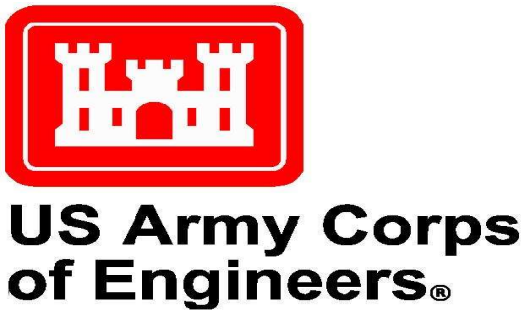
IHNC Feasibility Study

Monolith 1 Pile Foundation



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1	2/27/2019	CPGA Output	JDL	LEC	DPL	
1	2/27/2019	CPGA Input	JDL	LEC	DPL	
1	2/27/2019	Foundation Loads	JDL	LEC	DPL	
Rev	**Date**	**Description**	**By**	**Chk'd**	**App'd**	

US Army Corps of Engineers
New Orleans District

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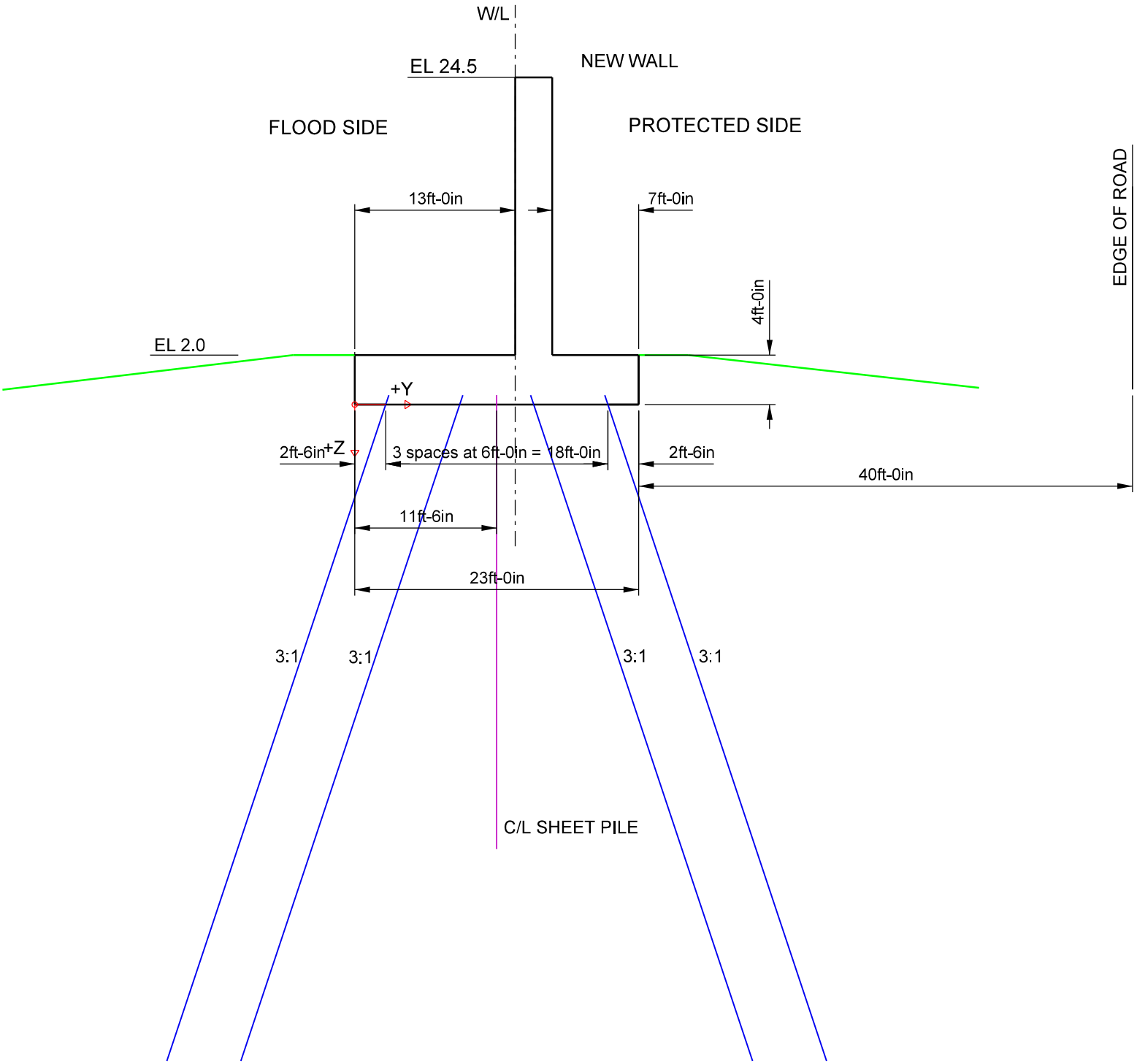
US Army Corps of Engineers
New Orleans District

Foundation Loads

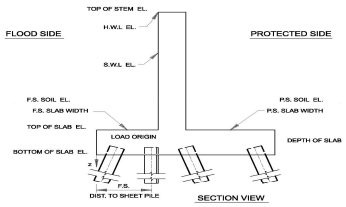
All vertical and horizontal loads, and their associated moments, for each load case were summed about a point located at the bottom of the slab, at the center of the flood side edge. The load cases were based on Table 5.2(b) of HSDRRS. The barge impact loads are as specified in paragraph 5.2.1 of HSDRRS for Zone 1A. A minimum wind pressure of 50 psf, as indicated in paragraph 5.6.2 of HSDRRS, was used.

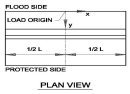
23-ft Wide, 22.5-ft Tall
T-Wall Monolith

X-SECTION



IHNC Feasibility Study 22-Jan (revised 27-Feb-19)
East T-Walls near Existing Lock and Bypass Channel
Floodwall - T-Wall - Monolith 1 (22.5-ft Tall T-Wall)





Top of Stem EL.	24.5	
Top of Slab EL.	2.00	
Bottom of Slab EL.	-2.00	
Stem Width:	3.00	ft
F.S. Slab Width:	13	ft
P.S. Slab Width:	7	ft
Length of Monolith:	40	ft
Dist to Sheet Pile:	11.5	ft
F.S. Soil EL.	2.00	
P.S. Soil EL.	2.00	
S.W.L EL.	17.30	
P.S. Water EL.	-2.00	
~~Reverse Head. P.S. EL~~	~~0.00~~	
~~Reverse Head. F.S. EL~~	~~0.00~~	
~~Curtain Wall Width:~~	~~0.00~~	
Width of Monolith:	23	ft
Area of Base Slab:	92	ft²

Normal El. of H2O	17.3	ft
Weight of Water:	0.0624	k/ft³
Weight of Soil:	0.120	k/ft³
Weight of Concrete:	0.150	k/ft³
Ko:	0.8	
Wave Load:	0	k/ft
Wave Arm EL.	0	
~~Reverse Head Wave:~~	~~0~~	~~k/ft~~
~~RH Wave Arm EL.~~	~~0~~	
Unbal. Load SWL:	0.0	k/ft
Unbal. Load HWL:	0.0	k/ft
Wind Load:	0.05	ksf
Debris Impact	0	k/ft
Boat Impact	400	kip (Point Load)
Boat Impact Elevation	24.5	ft applied above SWL (HSDRRS para 5.2.1)
Construction Surcharg	0.2	k/ft²
Bouyant Weight of Sa	0.058	k/ft³ Buoyant Weight of Sand
Area of Stem:	67.50	ft²
Unusual Barge Impact	200	kip (point load)
Unusual Barge Impact	24.5	ft applied above SWL (HSDRRS para 5.2.1)

Load Sheet Limitations - a) Straight aligned monoliths only b) No varying soil elevations along monolith
c) Constant stem thickness only d) Sheet only handles minimal impact loads
e) The Boat Impact applied to the T-Wall was From Zone 1A, Figure 5.6 of HSDRRS

1 **Load Case Ib.** Construction (w/ Soil and Surcharge) + Dead Load

Item	Subtotal Fx	Total Fx	Subtotal Fy	Total Fy	Subtotal Fz	Total Fz	x	y	z	Total Mx	My	Mz
Concrete Base					13.8	552.0		11.5		6,348.0		
Concrete Stem					10.1	405.0		14.50		5,872.5		
F.S. Horizontal Soil ($\gamma_{m\,rec}$)			0.77	30.72					1.33	41.0		
P.S. Horizontal Soil ($\gamma_{m\,rec}$)			-0.77	-30.72					1.33	-41.0		
F.S. Vertical Soil (γs)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Above H2O)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
Construction Surcharge Horiz.			0.00	0.00					0.00	0.0		
Construction Surcharge Vert. (FS)					2.60	104.0		6.50		676.0		
Construction Surcharge Vert. (PS)					1.40	56.0		19.50		1,092.0		
Total				**0**		**1117**				**13989**	**0**	

2 **Load Case II.** Construction + Dead Load + Wind

Item	Subtotal Fx	**Total Fx**	Subtotal Fy	**Total Fy**	Subtotal Fz	**Total Fz**	x	y	z	**Total Mx**	My	Mz
Concrete Base					13.8	552.0		11.5		6,348.0		
Concrete Stem					10.1	405.0		14.50		5,872.5		
F.S. Horizontal Soil (Base)			0.77	30.7					1.33	41.0		
P.S. Horizontal Soil (Base)			-0.77	-30.7					1.33	-41.0		
Wind			1.125	45.0					15.3	686.3		
Construction Surcharge Vert. (FS)					2.60	104.0		6.50		676.0		
Construction Surcharge Vert. (PS)					1.40	56.0		19.50		1,092.0		
Total				**45**		**1117**				**14675**	**0.0**	

3 **Load Case IIIa.** SWL, Impervious Uplift

Item	Subtotal Fx	Total Fx	Subtotal Fy	Total Fy	Subtotal Fz	Total Fz	x	y	z	Total Mx	My	Mz
Concrete Base					13.8	552.0		11.50		6,348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					12.4	496.5		6.50		3,227.0		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			11.6	464.9					6.43	2,990.6		
P.S. Horizontal Water			0.00	0.0					0.00	0.00		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Impervious Uplift					-13.8	-554.0		5.75		-3,185.4		
P.S. Impervious Uplift					0.0	0.0		0.00		0.0		
F.S. Vertical Soil (γs)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Above H2O)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
Unbalanced Force			0.0	0.0								
Total				**449**		**899**				**15231**	**0.0**	

4 **Load Case IIIb**. SWL, Pervious Uplift

Item	Subtotal Fx	Total Fx	Subtotal Fy	Total Fy	Subtotal Fz	Total Fz	x	y	z	Total Mx	My	Mz
Concrete Base					13.8	552.0		11.50		6348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					12.4	496.5		6.50		3227.0		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			11.6	464.9					6.43	2990.6		
P.S. Horizontal Water			0.00	0.0					0.00	0.0		
Pervious Uplift (Rec.)					0.0	0.0		0.00		0.0		
Pervious Uplift (Tri.)					-13.8	-554.0		7.67		-4247.2		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γs)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Above H_2O)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
Unbalanced Force			0.0	0.0								
Total				**449**		**899**				**14170**	**0.0**	

5 **Load Case IVa**. SWL + Wind, Impervious Uplift

Item	Subtotal Fx	Total Fx	Subtotal Fy	Total Fy	Subtotal Fz	Total Fz	x	y	z	Total Mx	My	Mz
Concrete Base					13.8	552.0		11.50		6348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					12.4	496.5		6.50		3227.0		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			11.6	464.9					6.43	2990.6		
P.S. Horizontal Water			0.00	0.0					0.00	0.0		
F.S. Impervious Uplift					-13.8	-554.0		5.75		-3,185.4		
P.S. Impervious Uplift					0.0	0.0		0.00		0.0		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γs)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Above H_2O)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
Wind			0.4	14.4					22.90	329.8		
Unbalanced Force			0.0	0.0								
Total				**463**		**899**				**15561**	**0.0**	

6 **Load Case IVb**. SWL + Wind, Pervious Uplift

Item	Subtotal Fx	**Total Fx**	Subtotal Fy	**Total Fy**	Subtotal Fz	**Total Fz**	x	y	z	**Total Mx**	**My**	Mz
Concrete Base					13.8	552.0		11.50		6348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					12.4	496.5		6.50		3227.0		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			11.6	464.9					6.43	2990.6		
P.S. Horizontal Water			0.00	0.0					0.00	0.0		
Pervious Uplift (Rec.)					0.0	0.0		0.00		0.0		
Pervious Uplift (Tri.)					-13.8	-554.0		7.67		-4247.2		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γs)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Above H_2O)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
Wind			0.4	14.4					22.90	329.8		
Unbalanced Force			0.0	0.0								
Total				**463**		**899**				**14499**	**0.0**	

7 **Load Case Va**. SWL + Wave, Impervious Uplift

Item	Subtotal Fx	**Total Fx**	Subtotal Fy	**Total Fy**	Subtotal Fz	**Total Fz**	x	y	z	**Total Mx**	**My**	Mz
Concrete Base					13.8	552.0		11.50		6348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					12.4	496.5		6.50		3227.0		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			11.6	464.9					6.43	2990.6		
P.S. Horizontal Water			0.000	0.0					0.00	0.0		
F.S. Impervious Uplift					-13.8	-554.0		5.75		-3,185.4		
P.S. Impervious Uplift					0.0	0.0		0.00		0.0		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γb)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Above H_2O)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
Wave			0.0	0.0					0.00	0.0		
Unbalanced Force			0.0	0.0								
Total				**449**		**899**				**15231**	**0.0**	

8 **Load Case Vb**. SWL + Wave, Pervious Uplift

Item	Subtotal Fx	**Total Fx**	Subtotal Fy	**Total Fy**	Subtotal Fz	**Total Fz**	x	y	z	**Total Mx**	**My**	Mz
Concrete Base					13.8	552.0		11.50		6348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					12.4	496.5		6.50		3227.0		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			11.6	464.9					6.43	2990.6		
P.S. Horizontal Water			0.000	0.0					0.00	0.0		
Pervious Uplift (Rec.)					0.0	0.0		11.50		0.0		
Pervious Uplift (Tri.)					-13.8	-554.0		7.67		-4247.2		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γb)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Above H_2O)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
Wave			0.0	0.0					0.00	0.0		
Unbalanced Force			0.0	0.0								
Total				**449**		**899**				**14170**	**0.0**	

9 **Load Case VIa**. SWL + Wind + Unusual Barge, Impervious Uplift

Item	Subtotal Fx	**Total Fx**	Subtotal Fy	**Total Fy**	Subtotal Fz	**Total Fz**	x	y	z	**Total Mx**	**My**	Mz
Concrete Base					13.8	552.0		11.50		6348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					12.4	496.5		6.50		3227.0		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			11.6	464.9					6.43	2990.6		
P.S. Horizontal Water			0.000	0.0					0.00	0.0		
Impervious Uplift (Rec.)					-13.8	-554.0		5.75		-3,185.4		
Impervious Uplift (Tri.)					0.0	0.0		0.00		0.0		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γb)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Above H2O)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
Wind			0.4	14.4					22.90	329.8		
Unbalanced Force				0.0								
Unusual Barge Impact				200.0					26.5	5300.0		
Total				**663**		**899**				**20861**	**0.0**	

10 **Load Case VIb**. SWL + Wind + Unusual Barge, Pervious Uplift

Item	Subtotal Fx	**Total Fx**	Subtotal Fy	**Total Fy**	Subtotal Fz	**Total Fz**	x	y	z	**Total Mx**	**My**	Mz
Concrete Base					13.8	552.0		11.50		6348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					12.4	496.5		6.50		3227.0		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			11.6	464.9					6.43	2990.6		
P.S. Horizontal Water			0.000	0.0					0.00	0.0		
Pervious Uplift (Rec.)					0.0	0.0		0.00		0.0		
Pervious Uplift (Tri.)					-13.8	-554.0		7.67		-4247.2		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γb)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Above H2O)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
Wind			0.4	14.4					22.90	329.8		
Unbalanced Force												
Unusual Barge Impact				200.0					26.5	5300.0		
Total				**663**		**899**				**19799**	**0.0**	

11 **Design Checks VIIa.** Water to the Top, Impervious Uplift

Item	Subtotal Fx	**Total Fx**	Subtotal Fy	**Total Fy**	Subtotal Fz	**Total Fz**	x	y	z	**Total Mx**	**My**	Mz
Concrete Base					13.8	552.0		11.50		6348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					18.3	730.1		6.50		4745.5		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			21.9	876.4					8.83	7741.6		
P.S. Horizontal Water			0.000	0.0					0.00	0.0		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γb)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Above H2O)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
F.S. Impervious Uplift					-19.0	-760.7		5.75		-4373.8		
P.S. Impervious Uplift					0.0	0.0		0.00		0.0		
Total				**860**		**926**				**20313**	**0.0**	

12 **Design Checks VIIb.** Water to the Top, Pervious Uplift

Item	Subtotal Fx	**Total Fx**	Subtotal Fy	**Total Fy**	Subtotal Fz	**Total Fz**	x	y	z	**Total Mx**	**My**	Mz
Concrete Base					13.8	552.0		11.50		6348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					18.3	730.1		6.50		4745.5		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			21.9	876.4					8.83	7741.6		
P.S. Horizontal Water			0.000	0.0					0.00	0.0		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γb)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Above H2O)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
Pervious Uplift (Rec.)					0.0	0.0		11.50		0.0		
Pervious Uplift (Tri.)					-19.0	-760.7		7.67		-5831.7		
Total				**860**		**926**				**18855**	**0.0**	

13 **Load Case VIIIa**. SWL + Impervious + Wind + Extreme Barge

Item	Subtotal Fx	**Total Fx**	Subtotal Fy	**Total Fy**	Subtotal Fz	**Total Fz**	x	y	z	**Total Mx**	**My**	Mz
Concrete Base					13.8	552.0		11.50		6348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					12.4	496.5		6.50		3227.0		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			11.6	464.9					6.43	2,990.6		0
P.S. Horizontal Water			0.00	0.0					0.00	0.00		
F.S. Impervious Uplift					-13.8	-554.0		5.75		-3,185.4		
P.S. Impervious Uplift					0.0	0.0		0.00		0.0		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γs)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Above H2O)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
Unbalanced Force			0.0	0.0								
Wind			0.4	14.4					22.90	329.8		
Extreme Barge Impact				400.0					26.5	10600.0		
Total				**863**		**899**				**26161**	**0.0**	

14 **Load CaseVIIIb**. SWL + Pervious + Wind + Extreme Barge

Item	Subtotal Fx	**Total Fx**	Subtotal Fy	**Total Fy**	Subtotal Fz	**Total Fz**	x	y	z	**Total Mx**	**My**	Mz
Concrete Base					13.8	552.0		11.50		6348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					12.4	496.5		6.50		3227.0		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			11.6	464.9					6.43	2,990.6		
P.S. Horizontal Water			0.00	0.0					0.00	0.00		
Pervious Uplift (Rec.)					0.0	0.0		0.00		0.0		
Pervious Uplift (Tri.)					-13.8	-554.0		7.67		-4247.2		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γs)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Above H_2O)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
Unbalanced Force			0.0	0.0								
Wind			0.4	14.4					22.90	329.8		
Extreme Barge Impact				400.0					26.5	10600.0		
Total				**863**		**899**				**25099**	**0.0**	

15 **Load Case IXa**. SWL + Impervious + Wind + Unusual Barge + Wave

Item	Subtotal Fx	**Total Fx**	Subtotal Fy	**Total Fy**	Subtotal Fz	**Total Fz**	x	y	z	**Total Mx**	**My**	Mz
Concrete Base					13.8	552.0		11.50		6348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					12.4	496.5		6.50		3227.0		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			11.6	464.9					6.43	2,990.6		
P.S. Horizontal Water			0.00	0.0					0.00	0.00		
F.S. Impervious Uplift					-13.8	-554.0		5.75		-3,185.4		
P.S. Impervious Uplift					0.0	0.0		0.00		0.0		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γs)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
Wind			0.4	14.4					22.90	329.8		
Wave			0.0	0.0					0.00	0.0		
Unbalanced Force			0.0	0.0								
Unusual Barge Impact				200.0					26.5	5300.0		
Total				**663**		**899**				**20861**	**0.0**	

16 **Load Case IXb**. SWL + Pervious + Wind + Unusual Barge + Wave

Item	Subtotal Fx	**Total Fx**	Subtotal Fy	**Total Fy**	Subtotal Fz	**Total Fz**	x	y	z	**Total Mx**	**My**	Mz
Concrete Base					13.8	552.0		11.50		6348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					12.4	496.5		6.50		3227.0		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			11.6	464.9					6.43	2,990.6		
P.S. Horizontal Water			0.00	0.0					0.00	0.00		
Pervious Uplift (Rec.)					0.0	0.0		0.00		0.0		
Pervious Uplift (Tri.)					-13.8	-554.0		7.67		-4247.2		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γs)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
Wind			0.4	14.4					22.90	329.8		
Wave			0.0	0.0					0.00	0.0		
Unbalanced Force			0.0	0.0								
Unusual Barge Impact				200.0					26.5	5300.0		
Total				**663**		**899**				**19799**	**0.0**	

17 **Load Case Xa**. SWL + Impervious + Wind + Extreme Barge @ Edge

Item	Subtotal Fx	**Total Fx**	Subtotal Fy	**Total Fy**	Subtotal Fz	**Total Fz**	x	y	z	**Total Mx**	**My**	Mz
Concrete Base					13.8	552.0		11.50		6348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					12.4	496.5		6.50		3227.0		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			11.6	464.9					6.43	2,990.6		
P.S. Horizontal Water			0.00	0.0					0.00	0.00		
F.S. Impervious Uplift					-13.8	-554.0		5.75		-3,185.4		
P.S. Impervious Uplift					0.0	0.0		0.00		0.0		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γs)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
Wind			0.4	14.4					22.90	329.8		
Unbalanced Force			0.0	0.0								
Extreme Barge Impact @ Edge				400.0			15.0		26.5	10600.0		6000
Total				**863**		**899**				**26161**	**0.0**	**6000**

18 **Load Case Xb**. SWL + Pervious + Wind + Extreme Barge @ Edge

Item	Subtotal Fx	**Total Fx**	Subtotal Fy	**Total Fy**	Subtotal Fz	**Total Fz**	x	y	z	**Total Mx**	**My**	Mz
Concrete Base					13.8	552.0		11.50		6348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					12.4	496.5		6.50		3227.0		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			11.6	464.9					6.43	2,990.6		
P.S. Horizontal Water			0.00	0.0					0.00	0.00		
Pervious Uplift (Rec.)					0.0	0.0		0.00		0.0		
Pervious Uplift (Tri.)					-13.8	-554.0		7.67		-4247.2		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γs)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
Wind			0.4	14.4					22.90	329.8		
Unbalanced Force			0.0	0.0								
Extreme Barge Impact @ Edge				400.0			15.0		26.5	10600.0		6000
Total				**863**		**899**				**25099**	**0.0**	**6000**

19 **Load Case XIa**. SWL + Impervious + Wind + Unusual Barge @ Edge

Item	Subtotal Fx	Total Fx	Subtotal Fy	Total Fy	Subtotal Fz	Total Fz	x	y	z	Total Mx	My	Mz
Concrete Base					13.8	552.0		11.50		6348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					12.4	496.5		6.50		3227.0		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			11.6	464.9					6.43	2,990.6		
P.S. Horizontal Water			0.00	0.0					0.00	0.00		
F.S. Impervious Uplift					-13.8	-554.0		5.75		-3,185.4		
P.S. Impervious Uplift					0.0	0.0		0.00		0.0		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γs)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
Wind			0.4	14.4					22.90	329.8		
Unbalanced Force			0.0	0.0								
Unusual Barge Impact @ Edge				200.0			15.0		26.5	5300.0		3000
Total				**663**		**899**				**20861**	**0.0**	**3000**

20 **Load Case XIb**. SWL + Pervious + Wind + Unusual Barge @ Edge

Item	Subtotal Fx	Total Fx	Subtotal Fy	Total Fy	Subtotal Fz	Total Fz	x	y	z	Total Mx	My	Mz
Concrete Base					13.8	552.0		11.50		6348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					12.4	496.5		6.50		3227.0		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			11.6	464.9					6.43	2,990.6		
P.S. Horizontal Water			0.00	0.0					0.00	0.00		
Pervious Uplift (Rec.)					0.0	0.0		0.00		0.0		
Pervious Uplift (Tri.)					-13.8	-554.0		7.67		-4247.2		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γs)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
Wind			0.4	14.4					22.90	329.8		
Unbalanced Force			0.0	0.0								
Unusual Barge Impact @ Edge				200.0			15.0		26.5	5300.0		3000
Total				**663**		**899**				**19799**	**0.0**	**3000**

21 **Design Checks XIIa.** SWL + Impervious + Unusual Barge + Wave

Item	Subtotal Fx	Total Fx	Subtotal Fy	Total Fy	Subtotal Fz	Total Fz	x	y	z	Total Mx	My	Mz
Concrete Base					13.8	552.0		11.50		6348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					12.4	496.5		6.50		3227.0		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			11.6	464.9					6.43	2,990.6		
P.S. Horizontal Water			0.00	0.0					0.00	0.00		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γs)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Above H2O)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
F.S. Impervious Uplift					-13.8	-554.0		5.75		-3,185.4		
P.S. Impervious Uplift					0.0	0.0		0.00		0.0		
Wave			0.0	0.0					0.00	0.0		
Unusual Barge Impact				200.0					26.5	5300.0		
Total				**649**		**899**				**20531**	**0.0**	

22 **Design Checks XIIb.** SWL + Pervious + Unusual Barge + Wave

Item	Subtotal Fx	Total Fx	Subtotal Fy	Total Fy	Subtotal Fz	Total Fz	x	y	z	Total Mx	My	Mz
Concrete Base					13.8	552.0		11.50		6348.0		
Concrete Stem					10.1	405.0		14.500		5872.5		
F.S. Vertical Water					12.4	496.5		6.50		3227.0		
P.S. Vertical Water					0.0	0.0		0.000		0.0		
F.S. Horizontal Water			11.6	464.9					6.43	2,990.6		
P.S. Horizontal Water			0.00	0.0					0.00	0.00		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γs)					0.00	0.0		0.00				
P.S. Vert Soil (Above H2O)					0.00	0.0		0.00		0.0		
P.S. Vert Soil (Bouyant)					0.00	0.0		0.00		0.0		
Pervious Uplift (Rec.)					0.0	0.0		0.00		0.0		
Pervious Uplift (Tri.)					-13.8	-554.0		7.67		-4247.2		
Wave			0.0	0.0					0.00	0.0		
Unusual Barge Impact				200.0					26.5	5300.0		
Total				**649**		**899**				**19470**	**0.0**	

23 **SWL + Impervious + 1.2*Wave + Extreme Barge**

Item	Subtotal Fx	Total Fx	Subtotal Fy	Total Fy	Subtotal Fz	Total Fz	x	y	z	Total Mx	My	Mz
Concrete Base				:	13.8	552.0		11.5		6348.0		
Concrete Stem					10.1	405.0		14.5		5872.5		
F.S. Vertical Water					12.4	496.5		6.5		3227.0		
P.S. Vertical Water					0.0	0.0		0.0		0.0		
F.S. Horizontal Water			11.6	464.9					6.4	2990.6		
P.S. Horizontal Water			0.0	0.0					0.0	0.0		
F.S. Impervious Uplift					-13.8	-554.0		5.75		-3185.4		
P.S. Impervious Uplift					0.0	0.0		0.0		0.0		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γs)					0.0	0.0		0.0		0.0		
P.S. Vert Soil (Above H2O)					0.0	0.0		0.0		0.0		
P.S. Vert Soil (Bouyant)					0.0	0.0		0.0		0.0		
Unbalanced Force			0.0	0.0								
1.2*Wave			0.0	0.0					0.0	0.0		0.0
Extreme Barge Impact				400.0					26.5	10600.0		
Total				**849**		**899**				**25831**		

24 **SWL + Pervious + 1.2*Wave + Extreme Barge**

Item	Subtotal Fx	Total Fx	Subtotal Fy	Total Fy	Subtotal Fz	Total Fz	x	y	z	Total Mx	My	Mz
Concrete Base					13.8	552.0		11.5		6348.0		
Concrete Stem					10.1	405.0		14.5		5872.5		
F.S. Vertical Water					12.4	496.5		6.5		3227.0		
P.S. Vertical Water					0.0	0.0		0.0		0.0		
F.S. Horizontal Water			11.6	464.9					6.4	2990.6		
P.S. Horizontal Water			0.0	0.0					0.0	0.0		
Pervious Uplift (Rec.)					0.0	0.0		0.0		0.0		
Pervious Uplift (Tri.)					-13.8	-554.0		7.67		-4247.2		
F.S. Horizontal Soil ($\gamma_{m\,tri}$)			0.37	14.7					1.33	19.7		
P.S. Horizontal Soil ($\gamma_{m\,tri}$)			-0.77	-30.7					1.33	-41.0		
F.S. Vertical Soil (γs)					0.0	0.0		0.0		0.0		
P.S. Vert Soil (Above H_2O)					0.0	0.0		0.0		0.0		
P.S. Vert Soil (Bouyant)					0.0	0.0		0.0		0.0		
Unbalanced Force			0.0	0.0								
1.2*Wave			0.0	0.0					0.0	0.0		
Extreme Barge Impact				400.0					26.5	10600.0		
Total				**849**		**899**				**24770**		

Summary Table of CPGA Loads with Additional Soil

	Load Cases	Fx	Fy	Fz	Mx	My	Mz	LC	OVST
1.167	**Load Case Ib. Construction (w/Soil and Surcharge) + Dead Load**	**0**	**0**	**1117**	**13989**	**0**	**0**	1	1.167
1.33	**Load Case II. Construction + Dead Load + Wind**	**0**	**45**	**1117**	**14675**	**0**	**0**	2	1.333
1.00	**Load Case IIIa. SWL, Impervious Uplift**	**0**	**449**	**899**	**15231**	**0**	**0**	3	1
1.00	**Load Case IIIb. SWL, Pervious Uplift**	**0**	**449**	**899**	**14170**	**0**	**0**	4	1
1.33	**Load Case Iva. SWL + WIND, Impervious Uplift**	**0**	**463**	**899**	**15561**	**0**	**0**	5	1.333
1.33	**Load Case Ivb. SWL + Wind, Pervious Uplift**	**0**	**463**	**899**	**14499**	**0**	**0**	6	1.333
1.33	**Load Case Va. SWL + Wave, Impervious Uplift**	**0**	**449**	**899**	**15231**	**0**	**0**	7	1.333
1.33	**Load Case Vb. SWL + Wave, Pervious Uplift**	**0**	**449**	**899**	**14170**	**0**	**0**	8	1.333
1.33	**Load Case Via. SWL + Wind + Unusual Barge, Impervious Uplift**	**0**	**663**	**899**	**20861**	**0**	**0**	9	1.333
1.33	**Load Case Vib. SWL + Wind + Unusual Barge, Pervious Uplift**	**0**	**663**	**899**	**19799**	**0**	**0**	10	1.333
1.33	**Design Checks VIIa. Water to the Top, Impervious Uplift**	**0**	**860**	**926**	**20313**	**0**	**0**	11	1.333
1.33	**Design Checks VIIb. Water to the Top, Pervious Uplift**	**0**	**860**	**926**	**18855**	**0**	**0**	12	1.333
1.74	**Load Case VIIIa. SWL + Impervious + Wind + Extreme Barge**	**0**	**863**	**899**	**26161**	**0**	**0**	13	1.74
1.74	**Load Case VIIIb. SWL + Pervious + Wind + Extreme Barge**	**0**	**863**	**899**	**25099**	**0**	**0**	14	1.74
1.33	**Load Case Ixa. SWL + Impervious + Wind + Unusual Barge + Wave**	**0**	**663**	**899**	**20861**	**0**	**0**	15	1.333
1.33	**Load Case Ixb. SWL + Pervious + Wind + Unusual Barge + Wave**	**0**	**663**	**899**	**19799**	**0**	**0**	16	1.333
2.00	**Load Case Xa. SWL + Impervious + Wind + Extreme Barge @ Edge**	**0**	**863**	**899**	**26161**	**0**	**6000**	17	2
2.00	**Load Case Xb. SWL + Pervious + Wind + Extreme Barge @ Edge**	**0**	**863**	**899**	**25099**	**0**	**6000**	18	2
2.00	**Load Case Xia. SWL + Impervious + Wind + Unusual Barge @ Edge**	**0**	**663**	**899**	**20861**	**0**	**3000**	19	2
2.00	**Load Case Xib. SWL + Pervious + Wind + Unusual Barge @ Edge**	**0**	**663**	**899**	**19799**	**0**	**3000**	20	2
1.33	**Design Checks XIIa. SWL + Impervious + Unusual Barge + Wave**	**0**	**649**	**899**	**20531**	**0**	**0**	21	1.333
1.33	**Design Checks XIIb. SWL + Pervious + Unusual Barge + Wave**	**0**	**649**	**899**	**19470**	**0**	**0**	22	1.333
1.74	**SWL + Impervious + 1.2*Wave + Extreme Barge**	**0**	**849**	**899**	**25831**	**0**	**0**	23	1.74
1.74	**SWL + Pervious + 1.2*Wave + Extreme Barge**	**0**	**849**	**899**	**24770**	**0**	**0**	24	1.74

US Army Corps of Engineers
New Orleans District

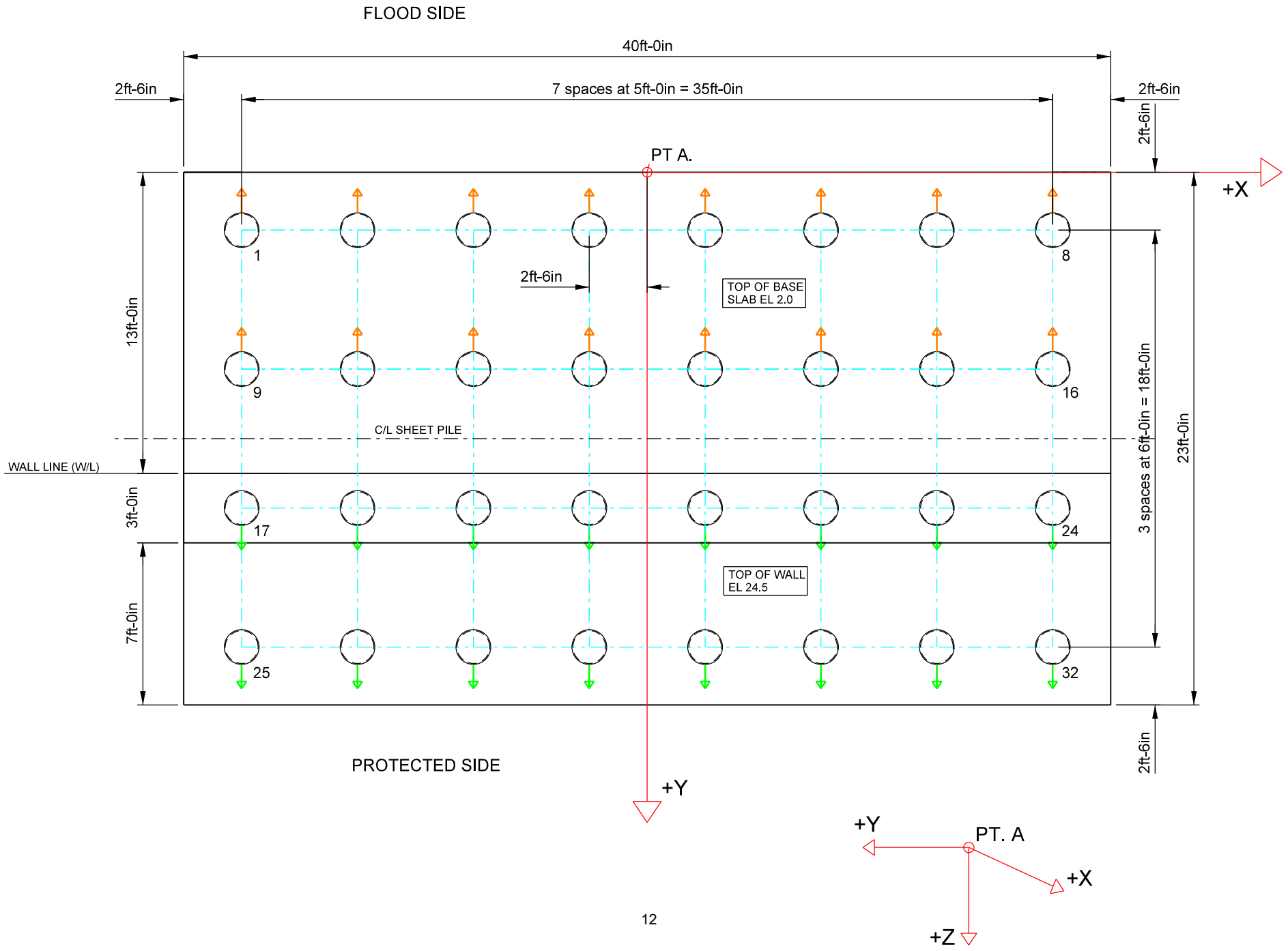
CPGA Input

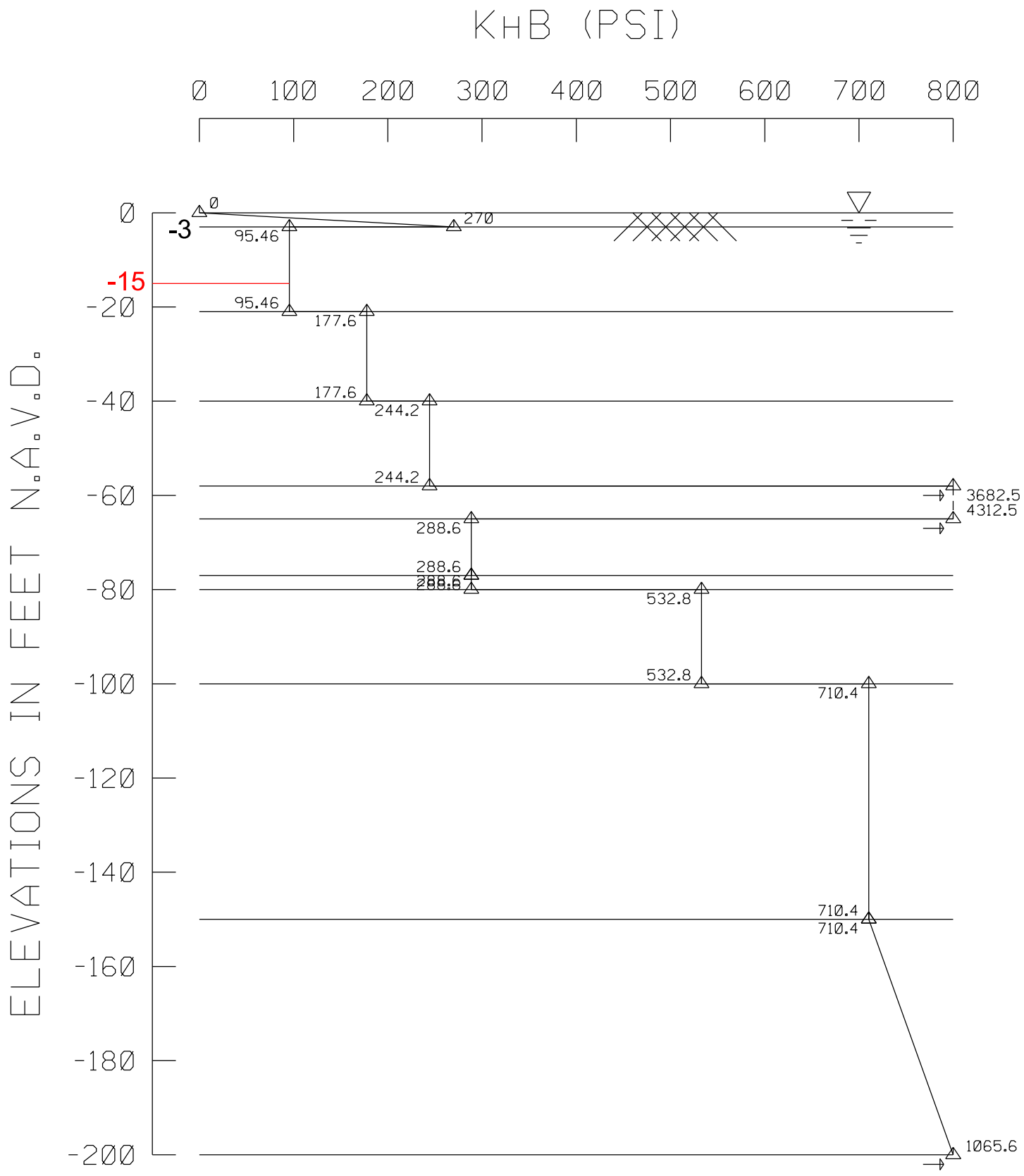
The pile foundation was modeled in CPGA. The overstress values were set based on Table 5.2(b) of HSDRRS. The following assumptions were made:

- 18” diameter, ½” thick pipe piles were used.
- The piles were assumed to be pinned.
- A batter of 3 was used for all piles.
- Q-case pile capacities were used and included a factor of safety of 2.0 as it was assumed there will be a load test.

