

PROJECT DATA  
=====

Curb to curb distance encompasses from the edge of the sidewalk railing barrier, to 1" past the construction joint.

Arcadis  
PROGRAM: LEAP Bridge Concrete CE V21-v21.2.0.38  
Bentley Systems, Inc. - www.bentley.com  
PHONE : TOLL-FREE 1-800-778-4277

| SHEET 2 OF 123  
| JOB NO. CMcGraw  
| BY CPM DATE Feb/21/2023  
| CKD. DATE

-----  
PROJECT: ODOT LUC-51-1285

PIER GEOMETRY

=====

Pier Type: Multi Column

Pier View : Downstation.

Cap Shape: Stepped Top Elevations: start = 647.40 ft end = 648.03 ft

Depth(Z) = 36.00 in Skew angle = 3.17 Reduction of I = 1.000

Length(X) = 45.33 ft

| Distance(X) ft | Height(Y) in |
|----------------|--------------|
|----------------|--------------|

-----

|      |       |
|------|-------|
| 7.26 | 42.00 |
|------|-------|

|      |       |
|------|-------|
| 7.26 | 43.51 |
|------|-------|

|      |       |
|------|-------|
| 7.26 | 45.02 |
|------|-------|

|      |       |
|------|-------|
| 7.26 | 46.54 |
|------|-------|

|      |       |
|------|-------|
| 7.00 | 48.05 |
|------|-------|

|      |       |
|------|-------|
| 9.29 | 49.56 |
|------|-------|

Column Shape : Round

Number of columns: 4

Column number 1:

Location from the left edge of the cap(X): 1.50 ft

Elevations: bottom = 622.56 ft top = 645.65 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): 13.92 ft

Elevations: bottom = 622.56 ft top = 645.65 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): 26.33 ft

Elevations: bottom = 622.56 ft top = 645.65 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): 38.75 ft

Elevations: bottom = 622.56 ft top = 645.65 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 : 36.00 in section area : 50.00 in^2

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Beam Inertia (Ixx): 10500.00 in<sup>4</sup> Beam inertia (Iyy): 320.00 in<sup>4</sup>  
 Beam CG:18.00 in Barrier height : 42.00 in Depth of slab : 8.50 in  
 Curb to curb distance: 44.250 ft

| Span # | Span length | Bridge Width |
|--------|-------------|--------------|
| 1      | 54.250 ft   | 45.250 ft    |
| 2      | 86.500 ft   | 45.250 ft    |
| 3      | 86.500 ft   | 45.250 ft    |
| 4      | 54.250 ft   | 45.250 ft    |

#### BEARING POINTS

=====

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

|   |       |
|---|-------|
| 1 | 1.50  |
| 2 | 8.76  |
| 3 | 16.02 |
| 4 | 23.28 |
| 5 | 30.54 |
| 6 | 34.54 |
| 7 | 41.80 |

#### MATERIAL PROPERTIES

=====

|                                        | Cap     | Column  | Footing |
|----------------------------------------|---------|---------|---------|
| Concrete Type                          | normal  | normal  | normal  |
| Concrete Strength (psi)                | 4000.00 | 4000.00 | 4000.00 |
| Concrete Density (lb/ft <sup>3</sup> ) | 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:

|     | Truck | Lane | Fatigue |
|-----|-------|------|---------|
| Cap | 0.33  | 0.00 | 0.15    |

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 | CKD. DATE

PROJECT: ODOT LUC-51-1285

|         |      |      |      |
|---------|------|------|------|
| Column  | 0.33 | 0.00 | 0.15 |
| Footing | 0.00 | 0.00 | 0.00 |

|         | Exposure factors | Clear cover<br>in | Clear side cover<br>in |
|---------|------------------|-------------------|------------------------|
| Cap     | 1.00             | 2.00              | 2.00                   |
| Column  | 1.00             | 2.00              |                        |
| Footing | 1.00             | 3.00              | 3.00                   |

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

#### SEISMIC DESIGN PARAMETERS

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.

### Braking Force (BR) –

According to the design manual, braking forces should be calculated as 5% of design truck plus 5% of lane load or 5% of the design tandem plus 5% of lane load. RC Pier **Manual Input** toggle is intended for BR generation for a special vehicle/design load, but it may be used to implement the SDU exception to LRFD 3.6.4 using the following procedure:

1. Generate braking forces along with live loads and turn on **Manual Input** toggle.
2. Calculate 5% of the weight of a design truck or design tandem (whichever one is greater).
3. Calculate 5% of the lane load.
4. Add values from step 2 and 3 to get the total load for one lane.
5. Divide the total load from step 4 by 0.25 and input that value into the **Truck Load** field.
6. Input a very small value for **Lane Load** (e.g. 0.001 kip).
7. Click on **Generate**, the program will generate a set of LL as well as BR.

Auto Load generation: Live Load

Longitudinal Reaction

☒ Compute Simple Span Reaction

Available:

- Design Truck
- Design Truck + Lane Load
- Design Tandem + Lane Load
- Two Design Trucks + Lane Load
- Two Design Tandems + Lane Load
- Fatigue Truck
- [PVP]-5 Truck
- [PVP]-7 Truck

Selected:

- Design Truck + Lane Load
- Design Tandem + Lane Load
- Two Design Trucks + Lane Load

☐ Compute Continuous Beam Reaction

☐ Input Already Computed Reaction

☐ Import Conspan Reaction

Normal pier

Max Truck Load: 0 kips

Max Lane Load: 0 kips

Import

Integral pier

|        | Max Load | Moment, k-ft |        | Load, kips | Max. Moment |
|--------|----------|--------------|--------|------------|-------------|
| Truck: |          |              | Truck: |            |             |
| Lane:  |          |              | Lane:  |            |             |

Note: For manual input, define truck and lane reactions as per lane, without impact and multiple presence factor.

| Reaction distribution among bearing lines | Bearing Line 1 | Bearing Line 2 |
|-------------------------------------------|----------------|----------------|
| Truck Case A:                             | 1              | 0              |
| Lane Case A:                              | 1              | 0              |
| Truck Case B:                             | 0              | 0              |
| Lane Case B:                              | 0              | 0              |

☐ Generate Reverse Cases also

Transverse Positioning

Loaded Lanes: All combinations

Live Load Positions

☒ Variable spacing

Minimum spacing between positions: 1. ft

☐ Constant spacing

Minimum distance from curb: 2. ft

Center to center spacing: 10. ft

Longitudinal Force

☒ Generate Longitudinal Load Cases also

☐ Auto Compute

☒ Manual input

Truck Load: 0 kips

Lane Load: 0 kips

Note: For manual input, truck is the total weight of all axles of one truck, lane is 0.64 \* span length + shear riders for one lane.

