PROJECT: LUC-23-11.75 PHASE 2

PROJECT DATA

Project : LUC-23-11.75 PHASE 2
User Job No.:
Designer : ATS
Date : Feb/16/2023
Checker : GPH
Checked Date: March/21/2023
State : State Job No. :
Structure type: Pier.
Pier View : Downstation.
State Specification: None
Code : AASHTO LRFD 9th Edition
Comments :
THIS DESIGN IS PIER NO. 2. THE DESIGN WILL APPLY TO PIER NO. 1 AND PIER NO. 3.
PROPOSED CAP AND TWO PROPOSED COLUMNS ARE BEING DESIGNED. TWO EXISITNG COLUMNS ARE BEING ANALYSED.

The footing design is failing in uplift.
The existing footing are showing uplift. emoved Braking, WL, and WS for te bearing, still it is showing the uplift.

The client is alerted about the flexure failing of the exisiting footing

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PIER GEOMETRY

Pier Type: Multi Column

Pier View : Downstation.
Cap Shape: Stepped Top Elevations: start = 648.16 ft end = 647.05 ft
Depth(Z) = 36.00 in Skew angle = 0.00 Reduction of I = 1.000
Length(X) = 43.63 ft

Distance(X) ft	Height(Y) in
7.20	55.32
7.26	53.10
6.64	50.88
6.01	48.66
6.01	46.44
6.01	44.22
4.50	42.00

Column Shape : Round
Number of columns: 4

Column number 1:

Location from the left edge of the cap(X): 5.67 ft
Elevations: bottom = 622.00 ft top = 645.30 ft Reduction of I = 1.000
Column Bottom is Fixed
Column section dimensions:
Diameter = 36.00 in

Column number 2:

Location from the left edge of the cap(X): 18.08 ft
Elevations: bottom = 622.00 ft top = 645.30 ft Reduction of I = 1.000
Column Bottom is Fixed
Column section dimensions:
Diameter = 36.00 in

Column number 3:

Location from the left edge of the cap(X): 28.10 ft
Elevations: bottom = 622.00 ft top = 645.30 ft Reduction of I = 1.000
Column Bottom is Fixed
Column section dimensions:
Diameter = 36.00 in

Column number 4:

Location from the left edge of the cap(X): 38.10 ft
Elevations: bottom = 622.00 ft top = 645.30 ft Reduction of I = 1.000
Column Bottom is Fixed
Column section dimensions:
Diameter = 36.00 in

SUPERSTRUCTURE INFO

Total number of spans: 4 Span number rear to current pier: 2
Number of traffic lanes: 3

Beam: height : 36.17 in section area : 50.00 in^2
Beam Inertia (Ixx): 10500.00 in^4 Beam inertia (Iyy): 320.00 in^4
Beam CG:18.08 in Barrier height : 42.00 in Depth of slab : 8.50 in
Curb to curb distance: 42.810 ft

Span #	Span length	Bridge Width
1	54.250 ft	44.480 ft
2	86.500 ft	44.480 ft
3	86.500 ft	44.480 ft
4	54.250 ft	44.480 ft
		44.480 ft

BEARING POINTS

Number of bearing lines: 1
First bearing line Eccentricity = 0.00 ft

Point	Distance ft
1	3.56
2	10.82
3	18.08
4	24.09
5	30.10
6	36.12
7	42.13

MATERIAL PROPERTIES

	Cap	Column	Footing
Concrete Type	normal	normal	normal
Concrete Strength (psi)	4000.00	4000.00	4000.00
Concrete Density (lb/ft3)	150.00	150.00	150.00
Concrete Modulus Ec (ksi)	4266.22	4266.22	4266.22
Steel Strength Fy (ksi)	60.00	60.00	60.00

DESIGN PARAMETERS

AASHTO LRFD Code
Resistance factors for reinf. concrete:

Flexure and tension	0.90
Shear and torsion (normal)	0.90
(lightweight)	0.90
Axial compression (ties)	0.75
Axial compression (spiral)	0.75
Compression in STM	0.70

Multi presence factors for live load:

1	Lanes	1.20
2	Lanes	1.00
3	Lanes	0.85
4	Lanes	0.65
5	Lanes	0.65
6	Lanes	0.65

Dynamic load allowance IM:

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	Truck	Lane	Fatigue
Cap	0.33	0.00	0.15
Column	0.33	0.00	0.15
Footing	0.00	0.00	0.00

	Exposure factors	Clear cover in	Clear side cover in
Cap	1.00	2.00	2.00
Column	1.00	3.00	
Footing	1.00	3.00	3.00

Degree of fixity in foundations for Moment Magnify Method: Ga = 5.00

SEISMIC DESIGN PARAMETERS
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Strength Reduction factors for reinf. Concrete Seismic Design:
- Tension controlled : 0.90
- Shear and torsion (normal) : 0.90
- (lightweight) : 0.70
- Compression Controlled (ties): 0.75
- Compression Controlled (spiral) : 0.75

Seismic Overstrength
- Flexure and tension : 1.30
- Axial compression (ties): 1.30
- Axial compression (spiral): 1.30

Response Modification Factor : 1.00

Use core area for plastic hinging calculations.

Design Factors
- Cap Design Factor : 1.20
- Footing Design Factor : 1.20

Plastic Hinge Moment
- Use actual computed Plastic Hinging Moment for each column in all combinations.

LOADS
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Pier View : Downstation.
Load Cases: 105
Longitudinal Reaction: Continuous Bridge Model
Selected Vehicles:

Load: Fatigue Truck

Tranverse Positioning
=====================

Number of loaded lanes = 1 Lane Loaded
Live Load Positions = Constant Spacing
Minimum Distance from Curb = 2.000000
Center to Center Spacing = 10.000000

Generate Braking/Longitudinal Force = Selected
Generate Centrifugal Force = Not Selected

Number of single regular truck positions = 8
Number of all possible combinations of regular truck positions = 8

Loadcase ID: DC1 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Y	-106.35
1	2	Y	-106.35
1	3	Y	-100.55
1	4	Y	-85.49
1	5	Y	-85.49
1	6	Y	-85.49
1	7	Y	-84.77

Auto generation details

Generated Dead Load
Slab weight = 150.00 pcf Girder weight = 150.00 pcf
Wearing weight = Not included Barrier load = 764.00 plf

Loadcase ID: LLf1 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Y	-55.25
1	2	Y	-24.47
1	3	Y	0.00
1	4	Y	0.00
1	5	Y	0.00
1	6	Y	0.00
1	7	Y	0.00

1	1	Y	0.00	L
1	2	Y	0.00	L
1	3	Y	0.00	L
1	4	Y	0.00	L
1	5	Y	0.00	L
1	6	Y	0.00	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

Loadcase ID: LLf2 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	0.00	
1	2	Y	0.00	
1	3	Y	0.00	
1	4	Y	0.00	
1	5	Y	-8.78	
1	6	Y	-39.93	
1	7	Y	-31.01	
1	1	Y	0.00	L
1	2	Y	0.00	L
1	3	Y	0.00	L
1	4	Y	0.00	L
1	5	Y	0.00	L
1	6	Y	0.00	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

Loadcase ID: LLf3 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	0.00	
1	2	Y	0.00	
1	3	Y	0.00	
1	4	Y	-35.24	
1	5	Y	-39.93	
1	6	Y	-4.56	
1	7	Y	0.00	
1	1	Y	0.00	L
1	2	Y	0.00	L
1	3	Y	0.00	L
1	4	Y	0.00	L
1	5	Y	0.00	L
1	6	Y	0.00	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

Loadcase ID: LLf4 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	0.00	
1	2	Y	-29.06	
1	3	Y	-45.97	
1	4	Y	-4.69	
1	5	Y	0.00	
1	6	Y	0.00	
1	7	Y	0.00	
1	1	Y	0.00	L
1	2	Y	0.00	L
1	3	Y	0.00	L
1	4	Y	0.00	L
1	5	Y	0.00	L
1	6	Y	0.00	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

Loadcase ID: LLf5 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	-33.29	
1	2	Y	-46.43	
1	3	Y	0.00	
1	4	Y	0.00	
1	5	Y	0.00	
1	6	Y	0.00	
1	7	Y	0.00	
1	1	Y	0.00	L
1	2	Y	0.00	L
1	3	Y	0.00	L
1	4	Y	0.00	L
1	5	Y	0.00	L
1	6	Y	0.00	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

Loadcase ID: LLf6 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	0.00	
1	2	Y	-18.08	
1	3	Y	-43.69	

1	4	Y	-17.96	
1	5	Y	0.00	
1	6	Y	0.00	
1	7	Y	0.00	
1	1	Y	0.00	L
1	2	Y	0.00	L
1	3	Y	0.00	L
1	4	Y	0.00	L
1	5	Y	0.00	L
1	6	Y	0.00	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

Loadcase ID: LLf7 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	0.00	
1	2	Y	0.00	
1	3	Y	0.00	
1	4	Y	0.00	
1	5	Y	-22.05	
1	6	Y	-39.93	
1	7	Y	-17.75	
1	1	Y	0.00	L
1	2	Y	0.00	L
1	3	Y	0.00	L
1	4	Y	0.00	L
1	5	Y	0.00	L
1	6	Y	0.00	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

Loadcase ID: LLf8 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	0.00	
1	2	Y	0.00	
1	3	Y	-8.64	
1	4	Y	-39.93	
1	5	Y	-31.15	
1	6	Y	0.00	
1	7	Y	0.00	
1	1	Y	0.00	L
1	2	Y	0.00	L
1	3	Y	0.00	L
1	4	Y	0.00	L
1	5	Y	0.00	L
1	6	Y	0.00	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

Loadcase ID: BRf1 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	210.01	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details

Selected Live Load for BR generation
Load: Fatigue Truck
Number of loaded lanes = 1
Contributing longitudinal length = 69.25 ft

Loadcase ID: BRf2 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	210.01	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details

Selected Live Load for BR generation
Load: Fatigue Truck
Number of loaded lanes = 1
Contributing longitudinal length = 69.25 ft

Loadcase ID: BRf3 Name:

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Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	210.01	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details

Selected Live Load for BR generation
Load: Fatigue Truck
Number of loaded lanes = 1
Contributing longitudinal length = 69.25 ft

Loadcase ID: BRf4 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	210.01	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details

Selected Live Load for BR generation
Load: Fatigue Truck
Number of loaded lanes = 1
Contributing longitudinal length = 69.25 ft

Loadcase ID: BRf5 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	210.01	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details

Selected Live Load for BR generation
Load: Fatigue Truck
Number of loaded lanes = 1
Contributing longitudinal length = 69.25 ft

Loadcase ID: BRf6 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	210.01	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details

Selected Live Load for BR generation
Load: Fatigue Truck
Number of loaded lanes = 1
Contributing longitudinal length = 69.25 ft

Loadcase ID: BRf7 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	210.01	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00

1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details

Selected Live Load for BR generation
Load: Fatigue Truck
Number of loaded lanes = 1
Contributing longitudinal length = 69.25 ft

Loadcase ID: BRf8 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	210.01	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details

Selected Live Load for BR generation
Load: Fatigue Truck
Number of loaded lanes = 1
Contributing longitudinal length = 69.25 ft

Loadcase ID: TU1 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.37
1	1	Z	6.59
1	2	X	0.37
1	2	Z	6.59
1	3	X	0.37
1	3	Z	6.59
1	4	X	0.37
1	4	Z	6.59
1	5	X	0.37
1	5	Z	6.59
1	6	X	0.37
1	6	Z	6.59
1	7	X	0.37
1	7	Z	6.59

Auto generation details

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Bearing type: Elastomeric Bearings
Direction of thermal force: +(Z)
Length of Superstructure Contributing, L: 187.667 ft
Change in temperature: 90.000 °F
Coefficient of thermal expansion: 6.5e-06 ft/°F

Area of bearing: 260.00 in^2
Shear modulus of Elastomer: 0.13 kips
Total Elastomer Thickness: 2.77 in

Loadcase ID: WS1 Name: STR III-Angle: -60
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	2.39	0.50	----	----
UDL	Z	----	0.09	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.058	klf	0.00	----	0.94
1	UDL	Z	0.100	klf	0.00	----	0.94
2	UDL	X	0.058	klf	0.00	----	0.94
2	UDL	Z	0.100	klf	0.00	----	0.94
3	UDL	X	0.058	klf	0.00	----	0.94
3	UDL	Z	0.100	klf	0.00	----	0.94
4	UDL	X	0.058	klf	0.00	----	0.94
4	UDL	Z	0.100	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = -60.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III

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Wind pressure for superstructure: Pz = 31.250 psf
Wind pressure for substructure: Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Pz = 17.580 psf
Wind pressure for substructure: Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Pz = 21.190 psf
Wind pressure for substructure: Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Pz = 16.250 psf
Wind pressure for substructure: Pz = 20.000 psf

Loadcase ID: WS2 Name: STR III-Angle: -45
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	2.85	0.50	----	----
UDL	Z	----	0.06	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.082	klf	0.00	----	0.94
1	UDL	Z	0.082	klf	0.00	----	0.94
2	UDL	X	0.082	klf	0.00	----	0.94
2	UDL	Z	0.082	klf	0.00	----	0.94
3	UDL	X	0.082	klf	0.00	----	0.94
3	UDL	Z	0.082	klf	0.00	----	0.94
4	UDL	X	0.082	klf	0.00	----	0.94
4	UDL	Z	0.082	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details

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Generated Wind Load on Structure
Angle of wind = -45.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS3 Name: STR III-Angle: -30
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	2.60	0.50	----	----
UDL	Z	----	0.03	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.100	klf	0.00	----	0.94
1	UDL	Z	0.058	klf	0.00	----	0.94
2	UDL	X	0.100	klf	0.00	----	0.94
2	UDL	Z	0.058	klf	0.00	----	0.94
3	UDL	X	0.100	klf	0.00	----	0.94
3	UDL	Z	0.058	klf	0.00	----	0.94
4	UDL	X	0.100	klf	0.00	----	0.94
4	UDL	Z	0.058	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00

1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = -30.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS4 Name: STR III-Angle: -15
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.72	0.50	----	----
UDL	Z	----	0.01	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.111	klf	0.00	----	0.94
1	UDL	Z	0.030	klf	0.00	----	0.94
2	UDL	X	0.111	klf	0.00	----	0.94
2	UDL	Z	0.030	klf	0.00	----	0.94
3	UDL	X	0.111	klf	0.00	----	0.94
3	UDL	Z	0.030	klf	0.00	----	0.94
4	UDL	X	0.111	klf	0.00	----	0.94
4	UDL	Z	0.030	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00

1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = -15.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS5 Name: STR III-Angle: 0
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	0.44	0.50	----	----

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.115	klf	0.00	----	0.94
2	UDL	X	0.115	klf	0.00	----	0.94
3	UDL	X	0.115	klf	0.00	----	0.94
4	UDL	X	0.115	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00

1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 0.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS6 Name: STR III-Angle: 15
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.72	0.50	----	----
UDL	Z	----	-0.01	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.111	klf	0.00	----	0.94
1	UDL	Z	-0.030	klf	0.00	----	0.94
2	UDL	X	0.111	klf	0.00	----	0.94
2	UDL	Z	-0.030	klf	0.00	----	0.94
3	UDL	X	0.111	klf	0.00	----	0.94
3	UDL	Z	-0.030	klf	0.00	----	0.94
4	UDL	X	0.111	klf	0.00	----	0.94
4	UDL	Z	-0.030	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00

1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 15.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS7 Name: STR III-Angle: 30
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	2.60	0.50	----	----
UDL	Z	----	-0.03	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.100	klf	0.00	----	0.94
1	UDL	Z	-0.058	klf	0.00	----	0.94
2	UDL	X	0.100	klf	0.00	----	0.94
2	UDL	Z	-0.058	klf	0.00	----	0.94
3	UDL	X	0.100	klf	0.00	----	0.94
3	UDL	Z	-0.058	klf	0.00	----	0.94
4	UDL	X	0.100	klf	0.00	----	0.94
4	UDL	Z	-0.058	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00

1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 30.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS8 Name: STR III-Angle: 45
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	2.85	0.50	----	----
UDL	Z	----	-0.06	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.082	klf	0.00	----	0.94
1	UDL	Z	-0.082	klf	0.00	----	0.94
2	UDL	X	0.082	klf	0.00	----	0.94
2	UDL	Z	-0.082	klf	0.00	----	0.94
3	UDL	X	0.082	klf	0.00	----	0.94
3	UDL	Z	-0.082	klf	0.00	----	0.94
4	UDL	X	0.082	klf	0.00	----	0.94
4	UDL	Z	-0.082	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00

1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 45.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS9 Name: STR III-Angle: 60
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	2.39	0.50	----	----
UDL	Z	----	-0.09	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.058	klf	0.00	----	0.94
1	UDL	Z	-0.100	klf	0.00	----	0.94
2	UDL	X	0.058	klf	0.00	----	0.94
2	UDL	Z	-0.100	klf	0.00	----	0.94
3	UDL	X	0.058	klf	0.00	----	0.94
3	UDL	Z	-0.100	klf	0.00	----	0.94
4	UDL	X	0.058	klf	0.00	----	0.94
4	UDL	Z	-0.100	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips

