	DC (self weight)		
	Vertical Force Z (kips)		
Pier	Composite Deck Truss	Open-Web	%Difference
RC1	11176	13144	17.6
RC2	19391	29134	50.2
RC3	20844	28775	38.0
RC4	20942	29058	38.8
RC5	21095	28752	36.3
RC6	22007	32805	49.1
RC7	20186	29524	46.3
RC8	10907	12495	14.6

DC

NEW
LARSA Output LCS_FEE EQ 2_46666664_03152011.xls

Joint	Result Case	Force X (kips)	Force Y (kips)	Force Z (kips)	Moment X (kips-ft)	Moment Y (kips-ft)	Moment Z (kips-ft)
1001	DC-Dead Load	13	-50	11176	2854	805	1
2001	DC-Dead Load	-14	62	19391	-15552	-4001	2
3001	DC-Dead Load	51	3	20844	-26560	-770	51
4001	DC-Dead Load	34	-8	20942	-21194	1438	458
5001	DC-Dead Load	-37	12	21095	-17253	-2309	1250
6001	DC-Dead Load	-48	-15	22007	-19337	-888	1148
7001	DC-Dead Load	-10	-40	20186	-11829	3114	0
8001	DC-Dead Load	11	35	10907	-6537	1042	9

EQL

NEW
LARSA Output LCS_FEE EQ 1_46666664_03152011.xls

Joint	Result Case	Force X (kips)	Force Y (kips)	Force Z (kips)	Moment X (kips-ft)	Moment Y (kips-ft)	Moment Z (kips-ft)
1001	EXT Ia - EQ 1 - 1	4850	5267	12241	276696	-90163	565
2001	EXT Ia - EQ 1 - 1	4070	3280	24563	237457	-61230	1963
3001	EXT Ia - EQ 1 - 1	6457	3819	25732	328523	-391120	22433
4001	EXT Ia - EQ 1 - 1	5956	3342	26336	303001	-405888	18229
5001	EXT Ia - EQ 1 - 1	5789	3503	26479	310279	-412852	19176
6001	EXT Ia - EQ 1 - 1	7331	3774	27179	365785	-525709	21252
7001	EXT Ia - EQ 1 - 1	8259	5560	25708	368352	-216107	5603
8001	EXT Ia - EQ 1 - 1	2852	3615	11931	278907	-117011	5370

EQT

NEW
LARSA Output LCS_FEE EQ 2_46666664_03152011.xls

Joint	Result Case	Force X (kips)	Force Y (kips)	Force Z (kips)	Moment X (kips-ft)	Moment Y (kips-ft)	Moment Z (kips-ft)
1001	EXT Ia - EQ 2 - 1	4787	6844	12108	343396	-109646	591
2001	EXT Ia - EQ 2 - 1	3733	4707	24225	351180	-84076	1419
3001	EXT Ia - EQ 2 - 1	2937	6938	25763	566383	-179158	38271
4001	EXT Ia - EQ 2 - 1	2474	7421	25909	613034	-167116	22917
5001	EXT Ia - EQ 2 - 1	2479	6329	26024	570404	-177159	42527
6001	EXT Ia - EQ 2 - 1	3021	6100	27152	578194	-212598	36454
7001	EXT Ia - EQ 2 - 1	5138	8538	25359	572772	-183240	5763
8001	EXT Ia - EQ 2 - 1	3439	5227	11945	382029	-151425	5686

FREQUENCIES USING FOUNDATION SPRINGS ASSOCIATED WITH LONGITUDINAL EARTHQUAKE

Mode Shapes - Frequencies

Mode Shape	Frequency (Hz)	Period (s)	Per Mass X	Per Mass Y	Per Mass Z	Cumulative Per Mass X	Cumulative Per Mass Y	Cumulative Per Mass Z
M1: f = 0.24, t = 4.1471	0.24	4.15	74.98	0.29	0.00	74.98	0.29	0.00
M2: f = 0.38, t = 2.6421	0.38	2.64	0.05	62.68	0.00	75.03	62.97	0.01
M3: f = 0.44, t = 2.2505	0.44	2.25	1.99	0.10	0.00	77.01	63.08	0.01
M4: f = 0.58, t = 1.7182	0.58	1.72	0.85	7.95	0.00	77.86	71.03	0.01
M5: f = 0.62, t = 1.6075	0.62	1.61	4.18	7.10	0.00	82.04	78.13	0.01
M6: f = 0.76, t = 1.3134	0.76	1.31	0.97	0.54	0.00	83.01	78.67	0.01
M7: f = 0.91, t = 1.0970	0.91	1.10	0.00	5.74	0.00	83.02	84.40	0.01
M8: f = 1.02, t = 0.9850	1.02	0.99	0.01	0.00	0.03	83.03	84.40	0.04
M9: f = 1.07, t = 0.9324	1.07	0.93	1.04	0.01	0.02	84.07	84.42	0.05
M10: f = 1.08, t = 0.9233	1.08	0.92	0.36	0.66	0.00	84.43	85.08	0.06
M11: f = 1.11, t = 0.8994	1.11	0.90	0.29	0.01	0.00	84.71	85.08	0.06
M12: f = 1.2, t = 0.8327	1.20	0.83	0.94	0.02	0.01	85.66	85.10	0.06
M13: f = 1.23, t = 0.8150	1.23	0.82	1.64	0.01	0.03	87.29	85.11	0.10
M14: f = 1.33, t = 0.7529	1.33	0.75	0.19	0.00	0.03	87.48	85.11	0.12
M15: f = 1.38, t = 0.7262	1.38	0.73	2.27	0.11	0.01	89.75	85.23	0.13
M16: f = 1.38, t = 0.7229	1.38	0.72	0.01	2.26	0.03	89.76	87.49	0.16
M17: f = 1.45, t = 0.6908	1.45	0.69	0.23	0.02	0.01	89.99	87.51	0.17
M18: f = 1.48, t = 0.6760	1.48	0.68	0.27	0.19	0.01	90.27	87.70	0.18
M19: f = 1.53, t = 0.6526	1.53	0.65	0.13	0.00	0.00	90.40	87.70	0.18
M20: f = 1.6, t = 0.6263	1.60	0.63	0.67	2.14	0.02	91.07	89.85	0.20
M21: f = 1.62, t = 0.6185	1.62	0.62	0.00	0.00	0.76	91.07	89.85	0.96
M22: f = 1.7, t = 0.5869	1.70	0.59	0.03	0.21	0.01	91.10	90.06	0.97
M23: f = 1.87, t = 0.5359	1.87	0.54	0.02	0.54	0.00	91.11	90.60	0.97
M24: f = 1.94, t = 0.5143	1.94	0.51	0.00	0.01	3.84	91.11	90.61	4.81
M25: f = 1.96, t = 0.5106	1.96	0.51	0.00	0.00	5.29	91.11	90.61	10.10
M26: f = 2.25, t = 0.4447	2.25	0.44	0.03	0.17	0.01	91.14	90.78	10.11
M27: f = 2.39, t = 0.4192	2.39	0.42	0.01	0.00	2.46	91.15	90.79	12.57
M28: f = 2.39, t = 0.4185	2.39	0.42	0.02	0.00	17.00	91.17	90.79	29.57
M29: f = 2.53, t = 0.3959	2.53	0.40	1.73	1.42	0.01	92.91	92.21	29.58
M30: f = 2.73, t = 0.3667	2.73	0.37	2.16	0.50	0.04	95.07	92.71	29.63
M31: f = 2.77, t = 0.3604	2.77	0.36	0.40	0.05	0.03	95.47	92.76	29.66
M32: f = 3.0, t = 0.3334	3.00	0.33	0.64	2.70	0.02	96.11	95.47	29.68

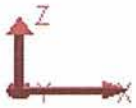
FREQUENCIES USING FOUNDATION SPRINGS ASSOCIATED WITH TRANSVERSE EARTHQUAKE

Mode Shapes - Frequencies

Mode Shape	Frequency (Hz)	Period (s)	Per Mass X	Per Mass Y	Per Mass Z	Cumulative Per Mass X	Cumulative Per Mass Y	Cumulative Per Mass Z
M1: f = 0.27, t = 3.7124	0.27	3.71	72.72	0.30	0.00	72.72	0.30	0.00
M2: f = 0.33, t = 3.0080	0.33	3.01	0.00	60.70	0.01	72.72	61.00	0.01
M3: f = 0.42, t = 2.3990	0.42	2.40	2.66	0.91	0.00	75.38	61.91	0.01
M4: f = 0.57, t = 1.7591	0.57	1.76	0.06	14.09	0.00	75.44	76.00	0.01
M5: f = 0.62, t = 1.6037	0.62	1.60	5.13	2.73	0.00	80.57	78.73	0.01
M6: f = 0.74, t = 1.3456	0.74	1.35	1.00	0.68	0.00	81.57	79.41	0.01
M7: f = 0.9, t = 1.1167	0.90	1.12	0.01	6.04	0.00	81.58	85.45	0.01
M8: f = 1.04, t = 0.9661	1.04	0.97	0.14	0.19	0.03	81.72	85.64	0.04
M9: f = 1.04, t = 0.9624	1.04	0.96	0.29	0.47	0.02	82.01	86.11	0.06
M10: f = 1.2, t = 0.8323	1.20	0.83	0.79	0.00	0.00	82.80	86.11	0.06
M11: f = 1.22, t = 0.8184	1.22	0.82	0.08	0.02	0.00	82.88	86.14	0.06
M12: f = 1.25, t = 0.7984	1.25	0.80	2.73	0.00	0.00	85.61	86.14	0.07
M13: f = 1.29, t = 0.7769	1.29	0.78	0.74	0.34	0.03	86.35	86.48	0.10
M14: f = 1.3, t = 0.7674	1.30	0.77	0.06	1.01	0.04	86.41	87.49	0.13
M15: f = 1.37, t = 0.7285	1.37	0.73	0.46	0.11	0.03	86.87	87.60	0.17
M16: f = 1.38, t = 0.7227	1.38	0.72	2.33	0.11	0.01	89.20	87.71	0.17
M17: f = 1.4, t = 0.7152	1.40	0.72	0.50	0.13	0.00	89.71	87.85	0.17
M18: f = 1.45, t = 0.6874	1.45	0.69	0.03	0.12	0.01	89.73	87.97	0.18
M19: f = 1.49, t = 0.6699	1.49	0.67	0.74	0.00	0.00	90.47	87.97	0.19
M20: f = 1.56, t = 0.6394	1.56	0.64	0.60	2.15	0.03	91.07	90.12	0.21
M21: f = 1.62, t = 0.6179	1.62	0.62	0.00	0.01	0.82	91.07	90.13	1.03
M22: f = 1.67, t = 0.5992	1.67	0.60	0.01	0.17	0.00	91.09	90.31	1.03
M23: f = 1.83, t = 0.5464	1.83	0.55	0.04	0.39	0.00	91.12	90.69	1.04
M24: f = 1.95, t = 0.5131	1.95	0.51	0.00	0.01	4.17	91.12	90.70	5.20
M25: f = 1.96, t = 0.5092	1.96	0.51	0.00	0.00	4.53	91.13	90.70	9.73
M26: f = 2.24, t = 0.4470	2.24	0.45	0.03	0.17	0.01	91.16	90.87	9.74
M27: f = 2.38, t = 0.4199	2.38	0.42	0.03	0.00	0.02	91.19	90.87	9.76
M28: f = 2.4, t = 0.4169	2.40	0.42	0.00	0.00	19.01	91.19	90.87	28.78
M29: f = 2.52, t = 0.3964	2.52	0.40	1.72	1.49	0.01	92.91	92.36	28.79
M30: f = 2.73, t = 0.3660	2.73	0.37	0.90	0.52	0.02	93.81	92.88	28.81
M31: f = 2.79, t = 0.3584	2.79	0.36	1.31	0.43	0.05	95.12	93.31	28.86
M32: f = 2.97, t = 0.3366	2.97	0.34	1.10	2.26	0.04	96.22	95.56	28.89

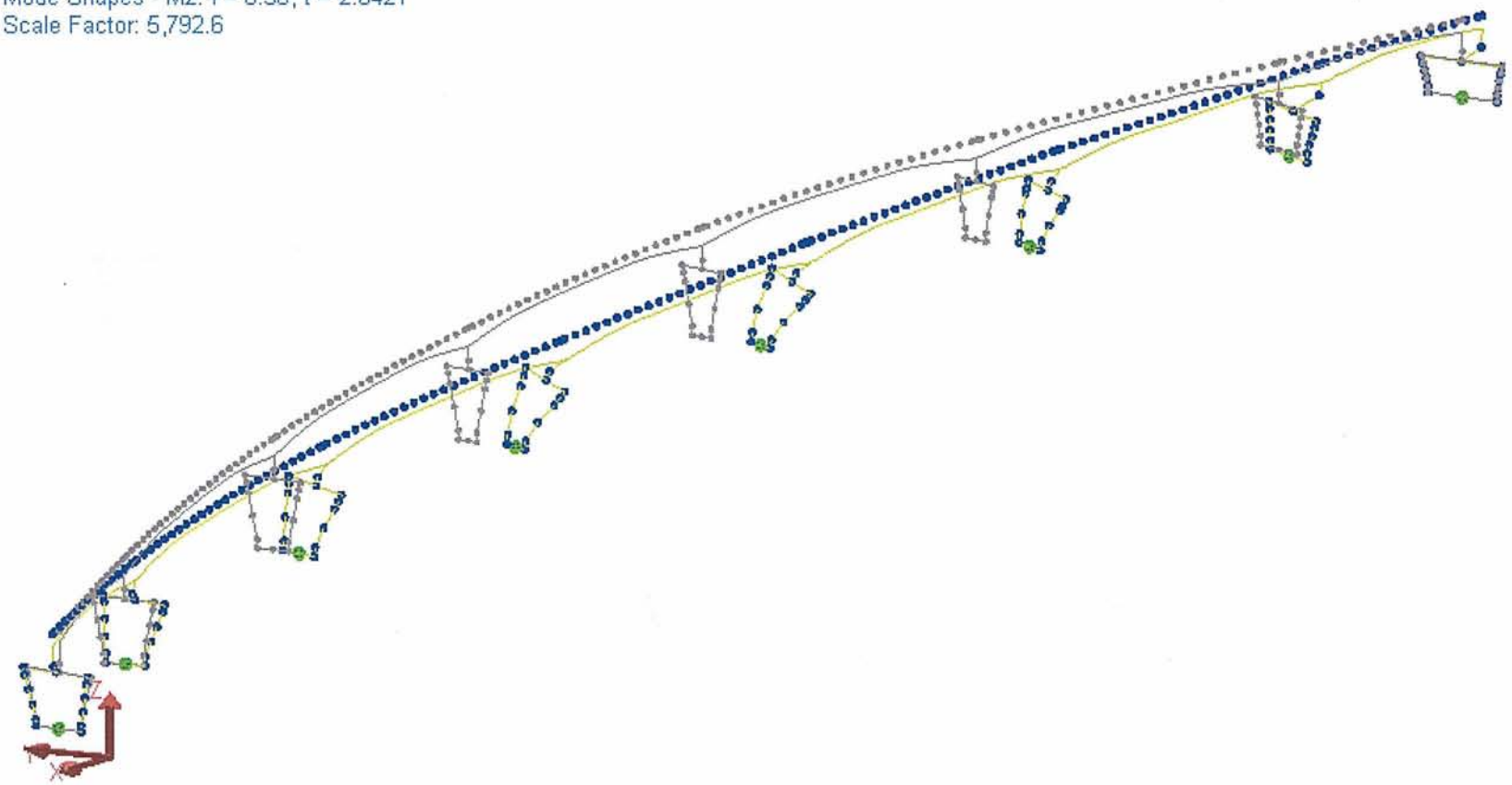
Graphics View 1

Zoom 1.875X
Mode Shapes - M1: f = 0.24, t = 4.1471
Scale Factor: 5,792.6



Graphics View 1

Zoom 3.662X
Mode Shapes - M2: f = 0.38, t = 2.6421
Scale Factor: 5,792.6

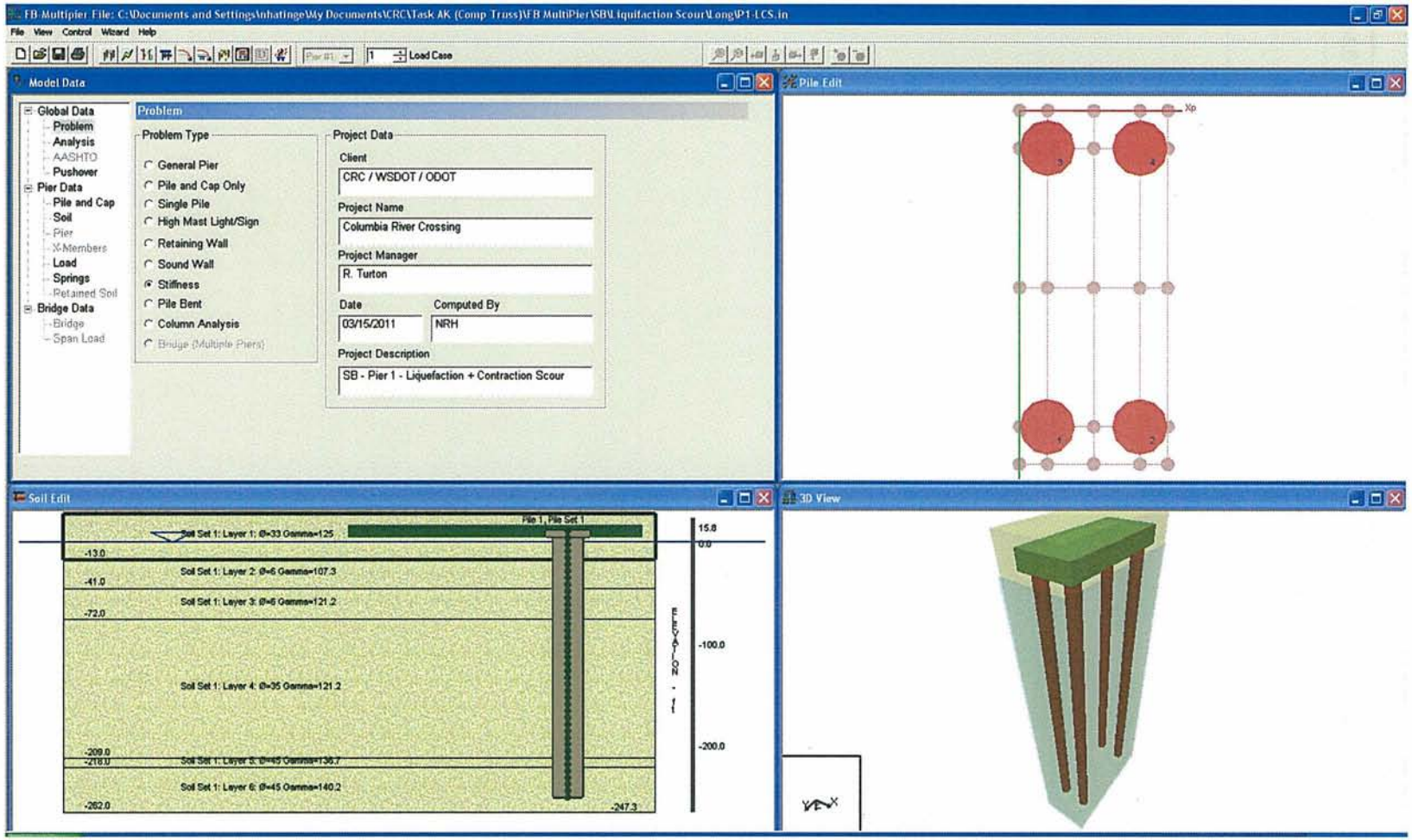


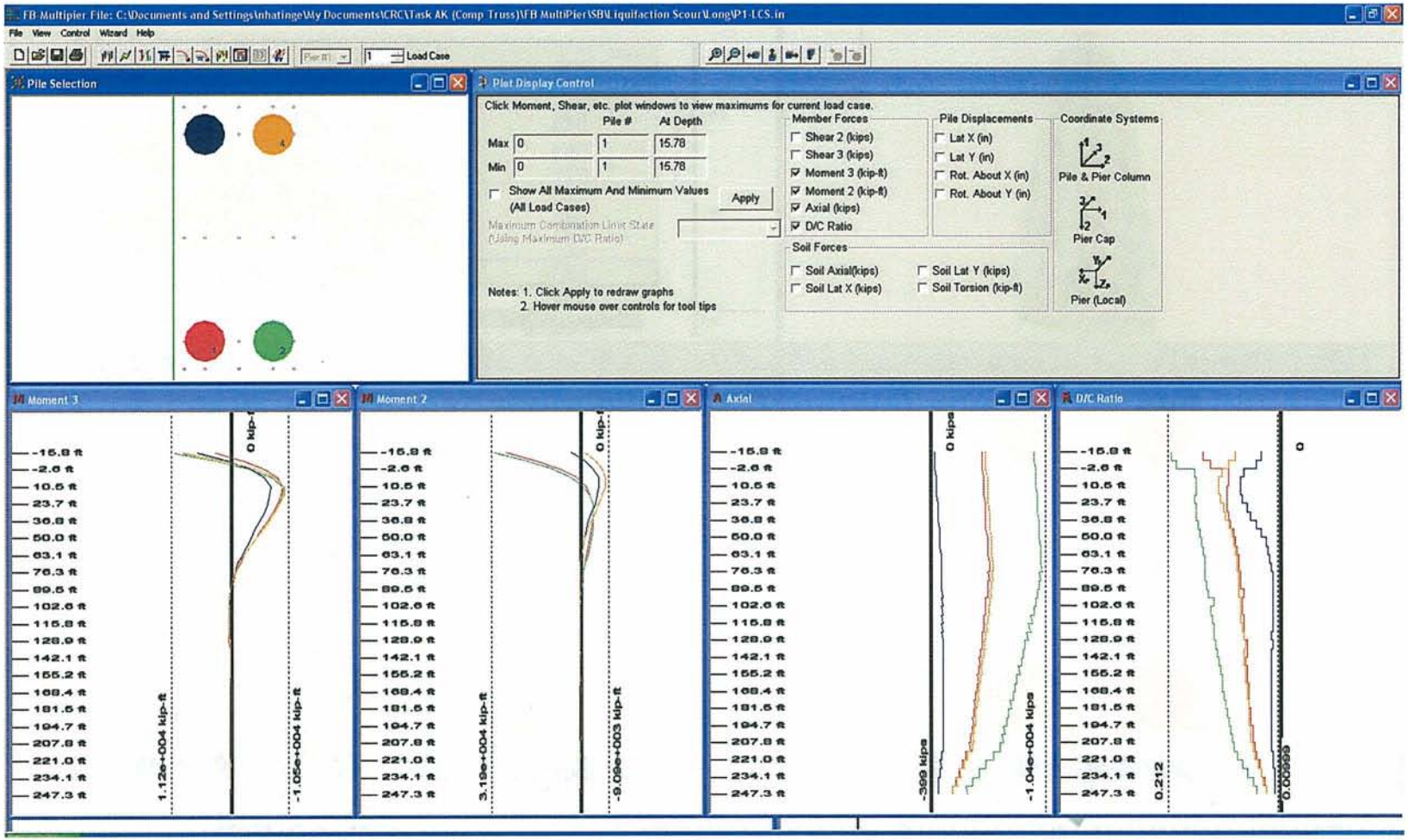
HDR | ONE COMPANY *Many Solutions*℠

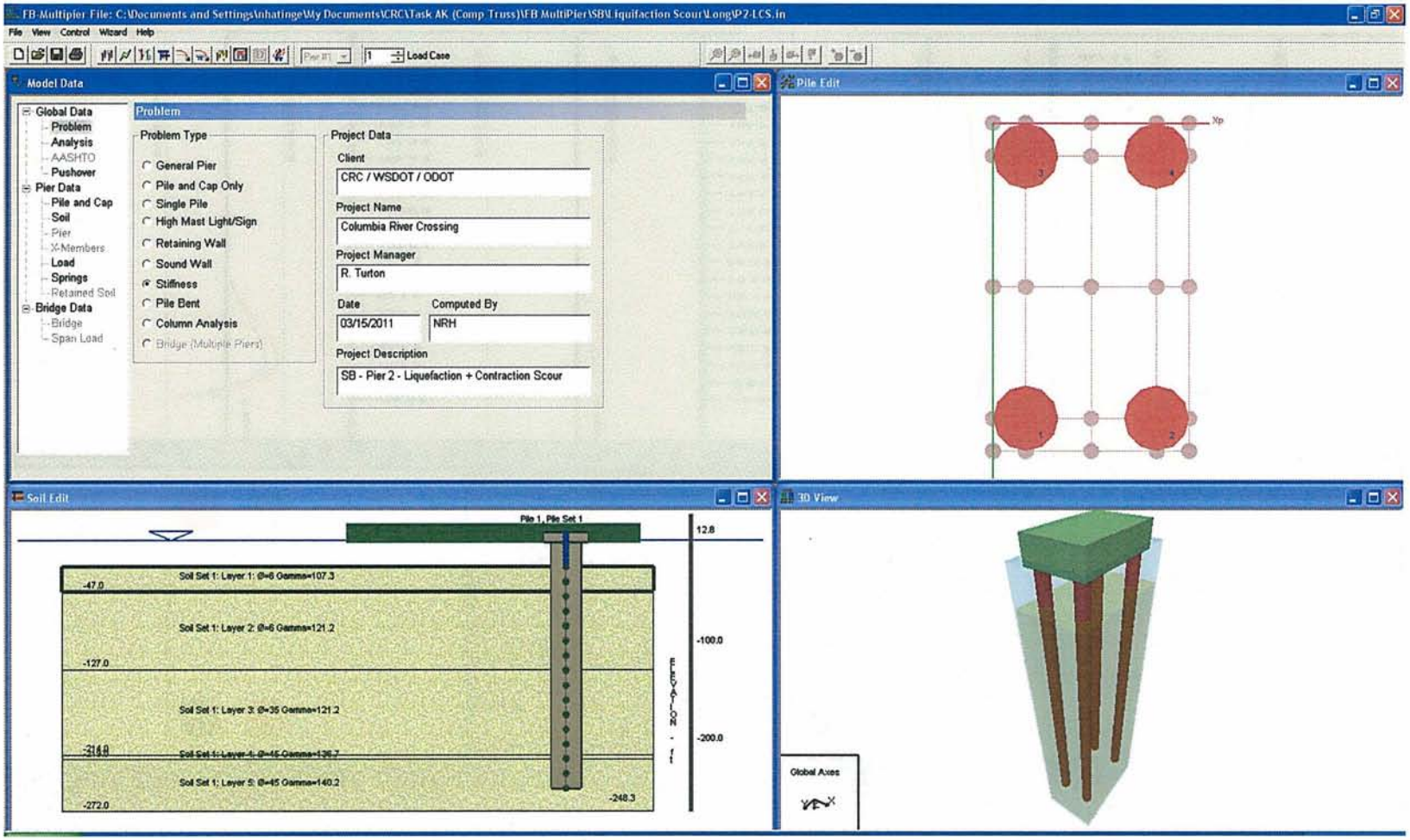
FB-Multipier Foundation Analysis

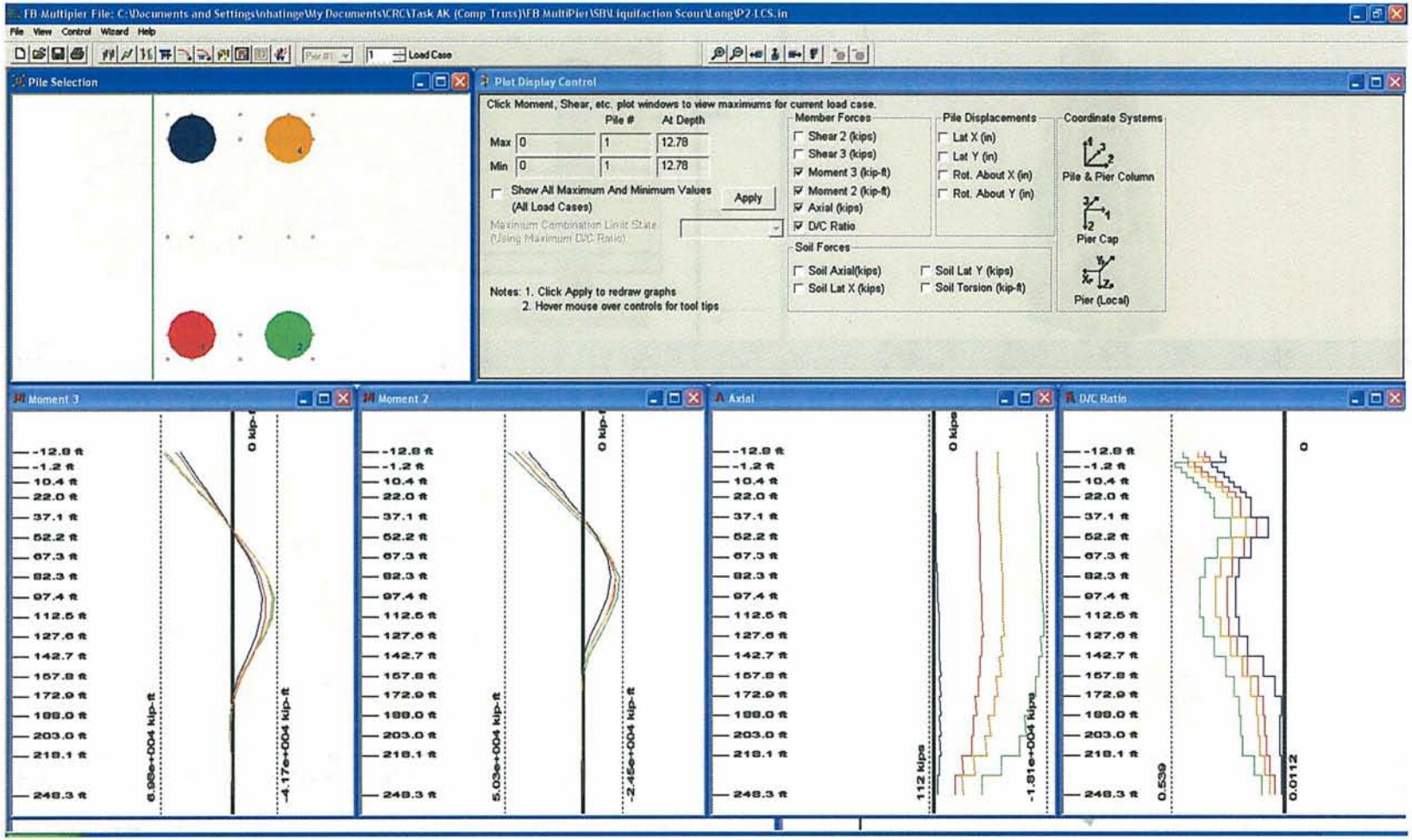
Project:	Columbia River Crossing	Computed:	C. Werts	Date:	03-23-2011
Subject:	River Bridge Preliminary Design	Checked:		Date:	
Task:	Composite Deck Truss Alternative	Sheet:		of	

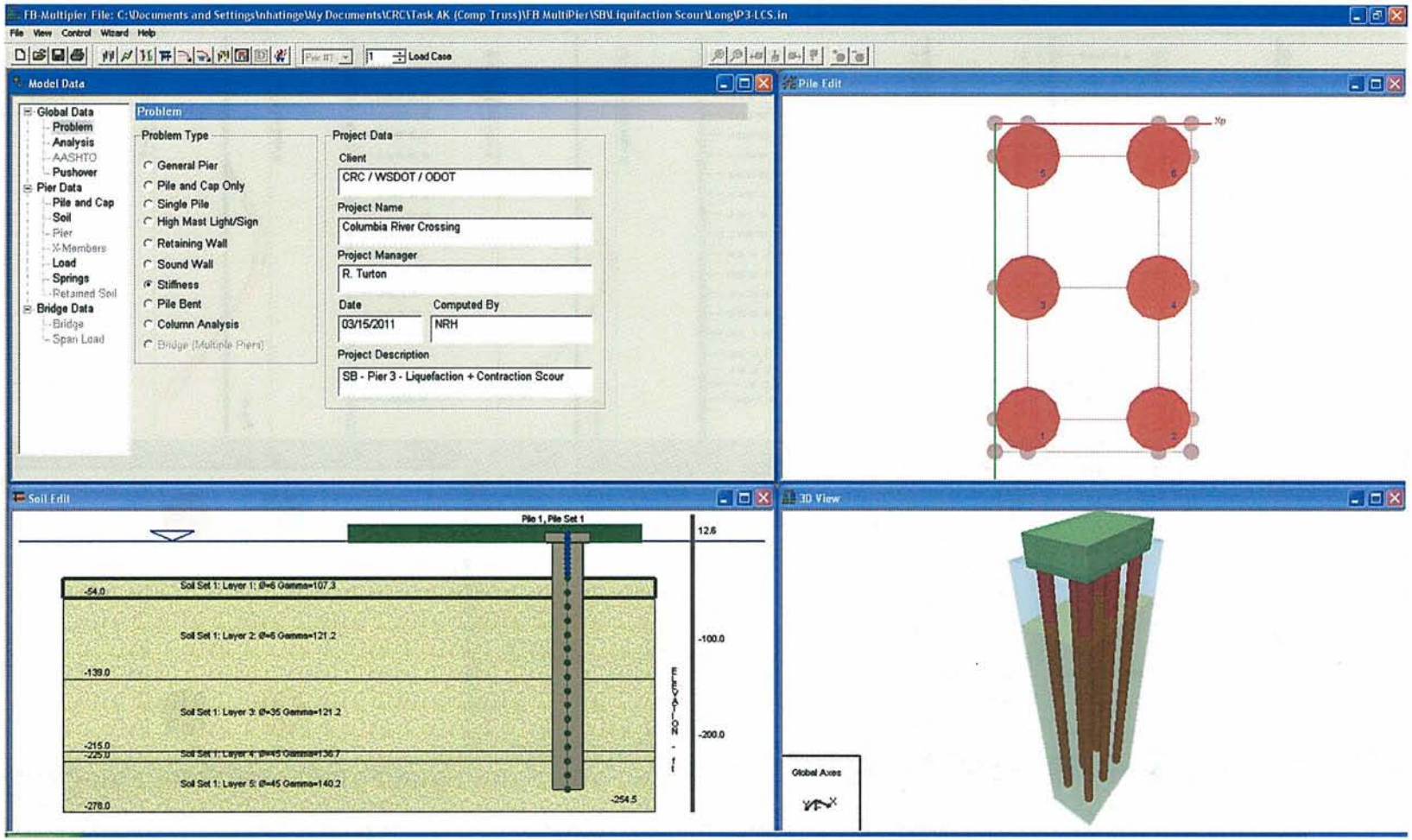
3. FB-Multipier Foundation Analysis

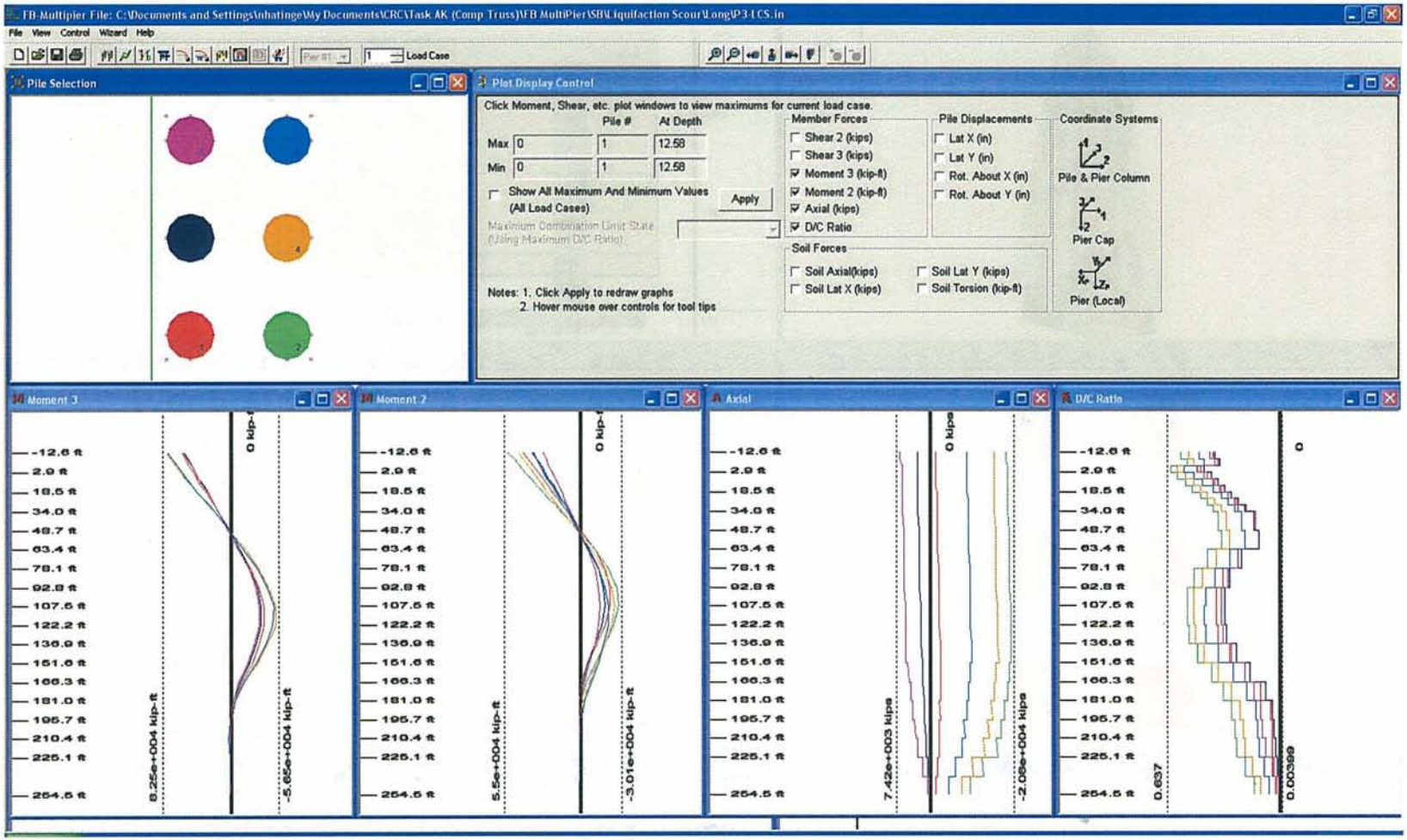

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P1-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
03/15/2011
Computed By
NRH
Project Description
SB - Pier 1 - Liquefaction + Contraction Scour
Pile Edit
Xp
Soil Edit
Pile 1, Pile Set 1
Soil Set 1: Layer 1: Ø=33 Gamma=125
Soil Set 1: Layer 2: Ø=6 Gamma=107.3
Soil Set 1: Layer 3: Ø=6 Gamma=121.2
Soil Set 1: Layer 4: Ø=35 Gamma=121.2
Soil Set 1: Layer 6: Ø=45 Gamma=140.2
15.8
0.0
-13.0
-41.0
-72.0
-100.0
-200.0
-209.0
-262.0
-247.3
3D View

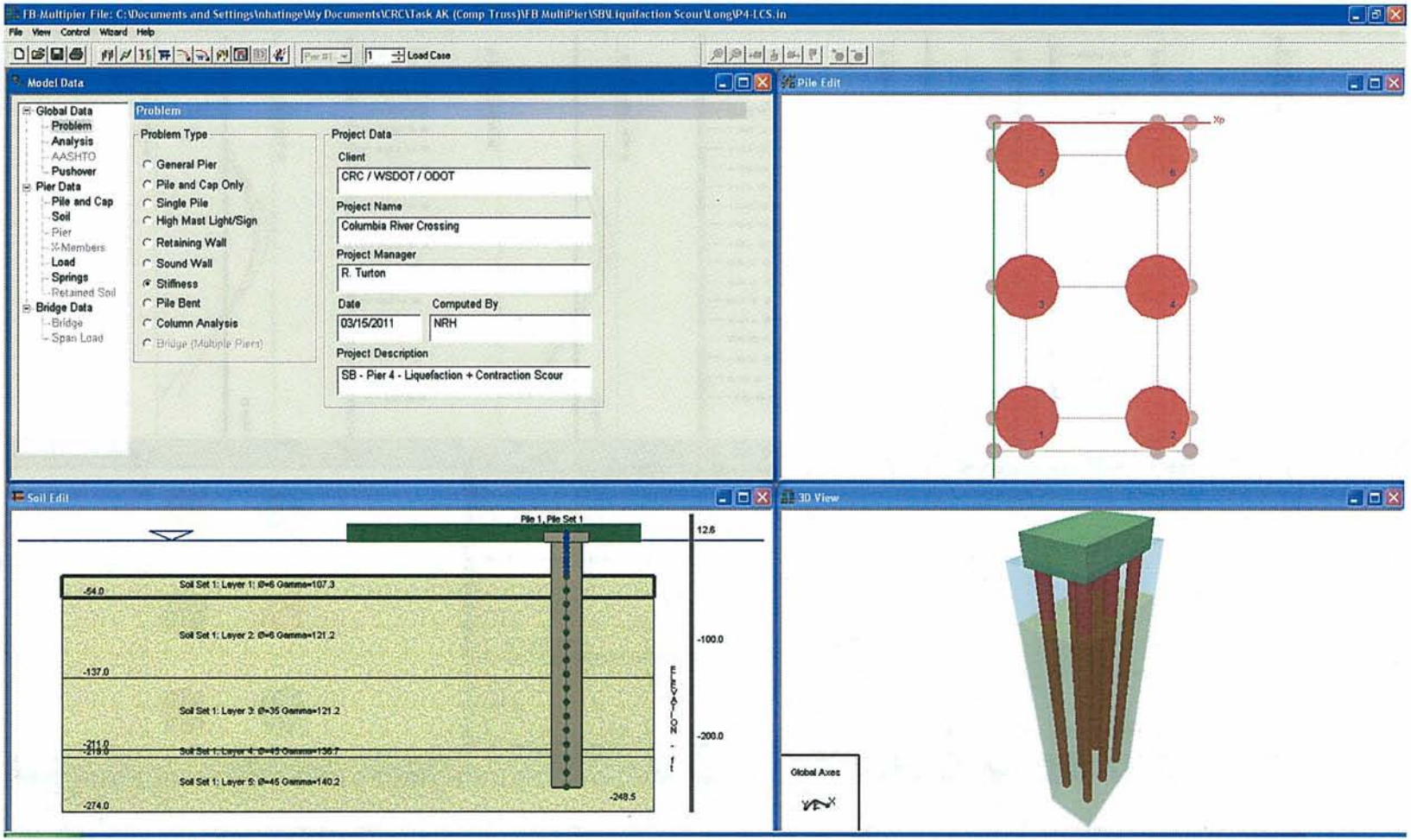

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P1-LCS.in
File View Control Wizard Help
Load Case
Pile Selection
Plot Display Control
Click Moment, Shear, etc. plot windows to view maximums for current load case.
Pile # At Depth
Max 0 1 15.78
Min 0 1 15.78
Show All Maximum And Minimum Values (All Load Cases)
Apply
Maximum Combination Limit State (Using Maximum D/C Ratio)
Notes: 1. Click Apply to redraw graphs
2. Hover mouse over controls for tool tips
Member Forces
Shear 2 (kips)
Shear 3 (kips)
Moment 3 (kip-ft)
Moment 2 (kip-ft)
Axial (kips)
D/C Ratio
Pile Displacements
Lat X (in)
Lat Y (in)
Rot. About X (in)
Rot. About Y (in)
Soil Forces
Soil Axial(kips)
Soil Lat Y (kips)
Soil Lat X (kips)
Soil Torsion (kip-ft)
Coordinate Systems
Pile & Pier Column
Pier Cap
Pier (Local)
Moment 3
Moment 2
Axial
D/C Ratio
-15.8 ft
-2.6 ft
10.5 ft
23.7 ft
36.8 ft
50.0 ft
63.1 ft
76.3 ft
89.5 ft
102.6 ft
115.8 ft
128.9 ft
142.1 ft
155.2 ft
168.4 ft
181.5 ft
194.7 ft
207.8 ft
221.0 ft
234.1 ft
247.3 ft
0 kip-ft
1.12e+004 kip-ft
-1.05e+004 kip-ft
3.19e+004 kip-ft
-9.09e+003 kip-ft
0 kips
-399 kips
-1.04e+004 kips
0
0.212

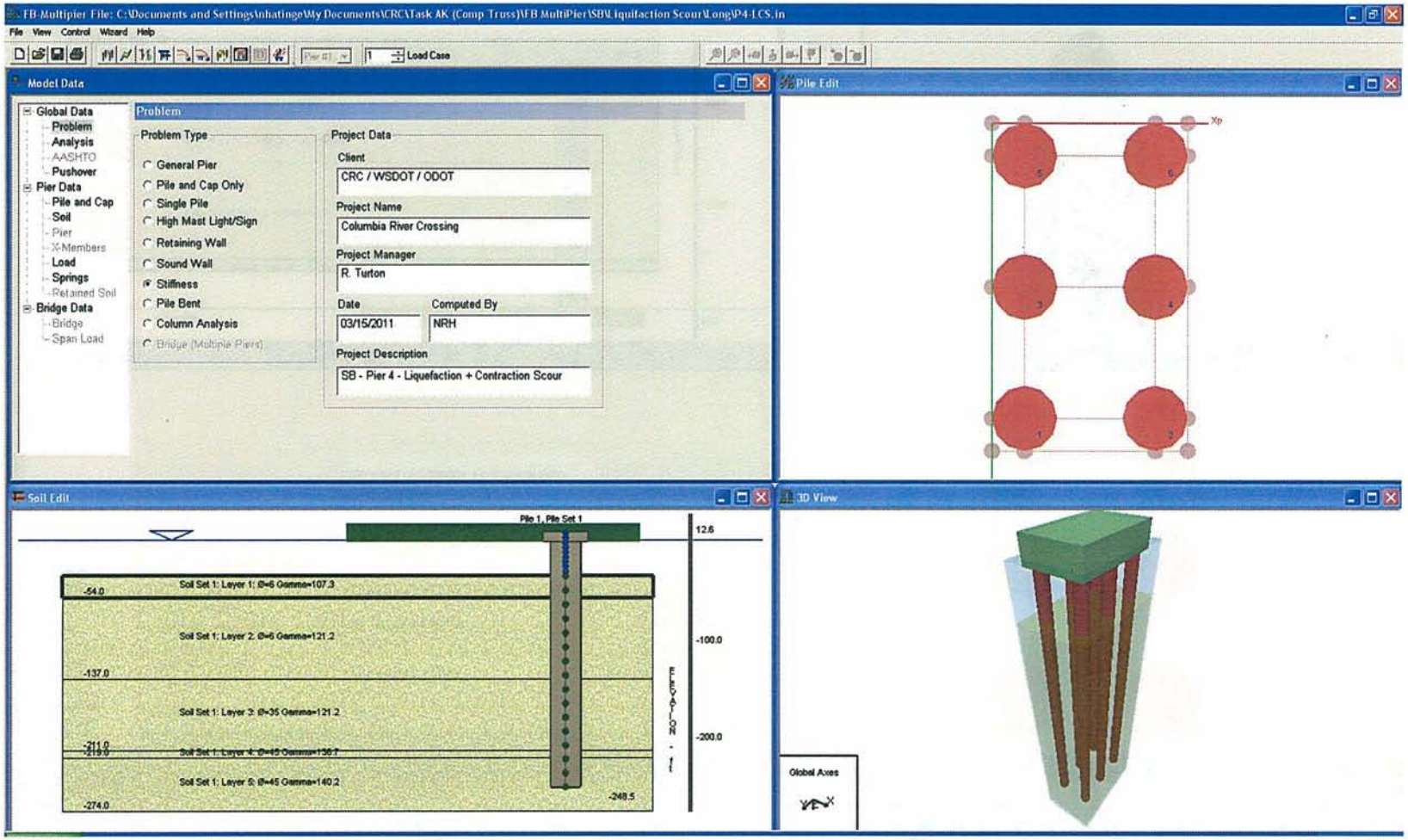

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P2-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
03/15/2011
Computed By
NRH
Project Description
SB - Pier 2 - Liquefaction + Contraction Scour
Pile Edit
Xp
Soil Edit
Pile 1, Pile Set 1
12.8
Soil Set 1: Layer 1: Ø=0 Gamma=107.3
-47.0
Soil Set 1: Layer 2: Ø=0 Gamma=121.2
-100.0
-127.0
Soil Set 1: Layer 3: Ø=35 Gamma=121.2
-200.0
Soil Set 1: Layer 4: Ø=45 Gamma=136.7
Soil Set 1: Layer 5: Ø=45 Gamma=140.2
-272.0
-248.3
3D View
Global Axes

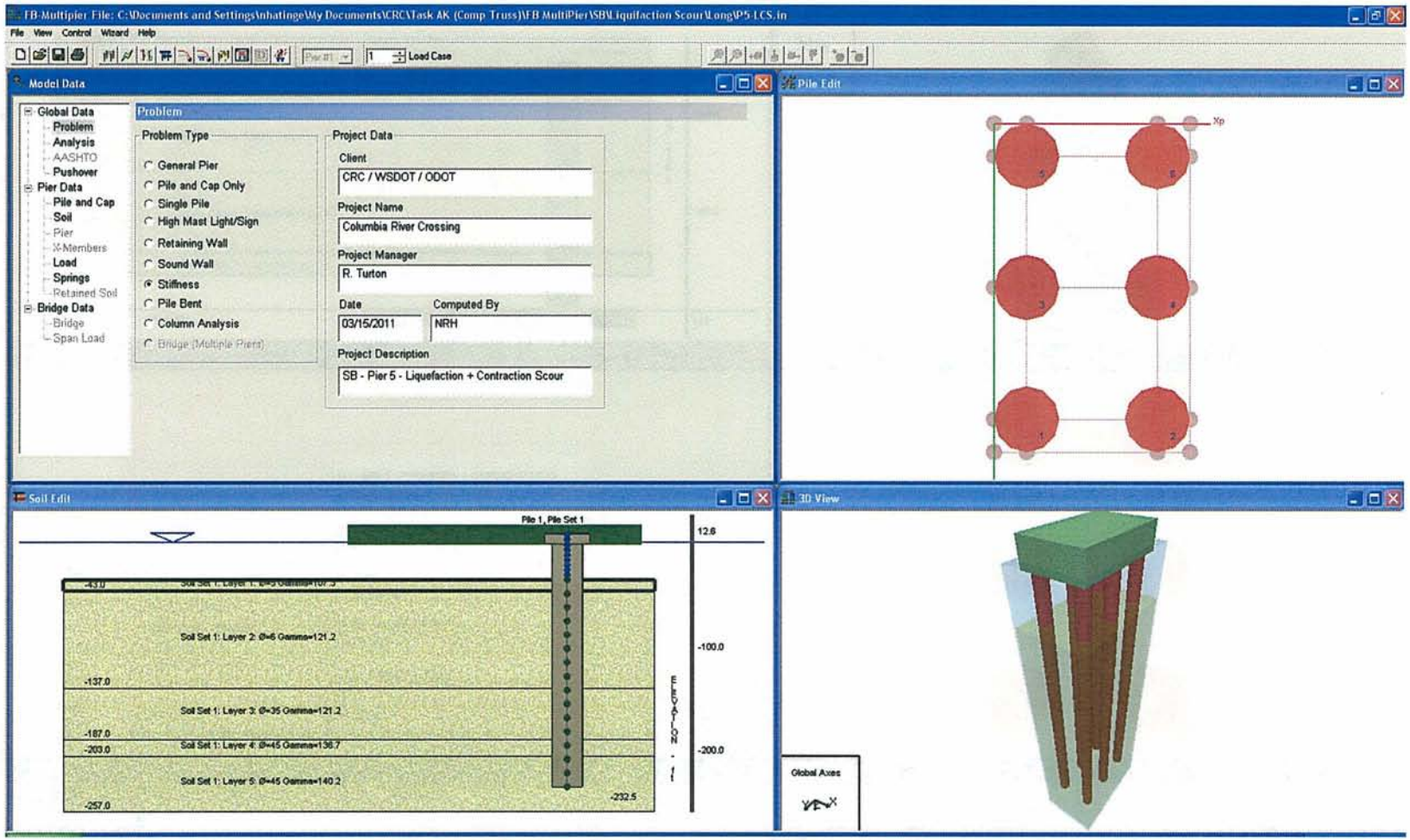

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P2-LCS.in
File View Control Wizard Help
Load Case
Pile Selection
Plot Display Control
Click Moment, Shear, etc. plot windows to view maximums for current load case.
Pile # At Depth
Max 0 1 12.78
Min 0 1 12.78
Show All Maximum And Minimum Values (All Load Cases)
Apply
Maximum Combination Limit State (Using Maximum D/C Ratio)
Notes: 1. Click Apply to redraw graphs
2. Hover mouse over controls for tool tips
Member Forces
Shear 2 (kips)
Shear 3 (kips)
Moment 3 (kip-ft)
Moment 2 (kip-ft)
Axial (kips)
D/C Ratio
Pile Displacements
Lat X (in)
Lat Y (in)
Rot. About X (in)
Rot. About Y (in)
Soil Forces
Soil Axial(kips)
Soil Lat Y (kips)
Soil Lat X (kips)
Soil Torsion (kip-ft)
Coordinate Systems
Pile & Pier Column
Pier Cap
Pier (Local)
Moment 3
Moment 2
Axial
D/C Ratio
-12.8 ft
-1.2 ft
10.4 ft
22.0 ft
37.1 ft
52.2 ft
67.3 ft
82.3 ft
97.4 ft
112.5 ft
127.6 ft
142.7 ft
157.8 ft
172.9 ft
188.0 ft
203.0 ft
218.1 ft
248.3 ft
0 kip-ft
6.98e+004 kip-ft
-4.17e+004 kip-ft
5.03e+004 kip-ft
-2.45e+004 kip-ft
0 kips
112 kips
-1.81e+004 kips
0
0.539
0.0112

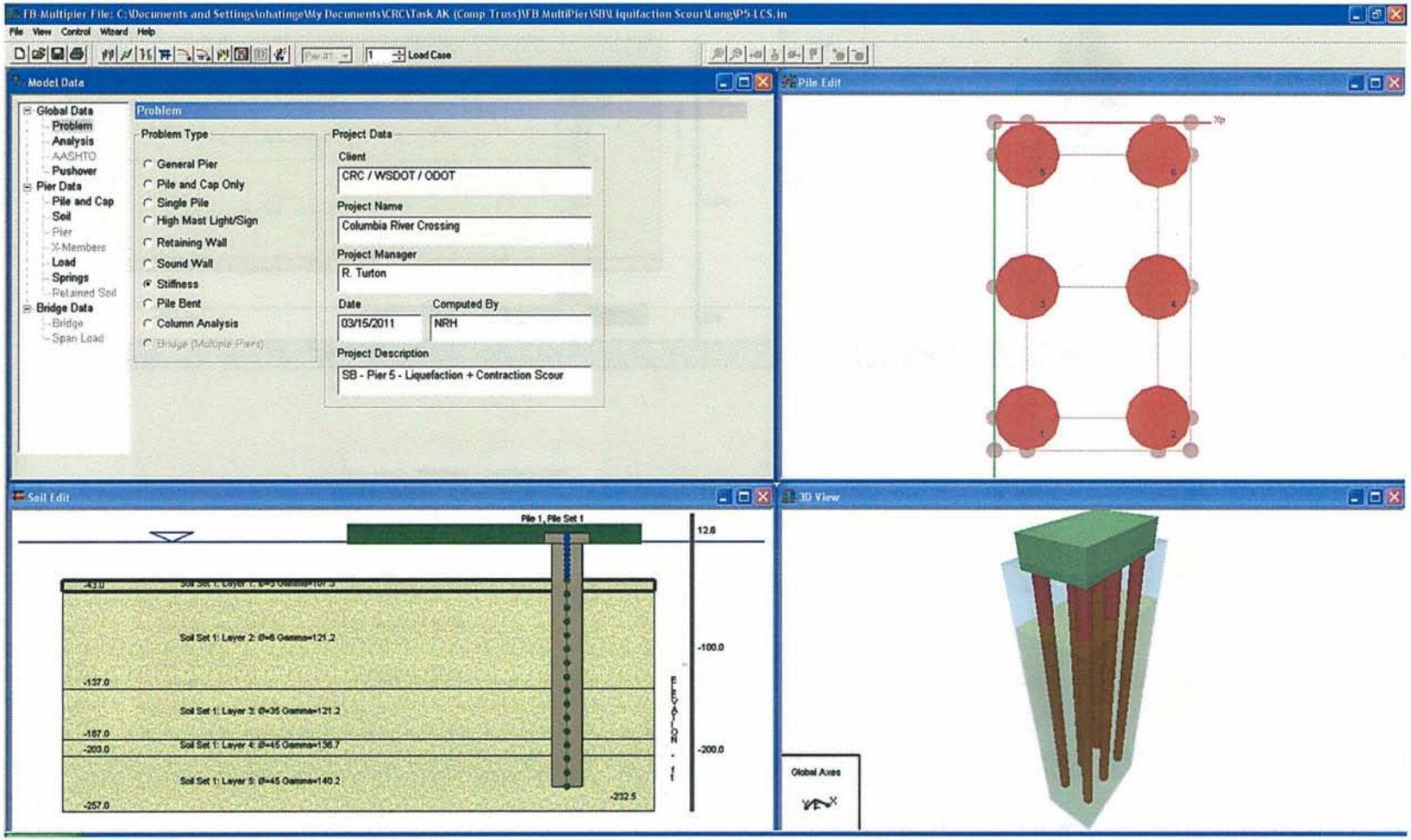

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P3-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
03/15/2011
Computed By
NRH
Project Description
SB - Pier 3 - Liquefaction + Contraction Scour
Pile Edit
Soil Edit
Pile 1, Pile Set 1
12.6
-54.0
Soil Set 1: Layer 1: Ø=6 Gamma=107.3
Soil Set 1: Layer 2: Ø=6 Gamma=121.2
-139.0
-100.0
Soil Set 1: Layer 3: Ø=35 Gamma=121.2
-200.0
-215.0
-225.0
Soil Set 1: Layer 4: Ø=45 Gamma=136.7
Soil Set 1: Layer 5: Ø=45 Gamma=140.2
-278.0
-254.5
3D View
Global Axes

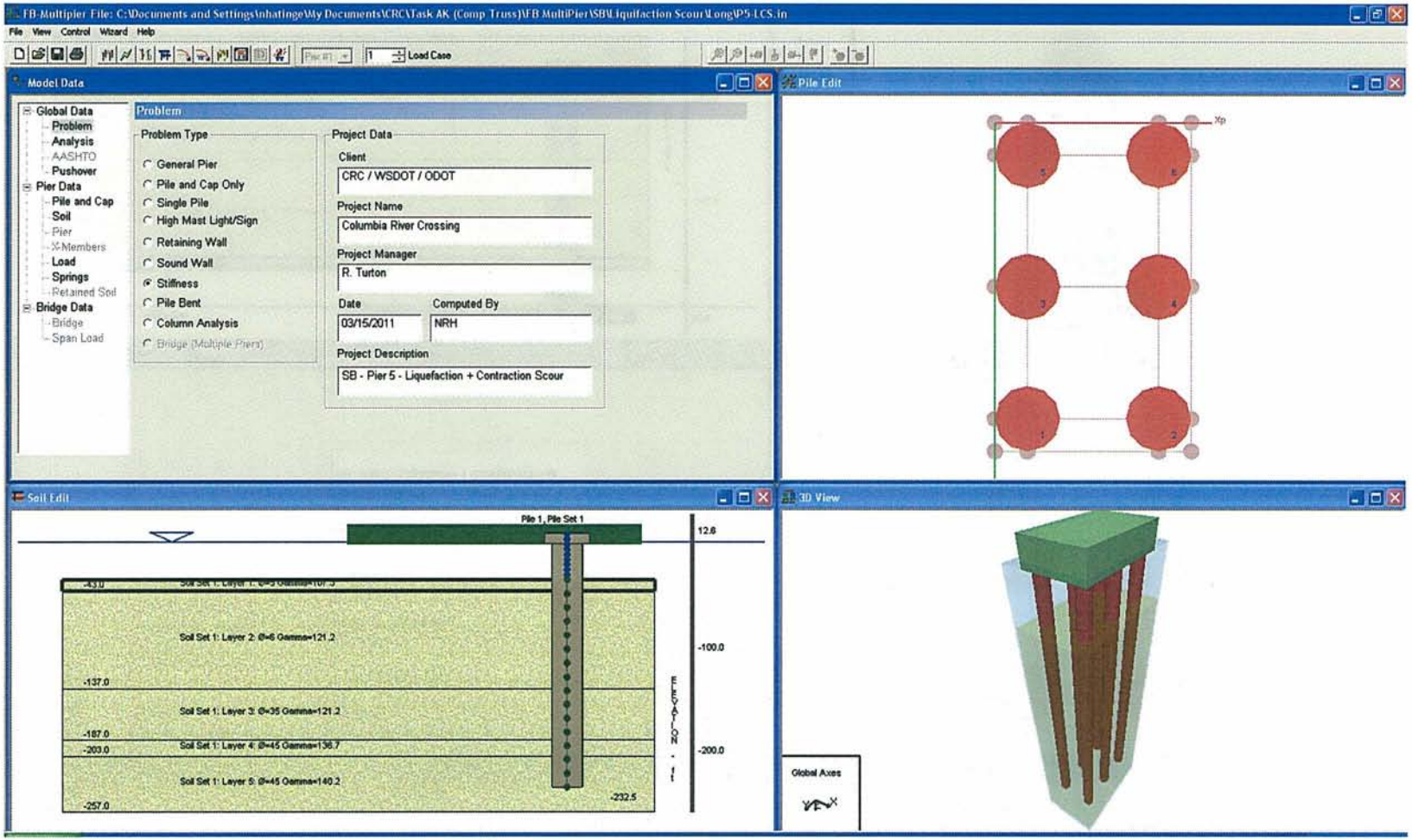

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P3-LCS.in
File View Control Wizard Help
Load Case
Pile Selection
Plot Display Control
Click Moment, Shear, etc. plot windows to view maximums for current load case.
Pile # At Depth
Max 0 1 12.58
Min 0 1 12.58
Show All Maximum And Minimum Values (All Load Cases)
Apply
Maximum Combination Limit State (Using Maximum D/C Ratio)
Notes: 1. Click Apply to redraw graphs
2. Hover mouse over controls for tool tips
Member Forces
Shear 2 (kips)
Shear 3 (kips)
Moment 3 (kip-ft)
Moment 2 (kip-ft)
Axial (kips)
D/C Ratio
Pile Displacements
Lat X (in)
Lat Y (in)
Rot. About X (in)
Rot. About Y (in)
Soil Forces
Soil Axial(kips)
Soil Lat X (kips)
Soil Lat Y (kips)
Soil Torsion (kip-ft)
Coordinate Systems
Pile & Pier Column
Pier Cap
Pier (Local)
Moment 3
Moment 2
Axial
D/C Ratio
-12.6 ft
2.9 ft
18.5 ft
34.0 ft
48.7 ft
63.4 ft
78.1 ft
92.8 ft
107.5 ft
122.2 ft
136.9 ft
151.6 ft
166.3 ft
181.0 ft
195.7 ft
210.4 ft
225.1 ft
254.5 ft
0 kip-ft
8.25e+004 kip-ft
-5.65e+004 kip-ft
5.5e+004 kip-ft
-3.01e+004 kip-ft
0 kips
7.42e+003 kips
-2.06e+004 kips
0
0.637
0.00399

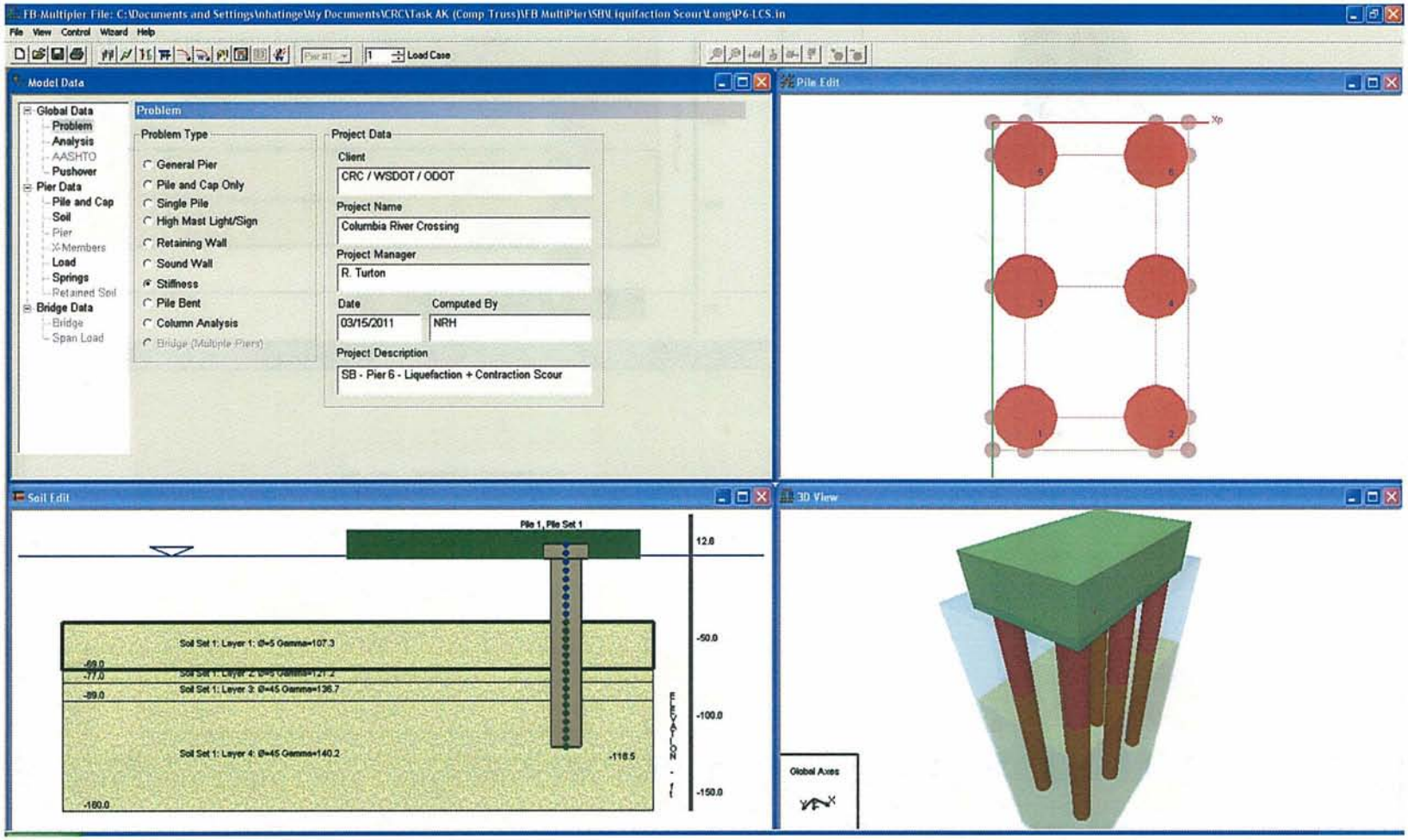

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P4-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
03/15/2011
Computed By
NRH
Project Description
SB - Pier 4 - Liquefaction + Contraction Scour
Pile Edit
Xp
Soil Edit
Pile 1, Pile Set 1
12.6
-54.0
Soil Set 1: Layer 1: ø=6 Gamma=107.3
Soil Set 1: Layer 2: ø=6 Gamma=121.2
-100.0
-137.0
Soil Set 1: Layer 3: ø=35 Gamma=121.2
-200.0
-211.0
-219.0
Soil Set 1: Layer 4: ø=45 Gamma=136.7
Soil Set 1: Layer 5: ø=45 Gamma=140.2
-248.5
-274.0
ELEVATION - ft
3D View
Global Axes

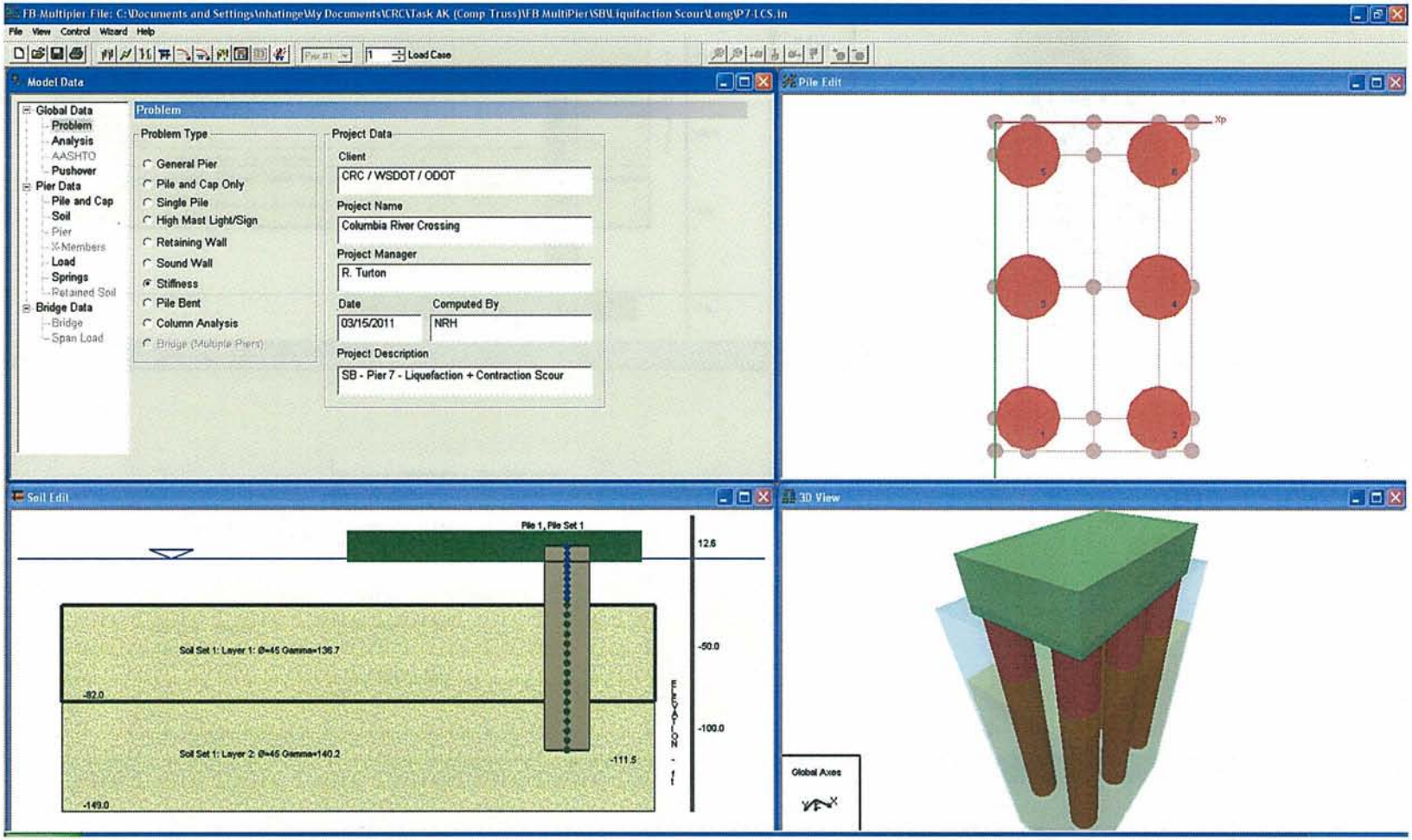

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P4-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
03/15/2011
Computed By
NRH
Project Description
SB - Pier 4 - Liquefaction + Contraction Scour
Pile Edit
Xp
Soil Edit
Pile 1, Pile Set 1
12.6
-54.0
Soil Set 1: Layer 1: Ø=6 Gamma=107.3
Soil Set 1: Layer 2: Ø=6 Gamma=121.2
-137.0
Soil Set 1: Layer 3: Ø=35 Gamma=121.2
-211.0
Soil Set 1: Layer 5: Ø=45 Gamma=140.2
-274.0
-248.5
-100.0
-200.0
ELEVATION - ft
3D View
Global Axes

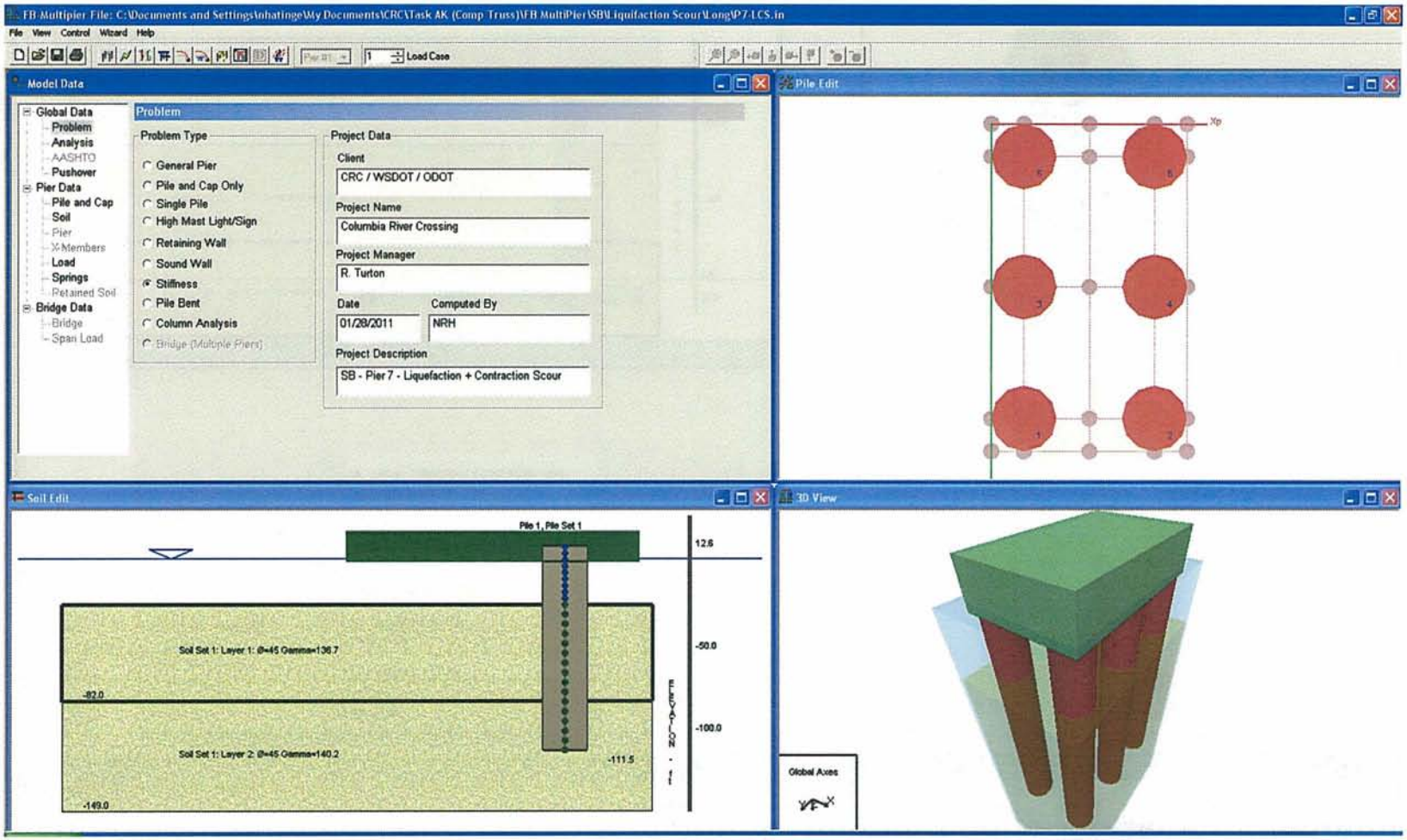

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P5-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
03/15/2011
Computed By
NRH
Project Description
SB - Pier 5 - Liquefaction + Contraction Scour
Pile Edit
Xp
Soil Edit
Pile 1, Pile Set 1
12.6
-100.0
-200.0
Soil Set 1: Layer 2: Ø=6 Gamma=121.2
-137.0
Soil Set 1: Layer 3: Ø=35 Gamma=121.2
-187.0
-203.0
Soil Set 1: Layer 4: Ø=45 Gamma=136.7
Soil Set 1: Layer 5: Ø=45 Gamma=140.2
-257.0
-232.5
3D View
Global Axes

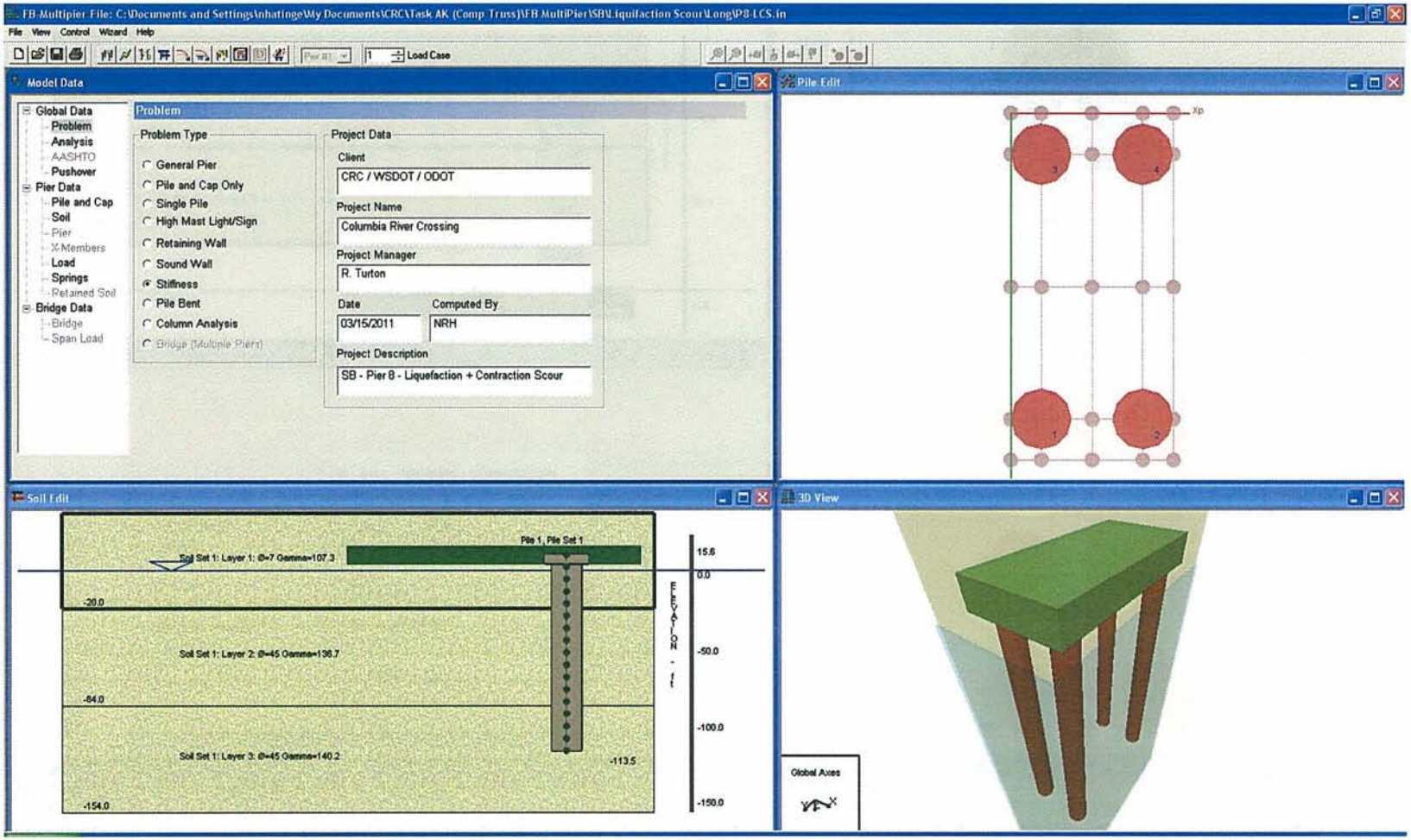

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P5-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
03/15/2011
Computed By
NRH
Project Description
SB - Pier 5 - Liquefaction + Contraction Scour
Pile Edit
Xp
Soil Edit
Pile 1, Pile Set 1
12.6
Soil Set 1: Layer 2: Ø=6 Gamma=121.2
-137.0
Soil Set 1: Layer 3: Ø=35 Gamma=121.2
-187.0
-203.0
Soil Set 1: Layer 4: Ø=45 Gamma=136.7
Soil Set 1: Layer 5: Ø=45 Gamma=140.2
-257.0
-232.5
-100.0
-200.0
3D View
Global Axes

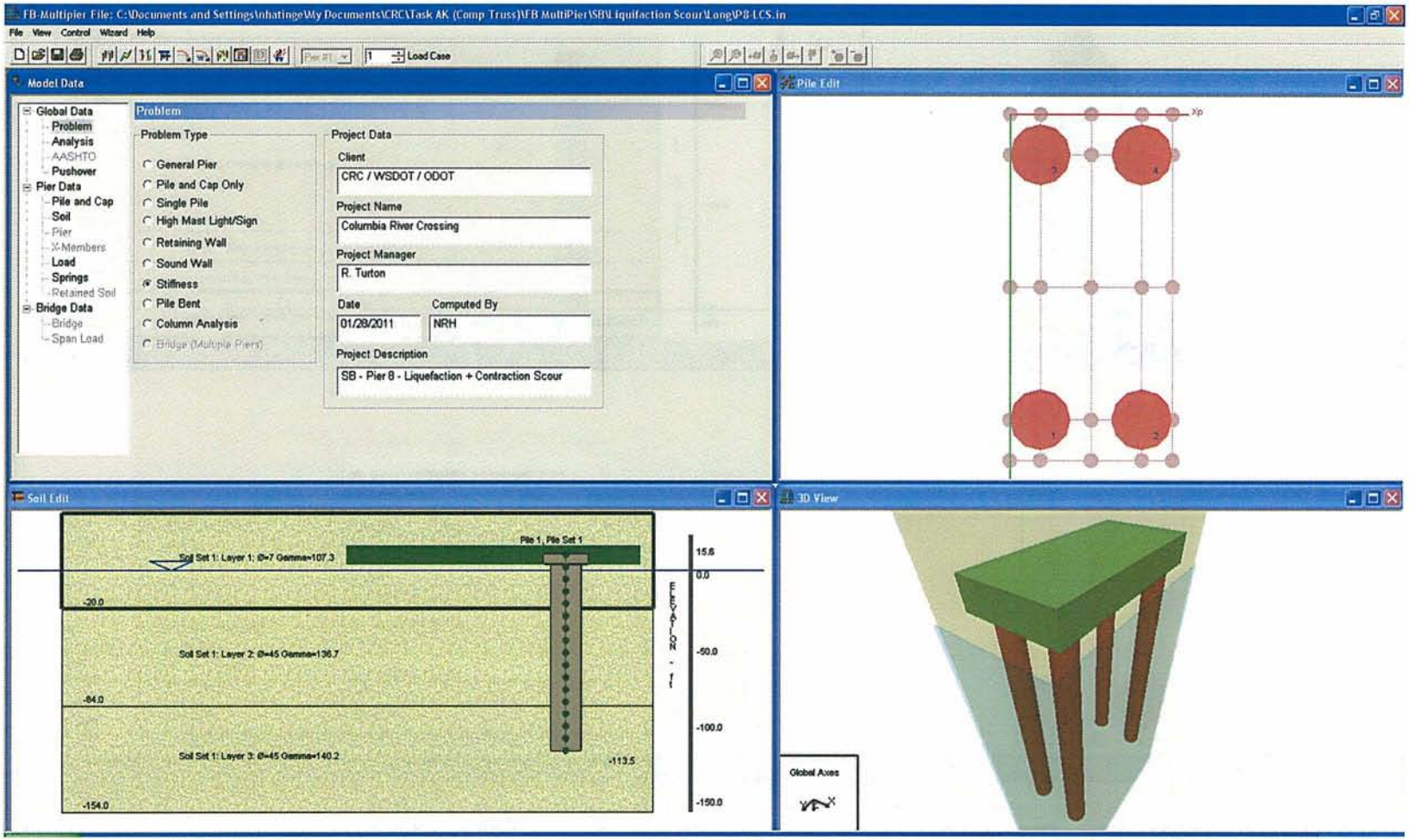

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P5-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
03/15/2011
Computed By
NRH
Project Description
SB - Pier 5 - Liquefaction + Contraction Scour
Pile Edit
Soil Edit
Pile 1, Pile Set 1
Soil Set 1: Layer 2: Ø=6 Gamma=121.2
Soil Set 1: Layer 3: Ø=35 Gamma=121.2
Soil Set 1: Layer 4: Ø=45 Gamma=136.7
Soil Set 1: Layer 5: Ø=45 Gamma=140.2
12.6
-100.0
-200.0
-137.0
-187.0
-203.0
-257.0
-232.5
3D View
Global Axes

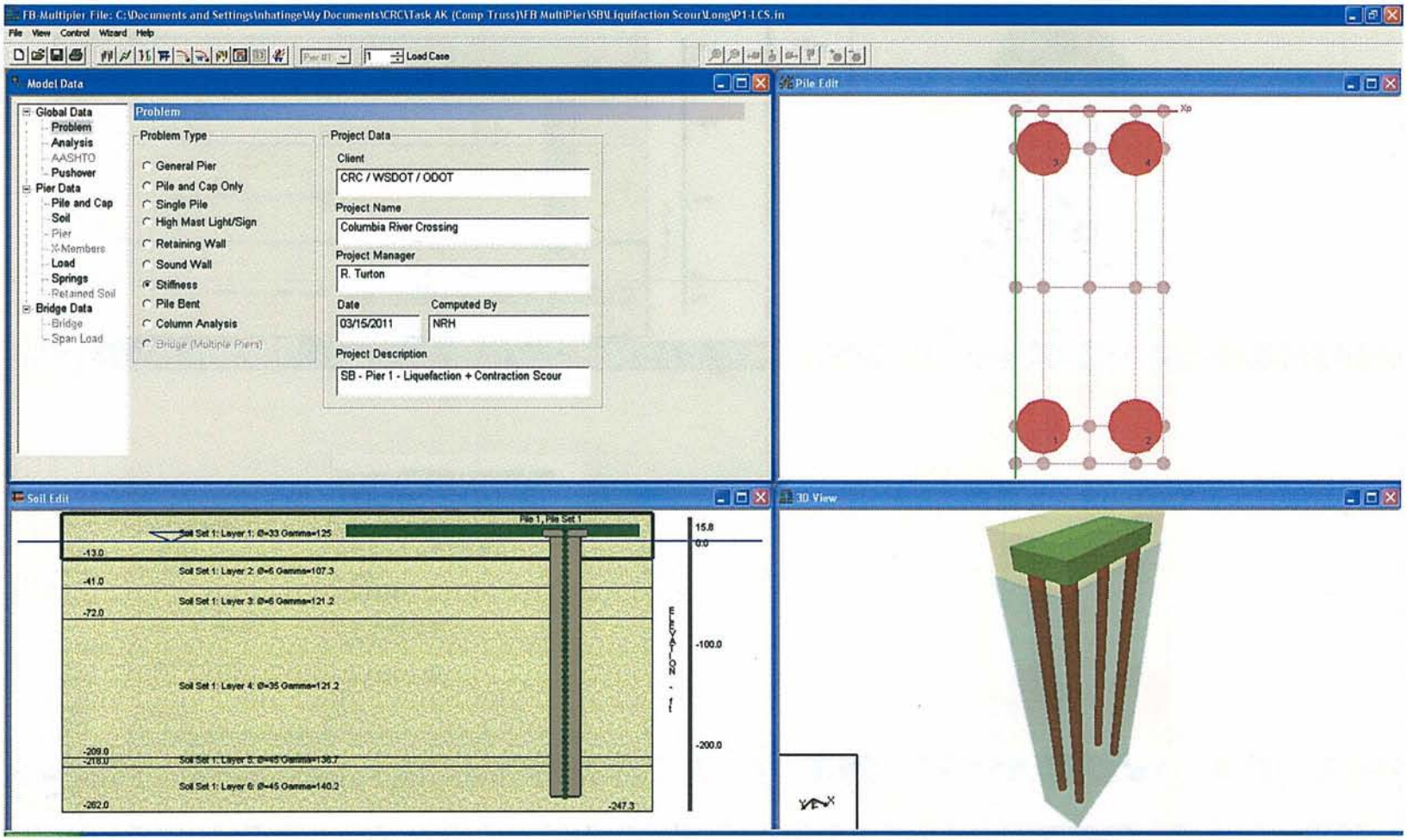

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P6-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
03/15/2011
Computed By
NRH
Project Description
SB - Pier 6 - Liquefaction + Contraction Scour
Pile Edit
Xp
5
6
3
4
1
2
Soil Edit
Pile 1, Pile Set 1
12.0
-50.0
-100.0
-150.0
Soil Set 1: Layer 1: Ø=5 Gamma=107.3
-69.0
-77.0
-89.0
Soil Set 1: Layer 3: Ø=45 Gamma=136.7
Soil Set 1: Layer 4: Ø=45 Gamma=140.2
-118.5
-160.0
3D View
Global Axes

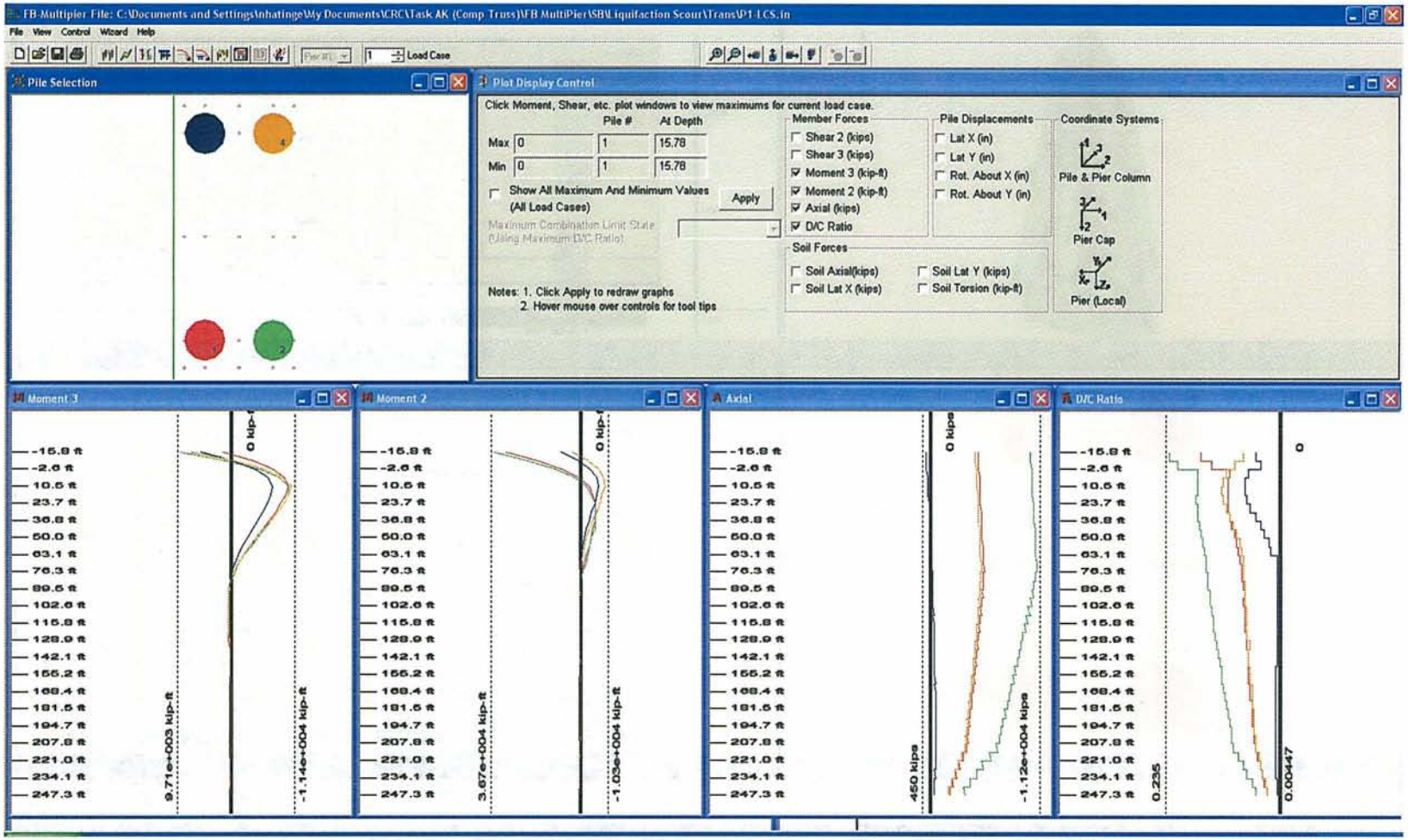

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P7-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
03/15/2011
Computed By
NRH
Project Description
SB - Pier 7 - Liquefaction + Contraction Scour
Pile Edit
Xp
Soil Edit
Pile 1, Pile Set 1
12.6
-50.0
-100.0
-111.5
Soil Set 1: Layer 1: Ø=45 Gamma=136.7
-82.0
Soil Set 1: Layer 2: Ø=45 Gamma=140.2
-149.0
ELEVATION - ft
3D View
Global Axes

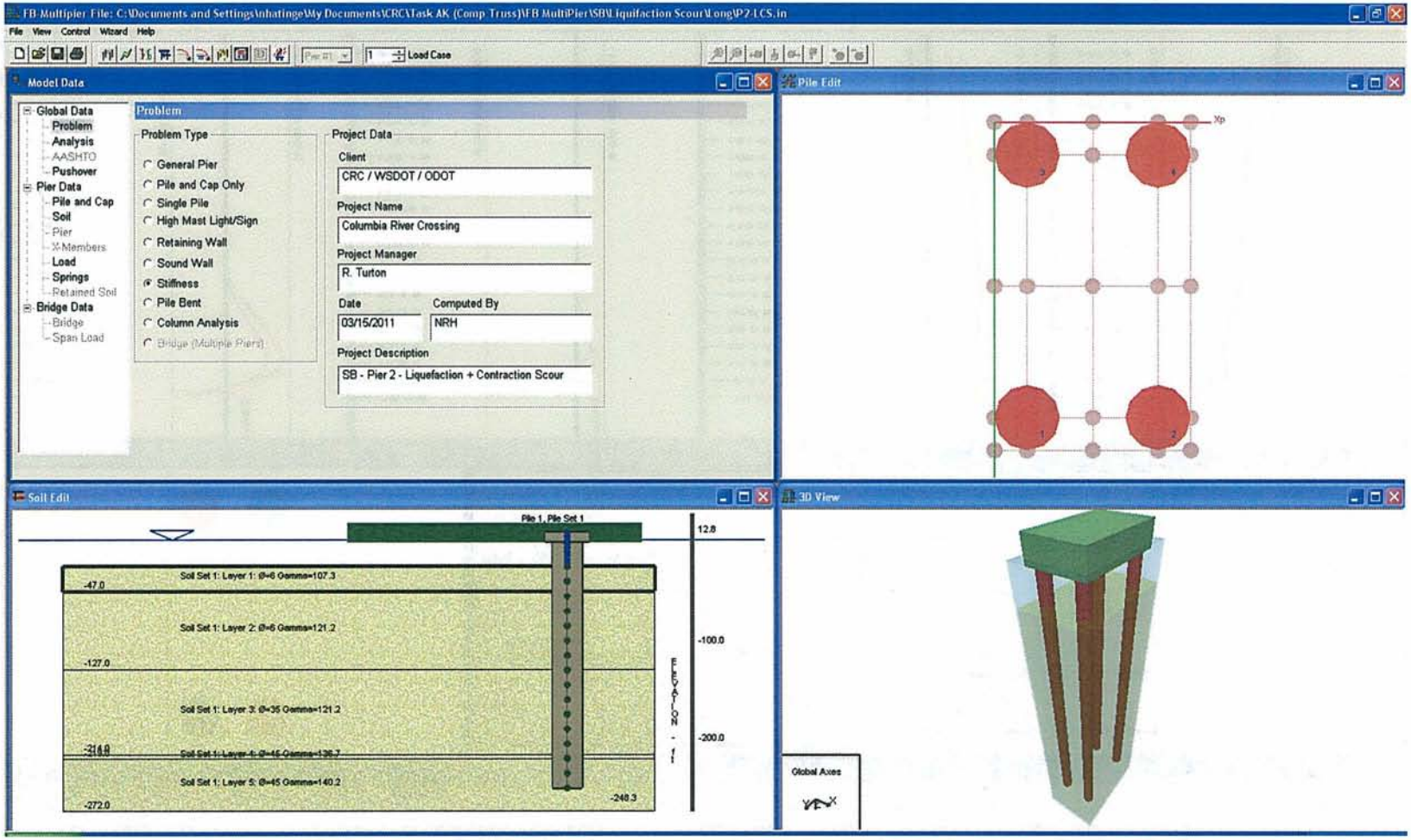

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P7-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
01/28/2011
Computed By
NRH
Project Description
SB - Pier 7 - Liquefaction + Contraction Scour
Pile Edit
Xp
Soil Edit
Pile 1, Pile Set 1
12.6
-50.0
-100.0
-111.5
Soil Set 1: Layer 1: Ø=45 Gamma=136.7
-82.0
Soil Set 1: Layer 2: Ø=45 Gamma=140.2
-149.0
3D View
Global Axes

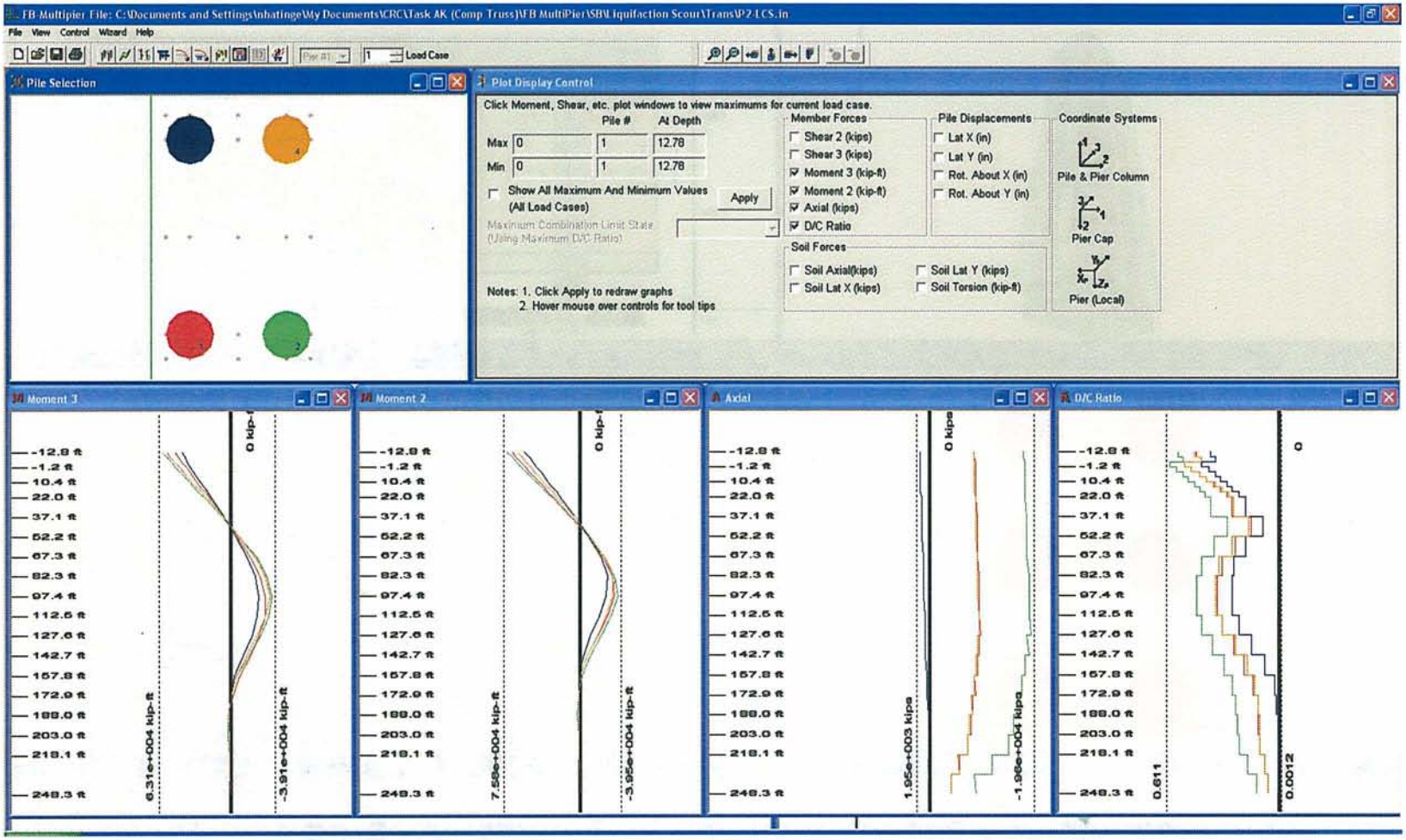

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P8-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
03/15/2011
Computed By
NRH
Project Description
SB - Pier 8 - Liquefaction + Contraction Scour
Pile Edit
Soil Edit
Pile 1, Pile Set 1
Soil Set 1: Layer 1: Ø=7 Gamma=107.3
Soil Set 1: Layer 2: Ø=45 Gamma=136.7
Soil Set 1: Layer 3: Ø=45 Gamma=140.2
15.6
0.0
-20.0
-50.0
-64.0
-100.0
-113.5
-150.0
-154.0
ELEVATION - ft
3D View
Global Axes

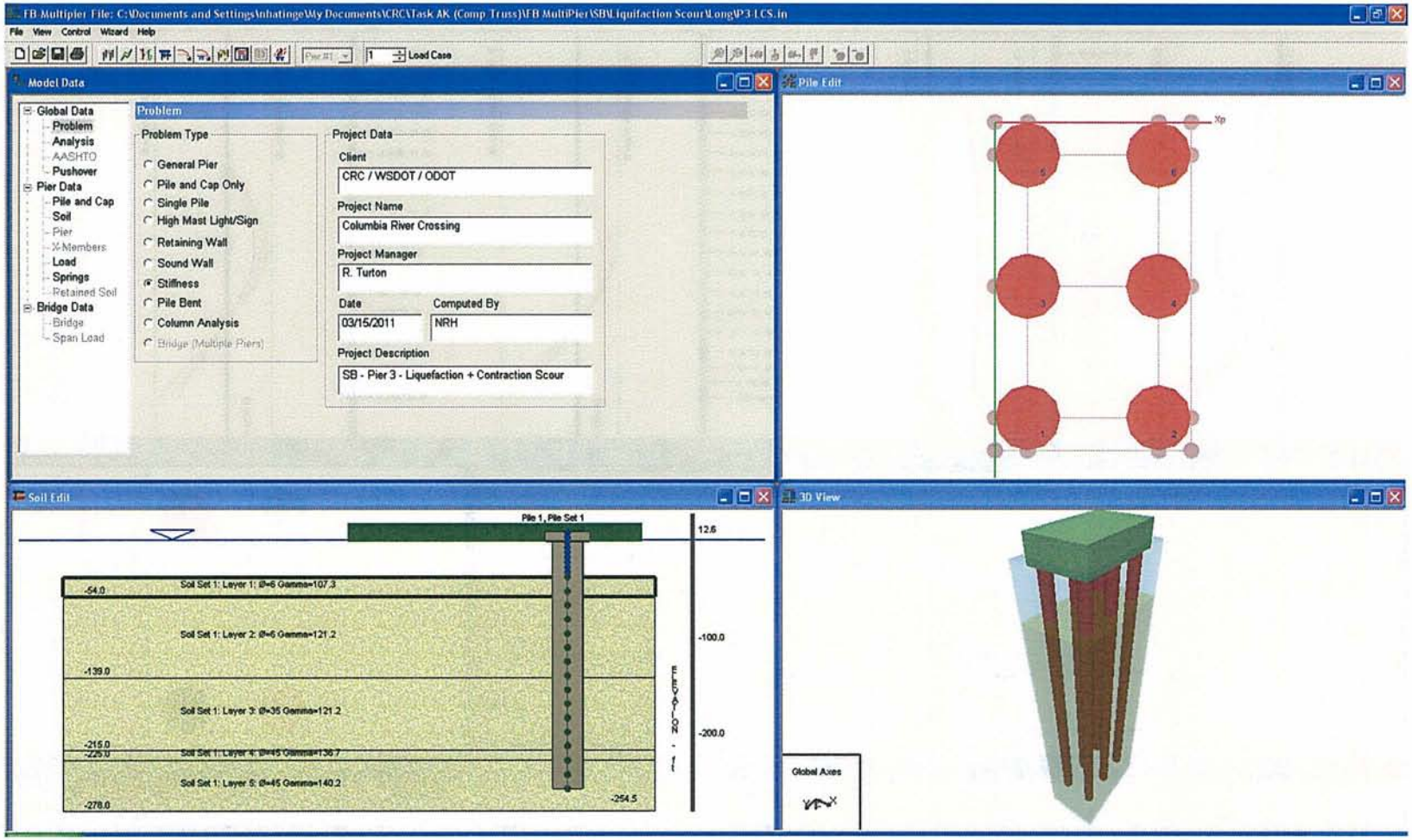

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P8-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
01/28/2011
Computed By
NRH
Project Description
SB - Pier 8 - Liquefaction + Contraction Scour
Pile Edit
Soil Edit
Pile 1, Pile Set 1
Soil Set 1: Layer 1: Ø=7 Gamma=107.3
Soil Set 1: Layer 2: Ø=45 Gamma=136.7
Soil Set 1: Layer 3: Ø=45 Gamma=140.2
15.6
0.0
-20.0
-50.0
-84.0
-100.0
-113.5
-150.0
-154.0
ELEVATION - ft
3D View
Global Axes

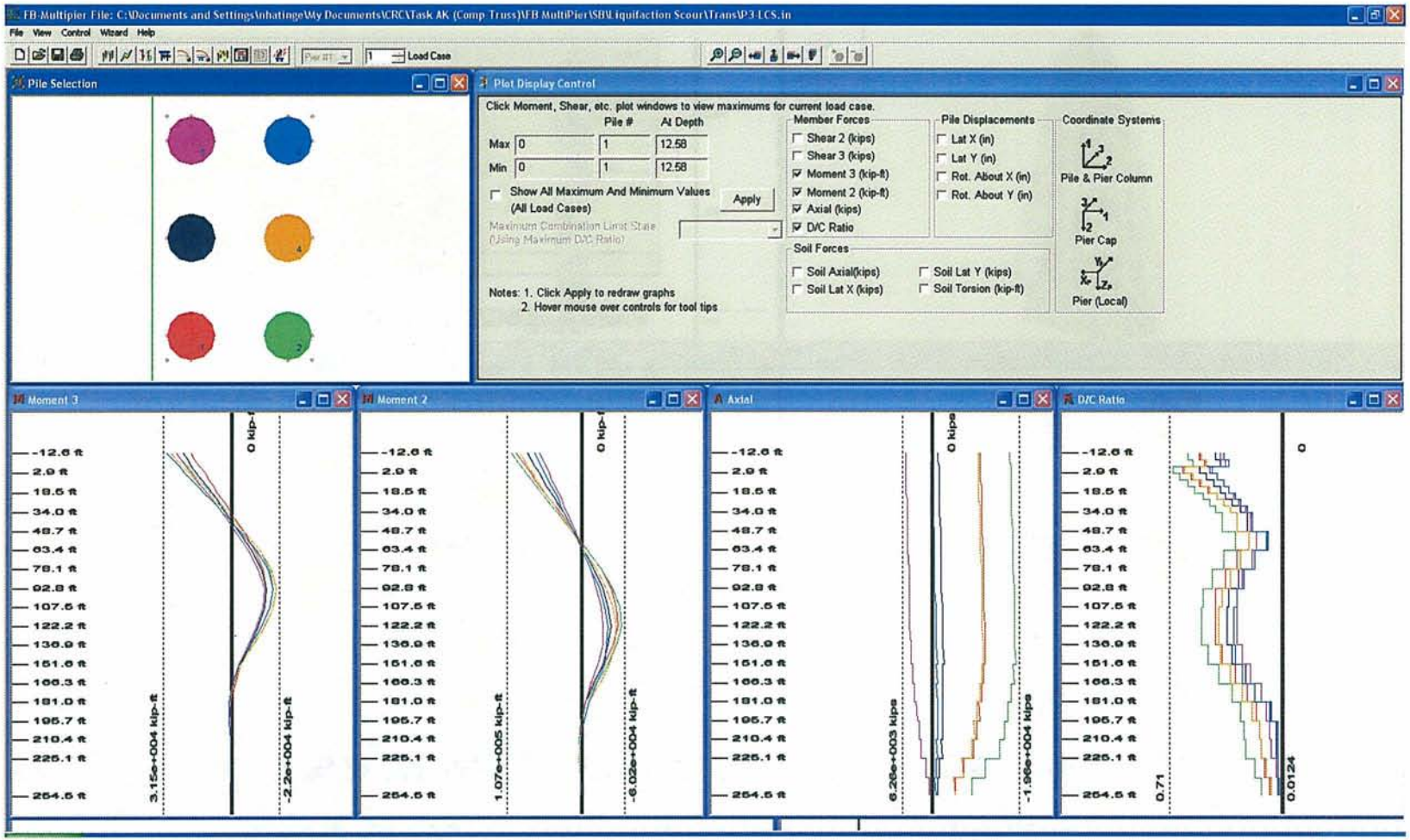

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P1-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
03/15/2011
Computed By
NRH
Project Description
SB - Pier 1 - Liquefaction + Contraction Scour
Pile Edit
Soil Edit
Soil Set 1: Layer 1: Ø=33 Gamma=125
Soil Set 1: Layer 2: Ø=6 Gamma=107.3
Soil Set 1: Layer 3: Ø=6 Gamma=121.2
Soil Set 1: Layer 4: Ø=35 Gamma=121.2
Soil Set 1: Layer 6: Ø=45 Gamma=140.2
15.8
0.0
-13.0
-41.0
-72.0
-100.0
-200.0
-209.0
-218.0
-262.0
-247.3
3D View

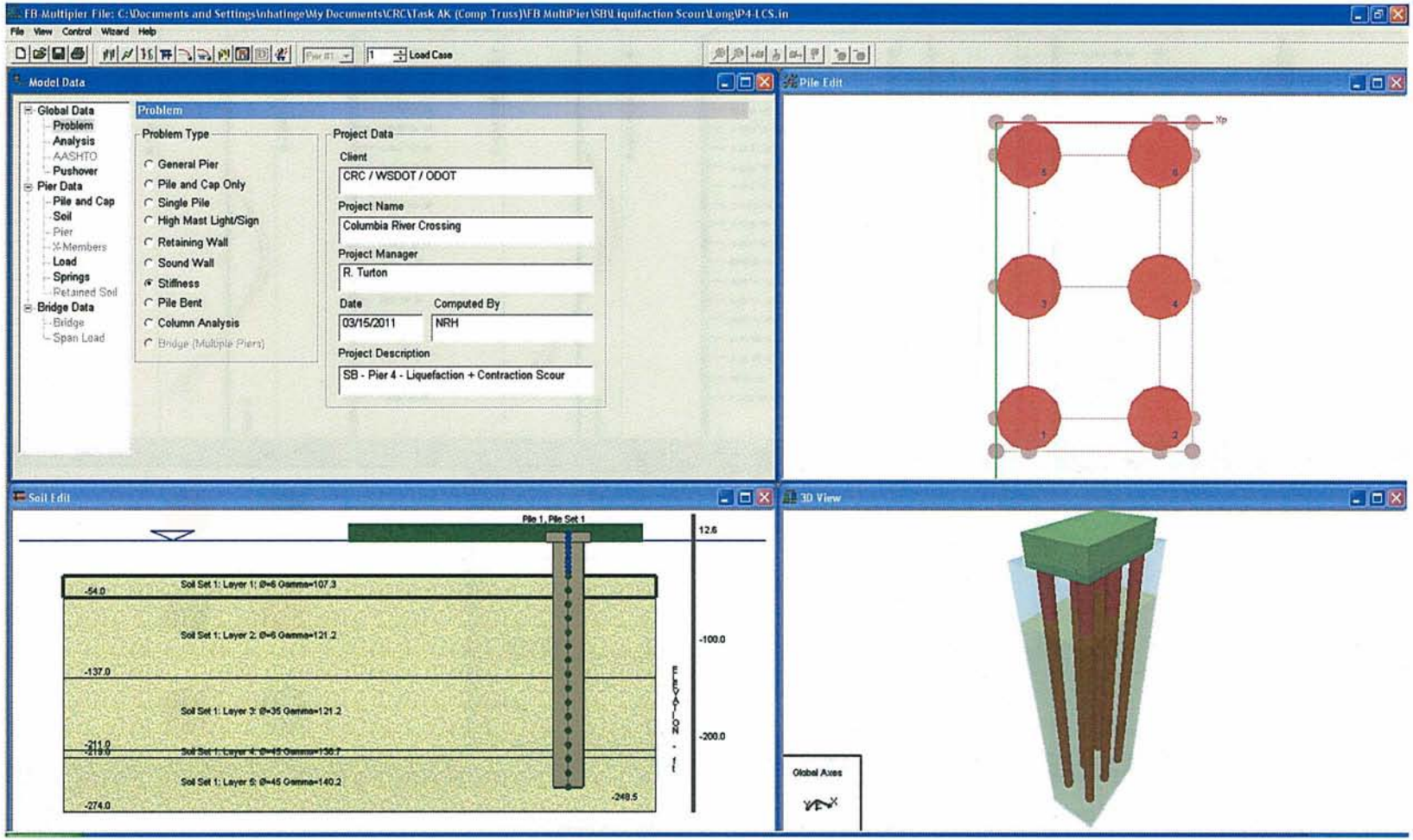

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Trans\P1-LCS.in
File View Control Wizard Help
Load Case
Pile Selection
Plot Display Control
Click Moment, Shear, etc. plot windows to view maximums for current load case.
Pile # At Depth
Max 0 1 15.78
Min 0 1 15.78
Show All Maximum And Minimum Values (All Load Cases)
Apply
Maximum Combination Limit State (Using Maximum D/C Ratio)
Notes: 1. Click Apply to redraw graphs
2. Hover mouse over controls for tool tips
Member Forces
Shear 2 (kips)
Shear 3 (kips)
Moment 3 (kip-ft)
Moment 2 (kip-ft)
Axial (kips)
D/C Ratio
Pile Displacements
Lat X (in)
Lat Y (in)
Rot. About X (in)
Rot. About Y (in)
Soil Forces
Soil Axial(kips)
Soil Lat Y (kips)
Soil Lat X (kips)
Soil Torsion (kip-ft)
Coordinate Systems
Pile & Pier Column
Pier Cap
Pier (Local)
Moment 3
Moment 2
Axial
D/C Ratio
-15.8 ft
-2.6 ft
10.5 ft
23.7 ft
36.8 ft
50.0 ft
63.1 ft
76.3 ft
89.5 ft
102.6 ft
115.8 ft
128.9 ft
142.1 ft
155.2 ft
168.4 ft
181.5 ft
194.7 ft
207.8 ft
221.0 ft
234.1 ft
247.3 ft
0 kip-ft
9.71e+003 kip-ft
-1.14e+004 kip-ft
3.67e+004 kip-ft
-1.03e+004 kip-ft
0 kips
450 kips
-1.12e+004 kips
0
0.235
0.00447

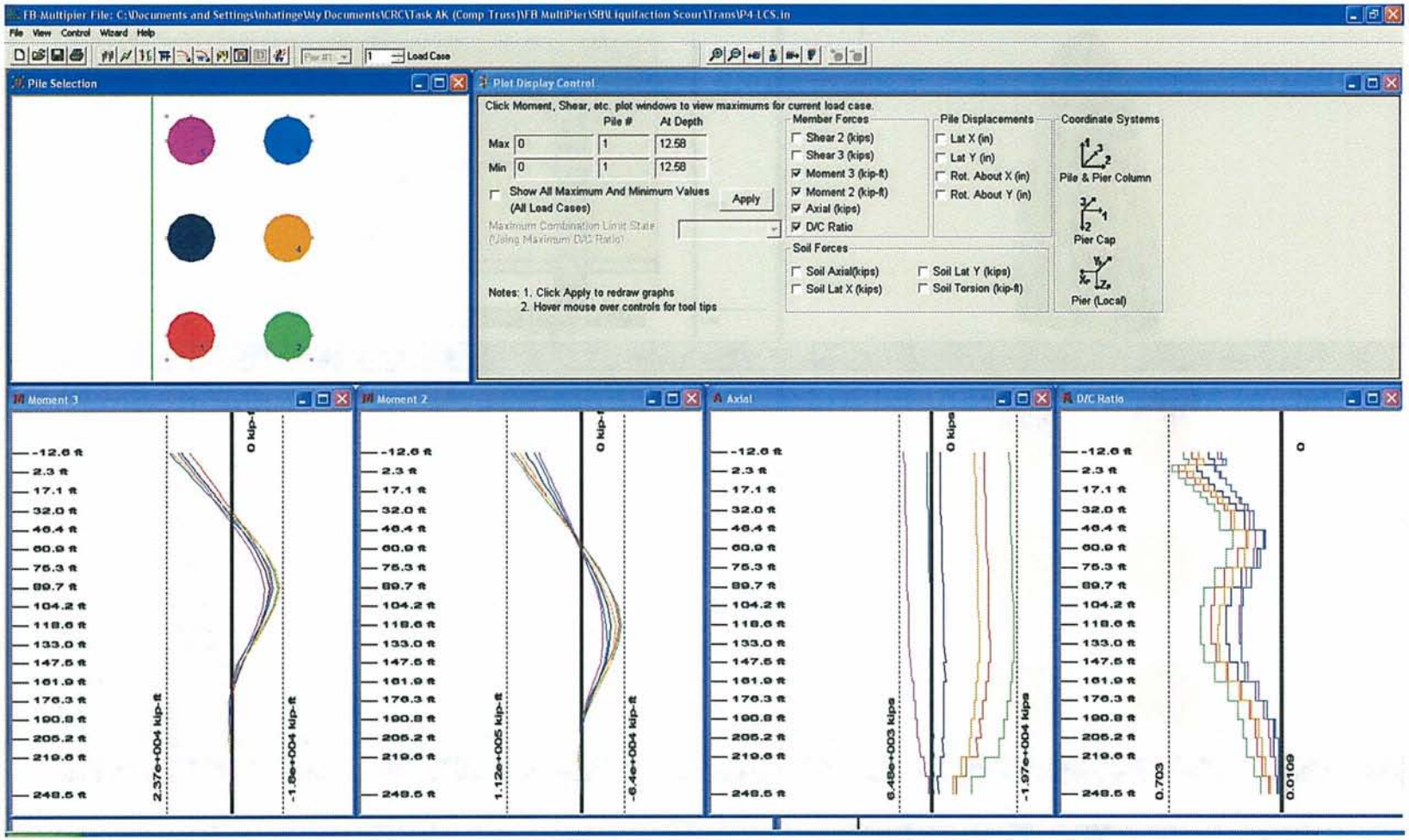

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P2-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
03/15/2011
Computed By
NRH
Project Description
SB - Pier 2 - Liquefaction + Contraction Scour
Pile Edit
Xp
Soil Edit
Pile 1, Pile Set 1
12.8
Soil Set 1: Layer 1: Ø=6 Gamma=107.3
-47.0
Soil Set 1: Layer 2: Ø=6 Gamma=121.2
-127.0
Soil Set 1: Layer 3: Ø=35 Gamma=121.2
Soil Set 1: Layer 4: Ø=45 Gamma=136.7
Soil Set 1: Layer 5: Ø=45 Gamma=140.2
-272.0
-248.3
-100.0
-200.0
ELEVATION - ft
3D View
Global Axes

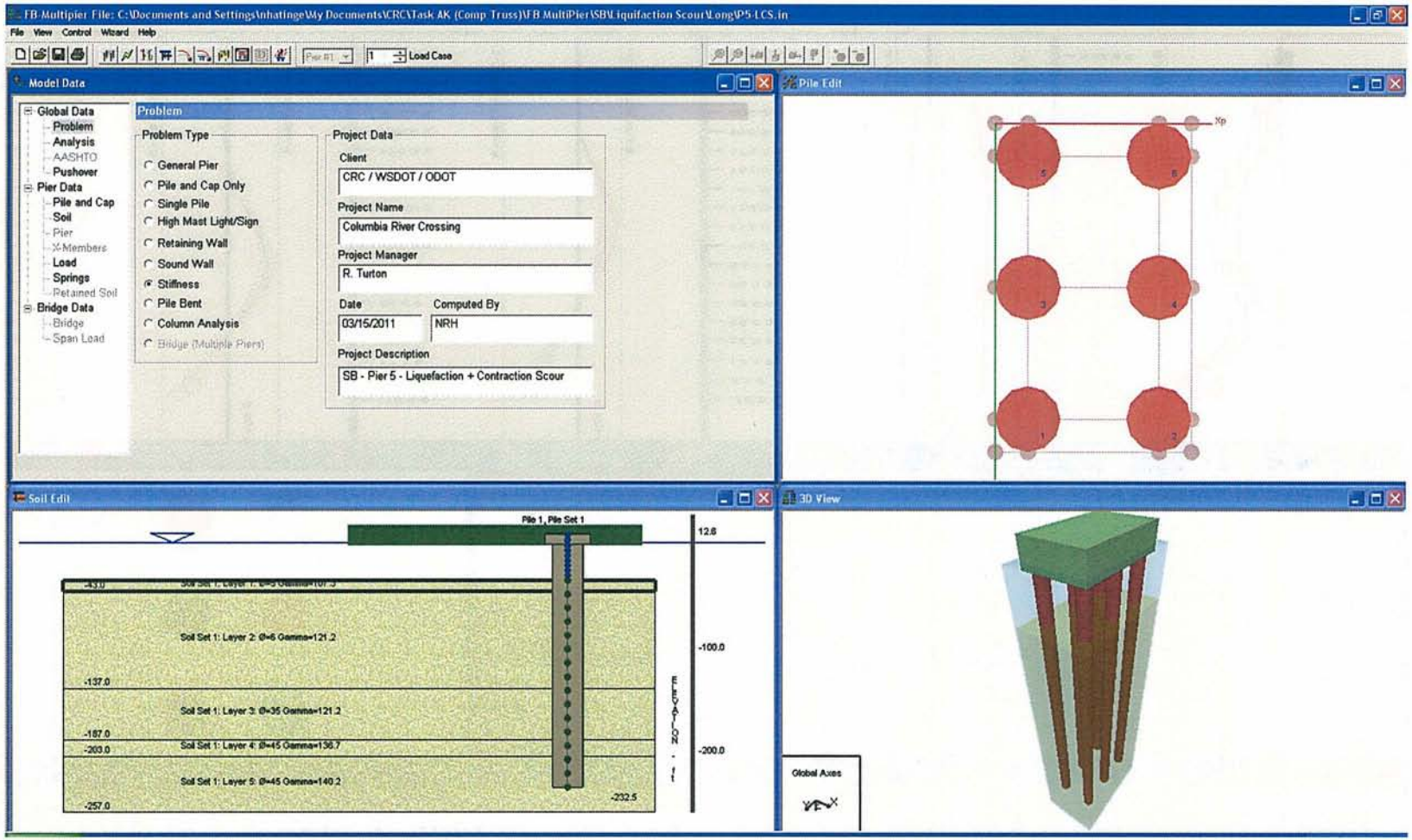

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Trans\P2-LCS.in
File View Control Wizard Help
Load Case
Pile Selection
Plot Display Control
Click Moment, Shear, etc. plot windows to view maximums for current load case.
Pile # At Depth
Max 0 1 12.78
Min 0 1 12.78
Show All Maximum And Minimum Values (All Load Cases)
Apply
Maximum Combination Limit State (Using Maximum D/C Ratio)
Notes: 1. Click Apply to redraw graphs
2. Hover mouse over controls for tool tips
Member Forces
Shear 2 (kips)
Shear 3 (kips)
Moment 3 (kip-ft)
Moment 2 (kip-ft)
Axial (kips)
D/C Ratio
Pile Displacements
Lat X (in)
Lat Y (in)
Rot. About X (in)
Rot. About Y (in)
Soil Forces
Soil Axial(kips)
Soil Lat Y (kips)
Soil Lat X (kips)
Soil Torsion (kip-ft)
Coordinate Systems
Pile & Pier Column
Pier Cap
Pier (Local)
Moment 3
Moment 2
Axial
D/C Ratio
-12.8 ft
-1.2 ft
10.4 ft
22.0 ft
37.1 ft
52.2 ft
67.3 ft
82.3 ft
97.4 ft
112.5 ft
127.6 ft
142.7 ft
157.8 ft
172.9 ft
188.0 ft
203.0 ft
218.1 ft
248.3 ft
0 kip-ft
6.31e+004 kip-ft
-3.91e+004 kip-ft
7.58e+004 kip-ft
-3.95e+004 kip-ft
0 kips
1.95e+003 kips
-1.96e+004 kips
0
0.611
0.0012

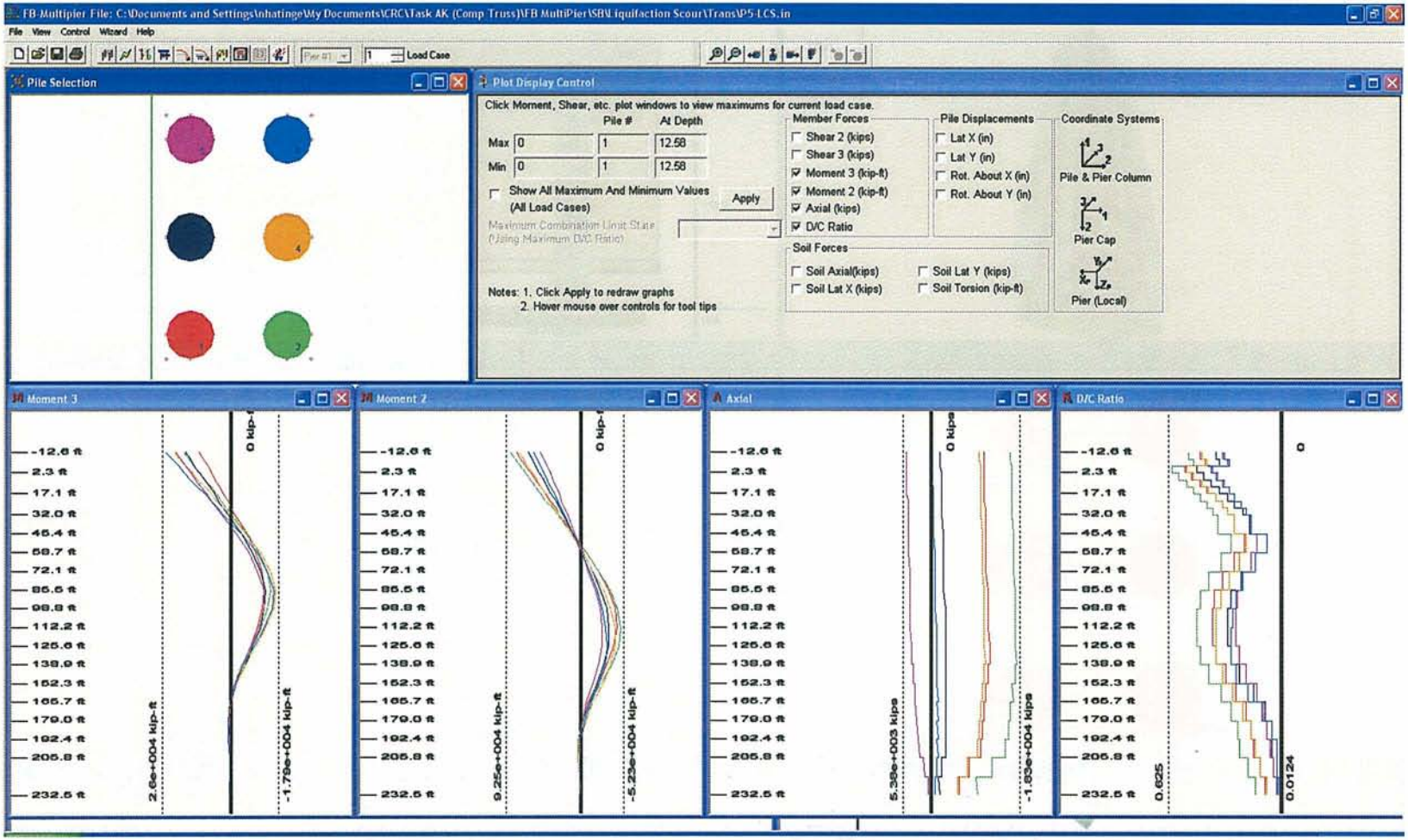

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P3-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
03/15/2011
Computed By
NRH
Project Description
SB - Pier 3 - Liquefaction + Contraction Scour
Pile Edit
Xp
Soil Edit
Pile 1, Pile Set 1
12.6
-54.0
Soil Set 1: Layer 1: Ø=6 Gamma=107.3
Soil Set 1: Layer 2: Ø=6 Gamma=121.2
-139.0
-100.0
Soil Set 1: Layer 3: Ø=35 Gamma=121.2
-200.0
-215.0
-225.0
Soil Set 1: Layer 4: Ø=45 Gamma=136.7
Soil Set 1: Layer 5: Ø=45 Gamma=140.2
-278.0
-254.5
3D View
Global Axes

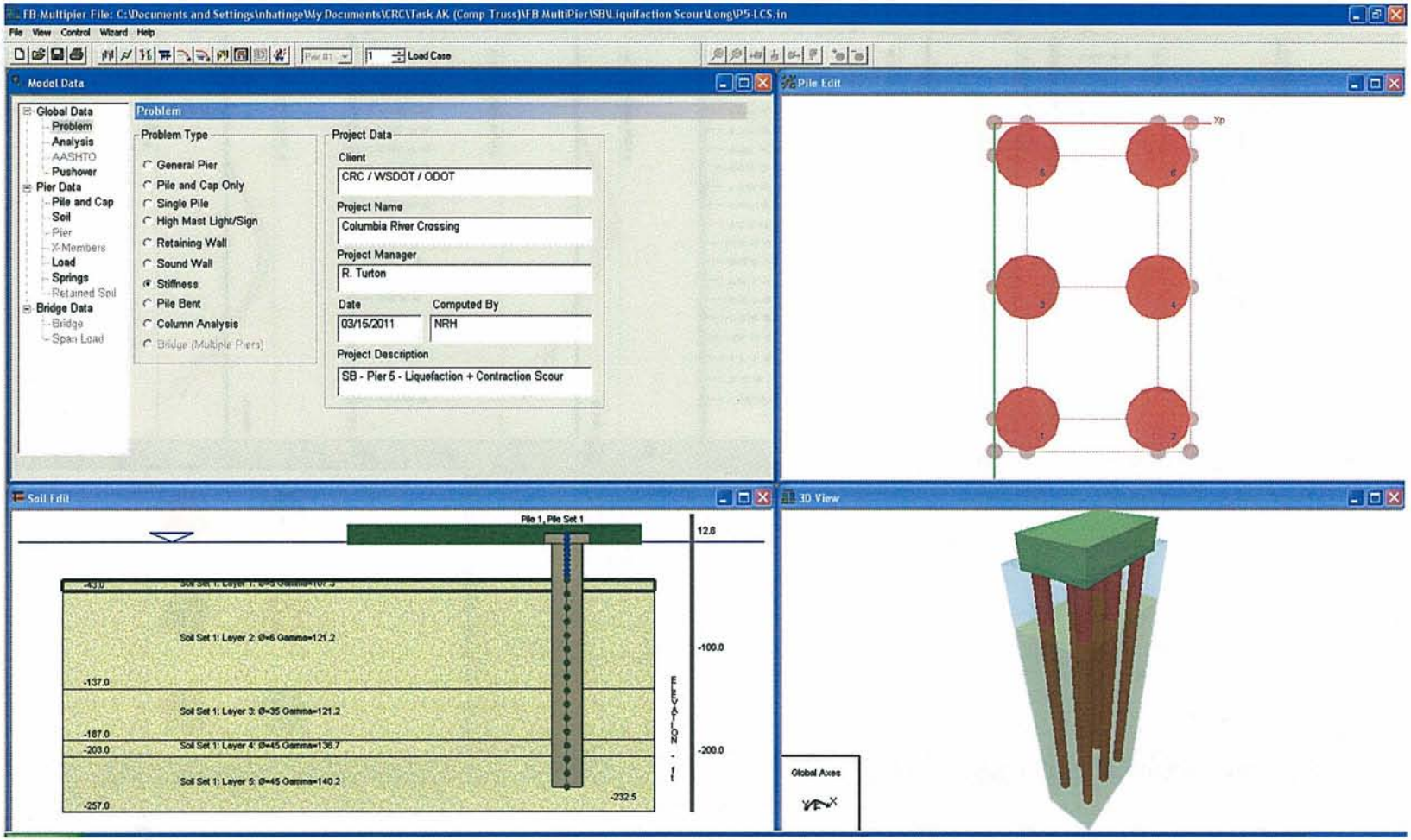

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Trans\P3-LCS.in
File View Control Wizard Help
Load Case
Pile Selection
Plot Display Control
Click Moment, Shear, etc. plot windows to view maximums for current load case.
Pile # At Depth
Max 0 1 12.58
Min 0 1 12.58
Show All Maximum And Minimum Values (All Load Cases)
Apply
Maximum Combination Limit State (Using Maximum D/C Ratio)
Member Forces
Shear 2 (kips)
Shear 3 (kips)
Moment 3 (kip-ft)
Moment 2 (kip-ft)
Axial (kips)
D/C Ratio
Pile Displacements
Lat X (in)
Lat Y (in)
Rot. About X (in)
Rot. About Y (in)
Coordinate Systems
Pile & Pier Column
Pier Cap
Pier (Local)
Soil Forces
Soil Axial(kips)
Soil Lat X (kips)
Soil Lat Y (kips)
Soil Torsion (kip-ft)
Notes: 1. Click Apply to redraw graphs
2. Hover mouse over controls for tool tips
Moment 3
Moment 2
Axial
D/C Ratio
-12.6 ft
2.9 ft
18.5 ft
34.0 ft
48.7 ft
63.4 ft
78.1 ft
92.8 ft
107.5 ft
122.2 ft
136.9 ft
151.6 ft
166.3 ft
181.0 ft
195.7 ft
210.4 ft
225.1 ft
254.5 ft
0 kip-ft
3.15e+004 kip-ft
-2.2e+004 kip-ft
1.07e+005 kip-ft
-6.02e+004 kip-ft
0 kips
6.26e+003 kips
-1.96e+004 kips
0
0.71
0.0124

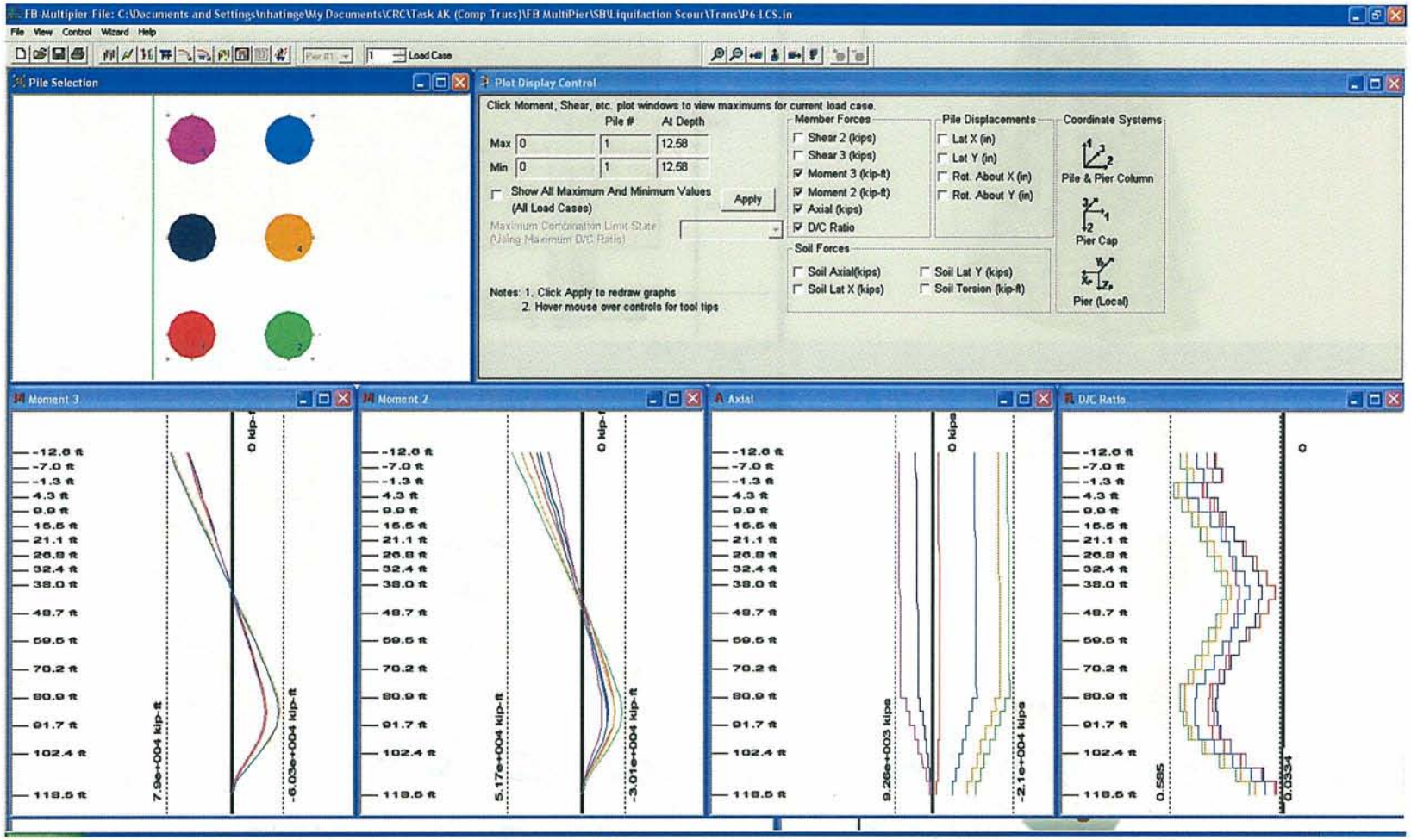

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P4-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
03/15/2011
Computed By
NRH
Project Description
SB - Pier 4 - Liquefaction + Contraction Scour
Pile Edit
Soil Edit
Pile 1, Pile Set 1
12.6
-54.0
Soil Set 1: Layer 1: Ø=6 Gamma=107.3
Soil Set 1: Layer 2: Ø=6 Gamma=121.2
-100.0
-137.0
Soil Set 1: Layer 3: Ø=35 Gamma=121.2
-200.0
-211.0
Soil Set 1: Layer 4: Ø=45 Gamma=130.7
Soil Set 1: Layer 5: Ø=45 Gamma=140.2
-248.5
-274.0
ELEVATION - ft
3D View
Global Axes

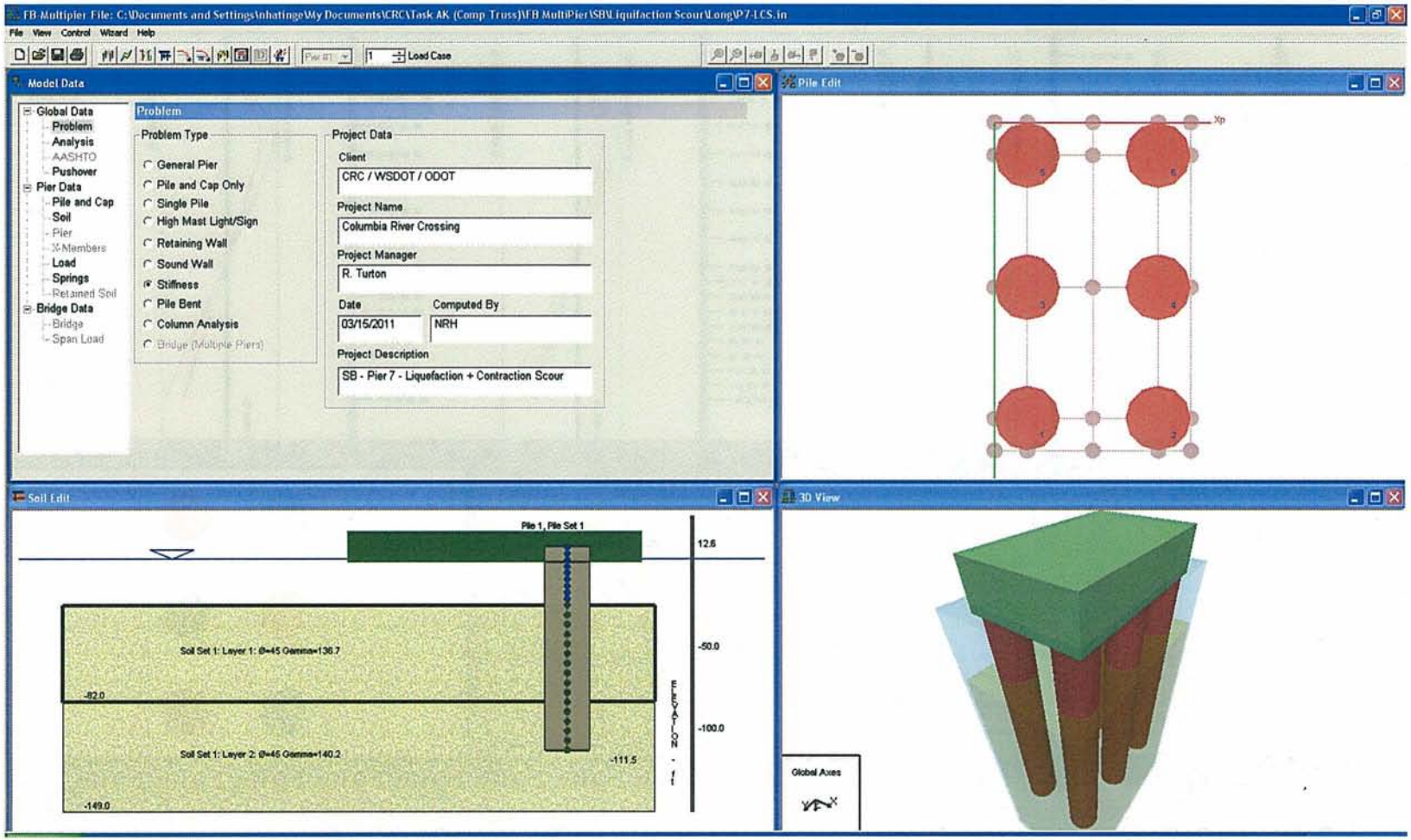

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SBU liquifaction Scour\Trans\P4-LCS.in
File View Control Wizard Help
Load Case
Pile Selection
Plot Display Control
Click Moment, Shear, etc. plot windows to view maximums for current load case.
Pile # At Depth
Max 0 1 12.58
Min 0 1 12.58
Show All Maximum And Minimum Values (All Load Cases)
Apply
Maximum Combination Limit State (Using Maximum D/C Ratio)
Notes: 1. Click Apply to redraw graphs
2. Hover mouse over controls for tool tips
Member Forces
Shear 2 (kips)
Shear 3 (kips)
Moment 3 (kip-ft)
Moment 2 (kip-ft)
Axial (kips)
D/C Ratio
Pile Displacements
Lat X (in)
Lat Y (in)
Rot. About X (in)
Rot. About Y (in)
Soil Forces
Soil Axial(kips)
Soil Lat Y (kips)
Soil Lat X (kips)
Soil Torsion (kip-ft)
Coordinate Systems
Pile & Pier Column
Pier Cap
Pier (Local)
Moment 3
Moment 2
Axial
D/C Ratio
-12.6 ft
2.3 ft
17.1 ft
32.0 ft
46.4 ft
60.9 ft
75.3 ft
89.7 ft
104.2 ft
118.6 ft
133.0 ft
147.5 ft
161.9 ft
176.3 ft
190.8 ft
205.2 ft
219.6 ft
248.5 ft
0 kip-ft
2.37e+004 kip-ft
-1.6e+004 kip-ft
1.12e+005 kip-ft
-6.4e+004 kip-ft
0 kips
6.48e+003 kips
-1.97e+004 kips
0
0.703
0.0109

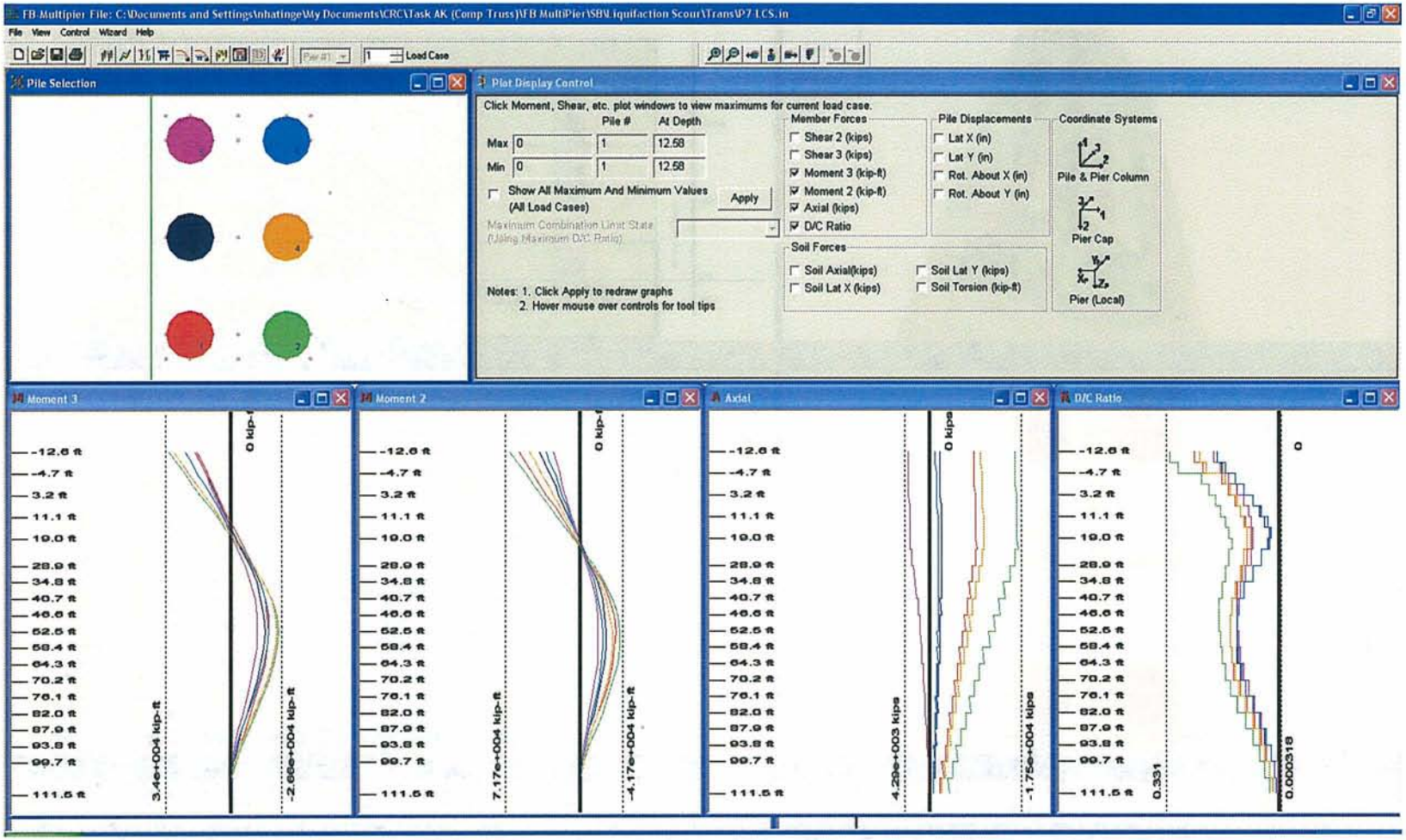

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P5-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
03/15/2011
Computed By
NRH
Project Description
SB - Pier 5 - Liquefaction + Contraction Scour
Pile Edit
Xp
Soil Edit
Pile 1, Pile Set 1
12.8
Soil Set 1: Layer 2: Ø=6 Gamma=121.2
-137.0
Soil Set 1: Layer 3: Ø=35 Gamma=121.2
-187.0
-203.0
Soil Set 1: Layer 4: Ø=45 Gamma=136.7
Soil Set 1: Layer 5: Ø=45 Gamma=140.2
-257.0
-232.5
-100.0
-200.0
3D View
Global Axes

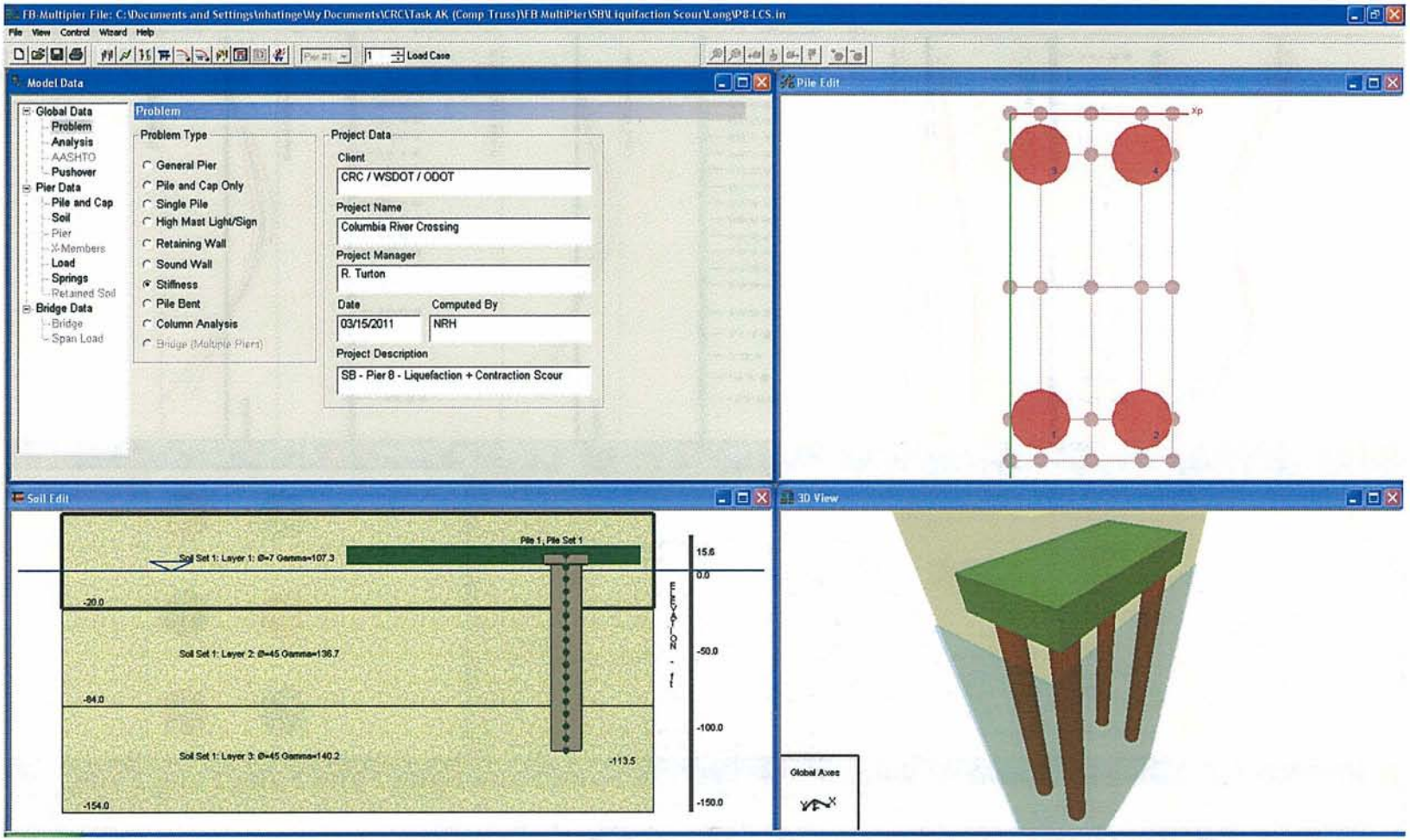

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Trans\P5-LCS.in
File View Control Wizard Help
Load Case
Pile Selection
Plot Display Control
Click Moment, Shear, etc. plot windows to view maximums for current load case.
Pile # At Depth
Max 0 1 12.58
Min 0 1 12.58
Show All Maximum And Minimum Values (All Load Cases)
Apply
Maximum Combination Limit State (Using Maximum D/C Ratio)
Member Forces
Shear 2 (kips)
Shear 3 (kips)
Moment 3 (kip-ft)
Moment 2 (kip-ft)
Axial (kips)
D/C Ratio
Pile Displacements
Lat X (in)
Lat Y (in)
Rot. About X (in)
Rot. About Y (in)
Coordinate Systems
Pile & Pier Column
Pier Cap
Pier (Local)
Soil Forces
Soil Axial(kips)
Soil Lat Y (kips)
Soil Lat X (kips)
Soil Torsion (kip-ft)
Notes: 1. Click Apply to redraw graphs
2. Hover mouse over controls for tool tips
Moment 3
Moment 2
Axial
D/C Ratio
-12.6 ft
2.3 ft
17.1 ft
32.0 ft
46.4 ft
58.7 ft
72.1 ft
85.5 ft
98.8 ft
112.2 ft
125.6 ft
138.9 ft
152.3 ft
165.7 ft
170.0 ft
192.4 ft
205.8 ft
232.5 ft
0 kip-ft
2.6e+004 kip-ft
-1.79e+004 kip-ft
9.25e+004 kip-ft
-5.23e+004 kip-ft
0 kips
5.38e+003 kips
-1.83e+004 kips
0
0.625
0.0124

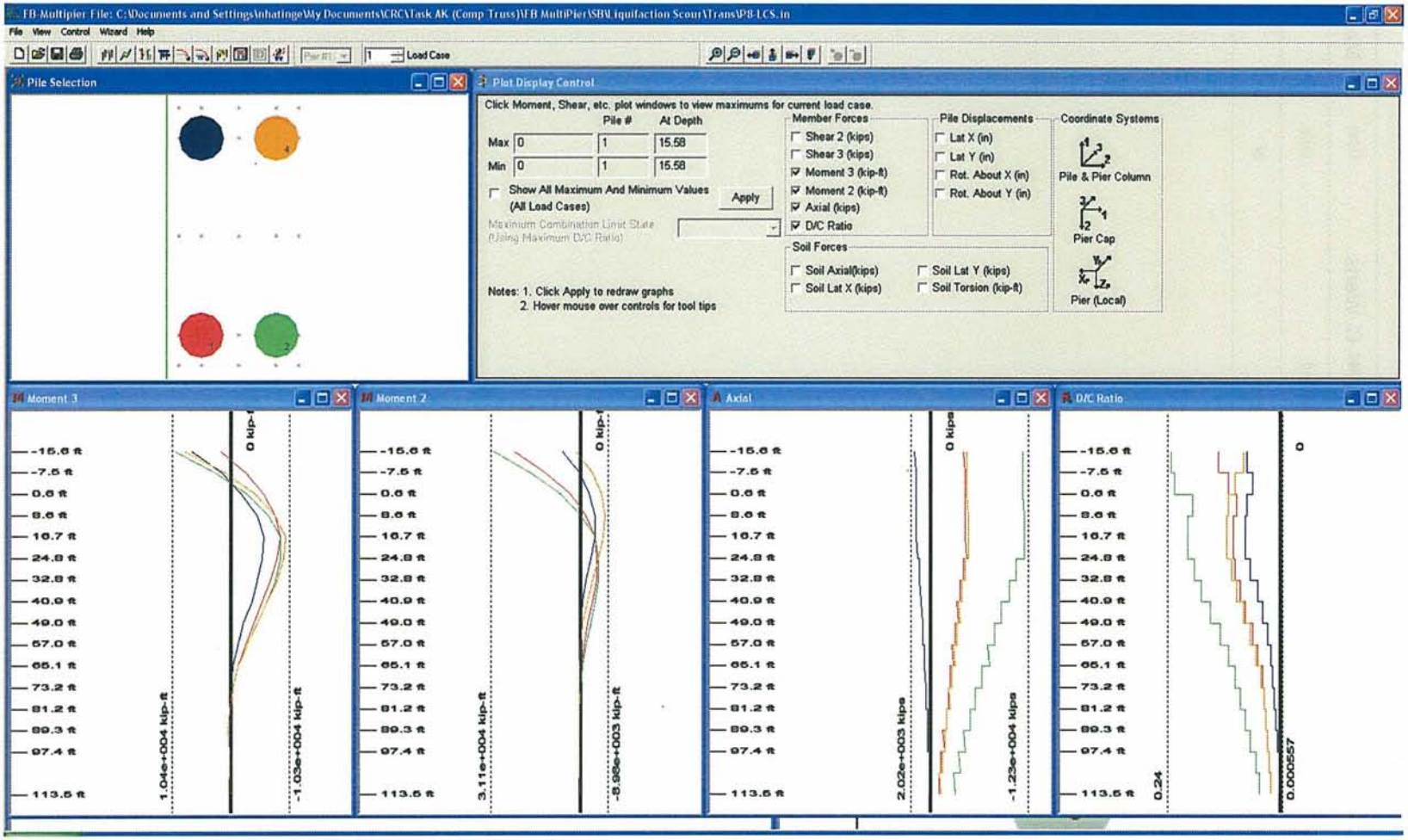

FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P5-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
03/15/2011
Computed By
NRH
Project Description
SB - Pier 5 - Liquefaction + Contraction Scour
Pile Edit
Soil Edit
Pile 1, Pile Set 1
12.8
-100.0
-200.0
Soil Set 1: Layer 2: Ø=6 Gamma=121.2
-137.0
Soil Set 1: Layer 3: Ø=35 Gamma=121.2
-187.0
-203.0
Soil Set 1: Layer 4: Ø=45 Gamma=136.7
Soil Set 1: Layer 5: Ø=45 Gamma=140.2
-257.0
-232.5
3D View
Global Axes


FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Trans\P6-LCS.in
File View Control Wizard Help
Load Case
Pile Selection
Plot Display Control
Click Moment, Shear, etc. plot windows to view maximums for current load case.
Pile # At Depth
Max 0 1 12.58
Min 0 1 12.58
Show All Maximum And Minimum Values (All Load Cases)
Apply
Maximum Combination Limit State (Using Maximum D/C Ratio)
Member Forces
Shear 2 (kips)
Shear 3 (kips)
Moment 3 (kip-ft)
Moment 2 (kip-ft)
Axial (kips)
D/C Ratio
Pile Displacements
Lat X (in)
Lat Y (in)
Rot. About X (in)
Rot. About Y (in)
Coordinate Systems
Pile & Pier Column
Pier Cap
Pier (Local)
Soil Forces
Soil Axial(kips)
Soil Lat Y (kips)
Soil Lat X (kips)
Soil Torsion (kip-ft)
Notes: 1. Click Apply to redraw graphs
2. Hover mouse over controls for tool tips
Moment 3
Moment 2
Axial
D/C Ratio
-12.6 ft
-7.0 ft
-1.3 ft
4.3 ft
9.9 ft
15.5 ft
21.1 ft
26.8 ft
32.4 ft
38.0 ft
48.7 ft
59.5 ft
70.2 ft
80.9 ft
91.7 ft
102.4 ft
119.5 ft
0 kip-ft
7.9e+004 kip-ft
-6.03e+004 kip-ft
5.17e+004 kip-ft
-3.01e+004 kip-ft
0 kips
9.26e+003 kips
-2.1e+004 kips
0
0.585
0.0334


FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P7-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
03/15/2011
Computed By
NRH
Project Description
SB - Pier 7 - Liquefaction + Contraction Scour
Pile Edit
Xp
Soil Edit
Pile 1, Pile Set 1
12.6
-50.0
-100.0
Soil Set 1: Layer 1: Ø=45 Gamma=136.7
-82.0
Soil Set 1: Layer 2: Ø=45 Gamma=140.2
-111.5
-149.0
ELEVATION - ft
3D View
Global Axes


FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SBV Liquifaction Scour\Trans\P7 LCS.in
File View Control Wizard Help
Load Case
Pile Selection
Plot Display Control
Click Moment, Shear, etc. plot windows to view maximums for current load case.
Pile # At Depth
Max 0 1 12.58
Min 0 1 12.58
Show All Maximum And Minimum Values (All Load Cases)
Apply
Maximum Combination Limit State (Using Maximum D/C Ratio)
Member Forces
Shear 2 (kips)
Shear 3 (kips)
Moment 3 (kip-ft)
Moment 2 (kip-ft)
Axial (kips)
D/C Ratio
Pile Displacements
Lat X (in)
Lat Y (in)
Rot. About X (in)
Rot. About Y (in)
Coordinate Systems
Pile & Pier Column
Pier Cap
Pier (Local)
Soil Forces
Soil Axial(kips)
Soil Lat X (kips)
Soil Lat Y (kips)
Soil Torsion (kip-ft)
Notes: 1. Click Apply to redraw graphs
2. Hover mouse over controls for tool tips
Moment 3
Moment 2
Axial
D/C Ratio
-12.6 ft
-4.7 ft
3.2 ft
11.1 ft
19.0 ft
28.9 ft
34.8 ft
40.7 ft
46.6 ft
52.5 ft
58.4 ft
64.3 ft
70.2 ft
76.1 ft
82.0 ft
87.9 ft
93.8 ft
99.7 ft
111.5 ft
0 kip-ft
3.4e+004 kip-ft
-2.66e+004 kip-ft
7.17e+004 kip-ft
-4.17e+004 kip-ft
0 kips
4.29e+003 kips
-1.75e+004 kips
0
0.331
0.000318


FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SB\Liquifaction Scour\Long\P8-LCS.in
File View Control Wizard Help
Load Case
Model Data
Global Data
Problem
Analysis
AASHTO
Pushover
Pier Data
Pile and Cap
Soil
Pier
X-Members
Load
Springs
Retained Soil
Bridge Data
Bridge
Span Load
Problem
Problem Type
General Pier
Pile and Cap Only
Single Pile
High Mast Light/Sign
Retaining Wall
Sound Wall
Stiffness
Pile Bent
Column Analysis
Bridge (Multiple Piers)
Project Data
Client
CRC / WSDOT / ODOT
Project Name
Columbia River Crossing
Project Manager
R. Turton
Date
03/15/2011
Computed By
NRH
Project Description
SB - Pier 8 - Liquefaction + Contraction Scour
Pile Edit
Soil Edit
Pile 1, Pile Set 1
Soil Set 1: Layer 1: Ø=7 Gamma=107.3
Soil Set 1: Layer 2: Ø=45 Gamma=136.7
Soil Set 1: Layer 3: Ø=45 Gamma=140.2
15.6
0.0
-20.0
-50.0
-84.0
-100.0
-113.5
-150.0
-154.0
3D View
Global Axes


FB-Multipier File: C:\Documents and Settings\nhatinge\My Documents\CRC\Task AK (Comp Truss)\FB MultiPier\SBL iquifaction Scour\Trans\P8-LCS.in
File View Control Wizard Help
Load Case
Pile Selection
Plot Display Control
Click Moment, Shear, etc. plot windows to view maximums for current load case.
Pile # At Depth
Max 0 1 15.58
Min 0 1 15.58
Show All Maximum And Minimum Values (All Load Cases)
Apply
Maximum Combination Limit State (Using Maximum D/C Ratio)
Member Forces
Shear 2 (kips)
Shear 3 (kips)
Moment 3 (kip-ft)
Moment 2 (kip-ft)
Axial (kips)
D/C Ratio
Pile Displacements
Lat X (in)
Lat Y (in)
Rot. About X (in)
Rot. About Y (in)
Coordinate Systems
Pile & Pier Column
Pier Cap
Pier (Local)
Soil Forces
Soil Axial(kips)
Soil Lat Y (kips)
Soil Lat X (kips)
Soil Torsion (kip-ft)
Notes: 1. Click Apply to redraw graphs
2. Hover mouse over controls for tool tips
Moment 3
Moment 2
Axial
D/C Ratio
-15.6 ft
-7.5 ft
0.6 ft
8.6 ft
16.7 ft
24.8 ft
32.8 ft
40.9 ft
49.0 ft
57.0 ft
65.1 ft
73.2 ft
81.2 ft
89.3 ft
97.4 ft
113.6 ft
1.04e+004 kip-ft
-1.03e+004 kip-ft
3.11e+004 kip-ft
-8.98e+003 kip-ft
2.02e+003 kips
-1.23e+004 kips
0.24
0.000557

HDR | ONE COMPANY *Many Solutions*℠

Appendix

Project:	Columbia River Crossing	Computed:	C. Werts	Date:	March 23 2011
Subject:	River Bridge Conceptual Design	Checked:		Date:	
Task:	Composite Deck Truss Foundation	Sheet:		of	

4. APPENDIX

HDR | ONE COMPANY *Many Solutions*℠

Appendix

Project:	Columbia River Crossing	Computed:	C. Werts	Date:	March 23 2011
Subject:	River Bridge Conceptual Design	Checked:		Date:	
Task:	Composite Deck Truss Foundation	Sheet:		of	

4.1 EXCERPTS FROM OPEN WEB CALCULATIONS

HDR | ONE COMPANY *Many Solutions*℠

Global Analysis Summary

Project:	Columbia River Crossing	Computed:	C. Werts	Date:	04-22-09
Subject:	River Bridge Type, Size & Location Study	Checked:	JH	Date:	5/30/09
Task:	Open Web Alternative	Sheet:	1	of	

2. Global Bridge Model

2.1 Summary of LARSA Analysis

Task Description:

Determine Substructure Demands:

The purpose of the global model response spectrum analysis is to determine the substructure demands for the foundations and piers for the main River Crossing for preliminary design of the pile foundations. The criteria used in this task is a subset of the complete project Design Criteria[1] but is in accordance with all included project specifications. It is intended to provide boundary conditions for the analysis that will envelope the critical cases for determining the requirements for the pile foundations.

Computer Programs Used:

LARSA 4D[2]	Used for global modeling of the bridge to produce foundation demands.
FB-Pier[3]	Used for foundation modeling of the pile cap and piles, creating stiffness matrices and checking pile capacities.
PCACol[4]	Used for obtaining column interaction diagrams.
Mathcad[5]	Used for transforming stiffness matrices from the FB-Pier pile foundation coordinate system to the LARSA global model coordinate system.
MS Excel[6]	Used for calculating model geometry, section properties, assembling load combinations and comparing demands and capacities.

Analytical Techniques:

Foundation demands were obtained using LARSA 4D[2] for the global model of the bridge structure. 6x6 stiffness matrices were used at the bottom of each pier and calculated using FB-Pier[3] with the soil profiles and properties given in the Geotechnical Report[7] and the reactions at the supports from LARSA 4D[2]. Iterations were performed as necessary until a force tolerance of approximately 10% was obtained in the support reactions. Pile and pier demands and capacities were checked to confirm that sections remained elastic under the demands associated with a 500-year return period earthquake.

General Assumptions:

The foundations for the main River Crossing are based on analyses for the Stacked Transit Highway Bridge (STHB) alternative and the layouts for the southbound and northbound structures. Plastic analysis was not used for this preliminary stage. The design was based on elastic behavior under the 500-year return period earthquake. Full liquefaction is assumed to be 105 feet from the top of the mud line or fill at all pier locations. Scour is assumed to be 10 feet of contraction scour based on the 500-year flood event in Table 5-3 of the project Scour Report[8]. It was assumed that during an event that includes 105 feet of liquefaction across the river bed, local scour would not be present or would level due to the deep

liquefaction. Response modification factors were all assumed to be 1.0 for this preliminary design. Cracked section properties of 0.5 x I_g were assumed for the column flexural section properties in the global model and the torsional constant was reduced to 0.2 x J_g per AASHTO Guide Specifications[10]. The response spectrum for the Functional Evaluation Earthquake (FEE) Class E from the Geotechnical Report[7] was used for seismic loading. Dead load cases do not include effects due to segmental construction sequence nor secondary moments due to post-tensioning.

LARSA Model:

Layout Geometry:

LARSA 4D analysis software was used to model the Main River Crossing bridge and foundations. The model extends from the start of the segmental bridge at the centerline of Pier 1 to the end of the segmental bridge at Pier 7. The geometry of the model is based on structure alignments for the Main River Crossing bridges on the I-5 SB Line and I-5 NB Line. Curve data, both horizontal and vertical, was obtained from Microstation DGN files from the TS&L design. Bottom of column elevations were based on the assumed top of footing elevation of 21.28 feet NAVD88 (16.0' CRD). The bridge consists of seven spans, four main spans 500 feet in length and 2 end spans 300 feet in length, for a total bridge length of 2600 feet. The open web alternative provides for 2 light rail vehicles to travel inside the segmental box. This alternative is substantially heavier than the standard segmental box with a deeper section at pier and much deeper section at midspan which is controlled by the vertical requirements of the LRT and diaphragm requirements.

Section Geometry:

A single line of beam column elements was used to model the superstructure and columns. The superstructure geometry followed the center of gravity of the section and the live load path was offset to follow a smooth path along the profile grade line at the top of the deck. Sections for the superstructure were taken at each of the anticipated bulkheads for the segments which were 20 feet in length, along with mid points between. The soffit of the superstructure was haunched along a parabolic curve from a distance 40 feet from centerline of pier to a point 160 feet from centerline of pier. The width of the bridge is typically 99 feet for more than half of the total bridge length, but the bridge tapers considerably to a maximum width at Pier 7. There is no response from the adjacent structures included in this preliminary analysis, however, the reactions at Piers 1 & 7 are assumed to be twice the reactions obtained from the analysis. This is conservative for the reactions at this stage of the design process.

Support Conditions:

The superstructure is rigidly connected to the top of each pier for Piers 3, 4 & 5. At Piers 1, 2, 6 & 7 the superstructure is released longitudinally in the X direction and at Piers 1 & 7 released rotationally in the local Z direction. The bottoms of the piers are supported using full 6x6 stiffness matrices. These matrices are calculated in FB-MulitPier using the reactions from LARSA in an iterative process. The iterations are continued until the forces converge within 10% for the dominant flexural moment, associated shear and displacement per WSDOT Bridge Design Manual.

Applied Loads:

Dead loads were in accordance with the CRC Structural Design Criteria and provided for additional dead load for the light rail transit (LRT) inside the segmental box. The additional LRT dead load includes a concrete support platform and a steel maintenance walkway. This is in addition to the utilities, plinths and rails that are specified in the Design Criteria. Live loads for the structure were based on 8 – HL-93 AASHTO LRFD live load lanes (design HL-93 truck and corresponding design lane load) and 2 – LRT 4-car trains as specified in the Design Criteria. Seismic loads were based on a Functional Evaluation

Earthquake (FEE) with a return period of 500 years. The response spectrum for this analysis is based on FEE Site Class E, which is the recommended curve in the Geotechnical Report for Piers 2 to 5. Site Class E is also the FEE curve with the highest spectral accelerations for any of the site classes. Please note that the model geometry was rotated in plan so that the X axis is a line from Pier 1 to Pier 7 and the longitudinal earthquake is in line with the structure. Wind, temperature, stream flow and barge collision force on the pier was also included in the analysis. Load combinations were in accordance with LARSA LRFD and the AASHTO Guide Specifications for LRFD Seismic Bridge Design.

The following AASHTO LRFD[9] design load combinations were used:

(1) Strength I	Factored dead load plus live load
(2) Strength III	Factored dead load plus wind load
(3) Extreme Ia	Dead load plus earthquake plus ½ live load, assuming no liquefaction and no scour
(4) Extreme Ib	Dead load plus earthquake plus ½ live load, assuming full liquefaction of 105 feet and 10 feet of contraction scour (this represents a boundary condition in accordance the load case given in the Design Criteria[1] and the recommendations of the geotechnical engineer)
(5) Extreme Event II	Factored stream flow and vessel impact in accordance with the project specific report on Vessel Collision Forces[12].
(6) Strength IV	Factored (1.5x) dead load for long span bridges

List of Models:

The demands associated with the seismic load cases were found to govern the design of the pile foundations. Four main models were used in this analysis, but the only difference between the four models is the final spring matrices that were used in each. Therefore only one input model is printed in full for each structure in this calculation set. All spring 6x6 matrices are included in the FB-MulitPier section of this document.

CRC TSL EQ-08 No-Scour Shaft – This model represents the Southbound Structure and uses springs iterated from FB-MultiPier for the drilled shaft alternative with soil conditions representing no scour or liquefaction.

CRC TSL EQ-08 Liquef Shaft – This model represents the Southbound Structure and uses springs iterated from FB-MultiPier for the drilled shaft alternative with soil conditions representing 10 feet of contraction scour based on the 500 year flood and 105 feet of liquefaction.

CRC TSL EQ-09 No-Scour Shaft – This model represents the Northbound Structure and uses springs iterated from FB-MultiPier for the drilled shaft alternative with soil conditions representing no scour or liquefaction.

CRC TSL EQ-09 Liquef Shaft – This model represents the Northbound Structure and uses springs iterated from FB-MultiPier for the drilled shaft alternative with soil conditions representing 10 feet of contraction scour based on the 500 year flood and 105 feet of liquefaction.

Design Methods:

Design capacities for the pier and pile sections are in accordance with AASHTO LRFD[9] Section 5.7.

References:

(1) CRC Structural Design Criteria for the River Crossing, Draft Report, Rev b, May 2008.
(2) LARSA 4D, Version 7.01 r27, Larsa Inc., 1995-2007.
(3) FB-MultiPier v.4 (Version 4.12b), 2000, Florida Bridge Software Institute, Dept. of Civil and Coastal Engineering, University of Florida.
(4) pcaColumn, Version 3.64, Portland Cement Association, 1988-2005.
(5) Mathcad 14.0 M020, 2007, Parametric Technology Corporation.
(6) Microsoft Excel 2003, SP-3, Microsoft Corporation, 1985-2003.
(7) Geotechnical Report, Columbia River Crossing Project – Interstate 5, Preliminary Foundation Evaluation, Main Span (In-Water Piers), August 2008, Shannon & Wilson, Inc.
(8) Hydraulic and Scour Parameters for Columbia River Crossing, November, 2008, Parsons Brinckerhoff.
(9) AASHTO LRFD Bridge Design Specifications, 4th Edition, 2007.
(10) AASHTO Guide Specifications for LRFD Seismic Bridge Design, 2008.
(11) Trimet Light Rail Design Criteria, Portland, June 2005.
(12) Predictions of Vessel Collision Forces on Highway Bridge Piers, The Glosten Associates, February 19, 2009.