Centrifugal Force

☐ Generate Centrifugal Load Cases also

☒ Auto Compute

☐ Manual input

Truck Load: 0 kips

Radius of curve: 0 ft

Design speed: 0 ft/s

Direction of centrifugal force: ☒ +[X] ☐ -[X]

Generate Cancel

for next page truck

Step 1

Step 5

Step 6

Step 7

|            |        |           |           |
|------------|--------|-----------|-----------|
| Proj. No.: | LUC-23 | Pre'd by: | CPM       |
| TIP No.:   |        | Date:     | 3/30/2023 |
| County:    |        | Chk'd by: | VDK       |
| Str. #:    |        | Date:     | 3/31/2023 |

## BRAKING FORCE

Span 1 Length = 86.5 ft

Span 2 Length = 86.5 ft

Length of Live Load Contributing = 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 =  $(3.6 \text{ kips} + 2.768 \text{ kips}) / 25\%$

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.

PROJECT: ODOT LUC-51-1285

## LOADS

Pier View : Downstation.  
Load Cases: 129  
Longitudinal Reaction: Simple Span Distribution  
Selected Vehicles:

Load: Fatigue Truck

## Tranverse Positioning

Number of loaded lanes = 1 Lane Loaded  
Live Load Positions = Variable Spacing  
Minimum spacing between positions = 1.000000

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

Number of single regular truck positions = 11  
Number of all possible combinations of regular truck positions = 11

Loadcase ID: LLf1 Name:  
Multiplier = 1.000

### Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | 0.00       |   |
| 1      | 2         | Y    | -20.19     |   |
| 1      | 3         | Y    | -41.93     |   |
| 1      | 4         | Y    | -9.41      |   |
| 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    | -1.23      |  |
| 1      | 4         | Y    | -41.93     |  |

Auto Load generation: Live Load

Longitudinal Reaction

☒ Compute Simple Span Reaction

Available:

Design Truck  
Design Truck + Lane Load  
Design Tandem + Lane Load  
Two Design Trucks + Lane Load  
Two Design Tandem + Lane Load  
Fatigue Truck  
[PVP]-5 Truck

Add ->  
-< Remove  
-< Remove All  
View

Selected:

Design Truck  
Design Truck + Lane Load  
Design Tandem + Lane Load  
Two Design Trucks + Lane Load  
Two Design Tandem + Lane Load

☐ Compute Continuous Beam Reaction

☐ Input Already Computed Reaction

☐ Read Superstructure Reaction

Piers in Prestressed Girder Bridges

Max Truck Load: 0 kips  
Max Lane Load: 0 kips

Piers in Post Tens. CIP/Slab CIP Bridges

Max Load: 0 kips  
Moment, k-ft: 0  
Load, kips: 0  
Max. Moment: 0

Truck:   
Lane:

Note: For manual input, define truck and lane reactions as per lane, without impact and multiple presence factor.

Reaction distribution among bearing lines

|               | Bearing Line 1 | Bearing Line 2 |
|---------------|----------------|----------------|
| Truck Case A: | 1.0            | 0.0            |
| Lane Case A:  | 1.0            | 0.0            |
| Truck Case B: | 0.0            | 0.0            |
| Lane Case B:  | 0.0            | 0.0            |

☐ Generate Reverse Cases also

Transverse Positioning

Loaded Lanes: All combinations

Live Load Positions

☒ Variable spacing  
Minimum spacing between positions: 1.00 ft

☐ Constant spacing  
Minimum distance from curb: 2.00 ft  
Center to center spacing: 10.00 ft

Braking Loads

☒ Generate Braking Load Cases

☐ Auto Compute  
☒ Manual input  
Truck Load: 25.472 kips  
Lane Load: 0.0001 kips

Note: For manual input, truck is the total weight of all axles of one truck. Lane is UDL \* span length.

Centrifugal Force

☐ Generate Centrifugal Load Cases also

☒ Auto Compute  
☐ Manual input  
Truck Load: 0 kips  
Radius of curve: 0 ft  
Design speed: 0 ft/s

Direction of centrifugal force: ☒ + ☐ -

Generate Cancel

PROJECT: ODOT LUC-51-1285

|   |   |   |        |   |
|---|---|---|--------|---|
| 1 | 5 | Y | -28.37 |   |
| 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: 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    | -16.03     |   |
| 1      | 5         | Y    | -30.86     |   |
| 1      | 6         | Y    | -24.64     |   |
| 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    | 0.00       |   |
| 1      | 3         | Y    | -29.60     |   |
| 1      | 4         | Y    | -41.93     |   |
| 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

PROJECT: ODOT LUC-51-1285

Generated Live Load

Loadcase ID: LLf5 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    | -29.60     |   |
| 1      | 5         | Y    | -41.93     |   |
| 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    | 0.00       |   |
| 1      | 3         | Y    | -41.93     |   |
| 1      | 4         | Y    | -29.60     |   |
| 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: DC1 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |  |
|--------|-----------|------|------------|--|
| 1      | 1         | Y    | -112.17    |  |
| 1      | 2         | Y    | -116.59    |  |

PROJECT: ODOT LUC-51-1285

|   |   |   |         |
|---|---|---|---------|
| 1 | 3 | Y | -116.59 |
| 1 | 4 | Y | -116.59 |
| 1 | 5 | Y | -100.58 |
| 1 | 6 | Y | -101.16 |
| 1 | 7 | Y | -106.73 |

#### Auto generation details

#### Generated Dead Load

Imported dead load reaction from Precast/Prestressed Girder module for Pier: 0

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 Load generation: Temperature load

Bearing data

☐ Fixed bearings

☒ Expansion bearings

Elastomeric bearings

Stiffness elastomer

☐ Manual input

☒ Compute

Stiffness of Elastomer, Kbs: 0 kips/in

Area of bearing, A: 260 in<sup>2</sup>

Shear modulus of Elastomer: 0.13 ksi

Total elastomer thickness: 2.77 in

Superstructure data

Contributing length: 187.67 ft

Change in temperature: 90 °F

Coeff Thermal Expansion, alpha: 6.5e-06 /F

Direction of thermal force (Z): ☒ +(Z) ☐ -(Z)

Pier data

☒ Auto compute

☐ User input

Kcols: 0 kips/in

Generate Cancel

#### Auto generation details

Bearing type: Elastomeric Bearings

Direction of thermal force: +(Z)

Length of Superstructure Contributing, L: 187.670 ft

Change in temperature: 90.000 °F

Coefficient of thermal expansion: 6.5e-06 ft/°F

Area of bearing: 260.00 in<sup>2</sup>  
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 kips, klf, k-ft | Mag2 kips, klf, k-ft | x2/L |
|-------|-----|--------|----------------------|----------------------|----------------------|------|
| Force | X   | 0.00   | 2.75                 | 0.50                 | ----                 | ---- |
| UDL   | Z   | ----   | -0.09                | 0.00                 | ----                 | 1.00 |

#### Column loads:

| Col # | Type | Dir | Mag1       | y1/L | Mag2 | y2/L |
|-------|------|-----|------------|------|------|------|
| 1     | UDL  | X   | 0.063 klf  | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | -0.097 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.063 klf  | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | -0.097 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.063 klf  | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | -0.097 klf | 0.37 | ---- | 0.92 |