1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 60.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS10 Name: SER IV-Angle: -60
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.34	0.50	----	----
UDL	Z	----	0.05	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.032	klf	0.00	----	0.94
1	UDL	Z	0.056	klf	0.00	----	0.94
2	UDL	X	0.032	klf	0.00	----	0.94
2	UDL	Z	0.056	klf	0.00	----	0.94
3	UDL	X	0.032	klf	0.00	----	0.94
3	UDL	Z	0.056	klf	0.00	----	0.94
4	UDL	X	0.032	klf	0.00	----	0.94
4	UDL	Z	0.056	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = -60.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS11 Name: SER IV-Angle: -45
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.60	0.50	----	----
UDL	Z	----	0.04	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.046	klf	0.00	----	0.94
1	UDL	Z	0.046	klf	0.00	----	0.94
2	UDL	X	0.046	klf	0.00	----	0.94
2	UDL	Z	0.046	klf	0.00	----	0.94

3	UDL	X	0.046	klf	0.00	----	0.94
3	UDL	Z	0.046	klf	0.00	----	0.94
4	UDL	X	0.046	klf	0.00	----	0.94
4	UDL	Z	0.046	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = -45.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS12 Name: SER IV-Angle: -30
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.46	0.50	----	----
UDL	Z	----	0.02	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1	y1/L	Mag2	y2/L

1	UDL	X	0.056	klf	0.00	----	0.94
1	UDL	Z	0.032	klf	0.00	----	0.94
2	UDL	X	0.056	klf	0.00	----	0.94
2	UDL	Z	0.032	klf	0.00	----	0.94
3	UDL	X	0.056	klf	0.00	----	0.94
3	UDL	Z	0.032	klf	0.00	----	0.94
4	UDL	X	0.056	klf	0.00	----	0.94
4	UDL	Z	0.032	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = -30.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS13 Name: SER IV-Angle: -15
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	0.97	0.50	----	----
UDL	Z	----	0.01	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.063	klf	0.00	----	0.94
1	UDL	Z	0.017	klf	0.00	----	0.94
2	UDL	X	0.063	klf	0.00	----	0.94
2	UDL	Z	0.017	klf	0.00	----	0.94
3	UDL	X	0.063	klf	0.00	----	0.94
3	UDL	Z	0.017	klf	0.00	----	0.94
4	UDL	X	0.063	klf	0.00	----	0.94
4	UDL	Z	0.017	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = -15.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS14 Name: SER IV-Angle: 0
Multiplier = 1.000

Cap loads:

Type	Dir	Arm	Mag1	x1/L	Mag2	x2/L

		ft	kips, klf,k-ft		kips, klf,k-ft		
Force	X	0.00	0.25	0.50	----	----	

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.065	klf	0.00	----	0.94
2	UDL	X	0.065	klf	0.00	----	0.94
3	UDL	X	0.065	klf	0.00	----	0.94
4	UDL	X	0.065	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 0.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS15 Name: SER IV-Angle: 15
Multiplier = 1.000

Cap loads:

Type	Dir	Arm	Mag1		x1/L	Mag2	x2/L
		ft	kips, klf,k-ft			kips, klf,k-ft	

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Force	X	0.00	0.97	0.50	----	----
UDL	Z	----	-0.01	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.063	klf	0.00	----	0.94
1	UDL	Z	-0.017	klf	0.00	----	0.94
2	UDL	X	0.063	klf	0.00	----	0.94
2	UDL	Z	-0.017	klf	0.00	----	0.94
3	UDL	X	0.063	klf	0.00	----	0.94
3	UDL	Z	-0.017	klf	0.00	----	0.94
4	UDL	X	0.063	klf	0.00	----	0.94
4	UDL	Z	-0.017	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 15.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS16 Name: SER IV-Angle: 30
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.46	0.50	----	----
UDL	Z	----	-0.02	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.056	klf	0.00	----	0.94
1	UDL	Z	-0.032	klf	0.00	----	0.94
2	UDL	X	0.056	klf	0.00	----	0.94
2	UDL	Z	-0.032	klf	0.00	----	0.94
3	UDL	X	0.056	klf	0.00	----	0.94
3	UDL	Z	-0.032	klf	0.00	----	0.94
4	UDL	X	0.056	klf	0.00	----	0.94
4	UDL	Z	-0.032	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 30.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS17 Name: SER IV-Angle: 45
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.60	0.50	----	----
UDL	Z	----	-0.04	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.046	klf	0.00	----	0.94
1	UDL	Z	-0.046	klf	0.00	----	0.94
2	UDL	X	0.046	klf	0.00	----	0.94
2	UDL	Z	-0.046	klf	0.00	----	0.94
3	UDL	X	0.046	klf	0.00	----	0.94
3	UDL	Z	-0.046	klf	0.00	----	0.94
4	UDL	X	0.046	klf	0.00	----	0.94
4	UDL	Z	-0.046	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 45.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:

Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS18 Name: SER IV-Angle: 60
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.34	0.50	----	----
UDL	Z	----	-0.05	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.032	klf	0.00	----	0.94
1	UDL	Z	-0.056	klf	0.00	----	0.94
2	UDL	X	0.032	klf	0.00	----	0.94
2	UDL	Z	-0.056	klf	0.00	----	0.94
3	UDL	X	0.032	klf	0.00	----	0.94
3	UDL	Z	-0.056	klf	0.00	----	0.94
4	UDL	X	0.032	klf	0.00	----	0.94
4	UDL	Z	-0.056	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 60.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:

Pz = 17.580 psf Pz = 21.630 psf

Overturning not considered

For STR V

Wind pressure for superstructure: Wind pressure for substructure:

Pz = 21.190 psf Pz = 26.080 psf

For SER I

Wind pressure for superstructure: Wind pressure for substructure:

Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS19 Name: STR V-Angle: -60

Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.62	0.50	----	----
UDL	Z	----	0.06	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.039	klf	0.00	----	0.94
1	UDL	Z	0.068	klf	0.00	----	0.94
2	UDL	X	0.039	klf	0.00	----	0.94
2	UDL	Z	0.068	klf	0.00	----	0.94
3	UDL	X	0.039	klf	0.00	----	0.94
3	UDL	Z	0.068	klf	0.00	----	0.94
4	UDL	X	0.039	klf	0.00	----	0.94
4	UDL	Z	0.068	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details

Generated Wind Load on Structure

Angle of wind = -60.00 deg Elevation above which wind load acts = 622.00 ft

Default wind pressure

For STR III

Wind pressure for superstructure: Wind pressure for substructure:

Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS20 Name: STR V-Angle: -45
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.93	0.50	----	----
UDL	Z	----	0.04	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.055	klf	0.00	----	0.94
1	UDL	Z	0.055	klf	0.00	----	0.94
2	UDL	X	0.055	klf	0.00	----	0.94
2	UDL	Z	0.055	klf	0.00	----	0.94
3	UDL	X	0.055	klf	0.00	----	0.94
3	UDL	Z	0.055	klf	0.00	----	0.94
4	UDL	X	0.055	klf	0.00	----	0.94
4	UDL	Z	0.055	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure

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Angle of wind = -45.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS21 Name: STR V-Angle: -30
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.77	0.50	----	----
UDL	Z	----	0.02	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.068	klf	0.00	----	0.94
1	UDL	Z	0.039	klf	0.00	----	0.94
2	UDL	X	0.068	klf	0.00	----	0.94
2	UDL	Z	0.039	klf	0.00	----	0.94
3	UDL	X	0.068	klf	0.00	----	0.94
3	UDL	Z	0.039	klf	0.00	----	0.94
4	UDL	X	0.068	klf	0.00	----	0.94
4	UDL	Z	0.039	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00

1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = -30.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS22 Name: STR V-Angle: -15
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.17	0.50	----	----
UDL	Z	----	0.01	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.076	klf	0.00	----	0.94
1	UDL	Z	0.020	klf	0.00	----	0.94
2	UDL	X	0.076	klf	0.00	----	0.94
2	UDL	Z	0.020	klf	0.00	----	0.94
3	UDL	X	0.076	klf	0.00	----	0.94
3	UDL	Z	0.020	klf	0.00	----	0.94
4	UDL	X	0.076	klf	0.00	----	0.94
4	UDL	Z	0.020	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00

1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = -15.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS23 Name: STR V-Angle: 0
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	0.30	0.50	----	----

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.078	klf	0.00	----	0.94
2	UDL	X	0.078	klf	0.00	----	0.94
3	UDL	X	0.078	klf	0.00	----	0.94
4	UDL	X	0.078	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00

1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 0.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS24 Name: STR V-Angle: 15
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.17	0.50	----	----
UDL	Z	----	-0.01	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.076	klf	0.00	----	0.94
1	UDL	Z	-0.020	klf	0.00	----	0.94
2	UDL	X	0.076	klf	0.00	----	0.94
2	UDL	Z	-0.020	klf	0.00	----	0.94
3	UDL	X	0.076	klf	0.00	----	0.94
3	UDL	Z	-0.020	klf	0.00	----	0.94
4	UDL	X	0.076	klf	0.00	----	0.94
4	UDL	Z	-0.020	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00

1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 15.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS25 Name: STR V-Angle: 30
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.77	0.50	----	----
UDL	Z	----	-0.02	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.068	klf	0.00	----	0.94
1	UDL	Z	-0.039	klf	0.00	----	0.94
2	UDL	X	0.068	klf	0.00	----	0.94
2	UDL	Z	-0.039	klf	0.00	----	0.94
3	UDL	X	0.068	klf	0.00	----	0.94
3	UDL	Z	-0.039	klf	0.00	----	0.94
4	UDL	X	0.068	klf	0.00	----	0.94
4	UDL	Z	-0.039	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00

1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 30.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS26 Name: STR V-Angle: 45
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.93	0.50	----	----
UDL	Z	----	-0.04	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.055	klf	0.00	----	0.94
1	UDL	Z	-0.055	klf	0.00	----	0.94
2	UDL	X	0.055	klf	0.00	----	0.94
2	UDL	Z	-0.055	klf	0.00	----	0.94
3	UDL	X	0.055	klf	0.00	----	0.94
3	UDL	Z	-0.055	klf	0.00	----	0.94
4	UDL	X	0.055	klf	0.00	----	0.94
4	UDL	Z	-0.055	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00

1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 45.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS27 Name: STR V-Angle: 60
Multiplier = 1.000

Cap loads:

Type	Dir	Arm	Mag1	x1/L	Mag2	x2/L
		ft	kips, klf,k-ft		kips, klf,k-ft	
Force	X	0.00	1.62	0.50	----	----
UDL	Z	----	-0.06	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1	y1/L	Mag2	y2/L
1	UDL	X	0.039 klf	0.00	----	0.94
1	UDL	Z	-0.068 klf	0.00	----	0.94
2	UDL	X	0.039 klf	0.00	----	0.94
2	UDL	Z	-0.068 klf	0.00	----	0.94
3	UDL	X	0.039 klf	0.00	----	0.94
3	UDL	Z	-0.068 klf	0.00	----	0.94
4	UDL	X	0.039 klf	0.00	----	0.94
4	UDL	Z	-0.068 klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00

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1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 60.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS28 Name: SER I-Angle: -60
Multiplier = 1.000

Cap loads:

Type	Dir	Arm	Mag1	x1/L	Mag2	x2/L
		ft	kips, klf,k-ft		kips, klf,k-ft	
Force	X	0.00	1.24	0.50	----	----
UDL	Z	----	0.05	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1	y1/L	Mag2	y2/L
1	UDL	X	0.030 klf	0.00	----	0.94
1	UDL	Z	0.052 klf	0.00	----	0.94
2	UDL	X	0.030 klf	0.00	----	0.94
2	UDL	Z	0.052 klf	0.00	----	0.94
3	UDL	X	0.030 klf	0.00	----	0.94
3	UDL	Z	0.052 klf	0.00	----	0.94
4	UDL	X	0.030 klf	0.00	----	0.94
4	UDL	Z	0.052 klf	0.00	----	0.94

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Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = -60.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS29 Name: SER I-Angle: -45
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.48	0.50	----	----
UDL	Z	----	0.03	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.042	klf	0.00	----	0.94
1	UDL	Z	0.042	klf	0.00	----	0.94
2	UDL	X	0.042	klf	0.00	----	0.94
2	UDL	Z	0.042	klf	0.00	----	0.94
3	UDL	X	0.042	klf	0.00	----	0.94

3	UDL	Z	0.042	klf	0.00	----	0.94	
4	UDL	X	0.042	klf	0.00	----	0.94	
4	UDL	Z	0.042	klf	0.00	----	0.94	

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = -45.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS30 Name: SER I-Angle: -30
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.35	0.50	----	----
UDL	Z	----	0.02	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1	y1/L	Mag2	y2/L
1	UDL	X	0.052 klf	0.00	----	0.94

1	UDL	Z	0.030	klf	0.00	----	0.94
2	UDL	X	0.052	klf	0.00	----	0.94
2	UDL	Z	0.030	klf	0.00	----	0.94
3	UDL	X	0.052	klf	0.00	----	0.94
3	UDL	Z	0.030	klf	0.00	----	0.94
4	UDL	X	0.052	klf	0.00	----	0.94
4	UDL	Z	0.030	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = -30.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS31 Name: SER I-Angle: -15
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	0.90	0.50	----	----
UDL	Z	----	0.01	0.00	----	1.00

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Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.058	klf	0.00	----	0.94
1	UDL	Z	0.016	klf	0.00	----	0.94
2	UDL	X	0.058	klf	0.00	----	0.94
2	UDL	Z	0.016	klf	0.00	----	0.94
3	UDL	X	0.058	klf	0.00	----	0.94
3	UDL	Z	0.016	klf	0.00	----	0.94
4	UDL	X	0.058	klf	0.00	----	0.94
4	UDL	Z	0.016	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = -15.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS32 Name: SER I-Angle: 0
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L

Force	X	0.00	0.23	0.50	----	----

Column loads:

Col #	Type	Dir	Mag1	y1/L	Mag2	y2/L
1	UDL	X	0.060 klf	0.00	----	0.94
2	UDL	X	0.060 klf	0.00	----	0.94
3	UDL	X	0.060 klf	0.00	----	0.94
4	UDL	X	0.060 klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 0.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS33 Name: SER I-Angle: 15
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L

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Force	X	0.00	0.90	0.50	----	----
UDL	Z	----	-0.01	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.058	klf	0.00	----	0.94
1	UDL	Z	-0.016	klf	0.00	----	0.94
2	UDL	X	0.058	klf	0.00	----	0.94
2	UDL	Z	-0.016	klf	0.00	----	0.94
3	UDL	X	0.058	klf	0.00	----	0.94
3	UDL	Z	-0.016	klf	0.00	----	0.94
4	UDL	X	0.058	klf	0.00	----	0.94
4	UDL	Z	-0.016	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 15.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS34 Name: SER I-Angle: 30
Multiplier = 1.000

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Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.35	0.50	----	----
UDL	Z	----	-0.02	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.052	klf	0.00	----	0.94
1	UDL	Z	-0.030	klf	0.00	----	0.94
2	UDL	X	0.052	klf	0.00	----	0.94
2	UDL	Z	-0.030	klf	0.00	----	0.94
3	UDL	X	0.052	klf	0.00	----	0.94
3	UDL	Z	-0.030	klf	0.00	----	0.94
4	UDL	X	0.052	klf	0.00	----	0.94
4	UDL	Z	-0.030	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 30.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 16.250 psf Pz = 20.000 psf

Loadcase ID: WS35 Name: SER I-Angle: 45
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.48	0.50	----	----
UDL	Z	----	-0.03	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.042	klf	0.00	----	0.94
1	UDL	Z	-0.042	klf	0.00	----	0.94
2	UDL	X	0.042	klf	0.00	----	0.94
2	UDL	Z	-0.042	klf	0.00	----	0.94
3	UDL	X	0.042	klf	0.00	----	0.94
3	UDL	Z	-0.042	klf	0.00	----	0.94
4	UDL	X	0.042	klf	0.00	----	0.94
4	UDL	Z	-0.042	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 45.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 31.250 psf Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 17.580 psf Pz = 21.630 psf
Overturning not considered
For STR V
Wind pressure for superstructure: Wind pressure for substructure:
Pz = 21.190 psf Pz = 26.080 psf

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For SER I
Wind pressure for superstructure: Pz = 16.250 psf
Wind pressure for substructure: Pz = 20.000 psf

Loadcase ID: WS36 Name: SER I-Angle: 60
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Force	X	0.00	1.24	0.50	----	----
UDL	Z	----	-0.05	0.00	----	1.00

Column loads:

Col #	Type	Dir	Mag1		y1/L	Mag2	y2/L
1	UDL	X	0.030	klf	0.00	----	0.94
1	UDL	Z	-0.052	klf	0.00	----	0.94
2	UDL	X	0.030	klf	0.00	----	0.94
2	UDL	Z	-0.052	klf	0.00	----	0.94
3	UDL	X	0.030	klf	0.00	----	0.94
3	UDL	Z	-0.052	klf	0.00	----	0.94
4	UDL	X	0.030	klf	0.00	----	0.94
4	UDL	Z	-0.052	klf	0.00	----	0.94