HDR | ONE COMPANY *Many Solutions*℠

Pile Group Analysis Summary

Project:	Columbia River Crossing	Computed:	C. Werts	Date:	04-22-09
Subject:	River Bridge Type, Size & Location Study	Checked:	JH	Date:	5/30/09
Task:	Open Web Alternative	Sheet:	1	of	

3. Pile Group Foundation Model

3.1 Summary of FB-MultiPier Analysis

Pile Cap Geometry:

FB-MulitPier analysis software was used to model the pile group foundations. The model consists of a pile cap with a depth that is specified and a pile layout. The pile type used for this analysis is a 10 foot diameter reinforced concrete shaft with a 1" structural steel casing. The default pile cap depth used for this analysis is 18 feet, determined by a bottom elevation 2 feet below elevation 0.0 CRD and a top elevation 1 foot above elevation 15.0 CRD. This depth of cap creates a relatively rigid cap that is large enough to provide for all connection steel and development of the pile as well as the columns. The pile spacing was chosen to be 2.5D, which is the minimum pile spacing recommended by WSDOT. The distance from the center of the exterior pile to the edge of the pile cap was chosen to be 10 feet. This was later changed to 7'-6" because 2'-6" provided ample room for pile cap reinforcement around the cap. The pile connections are fixed at the pile cap.

Applied Loads and Analysis:

Loads were obtained from the LARSA global analysis. A separate pile group model was created for each foundation condition, as described in the following geotechnical assumptions, and for each pier for a total of 14 separate pile group models per bridge. Reactions from LARSA for the critical seismic load cases, Extreme Ia and Extreme Ib, as discussed in the global model loads, were transformed into the coordinate system in FB-MultiPier by multiplying the loads (FX, FY, FZ, MX, MY, MZ) by the factors (-1, 1, 1, -1, 1, 1). FB-MultiPier uses AASHTO LRFD factors to create an interaction diagram and then determines the demand to capacity (D/C) ratio for the critical pile. This D/C was limited to 1.0 for our analysis and the loads from LARSA were not reduced by any AASHTO Response Modification Factor. Iterations were made to achieve a pile group that had a D/C less than 1.0. The subsequent 6x6 stiffness matrix from FB-MultiPier was then transformed, as shown in the following pages, into the coordinate system for LARSA. Iterations were performed with new forces and new stiffness matrices until the global support reactions in LARSA converged to within 10% for axial and the dominant flexural moment. Final outputs for each pier model under each foundation condition follow in the subsequent sections. Outputs include the interaction data and a single pile interaction diagram.

HDR | ONE COMPANY *Many Solutions*℠

Geotechnical Assumptions

Project:	Columbia River Crossing	Computed:	C. Werts	Date:	04-22-09
Subject:	River Bridge Type, Size & Location Study	Checked:	JH	Date:	5/30/09
Task:	Open Web Alternative	Sheet:	1	of	

3.2 FB-MultiPier Geotechnical Assumptions:

Soil properties used for input for FB-MultiPier are referenced from the Geotechnical Report by Shannon & Wilson dated August 2008. Soil data for this analysis is specifically taken from the soil borings along Section B-B in the Site Plan in Figure 2 and as shown in the soil Profile B-B in Figure 4. Please note that for the 2-bridge layout Pier 1 corresponds with the data shown for Pier 2 in the report, Pier 2 corresponds with the data shown for Pier 3, and so on. In addition, the soil data for Pier 6 is based on the nearest boring log along Section C-C in the Site Plan in Figure 2 and as shown in the soil Profile C-C in Figure 5. Input for each pier, for each of the 2 foundation cases and for each of the two structures considered in this analysis are summarized in the following pages. The two critical cases that bracket the foundation conditions in this analysis are:

1. No Scour or Liquefaction with drilled shafts
2. Liquefaction to a depth of 105 feet from a 10 feet contraction scour depth for a 500 year flood with drilled shafts

The following are additional assumptions that our specific for this preliminary analysis for the use of foundation modeling in FB-MultiPier:

1. Drilled Shafts
   a. Drilled Shafts to be drilled into the Troutdale Formation to a depth of 30 feet.
      i. This is in accordance with Section 7.2 of the Geotechnical Report.
   b. Drilled Shafts to have an Ultimate End Bearing Capacity of 15300 kips (7650 tons).
      i. This is in excess of the 3900 tons per Figures 33, 35, 37 & 39 of the Geotechnical Report.
      ii. The assumption of 15300 kips is based on the following:
         1. The ultimate end bearing of the 10' diameter drilled shaft shown in the tables is less than the ultimate end bearing of the 8' diameter driven pile.
         2. Based on the 9800 kips (4900 tons) for the 8' diameter driven pile, the average end bearing strength based on the enclosed area of the pile is:
            $9800 / (\pi \times (96/2)^2) = 1.354$ ksi
         3. 1.354 ksi is a reasonable strength for a soft rock such as a tuff. Although we recognize that the Troutdale Formation is not a tuff, but rather a partially-cemented conglomerate, this strength is a reasonable value.
         4. Multiplying the 1.354 ksi strength by the area of the 10' drilled shaft:
            $1.354 \times (\pi \times (120/2)^2) = 15313$ kips (USE 15300 kips)
      iii. Ultimate End Bearing Capacity of 15300 kips to be input into FB-MultiPier by choosing a "Custom Q-Z" tip model and specifying a Q-Z curve for the ultimate bearing force. The curve is modified to have an ultimate end bearing at a displacement of 2". The 2" displacement is in accordance with the standard WSDOT Bridge Special Provision (BSP) for construction of drilled shafts that allows only 2" of loose material for end bearing shafts.
   c. Drilled Shafts to have a 1" thick steel pile casing that will be left in place.
      i. Steel pile casings may be assumed to act compositely with the interior reinforced concrete section in accordance with Section 5.5.3 of the Design Criteria as follows:

1. Steel pile casings will supplement the pile strength and ductility provided that the effective casing thickness after full allowance for corrosion is at least 1/16 inch.
2. For Load Groups Ia and Ib, the effective casing shall consider ½ the allowance for corrosion as defined in Commentary C1.4.4.
3. With the allowance for corrosion considered, the casings may assume to contribute up to 80% of its net area to flexural capacity and up to 20% of its area to confinement of the pile interior.
4. Pile longitudinal reinforcement should contribute at least 50% of the pile flexural capacity.

HDR Engineering

Project:	Columbia River Crossing
Subject:	Soils Report Data
Task:	AF
Job #:	93127

FB-MULTIPIER INPUT DATA

Computed:	CAW	Date:	28-Apr-09
Checked:	JH	Date:	5/30/09
Page:	1	of:	3
No.:			

NO SCOUR CONDITION - DRILLED SHAFTS
No Scour and No Liquefaction

Pier 1: Boring Log CRC-RC-006

Water Level = 5 ft

Layer	Soil Input Data									Pile Input Data			
	Top Layer Elevation (ft)	Btm Layer Elevation (ft)	Lateral Model	Axial Model	Tip Model	Unit Weight (pcf)	Friction Angle (deg)	Subgrade Modulus (pci)	Axial Brg Failure (kips)	Pile Cap Thickness (ft)	Pile Head/Cap (ft)	Pile Socket (ft)	Pile Length (ft)
Soil Unit 1	37	-47	Sand (O'Neill)	Custom T-Z	Custom Q-Z	107.3	30	25		18	12	30	251
Soil Unit 2/3	-47	-76	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	35	50					
Soil Unit 2/3	-76	-214	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	35	50					
Soil Unit 4	-214	-218	Sand (O'Neill)	Custom T-Z	Custom Q-Z	136.7	45	125					
Soil Unit 5	-218	-268	Sand (O'Neill)	Custom T-Z	Custom Q-Z	140.2	45	150	15300		Excavation Length =		251

Note: Elevations for Pier 1 are based on the bottom of cap elevation, which is assumed to be approximately -10 feet.

Pier 2: Boring Log CRC-RC-006

Water Level = 5 ft

Layer	Soil Input Data									Pile Input Data			
	Top Layer Elevation (ft)	Btm Layer Elevation (ft)	Lateral Model	Axial Model	Tip Model	Unit Weight (pcf)	Friction Angle (deg)	Subgrade Modulus (pci)	Axial Brg Failure (kips)	Pile Cap Thickness (ft)	Pile Head/Cap (ft)	Pile Socket (ft)	Pile Length (ft)
Soil Unit 1	-11	-47	Sand (O'Neill)	Custom T-Z	Custom Q-Z	107.3	30	25		18	12	30	251
Soil Unit 2/3	-47	-76	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	35	50					
Soil Unit 2/3	-76	-214	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	35	50					
Soil Unit 4	-214	-218	Sand (O'Neill)	Custom T-Z	Custom Q-Z	136.7	45	125					
Soil Unit 5	-218	-268	Sand (O'Neill)	Custom T-Z	Custom Q-Z	140.2	45	150	15300		Excavation Length =		237

Note: Elevations for Pier 2 are based on the bottom of cap elevation, which is assumed to be approximately -10 feet.

Pier 3: Boring Log CRC-RC-009

Water Level = 5 ft

Layer	Soil Input Data									Pile Input Data			
	Top Layer Elevation (ft)	Btm Layer Elevation (ft)	Lateral Model	Axial Model	Tip Model	Unit Weight (pcf)	Friction Angle (deg)	Subgrade Modulus (pci)	Axial Brg Failure (kips)	Pile Cap Thickness (ft)	Pile Head/Cap (ft)	Pile Socket (ft)	Pile Length (ft)
Soil Unit 1	-24	-55	Sand (O'Neill)	Custom T-Z	Custom Q-Z	107.3	30	25		18	12	30	259
Soil Unit 2/3	-55	-99	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	35	50					
Soil Unit 2/3	-99	-216	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	35	50					
Soil Unit 4	-216	-226	Sand (O'Neill)	Custom T-Z	Custom Q-Z	136.7	45	125					
Soil Unit 5	-226	-276	Sand (O'Neill)	Custom T-Z	Custom Q-Z	140.2	45	150	15300		Excavation Length =		232

HDR Engineering

Project:	Columbia River Crossing
Subject:	Soils Report Data
Task:	AF
Job #:	93127

FB-MULTIPIER INPUT DATA

Computed:	CAW	Date:	28-Apr-09
Checked:	JH	Date:	5/30/09
Page:	2	of:	3
No.:			

NO SCOUR CONDITION - DRILLED SHAFTS
No Scour and No Liquefaction

Pier 4: Boring Log CRC-RC-012

Water Level = 5 ft

Layer	Soil Input Data									Pile Input Data			
	Top Layer Elevation (ft)	Btm Layer Elevation (ft)	Lateral Model	Axial Model	Tip Model	Unit Weight (pcf)	Friction Angle (deg)	Subgrade Modulus (pci)	Axial Brg Failure (kips)	Pile Cap Thickness (ft)	Pile Head/Cap (ft)	Pile Socket (ft)	Pile Length (ft)
Soil Unit 1	-22	-55	Sand (O'Neill)	Custom T-Z	Custom Q-Z	107.3	30	25		18	12	30	253
Soil Unit 2/3	-55	-97	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	35	50					
Soil Unit 2/3	-97	-212	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	35	50					
Soil Unit 4	-212	-220	Sand (O'Neill)	Custom T-Z	Custom Q-Z	136.7	45	125					
Soil Unit 5	-220	-270	Sand (O'Neill)	Custom T-Z	Custom Q-Z	140.2	45	150	15300		Excavation Length =		228

Pier 5: Boring Log CRC-RC-015

Water Level = 5 ft

Layer	Soil Input Data									Pile Input Data			
	Top Layer Elevation (ft)	Btm Layer Elevation (ft)	Lateral Model	Axial Model	Tip Model	Unit Weight (pcf)	Friction Angle (deg)	Subgrade Modulus (pci)	Axial Brg Failure (kips)	Pile Cap Thickness (ft)	Pile Head/Cap (ft)	Pile Socket (ft)	Pile Length (ft)
Soil Unit 1	-21	-52	Sand (O'Neill)	Custom T-Z	Custom Q-Z	107.3	30	25		18	12	30	236
Soil Unit 2/3	-52	-96	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	35	55					
Soil Unit 2/3	-96	-187	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	35	55					
Soil Unit 4	-187	-203	Sand (O'Neill)	Custom T-Z	Custom Q-Z	136.7	45	125					
Soil Unit 5	-203	-253	Sand (O'Neill)	Custom T-Z	Custom Q-Z	140.2	45	150	15300		Excavation Length =		212

Pier 6: Boring Log CRC-RC-018

Water Level = 5 ft

Layer	Soil Input Data									Pile Input Data			
	Top Layer Elevation (ft)	Btm Layer Elevation (ft)	Lateral Model	Axial Model	Tip Model	Unit Weight (pcf)	Friction Angle (deg)	Subgrade Modulus (pci)	Axial Brg Failure (kips)	Pile Cap Thickness (ft)	Pile Head/Cap (ft)	Pile Socket (ft)	Pile Length (ft)
Soil Unit 1	-28	-70	Sand (O'Neill)	Custom T-Z	Custom Q-Z	107.3	30	25		18	12	30	120
Soil Unit 2/3	-70	-76	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	35	55					
Soil Unit 4	-76	-87	Sand (O'Neill)	Custom T-Z	Custom Q-Z	136.7	45	125					
Soil Unit 5	-87	-137	Sand (O'Neill)	Custom T-Z	Custom Q-Z	140.2	45	150	15300		Excavation Length =		89

HDR Engineering

Project:	Columbia River Crossing
Subject:	Soils Report Data
Task:	AF
Job #:	93127

FB-MULTIPIER INPUT DATA

Computed:	CAW	Date:	28-Apr-09
Checked:	JH	Date:	5/30/09
Page:	3	of:	3
No.:			

NO SCOUR CONDITION - DRILLED SHAFTS
No Scour and No Liquefaction

Pier 7: Boring Log CRC-RC-020

Water Level = 5 ft

Layer	Soil Input Data									Pile Input Data			
	Top Layer Elevation (ft)	Btm Layer Elevation (ft)	Lateral Model	Axial Model	Tip Model	Unit Weight (pcf)	Friction Angle (deg)	Subgrade Modulus (pci)	Axial Brg Failure (kips)	Pile Cap Thickness (ft)	Pile Head/Cap (ft)	Pile Socket (ft)	Pile Length (ft)
Soil Unit 1	-6	-23	Sand (O'Neill)	Custom T-Z	Custom Q-Z	107.3	30	65		18	12	30	116
Soil Unit 4	-23	-81	Sand (O'Neill)	Custom T-Z	Custom Q-Z	136.7	45	125					
Soil Unit 4	-81	-83	Sand (O'Neill)	Custom T-Z	Custom Q-Z	136.7	45	125					
Soil Unit 5	-83	-133	Sand (O'Neill)	Custom T-Z	Custom Q-Z	140.2	45	150	15300		Excavation Length =		107

Pier 8: Boring Log CRC-RC-020

Water Level = 5 ft

Layer	Soil Input Data									Pile Input Data			
	Top Layer Elevation (ft)	Btm Layer Elevation (ft)	Lateral Model	Axial Model	Tip Model	Unit Weight (pcf)	Friction Angle (deg)	Subgrade Modulus (pci)	Axial Brg Failure (kips)	Pile Cap Thickness (ft)	Pile Head/Cap (ft)	Pile Socket (ft)	Pile Length (ft)
Soil Unit 1	43	-23	Sand (O'Neill)	Custom T-Z	Custom Q-Z	107.3	30	65		18	12	30	116
Soil Unit 4	-23	-75	Sand (O'Neill)	Custom T-Z	Custom Q-Z	136.7	45	125					
Soil Unit 4	-75	-83	Sand (O'Neill)	Custom T-Z	Custom Q-Z	136.7	45	125					
Soil Unit 5	-83	-133	Sand (O'Neill)	Custom T-Z	Custom Q-Z	140.2	45	150	15300		Excavation Length =		116

Note: All elevations are based on NAVD88.
Top and bottom layer elevations per Geotechnical Report, Fig. 4. for Piers 2 through 6, and Fig. 5 for Piers 7 & 8.
Unit weight, soil type, friction angle and subgrade modulus per Geotechnical Report, Table 4.
Axial bearing failure per Geotechnical Report and assumptions as discussed in FB-MultiPier Geotechnical Assumptions.
Soil properties for Pier 1 are based on Pier 2 with change in mudline to elevation 37.
Soil properties for Piers 8 are based on Pier 7 with change in mudline to elevation 43.
PY multipiers in FB-MultiPier are set to 0.575, 0.415, 0.300 per WSDOT for pile spacing of 2.5D.
Group effect for axial efficiency in FB-MultiPier is set to 1.0.
Pipe thickness for shafts is 1". Use maximum 0.75" effective after 1/16" corrosion and 80% of remaining effective.
Self weight factor and buoyancy factor are set to 1.0 for EQ. Self weight factor is set to 1.25 for Strength load cases.

HDR Engineering

Project:	Columbia River Crossing
Subject:	Soils Report Data
Task:	AF
Job #:	93127

FB-MULTIPIER INPUT DATA

Computed:	CAW	Date:	28-Apr-09
Checked:	JH	Date:	5/30/09
Page:	1	of:	3
No.:			

LIQUIFACTION CONDITION - DRILLED SHAFTS
10 feet Contraction Scour and 105 feet of Liquefaction

Pier 1: Boring Log CRC-RC-006

Water Level = 5 ft No scour = 37 ft

Layer	Soil Input Data									Pile Input Data			
	Top Layer Elevation (ft)	Btm Layer Elevation (ft)	Lateral Model	Axial Model	Tip Model	Unit Weight (pcf)	Friction Angle (deg)	Subgrade Modulus (pci)	Axial Brg Failure (kips)	Pile Cap Thickness (ft)	Pile Head/Cap (ft)	Pile Socket (ft)	Pile Length (ft)
Soil Unit 1	37	-47	Sand (O'Neill)	Custom T-Z	Custom Q-Z	107.3	6	4.6		18	12	30	251
Soil Unit 2/3	-47	-68	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	6	7.5					
Soil Unit 2/3	-68	-214	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	35	50					
Soil Unit 4	-214	-218	Sand (O'Neill)	Custom T-Z	Custom Q-Z	136.7	45	125					
Soil Unit 5	-218	-268	Sand (O'Neill)	Custom T-Z	Custom Q-Z	140.2	45	150	15300				

Note: Elevations for Pier 1 are based on the bottom of cap elevation, which is assumed to be approximately -10 feet.

Pier 2: Boring Log CRC-RC-006

Water Level = 5 ft 10' scour = -21 ft

Layer	Soil Input Data									Pile Input Data			
	Top Layer Elevation (ft)	Btm Layer Elevation (ft)	Lateral Model	Axial Model	Tip Model	Unit Weight (pcf)	Friction Angle (deg)	Subgrade Modulus (pci)	Axial Brg Failure (kips)	Pile Cap Thickness (ft)	Pile Head/Cap (ft)	Pile Socket (ft)	Pile Length (ft)
Soil Unit 1	-21	-47	Sand (O'Neill)	Custom T-Z	Custom Q-Z	107.3	6	4.6		18	12	30	251
Soil Unit 2/3	-47	-126	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	6	7.5					
Soil Unit 2/3	-126	-214	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	35	50					
Soil Unit 4	-214	-218	Sand (O'Neill)	Custom T-Z	Custom Q-Z	136.7	45	125					
Soil Unit 5	-218	-268	Sand (O'Neill)	Custom T-Z	Custom Q-Z	140.2	45	150	15300				

Note: Elevations for Pier 2 are based on the bottom of cap elevation, which is assumed to be approximately -10 feet.

Pier 3: Boring Log CRC-RC-009

Water Level = 5 ft 10' scour = -34 ft

Layer	Soil Input Data									Pile Input Data			
	Top Layer Elevation (ft)	Btm Layer Elevation (ft)	Lateral Model	Axial Model	Tip Model	Unit Weight (pcf)	Friction Angle (deg)	Subgrade Modulus (pci)	Axial Brg Failure (kips)	Pile Cap Thickness (ft)	Pile Head/Cap (ft)	Pile Socket (ft)	Pile Length (ft)
Soil Unit 1	-34	-55	Sand (O'Neill)	Custom T-Z	Custom Q-Z	107.3	6	4.6		18	12	30	259
Soil Unit 2/3	-55	-139	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	6	7.5					
Soil Unit 2/3	-139	-216	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	35	50					
Soil Unit 4	-216	-226	Sand (O'Neill)	Custom T-Z	Custom Q-Z	136.7	45	125					
Soil Unit 5	-226	-276	Sand (O'Neill)	Custom T-Z	Custom Q-Z	140.2	45	150	15300				

HDR Engineering

Project:	Columbia River Crossing
Subject:	Soils Report Data
Task:	AF
Job #:	93127

FB-MULTIPIER INPUT DATA

Computed:	CAW	Date:	28-Apr-09
Checked:	JH	Date:	5/30/09
Page:	2	of:	3
No.:			

LIQUIFACTION CONDITION - DRILLED SHAFTS
10 feet Contraction Scour and 105 feet of Liquefaction

Pier 4: Boring Log CRC-RC-012

Water Level = 5 ft 10' scour = -32 ft

Layer	Soil Input Data									Pile Input Data			
	Top Layer Elevation (ft)	Btm Layer Elevation (ft)	Lateral Model	Axial Model	Tip Model	Unit Weight (pcf)	Friction Angle (deg)	Subgrade Modulus (pci)	Axial Brg Failure (kips)	Pile Cap Thickness (ft)	Pile Head/Cap (ft)	Pile Socket (ft)	Pile Length (ft)
Soil Unit 1	-32	-55	Sand (O'Neill)	Custom T-Z	Custom Q-Z	107.3	6	4.6		18	12	30	253
Soil Unit 2/3	-55	-137	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	6	7.5					
Soil Unit 2/3	-137	-212	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	35	50					
Soil Unit 4	-212	-220	Sand (O'Neill)	Custom T-Z	Custom Q-Z	136.7	45	125					
Soil Unit 5	-220	-270	Sand (O'Neill)	Custom T-Z	Custom Q-Z	140.2	45	150	15300				

Pier 5: Boring Log CRC-RC-015

Water Level = 5 ft 10' scour = -31 ft

Layer	Soil Input Data									Pile Input Data			
	Top Layer Elevation (ft)	Btm Layer Elevation (ft)	Lateral Model	Axial Model	Tip Model	Unit Weight (pcf)	Friction Angle (deg)	Subgrade Modulus (pci)	Axial Brg Failure (kips)	Pile Cap Thickness (ft)	Pile Head/Cap (ft)	Pile Socket (ft)	Pile Length (ft)
Soil Unit 1	-31	-52	Sand (O'Neill)	Custom T-Z	Custom Q-Z	107.3	5	3.8		18	12	30	236
Soil Unit 2/3	-52	-136	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	5	6.9					
Soil Unit 2/3	-136	-187	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	35	55					
Soil Unit 4	-187	-203	Sand (O'Neill)	Custom T-Z	Custom Q-Z	136.7	45	125					
Soil Unit 5	-203	-253	Sand (O'Neill)	Custom T-Z	Custom Q-Z	140.2	45	150	15300				

Pier 6: Boring Log CRC-RC-018

Water Level = 5 ft 10' scour = -38 ft

Layer	Soil Input Data									Pile Input Data			
	Top Layer Elevation (ft)	Btm Layer Elevation (ft)	Lateral Model	Axial Model	Tip Model	Unit Weight (pcf)	Friction Angle (deg)	Subgrade Modulus (pci)	Axial Brg Failure (kips)	Pile Cap Thickness (ft)	Pile Head/Cap (ft)	Pile Socket (ft)	Pile Length (ft)
Soil Unit 1	-38	-70	Sand (O'Neill)	Custom T-Z	Custom Q-Z	107.3	5	3.8		18	12	30	120
Soil Unit 2/3	-70	-76	Sand (O'Neill)	Custom T-Z	Custom Q-Z	121.2	5	6.9					
Soil Unit 4	-76	-87	Sand (O'Neill)	Custom T-Z	Custom Q-Z	136.7	45	125					
Soil Unit 5	-87	-143	Sand (O'Neill)	Custom T-Z	Custom Q-Z	140.2	45	150					
Soil Unit 5	-143	-193	Sand (O'Neill)	Custom T-Z	Custom Q-Z	140.2	45	150	15300				

HDR Engineering

Project:	Columbia River Crossing
Subject:	Soils Report Data
Task:	AF
Job #:	93127

FB-MULTIPIER INPUT DATA

Computed:	CAW	Date:	28-Apr-09
Checked:	JH	Date:	5/30/09
Page:	3	of:	3
No.:			

LIQUIFACTION CONDITION - DRILLED SHAFTS
10 feet Contraction Scour and 105 feet of Liquefaction

Pier 7: Boring Log CRC-RC-020

Water Level = 5 ft 10' scour = -16 ft

Layer	Soil Input Data									Pile Input Data			
	Top Layer Elevation (ft)	Btm Layer Elevation (ft)	Lateral Model	Axial Model	Tip Model	Unit Weight (pcf)	Friction Angle (deg)	Subgrade Modulus (pci)	Axial Brg Failure (kips)	Pile Cap Thickness (ft)	Pile Head/Cap (ft)	Pile Socket (ft)	Pile Length (ft)
Soil Unit 1	-16	-23	Sand (O'Neill)	Custom T-Z	Custom Q-Z	107.3	7	65		18	12	30	116
Soil Unit 4	-23	-83	Sand (O'Neill)	Custom T-Z	Custom Q-Z	136.7	45	125					
Soil Unit 5	-83	-121	Sand (O'Neill)	Custom T-Z	Custom Q-Z	140.2	45	150					
Soil Unit 5	-121	-171	Sand (O'Neill)	Custom T-Z	Custom Q-Z	140.2	45	150	15300				

Pier 8: Boring Log CRC-RC-020

Water Level = 5 ft No scour = 43 ft

Layer	Soil Input Data									Pile Input Data			
	Top Layer Elevation (ft)	Btm Layer Elevation (ft)	Lateral Model	Axial Model	Tip Model	Unit Weight (pcf)	Friction Angle (deg)	Subgrade Modulus (pci)	Axial Brg Failure (kips)	Pile Cap Thickness (ft)	Pile Head/Cap (ft)	Pile Socket (ft)	Pile Length (ft)
Soil Unit 1	43	-23	Sand (O'Neill)	Custom T-Z	Custom Q-Z	107.3	7	65		18	12	30	116
Soil Unit 4	-23	-62	Sand (O'Neill)	Custom T-Z	Custom Q-Z	136.7	45	125					
Soil Unit 4	-62	-83	Sand (O'Neill)	Custom T-Z	Custom Q-Z	136.7	45	125					
Soil Unit 5	-83	-133	Sand (O'Neill)	Custom T-Z	Custom Q-Z	140.2	45	150	15300				

Note: All elevations are based on NAVD88.
Top and bottom layer elevations per Geotechnical Report, Fig. 4. for Piers 2 through 6, and Fig. 5 for Piers 7 & 8.
Unit weight, soil type, friction angle and subgrade modulus per Geotechnical Report, Table 4.
Axial bearing failure per Geotechnical Report and assumptions as discussed in FB-MultiPier Geotechnical Assumptions.
Soil properties for Pier 1 are based on Pier 2 with change in mudline to elevation 37.
Soil properties for Piers 8 are based on Pier 7 with change in mudline to elevation 43.
PY multipiers in FB-MultiPier are set to 0.575, 0.415, 0.300 per WSDOT for pile spacing of 2.5D.
Group effect for axial efficiency in FB-MultiPier is set to 1.0.
Pipe thickness for shafts is 1". Use maximum 0.75" effective after 1/16" corrosion and 80% of remaining effective.
Self weight factor and buoyancy factor are set to 1.0 for EQ. Self weight factor is set to 1.25 for Strength load cases.

HDR | ONE COMPANY *Many Solutions*℠

Appendix

Project:	Columbia River Crossing	Computed:	C. Werts	Date:	March 23 2011
Subject:	River Bridge Conceptual Design	Checked:		Date:	
Task:	Composite Deck Truss Foundation	Sheet:		of	

4.2 LARSA INPUT FILES

LARSA

HDR Engineering Inc.

CRC TSL-SB91-04_FEE EQ1_20110315_INPUT

Wednesday, March 23, 2011	C. Werts HDR Engineering Inc.	Tel:

PROJECT SUMMARY

INPUT PROPERTIES	Count
Universal Restraints	None
Materials	3
Sections	164
User Coordinate System	9
Spring Curves	9
Isolater Property	None
Creep Definitions	None

INPUT GEOMETRY	Count
Joints	276
Members	283
Plates	None
Springs	40
Isolaters / Bearings	None
Mass Elements	8
Slave / Masters	None
Tendons	None

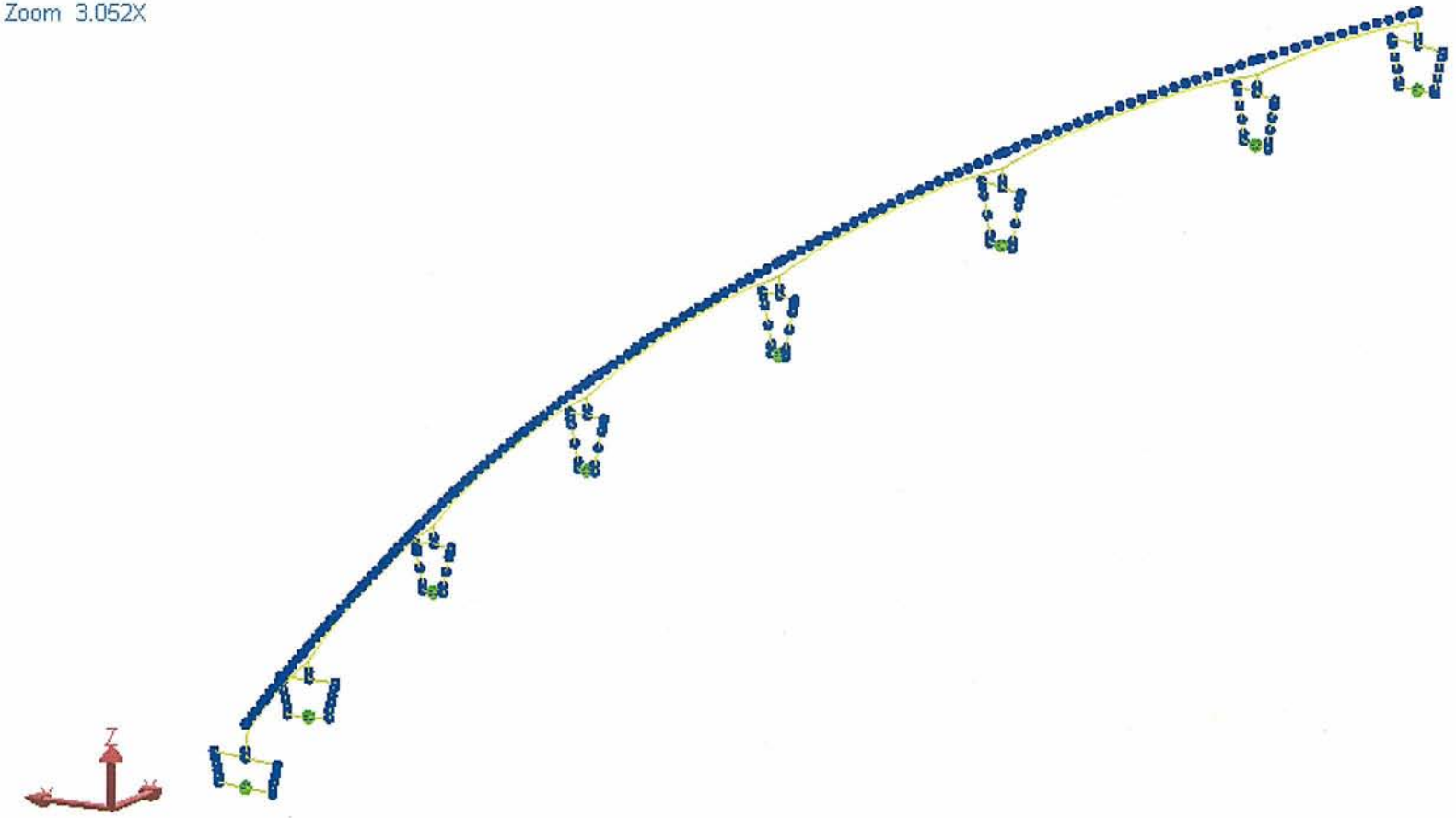
LOAD CASES	Count
Load Cases	30
Combination Cases	None
Construction Stages	None
Linked Databases	2

TABLE OF CONTENTS

INPUTS	Page#	RESULTS	Page#
- INPUT : Material Properties	Page 5		
- INPUT : UCSs	Page 5		
- INPUT : Spring Properties	Page 5		
- INPUT : Sections	Page 6		
- INPUT : Section Stress Points	Page 11		
- INPUT : Section Dimensions	Page 16		
- INPUT : Joints	Page 21		
- INPUT : Members	Page 29		
- INPUT : Member End Offsets	Page 37		
- INPUT : Member Fixity	Page 46		
- INPUT : Springs	Page 46		
- INPUT : Mass Elements	Page 47		
- INPUT : More Material Properties	Page 48		
- Load Cases	Page 48		
- STRUCTURE GROUP SUMMARY	Page 95		

Graphics View 1

Zoom 3.052X



INPUT : Material Properties

Name	Modulus of Elasticity (lb/in²)	Poisson Ratio	Shear Modulus (lb/in²)	Unit Weight (lb/in³)	Thermal Expansion (1/ °F *10^-6)	Assigned
Fc_6	5,173,322.00	0.2000	2,155,550.83	0.0926	6.000000	Yes
Fc_6 weightless	5,173,322.00	0.2000	2,155,550.83	0.0000	6.000000	Yes
Fc_8	5,973,638.00	0.2000	2,489,015.83	0.0000	6.000000	Yes

INPUT : UCSs

Name	Type	Origin X (ft)	Origin Y (ft)	Origin Z (ft)	Axis Point X (ft)	Axis Point Y (ft)	Axis Point Z (ft)	Point on XY Plane X	Point on XY Plane Y	Point on XY Plane Z	Angle Z	Angle X	Angle Y	Assigned
2-Brg 5-Lane SB	Bridge	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	1.0000	0.0000				No
Pier 1	Cartesian	82.5471	37.3955	12.3039	83.5471	37.3955	12.3039	82.5471	38.3955	12.3039				Yes
Pier 2	Cartesian	342.3954	99.8517	12.4015	343.3719	100.0671	12.4015	342.1799	100.8282	12.4015				Yes
Pier 3	Cartesian	796.3364	188.4845	12.1573	797.3233	188.6457	12.1573	796.1752	189.4714	12.1573				Yes
Pier 4	Cartesian	1,257.4342	239.3518	12.1670	1,258.4325	239.4096	12.1670	1,257.3764	240.3501	12.1670				Yes
Pier 5	Cartesian	1,723.1207	242.0036	12.1734	1,724.1199	241.9623	12.1734	1,723.1620	243.0028	12.1734				Yes
Pier 6	Cartesian	2,185.7345	200.8059	12.3118	2,186.7246	200.6650	12.3118	2,185.8755	201.7959	12.3118				Yes
Pier 7	Cartesian	2,641.3890	111.2006	12.4283	2,642.3587	110.9562	12.4283	2,641.6334	112.1703	12.4283				Yes
Pier 8	Cartesian	2,900.3687	37.4207	12.4854	2,901.3687	37.4207	12.4854	2,900.3687	38.4207	12.4854				Yes

INPUT : Spring Properties

Name	Type	Backbone	Polygonal Hysteretic Model	Alpha	Beta 1	Beta 2	Gamma	Mu	Assigned	Number of Points
Pier1spring	6x6 Stiffness Matrix	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a
Pier2spring	6x6 Stiffness Matrix	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a
Pier3spring	6x6 Stiffness Matrix	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a
Pier4spring	6x6 Stiffness Matrix	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a
Pier5spring	6x6 Stiffness Matrix	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a
Pier6spring	6x6 Stiffness Matrix	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a
Pier7spring	6x6 Stiffness Matrix	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a
Pier8spring	6x6 Stiffness Matrix	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a
Ghost	6x6 Stiffness Matrix	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a

INPUT : Sections

Name	Section Area (ft²)	Shear Area in yy (ft²)	Shear Area in zz (ft²)	Torsion Constant (ft^4)	Inertia Izz (ft^4)	Inertia Iyy (ft^4)	Plastic Modulus Zyy (ft³)	Plastic Modulus Zzz (ft³)	Perimeter (ft)	Material Time-Effect	Ductility	Residual Strength (%)	Assigned
Typ Pier Column	144.0000	120.0000	120.0000	2,923.7760	691.2000	691.2000	0.0000	0.0000	48.0000	(NONE)	50.	0.	Yes
Typ Pier Cap	180.0000	1.5000e5	1.5000e5	4.3675e6	3.3750e6	2.1600e6	0.0000	0.0000	54.0000	(NONE)	50.	0.	Yes
P1_Column	83.0000	17.1000	17.1000	216.0000	129.0000	129.0000	0.0000	0.0000	40.0000	(NONE)	50.	0.	Yes
P2_Column	83.0000	22.9000	22.9000	216.0000	173.0000	173.0000	0.0000	0.0000	40.0000	(NONE)	50.	0.	Yes
P7_Column	101.0000	30.9000	30.9000	319.0000	285.0000	285.0000	0.0000	0.0000	44.0000	(NONE)	50.	0.	Yes
P8_Column	101.0000	23.1000	23.1000	319.0000	212.0000	212.0000	0.0000	0.0000	44.0000	(NONE)	50.	0.	Yes
Abut Pier Cap	180.0000	1.5000e5	1.5000e5	4.3675e6	3.3750e6	2.1600e6	0.0000	0.0000	54.0000	(NONE)	50.	0.	Yes
Rigid Link	5,000.0000	5,000.0000	5,000.0000	9.0000e6	9.0000e6	9.0000e6	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_1T	374.7000	142.4000	193.4000	69,675.0000	49,345.0000	4.1113e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_2T	367.1000	135.7000	192.6000	65,454.0000	48,601.0000	3.9933e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_3T	348.5000	119.4000	190.5000	55,644.0000	44,533.0000	3.6999e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_4T	333.6000	106.8000	188.3000	48,459.0000	38,266.0000	3.4568e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_5T	322.4000	97.9000	186.2000	43,485.0000	34,020.0000	3.2624e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_6T	314.9000	92.8000	184.1000	40,379.0000	31,549.0000	3.1116e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_7T	311.2000	91.4000	181.9000	38,912.0000	30,700.0000	3.0017e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_8T	308.8000	91.4000	179.8000	38,042.0000	30,461.0000	2.9075e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_9T	309.3000	93.0000	178.8000	38,250.0000	31,013.0000	2.8776e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_10T	319.2000	98.3000	190.4000	40,279.0000	34,130.0000	2.8132e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_11T	346.6000	107.3000	215.0000	44,535.0000	40,897.0000	2.8777e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_12T	379.7000	120.0000	238.6000	49,786.0000	49,865.0000	2.9735e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_13T	415.5000	136.5000	261.2000	56,426.0000	61,177.0000	3.0788e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_14T	453.8000	156.7000	282.7000	64,711.0000	75,552.0000	3.1891e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_15T	494.7000	180.6000	302.9000	74,837.0000	91,734.0000	3.3011e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_16T	492.6000	180.6000	300.9000	73,895.0000	88,927.0000	3.2459e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_17T	490.5000	180.6000	298.9000	72,957.0000	91,169.0000	3.1913e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_18T	439.6000	156.7000	269.1000	58,829.0000	74,457.0000	2.8101e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_19T	393.4000	136.5000	240.2000	47,938.0000	58,870.0000	2.4805e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_20T	352.0000	120.0000	212.5000	39,648.0000	46,858.0000	2.2008e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_21T	315.4000	107.3000	185.8000	33,330.0000	37,490.0000	1.9639e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_22T	286.5000	98.3000	160.2000	28,435.0000	30,627.0000	1.7771e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_23T	273.0000	93.0000	145.5000	25,165.0000	27,248.0000	1.6518e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_24T	268.5000	91.4000	142.8000	23,788.0000	26,267.0000	1.5637e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes

INPUT : Sections

Name	Section Area (ft^2)	Shear Area in yy (ft^2)	Shear Area in zz (ft^2)	Torsion Constant (ft^4)	Inertia Izz (ft^4)	Inertia Iyy (ft^4)	Plastic Modulus Zyy (ft^3)	Plastic Modulus Zzz (ft^3)	Perimeter (ft)	Material Time-Effect	Ductility	Residual Strength (%)	Assigned
Sect_25T	265.6000	91.4000	140.1000	22,829.0000	25,897.0000	1.4865e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_26T	262.7000	91.4000	137.5000	21,874.0000	25,524.0000	1.4112e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_27T	259.8000	91.4000	134.8000	20,937.0000	25,153.0000	1.3389e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_28T	256.9000	91.4000	132.1000	20,011.0000	24,781.0000	1.2689e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_29T	254.0000	91.4000	129.5000	19,096.0000	24,410.0000	1.2013e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_30T	251.1000	91.4000	126.8000	18,193.0000	24,037.0000	1.1360e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_31T	248.4000	91.4000	124.4000	17,364.0000	23,690.0000	1.0772e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_32T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_33T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_34T	249.9000	93.0000	124.3000	17,643.0000	24,256.0000	1.0822e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_35T	258.0000	98.3000	133.9000	19,071.0000	26,678.0000	1.1040e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_36T	278.5000	107.3000	151.3000	21,354.0000	32,032.0000	1.1525e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_37T	305.7000	120.0000	168.8000	24,319.0000	39,533.0000	1.2197e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_38T	336.6000	136.5000	186.3000	28,201.0000	49,176.0000	1.2994e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_39T	371.2000	156.7000	203.8000	33,216.0000	61,602.0000	1.3918e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_40T	409.6000	180.6000	221.3000	39,586.0000	76,286.0000	1.4969e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_41T	409.6000	180.6000	221.3000	39,586.0000	75,624.0000	1.4969e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_42T	409.6000	180.6000	221.3000	39,586.0000	76,372.0000	1.4969e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_43T	371.1000	156.7000	203.7000	33,216.0000	61,585.0000	1.3916e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_44T	336.4000	136.5000	186.0000	28,200.0000	49,140.0000	1.2990e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_45T	305.3000	120.0000	168.4000	24,314.0000	39,479.0000	1.2190e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_46T	278.0000	107.3000	150.8000	21,342.0000	31,954.0000	1.1517e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_47T	257.7000	98.3000	133.1000	19,041.0000	26,624.0000	1.1036e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_48T	249.9000	93.0000	124.3000	17,643.0000	24,256.0000	1.0822e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_49T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_50T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_51T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_52T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_53T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_54T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_55T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_56T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_57T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_58T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes

INPUT : Sections

Name	Section Area (ft²)	Shear Area in yy (ft²)	Shear Area in zz (ft²)	Torsion Constant (ft^4)	Inertia Izz (ft^4)	Inertia Iyy (ft^4)	Plastic Modulus Zyy (ft³)	Plastic Modulus Zzz (ft³)	Perimeter (ft)	Material Time-Effect	Ductility	Residual Strength (%)	Assigned
Sect_59T	249.9000	93.0000	124.3000	17,643.0000	24,256.0000	1.0822e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_60T	257.7000	98.3000	133.1000	19,041.0000	26,624.0000	1.1036e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_61T	278.0000	107.3000	150.8000	21,342.0000	31,954.0000	1.1517e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_62T	305.3000	120.0000	168.4000	24,314.0000	39,479.0000	1.2190e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_63T	336.4000	136.5000	186.0000	28,200.0000	49,140.0000	1.2990e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_64T	371.1000	156.7000	203.7000	33,216.0000	61,585.0000	1.3916e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_65T	409.6000	180.6000	221.3000	39,586.0000	76,372.0000	1.4969e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_66T	409.6000	180.6000	221.3000	39,586.0000	75,624.0000	1.4969e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_67T	409.6000	180.6000	221.3000	39,586.0000	76,458.0000	1.4969e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_68T	371.0000	156.7000	203.5000	33,216.0000	61,567.0000	1.3914e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_69T	336.1000	136.5000	185.7000	28,199.0000	49,105.0000	1.2986e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_70T	305.0000	120.0000	167.9000	24,309.0000	39,424.0000	1.2184e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_71T	277.5000	107.3000	150.2000	21,330.0000	31,875.0000	1.1509e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_72T	257.4000	98.3000	132.4000	19,011.0000	26,573.0000	1.1032e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_73T	249.9000	93.0000	124.3000	17,643.0000	24,256.0000	1.0822e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_74T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_75T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_76T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_77T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_78T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_79T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_80T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_81T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_82T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_83T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_84T	249.9000	93.0000	124.3000	17,643.0000	24,256.0000	1.0822e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_85T	257.4000	98.3000	132.4000	19,011.0000	26,573.0000	1.1032e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_86T	277.5000	107.3000	150.2000	21,330.0000	31,875.0000	1.1509e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_87T	305.0000	120.0000	167.9000	24,309.0000	39,424.0000	1.2184e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_88T	336.1000	136.5000	185.7000	28,199.0000	49,105.0000	1.2986e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_89T	371.0000	156.7000	203.5000	33,216.0000	61,567.0000	1.3914e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_90T	409.6000	180.6000	221.3000	39,586.0000	76,458.0000	1.4969e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_91T	409.6000	180.6000	221.3000	39,586.0000	75,624.0000	1.4969e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_92T	409.6000	180.6000	221.3000	39,586.0000	76,397.0000	1.4969e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes

INPUT : Sections

Name	Section Area (ft²)	Shear Area in yy (ft²)	Shear Area in zz (ft²)	Torsion Constant (ft^4)	Inertia Izz (ft^4)	Inertia Iyy (ft^4)	Plastic Modulus Zyy (ft³)	Plastic Modulus Zzz (ft³)	Perimeter (ft)	Material Time-Effect	Ductility	Residual Strength (%)	Assigned
Sect_93T	371.1000	156.7000	203.7000	33,228.0000	61,587.0000	1.3922e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_94T	336.3000	136.5000	186.0000	28,210.0000	49,136.0000	1.2995e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_95T	305.3000	120.0000	168.3000	24,322.0000	39,467.0000	1.2194e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_96T	277.9000	107.3000	150.6000	21,346.0000	31,934.0000	1.1519e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_97T	258.1000	98.3000	133.3000	19,188.0000	26,679.0000	1.1137e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_98T	252.1000	93.0000	126.3000	18,311.0000	24,535.0000	1.1288e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_99T	252.2000	91.4000	127.9000	18,540.0000	24,181.0000	1.1609e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_100T	253.9000	91.4000	129.4000	19,071.0000	24,399.0000	1.1995e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_101T	255.6000	91.4000	131.0000	19,605.0000	24,617.0000	1.2388e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_102T	257.3000	91.4000	132.5000	20,144.0000	24,835.0000	1.2789e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_103T	259.0000	91.4000	134.1000	20,687.0000	25,053.0000	1.3198e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_104T	260.7000	91.4000	135.6000	21,233.0000	25,270.0000	1.3616e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_105T	260.7000	91.4000	135.7000	21,240.0000	25,273.0000	1.3621e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_106T	264.1000	91.4000	138.7000	22,331.0000	25,702.0000	1.4470e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_107T	265.8000	91.4000	140.3000	22,888.0000	25,920.0000	1.4912e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_108T	267.5000	91.4000	141.9000	23,450.0000	26,136.0000	1.5363e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_109T	270.7000	93.0000	143.4000	24,410.0000	26,961.0000	1.5903e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_110T	282.1000	98.3000	155.5000	27,071.0000	30,004.0000	1.6747e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_111T	308.7000	107.3000	179.3000	31,273.0000	36,498.0000	1.8125e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_112T	342.9000	120.0000	203.8000	36,651.0000	45,445.0000	1.9906e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_113T	378.8000	136.5000	226.3000	42,716.0000	56,488.0000	2.1388e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_114T	418.3000	156.7000	248.7000	50,466.0000	70,661.0000	2.3051e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_115T	461.6000	180.6000	271.2000	60,298.0000	87,602.0000	2.4922e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_116T	461.6000	180.6000	271.2000	60,298.0000	86,773.0000	2.4922e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_117T	461.6000	180.6000	271.2000	60,298.0000	87,598.0000	2.4922e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_118T	418.3000	156.7000	248.7000	50,466.0000	70,662.0000	2.3051e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_119T	378.8000	136.5000	226.3000	42,716.0000	56,490.0000	2.1388e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_120T	343.0000	120.0000	203.9000	36,692.0000	45,466.0000	1.9934e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_121T	311.0000	107.3000	181.5000	32,046.0000	36,835.0000	1.8688e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_122T	285.9000	98.3000	159.1000	28,382.0000	30,529.0000	1.7767e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_123T	275.9000	93.0000	148.2000	26,181.0000	27,630.0000	1.7361e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_124T	274.3000	91.4000	148.2000	25,756.0000	27,013.0000	1.7272e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_125T	274.3000	91.4000	148.2000	25,756.0000	27,013.0000	1.7272e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_126T	274.3000	91.4000	148.2000	25,756.0000	27,013.0000	1.7272e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes

INPUT : Sections

Name	Section Area (ft²)	Shear Area in yy (ft²)	Shear Area in zz (ft²)	Torsion Constant (ft^4)	Inertia Izz (ft^4)	Inertia Iyy (ft^4)	Plastic Modulus Zyy (ft³)	Plastic Modulus Zzz (ft³)	Perimeter (ft)	Material Time-Effect	Ductility	Residual Strength (%)	Assigned
Sect_127T	274.3000	91.4000	148.2000	25,756.0000	27,013.0000	1.7272e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_128T	274.3000	91.4000	148.2000	25,756.0000	27,013.0000	1.7272e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_129T	274.7000	91.4000	148.5000	25,884.0000	27,061.0000	1.7382e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_130T	275.5000	91.4000	149.2000	26,156.0000	27,163.0000	1.7614e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_131T	276.3000	91.4000	150.0000	26,429.0000	27,265.0000	1.7848e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_132T	277.1000	91.4000	150.7000	26,703.0000	27,367.0000	1.8084e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_133T	277.9000	91.4000	151.4000	26,977.0000	27,468.0000	1.8322e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_134T	280.3000	93.0000	152.2000	27,709.0000	28,198.0000	1.8663e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_135T	291.6000	98.3000	164.3000	30,368.0000	31,306.0000	1.9362e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_136T	318.6000	107.3000	188.6000	34,688.0000	37,944.0000	2.0665e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_137T	352.9000	120.0000	213.2000	40,171.0000	46,987.0000	2.2373e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_138T	391.8000	136.5000	238.6000	47,490.0000	58,633.0000	2.4495e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_139T	433.6000	156.7000	263.3000	56,504.0000	73,454.0000	2.6651e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_140T	480.0000	180.6000	288.8000	68,268.0000	90,575.0000	2.9242e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_141T	480.7000	180.6000	289.5000	68,568.0000	88,730.0000	2.9411e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_142T	481.3000	180.6000	290.1000	68,851.0000	90,644.0000	2.9569e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_143T	437.7000	156.7000	267.3000	58,163.0000	74,155.0000	2.7678e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_144T	397.6000	136.5000	244.2000	49,673.0000	59,526.0000	2.5974e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_145T	360.9000	120.0000	220.8000	43,029.0000	48,115.0000	2.4465e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_146T	327.6000	107.3000	197.1000	37,871.0000	39,142.0000	2.3160e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_147T	301.1000	98.3000	173.1000	33,760.0000	32,492.0000	2.2215e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_148T	290.6000	93.0000	161.6000	31,351.0000	29,408.0000	2.1933e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_149T	289.8000	91.4000	162.3000	31,124.0000	28,855.0000	2.2088e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_150T	290.6000	91.4000	163.1000	31,409.0000	28,946.0000	2.2358e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_151T	292.7000	92.7000	163.8000	32,115.0000	29,558.0000	2.2723e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_152T	298.4000	97.6000	164.5000	34,077.0000	31,700.0000	2.3365e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_153T	307.9000	106.3000	165.3000	37,436.0000	35,512.0000	2.4297e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_154T	321.1000	118.7000	166.0000	42,389.0000	41,199.0000	2.5529e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_155T	338.0000	134.8000	166.7000	49,198.0000	47,441.0000	2.7071e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_156T	345.9000	142.4000	167.0000	52,562.0000	49,703.0000	2.7786e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes

INPUT : Section Stress Points

Name	Point 1 Y (ft)	Point 1 Z (ft)	Point 2 Y (ft)	Point 2 Z (ft)	Point 3 Y (ft)	Point 3 Z (ft)	Point 4 Y (ft)	Point 4 Z (ft)	Point 5 Y (ft)	Point 5 Z (ft)	Point 6 Y (ft)	Point 6 Z (ft)
Typ Pier Column	6.0000	6.0000	6.0000	-6.0000	-6.0000	-6.0000	-6.0000	6.0000	(none)	(none)	(none)	(none)
Typ Pier Cap	7.5000	6.0000	7.5000	-6.0000	-7.5000	-6.0000	-7.5000	6.0000	(none)	(none)	(none)	(none)
P1_Column	5.0000	5.0000	5.0000	-5.0000	-5.0000	-5.0000	-5.0000	5.0000	(none)	(none)	(none)	(none)
P2_Column	5.0000	5.0000	5.0000	-5.0000	-5.0000	-5.0000	-5.0000	5.0000	(none)	(none)	(none)	(none)
P7_Column	5.5000	5.5000	5.5000	-5.5000	-5.5000	-5.5000	-5.5000	5.5000	(none)	(none)	(none)	(none)
P8_Column	5.5000	5.5000	5.5000	-5.5000	-5.5000	-5.5000	-5.5000	5.5000	(none)	(none)	(none)	(none)
Abut Pier Cap	7.5000	6.0000	7.5000	-6.0000	-7.5000	-6.0000	-7.5000	6.0000	(none)	(none)	(none)	(none)
Rigid Link	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Sect_1T	-15.7800	-43.0800	13.2200	-64.3300	13.2200	64.3300	-15.7800	43.0800	13.2200	0.0000	(none)	(none)
Sect_2T	-15.5300	-42.8700	12.6800	-64.1200	12.6800	64.1200	-15.5300	42.8700	12.6800	0.0000	(none)	(none)
Sect_3T	-14.8900	-42.2900	11.4100	-63.5400	11.4100	63.5400	-14.8900	42.2900	11.4100	0.0000	(none)	(none)
Sect_4T	-14.3300	-41.7100	10.4800	-62.9600	10.4800	62.9600	-14.3300	41.7100	10.4800	0.0000	(none)	(none)
Sect_5T	-13.9500	-41.1300	9.8200	-62.3800	9.8200	62.3800	-13.9500	41.1300	9.8200	0.0000	(none)	(none)
Sect_6T	-13.7400	-40.5400	9.4200	-61.7900	9.4200	61.7900	-13.7400	40.5400	9.4200	0.0000	(none)	(none)
Sect_7T	-13.7000	-39.9600	9.3000	-61.2100	9.3000	61.2100	-13.7000	39.9600	9.3000	0.0000	(none)	(none)
Sect_8T	-13.7100	-39.3800	9.2900	-60.6300	9.2900	60.6300	-13.7100	39.3800	9.2900	0.0000	(none)	(none)
Sect_9T	-13.7800	-39.1000	9.4000	-60.3500	9.4000	60.3500	-13.7800	39.1000	9.4000	0.0000	(none)	(none)
Sect_10T	-13.7100	-38.1900	10.1000	-59.4400	10.1000	59.4400	-13.7100	38.1900	10.1000	0.0000	(none)	(none)
Sect_11T	-13.3600	-37.5700	11.5100	-58.8200	11.5100	58.8200	-13.3600	37.5700	11.5100	0.0000	(none)	(none)
Sect_12T	-13.1900	-36.9400	13.1800	-58.1900	13.1800	58.1900	-13.1900	36.9400	13.1800	0.0000	(none)	(none)
Sect_13T	-13.3000	-36.2900	15.0100	-57.5400	15.0100	57.5400	-13.3000	36.2900	15.0100	0.0000	(none)	(none)
Sect_14T	-13.6600	-35.6000	17.0200	-56.8500	17.0200	56.8500	-13.6600	35.6000	17.0200	0.0000	(none)	(none)
Sect_15T	-14.2000	-34.8900	19.3000	-56.1400	19.3000	56.1400	-14.2000	34.8900	19.3000	0.0000	(none)	(none)
Sect_16T	-14.2200	-34.6300	19.2800	-55.8800	19.2800	55.8800	-14.2200	34.6300	19.2800	0.0000	(none)	(none)
Sect_17T	-14.2300	-34.3700	19.2700	-55.6200	19.2700	55.6200	-14.2300	34.3700	19.2700	0.0000	(none)	(none)
Sect_18T	-13.7900	-33.6400	16.8900	-54.8900	16.8900	54.8900	-13.7900	33.6400	16.8900	0.0000	(none)	(none)
Sect_19T	-13.5100	-32.9100	14.8000	-54.1600	14.8000	54.1600	-13.5100	32.9100	14.8000	0.0000	(none)	(none)
Sect_20T	-13.4600	-32.1900	12.9100	-53.4400	12.9100	53.4400	-13.4600	32.1900	12.9100	0.0000	(none)	(none)
Sect_21T	-13.6700	-31.4700	11.2000	-52.7200	11.2000	52.7200	-13.6700	31.4700	11.2000	0.0000	(none)	(none)
Sect_22T	-14.0100	-30.7400	9.8000	-51.9900	9.8000	51.9900	-14.0100	30.7400	9.8000	0.0000	(none)	(none)
Sect_23T	-14.0700	-30.0100	9.1100	-51.2600	9.1100	51.2600	-14.0700	30.0100	9.1100	0.0000	(none)	(none)
Sect_24T	-14.0400	-29.2900	8.9600	-50.5400	8.9600	50.5400	-14.0400	29.2900	8.9600	0.0000	(none)	(none)

INPUT : Section Stress Points

Name	Point 1 Y (ft)	Point 1 Z (ft)	Point 2 Y (ft)	Point 2 Z (ft)	Point 3 Y (ft)	Point 3 Z (ft)	Point 4 Y (ft)	Point 4 Z (ft)	Point 5 Y (ft)	Point 5 Z (ft)	Point 6 Y (ft)	Point 6 Z (ft)
Sect_25T	-14.0600	-28.5600	8.9400	-49.8100	8.9400	49.8100	-14.0600	28.5600	8.9400	0.0000	(none)	(none)
Sect_26T	-14.0900	-27.8300	8.9100	-49.0800	8.9100	49.0800	-14.0900	27.8300	8.9100	0.0000	(none)	(none)
Sect_27T	-14.1200	-27.1100	8.8800	-48.3600	8.8800	48.3600	-14.1200	27.1100	8.8800	0.0000	(none)	(none)
Sect_28T	-14.1500	-26.3800	8.8500	-47.6300	8.8500	47.6300	-14.1500	26.3800	8.8500	0.0000	(none)	(none)
Sect_29T	-14.1800	-25.6600	8.8200	-46.9100	8.8200	46.9100	-14.1800	25.6600	8.8200	0.0000	(none)	(none)
Sect_30T	-14.2100	-24.9300	8.7900	-46.1800	8.7900	46.1800	-14.2100	24.9300	8.7900	0.0000	(none)	(none)
Sect_31T	-14.2400	-24.2600	8.7600	-45.5100	8.7600	45.5100	-14.2400	24.2600	8.7600	0.0000	(none)	(none)
Sect_32T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_33T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_34T	-14.3000	-24.2500	8.8800	-45.5000	8.8800	45.5000	-14.3000	24.2500	8.8800	0.0000	(none)	(none)
Sect_35T	-14.3600	-24.2500	9.4500	-45.5000	9.4500	45.5000	-14.3600	24.2500	9.4500	0.0000	(none)	(none)
Sect_36T	-14.1600	-24.2500	10.7100	-45.5000	10.7100	45.5000	-14.1600	24.2500	10.7100	0.0000	(none)	(none)
Sect_37T	-14.0700	-24.2500	12.3000	-45.5000	12.3000	45.5000	-14.0700	24.2500	12.3000	0.0000	(none)	(none)
Sect_38T	-14.2200	-24.2500	14.0900	-45.5000	14.0900	45.5000	-14.2200	24.2500	14.0900	0.0000	(none)	(none)
Sect_39T	-14.6200	-24.2500	16.0600	-45.5000	16.0600	45.5000	-14.6200	24.2500	16.0600	0.0000	(none)	(none)
Sect_40T	-15.0700	-24.2500	18.4300	-45.5000	18.4300	45.5000	-15.0700	24.2500	18.4300	0.0000	(none)	(none)
Sect_41T	-14.9800	-24.2500	18.5200	-45.5000	18.5200	45.5000	-14.9800	24.2500	18.5200	0.0000	(none)	(none)
Sect_42T	-15.0800	-24.2500	18.4200	-45.5000	18.4200	45.5000	-15.0800	24.2500	18.4200	0.0000	(none)	(none)
Sect_43T	-14.6300	-24.2500	16.0600	-45.5000	16.0600	45.5000	-14.6300	24.2500	16.0600	0.0000	(none)	(none)
Sect_44T	-14.2300	-24.2500	14.0800	-45.5000	14.0800	45.5000	-14.2300	24.2500	14.0800	0.0000	(none)	(none)
Sect_45T	-14.0800	-24.2500	12.2900	-45.5000	12.2900	45.5000	-14.0800	24.2500	12.2900	0.0000	(none)	(none)
Sect_46T	-14.1800	-24.2500	10.6900	-45.5000	10.6900	45.5000	-14.1800	24.2500	10.6900	0.0000	(none)	(none)
Sect_47T	-14.3700	-24.2500	9.4400	-45.5000	9.4400	45.5000	-14.3700	24.2500	9.4400	0.0000	(none)	(none)
Sect_48T	-14.3000	-24.2500	8.8800	-45.5000	8.8800	45.5000	-14.3000	24.2500	8.8800	0.0000	(none)	(none)
Sect_49T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_50T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_51T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_52T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_53T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_54T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_55T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_56T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_57T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_58T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)

INPUT : Section Stress Points

Name	Point 1 Y (ft)	Point 1 Z (ft)	Point 2 Y (ft)	Point 2 Z (ft)	Point 3 Y (ft)	Point 3 Z (ft)	Point 4 Y (ft)	Point 4 Z (ft)	Point 5 Y (ft)	Point 5 Z (ft)	Point 6 Y (ft)	Point 6 Z (ft)
Sect_59T	-14.3000	-24.2500	8.8800	-45.5000	8.8800	45.5000	-14.3000	24.2500	8.8800	0.0000	(none)	(none)
Sect_60T	-14.3700	-24.2500	9.4400	-45.5000	9.4400	45.5000	-14.3700	24.2500	9.4400	0.0000	(none)	(none)
Sect_61T	-14.1800	-24.2500	10.6900	-45.5000	10.6900	45.5000	-14.1800	24.2500	10.6900	0.0000	(none)	(none)
Sect_62T	-14.0800	-24.2500	12.2900	-45.5000	12.2900	45.5000	-14.0800	24.2500	12.2900	0.0000	(none)	(none)
Sect_63T	-14.2300	-24.2500	14.0800	-45.5000	14.0800	45.5000	-14.2300	24.2500	14.0800	0.0000	(none)	(none)
Sect_64T	-14.6300	-24.2500	16.0600	-45.5000	16.0600	45.5000	-14.6300	24.2500	16.0600	0.0000	(none)	(none)
Sect_65T	-15.0800	-24.2500	18.4200	-45.5000	18.4200	45.5000	-15.0800	24.2500	18.4200	0.0000	(none)	(none)
Sect_66T	-14.9800	-24.2500	18.5200	-45.5000	18.5200	45.5000	-14.9800	24.2500	18.5200	0.0000	(none)	(none)
Sect_67T	-15.0900	-24.2500	18.4100	-45.5000	18.4100	45.5000	-15.0900	24.2500	18.4100	0.0000	(none)	(none)
Sect_68T	-14.6300	-24.2500	16.0600	-45.5000	16.0600	45.5000	-14.6300	24.2500	16.0600	0.0000	(none)	(none)
Sect_69T	-14.2400	-24.2500	14.0700	-45.5000	14.0700	45.5000	-14.2400	24.2500	14.0700	0.0000	(none)	(none)
Sect_70T	-14.1000	-24.2500	12.2800	-45.5000	12.2800	45.5000	-14.1000	24.2500	12.2800	0.0000	(none)	(none)
Sect_71T	-14.2000	-24.2500	10.6700	-45.5000	10.6700	45.5000	-14.2000	24.2500	10.6700	0.0000	(none)	(none)
Sect_72T	-14.3900	-24.2500	9.4200	-45.5000	9.4200	45.5000	-14.3900	24.2500	9.4200	0.0000	(none)	(none)
Sect_73T	-14.3000	-24.2500	8.8800	-45.5000	8.8800	45.5000	-14.3000	24.2500	8.8800	0.0000	(none)	(none)
Sect_74T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_75T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_76T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_77T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_78T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_79T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_80T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_81T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_82T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_83T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_84T	-14.3000	-24.2500	8.8800	-45.5000	8.8800	45.5000	-14.3000	24.2500	8.8800	0.0000	(none)	(none)
Sect_85T	-14.3900	-24.2500	9.4200	-45.5000	9.4200	45.5000	-14.3900	24.2500	9.4200	0.0000	(none)	(none)
Sect_86T	-14.2000	-24.2500	10.6700	-45.5000	10.6700	45.5000	-14.2000	24.2500	10.6700	0.0000	(none)	(none)
Sect_87T	-14.1000	-24.2500	12.2800	-45.5000	12.2800	45.5000	-14.1000	24.2500	12.2800	0.0000	(none)	(none)
Sect_88T	-14.2400	-24.2500	14.0700	-45.5000	14.0700	45.5000	-14.2400	24.2500	14.0700	0.0000	(none)	(none)
Sect_89T	-14.6300	-24.2500	16.0600	-45.5000	16.0600	45.5000	-14.6300	24.2500	16.0600	0.0000	(none)	(none)
Sect_90T	-15.0900	-24.2500	18.4100	-45.5000	18.4100	45.5000	-15.0900	24.2500	18.4100	0.0000	(none)	(none)
Sect_91T	-14.9800	-24.2500	18.5200	-45.5000	18.5200	45.5000	-14.9800	24.2500	18.5200	0.0000	(none)	(none)
Sect_92T	-15.0800	-24.2500	18.4200	-45.5000	18.4200	45.5000	-15.0800	24.2500	18.4200	0.0000	(none)	(none)

INPUT : Section Stress Points

Name	Point 1 Y (ft)	Point 1 Z (ft)	Point 2 Y (ft)	Point 2 Z (ft)	Point 3 Y (ft)	Point 3 Z (ft)	Point 4 Y (ft)	Point 4 Z (ft)	Point 5 Y (ft)	Point 5 Z (ft)	Point 6 Y (ft)	Point 6 Z (ft)
Sect_93T	-14.6300	-24.2600	16.0600	-45.5100	16.0600	45.5100	-14.6300	24.2600	16.0600	0.0000	(none)	(none)
Sect_94T	-14.2400	-24.2600	14.0700	-45.5100	14.0700	45.5100	-14.2400	24.2600	14.0700	0.0000	(none)	(none)
Sect_95T	-14.0900	-24.2600	12.2900	-45.5100	12.2900	45.5100	-14.0900	24.2600	12.2900	0.0000	(none)	(none)
Sect_96T	-14.1900	-24.2600	10.6900	-45.5100	10.6900	45.5100	-14.1900	24.2600	10.6900	0.0000	(none)	(none)
Sect_97T	-14.3700	-24.3700	9.4400	-45.6200	9.4400	45.6200	-14.3700	24.3700	9.4400	0.0000	(none)	(none)
Sect_98T	-14.2800	-24.7900	8.9100	-46.0400	8.9100	46.0400	-14.2800	24.7900	8.9100	0.0000	(none)	(none)
Sect_99T	-14.2000	-25.2100	8.8000	-46.4600	8.8000	46.4600	-14.2000	25.2100	8.8000	0.0000	(none)	(none)
Sect_100T	-14.1800	-25.6400	8.8200	-46.8900	8.8200	46.8900	-14.1800	25.6400	8.8200	0.0000	(none)	(none)
Sect_101T	-14.1600	-26.0600	8.8400	-47.3100	8.8400	47.3100	-14.1600	26.0600	8.8400	0.0000	(none)	(none)
Sect_102T	-14.1500	-26.4900	8.8500	-47.7400	8.8500	47.7400	-14.1500	26.4900	8.8500	0.0000	(none)	(none)
Sect_103T	-14.1300	-26.9100	8.8700	-48.1600	8.8700	48.1600	-14.1300	26.9100	8.8700	0.0000	(none)	(none)
Sect_104T	-14.1100	-27.3400	8.8900	-48.5900	8.8900	48.5900	-14.1100	27.3400	8.8900	0.0000	(none)	(none)
Sect_105T	-14.1100	-27.3400	8.8900	-48.5900	8.8900	48.5900	-14.1100	27.3400	8.8900	0.0000	(none)	(none)
Sect_106T	-14.0800	-28.1800	8.9200	-49.4300	8.9200	49.4300	-14.0800	28.1800	8.9200	0.0000	(none)	(none)
Sect_107T	-14.0600	-28.6100	8.9400	-49.8600	8.9400	49.8600	-14.0600	28.6100	8.9400	0.0000	(none)	(none)
Sect_108T	-14.0500	-29.0300	8.9500	-50.2800	8.9500	50.2800	-14.0500	29.0300	8.9500	0.0000	(none)	(none)
Sect_109T	-14.0900	-29.4600	9.0900	-50.7100	9.0900	50.7100	-14.0900	29.4600	9.0900	0.0000	(none)	(none)
Sect_110T	-14.0800	-29.8800	9.7300	-51.1300	9.7300	51.1300	-14.0800	29.8800	9.7300	0.0000	(none)	(none)
Sect_111T	-13.7700	-30.3100	11.1000	-51.5600	11.1000	51.5600	-13.7700	30.3100	11.1000	0.0000	(none)	(none)
Sect_112T	-13.5800	-30.7300	12.7900	-51.9800	12.7900	51.9800	-13.5800	30.7300	12.7900	0.0000	(none)	(none)
Sect_113T	-13.6800	-30.7500	14.6300	-52.0000	14.6300	52.0000	-13.6800	30.7500	14.6300	0.0000	(none)	(none)
Sect_114T	-14.0200	-30.7500	16.6700	-52.0000	16.6700	52.0000	-14.0200	30.7500	16.6700	0.0000	(none)	(none)
Sect_115T	-14.4300	-30.7500	19.0700	-52.0000	19.0700	52.0000	-14.4300	30.7500	19.0700	0.0000	(none)	(none)
Sect_116T	-14.3300	-30.7500	19.1700	-52.0000	19.1700	52.0000	-14.3300	30.7500	19.1700	0.0000	(none)	(none)
Sect_117T	-14.4300	-30.7500	19.0700	-52.0000	19.0700	52.0000	-14.4300	30.7500	19.0700	0.0000	(none)	(none)
Sect_118T	-14.0200	-30.7500	16.6700	-52.0000	16.6700	52.0000	-14.0200	30.7500	16.6700	0.0000	(none)	(none)
Sect_119T	-13.6800	-30.7500	14.6300	-52.0000	14.6300	52.0000	-13.6800	30.7500	14.6300	0.0000	(none)	(none)
Sect_120T	-13.5800	-30.7500	12.7900	-52.0000	12.7900	52.0000	-13.5800	30.7500	12.7900	0.0000	(none)	(none)
Sect_121T	-13.7500	-30.7500	11.1300	-52.0000	11.1300	52.0000	-13.7500	30.7500	11.1300	0.0000	(none)	(none)
Sect_122T	-14.0400	-30.7500	9.7700	-52.0000	9.7700	52.0000	-14.0400	30.7500	9.7700	0.0000	(none)	(none)
Sect_123T	-14.0500	-30.7500	9.1400	-52.0000	9.1400	52.0000	-14.0500	30.7500	9.1400	0.0000	(none)	(none)
Sect_124T	-13.9800	-30.7500	9.0200	-52.0000	9.0200	52.0000	-13.9800	30.7500	9.0200	0.0000	(none)	(none)
Sect_125T	-13.9800	-30.7500	9.0200	-52.0000	9.0200	52.0000	-13.9800	30.7500	9.0200	0.0000	(none)	(none)
Sect_126T	-13.9800	-30.7500	9.0200	-52.0000	9.0200	52.0000	-13.9800	30.7500	9.0200	0.0000	(none)	(none)

INPUT : Section Stress Points

Name	Point 1 Y (ft)	Point 1 Z (ft)	Point 2 Y (ft)	Point 2 Z (ft)	Point 3 Y (ft)	Point 3 Z (ft)	Point 4 Y (ft)	Point 4 Z (ft)	Point 5 Y (ft)	Point 5 Z (ft)	Point 6 Y (ft)	Point 6 Z (ft)
Sect_127T	-13.9800	-30.7500	9.0200	-52.0000	9.0200	52.0000	-13.9800	30.7500	9.0200	0.0000	(none)	(none)
Sect_128T	-13.9800	-30.7500	9.0200	-52.0000	9.0200	52.0000	-13.9800	30.7500	9.0200	0.0000	(none)	(none)
Sect_129T	-13.9800	-30.8500	9.0200	-52.1000	9.0200	52.1000	-13.9800	30.8500	9.0200	0.0000	(none)	(none)
Sect_130T	-13.9700	-31.0500	9.0300	-52.3000	9.0300	52.3000	-13.9700	31.0500	9.0300	0.0000	(none)	(none)
Sect_131T	-13.9600	-31.2500	9.0400	-52.5000	9.0400	52.5000	-13.9600	31.2500	9.0400	0.0000	(none)	(none)
Sect_132T	-13.9600	-31.4500	9.0400	-52.7000	9.0400	52.7000	-13.9600	31.4500	9.0400	0.0000	(none)	(none)
Sect_133T	-13.9500	-31.6500	9.0500	-52.9000	9.0500	52.9000	-13.9500	31.6500	9.0500	0.0000	(none)	(none)
Sect_134T	-14.0100	-31.8500	9.1800	-53.1000	9.1800	53.1000	-14.0100	31.8500	9.1800	0.0000	(none)	(none)
Sect_135T	-13.9800	-32.0500	9.8300	-53.3000	9.8300	53.3000	-13.9800	32.0500	9.8300	0.0000	(none)	(none)
Sect_136T	-13.6600	-32.2500	11.2100	-53.5000	11.2100	53.5000	-13.6600	32.2500	11.2100	0.0000	(none)	(none)
Sect_137T	-13.4700	-32.4500	12.9000	-53.7000	12.9000	53.7000	-13.4700	32.4500	12.9000	0.0000	(none)	(none)
Sect_138T	-13.5400	-32.7300	14.7700	-53.9800	14.7700	53.9800	-13.5400	32.7300	14.7700	0.0000	(none)	(none)
Sect_139T	-13.8600	-32.8500	16.8300	-54.1000	16.8300	54.1000	-13.8600	32.8500	16.8300	0.0000	(none)	(none)
Sect_140T	-14.2800	-33.0500	19.2200	-54.3000	19.2200	54.3000	-14.2800	33.0500	19.2200	0.0000	(none)	(none)
Sect_141T	-14.2300	-33.1400	19.2700	-54.3900	19.2700	54.3900	-14.2300	33.1400	19.2700	0.0000	(none)	(none)
Sect_142T	-14.2700	-33.2200	19.2300	-54.4700	19.2300	54.4700	-14.2700	33.2200	19.2300	0.0000	(none)	(none)
Sect_143T	-13.8200	-33.4200	16.8700	-54.6700	16.8700	54.6700	-13.8200	33.4200	16.8700	0.0000	(none)	(none)
Sect_144T	-13.4800	-33.6200	14.8300	-54.8700	14.8300	54.8700	-13.4800	33.6200	14.8300	0.0000	(none)	(none)
Sect_145T	-13.3900	-33.8200	12.9800	-55.0700	12.9800	55.0700	-13.3900	33.8200	12.9800	0.0000	(none)	(none)
Sect_146T	-13.5600	-34.0200	11.3100	-55.2700	11.3100	55.2700	-13.5600	34.0200	11.3100	0.0000	(none)	(none)
Sect_147T	-13.9000	-34.2200	9.9100	-55.4700	9.9100	55.4700	-13.9000	34.2200	9.9100	0.0000	(none)	(none)
Sect_148T	-13.9300	-34.4200	9.2600	-55.6700	9.2600	55.6700	-13.9300	34.4200	9.2600	0.0000	(none)	(none)
Sect_149T	-13.8600	-34.6200	9.1400	-55.8700	9.1400	55.8700	-13.8600	34.6200	9.1400	0.0000	(none)	(none)
Sect_150T	-13.8500	-34.8200	9.1500	-56.0700	9.1500	56.0700	-13.8500	34.8200	9.1500	0.0000	(none)	(none)
Sect_151T	-13.9000	-35.0200	9.2500	-56.2700	9.2500	56.2700	-13.9000	35.0200	9.2500	0.0000	(none)	(none)
Sect_152T	-14.1000	-35.2200	9.6300	-56.4700	9.6300	56.4700	-14.1000	35.2200	9.6300	0.0000	(none)	(none)
Sect_153T	-14.4700	-35.4200	10.2800	-56.6700	10.2800	56.6700	-14.4700	35.4200	10.2800	0.0000	(none)	(none)
Sect_154T	-15.0100	-35.6200	11.2000	-56.8700	11.2000	56.8700	-15.0100	35.6200	11.2000	0.0000	(none)	(none)
Sect_155T	-15.6200	-35.8200	12.4900	-57.0700	12.4900	57.0700	-15.6200	35.8200	12.4900	0.0000	(none)	(none)
Sect_156T	-15.9000	-35.9000	13.1000	-57.1500	13.1000	57.1500	-15.9000	35.9000	13.1000	0.0000	(none)	(none)

INPUT : Section Dimensions

Name	Shape	Dimension D1	Dimension D2	Dimension D3	Dimension D4	Dimension D5	Dimension D6
Typ Pier Column	Rectangle	12.0000	12.0000				
Typ Pier Cap	Rectangle	15.0000	12.0000				
P1_Column	Rectangle	10.0000	10.0000				
P2_Column	Rectangle	10.0000	10.0000				
P7_Column	Rectangle	11.0000	11.0000				
P8_Column	Rectangle	11.0000	11.0000				
Abut Pier Cap	Rectangle	15.0000	12.0000				
Rigid Link	Unspecified						
Sect_1T	Unspecified						
Sect_2T	Unspecified						
Sect_3T	Unspecified						
Sect_4T	Unspecified						
Sect_5T	Unspecified						
Sect_6T	Unspecified						
Sect_7T	Unspecified						
Sect_8T	Unspecified						
Sect_9T	Unspecified						
Sect_10T	Unspecified						
Sect_11T	Unspecified						
Sect_12T	Unspecified						
Sect_13T	Unspecified						
Sect_14T	Unspecified						
Sect_15T	Unspecified						
Sect_16T	Unspecified						
Sect_17T	Unspecified						
Sect_18T	Unspecified						
Sect_19T	Unspecified						
Sect_20T	Unspecified						
Sect_21T	Unspecified						
Sect_22T	Unspecified						
Sect_23T	Unspecified						
Sect_24T	Unspecified						

INPUT : Section Dimensions

Name	Shape	Dimension D1	Dimension D2	Dimension D3	Dimension D4	Dimension D5	Dimension D6
Sect_25T	Unspecified						
Sect_26T	Unspecified						
Sect_27T	Unspecified						
Sect_28T	Unspecified						
Sect_29T	Unspecified						
Sect_30T	Unspecified						
Sect_31T	Unspecified						
Sect_32T	Unspecified						
Sect_33T	Unspecified						
Sect_34T	Unspecified						
Sect_35T	Unspecified						
Sect_36T	Unspecified						
Sect_37T	Unspecified						
Sect_38T	Unspecified						
Sect_39T	Unspecified						
Sect_40T	Unspecified						
Sect_41T	Unspecified						
Sect_42T	Unspecified						
Sect_43T	Unspecified						
Sect_44T	Unspecified						
Sect_45T	Unspecified						
Sect_46T	Unspecified						
Sect_47T	Unspecified						
Sect_48T	Unspecified						
Sect_49T	Unspecified						
Sect_50T	Unspecified						
Sect_51T	Unspecified						
Sect_52T	Unspecified						
Sect_53T	Unspecified						
Sect_54T	Unspecified						
Sect_55T	Unspecified						
Sect_56T	Unspecified						
Sect_57T	Unspecified						
Sect_58T	Unspecified						

INPUT : Section Dimensions

Name	Shape	Dimension D1	Dimension D2	Dimension D3	Dimension D4	Dimension D5	Dimension D6
Sect_59T	Unspecified						
Sect_60T	Unspecified						
Sect_61T	Unspecified						
Sect_62T	Unspecified						
Sect_63T	Unspecified						
Sect_64T	Unspecified						
Sect_65T	Unspecified						
Sect_66T	Unspecified						
Sect_67T	Unspecified						
Sect_68T	Unspecified						
Sect_69T	Unspecified						
Sect_70T	Unspecified						
Sect_71T	Unspecified						
Sect_72T	Unspecified						
Sect_73T	Unspecified						
Sect_74T	Unspecified						
Sect_75T	Unspecified						
Sect_76T	Unspecified						
Sect_77T	Unspecified						
Sect_78T	Unspecified						
Sect_79T	Unspecified						
Sect_80T	Unspecified						
Sect_81T	Unspecified						
Sect_82T	Unspecified						
Sect_83T	Unspecified						
Sect_84T	Unspecified						
Sect_85T	Unspecified						
Sect_86T	Unspecified						
Sect_87T	Unspecified						
Sect_88T	Unspecified						
Sect_89T	Unspecified						
Sect_90T	Unspecified						
Sect_91T	Unspecified						
Sect_92T	Unspecified						

INPUT : Section Dimensions

Name	Shape	Dimension D1	Dimension D2	Dimension D3	Dimension D4	Dimension D5	Dimension D6
Sect_93T	Unspecified						
Sect_94T	Unspecified						
Sect_95T	Unspecified						
Sect_96T	Unspecified						
Sect_97T	Unspecified						
Sect_98T	Unspecified						
Sect_99T	Unspecified						
Sect_100T	Unspecified						
Sect_101T	Unspecified						
Sect_102T	Unspecified						
Sect_103T	Unspecified						
Sect_104T	Unspecified						
Sect_105T	Unspecified						
Sect_106T	Unspecified						
Sect_107T	Unspecified						
Sect_108T	Unspecified						
Sect_109T	Unspecified						
Sect_110T	Unspecified						
Sect_111T	Unspecified						
Sect_112T	Unspecified						
Sect_113T	Unspecified						
Sect_114T	Unspecified						
Sect_115T	Unspecified						
Sect_116T	Unspecified						
Sect_117T	Unspecified						
Sect_118T	Unspecified						
Sect_119T	Unspecified						
Sect_120T	Unspecified						
Sect_121T	Unspecified						
Sect_122T	Unspecified						
Sect_123T	Unspecified						
Sect_124T	Unspecified						
Sect_125T	Unspecified						
Sect_126T	Unspecified						

INPUT : Section Dimensions

Name	Shape	Dimension D1	Dimension D2	Dimension D3	Dimension D4	Dimension D5	Dimension D6
Sect_127T	Unspecified						
Sect_128T	Unspecified						
Sect_129T	Unspecified						
Sect_130T	Unspecified						
Sect_131T	Unspecified						
Sect_132T	Unspecified						
Sect_133T	Unspecified						
Sect_134T	Unspecified						
Sect_135T	Unspecified						
Sect_136T	Unspecified						
Sect_137T	Unspecified						
Sect_138T	Unspecified						
Sect_139T	Unspecified						
Sect_140T	Unspecified						
Sect_141T	Unspecified						
Sect_142T	Unspecified						
Sect_143T	Unspecified						
Sect_144T	Unspecified						
Sect_145T	Unspecified						
Sect_146T	Unspecified						
Sect_147T	Unspecified						
Sect_148T	Unspecified						
Sect_149T	Unspecified						
Sect_150T	Unspecified						
Sect_151T	Unspecified						
Sect_152T	Unspecified						
Sect_153T	Unspecified						
Sect_154T	Unspecified						
Sect_155T	Unspecified						
Sect_156T	Unspecified						

INPUT : Joints

ID	Station (ft)	Transverse Offset (ft)	Elevation (ft)	Translation DOF	Rotation DOF	Displacement UCS	Assignment
1	15,889.5000	14.2200	0.0000	all free	all free	Global	Yes
2	15,896.4100	14.1200	0.0000	all free	all free	Global	Yes
3	15,915.8920	13.8100	0.0000	all free	all free	Global	Yes
4	15,935.3750	13.4400	0.0000	all free	all free	Global	Yes
5	15,954.8570	13.0300	0.0000	all free	all free	Global	Yes
6	15,974.3390	12.5500	0.0000	all free	all free	Global	Yes
7	15,993.8220	12.0300	0.0000	all free	all free	Global	Yes
8	16,013.3040	11.4600	0.0000	all free	all free	Global	Yes
9	16,032.7860	10.8400	0.0000	all free	all free	Global	Yes
10	16,052.2680	10.1700	0.0000	all free	all free	Global	Yes
11	16,071.7510	9.4400	0.0000	all free	all free	Global	Yes
12	16,091.2330	8.6700	0.0000	all free	all free	Global	Yes
13	16,110.7150	7.8500	0.0000	all free	all free	Global	Yes
14	16,130.1980	6.9700	0.0000	all free	all free	Global	Yes
15	16,149.6800	6.0500	0.0000	all free	all free	Global	Yes
16	16,156.6000	5.7100	0.0000	all free	all free	Global	Yes
17	16,163.4900	5.3900	0.0000	all free	all free	Global	Yes
18	16,183.0000	4.4900	0.0000	all free	all free	Global	Yes
19	16,202.5110	3.6300	0.0000	all free	all free	Global	Yes
20	16,222.0210	2.8000	0.0000	all free	all free	Global	Yes
21	16,241.5320	2.0100	0.0000	all free	all free	Global	Yes
22	16,261.0420	1.2500	0.0000	all free	all free	Global	Yes
23	16,280.5530	0.5200	0.0000	all free	all free	Global	Yes
24	16,300.0630	-0.1700	0.0000	all free	all free	Global	Yes
25	16,319.5730	-0.8200	0.0000	all free	all free	Global	Yes
26	16,339.0840	-1.4400	0.0000	all free	all free	Global	Yes
27	16,358.5940	-2.0300	0.0000	all free	all free	Global	Yes
28	16,378.1050	-2.5600	0.0000	all free	all free	Global	Yes
29	16,397.6150	-3.0200	0.0000	all free	all free	Global	Yes
30	16,417.1260	-3.3800	0.0000	all free	all free	Global	Yes
31	16,436.6360	-3.6600	0.0000	all free	all free	Global	Yes
32	16,456.1470	-3.8600	0.0000	all free	all free	Global	Yes

INPUT : Joints

ID	Station (ft)	Transverse Offset (ft)	Elevation (ft)	Translation DOF	Rotation DOF	Displacement UCS	Assignment
33	16,475.6570	-3.9700	0.0000	all free	all free	Global	Yes
34	16,495.1670	-4.0000	0.0000	all free	all free	Global	Yes
35	16,514.6780	-4.0000	-0.0002	all free	all free	Global	Yes
36	16,534.1880	-4.0000	-0.0002	all free	all free	Global	Yes
37	16,553.6990	-4.0000	-0.0001	all free	all free	Global	Yes
38	16,573.2090	-4.0000	-0.0001	all free	all free	Global	Yes
39	16,592.7200	-4.0000	-0.0001	all free	all free	Global	Yes
40	16,612.2300	-4.0000	-0.0001	all free	all free	Global	Yes
41	16,619.1300	-4.0000	-0.0001	all free	all free	Global	Yes
42	16,626.9400	-4.0000	-0.0001	all free	all free	Global	Yes
43	16,646.4570	-4.0000	0.0000	all free	all free	Global	Yes
44	16,665.9750	-4.0000	0.0000	all free	all free	Global	Yes
45	16,685.4920	-4.0000	0.0000	all free	all free	Global	Yes
46	16,705.0100	-4.0000	0.0000	all free	all free	Global	Yes
47	16,724.5270	-4.0000	0.0000	all free	all free	Global	Yes
48	16,744.0440	-4.0000	0.0000	all free	all free	Global	Yes
49	16,763.5620	-4.0000	0.0000	all free	all free	Global	Yes
50	16,783.0790	-4.0000	0.0000	all free	all free	Global	Yes
51	16,802.5970	-4.0000	0.0000	all free	all free	Global	Yes
52	16,822.1140	-4.0000	0.0000	all free	all free	Global	Yes
53	16,841.6310	-4.0000	0.0000	all free	all free	Global	Yes
54	16,861.1490	-4.0000	0.0000	all free	all free	Global	Yes
55	16,880.6660	-4.0000	0.0000	all free	all free	Global	Yes
56	16,900.1830	-4.0000	0.0000	all free	all free	Global	Yes
57	16,919.7010	-4.0000	0.0000	all free	all free	Global	Yes
58	16,939.2180	-4.0000	0.0000	all free	all free	Global	Yes
59	16,958.7360	-4.0000	0.0000	all free	all free	Global	Yes
60	16,978.2530	-4.0000	0.0000	all free	all free	Global	Yes
61	16,997.7700	-4.0000	0.0000	all free	all free	Global	Yes
62	17,017.2880	-4.0000	0.0000	all free	all free	Global	Yes
63	17,036.8050	-4.0000	0.0000	all free	all free	Global	Yes
64	17,056.3230	-4.0000	0.0000	all free	all free	Global	Yes
65	17,075.8400	-4.0000	0.0000	all free	all free	Global	Yes
66	17,083.6500	-4.0000	0.0000	all free	all free	Global	Yes

INPUT : Joints

ID	Station (ft)	Transverse Offset (ft)	Elevation (ft)	Translation DOF	Rotation DOF	Displacement UCS	Assignment
67	17,092.3600	-4.0000	0.0000	all free	all free	Global	Yes
68	17,111.8770	-4.0000	0.0000	all free	all free	Global	Yes
69	17,131.3950	-4.0000	0.0000	all free	all free	Global	Yes
70	17,150.9120	-4.0000	0.0000	all free	all free	Global	Yes
71	17,170.4300	-4.0000	0.0000	all free	all free	Global	Yes
72	17,189.9470	-4.0000	0.0000	all free	all free	Global	Yes
73	17,209.4640	-4.0000	0.0000	all free	all free	Global	Yes
74	17,228.9820	-4.0000	0.0000	all free	all free	Global	Yes
75	17,248.4990	-4.0000	0.0000	all free	all free	Global	Yes
76	17,268.0170	-4.0000	0.0000	all free	all free	Global	Yes
77	17,287.5340	-4.0000	0.0000	all free	all free	Global	Yes
78	17,307.0510	-4.0000	0.0000	all free	all free	Global	Yes
79	17,326.5690	-4.0000	0.0000	all free	all free	Global	Yes
80	17,346.0860	-4.0000	0.0000	all free	all free	Global	Yes
81	17,365.6030	-4.0000	0.0000	all free	all free	Global	Yes
82	17,385.1210	-4.0000	0.0000	all free	all free	Global	Yes
83	17,404.6380	-4.0000	0.0000	all free	all free	Global	Yes
84	17,424.1560	-4.0000	0.0000	all free	all free	Global	Yes
85	17,443.6730	-4.0000	0.0000	all free	all free	Global	Yes
86	17,463.1900	-4.0000	0.0000	all free	all free	Global	Yes
87	17,482.7080	-4.0000	0.0000	all free	all free	Global	Yes
88	17,502.2250	-4.0000	0.0000	all free	all free	Global	Yes
89	17,521.7430	-4.0000	0.0000	all free	all free	Global	Yes
90	17,541.2600	-3.9700	0.0000	all free	all free	Global	Yes
91	17,549.9700	-3.9400	0.0000	all free	all free	Global	Yes
92	17,558.0400	-3.8900	0.0000	all free	all free	Global	Yes
93	17,577.5470	-3.7000	0.0000	all free	all free	Global	Yes
94	17,597.0540	-3.4300	0.0000	all free	all free	Global	Yes
95	17,616.5610	-3.2900	0.0000	all free	all free	Global	Yes
96	17,636.0680	-3.0800	0.0000	all free	all free	Global	Yes
97	17,655.5750	-2.8800	0.0000	all free	all free	Global	Yes
98	17,675.0820	-2.6700	0.0000	all free	all free	Global	Yes
99	17,694.5890	-2.4700	0.0000	all free	all free	Global	Yes
100	17,714.0960	-2.2700	0.0000	all free	all free	Global	Yes

INPUT : Joints

ID	Station (ft)	Transverse Offset (ft)	Elevation (ft)	Translation DOF	Rotation DOF	Displacement UCS	Assignment
101	17,733.6030	-2.0700	0.0000	all free	all free	Global	Yes
102	17,753.1100	-1.8700	0.0000	all free	all free	Global	Yes
103	17,772.6170	-1.6000	0.0000	all free	all free	Global	Yes
104	17,792.1230	-1.4700	0.0000	all free	all free	Global	Yes
105	17,811.6300	-1.2700	0.0000	all free	all free	Global	Yes
106	17,831.1370	-1.0800	0.0000	all free	all free	Global	Yes
107	17,850.6440	-0.8900	0.0000	all free	all free	Global	Yes
108	17,870.1510	-0.6900	0.0000	all free	all free	Global	Yes
109	17,889.6580	-0.5000	0.0000	all free	all free	Global	Yes
110	17,909.1650	-0.3100	0.0000	all free	all free	Global	Yes
111	17,928.6720	-0.1200	0.0000	all free	all free	Global	Yes
112	17,948.1790	0.0700	0.0000	all free	all free	Global	Yes
113	17,967.6860	0.2500	0.0000	all free	all free	Global	Yes
114	17,987.1930	0.4400	0.0000	all free	all free	Global	Yes
115	18,006.7000	0.6300	0.0000	all free	all free	Global	Yes
116	18,014.7700	0.7000	0.0000	all free	all free	Global	Yes
117	18,022.8000	0.7800	0.0000	all free	all free	Global	Yes
118	18,042.2890	0.9600	0.0000	all free	all free	Global	Yes
119	18,061.7770	1.1400	0.0000	all free	all free	Global	Yes
120	18,081.2660	1.3200	0.0000	all free	all free	Global	Yes
121	18,100.7550	1.5000	0.0000	all free	all free	Global	Yes
122	18,120.2430	1.6800	0.0000	all free	all free	Global	Yes
123	18,139.7320	1.8600	0.0000	all free	all free	Global	Yes
124	18,159.2210	2.0300	0.0000	all free	all free	Global	Yes
125	18,178.7100	2.2100	0.0000	all free	all free	Global	Yes
126	18,198.1980	2.3800	0.0000	all free	all free	Global	Yes
127	18,217.6870	2.5600	0.0000	all free	all free	Global	Yes
128	18,237.1760	2.7300	0.0000	all free	all free	Global	Yes
129	18,256.6640	2.9000	0.0000	all free	all free	Global	Yes
130	18,276.1530	3.0700	0.0000	all free	all free	Global	Yes
131	18,295.6420	3.2300	0.0000	all free	all free	Global	Yes
132	18,315.1300	3.4000	0.0000	all free	all free	Global	Yes
133	18,334.6190	3.5700	0.0000	all free	all free	Global	Yes
134	18,354.1080	3.7300	0.0000	all free	all free	Global	Yes

INPUT : Joints

ID	Station (ft)	Transverse Offset (ft)	Elevation (ft)	Translation DOF	Rotation DOF	Displacement UCS	Assignment
135	18,373.5970	3.8900	0.0000	all free	all free	Global	Yes
136	18,393.0850	4.0600	0.0000	all free	all free	Global	Yes
137	18,412.5740	4.2200	0.0000	all free	all free	Global	Yes
138	18,432.0630	4.3800	0.0000	all free	all free	Global	Yes
139	18,451.5510	4.5300	0.0000	all free	all free	Global	Yes
140	18,471.0400	4.6900	0.0000	all free	all free	Global	Yes
141	18,479.0600	4.7600	0.0000	all free	all free	Global	Yes
142	18,486.9600	4.8200	0.0000	all free	all free	Global	Yes
143	18,506.4350	4.9700	0.0000	all free	all free	Global	Yes
144	18,525.9090	5.1300	0.0000	all free	all free	Global	Yes
145	18,545.3840	5.2800	0.0000	all free	all free	Global	Yes
146	18,564.8580	5.4300	0.0000	all free	all free	Global	Yes
147	18,584.3330	5.5800	0.0000	all free	all free	Global	Yes
148	18,603.8080	5.7300	0.0000	all free	all free	Global	Yes
149	18,623.2820	5.8800	0.0000	all free	all free	Global	Yes
150	18,642.7570	6.0200	0.0000	all free	all free	Global	Yes
151	18,662.2320	6.1700	0.0000	all free	all free	Global	Yes
152	18,681.7060	6.3100	0.0000	all free	all free	Global	Yes
153	18,701.1810	6.4500	-0.0001	all free	all free	Global	Yes
154	18,720.6550	6.5900	-0.0001	all free	all free	Global	Yes
155	18,740.1300	6.7300	-0.0001	all free	all free	Global	Yes
156	18,748.0300	6.7900	-0.0001	all free	all free	Global	Yes
1001	15,889.5000	14.2650	-80.5250	all free	all free	Global	Yes
1101	15,877.3180	-22.5920	-80.1110	all free	all free	Pier 1	Yes
1102	15,877.3180	-22.5920	-73.6110	all free	all free	Pier 1	Yes
1103	15,876.7900	-24.1880	-65.6170	all free	all free	Pier 1	Yes
1104	15,876.2630	-25.7830	-57.6230	all free	all free	Pier 1	Yes
1105	15,875.7360	-27.3780	-49.6290	all free	all free	Pier 1	Yes
1106	15,875.2400	-28.8770	-42.1150	all free	all free	Pier 1	Yes
1201	15,901.6820	51.1230	-80.9360	all free	all free	Pier 1	Yes
1202	15,901.6820	51.1230	-74.4360	all free	all free	Pier 1	Yes
1203	15,902.2140	52.7310	-66.4150	all free	all free	Pier 1	Yes
1204	15,902.7450	54.3380	-58.3930	all free	all free	Pier 1	Yes
1205	15,903.2770	55.9460	-50.3720	all free	all free	Pier 1	Yes

INPUT : Joints

ID	Station (ft)	Transverse Offset (ft)	Elevation (ft)	Translation DOF	Rotation DOF	Displacement UCS	Assignment
1206	15,903.7730	57.4470	-42.8850	all free	all free	Pier 1	Yes
1006	15,889.4850	14.2200	-42.5000	all free	all free	Pier 1	Yes
1007	15,889.4850	14.2200	-33.0000	all free	all free	Pier 1	Yes
2001	16,156.6000	6.4750	-90.8710	all free	all free	Global	Yes
2101	16,156.6000	-19.5700	-90.1390	all free	all free	Pier 2	Yes
2102	16,156.6000	-19.5700	-80.6390	all free	all free	Pier 2	Yes
2103	16,156.6000	-21.5670	-70.5980	all free	all free	Pier 2	Yes
2104	16,156.6000	-23.5640	-60.5570	all free	all free	Pier 2	Yes
2105	16,156.6000	-25.5620	-50.5160	all free	all free	Pier 2	Yes
2106	16,156.6000	-27.0540	-43.0130	all free	all free	Pier 2	Yes
2201	16,156.6000	32.5190	-91.6480	all free	all free	Pier 2	Yes
2202	16,156.6000	32.5190	-82.1480	all free	all free	Pier 2	Yes
2203	16,156.6000	34.6400	-71.6040	all free	all free	Pier 2	Yes
2204	16,156.6000	36.7620	-61.0600	all free	all free	Pier 2	Yes
2205	16,156.6000	38.8850	-50.5160	all free	all free	Pier 2	Yes
2206	16,156.6000	40.3940	-43.0130	all free	all free	Pier 2	Yes
2006	16,156.6000	5.7100	-43.0130	all free	all free	Pier 2	Yes
2007	16,156.6000	5.7100	-33.5140	all free	all free	Pier 2	Yes
3001	16,619.1300	-2.8620	-103.0341	all free	all free	Global	Yes
3101	16,619.1300	-16.0900	-102.5511	all free	all free	Pier 3	Yes
3102	16,619.1300	-16.0900	-93.0511	all free	all free	Pier 3	Yes
3103	16,619.1300	-19.7980	-74.3771	all free	all free	Pier 3	Yes
3104	16,619.1300	-23.5060	-55.7031	all free	all free	Pier 3	Yes
3105	16,619.1300	-24.5382	-50.5001	all free	all free	Pier 3	Yes
3106	16,619.1300	-26.0273	-43.0001	all free	all free	Pier 3	Yes
3201	16,619.1300	10.3660	-103.6081	all free	all free	Pier 3	Yes
3202	16,619.1300	10.3660	-94.1081	all free	all free	Pier 3	Yes
3203	16,619.1300	14.2050	-75.0821	all free	all free	Pier 3	Yes
3204	16,619.1300	18.0440	-56.0561	all free	all free	Pier 3	Yes
3205	16,619.1300	19.1653	-50.5001	all free	all free	Pier 3	Yes
3206	16,619.1300	20.6786	-43.0001	all free	all free	Pier 3	Yes
3006	16,619.1300	-4.0000	-43.0001	all free	all free	Pier 3	Yes
3007	16,619.1300	-4.0000	-33.5001	all free	all free	Pier 3	Yes
4001	17,083.6500	-2.8620	-112.7860	all free	all free	Global	Yes

INPUT : Joints

ID	Station (ft)	Transverse Offset (ft)	Elevation (ft)	Translation DOF	Rotation DOF	Displacement UCS	Assignment
4101	17,083.6500	-14.1380	-112.3810	all free	all free	Pier 4	Yes
4102	17,083.6500	-14.1380	-102.8810	all free	all free	Pier 4	Yes
4103	17,083.6500	-18.4970	-80.9300	all free	all free	Pier 4	Yes
4104	17,083.6500	-22.8560	-58.9800	all free	all free	Pier 4	Yes
4105	17,083.6500	-24.5381	-50.5000	all free	all free	Pier 4	Yes
4106	17,083.6500	-26.0272	-43.0000	all free	all free	Pier 4	Yes
4201	17,083.6500	8.4140	-113.2820	all free	all free	Pier 4	Yes
4202	17,083.6500	8.4140	-103.7820	all free	all free	Pier 4	Yes
4203	17,083.6500	12.9040	-81.5310	all free	all free	Pier 4	Yes
4204	17,083.6500	17.3940	-59.2810	all free	all free	Pier 4	Yes
4205	17,083.6500	19.1652	-50.5000	all free	all free	Pier 4	Yes
4206	17,083.6500	20.6786	-43.0000	all free	all free	Pier 4	Yes
4006	17,083.6500	-4.0000	-43.0000	all free	all free	Pier 4	Yes
4007	17,083.6500	-4.0000	-33.5000	all free	all free	Pier 4	Yes
5001	17,549.9700	-2.8020	-117.1670	all free	all free	Global	Yes
5101	17,549.9700	-13.2010	-116.7970	all free	all free	Pier 5	Yes
5102	17,549.9700	-13.2010	-107.2970	all free	all free	Pier 5	Yes
5103	17,549.9700	-17.8520	-83.8750	all free	all free	Pier 5	Yes
5104	17,549.9700	-22.5030	-60.4520	all free	all free	Pier 5	Yes
5105	17,549.9700	-24.4780	-50.5000	all free	all free	Pier 5	Yes
5106	17,549.9700	-25.9672	-43.0000	all free	all free	Pier 5	Yes
5201	17,549.9700	7.5970	-117.6280	all free	all free	Pier 5	Yes
5202	17,549.9700	7.5970	-108.1280	all free	all free	Pier 5	Yes
5203	17,549.9700	12.3790	-84.4290	all free	all free	Pier 5	Yes
5204	17,549.9700	17.1610	-60.7290	all free	all free	Pier 5	Yes
5205	17,549.9700	19.2252	-50.5000	all free	all free	Pier 5	Yes
5206	17,549.9700	20.7386	-43.0000	all free	all free	Pier 5	Yes
5006	17,549.9700	-3.9400	-43.0000	all free	all free	Pier 5	Yes
5007	17,549.9700	-3.9400	-33.5000	all free	all free	Pier 5	Yes
6001	18,014.7700	1.7860	-116.3200	all free	all free	Global	Yes
6101	18,014.7700	-15.2770	-115.7120	all free	all free	Pier 6	Yes
6102	18,014.7700	-15.2770	-106.2120	all free	all free	Pier 6	Yes
6103	18,014.7700	-19.8560	-83.1510	all free	all free	Pier 6	Yes
6104	18,014.7700	-24.4350	-60.0900	all free	all free	Pier 6	Yes

INPUT : Joints

ID	Station (ft)	Transverse Offset (ft)	Elevation (ft)	Translation DOF	Rotation DOF	Displacement UCS	Assignment
6105	18,014.7700	-26.3382	-50.5000	all free	all free	Pier 6	Yes
6106	18,014.7700	-27.8273	-43.0000	all free	all free	Pier 6	Yes
6201	18,014.7700	18.8490	-117.0760	all free	all free	Pier 6	Yes
6202	18,014.7700	18.8490	-107.5760	all free	all free	Pier 6	Yes
6203	18,014.7700	23.5940	-84.0610	all free	all free	Pier 6	Yes
6204	18,014.7700	28.3380	-60.5450	all free	all free	Pier 6	Yes
6205	18,014.7700	30.3654	-50.5000	all free	all free	Pier 6	Yes
6206	18,014.7700	31.8787	-43.0000	all free	all free	Pier 6	Yes
6006	18,014.7700	0.7000	-43.0000	all free	all free	Pier 6	Yes
6007	18,014.7700	0.7000	-33.5000	all free	all free	Pier 6	Yes
7001	18,479.0600	5.8270	-110.0730	all free	all free	Global	Yes
7101	18,479.0600	-14.8770	-109.2880	all free	all free	Pier 7	Yes
7102	18,479.0600	-14.8770	-99.7880	all free	all free	Pier 7	Yes
7103	18,479.0600	-18.1380	-83.3710	all free	all free	Pier 7	Yes
7104	18,479.0600	-21.3980	-66.9530	all free	all free	Pier 7	Yes
7105	18,479.0600	-24.6580	-50.5400	all free	all free	Pier 7	Yes
7106	18,479.0600	-26.1460	-43.0290	all free	all free	Pier 7	Yes
7201	18,479.0600	26.5310	-110.9430	all free	all free	Pier 7	Yes
7202	18,479.0600	26.5310	-101.4430	all free	all free	Pier 7	Yes
7203	18,479.0600	29.9550	-84.4740	all free	all free	Pier 7	Yes
7204	18,479.0600	33.3790	-67.5050	all free	all free	Pier 7	Yes
7205	18,479.0600	36.8030	-50.5400	all free	all free	Pier 7	Yes
7206	18,479.0600	38.3180	-43.0290	all free	all free	Pier 7	Yes
7006	18,479.0600	4.7600	-43.0290	all free	all free	Global	Yes
7007	18,479.0600	4.7600	-33.5270	all free	all free	Pier 7	Yes
8001	18,748.0300	7.6480	-100.9821	all free	all free	Pier 7	Yes
8101	18,754.8930	-17.0260	-99.8501	all free	all free	Pier 7	Yes
8102	18,754.8930	-17.0260	-93.3501	all free	all free	Pier 8	Yes
8103	18,755.6940	-19.9040	-78.8321	all free	all free	Pier 7	Yes
8104	18,756.4950	-22.7830	-64.3141	all free	all free	Pier 7	Yes
8105	18,757.2960	-25.6620	-49.7961	all free	all free	Pier 7	Yes
8106	18,757.7100	-27.1520	-42.2801	all free	all free	Pier 7	Yes
8201	18,741.1670	32.3210	-102.1831	all free	all free	Pier 7	Yes
8202	18,741.1670	32.3210	-95.6831	all free	all free	Pier 8	Yes

INPUT : Joints

ID	Station (ft)	Transverse Offset (ft)	Elevation (ft)	Translation DOF	Rotation DOF	Displacement UCS	Assignment
8203	18,740.3160	35.3790	-80.5511	all free	all free	Pier 7	Yes
8204	18,739.4660	38.4360	-65.4191	all free	all free	Pier 7	Yes
8205	18,738.6150	41.4940	-50.2881	all free	all free	Pier 8	Yes
8206	18,738.1940	43.0090	-42.7931	all free	all free	Pier 8	Yes
8006	18,748.2690	6.7900	-42.5281	all free	all free	Pier 8	Yes
8007	18,748.2690	6.7900	-33.0201	all free	all free	Pier 8	Yes

INPUT : Members

ID	I-Joint	J-Joint	Span	Type	Section at Start	Section at End	Material	Prestress Force (kips)	Length (ft)	Rigid Zone from Start (x/L)	Rigid Zone from End (x/L)	Orientation Angle (deg)	Castin g (day)	Structure / Construction Group
1	1	2	-	Beam	Sect_1T	Sect_2T	Fc_8	0.0000	6.9533	0.0000	0.0000	90.1500	0	Deck at pier and
2	2	3	-	Beam	Sect_2T	Sect_3T	Fc_8	0.0000	19.574	0.0000	0.0000	90.2250	0	Deck
3	3	4	-	Beam	Sect_3T	Sect_4T	Fc_8	0.0000	19.5459	0.0000	0.0000	90.3370	0	Deck
4	4	5	-	Beam	Sect_4T	Sect_5T	Fc_8	0.0000	19.5274	0.0000	0.0000	90.4490	0	Deck
5	5	6	-	Beam	Sect_5T	Sect_6T	Fc_8	0.0000	19.5142	0.0000	0.0000	90.5600	0	Deck at pier and
6	6	7	-	Beam	Sect_6T	Sect_7T	Fc_8	0.0000	19.5051	0.0000	0.0000	90.6720	0	Deck
7	7	8	-	Beam	Sect_7T	Sect_8T	Fc_8	0.0000	19.5025	0.0000	0.0000	90.7830	0	Deck
8	8	9	-	Beam	Sect_8T	Sect_9T	Fc_8	0.0000	19.5012	0.0000	0.0000	90.8950	0	Deck
9	9	10	-	Beam	Sect_9T	Sect_10T	Fc_8	0.0000	19.5016	0.0000	0.0000	91.0070	0	Deck
10	10	11	-	Beam	Sect_10T	Sect_11T	Fc_8	0.0000	19.5281	0.0000	0.0000	91.1180	0	Deck
11	11	12	-	Beam	Sect_11T	Sect_12T	Fc_8	0.0000	19.5445	0.0000	0.0000	91.2300	0	Deck
12	12	13	-	Beam	Sect_12T	Sect_13T	Fc_8	0.0000	19.5592	0.0000	0.0000	91.3410	0	Deck
13	13	14	-	Beam	Sect_13T	Sect_14T	Fc_8	0.0000	19.579	0.0000	0.0000	91.4530	0	Deck
14	14	15	-	Beam	Sect_14T	Sect_15T	Fc_8	0.0000	19.6062	0.0000	0.0000	91.5640	0	Deck at pier and
15	15	16	-	Beam	Sect_15T	Sect_16T	Fc_8	0.0000	6.9432	0.0000	0.0000	91.6400	0	Deck
16	16	17	-	Beam	Sect_16T	Sect_17T	Fc_8	0.0000	6.914	0.0000	0.0000	91.6800	0	Deck
17	17	18	-	Beam	Sect_17T	Sect_18T	Fc_8	0.0000	19.756	0.0000	0.0000	91.7550	0	Deck at pier and
18	18	19	-	Beam	Sect_18T	Sect_19T	Fc_8	0.0000	19.7115	0.0000	0.0000	91.8670	0	Deck
19	19	20	-	Beam	Sect_19T	Sect_20T	Fc_8	0.0000	19.6794	0.0000	0.0000	91.9790	0	Deck
20	20	21	-	Beam	Sect_20T	Sect_21T	Fc_8	0.0000	19.6537	0.0000	0.0000	92.0900	0	Deck
21	21	22	-	Beam	Sect_21T	Sect_22T	Fc_8	0.0000	19.6168	0.0000	0.0000	92.2020	0	Deck
22	22	23	-	Beam	Sect_22T	Sect_23T	Fc_8	0.0000	19.5586	0.0000	0.0000	92.2910	0	Deck
23	23	24	-	Beam	Sect_23T	Sect_24T	Fc_8	0.0000	19.5326	0.0000	0.0000	92.2910	0	Deck

INPUT : Members

ID	I-Joint	J-Joint	Span	Type	Section at Start	Section at End	Material	Prestress Force (kips)	Length (ft)	Rigid Zone from Start (x/L)	Rigid Zone from End (x/L)	Orientation Angle (deg)	Castin g (day)	Structure / Construction Group
24	24	25	-	Beam	Sect_24T	Sect_25T	Fc_8	0.0000	19.5254	0.0000	0.0000	92.2910	0	Deck
25	25	26	-	Beam	Sect_25T	Sect_26T	Fc_8	0.0000	19.5229	0.0000	0.0000	92.2910	0	Deck
26	26	27	-	Beam	Sect_26T	Sect_27T	Fc_8	0.0000	19.5184	0.0000	0.0000	92.2910	0	Deck
27	27	28	-	Beam	Sect_27T	Sect_28T	Fc_8	0.0000	19.5153	0.0000	0.0000	92.2910	0	Deck at pier and
28	28	29	-	Beam	Sect_28T	Sect_29T	Fc_8	0.0000	19.5105	0.0000	0.0000	92.2910	0	Deck
29	29	30	-	Beam	Sect_29T	Sect_30T	Fc_8	0.0000	19.5075	0.0000	0.0000	92.2910	0	Deck
30	30	31	-	Beam	Sect_30T	Sect_31T	Fc_8	0.0000	19.504	0.0000	0.0000	92.2910	0	Deck
31	31	32	-	Beam	Sect_31T	Sect_32T	Fc_8	0.0000	19.5025	0.0000	0.0000	92.2910	0	Deck
32	32	33	-	Beam	Sect_32T	Sect_33T	Fc_8	0.0000	19.5002	0.0000	0.0000	92.2910	0	Deck
33	33	34	-	Beam	Sect_33T	Sect_34T	Fc_8	0.0000	19.4976	0.0000	0.0000	92.2910	0	Deck
34	34	35	-	Beam	Sect_34T	Sect_35T	Fc_8	0.0000	19.4979	0.0000	0.0000	92.2910	0	Deck
35	35	36	-	Beam	Sect_35T	Sect_36T	Fc_8	0.0000	19.5156	0.0000	0.0000	92.2910	0	Deck
36	36	37	-	Beam	Sect_36T	Sect_37T	Fc_8	0.0000	19.5338	0.0000	0.0000	92.2910	0	Deck
37	37	38	-	Beam	Sect_37T	Sect_38T	Fc_8	0.0000	19.5452	0.0000	0.0000	92.2910	0	Deck
38	38	39	-	Beam	Sect_38T	Sect_39T	Fc_8	0.0000	19.5612	0.0000	0.0000	92.2910	0	Deck
39	39	40	-	Beam	Sect_39T	Sect_40T	Fc_8	0.0000	19.5951	0.0000	0.0000	92.2910	0	Deck at pier and
40	40	41	-	Beam	Sect_40T	Sect_41T	Fc_8	0.0000	6.8951	0.0000	0.0000	92.2910	0	Deck
41	41	42	-	Beam	Sect_41T	Sect_42T	Fc_8	0.0000	7.8085	0.0000	0.0000	92.2910	0	Deck
42	42	43	-	Beam	Sect_42T	Sect_43T	Fc_8	0.0000	19.696	0.0000	0.0000	92.2910	0	Deck at pier and
43	43	44	-	Beam	Sect_43T	Sect_44T	Fc_8	0.0000	19.6468	0.0000	0.0000	92.2910	0	Deck
44	44	45	-	Beam	Sect_44T	Sect_45T	Fc_8	0.0000	19.6223	0.0000	0.0000	92.2910	0	Deck
45	45	46	-	Beam	Sect_45T	Sect_46T	Fc_8	0.0000	19.6026	0.0000	0.0000	92.2910	0	Deck
46	46	47	-	Beam	Sect_46T	Sect_47T	Fc_8	0.0000	19.5692	0.0000	0.0000	92.2910	0	Deck
47	47	48	-	Beam	Sect_47T	Sect_48T	Fc_8	0.0000	19.5231	0.0000	0.0000	92.2910	0	Deck
48	48	49	-	Beam	Sect_48T	Sect_49T	Fc_8	0.0000	19.5086	0.0000	0.0000	92.2910	0	Deck
49	49	50	-	Beam	Sect_49T	Sect_50T	Fc_8	0.0000	19.5047	0.0000	0.0000	92.2910	0	Deck
50	50	51	-	Beam	Sect_50T	Sect_51T	Fc_8	0.0000	19.5054	0.0000	0.0000	92.2910	0	Deck
51	51	52	-	Beam	Sect_51T	Sect_52T	Fc_8	0.0000	19.5042	0.0000	0.0000	92.2910	0	Deck
52	52	53	-	Beam	Sect_52T	Sect_53T	Fc_8	0.0000	19.504	0.0000	0.0000	92.2910	0	Deck
53	53	54	-	Beam	Sect_53T	Sect_54T	Fc_8	0.0000	19.5048	0.0000	0.0000	92.2910	0	Deck at pier and
54	54	55	-	Beam	Sect_54T	Sect_55T	Fc_8	0.0000	19.5036	0.0000	0.0000	92.2910	0	Deck
55	55	56	-	Beam	Sect_55T	Sect_56T	Fc_8	0.0000	19.5034	0.0000	0.0000	92.2910	0	Deck
56	56	57	-	Beam	Sect_56T	Sect_57T	Fc_8	0.0000	19.5042	0.0000	0.0000	92.2910	0	Deck
57	57	58	-	Beam	Sect_57T	Sect_58T	Fc_8	0.0000	19.5031	0.0000	0.0000	92.2910	0	Deck

INPUT : Members

ID	I-Joint	J-Joint	Span	Type	Section at Start	Section at End	Material	Prestress Force (kips)	Length (ft)	Rigid Zone from Start (x/L)	Rigid Zone from End (x/L)	Orientation Angle (deg)	Castin g (day)	Structure / Construction Group
58	58	59	-	Beam	Sect_58T	Sect_59T	Fc_8	0.0000	19.5024	0.0000	0.0000	92.2910	0	Deck
59	59	60	-	Beam	Sect_59T	Sect_60T	Fc_8	0.0000	19.5025	0.0000	0.0000	92.2910	0	Deck
60	60	61	-	Beam	Sect_60T	Sect_61T	Fc_8	0.0000	19.5247	0.0000	0.0000	92.2910	0	Deck
61	61	62	-	Beam	Sect_61T	Sect_62T	Fc_8	0.0000	19.5464	0.0000	0.0000	92.2910	0	Deck
62	62	63	-	Beam	Sect_62T	Sect_63T	Fc_8	0.0000	19.5594	0.0000	0.0000	92.2910	0	Deck
63	63	64	-	Beam	Sect_63T	Sect_64T	Fc_8	0.0000	19.5771	0.0000	0.0000	92.2910	0	Deck
64	64	65	-	Beam	Sect_64T	Sect_65T	Fc_8	0.0000	19.6137	0.0000	0.0000	92.2910	0	Deck at pier and
65	65	66	-	Beam	Sect_65T	Sect_66T	Fc_8	0.0000	7.8033	0.0000	0.0000	92.2910	0	Deck
66	66	67	-	Beam	Sect_66T	Sect_67T	Fc_8	0.0000	8.7054	0.0000	0.0000	92.2910	0	Deck
67	67	68	-	Beam	Sect_67T	Sect_68T	Fc_8	0.0000	19.6729	0.0000	0.0000	92.2910	0	Deck at pier and
68	68	69	-	Beam	Sect_68T	Sect_69T	Fc_8	0.0000	19.6281	0.0000	0.0000	92.2910	0	Deck
69	69	70	-	Beam	Sect_69T	Sect_70T	Fc_8	0.0000	19.6051	0.0000	0.0000	92.2910	0	Deck
70	70	71	-	Beam	Sect_70T	Sect_71T	Fc_8	0.0000	19.587	0.0000	0.0000	92.2910	0	Deck
71	71	72	-	Beam	Sect_71T	Sect_72T	Fc_8	0.0000	19.5551	0.0000	0.0000	92.2910	0	Deck
72	72	73	-	Beam	Sect_72T	Sect_73T	Fc_8	0.0000	19.5143	0.0000	0.0000	92.2910	0	Deck
73	73	74	-	Beam	Sect_73T	Sect_74T	Fc_8	0.0000	19.5037	0.0000	0.0000	92.2910	0	Deck
74	74	75	-	Beam	Sect_74T	Sect_75T	Fc_8	0.0000	19.5008	0.0000	0.0000	92.2910	0	Deck
75	75	76	-	Beam	Sect_75T	Sect_76T	Fc_8	0.0000	19.5017	0.0000	0.0000	92.2910	0	Deck
76	76	77	-	Beam	Sect_76T	Sect_77T	Fc_8	0.0000	19.5006	0.0000	0.0000	92.2910	0	Deck
77	77	78	-	Beam	Sect_77T	Sect_78T	Fc_8	0.0000	19.5005	0.0000	0.0000	92.2910	0	Deck
78	78	79	-	Beam	Sect_78T	Sect_79T	Fc_8	0.0000	19.5014	0.0000	0.0000	92.2910	0	Deck at pier and
79	79	80	-	Beam	Sect_79T	Sect_80T	Fc_8	0.0000	19.5003	0.0000	0.0000	92.2910	0	Deck
80	80	81	-	Beam	Sect_80T	Sect_81T	Fc_8	0.0000	19.5002	0.0000	0.0000	92.2910	0	Deck
81	81	82	-	Beam	Sect_81T	Sect_82T	Fc_8	0.0000	19.5011	0.0000	0.0000	92.2910	0	Deck
82	82	83	-	Beam	Sect_82T	Sect_83T	Fc_8	0.0000	19.5	0.0000	0.0000	92.2910	0	Deck
83	83	84	-	Beam	Sect_83T	Sect_84T	Fc_8	0.0000	19.5004	0.0000	0.0000	92.2910	0	Deck
84	84	85	-	Beam	Sect_84T	Sect_85T	Fc_8	0.0000	19.5034	0.0000	0.0000	92.2910	0	Deck
85	85	86	-	Beam	Sect_85T	Sect_86T	Fc_8	0.0000	19.531	0.0000	0.0000	92.2910	0	Deck
86	86	87	-	Beam	Sect_86T	Sect_87T	Fc_8	0.0000	19.5562	0.0000	0.0000	92.2910	0	Deck
87	87	88	-	Beam	Sect_87T	Sect_88T	Fc_8	0.0000	19.5708	0.0000	0.0000	92.2910	0	Deck
88	88	89	-	Beam	Sect_88T	Sect_89T	Fc_8	0.0000	19.59	0.0000	0.0000	92.2910	0	Deck
89	89	90	-	Beam	Sect_89T	Sect_90T	Fc_8	0.0000	19.6281	0.0000	0.0000	92.2910	0	Deck at pier and
90	90	91	-	Beam	Sect_90T	Sect_91T	Fc_8	0.0000	8.7025	0.0000	0.0000	92.2910	0	Deck
91	91	92	-	Beam	Sect_91T	Sect_92T	Fc_8	0.0000	8.0644	0.0000	0.0000	92.2910	0	Deck

INPUT : Members

ID	I-Joint	J-Joint	Span	Type	Section at Start	Section at End	Material	Prestress Force (kips)	Length (ft)	Rigid Zone from Start (x/L)	Rigid Zone from End (x/L)	Orientation Angle (deg)	Castin g (day)	Structure / Construction Group
92	92	93	-	Beam	Sect_92T	Sect_93T	Fc_8	0.0000	19.646	0.0000	0.0000	92.2910	0	Deck at pier and
93	93	94	-	Beam	Sect_93T	Sect_94T	Fc_8	0.0000	19.6038	0.0000	0.0000	92.2910	0	Deck
94	94	95	-	Beam	Sect_94T	Sect_95T	Fc_8	0.0000	19.583	0.0000	0.0000	92.2910	0	Deck
95	95	96	-	Beam	Sect_95T	Sect_96T	Fc_8	0.0000	19.5667	0.0000	0.0000	92.2910	0	Deck
96	96	97	-	Beam	Sect_96T	Sect_97T	Fc_8	0.0000	19.5396	0.0000	0.0000	92.2910	0	Deck
97	97	98	-	Beam	Sect_97T	Sect_98T	Fc_8	0.0000	19.5052	0.0000	0.0000	92.2910	0	Deck
98	98	99	-	Beam	Sect_98T	Sect_99T	Fc_8	0.0000	19.4974	0.0000	0.0000	92.2910	0	Deck
99	99	100	-	Beam	Sect_99T	Sect_100T	Fc_8	0.0000	19.4976	0.0000	0.0000	92.2910	0	Deck
100	100	101	-	Beam	Sect_100T	Sect_101T	Fc_8	0.0000	19.4985	0.0000	0.0000	92.2910	0	Deck
101	101	102	-	Beam	Sect_101T	Sect_102T	Fc_8	0.0000	19.4994	0.0000	0.0000	92.2910	0	Deck
102	102	103	-	Beam	Sect_102T	Sect_103T	Fc_8	0.0000	19.5012	0.0000	0.0000	92.2910	0	Deck
103	103	104	-	Beam	Sect_103T	Sect_104T	Fc_8	0.0000	19.4997	0.0000	0.0000	92.2910	0	Deck at pier and
104	104	105	-	Beam	Sect_104T	Sect_105T	Fc_8	0.0000	19.5021	0.0000	0.0000	92.2910	0	Deck
105	105	106	-	Beam	Sect_105T	Sect_106T	Fc_8	0.0000	19.5029	0.0000	0.0000	92.2910	0	Deck
106	106	107	-	Beam	Sect_106T	Sect_107T	Fc_8	0.0000	19.5037	0.0000	0.0000	92.2910	0	Deck
107	107	108	-	Beam	Sect_107T	Sect_108T	Fc_8	0.0000	19.5048	0.0000	0.0000	92.2910	0	Deck
108	108	109	-	Beam	Sect_108T	Sect_109T	Fc_8	0.0000	19.5059	0.0000	0.0000	92.2910	0	Deck
109	109	110	-	Beam	Sect_109T	Sect_110T	Fc_8	0.0000	19.5167	0.0000	0.0000	92.2910	0	Deck
110	110	111	-	Beam	Sect_110T	Sect_111T	Fc_8	0.0000	19.5561	0.0000	0.0000	92.2910	0	Deck
111	111	112	-	Beam	Sect_111T	Sect_112T	Fc_8	0.0000	19.5826	0.0000	0.0000	92.2910	0	Deck
112	112	113	-	Beam	Sect_112T	Sect_113T	Fc_8	0.0000	19.598	0.0000	0.0000	92.2910	0	Deck
113	113	114	-	Beam	Sect_113T	Sect_114T	Fc_8	0.0000	19.6187	0.0000	0.0000	92.2910	0	Deck
114	114	115	-	Beam	Sect_114T	Sect_115T	Fc_8	0.0000	19.6623	0.0000	0.0000	92.2910	0	Deck at pier and
115	115	116	-	Beam	Sect_115T	Sect_116T	Fc_8	0.0000	8.0725	0.0000	0.0000	92.2910	0	Deck
116	116	117	-	Beam	Sect_116T	Sect_117T	Fc_8	0.0000	8.0324	0.0000	0.0000	92.2910	0	Deck
117	117	118	-	Beam	Sect_117T	Sect_118T	Fc_8	0.0000	19.6364	0.0000	0.0000	92.2910	0	Deck at pier and
118	118	119	-	Beam	Sect_118T	Sect_119T	Fc_8	0.0000	19.5951	0.0000	0.0000	92.2910	0	Deck
119	119	120	-	Beam	Sect_119T	Sect_120T	Fc_8	0.0000	19.5774	0.0000	0.0000	92.2910	0	Deck
120	120	121	-	Beam	Sect_120T	Sect_121T	Fc_8	0.0000	19.5626	0.0000	0.0000	92.2910	0	Deck
121	121	122	-	Beam	Sect_121T	Sect_122T	Fc_8	0.0000	19.5393	0.0000	0.0000	92.2910	0	Deck
122	122	123	-	Beam	Sect_122T	Sect_123T	Fc_8	0.0000	19.5063	0.0000	0.0000	92.2910	0	Deck
123	123	124	-	Beam	Sect_123T	Sect_124T	Fc_8	0.0000	19.4993	0.0000	0.0000	92.2910	0	Deck
124	124	125	-	Beam	Sect_124T	Sect_125T	Fc_8	0.0000	19.5004	0.0000	0.0000	92.2910	0	Deck
125	125	126	-	Beam	Sect_125T	Sect_126T	Fc_8	0.0000	19.5001	0.0000	0.0000	92.2910	0	Deck

INPUT : Members

ID	I-Joint	J-Joint	Span	Type	Section at Start	Section at End	Material	Prestress Force (kips)	Length (ft)	Rigid Zone from Start (x/L)	Rigid Zone from End (x/L)	Orientation Angle (deg)	Castin g (day)	Structure / Construction Group
126	126	127	-	Beam	Sect_126T	Sect_127T	Fc_8	0.0000	19.5021	0.0000	0.0000	92.2910	0	Deck
127	127	128	-	Beam	Sect_127T	Sect_128T	Fc_8	0.0000	19.5029	0.0000	0.0000	92.2910	0	Deck
128	128	129	-	Beam	Sect_128T	Sect_129T	Fc_8	0.0000	19.5028	0.0000	0.0000	92.2910	0	Deck
129	129	130	-	Beam	Sect_129T	Sect_130T	Fc_8	0.0000	19.5047	0.0000	0.0000	92.2910	0	Deck at pier and
130	130	131	-	Beam	Sect_130T	Sect_131T	Fc_8	0.0000	19.5055	0.0000	0.0000	92.2910	0	Deck
131	131	132	-	Beam	Sect_131T	Sect_132T	Fc_8	0.0000	19.5053	0.0000	0.0000	92.2910	0	Deck
132	132	133	-	Beam	Sect_132T	Sect_133T	Fc_8	0.0000	19.5074	0.0000	0.0000	92.2910	0	Deck
133	133	134	-	Beam	Sect_133T	Sect_134T	Fc_8	0.0000	19.5094	0.0000	0.0000	92.2910	0	Deck
134	134	135	-	Beam	Sect_134T	Sect_135T	Fc_8	0.0000	19.5245	0.0000	0.0000	92.2910	0	Deck
135	135	136	-	Beam	Sect_135T	Sect_136T	Fc_8	0.0000	19.5691	0.0000	0.0000	92.2910	0	Deck
136	136	137	-	Beam	Sect_136T	Sect_137T	Fc_8	0.0000	19.5977	0.0000	0.0000	92.2910	0	Deck
137	137	138	-	Beam	Sect_137T	Sect_138T	Fc_8	0.0000	19.617	0.0000	0.0000	92.2910	0	Deck
138	138	139	-	Beam	Sect_138T	Sect_139T	Fc_8	0.0000	19.6379	0.0000	0.0000	92.2910	0	Deck
139	139	140	-	Beam	Sect_139T	Sect_140T	Fc_8	0.0000	19.6808	0.0000	0.0000	92.2910	0	Deck at pier and
140	140	141	-	Beam	Sect_140T	Sect_141T	Fc_8	0.0000	8.0308	0.0000	0.0000	92.2910	0	Deck
141	141	142	-	Beam	Sect_141T	Sect_142T	Fc_8	0.0000	7.91	0.0000	0.0000	92.2910	0	Deck
142	142	143	-	Beam	Sect_142T	Sect_143T	Fc_8	0.0000	19.6198	0.0000	0.0000	92.2910	0	Deck at pier and
143	143	144	-	Beam	Sect_143T	Sect_144T	Fc_8	0.0000	19.5868	0.0000	0.0000	92.2910	0	Deck
144	144	145	-	Beam	Sect_144T	Sect_145T	Fc_8	0.0000	19.5707	0.0000	0.0000	92.2910	0	Deck
145	145	146	-	Beam	Sect_145T	Sect_146T	Fc_8	0.0000	19.5564	0.0000	0.0000	92.2910	0	Deck
146	146	147	-	Beam	Sect_146T	Sect_147T	Fc_8	0.0000	19.5384	0.0000	0.0000	92.2910	0	Deck
147	147	148	-	Beam	Sect_147T	Sect_148T	Fc_8	0.0000	19.5088	0.0000	0.0000	92.2910	0	Deck
148	148	149	-	Beam	Sect_148T	Sect_149T	Fc_8	0.0000	19.5037	0.0000	0.0000	92.2910	0	Deck
149	149	150	-	Beam	Sect_149T	Sect_150T	Fc_8	0.0000	19.5068	0.0000	0.0000	92.2910	0	Deck
150	150	151	-	Beam	Sect_150T	Sect_151T	Fc_8	0.0000	19.5091	0.0000	0.0000	92.2910	0	Deck
151	151	152	-	Beam	Sect_151T	Sect_152T	Fc_8	0.0000	19.5159	0.0000	0.0000	92.2910	0	Deck at pier and
152	152	153	-	Beam	Sect_152T	Sect_153T	Fc_8	0.0000	19.5286	0.0000	0.0000	92.2910	0	Deck
153	153	154	-	Beam	Sect_153T	Sect_154T	Fc_8	0.0000	19.5427	0.0000	0.0000	92.2910	0	Deck
154	154	155	-	Beam	Sect_154T	Sect_155T	Fc_8	0.0000	19.5707	0.0000	0.0000	92.2910	0	Deck
155	155	156	-	Beam	Sect_155T	Sect_156T	Fc_8	0.0000	7.9469	0.0000	0.0000	92.2910	0	Deck at pier and
1001	1101	1001	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	38.818	0.0000	0.0000	0.0000	0	(none)
1002	1001	1201	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	38.8188	0.0000	0.0000	0.0000	0	(none)
1101	1101	1102	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	6.5	0.0000	0.0000	-90.0000	0	(none)
1102	1102	1103	-	Beam	P1_Column	(same as start)	Fc_6	0.0000	8.1545	0.0000	0.0000	0.0000	0	Column Bottom

INPUT : Members

ID	I-Joint	J-Joint	Span	Type	Section at Start	Section at End	Material	Prestress Force (kips)	Length (ft)	Rigid Zone from Start (x/L)	Rigid Zone from End (x/L)	Orientation Angle (deg)	Castin g (day)	Structure / Construction Group
1103	1103	1104	-	Beam	P1_Column	(same as start)	Fc_6	0.0000	8.1544	0.0000	0.0000	0.0000	0	(none)
1104	1104	1105	-	Beam	P1_Column	(same as start)	Fc_6	0.0000	8.1546	0.0000	0.0000	0.0000	0	Column Top
1105	1105	1106	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	7.6651	0.0000	0.0000	0.0000	0	(none)
1201	1201	1202	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	6.5	0.0000	0.0000	-90.0000	0	(none)
1202	1202	1203	-	Beam	P1_Column	(same as start)	Fc_6	0.0000	8.2202	0.0000	0.0000	0.0000	0	Column Bottom
1203	1203	1204	-	Beam	P1_Column	(same as start)	Fc_6	0.0000	8.221	0.0000	0.0000	0.0000	0	(none)
1204	1204	1205	-	Beam	P1_Column	(same as start)	Fc_6	0.0000	8.2205	0.0000	0.0000	0.0000	0	Column Top
1205	1205	1206	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	7.6733	0.0000	0.0000	0.0000	0	(none)
1011	1106	1006	-	Beam	Abut Pier Cap	(same as start)	Fc_6	0.0000	45.3902	0.0000	0.0000	90.0000	0	(none)
1012	1006	1206	-	Beam	Abut Pier Cap	(same as start)	Fc_6	0.0000	45.5272	0.0000	0.0000	90.0000	0	(none)
1006	1006	1007	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	14.5380	0	Rigid Super
1007	1007	1	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	20.3204	0.0000	0.0000	14.5380	0	Rigid Super
2001	2101	2001	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	26.0341	0.0000	0.0000	0.0000	0	(none)
2002	2001	2201	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	26.0331	0.0000	0.0000	0.0000	0	(none)
2101	2101	2102	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-77.5780	0	(none)
2102	2102	2103	-	Beam	P2_Column	(same as start)	Fc_6	0.0000	10.1808	0.0000	0.0000	0.0000	0	Column Bottom
2103	2103	2104	-	Beam	P2_Column	(same as start)	Fc_6	0.0000	10.1808	0.0000	0.0000	0.0000	0	(none)
2104	2104	2105	-	Beam	P2_Column	(same as start)	Fc_6	0.0000	10.1809	0.0000	0.0000	0.0000	0	Column Top
2105	2105	2106	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	7.6074	0.0000	0.0000	0.0000	0	(none)
2201	2201	2202	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-77.5780	0	(none)
2202	2202	2203	-	Beam	P2_Column	(same as start)	Fc_6	0.0000	10.8153	0.0000	0.0000	0.0000	0	Column Bottom
2203	2203	2204	-	Beam	P2_Column	(same as start)	Fc_6	0.0000	10.8155	0.0000	0.0000	0.0000	0	(none)
2204	2204	2205	-	Beam	P2_Column	(same as start)	Fc_6	0.0000	10.8157	0.0000	0.0000	0.0000	0	Column Top
2205	2205	2206	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	7.696	0.0000	0.0000	0.0000	0	(none)
2011	2106	2006	-	Beam	Typ Pier Cap	(same as start)	Fc_6	0.0000	32.764	0.0000	0.0000	90.0000	0	(none)
2012	2006	2206	-	Beam	Typ Pier Cap	(same as start)	Fc_6	0.0000	34.684	0.0000	0.0000	90.0000	0	(none)
2006	2006	2007	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.499	0.0000	0.0000	12.4220	0	Rigid Super
2007	2007	16	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	14.245	0.0000	0.0000	12.4220	0	Rigid Super
3001	3101	3001	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	13.2175	0.0000	0.0000	0.0000	0	(none)
3002	3001	3201	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	13.2175	0.0000	0.0000	0.0000	0	(none)
3101	3101	3102	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-80.7224	0	(none)
3102	3102	3103	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	18.8926	0.0000	0.0000	0.0000	0	Column Bottom
3103	3103	3104	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	18.8926	0.0000	0.0000	0.0000	0	(none)
3104	3104	3105	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	5.2638	0.0000	0.0000	0.0000	0	Column Top

INPUT : Members

ID	I-Joint	J-Joint	Span	Type	Section at Start	Section at End	Material	Prestress Force (kips)	Length (ft)	Rigid Zone from Start (x/L)	Rigid Zone from End (x/L)	Orientation Angle (deg)	Castin g (day)	Structure / Construction Group
3105	3105	3106	-	Beam	Typ Pier Column	(same as start)	Fc_6 weightless	0.0000	7.5878	0.0000	0.0000	0.0000	0	(none)
3201	3201	3202	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-80.7224	0	(none)
3202	3202	3203	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	19.5593	0.0000	0.0000	0.0000	0	Column Bottom
3203	3203	3204	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	19.5593	0.0000	0.0000	0.0000	0	(none)
3204	3204	3205	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	5.7118	0.0000	0.0000	0.0000	0	Column Top
3205	3205	3206	-	Beam	Typ Pier Column	(same as start)	Fc_6 weightless	0.0000	7.7102	0.0000	0.0000	0.0000	0	(none)
3011	3106	3006	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	22.0273	0.0000	0.0000	0.0000	0	(none)
3012	3006	3206	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	24.6786	0.0000	0.0000	0.0000	0	(none)
3006	3006	3007	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	9.2776	0	Rigid Super
3007	3007	41	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	15.078	0.0000	0.0000	9.2776	0	Rigid Super
4001	4101	4001	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	11.2671	0.0000	0.0000	0.0000	0	(none)
4002	4001	4201	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	11.2671	0.0000	0.0000	0.0000	0	(none)
4101	4101	4102	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-86.6872	0	(none)
4102	4102	4103	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	22.208	0.0000	0.0000	0.0000	0	Column Bottom
4103	4103	4104	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	22.2071	0.0000	0.0000	0.0000	0	(none)
4104	4104	4105	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	8.579	0.0000	0.0000	0.0000	0	Column Top
4105	4105	4106	-	Beam	Typ Pier Column	(same as start)	Fc_6 weightless	0.0000	7.5878	0.0000	0.0000	0.0000	0	(none)
4201	4201	4202	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-86.6872	0	(none)
4202	4202	4203	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	22.8748	0.0000	0.0000	0.0000	0	Column Bottom
4203	4203	4204	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	22.8738	0.0000	0.0000	0.0000	0	(none)
4204	4204	4205	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	9.027	0.0000	0.0000	0.0000	0	Column Top
4205	4205	4206	-	Beam	Typ Pier Column	(same as start)	Fc_6 weightless	0.0000	7.7102	0.0000	0.0000	0.0000	0	(none)
4011	4106	4006	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	22.0272	0.0000	0.0000	0.0000	0	(none)
4012	4006	4206	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	24.6786	0.0000	0.0000	0.0000	0	(none)
4006	4006	4007	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	3.3128	0	Rigid Super
4007	4007	66	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	15.09	0.0000	0.0000	3.3128	0	Rigid Super
5001	5101	5001	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	10.3908	0.0000	0.0000	0.0000	0	(none)
5002	5001	5201	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	10.3908	0.0000	0.0000	0.0000	0	(none)
5101	5101	5102	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-92.3673	0	(none)
5102	5102	5103	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	23.6963	0.0000	0.0000	0.0000	0	Column Bottom
5103	5103	5104	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	23.6972	0.0000	0.0000	0.0000	0	(none)
5104	5104	5105	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	10.0683	0.0000	0.0000	0.0000	0	Column Top
5105	5105	5106	-	Beam	Typ Pier Column	(same as start)	Fc_6 weightless	0.0000	7.5878	0.0000	0.0000	0.0000	0	(none)
5201	5201	5202	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-92.3673	0	(none)

INPUT : Members

ID	I-Joint	J-Joint	Span	Type	Section at Start	Section at End	Material	Prestress Force (kips)	Length (ft)	Rigid Zone from Start (x/L)	Rigid Zone from End (x/L)	Orientation Angle (deg)	Castin g (day)	Structure / Construction Group
5202	5202	5203	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	24.3633	0.0000	0.0000	0.0000	0	Column Bottom
5203	5203	5204	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	24.3643	0.0000	0.0000	0.0000	0	(none)
5204	5204	5205	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	10.5158	0.0000	0.0000	0.0000	0	Column Top
5205	5205	5206	-	Beam	Typ Pier Column	(same as start)	Fc_6 weightless	0.0000	7.7102	0.0000	0.0000	0.0000	0	(none)
5011	5106	5006	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	22.0272	0.0000	0.0000	0.0000	0	(none)
5012	5006	5206	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	24.6786	0.0000	0.0000	0.0000	0	(none)
5006	5006	5007	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-2.3673	0	Rigid Super
5007	5007	91	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	15.082	0.0000	0.0000	-2.3673	0	Rigid Super
6001	6101	6001	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	17.0495	0.0000	0.0000	0.0000	0	(none)
6002	6001	6201	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	17.0495	0.0000	0.0000	0.0000	0	(none)
6101	6101	6102	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-98.1027	0	(none)
6102	6102	6103	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	23.331	0.0000	0.0000	0.0000	0	Column Bottom
6103	6103	6104	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	23.331	0.0000	0.0000	0.0000	0	(none)
6104	6104	6105	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	9.7021	0.0000	0.0000	0.0000	0	Column Top
6105	6105	6106	-	Beam	Typ Pier Column	(same as start)	Fc_6 weightless	0.0000	7.5878	0.0000	0.0000	0.0000	0	(none)
6201	6201	6202	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-98.1027	0	(none)
6202	6202	6203	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	24.1742	0.0000	0.0000	0.0000	0	Column Bottom
6203	6203	6204	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	24.1749	0.0000	0.0000	0.0000	0	(none)
6204	6204	6205	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	10.3267	0.0000	0.0000	0.0000	0	Column Top
6205	6205	6206	-	Beam	Typ Pier Column	(same as start)	Fc_6 weightless	0.0000	7.7102	0.0000	0.0000	0.0000	0	(none)
6011	6106	6006	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	28.5273	0.0000	0.0000	0.0000	0	(none)
6012	6006	6206	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	31.1787	0.0000	0.0000	0.0000	0	(none)
6006	6006	6007	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-8.1027	0	Rigid Super
6007	6007	116	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	14.431	0.0000	0.0000	-8.1027	0	Rigid Super
7001	7101	7001	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	20.6875	0.0000	0.0000	0.0000	0	(none)
7002	7001	7201	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	20.6875	0.0000	0.0000	0.0000	0	(none)
7101	7101	7102	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-104.1468	0	(none)
7102	7102	7103	-	Beam	P7_Column	(same as start)	Fc_6	0.0000	16.6094	0.0000	0.0000	0.0000	0	Column Bottom
7103	7103	7104	-	Beam	P7_Column	(same as start)	Fc_6	0.0000	16.6102	0.0000	0.0000	0.0000	0	(none)
7104	7104	7105	-	Beam	P7_Column	(same as start)	Fc_6	0.0000	16.6053	0.0000	0.0000	0.0000	0	Column Top
7105	7105	7106	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	7.5984	0.0000	0.0000	0.0000	0	(none)
7201	7201	7202	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-104.1468	0	(none)
7202	7202	7203	-	Beam	P7_Column	(same as start)	Fc_6	0.0000	17.4447	0.0000	0.0000	0.0000	0	Column Bottom
7203	7203	7204	-	Beam	P7_Column	(same as start)	Fc_6	0.0000	17.4447	0.0000	0.0000	0.0000	0	(none)

INPUT : Members

ID	I-Joint	J-Joint	Span	Type	Section at Start	Section at End	Material	Prestress Force (kips)	Length (ft)	Rigid Zone from Start (x/L)	Rigid Zone from End (x/L)	Orientation Angle (deg)	Castin g (day)	Structure / Construction Group
7204	7204	7205	-	Beam	P7_Column	(same as start)	Fc_6	0.0000	17.4407	0.0000	0.0000	0.0000	0	Column Top
7205	7205	7206	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	7.7214	0.0000	0.0000	0.0000	0	(none)
7011	7106	7006	-	Beam	Typ Pier Cap	(same as start)	Fc_6	0.0000	30.906	0.0000	0.0000	90.0000	0	(none)
7012	7006	7206	-	Beam	Typ Pier Cap	(same as start)	Fc_6	0.0000	33.558	0.0000	0.0000	90.0000	0	(none)
7006	7006	7007	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.502	0.0000	0.0000	-14.1468	0	Rigid Super
7007	7007	141	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	14.301	0.0000	0.0000	-14.1468	0	Rigid Super
8001	8101	8001	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	25.5898	0.0000	0.0000	0.0000	0	(none)
8002	8001	8201	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	25.599	0.0000	0.0000	0.0000	0	(none)
8101	8101	8102	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	6.5	0.0000	0.0000	-90.0000	0	(none)
8102	8102	8103	-	Beam	P8_Column	(same as start)	Fc_6	0.0000	14.6881	0.0000	0.0000	0.0000	0	Column Bottom
8103	8103	8104	-	Beam	P8_Column	(same as start)	Fc_6	0.0000	14.6882	0.0000	0.0000	0.0000	0	(none)
8104	8104	8105	-	Beam	P8_Column	(same as start)	Fc_6	0.0000	14.6882	0.0000	0.0000	0.0000	0	Column Top
8105	8105	8106	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	7.604	0.0000	0.0000	0.0000	0	(none)
8201	8201	8202	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	6.5	0.0000	0.0000	-90.0000	0	(none)
8202	8202	8203	-	Beam	P8_Column	(same as start)	Fc_6	0.0000	15.6026	0.0000	0.0000	0.0000	0	Column Bottom
8203	8203	8204	-	Beam	P8_Column	(same as start)	Fc_6	0.0000	15.6023	0.0000	0.0000	0.0000	0	(none)
8204	8204	8205	-	Beam	P8_Column	(same as start)	Fc_6	0.0000	15.6017	0.0000	0.0000	0.0000	0	Column Top
8205	8205	8206	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	7.7282	0.0000	0.0000	0.0000	0	(none)
8011	8106	8006	-	Beam	Abut Pier Cap	(same as start)	Fc_6	0.0000	35.2248	0.0000	0.0000	90.0000	0	(none)
8012	8006	8206	-	Beam	Abut Pier Cap	(same as start)	Fc_6	0.0000	37.6092	0.0000	0.0000	90.0000	0	(none)
8006	8006	8007	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.508	0.0000	0.0000	-17.6058	0	Rigid Super
8007	8007	156	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	19.9297	0.0000	0.0000	180.0000	0	Rigid Super

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
1	0.0000	0.0350	-13.2170	0.0000	0.0500	-12.6800
2	0.0000	0.0500	-12.6800	0.0000	0.0670	-11.4070
3	0.0000	0.0670	-11.4070	0.0000	0.0820	-10.4830
4	0.0000	0.0820	-10.4830	0.0000	0.0960	-9.8200
5	0.0000	0.0960	-9.8200	0.0000	0.1110	-9.4250
6	0.0000	0.1110	-9.4250	0.0000	0.1270	-9.3040
7	0.0000	0.1270	-9.3040	0.0000	0.1450	-9.2900

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
8	0.0000	0.1450	-9.2900	0.0000	0.1650	-9.4020
9	0.0000	0.1650	-9.4020	0.0000	0.1970	-10.0990
10	0.0000	0.1970	-10.0990	0.0000	0.2470	-11.5120
11	0.0000	0.2470	-11.5120	0.0000	0.3090	-13.1770
12	0.0000	0.3090	-13.1770	0.0000	0.3810	-15.0060
13	0.0000	0.3810	-15.0060	0.0000	0.4650	-17.0220
14	0.0000	0.4650	-17.0220	0.0000	0.5520	-19.2960
15	0.0000	0.5520	-19.2960	0.0000	0.5650	-19.2750
16	0.0000	0.5650	-19.2750	0.0000	0.5900	-19.2690
17	0.0000	0.5900	-19.2690	0.0000	0.5510	-16.8910
18	0.0000	0.5510	-16.8910	0.0000	0.5110	-14.7970
19	0.0000	0.5110	-14.7970	0.0000	0.4710	-12.9080
20	0.0000	0.4710	-12.9080	0.0000	0.4310	-11.2020
21	0.0000	0.4310	-11.2020	0.0000	0.3920	-9.7960
22	0.0000	0.3920	-9.7960	0.0000	0.3650	-9.1150
23	0.0000	0.3650	-9.1150	0.0000	0.3590	-8.9640
24	0.0000	0.3590	-8.9640	0.0000	0.3570	-8.9360
25	0.0000	0.3570	-8.9360	0.0000	0.3560	-8.9080
26	0.0000	0.3560	-8.9080	0.0000	0.3550	-8.8790
27	0.0000	0.3550	-8.8790	0.0000	0.3540	-8.8490
28	0.0000	0.3540	-8.8490	0.0000	0.3530	-8.8180
29	0.0000	0.3530	-8.8180	0.0000	0.3510	-8.7870
30	0.0000	0.3510	-8.7870	0.0000	0.3500	-8.7580
31	0.0000	0.3500	-8.7580	0.0000	0.3500	-8.7570
32	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
33	0.0000	0.3500	-8.7570	0.0000	0.3550	-8.8850
34	0.0000	0.3550	-8.8850	0.0000	0.3780	-9.4540
35	0.0000	0.3780	-9.4540	0.0000	0.4290	-10.7140
36	0.0000	0.4290	-10.7140	0.0000	0.4920	-12.3050
37	0.0000	0.4920	-12.3050	0.0000	0.5630	-14.0850
38	0.0000	0.5630	-14.0850	0.0000	0.6430	-16.0640
39	0.0000	0.6430	-16.0640	0.0000	0.7370	-18.4340
40	0.0000	0.7370	-18.4340	0.0000	0.7410	-18.5240
41	0.0000	0.7410	-18.5240	0.0000	0.7370	-18.4220

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
42	0.0000	0.7370	-18.4220	0.0000	0.6420	-16.0600
43	0.0000	0.6420	-16.0600	0.0000	0.5630	-14.0770
44	0.0000	0.5630	-14.0770	0.0000	0.4920	-12.2900
45	0.0000	0.4920	-12.2900	0.0000	0.4280	-10.6910
46	0.0000	0.4280	-10.6910	0.0000	0.3780	-9.4380
47	0.0000	0.3780	-9.4380	0.0000	0.3550	-8.8850
48	0.0000	0.3550	-8.8850	0.0000	0.3500	-8.7570
49	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
50	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
51	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
52	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
53	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
54	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
55	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
56	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
57	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
58	0.0000	0.3500	-8.7570	0.0000	0.3550	-8.8850
59	0.0000	0.3550	-8.8850	0.0000	0.3780	-9.4380
60	0.0000	0.3780	-9.4380	0.0000	0.4280	-10.6910
61	0.0000	0.4280	-10.6910	0.0000	0.4920	-12.2900
62	0.0000	0.4920	-12.2900	0.0000	0.5630	-14.0770
63	0.0000	0.5630	-14.0770	0.0000	0.6420	-16.0600
64	0.0000	0.6420	-16.0600	0.0000	0.7370	-18.4220
65	0.0000	0.7370	-18.4220	0.0000	0.7410	-18.5240
66	0.0000	0.7410	-18.5240	0.0000	0.7360	-18.4100
67	0.0000	0.7360	-18.4100	0.0000	0.6420	-16.0560
68	0.0000	0.6420	-16.0560	0.0000	0.5630	-14.0680
69	0.0000	0.5630	-14.0680	0.0000	0.4910	-12.2750
70	0.0000	0.4910	-12.2750	0.0000	0.4270	-10.6690
71	0.0000	0.4270	-10.6690	0.0000	0.3770	-9.4230
72	0.0000	0.3770	-9.4230	0.0000	0.3550	-8.8850
73	0.0000	0.3550	-8.8850	0.0000	0.3500	-8.7570
74	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
75	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
76	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
77	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
78	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
79	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
80	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
81	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
82	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
83	0.0000	0.3500	-8.7570	0.0000	0.3550	-8.8850
84	0.0000	0.3550	-8.8850	0.0000	0.3770	-9.4230
85	0.0000	0.3770	-9.4230	0.0000	0.4270	-10.6690
86	0.0000	0.4270	-10.6690	0.0000	0.4910	-12.2750
87	0.0000	0.4910	-12.2750	0.0000	0.5630	-14.0680
88	0.0000	0.5630	-14.0680	0.0000	0.6420	-16.0560
89	0.0000	0.6420	-16.0560	0.0000	0.7360	-18.4100
90	0.0000	0.7360	-18.4100	0.0000	0.7410	-18.5240
91	0.0000	0.7410	-18.5240	0.0000	0.7370	-18.4180
92	0.0000	0.7370	-18.4180	0.0000	0.6420	-16.0590
93	0.0000	0.6420	-16.0590	0.0000	0.5630	-14.0750
94	0.0000	0.5630	-14.0750	0.0000	0.4910	-12.2860
95	0.0000	0.4910	-12.2860	0.0000	0.4270	-10.6850
96	0.0000	0.4270	-10.6850	0.0000	0.3780	-9.4400
97	0.0000	0.3780	-9.4400	0.0000	0.3560	-8.9080
98	0.0000	0.3560	-8.9080	0.0000	0.3520	-8.7990
99	0.0000	0.3520	-8.7990	0.0000	0.3530	-8.8180
100	0.0000	0.3530	-8.8180	0.0000	0.3530	-8.8350
101	0.0000	0.3530	-8.8350	0.0000	0.3540	-8.8530
102	0.0000	0.3540	-8.8530	0.0000	0.3550	-8.8710
103	0.0000	0.3550	-8.8710	0.0000	0.3560	-8.8880
104	0.0000	0.3560	-8.8880	0.0000	0.3560	-8.8880
105	0.0000	0.3560	-8.8880	0.0000	0.3570	-8.9210
106	0.0000	0.3570	-8.9210	0.0000	0.3580	-8.9380
107	0.0000	0.3580	-8.9380	0.0000	0.3580	-8.9540
108	0.0000	0.3580	-8.9540	0.0000	0.3640	-9.0940
109	0.0000	0.3640	-9.0940	0.0000	0.3890	-9.7260

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
110	0.0000	0.3890	-9.7260	0.0000	0.4440	-11.0980
111	0.0000	0.4440	-11.0980	0.0000	0.5120	-12.7880
112	0.0000	0.5120	-12.7880	0.0000	0.5850	-14.6310
113	0.0000	0.5850	-14.6310	0.0000	0.6670	-16.6670
114	0.0000	0.6670	-16.6670	0.0000	0.7630	-19.0680
115	0.0000	0.7630	-19.0680	0.0000	0.7670	-19.1660
116	0.0000	0.7670	-19.1660	0.0000	0.7630	-19.0690
117	0.0000	0.7630	-19.0690	0.0000	0.6670	-16.6670
118	0.0000	0.6670	-16.6670	0.0000	0.5850	-14.6310
119	0.0000	0.5850	-14.6310	0.0000	0.5120	-12.7900
120	0.0000	0.5120	-12.7900	0.0000	0.4450	-11.1260
121	0.0000	0.4450	-11.1260	0.0000	0.3910	-9.7670
122	0.0000	0.3910	-9.7670	0.0000	0.3660	-9.1410
123	0.0000	0.3660	-9.1410	0.0000	0.3610	-9.0190
124	0.0000	0.3610	-9.0190	0.0000	0.3610	-9.0190
125	0.0000	0.3610	-9.0190	0.0000	0.3610	-9.0190
126	0.0000	0.3610	-9.0190	0.0000	0.3610	-9.0190
127	0.0000	0.3610	-9.0190	0.0000	0.3610	-9.0190
128	0.0000	0.3610	-9.0190	0.0000	0.3610	-9.0220
129	0.0000	0.3610	-9.0220	0.0000	0.3610	-9.0290
130	0.0000	0.3610	-9.0290	0.0000	0.3610	-9.0360
131	0.0000	0.3610	-9.0360	0.0000	0.3620	-9.0440
132	0.0000	0.3620	-9.0440	0.0000	0.3620	-9.0510
133	0.0000	0.3620	-9.0510	0.0000	0.3670	-9.1800
134	0.0000	0.3670	-9.1800	0.0000	0.3930	-9.8260
135	0.0000	0.3930	-9.8260	0.0000	0.4490	-11.2140
136	0.0000	0.4490	-11.2140	0.0000	0.5160	-12.9030
137	0.0000	0.5160	-12.9030	0.0000	0.5910	-14.7730
138	0.0000	0.5910	-14.7730	0.0000	0.6730	-16.8310
139	0.0000	0.6730	-16.8310	0.0000	0.7690	-19.2200
140	0.0000	0.7690	-19.2200	0.0000	0.7710	-19.2650
141	0.0000	0.7710	-19.2650	0.0000	0.7690	-19.2260
142	0.0000	0.7690	-19.2260	0.0000	0.6750	-16.8700
143	0.0000	0.6750	-16.8700	0.0000	0.5930	-14.8310

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
144	0.0000	0.5930	-14.8310	0.0000	0.5190	-12.9840
145	0.0000	0.5190	-12.9840	0.0000	0.4520	-11.3080
146	0.0000	0.4520	-11.3080	0.0000	0.3970	-9.9150
147	0.0000	0.3970	-9.9150	0.0000	0.3700	-9.2590
148	0.0000	0.3700	-9.2590	0.0000	0.3660	-9.1440
149	0.0000	0.3660	-9.1440	0.0000	0.3660	-9.1500
150	0.0000	0.3660	-9.1500	0.0000	0.3700	-9.2520
151	0.0000	0.3700	-9.2520	0.0000	0.3850	-9.6310
152	0.0000	0.3850	-9.6310	0.0000	0.4110	-10.2840
153	0.0000	0.4110	-10.2840	0.0000	0.4480	-11.2010
154	0.0000	0.4480	-11.2010	0.0000	0.4990	-12.4850
155	0.0000	0.4990	-12.4850	0.0000	0.5240	-13.0980
1001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1104	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1202	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1204	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1205	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1007	0.0000	0.0000	0.0000	0.0000	0.0000	-12.6800
2001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2104	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
2105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2202	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2204	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2205	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2007	0.0000	0.0000	0.0000	0.0000	0.0000	-19.2690
3001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3104	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3202	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3204	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3205	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3007	0.0000	0.0000	0.0000	0.0000	0.0000	-18.4220
4001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4104	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
4202	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4204	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4205	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4007	0.0000	0.0000	0.0000	0.0000	0.0000	-18.4100
5001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5104	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5202	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5204	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5205	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5007	0.0000	0.0000	0.0000	0.0000	0.0000	-18.4180
6001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6104	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6202	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
6204	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6205	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6007	0.0000	0.0000	0.0000	0.0000	0.0000	-19.0690
7001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7104	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7202	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7204	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7205	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7007	0.0000	0.0000	0.0000	0.0000	0.0000	-19.2260
8001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8104	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8202	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8204	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8205	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
8011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8007	0.0000	0.0000	0.0000	0.0000	0.0000	-13.0980

INPUT : Member Fixity

Member ID	Start Force Fx	Start Force Fy	Start Force Fz	Start Moment Mx	Start Moment My	Start Moment Mz	End Force Fx	End Force Fy	End Force Fz	End Moment Mx	End Moment My	End Moment Mz
1006	Fixed	Fixed	Fixed	Fixed	Free	Fixed	Fixed	Fixed	Fixed	Free	Free	Fixed
2006	Fixed	Fixed	Fixed	Fixed	Free	Fixed	Fixed	Fixed	Fixed	Free	Free	Fixed
3006	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Fixed
4006	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Fixed
5006	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Fixed
6006	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Fixed
7006	Fixed	Fixed	Fixed	Fixed	Free	Fixed	Fixed	Fixed	Fixed	Free	Free	Fixed
8006	Fixed	Fixed	Fixed	Fixed	Free	Fixed	Fixed	Fixed	Fixed	Free	Free	Fixed

INPUT : Springs

ID	I-Joint	J-Joint	Type	Direction	K Tension (kips/in)	K Compression (kips/in)	Maximum Tension (kips or kips-in)	Maximum Compression (kips or kips-in)	Hook (in)	Gap (in)	Properties Definition	Structure / Construction Group
1	1001	(none)	Linear	K(6x6)	0.0000	0.0000					Pier1spring	Column Top, Column
2	2001	(none)	Linear	K(6x6)	0.0000	0.0000					Pier2spring	Column Top, Column
3	3001	(none)	Linear	K(6x6)	0.0000	0.0000					Pier3spring	Column Top, Column
4	4001	(none)	Linear	K(6x6)	0.0000	0.0000					Pier4spring	Column Top, Column
5	5001	(none)	Linear	K(6x6)	0.0000	0.0000					Pier5spring	Column Top, Column
6	6001	(none)	Linear	K(6x6)	0.0000	0.0000					Pier6spring	Column Top, Column
7	7001	(none)	Linear	K(6x6)	0.0000	0.0000					Pier7spring	Column Top, Column
8	8001	(none)	Linear	K(6x6)	0.0000	0.0000					Pier8spring	Column Top, Column
9	1102	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
10	1105	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
11	1202	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
12	1205	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
13	2102	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)

INPUT : Springs

ID	I-Joint	J-Joint	Type	Direction	K Tension (kips/in)	K Compression (kips/in)	Maximum Tension (kips or kips-in)	Maximum Compression (kips or kips-in)	Hook (in)	Gap (in)	Properties Definition	Structure / Construction Group
14	2105	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
15	2202	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
16	2205	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
17	3102	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
18	3105	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
19	3202	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
20	3205	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
21	4102	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
22	4105	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
23	4202	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
24	4205	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
25	5102	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
26	5105	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
27	5202	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
28	5205	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
29	6102	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
30	6105	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
31	6202	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
32	6205	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
33	7102	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
34	7105	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
35	7202	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
36	7205	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
37	8102	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
38	8105	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
39	8202	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
40	8205	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)

INPUT : Mass Elements

Joint	Translational X (kips)	Translational Y (kips)	Translational Z (kips)	Rotational X (kips-ft²)	Rotational Y (kips-ft²)	Rotational Z (kips-ft²)
1001	6,912.0000	6,912.0000	6,912.0000	0.0000	0.0000	0.0000
2001	10,260.0000	10,260.0000	10,260.0000	0.0000	0.0000	0.0000

INPUT : Mass Elements

Joint	Translational X (kips)	Translational Y (kips)	Translational Z (kips)	Rotational X (kips-ft²)	Rotational Y (kips-ft²)	Rotational Z (kips-ft²)
3001	10,260.0000	10,260.0000	10,260.0000	0.0000	0.0000	0.0000
4001	10,260.0000	10,260.0000	10,260.0000	0.0000	0.0000	0.0000
5001	10,260.0000	10,260.0000	10,260.0000	0.0000	0.0000	0.0000
6001	10,260.0000	10,260.0000	10,260.0000	0.0000	0.0000	0.0000
7001	10,260.0000	10,260.0000	10,260.0000	0.0000	0.0000	0.0000
8001	5,760.0000	5,760.0000	5,760.0000	0.0000	0.0000	0.0000

INPUT : More Material Properties

Name	Yield Stress (lb/in²)	Post-yield to Initial Slope Ratio	Concrete Strength Specimen	Concrete fc28 or Steel Fu (lb/in²)	Concrete Cement Hardening Type	Tendon GUTS (lb/in²)	Material Time-Effect	Assigned
Fc_6	0.00	0.020	Cylinder	6,000.00	Normal	0.00	(NONE)	Yes
Fc_6 weightless	0.00	0.020	Cylinder	6,000.00	Normal	0.00	(NONE)	Yes
Fc_8	0.00	0.020	Cylinder	8,000.00	Normal	0.00	(NONE)	Yes

Load Cases

ID	Name	Analysis Type	Class	Status	Weight Factor X	Weight Factor Y	Weight Factor Z	Is Dynamic Mass?	Assigned to Load Combinati	# of Joint Loads	# of Support Loads	# of Member Loads	# of Member Thermal	# of Plate Loads	# of Moving Loads	# of THA Loading	# of THA Initial
1	DC-Dead Load	Static	None	Active	0.0000	0.0000	-1.0000	Yes	No	8	0	155	0	0	0	0	0
2	DC-Barriers	Static	None	Active	0.0000	0.0000	0.0000	Yes	No	0	0	155	0	0	0	0	0
3	DC-LRT	Static	None	Active	0.0000	0.0000	0.0000	Yes	No	0	0	155	0	0	0	0	0
4	DW-Wearing	Static	None	Active	0.0000	0.0000	0.0000	Yes	No	0	0	155	0	0	0	0	0
5	DW-Utilities	Static	None	Active	0.0000	0.0000	0.0000	Yes	No	0	0	155	0	0	0	0	0
6	TU-Rise	Static	None	Active	0.0000	0.0000	0.0000	No	No	0	0	0	155	0	0	0	0
7	TU-Fall	Static	None	Active	0.0000	0.0000	0.0000	No	No	0	0	0	155	0	0	0	0
8	Live Load	Moving	None	Active	0.0000	0.0000	0.0000	No	No	0	0	0	0	0	0	0	0
9	EQ 1	Response	None	Active	0.0000	0.0000	0.0000	No	No	0	0	0	0	0	0	0	0
10	EQ 2	Response	None	Active	0.0000	0.0000	0.0000	No	No	0	0	0	0	0	0	0	0
11	EQ 3	Response	None	Active	0.0000	0.0000	0.0000	No	No	0	0	0	0	0	0	0	0
14	WA	Static	None	Active	0.0000	0.0000	0.0000	No	No	8	0	0	0	0	0	0	0
15	WS	Static	None	Active	0.0000	0.0000	0.0000	No	No	0	0	279	0	0	0	0	0
16	CV1	Static	None	Active	0.0000	0.0000	0.0000	No	No	1	0	0	0	0	0	0	0
17	CV2	Static	None	Active	0.0000	0.0000	0.0000	No	No	1	0	0	0	0	0	0	0
18	EQ 1 SEE	Response	None	Active	0.0000	0.0000	0.0000	No	No	0	0	0	0	0	0	0	0

Load Cases

ID	Name	Analysis Type	Class	Status	Weight Factor X	Weight Factor Y	Weight Factor Z	Is Dynamic Mass?	Assigned to Load Combinati	# of Joint Loads	# of Support Loads	# of Member Loads	# of Member Thermal	# of Plate Loads	# of Moving Loads	# of THA Loading	# of THA Initial
19	EQ 2 SEE	Response	None	Active	0.0000	0.0000	0.0000	No	No	0	0	0	0	0	0	0	0
20	EQ 3 SEE	Response	None	Active	0.0000	0.0000	0.0000	No	No	0	0	0	0	0	0	0	0
21	CVL-P2	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
22	CVT-P2	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
23	CVL-P3	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
24	CVT-P3	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
25	CVL-P4	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
26	CVT-P4	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
27	CVL-P5	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
28	CVT-P5	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
29	CVL-P6	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
30	CVT-P6	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
31	CVL-P7	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
32	CVT-P7	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0

LOAD CASE DC-Dead Load, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
1	Uniform Force	Global Z	-32.5600		0.0000	1.0000
2	Uniform Force	Global Z	-32.5600		0.0000	1.0000
3	Uniform Force	Global Z	-32.5600		0.0000	1.0000
4	Uniform Force	Global Z	-32.5600		0.0000	1.0000
5	Uniform Force	Global Z	-32.5600		0.0000	1.0000
6	Uniform Force	Global Z	-32.5600		0.0000	1.0000
7	Uniform Force	Global Z	-32.5600		0.0000	1.0000
8	Uniform Force	Global Z	-32.5600		0.0000	1.0000
9	Uniform Force	Global Z	-32.5600		0.0000	1.0000
10	Uniform Force	Global Z	-32.5600		0.0000	1.0000
11	Uniform Force	Global Z	-32.5600		0.0000	1.0000
12	Uniform Force	Global Z	-32.5600		0.0000	1.0000
13	Uniform Force	Global Z	-32.5600		0.0000	1.0000
14	Uniform Force	Global Z	-32.5600		0.0000	1.0000
15	Uniform Force	Global Z	-32.5600		0.0000	1.0000

LOAD CASE DC-Dead Load, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
16	Uniform Force	Global Z	-32.5600		0.0000	1.0000
17	Uniform Force	Global Z	-32.5600		0.0000	1.0000
18	Uniform Force	Global Z	-32.5600		0.0000	1.0000
19	Uniform Force	Global Z	-32.5600		0.0000	1.0000
20	Uniform Force	Global Z	-32.5600		0.0000	1.0000
21	Uniform Force	Global Z	-32.5600		0.0000	1.0000
22	Uniform Force	Global Z	-32.5600		0.0000	1.0000
23	Uniform Force	Global Z	-32.5600		0.0000	1.0000
24	Uniform Force	Global Z	-32.5600		0.0000	1.0000
25	Uniform Force	Global Z	-32.5600		0.0000	1.0000
26	Uniform Force	Global Z	-32.5600		0.0000	1.0000
27	Uniform Force	Global Z	-32.5600		0.0000	1.0000
28	Uniform Force	Global Z	-32.5600		0.0000	1.0000
29	Uniform Force	Global Z	-32.5600		0.0000	1.0000
30	Uniform Force	Global Z	-32.5600		0.0000	1.0000
31	Uniform Force	Global Z	-32.5600		0.0000	1.0000
32	Uniform Force	Global Z	-32.5600		0.0000	1.0000
33	Uniform Force	Global Z	-32.5600		0.0000	1.0000
34	Uniform Force	Global Z	-32.5600		0.0000	1.0000
35	Uniform Force	Global Z	-32.5600		0.0000	1.0000
36	Uniform Force	Global Z	-32.5600		0.0000	1.0000
37	Uniform Force	Global Z	-32.5600		0.0000	1.0000
38	Uniform Force	Global Z	-32.5600		0.0000	1.0000
39	Uniform Force	Global Z	-32.5600		0.0000	1.0000
40	Uniform Force	Global Z	-32.5600		0.0000	1.0000
41	Uniform Force	Global Z	-32.5600		0.0000	1.0000
42	Uniform Force	Global Z	-32.5600		0.0000	1.0000
43	Uniform Force	Global Z	-32.5600		0.0000	1.0000
44	Uniform Force	Global Z	-32.5600		0.0000	1.0000
45	Uniform Force	Global Z	-32.5600		0.0000	1.0000
46	Uniform Force	Global Z	-32.5600		0.0000	1.0000
47	Uniform Force	Global Z	-32.5600		0.0000	1.0000
48	Uniform Force	Global Z	-32.5600		0.0000	1.0000
49	Uniform Force	Global Z	-32.5600		0.0000	1.0000

LOAD CASE DC-Dead Load, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
50	Uniform Force	Global Z	-32.5600		0.0000	1.0000
51	Uniform Force	Global Z	-32.5600		0.0000	1.0000
52	Uniform Force	Global Z	-32.5600		0.0000	1.0000
53	Uniform Force	Global Z	-32.5600		0.0000	1.0000
54	Uniform Force	Global Z	-32.5600		0.0000	1.0000
55	Uniform Force	Global Z	-32.5600		0.0000	1.0000
56	Uniform Force	Global Z	-32.5600		0.0000	1.0000
57	Uniform Force	Global Z	-32.5600		0.0000	1.0000
58	Uniform Force	Global Z	-32.5600		0.0000	1.0000
59	Uniform Force	Global Z	-32.5600		0.0000	1.0000
60	Uniform Force	Global Z	-32.5600		0.0000	1.0000
61	Uniform Force	Global Z	-32.5600		0.0000	1.0000
62	Uniform Force	Global Z	-32.5600		0.0000	1.0000
63	Uniform Force	Global Z	-32.5600		0.0000	1.0000
64	Uniform Force	Global Z	-32.5600		0.0000	1.0000
65	Uniform Force	Global Z	-32.5600		0.0000	1.0000
66	Uniform Force	Global Z	-32.5600		0.0000	1.0000
67	Uniform Force	Global Z	-32.5600		0.0000	1.0000
68	Uniform Force	Global Z	-32.5600		0.0000	1.0000
69	Uniform Force	Global Z	-32.5600		0.0000	1.0000
70	Uniform Force	Global Z	-32.5600		0.0000	1.0000
71	Uniform Force	Global Z	-32.5600		0.0000	1.0000
72	Uniform Force	Global Z	-32.5600		0.0000	1.0000
73	Uniform Force	Global Z	-32.5600		0.0000	1.0000
74	Uniform Force	Global Z	-32.5600		0.0000	1.0000
75	Uniform Force	Global Z	-32.5600		0.0000	1.0000
76	Uniform Force	Global Z	-32.5600		0.0000	1.0000
77	Uniform Force	Global Z	-32.5600		0.0000	1.0000
78	Uniform Force	Global Z	-32.5600		0.0000	1.0000
79	Uniform Force	Global Z	-32.5600		0.0000	1.0000
80	Uniform Force	Global Z	-32.5600		0.0000	1.0000
81	Uniform Force	Global Z	-32.5600		0.0000	1.0000
82	Uniform Force	Global Z	-32.5600		0.0000	1.0000
83	Uniform Force	Global Z	-32.5600		0.0000	1.0000