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|   |     |   |        |     |      |      |      |
|---|-----|---|--------|-----|------|------|------|
| 4 | UDL | X | 0.063  | klf | 0.37 | ---- | 0.92 |
| 4 | UDL | Z | -0.097 | klf | 0.37 | ---- | 0.92 |

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 = 631.00 ft

Default wind pressure

For STR III

Wind pressure for superstructure:

Pz = 31.250 psf

Overturning not considered

For SER IV

Wind pressure for superstructure:

Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:

Pz = 21.190 psf

For SER I

Wind pressure for superstructure:

Pz = 16.250 psf

Wind pressure for substructure:

Pz = 38.460 psf

Wind pressure for substructure:

Pz = 21.630 psf

Wind pressure for substructure:

Pz = 26.080 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<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 3.09                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | -0.06                   | 0.00                    | ----                    | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1       | y1/L | Mag2 | y2/L |
|-------|------|-----|------------|------|------|------|
| 1     | UDL  | X   | 0.086 klf  | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | -0.077 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.086 klf  | 0.37 | ---- | 0.92 |

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|   |     |   |        |     |      |      |      |
|---|-----|---|--------|-----|------|------|------|
| 2 | UDL | Z | -0.077 | klf | 0.37 | ---- | 0.92 |
| 3 | UDL | X | 0.086  | klf | 0.37 | ---- | 0.92 |
| 3 | UDL | Z | -0.077 | klf | 0.37 | ---- | 0.92 |
| 4 | UDL | X | 0.086  | klf | 0.37 | ---- | 0.92 |
| 4 | UDL | Z | -0.077 | klf | 0.37 | ---- | 0.92 |

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 = 631.00 ft

Default wind pressure

For STR III

Wind pressure for superstructure:

Pz = 31.250 psf

Overturning not considered

For SER IV

Wind pressure for superstructure:

Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:

Pz = 21.190 psf

For SER I

Wind pressure for superstructure:

Pz = 16.250 psf

Wind pressure for substructure:

Pz = 38.460 psf

Wind pressure for substructure:

Pz = 21.630 psf

Wind pressure for substructure:

Pz = 26.080 psf

Wind pressure for substructure:

Pz = 20.000 psf

Loadcase ID: WS3 Name: STR III-Angle: 30

Multiplier = 1.000

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 2.67                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | -0.03                   | 0.00                    | ----                    | 1.00 |

Column loads:

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

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|   |     |   |        |     |      |      |      |
|---|-----|---|--------|-----|------|------|------|
| 1 | UDL | X | 0.103  | klf | 0.37 | ---- | 0.92 |
| 1 | UDL | Z | -0.052 | klf | 0.37 | ---- | 0.92 |
| 2 | UDL | X | 0.103  | klf | 0.37 | ---- | 0.92 |
| 2 | UDL | Z | -0.052 | klf | 0.37 | ---- | 0.92 |
| 3 | UDL | X | 0.103  | klf | 0.37 | ---- | 0.92 |
| 3 | UDL | Z | -0.052 | klf | 0.37 | ---- | 0.92 |
| 4 | UDL | X | 0.103  | klf | 0.37 | ---- | 0.92 |
| 4 | UDL | Z | -0.052 | klf | 0.37 | ---- | 0.92 |

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 = 631.00 ft

Default wind pressure

For STR III

Wind pressure for superstructure:

Pz = 31.250 psf

Overturning not considered

For SER IV

Wind pressure for superstructure:

Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:

Pz = 21.190 psf

For SER I

Wind pressure for superstructure:

Pz = 16.250 psf

Wind pressure for substructure:

Pz = 38.460 psf

Wind pressure for substructure:

Pz = 21.630 psf

Wind pressure for substructure:

Pz = 26.080 psf

Wind pressure for substructure:

Pz = 20.000 psf

Loadcase ID: WS4 Name: STR III-Angle: 15

Multiplier = 1.000

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|------|-------------------------|------|
| Force | X   | 0.00      | 1.60                    | 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   | 0.113  | klf 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | -0.024 | klf 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.113  | klf 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | -0.024 | klf 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.113  | klf 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | -0.024 | klf 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.113  | klf 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | -0.024 | klf 0.37 | ---- | 0.92 |

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 = 631.00 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

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: WS5 Name: STR III-Angle: 0

Multiplier = 1.000

Cap loads:

| Type | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|------|-----|-----------|-------------------------|------|-------------------------|------|
|------|-----|-----------|-------------------------|------|-------------------------|------|

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|       |   |      |      |      |      |      |
|-------|---|------|------|------|------|------|
| Force | X | 0.00 | 0.79 | 0.50 | ---- | ---- |
| UDL   | Z | ---- | 0.00 | 0.00 | ---- | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1  | y1/L     | Mag2 | y2/L |
|-------|------|-----|-------|----------|------|------|
| 1     | UDL  | X   | 0.115 | klf 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | 0.006 | klf 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.115 | klf 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | 0.006 | klf 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.115 | klf 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | 0.006 | klf 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.115 | klf 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | 0.006 | klf 0.37 | ---- | 0.92 |

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 = 631.00 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

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: WS6 Name: STR III-Angle: -15

Multiplier = 1.000

Cap loads:

Auto Load Generation: Wind on Struc

Start: 60 End: -60 Interval: 15

Wind Angle, deg: 60 -60 Interval 15

Generate for multiple angles: ☒ Wind exposure categories: B

Generate Wind on Live at the same time: ☐ Length of LL: 86.50 ft

Elevation above which Wind Load acting:  Gust Effect Factor, G: 1.00 (for column)