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Structure
Angle of wind = 60.00 deg Elevation above which wind load acts = 622.00 ft
Default wind pressure
For STR III
Wind pressure for superstructure: Pz = 31.250 psf
Wind pressure for substructure: Pz = 38.460 psf
Overturning not considered
For SER IV
Wind pressure for superstructure: Pz = 17.580 psf
Wind pressure for substructure: Pz = 21.630 psf

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Overturning not considered
For STR V
Wind pressure for superstructure: Pz = 21.190 psf
Wind pressure for substructure: Pz = 26.080 psf
For SER I
Wind pressure for superstructure: Pz = 16.250 psf
Wind pressure for substructure: Pz = 20.000 psf

Loadcase ID: WL1 Name: Angle: -60
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Live Load
Angle of wind = -60.00 deg Live load length = 86.50 ft

Loadcase ID: WL2 Name: Angle: -45
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00

1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Live Load
Angle of wind = -45.00 deg Live load length = 69.25 ft

Loadcase ID: WL3 Name: Angle: -30
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Live Load
Angle of wind = -30.00 deg Live load length = 69.25 ft

Loadcase ID: WL4 Name: Angle: -15
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00

1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Live Load
Angle of wind = -15.00 deg Live load length = 69.25 ft

Loadcase ID: WL5 Name: Angle: 0
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Live Load
Angle of wind = 0.00 deg Live load length = 69.25 ft

Loadcase ID: WL6 Name: Angle: 15
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00

1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Live Load
Angle of wind = 15.00 deg Live load length = 69.25 ft

Loadcase ID: WL7 Name: Angle: 30
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Live Load
Angle of wind = 30.00 deg Live load length = 69.25 ft

Loadcase ID: WL8 Name: Angle: 45
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00

1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Live Load
Angle of wind = 45.00 deg Live load length = 86.50 ft

Loadcase ID: WL9 Name: Angle: 60
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	X	0.00
1	1	Y	0.00
1	1	Z	0.00
1	2	X	0.00
1	2	Y	0.00
1	2	Z	0.00
1	3	X	0.00
1	3	Y	0.00
1	3	Z	0.00
1	4	X	0.00
1	4	Y	0.00
1	4	Z	0.00
1	5	X	0.00
1	5	Y	0.00
1	5	Z	0.00
1	6	X	0.00
1	6	Y	0.00
1	6	Z	0.00
1	7	X	0.00
1	7	Y	0.00
1	7	Z	0.00

Auto generation details
Generated Wind Load on Live Load
Angle of wind = 60.00 deg Live load length = 69.25 ft

Loadcase ID: LL1 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Y	-63.07
1	2	Y	-63.53
1	3	Y	-53.68

1	4	Y	-6.49	
1	5	Y	0.00	
1	6	Y	0.00	
1	7	Y	0.00	
1	1	Y	-41.61	L
1	2	Y	-41.76	L
1	3	Y	-35.71	L
1	4	Y	-4.12	L
1	5	Y	0.00	L
1	6	Y	0.00	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 5.92 - lane load on bearing line No. 1
Truck No. 2 - center line at: 15.92 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.0000
Maximum effects in members :
Member 1 node 1 - Fx = 218.4559
Member 1 node 2 - Fx = -218.4559

Loadcase ID: LL2 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	-63.07	
1	2	Y	-30.32	
1	3	Y	0.00	
1	4	Y	0.00	
1	5	Y	-8.51	
1	6	Y	-46.77	
1	7	Y	-38.10	
1	1	Y	-41.61	L
1	2	Y	-19.99	L
1	3	Y	-0.00	L
1	4	Y	0.00	L
1	5	Y	-4.91	L
1	6	Y	-32.26	L
1	7	Y	-24.43	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 5.92 - lane load on bearing line No. 1
Truck No. 2 - center line at: 38.02 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.0000
Maximum effects in members :
Member 1 node 1 - Mz = 25.0591
Member 1 node 2 - Mz = 46.9734
Member 4 node 7 - Mz = -26.6935
Member 4 node 8 - Mz = -56.9637

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Loadcase ID: LL3 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	0.00	
1	2	Y	0.00	
1	3	Y	0.00	
1	4	Y	-39.51	
1	5	Y	-55.29	
1	6	Y	-53.88	
1	7	Y	-38.10	
1	1	Y	0.00	L
1	2	Y	0.00	L
1	3	Y	-0.59	L
1	4	Y	-24.54	L
1	5	Y	-37.02	L
1	6	Y	-36.61	L
1	7	Y	-24.43	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 28.02 - lane load on bearing line No. 1
Truck No. 2 - center line at: 38.02 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.0000
Maximum effects in members :
Member 1 node 1 - Fx = -7.8531
Member 1 node 2 - Fx = 7.8531
Member 8 node 2 - Fy = -7.8531
Member 8 node 12 - Fy = 7.8531
Member 9 node 12 - Fy = -7.8531
Member 9 node 13 - Fy = 7.8531
Member 10 node 13 - Fy = -7.8531
Member 10 node 14 - Fy = 7.8531
Member 24 node 25 - Fy = -128.3347
Member 24 node 26 - Fy = 128.3347
Member 25 node 26 - Fy = -128.3347
Member 25 node 27 - Fy = 128.3347
Member 26 node 27 - Fy = -128.3347
Member 26 node 8 - Fy = 128.3347

Loadcase ID: LL4 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	0.00	
1	2	Y	-33.21	
1	3	Y	-62.81	
1	4	Y	-53.27	
1	5	Y	-37.49	
1	6	Y	0.00	
1	7	Y	0.00	
1	1	Y	0.00	L
1	2	Y	-21.77	L
1	3	Y	-40.87	L

1	4	Y	-37.02	L
1	5	Y	-23.19	L
1	6	Y	-0.34	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 15.92 - lane load on bearing line No. 1
Truck No. 2 - center line at: 25.92 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.0000
Maximum effects in members :
Member 1 node 1 - Mz = -21.4823
Member 1 node 2 - Mz = -42.0974
Member 2 node 3 - Fx = 181.8598
Member 2 node 4 - Fx = -181.8598

Loadcase ID: LL5 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	0.00	
1	2	Y	-33.21	
1	3	Y	-53.68	
1	4	Y	-6.49	
1	5	Y	-8.51	
1	6	Y	-46.77	
1	7	Y	-38.10	
1	1	Y	0.00	L
1	2	Y	-21.77	L
1	3	Y	-35.71	L
1	4	Y	-4.12	L
1	5	Y	-4.91	L
1	6	Y	-32.26	L
1	7	Y	-24.43	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 15.92 - lane load on bearing line No. 1
Truck No. 2 - center line at: 38.02 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.0000
Maximum effects in members :
Member 2 node 3 - Mz = 21.2662
Member 9 node 13 - Mz = 39.1027
Member 10 node 13 - Mz = -39.1027
Member 14 node 4 - Fy = -17.2758
Member 14 node 17 - Fy = 17.2758
Member 15 node 17 - Fy = -17.2758
Member 15 node 18 - Fy = 17.2758
Member 16 node 18 - Fy = -17.2758
Member 16 node 19 - Fy = 17.2758
Member 18 node 21 - Mz = -113.0537

Member 19 node 21 - Mz = 113.0537
Member 20 node 6 - Mz = 138.2370
Member 20 node 22 - Mz = -111.9767
Member 21 node 22 - Mz = 111.9767
Member 21 node 23 - Mz = -98.7283
Member 22 node 23 - Mz = 98.7283
Member 22 node 24 - Mz = -94.2225
Member 23 node 24 - Mz = 94.2225

Loadcase ID: LL6 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	0.00	
1	2	Y	0.00	
1	3	Y	0.00	
1	4	Y	0.00	
1	5	Y	-10.22	
1	6	Y	-56.13	
1	7	Y	-45.72	
1	1	Y	0.00	L
1	2	Y	0.00	L
1	3	Y	0.00	L
1	4	Y	0.00	L
1	5	Y	-5.89	L
1	6	Y	-38.71	L
1	7	Y	-29.31	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 38.02 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.2000
Maximum effects in members :
Member 2 node 3 - Fx = -6.3891
Member 2 node 4 - Fx = 6.3891
Member 4 node 7 - Fx = 205.9683
Member 4 node 8 - Fx = -205.9683
Member 8 node 2 - Mz = -17.3549
Member 8 node 12 - Mz = 15.6375
Member 9 node 12 - Mz = -15.6375
Member 24 node 26 - Mz = -153.4637
Member 25 node 26 - Mz = 153.4637
Member 25 node 27 - Mz = -256.1588
Member 26 node 27 - Mz = 256.1588
Member 26 node 8 - Mz = -307.4621
Member 27 node 8 - Fy = 90.1227
Member 27 node 8 - Mz = 362.3834
Member 27 node 28 - Fy = -90.1227
Member 27 node 28 - Mz = -242.5795
Member 28 node 28 - Fy = 90.1227
Member 28 node 28 - Mz = 242.5795
Member 28 node 29 - Fy = -90.1227

Loadcase ID: LL7 Name:
Multiplier = 1.000

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Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	-63.07	
1	2	Y	-30.32	
1	3	Y	-9.13	
1	4	Y	-46.77	
1	5	Y	-37.49	
1	6	Y	0.00	
1	7	Y	0.00	
1	1	Y	-41.61	L
1	2	Y	-19.99	L
1	3	Y	-5.17	L
1	4	Y	-32.90	L
1	5	Y	-23.19	L
1	6	Y	-0.34	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 5.92 - lane load on bearing line No. 1
Truck No. 2 - center line at: 25.92 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.0000
Maximum effects in members :
Member 2 node 3 - Mz = -14.7189

Loadcase ID: LL8 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	-37.32	
1	2	Y	-54.80	
1	3	Y	-1.26	
1	4	Y	0.00	
1	5	Y	-8.51	
1	6	Y	-46.77	
1	7	Y	-38.10	
1	1	Y	-25.83	L
1	2	Y	-33.72	L
1	3	Y	-2.05	L
1	4	Y	0.00	L
1	5	Y	-4.91	L
1	6	Y	-32.26	L
1	7	Y	-24.43	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 8.02 - lane load on bearing line No. 1
Truck No. 2 - center line at: 38.02 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.0000
Maximum effects in members :

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Member 2 node 4 - Mz = 31.2551
Member 16 node 19 - Mz = -90.2277
Member 17 node 19 - Mz = 90.2277
Member 17 node 20 - Mz = -91.8913
Member 18 node 20 - Mz = 91.8913

Loadcase ID: LL9 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	0.00	
1	2	Y	0.00	
1	3	Y	-10.95	
1	4	Y	-56.13	
1	5	Y	-44.99	
1	6	Y	0.00	
1	7	Y	0.00	
1	1	Y	0.00	L
1	2	Y	0.00	L
1	3	Y	-6.20	L
1	4	Y	-39.48	L
1	5	Y	-27.83	L
1	6	Y	-0.41	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 25.92 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.2000
Maximum effects in members :
Member 2 node 4 - Mz = -26.3106
Member 14 node 4 - Fy = 52.1875
Member 14 node 17 - Fy = -52.1875
Member 15 node 17 - Fy = 52.1875
Member 15 node 18 - Fy = -52.1875
Member 16 node 18 - Fy = 52.1875
Member 16 node 19 - Fy = -52.1875
Member 17 node 20 - Mz = 160.6776
Member 18 node 20 - Mz = -160.6776
Member 18 node 21 - Mz = 57.3968
Member 19 node 21 - Mz = -57.3968

Loadcase ID: LL10 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	0.00	
1	2	Y	-19.71	
1	3	Y	-50.87	
1	4	Y	-62.32	
1	5	Y	-46.77	
1	6	Y	-7.11	
1	7	Y	0.00	
1	1	Y	0.00	L

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1	2	Y	-10.88	L
1	3	Y	-38.83	L
1	4	Y	-37.02	L
1	5	Y	-32.11	L
1	6	Y	-4.35	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 18.02 - lane load on bearing line No. 1
Truck No. 2 - center line at: 28.02 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.0000
Maximum effects in members :
Member 3 node 5 - Fx = 159.1594
Member 3 node 6 - Fx = -159.1594
Member 16 node 19 - Mz = 226.1228
Member 17 node 19 - Fy = -77.7303
Member 17 node 19 - Mz = -226.1228
Member 17 node 20 - Fy = 77.7303
Member 18 node 20 - Fy = -77.7303
Member 18 node 21 - Fy = 77.7303
Member 19 node 21 - Fy = -77.7303
Member 19 node 6 - Fy = 77.7303

Loadcase ID: LL11 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	0.00	
1	2	Y	-19.71	
1	3	Y	-50.87	
1	4	Y	-22.81	
1	5	Y	-8.51	
1	6	Y	-46.77	
1	7	Y	-38.10	
1	1	Y	0.00	L
1	2	Y	-10.88	L
1	3	Y	-38.24	L
1	4	Y	-12.48	L
1	5	Y	-4.91	L
1	6	Y	-32.26	L
1	7	Y	-24.43	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 18.02 - lane load on bearing line No. 1
Truck No. 2 - center line at: 38.02 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.0000
Maximum effects in members :
Member 3 node 5 - Mz = 16.4192
Member 19 node 6 - Mz = -154.3604

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Member 23 node 25 - Mz = -79.5754
Member 24 node 25 - Mz = 79.5754

Loadcase ID: LL12 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	-75.69	
1	2	Y	-36.38	
1	3	Y	0.00	
1	4	Y	0.00	
1	5	Y	0.00	
1	6	Y	0.00	
1	7	Y	0.00	
1	1	Y	-49.93	L
1	2	Y	-23.99	L
1	3	Y	-0.00	L
1	4	Y	0.00	L
1	5	Y	0.00	L
1	6	Y	0.00	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 5.92 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.2000
Maximum effects in members :
Member 3 node 5 - Fx = -6.7796
Member 3 node 6 - Fx = 6.7796
Member 6 node 10 - Fy = -150.5952
Member 6 node 11 - Fy = 150.5952
Member 6 node 11 - Mz = -116.8106
Member 7 node 11 - Mz = 116.8106
Member 7 node 11 - Fy = -150.5952
Member 7 node 2 - Fy = 150.5952
Member 7 node 2 - Mz = -317.0029
Member 8 node 2 - Mz = 277.9897
Member 8 node 12 - Mz = -243.5972
Member 9 node 12 - Mz = 243.5972
Member 9 node 13 - Mz = -203.0223
Member 10 node 13 - Mz = 203.0223
Member 17 node 19 - Fy = 9.5666
Member 17 node 20 - Fy = -9.5666
Member 18 node 20 - Fy = 9.5666
Member 18 node 21 - Fy = -9.5666
Member 19 node 21 - Fy = 9.5666
Member 19 node 6 - Fy = -9.5666
Member 25 node 27 - Mz = 12.2008
Member 26 node 27 - Mz = -12.2008
Member 26 node 8 - Mz = 13.4351

Loadcase ID: LL13 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips

1	1	Y	-63.07	
1	2	Y	-30.32	
1	3	Y	0.00	
1	4	Y	0.00	
1	5	Y	-24.83	
1	6	Y	-46.78	
1	7	Y	-21.79	
1	1	Y	-41.61	L
1	2	Y	-19.99	L
1	3	Y	-0.00	L
1	4	Y	0.00	L
1	5	Y	-13.83	L
1	6	Y	-35.94	L
1	7	Y	-11.83	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 5.92 - lane load on bearing line No. 1
Truck No. 2 - center line at: 35.92 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.0000
Maximum effects in members :
Member 3 node 5 - Mz = -13.7100
Member 3 node 6 - Mz = -24.5688

Loadcase ID: LL14 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	0.00	
1	2	Y	-23.65	
1	3	Y	-61.05	
1	4	Y	-27.37	
1	5	Y	0.00	
1	6	Y	0.00	
1	7	Y	0.00	
1	1	Y	0.00	L
1	2	Y	-13.06	L
1	3	Y	-45.88	L
1	4	Y	-14.98	L
1	5	Y	0.00	L
1	6	Y	0.00	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 18.02 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.2000
Maximum effects in members :
Member 3 node 6 - Mz = 25.0355
Member 13 node 4 - Mz = 77.1721

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Member 14 node 17 - Mz = 82.6368
Member 15 node 17 - Mz = -82.6368
Member 15 node 18 - Mz = 84.5769
Member 16 node 18 - Mz = -84.5769

Loadcase ID: LL15 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	0.00	
1	2	Y	0.00	
1	3	Y	0.00	
1	4	Y	-47.41	
1	5	Y	-56.13	
1	6	Y	-8.53	
1	7	Y	0.00	
1	1	Y	0.00	L
1	2	Y	0.00	L
1	3	Y	-0.71	L
1	4	Y	-29.45	L
1	5	Y	-38.54	L
1	6	Y	-5.22	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 28.02 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.2000
Maximum effects in members :
Member 4 node 7 - Mz = 17.4845
Member 4 node 8 - Mz = 36.3595
Member 10 node 14 - Mz = -39.6146
Member 11 node 14 - Mz = 39.6146
Member 20 node 6 - Fy = 91.5990
Member 20 node 22 - Mz = 107.8611
Member 20 node 22 - Fy = -91.5990
Member 21 node 22 - Fy = 91.5990
Member 21 node 22 - Mz = -107.8611
Member 21 node 23 - Mz = 169.2928
Member 21 node 23 - Fy = -91.5990
Member 22 node 23 - Fy = -21.5871
Member 22 node 23 - Mz = -169.2928
Member 22 node 24 - Fy = 21.5871
Member 22 node 24 - Mz = 141.6551
Member 23 node 24 - Fy = -21.5871
Member 23 node 24 - Mz = -141.6551
Member 23 node 25 - Fy = 21.5871