23-ft Wide, 22.5-ft Tall
T-Wall Monolith

Plan View




KHB (PSI)
0
100
200
300
400
500
600
700
800
ELEVATIONS IN FEET N.A.V.D.
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-3
-15
0
270
95.46
95.46
177.6
177.6
244.2
244.2
288.6
288.6
532.8
532.8
710.4
710.4
710.4
3682.5
4312.5
1065.6

Subgrade Modulus

Input

$EL_1 := 0.0ft$ *Elevation at Top of First Layer*

$EL_2 := -3.0ft$ *Elevation at Bottom of First Layer*

$B := 18in$ *Pile Width*

$EL_3 := EL_1 - 10 \cdot B = -15 \cdot ft$ *Elevation at 10 x Pile Width Below Top of Soil*

$KHB_1 := 135psi$ *Subgrade Modulus Times Pile Width in First Layer (EL. -0.0 to -3.0)*

$KHB_2 := 95.46psi$ *Subgrade Modulus Times Pile Width in Second Layer (EL. -3.0 to -15.0)*

$s_x := 5ft$ *Pile Spacing in the X-Direction*

$s_y := 6ft$ *Pile Spacing in the Y-Direction*

Calculations

$d_1 := EL_1 - EL_2 = 3 \cdot ft$ *Depth of First Layer*

$d_2 := EL_2 - EL_3 = 12 \cdot ft$ *Depth of Second Layer*

$d_t := EL_1 - EL_3 = 15 \cdot ft$ *Total Depth*

$$KHB := \frac{KHB_1 \cdot d_1 + KHB_2 \cdot d_2}{d_t} = 103.37 \cdot psi$$ *Weighted Average*

$$R_{ga} := if\left[\frac{s_x}{B} > 3.75, 1, 0.64 \cdot \left(\frac{s_x}{B}\right)^{0.34}\right] = 0.96$$ *Group Reduction Factor - Perpendicular*

$$R_{gbl} := if\left[\frac{s_y}{B} > 4, 1, 0.7 \cdot \left(\frac{s_y}{B}\right)^{0.26}\right] = 1$$ *Group Reduction Factor - Para., Leading*

$$R_{gbt} := if\left[\frac{s_y}{B} > 7, 1, 0.48 \cdot \left(\frac{s_y}{B}\right)^{0.38}\right] = 0.81$$ *Group Reduction Factor - Para., Trailing*

$R_g := R_{ga} \cdot \min\left(R_{gbl}, R_{gbt}\right) = 0.78$ *Group Reduction Factor*

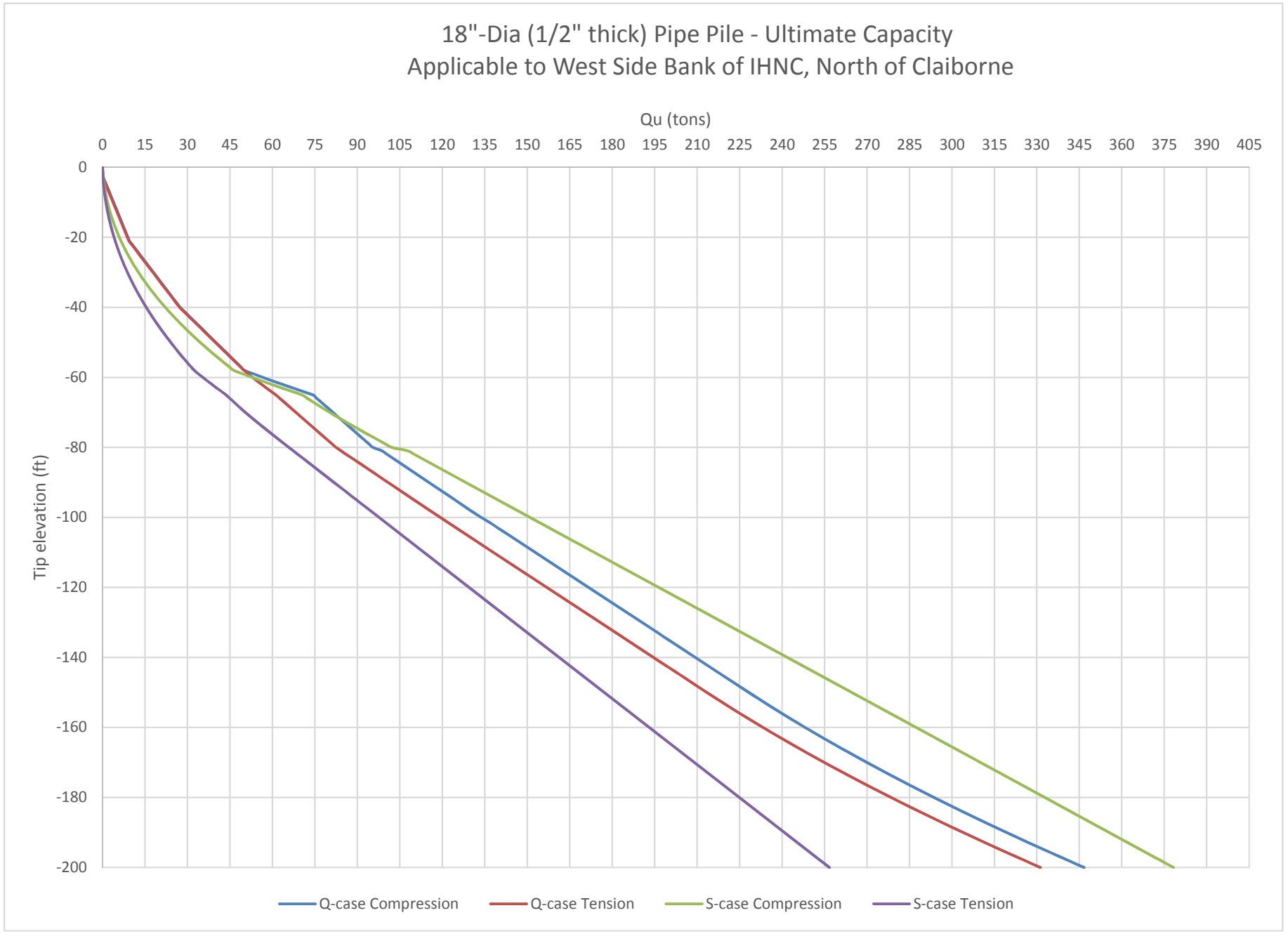
Results

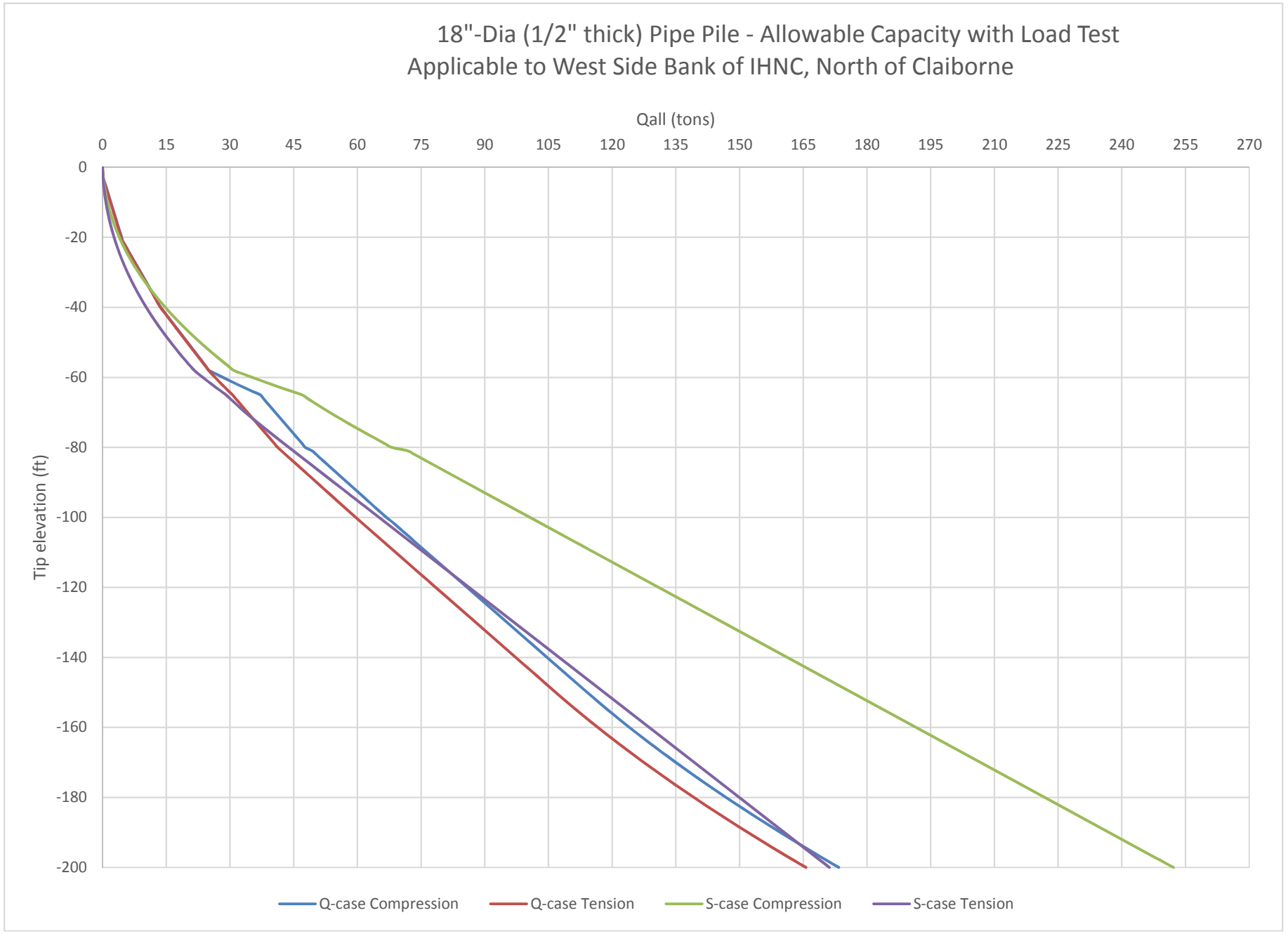
$ES := KHB \cdot R_g = 0.080978 \cdot ksi$ *Subgrade Modulus*

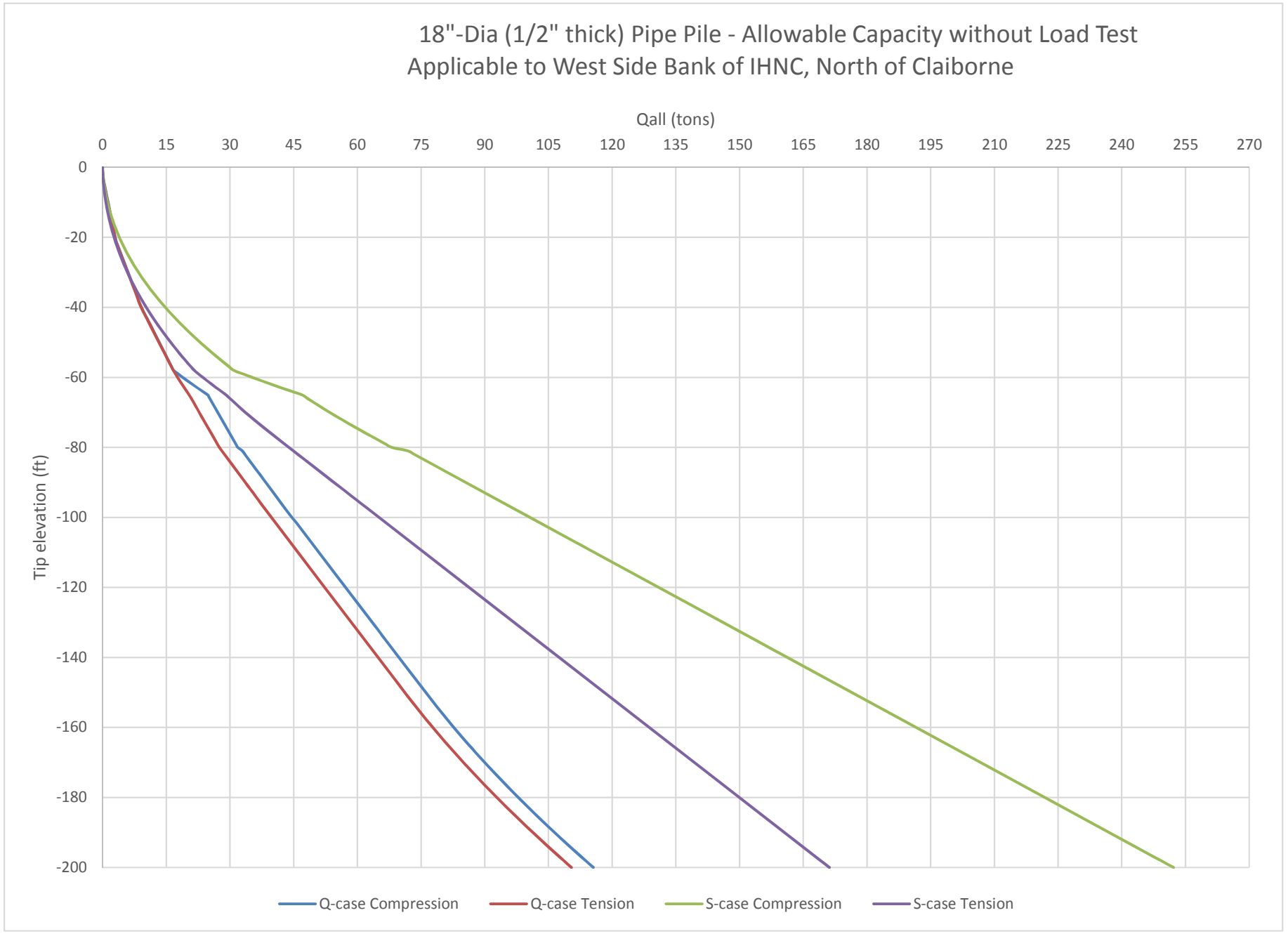
	FS w/ Load test	FS w/o Load test	Ultimate Capacity				Factored Capacity with Load Test				Factored Capacity without Load Test			
Q-case	2	3	Q-CASE		S-CASE		Q-CASE		S-CASE		Q-CASE		S-CASE	
S-case	1.5	1.5	Pile Capacity	Pile Capacity	Pile Capacity	Pile Capacity	Pile Capacity	Pile Capacity	Pile Capacity	Pile Capacity	Pile Capacity	Pile Capacity	Pile Capacity	Pile Capacity
Stratum	Tip	Increment	Compression	Tension	Compression	Tension	Compression	Tension	Compression	Tension	Compression	Tension	Compression	Tension
1	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1	-1	1	0.039	0.018	0.039	0.018	0.019	0.009	0.026	0.012	0.013	0.006	0.026	0.012
1	-2	1	0.155	0.072	0.155	0.072	0.078	0.036	0.103	0.048	0.052	0.024	0.103	0.048
1	-3	1	0.349	0.163	0.349	0.163	0.175	0.081	0.233	0.109	0.116	0.054	0.233	0.109
2	-4	1	0.856	0.670	0.478	0.253	0.428	0.335	0.319	0.169	0.285	0.223	0.319	0.169
2	-5	1	1.362	1.176	0.632	0.361	0.681	0.588	0.422	0.241	0.454	0.392	0.422	0.241
2	-6	1	1.869	1.683	0.811	0.486	0.934	0.841	0.541	0.324	0.623	0.561	0.541	0.324
2	-7	1	2.376	2.189	1.014	0.629	1.188	1.095	0.676	0.419	0.792	0.730	0.676	0.419
2	-8	1	2.882	2.696	1.242	0.788	1.441	1.348	0.828	0.525	0.961	0.899	0.828	0.525
2	-9	1	3.389	3.203	1.495	0.965	1.694	1.601	0.997	0.643	1.130	1.068	0.997	0.643
2	-10	1	3.895	3.709	1.772	1.159	1.948	1.855	1.181	0.773	1.298	1.236	1.181	0.773
2	-11	1	4.402	4.216	2.074	1.370	2.201	2.108	1.383	0.914	1.467	1.405	1.383	0.914
2	-12	1	4.909	4.722	2.401	1.599	2.454	2.361	1.601	1.066	1.636	1.574	1.601	1.066
2	-13	1	5.415	5.229	2.752	1.845	2.708	2.614	1.835	1.230	1.805	1.743	1.835	1.230
2	-14	1	5.922	5.735	3.128	2.108	2.961	2.868	2.086	1.406	1.974	1.912	2.086	1.406
2	-15	1	6.428	6.242	3.529	2.389	3.214	3.121	2.353	1.593	2.143	2.081	2.353	1.593
2	-16	1	6.935	6.749	3.954	2.687	3.467	3.374	2.636	1.791	2.312	2.250	2.636	1.791
2	-17	1	7.442	7.255	4.404	3.002	3.721	3.628	2.936	2.001	2.481	2.418	2.936	2.001
2	-18	1	7.948	7.762	4.879	3.334	3.974	3.881	3.253	2.223	2.649	2.587	3.253	2.223
2	-19	1	8.455	8.268	5.379	3.684	4.227	4.134	3.586	2.456	2.818	2.756	3.586	2.456
2	-20	1	8.961	8.775	5.903	4.050	4.481	4.388	3.935	2.700	2.987	2.925	3.935	2.700
2	-21	1	9.468	9.282	6.452	4.435	4.734	4.641	4.301	2.956	3.156	3.094	4.301	2.956
3	-22	1	10.410	10.224	7.027	4.837	5.205	5.112	4.684	3.225	3.470	3.408	4.684	3.225
3	-23	1	11.353	11.167	7.630	5.259	5.676	5.583	5.086	3.506	3.784	3.722	5.086	3.506
3	-24	1	12.295	12.109	8.261	5.701	6.148	6.055	5.507	3.801	4.098	4.036	5.507	3.801
3	-25	1	13.238	13.052	8.920	6.162	6.619	6.526	5.946	4.108	4.413	4.351	5.946	4.108
3	-26	1	14.180	13.994	9.606	6.643	7.090	6.997	6.404	4.429	4.727	4.665	6.404	4.429
3	-27	1	15.123	14.937	10.321	7.143	7.561	7.468	6.881	4.762	5.041	4.979	6.881	4.762
3	-28	1	16.065	15.879	11.064	7.663	8.033	7.940	7.376	5.109	5.355	5.293	7.376	5.109
3	-29	1	17.008	16.822	11.834	8.203	8.504	8.411	7.890	5.468	5.669	5.607	7.890	5.468
3	-30	1	17.950	17.764	12.633	8.761	8.975	8.882	8.422	5.841	5.983	5.921	8.422	5.841
3	-31	1	18.893	18.707	13.459	9.340	9.446	9.353	8.973	6.227	6.298	6.236	8.973	6.227
3	-32	1	19.835	19.649	14.314	9.938	9.918	9.825	9.542	6.625	6.612	6.550	9.542	6.625
3	-33	1	20.778	20.592	15.196	10.556	10.389	10.296	10.131	7.037	6.926	6.864	10.131	7.037
3	-34	1	21.720	21.534	16.106	11.193	10.860	10.767	10.737	7.462	7.240	7.178	10.737	7.462
3	-35	1	22.663	22.477	17.044	11.850	11.331	11.238	11.363	7.900	7.554	7.492	11.363	7.900
3	-36	1	23.605	23.419	18.010	12.526	11.803	11.710	12.007	8.351	7.868	7.806	12.007	8.351
3	-37	1	24.548	24.362	19.004	13.222	12.274	12.181	12.670	8.814	8.183	8.121	12.670	8.814
3	-38	1	25.490	25.304	20.026	13.937	12.745	12.652	13.351	9.291	8.497	8.435	13.351	9.291
3	-39	1	26.433	26.247	21.076	14.672	13.216	13.123	14.051	9.781	8.811	8.749	14.051	9.781
3	-40	1	27.375	27.189	22.154	15.426	13.688	13.595	14.769	10.284	9.125	9.063	14.769	10.284
4	-41	1	28.639	28.453	23.260	16.200	14.319	14.226	15.506	10.800	9.546	9.484	15.506	10.800
4	-42	1	29.902	29.716	24.393	16.994	14.951	14.858	16.262	11.329	9.967	9.905	16.262	11.329
4	-43	1	31.166	30.980	25.555	17.807	15.583	15.490	17.037	11.871	10.389	10.327	17.037	11.871
4	-44	1	32.430	32.243	26.744	18.640	16.215	16.122	17.830	12.426	10.810	10.748	17.830	12.426
4	-45	1	33.693	33.507	27.962	19.492	16.847	16.753	18.641	12.994	11.231	11.169	18.641	12.994
4	-46	1	34.957	34.770	29.207	20.363	17.478	17.385	19.471	13.576	11.652	11.590	19.471	13.576
4	-47	1	36.220	36.034	30.480	21.255	18.110	18.017	20.320	14.170	12.073	12.011	20.320	14.170
4	-48	1	37.484	37.297	31.782	22.166	18.742	18.649	21.188	14.777	12.495	12.432	21.188	14.777
4	-49	1	38.747	38.561	33.111	23.096	19.374	19.280	22.074	15.397	12.916	12.854	22.074	15.397

4	-50	1	40.011	39.825	34.468	24.046	20.005	19.912	22.978	16.031	13.337	13.275	22.978	16.031
4	-51	1	41.274	41.088	35.853	25.015	20.637	20.544	23.902	16.677	13.758	13.696	23.902	16.677
4	-52	1	42.538	42.352	37.266	26.004	21.269	21.176	24.844	17.336	14.179	14.117	24.844	17.336
4	-53	1	43.801	43.615	38.706	27.013	21.901	21.808	25.804	18.009	14.600	14.538	25.804	18.009
4	-54	1	45.065	44.879	40.175	28.041	22.532	22.439	26.783	18.694	15.022	14.960	26.783	18.694
4	-55	1	46.328	46.142	41.672	29.089	23.164	23.071	27.781	19.393	15.443	15.381	27.781	19.393
4	-56	1	47.592	47.406	43.196	30.156	23.796	23.703	28.798	20.104	15.864	15.802	28.798	20.104
4	-57	1	48.856	48.669	44.749	31.243	24.428	24.335	29.833	20.829	16.285	16.223	29.833	20.829
4	-58	1	50.119	49.933	46.329	32.349	25.060	24.966	30.886	21.566	16.706	16.644	30.886	21.566
5	-59	1	53.333	51.433	49.544	33.849	26.667	25.716	33.029	22.566	17.778	17.144	33.029	22.566
5	-60	1	56.625	52.969	52.835	35.385	28.312	26.484	35.224	23.590	18.875	17.656	35.224	23.590
5	-61	1	59.994	54.541	56.205	36.958	29.997	27.271	37.470	24.638	19.998	18.180	37.470	24.638
5	-62	1	63.441	56.150	59.651	38.566	31.721	28.075	39.768	25.711	21.147	18.717	39.768	25.711
5	-63	1	66.966	57.795	63.176	40.211	33.483	28.897	42.117	26.807	22.322	19.265	42.117	26.807
5	-64	1	70.568	59.476	66.778	41.892	35.284	29.738	44.519	27.928	23.523	19.825	44.519	27.928
5	-65	1	74.247	61.193	70.458	43.609	37.124	30.596	46.972	29.073	24.749	20.398	46.972	29.073
6	-66	1	75.664	62.609	72.342	44.928	37.832	31.305	48.228	29.952	25.221	20.870	48.228	29.952
6	-67	1	77.081	64.026	74.261	46.271	38.540	32.013	49.507	30.848	25.694	21.342	49.507	30.848
6	-68	1	78.498	65.443	76.214	47.639	39.249	32.721	50.810	31.759	26.166	21.814	50.810	31.759
6	-69	1	79.914	66.860	78.202	49.030	39.957	33.430	52.135	32.687	26.638	22.287	52.135	32.687
6	-70	1	81.331	68.276	80.224	50.445	40.665	34.138	53.483	33.630	27.110	22.759	53.483	33.630
6	-71	1	82.748	69.693	82.281	51.885	41.374	34.846	54.854	34.590	27.583	23.231	54.854	34.590
6	-72	1	84.164	71.110	84.372	53.349	42.082	35.555	56.248	35.566	28.055	23.703	56.248	35.566
6	-73	1	85.581	72.526	86.497	54.836	42.790	36.263	57.665	36.558	28.527	24.175	57.665	36.558
6	-74	1	86.998	73.943	88.657	56.348	43.499	36.971	59.104	37.566	28.999	24.648	59.104	37.566
6	-75	1	88.414	75.360	90.851	57.884	44.207	37.680	60.567	38.589	29.471	25.120	60.567	38.589
6	-76	1	89.831	76.776	93.080	59.444	44.916	38.388	62.053	39.630	29.944	25.592	62.053	39.630
6	-77	1	91.248	78.193	95.343	61.028	45.624	39.097	63.562	40.686	30.416	26.064	63.562	40.686
6	-78	1	92.664	79.610	97.616	62.620	46.332	39.805	65.077	41.746	30.888	26.537	65.077	41.746
6	-79	1	94.081	81.026	99.889	64.211	47.041	40.513	66.593	42.807	31.360	27.009	66.593	42.807
6	-80	1	95.498	82.443	102.162	65.802	47.749	41.222	68.108	43.868	31.833	27.481	68.108	43.868
7	-81	1	98.701	84.281	107.778	67.393	49.351	42.141	71.852	44.929	32.900	28.094	71.852	44.929
7	-82	1	100.539	86.119	110.051	68.984	50.270	43.059	73.367	45.990	33.513	28.706	73.367	45.990
7	-83	1	102.377	87.957	112.324	70.575	51.189	43.978	74.883	47.050	34.126	29.319	74.883	47.050
7	-84	1	104.215	89.795	114.597	72.167	52.107	44.897	76.398	48.111	34.738	29.932	76.398	48.111
7	-85	1	106.053	91.633	116.870	73.758	53.026	45.816	77.913	49.172	35.351	30.544	77.913	49.172
7	-86	1	107.891	93.470	119.143	75.349	53.945	46.735	79.429	50.233	35.964	31.157	79.429	50.233
7	-87	1	109.729	95.308	121.416	76.940	54.864	47.654	80.944	51.293	36.576	31.769	80.944	51.293
7	-88	1	111.566	97.146	123.689	78.531	55.783	48.573	82.460	52.354	37.189	32.382	82.460	52.354
7	-89	1	113.404	98.984	125.963	80.123	56.702	49.492	83.975	53.415	37.801	32.995	83.975	53.415
7	-90	1	115.242	100.822	128.236	81.714	57.621	50.411	85.490	54.476	38.414	33.607	85.490	54.476
7	-91	1	117.080	102.660	130.509	83.305	58.540	51.330	87.006	55.537	39.027	34.220	87.006	55.537
7	-92	1	118.918	104.498	132.782	84.896	59.459	52.249	88.521	56.597	39.639	34.833	88.521	56.597
7	-93	1	120.756	106.336	135.055	86.487	60.378	53.168	90.037	57.658	40.252	35.445	90.037	57.658
7	-94	1	122.594	108.173	137.328	88.078	61.297	54.087	91.552	58.719	40.865	36.058	91.552	58.719
7	-95	1	124.432	110.011	139.601	89.670	62.216	55.006	93.067	59.780	41.477	36.670	93.067	59.780
7	-96	1	126.269	111.849	141.874	91.261	63.135	55.925	94.583	60.841	42.090	37.283	94.583	60.841
7	-97	1	128.107	113.687	144.147	92.852	64.054	56.844	96.098	61.901	42.702	37.896	96.098	61.901
7	-98	1	129.945	115.525	146.421	94.443	64.973	57.762	97.614	62.962	43.315	38.508	97.614	62.962
7	-99	1	131.783	117.363	148.694	96.034	65.892	58.681	99.129	64.023	43.928	39.121	99.129	64.023
7	-100	1	133.621	119.201	150.967	97.626	66.810	59.600	100.645	65.084	44.540	39.734	100.645	65.084
8	-101	1	135.850	121.086	153.240	99.217	67.925	60.543	102.160	66.144	45.283	40.362	102.160	66.144
8	-102	1	137.735	122.971	155.513	100.808	68.867	61.485	103.675	67.205	45.912	40.990	103.675	67.205
8	-103	1	139.620	124.856	157.786	102.399	69.810	62.428	105.191	68.266	46.540	41.619	105.191	68.266
8	-104	1	141.505	126.741	160.059	103.990	70.752	63.370	106.706	69.327	47.168	42.247	106.706	69.327

8	-105	1	143.390	128.626	162.332	105.581	71.695	64.313	108.222	70.388	47.797	42.875	108.222	70.388
8	-106	1	145.275	130.511	164.605	107.173	72.637	65.255	109.737	71.448	48.425	43.504	109.737	71.448
8	-107	1	147.160	132.396	166.879	108.764	73.580	66.198	111.252	72.509	49.053	44.132	111.252	72.509
8	-108	1	149.045	134.281	169.152	110.355	74.522	67.140	112.768	73.570	49.682	44.760	112.768	73.570
8	-109	1	150.930	136.166	171.425	111.946	75.465	68.083	114.283	74.631	50.310	45.389	114.283	74.631
8	-110	1	152.815	138.051	173.698	113.537	76.407	69.025	115.799	75.692	50.938	46.017	115.799	75.692
8	-111	1	154.700	139.936	175.971	115.128	77.350	69.968	117.314	76.752	51.567	46.645	117.314	76.752
8	-112	1	156.585	141.821	178.244	116.720	78.292	70.910	118.829	77.813	52.195	47.274	118.829	77.813
8	-113	1	158.470	143.706	180.517	118.311	79.235	71.853	120.345	78.874	52.823	47.902	120.345	78.874
8	-114	1	160.355	145.591	182.790	119.902	80.177	72.795	121.860	79.935	53.452	48.530	121.860	79.935
8	-115	1	162.240	147.476	185.064	121.493	81.120	73.738	123.376	80.995	54.080	49.159	123.376	80.995
8	-116	1	164.125	149.361	187.337	123.084	82.062	74.680	124.891	82.056	54.708	49.787	124.891	82.056
8	-117	1	166.010	151.246	189.610	124.676	83.005	75.623	126.407	83.117	55.337	50.415	126.407	83.117
8	-118	1	167.895	153.131	191.883	126.267	83.947	76.565	127.922	84.178	55.965	51.044	127.922	84.178
8	-119	1	169.780	155.016	194.156	127.858	84.890	77.508	129.437	85.239	56.593	51.672	129.437	85.239
8	-120	1	171.665	156.901	196.429	129.449	85.832	78.450	130.953	86.299	57.222	52.300	130.953	86.299
8	-121	1	173.550	158.786	198.702	131.040	86.775	79.393	132.468	87.360	57.850	52.929	132.468	87.360
8	-122	1	175.435	160.671	200.975	132.631	87.717	80.335	133.984	88.421	58.478	53.557	133.984	88.421
8	-123	1	177.320	162.556	203.248	134.223	88.660	81.278	135.499	89.482	59.107	54.185	135.499	89.482
8	-124	1	179.205	164.441	205.522	135.814	89.602	82.220	137.014	90.543	59.735	54.814	137.014	90.543
8	-125	1	181.090	166.326	207.795	137.405	90.545	83.163	138.530	91.603	60.363	55.442	138.530	91.603
8	-126	1	182.975	168.211	210.068	138.996	91.487	84.105	140.045	92.664	60.992	56.070	140.045	92.664
8	-127	1	184.860	170.096	212.341	140.587	92.430	85.048	141.561	93.725	61.620	56.699	141.561	93.725
8	-128	1	186.745	171.981	214.614	142.179	93.372	85.990	143.076	94.786	62.248	57.327	143.076	94.786
8	-129	1	188.630	173.866	216.887	143.770	94.315	86.933	144.591	95.847	62.877	57.955	144.591	95.847
8	-130	1	190.515	175.751	219.160	145.361	95.257	87.875	146.107	96.907	63.505	58.584	146.107	96.907
8	-131	1	192.400	177.636	221.433	146.952	96.200	88.818	147.622	97.968	64.133	59.212	147.622	97.968
8	-132	1	194.285	179.521	223.707	148.543	97.142	89.760	149.138	99.029	64.762	59.840	149.138	99.029
8	-133	1	196.170	181.406	225.980	150.135	98.085	90.703	150.653	100.090	65.390	60.469	150.653	100.090
8	-134	1	198.055	183.290	228.253	151.726	99.027	91.645	152.169	101.150	66.018	61.097	152.169	101.150
8	-135	1	199.940	185.175	230.526	153.317	99.970	92.588	153.684	102.211	66.647	61.725	153.684	102.211
8	-136	1	201.825	187.060	232.799	154.908	100.912	93.530	155.199	103.272	67.275	62.353	155.199	103.272
8	-137	1	203.710	188.945	235.072	156.499	101.855	94.473	156.715	104.333	67.903	62.982	156.715	104.333


18"-Dia (1/2" thick) Pipe Pile - Ultimate Capacity
Applicable to West Side Bank of IHNC, North of Claiborne
Qu (tons)
0 15 30 45 60 75 90 105 120 135 150 165 180 195 210 225 240 255 270 285 300 315 330 345 360 375 390 405
Tip elevation (ft)
0 -20 -40 -60 -80 -100 -120 -140 -160 -180 -200
Q-case Compression
Q-case Tension
S-case Compression
S-case Tension


18"-Dia (1/2" thick) Pipe Pile - Allowable Capacity with Load Test
Applicable to West Side Bank of IHNC, North of Claiborne
Qall (tons)
0
15
30
45
60
75
90
105
120
135
150
165
180
195
210
225
240
255
270
Tip elevation (ft)
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
Q-case Compression
Q-case Tension
S-case Compression
S-case Tension


18"-Dia (1/2" thick) Pipe Pile - Allowable Capacity without Load Test
Applicable to West Side Bank of IHNC, North of Claiborne
Qall (tons)
0
15
30
45
60
75
90
105
120
135
150
165
180
195
210
225
240
255
270
Tip elevation (ft)
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
Q-case Compression
Q-case Tension
S-case Compression
S-case Tension

IHNC T WALL 1 INPUT

```
0100 IHNC T WALL 1 CALC (TIP EL. -94)
0120 PROP 29000 1053.17 1053.17 27.49 2 0 ALL
0135 SOIL ES 0.080978 LEN 98 0 ALL
0140 PIN ALL
0150 ALLOW R 122 108 617.27 617.27 3439.37 3439.37 ALL
0160 FOVSTR 1.167 1.167 1
0161 FOVSTR 1.333 1.333 2 5 6 7 8 9 10 11 12 15 16 21 22
0162 FOVSTR 2.0 2.0 17 18 19 20
0613 FOVSTR 1.74 1.74 13 14 23 24
0170 BATTER 3 ALL
0190 ANGLE 270 1 TO 16
0200 ANGLE 90 17 TO 32
0201 PILE 01 -17.5 2.5 0
0202 PILE 09 -17.5 8.5 0
0203 PILE 17 -17.5 14.5 0
0204 PILE 25 -17.5 20.5 0
0207 ROW X 8 01 7 AT 5
0208 ROW X 8 09 7 AT 5
0209 ROW X 8 17 7 AT 5
0210 ROW X 8 25 7 AT 5
0400 LOAD 01 0 0 1117 13989 0 0
0401 LOAD 02 0 45 1117 14675 0  0
0402 LOAD 03 0 449 899 15231 0  0
0403 LOAD 04 0 449 899 14170 0  0
0404 LOAD 05 0 463 899 15561 0 0
0405 LOAD 06 0 463 899 14499 0  0
0406 LOAD 07 0 449 899 15231 0  0
0407 LOAD 08 0 449 899 14170 0  0
0408 LOAD 09 0 663 899 20861 0  0
0409 LOAD 10 0 663 899 19799 0  0
0410 LOAD 11 0 860 926 20313 0  0
0411 LOAD 12 0 860 926 18855 0 0
0412 LOAD 13 0 863 899 26161 0  0
0413 LOAD 14 0 863 899 25099 0  0
0414 LOAD 15 0 663 899 20861 0  0
0415 LOAD 16 0 663 899 19799 0  0
0416 LOAD 17 0 863 899 26161 0  6000
0417 LOAD 18 0 863 899 25099 0  6000
0418 LOAD 19 0 663 899 20861 0  3000
0419 LOAD 20 0 663 899 19799 0  3000
0420 LOAD 21 0 649 899 20531 0  0
0421 LOAD 22 0 649 899 19470 0  0
0422 LOAD 23 0 849 899 25831 0  0
0423 LOAD 24 0 849 899 24770 0  0
0500 FOUT 1 2 3 4 5 6 7 WlPin.txt
0510 PFO ALL
0520 PLB ALL
```

US Army Corps of Engineers
New Orleans District

CPGA Output

The CPGA output was checked for pile failures and pile cap displacements. The pile cap displacements were limited to the maximum deflections stated in HSDRRS paragraph 5.2.2.1. CPGA was run through multiple iterations to determine the minimum required pile tip.

IHNC T WALL 1 OUTPUT

CPGA - CASE PILE GROUP ANALYSIS PROGRAM
RUN DATE: 27-FEB-19 RUN TIME: 14:19:36

FOR PILES WITH UNSUPPORTED HEIGHT:
A. CPGA CANNOT CALCULATE PMAXMOM FOR NH TYPE SOIL
B. THE ALLOWABLE STRESS CHECKS, ASC AND AST, ARE
NOT FULLY DEVELOPED FOR UNSUPPORTED PILES.
WORK IS IN PROGRESS TO COMPLETE THIS ASPECT OF CPGA.

ELASTIC CENTER LOCATION IS NOT COMPUTED FOR 3-DIMENSIONAL PROBLEMS.

IHNC T WALL 1 CALC (TIP EL. -94)
DATA UNKNOWN - REJECTED.

THERE ARE 32 PILES AND
24 LOAD CASES IN THIS RUN.

ALL PILE COORDINATES ARE CONTAINED WITHIN A BOX

	X	Y	Z
WITH DIAGONAL COORDINATES = (	-17.50 ,	2.50 ,	0.00)
(	17.50 ,	20.50 ,	0.00)

****

PILE PROPERTIES AS INPUT

E	I1	I2	A	C33	B66
KSI	IN**4	IN**4	IN**2		
0.29000E+05	0.10532E+04	0.10532E+04	0.27490E+02	0.20000E+01	0.00000E+00

THESE PILE PROPERTIES APPLY TO THE FOLLOWING PILES -

ALL

****

SOIL DESCRIPTIONS AS INPUT

IHNC T WALL 1 OUTPUT

ES	ESOIL K/IN**2	LENGTH	L FT	LU FT
	0.80978E-01	L	0.98000E+02	0.00000E+00

ESOIL(ORIGINAL) K/IN**2	RGROUP	RCYCLIC
0.80978E-01	0.1000E+01	0.1000E+01

THIS SOIL DESCRIPTION APPLIES TO THE FOLLOWING PILES -

ALL

****

PILE STIFFNESSES AS CALCULATED FROM PROPERTIES

0.79797E+01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
0.00000E+00	0.79797E+01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
0.00000E+00	0.00000E+00	0.13558E+04	0.00000E+00	0.00000E+00	0.00000E+00
0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00

THIS MATRIX APPLIES TO THE FOLLOWING PILES -

1

****

PILE GEOMETRY AS INPUT AND/OR GENERATED

NUM	X FT	Y FT	Z FT	BATTER	ANGLE	LENGTH FT	FIXITY
1	-17.50	2.50	0.00	3.00	270.00	98.00	P
2	-12.50	2.50	0.00	3.00	270.00	98.00	P
3	-7.50	2.50	0.00	3.00	270.00	98.00	P
4	-2.50	2.50	0.00	3.00	270.00	98.00	P
5	2.50	2.50	0.00	3.00	270.00	98.00	P
6	7.50	2.50	0.00	3.00	270.00	98.00	P
7	12.50	2.50	0.00	3.00	270.00	98.00	P
8	17.50	2.50	0.00	3.00	270.00	98.00	P
9	-17.50	8.50	0.00	3.00	270.00	98.00	P
10	-12.50	8.50	0.00	3.00	270.00	98.00	P

11	-7.50	8.50	0.00	3.00	270.00	98.00	P
12	-2.50	8.50	0.00	3.00	270.00	98.00	P
13	2.50	8.50	0.00	3.00	270.00	98.00	P
14	7.50	8.50	0.00	3.00	270.00	98.00	P
15	12.50	8.50	0.00	3.00	270.00	98.00	P
16	17.50	8.50	0.00	3.00	270.00	98.00	P
17	-17.50	14.50	0.00	3.00	90.00	98.00	P
18	-12.50	14.50	0.00	3.00	90.00	98.00	P
19	-7.50	14.50	0.00	3.00	90.00	98.00	P
20	-2.50	14.50	0.00	3.00	90.00	98.00	P
21	2.50	14.50	0.00	3.00	90.00	98.00	P
22	7.50	14.50	0.00	3.00	90.00	98.00	P
23	12.50	14.50	0.00	3.00	90.00	98.00	P
24	17.50	14.50	0.00	3.00	90.00	98.00	P
25	-17.50	20.50	0.00	3.00	90.00	98.00	P
26	-12.50	20.50	0.00	3.00	90.00	98.00	P
27	-7.50	20.50	0.00	3.00	90.00	98.00	P
28	-2.50	20.50	0.00	3.00	90.00	98.00	P
29	2.50	20.50	0.00	3.00	90.00	98.00	P
30	7.50	20.50	0.00	3.00	90.00	98.00	P
31	12.50	20.50	0.00	3.00	90.00	98.00	P
32	17.50	20.50	0.00	3.00	90.00	98.00	P

						3136.00	

****

APPLIED LOADS

LOAD CASE	PX K	PY K	PZ K	MX FT-K	MY FT-K	MZ FT-K	OVERSTRESS COM	TEN
1	0.0	0.0	1117.0	13989.0	0.0	0.0	1.17	1.17
2	0.0	45.0	1117.0	14675.0	0.0	0.0	1.33	1.33
3	0.0	449.0	899.0	15231.0	0.0	0.0		
4	0.0	449.0	899.0	14170.0	0.0	0.0		
5	0.0	463.0	899.0	15561.0	0.0	0.0	1.33	1.33
6	0.0	463.0	899.0	14499.0	0.0	0.0	1.33	1.33
7	0.0	449.0	899.0	15231.0	0.0	0.0	1.33	1.33
8	0.0	449.0	899.0	14170.0	0.0	0.0	1.33	1.33
9	0.0	663.0	899.0	20861.0	0.0	0.0	1.33	1.33
10	0.0	663.0	899.0	19799.0	0.0	0.0	1.33	1.33
11	0.0	860.0	926.0	20313.0	0.0	0.0	1.33	1.33
12	0.0	860.0	926.0	18855.0	0.0	0.0	1.33	1.33
13	0.0	863.0	899.0	26161.0	0.0	0.0	1.74	1.74
14	0.0	863.0	899.0	25099.0	0.0	0.0	1.74	1.74
15	0.0	663.0	899.0	20861.0	0.0	0.0	1.33	1.33

IHNC T WALL 1 OUTPUT

16	0.0	663.0	899.0	19799.0	0.0	0.0	1.33	1.33
17	0.0	863.0	899.0	26161.0	6000.0	0.0	2.00	2.00
18	0.0	863.0	899.0	25099.0	6000.0	0.0	2.00	2.00
19	0.0	663.0	899.0	20861.0	3000.0	0.0	2.00	2.00
20	0.0	663.0	899.0	19799.0	3000.0	0.0	2.00	2.00
21	0.0	649.0	899.0	20531.0	0.0	0.0	1.33	1.33
22	0.0	649.0	899.0	19470.0	0.0	0.0	1.33	1.33
23	0.0	849.0	899.0	25831.0	0.0	0.0	1.74	1.74
24	0.0	849.0	899.0	24770.0	0.0	0.0	1.74	1.74

****

ORIGINAL PILE GROUP STIFFNESS MATRIX

0.25535E+03	0.10496E-03	-0.15744E-03	0.94465E-03	-0.21684E-18	-0.35238E+05
0.10496E-03	0.45684E+04	0.28422E-11	0.93161E+06	0.14552E-10	-0.10706E-01
-0.15744E-03	0.37517E-11	0.39073E+05	0.53920E+07	0.29104E-10	-0.94465E-03
0.94465E-03	0.93161E+06	0.53920E+07	0.99729E+09	-0.74506E-08	-0.22388E+01
-0.21684E-18	-0.14552E-10	0.58208E-10	-0.74506E-08	0.73847E+09	-0.40978E-07
-0.35238E+05	-0.10706E-01	-0.94465E-03	-0.22388E+01	-0.67055E-07	0.92860E+08

32 PILES 24 LOAD CASES

LOAD CASE 1. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 0.

LOAD CASE 2. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 0.

LOAD CASE 3. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 8.

LOAD CASE 4. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 8.

LOAD CASE 5. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 8.

LOAD CASE 6. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 8.

LOAD CASE 7. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 8.

LOAD CASE 8. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 8.

LOAD CASE 9. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 16.

LOAD CASE 10. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 16.

LOAD CASE 11. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 16.

LOAD CASE 12. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 8.

LOAD CASE 13. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 16.

LOAD CASE 14. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 16.

LOAD CASE 15. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 16.

LOAD CASE 16. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 16.

LOAD CASE 17. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 16.

LOAD CASE 18. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 16.

LOAD CASE 19. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 16.

LOAD CASE 20. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 16.

LOAD CASE 21. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 16.

LOAD CASE 22. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 16.

LOAD CASE 23. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 16.

LOAD CASE 24. NUMBER OF FAILURES = 0. NUMBER OF PILES IN TENSION = 16.