Z: 33.18 ft

Kz( STR III and SER: 0.71

Kz( STR V and SER: 1.00

Cd\_Sup: 1.30 Cd\_Sub: 1.60

3-Sec Gust Wind Speed, V

V (SER I): 70.00 mph

V (STR V): 80.00 mph

V (SER IV): 86.25 mph

V (STR III): 115.00 mph

Wind pressure, Pz

For STR III

Pz, sup: 31.25 psf

Pz, sub: 38.46 psf

Consider Overturning: ☐

Overturning: 20.00 psf

For STR V

Pz, sup: 21.19 psf

Pz, sub: 26.08 psf

For SER IV

Pz, sup: 17.58 psf

Pz, sub: 21.63 psf

Consider Overturning: ☐

Overturning: 10.00 psf

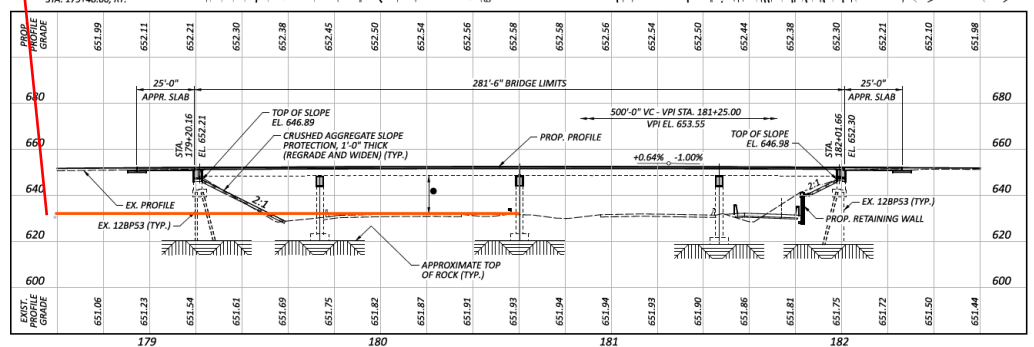
For SER I

Pz, sup: 16.25 psf

Pz, sub: 20.00 psf

Generate Cancel

wind elev is taken at 631 ft



PROJECT: ODOT LUC-51-1285

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 2.12                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | 0.01                    | 0.00                    | ----                    | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1      | y1/L | Mag2 | y2/L |
|-------|------|-----|-----------|------|------|------|
| 1     | UDL  | X   | 0.110 klf | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | 0.036 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.110 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | 0.036 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.110 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | 0.036 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.110 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | 0.036 klf | 0.37 | ---- | 0.92 |

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 = 631.00 ft

Default wind pressure

For STR III

Wind pressure for superstructure:

Pz = 31.250 psf

Overturning not considered

For SER IV

Wind pressure for superstructure:

Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:

Pz = 21.190 psf

For SER I

Wind pressure for superstructure:

Pz = 16.250 psf

Wind pressure for substructure:

Pz = 38.460 psf

Wind pressure for substructure:

Pz = 21.630 psf

Wind pressure for substructure:

Pz = 26.080 psf

Wind pressure for substructure:

Pz = 20.000 psf

Loadcase ID: WS7 Name: STR III-Angle: -30

PROJECT: ODOT LUC-51-1285

Multiplier = 1.000

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 2.94                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | 0.04                    | 0.00                    | ----                    | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1      | y1/L | Mag2 | y2/L |
|-------|------|-----|-----------|------|------|------|
| 1     | UDL  | X   | 0.097 klf | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | 0.063 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.097 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | 0.063 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.097 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | 0.063 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.097 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | 0.063 klf | 0.37 | ---- | 0.92 |

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 = 631.00 ft

Default wind pressure

For STR III

Wind pressure for superstructure:

Pz = 31.250 psf

Overturning not considered

For SER IV

Wind pressure for superstructure:

Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:

Pz = 21.190 psf

For SER I

Wind pressure for superstructure:

Pz = 16.250 psf

Wind pressure for substructure:

Pz = 38.460 psf

Wind pressure for substructure:

Pz = 21.630 psf

Wind pressure for substructure:

Pz = 26.080 psf

Wind pressure for substructure:

Pz = 20.000 psf

PROJECT: ODOT LUC-51-1285

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

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 3.04                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | 0.07                    | 0.00                    | ----                    | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1      | y1/L | Mag2 | y2/L |
|-------|------|-----|-----------|------|------|------|
| 1     | UDL  | X   | 0.077 klf | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | 0.086 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.077 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | 0.086 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.077 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | 0.086 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.077 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | 0.086 klf | 0.37 | ---- | 0.92 |

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 = 631.00 ft

Default wind pressure

For STR III

Wind pressure for superstructure:

Pz = 31.250 psf

Overturning not considered

For SER IV

Wind pressure for superstructure:

Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:

Pz = 21.190 psf

Wind pressure for substructure:

Pz = 38.460 psf

Wind pressure for substructure:

Pz = 21.630 psf

Wind pressure for substructure:

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

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 2.39                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | 0.10                    | 0.00                    | ----                    | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1      | y1/L | Mag2 | y2/L |
|-------|------|-----|-----------|------|------|------|
| 1     | UDL  | X   | 0.052 klf | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | 0.103 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.052 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | 0.103 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.052 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | 0.103 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.052 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | 0.103 klf | 0.37 | ---- | 0.92 |

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 = 631.00 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

Overturning not considered

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

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 1.55                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | -0.05                   | 0.00                    | ----                    | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1<br>klf | y1/L | Mag2 | y2/L |
|-------|------|-----|-------------|------|------|------|
| 1     | UDL  | X   | 0.036       | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | -0.054      | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.036       | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | -0.054      | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.036       | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | -0.054      | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.036       | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | -0.054      | 0.37 | ---- | 0.92 |

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 = 631.00 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

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Wind pressure for superstructure:

Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:

Pz = 21.190 psf

For SER I

Wind pressure for superstructure:

Pz = 16.250 psf

Wind pressure for substructure:

Pz = 21.630 psf

Wind pressure for substructure:

Pz = 26.080 psf

Wind pressure for substructure:

Pz = 20.000 psf

Loadcase ID: WS11 Name: SER IV-Angle: 45

Multiplier = 1.000

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 1.74                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | -0.03                   | 0.00                    | ----                    | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1       | y1/L | Mag2 | y2/L |
|-------|------|-----|------------|------|------|------|
| 1     | UDL  | X   | 0.048 klf  | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | -0.043 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.048 klf  | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | -0.043 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.048 klf  | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | -0.043 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.048 klf  | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | -0.043 klf | 0.37 | ---- | 0.92 |

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 = 631.00 ft

Default wind pressure

For STR III

Wind pressure for superstructure:

Wind pressure for substructure:

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|                                   |                                 |
|-----------------------------------|---------------------------------|
| 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<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|------|-------------------------|------|
| Force | X   | 0.00      | 1.50                    | 0.50 | ----                    | ---- |
| UDL   | Z   | ----      | -0.02                   | 0.00 | ----                    | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1       | y1/L | Mag2 | y2/L |
|-------|------|-----|------------|------|------|------|
| 1     | UDL  | X   | 0.058 klf  | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | -0.029 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.058 klf  | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | -0.029 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.058 klf  | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | -0.029 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.058 klf  | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | -0.029 klf | 0.37 | ---- | 0.92 |

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 = 631.00 ft

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Default wind pressure

For STR III

Wind pressure for superstructure:

Pz = 31.250 psf

Overturning not considered

For SER IV

Wind pressure for superstructure:

Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:

Pz = 21.190 psf

For SER I

Wind pressure for superstructure:

Pz = 16.250 psf

Wind pressure for substructure:

Pz = 38.460 psf

Wind pressure for substructure:

Pz = 21.630 psf

Wind pressure for substructure:

Pz = 26.080 psf

Wind pressure for substructure:

Pz = 20.000 psf

Loadcase ID: WS13 Name: SER IV-Angle: 15

Multiplier = 1.000

Cap loads:

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

Column loads:

| Col # | Type | Dir | Mag1       | y1/L | Mag2 | y2/L |
|-------|------|-----|------------|------|------|------|
| 1     | UDL  | X   | 0.064 klf  | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | -0.013 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.064 klf  | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | -0.013 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.064 klf  | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | -0.013 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.064 klf  | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | -0.013 klf | 0.37 | ---- | 0.92 |