Loadcase ID: LL16 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Y	-37.32
1	2	Y	-74.51

1	3	Y	-52.14	
1	4	Y	-22.81	
1	5	Y	0.00	
1	6	Y	0.00	
1	7	Y	0.00	
1	1	Y	-25.83	L
1	2	Y	-44.60	L
1	3	Y	-40.28	L
1	4	Y	-12.48	L
1	5	Y	0.00	L
1	6	Y	0.00	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 8.02 - lane load on bearing line No. 1
Truck No. 2 - center line at: 18.02 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.0000
Maximum effects in members :
Member 4 node 7 - Fx = -8.1454
Member 4 node 8 - Fx = 8.1454
Member 8 node 2 - Fy = 96.2420
Member 8 node 12 - Fy = -96.2420
Member 9 node 12 - Fy = 96.2420
Member 9 node 13 - Fy = -96.2420
Member 10 node 13 - Fy = 96.2420
Member 10 node 14 - Mz = 311.9030
Member 10 node 14 - Fy = -96.2420
Member 11 node 14 - Fy = -47.4565
Member 11 node 14 - Mz = -311.9030
Member 11 node 15 - Fy = 47.4565
Member 11 node 15 - Mz = 229.7694
Member 12 node 15 - Fy = -47.4565
Member 12 node 15 - Mz = -229.7694
Member 12 node 16 - Fy = 47.4565
Member 13 node 16 - Fy = -47.4565
Member 13 node 4 - Fy = 47.4565
Member 24 node 25 - Fy = 8.1454
Member 24 node 26 - Fy = -8.1454
Member 25 node 26 - Fy = 8.1454
Member 25 node 27 - Fy = -8.1454
Member 26 node 27 - Fy = 8.1454
Member 26 node 8 - Fy = -8.1454

Loadcase ID: LL17 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	-63.07	
1	2	Y	-30.32	
1	3	Y	0.00	
1	4	Y	-39.51	
1	5	Y	-46.77	
1	6	Y	-7.11	
1	7	Y	0.00	
1	1	Y	-41.61	L

1	2	Y	-19.99	L
1	3	Y	-0.60	L
1	4	Y	-24.54	L
1	5	Y	-32.11	L
1	6	Y	-4.35	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 5.92 - lane load on bearing line No. 1
Truck No. 2 - center line at: 28.02 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.0000
Maximum effects in members :
Member 11 node 15 - Mz = -54.9310
Member 12 node 15 - Mz = 54.9310
Member 12 node 16 - Mz = -133.9665
Member 13 node 16 - Mz = 133.9665
Member 14 node 4 - Mz = 174.8354
Member 24 node 26 - Mz = 20.0774
Member 25 node 26 - Mz = -20.0774

Loadcase ID: LL18 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	0.00	
1	2	Y	-39.86	
1	3	Y	-64.42	
1	4	Y	-7.79	
1	5	Y	0.00	
1	6	Y	0.00	
1	7	Y	0.00	
1	1	Y	0.00	L
1	2	Y	-26.13	L
1	3	Y	-42.85	L
1	4	Y	-4.95	L
1	5	Y	0.00	L
1	6	Y	0.00	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 15.92 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.2000
Maximum effects in members :
Member 12 node 16 - Mz = 102.1670
Member 13 node 16 - Mz = -102.1670
Member 14 node 4 - Mz = -86.0746

Loadcase ID: LL19 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	-37.32	
1	2	Y	-54.80	
1	3	Y	-1.26	
1	4	Y	-39.51	
1	5	Y	-46.77	
1	6	Y	-7.11	
1	7	Y	0.00	
1	1	Y	-25.83	L
1	2	Y	-33.72	L
1	3	Y	-2.64	L
1	4	Y	-24.54	L
1	5	Y	-32.11	L
1	6	Y	-4.35	L
1	7	Y	0.00	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 8.02 - lane load on bearing line No. 1
Truck No. 2 - center line at: 28.02 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.0000
Maximum effects in members :
Member 13 node 4 - Mz = -169.9296
Member 14 node 17 - Mz = -140.1441
Member 15 node 17 - Mz = 140.1441
Member 15 node 18 - Mz = -113.7179
Member 16 node 18 - Mz = 113.7179

Loadcase ID: LL20 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	-31.73	
1	2	Y	-63.33	
1	3	Y	-44.32	
1	4	Y	-19.39	
1	5	Y	-21.10	
1	6	Y	-39.76	
1	7	Y	-18.52	
1	1	Y	-21.96	L
1	2	Y	-37.91	L
1	3	Y	-34.24	L
1	4	Y	-10.61	L
1	5	Y	-11.76	L
1	6	Y	-30.55	L
1	7	Y	-10.05	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :

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TRUCK TYPE : Regular
Truck No. 1 - center line at: 8.02 - lane load on bearing line No. 1
Truck No. 2 - center line at: 18.02 - lane load on bearing line No. 1
Truck No. 3 - center line at: 35.92 - lane load on bearing line No. 1
Multi lane reduction factor used : 0.8500
Maximum effects in members :
Member 22 node 23 - Fy = 8.5319
Member 22 node 24 - Fy = -8.5319
Member 23 node 24 - Fy = 8.5319
Member 23 node 25 - Fy = -8.5319

Loadcase ID: LL21 Name:
Multiplier = 1.000

Bearing loads:

Line #	Bearing #	Dir.	Load, kips	
1	1	Y	0.00	
1	2	Y	0.00	
1	3	Y	0.00	
1	4	Y	0.00	
1	5	Y	-29.79	
1	6	Y	-56.13	
1	7	Y	-26.14	
1	1	Y	0.00	L
1	2	Y	0.00	L
1	3	Y	0.00	L
1	4	Y	0.00	L
1	5	Y	-16.60	L
1	6	Y	-43.13	L
1	7	Y	-14.19	L

Auto generation details

Generated Live Load

TRUCK IDENTIFICATION : Two Design Tandem + Lane Load
Positions of the center of each load measured from the left of the bridge :
TRUCK TYPE : Regular
Truck No. 1 - center line at: 35.92 - lane load on bearing line No. 1
Multi lane reduction factor used : 1.2000
Maximum effects in members :
Member 23 node 25 - Mz = 46.5769
Member 24 node 25 - Mz = -46.5769

Loadcase ID: BR1 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	123.83	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00

1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 2

Loadcase ID: BR2 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	123.83	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 2

Loadcase ID: BR3 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	123.83	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 2

Loadcase ID: BR4 Name:
Multiplier = 1.000

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Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	123.83	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 2

Loadcase ID: BR5 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	123.83	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 2

Loadcase ID: BR6 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	74.30	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00

1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 1

Loadcase ID: BR7 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	123.83	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 2

Loadcase ID: BR8 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	123.83	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 2

Loadcase ID: BR9 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	74.30	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 1

Loadcase ID: BR10 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	123.83	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 2

Loadcase ID: BR11 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	123.83	0.50	----	----

Bearing loads:

PROJECT: LUC-23-11.75 PHASE 2

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 2

Loadcase ID: BR12 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	74.30	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 1

Loadcase ID: BR13 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	123.83	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details

Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 2

Loadcase ID: BR14 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	74.30	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 1

Loadcase ID: BR15 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	74.30	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 1

Loadcase ID: BR16 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L

Moment	X	----	123.83	0.50	----	----	

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 2

Loadcase ID: BR17 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	123.83	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 2

Loadcase ID: BR18 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	74.30	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00

1	6	Z	0.00
1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 1

Loadcase ID: BR19 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	123.83	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 2

Loadcase ID: BR20 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	157.88	0.50	----	----

Bearing loads:

Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 3

Loadcase ID: BR21 Name:
Multiplier = 1.000

Cap loads:

Type	Dir	Arm ft	Mag1 kips, klf,k-ft	x1/L	Mag2 kips, klf,k-ft	x2/L
Moment	X	----	74.30	0.50	----	----

Bearing loads:

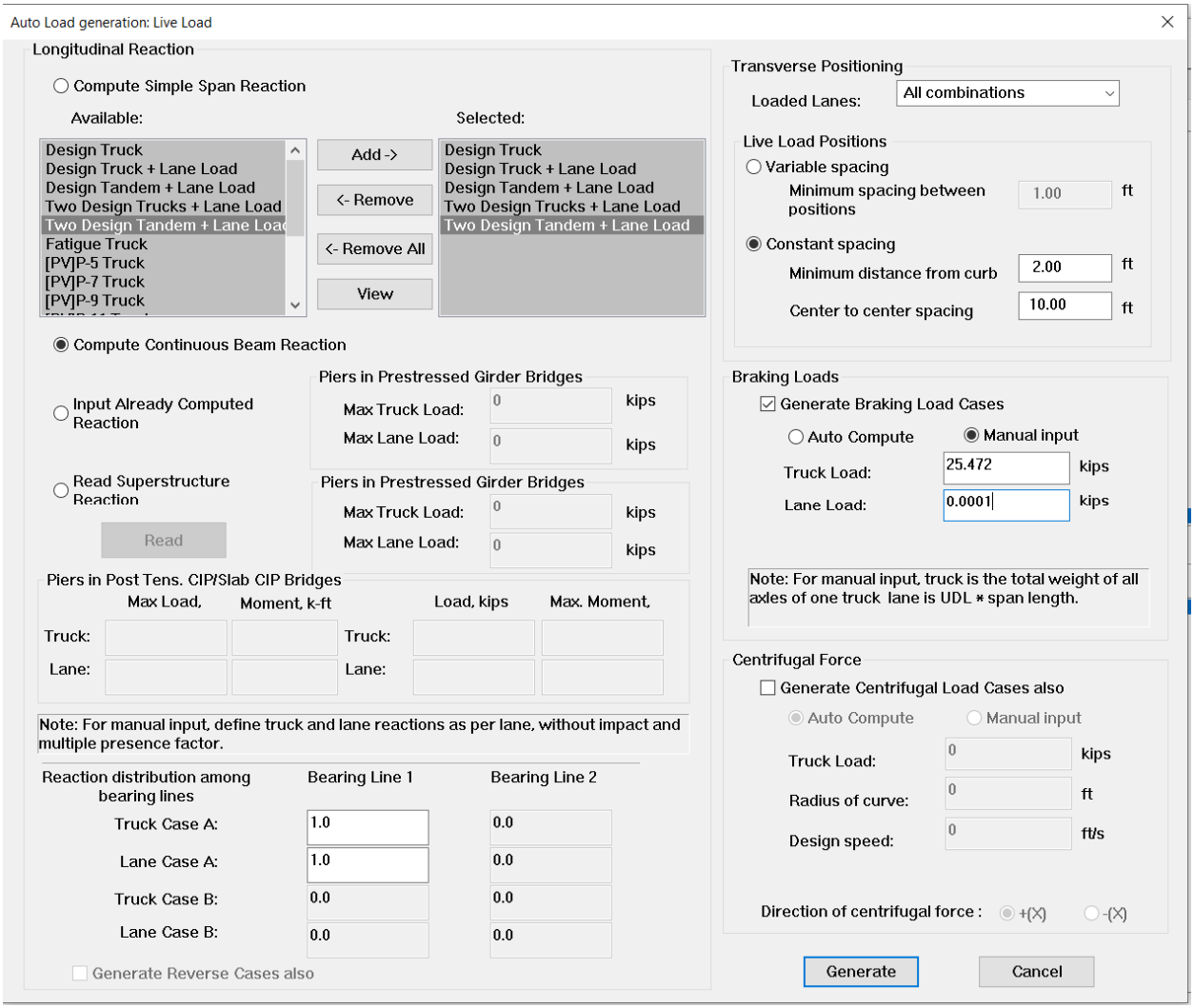
Line #	Bearing #	Dir.	Load, kips
1	1	Z	0.00
1	2	Z	0.00
1	3	Z	0.00
1	4	Z	0.00
1	5	Z	0.00
1	6	Z	0.00
1	7	Z	0.00

Auto generation details
Manual input
Maximum truck load = 25.47 kips
Maximum lane load = 0.00 kips
Number of loaded lanes = 1

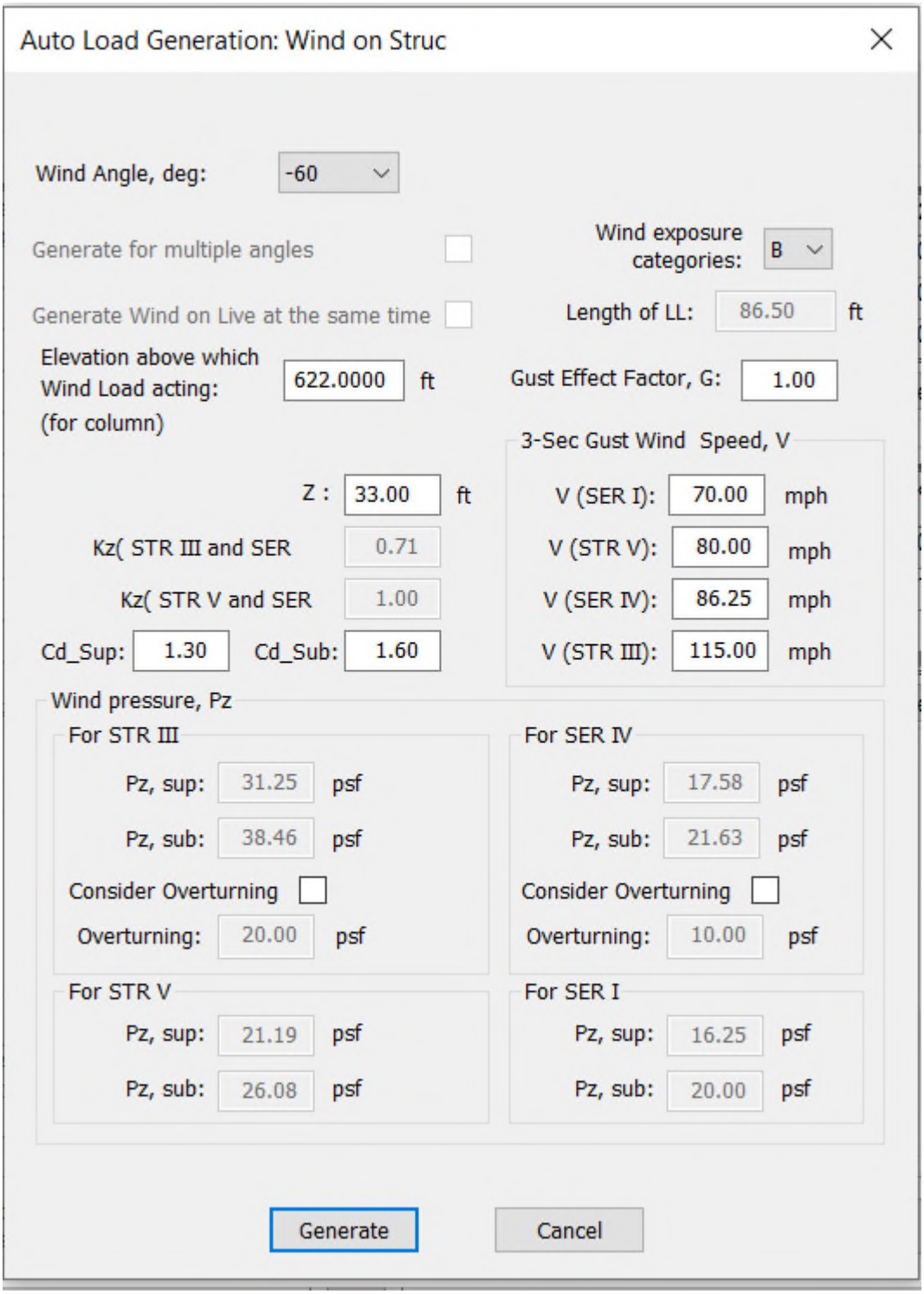
Selected load groups:

STRENGTH GROUP I
STRENGTH GROUP III
STRENGTH GROUP V
SERVICE GROUP I
FATIGUE I
SERVICE GROUP IV

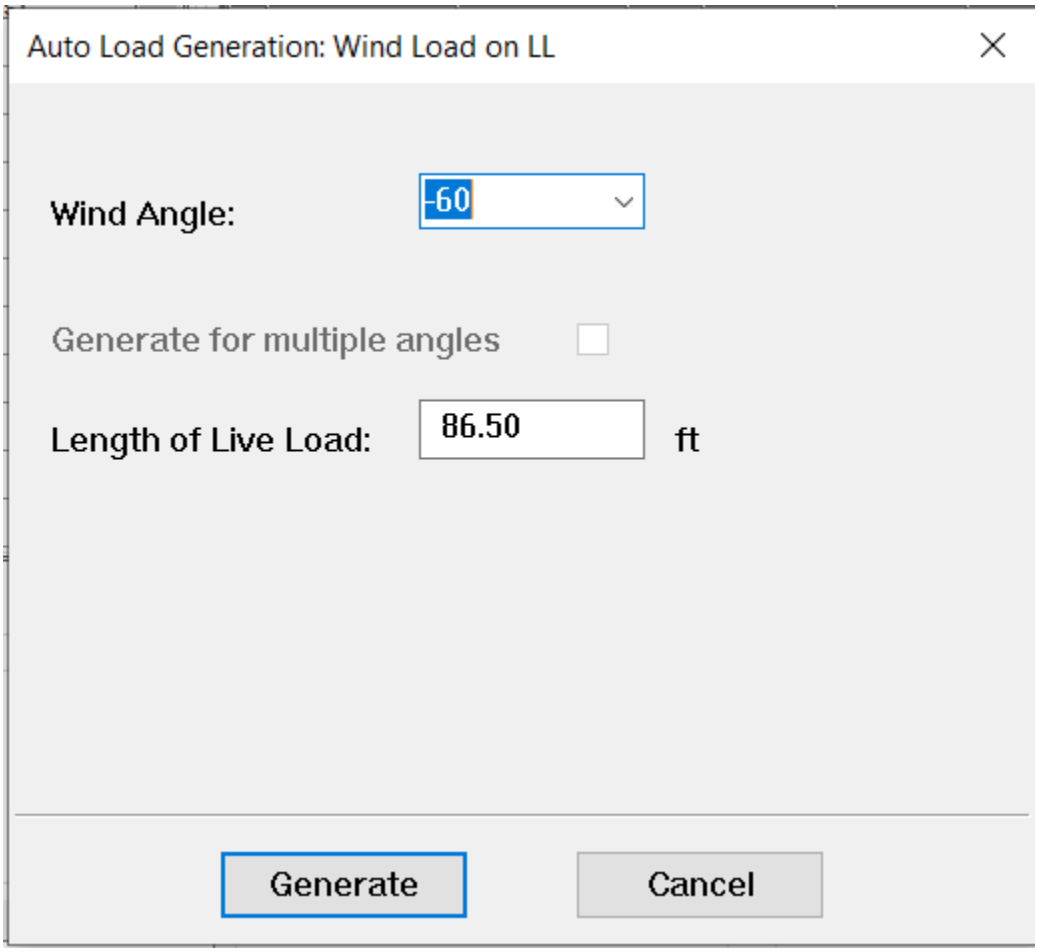
Live Load Generation



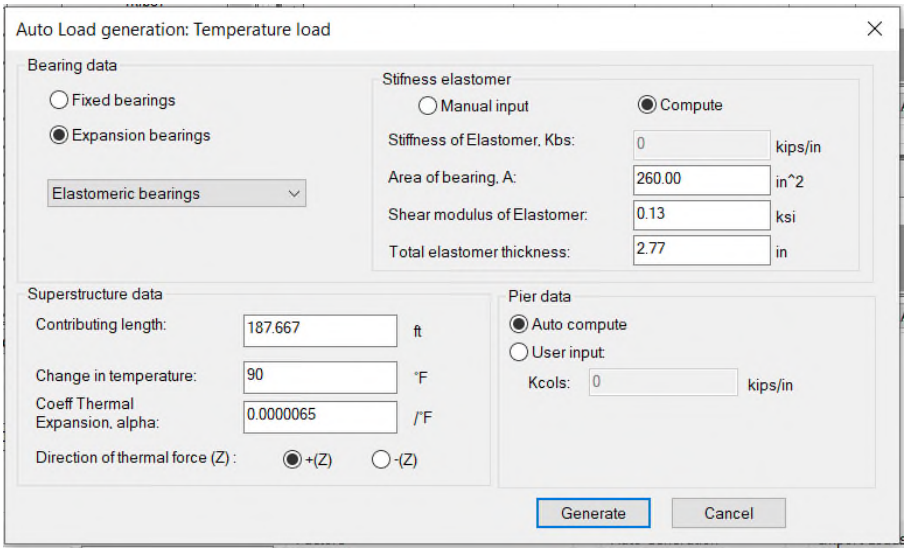
Wind Load on Structure

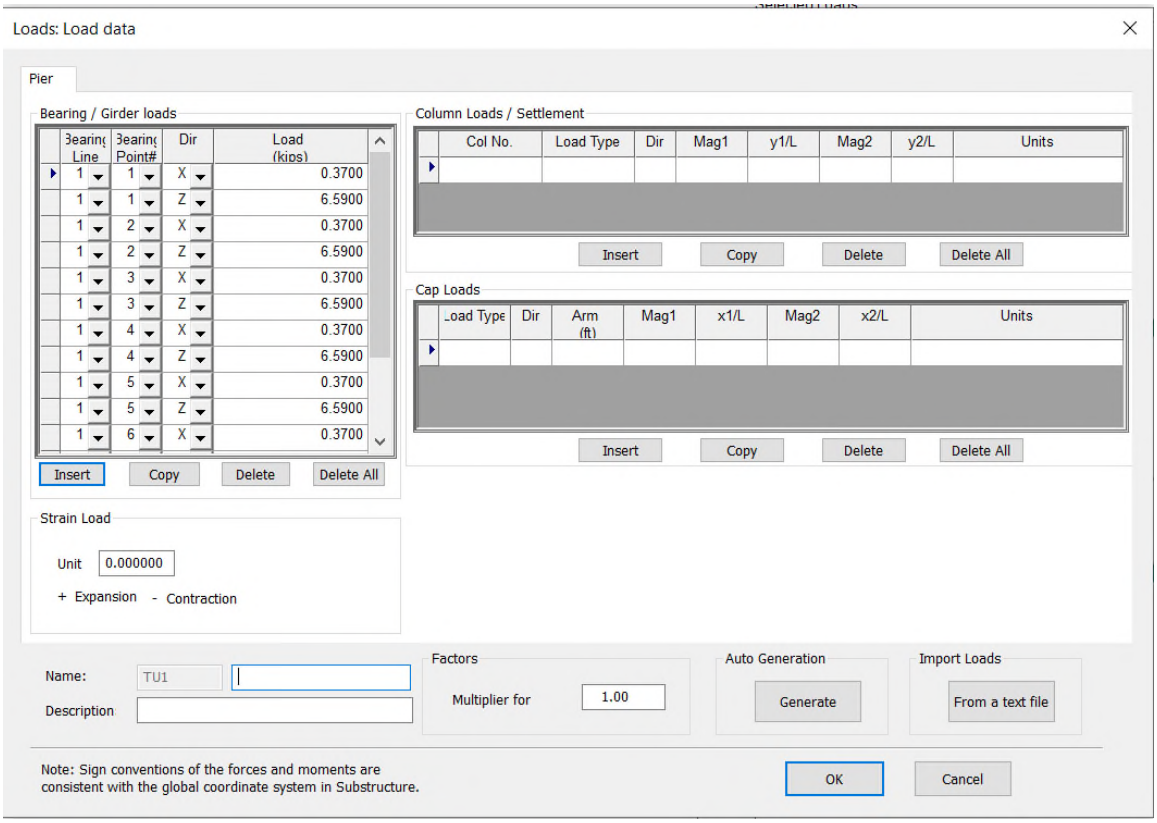


Wind Load on LL



Temperature Load





Determine Factored Horizontal Loads

The temperature and shrinkage forces acting on the bearings were not previously calculated as the force due to these load cases are based off of properties of the bearing by utilizing equation which a equates horizontal force based on the deformation of the bearing. AASHTO Eq. 14.6.3.1-2

$H_{bu\_temp} := 6.597\text{kip}$

$H_{bu\_temp} \cdot \cos(3.175\text{deg}) = 6.59 \cdot \text{kip}$

$H_{bu\_temp} \cdot \sin(3.175\text{deg}) = 0.37 \cdot \text{kip}$

Proj. No.:	LUC-23	Pre'd by:	ATS
TIP No.:		Date:	3/31/2023
County:		Chk'd by:	
Str. #:		Date:	

BRAKING FORCE

Span 1 Length =	86.5	ft
Span 2 Length =	86.5	ft
Length of Live Load Contibuting =	86.5	ft.
5% of AASHTO Truck =	3.6	kips
5% of 1 Lane Load =	2.768	kips

NOTE: RCPier takes 25% of the manually input truck or 5% of truck plus 5% of lane. In order to ensure that we design for 5% of HS-20 and 5% of HL93 lane load, we will have to "trick" the program.

Value to enter in truck load = 25.472 kips = (3.6 kips + 2.768 kips) / 25%

Value to enter in lane load = 0.0001

This will ensure that 25% of the truck input (our intended value) will be used for design.

CAP DESIGN

Code: AASHTO LRFD 9
Units: US
Pier View: Downstation.

DESIGN PARAMETERS

f'c = 4000.0 psi	
Fy flex = 60000.0 psi	Fy shear = 60000.0 psi
phi tens = 0.90	
phi comp = 0.75	phi shear = 0.90
Tens above = 0.005	Comp below = 0.002
Ec = 4266.2 ksi	Es = 29000.0 ksi
Crack check as per current LRFD	
Crack control Exposure = 1.00	
Concrete Type : Normal Weight.	
Design of cap at centerline of column.	

CAP GEOMETRY

Stepped Cap : Length(X) = 43.63 ft Depth(Z) = 36.00 in

Cap Section Properties

Sec.	Area ft ^2	Iz in ^4	Iy in ^4
1	13.83	507882.75	215083.50
2	13.27	449160.00	206452.38
3	12.72	395148.13	197821.00
4	12.16	345648.94	189189.75
5	11.61	300466.75	180558.50
6	11.05	259403.94	171927.25
7	10.50	222264.00	163296.00

MAIN REINFORCEMENT

	Bar size	Quantity	Bar dist. in	As total in^2	From ft	To ft	Hook
TOP	US#11[M36]	5	3.33	7.800	0.17	43.43	Both 90
BOTTOM	US#11[M36]	5	3.33	7.800	0.17	43.43	None

STIRRUPS

From ft	To ft	Stirrup Size	n legs	Spacing in	Aprv/s in^2 / ft	Bar Type
0.17	4.17	US#5[M16]	4	9.00	1.65	Stirrup
4.17	7.17	US#5[M16]	4	12.00	1.24	Stirrup
7.17	16.58	US#5[M16]	4	18.00	0.83	Stirrup
16.58	19.58	US#5[M16]	4	18.00	0.83	Stirrup
19.58	26.60	US#5[M16]	4	18.00	0.83	Stirrup
26.60	29.60	US#5[M16]	4	18.00	0.83	Stirrup
29.60	36.60	US#5[M16]	4	12.00	1.24	Stirrup
36.60	39.60	US#5[M16]	4	12.00	1.24	Stirrup
39.60	43.63	US#5[M16]	4	9.00	1.65	Stirrup

Clear Cover on Sides = 2.00 in

FLEXURE DESIGN

Span 1: From 0.00 ft To 5.67 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb-req in^2	Asb-prv in^2	Asb-eff in^2	Ast-req in^2	Ast-prv in^2	Ast-eff in^2
3.6	3.6	55	0.0	1758.7	0	T	3.86	51.99	0.037	0.90	0.71	7.80	7.80	0.71	7.80	7.80
			-16.5	-1758.7	1	T	3.86	51.99	0.037	0.90	0.71	7.80	7.80	0.71	7.80	7.80
4.3	4.3	55	0.0	1758.7	0	T	3.86	51.99	0.037	0.90	0.71	7.80	7.80	0.71	7.80	7.80
			-331.6	-1758.7	12	T	3.86	51.99	0.037	0.90	0.71	7.80	7.80	1.90	7.80	7.80
5.7	5.7	55	0.0	1758.7	0	T	3.86	51.99	0.037	0.90	0.71	7.80	7.80	0.71	7.80	7.80
			-875.9	-1758.7	12	T	3.86	51.99	0.037	0.90	0.71	7.80	7.80	3.81	7.80	7.80

Span 2: From 5.67 ft To 18.08 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb-req in^2	Asb-prv in^2	Asb-eff in^2	Ast-req in^2	Ast-prv in^2	Ast-eff in^2
0.0	5.7	55	0.0	1758.7	0	T	3.86	51.99	0.037	0.90	0.71	7.80	7.80	0.71	7.80	7.80
			-792.7	-1758.7	12	T	3.86	51.99	0.037	0.90	0.71	7.80	7.80	3.44	7.80	7.80
1.3	7.0	55	0.0	1758.7	0	T	3.86	51.99	0.037	0.90	0.71	7.80	7.80	0.71	7.80	7.80
			-521.8	-1758.7	12	T	3.86	51.99	0.037	0.90	0.71	7.80	7.80	3.01	7.80	7.80
1.5	7.2	53	0.0	1758.7	0	T	3.86	51.99	0.037	0.90	0.71	7.80	7.80	0.71	7.80	7.80
			-480.7	-1758.7	12	T	3.86	51.99	0.037	0.90	0.71	7.80	7.80	2.77	7.80	7.80
5.2	10.8	53	761.4	1680.8	16	T	3.86	49.77	0.036	0.90	3.46	7.80	7.80	0.70	7.80	7.80
			0.0	-1680.8	0	T	3.86	49.77	0.036	0.90	0.70	7.80	7.80	0.70	7.80	7.80
8.8	14.5	51	336.0	1680.8	18	T	3.86	49.77	0.036	0.90	2.02	7.80	7.80	0.70	7.80	7.80
			-122.5	-1680.8	59	T	3.86	49.77	0.036	0.90	0.70	7.80	7.80	0.73	7.80	7.80
11.1	16.8	51	141.4	1602.9	60	T	3.86	47.55	0.034	0.90	0.88	7.80	7.80	0.69	7.80	7.80
			-299.2	-1602.9	17	T	3.86	47.55	0.034	0.90	0.69	7.80	7.80	1.88	7.80	7.80
12.4	18.1	51	45.4	1602.9	56	T	3.86	47.55	0.034	0.90	0.69	7.80	7.80	0.69	7.80	7.80
			-432.9	-1602.9	19	T	3.86	47.55	0.034	0.90	0.69	7.80	7.80	2.73	7.80	7.80

Span 3: From 18.08 ft To 28.10 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb-req in^2	Asb-prv in^2	Asb-eff in^2	Ast-req in^2	Ast-prv in^2	Ast-eff in^2
0.0	18.1	51	77.6	1602.9	60	T	3.86	47.55	0.034	0.90	0.69	7.80	7.80	0.69	7.80	7.80
			-422.2	-1602.9	17	T	3.86	47.55	0.034	0.90	0.69	7.80	7.80	2.66	7.80	7.80
1.3	19.4	51	114.9	1602.9	56	T	3.86	47.55	0.034	0.90	0.72	7.80	7.80	0.69	7.80	7.80
			-256.0	-1602.9	19	T	3.86	47.55	0.034	0.90	0.69	7.80	7.80	1.60	7.80	7.80
3.0	21.1	49	190.4	1602.9	10	T	3.86	47.55	0.034	0.90	1.19	7.80	7.80	0.69	7.80	7.80
			-157.7	-1602.9	55	T	3.86	47.55	0.034	0.90	0.69	7.80	7.80	0.98	7.80	7.80
6.0	24.1	49	512.1	1525.0	10	T	3.86	45.33	0.032	0.90	3.04	7.80	7.80	0.67	7.80	7.80
			-83.8	-1525.0	50	T	3.86	45.33	0.032	0.90	0.67	7.80	7.80	0.67	7.80	7.80
8.7	26.8	49	31.7	1525.0	51	T	3.86	45.33	0.032	0.90	0.67	7.80	7.80	0.67	7.80	7.80
			-305.5	-1525.0	5	T	3.86	45.33	0.032	0.90	0.67	7.80	7.80	2.01	7.80	7.80
9.0	27.1	46	0.0	1525.0	0	T	3.86	45.33	0.032	0.90	0.67	7.80	7.80	0.67	7.80	7.80
			-351.4	-1525.0	5	T	3.86	45.33	0.032	0.90	0.67	7.80	7.80	2.32	7.80	7.80
10.0	28.1	46	0.0	1447.0	0	T	3.86	43.11	0.030	0.90	0.66	7.80	7.80	0.66	7.80	7.80
			-489.6	-1447.0	11	T	3.86	43.11	0.030	0.90	0.66	7.80	7.80	2.91	7.80	7.80