****

PILE CAP DISPLACEMENTS

LOAD CASE	DX IN	DY IN	DZ IN	RX RAD	RY RAD	RZ RAD
1	0.1748E-07	-0.4427E-01	-0.1370E-02	0.2171E-03	0.1426E-20	0.6749E-11
2	0.1345E-07	-0.3137E-01	0.6922E-03	0.2021E-03	0.1367E-20	0.6369E-11
3	-0.2319E-07	0.2043E+00	0.9473E-01	-0.5197E-03	-0.8686E-20	0.3182E-11
4	-0.2212E-07	0.2454E+00	0.1225E+00	-0.7212E-03	-0.1210E-19	0.3754E-11
5	-0.2457E-07	0.2038E+00	0.9232E-01	-0.5023E-03	-0.8329E-20	0.3001E-11
6	-0.2349E-07	0.2449E+00	0.1201E+00	-0.7039E-03	-0.1175E-19	0.3573E-11
7	-0.2319E-07	0.2043E+00	0.9473E-01	-0.5197E-03	-0.8686E-20	0.3182E-11
8	-0.2212E-07	0.2454E+00	0.1225E+00	-0.7212E-03	-0.1210E-19	0.3754E-11
9	-0.4475E-07	0.1739E+00	0.4251E-01	-0.1413E-03	-0.1349E-20	0.9708E-13
10	-0.4367E-07	0.2151E+00	0.7033E-01	-0.3429E-03	-0.4766E-20	0.6691E-12
11	-0.5801E-07	0.3799E+00	0.1534E+00	-0.9399E-03	-0.1409E-19	0.6891E-12
12	-0.5653E-07	0.4364E+00	0.1916E+00	-0.1217E-02	-0.1878E-19	0.1474E-11
13	-0.6494E-07	0.1441E+00	-0.7297E-02	0.2196E-03	0.5631E-20	-0.2807E-11

14	-0.6386E-07	0.1852E+00	0.2053E-01	0.1799E-04	0.2214E-20	-0.2235E-11
15	-0.4475E-07	0.1739E+00	0.4251E-01	-0.1413E-03	-0.1349E-20	0.9708E-13
16	-0.4367E-07	0.2151E+00	0.7033E-01	-0.3429E-03	-0.4766E-20	0.6691E-12
17	-0.6494E-07	0.1441E+00	-0.7297E-02	0.2196E-03	0.9750E-04	-0.2807E-11
18	-0.6386E-07	0.1852E+00	0.2053E-01	0.1799E-04	0.9750E-04	-0.2235E-11
19	-0.4475E-07	0.1739E+00	0.4251E-01	-0.1413E-03	0.4875E-04	0.9708E-13
20	-0.4367E-07	0.2151E+00	0.7033E-01	-0.3429E-03	0.4875E-04	0.6691E-12
21	-0.4338E-07	0.1744E+00	0.4492E-01	-0.1588E-03	-0.1706E-20	0.2783E-12
22	-0.4230E-07	0.2155E+00	0.7272E-01	-0.3602E-03	-0.5119E-20	0.8498E-12
23	-0.6357E-07	0.1446E+00	-0.4885E-02	0.2021E-03	0.5274E-20	-0.2626E-11
24	-0.6249E-07	0.1857E+00	0.2291E-01	0.7000E-06	0.1860E-20	-0.2054E-11

****

ELASTIC CENTER INFORMATION

ELASTIC CENTER IN PLANE X-Z	X	Z
	FT	FT
	0.00	0.00

****

PILE FORCES IN LOCAL GEOMETRY

M1 & M2 NOT AT PILE HEAD FOR PINNED PILES
* INDICATES PILE FAILURE
# INDICATES CBF BASED ON MOMENTS DUE TO
(F3*EMIN) FOR CONCRETE PILES
B INDICATES BUCKLING CONTROLS

LOAD CASE - 1

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	0.3	0.0	25.6	0.0	-20.4	0.0	0.18	0.04
2	0.3	0.0	25.6	0.0	-20.4	0.0	0.18	0.04
3	0.3	0.0	25.6	0.0	-20.4	0.0	0.18	0.04
4	0.3	0.0	25.6	0.0	-20.4	0.0	0.18	0.04
5	0.3	0.0	25.6	0.0	-20.4	0.0	0.18	0.04
6	0.3	0.0	25.6	0.0	-20.4	0.0	0.18	0.04
7	0.3	0.0	25.6	0.0	-20.4	0.0	0.18	0.04
8	0.3	0.0	25.6	0.0	-20.4	0.0	0.18	0.04

9	0.3	0.0	45.7	0.0	-17.9	0.0	0.32	0.07
10	0.3	0.0	45.7	0.0	-17.9	0.0	0.32	0.07
11	0.3	0.0	45.7	0.0	-17.9	0.0	0.32	0.07
12	0.3	0.0	45.7	0.0	-17.9	0.0	0.32	0.07
13	0.3	0.0	45.7	0.0	-17.9	0.0	0.32	0.07
14	0.3	0.0	45.7	0.0	-17.9	0.0	0.32	0.07
15	0.3	0.0	45.7	0.0	-17.9	0.0	0.32	0.07
16	0.3	0.0	45.7	0.0	-17.9	0.0	0.32	0.07
17	-0.4	0.0	27.8	0.0	27.1	0.0	0.20	0.05
18	-0.4	0.0	27.8	0.0	27.1	0.0	0.20	0.05
19	-0.4	0.0	27.8	0.0	27.1	0.0	0.20	0.05
20	-0.4	0.0	27.8	0.0	27.1	0.0	0.20	0.05
21	-0.4	0.0	27.8	0.0	27.1	0.0	0.20	0.05
22	-0.4	0.0	27.8	0.0	27.1	0.0	0.20	0.05
23	-0.4	0.0	27.8	0.0	27.1	0.0	0.20	0.05
24	-0.4	0.0	27.8	0.0	27.1	0.0	0.20	0.05
25	-0.5	0.0	47.9	0.0	29.6	0.0	0.34	0.07
26	-0.5	0.0	47.9	0.0	29.6	0.0	0.34	0.07
27	-0.5	0.0	47.9	0.0	29.6	0.0	0.34	0.07
28	-0.5	0.0	47.9	0.0	29.6	0.0	0.34	0.07
29	-0.5	0.0	47.9	0.0	29.6	0.0	0.34	0.07
30	-0.5	0.0	47.9	0.0	29.6	0.0	0.34	0.07
31	-0.5	0.0	47.9	0.0	29.6	0.0	0.34	0.07
32	-0.5	0.0	47.9	0.0	29.6	0.0	0.34	0.07

LOAD CASE - 2

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	0.2	0.0	22.1	0.0	-14.0	0.0	0.14	0.03
2	0.2	0.0	22.1	0.0	-14.0	0.0	0.14	0.03
3	0.2	0.0	22.1	0.0	-14.0	0.0	0.14	0.03
4	0.2	0.0	22.1	0.0	-14.0	0.0	0.14	0.03
5	0.2	0.0	22.1	0.0	-14.0	0.0	0.14	0.03
6	0.2	0.0	22.1	0.0	-14.0	0.0	0.14	0.03
7	0.2	0.0	22.1	0.0	-14.0	0.0	0.14	0.03
8	0.2	0.0	22.1	0.0	-14.0	0.0	0.14	0.03
9	0.2	0.0	40.9	0.0	-11.7	0.0	0.25	0.05
10	0.2	0.0	40.9	0.0	-11.7	0.0	0.25	0.05
11	0.2	0.0	40.9	0.0	-11.7	0.0	0.25	0.05
12	0.2	0.0	40.9	0.0	-11.7	0.0	0.25	0.05
13	0.2	0.0	40.9	0.0	-11.7	0.0	0.25	0.05
14	0.2	0.0	40.9	0.0	-11.7	0.0	0.25	0.05
15	0.2	0.0	40.9	0.0	-11.7	0.0	0.25	0.05
16	0.2	0.0	40.9	0.0	-11.7	0.0	0.25	0.05
17	-0.3	0.0	32.7	0.0	20.8	0.0	0.20	0.04

18	-0.3	0.0	32.7	0.0	20.8	0.0	0.20	0.04
19	-0.3	0.0	32.7	0.0	20.8	0.0	0.20	0.04
20	-0.3	0.0	32.7	0.0	20.8	0.0	0.20	0.04
21	-0.3	0.0	32.7	0.0	20.8	0.0	0.20	0.04
22	-0.3	0.0	32.7	0.0	20.8	0.0	0.20	0.04
23	-0.3	0.0	32.7	0.0	20.8	0.0	0.20	0.04
24	-0.3	0.0	32.7	0.0	20.8	0.0	0.20	0.04
25	-0.4	0.0	51.4	0.0	23.1	0.0	0.32	0.07
26	-0.4	0.0	51.4	0.0	23.1	0.0	0.32	0.07
27	-0.4	0.0	51.4	0.0	23.1	0.0	0.32	0.07
28	-0.4	0.0	51.4	0.0	23.1	0.0	0.32	0.07
29	-0.4	0.0	51.4	0.0	23.1	0.0	0.32	0.07
30	-0.4	0.0	51.4	0.0	23.1	0.0	0.32	0.07
31	-0.4	0.0	51.4	0.0	23.1	0.0	0.32	0.07
32	-0.4	0.0	51.4	0.0	23.1	0.0	0.32	0.07

LOAD CASE - 3

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-1.7	0.0	14.2	0.0	110.8	0.0	0.12	0.06
2	-1.7	0.0	14.2	0.0	110.8	0.0	0.12	0.06
3	-1.7	0.0	14.2	0.0	110.8	0.0	0.12	0.06
4	-1.7	0.0	14.2	0.0	110.8	0.0	0.12	0.06
5	-1.7	0.0	14.2	0.0	110.8	0.0	0.12	0.06
6	-1.7	0.0	14.2	0.0	110.8	0.0	0.12	0.06
7	-1.7	0.0	14.2	0.0	110.8	0.0	0.12	0.06
8	-1.7	0.0	14.2	0.0	110.8	0.0	0.12	0.06
9	-1.7	0.0	-33.9	0.0	104.8	0.0	0.31	0.09
10	-1.7	0.0	-33.9	0.0	104.8	0.0	0.31	0.09
11	-1.7	0.0	-33.9	0.0	104.8	0.0	0.31	0.09
12	-1.7	0.0	-33.9	0.0	104.8	0.0	0.31	0.09
13	-1.7	0.0	-33.9	0.0	104.8	0.0	0.31	0.09
14	-1.7	0.0	-33.9	0.0	104.8	0.0	0.31	0.09
15	-1.7	0.0	-33.9	0.0	104.8	0.0	0.31	0.09
16	-1.7	0.0	-33.9	0.0	104.8	0.0	0.31	0.09
17	1.5	0.0	93.1	0.0	-97.4	0.0	0.76	0.18
18	1.5	0.0	93.1	0.0	-97.4	0.0	0.76	0.18
19	1.5	0.0	93.1	0.0	-97.4	0.0	0.76	0.18
20	1.5	0.0	93.1	0.0	-97.4	0.0	0.76	0.18
21	1.5	0.0	93.1	0.0	-97.4	0.0	0.76	0.18
22	1.5	0.0	93.1	0.0	-97.4	0.0	0.76	0.18
23	1.5	0.0	93.1	0.0	-97.4	0.0	0.76	0.18
24	1.5	0.0	93.1	0.0	-97.4	0.0	0.76	0.18
25	1.6	0.0	45.0	0.0	-103.4	0.0	0.37	0.10
26	1.6	0.0	45.0	0.0	-103.4	0.0	0.37	0.10

27	1.6	0.0	45.0	0.0	-103.4	0.0	0.37	0.10
28	1.6	0.0	45.0	0.0	-103.4	0.0	0.37	0.10
29	1.6	0.0	45.0	0.0	-103.4	0.0	0.37	0.10
30	1.6	0.0	45.0	0.0	-103.4	0.0	0.37	0.10
31	1.6	0.0	45.0	0.0	-103.4	0.0	0.37	0.10
32	1.6	0.0	45.0	0.0	-103.4	0.0	0.37	0.10

LOAD CASE - 4

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-2.1	0.0	24.6	0.0	134.0	0.0	0.20	0.08
2	-2.1	0.0	24.6	0.0	134.0	0.0	0.20	0.08
3	-2.1	0.0	24.6	0.0	134.0	0.0	0.20	0.08
4	-2.1	0.0	24.6	0.0	134.0	0.0	0.20	0.08
5	-2.1	0.0	24.6	0.0	134.0	0.0	0.20	0.08
6	-2.1	0.0	24.6	0.0	134.0	0.0	0.20	0.08
7	-2.1	0.0	24.6	0.0	134.0	0.0	0.20	0.08
8	-2.1	0.0	24.6	0.0	134.0	0.0	0.20	0.08
9	-2.0	0.0	-42.2	0.0	125.7	0.0	0.39	0.10
10	-2.0	0.0	-42.2	0.0	125.7	0.0	0.39	0.10
11	-2.0	0.0	-42.2	0.0	125.7	0.0	0.39	0.10
12	-2.0	0.0	-42.2	0.0	125.7	0.0	0.39	0.10
13	-2.0	0.0	-42.2	0.0	125.7	0.0	0.39	0.10
14	-2.0	0.0	-42.2	0.0	125.7	0.0	0.39	0.10
15	-2.0	0.0	-42.2	0.0	125.7	0.0	0.39	0.10
16	-2.0	0.0	-42.2	0.0	125.7	0.0	0.39	0.10
17	1.9	0.0	101.4	0.0	-118.3	0.0	0.83	0.20
18	1.9	0.0	101.4	0.0	-118.3	0.0	0.83	0.20
19	1.9	0.0	101.4	0.0	-118.3	0.0	0.83	0.20
20	1.9	0.0	101.4	0.0	-118.3	0.0	0.83	0.20
21	1.9	0.0	101.4	0.0	-118.3	0.0	0.83	0.20
22	1.9	0.0	101.4	0.0	-118.3	0.0	0.83	0.20
23	1.9	0.0	101.4	0.0	-118.3	0.0	0.83	0.20
24	1.9	0.0	101.4	0.0	-118.3	0.0	0.83	0.20
25	2.0	0.0	34.6	0.0	-126.7	0.0	0.28	0.09
26	2.0	0.0	34.6	0.0	-126.7	0.0	0.28	0.09
27	2.0	0.0	34.6	0.0	-126.7	0.0	0.28	0.09
28	2.0	0.0	34.6	0.0	-126.7	0.0	0.28	0.09
29	2.0	0.0	34.6	0.0	-126.7	0.0	0.28	0.09
30	2.0	0.0	34.6	0.0	-126.7	0.0	0.28	0.09
31	2.0	0.0	34.6	0.0	-126.7	0.0	0.28	0.09
32	2.0	0.0	34.6	0.0	-126.7	0.0	0.28	0.09

LOAD CASE - 5

IHNC T WALL 1 OUTPUT

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-1.7	0.0	12.0	0.0	110.3	0.0	0.07	0.04
2	-1.7	0.0	12.0	0.0	110.3	0.0	0.07	0.04
3	-1.7	0.0	12.0	0.0	110.3	0.0	0.07	0.04
4	-1.7	0.0	12.0	0.0	110.3	0.0	0.07	0.04
5	-1.7	0.0	12.0	0.0	110.3	0.0	0.07	0.04
6	-1.7	0.0	12.0	0.0	110.3	0.0	0.07	0.04
7	-1.7	0.0	12.0	0.0	110.3	0.0	0.07	0.04
8	-1.7	0.0	12.0	0.0	110.3	0.0	0.07	0.04
9	-1.6	0.0	-34.5	0.0	104.5	0.0	0.24	0.06
10	-1.6	0.0	-34.5	0.0	104.5	0.0	0.24	0.06
11	-1.6	0.0	-34.5	0.0	104.5	0.0	0.24	0.06
12	-1.6	0.0	-34.5	0.0	104.5	0.0	0.24	0.06
13	-1.6	0.0	-34.5	0.0	104.5	0.0	0.24	0.06
14	-1.6	0.0	-34.5	0.0	104.5	0.0	0.24	0.06
15	-1.6	0.0	-34.5	0.0	104.5	0.0	0.24	0.06
16	-1.6	0.0	-34.5	0.0	104.5	0.0	0.24	0.06
17	1.5	0.0	93.7	0.0	-97.1	0.0	0.58	0.14
18	1.5	0.0	93.7	0.0	-97.1	0.0	0.58	0.14
19	1.5	0.0	93.7	0.0	-97.1	0.0	0.58	0.14
20	1.5	0.0	93.7	0.0	-97.1	0.0	0.58	0.14
21	1.5	0.0	93.7	0.0	-97.1	0.0	0.58	0.14
22	1.5	0.0	93.7	0.0	-97.1	0.0	0.58	0.14
23	1.5	0.0	93.7	0.0	-97.1	0.0	0.58	0.14
24	1.5	0.0	93.7	0.0	-97.1	0.0	0.58	0.14
25	1.6	0.0	47.2	0.0	-102.9	0.0	0.29	0.08
26	1.6	0.0	47.2	0.0	-102.9	0.0	0.29	0.08
27	1.6	0.0	47.2	0.0	-102.9	0.0	0.29	0.08
28	1.6	0.0	47.2	0.0	-102.9	0.0	0.29	0.08
29	1.6	0.0	47.2	0.0	-102.9	0.0	0.29	0.08
30	1.6	0.0	47.2	0.0	-102.9	0.0	0.29	0.08
31	1.6	0.0	47.2	0.0	-102.9	0.0	0.29	0.08
32	1.6	0.0	47.2	0.0	-102.9	0.0	0.29	0.08

LOAD CASE - 6

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-2.1	0.0	22.4	0.0	133.5	0.0	0.14	0.06
2	-2.1	0.0	22.4	0.0	133.5	0.0	0.14	0.06
3	-2.1	0.0	22.4	0.0	133.5	0.0	0.14	0.06
4	-2.1	0.0	22.4	0.0	133.5	0.0	0.14	0.06
5	-2.1	0.0	22.4	0.0	133.5	0.0	0.14	0.06

6	-2.1	0.0	22.4	0.0	133.5	0.0	0.14	0.06
7	-2.1	0.0	22.4	0.0	133.5	0.0	0.14	0.06
8	-2.1	0.0	22.4	0.0	133.5	0.0	0.14	0.06
9	-2.0	0.0	-42.8	0.0	125.4	0.0	0.30	0.08
10	-2.0	0.0	-42.8	0.0	125.4	0.0	0.30	0.08
11	-2.0	0.0	-42.8	0.0	125.4	0.0	0.30	0.08
12	-2.0	0.0	-42.8	0.0	125.4	0.0	0.30	0.08
13	-2.0	0.0	-42.8	0.0	125.4	0.0	0.30	0.08
14	-2.0	0.0	-42.8	0.0	125.4	0.0	0.30	0.08
15	-2.0	0.0	-42.8	0.0	125.4	0.0	0.30	0.08
16	-2.0	0.0	-42.8	0.0	125.4	0.0	0.30	0.08
17	1.9	0.0	102.0	0.0	-118.0	0.0	0.63	0.15
18	1.9	0.0	102.0	0.0	-118.0	0.0	0.63	0.15
19	1.9	0.0	102.0	0.0	-118.0	0.0	0.63	0.15
20	1.9	0.0	102.0	0.0	-118.0	0.0	0.63	0.15
21	1.9	0.0	102.0	0.0	-118.0	0.0	0.63	0.15
22	1.9	0.0	102.0	0.0	-118.0	0.0	0.63	0.15
23	1.9	0.0	102.0	0.0	-118.0	0.0	0.63	0.15
24	1.9	0.0	102.0	0.0	-118.0	0.0	0.63	0.15
25	2.0	0.0	36.8	0.0	-126.1	0.0	0.23	0.07
26	2.0	0.0	36.8	0.0	-126.1	0.0	0.23	0.07
27	2.0	0.0	36.8	0.0	-126.1	0.0	0.23	0.07
28	2.0	0.0	36.8	0.0	-126.1	0.0	0.23	0.07
29	2.0	0.0	36.8	0.0	-126.1	0.0	0.23	0.07
30	2.0	0.0	36.8	0.0	-126.1	0.0	0.23	0.07
31	2.0	0.0	36.8	0.0	-126.1	0.0	0.23	0.07
32	2.0	0.0	36.8	0.0	-126.1	0.0	0.23	0.07

LOAD CASE - 7

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-1.7	0.0	14.2	0.0	110.8	0.0	0.09	0.04
2	-1.7	0.0	14.2	0.0	110.8	0.0	0.09	0.04
3	-1.7	0.0	14.2	0.0	110.8	0.0	0.09	0.04
4	-1.7	0.0	14.2	0.0	110.8	0.0	0.09	0.04
5	-1.7	0.0	14.2	0.0	110.8	0.0	0.09	0.04
6	-1.7	0.0	14.2	0.0	110.8	0.0	0.09	0.04
7	-1.7	0.0	14.2	0.0	110.8	0.0	0.09	0.04
8	-1.7	0.0	14.2	0.0	110.8	0.0	0.09	0.04
9	-1.7	0.0	-33.9	0.0	104.8	0.0	0.24	0.06
10	-1.7	0.0	-33.9	0.0	104.8	0.0	0.24	0.06
11	-1.7	0.0	-33.9	0.0	104.8	0.0	0.24	0.06
12	-1.7	0.0	-33.9	0.0	104.8	0.0	0.24	0.06
13	-1.7	0.0	-33.9	0.0	104.8	0.0	0.24	0.06
14	-1.7	0.0	-33.9	0.0	104.8	0.0	0.24	0.06

15	-1.7	0.0	-33.9	0.0	104.8	0.0	0.24	0.06
16	-1.7	0.0	-33.9	0.0	104.8	0.0	0.24	0.06
17	1.5	0.0	93.1	0.0	-97.4	0.0	0.57	0.13
18	1.5	0.0	93.1	0.0	-97.4	0.0	0.57	0.13
19	1.5	0.0	93.1	0.0	-97.4	0.0	0.57	0.13
20	1.5	0.0	93.1	0.0	-97.4	0.0	0.57	0.13
21	1.5	0.0	93.1	0.0	-97.4	0.0	0.57	0.13
22	1.5	0.0	93.1	0.0	-97.4	0.0	0.57	0.13
23	1.5	0.0	93.1	0.0	-97.4	0.0	0.57	0.13
24	1.5	0.0	93.1	0.0	-97.4	0.0	0.57	0.13
25	1.6	0.0	45.0	0.0	-103.4	0.0	0.28	0.08
26	1.6	0.0	45.0	0.0	-103.4	0.0	0.28	0.08
27	1.6	0.0	45.0	0.0	-103.4	0.0	0.28	0.08
28	1.6	0.0	45.0	0.0	-103.4	0.0	0.28	0.08
29	1.6	0.0	45.0	0.0	-103.4	0.0	0.28	0.08
30	1.6	0.0	45.0	0.0	-103.4	0.0	0.28	0.08
31	1.6	0.0	45.0	0.0	-103.4	0.0	0.28	0.08
32	1.6	0.0	45.0	0.0	-103.4	0.0	0.28	0.08

LOAD CASE - 8

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-2.1	0.0	24.6	0.0	134.0	0.0	0.15	0.06
2	-2.1	0.0	24.6	0.0	134.0	0.0	0.15	0.06
3	-2.1	0.0	24.6	0.0	134.0	0.0	0.15	0.06
4	-2.1	0.0	24.6	0.0	134.0	0.0	0.15	0.06
5	-2.1	0.0	24.6	0.0	134.0	0.0	0.15	0.06
6	-2.1	0.0	24.6	0.0	134.0	0.0	0.15	0.06
7	-2.1	0.0	24.6	0.0	134.0	0.0	0.15	0.06
8	-2.1	0.0	24.6	0.0	134.0	0.0	0.15	0.06
9	-2.0	0.0	-42.2	0.0	125.7	0.0	0.29	0.08
10	-2.0	0.0	-42.2	0.0	125.7	0.0	0.29	0.08
11	-2.0	0.0	-42.2	0.0	125.7	0.0	0.29	0.08
12	-2.0	0.0	-42.2	0.0	125.7	0.0	0.29	0.08
13	-2.0	0.0	-42.2	0.0	125.7	0.0	0.29	0.08
14	-2.0	0.0	-42.2	0.0	125.7	0.0	0.29	0.08
15	-2.0	0.0	-42.2	0.0	125.7	0.0	0.29	0.08
16	-2.0	0.0	-42.2	0.0	125.7	0.0	0.29	0.08
17	1.9	0.0	101.4	0.0	-118.3	0.0	0.62	0.15
18	1.9	0.0	101.4	0.0	-118.3	0.0	0.62	0.15
19	1.9	0.0	101.4	0.0	-118.3	0.0	0.62	0.15
20	1.9	0.0	101.4	0.0	-118.3	0.0	0.62	0.15
21	1.9	0.0	101.4	0.0	-118.3	0.0	0.62	0.15
22	1.9	0.0	101.4	0.0	-118.3	0.0	0.62	0.15
23	1.9	0.0	101.4	0.0	-118.3	0.0	0.62	0.15

24	1.9	0.0	101.4	0.0	-118.3	0.0	0.62	0.15
25	2.0	0.0	34.6	0.0	-126.7	0.0	0.21	0.07
26	2.0	0.0	34.6	0.0	-126.7	0.0	0.21	0.07
27	2.0	0.0	34.6	0.0	-126.7	0.0	0.21	0.07
28	2.0	0.0	34.6	0.0	-126.7	0.0	0.21	0.07
29	2.0	0.0	34.6	0.0	-126.7	0.0	0.21	0.07
30	2.0	0.0	34.6	0.0	-126.7	0.0	0.21	0.07
31	2.0	0.0	34.6	0.0	-126.7	0.0	0.21	0.07
32	2.0	0.0	34.6	0.0	-126.7	0.0	0.21	0.07

LOAD CASE - 9

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-1.4	0.0	-25.4	0.0	89.7	0.0	0.18	0.05
2	-1.4	0.0	-25.4	0.0	89.7	0.0	0.18	0.05
3	-1.4	0.0	-25.4	0.0	89.7	0.0	0.18	0.05
4	-1.4	0.0	-25.4	0.0	89.7	0.0	0.18	0.05
5	-1.4	0.0	-25.4	0.0	89.7	0.0	0.18	0.05
6	-1.4	0.0	-25.4	0.0	89.7	0.0	0.18	0.05
7	-1.4	0.0	-25.4	0.0	89.7	0.0	0.18	0.05
8	-1.4	0.0	-25.4	0.0	89.7	0.0	0.18	0.05
9	-1.4	0.0	-38.4	0.0	88.1	0.0	0.27	0.07
10	-1.4	0.0	-38.4	0.0	88.1	0.0	0.27	0.07
11	-1.4	0.0	-38.4	0.0	88.1	0.0	0.27	0.07
12	-1.4	0.0	-38.4	0.0	88.1	0.0	0.27	0.07
13	-1.4	0.0	-38.4	0.0	88.1	0.0	0.27	0.07
14	-1.4	0.0	-38.4	0.0	88.1	0.0	0.27	0.07
15	-1.4	0.0	-38.4	0.0	88.1	0.0	0.27	0.07
16	-1.4	0.0	-38.4	0.0	88.1	0.0	0.27	0.07
17	1.3	0.0	97.6	0.0	-80.7	0.0	0.60	0.14
18	1.3	0.0	97.6	0.0	-80.7	0.0	0.60	0.14
19	1.3	0.0	97.6	0.0	-80.7	0.0	0.60	0.14
20	1.3	0.0	97.6	0.0	-80.7	0.0	0.60	0.14
21	1.3	0.0	97.6	0.0	-80.7	0.0	0.60	0.14
22	1.3	0.0	97.6	0.0	-80.7	0.0	0.60	0.14
23	1.3	0.0	97.6	0.0	-80.7	0.0	0.60	0.14
24	1.3	0.0	97.6	0.0	-80.7	0.0	0.60	0.14
25	1.3	0.0	84.5	0.0	-82.3	0.0	0.52	0.12
26	1.3	0.0	84.5	0.0	-82.3	0.0	0.52	0.12
27	1.3	0.0	84.5	0.0	-82.3	0.0	0.52	0.12
28	1.3	0.0	84.5	0.0	-82.3	0.0	0.52	0.12
29	1.3	0.0	84.5	0.0	-82.3	0.0	0.52	0.12
30	1.3	0.0	84.5	0.0	-82.3	0.0	0.52	0.12
31	1.3	0.0	84.5	0.0	-82.3	0.0	0.52	0.12
32	1.3	0.0	84.5	0.0	-82.3	0.0	0.52	0.12

LOAD CASE - 10

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-1.8	0.0	-15.0	0.0	112.9	0.0	0.10	0.04
2	-1.8	0.0	-15.0	0.0	112.9	0.0	0.10	0.04
3	-1.8	0.0	-15.0	0.0	112.9	0.0	0.10	0.04
4	-1.8	0.0	-15.0	0.0	112.9	0.0	0.10	0.04
5	-1.8	0.0	-15.0	0.0	112.9	0.0	0.10	0.04
6	-1.8	0.0	-15.0	0.0	112.9	0.0	0.10	0.04
7	-1.8	0.0	-15.0	0.0	112.9	0.0	0.10	0.04
8	-1.8	0.0	-15.0	0.0	112.9	0.0	0.10	0.04
9	-1.7	0.0	-46.7	0.0	109.0	0.0	0.32	0.08
10	-1.7	0.0	-46.7	0.0	109.0	0.0	0.32	0.08
11	-1.7	0.0	-46.7	0.0	109.0	0.0	0.32	0.08
12	-1.7	0.0	-46.7	0.0	109.0	0.0	0.32	0.08
13	-1.7	0.0	-46.7	0.0	109.0	0.0	0.32	0.08
14	-1.7	0.0	-46.7	0.0	109.0	0.0	0.32	0.08
15	-1.7	0.0	-46.7	0.0	109.0	0.0	0.32	0.08
16	-1.7	0.0	-46.7	0.0	109.0	0.0	0.32	0.08
17	1.6	0.0	105.9	0.0	-101.6	0.0	0.65	0.15
18	1.6	0.0	105.9	0.0	-101.6	0.0	0.65	0.15
19	1.6	0.0	105.9	0.0	-101.6	0.0	0.65	0.15
20	1.6	0.0	105.9	0.0	-101.6	0.0	0.65	0.15
21	1.6	0.0	105.9	0.0	-101.6	0.0	0.65	0.15
22	1.6	0.0	105.9	0.0	-101.6	0.0	0.65	0.15
23	1.6	0.0	105.9	0.0	-101.6	0.0	0.65	0.15
24	1.6	0.0	105.9	0.0	-101.6	0.0	0.65	0.15
25	1.7	0.0	74.2	0.0	-105.6	0.0	0.46	0.11
26	1.7	0.0	74.2	0.0	-105.6	0.0	0.46	0.11
27	1.7	0.0	74.2	0.0	-105.6	0.0	0.46	0.11
28	1.7	0.0	74.2	0.0	-105.6	0.0	0.46	0.11
29	1.7	0.0	74.2	0.0	-105.6	0.0	0.46	0.11
30	1.7	0.0	74.2	0.0	-105.6	0.0	0.46	0.11
31	1.7	0.0	74.2	0.0	-105.6	0.0	0.46	0.11
32	1.7	0.0	74.2	0.0	-105.6	0.0	0.46	0.11

LOAD CASE - 11

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-3.2	0.0	-1.8	0.0	202.6	0.0	0.01	0.05
2	-3.2	0.0	-1.8	0.0	202.6	0.0	0.01	0.05

3	-3.2	0.0	-1.8	0.0	202.6	0.0	0.01	0.05
4	-3.2	0.0	-1.8	0.0	202.6	0.0	0.01	0.05
5	-3.2	0.0	-1.8	0.0	202.6	0.0	0.01	0.05
6	-3.2	0.0	-1.8	0.0	202.6	0.0	0.01	0.05
7	-3.2	0.0	-1.8	0.0	202.6	0.0	0.01	0.05
8	-3.2	0.0	-1.8	0.0	202.6	0.0	0.01	0.05
9	-3.0	0.0	-88.9	0.0	191.7	0.0	0.62	0.15
10	-3.0	0.0	-88.9	0.0	191.7	0.0	0.62	0.15
11	-3.0	0.0	-88.9	0.0	191.7	0.0	0.62	0.15
12	-3.0	0.0	-88.9	0.0	191.7	0.0	0.62	0.15
13	-3.0	0.0	-88.9	0.0	191.7	0.0	0.62	0.15
14	-3.0	0.0	-88.9	0.0	191.7	0.0	0.62	0.15
15	-3.0	0.0	-88.9	0.0	191.7	0.0	0.62	0.15
16	-3.0	0.0	-88.9	0.0	191.7	0.0	0.62	0.15
17	2.9	0.0	149.8	0.0	-184.1	0.0	0.92	0.22
18	2.9	0.0	149.8	0.0	-184.1	0.0	0.92	0.22
19	2.9	0.0	149.8	0.0	-184.1	0.0	0.92	0.22
20	2.9	0.0	149.8	0.0	-184.1	0.0	0.92	0.22
21	2.9	0.0	149.8	0.0	-184.1	0.0	0.92	0.22
22	2.9	0.0	149.8	0.0	-184.1	0.0	0.92	0.22
23	2.9	0.0	149.8	0.0	-184.1	0.0	0.92	0.22
24	2.9	0.0	149.8	0.0	-184.1	0.0	0.92	0.22
25	3.1	0.0	62.8	0.0	-195.0	0.0	0.39	0.12
26	3.1	0.0	62.8	0.0	-195.0	0.0	0.39	0.12
27	3.1	0.0	62.8	0.0	-195.0	0.0	0.39	0.12
28	3.1	0.0	62.8	0.0	-195.0	0.0	0.39	0.12
29	3.1	0.0	62.8	0.0	-195.0	0.0	0.39	0.12
30	3.1	0.0	62.8	0.0	-195.0	0.0	0.39	0.12
31	3.1	0.0	62.8	0.0	-195.0	0.0	0.39	0.12
32	3.1	0.0	62.8	0.0	-195.0	0.0	0.39	0.12

LOAD CASE - 12

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-3.7	0.0	12.4	0.0	234.5	0.0	0.08	0.07
2	-3.7	0.0	12.4	0.0	234.5	0.0	0.08	0.07
3	-3.7	0.0	12.4	0.0	234.5	0.0	0.08	0.07
4	-3.7	0.0	12.4	0.0	234.5	0.0	0.08	0.07
5	-3.7	0.0	12.4	0.0	234.5	0.0	0.08	0.07
6	-3.7	0.0	12.4	0.0	234.5	0.0	0.08	0.07
7	-3.7	0.0	12.4	0.0	234.5	0.0	0.08	0.07
8	-3.7	0.0	12.4	0.0	234.5	0.0	0.08	0.07
9	-3.5	0.0	-100.3	0.0	220.4	0.0	0.70	0.17
10	-3.5	0.0	-100.3	0.0	220.4	0.0	0.70	0.17
11	-3.5	0.0	-100.3	0.0	220.4	0.0	0.70	0.17

12	-3.5	0.0	-100.3	0.0	220.4	0.0	0.70	0.17
13	-3.5	0.0	-100.3	0.0	220.4	0.0	0.70	0.17
14	-3.5	0.0	-100.3	0.0	220.4	0.0	0.70	0.17
15	-3.5	0.0	-100.3	0.0	220.4	0.0	0.70	0.17
16	-3.5	0.0	-100.3	0.0	220.4	0.0	0.70	0.17
17	3.4	0.0	161.2	0.0	-212.9	0.0	0.99	0.24
18	3.4	0.0	161.2	0.0	-212.9	0.0	0.99	0.24
19	3.4	0.0	161.2	0.0	-212.9	0.0	0.99	0.24
20	3.4	0.0	161.2	0.0	-212.9	0.0	0.99	0.24
21	3.4	0.0	161.2	0.0	-212.9	0.0	0.99	0.24
22	3.4	0.0	161.2	0.0	-212.9	0.0	0.99	0.24
23	3.4	0.0	161.2	0.0	-212.9	0.0	0.99	0.24
24	3.4	0.0	161.2	0.0	-212.9	0.0	0.99	0.24
25	3.6	0.0	48.6	0.0	-226.9	0.0	0.30	0.11
26	3.6	0.0	48.6	0.0	-226.9	0.0	0.30	0.11
27	3.6	0.0	48.6	0.0	-226.9	0.0	0.30	0.11
28	3.6	0.0	48.6	0.0	-226.9	0.0	0.30	0.11
29	3.6	0.0	48.6	0.0	-226.9	0.0	0.30	0.11
30	3.6	0.0	48.6	0.0	-226.9	0.0	0.30	0.11
31	3.6	0.0	48.6	0.0	-226.9	0.0	0.30	0.11
32	3.6	0.0	48.6	0.0	-226.9	0.0	0.30	0.11

LOAD CASE - 13

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-1.1	0.0	-62.7	0.0	69.1	0.0	0.33	0.07
2	-1.1	0.0	-62.7	0.0	69.1	0.0	0.33	0.07
3	-1.1	0.0	-62.7	0.0	69.1	0.0	0.33	0.07
4	-1.1	0.0	-62.7	0.0	69.1	0.0	0.33	0.07
5	-1.1	0.0	-62.7	0.0	69.1	0.0	0.33	0.07
6	-1.1	0.0	-62.7	0.0	69.1	0.0	0.33	0.07
7	-1.1	0.0	-62.7	0.0	69.1	0.0	0.33	0.07
8	-1.1	0.0	-62.7	0.0	69.1	0.0	0.33	0.07
9	-1.1	0.0	-42.4	0.0	71.7	0.0	0.23	0.05
10	-1.1	0.0	-42.4	0.0	71.7	0.0	0.23	0.05
11	-1.1	0.0	-42.4	0.0	71.7	0.0	0.23	0.05
12	-1.1	0.0	-42.4	0.0	71.7	0.0	0.23	0.05
13	-1.1	0.0	-42.4	0.0	71.7	0.0	0.23	0.05
14	-1.1	0.0	-42.4	0.0	71.7	0.0	0.23	0.05
15	-1.1	0.0	-42.4	0.0	71.7	0.0	0.23	0.05
16	-1.1	0.0	-42.4	0.0	71.7	0.0	0.23	0.05
17	1.0	0.0	101.6	0.0	-64.3	0.0	0.48	0.11
18	1.0	0.0	101.6	0.0	-64.3	0.0	0.48	0.11
19	1.0	0.0	101.6	0.0	-64.3	0.0	0.48	0.11
20	1.0	0.0	101.6	0.0	-64.3	0.0	0.48	0.11

21	1.0	0.0	101.6	0.0	-64.3	0.0	0.48	0.11
22	1.0	0.0	101.6	0.0	-64.3	0.0	0.48	0.11
23	1.0	0.0	101.6	0.0	-64.3	0.0	0.48	0.11
24	1.0	0.0	101.6	0.0	-64.3	0.0	0.48	0.11
25	1.0	0.0	121.9	0.0	-61.8	0.0	0.57	0.12
26	1.0	0.0	121.9	0.0	-61.8	0.0	0.57	0.12
27	1.0	0.0	121.9	0.0	-61.8	0.0	0.57	0.12
28	1.0	0.0	121.9	0.0	-61.8	0.0	0.57	0.12
29	1.0	0.0	121.9	0.0	-61.8	0.0	0.57	0.12
30	1.0	0.0	121.9	0.0	-61.8	0.0	0.57	0.12
31	1.0	0.0	121.9	0.0	-61.8	0.0	0.57	0.12
32	1.0	0.0	121.9	0.0	-61.8	0.0	0.57	0.12

LOAD CASE - 14

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-1.5	0.0	-52.3	0.0	92.4	0.0	0.28	0.06
2	-1.5	0.0	-52.3	0.0	92.4	0.0	0.28	0.06
3	-1.5	0.0	-52.3	0.0	92.4	0.0	0.28	0.06
4	-1.5	0.0	-52.3	0.0	92.4	0.0	0.28	0.06
5	-1.5	0.0	-52.3	0.0	92.4	0.0	0.28	0.06
6	-1.5	0.0	-52.3	0.0	92.4	0.0	0.28	0.06
7	-1.5	0.0	-52.3	0.0	92.4	0.0	0.28	0.06
8	-1.5	0.0	-52.3	0.0	92.4	0.0	0.28	0.06
9	-1.5	0.0	-50.7	0.0	92.6	0.0	0.27	0.06
10	-1.5	0.0	-50.7	0.0	92.6	0.0	0.27	0.06
11	-1.5	0.0	-50.7	0.0	92.6	0.0	0.27	0.06
12	-1.5	0.0	-50.7	0.0	92.6	0.0	0.27	0.06
13	-1.5	0.0	-50.7	0.0	92.6	0.0	0.27	0.06
14	-1.5	0.0	-50.7	0.0	92.6	0.0	0.27	0.06
15	-1.5	0.0	-50.7	0.0	92.6	0.0	0.27	0.06
16	-1.5	0.0	-50.7	0.0	92.6	0.0	0.27	0.06
17	1.3	0.0	109.8	0.0	-85.2	0.0	0.52	0.12
18	1.3	0.0	109.8	0.0	-85.2	0.0	0.52	0.12
19	1.3	0.0	109.8	0.0	-85.2	0.0	0.52	0.12
20	1.3	0.0	109.8	0.0	-85.2	0.0	0.52	0.12
21	1.3	0.0	109.8	0.0	-85.2	0.0	0.52	0.12
22	1.3	0.0	109.8	0.0	-85.2	0.0	0.52	0.12
23	1.3	0.0	109.8	0.0	-85.2	0.0	0.52	0.12
24	1.3	0.0	109.8	0.0	-85.2	0.0	0.52	0.12
25	1.3	0.0	111.5	0.0	-85.0	0.0	0.53	0.12
26	1.3	0.0	111.5	0.0	-85.0	0.0	0.53	0.12
27	1.3	0.0	111.5	0.0	-85.0	0.0	0.53	0.12
28	1.3	0.0	111.5	0.0	-85.0	0.0	0.53	0.12
29	1.3	0.0	111.5	0.0	-85.0	0.0	0.53	0.12

30	1.3	0.0	111.5	0.0	-85.0	0.0	0.53	0.12
31	1.3	0.0	111.5	0.0	-85.0	0.0	0.53	0.12
32	1.3	0.0	111.5	0.0	-85.0	0.0	0.53	0.12

LOAD CASE - 15

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-1.4	0.0	-25.4	0.0	89.7	0.0	0.18	0.05
2	-1.4	0.0	-25.4	0.0	89.7	0.0	0.18	0.05
3	-1.4	0.0	-25.4	0.0	89.7	0.0	0.18	0.05
4	-1.4	0.0	-25.4	0.0	89.7	0.0	0.18	0.05
5	-1.4	0.0	-25.4	0.0	89.7	0.0	0.18	0.05
6	-1.4	0.0	-25.4	0.0	89.7	0.0	0.18	0.05
7	-1.4	0.0	-25.4	0.0	89.7	0.0	0.18	0.05
8	-1.4	0.0	-25.4	0.0	89.7	0.0	0.18	0.05
9	-1.4	0.0	-38.4	0.0	88.1	0.0	0.27	0.07
10	-1.4	0.0	-38.4	0.0	88.1	0.0	0.27	0.07
11	-1.4	0.0	-38.4	0.0	88.1	0.0	0.27	0.07
12	-1.4	0.0	-38.4	0.0	88.1	0.0	0.27	0.07
13	-1.4	0.0	-38.4	0.0	88.1	0.0	0.27	0.07
14	-1.4	0.0	-38.4	0.0	88.1	0.0	0.27	0.07
15	-1.4	0.0	-38.4	0.0	88.1	0.0	0.27	0.07
16	-1.4	0.0	-38.4	0.0	88.1	0.0	0.27	0.07
17	1.3	0.0	97.6	0.0	-80.7	0.0	0.60	0.14
18	1.3	0.0	97.6	0.0	-80.7	0.0	0.60	0.14
19	1.3	0.0	97.6	0.0	-80.7	0.0	0.60	0.14
20	1.3	0.0	97.6	0.0	-80.7	0.0	0.60	0.14
21	1.3	0.0	97.6	0.0	-80.7	0.0	0.60	0.14
22	1.3	0.0	97.6	0.0	-80.7	0.0	0.60	0.14
23	1.3	0.0	97.6	0.0	-80.7	0.0	0.60	0.14
24	1.3	0.0	97.6	0.0	-80.7	0.0	0.60	0.14
25	1.3	0.0	84.5	0.0	-82.3	0.0	0.52	0.12
26	1.3	0.0	84.5	0.0	-82.3	0.0	0.52	0.12
27	1.3	0.0	84.5	0.0	-82.3	0.0	0.52	0.12
28	1.3	0.0	84.5	0.0	-82.3	0.0	0.52	0.12
29	1.3	0.0	84.5	0.0	-82.3	0.0	0.52	0.12
30	1.3	0.0	84.5	0.0	-82.3	0.0	0.52	0.12
31	1.3	0.0	84.5	0.0	-82.3	0.0	0.52	0.12
32	1.3	0.0	84.5	0.0	-82.3	0.0	0.52	0.12