LOAD CASE DC-Dead Load, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
84	Uniform Force	Global Z	-32.5600		0.0000	1.0000
85	Uniform Force	Global Z	-32.5600		0.0000	1.0000
86	Uniform Force	Global Z	-32.5600		0.0000	1.0000
87	Uniform Force	Global Z	-32.5600		0.0000	1.0000
88	Uniform Force	Global Z	-32.5600		0.0000	1.0000
89	Uniform Force	Global Z	-32.5600		0.0000	1.0000
90	Uniform Force	Global Z	-32.5600		0.0000	1.0000
91	Uniform Force	Global Z	-32.5600		0.0000	1.0000
92	Uniform Force	Global Z	-32.5600		0.0000	1.0000
93	Uniform Force	Global Z	-32.5600		0.0000	1.0000
94	Uniform Force	Global Z	-32.5600		0.0000	1.0000
95	Uniform Force	Global Z	-32.5600		0.0000	1.0000
96	Uniform Force	Global Z	-32.5600		0.0000	1.0000
97	Uniform Force	Global Z	-32.5600		0.0000	1.0000
98	Uniform Force	Global Z	-32.5600		0.0000	1.0000
99	Uniform Force	Global Z	-32.5600		0.0000	1.0000
100	Uniform Force	Global Z	-32.5600		0.0000	1.0000
101	Uniform Force	Global Z	-32.5600		0.0000	1.0000
102	Uniform Force	Global Z	-32.5600		0.0000	1.0000
103	Uniform Force	Global Z	-32.5600		0.0000	1.0000
104	Uniform Force	Global Z	-32.5600		0.0000	1.0000
105	Uniform Force	Global Z	-32.5600		0.0000	1.0000
106	Uniform Force	Global Z	-32.5600		0.0000	1.0000
107	Uniform Force	Global Z	-32.5600		0.0000	1.0000
108	Uniform Force	Global Z	-32.5600		0.0000	1.0000
109	Uniform Force	Global Z	-32.5600		0.0000	1.0000
110	Uniform Force	Global Z	-32.5600		0.0000	1.0000
111	Uniform Force	Global Z	-32.5600		0.0000	1.0000
112	Uniform Force	Global Z	-32.5600		0.0000	1.0000
113	Uniform Force	Global Z	-32.5600		0.0000	1.0000
114	Uniform Force	Global Z	-32.5600		0.0000	1.0000
115	Uniform Force	Global Z	-32.5600		0.0000	1.0000
116	Uniform Force	Global Z	-32.5600		0.0000	1.0000
117	Uniform Force	Global Z	-32.5600		0.0000	1.0000

LOAD CASE DC-Dead Load, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
118	Uniform Force	Global Z	-32.5600		0.0000	1.0000
119	Uniform Force	Global Z	-32.5600		0.0000	1.0000
120	Uniform Force	Global Z	-32.5600		0.0000	1.0000
121	Uniform Force	Global Z	-32.5600		0.0000	1.0000
122	Uniform Force	Global Z	-32.5600		0.0000	1.0000
123	Uniform Force	Global Z	-32.5600		0.0000	1.0000
124	Uniform Force	Global Z	-32.5600		0.0000	1.0000
125	Uniform Force	Global Z	-32.5600		0.0000	1.0000
126	Uniform Force	Global Z	-32.5600		0.0000	1.0000
127	Uniform Force	Global Z	-32.5600		0.0000	1.0000
128	Uniform Force	Global Z	-32.5600		0.0000	1.0000
129	Uniform Force	Global Z	-32.5600		0.0000	1.0000
130	Uniform Force	Global Z	-32.5600		0.0000	1.0000
131	Uniform Force	Global Z	-32.5600		0.0000	1.0000
132	Uniform Force	Global Z	-32.5600		0.0000	1.0000
133	Uniform Force	Global Z	-32.5600		0.0000	1.0000
134	Uniform Force	Global Z	-32.5600		0.0000	1.0000
135	Uniform Force	Global Z	-32.5600		0.0000	1.0000
136	Uniform Force	Global Z	-32.5600		0.0000	1.0000
137	Uniform Force	Global Z	-32.5600		0.0000	1.0000
138	Uniform Force	Global Z	-32.5600		0.0000	1.0000
139	Uniform Force	Global Z	-32.5600		0.0000	1.0000
140	Uniform Force	Global Z	-32.5600		0.0000	1.0000
141	Uniform Force	Global Z	-32.5600		0.0000	1.0000
142	Uniform Force	Global Z	-32.5600		0.0000	1.0000
143	Uniform Force	Global Z	-32.5600		0.0000	1.0000
144	Uniform Force	Global Z	-32.5600		0.0000	1.0000
145	Uniform Force	Global Z	-32.5600		0.0000	1.0000
146	Uniform Force	Global Z	-32.5600		0.0000	1.0000
147	Uniform Force	Global Z	-32.5600		0.0000	1.0000
148	Uniform Force	Global Z	-32.5600		0.0000	1.0000
149	Uniform Force	Global Z	-32.5600		0.0000	1.0000
150	Uniform Force	Global Z	-32.5600		0.0000	1.0000
151	Uniform Force	Global Z	-32.5600		0.0000	1.0000

LOAD CASE DC-Dead Load, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
152	Uniform Force	Global Z	-32.5600		0.0000	1.0000
153	Uniform Force	Global Z	-32.5600		0.0000	1.0000
154	Uniform Force	Global Z	-32.5600		0.0000	1.0000
155	Uniform Force	Global Z	-32.5600		0.0000	1.0000

LOAD CASE DC-Dead Load, Joint Loads

Joint	X-Force (kips)	Y-Force (kips)	Z-Force (kips)	X-Moment (kips-ft)	Y-Moment (kips-ft)	Z-Moment (kips-ft)
1	0.0000	0.0000	-5,619.4000	0.0000	0.0000	0.0000
16	0.0000	0.0000	-2,934.8000	0.0000	0.0000	0.0000
41	0.0000	0.0000	-3,314.7000	0.0000	0.0000	0.0000
66	0.0000	0.0000	-3,344.0000	0.0000	0.0000	0.0000
91	0.0000	0.0000	-3,348.3000	0.0000	0.0000	0.0000
116	0.0000	0.0000	-3,781.3000	0.0000	0.0000	0.0000
141	0.0000	0.0000	-2,908.5000	0.0000	0.0000	0.0000
156	0.0000	0.0000	-5,051.1000	0.0000	0.0000	0.0000

LOAD CASE DC-Barriers, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
1	Uniform Force	Global Z	-1.4500		0.0000	1.0000
2	Uniform Force	Global Z	-1.4500		0.0000	1.0000
3	Uniform Force	Global Z	-1.4500		0.0000	1.0000
4	Uniform Force	Global Z	-1.4500		0.0000	1.0000
5	Uniform Force	Global Z	-1.4500		0.0000	1.0000
6	Uniform Force	Global Z	-1.4500		0.0000	1.0000
7	Uniform Force	Global Z	-1.4500		0.0000	1.0000
8	Uniform Force	Global Z	-1.4500		0.0000	1.0000
9	Uniform Force	Global Z	-1.4500		0.0000	1.0000
10	Uniform Force	Global Z	-1.4500		0.0000	1.0000
11	Uniform Force	Global Z	-1.4500		0.0000	1.0000
12	Uniform Force	Global Z	-1.4500		0.0000	1.0000
13	Uniform Force	Global Z	-1.4500		0.0000	1.0000

LOAD CASE DC-Barriers, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
14	Uniform Force	Global Z	-1.4500		0.0000	1.0000
15	Uniform Force	Global Z	-1.4500		0.0000	1.0000
16	Uniform Force	Global Z	-1.4500		0.0000	1.0000
17	Uniform Force	Global Z	-1.4500		0.0000	1.0000
18	Uniform Force	Global Z	-1.4500		0.0000	1.0000
19	Uniform Force	Global Z	-1.4500		0.0000	1.0000
20	Uniform Force	Global Z	-1.4500		0.0000	1.0000
21	Uniform Force	Global Z	-1.4500		0.0000	1.0000
22	Uniform Force	Global Z	-1.4500		0.0000	1.0000
23	Uniform Force	Global Z	-1.4500		0.0000	1.0000
24	Uniform Force	Global Z	-1.4500		0.0000	1.0000
25	Uniform Force	Global Z	-1.4500		0.0000	1.0000
26	Uniform Force	Global Z	-1.4500		0.0000	1.0000
27	Uniform Force	Global Z	-1.4500		0.0000	1.0000
28	Uniform Force	Global Z	-1.4500		0.0000	1.0000
29	Uniform Force	Global Z	-1.4500		0.0000	1.0000
30	Uniform Force	Global Z	-1.4500		0.0000	1.0000
31	Uniform Force	Global Z	-1.4500		0.0000	1.0000
32	Uniform Force	Global Z	-1.4500		0.0000	1.0000
33	Uniform Force	Global Z	-1.4500		0.0000	1.0000
34	Uniform Force	Global Z	-1.4500		0.0000	1.0000
35	Uniform Force	Global Z	-1.4500		0.0000	1.0000
36	Uniform Force	Global Z	-1.4500		0.0000	1.0000
37	Uniform Force	Global Z	-1.4500		0.0000	1.0000
38	Uniform Force	Global Z	-1.4500		0.0000	1.0000
39	Uniform Force	Global Z	-1.4500		0.0000	1.0000
40	Uniform Force	Global Z	-1.4500		0.0000	1.0000
41	Uniform Force	Global Z	-1.4500		0.0000	1.0000
42	Uniform Force	Global Z	-1.4500		0.0000	1.0000
43	Uniform Force	Global Z	-1.4500		0.0000	1.0000
44	Uniform Force	Global Z	-1.4500		0.0000	1.0000
45	Uniform Force	Global Z	-1.4500		0.0000	1.0000
46	Uniform Force	Global Z	-1.4500		0.0000	1.0000
47	Uniform Force	Global Z	-1.4500		0.0000	1.0000

LOAD CASE DC-Barriers, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
48	Uniform Force	Global Z	-1.4500		0.0000	1.0000
49	Uniform Force	Global Z	-1.4500		0.0000	1.0000
50	Uniform Force	Global Z	-1.4500		0.0000	1.0000
51	Uniform Force	Global Z	-1.4500		0.0000	1.0000
52	Uniform Force	Global Z	-1.4500		0.0000	1.0000
53	Uniform Force	Global Z	-1.4500		0.0000	1.0000
54	Uniform Force	Global Z	-1.4500		0.0000	1.0000
55	Uniform Force	Global Z	-1.4500		0.0000	1.0000
56	Uniform Force	Global Z	-1.4500		0.0000	1.0000
57	Uniform Force	Global Z	-1.4500		0.0000	1.0000
58	Uniform Force	Global Z	-1.4500		0.0000	1.0000
59	Uniform Force	Global Z	-1.4500		0.0000	1.0000
60	Uniform Force	Global Z	-1.4500		0.0000	1.0000
61	Uniform Force	Global Z	-1.4500		0.0000	1.0000
62	Uniform Force	Global Z	-1.4500		0.0000	1.0000
63	Uniform Force	Global Z	-1.4500		0.0000	1.0000
64	Uniform Force	Global Z	-1.4500		0.0000	1.0000
65	Uniform Force	Global Z	-1.4500		0.0000	1.0000
66	Uniform Force	Global Z	-1.4500		0.0000	1.0000
67	Uniform Force	Global Z	-1.4500		0.0000	1.0000
68	Uniform Force	Global Z	-1.4500		0.0000	1.0000
69	Uniform Force	Global Z	-1.4500		0.0000	1.0000
70	Uniform Force	Global Z	-1.4500		0.0000	1.0000
71	Uniform Force	Global Z	-1.4500		0.0000	1.0000
72	Uniform Force	Global Z	-1.4500		0.0000	1.0000
73	Uniform Force	Global Z	-1.4500		0.0000	1.0000
74	Uniform Force	Global Z	-1.4500		0.0000	1.0000
75	Uniform Force	Global Z	-1.4500		0.0000	1.0000
76	Uniform Force	Global Z	-1.4500		0.0000	1.0000
77	Uniform Force	Global Z	-1.4500		0.0000	1.0000
78	Uniform Force	Global Z	-1.4500		0.0000	1.0000
79	Uniform Force	Global Z	-1.4500		0.0000	1.0000
80	Uniform Force	Global Z	-1.4500		0.0000	1.0000
81	Uniform Force	Global Z	-1.4500		0.0000	1.0000

LOAD CASE DC-Barriers, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
82	Uniform Force	Global Z	-1.4500		0.0000	1.0000
83	Uniform Force	Global Z	-1.4500		0.0000	1.0000
84	Uniform Force	Global Z	-1.4500		0.0000	1.0000
85	Uniform Force	Global Z	-1.4500		0.0000	1.0000
86	Uniform Force	Global Z	-1.4500		0.0000	1.0000
87	Uniform Force	Global Z	-1.4500		0.0000	1.0000
88	Uniform Force	Global Z	-1.4500		0.0000	1.0000
89	Uniform Force	Global Z	-1.4500		0.0000	1.0000
90	Uniform Force	Global Z	-1.4500		0.0000	1.0000
91	Uniform Force	Global Z	-1.4500		0.0000	1.0000
92	Uniform Force	Global Z	-1.4500		0.0000	1.0000
93	Uniform Force	Global Z	-1.4500		0.0000	1.0000
94	Uniform Force	Global Z	-1.4500		0.0000	1.0000
95	Uniform Force	Global Z	-1.4500		0.0000	1.0000
96	Uniform Force	Global Z	-1.4500		0.0000	1.0000
97	Uniform Force	Global Z	-1.4500		0.0000	1.0000
98	Uniform Force	Global Z	-1.4500		0.0000	1.0000
99	Uniform Force	Global Z	-1.4500		0.0000	1.0000
100	Uniform Force	Global Z	-1.4500		0.0000	1.0000
101	Uniform Force	Global Z	-1.4500		0.0000	1.0000
102	Uniform Force	Global Z	-1.4500		0.0000	1.0000
103	Uniform Force	Global Z	-1.4500		0.0000	1.0000
104	Uniform Force	Global Z	-1.4500		0.0000	1.0000
105	Uniform Force	Global Z	-1.4500		0.0000	1.0000
106	Uniform Force	Global Z	-1.4500		0.0000	1.0000
107	Uniform Force	Global Z	-1.4500		0.0000	1.0000
108	Uniform Force	Global Z	-1.4500		0.0000	1.0000
109	Uniform Force	Global Z	-1.4500		0.0000	1.0000
110	Uniform Force	Global Z	-1.4500		0.0000	1.0000
111	Uniform Force	Global Z	-1.4500		0.0000	1.0000
112	Uniform Force	Global Z	-1.4500		0.0000	1.0000
113	Uniform Force	Global Z	-1.4500		0.0000	1.0000
114	Uniform Force	Global Z	-1.4500		0.0000	1.0000
115	Uniform Force	Global Z	-1.4500		0.0000	1.0000

LOAD CASE DC-Barriers, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
116	Uniform Force	Global Z	-1.4500		0.0000	1.0000
117	Uniform Force	Global Z	-1.4500		0.0000	1.0000
118	Uniform Force	Global Z	-1.4500		0.0000	1.0000
119	Uniform Force	Global Z	-1.4500		0.0000	1.0000
120	Uniform Force	Global Z	-1.4500		0.0000	1.0000
121	Uniform Force	Global Z	-1.4500		0.0000	1.0000
122	Uniform Force	Global Z	-1.4500		0.0000	1.0000
123	Uniform Force	Global Z	-1.4500		0.0000	1.0000
124	Uniform Force	Global Z	-1.4500		0.0000	1.0000
125	Uniform Force	Global Z	-1.4500		0.0000	1.0000
126	Uniform Force	Global Z	-1.4500		0.0000	1.0000
127	Uniform Force	Global Z	-1.4500		0.0000	1.0000
128	Uniform Force	Global Z	-1.4500		0.0000	1.0000
129	Uniform Force	Global Z	-1.4500		0.0000	1.0000
130	Uniform Force	Global Z	-1.4500		0.0000	1.0000
131	Uniform Force	Global Z	-1.4500		0.0000	1.0000
132	Uniform Force	Global Z	-1.4500		0.0000	1.0000
133	Uniform Force	Global Z	-1.4500		0.0000	1.0000
134	Uniform Force	Global Z	-1.4500		0.0000	1.0000
135	Uniform Force	Global Z	-1.4500		0.0000	1.0000
136	Uniform Force	Global Z	-1.4500		0.0000	1.0000
137	Uniform Force	Global Z	-1.4500		0.0000	1.0000
138	Uniform Force	Global Z	-1.4500		0.0000	1.0000
139	Uniform Force	Global Z	-1.4500		0.0000	1.0000
140	Uniform Force	Global Z	-1.4500		0.0000	1.0000
141	Uniform Force	Global Z	-1.4500		0.0000	1.0000
142	Uniform Force	Global Z	-1.4500		0.0000	1.0000
143	Uniform Force	Global Z	-1.4500		0.0000	1.0000
144	Uniform Force	Global Z	-1.4500		0.0000	1.0000
145	Uniform Force	Global Z	-1.4500		0.0000	1.0000
146	Uniform Force	Global Z	-1.4500		0.0000	1.0000
147	Uniform Force	Global Z	-1.4500		0.0000	1.0000
148	Uniform Force	Global Z	-1.4500		0.0000	1.0000
149	Uniform Force	Global Z	-1.4500		0.0000	1.0000

LOAD CASE DC-Barriers, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
150	Uniform Force	Global Z	-1.4500		0.0000	1.0000
151	Uniform Force	Global Z	-1.4500		0.0000	1.0000
152	Uniform Force	Global Z	-1.4500		0.0000	1.0000
153	Uniform Force	Global Z	-1.4500		0.0000	1.0000
154	Uniform Force	Global Z	-1.4500		0.0000	1.0000
155	Uniform Force	Global Z	-1.4500		0.0000	1.0000

LOAD CASE DC-LRT, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
1	Uniform Force	Global Z	-3.4300		0.0000	1.0000
2	Uniform Force	Global Z	-3.4300		0.0000	1.0000
3	Uniform Force	Global Z	-3.4300		0.0000	1.0000
4	Uniform Force	Global Z	-3.4300		0.0000	1.0000
5	Uniform Force	Global Z	-3.4300		0.0000	1.0000
6	Uniform Force	Global Z	-3.4300		0.0000	1.0000
7	Uniform Force	Global Z	-3.4300		0.0000	1.0000
8	Uniform Force	Global Z	-3.6690		0.0000	1.0000
9	Uniform Force	Global Z	-4.4550		0.0000	1.0000
10	Uniform Force	Global Z	-5.5300		0.0000	1.0000
11	Uniform Force	Global Z	-6.3870		0.0000	1.0000
12	Uniform Force	Global Z	-7.0540		0.0000	1.0000
13	Uniform Force	Global Z	-7.8200		0.0000	1.0000
14	Uniform Force	Global Z	-8.7730		0.0000	1.0000
15	Uniform Force	Global Z	-9.2970		0.0000	1.0000
16	Uniform Force	Global Z	-9.2970		0.0000	1.0000
17	Uniform Force	Global Z	-8.7730		0.0000	1.0000
18	Uniform Force	Global Z	-7.8200		0.0000	1.0000
19	Uniform Force	Global Z	-7.0530		0.0000	1.0000
20	Uniform Force	Global Z	-6.3870		0.0000	1.0000
21	Uniform Force	Global Z	-5.5290		0.0000	1.0000
22	Uniform Force	Global Z	-4.4550		0.0000	1.0000
23	Uniform Force	Global Z	-3.6690		0.0000	1.0000

LOAD CASE DC-LRT, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
24	Uniform Force	Global Z	-3.4300		0.0000	1.0000
25	Uniform Force	Global Z	-3.4300		0.0000	1.0000
26	Uniform Force	Global Z	-3.4300		0.0000	1.0000
27	Uniform Force	Global Z	-3.4300		0.0000	1.0000
28	Uniform Force	Global Z	-3.4300		0.0000	1.0000
29	Uniform Force	Global Z	-3.4300		0.0000	1.0000
30	Uniform Force	Global Z	-3.4300		0.0000	1.0000
31	Uniform Force	Global Z	-3.4300		0.0000	1.0000
32	Uniform Force	Global Z	-3.4300		0.0000	1.0000
33	Uniform Force	Global Z	-3.6690		0.0000	1.0000
34	Uniform Force	Global Z	-4.4550		0.0000	1.0000
35	Uniform Force	Global Z	-5.5290		0.0000	1.0000
36	Uniform Force	Global Z	-6.3870		0.0000	1.0000
37	Uniform Force	Global Z	-7.0530		0.0000	1.0000
38	Uniform Force	Global Z	-7.8200		0.0000	1.0000
39	Uniform Force	Global Z	-8.7730		0.0000	1.0000
40	Uniform Force	Global Z	-9.2970		0.0000	1.0000
41	Uniform Force	Global Z	-9.2970		0.0000	1.0000
42	Uniform Force	Global Z	-8.7740		0.0000	1.0000
43	Uniform Force	Global Z	-7.8220		0.0000	1.0000
44	Uniform Force	Global Z	-7.0570		0.0000	1.0000
45	Uniform Force	Global Z	-6.3900		0.0000	1.0000
46	Uniform Force	Global Z	-5.5500		0.0000	1.0000
47	Uniform Force	Global Z	-4.4740		0.0000	1.0000
48	Uniform Force	Global Z	-3.6690		0.0000	1.0000
49	Uniform Force	Global Z	-3.4300		0.0000	1.0000
50	Uniform Force	Global Z	-3.4300		0.0000	1.0000
51	Uniform Force	Global Z	-3.4300		0.0000	1.0000
52	Uniform Force	Global Z	-3.4300		0.0000	1.0000
53	Uniform Force	Global Z	-3.4300		0.0000	1.0000
54	Uniform Force	Global Z	-3.4300		0.0000	1.0000
55	Uniform Force	Global Z	-3.4300		0.0000	1.0000
56	Uniform Force	Global Z	-3.4300		0.0000	1.0000
57	Uniform Force	Global Z	-3.4300		0.0000	1.0000

LOAD CASE DC-LRT, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
58	Uniform Force	Global Z	-3.6690		0.0000	1.0000
59	Uniform Force	Global Z	-4.4740		0.0000	1.0000
60	Uniform Force	Global Z	-5.5500		0.0000	1.0000
61	Uniform Force	Global Z	-6.3900		0.0000	1.0000
62	Uniform Force	Global Z	-7.0570		0.0000	1.0000
63	Uniform Force	Global Z	-7.8220		0.0000	1.0000
64	Uniform Force	Global Z	-8.7740		0.0000	1.0000
65	Uniform Force	Global Z	-9.2970		0.0000	1.0000
66	Uniform Force	Global Z	-9.2970		0.0000	1.0000
67	Uniform Force	Global Z	-8.7750		0.0000	1.0000
68	Uniform Force	Global Z	-7.8240		0.0000	1.0000
69	Uniform Force	Global Z	-7.0600		0.0000	1.0000
70	Uniform Force	Global Z	-6.3940		0.0000	1.0000
71	Uniform Force	Global Z	-5.5710		0.0000	1.0000
72	Uniform Force	Global Z	-4.4940		0.0000	1.0000
73	Uniform Force	Global Z	-3.6690		0.0000	1.0000
74	Uniform Force	Global Z	-3.4300		0.0000	1.0000
75	Uniform Force	Global Z	-3.4300		0.0000	1.0000
76	Uniform Force	Global Z	-3.4300		0.0000	1.0000
77	Uniform Force	Global Z	-3.4300		0.0000	1.0000
78	Uniform Force	Global Z	-3.4300		0.0000	1.0000
79	Uniform Force	Global Z	-3.4300		0.0000	1.0000
80	Uniform Force	Global Z	-3.4300		0.0000	1.0000
81	Uniform Force	Global Z	-3.4300		0.0000	1.0000
82	Uniform Force	Global Z	-3.4300		0.0000	1.0000
83	Uniform Force	Global Z	-3.6690		0.0000	1.0000
84	Uniform Force	Global Z	-4.4940		0.0000	1.0000
85	Uniform Force	Global Z	-5.5710		0.0000	1.0000
86	Uniform Force	Global Z	-6.3940		0.0000	1.0000
87	Uniform Force	Global Z	-7.0600		0.0000	1.0000
88	Uniform Force	Global Z	-7.8240		0.0000	1.0000
89	Uniform Force	Global Z	-8.7750		0.0000	1.0000
90	Uniform Force	Global Z	-9.2970		0.0000	1.0000
91	Uniform Force	Global Z	-9.2970		0.0000	1.0000

LOAD CASE DC-LRT, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
92	Uniform Force	Global Z	-8.7740		0.0000	1.0000
93	Uniform Force	Global Z	-7.8220		0.0000	1.0000
94	Uniform Force	Global Z	-7.0580		0.0000	1.0000
95	Uniform Force	Global Z	-6.3910		0.0000	1.0000
96	Uniform Force	Global Z	-5.5570		0.0000	1.0000
97	Uniform Force	Global Z	-4.4800		0.0000	1.0000
98	Uniform Force	Global Z	-3.6690		0.0000	1.0000
99	Uniform Force	Global Z	-3.4300		0.0000	1.0000
100	Uniform Force	Global Z	-3.4300		0.0000	1.0000
101	Uniform Force	Global Z	-3.4300		0.0000	1.0000
102	Uniform Force	Global Z	-3.4300		0.0000	1.0000
103	Uniform Force	Global Z	-3.4300		0.0000	1.0000
104	Uniform Force	Global Z	-3.4300		0.0000	1.0000
105	Uniform Force	Global Z	-3.4300		0.0000	1.0000
106	Uniform Force	Global Z	-3.4300		0.0000	1.0000
107	Uniform Force	Global Z	-3.4300		0.0000	1.0000
108	Uniform Force	Global Z	-3.6690		0.0000	1.0000
109	Uniform Force	Global Z	-4.4800		0.0000	1.0000
110	Uniform Force	Global Z	-5.5570		0.0000	1.0000
111	Uniform Force	Global Z	-6.3910		0.0000	1.0000
112	Uniform Force	Global Z	-7.0580		0.0000	1.0000
113	Uniform Force	Global Z	-7.8220		0.0000	1.0000
114	Uniform Force	Global Z	-8.7740		0.0000	1.0000
115	Uniform Force	Global Z	-9.2970		0.0000	1.0000
116	Uniform Force	Global Z	-9.2970		0.0000	1.0000
117	Uniform Force	Global Z	-8.7740		0.0000	1.0000
118	Uniform Force	Global Z	-7.8220		0.0000	1.0000
119	Uniform Force	Global Z	-7.0580		0.0000	1.0000
120	Uniform Force	Global Z	-6.3910		0.0000	1.0000
121	Uniform Force	Global Z	-5.5560		0.0000	1.0000
122	Uniform Force	Global Z	-4.4790		0.0000	1.0000
123	Uniform Force	Global Z	-3.6690		0.0000	1.0000
124	Uniform Force	Global Z	-3.4300		0.0000	1.0000
125	Uniform Force	Global Z	-3.4300		0.0000	1.0000

LOAD CASE DC-LRT, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
126	Uniform Force	Global Z	-3.4300		0.0000	1.0000
127	Uniform Force	Global Z	-3.4300		0.0000	1.0000
128	Uniform Force	Global Z	-3.4300		0.0000	1.0000
129	Uniform Force	Global Z	-3.4300		0.0000	1.0000
130	Uniform Force	Global Z	-3.4300		0.0000	1.0000
131	Uniform Force	Global Z	-3.4300		0.0000	1.0000
132	Uniform Force	Global Z	-3.4300		0.0000	1.0000
133	Uniform Force	Global Z	-3.6690		0.0000	1.0000
134	Uniform Force	Global Z	-4.4790		0.0000	1.0000
135	Uniform Force	Global Z	-5.5560		0.0000	1.0000
136	Uniform Force	Global Z	-6.3910		0.0000	1.0000
137	Uniform Force	Global Z	-7.0580		0.0000	1.0000
138	Uniform Force	Global Z	-7.8220		0.0000	1.0000
139	Uniform Force	Global Z	-8.7740		0.0000	1.0000
140	Uniform Force	Global Z	-9.2970		0.0000	1.0000
141	Uniform Force	Global Z	-9.2970		0.0000	1.0000
142	Uniform Force	Global Z	-8.7740		0.0000	1.0000
143	Uniform Force	Global Z	-7.8220		0.0000	1.0000
144	Uniform Force	Global Z	-7.0570		0.0000	1.0000
145	Uniform Force	Global Z	-6.3910		0.0000	1.0000
146	Uniform Force	Global Z	-5.5530		0.0000	1.0000
147	Uniform Force	Global Z	-4.4770		0.0000	1.0000
148	Uniform Force	Global Z	-3.6690		0.0000	1.0000
149	Uniform Force	Global Z	-3.4300		0.0000	1.0000
150	Uniform Force	Global Z	-3.4300		0.0000	1.0000
151	Uniform Force	Global Z	-3.4300		0.0000	1.0000
152	Uniform Force	Global Z	-3.4300		0.0000	1.0000
153	Uniform Force	Global Z	-3.4300		0.0000	1.0000
154	Uniform Force	Global Z	-3.4300		0.0000	1.0000
155	Uniform Force	Global Z	-3.4300		0.0000	1.0000

LOAD CASE DW-Wearing Surface, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
1	Uniform Force	Global Z	-3.1360		0.0000	1.0000
2	Uniform Force	Global Z	-3.1170		0.0000	1.0000
3	Uniform Force	Global Z	-3.0870		0.0000	1.0000
4	Uniform Force	Global Z	-3.0580		0.0000	1.0000
5	Uniform Force	Global Z	-3.0290		0.0000	1.0000
6	Uniform Force	Global Z	-3.0000		0.0000	1.0000
7	Uniform Force	Global Z	-2.9710		0.0000	1.0000
8	Uniform Force	Global Z	-2.9490		0.0000	1.0000
9	Uniform Force	Global Z	-2.9200		0.0000	1.0000
10	Uniform Force	Global Z	-2.8810		0.0000	1.0000
11	Uniform Force	Global Z	-2.8500		0.0000	1.0000
12	Uniform Force	Global Z	-2.8180		0.0000	1.0000
13	Uniform Force	Global Z	-2.7850		0.0000	1.0000
14	Uniform Force	Global Z	-2.7500		0.0000	1.0000
15	Uniform Force	Global Z	-2.7250		0.0000	1.0000
16	Uniform Force	Global Z	-2.7120		0.0000	1.0000
17	Uniform Force	Global Z	-2.6880		0.0000	1.0000
18	Uniform Force	Global Z	-2.6510		0.0000	1.0000
19	Uniform Force	Global Z	-2.6150		0.0000	1.0000
20	Uniform Force	Global Z	-2.5790		0.0000	1.0000
21	Uniform Force	Global Z	-2.5430		0.0000	1.0000
22	Uniform Force	Global Z	-2.5060		0.0000	1.0000
23	Uniform Force	Global Z	-2.4700		0.0000	1.0000
24	Uniform Force	Global Z	-2.4340		0.0000	1.0000
25	Uniform Force	Global Z	-2.3970		0.0000	1.0000
26	Uniform Force	Global Z	-2.3610		0.0000	1.0000
27	Uniform Force	Global Z	-2.3250		0.0000	1.0000
28	Uniform Force	Global Z	-2.2880		0.0000	1.0000
29	Uniform Force	Global Z	-2.2520		0.0000	1.0000
30	Uniform Force	Global Z	-2.2170		0.0000	1.0000
31	Uniform Force	Global Z	-2.2000		0.0000	1.0000
32	Uniform Force	Global Z	-2.2000		0.0000	1.0000

LOAD CASE DW-Wearing Surface, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
33	Uniform Force	Global Z	-2.2000		0.0000	1.0000
34	Uniform Force	Global Z	-2.2000		0.0000	1.0000
35	Uniform Force	Global Z	-2.2000		0.0000	1.0000
36	Uniform Force	Global Z	-2.2000		0.0000	1.0000
37	Uniform Force	Global Z	-2.2000		0.0000	1.0000
38	Uniform Force	Global Z	-2.2000		0.0000	1.0000
39	Uniform Force	Global Z	-2.2000		0.0000	1.0000
40	Uniform Force	Global Z	-2.2000		0.0000	1.0000
41	Uniform Force	Global Z	-2.2000		0.0000	1.0000
42	Uniform Force	Global Z	-2.2000		0.0000	1.0000
43	Uniform Force	Global Z	-2.2000		0.0000	1.0000
44	Uniform Force	Global Z	-2.2000		0.0000	1.0000
45	Uniform Force	Global Z	-2.2000		0.0000	1.0000
46	Uniform Force	Global Z	-2.2000		0.0000	1.0000
47	Uniform Force	Global Z	-2.2000		0.0000	1.0000
48	Uniform Force	Global Z	-2.2000		0.0000	1.0000
49	Uniform Force	Global Z	-2.2000		0.0000	1.0000
50	Uniform Force	Global Z	-2.2000		0.0000	1.0000
51	Uniform Force	Global Z	-2.2000		0.0000	1.0000
52	Uniform Force	Global Z	-2.2000		0.0000	1.0000
53	Uniform Force	Global Z	-2.2000		0.0000	1.0000
54	Uniform Force	Global Z	-2.2000		0.0000	1.0000
55	Uniform Force	Global Z	-2.2000		0.0000	1.0000
56	Uniform Force	Global Z	-2.2000		0.0000	1.0000
57	Uniform Force	Global Z	-2.2000		0.0000	1.0000
58	Uniform Force	Global Z	-2.2000		0.0000	1.0000
59	Uniform Force	Global Z	-2.2000		0.0000	1.0000
60	Uniform Force	Global Z	-2.2000		0.0000	1.0000
61	Uniform Force	Global Z	-2.2000		0.0000	1.0000
62	Uniform Force	Global Z	-2.2000		0.0000	1.0000
63	Uniform Force	Global Z	-2.2000		0.0000	1.0000
64	Uniform Force	Global Z	-2.2000		0.0000	1.0000
65	Uniform Force	Global Z	-2.2000		0.0000	1.0000
66	Uniform Force	Global Z	-2.2000		0.0000	1.0000

LOAD CASE DW-Wearing Surface, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
67	Uniform Force	Global Z	-2.2000		0.0000	1.0000
68	Uniform Force	Global Z	-2.2000		0.0000	1.0000
69	Uniform Force	Global Z	-2.2000		0.0000	1.0000
70	Uniform Force	Global Z	-2.2000		0.0000	1.0000
71	Uniform Force	Global Z	-2.2000		0.0000	1.0000
72	Uniform Force	Global Z	-2.2000		0.0000	1.0000
73	Uniform Force	Global Z	-2.2000		0.0000	1.0000
74	Uniform Force	Global Z	-2.2000		0.0000	1.0000
75	Uniform Force	Global Z	-2.2000		0.0000	1.0000
76	Uniform Force	Global Z	-2.2000		0.0000	1.0000
77	Uniform Force	Global Z	-2.2000		0.0000	1.0000
78	Uniform Force	Global Z	-2.2000		0.0000	1.0000
79	Uniform Force	Global Z	-2.2000		0.0000	1.0000
80	Uniform Force	Global Z	-2.2000		0.0000	1.0000
81	Uniform Force	Global Z	-2.2000		0.0000	1.0000
82	Uniform Force	Global Z	-2.2000		0.0000	1.0000
83	Uniform Force	Global Z	-2.2000		0.0000	1.0000
84	Uniform Force	Global Z	-2.2000		0.0000	1.0000
85	Uniform Force	Global Z	-2.2000		0.0000	1.0000
86	Uniform Force	Global Z	-2.2000		0.0000	1.0000
87	Uniform Force	Global Z	-2.2000		0.0000	1.0000
88	Uniform Force	Global Z	-2.2000		0.0000	1.0000
89	Uniform Force	Global Z	-2.2000		0.0000	1.0000
90	Uniform Force	Global Z	-2.2000		0.0000	1.0000
91	Uniform Force	Global Z	-2.2000		0.0000	1.0000
92	Uniform Force	Global Z	-2.2000		0.0000	1.0000
93	Uniform Force	Global Z	-2.2000		0.0000	1.0000
94	Uniform Force	Global Z	-2.2000		0.0000	1.0000
95	Uniform Force	Global Z	-2.2000		0.0000	1.0000
96	Uniform Force	Global Z	-2.2030		0.0000	1.0000
97	Uniform Force	Global Z	-2.2160		0.0000	1.0000
98	Uniform Force	Global Z	-2.2370		0.0000	1.0000
99	Uniform Force	Global Z	-2.2590		0.0000	1.0000
100	Uniform Force	Global Z	-2.2800		0.0000	1.0000

LOAD CASE DW-Wearing Surface, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
101	Uniform Force	Global Z	-2.3010		0.0000	1.0000
102	Uniform Force	Global Z	-2.3220		0.0000	1.0000
103	Uniform Force	Global Z	-2.3440		0.0000	1.0000
104	Uniform Force	Global Z	-2.3540		0.0000	1.0000
105	Uniform Force	Global Z	-2.3760		0.0000	1.0000
106	Uniform Force	Global Z	-2.4070		0.0000	1.0000
107	Uniform Force	Global Z	-2.4280		0.0000	1.0000
108	Uniform Force	Global Z	-2.4500		0.0000	1.0000
109	Uniform Force	Global Z	-2.4710		0.0000	1.0000
110	Uniform Force	Global Z	-2.4920		0.0000	1.0000
111	Uniform Force	Global Z	-2.5130		0.0000	1.0000
112	Uniform Force	Global Z	-2.5250		0.0000	1.0000
113	Uniform Force	Global Z	-2.5250		0.0000	1.0000
114	Uniform Force	Global Z	-2.5250		0.0000	1.0000
115	Uniform Force	Global Z	-2.5250		0.0000	1.0000
116	Uniform Force	Global Z	-2.5250		0.0000	1.0000
117	Uniform Force	Global Z	-2.5250		0.0000	1.0000
118	Uniform Force	Global Z	-2.5250		0.0000	1.0000
119	Uniform Force	Global Z	-2.5250		0.0000	1.0000
120	Uniform Force	Global Z	-2.5250		0.0000	1.0000
121	Uniform Force	Global Z	-2.5250		0.0000	1.0000
122	Uniform Force	Global Z	-2.5250		0.0000	1.0000
123	Uniform Force	Global Z	-2.5250		0.0000	1.0000
124	Uniform Force	Global Z	-2.5250		0.0000	1.0000
125	Uniform Force	Global Z	-2.5250		0.0000	1.0000
126	Uniform Force	Global Z	-2.5250		0.0000	1.0000
127	Uniform Force	Global Z	-2.5250		0.0000	1.0000
128	Uniform Force	Global Z	-2.5270		0.0000	1.0000
129	Uniform Force	Global Z	-2.5350		0.0000	1.0000
130	Uniform Force	Global Z	-2.5450		0.0000	1.0000
131	Uniform Force	Global Z	-2.5550		0.0000	1.0000
132	Uniform Force	Global Z	-2.5650		0.0000	1.0000
133	Uniform Force	Global Z	-2.5750		0.0000	1.0000
134	Uniform Force	Global Z	-2.5850		0.0000	1.0000

LOAD CASE DW-Wearing Surface, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
135	Uniform Force	Global Z	-2.5950		0.0000	1.0000
136	Uniform Force	Global Z	-2.6050		0.0000	1.0000
137	Uniform Force	Global Z	-2.6170		0.0000	1.0000
138	Uniform Force	Global Z	-2.6270		0.0000	1.0000
139	Uniform Force	Global Z	-2.6350		0.0000	1.0000
140	Uniform Force	Global Z	-2.6420		0.0000	1.0000
141	Uniform Force	Global Z	-2.6460		0.0000	1.0000
142	Uniform Force	Global Z	-2.6530		0.0000	1.0000
143	Uniform Force	Global Z	-2.6630		0.0000	1.0000
144	Uniform Force	Global Z	-2.6730		0.0000	1.0000
145	Uniform Force	Global Z	-2.6830		0.0000	1.0000
146	Uniform Force	Global Z	-2.6930		0.0000	1.0000
147	Uniform Force	Global Z	-2.7030		0.0000	1.0000
148	Uniform Force	Global Z	-2.7130		0.0000	1.0000
149	Uniform Force	Global Z	-2.7230		0.0000	1.0000
150	Uniform Force	Global Z	-2.7330		0.0000	1.0000
151	Uniform Force	Global Z	-2.7430		0.0000	1.0000
152	Uniform Force	Global Z	-2.7530		0.0000	1.0000
153	Uniform Force	Global Z	-2.7630		0.0000	1.0000
154	Uniform Force	Global Z	-2.7730		0.0000	1.0000
155	Uniform Force	Global Z	-2.7800		0.0000	1.0000

LOAD CASE DW-Utilities, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
1	Uniform Force	Global Z	-0.3000		0.0000	1.0000
2	Uniform Force	Global Z	-0.3000		0.0000	1.0000
3	Uniform Force	Global Z	-0.3000		0.0000	1.0000
4	Uniform Force	Global Z	-0.3000		0.0000	1.0000
5	Uniform Force	Global Z	-0.3000		0.0000	1.0000
6	Uniform Force	Global Z	-0.3000		0.0000	1.0000
7	Uniform Force	Global Z	-0.3000		0.0000	1.0000
8	Uniform Force	Global Z	-0.3000		0.0000	1.0000

LOAD CASE DW-Utilities, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
9	Uniform Force	Global Z	-0.3000		0.0000	1.0000
10	Uniform Force	Global Z	-0.3000		0.0000	1.0000
11	Uniform Force	Global Z	-0.3000		0.0000	1.0000
12	Uniform Force	Global Z	-0.3000		0.0000	1.0000
13	Uniform Force	Global Z	-0.3000		0.0000	1.0000
14	Uniform Force	Global Z	-0.3000		0.0000	1.0000
15	Uniform Force	Global Z	-0.3000		0.0000	1.0000
16	Uniform Force	Global Z	-0.3000		0.0000	1.0000
17	Uniform Force	Global Z	-0.3000		0.0000	1.0000
18	Uniform Force	Global Z	-0.3000		0.0000	1.0000
19	Uniform Force	Global Z	-0.3000		0.0000	1.0000
20	Uniform Force	Global Z	-0.3000		0.0000	1.0000
21	Uniform Force	Global Z	-0.3000		0.0000	1.0000
22	Uniform Force	Global Z	-0.3000		0.0000	1.0000
23	Uniform Force	Global Z	-0.3000		0.0000	1.0000
24	Uniform Force	Global Z	-0.3000		0.0000	1.0000
25	Uniform Force	Global Z	-0.3000		0.0000	1.0000
26	Uniform Force	Global Z	-0.3000		0.0000	1.0000
27	Uniform Force	Global Z	-0.3000		0.0000	1.0000
28	Uniform Force	Global Z	-0.3000		0.0000	1.0000
29	Uniform Force	Global Z	-0.3000		0.0000	1.0000
30	Uniform Force	Global Z	-0.3000		0.0000	1.0000
31	Uniform Force	Global Z	-0.3000		0.0000	1.0000
32	Uniform Force	Global Z	-0.3000		0.0000	1.0000
33	Uniform Force	Global Z	-0.3000		0.0000	1.0000
34	Uniform Force	Global Z	-0.3000		0.0000	1.0000
35	Uniform Force	Global Z	-0.3000		0.0000	1.0000
36	Uniform Force	Global Z	-0.3000		0.0000	1.0000
37	Uniform Force	Global Z	-0.3000		0.0000	1.0000
38	Uniform Force	Global Z	-0.3000		0.0000	1.0000
39	Uniform Force	Global Z	-0.3000		0.0000	1.0000
40	Uniform Force	Global Z	-0.3000		0.0000	1.0000
41	Uniform Force	Global Z	-0.3000		0.0000	1.0000
42	Uniform Force	Global Z	-0.3000		0.0000	1.0000

LOAD CASE DW-Utilities, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
43	Uniform Force	Global Z	-0.3000		0.0000	1.0000
44	Uniform Force	Global Z	-0.3000		0.0000	1.0000
45	Uniform Force	Global Z	-0.3000		0.0000	1.0000
46	Uniform Force	Global Z	-0.3000		0.0000	1.0000
47	Uniform Force	Global Z	-0.3000		0.0000	1.0000
48	Uniform Force	Global Z	-0.3000		0.0000	1.0000
49	Uniform Force	Global Z	-0.3000		0.0000	1.0000
50	Uniform Force	Global Z	-0.3000		0.0000	1.0000
51	Uniform Force	Global Z	-0.3000		0.0000	1.0000
52	Uniform Force	Global Z	-0.3000		0.0000	1.0000
53	Uniform Force	Global Z	-0.3000		0.0000	1.0000
54	Uniform Force	Global Z	-0.3000		0.0000	1.0000
55	Uniform Force	Global Z	-0.3000		0.0000	1.0000
56	Uniform Force	Global Z	-0.3000		0.0000	1.0000
57	Uniform Force	Global Z	-0.3000		0.0000	1.0000
58	Uniform Force	Global Z	-0.3000		0.0000	1.0000
59	Uniform Force	Global Z	-0.3000		0.0000	1.0000
60	Uniform Force	Global Z	-0.3000		0.0000	1.0000
61	Uniform Force	Global Z	-0.3000		0.0000	1.0000
62	Uniform Force	Global Z	-0.3000		0.0000	1.0000
63	Uniform Force	Global Z	-0.3000		0.0000	1.0000
64	Uniform Force	Global Z	-0.3000		0.0000	1.0000
65	Uniform Force	Global Z	-0.3000		0.0000	1.0000
66	Uniform Force	Global Z	-0.3000		0.0000	1.0000
67	Uniform Force	Global Z	-0.3000		0.0000	1.0000
68	Uniform Force	Global Z	-0.3000		0.0000	1.0000
69	Uniform Force	Global Z	-0.3000		0.0000	1.0000
70	Uniform Force	Global Z	-0.3000		0.0000	1.0000
71	Uniform Force	Global Z	-0.3000		0.0000	1.0000
72	Uniform Force	Global Z	-0.3000		0.0000	1.0000
73	Uniform Force	Global Z	-0.3000		0.0000	1.0000
74	Uniform Force	Global Z	-0.3000		0.0000	1.0000
75	Uniform Force	Global Z	-0.3000		0.0000	1.0000
76	Uniform Force	Global Z	-0.3000		0.0000	1.0000

LOAD CASE DW-Utilities, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
77	Uniform Force	Global Z	-0.3000		0.0000	1.0000
78	Uniform Force	Global Z	-0.3000		0.0000	1.0000
79	Uniform Force	Global Z	-0.3000		0.0000	1.0000
80	Uniform Force	Global Z	-0.3000		0.0000	1.0000
81	Uniform Force	Global Z	-0.3000		0.0000	1.0000
82	Uniform Force	Global Z	-0.3000		0.0000	1.0000
83	Uniform Force	Global Z	-0.3000		0.0000	1.0000
84	Uniform Force	Global Z	-0.3000		0.0000	1.0000
85	Uniform Force	Global Z	-0.3000		0.0000	1.0000
86	Uniform Force	Global Z	-0.3000		0.0000	1.0000
87	Uniform Force	Global Z	-0.3000		0.0000	1.0000
88	Uniform Force	Global Z	-0.3000		0.0000	1.0000
89	Uniform Force	Global Z	-0.3000		0.0000	1.0000
90	Uniform Force	Global Z	-0.3000		0.0000	1.0000
91	Uniform Force	Global Z	-0.3000		0.0000	1.0000
92	Uniform Force	Global Z	-0.3000		0.0000	1.0000
93	Uniform Force	Global Z	-0.3000		0.0000	1.0000
94	Uniform Force	Global Z	-0.3000		0.0000	1.0000
95	Uniform Force	Global Z	-0.3000		0.0000	1.0000
96	Uniform Force	Global Z	-0.3000		0.0000	1.0000
97	Uniform Force	Global Z	-0.3000		0.0000	1.0000
98	Uniform Force	Global Z	-0.3000		0.0000	1.0000
99	Uniform Force	Global Z	-0.3000		0.0000	1.0000
100	Uniform Force	Global Z	-0.3000		0.0000	1.0000
101	Uniform Force	Global Z	-0.3000		0.0000	1.0000
102	Uniform Force	Global Z	-0.3000		0.0000	1.0000
103	Uniform Force	Global Z	-0.3000		0.0000	1.0000
104	Uniform Force	Global Z	-0.3000		0.0000	1.0000
105	Uniform Force	Global Z	-0.3000		0.0000	1.0000
106	Uniform Force	Global Z	-0.3000		0.0000	1.0000
107	Uniform Force	Global Z	-0.3000		0.0000	1.0000
108	Uniform Force	Global Z	-0.3000		0.0000	1.0000
109	Uniform Force	Global Z	-0.3000		0.0000	1.0000
110	Uniform Force	Global Z	-0.3000		0.0000	1.0000

LOAD CASE DW-Utilities, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
111	Uniform Force	Global Z	-0.3000		0.0000	1.0000
112	Uniform Force	Global Z	-0.3000		0.0000	1.0000
113	Uniform Force	Global Z	-0.3000		0.0000	1.0000
114	Uniform Force	Global Z	-0.3000		0.0000	1.0000
115	Uniform Force	Global Z	-0.3000		0.0000	1.0000
116	Uniform Force	Global Z	-0.3000		0.0000	1.0000
117	Uniform Force	Global Z	-0.3000		0.0000	1.0000
118	Uniform Force	Global Z	-0.3000		0.0000	1.0000
119	Uniform Force	Global Z	-0.3000		0.0000	1.0000
120	Uniform Force	Global Z	-0.3000		0.0000	1.0000
121	Uniform Force	Global Z	-0.3000		0.0000	1.0000
122	Uniform Force	Global Z	-0.3000		0.0000	1.0000
123	Uniform Force	Global Z	-0.3000		0.0000	1.0000
124	Uniform Force	Global Z	-0.3000		0.0000	1.0000
125	Uniform Force	Global Z	-0.3000		0.0000	1.0000
126	Uniform Force	Global Z	-0.3000		0.0000	1.0000
127	Uniform Force	Global Z	-0.3000		0.0000	1.0000
128	Uniform Force	Global Z	-0.3000		0.0000	1.0000
129	Uniform Force	Global Z	-0.3000		0.0000	1.0000
130	Uniform Force	Global Z	-0.3000		0.0000	1.0000
131	Uniform Force	Global Z	-0.3000		0.0000	1.0000
132	Uniform Force	Global Z	-0.3000		0.0000	1.0000
133	Uniform Force	Global Z	-0.3000		0.0000	1.0000
134	Uniform Force	Global Z	-0.3000		0.0000	1.0000
135	Uniform Force	Global Z	-0.3000		0.0000	1.0000
136	Uniform Force	Global Z	-0.3000		0.0000	1.0000
137	Uniform Force	Global Z	-0.3000		0.0000	1.0000
138	Uniform Force	Global Z	-0.3000		0.0000	1.0000
139	Uniform Force	Global Z	-0.3000		0.0000	1.0000
140	Uniform Force	Global Z	-0.3000		0.0000	1.0000
141	Uniform Force	Global Z	-0.3000		0.0000	1.0000
142	Uniform Force	Global Z	-0.3000		0.0000	1.0000
143	Uniform Force	Global Z	-0.3000		0.0000	1.0000
144	Uniform Force	Global Z	-0.3000		0.0000	1.0000

LOAD CASE DW-Utilities, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
145	Uniform Force	Global Z	-0.3000		0.0000	1.0000
146	Uniform Force	Global Z	-0.3000		0.0000	1.0000
147	Uniform Force	Global Z	-0.3000		0.0000	1.0000
148	Uniform Force	Global Z	-0.3000		0.0000	1.0000
149	Uniform Force	Global Z	-0.3000		0.0000	1.0000
150	Uniform Force	Global Z	-0.3000		0.0000	1.0000
151	Uniform Force	Global Z	-0.3000		0.0000	1.0000
152	Uniform Force	Global Z	-0.3000		0.0000	1.0000
153	Uniform Force	Global Z	-0.3000		0.0000	1.0000
154	Uniform Force	Global Z	-0.3000		0.0000	1.0000
155	Uniform Force	Global Z	-0.3000		0.0000	1.0000

LOAD CASE TU-Rise, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
1	Uniform	n/a	50.0000		
2	Uniform	n/a	50.0000		
3	Uniform	n/a	50.0000		
4	Uniform	n/a	50.0000		
5	Uniform	n/a	50.0000		
6	Uniform	n/a	50.0000		
7	Uniform	n/a	50.0000		
8	Uniform	n/a	50.0000		
9	Uniform	n/a	50.0000		
10	Uniform	n/a	50.0000		
11	Uniform	n/a	50.0000		
12	Uniform	n/a	50.0000		
13	Uniform	n/a	50.0000		
14	Uniform	n/a	50.0000		
15	Uniform	n/a	50.0000		
16	Uniform	n/a	50.0000		
17	Uniform	n/a	50.0000		
18	Uniform	n/a	50.0000		

LOAD CASE TU-Rise, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
19	Uniform	n/a	50.0000		
20	Uniform	n/a	50.0000		
21	Uniform	n/a	50.0000		
22	Uniform	n/a	50.0000		
23	Uniform	n/a	50.0000		
24	Uniform	n/a	50.0000		
25	Uniform	n/a	50.0000		
26	Uniform	n/a	50.0000		
27	Uniform	n/a	50.0000		
28	Uniform	n/a	50.0000		
29	Uniform	n/a	50.0000		
30	Uniform	n/a	50.0000		
31	Uniform	n/a	50.0000		
32	Uniform	n/a	50.0000		
33	Uniform	n/a	50.0000		
34	Uniform	n/a	50.0000		
35	Uniform	n/a	50.0000		
36	Uniform	n/a	50.0000		
37	Uniform	n/a	50.0000		
38	Uniform	n/a	50.0000		
39	Uniform	n/a	50.0000		
40	Uniform	n/a	50.0000		
41	Uniform	n/a	50.0000		
42	Uniform	n/a	50.0000		
43	Uniform	n/a	50.0000		
44	Uniform	n/a	50.0000		
45	Uniform	n/a	50.0000		
46	Uniform	n/a	50.0000		
47	Uniform	n/a	50.0000		
48	Uniform	n/a	50.0000		
49	Uniform	n/a	50.0000		
50	Uniform	n/a	50.0000		
51	Uniform	n/a	50.0000		
52	Uniform	n/a	50.0000		

LOAD CASE TU-Rise, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
53	Uniform	n/a	50.0000		
54	Uniform	n/a	50.0000		
55	Uniform	n/a	50.0000		
56	Uniform	n/a	50.0000		
57	Uniform	n/a	50.0000		
58	Uniform	n/a	50.0000		
59	Uniform	n/a	50.0000		
60	Uniform	n/a	50.0000		
61	Uniform	n/a	50.0000		
62	Uniform	n/a	50.0000		
63	Uniform	n/a	50.0000		
64	Uniform	n/a	50.0000		
65	Uniform	n/a	50.0000		
66	Uniform	n/a	50.0000		
67	Uniform	n/a	50.0000		
68	Uniform	n/a	50.0000		
69	Uniform	n/a	50.0000		
70	Uniform	n/a	50.0000		
71	Uniform	n/a	50.0000		
72	Uniform	n/a	50.0000		
73	Uniform	n/a	50.0000		
74	Uniform	n/a	50.0000		
75	Uniform	n/a	50.0000		
76	Uniform	n/a	50.0000		
77	Uniform	n/a	50.0000		
78	Uniform	n/a	50.0000		
79	Uniform	n/a	50.0000		
80	Uniform	n/a	50.0000		
81	Uniform	n/a	50.0000		
82	Uniform	n/a	50.0000		
83	Uniform	n/a	50.0000		
84	Uniform	n/a	50.0000		
85	Uniform	n/a	50.0000		
86	Uniform	n/a	50.0000		

LOAD CASE TU-Rise, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
87	Uniform	n/a	50.0000		
88	Uniform	n/a	50.0000		
89	Uniform	n/a	50.0000		
90	Uniform	n/a	50.0000		
91	Uniform	n/a	50.0000		
92	Uniform	n/a	50.0000		
93	Uniform	n/a	50.0000		
94	Uniform	n/a	50.0000		
95	Uniform	n/a	50.0000		
96	Uniform	n/a	50.0000		
97	Uniform	n/a	50.0000		
98	Uniform	n/a	50.0000		
99	Uniform	n/a	50.0000		
100	Uniform	n/a	50.0000		
101	Uniform	n/a	50.0000		
102	Uniform	n/a	50.0000		
103	Uniform	n/a	50.0000		
104	Uniform	n/a	50.0000		
105	Uniform	n/a	50.0000		
106	Uniform	n/a	50.0000		
107	Uniform	n/a	50.0000		
108	Uniform	n/a	50.0000		
109	Uniform	n/a	50.0000		
110	Uniform	n/a	50.0000		
111	Uniform	n/a	50.0000		
112	Uniform	n/a	50.0000		
113	Uniform	n/a	50.0000		
114	Uniform	n/a	50.0000		
115	Uniform	n/a	50.0000		
116	Uniform	n/a	50.0000		
117	Uniform	n/a	50.0000		
118	Uniform	n/a	50.0000		
119	Uniform	n/a	50.0000		
120	Uniform	n/a	50.0000		

LOAD CASE TU-Rise, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
121	Uniform	n/a	50.0000		
122	Uniform	n/a	50.0000		
123	Uniform	n/a	50.0000		
124	Uniform	n/a	50.0000		
125	Uniform	n/a	50.0000		
126	Uniform	n/a	50.0000		
127	Uniform	n/a	50.0000		
128	Uniform	n/a	50.0000		
129	Uniform	n/a	50.0000		
130	Uniform	n/a	50.0000		
131	Uniform	n/a	50.0000		
132	Uniform	n/a	50.0000		
133	Uniform	n/a	50.0000		
134	Uniform	n/a	50.0000		
135	Uniform	n/a	50.0000		
136	Uniform	n/a	50.0000		
137	Uniform	n/a	50.0000		
138	Uniform	n/a	50.0000		
139	Uniform	n/a	50.0000		
140	Uniform	n/a	50.0000		
141	Uniform	n/a	50.0000		
142	Uniform	n/a	50.0000		
143	Uniform	n/a	50.0000		
144	Uniform	n/a	50.0000		
145	Uniform	n/a	50.0000		
146	Uniform	n/a	50.0000		
147	Uniform	n/a	50.0000		
148	Uniform	n/a	50.0000		
149	Uniform	n/a	50.0000		
150	Uniform	n/a	50.0000		
151	Uniform	n/a	50.0000		
152	Uniform	n/a	50.0000		
153	Uniform	n/a	50.0000		
154	Uniform	n/a	50.0000		

LOAD CASE TU-Rise, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
155	Uniform	n/a	50.0000		

LOAD CASE TU-Fall, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
1	Uniform	n/a	-50.0000		
2	Uniform	n/a	-50.0000		
3	Uniform	n/a	-50.0000		
4	Uniform	n/a	-50.0000		
5	Uniform	n/a	-50.0000		
6	Uniform	n/a	-50.0000		
7	Uniform	n/a	-50.0000		
8	Uniform	n/a	-50.0000		
9	Uniform	n/a	-50.0000		
10	Uniform	n/a	-50.0000		
11	Uniform	n/a	-50.0000		
12	Uniform	n/a	-50.0000		
13	Uniform	n/a	-50.0000		
14	Uniform	n/a	-50.0000		
15	Uniform	n/a	-50.0000		
16	Uniform	n/a	-50.0000		
17	Uniform	n/a	-50.0000		
18	Uniform	n/a	-50.0000		
19	Uniform	n/a	-50.0000		
20	Uniform	n/a	-50.0000		
21	Uniform	n/a	-50.0000		
22	Uniform	n/a	-50.0000		
23	Uniform	n/a	-50.0000		
24	Uniform	n/a	-50.0000		
25	Uniform	n/a	-50.0000		
26	Uniform	n/a	-50.0000		
27	Uniform	n/a	-50.0000		
28	Uniform	n/a	-50.0000		

LOAD CASE TU-Fall, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
29	Uniform	n/a	-50.0000		
30	Uniform	n/a	-50.0000		
31	Uniform	n/a	-50.0000		
32	Uniform	n/a	-50.0000		
33	Uniform	n/a	-50.0000		
34	Uniform	n/a	-50.0000		
35	Uniform	n/a	-50.0000		
36	Uniform	n/a	-50.0000		
37	Uniform	n/a	-50.0000		
38	Uniform	n/a	-50.0000		
39	Uniform	n/a	-50.0000		
40	Uniform	n/a	-50.0000		
41	Uniform	n/a	-50.0000		
42	Uniform	n/a	-50.0000		
43	Uniform	n/a	-50.0000		
44	Uniform	n/a	-50.0000		
45	Uniform	n/a	-50.0000		
46	Uniform	n/a	-50.0000		
47	Uniform	n/a	-50.0000		
48	Uniform	n/a	-50.0000		
49	Uniform	n/a	-50.0000		
50	Uniform	n/a	-50.0000		
51	Uniform	n/a	-50.0000		
52	Uniform	n/a	-50.0000		
53	Uniform	n/a	-50.0000		
54	Uniform	n/a	-50.0000		
55	Uniform	n/a	-50.0000		
56	Uniform	n/a	-50.0000		
57	Uniform	n/a	-50.0000		
58	Uniform	n/a	-50.0000		
59	Uniform	n/a	-50.0000		
60	Uniform	n/a	-50.0000		
61	Uniform	n/a	-50.0000		
62	Uniform	n/a	-50.0000		

LOAD CASE TU-Fall, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
63	Uniform	n/a	-50.0000		
64	Uniform	n/a	-50.0000		
65	Uniform	n/a	-50.0000		
66	Uniform	n/a	-50.0000		
67	Uniform	n/a	-50.0000		
68	Uniform	n/a	-50.0000		
69	Uniform	n/a	-50.0000		
70	Uniform	n/a	-50.0000		
71	Uniform	n/a	-50.0000		
72	Uniform	n/a	-50.0000		
73	Uniform	n/a	-50.0000		
74	Uniform	n/a	-50.0000		
75	Uniform	n/a	-50.0000		
76	Uniform	n/a	-50.0000		
77	Uniform	n/a	-50.0000		
78	Uniform	n/a	-50.0000		
79	Uniform	n/a	-50.0000		
80	Uniform	n/a	-50.0000		
81	Uniform	n/a	-50.0000		
82	Uniform	n/a	-50.0000		
83	Uniform	n/a	-50.0000		
84	Uniform	n/a	-50.0000		
85	Uniform	n/a	-50.0000		
86	Uniform	n/a	-50.0000		
87	Uniform	n/a	-50.0000		
88	Uniform	n/a	-50.0000		
89	Uniform	n/a	-50.0000		
90	Uniform	n/a	-50.0000		
91	Uniform	n/a	-50.0000		
92	Uniform	n/a	-50.0000		
93	Uniform	n/a	-50.0000		
94	Uniform	n/a	-50.0000		
95	Uniform	n/a	-50.0000		
96	Uniform	n/a	-50.0000		

LOAD CASE TU-Fall, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
97	Uniform	n/a	-50.0000		
98	Uniform	n/a	-50.0000		
99	Uniform	n/a	-50.0000		
100	Uniform	n/a	-50.0000		
101	Uniform	n/a	-50.0000		
102	Uniform	n/a	-50.0000		
103	Uniform	n/a	-50.0000		
104	Uniform	n/a	-50.0000		
105	Uniform	n/a	-50.0000		
106	Uniform	n/a	-50.0000		
107	Uniform	n/a	-50.0000		
108	Uniform	n/a	-50.0000		
109	Uniform	n/a	-50.0000		
110	Uniform	n/a	-50.0000		
111	Uniform	n/a	-50.0000		
112	Uniform	n/a	-50.0000		
113	Uniform	n/a	-50.0000		
114	Uniform	n/a	-50.0000		
115	Uniform	n/a	-50.0000		
116	Uniform	n/a	-50.0000		
117	Uniform	n/a	-50.0000		
118	Uniform	n/a	-50.0000		
119	Uniform	n/a	-50.0000		
120	Uniform	n/a	-50.0000		
121	Uniform	n/a	-50.0000		
122	Uniform	n/a	-50.0000		
123	Uniform	n/a	-50.0000		
124	Uniform	n/a	-50.0000		
125	Uniform	n/a	-50.0000		
126	Uniform	n/a	-50.0000		
127	Uniform	n/a	-50.0000		
128	Uniform	n/a	-50.0000		
129	Uniform	n/a	-50.0000		
130	Uniform	n/a	-50.0000		

LOAD CASE TU-Fall, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
131	Uniform	n/a	-50.0000		
132	Uniform	n/a	-50.0000		
133	Uniform	n/a	-50.0000		
134	Uniform	n/a	-50.0000		
135	Uniform	n/a	-50.0000		
136	Uniform	n/a	-50.0000		
137	Uniform	n/a	-50.0000		
138	Uniform	n/a	-50.0000		
139	Uniform	n/a	-50.0000		
140	Uniform	n/a	-50.0000		
141	Uniform	n/a	-50.0000		
142	Uniform	n/a	-50.0000		
143	Uniform	n/a	-50.0000		
144	Uniform	n/a	-50.0000		
145	Uniform	n/a	-50.0000		
146	Uniform	n/a	-50.0000		
147	Uniform	n/a	-50.0000		
148	Uniform	n/a	-50.0000		
149	Uniform	n/a	-50.0000		
150	Uniform	n/a	-50.0000		
151	Uniform	n/a	-50.0000		
152	Uniform	n/a	-50.0000		
153	Uniform	n/a	-50.0000		
154	Uniform	n/a	-50.0000		
155	Uniform	n/a	-50.0000		

LOAD CASE EQ 1, RSA

Name	Value
Response-Spectrum Curve in Direction 1	FEE Class E
Scale in Direction 1	1.0000
Response-Spectrum Curve in Direction 2	(none)
Scale in Direction 2	0.0000

LOAD CASE EQ 1, RSA

Name	Value
Response-Spectrum Curve in Global Z	(none)
Scale in Global Z	0.0000
Angle from Global X to Direction 1	0.0000
Modal Combination Method	CQC
Spatial Combination Method	SRSS
Modal Damping Ratio (if no curve)	0.0500
Sign Assigned to Results	No Sign
Modal Combination System	Global
Modal Damping Curve	(none)

LOAD CASE EQ 2, RSA

Name	Value
Response-Spectrum Curve in Direction 1	(none)
Scale in Direction 1	0.0000
Response-Spectrum Curve in Direction 2	FEE Class E
Scale in Direction 2	1.0000
Response-Spectrum Curve in Global Z	(none)
Scale in Global Z	0.0000
Angle from Global X to Direction 1	0.0000
Modal Combination Method	CQC
Spatial Combination Method	SRSS
Modal Damping Ratio (if no curve)	0.0500
Sign Assigned to Results	No Sign
Modal Combination System	Global
Modal Damping Curve	(none)

LOAD CASE EQ 3, RSA

Name	Value
Response-Spectrum Curve in Direction 1	(none)
Scale in Direction 1	0.0000
Response-Spectrum Curve in Direction 2	(none)

LOAD CASE EQ 3, RSA

Name	Value
Scale in Direction 2	0.0000
Response-Spectrum Curve in Global Z	FEE Class E
Scale in Global Z	1.0000
Angle from Global X to Direction 1	0.0000
Modal Combination Method	CQC
Spatial Combination Method	SRSS
Modal Damping Ratio (if no curve)	0.0500
Sign Assigned to Results	No Sign
Modal Combination System	Global
Modal Damping Curve	(none)

LOAD CASE WA, Joint Loads

Joint	X-Force (kips)	Y-Force (kips)	Z-Force (kips)	X-Moment (kips-ft)	Y-Moment (kips-ft)	Z-Moment (kips-ft)
1001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2001	0.0000	74.0000	0.0000	0.0000	0.0000	0.0000
3001	0.0000	163.0000	0.0000	0.0000	0.0000	0.0000
4001	0.0000	171.0000	0.0000	0.0000	0.0000	0.0000
5001	0.0000	189.0000	0.0000	0.0000	0.0000	0.0000
6001	0.0000	229.0000	0.0000	0.0000	0.0000	0.0000
7001	0.0000	82.0000	0.0000	0.0000	0.0000	0.0000
8001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

LOAD CASE WS, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
1	Uniform Force	Global Y	2.3190		0.0000	1.0000
2	Uniform Force	Global Y	2.2260		0.0000	1.0000
3	Uniform Force	Global Y	2.1230		0.0000	1.0000
4	Uniform Force	Global Y	2.0500		0.0000	1.0000
5	Uniform Force	Global Y	2.0040		0.0000	1.0000
6	Uniform Force	Global Y	1.9850		0.0000	1.0000
7	Uniform Force	Global Y	1.9840		0.0000	1.0000

LOAD CASE WS, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
8	Uniform Force	Global Y	1.9950		0.0000	1.0000
9	Uniform Force	Global Y	2.0280		0.0000	1.0000
10	Uniform Force	Global Y	2.0910		0.0000	1.0000
11	Uniform Force	Global Y	2.1800		0.0000	1.0000
12	Uniform Force	Global Y	2.2980		0.0000	1.0000
13	Uniform Force	Global Y	2.4470		0.0000	1.0000
14	Uniform Force	Global Y	2.6240		0.0000	1.0000
15	Uniform Force	Global Y	2.7090		0.0000	1.0000
16	Uniform Force	Global Y	2.7110		0.0000	1.0000
17	Uniform Force	Global Y	2.6100		0.0000	1.0000
18	Uniform Force	Global Y	2.4470		0.0000	1.0000
19	Uniform Force	Global Y	2.3100		0.0000	1.0000
20	Uniform Force	Global Y	2.2000		0.0000	1.0000
21	Uniform Force	Global Y	2.1200		0.0000	1.0000
22	Uniform Force	Global Y	2.0700		0.0000	1.0000
23	Uniform Force	Global Y	2.0470		0.0000	1.0000
24	Uniform Force	Global Y	2.0440		0.0000	1.0000
25	Uniform Force	Global Y	2.0480		0.0000	1.0000
26	Uniform Force	Global Y	2.0510		0.0000	1.0000
27	Uniform Force	Global Y	2.0550		0.0000	1.0000
28	Uniform Force	Global Y	2.0580		0.0000	1.0000
29	Uniform Force	Global Y	2.0620		0.0000	1.0000
30	Uniform Force	Global Y	2.0660		0.0000	1.0000
31	Uniform Force	Global Y	2.0690		0.0000	1.0000
32	Uniform Force	Global Y	2.0730		0.0000	1.0000
33	Uniform Force	Global Y	2.0830		0.0000	1.0000
34	Uniform Force	Global Y	2.1180		0.0000	1.0000
35	Uniform Force	Global Y	2.1840		0.0000	1.0000
36	Uniform Force	Global Y	2.2790		0.0000	1.0000
37	Uniform Force	Global Y	2.4050		0.0000	1.0000
38	Uniform Force	Global Y	2.5630		0.0000	1.0000
39	Uniform Force	Global Y	2.7510		0.0000	1.0000
40	Uniform Force	Global Y	2.8420		0.0000	1.0000
41	Uniform Force	Global Y	2.8430		0.0000	1.0000

LOAD CASE WS, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
42	Uniform Force	Global Y	2.7380		0.0000	1.0000
43	Uniform Force	Global Y	2.5630		0.0000	1.0000
44	Uniform Force	Global Y	2.4150		0.0000	1.0000
45	Uniform Force	Global Y	2.2960		0.0000	1.0000
46	Uniform Force	Global Y	2.2090		0.0000	1.0000
47	Uniform Force	Global Y	2.1540		0.0000	1.0000
48	Uniform Force	Global Y	2.1280		0.0000	1.0000
49	Uniform Force	Global Y	2.1240		0.0000	1.0000
50	Uniform Force	Global Y	2.1270		0.0000	1.0000
51	Uniform Force	Global Y	2.1300		0.0000	1.0000
52	Uniform Force	Global Y	2.1320		0.0000	1.0000
53	Uniform Force	Global Y	2.1350		0.0000	1.0000
54	Uniform Force	Global Y	2.1370		0.0000	1.0000
55	Uniform Force	Global Y	2.1400		0.0000	1.0000
56	Uniform Force	Global Y	2.1420		0.0000	1.0000
57	Uniform Force	Global Y	2.1440		0.0000	1.0000
58	Uniform Force	Global Y	2.1540		0.0000	1.0000
59	Uniform Force	Global Y	2.1880		0.0000	1.0000
60	Uniform Force	Global Y	2.2560		0.0000	1.0000
61	Uniform Force	Global Y	2.3530		0.0000	1.0000
62	Uniform Force	Global Y	2.4830		0.0000	1.0000
63	Uniform Force	Global Y	2.6460		0.0000	1.0000
64	Uniform Force	Global Y	2.8400		0.0000	1.0000
65	Uniform Force	Global Y	2.9340		0.0000	1.0000
66	Uniform Force	Global Y	2.9340		0.0000	1.0000
67	Uniform Force	Global Y	2.8240		0.0000	1.0000
68	Uniform Force	Global Y	2.6390		0.0000	1.0000
69	Uniform Force	Global Y	2.4830		0.0000	1.0000
70	Uniform Force	Global Y	2.3580		0.0000	1.0000
71	Uniform Force	Global Y	2.2660		0.0000	1.0000
72	Uniform Force	Global Y	2.2070		0.0000	1.0000
73	Uniform Force	Global Y	2.1780		0.0000	1.0000
74	Uniform Force	Global Y	2.1730		0.0000	1.0000
75	Uniform Force	Global Y	2.1740		0.0000	1.0000

LOAD CASE WS, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
76	Uniform Force	Global Y	2.1750		0.0000	1.0000
77	Uniform Force	Global Y	2.1770		0.0000	1.0000
78	Uniform Force	Global Y	2.1780		0.0000	1.0000
79	Uniform Force	Global Y	2.1790		0.0000	1.0000
80	Uniform Force	Global Y	2.1800		0.0000	1.0000
81	Uniform Force	Global Y	2.1810		0.0000	1.0000
82	Uniform Force	Global Y	2.1820		0.0000	1.0000
83	Uniform Force	Global Y	2.1900		0.0000	1.0000
84	Uniform Force	Global Y	2.2240		0.0000	1.0000
85	Uniform Force	Global Y	2.2900		0.0000	1.0000
86	Uniform Force	Global Y	2.3890		0.0000	1.0000
87	Uniform Force	Global Y	2.5190		0.0000	1.0000
88	Uniform Force	Global Y	2.6830		0.0000	1.0000
89	Uniform Force	Global Y	2.8790		0.0000	1.0000
90	Uniform Force	Global Y	2.9730		0.0000	1.0000
91	Uniform Force	Global Y	2.9720		0.0000	1.0000
92	Uniform Force	Global Y	2.8600		0.0000	1.0000
93	Uniform Force	Global Y	2.6700		0.0000	1.0000
94	Uniform Force	Global Y	2.5100		0.0000	1.0000
95	Uniform Force	Global Y	2.3820		0.0000	1.0000
96	Uniform Force	Global Y	2.2870		0.0000	1.0000
97	Uniform Force	Global Y	2.2260		0.0000	1.0000
98	Uniform Force	Global Y	2.1960		0.0000	1.0000
99	Uniform Force	Global Y	2.1890		0.0000	1.0000
100	Uniform Force	Global Y	2.1880		0.0000	1.0000
101	Uniform Force	Global Y	2.1880		0.0000	1.0000
102	Uniform Force	Global Y	2.1880		0.0000	1.0000
103	Uniform Force	Global Y	2.1880		0.0000	1.0000
104	Uniform Force	Global Y	2.1880		0.0000	1.0000
105	Uniform Force	Global Y	2.1870		0.0000	1.0000
106	Uniform Force	Global Y	2.1870		0.0000	1.0000
107	Uniform Force	Global Y	2.1860		0.0000	1.0000
108	Uniform Force	Global Y	2.1940		0.0000	1.0000
109	Uniform Force	Global Y	2.2260		0.0000	1.0000

LOAD CASE WS, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
110	Uniform Force	Global Y	2.2910		0.0000	1.0000
111	Uniform Force	Global Y	2.3870		0.0000	1.0000
112	Uniform Force	Global Y	2.5150		0.0000	1.0000
113	Uniform Force	Global Y	2.6760		0.0000	1.0000
114	Uniform Force	Global Y	2.8690		0.0000	1.0000
115	Uniform Force	Global Y	2.9610		0.0000	1.0000
116	Uniform Force	Global Y	2.9590		0.0000	1.0000
117	Uniform Force	Global Y	2.8470		0.0000	1.0000
118	Uniform Force	Global Y	2.6570		0.0000	1.0000
119	Uniform Force	Global Y	2.4960		0.0000	1.0000
120	Uniform Force	Global Y	2.3680		0.0000	1.0000
121	Uniform Force	Global Y	2.2730		0.0000	1.0000
122	Uniform Force	Global Y	2.2120		0.0000	1.0000
123	Uniform Force	Global Y	2.1810		0.0000	1.0000
124	Uniform Force	Global Y	2.1730		0.0000	1.0000
125	Uniform Force	Global Y	2.1710		0.0000	1.0000
126	Uniform Force	Global Y	2.1700		0.0000	1.0000
127	Uniform Force	Global Y	2.1690		0.0000	1.0000
128	Uniform Force	Global Y	2.1670		0.0000	1.0000
129	Uniform Force	Global Y	2.1650		0.0000	1.0000
130	Uniform Force	Global Y	2.1640		0.0000	1.0000
131	Uniform Force	Global Y	2.1620		0.0000	1.0000
132	Uniform Force	Global Y	2.1600		0.0000	1.0000
133	Uniform Force	Global Y	2.1660		0.0000	1.0000
134	Uniform Force	Global Y	2.1960		0.0000	1.0000
135	Uniform Force	Global Y	2.2590		0.0000	1.0000
136	Uniform Force	Global Y	2.3510		0.0000	1.0000
137	Uniform Force	Global Y	2.4760		0.0000	1.0000
138	Uniform Force	Global Y	2.6320		0.0000	1.0000
139	Uniform Force	Global Y	2.8180		0.0000	1.0000
140	Uniform Force	Global Y	2.9040		0.0000	1.0000
141	Uniform Force	Global Y	2.9030		0.0000	1.0000
142	Uniform Force	Global Y	2.7910		0.0000	1.0000
143	Uniform Force	Global Y	2.6040		0.0000	1.0000

LOAD CASE WS, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
144	Uniform Force	Global Y	2.4460		0.0000	1.0000
145	Uniform Force	Global Y	2.3200		0.0000	1.0000
146	Uniform Force	Global Y	2.2260		0.0000	1.0000
147	Uniform Force	Global Y	2.1650		0.0000	1.0000
148	Uniform Force	Global Y	2.1340		0.0000	1.0000
149	Uniform Force	Global Y	2.1240		0.0000	1.0000
150	Uniform Force	Global Y	2.1270		0.0000	1.0000
151	Uniform Force	Global Y	2.1530		0.0000	1.0000
152	Uniform Force	Global Y	2.2100		0.0000	1.0000
153	Uniform Force	Global Y	2.2960		0.0000	1.0000
154	Uniform Force	Global Y	2.4120		0.0000	1.0000
155	Uniform Force	Global Y	2.5030		0.0000	1.0000
1001	Uniform Force	Global Y	0.0000		0.0000	1.0000
1002	Uniform Force	Global Y	0.0000		0.0000	1.0000
1101	Uniform Force	Global Y	0.0000		0.0000	1.0000
1102	Uniform Force	Global Y	0.2840		0.0000	1.0000
1103	Uniform Force	Global Y	0.3100		0.0000	1.0000
1104	Uniform Force	Global Y	0.3320		0.0000	1.0000
1105	Uniform Force	Global Y	0.1710		0.0000	1.0000
1201	Uniform Force	Global Y	0.0000		0.0000	1.0000
1202	Uniform Force	Global Y	0.2990		0.0000	1.0000
1203	Uniform Force	Global Y	0.3320		0.0000	1.0000
1204	Uniform Force	Global Y	0.3590		0.0000	1.0000
1205	Uniform Force	Global Y	0.1700		0.0000	1.0000
1011	Uniform Force	Global Y	0.0000		0.0000	1.0000
1012	Uniform Force	Global Y	0.0000		0.0000	1.0000
1006	Uniform Force	Global Y	0.0000		0.0000	1.0000
1007	Uniform Force	Global Y	0.0000		0.0000	1.0000
2001	Uniform Force	Global Y	0.0000		0.0000	1.0000
2002	Uniform Force	Global Y	0.0000		0.0000	1.0000
2101	Uniform Force	Global Y	0.0000		0.0000	1.0000
2102	Uniform Force	Global Y	0.3780		0.0000	1.0000
2103	Uniform Force	Global Y	0.4210		0.0000	1.0000
2104	Uniform Force	Global Y	0.4570		0.0000	1.0000

LOAD CASE WS, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
2105	Uniform Force	Global Y	0.1790		0.0000	1.0000
2201	Uniform Force	Global Y	0.0000		0.0000	1.0000
2202	Uniform Force	Global Y	0.3890		0.0000	1.0000
2203	Uniform Force	Global Y	0.4370		0.0000	1.0000
2204	Uniform Force	Global Y	0.4760		0.0000	1.0000
2205	Uniform Force	Global Y	0.1790		0.0000	1.0000
2011	Uniform Force	Global Y	0.0000		0.0000	1.0000
2012	Uniform Force	Global Y	0.0000		0.0000	1.0000
2006	Uniform Force	Global Y	0.0000		0.0000	1.0000
2007	Uniform Force	Global Y	0.0000		0.0000	1.0000
3001	Uniform Force	Global Y	0.0000		0.0000	1.0000
3002	Uniform Force	Global Y	0.0000		0.0000	1.0000
3101	Uniform Force	Global Y	0.0000		0.0000	1.0000
3102	Uniform Force	Global Y	0.7640		0.0000	1.0000
3103	Uniform Force	Global Y	0.8970		0.0000	1.0000
3104	Uniform Force	Global Y	0.9960		0.0000	1.0000
3105	Uniform Force	Global Y	0.2040		0.0000	1.0000
3201	Uniform Force	Global Y	0.0000		0.0000	1.0000
3202	Uniform Force	Global Y	0.7730		0.0000	1.0000
3203	Uniform Force	Global Y	0.9160		0.0000	1.0000
3204	Uniform Force	Global Y	1.0220		0.0000	1.0000
3205	Uniform Force	Global Y	0.2040		0.0000	1.0000
3011	Uniform Force	Global Y	0.0000		0.0000	1.0000
3012	Uniform Force	Global Y	0.0000		0.0000	1.0000
3006	Uniform Force	Global Y	0.0000		0.0000	1.0000
4001	Uniform Force	Global Y	0.0000		0.0000	1.0000
4002	Uniform Force	Global Y	0.0000		0.0000	1.0000
4101	Uniform Force	Global Y	0.0000		0.0000	1.0000
4102	Uniform Force	Global Y	0.9180		0.0000	1.0000
4103	Uniform Force	Global Y	1.0910		0.0000	1.0000
4104	Uniform Force	Global Y	1.2180		0.0000	1.0000
4105	Uniform Force	Global Y	0.2110		0.0000	1.0000
4201	Uniform Force	Global Y	0.0000		0.0000	1.0000
4202	Uniform Force	Global Y	0.9250		0.0000	1.0000

LOAD CASE WS, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
4203	Uniform Force	Global Y	1.1050		0.0000	1.0000
4204	Uniform Force	Global Y	1.2370		0.0000	1.0000
4205	Uniform Force	Global Y	0.2110		0.0000	1.0000
4011	Uniform Force	Global Y	0.0000		0.0000	1.0000
4012	Uniform Force	Global Y	0.0000		0.0000	1.0000
4006	Uniform Force	Global Y	0.0000		0.0000	1.0000
5001	Uniform Force	Global Y	0.0000		0.0000	1.0000
5002	Uniform Force	Global Y	0.0000		0.0000	1.0000
5101	Uniform Force	Global Y	0.0000		0.0000	1.0000
5102	Uniform Force	Global Y	0.9880		0.0000	1.0000
5103	Uniform Force	Global Y	1.1800		0.0000	1.0000
5104	Uniform Force	Global Y	1.3190		0.0000	1.0000
5105	Uniform Force	Global Y	0.2150		0.0000	1.0000
5201	Uniform Force	Global Y	0.0000		0.0000	1.0000
5202	Uniform Force	Global Y	0.9940		0.0000	1.0000
5203	Uniform Force	Global Y	1.1930		0.0000	1.0000
5204	Uniform Force	Global Y	1.3360		0.0000	1.0000
5205	Uniform Force	Global Y	0.2150		0.0000	1.0000
5011	Uniform Force	Global Y	0.0000		0.0000	1.0000
5012	Uniform Force	Global Y	0.0000		0.0000	1.0000
5006	Uniform Force	Global Y	0.0000		0.0000	1.0000
6001	Uniform Force	Global Y	0.0000		0.0000	1.0000
6002	Uniform Force	Global Y	0.0000		0.0000	1.0000
6101	Uniform Force	Global Y	0.0000		0.0000	1.0000
6102	Uniform Force	Global Y	0.9710		0.0000	1.0000
6103	Uniform Force	Global Y	1.1540		0.0000	1.0000
6104	Uniform Force	Global Y	1.2890		0.0000	1.0000
6105	Uniform Force	Global Y	0.2140		0.0000	1.0000
6201	Uniform Force	Global Y	0.0000		0.0000	1.0000
6202	Uniform Force	Global Y	0.9790		0.0000	1.0000
6203	Uniform Force	Global Y	1.1710		0.0000	1.0000
6204	Uniform Force	Global Y	1.3100		0.0000	1.0000
6205	Uniform Force	Global Y	0.2140		0.0000	1.0000
6011	Uniform Force	Global Y	0.0000		0.0000	1.0000

LOAD CASE WS, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
6012	Uniform Force	Global Y	0.0000		0.0000	1.0000
6006	Uniform Force	Global Y	0.0000		0.0000	1.0000
7001	Uniform Force	Global Y	0.0000		0.0000	1.0000
7002	Uniform Force	Global Y	0.0000		0.0000	1.0000
7101	Uniform Force	Global Y	0.0000		0.0000	1.0000
7102	Uniform Force	Global Y	0.6500		0.0000	1.0000
7103	Uniform Force	Global Y	0.7470		0.0000	1.0000
7104	Uniform Force	Global Y	0.8220		0.0000	1.0000
7105	Uniform Force	Global Y	0.1980		0.0000	1.0000
7201	Uniform Force	Global Y	0.0000		0.0000	1.0000
7202	Uniform Force	Global Y	0.6650		0.0000	1.0000
7203	Uniform Force	Global Y	0.7740		0.0000	1.0000
7204	Uniform Force	Global Y	0.8570		0.0000	1.0000
7205	Uniform Force	Global Y	0.1980		0.0000	1.0000
7011	Uniform Force	Global Y	0.0000		0.0000	1.0000
7012	Uniform Force	Global Y	0.0000		0.0000	1.0000
7006	Uniform Force	Global Y	0.0000		0.0000	1.0000
7007	Uniform Force	Global Y	0.0000		0.0000	1.0000
8001	Uniform Force	Global Y	0.0000		0.0000	1.0000
8002	Uniform Force	Global Y	0.0000		0.0000	1.0000
8101	Uniform Force	Global Y	0.0000		0.0000	1.0000
8102	Uniform Force	Global Y	0.5610		0.0000	1.0000
8103	Uniform Force	Global Y	0.6360		0.0000	1.0000
8104	Uniform Force	Global Y	0.6960		0.0000	1.0000
8105	Uniform Force	Global Y	0.1930		0.0000	1.0000
8201	Uniform Force	Global Y	0.0000		0.0000	1.0000
8202	Uniform Force	Global Y	0.5780		0.0000	1.0000
8203	Uniform Force	Global Y	0.6670		0.0000	1.0000
8204	Uniform Force	Global Y	0.7360		0.0000	1.0000
8205	Uniform Force	Global Y	0.1930		0.0000	1.0000
8011	Uniform Force	Global Y	0.0000		0.0000	1.0000
8012	Uniform Force	Global Y	0.0000		0.0000	1.0000
8006	Uniform Force	Global Y	0.0000		0.0000	1.0000
8007	Uniform Force	Global Y	0.0000		0.0000	1.0000

LOAD CASE CV1, Joint Loads

Joint	X-Force (kips)	Y-Force (kips)	Z-Force (kips)	X-Moment (kips-ft)	Y-Moment (kips-ft)	Z-Moment (kips-ft)
6001	0.0000	25,760.0000	0.0000	0.0000	0.0000	0.0000

LOAD CASE CV2, Joint Loads

Joint	X-Force (kips)	Y-Force (kips)	Z-Force (kips)	X-Moment (kips-ft)	Y-Moment (kips-ft)	Z-Moment (kips-ft)
5001	12,880.0000	0.0000	0.0000	0.0000	0.0000	0.0000

LOAD CASE EQ 1 SEE, RSA

Name	Value
Response-Spectrum Curve in Direction 1	SEE Class E
Scale in Direction 1	1.0000
Response-Spectrum Curve in Direction 2	(none)
Scale in Direction 2	0.0000
Response-Spectrum Curve in Global Z	(none)
Scale in Global Z	0.0000
Angle from Global X to Direction 1	0.0000
Modal Combination Method	CQC
Spatial Combination Method	SRSS
Modal Damping Ratio (if no curve)	0.0500
Sign Assigned to Results	No Sign
Modal Combination System	Global
Modal Damping Curve	(none)

LOAD CASE EQ 2 SEE, RSA

Name	Value
Response-Spectrum Curve in Direction 1	(none)
Scale in Direction 1	0.0000
Response-Spectrum Curve in Direction 2	SEE Class E

LOAD CASE EQ 2 SEE, RSA

Name	Value
Scale in Direction 2	1.0000
Response-Spectrum Curve in Global Z	(none)
Scale in Global Z	0.0000
Angle from Global X to Direction 1	0.0000
Modal Combination Method	CQC
Spatial Combination Method	SRSS
Modal Damping Ratio (if no curve)	0.0500
Sign Assigned to Results	No Sign
Modal Combination System	Global
Modal Damping Curve	(none)

LOAD CASE EQ 3 SEE, RSA

Name	Value
Response-Spectrum Curve in Direction 1	(none)
Scale in Direction 1	0.0000
Response-Spectrum Curve in Direction 2	(none)
Scale in Direction 2	0.0000
Response-Spectrum Curve in Global Z	SEE Class E
Scale in Global Z	1.0000
Angle from Global X to Direction 1	0.0000
Modal Combination Method	CQC
Spatial Combination Method	SRSS
Modal Damping Ratio (if no curve)	0.0500
Sign Assigned to Results	No Sign
Modal Combination System	Global
Modal Damping Curve	(none)

POST-COMPUTED RESULT CASES SUMMARY

Influence Based Case: AASHTO Truck

Influence Line	Influence Line Coefficients Lane 1 GZ-
Vehicle	AASHTO HL-93 Design Truck
Transverse Offset	0
Lane Loading Method	Constant Loading
Lane Load	0
Back-to-Front Vehicle Spacing	0
Side-to-Side Vehicle Spacing	0
Load for Extreme Force Effects	Yes
AASHTO-LFD Point Loading	No
Complete Patterns Only	No
Vehicle Placement	Place Vehicles Anywhere
Include Lane Load Under Vehicles	Yes

Influence Based Case: AASHTO Tandem

Influence Line	Influence Line Coefficients Lane 1 GZ-
Vehicle	AASHTO HL-93 Design Tandem
Transverse Offset	0
Lane Loading Method	Constant Loading
Lane Load	0
Back-to-Front Vehicle Spacing	0
Side-to-Side Vehicle Spacing	0
Load for Extreme Force Effects	Yes
AASHTO-LFD Point Loading	No
Complete Patterns Only	No
Vehicle Placement	Place Vehicles Anywhere
Include Lane Load Under Vehicles	Yes

Influence Based Case: AASHTO 2 Truck

Influence Line	Influence Line Coefficients Lane 1 GZ-
Vehicle	AASHTO HL-93 Design Truck
Vehicle	AASHTO HL-93 Design Truck
Transverse Offset	0
Lane Loading Method	Constant Loading
Lane Load	0
Back-to-Front Vehicle Spacing	50

Side-to-Side Vehicle Spacing	0
Load for Extreme Force Effects	Yes
AASHTO-LFD Point Loading	No
Complete Patterns Only	No
Vehicle Placement	Place Vehicles Anywhere
Include Lane Load Under Vehicles	Yes
Influence Based Case: TriMet 4-Car Train	
Influence Line	Influence Line Coefficients Lane 1 GZ-
Vehicle	TriMet LRV 4 Car Train
Transverse Offset	0
Lane Loading Method	Constant Loading
Lane Load	0
Back-to-Front Vehicle Spacing	0
Side-to-Side Vehicle Spacing	0
Load for Extreme Force Effects	No
AASHTO-LFD Point Loading	No
Complete Patterns Only	No
Vehicle Placement	Place Vehicles Anywhere
Include Lane Load Under Vehicles	Yes
Influence Based Case: AASHTO Lane Load	
Influence Line	Influence Line Coefficients Lane 1 GZ-
Vehicle	AASHTO HL-93 Design Truck
Transverse Offset	0
Lane Loading Method	Constant Loading
Lane Load	0.64
Back-to-Front Vehicle Spacing	0
Side-to-Side Vehicle Spacing	0
Load for Extreme Force Effects	Yes
AASHTO-LFD Point Loading	No
Complete Patterns Only	No
Vehicle Placement	Place Vehicles Anywhere
Include Lane Load Under Vehicles	Yes
Extreme Effect Group: AASHTO Truck Envelope	
Allow Positive Minimum/Negative Maximum	Yes
Load Class	None

Case	Factor	Load Class	Incremental

AASHTO Truck	1	None	No
AASHTO Tandem	1	None	No
AASHTO 2 Truck	1	None	No
Extreme Effect Group: Extreme I Envelope			
Allow Positive Minimum/Negative Maximum	Yes		
Load Class	None		
Case	Factor	Load Class	Incremental
Extreme I - LC 1+	1	None	No
Extreme I - LC 2+	1	None	No
Extreme I - LC1-	1	None	No
Extreme I - LC 2-	1	None	No
Extreme Effect Group: Strength IV			
Allow Positive Minimum/Negative Maximum	Yes		
Load Class	None		
Case	Factor	Load Class	Incremental
Strength IV+	1	None	No
Strength IV-	1	None	No
Extreme Effect Group: AASHTO Truck & Lane			
Allow Positive Minimum/Negative Maximum	Yes		
Load Class	None		
Case	Factor	Load Class	Incremental
AASHTO Truck Envelope	1	None	No
AASHTO Lane Load	1	None	No
Linear Result Combination: 8 - AASHTO LL Lanes			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
AASHTO Truck Envelope	5.2	None	No
Linear Result Combination: 2 4-Car Trains			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
TriMet 4-Car Train	2	None	No
Linear Result Combination: Extreme I - LC 1+			
Combine For Extreme Effects	No		
Load Class	None		

Case	Factor	Load Class	Incremental
Linear Result Combination: Extreme I - LC 2+			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
EQ 1	0.3	None	No
EQ 2	1	None	No
WA	1	None	No
DC	1	None	No
DW	1	None	No
8 - AASHTO Lane Loads	0.5	None	No
Linear Result Combination: Extreme I - LC1-			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
EQ 1	-1	None	No
EQ 2	-0.3	None	No
WA	1	None	No
DC	1	None	No
DW	1	None	No
8 - AASHTO Lane Loads	0.5	None	No
Linear Result Combination: Extreme I - LC 2-			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
EQ 1	-0.3	None	No
EQ 2	-1	None	No
DC	1	None	No
DW	1	None	No
WA	1	None	No
8 - AASHTO Lane Loads	0.5	None	No
Linear Result Combination: DC			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
DC-Dead Load	1	None	No

DC-Barriers	1	None	No
DC-LRT	1	None	No
Linear Result Combination: DW			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
DW-Wearing Surface	1	None	No
DW-Utilities	1	None	No
Linear Result Combination: Strength IV+			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
Linear Result Combination: 8 - AASHTO Lane Loads			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
AASHTO Lane Load	5.2	None	No
Linear Result Combination: Strength IV-			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
DC	1.5	None	No
DW	1.5	None	No
WA	1	None	No
TU-Fall	0.5	None	No
Linear Result Combination: Barge Pier 4 DL Min			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
WA	1	None	No
CV1	1	None	No
DC	0.9	None	No
DW	0.65	None	No
Linear Result Combination: Barge Pier 4 DL Max			
Combine For Extreme Effects	No		
Load Class	None		

Case	Factor	Load Class	Incremental
WA	1	None	No
DC	1.25	None	No
DW	1.5	None	No
CV1	1	None	No

Linear Result Combination: Barge Pier 5 DL Min

Combine For Extreme Effects	No
Load Class	None

Case	Factor	Load Class	Incremental
WA	1	None	No
CV2	1	None	No
DC	0.9	None	No
DW	0.65	None	No

Linear Result Combination: Barge Pier 5 DL Max

Combine For Extreme Effects	No
Load Class	None

Case	Factor	Load Class	Incremental
WA	1	None	No
CV2	1	None	No
DC	1.25	None	No
DW	1.5	None	No

Linear Result Combination: Strength III+

Combine For Extreme Effects	No
Load Class	None

Case	Factor	Load Class	Incremental
WA	1	None	No
WS	1.4	None	No
TU-Rise	0.5	None	No
DC	1.25	None	No
DW	1.5	None	No

Linear Result Combination: Strnegth III-

Combine For Extreme Effects	No
Load Class	None

Case	Factor	Load Class	Incremental
WA	1	None	No
WS	-1.4	None	No

TU-Fall	0.5	None	No
DC	1.25	None	No
DW	1.5	None	No
Linear Result Combination: Strength I-			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
TU-Fall	0.5	None	No
WA	1	None	No
8 - AASHTO LL Lanes	1.75	None	No
2 4-Car Trains	1.67	None	No
DC	1.25	None	No
DW	1.5	None	No
Linear Result Combination: Strength I+			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
TU-Rise	0.5	None	No
WA	1	None	No
8 - AASHTO LL Lanes	1.75	None	No
2 4-Car Trains	1.67	None	No
DC	1.25	None	No
DW	1.5	None	No
Linear Result Combination: Service III-			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
TU-Fall	1	None	No
WA	1	None	No
DC	1	None	No
DW	1	None	No
8 - AASHTO LL Lanes	0.8	None	No
2 4-Car Trains	0.8	None	No
Linear Result Combination: Service III+			
Combine For Extreme Effects	No		
Load Class	None		

Case	Factor	Load Class	Incremental
TU-Rise	1	None	No
WA	1	None	No
DC	1	None	No
DW	1	None	No
8 - AASHTO LL Lanes	0.8	None	No
2 4-Car Trains	0.8	None	No
Linear Result Combination: LL Trk and Lane 5.2			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
AASHTO Truck Envelope	5.2	None	No
AASHTO Lane Load	5.2	None	No
Linear Result Combination: LL-8_LLLanes+2_4CarTrains			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
8 - AASHTO LL Lanes	1	None	No
2 4-Car Trains	1	None	No
Linear Result Combination: EQ1-L FEE			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
EQ 1	1	None	No
EQ 2	0.3	None	No
DC	1	None	No
Linear Result Combination: EQ2-T FEE			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
EQ 1	0.3	None	No
EQ 2	1	None	No
DC	1	None	No
Linear Result Combination: EQ1-L SEE			
Combine For Extreme Effects	No		
Load Class	None		

Case	Factor	Load Class	Incremental
EQ 1 SEE	1	None	No
EQ 2 SEE	0.3	None	No
Linear Result Combination: EQ2-T SEE			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
EQ 1 SEE	0.3	None	No
EQ 2 SEE	1	None	No
Linear Result Combination: LL for EQ			
Combine For Extreme Effects	Yes		
Load Class	None		
Case	Factor	Load Class	Incremental
AASHTO Lane Load	5.2	None	No
TriMet 4-Car Train	1.538	None	No
Linear Result Combination: LL for Column			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
AASHTO Truck Envelope	5.2	None	No
TriMet 4-Car Train	2	None	No

LARSA

HDR Engineering Inc.

CRC TSL-SB91-04_FEE EQ1_20110315_INPUT

Wednesday, March 23, 2011	C. Werts HDR Engineering Inc.	Tel:

PROJECT SUMMARY

INPUT PROPERTIES	Count
Universal Restraints	None
Materials	3
Sections	164
User Coordinate System	9
Spring Curves	9
Isolater Property	None
Creep Definitions	None

INPUT GEOMETRY	Count
Joints	276
Members	283
Plates	None
Springs	40
Isolaters / Bearings	None
Mass Elements	8
Slave / Masters	None
Tendons	None

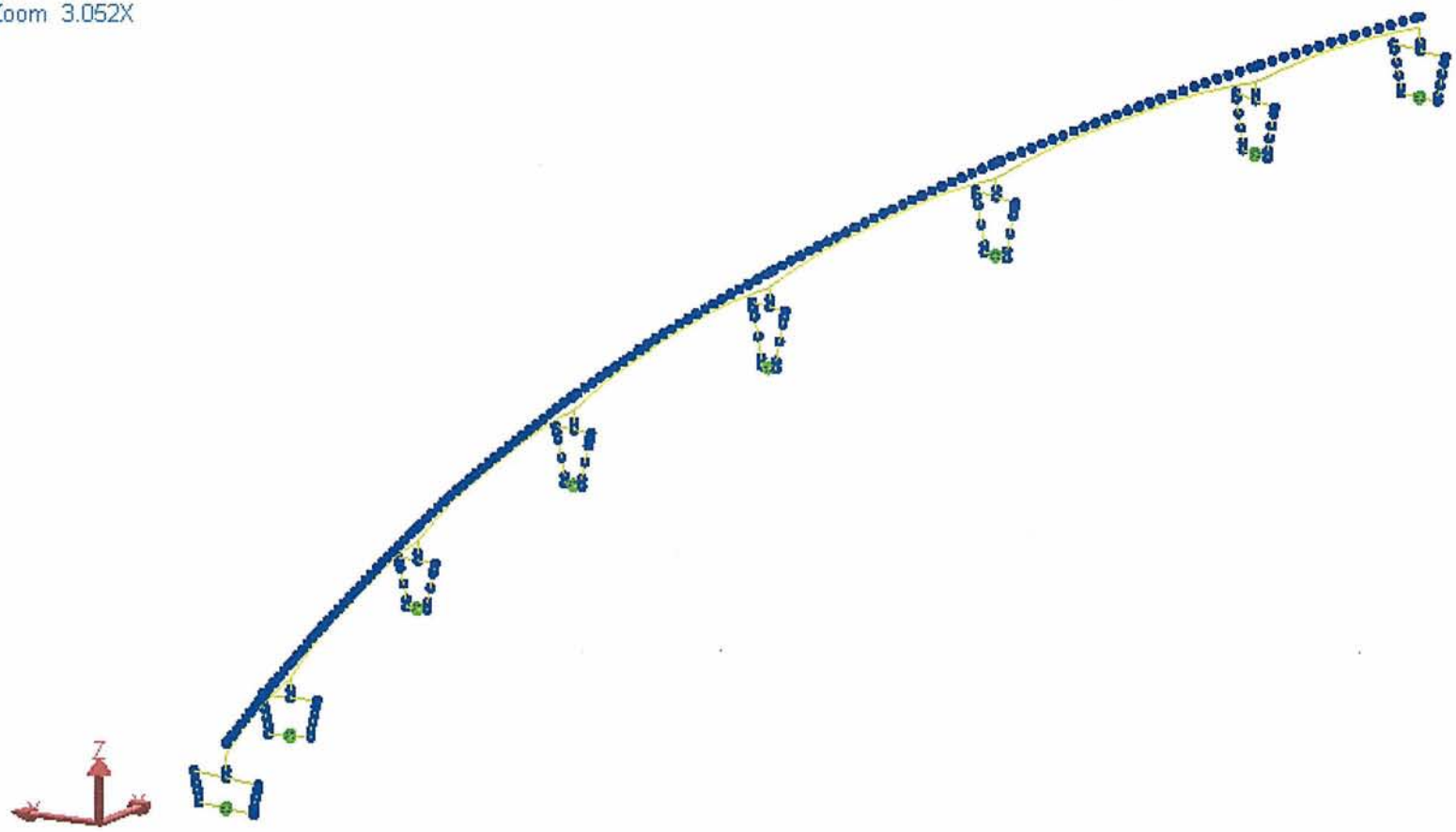
LOAD CASES	Count
Load Cases	30
Combination Cases	None
Construction Stages	None
Linked Databases	2

TABLE OF CONTENTS

INPUTS	Page#	RESULTS	Page#
- INPUT : Material Properties	Page 5		
- INPUT : UCSs	Page 5		
- INPUT : Spring Properties	Page 5		
- INPUT : Sections	Page 6		
- INPUT : Section Stress Points	Page 11		
- INPUT : Section Dimensions	Page 16		
- INPUT : Joints	Page 21		
- INPUT : Members	Page 29		
- INPUT : Member End Offsets	Page 37		
- INPUT : Member Fixity	Page 46		
- INPUT : Springs	Page 46		
- INPUT : Mass Elements	Page 47		
- INPUT : More Material Properties	Page 48		
- Load Cases	Page 48		
- STRUCTURE GROUP SUMMARY	Page 95		

Graphics View 1

Zoom 3.052X



INPUT : Material Properties

Name	Modulus of Elasticity (lb/in²)	Poisson Ratio	Shear Modulus (lb/in²)	Unit Weight (lb/in³)	Thermal Expansion (1/ °F *10^-6)	Assigned
Fc_6	5,173,322.00	0.2000	2,155,550.83	0.0926	6.000000	Yes
Fc_6 weightless	5,173,322.00	0.2000	2,155,550.83	0.0000	6.000000	Yes
Fc_8	5,973,638.00	0.2000	2,489,015.83	0.0000	6.000000	Yes

INPUT : UCSs

Name	Type	Origin X (ft)	Origin Y (ft)	Origin Z (ft)	Axis Point X (ft)	Axis Point Y (ft)	Axis Point Z (ft)	Point on XY Plane X	Point on XY Plane Y	Point on XY Plane Z	Angle Z	Angle X	Angle Y	Assigned
2-Brg 5-Lane SB	Bridge	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	1.0000	0.0000				No
Pier 1	Cartesian	82.5471	37.3955	12.3039	83.5471	37.3955	12.3039	82.5471	38.3955	12.3039				Yes
Pier 2	Cartesian	342.3954	99.8517	12.4015	343.3719	100.0671	12.4015	342.1799	100.8282	12.4015				Yes
Pier 3	Cartesian	796.3364	188.4845	12.1573	797.3233	188.6457	12.1573	796.1752	189.4714	12.1573				Yes
Pier 4	Cartesian	1,257.4342	239.3518	12.1670	1,258.4325	239.4096	12.1670	1,257.3764	240.3501	12.1670				Yes
Pier 5	Cartesian	1,723.1207	242.0036	12.1734	1,724.1199	241.9623	12.1734	1,723.1620	243.0028	12.1734				Yes
Pier 6	Cartesian	2,185.7345	200.8059	12.3118	2,186.7246	200.6650	12.3118	2,185.8755	201.7959	12.3118				Yes
Pier 7	Cartesian	2,641.3890	111.2006	12.4283	2,642.3587	110.9562	12.4283	2,641.6334	112.1703	12.4283				Yes
Pier 8	Cartesian	2,900.3687	37.4207	12.4854	2,901.3687	37.4207	12.4854	2,900.3687	38.4207	12.4854				Yes

INPUT : Spring Properties

Name	Type	Backbone	Polygonal Hysteretic Model	Alpha	Beta 1	Beta 2	Gamma	Mu	Assigned	Number of Points
Pier1spring	6x6 Stiffness Matrix	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a
Pier2spring	6x6 Stiffness Matrix	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a
Pier3spring	6x6 Stiffness Matrix	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a
Pier4spring	6x6 Stiffness Matrix	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a
Pier5spring	6x6 Stiffness Matrix	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a
Pier6spring	6x6 Stiffness Matrix	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a
Pier7spring	6x6 Stiffness Matrix	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a
Pier8spring	6x6 Stiffness Matrix	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a
Ghost	6x6 Stiffness Matrix	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Yes	n/a

INPUT : Sections

Name	Section Area (ft²)	Shear Area in yy (ft²)	Shear Area in zz (ft²)	Torsion Constant (ft^4)	Inertia Izz (ft^4)	Inertia Iyy (ft^4)	Plastic Modulus Zyy (ft³)	Plastic Modulus Zzz (ft³)	Perimeter (ft)	Material Time-Effect	Ductility	Residual Strength (%)	Assigned
Typ Pier Column	144.0000	120.0000	120.0000	2,923.7760	691.2000	691.2000	0.0000	0.0000	48.0000	(NONE)	50.	0.	Yes
Typ Pier Cap	180.0000	1.5000e5	1.5000e5	4.3675e6	3.3750e6	2.1600e6	0.0000	0.0000	54.0000	(NONE)	50.	0.	Yes
P1_Column	83.0000	17.1000	17.1000	216.0000	129.0000	129.0000	0.0000	0.0000	40.0000	(NONE)	50.	0.	Yes
P2_Column	83.0000	22.9000	22.9000	216.0000	173.0000	173.0000	0.0000	0.0000	40.0000	(NONE)	50.	0.	Yes
P7_Column	101.0000	30.9000	30.9000	319.0000	285.0000	285.0000	0.0000	0.0000	44.0000	(NONE)	50.	0.	Yes
P8_Column	101.0000	23.1000	23.1000	319.0000	212.0000	212.0000	0.0000	0.0000	44.0000	(NONE)	50.	0.	Yes
Abut Pier Cap	180.0000	1.5000e5	1.5000e5	4.3675e6	3.3750e6	2.1600e6	0.0000	0.0000	54.0000	(NONE)	50.	0.	Yes
Rigid Link	5,000.0000	5,000.0000	5,000.0000	9.0000e6	9.0000e6	9.0000e6	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_1T	374.7000	142.4000	193.4000	69,675.0000	49,345.0000	4.1113e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_2T	367.1000	135.7000	192.6000	65,454.0000	48,601.0000	3.9933e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_3T	348.5000	119.4000	190.5000	55,644.0000	44,533.0000	3.6999e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_4T	333.6000	106.8000	188.3000	48,459.0000	38,266.0000	3.4568e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_5T	322.4000	97.9000	186.2000	43,485.0000	34,020.0000	3.2624e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_6T	314.9000	92.8000	184.1000	40,379.0000	31,549.0000	3.1116e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_7T	311.2000	91.4000	181.9000	38,912.0000	30,700.0000	3.0017e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_8T	308.8000	91.4000	179.8000	38,042.0000	30,461.0000	2.9075e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_9T	309.3000	93.0000	178.8000	38,250.0000	31,013.0000	2.8776e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_10T	319.2000	98.3000	190.4000	40,279.0000	34,130.0000	2.8132e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_11T	346.6000	107.3000	215.0000	44,535.0000	40,897.0000	2.8777e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_12T	379.7000	120.0000	238.6000	49,786.0000	49,865.0000	2.9735e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_13T	415.5000	136.5000	261.2000	56,426.0000	61,177.0000	3.0788e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_14T	453.8000	156.7000	282.7000	64,711.0000	75,552.0000	3.1891e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_15T	494.7000	180.6000	302.9000	74,837.0000	91,734.0000	3.3011e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_16T	492.6000	180.6000	300.9000	73,895.0000	88,927.0000	3.2459e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_17T	490.5000	180.6000	298.9000	72,957.0000	91,169.0000	3.1913e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_18T	439.6000	156.7000	269.1000	58,829.0000	74,457.0000	2.8101e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_19T	393.4000	136.5000	240.2000	47,938.0000	58,870.0000	2.4805e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_20T	352.0000	120.0000	212.5000	39,648.0000	46,858.0000	2.2008e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_21T	315.4000	107.3000	185.8000	33,330.0000	37,490.0000	1.9639e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_22T	286.5000	98.3000	160.2000	28,435.0000	30,627.0000	1.7771e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_23T	273.0000	93.0000	145.5000	25,165.0000	27,248.0000	1.6518e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_24T	268.5000	91.4000	142.8000	23,788.0000	26,267.0000	1.5637e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes

INPUT : Sections

Name	Section Area (ft²)	Shear Area in yy (ft²)	Shear Area in zz (ft²)	Torsion Constant (ft^4)	Inertia Izz (ft^4)	Inertia Iyy (ft^4)	Plastic Modulus Zyy (ft³)	Plastic Modulus Zzz (ft³)	Perimeter (ft)	Material Time-Effect	Ductility	Residual Strength (%)	Assigned
Sect_25T	265.6000	91.4000	140.1000	22,829.0000	25,897.0000	1.4865e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_26T	262.7000	91.4000	137.5000	21,874.0000	25,524.0000	1.4112e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_27T	259.8000	91.4000	134.8000	20,937.0000	25,153.0000	1.3389e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_28T	256.9000	91.4000	132.1000	20,011.0000	24,781.0000	1.2689e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_29T	254.0000	91.4000	129.5000	19,096.0000	24,410.0000	1.2013e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_30T	251.1000	91.4000	126.8000	18,193.0000	24,037.0000	1.1360e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_31T	248.4000	91.4000	124.4000	17,364.0000	23,690.0000	1.0772e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_32T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_33T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_34T	249.9000	93.0000	124.3000	17,643.0000	24,256.0000	1.0822e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_35T	258.0000	98.3000	133.9000	19,071.0000	26,678.0000	1.1040e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_36T	278.5000	107.3000	151.3000	21,354.0000	32,032.0000	1.1525e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_37T	305.7000	120.0000	168.8000	24,319.0000	39,533.0000	1.2197e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_38T	336.6000	136.5000	186.3000	28,201.0000	49,176.0000	1.2994e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_39T	371.2000	156.7000	203.8000	33,216.0000	61,602.0000	1.3918e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_40T	409.6000	180.6000	221.3000	39,586.0000	76,286.0000	1.4969e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_41T	409.6000	180.6000	221.3000	39,586.0000	75,624.0000	1.4969e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_42T	409.6000	180.6000	221.3000	39,586.0000	76,372.0000	1.4969e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_43T	371.1000	156.7000	203.7000	33,216.0000	61,585.0000	1.3916e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_44T	336.4000	136.5000	186.0000	28,200.0000	49,140.0000	1.2990e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_45T	305.3000	120.0000	168.4000	24,314.0000	39,479.0000	1.2190e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_46T	278.0000	107.3000	150.8000	21,342.0000	31,954.0000	1.1517e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_47T	257.7000	98.3000	133.1000	19,041.0000	26,624.0000	1.1036e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_48T	249.9000	93.0000	124.3000	17,643.0000	24,256.0000	1.0822e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_49T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_50T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_51T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_52T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_53T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_54T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_55T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_56T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_57T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_58T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes

INPUT : Sections

Name	Section Area (ft²)	Shear Area in yy (ft²)	Shear Area in zz (ft²)	Torsion Constant (ft^4)	Inertia Izz (ft^4)	Inertia Iyy (ft^4)	Plastic Modulus Zyy (ft³)	Plastic Modulus Zzz (ft³)	Perimeter (ft)	Material Time-Effect	Ductility	Residual Strength (%)	Assigned
Sect_59T	249.9000	93.0000	124.3000	17,643.0000	24,256.0000	1.0822e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_60T	257.7000	98.3000	133.1000	19,041.0000	26,624.0000	1.1036e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_61T	278.0000	107.3000	150.8000	21,342.0000	31,954.0000	1.1517e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_62T	305.3000	120.0000	168.4000	24,314.0000	39,479.0000	1.2190e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_63T	336.4000	136.5000	186.0000	28,200.0000	49,140.0000	1.2990e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_64T	371.1000	156.7000	203.7000	33,216.0000	61,585.0000	1.3916e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_65T	409.6000	180.6000	221.3000	39,586.0000	76,372.0000	1.4969e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_66T	409.6000	180.6000	221.3000	39,586.0000	75,624.0000	1.4969e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_67T	409.6000	180.6000	221.3000	39,586.0000	76,458.0000	1.4969e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_68T	371.0000	156.7000	203.5000	33,216.0000	61,567.0000	1.3914e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_69T	336.1000	136.5000	185.7000	28,199.0000	49,105.0000	1.2986e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_70T	305.0000	120.0000	167.9000	24,309.0000	39,424.0000	1.2184e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_71T	277.5000	107.3000	150.2000	21,330.0000	31,875.0000	1.1509e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_72T	257.4000	98.3000	132.4000	19,011.0000	26,573.0000	1.1032e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_73T	249.9000	93.0000	124.3000	17,643.0000	24,256.0000	1.0822e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_74T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_75T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_76T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_77T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_78T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_79T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_80T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_81T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_82T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_83T	248.3000	91.4000	124.3000	17,358.0000	23,688.0000	1.0768e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_84T	249.9000	93.0000	124.3000	17,643.0000	24,256.0000	1.0822e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_85T	257.4000	98.3000	132.4000	19,011.0000	26,573.0000	1.1032e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_86T	277.5000	107.3000	150.2000	21,330.0000	31,875.0000	1.1509e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_87T	305.0000	120.0000	167.9000	24,309.0000	39,424.0000	1.2184e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_88T	336.1000	136.5000	185.7000	28,199.0000	49,105.0000	1.2986e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_89T	371.0000	156.7000	203.5000	33,216.0000	61,567.0000	1.3914e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_90T	409.6000	180.6000	221.3000	39,586.0000	76,458.0000	1.4969e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_91T	409.6000	180.6000	221.3000	39,586.0000	75,624.0000	1.4969e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_92T	409.6000	180.6000	221.3000	39,586.0000	76,397.0000	1.4969e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes

INPUT : Sections

Name	Section Area (ft²)	Shear Area in yy (ft²)	Shear Area in zz (ft²)	Torsion Constant (ft^4)	Inertia Izz (ft^4)	Inertia Iyy (ft^4)	Plastic Modulus Zyy (ft³)	Plastic Modulus Zzz (ft³)	Perimeter (ft)	Material Time-Effect	Ductility	Residual Strength (%)	Assigned
Sect_93T	371.1000	156.7000	203.7000	33,228.0000	61,587.0000	1.3922e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_94T	336.3000	136.5000	186.0000	28,210.0000	49,136.0000	1.2995e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_95T	305.3000	120.0000	168.3000	24,322.0000	39,467.0000	1.2194e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_96T	277.9000	107.3000	150.6000	21,346.0000	31,934.0000	1.1519e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_97T	258.1000	98.3000	133.3000	19,188.0000	26,679.0000	1.1137e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_98T	252.1000	93.0000	126.3000	18,311.0000	24,535.0000	1.1288e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_99T	252.2000	91.4000	127.9000	18,540.0000	24,181.0000	1.1609e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_100T	253.9000	91.4000	129.4000	19,071.0000	24,399.0000	1.1995e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_101T	255.6000	91.4000	131.0000	19,605.0000	24,617.0000	1.2388e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_102T	257.3000	91.4000	132.5000	20,144.0000	24,835.0000	1.2789e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_103T	259.0000	91.4000	134.1000	20,687.0000	25,053.0000	1.3198e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_104T	260.7000	91.4000	135.6000	21,233.0000	25,270.0000	1.3616e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_105T	260.7000	91.4000	135.7000	21,240.0000	25,273.0000	1.3621e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_106T	264.1000	91.4000	138.7000	22,331.0000	25,702.0000	1.4470e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_107T	265.8000	91.4000	140.3000	22,888.0000	25,920.0000	1.4912e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_108T	267.5000	91.4000	141.9000	23,450.0000	26,136.0000	1.5363e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_109T	270.7000	93.0000	143.4000	24,410.0000	26,961.0000	1.5903e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_110T	282.1000	98.3000	155.5000	27,071.0000	30,004.0000	1.6747e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_111T	308.7000	107.3000	179.3000	31,273.0000	36,498.0000	1.8125e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_112T	342.9000	120.0000	203.8000	36,651.0000	45,445.0000	1.9906e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_113T	378.8000	136.5000	226.3000	42,716.0000	56,488.0000	2.1388e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_114T	418.3000	156.7000	248.7000	50,466.0000	70,661.0000	2.3051e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_115T	461.6000	180.6000	271.2000	60,298.0000	87,602.0000	2.4922e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_116T	461.6000	180.6000	271.2000	60,298.0000	86,773.0000	2.4922e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_117T	461.6000	180.6000	271.2000	60,298.0000	87,598.0000	2.4922e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_118T	418.3000	156.7000	248.7000	50,466.0000	70,662.0000	2.3051e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_119T	378.8000	136.5000	226.3000	42,716.0000	56,490.0000	2.1388e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_120T	343.0000	120.0000	203.9000	36,692.0000	45,466.0000	1.9934e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_121T	311.0000	107.3000	181.5000	32,046.0000	36,835.0000	1.8688e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_122T	285.9000	98.3000	159.1000	28,382.0000	30,529.0000	1.7767e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_123T	275.9000	93.0000	148.2000	26,181.0000	27,630.0000	1.7361e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_124T	274.3000	91.4000	148.2000	25,756.0000	27,013.0000	1.7272e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_125T	274.3000	91.4000	148.2000	25,756.0000	27,013.0000	1.7272e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_126T	274.3000	91.4000	148.2000	25,756.0000	27,013.0000	1.7272e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes

INPUT : Sections

Name	Section Area (ft²)	Shear Area in yy (ft²)	Shear Area in zz (ft²)	Torsion Constant (ft^4)	Inertia Izz (ft^4)	Inertia Iyy (ft^4)	Plastic Modulus Zyy (ft³)	Plastic Modulus Zzz (ft³)	Perimeter (ft)	Material Time-Effect	Ductility	Residual Strength (%)	Assigned
Sect_127T	274.3000	91.4000	148.2000	25,756.0000	27,013.0000	1.7272e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_128T	274.3000	91.4000	148.2000	25,756.0000	27,013.0000	1.7272e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_129T	274.7000	91.4000	148.5000	25,884.0000	27,061.0000	1.7382e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_130T	275.5000	91.4000	149.2000	26,156.0000	27,163.0000	1.7614e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_131T	276.3000	91.4000	150.0000	26,429.0000	27,265.0000	1.7848e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_132T	277.1000	91.4000	150.7000	26,703.0000	27,367.0000	1.8084e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_133T	277.9000	91.4000	151.4000	26,977.0000	27,468.0000	1.8322e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_134T	280.3000	93.0000	152.2000	27,709.0000	28,198.0000	1.8663e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_135T	291.6000	98.3000	164.3000	30,368.0000	31,306.0000	1.9362e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_136T	318.6000	107.3000	188.6000	34,688.0000	37,944.0000	2.0665e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_137T	352.9000	120.0000	213.2000	40,171.0000	46,987.0000	2.2373e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_138T	391.8000	136.5000	238.6000	47,490.0000	58,633.0000	2.4495e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_139T	433.6000	156.7000	263.3000	56,504.0000	73,454.0000	2.6651e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_140T	480.0000	180.6000	288.8000	68,268.0000	90,575.0000	2.9242e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_141T	480.7000	180.6000	289.5000	68,568.0000	88,730.0000	2.9411e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_142T	481.3000	180.6000	290.1000	68,851.0000	90,644.0000	2.9569e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_143T	437.7000	156.7000	267.3000	58,163.0000	74,155.0000	2.7678e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_144T	397.6000	136.5000	244.2000	49,673.0000	59,526.0000	2.5974e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_145T	360.9000	120.0000	220.8000	43,029.0000	48,115.0000	2.4465e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_146T	327.6000	107.3000	197.1000	37,871.0000	39,142.0000	2.3160e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_147T	301.1000	98.3000	173.1000	33,760.0000	32,492.0000	2.2215e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_148T	290.6000	93.0000	161.6000	31,351.0000	29,408.0000	2.1933e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_149T	289.8000	91.4000	162.3000	31,124.0000	28,855.0000	2.2088e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_150T	290.6000	91.4000	163.1000	31,409.0000	28,946.0000	2.2358e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_151T	292.7000	92.7000	163.8000	32,115.0000	29,558.0000	2.2723e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_152T	298.4000	97.6000	164.5000	34,077.0000	31,700.0000	2.3365e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_153T	307.9000	106.3000	165.3000	37,436.0000	35,512.0000	2.4297e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_154T	321.1000	118.7000	166.0000	42,389.0000	41,199.0000	2.5529e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_155T	338.0000	134.8000	166.7000	49,198.0000	47,441.0000	2.7071e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes
Sect_156T	345.9000	142.4000	167.0000	52,562.0000	49,703.0000	2.7786e5	0.0000	0.0000	0.0000	(NONE)	50.	0.	Yes

INPUT : Section Stress Points

Name	Point 1 Y (ft)	Point 1 Z (ft)	Point 2 Y (ft)	Point 2 Z (ft)	Point 3 Y (ft)	Point 3 Z (ft)	Point 4 Y (ft)	Point 4 Z (ft)	Point 5 Y (ft)	Point 5 Z (ft)	Point 6 Y (ft)	Point 6 Z (ft)
Typ Pier Column	6.0000	6.0000	6.0000	-6.0000	-6.0000	-6.0000	-6.0000	6.0000	(none)	(none)	(none)	(none)
Typ Pier Cap	7.5000	6.0000	7.5000	-6.0000	-7.5000	-6.0000	-7.5000	6.0000	(none)	(none)	(none)	(none)
P1_Column	5.0000	5.0000	5.0000	-5.0000	-5.0000	-5.0000	-5.0000	5.0000	(none)	(none)	(none)	(none)
P2_Column	5.0000	5.0000	5.0000	-5.0000	-5.0000	-5.0000	-5.0000	5.0000	(none)	(none)	(none)	(none)
P7_Column	5.5000	5.5000	5.5000	-5.5000	-5.5000	-5.5000	-5.5000	5.5000	(none)	(none)	(none)	(none)
P8_Column	5.5000	5.5000	5.5000	-5.5000	-5.5000	-5.5000	-5.5000	5.5000	(none)	(none)	(none)	(none)
Abut Pier Cap	7.5000	6.0000	7.5000	-6.0000	-7.5000	-6.0000	-7.5000	6.0000	(none)	(none)	(none)	(none)
Rigid Link	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Sect_1T	-15.7800	-43.0800	13.2200	-64.3300	13.2200	64.3300	-15.7800	43.0800	13.2200	0.0000	(none)	(none)
Sect_2T	-15.5300	-42.8700	12.6800	-64.1200	12.6800	64.1200	-15.5300	42.8700	12.6800	0.0000	(none)	(none)
Sect_3T	-14.8900	-42.2900	11.4100	-63.5400	11.4100	63.5400	-14.8900	42.2900	11.4100	0.0000	(none)	(none)
Sect_4T	-14.3300	-41.7100	10.4800	-62.9600	10.4800	62.9600	-14.3300	41.7100	10.4800	0.0000	(none)	(none)
Sect_5T	-13.9500	-41.1300	9.8200	-62.3800	9.8200	62.3800	-13.9500	41.1300	9.8200	0.0000	(none)	(none)
Sect_6T	-13.7400	-40.5400	9.4200	-61.7900	9.4200	61.7900	-13.7400	40.5400	9.4200	0.0000	(none)	(none)
Sect_7T	-13.7000	-39.9600	9.3000	-61.2100	9.3000	61.2100	-13.7000	39.9600	9.3000	0.0000	(none)	(none)
Sect_8T	-13.7100	-39.3800	9.2900	-60.6300	9.2900	60.6300	-13.7100	39.3800	9.2900	0.0000	(none)	(none)
Sect_9T	-13.7800	-39.1000	9.4000	-60.3500	9.4000	60.3500	-13.7800	39.1000	9.4000	0.0000	(none)	(none)
Sect_10T	-13.7100	-38.1900	10.1000	-59.4400	10.1000	59.4400	-13.7100	38.1900	10.1000	0.0000	(none)	(none)
Sect_11T	-13.3600	-37.5700	11.5100	-58.8200	11.5100	58.8200	-13.3600	37.5700	11.5100	0.0000	(none)	(none)
Sect_12T	-13.1900	-36.9400	13.1800	-58.1900	13.1800	58.1900	-13.1900	36.9400	13.1800	0.0000	(none)	(none)
Sect_13T	-13.3000	-36.2900	15.0100	-57.5400	15.0100	57.5400	-13.3000	36.2900	15.0100	0.0000	(none)	(none)
Sect_14T	-13.6600	-35.6000	17.0200	-56.8500	17.0200	56.8500	-13.6600	35.6000	17.0200	0.0000	(none)	(none)
Sect_15T	-14.2000	-34.8900	19.3000	-56.1400	19.3000	56.1400	-14.2000	34.8900	19.3000	0.0000	(none)	(none)
Sect_16T	-14.2200	-34.6300	19.2800	-55.8800	19.2800	55.8800	-14.2200	34.6300	19.2800	0.0000	(none)	(none)
Sect_17T	-14.2300	-34.3700	19.2700	-55.6200	19.2700	55.6200	-14.2300	34.3700	19.2700	0.0000	(none)	(none)
Sect_18T	-13.7900	-33.6400	16.8900	-54.8900	16.8900	54.8900	-13.7900	33.6400	16.8900	0.0000	(none)	(none)
Sect_19T	-13.5100	-32.9100	14.8000	-54.1600	14.8000	54.1600	-13.5100	32.9100	14.8000	0.0000	(none)	(none)
Sect_20T	-13.4600	-32.1900	12.9100	-53.4400	12.9100	53.4400	-13.4600	32.1900	12.9100	0.0000	(none)	(none)
Sect_21T	-13.6700	-31.4700	11.2000	-52.7200	11.2000	52.7200	-13.6700	31.4700	11.2000	0.0000	(none)	(none)
Sect_22T	-14.0100	-30.7400	9.8000	-51.9900	9.8000	51.9900	-14.0100	30.7400	9.8000	0.0000	(none)	(none)
Sect_23T	-14.0700	-30.0100	9.1100	-51.2600	9.1100	51.2600	-14.0700	30.0100	9.1100	0.0000	(none)	(none)
Sect_24T	-14.0400	-29.2900	8.9600	-50.5400	8.9600	50.5400	-14.0400	29.2900	8.9600	0.0000	(none)	(none)

INPUT : Section Stress Points

Name	Point 1 Y (ft)	Point 1 Z (ft)	Point 2 Y (ft)	Point 2 Z (ft)	Point 3 Y (ft)	Point 3 Z (ft)	Point 4 Y (ft)	Point 4 Z (ft)	Point 5 Y (ft)	Point 5 Z (ft)	Point 6 Y (ft)	Point 6 Z (ft)
Sect_25T	-14.0600	-28.5600	8.9400	-49.8100	8.9400	49.8100	-14.0600	28.5600	8.9400	0.0000	(none)	(none)
Sect_26T	-14.0900	-27.8300	8.9100	-49.0800	8.9100	49.0800	-14.0900	27.8300	8.9100	0.0000	(none)	(none)
Sect_27T	-14.1200	-27.1100	8.8800	-48.3600	8.8800	48.3600	-14.1200	27.1100	8.8800	0.0000	(none)	(none)
Sect_28T	-14.1500	-26.3800	8.8500	-47.6300	8.8500	47.6300	-14.1500	26.3800	8.8500	0.0000	(none)	(none)
Sect_29T	-14.1800	-25.6600	8.8200	-46.9100	8.8200	46.9100	-14.1800	25.6600	8.8200	0.0000	(none)	(none)
Sect_30T	-14.2100	-24.9300	8.7900	-46.1800	8.7900	46.1800	-14.2100	24.9300	8.7900	0.0000	(none)	(none)
Sect_31T	-14.2400	-24.2600	8.7600	-45.5100	8.7600	45.5100	-14.2400	24.2600	8.7600	0.0000	(none)	(none)
Sect_32T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_33T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_34T	-14.3000	-24.2500	8.8800	-45.5000	8.8800	45.5000	-14.3000	24.2500	8.8800	0.0000	(none)	(none)
Sect_35T	-14.3600	-24.2500	9.4500	-45.5000	9.4500	45.5000	-14.3600	24.2500	9.4500	0.0000	(none)	(none)
Sect_36T	-14.1600	-24.2500	10.7100	-45.5000	10.7100	45.5000	-14.1600	24.2500	10.7100	0.0000	(none)	(none)
Sect_37T	-14.0700	-24.2500	12.3000	-45.5000	12.3000	45.5000	-14.0700	24.2500	12.3000	0.0000	(none)	(none)
Sect_38T	-14.2200	-24.2500	14.0900	-45.5000	14.0900	45.5000	-14.2200	24.2500	14.0900	0.0000	(none)	(none)
Sect_39T	-14.6200	-24.2500	16.0600	-45.5000	16.0600	45.5000	-14.6200	24.2500	16.0600	0.0000	(none)	(none)
Sect_40T	-15.0700	-24.2500	18.4300	-45.5000	18.4300	45.5000	-15.0700	24.2500	18.4300	0.0000	(none)	(none)
Sect_41T	-14.9800	-24.2500	18.5200	-45.5000	18.5200	45.5000	-14.9800	24.2500	18.5200	0.0000	(none)	(none)
Sect_42T	-15.0800	-24.2500	18.4200	-45.5000	18.4200	45.5000	-15.0800	24.2500	18.4200	0.0000	(none)	(none)
Sect_43T	-14.6300	-24.2500	16.0600	-45.5000	16.0600	45.5000	-14.6300	24.2500	16.0600	0.0000	(none)	(none)
Sect_44T	-14.2300	-24.2500	14.0800	-45.5000	14.0800	45.5000	-14.2300	24.2500	14.0800	0.0000	(none)	(none)
Sect_45T	-14.0800	-24.2500	12.2900	-45.5000	12.2900	45.5000	-14.0800	24.2500	12.2900	0.0000	(none)	(none)
Sect_46T	-14.1800	-24.2500	10.6900	-45.5000	10.6900	45.5000	-14.1800	24.2500	10.6900	0.0000	(none)	(none)
Sect_47T	-14.3700	-24.2500	9.4400	-45.5000	9.4400	45.5000	-14.3700	24.2500	9.4400	0.0000	(none)	(none)
Sect_48T	-14.3000	-24.2500	8.8800	-45.5000	8.8800	45.5000	-14.3000	24.2500	8.8800	0.0000	(none)	(none)
Sect_49T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_50T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_51T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_52T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_53T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_54T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_55T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_56T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_57T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_58T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)

INPUT : Section Stress Points

Name	Point 1 Y (ft)	Point 1 Z (ft)	Point 2 Y (ft)	Point 2 Z (ft)	Point 3 Y (ft)	Point 3 Z (ft)	Point 4 Y (ft)	Point 4 Z (ft)	Point 5 Y (ft)	Point 5 Z (ft)	Point 6 Y (ft)	Point 6 Z (ft)
Sect_59T	-14.3000	-24.2500	8.8800	-45.5000	8.8800	45.5000	-14.3000	24.2500	8.8800	0.0000	(none)	(none)
Sect_60T	-14.3700	-24.2500	9.4400	-45.5000	9.4400	45.5000	-14.3700	24.2500	9.4400	0.0000	(none)	(none)
Sect_61T	-14.1800	-24.2500	10.6900	-45.5000	10.6900	45.5000	-14.1800	24.2500	10.6900	0.0000	(none)	(none)
Sect_62T	-14.0800	-24.2500	12.2900	-45.5000	12.2900	45.5000	-14.0800	24.2500	12.2900	0.0000	(none)	(none)
Sect_63T	-14.2300	-24.2500	14.0800	-45.5000	14.0800	45.5000	-14.2300	24.2500	14.0800	0.0000	(none)	(none)
Sect_64T	-14.6300	-24.2500	16.0600	-45.5000	16.0600	45.5000	-14.6300	24.2500	16.0600	0.0000	(none)	(none)
Sect_65T	-15.0800	-24.2500	18.4200	-45.5000	18.4200	45.5000	-15.0800	24.2500	18.4200	0.0000	(none)	(none)
Sect_66T	-14.9800	-24.2500	18.5200	-45.5000	18.5200	45.5000	-14.9800	24.2500	18.5200	0.0000	(none)	(none)
Sect_67T	-15.0900	-24.2500	18.4100	-45.5000	18.4100	45.5000	-15.0900	24.2500	18.4100	0.0000	(none)	(none)
Sect_68T	-14.6300	-24.2500	16.0600	-45.5000	16.0600	45.5000	-14.6300	24.2500	16.0600	0.0000	(none)	(none)
Sect_69T	-14.2400	-24.2500	14.0700	-45.5000	14.0700	45.5000	-14.2400	24.2500	14.0700	0.0000	(none)	(none)
Sect_70T	-14.1000	-24.2500	12.2800	-45.5000	12.2800	45.5000	-14.1000	24.2500	12.2800	0.0000	(none)	(none)
Sect_71T	-14.2000	-24.2500	10.6700	-45.5000	10.6700	45.5000	-14.2000	24.2500	10.6700	0.0000	(none)	(none)
Sect_72T	-14.3900	-24.2500	9.4200	-45.5000	9.4200	45.5000	-14.3900	24.2500	9.4200	0.0000	(none)	(none)
Sect_73T	-14.3000	-24.2500	8.8800	-45.5000	8.8800	45.5000	-14.3000	24.2500	8.8800	0.0000	(none)	(none)
Sect_74T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_75T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_76T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_77T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_78T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_79T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_80T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_81T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_82T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_83T	-14.2400	-24.2500	8.7600	-45.5000	8.7600	45.5000	-14.2400	24.2500	8.7600	0.0000	(none)	(none)
Sect_84T	-14.3000	-24.2500	8.8800	-45.5000	8.8800	45.5000	-14.3000	24.2500	8.8800	0.0000	(none)	(none)
Sect_85T	-14.3900	-24.2500	9.4200	-45.5000	9.4200	45.5000	-14.3900	24.2500	9.4200	0.0000	(none)	(none)
Sect_86T	-14.2000	-24.2500	10.6700	-45.5000	10.6700	45.5000	-14.2000	24.2500	10.6700	0.0000	(none)	(none)
Sect_87T	-14.1000	-24.2500	12.2800	-45.5000	12.2800	45.5000	-14.1000	24.2500	12.2800	0.0000	(none)	(none)
Sect_88T	-14.2400	-24.2500	14.0700	-45.5000	14.0700	45.5000	-14.2400	24.2500	14.0700	0.0000	(none)	(none)
Sect_89T	-14.6300	-24.2500	16.0600	-45.5000	16.0600	45.5000	-14.6300	24.2500	16.0600	0.0000	(none)	(none)
Sect_90T	-15.0900	-24.2500	18.4100	-45.5000	18.4100	45.5000	-15.0900	24.2500	18.4100	0.0000	(none)	(none)
Sect_91T	-14.9800	-24.2500	18.5200	-45.5000	18.5200	45.5000	-14.9800	24.2500	18.5200	0.0000	(none)	(none)
Sect_92T	-15.0800	-24.2500	18.4200	-45.5000	18.4200	45.5000	-15.0800	24.2500	18.4200	0.0000	(none)	(none)

INPUT : Section Stress Points

Name	Point 1 Y (ft)	Point 1 Z (ft)	Point 2 Y (ft)	Point 2 Z (ft)	Point 3 Y (ft)	Point 3 Z (ft)	Point 4 Y (ft)	Point 4 Z (ft)	Point 5 Y (ft)	Point 5 Z (ft)	Point 6 Y (ft)	Point 6 Z (ft)
Sect_93T	-14.6300	-24.2600	16.0600	-45.5100	16.0600	45.5100	-14.6300	24.2600	16.0600	0.0000	(none)	(none)
Sect_94T	-14.2400	-24.2600	14.0700	-45.5100	14.0700	45.5100	-14.2400	24.2600	14.0700	0.0000	(none)	(none)
Sect_95T	-14.0900	-24.2600	12.2900	-45.5100	12.2900	45.5100	-14.0900	24.2600	12.2900	0.0000	(none)	(none)
Sect_96T	-14.1900	-24.2600	10.6900	-45.5100	10.6900	45.5100	-14.1900	24.2600	10.6900	0.0000	(none)	(none)
Sect_97T	-14.3700	-24.3700	9.4400	-45.6200	9.4400	45.6200	-14.3700	24.3700	9.4400	0.0000	(none)	(none)
Sect_98T	-14.2800	-24.7900	8.9100	-46.0400	8.9100	46.0400	-14.2800	24.7900	8.9100	0.0000	(none)	(none)
Sect_99T	-14.2000	-25.2100	8.8000	-46.4600	8.8000	46.4600	-14.2000	25.2100	8.8000	0.0000	(none)	(none)
Sect_100T	-14.1800	-25.6400	8.8200	-46.8900	8.8200	46.8900	-14.1800	25.6400	8.8200	0.0000	(none)	(none)
Sect_101T	-14.1600	-26.0600	8.8400	-47.3100	8.8400	47.3100	-14.1600	26.0600	8.8400	0.0000	(none)	(none)
Sect_102T	-14.1500	-26.4900	8.8500	-47.7400	8.8500	47.7400	-14.1500	26.4900	8.8500	0.0000	(none)	(none)
Sect_103T	-14.1300	-26.9100	8.8700	-48.1600	8.8700	48.1600	-14.1300	26.9100	8.8700	0.0000	(none)	(none)
Sect_104T	-14.1100	-27.3400	8.8900	-48.5900	8.8900	48.5900	-14.1100	27.3400	8.8900	0.0000	(none)	(none)
Sect_105T	-14.1100	-27.3400	8.8900	-48.5900	8.8900	48.5900	-14.1100	27.3400	8.8900	0.0000	(none)	(none)
Sect_106T	-14.0800	-28.1800	8.9200	-49.4300	8.9200	49.4300	-14.0800	28.1800	8.9200	0.0000	(none)	(none)
Sect_107T	-14.0600	-28.6100	8.9400	-49.8600	8.9400	49.8600	-14.0600	28.6100	8.9400	0.0000	(none)	(none)
Sect_108T	-14.0500	-29.0300	8.9500	-50.2800	8.9500	50.2800	-14.0500	29.0300	8.9500	0.0000	(none)	(none)
Sect_109T	-14.0900	-29.4600	9.0900	-50.7100	9.0900	50.7100	-14.0900	29.4600	9.0900	0.0000	(none)	(none)
Sect_110T	-14.0800	-29.8800	9.7300	-51.1300	9.7300	51.1300	-14.0800	29.8800	9.7300	0.0000	(none)	(none)
Sect_111T	-13.7700	-30.3100	11.1000	-51.5600	11.1000	51.5600	-13.7700	30.3100	11.1000	0.0000	(none)	(none)
Sect_112T	-13.5800	-30.7300	12.7900	-51.9800	12.7900	51.9800	-13.5800	30.7300	12.7900	0.0000	(none)	(none)
Sect_113T	-13.6800	-30.7500	14.6300	-52.0000	14.6300	52.0000	-13.6800	30.7500	14.6300	0.0000	(none)	(none)
Sect_114T	-14.0200	-30.7500	16.6700	-52.0000	16.6700	52.0000	-14.0200	30.7500	16.6700	0.0000	(none)	(none)
Sect_115T	-14.4300	-30.7500	19.0700	-52.0000	19.0700	52.0000	-14.4300	30.7500	19.0700	0.0000	(none)	(none)
Sect_116T	-14.3300	-30.7500	19.1700	-52.0000	19.1700	52.0000	-14.3300	30.7500	19.1700	0.0000	(none)	(none)
Sect_117T	-14.4300	-30.7500	19.0700	-52.0000	19.0700	52.0000	-14.4300	30.7500	19.0700	0.0000	(none)	(none)
Sect_118T	-14.0200	-30.7500	16.6700	-52.0000	16.6700	52.0000	-14.0200	30.7500	16.6700	0.0000	(none)	(none)
Sect_119T	-13.6800	-30.7500	14.6300	-52.0000	14.6300	52.0000	-13.6800	30.7500	14.6300	0.0000	(none)	(none)
Sect_120T	-13.5800	-30.7500	12.7900	-52.0000	12.7900	52.0000	-13.5800	30.7500	12.7900	0.0000	(none)	(none)
Sect_121T	-13.7500	-30.7500	11.1300	-52.0000	11.1300	52.0000	-13.7500	30.7500	11.1300	0.0000	(none)	(none)
Sect_122T	-14.0400	-30.7500	9.7700	-52.0000	9.7700	52.0000	-14.0400	30.7500	9.7700	0.0000	(none)	(none)
Sect_123T	-14.0500	-30.7500	9.1400	-52.0000	9.1400	52.0000	-14.0500	30.7500	9.1400	0.0000	(none)	(none)
Sect_124T	-13.9800	-30.7500	9.0200	-52.0000	9.0200	52.0000	-13.9800	30.7500	9.0200	0.0000	(none)	(none)
Sect_125T	-13.9800	-30.7500	9.0200	-52.0000	9.0200	52.0000	-13.9800	30.7500	9.0200	0.0000	(none)	(none)
Sect_126T	-13.9800	-30.7500	9.0200	-52.0000	9.0200	52.0000	-13.9800	30.7500	9.0200	0.0000	(none)	(none)

INPUT : Section Stress Points

Name	Point 1 Y (ft)	Point 1 Z (ft)	Point 2 Y (ft)	Point 2 Z (ft)	Point 3 Y (ft)	Point 3 Z (ft)	Point 4 Y (ft)	Point 4 Z (ft)	Point 5 Y (ft)	Point 5 Z (ft)	Point 6 Y (ft)	Point 6 Z (ft)
Sect_127T	-13.9800	-30.7500	9.0200	-52.0000	9.0200	52.0000	-13.9800	30.7500	9.0200	0.0000	(none)	(none)
Sect_128T	-13.9800	-30.7500	9.0200	-52.0000	9.0200	52.0000	-13.9800	30.7500	9.0200	0.0000	(none)	(none)
Sect_129T	-13.9800	-30.8500	9.0200	-52.1000	9.0200	52.1000	-13.9800	30.8500	9.0200	0.0000	(none)	(none)
Sect_130T	-13.9700	-31.0500	9.0300	-52.3000	9.0300	52.3000	-13.9700	31.0500	9.0300	0.0000	(none)	(none)
Sect_131T	-13.9600	-31.2500	9.0400	-52.5000	9.0400	52.5000	-13.9600	31.2500	9.0400	0.0000	(none)	(none)
Sect_132T	-13.9600	-31.4500	9.0400	-52.7000	9.0400	52.7000	-13.9600	31.4500	9.0400	0.0000	(none)	(none)
Sect_133T	-13.9500	-31.6500	9.0500	-52.9000	9.0500	52.9000	-13.9500	31.6500	9.0500	0.0000	(none)	(none)
Sect_134T	-14.0100	-31.8500	9.1800	-53.1000	9.1800	53.1000	-14.0100	31.8500	9.1800	0.0000	(none)	(none)
Sect_135T	-13.9800	-32.0500	9.8300	-53.3000	9.8300	53.3000	-13.9800	32.0500	9.8300	0.0000	(none)	(none)
Sect_136T	-13.6600	-32.2500	11.2100	-53.5000	11.2100	53.5000	-13.6600	32.2500	11.2100	0.0000	(none)	(none)
Sect_137T	-13.4700	-32.4500	12.9000	-53.7000	12.9000	53.7000	-13.4700	32.4500	12.9000	0.0000	(none)	(none)
Sect_138T	-13.5400	-32.7300	14.7700	-53.9800	14.7700	53.9800	-13.5400	32.7300	14.7700	0.0000	(none)	(none)
Sect_139T	-13.8600	-32.8500	16.8300	-54.1000	16.8300	54.1000	-13.8600	32.8500	16.8300	0.0000	(none)	(none)
Sect_140T	-14.2800	-33.0500	19.2200	-54.3000	19.2200	54.3000	-14.2800	33.0500	19.2200	0.0000	(none)	(none)
Sect_141T	-14.2300	-33.1400	19.2700	-54.3900	19.2700	54.3900	-14.2300	33.1400	19.2700	0.0000	(none)	(none)
Sect_142T	-14.2700	-33.2200	19.2300	-54.4700	19.2300	54.4700	-14.2700	33.2200	19.2300	0.0000	(none)	(none)
Sect_143T	-13.8200	-33.4200	16.8700	-54.6700	16.8700	54.6700	-13.8200	33.4200	16.8700	0.0000	(none)	(none)
Sect_144T	-13.4800	-33.6200	14.8300	-54.8700	14.8300	54.8700	-13.4800	33.6200	14.8300	0.0000	(none)	(none)
Sect_145T	-13.3900	-33.8200	12.9800	-55.0700	12.9800	55.0700	-13.3900	33.8200	12.9800	0.0000	(none)	(none)
Sect_146T	-13.5600	-34.0200	11.3100	-55.2700	11.3100	55.2700	-13.5600	34.0200	11.3100	0.0000	(none)	(none)
Sect_147T	-13.9000	-34.2200	9.9100	-55.4700	9.9100	55.4700	-13.9000	34.2200	9.9100	0.0000	(none)	(none)
Sect_148T	-13.9300	-34.4200	9.2600	-55.6700	9.2600	55.6700	-13.9300	34.4200	9.2600	0.0000	(none)	(none)
Sect_149T	-13.8600	-34.6200	9.1400	-55.8700	9.1400	55.8700	-13.8600	34.6200	9.1400	0.0000	(none)	(none)
Sect_150T	-13.8500	-34.8200	9.1500	-56.0700	9.1500	56.0700	-13.8500	34.8200	9.1500	0.0000	(none)	(none)
Sect_151T	-13.9000	-35.0200	9.2500	-56.2700	9.2500	56.2700	-13.9000	35.0200	9.2500	0.0000	(none)	(none)
Sect_152T	-14.1000	-35.2200	9.6300	-56.4700	9.6300	56.4700	-14.1000	35.2200	9.6300	0.0000	(none)	(none)
Sect_153T	-14.4700	-35.4200	10.2800	-56.6700	10.2800	56.6700	-14.4700	35.4200	10.2800	0.0000	(none)	(none)
Sect_154T	-15.0100	-35.6200	11.2000	-56.8700	11.2000	56.8700	-15.0100	35.6200	11.2000	0.0000	(none)	(none)
Sect_155T	-15.6200	-35.8200	12.4900	-57.0700	12.4900	57.0700	-15.6200	35.8200	12.4900	0.0000	(none)	(none)
Sect_156T	-15.9000	-35.9000	13.1000	-57.1500	13.1000	57.1500	-15.9000	35.9000	13.1000	0.0000	(none)	(none)

INPUT : Section Dimensions

Name	Shape	Dimension D1	Dimension D2	Dimension D3	Dimension D4	Dimension D5	Dimension D6
Typ Pier Column	Rectangle	12.0000	12.0000				
Typ Pier Cap	Rectangle	15.0000	12.0000				
P1_Column	Rectangle	10.0000	10.0000				
P2_Column	Rectangle	10.0000	10.0000				
P7_Column	Rectangle	11.0000	11.0000				
P8_Column	Rectangle	11.0000	11.0000				
Abut Pier Cap	Rectangle	15.0000	12.0000				
Rigid Link	Unspecified						
Sect_1T	Unspecified						
Sect_2T	Unspecified						
Sect_3T	Unspecified						
Sect_4T	Unspecified						
Sect_5T	Unspecified						
Sect_6T	Unspecified						
Sect_7T	Unspecified						
Sect_8T	Unspecified						
Sect_9T	Unspecified						
Sect_10T	Unspecified						
Sect_11T	Unspecified						
Sect_12T	Unspecified						
Sect_13T	Unspecified						
Sect_14T	Unspecified						
Sect_15T	Unspecified						
Sect_16T	Unspecified						
Sect_17T	Unspecified						
Sect_18T	Unspecified						
Sect_19T	Unspecified						
Sect_20T	Unspecified						
Sect_21T	Unspecified						
Sect_22T	Unspecified						
Sect_23T	Unspecified						
Sect_24T	Unspecified						

INPUT : Section Dimensions

Name	Shape	Dimension D1	Dimension D2	Dimension D3	Dimension D4	Dimension D5	Dimension D6
Sect_25T	Unspecified						
Sect_26T	Unspecified						
Sect_27T	Unspecified						
Sect_28T	Unspecified						
Sect_29T	Unspecified						
Sect_30T	Unspecified						
Sect_31T	Unspecified						
Sect_32T	Unspecified						
Sect_33T	Unspecified						
Sect_34T	Unspecified						
Sect_35T	Unspecified						
Sect_36T	Unspecified						
Sect_37T	Unspecified						
Sect_38T	Unspecified						
Sect_39T	Unspecified						
Sect_40T	Unspecified						
Sect_41T	Unspecified						
Sect_42T	Unspecified						
Sect_43T	Unspecified						
Sect_44T	Unspecified						
Sect_45T	Unspecified						
Sect_46T	Unspecified						
Sect_47T	Unspecified						
Sect_48T	Unspecified						
Sect_49T	Unspecified						
Sect_50T	Unspecified						
Sect_51T	Unspecified						
Sect_52T	Unspecified						
Sect_53T	Unspecified						
Sect_54T	Unspecified						
Sect_55T	Unspecified						
Sect_56T	Unspecified						
Sect_57T	Unspecified						
Sect_58T	Unspecified						

INPUT : Section Dimensions

Name	Shape	Dimension D1	Dimension D2	Dimension D3	Dimension D4	Dimension D5	Dimension D6
Sect_59T	Unspecified						
Sect_60T	Unspecified						
Sect_61T	Unspecified						
Sect_62T	Unspecified						
Sect_63T	Unspecified						
Sect_64T	Unspecified						
Sect_65T	Unspecified						
Sect_66T	Unspecified						
Sect_67T	Unspecified						
Sect_68T	Unspecified						
Sect_69T	Unspecified						
Sect_70T	Unspecified						
Sect_71T	Unspecified						
Sect_72T	Unspecified						
Sect_73T	Unspecified						
Sect_74T	Unspecified						
Sect_75T	Unspecified						
Sect_76T	Unspecified						
Sect_77T	Unspecified						
Sect_78T	Unspecified						
Sect_79T	Unspecified						
Sect_80T	Unspecified						
Sect_81T	Unspecified						
Sect_82T	Unspecified						
Sect_83T	Unspecified						
Sect_84T	Unspecified						
Sect_85T	Unspecified						
Sect_86T	Unspecified						
Sect_87T	Unspecified						
Sect_88T	Unspecified						
Sect_89T	Unspecified						
Sect_90T	Unspecified						
Sect_91T	Unspecified						
Sect_92T	Unspecified						

INPUT : Section Dimensions

Name	Shape	Dimension D1	Dimension D2	Dimension D3	Dimension D4	Dimension D5	Dimension D6
Sect_93T	Unspecified						
Sect_94T	Unspecified						
Sect_95T	Unspecified						
Sect_96T	Unspecified						
Sect_97T	Unspecified						
Sect_98T	Unspecified						
Sect_99T	Unspecified						
Sect_100T	Unspecified						
Sect_101T	Unspecified						
Sect_102T	Unspecified						
Sect_103T	Unspecified						
Sect_104T	Unspecified						
Sect_105T	Unspecified						
Sect_106T	Unspecified						
Sect_107T	Unspecified						
Sect_108T	Unspecified						
Sect_109T	Unspecified						
Sect_110T	Unspecified						
Sect_111T	Unspecified						
Sect_112T	Unspecified						
Sect_113T	Unspecified						
Sect_114T	Unspecified						
Sect_115T	Unspecified						
Sect_116T	Unspecified						
Sect_117T	Unspecified						
Sect_118T	Unspecified						
Sect_119T	Unspecified						
Sect_120T	Unspecified						
Sect_121T	Unspecified						
Sect_122T	Unspecified						
Sect_123T	Unspecified						
Sect_124T	Unspecified						
Sect_125T	Unspecified						
Sect_126T	Unspecified						

INPUT : Section Dimensions

Name	Shape	Dimension D1	Dimension D2	Dimension D3	Dimension D4	Dimension D5	Dimension D6
Sect_127T	Unspecified						
Sect_128T	Unspecified						
Sect_129T	Unspecified						
Sect_130T	Unspecified						
Sect_131T	Unspecified						
Sect_132T	Unspecified						
Sect_133T	Unspecified						
Sect_134T	Unspecified						
Sect_135T	Unspecified						
Sect_136T	Unspecified						
Sect_137T	Unspecified						
Sect_138T	Unspecified						
Sect_139T	Unspecified						
Sect_140T	Unspecified						
Sect_141T	Unspecified						
Sect_142T	Unspecified						
Sect_143T	Unspecified						
Sect_144T	Unspecified						
Sect_145T	Unspecified						
Sect_146T	Unspecified						
Sect_147T	Unspecified						
Sect_148T	Unspecified						
Sect_149T	Unspecified						
Sect_150T	Unspecified						
Sect_151T	Unspecified						
Sect_152T	Unspecified						
Sect_153T	Unspecified						
Sect_154T	Unspecified						
Sect_155T	Unspecified						
Sect_156T	Unspecified						

INPUT : Joints

ID	Station (ft)	Transverse Offset (ft)	Elevation (ft)	Translation DOF	Rotation DOF	Displacement UCS	Assignment
1	15,889.5000	14.2200	0.0000	all free	all free	Global	Yes
2	15,896.4100	14.1200	0.0000	all free	all free	Global	Yes
3	15,915.8920	13.8100	0.0000	all free	all free	Global	Yes
4	15,935.3750	13.4400	0.0000	all free	all free	Global	Yes
5	15,954.8570	13.0300	0.0000	all free	all free	Global	Yes
6	15,974.3390	12.5500	0.0000	all free	all free	Global	Yes
7	15,993.8220	12.0300	0.0000	all free	all free	Global	Yes
8	16,013.3040	11.4600	0.0000	all free	all free	Global	Yes
9	16,032.7860	10.8400	0.0000	all free	all free	Global	Yes
10	16,052.2680	10.1700	0.0000	all free	all free	Global	Yes
11	16,071.7510	9.4400	0.0000	all free	all free	Global	Yes
12	16,091.2330	8.6700	0.0000	all free	all free	Global	Yes
13	16,110.7150	7.8500	0.0000	all free	all free	Global	Yes
14	16,130.1980	6.9700	0.0000	all free	all free	Global	Yes
15	16,149.6800	6.0500	0.0000	all free	all free	Global	Yes
16	16,156.6000	5.7100	0.0000	all free	all free	Global	Yes
17	16,163.4900	5.3900	0.0000	all free	all free	Global	Yes
18	16,183.0000	4.4900	0.0000	all free	all free	Global	Yes
19	16,202.5110	3.6300	0.0000	all free	all free	Global	Yes
20	16,222.0210	2.8000	0.0000	all free	all free	Global	Yes
21	16,241.5320	2.0100	0.0000	all free	all free	Global	Yes
22	16,261.0420	1.2500	0.0000	all free	all free	Global	Yes
23	16,280.5530	0.5200	0.0000	all free	all free	Global	Yes
24	16,300.0630	-0.1700	0.0000	all free	all free	Global	Yes
25	16,319.5730	-0.8200	0.0000	all free	all free	Global	Yes
26	16,339.0840	-1.4400	0.0000	all free	all free	Global	Yes
27	16,358.5940	-2.0300	0.0000	all free	all free	Global	Yes
28	16,378.1050	-2.5600	0.0000	all free	all free	Global	Yes
29	16,397.6150	-3.0200	0.0000	all free	all free	Global	Yes
30	16,417.1260	-3.3800	0.0000	all free	all free	Global	Yes
31	16,436.6360	-3.6600	0.0000	all free	all free	Global	Yes
32	16,456.1470	-3.8600	0.0000	all free	all free	Global	Yes

INPUT : Joints

ID	Station (ft)	Transverse Offset (ft)	Elevation (ft)	Translation DOF	Rotation DOF	Displacement UCS	Assignment
33	16,475.6570	-3.9700	0.0000	all free	all free	Global	Yes
34	16,495.1670	-4.0000	0.0000	all free	all free	Global	Yes
35	16,514.6780	-4.0000	-0.0002	all free	all free	Global	Yes
36	16,534.1880	-4.0000	-0.0002	all free	all free	Global	Yes
37	16,553.6990	-4.0000	-0.0001	all free	all free	Global	Yes
38	16,573.2090	-4.0000	-0.0001	all free	all free	Global	Yes
39	16,592.7200	-4.0000	-0.0001	all free	all free	Global	Yes
40	16,612.2300	-4.0000	-0.0001	all free	all free	Global	Yes
41	16,619.1300	-4.0000	-0.0001	all free	all free	Global	Yes
42	16,626.9400	-4.0000	-0.0001	all free	all free	Global	Yes
43	16,646.4570	-4.0000	0.0000	all free	all free	Global	Yes
44	16,665.9750	-4.0000	0.0000	all free	all free	Global	Yes
45	16,685.4920	-4.0000	0.0000	all free	all free	Global	Yes
46	16,705.0100	-4.0000	0.0000	all free	all free	Global	Yes
47	16,724.5270	-4.0000	0.0000	all free	all free	Global	Yes
48	16,744.0440	-4.0000	0.0000	all free	all free	Global	Yes
49	16,763.5620	-4.0000	0.0000	all free	all free	Global	Yes
50	16,783.0790	-4.0000	0.0000	all free	all free	Global	Yes
51	16,802.5970	-4.0000	0.0000	all free	all free	Global	Yes
52	16,822.1140	-4.0000	0.0000	all free	all free	Global	Yes
53	16,841.6310	-4.0000	0.0000	all free	all free	Global	Yes
54	16,861.1490	-4.0000	0.0000	all free	all free	Global	Yes
55	16,880.6660	-4.0000	0.0000	all free	all free	Global	Yes
56	16,900.1830	-4.0000	0.0000	all free	all free	Global	Yes
57	16,919.7010	-4.0000	0.0000	all free	all free	Global	Yes
58	16,939.2180	-4.0000	0.0000	all free	all free	Global	Yes
59	16,958.7360	-4.0000	0.0000	all free	all free	Global	Yes
60	16,978.2530	-4.0000	0.0000	all free	all free	Global	Yes
61	16,997.7700	-4.0000	0.0000	all free	all free	Global	Yes
62	17,017.2880	-4.0000	0.0000	all free	all free	Global	Yes
63	17,036.8050	-4.0000	0.0000	all free	all free	Global	Yes
64	17,056.3230	-4.0000	0.0000	all free	all free	Global	Yes
65	17,075.8400	-4.0000	0.0000	all free	all free	Global	Yes
66	17,083.6500	-4.0000	0.0000	all free	all free	Global	Yes

INPUT : Joints

ID	Station (ft)	Transverse Offset (ft)	Elevation (ft)	Translation DOF	Rotation DOF	Displacement UCS	Assignment
67	17,092.3600	-4.0000	0.0000	all free	all free	Global	Yes
68	17,111.8770	-4.0000	0.0000	all free	all free	Global	Yes
69	17,131.3950	-4.0000	0.0000	all free	all free	Global	Yes
70	17,150.9120	-4.0000	0.0000	all free	all free	Global	Yes
71	17,170.4300	-4.0000	0.0000	all free	all free	Global	Yes
72	17,189.9470	-4.0000	0.0000	all free	all free	Global	Yes
73	17,209.4640	-4.0000	0.0000	all free	all free	Global	Yes
74	17,228.9820	-4.0000	0.0000	all free	all free	Global	Yes
75	17,248.4990	-4.0000	0.0000	all free	all free	Global	Yes
76	17,268.0170	-4.0000	0.0000	all free	all free	Global	Yes
77	17,287.5340	-4.0000	0.0000	all free	all free	Global	Yes
78	17,307.0510	-4.0000	0.0000	all free	all free	Global	Yes
79	17,326.5690	-4.0000	0.0000	all free	all free	Global	Yes
80	17,346.0860	-4.0000	0.0000	all free	all free	Global	Yes
81	17,365.6030	-4.0000	0.0000	all free	all free	Global	Yes
82	17,385.1210	-4.0000	0.0000	all free	all free	Global	Yes
83	17,404.6380	-4.0000	0.0000	all free	all free	Global	Yes
84	17,424.1560	-4.0000	0.0000	all free	all free	Global	Yes
85	17,443.6730	-4.0000	0.0000	all free	all free	Global	Yes
86	17,463.1900	-4.0000	0.0000	all free	all free	Global	Yes
87	17,482.7080	-4.0000	0.0000	all free	all free	Global	Yes
88	17,502.2250	-4.0000	0.0000	all free	all free	Global	Yes
89	17,521.7430	-4.0000	0.0000	all free	all free	Global	Yes
90	17,541.2600	-3.9700	0.0000	all free	all free	Global	Yes
91	17,549.9700	-3.9400	0.0000	all free	all free	Global	Yes
92	17,558.0400	-3.8900	0.0000	all free	all free	Global	Yes
93	17,577.5470	-3.7000	0.0000	all free	all free	Global	Yes
94	17,597.0540	-3.4300	0.0000	all free	all free	Global	Yes
95	17,616.5610	-3.2900	0.0000	all free	all free	Global	Yes
96	17,636.0680	-3.0800	0.0000	all free	all free	Global	Yes
97	17,655.5750	-2.8800	0.0000	all free	all free	Global	Yes
98	17,675.0820	-2.6700	0.0000	all free	all free	Global	Yes
99	17,694.5890	-2.4700	0.0000	all free	all free	Global	Yes
100	17,714.0960	-2.2700	0.0000	all free	all free	Global	Yes

INPUT : Joints

ID	Station (ft)	Transverse Offset (ft)	Elevation (ft)	Translation DOF	Rotation DOF	Displacement UCS	Assignment
101	17,733.6030	-2.0700	0.0000	all free	all free	Global	Yes
102	17,753.1100	-1.8700	0.0000	all free	all free	Global	Yes
103	17,772.6170	-1.6000	0.0000	all free	all free	Global	Yes
104	17,792.1230	-1.4700	0.0000	all free	all free	Global	Yes
105	17,811.6300	-1.2700	0.0000	all free	all free	Global	Yes
106	17,831.1370	-1.0800	0.0000	all free	all free	Global	Yes
107	17,850.6440	-0.8900	0.0000	all free	all free	Global	Yes
108	17,870.1510	-0.6900	0.0000	all free	all free	Global	Yes
109	17,889.6580	-0.5000	0.0000	all free	all free	Global	Yes
110	17,909.1650	-0.3100	0.0000	all free	all free	Global	Yes
111	17,928.6720	-0.1200	0.0000	all free	all free	Global	Yes
112	17,948.1790	0.0700	0.0000	all free	all free	Global	Yes
113	17,967.6860	0.2500	0.0000	all free	all free	Global	Yes
114	17,987.1930	0.4400	0.0000	all free	all free	Global	Yes
115	18,006.7000	0.6300	0.0000	all free	all free	Global	Yes
116	18,014.7700	0.7000	0.0000	all free	all free	Global	Yes
117	18,022.8000	0.7800	0.0000	all free	all free	Global	Yes
118	18,042.2890	0.9600	0.0000	all free	all free	Global	Yes
119	18,061.7770	1.1400	0.0000	all free	all free	Global	Yes
120	18,081.2660	1.3200	0.0000	all free	all free	Global	Yes
121	18,100.7550	1.5000	0.0000	all free	all free	Global	Yes
122	18,120.2430	1.6800	0.0000	all free	all free	Global	Yes
123	18,139.7320	1.8600	0.0000	all free	all free	Global	Yes
124	18,159.2210	2.0300	0.0000	all free	all free	Global	Yes
125	18,178.7100	2.2100	0.0000	all free	all free	Global	Yes
126	18,198.1980	2.3800	0.0000	all free	all free	Global	Yes
127	18,217.6870	2.5600	0.0000	all free	all free	Global	Yes
128	18,237.1760	2.7300	0.0000	all free	all free	Global	Yes
129	18,256.6640	2.9000	0.0000	all free	all free	Global	Yes
130	18,276.1530	3.0700	0.0000	all free	all free	Global	Yes
131	18,295.6420	3.2300	0.0000	all free	all free	Global	Yes
132	18,315.1300	3.4000	0.0000	all free	all free	Global	Yes
133	18,334.6190	3.5700	0.0000	all free	all free	Global	Yes
134	18,354.1080	3.7300	0.0000	all free	all free	Global	Yes

INPUT : Joints

ID	Station (ft)	Transverse Offset (ft)	Elevation (ft)	Translation DOF	Rotation DOF	Displacement UCS	Assignment
135	18,373.5970	3.8900	0.0000	all free	all free	Global	Yes
136	18,393.0850	4.0600	0.0000	all free	all free	Global	Yes
137	18,412.5740	4.2200	0.0000	all free	all free	Global	Yes
138	18,432.0630	4.3800	0.0000	all free	all free	Global	Yes
139	18,451.5510	4.5300	0.0000	all free	all free	Global	Yes
140	18,471.0400	4.6900	0.0000	all free	all free	Global	Yes
141	18,479.0600	4.7600	0.0000	all free	all free	Global	Yes
142	18,486.9600	4.8200	0.0000	all free	all free	Global	Yes
143	18,506.4350	4.9700	0.0000	all free	all free	Global	Yes
144	18,525.9090	5.1300	0.0000	all free	all free	Global	Yes
145	18,545.3840	5.2800	0.0000	all free	all free	Global	Yes
146	18,564.8580	5.4300	0.0000	all free	all free	Global	Yes
147	18,584.3330	5.5800	0.0000	all free	all free	Global	Yes
148	18,603.8080	5.7300	0.0000	all free	all free	Global	Yes
149	18,623.2820	5.8800	0.0000	all free	all free	Global	Yes
150	18,642.7570	6.0200	0.0000	all free	all free	Global	Yes
151	18,662.2320	6.1700	0.0000	all free	all free	Global	Yes
152	18,681.7060	6.3100	0.0000	all free	all free	Global	Yes
153	18,701.1810	6.4500	-0.0001	all free	all free	Global	Yes
154	18,720.6550	6.5900	-0.0001	all free	all free	Global	Yes
155	18,740.1300	6.7300	-0.0001	all free	all free	Global	Yes
156	18,748.0300	6.7900	-0.0001	all free	all free	Global	Yes
1001	15,889.5000	14.2650	-80.5250	all free	all free	Global	Yes
1101	15,877.3180	-22.5920	-80.1110	all free	all free	Pier 1	Yes
1102	15,877.3180	-22.5920	-73.6110	all free	all free	Pier 1	Yes
1103	15,876.7900	-24.1880	-65.6170	all free	all free	Pier 1	Yes
1104	15,876.2630	-25.7830	-57.6230	all free	all free	Pier 1	Yes
1105	15,875.7360	-27.3780	-49.6290	all free	all free	Pier 1	Yes
1106	15,875.2400	-28.8770	-42.1150	all free	all free	Pier 1	Yes
1201	15,901.6820	51.1230	-80.9360	all free	all free	Pier 1	Yes
1202	15,901.6820	51.1230	-74.4360	all free	all free	Pier 1	Yes
1203	15,902.2140	52.7310	-66.4150	all free	all free	Pier 1	Yes
1204	15,902.7450	54.3380	-58.3930	all free	all free	Pier 1	Yes
1205	15,903.2770	55.9460	-50.3720	all free	all free	Pier 1	Yes

INPUT : Joints

ID	Station (ft)	Transverse Offset (ft)	Elevation (ft)	Translation DOF	Rotation DOF	Displacement UCS	Assignment
1206	15,903.7730	57.4470	-42.8850	all free	all free	Pier 1	Yes
1006	15,889.4850	14.2200	-42.5000	all free	all free	Pier 1	Yes
1007	15,889.4850	14.2200	-33.0000	all free	all free	Pier 1	Yes
2001	16,156.6000	6.4750	-90.8710	all free	all free	Global	Yes
2101	16,156.6000	-19.5700	-90.1390	all free	all free	Pier 2	Yes
2102	16,156.6000	-19.5700	-80.6390	all free	all free	Pier 2	Yes
2103	16,156.6000	-21.5670	-70.5980	all free	all free	Pier 2	Yes
2104	16,156.6000	-23.5640	-60.5570	all free	all free	Pier 2	Yes
2105	16,156.6000	-25.5620	-50.5160	all free	all free	Pier 2	Yes
2106	16,156.6000	-27.0540	-43.0130	all free	all free	Pier 2	Yes
2201	16,156.6000	32.5190	-91.6480	all free	all free	Pier 2	Yes
2202	16,156.6000	32.5190	-82.1480	all free	all free	Pier 2	Yes
2203	16,156.6000	34.6400	-71.6040	all free	all free	Pier 2	Yes
2204	16,156.6000	36.7620	-61.0600	all free	all free	Pier 2	Yes
2205	16,156.6000	38.8850	-50.5160	all free	all free	Pier 2	Yes
2206	16,156.6000	40.3940	-43.0130	all free	all free	Pier 2	Yes
2006	16,156.6000	5.7100	-43.0130	all free	all free	Pier 2	Yes
2007	16,156.6000	5.7100	-33.5140	all free	all free	Pier 2	Yes
3001	16,619.1300	-2.8620	-103.0341	all free	all free	Global	Yes
3101	16,619.1300	-16.0900	-102.5511	all free	all free	Pier 3	Yes
3102	16,619.1300	-16.0900	-93.0511	all free	all free	Pier 3	Yes
3103	16,619.1300	-19.7980	-74.3771	all free	all free	Pier 3	Yes
3104	16,619.1300	-23.5060	-55.7031	all free	all free	Pier 3	Yes
3105	16,619.1300	-24.5382	-50.5001	all free	all free	Pier 3	Yes
3106	16,619.1300	-26.0273	-43.0001	all free	all free	Pier 3	Yes
3201	16,619.1300	10.3660	-103.6081	all free	all free	Pier 3	Yes
3202	16,619.1300	10.3660	-94.1081	all free	all free	Pier 3	Yes
3203	16,619.1300	14.2050	-75.0821	all free	all free	Pier 3	Yes
3204	16,619.1300	18.0440	-56.0561	all free	all free	Pier 3	Yes
3205	16,619.1300	19.1653	-50.5001	all free	all free	Pier 3	Yes
3206	16,619.1300	20.6786	-43.0001	all free	all free	Pier 3	Yes
3006	16,619.1300	-4.0000	-43.0001	all free	all free	Pier 3	Yes
3007	16,619.1300	-4.0000	-33.5001	all free	all free	Pier 3	Yes
4001	17,083.6500	-2.8620	-112.7860	all free	all free	Global	Yes