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       |

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Auto generation details

Generated Wind Load on Structure

Angle of wind = 15.00 deg Elevation above which wind load acts = 631.00 ft

Default wind pressure

For STR III

Wind pressure for superstructure:

Pz = 31.250 psf

Overturning not considered

For SER IV

Wind pressure for superstructure:

Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:

Pz = 21.190 psf

For SER I

Wind pressure for superstructure:

Pz = 16.250 psf

Wind pressure for substructure:

Pz = 38.460 psf

Wind pressure for substructure:

Pz = 21.630 psf

Wind pressure for substructure:

Pz = 26.080 psf

Wind pressure for substructure:

Pz = 20.000 psf

Loadcase ID: WS14 Name: SER IV-Angle: 0

Multiplier = 1.000

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 0.44                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | 0.00                    | 0.00                    | ----                    | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1      | y1/L | Mag2 | y2/L |
|-------|------|-----|-----------|------|------|------|
| 1     | UDL  | X   | 0.065 klf | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | 0.004 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.065 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | 0.004 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.065 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | 0.004 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.065 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | 0.004 klf | 0.37 | ---- | 0.92 |

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       |

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|   |   |   |      |
|---|---|---|------|
| 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 = 631.00 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

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: WS15 Name: SER IV-Angle: -15

Multiplier = 1.000

#### Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|------|-------------------------|------|
| Force | X   | 0.00      | 1.19                    | 0.50 | ----                    | ---- |
| UDL   | Z   | ----      | 0.01                    | 0.00 | ----                    | 1.00 |

#### Column loads:

| Col # | Type | Dir | Mag1      | y1/L | Mag2 | y2/L |
|-------|------|-----|-----------|------|------|------|
| 1     | UDL  | X   | 0.062 klf | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | 0.020 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.062 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | 0.020 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.062 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | 0.020 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.062 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | 0.020 klf | 0.37 | ---- | 0.92 |

#### 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       |

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|   |   |   |      |
|---|---|---|------|
| 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 = 631.00 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

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: WS16 Name: SER IV-Angle: -30

Multiplier = 1.000

#### Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 1.65                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | 0.02                    | 0.00                    | ----                    | 1.00 |

#### Column loads:

| Col # | Type | Dir | Mag1      | y1/L | Mag2 | y2/L |
|-------|------|-----|-----------|------|------|------|
| 1     | UDL  | X   | 0.054 klf | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | 0.036 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.054 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | 0.036 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.054 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | 0.036 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.054 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | 0.036 klf | 0.37 | ---- | 0.92 |

#### 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       |

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|   |   |   |      |
|---|---|---|------|
| 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 = 631.00 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

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: WS17 Name: SER IV-Angle: -45

Multiplier = 1.000

#### Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 1.71                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | 0.04                    | 0.00                    | ----                    | 1.00 |

#### Column loads:

| Col # | Type | Dir | Mag1      | y1/L | Mag2 | y2/L |
|-------|------|-----|-----------|------|------|------|
| 1     | UDL  | X   | 0.043 klf | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | 0.048 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.043 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | 0.048 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.043 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | 0.048 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.043 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | 0.048 klf | 0.37 | ---- | 0.92 |

#### 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       |

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|   |   |   |      |
|---|---|---|------|
| 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 = 631.00 ft

Default wind pressure

For STR III

Wind pressure for superstructure:

Pz = 31.250 psf

Overturning not considered

For SER IV

Wind pressure for superstructure:

Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:

Pz = 21.190 psf

For SER I

Wind pressure for superstructure:

Pz = 16.250 psf

Wind pressure for substructure:

Pz = 38.460 psf

Wind pressure for substructure:

Pz = 21.630 psf

Wind pressure for substructure:

Pz = 26.080 psf

Wind pressure for substructure:

Pz = 20.000 psf

Loadcase ID: WS18 Name: SER IV-Angle: -60

Multiplier = 1.000

#### Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 1.34                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | 0.06                    | 0.00                    | ----                    | 1.00 |

#### Column loads:

| Col # | Type | Dir | Mag1      | y1/L | Mag2 | y2/L |
|-------|------|-----|-----------|------|------|------|
| 1     | UDL  | X   | 0.029 klf | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | 0.058 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.029 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | 0.058 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.029 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | 0.058 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.029 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | 0.058 klf | 0.37 | ---- | 0.92 |

#### 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       |

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|   |   |   |      |
|---|---|---|------|
| 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 = 631.00 ft

Default wind pressure

For STR III

Wind pressure for superstructure:

Pz = 31.250 psf

Overturning not considered

For SER IV

Wind pressure for superstructure:

Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:

Pz = 21.190 psf

For SER I

Wind pressure for superstructure:

Pz = 16.250 psf

Wind pressure for substructure:

Pz = 38.460 psf

Wind pressure for substructure:

Pz = 21.630 psf

Wind pressure for substructure:

Pz = 26.080 psf

Wind pressure for substructure:

Pz = 20.000 psf

Loadcase ID: WS19 Name: STR V-Angle: 60  
 Multiplier = 1.000

#### Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 1.86                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | -0.06                   | 0.00                    | ----                    | 1.00 |

#### Column loads:

| Col # | Type | Dir | Mag1       | y1/L | Mag2 | y2/L |
|-------|------|-----|------------|------|------|------|
| 1     | UDL  | X   | 0.043 klf  | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | -0.065 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.043 klf  | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | -0.065 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.043 klf  | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | -0.065 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.043 klf  | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | -0.065 klf | 0.37 | ---- | 0.92 |

#### 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       |

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|   |   |   |      |
|---|---|---|------|
| 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 = 631.00 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

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: WS20 Name: STR V-Angle: 45

Multiplier = 1.000

#### Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 2.10                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | -0.04                   | 0.00                    | ----                    | 1.00 |

#### Column loads:

| Col # | Type | Dir | Mag1       | y1/L | Mag2 | y2/L |
|-------|------|-----|------------|------|------|------|
| 1     | UDL  | X   | 0.058 klf  | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | -0.052 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.058 klf  | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | -0.052 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.058 klf  | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | -0.052 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.058 klf  | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | -0.052 klf | 0.37 | ---- | 0.92 |

#### 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 = 45.00 deg Elevation above which wind load acts = 631.00 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

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: WS21 Name: STR V-Angle: 30

Multiplier = 1.000

#### Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 1.81                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | -0.02                   | 0.00                    | ----                    | 1.00 |

#### Column loads:

| Col # | Type | Dir | Mag1   | y1/L     | Mag2 | y2/L |
|-------|------|-----|--------|----------|------|------|
| 1     | UDL  | X   | 0.070  | klf 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | -0.035 | klf 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.070  | klf 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | -0.035 | klf 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.070  | klf 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | -0.035 | klf 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.070  | klf 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | -0.035 | klf 0.37 | ---- | 0.92 |

#### Bearing loads:

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| 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 = 631.00 ft

Default wind pressure

For STR III

Wind pressure for superstructure:

Pz = 31.250 psf

Overturning not considered

For SER IV

Wind pressure for superstructure:

Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:

Pz = 21.190 psf

For SER I

Wind pressure for superstructure:

Pz = 16.250 psf

Wind pressure for substructure:

Pz = 38.460 psf

Wind pressure for substructure:

Pz = 21.630 psf

Wind pressure for substructure:

Pz = 26.080 psf

Wind pressure for substructure:

Pz = 20.000 psf

Loadcase ID: WS22 Name: STR V-Angle: 15

Multiplier = 1.000

#### Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 1.08                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | -0.00                   | 0.00                    | ----                    | 1.00 |

#### Column loads:

| Col # | Type | Dir | Mag1       | y1/L | Mag2 | y2/L |
|-------|------|-----|------------|------|------|------|
| 1     | UDL  | X   | 0.077 klf  | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | -0.016 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.077 klf  | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | -0.016 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.077 klf  | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | -0.016 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.077 klf  | 0.37 | ---- | 0.92 |

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4 UDL Z -0.016 klf 0.37 ---- 0.92

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 = 631.00 ft

Default wind pressure

For STR III

Wind pressure for superstructure:

Pz = 31.250 psf

Overturning not considered

For SER IV

Wind pressure for superstructure:

Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:

Pz = 21.190 psf

For SER I

Wind pressure for superstructure:

Pz = 16.250 psf

Wind pressure for substructure:

Pz = 38.460 psf

Wind pressure for substructure:

Pz = 21.630 psf

Wind pressure for substructure:

Pz = 26.080 psf

Wind pressure for substructure:

Pz = 20.000 psf

Loadcase ID: WS23 Name: STR V-Angle: 0

Multiplier = 1.000

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 0.54                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | 0.00                    | 0.00                    | ----                    | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1      | y1/L | Mag2 | y2/L |
|-------|------|-----|-----------|------|------|------|
| 1     | UDL  | X   | 0.078 klf | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | 0.004 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.078 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | 0.004 klf | 0.37 | ---- | 0.92 |

PROJECT: ODOT LUC-51-1285

|   |     |   |       |     |      |      |      |
|---|-----|---|-------|-----|------|------|------|
| 3 | UDL | X | 0.078 | klf | 0.37 | ---- | 0.92 |
| 3 | UDL | Z | 0.004 | klf | 0.37 | ---- | 0.92 |
| 4 | UDL | X | 0.078 | klf | 0.37 | ---- | 0.92 |
| 4 | UDL | Z | 0.004 | klf | 0.37 | ---- | 0.92 |

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 = 631.00 ft

Default wind pressure

For STR III

Wind pressure for superstructure:

Pz = 31.250 psf

Overturning not considered

For SER IV

Wind pressure for superstructure:

Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:

Pz = 21.190 psf

For SER I

Wind pressure for superstructure:

Pz = 16.250 psf

Wind pressure for substructure:

Pz = 38.460 psf

Wind pressure for substructure:

Pz = 21.630 psf

Wind pressure for substructure:

Pz = 26.080 psf

Wind pressure for substructure:

Pz = 20.000 psf

Loadcase ID: WS24 Name: STR V-Angle: -15

Multiplier = 1.000

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 1.44                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | 0.01                    | 0.00                    | ----                    | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1<br>kips, klf, k-ft | y1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | y2/L |
|-------|------|-----|-------------------------|-------------------------|-------------------------|------|
| 1     | UDL  | X   | 0.074                   | klf 0.37                | ----                    | 0.92 |

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|   |     |   |       |     |      |      |      |
|---|-----|---|-------|-----|------|------|------|
| 1 | UDL | Z | 0.024 | klf | 0.37 | ---- | 0.92 |
| 2 | UDL | X | 0.074 | klf | 0.37 | ---- | 0.92 |
| 2 | UDL | Z | 0.024 | klf | 0.37 | ---- | 0.92 |
| 3 | UDL | X | 0.074 | klf | 0.37 | ---- | 0.92 |
| 3 | UDL | Z | 0.024 | klf | 0.37 | ---- | 0.92 |
| 4 | UDL | X | 0.074 | klf | 0.37 | ---- | 0.92 |
| 4 | UDL | Z | 0.024 | klf | 0.37 | ---- | 0.92 |

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 = 631.00 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

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: WS25 Name: STR V-Angle: -30

Multiplier = 1.000

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|------|-------------------------|------|
| Force | X   | 0.00      | 1.99                    | 0.50 | ----                    | ---- |
| UDL   | Z   | ----      | 0.03                    | 0.00 | ----                    | 1.00 |

Column loads:

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| Col # | Type | Dir | Mag1  | y1/L | Mag2 | y2/L |
|-------|------|-----|-------|------|------|------|
| 1     | UDL  | X   | 0.065 | klf  | 0.37 | 0.92 |
| 1     | UDL  | Z   | 0.043 | klf  | 0.37 | 0.92 |
| 2     | UDL  | X   | 0.065 | klf  | 0.37 | 0.92 |
| 2     | UDL  | Z   | 0.043 | klf  | 0.37 | 0.92 |
| 3     | UDL  | X   | 0.065 | klf  | 0.37 | 0.92 |
| 3     | UDL  | Z   | 0.043 | klf  | 0.37 | 0.92 |
| 4     | UDL  | X   | 0.065 | klf  | 0.37 | 0.92 |
| 4     | UDL  | Z   | 0.043 | klf  | 0.37 | 0.92 |

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 = 631.00 ft

Default wind pressure

For STR III

Wind pressure for superstructure:

Pz = 31.250 psf

Overturning not considered

For SER IV

Wind pressure for superstructure:

Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:

Pz = 21.190 psf

For SER I

Wind pressure for superstructure:

Pz = 16.250 psf

Wind pressure for substructure:

Pz = 38.460 psf

Wind pressure for substructure:

Pz = 21.630 psf

Wind pressure for substructure:

Pz = 26.080 psf

Wind pressure for substructure:

Pz = 20.000 psf

Loadcase ID: WS26 Name: STR V-Angle: -45

Multiplier = 1.000

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|------|-------------------------|------|
| Force | X   | 0.00      | 2.06                    | 0.50 | ----                    | ---- |

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 BY CPM DATE Feb/21/2023  
 CKD. DATE

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UDL Z ---- 0.05 0.00 ---- 1.00

Column loads:

| Col # | Type | Dir | Mag1  | y1/L     | Mag2 | y2/L |
|-------|------|-----|-------|----------|------|------|
| 1     | UDL  | X   | 0.052 | klf 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | 0.058 | klf 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.052 | klf 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | 0.058 | klf 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.052 | klf 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | 0.058 | klf 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.052 | klf 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | 0.058 | klf 0.37 | ---- | 0.92 |

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 = 631.00 ft

Default wind pressure

For STR III

Wind pressure for superstructure:

Pz = 31.250 psf

Overturning not considered

For SER IV

Wind pressure for superstructure:

Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:

Pz = 21.190 psf

For SER I

Wind pressure for superstructure:

Pz = 16.250 psf

Wind pressure for substructure:

Pz = 38.460 psf

Wind pressure for substructure:

Pz = 21.630 psf

Wind pressure for substructure:

Pz = 26.080 psf

Wind pressure for substructure:

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 |
|------|-----|-----|------|------|------|------|
|------|-----|-----|------|------|------|------|

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|       |   | ft   | kips, klf,k-ft | kips, klf,k-ft |      |      |
|-------|---|------|----------------|----------------|------|------|
| Force | X | 0.00 | 1.62           | 0.50           | ---- | ---- |
| UDL   | Z | ---- | 0.07           | 0.00           | ---- | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1  | y1/L     | Mag2 | y2/L |
|-------|------|-----|-------|----------|------|------|
| 1     | UDL  | X   | 0.035 | klf 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | 0.070 | klf 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.035 | klf 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | 0.070 | klf 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.035 | klf 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | 0.070 | klf 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.035 | klf 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | 0.070 | klf 0.37 | ---- | 0.92 |

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 = 631.00 ft

Default wind pressure

For STR III

Wind pressure for superstructure:

Pz = 31.250 psf

Overturning not considered

For SER IV

Wind pressure for superstructure:

Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:

Pz = 21.190 psf

For SER I

Wind pressure for superstructure:

Pz = 16.250 psf

Wind pressure for substructure:

Pz = 38.460 psf

Wind pressure for substructure:

Pz = 21.630 psf

Wind pressure for substructure:

Pz = 26.080 psf

Wind pressure for substructure:

Pz = 20.000 psf

Loadcase ID: WS28 Name: SER I-Angle: 60

Multiplier = 1.000

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Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 1.43                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | -0.05                   | 0.00                    | ----                    | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1       | y1/L | Mag2 | y2/L |
|-------|------|-----|------------|------|------|------|
| 1     | UDL  | X   | 0.033 klf  | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | -0.050 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.033 klf  | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | -0.050 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.033 klf  | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | -0.050 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.033 klf  | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | -0.050 klf | 0.37 | ---- | 0.92 |

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 = 631.00 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

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

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

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 1.61                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | -0.03                   | 0.00                    | ----                    | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1       | y1/L | Mag2 | y2/L |
|-------|------|-----|------------|------|------|------|
| 1     | UDL  | X   | 0.045 klf  | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | -0.040 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.045 klf  | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | -0.040 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.045 klf  | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | -0.040 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.045 klf  | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | -0.040 klf | 0.37 | ---- | 0.92 |

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 = 631.00 ft

Default wind pressure

For STR III

Wind pressure for superstructure:

Pz = 31.250 psf

Overturning not considered

For SER IV

Wind pressure for superstructure:

Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:

Pz = 21.190 psf

For SER I

Wind pressure for substructure:

Pz = 38.460 psf

Wind pressure for substructure:

Pz = 21.630 psf

Wind pressure for substructure:

Pz = 26.080 psf

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 | CKD. DATE

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Wind pressure for superstructure:  
 Pz = 16.250 psf

Wind pressure for substructure:  
 Pz = 20.000 psf

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

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 1.39                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | -0.02                   | 0.00                    | ----                    | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1<br>klf | y1/L     | Mag2 | y2/L |
|-------|------|-----|-------------|----------|------|------|
| 1     | UDL  | X   | 0.054       | klf 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | -0.027      | klf 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.054       | klf 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | -0.027      | klf 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.054       | klf 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | -0.027      | klf 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.054       | klf 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | -0.027      | klf 0.37 | ---- | 0.92 |

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 = 631.00 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

Overturning not considered

For STR V

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

Wind pressure for substructure:  
 Pz = 26.080 psf  
 Wind pressure for substructure:  
 Pz = 20.000 psf

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

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|------|-------------------------|------|
| Force | X   | 0.00      | 0.83                    | 0.50 | ----                    | ---- |
| UDL   | Z   | ----      | -0.00                   | 0.00 | ----                    | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1       | y1/L | Mag2 | y2/L |
|-------|------|-----|------------|------|------|------|
| 1     | UDL  | X   | 0.059 klf  | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | -0.012 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.059 klf  | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | -0.012 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.059 klf  | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | -0.012 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.059 klf  | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | -0.012 klf | 0.37 | ---- | 0.92 |

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 = 631.00 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:

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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<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 0.41                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | 0.00                    | 0.00                    | ----                    | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1<br>klf | y1/L | Mag2<br>klf | y2/L |
|-------|------|-----|-------------|------|-------------|------|
| 1     | UDL  | X   | 0.060       | 0.37 | ----        | 0.92 |
| 1     | UDL  | Z   | 0.003       | 0.37 | ----        | 0.92 |
| 2     | UDL  | X   | 0.060       | 0.37 | ----        | 0.92 |
| 2     | UDL  | Z   | 0.003       | 0.37 | ----        | 0.92 |
| 3     | UDL  | X   | 0.060       | 0.37 | ----        | 0.92 |
| 3     | UDL  | Z   | 0.003       | 0.37 | ----        | 0.92 |
| 4     | UDL  | X   | 0.060       | 0.37 | ----        | 0.92 |
| 4     | UDL  | Z   | 0.003       | 0.37 | ----        | 0.92 |

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 = 631.00 ft  
 Default wind pressure  
 For STR III  
 Wind pressure for superstructure:                      Wind pressure for substructure:  
     Pz = 31.250 psf                      Pz = 38.460 psf

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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: WS33 Name: SER I-Angle: -15

Multiplier = 1.000

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 1.10                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | 0.01                    | 0.00                    | ----                    | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1      | y1/L | Mag2 | y2/L |
|-------|------|-----|-----------|------|------|------|
| 1     | UDL  | X   | 0.057 klf | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | 0.019 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.057 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | 0.019 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.057 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | 0.019 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.057 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | 0.019 klf | 0.37 | ---- | 0.92 |

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 = 631.00 ft

Default wind pressure

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For STR III

Wind pressure for superstructure:  
Pz = 31.250 psf

Overturning not considered

For SER IV

Wind pressure for superstructure:  
Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:  
Pz = 21.190 psf

For SER I

Wind pressure for superstructure:  
Pz = 16.250 psf

Wind pressure for substructure:  
Pz = 38.460 psf

Wind pressure for substructure:  
Pz = 21.630 psf

Wind pressure for substructure:  
Pz = 26.080 psf

Wind pressure for substructure:  
Pz = 20.000 psf

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

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 1.53                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | 0.02                    | 0.00                    | ----                    | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1      | y1/L | Mag2 | y2/L |
|-------|------|-----|-----------|------|------|------|
| 1     | UDL  | X   | 0.050 klf | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | 0.033 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.050 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | 0.033 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.050 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | 0.033 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.050 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | 0.033 klf | 0.37 | ---- | 0.92 |

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 = -30.00 deg Elevation above which wind load acts = 631.00 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

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: WS35 Name: SER I-Angle: -45