LOAD CASE - 16

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF

1	-1.8	0.0	-15.0	0.0	112.9	0.0	0.10	0.04
2	-1.8	0.0	-15.0	0.0	112.9	0.0	0.10	0.04
3	-1.8	0.0	-15.0	0.0	112.9	0.0	0.10	0.04
4	-1.8	0.0	-15.0	0.0	112.9	0.0	0.10	0.04
5	-1.8	0.0	-15.0	0.0	112.9	0.0	0.10	0.04
6	-1.8	0.0	-15.0	0.0	112.9	0.0	0.10	0.04
7	-1.8	0.0	-15.0	0.0	112.9	0.0	0.10	0.04
8	-1.8	0.0	-15.0	0.0	112.9	0.0	0.10	0.04
9	-1.7	0.0	-46.7	0.0	109.0	0.0	0.32	0.08
10	-1.7	0.0	-46.7	0.0	109.0	0.0	0.32	0.08
11	-1.7	0.0	-46.7	0.0	109.0	0.0	0.32	0.08
12	-1.7	0.0	-46.7	0.0	109.0	0.0	0.32	0.08
13	-1.7	0.0	-46.7	0.0	109.0	0.0	0.32	0.08
14	-1.7	0.0	-46.7	0.0	109.0	0.0	0.32	0.08
15	-1.7	0.0	-46.7	0.0	109.0	0.0	0.32	0.08
16	-1.7	0.0	-46.7	0.0	109.0	0.0	0.32	0.08
17	1.6	0.0	105.9	0.0	-101.6	0.0	0.65	0.15
18	1.6	0.0	105.9	0.0	-101.6	0.0	0.65	0.15
19	1.6	0.0	105.9	0.0	-101.6	0.0	0.65	0.15
20	1.6	0.0	105.9	0.0	-101.6	0.0	0.65	0.15
21	1.6	0.0	105.9	0.0	-101.6	0.0	0.65	0.15
22	1.6	0.0	105.9	0.0	-101.6	0.0	0.65	0.15
23	1.6	0.0	105.9	0.0	-101.6	0.0	0.65	0.15
24	1.6	0.0	105.9	0.0	-101.6	0.0	0.65	0.15
25	1.7	0.0	74.2	0.0	-105.6	0.0	0.46	0.11
26	1.7	0.0	74.2	0.0	-105.6	0.0	0.46	0.11
27	1.7	0.0	74.2	0.0	-105.6	0.0	0.46	0.11
28	1.7	0.0	74.2	0.0	-105.6	0.0	0.46	0.11
29	1.7	0.0	74.2	0.0	-105.6	0.0	0.46	0.11
30	1.7	0.0	74.2	0.0	-105.6	0.0	0.46	0.11
31	1.7	0.0	74.2	0.0	-105.6	0.0	0.46	0.11
32	1.7	0.0	74.2	0.0	-105.6	0.0	0.46	0.11

LOAD CASE - 17

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-1.1	0.0	-36.4	0.0	72.4	0.0	0.17	0.04
2	-1.1	0.0	-43.9	0.0	71.5	0.0	0.20	0.05
3	-1.1	0.0	-51.4	0.0	70.5	0.0	0.24	0.05
4	-1.1	0.0	-58.9	0.0	69.6	0.0	0.27	0.06
5	-1.1	0.0	-66.5	0.0	68.7	0.0	0.31	0.06
6	-1.1	0.0	-74.0	0.0	67.7	0.0	0.34	0.07
7	-1.1	0.0	-81.5	0.0	66.8	0.0	0.38	0.08
8	-1.0	0.0	-89.0	0.0	65.8	0.0	0.41	0.08

9	-1.2	0.0	-16.0	0.0	74.9	0.0	0.07	0.02
10	-1.2	0.0	-23.6	0.0	74.0	0.0	0.11	0.03
11	-1.2	0.0	-31.1	0.0	73.1	0.0	0.14	0.04
12	-1.1	0.0	-38.6	0.0	72.1	0.0	0.18	0.04
13	-1.1	0.0	-46.1	0.0	71.2	0.0	0.21	0.05
14	-1.1	0.0	-53.7	0.0	70.3	0.0	0.25	0.05
15	-1.1	0.0	-61.2	0.0	69.3	0.0	0.28	0.06
16	-1.1	0.0	-68.7	0.0	68.4	0.0	0.32	0.07
17	1.0	0.0	127.9	0.0	-61.0	0.0	0.52	0.11
18	1.0	0.0	120.4	0.0	-61.9	0.0	0.49	0.11
19	1.0	0.0	112.8	0.0	-62.9	0.0	0.46	0.10
20	1.0	0.0	105.3	0.0	-63.8	0.0	0.43	0.09
21	1.0	0.0	97.8	0.0	-64.8	0.0	0.40	0.09
22	1.0	0.0	90.3	0.0	-65.7	0.0	0.37	0.08
23	1.0	0.0	82.7	0.0	-66.6	0.0	0.34	0.08
24	1.1	0.0	75.2	0.0	-67.6	0.0	0.31	0.07
25	0.9	0.0	148.2	0.0	-58.5	0.0	0.61	0.13
26	0.9	0.0	140.7	0.0	-59.4	0.0	0.58	0.12
27	1.0	0.0	133.2	0.0	-60.4	0.0	0.55	0.12
28	1.0	0.0	125.7	0.0	-61.3	0.0	0.51	0.11
29	1.0	0.0	118.1	0.0	-62.2	0.0	0.48	0.10
30	1.0	0.0	110.6	0.0	-63.2	0.0	0.45	0.10
31	1.0	0.0	103.1	0.0	-64.1	0.0	0.42	0.09
32	1.0	0.0	95.6	0.0	-65.0	0.0	0.39	0.09

LOAD CASE - 18

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-1.5	0.0	-26.0	0.0	95.6	0.0	0.12	0.03
2	-1.5	0.0	-33.5	0.0	94.7	0.0	0.16	0.04
3	-1.5	0.0	-41.0	0.0	93.8	0.0	0.19	0.05
4	-1.5	0.0	-48.6	0.0	92.8	0.0	0.22	0.05
5	-1.4	0.0	-56.1	0.0	91.9	0.0	0.26	0.06
6	-1.4	0.0	-63.6	0.0	91.0	0.0	0.29	0.06
7	-1.4	0.0	-71.1	0.0	90.0	0.0	0.33	0.07
8	-1.4	0.0	-78.7	0.0	89.1	0.0	0.36	0.08
9	-1.5	0.0	-24.3	0.0	95.8	0.0	0.11	0.03
10	-1.5	0.0	-31.8	0.0	94.9	0.0	0.15	0.04
11	-1.5	0.0	-39.4	0.0	94.0	0.0	0.18	0.05
12	-1.5	0.0	-46.9	0.0	93.0	0.0	0.22	0.05
13	-1.5	0.0	-54.4	0.0	92.1	0.0	0.25	0.06
14	-1.4	0.0	-61.9	0.0	91.2	0.0	0.29	0.06
15	-1.4	0.0	-69.5	0.0	90.2	0.0	0.32	0.07
16	-1.4	0.0	-77.0	0.0	89.3	0.0	0.36	0.08
17	1.3	0.0	136.2	0.0	-81.9	0.0	0.56	0.12

18	1.3	0.0	128.7	0.0	-82.9	0.0	0.53	0.12
19	1.3	0.0	121.1	0.0	-83.8	0.0	0.50	0.11
20	1.3	0.0	113.6	0.0	-84.7	0.0	0.47	0.10
21	1.3	0.0	106.1	0.0	-85.7	0.0	0.43	0.10
22	1.4	0.0	98.6	0.0	-86.6	0.0	0.40	0.09
23	1.4	0.0	91.0	0.0	-87.5	0.0	0.37	0.09
24	1.4	0.0	83.5	0.0	-88.5	0.0	0.34	0.08
25	1.3	0.0	137.8	0.0	-81.7	0.0	0.56	0.12
26	1.3	0.0	130.3	0.0	-82.7	0.0	0.53	0.12
27	1.3	0.0	122.8	0.0	-83.6	0.0	0.50	0.11
28	1.3	0.0	115.3	0.0	-84.5	0.0	0.47	0.11
29	1.3	0.0	107.8	0.0	-85.5	0.0	0.44	0.10
30	1.4	0.0	100.2	0.0	-86.4	0.0	0.41	0.09
31	1.4	0.0	92.7	0.0	-87.3	0.0	0.38	0.09
32	1.4	0.0	85.2	0.0	-88.3	0.0	0.35	0.08

LOAD CASE - 19

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-1.4	0.0	-12.2	0.0	91.3	0.0	0.06	0.02
2	-1.4	0.0	-15.9	0.0	90.9	0.0	0.07	0.03
3	-1.4	0.0	-19.7	0.0	90.4	0.0	0.09	0.03
4	-1.4	0.0	-23.5	0.0	89.9	0.0	0.11	0.03
5	-1.4	0.0	-27.2	0.0	89.5	0.0	0.13	0.04
6	-1.4	0.0	-31.0	0.0	89.0	0.0	0.14	0.04
7	-1.4	0.0	-34.8	0.0	88.5	0.0	0.16	0.04
8	-1.4	0.0	-38.5	0.0	88.1	0.0	0.18	0.04
9	-1.4	0.0	-25.3	0.0	89.7	0.0	0.12	0.03
10	-1.4	0.0	-29.0	0.0	89.2	0.0	0.13	0.04
11	-1.4	0.0	-32.8	0.0	88.8	0.0	0.15	0.04
12	-1.4	0.0	-36.6	0.0	88.3	0.0	0.17	0.04
13	-1.4	0.0	-40.3	0.0	87.8	0.0	0.19	0.05
14	-1.4	0.0	-44.1	0.0	87.4	0.0	0.20	0.05
15	-1.4	0.0	-47.8	0.0	86.9	0.0	0.22	0.05
16	-1.4	0.0	-51.6	0.0	86.4	0.0	0.24	0.05
17	1.2	0.0	110.8	0.0	-79.1	0.0	0.45	0.10
18	1.3	0.0	107.0	0.0	-79.5	0.0	0.44	0.10
19	1.3	0.0	103.3	0.0	-80.0	0.0	0.42	0.10
20	1.3	0.0	99.5	0.0	-80.5	0.0	0.41	0.09
21	1.3	0.0	95.7	0.0	-80.9	0.0	0.39	0.09
22	1.3	0.0	92.0	0.0	-81.4	0.0	0.38	0.09
23	1.3	0.0	88.2	0.0	-81.9	0.0	0.36	0.08
24	1.3	0.0	84.5	0.0	-82.3	0.0	0.35	0.08
25	1.3	0.0	97.7	0.0	-80.7	0.0	0.40	0.09
26	1.3	0.0	93.9	0.0	-81.2	0.0	0.39	0.09

27	1.3	0.0	90.2	0.0	-81.6	0.0	0.37	0.08
28	1.3	0.0	86.4	0.0	-82.1	0.0	0.35	0.08
29	1.3	0.0	82.7	0.0	-82.6	0.0	0.34	0.08
30	1.3	0.0	78.9	0.0	-83.0	0.0	0.32	0.08
31	1.3	0.0	75.1	0.0	-83.5	0.0	0.31	0.07
32	1.3	0.0	71.4	0.0	-84.0	0.0	0.29	0.07

LOAD CASE - 20

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-1.8	0.0	-1.8	0.0	114.6	0.0	0.01	0.02
2	-1.8	0.0	-5.6	0.0	114.1	0.0	0.03	0.02
3	-1.8	0.0	-9.3	0.0	113.6	0.0	0.04	0.02
4	-1.8	0.0	-13.1	0.0	113.2	0.0	0.06	0.03
5	-1.8	0.0	-16.9	0.0	112.7	0.0	0.08	0.03
6	-1.8	0.0	-20.6	0.0	112.2	0.0	0.10	0.03
7	-1.8	0.0	-24.4	0.0	111.8	0.0	0.11	0.04
8	-1.8	0.0	-28.1	0.0	111.3	0.0	0.13	0.04
9	-1.7	0.0	-33.6	0.0	110.6	0.0	0.16	0.04
10	-1.7	0.0	-37.3	0.0	110.2	0.0	0.17	0.05
11	-1.7	0.0	-41.1	0.0	109.7	0.0	0.19	0.05
12	-1.7	0.0	-44.9	0.0	109.2	0.0	0.21	0.05
13	-1.7	0.0	-48.6	0.0	108.7	0.0	0.23	0.06
14	-1.7	0.0	-52.4	0.0	108.3	0.0	0.24	0.06
15	-1.7	0.0	-56.1	0.0	107.8	0.0	0.26	0.06
16	-1.7	0.0	-59.9	0.0	107.3	0.0	0.28	0.06
17	1.6	0.0	119.1	0.0	-100.0	0.0	0.49	0.11
18	1.6	0.0	115.3	0.0	-100.4	0.0	0.47	0.11
19	1.6	0.0	111.6	0.0	-100.9	0.0	0.46	0.11
20	1.6	0.0	107.8	0.0	-101.4	0.0	0.44	0.10
21	1.6	0.0	104.0	0.0	-101.8	0.0	0.43	0.10
22	1.6	0.0	100.3	0.0	-102.3	0.0	0.41	0.10
23	1.6	0.0	96.5	0.0	-102.8	0.0	0.40	0.09
24	1.6	0.0	92.8	0.0	-103.3	0.0	0.38	0.09
25	1.6	0.0	87.3	0.0	-103.9	0.0	0.36	0.09
26	1.6	0.0	83.6	0.0	-104.4	0.0	0.34	0.08
27	1.7	0.0	79.8	0.0	-104.9	0.0	0.33	0.08
28	1.7	0.0	76.0	0.0	-105.3	0.0	0.31	0.08
29	1.7	0.0	72.3	0.0	-105.8	0.0	0.30	0.07
30	1.7	0.0	68.5	0.0	-106.3	0.0	0.28	0.07
31	1.7	0.0	64.8	0.0	-106.7	0.0	0.27	0.07
32	1.7	0.0	61.0	0.0	-107.2	0.0	0.25	0.06

LOAD CASE - 21

IHNC T WALL 1 OUTPUT

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-1.4	0.0	-23.1	0.0	90.2	0.0	0.16	0.05
2	-1.4	0.0	-23.1	0.0	90.2	0.0	0.16	0.05
3	-1.4	0.0	-23.1	0.0	90.2	0.0	0.16	0.05
4	-1.4	0.0	-23.1	0.0	90.2	0.0	0.16	0.05
5	-1.4	0.0	-23.1	0.0	90.2	0.0	0.16	0.05
6	-1.4	0.0	-23.1	0.0	90.2	0.0	0.16	0.05
7	-1.4	0.0	-23.1	0.0	90.2	0.0	0.16	0.05
8	-1.4	0.0	-23.1	0.0	90.2	0.0	0.16	0.05
9	-1.4	0.0	-37.8	0.0	88.4	0.0	0.26	0.07
10	-1.4	0.0	-37.8	0.0	88.4	0.0	0.26	0.07
11	-1.4	0.0	-37.8	0.0	88.4	0.0	0.26	0.07
12	-1.4	0.0	-37.8	0.0	88.4	0.0	0.26	0.07
13	-1.4	0.0	-37.8	0.0	88.4	0.0	0.26	0.07
14	-1.4	0.0	-37.8	0.0	88.4	0.0	0.26	0.07
15	-1.4	0.0	-37.8	0.0	88.4	0.0	0.26	0.07
16	-1.4	0.0	-37.8	0.0	88.4	0.0	0.26	0.07
17	1.3	0.0	97.0	0.0	-81.0	0.0	0.60	0.14
18	1.3	0.0	97.0	0.0	-81.0	0.0	0.60	0.14
19	1.3	0.0	97.0	0.0	-81.0	0.0	0.60	0.14
20	1.3	0.0	97.0	0.0	-81.0	0.0	0.60	0.14
21	1.3	0.0	97.0	0.0	-81.0	0.0	0.60	0.14
22	1.3	0.0	97.0	0.0	-81.0	0.0	0.60	0.14
23	1.3	0.0	97.0	0.0	-81.0	0.0	0.60	0.14
24	1.3	0.0	97.0	0.0	-81.0	0.0	0.60	0.14
25	1.3	0.0	82.3	0.0	-82.9	0.0	0.51	0.12
26	1.3	0.0	82.3	0.0	-82.9	0.0	0.51	0.12
27	1.3	0.0	82.3	0.0	-82.9	0.0	0.51	0.12
28	1.3	0.0	82.3	0.0	-82.9	0.0	0.51	0.12
29	1.3	0.0	82.3	0.0	-82.9	0.0	0.51	0.12
30	1.3	0.0	82.3	0.0	-82.9	0.0	0.51	0.12
31	1.3	0.0	82.3	0.0	-82.9	0.0	0.51	0.12
32	1.3	0.0	82.3	0.0	-82.9	0.0	0.51	0.12

LOAD CASE - 22

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-1.8	0.0	-12.8	0.0	113.5	0.0	0.09	0.04
2	-1.8	0.0	-12.8	0.0	113.5	0.0	0.09	0.04
3	-1.8	0.0	-12.8	0.0	113.5	0.0	0.09	0.04
4	-1.8	0.0	-12.8	0.0	113.5	0.0	0.09	0.04
5	-1.8	0.0	-12.8	0.0	113.5	0.0	0.09	0.04

6	-1.8	0.0	-12.8	0.0	113.5	0.0	0.09	0.04
7	-1.8	0.0	-12.8	0.0	113.5	0.0	0.09	0.04
8	-1.8	0.0	-12.8	0.0	113.5	0.0	0.09	0.04
9	-1.7	0.0	-46.1	0.0	109.3	0.0	0.32	0.08
10	-1.7	0.0	-46.1	0.0	109.3	0.0	0.32	0.08
11	-1.7	0.0	-46.1	0.0	109.3	0.0	0.32	0.08
12	-1.7	0.0	-46.1	0.0	109.3	0.0	0.32	0.08
13	-1.7	0.0	-46.1	0.0	109.3	0.0	0.32	0.08
14	-1.7	0.0	-46.1	0.0	109.3	0.0	0.32	0.08
15	-1.7	0.0	-46.1	0.0	109.3	0.0	0.32	0.08
16	-1.7	0.0	-46.1	0.0	109.3	0.0	0.32	0.08
17	1.6	0.0	105.3	0.0	-101.9	0.0	0.65	0.15
18	1.6	0.0	105.3	0.0	-101.9	0.0	0.65	0.15
19	1.6	0.0	105.3	0.0	-101.9	0.0	0.65	0.15
20	1.6	0.0	105.3	0.0	-101.9	0.0	0.65	0.15
21	1.6	0.0	105.3	0.0	-101.9	0.0	0.65	0.15
22	1.6	0.0	105.3	0.0	-101.9	0.0	0.65	0.15
23	1.6	0.0	105.3	0.0	-101.9	0.0	0.65	0.15
24	1.6	0.0	105.3	0.0	-101.9	0.0	0.65	0.15
25	1.7	0.0	72.0	0.0	-106.1	0.0	0.44	0.11
26	1.7	0.0	72.0	0.0	-106.1	0.0	0.44	0.11
27	1.7	0.0	72.0	0.0	-106.1	0.0	0.44	0.11
28	1.7	0.0	72.0	0.0	-106.1	0.0	0.44	0.11
29	1.7	0.0	72.0	0.0	-106.1	0.0	0.44	0.11
30	1.7	0.0	72.0	0.0	-106.1	0.0	0.44	0.11
31	1.7	0.0	72.0	0.0	-106.1	0.0	0.44	0.11
32	1.7	0.0	72.0	0.0	-106.1	0.0	0.44	0.11

LOAD CASE - 23

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-1.1	0.0	-60.5	0.0	69.7	0.0	0.32	0.07
2	-1.1	0.0	-60.5	0.0	69.7	0.0	0.32	0.07
3	-1.1	0.0	-60.5	0.0	69.7	0.0	0.32	0.07
4	-1.1	0.0	-60.5	0.0	69.7	0.0	0.32	0.07
5	-1.1	0.0	-60.5	0.0	69.7	0.0	0.32	0.07
6	-1.1	0.0	-60.5	0.0	69.7	0.0	0.32	0.07
7	-1.1	0.0	-60.5	0.0	69.7	0.0	0.32	0.07
8	-1.1	0.0	-60.5	0.0	69.7	0.0	0.32	0.07
9	-1.1	0.0	-41.8	0.0	72.0	0.0	0.22	0.05
10	-1.1	0.0	-41.8	0.0	72.0	0.0	0.22	0.05
11	-1.1	0.0	-41.8	0.0	72.0	0.0	0.22	0.05
12	-1.1	0.0	-41.8	0.0	72.0	0.0	0.22	0.05
13	-1.1	0.0	-41.8	0.0	72.0	0.0	0.22	0.05
14	-1.1	0.0	-41.8	0.0	72.0	0.0	0.22	0.05

15	-1.1	0.0	-41.8	0.0	72.0	0.0	0.22	0.05
16	-1.1	0.0	-41.8	0.0	72.0	0.0	0.22	0.05
17	1.0	0.0	101.0	0.0	-64.6	0.0	0.48	0.10
18	1.0	0.0	101.0	0.0	-64.6	0.0	0.48	0.10
19	1.0	0.0	101.0	0.0	-64.6	0.0	0.48	0.10
20	1.0	0.0	101.0	0.0	-64.6	0.0	0.48	0.10
21	1.0	0.0	101.0	0.0	-64.6	0.0	0.48	0.10
22	1.0	0.0	101.0	0.0	-64.6	0.0	0.48	0.10
23	1.0	0.0	101.0	0.0	-64.6	0.0	0.48	0.10
24	1.0	0.0	101.0	0.0	-64.6	0.0	0.48	0.10
25	1.0	0.0	119.7	0.0	-62.3	0.0	0.56	0.12
26	1.0	0.0	119.7	0.0	-62.3	0.0	0.56	0.12
27	1.0	0.0	119.7	0.0	-62.3	0.0	0.56	0.12
28	1.0	0.0	119.7	0.0	-62.3	0.0	0.56	0.12
29	1.0	0.0	119.7	0.0	-62.3	0.0	0.56	0.12
30	1.0	0.0	119.7	0.0	-62.3	0.0	0.56	0.12
31	1.0	0.0	119.7	0.0	-62.3	0.0	0.56	0.12
32	1.0	0.0	119.7	0.0	-62.3	0.0	0.56	0.12

LOAD CASE - 24

PILE	F1 K	F2 K	F3 K	M1 IN-K	M2 IN-K	M3 IN-K	ALF	CBF
1	-1.5	0.0	-50.1	0.0	92.9	0.0	0.27	0.06
2	-1.5	0.0	-50.1	0.0	92.9	0.0	0.27	0.06
3	-1.5	0.0	-50.1	0.0	92.9	0.0	0.27	0.06
4	-1.5	0.0	-50.1	0.0	92.9	0.0	0.27	0.06
5	-1.5	0.0	-50.1	0.0	92.9	0.0	0.27	0.06
6	-1.5	0.0	-50.1	0.0	92.9	0.0	0.27	0.06
7	-1.5	0.0	-50.1	0.0	92.9	0.0	0.27	0.06
8	-1.5	0.0	-50.1	0.0	92.9	0.0	0.27	0.06
9	-1.5	0.0	-50.1	0.0	92.9	0.0	0.27	0.06
10	-1.5	0.0	-50.1	0.0	92.9	0.0	0.27	0.06
11	-1.5	0.0	-50.1	0.0	92.9	0.0	0.27	0.06
12	-1.5	0.0	-50.1	0.0	92.9	0.0	0.27	0.06
13	-1.5	0.0	-50.1	0.0	92.9	0.0	0.27	0.06
14	-1.5	0.0	-50.1	0.0	92.9	0.0	0.27	0.06
15	-1.5	0.0	-50.1	0.0	92.9	0.0	0.27	0.06
16	-1.5	0.0	-50.1	0.0	92.9	0.0	0.27	0.06
17	1.3	0.0	109.2	0.0	-85.5	0.0	0.51	0.12
18	1.3	0.0	109.2	0.0	-85.5	0.0	0.51	0.12
19	1.3	0.0	109.2	0.0	-85.5	0.0	0.51	0.12
20	1.3	0.0	109.2	0.0	-85.5	0.0	0.51	0.12
21	1.3	0.0	109.2	0.0	-85.5	0.0	0.51	0.12
22	1.3	0.0	109.2	0.0	-85.5	0.0	0.51	0.12
23	1.3	0.0	109.2	0.0	-85.5	0.0	0.51	0.12

IHNC T WALL 1 OUTPUT

24	1.3	0.0	109.2	0.0	-85.5	0.0 0.51 0.12
25	1.3	0.0	109.3	0.0	-85.5	0.0 0.51 0.12
26	1.3	0.0	109.3	0.0	-85.5	0.0 0.51 0.12
27	1.3	0.0	109.3	0.0	-85.5	0.0 0.51 0.12
28	1.3	0.0	109.3	0.0	-85.5	0.0 0.51 0.12
29	1.3	0.0	109.3	0.0	-85.5	0.0 0.51 0.12
30	1.3	0.0	109.3	0.0	-85.5	0.0 0.51 0.12
31	1.3	0.0	109.3	0.0	-85.5	0.0 0.51 0.12
32	1.3	0.0	109.3	0.0	-85.5	0.0 0.51 0.12

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PILE FORCES IN GLOBAL GEOMETRY

LOAD CASE - 1

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	-8.4	24.2	0.0	0.0	0.0
2	0.0	-8.4	24.2	0.0	0.0	0.0
3	0.0	-8.4	24.2	0.0	0.0	0.0
4	0.0	-8.4	24.2	0.0	0.0	0.0
5	0.0	-8.4	24.2	0.0	0.0	0.0
6	0.0	-8.4	24.2	0.0	0.0	0.0
7	0.0	-8.4	24.2	0.0	0.0	0.0
8	0.0	-8.4	24.2	0.0	0.0	0.0
9	0.0	-14.7	43.3	0.0	0.0	0.0
10	0.0	-14.7	43.3	0.0	0.0	0.0
11	0.0	-14.7	43.3	0.0	0.0	0.0
12	0.0	-14.7	43.3	0.0	0.0	0.0
13	0.0	-14.7	43.3	0.0	0.0	0.0
14	0.0	-14.7	43.3	0.0	0.0	0.0
15	0.0	-14.7	43.3	0.0	0.0	0.0
16	0.0	-14.7	43.3	0.0	0.0	0.0
17	0.0	8.4	26.5	0.0	0.0	0.0
18	0.0	8.4	26.5	0.0	0.0	0.0
19	0.0	8.4	26.5	0.0	0.0	0.0
20	0.0	8.4	26.5	0.0	0.0	0.0
21	0.0	8.4	26.5	0.0	0.0	0.0
22	0.0	8.4	26.5	0.0	0.0	0.0
23	0.0	8.4	26.5	0.0	0.0	0.0
24	0.0	8.4	26.5	0.0	0.0	0.0
25	0.0	14.7	45.6	0.0	0.0	0.0
26	0.0	14.7	45.6	0.0	0.0	0.0

27	0.0	14.7	45.6	0.0	0.0	0.0
28	0.0	14.7	45.6	0.0	0.0	0.0
29	0.0	14.7	45.6	0.0	0.0	0.0
30	0.0	14.7	45.6	0.0	0.0	0.0
31	0.0	14.7	45.6	0.0	0.0	0.0
32	0.0	14.7	45.6	0.0	0.0	0.0

LOAD CASE - 2

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	-7.2	20.9	0.0	0.0	0.0
2	0.0	-7.2	20.9	0.0	0.0	0.0
3	0.0	-7.2	20.9	0.0	0.0	0.0
4	0.0	-7.2	20.9	0.0	0.0	0.0
5	0.0	-7.2	20.9	0.0	0.0	0.0
6	0.0	-7.2	20.9	0.0	0.0	0.0
7	0.0	-7.2	20.9	0.0	0.0	0.0
8	0.0	-7.2	20.9	0.0	0.0	0.0
9	0.0	-13.1	38.7	0.0	0.0	0.0
10	0.0	-13.1	38.7	0.0	0.0	0.0
11	0.0	-13.1	38.7	0.0	0.0	0.0
12	0.0	-13.1	38.7	0.0	0.0	0.0
13	0.0	-13.1	38.7	0.0	0.0	0.0
14	0.0	-13.1	38.7	0.0	0.0	0.0
15	0.0	-13.1	38.7	0.0	0.0	0.0
16	0.0	-13.1	38.7	0.0	0.0	0.0
17	0.0	10.0	31.1	0.0	0.0	0.0
18	0.0	10.0	31.1	0.0	0.0	0.0
19	0.0	10.0	31.1	0.0	0.0	0.0
20	0.0	10.0	31.1	0.0	0.0	0.0
21	0.0	10.0	31.1	0.0	0.0	0.0
22	0.0	10.0	31.1	0.0	0.0	0.0
23	0.0	10.0	31.1	0.0	0.0	0.0
24	0.0	10.0	31.1	0.0	0.0	0.0
25	0.0	15.9	48.9	0.0	0.0	0.0
26	0.0	15.9	48.9	0.0	0.0	0.0
27	0.0	15.9	48.9	0.0	0.0	0.0
28	0.0	15.9	48.9	0.0	0.0	0.0
29	0.0	15.9	48.9	0.0	0.0	0.0
30	0.0	15.9	48.9	0.0	0.0	0.0
31	0.0	15.9	48.9	0.0	0.0	0.0
32	0.0	15.9	48.9	0.0	0.0	0.0

LOAD CASE - 3

IHNC T WALL 1 OUTPUT

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	-2.8	14.0	0.0	0.0	0.0
2	0.0	-2.8	14.0	0.0	0.0	0.0
3	0.0	-2.8	14.0	0.0	0.0	0.0
4	0.0	-2.8	14.0	0.0	0.0	0.0
5	0.0	-2.8	14.0	0.0	0.0	0.0
6	0.0	-2.8	14.0	0.0	0.0	0.0
7	0.0	-2.8	14.0	0.0	0.0	0.0
8	0.0	-2.8	14.0	0.0	0.0	0.0
9	0.0	12.3	-31.7	0.0	0.0	0.0
10	0.0	12.3	-31.7	0.0	0.0	0.0
11	0.0	12.3	-31.7	0.0	0.0	0.0
12	0.0	12.3	-31.7	0.0	0.0	0.0
13	0.0	12.3	-31.7	0.0	0.0	0.0
14	0.0	12.3	-31.7	0.0	0.0	0.0
15	0.0	12.3	-31.7	0.0	0.0	0.0
16	0.0	12.3	-31.7	0.0	0.0	0.0
17	0.0	30.9	87.8	0.0	0.0	0.0
18	0.0	30.9	87.8	0.0	0.0	0.0
19	0.0	30.9	87.8	0.0	0.0	0.0
20	0.0	30.9	87.8	0.0	0.0	0.0
21	0.0	30.9	87.8	0.0	0.0	0.0
22	0.0	30.9	87.8	0.0	0.0	0.0
23	0.0	30.9	87.8	0.0	0.0	0.0
24	0.0	30.9	87.8	0.0	0.0	0.0
25	0.0	15.8	42.2	0.0	0.0	0.0
26	0.0	15.8	42.2	0.0	0.0	0.0
27	0.0	15.8	42.2	0.0	0.0	0.0
28	0.0	15.8	42.2	0.0	0.0	0.0
29	0.0	15.8	42.2	0.0	0.0	0.0
30	0.0	15.8	42.2	0.0	0.0	0.0
31	0.0	15.8	42.2	0.0	0.0	0.0
32	0.0	15.8	42.2	0.0	0.0	0.0

LOAD CASE - 4

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	-5.8	24.0	0.0	0.0	0.0
2	0.0	-5.8	24.0	0.0	0.0	0.0
3	0.0	-5.8	24.0	0.0	0.0	0.0
4	0.0	-5.8	24.0	0.0	0.0	0.0
5	0.0	-5.8	24.0	0.0	0.0	0.0

6	0.0	-5.8	24.0	0.0	0.0	0.0
7	0.0	-5.8	24.0	0.0	0.0	0.0
8	0.0	-5.8	24.0	0.0	0.0	0.0
9	0.0	15.2	-39.4	0.0	0.0	0.0
10	0.0	15.2	-39.4	0.0	0.0	0.0
11	0.0	15.2	-39.4	0.0	0.0	0.0
12	0.0	15.2	-39.4	0.0	0.0	0.0
13	0.0	15.2	-39.4	0.0	0.0	0.0
14	0.0	15.2	-39.4	0.0	0.0	0.0
15	0.0	15.2	-39.4	0.0	0.0	0.0
16	0.0	15.2	-39.4	0.0	0.0	0.0
17	0.0	33.8	95.6	0.0	0.0	0.0
18	0.0	33.8	95.6	0.0	0.0	0.0
19	0.0	33.8	95.6	0.0	0.0	0.0
20	0.0	33.8	95.6	0.0	0.0	0.0
21	0.0	33.8	95.6	0.0	0.0	0.0
22	0.0	33.8	95.6	0.0	0.0	0.0
23	0.0	33.8	95.6	0.0	0.0	0.0
24	0.0	33.8	95.6	0.0	0.0	0.0
25	0.0	12.8	32.2	0.0	0.0	0.0
26	0.0	12.8	32.2	0.0	0.0	0.0
27	0.0	12.8	32.2	0.0	0.0	0.0
28	0.0	12.8	32.2	0.0	0.0	0.0
29	0.0	12.8	32.2	0.0	0.0	0.0
30	0.0	12.8	32.2	0.0	0.0	0.0
31	0.0	12.8	32.2	0.0	0.0	0.0
32	0.0	12.8	32.2	0.0	0.0	0.0

LOAD CASE - 5

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	-2.1	11.9	0.0	0.0	0.0
2	0.0	-2.1	11.9	0.0	0.0	0.0
3	0.0	-2.1	11.9	0.0	0.0	0.0
4	0.0	-2.1	11.9	0.0	0.0	0.0
5	0.0	-2.1	11.9	0.0	0.0	0.0
6	0.0	-2.1	11.9	0.0	0.0	0.0
7	0.0	-2.1	11.9	0.0	0.0	0.0
8	0.0	-2.1	11.9	0.0	0.0	0.0
9	0.0	12.5	-32.2	0.0	0.0	0.0
10	0.0	12.5	-32.2	0.0	0.0	0.0
11	0.0	12.5	-32.2	0.0	0.0	0.0
12	0.0	12.5	-32.2	0.0	0.0	0.0
13	0.0	12.5	-32.2	0.0	0.0	0.0
14	0.0	12.5	-32.2	0.0	0.0	0.0

15	0.0	12.5	-32.2	0.0	0.0	0.0
16	0.0	12.5	-32.2	0.0	0.0	0.0
17	0.0	31.1	88.4	0.0	0.0	0.0
18	0.0	31.1	88.4	0.0	0.0	0.0
19	0.0	31.1	88.4	0.0	0.0	0.0
20	0.0	31.1	88.4	0.0	0.0	0.0
21	0.0	31.1	88.4	0.0	0.0	0.0
22	0.0	31.1	88.4	0.0	0.0	0.0
23	0.0	31.1	88.4	0.0	0.0	0.0
24	0.0	31.1	88.4	0.0	0.0	0.0
25	0.0	16.5	44.3	0.0	0.0	0.0
26	0.0	16.5	44.3	0.0	0.0	0.0
27	0.0	16.5	44.3	0.0	0.0	0.0
28	0.0	16.5	44.3	0.0	0.0	0.0
29	0.0	16.5	44.3	0.0	0.0	0.0
30	0.0	16.5	44.3	0.0	0.0	0.0
31	0.0	16.5	44.3	0.0	0.0	0.0
32	0.0	16.5	44.3	0.0	0.0	0.0

LOAD CASE - 6

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	-5.1	21.9	0.0	0.0	0.0
2	0.0	-5.1	21.9	0.0	0.0	0.0
3	0.0	-5.1	21.9	0.0	0.0	0.0
4	0.0	-5.1	21.9	0.0	0.0	0.0
5	0.0	-5.1	21.9	0.0	0.0	0.0
6	0.0	-5.1	21.9	0.0	0.0	0.0
7	0.0	-5.1	21.9	0.0	0.0	0.0
8	0.0	-5.1	21.9	0.0	0.0	0.0
9	0.0	15.4	-40.0	0.0	0.0	0.0
10	0.0	15.4	-40.0	0.0	0.0	0.0
11	0.0	15.4	-40.0	0.0	0.0	0.0
12	0.0	15.4	-40.0	0.0	0.0	0.0
13	0.0	15.4	-40.0	0.0	0.0	0.0
14	0.0	15.4	-40.0	0.0	0.0	0.0
15	0.0	15.4	-40.0	0.0	0.0	0.0
16	0.0	15.4	-40.0	0.0	0.0	0.0
17	0.0	34.0	96.2	0.0	0.0	0.0
18	0.0	34.0	96.2	0.0	0.0	0.0
19	0.0	34.0	96.2	0.0	0.0	0.0
20	0.0	34.0	96.2	0.0	0.0	0.0
21	0.0	34.0	96.2	0.0	0.0	0.0
22	0.0	34.0	96.2	0.0	0.0	0.0
23	0.0	34.0	96.2	0.0	0.0	0.0

24	0.0	34.0	96.2	0.0	0.0	0.0
25	0.0	13.5	34.3	0.0	0.0	0.0
26	0.0	13.5	34.3	0.0	0.0	0.0
27	0.0	13.5	34.3	0.0	0.0	0.0
28	0.0	13.5	34.3	0.0	0.0	0.0
29	0.0	13.5	34.3	0.0	0.0	0.0
30	0.0	13.5	34.3	0.0	0.0	0.0
31	0.0	13.5	34.3	0.0	0.0	0.0
32	0.0	13.5	34.3	0.0	0.0	0.0

LOAD CASE - 7

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	-2.8	14.0	0.0	0.0	0.0
2	0.0	-2.8	14.0	0.0	0.0	0.0
3	0.0	-2.8	14.0	0.0	0.0	0.0
4	0.0	-2.8	14.0	0.0	0.0	0.0
5	0.0	-2.8	14.0	0.0	0.0	0.0
6	0.0	-2.8	14.0	0.0	0.0	0.0
7	0.0	-2.8	14.0	0.0	0.0	0.0
8	0.0	-2.8	14.0	0.0	0.0	0.0
9	0.0	12.3	-31.7	0.0	0.0	0.0
10	0.0	12.3	-31.7	0.0	0.0	0.0
11	0.0	12.3	-31.7	0.0	0.0	0.0
12	0.0	12.3	-31.7	0.0	0.0	0.0
13	0.0	12.3	-31.7	0.0	0.0	0.0
14	0.0	12.3	-31.7	0.0	0.0	0.0
15	0.0	12.3	-31.7	0.0	0.0	0.0
16	0.0	12.3	-31.7	0.0	0.0	0.0
17	0.0	30.9	87.8	0.0	0.0	0.0
18	0.0	30.9	87.8	0.0	0.0	0.0
19	0.0	30.9	87.8	0.0	0.0	0.0
20	0.0	30.9	87.8	0.0	0.0	0.0
21	0.0	30.9	87.8	0.0	0.0	0.0
22	0.0	30.9	87.8	0.0	0.0	0.0
23	0.0	30.9	87.8	0.0	0.0	0.0
24	0.0	30.9	87.8	0.0	0.0	0.0
25	0.0	15.8	42.2	0.0	0.0	0.0
26	0.0	15.8	42.2	0.0	0.0	0.0
27	0.0	15.8	42.2	0.0	0.0	0.0
28	0.0	15.8	42.2	0.0	0.0	0.0
29	0.0	15.8	42.2	0.0	0.0	0.0
30	0.0	15.8	42.2	0.0	0.0	0.0
31	0.0	15.8	42.2	0.0	0.0	0.0
32	0.0	15.8	42.2	0.0	0.0	0.0

LOAD CASE - 8

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	-5.8	24.0	0.0	0.0	0.0
2	0.0	-5.8	24.0	0.0	0.0	0.0
3	0.0	-5.8	24.0	0.0	0.0	0.0
4	0.0	-5.8	24.0	0.0	0.0	0.0
5	0.0	-5.8	24.0	0.0	0.0	0.0
6	0.0	-5.8	24.0	0.0	0.0	0.0
7	0.0	-5.8	24.0	0.0	0.0	0.0
8	0.0	-5.8	24.0	0.0	0.0	0.0
9	0.0	15.2	-39.4	0.0	0.0	0.0
10	0.0	15.2	-39.4	0.0	0.0	0.0
11	0.0	15.2	-39.4	0.0	0.0	0.0
12	0.0	15.2	-39.4	0.0	0.0	0.0
13	0.0	15.2	-39.4	0.0	0.0	0.0
14	0.0	15.2	-39.4	0.0	0.0	0.0
15	0.0	15.2	-39.4	0.0	0.0	0.0
16	0.0	15.2	-39.4	0.0	0.0	0.0
17	0.0	33.8	95.6	0.0	0.0	0.0
18	0.0	33.8	95.6	0.0	0.0	0.0
19	0.0	33.8	95.6	0.0	0.0	0.0
20	0.0	33.8	95.6	0.0	0.0	0.0
21	0.0	33.8	95.6	0.0	0.0	0.0
22	0.0	33.8	95.6	0.0	0.0	0.0
23	0.0	33.8	95.6	0.0	0.0	0.0
24	0.0	33.8	95.6	0.0	0.0	0.0
25	0.0	12.8	32.2	0.0	0.0	0.0
26	0.0	12.8	32.2	0.0	0.0	0.0
27	0.0	12.8	32.2	0.0	0.0	0.0
28	0.0	12.8	32.2	0.0	0.0	0.0
29	0.0	12.8	32.2	0.0	0.0	0.0
30	0.0	12.8	32.2	0.0	0.0	0.0
31	0.0	12.8	32.2	0.0	0.0	0.0
32	0.0	12.8	32.2	0.0	0.0	0.0

LOAD CASE - 9

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	9.4	-23.6	0.0	0.0	0.0
2	0.0	9.4	-23.6	0.0	0.0	0.0

3	0.0	9.4	-23.6	0.0	0.0	0.0
4	0.0	9.4	-23.6	0.0	0.0	0.0
5	0.0	9.4	-23.6	0.0	0.0	0.0
6	0.0	9.4	-23.6	0.0	0.0	0.0
7	0.0	9.4	-23.6	0.0	0.0	0.0
8	0.0	9.4	-23.6	0.0	0.0	0.0
9	0.0	13.5	-36.0	0.0	0.0	0.0
10	0.0	13.5	-36.0	0.0	0.0	0.0
11	0.0	13.5	-36.0	0.0	0.0	0.0
12	0.0	13.5	-36.0	0.0	0.0	0.0
13	0.0	13.5	-36.0	0.0	0.0	0.0
14	0.0	13.5	-36.0	0.0	0.0	0.0
15	0.0	13.5	-36.0	0.0	0.0	0.0
16	0.0	13.5	-36.0	0.0	0.0	0.0
17	0.0	32.1	92.2	0.0	0.0	0.0
18	0.0	32.1	92.2	0.0	0.0	0.0
19	0.0	32.1	92.2	0.0	0.0	0.0
20	0.0	32.1	92.2	0.0	0.0	0.0
21	0.0	32.1	92.2	0.0	0.0	0.0
22	0.0	32.1	92.2	0.0	0.0	0.0
23	0.0	32.1	92.2	0.0	0.0	0.0
24	0.0	32.1	92.2	0.0	0.0	0.0
25	0.0	28.0	79.8	0.0	0.0	0.0
26	0.0	28.0	79.8	0.0	0.0	0.0
27	0.0	28.0	79.8	0.0	0.0	0.0
28	0.0	28.0	79.8	0.0	0.0	0.0
29	0.0	28.0	79.8	0.0	0.0	0.0
30	0.0	28.0	79.8	0.0	0.0	0.0
31	0.0	28.0	79.8	0.0	0.0	0.0
32	0.0	28.0	79.8	0.0	0.0	0.0

LOAD CASE - 10

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	6.4	-13.6	0.0	0.0	0.0
2	0.0	6.4	-13.6	0.0	0.0	0.0
3	0.0	6.4	-13.6	0.0	0.0	0.0
4	0.0	6.4	-13.6	0.0	0.0	0.0
5	0.0	6.4	-13.6	0.0	0.0	0.0
6	0.0	6.4	-13.6	0.0	0.0	0.0
7	0.0	6.4	-13.6	0.0	0.0	0.0
8	0.0	6.4	-13.6	0.0	0.0	0.0
9	0.0	16.4	-43.8	0.0	0.0	0.0
10	0.0	16.4	-43.8	0.0	0.0	0.0
11	0.0	16.4	-43.8	0.0	0.0	0.0