INPUT : Joints

ID	Station (ft)	Transverse Offset (ft)	Elevation (ft)	Translation DOF	Rotation DOF	Displacement UCS	Assignment
4101	17,083.6500	-14.1380	-112.3810	all free	all free	Pier 4	Yes
4102	17,083.6500	-14.1380	-102.8810	all free	all free	Pier 4	Yes
4103	17,083.6500	-18.4970	-80.9300	all free	all free	Pier 4	Yes
4104	17,083.6500	-22.8560	-58.9800	all free	all free	Pier 4	Yes
4105	17,083.6500	-24.5381	-50.5000	all free	all free	Pier 4	Yes
4106	17,083.6500	-26.0272	-43.0000	all free	all free	Pier 4	Yes
4201	17,083.6500	8.4140	-113.2820	all free	all free	Pier 4	Yes
4202	17,083.6500	8.4140	-103.7820	all free	all free	Pier 4	Yes
4203	17,083.6500	12.9040	-81.5310	all free	all free	Pier 4	Yes
4204	17,083.6500	17.3940	-59.2810	all free	all free	Pier 4	Yes
4205	17,083.6500	19.1652	-50.5000	all free	all free	Pier 4	Yes
4206	17,083.6500	20.6786	-43.0000	all free	all free	Pier 4	Yes
4006	17,083.6500	-4.0000	-43.0000	all free	all free	Pier 4	Yes
4007	17,083.6500	-4.0000	-33.5000	all free	all free	Pier 4	Yes
5001	17,549.9700	-2.8020	-117.1670	all free	all free	Global	Yes
5101	17,549.9700	-13.2010	-116.7970	all free	all free	Pier 5	Yes
5102	17,549.9700	-13.2010	-107.2970	all free	all free	Pier 5	Yes
5103	17,549.9700	-17.8520	-83.8750	all free	all free	Pier 5	Yes
5104	17,549.9700	-22.5030	-60.4520	all free	all free	Pier 5	Yes
5105	17,549.9700	-24.4780	-50.5000	all free	all free	Pier 5	Yes
5106	17,549.9700	-25.9672	-43.0000	all free	all free	Pier 5	Yes
5201	17,549.9700	7.5970	-117.6280	all free	all free	Pier 5	Yes
5202	17,549.9700	7.5970	-108.1280	all free	all free	Pier 5	Yes
5203	17,549.9700	12.3790	-84.4290	all free	all free	Pier 5	Yes
5204	17,549.9700	17.1610	-60.7290	all free	all free	Pier 5	Yes
5205	17,549.9700	19.2252	-50.5000	all free	all free	Pier 5	Yes
5206	17,549.9700	20.7386	-43.0000	all free	all free	Pier 5	Yes
5006	17,549.9700	-3.9400	-43.0000	all free	all free	Pier 5	Yes
5007	17,549.9700	-3.9400	-33.5000	all free	all free	Pier 5	Yes
6001	18,014.7700	1.7860	-116.3200	all free	all free	Global	Yes
6101	18,014.7700	-15.2770	-115.7120	all free	all free	Pier 6	Yes
6102	18,014.7700	-15.2770	-106.2120	all free	all free	Pier 6	Yes
6103	18,014.7700	-19.8560	-83.1510	all free	all free	Pier 6	Yes
6104	18,014.7700	-24.4350	-60.0900	all free	all free	Pier 6	Yes

INPUT : Joints

ID	Station (ft)	Transverse Offset (ft)	Elevation (ft)	Translation DOF	Rotation DOF	Displacement UCS	Assignment
6105	18,014.7700	-26.3382	-50.5000	all free	all free	Pier 6	Yes
6106	18,014.7700	-27.8273	-43.0000	all free	all free	Pier 6	Yes
6201	18,014.7700	18.8490	-117.0760	all free	all free	Pier 6	Yes
6202	18,014.7700	18.8490	-107.5760	all free	all free	Pier 6	Yes
6203	18,014.7700	23.5940	-84.0610	all free	all free	Pier 6	Yes
6204	18,014.7700	28.3380	-60.5450	all free	all free	Pier 6	Yes
6205	18,014.7700	30.3654	-50.5000	all free	all free	Pier 6	Yes
6206	18,014.7700	31.8787	-43.0000	all free	all free	Pier 6	Yes
6006	18,014.7700	0.7000	-43.0000	all free	all free	Pier 6	Yes
6007	18,014.7700	0.7000	-33.5000	all free	all free	Pier 6	Yes
7001	18,479.0600	5.8270	-110.0730	all free	all free	Global	Yes
7101	18,479.0600	-14.8770	-109.2880	all free	all free	Pier 7	Yes
7102	18,479.0600	-14.8770	-99.7880	all free	all free	Pier 7	Yes
7103	18,479.0600	-18.1380	-83.3710	all free	all free	Pier 7	Yes
7104	18,479.0600	-21.3980	-66.9530	all free	all free	Pier 7	Yes
7105	18,479.0600	-24.6580	-50.5400	all free	all free	Pier 7	Yes
7106	18,479.0600	-26.1460	-43.0290	all free	all free	Pier 7	Yes
7201	18,479.0600	26.5310	-110.9430	all free	all free	Pier 7	Yes
7202	18,479.0600	26.5310	-101.4430	all free	all free	Pier 7	Yes
7203	18,479.0600	29.9550	-84.4740	all free	all free	Pier 7	Yes
7204	18,479.0600	33.3790	-67.5050	all free	all free	Pier 7	Yes
7205	18,479.0600	36.8030	-50.5400	all free	all free	Pier 7	Yes
7206	18,479.0600	38.3180	-43.0290	all free	all free	Pier 7	Yes
7006	18,479.0600	4.7600	-43.0290	all free	all free	Global	Yes
7007	18,479.0600	4.7600	-33.5270	all free	all free	Pier 7	Yes
8001	18,748.0300	7.6480	-100.9821	all free	all free	Pier 7	Yes
8101	18,754.8930	-17.0260	-99.8501	all free	all free	Pier 7	Yes
8102	18,754.8930	-17.0260	-93.3501	all free	all free	Pier 8	Yes
8103	18,755.6940	-19.9040	-78.8321	all free	all free	Pier 7	Yes
8104	18,756.4950	-22.7830	-64.3141	all free	all free	Pier 7	Yes
8105	18,757.2960	-25.6620	-49.7961	all free	all free	Pier 7	Yes
8106	18,757.7100	-27.1520	-42.2801	all free	all free	Pier 7	Yes
8201	18,741.1670	32.3210	-102.1831	all free	all free	Pier 7	Yes
8202	18,741.1670	32.3210	-95.6831	all free	all free	Pier 8	Yes

INPUT : Joints

ID	Station (ft)	Transverse Offset (ft)	Elevation (ft)	Translation DOF	Rotation DOF	Displacement UCS	Assignment
8203	18,740.3160	35.3790	-80.5511	all free	all free	Pier 7	Yes
8204	18,739.4660	38.4360	-65.4191	all free	all free	Pier 7	Yes
8205	18,738.6150	41.4940	-50.2881	all free	all free	Pier 8	Yes
8206	18,738.1940	43.0090	-42.7931	all free	all free	Pier 8	Yes
8006	18,748.2690	6.7900	-42.5281	all free	all free	Pier 8	Yes
8007	18,748.2690	6.7900	-33.0201	all free	all free	Pier 8	Yes

INPUT : Members

ID	I-Joint	J-Joint	Span	Type	Section at Start	Section at End	Material	Prestress Force (kips)	Length (ft)	Rigid Zone from Start (x/L)	Rigid Zone from End (x/L)	Orientation Angle (deg)	Castin g (day)	Structure / Construction Group
1	1	2	-	Beam	Sect_1T	Sect_2T	Fc_8	0.0000	6.9533	0.0000	0.0000	90.1500	0	Deck at pier and
2	2	3	-	Beam	Sect_2T	Sect_3T	Fc_8	0.0000	19.574	0.0000	0.0000	90.2250	0	Deck
3	3	4	-	Beam	Sect_3T	Sect_4T	Fc_8	0.0000	19.5459	0.0000	0.0000	90.3370	0	Deck
4	4	5	-	Beam	Sect_4T	Sect_5T	Fc_8	0.0000	19.5274	0.0000	0.0000	90.4490	0	Deck
5	5	6	-	Beam	Sect_5T	Sect_6T	Fc_8	0.0000	19.5142	0.0000	0.0000	90.5600	0	Deck at pier and
6	6	7	-	Beam	Sect_6T	Sect_7T	Fc_8	0.0000	19.5051	0.0000	0.0000	90.6720	0	Deck
7	7	8	-	Beam	Sect_7T	Sect_8T	Fc_8	0.0000	19.5025	0.0000	0.0000	90.7830	0	Deck
8	8	9	-	Beam	Sect_8T	Sect_9T	Fc_8	0.0000	19.5012	0.0000	0.0000	90.8950	0	Deck
9	9	10	-	Beam	Sect_9T	Sect_10T	Fc_8	0.0000	19.5016	0.0000	0.0000	91.0070	0	Deck
10	10	11	-	Beam	Sect_10T	Sect_11T	Fc_8	0.0000	19.5281	0.0000	0.0000	91.1180	0	Deck
11	11	12	-	Beam	Sect_11T	Sect_12T	Fc_8	0.0000	19.5445	0.0000	0.0000	91.2300	0	Deck
12	12	13	-	Beam	Sect_12T	Sect_13T	Fc_8	0.0000	19.5592	0.0000	0.0000	91.3410	0	Deck
13	13	14	-	Beam	Sect_13T	Sect_14T	Fc_8	0.0000	19.579	0.0000	0.0000	91.4530	0	Deck
14	14	15	-	Beam	Sect_14T	Sect_15T	Fc_8	0.0000	19.6062	0.0000	0.0000	91.5640	0	Deck at pier and
15	15	16	-	Beam	Sect_15T	Sect_16T	Fc_8	0.0000	6.9432	0.0000	0.0000	91.6400	0	Deck
16	16	17	-	Beam	Sect_16T	Sect_17T	Fc_8	0.0000	6.914	0.0000	0.0000	91.6800	0	Deck
17	17	18	-	Beam	Sect_17T	Sect_18T	Fc_8	0.0000	19.756	0.0000	0.0000	91.7550	0	Deck at pier and
18	18	19	-	Beam	Sect_18T	Sect_19T	Fc_8	0.0000	19.7115	0.0000	0.0000	91.8670	0	Deck
19	19	20	-	Beam	Sect_19T	Sect_20T	Fc_8	0.0000	19.6794	0.0000	0.0000	91.9790	0	Deck
20	20	21	-	Beam	Sect_20T	Sect_21T	Fc_8	0.0000	19.6537	0.0000	0.0000	92.0900	0	Deck
21	21	22	-	Beam	Sect_21T	Sect_22T	Fc_8	0.0000	19.6168	0.0000	0.0000	92.2020	0	Deck
22	22	23	-	Beam	Sect_22T	Sect_23T	Fc_8	0.0000	19.5586	0.0000	0.0000	92.2910	0	Deck
23	23	24	-	Beam	Sect_23T	Sect_24T	Fc_8	0.0000	19.5326	0.0000	0.0000	92.2910	0	Deck

INPUT : Members

ID	I-Joint	J-Joint	Span	Type	Section at Start	Section at End	Material	Prestress Force (kips)	Length (ft)	Rigid Zone from Start (x/L)	Rigid Zone from End (x/L)	Orientation Angle (deg)	Castin g (day)	Structure / Construction Group
24	24	25	-	Beam	Sect_24T	Sect_25T	Fc_8	0.0000	19.5254	0.0000	0.0000	92.2910	0	Deck
25	25	26	-	Beam	Sect_25T	Sect_26T	Fc_8	0.0000	19.5229	0.0000	0.0000	92.2910	0	Deck
26	26	27	-	Beam	Sect_26T	Sect_27T	Fc_8	0.0000	19.5184	0.0000	0.0000	92.2910	0	Deck
27	27	28	-	Beam	Sect_27T	Sect_28T	Fc_8	0.0000	19.5153	0.0000	0.0000	92.2910	0	Deck at pier and
28	28	29	-	Beam	Sect_28T	Sect_29T	Fc_8	0.0000	19.5105	0.0000	0.0000	92.2910	0	Deck
29	29	30	-	Beam	Sect_29T	Sect_30T	Fc_8	0.0000	19.5075	0.0000	0.0000	92.2910	0	Deck
30	30	31	-	Beam	Sect_30T	Sect_31T	Fc_8	0.0000	19.504	0.0000	0.0000	92.2910	0	Deck
31	31	32	-	Beam	Sect_31T	Sect_32T	Fc_8	0.0000	19.5025	0.0000	0.0000	92.2910	0	Deck
32	32	33	-	Beam	Sect_32T	Sect_33T	Fc_8	0.0000	19.5002	0.0000	0.0000	92.2910	0	Deck
33	33	34	-	Beam	Sect_33T	Sect_34T	Fc_8	0.0000	19.4976	0.0000	0.0000	92.2910	0	Deck
34	34	35	-	Beam	Sect_34T	Sect_35T	Fc_8	0.0000	19.4979	0.0000	0.0000	92.2910	0	Deck
35	35	36	-	Beam	Sect_35T	Sect_36T	Fc_8	0.0000	19.5156	0.0000	0.0000	92.2910	0	Deck
36	36	37	-	Beam	Sect_36T	Sect_37T	Fc_8	0.0000	19.5338	0.0000	0.0000	92.2910	0	Deck
37	37	38	-	Beam	Sect_37T	Sect_38T	Fc_8	0.0000	19.5452	0.0000	0.0000	92.2910	0	Deck
38	38	39	-	Beam	Sect_38T	Sect_39T	Fc_8	0.0000	19.5612	0.0000	0.0000	92.2910	0	Deck
39	39	40	-	Beam	Sect_39T	Sect_40T	Fc_8	0.0000	19.5951	0.0000	0.0000	92.2910	0	Deck at pier and
40	40	41	-	Beam	Sect_40T	Sect_41T	Fc_8	0.0000	6.8951	0.0000	0.0000	92.2910	0	Deck
41	41	42	-	Beam	Sect_41T	Sect_42T	Fc_8	0.0000	7.8085	0.0000	0.0000	92.2910	0	Deck
42	42	43	-	Beam	Sect_42T	Sect_43T	Fc_8	0.0000	19.696	0.0000	0.0000	92.2910	0	Deck at pier and
43	43	44	-	Beam	Sect_43T	Sect_44T	Fc_8	0.0000	19.6468	0.0000	0.0000	92.2910	0	Deck
44	44	45	-	Beam	Sect_44T	Sect_45T	Fc_8	0.0000	19.6223	0.0000	0.0000	92.2910	0	Deck
45	45	46	-	Beam	Sect_45T	Sect_46T	Fc_8	0.0000	19.6026	0.0000	0.0000	92.2910	0	Deck
46	46	47	-	Beam	Sect_46T	Sect_47T	Fc_8	0.0000	19.5692	0.0000	0.0000	92.2910	0	Deck
47	47	48	-	Beam	Sect_47T	Sect_48T	Fc_8	0.0000	19.5231	0.0000	0.0000	92.2910	0	Deck
48	48	49	-	Beam	Sect_48T	Sect_49T	Fc_8	0.0000	19.5086	0.0000	0.0000	92.2910	0	Deck
49	49	50	-	Beam	Sect_49T	Sect_50T	Fc_8	0.0000	19.5047	0.0000	0.0000	92.2910	0	Deck
50	50	51	-	Beam	Sect_50T	Sect_51T	Fc_8	0.0000	19.5054	0.0000	0.0000	92.2910	0	Deck
51	51	52	-	Beam	Sect_51T	Sect_52T	Fc_8	0.0000	19.5042	0.0000	0.0000	92.2910	0	Deck
52	52	53	-	Beam	Sect_52T	Sect_53T	Fc_8	0.0000	19.504	0.0000	0.0000	92.2910	0	Deck
53	53	54	-	Beam	Sect_53T	Sect_54T	Fc_8	0.0000	19.5048	0.0000	0.0000	92.2910	0	Deck at pier and
54	54	55	-	Beam	Sect_54T	Sect_55T	Fc_8	0.0000	19.5036	0.0000	0.0000	92.2910	0	Deck
55	55	56	-	Beam	Sect_55T	Sect_56T	Fc_8	0.0000	19.5034	0.0000	0.0000	92.2910	0	Deck
56	56	57	-	Beam	Sect_56T	Sect_57T	Fc_8	0.0000	19.5042	0.0000	0.0000	92.2910	0	Deck
57	57	58	-	Beam	Sect_57T	Sect_58T	Fc_8	0.0000	19.5031	0.0000	0.0000	92.2910	0	Deck

INPUT : Members

ID	I-Joint	J-Joint	Span	Type	Section at Start	Section at End	Material	Prestress Force (kips)	Length (ft)	Rigid Zone from Start (x/L)	Rigid Zone from End (x/L)	Orientation Angle (deg)	Castin g (day)	Structure / Construction Group
58	58	59	-	Beam	Sect_58T	Sect_59T	Fc_8	0.0000	19.5024	0.0000	0.0000	92.2910	0	Deck
59	59	60	-	Beam	Sect_59T	Sect_60T	Fc_8	0.0000	19.5025	0.0000	0.0000	92.2910	0	Deck
60	60	61	-	Beam	Sect_60T	Sect_61T	Fc_8	0.0000	19.5247	0.0000	0.0000	92.2910	0	Deck
61	61	62	-	Beam	Sect_61T	Sect_62T	Fc_8	0.0000	19.5464	0.0000	0.0000	92.2910	0	Deck
62	62	63	-	Beam	Sect_62T	Sect_63T	Fc_8	0.0000	19.5594	0.0000	0.0000	92.2910	0	Deck
63	63	64	-	Beam	Sect_63T	Sect_64T	Fc_8	0.0000	19.5771	0.0000	0.0000	92.2910	0	Deck
64	64	65	-	Beam	Sect_64T	Sect_65T	Fc_8	0.0000	19.6137	0.0000	0.0000	92.2910	0	Deck at pier and
65	65	66	-	Beam	Sect_65T	Sect_66T	Fc_8	0.0000	7.8033	0.0000	0.0000	92.2910	0	Deck
66	66	67	-	Beam	Sect_66T	Sect_67T	Fc_8	0.0000	8.7054	0.0000	0.0000	92.2910	0	Deck
67	67	68	-	Beam	Sect_67T	Sect_68T	Fc_8	0.0000	19.6729	0.0000	0.0000	92.2910	0	Deck at pier and
68	68	69	-	Beam	Sect_68T	Sect_69T	Fc_8	0.0000	19.6281	0.0000	0.0000	92.2910	0	Deck
69	69	70	-	Beam	Sect_69T	Sect_70T	Fc_8	0.0000	19.6051	0.0000	0.0000	92.2910	0	Deck
70	70	71	-	Beam	Sect_70T	Sect_71T	Fc_8	0.0000	19.587	0.0000	0.0000	92.2910	0	Deck
71	71	72	-	Beam	Sect_71T	Sect_72T	Fc_8	0.0000	19.5551	0.0000	0.0000	92.2910	0	Deck
72	72	73	-	Beam	Sect_72T	Sect_73T	Fc_8	0.0000	19.5143	0.0000	0.0000	92.2910	0	Deck
73	73	74	-	Beam	Sect_73T	Sect_74T	Fc_8	0.0000	19.5037	0.0000	0.0000	92.2910	0	Deck
74	74	75	-	Beam	Sect_74T	Sect_75T	Fc_8	0.0000	19.5008	0.0000	0.0000	92.2910	0	Deck
75	75	76	-	Beam	Sect_75T	Sect_76T	Fc_8	0.0000	19.5017	0.0000	0.0000	92.2910	0	Deck
76	76	77	-	Beam	Sect_76T	Sect_77T	Fc_8	0.0000	19.5006	0.0000	0.0000	92.2910	0	Deck
77	77	78	-	Beam	Sect_77T	Sect_78T	Fc_8	0.0000	19.5005	0.0000	0.0000	92.2910	0	Deck
78	78	79	-	Beam	Sect_78T	Sect_79T	Fc_8	0.0000	19.5014	0.0000	0.0000	92.2910	0	Deck at pier and
79	79	80	-	Beam	Sect_79T	Sect_80T	Fc_8	0.0000	19.5003	0.0000	0.0000	92.2910	0	Deck
80	80	81	-	Beam	Sect_80T	Sect_81T	Fc_8	0.0000	19.5002	0.0000	0.0000	92.2910	0	Deck
81	81	82	-	Beam	Sect_81T	Sect_82T	Fc_8	0.0000	19.5011	0.0000	0.0000	92.2910	0	Deck
82	82	83	-	Beam	Sect_82T	Sect_83T	Fc_8	0.0000	19.5	0.0000	0.0000	92.2910	0	Deck
83	83	84	-	Beam	Sect_83T	Sect_84T	Fc_8	0.0000	19.5004	0.0000	0.0000	92.2910	0	Deck
84	84	85	-	Beam	Sect_84T	Sect_85T	Fc_8	0.0000	19.5034	0.0000	0.0000	92.2910	0	Deck
85	85	86	-	Beam	Sect_85T	Sect_86T	Fc_8	0.0000	19.531	0.0000	0.0000	92.2910	0	Deck
86	86	87	-	Beam	Sect_86T	Sect_87T	Fc_8	0.0000	19.5562	0.0000	0.0000	92.2910	0	Deck
87	87	88	-	Beam	Sect_87T	Sect_88T	Fc_8	0.0000	19.5708	0.0000	0.0000	92.2910	0	Deck
88	88	89	-	Beam	Sect_88T	Sect_89T	Fc_8	0.0000	19.59	0.0000	0.0000	92.2910	0	Deck
89	89	90	-	Beam	Sect_89T	Sect_90T	Fc_8	0.0000	19.6281	0.0000	0.0000	92.2910	0	Deck at pier and
90	90	91	-	Beam	Sect_90T	Sect_91T	Fc_8	0.0000	8.7025	0.0000	0.0000	92.2910	0	Deck
91	91	92	-	Beam	Sect_91T	Sect_92T	Fc_8	0.0000	8.0644	0.0000	0.0000	92.2910	0	Deck

INPUT : Members

ID	I-Joint	J-Joint	Span	Type	Section at Start	Section at End	Material	Prestress Force (kips)	Length (ft)	Rigid Zone from Start (x/L)	Rigid Zone from End (x/L)	Orientation Angle (deg)	Castin g (day)	Structure / Construction Group
92	92	93	-	Beam	Sect_92T	Sect_93T	Fc_8	0.0000	19.646	0.0000	0.0000	92.2910	0	Deck at pier and
93	93	94	-	Beam	Sect_93T	Sect_94T	Fc_8	0.0000	19.6038	0.0000	0.0000	92.2910	0	Deck
94	94	95	-	Beam	Sect_94T	Sect_95T	Fc_8	0.0000	19.583	0.0000	0.0000	92.2910	0	Deck
95	95	96	-	Beam	Sect_95T	Sect_96T	Fc_8	0.0000	19.5667	0.0000	0.0000	92.2910	0	Deck
96	96	97	-	Beam	Sect_96T	Sect_97T	Fc_8	0.0000	19.5396	0.0000	0.0000	92.2910	0	Deck
97	97	98	-	Beam	Sect_97T	Sect_98T	Fc_8	0.0000	19.5052	0.0000	0.0000	92.2910	0	Deck
98	98	99	-	Beam	Sect_98T	Sect_99T	Fc_8	0.0000	19.4974	0.0000	0.0000	92.2910	0	Deck
99	99	100	-	Beam	Sect_99T	Sect_100T	Fc_8	0.0000	19.4976	0.0000	0.0000	92.2910	0	Deck
100	100	101	-	Beam	Sect_100T	Sect_101T	Fc_8	0.0000	19.4985	0.0000	0.0000	92.2910	0	Deck
101	101	102	-	Beam	Sect_101T	Sect_102T	Fc_8	0.0000	19.4994	0.0000	0.0000	92.2910	0	Deck
102	102	103	-	Beam	Sect_102T	Sect_103T	Fc_8	0.0000	19.5012	0.0000	0.0000	92.2910	0	Deck
103	103	104	-	Beam	Sect_103T	Sect_104T	Fc_8	0.0000	19.4997	0.0000	0.0000	92.2910	0	Deck at pier and
104	104	105	-	Beam	Sect_104T	Sect_105T	Fc_8	0.0000	19.5021	0.0000	0.0000	92.2910	0	Deck
105	105	106	-	Beam	Sect_105T	Sect_106T	Fc_8	0.0000	19.5029	0.0000	0.0000	92.2910	0	Deck
106	106	107	-	Beam	Sect_106T	Sect_107T	Fc_8	0.0000	19.5037	0.0000	0.0000	92.2910	0	Deck
107	107	108	-	Beam	Sect_107T	Sect_108T	Fc_8	0.0000	19.5048	0.0000	0.0000	92.2910	0	Deck
108	108	109	-	Beam	Sect_108T	Sect_109T	Fc_8	0.0000	19.5059	0.0000	0.0000	92.2910	0	Deck
109	109	110	-	Beam	Sect_109T	Sect_110T	Fc_8	0.0000	19.5167	0.0000	0.0000	92.2910	0	Deck
110	110	111	-	Beam	Sect_110T	Sect_111T	Fc_8	0.0000	19.5561	0.0000	0.0000	92.2910	0	Deck
111	111	112	-	Beam	Sect_111T	Sect_112T	Fc_8	0.0000	19.5826	0.0000	0.0000	92.2910	0	Deck
112	112	113	-	Beam	Sect_112T	Sect_113T	Fc_8	0.0000	19.598	0.0000	0.0000	92.2910	0	Deck
113	113	114	-	Beam	Sect_113T	Sect_114T	Fc_8	0.0000	19.6187	0.0000	0.0000	92.2910	0	Deck
114	114	115	-	Beam	Sect_114T	Sect_115T	Fc_8	0.0000	19.6623	0.0000	0.0000	92.2910	0	Deck at pier and
115	115	116	-	Beam	Sect_115T	Sect_116T	Fc_8	0.0000	8.0725	0.0000	0.0000	92.2910	0	Deck
116	116	117	-	Beam	Sect_116T	Sect_117T	Fc_8	0.0000	8.0324	0.0000	0.0000	92.2910	0	Deck
117	117	118	-	Beam	Sect_117T	Sect_118T	Fc_8	0.0000	19.6364	0.0000	0.0000	92.2910	0	Deck at pier and
118	118	119	-	Beam	Sect_118T	Sect_119T	Fc_8	0.0000	19.5951	0.0000	0.0000	92.2910	0	Deck
119	119	120	-	Beam	Sect_119T	Sect_120T	Fc_8	0.0000	19.5774	0.0000	0.0000	92.2910	0	Deck
120	120	121	-	Beam	Sect_120T	Sect_121T	Fc_8	0.0000	19.5626	0.0000	0.0000	92.2910	0	Deck
121	121	122	-	Beam	Sect_121T	Sect_122T	Fc_8	0.0000	19.5393	0.0000	0.0000	92.2910	0	Deck
122	122	123	-	Beam	Sect_122T	Sect_123T	Fc_8	0.0000	19.5063	0.0000	0.0000	92.2910	0	Deck
123	123	124	-	Beam	Sect_123T	Sect_124T	Fc_8	0.0000	19.4993	0.0000	0.0000	92.2910	0	Deck
124	124	125	-	Beam	Sect_124T	Sect_125T	Fc_8	0.0000	19.5004	0.0000	0.0000	92.2910	0	Deck
125	125	126	-	Beam	Sect_125T	Sect_126T	Fc_8	0.0000	19.5001	0.0000	0.0000	92.2910	0	Deck

INPUT : Members

ID	I-Joint	J-Joint	Span	Type	Section at Start	Section at End	Material	Prestress Force (kips)	Length (ft)	Rigid Zone from Start (x/L)	Rigid Zone from End (x/L)	Orientation Angle (deg)	Castin g (day)	Structure / Construction Group
126	126	127	-	Beam	Sect_126T	Sect_127T	Fc_8	0.0000	19.5021	0.0000	0.0000	92.2910	0	Deck
127	127	128	-	Beam	Sect_127T	Sect_128T	Fc_8	0.0000	19.5029	0.0000	0.0000	92.2910	0	Deck
128	128	129	-	Beam	Sect_128T	Sect_129T	Fc_8	0.0000	19.5028	0.0000	0.0000	92.2910	0	Deck
129	129	130	-	Beam	Sect_129T	Sect_130T	Fc_8	0.0000	19.5047	0.0000	0.0000	92.2910	0	Deck at pier and
130	130	131	-	Beam	Sect_130T	Sect_131T	Fc_8	0.0000	19.5055	0.0000	0.0000	92.2910	0	Deck
131	131	132	-	Beam	Sect_131T	Sect_132T	Fc_8	0.0000	19.5053	0.0000	0.0000	92.2910	0	Deck
132	132	133	-	Beam	Sect_132T	Sect_133T	Fc_8	0.0000	19.5074	0.0000	0.0000	92.2910	0	Deck
133	133	134	-	Beam	Sect_133T	Sect_134T	Fc_8	0.0000	19.5094	0.0000	0.0000	92.2910	0	Deck
134	134	135	-	Beam	Sect_134T	Sect_135T	Fc_8	0.0000	19.5245	0.0000	0.0000	92.2910	0	Deck
135	135	136	-	Beam	Sect_135T	Sect_136T	Fc_8	0.0000	19.5691	0.0000	0.0000	92.2910	0	Deck
136	136	137	-	Beam	Sect_136T	Sect_137T	Fc_8	0.0000	19.5977	0.0000	0.0000	92.2910	0	Deck
137	137	138	-	Beam	Sect_137T	Sect_138T	Fc_8	0.0000	19.617	0.0000	0.0000	92.2910	0	Deck
138	138	139	-	Beam	Sect_138T	Sect_139T	Fc_8	0.0000	19.6379	0.0000	0.0000	92.2910	0	Deck
139	139	140	-	Beam	Sect_139T	Sect_140T	Fc_8	0.0000	19.6808	0.0000	0.0000	92.2910	0	Deck at pier and
140	140	141	-	Beam	Sect_140T	Sect_141T	Fc_8	0.0000	8.0308	0.0000	0.0000	92.2910	0	Deck
141	141	142	-	Beam	Sect_141T	Sect_142T	Fc_8	0.0000	7.91	0.0000	0.0000	92.2910	0	Deck
142	142	143	-	Beam	Sect_142T	Sect_143T	Fc_8	0.0000	19.6198	0.0000	0.0000	92.2910	0	Deck at pier and
143	143	144	-	Beam	Sect_143T	Sect_144T	Fc_8	0.0000	19.5868	0.0000	0.0000	92.2910	0	Deck
144	144	145	-	Beam	Sect_144T	Sect_145T	Fc_8	0.0000	19.5707	0.0000	0.0000	92.2910	0	Deck
145	145	146	-	Beam	Sect_145T	Sect_146T	Fc_8	0.0000	19.5564	0.0000	0.0000	92.2910	0	Deck
146	146	147	-	Beam	Sect_146T	Sect_147T	Fc_8	0.0000	19.5384	0.0000	0.0000	92.2910	0	Deck
147	147	148	-	Beam	Sect_147T	Sect_148T	Fc_8	0.0000	19.5088	0.0000	0.0000	92.2910	0	Deck
148	148	149	-	Beam	Sect_148T	Sect_149T	Fc_8	0.0000	19.5037	0.0000	0.0000	92.2910	0	Deck
149	149	150	-	Beam	Sect_149T	Sect_150T	Fc_8	0.0000	19.5068	0.0000	0.0000	92.2910	0	Deck
150	150	151	-	Beam	Sect_150T	Sect_151T	Fc_8	0.0000	19.5091	0.0000	0.0000	92.2910	0	Deck
151	151	152	-	Beam	Sect_151T	Sect_152T	Fc_8	0.0000	19.5159	0.0000	0.0000	92.2910	0	Deck at pier and
152	152	153	-	Beam	Sect_152T	Sect_153T	Fc_8	0.0000	19.5286	0.0000	0.0000	92.2910	0	Deck
153	153	154	-	Beam	Sect_153T	Sect_154T	Fc_8	0.0000	19.5427	0.0000	0.0000	92.2910	0	Deck
154	154	155	-	Beam	Sect_154T	Sect_155T	Fc_8	0.0000	19.5707	0.0000	0.0000	92.2910	0	Deck
155	155	156	-	Beam	Sect_155T	Sect_156T	Fc_8	0.0000	7.9469	0.0000	0.0000	92.2910	0	Deck at pier and
1001	1101	1001	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	38.818	0.0000	0.0000	0.0000	0	(none)
1002	1001	1201	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	38.8188	0.0000	0.0000	0.0000	0	(none)
1101	1101	1102	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	6.5	0.0000	0.0000	-90.0000	0	(none)
1102	1102	1103	-	Beam	P1_Column	(same as start)	Fc_6	0.0000	8.1545	0.0000	0.0000	0.0000	0	Column Bottom

INPUT : Members

ID	I-Joint	J-Joint	Span	Type	Section at Start	Section at End	Material	Prestress Force (kips)	Length (ft)	Rigid Zone from Start (x/L)	Rigid Zone from End (x/L)	Orientation Angle (deg)	Castin g (day)	Structure / Construction Group
1103	1103	1104	-	Beam	P1_Column	(same as start)	Fc_6	0.0000	8.1544	0.0000	0.0000	0.0000	0	(none)
1104	1104	1105	-	Beam	P1_Column	(same as start)	Fc_6	0.0000	8.1546	0.0000	0.0000	0.0000	0	Column Top
1105	1105	1106	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	7.6651	0.0000	0.0000	0.0000	0	(none)
1201	1201	1202	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	6.5	0.0000	0.0000	-90.0000	0	(none)
1202	1202	1203	-	Beam	P1_Column	(same as start)	Fc_6	0.0000	8.2202	0.0000	0.0000	0.0000	0	Column Bottom
1203	1203	1204	-	Beam	P1_Column	(same as start)	Fc_6	0.0000	8.221	0.0000	0.0000	0.0000	0	(none)
1204	1204	1205	-	Beam	P1_Column	(same as start)	Fc_6	0.0000	8.2205	0.0000	0.0000	0.0000	0	Column Top
1205	1205	1206	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	7.6733	0.0000	0.0000	0.0000	0	(none)
1011	1106	1006	-	Beam	Abut Pier Cap	(same as start)	Fc_6	0.0000	45.3902	0.0000	0.0000	90.0000	0	(none)
1012	1006	1206	-	Beam	Abut Pier Cap	(same as start)	Fc_6	0.0000	45.5272	0.0000	0.0000	90.0000	0	(none)
1006	1006	1007	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	14.5380	0	Rigid Super
1007	1007	1	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	20.3204	0.0000	0.0000	14.5380	0	Rigid Super
2001	2101	2001	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	26.0341	0.0000	0.0000	0.0000	0	(none)
2002	2001	2201	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	26.0331	0.0000	0.0000	0.0000	0	(none)
2101	2101	2102	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-77.5780	0	(none)
2102	2102	2103	-	Beam	P2_Column	(same as start)	Fc_6	0.0000	10.1808	0.0000	0.0000	0.0000	0	Column Bottom
2103	2103	2104	-	Beam	P2_Column	(same as start)	Fc_6	0.0000	10.1808	0.0000	0.0000	0.0000	0	(none)
2104	2104	2105	-	Beam	P2_Column	(same as start)	Fc_6	0.0000	10.1809	0.0000	0.0000	0.0000	0	Column Top
2105	2105	2106	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	7.6074	0.0000	0.0000	0.0000	0	(none)
2201	2201	2202	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-77.5780	0	(none)
2202	2202	2203	-	Beam	P2_Column	(same as start)	Fc_6	0.0000	10.8153	0.0000	0.0000	0.0000	0	Column Bottom
2203	2203	2204	-	Beam	P2_Column	(same as start)	Fc_6	0.0000	10.8155	0.0000	0.0000	0.0000	0	(none)
2204	2204	2205	-	Beam	P2_Column	(same as start)	Fc_6	0.0000	10.8157	0.0000	0.0000	0.0000	0	Column Top
2205	2205	2206	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	7.696	0.0000	0.0000	0.0000	0	(none)
2011	2106	2006	-	Beam	Typ Pier Cap	(same as start)	Fc_6	0.0000	32.764	0.0000	0.0000	90.0000	0	(none)
2012	2006	2206	-	Beam	Typ Pier Cap	(same as start)	Fc_6	0.0000	34.684	0.0000	0.0000	90.0000	0	(none)
2006	2006	2007	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.499	0.0000	0.0000	12.4220	0	Rigid Super
2007	2007	16	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	14.245	0.0000	0.0000	12.4220	0	Rigid Super
3001	3101	3001	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	13.2175	0.0000	0.0000	0.0000	0	(none)
3002	3001	3201	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	13.2175	0.0000	0.0000	0.0000	0	(none)
3101	3101	3102	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-80.7224	0	(none)
3102	3102	3103	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	18.8926	0.0000	0.0000	0.0000	0	Column Bottom
3103	3103	3104	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	18.8926	0.0000	0.0000	0.0000	0	(none)
3104	3104	3105	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	5.2638	0.0000	0.0000	0.0000	0	Column Top

INPUT : Members

ID	I-Joint	J-Joint	Span	Type	Section at Start	Section at End	Material	Prestress Force (kips)	Length (ft)	Rigid Zone from Start (x/L)	Rigid Zone from End (x/L)	Orientation Angle (deg)	Castin g (day)	Structure / Construction Group
3105	3105	3106	-	Beam	Typ Pier Column	(same as start)	Fc_6 weightless	0.0000	7.5878	0.0000	0.0000	0.0000	0	(none)
3201	3201	3202	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-80.7224	0	(none)
3202	3202	3203	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	19.5593	0.0000	0.0000	0.0000	0	Column Bottom
3203	3203	3204	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	19.5593	0.0000	0.0000	0.0000	0	(none)
3204	3204	3205	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	5.7118	0.0000	0.0000	0.0000	0	Column Top
3205	3205	3206	-	Beam	Typ Pier Column	(same as start)	Fc_6 weightless	0.0000	7.7102	0.0000	0.0000	0.0000	0	(none)
3011	3106	3006	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	22.0273	0.0000	0.0000	0.0000	0	(none)
3012	3006	3206	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	24.6786	0.0000	0.0000	0.0000	0	(none)
3006	3006	3007	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	9.2776	0	Rigid Super
3007	3007	41	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	15.078	0.0000	0.0000	9.2776	0	Rigid Super
4001	4101	4001	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	11.2671	0.0000	0.0000	0.0000	0	(none)
4002	4001	4201	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	11.2671	0.0000	0.0000	0.0000	0	(none)
4101	4101	4102	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-86.6872	0	(none)
4102	4102	4103	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	22.208	0.0000	0.0000	0.0000	0	Column Bottom
4103	4103	4104	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	22.2071	0.0000	0.0000	0.0000	0	(none)
4104	4104	4105	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	8.579	0.0000	0.0000	0.0000	0	Column Top
4105	4105	4106	-	Beam	Typ Pier Column	(same as start)	Fc_6 weightless	0.0000	7.5878	0.0000	0.0000	0.0000	0	(none)
4201	4201	4202	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-86.6872	0	(none)
4202	4202	4203	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	22.8748	0.0000	0.0000	0.0000	0	Column Bottom
4203	4203	4204	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	22.8738	0.0000	0.0000	0.0000	0	(none)
4204	4204	4205	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	9.027	0.0000	0.0000	0.0000	0	Column Top
4205	4205	4206	-	Beam	Typ Pier Column	(same as start)	Fc_6 weightless	0.0000	7.7102	0.0000	0.0000	0.0000	0	(none)
4011	4106	4006	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	22.0272	0.0000	0.0000	0.0000	0	(none)
4012	4006	4206	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	24.6786	0.0000	0.0000	0.0000	0	(none)
4006	4006	4007	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	3.3128	0	Rigid Super
4007	4007	66	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	15.09	0.0000	0.0000	3.3128	0	Rigid Super
5001	5101	5001	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	10.3908	0.0000	0.0000	0.0000	0	(none)
5002	5001	5201	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	10.3908	0.0000	0.0000	0.0000	0	(none)
5101	5101	5102	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-92.3673	0	(none)
5102	5102	5103	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	23.6963	0.0000	0.0000	0.0000	0	Column Bottom
5103	5103	5104	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	23.6972	0.0000	0.0000	0.0000	0	(none)
5104	5104	5105	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	10.0683	0.0000	0.0000	0.0000	0	Column Top
5105	5105	5106	-	Beam	Typ Pier Column	(same as start)	Fc_6 weightless	0.0000	7.5878	0.0000	0.0000	0.0000	0	(none)
5201	5201	5202	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-92.3673	0	(none)

INPUT : Members

ID	I-Joint	J-Joint	Span	Type	Section at Start	Section at End	Material	Prestress Force (kips)	Length (ft)	Rigid Zone from Start (x/L)	Rigid Zone from End (x/L)	Orientation Angle (deg)	Castin g (day)	Structure / Construction Group
5202	5202	5203	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	24.3633	0.0000	0.0000	0.0000	0	Column Bottom
5203	5203	5204	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	24.3643	0.0000	0.0000	0.0000	0	(none)
5204	5204	5205	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	10.5158	0.0000	0.0000	0.0000	0	Column Top
5205	5205	5206	-	Beam	Typ Pier Column	(same as start)	Fc_6 weightless	0.0000	7.7102	0.0000	0.0000	0.0000	0	(none)
5011	5106	5006	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	22.0272	0.0000	0.0000	0.0000	0	(none)
5012	5006	5206	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	24.6786	0.0000	0.0000	0.0000	0	(none)
5006	5006	5007	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-2.3673	0	Rigid Super
5007	5007	91	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	15.082	0.0000	0.0000	-2.3673	0	Rigid Super
6001	6101	6001	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	17.0495	0.0000	0.0000	0.0000	0	(none)
6002	6001	6201	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	17.0495	0.0000	0.0000	0.0000	0	(none)
6101	6101	6102	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-98.1027	0	(none)
6102	6102	6103	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	23.331	0.0000	0.0000	0.0000	0	Column Bottom
6103	6103	6104	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	23.331	0.0000	0.0000	0.0000	0	(none)
6104	6104	6105	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	9.7021	0.0000	0.0000	0.0000	0	Column Top
6105	6105	6106	-	Beam	Typ Pier Column	(same as start)	Fc_6 weightless	0.0000	7.5878	0.0000	0.0000	0.0000	0	(none)
6201	6201	6202	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-98.1027	0	(none)
6202	6202	6203	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	24.1742	0.0000	0.0000	0.0000	0	Column Bottom
6203	6203	6204	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	24.1749	0.0000	0.0000	0.0000	0	(none)
6204	6204	6205	-	Beam	Typ Pier Column	(same as start)	Fc_6	0.0000	10.3267	0.0000	0.0000	0.0000	0	Column Top
6205	6205	6206	-	Beam	Typ Pier Column	(same as start)	Fc_6 weightless	0.0000	7.7102	0.0000	0.0000	0.0000	0	(none)
6011	6106	6006	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	28.5273	0.0000	0.0000	0.0000	0	(none)
6012	6006	6206	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	31.1787	0.0000	0.0000	0.0000	0	(none)
6006	6006	6007	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-8.1027	0	Rigid Super
6007	6007	116	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	14.431	0.0000	0.0000	-8.1027	0	Rigid Super
7001	7101	7001	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	20.6875	0.0000	0.0000	0.0000	0	(none)
7002	7001	7201	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	20.6875	0.0000	0.0000	0.0000	0	(none)
7101	7101	7102	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-104.1468	0	(none)
7102	7102	7103	-	Beam	P7_Column	(same as start)	Fc_6	0.0000	16.6094	0.0000	0.0000	0.0000	0	Column Bottom
7103	7103	7104	-	Beam	P7_Column	(same as start)	Fc_6	0.0000	16.6102	0.0000	0.0000	0.0000	0	(none)
7104	7104	7105	-	Beam	P7_Column	(same as start)	Fc_6	0.0000	16.6053	0.0000	0.0000	0.0000	0	Column Top
7105	7105	7106	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	7.5984	0.0000	0.0000	0.0000	0	(none)
7201	7201	7202	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.5	0.0000	0.0000	-104.1468	0	(none)
7202	7202	7203	-	Beam	P7_Column	(same as start)	Fc_6	0.0000	17.4447	0.0000	0.0000	0.0000	0	Column Bottom
7203	7203	7204	-	Beam	P7_Column	(same as start)	Fc_6	0.0000	17.4447	0.0000	0.0000	0.0000	0	(none)

INPUT : Members

ID	I-Joint	J-Joint	Span	Type	Section at Start	Section at End	Material	Prestress Force (kips)	Length (ft)	Rigid Zone from Start (x/L)	Rigid Zone from End (x/L)	Orientation Angle (deg)	Castin g (day)	Structure / Construction Group
7204	7204	7205	-	Beam	P7_Column	(same as start)	Fc_6	0.0000	17.4407	0.0000	0.0000	0.0000	0	Column Top
7205	7205	7206	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	7.7214	0.0000	0.0000	0.0000	0	(none)
7011	7106	7006	-	Beam	Typ Pier Cap	(same as start)	Fc_6	0.0000	30.906	0.0000	0.0000	90.0000	0	(none)
7012	7006	7206	-	Beam	Typ Pier Cap	(same as start)	Fc_6	0.0000	33.558	0.0000	0.0000	90.0000	0	(none)
7006	7006	7007	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.502	0.0000	0.0000	-14.1468	0	Rigid Super
7007	7007	141	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	14.301	0.0000	0.0000	-14.1468	0	Rigid Super
8001	8101	8001	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	25.5898	0.0000	0.0000	0.0000	0	(none)
8002	8001	8201	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	25.599	0.0000	0.0000	0.0000	0	(none)
8101	8101	8102	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	6.5	0.0000	0.0000	-90.0000	0	(none)
8102	8102	8103	-	Beam	P8_Column	(same as start)	Fc_6	0.0000	14.6881	0.0000	0.0000	0.0000	0	Column Bottom
8103	8103	8104	-	Beam	P8_Column	(same as start)	Fc_6	0.0000	14.6882	0.0000	0.0000	0.0000	0	(none)
8104	8104	8105	-	Beam	P8_Column	(same as start)	Fc_6	0.0000	14.6882	0.0000	0.0000	0.0000	0	Column Top
8105	8105	8106	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	7.604	0.0000	0.0000	0.0000	0	(none)
8201	8201	8202	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	6.5	0.0000	0.0000	-90.0000	0	(none)
8202	8202	8203	-	Beam	P8_Column	(same as start)	Fc_6	0.0000	15.6026	0.0000	0.0000	0.0000	0	Column Bottom
8203	8203	8204	-	Beam	P8_Column	(same as start)	Fc_6	0.0000	15.6023	0.0000	0.0000	0.0000	0	(none)
8204	8204	8205	-	Beam	P8_Column	(same as start)	Fc_6	0.0000	15.6017	0.0000	0.0000	0.0000	0	Column Top
8205	8205	8206	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	7.7282	0.0000	0.0000	0.0000	0	(none)
8011	8106	8006	-	Beam	Abut Pier Cap	(same as start)	Fc_6	0.0000	35.2248	0.0000	0.0000	90.0000	0	(none)
8012	8006	8206	-	Beam	Abut Pier Cap	(same as start)	Fc_6	0.0000	37.6092	0.0000	0.0000	90.0000	0	(none)
8006	8006	8007	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	9.508	0.0000	0.0000	-17.6058	0	Rigid Super
8007	8007	156	-	Beam	Rigid Link	(same as start)	Fc_6 weightless	0.0000	19.9297	0.0000	0.0000	180.0000	0	Rigid Super

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
1	0.0000	0.0350	-13.2170	0.0000	0.0500	-12.6800
2	0.0000	0.0500	-12.6800	0.0000	0.0670	-11.4070
3	0.0000	0.0670	-11.4070	0.0000	0.0820	-10.4830
4	0.0000	0.0820	-10.4830	0.0000	0.0960	-9.8200
5	0.0000	0.0960	-9.8200	0.0000	0.1110	-9.4250
6	0.0000	0.1110	-9.4250	0.0000	0.1270	-9.3040
7	0.0000	0.1270	-9.3040	0.0000	0.1450	-9.2900

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
8	0.0000	0.1450	-9.2900	0.0000	0.1650	-9.4020
9	0.0000	0.1650	-9.4020	0.0000	0.1970	-10.0990
10	0.0000	0.1970	-10.0990	0.0000	0.2470	-11.5120
11	0.0000	0.2470	-11.5120	0.0000	0.3090	-13.1770
12	0.0000	0.3090	-13.1770	0.0000	0.3810	-15.0060
13	0.0000	0.3810	-15.0060	0.0000	0.4650	-17.0220
14	0.0000	0.4650	-17.0220	0.0000	0.5520	-19.2960
15	0.0000	0.5520	-19.2960	0.0000	0.5650	-19.2750
16	0.0000	0.5650	-19.2750	0.0000	0.5900	-19.2690
17	0.0000	0.5900	-19.2690	0.0000	0.5510	-16.8910
18	0.0000	0.5510	-16.8910	0.0000	0.5110	-14.7970
19	0.0000	0.5110	-14.7970	0.0000	0.4710	-12.9080
20	0.0000	0.4710	-12.9080	0.0000	0.4310	-11.2020
21	0.0000	0.4310	-11.2020	0.0000	0.3920	-9.7960
22	0.0000	0.3920	-9.7960	0.0000	0.3650	-9.1150
23	0.0000	0.3650	-9.1150	0.0000	0.3590	-8.9640
24	0.0000	0.3590	-8.9640	0.0000	0.3570	-8.9360
25	0.0000	0.3570	-8.9360	0.0000	0.3560	-8.9080
26	0.0000	0.3560	-8.9080	0.0000	0.3550	-8.8790
27	0.0000	0.3550	-8.8790	0.0000	0.3540	-8.8490
28	0.0000	0.3540	-8.8490	0.0000	0.3530	-8.8180
29	0.0000	0.3530	-8.8180	0.0000	0.3510	-8.7870
30	0.0000	0.3510	-8.7870	0.0000	0.3500	-8.7580
31	0.0000	0.3500	-8.7580	0.0000	0.3500	-8.7570
32	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
33	0.0000	0.3500	-8.7570	0.0000	0.3550	-8.8850
34	0.0000	0.3550	-8.8850	0.0000	0.3780	-9.4540
35	0.0000	0.3780	-9.4540	0.0000	0.4290	-10.7140
36	0.0000	0.4290	-10.7140	0.0000	0.4920	-12.3050
37	0.0000	0.4920	-12.3050	0.0000	0.5630	-14.0850
38	0.0000	0.5630	-14.0850	0.0000	0.6430	-16.0640
39	0.0000	0.6430	-16.0640	0.0000	0.7370	-18.4340
40	0.0000	0.7370	-18.4340	0.0000	0.7410	-18.5240
41	0.0000	0.7410	-18.5240	0.0000	0.7370	-18.4220

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
42	0.0000	0.7370	-18.4220	0.0000	0.6420	-16.0600
43	0.0000	0.6420	-16.0600	0.0000	0.5630	-14.0770
44	0.0000	0.5630	-14.0770	0.0000	0.4920	-12.2900
45	0.0000	0.4920	-12.2900	0.0000	0.4280	-10.6910
46	0.0000	0.4280	-10.6910	0.0000	0.3780	-9.4380
47	0.0000	0.3780	-9.4380	0.0000	0.3550	-8.8850
48	0.0000	0.3550	-8.8850	0.0000	0.3500	-8.7570
49	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
50	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
51	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
52	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
53	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
54	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
55	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
56	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
57	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
58	0.0000	0.3500	-8.7570	0.0000	0.3550	-8.8850
59	0.0000	0.3550	-8.8850	0.0000	0.3780	-9.4380
60	0.0000	0.3780	-9.4380	0.0000	0.4280	-10.6910
61	0.0000	0.4280	-10.6910	0.0000	0.4920	-12.2900
62	0.0000	0.4920	-12.2900	0.0000	0.5630	-14.0770
63	0.0000	0.5630	-14.0770	0.0000	0.6420	-16.0600
64	0.0000	0.6420	-16.0600	0.0000	0.7370	-18.4220
65	0.0000	0.7370	-18.4220	0.0000	0.7410	-18.5240
66	0.0000	0.7410	-18.5240	0.0000	0.7360	-18.4100
67	0.0000	0.7360	-18.4100	0.0000	0.6420	-16.0560
68	0.0000	0.6420	-16.0560	0.0000	0.5630	-14.0680
69	0.0000	0.5630	-14.0680	0.0000	0.4910	-12.2750
70	0.0000	0.4910	-12.2750	0.0000	0.4270	-10.6690
71	0.0000	0.4270	-10.6690	0.0000	0.3770	-9.4230
72	0.0000	0.3770	-9.4230	0.0000	0.3550	-8.8850
73	0.0000	0.3550	-8.8850	0.0000	0.3500	-8.7570
74	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
75	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
76	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
77	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
78	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
79	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
80	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
81	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
82	0.0000	0.3500	-8.7570	0.0000	0.3500	-8.7570
83	0.0000	0.3500	-8.7570	0.0000	0.3550	-8.8850
84	0.0000	0.3550	-8.8850	0.0000	0.3770	-9.4230
85	0.0000	0.3770	-9.4230	0.0000	0.4270	-10.6690
86	0.0000	0.4270	-10.6690	0.0000	0.4910	-12.2750
87	0.0000	0.4910	-12.2750	0.0000	0.5630	-14.0680
88	0.0000	0.5630	-14.0680	0.0000	0.6420	-16.0560
89	0.0000	0.6420	-16.0560	0.0000	0.7360	-18.4100
90	0.0000	0.7360	-18.4100	0.0000	0.7410	-18.5240
91	0.0000	0.7410	-18.5240	0.0000	0.7370	-18.4180
92	0.0000	0.7370	-18.4180	0.0000	0.6420	-16.0590
93	0.0000	0.6420	-16.0590	0.0000	0.5630	-14.0750
94	0.0000	0.5630	-14.0750	0.0000	0.4910	-12.2860
95	0.0000	0.4910	-12.2860	0.0000	0.4270	-10.6850
96	0.0000	0.4270	-10.6850	0.0000	0.3780	-9.4400
97	0.0000	0.3780	-9.4400	0.0000	0.3560	-8.9080
98	0.0000	0.3560	-8.9080	0.0000	0.3520	-8.7990
99	0.0000	0.3520	-8.7990	0.0000	0.3530	-8.8180
100	0.0000	0.3530	-8.8180	0.0000	0.3530	-8.8350
101	0.0000	0.3530	-8.8350	0.0000	0.3540	-8.8530
102	0.0000	0.3540	-8.8530	0.0000	0.3550	-8.8710
103	0.0000	0.3550	-8.8710	0.0000	0.3560	-8.8880
104	0.0000	0.3560	-8.8880	0.0000	0.3560	-8.8880
105	0.0000	0.3560	-8.8880	0.0000	0.3570	-8.9210
106	0.0000	0.3570	-8.9210	0.0000	0.3580	-8.9380
107	0.0000	0.3580	-8.9380	0.0000	0.3580	-8.9540
108	0.0000	0.3580	-8.9540	0.0000	0.3640	-9.0940
109	0.0000	0.3640	-9.0940	0.0000	0.3890	-9.7260

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
110	0.0000	0.3890	-9.7260	0.0000	0.4440	-11.0980
111	0.0000	0.4440	-11.0980	0.0000	0.5120	-12.7880
112	0.0000	0.5120	-12.7880	0.0000	0.5850	-14.6310
113	0.0000	0.5850	-14.6310	0.0000	0.6670	-16.6670
114	0.0000	0.6670	-16.6670	0.0000	0.7630	-19.0680
115	0.0000	0.7630	-19.0680	0.0000	0.7670	-19.1660
116	0.0000	0.7670	-19.1660	0.0000	0.7630	-19.0690
117	0.0000	0.7630	-19.0690	0.0000	0.6670	-16.6670
118	0.0000	0.6670	-16.6670	0.0000	0.5850	-14.6310
119	0.0000	0.5850	-14.6310	0.0000	0.5120	-12.7900
120	0.0000	0.5120	-12.7900	0.0000	0.4450	-11.1260
121	0.0000	0.4450	-11.1260	0.0000	0.3910	-9.7670
122	0.0000	0.3910	-9.7670	0.0000	0.3660	-9.1410
123	0.0000	0.3660	-9.1410	0.0000	0.3610	-9.0190
124	0.0000	0.3610	-9.0190	0.0000	0.3610	-9.0190
125	0.0000	0.3610	-9.0190	0.0000	0.3610	-9.0190
126	0.0000	0.3610	-9.0190	0.0000	0.3610	-9.0190
127	0.0000	0.3610	-9.0190	0.0000	0.3610	-9.0190
128	0.0000	0.3610	-9.0190	0.0000	0.3610	-9.0220
129	0.0000	0.3610	-9.0220	0.0000	0.3610	-9.0290
130	0.0000	0.3610	-9.0290	0.0000	0.3610	-9.0360
131	0.0000	0.3610	-9.0360	0.0000	0.3620	-9.0440
132	0.0000	0.3620	-9.0440	0.0000	0.3620	-9.0510
133	0.0000	0.3620	-9.0510	0.0000	0.3670	-9.1800
134	0.0000	0.3670	-9.1800	0.0000	0.3930	-9.8260
135	0.0000	0.3930	-9.8260	0.0000	0.4490	-11.2140
136	0.0000	0.4490	-11.2140	0.0000	0.5160	-12.9030
137	0.0000	0.5160	-12.9030	0.0000	0.5910	-14.7730
138	0.0000	0.5910	-14.7730	0.0000	0.6730	-16.8310
139	0.0000	0.6730	-16.8310	0.0000	0.7690	-19.2200
140	0.0000	0.7690	-19.2200	0.0000	0.7710	-19.2650
141	0.0000	0.7710	-19.2650	0.0000	0.7690	-19.2260
142	0.0000	0.7690	-19.2260	0.0000	0.6750	-16.8700
143	0.0000	0.6750	-16.8700	0.0000	0.5930	-14.8310

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
144	0.0000	0.5930	-14.8310	0.0000	0.5190	-12.9840
145	0.0000	0.5190	-12.9840	0.0000	0.4520	-11.3080
146	0.0000	0.4520	-11.3080	0.0000	0.3970	-9.9150
147	0.0000	0.3970	-9.9150	0.0000	0.3700	-9.2590
148	0.0000	0.3700	-9.2590	0.0000	0.3660	-9.1440
149	0.0000	0.3660	-9.1440	0.0000	0.3660	-9.1500
150	0.0000	0.3660	-9.1500	0.0000	0.3700	-9.2520
151	0.0000	0.3700	-9.2520	0.0000	0.3850	-9.6310
152	0.0000	0.3850	-9.6310	0.0000	0.4110	-10.2840
153	0.0000	0.4110	-10.2840	0.0000	0.4480	-11.2010
154	0.0000	0.4480	-11.2010	0.0000	0.4990	-12.4850
155	0.0000	0.4990	-12.4850	0.0000	0.5240	-13.0980
1001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1104	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1202	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1204	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1205	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1007	0.0000	0.0000	0.0000	0.0000	0.0000	-12.6800
2001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2104	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
2105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2202	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2204	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2205	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2007	0.0000	0.0000	0.0000	0.0000	0.0000	-19.2690
3001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3104	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3202	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3204	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3205	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3007	0.0000	0.0000	0.0000	0.0000	0.0000	-18.4220
4001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4104	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
4202	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4204	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4205	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4007	0.0000	0.0000	0.0000	0.0000	0.0000	-18.4100
5001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5104	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5202	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5204	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5205	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5007	0.0000	0.0000	0.0000	0.0000	0.0000	-18.4180
6001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6104	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6202	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
6204	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6205	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6007	0.0000	0.0000	0.0000	0.0000	0.0000	-19.0690
7001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7104	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7202	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7204	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7205	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7007	0.0000	0.0000	0.0000	0.0000	0.0000	-19.2260
8001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8102	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8104	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8105	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8202	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8203	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8204	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8205	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

INPUT : Member End Offsets

ID	I-Offset X (ft)	I-Offset Y (ft)	I-Offset Z (ft)	J-Offset X (ft)	J-Offset Y (ft)	J-Offset Z (ft)
8011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8007	0.0000	0.0000	0.0000	0.0000	0.0000	-13.0980

INPUT : Member Fixity

Member ID	Start Force Fx	Start Force Fy	Start Force Fz	Start Moment Mx	Start Moment My	Start Moment Mz	End Force Fx	End Force Fy	End Force Fz	End Moment Mx	End Moment My	End Moment Mz
1006	Fixed	Fixed	Fixed	Fixed	Free	Fixed	Fixed	Fixed	Fixed	Free	Free	Fixed
2006	Fixed	Fixed	Fixed	Fixed	Free	Fixed	Fixed	Fixed	Fixed	Free	Free	Fixed
3006	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Fixed
4006	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Fixed
5006	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Fixed
6006	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Fixed
7006	Fixed	Fixed	Fixed	Fixed	Free	Fixed	Fixed	Fixed	Fixed	Free	Free	Fixed
8006	Fixed	Fixed	Fixed	Fixed	Free	Fixed	Fixed	Fixed	Fixed	Free	Free	Fixed

INPUT : Springs

ID	I-Joint	J-Joint	Type	Direction	K Tension (kips/in)	K Compression (kips/in)	Maximum Tension (kips or kips-in)	Maximum Compression (kips or kips-in)	Hook (in)	Gap (in)	Properties Definition	Structure / Construction Group
1	1001	(none)	Linear	K(6x6)	0.0000	0.0000					Pier1spring	Column Top, Column
2	2001	(none)	Linear	K(6x6)	0.0000	0.0000					Pier2spring	Column Top, Column
3	3001	(none)	Linear	K(6x6)	0.0000	0.0000					Pier3spring	Column Top, Column
4	4001	(none)	Linear	K(6x6)	0.0000	0.0000					Pier4spring	Column Top, Column
5	5001	(none)	Linear	K(6x6)	0.0000	0.0000					Pier5spring	Column Top, Column
6	6001	(none)	Linear	K(6x6)	0.0000	0.0000					Pier6spring	Column Top, Column
7	7001	(none)	Linear	K(6x6)	0.0000	0.0000					Pier7spring	Column Top, Column
8	8001	(none)	Linear	K(6x6)	0.0000	0.0000					Pier8spring	Column Top, Column
9	1102	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
10	1105	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
11	1202	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
12	1205	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
13	2102	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)

INPUT : Springs

ID	I-Joint	J-Joint	Type	Direction	K Tension (kips/in)	K Compression (kips/in)	Maximum Tension (kips or kips-in)	Maximum Compression (kips or kips-in)	Hook (in)	Gap (in)	Properties Definition	Structure / Construction Group
14	2105	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
15	2202	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
16	2205	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
17	3102	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
18	3105	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
19	3202	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
20	3205	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
21	4102	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
22	4105	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
23	4202	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
24	4205	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
25	5102	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
26	5105	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
27	5202	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
28	5205	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
29	6102	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
30	6105	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
31	6202	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
32	6205	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
33	7102	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
34	7105	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
35	7202	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
36	7205	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
37	8102	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
38	8105	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
39	8202	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)
40	8205	(none)	Linear	K(6x6)	0.0000	0.0000					Ghost	(none)

INPUT : Mass Elements

Joint	Translational X (kips)	Translational Y (kips)	Translational Z (kips)	Rotational X (kips-ft²)	Rotational Y (kips-ft²)	Rotational Z (kips-ft²)
1001	6,912.0000	6,912.0000	6,912.0000	0.0000	0.0000	0.0000
2001	10,260.0000	10,260.0000	10,260.0000	0.0000	0.0000	0.0000

INPUT : Mass Elements

Joint	Translational X (kips)	Translational Y (kips)	Translational Z (kips)	Rotational X (kips-ft²)	Rotational Y (kips-ft²)	Rotational Z (kips-ft²)
3001	10,260.0000	10,260.0000	10,260.0000	0.0000	0.0000	0.0000
4001	10,260.0000	10,260.0000	10,260.0000	0.0000	0.0000	0.0000
5001	10,260.0000	10,260.0000	10,260.0000	0.0000	0.0000	0.0000
6001	10,260.0000	10,260.0000	10,260.0000	0.0000	0.0000	0.0000
7001	10,260.0000	10,260.0000	10,260.0000	0.0000	0.0000	0.0000
8001	5,760.0000	5,760.0000	5,760.0000	0.0000	0.0000	0.0000

INPUT : More Material Properties

Name	Yield Stress (lb/in²)	Post-yield to Initial Slope Ratio	Concrete Strength Specimen	Concrete fc28 or Steel Fu (lb/in²)	Concrete Cement Hardening Type	Tendon GUTS (lb/in²)	Material Time-Effect	Assigned
Fc_6	0.00	0.020	Cylinder	6,000.00	Normal	0.00	(NONE)	Yes
Fc_6 weightless	0.00	0.020	Cylinder	6,000.00	Normal	0.00	(NONE)	Yes
Fc_8	0.00	0.020	Cylinder	8,000.00	Normal	0.00	(NONE)	Yes

Load Cases

ID	Name	Analysis Type	Class	Status	Weight Factor X	Weight Factor Y	Weight Factor Z	Is Dynamic Mass?	Assigned to Load Combinati	# of Joint Loads	# of Support Loads	# of Member Loads	# of Member Thermal	# of Plate Loads	# of Moving Loads	# of THA Loading	# of THA Initial
1	DC-Dead Load	Static	None	Active	0.0000	0.0000	-1.0000	Yes	No	8	0	155	0	0	0	0	0
2	DC-Barriers	Static	None	Active	0.0000	0.0000	0.0000	Yes	No	0	0	155	0	0	0	0	0
3	DC-LRT	Static	None	Active	0.0000	0.0000	0.0000	Yes	No	0	0	155	0	0	0	0	0
4	DW-Wearing	Static	None	Active	0.0000	0.0000	0.0000	Yes	No	0	0	155	0	0	0	0	0
5	DW-Utilities	Static	None	Active	0.0000	0.0000	0.0000	Yes	No	0	0	155	0	0	0	0	0
6	TU-Rise	Static	None	Active	0.0000	0.0000	0.0000	No	No	0	0	0	155	0	0	0	0
7	TU-Fall	Static	None	Active	0.0000	0.0000	0.0000	No	No	0	0	0	155	0	0	0	0
8	Live Load	Moving	None	Active	0.0000	0.0000	0.0000	No	No	0	0	0	0	0	0	0	0
9	EQ 1	Response	None	Active	0.0000	0.0000	0.0000	No	No	0	0	0	0	0	0	0	0
10	EQ 2	Response	None	Active	0.0000	0.0000	0.0000	No	No	0	0	0	0	0	0	0	0
11	EQ 3	Response	None	Active	0.0000	0.0000	0.0000	No	No	0	0	0	0	0	0	0	0
14	WA	Static	None	Active	0.0000	0.0000	0.0000	No	No	8	0	0	0	0	0	0	0
15	WS	Static	None	Active	0.0000	0.0000	0.0000	No	No	0	0	279	0	0	0	0	0
16	CV1	Static	None	Active	0.0000	0.0000	0.0000	No	No	1	0	0	0	0	0	0	0
17	CV2	Static	None	Active	0.0000	0.0000	0.0000	No	No	1	0	0	0	0	0	0	0
18	EQ 1 SEE	Response	None	Active	0.0000	0.0000	0.0000	No	No	0	0	0	0	0	0	0	0

Load Cases

ID	Name	Analysis Type	Class	Status	Weight Factor X	Weight Factor Y	Weight Factor Z	Is Dynamic Mass?	Assigned to Load Combinati	# of Joint Loads	# of Support Loads	# of Member Loads	# of Member Thermal	# of Plate Loads	# of Moving Loads	# of THA Loading	# of THA Initial
19	EQ 2 SEE	Response	None	Active	0.0000	0.0000	0.0000	No	No	0	0	0	0	0	0	0	0
20	EQ 3 SEE	Response	None	Active	0.0000	0.0000	0.0000	No	No	0	0	0	0	0	0	0	0
21	CVL-P2	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
22	CVT-P2	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
23	CVL-P3	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
24	CVT-P3	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
25	CVL-P4	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
26	CVT-P4	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
27	CVL-P5	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
28	CVT-P5	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
29	CVL-P6	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
30	CVT-P6	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
31	CVL-P7	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0
32	CVT-P7	Static	None	Active	0.0000	0.0000	0.0000	No	No	2	0	0	0	0	0	0	0

LOAD CASE DC-Dead Load, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
1	Uniform Force	Global Z	-32.5600		0.0000	1.0000
2	Uniform Force	Global Z	-32.5600		0.0000	1.0000
3	Uniform Force	Global Z	-32.5600		0.0000	1.0000
4	Uniform Force	Global Z	-32.5600		0.0000	1.0000
5	Uniform Force	Global Z	-32.5600		0.0000	1.0000
6	Uniform Force	Global Z	-32.5600		0.0000	1.0000
7	Uniform Force	Global Z	-32.5600		0.0000	1.0000
8	Uniform Force	Global Z	-32.5600		0.0000	1.0000
9	Uniform Force	Global Z	-32.5600		0.0000	1.0000
10	Uniform Force	Global Z	-32.5600		0.0000	1.0000
11	Uniform Force	Global Z	-32.5600		0.0000	1.0000
12	Uniform Force	Global Z	-32.5600		0.0000	1.0000
13	Uniform Force	Global Z	-32.5600		0.0000	1.0000
14	Uniform Force	Global Z	-32.5600		0.0000	1.0000
15	Uniform Force	Global Z	-32.5600		0.0000	1.0000

LOAD CASE DC-Dead Load, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
16	Uniform Force	Global Z	-32.5600		0.0000	1.0000
17	Uniform Force	Global Z	-32.5600		0.0000	1.0000
18	Uniform Force	Global Z	-32.5600		0.0000	1.0000
19	Uniform Force	Global Z	-32.5600		0.0000	1.0000
20	Uniform Force	Global Z	-32.5600		0.0000	1.0000
21	Uniform Force	Global Z	-32.5600		0.0000	1.0000
22	Uniform Force	Global Z	-32.5600		0.0000	1.0000
23	Uniform Force	Global Z	-32.5600		0.0000	1.0000
24	Uniform Force	Global Z	-32.5600		0.0000	1.0000
25	Uniform Force	Global Z	-32.5600		0.0000	1.0000
26	Uniform Force	Global Z	-32.5600		0.0000	1.0000
27	Uniform Force	Global Z	-32.5600		0.0000	1.0000
28	Uniform Force	Global Z	-32.5600		0.0000	1.0000
29	Uniform Force	Global Z	-32.5600		0.0000	1.0000
30	Uniform Force	Global Z	-32.5600		0.0000	1.0000
31	Uniform Force	Global Z	-32.5600		0.0000	1.0000
32	Uniform Force	Global Z	-32.5600		0.0000	1.0000
33	Uniform Force	Global Z	-32.5600		0.0000	1.0000
34	Uniform Force	Global Z	-32.5600		0.0000	1.0000
35	Uniform Force	Global Z	-32.5600		0.0000	1.0000
36	Uniform Force	Global Z	-32.5600		0.0000	1.0000
37	Uniform Force	Global Z	-32.5600		0.0000	1.0000
38	Uniform Force	Global Z	-32.5600		0.0000	1.0000
39	Uniform Force	Global Z	-32.5600		0.0000	1.0000
40	Uniform Force	Global Z	-32.5600		0.0000	1.0000
41	Uniform Force	Global Z	-32.5600		0.0000	1.0000
42	Uniform Force	Global Z	-32.5600		0.0000	1.0000
43	Uniform Force	Global Z	-32.5600		0.0000	1.0000
44	Uniform Force	Global Z	-32.5600		0.0000	1.0000
45	Uniform Force	Global Z	-32.5600		0.0000	1.0000
46	Uniform Force	Global Z	-32.5600		0.0000	1.0000
47	Uniform Force	Global Z	-32.5600		0.0000	1.0000
48	Uniform Force	Global Z	-32.5600		0.0000	1.0000
49	Uniform Force	Global Z	-32.5600		0.0000	1.0000

LOAD CASE DC-Dead Load, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
50	Uniform Force	Global Z	-32.5600		0.0000	1.0000
51	Uniform Force	Global Z	-32.5600		0.0000	1.0000
52	Uniform Force	Global Z	-32.5600		0.0000	1.0000
53	Uniform Force	Global Z	-32.5600		0.0000	1.0000
54	Uniform Force	Global Z	-32.5600		0.0000	1.0000
55	Uniform Force	Global Z	-32.5600		0.0000	1.0000
56	Uniform Force	Global Z	-32.5600		0.0000	1.0000
57	Uniform Force	Global Z	-32.5600		0.0000	1.0000
58	Uniform Force	Global Z	-32.5600		0.0000	1.0000
59	Uniform Force	Global Z	-32.5600		0.0000	1.0000
60	Uniform Force	Global Z	-32.5600		0.0000	1.0000
61	Uniform Force	Global Z	-32.5600		0.0000	1.0000
62	Uniform Force	Global Z	-32.5600		0.0000	1.0000
63	Uniform Force	Global Z	-32.5600		0.0000	1.0000
64	Uniform Force	Global Z	-32.5600		0.0000	1.0000
65	Uniform Force	Global Z	-32.5600		0.0000	1.0000
66	Uniform Force	Global Z	-32.5600		0.0000	1.0000
67	Uniform Force	Global Z	-32.5600		0.0000	1.0000
68	Uniform Force	Global Z	-32.5600		0.0000	1.0000
69	Uniform Force	Global Z	-32.5600		0.0000	1.0000
70	Uniform Force	Global Z	-32.5600		0.0000	1.0000
71	Uniform Force	Global Z	-32.5600		0.0000	1.0000
72	Uniform Force	Global Z	-32.5600		0.0000	1.0000
73	Uniform Force	Global Z	-32.5600		0.0000	1.0000
74	Uniform Force	Global Z	-32.5600		0.0000	1.0000
75	Uniform Force	Global Z	-32.5600		0.0000	1.0000
76	Uniform Force	Global Z	-32.5600		0.0000	1.0000
77	Uniform Force	Global Z	-32.5600		0.0000	1.0000
78	Uniform Force	Global Z	-32.5600		0.0000	1.0000
79	Uniform Force	Global Z	-32.5600		0.0000	1.0000
80	Uniform Force	Global Z	-32.5600		0.0000	1.0000
81	Uniform Force	Global Z	-32.5600		0.0000	1.0000
82	Uniform Force	Global Z	-32.5600		0.0000	1.0000
83	Uniform Force	Global Z	-32.5600		0.0000	1.0000

LOAD CASE DC-Dead Load, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
84	Uniform Force	Global Z	-32.5600		0.0000	1.0000
85	Uniform Force	Global Z	-32.5600		0.0000	1.0000
86	Uniform Force	Global Z	-32.5600		0.0000	1.0000
87	Uniform Force	Global Z	-32.5600		0.0000	1.0000
88	Uniform Force	Global Z	-32.5600		0.0000	1.0000
89	Uniform Force	Global Z	-32.5600		0.0000	1.0000
90	Uniform Force	Global Z	-32.5600		0.0000	1.0000
91	Uniform Force	Global Z	-32.5600		0.0000	1.0000
92	Uniform Force	Global Z	-32.5600		0.0000	1.0000
93	Uniform Force	Global Z	-32.5600		0.0000	1.0000
94	Uniform Force	Global Z	-32.5600		0.0000	1.0000
95	Uniform Force	Global Z	-32.5600		0.0000	1.0000
96	Uniform Force	Global Z	-32.5600		0.0000	1.0000
97	Uniform Force	Global Z	-32.5600		0.0000	1.0000
98	Uniform Force	Global Z	-32.5600		0.0000	1.0000
99	Uniform Force	Global Z	-32.5600		0.0000	1.0000
100	Uniform Force	Global Z	-32.5600		0.0000	1.0000
101	Uniform Force	Global Z	-32.5600		0.0000	1.0000
102	Uniform Force	Global Z	-32.5600		0.0000	1.0000
103	Uniform Force	Global Z	-32.5600		0.0000	1.0000
104	Uniform Force	Global Z	-32.5600		0.0000	1.0000
105	Uniform Force	Global Z	-32.5600		0.0000	1.0000
106	Uniform Force	Global Z	-32.5600		0.0000	1.0000
107	Uniform Force	Global Z	-32.5600		0.0000	1.0000
108	Uniform Force	Global Z	-32.5600		0.0000	1.0000
109	Uniform Force	Global Z	-32.5600		0.0000	1.0000
110	Uniform Force	Global Z	-32.5600		0.0000	1.0000
111	Uniform Force	Global Z	-32.5600		0.0000	1.0000
112	Uniform Force	Global Z	-32.5600		0.0000	1.0000
113	Uniform Force	Global Z	-32.5600		0.0000	1.0000
114	Uniform Force	Global Z	-32.5600		0.0000	1.0000
115	Uniform Force	Global Z	-32.5600		0.0000	1.0000
116	Uniform Force	Global Z	-32.5600		0.0000	1.0000
117	Uniform Force	Global Z	-32.5600		0.0000	1.0000

LOAD CASE DC-Dead Load, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
118	Uniform Force	Global Z	-32.5600		0.0000	1.0000
119	Uniform Force	Global Z	-32.5600		0.0000	1.0000
120	Uniform Force	Global Z	-32.5600		0.0000	1.0000
121	Uniform Force	Global Z	-32.5600		0.0000	1.0000
122	Uniform Force	Global Z	-32.5600		0.0000	1.0000
123	Uniform Force	Global Z	-32.5600		0.0000	1.0000
124	Uniform Force	Global Z	-32.5600		0.0000	1.0000
125	Uniform Force	Global Z	-32.5600		0.0000	1.0000
126	Uniform Force	Global Z	-32.5600		0.0000	1.0000
127	Uniform Force	Global Z	-32.5600		0.0000	1.0000
128	Uniform Force	Global Z	-32.5600		0.0000	1.0000
129	Uniform Force	Global Z	-32.5600		0.0000	1.0000
130	Uniform Force	Global Z	-32.5600		0.0000	1.0000
131	Uniform Force	Global Z	-32.5600		0.0000	1.0000
132	Uniform Force	Global Z	-32.5600		0.0000	1.0000
133	Uniform Force	Global Z	-32.5600		0.0000	1.0000
134	Uniform Force	Global Z	-32.5600		0.0000	1.0000
135	Uniform Force	Global Z	-32.5600		0.0000	1.0000
136	Uniform Force	Global Z	-32.5600		0.0000	1.0000
137	Uniform Force	Global Z	-32.5600		0.0000	1.0000
138	Uniform Force	Global Z	-32.5600		0.0000	1.0000
139	Uniform Force	Global Z	-32.5600		0.0000	1.0000
140	Uniform Force	Global Z	-32.5600		0.0000	1.0000
141	Uniform Force	Global Z	-32.5600		0.0000	1.0000
142	Uniform Force	Global Z	-32.5600		0.0000	1.0000
143	Uniform Force	Global Z	-32.5600		0.0000	1.0000
144	Uniform Force	Global Z	-32.5600		0.0000	1.0000
145	Uniform Force	Global Z	-32.5600		0.0000	1.0000
146	Uniform Force	Global Z	-32.5600		0.0000	1.0000
147	Uniform Force	Global Z	-32.5600		0.0000	1.0000
148	Uniform Force	Global Z	-32.5600		0.0000	1.0000
149	Uniform Force	Global Z	-32.5600		0.0000	1.0000
150	Uniform Force	Global Z	-32.5600		0.0000	1.0000
151	Uniform Force	Global Z	-32.5600		0.0000	1.0000

LOAD CASE DC-Dead Load, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
152	Uniform Force	Global Z	-32.5600		0.0000	1.0000
153	Uniform Force	Global Z	-32.5600		0.0000	1.0000
154	Uniform Force	Global Z	-32.5600		0.0000	1.0000
155	Uniform Force	Global Z	-32.5600		0.0000	1.0000

LOAD CASE DC-Dead Load, Joint Loads

Joint	X-Force (kips)	Y-Force (kips)	Z-Force (kips)	X-Moment (kips-ft)	Y-Moment (kips-ft)	Z-Moment (kips-ft)
1	0.0000	0.0000	-5,619.4000	0.0000	0.0000	0.0000
16	0.0000	0.0000	-2,934.8000	0.0000	0.0000	0.0000
41	0.0000	0.0000	-3,314.7000	0.0000	0.0000	0.0000
66	0.0000	0.0000	-3,344.0000	0.0000	0.0000	0.0000
91	0.0000	0.0000	-3,348.3000	0.0000	0.0000	0.0000
116	0.0000	0.0000	-3,781.3000	0.0000	0.0000	0.0000
141	0.0000	0.0000	-2,908.5000	0.0000	0.0000	0.0000
156	0.0000	0.0000	-5,051.1000	0.0000	0.0000	0.0000

LOAD CASE DC-Barriers, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
1	Uniform Force	Global Z	-1.4500		0.0000	1.0000
2	Uniform Force	Global Z	-1.4500		0.0000	1.0000
3	Uniform Force	Global Z	-1.4500		0.0000	1.0000
4	Uniform Force	Global Z	-1.4500		0.0000	1.0000
5	Uniform Force	Global Z	-1.4500		0.0000	1.0000
6	Uniform Force	Global Z	-1.4500		0.0000	1.0000
7	Uniform Force	Global Z	-1.4500		0.0000	1.0000
8	Uniform Force	Global Z	-1.4500		0.0000	1.0000
9	Uniform Force	Global Z	-1.4500		0.0000	1.0000
10	Uniform Force	Global Z	-1.4500		0.0000	1.0000
11	Uniform Force	Global Z	-1.4500		0.0000	1.0000
12	Uniform Force	Global Z	-1.4500		0.0000	1.0000
13	Uniform Force	Global Z	-1.4500		0.0000	1.0000

LOAD CASE DC-Barriers, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
14	Uniform Force	Global Z	-1.4500		0.0000	1.0000
15	Uniform Force	Global Z	-1.4500		0.0000	1.0000
16	Uniform Force	Global Z	-1.4500		0.0000	1.0000
17	Uniform Force	Global Z	-1.4500		0.0000	1.0000
18	Uniform Force	Global Z	-1.4500		0.0000	1.0000
19	Uniform Force	Global Z	-1.4500		0.0000	1.0000
20	Uniform Force	Global Z	-1.4500		0.0000	1.0000
21	Uniform Force	Global Z	-1.4500		0.0000	1.0000
22	Uniform Force	Global Z	-1.4500		0.0000	1.0000
23	Uniform Force	Global Z	-1.4500		0.0000	1.0000
24	Uniform Force	Global Z	-1.4500		0.0000	1.0000
25	Uniform Force	Global Z	-1.4500		0.0000	1.0000
26	Uniform Force	Global Z	-1.4500		0.0000	1.0000
27	Uniform Force	Global Z	-1.4500		0.0000	1.0000
28	Uniform Force	Global Z	-1.4500		0.0000	1.0000
29	Uniform Force	Global Z	-1.4500		0.0000	1.0000
30	Uniform Force	Global Z	-1.4500		0.0000	1.0000
31	Uniform Force	Global Z	-1.4500		0.0000	1.0000
32	Uniform Force	Global Z	-1.4500		0.0000	1.0000
33	Uniform Force	Global Z	-1.4500		0.0000	1.0000
34	Uniform Force	Global Z	-1.4500		0.0000	1.0000
35	Uniform Force	Global Z	-1.4500		0.0000	1.0000
36	Uniform Force	Global Z	-1.4500		0.0000	1.0000
37	Uniform Force	Global Z	-1.4500		0.0000	1.0000
38	Uniform Force	Global Z	-1.4500		0.0000	1.0000
39	Uniform Force	Global Z	-1.4500		0.0000	1.0000
40	Uniform Force	Global Z	-1.4500		0.0000	1.0000
41	Uniform Force	Global Z	-1.4500		0.0000	1.0000
42	Uniform Force	Global Z	-1.4500		0.0000	1.0000
43	Uniform Force	Global Z	-1.4500		0.0000	1.0000
44	Uniform Force	Global Z	-1.4500		0.0000	1.0000
45	Uniform Force	Global Z	-1.4500		0.0000	1.0000
46	Uniform Force	Global Z	-1.4500		0.0000	1.0000
47	Uniform Force	Global Z	-1.4500		0.0000	1.0000

LOAD CASE DC-Barriers, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
48	Uniform Force	Global Z	-1.4500		0.0000	1.0000
49	Uniform Force	Global Z	-1.4500		0.0000	1.0000
50	Uniform Force	Global Z	-1.4500		0.0000	1.0000
51	Uniform Force	Global Z	-1.4500		0.0000	1.0000
52	Uniform Force	Global Z	-1.4500		0.0000	1.0000
53	Uniform Force	Global Z	-1.4500		0.0000	1.0000
54	Uniform Force	Global Z	-1.4500		0.0000	1.0000
55	Uniform Force	Global Z	-1.4500		0.0000	1.0000
56	Uniform Force	Global Z	-1.4500		0.0000	1.0000
57	Uniform Force	Global Z	-1.4500		0.0000	1.0000
58	Uniform Force	Global Z	-1.4500		0.0000	1.0000
59	Uniform Force	Global Z	-1.4500		0.0000	1.0000
60	Uniform Force	Global Z	-1.4500		0.0000	1.0000
61	Uniform Force	Global Z	-1.4500		0.0000	1.0000
62	Uniform Force	Global Z	-1.4500		0.0000	1.0000
63	Uniform Force	Global Z	-1.4500		0.0000	1.0000
64	Uniform Force	Global Z	-1.4500		0.0000	1.0000
65	Uniform Force	Global Z	-1.4500		0.0000	1.0000
66	Uniform Force	Global Z	-1.4500		0.0000	1.0000
67	Uniform Force	Global Z	-1.4500		0.0000	1.0000
68	Uniform Force	Global Z	-1.4500		0.0000	1.0000
69	Uniform Force	Global Z	-1.4500		0.0000	1.0000
70	Uniform Force	Global Z	-1.4500		0.0000	1.0000
71	Uniform Force	Global Z	-1.4500		0.0000	1.0000
72	Uniform Force	Global Z	-1.4500		0.0000	1.0000
73	Uniform Force	Global Z	-1.4500		0.0000	1.0000
74	Uniform Force	Global Z	-1.4500		0.0000	1.0000
75	Uniform Force	Global Z	-1.4500		0.0000	1.0000
76	Uniform Force	Global Z	-1.4500		0.0000	1.0000
77	Uniform Force	Global Z	-1.4500		0.0000	1.0000
78	Uniform Force	Global Z	-1.4500		0.0000	1.0000
79	Uniform Force	Global Z	-1.4500		0.0000	1.0000
80	Uniform Force	Global Z	-1.4500		0.0000	1.0000
81	Uniform Force	Global Z	-1.4500		0.0000	1.0000

LOAD CASE DC-Barriers, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
82	Uniform Force	Global Z	-1.4500		0.0000	1.0000
83	Uniform Force	Global Z	-1.4500		0.0000	1.0000
84	Uniform Force	Global Z	-1.4500		0.0000	1.0000
85	Uniform Force	Global Z	-1.4500		0.0000	1.0000
86	Uniform Force	Global Z	-1.4500		0.0000	1.0000
87	Uniform Force	Global Z	-1.4500		0.0000	1.0000
88	Uniform Force	Global Z	-1.4500		0.0000	1.0000
89	Uniform Force	Global Z	-1.4500		0.0000	1.0000
90	Uniform Force	Global Z	-1.4500		0.0000	1.0000
91	Uniform Force	Global Z	-1.4500		0.0000	1.0000
92	Uniform Force	Global Z	-1.4500		0.0000	1.0000
93	Uniform Force	Global Z	-1.4500		0.0000	1.0000
94	Uniform Force	Global Z	-1.4500		0.0000	1.0000
95	Uniform Force	Global Z	-1.4500		0.0000	1.0000
96	Uniform Force	Global Z	-1.4500		0.0000	1.0000
97	Uniform Force	Global Z	-1.4500		0.0000	1.0000
98	Uniform Force	Global Z	-1.4500		0.0000	1.0000
99	Uniform Force	Global Z	-1.4500		0.0000	1.0000
100	Uniform Force	Global Z	-1.4500		0.0000	1.0000
101	Uniform Force	Global Z	-1.4500		0.0000	1.0000
102	Uniform Force	Global Z	-1.4500		0.0000	1.0000
103	Uniform Force	Global Z	-1.4500		0.0000	1.0000
104	Uniform Force	Global Z	-1.4500		0.0000	1.0000
105	Uniform Force	Global Z	-1.4500		0.0000	1.0000
106	Uniform Force	Global Z	-1.4500		0.0000	1.0000
107	Uniform Force	Global Z	-1.4500		0.0000	1.0000
108	Uniform Force	Global Z	-1.4500		0.0000	1.0000
109	Uniform Force	Global Z	-1.4500		0.0000	1.0000
110	Uniform Force	Global Z	-1.4500		0.0000	1.0000
111	Uniform Force	Global Z	-1.4500		0.0000	1.0000
112	Uniform Force	Global Z	-1.4500		0.0000	1.0000
113	Uniform Force	Global Z	-1.4500		0.0000	1.0000
114	Uniform Force	Global Z	-1.4500		0.0000	1.0000
115	Uniform Force	Global Z	-1.4500		0.0000	1.0000

LOAD CASE DC-Barriers, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
116	Uniform Force	Global Z	-1.4500		0.0000	1.0000
117	Uniform Force	Global Z	-1.4500		0.0000	1.0000
118	Uniform Force	Global Z	-1.4500		0.0000	1.0000
119	Uniform Force	Global Z	-1.4500		0.0000	1.0000
120	Uniform Force	Global Z	-1.4500		0.0000	1.0000
121	Uniform Force	Global Z	-1.4500		0.0000	1.0000
122	Uniform Force	Global Z	-1.4500		0.0000	1.0000
123	Uniform Force	Global Z	-1.4500		0.0000	1.0000
124	Uniform Force	Global Z	-1.4500		0.0000	1.0000
125	Uniform Force	Global Z	-1.4500		0.0000	1.0000
126	Uniform Force	Global Z	-1.4500		0.0000	1.0000
127	Uniform Force	Global Z	-1.4500		0.0000	1.0000
128	Uniform Force	Global Z	-1.4500		0.0000	1.0000
129	Uniform Force	Global Z	-1.4500		0.0000	1.0000
130	Uniform Force	Global Z	-1.4500		0.0000	1.0000
131	Uniform Force	Global Z	-1.4500		0.0000	1.0000
132	Uniform Force	Global Z	-1.4500		0.0000	1.0000
133	Uniform Force	Global Z	-1.4500		0.0000	1.0000
134	Uniform Force	Global Z	-1.4500		0.0000	1.0000
135	Uniform Force	Global Z	-1.4500		0.0000	1.0000
136	Uniform Force	Global Z	-1.4500		0.0000	1.0000
137	Uniform Force	Global Z	-1.4500		0.0000	1.0000
138	Uniform Force	Global Z	-1.4500		0.0000	1.0000
139	Uniform Force	Global Z	-1.4500		0.0000	1.0000
140	Uniform Force	Global Z	-1.4500		0.0000	1.0000
141	Uniform Force	Global Z	-1.4500		0.0000	1.0000
142	Uniform Force	Global Z	-1.4500		0.0000	1.0000
143	Uniform Force	Global Z	-1.4500		0.0000	1.0000
144	Uniform Force	Global Z	-1.4500		0.0000	1.0000
145	Uniform Force	Global Z	-1.4500		0.0000	1.0000
146	Uniform Force	Global Z	-1.4500		0.0000	1.0000
147	Uniform Force	Global Z	-1.4500		0.0000	1.0000
148	Uniform Force	Global Z	-1.4500		0.0000	1.0000
149	Uniform Force	Global Z	-1.4500		0.0000	1.0000

LOAD CASE DC-Barriers, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
150	Uniform Force	Global Z	-1.4500		0.0000	1.0000
151	Uniform Force	Global Z	-1.4500		0.0000	1.0000
152	Uniform Force	Global Z	-1.4500		0.0000	1.0000
153	Uniform Force	Global Z	-1.4500		0.0000	1.0000
154	Uniform Force	Global Z	-1.4500		0.0000	1.0000
155	Uniform Force	Global Z	-1.4500		0.0000	1.0000

LOAD CASE DC-LRT, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
1	Uniform Force	Global Z	-3.4300		0.0000	1.0000
2	Uniform Force	Global Z	-3.4300		0.0000	1.0000
3	Uniform Force	Global Z	-3.4300		0.0000	1.0000
4	Uniform Force	Global Z	-3.4300		0.0000	1.0000
5	Uniform Force	Global Z	-3.4300		0.0000	1.0000
6	Uniform Force	Global Z	-3.4300		0.0000	1.0000
7	Uniform Force	Global Z	-3.4300		0.0000	1.0000
8	Uniform Force	Global Z	-3.6690		0.0000	1.0000
9	Uniform Force	Global Z	-4.4550		0.0000	1.0000
10	Uniform Force	Global Z	-5.5300		0.0000	1.0000
11	Uniform Force	Global Z	-6.3870		0.0000	1.0000
12	Uniform Force	Global Z	-7.0540		0.0000	1.0000
13	Uniform Force	Global Z	-7.8200		0.0000	1.0000
14	Uniform Force	Global Z	-8.7730		0.0000	1.0000
15	Uniform Force	Global Z	-9.2970		0.0000	1.0000
16	Uniform Force	Global Z	-9.2970		0.0000	1.0000
17	Uniform Force	Global Z	-8.7730		0.0000	1.0000
18	Uniform Force	Global Z	-7.8200		0.0000	1.0000
19	Uniform Force	Global Z	-7.0530		0.0000	1.0000
20	Uniform Force	Global Z	-6.3870		0.0000	1.0000
21	Uniform Force	Global Z	-5.5290		0.0000	1.0000
22	Uniform Force	Global Z	-4.4550		0.0000	1.0000
23	Uniform Force	Global Z	-3.6690		0.0000	1.0000

LOAD CASE DC-LRT, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
24	Uniform Force	Global Z	-3.4300		0.0000	1.0000
25	Uniform Force	Global Z	-3.4300		0.0000	1.0000
26	Uniform Force	Global Z	-3.4300		0.0000	1.0000
27	Uniform Force	Global Z	-3.4300		0.0000	1.0000
28	Uniform Force	Global Z	-3.4300		0.0000	1.0000
29	Uniform Force	Global Z	-3.4300		0.0000	1.0000
30	Uniform Force	Global Z	-3.4300		0.0000	1.0000
31	Uniform Force	Global Z	-3.4300		0.0000	1.0000
32	Uniform Force	Global Z	-3.4300		0.0000	1.0000
33	Uniform Force	Global Z	-3.6690		0.0000	1.0000
34	Uniform Force	Global Z	-4.4550		0.0000	1.0000
35	Uniform Force	Global Z	-5.5290		0.0000	1.0000
36	Uniform Force	Global Z	-6.3870		0.0000	1.0000
37	Uniform Force	Global Z	-7.0530		0.0000	1.0000
38	Uniform Force	Global Z	-7.8200		0.0000	1.0000
39	Uniform Force	Global Z	-8.7730		0.0000	1.0000
40	Uniform Force	Global Z	-9.2970		0.0000	1.0000
41	Uniform Force	Global Z	-9.2970		0.0000	1.0000
42	Uniform Force	Global Z	-8.7740		0.0000	1.0000
43	Uniform Force	Global Z	-7.8220		0.0000	1.0000
44	Uniform Force	Global Z	-7.0570		0.0000	1.0000
45	Uniform Force	Global Z	-6.3900		0.0000	1.0000
46	Uniform Force	Global Z	-5.5500		0.0000	1.0000
47	Uniform Force	Global Z	-4.4740		0.0000	1.0000
48	Uniform Force	Global Z	-3.6690		0.0000	1.0000
49	Uniform Force	Global Z	-3.4300		0.0000	1.0000
50	Uniform Force	Global Z	-3.4300		0.0000	1.0000
51	Uniform Force	Global Z	-3.4300		0.0000	1.0000
52	Uniform Force	Global Z	-3.4300		0.0000	1.0000
53	Uniform Force	Global Z	-3.4300		0.0000	1.0000
54	Uniform Force	Global Z	-3.4300		0.0000	1.0000
55	Uniform Force	Global Z	-3.4300		0.0000	1.0000
56	Uniform Force	Global Z	-3.4300		0.0000	1.0000
57	Uniform Force	Global Z	-3.4300		0.0000	1.0000

LOAD CASE DC-LRT, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
58	Uniform Force	Global Z	-3.6690		0.0000	1.0000
59	Uniform Force	Global Z	-4.4740		0.0000	1.0000
60	Uniform Force	Global Z	-5.5500		0.0000	1.0000
61	Uniform Force	Global Z	-6.3900		0.0000	1.0000
62	Uniform Force	Global Z	-7.0570		0.0000	1.0000
63	Uniform Force	Global Z	-7.8220		0.0000	1.0000
64	Uniform Force	Global Z	-8.7740		0.0000	1.0000
65	Uniform Force	Global Z	-9.2970		0.0000	1.0000
66	Uniform Force	Global Z	-9.2970		0.0000	1.0000
67	Uniform Force	Global Z	-8.7750		0.0000	1.0000
68	Uniform Force	Global Z	-7.8240		0.0000	1.0000
69	Uniform Force	Global Z	-7.0600		0.0000	1.0000
70	Uniform Force	Global Z	-6.3940		0.0000	1.0000
71	Uniform Force	Global Z	-5.5710		0.0000	1.0000
72	Uniform Force	Global Z	-4.4940		0.0000	1.0000
73	Uniform Force	Global Z	-3.6690		0.0000	1.0000
74	Uniform Force	Global Z	-3.4300		0.0000	1.0000
75	Uniform Force	Global Z	-3.4300		0.0000	1.0000
76	Uniform Force	Global Z	-3.4300		0.0000	1.0000
77	Uniform Force	Global Z	-3.4300		0.0000	1.0000
78	Uniform Force	Global Z	-3.4300		0.0000	1.0000
79	Uniform Force	Global Z	-3.4300		0.0000	1.0000
80	Uniform Force	Global Z	-3.4300		0.0000	1.0000
81	Uniform Force	Global Z	-3.4300		0.0000	1.0000
82	Uniform Force	Global Z	-3.4300		0.0000	1.0000
83	Uniform Force	Global Z	-3.6690		0.0000	1.0000
84	Uniform Force	Global Z	-4.4940		0.0000	1.0000
85	Uniform Force	Global Z	-5.5710		0.0000	1.0000
86	Uniform Force	Global Z	-6.3940		0.0000	1.0000
87	Uniform Force	Global Z	-7.0600		0.0000	1.0000
88	Uniform Force	Global Z	-7.8240		0.0000	1.0000
89	Uniform Force	Global Z	-8.7750		0.0000	1.0000
90	Uniform Force	Global Z	-9.2970		0.0000	1.0000
91	Uniform Force	Global Z	-9.2970		0.0000	1.0000

LOAD CASE DC-LRT, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
92	Uniform Force	Global Z	-8.7740		0.0000	1.0000
93	Uniform Force	Global Z	-7.8220		0.0000	1.0000
94	Uniform Force	Global Z	-7.0580		0.0000	1.0000
95	Uniform Force	Global Z	-6.3910		0.0000	1.0000
96	Uniform Force	Global Z	-5.5570		0.0000	1.0000
97	Uniform Force	Global Z	-4.4800		0.0000	1.0000
98	Uniform Force	Global Z	-3.6690		0.0000	1.0000
99	Uniform Force	Global Z	-3.4300		0.0000	1.0000
100	Uniform Force	Global Z	-3.4300		0.0000	1.0000
101	Uniform Force	Global Z	-3.4300		0.0000	1.0000
102	Uniform Force	Global Z	-3.4300		0.0000	1.0000
103	Uniform Force	Global Z	-3.4300		0.0000	1.0000
104	Uniform Force	Global Z	-3.4300		0.0000	1.0000
105	Uniform Force	Global Z	-3.4300		0.0000	1.0000
106	Uniform Force	Global Z	-3.4300		0.0000	1.0000
107	Uniform Force	Global Z	-3.4300		0.0000	1.0000
108	Uniform Force	Global Z	-3.6690		0.0000	1.0000
109	Uniform Force	Global Z	-4.4800		0.0000	1.0000
110	Uniform Force	Global Z	-5.5570		0.0000	1.0000
111	Uniform Force	Global Z	-6.3910		0.0000	1.0000
112	Uniform Force	Global Z	-7.0580		0.0000	1.0000
113	Uniform Force	Global Z	-7.8220		0.0000	1.0000
114	Uniform Force	Global Z	-8.7740		0.0000	1.0000
115	Uniform Force	Global Z	-9.2970		0.0000	1.0000
116	Uniform Force	Global Z	-9.2970		0.0000	1.0000
117	Uniform Force	Global Z	-8.7740		0.0000	1.0000
118	Uniform Force	Global Z	-7.8220		0.0000	1.0000
119	Uniform Force	Global Z	-7.0580		0.0000	1.0000
120	Uniform Force	Global Z	-6.3910		0.0000	1.0000
121	Uniform Force	Global Z	-5.5560		0.0000	1.0000
122	Uniform Force	Global Z	-4.4790		0.0000	1.0000
123	Uniform Force	Global Z	-3.6690		0.0000	1.0000
124	Uniform Force	Global Z	-3.4300		0.0000	1.0000
125	Uniform Force	Global Z	-3.4300		0.0000	1.0000

LOAD CASE DC-LRT, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
126	Uniform Force	Global Z	-3.4300		0.0000	1.0000
127	Uniform Force	Global Z	-3.4300		0.0000	1.0000
128	Uniform Force	Global Z	-3.4300		0.0000	1.0000
129	Uniform Force	Global Z	-3.4300		0.0000	1.0000
130	Uniform Force	Global Z	-3.4300		0.0000	1.0000
131	Uniform Force	Global Z	-3.4300		0.0000	1.0000
132	Uniform Force	Global Z	-3.4300		0.0000	1.0000
133	Uniform Force	Global Z	-3.6690		0.0000	1.0000
134	Uniform Force	Global Z	-4.4790		0.0000	1.0000
135	Uniform Force	Global Z	-5.5560		0.0000	1.0000
136	Uniform Force	Global Z	-6.3910		0.0000	1.0000
137	Uniform Force	Global Z	-7.0580		0.0000	1.0000
138	Uniform Force	Global Z	-7.8220		0.0000	1.0000
139	Uniform Force	Global Z	-8.7740		0.0000	1.0000
140	Uniform Force	Global Z	-9.2970		0.0000	1.0000
141	Uniform Force	Global Z	-9.2970		0.0000	1.0000
142	Uniform Force	Global Z	-8.7740		0.0000	1.0000
143	Uniform Force	Global Z	-7.8220		0.0000	1.0000
144	Uniform Force	Global Z	-7.0570		0.0000	1.0000
145	Uniform Force	Global Z	-6.3910		0.0000	1.0000
146	Uniform Force	Global Z	-5.5530		0.0000	1.0000
147	Uniform Force	Global Z	-4.4770		0.0000	1.0000
148	Uniform Force	Global Z	-3.6690		0.0000	1.0000
149	Uniform Force	Global Z	-3.4300		0.0000	1.0000
150	Uniform Force	Global Z	-3.4300		0.0000	1.0000
151	Uniform Force	Global Z	-3.4300		0.0000	1.0000
152	Uniform Force	Global Z	-3.4300		0.0000	1.0000
153	Uniform Force	Global Z	-3.4300		0.0000	1.0000
154	Uniform Force	Global Z	-3.4300		0.0000	1.0000
155	Uniform Force	Global Z	-3.4300		0.0000	1.0000

LOAD CASE DW-Wearing Surface, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
1	Uniform Force	Global Z	-3.1360		0.0000	1.0000
2	Uniform Force	Global Z	-3.1170		0.0000	1.0000
3	Uniform Force	Global Z	-3.0870		0.0000	1.0000
4	Uniform Force	Global Z	-3.0580		0.0000	1.0000
5	Uniform Force	Global Z	-3.0290		0.0000	1.0000
6	Uniform Force	Global Z	-3.0000		0.0000	1.0000
7	Uniform Force	Global Z	-2.9710		0.0000	1.0000
8	Uniform Force	Global Z	-2.9490		0.0000	1.0000
9	Uniform Force	Global Z	-2.9200		0.0000	1.0000
10	Uniform Force	Global Z	-2.8810		0.0000	1.0000
11	Uniform Force	Global Z	-2.8500		0.0000	1.0000
12	Uniform Force	Global Z	-2.8180		0.0000	1.0000
13	Uniform Force	Global Z	-2.7850		0.0000	1.0000
14	Uniform Force	Global Z	-2.7500		0.0000	1.0000
15	Uniform Force	Global Z	-2.7250		0.0000	1.0000
16	Uniform Force	Global Z	-2.7120		0.0000	1.0000
17	Uniform Force	Global Z	-2.6880		0.0000	1.0000
18	Uniform Force	Global Z	-2.6510		0.0000	1.0000
19	Uniform Force	Global Z	-2.6150		0.0000	1.0000
20	Uniform Force	Global Z	-2.5790		0.0000	1.0000
21	Uniform Force	Global Z	-2.5430		0.0000	1.0000
22	Uniform Force	Global Z	-2.5060		0.0000	1.0000
23	Uniform Force	Global Z	-2.4700		0.0000	1.0000
24	Uniform Force	Global Z	-2.4340		0.0000	1.0000
25	Uniform Force	Global Z	-2.3970		0.0000	1.0000
26	Uniform Force	Global Z	-2.3610		0.0000	1.0000
27	Uniform Force	Global Z	-2.3250		0.0000	1.0000
28	Uniform Force	Global Z	-2.2880		0.0000	1.0000
29	Uniform Force	Global Z	-2.2520		0.0000	1.0000
30	Uniform Force	Global Z	-2.2170		0.0000	1.0000
31	Uniform Force	Global Z	-2.2000		0.0000	1.0000
32	Uniform Force	Global Z	-2.2000		0.0000	1.0000

LOAD CASE DW-Wearing Surface, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
33	Uniform Force	Global Z	-2.2000		0.0000	1.0000
34	Uniform Force	Global Z	-2.2000		0.0000	1.0000
35	Uniform Force	Global Z	-2.2000		0.0000	1.0000
36	Uniform Force	Global Z	-2.2000		0.0000	1.0000
37	Uniform Force	Global Z	-2.2000		0.0000	1.0000
38	Uniform Force	Global Z	-2.2000		0.0000	1.0000
39	Uniform Force	Global Z	-2.2000		0.0000	1.0000
40	Uniform Force	Global Z	-2.2000		0.0000	1.0000
41	Uniform Force	Global Z	-2.2000		0.0000	1.0000
42	Uniform Force	Global Z	-2.2000		0.0000	1.0000
43	Uniform Force	Global Z	-2.2000		0.0000	1.0000
44	Uniform Force	Global Z	-2.2000		0.0000	1.0000
45	Uniform Force	Global Z	-2.2000		0.0000	1.0000
46	Uniform Force	Global Z	-2.2000		0.0000	1.0000
47	Uniform Force	Global Z	-2.2000		0.0000	1.0000
48	Uniform Force	Global Z	-2.2000		0.0000	1.0000
49	Uniform Force	Global Z	-2.2000		0.0000	1.0000
50	Uniform Force	Global Z	-2.2000		0.0000	1.0000
51	Uniform Force	Global Z	-2.2000		0.0000	1.0000
52	Uniform Force	Global Z	-2.2000		0.0000	1.0000
53	Uniform Force	Global Z	-2.2000		0.0000	1.0000
54	Uniform Force	Global Z	-2.2000		0.0000	1.0000
55	Uniform Force	Global Z	-2.2000		0.0000	1.0000
56	Uniform Force	Global Z	-2.2000		0.0000	1.0000
57	Uniform Force	Global Z	-2.2000		0.0000	1.0000
58	Uniform Force	Global Z	-2.2000		0.0000	1.0000
59	Uniform Force	Global Z	-2.2000		0.0000	1.0000
60	Uniform Force	Global Z	-2.2000		0.0000	1.0000
61	Uniform Force	Global Z	-2.2000		0.0000	1.0000
62	Uniform Force	Global Z	-2.2000		0.0000	1.0000
63	Uniform Force	Global Z	-2.2000		0.0000	1.0000
64	Uniform Force	Global Z	-2.2000		0.0000	1.0000
65	Uniform Force	Global Z	-2.2000		0.0000	1.0000
66	Uniform Force	Global Z	-2.2000		0.0000	1.0000

LOAD CASE DW-Wearing Surface, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
67	Uniform Force	Global Z	-2.2000		0.0000	1.0000
68	Uniform Force	Global Z	-2.2000		0.0000	1.0000
69	Uniform Force	Global Z	-2.2000		0.0000	1.0000
70	Uniform Force	Global Z	-2.2000		0.0000	1.0000
71	Uniform Force	Global Z	-2.2000		0.0000	1.0000
72	Uniform Force	Global Z	-2.2000		0.0000	1.0000
73	Uniform Force	Global Z	-2.2000		0.0000	1.0000
74	Uniform Force	Global Z	-2.2000		0.0000	1.0000
75	Uniform Force	Global Z	-2.2000		0.0000	1.0000
76	Uniform Force	Global Z	-2.2000		0.0000	1.0000
77	Uniform Force	Global Z	-2.2000		0.0000	1.0000
78	Uniform Force	Global Z	-2.2000		0.0000	1.0000
79	Uniform Force	Global Z	-2.2000		0.0000	1.0000
80	Uniform Force	Global Z	-2.2000		0.0000	1.0000
81	Uniform Force	Global Z	-2.2000		0.0000	1.0000
82	Uniform Force	Global Z	-2.2000		0.0000	1.0000
83	Uniform Force	Global Z	-2.2000		0.0000	1.0000
84	Uniform Force	Global Z	-2.2000		0.0000	1.0000
85	Uniform Force	Global Z	-2.2000		0.0000	1.0000
86	Uniform Force	Global Z	-2.2000		0.0000	1.0000
87	Uniform Force	Global Z	-2.2000		0.0000	1.0000
88	Uniform Force	Global Z	-2.2000		0.0000	1.0000
89	Uniform Force	Global Z	-2.2000		0.0000	1.0000
90	Uniform Force	Global Z	-2.2000		0.0000	1.0000
91	Uniform Force	Global Z	-2.2000		0.0000	1.0000
92	Uniform Force	Global Z	-2.2000		0.0000	1.0000
93	Uniform Force	Global Z	-2.2000		0.0000	1.0000
94	Uniform Force	Global Z	-2.2000		0.0000	1.0000
95	Uniform Force	Global Z	-2.2000		0.0000	1.0000
96	Uniform Force	Global Z	-2.2030		0.0000	1.0000
97	Uniform Force	Global Z	-2.2160		0.0000	1.0000
98	Uniform Force	Global Z	-2.2370		0.0000	1.0000
99	Uniform Force	Global Z	-2.2590		0.0000	1.0000
100	Uniform Force	Global Z	-2.2800		0.0000	1.0000

LOAD CASE DW-Wearing Surface, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
101	Uniform Force	Global Z	-2.3010		0.0000	1.0000
102	Uniform Force	Global Z	-2.3220		0.0000	1.0000
103	Uniform Force	Global Z	-2.3440		0.0000	1.0000
104	Uniform Force	Global Z	-2.3540		0.0000	1.0000
105	Uniform Force	Global Z	-2.3760		0.0000	1.0000
106	Uniform Force	Global Z	-2.4070		0.0000	1.0000
107	Uniform Force	Global Z	-2.4280		0.0000	1.0000
108	Uniform Force	Global Z	-2.4500		0.0000	1.0000
109	Uniform Force	Global Z	-2.4710		0.0000	1.0000
110	Uniform Force	Global Z	-2.4920		0.0000	1.0000
111	Uniform Force	Global Z	-2.5130		0.0000	1.0000
112	Uniform Force	Global Z	-2.5250		0.0000	1.0000
113	Uniform Force	Global Z	-2.5250		0.0000	1.0000
114	Uniform Force	Global Z	-2.5250		0.0000	1.0000
115	Uniform Force	Global Z	-2.5250		0.0000	1.0000
116	Uniform Force	Global Z	-2.5250		0.0000	1.0000
117	Uniform Force	Global Z	-2.5250		0.0000	1.0000
118	Uniform Force	Global Z	-2.5250		0.0000	1.0000
119	Uniform Force	Global Z	-2.5250		0.0000	1.0000
120	Uniform Force	Global Z	-2.5250		0.0000	1.0000
121	Uniform Force	Global Z	-2.5250		0.0000	1.0000
122	Uniform Force	Global Z	-2.5250		0.0000	1.0000
123	Uniform Force	Global Z	-2.5250		0.0000	1.0000
124	Uniform Force	Global Z	-2.5250		0.0000	1.0000
125	Uniform Force	Global Z	-2.5250		0.0000	1.0000
126	Uniform Force	Global Z	-2.5250		0.0000	1.0000
127	Uniform Force	Global Z	-2.5250		0.0000	1.0000
128	Uniform Force	Global Z	-2.5270		0.0000	1.0000
129	Uniform Force	Global Z	-2.5350		0.0000	1.0000
130	Uniform Force	Global Z	-2.5450		0.0000	1.0000
131	Uniform Force	Global Z	-2.5550		0.0000	1.0000
132	Uniform Force	Global Z	-2.5650		0.0000	1.0000
133	Uniform Force	Global Z	-2.5750		0.0000	1.0000
134	Uniform Force	Global Z	-2.5850		0.0000	1.0000

LOAD CASE DW-Wearing Surface, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
135	Uniform Force	Global Z	-2.5950		0.0000	1.0000
136	Uniform Force	Global Z	-2.6050		0.0000	1.0000
137	Uniform Force	Global Z	-2.6170		0.0000	1.0000
138	Uniform Force	Global Z	-2.6270		0.0000	1.0000
139	Uniform Force	Global Z	-2.6350		0.0000	1.0000
140	Uniform Force	Global Z	-2.6420		0.0000	1.0000
141	Uniform Force	Global Z	-2.6460		0.0000	1.0000
142	Uniform Force	Global Z	-2.6530		0.0000	1.0000
143	Uniform Force	Global Z	-2.6630		0.0000	1.0000
144	Uniform Force	Global Z	-2.6730		0.0000	1.0000
145	Uniform Force	Global Z	-2.6830		0.0000	1.0000
146	Uniform Force	Global Z	-2.6930		0.0000	1.0000
147	Uniform Force	Global Z	-2.7030		0.0000	1.0000
148	Uniform Force	Global Z	-2.7130		0.0000	1.0000
149	Uniform Force	Global Z	-2.7230		0.0000	1.0000
150	Uniform Force	Global Z	-2.7330		0.0000	1.0000
151	Uniform Force	Global Z	-2.7430		0.0000	1.0000
152	Uniform Force	Global Z	-2.7530		0.0000	1.0000
153	Uniform Force	Global Z	-2.7630		0.0000	1.0000
154	Uniform Force	Global Z	-2.7730		0.0000	1.0000
155	Uniform Force	Global Z	-2.7800		0.0000	1.0000

LOAD CASE DW-Utilities, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
1	Uniform Force	Global Z	-0.3000		0.0000	1.0000
2	Uniform Force	Global Z	-0.3000		0.0000	1.0000
3	Uniform Force	Global Z	-0.3000		0.0000	1.0000
4	Uniform Force	Global Z	-0.3000		0.0000	1.0000
5	Uniform Force	Global Z	-0.3000		0.0000	1.0000
6	Uniform Force	Global Z	-0.3000		0.0000	1.0000
7	Uniform Force	Global Z	-0.3000		0.0000	1.0000
8	Uniform Force	Global Z	-0.3000		0.0000	1.0000

LOAD CASE DW-Utilities, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
9	Uniform Force	Global Z	-0.3000		0.0000	1.0000
10	Uniform Force	Global Z	-0.3000		0.0000	1.0000
11	Uniform Force	Global Z	-0.3000		0.0000	1.0000
12	Uniform Force	Global Z	-0.3000		0.0000	1.0000
13	Uniform Force	Global Z	-0.3000		0.0000	1.0000
14	Uniform Force	Global Z	-0.3000		0.0000	1.0000
15	Uniform Force	Global Z	-0.3000		0.0000	1.0000
16	Uniform Force	Global Z	-0.3000		0.0000	1.0000
17	Uniform Force	Global Z	-0.3000		0.0000	1.0000
18	Uniform Force	Global Z	-0.3000		0.0000	1.0000
19	Uniform Force	Global Z	-0.3000		0.0000	1.0000
20	Uniform Force	Global Z	-0.3000		0.0000	1.0000
21	Uniform Force	Global Z	-0.3000		0.0000	1.0000
22	Uniform Force	Global Z	-0.3000		0.0000	1.0000
23	Uniform Force	Global Z	-0.3000		0.0000	1.0000
24	Uniform Force	Global Z	-0.3000		0.0000	1.0000
25	Uniform Force	Global Z	-0.3000		0.0000	1.0000
26	Uniform Force	Global Z	-0.3000		0.0000	1.0000
27	Uniform Force	Global Z	-0.3000		0.0000	1.0000
28	Uniform Force	Global Z	-0.3000		0.0000	1.0000
29	Uniform Force	Global Z	-0.3000		0.0000	1.0000
30	Uniform Force	Global Z	-0.3000		0.0000	1.0000
31	Uniform Force	Global Z	-0.3000		0.0000	1.0000
32	Uniform Force	Global Z	-0.3000		0.0000	1.0000
33	Uniform Force	Global Z	-0.3000		0.0000	1.0000
34	Uniform Force	Global Z	-0.3000		0.0000	1.0000
35	Uniform Force	Global Z	-0.3000		0.0000	1.0000
36	Uniform Force	Global Z	-0.3000		0.0000	1.0000
37	Uniform Force	Global Z	-0.3000		0.0000	1.0000
38	Uniform Force	Global Z	-0.3000		0.0000	1.0000
39	Uniform Force	Global Z	-0.3000		0.0000	1.0000
40	Uniform Force	Global Z	-0.3000		0.0000	1.0000
41	Uniform Force	Global Z	-0.3000		0.0000	1.0000
42	Uniform Force	Global Z	-0.3000		0.0000	1.0000

LOAD CASE DW-Utilities, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
43	Uniform Force	Global Z	-0.3000		0.0000	1.0000
44	Uniform Force	Global Z	-0.3000		0.0000	1.0000
45	Uniform Force	Global Z	-0.3000		0.0000	1.0000
46	Uniform Force	Global Z	-0.3000		0.0000	1.0000
47	Uniform Force	Global Z	-0.3000		0.0000	1.0000
48	Uniform Force	Global Z	-0.3000		0.0000	1.0000
49	Uniform Force	Global Z	-0.3000		0.0000	1.0000
50	Uniform Force	Global Z	-0.3000		0.0000	1.0000
51	Uniform Force	Global Z	-0.3000		0.0000	1.0000
52	Uniform Force	Global Z	-0.3000		0.0000	1.0000
53	Uniform Force	Global Z	-0.3000		0.0000	1.0000
54	Uniform Force	Global Z	-0.3000		0.0000	1.0000
55	Uniform Force	Global Z	-0.3000		0.0000	1.0000
56	Uniform Force	Global Z	-0.3000		0.0000	1.0000
57	Uniform Force	Global Z	-0.3000		0.0000	1.0000
58	Uniform Force	Global Z	-0.3000		0.0000	1.0000
59	Uniform Force	Global Z	-0.3000		0.0000	1.0000
60	Uniform Force	Global Z	-0.3000		0.0000	1.0000
61	Uniform Force	Global Z	-0.3000		0.0000	1.0000
62	Uniform Force	Global Z	-0.3000		0.0000	1.0000
63	Uniform Force	Global Z	-0.3000		0.0000	1.0000
64	Uniform Force	Global Z	-0.3000		0.0000	1.0000
65	Uniform Force	Global Z	-0.3000		0.0000	1.0000
66	Uniform Force	Global Z	-0.3000		0.0000	1.0000
67	Uniform Force	Global Z	-0.3000		0.0000	1.0000
68	Uniform Force	Global Z	-0.3000		0.0000	1.0000
69	Uniform Force	Global Z	-0.3000		0.0000	1.0000
70	Uniform Force	Global Z	-0.3000		0.0000	1.0000
71	Uniform Force	Global Z	-0.3000		0.0000	1.0000
72	Uniform Force	Global Z	-0.3000		0.0000	1.0000
73	Uniform Force	Global Z	-0.3000		0.0000	1.0000
74	Uniform Force	Global Z	-0.3000		0.0000	1.0000
75	Uniform Force	Global Z	-0.3000		0.0000	1.0000
76	Uniform Force	Global Z	-0.3000		0.0000	1.0000

LOAD CASE DW-Utilities, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
77	Uniform Force	Global Z	-0.3000		0.0000	1.0000
78	Uniform Force	Global Z	-0.3000		0.0000	1.0000
79	Uniform Force	Global Z	-0.3000		0.0000	1.0000
80	Uniform Force	Global Z	-0.3000		0.0000	1.0000
81	Uniform Force	Global Z	-0.3000		0.0000	1.0000
82	Uniform Force	Global Z	-0.3000		0.0000	1.0000
83	Uniform Force	Global Z	-0.3000		0.0000	1.0000
84	Uniform Force	Global Z	-0.3000		0.0000	1.0000
85	Uniform Force	Global Z	-0.3000		0.0000	1.0000
86	Uniform Force	Global Z	-0.3000		0.0000	1.0000
87	Uniform Force	Global Z	-0.3000		0.0000	1.0000
88	Uniform Force	Global Z	-0.3000		0.0000	1.0000
89	Uniform Force	Global Z	-0.3000		0.0000	1.0000
90	Uniform Force	Global Z	-0.3000		0.0000	1.0000
91	Uniform Force	Global Z	-0.3000		0.0000	1.0000
92	Uniform Force	Global Z	-0.3000		0.0000	1.0000
93	Uniform Force	Global Z	-0.3000		0.0000	1.0000
94	Uniform Force	Global Z	-0.3000		0.0000	1.0000
95	Uniform Force	Global Z	-0.3000		0.0000	1.0000
96	Uniform Force	Global Z	-0.3000		0.0000	1.0000
97	Uniform Force	Global Z	-0.3000		0.0000	1.0000
98	Uniform Force	Global Z	-0.3000		0.0000	1.0000
99	Uniform Force	Global Z	-0.3000		0.0000	1.0000
100	Uniform Force	Global Z	-0.3000		0.0000	1.0000
101	Uniform Force	Global Z	-0.3000		0.0000	1.0000
102	Uniform Force	Global Z	-0.3000		0.0000	1.0000
103	Uniform Force	Global Z	-0.3000		0.0000	1.0000
104	Uniform Force	Global Z	-0.3000		0.0000	1.0000
105	Uniform Force	Global Z	-0.3000		0.0000	1.0000
106	Uniform Force	Global Z	-0.3000		0.0000	1.0000
107	Uniform Force	Global Z	-0.3000		0.0000	1.0000
108	Uniform Force	Global Z	-0.3000		0.0000	1.0000
109	Uniform Force	Global Z	-0.3000		0.0000	1.0000
110	Uniform Force	Global Z	-0.3000		0.0000	1.0000

LOAD CASE DW-Utilities, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
111	Uniform Force	Global Z	-0.3000		0.0000	1.0000
112	Uniform Force	Global Z	-0.3000		0.0000	1.0000
113	Uniform Force	Global Z	-0.3000		0.0000	1.0000
114	Uniform Force	Global Z	-0.3000		0.0000	1.0000
115	Uniform Force	Global Z	-0.3000		0.0000	1.0000
116	Uniform Force	Global Z	-0.3000		0.0000	1.0000
117	Uniform Force	Global Z	-0.3000		0.0000	1.0000
118	Uniform Force	Global Z	-0.3000		0.0000	1.0000
119	Uniform Force	Global Z	-0.3000		0.0000	1.0000
120	Uniform Force	Global Z	-0.3000		0.0000	1.0000
121	Uniform Force	Global Z	-0.3000		0.0000	1.0000
122	Uniform Force	Global Z	-0.3000		0.0000	1.0000
123	Uniform Force	Global Z	-0.3000		0.0000	1.0000
124	Uniform Force	Global Z	-0.3000		0.0000	1.0000
125	Uniform Force	Global Z	-0.3000		0.0000	1.0000
126	Uniform Force	Global Z	-0.3000		0.0000	1.0000
127	Uniform Force	Global Z	-0.3000		0.0000	1.0000
128	Uniform Force	Global Z	-0.3000		0.0000	1.0000
129	Uniform Force	Global Z	-0.3000		0.0000	1.0000
130	Uniform Force	Global Z	-0.3000		0.0000	1.0000
131	Uniform Force	Global Z	-0.3000		0.0000	1.0000
132	Uniform Force	Global Z	-0.3000		0.0000	1.0000
133	Uniform Force	Global Z	-0.3000		0.0000	1.0000
134	Uniform Force	Global Z	-0.3000		0.0000	1.0000
135	Uniform Force	Global Z	-0.3000		0.0000	1.0000
136	Uniform Force	Global Z	-0.3000		0.0000	1.0000
137	Uniform Force	Global Z	-0.3000		0.0000	1.0000
138	Uniform Force	Global Z	-0.3000		0.0000	1.0000
139	Uniform Force	Global Z	-0.3000		0.0000	1.0000
140	Uniform Force	Global Z	-0.3000		0.0000	1.0000
141	Uniform Force	Global Z	-0.3000		0.0000	1.0000
142	Uniform Force	Global Z	-0.3000		0.0000	1.0000
143	Uniform Force	Global Z	-0.3000		0.0000	1.0000
144	Uniform Force	Global Z	-0.3000		0.0000	1.0000

LOAD CASE DW-Utilities, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
145	Uniform Force	Global Z	-0.3000		0.0000	1.0000
146	Uniform Force	Global Z	-0.3000		0.0000	1.0000
147	Uniform Force	Global Z	-0.3000		0.0000	1.0000
148	Uniform Force	Global Z	-0.3000		0.0000	1.0000
149	Uniform Force	Global Z	-0.3000		0.0000	1.0000
150	Uniform Force	Global Z	-0.3000		0.0000	1.0000
151	Uniform Force	Global Z	-0.3000		0.0000	1.0000
152	Uniform Force	Global Z	-0.3000		0.0000	1.0000
153	Uniform Force	Global Z	-0.3000		0.0000	1.0000
154	Uniform Force	Global Z	-0.3000		0.0000	1.0000
155	Uniform Force	Global Z	-0.3000		0.0000	1.0000

LOAD CASE TU-Rise, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
1	Uniform	n/a	50.0000		
2	Uniform	n/a	50.0000		
3	Uniform	n/a	50.0000		
4	Uniform	n/a	50.0000		
5	Uniform	n/a	50.0000		
6	Uniform	n/a	50.0000		
7	Uniform	n/a	50.0000		
8	Uniform	n/a	50.0000		
9	Uniform	n/a	50.0000		
10	Uniform	n/a	50.0000		
11	Uniform	n/a	50.0000		
12	Uniform	n/a	50.0000		
13	Uniform	n/a	50.0000		
14	Uniform	n/a	50.0000		
15	Uniform	n/a	50.0000		
16	Uniform	n/a	50.0000		
17	Uniform	n/a	50.0000		
18	Uniform	n/a	50.0000		

LOAD CASE TU-Rise, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
19	Uniform	n/a	50.0000		
20	Uniform	n/a	50.0000		
21	Uniform	n/a	50.0000		
22	Uniform	n/a	50.0000		
23	Uniform	n/a	50.0000		
24	Uniform	n/a	50.0000		
25	Uniform	n/a	50.0000		
26	Uniform	n/a	50.0000		
27	Uniform	n/a	50.0000		
28	Uniform	n/a	50.0000		
29	Uniform	n/a	50.0000		
30	Uniform	n/a	50.0000		
31	Uniform	n/a	50.0000		
32	Uniform	n/a	50.0000		
33	Uniform	n/a	50.0000		
34	Uniform	n/a	50.0000		
35	Uniform	n/a	50.0000		
36	Uniform	n/a	50.0000		
37	Uniform	n/a	50.0000		
38	Uniform	n/a	50.0000		
39	Uniform	n/a	50.0000		
40	Uniform	n/a	50.0000		
41	Uniform	n/a	50.0000		
42	Uniform	n/a	50.0000		
43	Uniform	n/a	50.0000		
44	Uniform	n/a	50.0000		
45	Uniform	n/a	50.0000		
46	Uniform	n/a	50.0000		
47	Uniform	n/a	50.0000		
48	Uniform	n/a	50.0000		
49	Uniform	n/a	50.0000		
50	Uniform	n/a	50.0000		
51	Uniform	n/a	50.0000		
52	Uniform	n/a	50.0000		

LOAD CASE TU-Rise, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
53	Uniform	n/a	50.0000		
54	Uniform	n/a	50.0000		
55	Uniform	n/a	50.0000		
56	Uniform	n/a	50.0000		
57	Uniform	n/a	50.0000		
58	Uniform	n/a	50.0000		
59	Uniform	n/a	50.0000		
60	Uniform	n/a	50.0000		
61	Uniform	n/a	50.0000		
62	Uniform	n/a	50.0000		
63	Uniform	n/a	50.0000		
64	Uniform	n/a	50.0000		
65	Uniform	n/a	50.0000		
66	Uniform	n/a	50.0000		
67	Uniform	n/a	50.0000		
68	Uniform	n/a	50.0000		
69	Uniform	n/a	50.0000		
70	Uniform	n/a	50.0000		
71	Uniform	n/a	50.0000		
72	Uniform	n/a	50.0000		
73	Uniform	n/a	50.0000		
74	Uniform	n/a	50.0000		
75	Uniform	n/a	50.0000		
76	Uniform	n/a	50.0000		
77	Uniform	n/a	50.0000		
78	Uniform	n/a	50.0000		
79	Uniform	n/a	50.0000		
80	Uniform	n/a	50.0000		
81	Uniform	n/a	50.0000		
82	Uniform	n/a	50.0000		
83	Uniform	n/a	50.0000		
84	Uniform	n/a	50.0000		
85	Uniform	n/a	50.0000		
86	Uniform	n/a	50.0000		

LOAD CASE TU-Rise, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
87	Uniform	n/a	50.0000		
88	Uniform	n/a	50.0000		
89	Uniform	n/a	50.0000		
90	Uniform	n/a	50.0000		
91	Uniform	n/a	50.0000		
92	Uniform	n/a	50.0000		
93	Uniform	n/a	50.0000		
94	Uniform	n/a	50.0000		
95	Uniform	n/a	50.0000		
96	Uniform	n/a	50.0000		
97	Uniform	n/a	50.0000		
98	Uniform	n/a	50.0000		
99	Uniform	n/a	50.0000		
100	Uniform	n/a	50.0000		
101	Uniform	n/a	50.0000		
102	Uniform	n/a	50.0000		
103	Uniform	n/a	50.0000		
104	Uniform	n/a	50.0000		
105	Uniform	n/a	50.0000		
106	Uniform	n/a	50.0000		
107	Uniform	n/a	50.0000		
108	Uniform	n/a	50.0000		
109	Uniform	n/a	50.0000		
110	Uniform	n/a	50.0000		
111	Uniform	n/a	50.0000		
112	Uniform	n/a	50.0000		
113	Uniform	n/a	50.0000		
114	Uniform	n/a	50.0000		
115	Uniform	n/a	50.0000		
116	Uniform	n/a	50.0000		
117	Uniform	n/a	50.0000		
118	Uniform	n/a	50.0000		
119	Uniform	n/a	50.0000		
120	Uniform	n/a	50.0000		

LOAD CASE TU-Rise, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
121	Uniform	n/a	50.0000		
122	Uniform	n/a	50.0000		
123	Uniform	n/a	50.0000		
124	Uniform	n/a	50.0000		
125	Uniform	n/a	50.0000		
126	Uniform	n/a	50.0000		
127	Uniform	n/a	50.0000		
128	Uniform	n/a	50.0000		
129	Uniform	n/a	50.0000		
130	Uniform	n/a	50.0000		
131	Uniform	n/a	50.0000		
132	Uniform	n/a	50.0000		
133	Uniform	n/a	50.0000		
134	Uniform	n/a	50.0000		
135	Uniform	n/a	50.0000		
136	Uniform	n/a	50.0000		
137	Uniform	n/a	50.0000		
138	Uniform	n/a	50.0000		
139	Uniform	n/a	50.0000		
140	Uniform	n/a	50.0000		
141	Uniform	n/a	50.0000		
142	Uniform	n/a	50.0000		
143	Uniform	n/a	50.0000		
144	Uniform	n/a	50.0000		
145	Uniform	n/a	50.0000		
146	Uniform	n/a	50.0000		
147	Uniform	n/a	50.0000		
148	Uniform	n/a	50.0000		
149	Uniform	n/a	50.0000		
150	Uniform	n/a	50.0000		
151	Uniform	n/a	50.0000		
152	Uniform	n/a	50.0000		
153	Uniform	n/a	50.0000		
154	Uniform	n/a	50.0000		

LOAD CASE TU-Rise, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
155	Uniform	n/a	50.0000		

LOAD CASE TU-Fall, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
1	Uniform	n/a	-50.0000		
2	Uniform	n/a	-50.0000		
3	Uniform	n/a	-50.0000		
4	Uniform	n/a	-50.0000		
5	Uniform	n/a	-50.0000		
6	Uniform	n/a	-50.0000		
7	Uniform	n/a	-50.0000		
8	Uniform	n/a	-50.0000		
9	Uniform	n/a	-50.0000		
10	Uniform	n/a	-50.0000		
11	Uniform	n/a	-50.0000		
12	Uniform	n/a	-50.0000		
13	Uniform	n/a	-50.0000		
14	Uniform	n/a	-50.0000		
15	Uniform	n/a	-50.0000		
16	Uniform	n/a	-50.0000		
17	Uniform	n/a	-50.0000		
18	Uniform	n/a	-50.0000		
19	Uniform	n/a	-50.0000		
20	Uniform	n/a	-50.0000		
21	Uniform	n/a	-50.0000		
22	Uniform	n/a	-50.0000		
23	Uniform	n/a	-50.0000		
24	Uniform	n/a	-50.0000		
25	Uniform	n/a	-50.0000		
26	Uniform	n/a	-50.0000		
27	Uniform	n/a	-50.0000		
28	Uniform	n/a	-50.0000		

LOAD CASE TU-Fall, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
29	Uniform	n/a	-50.0000		
30	Uniform	n/a	-50.0000		
31	Uniform	n/a	-50.0000		
32	Uniform	n/a	-50.0000		
33	Uniform	n/a	-50.0000		
34	Uniform	n/a	-50.0000		
35	Uniform	n/a	-50.0000		
36	Uniform	n/a	-50.0000		
37	Uniform	n/a	-50.0000		
38	Uniform	n/a	-50.0000		
39	Uniform	n/a	-50.0000		
40	Uniform	n/a	-50.0000		
41	Uniform	n/a	-50.0000		
42	Uniform	n/a	-50.0000		
43	Uniform	n/a	-50.0000		
44	Uniform	n/a	-50.0000		
45	Uniform	n/a	-50.0000		
46	Uniform	n/a	-50.0000		
47	Uniform	n/a	-50.0000		
48	Uniform	n/a	-50.0000		
49	Uniform	n/a	-50.0000		
50	Uniform	n/a	-50.0000		
51	Uniform	n/a	-50.0000		
52	Uniform	n/a	-50.0000		
53	Uniform	n/a	-50.0000		
54	Uniform	n/a	-50.0000		
55	Uniform	n/a	-50.0000		
56	Uniform	n/a	-50.0000		
57	Uniform	n/a	-50.0000		
58	Uniform	n/a	-50.0000		
59	Uniform	n/a	-50.0000		
60	Uniform	n/a	-50.0000		
61	Uniform	n/a	-50.0000		
62	Uniform	n/a	-50.0000		

LOAD CASE TU-Fall, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
63	Uniform	n/a	-50.0000		
64	Uniform	n/a	-50.0000		
65	Uniform	n/a	-50.0000		
66	Uniform	n/a	-50.0000		
67	Uniform	n/a	-50.0000		
68	Uniform	n/a	-50.0000		
69	Uniform	n/a	-50.0000		
70	Uniform	n/a	-50.0000		
71	Uniform	n/a	-50.0000		
72	Uniform	n/a	-50.0000		
73	Uniform	n/a	-50.0000		
74	Uniform	n/a	-50.0000		
75	Uniform	n/a	-50.0000		
76	Uniform	n/a	-50.0000		
77	Uniform	n/a	-50.0000		
78	Uniform	n/a	-50.0000		
79	Uniform	n/a	-50.0000		
80	Uniform	n/a	-50.0000		
81	Uniform	n/a	-50.0000		
82	Uniform	n/a	-50.0000		
83	Uniform	n/a	-50.0000		
84	Uniform	n/a	-50.0000		
85	Uniform	n/a	-50.0000		
86	Uniform	n/a	-50.0000		
87	Uniform	n/a	-50.0000		
88	Uniform	n/a	-50.0000		
89	Uniform	n/a	-50.0000		
90	Uniform	n/a	-50.0000		
91	Uniform	n/a	-50.0000		
92	Uniform	n/a	-50.0000		
93	Uniform	n/a	-50.0000		
94	Uniform	n/a	-50.0000		
95	Uniform	n/a	-50.0000		
96	Uniform	n/a	-50.0000		

LOAD CASE TU-Fall, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
97	Uniform	n/a	-50.0000		
98	Uniform	n/a	-50.0000		
99	Uniform	n/a	-50.0000		
100	Uniform	n/a	-50.0000		
101	Uniform	n/a	-50.0000		
102	Uniform	n/a	-50.0000		
103	Uniform	n/a	-50.0000		
104	Uniform	n/a	-50.0000		
105	Uniform	n/a	-50.0000		
106	Uniform	n/a	-50.0000		
107	Uniform	n/a	-50.0000		
108	Uniform	n/a	-50.0000		
109	Uniform	n/a	-50.0000		
110	Uniform	n/a	-50.0000		
111	Uniform	n/a	-50.0000		
112	Uniform	n/a	-50.0000		
113	Uniform	n/a	-50.0000		
114	Uniform	n/a	-50.0000		
115	Uniform	n/a	-50.0000		
116	Uniform	n/a	-50.0000		
117	Uniform	n/a	-50.0000		
118	Uniform	n/a	-50.0000		
119	Uniform	n/a	-50.0000		
120	Uniform	n/a	-50.0000		
121	Uniform	n/a	-50.0000		
122	Uniform	n/a	-50.0000		
123	Uniform	n/a	-50.0000		
124	Uniform	n/a	-50.0000		
125	Uniform	n/a	-50.0000		
126	Uniform	n/a	-50.0000		
127	Uniform	n/a	-50.0000		
128	Uniform	n/a	-50.0000		
129	Uniform	n/a	-50.0000		
130	Uniform	n/a	-50.0000		

LOAD CASE TU-Fall, Member Thermal Loads

Member	Type	Variation Direction	Temperature Change at Top (+ Edge)(°F)	Temperature Change at Bottom (- Edge)(°F)	Nonlinear Temperature Curve
131	Uniform	n/a	-50.0000		
132	Uniform	n/a	-50.0000		
133	Uniform	n/a	-50.0000		
134	Uniform	n/a	-50.0000		
135	Uniform	n/a	-50.0000		
136	Uniform	n/a	-50.0000		
137	Uniform	n/a	-50.0000		
138	Uniform	n/a	-50.0000		
139	Uniform	n/a	-50.0000		
140	Uniform	n/a	-50.0000		
141	Uniform	n/a	-50.0000		
142	Uniform	n/a	-50.0000		
143	Uniform	n/a	-50.0000		
144	Uniform	n/a	-50.0000		
145	Uniform	n/a	-50.0000		
146	Uniform	n/a	-50.0000		
147	Uniform	n/a	-50.0000		
148	Uniform	n/a	-50.0000		
149	Uniform	n/a	-50.0000		
150	Uniform	n/a	-50.0000		
151	Uniform	n/a	-50.0000		
152	Uniform	n/a	-50.0000		
153	Uniform	n/a	-50.0000		
154	Uniform	n/a	-50.0000		
155	Uniform	n/a	-50.0000		

LOAD CASE EQ 1, RSA

Name	Value
Response-Spectrum Curve in Direction 1	FEE Class E
Scale in Direction 1	1.0000
Response-Spectrum Curve in Direction 2	(none)
Scale in Direction 2	0.0000

LOAD CASE EQ 1, RSA

Name	Value
Response-Spectrum Curve in Global Z	(none)
Scale in Global Z	0.0000
Angle from Global X to Direction 1	0.0000
Modal Combination Method	CQC
Spatial Combination Method	SRSS
Modal Damping Ratio (if no curve)	0.0500
Sign Assigned to Results	No Sign
Modal Combination System	Global
Modal Damping Curve	(none)

LOAD CASE EQ 2, RSA

Name	Value
Response-Spectrum Curve in Direction 1	(none)
Scale in Direction 1	0.0000
Response-Spectrum Curve in Direction 2	FEE Class E
Scale in Direction 2	1.0000
Response-Spectrum Curve in Global Z	(none)
Scale in Global Z	0.0000
Angle from Global X to Direction 1	0.0000
Modal Combination Method	CQC
Spatial Combination Method	SRSS
Modal Damping Ratio (if no curve)	0.0500
Sign Assigned to Results	No Sign
Modal Combination System	Global
Modal Damping Curve	(none)

LOAD CASE EQ 3, RSA

Name	Value
Response-Spectrum Curve in Direction 1	(none)
Scale in Direction 1	0.0000
Response-Spectrum Curve in Direction 2	(none)

LOAD CASE EQ 3, RSA

Name	Value
Scale in Direction 2	0.0000
Response-Spectrum Curve in Global Z	FEE Class E
Scale in Global Z	1.0000
Angle from Global X to Direction 1	0.0000
Modal Combination Method	CQC
Spatial Combination Method	SRSS
Modal Damping Ratio (if no curve)	0.0500
Sign Assigned to Results	No Sign
Modal Combination System	Global
Modal Damping Curve	(none)

LOAD CASE WA, Joint Loads

Joint	X-Force (kips)	Y-Force (kips)	Z-Force (kips)	X-Moment (kips-ft)	Y-Moment (kips-ft)	Z-Moment (kips-ft)
1001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2001	0.0000	74.0000	0.0000	0.0000	0.0000	0.0000
3001	0.0000	163.0000	0.0000	0.0000	0.0000	0.0000
4001	0.0000	171.0000	0.0000	0.0000	0.0000	0.0000
5001	0.0000	189.0000	0.0000	0.0000	0.0000	0.0000
6001	0.0000	229.0000	0.0000	0.0000	0.0000	0.0000
7001	0.0000	82.0000	0.0000	0.0000	0.0000	0.0000
8001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

LOAD CASE WS, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
1	Uniform Force	Global Y	2.3190		0.0000	1.0000
2	Uniform Force	Global Y	2.2260		0.0000	1.0000
3	Uniform Force	Global Y	2.1230		0.0000	1.0000
4	Uniform Force	Global Y	2.0500		0.0000	1.0000
5	Uniform Force	Global Y	2.0040		0.0000	1.0000
6	Uniform Force	Global Y	1.9850		0.0000	1.0000
7	Uniform Force	Global Y	1.9840		0.0000	1.0000

LOAD CASE WS, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
8	Uniform Force	Global Y	1.9950		0.0000	1.0000
9	Uniform Force	Global Y	2.0280		0.0000	1.0000
10	Uniform Force	Global Y	2.0910		0.0000	1.0000
11	Uniform Force	Global Y	2.1800		0.0000	1.0000
12	Uniform Force	Global Y	2.2980		0.0000	1.0000
13	Uniform Force	Global Y	2.4470		0.0000	1.0000
14	Uniform Force	Global Y	2.6240		0.0000	1.0000
15	Uniform Force	Global Y	2.7090		0.0000	1.0000
16	Uniform Force	Global Y	2.7110		0.0000	1.0000
17	Uniform Force	Global Y	2.6100		0.0000	1.0000
18	Uniform Force	Global Y	2.4470		0.0000	1.0000
19	Uniform Force	Global Y	2.3100		0.0000	1.0000
20	Uniform Force	Global Y	2.2000		0.0000	1.0000
21	Uniform Force	Global Y	2.1200		0.0000	1.0000
22	Uniform Force	Global Y	2.0700		0.0000	1.0000
23	Uniform Force	Global Y	2.0470		0.0000	1.0000
24	Uniform Force	Global Y	2.0440		0.0000	1.0000
25	Uniform Force	Global Y	2.0480		0.0000	1.0000
26	Uniform Force	Global Y	2.0510		0.0000	1.0000
27	Uniform Force	Global Y	2.0550		0.0000	1.0000
28	Uniform Force	Global Y	2.0580		0.0000	1.0000
29	Uniform Force	Global Y	2.0620		0.0000	1.0000
30	Uniform Force	Global Y	2.0660		0.0000	1.0000
31	Uniform Force	Global Y	2.0690		0.0000	1.0000
32	Uniform Force	Global Y	2.0730		0.0000	1.0000
33	Uniform Force	Global Y	2.0830		0.0000	1.0000
34	Uniform Force	Global Y	2.1180		0.0000	1.0000
35	Uniform Force	Global Y	2.1840		0.0000	1.0000
36	Uniform Force	Global Y	2.2790		0.0000	1.0000
37	Uniform Force	Global Y	2.4050		0.0000	1.0000
38	Uniform Force	Global Y	2.5630		0.0000	1.0000
39	Uniform Force	Global Y	2.7510		0.0000	1.0000
40	Uniform Force	Global Y	2.8420		0.0000	1.0000
41	Uniform Force	Global Y	2.8430		0.0000	1.0000

LOAD CASE WS, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
42	Uniform Force	Global Y	2.7380		0.0000	1.0000
43	Uniform Force	Global Y	2.5630		0.0000	1.0000
44	Uniform Force	Global Y	2.4150		0.0000	1.0000
45	Uniform Force	Global Y	2.2960		0.0000	1.0000
46	Uniform Force	Global Y	2.2090		0.0000	1.0000
47	Uniform Force	Global Y	2.1540		0.0000	1.0000
48	Uniform Force	Global Y	2.1280		0.0000	1.0000
49	Uniform Force	Global Y	2.1240		0.0000	1.0000
50	Uniform Force	Global Y	2.1270		0.0000	1.0000
51	Uniform Force	Global Y	2.1300		0.0000	1.0000
52	Uniform Force	Global Y	2.1320		0.0000	1.0000
53	Uniform Force	Global Y	2.1350		0.0000	1.0000
54	Uniform Force	Global Y	2.1370		0.0000	1.0000
55	Uniform Force	Global Y	2.1400		0.0000	1.0000
56	Uniform Force	Global Y	2.1420		0.0000	1.0000
57	Uniform Force	Global Y	2.1440		0.0000	1.0000
58	Uniform Force	Global Y	2.1540		0.0000	1.0000
59	Uniform Force	Global Y	2.1880		0.0000	1.0000
60	Uniform Force	Global Y	2.2560		0.0000	1.0000
61	Uniform Force	Global Y	2.3530		0.0000	1.0000
62	Uniform Force	Global Y	2.4830		0.0000	1.0000
63	Uniform Force	Global Y	2.6460		0.0000	1.0000
64	Uniform Force	Global Y	2.8400		0.0000	1.0000
65	Uniform Force	Global Y	2.9340		0.0000	1.0000
66	Uniform Force	Global Y	2.9340		0.0000	1.0000
67	Uniform Force	Global Y	2.8240		0.0000	1.0000
68	Uniform Force	Global Y	2.6390		0.0000	1.0000
69	Uniform Force	Global Y	2.4830		0.0000	1.0000
70	Uniform Force	Global Y	2.3580		0.0000	1.0000
71	Uniform Force	Global Y	2.2660		0.0000	1.0000
72	Uniform Force	Global Y	2.2070		0.0000	1.0000
73	Uniform Force	Global Y	2.1780		0.0000	1.0000
74	Uniform Force	Global Y	2.1730		0.0000	1.0000
75	Uniform Force	Global Y	2.1740		0.0000	1.0000

LOAD CASE WS, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
76	Uniform Force	Global Y	2.1750		0.0000	1.0000
77	Uniform Force	Global Y	2.1770		0.0000	1.0000
78	Uniform Force	Global Y	2.1780		0.0000	1.0000
79	Uniform Force	Global Y	2.1790		0.0000	1.0000
80	Uniform Force	Global Y	2.1800		0.0000	1.0000
81	Uniform Force	Global Y	2.1810		0.0000	1.0000
82	Uniform Force	Global Y	2.1820		0.0000	1.0000
83	Uniform Force	Global Y	2.1900		0.0000	1.0000
84	Uniform Force	Global Y	2.2240		0.0000	1.0000
85	Uniform Force	Global Y	2.2900		0.0000	1.0000
86	Uniform Force	Global Y	2.3890		0.0000	1.0000
87	Uniform Force	Global Y	2.5190		0.0000	1.0000
88	Uniform Force	Global Y	2.6830		0.0000	1.0000
89	Uniform Force	Global Y	2.8790		0.0000	1.0000
90	Uniform Force	Global Y	2.9730		0.0000	1.0000
91	Uniform Force	Global Y	2.9720		0.0000	1.0000
92	Uniform Force	Global Y	2.8600		0.0000	1.0000
93	Uniform Force	Global Y	2.6700		0.0000	1.0000
94	Uniform Force	Global Y	2.5100		0.0000	1.0000
95	Uniform Force	Global Y	2.3820		0.0000	1.0000
96	Uniform Force	Global Y	2.2870		0.0000	1.0000
97	Uniform Force	Global Y	2.2260		0.0000	1.0000
98	Uniform Force	Global Y	2.1960		0.0000	1.0000
99	Uniform Force	Global Y	2.1890		0.0000	1.0000
100	Uniform Force	Global Y	2.1880		0.0000	1.0000
101	Uniform Force	Global Y	2.1880		0.0000	1.0000
102	Uniform Force	Global Y	2.1880		0.0000	1.0000
103	Uniform Force	Global Y	2.1880		0.0000	1.0000
104	Uniform Force	Global Y	2.1880		0.0000	1.0000
105	Uniform Force	Global Y	2.1870		0.0000	1.0000
106	Uniform Force	Global Y	2.1870		0.0000	1.0000
107	Uniform Force	Global Y	2.1860		0.0000	1.0000
108	Uniform Force	Global Y	2.1940		0.0000	1.0000
109	Uniform Force	Global Y	2.2260		0.0000	1.0000

LOAD CASE WS, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
110	Uniform Force	Global Y	2.2910		0.0000	1.0000
111	Uniform Force	Global Y	2.3870		0.0000	1.0000
112	Uniform Force	Global Y	2.5150		0.0000	1.0000
113	Uniform Force	Global Y	2.6760		0.0000	1.0000
114	Uniform Force	Global Y	2.8690		0.0000	1.0000
115	Uniform Force	Global Y	2.9610		0.0000	1.0000
116	Uniform Force	Global Y	2.9590		0.0000	1.0000
117	Uniform Force	Global Y	2.8470		0.0000	1.0000
118	Uniform Force	Global Y	2.6570		0.0000	1.0000
119	Uniform Force	Global Y	2.4960		0.0000	1.0000
120	Uniform Force	Global Y	2.3680		0.0000	1.0000
121	Uniform Force	Global Y	2.2730		0.0000	1.0000
122	Uniform Force	Global Y	2.2120		0.0000	1.0000
123	Uniform Force	Global Y	2.1810		0.0000	1.0000
124	Uniform Force	Global Y	2.1730		0.0000	1.0000
125	Uniform Force	Global Y	2.1710		0.0000	1.0000
126	Uniform Force	Global Y	2.1700		0.0000	1.0000
127	Uniform Force	Global Y	2.1690		0.0000	1.0000
128	Uniform Force	Global Y	2.1670		0.0000	1.0000
129	Uniform Force	Global Y	2.1650		0.0000	1.0000
130	Uniform Force	Global Y	2.1640		0.0000	1.0000
131	Uniform Force	Global Y	2.1620		0.0000	1.0000
132	Uniform Force	Global Y	2.1600		0.0000	1.0000
133	Uniform Force	Global Y	2.1660		0.0000	1.0000
134	Uniform Force	Global Y	2.1960		0.0000	1.0000
135	Uniform Force	Global Y	2.2590		0.0000	1.0000
136	Uniform Force	Global Y	2.3510		0.0000	1.0000
137	Uniform Force	Global Y	2.4760		0.0000	1.0000
138	Uniform Force	Global Y	2.6320		0.0000	1.0000
139	Uniform Force	Global Y	2.8180		0.0000	1.0000
140	Uniform Force	Global Y	2.9040		0.0000	1.0000
141	Uniform Force	Global Y	2.9030		0.0000	1.0000
142	Uniform Force	Global Y	2.7910		0.0000	1.0000
143	Uniform Force	Global Y	2.6040		0.0000	1.0000

LOAD CASE WS, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
144	Uniform Force	Global Y	2.4460		0.0000	1.0000
145	Uniform Force	Global Y	2.3200		0.0000	1.0000
146	Uniform Force	Global Y	2.2260		0.0000	1.0000
147	Uniform Force	Global Y	2.1650		0.0000	1.0000
148	Uniform Force	Global Y	2.1340		0.0000	1.0000
149	Uniform Force	Global Y	2.1240		0.0000	1.0000
150	Uniform Force	Global Y	2.1270		0.0000	1.0000
151	Uniform Force	Global Y	2.1530		0.0000	1.0000
152	Uniform Force	Global Y	2.2100		0.0000	1.0000
153	Uniform Force	Global Y	2.2960		0.0000	1.0000
154	Uniform Force	Global Y	2.4120		0.0000	1.0000
155	Uniform Force	Global Y	2.5030		0.0000	1.0000
1001	Uniform Force	Global Y	0.0000		0.0000	1.0000
1002	Uniform Force	Global Y	0.0000		0.0000	1.0000
1101	Uniform Force	Global Y	0.0000		0.0000	1.0000
1102	Uniform Force	Global Y	0.2840		0.0000	1.0000
1103	Uniform Force	Global Y	0.3100		0.0000	1.0000
1104	Uniform Force	Global Y	0.3320		0.0000	1.0000
1105	Uniform Force	Global Y	0.1710		0.0000	1.0000
1201	Uniform Force	Global Y	0.0000		0.0000	1.0000
1202	Uniform Force	Global Y	0.2990		0.0000	1.0000
1203	Uniform Force	Global Y	0.3320		0.0000	1.0000
1204	Uniform Force	Global Y	0.3590		0.0000	1.0000
1205	Uniform Force	Global Y	0.1700		0.0000	1.0000
1011	Uniform Force	Global Y	0.0000		0.0000	1.0000
1012	Uniform Force	Global Y	0.0000		0.0000	1.0000
1006	Uniform Force	Global Y	0.0000		0.0000	1.0000
1007	Uniform Force	Global Y	0.0000		0.0000	1.0000
2001	Uniform Force	Global Y	0.0000		0.0000	1.0000
2002	Uniform Force	Global Y	0.0000		0.0000	1.0000
2101	Uniform Force	Global Y	0.0000		0.0000	1.0000
2102	Uniform Force	Global Y	0.3780		0.0000	1.0000
2103	Uniform Force	Global Y	0.4210		0.0000	1.0000
2104	Uniform Force	Global Y	0.4570		0.0000	1.0000

LOAD CASE WS, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
2105	Uniform Force	Global Y	0.1790		0.0000	1.0000
2201	Uniform Force	Global Y	0.0000		0.0000	1.0000
2202	Uniform Force	Global Y	0.3890		0.0000	1.0000
2203	Uniform Force	Global Y	0.4370		0.0000	1.0000
2204	Uniform Force	Global Y	0.4760		0.0000	1.0000
2205	Uniform Force	Global Y	0.1790		0.0000	1.0000
2011	Uniform Force	Global Y	0.0000		0.0000	1.0000
2012	Uniform Force	Global Y	0.0000		0.0000	1.0000
2006	Uniform Force	Global Y	0.0000		0.0000	1.0000
2007	Uniform Force	Global Y	0.0000		0.0000	1.0000
3001	Uniform Force	Global Y	0.0000		0.0000	1.0000
3002	Uniform Force	Global Y	0.0000		0.0000	1.0000
3101	Uniform Force	Global Y	0.0000		0.0000	1.0000
3102	Uniform Force	Global Y	0.7640		0.0000	1.0000
3103	Uniform Force	Global Y	0.8970		0.0000	1.0000
3104	Uniform Force	Global Y	0.9960		0.0000	1.0000
3105	Uniform Force	Global Y	0.2040		0.0000	1.0000
3201	Uniform Force	Global Y	0.0000		0.0000	1.0000
3202	Uniform Force	Global Y	0.7730		0.0000	1.0000
3203	Uniform Force	Global Y	0.9160		0.0000	1.0000
3204	Uniform Force	Global Y	1.0220		0.0000	1.0000
3205	Uniform Force	Global Y	0.2040		0.0000	1.0000
3011	Uniform Force	Global Y	0.0000		0.0000	1.0000
3012	Uniform Force	Global Y	0.0000		0.0000	1.0000
3006	Uniform Force	Global Y	0.0000		0.0000	1.0000
4001	Uniform Force	Global Y	0.0000		0.0000	1.0000
4002	Uniform Force	Global Y	0.0000		0.0000	1.0000
4101	Uniform Force	Global Y	0.0000		0.0000	1.0000
4102	Uniform Force	Global Y	0.9180		0.0000	1.0000
4103	Uniform Force	Global Y	1.0910		0.0000	1.0000
4104	Uniform Force	Global Y	1.2180		0.0000	1.0000
4105	Uniform Force	Global Y	0.2110		0.0000	1.0000
4201	Uniform Force	Global Y	0.0000		0.0000	1.0000
4202	Uniform Force	Global Y	0.9250		0.0000	1.0000

LOAD CASE WS, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
4203	Uniform Force	Global Y	1.1050		0.0000	1.0000
4204	Uniform Force	Global Y	1.2370		0.0000	1.0000
4205	Uniform Force	Global Y	0.2110		0.0000	1.0000
4011	Uniform Force	Global Y	0.0000		0.0000	1.0000
4012	Uniform Force	Global Y	0.0000		0.0000	1.0000
4006	Uniform Force	Global Y	0.0000		0.0000	1.0000
5001	Uniform Force	Global Y	0.0000		0.0000	1.0000
5002	Uniform Force	Global Y	0.0000		0.0000	1.0000
5101	Uniform Force	Global Y	0.0000		0.0000	1.0000
5102	Uniform Force	Global Y	0.9880		0.0000	1.0000
5103	Uniform Force	Global Y	1.1800		0.0000	1.0000
5104	Uniform Force	Global Y	1.3190		0.0000	1.0000
5105	Uniform Force	Global Y	0.2150		0.0000	1.0000
5201	Uniform Force	Global Y	0.0000		0.0000	1.0000
5202	Uniform Force	Global Y	0.9940		0.0000	1.0000
5203	Uniform Force	Global Y	1.1930		0.0000	1.0000
5204	Uniform Force	Global Y	1.3360		0.0000	1.0000
5205	Uniform Force	Global Y	0.2150		0.0000	1.0000
5011	Uniform Force	Global Y	0.0000		0.0000	1.0000
5012	Uniform Force	Global Y	0.0000		0.0000	1.0000
5006	Uniform Force	Global Y	0.0000		0.0000	1.0000
6001	Uniform Force	Global Y	0.0000		0.0000	1.0000
6002	Uniform Force	Global Y	0.0000		0.0000	1.0000
6101	Uniform Force	Global Y	0.0000		0.0000	1.0000
6102	Uniform Force	Global Y	0.9710		0.0000	1.0000
6103	Uniform Force	Global Y	1.1540		0.0000	1.0000
6104	Uniform Force	Global Y	1.2890		0.0000	1.0000
6105	Uniform Force	Global Y	0.2140		0.0000	1.0000
6201	Uniform Force	Global Y	0.0000		0.0000	1.0000
6202	Uniform Force	Global Y	0.9790		0.0000	1.0000
6203	Uniform Force	Global Y	1.1710		0.0000	1.0000
6204	Uniform Force	Global Y	1.3100		0.0000	1.0000
6205	Uniform Force	Global Y	0.2140		0.0000	1.0000
6011	Uniform Force	Global Y	0.0000		0.0000	1.0000

LOAD CASE WS, Member Loads

Member	Type	Direction	Magnitude at Start (kips or kips-ft)	Magnitude at End (kips or kips-ft)	Start Position (x/L)	End Position from start (x/L)
6012	Uniform Force	Global Y	0.0000		0.0000	1.0000
6006	Uniform Force	Global Y	0.0000		0.0000	1.0000
7001	Uniform Force	Global Y	0.0000		0.0000	1.0000
7002	Uniform Force	Global Y	0.0000		0.0000	1.0000
7101	Uniform Force	Global Y	0.0000		0.0000	1.0000
7102	Uniform Force	Global Y	0.6500		0.0000	1.0000
7103	Uniform Force	Global Y	0.7470		0.0000	1.0000
7104	Uniform Force	Global Y	0.8220		0.0000	1.0000
7105	Uniform Force	Global Y	0.1980		0.0000	1.0000
7201	Uniform Force	Global Y	0.0000		0.0000	1.0000
7202	Uniform Force	Global Y	0.6650		0.0000	1.0000
7203	Uniform Force	Global Y	0.7740		0.0000	1.0000
7204	Uniform Force	Global Y	0.8570		0.0000	1.0000
7205	Uniform Force	Global Y	0.1980		0.0000	1.0000
7011	Uniform Force	Global Y	0.0000		0.0000	1.0000
7012	Uniform Force	Global Y	0.0000		0.0000	1.0000
7006	Uniform Force	Global Y	0.0000		0.0000	1.0000
7007	Uniform Force	Global Y	0.0000		0.0000	1.0000
8001	Uniform Force	Global Y	0.0000		0.0000	1.0000
8002	Uniform Force	Global Y	0.0000		0.0000	1.0000
8101	Uniform Force	Global Y	0.0000		0.0000	1.0000
8102	Uniform Force	Global Y	0.5610		0.0000	1.0000
8103	Uniform Force	Global Y	0.6360		0.0000	1.0000
8104	Uniform Force	Global Y	0.6960		0.0000	1.0000
8105	Uniform Force	Global Y	0.1930		0.0000	1.0000
8201	Uniform Force	Global Y	0.0000		0.0000	1.0000
8202	Uniform Force	Global Y	0.5780		0.0000	1.0000
8203	Uniform Force	Global Y	0.6670		0.0000	1.0000
8204	Uniform Force	Global Y	0.7360		0.0000	1.0000
8205	Uniform Force	Global Y	0.1930		0.0000	1.0000
8011	Uniform Force	Global Y	0.0000		0.0000	1.0000
8012	Uniform Force	Global Y	0.0000		0.0000	1.0000
8006	Uniform Force	Global Y	0.0000		0.0000	1.0000
8007	Uniform Force	Global Y	0.0000		0.0000	1.0000

LOAD CASE CV1, Joint Loads

Joint	X-Force (kips)	Y-Force (kips)	Z-Force (kips)	X-Moment (kips-ft)	Y-Moment (kips-ft)	Z-Moment (kips-ft)
6001	0.0000	25,760.0000	0.0000	0.0000	0.0000	0.0000

LOAD CASE CV2, Joint Loads

Joint	X-Force (kips)	Y-Force (kips)	Z-Force (kips)	X-Moment (kips-ft)	Y-Moment (kips-ft)	Z-Moment (kips-ft)
5001	12,880.0000	0.0000	0.0000	0.0000	0.0000	0.0000

LOAD CASE EQ 1 SEE, RSA

Name	Value
Response-Spectrum Curve in Direction 1	SEE Class E
Scale in Direction 1	1.0000
Response-Spectrum Curve in Direction 2	(none)
Scale in Direction 2	0.0000
Response-Spectrum Curve in Global Z	(none)
Scale in Global Z	0.0000
Angle from Global X to Direction 1	0.0000
Modal Combination Method	CQC
Spatial Combination Method	SRSS
Modal Damping Ratio (if no curve)	0.0500
Sign Assigned to Results	No Sign
Modal Combination System	Global
Modal Damping Curve	(none)

LOAD CASE EQ 2 SEE, RSA

Name	Value
Response-Spectrum Curve in Direction 1	(none)
Scale in Direction 1	0.0000
Response-Spectrum Curve in Direction 2	SEE Class E

LOAD CASE EQ 2 SEE, RSA

Name	Value
Scale in Direction 2	1.0000
Response-Spectrum Curve in Global Z	(none)
Scale in Global Z	0.0000
Angle from Global X to Direction 1	0.0000
Modal Combination Method	CQC
Spatial Combination Method	SRSS
Modal Damping Ratio (if no curve)	0.0500
Sign Assigned to Results	No Sign
Modal Combination System	Global
Modal Damping Curve	(none)

LOAD CASE EQ 3 SEE, RSA

Name	Value
Response-Spectrum Curve in Direction 1	(none)
Scale in Direction 1	0.0000
Response-Spectrum Curve in Direction 2	(none)
Scale in Direction 2	0.0000
Response-Spectrum Curve in Global Z	SEE Class E
Scale in Global Z	1.0000
Angle from Global X to Direction 1	0.0000
Modal Combination Method	CQC
Spatial Combination Method	SRSS
Modal Damping Ratio (if no curve)	0.0500
Sign Assigned to Results	No Sign
Modal Combination System	Global
Modal Damping Curve	(none)

POST-COMPUTED RESULT CASES SUMMARY

Influence Based Case: AASHTO Truck

Influence Line	Influence Line Coefficients Lane 1 GZ-
Vehicle	AASHTO HL-93 Design Truck
Transverse Offset	0
Lane Loading Method	Constant Loading
Lane Load	0
Back-to-Front Vehicle Spacing	0
Side-to-Side Vehicle Spacing	0
Load for Extreme Force Effects	Yes
AASHTO-LFD Point Loading	No
Complete Patterns Only	No
Vehicle Placement	Place Vehicles Anywhere
Include Lane Load Under Vehicles	Yes

Influence Based Case: AASHTO Tandem

Influence Line	Influence Line Coefficients Lane 1 GZ-
Vehicle	AASHTO HL-93 Design Tandem
Transverse Offset	0
Lane Loading Method	Constant Loading
Lane Load	0
Back-to-Front Vehicle Spacing	0
Side-to-Side Vehicle Spacing	0
Load for Extreme Force Effects	Yes
AASHTO-LFD Point Loading	No
Complete Patterns Only	No
Vehicle Placement	Place Vehicles Anywhere
Include Lane Load Under Vehicles	Yes

Influence Based Case: AASHTO 2 Truck

Influence Line	Influence Line Coefficients Lane 1 GZ-
Vehicle	AASHTO HL-93 Design Truck
Vehicle	AASHTO HL-93 Design Truck
Transverse Offset	0
Lane Loading Method	Constant Loading
Lane Load	0
Back-to-Front Vehicle Spacing	50

Side-to-Side Vehicle Spacing	0		
Load for Extreme Force Effects	Yes		
AASHTO-LFD Point Loading	No		
Complete Patterns Only	No		
Vehicle Placement	Place Vehicles Anywhere		
Include Lane Load Under Vehicles	Yes		
Influence Based Case: TriMet 4-Car Train			
Influence Line	Influence Line Coefficients Lane 1 GZ-		
Vehicle	TriMet LRV 4 Car Train		
Transverse Offset	0		
Lane Loading Method	Constant Loading		
Lane Load	0		
Back-to-Front Vehicle Spacing	0		
Side-to-Side Vehicle Spacing	0		
Load for Extreme Force Effects	No		
AASHTO-LFD Point Loading	No		
Complete Patterns Only	No		
Vehicle Placement	Place Vehicles Anywhere		
Include Lane Load Under Vehicles	Yes		
Influence Based Case: AASHTO Lane Load			
Influence Line	Influence Line Coefficients Lane 1 GZ-		
Vehicle	AASHTO HL-93 Design Truck		
Transverse Offset	0		
Lane Loading Method	Constant Loading		
Lane Load	0.64		
Back-to-Front Vehicle Spacing	0		
Side-to-Side Vehicle Spacing	0		
Load for Extreme Force Effects	Yes		
AASHTO-LFD Point Loading	No		
Complete Patterns Only	No		
Vehicle Placement	Place Vehicles Anywhere		
Include Lane Load Under Vehicles	Yes		
Extreme Effect Group: AASHTO Truck Envelope			
Allow Positive Minimum/Negative Maximum	Yes		
Load Class	None		
Case	Factor	Load Class	Incremental

AASHTO Truck	1	None	No
AASHTO Tandem	1	None	No
AASHTO 2 Truck	1	None	No
Extreme Effect Group: Extreme I Envelope			
Allow Positive Minimum/Negative Maximum	Yes		
Load Class	None		
Case	Factor	Load Class	Incremental
Extreme I - LC 1+	1	None	No
Extreme I - LC 2+	1	None	No
Extreme I - LC1-	1	None	No
Extreme I - LC 2-	1	None	No
Extreme Effect Group: Strength IV			
Allow Positive Minimum/Negative Maximum	Yes		
Load Class	None		
Case	Factor	Load Class	Incremental
Strength IV+	1	None	No
Strength IV-	1	None	No
Extreme Effect Group: AASHTO Truck & Lane			
Allow Positive Minimum/Negative Maximum	Yes		
Load Class	None		
Case	Factor	Load Class	Incremental
AASHTO Truck Envelope	1	None	No
AASHTO Lane Load	1	None	No
Linear Result Combination: 8 - AASHTO LL Lanes			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
AASHTO Truck Envelope	5.2	None	No
Linear Result Combination: 2 4-Car Trains			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
TriMet 4-Car Train	2	None	No
Linear Result Combination: Extreme I - LC 1+			
Combine For Extreme Effects	No		
Load Class	None		

Case	Factor	Load Class	Incremental
Linear Result Combination: Extreme I - LC 2+			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
EQ 1	0.3	None	No
EQ 2	1	None	No
WA	1	None	No
DC	1	None	No
DW	1	None	No
8 - AASHTO Lane Loads	0.5	None	No
Linear Result Combination: Extreme I - LC1-			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
EQ 1	-1	None	No
EQ 2	-0.3	None	No
WA	1	None	No
DC	1	None	No
DW	1	None	No
8 - AASHTO Lane Loads	0.5	None	No
Linear Result Combination: Extreme I - LC 2-			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
EQ 1	-0.3	None	No
EQ 2	-1	None	No
DC	1	None	No
DW	1	None	No
WA	1	None	No
8 - AASHTO Lane Loads	0.5	None	No
Linear Result Combination: DC			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
DC-Dead Load	1	None	No

DC-Barriers	1	None	No
DC-LRT	1	None	No
Linear Result Combination: DW			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
DW-Wearing Surface	1	None	No
DW-Utilities	1	None	No
Linear Result Combination: Strength IV+			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
Linear Result Combination: 8 - AASHTO Lane Loads			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
AASHTO Lane Load	5.2	None	No
Linear Result Combination: Strength IV-			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
DC	1.5	None	No
DW	1.5	None	No
WA	1	None	No
TU-Fall	0.5	None	No
Linear Result Combination: Barge Pier 4 DL Min			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
WA	1	None	No
CV1	1	None	No
DC	0.9	None	No
DW	0.65	None	No
Linear Result Combination: Barge Pier 4 DL Max			
Combine For Extreme Effects	No		
Load Class	None		

Case	Factor	Load Class	Incremental
WA	1	None	No
DC	1.25	None	No
DW	1.5	None	No
CV1	1	None	No

Linear Result Combination: Barge Pier 5 DL Min

Combine For Extreme Effects	No
Load Class	None

Case	Factor	Load Class	Incremental
WA	1	None	No
CV2	1	None	No
DC	0.9	None	No
DW	0.65	None	No

Linear Result Combination: Barge Pier 5 DL Max

Combine For Extreme Effects	No
Load Class	None

Case	Factor	Load Class	Incremental
WA	1	None	No
CV2	1	None	No
DC	1.25	None	No
DW	1.5	None	No

Linear Result Combination: Strength III+

Combine For Extreme Effects	No
Load Class	None

Case	Factor	Load Class	Incremental
WA	1	None	No
WS	1.4	None	No
TU-Rise	0.5	None	No
DC	1.25	None	No
DW	1.5	None	No

Linear Result Combination: Strnegth III-

Combine For Extreme Effects	No
Load Class	None

Case	Factor	Load Class	Incremental
WA	1	None	No
WS	-1.4	None	No

TU-Fall	0.5	None	No
DC	1.25	None	No
DW	1.5	None	No
Linear Result Combination: Strength I-			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
TU-Fall	0.5	None	No
WA	1	None	No
8 - AASHTO LL Lanes	1.75	None	No
2 4-Car Trains	1.67	None	No
DC	1.25	None	No
DW	1.5	None	No
Linear Result Combination: Strength I+			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
TU-Rise	0.5	None	No
WA	1	None	No
8 - AASHTO LL Lanes	1.75	None	No
2 4-Car Trains	1.67	None	No
DC	1.25	None	No
DW	1.5	None	No
Linear Result Combination: Service III-			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
TU-Fall	1	None	No
WA	1	None	No
DC	1	None	No
DW	1	None	No
8 - AASHTO LL Lanes	0.8	None	No
2 4-Car Trains	0.8	None	No
Linear Result Combination: Service III+			
Combine For Extreme Effects	No		
Load Class	None		

Case	Factor	Load Class	Incremental
TU-Rise	1	None	No
WA	1	None	No
DC	1	None	No
DW	1	None	No
8 - AASHTO LL Lanes	0.8	None	No
2 4-Car Trains	0.8	None	No
Linear Result Combination: LL Trk and Lane 5.2			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
AASHTO Truck Envelope	5.2	None	No
AASHTO Lane Load	5.2	None	No
Linear Result Combination: LL-8_LLLanes+2_4CarTrains			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
8 - AASHTO LL Lanes	1	None	No
2 4-Car Trains	1	None	No
Linear Result Combination: EQ1-L FEE			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
EQ 1	1	None	No
EQ 2	0.3	None	No
Linear Result Combination: EQ2-T FEE			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
EQ 1	0.3	None	No
EQ 2	1	None	No
DC	1	None	No
Linear Result Combination: EQ1-L SEE			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental

EQ 1 SEE	1	None	No
EQ 2 SEE	0.3	None	No
Linear Result Combination: EQ2-T SEE			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
EQ 1 SEE	0.3	None	No
EQ 2 SEE	1	None	No
Linear Result Combination: LL for EQ			
Combine For Extreme Effects	Yes		
Load Class	None		
Case	Factor	Load Class	Incremental
AASHTO Lane Load	5.2	None	No
TriMet 4-Car Train	1.538	None	No
Linear Result Combination: LL for Column			
Combine For Extreme Effects	No		
Load Class	None		
Case	Factor	Load Class	Incremental
AASHTO Truck Envelope	5.2	None	No
TriMet 4-Car Train	2	None	No

HDR | ONE COMPANY *Many Solutions*℠

Appendix

Project:	Columbia River Crossing	Computed:	C. Werts	Date:	March 23 2011
Subject:	River Bridge Conceptual Design	Checked:		Date:	
Task:	Composite Deck Truss Foundation	Sheet:		of	

4.3 FB-MULTIPIER OUTPUT FILES

```
!------------------------------------------------------------!
!                                                            !
!        The University of Florida, Florida Department       !
!        of Transportation, Drs. Marc Hoit, Mike McVay       !
!        Cliff Hays, Mark Williams, Petros Christou, and     !
!                        Jae H. Chung                        !
!         disclaim any warranty, expressed or implied,       !
!          including but not limited to, any implied         !
!         warranty of fitness for a particular purpose       !
!            or accuracy of the FB-Pier software             !
!     The  developers shall not be liable for any damages    !
!          incurred through the use of FB-MultiPier          !
!                                                            !
!                                                            !
!              :::: F B - M U L T I P I E R ::::             !
!                  FB-MultiPier Version 4.13                 !
!                                                            !
!                                                            !
!         Written by Marc Hoit, Mike McVay, Cliff Hays       !
!         Mark Williams, Petros Christou, Jae H. Chung.      !
!                                                            !
!       Civil & Coastal Engineering, University of Florida   !
!       Supported by Florida Department of Transportation    !
!            and the Federal Highway Administration          !
!                                                            !
!              The program calculates the Response           !
!            of the Bridge Pier Pile Soil Structures         !
!                                                            !
!             The Analysis includes PreLoad, Static,         !
!                 Transient Dynamic or Push Over             !
!                                                            !
!         The Program Handles NonLinear Soil Behavior,       !
!   Linear Pile Cap and Linear and NonLinear Piles and Piers !
!                                                            !
!                                                            !
!        Contact: Bridge Software Institute for Support      !
!                HTTP://BSI-WEB.CE.UFL.EDU                   !
!                                                            !
!------------------------------------------------------------!

Analysis Start       : 3:40pm
Analysis End         : 3:40pm
Analysis Time        : 3 seconds

Input Data File Name : P1-LCS.in
Analysis Date        : 3-15-2011
License ID Number    : 432478881


********************
*   PROJECT DATA   *
********************

Project Client      : CRC / WSDOT / ODOT
Project Name        : Columbia River Crossing
Project Manager     : R. Turton
Computed by         : NRH
Project Description : SB - Pier 1 - Liquefaction + Contraction Scour


**************************************
*   SELECTIVE PRINT OUTPUT CONTROL   *
**************************************
                                      Print On
Pile Displacements                      YES
Pile Element Forces                      NO
Missing Pile ID Numbers                  NO
Pier Columns and Pier Cap Displacements  NO
Pier Columns and Pier Cap Force Output  YES
Pier Material Properties                YES
Soil Response Forces                     NO
Soil Data per Layer                     YES
Soil Curve data per Pile Node            NO
Soil Graph per Pile Node                 NO
Out of Balance Forces                    NO
Bridge Simulation Spring Force Output    NO
Bridge Span Displacements                NO
Bridge Span Element Forces               NO
Bridge Span Properties                   NO
Pile Cap Stress                          NO
```

BSI FB-MultiPier - File: P1-LCS.out Wednesday, March 23, 2011

```
 Material Stress Strain Curve Data          NO
 Interaction Diagram Data For Pile and Pier YES
 Pile and Pier coordinates                  NO
 Generate XML file                          NO


 *************
 *   UNITS   *
 *************

 Analysis Units Specified are: English Mixed (Kips & Ft some lbs & in)


 ***************************
 *   CONTROL INFORMATION   *
 ***************************

 Number of Piers               (NUMPIERS) =    1
 Maximum Number of Iterations    (MAXITN) =   50
 Tolerance                        (TOLER) =    10.000000     Kips

 NOTE : The following soil information is not applicable in the coulmn analysis problems

 Soil Behavior Option             (IFLEX) =    0
    IFLEX = 0 -> PY Multipliers are Input
    IFLEX = 1 -> PY Multipliers Defaulted to 1.0
    IFLEX = 2 -> No SOIL (Must use tip springs)

 Soil resistance due to Pile Rotation About 2 and 3 Axis (NSODF) =    4
    NSDOF = 4 -> NO Resistance Accounted
    NSDOF = 6 -> Resistance Accounted

 Linear Pile TIP Spring Option     (ITIP) =    0
    ITIP = 0 -> NO spring
    ITIP = 1 -> Axial only
    ITIP = 2 -> All DOF

 Linear Pile TIP Spring Stiffness (TSTIF) =         0.00 kips/in


 **********************
 *   SOIL BEHAVIOR    *
 **********************

 PY Multipliers will be used (IFLEX = 0)


 ************************************************
 *   LOAD FACTORS FOR SELF WEIGHT AND BUOYANCY   *
 ************************************************

 LOAD CASE     SELF WEIGHT     BUOYANCY
     #            FACTOR         FACTOR
     1             1.00           1.00


 ****************************
 *   GENERAL INFORMATION    *
 ****************************

 Static / Cyclic Load (KCYC)      =    0
    KCYC = 0 -> Static Load
    KCKC > 0 -> Cyclic Load (# Cycles)

 Fixity of Pile Cap (KFIX)        =    1
    KFIX = 0 -> Pinned Head
    KFIX = 1 -> Fixed head

 Bearing of Cap on Soil           =  NO


 ******************************
 *   GRID DATA INFORMATION    *
 ******************************

 NOTE: X-Grid : Distance between axes along the X-Axis
       Y-Grid : Distance between axes along the Y-Axis

 Number of Grid Points in X-Direction (NPX) =     5
 Number of Grid Points in X-Direction (NPY) =     5

 Grid Spacing in the X Direction : (inches)
      90.00     150.00     150.00      90.00
```

Grid Spacing in the Y Direction : (inches)
120.00 450.00 450.00 120.00

****
* ANALYSIS OPTIONS *
****

Type of Stiffness = Secant Stiffness
Type of Structure = Full
Type of Analysis = Static Analysis

****
* INPUT SOIL DATA - GIVEN BY LAYER *
****

NOTE : The following data is used to define Springs
for each Soil Layer to determine the Soil
Behavior during the analysis

LAYERED P-Y CURVES

SOIL SET # 1

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	1	1	0.3300E+02	0.5500E+02	0.1250E+03
			0.3300E+02	0.5500E+02	0.1250E+03
1	2	1	0.6000E+01	0.4600E+01	0.1073E+03
			0.6000E+01	0.4600E+01	0.1073E+03
1	3	1	0.6000E+01	0.7500E+01	0.1212E+03
			0.6000E+01	0.7500E+01	0.1212E+03
1	4	1	0.3500E+02	0.5000E+02	0.1212E+03
			0.3500E+02	0.5000E+02	0.1212E+03
1	5	1	0.4500E+02	0.1250E+03	0.1367E+03
			0.4500E+02	0.1250E+03	0.1367E+03
1	6	1	0.4500E+02	0.1500E+03	0.1402E+03
			0.4500E+02	0.1500E+03	0.1402E+03

LAYERED T-Z CURVES

SOIL SET # 1

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00
	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00

0.114E+01	0.000E+00	0.114E+01	0.000E+00
0.152E+01	0.000E+00	0.152E+01	0.000E+00
0.265E+01	0.000E+00	0.265E+01	0.000E+00
0.379E+01	0.000E+00	0.379E+01	0.000E+00
0.493E+01	0.000E+00	0.493E+01	0.000E+00
0.606E+01	0.000E+00	0.606E+01	0.000E+00
0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED

	TOP		BOTTOM	
	Z Value	T Value	Z Value	T Value
	in	psi	in	psi
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00
	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED

	TOP		BOTTOM	
	Z Value	T Value	Z Value	T Value
	in	psi	in	psi
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.546E+01	0.380E+00	0.147E+02
	0.760E+00	0.679E+01	0.760E+00	0.182E+02
	0.114E+01	0.707E+01	0.114E+01	0.190E+02
	0.152E+01	0.707E+01	0.152E+01	0.190E+02
	0.265E+01	0.707E+01	0.265E+01	0.190E+02
	0.379E+01	0.707E+01	0.379E+01	0.190E+02
	0.493E+01	0.707E+01	0.493E+01	0.190E+02
	0.606E+01	0.707E+01	0.606E+01	0.190E+02
	0.720E+01	0.707E+01	0.720E+01	0.190E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value	T Value	Z Value	T Value
	in	psi	in	psi
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value	T Value	Z Value	T Value
	in	psi	in	psi
6	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

LAYERED T-Theta CURVES

SOIL SET # 1

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	1	1	0.1000E-01	0.0000E+00
			0.1000E-01	0.0000E+00

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	2	1	0.1000E-01	0.0000E+00
			0.1000E-01	0.0000E+00

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	3	1	0.1000E-01	0.0000E+00

```
                        0.1000E-01      0.0000E+00

  SET    LAYER    MODEL     SHEAR M.        TAU MAX
                             ksi             psf
    1       4        1     0.1000E-01      0.0000E+00
                           0.1000E-01      0.0000E+00

  SET    LAYER    MODEL     SHEAR M.        TAU MAX
                             ksi             psf
    1       5        1     0.1000E-01      0.0000E+00
                           0.1000E-01      0.0000E+00

  SET    LAYER    MODEL     SHEAR M.        TAU MAX
                             ksi             psf
    1       6        1     0.1000E-01      0.0000E+00
                           0.1000E-01      0.0000E+00

 PILE TIP SOIL PARAMETERS
 ------------------------

 SOIL SET #  1

 USER DEFINED
                 Q Value    T Value
                   in         lbs
     1           0.000E+00  0.000E+00
     2           0.222E+00  0.362E+07
     3           0.444E+00  0.624E+07
     4           0.667E+00  0.829E+07
     5           0.889E+00  0.995E+07
     6           0.111E+01  0.113E+08
     7           0.133E+01  0.125E+08
     8           0.156E+01  0.136E+08
     9           0.178E+01  0.145E+08
    10           0.200E+01  0.153E+08


 ***************************************
 *   PILE SEGMENT INFORMATION DATA     *
 ***************************************

 NOTE: The Piles Sets consist of Pile Segments based on the
       User Input. The program groups all segments from all
       the different Pile Sets and assigns a reference number
       to each

       The reference number for each segment together with the
       User Input Pile Set/Segment number is shown below. The
       Input section properties for each section/segment is
       also provided below.

       The user is advised to double check these numbers

 Number of segments found in all Piles (NPSEG) =   2

 ---------------------------------------------
 ! -> SECTION DATA FOR SECTION/SEGMENT :   1  !
 ---------------------------------------------

 Input Pile Set Number  =   1
 Input Pile Set Segment =   1

 Section Pile Length               (L) =    6.0000000     ft

 Nonlinear Section/Segment Material Properties
 ---------------------------------------------

 Material Option (MATOPT) =   1
 (Please Refer to the Users Guide for Details)

 - Concrete Stress Strain Properties

   Concrete Strength    (FPC) = 0.4000E+01 ksi
   Modulus of Elasticity (EC) = 0.4224E+04 ksi

   Gauss Integration Points for Concrete = 60

 - Steel Stress Strain Properties

   Mild Steel Yield Stress  (FY) =  0.600E+02 ksi
   Modulus of Elasticity    (ES) = 0.2900E+05 ksi

   Tubular Steel Yield Stress (FY) =  0.500E+02 ksi
```

```
   Modulus of Elasticity      (ES) = 0.2900E+05 ksi

 - Shape of Section : CIRCULAR

 - Steel and Confinement Data

   Number of Steel Layers         =   2
   Section/Segment Diameter       =  180.0000 in
   Tied/Spiral Reinforcement Flag =   1
   (NOTE : Spiral = 1, Tied   = 2)
   Confinement Flag               =   1
   (NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

 - Steel and Confinement Data

  Yield Stress of Confinement Steel =    60.00     ksi
  Spacing between Confinement Steel =    6.000     in
  Diameter of Confinement Steel     =    1.000     in
   Outer Shell Thickness          =    1.00      in

 - Total Area of Steel Reinforcement  = 424.00 in^2

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing
                           in^2      in             ksi

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     1           56        4.00    108.00           0.00

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     2           52        3.85     96.00           0.00

-----------------------------------------------
! -> SECTION DATA FOR SECTION/SEGMENT :   2  !
-----------------------------------------------

Input Pile Set Number  =   1
Input Pile Set Segment =   2

Section Pile Length               (L) =    257.08000     ft

Nonlinear Section/Segment Material Properties
_______________________________________________

Material Option (MATOPT) =   1
(Please Refer to the Users Guide for Details)

 - Concrete Stress Strain Properties

   Concrete Strength    (FPC) = 0.6000E+01 ksi
   Modulus of Elasticity (EC) = 0.5173E+04 ksi

   Gauss Integration Points for Concrete = 60

 - Steel Stress Strain Properties

   Mild Steel Yield Stress  (FY) =  0.600E+02 ksi
   Modulus of Elasticity    (ES) = 0.2900E+05 ksi

   Tubular Steel Yield Stress (FY) =  0.500E+02 ksi
   Modulus of Elasticity      (ES) = 0.2900E+05 ksi

 - Shape of Section : CIRCULAR

 - Steel and Confinement Data

   Number of Steel Layers         =   2
   Section/Segment Diameter       =  120.0000 in
   Tied/Spiral Reinforcement Flag =   1
   (NOTE : Spiral = 1, Tied   = 2)
   Confinement Flag               =   1
   (NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)
```

- Steel and Confinement Data

Yield Stress of Confinement Steel = 60.00 ksi
Spacing between Confinement Steel = 6.000 in
Diameter of Confinement Steel = 1.000 in
Outer Shell Thickness = 1.00 in

- Total Area of Steel Reinforcement = 424.00 in^2

Layer	# Bars/Strands	Area in^2	Layer Dia. in	Prestressing ksi

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
1	56	4.00	108.00	0.00

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
2	52	3.85	96.00	0.00

PLOT OF THE QZ CURVE FOR THE TIP OF THE PILE

- USER DEFINED CURVE

SOIL SET	Z Value	Q Value	Z Value	Q Value	Z Value	Q Value
1	0.0000E+00	0.0000E+00	0.2222E+00	0.3615E+07	0.4444E+00	0.6244E+07
	0.6667E+00	0.8290E+07	0.8889E+00	0.9952E+07	0.1111E+01	0.1134E+08
	0.1333E+01	0.1253E+08	0.1556E+01	0.1357E+08	0.1778E+01	0.1448E+08
	0.2000E+01	0.1530E+08				

****
* PILE SET DATA DESCRIPTION *
****

NOTE : The piles are organized in pile sets. Each pile set is composed of pile segments that are input by the User. A pile set is attached to each pile in order to describe its composition

List of Piles Sets and Piles

Pile Set	Piles (that are assigned the Pile Set)
1	1, 2, 3, 4

Total Length for Each Pile Set

Pile Set	Length
1	3156.96

****
* INPUT FOR STRUCTURAL ANALYSIS *
****

Number of Joints = 82
Number of Different Element Types = 3
Number of Load Conditions = 1

WARNING : Pier Columns and Cap are linear
No P-Delta or Moment Magnification is included
Nonlinear should be used for final design

PIER SUMMARY

BSI FB-MultiPier - File: P1-LCS.out Wednesday, March 23, 2011
Stiffness of Foundation Requested - NO Pier Exists

****
* MATERIAL PROPERTIES FOR PILE CAP AND FRAME (PIER) ELEMENTS *
****

****
* PILE CAP PROPERTIES - USING SHELL ELEMENTS *
****

Modulus of Elasticity = 0.4224E+04 (ksi)
Poissons Ratio = 0.2000
Shear Modulus = 0.1760E+04 (ksi)
Self Weight = 160.0000 (pcf)
Thickness = 0.1300E+02 (ft)

! -> PROPERTIES FOR CONNECTOR ELEMENTS (DEFAULTED) !