Span 4: From 28.10 ft To 38.10 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb-req in^2	Asb-prv in^2	Asb-eff in^2	Ast-req in^2	Ast-prv in^2	Ast-eff in^2
0.0	28.1	46	0.0	1447.0	0	T	3.86	43.11	0.030	0.90	0.66	7.80	7.80	0.66	7.80	7.80
			-448.5	-1447.0	5	T	3.86	43.11	0.030	0.90	0.66	7.80	7.80	2.91	7.80	7.80
1.3	29.4	46	141.6	1447.0	57	T	3.86	43.11	0.030	0.90	0.98	7.80	7.80	0.66	7.80	7.80
			-275.6	-1447.0	5	T	3.86	43.11	0.030	0.90	0.66	7.80	7.80	1.91	7.80	7.80
2.0	30.1	46	293.8	1447.0	57	T	3.86	43.11	0.030	0.90	2.04	7.80	7.80	0.66	7.80	7.80
			-189.9	-1447.0	5	T	3.86	43.11	0.030	0.90	0.66	7.80	7.80	1.31	7.80	7.80
5.0	33.1	44	138.2	1447.0	57	T	3.86	43.11	0.030	0.90	0.95	7.80	7.80	0.66	7.80	7.80
			-224.2	-1447.0	11	T	3.86	43.11	0.030	0.90	0.66	7.80	7.80	1.55	7.80	7.80
8.0	36.1	44	0.0	1369.1	0	T	3.86	40.89	0.029	0.90	0.64	7.80	7.80	0.64	7.80	7.80
			-280.6	-1369.1	11	T	3.86	40.89	0.029	0.90	0.64	7.80	7.80	2.05	7.80	7.80
8.7	36.8	44	0.0	1369.1	0	T	3.86	40.89	0.029	0.90	0.64	7.80	7.80	0.64	7.80	7.80
			-498.5	-1369.1	6	T	3.86	40.89	0.029	0.90	0.64	7.80	7.80	2.78	7.80	7.80
10.0	38.1	44	0.0	1369.1	0	T	3.86	40.89	0.029	0.90	0.64	7.80	7.80	0.64	7.80	7.80
			-949.8	-1369.1	6	T	3.86	40.89	0.029	0.90	0.64	7.80	7.80	5.33	7.80	7.80

Span 5: From 38.10 ft To 43.63 ft

Loc ft	AbsLoc ft	H in	Mmax Mmin kips-ft	Mr kips-ft	Comb	CL	c	dt in	eps_t	Phi	Asb-req in^2	Asb-prv in^2	Asb-eff in^2	Ast-req in^2	Ast-prv in^2	Ast-eff in^2
0.0	38.1	44	0.0	1369.1	0	T	3.86	40.89	0.029	0.90	0.64	7.80	7.80	0.64	7.80	7.80
			-1090.7	-1369.1	6	T	3.86	40.89	0.029	0.90	0.64	7.80	7.80	6.15	7.80	7.80
1.0	39.1	42	0.0	1369.1	0	T	3.86	40.89	0.029	0.90	0.64	7.80	7.80	0.64	7.80	7.80
			-810.0	-1369.1	6	T	3.86	40.89	0.029	0.90	0.64	7.80	7.80	4.52	7.80	7.80
1.3	39.4	42	0.0	1291.2	0	T	3.86	38.67	0.027	0.90	0.63	7.80	7.80	0.63	7.80	7.80
			-727.4	-1291.2	6	T	3.86	38.67	0.027	0.90	0.63	7.80	7.80	4.30	7.80	7.80
4.0	42.1	42	0.0	1291.2	0	T	3.86	38.67	0.027	0.90	0.63	7.80	7.80	0.63	7.80	7.80
			-2.6	-1291.2	1	T	3.86	38.67	0.027	0.90	0.63	7.80	7.80	0.63	7.80	7.80

Flexure Design : Notes

CL: Section classification as per LRFD 2006 interims for provided reinforcement.
C = Compression controlled, I = In-Transition, T = Tension controlled.
Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

SHEAR AND TORSION DESIGN:

Span 1: From 0.00 ft To 5.67 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta	Theta deg	b in	dv in	Eps_s
3.56	3.56	L	9.2	1	0.0	0	1134.4	102.6	0.00	0.00	0.00	1.65	0.00	518.48	741.95	4.52	29.29	36.00	50.35	0.0001
		R	405.7	12	6.7	12	556.7	102.6	1.06	0.00	1.06	1.65	0.00	149.11	469.45	1.30	41.55	36.00	50.35	0.0036
4.34	4.34	L	407.7	12	6.7	12	450.0	102.6	1.07	0.00	1.07	1.24	0.00	148.57	351.39	1.30	41.62	36.00	50.35	0.0036

Span 2: From 5.67 ft To 18.08 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta	Theta deg	b in	dv in	Eps_s
1.33	7.00	R	272.4	16	64.7	20	544.3	103.0	0.46	0.00	0.46	1.24	0.00	196.52	408.28	1.71	37.40	36.00	50.35	0.002
1.53	7.20	L	271.9	16	64.7	20	422.3	103.0	0.46	0.00	0.46	0.83	0.00	196.76	272.46	1.72	37.38	36.00	50.35	0.002
		R	271.9	16	64.7	20	403.7	97.3	0.46	0.00	0.46	0.83	0.00	188.09	260.45	1.72	37.38	36.00	48.13	0.002
5.16	10.82	L	262.9	16	64.7	20	409.8	97.3	0.46	0.00	0.46	0.83	0.00	192.20	263.09	1.75	37.10	36.00	48.13	0.002
		R	121.5	16	58.0	20	498.6	96.3	0.46	0.00	0.46	0.83	0.00	257.49	296.53	2.35	33.87	36.00	48.13	0.001
8.79	14.46	L	130.6	16	58.0	20	527.2	96.3	0.46	0.00	0.46	0.83	0.00	280.33	305.40	2.56	33.09	36.00	48.13	0.001
		R	130.6	16	58.0	20	502.8	90.6	0.46	0.00	0.46	0.83	0.00	267.40	291.31	2.56	33.09	36.00	45.91	0.001
11.09	16.75	L	136.1	16	58.0	20	496.6	90.6	0.46	0.00	0.46	0.83	0.00	262.33	289.44	2.51	33.26	36.00	45.91	0.001

Span 3: From 18.08 ft To 28.10 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta	Theta deg	b in	dv in	Eps_s
1.33	19.41	L	132.8	9	157.6	20	433.0	91.6	0.23	0.11	0.46	0.83	0.00	267.81	213.27	2.56	33.08	36.00	45.91	0.0012
		R	132.8	9	157.6	20	433.0	91.6	0.23	0.11	0.46	0.83	0.00	267.81	213.27	2.56	33.08	36.00	45.91	0.0012
3.02	21.10	L	128.7	9	157.6	20	437.7	91.6	0.23	0.11	0.46	0.83	0.00	271.68	214.66	2.60	32.95	36.00	45.91	0.0011
		R	128.7	9	157.6	20	413.2	86.0	0.22	0.12	0.46	0.83	0.00	258.54	200.53	2.60	32.95	36.00	43.69	0.0011
6.01	24.09	L	121.9	30	135.8	41	420.0	86.0	0.25	0.10	0.46	0.83	0.00	256.20	210.51	2.58	33.03	36.00	43.69	0.0012
		R	212.8	31	129.1	41	346.0	84.7	0.25	0.11	0.46	0.83	0.00	196.70	187.73	1.98	35.66	36.00	43.69	0.0019
8.69	26.77	L	218.9	31	129.1	41	341.5	84.7	0.24	0.11	0.46	0.83	0.00	193.47	185.98	1.95	35.85	36.00	43.69	0.0020
		R	218.9	31	129.1	41	341.5	84.7	0.24	0.11	0.46	0.83	0.00	193.47	185.98	1.95	35.85	36.00	43.69	0.0020

Span 4: From 28.10 ft To 38.10 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta	Theta deg	b in	dv in	Eps_s
1.33	29.43	R	253.2	36	62.1	41	358.5	80.2	0.46	0.00	0.46	0.83	0.00	169.31	229.00	1.79	36.82	36.00	41.47	0.0022
2.00	30.10	L	251.8	36	62.1	41	462.5	80.2	0.46	0.00	0.46	1.24	0.00	169.93	343.93	1.80	36.78	36.00	41.47	0.0022
		R	53.2	36	55.4	83	658.7	79.2	0.00	0.00	0.00	1.24	0.00	307.54	424.35	3.26	31.21	36.00	41.47	0.0006
5.02	33.12	L	59.7	36	55.4	41	670.6	79.2	0.00	0.00	0.00	1.24	0.00	317.22	427.88	3.36	31.00	36.00	41.47	0.0006
		R	59.7	36	55.4	41	631.6	73.8	0.00	0.00	0.00	1.24	0.00	297.70	404.06	3.33	31.06	36.00	39.25	0.0006
8.01	36.12	L	65.9	36	55.4	41	612.7	73.8	0.00	0.00	0.00	1.24	0.00	282.46	398.34	3.16	31.42	36.00	39.25	0.0007
		R	359.2	3	49.4	20	372.9	73.8	1.17	0.00	1.17	1.24	0.00	126.26	288.09	1.41	40.19	36.00	39.25	0.0032
8.67	36.77	L	360.6	3	49.4	20	372.2	73.8	1.18	0.00	1.18	1.24	0.18	125.93	287.66	1.41	40.23	36.00	39.25	0.0032

Span 5: From 38.10 ft To 43.63 ft

Loc ft	AbsLoc ft	Pos	Vu kips	Comb	Tu kips-ft	Comb	phi*Vn kips	T-lim kips-ft	Avs/s in^2/ft	Ats/s in^2/ft	Av/s in^2/ft	Aprv/s in^2/ft	Alx in^2	Vc kips	Vs kips	Beta	Theta deg	b in	dv in	Eps_s
1.33	39.43	R	271.9	6	6.7	6	400.0	69.2	0.65	0.00	0.65	1.24	0.00	144.34	300.08	1.71	37.42	36.00	37.03	0.0024
4.02	42.13	L	266.6	6	6.7	6	493.7	69.2	0.62	0.00	0.62	1.65	0.00	146.17	402.41	1.73	37.25	36.00	37.03	0.0024
		R	3.0	1	0.0	0	852.2	69.2	0.00	0.00	0.00	1.65	0.00	396.87	550.02	4.71	29.09	36.00	37.03	0.0000

Shear and Torsion Design : Notes

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

Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

CRACKING/FATIGUE CHECK

Span 1: From 0.00 ft To 5.67 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking fs-t fs-b ksi	Cracking dc in	Cracking Srqt Srqb in	Cracking Sprt Sprb in	Fatigue stress range fs-t fs-b ksi	Fatigue threshold FTH-t FTH-b ksi
3.56	3.6	55.3	1633	0.4	2.7	36.0	7.3	0.00	25.85
			0	0.0	2.7	5.0	7.3	0.00	26.15
4.34	4.3	55.3	1644	6.9	2.7	36.0	7.3	2.75	28.20
			0	0.0	2.7	5.0	7.3	2.75	28.20
5.67	5.7	55.3	1644	18.1	2.7	30.6	7.3	7.45	23.00
			0	0.0	2.7	5.0	7.3	7.45	31.73

Span 2: From 5.67 ft To 18.08 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking fs-t fs-b ksi	Cracking dc in	Cracking Srqt Srqb in	Cracking Sprt Sprb in	Fatigue stress range fs-t fs-b ksi	Fatigue threshold FTH-t FTH-b ksi
0.00	5.7	55.3	2064	16.6	2.7	33.9	7.3	6.90	31.28
			0	0.0	2.7	5.0	7.3	6.90	23.25
1.33	7.0	55.3	2064	10.7	2.7	36.0	7.3	5.67	29.35
			0	0.0	2.7	5.0	7.3	5.67	29.35
1.53	7.2	53.1	2064	10.2	2.7	36.0	7.3	5.94	29.21
			0	0.0	2.7	5.0	7.3	5.68	29.06
5.16	10.8	53.1	0	0.0	2.7	5.0	7.3	7.03	30.29
			1690	16.1	2.7	34.9	7.3	7.03	30.29
8.79	14.5	50.9	1691	1.7	2.7	36.0	7.3	5.48	27.98
			2070	7.1	2.7	36.0	7.3	5.75	28.07
11.09	16.8	50.9	1691	6.5	2.7	36.0	7.3	4.84	27.40
			2070	2.0	2.7	36.0	7.3	4.84	27.40
12.42	18.1	50.9	1693	9.8	2.7	36.0	7.3	4.97	25.34
			0	0.0	2.7	5.0	7.3	4.97	28.49

Span 3: From 18.08 ft To 28.10 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking fs-t fs-b ksi	Cracking dc in	Cracking Srqt Srqb in	Cracking Sprt Sprb in	Fatigue stress range fs-t fs-b ksi	Fatigue threshold FTH-t FTH-b ksi
0.00	18.1	50.9	2069	9.3	2.7	36.0	7.3	5.19	28.24
			1692	0.3	2.7	36.0	7.3	5.19	25.67
1.33	19.4	50.9	2071	5.5	2.7	36.0	7.3	4.38	27.44
			1688	1.7	2.7	36.0	7.3	4.38	27.44
3.02	21.1	48.7	2065	3.2	2.7	36.0	7.3	4.18	26.90
			1684	4.1	2.7	36.0	7.3	4.18	26.63
6.01	24.1	48.7	1682	0.2	2.7	36.0	7.3	7.36	29.34
			2062	11.6	2.7	36.0	7.3	7.36	29.34
8.69	26.8	48.7	1679	7.4	2.7	36.0	7.3	3.67	27.87
			0	0.0	2.7	5.0	7.3	3.67	27.87
9.03	27.1	46.4	1679	9.1	2.7	36.0	7.3	3.47	28.31
			0	0.0	2.7	5.0	7.3	3.30	28.20
10.02	28.1	46.4	1685	12.9	2.7	36.0	7.3	2.56	23.59
			0	0.0	2.7	5.0	7.3	2.56	29.35

Span 4: From 28.10 ft To 38.10 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking fs-t fs-b ksi	Cracking dc in	Cracking Srqt Srqb in	Cracking Sprt Sprb in	Fatigue stress range fs-t fs-b ksi	Fatigue threshold FTH-t FTH-b ksi
0.00	28.1	46.4	2057	11.6	2.7	36.0	7.3	2.68	29.27
			0	0.0	2.7	5.0	7.3	2.68	23.71
1.33	29.4	46.4	2057	6.7	2.7	36.0	7.3	4.95	27.54
			1689	2.1	2.7	36.0	7.3	4.95	27.54
2.00	30.1	46.4	2057	4.3	2.7	36.0	7.3	6.32	27.59
			1689	6.4	2.7	36.0	7.3	6.32	27.59
5.02	33.1	44.2	1685	5.9	2.7	36.0	7.3	4.55	26.30
			2067	2.2	2.7	36.0	7.3	4.55	27.37
8.01	36.1	44.2	1685	8.1	2.7	36.0	7.3	3.17	28.39
			0	0.0	2.7	5.0	7.3	3.17	28.39
8.67	36.8	44.2	1680	14.0	2.7	36.0	7.3	4.62	30.27
			0	0.0	2.7	5.0	7.3	4.62	30.27
10.00	38.1	44.2	1680	26.3	2.7	19.0	7.3	9.17	21.28
			0	0.0	2.7	5.0	7.3	9.17	34.08

Span 5: From 38.10 ft To 43.63 ft

Loc ft	AbsLoc ft	H in	Cracking Comb	Cracking fs-t fs-b ksi	Cracking dc in	Cracking Srqt Srqb in	Cracking Sprt Sprb in	Fatigue stress range fs-t fs-b ksi	Fatigue threshold FTH-t FTH-b ksi
0.00	38.1	44.2	1638	29.5	2.7	16.3	7.3	10.24	35.22
			0	0.0	2.7	5.0	7.3	10.24	20.54
1.03	39.1	42.0	1638	23.2	2.7	22.2	7.3	8.09	33.24
			0	0.0	2.7	5.0	7.3	7.63	32.84
1.33	39.4	42.0	1638	20.9	2.7	25.2	7.3	7.27	32.50
			0	0.0	2.7	5.0	7.3	7.27	32.50
4.02	42.1	42.0	1633	0.1	2.7	36.0	7.3	0.00	25.97
			0	0.0	2.7	5.0	7.3	0.00	26.03

Cracking and fatigue Check : Notes

* Cracking / fatigue checking failed.
Required bar spacing, Sreq, should not be less than 5 in per Art. 5.7.3.4.
Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

COLUMN DESIGN - Column: 1

Code: AASHTO LRFD 9
Units: US
Pier View: Downstation.
Design/Analysis Method: P - Delta.

Column Type: Round D = 36.00 in

Column Section Properties

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

DESIGN PARAMETERS

f'c = 4000.0 psi	fy = 60000.0 psi
phi tens = 0.90	phi comp = 0.75
Tens above = 0.005	Comp below = 0.002
phi shear = 0.90	fy shear = 60000.00 psi
Ec = 4266.2 ksi	Es = 29000 ksi
Concrete Type : Normal Weight.	

Reinforcement

Rebar Pattern: Circular
Rebar Orientation: Face Parallel

Main Reinforcement Schedule

Layer	Size	No. bars	Bar Dist. in	From ft	To ft	Hook
1	US#11[M36]	10	2.00	0.00	23.30	None

Note:

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

Lateral Reinforcement Schedule

Layer	Size	Type	Pitch in	From ft	To ft
1	US#4[M13]	Ties	4.50	0.00	23.20

Design values used after P-Delta Analysis (e-min effect included).