12	0.0	16.4	-43.8	0.0	0.0	0.0
13	0.0	16.4	-43.8	0.0	0.0	0.0
14	0.0	16.4	-43.8	0.0	0.0	0.0
15	0.0	16.4	-43.8	0.0	0.0	0.0
16	0.0	16.4	-43.8	0.0	0.0	0.0
17	0.0	35.0	100.0	0.0	0.0	0.0
18	0.0	35.0	100.0	0.0	0.0	0.0
19	0.0	35.0	100.0	0.0	0.0	0.0
20	0.0	35.0	100.0	0.0	0.0	0.0
21	0.0	35.0	100.0	0.0	0.0	0.0
22	0.0	35.0	100.0	0.0	0.0	0.0
23	0.0	35.0	100.0	0.0	0.0	0.0
24	0.0	35.0	100.0	0.0	0.0	0.0
25	0.0	25.0	69.8	0.0	0.0	0.0
26	0.0	25.0	69.8	0.0	0.0	0.0
27	0.0	25.0	69.8	0.0	0.0	0.0
28	0.0	25.0	69.8	0.0	0.0	0.0
29	0.0	25.0	69.8	0.0	0.0	0.0
30	0.0	25.0	69.8	0.0	0.0	0.0
31	0.0	25.0	69.8	0.0	0.0	0.0
32	0.0	25.0	69.8	0.0	0.0	0.0

LOAD CASE - 11

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	3.6	-0.7	0.0	0.0	0.0
2	0.0	3.6	-0.7	0.0	0.0	0.0
3	0.0	3.6	-0.7	0.0	0.0	0.0
4	0.0	3.6	-0.7	0.0	0.0	0.0
5	0.0	3.6	-0.7	0.0	0.0	0.0
6	0.0	3.6	-0.7	0.0	0.0	0.0
7	0.0	3.6	-0.7	0.0	0.0	0.0
8	0.0	3.6	-0.7	0.0	0.0	0.0
9	0.0	31.0	-83.4	0.0	0.0	0.0
10	0.0	31.0	-83.4	0.0	0.0	0.0
11	0.0	31.0	-83.4	0.0	0.0	0.0
12	0.0	31.0	-83.4	0.0	0.0	0.0
13	0.0	31.0	-83.4	0.0	0.0	0.0
14	0.0	31.0	-83.4	0.0	0.0	0.0
15	0.0	31.0	-83.4	0.0	0.0	0.0
16	0.0	31.0	-83.4	0.0	0.0	0.0
17	0.0	50.1	141.2	0.0	0.0	0.0
18	0.0	50.1	141.2	0.0	0.0	0.0
19	0.0	50.1	141.2	0.0	0.0	0.0
20	0.0	50.1	141.2	0.0	0.0	0.0

21	0.0	50.1	141.2	0.0	0.0	0.0
22	0.0	50.1	141.2	0.0	0.0	0.0
23	0.0	50.1	141.2	0.0	0.0	0.0
24	0.0	50.1	141.2	0.0	0.0	0.0
25	0.0	22.8	58.6	0.0	0.0	0.0
26	0.0	22.8	58.6	0.0	0.0	0.0
27	0.0	22.8	58.6	0.0	0.0	0.0
28	0.0	22.8	58.6	0.0	0.0	0.0
29	0.0	22.8	58.6	0.0	0.0	0.0
30	0.0	22.8	58.6	0.0	0.0	0.0
31	0.0	22.8	58.6	0.0	0.0	0.0
32	0.0	22.8	58.6	0.0	0.0	0.0

LOAD CASE - 12

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	-0.4	12.9	0.0	0.0	0.0
2	0.0	-0.4	12.9	0.0	0.0	0.0
3	0.0	-0.4	12.9	0.0	0.0	0.0
4	0.0	-0.4	12.9	0.0	0.0	0.0
5	0.0	-0.4	12.9	0.0	0.0	0.0
6	0.0	-0.4	12.9	0.0	0.0	0.0
7	0.0	-0.4	12.9	0.0	0.0	0.0
8	0.0	-0.4	12.9	0.0	0.0	0.0
9	0.0	35.0	-94.0	0.0	0.0	0.0
10	0.0	35.0	-94.0	0.0	0.0	0.0
11	0.0	35.0	-94.0	0.0	0.0	0.0
12	0.0	35.0	-94.0	0.0	0.0	0.0
13	0.0	35.0	-94.0	0.0	0.0	0.0
14	0.0	35.0	-94.0	0.0	0.0	0.0
15	0.0	35.0	-94.0	0.0	0.0	0.0
16	0.0	35.0	-94.0	0.0	0.0	0.0
17	0.0	54.2	151.9	0.0	0.0	0.0
18	0.0	54.2	151.9	0.0	0.0	0.0
19	0.0	54.2	151.9	0.0	0.0	0.0
20	0.0	54.2	151.9	0.0	0.0	0.0
21	0.0	54.2	151.9	0.0	0.0	0.0
22	0.0	54.2	151.9	0.0	0.0	0.0
23	0.0	54.2	151.9	0.0	0.0	0.0
24	0.0	54.2	151.9	0.0	0.0	0.0
25	0.0	18.7	44.9	0.0	0.0	0.0
26	0.0	18.7	44.9	0.0	0.0	0.0
27	0.0	18.7	44.9	0.0	0.0	0.0
28	0.0	18.7	44.9	0.0	0.0	0.0
29	0.0	18.7	44.9	0.0	0.0	0.0

30	0.0	18.7	44.9	0.0	0.0	0.0
31	0.0	18.7	44.9	0.0	0.0	0.0
32	0.0	18.7	44.9	0.0	0.0	0.0

LOAD CASE - 13

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	20.9	-59.1	0.0	0.0	0.0
2	0.0	20.9	-59.1	0.0	0.0	0.0
3	0.0	20.9	-59.1	0.0	0.0	0.0
4	0.0	20.9	-59.1	0.0	0.0	0.0
5	0.0	20.9	-59.1	0.0	0.0	0.0
6	0.0	20.9	-59.1	0.0	0.0	0.0
7	0.0	20.9	-59.1	0.0	0.0	0.0
8	0.0	20.9	-59.1	0.0	0.0	0.0
9	0.0	14.5	-39.8	0.0	0.0	0.0
10	0.0	14.5	-39.8	0.0	0.0	0.0
11	0.0	14.5	-39.8	0.0	0.0	0.0
12	0.0	14.5	-39.8	0.0	0.0	0.0
13	0.0	14.5	-39.8	0.0	0.0	0.0
14	0.0	14.5	-39.8	0.0	0.0	0.0
15	0.0	14.5	-39.8	0.0	0.0	0.0
16	0.0	14.5	-39.8	0.0	0.0	0.0
17	0.0	33.1	96.0	0.0	0.0	0.0
18	0.0	33.1	96.0	0.0	0.0	0.0
19	0.0	33.1	96.0	0.0	0.0	0.0
20	0.0	33.1	96.0	0.0	0.0	0.0
21	0.0	33.1	96.0	0.0	0.0	0.0
22	0.0	33.1	96.0	0.0	0.0	0.0
23	0.0	33.1	96.0	0.0	0.0	0.0
24	0.0	33.1	96.0	0.0	0.0	0.0
25	0.0	39.5	115.3	0.0	0.0	0.0
26	0.0	39.5	115.3	0.0	0.0	0.0
27	0.0	39.5	115.3	0.0	0.0	0.0
28	0.0	39.5	115.3	0.0	0.0	0.0
29	0.0	39.5	115.3	0.0	0.0	0.0
30	0.0	39.5	115.3	0.0	0.0	0.0
31	0.0	39.5	115.3	0.0	0.0	0.0
32	0.0	39.5	115.3	0.0	0.0	0.0

LOAD CASE - 14

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K

1	0.0	17.9	-49.2	0.0	0.0	0.0
2	0.0	17.9	-49.2	0.0	0.0	0.0
3	0.0	17.9	-49.2	0.0	0.0	0.0
4	0.0	17.9	-49.2	0.0	0.0	0.0
5	0.0	17.9	-49.2	0.0	0.0	0.0
6	0.0	17.9	-49.2	0.0	0.0	0.0
7	0.0	17.9	-49.2	0.0	0.0	0.0
8	0.0	17.9	-49.2	0.0	0.0	0.0
9	0.0	17.4	-47.6	0.0	0.0	0.0
10	0.0	17.4	-47.6	0.0	0.0	0.0
11	0.0	17.4	-47.6	0.0	0.0	0.0
12	0.0	17.4	-47.6	0.0	0.0	0.0
13	0.0	17.4	-47.6	0.0	0.0	0.0
14	0.0	17.4	-47.6	0.0	0.0	0.0
15	0.0	17.4	-47.6	0.0	0.0	0.0
16	0.0	17.4	-47.6	0.0	0.0	0.0
17	0.0	36.0	103.8	0.0	0.0	0.0
18	0.0	36.0	103.8	0.0	0.0	0.0
19	0.0	36.0	103.8	0.0	0.0	0.0
20	0.0	36.0	103.8	0.0	0.0	0.0
21	0.0	36.0	103.8	0.0	0.0	0.0
22	0.0	36.0	103.8	0.0	0.0	0.0
23	0.0	36.0	103.8	0.0	0.0	0.0
24	0.0	36.0	103.8	0.0	0.0	0.0
25	0.0	36.5	105.4	0.0	0.0	0.0
26	0.0	36.5	105.4	0.0	0.0	0.0
27	0.0	36.5	105.4	0.0	0.0	0.0
28	0.0	36.5	105.4	0.0	0.0	0.0
29	0.0	36.5	105.4	0.0	0.0	0.0
30	0.0	36.5	105.4	0.0	0.0	0.0
31	0.0	36.5	105.4	0.0	0.0	0.0
32	0.0	36.5	105.4	0.0	0.0	0.0

LOAD CASE - 15

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	9.4	-23.6	0.0	0.0	0.0
2	0.0	9.4	-23.6	0.0	0.0	0.0
3	0.0	9.4	-23.6	0.0	0.0	0.0
4	0.0	9.4	-23.6	0.0	0.0	0.0
5	0.0	9.4	-23.6	0.0	0.0	0.0
6	0.0	9.4	-23.6	0.0	0.0	0.0
7	0.0	9.4	-23.6	0.0	0.0	0.0
8	0.0	9.4	-23.6	0.0	0.0	0.0

9	0.0	13.5	-36.0	0.0	0.0	0.0
10	0.0	13.5	-36.0	0.0	0.0	0.0
11	0.0	13.5	-36.0	0.0	0.0	0.0
12	0.0	13.5	-36.0	0.0	0.0	0.0
13	0.0	13.5	-36.0	0.0	0.0	0.0
14	0.0	13.5	-36.0	0.0	0.0	0.0
15	0.0	13.5	-36.0	0.0	0.0	0.0
16	0.0	13.5	-36.0	0.0	0.0	0.0
17	0.0	32.1	92.2	0.0	0.0	0.0
18	0.0	32.1	92.2	0.0	0.0	0.0
19	0.0	32.1	92.2	0.0	0.0	0.0
20	0.0	32.1	92.2	0.0	0.0	0.0
21	0.0	32.1	92.2	0.0	0.0	0.0
22	0.0	32.1	92.2	0.0	0.0	0.0
23	0.0	32.1	92.2	0.0	0.0	0.0
24	0.0	32.1	92.2	0.0	0.0	0.0
25	0.0	28.0	79.8	0.0	0.0	0.0
26	0.0	28.0	79.8	0.0	0.0	0.0
27	0.0	28.0	79.8	0.0	0.0	0.0
28	0.0	28.0	79.8	0.0	0.0	0.0
29	0.0	28.0	79.8	0.0	0.0	0.0
30	0.0	28.0	79.8	0.0	0.0	0.0
31	0.0	28.0	79.8	0.0	0.0	0.0
32	0.0	28.0	79.8	0.0	0.0	0.0

LOAD CASE - 16

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	6.4	-13.6	0.0	0.0	0.0
2	0.0	6.4	-13.6	0.0	0.0	0.0
3	0.0	6.4	-13.6	0.0	0.0	0.0
4	0.0	6.4	-13.6	0.0	0.0	0.0
5	0.0	6.4	-13.6	0.0	0.0	0.0
6	0.0	6.4	-13.6	0.0	0.0	0.0
7	0.0	6.4	-13.6	0.0	0.0	0.0
8	0.0	6.4	-13.6	0.0	0.0	0.0
9	0.0	16.4	-43.8	0.0	0.0	0.0
10	0.0	16.4	-43.8	0.0	0.0	0.0
11	0.0	16.4	-43.8	0.0	0.0	0.0
12	0.0	16.4	-43.8	0.0	0.0	0.0
13	0.0	16.4	-43.8	0.0	0.0	0.0
14	0.0	16.4	-43.8	0.0	0.0	0.0
15	0.0	16.4	-43.8	0.0	0.0	0.0
16	0.0	16.4	-43.8	0.0	0.0	0.0
17	0.0	35.0	100.0	0.0	0.0	0.0

18	0.0	35.0	100.0	0.0	0.0	0.0
19	0.0	35.0	100.0	0.0	0.0	0.0
20	0.0	35.0	100.0	0.0	0.0	0.0
21	0.0	35.0	100.0	0.0	0.0	0.0
22	0.0	35.0	100.0	0.0	0.0	0.0
23	0.0	35.0	100.0	0.0	0.0	0.0
24	0.0	35.0	100.0	0.0	0.0	0.0
25	0.0	25.0	69.8	0.0	0.0	0.0
26	0.0	25.0	69.8	0.0	0.0	0.0
27	0.0	25.0	69.8	0.0	0.0	0.0
28	0.0	25.0	69.8	0.0	0.0	0.0
29	0.0	25.0	69.8	0.0	0.0	0.0
30	0.0	25.0	69.8	0.0	0.0	0.0
31	0.0	25.0	69.8	0.0	0.0	0.0
32	0.0	25.0	69.8	0.0	0.0	0.0

LOAD CASE - 17

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	12.6	-34.1	0.0	0.0	0.0
2	0.0	14.9	-41.3	0.0	0.0	0.0
3	0.0	17.3	-48.4	0.0	0.0	0.0
4	0.0	19.7	-55.6	0.0	0.0	0.0
5	0.0	22.0	-62.7	0.0	0.0	0.0
6	0.0	24.4	-69.9	0.0	0.0	0.0
7	0.0	26.8	-77.0	0.0	0.0	0.0
8	0.0	29.1	-84.1	0.0	0.0	0.0
9	0.0	6.2	-14.8	0.0	0.0	0.0
10	0.0	8.6	-22.0	0.0	0.0	0.0
11	0.0	10.9	-29.1	0.0	0.0	0.0
12	0.0	13.3	-36.3	0.0	0.0	0.0
13	0.0	15.7	-43.4	0.0	0.0	0.0
14	0.0	18.0	-50.5	0.0	0.0	0.0
15	0.0	20.4	-57.7	0.0	0.0	0.0
16	0.0	22.7	-64.8	0.0	0.0	0.0
17	0.0	41.4	121.0	0.0	0.0	0.0
18	0.0	39.0	113.9	0.0	0.0	0.0
19	0.0	36.6	106.7	0.0	0.0	0.0
20	0.0	34.3	99.6	0.0	0.0	0.0
21	0.0	31.9	92.5	0.0	0.0	0.0
22	0.0	29.5	85.3	0.0	0.0	0.0
23	0.0	27.2	78.2	0.0	0.0	0.0
24	0.0	24.8	71.0	0.0	0.0	0.0
25	0.0	47.7	140.3	0.0	0.0	0.0
26	0.0	45.4	133.2	0.0	0.0	0.0

27	0.0	43.0	126.0	0.0	0.0	0.0
28	0.0	40.7	118.9	0.0	0.0	0.0
29	0.0	38.3	111.8	0.0	0.0	0.0
30	0.0	35.9	104.6	0.0	0.0	0.0
31	0.0	33.6	97.5	0.0	0.0	0.0
32	0.0	31.2	90.3	0.0	0.0	0.0

LOAD CASE - 18

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	9.6	-24.2	0.0	0.0	0.0
2	0.0	12.0	-31.3	0.0	0.0	0.0
3	0.0	14.4	-38.5	0.0	0.0	0.0
4	0.0	16.7	-45.6	0.0	0.0	0.0
5	0.0	19.1	-52.8	0.0	0.0	0.0
6	0.0	21.5	-59.9	0.0	0.0	0.0
7	0.0	23.8	-67.0	0.0	0.0	0.0
8	0.0	26.2	-74.2	0.0	0.0	0.0
9	0.0	9.1	-22.6	0.0	0.0	0.0
10	0.0	11.5	-29.7	0.0	0.0	0.0
11	0.0	13.9	-36.9	0.0	0.0	0.0
12	0.0	16.2	-44.0	0.0	0.0	0.0
13	0.0	18.6	-51.2	0.0	0.0	0.0
14	0.0	21.0	-58.3	0.0	0.0	0.0
15	0.0	23.3	-65.5	0.0	0.0	0.0
16	0.0	25.7	-72.6	0.0	0.0	0.0
17	0.0	44.3	128.8	0.0	0.0	0.0
18	0.0	41.9	121.6	0.0	0.0	0.0
19	0.0	39.6	114.5	0.0	0.0	0.0
20	0.0	37.2	107.4	0.0	0.0	0.0
21	0.0	34.8	100.2	0.0	0.0	0.0
22	0.0	32.5	93.1	0.0	0.0	0.0
23	0.0	30.1	85.9	0.0	0.0	0.0
24	0.0	27.7	78.8	0.0	0.0	0.0
25	0.0	44.8	130.4	0.0	0.0	0.0
26	0.0	42.4	123.2	0.0	0.0	0.0
27	0.0	40.1	116.1	0.0	0.0	0.0
28	0.0	37.7	108.9	0.0	0.0	0.0
29	0.0	35.4	101.8	0.0	0.0	0.0
30	0.0	33.0	94.7	0.0	0.0	0.0
31	0.0	30.6	87.5	0.0	0.0	0.0
32	0.0	28.3	80.4	0.0	0.0	0.0

LOAD CASE - 19

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	5.2	-11.1	0.0	0.0	0.0
2	0.0	6.4	-14.7	0.0	0.0	0.0
3	0.0	7.6	-18.2	0.0	0.0	0.0
4	0.0	8.8	-21.8	0.0	0.0	0.0
5	0.0	9.9	-25.4	0.0	0.0	0.0
6	0.0	11.1	-29.0	0.0	0.0	0.0
7	0.0	12.3	-32.5	0.0	0.0	0.0
8	0.0	13.5	-36.1	0.0	0.0	0.0
9	0.0	9.3	-23.5	0.0	0.0	0.0
10	0.0	10.5	-27.1	0.0	0.0	0.0
11	0.0	11.7	-30.7	0.0	0.0	0.0
12	0.0	12.9	-34.2	0.0	0.0	0.0
13	0.0	14.1	-37.8	0.0	0.0	0.0
14	0.0	15.2	-41.4	0.0	0.0	0.0
15	0.0	16.4	-45.0	0.0	0.0	0.0
16	0.0	17.6	-48.5	0.0	0.0	0.0
17	0.0	36.2	104.7	0.0	0.0	0.0
18	0.0	35.0	101.1	0.0	0.0	0.0
19	0.0	33.9	97.6	0.0	0.0	0.0
20	0.0	32.7	94.0	0.0	0.0	0.0
21	0.0	31.5	90.4	0.0	0.0	0.0
22	0.0	30.3	86.9	0.0	0.0	0.0
23	0.0	29.1	83.3	0.0	0.0	0.0
24	0.0	27.9	79.7	0.0	0.0	0.0
25	0.0	32.1	92.3	0.0	0.0	0.0
26	0.0	30.9	88.7	0.0	0.0	0.0
27	0.0	29.7	85.1	0.0	0.0	0.0
28	0.0	28.6	81.6	0.0	0.0	0.0
29	0.0	27.4	78.0	0.0	0.0	0.0
30	0.0	26.2	74.4	0.0	0.0	0.0
31	0.0	25.0	70.9	0.0	0.0	0.0
32	0.0	23.8	67.3	0.0	0.0	0.0

LOAD CASE - 20

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	2.3	-1.1	0.0	0.0	0.0
2	0.0	3.5	-4.7	0.0	0.0	0.0
3	0.0	4.6	-8.3	0.0	0.0	0.0
4	0.0	5.8	-11.9	0.0	0.0	0.0
5	0.0	7.0	-15.4	0.0	0.0	0.0

6	0.0	8.2	-19.0	0.0	0.0	0.0
7	0.0	9.4	-22.6	0.0	0.0	0.0
8	0.0	10.6	-26.1	0.0	0.0	0.0
9	0.0	12.3	-31.3	0.0	0.0	0.0
10	0.0	13.5	-34.9	0.0	0.0	0.0
11	0.0	14.6	-38.4	0.0	0.0	0.0
12	0.0	15.8	-42.0	0.0	0.0	0.0
13	0.0	17.0	-45.6	0.0	0.0	0.0
14	0.0	18.2	-49.1	0.0	0.0	0.0
15	0.0	19.4	-52.7	0.0	0.0	0.0
16	0.0	20.5	-56.3	0.0	0.0	0.0
17	0.0	39.2	112.5	0.0	0.0	0.0
18	0.0	38.0	108.9	0.0	0.0	0.0
19	0.0	36.8	105.3	0.0	0.0	0.0
20	0.0	35.6	101.8	0.0	0.0	0.0
21	0.0	34.4	98.2	0.0	0.0	0.0
22	0.0	33.2	94.6	0.0	0.0	0.0
23	0.0	32.1	91.1	0.0	0.0	0.0
24	0.0	30.9	87.5	0.0	0.0	0.0
25	0.0	29.2	82.3	0.0	0.0	0.0
26	0.0	28.0	78.8	0.0	0.0	0.0
27	0.0	26.8	75.2	0.0	0.0	0.0
28	0.0	25.6	71.6	0.0	0.0	0.0
29	0.0	24.4	68.0	0.0	0.0	0.0
30	0.0	23.3	64.5	0.0	0.0	0.0
31	0.0	22.1	60.9	0.0	0.0	0.0
32	0.0	20.9	57.3	0.0	0.0	0.0

LOAD CASE - 21

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	8.7	-21.5	0.0	0.0	0.0
2	0.0	8.7	-21.5	0.0	0.0	0.0
3	0.0	8.7	-21.5	0.0	0.0	0.0
4	0.0	8.7	-21.5	0.0	0.0	0.0
5	0.0	8.7	-21.5	0.0	0.0	0.0
6	0.0	8.7	-21.5	0.0	0.0	0.0
7	0.0	8.7	-21.5	0.0	0.0	0.0
8	0.0	8.7	-21.5	0.0	0.0	0.0
9	0.0	13.3	-35.5	0.0	0.0	0.0
10	0.0	13.3	-35.5	0.0	0.0	0.0
11	0.0	13.3	-35.5	0.0	0.0	0.0
12	0.0	13.3	-35.5	0.0	0.0	0.0
13	0.0	13.3	-35.5	0.0	0.0	0.0
14	0.0	13.3	-35.5	0.0	0.0	0.0

15	0.0	13.3	-35.5	0.0	0.0	0.0
16	0.0	13.3	-35.5	0.0	0.0	0.0
17	0.0	31.9	91.7	0.0	0.0	0.0
18	0.0	31.9	91.7	0.0	0.0	0.0
19	0.0	31.9	91.7	0.0	0.0	0.0
20	0.0	31.9	91.7	0.0	0.0	0.0
21	0.0	31.9	91.7	0.0	0.0	0.0
22	0.0	31.9	91.7	0.0	0.0	0.0
23	0.0	31.9	91.7	0.0	0.0	0.0
24	0.0	31.9	91.7	0.0	0.0	0.0
25	0.0	27.3	77.7	0.0	0.0	0.0
26	0.0	27.3	77.7	0.0	0.0	0.0
27	0.0	27.3	77.7	0.0	0.0	0.0
28	0.0	27.3	77.7	0.0	0.0	0.0
29	0.0	27.3	77.7	0.0	0.0	0.0
30	0.0	27.3	77.7	0.0	0.0	0.0
31	0.0	27.3	77.7	0.0	0.0	0.0
32	0.0	27.3	77.7	0.0	0.0	0.0

LOAD CASE - 22

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	5.7	-11.5	0.0	0.0	0.0
2	0.0	5.7	-11.5	0.0	0.0	0.0
3	0.0	5.7	-11.5	0.0	0.0	0.0
4	0.0	5.7	-11.5	0.0	0.0	0.0
5	0.0	5.7	-11.5	0.0	0.0	0.0
6	0.0	5.7	-11.5	0.0	0.0	0.0
7	0.0	5.7	-11.5	0.0	0.0	0.0
8	0.0	5.7	-11.5	0.0	0.0	0.0
9	0.0	16.2	-43.2	0.0	0.0	0.0
10	0.0	16.2	-43.2	0.0	0.0	0.0
11	0.0	16.2	-43.2	0.0	0.0	0.0
12	0.0	16.2	-43.2	0.0	0.0	0.0
13	0.0	16.2	-43.2	0.0	0.0	0.0
14	0.0	16.2	-43.2	0.0	0.0	0.0
15	0.0	16.2	-43.2	0.0	0.0	0.0
16	0.0	16.2	-43.2	0.0	0.0	0.0
17	0.0	34.8	99.4	0.0	0.0	0.0
18	0.0	34.8	99.4	0.0	0.0	0.0
19	0.0	34.8	99.4	0.0	0.0	0.0
20	0.0	34.8	99.4	0.0	0.0	0.0
21	0.0	34.8	99.4	0.0	0.0	0.0
22	0.0	34.8	99.4	0.0	0.0	0.0
23	0.0	34.8	99.4	0.0	0.0	0.0

24	0.0	34.8	99.4	0.0	0.0	0.0
25	0.0	24.3	67.7	0.0	0.0	0.0
26	0.0	24.3	67.7	0.0	0.0	0.0
27	0.0	24.3	67.7	0.0	0.0	0.0
28	0.0	24.3	67.7	0.0	0.0	0.0
29	0.0	24.3	67.7	0.0	0.0	0.0
30	0.0	24.3	67.7	0.0	0.0	0.0
31	0.0	24.3	67.7	0.0	0.0	0.0
32	0.0	24.3	67.7	0.0	0.0	0.0

LOAD CASE - 23

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	20.2	-57.0	0.0	0.0	0.0
2	0.0	20.2	-57.0	0.0	0.0	0.0
3	0.0	20.2	-57.0	0.0	0.0	0.0
4	0.0	20.2	-57.0	0.0	0.0	0.0
5	0.0	20.2	-57.0	0.0	0.0	0.0
6	0.0	20.2	-57.0	0.0	0.0	0.0
7	0.0	20.2	-57.0	0.0	0.0	0.0
8	0.0	20.2	-57.0	0.0	0.0	0.0
9	0.0	14.3	-39.3	0.0	0.0	0.0
10	0.0	14.3	-39.3	0.0	0.0	0.0
11	0.0	14.3	-39.3	0.0	0.0	0.0
12	0.0	14.3	-39.3	0.0	0.0	0.0
13	0.0	14.3	-39.3	0.0	0.0	0.0
14	0.0	14.3	-39.3	0.0	0.0	0.0
15	0.0	14.3	-39.3	0.0	0.0	0.0
16	0.0	14.3	-39.3	0.0	0.0	0.0
17	0.0	32.9	95.5	0.0	0.0	0.0
18	0.0	32.9	95.5	0.0	0.0	0.0
19	0.0	32.9	95.5	0.0	0.0	0.0
20	0.0	32.9	95.5	0.0	0.0	0.0
21	0.0	32.9	95.5	0.0	0.0	0.0
22	0.0	32.9	95.5	0.0	0.0	0.0
23	0.0	32.9	95.5	0.0	0.0	0.0
24	0.0	32.9	95.5	0.0	0.0	0.0
25	0.0	38.8	113.2	0.0	0.0	0.0
26	0.0	38.8	113.2	0.0	0.0	0.0
27	0.0	38.8	113.2	0.0	0.0	0.0
28	0.0	38.8	113.2	0.0	0.0	0.0
29	0.0	38.8	113.2	0.0	0.0	0.0
30	0.0	38.8	113.2	0.0	0.0	0.0
31	0.0	38.8	113.2	0.0	0.0	0.0
32	0.0	38.8	113.2	0.0	0.0	0.0

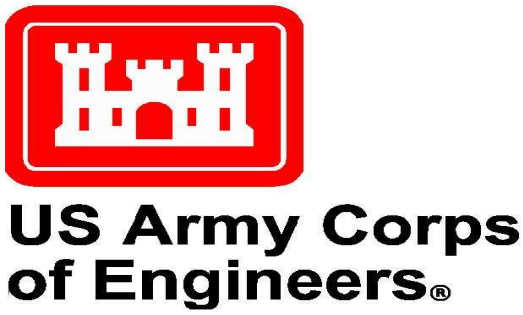
LOAD CASE - 24

PILE	PX K	PY K	PZ K	MX IN-K	MY IN-K	MZ IN-K
1	0.0	17.2	-47.1	0.0	0.0	0.0
2	0.0	17.2	-47.1	0.0	0.0	0.0
3	0.0	17.2	-47.1	0.0	0.0	0.0
4	0.0	17.2	-47.1	0.0	0.0	0.0
5	0.0	17.2	-47.1	0.0	0.0	0.0
6	0.0	17.2	-47.1	0.0	0.0	0.0
7	0.0	17.2	-47.1	0.0	0.0	0.0
8	0.0	17.2	-47.1	0.0	0.0	0.0
9	0.0	17.2	-47.0	0.0	0.0	0.0
10	0.0	17.2	-47.0	0.0	0.0	0.0
11	0.0	17.2	-47.0	0.0	0.0	0.0
12	0.0	17.2	-47.0	0.0	0.0	0.0
13	0.0	17.2	-47.0	0.0	0.0	0.0
14	0.0	17.2	-47.0	0.0	0.0	0.0
15	0.0	17.2	-47.0	0.0	0.0	0.0
16	0.0	17.2	-47.0	0.0	0.0	0.0
17	0.0	35.8	103.2	0.0	0.0	0.0
18	0.0	35.8	103.2	0.0	0.0	0.0
19	0.0	35.8	103.2	0.0	0.0	0.0
20	0.0	35.8	103.2	0.0	0.0	0.0
21	0.0	35.8	103.2	0.0	0.0	0.0
22	0.0	35.8	103.2	0.0	0.0	0.0
23	0.0	35.8	103.2	0.0	0.0	0.0
24	0.0	35.8	103.2	0.0	0.0	0.0
25	0.0	35.8	103.3	0.0	0.0	0.0
26	0.0	35.8	103.3	0.0	0.0	0.0
27	0.0	35.8	103.3	0.0	0.0	0.0
28	0.0	35.8	103.3	0.0	0.0	0.0
29	0.0	35.8	103.3	0.0	0.0	0.0
30	0.0	35.8	103.3	0.0	0.0	0.0
31	0.0	35.8	103.3	0.0	0.0	0.0
32	0.0	35.8	103.3	0.0	0.0	0.0

NO FILES WERE GENERATED DURING THIS RUN.

IHNC Feasibility Study

Monolith 1 Stem



7400 Leake Ave
New Orleans, La 70118
Phone (504)-862-1812

1	2/28/2019	CPGA Output	HMA	DPL	DPL	
1	2/28/2019	CPGA Input	HMA	DPL	DPL	
1	2/28/2019	Foundation Loads	HMA	DPL	DPL	
Rev	**Date**	**Description**	**By**	**Chk'd**	**App'd**	

Material Properties

Concrete

$f'_c := 4000psi$ *Compressive Strength of Concrete*

$\lambda := 1$ *Modification Factor (ACI 318-14, Table 19.2.4.2)*

$\beta_1 := 0.85$ *ACI 318-14, Table 22.2.2.4.3*

Water

$\gamma_w := 62.4pcf$ *Unit Weight of Water*

Steel

$f_y := 60ksi$ *Yield Strength of Steel*

$\rho_b := 0.0285$ *Balanced Ratio of Reinforcement*

Strength Reduction Factors

$\phi_b := 0.90$ *Strength Reduction Factor for Moment (ACI 318-14, Table 21.2.2)*

$\phi_v := 0.75$ *Strength Reduction Factor for Shear (ACI 318-14, Table 21.2.1)*

Elevations

$EL_{tos} := 2.0ft$ *Elevation at Top of Slab*

$EL_{tow} := 24.5ft$ *Elevation at Top of Wall*

$EL_{swl} := 17.3ft$ *Elevation at Still Water Level*

Reinforcement Properties

Main Reinforcement: #9 bars @ 6"

$d_s := 1.128in$ *Diameter of Bar*

$A_s := 2.00in^2$ *Area of Steal Provided by Main Reinforcement (per foot of wall)*

T&S Reinforcement: #7 bars @ 12"

$d_{s.ts} := 0.875in$ *Diameter of Bar*

$A_{s.ts} := 0.60in^2$ *Area of Steal Provided by T&S Reinforcement (per foot of wall)*

Wall Dimensions

$b := 12in$ *Width (12" since design is per foot of wall)*

$h := 36in$ *Depth*

$cc := 4in$ *Clear Cover*

$d := h - cc - 0.5 \cdot d_s = 31.44\,in$ *Distance from Extreme Compression Fiber to Centroid of Tension Reinforcement*

Forces

$wind := 50psf$ *Wind Pressure (HSDRRS, Paragraph 5.6.2)*

$F_{usual\_bi} := 0kip$ *Usual Barge Impact Load (HSDRRS, Paragraph 5.2.1 - Zone 1A)*

$F_{unusual\_bi} := 200kip$ *Unusual Barge Impact Load (HSDRRS, Paragraph 5.2.1 - Zone 1A)*

$F_{extreme\_bi} := 400kip$ *Extreme Barge Impact Load (HSDRRS, Paragraph 5.2.1 - Zone 1A)*

Loads

$V_{swl} := 0.5 \cdot \gamma_w \cdot (EL_{swl} - EL_{tos})^2 \cdot b = 7.3\,kip$ *Shear due to SWL Water*

$M_{swl} := V_{swl} \cdot \frac{EL_{swl} - EL_{tos}}{3} = 37.25\,ft \cdot kip$ *Moment due to SWL Water*

$V_{tow} := 0.5 \cdot \gamma_w \cdot (EL_{tow} - EL_{tos})^2 \cdot b = 15.79\,kip$ *Shear due to TOW Water*

$M_{tow} := V_{tow} \cdot \frac{EL_{tow} - EL_{tos}}{3} = 118.46\,ft \cdot kip$ *Moment due to TOW Water*

$V_{wind} := wind \cdot (EL_{tow} - EL_{swl}) \cdot b = 0.36\,kip$ *Shear due to Wind*

$M_{wind} := V_{wind} \cdot \left(EL_{swl} - EL_{tos} + \frac{EL_{tow} - EL_{swl}}{2} \right) = 6.8\,ft \cdot kip$ *Moment due to Wind*

$V_{usual\_bi} := \frac{F_{usual\_bi}}{5ft + 2 \cdot (EL_{tow} - EL_{tos})} \cdot b = 0$ *Shear due to Usual Barge Impact*

$M_{usual\_bi} := V_{usual\_bi} \cdot (EL_{tow} - EL_{tos}) = 0$ *Moment due to Usual Barge Impact*

$V_{unusual\_bi} := \frac{F_{unusual\_bi}}{5ft + 2 \cdot (EL_{tow} - EL_{tos})} \cdot b = 4\,kip$ *Shear due to Unusual Barge Impact*

$M_{unusual\_bi} := V_{unusual\_bi} \cdot (EL_{tow} - EL_{tos}) = 90\,ft \cdot kip$ *Moment due to Unusual Barge Impact*

Loads (continued)

$V_{extreme\_bi} := \frac{F_{extreme\_bi}}{5ft + 2\cdot\left(EL_{tow} - EL_{tos}\right)}\cdot b = 8\,kip$ *Shear due to Extreme Barge Impact*

$M_{extreme\_bi} := V_{extreme\_bi}\cdot\left(EL_{tow} - EL_{tos}\right) = 180\,ft\cdot kip$ *Moment due to Extreme Barge Impact*

Load Combinations

$V_3 := 1.3\cdot 1.7\cdot V_{swl} = 16.14\,kip$ *Shear - SWL*

$V_5 := \frac{1.3\cdot 1.7\cdot\left(V_{swl} + V_{wind}\right)}{1.333} = 12.71\,kip$ *Shear - SWL + Wind*

$V_9 := \frac{1.3\cdot 1.7\cdot\left(V_{swl} + V_{wind} + V_{unusual\_bi}\right)}{1.333} = 19.34\,kip$ *Shear - SWL + Wind + Unusual BI*

$V_{11} := \frac{1.3\cdot 1.7\cdot V_{tow}}{1.333} = 26.19\,kip$ *Shear - TOW*

$V_{13} := \frac{V_{swl} + V_{wind} + V_{extreme\_bi}}{1.74} = 9\,kip$ *Shear - SWL + Wind + Extreme BI*

$M_3 := 1.3\cdot 1.7\cdot M_{swl} = 82.32\,ft\cdot kip$ *Moment - SWL*

$M_5 := \frac{1.3\cdot 1.7\cdot\left(M_{swl} + M_{wind}\right)}{1.333} = 73.04\,ft\cdot kip$ *Moment - SWL + Wind*

$M_9 := \frac{1.3\cdot 1.7\cdot\left(M_{swl} + M_{wind} + M_{unusual\_bi}\right)}{1.333} = 222.25\,ft\cdot kip$ *Moment - SWL + Wind + Unusual BI*

$M_{11} := \frac{1.3\cdot 1.7\cdot M_{tow}}{1.333} = 196.4\,ft\cdot kip$ *Moment - TOW*

$M_{13} := \frac{M_{swl} + M_{wind} + M_{extreme\_bi}}{1.74} = 128.77\,ft\cdot kip$ *Moment - SWL + Wind + Extreme BI*

Maximum Loads

$V_u := \max\left(V_3, V_5, V_9, V_{11}, V_{13}\right) = 26.19\,kip$ *Ultimate Shear*

$M_u := \max\left(M_3, M_5, M_9, M_{11}, M_{13}\right) = 222.25\,ft\cdot kip$ *Ultimate Moment*

Stem Reinforcement

Input

$M_u = 2666.97 \cdot in \cdot kip$	*Ultimate Moment*
$V_u = 26.19\,kip$	*Ultimate Shear*
$b = 12\,in$	*Member Width*
$d = 31.44\,in$	*Distance from Extreme Compression Fiber to Centroid of Tension Reinforcement*
$t := h = 36\,in$	*Thickness of Structure*
$f'_c = 4000 \cdot psi$	*Compressive Strength of Concrete*
$f_y = 60 \cdot ksi$	*Yield Strength of Steel*
$\beta_1 = 0.85$	*ACI 318-14, Table 22.2.2.4.3*
$\rho_b = 0.0285$	*Balanced Ratio of Reinforcement*

Calculation

$$A_{s.req} := \frac{\phi_b \cdot f_y \cdot d - \sqrt{\frac{-1.8 \cdot M_u \cdot f_y^2}{\beta_1 \cdot b \cdot f'_c} + \left(\phi_b \cdot f_y \cdot d\right)^2}}{\left(\frac{\phi_b \cdot f_y^2}{\beta_1 \cdot b \cdot f'_c}\right)} = 1.63\,in^2$$

Area of Steel Required

$$A_{s.min} := \min\left(\max\left(\frac{3 \cdot \sqrt{f'_c}}{f_y \cdot \sqrt{psi}} \cdot b \cdot d, \frac{200}{f_y} \cdot b \cdot d\right) \cdot psi, 1.33 \cdot A_{s.req}\right) = 1.26\,in^2$$

Minimum Area of Steel
(ACI 318-14, Para. 9.6.1.2 & 9.6.1.3)

$$A_{s.ts.req} := 0.0014 \cdot b \cdot h = 0.6\,in^2$$

Min. Area of Steel for T&S
(HSDRRS, Para. 5.5.4)

$$A_{s.Reqd} := \max\left(A_{s.req}, A_{s.min}, A_{s.ts.req}\right) = 1.63\,in^2$$

Area of Steel Required

$$\phi M_n := \phi_b \cdot A_s \cdot f_y \cdot d \cdot \left(1 - \frac{A_s \cdot f_y}{2 \cdot 0.85 \cdot b \cdot d \cdot f'_c}\right) = 3236.26 \cdot in \cdot kip$$

Factored Flexural Strength

$$\phi V_c := \phi_v \cdot 2 \cdot \lambda \cdot \sqrt{\frac{f'_c}{psi}} \cdot b \cdot d \cdot \frac{lbf}{in^2} = 35.79\,kip$$

Factored Shear Strength
(ACI 318-14, Eq. 22.5.5.1)

$$\rho := \frac{A_s}{b \cdot d} = 0.0053$$

Ratio of Reinforcement

Stem Reinforcement (continued)

Results

$\text{if}\left(A_s \geq A_{s.Reqd}, \text{"OK"}, \text{"Adjust Reinforcement"}\right) = \text{"OK"}$ *Main Area of Steel Check*

$\text{if}\left(M_u \leq \phi M_n, \text{"OK"}, \text{"Adjust Reinforcement"}\right) = \text{"OK"}$ *Flexure Check*

$\text{if}\left(V_u \leq \phi V_c, \text{"OK"}, \text{"Adjust Reinforcement"}\right) = \text{"OK"}$ *Shear Check*

$\text{if}\left(\rho \leq 0.25 \cdot \rho_b, \text{"OK"}, \text{if}\left(\rho \leq 0.375 \cdot \rho_b, \text{"OK"}, \text{"Adjust Reinforcement"}\right)\right) = \text{"OK"}$ *Ratio of Reinforcement Check*

$\text{if}\left(A_{s.ts} \geq A_{s.ts.req}, \text{"OK"}, \text{"Adjust Reinforcement"}\right) = \text{"Adjust Reinforcement"}$ *T&S Area of Steel Check*

* The area of temperature & shrinkage required is slightly more than what is provided. However, when the area required is rounded, the value is the same as what is provided. Therefore, the area of temperature & shrinkage provided is sufficient.

Summary

The wall will be 3'0" thick. The main reinforcement will consist of #9 bars @ 6". The temperature & shrinkage reinforcement will consist of #7 bars @ 12". Clear cover of 4" will be provided.