NOTE : These Elements are generated by the program at the Pier Column Bases where they connect with the Pile Cap. The purpose for these elements is to spread the column base load over an area on the Pile Cap and therefore avoid High Stress Concentrations

NOTE : The material property number for these elements is defaulted to 1. The material numbers for the properties of the rest of the Pier elements start form 2

-> SECTION DATA FOR SECTION/SEGMENT : 1

Member Property Number = 1
Axial Area, A = 24336. (in^2)
Torsional Moment of Inertia, J = 0.31637E+10 (in^4)
Moment of Inertia, 3 - Axis = 0.31637E+10 (in^4)
Moment of Inertia, 2 - Axis = 0.31637E+10 (in^4)
Modulus of Elasticity, E = 4224.0 (ksi)
Shear Modulus, G = 1760.0 (ksi) (used for Torsion)
Weight Density = 0.00000 (K/in^3)

! -> PROPERTIES FOR PIER COLUMNS !

Member Property Number = 2
Axial Area, A = 0.00000 (in^2)
Torsional Moment of Inertia, J = 0.00000 (in^4)
Moment of Inertia, 3 - Axis = 0.00000 (in^4)
Moment of Inertia, 2 - Axis = 0.00000 (in^4)
Modulus of Elasticity, E = 0.00000 (ksi)
Shear Modulus, G = 0.00000 (ksi) (used for Torsion)
Weight Density = 0.00000 (K/in^3)

****
* PIER MEMBER CONNECTIVITY *
****

ELEMENT NUMBER	NODES I	NODES J	MATERIAL NUMBER
1	82	60	1
2	82	54	1
3	82	47	1
4	82	53	1

****
* GENERAL LOAD DATA *
****

The table below shows the Applied Loads for every Load Case. The values in the table represent the magnitute of the Loads in the specified units

- Applied Load

NODE	LOAD	X (Kips)	Y (Kips)	Z (Kips)	MXX (Kip-ft)	MYY (Kip-ft)	MZZ (Kip-ft)
82	1	4850.00	0.00	0.00	0.00	0.00	0.00
82	2	0.00	5267.00	0.00	0.00	0.00	0.00
82	3	0.00	0.00	12241.00	0.00	0.00	0.00

82	4	0.00	0.00	0.00	276696.00	0.00	0.00
82	5	0.00	0.00	0.00	0.00	-90163.00	0.00
82	6	0.00	0.00	0.00	0.00	0.00	565.00

****
* *
* ANALYSIS RESULTS *
* *
****

****
* RESULTS FOR LOAD CASE # 1 *
****

NOTE : PY Multipliers are applied Lead to Trail row based on the actual displacement. If there is no displacement in a Lateral direction they are defaulted to 1.0. This can happen in Axial Load and one direction lateral load cases

PY Multipliers are Applied to A Pile Group

PILE#	X-PYM	Y-PYM
1	0.500E+00	0.100E+01
2	0.700E+00	0.100E+01
3	0.500E+00	0.100E+01
4	0.700E+00	0.100E+01

****
* CONVERGENCE REPORT *
****

The Solution Converged in 4 Iterations

Summary of Abs Maximum Out-Of-Balance Forces

FZZ =	0.412	Kips
FXX =	0.000	Kips
FYY =	24.188	Kips
MXX =	0.582	Kip-in
MYY =	0.000	Kip-in
MZZ =	21.325	Kip-in

Summary of Displacements at Pile Heads

Node	X (in)	Y (in)	Z (in)
1	0.4745	0.2596	0.3186
2	0.4738	0.2688	0.5786
3	0.4790	0.2704	0.0721
4	0.4781	0.2640	0.3355

Final Displacements

Load Case # 1

Node	X (in)	Y (in)	Z (in)	Rx (rad)	Ry (rad)	Rz (rad)
Pile Number 1						
1	0.4745	0.2596	0.3186	0.0000	-0.0010	0.0000
83	0.3918	0.2490	0.3139	0.0002	-0.0010	0.0000
84	0.3113	0.2240	0.3086	0.0004	-0.0010	0.0000
85	0.2376	0.1895	0.3029	0.0005	-0.0009	0.0000
86	0.1733	0.1526	0.2972	0.0005	-0.0007	0.0000
87	0.1195	0.1174	0.2915	0.0004	-0.0006	0.0000
88	0.0760	0.0860	0.2856	0.0004	-0.0005	0.0000
89	0.0423	0.0593	0.2798	0.0003	-0.0004	0.0000
90	0.0171	0.0378	0.2738	0.0002	-0.0003	0.0000
91	-0.0006	0.0212	0.2678	0.0002	-0.0002	0.0000
92	-0.0121	0.0092	0.2617	0.0001	-0.0001	0.0000
93	-0.0186	0.0012	0.2555	0.0001	-0.0001	0.0000
94	-0.0213	-0.0037	0.2493	0.0000	0.0000	0.0000
95	-0.0212	-0.0061	0.2431	0.0000	0.0000	0.0000

96	-0.0193	-0.0067	0.2367	0.0000	0.0000	0.0000
97	-0.0163	-0.0063	0.2305	0.0000	0.0000	0.0000
98	-0.0130	-0.0052	0.2243	0.0000	0.0000	0.0000
99	-0.0098	-0.0040	0.2182	0.0000	0.0000	0.0000
100	-0.0069	-0.0028	0.2122	0.0000	0.0000	0.0000
101	-0.0044	-0.0018	0.2062	0.0000	0.0000	0.0000
102	-0.0025	-0.0010	0.2004	0.0000	0.0000	0.0000
103	-0.0011	-0.0004	0.1946	0.0000	0.0000	0.0000
104	-0.0002	0.0000	0.1889	0.0000	0.0000	0.0000
105	0.0003	0.0001	0.1834	0.0000	0.0000	0.0000
106	0.0006	0.0002	0.1779	0.0000	0.0000	0.0000
107	0.0007	0.0002	0.1726	0.0000	0.0000	0.0000
108	0.0007	0.0002	0.1673	0.0000	0.0000	0.0000
109	0.0006	0.0001	0.1622	0.0000	0.0000	0.0000
110	0.0004	0.0001	0.1572	0.0000	0.0000	0.0000
111	0.0003	0.0001	0.1522	0.0000	0.0000	0.0000
112	0.0002	0.0000	0.1474	0.0000	0.0000	0.0000
113	0.0001	0.0000	0.1427	0.0000	0.0000	0.0000
114	0.0001	0.0000	0.1382	0.0000	0.0000	0.0000
115	0.0000	0.0000	0.1337	0.0000	0.0000	0.0000
116	0.0000	0.0000	0.1293	0.0000	0.0000	0.0000
117	0.0000	0.0000	0.1251	0.0000	0.0000	0.0000
118	0.0000	0.0000	0.1213	0.0000	0.0000	0.0000
119	0.0000	0.0000	0.1179	0.0000	0.0000	0.0000
120	0.0000	0.0000	0.1149	0.0000	0.0000	0.0000
121	0.0000	0.0000	0.1122	0.0000	0.0000	0.0000
122	0.0000	0.0000	0.1100	0.0000	0.0000	0.0000

Pile Number 2

2	0.4738	0.2688	0.5786	0.0000	-0.0009	0.0000
123	0.3980	0.2630	0.5685	0.0002	-0.0010	0.0000
124	0.3205	0.2409	0.5573	0.0004	-0.0010	0.0000
125	0.2466	0.2072	0.5460	0.0005	-0.0009	0.0000
126	0.1809	0.1694	0.5347	0.0005	-0.0008	0.0000
127	0.1255	0.1324	0.5233	0.0005	-0.0006	0.0000
128	0.0805	0.0987	0.5118	0.0004	-0.0005	0.0000
129	0.0456	0.0696	0.5003	0.0003	-0.0004	0.0000
130	0.0197	0.0456	0.4887	0.0003	-0.0003	0.0000
131	0.0017	0.0269	0.4771	0.0002	-0.0002	0.0000
132	-0.0099	0.0130	0.4654	0.0001	-0.0001	0.0000
133	-0.0162	0.0035	0.4536	0.0001	-0.0001	0.0000
134	-0.0187	-0.0025	0.4418	0.0001	0.0000	0.0000
135	-0.0184	-0.0056	0.4300	0.0000	0.0000	0.0000
136	-0.0163	-0.0068	0.4181	0.0000	0.0000	0.0000
137	-0.0134	-0.0066	0.4063	0.0000	0.0000	0.0000
138	-0.0103	-0.0057	0.3947	0.0000	0.0000	0.0000
139	-0.0073	-0.0044	0.3832	0.0000	0.0000	0.0000
140	-0.0048	-0.0032	0.3719	0.0000	0.0000	0.0000
141	-0.0028	-0.0021	0.3609	0.0000	0.0000	0.0000
142	-0.0013	-0.0012	0.3500	0.0000	0.0000	0.0000
143	-0.0003	-0.0005	0.3393	0.0000	0.0000	0.0000
144	0.0003	-0.0001	0.3289	0.0000	0.0000	0.0000
145	0.0005	0.0001	0.3187	0.0000	0.0000	0.0000
146	0.0006	0.0002	0.3086	0.0000	0.0000	0.0000
147	0.0006	0.0002	0.2989	0.0000	0.0000	0.0000
148	0.0005	0.0002	0.2893	0.0000	0.0000	0.0000
149	0.0004	0.0002	0.2800	0.0000	0.0000	0.0000
150	0.0003	0.0001	0.2709	0.0000	0.0000	0.0000
151	0.0002	0.0001	0.2620	0.0000	0.0000	0.0000
152	0.0001	0.0000	0.2534	0.0000	0.0000	0.0000
153	0.0000	0.0000	0.2450	0.0000	0.0000	0.0000
154	0.0000	0.0000	0.2368	0.0000	0.0000	0.0000
155	0.0000	0.0000	0.2289	0.0000	0.0000	0.0000
156	0.0000	0.0000	0.2212	0.0000	0.0000	0.0000
157	0.0000	0.0000	0.2137	0.0000	0.0000	0.0000
158	0.0000	0.0000	0.2070	0.0000	0.0000	0.0000
159	0.0000	0.0000	0.2011	0.0000	0.0000	0.0000
160	0.0000	0.0000	0.1958	0.0000	0.0000	0.0000
161	0.0000	0.0000	0.1913	0.0000	0.0000	0.0000
162	0.0000	0.0000	0.1875	0.0000	0.0000	0.0000

Pile Number 3

3	0.4790	0.2704	0.0721	0.0007	-0.0010	0.0000
163	0.3977	0.2121	0.0719	0.0007	-0.0010	0.0000
164	0.3163	0.1556	0.0719	0.0007	-0.0010	0.0000
165	0.2401	0.1057	0.0728	0.0006	-0.0009	0.0000
166	0.1733	0.0652	0.0741	0.0005	-0.0008	0.0000
167	0.1179	0.0344	0.0754	0.0003	-0.0006	0.0000
168	0.0738	0.0126	0.0763	0.0002	-0.0005	0.0000
169	0.0404	-0.0017	0.0769	0.0001	-0.0004	0.0000
170	0.0163	-0.0099	0.0772	0.0001	-0.0003	0.0000
171	0.0000	-0.0138	0.0770	0.0000	-0.0002	0.0000
172	-0.0100	-0.0146	0.0764	0.0000	-0.0001	0.0000

173	-0.0153	-0.0136	0.0756	0.0000	0.0000	0.0000
174	-0.0173	-0.0115	0.0745	0.0000	0.0000	0.0000
175	-0.0170	-0.0091	0.0734	0.0000	0.0000	0.0000
176	-0.0154	-0.0066	0.0722	0.0000	0.0000	0.0000
177	-0.0130	-0.0045	0.0710	0.0000	0.0000	0.0000
178	-0.0103	-0.0027	0.0697	0.0000	0.0000	0.0000
179	-0.0077	-0.0014	0.0684	0.0000	0.0000	0.0000
180	-0.0054	-0.0005	0.0672	0.0000	0.0000	0.0000
181	-0.0035	0.0001	0.0659	0.0000	0.0000	0.0000
182	-0.0019	0.0004	0.0646	0.0000	0.0000	0.0000
183	-0.0009	0.0005	0.0633	0.0000	0.0000	0.0000
184	-0.0001	0.0004	0.0620	0.0000	0.0000	0.0000
185	0.0003	0.0004	0.0606	0.0000	0.0000	0.0000
186	0.0005	0.0003	0.0593	0.0000	0.0000	0.0000
187	0.0006	0.0002	0.0580	0.0000	0.0000	0.0000
188	0.0005	0.0001	0.0567	0.0000	0.0000	0.0000
189	0.0005	0.0001	0.0553	0.0000	0.0000	0.0000
190	0.0004	0.0000	0.0540	0.0000	0.0000	0.0000
191	0.0003	0.0000	0.0526	0.0000	0.0000	0.0000
192	0.0002	0.0000	0.0513	0.0000	0.0000	0.0000
193	0.0001	0.0000	0.0500	0.0000	0.0000	0.0000
194	0.0000	0.0000	0.0486	0.0000	0.0000	0.0000
195	0.0000	0.0000	0.0473	0.0000	0.0000	0.0000
196	0.0000	0.0000	0.0460	0.0000	0.0000	0.0000
197	0.0000	0.0000	0.0447	0.0000	0.0000	0.0000
198	0.0000	0.0000	0.0435	0.0000	0.0000	0.0000
199	0.0000	0.0000	0.0424	0.0000	0.0000	0.0000
200	0.0000	0.0000	0.0414	0.0000	0.0000	0.0000
201	0.0000	0.0000	0.0405	0.0000	0.0000	0.0000
202	0.0000	0.0000	0.0397	0.0000	0.0000	0.0000

Pile Number 4

4	0.4781	0.2640	0.3355	0.0008	-0.0010	0.0000
203	0.3978	0.2022	0.3301	0.0008	-0.0010	0.0000
204	0.3169	0.1451	0.3242	0.0007	-0.0010	0.0000
205	0.2408	0.0964	0.3182	0.0006	-0.0009	0.0000
206	0.1740	0.0573	0.3123	0.0004	-0.0008	0.0000
207	0.1184	0.0280	0.3063	0.0003	-0.0006	0.0000
208	0.0741	0.0073	0.3002	0.0002	-0.0005	0.0000
209	0.0401	-0.0062	0.2939	0.0001	-0.0004	0.0000
210	0.0153	-0.0142	0.2876	0.0001	-0.0003	0.0000
211	-0.0017	-0.0179	0.2812	0.0000	-0.0002	0.0000
212	-0.0123	-0.0185	0.2748	0.0000	-0.0001	0.0000
213	-0.0179	-0.0171	0.2682	0.0000	0.0000	0.0000
214	-0.0197	-0.0145	0.2617	0.0000	0.0000	0.0000
215	-0.0190	-0.0115	0.2551	0.0000	0.0000	0.0000
216	-0.0166	-0.0084	0.2484	0.0000	0.0000	0.0000
217	-0.0135	-0.0057	0.2418	0.0000	0.0000	0.0000
218	-0.0102	-0.0035	0.2352	0.0000	0.0000	0.0000
219	-0.0072	-0.0018	0.2288	0.0000	0.0000	0.0000
220	-0.0046	-0.0006	0.2224	0.0000	0.0000	0.0000
221	-0.0026	0.0001	0.2162	0.0000	0.0000	0.0000
222	-0.0012	0.0004	0.2100	0.0000	0.0000	0.0000
223	-0.0002	0.0006	0.2039	0.0000	0.0000	0.0000
224	0.0003	0.0006	0.1979	0.0000	0.0000	0.0000
225	0.0006	0.0005	0.1921	0.0000	0.0000	0.0000
226	0.0007	0.0003	0.1863	0.0000	0.0000	0.0000
227	0.0006	0.0002	0.1807	0.0000	0.0000	0.0000
228	0.0005	0.0001	0.1752	0.0000	0.0000	0.0000
229	0.0004	0.0001	0.1698	0.0000	0.0000	0.0000
230	0.0002	0.0000	0.1645	0.0000	0.0000	0.0000
231	0.0001	0.0000	0.1593	0.0000	0.0000	0.0000
232	0.0001	0.0000	0.1542	0.0000	0.0000	0.0000
233	0.0000	0.0000	0.1493	0.0000	0.0000	0.0000
234	0.0000	0.0000	0.1445	0.0000	0.0000	0.0000
235	0.0000	0.0000	0.1398	0.0000	0.0000	0.0000
236	0.0000	0.0000	0.1352	0.0000	0.0000	0.0000
237	0.0000	0.0000	0.1308	0.0000	0.0000	0.0000
238	0.0000	0.0000	0.1268	0.0000	0.0000	0.0000
239	0.0000	0.0000	0.1232	0.0000	0.0000	0.0000
240	0.0000	0.0000	0.1201	0.0000	0.0000	0.0000
241	0.0000	0.0000	0.1173	0.0000	0.0000	0.0000
242	0.0000	0.0000	0.1150	0.0000	0.0000	0.0000

SUM OF TOTAL SOIL SPRING LOADS

CHECK: Total Load Carried by the Soil
(Sum of NF+FF Soil Spring Loads)

X Direction	=	4847.5203	Kips
Y Direction	=	5268.3599	Kips
Z Direction	=	28093.9775	Kips

BSI FB-MultiPier - File: P1-LCS.out Wednesday, March 23, 2011
Sum of Tip Forces = 7355.7429 Kips

Summary of Pile Forces for Load CASE 1

1. Axial Force (Kips)

Pile #	Maximum Force	Minimum Force
1	-0.19250E+04	-0.55269E+04
2	-0.33165E+04	-0.10405E+05
3	-0.39885E+03	-0.11876E+04
4	-0.20144E+04	-0.58419E+04

2. Pile Shear Force in 2 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.86108E+03	-0.17787E+03
2	0.13107E+04	-0.19618E+03
3	0.90406E+03	-0.14156E+03
4	0.12640E+04	-0.20197E+03

3. Pile Shear Force in 3 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.10973E+03	-0.16162E+04
2	0.11581E+03	-0.17888E+04
3	0.15177E+03	-0.75454E+03
4	0.19947E+03	-0.63093E+03

4. Bending Moment About 2 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.2742E+05	0.59193E+02	-4850.
2	2	0.00000E+00	0.3191E+05	0.59193E+02	-4975.
3	3	0.00000E+00	3422.	0.39462E+02	-6704.
4	218	0.11839E+03	541.9	0.26308E+02	-9094.

5. Bending Moment About 3 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	3286.	0.39462E+02	-0.1003E+05
2	2	0.00000E+00	0.1118E+05	0.46039E+02	-0.1003E+05
3	3	0.00000E+00	6479.	0.39462E+02	-7716.
4	4	0.00000E+00	9469.	0.39462E+02	-0.1046E+05

****
* ANALYTICAL FORCE RESULTS FOR PIER *
****

ELEM NO.	PROP NO.	NODE NO.	LOAD CASE	FAX (Kips)	F22 (Kips)	F33 (Kips)	M22 (Kip-ft)	M33 (Kip-ft)	TORQUE (Kip-ft)	D/C (Ratio)
- Connector Beam Segments										
1	1	82	1	-529.02	6799.41	-2704.96	50717.99	127488.96	33050.30	0.00
	1	60		529.02	-6799.41	2704.96	0.00	0.00	-33050.30	0.00
2	1	82	1	-310.26	-5588.42	-1910.30	11939.35	-34927.65	13263.84	0.00
	1	54		310.26	5588.42	1910.30	0.00	0.00	-13263.84	0.00
3	1	82	1	930.51	20157.57	2679.20	-50234.97	377954.38	-34993.13	0.00
	1	47		-930.51	-20157.57	-2679.20	0.00	0.00	34993.13	0.00
4	1	82	1	223.89	-9127.55	1897.18	-11857.37	-57047.22	-12966.74	0.00
	1	53		-223.89	9127.55	-1897.18	0.00	0.00	12966.74	0.00

```
**************************************************
*   ANALYTICAL PILE CAP - SHELL STRESS RESULTS   *
**************************************************


**********************
*   DAMPING FORCES   *
**********************

  Node #      FXX          FYY          FZZ          MXX          MYY          MZZ
            Kip          Kip          Kip          Kip          Kip          Kip


************************************
*   UNIAXIAL INTERACTION DIAGRAM   *
************************************

NOTE : 1. The tables below show the values on the Interaction
          Diagrams for each section which correspond to the
          section capacity
       2. The numbering of the SECTIONS/SEGMENTS is shown
          previously in the output file

----------------------------------------
! -> Pile Cross Section Number =    1 !
----------------------------------------

Diagram Data
____________

Maximum Tension Force                      =  0.4820E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid    =  0.1237E-14 (in)
Local 3 Axis Shift for Plastic Centroid    = -0.7486E-09 (in)

Recommended Phi Values
______________________

Concrete, Rectangular members           Phi =  0.70
Concrete, Circular members with Ties    Phi =  0.70
Concrete, Circular members with Spirals Phi =  0.75

Phi Factors Used
________________

Phi Factor for Concrete Control            =   0.7500
Phi Factor for Steel in Compression        =   0.9000
Phi Factor for Steel in Tension            =   0.9500
Phi Factor for Steel in Bending            =   1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips,  Units for Moment : Kip-ft

   Axial      Moment(+3)   Moment(-2)   Moment(-3)   Moment(+2)

 0.4820E+05  0.0000E+00  0.0000E+00  0.0000E+00  0.0000E+00
 0.4354E+05  0.1515E+06  0.1515E+06  0.1515E+06  0.1515E+06
 0.3929E+05  0.1672E+06  0.1672E+06  0.1672E+06  0.1672E+06
 0.3526E+05  0.1776E+06  0.1776E+06  0.1776E+06  0.1776E+06
 0.3041E+05  0.1842E+06  0.1842E+06  0.1842E+06  0.1842E+06
 0.2639E+05  0.1869E+06  0.1869E+06  0.1869E+06  0.1869E+06
 0.2191E+05  0.1900E+06  0.1900E+06  0.1900E+06  0.1900E+06
 0.1762E+05  0.1988E+06  0.1988E+06  0.1988E+06  0.1988E+06
 0.1308E+05  0.2063E+06  0.2063E+06  0.2063E+06  0.2063E+06
 0.8690E+04  0.2121E+06  0.2121E+06  0.2121E+06  0.2121E+06
 0.4384E+04  0.2176E+06  0.2176E+06  0.2176E+06  0.2176E+06
-0.1228E-11  0.2194E+06  0.2194E+06  0.2194E+06  0.2194E+06
-0.7627E+04  0.1870E+06  0.1870E+06  0.1870E+06  0.1870E+06
-0.1523E+05  0.1932E+06  0.1932E+06  0.1932E+06  0.1932E+06
-0.2285E+05  0.1946E+06  0.1946E+06  0.1946E+06  0.1946E+06
-0.3034E+05  0.1885E+06  0.1885E+06  0.1885E+06  0.1885E+06
-0.3796E+05  0.1771E+06  0.1771E+06  0.1771E+06  0.1771E+06
-0.4540E+05  0.1601E+06  0.1601E+06  0.1601E+06  0.1601E+06
-0.5382E+05  0.1340E+06  0.1340E+06  0.1340E+06  0.1340E+06
-0.5444E+05  0.1320E+06  0.1320E+06  0.1320E+06  0.1320E+06
-0.5513E+05  0.1297E+06  0.1297E+06  0.1297E+06  0.1297E+06
-0.5632E+05  0.1256E+06  0.1256E+06  0.1256E+06  0.1256E+06
-0.5690E+05  0.1237E+06  0.1237E+06  0.1237E+06  0.1237E+06
-0.5785E+05  0.1204E+06  0.1204E+06  0.1204E+06  0.1204E+06
-0.5867E+05  0.1175E+06  0.1175E+06  0.1175E+06  0.1175E+06
-0.5948E+05  0.1144E+06  0.1144E+06  0.1144E+06  0.1144E+06
-0.6019E+05  0.1116E+06  0.1116E+06  0.1116E+06  0.1116E+06
-0.6145E+05  0.1066E+06  0.1066E+06  0.1066E+06  0.1066E+06
```

-0.6215E+05 0.1012E+06 0.1037E+06 0.1012E+06 0.1037E+06

! -> Pile Cross Section Number = 2 !

Diagram Data

Maximum Tension Force = 0.3972E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = -0.2885E-15 (in)
Local 3 Axis Shift for Plastic Centroid = -0.6414E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.3972E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.2746E+05	0.1262E+06	0.1262E+06	0.1262E+06	0.1262E+06
0.2716E+05	0.1269E+06	0.1269E+06	0.1269E+06	0.1269E+06
0.2685E+05	0.1276E+06	0.1276E+06	0.1276E+06	0.1276E+06
0.2538E+05	0.1310E+06	0.1310E+06	0.1310E+06	0.1310E+06
0.2176E+05	0.1406E+06	0.1406E+06	0.1406E+06	0.1406E+06
0.1804E+05	0.1502E+06	0.1502E+06	0.1502E+06	0.1502E+06
0.1436E+05	0.1570E+06	0.1570E+06	0.1570E+06	0.1570E+06
0.1083E+05	0.1547E+06	0.1547E+06	0.1547E+06	0.1547E+06
0.7222E+04	0.1542E+06	0.1542E+06	0.1542E+06	0.1542E+06
0.3610E+04	0.1576E+06	0.1576E+06	0.1576E+06	0.1576E+06
-0.5163E-01	0.1596E+06	0.1596E+06	0.1596E+06	0.1596E+06
-0.6658E+04	0.1336E+06	0.1336E+06	0.1336E+06	0.1336E+06
-0.1331E+05	0.1364E+06	0.1364E+06	0.1364E+06	0.1364E+06
-0.1999E+05	0.1383E+06	0.1383E+06	0.1383E+06	0.1383E+06
-0.2662E+05	0.1365E+06	0.1365E+06	0.1365E+06	0.1365E+06
-0.3326E+05	0.1303E+06	0.1303E+06	0.1303E+06	0.1303E+06
-0.3957E+05	0.1217E+06	0.1217E+06	0.1217E+06	0.1217E+06
-0.4701E+05	0.1065E+06	0.1065E+06	0.1065E+06	0.1065E+06
-0.4884E+05	0.1020E+06	0.1020E+06	0.1020E+06	0.1020E+06
-0.5106E+05	0.9575E+05	0.9575E+05	0.9575E+05	0.9575E+05
-0.5308E+05	0.8956E+05	0.8956E+05	0.8956E+05	0.8956E+05
-0.5557E+05	0.8048E+05	0.8161E+05	0.8048E+05	0.8161E+05
-0.5766E+05	0.7424E+05	0.7474E+05	0.7424E+05	0.7474E+05
-0.5966E+05	0.6751E+05	0.6782E+05	0.6751E+05	0.6782E+05
-0.6195E+05	0.5858E+05	0.5963E+05	0.5858E+05	0.5963E+05
-0.6434E+05	0.4877E+05	0.5056E+05	0.4877E+05	0.5056E+05
-0.6692E+05	0.4040E+05	0.4040E+05	0.4040E+05	0.4040E+05
-0.6946E+05	0.3005E+05	0.3005E+05	0.3005E+05	0.3005E+05
-0.7136E+05	0.2206E+05	0.2206E+05	0.2206E+05	0.2206E+05

****
* FINAL MAXIMUMS/MINIMUMS FOR ALL LOAD CASES *
* PIER # 1 *
****

Maximum/Minimum Pile Forces

	Value	Load	Comb.	Pile
Max Shear in 2 Direction	0.1311E+04 Kip	1	0	2
Min Shear in 2 Direction	-0.2020E+03 Kip	1	0	4
Max Shear in 3 Direction	0.1995E+03 Kip	1	0	4
Min Shear in 3 Direction	-0.1789E+04 Kip	1	0	2
Max Moment about 2 Axis	0.3191E+05 Kip-ft	1	0	2
Min Moment about 2 Axis	-0.9094E+04 Kip-ft	1	0	4
Max Moment About 3 Axis	0.1118E+05 Kip-ft	1	0	2
Min Moment About 3 Axis	-0.1046E+05 Kip-ft	1	0	4
Max Axial Force	-0.3988E+03 Kip	1	0	3

Min Axial Force	-0.1040E+05	Kip	1	0	2
Absolute Max Torque	0.1672E-04	Kip-ft	1	0	3
Max Demand/Capacity Ratio	0.2125E+00		1	0	2

Maximum/Minimum Soil Forces

Max Axial Soil Force	0.7224E+03	Kip	1	0	2
Min Axial Soil Force	0.0000E+00	Kip	1	0	1
Max Lateral Force in X dir	0.3522E+03	Kip	1	0	2
Min Lateral Force in X dir	-0.3391E+02	Kip	1	0	4
Max Lateral Force in Y dir	0.3976E+03	Kip	1	0	2
Min Lateral Force in Y dir	-0.2909E+02	Kip	1	0	4
Max Torsional Soil Force	0.0000E+00	Kip-ft	1	0	1

Maximum/Minimum Pile Displacements

Max Axial Displacement	0.5786E+00	in	1	0	2
Min Axial Displacement	0.3969E-01	in	1	0	3
Max Displacement in X	0.4790E+00	in	1	0	3
Min Displacement in X	-0.2125E-01	in	1	0	1
Max Displacement in Y	0.2704E+00	in	1	0	3
Min Displacement in Y	-0.1848E-01	in	1	0	4

Maximum/Minimum Column Forces

	Value		Load	Comb.	Column
Max Axial Force	0.0000E+00	Kip	0	0	0
Min Axial Force	0.0000E+00	Kip	0	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	1
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	0
Absolute Max Torque	0.1000E+06	Kip-ft	1	0	0

Maximum/Minimum Pier Cap Forces

Max Axial Force	0.0000E+00	Kip	0	0
Min Axial Force	0.0000E+00	Kip	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0
Max Torque	-0.1000E+06	Kip-ft	1	0
Min Torque	0.0000E+00	Kip-ft	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0

****

Foundation Flexibilty for given loads

****

Averaged flexiblity

	Fx	Fy	Fz	Mx	My	Mz
DeltaX	0.8354E-04	0.5056E-06	-0.8681E-06	0.1636E-08	-0.8742E-07	0.1301E-08
DeltaY	0.5056E-06	0.4950E-04	-0.3228E-06	0.4788E-08	-0.1733E-08	-0.1080E-09
DeltaZ	-0.8681E-06	-0.3228E-06	0.2230E-04	-0.8879E-09	0.2746E-08	-0.4964E-09
ThetaX	0.1636E-08	0.4788E-08	-0.8879E-09	0.1124E-09	-0.5506E-11	0.1975E-11
ThetaY	-0.8742E-07	-0.1733E-08	0.2746E-08	-0.5506E-11	0.6832E-09	-0.1375E-11
ThetaZ	0.1301E-08	-0.1080E-09	-0.4964E-09	0.1975E-11	-0.1375E-11	0.2843E-09

****

Foundation Stiffness for given loads

****

STIFFNESS

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.1383E+05	-0.6694E+02	0.3141E+03	-0.1085E+06	0.1767E+07	-0.5345E+05
Fy	-0.6694E+02	0.2029E+05	0.2528E+03	-0.8598E+06	0.3498E+05	0.1460E+05
Fz	0.3141E+03	0.2528E+03	0.4488E+05	0.3312E+06	-0.1368E+06	0.7407E+05
Mx	-0.1085E+06	-0.8598E+06	0.3312E+06	0.8941E+10	0.5454E+08	-0.6110E+08
My	0.1767E+07	0.3498E+05	-0.1368E+06	0.5454E+08	0.1691E+10	-0.5108E+06
Mz	-0.5345E+05	0.1460E+05	0.7407E+05	-0.6110E+08	-0.5108E+06	0.3518E+10

****
Foundation Stiffness in STANDARD X-Y-Z directions
(FB-Pier->Stardard, X->X, Y->Z & -Z->Y)
Translations: kips/in Rotations: kip-in/rad
****

Stiffness in standard X-Y-Z

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.1383E+05	-0.3141E+03	-0.6694E+02	-0.1085E+06	0.5345E+05	0.1767E+07
Fy	-0.3141E+03	0.4488E+05	-0.2528E+03	-0.3312E+06	0.7407E+05	0.1368E+06
Fz	-0.6694E+02	-0.2528E+03	0.2029E+05	-0.8598E+06	-0.1460E+05	0.3498E+05
Mx	-0.1085E+06	-0.3312E+06	-0.8598E+06	0.8941E+10	0.6110E+08	0.5454E+08
My	0.5345E+05	0.7407E+05	-0.1460E+05	0.6110E+08	0.3518E+10	0.5108E+06
Mz	0.1767E+07	0.1368E+06	0.3498E+05	0.5454E+08	0.5108E+06	0.1691E+10

```
!------------------------------------------------------------!
!                                                            !
!        The University of Florida, Florida Department       !
!        of Transportation, Drs. Marc Hoit, Mike McVay       !
!        Cliff Hays, Mark Williams, Petros Christou, and     !
!                         Jae H. Chung                       !
!         disclaim any warranty, expressed or implied,       !
!          including but not limited to, any implied         !
!         warranty of fitness for a particular purpose       !
!            or accuracy of the FB-Pier software             !
!     The  developers shall not be liable for any damages    !
!          incurred through the use of FB-MultiPier          !
!                                                            !
!                                                            !
!              :::: F B - M U L T I P I E R ::::             !
!                  FB-MultiPier Version 4.13                 !
!                                                            !
!                                                            !
!         Written by Marc Hoit, Mike McVay, Cliff Hays       !
!         Mark Williams, Petros Christou, Jae H. Chung.      !
!                                                            !
!      Civil & Coastal Engineering, University of Florida    !
!      Supported by Florida Department of Transportation     !
!           and the Federal Highway Administration           !
!                                                            !
!             The program calculates the Response            !
!           of the Bridge Pier Pile Soil Structures          !
!                                                            !
!            The Analysis includes PreLoad, Static,          !
!                Transient Dynamic or Push Over              !
!                                                            !
!        The Program Handles NonLinear Soil Behavior,        !
!  Linear Pile Cap and Linear and NonLinear Piles and Piers  !
!                                                            !
!                                                            !
!       Contact: Bridge Software Institute for Support       !
!               HTTP://BSI-WEB.CE.UFL.EDU                    !
!                                                            !
!------------------------------------------------------------!
```

```
Analysis Start       : 3:40pm
Analysis End         : 3:40pm
Analysis Time        : 3 seconds

Input Data File Name : P2-LCS.in
Analysis Date        : 3-15-2011
License ID Number    : 432478881


********************
*   PROJECT DATA   *
********************

Project Client       : CRC / WSDOT / ODOT
Project Name         : Columbia River Crossing
Project Manager      : R. Turton
Computed by          : NRH
Project Description : SB - Pier 2 - Liquefaction + Contraction Scour


**************************************
*   SELECTIVE PRINT OUTPUT CONTROL   *
**************************************
                                      Print On
Pile Displacements                      YES
Pile Element Forces                      NO
Missing Pile ID Numbers                  NO
Pier Columns and Pier Cap Displacements  NO
Pier Columns and Pier Cap Force Output  YES
Pier Material Properties                YES
Soil Response Forces                     NO
Soil Data per Layer                     YES
Soil Curve data per Pile Node            NO
Soil Graph per Pile Node                 NO
Out of Balance Forces                    NO
Bridge Simulation Spring Force Output    NO
Bridge Span Displacements                NO
Bridge Span Element Forces               NO
Bridge Span Properties                   NO
Pile Cap Stress                          NO
```

BSI FB-MultiPier - File: P2-LCS.out Wednesday, March 23, 2011

```
 Material Stress Strain Curve Data          NO
 Interaction Diagram Data For Pile and Pier YES
 Pile and Pier coordinates                  NO
 Generate XML file                          NO


 *************
 *   UNITS   *
 *************

 Analysis Units Specified are: English Mixed (Kips & Ft some lbs & in)


 ***************************
 *   CONTROL INFORMATION   *
 ***************************

 Number of Piers               (NUMPIERS) =    1
 Maximum Number of Iterations    (MAXITN) =   50
 Tolerance                        (TOLER) =    10.000000     Kips

 NOTE : The following soil information is not applicable in the coulmn analysis problems

 Soil Behavior Option             (IFLEX) =    0
    IFLEX = 0 -> PY Multipliers are Input
    IFLEX = 1 -> PY Multipliers Defaulted to 1.0
    IFLEX = 2 -> No SOIL (Must use tip springs)

 Soil resistance due to Pile Rotation About 2 and 3 Axis (NSODF) =    4
    NSDOF = 4 -> NO Resistance Accounted
    NSDOF = 6 -> Resistance Accounted

 Linear Pile TIP Spring Option     (ITIP) =    0
    ITIP = 0 -> NO spring
    ITIP = 1 -> Axial only
    ITIP = 2 -> All DOF

 Linear Pile TIP Spring Stiffness (TSTIF) =         0.00 kips/in


 **********************
 *   SOIL BEHAVIOR    *
 **********************

 PY Multipliers will be used (IFLEX = 0)


 ***************************************************
 *   LOAD FACTORS FOR SELF WEIGHT AND BUOYANCY     *
 ***************************************************

 LOAD CASE     SELF WEIGHT     BUOYANCY
     #            FACTOR         FACTOR
     1             1.00           1.00


 ****************************
 *   GENERAL INFORMATION    *
 ****************************

 Static / Cyclic Load (KCYC)      =    0
    KCYC = 0 -> Static Load
    KCKC > 0 -> Cyclic Load (# Cycles)

 Fixity of Pile Cap (KFIX)        =    1
    KFIX = 0 -> Pinned Head
    KFIX = 1 -> Fixed head

 Bearing of Cap on Soil           =  NO


 ******************************
 *   GRID DATA INFORMATION    *
 ******************************

 NOTE: X-Grid : Distance between axes along the X-Axis
       Y-Grid : Distance between axes along the Y-Axis

 Number of Grid Points in X-Direction (NPX) =     5
 Number of Grid Points in X-Direction (NPY) =     5

 Grid Spacing in the X Direction : (inches)
      90.00     180.00     180.00      90.00
```

Grid Spacing in the Y Direction : (inches)
90.00 360.00 360.00 90.00

****
* ANALYSIS OPTIONS *
****

Type of Stiffness = Secant Stiffness
Type of Structure = Full
Type of Analysis = Static Analysis

****
* INPUT SOIL DATA - GIVEN BY LAYER *
****

NOTE : The following data is used to define Springs
for each Soil Layer to determine the Soil
Behavior during the analysis

LAYERED P-Y CURVES

SOIL SET # 1

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	1	1	0.6000E+01	0.4600E+01	0.1073E+03
			0.6000E+01	0.4600E+01	0.1073E+03
1	2	1	0.6000E+01	0.7500E+01	0.1212E+03
			0.6000E+01	0.7500E+01	0.1212E+03
1	3	1	0.3500E+02	0.5000E+02	0.1212E+03
			0.3500E+02	0.5000E+02	0.1212E+03
1	4	1	0.4500E+02	0.1250E+03	0.1367E+03
			0.4500E+02	0.1250E+03	0.1367E+03
1	5	1	0.4500E+02	0.1500E+03	0.1402E+03
			0.4500E+02	0.1500E+03	0.1402E+03

LAYERED T-Z CURVES

SOIL SET # 1

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00
	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00

	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.546E+01	0.380E+00	0.147E+02
	0.760E+00	0.679E+01	0.760E+00	0.182E+02
	0.114E+01	0.707E+01	0.114E+01	0.190E+02
	0.152E+01	0.707E+01	0.152E+01	0.190E+02
	0.265E+01	0.707E+01	0.265E+01	0.190E+02
	0.379E+01	0.707E+01	0.379E+01	0.190E+02
	0.493E+01	0.707E+01	0.493E+01	0.190E+02
	0.606E+01	0.707E+01	0.606E+01	0.190E+02
	0.720E+01	0.707E+01	0.720E+01	0.190E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

LAYERED T-Theta CURVES

SOIL SET # 1

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	1	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	2	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	3	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	4	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	5	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

PILE TIP SOIL PARAMETERS

SOIL SET # 1

USER DEFINED

Q Value	T Value

	in	lbs
1	0.000E+00	0.000E+00
2	0.222E+00	0.362E+07
3	0.444E+00	0.624E+07
4	0.667E+00	0.829E+07
5	0.889E+00	0.995E+07
6	0.111E+01	0.113E+08
7	0.133E+01	0.125E+08
8	0.156E+01	0.136E+08
9	0.178E+01	0.145E+08
10	0.200E+01	0.153E+08

****
* PILE SEGMENT INFORMATION DATA *
****

NOTE: The Piles Sets consist of Pile Segments based on the User Input. The program groups all segments from all the different Pile Sets and assigns a reference number to each

The reference number for each segment together with the User Input Pile Set/Segment number is shown below. The Input section properties for each section/segment is also provided below.

The user is advised to double check these numbers

Number of segments found in all Piles (NPSEG) = 2

! -> SECTION DATA FOR SECTION/SEGMENT : 1 !

Input Pile Set Number = 1
Input Pile Set Segment = 1

Section Pile Length (L) = 9.0000000 ft

Nonlinear Section/Segment Material Properties

Material Option (MATOPT) = 1
(Please Refer to the Users Guide for Details)

- Concrete Stress Strain Properties

Concrete Strength (FPC) = 0.4000E+01 ksi
Modulus of Elasticity (EC) = 0.4224E+04 ksi

Gauss Integration Points for Concrete = 60

- Steel Stress Strain Properties

Mild Steel Yield Stress (FY) = 0.600E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

Tubular Steel Yield Stress (FY) = 0.500E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

- Shape of Section : CIRCULAR

- Steel and Confinement Data

Number of Steel Layers = 2
Section/Segment Diameter = 180.0000 in
Tied/Spiral Reinforcement Flag = 1
(NOTE : Spiral = 1, Tied = 2)
Confinement Flag = 1
(NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

- Steel and Confinement Data

Yield Stress of Confinement Steel = 60.00 ksi
Spacing between Confinement Steel = 6.000 in
Diameter of Confinement Steel = 0.7500 in
Outer Shell Thickness = 1.00 in

- Total Area of Steel Reinforcement = 424.00 in^2

Layer	# Bars/Strands	Area in^2	Layer Dia. in	Prestressing ksi

```
   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     1           56        4.00    108.00           0.00

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     2           52        3.85     96.00           0.00

 ------------------------------------------------
 ! -> SECTION DATA FOR SECTION/SEGMENT :   2  !
 ------------------------------------------------

 Input Pile Set Number  =   1
 Input Pile Set Segment =   2

 Section Pile Length               (L) =    252.08000     ft

 Nonlinear Section/Segment Material Properties
 ---------------------------------------------

 Material Option (MATOPT) =   1
 (Please Refer to the Users Guide for Details)

 - Concrete Stress Strain Properties

   Concrete Strength    (FPC) = 0.6000E+01 ksi
   Modulus of Elasticity (EC) = 0.5173E+04 ksi

   Gauss Integration Points for Concrete = 60

 - Steel Stress Strain Properties

   Mild Steel Yield Stress  (FY) =  0.600E+02 ksi
   Modulus of Elasticity    (ES) = 0.2900E+05 ksi

   Tubular Steel Yield Stress (FY) =  0.600E+02 ksi
   Modulus of Elasticity      (ES) = 0.2900E+05 ksi

 - Shape of Section : CIRCULAR

 - Steel and Confinement Data

   Number of Steel Layers         =   2
   Section/Segment Diameter       =  120.0000 in
   Tied/Spiral Reinforcement Flag =   1
   (NOTE : Spiral = 1, Tied   = 2)
   Confinement Flag               =   1
   (NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

 - Steel and Confinement Data

  Yield Stress of Confinement Steel =    60.00     ksi
  Spacing between Confinement Steel =    6.000     in
  Diameter of Confinement Steel     =   0.7500     in
   Outer Shell Thickness          =    1.00      in

 - Total Area of Steel Reinforcement  = 424.00 in^2

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing
                           in^2      in             ksi

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     1           56        4.00    108.00           0.00

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
```

for the analysis. The area is changed to
result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
2	52	3.85	96.00	0.00

PLOT OF THE QZ CURVE FOR THE TIP OF THE PILE

- USER DEFINED CURVE

SOIL SET	Z Value	Q Value	Z Value	Q Value	Z Value	Q Value
1	0.0000E+00	0.0000E+00	0.2222E+00	0.3615E+07	0.4444E+00	0.6244E+07
	0.6667E+00	0.8290E+07	0.8889E+00	0.9952E+07	0.1111E+01	0.1134E+08
	0.1333E+01	0.1253E+08	0.1556E+01	0.1357E+08	0.1778E+01	0.1448E+08
	0.2000E+01	0.1530E+08				

****
* PILE SET DATA DESCRIPTION *
****

NOTE : The piles are organized in pile sets. Each pile
set is composed of pile segments that are input
by the User. A pile set is attached to each
pile in order to describe its composition

List of Piles Sets and Piles

Pile Set	Piles (that are assigned the Pile Set)
1	1, 2, 3, 4

Total Length for Each Pile Set

Pile Set	Length
1	3132.96

****
* INPUT FOR STRUCTURAL ANALYSIS *
****

Number of Joints = 82
Number of Different Element Types = 3
Number of Load Conditions = 1

WARNING : Pier Columns and Cap are linear
No P-Delta or Moment Magnification is included
Nonlinear should be used for final design

PIER SUMMARY

Stiffness of Foundation Requested - NO Pier Exists

****
* MATERIAL PROPERTIES FOR PILE CAP AND FRAME (PIER) ELEMENTS *
****

****
* PILE CAP PROPERTIES - USING SHELL ELEMENTS *
****

Modulus of Elasticity = 0.4224E+04 (ksi)
Poissons Ratio = 0.2000
Shear Modulus = 0.1760E+04 (ksi)
Self Weight = 160.0000 (pcf)
Thickness = 0.1900E+02 (ft)

! -> PROPERTIES FOR CONNECTOR ELEMENTS (DEFAULTED) !

NOTE : These Elements are generated by the program at the Pier
Column Bases where they connect with the Pile Cap. The
purpose for these elements is to spread the column base

load over an area on the Pile Cap and therefore avoid
High Stress Concentrations

NOTE : The material property number for these elements is
defaulted to 1. The material numbers for the properties
of the rest of the Pier elements start form 2

-> SECTION DATA FOR SECTION/SEGMENT : 1

Member Property Number = 1
Axial Area, A = 51984. (in^2)
Torsional Moment of Inertia, J = 0.98770E+10 (in^4)
Moment of Inertia, 3 - Axis = 0.98770E+10 (in^4)
Moment of Inertia, 2 - Axis = 0.98770E+10 (in^4)
Modulus of Elasticity, E = 4224.0 (ksi)
Shear Modulus, G = 1760.0 (ksi) (used for Torsion)
Weight Density = 0.00000 (K/in^3)

! -> PROPERTIES FOR PIER COLUMNS !

Member Property Number = 2
Axial Area, A = 0.00000 (in^2)
Torsional Moment of Inertia, J = 0.00000 (in^4)
Moment of Inertia, 3 - Axis = 0.00000 (in^4)
Moment of Inertia, 2 - Axis = 0.00000 (in^4)
Modulus of Elasticity, E = 0.00000 (ksi)
Shear Modulus, G = 0.00000 (ksi) (used for Torsion)
Weight Density = 0.00000 (K/in^3)

****
* PIER MEMBER CONNECTIVITY *
****

ELEMENT NUMBER	NODES I	NODES J	MATERIAL NUMBER
1	82	60	1
2	82	54	1
3	82	47	1
4	82	53	1

****
* GENERAL LOAD DATA *
****

The table below shows the Applied Loads for every
Load Case. The values in the table represent the
magnitute of the Loads in the specified units

- Applied Load

NODE	LOAD	X (Kips)	Y (Kips)	Z (Kips)	MXX (Kip-ft)	MYY (Kip-ft)	MZZ (Kip-ft)
82	1	4070.00	0.00	0.00	0.00	0.00	0.00
82	2	0.00	3280.00	0.00	0.00	0.00	0.00
82	3	0.00	0.00	24563.00	0.00	0.00	0.00
82	4	0.00	0.00	0.00	237457.00	0.00	0.00
82	5	0.00	0.00	0.00	0.00	-61230.00	0.00
82	6	0.00	0.00	0.00	0.00	0.00	1963.00

****
*
* ANALYSIS RESULTS *
*
****

****
* RESULTS FOR LOAD CASE # 1 *
****

NOTE : PY Multipliers are applied Lead to Trail row
based on the actual displacement. If there is
no displacement in a Lateral direction they are
defaulted to 1.0. This can happen in Axial Load
and one direction lateral load cases

PY Multipliers are Applied to A Pile Group

PILE#	X-PYM	Y-PYM
1	0.500E+00	0.100E+01
2	0.700E+00	0.100E+01
3	0.500E+00	0.100E+01
4	0.700E+00	0.100E+01

****
* CONVERGENCE REPORT *
****

The Solution Converged in 9 Iterations

Summary of Abs Maximum Out-Of-Balance Forces

FZZ =	0.739	Kips
FXX =	0.121	Kips
FYY =	62.533	Kips
MXX =	9.080	Kip-in
MYY =	0.000	Kip-in
MZZ =	57.287	Kip-in

Summary of Displacements at Pile Heads

Node	X (in)	Y (in)	Z (in)
1	7.9124	3.5542	0.4461
2	7.9123	3.5974	1.1983
3	7.9938	3.5571	-0.0735
4	7.9932	3.5948	0.6704

Final Displacements

Load Case # 1

Node	X (in)	Y (in)	Z (in)	Rx (rad)	Ry (rad)	Rz (rad)
Pile Number 1						
1	7.9124	3.5542	0.4461	0.0007	-0.0025	0.0001
83	7.7907	3.5166	0.4440	0.0009	-0.0028	0.0001
84	7.6560	3.4686	0.4417	0.0011	-0.0030	0.0001
85	7.5033	3.4063	0.4418	0.0015	-0.0035	0.0001
86	7.3280	3.3265	0.4412	0.0019	-0.0040	0.0001
87	7.1325	3.2309	0.4399	0.0022	-0.0044	0.0001
88	6.9187	3.1215	0.4379	0.0025	-0.0048	0.0001
89	6.6888	3.0000	0.4352	0.0027	-0.0051	0.0001
90	6.4449	2.8684	0.4319	0.0029	-0.0054	0.0001
91	6.1891	2.7283	0.4281	0.0031	-0.0056	0.0001
92	5.1154	2.1356	0.4094	0.0034	-0.0062	0.0001
93	3.9910	1.5275	0.3896	0.0033	-0.0062	0.0000
94	2.8955	0.9695	0.3700	0.0028	-0.0058	0.0000
95	1.9098	0.5201	0.3536	0.0021	-0.0050	0.0000
96	1.1071	0.2146	0.3396	0.0013	-0.0038	0.0000
97	0.5288	0.0463	0.3253	0.0006	-0.0026	0.0000
98	0.1739	-0.0210	0.3088	0.0002	-0.0014	0.0000
99	0.0011	-0.0314	0.2898	0.0000	-0.0006	0.0000
100	-0.0553	-0.0210	0.2698	-0.0001	-0.0001	0.0000
101	-0.0541	-0.0090	0.2505	-0.0001	0.0001	0.0000
102	-0.0335	-0.0019	0.2320	0.0000	0.0001	0.0000
103	-0.0142	0.0006	0.2146	0.0000	0.0001	0.0000
104	-0.0029	0.0007	0.1982	0.0000	0.0000	0.0000
105	0.0015	0.0002	0.1856	0.0000	0.0000	0.0000
106	0.0028	-0.0001	0.1764	0.0000	0.0000	0.0000
Pile Number 2						
2	7.9123	3.5974	1.1983	0.0007	-0.0024	0.0001
107	7.7948	3.5607	1.1886	0.0009	-0.0027	0.0001
108	7.6625	3.5135	1.1786	0.0011	-0.0030	0.0001
109	7.5101	3.4520	1.1694	0.0015	-0.0036	0.0001
110	7.3330	3.3732	1.1596	0.0019	-0.0041	0.0001
111	7.1338	3.2789	1.1493	0.0022	-0.0045	0.0001
112	6.9150	3.1711	1.1386	0.0025	-0.0049	0.0001
113	6.6789	3.0515	1.1275	0.0027	-0.0053	0.0001
114	6.4279	2.9219	1.1160	0.0029	-0.0056	0.0001
115	6.1643	2.7839	1.1043	0.0031	-0.0058	0.0001
116	5.0526	2.1952	1.0582	0.0034	-0.0064	0.0001

117	3.8850	1.5842	1.0120	0.0033	-0.0064	0.0000
118	2.7605	1.0225	0.9652	0.0029	-0.0059	0.0000
119	1.7678	0.5661	0.9185	0.0022	-0.0050	0.0000
120	0.9793	0.2476	0.8725	0.0014	-0.0037	0.0000
121	0.4326	0.0645	0.8262	0.0007	-0.0024	0.0000
122	0.1136	-0.0153	0.7785	0.0002	-0.0012	0.0000
123	-0.0290	-0.0331	0.7315	0.0000	-0.0004	0.0000
124	-0.0625	-0.0244	0.6859	-0.0001	0.0000	0.0000
125	-0.0476	-0.0113	0.6420	-0.0001	0.0001	0.0000
126	-0.0235	-0.0028	0.6000	0.0000	0.0001	0.0000
127	-0.0069	0.0005	0.5603	0.0000	0.0001	0.0000
128	0.0001	0.0007	0.5230	0.0000	0.0000	0.0000
129	0.0014	0.0003	0.4940	0.0000	0.0000	0.0000
130	0.0009	-0.0001	0.4729	0.0000	0.0000	0.0000

Pile Number 3

3	7.9938	3.5571	-0.0735	0.0011	-0.0024	0.0001
131	7.8758	3.4994	-0.0689	0.0013	-0.0027	0.0001
132	7.7446	3.4327	-0.0648	0.0015	-0.0030	0.0001
133	7.5949	3.3534	-0.0570	0.0019	-0.0035	0.0001
134	7.4219	3.2586	-0.0499	0.0022	-0.0040	0.0001
135	7.2275	3.1499	-0.0435	0.0025	-0.0044	0.0001
136	7.0137	3.0289	-0.0377	0.0027	-0.0048	0.0001
137	6.7823	2.8972	-0.0327	0.0029	-0.0052	0.0001
138	6.5354	2.7564	-0.0284	0.0031	-0.0055	0.0001
139	6.2750	2.6080	-0.0248	0.0033	-0.0058	0.0001
140	5.1675	1.9888	-0.0170	0.0035	-0.0064	0.0000
141	3.9936	1.3690	-0.0150	0.0033	-0.0065	0.0000
142	2.8571	0.8251	-0.0075	0.0027	-0.0060	0.0000
143	1.8498	0.4118	0.0055	0.0019	-0.0051	0.0000
144	1.0434	0.1475	0.0209	0.0011	-0.0038	0.0000
145	0.4743	0.0142	0.0356	0.0004	-0.0025	0.0000
146	0.1351	-0.0294	0.0470	0.0001	-0.0013	0.0000
147	-0.0191	-0.0284	0.0533	-0.0001	-0.0005	0.0000
148	-0.0577	-0.0154	0.0543	-0.0001	0.0000	0.0000
149	-0.0466	-0.0052	0.0518	0.0000	0.0001	0.0000
150	-0.0256	-0.0003	0.0489	0.0000	0.0001	0.0000
151	-0.0095	0.0009	0.0459	0.0000	0.0001	0.0000
152	-0.0012	0.0006	0.0429	0.0000	0.0000	0.0000
153	0.0015	0.0001	0.0405	0.0000	0.0000	0.0000
154	0.0019	-0.0001	0.0386	0.0000	0.0000	0.0000

Pile Number 4

4	7.9932	3.5948	0.6704	0.0012	-0.0024	0.0001
155	7.8742	3.5340	0.6657	0.0014	-0.0027	0.0001
156	7.7403	3.4642	0.6606	0.0016	-0.0030	0.0001
157	7.5858	3.3824	0.6576	0.0019	-0.0036	0.0001
158	7.4058	3.2858	0.6537	0.0022	-0.0041	0.0001
159	7.2028	3.1762	0.6492	0.0025	-0.0046	0.0001
160	6.9795	3.0554	0.6440	0.0027	-0.0050	0.0001
161	6.7384	2.9250	0.6382	0.0029	-0.0054	0.0001
162	6.4818	2.7866	0.6319	0.0031	-0.0057	0.0001
163	6.2122	2.6419	0.6252	0.0032	-0.0059	0.0001
164	5.0791	2.0441	0.5968	0.0034	-0.0065	0.0000
165	3.8940	1.4459	0.5680	0.0032	-0.0065	0.0000
166	2.7518	0.9076	0.5391	0.0027	-0.0060	0.0000
167	1.7447	0.4809	0.5123	0.0020	-0.0050	0.0000
168	0.9520	0.1938	0.4875	0.0012	-0.0037	0.0000
169	0.4109	0.0380	0.4621	0.0006	-0.0023	0.0000
170	0.1035	-0.0227	0.4341	0.0001	-0.0011	0.0000
171	-0.0289	-0.0312	0.4048	0.0000	-0.0004	0.0000
172	-0.0589	-0.0207	0.3761	-0.0001	0.0000	0.0000
173	-0.0446	-0.0088	0.3488	-0.0001	0.0001	0.0000
174	-0.0221	-0.0018	0.3229	0.0000	0.0001	0.0000
175	-0.0066	0.0006	0.2985	0.0000	0.0001	0.0000
176	0.0001	0.0007	0.2757	0.0000	0.0000	0.0000
177	0.0014	0.0002	0.2582	0.0000	0.0000	0.0000
178	0.0009	-0.0001	0.2456	0.0000	0.0000	0.0000

SUM OF TOTAL SOIL SPRING LOADS

CHECK: Total Load Carried by the Soil
(Sum of NF+FF Soil Spring Loads)

X Direction	=	4048.9516	Kips
Y Direction	=	3276.3803	Kips
Z Direction	=	42568.1749	Kips
Sum of Tip Forces	=	13897.0214	Kips

Summary of Pile Forces for Load CASE 1

1. Axial Force (Kips)

Pile #	Maximum Force	Minimum Force
1	-0.34382E+04	-0.81844E+04
2	-0.79611E+04	-0.18104E+05
3	0.11230E+03	-0.11936E+04
4	-0.47296E+04	-0.11594E+05

2. Pile Shear Force in 2 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.93215E+03	-0.64916E+03
2	0.11269E+04	-0.85383E+03
3	0.88579E+03	-0.59416E+03
4	0.11259E+04	-0.80931E+03

3. Pile Shear Force in 3 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.44314E+03	-0.85290E+03
2	0.48160E+03	-0.89724E+03
3	0.37544E+03	-0.73440E+03
4	0.44343E+03	-0.79574E+03

4. Bending Moment About 2 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.4565E+05	0.11021E+03	-0.2252E+05
2	2	0.00000E+00	0.5035E+05	0.95127E+02	-0.2451E+05
3	3	0.00000E+00	0.3627E+05	0.11021E+03	-0.1897E+05
4	4	0.00000E+00	0.4079E+05	0.11021E+03	-0.2293E+05

5. Bending Moment About 3 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.5683E+05	0.14039E+03	-0.3403E+05
2	2	0.00000E+00	0.6985E+05	0.12530E+03	-0.4168E+05
3	3	0.00000E+00	0.5194E+05	0.11021E+03	-0.2967E+05
4	4	0.00000E+00	0.6770E+05	0.12530E+03	-0.4009E+05

****
* ANALYTICAL FORCE RESULTS FOR PIER *
****

ELEM NO.	PROP NO.	NODE NO.	LOAD CASE	FAX (Kips)	F22 (Kips)	F33 (Kips)	M22 (Kip-ft)	M33 (Kip-ft)	TORQUE (Kip-ft)	D/C (Ratio)
- Connector Beam Segments										
1	1	82	1	-463.91	13022.99	-1999.90	29998.51	195344.87	48491.82	0.00
	1	60		463.91	-13022.99	1999.90	0.00	0.00	-48491.82	0.00
2	1	82	1	65.38	-7088.88	-1189.39	8920.41	-53166.62	48123.43	0.00
	1	54		-65.38	7088.88	1189.39	0.00	0.00	-48123.43	0.00
3	1	82	1	516.22	22288.28	1908.49	-28627.28	334324.16	-38459.40	0.00
	1	47		-516.22	-22288.28	-1908.49	0.00	0.00	38459.40	0.00
4	1	82	1	-96.23	-3659.39	1110.48	-8328.64	-27445.40	-50354.27	0.00
	1	53		96.23	3659.39	-1110.48	0.00	0.00	50354.27	0.00

****
* ANALYTICAL PILE CAP - SHELL STRESS RESULTS *
****

****
* DAMPING FORCES *
****

Node #	FXX Kip	FYY Kip	FZZ Kip	MXX Kip	MYY Kip	MZZ Kip

****
* UNIAXIAL INTERACTION DIAGRAM *
****

NOTE : 1. The tables below show the values on the Interaction Diagrams for each section which correspond to the section capacity
2. The numbering of the SECTIONS/SEGMENTS is shown previously in the output file

---
! -> Pile Cross Section Number = 1 !

Diagram Data

Maximum Tension Force = 0.4820E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = 0.1237E-14 (in)
Local 3 Axis Shift for Plastic Centroid = -0.7486E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.4820E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.4397E+05	0.1425E+06	0.1425E+06	0.1425E+06	0.1425E+06
0.3941E+05	0.1572E+06	0.1572E+06	0.1572E+06	0.1572E+06
0.3504E+05	0.1687E+06	0.1687E+06	0.1687E+06	0.1687E+06
0.3074E+05	0.1749E+06	0.1749E+06	0.1749E+06	0.1749E+06
0.2629E+05	0.1777E+06	0.1777E+06	0.1777E+06	0.1777E+06
0.2204E+05	0.1794E+06	0.1794E+06	0.1794E+06	0.1794E+06
0.1754E+05	0.1877E+06	0.1877E+06	0.1877E+06	0.1877E+06
0.1315E+05	0.1951E+06	0.1951E+06	0.1951E+06	0.1951E+06
0.8836E+04	0.2009E+06	0.2009E+06	0.2009E+06	0.2009E+06
0.4379E+04	0.2067E+06	0.2067E+06	0.2067E+06	0.2067E+06
0.7769E-01	0.2109E+06	0.2109E+06	0.2109E+06	0.2109E+06
-0.6898E+04	0.1877E+06	0.1877E+06	0.1877E+06	0.1877E+06
-0.1348E+05	0.1894E+06	0.1894E+06	0.1894E+06	0.1894E+06
-0.2023E+05	0.1912E+06	0.1912E+06	0.1912E+06	0.1912E+06
-0.2690E+05	0.1869E+06	0.1869E+06	0.1869E+06	0.1869E+06
-0.3368E+05	0.1773E+06	0.1773E+06	0.1773E+06	0.1773E+06
-0.4042E+05	0.1633E+06	0.1633E+06	0.1633E+06	0.1633E+06
-0.4761E+05	0.1439E+06	0.1439E+06	0.1439E+06	0.1439E+06
-0.4853E+05	0.1410E+06	0.1410E+06	0.1410E+06	0.1410E+06
-0.5008E+05	0.1361E+06	0.1361E+06	0.1361E+06	0.1361E+06
-0.5139E+05	0.1319E+06	0.1319E+06	0.1319E+06	0.1319E+06
-0.5259E+05	0.1279E+06	0.1279E+06	0.1279E+06	0.1279E+06
-0.5371E+05	0.1239E+06	0.1239E+06	0.1239E+06	0.1239E+06
-0.5469E+05	0.1204E+06	0.1204E+06	0.1204E+06	0.1204E+06
-0.5552E+05	0.1174E+06	0.1174E+06	0.1174E+06	0.1174E+06
-0.5695E+05	0.1100E+06	0.1120E+06	0.1100E+06	0.1120E+06
-0.5814E+05	0.1075E+06	0.1075E+06	0.1075E+06	0.1075E+06
-0.5945E+05	0.9967E+05	0.1019E+06	0.9967E+05	0.1019E+06
-0.6046E+05	0.9587E+05	0.9753E+05	0.9587E+05	0.9753E+05

! -> Pile Cross Section Number = 2 !

Diagram Data

Maximum Tension Force = 0.4308E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = -0.3047E-15 (in)
Local 3 Axis Shift for Plastic Centroid = -0.6806E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.4308E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.3110E+05	0.1327E+06	0.1327E+06	0.1327E+06	0.1327E+06
0.3052E+05	0.1339E+06	0.1339E+06	0.1339E+06	0.1339E+06
0.2750E+05	0.1395E+06	0.1395E+06	0.1395E+06	0.1395E+06
0.2361E+05	0.1485E+06	0.1485E+06	0.1485E+06	0.1485E+06
0.1958E+05	0.1577E+06	0.1577E+06	0.1577E+06	0.1577E+06
0.1566E+05	0.1636E+06	0.1636E+06	0.1636E+06	0.1636E+06
0.1175E+05	0.1601E+06	0.1601E+06	0.1601E+06	0.1601E+06
0.7886E+04	0.1603E+06	0.1603E+06	0.1603E+06	0.1603E+06
0.3914E+04	0.1630E+06	0.1630E+06	0.1630E+06	0.1630E+06
-0.1798E+00	0.1647E+06	0.1647E+06	0.1647E+06	0.1647E+06
-0.5618E+04	0.1381E+06	0.1381E+06	0.1381E+06	0.1381E+06
-0.1126E+05	0.1403E+06	0.1403E+06	0.1403E+06	0.1403E+06
-0.1687E+05	0.1424E+06	0.1424E+06	0.1424E+06	0.1424E+06
-0.2254E+05	0.1428E+06	0.1428E+06	0.1428E+06	0.1428E+06
-0.2814E+05	0.1389E+06	0.1389E+06	0.1389E+06	0.1389E+06
-0.3377E+05	0.1323E+06	0.1323E+06	0.1323E+06	0.1323E+06
-0.3976E+05	0.1226E+06	0.1226E+06	0.1226E+06	0.1226E+06
-0.4243E+05	0.1174E+06	0.1174E+06	0.1174E+06	0.1174E+06
-0.4510E+05	0.1111E+06	0.1111E+06	0.1111E+06	0.1111E+06
-0.4817E+05	0.1028E+06	0.1028E+06	0.1028E+06	0.1028E+06
-0.5123E+05	0.9348E+05	0.9348E+05	0.9348E+05	0.9348E+05
-0.5390E+05	0.8356E+05	0.8488E+05	0.8356E+05	0.8488E+05
-0.5661E+05	0.7541E+05	0.7580E+05	0.7541E+05	0.7580E+05
-0.5938E+05	0.6589E+05	0.6642E+05	0.6589E+05	0.6642E+05
-0.6221E+05	0.5509E+05	0.5653E+05	0.5509E+05	0.5653E+05
-0.6512E+05	0.4567E+05	0.4567E+05	0.4567E+05	0.4567E+05
-0.6802E+05	0.3413E+05	0.3413E+05	0.3413E+05	0.3413E+05
-0.7149E+05	0.1978E+05	0.1978E+05	0.1978E+05	0.1978E+05

****
* FINAL MAXIMUMS/MINIMUMS FOR ALL LOAD CASES *
* PIER # 1 *
****

Maximum/Minimum Pile Forces

	Value		Load	Comb.	Pile
Max Shear in 2 Direction	0.1127E+04	Kip	1	0	2
Min Shear in 2 Direction	-0.8538E+03	Kip	1	0	2
Max Shear in 3 Direction	0.4816E+03	Kip	1	0	2
Min Shear in 3 Direction	-0.8972E+03	Kip	1	0	2
Max Moment about 2 Axis	0.5035E+05	Kip-ft	1	0	2
Min Moment about 2 Axis	-0.2451E+05	Kip-ft	1	0	2
Max Moment About 3 Axis	0.6985E+05	Kip-ft	1	0	2
Min Moment About 3 Axis	-0.4168E+05	Kip-ft	1	0	2
Max Axial Force	0.1123E+03	Kip	1	0	3
Min Axial Force	-0.1810E+05	Kip	1	0	2
Absolute Max Torque	0.7458E+00	Kip-ft	1	0	4
Max Demand/Capacity Ratio	0.5393E+00		1	0	2

Maximum/Minimum Soil Forces

Max Axial Soil Force	0.3217E+04	Kip	1	0	2
Min Axial Soil Force	0.0000E+00	Kip	1	0	1
Max Lateral Force in X dir	0.5059E+03	Kip	1	0	2
Min Lateral Force in X dir	-0.2984E+03	Kip	1	0	2
Max Lateral Force in Y dir	0.4104E+03	Kip	1	0	2
Min Lateral Force in Y dir	-0.1716E+03	Kip	1	0	2
Max Torsional Soil Force	0.1392E+04	Kip-ft	1	0	1

Maximum/Minimum Pile Displacements

Max Axial Displacement	0.1198E+01	in	1	0	2
Min Axial Displacement	-0.7348E-01	in	1	0	3
Max Displacement in X	0.7994E+01	in	1	0	3
Min Displacement in X	-0.6252E-01	in	1	0	2
Max Displacement in Y	0.3597E+01	in	1	0	2
Min Displacement in Y	-0.3313E-01	in	1	0	2

Maximum/Minimum Column Forces

	Value		Load	Comb.	Column
Max Axial Force	0.0000E+00	Kip	0	0	0
Min Axial Force	0.0000E+00	Kip	0	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	1
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	0
Absolute Max Torque	0.1000E+06	Kip-ft	1	0	0

Maximum/Minimum Pier Cap Forces

Max Axial Force	0.0000E+00	Kip	0	0
Min Axial Force	0.0000E+00	Kip	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0
Max Torque	-0.1000E+06	Kip-ft	1	0
Min Torque	0.0000E+00	Kip-ft	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0

****

Foundation Flexibilty for given loads

****

Averaged flexiblity

	Fx	Fy	Fz	Mx	My	Mz
DeltaX	0.2023E-02	0.7231E-04	-0.2428E-04	0.2441E-07	-0.4436E-06	-0.4363E-09
DeltaY	0.7231E-04	0.1038E-02	-0.1069E-04	0.8718E-07	-0.2740E-07	0.8638E-10
DeltaZ	-0.2428E-04	-0.1069E-04	0.2154E-04	-0.2063E-08	0.5584E-08	-0.1384E-08
ThetaX	0.2441E-07	0.8718E-07	-0.2063E-08	0.1594E-09	-0.1660E-10	0.3921E-10
ThetaY	-0.4436E-06	-0.2740E-07	0.5584E-08	-0.1660E-10	0.5856E-09	0.3211E-10
ThetaZ	-0.4363E-09	0.8638E-10	-0.1384E-08	0.3921E-10	0.3211E-10	0.3311E-08

****

Foundation Stiffness for given loads

****

STIFFNESS

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.6003E+03	-0.2227E+02	0.5468E+03	-0.2510E+05	0.4480E+06	-0.3739E+04
Fy	-0.2227E+02	0.1016E+04	0.4240E+03	-0.5471E+06	0.1075E+05	0.6522E+04
Fz	0.5468E+03	0.4240E+03	0.4728E+05	0.2912E+06	-0.9491E+04	0.1648E+05
Mx	-0.2510E+05	-0.5471E+06	0.2912E+06	0.6614E+10	0.1445E+09	-0.7960E+08
My	0.4480E+06	0.1075E+05	-0.9491E+04	0.1445E+09	0.2053E+10	-0.2156E+08
Mz	-0.3739E+04	0.6522E+04	0.1648E+05	-0.7960E+08	-0.2156E+08	0.3032E+09

****

Foundation Stiffness in STANDARD X-Y-Z directions
(FB-Pier->Stardard, X->X, Y->Z & -Z->Y)
Translations: kips/in Rotations: kip-in/rad

Stiffness in standard X-Y-Z

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.6003E+03	-0.5468E+03	-0.2227E+02	-0.2510E+05	0.3739E+04	0.4480E+06
Fy	-0.5468E+03	0.4728E+05	-0.4240E+03	-0.2912E+06	0.1648E+05	0.9491E+04
Fz	-0.2227E+02	-0.4240E+03	0.1016E+04	-0.5471E+06	-0.6522E+04	0.1075E+05
Mx	-0.2510E+05	-0.2912E+06	-0.5471E+06	0.6614E+10	0.7960E+08	0.1445E+09
My	0.3739E+04	0.1648E+05	-0.6522E+04	0.7960E+08	0.3032E+09	0.2156E+08
Mz	0.4480E+06	0.9491E+04	0.1075E+05	0.1445E+09	0.2156E+08	0.2053E+10

:::: F B - M U L T I P I E R ::::
FB-MultiPier Version 4.13

Written by Marc Hoit, Mike McVay, Cliff Hays
Mark Williams, Petros Christou, Jae H. Chung.

Civil & Coastal Engineering, University of Florida
Supported by Florida Department of Transportation
and the Federal Highway Administration

The program calculates the Response
of the Bridge Pier Pile Soil Structures

The Analysis includes PreLoad, Static,
Transient Dynamic or Push Over

The Program Handles NonLinear Soil Behavior,
Linear Pile Cap and Linear and NonLinear Piles and Piers

Contact: Bridge Software Institute for Support
HTTP://BSI-WEB.CE.UFL.EDU

Analysis Start : 3:41pm
Analysis End : 3:41pm
Analysis Time : 3 seconds

Input Data File Name : P3-LCS.in
Analysis Date : 3-15-2011
License ID Number : 432478881

****
* PROJECT DATA *
****

Project Client : CRC / WSDOT / ODOT
Project Name : Columbia River Crossing
Project Manager : R. Turton
Computed by : NRH
Project Description : SB - Pier 3 - Liquefaction + Contraction Scour

****
* SELECTIVE PRINT OUTPUT CONTROL *
****

	Print On
Pile Displacements	YES
Pile Element Forces	NO
Missing Pile ID Numbers	NO
Pier Columns and Pier Cap Displacements	NO
Pier Columns and Pier Cap Force Output	YES
Pier Material Properties	YES
Soil Response Forces	NO
Soil Data per Layer	YES
Soil Curve data per Pile Node	NO
Soil Graph per Pile Node	NO
Out of Balance Forces	NO
Bridge Simulation Spring Force Output	NO
Bridge Span Displacements	NO
Bridge Span Element Forces	NO
Bridge Span Properties	NO
Pile Cap Stress	NO

BSI FB-MultiPier - File: P3-LCS.out Wednesday, March 23, 2011

```
 Material Stress Strain Curve Data          NO
 Interaction Diagram Data For Pile and Pier YES
 Pile and Pier coordinates                  NO
 Generate XML file                          NO


 *************
 *   UNITS   *
 *************

 Analysis Units Specified are: English Mixed (Kips & Ft some lbs & in)


 ****************************
 *   CONTROL INFORMATION    *
 ****************************

 Number of Piers               (NUMPIERS) =    1
 Maximum Number of Iterations    (MAXITN) =   50
 Tolerance                        (TOLER) =    10.000000     Kips

 NOTE : The following soil information is not applicable in the coulmn analysis problems

 Soil Behavior Option             (IFLEX) =    0
    IFLEX = 0 -> PY Multipliers are Input
    IFLEX = 1 -> PY Multipliers Defaulted to 1.0
    IFLEX = 2 -> No SOIL (Must use tip springs)

 Soil resistance due to Pile Rotation About 2 and 3 Axis (NSODF) =    4
    NSDOF = 4 -> NO Resistance Accounted
    NSDOF = 6 -> Resistance Accounted

 Linear Pile TIP Spring Option     (ITIP) =    0
    ITIP = 0 -> NO spring
    ITIP = 1 -> Axial only
    ITIP = 2 -> All DOF

 Linear Pile TIP Spring Stiffness (TSTIF) =         0.00 kips/in


 **********************
 *   SOIL BEHAVIOR    *
 **********************

 PY Multipliers will be used (IFLEX = 0)


 ************************************************
 *   LOAD FACTORS FOR SELF WEIGHT AND BUOYANCY   *
 ************************************************

 LOAD CASE     SELF WEIGHT     BUOYANCY
     #            FACTOR         FACTOR
     1             1.00           1.00


 ****************************
 *   GENERAL INFORMATION    *
 ****************************

 Static / Cyclic Load (KCYC)      =    0
    KCYC = 0 -> Static Load
    KCKC > 0 -> Cyclic Load (# Cycles)

 Fixity of Pile Cap (KFIX)        =    1
    KFIX = 0 -> Pinned Head
    KFIX = 1 -> Fixed head

 Bearing of Cap on Soil           =  NO


 ******************************
 *   GRID DATA INFORMATION    *
 ******************************

 NOTE: X-Grid : Distance between axes along the X-Axis
       Y-Grid : Distance between axes along the Y-Axis

 Number of Grid Points in X-Direction (NPX) =     4
 Number of Grid Points in X-Direction (NPY) =     5

 Grid Spacing in the X Direction : (inches)
      90.00     360.00      90.00
```

Grid Spacing in the Y Direction : (inches)
90.00 360.00 360.00 90.00

****
* ANALYSIS OPTIONS *
****

Type of Stiffness = Secant Stiffness
Type of Structure = Full
Type of Analysis = Static Analysis

****
* INPUT SOIL DATA - GIVEN BY LAYER *
****

NOTE : The following data is used to define Springs
for each Soil Layer to determine the Soil
Behavior during the analysis

LAYERED P-Y CURVES

SOIL SET # 1

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	1	1	0.6000E+01	0.4600E+01	0.1073E+03
			0.6000E+01	0.4600E+01	0.1073E+03
1	2	1	0.6000E+01	0.7500E+01	0.1212E+03
			0.6000E+01	0.7500E+01	0.1212E+03
1	3	1	0.3500E+02	0.5000E+02	0.1212E+03
			0.3500E+02	0.5000E+02	0.1212E+03
1	4	1	0.4500E+02	0.1250E+03	0.1367E+03
			0.4500E+02	0.1250E+03	0.1367E+03
1	5	1	0.4500E+02	0.1500E+03	0.1402E+03
			0.4500E+02	0.1500E+03	0.1402E+03

LAYERED T-Z CURVES

SOIL SET # 1

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00
	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00

	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.546E+01	0.380E+00	0.147E+02
	0.760E+00	0.679E+01	0.760E+00	0.182E+02
	0.114E+01	0.707E+01	0.114E+01	0.190E+02
	0.152E+01	0.707E+01	0.152E+01	0.190E+02
	0.265E+01	0.707E+01	0.265E+01	0.190E+02
	0.379E+01	0.707E+01	0.379E+01	0.190E+02
	0.493E+01	0.707E+01	0.493E+01	0.190E+02
	0.606E+01	0.707E+01	0.606E+01	0.190E+02
	0.720E+01	0.707E+01	0.720E+01	0.190E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

LAYERED T-Theta CURVES

SOIL SET # 1

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	1	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	2	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	3	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	4	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	5	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

PILE TIP SOIL PARAMETERS

SOIL SET # 1

USER DEFINED

Q Value	T Value

	in	lbs
1	0.000E+00	0.000E+00
2	0.222E+00	0.362E+07
3	0.444E+00	0.624E+07
4	0.667E+00	0.829E+07
5	0.889E+00	0.995E+07
6	0.111E+01	0.113E+08
7	0.133E+01	0.125E+08
8	0.156E+01	0.136E+08
9	0.178E+01	0.145E+08
10	0.200E+01	0.153E+08

****
* PILE SEGMENT INFORMATION DATA *
****

NOTE: The Piles Sets consist of Pile Segments based on the User Input. The program groups all segments from all the different Pile Sets and assigns a reference number to each

The reference number for each segment together with the User Input Pile Set/Segment number is shown below. The Input section properties for each section/segment is also provided below.

The user is advised to double check these numbers

Number of segments found in all Piles (NPSEG) = 2

! -> SECTION DATA FOR SECTION/SEGMENT : 1 !

Input Pile Set Number = 1
Input Pile Set Segment = 1

Section Pile Length (L) = 9.0000000 ft

Nonlinear Section/Segment Material Properties

Material Option (MATOPT) = 1
(Please Refer to the Users Guide for Details)

- Concrete Stress Strain Properties

Concrete Strength (FPC) = 0.4000E+01 ksi
Modulus of Elasticity (EC) = 0.4224E+04 ksi

Gauss Integration Points for Concrete = 60

- Steel Stress Strain Properties

Mild Steel Yield Stress (FY) = 0.600E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

Tubular Steel Yield Stress (FY) = 0.500E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

- Shape of Section : CIRCULAR

- Steel and Confinement Data

Number of Steel Layers = 2
Section/Segment Diameter = 180.0000 in
Tied/Spiral Reinforcement Flag = 1
(NOTE : Spiral = 1, Tied = 2)
Confinement Flag = 1
(NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

- Steel and Confinement Data

Yield Stress of Confinement Steel = 60.00 ksi
Spacing between Confinement Steel = 6.750 in
Diameter of Confinement Steel = 0.7500 in
Outer Shell Thickness = 1.00 in

- Total Area of Steel Reinforcement = 424.00 in^2

Layer	# Bars/Strands	Area in^2	Layer Dia. in	Prestressing ksi

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
1	56	4.00	108.00	0.00

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
2	52	3.85	96.00	0.00

```
-----------------------------------------------
! -> SECTION DATA FOR SECTION/SEGMENT :   2  !
-----------------------------------------------

Input Pile Set Number  =   1
Input Pile Set Segment =   2

Section Pile Length               (L) =    258.08000     ft

Nonlinear Section/Segment Material Properties
```

Material Option (MATOPT) = 1
(Please Refer to the Users Guide for Details)

- Concrete Stress Strain Properties

  Concrete Strength (FPC) = 0.6000E+01 ksi
  Modulus of Elasticity (EC) = 0.5173E+04 ksi

  Gauss Integration Points for Concrete = 60

- Steel Stress Strain Properties

  Mild Steel Yield Stress (FY) = 0.600E+02 ksi
  Modulus of Elasticity (ES) = 0.2900E+05 ksi

  Tubular Steel Yield Stress (FY) = 0.500E+02 ksi
  Modulus of Elasticity (ES) = 0.2900E+05 ksi

- Shape of Section : CIRCULAR

- Steel and Confinement Data

  Number of Steel Layers = 2
  Section/Segment Diameter = 120.0000 in
  Tied/Spiral Reinforcement Flag = 1
  (NOTE : Spiral = 1, Tied = 2)
  Confinement Flag = 1
  (NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

- Steel and Confinement Data

  Yield Stress of Confinement Steel = 60.00 ksi
  Spacing between Confinement Steel = 6.000 in
  Diameter of Confinement Steel = 0.7500 in
  Outer Shell Thickness = 1.00 in

- Total Area of Steel Reinforcement = 424.00 in^2

Layer	# Bars/Strands	Area in^2	Layer Dia. in	Prestressing ksi

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
1	56	4.00	108.00	0.00

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section

for the analysis. The area is changed to
result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
2	52	3.85	96.00	0.00

PLOT OF THE QZ CURVE FOR THE TIP OF THE PILE

- USER DEFINED CURVE

SOIL SET	Z Value	Q Value	Z Value	Q Value	Z Value	Q Value
1	0.0000E+00	0.0000E+00	0.2222E+00	0.3615E+07	0.4444E+00	0.6244E+07
	0.6667E+00	0.8290E+07	0.8889E+00	0.9952E+07	0.1111E+01	0.1134E+08
	0.1333E+01	0.1253E+08	0.1556E+01	0.1357E+08	0.1778E+01	0.1448E+08
	0.2000E+01	0.1530E+08				

****
* PILE SET DATA DESCRIPTION *
****

NOTE : The piles are organized in pile sets. Each pile
set is composed of pile segments that are input
by the User. A pile set is attached to each
pile in order to describe its composition

List of Piles Sets and Piles

Pile Set	Piles (that are assigned the Pile Set)
1	1, 2, 3, 4, 5, 6

Total Length for Each Pile Set

Pile Set	Length
1	3204.96

****
* INPUT FOR STRUCTURAL ANALYSIS *
****

Number of Joints = 64
Number of Different Element Types = 3
Number of Load Conditions = 1

WARNING : Pier Columns and Cap are linear
No P-Delta or Moment Magnification is included
Nonlinear should be used for final design

PIER SUMMARY

Stiffness of Foundation Requested - NO Pier Exists

****
* MATERIAL PROPERTIES FOR PILE CAP AND FRAME (PIER) ELEMENTS *
****

****
* PILE CAP PROPERTIES - USING SHELL ELEMENTS *
****

Modulus of Elasticity = 0.4224E+04 (ksi)
Poissons Ratio = 0.2000
Shear Modulus = 0.1760E+04 (ksi)
Self Weight = 160.0000 (pcf)
Thickness = 0.1900E+02 (ft)

! -> PROPERTIES FOR CONNECTOR ELEMENTS (DEFAULTED) !

NOTE : These Elements are generated by the program at the Pier
Column Bases where they connect with the Pile Cap. The
purpose for these elements is to spread the column base

load over an area on the Pile Cap and therefore avoid
High Stress Concentrations

NOTE : The material property number for these elements is
defaulted to 1. The material numbers for the properties
of the rest of the Pier elements start form 2

-> SECTION DATA FOR SECTION/SEGMENT : 1

Member Property Number	=	1	
Axial Area, A	=	51984.	(in^2)
Torsional Moment of Inertia, J	=	0.98770E+10	(in^4)
Moment of Inertia, 3 - Axis	=	0.98770E+10	(in^4)
Moment of Inertia, 2 - Axis	=	0.98770E+10	(in^4)
Modulus of Elasticity, E	=	4224.0	(ksi)
Shear Modulus, G	=	1760.0	(ksi) (used for Torsion)
Weight Density	=	0.00000	(K/in^3)

! -> PROPERTIES FOR PIER COLUMNS !

Member Property Number	=	2	
Axial Area, A	=	0.00000	(in^2)
Torsional Moment of Inertia, J	=	0.00000	(in^4)
Moment of Inertia, 3 - Axis	=	0.00000	(in^4)
Moment of Inertia, 2 - Axis	=	0.00000	(in^4)
Modulus of Elasticity, E	=	0.00000	(ksi)
Shear Modulus, G	=	0.00000	(ksi) (used for Torsion)
Weight Density	=	0.00000	(K/in^3)

****
* PIER MEMBER CONNECTIVITY *
****

ELEMENT NUMBER	NODES I	NODES J	MATERIAL NUMBER
1	64	47	1
2	64	4	1
3	64	37	1
4	64	3	1

****
* GENERAL LOAD DATA *
****

The table below shows the Applied Loads for every
Load Case. The values in the table represent the
magnitute of the Loads in the specified units

- Applied Load

NODE	LOAD	X (Kips)	Y (Kips)	Z (Kips)	MXX (Kip-ft)	MYY (Kip-ft)	MZZ (Kip-ft)
64	1	6457.00	0.00	0.00	0.00	0.00	0.00
64	2	0.00	3819.00	0.00	0.00	0.00	0.00
64	3	0.00	0.00	25732.00	0.00	0.00	0.00
64	4	0.00	0.00	0.00	328523.00	0.00	0.00
64	5	0.00	0.00	0.00	0.00	-391120.00	0.00
64	6	0.00	0.00	0.00	0.00	0.00	22433.00

****
* *
* ANALYSIS RESULTS *
* *
****

****
* RESULTS FOR LOAD CASE # 1 *
****

NOTE : PY Multipliers are applied Lead to Trail row
based on the actual displacement. If there is
no displacement in a Lateral direction they are
defaulted to 1.0. This can happen in Axial Load
and one direction lateral load cases

PY Multipliers are Applied to A Pile Group

PILE#	X-PYM	Y-PYM
1	0.500E+00	0.700E+00
2	0.700E+00	0.700E+00
3	0.500E+00	0.500E+00
4	0.700E+00	0.500E+00
5	0.500E+00	0.350E+00
6	0.700E+00	0.350E+00

****
* CONVERGENCE REPORT *
****

The Solution Converged in 10 Iterations

Summary of Abs Maximum Out-Of-Balance Forces

FZZ =	1.874	Kips
FXX =	1.356	Kips
FYY =	0.738	Kips
MXX =	158.400	Kip-in
MYY =	0.000	Kip-in
MZZ =	159.066	Kip-in

Summary of Displacements at Pile Heads

Node	X (in)	Y (in)	Z (in)
1	13.6020	5.5799	0.0128
2	13.6022	5.8990	1.5517
3	13.9213	5.5824	-0.4639
4	13.9211	5.8998	1.1612
5	14.2364	5.5827	-0.9596
6	14.2359	5.8971	0.5837

Final Displacements

Load Case # 1

Node	X (in)	Y (in)	Z (in)	Rx (rad)	Ry (rad)	Rz (rad)
Pile Number 1						
1	13.6020	5.5799	0.0128	0.0015	-0.0049	0.0009
65	13.2831	5.4797	0.0176	0.0018	-0.0054	0.0009
66	12.9371	5.3606	0.0217	0.0021	-0.0058	0.0009
67	12.5542	5.2159	0.0308	0.0026	-0.0065	0.0008
68	12.1258	5.0401	0.0385	0.0031	-0.0072	0.0008
69	11.6572	4.8369	0.0450	0.0035	-0.0078	0.0007
70	11.1534	4.6100	0.0501	0.0038	-0.0084	0.0006
71	10.6197	4.3632	0.0539	0.0041	-0.0088	0.0006
72	10.0614	4.1003	0.0565	0.0043	-0.0092	0.0005
73	9.4834	3.8249	0.0578	0.0045	-0.0094	0.0005
74	7.7839	3.0094	0.0548	0.0047	-0.0098	0.0004
75	6.0731	2.1973	0.0507	0.0045	-0.0096	0.0003
76	4.4467	1.4561	0.0537	0.0039	-0.0088	0.0002
77	3.0017	0.8466	0.0633	0.0030	-0.0075	0.0001
78	1.8170	0.4049	0.0769	0.0020	-0.0059	0.0001
79	0.9387	0.1326	0.0909	0.0011	-0.0041	0.0001
80	0.3682	-0.0002	0.1020	0.0004	-0.0024	0.0000
81	0.0621	-0.0411	0.1074	0.0001	-0.0011	0.0000
82	-0.0553	-0.0374	0.1066	-0.0001	-0.0003	0.0000
83	-0.0704	-0.0217	0.1011	-0.0001	0.0001	0.0000
84	-0.0491	-0.0086	0.0945	-0.0001	0.0002	0.0000
85	-0.0236	-0.0016	0.0881	0.0000	0.0001	0.0000
86	-0.0062	0.0007	0.0820	0.0000	0.0001	0.0000
87	0.0018	0.0007	0.0771	0.0000	0.0000	0.0000
88	0.0051	0.0002	0.0735	0.0000	0.0000	0.0000
Pile Number 2						
2	13.6022	5.8990	1.5517	0.0013	-0.0048	0.0009
89	13.2858	5.8046	1.5366	0.0017	-0.0054	0.0009
90	12.9386	5.6897	1.5210	0.0020	-0.0058	0.0009
91	12.5504	5.5474	1.5062	0.0026	-0.0067	0.0008
92	12.1132	5.3725	1.4905	0.0031	-0.0074	0.0008
93	11.6335	5.1693	1.4740	0.0035	-0.0080	0.0007
94	11.1178	4.9418	1.4567	0.0038	-0.0086	0.0006

95	10.5722	4.6943	1.4388	0.0041	-0.0090	0.0006
96	10.0026	4.4305	1.4207	0.0044	-0.0093	0.0005
97	9.4140	4.1538	1.4025	0.0045	-0.0096	0.0005
98	7.6825	3.3267	1.3507	0.0048	-0.0099	0.0004
99	5.9441	2.4919	1.2986	0.0046	-0.0097	0.0003
100	4.3012	1.7149	1.2461	0.0041	-0.0089	0.0002
101	2.8485	1.0527	1.1943	0.0033	-0.0075	0.0001
102	1.6723	0.5497	1.1443	0.0024	-0.0058	0.0001
103	0.8237	0.2198	1.0946	0.0014	-0.0039	0.0001
104	0.2952	0.0407	1.0429	0.0007	-0.0022	0.0000
105	0.0251	-0.0322	0.9891	0.0002	-0.0009	0.0000
106	-0.0711	-0.0447	0.9364	0.0000	-0.0002	0.0000
107	-0.0742	-0.0320	0.8855	-0.0001	0.0001	0.0000
108	-0.0455	-0.0156	0.8367	-0.0001	0.0002	0.0000
109	-0.0181	-0.0047	0.7903	0.0000	0.0001	0.0000
110	-0.0028	0.0001	0.7467	0.0000	0.0001	0.0000
111	0.0022	0.0010	0.7122	0.0000	0.0000	0.0000
112	0.0030	0.0007	0.6864	0.0000	0.0000	0.0000

Pile Number 3

3	13.9213	5.5824	-0.4639	0.0014	-0.0049	0.0009
113	13.5998	5.4835	-0.4523	0.0017	-0.0054	0.0009
114	13.2508	5.3678	-0.4413	0.0020	-0.0058	0.0009
115	12.8640	5.2288	-0.4242	0.0025	-0.0066	0.0008
116	12.4303	5.0611	-0.4083	0.0029	-0.0073	0.0008
117	11.9548	4.8677	-0.3935	0.0033	-0.0080	0.0007
118	11.4421	4.6518	-0.3799	0.0036	-0.0085	0.0006
119	10.8972	4.4163	-0.3675	0.0039	-0.0090	0.0006
120	10.3249	4.1645	-0.3563	0.0042	-0.0094	0.0005
121	9.7300	3.8994	-0.3461	0.0044	-0.0097	0.0005
122	7.9630	3.1025	-0.3221	0.0046	-0.0102	0.0004
123	6.1790	2.3018	-0.2998	0.0044	-0.0099	0.0003
124	4.5004	1.5708	-0.2728	0.0038	-0.0090	0.0002
125	3.0213	0.9610	-0.2402	0.0030	-0.0077	0.0001
126	1.8152	0.5038	-0.2039	0.0021	-0.0060	0.0001
127	0.9248	0.2031	-0.1671	0.0013	-0.0041	0.0001
128	0.3495	0.0370	-0.1333	0.0006	-0.0024	0.0000
129	0.0433	-0.0311	-0.1052	0.0002	-0.0011	0.0000
130	-0.0702	-0.0415	-0.0847	0.0000	-0.0003	0.0000
131	-0.0763	-0.0282	-0.0705	-0.0001	0.0001	0.0000
132	-0.0446	-0.0124	-0.0592	-0.0001	0.0002	0.0000
133	-0.0158	-0.0029	-0.0496	0.0000	0.0001	0.0000
134	-0.0014	0.0005	-0.0419	0.0000	0.0000	0.0000
135	0.0021	0.0007	-0.0374	0.0000	0.0000	0.0000
136	0.0017	0.0002	-0.0359	0.0000	0.0000	0.0000

Pile Number 4

4	13.9211	5.8998	1.1612	0.0014	-0.0050	0.0009
137	13.5940	5.8003	1.1495	0.0018	-0.0055	0.0009
138	13.2358	5.6827	1.1374	0.0020	-0.0060	0.0009
139	12.8362	5.5411	1.1267	0.0025	-0.0069	0.0008
140	12.3869	5.3705	1.1149	0.0030	-0.0076	0.0007
141	11.8945	5.1746	1.1022	0.0033	-0.0082	0.0007
142	11.3655	4.9569	1.0886	0.0037	-0.0088	0.0006
143	10.8061	4.7212	1.0743	0.0039	-0.0092	0.0006
144	10.2225	4.4707	1.0595	0.0041	-0.0096	0.0005
145	9.6201	4.2085	1.0445	0.0043	-0.0098	0.0005
146	7.8509	3.4249	1.0018	0.0045	-0.0102	0.0004
147	6.0760	2.6281	0.9589	0.0045	-0.0099	0.0003
148	4.3967	1.8734	0.9156	0.0041	-0.0091	0.0002
149	2.9105	1.2122	0.8739	0.0034	-0.0077	0.0001
150	1.7069	0.6879	0.8349	0.0025	-0.0059	0.0001
151	0.8387	0.3215	0.7964	0.0016	-0.0039	0.0001
152	0.2998	0.1019	0.7558	0.0009	-0.0022	0.0000
153	0.0268	-0.0054	0.7120	0.0004	-0.0010	0.0000
154	-0.0700	-0.0412	0.6682	0.0001	-0.0002	0.0000
155	-0.0737	-0.0395	0.6262	-0.0001	0.0001	0.0000
156	-0.0454	-0.0249	0.5862	-0.0001	0.0002	0.0000
157	-0.0182	-0.0108	0.5483	-0.0001	0.0001	0.0000
158	-0.0029	-0.0023	0.5128	0.0000	0.0001	0.0000
159	0.0021	0.0012	0.4851	0.0000	0.0000	0.0000
160	0.0030	0.0024	0.4649	0.0000	0.0000	0.0000

Pile Number 5

5	14.2364	5.5827	-0.9596	0.0016	-0.0048	0.0009
161	13.9225	5.4748	-0.9417	0.0019	-0.0053	0.0009
162	13.5797	5.3526	-0.9244	0.0021	-0.0057	0.0008
163	13.1967	5.2105	-0.9000	0.0025	-0.0066	0.0008
164	12.7636	5.0439	-0.8766	0.0029	-0.0074	0.0007
165	12.2853	4.8550	-0.8542	0.0032	-0.0080	0.0007
166	11.7667	4.6464	-0.8328	0.0035	-0.0087	0.0006
167	11.2126	4.4204	-0.8124	0.0038	-0.0092	0.0006
168	10.6278	4.1795	-0.7928	0.0040	-0.0096	0.0005

169	10.0174	3.9264	-0.7738	0.0042	-0.0100	0.0005
170	8.1972	3.1675	-0.7206	0.0044	-0.0105	0.0004
171	6.3522	2.4008	-0.6684	0.0043	-0.0103	0.0003
172	4.6117	1.6894	-0.6165	0.0038	-0.0094	0.0002
173	3.0833	1.0832	-0.5621	0.0031	-0.0079	0.0001
174	1.8415	0.6117	-0.5047	0.0023	-0.0061	0.0001
175	0.9278	0.2828	-0.4469	0.0015	-0.0042	0.0001
176	0.3404	0.0839	-0.3917	0.0008	-0.0025	0.0000
177	0.0332	-0.0123	-0.3411	0.0003	-0.0011	0.0000
178	-0.0729	-0.0403	-0.2975	0.0000	-0.0002	0.0000
179	-0.0725	-0.0342	-0.2587	-0.0001	0.0002	0.0000
180	-0.0404	-0.0190	-0.2245	-0.0001	0.0002	0.0000
181	-0.0137	-0.0069	-0.1948	-0.0001	0.0001	0.0000
182	-0.0009	-0.0007	-0.1696	0.0000	0.0000	0.0000
183	0.0020	0.0010	-0.1551	0.0000	0.0000	0.0000
184	0.0014	0.0011	-0.1503	0.0000	0.0000	0.0000

Pile Number 6

6	14.2359	5.8971	0.5837	0.0018	-0.0049	0.0009
185	13.9129	5.7796	0.5795	0.0020	-0.0055	0.0009
186	13.5575	5.6475	0.5747	0.0022	-0.0060	0.0008
187	13.1583	5.4955	0.5733	0.0027	-0.0069	0.0008
188	12.7058	5.3192	0.5705	0.0030	-0.0077	0.0007
189	12.2067	5.1219	0.5665	0.0033	-0.0084	0.0007
190	11.6679	4.9064	0.5611	0.0036	-0.0090	0.0006
191	11.0960	4.6756	0.5546	0.0038	-0.0094	0.0006
192	10.4976	4.4323	0.5472	0.0040	-0.0098	0.0005
193	9.8788	4.1793	0.5389	0.0041	-0.0101	0.0005
194	8.0616	3.4308	0.5141	0.0043	-0.0104	0.0004
195	6.2353	2.6731	0.4889	0.0042	-0.0102	0.0003
196	4.4997	1.9501	0.4647	0.0039	-0.0094	0.0002
197	2.9629	1.3081	0.4451	0.0033	-0.0080	0.0001
198	1.7222	0.7861	0.4297	0.0026	-0.0061	0.0001
199	0.8329	0.4040	0.4155	0.0018	-0.0040	0.0001
200	0.2882	0.1580	0.3986	0.0010	-0.0022	0.0000
201	0.0208	0.0248	0.3763	0.0005	-0.0009	0.0000
202	-0.0680	-0.0300	0.3510	0.0002	-0.0002	0.0000
203	-0.0696	-0.0408	0.3261	0.0000	0.0001	0.0000
204	-0.0425	-0.0316	0.3025	-0.0001	0.0002	0.0000
205	-0.0170	-0.0174	0.2802	-0.0001	0.0001	0.0000
206	-0.0027	-0.0060	0.2595	-0.0001	0.0000	0.0000
207	0.0020	0.0006	0.2434	0.0000	0.0000	0.0000
208	0.0028	0.0046	0.2318	0.0000	0.0000	0.0000

SUM OF TOTAL SOIL SPRING LOADS

CHECK: Total Load Carried by the Soil
(Sum of NF+FF Soil Spring Loads)

X Direction	=	6432.7337	Kips
Y Direction	=	3818.8296	Kips
Z Direction	=	47980.2741	Kips
Sum of Tip Forces	=	19794.8588	Kips

Summary of Pile Forces for Load CASE 1

1. Axial Force (Kips)

Pile #	Maximum Force	Minimum Force
1	-0.13611E+04	-0.27895E+04
2	-0.10048E+05	-0.20827E+05
3	0.34547E+04	0.13575E+03
4	-0.78376E+04	-0.17388E+05
5	0.74178E+04	0.56772E+03
6	-0.44932E+04	-0.10561E+05

2. Pile Shear Force in 2 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.96645E+03	-0.79815E+03
2	0.11689E+04	-0.10872E+04
3	0.95232E+03	-0.75653E+03
4	0.11884E+04	-0.10818E+04
5	0.96617E+03	-0.71612E+03
6	0.12153E+04	-0.10243E+04

3. Pile Shear Force in 3 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.43263E+03	-0.71803E+03
2	0.55828E+03	-0.80957E+03
3	0.35006E+03	-0.59262E+03
4	0.44904E+03	-0.67903E+03
5	0.26843E+03	-0.47924E+03
6	0.36461E+03	-0.54112E+03

4. Bending Moment About 2 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.4343E+05	0.12008E+03	-0.2308E+05
2	2	0.00000E+00	0.5504E+05	0.13478E+03	-0.3005E+05
3	3	0.00000E+00	0.3591E+05	0.13478E+03	-0.1905E+05
4	4	0.00000E+00	0.4726E+05	0.12008E+03	-0.2637E+05
5	5	0.00000E+00	0.2856E+05	0.12008E+03	-0.1560E+05
6	6	0.00000E+00	0.3671E+05	0.13478E+03	-0.2180E+05

5. Bending Moment About 3 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.6160E+05	0.14948E+03	-0.4173E+05
2	2	0.00000E+00	0.8245E+05	0.13478E+03	-0.5645E+05
3	3	0.00000E+00	0.5833E+05	0.14948E+03	-0.3779E+05
4	4	0.00000E+00	0.8195E+05	0.12008E+03	-0.5628E+05
5	5	0.00000E+00	0.5780E+05	0.12008E+03	-0.3582E+05
6	6	0.00000E+00	0.8088E+05	0.13478E+03	-0.5387E+05

****
* ANALYTICAL FORCE RESULTS FOR PIER *
****

ELEM NO.	PROP NO.	NODE NO.	LOAD CASE	FAX (Kips)	F22 (Kips)	F33 (Kips)	M22 (Kip-ft)	M33 (Kip-ft)	TORQUE (Kip-ft)	D/C (Ratio)
- Connector Beam Segments										
1	1	64	1	-435.72	-7842.58	-2276.30	34144.51	*********	-28406.08	
	0.00									
	1	47		435.72	7842.58	2276.30	0.00	0.00	28406.08	
	0.00									
2	1	64	1	1290.81	20296.13	-1895.95	28439.18	304441.98	-67937.59	
	0.00									
	1	4		-1290.81	-20296.13	1895.95	0.00	0.00	67937.59	
	0.00									
3	1	64	1	570.61	22497.12	1759.99	-26399.79	337456.75	23195.86	
	0.00									
	1	37		-570.61	-22497.12	-1759.99	0.00	0.00	-23195.86	
	0.00									
4	1	64	1	-1129.90	-9218.66	916.73	-13750.90	*********	58634.92	
	0.00									
	1	3		1129.90	9218.66	-916.73	0.00	0.00	-58634.92	
	0.00									

****
* ANALYTICAL PILE CAP - SHELL STRESS RESULTS *
****

****
* DAMPING FORCES *
****

Node #	FXX Kip	FYY Kip	FZZ Kip	MXX Kip	MYY Kip	MZZ Kip

****
* UNIAXIAL INTERACTION DIAGRAM *
****

NOTE : 1. The tables below show the values on the Interaction
Diagrams for each section which correspond to the

section capacity
2. The numbering of the SECTIONS/SEGMENTS is shown previously in the output file

---
! -> Pile Cross Section Number = 1 !

Diagram Data

Maximum Tension Force = 0.4820E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = 0.1237E-14 (in)
Local 3 Axis Shift for Plastic Centroid = -0.7486E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.4820E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.4383E+05	0.1416E+06	0.1416E+06	0.1416E+06	0.1416E+06
0.3942E+05	0.1551E+06	0.1551E+06	0.1551E+06	0.1551E+06
0.3522E+05	0.1665E+06	0.1665E+06	0.1665E+06	0.1665E+06
0.3063E+05	0.1734E+06	0.1734E+06	0.1734E+06	0.1734E+06
0.2630E+05	0.1763E+06	0.1763E+06	0.1763E+06	0.1763E+06
0.2202E+05	0.1781E+06	0.1781E+06	0.1781E+06	0.1781E+06
0.1754E+05	0.1858E+06	0.1858E+06	0.1858E+06	0.1858E+06
0.1313E+05	0.1933E+06	0.1933E+06	0.1933E+06	0.1933E+06
0.8760E+04	0.1992E+06	0.1992E+06	0.1992E+06	0.1992E+06
0.4351E+04	0.2050E+06	0.2050E+06	0.2050E+06	0.2050E+06
0.2535E+00	0.2098E+06	0.2098E+06	0.2098E+06	0.2098E+06
-0.6770E+04	0.1879E+06	0.1879E+06	0.1879E+06	0.1879E+06
-0.1317E+05	0.1887E+06	0.1887E+06	0.1887E+06	0.1887E+06
-0.1976E+05	0.1904E+06	0.1904E+06	0.1904E+06	0.1904E+06
-0.2636E+05	0.1864E+06	0.1864E+06	0.1864E+06	0.1864E+06
-0.3296E+05	0.1770E+06	0.1770E+06	0.1770E+06	0.1770E+06
-0.3956E+05	0.1636E+06	0.1636E+06	0.1636E+06	0.1636E+06
-0.4658E+05	0.1451E+06	0.1451E+06	0.1451E+06	0.1451E+06
-0.4750E+05	0.1423E+06	0.1423E+06	0.1423E+06	0.1423E+06
-0.4912E+05	0.1373E+06	0.1373E+06	0.1373E+06	0.1373E+06
-0.5045E+05	0.1331E+06	0.1331E+06	0.1331E+06	0.1331E+06
-0.5170E+05	0.1289E+06	0.1289E+06	0.1289E+06	0.1289E+06
-0.5283E+05	0.1249E+06	0.1249E+06	0.1249E+06	0.1249E+06
-0.5384E+05	0.1213E+06	0.1213E+06	0.1213E+06	0.1213E+06
-0.5553E+05	0.1152E+06	0.1152E+06	0.1152E+06	0.1152E+06
-0.5679E+05	0.1105E+06	0.1105E+06	0.1105E+06	0.1105E+06
-0.5811E+05	0.1049E+06	0.1049E+06	0.1049E+06	0.1049E+06
-0.5928E+05	0.9803E+05	0.9997E+05	0.9803E+05	0.9997E+05
-0.6016E+05	0.9454E+05	0.9617E+05	0.9454E+05	0.9617E+05

! -> Pile Cross Section Number = 2 !

Diagram Data

Maximum Tension Force = 0.3972E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = -0.2885E-15 (in)
Local 3 Axis Shift for Plastic Centroid = -0.6414E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.3972E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.2923E+05	0.1203E+06	0.1203E+06	0.1203E+06	0.1203E+06
0.2532E+05	0.1265E+06	0.1265E+06	0.1265E+06	0.1265E+06
0.2177E+05	0.1346E+06	0.1346E+06	0.1346E+06	0.1346E+06
0.1803E+05	0.1432E+06	0.1432E+06	0.1432E+06	0.1432E+06
0.1444E+05	0.1490E+06	0.1490E+06	0.1490E+06	0.1490E+06
0.1088E+05	0.1475E+06	0.1475E+06	0.1475E+06	0.1475E+06
0.7226E+04	0.1453E+06	0.1453E+06	0.1453E+06	0.1453E+06
0.3610E+04	0.1484E+06	0.1484E+06	0.1484E+06	0.1484E+06
-0.4144E-01	0.1502E+06	0.1502E+06	0.1502E+06	0.1502E+06
-0.5800E+04	0.1268E+06	0.1268E+06	0.1268E+06	0.1268E+06
-0.1170E+05	0.1305E+06	0.1305E+06	0.1305E+06	0.1305E+06
-0.1744E+05	0.1337E+06	0.1337E+06	0.1337E+06	0.1337E+06
-0.2328E+05	0.1339E+06	0.1339E+06	0.1339E+06	0.1339E+06
-0.2902E+05	0.1292E+06	0.1292E+06	0.1292E+06	0.1292E+06
-0.3498E+05	0.1218E+06	0.1218E+06	0.1218E+06	0.1218E+06
-0.4119E+05	0.1107E+06	0.1107E+06	0.1107E+06	0.1107E+06
-0.4369E+05	0.1050E+06	0.1050E+06	0.1050E+06	0.1050E+06
-0.4572E+05	0.9985E+05	0.9985E+05	0.9985E+05	0.9985E+05
-0.4823E+05	0.9275E+05	0.9275E+05	0.9275E+05	0.9275E+05
-0.5091E+05	0.8466E+05	0.8466E+05	0.8466E+05	0.8466E+05
-0.5350E+05	0.7561E+05	0.7644E+05	0.7561E+05	0.7644E+05
-0.5585E+05	0.6814E+05	0.6854E+05	0.6814E+05	0.6854E+05
-0.5832E+05	0.5940E+05	0.6011E+05	0.5940E+05	0.6011E+05
-0.6098E+05	0.4891E+05	0.5047E+05	0.4891E+05	0.5047E+05
-0.6386E+05	0.3943E+05	0.3943E+05	0.3943E+05	0.3943E+05
-0.6616E+05	0.3020E+05	0.3020E+05	0.3020E+05	0.3020E+05
-0.6883E+05	0.1921E+05	0.1921E+05	0.1921E+05	0.1921E+05

****
* FINAL MAXIMUMS/MINIMUMS FOR ALL LOAD CASES *
* PIER # 1 *
****

Maximum/Minimum Pile Forces

	Value		Load	Comb.	Pile
Max Shear in 2 Direction	0.1215E+04	Kip	1	0	6
Min Shear in 2 Direction	-0.1087E+04	Kip	1	0	2
Max Shear in 3 Direction	0.5583E+03	Kip	1	0	2
Min Shear in 3 Direction	-0.8096E+03	Kip	1	0	2
Max Moment about 2 Axis	0.5504E+05	Kip-ft	1	0	2
Min Moment about 2 Axis	-0.3005E+05	Kip-ft	1	0	2
Max Moment About 3 Axis	0.8245E+05	Kip-ft	1	0	2
Min Moment About 3 Axis	-0.5645E+05	Kip-ft	1	0	2
Max Axial Force	0.7418E+04	Kip	1	0	5
Min Axial Force	-0.2083E+05	Kip	1	0	2
Absolute Max Torque	0.7190E+01	Kip-ft	1	0	6
Max Demand/Capacity Ratio	0.6371E+00		1	0	2

Maximum/Minimum Soil Forces

Max Axial Soil Force	0.3547E+04	Kip	1	0	2
Min Axial Soil Force	-0.1281E+04	Kip	1	0	5
Max Lateral Force in X dir	0.5548E+03	Kip	1	0	4
Min Lateral Force in X dir	-0.3945E+03	Kip	1	0	2
Max Lateral Force in Y dir	0.3621E+03	Kip	1	0	2
Min Lateral Force in Y dir	-0.1891E+03	Kip	1	0	2
Max Torsional Soil Force	0.7622E+04	Kip-ft	1	0	1

Maximum/Minimum Pile Displacements

Max Axial Displacement	0.1552E+01	in	1	0	2
Min Axial Displacement	-0.9596E+00	in	1	0	5
Max Displacement in X	0.1424E+02	in	1	0	5

BSI FB-MultiPier - File: P3-LCS.out Wednesday, March 23, 2011

Min Displacement in X	-0.7631E-01 in	1	0	3
Max Displacement in Y	0.5900E+01 in	1	0	4
Min Displacement in Y	-0.4475E-01 in	1	0	2

Maximum/Minimum Column Forces

	Value	Load	Comb.	Column
Max Axial Force	0.0000E+00 Kip	0	0	0
Min Axial Force	0.0000E+00 Kip	0	0	0
Max Shear in 2 Direction	0.0000E+00 Kip	0	0	0
Min Shear in 2 Direction	0.0000E+00 Kip	0	0	0
Max Shear in 3 Direction	0.0000E+00 Kip	0	0	0
Min Shear in 3 Direction	0.0000E+00 Kip	0	0	0
Max Moment about 2 Axis	0.0000E+00 Kip-ft	0	0	0
Min Moment about 2 Axis	0.0000E+00 Kip-ft	0	0	0
Max Moment about 3 Axis	0.0000E+00 Kip-ft	0	0	1
Min Moment about 3 Axis	0.0000E+00 Kip-ft	0	0	0
Absolute Max Torque	0.1000E+06 Kip-ft	1	0	0

Maximum/Minimum Pier Cap Forces

Max Axial Force	0.0000E+00 Kip	0	0
Min Axial Force	0.0000E+00 Kip	0	0
Max Shear in 2 Direction	0.0000E+00 Kip	0	0
Min Shear in 2 Direction	0.0000E+00 Kip	0	0
Max Shear in 3 Direction	0.0000E+00 Kip	0	0
Min Shear in 3 Direction	0.0000E+00 Kip	0	0
Max Torque	-0.1000E+06 Kip-ft	1	0
Min Torque	0.0000E+00 Kip-ft	0	0
Max Moment about 2 Axis	0.0000E+00 Kip-ft	0	0
Min Moment about 2 Axis	0.0000E+00 Kip-ft	0	0
Max Moment about 3 Axis	0.0000E+00 Kip-ft	0	0
Min Moment about 3 Axis	0.0000E+00 Kip-ft	0	0

****

Foundation Flexibilty for given loads

****

Averaged flexiblity

	Fx	Fy	Fz	Mx	My	Mz
DeltaX	0.1993E-02	0.6985E-04	-0.3305E-04	0.3188E-07	-0.4290E-06	-0.9728E-09
DeltaY	0.6985E-04	0.1323E-02	-0.1238E-04	0.1380E-06	-0.3836E-07	0.5965E-08
DeltaZ	-0.3305E-04	-0.1238E-04	0.1655E-04	-0.3849E-08	0.1567E-07	0.6730E-09
ThetaX	0.3188E-07	0.1380E-06	-0.3849E-08	0.1815E-09	-0.2967E-10	0.4084E-10
ThetaY	-0.4290E-06	-0.3836E-07	0.1567E-07	-0.2967E-10	0.4564E-09	0.3542E-10
ThetaZ	-0.9728E-09	0.5965E-08	0.6730E-09	0.4084E-10	0.3542E-10	0.3133E-08

****

Foundation Stiffness for given loads

****

STIFFNESS

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.6376E+03	-0.1095E+02	0.7229E+03	0.7066E+04	0.5746E+06	-0.6526E+04
Fy	-0.1095E+02	0.8253E+03	0.4485E+03	-0.6170E+06	0.3074E+04	0.6337E+04
Fz	0.7229E+03	0.4485E+03	0.6370E+05	0.6514E+06	-0.1427E+07	-0.6677E+04
Mx	0.7066E+04	-0.6170E+06	0.6514E+06	0.6065E+10	0.3331E+09	-0.8179E+08
My	0.5746E+06	0.3074E+04	-0.1427E+07	0.3331E+09	0.2805E+10	-0.3558E+08
Mz	-0.6526E+04	0.6337E+04	-0.6677E+04	-0.8179E+08	-0.3558E+08	0.3207E+09

****

Foundation Stiffness in STANDARD X-Y-Z directions
(FB-Pier->Stardard, X->X, Y->Z & -Z->Y)
Translations: kips/in Rotations: kip-in/rad

****

Stiffness in standard X-Y-Z

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.6376E+03	-0.7229E+03	-0.1095E+02	0.7066E+04	0.6526E+04	0.5746E+06
Fy	-0.7229E+03	0.6370E+05	-0.4485E+03	-0.6514E+06	-0.6677E+04	0.1427E+07
Fz	-0.1095E+02	-0.4485E+03	0.8253E+03	-0.6170E+06	-0.6337E+04	0.3074E+04
Mx	0.7066E+04	-0.6514E+06	-0.6170E+06	0.6065E+10	0.8179E+08	0.3331E+09
My	0.6526E+04	-0.6677E+04	-0.6337E+04	0.8179E+08	0.3207E+09	0.3558E+08
Mz	0.5746E+06	0.1427E+07	0.3074E+04	0.3331E+09	0.3558E+08	0.2805E+10

```
!------------------------------------------------------------!
!                                                            !
!        The University of Florida, Florida Department       !
!        of Transportation, Drs. Marc Hoit, Mike McVay       !
!        Cliff Hays, Mark Williams, Petros Christou, and     !
!                        Jae H. Chung                        !
!         disclaim any warranty, expressed or implied,       !
!          including but not limited to, any implied         !
!         warranty of fitness for a particular purpose       !
!            or accuracy of the FB-Pier software             !
!     The  developers shall not be liable for any damages    !
!          incurred through the use of FB-MultiPier          !
!                                                            !
!                                                            !
!              :::: F B - M U L T I P I E R ::::             !
!                  FB-MultiPier Version 4.13                 !
!                                                            !
!                                                            !
!         Written by Marc Hoit, Mike McVay, Cliff Hays       !
!         Mark Williams, Petros Christou, Jae H. Chung.      !
!                                                            !
!      Civil & Coastal Engineering, University of Florida    !
!      Supported by Florida Department of Transportation     !
!           and the Federal Highway Administration           !
!                                                            !
!             The program calculates the Response            !
!           of the Bridge Pier Pile Soil Structures          !
!                                                            !
!            The Analysis includes PreLoad, Static,          !
!                Transient Dynamic or Push Over              !
!                                                            !
!        The Program Handles NonLinear Soil Behavior,        !
!  Linear Pile Cap and Linear and NonLinear Piles and Piers  !
!                                                            !
!                                                            !
!       Contact: Bridge Software Institute for Support       !
!                HTTP://BSI-WEB.CE.UFL.EDU                   !
!                                                            !
!------------------------------------------------------------!
```

```
Analysis Start       : 4:17pm
Analysis End         : 4:17pm
Analysis Time        : 3 seconds

Input Data File Name : P4-LCS.in
Analysis Date        : 3-15-2011
License ID Number    : 432478881
```

```
********************
*   PROJECT DATA   *
********************

Project Client      : CRC / WSDOT / ODOT
Project Name        : Columbia River Crossing
Project Manager     : R. Turton
Computed by         : NRH
Project Description : SB - Pier 4 - Liquefaction + Contraction Scour
```

```
*************************************
*   SELECTIVE PRINT OUTPUT CONTROL  *
*************************************
                                      Print On
Pile Displacements                      YES
Pile Element Forces                      NO
Missing Pile ID Numbers                  NO
Pier Columns and Pier Cap Displacements  NO
Pier Columns and Pier Cap Force Output  YES
Pier Material Properties                YES
Soil Response Forces                     NO
Soil Data per Layer                     YES
Soil Curve data per Pile Node            NO
Soil Graph per Pile Node                 NO
Out of Balance Forces                    NO
Bridge Simulation Spring Force Output    NO
Bridge Span Displacements                NO
Bridge Span Element Forces               NO
Bridge Span Properties                   NO
Pile Cap Stress                          NO
```

BSI FB-MultiPier - File: P4-LCS.out Wednesday, March 23, 2011

```
 Material Stress Strain Curve Data          NO
 Interaction Diagram Data For Pile and Pier YES
 Pile and Pier coordinates                  NO
 Generate XML file                          NO


 *************
 *   UNITS   *
 *************

 Analysis Units Specified are: English Mixed (Kips & Ft some lbs & in)


 ***************************
 *   CONTROL INFORMATION   *
 ***************************

 Number of Piers              (NUMPIERS) =    1
 Maximum Number of Iterations   (MAXITN) =   50
 Tolerance                       (TOLER) =    10.000000     Kips

 NOTE : The following soil information is not applicable in the coulmn analysis problems

 Soil Behavior Option             (IFLEX) =    0
    IFLEX = 0 -> PY Multipliers are Input
    IFLEX = 1 -> PY Multipliers Defaulted to 1.0
    IFLEX = 2 -> No SOIL (Must use tip springs)

 Soil resistance due to Pile Rotation About 2 and 3 Axis (NSODF) =    4
    NSDOF = 4 -> NO Resistance Accounted
    NSDOF = 6 -> Resistance Accounted

 Linear Pile TIP Spring Option     (ITIP) =    0
    ITIP = 0 -> NO spring
    ITIP = 1 -> Axial only
    ITIP = 2 -> All DOF

 Linear Pile TIP Spring Stiffness (TSTIF) =         0.00 kips/in


 **********************
 *   SOIL BEHAVIOR    *
 **********************

 PY Multipliers will be used (IFLEX = 0)


 ***************************************************
 *   LOAD FACTORS FOR SELF WEIGHT AND BUOYANCY     *
 ***************************************************

 LOAD CASE     SELF WEIGHT     BUOYANCY
     #            FACTOR         FACTOR
     1             1.00           1.00


 ****************************
 *   GENERAL INFORMATION    *
 ****************************

 Static / Cyclic Load (KCYC)      =    0
    KCYC = 0 -> Static Load
    KCKC > 0 -> Cyclic Load (# Cycles)

 Fixity of Pile Cap (KFIX)        =    1
    KFIX = 0 -> Pinned Head
    KFIX = 1 -> Fixed head

 Bearing of Cap on Soil           =  NO


 ******************************
 *   GRID DATA INFORMATION    *
 ******************************

 NOTE: X-Grid : Distance between axes along the X-Axis
       Y-Grid : Distance between axes along the Y-Axis

 Number of Grid Points in X-Direction (NPX) =     4
 Number of Grid Points in X-Direction (NPY) =     5

 Grid Spacing in the X Direction : (inches)
      90.00     360.00      90.00
```

Grid Spacing in the Y Direction : (inches)
90.00 360.00 360.00 90.00

****
* ANALYSIS OPTIONS *
****

Type of Stiffness = Secant Stiffness
Type of Structure = Full
Type of Analysis = Static Analysis

****
* INPUT SOIL DATA - GIVEN BY LAYER *
****

NOTE : The following data is used to define Springs
for each Soil Layer to determine the Soil
Behavior during the analysis

LAYERED P-Y CURVES

SOIL SET # 1

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	1	1	0.6000E+01	0.4600E+01	0.1073E+03
			0.6000E+01	0.4600E+01	0.1073E+03
1	2	1	0.6000E+01	0.7500E+01	0.1212E+03
			0.6000E+01	0.7500E+01	0.1212E+03
1	3	1	0.3500E+02	0.5000E+02	0.1212E+03
			0.3500E+02	0.5000E+02	0.1212E+03
1	4	1	0.4500E+02	0.1250E+03	0.1367E+03
			0.4500E+02	0.1250E+03	0.1367E+03
1	5	1	0.4500E+02	0.1500E+03	0.1402E+03
			0.4500E+02	0.1500E+03	0.1402E+03

LAYERED T-Z CURVES

SOIL SET # 1

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00
	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00

	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.546E+01	0.380E+00	0.147E+02
	0.760E+00	0.679E+01	0.760E+00	0.182E+02
	0.114E+01	0.707E+01	0.114E+01	0.190E+02
	0.152E+01	0.707E+01	0.152E+01	0.190E+02
	0.265E+01	0.707E+01	0.265E+01	0.190E+02
	0.379E+01	0.707E+01	0.379E+01	0.190E+02
	0.493E+01	0.707E+01	0.493E+01	0.190E+02
	0.606E+01	0.707E+01	0.606E+01	0.190E+02
	0.720E+01	0.707E+01	0.720E+01	0.190E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

LAYERED T-Theta CURVES

SOIL SET # 1

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	1	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	2	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	3	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	4	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	5	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

PILE TIP SOIL PARAMETERS

SOIL SET # 1

USER DEFINED

Q Value	T Value

	in	lbs
1	0.000E+00	0.000E+00
2	0.222E+00	0.362E+07
3	0.444E+00	0.624E+07
4	0.667E+00	0.829E+07
5	0.889E+00	0.995E+07
6	0.111E+01	0.113E+08
7	0.133E+01	0.125E+08
8	0.156E+01	0.136E+08
9	0.178E+01	0.145E+08
10	0.200E+01	0.153E+08

****
* PILE SEGMENT INFORMATION DATA *
****

NOTE: The Piles Sets consist of Pile Segments based on the User Input. The program groups all segments from all the different Pile Sets and assigns a reference number to each

The reference number for each segment together with the User Input Pile Set/Segment number is shown below. The Input section properties for each section/segment is also provided below.

The user is advised to double check these numbers

Number of segments found in all Piles (NPSEG) = 2

! -> SECTION DATA FOR SECTION/SEGMENT : 1 !

Input Pile Set Number = 1
Input Pile Set Segment = 1

Section Pile Length (L) = 9.0000000 ft

Nonlinear Section/Segment Material Properties

Material Option (MATOPT) = 1
(Please Refer to the Users Guide for Details)

- Concrete Stress Strain Properties

Concrete Strength (FPC) = 0.4000E+01 ksi
Modulus of Elasticity (EC) = 0.4224E+04 ksi

Gauss Integration Points for Concrete = 60

- Steel Stress Strain Properties

Mild Steel Yield Stress (FY) = 0.600E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

Tubular Steel Yield Stress (FY) = 0.500E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

- Shape of Section : CIRCULAR

- Steel and Confinement Data

Number of Steel Layers = 2
Section/Segment Diameter = 180.0000 in
Tied/Spiral Reinforcement Flag = 1
(NOTE : Spiral = 1, Tied = 2)
Confinement Flag = 1
(NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

- Steel and Confinement Data

Yield Stress of Confinement Steel = 60.00 ksi
Spacing between Confinement Steel = 6.000 in
Diameter of Confinement Steel = 0.7500 in
Outer Shell Thickness = 1.00 in

- Total Area of Steel Reinforcement = 424.00 in^2

Layer	# Bars/Strands	Area in^2	Layer Dia. in	Prestressing ksi

```
   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     1           56        4.00    108.00           0.00

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     2           52        3.85     96.00           0.00

 ------------------------------------------
 ! -> SECTION DATA FOR SECTION/SEGMENT :   2  !
 ------------------------------------------

 Input Pile Set Number  =   1
 Input Pile Set Segment =   2

 Section Pile Length               (L) =    252.08000     ft

 Nonlinear Section/Segment Material Properties
 ---------------------------------------------

 Material Option (MATOPT) =   1
 (Please Refer to the Users Guide for Details)

 - Concrete Stress Strain Properties

   Concrete Strength    (FPC) = 0.6000E+01 ksi
   Modulus of Elasticity (EC) = 0.5173E+04 ksi

   Gauss Integration Points for Concrete = 60

 - Steel Stress Strain Properties

   Mild Steel Yield Stress  (FY) =  0.600E+02 ksi
   Modulus of Elasticity    (ES) = 0.2900E+05 ksi

   Tubular Steel Yield Stress (FY) =  0.600E+02 ksi
   Modulus of Elasticity      (ES) = 0.2900E+05 ksi

 - Shape of Section : CIRCULAR

 - Steel and Confinement Data

   Number of Steel Layers         =   2
   Section/Segment Diameter       =  120.0000 in
   Tied/Spiral Reinforcement Flag =   1
   (NOTE : Spiral = 1, Tied   = 2)
   Confinement Flag               =   1
   (NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

 - Steel and Confinement Data

  Yield Stress of Confinement Steel =    60.00     ksi
  Spacing between Confinement Steel =    6.000     in
  Diameter of Confinement Steel     =   0.7500     in
   Outer Shell Thickness          =    1.00      in

 - Total Area of Steel Reinforcement  = 424.00 in^2

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing
                           in^2      in             ksi

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     1           56        4.00    108.00           0.00

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
```

for the analysis. The area is changed to
result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
2	52	3.85	96.00	0.00

PLOT OF THE QZ CURVE FOR THE TIP OF THE PILE

- USER DEFINED CURVE

SOIL SET	Z Value	Q Value	Z Value	Q Value	Z Value	Q Value
1	0.0000E+00	0.0000E+00	0.2222E+00	0.3615E+07	0.4444E+00	0.6244E+07
	0.6667E+00	0.8290E+07	0.8889E+00	0.9952E+07	0.1111E+01	0.1134E+08
	0.1333E+01	0.1253E+08	0.1556E+01	0.1357E+08	0.1778E+01	0.1448E+08
	0.2000E+01	0.1530E+08				

****
* PILE SET DATA DESCRIPTION *
****

NOTE : The piles are organized in pile sets. Each pile
set is composed of pile segments that are input
by the User. A pile set is attached to each
pile in order to describe its composition

List of Piles Sets and Piles

Pile Set	Piles (that are assigned the Pile Set)
1	1, 2, 3, 4, 5, 6

Total Length for Each Pile Set

Pile Set	Length
1	3132.96

****
* INPUT FOR STRUCTURAL ANALYSIS *
****

Number of Joints = 64
Number of Different Element Types = 3
Number of Load Conditions = 1

WARNING : Pier Columns and Cap are linear
No P-Delta or Moment Magnification is included
Nonlinear should be used for final design

PIER SUMMARY

Stiffness of Foundation Requested - NO Pier Exists

****
* MATERIAL PROPERTIES FOR PILE CAP AND FRAME (PIER) ELEMENTS *
****

****
* PILE CAP PROPERTIES - USING SHELL ELEMENTS *
****

Modulus of Elasticity = 0.4224E+04 (ksi)
Poissons Ratio = 0.2000
Shear Modulus = 0.1760E+04 (ksi)
Self Weight = 160.0000 (pcf)
Thickness = 0.1900E+02 (ft)

! -> PROPERTIES FOR CONNECTOR ELEMENTS (DEFAULTED) !

NOTE : These Elements are generated by the program at the Pier
Column Bases where they connect with the Pile Cap. The
purpose for these elements is to spread the column base

load over an area on the Pile Cap and therefore avoid
High Stress Concentrations

NOTE : The material property number for these elements is
defaulted to 1. The material numbers for the properties
of the rest of the Pier elements start form 2

-> SECTION DATA FOR SECTION/SEGMENT : 1

Member Property Number = 1
Axial Area, A = 51984. (in^2)
Torsional Moment of Inertia, J = 0.98770E+10 (in^4)
Moment of Inertia, 3 - Axis = 0.98770E+10 (in^4)
Moment of Inertia, 2 - Axis = 0.98770E+10 (in^4)
Modulus of Elasticity, E = 4224.0 (ksi)
Shear Modulus, G = 1760.0 (ksi) (used for Torsion)
Weight Density = 0.00000 (K/in^3)

! -> PROPERTIES FOR PIER COLUMNS !

Member Property Number = 2
Axial Area, A = 0.00000 (in^2)
Torsional Moment of Inertia, J = 0.00000 (in^4)
Moment of Inertia, 3 - Axis = 0.00000 (in^4)
Moment of Inertia, 2 - Axis = 0.00000 (in^4)
Modulus of Elasticity, E = 0.00000 (ksi)
Shear Modulus, G = 0.00000 (ksi) (used for Torsion)
Weight Density = 0.00000 (K/in^3)

****
* PIER MEMBER CONNECTIVITY *
****

ELEMENT NUMBER	NODES I	NODES J	MATERIAL NUMBER
1	64	47	1
2	64	4	1
3	64	37	1
4	64	3	1

****
* GENERAL LOAD DATA *
****

The table below shows the Applied Loads for every
Load Case. The values in the table represent the
magnitute of the Loads in the specified units

- Applied Load

NODE	LOAD	X (Kips)	Y (Kips)	Z (Kips)	MXX (Kip-ft)	MYY (Kip-ft)	MZZ (Kip-ft)
64	1	5956.00	0.00	0.00	0.00	0.00	0.00
64	2	0.00	3342.00	0.00	0.00	0.00	0.00
64	3	0.00	0.00	26336.00	0.00	0.00	0.00
64	4	0.00	0.00	0.00	303001.00	0.00	0.00
64	5	0.00	0.00	0.00	0.00	-405888.00	0.00
64	6	0.00	0.00	0.00	0.00	0.00	18229.00

****
*
* ANALYSIS RESULTS *
*
****

****
* RESULTS FOR LOAD CASE # 1 *
****

NOTE : PY Multipliers are applied Lead to Trail row
based on the actual displacement. If there is
no displacement in a Lateral direction they are
defaulted to 1.0. This can happen in Axial Load
and one direction lateral load cases

PY Multipliers are Applied to A Pile Group

PILE#	X-PYM	Y-PYM
1	0.500E+00	0.700E+00
2	0.700E+00	0.700E+00
3	0.500E+00	0.500E+00
4	0.700E+00	0.500E+00
5	0.500E+00	0.350E+00
6	0.700E+00	0.350E+00

****
* CONVERGENCE REPORT *
****

The Solution Converged in 10 Iterations

Summary of Abs Maximum Out-Of-Balance Forces

FZZ =	0.954	Kips
FXX =	0.575	Kips
FYY =	0.253	Kips
MXX =	60.074	Kip-in
MYY =	0.000	Kip-in
MZZ =	41.521	Kip-in

Summary of Displacements at Pile Heads

Node	X (in)	Y (in)	Z (in)
1	11.6905	4.4221	0.0358
2	11.6907	4.6694	1.4607
3	11.9380	4.4243	-0.3730
4	11.9378	4.6700	1.1361
5	12.1816	4.4247	-0.8058
6	12.1811	4.6677	0.6229

Final Displacements

Load Case # 1

Node	X (in)	Y (in)	Z (in)	Rx (rad)	Ry (rad)	Rz (rad)
Pile Number 1						
1	11.6905	4.4221	0.0358	0.0012	-0.0045	0.0007
65	11.4098	4.3414	0.0396	0.0015	-0.0049	0.0007
66	11.1074	4.2462	0.0428	0.0017	-0.0053	0.0007
67	10.7754	4.1315	0.0500	0.0021	-0.0059	0.0006
68	10.4071	3.9928	0.0562	0.0025	-0.0065	0.0006
69	10.0065	3.8331	0.0612	0.0028	-0.0070	0.0005
70	9.5779	3.6553	0.0652	0.0031	-0.0074	0.0005
71	9.1254	3.4623	0.0681	0.0034	-0.0078	0.0005
72	8.6532	3.2569	0.0700	0.0035	-0.0081	0.0004
73	8.1655	3.0420	0.0707	0.0037	-0.0083	0.0004
74	6.6969	2.3894	0.0674	0.0038	-0.0086	0.0003
75	5.2214	1.7405	0.0633	0.0036	-0.0084	0.0002
76	3.8205	1.1498	0.0653	0.0031	-0.0077	0.0001
77	2.5776	0.6662	0.0728	0.0024	-0.0066	0.0001
78	1.5603	0.3173	0.0836	0.0016	-0.0051	0.0001
79	0.8071	0.1027	0.0948	0.0009	-0.0036	0.0001
80	0.3178	-0.0022	0.1033	0.0004	-0.0021	0.0000
81	0.0538	-0.0350	0.1069	0.0001	-0.0010	0.0000
82	-0.0494	-0.0323	0.1054	-0.0001	-0.0003	0.0000
83	-0.0643	-0.0193	0.0999	-0.0001	0.0001	0.0000
84	-0.0462	-0.0081	0.0935	-0.0001	0.0001	0.0000
85	-0.0232	-0.0018	0.0873	0.0000	0.0001	0.0000
86	-0.0067	0.0005	0.0814	0.0000	0.0001	0.0000
87	0.0015	0.0007	0.0767	0.0000	0.0000	0.0000
88	0.0054	0.0003	0.0732	0.0000	0.0000	0.0000
Pile Number 2						
2	11.6907	4.6694	1.4607	0.0011	-0.0045	0.0007
89	11.4125	4.5944	1.4465	0.0014	-0.0049	0.0007
90	11.1098	4.5035	1.4320	0.0017	-0.0053	0.0007
91	10.7744	4.3919	1.4179	0.0021	-0.0060	0.0006
92	10.4002	4.2553	1.4030	0.0025	-0.0066	0.0006
93	9.9924	4.0972	1.3874	0.0028	-0.0071	0.0005
94	9.5560	3.9205	1.3714	0.0031	-0.0076	0.0005

95	9.0958	3.7284	1.3549	0.0033	-0.0079	0.0005
96	8.6162	3.5237	1.3383	0.0035	-0.0082	0.0004
97	8.1212	3.3090	1.3216	0.0037	-0.0084	0.0004
98	6.6282	2.6491	1.2730	0.0039	-0.0087	0.0003
99	5.1305	1.9827	1.2242	0.0038	-0.0085	0.0002
100	3.7170	1.3639	1.1748	0.0033	-0.0078	0.0001
101	2.4686	0.8385	1.1258	0.0027	-0.0066	0.0001
102	1.4570	0.4398	1.0781	0.0019	-0.0051	0.0001
103	0.7243	0.1775	1.0304	0.0011	-0.0034	0.0001
104	0.2637	0.0331	0.9812	0.0006	-0.0020	0.0000
105	0.0240	-0.0273	0.9306	0.0002	-0.0009	0.0000
106	-0.0643	-0.0385	0.8810	0.0000	-0.0002	0.0000
107	-0.0693	-0.0283	0.8332	-0.0001	0.0001	0.0000
108	-0.0441	-0.0145	0.7873	-0.0001	0.0002	0.0000
109	-0.0186	-0.0047	0.7436	0.0000	0.0001	0.0000
110	-0.0035	-0.0002	0.7027	0.0000	0.0001	0.0000
111	0.0020	0.0009	0.6702	0.0000	0.0000	0.0000
112	0.0034	0.0009	0.6459	0.0000	0.0000	0.0000

Pile Number 3

3	11.9380	4.4243	-0.3730	0.0013	-0.0046	0.0007
113	11.6546	4.3429	-0.3634	0.0015	-0.0050	0.0007
114	11.3492	4.2486	-0.3544	0.0017	-0.0053	0.0007
115	11.0136	4.1367	-0.3403	0.0021	-0.0060	0.0006
116	10.6404	4.0031	-0.3273	0.0024	-0.0066	0.0006
117	10.2338	3.8501	-0.3152	0.0027	-0.0071	0.0005
118	9.7974	3.6801	-0.3042	0.0030	-0.0076	0.0005
119	9.3353	3.4953	-0.2941	0.0032	-0.0080	0.0005
120	8.8512	3.2981	-0.2849	0.0034	-0.0083	0.0004
121	8.3492	3.0908	-0.2767	0.0036	-0.0086	0.0004
122	6.8230	2.4529	-0.2571	0.0038	-0.0090	0.0003
123	5.2861	1.8141	-0.2388	0.0036	-0.0087	0.0002
124	3.8431	1.2336	-0.2162	0.0031	-0.0079	0.0001
125	2.5746	0.7520	-0.1887	0.0024	-0.0067	0.0001
126	1.5434	0.3925	-0.1582	0.0017	-0.0052	0.0001
127	0.7846	0.1565	-0.1274	0.0010	-0.0036	0.0001
128	0.2953	0.0262	-0.0994	0.0005	-0.0021	0.0000
129	0.0343	-0.0274	-0.0763	0.0001	-0.0010	0.0000
130	-0.0637	-0.0356	-0.0597	0.0000	-0.0002	0.0000
131	-0.0701	-0.0246	-0.0486	-0.0001	0.0001	0.0000
132	-0.0424	-0.0113	-0.0401	-0.0001	0.0002	0.0000
133	-0.0160	-0.0029	-0.0331	0.0000	0.0001	0.0000
134	-0.0020	0.0003	-0.0275	0.0000	0.0000	0.0000
135	0.0020	0.0007	-0.0243	0.0000	0.0000	0.0000
136	0.0020	0.0003	-0.0232	0.0000	0.0000	0.0000

Pile Number 4

4	11.9378	4.6700	1.1361	0.0013	-0.0046	0.0007
137	11.6499	4.5881	1.1247	0.0015	-0.0051	0.0007
138	11.3372	4.4925	1.1129	0.0017	-0.0055	0.0007
139	10.9918	4.3789	1.1019	0.0021	-0.0062	0.0006
140	10.6072	4.2437	1.0901	0.0024	-0.0068	0.0006
141	10.1887	4.0895	1.0776	0.0027	-0.0073	0.0005
142	9.7413	3.9192	1.0644	0.0030	-0.0077	0.0005
143	9.2700	3.7353	1.0507	0.0032	-0.0081	0.0005
144	8.7794	3.5403	1.0368	0.0034	-0.0084	0.0004
145	8.2738	3.3365	1.0227	0.0035	-0.0086	0.0004
146	6.7513	2.7118	0.9818	0.0037	-0.0089	0.0003
147	5.2257	2.0776	0.9406	0.0036	-0.0087	0.0002
148	3.7848	1.4793	0.8990	0.0033	-0.0079	0.0001
149	2.5112	0.9572	0.8582	0.0027	-0.0067	0.0001
150	1.4794	0.5445	0.8193	0.0020	-0.0052	0.0001
151	0.7330	0.2558	0.7808	0.0013	-0.0035	0.0001
152	0.2660	0.0814	0.7406	0.0007	-0.0020	0.0000
153	0.0251	-0.0053	0.6980	0.0003	-0.0009	0.0000
154	-0.0634	-0.0350	0.6560	0.0001	-0.0002	0.0000
155	-0.0688	-0.0341	0.6156	-0.0001	0.0001	0.0000
156	-0.0440	-0.0221	0.5770	-0.0001	0.0002	0.0000
157	-0.0187	-0.0101	0.5404	-0.0001	0.0001	0.0000
158	-0.0036	-0.0024	0.5062	0.0000	0.0001	0.0000
159	0.0020	0.0010	0.4793	0.0000	0.0000	0.0000
160	0.0034	0.0024	0.4597	0.0000	0.0000	0.0000

Pile Number 5

5	12.1816	4.4247	-0.8058	0.0014	-0.0044	0.0007
161	11.9052	4.3349	-0.7911	0.0016	-0.0049	0.0007
162	11.6056	4.2344	-0.7767	0.0018	-0.0052	0.0007
163	11.2738	4.1190	-0.7565	0.0021	-0.0059	0.0006
164	10.9019	3.9852	-0.7371	0.0024	-0.0066	0.0006
165	10.4937	3.8347	-0.7186	0.0027	-0.0072	0.0005
166	10.0532	3.6693	-0.7009	0.0029	-0.0077	0.0005
167	9.5841	3.4909	-0.6841	0.0031	-0.0081	0.0005
168	9.0905	3.3015	-0.6678	0.0033	-0.0085	0.0004

169	8.5764	3.1030	-0.6521	0.0034	-0.0088	0.0004
170	7.0065	2.4943	-0.6072	0.0036	-0.0092	0.0003
171	5.4191	1.8822	-0.5631	0.0034	-0.0090	0.0002
172	3.9257	1.3179	-0.5193	0.0030	-0.0082	0.0001
173	2.6180	0.8403	-0.4730	0.0025	-0.0069	0.0001
174	1.5588	0.4715	-0.4243	0.0018	-0.0053	0.0001
175	0.7822	0.2157	-0.3754	0.0012	-0.0037	0.0001
176	0.2843	0.0615	-0.3290	0.0006	-0.0021	0.0000
177	0.0236	-0.0130	-0.2867	0.0002	-0.0009	0.0000
178	-0.0672	-0.0346	-0.2503	0.0000	-0.0002	0.0000
179	-0.0668	-0.0293	-0.2181	-0.0001	0.0001	0.0000
180	-0.0383	-0.0166	-0.1896	-0.0001	0.0002	0.0000
181	-0.0137	-0.0063	-0.1648	0.0000	0.0001	0.0000
182	-0.0013	-0.0008	-0.1439	0.0000	0.0000	0.0000
183	0.0019	0.0009	-0.1318	0.0000	0.0000	0.0000
184	0.0017	0.0012	-0.1278	0.0000	0.0000	0.0000

Pile Number 6

6	12.1811	4.6677	0.6229	0.0016	-0.0045	0.0007
185	11.8974	4.5692	0.6177	0.0018	-0.0050	0.0007
186	11.5878	4.4599	0.6121	0.0019	-0.0054	0.0007
187	11.2433	4.3360	0.6088	0.0022	-0.0062	0.0006
188	10.8566	4.1945	0.6044	0.0025	-0.0068	0.0006
189	10.4331	4.0378	0.5990	0.0028	-0.0074	0.0005
190	9.9782	3.8677	0.5926	0.0030	-0.0079	0.0005
191	9.4973	3.6866	0.5854	0.0031	-0.0083	0.0005
192	8.9954	3.4963	0.5775	0.0033	-0.0086	0.0004
193	8.4776	3.2992	0.5691	0.0034	-0.0088	0.0004
194	6.9188	2.7025	0.5438	0.0035	-0.0091	0.0003
195	5.3534	2.1006	0.5183	0.0034	-0.0089	0.0002
196	3.8677	1.5285	0.4932	0.0032	-0.0082	0.0001
197	2.5526	1.0226	0.4713	0.0027	-0.0069	0.0001
198	1.4900	0.6133	0.4529	0.0020	-0.0053	0.0001
199	0.7269	0.3150	0.4354	0.0014	-0.0035	0.0001
200	0.2564	0.1233	0.4154	0.0008	-0.0020	0.0000
201	0.0209	0.0189	0.3911	0.0004	-0.0008	0.0000
202	-0.0614	-0.0253	0.3650	0.0001	-0.0002	0.0000
203	-0.0654	-0.0346	0.3398	0.0000	0.0001	0.0000
204	-0.0416	-0.0273	0.3158	-0.0001	0.0002	0.0000
205	-0.0177	-0.0155	0.2932	-0.0001	0.0001	0.0000
206	-0.0034	-0.0056	0.2721	0.0000	0.0001	0.0000
207	0.0019	0.0004	0.2557	0.0000	0.0000	0.0000
208	0.0033	0.0042	0.2439	0.0000	0.0000	0.0000

SUM OF TOTAL SOIL SPRING LOADS

CHECK: Total Load Carried by the Soil
(Sum of NF+FF Soil Spring Loads)

X Direction	=	5943.7127	Kips
Y Direction	=	3342.4572	Kips
Z Direction	=	48338.1542	Kips
Sum of Tip Forces	=	19545.4899	Kips

Summary of Pile Forces for Load CASE 1

1. Axial Force (Kips)

Pile #	Maximum Force	Minimum Force
1	-0.13513E+04	-0.27210E+04
2	-0.96394E+04	-0.19949E+05
3	0.29328E+04	0.86082E+02
4	-0.77579E+04	-0.17011E+05
5	0.64363E+04	0.47417E+03
6	-0.46666E+04	-0.10866E+05

2. Pile Shear Force in 2 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.88824E+03	-0.70528E+03
2	0.10923E+04	-0.97392E+03
3	0.86771E+03	-0.66657E+03
4	0.11053E+04	-0.96991E+03
5	0.87474E+03	-0.63035E+03
6	0.11281E+04	-0.92417E+03

3. Pile Shear Force in 3 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.35640E+03	-0.62855E+03
2	0.46081E+03	-0.72227E+03
3	0.28707E+03	-0.51310E+03
4	0.37287E+03	-0.59910E+03
5	0.22134E+03	-0.40964E+03
6	0.29893E+03	-0.46971E+03

4. Bending Moment About 2 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.3644E+05	0.11675E+03	-0.1929E+05
2	2	0.00000E+00	0.4684E+05	0.11675E+03	-0.2503E+05
3	3	0.00000E+00	0.2980E+05	0.13118E+03	-0.1570E+05
4	4	0.00000E+00	0.3963E+05	0.13118E+03	-0.2205E+05
5	5	0.00000E+00	0.2340E+05	0.13118E+03	-0.1286E+05
6	6	0.00000E+00	0.3025E+05	0.11675E+03	-0.1826E+05

5. Bending Moment About 3 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.5412E+05	0.14561E+03	-0.3737E+05
2	2	0.00000E+00	0.7315E+05	0.11675E+03	-0.5094E+05
3	3	0.00000E+00	0.5104E+05	0.11675E+03	-0.3402E+05
4	4	0.00000E+00	0.7256E+05	0.13118E+03	-0.5086E+05
5	5	0.00000E+00	0.5055E+05	0.13118E+03	-0.3220E+05
6	6	0.00000E+00	0.7196E+05	0.13118E+03	-0.4896E+05

****
* ANALYTICAL FORCE RESULTS FOR PIER *
****

ELEM NO.	PROP NO.	NODE NO.	LOAD CASE	FAX (Kips)	F22 (Kips)	F33 (Kips)	M22 (Kip-ft)	M33 (Kip-ft)	TORQUE (Kip-ft)	D/C (Ratio)
- Connector Beam Segments										
1	1	64	1	-377.21	-6013.31	-2065.81	30987.09	-90199.69	-13075.80	0.00
	1	47		377.21	6013.31	2065.81	0.00	0.00	13075.80	0.00
2	1	64	1	1198.63	19854.62	-1634.10	24511.48	297819.35	-56135.34	0.00
	1	4		-1198.63	-19854.62	1634.10	0.00	0.00	56135.34	0.00
3	1	64	1	503.42	21136.66	1657.37	-24860.54	317049.91	8485.11	0.00
	1	37		-503.42	-21136.66	-1657.37	0.00	0.00	-8485.11	0.00
4	1	64	1	-1034.20	-8641.97	827.27	-12409.04	*********	48113.26	0.00
	1	3		1034.20	8641.97	-827.27	0.00	0.00	-48113.26	0.00

****
* ANALYTICAL PILE CAP - SHELL STRESS RESULTS *
****

****
* DAMPING FORCES *
****

Node #	FXX Kip	FYY Kip	FZZ Kip	MXX Kip	MYY Kip	MZZ Kip

****
* UNIAXIAL INTERACTION DIAGRAM *
****

NOTE : 1. The tables below show the values on the Interaction
Diagrams for each section which correspond to the

section capacity
2. The numbering of the SECTIONS/SEGMENTS is shown previously in the output file

---
! -> Pile Cross Section Number = 1 !

Diagram Data

Maximum Tension Force = 0.4820E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = 0.1237E-14 (in)
Local 3 Axis Shift for Plastic Centroid = -0.7486E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.4820E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.4397E+05	0.1425E+06	0.1425E+06	0.1425E+06	0.1425E+06
0.3941E+05	0.1572E+06	0.1572E+06	0.1572E+06	0.1572E+06
0.3504E+05	0.1687E+06	0.1687E+06	0.1687E+06	0.1687E+06
0.3074E+05	0.1749E+06	0.1749E+06	0.1749E+06	0.1749E+06
0.2629E+05	0.1777E+06	0.1777E+06	0.1777E+06	0.1777E+06
0.2204E+05	0.1794E+06	0.1794E+06	0.1794E+06	0.1794E+06
0.1754E+05	0.1877E+06	0.1877E+06	0.1877E+06	0.1877E+06
0.1315E+05	0.1951E+06	0.1951E+06	0.1951E+06	0.1951E+06
0.8836E+04	0.2009E+06	0.2009E+06	0.2009E+06	0.2009E+06
0.4379E+04	0.2067E+06	0.2067E+06	0.2067E+06	0.2067E+06
0.7769E-01	0.2109E+06	0.2109E+06	0.2109E+06	0.2109E+06
-0.6898E+04	0.1877E+06	0.1877E+06	0.1877E+06	0.1877E+06
-0.1348E+05	0.1894E+06	0.1894E+06	0.1894E+06	0.1894E+06
-0.2023E+05	0.1912E+06	0.1912E+06	0.1912E+06	0.1912E+06
-0.2690E+05	0.1869E+06	0.1869E+06	0.1869E+06	0.1869E+06
-0.3368E+05	0.1773E+06	0.1773E+06	0.1773E+06	0.1773E+06
-0.4042E+05	0.1633E+06	0.1633E+06	0.1633E+06	0.1633E+06
-0.4761E+05	0.1439E+06	0.1439E+06	0.1439E+06	0.1439E+06
-0.4853E+05	0.1410E+06	0.1410E+06	0.1410E+06	0.1410E+06
-0.5008E+05	0.1361E+06	0.1361E+06	0.1361E+06	0.1361E+06
-0.5139E+05	0.1319E+06	0.1319E+06	0.1319E+06	0.1319E+06
-0.5259E+05	0.1279E+06	0.1279E+06	0.1279E+06	0.1279E+06
-0.5371E+05	0.1239E+06	0.1239E+06	0.1239E+06	0.1239E+06
-0.5469E+05	0.1204E+06	0.1204E+06	0.1204E+06	0.1204E+06
-0.5552E+05	0.1174E+06	0.1174E+06	0.1174E+06	0.1174E+06
-0.5695E+05	0.1100E+06	0.1120E+06	0.1100E+06	0.1120E+06
-0.5814E+05	0.1075E+06	0.1075E+06	0.1075E+06	0.1075E+06
-0.5945E+05	0.9967E+05	0.1019E+06	0.9967E+05	0.1019E+06
-0.6046E+05	0.9587E+05	0.9753E+05	0.9587E+05	0.9753E+05

! -> Pile Cross Section Number = 2 !

Diagram Data

Maximum Tension Force = 0.4308E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = -0.3047E-15 (in)
Local 3 Axis Shift for Plastic Centroid = -0.6806E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.4308E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.3110E+05	0.1327E+06	0.1327E+06	0.1327E+06	0.1327E+06
0.3052E+05	0.1339E+06	0.1339E+06	0.1339E+06	0.1339E+06
0.2750E+05	0.1395E+06	0.1395E+06	0.1395E+06	0.1395E+06
0.2361E+05	0.1485E+06	0.1485E+06	0.1485E+06	0.1485E+06
0.1958E+05	0.1577E+06	0.1577E+06	0.1577E+06	0.1577E+06
0.1566E+05	0.1636E+06	0.1636E+06	0.1636E+06	0.1636E+06
0.1175E+05	0.1601E+06	0.1601E+06	0.1601E+06	0.1601E+06
0.7886E+04	0.1603E+06	0.1603E+06	0.1603E+06	0.1603E+06
0.3914E+04	0.1630E+06	0.1630E+06	0.1630E+06	0.1630E+06
-0.1798E+00	0.1647E+06	0.1647E+06	0.1647E+06	0.1647E+06
-0.5618E+04	0.1381E+06	0.1381E+06	0.1381E+06	0.1381E+06
-0.1126E+05	0.1403E+06	0.1403E+06	0.1403E+06	0.1403E+06
-0.1687E+05	0.1424E+06	0.1424E+06	0.1424E+06	0.1424E+06
-0.2254E+05	0.1428E+06	0.1428E+06	0.1428E+06	0.1428E+06
-0.2814E+05	0.1389E+06	0.1389E+06	0.1389E+06	0.1389E+06
-0.3377E+05	0.1323E+06	0.1323E+06	0.1323E+06	0.1323E+06
-0.3976E+05	0.1226E+06	0.1226E+06	0.1226E+06	0.1226E+06
-0.4243E+05	0.1174E+06	0.1174E+06	0.1174E+06	0.1174E+06
-0.4510E+05	0.1111E+06	0.1111E+06	0.1111E+06	0.1111E+06
-0.4817E+05	0.1028E+06	0.1028E+06	0.1028E+06	0.1028E+06
-0.5123E+05	0.9348E+05	0.9348E+05	0.9348E+05	0.9348E+05
-0.5390E+05	0.8356E+05	0.8488E+05	0.8356E+05	0.8488E+05
-0.5661E+05	0.7541E+05	0.7580E+05	0.7541E+05	0.7580E+05
-0.5938E+05	0.6589E+05	0.6642E+05	0.6589E+05	0.6642E+05
-0.6221E+05	0.5509E+05	0.5653E+05	0.5509E+05	0.5653E+05
-0.6512E+05	0.4567E+05	0.4567E+05	0.4567E+05	0.4567E+05
-0.6802E+05	0.3413E+05	0.3413E+05	0.3413E+05	0.3413E+05
-0.7149E+05	0.1978E+05	0.1978E+05	0.1978E+05	0.1978E+05

****
* FINAL MAXIMUMS/MINIMUMS FOR ALL LOAD CASES *
* PIER # 1 *
****

Maximum/Minimum Pile Forces

	Value		Load	Comb.	Pile
Max Shear in 2 Direction	0.1128E+04	Kip	1	0	6
Min Shear in 2 Direction	-0.9739E+03	Kip	1	0	2
Max Shear in 3 Direction	0.4608E+03	Kip	1	0	2
Min Shear in 3 Direction	-0.7223E+03	Kip	1	0	2
Max Moment about 2 Axis	0.4684E+05	Kip-ft	1	0	2
Min Moment about 2 Axis	-0.2503E+05	Kip-ft	1	0	2
Max Moment About 3 Axis	0.7315E+05	Kip-ft	1	0	2
Min Moment About 3 Axis	-0.5094E+05	Kip-ft	1	0	2
Max Axial Force	0.6436E+04	Kip	1	0	5
Min Axial Force	-0.1995E+05	Kip	1	0	2
Absolute Max Torque	0.5878E+01	Kip-ft	1	0	6
Max Demand/Capacity Ratio	0.5415E+00		1	0	2

Maximum/Minimum Soil Forces

Max Axial Soil Force	0.3403E+04	Kip	1	0	2
Min Axial Soil Force	-0.1068E+04	Kip	1	0	5
Max Lateral Force in X dir	0.5001E+03	Kip	1	0	6
Min Lateral Force in X dir	-0.3445E+03	Kip	1	0	2
Max Lateral Force in Y dir	0.3095E+03	Kip	1	0	2
Min Lateral Force in Y dir	-0.1510E+03	Kip	1	0	2
Max Torsional Soil Force	0.6169E+04	Kip-ft	1	0	1

Maximum/Minimum Pile Displacements

Max Axial Displacement	0.1461E+01	in	1	0	2
Min Axial Displacement	-0.8058E+00	in	1	0	5

BSI FB-MultiPier - File: P4-LCS.out Wednesday, March 23, 2011

Max Displacement in X	0.1218E+02 in	1	0	5
Min Displacement in X	-0.7007E-01 in	1	0	3
Max Displacement in Y	0.4670E+01 in	1	0	4
Min Displacement in Y	-0.3848E-01 in	1	0	2

Maximum/Minimum Column Forces

	Value	Load	Comb.	Column
Max Axial Force	0.0000E+00 Kip	0	0	0
Min Axial Force	0.0000E+00 Kip	0	0	0
Max Shear in 2 Direction	0.0000E+00 Kip	0	0	0
Min Shear in 2 Direction	0.0000E+00 Kip	0	0	0
Max Shear in 3 Direction	0.0000E+00 Kip	0	0	0
Min Shear in 3 Direction	0.0000E+00 Kip	0	0	0
Max Moment about 2 Axis	0.0000E+00 Kip-ft	0	0	0
Min Moment about 2 Axis	0.0000E+00 Kip-ft	0	0	0
Max Moment about 3 Axis	0.0000E+00 Kip-ft	0	0	1
Min Moment about 3 Axis	0.0000E+00 Kip-ft	0	0	0
Absolute Max Torque	0.1000E+06 Kip-ft	1	0	0

Maximum/Minimum Pier Cap Forces

Max Axial Force	0.0000E+00 Kip	0	0
Min Axial Force	0.0000E+00 Kip	0	0
Max Shear in 2 Direction	0.0000E+00 Kip	0	0
Min Shear in 2 Direction	0.0000E+00 Kip	0	0
Max Shear in 3 Direction	0.0000E+00 Kip	0	0
Min Shear in 3 Direction	0.0000E+00 Kip	0	0
Max Torque	-0.1000E+06 Kip-ft	1	0
Min Torque	0.0000E+00 Kip-ft	0	0
Max Moment about 2 Axis	0.0000E+00 Kip-ft	0	0
Min Moment about 2 Axis	0.0000E+00 Kip-ft	0	0
Max Moment about 3 Axis	0.0000E+00 Kip-ft	0	0
Min Moment about 3 Axis	0.0000E+00 Kip-ft	0	0

****
Foundation Flexibilty for given loads
****

Averaged flexiblity

	Fx	Fy	Fz	Mx	My	Mz
DeltaX	0.1828E-02	0.6350E-04	-0.3086E-04	0.3037E-07	-0.4109E-06	0.2468E-08
DeltaY	0.6350E-04	0.1181E-02	-0.1091E-04	0.1305E-06	-0.3780E-07	-0.1289E-08
DeltaZ	-0.3086E-04	-0.1091E-04	0.1622E-04	-0.3960E-08	0.1574E-07	0.9013E-09
ThetaX	0.3037E-07	0.1305E-06	-0.3960E-08	0.1779E-09	-0.2949E-10	0.3854E-10
ThetaY	-0.4109E-06	-0.3780E-07	0.1574E-07	-0.2949E-10	0.4476E-09	0.3214E-10
ThetaZ	0.2468E-08	-0.1289E-08	0.9013E-09	0.3854E-10	0.3214E-10	0.2980E-08

****
Foundation Stiffness for given loads
****

STIFFNESS

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.6979E+03	-0.1220E+02	0.7249E+03	0.9567E+04	0.6153E+06	-0.7562E+04
Fy	-0.1220E+02	0.9258E+03	0.4287E+03	-0.6684E+06	0.7233E+04	0.8848E+04
Fz	0.7249E+03	0.4287E+03	0.6498E+05	0.7570E+06	-0.1533E+07	-0.1333E+05
Mx	0.9567E+04	-0.6684E+06	0.7570E+06	0.6203E+10	0.3404E+09	-0.8442E+08
My	0.6153E+06	0.7233E+04	-0.1533E+07	0.3404E+09	0.2879E+10	-0.3549E+08
Mz	-0.7562E+04	0.8848E+04	-0.1333E+05	-0.8442E+08	-0.3549E+08	0.3370E+09

****
Foundation Stiffness in STANDARD X-Y-Z directions
(FB-Pier->Stardard, X->X, Y->Z & -Z->Y)
Translations: kips/in Rotations: kip-in/rad
****

Stiffness in standard X-Y-Z

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.6979E+03	-0.7249E+03	-0.1220E+02	0.9567E+04	0.7562E+04	0.6153E+06
Fy	-0.7249E+03	0.6498E+05	-0.4287E+03	-0.7570E+06	-0.1333E+05	0.1533E+07
Fz	-0.1220E+02	-0.4287E+03	0.9258E+03	-0.6684E+06	-0.8848E+04	0.7233E+04
Mx	0.9567E+04	-0.7570E+06	-0.6684E+06	0.6203E+10	0.8442E+08	0.3404E+09
My	0.7562E+04	-0.1333E+05	-0.8848E+04	0.8442E+08	0.3370E+09	0.3549E+08
Mz	0.6153E+06	0.1533E+07	0.7233E+04	0.3404E+09	0.3549E+08	0.2879E+10

:::: F B - M U L T I P I E R ::::
FB-MultiPier Version 4.13

Written by Marc Hoit, Mike McVay, Cliff Hays
Mark Williams, Petros Christou, Jae H. Chung.