Loc ft	Comb	Fx kips	Fy kips	Fz kips	Mx kips-ft	My kips-ft	Mz kips-ft
622.00	1	-0.7	665.8	-6.0	-209.3	0.8	93.2
645.30	1	0.7	637.2	6.0	89.2	0.8	89.2
622.00	879	-3.5	192.2	-8.1	-224.5	1.4	37.7
645.30	879	2.6	171.7	6.7	49.8	1.4	32.7

COLUMN DESIGN

Bot/Top Elev. ft	Comb	Pu kips	Mux kips-ft	Muz kips-ft	pMn kips-ft	Incl deg	pPn/Pu	pMn/Mu
622.00	879	192.2	224.5	37.7	1114.3	9.53	1.00	4.89415
645.30	1	637.2	89.2	89.2	1369.7	45.00	1.00	10.85650

COLUMN DESIGN

Bot/Top Elev. ft	As_min in^2	As_max in^2	As_prov in^2
622.00	9.16	81.43	15.60
645.30	9.16	81.43	15.60

SHEAR DESIGN:

Loc ft	Pos	Vu kips	Comb	phi*Vn kips	Av/s in^2/ft	Aprv/s in^2/ft	Vc kips	Vs kips	Beta	Theta deg	b in	dv in	Eps_s	Smax in	Sprv in
622.00	L	10.4	122	549.4	0.00	1.07	355.72	254.77	6.16	27.97	36.00	25.37	-0.0003	20.29	4.50
645.30	R	8.9	2	356.4	0.00	**0.00**	396.05	0.00	6.86	27.60	36.00	25.37	-0.0004	20.29	0.00

Column Design : Notes

Min reinforcement = 0.9000 % of Ag.
Shear Design : Notes
- Pos is the design position. L suggests the calculation is done at immediate left of "Loc" and R suggests at immediate right of it.
- Av/s is the total required area of steel per unit length due to shear plus torsion.
- Aprvs/s is the total provided area of transverse steel reinforcement.
- Vc is the nominal shear resistence of concrete.
- Vs is the nominal shear resistence of transverse reinforcement.
- Beta is the factor indicating ability of diagonally cracked concrete to transmit tension and shear.
- Theta is the angle of inclination of diagonal compressive stress.
- # Vu is greater tha phi*Vn.

Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

COLUMN DESIGN - Column: 2

Code: AASHTO LRFD 9
Units: US
Pier View: Downstation.
Design/Analysis Method: P - Delta.

Column Type: Round D = 36.00 in

Column Section Properties

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

DESIGN PARAMETERS

f'c = 4000.0 psi	fy = 60000.0 psi
phi tens = 0.90	phi comp = 0.75
Tens above = 0.005	Comp below = 0.002
phi shear = 0.90	fy shear = 60000.00 psi
Ec = 4266.2 ksi	Es = 29000 ksi
Concrete Type : Normal Weight.	

Reinforcement

Rebar Pattern: Circular
Rebar Orientation: Face Parallel

Main Reinforcement Schedule

Layer	Size	No. bars	Bar Dist. in	From ft	To ft	Hook
1	US#11[M36]	10	2.00	0.00	23.30	None

Note:

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

Lateral Reinforcement Schedule

Layer	Size	Type	Pitch in	From ft	To ft
1	US#4[M13]	Ties	4.50	0.00	23.20

Design values used after P-Delta Analysis (e-min effect included).

Loc ft	Comb	Fx kips	Fy kips	Fz kips	Mx kips-ft	My kips-ft	Mz kips-ft
622.00	50	-5.0	260.3	-4.5	-195.8	0.9	46.5
645.30	50	5.0	239.7	4.5	86.5	0.9	70.0
622.00	878	-4.3	205.3	-7.0	-217.3	0.8	39.5
645.30	878	3.5	184.7	5.5	69.9	0.8	50.5

COLUMN DESIGN

Bot/Top Elev. ft	Comb	Pu kips	Mux kips-ft	Muz kips-ft	pMn kips-ft	Incl deg	pPn/Pu	pMn/Mu
622.00	878	205.3	217.3	39.5	1124.0	10.31	1.00	5.09002
645.30	50	239.7	86.5	70.0	1154.1	38.99	1.00	10.37373

COLUMN DESIGN

Bot/Top Elev. ft	As_min in^2	As_max in^2	As_prov in^2
622.00	9.16	81.43	15.60
645.30	9.16	81.43	15.60

SHEAR DESIGN:

Loc ft	Pos	Vu kips	Comb	phi*Vn kips	Av/s in^2/ft	Aprv/s in^2/ft	Vc kips	Vs kips	Beta	Theta deg	b in	dv in	Eps_s	Smax in	Sprv in
622.00	L	10.4	317	509.5	0.00	1.07	316.15	249.95	5.47	28.43	36.00	25.37	-0.0002	20.29	4.50
645.30	R	8.7	317	296.1	0.00	0.00	329.05	0.00	5.70	28.27	36.00	25.37	-0.0002	20.29	0.00

Column Design : Notes

Min reinforcement = 0.9000 % of Ag.
Shear Design : Notes
- Pos is the design position. L suggests the calculation is done at immediate left of "Loc" and R suggests at immediate right of it.
- Av/s is the total required area of steel per unit length due to shear plus torsion.
- Aprvs/s is the total provided area of transverse steel reinforcement.
- Vc is the nominal shear resistence of concrete.
- Vs is the nominal shear resistence of transverse reinforcement.
- Beta is the factor indicating ability of diagonally cracked concrete to transmit tension and shear.
- Theta is the angle of inclination of diagonal compressive stress.
- # Vu is greater tha phi*Vn.

Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

COLUMN DESIGN - Column: 3

Code: AASHTO LRFD 9
Units: US
Pier View: Downstation.
Design/Analysis Method: P - Delta.

Column Type: Round D = 36.00 in

Column Section Properties

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

DESIGN PARAMETERS

f'c = 4000.0 psi	fy = 60000.0 psi
phi tens = 0.90	phi comp = 0.75
Tens above = 0.005	Comp below = 0.002
phi shear = 0.90	fy shear = 60000.00 psi
Ec = 4266.2 ksi	Es = 29000 ksi
Concrete Type : Normal Weight.	

Reinforcement

Rebar Pattern: Circular
Rebar Orientation: Face Parallel

Main Reinforcement Schedule

Layer	Size	No. bars	Bar Dist. in	From ft	To ft	Hook
1	US#11[M36]	10	3.45	0.00	23.30	None

Note:

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

Lateral Reinforcement Schedule

Layer	Size	Type	Pitch in	From ft	To ft
1	US#4[M13]	Spiral	4.50	0.00	23.20

Design values used after P-Delta Analysis (e-min effect included).

Loc ft	Comb	Fx kips	Fy kips	Fz kips	Mx kips-ft	My kips-ft	Mz kips-ft
622.00	62	-1.4	292.3	-5.3	-219.3	0.1	40.9
645.30	62	1.4	271.8	5.3	89.6	0.1	38.0
622.00	878	-1.1	173.8	-7.7	-224.1	1.0	24.3
645.30	878	0.3	153.2	6.3	59.0	1.0	21.4

COLUMN DESIGN

Bot/Top Elev. ft	Comb	Pu kips	Mux kips-ft	Muz kips-ft	pMn kips-ft	Incl deg	pPn/Pu	pMn/Mu
622.00	878	173.8	224.1	24.3	1045.5	6.20	1.00	4.63760
645.30	62	271.8	89.6	38.0	1112.3	23.00	1.00	11.42403

COLUMN DESIGN

Bot/Top Elev. ft	As_min in^2	As_max in^2	As_prov in^2
622.00	9.16	81.43	15.60
645.30	9.16	81.43	15.60

SHEAR DESIGN:

Loc ft	Pos	Vu kips	Comb	phi*Vn kips	Av/s in^2/ft	Aprv/s in^2/ft	Vc kips	Vs kips	Beta	Theta deg	b in	dv in	Eps_s	Smax in	Sprv in
622.00	L	9.6	85	452.7	0.00	1.07	267.14	235.91	4.78	29.02	36.00	24.54	0.0000	19.63	4.50
645.30	R	7.8	320	288.9	0.00	**0.00**	320.99	0.00	5.75	28.23	36.00	24.54	-0.0002	19.63	0.00

Column Design : Notes

Min reinforcement = 0.9000 % of Ag.
Shear Design : Notes
- Pos is the design position. L suggests the calculation is done at immediate left of "Loc" and R suggests at immediate right of it.
- Av/s is the total required area of steel per unit length due to shear plus torsion.
- Aprvs/s is the total provided area of transverse steel reinforcement.
- Vc is the nominal shear resistence of concrete.
- Vs is the nominal shear resistence of transverse reinforcement.
- Beta is the factor indicating ability of diagonally cracked concrete to transmit tension and shear.
- Theta is the angle of inclination of diagonal compressive stress.
- # Vu is greater tha phi*Vn.

Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

COLUMN DESIGN - Column: 4

Code: AASHTO LRFD 9
Units: US
Pier View: Downstation.
Design/Analysis Method: P - Delta.

Column Type: Round D = 36.00 in

Column Section Properties

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

DESIGN PARAMETERS

f'c = 4000.0 psi	fy = 60000.0 psi
phi tens = 0.90	phi comp = 0.75
Tens above = 0.005	Comp below = 0.002
phi shear = 0.90	fy shear = 60000.00 psi
Ec = 4266.2 ksi	Es = 29000 ksi
Concrete Type : Normal Weight.	

Reinforcement

Rebar Pattern: Circular
Rebar Orientation: Face Parallel

Main Reinforcement Schedule

Layer	Size	No. bars	Bar Dist. in	From ft	To ft	Hook
1	US#11[M36]	10	3.45	0.00	23.30	None

Note:

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

Lateral Reinforcement Schedule

Layer	Size	Type	Pitch in	From ft	To ft
1	US#4[M13]	Spiral	4.50	0.00	23.20

Design values used after P-Delta Analysis (e-min effect included).

Loc ft	Comb	Fx kips	Fy kips	Fz kips	Mx kips-ft	My kips-ft	Mz kips-ft
622.00	2	8.9	580.0	-7.0	-219.5	1.5	-81.2
645.30	2	-8.9	551.4	7.0	77.2	1.5	-144.0
622.00	1423	4.2	192.7	-9.1	-235.7	1.4	-36.3
645.30	1423	-3.4	172.2	7.6	37.9	1.4	-51.3

COLUMN DESIGN

Bot/Top Elev. ft	Comb	Pu kips	Mux kips-ft	Muz kips-ft	pMn kips-ft	Incl deg	pPn/Pu	pMn/Mu
622.00	1423	192.7	235.7	36.3	1058.0	8.74	1.00	4.43643
645.30	2	551.4	77.2	144.0	1262.9	61.81	1.00	7.72798

COLUMN DESIGN

Bot/Top Elev. ft	As_min in^2	As_max in^2	As_prov in^2
622.00	9.16	81.43	15.60
645.30	9.16	81.43	15.60

SHEAR DESIGN:

Loc ft	Pos	Vu kips	Comb	phi*Vn kips	Av/s in^2/ft	Aprv/s in^2/ft	Vc kips	Vs kips	Beta	Theta deg	b in	dv in	Eps_s	Smax in	Sprv in
622.00	L	12.6	668	523.3	0.00	1.07	335.94	245.51	6.01	28.06	36.00	24.54	-0.0003	19.63	4.50
645.30	R	11.4	2	344.8	0.00	**0.00**	383.08	0.00	6.86	27.60	36.00	24.54	-0.0004	19.63	0.00

Column Design : Notes

Min reinforcement = 0.9000 % of Ag.
Shear Design : Notes
- Pos is the design position. L suggests the calculation is done at immediate left of "Loc" and R suggests at immediate right of it.
- Av/s is the total required area of steel per unit length due to shear plus torsion.
- Aprvs/s is the total provided area of transverse steel reinforcement.
- Vc is the nominal shear resistence of concrete.
- Vs is the nominal shear resistence of transverse reinforcement.
- Beta is the factor indicating ability of diagonally cracked concrete to transmit tension and shear.
- Theta is the angle of inclination of diagonal compressive stress.
- # Vu is greater tha phi*Vn.

Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

ISOLATED FOOTING DESIGN

Code: AASHTO LRFD 9
Units: US
Pier View: Downstation.

GEOMETRY

Name : footing1
Shape : Rectangular, Type : Spread
Bf(X) = 8.00 ft, Hf(Z) = 8.00 ft, Thickness(Y) = 36.00 in
Ag = 64.00 ft^2, Ix = 341.33 ft^4, Iz = 341.33 ft^4
Footing concentric.
Columns located on the footing:
Column No. 1 at x = 0.00 ft, Round D = 36.00 in

DESIGN PARAMETERS

f'c = 4000.00 psi	fy = 60000.00 psi
phi tens = 0.90	
phi comp = 0.75	phi shear = 0.90
Tens above = 0.005	Comp below = 0.002
Ec = 4266.2 ksi	Es = 29000.0 ksi
Crack check as per current LRFD	
Crack control Exposure = 1.00	
Concrete Type : Normal Weight.	

Reinforcement Schedule

Dir	Quantity	Size	Bar dist. in	As total in^2	Spacing in	Hook
X	15	US#5[M16]	4.00	4.65	6.38	None
X	15	US#4[M13]	32.00	3.00	6.39	None
Z	11	US#7[M22]	3.00	6.60	8.91	None
Z	11	US#4[M13]	33.00	2.20	8.95	None

Max Soil Pressures, Service

Corner	X ft	Z ft	comb	Ovs	P kips	Mxx kft	Mzz kft	Soil press. ksf
1	-4.00	-4.00	2200	1.000	-437.81	245.50	-2.03	3.94
			1635	1.000	-247.56	378.40	-42.67	**-1.07***
2	4.00	-4.00	1990	1.000	-436.46	245.50	-24.90	4.23
			2187	1.000	-251.94	364.00	-1.02	**-0.32***
3	4.00	4.00	1633	1.000	-436.46	378.40	-24.90	11.55
			2208	1.000	-251.94	259.90	-1.02	6.99
4	-4.00	4.00	2179	1.000	-437.81	378.40	-2.03	11.25
			1992	1.000	-247.56	245.50	-42.67	6.24

Max Soil Pressures, Factored

Corner	X ft	Z ft	comb	Ovs	P kips	Mxx kft	Mzz kft	Soil press. ksf
1	-4.000	-4.000	22	---	-638.33	92.95	-6.82	8.80
			879	---	-219.96	244.29	-44.61	0.05
2	4.000	-4.000	22	---	-638.33	92.95	-6.82	8.96
			1431	---	-225.81	224.84	10.57	0.77
3	4.000	4.000	1	---	-638.33	219.00	-6.82	12.62
			1452	---	-225.81	87.11	10.57	4.43
4	-4.000	4.000	1	---	-638.33	219.00	-6.82	12.46
			1236	---	-219.96	67.66	-44.61	3.71

Footing Design : Notes

* Negative pressure values indicates uplift of footing cap.
Only max. positive pressure is considered for design.
Load effects (P, Mxx and Mzz) are reported at bottom of the footing.
Soil pressure are calculated based on the load effects at bottom of the footing.
Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

Max. Soil Pressure Used in Design:

Factored soil pressure	12.62 ksf	Comb 1
Service soil pressure	11.55 ksf	Comb 1633
Fatigue soil pressure	2.19 ksf	Comb 0

Flexure

Dir	Loc ft	d in	Mmax kft	Comb	CL	Asb_req in^2	Asb_prv in^2	Asb_eff in^2	Ast_req in^2	Ast_prv in^2	Ast_eff in^2
X	-1.33	32.00	348.5	1	T	3.25	4.65	3.65	2.27	3.00	2.72
X	1.33	32.00	348.5	1	T	3.25	4.65	3.65	2.27	3.00	2.72
Z	-1.33	33.00	348.5	1	T	3.15	6.60	5.41	2.27	2.20 *	1.46 *
Z	1.33	33.00	348.5	1	T	3.15	6.60	5.41	2.27	2.20 *	1.46 *

Flexure Note

CL: Section classification as per LRFD 2006 interims for provided reinforcement.
C = Compression controlled, I = In-Transition, T = Tension controlled.
Required reinforcement is based on phi for tension controlled sections..
* The provided reinforcement is not adequate, either less than required or larger than maximum allowed.
Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

Crack control and fatigue check

Cracking/Fatigue

Dir	Loc ft	d in	Service Mmax kft	Service Comb	Service fs ksi	Service Srq in	Service Spr in	Fatigue fs ksi	Fatigue FTH ksi
X	-1.33	32.00	316.6	1633	39.68**	13.1	6.4	0.91	19.77
X	1.33	32.00	316.6	1633	39.68**	13.1	6.4	0.91	19.77
Z	-1.33	33.00	316.6	1633	38.05**	12.7	8.9	0.60	21.90
Z	1.33	33.00	316.6	1633	38.05**	12.7	8.9	0.60	21.90

Cracking/Fatigue Note

** Stress (fs) is higher than steel yield strength (0.6*fy).
Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

One Way Shear (Beta-Theta Method)

Col	Dir	Dist ft	Comb	dv in	Vu kips	Mu kft	theta deg	beta	phi*Vc kips
1	X	-4.00	1	32.00	17.1	1.5	50.00	0.87	152.6
	X	4.00	1	32.0	17.1	1.5	50.00	0.87	152.6
	Z	-4.03	Outside of Footing	---	---	---	---	---	---
	Z	4.03	Outside of Footing	---	---	---	---	---	---

One Way Shear Note

Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

Two Way Shear

#	Bo ft	Ao ft^2	Comb	Avg. dv in	Vu kips	phi*Vc kips
Columns						
1	17.85	25.37	1	32.20	487.6	1564.5

Two Way Shear Note

TWO WAY SHEAR IN FOOTING IS NOT DESIGNED AND STIRRUPS ARE NOT CONSIDERED.
Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

ISOLATED FOOTING DESIGN

Code: AASHTO LRFD 9
Units: US
Pier View: Downstation.