IHNC Feasibility Study

Bridge Design

US Army Corps of Engineers®

7400 Leake Ave
New Orleans, La 70118
Phone (504)-862-1812

1	2/27/2019	Column and Pier Cap Design	JDL	DPL	DPL	
1	2/27/2019	Concrete Pier Design	DSW	JDL	DPL	
1	1/13/2019	Deck and Girder Design	DSW	JDL	DPL	
Rev	**Date**	**Description**	**By**	**Chk'd**	**App'd**	

US Army Corps of Engineers
New Orleans District

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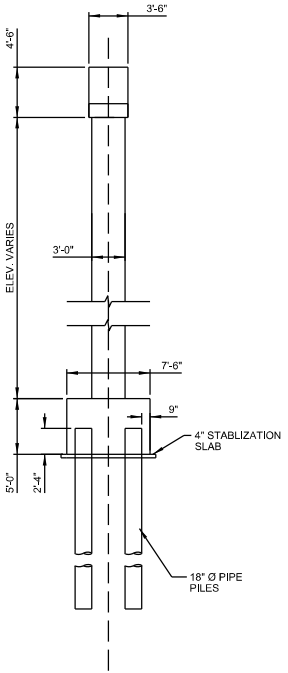
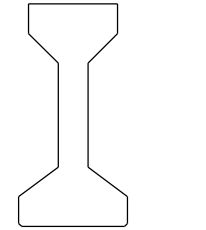
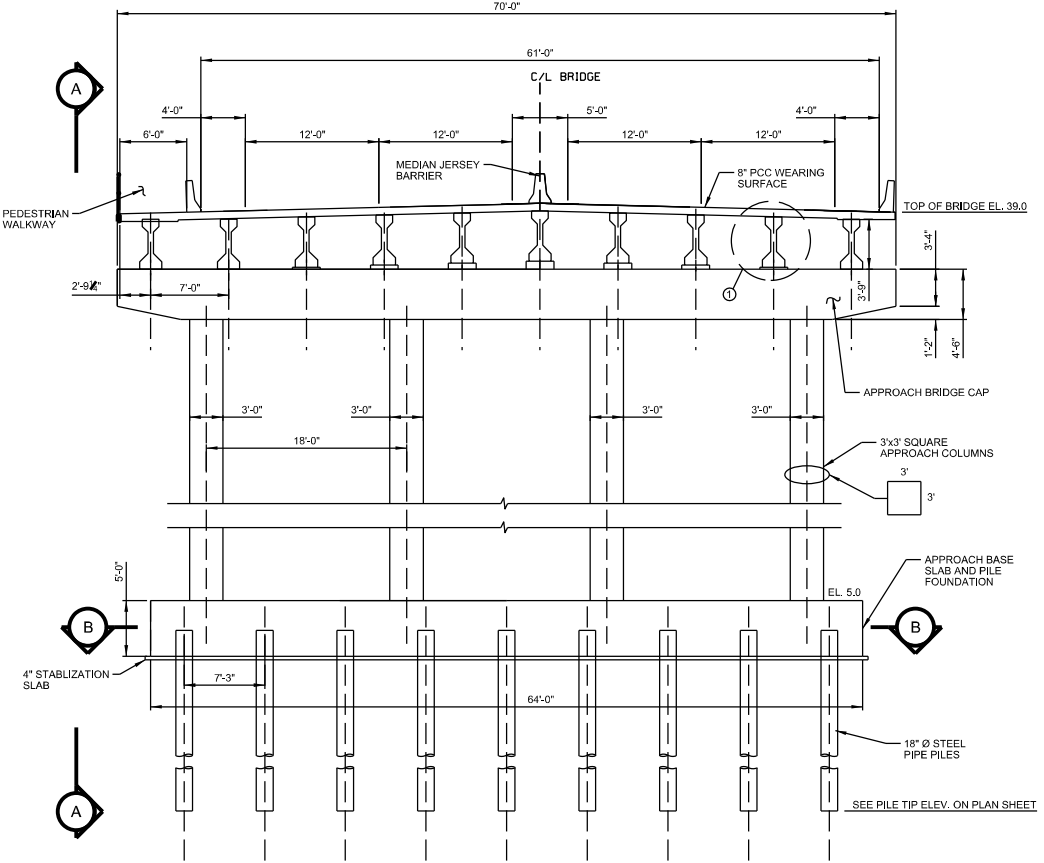


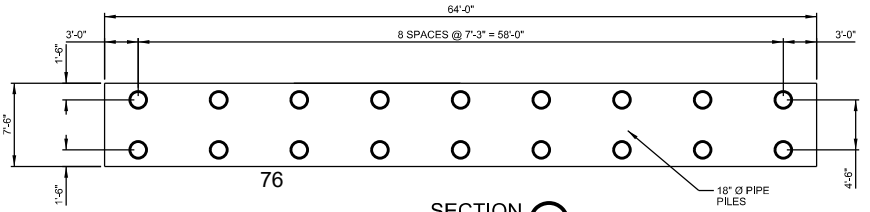
SECTION A
SCALE: 3/16" = 1'-0"



TYPE III P.P.C. GIRDERS
DETAIL 1
SCALE: 1" = 1'-0"



APPROACH BRIDGE PIER
SCALE : 3/16" = 1'-0"



SECTION B
SCALE: 3/16" = 1'-0"

0 4' 8' 16'
SCALE:3/16"=1'

US Army Corps of Engineers
New Orleans District

Deck and Girder Design

1.) DECK DESIGN

ASSUMPTIONS:

# of Girders : 10
Bridge Overhang : 2.375
Assuming Stringers :
AASHTO Type III PPC

$W_{concrete} := .15 \frac{kip}{ft^3}$ Weight of concrete

$f_c := 4.5 \frac{kip}{in^2}$ Concrete slab properties

$\phi := 0.9$

$f_y := 60 \frac{kip}{in^2}$ Reinforcement yield strength

$A_T := 8.5\ ft$

$T_{slab} := 7 \cdot in$

$S_{spacing} := 7ft$ Center to Center Beam Spacing

$P_{HS20} := 16kip$

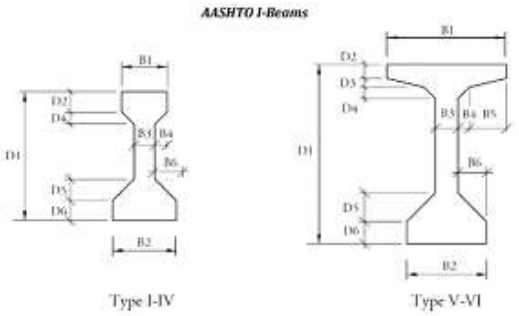
$b := 12in$

$Span := 80\ \ ft$

$F_y := 50\ \ ksi$

Beam Properties:

-Assume AASHTO Type III Girder



Dimensions (inches)

Type	D1	D2	D3	D4	D5	D6	B1	B2	B3	B4	B5	B6
I	28	4	0	3	5	5	12	16	6	3	0	5
II	36	6	0	3	6	6	12	18	6	3	0	6
III	45	7	0	4.5	7.5	7	16	22	7	4.5	0	7.5
IV	54	8	0	6	9	8	20	26	8	6	0	9
V	63	5	3	4	10	8	42	28	8	4	13	10
VI	72	5	3	4	10	8	42	28	8	4	13	10

$W_{tf} := 1.333ft$ Top Flange Width

$Ww := 7in$ Web Thickness

Effective Span Length:

$Clear\_span := S_{spacing} - W_{tf} = 5.67 \cdot ft$

Step 2: Compute Moment Due to Dead Load

Dead Load = $w_{DL} := T_{slab} \cdot W_{concrete} \cdot b = 87.5 \cdot \frac{lbf}{ft}$

Moment Dead Load = $M_{DL} := \frac{\left(w_{DL} \cdot Clear\_span^2\right)}{10} = 0.28 \cdot ft \cdot kip$

Step 3: Compute Moment Due to Live Load + Impact =

Moment Live Load = $M_{LL} := 0.8 \frac{(Clear\_span + 2ft) \cdot P_{HS20}}{32} = 3.07 \cdot ft \cdot kip$

Calculating Impact = $\left(M_{LL} \cdot 1.3\right) = 3.99 \cdot ft \cdot kip$

Step 4: Compute total factored bending moment =

$M_u := \left(1.3 \cdot M_{DL}\right) + \left(2.17 \cdot M_{LL}\right) = 7.02 \cdot ft \cdot kip$

Step 5: Compute Effective Depth of Slab

$Depth_{slab} := T_{slab} = 7 \cdot in$

$Cover_{top} := 2in$

$Cover_{bottom} := 1in$

$Reinforcing_{diameter} := 0.625in$

$Depth_{effective} := Depth_{slab} - Cover_{bottom} - \frac{Reinforcing_{diameter}}{2} = 5.69 \cdot in$

Step 6: Compute Required Main Reinforcement

Try #5 @ 12"

$$A_s := \left(0.306in^2\right)\cdot\left(\frac{12}{12}\right) = 0.31\cdot in^2$$

$$a := \left|\frac{\left(A_s\cdot f_y\right)}{\left(0.85\cdot f_c\cdot b\right)}\right| = 0.4\cdot in$$

$$\phi M_n := \phi\cdot\left(A_s\right)\cdot\left(f_y\right)\cdot\left[Depth_{effective} - \left(\frac{a}{2}\right)\right] = 7.56\cdot kip\cdot ft$$

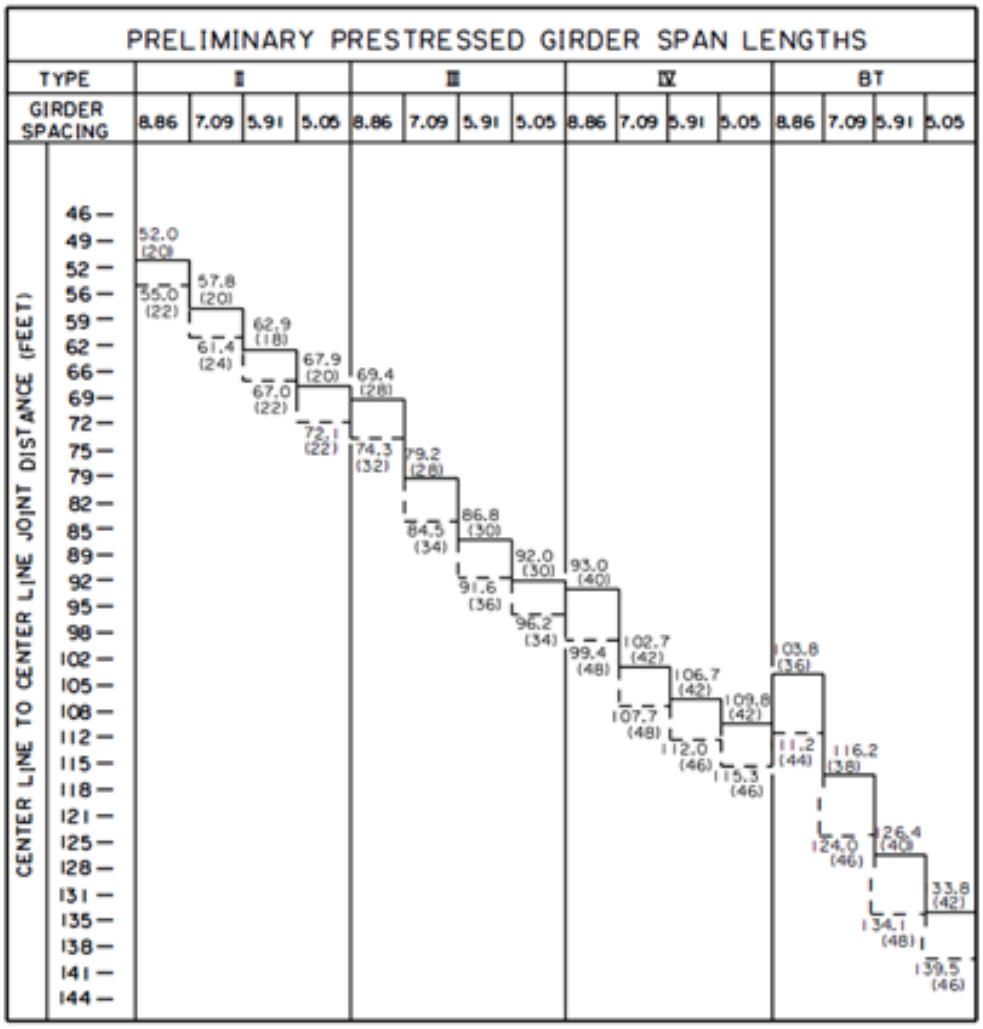
$$\phi M_n = 7.56\cdot kip\cdot ft$$

$$M_u = 7.02\cdot kip\cdot ft$$

$$\phi M_n > M_u \qquad OK$$

Use 7" slab

2.) Concrete Girder Design



Per LADOTD Bridge Design Manual, 4th Edition for a 7.09ft girder spacing, a span of approximately 84.3 feet is possible for a Type 3 AASHTO Girder. Use Type 3 girders for all spans assuming with 7.25 feet girder spacing, an 80 foot span will be accommodate that girder type.

US Army Corps of Engineers
New Orleans District

Concrete Pier Design

Loadings were calculated by hand for input in STAAD. STAAD model was run including the pier cap, columns, pile cap and piles. Pier cap was run as a continous beam over the columns. Columns were designed with fixed connnections to the pier cap and the pile cap. Pile cap was analyzed a s continous beam over the piles. Each pile element represents two piles, total of 18 piles per pile cap. Piles were modeled 10 pile diamters 15' total and fixed at that point. Reactions from piles were used to determine pile tip from pile capacity curves for 18" pipe piles.

US Army Corps of Engineers
New Orleans District

Loading Calculations

Girder Dead Weight

Type III AASHTO Girder: $A = 560 in^2$

Pt Load on Pier $= 560 in^2 \times {}^{1ft^2}/_{144 in^2} \times 80 ft \times .150 kcf$

$= 46.67$ k (applied at each girder location)

Slab Dead Weight

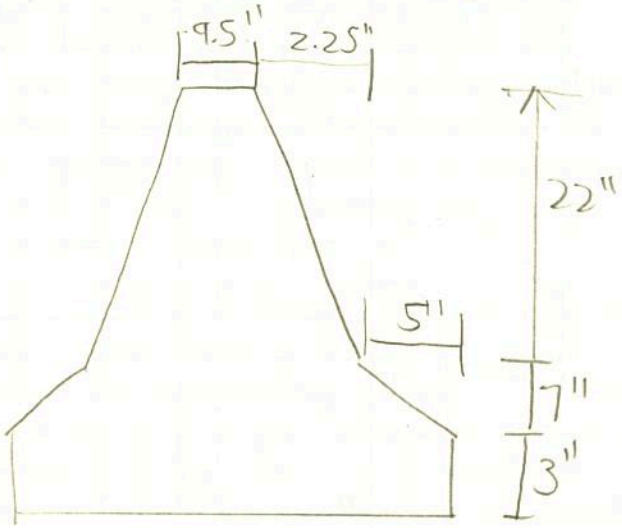
$7 in \times {}^{1ft}/_{12 in} \times .150 kcf = .0875 k/ft$

Mid span $= .0875 k/ft \times 7.5 ft \times 80 ft) = 52.5 k$

End span $= .0875 k/ft \times 6.125 ft \times 80 ft$

$= 42.9$ k

Median Barrier Weight



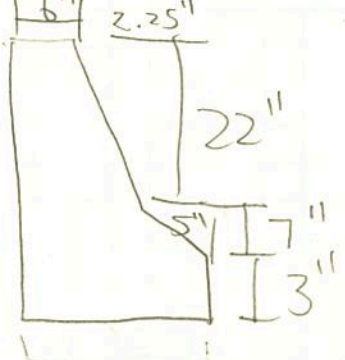
$A = (9.5")(22") + (2.25")(22") + (7")(5") + (3")(24")$

$= 365.5 in^2$

Pt Load on Middle (6) Girder $= 365.5 in^2 \times {}^{1ft^2}/_{144 in^2} \times 80 ft \times .150 kcf$

$= 30.5$ k.

End Barrier Weight



$A = (6")(22") + (1/2)(2.25")(22") + (1/2)(5")(7") + (5" \times 3")$

$= 189.25 in^2$

Pt load on for right girder (10)

$= 189.25 in^2 \times {}^{1ft^2}/_{144 in^2} \times 80 ft \times .150 kcf$

$= 15.77$ k

Pt load on [illegible] (1 & 2)

Live Load

HL-93 shall consist of a combination of:

- Design truck or design tandem, and
- Design lane load

- Loads assumed to occupy 10 ft transversely within a design lane

- Design lane load = 0.64 k/f AASHTO Para 3.6.1.2.4
  spread over 10 ft width

  $\times$ 80 ft (Span) = 51.2 k $\div$ 10 = 5.12 k/ft

US Army Corps of Engineers
New Orleans District

STAAD Report

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STAAD SPACE
START JOB INFORMATION
ENGINEER DATE 01-Nov-18
JOB NAME IHNC - Bridge Pier
JOB CLIENT Feasibility Study
*This design if for the approach span, bridge piers that will be located at the
*New St. Claude Avenue Bridge. There is a seperate design for the bascule
*Bridge Piers that will house the bridge leafs and machinery.
ENGINEER NAME DSW
CHECKER NAME JDL
END JOB INFORMATION
INPUT WIDTH 79
UNIT FEET KIP
JOINT COORDINATES
1 0 0 0; 2 8 0 0; 3 26 0 0; 4 44 0 0; 5 62 0 0; 6 70 0 0; 7 3 -25 0; 8 6 -25 0;
9 8 -25 0; 10 13.25 -25 0; 11 20.5 -25 0; 12 26 -25 0; 13 27.75 -25 0;
14 35 -25 0; 15 42.25 -25 0; 16 44 -25 0; 17 49.5 -25 0; 18 56.75 -25 0;
19 62 -25 0; 20 64 -25 0; 21 67 -25 0; 22 6 -40 0; 23 13.25 -40 0;
24 20.5 -40 0; 25 27.75 -40 0; 26 35 -40 0; 27 42.25 -40 0; 28 49.5 -40 0;
29 56.75 -40 0; 30 64 -40 0;
MEMBER INCIDENCES
1 7 8; 2 8 9; 3 9 10; 4 10 11; 5 11 12; 6 12 13; 7 13 14; 8 14 15; 9 15 16;
10 16 17; 11 17 18; 12 18 19; 13 19 20; 14 20 21; 15 1 2; 16 2 3; 17 3 4;
18 4 5; 19 5 6; 20 2 9; 21 3 12; 22 4 16; 23 5 19; 24 8 22; 25 10 23; 26 11 24;
27 13 25; 28 14 26; 29 15 27; 30 17 28; 31 18 29; 32 20 30;
DEFINE MATERIAL START
ISOTROPIC STEEL
E 4.176e+006
POISSON 0.3
DENSITY 0.489024
ALPHA 6e-006
DAMP 0.03
TYPE STEEL
STRENGTH FY 5184 FU 8352 RY 1.5 RT 1.2
ISOTROPIC CONCRETE
E 453600
POISSON 0.17
DENSITY 0.150336
ALPHA 5e-006
DAMP 0.05
TYPE CONCRETE
STRENGTH FCU 576
END DEFINE MATERIAL
MEMBER PROPERTY AMERICAN
15 TO 19 PRIS YD 4.5 ZD 3.5
1 TO 14 PRIS YD 4.5 ZD 10.5
20 TO 23 PRIS YD 3 ZD 3
24 TO 32 TABLE ST PIPE OD 1.5 ID 1.39583
CONSTANTS
MATERIAL CONCRETE MEMB 1 TO 23
```

```
MATERIAL STEEL MEMB 24 TO 32
SUPPORTS
22 TO 30 FIXED
*MEMBER RELEASE
*20 TO 23 START MX MY MZ
*20 TO 23 END MX MY MZ
LOAD 1 LOADTYPE None  TITLE CONCRETE DEAD WEIGHT
MEMBER LOAD
*WEIGHT OF AASHTO TYPE III GIRDERS*
15 CON GY -46.67 2.375
16 CON GY -46.67 1.625
16 CON GY -46.67 8.875
16 CON GY -46.67 16.125
17 CON GY -46.67 5.375
17 CON GY -46.67 12.625
18 CON GY -46.67 1.875
18 CON GY -46.67 9.125
18 CON GY -46.67 16.375
19 CON GY -46.67 5.625
MEMBER LOAD
*WEIGHT OF SLAB*
15 CON GY -42.9 2.375
16 CON GY -52.5 1.625
16 CON GY -52.5 8.875
16 CON GY -52.5 16.125
17 CON GY -52.5 5.375
17 CON GY -52.5 12.625
18 CON GY -52.5 1.875
18 CON GY -52.5 9.125
18 CON GY -52.5 16.375
19 CON GY -42.9 5.625
MEMBER LOAD
*WEIGHT OF BARRIERS*
15 CON GY -7.9 2.375
16 CON GY -7.9 1.625
17 CON GY -30.5 12.625
19 CON GY -15.8 5.625
SELFWEIGHT Y -1
LOAD 2 LOADTYPE None  TITLE LIVE LOAD - LANE LOADS
MEMBER LOAD
16 UNI GY -5.12 4.5 14.5
16 UNI GY -5.12 16.5 18
17 UNI GY -5.12 0 8.5
17 UNI GY -5.12 15.5 18
18 UNI GY -5.12 0 7.5
18 UNI GY -5.12 9.5 18
19 UNI GY -5.12 0 1.5
LOAD 3 LOADTYPE None  TITLE LIVE LOAD - DESIGN TRUCK HL-93
MEMBER LOAD
16 CON GY -72 9.5
```