Civil & Coastal Engineering, University of Florida

Supported by Florida Department of Transportation
and the Federal Highway Administration

The program calculates the Response
of the Bridge Pier Pile Soil Structures

The Analysis includes PreLoad, Static,
Transient Dynamic or Push Over

The Program Handles NonLinear Soil Behavior,
Linear Pile Cap and Linear and NonLinear Piles and Piers

Contact: Bridge Software Institute for Support
HTTP://BSI-WEB.CE.UFL.EDU

Analysis Start : 4:18pm
Analysis End : 4:18pm
Analysis Time : 3 seconds

Input Data File Name : P5-LCS.in
Analysis Date : 3-15-2011
License ID Number : 432478881

****
* PROJECT DATA *
****

Project Client : CRC / WSDOT / ODOT
Project Name : Columbia River Crossing
Project Manager : R. Turton
Computed by : NRH
Project Description : SB - Pier 5 - Liquefaction + Contraction Scour

****
* SELECTIVE PRINT OUTPUT CONTROL *
****

	Print On
Pile Displacements	YES
Pile Element Forces	NO
Missing Pile ID Numbers	NO
Pier Columns and Pier Cap Displacements	NO
Pier Columns and Pier Cap Force Output	YES
Pier Material Properties	YES
Soil Response Forces	NO
Soil Data per Layer	YES
Soil Curve data per Pile Node	NO
Soil Graph per Pile Node	NO
Out of Balance Forces	NO
Bridge Simulation Spring Force Output	NO
Bridge Span Displacements	NO
Bridge Span Element Forces	NO
Bridge Span Properties	NO
Pile Cap Stress	NO

```
 Material Stress Strain Curve Data          NO
 Interaction Diagram Data For Pile and Pier YES
 Pile and Pier coordinates                  NO
 Generate XML file                          NO


 *************
 *   UNITS   *
 *************

 Analysis Units Specified are: English Mixed (Kips & Ft some lbs & in)


 ***************************
 *   CONTROL INFORMATION   *
 ***************************

 Number of Piers               (NUMPIERS) =    1
 Maximum Number of Iterations    (MAXITN) =   50
 Tolerance                        (TOLER) =    10.000000     Kips

 NOTE : The following soil information is not applicable in the coulmn analysis problems

 Soil Behavior Option             (IFLEX) =    0
    IFLEX = 0 -> PY Multipliers are Input
    IFLEX = 1 -> PY Multipliers Defaulted to 1.0
    IFLEX = 2 -> No SOIL (Must use tip springs)

 Soil resistance due to Pile Rotation About 2 and 3 Axis (NSODF) =    4
    NSDOF = 4 -> NO Resistance Accounted
    NSDOF = 6 -> Resistance Accounted

 Linear Pile TIP Spring Option     (ITIP) =    0
    ITIP = 0 -> NO spring
    ITIP = 1 -> Axial only
    ITIP = 2 -> All DOF

 Linear Pile TIP Spring Stiffness (TSTIF) =         0.00 kips/in


 **********************
 *   SOIL BEHAVIOR    *
 **********************

 PY Multipliers will be used (IFLEX = 0)

 ************************************************
 *   LOAD FACTORS FOR SELF WEIGHT AND BUOYANCY   *
 ************************************************

 LOAD CASE     SELF WEIGHT     BUOYANCY
     #            FACTOR        FACTOR
     1             1.00          1.00


 ****************************
 *   GENERAL INFORMATION    *
 ****************************

 Static / Cyclic Load (KCYC)      =    0
    KCYC = 0 -> Static Load
    KCKC > 0 -> Cyclic Load (# Cycles)

 Fixity of Pile Cap (KFIX)        =    1
    KFIX = 0 -> Pinned Head
    KFIX = 1 -> Fixed head

 Bearing of Cap on Soil           =  NO


 *****************************
 *   GRID DATA INFORMATION   *
 *****************************

 NOTE: X-Grid : Distance between axes along the X-Axis
       Y-Grid : Distance between axes along the Y-Axis

 Number of Grid Points in X-Direction (NPX) =     4
 Number of Grid Points in X-Direction (NPY) =     5

 Grid Spacing in the X Direction : (inches)
      90.00     360.00      90.00
```

Grid Spacing in the Y Direction : (inches)
90.00 360.00 360.00 90.00

****
* ANALYSIS OPTIONS *
****

Type of Stiffness = Secant Stiffness
Type of Structure = Full
Type of Analysis = Static Analysis

****
* INPUT SOIL DATA - GIVEN BY LAYER *
****

NOTE : The following data is used to define Springs
for each Soil Layer to determine the Soil
Behavior during the analysis

LAYERED P-Y CURVES

SOIL SET # 1

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	1	1	0.5000E+01	0.3800E+01	0.1073E+03
			0.5000E+01	0.3800E+01	0.1073E+03
1	2	1	0.6000E+01	0.7500E+01	0.1212E+03
			0.6000E+01	0.7500E+01	0.1212E+03
1	3	1	0.3500E+02	0.5000E+02	0.1212E+03
			0.3500E+02	0.5000E+02	0.1212E+03
1	4	1	0.4500E+02	0.1250E+03	0.1367E+03
			0.4500E+02	0.1250E+03	0.1367E+03
1	5	1	0.4500E+02	0.1500E+03	0.1402E+03
			0.4500E+02	0.1500E+03	0.1402E+03

LAYERED T-Z CURVES

SOIL SET # 1

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00
	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00

	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.559E+01	0.380E+00	0.853E+01
	0.760E+00	0.696E+01	0.760E+00	0.106E+02
	0.114E+01	0.725E+01	0.114E+01	0.111E+02
	0.152E+01	0.725E+01	0.152E+01	0.111E+02
	0.265E+01	0.725E+01	0.265E+01	0.111E+02
	0.379E+01	0.725E+01	0.379E+01	0.111E+02
	0.493E+01	0.725E+01	0.493E+01	0.111E+02
	0.606E+01	0.725E+01	0.606E+01	0.111E+02
	0.720E+01	0.725E+01	0.720E+01	0.111E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.102E+02	0.380E+00	0.102E+02
	0.760E+00	0.126E+02	0.760E+00	0.126E+02
	0.114E+01	0.132E+02	0.114E+01	0.132E+02
	0.152E+01	0.132E+02	0.152E+01	0.132E+02
	0.265E+01	0.132E+02	0.265E+01	0.132E+02
	0.379E+01	0.132E+02	0.379E+01	0.132E+02
	0.493E+01	0.132E+02	0.493E+01	0.132E+02
	0.606E+01	0.132E+02	0.606E+01	0.132E+02
	0.720E+01	0.132E+02	0.720E+01	0.132E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

LAYERED T-Theta CURVES

SOIL SET # 1

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	1	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	2	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	3	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	4	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	5	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

PILE TIP SOIL PARAMETERS

SOIL SET # 1

USER DEFINED

Q Value	T Value

	in	lbs
1	0.000E+00	0.000E+00
2	0.222E+00	0.362E+07
3	0.444E+00	0.624E+07
4	0.667E+00	0.829E+07
5	0.889E+00	0.995E+07
6	0.111E+01	0.113E+08
7	0.133E+01	0.125E+08
8	0.156E+01	0.136E+08
9	0.178E+01	0.145E+08
10	0.200E+01	0.153E+08

****
* PILE SEGMENT INFORMATION DATA *
****

NOTE: The Piles Sets consist of Pile Segments based on the User Input. The program groups all segments from all the different Pile Sets and assigns a reference number to each

The reference number for each segment together with the User Input Pile Set/Segment number is shown below. The Input section properties for each section/segment is also provided below.

The user is advised to double check these numbers

Number of segments found in all Piles (NPSEG) = 2

! -> SECTION DATA FOR SECTION/SEGMENT : 1 !

Input Pile Set Number = 1
Input Pile Set Segment = 1

Section Pile Length (L) = 9.0000000 ft

Nonlinear Section/Segment Material Properties

Material Option (MATOPT) = 1
(Please Refer to the Users Guide for Details)

- Concrete Stress Strain Properties

Concrete Strength (FPC) = 0.4000E+01 ksi
Modulus of Elasticity (EC) = 0.4224E+04 ksi

Gauss Integration Points for Concrete = 60

- Steel Stress Strain Properties

Mild Steel Yield Stress (FY) = 0.600E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

Tubular Steel Yield Stress (FY) = 0.500E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

- Shape of Section : CIRCULAR

- Steel and Confinement Data

Number of Steel Layers = 2
Section/Segment Diameter = 180.0000 in
Tied/Spiral Reinforcement Flag = 1
(NOTE : Spiral = 1, Tied = 2)
Confinement Flag = 1
(NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

- Steel and Confinement Data

Yield Stress of Confinement Steel = 60.00 ksi
Spacing between Confinement Steel = 6.000 in
Diameter of Confinement Steel = 0.7500 in
Outer Shell Thickness = 1.00 in

- Total Area of Steel Reinforcement = 424.00 in^2

Layer	# Bars/Strands	Area in^2	Layer Dia. in	Prestressing ksi

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
1	56	4.00	108.00	0.00

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
2	52	3.85	96.00	0.00

```
-----------------------------------------
! -> SECTION DATA FOR SECTION/SEGMENT :   2  !
-----------------------------------------

Input Pile Set Number  =   1
Input Pile Set Segment =   2

Section Pile Length               (L) =    236.08000     ft

Nonlinear Section/Segment Material Properties
```

Material Option (MATOPT) = 1
(Please Refer to the Users Guide for Details)

- Concrete Stress Strain Properties

  Concrete Strength (FPC) = 0.6000E+01 ksi
  Modulus of Elasticity (EC) = 0.5173E+04 ksi

  Gauss Integration Points for Concrete = 60

- Steel Stress Strain Properties

  Mild Steel Yield Stress (FY) = 0.600E+02 ksi
  Modulus of Elasticity (ES) = 0.2900E+05 ksi

  Tubular Steel Yield Stress (FY) = 0.500E+02 ksi
  Modulus of Elasticity (ES) = 0.2900E+05 ksi

- Shape of Section : CIRCULAR

- Steel and Confinement Data

  Number of Steel Layers = 2
  Section/Segment Diameter = 120.0000 in
  Tied/Spiral Reinforcement Flag = 1
  (NOTE : Spiral = 1, Tied = 2)
  Confinement Flag = 1
  (NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

- Steel and Confinement Data

```
 Yield Stress of Confinement Steel =    60.00     ksi
 Spacing between Confinement Steel =    6.000     in
 Diameter of Confinement Steel     =   0.6250     in
  Outer Shell Thickness            =    1.00      in
```

- Total Area of Steel Reinforcement = 424.00 in^2

Layer	# Bars/Strands	Area in^2	Layer Dia. in	Prestressing ksi

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
1	56	4.00	108.00	0.00

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section

for the analysis. The area is changed to
result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
2	52	3.85	96.00	0.00

PLOT OF THE QZ CURVE FOR THE TIP OF THE PILE

- USER DEFINED CURVE

SOIL SET	Z Value	Q Value	Z Value	Q Value	Z Value	Q Value
1	0.0000E+00	0.0000E+00	0.2222E+00	0.3615E+07	0.4444E+00	0.6244E+07
	0.6667E+00	0.8290E+07	0.8889E+00	0.9952E+07	0.1111E+01	0.1134E+08
	0.1333E+01	0.1253E+08	0.1556E+01	0.1357E+08	0.1778E+01	0.1448E+08
	0.2000E+01	0.1530E+08				

****
* PILE SET DATA DESCRIPTION *
****

NOTE : The piles are organized in pile sets. Each pile
set is composed of pile segments that are input
by the User. A pile set is attached to each
pile in order to describe its composition

List of Piles Sets and Piles

Pile Set	Piles (that are assigned the Pile Set)
1	1, 2, 3, 4, 5, 6

Total Length for Each Pile Set

Pile Set	Length
1	2940.96

****
* INPUT FOR STRUCTURAL ANALYSIS *
****

Number of Joints = 64
Number of Different Element Types = 3
Number of Load Conditions = 1

WARNING : Pier Columns and Cap are linear
No P-Delta or Moment Magnification is included
Nonlinear should be used for final design

PIER SUMMARY

Stiffness of Foundation Requested - NO Pier Exists

****
* MATERIAL PROPERTIES FOR PILE CAP AND FRAME (PIER) ELEMENTS *
****

****
* PILE CAP PROPERTIES - USING SHELL ELEMENTS *
****

Modulus of Elasticity = 0.4224E+04 (ksi)
Poissons Ratio = 0.2000
Shear Modulus = 0.1760E+04 (ksi)
Self Weight = 160.0000 (pcf)
Thickness = 0.1900E+02 (ft)

! -> PROPERTIES FOR CONNECTOR ELEMENTS (DEFAULTED) !

NOTE : These Elements are generated by the program at the Pier
Column Bases where they connect with the Pile Cap. The
purpose for these elements is to spread the column base

load over an area on the Pile Cap and therefore avoid
High Stress Concentrations

NOTE : The material property number for these elements is
defaulted to 1. The material numbers for the properties
of the rest of the Pier elements start form 2

-> SECTION DATA FOR SECTION/SEGMENT : 1

Member Property Number	=	1	
Axial Area, A	=	51984.	(in^2)
Torsional Moment of Inertia, J	=	0.98770E+10	(in^4)
Moment of Inertia, 3 - Axis	=	0.98770E+10	(in^4)
Moment of Inertia, 2 - Axis	=	0.98770E+10	(in^4)
Modulus of Elasticity, E	=	4224.0	(ksi)
Shear Modulus, G	=	1760.0	(ksi) (used for Torsion)
Weight Density	=	0.00000	(K/in^3)

! -> PROPERTIES FOR PIER COLUMNS !

Member Property Number	=	2	
Axial Area, A	=	0.00000	(in^2)
Torsional Moment of Inertia, J	=	0.00000	(in^4)
Moment of Inertia, 3 - Axis	=	0.00000	(in^4)
Moment of Inertia, 2 - Axis	=	0.00000	(in^4)
Modulus of Elasticity, E	=	0.00000	(ksi)
Shear Modulus, G	=	0.00000	(ksi) (used for Torsion)
Weight Density	=	0.00000	(K/in^3)

****
* PIER MEMBER CONNECTIVITY *
****

ELEMENT NUMBER	NODES I	NODES J	MATERIAL NUMBER
1	64	47	1
2	64	4	1
3	64	37	1
4	64	3	1

****
* GENERAL LOAD DATA *
****

The table below shows the Applied Loads for every
Load Case. The values in the table represent the
magnitute of the Loads in the specified units

- Applied Load

NODE	LOAD	X (Kips)	Y (Kips)	Z (Kips)	MXX (Kip-ft)	MYY (Kip-ft)	MZZ (Kip-ft)
64	1	5789.00	0.00	0.00	0.00	0.00	0.00
64	2	0.00	3503.00	0.00	0.00	0.00	0.00
64	3	0.00	0.00	26479.00	0.00	0.00	0.00
64	4	0.00	0.00	0.00	310279.00	0.00	0.00
64	5	0.00	0.00	0.00	0.00	-412852.00	0.00
64	6	0.00	0.00	0.00	0.00	0.00	19176.00

****
*
* ANALYSIS RESULTS *
*
****

****
* RESULTS FOR LOAD CASE # 1 *
****

NOTE : PY Multipliers are applied Lead to Trail row
based on the actual displacement. If there is
no displacement in a Lateral direction they are
defaulted to 1.0. This can happen in Axial Load
and one direction lateral load cases

PY Multipliers are Applied to A Pile Group

PILE#	X-PYM	Y-PYM
1	0.500E+00	0.700E+00
2	0.700E+00	0.700E+00
3	0.500E+00	0.500E+00
4	0.700E+00	0.500E+00
5	0.500E+00	0.350E+00
6	0.700E+00	0.350E+00

****
* CONVERGENCE REPORT *
****

The Solution Converged in 10 Iterations

Summary of Abs Maximum Out-Of-Balance Forces

FZZ =	0.941	Kips
FXX =	0.972	Kips
FYY =	0.349	Kips
MXX =	42.427	Kip-in
MYY =	0.000	Kip-in
MZZ =	42.873	Kip-in

Summary of Displacements at Pile Heads

Node	X (in)	Y (in)	Z (in)
1	10.9468	4.5618	0.0919
2	10.9469	4.8204	1.5592
3	11.2055	4.5640	-0.3545
4	11.2054	4.8211	1.1931
5	11.4606	4.5643	-0.8273
6	11.4601	4.8187	0.6386

Final Displacements

Load Case # 1

Node	X (in)	Y (in)	Z (in)	Rx (rad)	Ry (rad)	Rz (rad)
Pile Number 1						
1	10.9468	4.5618	0.0919	0.0013	-0.0046	0.0007
65	10.6616	4.4740	0.0947	0.0016	-0.0050	0.0007
66	10.3565	4.3714	0.0969	0.0018	-0.0053	0.0007
67	10.0244	4.2488	0.1028	0.0023	-0.0059	0.0007
68	9.6593	4.1019	0.1076	0.0027	-0.0064	0.0006
69	9.2653	3.9336	0.1113	0.0030	-0.0069	0.0006
70	8.8465	3.7471	0.1139	0.0033	-0.0072	0.0005
71	8.4069	3.5453	0.1155	0.0035	-0.0076	0.0005
72	7.9505	3.3314	0.1160	0.0037	-0.0078	0.0004
73	7.4815	3.1081	0.1155	0.0038	-0.0080	0.0004
74	6.1847	2.4838	0.1102	0.0039	-0.0081	0.0003
75	4.8888	1.8623	0.1048	0.0038	-0.0080	0.0002
76	3.6550	1.2877	0.1041	0.0033	-0.0074	0.0002
77	2.5476	0.8019	0.1082	0.0027	-0.0064	0.0001
78	1.6199	0.4316	0.1153	0.0019	-0.0051	0.0001
79	0.9060	0.1827	0.1233	0.0012	-0.0038	0.0001
80	0.4129	0.0410	0.1297	0.0006	-0.0024	0.0000
81	0.1192	-0.0210	0.1323	0.0002	-0.0013	0.0000
82	-0.0186	-0.0348	0.1307	0.0000	-0.0005	0.0000
83	-0.0575	-0.0271	0.1253	-0.0001	0.0000	0.0000
84	-0.0496	-0.0148	0.1182	-0.0001	0.0001	0.0000
85	-0.0280	-0.0052	0.1110	0.0000	0.0001	0.0000
86	-0.0097	-0.0004	0.1041	0.0000	0.0001	0.0000
87	0.0011	0.0011	0.0986	0.0000	0.0000	0.0000
88	0.0077	0.0014	0.0944	0.0000	0.0000	0.0000
Pile Number 2						
2	10.9469	4.8204	1.5592	0.0012	-0.0045	0.0007
89	10.6649	4.7380	1.5451	0.0015	-0.0049	0.0007
90	10.3601	4.6393	1.5308	0.0018	-0.0053	0.0007
91	10.0256	4.5195	1.5167	0.0022	-0.0059	0.0007
92	9.6559	4.3744	1.5019	0.0026	-0.0065	0.0006
93	9.2559	4.2076	1.4864	0.0030	-0.0070	0.0006
94	8.8306	4.0221	1.4705	0.0033	-0.0073	0.0005

95	8.3844	3.8212	1.4543	0.0035	-0.0077	0.0005
96	7.9214	3.6076	1.4380	0.0037	-0.0079	0.0004
97	7.4454	3.3840	1.4216	0.0038	-0.0081	0.0004
98	6.1255	2.7507	1.3774	0.0040	-0.0083	0.0003
99	4.8089	2.1111	1.3329	0.0039	-0.0081	0.0002
100	3.5634	1.5100	1.2881	0.0035	-0.0074	0.0002
101	2.4506	0.9859	1.2434	0.0030	-0.0064	0.0001
102	1.5259	0.5692	1.1999	0.0022	-0.0051	0.0001
103	0.8265	0.2737	1.1567	0.0015	-0.0036	0.0001
104	0.3562	0.0915	1.1125	0.0008	-0.0023	0.0000
105	0.0847	-0.0017	1.0668	0.0004	-0.0012	0.0000
106	-0.0381	-0.0349	1.0216	0.0001	-0.0004	0.0000
107	-0.0672	-0.0350	0.9774	-0.0001	0.0000	0.0000
108	-0.0513	-0.0223	0.9344	-0.0001	0.0002	0.0000
109	-0.0248	-0.0093	0.8926	-0.0001	0.0002	0.0000
110	-0.0062	-0.0016	0.8523	0.0000	0.0001	0.0000
111	0.0022	0.0013	0.8197	0.0000	0.0000	0.0000
112	0.0058	0.0023	0.7946	0.0000	0.0000	0.0000

Pile Number 3

3	11.2055	4.5640	-0.3545	0.0014	-0.0047	0.0007
113	10.9180	4.4756	-0.3454	0.0016	-0.0050	0.0007
114	10.6101	4.3742	-0.3368	0.0018	-0.0053	0.0007
115	10.2744	4.2546	-0.3235	0.0022	-0.0060	0.0007
116	9.9042	4.1129	-0.3112	0.0026	-0.0065	0.0006
117	9.5035	3.9514	-0.2998	0.0029	-0.0070	0.0006
118	9.0760	3.7725	-0.2894	0.0031	-0.0074	0.0005
119	8.6254	3.5788	-0.2800	0.0034	-0.0078	0.0005
120	8.1556	3.3726	-0.2716	0.0036	-0.0080	0.0004
121	7.6702	3.1564	-0.2640	0.0037	-0.0083	0.0004
122	6.3147	2.5436	-0.2471	0.0039	-0.0086	0.0003
123	4.9593	1.9299	-0.2309	0.0037	-0.0083	0.0002
124	3.6840	1.3647	-0.2109	0.0033	-0.0076	0.0002
125	2.5502	0.8826	-0.1867	0.0027	-0.0065	0.0001
126	1.6071	0.5062	-0.1597	0.0020	-0.0052	0.0001
127	0.8854	0.2412	-0.1320	0.0013	-0.0038	0.0001
128	0.3900	0.0775	-0.1060	0.0007	-0.0024	0.0000
129	0.0976	-0.0056	-0.0836	0.0003	-0.0013	0.0000
130	-0.0367	-0.0339	-0.0665	0.0001	-0.0005	0.0000
131	-0.0692	-0.0320	-0.0547	-0.0001	0.0000	0.0000
132	-0.0515	-0.0190	-0.0466	-0.0001	0.0002	0.0000
133	-0.0227	-0.0069	-0.0398	-0.0001	0.0002	0.0000
134	-0.0043	-0.0006	-0.0342	0.0000	0.0001	0.0000
135	0.0025	0.0012	-0.0310	0.0000	0.0000	0.0000
136	0.0041	0.0012	-0.0299	0.0000	0.0000	0.0000

Pile Number 4

4	11.2054	4.8211	1.1931	0.0014	-0.0047	0.0007
137	10.9137	4.7322	1.1818	0.0016	-0.0051	0.0007
138	10.5991	4.6293	1.1701	0.0018	-0.0055	0.0007
139	10.2545	4.5080	1.1591	0.0022	-0.0061	0.0007
140	9.8742	4.3647	1.1473	0.0026	-0.0067	0.0006
141	9.4634	4.2024	1.1348	0.0029	-0.0071	0.0006
142	9.0268	4.0237	1.1217	0.0031	-0.0075	0.0005
143	8.5692	3.8314	1.1081	0.0033	-0.0079	0.0005
144	8.0950	3.6280	1.0944	0.0035	-0.0081	0.0004
145	7.6079	3.4158	1.0806	0.0036	-0.0083	0.0004
146	6.2592	2.8158	1.0433	0.0038	-0.0085	0.0003
147	4.9148	2.2067	1.0058	0.0038	-0.0082	0.0002
148	3.6419	1.6261	0.9679	0.0035	-0.0076	0.0002
149	2.5031	1.1079	0.9307	0.0030	-0.0066	0.0001
150	1.5566	0.6814	0.8951	0.0023	-0.0052	0.0001
151	0.8412	0.3636	0.8602	0.0016	-0.0037	0.0001
152	0.3614	0.1529	0.8244	0.0010	-0.0023	0.0000
153	0.0863	0.0325	0.7864	0.0005	-0.0012	0.0000
154	-0.0372	-0.0222	0.7482	0.0002	-0.0004	0.0000
155	-0.0668	-0.0356	0.7108	0.0000	0.0000	0.0000
156	-0.0512	-0.0282	0.6746	-0.0001	0.0002	0.0000
157	-0.0249	-0.0150	0.6395	-0.0001	0.0002	0.0000
158	-0.0063	-0.0048	0.6058	0.0000	0.0001	0.0000
159	0.0022	0.0009	0.5790	0.0000	0.0000	0.0000
160	0.0059	0.0043	0.5588	0.0000	0.0000	0.0000

Pile Number 5

5	11.4606	4.5643	-0.8273	0.0015	-0.0045	0.0007
161	11.1802	4.4676	-0.8125	0.0017	-0.0049	0.0007
162	10.8782	4.3599	-0.7983	0.0019	-0.0053	0.0007
163	10.5461	4.2369	-0.7783	0.0022	-0.0059	0.0006
164	10.1767	4.0951	-0.7592	0.0025	-0.0065	0.0006
165	9.7739	3.9363	-0.7409	0.0028	-0.0070	0.0006
166	9.3412	3.7623	-0.7235	0.0030	-0.0075	0.0005
167	8.8825	3.5751	-0.7068	0.0032	-0.0079	0.0005
168	8.4017	3.3769	-0.6906	0.0034	-0.0083	0.0004

169	7.9029	3.1695	-0.6748	0.0036	-0.0085	0.0004
170	6.5049	2.5839	-0.6325	0.0037	-0.0088	0.0003
171	5.1006	1.9955	-0.5910	0.0036	-0.0086	0.0002
172	3.7759	1.4466	-0.5499	0.0032	-0.0079	0.0002
173	2.6024	0.9706	-0.5071	0.0027	-0.0067	0.0001
174	1.6300	0.5882	-0.4621	0.0021	-0.0054	0.0001
175	0.8886	0.3069	-0.4166	0.0014	-0.0039	0.0001
176	0.3821	0.1212	-0.3725	0.0009	-0.0025	0.0000
177	0.0866	0.0167	-0.3315	0.0004	-0.0013	0.0000
178	-0.0437	-0.0272	-0.2959	0.0001	-0.0004	0.0000
179	-0.0691	-0.0335	-0.2643	0.0000	0.0000	0.0000
180	-0.0481	-0.0233	-0.2355	-0.0001	0.0002	0.0000
181	-0.0202	-0.0106	-0.2095	-0.0001	0.0001	0.0000
182	-0.0033	-0.0023	-0.1866	0.0000	0.0001	0.0000
183	0.0025	0.0012	-0.1732	0.0000	0.0000	0.0000
184	0.0036	0.0026	-0.1689	0.0000	0.0000	0.0000

Pile Number 6

6	11.4601	4.8187	0.6386	0.0017	-0.0046	0.0007
185	11.1727	4.7130	0.6332	0.0019	-0.0050	0.0007
186	10.8612	4.5962	0.6274	0.0021	-0.0054	0.0007
187	10.5174	4.4645	0.6237	0.0024	-0.0061	0.0006
188	10.1350	4.3148	0.6188	0.0027	-0.0067	0.0006
189	9.7191	4.1496	0.6131	0.0029	-0.0073	0.0006
190	9.2750	3.9711	0.6064	0.0031	-0.0077	0.0005
191	8.8078	3.7814	0.5989	0.0033	-0.0080	0.0005
192	8.3224	3.5828	0.5908	0.0034	-0.0083	0.0004
193	7.8234	3.3774	0.5823	0.0035	-0.0085	0.0004
194	6.4407	2.8034	0.5591	0.0036	-0.0087	0.0003
195	5.0584	2.2244	0.5356	0.0036	-0.0085	0.0002
196	3.7428	1.6696	0.5123	0.0033	-0.0079	0.0002
197	2.5631	1.1688	0.4916	0.0029	-0.0068	0.0001
198	1.5838	0.7490	0.4740	0.0023	-0.0054	0.0001
199	0.8467	0.4260	0.4576	0.0017	-0.0038	0.0001
200	0.3571	0.2014	0.4400	0.0011	-0.0023	0.0000
201	0.0817	0.0645	0.4191	0.0006	-0.0012	0.0000
202	-0.0373	-0.0048	0.3959	0.0003	-0.0004	0.0000
203	-0.0643	-0.0298	0.3723	0.0001	0.0000	0.0000
204	-0.0489	-0.0298	0.3494	0.0000	0.0002	0.0000
205	-0.0237	-0.0195	0.3274	-0.0001	0.0001	0.0000
206	-0.0060	-0.0085	0.3063	-0.0001	0.0001	0.0000
207	0.0021	-0.0004	0.2899	0.0000	0.0000	0.0000
208	0.0057	0.0057	0.2779	0.0000	0.0000	0.0000

SUM OF TOTAL SOIL SPRING LOADS

CHECK: Total Load Carried by the Soil
(Sum of NF+FF Soil Spring Loads)

X Direction	=	5782.7021	Kips
Y Direction	=	3502.9664	Kips
Z Direction	=	47731.5565	Kips
Sum of Tip Forces	=	22352.7897	Kips

Summary of Pile Forces for Load CASE 1

1. Axial Force (Kips)

Pile #	Maximum Force	Minimum Force
1	-0.17567E+04	-0.32648E+04
2	-0.10781E+05	-0.19625E+05
3	0.27968E+04	0.10273E+03
4	-0.86526E+04	-0.16720E+05
5	0.65189E+04	0.58003E+03
6	-0.51270E+04	-0.10766E+05

2. Pile Shear Force in 2 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.86163E+03	-0.69491E+03
2	0.10623E+04	-0.97592E+03
3	0.83987E+03	-0.66606E+03
4	0.10765E+04	-0.97369E+03
5	0.84726E+03	-0.63709E+03
6	0.11018E+04	-0.93636E+03

3. Pile Shear Force in 3 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.38149E+03	-0.66377E+03
2	0.46644E+03	-0.75778E+03
3	0.29299E+03	-0.53462E+03
4	0.40843E+03	-0.62956E+03
5	0.23341E+03	-0.42546E+03
6	0.31986E+03	-0.49291E+03

4. Bending Moment About 2 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.3802E+05	0.12478E+03	-0.2027E+05
2	2	0.00000E+00	0.4839E+05	0.12478E+03	-0.2609E+05
3	3	0.00000E+00	0.3052E+05	0.12478E+03	-0.1645E+05
4	4	0.00000E+00	0.4104E+05	0.11141E+03	-0.2267E+05
5	5	0.00000E+00	0.2386E+05	0.12478E+03	-0.1323E+05
6	6	0.00000E+00	0.3128E+05	0.13815E+03	-0.1889E+05

5. Bending Moment About 3 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.5051E+05	0.13815E+03	-0.3679E+05
2	2	0.00000E+00	0.6815E+05	0.12478E+03	-0.4909E+05
3	3	0.00000E+00	0.4750E+05	0.13815E+03	-0.3297E+05
4	4	0.00000E+00	0.6775E+05	0.13815E+03	-0.4912E+05
5	5	0.00000E+00	0.4710E+05	0.12478E+03	-0.3096E+05
6	6	0.00000E+00	0.6770E+05	0.13815E+03	-0.4739E+05

ANALYTICAL FORCE RESULTS FOR PIER

ELEM NO.	PROP NO.	NODE NO.	LOAD CASE	FAX (Kips)	F22 (Kips)	F33 (Kips)	M22 (Kip-ft)	M33 (Kip-ft)	TORQUE (Kip-ft)	D/C (Ratio)
- Connector Beam Segments										
1	1	64	1	-394.87	-6291.57	-2024.07	30361.09	-94373.51	-1903.07	0.00
	1	47		394.87	6291.57	2024.07	0.00	0.00	1903.07	0.00
2	1	64	1	1165.73	19606.50	-1714.61	25719.12	294097.51	-59573.15	0.00
	1	4		-1165.73	-19606.50	1714.61	0.00	0.00	59573.15	0.00
3	1	64	1	528.68	21573.10	1595.44	-23931.53	323596.52	5477.96	0.00
	1	37		-528.68	-21573.10	-1595.44	0.00	0.00	-5477.96	0.00
4	1	64	1	-1003.76	-8409.03	864.84	-12972.67	*********	48117.88	0.00
	1	3		1003.76	8409.03	-864.84	0.00	0.00	-48117.88	0.00

ANALYTICAL PILE CAP - SHELL STRESS RESULTS

DAMPING FORCES

Node #	FXX	FYY	FZZ	MXX	MYY	MZZ
	Kip	Kip	Kip	Kip	Kip	Kip

UNIAXIAL INTERACTION DIAGRAM

NOTE : 1. The tables below show the values on the Interaction
Diagrams for each section which correspond to the

section capacity
2. The numbering of the SECTIONS/SEGMENTS is shown previously in the output file

---
! -> Pile Cross Section Number = 1 !

Diagram Data

Maximum Tension Force = 0.4820E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = 0.1237E-14 (in)
Local 3 Axis Shift for Plastic Centroid = -0.7486E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.4820E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.4397E+05	0.1425E+06	0.1425E+06	0.1425E+06	0.1425E+06
0.3941E+05	0.1572E+06	0.1572E+06	0.1572E+06	0.1572E+06
0.3504E+05	0.1687E+06	0.1687E+06	0.1687E+06	0.1687E+06
0.3074E+05	0.1749E+06	0.1749E+06	0.1749E+06	0.1749E+06
0.2629E+05	0.1777E+06	0.1777E+06	0.1777E+06	0.1777E+06
0.2204E+05	0.1795E+06	0.1795E+06	0.1795E+06	0.1795E+06
0.1754E+05	0.1877E+06	0.1877E+06	0.1877E+06	0.1877E+06
0.1315E+05	0.1951E+06	0.1951E+06	0.1951E+06	0.1951E+06
0.8836E+04	0.2009E+06	0.2009E+06	0.2009E+06	0.2009E+06
0.4379E+04	0.2067E+06	0.2067E+06	0.2067E+06	0.2067E+06
0.7571E-01	0.2109E+06	0.2109E+06	0.2109E+06	0.2109E+06
-0.6898E+04	0.1877E+06	0.1877E+06	0.1877E+06	0.1877E+06
-0.1348E+05	0.1894E+06	0.1894E+06	0.1894E+06	0.1894E+06
-0.2023E+05	0.1912E+06	0.1912E+06	0.1912E+06	0.1912E+06
-0.2690E+05	0.1869E+06	0.1869E+06	0.1869E+06	0.1869E+06
-0.3368E+05	0.1773E+06	0.1773E+06	0.1773E+06	0.1773E+06
-0.4042E+05	0.1633E+06	0.1633E+06	0.1633E+06	0.1633E+06
-0.4761E+05	0.1439E+06	0.1439E+06	0.1439E+06	0.1439E+06
-0.4853E+05	0.1410E+06	0.1410E+06	0.1410E+06	0.1410E+06
-0.5008E+05	0.1361E+06	0.1361E+06	0.1361E+06	0.1361E+06
-0.5139E+05	0.1319E+06	0.1319E+06	0.1319E+06	0.1319E+06
-0.5259E+05	0.1279E+06	0.1279E+06	0.1279E+06	0.1279E+06
-0.5371E+05	0.1239E+06	0.1239E+06	0.1239E+06	0.1239E+06
-0.5469E+05	0.1204E+06	0.1204E+06	0.1204E+06	0.1204E+06
-0.5552E+05	0.1174E+06	0.1174E+06	0.1174E+06	0.1174E+06
-0.5695E+05	0.1100E+06	0.1120E+06	0.1100E+06	0.1120E+06
-0.5814E+05	0.1075E+06	0.1075E+06	0.1075E+06	0.1075E+06
-0.5945E+05	0.9967E+05	0.1019E+06	0.9967E+05	0.1019E+06
-0.6046E+05	0.9587E+05	0.9753E+05	0.9587E+05	0.9753E+05

! -> Pile Cross Section Number = 2 !

Diagram Data

Maximum Tension Force = 0.3972E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = -0.2885E-15 (in)
Local 3 Axis Shift for Plastic Centroid = -0.6414E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.3972E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.2967E+05	0.1188E+06	0.1188E+06	0.1188E+06	0.1188E+06
0.2917E+05	0.1190E+06	0.1190E+06	0.1190E+06	0.1190E+06
0.2506E+05	0.1240E+06	0.1240E+06	0.1240E+06	0.1240E+06
0.2163E+05	0.1312E+06	0.1312E+06	0.1312E+06	0.1312E+06
0.1804E+05	0.1390E+06	0.1390E+06	0.1390E+06	0.1390E+06
0.1439E+05	0.1450E+06	0.1450E+06	0.1450E+06	0.1450E+06
0.1086E+05	0.1450E+06	0.1450E+06	0.1450E+06	0.1450E+06
0.7277E+04	0.1415E+06	0.1415E+06	0.1415E+06	0.1415E+06
0.3611E+04	0.1444E+06	0.1444E+06	0.1444E+06	0.1444E+06
-0.4794E-01	0.1461E+06	0.1461E+06	0.1461E+06	0.1461E+06
-0.5424E+04	0.1245E+06	0.1245E+06	0.1245E+06	0.1245E+06
-0.1089E+05	0.1285E+06	0.1285E+06	0.1285E+06	0.1285E+06
-0.1625E+05	0.1318E+06	0.1318E+06	0.1318E+06	0.1318E+06
-0.2176E+05	0.1325E+06	0.1325E+06	0.1325E+06	0.1325E+06
-0.2717E+05	0.1287E+06	0.1287E+06	0.1287E+06	0.1287E+06
-0.3261E+05	0.1222E+06	0.1222E+06	0.1222E+06	0.1222E+06
-0.3842E+05	0.1125E+06	0.1125E+06	0.1125E+06	0.1125E+06
-0.4107E+05	0.1069E+06	0.1069E+06	0.1069E+06	0.1069E+06
-0.4342E+05	0.1011E+06	0.1011E+06	0.1011E+06	0.1011E+06
-0.4628E+05	0.9335E+05	0.9335E+05	0.9335E+05	0.9335E+05
-0.4900E+05	0.8534E+05	0.8534E+05	0.8534E+05	0.8534E+05
-0.5129E+05	0.7695E+05	0.7808E+05	0.7695E+05	0.7808E+05
-0.5402E+05	0.6878E+05	0.6919E+05	0.6878E+05	0.6919E+05
-0.5676E+05	0.5932E+05	0.6000E+05	0.5932E+05	0.6000E+05
-0.5945E+05	0.4928E+05	0.5074E+05	0.4928E+05	0.5074E+05
-0.6224E+05	0.4026E+05	0.4026E+05	0.4026E+05	0.4026E+05
-0.6511E+05	0.2891E+05	0.2891E+05	0.2891E+05	0.2891E+05
-0.6771E+05	0.1816E+05	0.1816E+05	0.1816E+05	0.1816E+05

****
* FINAL MAXIMUMS/MINIMUMS FOR ALL LOAD CASES *
* PIER # 1 *
****

Maximum/Minimum Pile Forces

	Value		Load	Comb.	Pile
Max Shear in 2 Direction	0.1102E+04	Kip	1	0	6
Min Shear in 2 Direction	-0.9759E+03	Kip	1	0	2
Max Shear in 3 Direction	0.4664E+03	Kip	1	0	2
Min Shear in 3 Direction	-0.7578E+03	Kip	1	0	2
Max Moment about 2 Axis	0.4839E+05	Kip-ft	1	0	2
Min Moment about 2 Axis	-0.2609E+05	Kip-ft	1	0	2
Max Moment About 3 Axis	0.6815E+05	Kip-ft	1	0	2
Min Moment About 3 Axis	-0.4912E+05	Kip-ft	1	0	4
Max Axial Force	0.6519E+04	Kip	1	0	5
Min Axial Force	-0.1963E+05	Kip	1	0	2
Absolute Max Torque	0.8323E+01	Kip-ft	1	0	6
Max Demand/Capacity Ratio	0.5572E+00		1	0	2

Maximum/Minimum Soil Forces

Max Axial Soil Force	0.3280E+04	Kip	1	0	2
Min Axial Soil Force	-0.1282E+04	Kip	1	0	5
Max Lateral Force in X dir	0.4654E+03	Kip	1	0	6
Min Lateral Force in X dir	-0.3157E+03	Kip	1	0	4
Max Lateral Force in Y dir	0.3005E+03	Kip	1	0	2
Min Lateral Force in Y dir	-0.1452E+03	Kip	1	0	2
Max Torsional Soil Force	0.6048E+04	Kip-ft	1	0	1

Maximum/Minimum Pile Displacements

Max Axial Displacement	0.1559E+01	in	1	0	2
Min Axial Displacement	-0.8273E+00	in	1	0	5

BSI FB-MultiPier - File: P5-LCS.out Wednesday, March 23, 2011

Max Displacement in X	0.1146E+02 in	1	0	5
Min Displacement in X	-0.6920E-01 in	1	0	3
Max Displacement in Y	0.4821E+01 in	1	0	4
Min Displacement in Y	-0.3557E-01 in	1	0	4

Maximum/Minimum Column Forces

	Value	Load	Comb.	Column
Max Axial Force	0.0000E+00 Kip	0	0	0
Min Axial Force	0.0000E+00 Kip	0	0	0
Max Shear in 2 Direction	0.0000E+00 Kip	0	0	0
Min Shear in 2 Direction	0.0000E+00 Kip	0	0	0
Max Shear in 3 Direction	0.0000E+00 Kip	0	0	0
Min Shear in 3 Direction	0.0000E+00 Kip	0	0	0
Max Moment about 2 Axis	0.0000E+00 Kip-ft	0	0	0
Min Moment about 2 Axis	0.0000E+00 Kip-ft	0	0	0
Max Moment about 3 Axis	0.0000E+00 Kip-ft	0	0	1
Min Moment about 3 Axis	0.0000E+00 Kip-ft	0	0	0
Absolute Max Torque	0.1000E+06 Kip-ft	1	0	0

Maximum/Minimum Pier Cap Forces

Max Axial Force	0.0000E+00 Kip	0	0	
Min Axial Force	0.0000E+00 Kip	0	0	
Max Shear in 2 Direction	0.0000E+00 Kip	0	0	
Min Shear in 2 Direction	0.0000E+00 Kip	0	0	
Max Shear in 3 Direction	0.0000E+00 Kip	0	0	
Min Shear in 3 Direction	0.0000E+00 Kip	0	0	
Max Torque	-0.1000E+06 Kip-ft	1	0	
Min Torque	0.0000E+00 Kip-ft	0	0	
Max Moment about 2 Axis	0.0000E+00 Kip-ft	0	0	
Min Moment about 2 Axis	0.0000E+00 Kip-ft	0	0	
Max Moment about 3 Axis	0.0000E+00 Kip-ft	0	0	
Min Moment about 3 Axis	0.0000E+00 Kip-ft	0	0	

****

Foundation Flexibilty for given loads

****

Averaged flexiblity

	Fx	Fy	Fz	Mx	My	Mz
DeltaX	0.1724E-02	0.6610E-04	-0.2831E-04	0.3534E-07	-0.4095E-06	0.5387E-08
DeltaY	0.6610E-04	0.1156E-02	-0.1107E-04	0.1325E-06	-0.4261E-07	-0.2171E-08
DeltaZ	-0.2831E-04	-0.1107E-04	0.1658E-04	-0.4015E-08	0.1466E-07	0.8036E-09
ThetaX	0.3534E-07	0.1325E-06	-0.4015E-08	0.1823E-09	-0.3549E-10	0.3770E-10
ThetaY	-0.4095E-06	-0.4261E-07	0.1466E-07	-0.3549E-10	0.4583E-09	0.3229E-10
ThetaZ	0.5387E-08	-0.2171E-08	0.8036E-09	0.3770E-10	0.3229E-10	0.2946E-08

****

Foundation Stiffness for given loads

****

STIFFNESS

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.7447E+03	-0.1308E+02	0.6964E+03	0.7436E+04	0.6430E+06	-0.8704E+04
Fy	-0.1308E+02	0.9479E+03	0.4378E+03	-0.6767E+06	0.9390E+04	0.9160E+04
Fz	0.6964E+03	0.4378E+03	0.6312E+05	0.6861E+06	-0.1302E+07	-0.1267E+05
Mx	0.7436E+04	-0.6767E+06	0.6861E+06	0.6085E+10	0.3988E+09	-0.8294E+08
My	0.6430E+06	0.9390E+04	-0.1302E+07	0.3988E+09	0.2832E+10	-0.3696E+08
Mz	-0.8704E+04	0.9160E+04	-0.1267E+05	-0.8294E+08	-0.3696E+08	0.3409E+09

****

Foundation Stiffness in STANDARD X-Y-Z directions
(FB-Pier->Stardard, X->X, Y->Z & -Z->Y)
Translations: kips/in Rotations: kip-in/rad

****

Stiffness in standard X-Y-Z

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.7447E+03	-0.6964E+03	-0.1308E+02	0.7436E+04	0.8704E+04	0.6430E+06
Fy	-0.6964E+03	0.6312E+05	-0.4378E+03	-0.6861E+06	-0.1267E+05	0.1302E+07
Fz	-0.1308E+02	-0.4378E+03	0.9479E+03	-0.6767E+06	-0.9160E+04	0.9390E+04
Mx	0.7436E+04	-0.6861E+06	-0.6767E+06	0.6085E+10	0.8294E+08	0.3988E+09
My	0.8704E+04	-0.1267E+05	-0.9160E+04	0.8294E+08	0.3409E+09	0.3696E+08
Mz	0.6430E+06	0.1302E+07	0.9390E+04	0.3988E+09	0.3696E+08	0.2832E+10

:::: F B - M U L T I P I E R ::::
FB-MultiPier Version 4.13

Written by Marc Hoit, Mike McVay, Cliff Hays
Mark Williams, Petros Christou, Jae H. Chung.

Civil & Coastal Engineering, University of Florida
Supported by Florida Department of Transportation and the Federal Highway Administration

The program calculates the Response of the Bridge Pier Pile Soil Structures

The Analysis includes PreLoad, Static, Transient Dynamic or Push Over

The Program Handles NonLinear Soil Behavior, Linear Pile Cap and Linear and NonLinear Piles and Piers

Contact: Bridge Software Institute for Support
HTTP://BSI-WEB.CE.UFL.EDU

Analysis Start : 4:18pm
Analysis End : 4:18pm
Analysis Time : 4 seconds

Input Data File Name : P6-LCS.in
Analysis Date : 3-15-2011
License ID Number : 432478881

****
* PROJECT DATA *
****

Project Client : CRC / WSDOT / ODOT
Project Name : Columbia River Crossing
Project Manager : R. Turton
Computed by : NRH
Project Description : SB - Pier 6 - Liquefaction + Contraction Scour

****
* SELECTIVE PRINT OUTPUT CONTROL *
****

	Print On
Pile Displacements	YES
Pile Element Forces	NO
Missing Pile ID Numbers	NO
Pier Columns and Pier Cap Displacements	NO
Pier Columns and Pier Cap Force Output	YES
Pier Material Properties	YES
Soil Response Forces	NO
Soil Data per Layer	YES
Soil Curve data per Pile Node	NO
Soil Graph per Pile Node	NO
Out of Balance Forces	NO
Bridge Simulation Spring Force Output	NO
Bridge Span Displacements	NO
Bridge Span Element Forces	NO
Bridge Span Properties	NO
Pile Cap Stress	NO

```
 Material Stress Strain Curve Data          NO
 Interaction Diagram Data For Pile and Pier YES
 Pile and Pier coordinates                  NO
 Generate XML file                          NO


 *************
 *   UNITS   *
 *************

 Analysis Units Specified are: English Mixed (Kips & Ft some lbs & in)


 ***************************
 *   CONTROL INFORMATION   *
 ***************************

 Number of Piers               (NUMPIERS) =    1
 Maximum Number of Iterations    (MAXITN) =   50
 Tolerance                        (TOLER) =    10.000000     Kips

 NOTE : The following soil information is not applicable in the coulmn analysis problems

 Soil Behavior Option             (IFLEX) =    0
    IFLEX = 0 -> PY Multipliers are Input
    IFLEX = 1 -> PY Multipliers Defaulted to 1.0
    IFLEX = 2 -> No SOIL (Must use tip springs)

 Soil resistance due to Pile Rotation About 2 and 3 Axis (NSODF) =    4
    NSDOF = 4 -> NO Resistance Accounted
    NSDOF = 6 -> Resistance Accounted

 Linear Pile TIP Spring Option     (ITIP) =    0
    ITIP = 0 -> NO spring
    ITIP = 1 -> Axial only
    ITIP = 2 -> All DOF

 Linear Pile TIP Spring Stiffness (TSTIF) =         0.00 kips/in


 **********************
 *   SOIL BEHAVIOR    *
 **********************

 PY Multipliers will be used (IFLEX = 0)


 ************************************************
 *   LOAD FACTORS FOR SELF WEIGHT AND BUOYANCY   *
 ************************************************

 LOAD CASE     SELF WEIGHT     BUOYANCY
     #            FACTOR         FACTOR
     1             1.00           1.00


 ***************************
 *   GENERAL INFORMATION   *
 ***************************

 Static / Cyclic Load (KCYC)      =    0
    KCYC = 0 -> Static Load
    KCKC > 0 -> Cyclic Load (# Cycles)

 Fixity of Pile Cap (KFIX)        =    1
    KFIX = 0 -> Pinned Head
    KFIX = 1 -> Fixed head

 Bearing of Cap on Soil           =  NO


 *****************************
 *   GRID DATA INFORMATION   *
 *****************************

 NOTE: X-Grid : Distance between axes along the X-Axis
       Y-Grid : Distance between axes along the Y-Axis

 Number of Grid Points in X-Direction (NPX) =     4
 Number of Grid Points in X-Direction (NPY) =     5

 Grid Spacing in the X Direction : (inches)
      90.00     360.00      90.00
```

Grid Spacing in the Y Direction : (inches)
90.00 360.00 360.00 90.00

****
* ANALYSIS OPTIONS *
****

Type of Stiffness = Secant Stiffness
Type of Structure = Full
Type of Analysis = Static Analysis

****
* INPUT SOIL DATA - GIVEN BY LAYER *
****

NOTE : The following data is used to define Springs
for each Soil Layer to determine the Soil
Behavior during the analysis

LAYERED P-Y CURVES

SOIL SET # 1

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	1	1	0.5000E+01	0.3800E+01	0.1073E+03
			0.5000E+01	0.3800E+01	0.1073E+03
1	2	1	0.5000E+01	0.6900E+01	0.1212E+03
			0.5000E+01	0.6900E+01	0.1212E+03
1	3	1	0.4500E+02	0.1250E+03	0.1367E+03
			0.4500E+02	0.1250E+03	0.1367E+03
1	4	1	0.4500E+02	0.1500E+03	0.1402E+03
			0.4500E+02	0.1500E+03	0.1402E+03

LAYERED T-Z CURVES

SOIL SET # 1

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00
	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00
	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED

	TOP		BOTTOM	
	Z Value	T Value	Z Value	T Value

	in	psi	in	psi
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value	T Value	Z Value	T Value
	in	psi	in	psi
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

LAYERED T-Theta CURVES

SOIL SET # 1

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	1	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	2	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	3	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	4	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

PILE TIP SOIL PARAMETERS

SOIL SET # 1

USER DEFINED

	Q Value	T Value
	in	lbs
1	0.000E+00	0.000E+00
2	0.222E+00	0.362E+07
3	0.444E+00	0.624E+07
4	0.667E+00	0.829E+07
5	0.889E+00	0.995E+07
6	0.111E+01	0.113E+08
7	0.133E+01	0.125E+08
8	0.156E+01	0.136E+08
9	0.178E+01	0.145E+08
10	0.200E+01	0.153E+08

****
* PILE SEGMENT INFORMATION DATA *
****

NOTE: The Piles Sets consist of Pile Segments based on the User Input. The program groups all segments from all the different Pile Sets and assigns a reference number to each

The reference number for each segment together with the User Input Pile Set/Segment number is shown below. The

Input section properties for each section/segment is
also provided below.

The user is advised to double check these numbers

Number of segments found in all Piles (NPSEG) = 2

! -> SECTION DATA FOR SECTION/SEGMENT : 1 !

Input Pile Set Number = 1
Input Pile Set Segment = 1

Section Pile Length (L) = 9.0000000 ft

Nonlinear Section/Segment Material Properties

Material Option (MATOPT) = 1
(Please Refer to the Users Guide for Details)

- Concrete Stress Strain Properties

Concrete Strength (FPC) = 0.4000E+01 ksi
Modulus of Elasticity (EC) = 0.4224E+04 ksi

Gauss Integration Points for Concrete = 60

- Steel Stress Strain Properties

Mild Steel Yield Stress (FY) = 0.600E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

Tubular Steel Yield Stress (FY) = 0.500E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

- Shape of Section : CIRCULAR

- Steel and Confinement Data

Number of Steel Layers = 2
Section/Segment Diameter = 180.0000 in
Tied/Spiral Reinforcement Flag = 1
(NOTE : Spiral = 1, Tied = 2)
Confinement Flag = 1
(NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

- Steel and Confinement Data

Yield Stress of Confinement Steel = 60.00 ksi
Spacing between Confinement Steel = 6.000 in
Diameter of Confinement Steel = 0.7500 in
Outer Shell Thickness = 1.00 in

- Total Area of Steel Reinforcement = 424.00 in^2

Layer	# Bars/Strands	Area in^2	Layer Dia. in	Prestressing ksi

WARNING : The number of bars is changed to a multiple
of 4. This is to ensure a symmetric section
for the analysis. The area is changed to
result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
1	56	4.00	108.00	0.00

WARNING : The number of bars is changed to a multiple
of 4. This is to ensure a symmetric section
for the analysis. The area is changed to
result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
2	52	3.85	96.00	0.00

! -> SECTION DATA FOR SECTION/SEGMENT : 2 !

Input Pile Set Number = 1

BSI FB-MultiPier - File: P6-LCS.out Wednesday, March 23, 2011
Input Pile Set Segment = 2

Section Pile Length (L) = 122.08000 ft

Nonlinear Section/Segment Material Properties

Material Option (MATOPT) = 1
(Please Refer to the Users Guide for Details)

- Concrete Stress Strain Properties

Concrete Strength (FPC) = 0.6000E+01 ksi
Modulus of Elasticity (EC) = 0.5173E+04 ksi

Gauss Integration Points for Concrete = 60

- Steel Stress Strain Properties

Mild Steel Yield Stress (FY) = 0.600E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

Tubular Steel Yield Stress (FY) = 0.500E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

- Shape of Section : CIRCULAR

- Steel and Confinement Data

Number of Steel Layers = 2
Section/Segment Diameter = 120.0000 in
Tied/Spiral Reinforcement Flag = 1
(NOTE : Spiral = 1, Tied = 2)
Confinement Flag = 1
(NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

- Steel and Confinement Data

Yield Stress of Confinement Steel = 60.00 ksi
Spacing between Confinement Steel = 6.000 in
Diameter of Confinement Steel = 0.7500 in
Outer Shell Thickness = 1.00 in

- Total Area of Steel Reinforcement = 424.00 in^2

Layer	# Bars/Strands	Area in^2	Layer Dia. in	Prestressing ksi

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
1	56	4.00	108.00	0.00

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
2	52	3.85	96.00	0.00

PLOT OF THE QZ CURVE FOR THE TIP OF THE PILE

- USER DEFINED CURVE

SOIL SET	Z Value	Q Value	Z Value	Q Value	Z Value	Q Value
1	0.0000E+00	0.0000E+00	0.2222E+00	0.3615E+07	0.4444E+00	0.6244E+07
	0.6667E+00	0.8290E+07	0.8889E+00	0.9952E+07	0.1111E+01	0.1134E+08
	0.1333E+01	0.1253E+08	0.1556E+01	0.1357E+08	0.1778E+01	0.1448E+08
	0.2000E+01	0.1530E+08				

****
* PILE SET DATA DESCRIPTION *
****

```
 NOTE : The piles are organized in pile sets. Each pile
        set is composed of pile segments that are input
        by the User. A pile set is attached to each
        pile in order to describe its composition

 List of Piles Sets and Piles
 ----------------------------

 Pile Set   Piles (that are assigned the Pile Set)
     1       1,  2,  3,  4,  5,  6


 Total Length for Each Pile Set
 ------------------------------

 Pile Set   Length
     1     1572.96


 ************************************
 *   INPUT FOR STRUCTURAL ANALYSIS   *
 ************************************

 Number of Joints                   =  64
 Number of Different Element Types  =   3
 Number of Load Conditions          =   1


 WARNING : Pier Columns and Cap are linear
           No P-Delta or Moment Magnification is included
           Nonlinear should be used for final design

 PIER SUMMARY
 ------------

 Stiffness of Foundation Requested - NO Pier Exists


 ************************************************************************
 *   MATERIAL PROPERTIES FOR PILE CAP AND FRAME (PIER) ELEMENTS   *
 ************************************************************************

 ************************************************
 * PILE CAP PROPERTIES - USING SHELL ELEMENTS *
 ************************************************

 Modulus of Elasticity =   0.4224E+04 (ksi)
 Poissons Ratio        =      0.2000
 Shear Modulus         =   0.1760E+04 (ksi)
 Self Weight           =    160.0000 (pcf)
 Thickness             =   0.1900E+02 (ft)

 ------------------------------------------------------
 ! -> PROPERTIES FOR CONNECTOR ELEMENTS (DEFAULTED) !
 ------------------------------------------------------

 NOTE : These Elements are generated by the program at the Pier
        Column Bases where they connect with the Pile Cap. The
        purpose for these elements is to spread the column base
        load over an area on the Pile Cap and therefore avoid
        High Stress Concentrations

 NOTE : The material property number for these elements is
        defaulted to 1. The material numbers for the properties
        of the rest of the Pier elements start form 2

 -> SECTION DATA FOR SECTION/SEGMENT :   1

 Member Property Number         =   1
 Axial Area, A                  =    51984.     (in^2)
 Torsional Moment of Inertia, J =   0.98770E+10 (in^4)
 Moment of Inertia, 3 - Axis    =   0.98770E+10 (in^4)
 Moment of Inertia, 2 - Axis    =   0.98770E+10 (in^4)
 Modulus of Elasticity, E       =    4224.0     (ksi)
 Shear Modulus, G               =    1760.0     (ksi) (used for Torsion)
 Weight Density                 =       0.00000 (K/in^3)

 ---------------------------------
 ! -> PROPERTIES FOR PIER COLUMNS !
 ---------------------------------

 Member Property Number         =   2
 Axial Area, A                  =       0.00000 (in^2)
```

```
 Torsional Moment of Inertia, J =       0.00000 (in^4)
 Moment of Inertia, 3 - Axis    =       0.00000 (in^4)
 Moment of Inertia, 2 - Axis    =       0.00000 (in^4)
 Modulus of Elasticity, E       =       0.00000 (ksi)
 Shear Modulus, G               =       0.00000 (ksi) (used for Torsion)
 Weight Density                 =       0.00000 (K/in^3)
```

****
* PIER MEMBER CONNECTIVITY *
****

ELEMENT NUMBER	NODES I	NODES J	MATERIAL NUMBER
1	64	47	1
2	64	4	1
3	64	37	1
4	64	3	1

****
* GENERAL LOAD DATA *
****

The table below shows the Applied Loads for every Load Case. The values in the table represent the magnitute of the Loads in the specified units

- Applied Load

NODE	LOAD	X (Kips)	Y (Kips)	Z (Kips)	MXX (Kip-ft)	MYY (Kip-ft)	MZZ (Kip-ft)
64	1	7331.00	0.00	0.00	0.00	0.00	0.00
64	2	0.00	3774.00	0.00	0.00	0.00	0.00
64	3	0.00	0.00	27179.00	0.00	0.00	0.00
64	4	0.00	0.00	0.00	365785.00	0.00	0.00
64	5	0.00	0.00	0.00	0.00	-525709.00	0.00
64	6	0.00	0.00	0.00	0.00	0.00	21252.00

****
* *
* ANALYSIS RESULTS *
* *
****

****
* RESULTS FOR LOAD CASE # 1 *
****

NOTE : PY Multipliers are applied Lead to Trail row based on the actual displacement. If there is no displacement in a Lateral direction they are defaulted to 1.0. This can happen in Axial Load and one direction lateral load cases

PY Multipliers are Applied to A Pile Group

PILE#	X-PYM	Y-PYM
1	0.500E+00	0.700E+00
2	0.700E+00	0.700E+00
3	0.500E+00	0.500E+00
4	0.700E+00	0.500E+00
5	0.500E+00	0.350E+00
6	0.700E+00	0.350E+00

****
* CONVERGENCE REPORT *
****

The Solution Converged in 11 Iterations

Summary of Abs Maximum Out-Of-Balance Forces

```
FZZ =        0.174  Kips
FXX =        0.170  Kips
FYY =        0.014  Kips
MXX =       10.644  Kip-in
```

MYY = 0.000 Kip-in
MZZ = 6.167 Kip-in

Summary of Displacements at Pile Heads

Node	X (in)	Y (in)	Z (in)
1	9.3342	4.1080	0.0110
2	9.3344	4.3584	1.5012
3	9.5847	4.1106	-0.4582
4	9.5845	4.3589	1.1243
5	9.8305	4.1112	-0.9370
6	9.8299	4.3562	0.5392

Final Displacements

Load Case # 1

Node	X (in)	Y (in)	Z (in)	Rx (rad)	Ry (rad)	Rz (rad)
Pile Number 1						
1	9.3342	4.1080	0.0110	0.0014	-0.0048	0.0007
65	8.9978	4.0029	0.0154	0.0017	-0.0052	0.0007
66	8.6328	3.8783	0.0191	0.0020	-0.0056	0.0007
67	8.2300	3.7279	0.0269	0.0025	-0.0063	0.0006
68	7.7827	3.5469	0.0332	0.0029	-0.0069	0.0006
69	7.2982	3.3399	0.0378	0.0032	-0.0074	0.0005
70	6.7837	3.1117	0.0408	0.0035	-0.0078	0.0005
71	6.2466	2.8669	0.0422	0.0037	-0.0081	0.0005
72	5.6942	2.6101	0.0421	0.0039	-0.0083	0.0004
73	5.1336	2.3460	0.0406	0.0039	-0.0083	0.0004
74	4.5963	2.0910	0.0387	0.0040	-0.0083	0.0003
75	4.0617	1.8362	0.0370	0.0039	-0.0083	0.0003
76	3.5353	1.5849	0.0364	0.0039	-0.0081	0.0003
77	3.0232	1.3407	0.0370	0.0037	-0.0078	0.0002
78	2.5312	1.1074	0.0389	0.0035	-0.0075	0.0002
79	2.0656	0.8884	0.0419	0.0033	-0.0070	0.0002
80	1.6320	0.6873	0.0461	0.0030	-0.0065	0.0002
81	1.2362	0.5073	0.0515	0.0026	-0.0058	0.0002
82	0.8830	0.3510	0.0577	0.0022	-0.0051	0.0002
83	0.5743	0.2193	0.0641	0.0019	-0.0045	0.0001
84	0.3077	0.1107	0.0697	0.0015	-0.0038	0.0001
85	0.0760	0.0212	0.0736	0.0013	-0.0034	0.0001
86	-0.1310	-0.0551	0.0753	0.0011	-0.0031	0.0001
87	-0.3245	-0.1242	0.0750	0.0010	-0.0029	0.0001
88	-0.5135	-0.1909	0.0738	0.0010	-0.0029	0.0001
Pile Number 2						
2	9.3344	4.3584	1.5012	0.0013	-0.0047	0.0007
89	9.0015	4.2595	1.4836	0.0016	-0.0052	0.0007
90	8.6364	4.1385	1.4655	0.0019	-0.0056	0.0007
91	8.2304	3.9894	1.4473	0.0025	-0.0064	0.0006
92	7.7781	3.8075	1.4282	0.0029	-0.0070	0.0006
93	7.2882	3.5984	1.4083	0.0033	-0.0075	0.0005
94	6.7687	3.3671	1.3880	0.0036	-0.0079	0.0005
95	6.2271	3.1182	1.3675	0.0038	-0.0082	0.0005
96	5.6700	2.8558	1.3471	0.0040	-0.0083	0.0004
97	5.1041	2.5838	1.3267	0.0041	-0.0084	0.0004
98	4.5615	2.3189	1.3071	0.0041	-0.0084	0.0003
99	4.0227	2.0525	1.2875	0.0041	-0.0083	0.0003
100	3.4935	1.7882	1.2678	0.0041	-0.0081	0.0003
101	2.9796	1.5295	1.2481	0.0040	-0.0078	0.0002
102	2.4865	1.2795	1.2283	0.0038	-0.0075	0.0002
103	2.0198	1.0417	1.2086	0.0036	-0.0070	0.0002
104	1.5858	0.8196	1.1892	0.0033	-0.0065	0.0002
105	1.1910	0.6168	1.1704	0.0030	-0.0058	0.0002
106	0.8414	0.4368	1.1536	0.0026	-0.0051	0.0002
107	0.5397	0.2811	1.1383	0.0022	-0.0043	0.0001
108	0.2829	0.1484	1.1240	0.0019	-0.0037	0.0001
109	0.0626	0.0345	1.1101	0.0017	-0.0032	0.0001
110	-0.1330	-0.0667	1.0966	0.0015	-0.0029	0.0001
111	-0.3153	-0.1611	1.0843	0.0014	-0.0028	0.0001
112	-0.4927	-0.2530	1.0733	0.0014	-0.0027	0.0001
Pile Number 3						
3	9.5847	4.1106	-0.4582	0.0014	-0.0048	0.0007
113	9.2445	4.0047	-0.4440	0.0017	-0.0053	0.0007
114	8.8742	3.8815	-0.4306	0.0019	-0.0057	0.0007
115	8.4638	3.7346	-0.4111	0.0024	-0.0065	0.0006

116	8.0053	3.5594	-0.3931	0.0028	-0.0071	0.0006
117	7.5056	3.3593	-0.3766	0.0031	-0.0077	0.0005
118	6.9719	3.1383	-0.3614	0.0034	-0.0081	0.0005
119	6.4110	2.8999	-0.3476	0.0036	-0.0085	0.0005
120	5.8303	2.6479	-0.3348	0.0038	-0.0087	0.0004
121	5.2377	2.3864	-0.3224	0.0039	-0.0088	0.0004
122	4.6688	2.1323	-0.3106	0.0040	-0.0088	0.0003
123	4.1050	1.8781	-0.2989	0.0039	-0.0087	0.0003
124	3.5538	1.6279	-0.2872	0.0038	-0.0084	0.0003
125	3.0221	1.3854	-0.2748	0.0037	-0.0081	0.0002
126	2.5156	1.1538	-0.2614	0.0035	-0.0076	0.0002
127	2.0402	0.9360	-0.2469	0.0033	-0.0071	0.0002
128	1.6012	0.7348	-0.2315	0.0030	-0.0065	0.0002
129	1.2043	0.5529	-0.2151	0.0027	-0.0058	0.0002
130	0.8537	0.3921	-0.1992	0.0023	-0.0051	0.0002
131	0.5504	0.2529	-0.1846	0.0020	-0.0043	0.0001
132	0.2915	0.1340	-0.1721	0.0017	-0.0037	0.0001
133	0.0696	0.0319	-0.1624	0.0015	-0.0032	0.0001
134	-0.1260	-0.0581	-0.1560	0.0013	-0.0029	0.0001
135	-0.3065	-0.1412	-0.1527	0.0013	-0.0027	0.0001
136	-0.4812	-0.2217	-0.1517	0.0012	-0.0027	0.0001

Pile Number 4

4	9.5845	4.3589	1.1243	0.0014	-0.0049	0.0007
137	9.2391	4.2519	1.1093	0.0017	-0.0054	0.0007
138	8.8609	4.1257	1.0939	0.0020	-0.0058	0.0007
139	8.4412	3.9748	1.0787	0.0025	-0.0066	0.0006
140	7.9744	3.7950	1.0624	0.0029	-0.0072	0.0006
141	7.4694	3.5912	1.0453	0.0032	-0.0077	0.0005
142	6.9346	3.3677	1.0276	0.0034	-0.0081	0.0005
143	6.3778	3.1284	1.0097	0.0036	-0.0084	0.0005
144	5.8056	2.8769	0.9917	0.0038	-0.0086	0.0004
145	5.2248	2.6165	0.9738	0.0039	-0.0086	0.0004
146	4.6683	2.3626	0.9566	0.0040	-0.0086	0.0003
147	4.1160	2.1066	0.9394	0.0040	-0.0085	0.0003
148	3.5735	1.8515	0.9222	0.0039	-0.0083	0.0003
149	3.0466	1.6000	0.9048	0.0039	-0.0080	0.0002
150	2.5409	1.3550	0.8875	0.0037	-0.0077	0.0002
151	2.0624	1.1194	0.8703	0.0036	-0.0072	0.0002
152	1.6176	0.8963	0.8537	0.0034	-0.0066	0.0002
153	1.2133	0.6888	0.8376	0.0031	-0.0059	0.0002
154	0.8557	0.5002	0.8237	0.0028	-0.0052	0.0002
155	0.5477	0.3317	0.8115	0.0025	-0.0044	0.0001
156	0.2864	0.1828	0.8000	0.0022	-0.0037	0.0001
157	0.0630	0.0498	0.7887	0.0020	-0.0032	0.0001
158	-0.1347	-0.0723	0.7775	0.0018	-0.0029	0.0001
159	-0.3188	-0.1886	0.7673	0.0018	-0.0028	0.0001
160	-0.4979	-0.3027	0.7584	0.0018	-0.0028	0.0001

Pile Number 5

5	9.8305	4.1112	-0.9370	0.0016	-0.0046	0.0007
161	9.5000	3.9973	-0.9143	0.0018	-0.0052	0.0007
162	9.1366	3.8686	-0.8922	0.0020	-0.0056	0.0007
163	8.7287	3.7193	-0.8627	0.0024	-0.0065	0.0006
164	8.2668	3.5446	-0.8344	0.0028	-0.0072	0.0006
165	7.7582	3.3478	-0.8072	0.0031	-0.0079	0.0005
166	7.2105	3.1320	-0.7807	0.0033	-0.0084	0.0005
167	6.6317	2.9006	-0.7546	0.0035	-0.0088	0.0005
168	6.0308	2.6574	-0.7287	0.0037	-0.0090	0.0004
169	5.4168	2.4061	-0.7028	0.0038	-0.0092	0.0004
170	4.8263	2.1620	-0.6783	0.0038	-0.0092	0.0003
171	4.2398	1.9173	-0.6538	0.0038	-0.0090	0.0003
172	3.6650	1.6751	-0.6295	0.0037	-0.0088	0.0003
173	3.1095	1.4387	-0.6053	0.0036	-0.0084	0.0002
174	2.5810	1.2112	-0.5812	0.0034	-0.0080	0.0002
175	2.0862	0.9954	-0.5566	0.0032	-0.0074	0.0002
176	1.6314	0.7936	-0.5313	0.0030	-0.0067	0.0002
177	1.2221	0.6084	-0.5053	0.0027	-0.0060	0.0002
178	0.8627	0.4414	-0.4814	0.0024	-0.0052	0.0002
179	0.5539	0.2930	-0.4600	0.0022	-0.0044	0.0001
180	0.2922	0.1620	-0.4418	0.0019	-0.0037	0.0001
181	0.0697	0.0454	-0.4278	0.0017	-0.0032	0.0001
182	-0.1248	-0.0606	-0.4181	0.0016	-0.0029	0.0001
183	-0.3031	-0.1605	-0.4128	0.0015	-0.0027	0.0001
184	-0.4750	-0.2580	-0.4111	0.0015	-0.0027	0.0001

Pile Number 6

6	9.8299	4.3562	0.5392	0.0018	-0.0048	0.0007
185	9.4903	4.2294	0.5317	0.0020	-0.0053	0.0007
186	9.1154	4.0873	0.5234	0.0022	-0.0058	0.0007
187	8.6951	3.9254	0.5171	0.0026	-0.0067	0.0006
188	8.2222	3.7402	0.5093	0.0029	-0.0074	0.0006
189	7.7066	3.5352	0.5001	0.0032	-0.0079	0.0005

190	7.1576	3.3140	0.4897	0.0034	-0.0083	0.0005
191	6.5842	3.0801	0.4785	0.0035	-0.0086	0.0005
192	5.9943	2.8370	0.4670	0.0037	-0.0088	0.0004
193	5.3951	2.5871	0.4555	0.0037	-0.0089	0.0004
194	4.8203	2.3446	0.4445	0.0038	-0.0089	0.0003
195	4.2487	2.1005	0.4335	0.0038	-0.0088	0.0003
196	3.6862	1.8569	0.4223	0.0038	-0.0086	0.0003
197	3.1385	1.6161	0.4112	0.0037	-0.0084	0.0002
198	2.6121	1.3802	0.4005	0.0036	-0.0080	0.0002
199	2.1141	1.1518	0.3906	0.0035	-0.0075	0.0002
200	1.6519	0.9336	0.3817	0.0033	-0.0069	0.0002
201	1.2332	0.7281	0.3738	0.0031	-0.0061	0.0002
202	0.8649	0.5378	0.3682	0.0028	-0.0053	0.0002
203	0.5498	0.3639	0.3638	0.0026	-0.0045	0.0001
204	0.2851	0.2058	0.3597	0.0023	-0.0038	0.0001
205	0.0617	0.0609	0.3551	0.0022	-0.0032	0.0001
206	-0.1335	-0.0748	0.3494	0.0021	-0.0029	0.0001
207	-0.3143	-0.2057	0.3436	0.0020	-0.0027	0.0001
208	-0.4901	-0.3349	0.3385	0.0020	-0.0027	0.0001

SUM OF TOTAL SOIL SPRING LOADS

CHECK: Total Load Carried by the Soil
(Sum of NF+FF Soil Spring Loads)

X Direction	=	7330.9172	Kips
Y Direction	=	3773.9378	Kips
Z Direction	=	43209.4433	Kips
Sum of Tip Forces	=	26273.8545	Kips

Summary of Pile Forces for Load CASE 1

1. Axial Force (Kips)

Pile #	Maximum Force	Minimum Force
1	-0.12613E+04	-0.23020E+04
2	-0.11740E+05	-0.20981E+05
3	0.46691E+04	0.20923E+03
4	-0.95854E+04	-0.18505E+05
5	0.92606E+04	0.53746E+03
6	-0.54161E+04	-0.12102E+05

2. Pile Shear Force in 2 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.10736E+04	-0.20645E+04
2	0.13207E+04	-0.28162E+04
3	0.10680E+04	-0.19511E+04
4	0.13484E+04	-0.28471E+04
5	0.11129E+04	-0.19287E+04
6	0.14078E+04	-0.28083E+04

3. Pile Shear Force in 3 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.11168E+04	-0.69384E+03
2	0.14426E+04	-0.82727E+03
3	0.90253E+03	-0.57045E+03
4	0.12011E+04	-0.68838E+03
5	0.71466E+03	-0.46780E+03
6	0.91486E+03	-0.52651E+03

4. Bending Moment About 2 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.3886E+05	0.10425E+03	-0.2419E+05
2	2	0.00000E+00	0.5174E+05	0.98880E+02	-0.3013E+05
3	3	0.00000E+00	0.3125E+05	0.10425E+03	-0.1929E+05
4	4	0.00000E+00	0.4440E+05	0.10425E+03	-0.2452E+05
5	5	0.00000E+00	0.2517E+05	0.10425E+03	-0.1509E+05
6	6	0.00000E+00	0.3367E+05	0.98880E+02	-0.1856E+05

5. Bending Moment About 3 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.5719E+05	0.10425E+03	-0.4383E+05
2	2	0.00000E+00	0.7676E+05	0.98880E+02	-0.5943E+05
3	3	0.00000E+00	0.5436E+05	0.98880E+02	-0.4172E+05
4	4	0.00000E+00	0.7714E+05	0.98880E+02	-0.6031E+05
5	5	0.00000E+00	0.5570E+05	0.98880E+02	-0.4128E+05
6	6	0.00000E+00	0.7898E+05	0.98880E+02	-0.5985E+05

****
* ANALYTICAL FORCE RESULTS FOR PIER *
****

ELEM NO.	PROP NO.	NODE NO.	LOAD CASE	FAX (Kips)	F22 (Kips)	F33 (Kips)	M22 (Kip-ft)	M33 (Kip-ft)	TORQUE (Kip-ft)	D/C (Ratio)
- Connector Beam Segments										
1	1	64	1	-425.99	-8055.34	-2541.08	38116.14	*********	16151.52	
	0.00									
	1	47		425.99	8055.34	2541.08	0.00	0.00	-16151.52	
	0.00									
2	1	64	1	1471.21	22907.07	-1849.75	27746.25	343606.02	-66186.62	
	0.00									
	1	4		-1471.21	-22907.07	1849.75	0.00	0.00	66186.62	
	0.00									
3	1	64	1	567.67	23782.61	2043.43	-30651.49	356739.10	5878.54	
	0.00									
	1	37		-567.67	-23782.61	-2043.43	0.00	0.00	-5878.54	
	0.00									
4	1	64	1	-1275.28	-11455.33	930.59	-13958.90	*********	45597.61	
	0.00									
	1	3		1275.28	11455.33	-930.59	0.00	0.00	-45597.61	
	0.00									

****
* ANALYTICAL PILE CAP - SHELL STRESS RESULTS *
****

****
* DAMPING FORCES *
****

Node #	FXX Kip	FYY Kip	FZZ Kip	MXX Kip	MYY Kip	MZZ Kip

****
* UNIAXIAL INTERACTION DIAGRAM *
****

NOTE : 1. The tables below show the values on the Interaction Diagrams for each section which correspond to the section capacity
2. The numbering of the SECTIONS/SEGMENTS is shown previously in the output file

! -> Pile Cross Section Number = 1 !

Diagram Data

Maximum Tension Force = 0.4820E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = 0.1237E-14 (in)
Local 3 Axis Shift for Plastic Centroid = -0.7486E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.4820E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.4397E+05	0.1425E+06	0.1425E+06	0.1425E+06	0.1425E+06
0.3941E+05	0.1572E+06	0.1572E+06	0.1572E+06	0.1572E+06
0.3504E+05	0.1687E+06	0.1687E+06	0.1687E+06	0.1687E+06
0.3074E+05	0.1749E+06	0.1749E+06	0.1749E+06	0.1749E+06
0.2629E+05	0.1777E+06	0.1777E+06	0.1777E+06	0.1777E+06
0.2204E+05	0.1794E+06	0.1794E+06	0.1794E+06	0.1794E+06
0.1754E+05	0.1877E+06	0.1877E+06	0.1877E+06	0.1877E+06
0.1315E+05	0.1951E+06	0.1951E+06	0.1951E+06	0.1951E+06
0.8836E+04	0.2009E+06	0.2009E+06	0.2009E+06	0.2009E+06
0.4379E+04	0.2067E+06	0.2067E+06	0.2067E+06	0.2067E+06
0.7769E-01	0.2109E+06	0.2109E+06	0.2109E+06	0.2109E+06
-0.6898E+04	0.1877E+06	0.1877E+06	0.1877E+06	0.1877E+06
-0.1348E+05	0.1894E+06	0.1894E+06	0.1894E+06	0.1894E+06
-0.2023E+05	0.1912E+06	0.1912E+06	0.1912E+06	0.1912E+06
-0.2690E+05	0.1869E+06	0.1869E+06	0.1869E+06	0.1869E+06
-0.3368E+05	0.1773E+06	0.1773E+06	0.1773E+06	0.1773E+06
-0.4042E+05	0.1633E+06	0.1633E+06	0.1633E+06	0.1633E+06
-0.4761E+05	0.1439E+06	0.1439E+06	0.1439E+06	0.1439E+06
-0.4853E+05	0.1410E+06	0.1410E+06	0.1410E+06	0.1410E+06
-0.5008E+05	0.1361E+06	0.1361E+06	0.1361E+06	0.1361E+06
-0.5139E+05	0.1319E+06	0.1319E+06	0.1319E+06	0.1319E+06
-0.5259E+05	0.1279E+06	0.1279E+06	0.1279E+06	0.1279E+06
-0.5371E+05	0.1239E+06	0.1239E+06	0.1239E+06	0.1239E+06
-0.5469E+05	0.1204E+06	0.1204E+06	0.1204E+06	0.1204E+06
-0.5552E+05	0.1174E+06	0.1174E+06	0.1174E+06	0.1174E+06
-0.5695E+05	0.1100E+06	0.1120E+06	0.1100E+06	0.1120E+06
-0.5814E+05	0.1075E+06	0.1075E+06	0.1075E+06	0.1075E+06
-0.5945E+05	0.9967E+05	0.1019E+06	0.9967E+05	0.1019E+06
-0.6046E+05	0.9587E+05	0.9753E+05	0.9587E+05	0.9753E+05

! -> Pile Cross Section Number = 2 !

Diagram Data

Maximum Tension Force = 0.3972E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = -0.2885E-15 (in)
Local 3 Axis Shift for Plastic Centroid = -0.6414E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.3972E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.2923E+05	0.1203E+06	0.1203E+06	0.1203E+06	0.1203E+06
0.2532E+05	0.1265E+06	0.1265E+06	0.1265E+06	0.1265E+06
0.2177E+05	0.1346E+06	0.1346E+06	0.1346E+06	0.1346E+06
0.1803E+05	0.1432E+06	0.1432E+06	0.1432E+06	0.1432E+06
0.1444E+05	0.1490E+06	0.1490E+06	0.1490E+06	0.1490E+06
0.1088E+05	0.1475E+06	0.1475E+06	0.1475E+06	0.1475E+06
0.7226E+04	0.1453E+06	0.1453E+06	0.1453E+06	0.1453E+06
0.3610E+04	0.1484E+06	0.1484E+06	0.1484E+06	0.1484E+06
-0.4144E-01	0.1502E+06	0.1502E+06	0.1502E+06	0.1502E+06

-0.5800E+04	0.1268E+06	0.1268E+06	0.1268E+06	0.1268E+06
-0.1170E+05	0.1305E+06	0.1305E+06	0.1305E+06	0.1305E+06
-0.1744E+05	0.1337E+06	0.1337E+06	0.1337E+06	0.1337E+06
-0.2328E+05	0.1339E+06	0.1339E+06	0.1339E+06	0.1339E+06
-0.2902E+05	0.1292E+06	0.1292E+06	0.1292E+06	0.1292E+06
-0.3498E+05	0.1218E+06	0.1218E+06	0.1218E+06	0.1218E+06
-0.4119E+05	0.1107E+06	0.1107E+06	0.1107E+06	0.1107E+06
-0.4369E+05	0.1050E+06	0.1050E+06	0.1050E+06	0.1050E+06
-0.4572E+05	0.9985E+05	0.9985E+05	0.9985E+05	0.9985E+05
-0.4823E+05	0.9275E+05	0.9275E+05	0.9275E+05	0.9275E+05
-0.5091E+05	0.8466E+05	0.8466E+05	0.8466E+05	0.8466E+05
-0.5350E+05	0.7561E+05	0.7644E+05	0.7561E+05	0.7644E+05
-0.5585E+05	0.6814E+05	0.6854E+05	0.6814E+05	0.6854E+05
-0.5832E+05	0.5940E+05	0.6011E+05	0.5940E+05	0.6011E+05
-0.6098E+05	0.4891E+05	0.5047E+05	0.4891E+05	0.5047E+05
-0.6386E+05	0.3943E+05	0.3943E+05	0.3943E+05	0.3943E+05
-0.6616E+05	0.3020E+05	0.3020E+05	0.3020E+05	0.3020E+05
-0.6883E+05	0.1921E+05	0.1921E+05	0.1921E+05	0.1921E+05

****
* FINAL MAXIMUMS/MINIMUMS FOR ALL LOAD CASES *
* PIER # 1 *
****

Maximum/Minimum Pile Forces

	Value		Load	Comb.	Pile
Max Shear in 2 Direction	0.1408E+04	Kip	1	0	6
Min Shear in 2 Direction	-0.2847E+04	Kip	1	0	4
Max Shear in 3 Direction	0.1443E+04	Kip	1	0	2
Min Shear in 3 Direction	-0.8273E+03	Kip	1	0	2
Max Moment about 2 Axis	0.5174E+05	Kip-ft	1	0	2
Min Moment about 2 Axis	-0.3013E+05	Kip-ft	1	0	2
Max Moment About 3 Axis	0.7898E+05	Kip-ft	1	0	6
Min Moment About 3 Axis	-0.6031E+05	Kip-ft	1	0	4
Max Axial Force	0.9261E+04	Kip	1	0	5
Min Axial Force	-0.2098E+05	Kip	1	0	2
Absolute Max Torque	0.4661E+02	Kip-ft	1	0	6
Max Demand/Capacity Ratio	0.5846E+00		1	0	2

Maximum/Minimum Soil Forces

Max Axial Soil Force	0.1358E+04	Kip	1	0	2
Min Axial Soil Force	-0.1132E+04	Kip	1	0	5
Max Lateral Force in X dir	0.1212E+04	Kip	1	0	6
Min Lateral Force in X dir	-0.1271E+04	Kip	1	0	4
Max Lateral Force in Y dir	0.6313E+03	Kip	1	0	2
Min Lateral Force in Y dir	-0.6444E+03	Kip	1	0	2
Max Torsional Soil Force	0.2669E+04	Kip-ft	1	0	1

Maximum/Minimum Pile Displacements

Max Axial Displacement	0.1501E+01	in	1	0	2
Min Axial Displacement	-0.9370E+00	in	1	0	5
Max Displacement in X	0.9830E+01	in	1	0	5
Min Displacement in X	-0.5135E+00	in	1	0	1
Max Displacement in Y	0.4359E+01	in	1	0	4
Min Displacement in Y	-0.3349E+00	in	1	0	6

Maximum/Minimum Column Forces

	Value		Load	Comb.	Column
Max Axial Force	0.0000E+00	Kip	0	0	0
Min Axial Force	0.0000E+00	Kip	0	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	1
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	0
Absolute Max Torque	0.1000E+06	Kip-ft	1	0	0

Maximum/Minimum Pier Cap Forces

Max Axial Force	0.0000E+00	Kip	0	0
Min Axial Force	0.0000E+00	Kip	0	0

Max Shear in 2 Direction	0.0000E+00	Kip	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0
Max Torque	-0.1000E+06	Kip-ft	1	0
Min Torque	0.0000E+00	Kip-ft	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0

****
Foundation Flexibilty for given loads
****

Averaged flexiblity

	Fx	Fy	Fz	Mx	My	Mz
DeltaX	0.1103E-02	0.4754E-04	-0.1589E-04	0.3012E-07	-0.2882E-06	0.2616E-08
DeltaY	0.4754E-04	0.9192E-03	-0.6778E-05	0.1020E-06	-0.3767E-07	-0.1056E-07
DeltaZ	-0.1589E-04	-0.6778E-05	0.1315E-04	-0.1861E-08	0.8473E-08	0.8764E-09
ThetaX	0.3012E-07	0.1020E-06	-0.1861E-08	0.1493E-09	-0.3676E-10	0.3495E-10
ThetaY	-0.2882E-06	-0.3767E-07	0.8473E-08	-0.3676E-10	0.3696E-09	0.2903E-10
ThetaZ	0.2616E-08	-0.1056E-07	0.8764E-09	0.3495E-10	0.2903E-10	0.2767E-08

****
Foundation Stiffness for given loads
****

STIFFNESS

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.1148E+04	-0.1863E+02	0.8150E+03	0.9602E+04	0.8764E+06	-0.1073E+05
Fy	-0.1863E+02	0.1182E+04	0.4631E+03	-0.7974E+06	0.1486E+05	0.1429E+05
Fz	0.8150E+03	0.4631E+03	0.7801E+05	0.2290E+06	-0.1082E+07	-0.1526E+05
Mx	0.9602E+04	-0.7974E+06	0.2290E+06	0.7432E+10	0.6683E+09	-0.1040E+09
My	0.8764E+06	0.1486E+05	-0.1082E+07	0.6683E+09	0.3486E+10	-0.4544E+08
Mz	-0.1073E+05	0.1429E+05	-0.1526E+05	-0.1040E+09	-0.4544E+08	0.3632E+09

****
Foundation Stiffness in STANDARD X-Y-Z directions
(FB-Pier->Stardard, X->X, Y->Z & -Z->Y)
Translations: kips/in Rotations: kip-in/rad
****

Stiffness in standard X-Y-Z

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.1148E+04	-0.8150E+03	-0.1863E+02	0.9602E+04	0.1073E+05	0.8764E+06
Fy	-0.8150E+03	0.7801E+05	-0.4631E+03	-0.2290E+06	-0.1526E+05	0.1082E+07
Fz	-0.1863E+02	-0.4631E+03	0.1182E+04	-0.7974E+06	-0.1429E+05	0.1486E+05
Mx	0.9602E+04	-0.2290E+06	-0.7974E+06	0.7432E+10	0.1040E+09	0.6683E+09
My	0.1073E+05	-0.1526E+05	-0.1429E+05	0.1040E+09	0.3632E+09	0.4544E+08
Mz	0.8764E+06	0.1082E+07	0.1486E+05	0.6683E+09	0.4544E+08	0.3486E+10

```
!-------------------------------------------------------------!
!                                                             !
!       The University of Florida, Florida Department         !
!       of Transportation, Drs. Marc Hoit, Mike McVay         !
!       Cliff Hays, Mark Williams, Petros Christou, and       !
!                       Jae H. Chung                          !
!        disclaim any warranty, expressed or implied,         !
!         including but not limited to, any implied           !
!        warranty of fitness for a particular purpose         !
!           or accuracy of the FB-Pier software               !
!     The  developers shall not be liable for any damages     !
!          incurred through the use of FB-MultiPier           !
!                                                             !
!                                                             !
!              :::: F B - M U L T I P I E R ::::              !
!                  FB-MultiPier Version 4.13                  !
!                                                             !
!                                                             !
!         Written by Marc Hoit, Mike McVay, Cliff Hays        !
!         Mark Williams, Petros Christou, Jae H. Chung.       !
!                                                             !
!      Civil & Coastal Engineering, University of Florida     !
!      Supported by Florida Department of Transportation      !
!           and the Federal Highway Administration            !
!                                                             !
!             The program calculates the Response             !
!           of the Bridge Pier Pile Soil Structures           !
!                                                             !
!            The Analysis includes PreLoad, Static,           !
!                Transient Dynamic or Push Over               !
!                                                             !
!        The Program Handles NonLinear Soil Behavior,         !
!  Linear Pile Cap and Linear and NonLinear Piles and Piers   !
!                                                             !
!                                                             !
!       Contact: Bridge Software Institute for Support        !
!                HTTP://BSI-WEB.CE.UFL.EDU                    !
!                                                             !
!-------------------------------------------------------------!
```

```
Analysis Start       : 3:44pm
Analysis End         : 3:44pm
Analysis Time        : 2 seconds

Input Data File Name : P7-LCS.in
Analysis Date        : 3-15-2011
License ID Number    : 432478881


********************
*   PROJECT DATA   *
********************

Project Client       : CRC / WSDOT / ODOT
Project Name         : Columbia River Crossing
Project Manager      : R. Turton
Computed by          : NRH
Project Description : SB - Pier 7 - Liquefaction + Contraction Scour


*************************************
*   SELECTIVE PRINT OUTPUT CONTROL   *
*************************************
                                        Print On
Pile Displacements                        YES
Pile Element Forces                        NO
Missing Pile ID Numbers                    NO
Pier Columns and Pier Cap Displacements    NO
Pier Columns and Pier Cap Force Output    YES
Pier Material Properties                  YES
Soil Response Forces                       NO
Soil Data per Layer                       YES
Soil Curve data per Pile Node              NO
Soil Graph per Pile Node                   NO
Out of Balance Forces                      NO
Bridge Simulation Spring Force Output      NO
Bridge Span Displacements                  NO
Bridge Span Element Forces                 NO
Bridge Span Properties                     NO
Pile Cap Stress                            NO
```

BSI FB-MultiPier - File: P7-LCS.out Wednesday, March 23, 2011

```
 Material Stress Strain Curve Data          NO
 Interaction Diagram Data For Pile and Pier YES
 Pile and Pier coordinates                  NO
 Generate XML file                          NO


 *************
 *   UNITS   *
 *************

 Analysis Units Specified are: English Mixed (Kips & Ft some lbs & in)


 ***************************
 *   CONTROL INFORMATION   *
 ***************************

 Number of Piers               (NUMPIERS) =    1
 Maximum Number of Iterations    (MAXITN) =   50
 Tolerance                        (TOLER) =    10.000000     Kips

 NOTE : The following soil information is not applicable in the coulmn analysis problems

 Soil Behavior Option             (IFLEX) =    0
    IFLEX = 0 -> PY Multipliers are Input
    IFLEX = 1 -> PY Multipliers Defaulted to 1.0
    IFLEX = 2 -> No SOIL (Must use tip springs)

 Soil resistance due to Pile Rotation About 2 and 3 Axis (NSODF) =    4
    NSDOF = 4 -> NO Resistance Accounted
    NSDOF = 6 -> Resistance Accounted

 Linear Pile TIP Spring Option     (ITIP) =    0
    ITIP = 0 -> NO spring
    ITIP = 1 -> Axial only
    ITIP = 2 -> All DOF

 Linear Pile TIP Spring Stiffness (TSTIF) =         0.00 kips/in


 *********************
 *   SOIL BEHAVIOR   *
 *********************

 PY Multipliers will be used (IFLEX = 0)


 ************************************************
 *   LOAD FACTORS FOR SELF WEIGHT AND BUOYANCY   *
 ************************************************

 LOAD CASE     SELF WEIGHT     BUOYANCY
     #            FACTOR         FACTOR
     1             1.00           1.00


 ****************************
 *   GENERAL INFORMATION    *
 ****************************

 Static / Cyclic Load (KCYC)      =    0
    KCYC = 0 -> Static Load
    KCKC > 0 -> Cyclic Load (# Cycles)

 Fixity of Pile Cap (KFIX)        =    1
    KFIX = 0 -> Pinned Head
    KFIX = 1 -> Fixed head

 Bearing of Cap on Soil           =  NO


 *****************************
 *   GRID DATA INFORMATION   *
 *****************************

 NOTE: X-Grid : Distance between axes along the X-Axis
       Y-Grid : Distance between axes along the Y-Axis

 Number of Grid Points in X-Direction (NPX) =     5
 Number of Grid Points in X-Direction (NPY) =     5

 Grid Spacing in the X Direction : (inches)
      90.00     180.00     180.00      90.00
```

Grid Spacing in the Y Direction : (inches)
90.00 360.00 360.00 90.00

****
* ANALYSIS OPTIONS *
****

Type of Stiffness = Secant Stiffness
Type of Structure = Full
Type of Analysis = Static Analysis

****
* INPUT SOIL DATA - GIVEN BY LAYER *
****

NOTE : The following data is used to define Springs
for each Soil Layer to determine the Soil
Behavior during the analysis

LAYERED P-Y CURVES

SOIL SET # 1

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	1	1	0.4500E+02	0.1250E+03	0.1367E+03
			0.4500E+02	0.1250E+03	0.1367E+03

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	2	1	0.4500E+02	0.1500E+03	0.1402E+03
			0.4500E+02	0.1500E+03	0.1402E+03

LAYERED T-Z CURVES

SOIL SET # 1

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

LAYERED T-Theta CURVES

SOIL SET # 1

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	1	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M.	TAU MAX

			ksi	psf
1	2	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

PILE TIP SOIL PARAMETERS

SOIL SET # 1

USER DEFINED

	Q Value in	T Value lbs
1	0.000E+00	0.000E+00
2	0.222E+00	0.362E+07
3	0.444E+00	0.624E+07
4	0.667E+00	0.829E+07
5	0.889E+00	0.995E+07
6	0.111E+01	0.113E+08
7	0.133E+01	0.125E+08
8	0.156E+01	0.136E+08
9	0.178E+01	0.145E+08
10	0.200E+01	0.153E+08

****
* PILE SEGMENT INFORMATION DATA *
****

NOTE: The Piles Sets consist of Pile Segments based on the User Input. The program groups all segments from all the different Pile Sets and assigns a reference number to each

The reference number for each segment together with the User Input Pile Set/Segment number is shown below. The Input section properties for each section/segment is also provided below.

The user is advised to double check these numbers

Number of segments found in all Piles (NPSEG) = 2

! -> SECTION DATA FOR SECTION/SEGMENT : 1 !

Input Pile Set Number = 1
Input Pile Set Segment = 1

Section Pile Length (L) = 9.0000000 ft

Nonlinear Section/Segment Material Properties

Material Option (MATOPT) = 1
(Please Refer to the Users Guide for Details)

- Concrete Stress Strain Properties

Concrete Strength (FPC) = 0.4000E+01 ksi
Modulus of Elasticity (EC) = 0.4224E+04 ksi

Gauss Integration Points for Concrete = 60

- Steel Stress Strain Properties

Mild Steel Yield Stress (FY) = 0.600E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

Tubular Steel Yield Stress (FY) = 0.500E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

- Shape of Section : CIRCULAR

- Steel and Confinement Data

Number of Steel Layers = 2
Section/Segment Diameter = 180.0000 in
Tied/Spiral Reinforcement Flag = 1
(NOTE : Spiral = 1, Tied = 2)
Confinement Flag = 1
(NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

```
 - Steel and Confinement Data

  Yield Stress of Confinement Steel =    60.00     ksi
  Spacing between Confinement Steel =    6.000     in
  Diameter of Confinement Steel     =   0.7500     in
   Outer Shell Thickness          =    1.00      in

 - Total Area of Steel Reinforcement  = 424.00 in^2

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing
                           in^2      in             ksi

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     1           56        4.00    108.00           0.00

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     2           52        3.85     96.00           0.00

 ---------------------------------------------
 ! -> SECTION DATA FOR SECTION/SEGMENT :   2  !
 ---------------------------------------------

 Input Pile Set Number  =   1
 Input Pile Set Segment =   2

 Section Pile Length               (L) =    115.08000     ft

 Nonlinear Section/Segment Material Properties
 ---------------------------------------------

 Material Option (MATOPT) =   1
 (Please Refer to the Users Guide for Details)

 - Concrete Stress Strain Properties

   Concrete Strength    (FPC) = 0.6000E+01 ksi
   Modulus of Elasticity (EC) = 0.5173E+04 ksi

   Gauss Integration Points for Concrete = 60

 - Steel Stress Strain Properties

   Mild Steel Yield Stress  (FY) =  0.600E+02 ksi
   Modulus of Elasticity    (ES) = 0.2900E+05 ksi

   Tubular Steel Yield Stress (FY) =  0.500E+02 ksi
   Modulus of Elasticity      (ES) = 0.2900E+05 ksi

 - Shape of Section : CIRCULAR

 - Steel and Confinement Data

   Number of Steel Layers         =   2
   Section/Segment Diameter       =  180.0000 in
   Tied/Spiral Reinforcement Flag =   1
   (NOTE : Spiral = 1, Tied   = 2)
   Confinement Flag               =   1
   (NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

 - Steel and Confinement Data

  Yield Stress of Confinement Steel =    60.00     ksi
  Spacing between Confinement Steel =    6.000     in
  Diameter of Confinement Steel     =   0.7500     in
   Outer Shell Thickness          =    1.00      in

 - Total Area of Steel Reinforcement  = 424.00 in^2

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing
                           in^2      in             ksi
```

```
   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     1          56        4.00    108.00          0.00

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     2          52        3.85     96.00          0.00

 PLOT OF THE QZ CURVE FOR THE TIP OF THE PILE
 ____________________________________________

 - USER DEFINED CURVE

 SOIL SET   Z Value    Q Value    Z Value    Q Value    Z Value    Q Value
   1 0.0000E+00 0.0000E+00 0.2222E+00 0.3615E+07 0.4444E+00 0.6244E+07
       0.6667E+00 0.8290E+07 0.8889E+00 0.9952E+07 0.1111E+01 0.1134E+08
       0.1333E+01 0.1253E+08 0.1556E+01 0.1357E+08 0.1778E+01 0.1448E+08
       0.2000E+01 0.1530E+08


 **********************************
 *   PILE SET DATA DESCRIPTION    *
 **********************************

 NOTE : The piles are organized in pile sets. Each pile
        set is composed of pile segments that are input
        by the User. A pile set is attached to each
        pile in order to describe its composition

 List of Piles Sets and Piles
 ____________________________

 Pile Set   Piles (that are assigned the Pile Set)
     1       1,  2,  3,  4,  5,  6


 Total Length for Each Pile Set
 ______________________________

 Pile Set   Length
     1     1488.96


 ************************************
 *   INPUT FOR STRUCTURAL ANALYSIS  *
 ************************************

 Number of Joints                  =  82
 Number of Different Element Types =   3
 Number of Load Conditions         =   1


 WARNING : Pier Columns and Cap are linear
           No P-Delta or Moment Magnification is included
           Nonlinear should be used for final design

 PIER SUMMARY
 ____________

 Stiffness of Foundation Requested - NO Pier Exists


 ********************************************************************
 *   MATERIAL PROPERTIES FOR PILE CAP AND FRAME (PIER) ELEMENTS     *
 ********************************************************************

 ***********************************************
 * PILE CAP PROPERTIES - USING SHELL ELEMENTS *
 ***********************************************

 Modulus of Elasticity =   0.4224E+04 (ksi)
 Poissons Ratio        =        0.2000
```

```
 Shear Modulus          =   0.1760E+04 (ksi)
 Self Weight            =     160.0000 (pcf)
 Thickness              =   0.1900E+02 (ft)

 ----------------------------------------------------
 ! -> PROPERTIES FOR CONNECTOR ELEMENTS (DEFAULTED) !
 ----------------------------------------------------

 NOTE : These Elements are generated by the program at the Pier
        Column Bases where they connect with the Pile Cap. The
        purpose for these elements is to spread the column base
        load over an area on the Pile Cap and therefore avoid
        High Stress Concentrations

 NOTE : The material property number for these elements is
        defaulted to 1. The material numbers for the properties
        of the rest of the Pier elements start form 2

 -> SECTION DATA FOR SECTION/SEGMENT :   1

 Member Property Number         =   1
 Axial Area, A                  =    51984.     (in^2)
 Torsional Moment of Inertia, J =   0.98770E+10 (in^4)
 Moment of Inertia, 3 - Axis    =   0.98770E+10 (in^4)
 Moment of Inertia, 2 - Axis    =   0.98770E+10 (in^4)
 Modulus of Elasticity, E       =    4224.0     (ksi)
 Shear Modulus, G               =    1760.0     (ksi) (used for Torsion)
 Weight Density                 =       0.00000 (K/in^3)

 ---------------------------------
 ! -> PROPERTIES FOR PIER COLUMNS !
 ---------------------------------

 Member Property Number         =   2
 Axial Area, A                  =       0.00000 (in^2)
 Torsional Moment of Inertia, J =       0.00000 (in^4)
 Moment of Inertia, 3 - Axis    =       0.00000 (in^4)
 Moment of Inertia, 2 - Axis    =       0.00000 (in^4)
 Modulus of Elasticity, E       =       0.00000 (ksi)
 Shear Modulus, G               =       0.00000 (ksi) (used for Torsion)
 Weight Density                 =       0.00000 (K/in^3)


 *********************************
 *   PIER MEMBER CONNECTIVITY    *
 *********************************

 ELEMENT      NODES     MATERIAL
  NUMBER      I    J     NUMBER

    1        82   60       1
    2        82   54       1
    3        82   47       1
    4        82   53       1


 *************************
 *   GENERAL LOAD DATA   *
 *************************

 The table below shows the Applied Loads for every
 Load Case. The values in the table represent the
 magnitute of the Loads in the specified units

 - Applied Load
   NODE  LOAD        X         Y         Z        MXX        MYY        MZZ
                  (Kips)    (Kips)    (Kips)   (Kip-ft)   (Kip-ft)   (Kip-ft)
     82     1   8259.00      0.00      0.00       0.00       0.00       0.00
     82     2      0.00   5560.00      0.00       0.00       0.00       0.00
     82     3      0.00      0.00  25708.00       0.00       0.00       0.00
     82     4      0.00      0.00      0.00  368352.00       0.00       0.00
     82     5      0.00      0.00      0.00       0.00-216107.00       0.00
     82     6      0.00      0.00      0.00       0.00       0.00    5603.00


 *************************
 *                       *
 *   ANALYSIS RESULTS    *
 *                       *
 *************************


 ***********************************
```

BSI FB-MultiPier - File: P7-LCS.out Wednesday, March 23, 2011
* RESULTS FOR LOAD CASE # 1 *
****

NOTE : PY Multipliers are applied Lead to Trail row based on the actual displacement. If there is no displacement in a Lateral direction they are defaulted to 1.0. This can happen in Axial Load and one direction lateral load cases

PY Multipliers are Applied to A Pile Group

PILE#	X-PYM	Y-PYM
1	0.500E+00	0.700E+00
2	0.700E+00	0.700E+00
3	0.500E+00	0.500E+00
4	0.700E+00	0.500E+00
5	0.500E+00	0.350E+00
6	0.700E+00	0.350E+00

****
* CONVERGENCE REPORT *
****

The Solution Converged in 4 Iterations

Summary of Abs Maximum Out-Of-Balance Forces

FZZ =	3.359	Kips
FXX =	0.154	Kips
FYY =	226.210	Kips
MXX =	4.892	Kip-in
MYY =	0.000	Kip-in
MZZ =	261.655	Kip-in

Summary of Displacements at Pile Heads

Node	X (in)	Y (in)	Z (in)
1	1.1169	0.7090	0.0936
2	1.1163	0.7376	0.3064
3	1.1460	0.7117	0.0100
4	1.1450	0.7372	0.2399
5	1.1688	0.7132	-0.1164
6	1.1677	0.7353	0.1051

Final Displacements

Load Case # 1

Node	X (in)	Y (in)	Z (in)	Rx (rad)	Ry (rad)	Rz (rad)
Pile Number 1						
1	1.1169	0.7090	0.0936	0.0004	-0.0009	0.0001
83	1.0696	0.6879	0.0944	0.0005	-0.0011	0.0001
84	1.0172	0.6609	0.0946	0.0006	-0.0012	0.0001
85	0.9609	0.6292	0.0944	0.0007	-0.0012	0.0001
86	0.9017	0.5939	0.0936	0.0008	-0.0013	0.0001
87	0.8404	0.5559	0.0923	0.0008	-0.0013	0.0001
88	0.7780	0.5160	0.0906	0.0009	-0.0013	0.0001
89	0.7149	0.4750	0.0888	0.0009	-0.0013	0.0001
90	0.6517	0.4332	0.0870	0.0009	-0.0013	0.0001
91	0.5888	0.3911	0.0852	0.0009	-0.0013	0.0001
92	0.4965	0.3287	0.0825	0.0009	-0.0013	0.0000
93	0.4078	0.2681	0.0804	0.0008	-0.0012	0.0000
94	0.3249	0.2112	0.0794	0.0008	-0.0011	0.0000
95	0.2501	0.1600	0.0794	0.0007	-0.0010	0.0000
96	0.1848	0.1157	0.0801	0.0006	-0.0008	0.0000
97	0.1299	0.0789	0.0812	0.0005	-0.0007	0.0000
98	0.0851	0.0496	0.0823	0.0004	-0.0006	0.0000
99	0.0498	0.0271	0.0832	0.0003	-0.0004	0.0000
100	0.0227	0.0107	0.0838	0.0002	-0.0003	0.0000
101	0.0023	-0.0010	0.0838	0.0001	-0.0002	0.0000
102	-0.0133	-0.0091	0.0834	0.0001	-0.0002	0.0000
103	-0.0257	-0.0148	0.0825	0.0001	-0.0002	0.0000
104	-0.0363	-0.0194	0.0816	0.0001	-0.0001	0.0000

105	-0.0462	-0.0235	0.0807	0.0001	-0.0001	0.0000
106	-0.0559	-0.0273	0.0800	0.0001	-0.0001	0.0000

Pile Number 2

2	1.1163	0.7376	0.3064	0.0004	-0.0009	0.0001
107	1.0718	0.7175	0.3009	0.0005	-0.0010	0.0001
108	1.0213	0.6916	0.2949	0.0006	-0.0011	0.0001
109	0.9663	0.6610	0.2896	0.0007	-0.0012	0.0001
110	0.9081	0.6270	0.2842	0.0007	-0.0013	0.0001
111	0.8475	0.5902	0.2787	0.0008	-0.0013	0.0001
112	0.7851	0.5513	0.2732	0.0008	-0.0013	0.0001
113	0.7217	0.5107	0.2676	0.0009	-0.0013	0.0001
114	0.6578	0.4690	0.2621	0.0009	-0.0013	0.0001
115	0.5941	0.4267	0.2565	0.0009	-0.0013	0.0001
116	0.5009	0.3638	0.2484	0.0009	-0.0013	0.0000
117	0.4117	0.3024	0.2408	0.0008	-0.0012	0.0000
118	0.3284	0.2442	0.2339	0.0008	-0.0011	0.0000
119	0.2528	0.1908	0.2277	0.0007	-0.0010	0.0000
120	0.1867	0.1434	0.2225	0.0006	-0.0009	0.0000
121	0.1308	0.1027	0.2180	0.0005	-0.0007	0.0000
122	0.0853	0.0692	0.2140	0.0004	-0.0006	0.0000
123	0.0496	0.0424	0.2104	0.0003	-0.0004	0.0000
124	0.0224	0.0215	0.2070	0.0003	-0.0003	0.0000
125	0.0019	0.0054	0.2036	0.0002	-0.0002	0.0000
126	-0.0136	-0.0070	0.2004	0.0002	-0.0002	0.0000
127	-0.0257	-0.0170	0.1974	0.0001	-0.0002	0.0000
128	-0.0359	-0.0255	0.1948	0.0001	-0.0001	0.0000
129	-0.0450	-0.0333	0.1926	0.0001	-0.0001	0.0000
130	-0.0539	-0.0408	0.1908	0.0001	-0.0001	0.0000

Pile Number 3

3	1.1460	0.7117	0.0100	0.0005	-0.0009	0.0001
131	1.0982	0.6864	0.0134	0.0006	-0.0011	0.0001
132	1.0446	0.6566	0.0162	0.0007	-0.0012	0.0001
133	0.9863	0.6231	0.0185	0.0007	-0.0013	0.0001
134	0.9244	0.5866	0.0201	0.0008	-0.0013	0.0001
135	0.8598	0.5478	0.0209	0.0008	-0.0014	0.0001
136	0.7935	0.5074	0.0211	0.0009	-0.0014	0.0001
137	0.7262	0.4660	0.0208	0.0009	-0.0014	0.0001
138	0.6588	0.4242	0.0203	0.0009	-0.0014	0.0001
139	0.5917	0.3824	0.0198	0.0009	-0.0014	0.0000
140	0.4936	0.3209	0.0198	0.0009	-0.0014	0.0000
141	0.4005	0.2620	0.0211	0.0008	-0.0013	0.0000
142	0.3149	0.2075	0.0233	0.0007	-0.0011	0.0000
143	0.2387	0.1586	0.0263	0.0006	-0.0010	0.0000
144	0.1733	0.1162	0.0296	0.0005	-0.0008	0.0000
145	0.1189	0.0808	0.0331	0.0005	-0.0007	0.0000
146	0.0753	0.0522	0.0363	0.0004	-0.0005	0.0000
147	0.0416	0.0299	0.0391	0.0003	-0.0004	0.0000
148	0.0164	0.0130	0.0412	0.0002	-0.0003	0.0000
149	-0.0020	0.0005	0.0427	0.0001	-0.0002	0.0000
150	-0.0151	-0.0086	0.0435	0.0001	-0.0002	0.0000
151	-0.0249	-0.0155	0.0437	0.0001	-0.0001	0.0000
152	-0.0327	-0.0211	0.0434	0.0001	-0.0001	0.0000
153	-0.0398	-0.0263	0.0430	0.0001	-0.0001	0.0000
154	-0.0466	-0.0312	0.0426	0.0001	-0.0001	0.0000

Pile Number 4

4	1.1450	0.7372	0.2399	0.0005	-0.0009	0.0001
155	1.0981	0.7109	0.2359	0.0006	-0.0011	0.0001
156	1.0451	0.6806	0.2315	0.0007	-0.0012	0.0001
157	0.9878	0.6473	0.2275	0.0007	-0.0012	0.0001
158	0.9273	0.6117	0.2233	0.0008	-0.0013	0.0001
159	0.8645	0.5745	0.2191	0.0008	-0.0013	0.0001
160	0.8001	0.5359	0.2148	0.0008	-0.0014	0.0001
161	0.7346	0.4964	0.2105	0.0008	-0.0014	0.0001
162	0.6688	0.4564	0.2061	0.0008	-0.0014	0.0000
163	0.6032	0.4161	0.2017	0.0008	-0.0014	0.0000
164	0.5071	0.3566	0.1954	0.0008	-0.0013	0.0000
165	0.4152	0.2988	0.1895	0.0008	-0.0013	0.0000
166	0.3294	0.2439	0.1843	0.0007	-0.0012	0.0000
167	0.2518	0.1933	0.1799	0.0007	-0.0010	0.0000
168	0.1842	0.1480	0.1764	0.0006	-0.0009	0.0000
169	0.1276	0.1088	0.1735	0.0005	-0.0007	0.0000
170	0.0819	0.0757	0.1711	0.0004	-0.0006	0.0000
171	0.0464	0.0485	0.1688	0.0003	-0.0004	0.0000
172	0.0197	0.0266	0.1666	0.0003	-0.0003	0.0000
173	0.0000	0.0089	0.1642	0.0002	-0.0002	0.0000
174	-0.0145	-0.0055	0.1618	0.0002	-0.0002	0.0000
175	-0.0257	-0.0178	0.1595	0.0002	-0.0001	0.0000
176	-0.0349	-0.0289	0.1574	0.0002	-0.0001	0.0000
177	-0.0432	-0.0393	0.1557	0.0001	-0.0001	0.0000
178	-0.0511	-0.0495	0.1542	0.0001	-0.0001	0.0000

Pile Number 5						
5	1.1688	0.7132	-0.1164	0.0005	-0.0009	0.0001
179	1.1236	0.6876	-0.1087	0.0006	-0.0010	0.0001
180	1.0713	0.6579	-0.1015	0.0007	-0.0012	0.0001
181	1.0129	0.6247	-0.0948	0.0007	-0.0013	0.0001
182	0.9494	0.5886	-0.0888	0.0008	-0.0014	0.0001
183	0.8816	0.5499	-0.0832	0.0008	-0.0015	0.0000
184	0.8105	0.5093	-0.0781	0.0009	-0.0015	0.0000
185	0.7374	0.4673	-0.0731	0.0009	-0.0016	0.0000
186	0.6635	0.4246	-0.0683	0.0009	-0.0016	0.0000
187	0.5902	0.3820	-0.0636	0.0009	-0.0015	0.0000
188	0.4848	0.3201	-0.0569	0.0009	-0.0014	0.0000
189	0.3870	0.2619	-0.0500	0.0008	-0.0013	0.0000
190	0.2990	0.2086	-0.0429	0.0007	-0.0012	0.0000
191	0.2222	0.1610	-0.0356	0.0006	-0.0010	0.0000
192	0.1573	0.1197	-0.0286	0.0005	-0.0008	0.0000
193	0.1043	0.0848	-0.0219	0.0004	-0.0007	0.0000
194	0.0627	0.0562	-0.0159	0.0004	-0.0005	0.0000
195	0.0313	0.0333	-0.0106	0.0003	-0.0004	0.0000
196	0.0086	0.0155	-0.0063	0.0002	-0.0003	0.0000
197	-0.0070	0.0019	-0.0028	0.0002	-0.0002	0.0000
198	-0.0172	-0.0085	-0.0003	0.0001	-0.0001	0.0000
199	-0.0237	-0.0164	0.0014	0.0001	-0.0001	0.0000
200	-0.0280	-0.0229	0.0024	0.0001	0.0000	0.0000
201	-0.0310	-0.0285	0.0029	0.0001	0.0000	0.0000
202	-0.0337	-0.0340	0.0029	0.0001	0.0000	0.0000

Pile Number 6						
6	1.1677	0.7353	0.1051	0.0006	-0.0009	0.0001
203	1.1196	0.7063	0.1054	0.0006	-0.0011	0.0001
204	1.0649	0.6742	0.1049	0.0007	-0.0012	0.0001
205	1.0051	0.6396	0.1042	0.0007	-0.0013	0.0001
206	0.9416	0.6033	0.1029	0.0008	-0.0014	0.0001
207	0.8756	0.5656	0.1012	0.0008	-0.0014	0.0000
208	0.8079	0.5272	0.0992	0.0008	-0.0014	0.0000
209	0.7393	0.4882	0.0973	0.0008	-0.0015	0.0000
210	0.6704	0.4489	0.0953	0.0008	-0.0015	0.0000
211	0.6018	0.4097	0.0932	0.0008	-0.0014	0.0000
212	0.5011	0.3518	0.0903	0.0008	-0.0014	0.0000
213	0.4046	0.2955	0.0880	0.0008	-0.0013	0.0000
214	0.3153	0.2422	0.0868	0.0007	-0.0012	0.0000
215	0.2358	0.1931	0.0867	0.0007	-0.0010	0.0000
216	0.1678	0.1491	0.0874	0.0006	-0.0009	0.0000
217	0.1120	0.1108	0.0884	0.0005	-0.0007	0.0000
218	0.0681	0.0782	0.0894	0.0004	-0.0005	0.0000
219	0.0350	0.0512	0.0902	0.0003	-0.0004	0.0000
220	0.0113	0.0289	0.0905	0.0003	-0.0003	0.0000
221	-0.0052	0.0105	0.0904	0.0002	-0.0002	0.0000
222	-0.0163	-0.0048	0.0898	0.0002	-0.0001	0.0000
223	-0.0241	-0.0183	0.0888	0.0002	-0.0001	0.0000
224	-0.0301	-0.0306	0.0877	0.0002	-0.0001	0.0000
225	-0.0353	-0.0425	0.0868	0.0002	-0.0001	0.0000
226	-0.0403	-0.0541	0.0860	0.0002	-0.0001	0.0000

SUM OF TOTAL SOIL SPRING LOADS

CHECK: Total Load Carried by the Soil
(Sum of NF+FF Soil Spring Loads)

X Direction	=	8255.5521	Kips
Y Direction	=	5558.5518	Kips
Z Direction	=	48157.3117	Kips
Sum of Tip Forces	=	9055.0597	Kips

Summary of Pile Forces for Load CASE 1

1. Axial Force (Kips)

Pile #	Maximum Force	Minimum Force
1	-0.13812E+04	-0.53554E+04
2	-0.34368E+04	-0.16292E+05
3	-0.68909E+03	-0.15951E+04
4	-0.27578E+04	-0.12726E+05
5	0.34046E+04	-0.59109E+02
6	-0.14930E+04	-0.59262E+04

2. Pile Shear Force in 2 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.11888E+04	-0.74934E+03
2	0.17006E+04	-0.10305E+04
3	0.11259E+04	-0.68151E+03
4	0.16765E+04	-0.10057E+04
5	0.10346E+04	-0.59545E+03
6	0.15377E+04	-0.89413E+03

3. Pile Shear Force in 3 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.56401E+03	-0.11220E+04
2	0.72836E+03	-0.14029E+04
3	0.43522E+03	-0.78478E+03
4	0.59091E+03	-0.10035E+04
5	0.32730E+03	-0.55760E+03
6	0.43960E+03	-0.69301E+03

4. Bending Moment About 2 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.3888E+05	0.70980E+02	-0.2193E+05
2	2	0.00000E+00	0.5080E+05	0.76880E+02	-0.2715E+05
3	3	0.00000E+00	0.2521E+05	0.65080E+02	-0.1707E+05
4	4	0.00000E+00	0.3382E+05	0.76880E+02	-0.2205E+05
5	5	0.00000E+00	0.1733E+05	0.70980E+02	-0.1270E+05
6	6	0.00000E+00	0.2192E+05	0.65080E+02	-0.1648E+05

5. Bending Moment About 3 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.3454E+05	0.70980E+02	-0.2970E+05
2	2	0.00000E+00	0.5221E+05	0.70980E+02	-0.4052E+05
3	3	0.00000E+00	0.3271E+05	0.65080E+02	-0.2722E+05
4	4	0.00000E+00	0.5080E+05	0.70980E+02	-0.3998E+05
5	5	0.00000E+00	0.3079E+05	0.70980E+02	-0.2359E+05
6	6	0.00000E+00	0.4619E+05	0.65080E+02	-0.3571E+05

****
* ANALYTICAL FORCE RESULTS FOR PIER *
****

ELEM NO.	PROP NO.	NODE NO.	LOAD CASE	FAX (Kips)	F22 (Kips)	F33 (Kips)	M22 (Kip-ft)	M33 (Kip-ft)	TORQUE (Kip-ft)	D/C (Ratio)
- Connector Beam Segments										
1	1	82	1	-615.78	2586.45	-3417.02	51255.37	38796.76	75650.80	0.00
	1	60		615.78	-2586.45	3417.02	0.00	0.00	-75650.80	0.00
2	1	82	1	872.43	5882.80	-2187.29	16404.69	44120.99	64343.99	0.00
	1	54		-872.43	-5882.80	2187.29	0.00	0.00	-64343.99	0.00
3	1	82	1	838.73	19006.01	3178.04	-47670.58	285090.22	-83080.73	0.00
	1	47		-838.73	-19006.01	-3178.04	0.00	0.00	83080.73	0.00
4	1	82	1	-791.51	-1767.26	1918.20	-14386.47	-13254.48	-57714.56	0.00
	1	53		791.51	1767.26	-1918.20	0.00	0.00	57714.56	0.00

****
* ANALYTICAL PILE CAP - SHELL STRESS RESULTS *
****

****
* DAMPING FORCES *
****

Node #	FXX	FYY	FZZ	MXX	MYY	MZZ
	Kip	Kip	Kip	Kip	Kip	Kip

****
* UNIAXIAL INTERACTION DIAGRAM *
****

NOTE : 1. The tables below show the values on the Interaction Diagrams for each section which correspond to the section capacity
2. The numbering of the SECTIONS/SEGMENTS is shown previously in the output file

---
! -> Pile Cross Section Number = 1 !

Diagram Data

Maximum Tension Force = 0.4820E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = 0.1237E-14 (in)
Local 3 Axis Shift for Plastic Centroid = -0.7486E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.4820E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.4416E+05	0.1645E+06	0.1646E+06	0.1645E+06	0.1646E+06
0.3966E+05	0.1721E+06	0.1721E+06	0.1721E+06	0.1721E+06
0.3479E+05	0.1890E+06	0.1890E+06	0.1890E+06	0.1890E+06
0.3076E+05	0.2030E+06	0.2030E+06	0.2030E+06	0.2030E+06
0.2624E+05	0.2184E+06	0.2184E+06	0.2184E+06	0.2184E+06
0.2191E+05	0.2309E+06	0.2309E+06	0.2309E+06	0.2309E+06
0.1767E+05	0.2387E+06	0.2387E+06	0.2387E+06	0.2387E+06
0.1316E+05	0.2419E+06	0.2419E+06	0.2419E+06	0.2419E+06
0.8766E+04	0.2432E+06	0.2432E+06	0.2432E+06	0.2432E+06
0.4372E+04	0.2501E+06	0.2501E+06	0.2501E+06	0.2501E+06
-0.1105E-01	0.2576E+06	0.2576E+06	0.2576E+06	0.2576E+06
-0.9145E+04	0.2273E+06	0.2273E+06	0.2273E+06	0.2273E+06
-0.1838E+05	0.2415E+06	0.2415E+06	0.2415E+06	0.2415E+06
-0.2759E+05	0.2518E+06	0.2518E+06	0.2518E+06	0.2518E+06
-0.3692E+05	0.2546E+06	0.2546E+06	0.2546E+06	0.2546E+06
-0.4600E+05	0.2465E+06	0.2465E+06	0.2465E+06	0.2465E+06
-0.5522E+05	0.2301E+06	0.2301E+06	0.2301E+06	0.2301E+06
-0.6501E+05	0.2076E+06	0.2076E+06	0.2076E+06	0.2076E+06
-0.6747E+05	0.2013E+06	0.2013E+06	0.2013E+06	0.2013E+06
-0.7105E+05	0.1908E+06	0.1908E+06	0.1908E+06	0.1908E+06
-0.7376E+05	0.1819E+06	0.1819E+06	0.1819E+06	0.1819E+06
-0.7676E+05	0.1689E+06	0.1717E+06	0.1689E+06	0.1717E+06
-0.8002E+05	0.1554E+06	0.1587E+06	0.1554E+06	0.1587E+06
-0.8293E+05	0.1438E+06	0.1457E+06	0.1438E+06	0.1457E+06
-0.8579E+05	0.1321E+06	0.1328E+06	0.1321E+06	0.1328E+06
-0.8882E+05	0.1180E+06	0.1189E+06	0.1180E+06	0.1189E+06
-0.9208E+05	0.1014E+06	0.1036E+06	0.1014E+06	0.1036E+06
-0.9518E+05	0.8843E+05	0.8843E+05	0.8843E+05	0.8843E+05
-0.9883E+05	0.6861E+05	0.6861E+05	0.6861E+05	0.6861E+05

! -> Pile Cross Section Number = 2 !

Diagram Data

Maximum Tension Force = 0.4820E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = 0.5203E-15 (in)
Local 3 Axis Shift for Plastic Centroid = -0.5543E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.4820E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.4371E+05	0.1707E+06	0.1706E+06	0.1707E+06	0.1706E+06
0.3982E+05	0.1758E+06	0.1758E+06	0.1758E+06	0.1758E+06
0.3506E+05	0.1913E+06	0.1913E+06	0.1913E+06	0.1913E+06
0.3088E+05	0.2064E+06	0.2064E+06	0.2064E+06	0.2064E+06
0.2626E+05	0.2238E+06	0.2238E+06	0.2238E+06	0.2238E+06
0.2188E+05	0.2397E+06	0.2397E+06	0.2397E+06	0.2397E+06
0.1749E+05	0.2544E+06	0.2544E+06	0.2544E+06	0.2544E+06
0.1310E+05	0.2657E+06	0.2657E+06	0.2657E+06	0.2657E+06
0.8766E+04	0.2703E+06	0.2703E+06	0.2703E+06	0.2703E+06
0.4423E+04	0.2680E+06	0.2680E+06	0.2680E+06	0.2680E+06
0.5993E-01	0.2737E+06	0.2737E+06	0.2737E+06	0.2737E+06
-0.1173E+05	0.2476E+06	0.2476E+06	0.2476E+06	0.2476E+06
-0.2330E+05	0.2649E+06	0.2649E+06	0.2649E+06	0.2649E+06
-0.3465E+05	0.2792E+06	0.2792E+06	0.2792E+06	0.2792E+06
-0.4650E+05	0.2861E+06	0.2861E+06	0.2861E+06	0.2861E+06
-0.5797E+05	0.2788E+06	0.2788E+06	0.2788E+06	0.2788E+06
-0.7023E+05	0.2570E+06	0.2570E+06	0.2570E+06	0.2570E+06
-0.8210E+05	0.2294E+06	0.2294E+06	0.2294E+06	0.2294E+06
-0.8654E+05	0.2175E+06	0.2175E+06	0.2175E+06	0.2175E+06
-0.9052E+05	0.2051E+06	0.2051E+06	0.2051E+06	0.2051E+06
-0.9349E+05	0.1953E+06	0.1953E+06	0.1953E+06	0.1953E+06
-0.9786E+05	0.1763E+06	0.1794E+06	0.1763E+06	0.1794E+06
-0.1029E+06	0.1551E+06	0.1576E+06	0.1551E+06	0.1576E+06
-0.1067E+06	0.1394E+06	0.1403E+06	0.1394E+06	0.1403E+06
-0.1108E+06	0.1195E+06	0.1207E+06	0.1195E+06	0.1207E+06
-0.1152E+06	0.9658E+05	0.9961E+05	0.9658E+05	0.9961E+05
-0.1197E+06	0.7497E+05	0.7497E+05	0.7497E+05	0.7497E+05
-0.1244E+06	0.4745E+05	0.4745E+05	0.4745E+05	0.4745E+05

****
* FINAL MAXIMUMS/MINIMUMS FOR ALL LOAD CASES *
* PIER # 1 *
****

Maximum/Minimum Pile Forces

	Value		Load	Comb.	Pile
Max Shear in 2 Direction	0.1701E+04	Kip	1	0	2
Min Shear in 2 Direction	-0.1031E+04	Kip	1	0	2
Max Shear in 3 Direction	0.7284E+03	Kip	1	0	2
Min Shear in 3 Direction	-0.1403E+04	Kip	1	0	2
Max Moment about 2 Axis	0.5080E+05	Kip-ft	1	0	2
Min Moment about 2 Axis	-0.2715E+05	Kip-ft	1	0	2
Max Moment About 3 Axis	0.5221E+05	Kip-ft	1	0	2
Min Moment About 3 Axis	-0.4052E+05	Kip-ft	1	0	2
Max Axial Force	0.3405E+04	Kip	1	0	5
Min Axial Force	-0.1629E+05	Kip	1	0	2
Absolute Max Torque	0.2016E+02	Kip-ft	1	0	5
Max Demand/Capacity Ratio	0.3044E+00		1	0	2

Maximum/Minimum Soil Forces

Max Axial Soil Force	0.1130E+04	Kip	1	0	2
Min Axial Soil Force	-0.2587E+03	Kip	1	0	5

BSI FB-MultiPier - File: P7-LCS.out Wednesday, March 23, 2011

Max Lateral Force in X dir	0.4425E+03	Kip	1	0	2
Min Lateral Force in X dir	-0.3318E+03	Kip	1	0	2
Max Lateral Force in Y dir	0.3343E+03	Kip	1	0	2
Min Lateral Force in Y dir	-0.2452E+03	Kip	1	0	2
Max Torsional Soil Force	0.1190E+04	Kip-ft	1	0	1

Maximum/Minimum Pile Displacements

Max Axial Displacement	0.3064E+00	in	1	0	2
Min Axial Displacement	-0.1164E+00	in	1	0	5
Max Displacement in X	0.1169E+01	in	1	0	5
Min Displacement in X	-0.5590E-01	in	1	0	1
Max Displacement in Y	0.7376E+00	in	1	0	2
Min Displacement in Y	-0.5413E-01	in	1	0	6

Maximum/Minimum Column Forces

	Value		Load	Comb.	Column
Max Axial Force	0.0000E+00	Kip	0	0	0
Min Axial Force	0.0000E+00	Kip	0	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	1
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	0
Absolute Max Torque	0.1000E+06	Kip-ft	1	0	0

Maximum/Minimum Pier Cap Forces

Max Axial Force	0.0000E+00	Kip	0	0
Min Axial Force	0.0000E+00	Kip	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0
Max Torque	-0.1000E+06	Kip-ft	1	0
Min Torque	0.0000E+00	Kip-ft	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0

****
Foundation Flexibilty for given loads
****

Averaged flexiblity

	Fx	Fy	Fz	Mx	My	Mz
DeltaX	0.1351E-03	0.7900E-05	-0.4182E-05	0.4202E-08	-0.5106E-07	0.5148E-08
DeltaY	0.7900E-05	0.1228E-03	-0.2929E-05	0.1713E-07	-0.5820E-08	-0.4883E-08
DeltaZ	-0.4182E-05	-0.2929E-05	0.6166E-05	-0.1384E-08	0.2934E-08	-0.2817E-09
ThetaX	0.4202E-08	0.1713E-07	-0.1384E-08	0.6819E-10	-0.4008E-11	0.1441E-10
ThetaY	-0.5106E-07	-0.5820E-08	0.2934E-08	-0.4008E-11	0.1601E-09	0.1098E-10
ThetaZ	0.5148E-08	-0.4883E-08	-0.2817E-09	0.1441E-10	0.1098E-10	0.4946E-09

****
Foundation Stiffness for given loads
****

STIFFNESS

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.8567E+04	-0.3025E+03	0.4360E+04	-0.1776E+06	0.2646E+07	-0.1432E+06
Fy	-0.3025E+03	0.8541E+04	0.3348E+04	-0.2086E+07	0.9025E+05	0.1481E+06
Fz	0.4360E+04	0.3348E+04	0.1679E+06	0.2198E+07	-0.1514E+07	0.5291E+05
Mx	-0.1776E+06	-0.2086E+07	0.2198E+07	0.1536E+11	0.2440E+09	-0.4704E+09
My	0.2646E+07	0.9025E+05	-0.1514E+07	0.2440E+09	0.7139E+10	-0.1931E+09
Mz	-0.1432E+06	0.1481E+06	0.5291E+05	-0.4704E+09	-0.1931E+09	0.2043E+10

****
Foundation Stiffness in STANDARD X-Y-Z directions
(FB-Pier->Stardard, X->X, Y->Z & -Z->Y)
Translations: kips/in Rotations: kip-in/rad
****

Stiffness in standard X-Y-Z

BSI FB-MultiPier - File: P7-LCS.out Wednesday, March 23, 2011

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.8567E+04	-0.4360E+04	-0.3025E+03	-0.1776E+06	0.1432E+06	0.2646E+07
Fy	-0.4360E+04	0.1679E+06	-0.3348E+04	-0.2198E+07	0.5291E+05	0.1514E+07
Fz	-0.3025E+03	-0.3348E+04	0.8541E+04	-0.2086E+07	-0.1481E+06	0.9025E+05
Mx	-0.1776E+06	-0.2198E+07	-0.2086E+07	0.1536E+11	0.4704E+09	0.2440E+09
My	0.1432E+06	0.5291E+05	-0.1481E+06	0.4704E+09	0.2043E+10	0.1931E+09
Mz	0.2646E+07	0.1514E+07	0.9025E+05	0.2440E+09	0.1931E+09	0.7139E+10

:::: F B - M U L T I P I E R ::::
FB-MultiPier Version 4.13

Written by Marc Hoit, Mike McVay, Cliff Hays
Mark Williams, Petros Christou, Jae H. Chung.

Civil & Coastal Engineering, University of Florida

Supported by Florida Department of Transportation and the Federal Highway Administration

The program calculates the Response of the Bridge Pier Pile Soil Structures

The Analysis includes PreLoad, Static, Transient Dynamic or Push Over

The Program Handles NonLinear Soil Behavior, Linear Pile Cap and Linear and NonLinear Piles and Piers

Contact: Bridge Software Institute for Support
HTTP://BSI-WEB.CE.UFL.EDU

Analysis Start : 3:45pm
Analysis End : 3:45pm
Analysis Time : 2 seconds

Input Data File Name : P8-LCS.in
Analysis Date : 3-15-2011
License ID Number : 432478881

****
* PROJECT DATA *
****

Project Client : CRC / WSDOT / ODOT
Project Name : Columbia River Crossing
Project Manager : R. Turton
Computed by : NRH
Project Description : SB - Pier 8 - Liquefaction + Contraction Scour

****
* SELECTIVE PRINT OUTPUT CONTROL *
****

	Print On
Pile Displacements	YES
Pile Element Forces	NO
Missing Pile ID Numbers	NO
Pier Columns and Pier Cap Displacements	NO
Pier Columns and Pier Cap Force Output	YES
Pier Material Properties	YES
Soil Response Forces	NO
Soil Data per Layer	YES
Soil Curve data per Pile Node	NO
Soil Graph per Pile Node	NO
Out of Balance Forces	NO
Bridge Simulation Spring Force Output	NO
Bridge Span Displacements	NO
Bridge Span Element Forces	NO
Bridge Span Properties	NO
Pile Cap Stress	NO

BSI FB-MultiPier - File: P8-LCS.out Wednesday, March 23, 2011

```
 Material Stress Strain Curve Data          NO
 Interaction Diagram Data For Pile and Pier YES
 Pile and Pier coordinates                  NO
 Generate XML file                          NO


 *************
 *   UNITS   *
 *************

 Analysis Units Specified are: English Mixed (Kips & Ft some lbs & in)


 ****************************
 *   CONTROL INFORMATION    *
 ****************************

 Number of Piers               (NUMPIERS) =    1
 Maximum Number of Iterations    (MAXITN) =   50
 Tolerance                        (TOLER) =    10.000000     Kips

 NOTE : The following soil information is not applicable in the coulmn analysis problems

 Soil Behavior Option             (IFLEX) =    0
    IFLEX = 0 -> PY Multipliers are Input
    IFLEX = 1 -> PY Multipliers Defaulted to 1.0
    IFLEX = 2 -> No SOIL (Must use tip springs)

 Soil resistance due to Pile Rotation About 2 and 3 Axis (NSODF) =    4
    NSDOF = 4 -> NO Resistance Accounted
    NSDOF = 6 -> Resistance Accounted

 Linear Pile TIP Spring Option     (ITIP) =    0
    ITIP = 0 -> NO spring
    ITIP = 1 -> Axial only
    ITIP = 2 -> All DOF

 Linear Pile TIP Spring Stiffness (TSTIF) =         0.00 kips/in


 *********************
 *   SOIL BEHAVIOR   *
 *********************

 PY Multipliers will be used (IFLEX = 0)


 ************************************************
 *   LOAD FACTORS FOR SELF WEIGHT AND BUOYANCY   *
 ************************************************

 LOAD CASE     SELF WEIGHT     BUOYANCY
     #            FACTOR         FACTOR
     1             1.00           1.00


 ****************************
 *   GENERAL INFORMATION    *
 ****************************

 Static / Cyclic Load (KCYC)      =    0
    KCYC = 0 -> Static Load
    KCKC > 0 -> Cyclic Load (# Cycles)

 Fixity of Pile Cap (KFIX)        =    1
    KFIX = 0 -> Pinned Head
    KFIX = 1 -> Fixed head

 Bearing of Cap on Soil           =  NO


 ******************************
 *   GRID DATA INFORMATION    *
 ******************************

 NOTE: X-Grid : Distance between axes along the X-Axis
       Y-Grid : Distance between axes along the Y-Axis

 Number of Grid Points in X-Direction (NPX) =     5
 Number of Grid Points in X-Direction (NPY) =     5

 Grid Spacing in the X Direction : (inches)
      90.00     150.00     150.00      90.00
```

Grid Spacing in the Y Direction : (inches)
120.00 390.00 390.00 120.00

****
* ANALYSIS OPTIONS *
****

Type of Stiffness = Secant Stiffness
Type of Structure = Full
Type of Analysis = Static Analysis

****
* INPUT SOIL DATA - GIVEN BY LAYER *
****

NOTE : The following data is used to define Springs
for each Soil Layer to determine the Soil
Behavior during the analysis

LAYERED P-Y CURVES

SOIL SET # 1

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	1	1	0.7000E+01	0.6500E+02	0.1073E+03
			0.7000E+01	0.6500E+02	0.1073E+03

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	2	1	0.4500E+02	0.1250E+03	0.1367E+03
			0.4500E+02	0.1250E+03	0.1367E+03

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	3	1	0.4500E+02	0.1500E+03	0.1402E+03
			0.4500E+02	0.1500E+03	0.1402E+03

LAYERED T-Z CURVES

SOIL SET # 1

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00
	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02

0.152E+01	0.559E+02	0.152E+01	0.559E+02
0.265E+01	0.559E+02	0.265E+01	0.559E+02
0.379E+01	0.559E+02	0.379E+01	0.559E+02
0.493E+01	0.559E+02	0.493E+01	0.559E+02
0.606E+01	0.559E+02	0.606E+01	0.559E+02
0.720E+01	0.559E+02	0.720E+01	0.559E+02

LAYERED T-Theta CURVES

SOIL SET # 1

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	1	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	2	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	3	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

PILE TIP SOIL PARAMETERS

SOIL SET # 1

USER DEFINED

	Q Value in	T Value lbs
1	0.000E+00	0.000E+00
2	0.222E+00	0.362E+07
3	0.444E+00	0.624E+07
4	0.667E+00	0.829E+07
5	0.889E+00	0.995E+07
6	0.111E+01	0.113E+08
7	0.133E+01	0.125E+08
8	0.156E+01	0.136E+08
9	0.178E+01	0.145E+08
10	0.200E+01	0.153E+08

****
* PILE SEGMENT INFORMATION DATA *
****

NOTE: The Piles Sets consist of Pile Segments based on the User Input. The program groups all segments from all the different Pile Sets and assigns a reference number to each

The reference number for each segment together with the User Input Pile Set/Segment number is shown below. The Input section properties for each section/segment is also provided below.

The user is advised to double check these numbers

Number of segments found in all Piles (NPSEG) = 2

! -> SECTION DATA FOR SECTION/SEGMENT : 1 !

Input Pile Set Number = 1
Input Pile Set Segment = 1

Section Pile Length (L) = 6.0000000 ft

Nonlinear Section/Segment Material Properties

Material Option (MATOPT) = 1
(Please Refer to the Users Guide for Details)

- Concrete Stress Strain Properties

```
   Concrete Strength    (FPC) = 0.4000E+01 ksi
   Modulus of Elasticity (EC) = 0.4224E+04 ksi

   Gauss Integration Points for Concrete = 60

 - Steel Stress Strain Properties

   Mild Steel Yield Stress  (FY) =  0.600E+02 ksi
   Modulus of Elasticity    (ES) = 0.2900E+05 ksi

   Tubular Steel Yield Stress (FY) =  0.500E+02 ksi
   Modulus of Elasticity      (ES) = 0.2900E+05 ksi

 - Shape of Section : CIRCULAR

 - Steel and Confinement Data

   Number of Steel Layers         =   2
   Section/Segment Diameter       =  180.0000 in
   Tied/Spiral Reinforcement Flag =   1
   (NOTE : Spiral = 1, Tied   = 2)
   Confinement Flag               =   1
   (NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

 - Steel and Confinement Data

  Yield Stress of Confinement Steel =    60.00     ksi
  Spacing between Confinement Steel =    6.000     in
  Diameter of Confinement Steel     =   0.7500     in
   Outer Shell Thickness          =    1.00      in

 - Total Area of Steel Reinforcement  = 424.00 in^2

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing
                           in^2      in             ksi

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     1           56        4.00    108.00           0.00

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     2           52        3.85     96.00           0.00

-----------------------------------------------
! -> SECTION DATA FOR SECTION/SEGMENT :   2  !
-----------------------------------------------

Input Pile Set Number  =   1
Input Pile Set Segment =   2

Section Pile Length               (L) =    123.08000     ft

Nonlinear Section/Segment Material Properties
_____________________________________________

Material Option (MATOPT) =   1
(Please Refer to the Users Guide for Details)

 - Concrete Stress Strain Properties

   Concrete Strength    (FPC) = 0.6000E+01 ksi
   Modulus of Elasticity (EC) = 0.5173E+04 ksi

   Gauss Integration Points for Concrete = 60

 - Steel Stress Strain Properties

   Mild Steel Yield Stress  (FY) =  0.600E+02 ksi
   Modulus of Elasticity    (ES) = 0.2900E+05 ksi

   Tubular Steel Yield Stress (FY) =  0.500E+02 ksi
   Modulus of Elasticity      (ES) = 0.2900E+05 ksi
```

- Shape of Section : CIRCULAR

- Steel and Confinement Data

Number of Steel Layers = 2
Section/Segment Diameter = 120.0000 in
Tied/Spiral Reinforcement Flag = 1
(NOTE : Spiral = 1, Tied = 2)
Confinement Flag = 1
(NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

- Steel and Confinement Data

Yield Stress of Confinement Steel = 60.00 ksi
Spacing between Confinement Steel = 6.000 in
Diameter of Confinement Steel = 0.7500 in
Outer Shell Thickness = 1.00 in

- Total Area of Steel Reinforcement = 424.00 in^2

Layer	# Bars/Strands	Area in^2	Layer Dia. in	Prestressing ksi

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
1	56	4.00	108.00	0.00

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
2	52	3.85	96.00	0.00

PLOT OF THE QZ CURVE FOR THE TIP OF THE PILE

- USER DEFINED CURVE

SOIL SET	Z Value	Q Value	Z Value	Q Value	Z Value	Q Value
1	0.0000E+00	0.0000E+00	0.2222E+00	0.3615E+07	0.4444E+00	0.6244E+07
	0.6667E+00	0.8290E+07	0.8889E+00	0.9952E+07	0.1111E+01	0.1134E+08
	0.1333E+01	0.1253E+08	0.1556E+01	0.1357E+08	0.1778E+01	0.1448E+08
	0.2000E+01	0.1530E+08				

****
* PILE SET DATA DESCRIPTION *
****

NOTE : The piles are organized in pile sets. Each pile set is composed of pile segments that are input by the User. A pile set is attached to each pile in order to describe its composition

List of Piles Sets and Piles

Pile Set	Piles (that are assigned the Pile Set)
1	1, 2, 3, 4

Total Length for Each Pile Set

Pile Set	Length
1	1548.96

****
* INPUT FOR STRUCTURAL ANALYSIS *
****

Number of Joints = 82

BSI FB-MultiPier - File: P8-LCS.out Wednesday, March 23, 2011

Number of Different Element Types = 3
Number of Load Conditions = 1

WARNING : Pier Columns and Cap are linear
No P-Delta or Moment Magnification is included
Nonlinear should be used for final design

PIER SUMMARY

Stiffness of Foundation Requested - NO Pier Exists

****
* MATERIAL PROPERTIES FOR PILE CAP AND FRAME (PIER) ELEMENTS *
****

****
* PILE CAP PROPERTIES - USING SHELL ELEMENTS *
****

Modulus of Elasticity = 0.4224E+04 (ksi)
Poissons Ratio = 0.2000
Shear Modulus = 0.1760E+04 (ksi)
Self Weight = 160.0000 (pcf)
Thickness = 0.1300E+02 (ft)

! -> PROPERTIES FOR CONNECTOR ELEMENTS (DEFAULTED) !

NOTE : These Elements are generated by the program at the Pier Column Bases where they connect with the Pile Cap. The purpose for these elements is to spread the column base load over an area on the Pile Cap and therefore avoid High Stress Concentrations

NOTE : The material property number for these elements is defaulted to 1. The material numbers for the properties of the rest of the Pier elements start form 2

-> SECTION DATA FOR SECTION/SEGMENT : 1

Member Property Number = 1
Axial Area, A = 24336. (in^2)
Torsional Moment of Inertia, J = 0.31637E+10 (in^4)
Moment of Inertia, 3 - Axis = 0.31637E+10 (in^4)
Moment of Inertia, 2 - Axis = 0.31637E+10 (in^4)
Modulus of Elasticity, E = 4224.0 (ksi)
Shear Modulus, G = 1760.0 (ksi) (used for Torsion)
Weight Density = 0.00000 (K/in^3)

! -> PROPERTIES FOR PIER COLUMNS !

Member Property Number = 2
Axial Area, A = 0.00000 (in^2)
Torsional Moment of Inertia, J = 0.00000 (in^4)
Moment of Inertia, 3 - Axis = 0.00000 (in^4)
Moment of Inertia, 2 - Axis = 0.00000 (in^4)
Modulus of Elasticity, E = 0.00000 (ksi)
Shear Modulus, G = 0.00000 (ksi) (used for Torsion)
Weight Density = 0.00000 (K/in^3)

****
* PIER MEMBER CONNECTIVITY *
****

ELEMENT NUMBER	NODES I	NODES J	MATERIAL NUMBER
1	82	60	1
2	82	54	1
3	82	47	1
4	82	53	1

****
* GENERAL LOAD DATA *
****

The table below shows the Applied Loads for every Load Case. The values in the table represent the magnitute of the Loads in the specified units

- Applied Load

NODE	LOAD	X (Kips)	Y (Kips)	Z (Kips)	MXX (Kip-ft)	MYY (Kip-ft)	MZZ (Kip-ft)
82	1	2852.00	0.00	0.00	0.00	0.00	0.00
82	2	0.00	3615.00	0.00	0.00	0.00	0.00
82	3	0.00	0.00	11931.00	0.00	0.00	0.00
82	4	0.00	0.00	0.00	278907.00	0.00	0.00
82	5	0.00	0.00	0.00	0.00	-117011.00	0.00
82	6	0.00	0.00	0.00	0.00	0.00	5370.00

****
* *
* ANALYSIS RESULTS *
* *
****

****
* RESULTS FOR LOAD CASE # 1 *
****

NOTE : PY Multipliers are applied Lead to Trail row based on the actual displacement. If there is no displacement in a Lateral direction they are defaulted to 1.0. This can happen in Axial Load and one direction lateral load cases

PY Multipliers are Applied to A Pile Group

PILE#	X-PYM	Y-PYM
1	0.415E+00	0.100E+01
2	0.575E+00	0.100E+01
3	0.415E+00	0.100E+01
4	0.575E+00	0.100E+01

****
* CONVERGENCE REPORT *
****

The Solution Converged in 5 Iterations

Summary of Abs Maximum Out-Of-Balance Forces

FZZ =	1.655	Kips
FXX =	2.186	Kips
FYY =	97.482	Kips
MXX =	1.087	Kip-in
MYY =	0.000	Kip-in
MZZ =	38.814	Kip-in

Summary of Displacements at Pile Heads

Node	X (in)	Y (in)	Z (in)
1	0.2879	0.1343	0.1439
2	0.2875	0.1469	0.3023
3	0.3130	0.1399	-0.0047
4	0.3124	0.1460	0.1596

Final Displacements

Load Case # 1

Node	X (in)	Y (in)	Z (in)	Rx (rad)	Ry (rad)	Rz (rad)
Pile Number 1						
1	0.2879	0.1343	0.1439	0.0000	-0.0007	0.0000
83	0.2221	0.1269	0.1384	0.0001	-0.0007	0.0000
84	0.1603	0.1065	0.1321	0.0003	-0.0006	0.0000

85	0.1071	0.0794	0.1257	0.0003	-0.0005	0.0000
86	0.0647	0.0530	0.1192	0.0003	-0.0004	0.0000
87	0.0334	0.0312	0.1126	0.0002	-0.0003	0.0000
88	0.0121	0.0152	0.1066	0.0001	-0.0002	0.0000
89	-0.0009	0.0049	0.1011	0.0001	-0.0001	0.0000
90	-0.0075	-0.0007	0.0962	0.0000	0.0000	0.0000
91	-0.0097	-0.0030	0.0917	0.0000	0.0000	0.0000
92	-0.0092	-0.0033	0.0876	0.0000	0.0000	0.0000
93	-0.0074	-0.0026	0.0840	0.0000	0.0000	0.0000
94	-0.0051	-0.0017	0.0807	0.0000	0.0000	0.0000
95	-0.0029	-0.0008	0.0779	0.0000	0.0000	0.0000
96	-0.0010	-0.0002	0.0754	0.0000	0.0000	0.0000
97	0.0005	0.0002	0.0733	0.0000	0.0000	0.0000
98	0.0020	0.0005	0.0715	0.0000	0.0000	0.0000

Pile Number 2

2	0.2875	0.1469	0.3023	-0.0001	-0.0005	0.0000
99	0.2320	0.1459	0.2896	0.0001	-0.0006	0.0000
100	0.1746	0.1274	0.2755	0.0003	-0.0006	0.0000
101	0.1213	0.0981	0.2612	0.0003	-0.0005	0.0000
102	0.0765	0.0677	0.2469	0.0003	-0.0004	0.0000
103	0.0423	0.0414	0.2325	0.0002	-0.0003	0.0000
104	0.0184	0.0215	0.2194	0.0002	-0.0002	0.0000
105	0.0034	0.0081	0.2074	0.0001	-0.0001	0.0000
106	-0.0045	0.0005	0.1966	0.0001	-0.0001	0.0000
107	-0.0076	-0.0030	0.1868	0.0000	0.0000	0.0000
108	-0.0076	-0.0037	0.1781	0.0000	0.0000	0.0000
109	-0.0061	-0.0031	0.1702	0.0000	0.0000	0.0000
110	-0.0041	-0.0021	0.1633	0.0000	0.0000	0.0000
111	-0.0023	-0.0011	0.1573	0.0000	0.0000	0.0000
112	-0.0008	-0.0003	0.1520	0.0000	0.0000	0.0000
113	0.0004	0.0002	0.1476	0.0000	0.0000	0.0000
114	0.0015	0.0006	0.1439	0.0000	0.0000	0.0000

Pile Number 3

3	0.3130	0.1399	-0.0047	0.0005	-0.0006	0.0000
115	0.2481	0.0954	-0.0033	0.0004	-0.0007	0.0000
116	0.1827	0.0562	-0.0013	0.0004	-0.0007	0.0000
117	0.1236	0.0271	0.0011	0.0002	-0.0006	0.0000
118	0.0752	0.0083	0.0036	0.0001	-0.0004	0.0000
119	0.0393	-0.0018	0.0058	0.0001	-0.0003	0.0000
120	0.0151	-0.0059	0.0075	0.0000	-0.0002	0.0000
121	0.0007	-0.0062	0.0088	0.0000	-0.0001	0.0000
122	-0.0064	-0.0049	0.0096	0.0000	0.0000	0.0000
123	-0.0085	-0.0031	0.0101	0.0000	0.0000	0.0000
124	-0.0079	-0.0016	0.0103	0.0000	0.0000	0.0000
125	-0.0060	-0.0006	0.0103	0.0000	0.0000	0.0000
126	-0.0040	-0.0001	0.0102	0.0000	0.0000	0.0000
127	-0.0021	0.0001	0.0101	0.0000	0.0000	0.0000
128	-0.0007	0.0002	0.0100	0.0000	0.0000	0.0000
129	0.0006	0.0001	0.0098	0.0000	0.0000	0.0000
130	0.0017	0.0001	0.0096	0.0000	0.0000	0.0000

Pile Number 4

4	0.3124	0.1460	0.1596	0.0005	-0.0006	0.0000
131	0.2488	0.0957	0.1533	0.0005	-0.0007	0.0000
132	0.1848	0.0540	0.1462	0.0004	-0.0006	0.0000
133	0.1265	0.0241	0.1390	0.0002	-0.0006	0.0000
134	0.0785	0.0052	0.1317	0.0001	-0.0004	0.0000
135	0.0422	-0.0049	0.1244	0.0001	-0.0003	0.0000
136	0.0173	-0.0088	0.1177	0.0000	-0.0002	0.0000
137	0.0020	-0.0089	0.1116	0.0000	-0.0001	0.0000
138	-0.0059	-0.0071	0.1060	0.0000	-0.0001	0.0000
139	-0.0086	-0.0048	0.1010	0.0000	0.0000	0.0000
140	-0.0083	-0.0027	0.0965	0.0000	0.0000	0.0000
141	-0.0066	-0.0012	0.0924	0.0000	0.0000	0.0000
142	-0.0044	-0.0003	0.0888	0.0000	0.0000	0.0000
143	-0.0024	0.0001	0.0857	0.0000	0.0000	0.0000
144	-0.0008	0.0003	0.0829	0.0000	0.0000	0.0000
145	0.0005	0.0003	0.0805	0.0000	0.0000	0.0000
146	0.0016	0.0002	0.0786	0.0000	0.0000	0.0000

SUM OF TOTAL SOIL SPRING LOADS

CHECK: Total Load Carried by the Soil
(Sum of NF+FF Soil Spring Loads)

X Direction	=	2752.4492	Kips
Y Direction	=	3606.9292	Kips
Z Direction	=	22934.4890	Kips
Sum of Tip Forces	=	4938.6596	Kips

Summary of Pile Forces for Load CASE 1

1. Axial Force (Kips)

Pile #	Maximum Force	Minimum Force
1	-0.12489E+04	-0.47231E+04
2	-0.25783E+04	-0.10299E+05
3	0.38176E+03	-0.17603E+03
4	-0.13792E+04	-0.52697E+04

2. Pile Shear Force in 2 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.43882E+03	-0.15774E+03
2	0.74539E+03	-0.16821E+03
3	0.52479E+03	-0.12532E+03
4	0.74022E+03	-0.18451E+03

3. Pile Shear Force in 3 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.11061E+03	-0.11013E+04
2	0.12556E+03	-0.13108E+04
3	0.12976E+03	-0.39582E+03
4	0.20465E+03	-0.29104E+03

4. Bending Moment About 2 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.1955E+05	0.56473E+02	-3819.
2	2	0.00000E+00	0.2522E+05	0.56473E+02	-4260.
3	3	0.00000E+00	514.7	0.40337E+02	-4261.
4	139	0.88743E+02	404.4	0.24203E+02	-7685.

5. Bending Moment About 3 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	436.0	0.40337E+02	-7117.
2	2	0.00000E+00	7824.	0.48405E+02	-6877.
3	3	0.00000E+00	4735.	0.48405E+02	-5197.
4	4	0.00000E+00	6558.	0.40337E+02	-7700.

****
* ANALYTICAL FORCE RESULTS FOR PIER *
****

ELEM NO.	PROP NO.	NODE NO.	LOAD CASE	FAX (Kips)	F22 (Kips)	F33 (Kips)	M22 (Kip-ft)	M33 (Kip-ft)	TORQUE (Kip-ft)	D/C (Ratio)
- Connector Beam Segments										
1	1	82	1	-340.17	3741.17	-1605.86	26095.26	60793.94	39194.79	0.00
	1	60		340.17	-3741.17	1605.86	0.00	0.00	-39194.79	0.00
2	1	82	1	-67.52	-2712.43	-1370.54	8565.86	-16952.67	13967.26	0.00
	1	54		67.52	2712.43	1370.54	0.00	0.00	-13967.26	0.00
3	1	82	1	655.66	19242.88	1322.29	-21487.16	312696.78	-42640.02	0.00
	1	47		-655.66	-19242.88	-1322.29	0.00	0.00	42640.02	0.00
4	1	82	1	8.63	-8340.62	1248.63	-7803.97	-52128.86	-13036.89	0.00
	1	53		-8.63	8340.62	-1248.63	0.00	0.00	13036.89	0.00

****

```
 *   ANALYTICAL PILE CAP - SHELL STRESS RESULTS   *
 ************************************************


 **********************
 *   DAMPING FORCES   *
 **********************

   Node #      FXX          FYY          FZZ          MXX          MYY          MZZ
             Kip          Kip          Kip          Kip          Kip          Kip


 ************************************
 *   UNIAXIAL INTERACTION DIAGRAM   *
 ************************************

 NOTE : 1. The tables below show the values on the Interaction
           Diagrams for each section which correspond to the
           section capacity
        2. The numbering of the SECTIONS/SEGMENTS is shown
           previously in the output file

 ---------------------------------------
 ! -> Pile Cross Section Number =    1 !
 ---------------------------------------

 Diagram Data
 ____________

 Maximum Tension Force                      =  0.4820E+05 (Kips)
 Local 2 Axis Shift for Plastic Centroid    =  0.1237E-14 (in)
 Local 3 Axis Shift for Plastic Centroid    = -0.7486E-09 (in)

 Recommended Phi Values
 ______________________

 Concrete, Rectangular members           Phi =  0.70
 Concrete, Circular members with Ties    Phi =  0.70
 Concrete, Circular members with Spirals Phi =  0.75

 Phi Factors Used
 ________________

 Phi Factor for Concrete Control            =   0.7500
 Phi Factor for Steel in Compression        =   0.9000
 Phi Factor for Steel in Tension            =   0.9500
 Phi Factor for Steel in Bending            =   1.0000
 Transition Phi Factor according to AASHTO

 Units for Axial Force : Kips,  Units for Moment : Kip-ft

    Axial     Moment(+3)  Moment(-2)  Moment(-3)  Moment(+2)

  0.4820E+05  0.0000E+00  0.0000E+00  0.0000E+00  0.0000E+00
  0.4397E+05  0.1425E+06  0.1425E+06  0.1425E+06  0.1425E+06
  0.3941E+05  0.1572E+06  0.1572E+06  0.1572E+06  0.1572E+06
  0.3504E+05  0.1687E+06  0.1687E+06  0.1687E+06  0.1687E+06
  0.3074E+05  0.1749E+06  0.1749E+06  0.1749E+06  0.1749E+06
  0.2629E+05  0.1777E+06  0.1777E+06  0.1777E+06  0.1777E+06
  0.2204E+05  0.1794E+06  0.1794E+06  0.1794E+06  0.1794E+06
  0.1754E+05  0.1877E+06  0.1877E+06  0.1877E+06  0.1877E+06
  0.1315E+05  0.1951E+06  0.1951E+06  0.1951E+06  0.1951E+06
  0.8836E+04  0.2009E+06  0.2009E+06  0.2009E+06  0.2009E+06
  0.4379E+04  0.2067E+06  0.2067E+06  0.2067E+06  0.2067E+06
  0.7769E-01  0.2109E+06  0.2109E+06  0.2109E+06  0.2109E+06
 -0.6898E+04  0.1877E+06  0.1877E+06  0.1877E+06  0.1877E+06
 -0.1348E+05  0.1894E+06  0.1894E+06  0.1894E+06  0.1894E+06
 -0.2023E+05  0.1912E+06  0.1912E+06  0.1912E+06  0.1912E+06
 -0.2690E+05  0.1869E+06  0.1869E+06  0.1869E+06  0.1869E+06
 -0.3368E+05  0.1773E+06  0.1773E+06  0.1773E+06  0.1773E+06
 -0.4042E+05  0.1633E+06  0.1633E+06  0.1633E+06  0.1633E+06
 -0.4761E+05  0.1439E+06  0.1439E+06  0.1439E+06  0.1439E+06
 -0.4853E+05  0.1410E+06  0.1410E+06  0.1410E+06  0.1410E+06
 -0.5008E+05  0.1361E+06  0.1361E+06  0.1361E+06  0.1361E+06
 -0.5139E+05  0.1319E+06  0.1319E+06  0.1319E+06  0.1319E+06
 -0.5259E+05  0.1279E+06  0.1279E+06  0.1279E+06  0.1279E+06
 -0.5371E+05  0.1239E+06  0.1239E+06  0.1239E+06  0.1239E+06
 -0.5469E+05  0.1204E+06  0.1204E+06  0.1204E+06  0.1204E+06
 -0.5552E+05  0.1174E+06  0.1174E+06  0.1174E+06  0.1174E+06
 -0.5695E+05  0.1100E+06  0.1120E+06  0.1100E+06  0.1120E+06
 -0.5814E+05  0.1075E+06  0.1075E+06  0.1075E+06  0.1075E+06
 -0.5945E+05  0.9967E+05  0.1019E+06  0.9967E+05  0.1019E+06
 -0.6046E+05  0.9587E+05  0.9753E+05  0.9587E+05  0.9753E+05
```

```
---------------------------------------
! -> Pile Cross Section Number =    2 !
---------------------------------------
```

Diagram Data

Maximum Tension Force = 0.3972E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = -0.2885E-15 (in)
Local 3 Axis Shift for Plastic Centroid = -0.6414E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.3972E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.2923E+05	0.1203E+06	0.1203E+06	0.1203E+06	0.1203E+06
0.2532E+05	0.1265E+06	0.1265E+06	0.1265E+06	0.1265E+06
0.2177E+05	0.1346E+06	0.1346E+06	0.1346E+06	0.1346E+06
0.1803E+05	0.1432E+06	0.1432E+06	0.1432E+06	0.1432E+06
0.1444E+05	0.1490E+06	0.1490E+06	0.1490E+06	0.1490E+06
0.1088E+05	0.1475E+06	0.1475E+06	0.1475E+06	0.1475E+06
0.7226E+04	0.1453E+06	0.1453E+06	0.1453E+06	0.1453E+06
0.3610E+04	0.1484E+06	0.1484E+06	0.1484E+06	0.1484E+06
-0.4144E-01	0.1502E+06	0.1502E+06	0.1502E+06	0.1502E+06
-0.5800E+04	0.1268E+06	0.1268E+06	0.1268E+06	0.1268E+06
-0.1170E+05	0.1305E+06	0.1305E+06	0.1305E+06	0.1305E+06
-0.1744E+05	0.1337E+06	0.1337E+06	0.1337E+06	0.1337E+06
-0.2328E+05	0.1339E+06	0.1339E+06	0.1339E+06	0.1339E+06
-0.2902E+05	0.1292E+06	0.1292E+06	0.1292E+06	0.1292E+06
-0.3498E+05	0.1218E+06	0.1218E+06	0.1218E+06	0.1218E+06
-0.4119E+05	0.1107E+06	0.1107E+06	0.1107E+06	0.1107E+06
-0.4369E+05	0.1050E+06	0.1050E+06	0.1050E+06	0.1050E+06
-0.4572E+05	0.9985E+05	0.9985E+05	0.9985E+05	0.9985E+05
-0.4823E+05	0.9275E+05	0.9275E+05	0.9275E+05	0.9275E+05
-0.5091E+05	0.8466E+05	0.8466E+05	0.8466E+05	0.8466E+05
-0.5350E+05	0.7561E+05	0.7644E+05	0.7561E+05	0.7644E+05
-0.5585E+05	0.6814E+05	0.6854E+05	0.6814E+05	0.6854E+05
-0.5832E+05	0.5940E+05	0.6011E+05	0.5940E+05	0.6011E+05
-0.6098E+05	0.4891E+05	0.5047E+05	0.4891E+05	0.5047E+05
-0.6386E+05	0.3943E+05	0.3943E+05	0.3943E+05	0.3943E+05
-0.6616E+05	0.3020E+05	0.3020E+05	0.3020E+05	0.3020E+05
-0.6883E+05	0.1921E+05	0.1921E+05	0.1921E+05	0.1921E+05

```
*********************************************************
*     FINAL MAXIMUMS/MINIMUMS FOR ALL LOAD CASES        *
*                     PIER # 1                          *
*********************************************************
```

Maximum/Minimum Pile Forces

	Value		Load	Comb.	Pile
Max Shear in 2 Direction	0.7454E+03	Kip	1	0	2
Min Shear in 2 Direction	-0.1845E+03	Kip	1	0	4
Max Shear in 3 Direction	0.2046E+03	Kip	1	0	4
Min Shear in 3 Direction	-0.1311E+04	Kip	1	0	2
Max Moment about 2 Axis	0.2522E+05	Kip-ft	1	0	2
Min Moment about 2 Axis	-0.7685E+04	Kip-ft	1	0	4
Max Moment About 3 Axis	0.7824E+04	Kip-ft	1	0	2
Min Moment About 3 Axis	-0.7700E+04	Kip-ft	1	0	4
Max Axial Force	0.3818E+03	Kip	1	0	3
Min Axial Force	-0.1030E+05	Kip	1	0	2
Absolute Max Torque	0.1372E+01	Kip-ft	1	0	3
Max Demand/Capacity Ratio	0.1968E+00		1	0	2

Maximum/Minimum Soil Forces

Max Axial Soil Force	0.9641E+03	Kip	1	0	2
Min Axial Soil Force	0.0000E+00	Kip	1	0	1
Max Lateral Force in X dir	0.2130E+03	Kip	1	0	4
Min Lateral Force in X dir	-0.4238E+02	Kip	1	0	4
Max Lateral Force in Y dir	0.3175E+03	Kip	1	0	2
Min Lateral Force in Y dir	-0.4750E+02	Kip	1	0	4
Max Torsional Soil Force	0.7106E+03	Kip-ft	1	0	2

Maximum/Minimum Pile Displacements

Max Axial Displacement	0.3023E+00	in	1	0	2
Min Axial Displacement	-0.4690E-02	in	1	0	3
Max Displacement in X	0.3130E+00	in	1	0	3
Min Displacement in X	-0.9712E-02	in	1	0	1
Max Displacement in Y	0.1469E+00	in	1	0	2
Min Displacement in Y	-0.8927E-02	in	1	0	4

Maximum/Minimum Column Forces

	Value		Load	Comb.	Column
Max Axial Force	0.0000E+00	Kip	0	0	0
Min Axial Force	0.0000E+00	Kip	0	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	1
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	0
Absolute Max Torque	0.1000E+06	Kip-ft	1	0	0

Maximum/Minimum Pier Cap Forces

Max Axial Force	0.0000E+00	Kip	0	0
Min Axial Force	0.0000E+00	Kip	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0
Max Torque	-0.1000E+06	Kip-ft	1	0
Min Torque	0.0000E+00	Kip-ft	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0

****

Foundation Flexibilty for given loads

****

Averaged flexiblity

	Fx	Fy	Fz	Mx	My	Mz
DeltaX	0.8220E-04	0.5074E-06	-0.1074E-05	0.2759E-08	-0.6228E-07	0.4833E-08
DeltaY	0.5074E-06	0.3866E-04	-0.2551E-06	0.2659E-08	-0.2001E-08	-0.4050E-10
DeltaZ	-0.1074E-05	-0.2551E-06	0.1483E-04	-0.1415E-08	0.3331E-08	-0.6931E-09
ThetaX	0.2759E-08	0.2659E-08	-0.1415E-08	0.9929E-10	-0.8842E-11	0.2730E-11
ThetaY	-0.6228E-07	-0.2001E-08	0.3331E-08	-0.8842E-11	0.5008E-09	-0.4173E-11
ThetaZ	0.4833E-08	-0.4050E-10	-0.6931E-09	0.2730E-11	-0.4173E-11	0.3115E-09

****

Foundation Stiffness for given loads

****

STIFFNESS

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.1345E+05	-0.7238E+02	0.5708E+03	-0.2106E+06	0.1663E+07	-0.1833E+06
Fy	-0.7238E+02	0.2592E+05	0.3582E+03	-0.6802E+06	0.8024E+05	0.1233E+05
Fz	0.5708E+03	0.3582E+03	0.6764E+05	0.9025E+06	-0.3605E+06	0.1290E+06
Mx	-0.2106E+06	-0.6802E+06	0.9025E+06	0.1012E+11	0.1431E+09	-0.8164E+08
My	0.1663E+07	0.8024E+05	-0.3605E+06	0.1431E+09	0.2209E+10	0.1739E+07
Mz	-0.1833E+06	0.1233E+05	0.1290E+06	-0.8164E+08	0.1739E+07	0.3215E+10

****

Foundation Stiffness in STANDARD X-Y-Z directions

BSI FB-MultiPier - File: P8-LCS.out Wednesday, March 23, 2011
(FB-Pier->Stardard, X->X, Y->Z & -Z->Y)
Translations: kips/in Rotations: kip-in/rad
****

Stiffness in standard X-Y-Z

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.1345E+05	-0.5708E+03	-0.7238E+02	-0.2106E+06	0.1833E+06	0.1663E+07
Fy	-0.5708E+03	0.6764E+05	-0.3582E+03	-0.9025E+06	0.1290E+06	0.3605E+06
Fz	-0.7238E+02	-0.3582E+03	0.2592E+05	-0.6802E+06	-0.1233E+05	0.8024E+05
Mx	-0.2106E+06	-0.9025E+06	-0.6802E+06	0.1012E+11	0.8164E+08	0.1431E+09
My	0.1833E+06	0.1290E+06	-0.1233E+05	0.8164E+08	0.3215E+10	-0.1739E+07
Mz	0.1663E+07	0.3605E+06	0.8024E+05	0.1431E+09	-0.1739E+07	0.2209E+10

```
!------------------------------------------------------------!
!                                                            !
!        The University of Florida, Florida Department       !
!        of Transportation, Drs. Marc Hoit, Mike McVay       !
!        Cliff Hays, Mark Williams, Petros Christou, and     !
!                        Jae H. Chung                        !
!         disclaim any warranty, expressed or implied,       !
!          including but not limited to, any implied         !
!         warranty of fitness for a particular purpose       !
!            or accuracy of the FB-Pier software             !
!     The  developers shall not be liable for any damages    !
!          incurred through the use of FB-MultiPier          !
!                                                            !
!                                                            !
!              :::: F B - M U L T I P I E R ::::             !
!                  FB-MultiPier Version 4.13                 !
!                                                            !
!                                                            !
!         Written by Marc Hoit, Mike McVay, Cliff Hays       !
!         Mark Williams, Petros Christou, Jae H. Chung.      !
!                                                            !
!      Civil & Coastal Engineering, University of Florida    !
!      Supported by Florida Department of Transportation     !
!           and the Federal Highway Administration           !
!                                                            !
!             The program calculates the Response            !
!           of the Bridge Pier Pile Soil Structures          !
!                                                            !
!            The Analysis includes PreLoad, Static,          !
!                Transient Dynamic or Push Over              !
!                                                            !
!        The Program Handles NonLinear Soil Behavior,        !
!  Linear Pile Cap and Linear and NonLinear Piles and Piers  !
!                                                            !
!                                                            !
!       Contact: Bridge Software Institute for Support       !
!                HTTP://BSI-WEB.CE.UFL.EDU                   !
!                                                            !
!------------------------------------------------------------!

Analysis Start Time  :****************************************
Analysis End Time    :****************************************
Analysis Duration    :****************************************

Input Data File Name : P1-LCS.IN
Analysis Date        : 3-15-2011
License ID Number    : 432478881


********************
*   PROJECT DATA   *
********************

Project Client      : CRC / WSDOT / ODOT
Project Name        : Columbia River Crossing
Project Manager     : R. Turton
Computed by         : NRH
Project Description : SB - Pier 1 - Liquefaction + Contraction Scour


**************************************
*   SELECTIVE PRINT OUTPUT CONTROL   *
**************************************
                                      Print On
Pile Displacements                      YES
Pile Element Forces                      NO
Missing Pile ID Numbers                  NO
Pier Columns and Pier Cap Displacements  NO
Pier Columns and Pier Cap Force Output  YES
Pier Material Properties                YES
Soil Response Forces                     NO
Soil Data per Layer                     YES
Soil Curve data per Pile Node            NO
Soil Graph per Pile Node                 NO
Out of Balance Forces                    NO
Bridge Simulation Spring Force Output    NO
Bridge Span Displacements                NO
Bridge Span Element Forces               NO
Bridge Span Properties                   NO
Pile Cap Stress                          NO
```

```
BSI FB-MultiPier - File: P1-LCS.out                                  Wednesday, March 23, 2011
 Material Stress Strain Curve Data          NO
 Interaction Diagram Data For Pile and Pier YES
 Pile and Pier coordinates                  NO
 Generate XML file                          NO


 *************
 *   UNITS   *
 *************

 Analysis Units Specified are: English Mixed (Kips & Ft some lbs & in)


 ***************************
 *   CONTROL INFORMATION   *
 ***************************

 Number of Piers               (NUMPIERS) =    1
 Maximum Number of Iterations    (MAXITN) =   50
 Tolerance                        (TOLER) =    10.000000     Kips

 NOTE : The following soil information is not applicable in the coulmn analysis problems

 Soil Behavior Option             (IFLEX) =    0
    IFLEX = 0 -> PY Multipliers are Input
    IFLEX = 1 -> PY Multipliers Defaulted to 1.0
    IFLEX = 2 -> No SOIL (Must use tip springs)

 Soil resistance due to Pile Rotation About 2 and 3 Axis (NSODF) =    4
    NSDOF = 4 -> NO Resistance Accounted
    NSDOF = 6 -> Resistance Accounted

 Linear Pile TIP Spring Option     (ITIP) =    0
    ITIP = 0 -> NO spring
    ITIP = 1 -> Axial only
    ITIP = 2 -> All DOF

 Linear Pile TIP Spring Stiffness (TSTIF) =         0.00 kips/in


 **********************
 *   SOIL BEHAVIOR    *
 **********************

 PY Multipliers will be used (IFLEX = 0)


 ************************************************
 *   LOAD FACTORS FOR SELF WEIGHT AND BUOYANCY   *
 ************************************************

 LOAD CASE     SELF WEIGHT     BUOYANCY
     #            FACTOR         FACTOR
     1             1.00           1.00


 ***************************
 *   GENERAL INFORMATION   *
 ***************************

 Static / Cyclic Load (KCYC)      =    0
    KCYC = 0 -> Static Load
    KCKC > 0 -> Cyclic Load (# Cycles)

 Fixity of Pile Cap (KFIX)        =    1
    KFIX = 0 -> Pinned Head
    KFIX = 1 -> Fixed head

 Bearing of Cap on Soil           =  NO


 *****************************
 *   GRID DATA INFORMATION   *
 *****************************

 NOTE: X-Grid : Distance between axes along the X-Axis
       Y-Grid : Distance between axes along the Y-Axis

 Number of Grid Points in X-Direction (NPX) =     5
 Number of Grid Points in X-Direction (NPY) =     5

 Grid Spacing in the X Direction : (inches)
      90.00     150.00     150.00      90.00
```

Grid Spacing in the Y Direction : (inches)
120.00 450.00 450.00 120.00

****
* ANALYSIS OPTIONS *
****

Type of Stiffness = Secant Stiffness
Type of Structure = Full
Type of Analysis = Static Analysis

****
* INPUT SOIL DATA - GIVEN BY LAYER *
****

NOTE : The following data is used to define Springs
for each Soil Layer to determine the Soil
Behavior during the analysis

LAYERED P-Y CURVES

SOIL SET # 1

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	1	1	0.3300E+02	0.5500E+02	0.1250E+03
			0.3300E+02	0.5500E+02	0.1250E+03
1	2	1	0.6000E+01	0.4600E+01	0.1073E+03
			0.6000E+01	0.4600E+01	0.1073E+03
1	3	1	0.6000E+01	0.7500E+01	0.1212E+03
			0.6000E+01	0.7500E+01	0.1212E+03
1	4	1	0.3500E+02	0.5000E+02	0.1212E+03
			0.3500E+02	0.5000E+02	0.1212E+03
1	5	1	0.4500E+02	0.1250E+03	0.1367E+03
			0.4500E+02	0.1250E+03	0.1367E+03
1	6	1	0.4500E+02	0.1500E+03	0.1402E+03
			0.4500E+02	0.1500E+03	0.1402E+03

LAYERED T-Z CURVES

SOIL SET # 1

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00
	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00

0.114E+01	0.000E+00	0.114E+01	0.000E+00
0.152E+01	0.000E+00	0.152E+01	0.000E+00
0.265E+01	0.000E+00	0.265E+01	0.000E+00
0.379E+01	0.000E+00	0.379E+01	0.000E+00
0.493E+01	0.000E+00	0.493E+01	0.000E+00
0.606E+01	0.000E+00	0.606E+01	0.000E+00
0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00
	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.546E+01	0.380E+00	0.147E+02
	0.760E+00	0.679E+01	0.760E+00	0.182E+02
	0.114E+01	0.707E+01	0.114E+01	0.190E+02
	0.152E+01	0.707E+01	0.152E+01	0.190E+02
	0.265E+01	0.707E+01	0.265E+01	0.190E+02
	0.379E+01	0.707E+01	0.379E+01	0.190E+02
	0.493E+01	0.707E+01	0.493E+01	0.190E+02
	0.606E+01	0.707E+01	0.606E+01	0.190E+02
	0.720E+01	0.707E+01	0.720E+01	0.190E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
6	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

LAYERED T-Theta CURVES

SOIL SET # 1

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	1	1	0.1000E-01	0.0000E+00
			0.1000E-01	0.0000E+00

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	2	1	0.1000E-01	0.0000E+00
			0.1000E-01	0.0000E+00

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	3	1	0.1000E-01	0.0000E+00

```
                        0.1000E-01     0.0000E+00

 SET   LAYER   MODEL     SHEAR M.       TAU MAX
                           ksi            psf
  1      4       1      0.1000E-01     0.0000E+00
                        0.1000E-01     0.0000E+00

 SET   LAYER   MODEL     SHEAR M.       TAU MAX
                           ksi            psf
  1      5       1      0.1000E-01     0.0000E+00
                        0.1000E-01     0.0000E+00

 SET   LAYER   MODEL     SHEAR M.       TAU MAX
                           ksi            psf
  1      6       1      0.1000E-01     0.0000E+00
                        0.1000E-01     0.0000E+00
```

PILE TIP SOIL PARAMETERS

SOIL SET # 1

USER DEFINED

	Q Value in	T Value lbs
1	0.000E+00	0.000E+00
2	0.222E+00	0.362E+07
3	0.444E+00	0.624E+07
4	0.667E+00	0.829E+07
5	0.889E+00	0.995E+07
6	0.111E+01	0.113E+08
7	0.133E+01	0.125E+08
8	0.156E+01	0.136E+08
9	0.178E+01	0.145E+08
10	0.200E+01	0.153E+08

```
************************************
*   PILE SEGMENT INFORMATION DATA  *
************************************
```

NOTE: The Piles Sets consist of Pile Segments based on the User Input. The program groups all segments from all the different Pile Sets and assigns a reference number to each

The reference number for each segment together with the User Input Pile Set/Segment number is shown below. The Input section properties for each section/segment is also provided below.