GEOMETRY

Name : footing2
Shape : Rectangular, Type : Spread
Bf(X) = 8.00 ft, Hf(Z) = 8.00 ft, Thickness(Y) = 36.00 in
Ag = 64.00 ft^2, Ix = 341.33 ft^4, Iz = 341.33 ft^4
Footing concentric.
Columns located on the footing:
Column No. 2 at x = 0.00 ft, Round D = 36.00 in

DESIGN PARAMETERS

f'c = 4000.00 psi	fy = 60000.00 psi
phi tens = 0.90	
phi comp = 0.75	phi shear = 0.90
Tens above = 0.005	Comp below = 0.002
Ec = 4266.2 ksi	Es = 29000.0 ksi
Crack check as per current LRFD	
Crack control Exposure = 1.00	
Concrete Type : Normal Weight.	

Reinforcement Schedule

Dir	Quantity	Size	Bar dist. in	As total in^2	Spacing in	Hook
X	15	US#5[M16]	4.00	4.65	6.38	None
X	15	US#4[M13]	32.00	3.00	6.39	None
Z	11	US#7[M22]	3.00	6.60	8.91	None
Z	11	US#4[M13]	33.00	2.20	8.95	None

Max Soil Pressures, Service

Corner	X ft	Z ft	comb	Ovs	P kips	Mxx kft	Mzz kft	Soil press. ksf
1	-4.00	-4.00	2203	1.000	-384.03	265.58	-5.44	2.82
			1638	1.000	-227.24	364.68	-52.50	**-1.34***
2	4.00	-4.00	1993	1.000	-384.08	265.58	-29.02	3.23
			2199	1.000	-232.71	364.68	-18.58	**-0.42***
3	4.00	4.00	1636	1.000	-384.08	374.51	-29.02	10.73
			2220	1.000	-232.71	275.42	-18.58	7.08
4	-4.00	4.00	2182	1.000	-384.03	374.51	-5.44	10.33
			1995	1.000	-227.24	275.42	-52.50	6.16

Max Soil Pressures, Factored

Corner	X ft	Z ft	comb	Ovs	P kips	Mxx kft	Mzz kft	Soil press. ksf
1	-4.000	-4.000	25	---	-555.74	116.99	-11.26	7.18
			882	---	-202.07	218.90	-56.08	**-0.07***
2	4.000	-4.000	25	---	-555.74	116.99	-11.26	7.44
			120	---	-209.33	217.47	6.15	0.65
3	4.000	4.000	4	---	-555.74	203.06	-11.26	11.20
			112	---	-209.33	102.57	6.15	4.40
4	-4.000	4.000	4	---	-555.74	203.06	-11.26	10.93
			1239	---	-202.07	101.15	-56.08	3.69

Footing Design : Notes

* Negative pressure values indicates uplift of footing cap.
Only max. positive pressure is considered for design.
Load effects (P, Mxx and Mzz) are reported at bottom of the footing.
Soil pressure are calculated based on the load effects at bottom of the footing.
Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

Max. Soil Pressure Used in Design:

Factored soil pressure	11.20 ksf	Comb 4
Service soil pressure	10.73 ksf	Comb 1636
Fatigue soil pressure	1.46 ksf	Comb 0

Flexure

Dir	Loc ft	d in	Mmax kft	Comb	CL	Asb_req in^2	Asb_prv in^2	Asb_eff in^2	Ast_req in^2	Ast_prv in^2	Ast_eff in^2
X	-1.33	32.00	307.8	4	T	2.87	4.65	4.13	2.27	3.00	2.72
X	1.33	32.00	307.8	4	T	2.87	4.65	4.13	2.27	3.00	2.72
Z	-1.33	33.00	307.8	4	T	2.78	6.60	6.13	2.27	**2.20 ***	**1.46 ***
Z	1.33	33.00	307.8	4	T	2.78	6.60	6.13	2.27	**2.20 ***	**1.46 ***

Flexure Note

CL: Section classification as per LRFD 2006 interims for provided reinforcement.
C = Compression controlled, I = In-Transition, T = Tension controlled.
Required reinforcement is based on phi for tension controlled sections..
* The provided reinforcement is not adequate, either less than required or larger than maximum allowed.
Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

Crack control and fatigue check

Cracking/Fatigue

Dir	Loc ft	d in	Service Mmax kft	Service Comb	Service fs ksi	Service Srq in	Service Spr in	Fatigue fs ksi	Fatigue FTH ksi
X	-1.33	32.00	293.3	1636	36.76**	13.1	6.4	4.49	22.90
X	1.33	32.00	293.3	1636	36.76**	13.1	6.4	4.49	22.90
Z	-1.33	33.00	293.3	1636	35.26	13.1	8.9	2.95	23.96
Z	1.33	33.00	293.3	1636	35.26	13.1	8.9	2.95	23.96

Cracking/Fatigue Note

** Stress (fs) is higher than steel yield strength (0.6*fy).
Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

One Way Shear (Beta-Theta Method)

Col	Dir	Dist ft	Comb	dv in	Vu kips	Mu kft	theta deg	beta	phi*Vc kips
1	X	-4.00	4	32.00	15.1	1.3	50.00	0.87	152.6
	X	4.00	4	32.0	15.1	1.3	50.00	0.87	152.6
	Z	-4.03	Outside of Footing	---	---	---	---	---	---
	Z	4.03	Outside of Footing	---	---	---	---	---	---

One Way Shear Note

Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

Two Way Shear

#	Bo ft	Ao ft^2	Comb	Avg. dv in	Vu kips	phi*Vc kips
Columns						
1	17.85	25.37	4	32.20	432.5	1564.5

Two Way Shear Note

TWO WAY SHEAR IN FOOTING IS NOT DESIGNED AND STIRRUPS ARE NOT CONSIDERED.
Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

ISOLATED FOOTING DESIGN

Code: AASHTO LRFD 9
Units: US
Pier View: Downstation.

GEOMETRY

Name : footing3
Shape : Rectangular, Type : Spread
Bf(X) = 8.00 ft, Hf(Z) = 8.00 ft, Thickness(Y) = 36.00 in
Ag = 64.00 ft^2, Ix = 341.33 ft^4, Iz = 341.33 ft^4
Footing concentric.
Columns located on the footing:
Column No. 3 at x = 0.00 ft, Round D = 36.00 in

DESIGN PARAMETERS

f'c = 4000.00 psi	fy = 60000.00 psi
phi tens = 0.90	
phi comp = 0.75	phi shear = 0.90
Tens above = 0.005	Comp below = 0.002
Ec = 4266.2 ksi	Es = 29000.0 ksi
Crack check as per current LRFD	
Crack control Exposure = 1.00	
Concrete Type : Normal Weight.	

Reinforcement Schedule

Dir	Quantity	Size	Bar dist. in	As total in^2	Spacing in	Hook
X	15	US#7[M22]	3.00	9.00	6.37	Both 90
X	15	US#5[M16]	33.00	4.65	6.38	Both 90
Z	10	US#7[M22]	4.00	6.00	9.90	Both 90
Z	10	US#5[M16]	32.00	3.10	9.93	Both 90

Max Soil Pressures, Service

Corner	X ft	Z ft	comb	Ovs	P kips	Mxx kft	Mzz kft	Soil press. ksf
1	-4.00	-4.00	2209	1.000	-329.91	271.92	-17.03	1.77
			1644	1.000	-191.49	375.96	-16.83	**-1.61***
2	4.00	-4.00	1999	1.000	-329.61	271.92	-40.52	2.44
			2190	1.000	-191.79	375.96	6.65	**-1.49***
3	4.00	4.00	1642	1.000	-329.61	387.19	-40.52	10.16
			2211	1.000	-191.79	283.14	6.65	6.24
4	-4.00	4.00	2188	1.000	-329.91	387.19	-17.03	9.49
			2001	1.000	-191.49	283.14	-16.83	6.11

Max Soil Pressures, Factored

Corner	X ft	Z ft	comb	Ovs	P kips	Mxx kft	Mzz kft	Soil press. ksf
1	-4.000	-4.000	31	---	-478.59	115.66	-33.31	5.73
			103	---	-177.44	221.63	-35.83	**-0.24***
2	4.000	-4.000	31	---	-478.59	115.66	-33.31	6.51
			1434	---	-170.20	226.07	21.04	**-0.24***
3	4.000	4.000	10	---	-478.59	213.89	-33.31	10.37
			1455	---	-170.20	103.49	21.04	3.63
4	-4.000	4.000	10	---	-478.59	213.89	-33.31	9.59
			111	---	-177.44	107.92	-35.83	3.62

Footing Design : Notes

* Negative pressure values indicates uplift of footing cap.
Only max. positive pressure is considered for design.
Load effects (P, Mxx and Mzz) are reported at bottom of the footing.
Soil pressure are calculated based on the load effects at bottom of the footing.
Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

Max. Soil Pressure Used in Design:

Factored soil pressure	10.37 ksf	Comb 10
Service soil pressure	10.16 ksf	Comb 1642
Fatigue soil pressure	1.36 ksf	Comb 0

Flexure

Dir	Loc ft	d in	Mmax kft	Comb	CL	Asb_req in^2	Asb_prv in^2	Asb_eff in^2	Ast_req in^2	Ast_prv in^2	Ast_eff in^2
X	-1.33	33.00	284.4	10	T	2.57	9.00	9.00	2.27	4.65	4.65
X	1.33	33.00	284.4	10	T	2.57	9.00	9.00	2.27	4.65	4.65
Z	-1.33	32.00	284.4	10	T	2.65	6.00	6.00	2.27	3.10	3.10
Z	1.33	32.00	284.4	10	T	2.65	6.00	6.00	2.27	3.10	3.10

Flexure Note

CL: Section classification as per LRFD 2006 interims for provided reinforcement.
C = Compression controlled, I = In-Transition, T = Tension controlled.
Required reinforcement is based on phi for tension controlled sections..
Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

Crack control and fatigue check

Cracking/Fatigue

Dir	Loc ft	d in	Service Mmax kft	Service Comb	Service fs ksi	Service Srq in	Service Spr in	Fatigue fs ksi	Fatigue FTH ksi
X	-1.33	33.00	277.1	1642	11.91	48.4	6.4	1.90	24.85
X	1.33	33.00	277.1	1642	11.91	48.4	6.4	1.90	24.85
Z	-1.33	32.00	277.1	1642	18.26	29.9	9.9	2.92	24.25
Z	1.33	32.00	277.1	1642	18.26	29.9	9.9	2.92	24.25

Cracking/Fatigue Note

Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

One Way Shear (Beta-Theta Method)

Col	Dir	Dist ft	Comb	dv in	Vu kips	Mu kft	theta deg	beta	phi*Vc kips
1	X	-4.01	Outside of Footing	---	---	---	---	---	---
	X	4.01	Outside of Footing	---	---	---	---	---	---
	Z	-4.00	10	32.00	13.9	1.2	50.00	0.87	152.6
	Z	4.00	10	32.00	13.9	1.2	50.00	0.87	152.6

One Way Shear Note

Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

Two Way Shear

#	Bo ft	Ao ft^2	Comb	Avg. dv in	Vu kips	phi*Vc kips
Columns						
1	17.82	25.28	10	32.09	401.7	1556.6

Two Way Shear Note

TWO WAY SHEAR IN FOOTING IS NOT DESIGNED AND STIRRUPS ARE NOT CONSIDERED.
Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

ISOLATED FOOTING DESIGN

Code: AASHTO LRFD 9
Units: US
Pier View: Downstation.

GEOMETRY

Name : footing4
Shape : Rectangular, Type : Spread
Bf(X) = 8.00 ft, Hf(Z) = 8.00 ft, Thickness(Y) = 36.00 in
Ag = 64.00 ft^2, Ix = 341.33 ft^4, Iz = 341.33 ft^4
Footing concentric.
Columns located on the footing:
Column No. 4 at x = 0.00 ft, Round D = 36.00 in

DESIGN PARAMETERS

f'c = 4000.00 psi	fy = 60000.00 psi
phi tens = 0.90	
phi comp = 0.75	phi shear = 0.90
Tens above = 0.005	Comp below = 0.002
Ec = 4266.2 ksi	Es = 29000.0 ksi
Crack check as per current LRFD	
Crack control Exposure = 1.00	
Concrete Type : Normal Weight.	

Reinforcement Schedule

Dir	Quantity	Size	Bar dist. in	As total in^2	Spacing in	Hook
X	15	US#7[M22]	3.00	9.00	6.37	Both 90
X	15	US#5[M16]	33.00	4.65	6.38	Both 90
Z	10	US#7[M22]	4.00	6.00	9.90	Both 90
Z	10	US#5[M16]	32.00	3.10	9.93	Both 90

Max Soil Pressures, Service

Corner	X ft	Z ft	comb	Ovs	P kips	Mxx kft	Mzz kft	Soil press. ksf
1	-4.00	-4.00	2205	1.000	-427.59	294.65	49.26	3.81
			1648	1.000	-250.66	409.80	8.41	**-0.79***
2	4.00	-4.00	1992	1.000	-427.36	280.59	6.12	3.32
			2179	1.000	-249.24	409.80	36.81	**-1.34***
3	4.00	4.00	1635	1.000	-427.36	409.80	6.12	11.41
			2200	1.000	-249.24	280.59	36.81	6.75
4	-4.00	4.00	2184	1.000	-427.59	395.74	49.26	11.90
			2005	1.000	-250.66	280.59	8.41	7.30

Max Soil Pressures, Factored

Corner	X ft	Z ft	comb	Ovs	P kips	Mxx kft	Mzz kft	Soil press. ksf
1	-4.000	-4.000	27	---	-620.38	135.69	65.82	8.87
			892	---	-222.31	258.46	8.69	0.55
2	4.000	-4.000	24	---	-617.17	111.08	29.64	7.99
			1423	---	-220.47	258.46	45.99	-0.12*
3	4.000	4.000	3	---	-617.17	234.12	29.64	12.04
			1444	---	-220.47	86.74	45.99	3.92
4	-4.000	4.000	6	---	-620.38	209.51	65.82	12.92
			1249	---	-222.31	86.74	8.69	4.59

Footing Design : Notes

* Negative pressure values indicates uplift of footing cap.
Only max. positive pressure is considered for design.
Load effects (P, Mxx and Mzz) are reported at bottom of the footing.
Soil pressure are calculated based on the load effects at bottom of the footing.
Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

Max. Soil Pressure Used in Design:

Factored soil pressure	12.92 ksf	Comb 6
Service soil pressure	11.90 ksf	Comb 2184
Fatigue soil pressure	2.15 ksf	Comb 0

Flexure

Dir	Loc ft	d in	Mmax kft	Comb	CL	Asb_req in^2	Asb_prv in^2	Asb_eff in^2	Ast_req in^2	Ast_prv in^2	Ast_eff in^2
X	-1.33	33.00	357.0	6	T	3.23	9.00	9.00	2.27	4.65	4.65
X	1.33	33.00	357.0	6	T	3.23	9.00	9.00	2.27	4.65	4.65
Z	-1.33	32.00	357.0	6	T	3.33	6.00	6.00	2.27	3.10	3.10
Z	1.33	32.00	357.0	6	T	3.33	6.00	6.00	2.27	3.10	3.10

Flexure Note

CL: Section classification as per LRFD 2006 interims for provided reinforcement.
C = Compression controlled, I = In-Transition, T = Tension controlled.
Required reinforcement is based on phi for tension controlled sections..
Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

Crack control and fatigue check

Cracking/Fatigue

Dir	Loc ft	d in	Service Mmax kft	Service Comb	Service fs ksi	Service Srq in	Service Spr in	Fatigue fs ksi	Fatigue FTH ksi
X	-1.33	33.00	326.5	2184	14.04	40.3	6.4	2.83	24.35
X	1.33	33.00	326.5	2184	14.04	40.3	6.4	2.83	24.35
Z	-1.33	32.00	326.5	2184	21.52	24.6	9.9	4.33	23.47
Z	1.33	32.00	326.5	2184	21.52	24.6	9.9	4.33	23.47

Cracking/Fatigue Note

Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

One Way Shear (Beta-Theta Method)

Col	Dir	Dist ft	Comb	dv in	Vu kips	Mu kft	theta deg	beta	phi*Vc kips
1	X	-4.01	Outside of Footing	---	---	---	---	---	---
	X	4.01	Outside of Footing	---	---	---	---	---	---
	Z	-4.00	6	32.00	17.5	1.5	50.00	0.87	152.6
	Z	4.00	6	32.00	17.5	1.5	50.00	0.87	152.6

One Way Shear Note

Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.

Two Way Shear

#	Bo ft	Ao ft^2	Comb	Avg. dv in	Vu kips	phi*Vc kips
Columns						
1	17.82	25.28	6	32.09	500.2	1556.6

Two Way Shear Note

TWO WAY SHEAR IN FOOTING IS NOT DESIGNED AND STIRRUPS ARE NOT CONSIDERED.
Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination number 0.