```
17 CON GY -72 3.5
18 CON GY -72 14.5
18 CON GY -72 1.5
LOAD COMB 4 COMBINATION LOAD CASE 4
1 1.3 2 2.17
LOAD COMB 5 COMBINATION LOAD CASE 5
1 1.3 3 2.17
LOAD COMB 6 COMBINATION LOAD CASE 6
1 1.0 2 1.0
LOAD COMB 7 COMBINATION LOAD CASE 7
1 1.0 3 1.0
PERFORM ANALYSIS PRINT ALL
FINISH
```

Job Information

	Engineer	Checked	Approved
Name:	DSW	JDL	
Date:	01-Nov-18		

Project ID	
Project Name	

Structure Type	SPACE FRAME

Number of Nodes	30	Highest Node	30
Number of Elements	32	Highest Beam	32

Number of Basic Load Cases	3
Number of Combination Load Cases	4

Included in this printout are data for:

All	The Whole Structure

Included in this printout are results for load cases:

Type	L/C	Name
Combination	4	COMBINATION LOAD CASE 4
Combination	5	COMBINATION LOAD CASE 5
Combination	6	COMBINATION LOAD CASE 6
Combination	7	COMBINATION LOAD CASE 7

Nodes

Node	X (ft)	Y (ft)	Z (ft)
1	0.000	0.000	0.000
2	8.000	0.000	0.000
3	26.000	0.000	0.000
4	44.000	0.000	0.000
5	62.000	0.000	0.000
6	70.000	0.000	0.000
7	3.000	-25.000	0.000
8	6.000	-25.000	0.000
9	8.000	-25.000	0.000
10	13.250	-25.000	0.000
11	20.500	-25.000	0.000
12	26.000	-25.000	0.000
13	27.750	-25.000	0.000
14	35.000	-25.000	0.000
15	42.250	-25.000	0.000
16	44.000	-25.000	0.000

Nodes Cont...

Node	X (ft)	Y (ft)	Z (ft)
20	64.000	-25.000	0.000
21	67.000	-25.000	0.000
22	6.000	-40.000	0.000
23	13.250	-40.000	0.000
24	20.500	-40.000	0.000
25	27.750	-40.000	0.000
26	35.000	-40.000	0.000
27	42.250	-40.000	0.000
28	49.500	-40.000	0.000
29	56.750	-40.000	0.000
30	64.000	-40.000	0.000

Beams

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
1	7	8	3.000	2	0
2	8	9	2.000	2	0
3	9	10	5.250	2	0
4	10	11	7.250	2	0
5	11	12	5.500	2	0
6	12	13	1.750	2	0
7	13	14	7.250	2	0
8	14	15	7.250	2	0
9	15	16	1.750	2	0
10	16	17	5.500	2	0
11	17	18	7.250	2	0
12	18	19	5.250	2	0
13	19	20	2.000	2	0
14	20	21	3.000	2	0
15	1	2	8.000	1	0
16	2	3	18.000	1	0
17	3	4	18.000	1	0
18	4	5	18.000	1	0
19	5	6	8.000	1	0
20	2	9	25.000	3	0
21	3	12	25.000	3	0
22	4	16	25.000	3	0
23	5	19	25.000	3	0
24	8	22	15.000	4	0
25	10	23	15.000	4	0
26	11	24	15.000	4	0
27	13	25	15.000	4	0
28	14	26	15.000	4	0

Beams Cont...

Beam	Node A	Node B	Length (ft)	Property	β (degrees)
29	15	27	15.000	4	0
30	17	28	15.000	4	0
31	18	29	15.000	4	0
32	20	30	15.000	4	0

Section Properties

Prop	Section	Area (in^2)	I_{yy} (in^4)	I_{zz} (in^4)	J (in^4)	Material
1	Rect 54.00x42.00	2.27E+3	333E+3	551E+3	700E+3	CONCRETE
2	Rect 54.00x126.00	6.8E+3	9E+6	1.65E+6	4.83E+6	CONCRETE
3	Rect 36.00x36.00	1.3E+3	140E+3	140E+3	236E+3	CONCRETE
4	PIPE	34.117	1.29E+3	1.29E+3	2.58E+3	STEEL

Materials

Mat	Name	E (kip/in^2)	ν	Density (kip/in^3)	α (/°F)
1	STEEL	29E+3	0.300	0.000	6E -6
2	STAINLESSSTEEL	28E+3	0.300	0.000	10E -6
3	ALUMINUM	10E+3	0.330	0.000	13E -6
4	CONCRETE	3.15E+3	0.170	0.000	5E -6

Supports

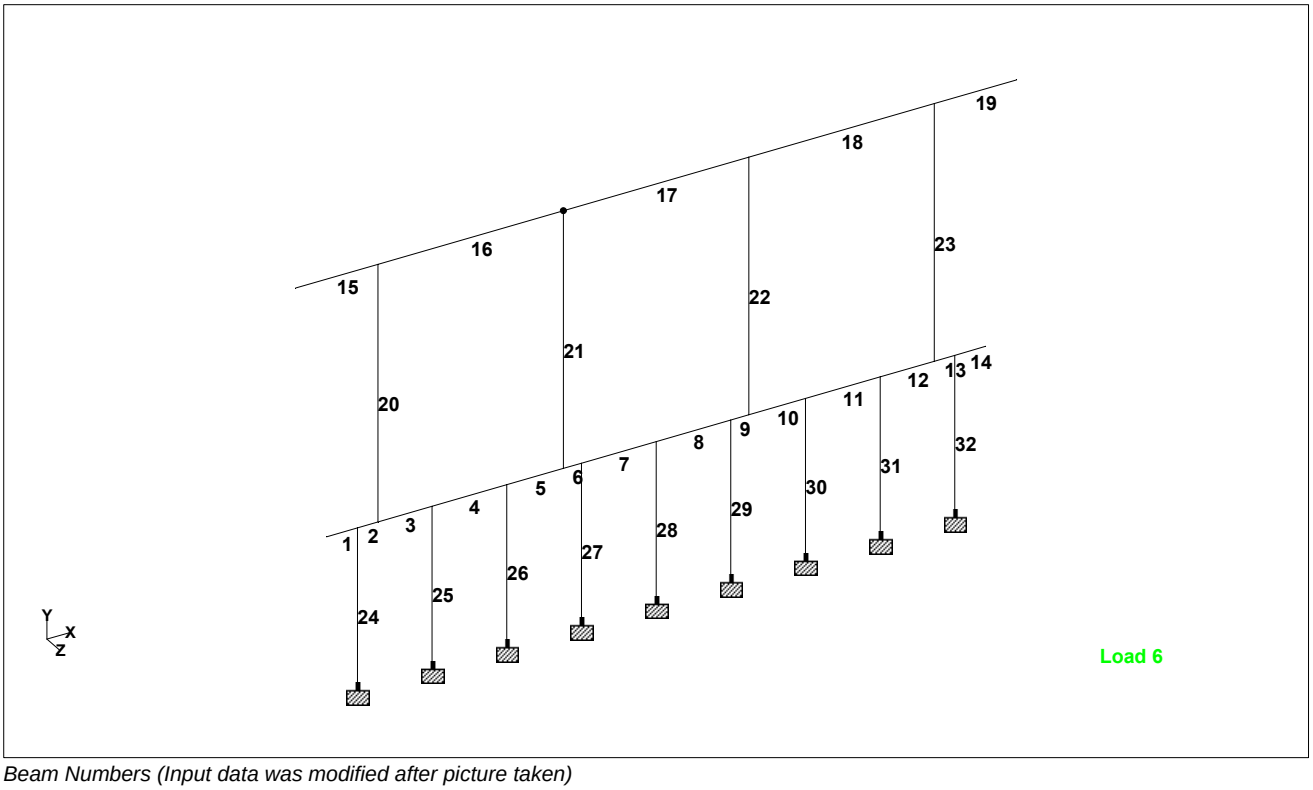
Node	X (kip/in)	Y (kip/in)	Z (kip/in)	rX (kip^-ft/deg)	rY (kip^-ft/deg)	rZ (kip^-ft/deg)
22	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
23	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
24	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
25	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
26	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
27	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
28	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
29	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
30	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed

Primary Load Cases

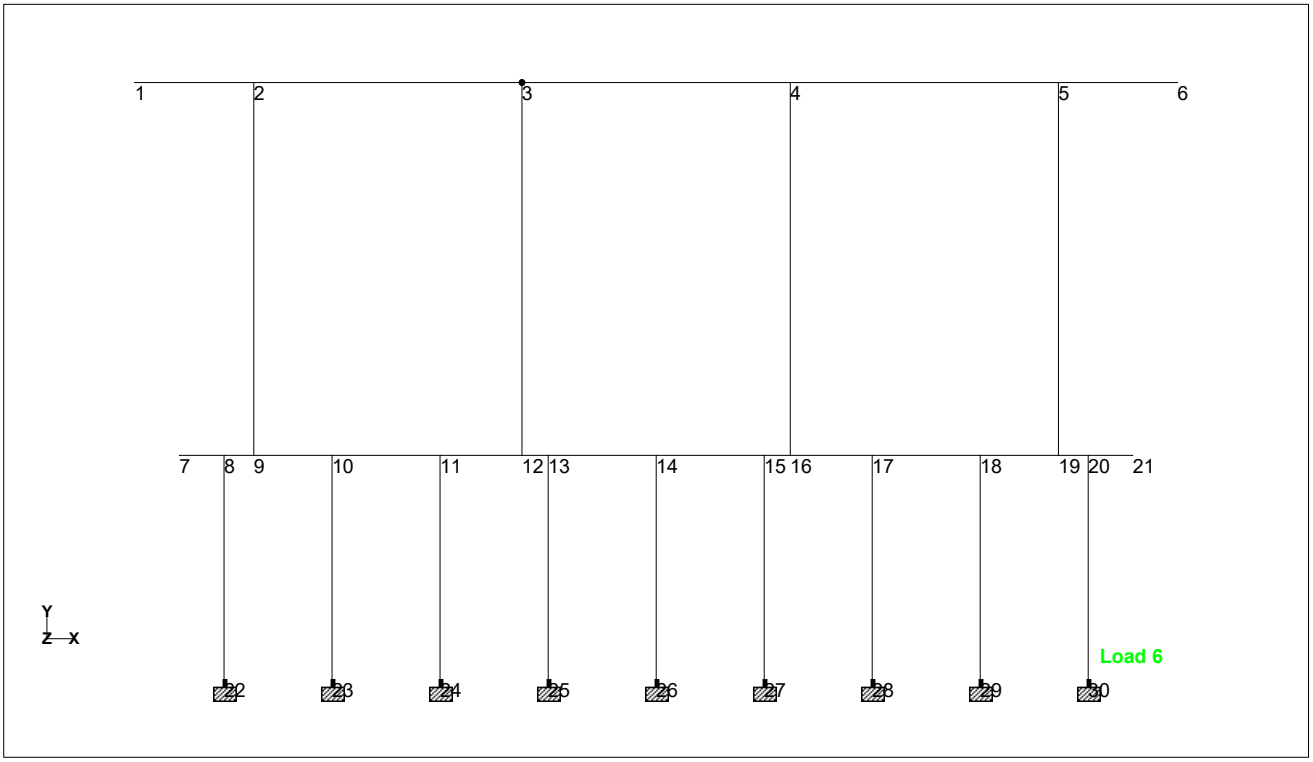
Number	Name	Type
1	CONCRETE DEAD WEIGHT	None
2	LIVE LOAD - LANE LOADS	None
3	LIVE LOAD - DESIGN TRUCK HL-93	None

Combination Load Cases

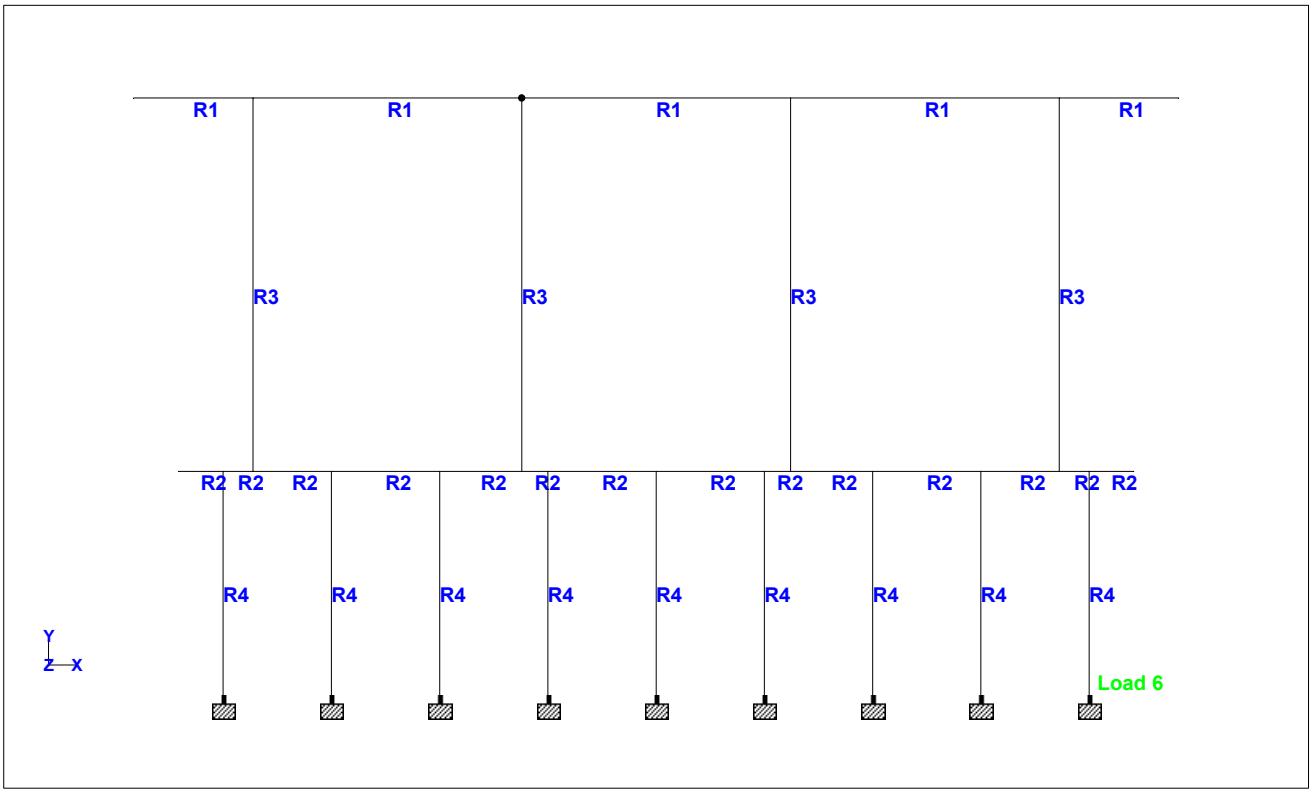
Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
4	COMBINATION LOAD CASE 4	1	CONCRETE DEAD WEIGHT	1.30
		2	LIVE LOAD - LANE LOADS	2.17
5	COMBINATION LOAD CASE 5	1	CONCRETE DEAD WEIGHT	1.30
		3	LIVE LOAD - DESIGN TRUCK HL-93	2.17
6	COMBINATION LOAD CASE 6	1	CONCRETE DEAD WEIGHT	1.00
		2	LIVE LOAD - LANE LOADS	1.00
7	COMBINATION LOAD CASE 7	1	CONCRETE DEAD WEIGHT	1.00
		3	LIVE LOAD - DESIGN TRUCK HL-93	1.00



Beam Numbers (Input data was modified after picture taken)



Node Numbers (Input data was modified after picture taken)



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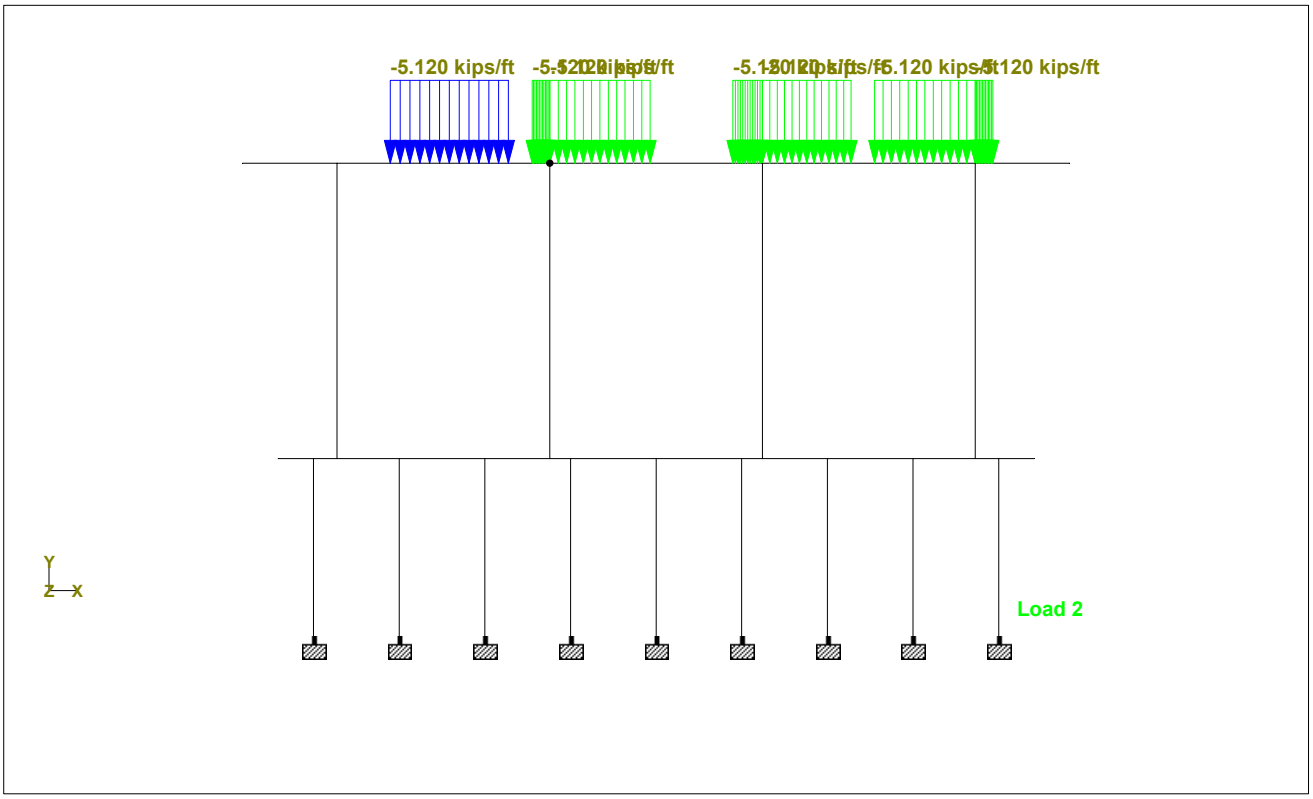
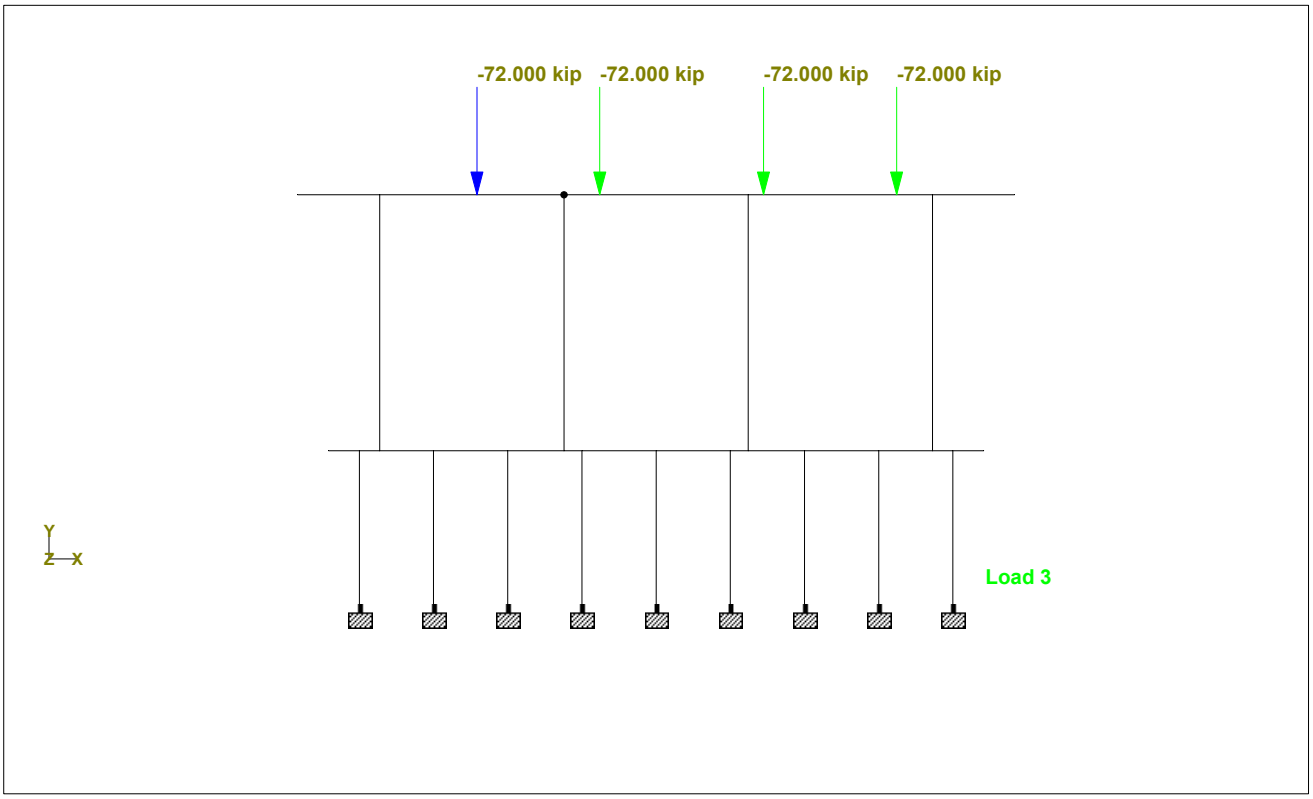


Lane Live Loads



Live Load Design Truck HL-93

Beam Maximum Moments

Distances to maxima are given from beam end A.

Beam	Node A	Length (ft)	L/C		d (ft)	Max My (kip-in)	d (ft)	Max Mz (kip-in)
1	7	3.000	4:COMBINATIC	Max +ve	0.000	0.000	3.000	498.657
				Max -ve	0.000	0.000		
			5:COMBINATIC	Max +ve	0.000	0.000	3.000	498.657
				Max -ve	0.000	0.000		
			6:COMBINATIC	Max +ve	0.000	0.000	3.000	383.582
				Max -ve	0.000	0.000		
			7:COMBINATIC	Max +ve	0.000	0.000	3.000	383.582
				Max -ve	0.000	0.000		
2	8	2.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	456.396
				Max -ve	0.000	0.000	2.000	-6.59E+3
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	462.891
				Max -ve	0.000	0.000	2.000	-6.79E+3
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	348.218
				Max -ve	0.000	0.000	2.000	-4.89E+3
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	351.211
				Max -ve	0.000	0.000	2.000	-4.98E+3
3	9	5.250	4:COMBINATIC	Max +ve	0.000	0.000	5.250	6.92E+3

Beam Maximum Moments Cont...

Beam	Node A	Length (ft)	L/C		d (ft)	Max My (kip-in)	d (ft)	Max Mz (kip-in)
				Max -ve	0.000	0.000	0.000	-7E+3
			5:COMBINATIC	Max +ve	0.000	0.000	5.250	7.43E+3
				Max -ve	0.000	0.000	0.000	-6.98E+3
			6:COMBINATIC	Max +ve	0.000	0.000	5.250	4.95E+3
				Max -ve	0.000	0.000	0.000	-5.33E+3
			7:COMBINATIC	Max +ve	0.000	0.000	5.250	5.19E+3
				Max -ve	0.000	0.000	0.000	-5.32E+3
4	10	7.250	4:COMBINATIC	Max +ve	0.000	0.000	0.000	6.87E+3
				Max -ve	0.000	0.000		
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	7.39E+3
				Max -ve	0.000	0.000		
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	4.9E+3
				Max -ve	0.000	0.000		
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	5.14E+3
				Max -ve	0.000	0.000		
5	11	5.500	4:COMBINATIC	Max +ve	0.000	0.000	0.000	5.69E+3
				Max -ve	0.000	0.000	5.500	-10.2E+3
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	5.73E+3
				Max -ve	0.000	0.000	5.500	-12E+3
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	4.28E+3
				Max -ve	0.000	0.000	5.500	-6.77E+3
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	4.3E+3
				Max -ve	0.000	0.000	5.500	-7.57E+3
6	12	1.750	4:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-10.4E+3
			5:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-12.1E+3
			6:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-6.85E+3
			7:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-7.64E+3
7	13	7.250	4:COMBINATIC	Max +ve	0.000	0.000	7.250	7.04E+3
				Max -ve	0.000	0.000	0.000	-2.59E+3
			5:COMBINATIC	Max +ve	0.000	0.000	7.250	7.51E+3
				Max -ve	0.000	0.000	0.000	-3.42E+3
			6:COMBINATIC	Max +ve	0.000	0.000	7.250	5.05E+3
				Max -ve	0.000	0.000	0.000	-1.48E+3
			7:COMBINATIC	Max +ve	0.000	0.000	7.250	5.27E+3
				Max -ve	0.000	0.000	0.000	-1.86E+3
8	14	7.250	4:COMBINATIC	Max +ve	0.000	0.000	0.000	7.04E+3
				Max -ve	0.000	0.000	7.250	-2.15E+3
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	7.5E+3
				Max -ve	0.000	0.000	7.250	-2.63E+3
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	5.05E+3
				Max -ve	0.000	0.000	7.250	-1.35E+3

Beam Maximum Moments Cont...

Beam	Node A	Length (ft)	L/C		d (ft)	Max My (kip-in)	d (ft)	Max Mz (kip-in)
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	5.26E+3
				Max -ve	0.000	0.000	7.250	-1.57E+3
9	15	1.750	4:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	1.750	-9.88E+3
			5:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	1.750	-11.1E+3
			6:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	1.750	-6.74E+3
			7:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	1.750	-7.32E+3
10	16	5.500	4:COMBINATIC	Max +ve	0.000	0.000	5.500	6.44E+3
				Max -ve	0.000	0.000	0.000	-9.89E+3
			5:COMBINATIC	Max +ve	0.000	0.000	5.500	6.81E+3
				Max -ve	0.000	0.000	0.000	-11.2E+3
			6:COMBINATIC	Max +ve	0.000	0.000	5.500	4.6E+3
				Max -ve	0.000	0.000	0.000	-6.73E+3
			7:COMBINATIC	Max +ve	0.000	0.000	5.500	4.77E+3
				Max -ve	0.000	0.000	0.000	-7.33E+3
11	17	7.250	4:COMBINATIC	Max +ve	0.000	0.000	7.250	7.39E+3
				Max -ve	0.000	0.000		
			5:COMBINATIC	Max +ve	0.000	0.000	7.250	8.09E+3
				Max -ve	0.000	0.000		
			6:COMBINATIC	Max +ve	0.000	0.000	7.250	5.16E+3
				Max -ve	0.000	0.000		
			7:COMBINATIC	Max +ve	0.000	0.000	7.250	5.47E+3
				Max -ve	0.000	0.000		
12	18	5.250	4:COMBINATIC	Max +ve	0.000	0.000	0.000	7.46E+3
				Max -ve	0.000	0.000	5.250	-7.88E+3
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	8.15E+3
				Max -ve	0.000	0.000	5.250	-8.09E+3
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	5.21E+3
				Max -ve	0.000	0.000	5.250	-5.76E+3
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	5.52E+3
				Max -ve	0.000	0.000	5.250	-5.86E+3
13	19	2.000	4:COMBINATIC	Max +ve	0.000	0.000	2.000	447.667
				Max -ve	0.000	0.000	0.000	-7.41E+3
			5:COMBINATIC	Max +ve	0.000	0.000	2.000	449.764
				Max -ve	0.000	0.000	0.000	-7.85E+3
			6:COMBINATIC	Max +ve	0.000	0.000	2.000	344.678
				Max -ve	0.000	0.000	0.000	-5.28E+3
			7:COMBINATIC	Max +ve	0.000	0.000	2.000	345.644
				Max -ve	0.000	0.000	0.000	-5.49E+3
14	20	3.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	498.657
				Max -ve	0.000	0.000		
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	498.657

Beam Maximum Moments Cont...

Beam	Node A	Length (ft)	L/C		d (ft)	Max My (kip-in)	d (ft)	Max Mz (kip-in)
				Max -ve	0.000	0.000		
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	383.582
				Max -ve	0.000	0.000		
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	383.582
				Max -ve	0.000	0.000		
15	1	8.000	4:COMBINATIC	Max +ve	0.000	0.000	8.000	9.73E+3
				Max -ve	0.000	0.000		
			5:COMBINATIC	Max +ve	0.000	0.000	8.000	9.73E+3
				Max -ve	0.000	0.000		
			6:COMBINATIC	Max +ve	0.000	0.000	8.000	7.49E+3
				Max -ve	0.000	0.000		
			7:COMBINATIC	Max +ve	0.000	0.000	8.000	7.49E+3
				Max -ve	0.000	0.000		
16	2	18.000	4:COMBINATIC	Max +ve	0.000	0.000	18.000	9.64E+3
				Max -ve	0.000	0.000	9.000	-5.95E+3
			5:COMBINATIC	Max +ve	0.000	0.000	18.000	11E+3
				Max -ve	0.000	0.000	9.000	-8.64E+3
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	7.11E+3
				Max -ve	0.000	0.000	9.000	-3.67E+3
			7:COMBINATIC	Max +ve	0.000	0.000	18.000	7.4E+3
				Max -ve	0.000	0.000	9.000	-4.91E+3
17	3	18.000	4:COMBINATIC	Max +ve	0.000	0.000	18.000	9.85E+3
				Max -ve	0.000	0.000	7.500	-4.09E+3
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	10.9E+3
				Max -ve	0.000	0.000	6.000	-4.22E+3
			6:COMBINATIC	Max +ve	0.000	0.000	18.000	6.83E+3
				Max -ve	0.000	0.000	9.000	-2.96E+3
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	7.36E+3
				Max -ve	0.000	0.000	7.500	-2.91E+3
18	4	18.000	4:COMBINATIC	Max +ve	0.000	0.000	18.000	10.3E+3
				Max -ve	0.000	0.000	9.000	-5.29E+3
			5:COMBINATIC	Max +ve	0.000	0.000	18.000	10.5E+3
				Max -ve	0.000	0.000	9.000	-5.41E+3
			6:COMBINATIC	Max +ve	0.000	0.000	18.000	7.61E+3
				Max -ve	0.000	0.000	9.000	-3.28E+3
			7:COMBINATIC	Max +ve	0.000	0.000	18.000	7.74E+3
				Max -ve	0.000	0.000	9.000	-3.33E+3
19	5	8.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	10.6E+3
				Max -ve	0.000	0.000		
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	10.4E+3
				Max -ve	0.000	0.000		
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	8.09E+3
				Max -ve	0.000	0.000		
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	8.02E+3
				Max -ve	0.000	0.000		

Beam Maximum Moments Cont...

Beam	Node A	Length (ft)	L/C		d (ft)	Max My (kip-in)	d (ft)	Max Mz (kip-in)
20	2	25.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	158.261
				Max -ve	0.000	0.000	25.000	-407.801
			5:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-265.529
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	374.820
				Max -ve	0.000	0.000	25.000	-440.121
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	179.525
				Max -ve	0.000	0.000	25.000	-336.968
21	3	25.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	104.511
				Max -ve	0.000	0.000	25.000	-118.105
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	82.529
				Max -ve	0.000	0.000	25.000	-100.567
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	47.915
				Max -ve	0.000	0.000	25.000	-76.847
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	37.785
				Max -ve	0.000	0.000	25.000	-68.765
22	4	25.000	4:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-13.759
			5:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	25.000	-51.670
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	19.161
				Max -ve	0.000	0.000		
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	14.725
				Max -ve	0.000	0.000	25.000	-16.559
23	5	25.000	4:COMBINATIC	Max +ve	0.000	0.000	25.000	467.467
				Max -ve	0.000	0.000	0.000	-320.152
			5:COMBINATIC	Max +ve	0.000	0.000	25.000	241.178
				Max -ve	0.000	0.000		
			6:COMBINATIC	Max +ve	0.000	0.000	25.000	475.241
				Max -ve	0.000	0.000	0.000	-482.224
			7:COMBINATIC	Max +ve	0.000	0.000	25.000	370.961
				Max -ve	0.000	0.000	0.000	-283.367
24	8	15.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	42.261
				Max -ve	0.000	0.000	15.000	-22.898
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	35.766
				Max -ve	0.000	0.000	15.000	-20.573
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	35.364
				Max -ve	0.000	0.000	15.000	-18.223
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	32.371
				Max -ve	0.000	0.000	15.000	-17.152
25	10	15.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	56.346
				Max -ve	0.000	0.000	15.000	-29.562
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	47.673
				Max -ve	0.000	0.000	15.000	-26.225
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	47.364

Beam Maximum Moments Cont...

Beam	Node A	Length (ft)	L/C		d (ft)	Max My (kip-in)	d (ft)	Max Mz (kip-in)
				Max -ve	0.000	0.000	15.000	-23.889
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	43.367
				Max -ve	0.000	0.000	15.000	-22.351
26	11	15.000	4:COMBINATIC	Max +ve	0.000	0.000	15.000	6.630
				Max -ve	0.000	0.000	0.000	-19.962
			5:COMBINATIC	Max +ve	0.000	0.000	15.000	11.634
				Max -ve	0.000	0.000	0.000	-32.211
			6:COMBINATIC	Max +ve	0.000	0.000	15.000	2.527
				Max -ve	0.000	0.000	0.000	-8.295
			7:COMBINATIC	Max +ve	0.000	0.000	15.000	4.833
				Max -ve	0.000	0.000	0.000	-13.940
27	13	15.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	26.269
				Max -ve	0.000	0.000	15.000	-15.269
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	26.596
				Max -ve	0.000	0.000	15.000	-16.254
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	19.583
				Max -ve	0.000	0.000	15.000	-10.660
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	19.734
				Max -ve	0.000	0.000	15.000	-11.114
28	14	15.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	3.251
				Max -ve	0.000	0.000	15.000	-4.333
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	6.051
				Max -ve	0.000	0.000	15.000	-6.519
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	0.868
				Max -ve	0.000	0.000	15.000	-1.755
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	2.158
				Max -ve	0.000	0.000	15.000	-2.763
29	15	15.000	4:COMBINATIC	Max +ve	0.000	0.000	15.000	7.964
				Max -ve	0.000	0.000	0.000	-22.637
			5:COMBINATIC	Max +ve	0.000	0.000	15.000	5.661
				Max -ve	0.000	0.000	0.000	-19.653
			6:COMBINATIC	Max +ve	0.000	0.000	15.000	7.553
				Max -ve	0.000	0.000	0.000	-18.697
			7:COMBINATIC	Max +ve	0.000	0.000	15.000	6.491
				Max -ve	0.000	0.000	0.000	-17.321
30	17	15.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	16.608
				Max -ve	0.000	0.000	15.000	-10.617
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	27.041
				Max -ve	0.000	0.000	15.000	-16.480
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	6.988
				Max -ve	0.000	0.000	15.000	-4.590
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	11.796
				Max -ve	0.000	0.000	15.000	-7.292
31	18	15.000	4:COMBINATIC	Max +ve	0.000	0.000	15.000	29.594
				Max -ve	0.000	0.000	0.000	-68.158

Beam Maximum Moments Cont...

Beam	Node A	Length (ft)	L/C		d (ft)	Max My (kip-in)	d (ft)	Max Mz (kip-in)
			5:COMBINATIC	Max +ve	0.000	0.000	15.000	26.978
				Max -ve	0.000	0.000	0.000	-64.636
			6:COMBINATIC	Max +ve	0.000	0.000	15.000	23.625
				Max -ve	0.000	0.000	0.000	-52.452
			7:COMBINATIC	Max +ve	0.000	0.000	15.000	22.419
				Max -ve	0.000	0.000	0.000	-50.829
32	20	15.000	4:COMBINATIC	Max +ve	0.000	0.000	15.000	21.476
				Max -ve	0.000	0.000	0.000	-50.990
			5:COMBINATIC	Max +ve	0.000	0.000	15.000	19.513
				Max -ve	0.000	0.000	0.000	-48.893
			6:COMBINATIC	Max +ve	0.000	0.000	15.000	17.229
				Max -ve	0.000	0.000	0.000	-38.905
			7:COMBINATIC	Max +ve	0.000	0.000	15.000	16.325
				Max -ve	0.000	0.000	0.000	-37.938

Beam Maximum Shear Forces

Distances to maxima are given from beam end A.

Beam	Node A	Length (ft)	L/C		d (ft)	Max Fz (kip)	d (ft)	Max Fy (kip)
1	7	3.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	0.000
				Max -ve	0.000	0.000	3.000	-27.703
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	0.000
				Max -ve	0.000	0.000	3.000	-27.703
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	0.000
				Max -ve	0.000	0.000	3.000	-21.310
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	0.000
				Max -ve	0.000	0.000	3.000	-21.310
2	8	2.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	302.993
				Max -ve	0.000	0.000		
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	311.530
				Max -ve	0.000	0.000		
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	225.318
				Max -ve	0.000	0.000		
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	229.252
				Max -ve	0.000	0.000		
3	9	5.250	4:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	5.250	-245.267
			5:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	5.250	-252.986
			6:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	5.250	-181.824
			7:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	5.250	-185.382
4	10	7.250	4:COMBINATIC	Max +ve	0.000	0.000	0.000	47.266

Beam Maximum Shear Forces Cont...

Beam	Node A	Length (ft)	L/C		d (ft)	Max Fz (kip)	d (ft)	Max Fy (kip)
				Max -ve	0.000	0.000	7.250	-19.683
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	52.906
				Max -ve	0.000	0.000	7.250	-14.043
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	33.014
				Max -ve	0.000	0.000	7.250	-18.486
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	35.613
				Max -ve	0.000	0.000	7.250	-15.887
5	11	5.500	4:COMBINATIC	Max +ve	0.000	0.000	0.000	266.753
				Max -ve	0.000	0.000		
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	293.666
				Max -ve	0.000	0.000		
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	187.027
				Max -ve	0.000	0.000		
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	199.430
				Max -ve	0.000	0.000		
6	12	1.750	4:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	1.750	-379.423
			5:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	1.750	-421.688
			6:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	1.750	-263.017
			7:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	1.750	-282.494
7	13	7.250	4:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	7.250	-144.177
			5:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	7.250	-159.034
			6:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	7.250	-100.811
			7:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	7.250	-107.658
8	14	7.250	4:COMBINATIC	Max +ve	0.000	0.000	0.000	139.099
				Max -ve	0.000	0.000		
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	149.903
				Max -ve	0.000	0.000		
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	99.311
				Max -ve	0.000	0.000		
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	104.290
				Max -ve	0.000	0.000		
9	15	1.750	4:COMBINATIC	Max +ve	0.000	0.000	0.000	377.099
				Max -ve	0.000	0.000		
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	414.109
				Max -ve	0.000	0.000		
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	263.638
				Max -ve	0.000	0.000		

Beam Maximum Shear Forces Cont...

Beam	Node A	Length (ft)	L/C		d (ft)	Max Fz (kip)	d (ft)	Max Fy (kip)
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	280.693
				Max -ve	0.000	0.000		
10	16	5.500	4:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	5.500	-272.742
			5:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	5.500	-298.119
			6:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	5.500	-191.244
			7:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	5.500	-202.938
11	17	7.250	4:COMBINATIC	Max +ve	0.000	0.000	0.000	22.254
				Max -ve	0.000	0.000	7.250	-44.696
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	18.515
				Max -ve	0.000	0.000	7.250	-48.435
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	19.273
				Max -ve	0.000	0.000	7.250	-32.227
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	17.550
				Max -ve	0.000	0.000	7.250	-33.950
12	18	5.250	4:COMBINATIC	Max +ve	0.000	0.000	0.000	267.711
				Max -ve	0.000	0.000		
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	282.011
				Max -ve	0.000	0.000		
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	192.731
				Max -ve	0.000	0.000		
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	199.321
				Max -ve	0.000	0.000		
13	19	2.000	4:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	2.000	-336.569
			5:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	2.000	-354.989
			6:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	2.000	-241.647
			7:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	2.000	-250.135
14	20	3.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	27.703
				Max -ve	0.000	0.000	3.000	-0.000
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	27.703
				Max -ve	0.000	0.000	3.000	-0.000
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	21.310
				Max -ve	0.000	0.000	3.000	-0.000
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	21.310
				Max -ve	0.000	0.000	3.000	-0.000
15	1	8.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	0.000
				Max -ve	0.000	0.000	8.000	-151.336
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	0.000

Beam Maximum Shear Forces Cont...

Beam	Node A	Length (ft)	L/C		d (ft)	Max Fz (kip)	d (ft)	Max Fy (kip)
				Max -ve	0.000	0.000	8.000	-151.336
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	0.000
				Max -ve	0.000	0.000	8.000	-116.412
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	0.000
				Max -ve	0.000	0.000	8.000	-116.412
16	2	18.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	286.001
				Max -ve	0.000	0.000	18.000	-294.208
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	302.258
				Max -ve	0.000	0.000	18.000	-306.421
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	205.405
				Max -ve	0.000	0.000	18.000	-201.505
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	212.897
				Max -ve	0.000	0.000	18.000	-207.134
17	3	18.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	241.045
				Max -ve	0.000	0.000	18.000	-234.067
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	298.011
				Max -ve	0.000	0.000	18.000	-211.127
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	163.214
				Max -ve	0.000	0.000	18.000	-164.566
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	189.465
				Max -ve	0.000	0.000	18.000	-153.995
18	4	18.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	304.851
				Max -ve	0.000	0.000	18.000	-315.085
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	390.178
				Max -ve	0.000	0.000	18.000	-364.471
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	204.990
				Max -ve	0.000	0.000	18.000	-217.060
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	244.312
				Max -ve	0.000	0.000	18.000	-239.819
19	5	8.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	178.272
				Max -ve	0.000	0.000	8.000	-0.000
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	161.606
				Max -ve	0.000	0.000	8.000	-0.000
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	131.992
				Max -ve	0.000	0.000	8.000	-0.000
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	124.312
				Max -ve	0.000	0.000	8.000	-0.000
20	2	25.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	1.887
				Max -ve	0.000	0.000		
			5:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-0.272
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	2.716
				Max -ve	0.000	0.000		
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	1.722
				Max -ve	0.000	0.000		

Beam Maximum Shear Forces Cont...

Beam	Node A	Length (ft)	L/C		d (ft)	Max Fz (kip)	d (ft)	Max Fy (kip)
21	3	25.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	0.742
				Max -ve	0.000	0.000		
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	0.610
				Max -ve	0.000	0.000		
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	0.416
				Max -ve	0.000	0.000		
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	0.355
				Max -ve	0.000	0.000		
22	4	25.000	4:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-0.004
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	0.094
				Max -ve	0.000	0.000		
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	0.059
				Max -ve	0.000	0.000		
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	0.104
				Max -ve	0.000	0.000		
23	5	25.000	4:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-2.625
			5:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-0.433
			6:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-3.192
			7:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-2.181
24	8	15.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	0.362
				Max -ve	0.000	0.000		
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	0.313
				Max -ve	0.000	0.000		
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	0.298
				Max -ve	0.000	0.000		
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	0.275
				Max -ve	0.000	0.000		
25	10	15.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	0.477
				Max -ve	0.000	0.000		
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	0.411
				Max -ve	0.000	0.000		
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	0.396
				Max -ve	0.000	0.000		
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	0.365
				Max -ve	0.000	0.000		
26	11	15.000	4:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-0.148
			5:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-0.244
			6:COMBINATIC	Max +ve	0.000	0.000		

Beam Maximum Shear Forces Cont...

Beam	Node A	Length (ft)	L/C		d (ft)	Max Fz (kip)	d (ft)	Max Fy (kip)
				Max -ve	0.000	0.000	0.000	-0.060
			7:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-0.104
27	13	15.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	0.231
				Max -ve	0.000	0.000		
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	0.238
				Max -ve	0.000	0.000		
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	0.168
				Max -ve	0.000	0.000		
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	0.171
				Max -ve	0.000	0.000		
28	14	15.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	0.042
				Max -ve	0.000	0.000		
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	0.070
				Max -ve	0.000	0.000		
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	0.015
				Max -ve	0.000	0.000		
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	0.027
				Max -ve	0.000	0.000		
29	15	15.000	4:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-0.170
			5:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-0.141
			6:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-0.146
			7:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-0.132
30	17	15.000	4:COMBINATIC	Max +ve	0.000	0.000	0.000	0.151
				Max -ve	0.000	0.000		
			5:COMBINATIC	Max +ve	0.000	0.000	0.000	0.242
				Max -ve	0.000	0.000		
			6:COMBINATIC	Max +ve	0.000	0.000	0.000	0.064
				Max -ve	0.000	0.000		
			7:COMBINATIC	Max +ve	0.000	0.000	0.000	0.106
				Max -ve	0.000	0.000		
31	18	15.000	4:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-0.543
			5:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-0.509
			6:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-0.423
			7:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-0.407
32	20	15.000	4:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-0.403

Beam Maximum Shear Forces Cont...

Beam	Node A	Length (ft)	L/C		d (ft)	Max Fz (kip)	d (ft)	Max Fy (kip)
			5:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-0.380
			6:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-0.312
			7:COMBINATIC	Max +ve	0.000	0.000		
				Max -ve	0.000	0.000	0.000	-0.301

Beam Maximum Axial Forces

Distances to maxima are given from beam end A.

Beam	Node A	Length (ft)	L/C		d (ft)	Max Fx (kip)
1	7	3.000	4:COMBINATIC	Max +ve	0.000	0.000
				Max -ve	0.000	0.000
			5:COMBINATIC	Max +ve	0.000	0.000
				Max -ve	0.000	0.000
			6:COMBINATIC	Max +ve	0.000	0.000
				Max -ve	0.000	0.000
			7:COMBINATIC	Max +ve	0.000	0.000
				Max -ve	0.000	0.000
2	8	2.000	4:COMBINATIC	Max +ve		
				Max -ve	0.000	-0.362
			5:COMBINATIC	Max +ve		
				Max -ve	0.000	-0.313
			6:COMBINATIC	Max +ve		
				Max -ve	0.000	-0.298
			7:COMBINATIC	Max +ve		
				Max -ve	0.000	-0.275
3	9	5.250	4:COMBINATIC	Max +ve	0.000	1.525
				Max -ve		
			5:COMBINATIC	Max +ve		
				Max -ve	0.000	-0.585
			6:COMBINATIC	Max +ve	0.000	2.419
				Max -ve		
			7:COMBINATIC	Max +ve	0.000	1.447
				Max -ve		
4	10	7.250	4:COMBINATIC	Max +ve	0.000	1.048
				Max -ve		
			5:COMBINATIC	Max +ve		
				Max -ve	0.000	-0.995
			6:COMBINATIC	Max +ve	0.000	2.023
				Max -ve		
			7:COMBINATIC	Max +ve	0.000	1.081
				Max -ve		
5	11	5.500	4:COMBINATIC	Max +ve	0.000	1.195

Beam Maximum Axial Forces Cont...

Beam	Node A	Length (ft)	L/C		d (ft)	Max Fx (kip)
				Max -ve		
			5:COMBINATIC	Max +ve		
				Max -ve	0.000	-0.752
			6:COMBINATIC	Max +ve	0.000	2.083
				Max -ve		
			7:COMBINATIC	Max +ve	0.000	1.186
				Max -ve		
6	12	1.750	4:COMBINATIC	Max +ve	0.000	1.937
				Max -ve		
			5:COMBINATIC	Max +ve		
				Max -ve	0.000	-0.142
			6:COMBINATIC	Max +ve	0.000	2.499
				Max -ve		
			7:COMBINATIC	Max +ve	0.000	1.541
				Max -ve		
7	13	7.250	4:COMBINATIC	Max +ve	0.000	1.707
				Max -ve		
			5:COMBINATIC	Max +ve		
				Max -ve	0.000	-0.380
			6:COMBINATIC	Max +ve	0.000	2.331
				Max -ve		
			7:COMBINATIC	Max +ve	0.000	1.369
				Max -ve		
8	14	7.250	4:COMBINATIC	Max +ve	0.000	1.665
				Max -ve		
			5:COMBINATIC	Max +ve		
				Max -ve	0.000	-0.449
			6:COMBINATIC	Max +ve	0.000	2.316
				Max -ve		
			7:COMBINATIC	Max +ve	0.000	1.342
				Max -ve		
9	15	1.750	4:COMBINATIC	Max +ve	0.000	1.835
				Max -ve		
			5:COMBINATIC	Max +ve		
				Max -ve	0.000	-0.309
			6:COMBINATIC	Max +ve	0.000	2.462
				Max -ve		
			7:COMBINATIC	Max +ve	0.000	1.474
				Max -ve		
10	16	5.500	4:COMBINATIC	Max +ve	0.000	1.831
				Max -ve		
			5:COMBINATIC	Max +ve		
				Max -ve	0.000	-0.215
			6:COMBINATIC	Max +ve	0.000	2.521
				Max -ve		

Beam Maximum Axial Forces Cont...

Beam	Node A	Length (ft)	L/C		d (ft)	Max Fx (kip)
			7:COMBINATIC	Max +ve	0.000	1.579
				Max -ve		
11	17	7.250	4:COMBINATIC	Max +ve	0.000	1.680
				Max -ve		
			5:COMBINATIC	Max +ve		
				Max -ve	0.000	-0.456
			6:COMBINATIC	Max +ve	0.000	2.457
				Max -ve		
			7:COMBINATIC	Max +ve	0.000	1.473
				Max -ve		
12	18	5.250	4:COMBINATIC	Max +ve	0.000	2.223
				Max -ve		
			5:COMBINATIC	Max +ve	0.000	0.053
				Max -ve		
			6:COMBINATIC	Max +ve	0.000	2.880
				Max -ve		
			7:COMBINATIC	Max +ve	0.000	1.880
				Max -ve		
13	19	2.000	4:COMBINATIC	Max +ve		
				Max -ve	0.000	-0.403
			5:COMBINATIC	Max +ve		
				Max -ve	0.000	-0.380
			6:COMBINATIC	Max +ve		
				Max -ve	0.000	-0.312
			7:COMBINATIC	Max +ve		
				Max -ve	0.000	-0.301
14	20	3.000	4:COMBINATIC	Max +ve	0.000	0.000
				Max -ve	0.000	0.000
			5:COMBINATIC	Max +ve	0.000	0.000
				Max -ve	0.000	0.000
			6:COMBINATIC	Max +ve	0.000	0.000
				Max -ve	0.000	0.000
			7:COMBINATIC	Max +ve	0.000	0.000
				Max -ve	0.000	0.000
15	1	8.000	4:COMBINATIC	Max +ve	0.000	0.000
				Max -ve	0.000	0.000
			5:COMBINATIC	Max +ve	0.000	0.000
				Max -ve	0.000	0.000
			6:COMBINATIC	Max +ve	0.000	0.000
				Max -ve	0.000	0.000
			7:COMBINATIC	Max +ve	0.000	0.000
				Max -ve	0.000	0.000
16	2	18.000	4:COMBINATIC	Max +ve		
				Max -ve	0.000	-1.887
			5:COMBINATIC	Max +ve	0.000	0.272

Beam Maximum Axial Forces Cont...

Beam	Node A	Length (ft)	L/C		d (ft)	Max Fx (kip)
				Max -ve		
			6:COMBINATIC	Max +ve		
				Max -ve	0.000	-2.716
			7:COMBINATIC	Max +ve		
				Max -ve	0.000	-1.722
17	3	18.000	4:COMBINATIC	Max +ve		
				Max -ve	0.000	-2.629
			5:COMBINATIC	Max +ve		
				Max -ve	0.000	-0.338
			6:COMBINATIC	Max +ve		
				Max -ve	0.000	-3.132
			7:COMBINATIC	Max +ve		
				Max -ve	0.000	-2.077
18	4	18.000	4:COMBINATIC	Max +ve		
				Max -ve	0.000	-2.625
			5:COMBINATIC	Max +ve		
				Max -ve	0.000	-0.433
			6:COMBINATIC	Max +ve		
				Max -ve	0.000	-3.192
			7:COMBINATIC	Max +ve		
				Max -ve	0.000	-2.181
19	5	8.000	4:COMBINATIC	Max +ve	0.000	0.000
				Max -ve	0.000	0.000
			5:COMBINATIC	Max +ve	0.000	0.000
				Max -ve	0.000	0.000
			6:COMBINATIC	Max +ve	0.000	0.000
				Max -ve	0.000	0.000
			7:COMBINATIC	Max +ve	0.000	0.000
				Max -ve	0.000	0.000
20	2	25.000	4:COMBINATIC	Max +ve	25.000	481.311
				Max -ve		
			5:COMBINATIC	Max +ve	25.000	497.567
				Max -ve		
			6:COMBINATIC	Max +ve	25.000	355.643
				Max -ve		
			7:COMBINATIC	Max +ve	25.000	363.135
				Max -ve		
21	3	25.000	4:COMBINATIC	Max +ve	25.000	579.226
				Max -ve		
			5:COMBINATIC	Max +ve	25.000	648.406
				Max -ve		
			6:COMBINATIC	Max +ve	25.000	398.545
				Max -ve		
			7:COMBINATIC	Max +ve	25.000	430.425
				Max -ve		

Beam Maximum Axial Forces Cont...

Beam	Node A	Length (ft)	L/C		d (ft)	Max Fx (kip)
22	4	25.000	4:COMBINATIC	Max +ve	25.000	582.891
				Max -ve		
			5:COMBINATIC	Max +ve	25.000	645.279
				Max -ve		
			6:COMBINATIC	Max +ve	25.000	403.382
				Max -ve		
			7:COMBINATIC	Max +ve	25.000	432.132
				Max -ve		
23	5	25.000	4:COMBINATIC	Max +ve	25.000	537.330
				Max -ve		
			5:COMBINATIC	Max +ve	25.000	570.051
				Max -ve		
			6:COMBINATIC	Max +ve	25.000	382.878
				Max -ve		
			7:COMBINATIC	Max +ve	25.000	397.957
				Max -ve		
24	8	15.000	4:COMBINATIC	Max +ve	15.000	332.956
				Max -ve		
			5:COMBINATIC	Max +ve	15.000	341.493
				Max -ve		
			6:COMBINATIC	Max +ve	15.000	248.366
				Max -ve		
			7:COMBINATIC	Max +ve	15.000	252.301
				Max -ve		
25	10	15.000	4:COMBINATIC	Max +ve	15.000	294.792
				Max -ve		
			5:COMBINATIC	Max +ve	15.000	308.152
				Max -ve		
			6:COMBINATIC	Max +ve	15.000	216.576
				Max -ve		
			7:COMBINATIC	Max +ve	15.000	222.732
				Max -ve		
26	11	15.000	4:COMBINATIC	Max +ve	15.000	288.695
				Max -ve		
			5:COMBINATIC	Max +ve	15.000	309.969
				Max -ve		
			6:COMBINATIC	Max +ve	15.000	207.251
				Max -ve		
			7:COMBINATIC	Max +ve	15.000	217.054
				Max -ve		
27	13	15.000	4:COMBINATIC	Max +ve	15.000	304.455
				Max -ve		
			5:COMBINATIC	Max +ve	15.000	331.863
				Max -ve		
			6:COMBINATIC	Max +ve	15.000	215.443

Beam Maximum Axial Forces Cont...

Beam	Node A	Length (ft)	L/C		d (ft)	Max Fx (kip)
				Max -ve		
			7:COMBINATIC	Max +ve	15.000	228.074
				Max -ve		
28	14	15.000	4:COMBINATIC	Max +ve	15.000	285.535
				Max -ve		
			5:COMBINATIC	Max +ve	15.000	311.196
				Max -ve		
			6:COMBINATIC	Max +ve	15.000	201.860
				Max -ve		
			7:COMBINATIC	Max +ve	15.000	213.686
				Max -ve		
29	15	15.000	4:COMBINATIC	Max +ve	15.000	307.209
				Max -ve		
			5:COMBINATIC	Max +ve	15.000	333.414
				Max -ve		
			6:COMBINATIC	Max +ve	15.000	217.564
				Max -ve		
			7:COMBINATIC	Max +ve	15.000	229.640
				Max -ve		
30	17	15.000	4:COMBINATIC	Max +ve	15.000	297.255
				Max -ve		
			5:COMBINATIC	Max +ve	15.000	318.893
				Max -ve		
			6:COMBINATIC	Max +ve	15.000	212.255
				Max -ve		
			7:COMBINATIC	Max +ve	15.000	222.226
				Max -ve		
31	18	15.000	4:COMBINATIC	Max +ve	15.000	314.666
				Max -ve		
			5:COMBINATIC	Max +ve	15.000	332.705
				Max -ve		
			6:COMBINATIC	Max +ve	15.000	226.695
				Max -ve		
			7:COMBINATIC	Max +ve	15.000	235.008
				Max -ve		
32	20	15.000	4:COMBINATIC	Max +ve	15.000	366.531
				Max -ve		
			5:COMBINATIC	Max +ve	15.000	384.951
				Max -ve		
			6:COMBINATIC	Max +ve	15.000	264.695
				Max -ve		
			7:COMBINATIC	Max +ve	15.000	273.183
				Max -ve		

Reactions

		Horizontal	Vertical	Horizontal	Moment		
Node	L/C	FX (kip)	FY (kip)	FZ (kip)	MX (kip-in)	MY (kip-in)	MZ (kip-in)
22	4:COMBINATIC	-0.362	332.956	0.000	0.000	0.000	22.898
	5:COMBINATIC	-0.313	341.493	0.000	0.000	0.000	20.573
	6:COMBINATIC	-0.298	248.366	0.000	0.000	0.000	18.223
	7:COMBINATIC	-0.275	252.301	0.000	0.000	0.000	17.152
23	4:COMBINATIC	-0.477	294.792	0.000	0.000	0.000	29.562
	5:COMBINATIC	-0.411	308.152	0.000	0.000	0.000	26.225
	6:COMBINATIC	-0.396	216.576	0.000	0.000	0.000	23.889
	7:COMBINATIC	-0.365	222.732	0.000	0.000	0.000	22.351
24	4:COMBINATIC	0.148	288.695	0.000	0.000	0.000	-6.630
	5:COMBINATIC	0.244	309.969	0.000	0.000	0.000	-11.634
	6:COMBINATIC	0.060	207.251	0.000	0.000	0.000	-2.527
	7:COMBINATIC	0.104	217.054	0.000	0.000	0.000	-4.833
25	4:COMBINATIC	-0.231	304.455	0.000	0.000	0.000	15.269
	5:COMBINATIC	-0.238	331.863	0.000	0.000	0.000	16.254
	6:COMBINATIC	-0.168	215.443	0.000	0.000	0.000	10.660
	7:COMBINATIC	-0.171	228.074	0.000	0.000	0.000	11.114
26	4:COMBINATIC	-0.042	285.535	0.000	0.000	0.000	4.333
	5:COMBINATIC	-0.070	311.196	0.000	0.000	0.000	6.519
	6:COMBINATIC	-0.015	201.860	0.000	0.000	0.000	1.755
	7:COMBINATIC	-0.027	213.686	0.000	0.000	0.000	2.763
27	4:COMBINATIC	0.170	307.209	0.000	0.000	0.000	-7.964
	5:COMBINATIC	0.141	333.414	0.000	0.000	0.000	-5.661
	6:COMBINATIC	0.146	217.564	0.000	0.000	0.000	-7.553
	7:COMBINATIC	0.132	229.640	0.000	0.000	0.000	-6.491
28	4:COMBINATIC	-0.151	297.255	0.000	0.000	0.000	10.617
	5:COMBINATIC	-0.242	318.893	0.000	0.000	0.000	16.480
	6:COMBINATIC	-0.064	212.255	0.000	0.000	0.000	4.590
	7:COMBINATIC	-0.106	222.226	0.000	0.000	0.000	7.292
29	4:COMBINATIC	0.543	314.666	0.000	0.000	0.000	-29.594
	5:COMBINATIC	0.509	332.705	0.000	0.000	0.000	-26.978
	6:COMBINATIC	0.423	226.695	0.000	0.000	0.000	-23.625
	7:COMBINATIC	0.407	235.008	0.000	0.000	0.000	-22.419
30	4:COMBINATIC	0.403	366.531	0.000	0.000	0.000	-21.476
	5:COMBINATIC	0.380	384.951	0.000	0.000	0.000	-19.513
	6:COMBINATIC	0.312	264.695	0.000	0.000	0.000	-17.229
	7:COMBINATIC	0.301	273.183	0.000	0.000	0.000	-16.325

```
**************************************************
*                                                *
*           STAAD.Pro V8i SELECTseries6          *
*           Version  20.07.11.82                 *
*           Proprietary Program of               *
*           Bentley Systems, Inc.                *
*           Date=    FEB 27, 2019                *
*           Time=     9:38:45                    *
*                                                *
*      USER ID:                                  *
**************************************************
```