The user is advised to double check these numbers

Number of segments found in all Piles (NPSEG) = 2

```
-----------------------------------------------
! -> SECTION DATA FOR SECTION/SEGMENT :   1  !
-----------------------------------------------
```

Input Pile Set Number = 1
Input Pile Set Segment = 1

Section Pile Length (L) = 6.0000000 ft

Nonlinear Section/Segment Material Properties

Material Option (MATOPT) = 1
(Please Refer to the Users Guide for Details)

- Concrete Stress Strain Properties

  Concrete Strength (FPC) = 0.4000E+01 ksi
  Modulus of Elasticity (EC) = 0.4224E+04 ksi

  Gauss Integration Points for Concrete = 60

- Steel Stress Strain Properties

  Mild Steel Yield Stress (FY) = 0.600E+02 ksi
  Modulus of Elasticity (ES) = 0.2900E+05 ksi

  Tubular Steel Yield Stress (FY) = 0.500E+02 ksi

```
   Modulus of Elasticity      (ES) = 0.2900E+05 ksi

 - Shape of Section : CIRCULAR

 - Steel and Confinement Data

   Number of Steel Layers         =   2
   Section/Segment Diameter       =  180.0000 in
   Tied/Spiral Reinforcement Flag =   1
   (NOTE : Spiral = 1, Tied   = 2)
   Confinement Flag               =   1
   (NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

 - Steel and Confinement Data

  Yield Stress of Confinement Steel =    60.00     ksi
  Spacing between Confinement Steel =    6.000     in
  Diameter of Confinement Steel     =    1.000     in
   Outer Shell Thickness          =    1.00      in

 - Total Area of Steel Reinforcement  = 424.00 in^2

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing
                           in^2      in             ksi

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     1           56        4.00    108.00           0.00

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     2           52        3.85     96.00           0.00

-----------------------------------------------
! -> SECTION DATA FOR SECTION/SEGMENT :   2  !
-----------------------------------------------

Input Pile Set Number  =   1
Input Pile Set Segment =   2

Section Pile Length     .           (L) =    257.08000     ft

Nonlinear Section/Segment Material Properties
_____________________________________________

Material Option (MATOPT) =   1
(Please Refer to the Users Guide for Details)

 - Concrete Stress Strain Properties

   Concrete Strength    (FPC) = 0.6000E+01 ksi
   Modulus of Elasticity (EC) = 0.5173E+04 ksi

   Gauss Integration Points for Concrete = 60

 - Steel Stress Strain Properties

   Mild Steel Yield Stress  (FY) =  0.600E+02 ksi
   Modulus of Elasticity    (ES) = 0.2900E+05 ksi

   Tubular Steel Yield Stress (FY) =  0.500E+02 ksi
   Modulus of Elasticity      (ES) = 0.2900E+05 ksi

 - Shape of Section : CIRCULAR

 - Steel and Confinement Data

   Number of Steel Layers         =   2
   Section/Segment Diameter       =  120.0000 in
   Tied/Spiral Reinforcement Flag =   1
   (NOTE : Spiral = 1, Tied   = 2)
   Confinement Flag               =   1
   (NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)
```

- Steel and Confinement Data

Yield Stress of Confinement Steel = 60.00 ksi
Spacing between Confinement Steel = 6.000 in
Diameter of Confinement Steel = 1.000 in
Outer Shell Thickness = 1.00 in

- Total Area of Steel Reinforcement = 424.00 in^2

Layer	# Bars/Strands	Area in^2	Layer Dia. in	Prestressing ksi

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
1	56	4.00	108.00	0.00

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
2	52	3.85	96.00	0.00

PLOT OF THE QZ CURVE FOR THE TIP OF THE PILE

- USER DEFINED CURVE

SOIL SET	Z Value	Q Value	Z Value	Q Value	Z Value	Q Value
1	0.0000E+00	0.0000E+00	0.2222E+00	0.3615E+07	0.4444E+00	0.6244E+07
	0.6667E+00	0.8290E+07	0.8889E+00	0.9952E+07	0.1111E+01	0.1134E+08
	0.1333E+01	0.1253E+08	0.1556E+01	0.1357E+08	0.1778E+01	0.1448E+08
	0.2000E+01	0.1530E+08				

****
* PILE SET DATA DESCRIPTION *
****

NOTE : The piles are organized in pile sets. Each pile set is composed of pile segments that are input by the User. A pile set is attached to each pile in order to describe its composition

List of Piles Sets and Piles

Pile Set	Piles (that are assigned the Pile Set)
1	1, 2, 3, 4

Total Length for Each Pile Set

Pile Set	Length
1	3156.96

****
* INPUT FOR STRUCTURAL ANALYSIS *
****

Number of Joints = 82
Number of Different Element Types = 3
Number of Load Conditions = 1

WARNING : Pier Columns and Cap are linear
No P-Delta or Moment Magnification is included
Nonlinear should be used for final design

PIER SUMMARY

```
**************************************************************************
*   MATERIAL PROPERTIES FOR PILE CAP AND FRAME (PIER) ELEMENTS   *
**************************************************************************

***********************************************
* PILE CAP PROPERTIES - USING SHELL ELEMENTS *
***********************************************

Modulus of Elasticity =   0.4224E+04 (ksi)
Poissons Ratio        =       0.2000
Shear Modulus         =   0.1760E+04 (ksi)
Self Weight           =     160.0000 (pcf)
Thickness             =   0.1300E+02 (ft)

-----------------------------------------------------
! -> PROPERTIES FOR CONNECTOR ELEMENTS (DEFAULTED) !
-----------------------------------------------------

NOTE : These Elements are generated by the program at the Pier
       Column Bases where they connect with the Pile Cap. The
       purpose for these elements is to spread the column base
       load over an area on the Pile Cap and therefore avoid
       High Stress Concentrations

NOTE : The material property number for these elements is
       defaulted to 1. The material numbers for the properties
       of the rest of the Pier elements start form 2

-> SECTION DATA FOR SECTION/SEGMENT :   1

Member Property Number         =   1
Axial Area, A                  =    24336.      (in^2)
Torsional Moment of Inertia, J =   0.31637E+10 (in^4)
Moment of Inertia, 3 - Axis    =   0.31637E+10 (in^4)
Moment of Inertia, 2 - Axis    =   0.31637E+10 (in^4)
Modulus of Elasticity, E       =    4224.0     (ksi)
Shear Modulus, G               =    1760.0     (ksi) (used for Torsion)
Weight Density                 =       0.00000 (K/in^3)

---------------------------------
! -> PROPERTIES FOR PIER COLUMNS !
---------------------------------

Member Property Number         =   2
Axial Area, A                  =       0.00000 (in^2)
Torsional Moment of Inertia, J =       0.00000 (in^4)
Moment of Inertia, 3 - Axis    =       0.00000 (in^4)
Moment of Inertia, 2 - Axis    =       0.00000 (in^4)
Modulus of Elasticity, E       =       0.00000 (ksi)
Shear Modulus, G               =       0.00000 (ksi) (used for Torsion)
Weight Density                 =       0.00000 (K/in^3)


*********************************
*   PIER MEMBER CONNECTIVITY    *
*********************************

ELEMENT      NODES     MATERIAL
 NUMBER      I    J     NUMBER

   1        82   60       1
   2        82   54       1
   3        82   47       1
   4        82   53       1


*************************
*   GENERAL LOAD DATA   *
*************************

The table below shows the Applied Loads for every
Load Case. The values in the table represent the
magnitute of the Loads in the specified units

- Applied Load
  NODE  LOAD        X          Y          Z          MXX        MYY        MZZ
                  (Kips)     (Kips)     (Kips)    (Kip-ft)   (Kip-ft)   (Kip-ft)
    82     1    4787.00       0.00       0.00       0.00       0.00       0.00
    82     2       0.00    6844.00       0.00       0.00       0.00       0.00
    82     3       0.00       0.00   12108.00       0.00       0.00       0.00
```

82	4	0.00	0.00	0.00	343395.00	0.00	0.00
82	5	0.00	0.00	0.00	0.00	-109646.00	0.00
82	6	0.00	0.00	0.00	0.00	0.00	590.00

****
* *
* ANALYSIS RESULTS *
* *
****

****
* RESULTS FOR LOAD CASE # 1 *
****

NOTE : PY Multipliers are applied Lead to Trail row based on the actual displacement. If there is no displacement in a Lateral direction they are defaulted to 1.0. This can happen in Axial Load and one direction lateral load cases

PY Multipliers are Applied to A Pile Group

PILE#	X-PYM	Y-PYM
1	0.500E+00	0.100E+01
2	0.700E+00	0.100E+01
3	0.500E+00	0.100E+01
4	0.700E+00	0.100E+01

****
* CONVERGENCE REPORT *
****

The Solution Converged in 4 Iterations

Summary of Abs Maximum Out-Of-Balance Forces

FZZ =	0.443	Kips
FXX =	0.000	Kips
FYY =	21.858	Kips
MXX =	0.718	Kip-in
MYY =	0.000	Kip-in
MZZ =	25.474	Kip-in

Summary of Displacements at Pile Heads

Node	X (in)	Y (in)	Z (in)
1	0.4927	0.3408	0.3310
2	0.4920	0.3501	0.6245
3	0.4980	0.3515	0.0171
4	0.4972	0.3454	0.3159

Final Displacements

Load Case # 1

Node	X (in)	Y (in)	Z (in)	Rx (rad)	Ry (rad)	Rz (rad)
Pile Number 1						
1	0.4927	0.3408	0.3310	0.0002	-0.0011	0.0000
83	0.4023	0.3192	0.3262	0.0004	-0.0011	0.0000
84	0.3157	0.2816	0.3207	0.0006	-0.0011	0.0000
85	0.2375	0.2342	0.3148	0.0006	-0.0009	0.0000
86	0.1701	0.1855	0.3088	0.0006	-0.0008	0.0000
87	0.1143	0.1402	0.3028	0.0005	-0.0006	0.0000
88	0.0699	0.1007	0.2968	0.0005	-0.0005	0.0000
89	0.0359	0.0678	0.2906	0.0004	-0.0004	0.0000
90	0.0110	0.0416	0.2844	0.0003	-0.0003	0.0000
91	-0.0061	0.0219	0.2781	0.0002	-0.0002	0.0000
92	-0.0168	0.0079	0.2717	0.0001	-0.0001	0.0000
93	-0.0225	-0.0012	0.2653	0.0001	0.0000	0.0000
94	-0.0244	-0.0064	0.2588	0.0000	0.0000	0.0000
95	-0.0235	-0.0088	0.2523	0.0000	0.0000	0.0000

96	-0.0209	-0.0091	0.2457	0.0000	0.0000	0.0000
97	-0.0174	-0.0081	0.2391	0.0000	0.0000	0.0000
98	-0.0137	-0.0066	0.2327	0.0000	0.0000	0.0000
99	-0.0101	-0.0049	0.2263	0.0000	0.0000	0.0000
100	-0.0069	-0.0033	0.2200	0.0000	0.0000	0.0000
101	-0.0044	-0.0020	0.2138	0.0000	0.0000	0.0000
102	-0.0024	-0.0010	0.2077	0.0000	0.0000	0.0000
103	-0.0010	-0.0004	0.2017	0.0000	0.0000	0.0000
104	0.0000	0.0000	0.1958	0.0000	0.0000	0.0000
105	0.0005	0.0002	0.1900	0.0000	0.0000	0.0000
106	0.0008	0.0003	0.1844	0.0000	0.0000	0.0000
107	0.0008	0.0003	0.1788	0.0000	0.0000	0.0000
108	0.0007	0.0002	0.1733	0.0000	0.0000	0.0000
109	0.0006	0.0002	0.1680	0.0000	0.0000	0.0000
110	0.0005	0.0001	0.1628	0.0000	0.0000	0.0000
111	0.0003	0.0001	0.1576	0.0000	0.0000	0.0000
112	0.0002	0.0000	0.1526	0.0000	0.0000	0.0000
113	0.0001	0.0000	0.1478	0.0000	0.0000	0.0000
114	0.0001	0.0000	0.1430	0.0000	0.0000	0.0000
115	0.0000	0.0000	0.1384	0.0000	0.0000	0.0000
116	0.0000	0.0000	0.1339	0.0000	0.0000	0.0000
117	0.0000	0.0000	0.1294	0.0000	0.0000	0.0000
118	0.0000	0.0000	0.1255	0.0000	0.0000	0.0000
119	0.0000	0.0000	0.1220	0.0000	0.0000	0.0000
120	0.0000	0.0000	0.1188	0.0000	0.0000	0.0000
121	0.0000	0.0000	0.1161	0.0000	0.0000	0.0000
122	0.0000	0.0000	0.1138	0.0000	0.0000	0.0000

Pile Number 2

2	0.4920	0.3501	0.6245	0.0001	-0.0010	0.0000
123	0.4097	0.3345	0.6136	0.0003	-0.0011	0.0000
124	0.3267	0.3007	0.6014	0.0005	-0.0010	0.0000
125	0.2488	0.2545	0.5891	0.0006	-0.0009	0.0000
126	0.1802	0.2051	0.5769	0.0006	-0.0008	0.0000
127	0.1228	0.1579	0.5645	0.0006	-0.0007	0.0000
128	0.0768	0.1158	0.5521	0.0005	-0.0005	0.0000
129	0.0414	0.0800	0.5396	0.0004	-0.0004	0.0000
130	0.0156	0.0510	0.5271	0.0003	-0.0003	0.0000
131	-0.0022	0.0287	0.5145	0.0002	-0.0002	0.0000
132	-0.0132	0.0125	0.5019	0.0002	-0.0001	0.0000
133	-0.0189	0.0016	0.4892	0.0001	0.0000	0.0000
134	-0.0208	-0.0050	0.4764	0.0001	0.0000	0.0000
135	-0.0199	-0.0082	0.4636	0.0000	0.0000	0.0000
136	-0.0174	-0.0091	0.4507	0.0000	0.0000	0.0000
137	-0.0141	-0.0085	0.4380	0.0000	0.0000	0.0000
138	-0.0107	-0.0071	0.4254	0.0000	0.0000	0.0000
139	-0.0075	-0.0054	0.4131	0.0000	0.0000	0.0000
140	-0.0048	-0.0038	0.4009	0.0000	0.0000	0.0000
141	-0.0027	-0.0024	0.3889	0.0000	0.0000	0.0000
142	-0.0012	-0.0013	0.3771	0.0000	0.0000	0.0000
143	-0.0002	-0.0005	0.3655	0.0000	0.0000	0.0000
144	0.0004	-0.0001	0.3542	0.0000	0.0000	0.0000
145	0.0006	0.0002	0.3431	0.0000	0.0000	0.0000
146	0.0007	0.0003	0.3323	0.0000	0.0000	0.0000
147	0.0006	0.0003	0.3217	0.0000	0.0000	0.0000
148	0.0005	0.0003	0.3114	0.0000	0.0000	0.0000
149	0.0004	0.0002	0.3013	0.0000	0.0000	0.0000
150	0.0003	0.0001	0.2914	0.0000	0.0000	0.0000
151	0.0002	0.0001	0.2819	0.0000	0.0000	0.0000
152	0.0001	0.0000	0.2725	0.0000	0.0000	0.0000
153	0.0000	0.0000	0.2635	0.0000	0.0000	0.0000
154	0.0000	0.0000	0.2546	0.0000	0.0000	0.0000
155	0.0000	0.0000	0.2461	0.0000	0.0000	0.0000
156	0.0000	0.0000	0.2378	0.0000	0.0000	0.0000
157	0.0000	0.0000	0.2297	0.0000	0.0000	0.0000
158	0.0000	0.0000	0.2225	0.0000	0.0000	0.0000
159	0.0000	0.0000	0.2161	0.0000	0.0000	0.0000
160	0.0000	0.0000	0.2105	0.0000	0.0000	0.0000
161	0.0000	0.0000	0.2056	0.0000	0.0000	0.0000
162	0.0000	0.0000	0.2015	0.0000	0.0000	0.0000

Pile Number 3

3	0.4980	0.3515	0.0171	0.0008	-0.0011	0.0000
163	0.4091	0.2830	0.0187	0.0009	-0.0011	0.0000
164	0.3209	0.2135	0.0205	0.0009	-0.0011	0.0000
165	0.2397	0.1498	0.0233	0.0007	-0.0010	0.0000
166	0.1694	0.0965	0.0266	0.0006	-0.0008	0.0000
167	0.1117	0.0550	0.0299	0.0005	-0.0007	0.0000
168	0.0664	0.0248	0.0329	0.0003	-0.0005	0.0000
169	0.0324	0.0043	0.0354	0.0002	-0.0004	0.0000
170	0.0083	-0.0082	0.0375	0.0001	-0.0002	0.0000
171	-0.0075	-0.0147	0.0390	0.0001	-0.0002	0.0000
172	-0.0166	-0.0168	0.0401	0.0000	-0.0001	0.0000

173	-0.0206	-0.0161	0.0407	0.0000	0.0000	0.0000
174	-0.0211	-0.0138	0.0410	0.0000	0.0000	0.0000
175	-0.0193	-0.0109	0.0410	0.0000	0.0000	0.0000
176	-0.0164	-0.0079	0.0408	0.0000	0.0000	0.0000
177	-0.0131	-0.0053	0.0405	0.0000	0.0000	0.0000
178	-0.0099	-0.0032	0.0402	0.0000	0.0000	0.0000
179	-0.0070	-0.0016	0.0399	0.0000	0.0000	0.0000
180	-0.0045	-0.0006	0.0395	0.0000	0.0000	0.0000
181	-0.0026	0.0001	0.0391	0.0000	0.0000	0.0000
182	-0.0012	0.0004	0.0387	0.0000	0.0000	0.0000
183	-0.0003	0.0005	0.0382	0.0000	0.0000	0.0000
184	0.0003	0.0005	0.0378	0.0000	0.0000	0.0000
185	0.0006	0.0004	0.0372	0.0000	0.0000	0.0000
186	0.0007	0.0003	0.0367	0.0000	0.0000	0.0000
187	0.0007	0.0002	0.0361	0.0000	0.0000	0.0000
188	0.0006	0.0001	0.0356	0.0000	0.0000	0.0000
189	0.0005	0.0001	0.0349	0.0000	0.0000	0.0000
190	0.0003	0.0000	0.0343	0.0000	0.0000	0.0000
191	0.0002	0.0000	0.0337	0.0000	0.0000	0.0000
192	0.0001	0.0000	0.0330	0.0000	0.0000	0.0000
193	0.0001	0.0000	0.0323	0.0000	0.0000	0.0000
194	0.0000	0.0000	0.0316	0.0000	0.0000	0.0000
195	0.0000	0.0000	0.0309	0.0000	0.0000	0.0000
196	0.0000	0.0000	0.0301	0.0000	0.0000	0.0000
197	0.0000	0.0000	0.0293	0.0000	0.0000	0.0000
198	0.0000	0.0000	0.0286	0.0000	0.0000	0.0000
199	0.0000	0.0000	0.0280	0.0000	0.0000	0.0000
200	0.0000	0.0000	0.0274	0.0000	0.0000	0.0000
201	0.0000	0.0000	0.0268	0.0000	0.0000	0.0000
202	0.0000	0.0000	0.0263	0.0000	0.0000	0.0000

Pile Number 4

4	0.4972	0.3454	0.3159	0.0009	-0.0011	0.0000
203	0.4089	0.2729	0.3109	0.0009	-0.0011	0.0000
204	0.3213	0.2033	0.3053	0.0008	-0.0011	0.0000
205	0.2403	0.1415	0.2999	0.0007	-0.0010	0.0000
206	0.1701	0.0905	0.2946	0.0006	-0.0008	0.0000
207	0.1126	0.0511	0.2892	0.0004	-0.0006	0.0000
208	0.0676	0.0224	0.2837	0.0003	-0.0005	0.0000
209	0.0338	0.0026	0.2780	0.0002	-0.0004	0.0000
210	0.0097	-0.0098	0.2721	0.0001	-0.0003	0.0000
211	-0.0065	-0.0166	0.2661	0.0001	-0.0002	0.0000
212	-0.0162	-0.0192	0.2600	0.0000	-0.0001	0.0000
213	-0.0209	-0.0190	0.2539	0.0000	0.0000	0.0000
214	-0.0219	-0.0169	0.2478	0.0000	0.0000	0.0000
215	-0.0204	-0.0139	0.2416	0.0000	0.0000	0.0000
216	-0.0175	-0.0105	0.2353	0.0000	0.0000	0.0000
217	-0.0140	-0.0074	0.2291	0.0000	0.0000	0.0000
218	-0.0104	-0.0047	0.2229	0.0000	0.0000	0.0000
219	-0.0072	-0.0026	0.2169	0.0000	0.0000	0.0000
220	-0.0045	-0.0012	0.2109	0.0000	0.0000	0.0000
221	-0.0025	-0.0002	0.2050	0.0000	0.0000	0.0000
222	-0.0010	0.0003	0.1992	0.0000	0.0000	0.0000
223	-0.0001	0.0006	0.1935	0.0000	0.0000	0.0000
224	0.0005	0.0006	0.1878	0.0000	0.0000	0.0000
225	0.0007	0.0006	0.1823	0.0000	0.0000	0.0000
226	0.0007	0.0004	0.1769	0.0000	0.0000	0.0000
227	0.0006	0.0003	0.1716	0.0000	0.0000	0.0000
228	0.0005	0.0002	0.1664	0.0000	0.0000	0.0000
229	0.0004	0.0001	0.1612	0.0000	0.0000	0.0000
230	0.0002	0.0000	0.1562	0.0000	0.0000	0.0000
231	0.0001	0.0000	0.1514	0.0000	0.0000	0.0000
232	0.0001	0.0000	0.1466	0.0000	0.0000	0.0000
233	0.0000	0.0000	0.1419	0.0000	0.0000	0.0000
234	0.0000	0.0000	0.1374	0.0000	0.0000	0.0000
235	0.0000	0.0000	0.1329	0.0000	0.0000	0.0000
236	0.0000	0.0000	0.1286	0.0000	0.0000	0.0000
237	0.0000	0.0000	0.1244	0.0000	0.0000	0.0000
238	0.0000	0.0000	0.1206	0.0000	0.0000	0.0000
239	0.0000	0.0000	0.1172	0.0000	0.0000	0.0000
240	0.0000	0.0000	0.1142	0.0000	0.0000	0.0000
241	0.0000	0.0000	0.1116	0.0000	0.0000	0.0000
242	0.0000	0.0000	0.1094	0.0000	0.0000	0.0000

SUM OF TOTAL SOIL SPRING LOADS

CHECK: Total Load Carried by the Soil
(Sum of NF+FF Soil Spring Loads)

X Direction	=	4784.4852	Kips
Y Direction	=	6846.2626	Kips
Z Direction	=	27959.5679	Kips

BSI FB-MultiPier - File: P1-LCS.out Wednesday, March 23, 2011
Sum of Tip Forces = 7336.8796 Kips

Summary of Pile Forces for Load CASE 1

1. Axial Force (Kips)

Pile #	Maximum Force	Minimum Force
1	-0.19935E+04	-0.57685E+04
2	-0.35683E+04	-0.11233E+05
3	0.45003E+03	-0.69360E+03
4	-0.19139E+04	-0.54877E+04

2. Pile Shear Force in 2 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.83596E+03	-0.19675E+03
2	0.13005E+04	-0.21236E+03
3	0.88382E+03	-0.15191E+03
4	0.12368E+04	-0.21901E+03

3. Pile Shear Force in 3 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.14305E+03	-0.19631E+04
2	0.14809E+03	-0.21619E+04
3	0.17135E+03	-0.11062E+04
4	0.21956E+03	-0.99216E+03

4. Bending Moment About 2 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.3146E+05	0.59193E+02	-6408.
2	2	0.00000E+00	0.3674E+05	0.59193E+02	-6507.
3	3	0.00000E+00	8463.	0.39462E+02	-7423.
4	4	0.00000E+00	3260.	0.32885E+02	-0.1030E+05

5. Bending Moment About 3 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	1480.	0.32885E+02	-0.1102E+05
2	2	0.00000E+00	9709.	0.39462E+02	-0.1092E+05
3	3	0.00000E+00	5640.	0.39462E+02	-7824.
4	4	0.00000E+00	7611.	0.32885E+02	-0.1136E+05

****
* ANALYTICAL FORCE RESULTS FOR PIER *
****

ELEM NO.	PROP NO.	NODE NO.	LOAD CASE	FAX (Kips)	F22 (Kips)	F33 (Kips)	M22 (Kip-ft)	M33 (Kip-ft)	TORQUE (Kip-ft)	D/C (Ratio)
- Connector Beam Segments										
1	1	82	1	-746.63	5126.39	-2668.50	50034.38	96119.86	38803.06	
	0.00									
	1	60		746.63	-5126.39	2668.50	0.00	0.00	-38803.06	
	0.00									
2	1	82	1	-305.64	-4998.11	-2482.01	15512.55	-31238.19	17439.71	
	0.00									
	1	54		305.64	4998.11	2482.01	0.00	0.00	-17439.71	
	0.00									
3	1	82	1	1149.75	21611.97	2642.50	-49546.88	405224.35	-41879.59	
	0.00									
	1	47		-1149.75	-21611.97	-2642.50	0.00	0.00	41879.59	
	0.00									
4	1	82	1	218.36	-9632.25	2465.61	-15410.05	-60201.54	-16850.80	
	0.00									
	1	53		-218.36	9632.25	-2465.61	0.00	0.00	16850.80	
	0.00									

```
**************************************************
*   ANALYTICAL PILE CAP - SHELL STRESS RESULTS   *
**************************************************


**********************
*   DAMPING FORCES   *
**********************

  Node #      FXX          FYY          FZZ          MXX          MYY          MZZ
            Kip          Kip          Kip          Kip          Kip          Kip


************************************
*   UNIAXIAL INTERACTION DIAGRAM   *
************************************

NOTE : 1. The tables below show the values on the Interaction
          Diagrams for each section which correspond to the
          section capacity
       2. The numbering of the SECTIONS/SEGMENTS is shown
          previously in the output file

---------------------------------------
! -> Pile Cross Section Number =    1 !
---------------------------------------

Diagram Data
____________

Maximum Tension Force                      =  0.4820E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid    =  0.1237E-14 (in)
Local 3 Axis Shift for Plastic Centroid    = -0.7486E-09 (in)

Recommended Phi Values
______________________

Concrete, Rectangular members          Phi =  0.70
Concrete, Circular members with Ties   Phi =  0.70
Concrete, Circular members with Spirals Phi =  0.75

Phi Factors Used
________________

Phi Factor for Concrete Control            =   0.7500
Phi Factor for Steel in Compression        =   0.9000
Phi Factor for Steel in Tension            =   0.9500
Phi Factor for Steel in Bending            =   1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips,  Units for Moment : Kip-ft

   Axial     Moment(+3)  Moment(-2)  Moment(-3)  Moment(+2)

 0.4820E+05  0.0000E+00  0.0000E+00  0.0000E+00  0.0000E+00
 0.4354E+05  0.1515E+06  0.1515E+06  0.1515E+06  0.1515E+06
 0.3929E+05  0.1672E+06  0.1672E+06  0.1672E+06  0.1672E+06
 0.3526E+05  0.1776E+06  0.1776E+06  0.1776E+06  0.1776E+06
 0.3041E+05  0.1842E+06  0.1842E+06  0.1842E+06  0.1842E+06
 0.2639E+05  0.1869E+06  0.1869E+06  0.1869E+06  0.1869E+06
 0.2191E+05  0.1900E+06  0.1900E+06  0.1900E+06  0.1900E+06
 0.1762E+05  0.1988E+06  0.1988E+06  0.1988E+06  0.1988E+06
 0.1308E+05  0.2063E+06  0.2063E+06  0.2063E+06  0.2063E+06
 0.8690E+04  0.2121E+06  0.2121E+06  0.2121E+06  0.2121E+06
 0.4384E+04  0.2176E+06  0.2176E+06  0.2176E+06  0.2176E+06
-0.1228E-11  0.2194E+06  0.2194E+06  0.2194E+06  0.2194E+06
-0.7627E+04  0.1870E+06  0.1870E+06  0.1870E+06  0.1870E+06
-0.1523E+05  0.1932E+06  0.1932E+06  0.1932E+06  0.1932E+06
-0.2285E+05  0.1946E+06  0.1946E+06  0.1946E+06  0.1946E+06
-0.3034E+05  0.1885E+06  0.1885E+06  0.1885E+06  0.1885E+06
-0.3796E+05  0.1771E+06  0.1771E+06  0.1771E+06  0.1771E+06
-0.4540E+05  0.1601E+06  0.1601E+06  0.1601E+06  0.1601E+06
-0.5382E+05  0.1340E+06  0.1340E+06  0.1340E+06  0.1340E+06
-0.5444E+05  0.1320E+06  0.1320E+06  0.1320E+06  0.1320E+06
-0.5513E+05  0.1297E+06  0.1297E+06  0.1297E+06  0.1297E+06
-0.5632E+05  0.1256E+06  0.1256E+06  0.1256E+06  0.1256E+06
-0.5690E+05  0.1237E+06  0.1237E+06  0.1237E+06  0.1237E+06
-0.5785E+05  0.1204E+06  0.1204E+06  0.1204E+06  0.1204E+06
-0.5867E+05  0.1175E+06  0.1175E+06  0.1175E+06  0.1175E+06
-0.5948E+05  0.1144E+06  0.1144E+06  0.1144E+06  0.1144E+06
-0.6019E+05  0.1116E+06  0.1116E+06  0.1116E+06  0.1116E+06
-0.6145E+05  0.1066E+06  0.1066E+06  0.1066E+06  0.1066E+06
```

-0.6215E+05 0.1012E+06 0.1037E+06 0.1012E+06 0.1037E+06

! -> Pile Cross Section Number = 2 !

Diagram Data

Maximum Tension Force = 0.3972E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = -0.2885E-15 (in)
Local 3 Axis Shift for Plastic Centroid = -0.6414E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.3972E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.2746E+05	0.1262E+06	0.1262E+06	0.1262E+06	0.1262E+06
0.2716E+05	0.1269E+06	0.1269E+06	0.1269E+06	0.1269E+06
0.2685E+05	0.1276E+06	0.1276E+06	0.1276E+06	0.1276E+06
0.2538E+05	0.1310E+06	0.1310E+06	0.1310E+06	0.1310E+06
0.2176E+05	0.1406E+06	0.1406E+06	0.1406E+06	0.1406E+06
0.1804E+05	0.1502E+06	0.1502E+06	0.1502E+06	0.1502E+06
0.1436E+05	0.1570E+06	0.1570E+06	0.1570E+06	0.1570E+06
0.1083E+05	0.1547E+06	0.1547E+06	0.1547E+06	0.1547E+06
0.7222E+04	0.1542E+06	0.1542E+06	0.1542E+06	0.1542E+06
0.3610E+04	0.1576E+06	0.1576E+06	0.1576E+06	0.1576E+06
-0.5163E-01	0.1596E+06	0.1596E+06	0.1596E+06	0.1596E+06
-0.6658E+04	0.1336E+06	0.1336E+06	0.1336E+06	0.1336E+06
-0.1331E+05	0.1364E+06	0.1364E+06	0.1364E+06	0.1364E+06
-0.1999E+05	0.1383E+06	0.1383E+06	0.1383E+06	0.1383E+06
-0.2662E+05	0.1365E+06	0.1365E+06	0.1365E+06	0.1365E+06
-0.3326E+05	0.1303E+06	0.1303E+06	0.1303E+06	0.1303E+06
-0.3957E+05	0.1217E+06	0.1217E+06	0.1217E+06	0.1217E+06
-0.4701E+05	0.1065E+06	0.1065E+06	0.1065E+06	0.1065E+06
-0.4884E+05	0.1020E+06	0.1020E+06	0.1020E+06	0.1020E+06
-0.5106E+05	0.9575E+05	0.9575E+05	0.9575E+05	0.9575E+05
-0.5308E+05	0.8956E+05	0.8956E+05	0.8956E+05	0.8956E+05
-0.5557E+05	0.8048E+05	0.8161E+05	0.8048E+05	0.8161E+05
-0.5766E+05	0.7424E+05	0.7474E+05	0.7424E+05	0.7474E+05
-0.5966E+05	0.6751E+05	0.6782E+05	0.6751E+05	0.6782E+05
-0.6195E+05	0.5858E+05	0.5963E+05	0.5858E+05	0.5963E+05
-0.6434E+05	0.4877E+05	0.5056E+05	0.4877E+05	0.5056E+05
-0.6692E+05	0.4040E+05	0.4040E+05	0.4040E+05	0.4040E+05
-0.6946E+05	0.3005E+05	0.3005E+05	0.3005E+05	0.3005E+05
-0.7136E+05	0.2206E+05	0.2206E+05	0.2206E+05	0.2206E+05

****
* FINAL MAXIMUMS/MINIMUMS FOR ALL LOAD CASES *
* PIER # 1 *
****

Maximum/Minimum Pile Forces

	Value	Load	Comb.	Pile
Max Shear in 2 Direction	0.1300E+04 Kip	1	0	2
Min Shear in 2 Direction	-0.2190E+03 Kip	1	0	4
Max Shear in 3 Direction	0.2196E+03 Kip	1	0	4
Min Shear in 3 Direction	-0.2162E+04 Kip	1	0	2
Max Moment about 2 Axis	0.3674E+05 Kip-ft	1	0	2
Min Moment about 2 Axis	-0.1030E+05 Kip-ft	1	0	4
Max Moment About 3 Axis	0.9709E+04 Kip-ft	1	0	2
Min Moment About 3 Axis	-0.1136E+05 Kip-ft	1	0	4
Max Axial Force	0.4500E+03 Kip	1	0	3

BSI FB-MultiPier - File: P1-LCS.out Wednesday, March 23, 2011

Min Axial Force	-0.1123E+05	Kip	1	0	2
Absolute Max Torque	0.1592E-04	Kip-ft	1	0	3
Max Demand/Capacity Ratio	0.2354E+00		1	0	2

Maximum/Minimum Soil Forces

Max Axial Soil Force	0.7766E+03	Kip	1	0	2
Min Axial Soil Force	0.0000E+00	Kip	1	0	1
Max Lateral Force in X dir	0.3589E+03	Kip	1	0	2
Min Lateral Force in X dir	-0.3575E+02	Kip	1	0	4
Max Lateral Force in Y dir	0.4879E+03	Kip	1	0	2
Min Lateral Force in Y dir	-0.3080E+02	Kip	1	0	4
Max Torsional Soil Force	0.0000E+00	Kip-ft	1	0	1

Maximum/Minimum Pile Displacements

Max Axial Displacement	0.6245E+00	in	1	0	2
Min Axial Displacement	0.1708E-01	in	1	0	3
Max Displacement in X	0.4980E+00	in	1	0	3
Min Displacement in X	-0.2436E-01	in	1	0	1
Max Displacement in Y	0.3515E+00	in	1	0	3
Min Displacement in Y	-0.1924E-01	in	1	0	4

Maximum/Minimum Column Forces

	Value		Load	Comb.	Column
Max Axial Force	0.0000E+00	Kip	0	0	0
Min Axial Force	0.0000E+00	Kip	0	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	1
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	0
Absolute Max Torque	0.1000E+06	Kip-ft	1	0	0

Maximum/Minimum Pier Cap Forces

Max Axial Force	0.0000E+00	Kip	0	0
Min Axial Force	0.0000E+00	Kip	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0
Max Torque	-0.1000E+06	Kip-ft	1	0
Min Torque	0.0000E+00	Kip-ft	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0

****
Foundation Flexibilty for given loads
****

Averaged flexiblity

	Fx	Fy	Fz	Mx	My	Mz
DeltaX	0.8406E-04	0.6826E-06	-0.1231E-05	0.2391E-08	-0.8884E-07	0.1791E-08
DeltaY	0.6826E-06	0.4993E-04	-0.6447E-06	0.5354E-08	-0.3079E-08	-0.3646E-09
DeltaZ	-0.1231E-05	-0.6447E-06	0.2277E-04	-0.1718E-08	0.4746E-08	-0.4474E-09
ThetaX	0.2391E-08	0.5354E-08	-0.1718E-08	0.1142E-09	-0.9351E-11	0.2026E-11
ThetaY	-0.8884E-07	-0.3079E-08	0.4746E-08	-0.9351E-11	0.6955E-09	0.2058E-12
ThetaZ	0.1791E-08	-0.3646E-09	-0.4474E-09	0.2026E-11	0.2058E-12	0.2864E-09

****
Foundation Stiffness for given loads
****

STIFFNESS

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.1376E+05	-0.6149E+02	0.3648E+03	-0.1346E+06	0.1753E+07	-0.8586E+05
Fy	-0.6149E+02	0.2014E+05	0.4837E+03	-0.9306E+06	0.6548E+05	0.3332E+05
Fz	0.3648E+03	0.4837E+03	0.4405E+05	0.6110E+06	-0.2436E+06	0.6301E+05
Mx	-0.1346E+06	-0.9306E+06	0.6110E+06	0.8819E+10	0.9310E+08	-0.6183E+08
My	0.1753E+07	0.6548E+05	-0.2436E+06	0.9310E+08	0.1665E+10	-0.1311E+08
Mz	-0.8586E+05	0.3332E+05	0.6301E+05	-0.6183E+08	-0.1311E+08	0.3493E+10

****
Foundation Stiffness in STANDARD X-Y-Z directions
(FB-Pier->Stardard, X->X, Y->Z & -Z->Y)
Translations: kips/in Rotations: kip-in/rad
****

Stiffness in standard X-Y-Z

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.1376E+05	-0.3648E+03	-0.6149E+02	-0.1346E+06	0.8586E+05	0.1753E+07
Fy	-0.3648E+03	0.4405E+05	-0.4837E+03	-0.6110E+06	0.6301E+05	0.2436E+06
Fz	-0.6149E+02	-0.4837E+03	0.2014E+05	-0.9306E+06	-0.3332E+05	0.6548E+05
Mx	-0.1346E+06	-0.6110E+06	-0.9306E+06	0.8819E+10	0.6183E+08	0.9310E+08
My	0.8586E+05	0.6301E+05	-0.3332E+05	0.6183E+08	0.3493E+10	0.1311E+08
Mz	0.1753E+07	0.2436E+06	0.6548E+05	0.9310E+08	0.1311E+08	0.1665E+10

```
!------------------------------------------------------------!
!                                                            !
!        The University of Florida, Florida Department       !
!        of Transportation, Drs. Marc Hoit, Mike McVay       !
!        Cliff Hays, Mark Williams, Petros Christou, and     !
!                          Jae H. Chung                      !
!         disclaim any warranty, expressed or implied,       !
!          including but not limited to, any implied         !
!         warranty of fitness for a particular purpose       !
!            or accuracy of the FB-Pier software             !
!     The  developers shall not be liable for any damages    !
!          incurred through the use of FB-MultiPier          !
!                                                            !
!                                                            !
!              :::: F B - M U L T I P I E R ::::             !
!                  FB-MultiPier Version 4.13                 !
!                                                            !
!                                                            !
!         Written by Marc Hoit, Mike McVay, Cliff Hays       !
!         Mark Williams, Petros Christou, Jae H. Chung.      !
!                                                            !
!      Civil & Coastal Engineering, University of Florida    !
!      Supported by Florida Department of Transportation     !
!           and the Federal Highway Administration           !
!                                                            !
!             The program calculates the Response            !
!           of the Bridge Pier Pile Soil Structures          !
!                                                            !
!            The Analysis includes PreLoad, Static,          !
!                Transient Dynamic or Push Over              !
!                                                            !
!        The Program Handles NonLinear Soil Behavior,        !
!  Linear Pile Cap and Linear and NonLinear Piles and Piers  !
!                                                            !
!                                                            !
!       Contact: Bridge Software Institute for Support       !
!                HTTP://BSI-WEB.CE.UFL.EDU                   !
!                                                            !
!------------------------------------------------------------!

Analysis Start Time  :****************************************
Analysis End Time    :****************************************
Analysis Duration    :****************************************

Input Data File Name : P2-LCS.IN
Analysis Date        : 3-15-2011
License ID Number    : 432478881


********************
*   PROJECT DATA   *
********************

Project Client      : CRC / WSDOT / ODOT
Project Name        : Columbia River Crossing
Project Manager     : R. Turton
Computed by         : NRH
Project Description : SB - Pier 2 - Liquefaction + Contraction Scour


************************************
*   SELECTIVE PRINT OUTPUT CONTROL   *
************************************
                                      Print On
Pile Displacements                      YES
Pile Element Forces                      NO
Missing Pile ID Numbers                  NO
Pier Columns and Pier Cap Displacements  NO
Pier Columns and Pier Cap Force Output  YES
Pier Material Properties                YES
Soil Response Forces                     NO
Soil Data per Layer                     YES
Soil Curve data per Pile Node            NO
Soil Graph per Pile Node                 NO
Out of Balance Forces                    NO
Bridge Simulation Spring Force Output    NO
Bridge Span Displacements                NO
Bridge Span Element Forces               NO
Bridge Span Properties                   NO
Pile Cap Stress                          NO
```

```
 Material Stress Strain Curve Data          NO
 Interaction Diagram Data For Pile and Pier YES
 Pile and Pier coordinates                  NO
 Generate XML file                          NO


 **************
 *   UNITS    *
 **************

 Analysis Units Specified are: English Mixed (Kips & Ft some lbs & in)


 ****************************
 *   CONTROL INFORMATION    *
 ****************************

 Number of Piers               (NUMPIERS) =    1
 Maximum Number of Iterations    (MAXITN) =   50
 Tolerance                        (TOLER) =    10.000000     Kips

 NOTE : The following soil information is not applicable in the coulmn analysis problems

 Soil Behavior Option             (IFLEX) =    0
    IFLEX = 0 -> PY Multipliers are Input
    IFLEX = 1 -> PY Multipliers Defaulted to 1.0
    IFLEX = 2 -> No SOIL (Must use tip springs)

 Soil resistance due to Pile Rotation About 2 and 3 Axis (NSODF) =    4
    NSDOF = 4 -> NO Resistance Accounted
    NSDOF = 6 -> Resistance Accounted

 Linear Pile TIP Spring Option     (ITIP) =    0
    ITIP = 0 -> NO spring
    ITIP = 1 -> Axial only
    ITIP = 2 -> All DOF

 Linear Pile TIP Spring Stiffness (TSTIF) =         0.00 kips/in


 **********************
 *   SOIL BEHAVIOR    *
 **********************

 PY Multipliers will be used (IFLEX = 0)


 ***************************************************
 *   LOAD FACTORS FOR SELF WEIGHT AND BUOYANCY     *
 ***************************************************

 LOAD CASE     SELF WEIGHT     BUOYANCY
     #            FACTOR         FACTOR
     1             1.00           1.00


 ****************************
 *   GENERAL INFORMATION    *
 ****************************

 Static / Cyclic Load (KCYC)      =    0
    KCYC = 0 -> Static Load
    KCKC > 0 -> Cyclic Load (# Cycles)

 Fixity of Pile Cap (KFIX)        =    1
    KFIX = 0 -> Pinned Head
    KFIX = 1 -> Fixed head

 Bearing of Cap on Soil           =  NO


 ******************************
 *   GRID DATA INFORMATION    *
 ******************************

 NOTE: X-Grid : Distance between axes along the X-Axis
       Y-Grid : Distance between axes along the Y-Axis

 Number of Grid Points in X-Direction (NPX) =     5
 Number of Grid Points in X-Direction (NPY) =     5

 Grid Spacing in the X Direction : (inches)
      90.00     180.00     180.00      90.00
```

Grid Spacing in the Y Direction : (inches)
90.00 360.00 360.00 90.00

****
* ANALYSIS OPTIONS *
****

Type of Stiffness = Secant Stiffness
Type of Structure = Full
Type of Analysis = Static Analysis

****
* INPUT SOIL DATA - GIVEN BY LAYER *
****

NOTE : The following data is used to define Springs
for each Soil Layer to determine the Soil
Behavior during the analysis

LAYERED P-Y CURVES

SOIL SET # 1

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	1	1	0.6000E+01	0.4600E+01	0.1073E+03
			0.6000E+01	0.4600E+01	0.1073E+03
1	2	1	0.6000E+01	0.7500E+01	0.1212E+03
			0.6000E+01	0.7500E+01	0.1212E+03
1	3	1	0.3500E+02	0.5000E+02	0.1212E+03
			0.3500E+02	0.5000E+02	0.1212E+03
1	4	1	0.4500E+02	0.1250E+03	0.1367E+03
			0.4500E+02	0.1250E+03	0.1367E+03
1	5	1	0.4500E+02	0.1500E+03	0.1402E+03
			0.4500E+02	0.1500E+03	0.1402E+03

LAYERED T-Z CURVES

SOIL SET # 1

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00
	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00

	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.546E+01	0.380E+00	0.147E+02
	0.760E+00	0.679E+01	0.760E+00	0.182E+02
	0.114E+01	0.707E+01	0.114E+01	0.190E+02
	0.152E+01	0.707E+01	0.152E+01	0.190E+02
	0.265E+01	0.707E+01	0.265E+01	0.190E+02
	0.379E+01	0.707E+01	0.379E+01	0.190E+02
	0.493E+01	0.707E+01	0.493E+01	0.190E+02
	0.606E+01	0.707E+01	0.606E+01	0.190E+02
	0.720E+01	0.707E+01	0.720E+01	0.190E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

LAYERED T-Theta CURVES

SOIL SET # 1

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	1	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	2	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	3	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	4	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	5	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

PILE TIP SOIL PARAMETERS

SOIL SET # 1

USER DEFINED

Q Value	T Value

	in	lbs
1	0.000E+00	0.000E+00
2	0.222E+00	0.362E+07
3	0.444E+00	0.624E+07
4	0.667E+00	0.829E+07
5	0.889E+00	0.995E+07
6	0.111E+01	0.113E+08
7	0.133E+01	0.125E+08
8	0.156E+01	0.136E+08
9	0.178E+01	0.145E+08
10	0.200E+01	0.153E+08

****
* PILE SEGMENT INFORMATION DATA *
****

NOTE: The Piles Sets consist of Pile Segments based on the User Input. The program groups all segments from all the different Pile Sets and assigns a reference number to each

The reference number for each segment together with the User Input Pile Set/Segment number is shown below. The Input section properties for each section/segment is also provided below.

The user is advised to double check these numbers

Number of segments found in all Piles (NPSEG) = 2

! -> SECTION DATA FOR SECTION/SEGMENT : 1 !

Input Pile Set Number = 1
Input Pile Set Segment = 1

Section Pile Length (L) = 9.0000000 ft

Nonlinear Section/Segment Material Properties

Material Option (MATOPT) = 1
(Please Refer to the Users Guide for Details)

- Concrete Stress Strain Properties

Concrete Strength (FPC) = 0.4000E+01 ksi
Modulus of Elasticity (EC) = 0.4224E+04 ksi

Gauss Integration Points for Concrete = 60

- Steel Stress Strain Properties

Mild Steel Yield Stress (FY) = 0.600E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

Tubular Steel Yield Stress (FY) = 0.500E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

- Shape of Section : CIRCULAR

- Steel and Confinement Data

Number of Steel Layers = 2
Section/Segment Diameter = 180.0000 in
Tied/Spiral Reinforcement Flag = 1
(NOTE : Spiral = 1, Tied = 2)
Confinement Flag = 1
(NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

- Steel and Confinement Data

Yield Stress of Confinement Steel = 60.00 ksi
Spacing between Confinement Steel = 6.000 in
Diameter of Confinement Steel = 0.7500 in
Outer Shell Thickness = 1.00 in

- Total Area of Steel Reinforcement = 424.00 in^2

Layer	# Bars/Strands	Area in^2	Layer Dia. in	Prestressing ksi

```
   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     1           56        4.00    108.00           0.00

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     2           52        3.85     96.00           0.00

 ------------------------------------------------
 ! -> SECTION DATA FOR SECTION/SEGMENT :   2  !
 ------------------------------------------------

 Input Pile Set Number  =   1
 Input Pile Set Segment =   2

 Section Pile Length               (L) =    252.08000     ft

 Nonlinear Section/Segment Material Properties
 ---------------------------------------------

 Material Option (MATOPT) =   1
 (Please Refer to the Users Guide for Details)

 - Concrete Stress Strain Properties

   Concrete Strength    (FPC) = 0.6000E+01 ksi
   Modulus of Elasticity (EC) = 0.5173E+04 ksi

   Gauss Integration Points for Concrete = 60

 - Steel Stress Strain Properties

   Mild Steel Yield Stress  (FY) =  0.600E+02 ksi
   Modulus of Elasticity    (ES) = 0.2900E+05 ksi

   Tubular Steel Yield Stress (FY) =  0.600E+02 ksi
   Modulus of Elasticity      (ES) = 0.2900E+05 ksi

 - Shape of Section : CIRCULAR

 - Steel and Confinement Data

   Number of Steel Layers         =   2
   Section/Segment Diameter       =  120.0000 in
   Tied/Spiral Reinforcement Flag =   1
   (NOTE : Spiral = 1, Tied   = 2)
   Confinement Flag               =   1
   (NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

 - Steel and Confinement Data

  Yield Stress of Confinement Steel =    60.00     ksi
  Spacing between Confinement Steel =    6.000     in
  Diameter of Confinement Steel     =   0.7500     in
   Outer Shell Thickness          =    1.00      in

 - Total Area of Steel Reinforcement  = 424.00 in^2

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing
                           in^2      in             ksi

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     1           56        4.00    108.00           0.00

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
```

for the analysis. The area is changed to
result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
2	52	3.85	96.00	0.00

PLOT OF THE QZ CURVE FOR THE TIP OF THE PILE

- USER DEFINED CURVE

SOIL SET	Z Value	Q Value	Z Value	Q Value	Z Value	Q Value
1	0.0000E+00	0.0000E+00	0.2222E+00	0.3615E+07	0.4444E+00	0.6244E+07
	0.6667E+00	0.8290E+07	0.8889E+00	0.9952E+07	0.1111E+01	0.1134E+08
	0.1333E+01	0.1253E+08	0.1556E+01	0.1357E+08	0.1778E+01	0.1448E+08
	0.2000E+01	0.1530E+08				

PILE SET DATA DESCRIPTION

NOTE : The piles are organized in pile sets. Each pile
set is composed of pile segments that are input
by the User. A pile set is attached to each
pile in order to describe its composition

List of Piles Sets and Piles

Pile Set	Piles (that are assigned the Pile Set)
1	1, 2, 3, 4

Total Length for Each Pile Set

Pile Set	Length
1	3132.96

INPUT FOR STRUCTURAL ANALYSIS

Number of Joints = 82
Number of Different Element Types = 3
Number of Load Conditions = 1

WARNING : Pier Columns and Cap are linear
No P-Delta or Moment Magnification is included
Nonlinear should be used for final design

PIER SUMMARY

Stiffness of Foundation Requested - NO Pier Exists

MATERIAL PROPERTIES FOR PILE CAP AND FRAME (PIER) ELEMENTS

PILE CAP PROPERTIES - USING SHELL ELEMENTS

Modulus of Elasticity = 0.4224E+04 (ksi)
Poissons Ratio = 0.2000
Shear Modulus = 0.1760E+04 (ksi)
Self Weight = 160.0000 (pcf)
Thickness = 0.1900E+02 (ft)

! -> PROPERTIES FOR CONNECTOR ELEMENTS (DEFAULTED) !

NOTE : These Elements are generated by the program at the Pier
Column Bases where they connect with the Pile Cap. The
purpose for these elements is to spread the column base

load over an area on the Pile Cap and therefore avoid
High Stress Concentrations

NOTE : The material property number for these elements is
defaulted to 1. The material numbers for the properties
of the rest of the Pier elements start form 2

-> SECTION DATA FOR SECTION/SEGMENT : 1

Member Property Number = 1
Axial Area, A = 51984. (in^2)
Torsional Moment of Inertia, J = 0.98770E+10 (in^4)
Moment of Inertia, 3 - Axis = 0.98770E+10 (in^4)
Moment of Inertia, 2 - Axis = 0.98770E+10 (in^4)
Modulus of Elasticity, E = 4224.0 (ksi)
Shear Modulus, G = 1760.0 (ksi) (used for Torsion)
Weight Density = 0.00000 (K/in^3)

! -> PROPERTIES FOR PIER COLUMNS !

Member Property Number = 2
Axial Area, A = 0.00000 (in^2)
Torsional Moment of Inertia, J = 0.00000 (in^4)
Moment of Inertia, 3 - Axis = 0.00000 (in^4)
Moment of Inertia, 2 - Axis = 0.00000 (in^4)
Modulus of Elasticity, E = 0.00000 (ksi)
Shear Modulus, G = 0.00000 (ksi) (used for Torsion)
Weight Density = 0.00000 (K/in^3)

****
* PIER MEMBER CONNECTIVITY *
****

ELEMENT NUMBER	NODES I	NODES J	MATERIAL NUMBER
1	82	60	1
2	82	54	1
3	82	47	1
4	82	53	1

****
* GENERAL LOAD DATA *
****

The table below shows the Applied Loads for every
Load Case. The values in the table represent the
magnitute of the Loads in the specified units

- Applied Load

NODE	LOAD	X (Kips)	Y (Kips)	Z (Kips)	MXX (Kip-ft)	MYY (Kip-ft)	MZZ (Kip-ft)
82	1	3732.00	0.00	0.00	0.00	0.00	0.00
82	2	0.00	4706.00	0.00	0.00	0.00	0.00
82	3	0.00	0.00	24225.00	0.00	0.00	0.00
82	4	0.00	0.00	0.00	351179.00	0.00	0.00
82	5	0.00	0.00	0.00	0.00	-84077.00	0.00
82	6	0.00	0.00	0.00	0.00	0.00	1419.00

****
*
* ANALYSIS RESULTS *
*
****

****
* RESULTS FOR LOAD CASE # 1 *
****

NOTE : PY Multipliers are applied Lead to Trail row
based on the actual displacement. If there is
no displacement in a Lateral direction they are
defaulted to 1.0. This can happen in Axial Load
and one direction lateral load cases

PY Multipliers are Applied to A Pile Group

PILE#	X-PYM	Y-PYM
1	0.500E+00	0.100E+01
2	0.700E+00	0.100E+01
3	0.500E+00	0.100E+01
4	0.700E+00	0.100E+01

****
* CONVERGENCE REPORT *
****

The Solution Converged in 9 Iterations

Summary of Abs Maximum Out-Of-Balance Forces

FZZ =	2.031	Kips
FXX =	0.036	Kips
FYY =	68.390	Kips
MXX =	8.497	Kip-in
MYY =	0.000	Kip-in
MZZ =	65.731	Kip-in

Summary of Displacements at Pile Heads

Node	X (in)	Y (in)	Z (in)
1	7.3955	6.2889	0.5490
2	7.3956	6.3238	1.3508
3	7.4608	6.2916	-0.2582
4	7.4602	6.3214	0.5316

Final Displacements

Load Case # 1

Node	X (in)	Y (in)	Z (in)	Rx (rad)	Ry (rad)	Rz (rad)
Pile Number 1						
1	7.3955	6.2889	0.5490	0.0012	-0.0026	0.0001
83	7.2689	6.2240	0.5462	0.0016	-0.0029	0.0001
84	7.1306	6.1430	0.5429	0.0019	-0.0031	0.0001
85	6.9762	6.0398	0.5425	0.0025	-0.0036	0.0001
86	6.8018	5.9090	0.5414	0.0031	-0.0040	0.0001
87	6.6093	5.7534	0.5393	0.0036	-0.0043	0.0001
88	6.4006	5.5757	0.5365	0.0041	-0.0047	0.0001
89	6.1777	5.3787	0.5329	0.0044	-0.0049	0.0001
90	5.9426	5.1650	0.5286	0.0048	-0.0052	0.0001
91	5.6971	4.9371	0.5236	0.0050	-0.0054	0.0001
92	4.6768	3.9630	0.5001	0.0056	-0.0058	0.0000
93	3.6198	2.9407	0.4755	0.0056	-0.0058	0.0000
94	2.5999	1.9695	0.4510	0.0051	-0.0054	0.0000
95	1.6917	1.1453	0.4304	0.0040	-0.0046	0.0000
96	0.9629	0.5419	0.4130	0.0027	-0.0034	0.0000
97	0.4486	0.1757	0.3952	0.0014	-0.0022	0.0000
98	0.1400	0.0039	0.3735	0.0005	-0.0012	0.0000
99	-0.0068	-0.0456	0.3492	0.0001	-0.0005	0.0000
100	-0.0531	-0.0402	0.3246	-0.0001	-0.0001	0.0000
101	-0.0494	-0.0210	0.3010	-0.0001	0.0001	0.0000
102	-0.0299	-0.0065	0.2787	-0.0001	0.0001	0.0000
103	-0.0123	-0.0001	0.2575	0.0000	0.0001	0.0000
104	-0.0023	0.0011	0.2378	0.0000	0.0000	0.0000
105	0.0014	0.0005	0.2225	0.0000	0.0000	0.0000
106	0.0025	-0.0001	0.2115	0.0000	0.0000	0.0000
Pile Number 2						
2	7.3956	6.3238	1.3508	0.0012	-0.0025	0.0001
107	7.2745	6.2598	1.3403	0.0016	-0.0028	0.0001
108	7.1402	6.1797	1.3296	0.0019	-0.0030	0.0001
109	6.9875	6.0775	1.3200	0.0025	-0.0035	0.0001
110	6.8123	5.9480	1.3097	0.0031	-0.0040	0.0001
111	6.6170	5.7942	1.2988	0.0036	-0.0044	0.0001
112	6.4040	5.6188	1.2873	0.0040	-0.0048	0.0001
113	6.1756	5.4245	1.2753	0.0044	-0.0051	0.0001
114	5.9338	5.2140	1.2629	0.0047	-0.0053	0.0001
115	5.6809	4.9897	1.2503	0.0050	-0.0056	0.0001
116	4.6233	4.0266	1.2001	0.0056	-0.0061	0.0000

117	3.5246	3.0070	1.1498	0.0056	-0.0060	0.0000
118	2.4768	2.0374	1.0990	0.0050	-0.0055	0.0000
119	1.5615	1.2099	1.0484	0.0040	-0.0046	0.0000
120	0.8459	0.5931	0.9991	0.0028	-0.0033	0.0000
121	0.3602	0.2072	0.9492	0.0015	-0.0021	0.0000
122	0.0845	0.0156	0.8976	0.0006	-0.0010	0.0000
123	-0.0341	-0.0472	0.8465	0.0001	-0.0003	0.0000
124	-0.0582	-0.0452	0.7969	-0.0001	0.0000	0.0000
125	-0.0422	-0.0246	0.7491	-0.0001	0.0001	0.0000
126	-0.0201	-0.0080	0.7033	-0.0001	0.0001	0.0000
127	-0.0056	-0.0004	0.6599	0.0000	0.0001	0.0000
128	0.0003	0.0012	0.6192	0.0000	0.0000	0.0000
129	0.0013	0.0006	0.5873	0.0000	0.0000	0.0000
130	0.0007	-0.0001	0.5638	0.0000	0.0000	0.0000

Pile Number 3

3	7.4608	6.2916	-0.2582	0.0016	-0.0025	0.0001
131	7.3396	6.2080	-0.2509	0.0020	-0.0027	0.0001
132	7.2065	6.1096	-0.2440	0.0023	-0.0030	0.0001
133	7.0567	5.9905	-0.2324	0.0029	-0.0035	0.0001
134	6.8859	5.8455	-0.2216	0.0034	-0.0039	0.0001
135	6.6959	5.6769	-0.2116	0.0039	-0.0043	0.0001
136	6.4883	5.4871	-0.2025	0.0043	-0.0047	0.0001
137	6.2650	5.2784	-0.1941	0.0047	-0.0050	0.0001
138	6.0277	5.0531	-0.1866	0.0050	-0.0053	0.0001
139	5.7782	4.8136	-0.1799	0.0053	-0.0055	0.0000
140	4.7225	3.7889	-0.1611	0.0059	-0.0061	0.0000
141	3.6103	2.7214	-0.1489	0.0058	-0.0061	0.0000
142	2.5484	1.7454	-0.1301	0.0050	-0.0056	0.0000
143	1.6225	0.9571	-0.1046	0.0037	-0.0046	0.0000
144	0.8941	0.4105	-0.0761	0.0023	-0.0034	0.0000
145	0.3901	0.1008	-0.0496	0.0011	-0.0022	0.0000
146	0.0969	-0.0271	-0.0286	0.0003	-0.0011	0.0000
147	-0.0315	-0.0491	-0.0146	0.0000	-0.0004	0.0000
148	-0.0587	-0.0310	-0.0066	-0.0001	0.0000	0.0000
149	-0.0419	-0.0106	-0.0024	-0.0001	0.0001	0.0000
150	-0.0186	-0.0006	0.0005	0.0000	0.0001	0.0000
151	-0.0043	0.0014	0.0026	0.0000	0.0000	0.0000
152	0.0008	0.0007	0.0039	0.0000	0.0000	0.0000
153	0.0011	0.0001	0.0043	0.0000	0.0000	0.0000
154	0.0003	-0.0002	0.0043	0.0000	0.0000	0.0000

Pile Number 4

4	7.4602	6.3214	0.5316	0.0017	-0.0025	0.0001
155	7.3371	6.2337	0.5290	0.0021	-0.0028	0.0001
156	7.2004	6.1312	0.5260	0.0024	-0.0031	0.0001
157	7.0450	6.0084	0.5257	0.0029	-0.0036	0.0001
158	6.8665	5.8606	0.5245	0.0034	-0.0041	0.0001
159	6.6670	5.6903	0.5226	0.0039	-0.0045	0.0001
160	6.4489	5.5001	0.5200	0.0043	-0.0049	0.0001
161	6.2146	5.2925	0.5166	0.0046	-0.0052	0.0001
162	5.9663	5.0700	0.5124	0.0049	-0.0055	0.0001
163	5.7064	4.8352	0.5076	0.0052	-0.0057	0.0000
164	4.6232	3.8479	0.4845	0.0056	-0.0062	0.0000
165	3.5041	2.8283	0.4605	0.0056	-0.0061	0.0000
166	2.4360	1.8714	0.4372	0.0049	-0.0056	0.0000
167	1.5082	1.0708	0.4188	0.0038	-0.0046	0.0000
168	0.7946	0.4945	0.4036	0.0025	-0.0033	0.0000
169	0.3233	0.1524	0.3871	0.0013	-0.0020	0.0000
170	0.0680	-0.0033	0.3659	0.0005	-0.0009	0.0000
171	-0.0342	-0.0456	0.3418	0.0000	-0.0003	0.0000
172	-0.0527	-0.0383	0.3177	-0.0001	0.0000	0.0000
173	-0.0375	-0.0195	0.2947	-0.0001	0.0001	0.0000
174	-0.0177	-0.0058	0.2728	-0.0001	0.0001	0.0000
175	-0.0049	0.0001	0.2522	0.0000	0.0000	0.0000
176	0.0003	0.0011	0.2328	0.0000	0.0000	0.0000
177	0.0012	0.0005	0.2179	0.0000	0.0000	0.0000
178	0.0007	-0.0001	0.2071	0.0000	0.0000	0.0000

SUM OF TOTAL SOIL SPRING LOADS

CHECK: Total Load Carried by the Soil
(Sum of NF+FF Soil Spring Loads)

X Direction	=	3714.0422	Kips
Y Direction	=	4686.6756	Kips
Z Direction	=	42232.2764	Kips
Sum of Tip Forces	=	14222.5568	Kips

Summary of Pile Forces for Load CASE 1

1. Axial Force (Kips)

Pile #	Maximum Force	Minimum Force
1	-0.41451E+04	-0.10008E+05
2	-0.88829E+04	-0.19596E+05
3	0.19540E+04	-0.85946E+02
4	-0.40567E+04	-0.97802E+04

2. Pile Shear Force in 2 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.85774E+03	-0.60861E+03
2	0.10387E+04	-0.78721E+03
3	0.80866E+03	-0.54215E+03
4	0.10273E+04	-0.71477E+03

3. Pile Shear Force in 3 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.70780E+03	-0.12207E+04
2	0.79290E+03	-0.12557E+04
3	0.62120E+03	-0.10724E+04
4	0.68645E+03	-0.11575E+04

4. Bending Moment About 2 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.7067E+05	0.11021E+03	-0.3620E+05
2	2	0.00000E+00	0.7577E+05	0.12530E+03	-0.3947E+05
3	3	0.00000E+00	0.5728E+05	0.11021E+03	-0.2899E+05
4	4	0.00000E+00	0.6478E+05	0.11021E+03	-0.3515E+05

5. Bending Moment About 3 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.5101E+05	0.11021E+03	-0.3231E+05
2	2	0.00000E+00	0.6308E+05	0.12530E+03	-0.3905E+05
3	3	0.00000E+00	0.4550E+05	0.12530E+03	-0.2661E+05
4	4	0.00000E+00	0.5934E+05	0.11021E+03	-0.3626E+05

****
* ANALYTICAL FORCE RESULTS FOR PIER *
****

ELEM NO.	PROP NO.	NODE NO.	LOAD CASE	FAX (Kips)	F22 (Kips)	F33 (Kips)	M22 (Kip-ft)	M33 (Kip-ft)	TORQUE (Kip-ft)	D/C (Ratio)
- Connector Beam Segments										
1	1	82	1	-675.76	10614.93	-1825.05	27375.70	159223.98	56109.62	0.00
	1	60		675.76	-10614.93	1825.05	0.00	0.00	-56109.62	0.00
2	1	82	1	57.71	-6127.96	-1682.41	12618.09	-45959.73	73225.89	0.00
	1	54		-57.71	6127.96	1682.41	0.00	0.00	-73225.89	0.00
3	1	82	1	731.35	24039.13	1763.41	-26451.21	360586.95	-41668.87	0.00
	1	47		-731.35	-24039.13	-1763.41	0.00	0.00	41668.87	0.00
4	1	82	1	-85.83	-4301.10	1616.48	-12123.58	-32258.24	-76590.14	0.00
	1	53		85.83	4301.10	-1616.48	0.00	0.00	76590.14	0.00

****
* ANALYTICAL PILE CAP - SHELL STRESS RESULTS *
****

```
**********************
*   DAMPING FORCES   *
**********************

  Node #      FXX          FYY          FZZ          MXX          MYY          MZZ
            Kip          Kip          Kip          Kip          Kip          Kip


************************************
*   UNIAXIAL INTERACTION DIAGRAM   *
************************************

NOTE : 1. The tables below show the values on the Interaction
          Diagrams for each section which correspond to the
          section capacity
       2. The numbering of the SECTIONS/SEGMENTS is shown
          previously in the output file

---------------------------------------
! -> Pile Cross Section Number =    1 !
---------------------------------------

Diagram Data
------------

Maximum Tension Force                      =  0.4820E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid    =  0.1237E-14 (in)
Local 3 Axis Shift for Plastic Centroid    = -0.7486E-09 (in)

Recommended Phi Values
----------------------

Concrete, Rectangular members          Phi =  0.70
Concrete, Circular members with Ties   Phi =  0.70
Concrete, Circular members with Spirals Phi =  0.75

Phi Factors Used
----------------

Phi Factor for Concrete Control            =   0.7500
Phi Factor for Steel in Compression        =   0.9000
Phi Factor for Steel in Tension            =   0.9500
Phi Factor for Steel in Bending            =   1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips,  Units for Moment : Kip-ft

   Axial     Moment(+3)  Moment(-2)  Moment(-3)  Moment(+2)

 0.4820E+05  0.0000E+00  0.0000E+00  0.0000E+00  0.0000E+00
 0.4397E+05  0.1425E+06  0.1425E+06  0.1425E+06  0.1425E+06
 0.3941E+05  0.1572E+06  0.1572E+06  0.1572E+06  0.1572E+06
 0.3504E+05  0.1687E+06  0.1687E+06  0.1687E+06  0.1687E+06
 0.3074E+05  0.1749E+06  0.1749E+06  0.1749E+06  0.1749E+06
 0.2629E+05  0.1777E+06  0.1777E+06  0.1777E+06  0.1777E+06
 0.2204E+05  0.1794E+06  0.1794E+06  0.1794E+06  0.1794E+06
 0.1754E+05  0.1877E+06  0.1877E+06  0.1877E+06  0.1877E+06
 0.1315E+05  0.1951E+06  0.1951E+06  0.1951E+06  0.1951E+06
 0.8836E+04  0.2009E+06  0.2009E+06  0.2009E+06  0.2009E+06
 0.4379E+04  0.2067E+06  0.2067E+06  0.2067E+06  0.2067E+06
 0.7769E-01  0.2109E+06  0.2109E+06  0.2109E+06  0.2109E+06
-0.6898E+04  0.1877E+06  0.1877E+06  0.1877E+06  0.1877E+06
-0.1348E+05  0.1894E+06  0.1894E+06  0.1894E+06  0.1894E+06
-0.2023E+05  0.1912E+06  0.1912E+06  0.1912E+06  0.1912E+06
-0.2690E+05  0.1869E+06  0.1869E+06  0.1869E+06  0.1869E+06
-0.3368E+05  0.1773E+06  0.1773E+06  0.1773E+06  0.1773E+06
-0.4042E+05  0.1633E+06  0.1633E+06  0.1633E+06  0.1633E+06
-0.4761E+05  0.1439E+06  0.1439E+06  0.1439E+06  0.1439E+06
-0.4853E+05  0.1410E+06  0.1410E+06  0.1410E+06  0.1410E+06
-0.5008E+05  0.1361E+06  0.1361E+06  0.1361E+06  0.1361E+06
-0.5139E+05  0.1319E+06  0.1319E+06  0.1319E+06  0.1319E+06
-0.5259E+05  0.1279E+06  0.1279E+06  0.1279E+06  0.1279E+06
-0.5371E+05  0.1239E+06  0.1239E+06  0.1239E+06  0.1239E+06
-0.5469E+05  0.1204E+06  0.1204E+06  0.1204E+06  0.1204E+06
-0.5552E+05  0.1174E+06  0.1174E+06  0.1174E+06  0.1174E+06
-0.5695E+05  0.1100E+06  0.1120E+06  0.1100E+06  0.1120E+06
-0.5814E+05  0.1075E+06  0.1075E+06  0.1075E+06  0.1075E+06
-0.5945E+05  0.9967E+05  0.1019E+06  0.9967E+05  0.1019E+06
-0.6046E+05  0.9587E+05  0.9753E+05  0.9587E+05  0.9753E+05

---------------------------------------
! -> Pile Cross Section Number =    2 !
```

Diagram Data

Maximum Tension Force = 0.4308E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = -0.3047E-15 (in)
Local 3 Axis Shift for Plastic Centroid = -0.6806E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.4308E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.3110E+05	0.1327E+06	0.1327E+06	0.1327E+06	0.1327E+06
0.3052E+05	0.1339E+06	0.1339E+06	0.1339E+06	0.1339E+06
0.2750E+05	0.1395E+06	0.1395E+06	0.1395E+06	0.1395E+06
0.2361E+05	0.1485E+06	0.1485E+06	0.1485E+06	0.1485E+06
0.1958E+05	0.1577E+06	0.1577E+06	0.1577E+06	0.1577E+06
0.1566E+05	0.1636E+06	0.1636E+06	0.1636E+06	0.1636E+06
0.1175E+05	0.1601E+06	0.1601E+06	0.1601E+06	0.1601E+06
0.7886E+04	0.1603E+06	0.1603E+06	0.1603E+06	0.1603E+06
0.3914E+04	0.1630E+06	0.1630E+06	0.1630E+06	0.1630E+06
-0.1798E+00	0.1647E+06	0.1647E+06	0.1647E+06	0.1647E+06
-0.5618E+04	0.1381E+06	0.1381E+06	0.1381E+06	0.1381E+06
-0.1126E+05	0.1403E+06	0.1403E+06	0.1403E+06	0.1403E+06
-0.1687E+05	0.1424E+06	0.1424E+06	0.1424E+06	0.1424E+06
-0.2254E+05	0.1428E+06	0.1428E+06	0.1428E+06	0.1428E+06
-0.2814E+05	0.1389E+06	0.1389E+06	0.1389E+06	0.1389E+06
-0.3377E+05	0.1323E+06	0.1323E+06	0.1323E+06	0.1323E+06
-0.3976E+05	0.1226E+06	0.1226E+06	0.1226E+06	0.1226E+06
-0.4243E+05	0.1174E+06	0.1174E+06	0.1174E+06	0.1174E+06
-0.4510E+05	0.1111E+06	0.1111E+06	0.1111E+06	0.1111E+06
-0.4817E+05	0.1028E+06	0.1028E+06	0.1028E+06	0.1028E+06
-0.5123E+05	0.9348E+05	0.9348E+05	0.9348E+05	0.9348E+05
-0.5390E+05	0.8356E+05	0.8488E+05	0.8356E+05	0.8488E+05
-0.5661E+05	0.7541E+05	0.7580E+05	0.7541E+05	0.7580E+05
-0.5938E+05	0.6589E+05	0.6642E+05	0.6589E+05	0.6642E+05
-0.6221E+05	0.5509E+05	0.5653E+05	0.5509E+05	0.5653E+05
-0.6512E+05	0.4567E+05	0.4567E+05	0.4567E+05	0.4567E+05
-0.6802E+05	0.3413E+05	0.3413E+05	0.3413E+05	0.3413E+05
-0.7149E+05	0.1978E+05	0.1978E+05	0.1978E+05	0.1978E+05

****
* FINAL MAXIMUMS/MINIMUMS FOR ALL LOAD CASES *
* PIER # 1 *
****

Maximum/Minimum Pile Forces

	Value	Load	Comb.	Pile
Max Shear in 2 Direction	0.1039E+04 Kip	1	0	2
Min Shear in 2 Direction	-0.7872E+03 Kip	1	0	2
Max Shear in 3 Direction	0.7929E+03 Kip	1	0	2
Min Shear in 3 Direction	-0.1256E+04 Kip	1	0	2
Max Moment about 2 Axis	0.7577E+05 Kip-ft	1	0	2
Min Moment about 2 Axis	-0.3947E+05 Kip-ft	1	0	2
Max Moment About 3 Axis	0.6308E+05 Kip-ft	1	0	2
Min Moment about 3 Axis	-0.3905E+05 Kip-ft	1	0	2
Max Axial Force	0.1954E+04 Kip	1	0	3
Min Axial Force	-0.1960E+05 Kip	1	0	2
Absolute Max Torque	0.5852E+00 Kip-ft	1	0	4
Max Demand/Capacity Ratio	0.6109E+00	1	0	2

Maximum/Minimum Soil Forces

Max Axial Soil Force	0.3399E+04	Kip	1	0	2
Min Axial Soil Force	-0.2839E+02	Kip	1	0	3
Max Lateral Force in X dir	0.4792E+03	Kip	1	0	2
Min Lateral Force in X dir	-0.2779E+03	Kip	1	0	2
Max Lateral Force in Y dir	0.5679E+03	Kip	1	0	2
Min Lateral Force in Y dir	-0.3082E+03	Kip	1	0	2
Max Torsional Soil Force	0.1134E+04	Kip-ft	1	0	1

Maximum/Minimum Pile Displacements

Max Axial Displacement	0.1351E+01	in	1	0	2
Min Axial Displacement	-0.2582E+00	in	1	0	3
Max Displacement in X	0.7461E+01	in	1	0	3
Min Displacement in X	-0.5869E-01	in	1	0	3
Max Displacement in Y	0.6324E+01	in	1	0	2
Min Displacement in Y	-0.4907E-01	in	1	0	3

Maximum/Minimum Column Forces

	Value		Load	Comb.	Column
Max Axial Force	0.0000E+00	Kip	0	0	0
Min Axial Force	0.0000E+00	Kip	0	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	1
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	0
Absolute Max Torque	0.1000E+06	Kip-ft	1	0	0

Maximum/Minimum Pier Cap Forces

Max Axial Force	0.0000E+00	Kip	0	0
Min Axial Force	0.0000E+00	Kip	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0
Max Torque	-0.1000E+06	Kip-ft	1	0
Min Torque	0.0000E+00	Kip-ft	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0

****

Foundation Flexibilty for given loads

****

Averaged flexiblity

	Fx	Fy	Fz	Mx	My	Mz
DeltaX	0.1931E-02	0.9695E-04	-0.2242E-04	0.3522E-07	-0.4500E-06	-0.3899E-08
DeltaY	0.9695E-04	0.1307E-02	-0.1857E-04	0.1039E-06	-0.4152E-07	0.2183E-08
DeltaZ	-0.2242E-04	-0.1857E-04	0.2262E-04	-0.4230E-08	0.8272E-08	-0.1662E-08
ThetaX	0.3522E-07	0.1039E-06	-0.4230E-08	0.1681E-09	-0.3058E-10	0.3419E-10
ThetaY	-0.4500E-06	-0.4152E-07	0.8272E-08	-0.3058E-10	0.6157E-09	0.4453E-10
ThetaZ	-0.3899E-08	0.2183E-08	-0.1662E-08	0.3419E-10	0.4453E-10	0.3342E-08

****

Foundation Stiffness for given loads

****

STIFFNESS

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.6298E+03	-0.2436E+02	0.4344E+03	-0.2276E+05	0.4520E+06	-0.4824E+04
Fy	-0.2436E+02	0.8132E+03	0.5516E+03	-0.4839E+06	0.5256E+04	0.4596E+04
Fz	0.4344E+03	0.5516E+03	0.4531E+05	0.6637E+06	-0.2224E+06	0.1885E+05
Mx	-0.2276E+05	-0.4839E+06	0.6637E+06	0.6332E+10	0.2612E+09	-0.6765E+08
My	0.4520E+06	0.5256E+04	-0.2224E+06	0.2612E+09	0.1973E+10	-0.2855E+08
Mz	-0.4824E+04	0.4596E+04	0.1885E+05	-0.6765E+08	-0.2855E+08	0.3003E+09

****

Foundation Stiffness in STANDARD X-Y-Z directions
(FB-Pier->Stardard, X->X, Y->Z & -Z->Y)
Translations: kips/in Rotations: kip-in/rad

Stiffness in standard X-Y-Z

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.6298E+03	-0.4344E+03	-0.2436E+02	-0.2276E+05	0.4824E+04	0.4520E+06
Fy	-0.4344E+03	0.4531E+05	-0.5516E+03	-0.6637E+06	0.1885E+05	0.2224E+06
Fz	-0.2436E+02	-0.5516E+03	0.8132E+03	-0.4839E+06	-0.4596E+04	0.5256E+04
Mx	-0.2276E+05	-0.6637E+06	-0.4839E+06	0.6332E+10	0.6765E+08	0.2612E+09
My	0.4824E+04	0.1885E+05	-0.4596E+04	0.6765E+08	0.3003E+09	0.2855E+08
Mz	0.4520E+06	0.2224E+06	0.5256E+04	0.2612E+09	0.2855E+08	0.1973E+10

```
!------------------------------------------------------------!
!                                                            !
!        The University of Florida, Florida Department       !
!        of Transportation, Drs. Marc Hoit, Mike McVay       !
!        Cliff Hays, Mark Williams, Petros Christou, and     !
!                          Jae H. Chung                      !
!         disclaim any warranty, expressed or implied,       !
!          including but not limited to, any implied         !
!         warranty of fitness for a particular purpose       !
!            or accuracy of the FB-Pier software             !
!     The  developers shall not be liable for any damages    !
!          incurred through the use of FB-MultiPier          !
!                                                            !
!                                                            !
!              :::: F B - M U L T I P I E R ::::             !
!                  FB-MultiPier Version 4.13                 !
!                                                            !
!                                                            !
!         Written by Marc Hoit, Mike McVay, Cliff Hays       !
!         Mark Williams, Petros Christou, Jae H. Chung.      !
!                                                            !
!      Civil & Coastal Engineering, University of Florida    !
!      Supported by Florida Department of Transportation     !
!           and the Federal Highway Administration           !
!                                                            !
!              The program calculates the Response           !
!            of the Bridge Pier Pile Soil Structures         !
!                                                            !
!             The Analysis includes PreLoad, Static,         !
!                 Transient Dynamic or Push Over             !
!                                                            !
!        The Program Handles NonLinear Soil Behavior,        !
!  Linear Pile Cap and Linear and NonLinear Piles and Piers  !
!                                                            !
!                                                            !
!       Contact: Bridge Software Institute for Support       !
!                HTTP://BSI-WEB.CE.UFL.EDU                   !
!                                                            !
!------------------------------------------------------------!

Analysis Start Time  :****************************************
Analysis End Time    :****************************************
Analysis Duration    :****************************************

Input Data File Name : P3-LCS.IN
Analysis Date        : 3-15-2011
License ID Number    : 432478881


********************
*   PROJECT DATA   *
********************

Project Client      : CRC / WSDOT / ODOT
Project Name        : Columbia River Crossing
Project Manager     : R. Turton
Computed by         : NRH
Project Description : SB - Pier 3 - Liquefaction + Contraction Scour


************************************
*   SELECTIVE PRINT OUTPUT CONTROL   *
************************************
                                      Print On
Pile Displacements                      YES
Pile Element Forces                      NO
Missing Pile ID Numbers                  NO
Pier Columns and Pier Cap Displacements  NO
Pier Columns and Pier Cap Force Output  YES
Pier Material Properties                YES
Soil Response Forces                     NO
Soil Data per Layer                     YES
Soil Curve data per Pile Node            NO
Soil Graph per Pile Node                 NO
Out of Balance Forces                    NO
Bridge Simulation Spring Force Output    NO
Bridge Span Displacements                NO
Bridge Span Element Forces               NO
Bridge Span Properties                   NO
Pile Cap Stress                          NO
```

```
 Material Stress Strain Curve Data          NO
 Interaction Diagram Data For Pile and Pier YES
 Pile and Pier coordinates                  NO
 Generate XML file                          NO


 *************
 *   UNITS   *
 *************

 Analysis Units Specified are: English Mixed (Kips & Ft some lbs & in)


 ***************************
 *   CONTROL INFORMATION   *
 ***************************

 Number of Piers               (NUMPIERS) =    1
 Maximum Number of Iterations    (MAXITN) =   50
 Tolerance                        (TOLER) =    10.000000     Kips

 NOTE : The following soil information is not applicable in the coulmn analysis problems

 Soil Behavior Option             (IFLEX) =    0
    IFLEX = 0 -> PY Multipliers are Input
    IFLEX = 1 -> PY Multipliers Defaulted to 1.0
    IFLEX = 2 -> No SOIL (Must use tip springs)

 Soil resistance due to Pile Rotation About 2 and 3 Axis (NSODF) =    4
    NSDOF = 4 -> NO Resistance Accounted
    NSDOF = 6 -> Resistance Accounted

 Linear Pile TIP Spring Option     (ITIP) =    0
    ITIP = 0 -> NO spring
    ITIP = 1 -> Axial only
    ITIP = 2 -> All DOF

 Linear Pile TIP Spring Stiffness (TSTIF) =         0.00 kips/in


 **********************
 *   SOIL BEHAVIOR    *
 **********************

 PY Multipliers will be used (IFLEX = 0)


 ************************************************
 *   LOAD FACTORS FOR SELF WEIGHT AND BUOYANCY   *
 ************************************************

 LOAD CASE     SELF WEIGHT     BUOYANCY
     #            FACTOR         FACTOR
     1             1.00           1.00


 ****************************
 *   GENERAL INFORMATION    *
 ****************************

 Static / Cyclic Load (KCYC)      =    0
    KCYC = 0 -> Static Load
    KCKC > 0 -> Cyclic Load (# Cycles)

 Fixity of Pile Cap (KFIX)        =    1
    KFIX = 0 -> Pinned Head
    KFIX = 1 -> Fixed head

 Bearing of Cap on Soil           =  NO


 ******************************
 *   GRID DATA INFORMATION    *
 ******************************

 NOTE: X-Grid : Distance between axes along the X-Axis
       Y-Grid : Distance between axes along the Y-Axis

 Number of Grid Points in X-Direction (NPX) =     4
 Number of Grid Points in X-Direction (NPY) =     5

 Grid Spacing in the X Direction : (inches)
      90.00     360.00      90.00
```

Grid Spacing in the Y Direction : (inches)
90.00 360.00 360.00 90.00

****
* ANALYSIS OPTIONS *
****

Type of Stiffness = Secant Stiffness
Type of Structure = Full
Type of Analysis = Static Analysis

****
* INPUT SOIL DATA - GIVEN BY LAYER *
****

NOTE : The following data is used to define Springs
for each Soil Layer to determine the Soil
Behavior during the analysis

LAYERED P-Y CURVES

SOIL SET # 1

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	1	1	0.6000E+01	0.4600E+01	0.1073E+03
			0.6000E+01	0.4600E+01	0.1073E+03
1	2	1	0.6000E+01	0.7500E+01	0.1212E+03
			0.6000E+01	0.7500E+01	0.1212E+03
1	3	1	0.3500E+02	0.5000E+02	0.1212E+03
			0.3500E+02	0.5000E+02	0.1212E+03
1	4	1	0.4500E+02	0.1250E+03	0.1367E+03
			0.4500E+02	0.1250E+03	0.1367E+03
1	5	1	0.4500E+02	0.1500E+03	0.1402E+03
			0.4500E+02	0.1500E+03	0.1402E+03

LAYERED T-Z CURVES

SOIL SET # 1

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00
	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00

	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED

	TOP		BOTTOM	
	Z Value	T Value	Z Value	T Value
	in	psi	in	psi
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.546E+01	0.380E+00	0.147E+02
	0.760E+00	0.679E+01	0.760E+00	0.182E+02
	0.114E+01	0.707E+01	0.114E+01	0.190E+02
	0.152E+01	0.707E+01	0.152E+01	0.190E+02
	0.265E+01	0.707E+01	0.265E+01	0.190E+02
	0.379E+01	0.707E+01	0.379E+01	0.190E+02
	0.493E+01	0.707E+01	0.493E+01	0.190E+02
	0.606E+01	0.707E+01	0.606E+01	0.190E+02
	0.720E+01	0.707E+01	0.720E+01	0.190E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value	T Value	Z Value	T Value
	in	psi	in	psi
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value	T Value	Z Value	T Value
	in	psi	in	psi
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

LAYERED T-Theta CURVES

SOIL SET # 1

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	1	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	2	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	3	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	4	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	5	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

PILE TIP SOIL PARAMETERS

SOIL SET # 1

USER DEFINED

Q Value	T Value

	in	lbs
1	0.000E+00	0.000E+00
2	0.222E+00	0.362E+07
3	0.444E+00	0.624E+07
4	0.667E+00	0.829E+07
5	0.889E+00	0.995E+07
6	0.111E+01	0.113E+08
7	0.133E+01	0.125E+08
8	0.156E+01	0.136E+08
9	0.178E+01	0.145E+08
10	0.200E+01	0.153E+08

****
* PILE SEGMENT INFORMATION DATA *
****

NOTE: The Piles Sets consist of Pile Segments based on the User Input. The program groups all segments from all the different Pile Sets and assigns a reference number to each

The reference number for each segment together with the User Input Pile Set/Segment number is shown below. The Input section properties for each section/segment is also provided below.

The user is advised to double check these numbers

Number of segments found in all Piles (NPSEG) = 2

! -> SECTION DATA FOR SECTION/SEGMENT : 1 !

Input Pile Set Number = 1
Input Pile Set Segment = 1

Section Pile Length (L) = 9.0000000 ft

Nonlinear Section/Segment Material Properties

Material Option (MATOPT) = 1
(Please Refer to the Users Guide for Details)

- Concrete Stress Strain Properties

Concrete Strength (FPC) = 0.4000E+01 ksi
Modulus of Elasticity (EC) = 0.4224E+04 ksi

Gauss Integration Points for Concrete = 60

- Steel Stress Strain Properties

Mild Steel Yield Stress (FY) = 0.600E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

Tubular Steel Yield Stress (FY) = 0.500E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

- Shape of Section : CIRCULAR

- Steel and Confinement Data

Number of Steel Layers = 2
Section/Segment Diameter = 180.0000 in
Tied/Spiral Reinforcement Flag = 1
(NOTE : Spiral = 1, Tied = 2)
Confinement Flag = 1
(NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

- Steel and Confinement Data

Yield Stress of Confinement Steel = 60.00 ksi
Spacing between Confinement Steel = 6.750 in
Diameter of Confinement Steel = 0.7500 in
Outer Shell Thickness = 1.00 in

- Total Area of Steel Reinforcement = 424.00 in^2

Layer	# Bars/Strands	Area in^2	Layer Dia. in	Prestressing ksi

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
1	56	4.00	108.00	0.00

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
2	52	3.85	96.00	0.00

! -> SECTION DATA FOR SECTION/SEGMENT : 2 !

Input Pile Set Number = 1
Input Pile Set Segment = 2

Section Pile Length (L) = 258.08000 ft

Nonlinear Section/Segment Material Properties

Material Option (MATOPT) = 1
(Please Refer to the Users Guide for Details)

- Concrete Stress Strain Properties

  Concrete Strength (FPC) = 0.6000E+01 ksi
  Modulus of Elasticity (EC) = 0.5173E+04 ksi

  Gauss Integration Points for Concrete = 60

- Steel Stress Strain Properties

  Mild Steel Yield Stress (FY) = 0.600E+02 ksi
  Modulus of Elasticity (ES) = 0.2900E+05 ksi

  Tubular Steel Yield Stress (FY) = 0.500E+02 ksi
  Modulus of Elasticity (ES) = 0.2900E+05 ksi

- Shape of Section : CIRCULAR

- Steel and Confinement Data

  Number of Steel Layers = 2
  Section/Segment Diameter = 120.0000 in
  Tied/Spiral Reinforcement Flag = 1
  (NOTE : Spiral = 1, Tied = 2)
  Confinement Flag = 1
  (NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

- Steel and Confinement Data

  Yield Stress of Confinement Steel = 60.00 ksi
  Spacing between Confinement Steel = 6.000 in
  Diameter of Confinement Steel = 0.7500 in
  Outer Shell Thickness = 1.00 in

- Total Area of Steel Reinforcement = 424.00 in^2

Layer	# Bars/Strands	Area in^2	Layer Dia. in	Prestressing ksi

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
1	56	4.00	108.00	0.00

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section

for the analysis. The area is changed to
result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
2	52	3.85	96.00	0.00

PLOT OF THE QZ CURVE FOR THE TIP OF THE PILE

- USER DEFINED CURVE

SOIL SET	Z Value	Q Value	Z Value	Q Value	Z Value	Q Value
1	0.0000E+00	0.0000E+00	0.2222E+00	0.3615E+07	0.4444E+00	0.6244E+07
	0.6667E+00	0.8290E+07	0.8889E+00	0.9952E+07	0.1111E+01	0.1134E+08
	0.1333E+01	0.1253E+08	0.1556E+01	0.1357E+08	0.1778E+01	0.1448E+08
	0.2000E+01	0.1530E+08				

****
* PILE SET DATA DESCRIPTION *
****

NOTE : The piles are organized in pile sets. Each pile
set is composed of pile segments that are input
by the User. A pile set is attached to each
pile in order to describe its composition

List of Piles Sets and Piles

Pile Set	Piles (that are assigned the Pile Set)
1	1, 2, 3, 4, 5, 6

Total Length for Each Pile Set

Pile Set	Length
1	3204.96

****
* INPUT FOR STRUCTURAL ANALYSIS *
****

Number of Joints = 64
Number of Different Element Types = 3
Number of Load Conditions = 1

WARNING : Pier Columns and Cap are linear
No P-Delta or Moment Magnification is included
Nonlinear should be used for final design

PIER SUMMARY

Stiffness of Foundation Requested - NO Pier Exists

****
* MATERIAL PROPERTIES FOR PILE CAP AND FRAME (PIER) ELEMENTS *
****

****
* PILE CAP PROPERTIES - USING SHELL ELEMENTS *
****

Modulus of Elasticity = 0.4224E+04 (ksi)
Poissons Ratio = 0.2000
Shear Modulus = 0.1760E+04 (ksi)
Self Weight = 160.0000 (pcf)
Thickness = 0.1900E+02 (ft)

! -> PROPERTIES FOR CONNECTOR ELEMENTS (DEFAULTED) !

NOTE : These Elements are generated by the program at the Pier
Column Bases where they connect with the Pile Cap. The
purpose for these elements is to spread the column base

load over an area on the Pile Cap and therefore avoid
High Stress Concentrations

NOTE : The material property number for these elements is
defaulted to 1. The material numbers for the properties
of the rest of the Pier elements start form 2

-> SECTION DATA FOR SECTION/SEGMENT : 1

Member Property Number	=	1	
Axial Area, A	=	51984.	(in^2)
Torsional Moment of Inertia, J	=	0.98770E+10	(in^4)
Moment of Inertia, 3 - Axis	=	0.98770E+10	(in^4)
Moment of Inertia, 2 - Axis	=	0.98770E+10	(in^4)
Modulus of Elasticity, E	=	4224.0	(ksi)
Shear Modulus, G	=	1760.0	(ksi) (used for Torsion)
Weight Density	=	0.00000	(K/in^3)

! -> PROPERTIES FOR PIER COLUMNS !

Member Property Number	=	2	
Axial Area, A	=	0.00000	(in^2)
Torsional Moment of Inertia, J	=	0.00000	(in^4)
Moment of Inertia, 3 - Axis	=	0.00000	(in^4)
Moment of Inertia, 2 - Axis	=	0.00000	(in^4)
Modulus of Elasticity, E	=	0.00000	(ksi)
Shear Modulus, G	=	0.00000	(ksi) (used for Torsion)
Weight Density	=	0.00000	(K/in^3)

****
* PIER MEMBER CONNECTIVITY *
****

ELEMENT NUMBER	NODES I	NODES J	MATERIAL NUMBER
1	64	47	1
2	64	4	1
3	64	37	1
4	64	3	1

****
* GENERAL LOAD DATA *
****

The table below shows the Applied Loads for every
Load Case. The values in the table represent the
magnitute of the Loads in the specified units

- Applied Load

NODE	LOAD	X (Kips)	Y (Kips)	Z (Kips)	MXX (Kip-ft)	MYY (Kip-ft)	MZZ (Kip-ft)
64	1	2936.00	0.00	0.00	0.00	0.00	0.00
64	2	0.00	6938.00	0.00	0.00	0.00	0.00
64	3	0.00	0.00	25762.00	0.00	0.00	0.00
64	4	0.00	0.00	0.00	566382.00	0.00	0.00
64	5	0.00	0.00	0.00	0.00	-179159.00	0.00
64	6	0.00	0.00	0.00	0.00	0.00	38270.00

****
*
* ANALYSIS RESULTS *
*
****

****
* RESULTS FOR LOAD CASE # 1 *
****

NOTE : PY Multipliers are applied Lead to Trail row
based on the actual displacement. If there is
no displacement in a Lateral direction they are
defaulted to 1.0. This can happen in Axial Load
and one direction lateral load cases

PY Multipliers are Applied to A Pile Group

PILE#	X-PYM	Y-PYM
1	0.500E+00	0.700E+00
2	0.700E+00	0.700E+00
3	0.500E+00	0.500E+00
4	0.700E+00	0.500E+00
5	0.500E+00	0.350E+00
6	0.700E+00	0.350E+00

****
* CONVERGENCE REPORT *
****

The Solution Converged in 9 Iterations

Summary of Abs Maximum Out-Of-Balance Forces

FZZ =	1.407	Kips
FXX =	7.338	Kips
FYY =	0.622	Kips
MXX =	210.694	Kip-in
MYY =	0.000	Kip-in
MZZ =	703.161	Kip-in

Summary of Displacements at Pile Heads

Node	X (in)	Y (in)	Z (in)
1	3.9792	13.2045	0.7322
2	3.9798	13.7638	1.3956
3	4.5390	13.2074	-0.0043
4	4.5390	13.7667	0.6938
5	5.0970	13.2065	-0.8062
6	5.0964	13.7636	-0.1375

Final Displacements

Load Case # 1

Node	X (in)	Y (in)	Z (in)	Rx (rad)	Ry (rad)	Rz (rad)
Pile Number 1						
1	3.9792	13.2045	0.7322	0.0025	-0.0022	0.0016
65	3.8409	13.0300	0.7265	0.0031	-0.0023	0.0015
66	3.6950	12.8159	0.7201	0.0037	-0.0024	0.0015
67	3.5391	12.5475	0.7172	0.0049	-0.0026	0.0014
68	3.3715	12.2124	0.7131	0.0059	-0.0028	0.0013
69	3.1941	11.8182	0.7077	0.0068	-0.0029	0.0012
70	3.0090	11.3723	0.7011	0.0076	-0.0030	0.0012
71	2.8184	10.8822	0.6933	0.0082	-0.0031	0.0011
72	2.6244	10.3551	0.6845	0.0087	-0.0031	0.0010
73	2.4286	9.7982	0.6747	0.0092	-0.0032	0.0009
74	1.8774	8.1138	0.6446	0.0098	-0.0031	0.0007
75	1.3575	6.3703	0.6142	0.0099	-0.0028	0.0005
76	0.8973	4.6774	0.5835	0.0093	-0.0024	0.0004
77	0.5232	3.1451	0.5555	0.0080	-0.0018	0.0003
78	0.2531	1.8780	0.5314	0.0063	-0.0012	0.0002
79	0.0847	0.9453	0.5087	0.0043	-0.0007	0.0001
80	-0.0005	0.3546	0.4841	0.0024	-0.0003	0.0001
81	-0.0303	0.0498	0.4549	0.0011	-0.0001	0.0001
82	-0.0308	-0.0623	0.4239	0.0003	0.0000	0.0001
83	-0.0208	-0.0733	0.3940	-0.0001	0.0001	0.0000
84	-0.0103	-0.0474	0.3656	-0.0002	0.0001	0.0000
85	-0.0033	-0.0201	0.3389	-0.0001	0.0000	0.0000
86	-0.0001	-0.0037	0.3141	-0.0001	0.0000	0.0000
87	0.0008	0.0021	0.2951	0.0000	0.0000	0.0000
88	0.0008	0.0033	0.2815	0.0000	0.0000	0.0000
Pile Number 2						
2	3.9798	13.7638	1.3956	0.0024	-0.0020	0.0016
89	3.8533	13.5906	1.3824	0.0031	-0.0021	0.0015
90	3.7168	13.3762	1.3687	0.0038	-0.0023	0.0015
91	3.5672	13.1053	1.3572	0.0049	-0.0025	0.0014
92	3.4023	12.7654	1.3446	0.0060	-0.0028	0.0013
93	3.2248	12.3645	1.3308	0.0069	-0.0029	0.0012
94	3.0372	11.9104	1.3160	0.0077	-0.0031	0.0012

95	2.8422	11.4108	1.3002	0.0084	-0.0032	0.0011
96	2.6418	10.8731	1.2838	0.0089	-0.0033	0.0010
97	2.4382	10.3044	1.2669	0.0094	-0.0033	0.0009
98	1.8609	8.5758	1.2184	0.0101	-0.0032	0.0007
99	1.3172	6.7745	1.1696	0.0102	-0.0029	0.0005
100	0.8441	5.0200	1.1205	0.0096	-0.0024	0.0004
101	0.4688	3.4238	1.0716	0.0084	-0.0018	0.0003
102	0.2063	2.0883	1.0246	0.0067	-0.0012	0.0002
103	0.0518	1.0857	0.9784	0.0047	-0.0006	0.0001
104	-0.0188	0.4314	0.9311	0.0028	-0.0002	0.0001
105	-0.0363	0.0776	0.8814	0.0013	0.0000	0.0001
106	-0.0293	-0.0628	0.8320	0.0004	0.0001	0.0001
107	-0.0162	-0.0826	0.7844	-0.0001	0.0001	0.0000
108	-0.0061	-0.0552	0.7388	-0.0002	0.0000	0.0000
109	-0.0009	-0.0239	0.6957	-0.0002	0.0000	0.0000
110	0.0006	-0.0046	0.6552	-0.0001	0.0000	0.0000
111	0.0005	0.0023	0.6233	0.0000	0.0000	0.0000
112	0.0001	0.0039	0.5997	0.0000	0.0000	0.0000

Pile Number 3

3	4.5390	13.2074	-0.0043	0.0023	-0.0021	0.0016
113	4.4023	13.0448	0.0014	0.0029	-0.0023	0.0015
114	4.2554	12.8462	0.0065	0.0035	-0.0024	0.0015
115	4.0949	12.5977	0.0175	0.0045	-0.0027	0.0014
116	3.9181	12.2871	0.0272	0.0055	-0.0030	0.0013
117	3.7274	11.9203	0.0357	0.0063	-0.0032	0.0012
118	3.5251	11.5034	0.0427	0.0071	-0.0033	0.0012
119	3.3137	11.0423	0.0485	0.0078	-0.0035	0.0011
120	3.0954	10.5431	0.0529	0.0083	-0.0036	0.0010
121	2.8726	10.0116	0.0559	0.0088	-0.0036	0.0009
122	2.2349	8.3830	0.0581	0.0096	-0.0036	0.0007
123	1.6220	6.6741	0.0541	0.0097	-0.0033	0.0005
124	1.0739	4.9979	0.0540	0.0092	-0.0029	0.0004
125	0.6282	3.4627	0.0604	0.0081	-0.0022	0.0003
126	0.3062	2.1647	0.0716	0.0066	-0.0015	0.0002
127	0.1057	1.1686	0.0849	0.0047	-0.0008	0.0001
128	0.0039	0.4949	0.0969	0.0029	-0.0004	0.0001
129	-0.0317	0.1140	0.1042	0.0014	-0.0001	0.0001
130	-0.0325	-0.0451	0.1056	0.0004	0.0000	0.0001
131	-0.0212	-0.0757	0.1011	0.0000	0.0001	0.0000
132	-0.0101	-0.0564	0.0945	-0.0002	0.0001	0.0000
133	-0.0031	-0.0285	0.0881	-0.0001	0.0000	0.0000
134	0.0000	-0.0081	0.0820	-0.0001	0.0000	0.0000
135	0.0008	0.0018	0.0772	0.0000	0.0000	0.0000
136	0.0007	0.0061	0.0735	0.0000	0.0000	0.0000

Pile Number 4

4	4.5390	13.7667	0.6938	0.0023	-0.0021	0.0016
137	4.4019	13.6030	0.6884	0.0030	-0.0023	0.0015
138	4.2534	13.4015	0.6825	0.0035	-0.0025	0.0015
139	4.0898	13.1479	0.6801	0.0046	-0.0028	0.0014
140	3.9084	12.8300	0.6766	0.0056	-0.0031	0.0013
141	3.7119	12.4544	0.6719	0.0065	-0.0033	0.0012
142	3.5031	12.0279	0.6661	0.0072	-0.0034	0.0012
143	3.2849	11.5572	0.6591	0.0079	-0.0036	0.0011
144	3.0599	11.0488	0.6511	0.0085	-0.0037	0.0010
145	2.8308	10.5094	0.6421	0.0089	-0.0037	0.0009
146	2.1786	8.8639	0.6136	0.0097	-0.0037	0.0007
147	1.5585	7.1377	0.5845	0.0098	-0.0034	0.0005
148	1.0102	5.4309	0.5552	0.0094	-0.0028	0.0004
149	0.5687	3.8423	0.5277	0.0085	-0.0021	0.0003
150	0.2563	2.4698	0.5034	0.0070	-0.0014	0.0002
151	0.0698	1.3891	0.4812	0.0052	-0.0007	0.0001
152	-0.0166	0.6336	0.4585	0.0034	-0.0003	0.0001
153	-0.0392	0.1843	0.4329	0.0018	0.0000	0.0001
154	-0.0322	-0.0237	0.4047	0.0007	0.0001	0.0001
155	-0.0180	-0.0831	0.3761	0.0001	0.0001	0.0000
156	-0.0069	-0.0718	0.3489	-0.0002	0.0000	0.0000
157	-0.0011	-0.0398	0.3235	-0.0002	0.0000	0.0000
158	0.0006	-0.0129	0.2997	-0.0001	0.0000	0.0000
159	0.0006	0.0014	0.2815	-0.0001	0.0000	0.0000
160	0.0002	0.0084	0.2684	0.0000	0.0000	0.0000

Pile Number 5

5	5.0970	13.2065	-0.8062	0.0026	-0.0020	0.0015
161	4.9646	13.0292	-0.7901	0.0031	-0.0022	0.0015
162	4.8192	12.8213	-0.7746	0.0036	-0.0024	0.0015
163	4.6562	12.5704	-0.7519	0.0045	-0.0028	0.0014
164	4.4718	12.2653	-0.7303	0.0053	-0.0031	0.0013
165	4.2683	11.9107	-0.7097	0.0061	-0.0034	0.0012
166	4.0484	11.5110	-0.6901	0.0068	-0.0037	0.0011
167	3.8145	11.0707	-0.6714	0.0074	-0.0039	0.0011
168	3.5693	10.5943	-0.6537	0.0079	-0.0040	0.0010

169	3.3154	10.0863	-0.6368	0.0084	-0.0041	0.0009
170	2.5732	8.5147	-0.5920	0.0093	-0.0042	0.0007
171	1.8518	6.8442	-0.5485	0.0095	-0.0039	0.0005
172	1.2137	5.1980	-0.5058	0.0091	-0.0033	0.0004
173	0.7044	3.6851	-0.4611	0.0080	-0.0025	0.0003
174	0.3407	2.3880	-0.4136	0.0066	-0.0016	0.0002
175	0.1154	1.3622	-0.3650	0.0050	-0.0009	0.0001
176	0.0020	0.6315	-0.3175	0.0033	-0.0004	0.0001
177	-0.0358	0.1837	-0.2731	0.0018	-0.0001	0.0001
178	-0.0344	-0.0296	-0.2353	0.0007	0.0001	0.0001
179	-0.0200	-0.0863	-0.2037	0.0000	0.0001	0.0000
180	-0.0075	-0.0685	-0.1761	-0.0002	0.0001	0.0000
181	-0.0011	-0.0337	-0.1523	-0.0002	0.0000	0.0000
182	0.0007	-0.0085	-0.1322	-0.0001	0.0000	0.0000
183	0.0005	0.0022	-0.1206	0.0000	0.0000	0.0000
184	0.0000	0.0057	-0.1168	0.0000	0.0000	0.0000

Pile Number 6

6	5.0964	13.7636	-0.1375	0.0027	-0.0021	0.0015
185	4.9558	13.5811	-0.1302	0.0032	-0.0024	0.0015
186	4.8013	13.3666	-0.1235	0.0037	-0.0026	0.0015
187	4.6281	13.1072	-0.1108	0.0046	-0.0030	0.0014
188	4.4325	12.7918	-0.0994	0.0055	-0.0033	0.0013
189	4.2175	12.4254	-0.0891	0.0063	-0.0036	0.0012
190	3.9861	12.0131	-0.0801	0.0070	-0.0038	0.0011
191	3.7414	11.5599	-0.0722	0.0076	-0.0040	0.0011
192	3.4864	11.0709	-0.0656	0.0081	-0.0042	0.0010
193	3.2243	10.5512	-0.0601	0.0086	-0.0043	0.0009
194	2.4688	8.9551	-0.0510	0.0094	-0.0043	0.0007
195	1.7457	7.2650	-0.0474	0.0097	-0.0039	0.0005
196	1.1125	5.5886	-0.0404	0.0093	-0.0032	0.0004
197	0.6133	4.0245	-0.0278	0.0084	-0.0024	0.0003
198	0.2681	2.6606	-0.0113	0.0070	-0.0015	0.0002
199	0.0674	1.5619	0.0071	0.0054	-0.0008	0.0001
200	-0.0215	0.7619	0.0253	0.0037	-0.0003	0.0001
201	-0.0413	0.2567	0.0406	0.0021	0.0000	0.0001
202	-0.0311	0.0025	0.0507	0.0009	0.0001	0.0001
203	-0.0156	-0.0806	0.0544	0.0001	0.0001	0.0000
204	-0.0051	-0.0769	0.0530	-0.0001	0.0000	0.0000
205	-0.0005	-0.0467	0.0498	-0.0002	0.0000	0.0000
206	0.0007	-0.0180	0.0466	-0.0001	0.0000	0.0000
207	0.0005	0.0001	0.0441	-0.0001	0.0000	0.0000
208	0.0001	0.0116	0.0421	-0.0001	0.0000	0.0000

SUM OF TOTAL SOIL SPRING LOADS

CHECK: Total Load Carried by the Soil
(Sum of NF+FF Soil Spring Loads)

X Direction	=	2932.5819	Kips
Y Direction	=	6830.9708	Kips
Z Direction	=	48015.2856	Kips
Sum of Tip Forces	=	18032.0127	Kips

Summary of Pile Forces for Load CASE 1

1. Axial Force (Kips)

Pile #	Maximum Force	Minimum Force
1	-0.52685E+04	-0.12615E+05
2	-0.92054E+04	-0.19567E+05
3	-0.13616E+04	-0.27840E+04
4	-0.50633E+04	-0.12096E+05
5	0.62597E+04	0.44131E+03
6	0.87295E+02	-0.13152E+04

2. Pile Shear Force in 2 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.38317E+03	-0.28409E+03
2	0.48867E+03	-0.36057E+03
3	0.44525E+03	-0.28949E+03
4	0.54684E+03	-0.39321E+03
5	0.48868E+03	-0.27960E+03
6	0.58471E+03	-0.37494E+03

3. Pile Shear Force in 3 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.10932E+04	-0.13536E+04
2	0.12251E+04	-0.13951E+04
3	0.86827E+03	-0.11277E+04
4	0.10227E+04	-0.12072E+04
5	0.66440E+03	-0.89388E+03
6	0.75228E+03	-0.96194E+03

4. Bending Moment About 2 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.9860E+05	0.13478E+03	-0.5489E+05
2	2	0.00000E+00	0.1067E+06	0.13478E+03	-0.6015E+05
3	3	0.00000E+00	0.8105E+05	0.14948E+03	-0.4368E+05
4	4	0.00000E+00	0.9324E+05	0.13478E+03	-0.5187E+05
5	5	0.00000E+00	0.6176E+05	0.14948E+03	-0.3259E+05
6	6	0.00000E+00	0.7080E+05	0.14948E+03	-0.3884E+05

5. Bending Moment About 3 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.1950E+05	0.12008E+03	-0.1728E+05
2	2	0.00000E+00	0.2681E+05	0.12008E+03	-0.2042E+05
3	3	0.00000E+00	0.2359E+05	0.12008E+03	-0.1690E+05
4	4	0.00000E+00	0.2944E+05	0.12008E+03	-0.2202E+05
5	5	0.00000E+00	0.2658E+05	0.10538E+03	-0.1571E+05
6	6	0.00000E+00	0.3148E+05	0.12008E+03	-0.2039E+05

****
* ANALYTICAL FORCE RESULTS FOR PIER *
****

ELEM NO.	PROP NO.	NODE NO.	LOAD CASE	FAX (Kips)	F22 (Kips)	F33 (Kips)	M22 (Kip-ft)	M33 (Kip-ft)	TORQUE (Kip-ft)	D/C (Ratio)
- Connector Beam Segments										
1	1	64	1	-797.88	-21171.90	-1389.49	20842.38	*********	-14432.02	
	0.00									
	1	47		797.88	21171.90	1389.49	0.00	0.00	14432.02	
	0.00									
2	1	64	1	568.98	12705.02	-3360.33	50404.95	190575.23	*********	
	0.00									
	1	4		-568.98	-12705.02	3360.33	0.00	0.00	139561.97	
	0.00									
3	1	64	1	1024.00	34570.37	442.70	-6640.46	518555.48	2106.45	
	0.00									
	1	37		-1024.00	-34570.37	-442.70	0.00	0.00	-2106.45	
	0.00									
4	1	64	1	-534.83	-341.48	1755.79	-26336.87	-5122.24	130189.97	
	0.00									
	1	3		534.83	341.48	-1755.79	0.00	0.00	*********	
	0.00									

****
* ANALYTICAL PILE CAP - SHELL STRESS RESULTS *
****

****
* DAMPING FORCES *
****

Node #	FXX Kip	FYY Kip	FZZ Kip	MXX Kip	MYY Kip	MZZ Kip

****
* UNIAXIAL INTERACTION DIAGRAM *
****

NOTE : 1. The tables below show the values on the Interaction
Diagrams for each section which correspond to the

section capacity
2. The numbering of the SECTIONS/SEGMENTS is shown previously in the output file

---
! -> Pile Cross Section Number = 1 !

Diagram Data

Maximum Tension Force = 0.4820E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = 0.1237E-14 (in)
Local 3 Axis Shift for Plastic Centroid = -0.7486E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.4820E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.4383E+05	0.1416E+06	0.1416E+06	0.1416E+06	0.1416E+06
0.3942E+05	0.1551E+06	0.1551E+06	0.1551E+06	0.1551E+06
0.3522E+05	0.1665E+06	0.1665E+06	0.1665E+06	0.1665E+06
0.3063E+05	0.1734E+06	0.1734E+06	0.1734E+06	0.1734E+06
0.2630E+05	0.1763E+06	0.1763E+06	0.1763E+06	0.1763E+06
0.2202E+05	0.1781E+06	0.1781E+06	0.1781E+06	0.1781E+06
0.1754E+05	0.1858E+06	0.1858E+06	0.1858E+06	0.1858E+06
0.1313E+05	0.1933E+06	0.1933E+06	0.1933E+06	0.1933E+06
0.8760E+04	0.1992E+06	0.1992E+06	0.1992E+06	0.1992E+06
0.4351E+04	0.2050E+06	0.2050E+06	0.2050E+06	0.2050E+06
0.2535E+00	0.2098E+06	0.2098E+06	0.2098E+06	0.2098E+06
-0.6770E+04	0.1879E+06	0.1879E+06	0.1879E+06	0.1879E+06
-0.1317E+05	0.1887E+06	0.1887E+06	0.1887E+06	0.1887E+06
-0.1976E+05	0.1904E+06	0.1904E+06	0.1904E+06	0.1904E+06
-0.2636E+05	0.1864E+06	0.1864E+06	0.1864E+06	0.1864E+06
-0.3296E+05	0.1770E+06	0.1770E+06	0.1770E+06	0.1770E+06
-0.3956E+05	0.1636E+06	0.1636E+06	0.1636E+06	0.1636E+06
-0.4658E+05	0.1451E+06	0.1451E+06	0.1451E+06	0.1451E+06
-0.4750E+05	0.1423E+06	0.1423E+06	0.1423E+06	0.1423E+06
-0.4912E+05	0.1373E+06	0.1373E+06	0.1373E+06	0.1373E+06
-0.5045E+05	0.1331E+06	0.1331E+06	0.1331E+06	0.1331E+06
-0.5170E+05	0.1289E+06	0.1289E+06	0.1289E+06	0.1289E+06
-0.5283E+05	0.1249E+06	0.1249E+06	0.1249E+06	0.1249E+06
-0.5384E+05	0.1213E+06	0.1213E+06	0.1213E+06	0.1213E+06
-0.5553E+05	0.1152E+06	0.1152E+06	0.1152E+06	0.1152E+06
-0.5679E+05	0.1105E+06	0.1105E+06	0.1105E+06	0.1105E+06
-0.5811E+05	0.1049E+06	0.1049E+06	0.1049E+06	0.1049E+06
-0.5928E+05	0.9803E+05	0.9997E+05	0.9803E+05	0.9997E+05
-0.6016E+05	0.9454E+05	0.9617E+05	0.9454E+05	0.9617E+05

! -> Pile Cross Section Number = 2 !

Diagram Data

Maximum Tension Force = 0.3972E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = -0.2885E-15 (in)
Local 3 Axis Shift for Plastic Centroid = -0.6414E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.3972E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.2923E+05	0.1203E+06	0.1203E+06	0.1203E+06	0.1203E+06
0.2532E+05	0.1265E+06	0.1265E+06	0.1265E+06	0.1265E+06
0.2177E+05	0.1346E+06	0.1346E+06	0.1346E+06	0.1346E+06
0.1803E+05	0.1432E+06	0.1432E+06	0.1432E+06	0.1432E+06
0.1444E+05	0.1490E+06	0.1490E+06	0.1490E+06	0.1490E+06
0.1088E+05	0.1475E+06	0.1475E+06	0.1475E+06	0.1475E+06
0.7226E+04	0.1453E+06	0.1453E+06	0.1453E+06	0.1453E+06
0.3610E+04	0.1484E+06	0.1484E+06	0.1484E+06	0.1484E+06
-0.4144E-01	0.1502E+06	0.1502E+06	0.1502E+06	0.1502E+06
-0.5800E+04	0.1268E+06	0.1268E+06	0.1268E+06	0.1268E+06
-0.1170E+05	0.1305E+06	0.1305E+06	0.1305E+06	0.1305E+06
-0.1744E+05	0.1337E+06	0.1337E+06	0.1337E+06	0.1337E+06
-0.2328E+05	0.1339E+06	0.1339E+06	0.1339E+06	0.1339E+06
-0.2902E+05	0.1292E+06	0.1292E+06	0.1292E+06	0.1292E+06
-0.3498E+05	0.1218E+06	0.1218E+06	0.1218E+06	0.1218E+06
-0.4119E+05	0.1107E+06	0.1107E+06	0.1107E+06	0.1107E+06
-0.4369E+05	0.1050E+06	0.1050E+06	0.1050E+06	0.1050E+06
-0.4572E+05	0.9985E+05	0.9985E+05	0.9985E+05	0.9985E+05
-0.4823E+05	0.9275E+05	0.9275E+05	0.9275E+05	0.9275E+05
-0.5091E+05	0.8466E+05	0.8466E+05	0.8466E+05	0.8466E+05
-0.5350E+05	0.7561E+05	0.7644E+05	0.7561E+05	0.7644E+05
-0.5585E+05	0.6814E+05	0.6854E+05	0.6814E+05	0.6854E+05
-0.5832E+05	0.5940E+05	0.6011E+05	0.5940E+05	0.6011E+05
-0.6098E+05	0.4891E+05	0.5047E+05	0.4891E+05	0.5047E+05
-0.6386E+05	0.3943E+05	0.3943E+05	0.3943E+05	0.3943E+05
-0.6616E+05	0.3020E+05	0.3020E+05	0.3020E+05	0.3020E+05
-0.6883E+05	0.1921E+05	0.1921E+05	0.1921E+05	0.1921E+05

****
* FINAL MAXIMUMS/MINIMUMS FOR ALL LOAD CASES *
* PIER # 1 *
****

Maximum/Minimum Pile Forces

	Value		Load	Comb.	Pile
Max Shear in 2 Direction	0.5847E+03	Kip	1	0	6
Min Shear in 2 Direction	-0.3932E+03	Kip	1	0	4
Max Shear in 3 Direction	0.1225E+04	Kip	1	0	2
Min Shear in 3 Direction	-0.1395E+04	Kip	1	0	2
Max Moment about 2 Axis	0.1067E+06	Kip-ft	1	0	2
Min Moment about 2 Axis	-0.6015E+05	Kip-ft	1	0	2
Max Moment About 3 Axis	0.3148E+05	Kip-ft	1	0	6
Min Moment About 3 Axis	-0.2202E+05	Kip-ft	1	0	4
Max Axial Force	0.6260E+04	Kip	1	0	5
Min Axial Force	-0.1957E+05	Kip	1	0	2
Absolute Max Torque	0.1457E+02	Kip-ft	1	0	6
Max Demand/Capacity Ratio	0.7101E+00		1	0	2

Maximum/Minimum Soil Forces

Max Axial Soil Force	0.3378E+04	Kip	1	0	2
Min Axial Soil Force	-0.9989E+03	Kip	1	0	5
Max Lateral Force in X dir	0.2870E+03	Kip	1	0	6
Min Lateral Force in X dir	-0.1362E+03	Kip	1	0	4
Max Lateral Force in Y dir	0.6075E+03	Kip	1	0	2
Min Lateral Force in Y dir	-0.4391E+03	Kip	1	0	2
Max Torsional Soil Force	0.1174E+05	Kip-ft	1	0	3

Maximum/Minimum Pile Displacements

Max Axial Displacement	0.1396E+01	in	1	0	2
Min Axial Displacement	-0.8062E+00	in	1	0	5
Max Displacement in X	0.5097E+01	in	1	0	5

BSI FB-MultiPier - File: P3-LCS.out Wednesday, March 23, 2011

Min Displacement in X	-0.4134E-01 in	1	0	6
Max Displacement in Y	0.1377E+02 in	1	0	4
Min Displacement in Y	-0.8630E-01 in	1	0	5

Maximum/Minimum Column Forces

	Value		Load	Comb.	Column
Max Axial Force	0.0000E+00	Kip	0	0	0
Min Axial Force	0.0000E+00	Kip	0	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	1
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	0
Absolute Max Torque	0.1000E+06	Kip-ft	1	0	0

Maximum/Minimum Pier Cap Forces

Max Axial Force	0.0000E+00	Kip	0	0
Min Axial Force	0.0000E+00	Kip	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0
Max Torque	-0.1000E+06	Kip-ft	1	0
Min Torque	0.0000E+00	Kip-ft	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0

****
Foundation Flexibilty for given loads
****

Averaged flexiblity

	Fx	Fy	Fz	Mx	My	Mz
DeltaX	0.1270E-02	0.5197E-04	-0.1056E-04	0.2626E-07	-0.3168E-06	0.3619E-07
DeltaY	0.5197E-04	0.1930E-02	-0.3111E-04	0.1723E-06	-0.3378E-07	0.1036E-07
DeltaZ	-0.1056E-04	-0.3111E-04	0.1551E-04	-0.6954E-08	0.5947E-08	-0.1589E-08
ThetaX	0.2626E-07	0.1723E-06	-0.6954E-08	0.1850E-09	-0.2272E-10	0.2106E-10
ThetaY	-0.3168E-06	-0.3378E-07	0.5947E-08	-0.2272E-10	0.4120E-09	0.4340E-10
ThetaZ	0.3619E-07	0.1036E-07	-0.1589E-08	0.2106E-10	0.4340E-10	0.3027E-08

****
Foundation Stiffness for given loads
****

STIFFNESS

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.9786E+03	-0.5052E+01	0.3553E+03	-0.2651E+05	0.7478E+06	-0.2203E+05
Fy	-0.5052E+01	0.5783E+03	0.9307E+03	-0.5029E+06	0.2150E+04	0.2037E+04
Fz	0.3553E+03	0.9307E+03	0.6750E+05	0.1551E+07	-0.5418E+06	0.2497E+05
Mx	-0.2651E+05	-0.5029E+06	0.1551E+07	0.5972E+10	0.2497E+09	-0.4227E+08
My	0.7478E+06	0.2150E+04	-0.5418E+06	0.2497E+09	0.3029E+10	-0.5440E+08
Mz	-0.2203E+05	0.2037E+04	0.2497E+05	-0.4227E+08	-0.5440E+08	0.3317E+09

****
Foundation Stiffness in STANDARD X-Y-Z directions
(FB-Pier->Stardard, X->X, Y->Z & -Z->Y)
Translations: kips/in Rotations: kip-in/rad
****

Stiffness in standard X-Y-Z

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.9786E+03	-0.3553E+03	-0.5052E+01	-0.2651E+05	0.2203E+05	0.7478E+06
Fy	-0.3553E+03	0.6750E+05	-0.9307E+03	-0.1551E+07	0.2497E+05	0.5418E+06
Fz	-0.5052E+01	-0.9307E+03	0.5783E+03	-0.5029E+06	-0.2037E+04	0.2150E+04
Mx	-0.2651E+05	-0.1551E+07	-0.5029E+06	0.5972E+10	0.4227E+08	0.2497E+09
My	0.2203E+05	0.2497E+05	-0.2037E+04	0.4227E+08	0.3317E+09	0.5440E+08
Mz	0.7478E+06	0.5418E+06	0.2150E+04	0.2497E+09	0.5440E+08	0.3029E+10

```
!-------------------------------------------------------------!
!                                                             !
!        The University of Florida, Florida Department        !
!        of Transportation, Drs. Marc Hoit, Mike McVay        !
!        Cliff Hays, Mark Williams, Petros Christou, and      !
!                        Jae H. Chung                         !
!         disclaim any warranty, expressed or implied,        !
!          including but not limited to, any implied          !
!         warranty of fitness for a particular purpose        !
!            or accuracy of the FB-Pier software              !
!     The  developers shall not be liable for any damages     !
!          incurred through the use of FB-MultiPier           !
!                                                             !
!                                                             !
!              :::: F B - M U L T I P I E R ::::              !
!                  FB-MultiPier Version 4.13                  !
!                                                             !
!                                                             !
!         Written by Marc Hoit, Mike McVay, Cliff Hays        !
!         Mark Williams, Petros Christou, Jae H. Chung.       !
!                                                             !
!      Civil & Coastal Engineering, University of Florida     !
!      Supported by Florida Department of Transportation      !
!           and the Federal Highway Administration            !
!                                                             !
!             The program calculates the Response             !
!           of the Bridge Pier Pile Soil Structures           !
!                                                             !
!            The Analysis includes PreLoad, Static,           !
!                Transient Dynamic or Push Over               !
!                                                             !
!        The Program Handles NonLinear Soil Behavior,         !
!  Linear Pile Cap and Linear and NonLinear Piles and Piers   !
!                                                             !
!                                                             !
!       Contact: Bridge Software Institute for Support        !
!              HTTP://BSI-WEB.CE.UFL.EDU                      !
!                                                             !
!-------------------------------------------------------------!

 Analysis Start Time  :****************************************
 Analysis End Time    :****************************************
 Analysis Duration    :****************************************

 Input Data File Name : P4-LCS.IN
 Analysis Date        : 3-15-2011
 License ID Number    : 432478881


 ********************
 *   PROJECT DATA   *
 ********************

 Project Client      : CRC / WSDOT / ODOT
 Project Name        : Columbia River Crossing
 Project Manager     : R. Turton
 Computed by         : NRH
 Project Description : SB - Pier 4 - Liquefaction + Contraction Scour


 ************************************
 *   SELECTIVE PRINT OUTPUT CONTROL   *
 ************************************
                                      Print On
 Pile Displacements                     YES
 Pile Element Forces                     NO
 Missing Pile ID Numbers                 NO
 Pier Columns and Pier Cap Displacements NO
 Pier Columns and Pier Cap Force Output YES
 Pier Material Properties               YES
 Soil Response Forces                    NO
 Soil Data per Layer                    YES
 Soil Curve data per Pile Node           NO
 Soil Graph per Pile Node                NO
 Out of Balance Forces                   NO
 Bridge Simulation Spring Force Output   NO
 Bridge Span Displacements               NO
 Bridge Span Element Forces              NO
 Bridge Span Properties                  NO
 Pile Cap Stress                         NO
```

BSI FB-MultiPier - File: P4-LCS.out Wednesday, March 23, 2011

```
 Material Stress Strain Curve Data          NO
 Interaction Diagram Data For Pile and Pier YES
 Pile and Pier coordinates                  NO
 Generate XML file                          NO


 *************
 *   UNITS   *
 *************

 Analysis Units Specified are: English Mixed (Kips & Ft some lbs & in)


 ***************************
 *   CONTROL INFORMATION   *
 ***************************

 Number of Piers               (NUMPIERS) =    1
 Maximum Number of Iterations    (MAXITN) =   50
 Tolerance                        (TOLER) =    10.000000     Kips

 NOTE : The following soil information is not applicable in the coulmn analysis problems

 Soil Behavior Option             (IFLEX) =    0
    IFLEX = 0 -> PY Multipliers are Input
    IFLEX = 1 -> PY Multipliers Defaulted to 1.0
    IFLEX = 2 -> No SOIL (Must use tip springs)

 Soil resistance due to Pile Rotation About 2 and 3 Axis (NSODF) =    4
    NSDOF = 4 -> NO Resistance Accounted
    NSDOF = 6 -> Resistance Accounted

 Linear Pile TIP Spring Option     (ITIP) =    0
    ITIP = 0 -> NO spring
    ITIP = 1 -> Axial only
    ITIP = 2 -> All DOF

 Linear Pile TIP Spring Stiffness (TSTIF) =         0.00 kips/in


 **********************
 *   SOIL BEHAVIOR    *
 **********************

 PY Multipliers will be used (IFLEX = 0)


 ************************************************
 *   LOAD FACTORS FOR SELF WEIGHT AND BUOYANCY   *
 ************************************************

 LOAD CASE    SELF WEIGHT    BUOYANCY
     #           FACTOR       FACTOR
     1            1.00         1.00


 ****************************
 *   GENERAL INFORMATION    *
 ****************************

 Static / Cyclic Load (KCYC)      =    0
    KCYC = 0 -> Static Load
    KCKC > 0 -> Cyclic Load (# Cycles)

 Fixity of Pile Cap (KFIX)        =    1
    KFIX = 0 -> Pinned Head
    KFIX = 1 -> Fixed head

 Bearing of Cap on Soil           =  NO


 ******************************
 *   GRID DATA INFORMATION    *
 ******************************

 NOTE: X-Grid : Distance between axes along the X-Axis
       Y-Grid : Distance between axes along the Y-Axis

 Number of Grid Points in X-Direction (NPX) =     4
 Number of Grid Points in X-Direction (NPY) =     5

 Grid Spacing in the X Direction : (inches)
      90.00     360.00      90.00
```

Grid Spacing in the Y Direction : (inches)
90.00 360.00 360.00 90.00

****
* ANALYSIS OPTIONS *
****

Type of Stiffness = Secant Stiffness
Type of Structure = Full
Type of Analysis = Static Analysis

****
* INPUT SOIL DATA - GIVEN BY LAYER *
****

NOTE : The following data is used to define Springs
for each Soil Layer to determine the Soil
Behavior during the analysis

LAYERED P-Y CURVES

SOIL SET # 1

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	1	1	0.6000E+01	0.4600E+01	0.1073E+03
			0.6000E+01	0.4600E+01	0.1073E+03
1	2	1	0.6000E+01	0.7500E+01	0.1212E+03
			0.6000E+01	0.7500E+01	0.1212E+03
1	3	1	0.3500E+02	0.5000E+02	0.1212E+03
			0.3500E+02	0.5000E+02	0.1212E+03
1	4	1	0.4500E+02	0.1250E+03	0.1367E+03
			0.4500E+02	0.1250E+03	0.1367E+03
1	5	1	0.4500E+02	0.1500E+03	0.1402E+03
			0.4500E+02	0.1500E+03	0.1402E+03

LAYERED T-Z CURVES

SOIL SET # 1

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00
	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00

	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED

	TOP		BOTTOM	
	Z Value	T Value	Z Value	T Value
	in	psi	in	psi
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.546E+01	0.380E+00	0.147E+02
	0.760E+00	0.679E+01	0.760E+00	0.182E+02
	0.114E+01	0.707E+01	0.114E+01	0.190E+02
	0.152E+01	0.707E+01	0.152E+01	0.190E+02
	0.265E+01	0.707E+01	0.265E+01	0.190E+02
	0.379E+01	0.707E+01	0.379E+01	0.190E+02
	0.493E+01	0.707E+01	0.493E+01	0.190E+02
	0.606E+01	0.707E+01	0.606E+01	0.190E+02
	0.720E+01	0.707E+01	0.720E+01	0.190E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value	T Value	Z Value	T Value
	in	psi	in	psi
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value	T Value	Z Value	T Value
	in	psi	in	psi
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

LAYERED T-Theta CURVES

SOIL SET # 1

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	1	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	2	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	3	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	4	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	5	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

PILE TIP SOIL PARAMETERS

SOIL SET # 1

USER DEFINED

Q Value	T Value

	in	lbs
1	0.000E+00	0.000E+00
2	0.222E+00	0.362E+07
3	0.444E+00	0.624E+07
4	0.667E+00	0.829E+07
5	0.889E+00	0.995E+07
6	0.111E+01	0.113E+08
7	0.133E+01	0.125E+08
8	0.156E+01	0.136E+08
9	0.178E+01	0.145E+08
10	0.200E+01	0.153E+08

****
* PILE SEGMENT INFORMATION DATA *
****

NOTE: The Piles Sets consist of Pile Segments based on the User Input. The program groups all segments from all the different Pile Sets and assigns a reference number to each

The reference number for each segment together with the User Input Pile Set/Segment number is shown below. The Input section properties for each section/segment is also provided below.

The user is advised to double check these numbers

Number of segments found in all Piles (NPSEG) = 2

! -> SECTION DATA FOR SECTION/SEGMENT : 1 !

Input Pile Set Number = 1
Input Pile Set Segment = 1

Section Pile Length (L) = 9.0000000 ft

Nonlinear Section/Segment Material Properties

Material Option (MATOPT) = 1
(Please Refer to the Users Guide for Details)

- Concrete Stress Strain Properties

Concrete Strength (FPC) = 0.4000E+01 ksi
Modulus of Elasticity (EC) = 0.4224E+04 ksi

Gauss Integration Points for Concrete = 60

- Steel Stress Strain Properties

Mild Steel Yield Stress (FY) = 0.600E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

Tubular Steel Yield Stress (FY) = 0.500E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

- Shape of Section : CIRCULAR

- Steel and Confinement Data

Number of Steel Layers = 2
Section/Segment Diameter = 180.0000 in
Tied/Spiral Reinforcement Flag = 1
(NOTE : Spiral = 1, Tied = 2)
Confinement Flag = 1
(NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

- Steel and Confinement Data

Yield Stress of Confinement Steel = 60.00 ksi
Spacing between Confinement Steel = 6.000 in
Diameter of Confinement Steel = 0.7500 in
Outer Shell Thickness = 1.00 in

- Total Area of Steel Reinforcement = 424.00 in^2

Layer	# Bars/Strands	Area in^2	Layer Dia. in	Prestressing ksi

```
   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     1           56        4.00    108.00           0.00

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     2           52        3.85     96.00           0.00

 ------------------------------------------------
 ! -> SECTION DATA FOR SECTION/SEGMENT :   2  !
 ------------------------------------------------

 Input Pile Set Number  =   1
 Input Pile Set Segment =   2

 Section Pile Length               (L) =    252.08000     ft

 Nonlinear Section/Segment Material Properties
 ---------------------------------------------

 Material Option (MATOPT) =   1
 (Please Refer to the Users Guide for Details)

 - Concrete Stress Strain Properties

   Concrete Strength    (FPC) = 0.6000E+01 ksi
   Modulus of Elasticity (EC) = 0.5173E+04 ksi

   Gauss Integration Points for Concrete = 60

 - Steel Stress Strain Properties

   Mild Steel Yield Stress  (FY) =  0.600E+02 ksi
   Modulus of Elasticity    (ES) = 0.2900E+05 ksi

   Tubular Steel Yield Stress (FY) =  0.600E+02 ksi
   Modulus of Elasticity      (ES) = 0.2900E+05 ksi

 - Shape of Section : CIRCULAR

 - Steel and Confinement Data

   Number of Steel Layers         =   2
   Section/Segment Diameter       =  120.0000 in
   Tied/Spiral Reinforcement Flag =   1
   (NOTE : Spiral = 1, Tied   = 2)
   Confinement Flag               =   1
   (NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

 - Steel and Confinement Data

  Yield Stress of Confinement Steel =    60.00     ksi
  Spacing between Confinement Steel =    6.000     in
  Diameter of Confinement Steel     =   0.7500     in
   Outer Shell Thickness          =    1.00      in

 - Total Area of Steel Reinforcement  = 424.00 in^2

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing
                           in^2      in             ksi

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     1           56        4.00    108.00           0.00

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
```

for the analysis. The area is changed to
result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
2	52	3.85	96.00	0.00

PLOT OF THE QZ CURVE FOR THE TIP OF THE PILE

- USER DEFINED CURVE

SOIL SET	Z Value	Q Value	Z Value	Q Value	Z Value	Q Value
1	0.0000E+00	0.0000E+00	0.2222E+00	0.3615E+07	0.4444E+00	0.6244E+07
	0.6667E+00	0.8290E+07	0.8889E+00	0.9952E+07	0.1111E+01	0.1134E+08
	0.1333E+01	0.1253E+08	0.1556E+01	0.1357E+08	0.1778E+01	0.1448E+08
	0.2000E+01	0.1530E+08				

****
* PILE SET DATA DESCRIPTION *
****

NOTE : The piles are organized in pile sets. Each pile
set is composed of pile segments that are input
by the User. A pile set is attached to each
pile in order to describe its composition

List of Piles Sets and Piles

Pile Set	Piles (that are assigned the Pile Set)
1	1, 2, 3, 4, 5, 6

Total Length for Each Pile Set

Pile Set	Length
1	3132.96

****
* INPUT FOR STRUCTURAL ANALYSIS *
****

Number of Joints = 64
Number of Different Element Types = 3
Number of Load Conditions = 1

WARNING : Pier Columns and Cap are linear
No P-Delta or Moment Magnification is included
Nonlinear should be used for final design

PIER SUMMARY

Stiffness of Foundation Requested - NO Pier Exists

****
* MATERIAL PROPERTIES FOR PILE CAP AND FRAME (PIER) ELEMENTS *
****

****
* PILE CAP PROPERTIES - USING SHELL ELEMENTS *
****

Modulus of Elasticity = 0.4224E+04 (ksi)
Poissons Ratio = 0.2000
Shear Modulus = 0.1760E+04 (ksi)
Self Weight = 160.0000 (pcf)
Thickness = 0.1900E+02 (ft)

! -> PROPERTIES FOR CONNECTOR ELEMENTS (DEFAULTED) !

NOTE : These Elements are generated by the program at the Pier
Column Bases where they connect with the Pile Cap. The
purpose for these elements is to spread the column base

load over an area on the Pile Cap and therefore avoid
High Stress Concentrations

NOTE : The material property number for these elements is
defaulted to 1. The material numbers for the properties
of the rest of the Pier elements start form 2

-> SECTION DATA FOR SECTION/SEGMENT : 1

Member Property Number	=	1	
Axial Area, A	=	51984.	(in^2)
Torsional Moment of Inertia, J	=	0.98770E+10	(in^4)
Moment of Inertia, 3 - Axis	=	0.98770E+10	(in^4)
Moment of Inertia, 2 - Axis	=	0.98770E+10	(in^4)
Modulus of Elasticity, E	=	4224.0	(ksi)
Shear Modulus, G	=	1760.0	(ksi) (used for Torsion)
Weight Density	=	0.00000	(K/in^3)

! -> PROPERTIES FOR PIER COLUMNS !

Member Property Number	=	2	
Axial Area, A	=	0.00000	(in^2)
Torsional Moment of Inertia, J	=	0.00000	(in^4)
Moment of Inertia, 3 - Axis	=	0.00000	(in^4)
Moment of Inertia, 2 - Axis	=	0.00000	(in^4)
Modulus of Elasticity, E	=	0.00000	(ksi)
Shear Modulus, G	=	0.00000	(ksi) (used for Torsion)
Weight Density	=	0.00000	(K/in^3)

****
* PIER MEMBER CONNECTIVITY *
****

ELEMENT NUMBER	NODES I	NODES J	MATERIAL NUMBER
1	64	47	1
2	64	4	1
3	64	37	1
4	64	3	1

****
* GENERAL LOAD DATA *
****

The table below shows the Applied Loads for every
Load Case. The values in the table represent the
magnitute of the Loads in the specified units

- Applied Load

NODE	LOAD	X (Kips)	Y (Kips)	Z (Kips)	MXX (Kip-ft)	MYY (Kip-ft)	MZZ (Kip-ft)
64	1	2474.00	0.00	0.00	0.00	0.00	0.00
64	2	0.00	7420.00	0.00	0.00	0.00	0.00
64	3	0.00	0.00	25908.00	0.00	0.00	0.00
64	4	0.00	0.00	0.00	613034.00	0.00	0.00
64	5	0.00	0.00	0.00	0.00	-167116.00	0.00
64	6	0.00	0.00	0.00	0.00	0.00	22917.00

****
* *
* ANALYSIS RESULTS *
* *
****

****
* RESULTS FOR LOAD CASE # 1 *
****

NOTE : PY Multipliers are applied Lead to Trail row
based on the actual displacement. If there is
no displacement in a Lateral direction they are
defaulted to 1.0. This can happen in Axial Load
and one direction lateral load cases

PY Multipliers are Applied to A Pile Group

PILE#	X-PYM	Y-PYM
1	0.500E+00	0.700E+00
2	0.700E+00	0.700E+00
3	0.500E+00	0.500E+00
4	0.700E+00	0.500E+00
5	0.500E+00	0.350E+00
6	0.700E+00	0.350E+00

****
* CONVERGENCE REPORT *
****

The Solution Converged in 9 Iterations

Summary of Abs Maximum Out-Of-Balance Forces

FZZ =	2.136	Kips
FXX =	8.297	Kips
FYY =	0.335	Kips
MXX =	207.254	Kip-in
MYY =	0.000	Kip-in
MZZ =	309.027	Kip-in

Summary of Displacements at Pile Heads

Node	X (in)	Y (in)	Z (in)
1	3.2794	14.3957	0.8145
2	3.2800	14.7085	1.4053
3	3.5926	14.3989	0.0236
4	3.5926	14.7115	0.6434
5	3.9042	14.3975	-0.8366
6	3.9036	14.7085	-0.2430

Final Displacements

Load Case # 1

Node	X (in)	Y (in)	Z (in)	Rx (rad)	Ry (rad)	Rz (rad)
Pile Number 1						
1	3.2794	14.3957	0.8145	0.0027	-0.0019	0.0009
65	3.1618	14.2167	0.8080	0.0034	-0.0020	0.0009
66	3.0386	13.9983	0.8009	0.0040	-0.0021	0.0008
67	2.9081	13.7257	0.7975	0.0052	-0.0023	0.0008
68	2.7689	13.3860	0.7928	0.0062	-0.0024	0.0007
69	2.6227	12.9865	0.7869	0.0072	-0.0025	0.0007
70	2.4709	12.5344	0.7798	0.0080	-0.0026	0.0006
71	2.3153	12.0365	0.7716	0.0087	-0.0026	0.0006
72	2.1573	11.5000	0.7623	0.0093	-0.0027	0.0005
73	1.9985	10.9316	0.7522	0.0098	-0.0027	0.0005
74	1.5416	9.1549	0.7196	0.0106	-0.0026	0.0004
75	1.1134	7.2969	0.6865	0.0108	-0.0023	0.0003
76	0.7366	5.4714	0.6530	0.0102	-0.0020	0.0002
77	0.4306	3.7888	0.6211	0.0091	-0.0015	0.0001
78	0.2085	2.3581	0.5931	0.0074	-0.0010	0.0001
79	0.0692	1.2622	0.5675	0.0053	-0.0006	0.0001
80	-0.0019	0.5286	0.5410	0.0032	-0.0003	0.0001
81	-0.0271	0.1200	0.5107	0.0016	-0.0001	0.0000
82	-0.0277	-0.0502	0.4777	0.0005	0.0000	0.0000
83	-0.0190	-0.0851	0.4450	0.0000	0.0001	0.0000
84	-0.0098	-0.0628	0.4139	-0.0002	0.0000	0.0000
85	-0.0034	-0.0301	0.3847	-0.0002	0.0000	0.0000
86	-0.0003	-0.0075	0.3574	-0.0001	0.0000	0.0000
87	0.0007	0.0022	0.3366	0.0000	0.0000	0.0000
88	0.0009	0.0055	0.3217	0.0000	0.0000	0.0000
Pile Number 2						
2	3.2800	14.7085	1.4053	0.0026	-0.0017	0.0009
89	3.1748	14.5309	1.3927	0.0033	-0.0018	0.0009
90	3.0618	14.3130	1.3797	0.0040	-0.0020	0.0008
91	2.9387	14.0399	1.3691	0.0052	-0.0022	0.0008
92	2.8037	13.6986	1.3574	0.0063	-0.0024	0.0007
93	2.6588	13.2966	1.3447	0.0072	-0.0025	0.0007
94	2.5062	12.8413	1.3308	0.0081	-0.0026	0.0006

95	2.3478	12.3399	1.3161	0.0088	-0.0027	0.0006
96	2.1854	11.7994	1.3006	0.0094	-0.0028	0.0005
97	2.0206	11.2265	1.2845	0.0099	-0.0028	0.0005
98	1.5417	9.4312	1.2366	0.0108	-0.0027	0.0004
99	1.0917	7.5443	1.1884	0.0109	-0.0025	0.0003
100	0.7010	5.6867	1.1399	0.0104	-0.0020	0.0002
101	0.3913	3.9711	1.0914	0.0093	-0.0015	0.0001
102	0.1736	2.5030	1.0447	0.0076	-0.0010	0.0001
103	0.0442	1.3650	0.9996	0.0055	-0.0005	0.0001
104	-0.0161	0.5896	0.9539	0.0035	-0.0002	0.0001
105	-0.0319	0.1461	0.9060	0.0017	0.0000	0.0000
106	-0.0263	-0.0475	0.8573	0.0006	0.0001	0.0000
107	-0.0152	-0.0917	0.8101	0.0000	0.0001	0.0000
108	-0.0061	-0.0693	0.7649	-0.0002	0.0000	0.0000
109	-0.0012	-0.0336	0.7220	-0.0002	0.0000	0.0000
110	0.0005	-0.0085	0.6817	-0.0001	0.0000	0.0000
111	0.0005	0.0023	0.6498	0.0000	0.0000	0.0000
112	0.0002	0.0061	0.6260	0.0000	0.0000	0.0000

Pile Number 3

3	3.5926	14.3989	0.0236	0.0025	-0.0019	0.0009
113	3.4780	14.2323	0.0288	0.0031	-0.0020	0.0009
114	3.3562	14.0300	0.0334	0.0037	-0.0021	0.0008
115	3.2248	13.7777	0.0441	0.0048	-0.0023	0.0008
116	3.0821	13.4630	0.0535	0.0058	-0.0025	0.0007
117	2.9296	13.0916	0.0616	0.0067	-0.0026	0.0007
118	2.7693	12.6692	0.0684	0.0075	-0.0028	0.0006
119	2.6029	12.2015	0.0739	0.0082	-0.0028	0.0006
120	2.4321	11.6942	0.0782	0.0088	-0.0029	0.0005
121	2.2584	11.1531	0.0813	0.0094	-0.0029	0.0005
122	1.7515	9.4399	0.0835	0.0103	-0.0029	0.0004
123	1.2681	7.6239	0.0782	0.0106	-0.0027	0.0003
124	0.8369	5.8204	0.0746	0.0102	-0.0023	0.0002
125	0.4875	4.1380	0.0777	0.0092	-0.0017	0.0001
126	0.2366	2.6799	0.0861	0.0076	-0.0012	0.0001
127	0.0809	1.5227	0.0978	0.0057	-0.0007	0.0001
128	0.0013	0.7029	0.1095	0.0038	-0.0003	0.0001
129	-0.0273	0.2083	0.1179	0.0020	-0.0001	0.0000
130	-0.0281	-0.0216	0.1207	0.0007	0.0000	0.0000
131	-0.0188	-0.0841	0.1168	0.0001	0.0001	0.0000
132	-0.0093	-0.0715	0.1095	-0.0002	0.0000	0.0000
133	-0.0031	-0.0401	0.1021	-0.0002	0.0000	0.0000
134	-0.0001	-0.0135	0.0951	-0.0001	0.0000	0.0000
135	0.0007	0.0012	0.0896	-0.0001	0.0000	0.0000
136	0.0008	0.0091	0.0854	0.0000	0.0000	0.0000

Pile Number 4

4	3.5926	14.7115	0.6434	0.0025	-0.0019	0.0009
137	3.4782	14.5442	0.6390	0.0031	-0.0020	0.0009
138	3.3555	14.3401	0.6342	0.0037	-0.0021	0.0008
139	3.2220	14.0848	0.6332	0.0048	-0.0024	0.0008
140	3.0757	13.7660	0.6310	0.0059	-0.0026	0.0007
141	2.9186	13.3899	0.6277	0.0068	-0.0027	0.0007
142	2.7528	12.9629	0.6233	0.0076	-0.0029	0.0006
143	2.5803	12.4910	0.6178	0.0083	-0.0029	0.0006
144	2.4033	11.9805	0.6113	0.0089	-0.0030	0.0005
145	2.2236	11.4375	0.6037	0.0094	-0.0030	0.0005
146	1.7026	9.7272	0.5779	0.0103	-0.0030	0.0004
147	1.2118	7.9181	0.5505	0.0105	-0.0027	0.0003
148	0.7811	6.1131	0.5229	0.0102	-0.0023	0.0002
149	0.4362	4.4105	0.4968	0.0094	-0.0017	0.0001
150	0.1932	2.9108	0.4742	0.0079	-0.0011	0.0001
151	0.0484	1.6986	0.4546	0.0061	-0.0006	0.0001
152	-0.0182	0.8205	0.4354	0.0041	-0.0002	0.0001
153	-0.0345	0.2736	0.4140	0.0023	0.0000	0.0000
154	-0.0277	0.0037	0.3896	0.0009	0.0001	0.0000
155	-0.0156	-0.0853	0.3631	0.0002	0.0001	0.0000
156	-0.0061	-0.0838	0.3375	-0.0001	0.0000	0.0000
157	-0.0011	-0.0507	0.3134	-0.0002	0.0000	0.0000
158	0.0005	-0.0186	0.2910	-0.0001	0.0000	0.0000
159	0.0006	0.0004	0.2736	-0.0001	0.0000	0.0000
160	0.0002	0.0113	0.2611	-0.0001	0.0000	0.0000

Pile Number 5

5	3.9042	14.3975	-0.8366	0.0028	-0.0018	0.0009
161	3.7945	14.2162	-0.8207	0.0033	-0.0019	0.0009
162	3.6757	14.0043	-0.8053	0.0038	-0.0021	0.0008
163	3.5444	13.7492	-0.7827	0.0048	-0.0023	0.0008
164	3.3981	13.4395	-0.7610	0.0056	-0.0026	0.0007
165	3.2386	13.0796	-0.7404	0.0065	-0.0028	0.0007
166	3.0676	12.6737	-0.7206	0.0072	-0.0030	0.0006
167	2.8872	12.2263	-0.7018	0.0079	-0.0031	0.0006
168	2.6993	11.7415	-0.6838	0.0084	-0.0032	0.0005

169	2.5059	11.2237	-0.6666	0.0090	-0.0033	0.0005
170	1.9298	9.5697	-0.6204	0.0101	-0.0033	0.0004
171	1.3752	7.7903	-0.5760	0.0104	-0.0030	0.0003
172	0.8896	6.0124	-0.5324	0.0100	-0.0025	0.0002
173	0.5077	4.3529	-0.4879	0.0091	-0.0019	0.0001
174	0.2399	2.9029	-0.4404	0.0076	-0.0012	0.0001
175	0.0769	1.7261	-0.3912	0.0059	-0.0007	0.0001
176	-0.0038	0.8577	-0.3419	0.0041	-0.0003	0.0001
177	-0.0300	0.2976	-0.2944	0.0024	0.0000	0.0000
178	-0.0277	0.0068	-0.2534	0.0010	0.0001	0.0000
179	-0.0163	-0.0916	-0.2198	0.0002	0.0001	0.0000
180	-0.0064	-0.0860	-0.1911	-0.0002	0.0000	0.0000
181	-0.0011	-0.0476	-0.1662	-0.0002	0.0000	0.0000
182	0.0005	-0.0146	-0.1451	-0.0001	0.0000	0.0000
183	0.0005	0.0018	-0.1329	-0.0001	0.0000	0.0000
184	0.0001	0.0087	-0.1289	0.0000	0.0000	0.0000

Pile Number 6

6	3.9036	14.7085	-0.2430	0.0028	-0.0019	0.0009
185	3.7859	14.5232	-0.2343	0.0034	-0.0021	0.0009
186	3.6586	14.3066	-0.2262	0.0039	-0.0022	0.0008
187	3.5184	14.0458	-0.2119	0.0049	-0.0025	0.0008
188	3.3626	13.7297	-0.1988	0.0058	-0.0027	0.0007
189	3.1934	13.3629	-0.1867	0.0066	-0.0029	0.0007
190	3.0130	12.9502	-0.1757	0.0073	-0.0031	0.0006
191	2.8235	12.4960	-0.1659	0.0080	-0.0033	0.0006
192	2.6271	12.0052	-0.1572	0.0085	-0.0034	0.0005
193	2.4259	11.4825	-0.1496	0.0090	-0.0034	0.0005
194	1.8346	9.8230	-0.1335	0.0100	-0.0034	0.0004
195	1.2764	8.0457	-0.1242	0.0104	-0.0030	0.0003
196	0.7985	6.2646	-0.1136	0.0101	-0.0025	0.0002
197	0.4301	4.5854	-0.0978	0.0092	-0.0018	0.0001
198	0.1808	3.0992	-0.0776	0.0079	-0.0011	0.0001
199	0.0386	1.8770	-0.0543	0.0062	-0.0006	0.0001
200	-0.0229	0.9613	-0.0303	0.0044	-0.0002	0.0001
201	-0.0347	0.3594	-0.0081	0.0026	0.0000	0.0000
202	-0.0252	0.0374	0.0090	0.0012	0.0001	0.0000
203	-0.0124	-0.0829	0.0191	0.0003	0.0001	0.0000
204	-0.0038	-0.0912	0.0230	-0.0001	0.0000	0.0000
205	-0.0002	-0.0580	0.0226	-0.0002	0.0000	0.0000
206	0.0006	-0.0232	0.0216	-0.0002	0.0000	0.0000
207	0.0004	-0.0006	0.0210	-0.0001	0.0000	0.0000
208	0.0000	0.0139	0.0202	-0.0001	0.0000	0.0000

SUM OF TOTAL SOIL SPRING LOADS

CHECK: Total Load Carried by the Soil
(Sum of NF+FF Soil Spring Loads)

X Direction	=	2472.2122	Kips
Y Direction	=	7304.3295	Kips
Z Direction	=	47892.6900	Kips
Sum of Tip Forces	=	18500.4670	Kips

Summary of Pile Forces for Load CASE 1

1. Axial Force (Kips)

Pile #	Maximum Force	Minimum Force
1	-0.58757E+04	-0.13863E+05
2	-0.94437E+04	-0.19665E+05
3	-0.15957E+04	-0.32961E+04
4	-0.49335E+04	-0.11570E+05
5	0.64800E+04	0.47806E+03
6	0.11778E+04	-0.49836E+03

2. Pile Shear Force in 2 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.33087E+03	-0.24400E+03
2	0.43255E+03	-0.30549E+03
3	0.37706E+03	-0.23767E+03
4	0.45854E+03	-0.32136E+03
5	0.40229E+03	-0.21720E+03
6	0.47500E+03	-0.28649E+03

3. Pile Shear Force in 3 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.12404E+04	-0.14530E+04
2	0.13392E+04	-0.14745E+04
3	0.96445E+03	-0.12202E+04
4	0.10845E+04	-0.12806E+04
5	0.72994E+03	-0.97326E+03
6	0.84480E+03	-0.10210E+04

4. Bending Moment About 2 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.1067E+06	0.14561E+03	-0.6023E+05
2	2	0.00000E+00	0.1125E+06	0.13118E+03	-0.6401E+05
3	3	0.00000E+00	0.8814E+05	0.14561E+03	-0.4757E+05
4	4	0.00000E+00	0.9828E+05	0.14561E+03	-0.5431E+05
5	5	0.00000E+00	0.6724E+05	0.14561E+03	-0.3521E+05
6	6	0.00000E+00	0.7425E+05	0.16005E+03	-0.4116E+05

5. Bending Moment About 3 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.1568E+05	0.11675E+03	-0.1485E+05
2	2	0.00000E+00	0.2248E+05	0.10231E+03	-0.1740E+05
3	3	0.00000E+00	0.1862E+05	0.10231E+03	-0.1416E+05
4	4	0.00000E+00	0.2271E+05	0.10231E+03	-0.1805E+05
5	5	0.00000E+00	0.2048E+05	0.11675E+03	-0.1248E+05
6	6	0.00000E+00	0.2366E+05	0.10231E+03	-0.1572E+05

****
* ANALYTICAL FORCE RESULTS FOR PIER *
****

ELEM NO.	PROP NO.	NODE NO.	LOAD CASE	FAX (Kips)	F22 (Kips)	F33 (Kips)	M22 (Kip-ft)	M33 (Kip-ft)	TORQUE (Kip-ft)	D/C (Ratio)
- Connector Beam Segments										
1	1	64	1	-855.87	-23370.66	-1052.70	15790.49	*********	-5995.73	
	0.00									
	1	47		855.87	23370.66	1052.70	0.00	0.00	5995.73	
	0.00									
2	1	64	1	473.78	12047.32	-3219.41	48291.08	180709.73	*********	
	0.00									
	1	4		-473.78	-12047.32	3219.41	0.00	0.00	148260.36	
	0.00									
3	1	64	1	1091.90	36693.75	491.48	-7372.21	550406.32	-465.78	
	0.00									
	1	37		-1091.90	-36693.75	-491.48	0.00	0.00	465.78	
	0.00									
4	1	64	1	-456.04	537.59	2252.82	-33792.36	8063.79	139671.80	
	0.00									
	1	3		456.04	-537.59	-2252.82	0.00	0.00	*********	
	0.00									

****
* ANALYTICAL PILE CAP - SHELL STRESS RESULTS *
****

****
* DAMPING FORCES *
****

Node #	FXX Kip	FYY Kip	FZZ Kip	MXX Kip	MYY Kip	MZZ Kip

****
* UNIAXIAL INTERACTION DIAGRAM *
****

NOTE : 1. The tables below show the values on the Interaction
Diagrams for each section which correspond to the

section capacity
2. The numbering of the SECTIONS/SEGMENTS is shown previously in the output file

---
! -> Pile Cross Section Number = 1 !

Diagram Data

Maximum Tension Force = 0.4820E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = 0.1237E-14 (in)
Local 3 Axis Shift for Plastic Centroid = -0.7486E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.4820E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.4397E+05	0.1425E+06	0.1425E+06	0.1425E+06	0.1425E+06
0.3941E+05	0.1572E+06	0.1572E+06	0.1572E+06	0.1572E+06
0.3504E+05	0.1687E+06	0.1687E+06	0.1687E+06	0.1687E+06
0.3074E+05	0.1749E+06	0.1749E+06	0.1749E+06	0.1749E+06
0.2629E+05	0.1777E+06	0.1777E+06	0.1777E+06	0.1777E+06
0.2204E+05	0.1794E+06	0.1794E+06	0.1794E+06	0.1794E+06
0.1754E+05	0.1877E+06	0.1877E+06	0.1877E+06	0.1877E+06
0.1315E+05	0.1951E+06	0.1951E+06	0.1951E+06	0.1951E+06
0.8836E+04	0.2009E+06	0.2009E+06	0.2009E+06	0.2009E+06
0.4379E+04	0.2067E+06	0.2067E+06	0.2067E+06	0.2067E+06
0.7769E-01	0.2109E+06	0.2109E+06	0.2109E+06	0.2109E+06
-0.6898E+04	0.1877E+06	0.1877E+06	0.1877E+06	0.1877E+06
-0.1348E+05	0.1894E+06	0.1894E+06	0.1894E+06	0.1894E+06
-0.2023E+05	0.1912E+06	0.1912E+06	0.1912E+06	0.1912E+06
-0.2690E+05	0.1869E+06	0.1869E+06	0.1869E+06	0.1869E+06
-0.3368E+05	0.1773E+06	0.1773E+06	0.1773E+06	0.1773E+06
-0.4042E+05	0.1633E+06	0.1633E+06	0.1633E+06	0.1633E+06
-0.4761E+05	0.1439E+06	0.1439E+06	0.1439E+06	0.1439E+06
-0.4853E+05	0.1410E+06	0.1410E+06	0.1410E+06	0.1410E+06
-0.5008E+05	0.1361E+06	0.1361E+06	0.1361E+06	0.1361E+06
-0.5139E+05	0.1319E+06	0.1319E+06	0.1319E+06	0.1319E+06
-0.5259E+05	0.1279E+06	0.1279E+06	0.1279E+06	0.1279E+06
-0.5371E+05	0.1239E+06	0.1239E+06	0.1239E+06	0.1239E+06
-0.5469E+05	0.1204E+06	0.1204E+06	0.1204E+06	0.1204E+06
-0.5552E+05	0.1174E+06	0.1174E+06	0.1174E+06	0.1174E+06
-0.5695E+05	0.1100E+06	0.1120E+06	0.1100E+06	0.1120E+06
-0.5814E+05	0.1075E+06	0.1075E+06	0.1075E+06	0.1075E+06
-0.5945E+05	0.9967E+05	0.1019E+06	0.9967E+05	0.1019E+06
-0.6046E+05	0.9587E+05	0.9753E+05	0.9587E+05	0.9753E+05

! -> Pile Cross Section Number = 2 !