```
     1. STAAD SPACE
INPUT FILE: c:\pwworking\cemvn\b2edtdpl\d0672280\Concrete Pier Design.STD
     2. START JOB INFORMATION
     3. ENGINEER DATE 01-NOV-18
     4. JOB NAME IHNC - BRIDGE PIER
     5. JOB CLIENT FEASIBILITY STUDY
     6. *THIS DESIGN IF FOR THE APPROACH SPAN, BRIDGE PIERS THAT WILL BE LOCATED AT THE
     7. *NEW ST. CLAUDE AVENUE BRIDGE. THERE IS A SEPERATE DESIGN FOR THE BASCULE
     8. *BRIDGE PIERS THAT WILL HOUSE THE BRIDGE LEAFS AND MACHINERY.
     9. ENGINEER NAME DSW
    10. CHECKER NAME JDL
    11. END JOB INFORMATION
    12. INPUT WIDTH 79
    13. UNIT FEET KIP
    14. JOINT COORDINATES
    15. 1 0 0 0; 2 8 0 0; 3 26 0 0; 4 44 0 0; 5 62 0 0; 6 70 0 0; 7 3 -25 0; 8 6 -25 0
    16. 9 8 -25 0; 10 13.25 -25 0; 11 20.5 -25 0; 12 26 -25 0; 13 27.75 -25 0
    17. 14 35 -25 0; 15 42.25 -25 0; 16 44 -25 0; 17 49.5 -25 0; 18 56.75 -25 0
    18. 19 62 -25 0; 20 64 -25 0; 21 67 -25 0; 22 6 -40 0; 23 13.25 -40 0
    19. 24 20.5 -40 0; 25 27.75 -40 0; 26 35 -40 0; 27 42.25 -40 0; 28 49.5 -40 0
    20. 29 56.75 -40 0; 30 64 -40 0
    21. MEMBER INCIDENCES
    22. 1 7 8; 2 8 9; 3 9 10; 4 10 11; 5 11 12; 6 12 13; 7 13 14; 8 14 15; 9 15 16
    23. 10 16 17; 11 17 18; 12 18 19; 13 19 20; 14 20 21; 15 1 2; 16 2 3; 17 3 4
    24. 18 4 5; 19 5 6; 20 2 9; 21 3 12; 22 4 16; 23 5 19; 24 8 22; 25 10 23; 26 11 24
    25. 27 13 25; 28 14 26; 29 15 27; 30 17 28; 31 18 29; 32 20 30
    26. DEFINE MATERIAL START
    27. ISOTROPIC STEEL
    28. E 4.176E+006
    29. POISSON 0.3
    30. DENSITY 0.489024
    31. ALPHA 6E-006
    32. DAMP 0.03
    33. TYPE STEEL
    34. STRENGTH FY 5184 FU 8352 RY 1.5 RT 1.2
    35. ISOTROPIC CONCRETE
    36. E 453600
    37. POISSON 0.17
    38. DENSITY 0.150336
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39. ALPHA 5E-006
40. DAMP 0.05
41. TYPE CONCRETE
42. STRENGTH FCU 576
43. END DEFINE MATERIAL
44. MEMBER PROPERTY AMERICAN
45. 15 TO 19 PRIS YD 4.5 ZD 3.5
46. 1 TO 14 PRIS YD 4.5 ZD 10.5
47. 20 TO 23 PRIS YD 3 ZD 3
48. 24 TO 32 TABLE ST PIPE OD 1.5 ID 1.39583
49. CONSTANTS
50. MATERIAL CONCRETE MEMB 1 TO 23
51. MATERIAL STEEL MEMB 24 TO 32
52. SUPPORTS
53. 22 TO 30 FIXED
54. *MEMBER RELEASE
55. *20 TO 23 START MX MY MZ
56. *20 TO 23 END MX MY MZ
57. LOAD 1 LOADTYPE NONE  TITLE CONCRETE DEAD WEIGHT
58. MEMBER LOAD
59. *WEIGHT OF AASHTO TYPE III GIRDERS*
60. 15 CON GY -46.67 2.375
61. 16 CON GY -46.67 1.625
62. 16 CON GY -46.67 8.875
63. 16 CON GY -46.67 16.125
64. 17 CON GY -46.67 5.375
65. 17 CON GY -46.67 12.625
66. 18 CON GY -46.67 1.875
67. 18 CON GY -46.67 9.125
68. 18 CON GY -46.67 16.375
69. 19 CON GY -46.67 5.625
70. MEMBER LOAD
71. *WEIGHT OF SLAB*
72. 15 CON GY -42.9 2.375
73. 16 CON GY -52.5 1.625
74. 16 CON GY -52.5 8.875
75. 16 CON GY -52.5 16.125
76. 17 CON GY -52.5 5.375
77. 17 CON GY -52.5 12.625
78. 18 CON GY -52.5 1.875
79. 18 CON GY -52.5 9.125
80. 18 CON GY -52.5 16.375
81. 19 CON GY -42.9 5.625
82. MEMBER LOAD
83. *WEIGHT OF BARRIERS*
84. 15 CON GY -7.9 2.375
85. 16 CON GY -7.9 1.625
86. 17 CON GY -30.5 12.625
87. 19 CON GY -15.8 5.625
88. SELFWEIGHT Y -1
89. LOAD 2 LOADTYPE NONE  TITLE LIVE LOAD - LANE LOADS
90. MEMBER LOAD
91. 16 UNI GY -5.12 4.5 14.5
92. 16 UNI GY -5.12 16.5 18
93. 17 UNI GY -5.12 0 8.5
94. 17 UNI GY -5.12 15.5 18
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 95. 18 UNI GY -5.12 0 7.5
 96. 18 UNI GY -5.12 9.5 18
 97. 19 UNI GY -5.12 0 1.5
 98. LOAD 3 LOADTYPE NONE  TITLE LIVE LOAD - DESIGN TRUCK HL-93
 99. MEMBER LOAD
100. 16 CON GY -72 9.5
101. 17 CON GY -72 3.5
102. 18 CON GY -72 14.5
103. 18 CON GY -72 1.5
104. LOAD COMB 4 COMBINATION LOAD CASE 4
105. 1 1.3 2 2.17
106. LOAD COMB 5 COMBINATION LOAD CASE 5
107. 1 1.3 3 2.17
108. LOAD COMB 6 COMBINATION LOAD CASE 6
109. 1 1.0 2 1.0
110. LOAD COMB 7 COMBINATION LOAD CASE 7
111. 1 1.0 3 1.0
112. PERFORM ANALYSIS PRINT ALL
```

P R O B L E M S T A T I S T I C S

NUMBER OF JOINTS 30 NUMBER OF MEMBERS 32
NUMBER OF PLATES 0 NUMBER OF SOLIDS 0
NUMBER OF SURFACES 0 NUMBER OF SUPPORTS 9

SOLVER USED IS THE IN-CORE ADVANCED MATH SOLVER

TOTAL PRIMARY LOAD CASES = 3, TOTAL DEGREES OF FREEDOM = 126
TOTAL LOAD COMBINATION CASES = 4 SO FAR.

LOADING 1 LOADTYPE NONE TITLE CONCRETE DEAD WEIGHT

MEMBER LOAD - UNIT KIP FEET

MEMBER	UDL	L1	L2	CON	L	LIN1	LIN2
15				-46.6700 GY	2.38		
16				-46.6700 GY	1.62		
16				-46.6700 GY	8.88		
16				-46.6700 GY	16.12		
17				-46.6700 GY	5.38		
17				-46.6700 GY	12.62		
18				-46.6700 GY	1.88		
18				-46.6700 GY	9.12		
18				-46.6700 GY	16.38		
19				-46.6700 GY	5.62		

MEMBER LOAD - UNIT KIP FEET

MEMBER	UDL	L1	L2	CON	L	LIN1	LIN2
15				-42.9000 GY	2.38		
16				-52.5000 GY	1.62		
16				-52.5000 GY	8.88		
16				-52.5000 GY	16.12		
17				-52.5000 GY	5.38		
17				-52.5000 GY	12.62		
18				-52.5000 GY	1.88		
18				-52.5000 GY	9.12		
18				-52.5000 GY	16.38		
19				-42.9000 GY	5.62		

MEMBER LOAD - UNIT KIP FEET

MEMBER	UDL	L1	L2	CON	L	LIN1	LIN2
15				-7.9000 GY	2.38		
16				-7.9000 GY	1.62		
17				-30.5000 GY	12.62		
19				-15.8000 GY	5.62		

SELFWEIGHT Y -1.000

ACTUAL WEIGHT OF THE STRUCTURE = 771.305 KIP

LOADING 2 LOADTYPE NONE TITLE LIVE LOAD - LANE LOADS

MEMBER LOAD - UNIT KIP FEET

MEMBER	UDL	L1	L2	CON	L	LIN1	LIN2
16	-5.1200 GY	4.50	14.50				
16	-5.1200 GY	16.50	18.00				
17	-5.1200 GY	0.00	8.50				
17	-5.1200 GY	15.50	18.00				
18	-5.1200 GY	0.00	7.50				
18	-5.1200 GY	9.50	18.00				
19	-5.1200 GY	0.00	1.50				

LOADING 3 LOADTYPE NONE TITLE LIVE LOAD - DESIGN TRUCK HL-93

MEMBER LOAD - UNIT KIP FEET

MEMBER	UDL	L1	L2	CON	L	LIN1	LIN2
16				-72.0000 GY	9.50		
17				-72.0000 GY	3.50		
18				-72.0000 GY	14.50		
18				-72.0000 GY	1.50		

FOR LOADING - 1

APPLIED JOINT EQUIVALENT LOADS

JOINT	FORCE-X	FORCE-Y	FORCE-Z	MOM-X	MOM-Y	MOM-Z
1	0.00000E+00	-8.62703E+01	0.00000E+00	0.00000E+00	0.00000E+00	-1.27074E+02
2	0.00000E+00	-2.26597E+02	0.00000E+00	0.00000E+00	0.00000E+00	-3.90512E+02
3	0.00000E+00	-3.12416E+02	0.00000E+00	0.00000E+00	0.00000E+00	-2.46995E+01
4	0.00000E+00	-3.29665E+02	0.00000E+00	0.00000E+00	0.00000E+00	7.20669E+01
5	0.00000E+00	-2.20554E+02	0.00000E+00	0.00000E+00	0.00000E+00	3.75971E+02
6	0.00000E+00	-9.24949E+01	0.00000E+00	0.00000E+00	0.00000E+00	1.36350E+02
7	0.00000E+00	-1.06551E+01	0.00000E+00	0.00000E+00	0.00000E+00	-5.32753E+00
8	0.00000E+00	-1.86274E+01	0.00000E+00	0.00000E+00	0.00000E+00	2.95974E+00
9	0.00000E+00	-4.26625E+01	0.00000E+00	0.00000E+00	0.00000E+00	-1.39478E+01
10	0.00000E+00	-4.52651E+01	0.00000E+00	0.00000E+00	0.00000E+00	-1.47987E+01
11	0.00000E+00	-4.61530E+01	0.00000E+00	0.00000E+00	0.00000E+00	1.32078E+01
12	0.00000E+00	-4.26625E+01	0.00000E+00	0.00000E+00	0.00000E+00	1.60936E+01
13	0.00000E+00	-3.28341E+01	0.00000E+00	0.00000E+00	0.00000E+00	-2.93014E+01
14	0.00000E+00	-5.23684E+01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
15	0.00000E+00	-3.28341E+01	0.00000E+00	0.00000E+00	0.00000E+00	2.93014E+01
16	0.00000E+00	-4.26625E+01	0.00000E+00	0.00000E+00	0.00000E+00	-1.60936E+01
17	0.00000E+00	-4.61530E+01	0.00000E+00	0.00000E+00	0.00000E+00	-1.32078E+01
18	0.00000E+00	-4.52651E+01	0.00000E+00	0.00000E+00	0.00000E+00	1.47987E+01
19	0.00000E+00	-4.26625E+01	0.00000E+00	0.00000E+00	0.00000E+00	1.39478E+01
20	0.00000E+00	-1.86274E+01	0.00000E+00	0.00000E+00	0.00000E+00	-2.95974E+00
21	0.00000E+00	-1.06551E+01	0.00000E+00	0.00000E+00	0.00000E+00	5.32753E+00
22	0.00000E+00	-8.68955E-01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
23	0.00000E+00	-8.68955E-01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
24	0.00000E+00	-8.68955E-01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00

APPLIED JOINT EQUIVALENT LOADS

JOINT	FORCE-X	FORCE-Y	FORCE-Z	MOM-X	MOM-Y	MOM-Z
25	0.00000E+00	-8.68955E-01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
26	0.00000E+00	-8.68955E-01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
27	0.00000E+00	-8.68955E-01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
28	0.00000E+00	-8.68955E-01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
29	0.00000E+00	-8.68955E-01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00
30	0.00000E+00	-8.68955E-01	0.00000E+00	0.00000E+00	0.00000E+00	0.00000E+00

STATIC LOAD/REACTION/EQUILIBRIUM SUMMARY FOR CASE NO. 1
LOADTYPE NONE TITLE CONCRETE DEAD WEIGHT

CENTER OF FORCE BASED ON Y FORCES ONLY (FEET).
(FORCES IN NON-GLOBAL DIRECTIONS WILL INVALIDATE RESULTS)

X = 0.350929388E+02
Y = -0.751147988E+01
Z = 0.000000000E+00

***TOTAL APPLIED LOAD (KIP FEET) SUMMARY (LOADING 1)
SUMMATION FORCE-X = 0.00
SUMMATION FORCE-Y = -1805.91
SUMMATION FORCE-Z = 0.00

SUMMATION OF MOMENTS AROUND THE ORIGIN-
MX= 0.00 MY= 0.00 MZ= -63374.52

***TOTAL REACTION LOAD(KIP FEET) SUMMARY (LOADING 1)
SUMMATION FORCE-X = -0.00
SUMMATION FORCE-Y = 1805.91
SUMMATION FORCE-Z = 0.00

SUMMATION OF MOMENTS AROUND THE ORIGIN-
MX= 0.00 MY= 0.00 MZ= 63374.52

MAXIMUM DISPLACEMENTS (INCH /RADIANS) (LOADING 1)

	MAXIMUMS	AT NODE
X =	8.54363E-04	5
Y =	-9.27755E-02	6
Z =	0.00000E+00	0
RX=	0.00000E+00	0
RY=	0.00000E+00	0
RZ=	-2.77131E-04	6

EXTERNAL AND INTERNAL JOINT LOAD SUMMARY (KIP FEET)-

JT	EXT FX/ INT FX	EXT FY/ INT FY	EXT FZ/ INT FZ	EXT MX/ INT MX	EXT MY/ INT MY	EXT MZ/ INT MZ	
							SUPPORT=1
22	0.00	-0.87	0.00	0.00	0.00	0.00	
	0.33	-235.91	0.00	0.00	0.00	-1.59	111111

23	0.00	-0.87	0.00	0.00	0.00	0.00	
	0.44	-200.48	0.00	0.00	0.00	-2.13	111111
24	0.00	-0.87	0.00	0.00	0.00	0.00	
	0.02	-184.23	0.00	0.00	0.00	-0.11	111111
25	0.00	-0.87	0.00	0.00	0.00	0.00	
	0.15	-186.55	0.00	0.00	0.00	-0.75	111111
26	0.00	-0.87	0.00	0.00	0.00	0.00	
	-0.01	-174.42	0.00	0.00	0.00	0.05	111111
27	0.00	-0.87	0.00	0.00	0.00	0.00	
	-0.17	-188.68	0.00	0.00	0.00	0.81	111111
28	0.00	-0.87	0.00	0.00	0.00	0.00	
	-0.01	-186.88	0.00	0.00	0.00	0.06	111111
29	0.00	-0.87	0.00	0.00	0.00	0.00	
	-0.43	-202.88	0.00	0.00	0.00	2.08	111111
30	0.00	-0.87	0.00	0.00	0.00	0.00	
	-0.32	-238.05	0.00	0.00	0.00	1.52	111111

FOR LOADING - 2
APPLIED JOINT EQUIVALENT LOADS

JOINT	FORCE-X	FORCE-Y	FORCE-Z	MOM-X	MOM-Y	MOM-Z
2	0.00000E+00	-2.37394E+01	0.00000E+00	0.00000E+00	0.00000E+00	-9.88877E+01
3	0.00000E+00	-7.14770E+01	0.00000E+00	0.00000E+00	0.00000E+00	2.20842E+01
4	0.00000E+00	-6.05191E+01	0.00000E+00	0.00000E+00	0.00000E+00	-6.33086E+01
5	0.00000E+00	-4.88198E+01	0.00000E+00	0.00000E+00	0.00000E+00	1.12205E+02
6	0.00000E+00	-2.44687E-01	0.00000E+00	0.00000E+00	0.00000E+00	6.18750E-01

STATIC LOAD/REACTION/EQUILIBRIUM SUMMARY FOR CASE NO. 2
LOADTYPE NONE TITLE LIVE LOAD - LANE LOADS

CENTER OF FORCE BASED ON Y FORCES ONLY (FEET).
(FORCES IN NON-GLOBAL DIRECTIONS WILL INVALIDATE RESULTS)

X = 0.380000016E+02
Y = 0.000000000E+00
Z = 0.000000000E+00

***TOTAL APPLIED LOAD (KIP FEET) SUMMARY (LOADING 2)
SUMMATION FORCE-X = 0.00
SUMMATION FORCE-Y = -204.80
SUMMATION FORCE-Z = 0.00

SUMMATION OF MOMENTS AROUND THE ORIGIN-
MX= 0.00 MY= 0.00 MZ= -7782.40

***TOTAL REACTION LOAD(KIP FEET) SUMMARY (LOADING 2)
SUMMATION FORCE-X = 0.00
SUMMATION FORCE-Y = 204.80
SUMMATION FORCE-Z = 0.00

SUMMATION OF MOMENTS AROUND THE ORIGIN-
MX= 0.00 MY= 0.00 MZ= 7782.40

MAXIMUM DISPLACEMENTS (INCH /RADIANS) (LOADING 2)

	MAXIMUMS	AT NODE
X =	2.19460E-03	2
Y =	-1.02966E-02	3
Z =	0.00000E+00	0
RX=	0.00000E+00	0
RY=	0.00000E+00	0
RZ=	-7.18472E-05	2

EXTERNAL AND INTERNAL JOINT LOAD SUMMARY (KIP FEET)-

JT	EXT FX/ INT FX	EXT FY/ INT FY	EXT FZ/ INT FZ	EXT MX/ INT MX	EXT MY/ INT MY	EXT MZ/ INT MZ	
							SUPPORT=1
22	0.00	0.00	0.00	0.00	0.00	0.00	
	-0.03	-11.59	0.00	0.00	0.00	0.08	111111
23	0.00	0.00	0.00	0.00	0.00	0.00	
	-0.04	-15.22	0.00	0.00	0.00	0.14	111111
24	0.00	0.00	0.00	0.00	0.00	0.00	
	-0.08	-22.15	0.00	0.00	0.00	0.32	111111
25	0.00	0.00	0.00	0.00	0.00	0.00	
	0.01	-28.02	0.00	0.00	0.00	-0.14	111111
26	0.00	0.00	0.00	0.00	0.00	0.00	
	0.03	-26.57	0.00	0.00	0.00	-0.20	111111
27	0.00	0.00	0.00	0.00	0.00	0.00	
	0.02	-28.02	0.00	0.00	0.00	-0.18	111111
28	0.00	0.00	0.00	0.00	0.00	0.00	
	0.08	-24.51	0.00	0.00	0.00	-0.45	111111
29	0.00	0.00	0.00	0.00	0.00	0.00	
	0.01	-22.94	0.00	0.00	0.00	-0.11	111111
30	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	-25.78	0.00	0.00	0.00	-0.09	111111

FOR LOADING - 3
APPLIED JOINT EQUIVALENT LOADS

JOINT	FORCE-X	FORCE-Y	FORCE-Z	MOM-X	MOM-Y	MOM-Z
2	0.00000E+00	-3.30031E+01	0.00000E+00	0.00000E+00	0.00000E+00	-1.52528E+02
3	0.00000E+00	-1.03889E+02	0.00000E+00	0.00000E+00	0.00000E+00	6.94445E+00
4	0.00000E+00	-8.47994E+01	0.00000E+00	0.00000E+00	0.00000E+00	-9.07500E+01
5	0.00000E+00	-6.63086E+01	0.00000E+00	0.00000E+00	0.00000E+00	1.71778E+02

STATIC LOAD/REACTION/EQUILIBRIUM SUMMARY FOR CASE NO. 3
LOADTYPE NONE TITLE LIVE LOAD - DESIGN TRUCK HL-93

CENTER OF FORCE BASED ON Y FORCES ONLY (FEET).
(FORCES IN NON-GLOBAL DIRECTIONS WILL INVALIDATE RESULTS)

X = 0.377500009E+02
Y = 0.000000000E+00
Z = 0.000000000E+00

***TOTAL APPLIED LOAD (KIP FEET) SUMMARY (LOADING 3)
SUMMATION FORCE-X = 0.00
SUMMATION FORCE-Y = -288.00
SUMMATION FORCE-Z = 0.00

SUMMATION OF MOMENTS AROUND THE ORIGIN-
MX= 0.00 MY= 0.00 MZ= -10872.00

***TOTAL REACTION LOAD(KIP FEET) SUMMARY (LOADING 3)
SUMMATION FORCE-X = 0.00
SUMMATION FORCE-Y = 288.00
SUMMATION FORCE-Z = 0.00

SUMMATION OF MOMENTS AROUND THE ORIGIN-
MX= 0.00 MY= 0.00 MZ= 10872.00

MAXIMUM DISPLACEMENTS (INCH /RADIANS) (LOADING 3)

	MAXIMUMS	AT NODE
X =	3.04738E-03	1
Y =	-1.49525E-02	3
Z =	0.00000E+00	0
RX=	0.00000E+00	0
RY=	0.00000E+00	0
RZ=	-1.07617E-04	1

EXTERNAL AND INTERNAL JOINT LOAD SUMMARY (KIP FEET)-

JT	EXT FX/ INT FX	EXT FY/ INT FY	EXT FZ/ INT FZ	EXT MX/ INT MX	EXT MY/ INT MY	EXT MZ/ INT MZ	
							SUPPORT=1
22	0.00	0.00	0.00	0.00	0.00	0.00	
	-0.05	-15.52	0.00	0.00	0.00	0.17	111111
23	0.00	0.00	0.00	0.00	0.00	0.00	
	-0.07	-21.38	0.00	0.00	0.00	0.27	111111
24	0.00	0.00	0.00	0.00	0.00	0.00	
	-0.12	-31.95	0.00	0.00	0.00	0.51	111111
25	0.00	0.00	0.00	0.00	0.00	0.00	
	0.02	-40.65	0.00	0.00	0.00	-0.17	111111
26	0.00	0.00	0.00	0.00	0.00	0.00	
	0.04	-38.40	0.00	0.00	0.00	-0.28	111111
27	0.00	0.00	0.00	0.00	0.00	0.00	
	0.04	-40.09	0.00	0.00	0.00	-0.27	111111
28	0.00	0.00	0.00	0.00	0.00	0.00	
	0.12	-34.48	0.00	0.00	0.00	-0.67	111111
29	0.00	0.00	0.00	0.00	0.00	0.00	
	0.02	-31.26	0.00	0.00	0.00	-0.21	111111
30	0.00	0.00	0.00	0.00	0.00	0.00	
	0.01	-34.27	0.00	0.00	0.00	-0.16	111111

LOAD COMBINATION NO. 4
COMBINATION LOAD CASE 4

```
LOADING-     1.     2.
FACTOR -   1.30   2.17

  LOAD COMBINATION NO.     5
  COMBINATION LOAD CASE 5

LOADING-     1.     3.
FACTOR -   1.30   2.17

  LOAD COMBINATION NO.     6
  COMBINATION LOAD CASE 6

LOADING-     1.     2.
FACTOR -   1.00   1.00

  LOAD COMBINATION NO.     7
  COMBINATION LOAD CASE 7

LOADING-     1.     3.
FACTOR -   1.00   1.00


  ************ END OF DATA FROM INTERNAL STORAGE ************


  113. FINISH


           *********** END OF THE STAAD.Pro RUN ***********

             **** DATE= FEB 27,2019   TIME=  9:38:46 ****
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     ************************************************************
     *   For technical assistance on STAAD.Pro, please visit    *
     *   http://selectservices.bentley.com/en-US/               *
     *                                                          *
     *   Details about additional assistance from               *
     *   Bentley and Partners can be found at program menu      *
     *   Help->Technical Support                                *
     *                                                          *
     *      Copyright (c) 1997-2016 Bentley Systems, Inc.       *
     *                http://www.bentley.com                    *
     ************************************************************
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US Army Corps of Engineers
New Orleans District

Pile Tip Selection

Pier Design	Pile tip Selection	Designed By: DPL 2/21/14

- From STAAD Model, max. reaction is 273 kips
  - Assume load is split between 2 piles per support
    = 68.25 Tons

Use tip @ El. -105, Capacity = 71.7 Tons

	FS w/ Load test	FS w/o Load test	Ultimate Capacity				Factored Capacity with Load Test				Factored Capacity without Load Test			
Q-case	2	3	Q-CASE		S-CASE		Q-CASE		S-CASE		Q-CASE		S-CASE	
S-case	1.5	1.5	Pile Capacity	Pile Capacity	Pile Capacity	Pile Capacity	Pile Capacity	Pile Capacity	Pile Capacity	Pile Capacity	Pile Capacity	Pile Capacity	Pile Capacity	Pile Capacity
Stratum	Tip	Increment	Compression	Tension	Compression	Tension	Compression	Tension	Compression	Tension	Compression	Tension	Compression	Tension
1	0	0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1	-1	1	0.039	0.018	0.039	0.018	0.019	0.009	0.026	0.012	0.013	0.006	0.026	0.012
1	-2	1	0.155	0.072	0.155	0.072	0.078	0.036	0.103	0.048	0.052	0.024	0.103	0.048
1	-3	1	0.349	0.163	0.349	0.163	0.175	0.081	0.233	0.109	0.116	0.054	0.233	0.109
2	-4	1	0.856	0.670	0.478	0.253	0.428	0.335	0.319	0.169	0.285	0.223	0.319	0.169
2	-5	1	1.362	1.176	0.632	0.361	0.681	0.588	0.422	0.241	0.454	0.392	0.422	0.241
2	-6	1	1.869	1.683	0.811	0.486	0.934	0.841	0.541	0.324	0.623	0.561	0.541	0.324
2	-7	1	2.376	2.189	1.014	0.629	1.188	1.095	0.676	0.419	0.792	0.730	0.676	0.419
2	-8	1	2.882	2.696	1.242	0.788	1.441	1.348	0.828	0.525	0.961	0.899	0.828	0.525
2	-9	1	3.389	3.203	1.495	0.965	1.694	1.601	0.997	0.643	1.130	1.068	0.997	0.643
2	-10	1	3.895	3.709	1.772	1.159	1.948	1.855	1.181	0.773	1.298	1.236	1.181	0.773
2	-11	1	4.402	4.216	2.074	1.370	2.201	2.108	1.383	0.914	1.467	1.405	1.383	0.914
2	-12	1	4.909	4.722	2.401	1.599	2.454	2.361	1.601	1.066	1.636	1.574	1.601	1.066
2	-13	1	5.415	5.229	2.752	1.845	2.708	2.614	1.835	1.230	1.805	1.743	1.835	1.230
2	-14	1	5.922	5.735	3.128	2.108	2.961	2.868	2.086	1.406	1.974	1.912	2.086	1.406
2	-15	1	6.428	6.242	3.529	2.389	3.214	3.121	2.353	1.593	2.143	2.081	2.353	1.593
2	-16	1	6.935	6.749	3.954	2.687	3.467	3.374	2.636	1.791	2.312	2.250	2.636	1.791
2	-17	1	7.442	7.255	4.404	3.002	3.721	3.628	2.936	2.001	2.481	2.418	2.936	2.001
2	-18	1	7.948	7.762	4.879	3.334	3.974	3.881	3.253	2.223	2.649	2.587	3.253	2.223
2	-19	1	8.455	8.268	5.379	3.684	4.227	4.134	3.586	2.456	2.818	2.756	3.586	2.456
2	-20	1	8.961	8.775	5.903	4.050	4.481	4.388	3.935	2.700	2.987	2.925	3.935	2.700
2	-21	1	9.468	9.282	6.452	4.435	4.734	4.641	4.301	2.956	3.156	3.094	4.301	2.956
3	-22	1	10.410	10.224	7.027	4.837	5.205	5.112	4.684	3.225	3.470	3.408	4.684	3.225
3	-23	1	11.353	11.167	7.630	5.259	5.676	5.583	5.086	3.506	3.784	3.722	5.086	3.506
3	-24	1	12.295	12.109	8.261	5.701	6.148	6.055	5.507	3.801	4.098	4.036	5.507	3.801
3	-25	1	13.238	13.052	8.920	6.162	6.619	6.526	5.946	4.108	4.413	4.351	5.946	4.108
3	-26	1	14.180	13.994	9.606	6.643	7.090	6.997	6.404	4.429	4.727	4.665	6.404	4.429
3	-27	1	15.123	14.937	10.321	7.143	7.561	7.468	6.881	4.762	5.041	4.979	6.881	4.762
3	-28	1	16.065	15.879	11.064	7.663	8.033	7.940	7.376	5.109	5.355	5.293	7.376	5.109
3	-29	1	17.008	16.822	11.834	8.203	8.504	8.411	7.890	5.468	5.669	5.607	7.890	5.468
3	-30	1	17.950	17.764	12.633	8.761	8.975	8.882	8.422	5.841	5.983	5.921	8.422	5.841
3	-31	1	18.893	18.707	13.459	9.340	9.446	9.353	8.973	6.227	6.298	6.236	8.973	6.227
3	-32	1	19.835	19.649	14.314	9.938	9.918	9.825	9.542	6.625	6.612	6.550	9.542	6.625
3	-33	1	20.778	20.592	15.196	10.556	10.389	10.296	10.131	7.037	6.926	6.864	10.131	7.037
3	-34	1	21.720	21.534	16.106	11.193	10.860	10.767	10.737	7.462	7.240	7.178	10.737	7.462
3	-35	1	22.663	22.477	17.044	11.850	11.331	11.238	11.363	7.900	7.554	7.492	11.363	7.900
3	-36	1	23.605	23.419	18.010	12.526	11.803	11.710	12.007	8.351	7.868	7.806	12.007	8.351
3	-37	1	24.548	24.362	19.004	13.222	12.274	12.181	12.670	8.814	8.183	8.121	12.670	8.814
3	-38	1	25.490	25.304	20.026	13.937	12.745	12.652	13.351	9.291	8.497	8.435	13.351	9.291
3	-39	1	26.433	26.247	21.076	14.672	13.216	13.123	14.051	9.781	8.811	8.749	14.051	9.781
3	-40	1	27.375	27.189	22.154	15.426	13.688	13.595	14.769	10.284	9.125	9.063	14.769	10.284
4	-41	1	28.639	28.453	23.260	16.200	14.319	14.226	15.506	10.800	9.546	9.484	15.506	10.800
4	-42	1	29.902	29.716	24.393	16.994	14.951	14.858	16.262	11.329	9.967	9.905	16.262	11.329
4	-43	1	31.166	30.980	25.555	17.807	15.583	15.490	17.037	11.871	10.389	10.327	17.037	11.871
4	-44	1	32.430	32.243	26.744	18.640	16.215	16.122	17.830	12.426	10.810	10.748	17.830	12.426
4	-45	1	33.693	33.507	27.962	19.492	16.847	16.753	18.641	12.994	11.231	11.169	18.641	12.994
4	-46	1	34.957	34.770	29.207	20.363	17.478	17.385	19.471	13.576	11.652	11.590	19.471	13.576
4	-47	1	36.220	36.034	30.480	21.255	18.110	18.017	20.320	14.170	12.073	12.011	20.320	14.170
4	-48	1	37.484	37.297	31.782	22.166	18.742	18.649	21.188	14.777	12.495	12.432	21.188	14.777
4	-49	1	38.747	38.561	33.111	23.096	19.374	19.280	22.074	15.397	12.916	12.854	22.074	15.397

4	-50	1	40.011	39.825	34.468	24.046	20.005	19.912	22.978	16.031	13.337	13.275	22.978	16.031
4	-51	1	41.274	41.088	35.853	25.015	20.637	20.544	23.902	16.677	13.758	13.696	23.902	16.677
4	-52	1	42.538	42.352	37.266	26.004	21.269	21.176	24.844	17.336	14.179	14.117	24.844	17.336
4	-53	1	43.801	43.615	38.706	27.013	21.901	21.808	25.804	18.009	14.600	14.538	25.804	18.009
4	-54	1	45.065	44.879	40.175	28.041	22.532	22.439	26.783	18.694	15.022	14.960	26.783	18.694
4	-55	1	46.328	46.142	41.672	29.089	23.164	23.071	27.781	19.393	15.443	15.381	27.781	19.393
4	-56	1	47.592	47.406	43.196	30.156	23.796	23.703	28.798	20.104	15.864	15.802	28.798	20.104
4	-57	1	48.856	48.669	44.749	31.243	24.428	24.335	29.833	20.829	16.285	16.223	29.833	20.829
4	-58	1	50.119	49.933	46.329	32.349	25.060	24.966	30.886	21.566	16.706	16.644	30.886	21.566
5	-59	1	53.333	51.433	49.544	33.849	26.667	25.716	33.029	22.566	17.778	17.144	33.029	22.566
5	-60	1	56.625	52.969	52.835	35.385	28.312	26.484	35.224	23.590	18.875	17.656	35.224	23.590
5	-61	1	59.994	54.541	56.205	36.958	29.997	27.271	37.470	24.638	19.998	18.180	37.470	24.638
5	-62	1	63.441	56.150	59.651	38.566	31.721	28.075	39.768	25.711	21.147	18.717	39.768	25.711
5	-63	1	66.966	57.795	63.176	40.211	33.483	28.897	42.117	26.807	22.322	19.265	42.117	26.807
5	-64	1	70.568	59.476	66.778	41.892	35.284	29.738	44.519	27.928	23.523	19.825	44.519	27.928
5	-65	1	74.247	61.193	70.458	43.609	37.124	30.596	46.972	29.073	24.749	20.398	46.972	29.073
6	-66	1	75.664	62.609	72.342	44.928	37.832	31.305	48.228	29.952	25.221	20.870	48.228	29.952
6	-67	1	77.081	64.026	74.261	46.271	38.540	32.013	49.507	30.848	25.694	21.342	49.507	30.848
6	-68	1	78.498	65.443	76.214	47.639	39.249	32.721	50.810	31.759	26.166	21.814	50.810	31.759
6	-69	1	79.914	66.860	78.202	49.030	39.957	33.430	52.135	32.687	26.638	22.287	52.135	32.687
6	-70	1	81.331	68.276	80.224	50.445	40.665	34.138	53.483	33.630	27.110	22.759	53.483	33.630
6	-71	1	82.748	69.693	82.281	51.885	41.374	34.846	54.854	34.590	27.583	23.231	54.854	34.590
6	-72	1	84.164	71.110	84.372	53.349	42.082	35.555	56.248	35.566	28.055	23.703	56.248	35.566
6	-73	1	85.581	72.526	86.497	54.836	42.790	36.263	57.665	36.558	28.527	24.175	57.665	36.558
6	-74	1	86.998	73.943	88.657	56.348	43.499	36.971	59.104	37.566	28.999	24.648	59.104	37.566
6	-75	1	88.414	75.360	90.851	57.884	44.207	37.680	60.567	38.589	29.471	25.120	60.567	38.589
6	-76	1	89.831	76.776	93.080	59.444	44.916	38.388	62.053	39.630	29.944	25.592	62.053	39.630
6	-77	1	91.248	78.193	95.343	61.028	45.624	39.097	63.562	40.686	30.416	26.064	63.562	40.686
6	-78	1	92.664	79.610	97.616	62.620	46.332	39.805	65.077	41.746	30.888	26.537	65.077	41.746
6	-79	1	94.081	81.026	99.889	64.211	47.041	40.513	66.593	42.807	31.360	27.009	66.593	42.807
6	-80	1	95.498	82.443	102.162	65.802	47.749	41.222	68.108	43.868	31.833	27.481	68.108	43.868
7	-81	1	98.701	84.281	107.778	67.393	49.351	42.141	71.852	44.929	32.900	28.094	71.852	44.929
7	-82	1	100.539	86.119	110.051	68.984	50.270	43.059	73.367	45.990	33.513	28.706	73.367	45.990
7	-83	1	102.377	87.957	112.324	70.575	51.189	43.978	74.883	47.050	34.126	29.319	74.883	47.050
7	-84	1	104.215	89.795	114.597	72.167	52.107	44.897	76.398	48.111	34.738	29.932	76.398	48.111
7	-85	1	106.053	91.633	116.870	73.758	53.026	45.816	77.913	49.172	35.351	30.544	77.913	49.172
7	-86	1	107.891	93.470	119.143	75.349	53.945	46.735	79.429	50.233	35.964	31.157	79.429	50.233
7	-87	1	109.729	95.308	121.416	76.940	54.864	47.654	80.944	51.293	36.576	31.769	80.944	51.293
7	-88	1	111.566	97.146	123.689	78.531	55.783	48.573	82.460	52.354	37.189	32.382	82.460	52.354
7	-89	1	113.404	98.984	125.963	80.123	56.702	49.492	83.975	53.415	37.801	32.995	83.975	53.415
7	-90	1	115.242	100.822	128.236	81.714	57.621	50.411	85.490	54.476	38.414	33.607	85.490	54.476
7	-91	1	117.080	102.660	130.509	83.305	58.540	51.330	87.006	55.537	39.027	34.220	87.006	55.537
7	-92	1	118.918	104.498	132.782	84.896	59.459	52.249	88.521	56.597	39.639	34.833	88.521	56.597
7	-93	1	120.756	106.336	135.055	86.487	60.378	53.168	90.037	57.658	40.252	35.445	90.037	57.658
7	-94	1	122.594	108.173	137.328	88.078	61.297	54.087	91.552	58.719	40.865	36.058	91.552	58.719
7	-95	1	124.432	110.011	139.601	89.670	62.216	55.006	93.067	59.780	41.477	36.670	93.067	59.780
7	-96	1	126.269	111.849	141.874	91.261	63.135	55.925	94.583	60.841	42.090	37.283	94.583	60.841
7	-97	1	128.107	113.687	144.147	92.852	64.054	56.844	96.098	61.901	42.702	37.896	96.098	61.901
7	-98	1	129.945	115.525	146.421	94.443	64.973	57.762	97.614	62.962	43.315	38.508	97.614	62.962
7	-99	1	131.783	117.363	148.694	96.034	65.892	58.681	99.129	64.023	43.928	39.121	99.129	64.023
7	-100	1	133.621	119.201	150.967	97.626	66.810	59.600	100.645	65.084	44.540	39.734	100.645	65.084
8	-101	1	135.850	121.086	153.240	99.217	67.925	60.543	102.160	66.144	45.283	40.362	102.160	66.144
8	-102	1	137.735	122.971	155.513	100.808	68.867	61.485	103.675	67.205	45.912	40.990	103.675	67.205
8	-103	1	139.620	124.856	157.786	102.399	69.810	62.428	105.191	68.266	46.540	41.619	105.191	68.266
8	-104	1	141.505	126.741	160.059	103.990	70.752	63.370	106.706	69.327	47.168	42.247	106.706	69.327

8	-105	1	143.390	128.626	162.332	105.581	71.695	64.313	108.222	70.388	47.797	42.875	108.222	70.388
8	-106	1	145.275	130.511	164.605	107.173	72.637	65.255	109.737	71.448	48.425	43.504	109.737	71.448
8	-107	1	147.160	132.396	166.879	108.764	73.580	66.198	111.252	72.509	49.053	44.132	111.252	72.509
8	-108	1	149.045	134.281	169.152	110.355	74.522	67.140	112.768	73.570	49.682	44.760	112.768	73.570
8	-109	1	150.930	136.166	171.425	111.946	75.465	68.083	114.283	74.631	50.310	45.389	114.283	74.631
8	-110	1	152.815	138.051	173.698	113.537	76.407	69.025	115.799	75.692	50.938	46.017	115.799	75.692
8	-111	1	154.700	139.936	175.971	115.128	77.350	69.968	117.314	76.752	51.567	46.645	117.314	76.752
8	-112	1	156.585	141.821	178.244	116.720	78.292	70.910	118.829	77.813	52.195	47.274	118.829	77.813
8	-113	1	158.470	143.706	180.517	118.311	79.235	71.853	120.345	78.874	52.823	47.902	120.345	78.874
8	-114	1	160.355	145.591	182.790	119.902	80.177	72.795	121.860	79.935	53.452	48.530	121.860	79.935
8	-115	1	162.240	147.476	185.064	121.493	81.120	73.738	123.376	80.995	54.080	49.159	123.376	80.995
8	-116	1	164.125	149.361	187.337	123.084	82.062	74.680	124.891	82.056	54.708	49.787	124.891	82.056
8	-117	1	166.010	151.246	189.610	124.676	83.005	75.623	126.407	83.117	55.337	50.415	126.407	83.117
8	-118	1	167.895	153.131	191.883	126.267	83.947	76.565	127.922	84.178	55.965	51.044	127.922	84.178
8	-119	1	169.780	155.016	194.156	127.858	84.890	77.508	129.437	85.239	56.593	51.672	129.437	85.239
8	-120	1	171.665	156.901	196.429	129.449	85.832	78.450	130.953	86.299	57.222	52.300	130.953	86.299
8	-121	1	173.550	158.786	198.702	131.040	86.775	79.393	132.468	87.360	57.850	52.929	132.468	87.360
8	-122	1	175.435	160.671	200.975	132.631	87.717	80.335	133.984	88.421	58.478	53.557	133.984	88.421
8	-123	1	177.320	162.556	203.248	134.223	88.660	81.278	135.499	89.482	59.107	54.185	135.499	89.482
8	-124	1	179.205	164.441	205.522	135.814	89.602	82.220	137.014	90.543	59.735	54.814	137.014	90.543
8	-125	1	181.090	166.326	207.795	137.405	90.545	83.163	138.530	91.603	60.363	55.442	138.530	91.603
8	-126	1	182.975	168.211	210.068	138.996	91.487	84.105	140.045	92.664	60.992	56.070	140.045	92.664
8	-127	1	184.860	170.096	212.341	140.587	92.430	85.048	141.561	93.725	61.620	56.699	141.561	93.725
8	-128	1	186.745	171.981	214.614	142.179	93.372	85.990	143.076	94.786	62.248	57.327	143.076	94.786
8	-129	1	188.630	173.866	216.887	143.770	94.315	86.933	144.591	95.847	62.877	57.955	144.591	95.847
8	-130	1	190.515	175.751	219.160	145.361	95.257	87.875	146.107	96.907	63.505	58.584	146.107	96.907
8	-131	1	192.400	177.636	221.433	146.952	96.200	88.818	147.622	97.968	64.133	59.212	147.622	97.968
8	-132	1	194.285	179.521	223.707	148.543	97.142	89.760	149.138	99.029	64.762	59.840	149.138	99.029
8	-133	1	196.170	181.406	225.980	150.135	98.085	90.703	150.653	100.090	65.390	60.469	150.653	100.090
8	-134	1	198.055	183.290	228.253	151.726	99.027	91.645	152.169	101.150	66.018	61.097	152.169	101.150
8	-135	1	199.940	185.175	230.526	153.317	99.970	92.588	153.684	102.211	66.647	61.725	153.684	102.211
8	-136	1	201.825	187.060	232.799	154.908	100.912	93.530	155.199	103.272	67.275	62.353	155.199	103.272
8	-137	1	203.710	188.945	235.072	156.499	101.855	94.473	156.715	104.333	67.903	62.982	156.715	104.333

US Army Corps of Engineers
New Orleans District

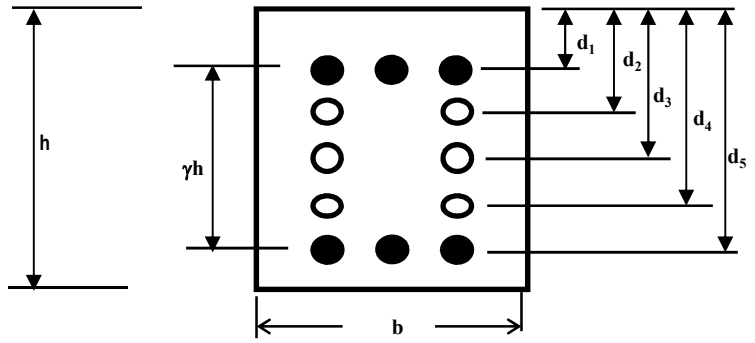
Column Size Check

Project Name:	**IHNC Lock GRR St. Claude Bridge**		
Title of Calculation:	**Pier Cap Column Check**		
Document No.:		**Rev.:**	
Prepared By:	**D. Lovett**	**Date:**	**2/27/2019**
Checked By:		**Date:**	

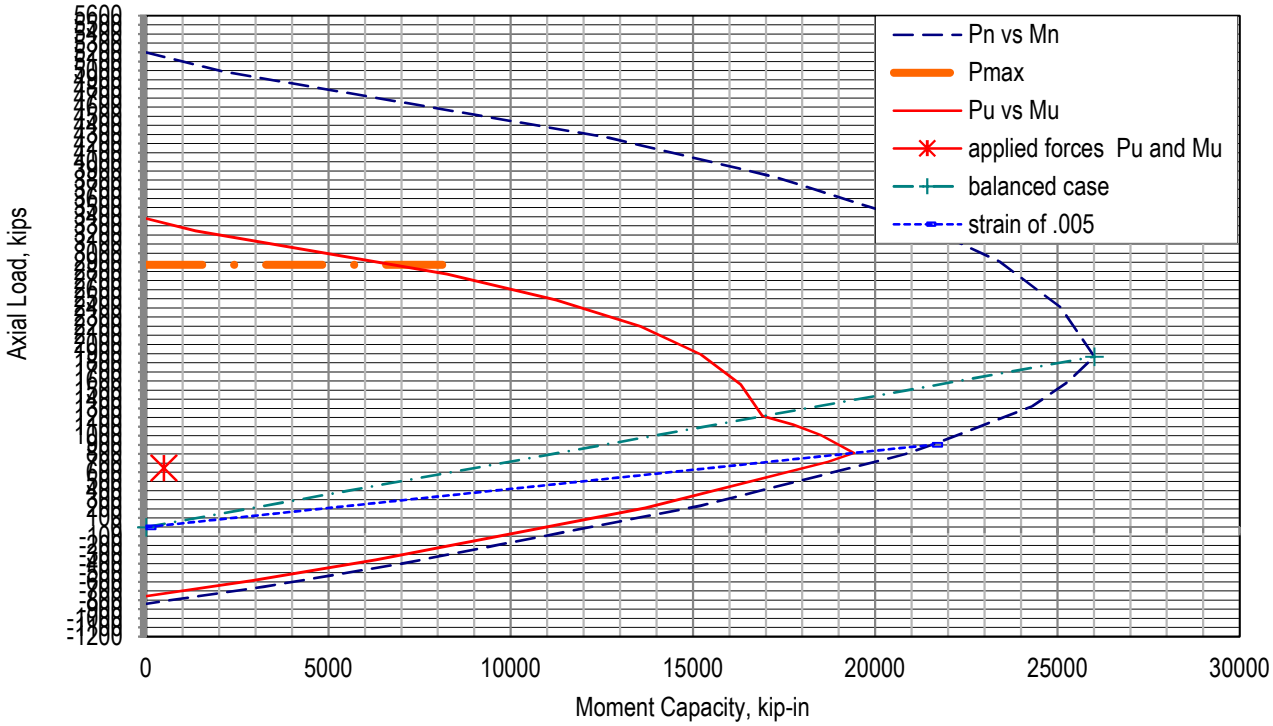
Pedestal Compression Capacity

P_u =	648	k	
M_u =	40.25	ft-k	= 483 k-in
b =	36	in.	
h =	36	in.	
g =	0.7		
f_c' =	4000	psi	
f_y =	60000	psi	
A_{s1} =	8.00	in^2	
A_{s2} =	6.00	in^2	
A_{st} =	14.00	in^2	
A_g =	1296.0	in^2	
r_t =	0.0108		-
b_1 =	0.85		-
e_y =	0.00206897		
E_s =	29000	ksi	
c_{bal} =	18.11	in.	
$c_{.005}$ =	11.475	in.	

e = 0.74537037 in.



Note: This spreadsheet is based on an assumption that there are interior layers of bars. The value of A_{s1} entered is divided into 2 equal parts and A_{s2} is divided into the three interior layers shown. Calculations are based on bar locations shown on the drawing. If the actual number of layers of interior bars is different from 3, slight errors will result.



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Pier Cap Size Check

1.) PIER CAP CONCRETE DESIGN

$t := 4.5ft$ *height of pier cap*

$width := 3.5ft$ *width of pier cap*

$L_f := 1.7$ *Single load factor for concrete design*

$H_f := 1.3$ *hydraulic load factor for concrete design*

$f_c := 4000psi$ *compressive strenth of concrete*

$f_y := 60000psi$ *yield strength of reinforcing steel*

$\phi_f := 0.9$ *strength reduction factor for bending*

$\phi_v := 0.85$ *strength reduction factor for shear*

$\beta := 0.85$

$t := 4.5ft$ *height of pier cap*

$c_c := 4in$ *clear cover*

$M_u := 10828kip \cdot in$ Maximum Factored Moment from STAAD

$V_u := 387kip$ Maximum Factored Shear from STAAD

$b := width = 3.5\,ft$

$d := t - c_c = 4.167\,ft$

Determine Required Reinforcement

$$M_n := \frac{M_u}{\phi_f} = 1.003 \times 10^3\,ft \cdot kip$$

$$R_n := \frac{M_n}{b \cdot d^2} = 16.5\,ksf$$

$$m_c := \frac{f_y}{0.85 \cdot f_c} = 17.647$$

$$\rho := \left(\frac{1}{m_c}\right)\cdot\left[1-\left[1-\left(2\cdot m_c\cdot\frac{R_n}{f_y}\right)\right]^{.5}\right] = 1.943\times 10^{-3}$$

$A_{sreqd} := \rho\cdot b\cdot d = 0.03\,ft^2$

Use T&S Reinforcing

$$\rho_b := \frac{0.85\cdot f_c}{f_y}\cdot\left[\beta\cdot\left(\frac{87000}{87000+60000}\right)\right] = 0.029$$

$Ratio_{Reinforcement} := if\left(\rho \le .25\cdot\rho_b, \text{"OK"}, \text{"NG"}\right)$ $Ratio_{Reinforcement} = \text{"OK"}$

Check Shear Capacity of Beam

$V_u = 387\,kip$

$\phi V_{c1} := \phi_v\cdot 2\cdot\sqrt{f_c}\cdot\sqrt{psi}\cdot b\cdot d = 225.787\,kip$

$Shear_{Check} := if\left(\phi V_{c1} \ge V_u, \text{"OK"}, \text{"NG, Include Stirrups"}\right)$ $Shear_{Check} = \text{"NG, Include Stirrups"}$

$$V_s := \frac{V_u}{\phi_v} - \frac{\phi V_{c1}}{\phi_v} = 189.663\,kip$$

$s_s := 6in$ Stirrup spacing

$$A_v := \frac{V_s\cdot s_s}{f_y\cdot d} = 0.379\cdot in^2$$

Use #4 bar @ 6" spacing, Av=.39 in^2