Diagram Data

Maximum Tension Force = 0.4308E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = -0.3047E-15 (in)
Local 3 Axis Shift for Plastic Centroid = -0.6806E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.4308E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.3110E+05	0.1327E+06	0.1327E+06	0.1327E+06	0.1327E+06
0.3052E+05	0.1339E+06	0.1339E+06	0.1339E+06	0.1339E+06
0.2750E+05	0.1395E+06	0.1395E+06	0.1395E+06	0.1395E+06
0.2361E+05	0.1485E+06	0.1485E+06	0.1485E+06	0.1485E+06
0.1958E+05	0.1577E+06	0.1577E+06	0.1577E+06	0.1577E+06
0.1566E+05	0.1636E+06	0.1636E+06	0.1636E+06	0.1636E+06
0.1175E+05	0.1601E+06	0.1601E+06	0.1601E+06	0.1601E+06
0.7886E+04	0.1603E+06	0.1603E+06	0.1603E+06	0.1603E+06
0.3914E+04	0.1630E+06	0.1630E+06	0.1630E+06	0.1630E+06
-0.1798E+00	0.1647E+06	0.1647E+06	0.1647E+06	0.1647E+06
-0.5618E+04	0.1381E+06	0.1381E+06	0.1381E+06	0.1381E+06
-0.1126E+05	0.1403E+06	0.1403E+06	0.1403E+06	0.1403E+06
-0.1687E+05	0.1424E+06	0.1424E+06	0.1424E+06	0.1424E+06
-0.2254E+05	0.1428E+06	0.1428E+06	0.1428E+06	0.1428E+06
-0.2814E+05	0.1389E+06	0.1389E+06	0.1389E+06	0.1389E+06
-0.3377E+05	0.1323E+06	0.1323E+06	0.1323E+06	0.1323E+06
-0.3976E+05	0.1226E+06	0.1226E+06	0.1226E+06	0.1226E+06
-0.4243E+05	0.1174E+06	0.1174E+06	0.1174E+06	0.1174E+06
-0.4510E+05	0.1111E+06	0.1111E+06	0.1111E+06	0.1111E+06
-0.4817E+05	0.1028E+06	0.1028E+06	0.1028E+06	0.1028E+06
-0.5123E+05	0.9348E+05	0.9348E+05	0.9348E+05	0.9348E+05
-0.5390E+05	0.8356E+05	0.8488E+05	0.8356E+05	0.8488E+05
-0.5661E+05	0.7541E+05	0.7580E+05	0.7541E+05	0.7580E+05
-0.5938E+05	0.6589E+05	0.6642E+05	0.6589E+05	0.6642E+05
-0.6221E+05	0.5509E+05	0.5653E+05	0.5509E+05	0.5653E+05
-0.6512E+05	0.4567E+05	0.4567E+05	0.4567E+05	0.4567E+05
-0.6802E+05	0.3413E+05	0.3413E+05	0.3413E+05	0.3413E+05
-0.7149E+05	0.1978E+05	0.1978E+05	0.1978E+05	0.1978E+05

****
* FINAL MAXIMUMS/MINIMUMS FOR ALL LOAD CASES *
* PIER # 1 *
****

Maximum/Minimum Pile Forces

	Value		Load	Comb.	Pile
Max Shear in 2 Direction	0.4750E+03	Kip	1	0	6
Min Shear in 2 Direction	-0.3214E+03	Kip	1	0	4
Max Shear in 3 Direction	0.1339E+04	Kip	1	0	2
Min Shear in 3 Direction	-0.1475E+04	Kip	1	0	2
Max Moment about 2 Axis	0.1125E+06	Kip-ft	1	0	2
Min Moment about 2 Axis	-0.6401E+05	Kip-ft	1	0	2
Max Moment About 3 Axis	0.2366E+05	Kip-ft	1	0	6
Min Moment About 3 Axis	-0.1805E+05	Kip-ft	1	0	4
Max Axial Force	0.6480E+04	Kip	1	0	5
Min Axial Force	-0.1967E+05	Kip	1	0	2
Absolute Max Torque	0.7828E+01	Kip-ft	1	0	6
Max Demand/Capacity Ratio	0.7030E+00		1	0	2

Maximum/Minimum Soil Forces

Max Axial Soil Force	0.3365E+04	Kip	1	0	2
Min Axial Soil Force	-0.1076E+04	Kip	1	0	5
Max Lateral Force in X dir	0.2221E+03	Kip	1	0	4
Min Lateral Force in X dir	-0.1086E+03	Kip	1	0	4
Max Lateral Force in Y dir	0.6106E+03	Kip	1	0	2
Min Lateral Force in Y dir	-0.4562E+03	Kip	1	0	2
Max Torsional Soil Force	0.7512E+04	Kip-ft	1	0	1

Maximum/Minimum Pile Displacements

Max Axial Displacement	0.1405E+01	in	1	0	2
Min Axial Displacement	-0.8366E+00	in	1	0	5

BSI FB-MultiPier - File: P4-LCS.out Wednesday, March 23, 2011

Max Displacement in X	0.3904E+01 in	1	0	5
Min Displacement in X	-0.3474E-01 in	1	0	6
Max Displacement in Y	0.1471E+02 in	1	0	4
Min Displacement in Y	-0.9171E-01 in	1	0	2

Maximum/Minimum Column Forces

	Value	Load	Comb.	Column
Max Axial Force	0.0000E+00 Kip	0	0	0
Min Axial Force	0.0000E+00 Kip	0	0	0
Max Shear in 2 Direction	0.0000E+00 Kip	0	0	0
Min Shear in 2 Direction	0.0000E+00 Kip	0	0	0
Max Shear in 3 Direction	0.0000E+00 Kip	0	0	0
Min Shear in 3 Direction	0.0000E+00 Kip	0	0	0
Max Moment about 2 Axis	0.0000E+00 Kip-ft	0	0	0
Min Moment about 2 Axis	0.0000E+00 Kip-ft	0	0	0
Max Moment about 3 Axis	0.0000E+00 Kip-ft	0	0	1
Min Moment about 3 Axis	0.0000E+00 Kip-ft	0	0	0
Absolute Max Torque	0.1000E+06 Kip-ft	1	0	0

Maximum/Minimum Pier Cap Forces

Max Axial Force	0.0000E+00 Kip	0	0	
Min Axial Force	0.0000E+00 Kip	0	0	
Max Shear in 2 Direction	0.0000E+00 Kip	0	0	
Min Shear in 2 Direction	0.0000E+00 Kip	0	0	
Max Shear in 3 Direction	0.0000E+00 Kip	0	0	
Min Shear in 3 Direction	0.0000E+00 Kip	0	0	
Max Torque	-0.1000E+06 Kip-ft	1	0	
Min Torque	0.0000E+00 Kip-ft	0	0	
Max Moment about 2 Axis	0.0000E+00 Kip-ft	0	0	
Min Moment about 2 Axis	0.0000E+00 Kip-ft	0	0	
Max Moment about 3 Axis	0.0000E+00 Kip-ft	0	0	
Min Moment about 3 Axis	0.0000E+00 Kip-ft	0	0	

****

Foundation Flexibilty for given loads

****

Averaged flexiblity

	Fx	Fy	Fz	Mx	My	Mz
DeltaX	0.1154E-02	0.4025E-04	-0.8144E-05	0.2093E-07	-0.3027E-06	0.1995E-07
DeltaY	0.4025E-04	0.1950E-02	-0.3228E-04	0.1749E-06	-0.2855E-07	0.7416E-08
DeltaZ	-0.8144E-05	-0.3228E-04	0.1556E-04	-0.7136E-08	0.4831E-08	-0.1065E-08
ThetaX	0.2093E-07	0.1749E-06	-0.7136E-08	0.1868E-09	-0.2010E-10	0.1606E-10
ThetaY	-0.3027E-06	-0.2855E-07	0.4831E-08	-0.2010E-10	0.4110E-09	0.4306E-10
ThetaZ	0.1995E-07	0.7416E-08	-0.1065E-08	0.1606E-10	0.4306E-10	0.2820E-08

****

Foundation Stiffness for given loads

****

STIFFNESS

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.1077E+04	-0.3921E+01	0.3002E+03	-0.1884E+05	0.7902E+06	-0.1945E+05
Fy	-0.3921E+01	0.5736E+03	0.9586E+03	-0.4999E+06	0.1071E+04	0.1713E+04
Fz	0.3002E+03	0.9586E+03	0.6729E+05	0.1592E+07	-0.4274E+06	0.1823E+05
Mx	-0.1884E+05	-0.4999E+06	0.1592E+07	0.5912E+10	0.2254E+09	-0.3507E+08
My	0.7902E+06	0.1071E+04	-0.4274E+06	0.2254E+09	0.3037E+10	-0.5341E+08
Mz	-0.1945E+05	0.1713E+04	0.1823E+05	-0.3507E+08	-0.5341E+08	0.3558E+09

****

Foundation Stiffness in STANDARD X-Y-Z directions
(FB-Pier->Stardard, X->X, Y->Z & -Z->Y)
Translations: kips/in Rotations: kip-in/rad

****

Stiffness in standard X-Y-Z

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.1077E+04	-0.3002E+03	-0.3921E+01	-0.1884E+05	0.1945E+05	0.7902E+06
Fy	-0.3002E+03	0.6729E+05	-0.9586E+03	-0.1592E+07	0.1823E+05	0.4274E+06
Fz	-0.3921E+01	-0.9586E+03	0.5736E+03	-0.4999E+06	-0.1713E+04	0.1071E+04
Mx	-0.1884E+05	-0.1592E+07	-0.4999E+06	0.5912E+10	0.3507E+08	0.2254E+09
My	0.1945E+05	0.1823E+05	-0.1713E+04	0.3507E+08	0.3558E+09	0.5341E+08
Mz	0.7902E+06	0.4274E+06	0.1071E+04	0.2254E+09	0.5341E+08	0.3037E+10

```
!------------------------------------------------------------!
!                                                            !
!        The University of Florida, Florida Department       !
!        of Transportation, Drs. Marc Hoit, Mike McVay       !
!        Cliff Hays, Mark Williams, Petros Christou, and     !
!                        Jae H. Chung                        !
!         disclaim any warranty, expressed or implied,       !
!          including but not limited to, any implied         !
!         warranty of fitness for a particular purpose       !
!            or accuracy of the FB-Pier software             !
!     The  developers shall not be liable for any damages    !
!          incurred through the use of FB-MultiPier          !
!                                                            !
!                                                            !
!              :::: F B - M U L T I P I E R ::::             !
!                  FB-MultiPier Version 4.13                 !
!                                                            !
!                                                            !
!         Written by Marc Hoit, Mike McVay, Cliff Hays       !
!         Mark Williams, Petros Christou, Jae H. Chung.      !
!                                                            !
!      Civil & Coastal Engineering, University of Florida    !
!      Supported by Florida Department of Transportation     !
!           and the Federal Highway Administration           !
!                                                            !
!             The program calculates the Response            !
!           of the Bridge Pier Pile Soil Structures          !
!                                                            !
!            The Analysis includes PreLoad, Static,          !
!                Transient Dynamic or Push Over              !
!                                                            !
!        The Program Handles NonLinear Soil Behavior,        !
!  Linear Pile Cap and Linear and NonLinear Piles and Piers  !
!                                                            !
!                                                            !
!       Contact: Bridge Software Institute for Support       !
!                HTTP://BSI-WEB.CE.UFL.EDU                   !
!                                                            !
!------------------------------------------------------------!

 Analysis Start Time  :****************************************
 Analysis End Time    :****************************************
 Analysis Duration    :****************************************

 Input Data File Name : P5-LCS.IN
 Analysis Date        : 3-15-2011
 License ID Number    : 432478881


 ********************
 *   PROJECT DATA   *
 ********************

 Project Client      : CRC / WSDOT / ODOT
 Project Name        : Columbia River Crossing
 Project Manager     : R. Turton
 Computed by         : NRH
 Project Description : SB - Pier 5 - Liquefaction + Contraction Scour


 ************************************
 *   SELECTIVE PRINT OUTPUT CONTROL   *
 ************************************
                                       Print On
 Pile Displacements                      YES
 Pile Element Forces                      NO
 Missing Pile ID Numbers                  NO
 Pier Columns and Pier Cap Displacements  NO
 Pier Columns and Pier Cap Force Output  YES
 Pier Material Properties                YES
 Soil Response Forces                     NO
 Soil Data per Layer                     YES
 Soil Curve data per Pile Node            NO
 Soil Graph per Pile Node                 NO
 Out of Balance Forces                    NO
 Bridge Simulation Spring Force Output    NO
 Bridge Span Displacements                NO
 Bridge Span Element Forces               NO
 Bridge Span Properties                   NO
 Pile Cap Stress                          NO
```

```
BSI FB-MultiPier - File: P5-LCS.out                                  Wednesday, March 23, 2011
 Material Stress Strain Curve Data          NO
 Interaction Diagram Data For Pile and Pier YES
 Pile and Pier coordinates                  NO
 Generate XML file                          NO


 *************
 *   UNITS   *
 *************

 Analysis Units Specified are: English Mixed (Kips & Ft some lbs & in)


 ***************************
 *   CONTROL INFORMATION   *
 ***************************

 Number of Piers               (NUMPIERS) =    1
 Maximum Number of Iterations    (MAXITN) =   50
 Tolerance                        (TOLER) =    10.000000     Kips

 NOTE : The following soil information is not applicable in the coulmn analysis problems

 Soil Behavior Option             (IFLEX) =    0
    IFLEX = 0 -> PY Multipliers are Input
    IFLEX = 1 -> PY Multipliers Defaulted to 1.0
    IFLEX = 2 -> No SOIL (Must use tip springs)

 Soil resistance due to Pile Rotation About 2 and 3 Axis (NSODF) =    4
    NSDOF = 4 -> NO Resistance Accounted
    NSDOF = 6 -> Resistance Accounted

 Linear Pile TIP Spring Option     (ITIP) =    0
    ITIP = 0 -> NO spring
    ITIP = 1 -> Axial only
    ITIP = 2 -> All DOF

 Linear Pile TIP Spring Stiffness (TSTIF) =         0.00 kips/in


 **********************
 *   SOIL BEHAVIOR    *
 **********************

 PY Multipliers will be used (IFLEX = 0)


 ************************************************
 *   LOAD FACTORS FOR SELF WEIGHT AND BUOYANCY   *
 ************************************************

 LOAD CASE     SELF WEIGHT     BUOYANCY
     #            FACTOR         FACTOR
     1             1.00           1.00


 ****************************
 *   GENERAL INFORMATION    *
 ****************************

 Static / Cyclic Load (KCYC)      =    0
    KCYC = 0 -> Static Load
    KCKC > 0 -> Cyclic Load (# Cycles)

 Fixity of Pile Cap (KFIX)        =    1
    KFIX = 0 -> Pinned Head
    KFIX = 1 -> Fixed head

 Bearing of Cap on Soil           =  NO


 *****************************
 *   GRID DATA INFORMATION   *
 *****************************

 NOTE: X-Grid : Distance between axes along the X-Axis
       Y-Grid : Distance between axes along the Y-Axis

 Number of Grid Points in X-Direction (NPX) =     4
 Number of Grid Points in X-Direction (NPY) =     5

 Grid Spacing in the X Direction : (inches)
      90.00     360.00      90.00
```

Grid Spacing in the Y Direction : (inches)
90.00 360.00 360.00 90.00

****
* ANALYSIS OPTIONS *
****

Type of Stiffness = Secant Stiffness
Type of Structure = Full
Type of Analysis = Static Analysis

****
* INPUT SOIL DATA - GIVEN BY LAYER *
****

NOTE : The following data is used to define Springs
for each Soil Layer to determine the Soil
Behavior during the analysis

LAYERED P-Y CURVES

SOIL SET # 1

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	1	1	0.5000E+01	0.3800E+01	0.1073E+03
			0.5000E+01	0.3800E+01	0.1073E+03
1	2	1	0.6000E+01	0.7500E+01	0.1212E+03
			0.6000E+01	0.7500E+01	0.1212E+03
1	3	1	0.3500E+02	0.5000E+02	0.1212E+03
			0.3500E+02	0.5000E+02	0.1212E+03
1	4	1	0.4500E+02	0.1250E+03	0.1367E+03
			0.4500E+02	0.1250E+03	0.1367E+03
1	5	1	0.4500E+02	0.1500E+03	0.1402E+03
			0.4500E+02	0.1500E+03	0.1402E+03

LAYERED T-Z CURVES

SOIL SET # 1

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00
	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00

	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED

	TOP		BOTTOM	
	Z Value	T Value	Z Value	T Value
	in	psi	in	psi
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.559E+01	0.380E+00	0.853E+01
	0.760E+00	0.696E+01	0.760E+00	0.106E+02
	0.114E+01	0.725E+01	0.114E+01	0.111E+02
	0.152E+01	0.725E+01	0.152E+01	0.111E+02
	0.265E+01	0.725E+01	0.265E+01	0.111E+02
	0.379E+01	0.725E+01	0.379E+01	0.111E+02
	0.493E+01	0.725E+01	0.493E+01	0.111E+02
	0.606E+01	0.725E+01	0.606E+01	0.111E+02
	0.720E+01	0.725E+01	0.720E+01	0.111E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value	T Value	Z Value	T Value
	in	psi	in	psi
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.102E+02	0.380E+00	0.102E+02
	0.760E+00	0.126E+02	0.760E+00	0.126E+02
	0.114E+01	0.132E+02	0.114E+01	0.132E+02
	0.152E+01	0.132E+02	0.152E+01	0.132E+02
	0.265E+01	0.132E+02	0.265E+01	0.132E+02
	0.379E+01	0.132E+02	0.379E+01	0.132E+02
	0.493E+01	0.132E+02	0.493E+01	0.132E+02
	0.606E+01	0.132E+02	0.606E+01	0.132E+02
	0.720E+01	0.132E+02	0.720E+01	0.132E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value	T Value	Z Value	T Value
	in	psi	in	psi
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

LAYERED T-Theta CURVES

SOIL SET # 1

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	1	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	2	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	3	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	4	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	5	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

PILE TIP SOIL PARAMETERS

SOIL SET # 1

USER DEFINED

Q Value	T Value

	in	lbs
1	0.000E+00	0.000E+00
2	0.222E+00	0.362E+07
3	0.444E+00	0.624E+07
4	0.667E+00	0.829E+07
5	0.889E+00	0.995E+07
6	0.111E+01	0.113E+08
7	0.133E+01	0.125E+08
8	0.156E+01	0.136E+08
9	0.178E+01	0.145E+08
10	0.200E+01	0.153E+08

```
************************************
*   PILE SEGMENT INFORMATION DATA   *
************************************

NOTE: The Piles Sets consist of Pile Segments based on the
      User Input. The program groups all segments from all
      the different Pile Sets and assigns a reference number
      to each

      The reference number for each segment together with the
      User Input Pile Set/Segment number is shown below. The
      Input section properties for each section/segment is
      also provided below.

      The user is advised to double check these numbers

Number of segments found in all Piles (NPSEG) =   2

-----------------------------------------------
! -> SECTION DATA FOR SECTION/SEGMENT :   1  !
-----------------------------------------------

Input Pile Set Number  =   1
Input Pile Set Segment =   1

Section Pile Length               (L) =    9.0000000     ft

Nonlinear Section/Segment Material Properties
_____________________________________________

Material Option (MATOPT) =   1
(Please Refer to the Users Guide for Details)

- Concrete Stress Strain Properties

  Concrete Strength    (FPC) = 0.4000E+01 ksi
  Modulus of Elasticity (EC) = 0.4224E+04 ksi

  Gauss Integration Points for Concrete = 60

- Steel Stress Strain Properties

  Mild Steel Yield Stress  (FY) =  0.600E+02 ksi
  Modulus of Elasticity    (ES) = 0.2900E+05 ksi

  Tubular Steel Yield Stress (FY) =  0.500E+02 ksi
  Modulus of Elasticity      (ES) = 0.2900E+05 ksi

- Shape of Section : CIRCULAR

- Steel and Confinement Data

  Number of Steel Layers         =   2
  Section/Segment Diameter       =  180.0000 in
  Tied/Spiral Reinforcement Flag =   1
  (NOTE : Spiral = 1, Tied   = 2)
  Confinement Flag               =   1
  (NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

- Steel and Confinement Data

 Yield Stress of Confinement Steel =    60.00     ksi
 Spacing between Confinement Steel =    6.000     in
 Diameter of Confinement Steel     =   0.7500     in
  Outer Shell Thickness          =    1.00      in

- Total Area of Steel Reinforcement  = 424.00 in^2

  Layer   # Bars/Strands  Area    Layer Dia.    Prestressing
                          in^2       in             ksi
```

```
   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     1           56        4.00    108.00           0.00

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     2           52        3.85     96.00           0.00

 ------------------------------------------------
 ! -> SECTION DATA FOR SECTION/SEGMENT :   2  !
 ------------------------------------------------

 Input Pile Set Number  =   1
 Input Pile Set Segment =   2

 Section Pile Length               (L) =    236.08000     ft

 Nonlinear Section/Segment Material Properties
 ---------------------------------------------

 Material Option (MATOPT) =   1
 (Please Refer to the Users Guide for Details)

 - Concrete Stress Strain Properties

   Concrete Strength    (FPC) = 0.6000E+01 ksi
   Modulus of Elasticity (EC) = 0.5173E+04 ksi

   Gauss Integration Points for Concrete = 60

 - Steel Stress Strain Properties

   Mild Steel Yield Stress  (FY) =  0.600E+02 ksi
   Modulus of Elasticity    (ES) = 0.2900E+05 ksi

   Tubular Steel Yield Stress (FY) =  0.500E+02 ksi
   Modulus of Elasticity      (ES) = 0.2900E+05 ksi

 - Shape of Section : CIRCULAR

 - Steel and Confinement Data

   Number of Steel Layers         =   2
   Section/Segment Diameter       =  120.0000 in
   Tied/Spiral Reinforcement Flag =   1
   (NOTE : Spiral = 1, Tied   = 2)
   Confinement Flag               =   1
   (NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

 - Steel and Confinement Data

  Yield Stress of Confinement Steel =    60.00     ksi
  Spacing between Confinement Steel =    6.000     in
  Diameter of Confinement Steel     =   0.6250     in
   Outer Shell Thickness          =    1.00      in

 - Total Area of Steel Reinforcement  = 424.00 in^2

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing
                           in^2      in             ksi

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     1           56        4.00    108.00           0.00

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
```

for the analysis. The area is changed to
result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
2	52	3.85	96.00	0.00

PLOT OF THE QZ CURVE FOR THE TIP OF THE PILE

- USER DEFINED CURVE

SOIL SET	Z Value	Q Value	Z Value	Q Value	Z Value	Q Value
1	0.0000E+00	0.0000E+00	0.2222E+00	0.3615E+07	0.4444E+00	0.6244E+07
	0.6667E+00	0.8290E+07	0.8889E+00	0.9952E+07	0.1111E+01	0.1134E+08
	0.1333E+01	0.1253E+08	0.1556E+01	0.1357E+08	0.1778E+01	0.1448E+08
	0.2000E+01	0.1530E+08				

****
* PILE SET DATA DESCRIPTION *
****

NOTE : The piles are organized in pile sets. Each pile
set is composed of pile segments that are input
by the User. A pile set is attached to each
pile in order to describe its composition

List of Piles Sets and Piles

Pile Set	Piles (that are assigned the Pile Set)
1	1, 2, 3, 4, 5, 6

Total Length for Each Pile Set

Pile Set	Length
1	2940.96

****
* INPUT FOR STRUCTURAL ANALYSIS *
****

Number of Joints = 64
Number of Different Element Types = 3
Number of Load Conditions = 1

WARNING : Pier Columns and Cap are linear
No P-Delta or Moment Magnification is included
Nonlinear should be used for final design

PIER SUMMARY

Stiffness of Foundation Requested - NO Pier Exists

****
* MATERIAL PROPERTIES FOR PILE CAP AND FRAME (PIER) ELEMENTS *
****

****
* PILE CAP PROPERTIES - USING SHELL ELEMENTS *
****

Modulus of Elasticity = 0.4224E+04 (ksi)
Poissons Ratio = 0.2000
Shear Modulus = 0.1760E+04 (ksi)
Self Weight = 160.0000 (pcf)
Thickness = 0.1900E+02 (ft)

! -> PROPERTIES FOR CONNECTOR ELEMENTS (DEFAULTED) !

NOTE : These Elements are generated by the program at the Pier
Column Bases where they connect with the Pile Cap. The
purpose for these elements is to spread the column base

load over an area on the Pile Cap and therefore avoid
High Stress Concentrations

NOTE : The material property number for these elements is
defaulted to 1. The material numbers for the properties
of the rest of the Pier elements start form 2

-> SECTION DATA FOR SECTION/SEGMENT : 1

Member Property Number	=	1	
Axial Area, A	=	51984.	(in^2)
Torsional Moment of Inertia, J	=	0.98770E+10	(in^4)
Moment of Inertia, 3 - Axis	=	0.98770E+10	(in^4)
Moment of Inertia, 2 - Axis	=	0.98770E+10	(in^4)
Modulus of Elasticity, E	=	4224.0	(ksi)
Shear Modulus, G	=	1760.0	(ksi) (used for Torsion)
Weight Density	=	0.00000	(K/in^3)

! -> PROPERTIES FOR PIER COLUMNS !

Member Property Number	=	2	
Axial Area, A	=	0.00000	(in^2)
Torsional Moment of Inertia, J	=	0.00000	(in^4)
Moment of Inertia, 3 - Axis	=	0.00000	(in^4)
Moment of Inertia, 2 - Axis	=	0.00000	(in^4)
Modulus of Elasticity, E	=	0.00000	(ksi)
Shear Modulus, G	=	0.00000	(ksi) (used for Torsion)
Weight Density	=	0.00000	(K/in^3)

****
* PIER MEMBER CONNECTIVITY *
****

ELEMENT NUMBER	NODES I	NODES J	MATERIAL NUMBER
1	64	47	1
2	64	4	1
3	64	37	1
4	64	3	1

****
* GENERAL LOAD DATA *
****

The table below shows the Applied Loads for every
Load Case. The values in the table represent the
magnitute of the Loads in the specified units

- Applied Load

NODE	LOAD	X (Kips)	Y (Kips)	Z (Kips)	MXX (Kip-ft)	MYY (Kip-ft)	MZZ (Kip-ft)
64	1	2479.00	0.00	0.00	0.00	0.00	0.00
64	2	0.00	6328.00	0.00	0.00	0.00	0.00
64	3	0.00	0.00	26024.00	0.00	0.00	0.00
64	4	0.00	0.00	0.00	570404.00	0.00	0.00
64	5	0.00	0.00	0.00	0.00	-177160.00	0.00
64	6	0.00	0.00	0.00	0.00	0.00	42527.00

****
*
* ANALYSIS RESULTS *
*
****

****
* RESULTS FOR LOAD CASE # 1 *
****

NOTE : PY Multipliers are applied Lead to Trail row
based on the actual displacement. If there is
no displacement in a Lateral direction they are
defaulted to 1.0. This can happen in Axial Load
and one direction lateral load cases

PY Multipliers are Applied to A Pile Group

PILE#	X-PYM	Y-PYM
1	0.500E+00	0.700E+00
2	0.700E+00	0.700E+00
3	0.500E+00	0.500E+00
4	0.700E+00	0.500E+00
5	0.500E+00	0.350E+00
6	0.700E+00	0.350E+00

****
* CONVERGENCE REPORT *
****

The Solution Converged in 9 Iterations

Summary of Abs Maximum Out-Of-Balance Forces

FZZ =	1.140	Kips
FXX =	3.056	Kips
FYY =	0.651	Kips
MXX =	111.589	Kip-in
MYY =	0.000	Kip-in
MZZ =	84.749	Kip-in

Summary of Displacements at Pile Heads

Node	X (in)	Y (in)	Z (in)
1	2.8821	10.3791	0.7696
2	2.8827	10.9636	1.3650
3	3.4672	10.3817	0.0827
4	3.4672	10.9665	0.7082
5	4.0507	10.3809	-0.6745
6	4.0501	10.9636	-0.0760

Final Displacements

Load Case # 1

Node	X (in)	Y (in)	Z (in)	Rx (rad)	Ry (rad)	Rz (rad)
Pile Number 1						
1	2.8821	10.3791	0.7696	0.0023	-0.0019	0.0016
65	2.7659	10.2283	0.7630	0.0028	-0.0020	0.0016
66	2.6455	10.0470	0.7560	0.0033	-0.0021	0.0016
67	2.5196	9.8243	0.7515	0.0042	-0.0022	0.0015
68	2.3876	9.5514	0.7458	0.0050	-0.0023	0.0014
69	2.2507	9.2340	0.7392	0.0057	-0.0023	0.0013
70	2.1104	8.8780	0.7316	0.0063	-0.0024	0.0012
71	1.9681	8.4892	0.7231	0.0068	-0.0024	0.0011
72	1.8250	8.0731	0.7140	0.0072	-0.0024	0.0010
73	1.6820	7.6352	0.7042	0.0075	-0.0024	0.0009
74	1.3053	6.3836	0.6768	0.0080	-0.0023	0.0007
75	0.9555	5.0915	0.6492	0.0080	-0.0021	0.0006
76	0.6485	3.8332	0.6214	0.0076	-0.0018	0.0004
77	0.3967	2.6796	0.5944	0.0067	-0.0014	0.0003
78	0.2090	1.6985	0.5697	0.0055	-0.0010	0.0002
79	0.0846	0.9402	0.5464	0.0040	-0.0006	0.0002
80	0.0141	0.4206	0.5224	0.0025	-0.0003	0.0001
81	-0.0174	0.1163	0.4960	0.0013	-0.0001	0.0001
82	-0.0246	-0.0242	0.4681	0.0005	0.0000	0.0001
83	-0.0201	-0.0630	0.4404	0.0000	0.0000	0.0001
84	-0.0121	-0.0516	0.4136	-0.0001	0.0001	0.0000
85	-0.0051	-0.0263	0.3877	-0.0002	0.0000	0.0000
86	-0.0009	-0.0073	0.3631	-0.0001	0.0000	0.0000
87	0.0009	0.0019	0.3439	0.0000	0.0000	0.0000
88	0.0017	0.0062	0.3301	0.0000	0.0000	0.0000
Pile Number 2						
2	2.8827	10.9636	1.3650	0.0022	-0.0017	0.0016
89	2.7775	10.8135	1.3527	0.0028	-0.0018	0.0016
90	2.6661	10.6311	1.3401	0.0033	-0.0019	0.0016
91	2.5470	10.4052	1.3291	0.0043	-0.0021	0.0015
92	2.4188	10.1265	1.3170	0.0051	-0.0022	0.0014
93	2.2835	9.8011	1.3041	0.0058	-0.0023	0.0013
94	2.1427	9.4352	1.2904	0.0065	-0.0024	0.0012

95	1.9980	9.0348	1.2760	0.0070	-0.0025	0.0011
96	1.8507	8.6055	1.2612	0.0074	-0.0025	0.0010
97	1.7025	8.1526	1.2460	0.0078	-0.0025	0.0009
98	1.3080	6.8507	1.2050	0.0084	-0.0024	0.0007
99	0.9409	5.4971	1.1637	0.0084	-0.0022	0.0006
100	0.6223	4.1731	1.1221	0.0080	-0.0018	0.0004
101	0.3665	2.9533	1.0804	0.0071	-0.0014	0.0003
102	0.1806	1.9052	1.0396	0.0059	-0.0009	0.0002
103	0.0620	1.0814	0.9995	0.0044	-0.0005	0.0002
104	-0.0008	0.5032	0.9592	0.0029	-0.0002	0.0001
105	-0.0242	0.1531	0.9175	0.0016	-0.0001	0.0001
106	-0.0255	-0.0168	0.8755	0.0006	0.0000	0.0001
107	-0.0179	-0.0684	0.8345	0.0001	0.0001	0.0001
108	-0.0091	-0.0587	0.7946	-0.0002	0.0000	0.0000
109	-0.0029	-0.0306	0.7559	-0.0002	0.0000	0.0000
110	0.0000	-0.0088	0.7188	-0.0001	0.0000	0.0000
111	0.0008	0.0020	0.6890	0.0000	0.0000	0.0000
112	0.0008	0.0071	0.6663	0.0000	0.0000	0.0000

Pile Number 3

3	3.4672	10.3817	0.0827	0.0022	-0.0019	0.0016
113	3.3521	10.2377	0.0862	0.0027	-0.0020	0.0016
114	3.2300	10.0662	0.0892	0.0031	-0.0021	0.0016
115	3.0989	9.8565	0.0968	0.0039	-0.0023	0.0015
116	2.9569	9.5997	0.1032	0.0047	-0.0025	0.0014
117	2.8060	9.3004	0.1085	0.0054	-0.0026	0.0013
118	2.6478	8.9633	0.1127	0.0060	-0.0027	0.0012
119	2.4841	8.5933	0.1158	0.0065	-0.0028	0.0011
120	2.3165	8.1949	0.1179	0.0069	-0.0028	0.0010
121	2.1467	7.7730	0.1190	0.0073	-0.0029	0.0010
122	1.6894	6.5565	0.1170	0.0078	-0.0028	0.0007
123	1.2524	5.2898	0.1114	0.0079	-0.0026	0.0006
124	0.8585	4.0443	0.1079	0.0076	-0.0023	0.0004
125	0.5316	2.8903	0.1090	0.0068	-0.0018	0.0003
126	0.2856	1.8932	0.1137	0.0056	-0.0013	0.0002
127	0.1212	1.1000	0.1202	0.0043	-0.0008	0.0002
128	0.0268	0.5315	0.1264	0.0028	-0.0004	0.0001
129	-0.0163	0.1779	0.1300	0.0016	-0.0001	0.0001
130	-0.0274	0.0017	0.1299	0.0007	0.0000	0.0001
131	-0.0226	-0.0558	0.1254	0.0001	0.0001	0.0001
132	-0.0133	-0.0535	0.1184	-0.0001	0.0001	0.0000
133	-0.0055	-0.0319	0.1113	-0.0001	0.0000	0.0000
134	-0.0010	-0.0118	0.1043	-0.0001	0.0000	0.0000
135	0.0010	0.0006	0.0988	-0.0001	0.0000	0.0000
136	0.0018	0.0085	0.0946	0.0000	0.0000	0.0000

Pile Number 4

4	3.4672	10.9665	0.7082	0.0022	-0.0019	0.0016
137	3.3520	10.8214	0.7025	0.0027	-0.0020	0.0016
138	3.2290	10.6470	0.6963	0.0032	-0.0021	0.0016
139	3.0956	10.4323	0.6927	0.0040	-0.0024	0.0015
140	2.9501	10.1683	0.6881	0.0048	-0.0025	0.0014
141	2.7948	9.8604	0.6826	0.0055	-0.0027	0.0013
142	2.6315	9.5137	0.6761	0.0061	-0.0028	0.0012
143	2.4624	9.1336	0.6687	0.0066	-0.0029	0.0011
144	2.2894	8.7254	0.6605	0.0071	-0.0029	0.0010
145	2.1144	8.2940	0.6517	0.0074	-0.0030	0.0009
146	1.6448	7.0522	0.6262	0.0080	-0.0029	0.0007
147	1.2011	5.7543	0.6005	0.0081	-0.0026	0.0006
148	0.8078	4.4685	0.5744	0.0079	-0.0023	0.0004
149	0.4849	3.2599	0.5491	0.0072	-0.0018	0.0003
150	0.2458	2.1934	0.5257	0.0061	-0.0012	0.0002
151	0.0911	1.3230	0.5040	0.0047	-0.0007	0.0002
152	0.0075	0.6792	0.4826	0.0033	-0.0003	0.0001
153	-0.0255	0.2611	0.4596	0.0019	-0.0001	0.0001
154	-0.0295	0.0366	0.4350	0.0009	0.0000	0.0001
155	-0.0212	-0.0520	0.4093	0.0003	0.0001	0.0001
156	-0.0110	-0.0632	0.3842	-0.0001	0.0001	0.0000
157	-0.0036	-0.0417	0.3601	-0.0002	0.0000	0.0000
158	-0.0001	-0.0173	0.3371	-0.0001	0.0000	0.0000
159	0.0009	-0.0006	0.3192	-0.0001	0.0000	0.0000
160	0.0010	0.0107	0.3062	-0.0001	0.0000	0.0000

Pile Number 5

5	4.0507	10.3809	-0.6745	0.0024	-0.0018	0.0016
161	3.9388	10.2249	-0.6614	0.0028	-0.0020	0.0016
162	3.8173	10.0456	-0.6487	0.0032	-0.0021	0.0016
163	3.6824	9.8335	-0.6304	0.0039	-0.0024	0.0015
164	3.5314	9.5803	-0.6130	0.0046	-0.0027	0.0014
165	3.3663	9.2893	-0.5963	0.0052	-0.0029	0.0013
166	3.1888	8.9643	-0.5805	0.0057	-0.0031	0.0012
167	3.0011	8.6086	-0.5655	0.0062	-0.0032	0.0011
168	2.8052	8.2258	-0.5512	0.0066	-0.0034	0.0010

169	2.6031	7.8195	-0.5376	0.0070	-0.0034	0.0009
170	2.0457	6.6356	-0.5030	0.0077	-0.0035	0.0007
171	1.5054	5.3875	-0.4693	0.0078	-0.0032	0.0006
172	1.0238	4.1579	-0.4363	0.0075	-0.0027	0.0004
173	0.6307	3.0199	-0.4020	0.0067	-0.0021	0.0003
174	0.3378	2.0295	-0.3656	0.0056	-0.0015	0.0002
175	0.1425	1.2257	-0.3283	0.0044	-0.0009	0.0002
176	0.0305	0.6285	-0.2914	0.0031	-0.0005	0.0001
177	-0.0195	0.2356	-0.2565	0.0018	-0.0002	0.0001
178	-0.0311	0.0216	-0.2260	0.0009	0.0000	0.0001
179	-0.0242	-0.0597	-0.2003	0.0002	0.0001	0.0001
180	-0.0127	-0.0625	-0.1779	-0.0001	0.0001	0.0000
181	-0.0039	-0.0362	-0.1578	-0.0002	0.0000	0.0000
182	0.0000	-0.0121	-0.1401	-0.0001	0.0000	0.0000
183	0.0009	0.0012	-0.1299	-0.0001	0.0000	0.0000
184	0.0007	0.0082	-0.1265	0.0000	0.0000	0.0000

Pile Number 6

6	4.0501	10.9636	-0.0760	0.0025	-0.0019	0.0016
185	3.9314	10.8028	-0.0703	0.0029	-0.0021	0.0016
186	3.8023	10.6172	-0.0652	0.0033	-0.0023	0.0016
187	3.6593	10.3969	-0.0554	0.0041	-0.0026	0.0015
188	3.4995	10.1334	-0.0466	0.0048	-0.0028	0.0014
189	3.3254	9.8306	-0.0387	0.0054	-0.0030	0.0013
190	3.1393	9.4927	-0.0319	0.0060	-0.0032	0.0012
191	2.9437	9.1237	-0.0261	0.0065	-0.0034	0.0011
192	2.7409	8.7275	-0.0213	0.0069	-0.0035	0.0010
193	2.5333	8.3082	-0.0176	0.0072	-0.0035	0.0009
194	1.9682	7.0947	-0.0120	0.0078	-0.0035	0.0007
195	1.4278	5.8191	-0.0105	0.0080	-0.0032	0.0006
196	0.9493	4.5529	-0.0066	0.0077	-0.0027	0.0004
197	0.5618	3.3620	0.0016	0.0071	-0.0021	0.0003
198	0.2797	2.3066	0.0127	0.0061	-0.0014	0.0002
199	0.1003	1.4333	0.0256	0.0048	-0.0008	0.0002
200	0.0061	0.7698	0.0388	0.0035	-0.0004	0.0001
201	-0.0287	0.3209	0.0505	0.0022	-0.0001	0.0001
202	-0.0309	0.0660	0.0588	0.0011	0.0000	0.0001
203	-0.0208	-0.0423	0.0626	0.0003	0.0001	0.0001
204	-0.0100	-0.0621	0.0620	0.0000	0.0001	0.0000
205	-0.0030	-0.0446	0.0588	-0.0001	0.0000	0.0000
206	0.0001	-0.0213	0.0554	-0.0001	0.0000	0.0000
207	0.0009	-0.0026	0.0526	-0.0001	0.0000	0.0000
208	0.0008	0.0120	0.0504	-0.0001	0.0000	0.0000

SUM OF TOTAL SOIL SPRING LOADS

CHECK: Total Load Carried by the Soil
(Sum of NF+FF Soil Spring Loads)

X Direction	=	2477.8645	Kips
Y Direction	=	6283.5885	Kips
Z Direction	=	47290.8734	Kips
Sum of Tip Forces	=	20144.1635	Kips

Summary of Pile Forces for Load CASE 1

1. Axial Force (Kips)

Pile #	Maximum Force	Minimum Force
1	-0.59231E+04	-0.12524E+05
2	-0.97325E+04	-0.18282E+05
3	-0.17606E+04	-0.32691E+04
4	-0.55580E+04	-0.11739E+05
5	0.53842E+04	0.43447E+03
6	-0.17345E+03	-0.15294E+04

2. Pile Shear Force in 2 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.29576E+03	-0.22025E+03
2	0.39198E+03	-0.27041E+03
3	0.37622E+03	-0.23789E+03
4	0.46728E+03	-0.31506E+03
5	0.42905E+03	-0.23722E+03
6	0.52016E+03	-0.31151E+03

3. Pile Shear Force in 3 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.95599E+03	-0.12385E+04
2	0.10599E+04	-0.12974E+04
3	0.72469E+03	-0.10177E+04
4	0.91547E+03	-0.11151E+04
5	0.56433E+03	-0.78869E+03
6	0.68761E+03	-0.87212E+03

4. Bending Moment About 2 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.8460E+05	0.13815E+03	-0.4780E+05
2	2	0.00000E+00	0.9252E+05	0.13815E+03	-0.5232E+05
3	3	0.00000E+00	0.6885E+05	0.13815E+03	-0.3767E+05
4	4	0.00000E+00	0.8064E+05	0.15151E+03	-0.4493E+05
5	5	0.00000E+00	0.5138E+05	0.13815E+03	-0.2754E+05
6	6	0.00000E+00	0.6036E+05	0.15151E+03	-0.3410E+05

5. Bending Moment About 3 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.1241E+05	0.98047E+02	-0.1346E+05
2	2	0.00000E+00	0.1865E+05	0.98047E+02	-0.1568E+05
3	3	0.00000E+00	0.1796E+05	0.11141E+03	-0.1379E+05
4	4	0.00000E+00	0.2268E+05	0.98047E+02	-0.1786E+05
5	5	0.00000E+00	0.2191E+05	0.98047E+02	-0.1295E+05
6	6	0.00000E+00	0.2604E+05	0.11141E+03	-0.1705E+05

****
* ANALYTICAL FORCE RESULTS FOR PIER *
****

ELEM NO.	PROP NO.	NODE NO.	LOAD CASE	FAX (Kips)	F22 (Kips)	F33 (Kips)	M22 (Kip-ft)	M33 (Kip-ft)	TORQUE (Kip-ft)	D/C (Ratio)
- Connector Beam Segments										
1	1	64	1	-719.39	-19824.97	-1301.93	19528.88	*********	-5265.55	
	0.00									
	1	47		719.39	19824.97	1301.93	0.00	0.00	5265.55	
	0.00									
2	1	64	1	480.67	12175.58	-3222.12	48331.78	182633.69	*********	
	0.00									
	1	4		-480.67	-12175.58	3222.12	0.00	0.00	118368.94	
	0.00									
3	1	64	1	940.99	33311.08	243.41	-3651.14	499666.22	-5226.52	
	0.00									
	1	37		-940.99	-33311.08	-243.41	0.00	0.00	5226.52	
	0.00									
4	1	64	1	-453.00	362.31	1445.50	-21682.53	5434.67	108267.86	
	0.00									
	1	3		453.00	-362.31	-1445.50	0.00	0.00	*********	
	0.00									

****
* ANALYTICAL PILE CAP - SHELL STRESS RESULTS *
****

****
* DAMPING FORCES *
****

Node #	FXX	FYY	FZZ	MXX	MYY	MZZ
	Kip	Kip	Kip	Kip	Kip	Kip

****
* UNIAXIAL INTERACTION DIAGRAM *
****

NOTE : 1. The tables below show the values on the Interaction
Diagrams for each section which correspond to the

section capacity
2. The numbering of the SECTIONS/SEGMENTS is shown previously in the output file

---
! -> Pile Cross Section Number = 1 !

Diagram Data

Maximum Tension Force = 0.4820E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = 0.1237E-14 (in)
Local 3 Axis Shift for Plastic Centroid = -0.7486E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.4820E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.4397E+05	0.1425E+06	0.1425E+06	0.1425E+06	0.1425E+06
0.3941E+05	0.1572E+06	0.1572E+06	0.1572E+06	0.1572E+06
0.3504E+05	0.1687E+06	0.1687E+06	0.1687E+06	0.1687E+06
0.3074E+05	0.1749E+06	0.1749E+06	0.1749E+06	0.1749E+06
0.2629E+05	0.1777E+06	0.1777E+06	0.1777E+06	0.1777E+06
0.2204E+05	0.1795E+06	0.1795E+06	0.1795E+06	0.1795E+06
0.1754E+05	0.1877E+06	0.1877E+06	0.1877E+06	0.1877E+06
0.1315E+05	0.1951E+06	0.1951E+06	0.1951E+06	0.1951E+06
0.8836E+04	0.2009E+06	0.2009E+06	0.2009E+06	0.2009E+06
0.4379E+04	0.2067E+06	0.2067E+06	0.2067E+06	0.2067E+06
0.7571E-01	0.2109E+06	0.2109E+06	0.2109E+06	0.2109E+06
-0.6898E+04	0.1877E+06	0.1877E+06	0.1877E+06	0.1877E+06
-0.1348E+05	0.1894E+06	0.1894E+06	0.1894E+06	0.1894E+06
-0.2023E+05	0.1912E+06	0.1912E+06	0.1912E+06	0.1912E+06
-0.2690E+05	0.1869E+06	0.1869E+06	0.1869E+06	0.1869E+06
-0.3368E+05	0.1773E+06	0.1773E+06	0.1773E+06	0.1773E+06
-0.4042E+05	0.1633E+06	0.1633E+06	0.1633E+06	0.1633E+06
-0.4761E+05	0.1439E+06	0.1439E+06	0.1439E+06	0.1439E+06
-0.4853E+05	0.1410E+06	0.1410E+06	0.1410E+06	0.1410E+06
-0.5008E+05	0.1361E+06	0.1361E+06	0.1361E+06	0.1361E+06
-0.5139E+05	0.1319E+06	0.1319E+06	0.1319E+06	0.1319E+06
-0.5259E+05	0.1279E+06	0.1279E+06	0.1279E+06	0.1279E+06
-0.5371E+05	0.1239E+06	0.1239E+06	0.1239E+06	0.1239E+06
-0.5469E+05	0.1204E+06	0.1204E+06	0.1204E+06	0.1204E+06
-0.5552E+05	0.1174E+06	0.1174E+06	0.1174E+06	0.1174E+06
-0.5695E+05	0.1100E+06	0.1120E+06	0.1100E+06	0.1120E+06
-0.5814E+05	0.1075E+06	0.1075E+06	0.1075E+06	0.1075E+06
-0.5945E+05	0.9967E+05	0.1019E+06	0.9967E+05	0.1019E+06
-0.6046E+05	0.9587E+05	0.9753E+05	0.9587E+05	0.9753E+05

! -> Pile Cross Section Number = 2 !

Diagram Data

Maximum Tension Force = 0.3972E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = -0.2885E-15 (in)
Local 3 Axis Shift for Plastic Centroid = -0.6414E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.3972E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.2967E+05	0.1188E+06	0.1188E+06	0.1188E+06	0.1188E+06
0.2917E+05	0.1190E+06	0.1190E+06	0.1190E+06	0.1190E+06
0.2506E+05	0.1240E+06	0.1240E+06	0.1240E+06	0.1240E+06
0.2163E+05	0.1312E+06	0.1312E+06	0.1312E+06	0.1312E+06
0.1804E+05	0.1390E+06	0.1390E+06	0.1390E+06	0.1390E+06
0.1439E+05	0.1450E+06	0.1450E+06	0.1450E+06	0.1450E+06
0.1086E+05	0.1450E+06	0.1450E+06	0.1450E+06	0.1450E+06
0.7277E+04	0.1415E+06	0.1415E+06	0.1415E+06	0.1415E+06
0.3611E+04	0.1444E+06	0.1444E+06	0.1444E+06	0.1444E+06
-0.4794E-01	0.1461E+06	0.1461E+06	0.1461E+06	0.1461E+06
-0.5424E+04	0.1245E+06	0.1245E+06	0.1245E+06	0.1245E+06
-0.1089E+05	0.1285E+06	0.1285E+06	0.1285E+06	0.1285E+06
-0.1625E+05	0.1318E+06	0.1318E+06	0.1318E+06	0.1318E+06
-0.2176E+05	0.1325E+06	0.1325E+06	0.1325E+06	0.1325E+06
-0.2717E+05	0.1287E+06	0.1287E+06	0.1287E+06	0.1287E+06
-0.3261E+05	0.1222E+06	0.1222E+06	0.1222E+06	0.1222E+06
-0.3842E+05	0.1125E+06	0.1125E+06	0.1125E+06	0.1125E+06
-0.4107E+05	0.1069E+06	0.1069E+06	0.1069E+06	0.1069E+06
-0.4342E+05	0.1011E+06	0.1011E+06	0.1011E+06	0.1011E+06
-0.4628E+05	0.9335E+05	0.9335E+05	0.9335E+05	0.9335E+05
-0.4900E+05	0.8534E+05	0.8534E+05	0.8534E+05	0.8534E+05
-0.5129E+05	0.7695E+05	0.7808E+05	0.7695E+05	0.7808E+05
-0.5402E+05	0.6878E+05	0.6919E+05	0.6878E+05	0.6919E+05
-0.5676E+05	0.5932E+05	0.6000E+05	0.5932E+05	0.6000E+05
-0.5945E+05	0.4928E+05	0.5074E+05	0.4928E+05	0.5074E+05
-0.6224E+05	0.4026E+05	0.4026E+05	0.4026E+05	0.4026E+05
-0.6511E+05	0.2891E+05	0.2891E+05	0.2891E+05	0.2891E+05
-0.6771E+05	0.1816E+05	0.1816E+05	0.1816E+05	0.1816E+05

****
* FINAL MAXIMUMS/MINIMUMS FOR ALL LOAD CASES *
* PIER # 1 *
****

Maximum/Minimum Pile Forces

	Value		Load	Comb.	Pile
Max Shear in 2 Direction	0.5202E+03	Kip	1	0	6
Min Shear in 2 Direction	-0.3151E+03	Kip	1	0	4
Max Shear in 3 Direction	0.1060E+04	Kip	1	0	2
Min Shear in 3 Direction	-0.1297E+04	Kip	1	0	2
Max Moment about 2 Axis	0.9252E+05	Kip-ft	1	0	2
Min Moment about 2 Axis	-0.5232E+05	Kip-ft	1	0	2
Max Moment About 3 Axis	0.2604E+05	Kip-ft	1	0	6
Min Moment About 3 Axis	-0.1786E+05	Kip-ft	1	0	4
Max Axial Force	0.5384E+04	Kip	1	0	5
Min Axial Force	-0.1828E+05	Kip	1	0	2
Absolute Max Torque	0.2285E+02	Kip-ft	1	0	6
Max Demand/Capacity Ratio	0.6255E+00		1	0	2

Maximum/Minimum Soil Forces

Max Axial Soil Force	0.3178E+04	Kip	1	0	2
Min Axial Soil Force	-0.9626E+03	Kip	1	0	5
Max Lateral Force in X dir	0.2221E+03	Kip	1	0	6
Min Lateral Force in X dir	-0.1004E+03	Kip	1	0	6
Max Lateral Force in Y dir	0.5091E+03	Kip	1	0	2
Min Lateral Force in Y dir	-0.3884E+03	Kip	1	0	2
Max Torsional Soil Force	0.1134E+05	Kip-ft	1	0	3

Maximum/Minimum Pile Displacements

Max Axial Displacement	0.1365E+01	in	1	0	2
Min Axial Displacement	-0.6745E+00	in	1	0	5

BSI FB-MultiPier - File: P5-LCS.out Wednesday, March 23, 2011

Max Displacement in X	0.4051E+01 in	1	0	5
Min Displacement in X	-0.3107E-01 in	1	0	5
Max Displacement in Y	0.1097E+02 in	1	0	4
Min Displacement in Y	-0.6836E-01 in	1	0	2

Maximum/Minimum Column Forces

	Value		Load	Comb.	Column
Max Axial Force	0.0000E+00	Kip	0	0	0
Min Axial Force	0.0000E+00	Kip	0	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	1
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	0
Absolute Max Torque	0.1000E+06	Kip-ft	1	0	0

Maximum/Minimum Pier Cap Forces

Max Axial Force	0.0000E+00	Kip	0	0
Min Axial Force	0.0000E+00	Kip	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0
Max Torque	-0.1000E+06	Kip-ft	1	0
Min Torque	0.0000E+00	Kip-ft	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0

****
Foundation Flexibilty for given loads
****

Averaged flexiblity

	Fx	Fy	Fz	Mx	My	Mz
DeltaX	0.1091E-02	0.4395E-04	-0.8864E-05	0.2670E-07	-0.2962E-06	0.5462E-07
DeltaY	0.4395E-04	0.1655E-02	-0.2717E-04	0.1648E-06	-0.3343E-07	0.9316E-08
DeltaZ	-0.8864E-05	-0.2717E-04	0.1536E-04	-0.6671E-08	0.5510E-08	-0.1795E-08
ThetaX	0.2670E-07	0.1648E-06	-0.6671E-08	0.1854E-09	-0.2519E-10	0.1922E-10
ThetaY	-0.2962E-06	-0.3343E-07	0.5510E-08	-0.2519E-10	0.4082E-09	0.3935E-10
ThetaZ	0.5462E-07	0.9316E-08	-0.1795E-08	0.1922E-10	0.3935E-10	0.2852E-08

****
Foundation Stiffness for given loads
****

STIFFNESS

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.1146E+04	-0.4715E+01	0.3380E+03	-0.3278E+05	0.8282E+06	-0.3294E+05
Fy	-0.4715E+01	0.6764E+03	0.9467E+03	-0.5662E+06	0.4038E+04	0.2236E+04
Fz	0.3380E+03	0.9467E+03	0.6781E+05	0.1478E+07	-0.5043E+06	0.3012E+05
Mx	-0.3278E+05	-0.5662E+06	0.1478E+07	0.5997E+10	0.2840E+09	-0.4093E+08
My	0.8282E+06	0.4038E+04	-0.5043E+06	0.2840E+09	0.3082E+10	-0.6063E+08
Mz	-0.3294E+05	0.2236E+04	0.3012E+05	-0.4093E+08	-0.6063E+08	0.3524E+09

****
Foundation Stiffness in STANDARD X-Y-Z directions
(FB-Pier->Stardard, X->X, Y->Z & -Z->Y)
Translations: kips/in Rotations: kip-in/rad
****

Stiffness in standard X-Y-Z

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.1146E+04	-0.3380E+03	-0.4715E+01	-0.3278E+05	0.3294E+05	0.8282E+06
Fy	-0.3380E+03	0.6781E+05	-0.9467E+03	-0.1478E+07	0.3012E+05	0.5043E+06
Fz	-0.4715E+01	-0.9467E+03	0.6764E+03	-0.5662E+06	-0.2236E+04	0.4038E+04
Mx	-0.3278E+05	-0.1478E+07	-0.5662E+06	0.5997E+10	0.4093E+08	0.2840E+09
My	0.3294E+05	0.3012E+05	-0.2236E+04	0.4093E+08	0.3524E+09	0.6063E+08
Mz	0.8282E+06	0.5043E+06	0.4038E+04	0.2840E+09	0.6063E+08	0.3082E+10

```
!------------------------------------------------------------!
!                                                            !
!        The University of Florida, Florida Department       !
!        of Transportation, Drs. Marc Hoit, Mike McVay       !
!        Cliff Hays, Mark Williams, Petros Christou, and     !
!                         Jae H. Chung                       !
!         disclaim any warranty, expressed or implied,       !
!          including but not limited to, any implied         !
!         warranty of fitness for a particular purpose       !
!            or accuracy of the FB-Pier software             !
!     The  developers shall not be liable for any damages    !
!          incurred through the use of FB-MultiPier          !
!                                                            !
!                                                            !
!              :::: F B - M U L T I P I E R ::::             !
!                  FB-MultiPier Version 4.13                 !
!                                                            !
!                                                            !
!         Written by Marc Hoit, Mike McVay, Cliff Hays       !
!         Mark Williams, Petros Christou, Jae H. Chung.      !
!                                                            !
!      Civil & Coastal Engineering, University of Florida    !
!      Supported by Florida Department of Transportation     !
!           and the Federal Highway Administration           !
!                                                            !
!             The program calculates the Response            !
!           of the Bridge Pier Pile Soil Structures          !
!                                                            !
!            The Analysis includes PreLoad, Static,          !
!                Transient Dynamic or Push Over              !
!                                                            !
!        The Program Handles NonLinear Soil Behavior,        !
!  Linear Pile Cap and Linear and NonLinear Piles and Piers  !
!                                                            !
!                                                            !
!       Contact: Bridge Software Institute for Support       !
!              HTTP://BSI-WEB.CE.UFL.EDU                     !
!                                                            !
!------------------------------------------------------------!

Analysis Start       : 3:43pm
Analysis End         : 3:43pm
Analysis Time        : 3 seconds

Input Data File Name : P6-LCS.in
Analysis Date        : 3-15-2011
License ID Number    : 432478881


********************
*   PROJECT DATA   *
********************

Project Client      : CRC / WSDOT / ODOT
Project Name        : Columbia River Crossing
Project Manager     : R. Turton
Computed by         : NRH
Project Description : SB - Pier 6 - Liquefaction + Contraction Scour


**************************************
*   SELECTIVE PRINT OUTPUT CONTROL   *
**************************************
                                      Print On
Pile Displacements                      YES
Pile Element Forces                      NO
Missing Pile ID Numbers                  NO
Pier Columns and Pier Cap Displacements  NO
Pier Columns and Pier Cap Force Output  YES
Pier Material Properties                YES
Soil Response Forces                     NO
Soil Data per Layer                     YES
Soil Curve data per Pile Node            NO
Soil Graph per Pile Node                 NO
Out of Balance Forces                    NO
Bridge Simulation Spring Force Output    NO
Bridge Span Displacements                NO
Bridge Span Element Forces               NO
Bridge Span Properties                   NO
Pile Cap Stress                          NO
```

```
 Material Stress Strain Curve Data          NO
 Interaction Diagram Data For Pile and Pier YES
 Pile and Pier coordinates                  NO
 Generate XML file                          NO


 *************
 *   UNITS   *
 *************

 Analysis Units Specified are: English Mixed (Kips & Ft some lbs & in)


 ***************************
 *   CONTROL INFORMATION   *
 ***************************

 Number of Piers               (NUMPIERS) =    1
 Maximum Number of Iterations    (MAXITN) =   50
 Tolerance                        (TOLER) =    10.000000     Kips

 NOTE : The following soil information is not applicable in the coulmn analysis problems

 Soil Behavior Option             (IFLEX) =    0
    IFLEX = 0 -> PY Multipliers are Input
    IFLEX = 1 -> PY Multipliers Defaulted to 1.0
    IFLEX = 2 -> No SOIL (Must use tip springs)

 Soil resistance due to Pile Rotation About 2 and 3 Axis (NSODF) =    4
    NSDOF = 4 -> NO Resistance Accounted
    NSDOF = 6 -> Resistance Accounted

 Linear Pile TIP Spring Option     (ITIP) =    0
    ITIP = 0 -> NO spring
    ITIP = 1 -> Axial only
    ITIP = 2 -> All DOF

 Linear Pile TIP Spring Stiffness (TSTIF) =         0.00 kips/in


 **********************
 *   SOIL BEHAVIOR    *
 **********************

 PY Multipliers will be used (IFLEX = 0)


 ************************************************
 *   LOAD FACTORS FOR SELF WEIGHT AND BUOYANCY   *
 ************************************************

 LOAD CASE     SELF WEIGHT     BUOYANCY
     #            FACTOR         FACTOR
     1             1.00           1.00


 ***************************
 *   GENERAL INFORMATION   *
 ***************************

 Static / Cyclic Load (KCYC)      =    0
    KCYC = 0 -> Static Load
    KCKC > 0 -> Cyclic Load (# Cycles)

 Fixity of Pile Cap (KFIX)        =    1
    KFIX = 0 -> Pinned Head
    KFIX = 1 -> Fixed head

 Bearing of Cap on Soil           =  NO


 ******************************
 *   GRID DATA INFORMATION    *
 ******************************

 NOTE: X-Grid : Distance between axes along the X-Axis
       Y-Grid : Distance between axes along the Y-Axis

 Number of Grid Points in X-Direction (NPX) =     4
 Number of Grid Points in X-Direction (NPY) =     5

 Grid Spacing in the X Direction : (inches)
      90.00     360.00      90.00
```

Grid Spacing in the Y Direction : (inches)
90.00 360.00 360.00 90.00

****
* ANALYSIS OPTIONS *
****

Type of Stiffness = Secant Stiffness
Type of Structure = Full
Type of Analysis = Static Analysis

****
* INPUT SOIL DATA - GIVEN BY LAYER *
****

NOTE : The following data is used to define Springs
for each Soil Layer to determine the Soil
Behavior during the analysis

LAYERED P-Y CURVES

SOIL SET # 1

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	1	1	0.5000E+01	0.3800E+01	0.1073E+03
			0.5000E+01	0.3800E+01	0.1073E+03
1	2	1	0.5000E+01	0.6900E+01	0.1212E+03
			0.5000E+01	0.6900E+01	0.1212E+03
1	3	1	0.4500E+02	0.1250E+03	0.1367E+03
			0.4500E+02	0.1250E+03	0.1367E+03
1	4	1	0.4500E+02	0.1500E+03	0.1402E+03
			0.4500E+02	0.1500E+03	0.1402E+03

LAYERED T-Z CURVES

SOIL SET # 1

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00
	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00
	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED	TOP		BOTTOM	
	Z Value	T Value	Z Value	T Value

	in	psi	in	psi
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

- USER DEFINED

	TOP		BOTTOM	
	Z Value	T Value	Z Value	T Value
	in	psi	in	psi
4	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

LAYERED T-Theta CURVES

SOIL SET # 1

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	1	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	2	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	3	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M.	TAU MAX
			ksi	psf
1	4	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

PILE TIP SOIL PARAMETERS

SOIL SET # 1

USER DEFINED

	Q Value	T Value
	in	lbs
1	0.000E+00	0.000E+00
2	0.222E+00	0.362E+07
3	0.444E+00	0.624E+07
4	0.667E+00	0.829E+07
5	0.889E+00	0.995E+07
6	0.111E+01	0.113E+08
7	0.133E+01	0.125E+08
8	0.156E+01	0.136E+08
9	0.178E+01	0.145E+08
10	0.200E+01	0.153E+08

****
* PILE SEGMENT INFORMATION DATA *
****

NOTE: The Piles Sets consist of Pile Segments based on the User Input. The program groups all segments from all the different Pile Sets and assigns a reference number to each

The reference number for each segment together with the User Input Pile Set/Segment number is shown below. The

Input section properties for each section/segment is
also provided below.

The user is advised to double check these numbers

Number of segments found in all Piles (NPSEG) = 2

! -> SECTION DATA FOR SECTION/SEGMENT : 1 !

Input Pile Set Number = 1
Input Pile Set Segment = 1

Section Pile Length (L) = 9.0000000 ft

Nonlinear Section/Segment Material Properties

Material Option (MATOPT) = 1
(Please Refer to the Users Guide for Details)

- Concrete Stress Strain Properties

  Concrete Strength (FPC) = 0.4000E+01 ksi
  Modulus of Elasticity (EC) = 0.4224E+04 ksi

  Gauss Integration Points for Concrete = 60

- Steel Stress Strain Properties

  Mild Steel Yield Stress (FY) = 0.600E+02 ksi
  Modulus of Elasticity (ES) = 0.2900E+05 ksi

  Tubular Steel Yield Stress (FY) = 0.500E+02 ksi
  Modulus of Elasticity (ES) = 0.2900E+05 ksi

- Shape of Section : CIRCULAR

- Steel and Confinement Data

  Number of Steel Layers = 2
  Section/Segment Diameter = 180.0000 in
  Tied/Spiral Reinforcement Flag = 1
  (NOTE : Spiral = 1, Tied = 2)
  Confinement Flag = 1
  (NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

- Steel and Confinement Data

 Yield Stress of Confinement Steel = 60.00 ksi
 Spacing between Confinement Steel = 6.000 in
 Diameter of Confinement Steel = 0.7500 in
 Outer Shell Thickness = 1.00 in

- Total Area of Steel Reinforcement = 424.00 in^2

Layer	# Bars/Strands	Area in^2	Layer Dia. in	Prestressing ksi

WARNING : The number of bars is changed to a multiple
of 4. This is to ensure a symmetric section
for the analysis. The area is changed to
result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
1	56	4.00	108.00	0.00

WARNING : The number of bars is changed to a multiple
of 4. This is to ensure a symmetric section
for the analysis. The area is changed to
result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
2	52	3.85	96.00	0.00

! -> SECTION DATA FOR SECTION/SEGMENT : 2 !

Input Pile Set Number = 1

```
 Input Pile Set Segment =   2

 Section Pile Length                (L) =    122.08000     ft

 Nonlinear Section/Segment Material Properties
 ---------------------------------------------

 Material Option (MATOPT) =   1
 (Please Refer to the Users Guide for Details)

 - Concrete Stress Strain Properties

   Concrete Strength    (FPC) = 0.6000E+01 ksi
   Modulus of Elasticity (EC) = 0.5173E+04 ksi

   Gauss Integration Points for Concrete = 60

 - Steel Stress Strain Properties

   Mild Steel Yield Stress  (FY) =  0.600E+02 ksi
   Modulus of Elasticity    (ES) = 0.2900E+05 ksi

   Tubular Steel Yield Stress (FY) =  0.500E+02 ksi
   Modulus of Elasticity      (ES) = 0.2900E+05 ksi

 - Shape of Section : CIRCULAR

 - Steel and Confinement Data

   Number of Steel Layers         =   2
   Section/Segment Diameter       =  120.0000 in
   Tied/Spiral Reinforcement Flag =   1
   (NOTE : Spiral = 1, Tied   = 2)
   Confinement Flag               =   1
   (NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

 - Steel and Confinement Data

  Yield Stress of Confinement Steel =    60.00     ksi
  Spacing between Confinement Steel =    6.000     in
  Diameter of Confinement Steel     =   0.7500     in
   Outer Shell Thickness          =    1.00      in

 - Total Area of Steel Reinforcement  = 424.00 in^2

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing
                           in^2      in             ksi

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     1           56        4.00    108.00           0.00

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     2           52        3.85     96.00           0.00


 PLOT OF THE QZ CURVE FOR THE TIP OF THE PILE
 --------------------------------------------

 - USER DEFINED CURVE

 SOIL SET   Z Value    Q Value    Z Value    Q Value    Z Value    Q Value
   1 0.0000E+00 0.0000E+00 0.2222E+00 0.3615E+07 0.4444E+00 0.6244E+07
       0.6667E+00 0.8290E+07 0.8889E+00 0.9952E+07 0.1111E+01 0.1134E+08
       0.1333E+01 0.1253E+08 0.1556E+01 0.1357E+08 0.1778E+01 0.1448E+08
       0.2000E+01 0.1530E+08


 *********************************
 *   PILE SET DATA DESCRIPTION   *
 *********************************
```

```
 NOTE : The piles are organized in pile sets. Each pile
        set is composed of pile segments that are input
        by the User. A pile set is attached to each
        pile in order to describe its composition

 List of Piles Sets and Piles
 ----------------------------

 Pile Set   Piles (that are assigned the Pile Set)
     1       1,  2,  3,  4,  5,  6


 Total Length for Each Pile Set
 ------------------------------

 Pile Set   Length
     1     1572.96


 ************************************
 *   INPUT FOR STRUCTURAL ANALYSIS   *
 ************************************

 Number of Joints                    =  64
 Number of Different Element Types   =   3
 Number of Load Conditions           =   1


 WARNING : Pier Columns and Cap are linear
           No P-Delta or Moment Magnification is included
           Nonlinear should be used for final design

 PIER SUMMARY
 ------------

 Stiffness of Foundation Requested - NO Pier Exists


 ************************************************************************
 *   MATERIAL PROPERTIES FOR PILE CAP AND FRAME (PIER) ELEMENTS   *
 ************************************************************************

 ************************************************
 * PILE CAP PROPERTIES - USING SHELL ELEMENTS *
 ************************************************

 Modulus of Elasticity =   0.4224E+04 (ksi)
 Poissons Ratio        =      0.2000
 Shear Modulus         =   0.1760E+04 (ksi)
 Self Weight           =     160.0000 (pcf)
 Thickness             =   0.1900E+02 (ft)

 ---------------------------------------------------
 ! -> PROPERTIES FOR CONNECTOR ELEMENTS (DEFAULTED) !
 ---------------------------------------------------

 NOTE : These Elements are generated by the program at the Pier
        Column Bases where they connect with the Pile Cap. The
        purpose for these elements is to spread the column base
        load over an area on the Pile Cap and therefore avoid
        High Stress Concentrations

 NOTE : The material property number for these elements is
        defaulted to 1. The material numbers for the properties
        of the rest of the Pier elements start form 2

 -> SECTION DATA FOR SECTION/SEGMENT :   1

 Member Property Number         =   1
 Axial Area, A                  =    51984.     (in^2)
 Torsional Moment of Inertia, J =   0.98770E+10 (in^4)
 Moment of Inertia, 3 - Axis    =   0.98770E+10 (in^4)
 Moment of Inertia, 2 - Axis    =   0.98770E+10 (in^4)
 Modulus of Elasticity, E       =    4224.0     (ksi)
 Shear Modulus, G               =    1760.0     (ksi) (used for Torsion)
 Weight Density                 =       0.00000 (K/in^3)

 ---------------------------------
 ! -> PROPERTIES FOR PIER COLUMNS !
 ---------------------------------

 Member Property Number         =   2
 Axial Area, A                  =       0.00000 (in^2)
```

```
 Torsional Moment of Inertia, J =       0.00000 (in^4)
 Moment of Inertia, 3 - Axis    =       0.00000 (in^4)
 Moment of Inertia, 2 - Axis    =       0.00000 (in^4)
 Modulus of Elasticity, E       =       0.00000 (ksi)
 Shear Modulus, G               =       0.00000 (ksi) (used for Torsion)
 Weight Density                 =       0.00000 (K/in^3)
```

****
* PIER MEMBER CONNECTIVITY *
****

ELEMENT NUMBER	NODES I	NODES J	MATERIAL NUMBER
1	64	47	1
2	64	4	1
3	64	37	1
4	64	3	1

****
* GENERAL LOAD DATA *
****

The table below shows the Applied Loads for every Load Case. The values in the table represent the magnitute of the Loads in the specified units

- Applied Load

NODE	LOAD	X (Kips)	Y (Kips)	Z (Kips)	MXX (Kip-ft)	MYY (Kip-ft)	MZZ (Kip-ft)
64	1	7331.00	0.00	0.00	0.00	0.00	0.00
64	2	0.00	3774.00	0.00	0.00	0.00	0.00
64	3	0.00	0.00	27179.00	0.00	0.00	0.00
64	4	0.00	0.00	0.00	365785.00	0.00	0.00
64	5	0.00	0.00	0.00	0.00	-525709.00	0.00
64	6	0.00	0.00	0.00	0.00	0.00	21252.00

****
* *
* ANALYSIS RESULTS *
* *
****

****
* RESULTS FOR LOAD CASE # 1 *
****

NOTE : PY Multipliers are applied Lead to Trail row based on the actual displacement. If there is no displacement in a Lateral direction they are defaulted to 1.0. This can happen in Axial Load and one direction lateral load cases

PY Multipliers are Applied to A Pile Group

PILE#	X-PYM	Y-PYM
1	0.500E+00	0.700E+00
2	0.700E+00	0.700E+00
3	0.500E+00	0.500E+00
4	0.700E+00	0.500E+00
5	0.500E+00	0.350E+00
6	0.700E+00	0.350E+00

****
* CONVERGENCE REPORT *
****

The Solution Converged in 11 Iterations

Summary of Abs Maximum Out-Of-Balance Forces

```
FZZ =        0.174  Kips
FXX =        0.170  Kips
FYY =        0.014  Kips
MXX =       10.644  Kip-in
```

BSI FB-MultiPier - File: P6-LCS.out Wednesday, March 23, 2011
MYY = 0.000 Kip-in
MZZ = 6.167 Kip-in

Summary of Displacements at Pile Heads

Node	X (in)	Y (in)	Z (in)
1	9.3342	4.1080	0.0110
2	9.3344	4.3584	1.5012
3	9.5847	4.1106	-0.4582
4	9.5845	4.3589	1.1243
5	9.8305	4.1112	-0.9370
6	9.8299	4.3562	0.5392

Final Displacements

Load Case # 1

Node	X (in)	Y (in)	Z (in)	Rx (rad)	Ry (rad)	Rz (rad)
Pile Number 1						
1	9.3342	4.1080	0.0110	0.0014	-0.0048	0.0007
65	8.9978	4.0029	0.0154	0.0017	-0.0052	0.0007
66	8.6328	3.8783	0.0191	0.0020	-0.0056	0.0007
67	8.2300	3.7279	0.0269	0.0025	-0.0063	0.0006
68	7.7827	3.5469	0.0332	0.0029	-0.0069	0.0006
69	7.2982	3.3399	0.0378	0.0032	-0.0074	0.0005
70	6.7837	3.1117	0.0408	0.0035	-0.0078	0.0005
71	6.2466	2.8669	0.0422	0.0037	-0.0081	0.0005
72	5.6942	2.6101	0.0421	0.0039	-0.0083	0.0004
73	5.1336	2.3460	0.0406	0.0039	-0.0083	0.0004
74	4.5963	2.0910	0.0387	0.0040	-0.0083	0.0003
75	4.0617	1.8362	0.0370	0.0039	-0.0083	0.0003
76	3.5353	1.5849	0.0364	0.0039	-0.0081	0.0003
77	3.0232	1.3407	0.0370	0.0037	-0.0078	0.0002
78	2.5312	1.1074	0.0389	0.0035	-0.0075	0.0002
79	2.0656	0.8884	0.0419	0.0033	-0.0070	0.0002
80	1.6320	0.6873	0.0461	0.0030	-0.0065	0.0002
81	1.2362	0.5073	0.0515	0.0026	-0.0058	0.0002
82	0.8830	0.3510	0.0577	0.0022	-0.0051	0.0002
83	0.5743	0.2193	0.0641	0.0019	-0.0045	0.0001
84	0.3077	0.1107	0.0697	0.0015	-0.0038	0.0001
85	0.0760	0.0212	0.0736	0.0013	-0.0034	0.0001
86	-0.1310	-0.0551	0.0753	0.0011	-0.0031	0.0001
87	-0.3245	-0.1242	0.0750	0.0010	-0.0029	0.0001
88	-0.5135	-0.1909	0.0738	0.0010	-0.0029	0.0001
Pile Number 2						
2	9.3344	4.3584	1.5012	0.0013	-0.0047	0.0007
89	9.0015	4.2595	1.4836	0.0016	-0.0052	0.0007
90	8.6364	4.1385	1.4655	0.0019	-0.0056	0.0007
91	8.2304	3.9894	1.4473	0.0025	-0.0064	0.0006
92	7.7781	3.8075	1.4282	0.0029	-0.0070	0.0006
93	7.2882	3.5984	1.4083	0.0033	-0.0075	0.0005
94	6.7687	3.3671	1.3880	0.0036	-0.0079	0.0005
95	6.2271	3.1182	1.3675	0.0038	-0.0082	0.0005
96	5.6700	2.8558	1.3471	0.0040	-0.0083	0.0004
97	5.1041	2.5838	1.3267	0.0041	-0.0084	0.0004
98	4.5615	2.3189	1.3071	0.0041	-0.0084	0.0003
99	4.0227	2.0525	1.2875	0.0041	-0.0083	0.0003
100	3.4935	1.7882	1.2678	0.0041	-0.0081	0.0003
101	2.9796	1.5295	1.2481	0.0040	-0.0078	0.0002
102	2.4865	1.2795	1.2283	0.0038	-0.0075	0.0002
103	2.0198	1.0417	1.2086	0.0036	-0.0070	0.0002
104	1.5858	0.8196	1.1892	0.0033	-0.0065	0.0002
105	1.1910	0.6168	1.1704	0.0030	-0.0058	0.0002
106	0.8414	0.4368	1.1536	0.0026	-0.0051	0.0002
107	0.5397	0.2811	1.1383	0.0022	-0.0043	0.0001
108	0.2829	0.1484	1.1240	0.0019	-0.0037	0.0001
109	0.0626	0.0345	1.1101	0.0017	-0.0032	0.0001
110	-0.1330	-0.0667	1.0966	0.0015	-0.0029	0.0001
111	-0.3153	-0.1611	1.0843	0.0014	-0.0028	0.0001
112	-0.4927	-0.2530	1.0733	0.0014	-0.0027	0.0001
Pile Number 3						
3	9.5847	4.1106	-0.4582	0.0014	-0.0048	0.0007
113	9.2445	4.0047	-0.4440	0.0017	-0.0053	0.0007
114	8.8742	3.8815	-0.4306	0.0019	-0.0057	0.0007
115	8.4638	3.7346	-0.4111	0.0024	-0.0065	0.0006

116	8.0053	3.5594	-0.3931	0.0028	-0.0071	0.0006
117	7.5056	3.3593	-0.3766	0.0031	-0.0077	0.0005
118	6.9719	3.1383	-0.3614	0.0034	-0.0081	0.0005
119	6.4110	2.8999	-0.3476	0.0036	-0.0085	0.0005
120	5.8303	2.6479	-0.3348	0.0038	-0.0087	0.0004
121	5.2377	2.3864	-0.3224	0.0039	-0.0088	0.0004
122	4.6688	2.1323	-0.3106	0.0040	-0.0088	0.0003
123	4.1050	1.8781	-0.2989	0.0039	-0.0087	0.0003
124	3.5538	1.6279	-0.2872	0.0038	-0.0084	0.0003
125	3.0221	1.3854	-0.2748	0.0037	-0.0081	0.0002
126	2.5156	1.1538	-0.2614	0.0035	-0.0076	0.0002
127	2.0402	0.9360	-0.2469	0.0033	-0.0071	0.0002
128	1.6012	0.7348	-0.2315	0.0030	-0.0065	0.0002
129	1.2043	0.5529	-0.2151	0.0027	-0.0058	0.0002
130	0.8537	0.3921	-0.1992	0.0023	-0.0051	0.0002
131	0.5504	0.2529	-0.1846	0.0020	-0.0043	0.0001
132	0.2915	0.1340	-0.1721	0.0017	-0.0037	0.0001
133	0.0696	0.0319	-0.1624	0.0015	-0.0032	0.0001
134	-0.1260	-0.0581	-0.1560	0.0013	-0.0029	0.0001
135	-0.3065	-0.1412	-0.1527	0.0013	-0.0027	0.0001
136	-0.4812	-0.2217	-0.1517	0.0012	-0.0027	0.0001

Pile Number 4

4	9.5845	4.3589	1.1243	0.0014	-0.0049	0.0007
137	9.2391	4.2519	1.1093	0.0017	-0.0054	0.0007
138	8.8609	4.1257	1.0939	0.0020	-0.0058	0.0007
139	8.4412	3.9748	1.0787	0.0025	-0.0066	0.0006
140	7.9744	3.7950	1.0624	0.0029	-0.0072	0.0006
141	7.4694	3.5912	1.0453	0.0032	-0.0077	0.0005
142	6.9346	3.3677	1.0276	0.0034	-0.0081	0.0005
143	6.3778	3.1284	1.0097	0.0036	-0.0084	0.0005
144	5.8056	2.8769	0.9917	0.0038	-0.0086	0.0004
145	5.2248	2.6165	0.9738	0.0039	-0.0086	0.0004
146	4.6683	2.3626	0.9566	0.0040	-0.0086	0.0003
147	4.1160	2.1066	0.9394	0.0040	-0.0085	0.0003
148	3.5735	1.8515	0.9222	0.0039	-0.0083	0.0003
149	3.0466	1.6000	0.9048	0.0039	-0.0080	0.0002
150	2.5409	1.3550	0.8875	0.0037	-0.0077	0.0002
151	2.0624	1.1194	0.8703	0.0036	-0.0072	0.0002
152	1.6176	0.8963	0.8537	0.0034	-0.0066	0.0002
153	1.2133	0.6888	0.8376	0.0031	-0.0059	0.0002
154	0.8557	0.5002	0.8237	0.0028	-0.0052	0.0002
155	0.5477	0.3317	0.8115	0.0025	-0.0044	0.0001
156	0.2864	0.1828	0.8000	0.0022	-0.0037	0.0001
157	0.0630	0.0498	0.7887	0.0020	-0.0032	0.0001
158	-0.1347	-0.0723	0.7775	0.0018	-0.0029	0.0001
159	-0.3188	-0.1886	0.7673	0.0018	-0.0028	0.0001
160	-0.4979	-0.3027	0.7584	0.0018	-0.0028	0.0001

Pile Number 5

5	9.8305	4.1112	-0.9370	0.0016	-0.0046	0.0007
161	9.5000	3.9973	-0.9143	0.0018	-0.0052	0.0007
162	9.1366	3.8686	-0.8922	0.0020	-0.0056	0.0007
163	8.7287	3.7193	-0.8627	0.0024	-0.0065	0.0006
164	8.2668	3.5446	-0.8344	0.0028	-0.0072	0.0006
165	7.7582	3.3478	-0.8072	0.0031	-0.0079	0.0005
166	7.2105	3.1320	-0.7807	0.0033	-0.0084	0.0005
167	6.6317	2.9006	-0.7546	0.0035	-0.0088	0.0005
168	6.0308	2.6574	-0.7287	0.0037	-0.0090	0.0004
169	5.4168	2.4061	-0.7028	0.0038	-0.0092	0.0004
170	4.8263	2.1620	-0.6783	0.0038	-0.0092	0.0003
171	4.2398	1.9173	-0.6538	0.0038	-0.0090	0.0003
172	3.6650	1.6751	-0.6295	0.0037	-0.0088	0.0003
173	3.1095	1.4387	-0.6053	0.0036	-0.0084	0.0002
174	2.5810	1.2112	-0.5812	0.0034	-0.0080	0.0002
175	2.0862	0.9954	-0.5566	0.0032	-0.0074	0.0002
176	1.6314	0.7936	-0.5313	0.0030	-0.0067	0.0002
177	1.2221	0.6084	-0.5053	0.0027	-0.0060	0.0002
178	0.8627	0.4414	-0.4814	0.0024	-0.0052	0.0002
179	0.5539	0.2930	-0.4600	0.0022	-0.0044	0.0001
180	0.2922	0.1620	-0.4418	0.0019	-0.0037	0.0001
181	0.0697	0.0454	-0.4278	0.0017	-0.0032	0.0001
182	-0.1248	-0.0606	-0.4181	0.0016	-0.0029	0.0001
183	-0.3031	-0.1605	-0.4128	0.0015	-0.0027	0.0001
184	-0.4750	-0.2580	-0.4111	0.0015	-0.0027	0.0001

Pile Number 6

6	9.8299	4.3562	0.5392	0.0018	-0.0048	0.0007
185	9.4903	4.2294	0.5317	0.0020	-0.0053	0.0007
186	9.1154	4.0873	0.5234	0.0022	-0.0058	0.0007
187	8.6951	3.9254	0.5171	0.0026	-0.0067	0.0006
188	8.2222	3.7402	0.5093	0.0029	-0.0074	0.0006
189	7.7066	3.5352	0.5001	0.0032	-0.0079	0.0005

190	7.1576	3.3140	0.4897	0.0034	-0.0083	0.0005
191	6.5842	3.0801	0.4785	0.0035	-0.0086	0.0005
192	5.9943	2.8370	0.4670	0.0037	-0.0088	0.0004
193	5.3951	2.5871	0.4555	0.0037	-0.0089	0.0004
194	4.8203	2.3446	0.4445	0.0038	-0.0089	0.0003
195	4.2487	2.1005	0.4335	0.0038	-0.0088	0.0003
196	3.6862	1.8569	0.4223	0.0038	-0.0086	0.0003
197	3.1385	1.6161	0.4112	0.0037	-0.0084	0.0002
198	2.6121	1.3802	0.4005	0.0036	-0.0080	0.0002
199	2.1141	1.1518	0.3906	0.0035	-0.0075	0.0002
200	1.6519	0.9336	0.3817	0.0033	-0.0069	0.0002
201	1.2332	0.7281	0.3738	0.0031	-0.0061	0.0002
202	0.8649	0.5378	0.3682	0.0028	-0.0053	0.0002
203	0.5498	0.3639	0.3638	0.0026	-0.0045	0.0001
204	0.2851	0.2058	0.3597	0.0023	-0.0038	0.0001
205	0.0617	0.0609	0.3551	0.0022	-0.0032	0.0001
206	-0.1335	-0.0748	0.3494	0.0021	-0.0029	0.0001
207	-0.3143	-0.2057	0.3436	0.0020	-0.0027	0.0001
208	-0.4901	-0.3349	0.3385	0.0020	-0.0027	0.0001

SUM OF TOTAL SOIL SPRING LOADS

CHECK: Total Load Carried by the Soil
(Sum of NF+FF Soil Spring Loads)

X Direction	=	7330.9172	Kips
Y Direction	=	3773.9378	Kips
Z Direction	=	43209.4433	Kips
Sum of Tip Forces	=	26273.8545	Kips

Summary of Pile Forces for Load CASE 1

1. Axial Force (Kips)

Pile #	Maximum Force	Minimum Force
1	-0.12613E+04	-0.23020E+04
2	-0.11740E+05	-0.20981E+05
3	0.46691E+04	0.20923E+03
4	-0.95854E+04	-0.18505E+05
5	0.92606E+04	0.53746E+03
6	-0.54161E+04	-0.12102E+05

2. Pile Shear Force in 2 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.10736E+04	-0.20645E+04
2	0.13207E+04	-0.28162E+04
3	0.10680E+04	-0.19511E+04
4	0.13484E+04	-0.28471E+04
5	0.11129E+04	-0.19287E+04
6	0.14078E+04	-0.28083E+04

3. Pile Shear Force in 3 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.11168E+04	-0.69384E+03
2	0.14426E+04	-0.82727E+03
3	0.90253E+03	-0.57045E+03
4	0.12011E+04	-0.68838E+03
5	0.71466E+03	-0.46780E+03
6	0.91486E+03	-0.52651E+03

4. Bending Moment About 2 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.3886E+05	0.10425E+03	-0.2419E+05
2	2	0.00000E+00	0.5174E+05	0.98880E+02	-0.3013E+05
3	3	0.00000E+00	0.3125E+05	0.10425E+03	-0.1929E+05
4	4	0.00000E+00	0.4440E+05	0.10425E+03	-0.2452E+05
5	5	0.00000E+00	0.2517E+05	0.10425E+03	-0.1509E+05
6	6	0.00000E+00	0.3367E+05	0.98880E+02	-0.1856E+05

5. Bending Moment About 3 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.5719E+05	0.10425E+03	-0.4383E+05
2	2	0.00000E+00	0.7676E+05	0.98880E+02	-0.5943E+05
3	3	0.00000E+00	0.5436E+05	0.98880E+02	-0.4172E+05
4	4	0.00000E+00	0.7714E+05	0.98880E+02	-0.6031E+05
5	5	0.00000E+00	0.5570E+05	0.98880E+02	-0.4128E+05
6	6	0.00000E+00	0.7898E+05	0.98880E+02	-0.5985E+05

****
* ANALYTICAL FORCE RESULTS FOR PIER *
****

ELEM NO.	PROP NO.	NODE NO.	LOAD CASE	FAX (Kips)	F22 (Kips)	F33 (Kips)	M22 (Kip-ft)	M33 (Kip-ft)	TORQUE (Kip-ft)	D/C (Ratio)
- Connector Beam Segments										
1	1	64	1	-425.99	-8055.34	-2541.08	38116.14	*********	16151.52	
	0.00									
	1	47		425.99	8055.34	2541.08	0.00	0.00	-16151.52	
	0.00									
2	1	64	1	1471.21	22907.07	-1849.75	27746.25	343606.02	-66186.62	
	0.00									
	1	4		-1471.21	-22907.07	1849.75	0.00	0.00	66186.62	
	0.00									
3	1	64	1	567.67	23782.61	2043.43	-30651.49	356739.10	5878.54	
	0.00									
	1	37		-567.67	-23782.61	-2043.43	0.00	0.00	-5878.54	
	0.00									
4	1	64	1	-1275.28	-11455.33	930.59	-13958.90	*********	45597.61	
	0.00									
	1	3		1275.28	11455.33	-930.59	0.00	0.00	-45597.61	
	0.00									

****
* ANALYTICAL PILE CAP - SHELL STRESS RESULTS *
****

****
* DAMPING FORCES *
****

Node #	FXX Kip	FYY Kip	FZZ Kip	MXX Kip	MYY Kip	MZZ Kip

****
* UNIAXIAL INTERACTION DIAGRAM *
****

NOTE : 1. The tables below show the values on the Interaction Diagrams for each section which correspond to the section capacity
2. The numbering of the SECTIONS/SEGMENTS is shown previously in the output file

---
! -> Pile Cross Section Number = 1 !

Diagram Data

Maximum Tension Force = 0.4820E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = 0.1237E-14 (in)
Local 3 Axis Shift for Plastic Centroid = -0.7486E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.4820E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.4397E+05	0.1425E+06	0.1425E+06	0.1425E+06	0.1425E+06
0.3941E+05	0.1572E+06	0.1572E+06	0.1572E+06	0.1572E+06
0.3504E+05	0.1687E+06	0.1687E+06	0.1687E+06	0.1687E+06
0.3074E+05	0.1749E+06	0.1749E+06	0.1749E+06	0.1749E+06
0.2629E+05	0.1777E+06	0.1777E+06	0.1777E+06	0.1777E+06
0.2204E+05	0.1794E+06	0.1794E+06	0.1794E+06	0.1794E+06
0.1754E+05	0.1877E+06	0.1877E+06	0.1877E+06	0.1877E+06
0.1315E+05	0.1951E+06	0.1951E+06	0.1951E+06	0.1951E+06
0.8836E+04	0.2009E+06	0.2009E+06	0.2009E+06	0.2009E+06
0.4379E+04	0.2067E+06	0.2067E+06	0.2067E+06	0.2067E+06
0.7769E-01	0.2109E+06	0.2109E+06	0.2109E+06	0.2109E+06
-0.6898E+04	0.1877E+06	0.1877E+06	0.1877E+06	0.1877E+06
-0.1348E+05	0.1894E+06	0.1894E+06	0.1894E+06	0.1894E+06
-0.2023E+05	0.1912E+06	0.1912E+06	0.1912E+06	0.1912E+06
-0.2690E+05	0.1869E+06	0.1869E+06	0.1869E+06	0.1869E+06
-0.3368E+05	0.1773E+06	0.1773E+06	0.1773E+06	0.1773E+06
-0.4042E+05	0.1633E+06	0.1633E+06	0.1633E+06	0.1633E+06
-0.4761E+05	0.1439E+06	0.1439E+06	0.1439E+06	0.1439E+06
-0.4853E+05	0.1410E+06	0.1410E+06	0.1410E+06	0.1410E+06
-0.5008E+05	0.1361E+06	0.1361E+06	0.1361E+06	0.1361E+06
-0.5139E+05	0.1319E+06	0.1319E+06	0.1319E+06	0.1319E+06
-0.5259E+05	0.1279E+06	0.1279E+06	0.1279E+06	0.1279E+06
-0.5371E+05	0.1239E+06	0.1239E+06	0.1239E+06	0.1239E+06
-0.5469E+05	0.1204E+06	0.1204E+06	0.1204E+06	0.1204E+06
-0.5552E+05	0.1174E+06	0.1174E+06	0.1174E+06	0.1174E+06
-0.5695E+05	0.1100E+06	0.1120E+06	0.1100E+06	0.1120E+06
-0.5814E+05	0.1075E+06	0.1075E+06	0.1075E+06	0.1075E+06
-0.5945E+05	0.9967E+05	0.1019E+06	0.9967E+05	0.1019E+06
-0.6046E+05	0.9587E+05	0.9753E+05	0.9587E+05	0.9753E+05

! -> Pile Cross Section Number = 2 !

Diagram Data

Maximum Tension Force = 0.3972E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = -0.2885E-15 (in)
Local 3 Axis Shift for Plastic Centroid = -0.6414E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.3972E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.2923E+05	0.1203E+06	0.1203E+06	0.1203E+06	0.1203E+06
0.2532E+05	0.1265E+06	0.1265E+06	0.1265E+06	0.1265E+06
0.2177E+05	0.1346E+06	0.1346E+06	0.1346E+06	0.1346E+06
0.1803E+05	0.1432E+06	0.1432E+06	0.1432E+06	0.1432E+06
0.1444E+05	0.1490E+06	0.1490E+06	0.1490E+06	0.1490E+06
0.1088E+05	0.1475E+06	0.1475E+06	0.1475E+06	0.1475E+06
0.7226E+04	0.1453E+06	0.1453E+06	0.1453E+06	0.1453E+06
0.3610E+04	0.1484E+06	0.1484E+06	0.1484E+06	0.1484E+06
-0.4144E-01	0.1502E+06	0.1502E+06	0.1502E+06	0.1502E+06

-0.5800E+04	0.1268E+06	0.1268E+06	0.1268E+06	0.1268E+06
-0.1170E+05	0.1305E+06	0.1305E+06	0.1305E+06	0.1305E+06
-0.1744E+05	0.1337E+06	0.1337E+06	0.1337E+06	0.1337E+06
-0.2328E+05	0.1339E+06	0.1339E+06	0.1339E+06	0.1339E+06
-0.2902E+05	0.1292E+06	0.1292E+06	0.1292E+06	0.1292E+06
-0.3498E+05	0.1218E+06	0.1218E+06	0.1218E+06	0.1218E+06
-0.4119E+05	0.1107E+06	0.1107E+06	0.1107E+06	0.1107E+06
-0.4369E+05	0.1050E+06	0.1050E+06	0.1050E+06	0.1050E+06
-0.4572E+05	0.9985E+05	0.9985E+05	0.9985E+05	0.9985E+05
-0.4823E+05	0.9275E+05	0.9275E+05	0.9275E+05	0.9275E+05
-0.5091E+05	0.8466E+05	0.8466E+05	0.8466E+05	0.8466E+05
-0.5350E+05	0.7561E+05	0.7644E+05	0.7561E+05	0.7644E+05
-0.5585E+05	0.6814E+05	0.6854E+05	0.6814E+05	0.6854E+05
-0.5832E+05	0.5940E+05	0.6011E+05	0.5940E+05	0.6011E+05
-0.6098E+05	0.4891E+05	0.5047E+05	0.4891E+05	0.5047E+05
-0.6386E+05	0.3943E+05	0.3943E+05	0.3943E+05	0.3943E+05
-0.6616E+05	0.3020E+05	0.3020E+05	0.3020E+05	0.3020E+05
-0.6883E+05	0.1921E+05	0.1921E+05	0.1921E+05	0.1921E+05

****
* FINAL MAXIMUMS/MINIMUMS FOR ALL LOAD CASES *
* PIER # 1 *
****

Maximum/Minimum Pile Forces

	Value		Load	Comb.	Pile
Max Shear in 2 Direction	0.1408E+04	Kip	1	0	6
Min Shear in 2 Direction	-0.2847E+04	Kip	1	0	4
Max Shear in 3 Direction	0.1443E+04	Kip	1	0	2
Min Shear in 3 Direction	-0.8273E+03	Kip	1	0	2
Max Moment about 2 Axis	0.5174E+05	Kip-ft	1	0	2
Min Moment about 2 Axis	-0.3013E+05	Kip-ft	1	0	2
Max Moment About 3 Axis	0.7898E+05	Kip-ft	1	0	6
Min Moment About 3 Axis	-0.6031E+05	Kip-ft	1	0	4
Max Axial Force	0.9261E+04	Kip	1	0	5
Min Axial Force	-0.2098E+05	Kip	1	0	2
Absolute Max Torque	0.4661E+02	Kip-ft	1	0	6
Max Demand/Capacity Ratio	0.5846E+00		1	0	2

Maximum/Minimum Soil Forces

Max Axial Soil Force	0.1358E+04	Kip	1	0	2
Min Axial Soil Force	-0.1132E+04	Kip	1	0	5
Max Lateral Force in X dir	0.1212E+04	Kip	1	0	6
Min Lateral Force in X dir	-0.1271E+04	Kip	1	0	4
Max Lateral Force in Y dir	0.6313E+03	Kip	1	0	2
Min Lateral Force in Y dir	-0.6444E+03	Kip	1	0	2
Max Torsional Soil Force	0.2669E+04	Kip-ft	1	0	1

Maximum/Minimum Pile Displacements

Max Axial Displacement	0.1501E+01	in	1	0	2
Min Axial Displacement	-0.9370E+00	in	1	0	5
Max Displacement in X	0.9830E+01	in	1	0	5
Min Displacement in X	-0.5135E+00	in	1	0	1
Max Displacement in Y	0.4359E+01	in	1	0	4
Min Displacement in Y	-0.3349E+00	in	1	0	6

Maximum/Minimum Column Forces

	Value		Load	Comb.	Column
Max Axial Force	0.0000E+00	Kip	0	0	0
Min Axial Force	0.0000E+00	Kip	0	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	1
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	0
Absolute Max Torque	0.1000E+06	Kip-ft	1	0	0

Maximum/Minimum Pier Cap Forces

Max Axial Force	0.0000E+00	Kip	0	0
Min Axial Force	0.0000E+00	Kip	0	0

Max Shear in 2 Direction	0.0000E+00	Kip	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0
Max Torque	-0.1000E+06	Kip-ft	1	0
Min Torque	0.0000E+00	Kip-ft	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0

****
Foundation Flexibilty for given loads
****

Averaged flexiblity

	Fx	Fy	Fz	Mx	My	Mz
DeltaX	0.1103E-02	0.4754E-04	-0.1589E-04	0.3012E-07	-0.2882E-06	0.2616E-08
DeltaY	0.4754E-04	0.9192E-03	-0.6778E-05	0.1020E-06	-0.3767E-07	-0.1056E-07
DeltaZ	-0.1589E-04	-0.6778E-05	0.1315E-04	-0.1861E-08	0.8473E-08	0.8764E-09
ThetaX	0.3012E-07	0.1020E-06	-0.1861E-08	0.1493E-09	-0.3676E-10	0.3495E-10
ThetaY	-0.2882E-06	-0.3767E-07	0.8473E-08	-0.3676E-10	0.3696E-09	0.2903E-10
ThetaZ	0.2616E-08	-0.1056E-07	0.8764E-09	0.3495E-10	0.2903E-10	0.2767E-08

****
Foundation Stiffness for given loads
****

STIFFNESS

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.1148E+04	-0.1863E+02	0.8150E+03	0.9602E+04	0.8764E+06	-0.1073E+05
Fy	-0.1863E+02	0.1182E+04	0.4631E+03	-0.7974E+06	0.1486E+05	0.1429E+05
Fz	0.8150E+03	0.4631E+03	0.7801E+05	0.2290E+06	-0.1082E+07	-0.1526E+05
Mx	0.9602E+04	-0.7974E+06	0.2290E+06	0.7432E+10	0.6683E+09	-0.1040E+09
My	0.8764E+06	0.1486E+05	-0.1082E+07	0.6683E+09	0.3486E+10	-0.4544E+08
Mz	-0.1073E+05	0.1429E+05	-0.1526E+05	-0.1040E+09	-0.4544E+08	0.3632E+09

****
Foundation Stiffness in STANDARD X-Y-Z directions
(FB-Pier->Stardard, X->X, Y->Z & -Z->Y)
Translations: kips/in Rotations: kip-in/rad
****

Stiffness in standard X-Y-Z

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.1148E+04	-0.8150E+03	-0.1863E+02	0.9602E+04	0.1073E+05	0.8764E+06
Fy	-0.8150E+03	0.7801E+05	-0.4631E+03	-0.2290E+06	-0.1526E+05	0.1082E+07
Fz	-0.1863E+02	-0.4631E+03	0.1182E+04	-0.7974E+06	-0.1429E+05	0.1486E+05
Mx	0.9602E+04	-0.2290E+06	-0.7974E+06	0.7432E+10	0.1040E+09	0.6683E+09
My	0.1073E+05	-0.1526E+05	-0.1429E+05	0.1040E+09	0.3632E+09	0.4544E+08
Mz	0.8764E+06	0.1082E+07	0.1486E+05	0.6683E+09	0.4544E+08	0.3486E+10

```
!------------------------------------------------------------!
!                                                            !
!        The University of Florida, Florida Department       !
!        of Transportation, Drs. Marc Hoit, Mike McVay       !
!        Cliff Hays, Mark Williams, Petros Christou, and     !
!                          Jae H. Chung                      !
!         disclaim any warranty, expressed or implied,       !
!          including but not limited to, any implied         !
!         warranty of fitness for a particular purpose       !
!            or accuracy of the FB-Pier software             !
!     The  developers shall not be liable for any damages    !
!          incurred through the use of FB-MultiPier          !
!                                                            !
!                                                            !
!              :::: F B - M U L T I P I E R ::::             !
!                  FB-MultiPier Version 4.13                 !
!                                                            !
!                                                            !
!          Written by Marc Hoit, Mike McVay, Cliff Hays      !
!          Mark Williams, Petros Christou, Jae H. Chung.     !
!                                                            !
!       Civil & Coastal Engineering, University of Florida   !
!       Supported by Florida Department of Transportation    !
!            and the Federal Highway Administration          !
!                                                            !
!              The program calculates the Response           !
!            of the Bridge Pier Pile Soil Structures         !
!                                                            !
!             The Analysis includes PreLoad, Static,         !
!                 Transient Dynamic or Push Over             !
!                                                            !
!          The Program Handles NonLinear Soil Behavior,      !
!   Linear Pile Cap and Linear and NonLinear Piles and Piers !
!                                                            !
!                                                            !
!         Contact: Bridge Software Institute for Support     !
!                  HTTP://BSI-WEB.CE.UFL.EDU                 !
!                                                            !
!------------------------------------------------------------!

 Analysis Start Time  :****************************************
 Analysis End Time    :****************************************
 Analysis Duration    :****************************************

 Input Data File Name : P7-LCS.IN
 Analysis Date        : 3-15-2011
 License ID Number    : 432478881


 ********************
 *   PROJECT DATA   *
 ********************

 Project Client      : CRC / WSDOT / ODOT
 Project Name        : Columbia River Crossing
 Project Manager     : R. Turton
 Computed by         : NRH
 Project Description : SB - Pier 7 - Liquefaction + Contraction Scour


 ************************************
 *   SELECTIVE PRINT OUTPUT CONTROL   *
 ************************************
                                        Print On
 Pile Displacements                       YES
 Pile Element Forces                       NO
 Missing Pile ID Numbers                   NO
 Pier Columns and Pier Cap Displacements   NO
 Pier Columns and Pier Cap Force Output   YES
 Pier Material Properties                 YES
 Soil Response Forces                      NO
 Soil Data per Layer                      YES
 Soil Curve data per Pile Node             NO
 Soil Graph per Pile Node                  NO
 Out of Balance Forces                     NO
 Bridge Simulation Spring Force Output     NO
 Bridge Span Displacements                 NO
 Bridge Span Element Forces                NO
 Bridge Span Properties                    NO
 Pile Cap Stress                           NO
```

```
 Material Stress Strain Curve Data          NO
 Interaction Diagram Data For Pile and Pier YES
 Pile and Pier coordinates                  NO
 Generate XML file                          NO


 *************
 *   UNITS   *
 *************

 Analysis Units Specified are: English Mixed (Kips & Ft some lbs & in)


 ***************************
 *   CONTROL INFORMATION   *
 ***************************

 Number of Piers               (NUMPIERS) =    1
 Maximum Number of Iterations    (MAXITN) =   50
 Tolerance                        (TOLER) =    10.000000     Kips

 NOTE : The following soil information is not applicable in the coulmn analysis problems

 Soil Behavior Option             (IFLEX) =    0
    IFLEX = 0 -> PY Multipliers are Input
    IFLEX = 1 -> PY Multipliers Defaulted to 1.0
    IFLEX = 2 -> No SOIL (Must use tip springs)

 Soil resistance due to Pile Rotation About 2 and 3 Axis (NSODF) =    4
    NSDOF = 4 -> NO Resistance Accounted
    NSDOF = 6 -> Resistance Accounted

 Linear Pile TIP Spring Option     (ITIP) =    0
    ITIP = 0 -> NO spring
    ITIP = 1 -> Axial only
    ITIP = 2 -> All DOF

 Linear Pile TIP Spring Stiffness (TSTIF) =         0.00 kips/in


 **********************
 *   SOIL BEHAVIOR    *
 **********************

 PY Multipliers will be used (IFLEX = 0)


 ***************************************************
 *   LOAD FACTORS FOR SELF WEIGHT AND BUOYANCY     *
 ***************************************************

 LOAD CASE     SELF WEIGHT     BUOYANCY
     #            FACTOR         FACTOR
     1             1.00           1.00


 ****************************
 *   GENERAL INFORMATION    *
 ****************************

 Static / Cyclic Load (KCYC)       =    0
    KCYC = 0 -> Static Load
    KCKC > 0 -> Cyclic Load (# Cycles)

 Fixity of Pile Cap (KFIX)         =    1
    KFIX = 0 -> Pinned Head
    KFIX = 1 -> Fixed head

 Bearing of Cap on Soil            =  NO


 ******************************
 *   GRID DATA INFORMATION    *
 ******************************

 NOTE: X-Grid : Distance between axes along the X-Axis
       Y-Grid : Distance between axes along the Y-Axis

 Number of Grid Points in X-Direction (NPX) =     5
 Number of Grid Points in X-Direction (NPY) =     5

 Grid Spacing in the X Direction : (inches)
      90.00     180.00     180.00      90.00
```

Grid Spacing in the Y Direction : (inches)
90.00 360.00 360.00 90.00

****
* ANALYSIS OPTIONS *
****

Type of Stiffness = Secant Stiffness
Type of Structure = Full
Type of Analysis = Static Analysis

****
* INPUT SOIL DATA - GIVEN BY LAYER *
****

NOTE : The following data is used to define Springs
for each Soil Layer to determine the Soil
Behavior during the analysis

LAYERED P-Y CURVES

SOIL SET # 1

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	1	1	0.4500E+02	0.1250E+03	0.1367E+03
			0.4500E+02	0.1250E+03	0.1367E+03

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	2	1	0.4500E+02	0.1500E+03	0.1402E+03
			0.4500E+02	0.1500E+03	0.1402E+03

LAYERED T-Z CURVES

SOIL SET # 1

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

LAYERED T-Theta CURVES

SOIL SET # 1

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	1	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M.	TAU MAX

			ksi	psf
1	2	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

PILE TIP SOIL PARAMETERS

SOIL SET # 1

USER DEFINED

	Q Value in	T Value lbs
1	0.000E+00	0.000E+00
2	0.222E+00	0.362E+07
3	0.444E+00	0.624E+07
4	0.667E+00	0.829E+07
5	0.889E+00	0.995E+07
6	0.111E+01	0.113E+08
7	0.133E+01	0.125E+08
8	0.156E+01	0.136E+08
9	0.178E+01	0.145E+08
10	0.200E+01	0.153E+08

****
* PILE SEGMENT INFORMATION DATA *
****

NOTE: The Piles Sets consist of Pile Segments based on the User Input. The program groups all segments from all the different Pile Sets and assigns a reference number to each

The reference number for each segment together with the User Input Pile Set/Segment number is shown below. The Input section properties for each section/segment is also provided below.

The user is advised to double check these numbers

Number of segments found in all Piles (NPSEG) = 2

! -> SECTION DATA FOR SECTION/SEGMENT : 1 !

Input Pile Set Number = 1
Input Pile Set Segment = 1

Section Pile Length (L) = 9.0000000 ft

Nonlinear Section/Segment Material Properties

Material Option (MATOPT) = 1
(Please Refer to the Users Guide for Details)

- Concrete Stress Strain Properties

Concrete Strength (FPC) = 0.4000E+01 ksi
Modulus of Elasticity (EC) = 0.4224E+04 ksi

Gauss Integration Points for Concrete = 60

- Steel Stress Strain Properties

Mild Steel Yield Stress (FY) = 0.600E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

Tubular Steel Yield Stress (FY) = 0.500E+02 ksi
Modulus of Elasticity (ES) = 0.2900E+05 ksi

- Shape of Section : CIRCULAR

- Steel and Confinement Data

Number of Steel Layers = 2
Section/Segment Diameter = 180.0000 in
Tied/Spiral Reinforcement Flag = 1
(NOTE : Spiral = 1, Tied = 2)
Confinement Flag = 1
(NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

```
 - Steel and Confinement Data

  Yield Stress of Confinement Steel =    60.00     ksi
  Spacing between Confinement Steel =    6.000     in
  Diameter of Confinement Steel     =   0.7500     in
   Outer Shell Thickness          =    1.00      in

 - Total Area of Steel Reinforcement  = 424.00 in^2

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing
                           in^2      in             ksi

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     1           56        4.00    108.00           0.00

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     2           52        3.85     96.00           0.00

 ------------------------------------------------
 ! -> SECTION DATA FOR SECTION/SEGMENT :   2  !
 ------------------------------------------------

 Input Pile Set Number  =   1
 Input Pile Set Segment =   2

 Section Pile Length               (L) =    115.08000     ft

 Nonlinear Section/Segment Material Properties
 ---------------------------------------------

 Material Option (MATOPT) =   1
 (Please Refer to the Users Guide for Details)

 - Concrete Stress Strain Properties

   Concrete Strength    (FPC) = 0.6000E+01 ksi
   Modulus of Elasticity (EC) = 0.5173E+04 ksi

   Gauss Integration Points for Concrete = 60

 - Steel Stress Strain Properties

   Mild Steel Yield Stress  (FY) =  0.600E+02 ksi
   Modulus of Elasticity    (ES) = 0.2900E+05 ksi

   Tubular Steel Yield Stress (FY) =  0.500E+02 ksi
   Modulus of Elasticity      (ES) = 0.2900E+05 ksi

 - Shape of Section : CIRCULAR

 - Steel and Confinement Data

   Number of Steel Layers         =   2
   Section/Segment Diameter       =  180.0000 in
   Tied/Spiral Reinforcement Flag =   1
   (NOTE : Spiral = 1, Tied   = 2)
   Confinement Flag               =   1
   (NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

 - Steel and Confinement Data

  Yield Stress of Confinement Steel =    60.00     ksi
  Spacing between Confinement Steel =    6.000     in
  Diameter of Confinement Steel     =   0.7500     in
   Outer Shell Thickness          =    1.00      in

 - Total Area of Steel Reinforcement  = 424.00 in^2

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing
                           in^2      in             ksi
```

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
1	56	4.00	108.00	0.00

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
2	52	3.85	96.00	0.00

PLOT OF THE QZ CURVE FOR THE TIP OF THE PILE

- USER DEFINED CURVE

SOIL SET	Z Value	Q Value	Z Value	Q Value	Z Value	Q Value
1	0.0000E+00	0.0000E+00	0.2222E+00	0.3615E+07	0.4444E+00	0.6244E+07
	0.6667E+00	0.8290E+07	0.8889E+00	0.9952E+07	0.1111E+01	0.1134E+08
	0.1333E+01	0.1253E+08	0.1556E+01	0.1357E+08	0.1778E+01	0.1448E+08
	0.2000E+01	0.1530E+08				

****
* PILE SET DATA DESCRIPTION *
****

NOTE : The piles are organized in pile sets. Each pile set is composed of pile segments that are input by the User. A pile set is attached to each pile in order to describe its composition

List of Piles Sets and Piles

Pile Set	Piles (that are assigned the Pile Set)
1	1, 2, 3, 4, 5, 6

Total Length for Each Pile Set

Pile Set	Length
1	1488.96

****
* INPUT FOR STRUCTURAL ANALYSIS *
****

Number of Joints = 82
Number of Different Element Types = 3
Number of Load Conditions = 1

WARNING : Pier Columns and Cap are linear
No P-Delta or Moment Magnification is included
Nonlinear should be used for final design

PIER SUMMARY

Stiffness of Foundation Requested - NO Pier Exists

****
* MATERIAL PROPERTIES FOR PILE CAP AND FRAME (PIER) ELEMENTS *
****

****
* PILE CAP PROPERTIES - USING SHELL ELEMENTS *
****

Modulus of Elasticity = 0.4224E+04 (ksi)
Poissons Ratio = 0.2000

```
 Shear Modulus          =   0.1760E+04 (ksi)
 Self Weight            =     160.0000 (pcf)
 Thickness              =   0.1900E+02 (ft)

 ---------------------------------------------------
 ! -> PROPERTIES FOR CONNECTOR ELEMENTS (DEFAULTED) !
 ---------------------------------------------------

 NOTE : These Elements are generated by the program at the Pier
        Column Bases where they connect with the Pile Cap. The
        purpose for these elements is to spread the column base
        load over an area on the Pile Cap and therefore avoid
        High Stress Concentrations

 NOTE : The material property number for these elements is
        defaulted to 1. The material numbers for the properties
        of the rest of the Pier elements start form 2

 -> SECTION DATA FOR SECTION/SEGMENT :   1

 Member Property Number         =   1
 Axial Area, A                  =    51984.     (in^2)
 Torsional Moment of Inertia, J =   0.98770E+10 (in^4)
 Moment of Inertia, 3 - Axis    =   0.98770E+10 (in^4)
 Moment of Inertia, 2 - Axis    =   0.98770E+10 (in^4)
 Modulus of Elasticity, E       =    4224.0     (ksi)
 Shear Modulus, G               =    1760.0     (ksi) (used for Torsion)
 Weight Density                 =       0.00000 (K/in^3)

 ----------------------------------
 ! -> PROPERTIES FOR PIER COLUMNS !
 ----------------------------------

 Member Property Number         =   2
 Axial Area, A                  =       0.00000 (in^2)
 Torsional Moment of Inertia, J =       0.00000 (in^4)
 Moment of Inertia, 3 - Axis    =       0.00000 (in^4)
 Moment of Inertia, 2 - Axis    =       0.00000 (in^4)
 Modulus of Elasticity, E       =       0.00000 (ksi)
 Shear Modulus, G               =       0.00000 (ksi) (used for Torsion)
 Weight Density                 =       0.00000 (K/in^3)


 *********************************
 *   PIER MEMBER CONNECTIVITY    *
 *********************************

 ELEMENT     NODES     MATERIAL
  NUMBER     I    J     NUMBER

    1       82   60       1
    2       82   54       1
    3       82   47       1
    4       82   53       1


 ************************** 
 *   GENERAL LOAD DATA    *
 **************************

 The table below shows the Applied Loads for every
 Load Case. The values in the table represent the
 magnitute of the Loads in the specified units

 - Applied Load
   NODE  LOAD        X          Y          Z         MXX         MYY         MZZ
                  (Kips)     (Kips)     (Kips)    (Kip-ft)    (Kip-ft)    (Kip-ft)
    82     1    5138.00       0.00       0.00        0.00        0.00        0.00
    82     2       0.00    8538.00       0.00        0.00        0.00        0.00
    82     3       0.00       0.00   25358.00        0.00        0.00        0.00
    82     4       0.00       0.00       0.00   572772.00        0.00        0.00
    82     5       0.00       0.00       0.00        0.00-183240.00        0.00
    82     6       0.00       0.00       0.00        0.00        0.00    5763.00


 *************************
 *                       *
 *   ANALYSIS RESULTS    *
 *                       *
 *************************


 ***********************************
```

```
 *  RESULTS FOR LOAD CASE #      1 *
 ************************************
```

NOTE : PY Multipliers are applied Lead to Trail row based on the actual displacement. If there is no displacement in a Lateral direction they are defaulted to 1.0. This can happen in Axial Load and one direction lateral load cases

PY Multipliers are Applied to A Pile Group

PILE#	X-PYM	Y-PYM
1	0.500E+00	0.700E+00
2	0.700E+00	0.700E+00
3	0.500E+00	0.500E+00
4	0.700E+00	0.500E+00
5	0.500E+00	0.350E+00
6	0.700E+00	0.350E+00

```
**************************
*   CONVERGENCE REPORT   *
**************************
```

The Solution Converged in 5 Iterations

Summary of Abs Maximum Out-Of-Balance Forces

FZZ =	0.100	Kips
FXX =	0.042	Kips
FYY =	4.420	Kips
MXX =	0.085	Kip-in
MYY =	0.000	Kip-in
MZZ =	2.337	Kip-in

Summary of Displacements at Pile Heads

Node	X (in)	Y (in)	Z (in)
1	0.7235	1.1028	0.1735
2	0.7234	1.1289	0.3279
3	0.7502	1.1055	0.0354
4	0.7497	1.1297	0.2060
5	0.7729	1.1064	-0.1453
6	0.7722	1.1284	0.0198

Final Displacements

Load Case # 1

Node	X (in)	Y (in)	Z (in)	Rx (rad)	Ry (rad)	Rz (rad)
Pile Number 1						
1	0.7235	1.1028	0.1735	0.0006	-0.0007	0.0001
83	0.6895	1.0681	0.1721	0.0008	-0.0007	0.0001
84	0.6530	1.0249	0.1701	0.0010	-0.0008	0.0001
85	0.6148	0.9752	0.1681	0.0011	-0.0008	0.0001
86	0.5754	0.9205	0.1655	0.0012	-0.0008	0.0001
87	0.5353	0.8623	0.1625	0.0013	-0.0009	0.0001
88	0.4947	0.8015	0.1594	0.0013	-0.0009	0.0001
89	0.4541	0.7389	0.1562	0.0013	-0.0009	0.0001
90	0.4136	0.6751	0.1530	0.0014	-0.0008	0.0001
91	0.3736	0.6110	0.1498	0.0014	-0.0008	0.0000
92	0.3153	0.5160	0.1451	0.0013	-0.0008	0.0000
93	0.2597	0.4239	0.1408	0.0013	-0.0008	0.0000
94	0.2077	0.3371	0.1372	0.0012	-0.0007	0.0000
95	0.1607	0.2582	0.1346	0.0011	-0.0006	0.0000
96	0.1195	0.1891	0.1329	0.0009	-0.0005	0.0000
97	0.0846	0.1311	0.1318	0.0007	-0.0004	0.0000
98	0.0560	0.0844	0.1311	0.0006	-0.0004	0.0000
99	0.0332	0.0482	0.1303	0.0004	-0.0003	0.0000
100	0.0155	0.0211	0.1293	0.0003	-0.0002	0.0000
101	0.0018	0.0014	0.1280	0.0002	-0.0002	0.0000
102	-0.0089	-0.0130	0.1264	0.0002	-0.0001	0.0000
103	-0.0177	-0.0240	0.1247	0.0001	-0.0001	0.0000
104	-0.0253	-0.0331	0.1231	0.0001	-0.0001	0.0000

105	-0.0325	-0.0412	0.1218	0.0001	-0.0001	0.0000
106	-0.0395	-0.0490	0.1207	0.0001	-0.0001	0.0000

Pile Number 2

2	0.7234	1.1289	0.3279	0.0006	-0.0006	0.0001
107	0.6947	1.0950	0.3220	0.0008	-0.0006	0.0001
108	0.6621	1.0527	0.3156	0.0010	-0.0007	0.0001
109	0.6265	1.0039	0.3100	0.0011	-0.0008	0.0001
110	0.5888	0.9502	0.3042	0.0012	-0.0008	0.0001
111	0.5495	0.8928	0.2983	0.0012	-0.0008	0.0001
112	0.5091	0.8324	0.2924	0.0013	-0.0009	0.0001
113	0.4680	0.7698	0.2864	0.0013	-0.0009	0.0001
114	0.4266	0.7059	0.2805	0.0014	-0.0009	0.0001
115	0.3853	0.6413	0.2745	0.0014	-0.0009	0.0000
116	0.3250	0.5456	0.2658	0.0013	-0.0008	0.0000
117	0.2673	0.4527	0.2577	0.0013	-0.0008	0.0000
118	0.2135	0.3651	0.2502	0.0012	-0.0007	0.0000
119	0.1647	0.2847	0.2434	0.0011	-0.0006	0.0000
120	0.1218	0.2134	0.2376	0.0009	-0.0006	0.0000
121	0.0856	0.1524	0.2326	0.0008	-0.0005	0.0000
122	0.0561	0.1022	0.2282	0.0006	-0.0004	0.0000
123	0.0327	0.0621	0.2241	0.0005	-0.0003	0.0000
124	0.0149	0.0309	0.2203	0.0004	-0.0002	0.0000
125	0.0014	0.0071	0.2167	0.0003	-0.0002	0.0000
126	-0.0088	-0.0113	0.2132	0.0002	-0.0001	0.0000
127	-0.0168	-0.0262	0.2100	0.0002	-0.0001	0.0000
128	-0.0236	-0.0387	0.2073	0.0002	-0.0001	0.0000
129	-0.0297	-0.0502	0.2049	0.0002	-0.0001	0.0000
130	-0.0355	-0.0613	0.2030	0.0002	-0.0001	0.0000

Pile Number 3

3	0.7502	1.1055	0.0354	0.0007	-0.0007	0.0001
131	0.7164	1.0665	0.0381	0.0009	-0.0007	0.0001
132	0.6794	1.0205	0.0401	0.0010	-0.0008	0.0001
133	0.6399	0.9688	0.0417	0.0011	-0.0009	0.0001
134	0.5986	0.9127	0.0426	0.0012	-0.0009	0.0001
135	0.5560	0.8533	0.0428	0.0013	-0.0009	0.0001
136	0.5126	0.7915	0.0424	0.0013	-0.0009	0.0001
137	0.4690	0.7283	0.0416	0.0013	-0.0009	0.0001
138	0.4255	0.6645	0.0407	0.0013	-0.0009	0.0000
139	0.3823	0.6006	0.0399	0.0013	-0.0009	0.0000
140	0.3191	0.5062	0.0388	0.0013	-0.0009	0.0000
141	0.2591	0.4152	0.0388	0.0013	-0.0008	0.0000
142	0.2039	0.3303	0.0398	0.0011	-0.0007	0.0000
143	0.1547	0.2538	0.0418	0.0010	-0.0006	0.0000
144	0.1124	0.1872	0.0443	0.0009	-0.0005	0.0000
145	0.0772	0.1312	0.0469	0.0007	-0.0004	0.0000
146	0.0490	0.0857	0.0495	0.0006	-0.0004	0.0000
147	0.0271	0.0499	0.0517	0.0004	-0.0003	0.0000
148	0.0106	0.0227	0.0534	0.0003	-0.0002	0.0000
149	-0.0014	0.0024	0.0544	0.0002	-0.0001	0.0000
150	-0.0102	-0.0127	0.0549	0.0002	-0.0001	0.0000
151	-0.0168	-0.0244	0.0548	0.0001	-0.0001	0.0000
152	-0.0222	-0.0342	0.0543	0.0001	-0.0001	0.0000
153	-0.0271	-0.0431	0.0538	0.0001	-0.0001	0.0000
154	-0.0318	-0.0519	0.0533	0.0001	-0.0001	0.0000

Pile Number 4

4	0.7497	1.1297	0.2060	0.0008	-0.0006	0.0001
155	0.7181	1.0896	0.2030	0.0009	-0.0007	0.0001
156	0.6827	1.0433	0.1996	0.0010	-0.0008	0.0001
157	0.6446	0.9920	0.1965	0.0011	-0.0008	0.0001
158	0.6044	0.9373	0.1930	0.0012	-0.0009	0.0001
159	0.5628	0.8799	0.1894	0.0012	-0.0009	0.0001
160	0.5202	0.8206	0.1857	0.0013	-0.0009	0.0001
161	0.4771	0.7598	0.1820	0.0013	-0.0009	0.0000
162	0.4338	0.6982	0.1783	0.0013	-0.0009	0.0000
163	0.3907	0.6364	0.1745	0.0013	-0.0009	0.0000
164	0.3278	0.5450	0.1691	0.0013	-0.0009	0.0000
165	0.2676	0.4561	0.1640	0.0012	-0.0008	0.0000
166	0.2114	0.3718	0.1595	0.0012	-0.0008	0.0000
167	0.1608	0.2940	0.1559	0.0010	-0.0007	0.0000
168	0.1167	0.2244	0.1532	0.0009	-0.0006	0.0000
169	0.0799	0.1643	0.1511	0.0008	-0.0005	0.0000
170	0.0504	0.1137	0.1494	0.0006	-0.0004	0.0000
171	0.0278	0.0723	0.1478	0.0005	-0.0003	0.0000
172	0.0110	0.0391	0.1461	0.0004	-0.0002	0.0000
173	-0.0012	0.0125	0.1443	0.0003	-0.0001	0.0000
174	-0.0100	-0.0090	0.1423	0.0003	-0.0001	0.0000
175	-0.0167	-0.0272	0.1404	0.0002	-0.0001	0.0000
176	-0.0221	-0.0435	0.1386	0.0002	-0.0001	0.0000
177	-0.0269	-0.0588	0.1370	0.0002	-0.0001	0.0000
178	-0.0315	-0.0737	0.1358	0.0002	-0.0001	0.0000

Pile Number 5						
5	0.7729	1.1064	-0.1453	0.0007	-0.0006	0.0001
179	0.7419	1.0692	-0.1367	0.0009	-0.0007	0.0001
180	0.7063	1.0251	-0.1286	0.0010	-0.0008	0.0001
181	0.6667	0.9750	-0.1209	0.0011	-0.0009	0.0001
182	0.6238	0.9198	-0.1137	0.0012	-0.0009	0.0001
183	0.5782	0.8602	-0.1069	0.0013	-0.0010	0.0000
184	0.5305	0.7971	-0.1004	0.0014	-0.0010	0.0000
185	0.4815	0.7316	-0.0939	0.0014	-0.0010	0.0000
186	0.4322	0.6649	-0.0876	0.0014	-0.0010	0.0000
187	0.3834	0.5980	-0.0814	0.0014	-0.0010	0.0000
188	0.3133	0.5004	-0.0729	0.0013	-0.0010	0.0000
189	0.2487	0.4085	-0.0648	0.0012	-0.0009	0.0000
190	0.1909	0.3245	-0.0569	0.0011	-0.0008	0.0000
191	0.1408	0.2498	-0.0490	0.0010	-0.0007	0.0000
192	0.0988	0.1851	-0.0414	0.0008	-0.0005	0.0000
193	0.0647	0.1307	-0.0343	0.0007	-0.0004	0.0000
194	0.0381	0.0861	-0.0279	0.0006	-0.0003	0.0000
195	0.0182	0.0506	-0.0222	0.0004	-0.0002	0.0000
196	0.0041	0.0232	-0.0175	0.0003	-0.0002	0.0000
197	-0.0055	0.0024	-0.0137	0.0003	-0.0001	0.0000
198	-0.0116	-0.0133	-0.0108	0.0002	-0.0001	0.0000
199	-0.0153	-0.0251	-0.0088	0.0001	0.0000	0.0000
200	-0.0174	-0.0346	-0.0076	0.0001	0.0000	0.0000
201	-0.0189	-0.0428	-0.0069	0.0001	0.0000	0.0000
202	-0.0200	-0.0505	-0.0067	0.0001	0.0000	0.0000

Pile Number 6						
6	0.7722	1.1284	0.0198	0.0008	-0.0007	0.0001
203	0.7388	1.0883	0.0229	0.0009	-0.0008	0.0001
204	0.7011	1.0421	0.0253	0.0010	-0.0008	0.0001
205	0.6600	0.9909	0.0273	0.0011	-0.0009	0.0001
206	0.6163	0.9358	0.0286	0.0012	-0.0009	0.0001
207	0.5708	0.8776	0.0293	0.0013	-0.0010	0.0000
208	0.5241	0.8173	0.0293	0.0013	-0.0010	0.0000
209	0.4769	0.7556	0.0288	0.0013	-0.0010	0.0000
210	0.4296	0.6934	0.0282	0.0013	-0.0010	0.0000
211	0.3827	0.6311	0.0276	0.0013	-0.0010	0.0000
212	0.3142	0.5390	0.0271	0.0013	-0.0009	0.0000
213	0.2496	0.4498	0.0277	0.0012	-0.0009	0.0000
214	0.1910	0.3659	0.0294	0.0011	-0.0008	0.0000
215	0.1398	0.2892	0.0319	0.0010	-0.0007	0.0000
216	0.0968	0.2212	0.0349	0.0009	-0.0005	0.0000
217	0.0621	0.1624	0.0380	0.0008	-0.0004	0.0000
218	0.0355	0.1129	0.0409	0.0006	-0.0003	0.0000
219	0.0159	0.0721	0.0434	0.0005	-0.0002	0.0000
220	0.0024	0.0391	0.0453	0.0004	-0.0002	0.0000
221	-0.0064	0.0126	0.0466	0.0003	-0.0001	0.0000
222	-0.0118	-0.0089	0.0473	0.0003	-0.0001	0.0000
223	-0.0150	-0.0270	0.0474	0.0002	0.0000	0.0000
224	-0.0170	-0.0432	0.0470	0.0002	0.0000	0.0000
225	-0.0185	-0.0586	0.0466	0.0002	0.0000	0.0000
226	-0.0199	-0.0738	0.0461	0.0002	0.0000	0.0000

SUM OF TOTAL SOIL SPRING LOADS

CHECK: Total Load Carried by the Soil
(Sum of NF+FF Soil Spring Loads)

X Direction	=	5137.5044	Kips
Y Direction	=	8537.1531	Kips
Z Direction	=	47807.3117	Kips
Sum of Tip Forces	=	9091.8813	Kips

Summary of Pile Forces for Load CASE 1

1. Axial Force (Kips)

Pile #	Maximum Force	Minimum Force
1	-0.21356E+04	-0.94070E+04
2	-0.36629E+04	-0.17472E+05
3	-0.88602E+03	-0.26432E+04
4	-0.24156E+04	-0.10933E+05
5	0.42866E+04	0.15333E+02
6	-0.75388E+03	-0.19481E+04

2. Pile Shear Force in 2 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.73458E+03	-0.52262E+03
2	0.11104E+04	-0.67755E+03
3	0.70946E+03	-0.46277E+03
4	0.10554E+04	-0.64190E+03
5	0.65009E+03	-0.37500E+03
6	0.87815E+03	-0.52282E+03

3. Pile Shear Force in 3 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.95099E+03	-0.18080E+04
2	0.11080E+04	-0.20457E+04
3	0.70306E+03	-0.12595E+04
4	0.88948E+03	-0.15132E+04
5	0.49309E+03	-0.86929E+03
6	0.62012E+03	-0.10425E+04

4. Bending Moment About 2 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.6187E+05	0.70980E+02	-0.3684E+05
2	2	0.00000E+00	0.7169E+05	0.70980E+02	-0.4166E+05
3	3	0.00000E+00	0.4109E+05	0.70980E+02	-0.2733E+05
4	4	0.00000E+00	0.5081E+05	0.70980E+02	-0.3326E+05
5	5	0.00000E+00	0.2773E+05	0.65080E+02	-0.1910E+05
6	6	0.00000E+00	0.3425E+05	0.70980E+02	-0.2324E+05

5. Bending Moment About 3 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.1861E+05	0.70980E+02	-0.2097E+05
2	2	0.00000E+00	0.3399E+05	0.70980E+02	-0.2661E+05
3	3	0.00000E+00	0.1903E+05	0.70980E+02	-0.1867E+05
4	4	0.00000E+00	0.3113E+05	0.65080E+02	-0.2565E+05
5	5	0.00000E+00	0.1901E+05	0.65080E+02	-0.1490E+05
6	6	0.00000E+00	0.2469E+05	0.70980E+02	-0.2107E+05

****
* ANALYTICAL FORCE RESULTS FOR PIER *
****

ELEM NO.	PROP NO.	NODE NO.	LOAD CASE	FAX (Kips)	F22 (Kips)	F33 (Kips)	M22 (Kip-ft)	M33 (Kip-ft)	TORQUE (Kip-ft)	D/C (Ratio)
- Connector Beam Segments										
1	1	82	1	-951.25	-2326.92	-2171.29	32569.37	-34903.76	58604.63	
	0.00									
	1	60		951.25	2326.92	2171.29	0.00	0.00	-58604.63	
	0.00									
2	1	82	1	551.21	5946.96	-3288.52	24663.93	44602.18	97840.44	
	0.00									
	1	54		-551.21	-5946.96	3288.52	0.00	0.00	-97840.44	
	0.00									
3	1	82	1	1282.89	23312.49	1923.68	-28855.26	349687.30	-68224.24	
	0.00									
	1	47		-1282.89	-23312.49	-1923.68	0.00	0.00	68224.24	
	0.00									
4	1	82	1	-491.81	-1574.53	3015.34	-22615.03	-11808.95	-90340.50	
	0.00									
	1	53		491.81	1574.53	-3015.34	0.00	0.00	90340.50	
	0.00									

****
* ANALYTICAL PILE CAP - SHELL STRESS RESULTS *
****

****
* DAMPING FORCES *
****

Node #	FXX	FYY	FZZ	MXX	MYY	MZZ
	Kip	Kip	Kip	Kip	Kip	Kip

****
* UNIAXIAL INTERACTION DIAGRAM *
****

NOTE : 1. The tables below show the values on the Interaction Diagrams for each section which correspond to the section capacity
2. The numbering of the SECTIONS/SEGMENTS is shown previously in the output file

---
! -> Pile Cross Section Number = 1 !

Diagram Data

Maximum Tension Force = 0.4820E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = 0.1237E-14 (in)
Local 3 Axis Shift for Plastic Centroid = -0.7486E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.4820E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.4416E+05	0.1645E+06	0.1646E+06	0.1645E+06	0.1646E+06
0.3966E+05	0.1721E+06	0.1721E+06	0.1721E+06	0.1721E+06
0.3479E+05	0.1890E+06	0.1890E+06	0.1890E+06	0.1890E+06
0.3076E+05	0.2030E+06	0.2030E+06	0.2030E+06	0.2030E+06
0.2624E+05	0.2184E+06	0.2184E+06	0.2184E+06	0.2184E+06
0.2191E+05	0.2309E+06	0.2309E+06	0.2309E+06	0.2309E+06
0.1767E+05	0.2387E+06	0.2387E+06	0.2387E+06	0.2387E+06
0.1316E+05	0.2419E+06	0.2419E+06	0.2419E+06	0.2419E+06
0.8766E+04	0.2432E+06	0.2432E+06	0.2432E+06	0.2432E+06
0.4372E+04	0.2501E+06	0.2501E+06	0.2501E+06	0.2501E+06
-0.1105E-01	0.2576E+06	0.2576E+06	0.2576E+06	0.2576E+06
-0.9145E+04	0.2273E+06	0.2273E+06	0.2273E+06	0.2273E+06
-0.1838E+05	0.2415E+06	0.2415E+06	0.2415E+06	0.2415E+06
-0.2759E+05	0.2518E+06	0.2518E+06	0.2518E+06	0.2518E+06
-0.3692E+05	0.2546E+06	0.2546E+06	0.2546E+06	0.2546E+06
-0.4600E+05	0.2465E+06	0.2465E+06	0.2465E+06	0.2465E+06
-0.5522E+05	0.2301E+06	0.2301E+06	0.2301E+06	0.2301E+06
-0.6501E+05	0.2076E+06	0.2076E+06	0.2076E+06	0.2076E+06
-0.6747E+05	0.2013E+06	0.2013E+06	0.2013E+06	0.2013E+06
-0.7105E+05	0.1908E+06	0.1908E+06	0.1908E+06	0.1908E+06
-0.7376E+05	0.1819E+06	0.1819E+06	0.1819E+06	0.1819E+06
-0.7676E+05	0.1689E+06	0.1717E+06	0.1689E+06	0.1717E+06
-0.8002E+05	0.1554E+06	0.1587E+06	0.1554E+06	0.1587E+06
-0.8293E+05	0.1438E+06	0.1457E+06	0.1438E+06	0.1457E+06
-0.8579E+05	0.1321E+06	0.1328E+06	0.1321E+06	0.1328E+06
-0.8882E+05	0.1180E+06	0.1189E+06	0.1180E+06	0.1189E+06
-0.9208E+05	0.1014E+06	0.1036E+06	0.1014E+06	0.1036E+06
-0.9518E+05	0.8843E+05	0.8843E+05	0.8843E+05	0.8843E+05
-0.9883E+05	0.6861E+05	0.6861E+05	0.6861E+05	0.6861E+05

! -> Pile Cross Section Number = 2 !

Diagram Data

Maximum Tension Force = 0.4820E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = 0.5203E-15 (in)
Local 3 Axis Shift for Plastic Centroid = -0.5543E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.4820E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.4371E+05	0.1707E+06	0.1706E+06	0.1707E+06	0.1706E+06
0.3982E+05	0.1758E+06	0.1758E+06	0.1758E+06	0.1758E+06
0.3506E+05	0.1913E+06	0.1913E+06	0.1913E+06	0.1913E+06
0.3088E+05	0.2064E+06	0.2064E+06	0.2064E+06	0.2064E+06
0.2626E+05	0.2238E+06	0.2238E+06	0.2238E+06	0.2238E+06
0.2188E+05	0.2397E+06	0.2397E+06	0.2397E+06	0.2397E+06
0.1749E+05	0.2544E+06	0.2544E+06	0.2544E+06	0.2544E+06
0.1310E+05	0.2657E+06	0.2657E+06	0.2657E+06	0.2657E+06
0.8766E+04	0.2703E+06	0.2703E+06	0.2703E+06	0.2703E+06
0.4423E+04	0.2680E+06	0.2680E+06	0.2680E+06	0.2680E+06
0.5993E-01	0.2737E+06	0.2737E+06	0.2737E+06	0.2737E+06
-0.1173E+05	0.2476E+06	0.2476E+06	0.2476E+06	0.2476E+06
-0.2330E+05	0.2649E+06	0.2649E+06	0.2649E+06	0.2649E+06
-0.3465E+05	0.2792E+06	0.2792E+06	0.2792E+06	0.2792E+06
-0.4650E+05	0.2861E+06	0.2861E+06	0.2861E+06	0.2861E+06
-0.5797E+05	0.2788E+06	0.2788E+06	0.2788E+06	0.2788E+06
-0.7023E+05	0.2570E+06	0.2570E+06	0.2570E+06	0.2570E+06
-0.8210E+05	0.2294E+06	0.2294E+06	0.2294E+06	0.2294E+06
-0.8654E+05	0.2175E+06	0.2175E+06	0.2175E+06	0.2175E+06
-0.9052E+05	0.2051E+06	0.2051E+06	0.2051E+06	0.2051E+06
-0.9349E+05	0.1953E+06	0.1953E+06	0.1953E+06	0.1953E+06
-0.9786E+05	0.1763E+06	0.1794E+06	0.1763E+06	0.1794E+06
-0.1029E+06	0.1551E+06	0.1576E+06	0.1551E+06	0.1576E+06
-0.1067E+06	0.1394E+06	0.1403E+06	0.1394E+06	0.1403E+06
-0.1108E+06	0.1195E+06	0.1207E+06	0.1195E+06	0.1207E+06
-0.1152E+06	0.9658E+05	0.9961E+05	0.9658E+05	0.9961E+05
-0.1197E+06	0.7497E+05	0.7497E+05	0.7497E+05	0.7497E+05
-0.1244E+06	0.4745E+05	0.4745E+05	0.4745E+05	0.4745E+05

****
* FINAL MAXIMUMS/MINIMUMS FOR ALL LOAD CASES *
* PIER # 1 *
****

Maximum/Minimum Pile Forces

	Value		Load	Comb.	Pile
Max Shear in 2 Direction	0.1110E+04	Kip	1	0	2
Min Shear in 2 Direction	-0.6776E+03	Kip	1	0	2
Max Shear in 3 Direction	0.1108E+04	Kip	1	0	2
Min Shear in 3 Direction	-0.2046E+04	Kip	1	0	2
Max Moment about 2 Axis	0.7169E+05	Kip-ft	1	0	2
Min Moment about 2 Axis	-0.4166E+05	Kip-ft	1	0	2
Max Moment About 3 Axis	0.3399E+05	Kip-ft	1	0	2
Min Moment About 3 Axis	-0.2661E+05	Kip-ft	1	0	2
Max Axial Force	0.4287E+04	Kip	1	0	5
Min Axial Force	-0.1747E+05	Kip	1	0	2
Absolute Max Torque	0.2014E+02	Kip-ft	1	0	5
Max Demand/Capacity Ratio	0.3314E+00		1	0	2

Maximum/Minimum Soil Forces

Max Axial Soil Force	0.1209E+04	Kip	1	0	2
Min Axial Soil Force	-0.3314E+03	Kip	1	0	5

BSI FB-MultiPier - File: P7-LCS.out Wednesday, March 23, 2011

Max Lateral Force in X dir	0.2886E+03	Kip	1	0	2
Min Lateral Force in X dir	-0.2187E+03	Kip	1	0	2
Max Lateral Force in Y dir	0.4979E+03	Kip	1	0	2
Min Lateral Force in Y dir	-0.3700E+03	Kip	1	0	2
Max Torsional Soil Force	0.1091E+04	Kip-ft	1	0	1

Maximum/Minimum Pile Displacements

Max Axial Displacement	0.3279E+00	in	1	0	2
Min Axial Displacement	-0.1453E+00	in	1	0	5
Max Displacement in X	0.7729E+00	in	1	0	5
Min Displacement in X	-0.3947E-01	in	1	0	1
Max Displacement in Y	0.1130E+01	in	1	0	4
Min Displacement in Y	-0.7376E-01	in	1	0	6

Maximum/Minimum Column Forces

	Value		Load	Comb.	Column
Max Axial Force	0.0000E+00	Kip	0	0	0
Min Axial Force	0.0000E+00	Kip	0	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	1
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0	0
Absolute Max Torque	0.1000E+06	Kip-ft	1	0	0

Maximum/Minimum Pier Cap Forces

Max Axial Force	0.0000E+00	Kip	0	0
Min Axial Force	0.0000E+00	Kip	0	0
Max Shear in 2 Direction	0.0000E+00	Kip	0	0
Min Shear in 2 Direction	0.0000E+00	Kip	0	0
Max Shear in 3 Direction	0.0000E+00	Kip	0	0
Min Shear in 3 Direction	0.0000E+00	Kip	0	0
Max Torque	-0.1000E+06	Kip-ft	1	0
Min Torque	0.0000E+00	Kip-ft	0	0
Max Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 2 Axis	0.0000E+00	Kip-ft	0	0
Max Moment about 3 Axis	0.0000E+00	Kip-ft	0	0
Min Moment about 3 Axis	0.0000E+00	Kip-ft	0	0

****

Foundation Flexibilty for given loads

****

Averaged flexiblity

	Fx	Fy	Fz	Mx	My	Mz
DeltaX	0.1292E-03	0.7267E-05	-0.2863E-05	0.4588E-08	-0.4773E-07	0.1004E-07
DeltaY	0.7267E-05	0.1288E-03	-0.4198E-05	0.1931E-07	-0.5408E-08	-0.4158E-08
DeltaZ	-0.2863E-05	-0.4198E-05	0.6225E-05	-0.2088E-08	0.2222E-08	-0.5355E-09
ThetaX	0.4588E-08	0.1931E-07	-0.2088E-08	0.6982E-10	-0.4151E-11	0.1039E-10
ThetaY	-0.4773E-07	-0.5408E-08	0.2222E-08	-0.4151E-11	0.1602E-09	0.1430E-10
ThetaZ	0.1004E-07	-0.4158E-08	-0.5355E-09	0.1039E-10	0.1430E-10	0.4914E-09

****

Foundation Stiffness for given loads

****

STIFFNESS

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.8806E+04	-0.2691E+03	0.2846E+04	-0.2278E+06	0.2592E+07	-0.2497E+06
Fy	-0.2691E+03	0.8259E+04	0.4714E+04	-0.2140E+07	0.6676E+05	0.1238E+06
Fz	0.2846E+04	0.4714E+04	0.1667E+06	0.3403E+07	-0.1228E+07	0.1272E+06
Mx	-0.2278E+06	-0.2140E+07	0.3403E+07	0.1509E+11	0.2338E+09	-0.3356E+09
My	0.2592E+07	0.6676E+05	-0.1228E+07	0.2338E+09	0.7065E+10	-0.2642E+09
Mz	-0.2497E+06	0.1238E+06	0.1272E+06	-0.3356E+09	-0.2642E+09	0.2056E+10

****

Foundation Stiffness in STANDARD X-Y-Z directions
(FB-Pier->Stardard, X->X, Y->Z & -Z->Y)
Translations: kips/in Rotations: kip-in/rad

****

Stiffness in standard X-Y-Z

BSI FB-MultiPier - File: P7-LCS.out Wednesday, March 23, 2011

	DeltaX	DeltaY	DeltaZ	ThetaX	ThetaY	ThetaZ
Fx	0.8806E+04	-0.2846E+04	-0.2691E+03	-0.2278E+06	0.2497E+06	0.2592E+07
Fy	-0.2846E+04	0.1667E+06	-0.4714E+04	-0.3403E+07	0.1272E+06	0.1228E+07
Fz	-0.2691E+03	-0.4714E+04	0.8259E+04	-0.2140E+07	-0.1238E+06	0.6676E+05
Mx	-0.2278E+06	-0.3403E+07	-0.2140E+07	0.1509E+11	0.3356E+09	0.2338E+09
My	0.2497E+06	0.1272E+06	-0.1238E+06	0.3356E+09	0.2056E+10	0.2642E+09
Mz	0.2592E+07	0.1228E+07	0.6676E+05	0.2338E+09	0.2642E+09	0.7065E+10

```
!------------------------------------------------------------!
!                                                            !
!       The University of Florida, Florida Department        !
!       of Transportation, Drs. Marc Hoit, Mike McVay        !
!       Cliff Hays, Mark Williams, Petros Christou, and      !
!                        Jae H. Chung                        !
!        disclaim any warranty, expressed or implied,        !
!         including but not limited to, any implied          !
!        warranty of fitness for a particular purpose        !
!           or accuracy of the FB-Pier software              !
!     The  developers shall not be liable for any damages    !
!          incurred through the use of FB-MultiPier          !
!                                                            !
!                                                            !
!              :::: F B - M U L T I P I E R ::::             !
!                  FB-MultiPier Version 4.13                 !
!                                                            !
!                                                            !
!         Written by Marc Hoit, Mike McVay, Cliff Hays       !
!         Mark Williams, Petros Christou, Jae H. Chung.      !
!                                                            !
!      Civil & Coastal Engineering, University of Florida    !
!      Supported by Florida Department of Transportation     !
!           and the Federal Highway Administration           !
!                                                            !
!             The program calculates the Response            !
!           of the Bridge Pier Pile Soil Structures          !
!                                                            !
!            The Analysis includes PreLoad, Static,          !
!                Transient Dynamic or Push Over              !
!                                                            !
!        The Program Handles NonLinear Soil Behavior,        !
!  Linear Pile Cap and Linear and NonLinear Piles and Piers  !
!                                                            !
!                                                            !
!       Contact: Bridge Software Institute for Support       !
!                HTTP://BSI-WEB.CE.UFL.EDU                   !
!                                                            !
!------------------------------------------------------------!

 Analysis Start Time  :****************************************
 Analysis End Time    :****************************************
 Analysis Duration    :****************************************

 Input Data File Name : P8-LCS.IN
 Analysis Date        : 3-15-2011
 License ID Number    : 432478881


 ********************
 *   PROJECT DATA   *
 ********************

 Project Client      : CRC / WSDOT / ODOT
 Project Name        : Columbia River Crossing
 Project Manager     : R. Turton
 Computed by         : NRH
 Project Description : SB - Pier 8 - Liquefaction + Contraction Scour


 ************************************
 *   SELECTIVE PRINT OUTPUT CONTROL   *
 ************************************
                                      Print On
 Pile Displacements                     YES
 Pile Element Forces                     NO
 Missing Pile ID Numbers                 NO
 Pier Columns and Pier Cap Displacements NO
 Pier Columns and Pier Cap Force Output YES
 Pier Material Properties               YES
 Soil Response Forces                    NO
 Soil Data per Layer                    YES
 Soil Curve data per Pile Node           NO
 Soil Graph per Pile Node                NO
 Out of Balance Forces                   NO
 Bridge Simulation Spring Force Output   NO
 Bridge Span Displacements               NO
 Bridge Span Element Forces              NO
 Bridge Span Properties                  NO
 Pile Cap Stress                         NO
```

BSI FB-MultiPier - File: P8-LCS.out Wednesday, March 23, 2011

```
 Material Stress Strain Curve Data          NO
 Interaction Diagram Data For Pile and Pier YES
 Pile and Pier coordinates                  NO
 Generate XML file                          NO


 *************
 *   UNITS   *
 *************

 Analysis Units Specified are: English Mixed (Kips & Ft some lbs & in)


 ***************************
 *   CONTROL INFORMATION   *
 ***************************

 Number of Piers               (NUMPIERS) =    1
 Maximum Number of Iterations    (MAXITN) =   50
 Tolerance                        (TOLER) =    10.000000     Kips

 NOTE : The following soil information is not applicable in the coulmn analysis problems

 Soil Behavior Option             (IFLEX) =    0
    IFLEX = 0 -> PY Multipliers are Input
    IFLEX = 1 -> PY Multipliers Defaulted to 1.0
    IFLEX = 2 -> No SOIL (Must use tip springs)

 Soil resistance due to Pile Rotation About 2 and 3 Axis (NSODF) =    4
    NSDOF = 4 -> NO Resistance Accounted
    NSDOF = 6 -> Resistance Accounted

 Linear Pile TIP Spring Option     (ITIP) =    0
    ITIP = 0 -> NO spring
    ITIP = 1 -> Axial only
    ITIP = 2 -> All DOF

 Linear Pile TIP Spring Stiffness (TSTIF) =         0.00 kips/in


 **********************
 *   SOIL BEHAVIOR    *
 **********************

 PY Multipliers will be used (IFLEX = 0)


 ***************************************************
 *   LOAD FACTORS FOR SELF WEIGHT AND BUOYANCY     *
 ***************************************************

 LOAD CASE     SELF WEIGHT     BUOYANCY
     #            FACTOR         FACTOR
     1             1.00           1.00


 ****************************
 *   GENERAL INFORMATION    *
 ****************************

 Static / Cyclic Load (KCYC)      =    0
    KCYC = 0 -> Static Load
    KCKC > 0 -> Cyclic Load (# Cycles)

 Fixity of Pile Cap (KFIX)        =    1
    KFIX = 0 -> Pinned Head
    KFIX = 1 -> Fixed head

 Bearing of Cap on Soil           =  NO


 ******************************
 *   GRID DATA INFORMATION    *
 ******************************

 NOTE: X-Grid : Distance between axes along the X-Axis
       Y-Grid : Distance between axes along the Y-Axis

 Number of Grid Points in X-Direction (NPX) =     5
 Number of Grid Points in X-Direction (NPY) =     5

 Grid Spacing in the X Direction : (inches)
      90.00     150.00     150.00      90.00
```

Grid Spacing in the Y Direction : (inches)
120.00 390.00 390.00 120.00

****
* ANALYSIS OPTIONS *
****

Type of Stiffness = Secant Stiffness
Type of Structure = Full
Type of Analysis = Static Analysis

****
* INPUT SOIL DATA - GIVEN BY LAYER *
****

NOTE : The following data is used to define Springs
for each Soil Layer to determine the Soil
Behavior during the analysis

LAYERED P-Y CURVES

SOIL SET # 1

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	1	1	0.7000E+01	0.6500E+02	0.1073E+03
			0.7000E+01	0.6500E+02	0.1073E+03

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	2	1	0.4500E+02	0.1250E+03	0.1367E+03
			0.4500E+02	0.1250E+03	0.1367E+03

SET	LAYER	MODEL	PHI (DEG)	RK lbs/in^3	GAMMA pcf
1	3	1	0.4500E+02	0.1500E+03	0.1402E+03
			0.4500E+02	0.1500E+03	0.1402E+03

LAYERED T-Z CURVES

SOIL SET # 1

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.000E+00	0.380E+00	0.000E+00
	0.760E+00	0.000E+00	0.760E+00	0.000E+00
	0.114E+01	0.000E+00	0.114E+01	0.000E+00
	0.152E+01	0.000E+00	0.152E+01	0.000E+00
	0.265E+01	0.000E+00	0.265E+01	0.000E+00
	0.379E+01	0.000E+00	0.379E+01	0.000E+00
	0.493E+01	0.000E+00	0.493E+01	0.000E+00
	0.606E+01	0.000E+00	0.606E+01	0.000E+00
	0.720E+01	0.000E+00	0.720E+01	0.000E+00

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
2	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02
	0.152E+01	0.559E+02	0.152E+01	0.559E+02
	0.265E+01	0.559E+02	0.265E+01	0.559E+02
	0.379E+01	0.559E+02	0.379E+01	0.559E+02
	0.493E+01	0.559E+02	0.493E+01	0.559E+02
	0.606E+01	0.559E+02	0.606E+01	0.559E+02
	0.720E+01	0.559E+02	0.720E+01	0.559E+02

- USER DEFINED	TOP		BOTTOM	
	Z Value in	T Value psi	Z Value in	T Value psi
3	0.000E+00	0.000E+00	0.000E+00	0.000E+00
	0.380E+00	0.432E+02	0.380E+00	0.432E+02
	0.760E+00	0.537E+02	0.760E+00	0.537E+02
	0.114E+01	0.559E+02	0.114E+01	0.559E+02

0.152E+01	0.559E+02	0.152E+01	0.559E+02
0.265E+01	0.559E+02	0.265E+01	0.559E+02
0.379E+01	0.559E+02	0.379E+01	0.559E+02
0.493E+01	0.559E+02	0.493E+01	0.559E+02
0.606E+01	0.559E+02	0.606E+01	0.559E+02
0.720E+01	0.559E+02	0.720E+01	0.559E+02

LAYERED T-Theta CURVES

SOIL SET # 1

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	1	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	2	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

SET	LAYER	MODEL	SHEAR M. ksi	TAU MAX psf
1	3	1	0.3500E+01	0.1152E+04
			0.3500E+01	0.1152E+04

PILE TIP SOIL PARAMETERS

SOIL SET # 1

USER DEFINED

	Q Value in	T Value lbs
1	0.000E+00	0.000E+00
2	0.222E+00	0.362E+07
3	0.444E+00	0.624E+07
4	0.667E+00	0.829E+07
5	0.889E+00	0.995E+07
6	0.111E+01	0.113E+08
7	0.133E+01	0.125E+08
8	0.156E+01	0.136E+08
9	0.178E+01	0.145E+08
10	0.200E+01	0.153E+08

****
* PILE SEGMENT INFORMATION DATA *
****

NOTE: The Piles Sets consist of Pile Segments based on the User Input. The program groups all segments from all the different Pile Sets and assigns a reference number to each

The reference number for each segment together with the User Input Pile Set/Segment number is shown below. The Input section properties for each section/segment is also provided below.

The user is advised to double check these numbers

Number of segments found in all Piles (NPSEG) = 2

! -> SECTION DATA FOR SECTION/SEGMENT : 1 !

Input Pile Set Number = 1
Input Pile Set Segment = 1

Section Pile Length (L) = 6.0000000 ft

Nonlinear Section/Segment Material Properties

Material Option (MATOPT) = 1
(Please Refer to the Users Guide for Details)

- Concrete Stress Strain Properties

```
   Concrete Strength    (FPC) = 0.4000E+01 ksi
   Modulus of Elasticity (EC) = 0.4224E+04 ksi

   Gauss Integration Points for Concrete = 60

 - Steel Stress Strain Properties

   Mild Steel Yield Stress  (FY) =  0.600E+02 ksi
   Modulus of Elasticity    (ES) = 0.2900E+05 ksi

   Tubular Steel Yield Stress (FY) =  0.500E+02 ksi
   Modulus of Elasticity      (ES) = 0.2900E+05 ksi

 - Shape of Section : CIRCULAR

 - Steel and Confinement Data

   Number of Steel Layers         =   2
   Section/Segment Diameter       =  180.0000 in
   Tied/Spiral Reinforcement Flag =   1
   (NOTE : Spiral = 1, Tied   = 2)
   Confinement Flag               =   1
   (NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

 - Steel and Confinement Data

  Yield Stress of Confinement Steel =    60.00     ksi
  Spacing between Confinement Steel =    6.000     in
  Diameter of Confinement Steel     =   0.7500     in
   Outer Shell Thickness          =    1.00      in

 - Total Area of Steel Reinforcement  = 424.00 in^2

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing
                           in^2      in             ksi

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     1           56        4.00    108.00           0.00

   WARNING : The number of bars is changed to a multiple
             of 4. This is to ensure a symmetric section
             for the analysis. The area is changed to
             result in the same total area of steel

   Layer   # Bars/Strands  Area   Layer Dia.    Prestressing

     2           52        3.85     96.00           0.00

 ------------------------------------------------
 ! -> SECTION DATA FOR SECTION/SEGMENT :   2  !
 ------------------------------------------------

 Input Pile Set Number  =   1
 Input Pile Set Segment =   2

 Section Pile Length               (L) =    123.08000     ft

 Nonlinear Section/Segment Material Properties
 ---------------------------------------------

 Material Option (MATOPT) =   1
 (Please Refer to the Users Guide for Details)

 - Concrete Stress Strain Properties

   Concrete Strength    (FPC) = 0.6000E+01 ksi
   Modulus of Elasticity (EC) = 0.5173E+04 ksi

   Gauss Integration Points for Concrete = 60

 - Steel Stress Strain Properties

   Mild Steel Yield Stress  (FY) =  0.600E+02 ksi
   Modulus of Elasticity    (ES) = 0.2900E+05 ksi

   Tubular Steel Yield Stress (FY) =  0.500E+02 ksi
   Modulus of Elasticity      (ES) = 0.2900E+05 ksi
```

- Shape of Section : CIRCULAR

- Steel and Confinement Data

Number of Steel Layers = 2
Section/Segment Diameter = 120.0000 in
Tied/Spiral Reinforcement Flag = 1
(NOTE : Spiral = 1, Tied = 2)
Confinement Flag = 1
(NOTE : None = 0, Confined - Spiral Only = 1,Confined - Shell = 2)

- Steel and Confinement Data

Yield Stress of Confinement Steel = 60.00 ksi
Spacing between Confinement Steel = 6.000 in
Diameter of Confinement Steel = 0.7500 in
Outer Shell Thickness = 1.00 in

- Total Area of Steel Reinforcement = 424.00 in^2

Layer	# Bars/Strands	Area in^2	Layer Dia. in	Prestressing ksi

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
1	56	4.00	108.00	0.00

WARNING : The number of bars is changed to a multiple of 4. This is to ensure a symmetric section for the analysis. The area is changed to result in the same total area of steel

Layer	# Bars/Strands	Area	Layer Dia.	Prestressing
2	52	3.85	96.00	0.00

PLOT OF THE QZ CURVE FOR THE TIP OF THE PILE

- USER DEFINED CURVE

SOIL SET	Z Value	Q Value	Z Value	Q Value	Z Value	Q Value
1	0.0000E+00	0.0000E+00	0.2222E+00	0.3615E+07	0.4444E+00	0.6244E+07
	0.6667E+00	0.8290E+07	0.8889E+00	0.9952E+07	0.1111E+01	0.1134E+08
	0.1333E+01	0.1253E+08	0.1556E+01	0.1357E+08	0.1778E+01	0.1448E+08
	0.2000E+01	0.1530E+08				

****
* PILE SET DATA DESCRIPTION *
****

NOTE : The piles are organized in pile sets. Each pile set is composed of pile segments that are input by the User. A pile set is attached to each pile in order to describe its composition

List of Piles Sets and Piles

Pile Set	Piles (that are assigned the Pile Set)
1	1, 2, 3, 4

Total Length for Each Pile Set

Pile Set	Length
1	1548.96

****
* INPUT FOR STRUCTURAL ANALYSIS *
****

Number of Joints = 82

BSI FB-MultiPier - File: P8-LCS.out Wednesday, March 23, 2011

```
 Number of Different Element Types  =   3
 Number of Load Conditions          =   1

 WARNING : Pier Columns and Cap are linear
           No P-Delta or Moment Magnification is included
           Nonlinear should be used for final design

 PIER SUMMARY
 ------------

 Stiffness of Foundation Requested - NO Pier Exists

 ************************************************************************
 *   MATERIAL PROPERTIES FOR PILE CAP AND FRAME (PIER) ELEMENTS   *
 ************************************************************************

 ***********************************************
 * PILE CAP PROPERTIES - USING SHELL ELEMENTS *
 ***********************************************

 Modulus of Elasticity =   0.4224E+04 (ksi)
 Poissons Ratio        =      0.2000
 Shear Modulus         =   0.1760E+04 (ksi)
 Self Weight           =    160.0000 (pcf)
 Thickness             =   0.1300E+02 (ft)

 ---------------------------------------------------
 ! -> PROPERTIES FOR CONNECTOR ELEMENTS (DEFAULTED) !
 ---------------------------------------------------

 NOTE : These Elements are generated by the program at the Pier
        Column Bases where they connect with the Pile Cap. The
        purpose for these elements is to spread the column base
        load over an area on the Pile Cap and therefore avoid
        High Stress Concentrations

 NOTE : The material property number for these elements is
        defaulted to 1. The material numbers for the properties
        of the rest of the Pier elements start form 2

 -> SECTION DATA FOR SECTION/SEGMENT :   1

 Member Property Number         =   1
 Axial Area, A                  =    24336.     (in^2)
 Torsional Moment of Inertia, J =   0.31637E+10 (in^4)
 Moment of Inertia, 3 - Axis    =   0.31637E+10 (in^4)
 Moment of Inertia, 2 - Axis    =   0.31637E+10 (in^4)
 Modulus of Elasticity, E       =    4224.0     (ksi)
 Shear Modulus, G               =    1760.0     (ksi) (used for Torsion)
 Weight Density                 =       0.00000 (K/in^3)

 ----------------------------------
 ! -> PROPERTIES FOR PIER COLUMNS !
 ----------------------------------

 Member Property Number         =   2
 Axial Area, A                  =       0.00000 (in^2)
 Torsional Moment of Inertia, J =       0.00000 (in^4)
 Moment of Inertia, 3 - Axis    =       0.00000 (in^4)
 Moment of Inertia, 2 - Axis    =       0.00000 (in^4)
 Modulus of Elasticity, E       =       0.00000 (ksi)
 Shear Modulus, G               =       0.00000 (ksi) (used for Torsion)
 Weight Density                 =       0.00000 (K/in^3)

 ********************************
 *   PIER MEMBER CONNECTIVITY   *
 ********************************

 ELEMENT      NODES     MATERIAL
  NUMBER      I    J     NUMBER

    1        82   60       1
    2        82   54       1
    3        82   47       1
    4        82   53       1

 *************************
 *   GENERAL LOAD DATA   *
 *************************
```

The table below shows the Applied Loads for every Load Case. The values in the table represent the magnitute of the Loads in the specified units

- Applied Load

NODE	LOAD	X (Kips)	Y (Kips)	Z (Kips)	MXX (Kip-ft)	MYY (Kip-ft)	MZZ (Kip-ft)
82	1	3438.00	0.00	0.00	0.00	0.00	0.00
82	2	0.00	5227.00	0.00	0.00	0.00	0.00
82	3	0.00	0.00	11944.00	0.00	0.00	0.00
82	4	0.00	0.00	0.00	382028.00	0.00	0.00
82	5	0.00	0.00	0.00	0.00	-151425.00	0.00
82	6	0.00	0.00	0.00	0.00	0.00	5686.00

****
* *
* ANALYSIS RESULTS *
* *
****

****
* RESULTS FOR LOAD CASE # 1 *
****

NOTE : PY Multipliers are applied Lead to Trail row based on the actual displacement. If there is no displacement in a Lateral direction they are defaulted to 1.0. This can happen in Axial Load and one direction lateral load cases

PY Multipliers are Applied to A Pile Group

PILE#	X-PYM	Y-PYM
1	0.415E+00	0.100E+01
2	0.575E+00	0.100E+01
3	0.415E+00	0.100E+01
4	0.575E+00	0.100E+01

****
* CONVERGENCE REPORT *
****

The Solution Converged in 7 Iterations

Summary of Abs Maximum Out-Of-Balance Forces

FZZ =	1.102	Kips
FXX =	1.818	Kips
FYY =	21.764	Kips
MXX =	0.885	Kip-in
MYY =	0.000	Kip-in
MZZ =	33.069	Kip-in

Summary of Displacements at Pile Heads

Node	X (in)	Y (in)	Z (in)
1	0.4255	0.2271	0.1418
2	0.4250	0.2461	0.3590
3	0.4654	0.2332	-0.0819
4	0.4647	0.2441	0.1507

Final Displacements

Load Case # 1

Node	X (in)	Y (in)	Z (in)	Rx (rad)	Ry (rad)	Rz (rad)
Pile Number 1						
1	0.4255	0.2271	0.1418	0.0001	-0.0009	0.0001
83	0.3355	0.2042	0.1365	0.0003	-0.0009	0.0001
84	0.2493	0.1659	0.1304	0.0005	-0.0008	0.0000

85	0.1729	0.1208	0.1240	0.0005	-0.0007	0.0000
86	0.1097	0.0786	0.1177	0.0004	-0.0006	0.0000
87	0.0615	0.0448	0.1113	0.0003	-0.0004	0.0000
88	0.0275	0.0207	0.1055	0.0002	-0.0003	0.0000
89	0.0057	0.0057	0.1001	0.0001	-0.0002	0.0000
90	-0.0063	-0.0022	0.0952	0.0001	-0.0001	0.0000
91	-0.0115	-0.0051	0.0908	0.0000	0.0000	0.0000
92	-0.0122	-0.0052	0.0868	0.0000	0.0000	0.0000
93	-0.0104	-0.0039	0.0832	0.0000	0.0000	0.0000
94	-0.0075	-0.0024	0.0800	0.0000	0.0000	0.0000
95	-0.0046	-0.0012	0.0771	0.0000	0.0000	0.0000
96	-0.0019	-0.0003	0.0747	0.0000	0.0000	0.0000
97	0.0005	0.0003	0.0726	0.0000	0.0000	0.0000
98	0.0026	0.0008	0.0708	0.0000	0.0000	0.0000

Pile Number 2

2	0.4250	0.2461	0.3590	0.0000	-0.0008	0.0001
99	0.3470	0.2324	0.3437	0.0002	-0.0008	0.0001
100	0.2659	0.1971	0.3267	0.0005	-0.0008	0.0001
101	0.1890	0.1493	0.3097	0.0005	-0.0007	0.0000
102	0.1230	0.1016	0.2925	0.0005	-0.0006	0.0000
103	0.0712	0.0613	0.2753	0.0004	-0.0005	0.0000
104	0.0340	0.0311	0.2596	0.0003	-0.0003	0.0000
105	0.0099	0.0112	0.2453	0.0002	-0.0002	0.0000
106	-0.0037	0.0000	0.2324	0.0001	-0.0001	0.0000
107	-0.0096	-0.0049	0.2208	0.0000	0.0000	0.0000
108	-0.0106	-0.0059	0.2103	0.0000	0.0000	0.0000
109	-0.0089	-0.0048	0.2010	0.0000	0.0000	0.0000
110	-0.0063	-0.0032	0.1928	0.0000	0.0000	0.0000
111	-0.0036	-0.0016	0.1856	0.0000	0.0000	0.0000
112	-0.0014	-0.0005	0.1794	0.0000	0.0000	0.0000
113	0.0005	0.0003	0.1741	0.0000	0.0000	0.0000
114	0.0022	0.0010	0.1698	0.0000	0.0000	0.0000

Pile Number 3

3	0.4654	0.2332	-0.0819	0.0006	-0.0009	0.0000
115	0.3754	0.1731	-0.0752	0.0006	-0.0010	0.0000
116	0.2821	0.1129	-0.0671	0.0006	-0.0010	0.0000
117	0.1949	0.0627	-0.0591	0.0004	-0.0008	0.0000
118	0.1216	0.0271	-0.0510	0.0003	-0.0007	0.0000
119	0.0658	0.0056	-0.0432	0.0002	-0.0005	0.0000
120	0.0273	-0.0048	-0.0365	0.0001	-0.0003	0.0000
121	0.0038	-0.0079	-0.0309	0.0000	-0.0002	0.0000
122	-0.0079	-0.0070	-0.0262	0.0000	-0.0001	0.0000
123	-0.0117	-0.0047	-0.0223	0.0000	0.0000	0.0000
124	-0.0108	-0.0025	-0.0191	0.0000	0.0000	0.0000
125	-0.0080	-0.0009	-0.0164	0.0000	0.0000	0.0000
126	-0.0049	-0.0001	-0.0143	0.0000	0.0000	0.0000
127	-0.0023	0.0002	-0.0127	0.0000	0.0000	0.0000
128	-0.0005	0.0002	-0.0116	0.0000	0.0000	0.0000
129	0.0007	0.0001	-0.0109	0.0000	0.0000	0.0000
130	0.0017	0.0000	-0.0107	0.0000	0.0000	0.0000

Pile Number 4

4	0.4647	0.2441	0.1507	0.0007	-0.0009	0.0000
131	0.3739	0.1765	0.1447	0.0007	-0.0010	0.0000
132	0.2820	0.1145	0.1380	0.0006	-0.0009	0.0000
133	0.1971	0.0645	0.1314	0.0004	-0.0008	0.0000
134	0.1256	0.0289	0.1248	0.0003	-0.0007	0.0000
135	0.0707	0.0067	0.1181	0.0002	-0.0005	0.0000
136	0.0321	-0.0049	0.1119	0.0001	-0.0003	0.0000
137	0.0078	-0.0092	0.1061	0.0000	-0.0002	0.0000
138	-0.0055	-0.0092	0.1009	0.0000	-0.0001	0.0000
139	-0.0109	-0.0072	0.0961	0.0000	0.0000	0.0000
140	-0.0115	-0.0047	0.0919	0.0000	0.0000	0.0000
141	-0.0094	-0.0025	0.0880	0.0000	0.0000	0.0000
142	-0.0065	-0.0010	0.0846	0.0000	0.0000	0.0000
143	-0.0037	-0.0002	0.0816	0.0000	0.0000	0.0000
144	-0.0013	0.0002	0.0790	0.0000	0.0000	0.0000
145	0.0006	0.0004	0.0768	0.0000	0.0000	0.0000
146	0.0023	0.0005	0.0749	0.0000	0.0000	0.0000

SUM OF TOTAL SOIL SPRING LOADS

CHECK: Total Load Carried by the Soil
(Sum of NF+FF Soil Spring Loads)

X Direction	=	3381.1337	Kips
Y Direction	=	5217.7312	Kips
Z Direction	=	22947.5081	Kips
Sum of Tip Forces	=	5131.7049	Kips

Summary of Pile Forces for Load CASE 1

1. Axial Force (Kips)

Pile #	Maximum Force	Minimum Force
1	-0.12364E+04	-0.46695E+04
2	-0.30523E+04	-0.12287E+05
3	0.20175E+04	0.22136E+02
4	-0.13114E+04	-0.49842E+04

2. Pile Shear Force in 2 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.56650E+03	-0.20951E+03
2	0.91074E+03	-0.23447E+03
3	0.63702E+03	-0.16145E+03
4	0.88865E+03	-0.25445E+03

3. Pile Shear Force in 3 Direction (Kips)

Pile #	Maximum Shear	Minimum Shear
1	0.17648E+03	-0.13944E+04
2	0.19389E+03	-0.16305E+04
3	0.16524E+03	-0.77166E+03
4	0.24573E+03	-0.71274E+03

4. Bending Moment About 2 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	0.2381E+05	0.56473E+02	-6127.
2	2	0.00000E+00	0.3108E+05	0.56473E+02	-6618.
3	3	0.00000E+00	6561.	0.32270E+02	-5166.
4	4	0.00000E+00	1366.	0.40337E+02	-8977.

5. Bending Moment About 3 Axis (Kip-ft)

Pile #	Pile Node	At Depth Below Cap	Maximum Moment	At Depth Below Cap	Minimum Moment
1	1	0.00000E+00	1813.	0.40337E+02	-9338.
2	2	0.00000E+00	0.1036E+05	0.48405E+02	-9252.
3	3	0.00000E+00	7023.	0.48405E+02	-6118.
4	4	0.00000E+00	8347.	0.48405E+02	-0.1026E+05

****
* ANALYTICAL FORCE RESULTS FOR PIER *
****

ELEM NO.	PROP NO.	NODE NO.	LOAD CASE	FAX (Kips)	F22 (Kips)	F33 (Kips)	M22 (Kip-ft)	M33 (Kip-ft)	TORQUE (Kip-ft)	D/C (Ratio)
- Connector Beam Segments										
1	1	82	1	-576.92	1044.88	-1918.85	31181.32	16979.22	48798.59	
	0.00									
	1	60		576.92	-1044.88	1918.85	0.00	0.00	-48798.59	
	0.00									
2	1	82	1	-84.21	-1981.45	-1964.54	12278.37	-12384.09	21434.08	
	0.00									
	1	54		84.21	1981.45	1964.54	0.00	0.00	-21434.08	
	0.00									
3	1	82	1	861.96	22078.99	1623.16	-26376.35	358783.53	-57520.45	
	0.00									
	1	47		-861.96	-22078.99	-1623.16	0.00	0.00	57520.45	
	0.00									
4	1	82	1	19.80	-9198.41	1823.58	-11397.35	-57490.04	-18789.61	
	0.00									
	1	53		-19.80	9198.41	-1823.58	0.00	0.00	18789.61	
	0.00									

****

```
 *   ANALYTICAL PILE CAP - SHELL STRESS RESULTS   *
 ************************************************


 **********************
 *   DAMPING FORCES   *
 **********************

   Node #      FXX          FYY          FZZ          MXX          MYY          MZZ
             Kip          Kip          Kip          Kip          Kip          Kip


 *************************************
 *   UNIAXIAL INTERACTION DIAGRAM    *
 *************************************

 NOTE : 1. The tables below show the values on the Interaction
           Diagrams for each section which correspond to the
           section capacity
        2. The numbering of the SECTIONS/SEGMENTS is shown
           previously in the output file

 ---------------------------------------
 ! -> Pile Cross Section Number =    1 !
 ---------------------------------------

 Diagram Data
 ____________

 Maximum Tension Force                        =  0.4820E+05 (Kips)
 Local 2 Axis Shift for Plastic Centroid      =  0.1237E-14 (in)
 Local 3 Axis Shift for Plastic Centroid      = -0.7486E-09 (in)

 Recommended Phi Values
 ______________________

 Concrete, Rectangular members           Phi =  0.70
 Concrete, Circular members with Ties    Phi =  0.70
 Concrete, Circular members with Spirals Phi =  0.75

 Phi Factors Used
 ________________

 Phi Factor for Concrete Control              =   0.7500
 Phi Factor for Steel in Compression          =   0.9000
 Phi Factor for Steel in Tension              =   0.9500
 Phi Factor for Steel in Bending              =   1.0000
 Transition Phi Factor according to AASHTO

 Units for Axial Force : Kips,  Units for Moment : Kip-ft

    Axial     Moment(+3)  Moment(-2)  Moment(-3)  Moment(+2)

  0.4820E+05  0.0000E+00  0.0000E+00  0.0000E+00  0.0000E+00
  0.4397E+05  0.1425E+06  0.1425E+06  0.1425E+06  0.1425E+06
  0.3941E+05  0.1572E+06  0.1572E+06  0.1572E+06  0.1572E+06
  0.3504E+05  0.1687E+06  0.1687E+06  0.1687E+06  0.1687E+06
  0.3074E+05  0.1749E+06  0.1749E+06  0.1749E+06  0.1749E+06
  0.2629E+05  0.1777E+06  0.1777E+06  0.1777E+06  0.1777E+06
  0.2204E+05  0.1794E+06  0.1794E+06  0.1794E+06  0.1794E+06
  0.1754E+05  0.1877E+06  0.1877E+06  0.1877E+06  0.1877E+06
  0.1315E+05  0.1951E+06  0.1951E+06  0.1951E+06  0.1951E+06
  0.8836E+04  0.2009E+06  0.2009E+06  0.2009E+06  0.2009E+06
  0.4379E+04  0.2067E+06  0.2067E+06  0.2067E+06  0.2067E+06
  0.7769E-01  0.2109E+06  0.2109E+06  0.2109E+06  0.2109E+06
 -0.6898E+04  0.1877E+06  0.1877E+06  0.1877E+06  0.1877E+06
 -0.1348E+05  0.1894E+06  0.1894E+06  0.1894E+06  0.1894E+06
 -0.2023E+05  0.1912E+06  0.1912E+06  0.1912E+06  0.1912E+06
 -0.2690E+05  0.1869E+06  0.1869E+06  0.1869E+06  0.1869E+06
 -0.3368E+05  0.1773E+06  0.1773E+06  0.1773E+06  0.1773E+06
 -0.4042E+05  0.1633E+06  0.1633E+06  0.1633E+06  0.1633E+06
 -0.4761E+05  0.1439E+06  0.1439E+06  0.1439E+06  0.1439E+06
 -0.4853E+05  0.1410E+06  0.1410E+06  0.1410E+06  0.1410E+06
 -0.5008E+05  0.1361E+06  0.1361E+06  0.1361E+06  0.1361E+06
 -0.5139E+05  0.1319E+06  0.1319E+06  0.1319E+06  0.1319E+06
 -0.5259E+05  0.1279E+06  0.1279E+06  0.1279E+06  0.1279E+06
 -0.5371E+05  0.1239E+06  0.1239E+06  0.1239E+06  0.1239E+06
 -0.5469E+05  0.1204E+06  0.1204E+06  0.1204E+06  0.1204E+06
 -0.5552E+05  0.1174E+06  0.1174E+06  0.1174E+06  0.1174E+06
 -0.5695E+05  0.1100E+06  0.1120E+06  0.1100E+06  0.1120E+06
 -0.5814E+05  0.1075E+06  0.1075E+06  0.1075E+06  0.1075E+06
 -0.5945E+05  0.9967E+05  0.1019E+06  0.9967E+05  0.1019E+06
 -0.6046E+05  0.9587E+05  0.9753E+05  0.9587E+05  0.9753E+05
```

```
---------------------------------------
! -> Pile Cross Section Number =    2 !
---------------------------------------
```

Diagram Data

Maximum Tension Force = 0.3972E+05 (Kips)
Local 2 Axis Shift for Plastic Centroid = -0.2885E-15 (in)
Local 3 Axis Shift for Plastic Centroid = -0.6414E-09 (in)

Recommended Phi Values

Concrete, Rectangular members Phi = 0.70
Concrete, Circular members with Ties Phi = 0.70
Concrete, Circular members with Spirals Phi = 0.75

Phi Factors Used

Phi Factor for Concrete Control = 0.7500
Phi Factor for Steel in Compression = 0.9000
Phi Factor for Steel in Tension = 0.9500
Phi Factor for Steel in Bending = 1.0000
Transition Phi Factor according to AASHTO

Units for Axial Force : Kips, Units for Moment : Kip-ft

Axial	Moment(+3)	Moment(-2)	Moment(-3)	Moment(+2)
0.3972E+05	0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.2923E+05	0.1203E+06	0.1203E+06	0.1203E+06	0.1203E+06
0.2532E+05	0.1265E+06	0.1265E+06	0.1265E+06	0.1265E+06
0.2177E+05	0.1346E+06	0.1346E+06	0.1346E+06	0.1346E+06
0.1803E+05	0.1432E+06	0.1432E+06	0.1432E+06	0.1432E+06
0.1444E+05	0.1490E+06	0.1490E+06	0.1490E+06	0.1490E+06
0.1088E+05	0.1475E+06	0.1475E+06	0.1475E+06	0.1475E+06
0.7226E+04	0.1453E+06	0.1453E+06	0.1453E+06	0.1453E+06
0.3610E+04	0.1484E+06	0.1484E+06	0.1484E+06	0.1484E+06
-0.4144E-01	0.1502E+06	0.1502E+06	0.1502E+06	0.1502E+06
-0.5800E+04	0.1268E+06	0.1268E+06	0.1268E+06	0.1268E+06
-0.1170E+05	0.1305E+06	0.1305E+06	0.1305E+06	0.1305E+06
-0.1744E+05	0.1337E+06	0.1337E+06	0.1337E+06	0.1337E+06
-0.2328E+05	0.1339E+06	0.1339E+06	0.1339E+06	0.1339E+06
-0.2902E+05	0.1292E+06	0.1292E+06	0.1292E+06	0.1292E+06
-0.3498E+05	0.1218E+06	0.1218E+06	0.1218E+06	0.1218E+06
-0.4119E+05	0.1107E+06	0.1107E+06	0.1107E+06	0.1107E+06
-0.4369E+05	0.1050E+06	0.1050E+06	0.1050E+06	0.1050E+06
-0.4572E+05	0.9985E+05	0.9985E+05	0.9985E+05	0.9985E+05
-0.4823E+05	0.9275E+05	0.9275E+05	0.9275E+05	0.9275E+05
-0.5091E+05	0.8466E+05	0.8466E+05	0.8466E+05	0.8466E+05
-0.5350E+05	0.7561E+05	0.7644E+05	0.7561E+05	0.7644E+05
-0.5585E+05	0.6814E+05	0.6854E+05	0.6814E+05	0.6854E+05
-0.5832E+05	0.5940E+05	0.6011E+05	0.5940E+05	0.6011E+05
-0.6098E+05	0.4891E+05	0.5047E+05	0.4891E+05	0.5047E+05
-0.6386E+05	0.3943E+05	0.3943E+05	0.3943E+05	0.3943E+05
-0.6616E+05	0.3020E+05	0.3020E+05	0.3020E+05	0.3020E+05
-0.6883E+05	0.1921E+05	0.1921E+05	0.1921E+05	0.1921E+05

```
*******************************************************
*     FINAL MAXIMUMS/MINIMUMS FOR ALL LOAD CASES      *
*                    PIER # 1                         *
*******************************************************
```

Maximum/Minimum Pile Forces

	Value	Load	Comb.	Pile
Max Shear in 2 Direction	0.9107E+03 Kip	1	0	2
Min Shear in 2 Direction	-0.2544E+03 Kip	1	0	4
Max Shear in 3 Direction	0.2457E+03 Kip	1	0	4
Min Shear in 3 Direction	-0.1631E+04 Kip	1	0	2
Max Moment about 2 Axis	0.3108E+05 Kip-ft	1	0	2
Min Moment about 2 Axis	-0.8977E+04 Kip-ft	1	0	4
Max Moment About 3 Axis	0.1036E+05 Kip-ft	1	0	2
Min Moment About 3 Axis	-0.1026E+05 Kip-ft	1	0	4
Max Axial Force	0.2018E+04 Kip	1	0	3
Min Axial Force	-0.1229E+05 Kip	1	0	2
Absolute Max Torque	0.2490E+01 Kip-ft	1	0	3
Max Demand/Capacity Ratio	0.2396E+00	1	0	2