Multiplier = 1.000

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Force | X   | 0.00      | 1.58                    | 0.50                    | ----                    | ---- |
| UDL   | Z   | ----      | 0.04                    | 0.00                    | ----                    | 1.00 |

Column loads:

| Col # | Type | Dir | Mag1      | y1/L | Mag2 | y2/L |
|-------|------|-----|-----------|------|------|------|
| 1     | UDL  | X   | 0.040 klf | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | 0.045 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.040 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | 0.045 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.040 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | 0.045 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.040 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | 0.045 klf | 0.37 | ---- | 0.92 |

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       |

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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 = 631.00 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

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: WS36 Name: SER I-Angle: -60

Multiplier = 1.000

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>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   | 0.027 klf | 0.37 | ---- | 0.92 |
| 1     | UDL  | Z   | 0.054 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | X   | 0.027 klf | 0.37 | ---- | 0.92 |
| 2     | UDL  | Z   | 0.054 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | X   | 0.027 klf | 0.37 | ---- | 0.92 |
| 3     | UDL  | Z   | 0.054 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | X   | 0.027 klf | 0.37 | ---- | 0.92 |
| 4     | UDL  | Z   | 0.054 klf | 0.37 | ---- | 0.92 |

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       |

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|   |   |   |      |
|---|---|---|------|
| 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 = 631.00 ft

Default wind pressure

For STR III

Wind pressure for superstructure:

Pz = 31.250 psf

Overturning not considered

For SER IV

Wind pressure for superstructure:

Pz = 17.580 psf

Overturning not considered

For STR V

Wind pressure for superstructure:

Pz = 21.190 psf

For SER I

Wind pressure for superstructure:

Pz = 16.250 psf

Wind pressure for substructure:

Pz = 38.460 psf

Wind pressure for substructure:

Pz = 21.630 psf

Wind pressure for substructure:

Pz = 26.080 psf

Wind pressure for substructure:

Pz = 20.000 psf

Loadcase ID: BR1 Name:

Multiplier = 1.000

#### Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 74.07                   | 0.50 | ----                    | ---- |

#### Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | -0.06      |
| 1      | 1         | Z    | 1.09       |
| 1      | 1         | Y    | -0.10      |
| 1      | 2         | X    | -0.06      |
| 1      | 2         | Z    | 1.09       |
| 1      | 3         | X    | -0.06      |
| 1      | 3         | Z    | 1.09       |
| 1      | 4         | X    | -0.06      |
| 1      | 4         | Z    | 1.09       |
| 1      | 5         | X    | -0.06      |
| 1      | 5         | Z    | 1.09       |
| 1      | 6         | X    | -0.06      |
| 1      | 6         | Z    | 1.09       |
| 1      | 7         | X    | -0.06      |
| 1      | 7         | Z    | 1.09       |
| 1      | 7         | Y    | 0.10       |

#### Auto generation details

Manual input

Maximum truck load = 25.47 kips

Maximum lane load = 0.00 kips

Number of loaded lanes = 1

Loadcase ID: BR2 Name:

Multiplier = 1.000

#### Cap loads:

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| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Moment | X   | ----      | 74.07                   | 0.50                    | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR3 Name:  
Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50                    | ----                    | ---- |

Bearing loads:

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

Auto generation details

Manual input  
Maximum truck load = 25.47 kips  
Maximum lane load = 0.00 kips

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Number of loaded lanes = 2

Loadcase ID: BR4 Name:  
Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50                    | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50                    | ----                    | ---- |

Bearing loads:

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

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1 7 Y 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<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Moment | X   | ----      | 74.07                   | 0.50                    | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Moment | X   | ----      | 74.07                   | 0.50                    | ----                    | ---- |

Bearing loads:

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

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|   |   |   |      |
|---|---|---|------|
| 1 | 5 | X | 0.00 |
| 1 | 5 | Z | 0.00 |
| 1 | 6 | X | 0.00 |
| 1 | 6 | Z | 0.00 |
| 1 | 7 | X | 0.00 |
| 1 | 7 | Z | 0.00 |
| 1 | 7 | Y | 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: BR8 Name:

Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50 | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50 | ----                    | ---- |

Bearing loads:

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

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|   |   |   |      |
|---|---|---|------|
| 1 | 2 | X | 0.00 |
| 1 | 2 | Z | 0.00 |
| 1 | 3 | X | 0.00 |
| 1 | 3 | Z | 0.00 |
| 1 | 4 | X | 0.00 |
| 1 | 4 | Z | 0.00 |
| 1 | 5 | X | 0.00 |
| 1 | 5 | Z | 0.00 |
| 1 | 6 | X | 0.00 |
| 1 | 6 | Z | 0.00 |
| 1 | 7 | X | 0.00 |
| 1 | 7 | Z | 0.00 |
| 1 | 7 | Y | 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: BR10 Name:

Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 74.07                   | 0.50 | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR11 Name:

Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50 | ----                    | ---- |

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Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50 | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR13 Name:  
 Multiplier = 1.000

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Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50 | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50 | ----                    | ---- |

Bearing loads:

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

Auto generation details

Manual input  
 Maximum truck load = 25.47 kips

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Maximum lane load = 0.00 kips  
 Number of loaded lanes = 2

Loadcase ID: BR15 Name:  
 Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 157.41                  | 0.50 | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR16 Name:  
 Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50 | ----                    | ---- |

Bearing loads:

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

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|   |   |   |      |
|---|---|---|------|
| 1 | 7 | Z | 0.00 |
| 1 | 7 | Y | 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<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Moment | X   | ----      | 74.07                   | 0.50                    | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR18 Name:  
Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50                    | ----                    | ---- |

Bearing loads:

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

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|   |   |   |      |
|---|---|---|------|
| 1 | 4 | Z | 0.00 |
| 1 | 5 | X | 0.00 |
| 1 | 5 | Z | 0.00 |
| 1 | 6 | X | 0.00 |
| 1 | 6 | Z | 0.00 |
| 1 | 7 | X | 0.00 |
| 1 | 7 | Z | 0.00 |
| 1 | 7 | Y | 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: BR19 Name:

Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 74.07                   | 0.50 | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR20 Name:

Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 74.07                   | 0.50 | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |

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|   |   |   |      |
|---|---|---|------|
| 1 | 1 | Y | 0.00 |
| 1 | 2 | X | 0.00 |
| 1 | 2 | Z | 0.00 |
| 1 | 3 | X | 0.00 |
| 1 | 3 | Z | 0.00 |
| 1 | 4 | X | 0.00 |
| 1 | 4 | Z | 0.00 |
| 1 | 5 | X | 0.00 |
| 1 | 5 | Z | 0.00 |
| 1 | 6 | X | 0.00 |
| 1 | 6 | Z | 0.00 |
| 1 | 7 | X | 0.00 |
| 1 | 7 | Z | 0.00 |
| 1 | 7 | Y | 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: BR21 Name:

Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Moment | X   | ----      | 157.41                  | 0.50                    | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR22 Name:

Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Moment | X   | ----      | 157.41                  | 0.50                    | ----                    | ---- |

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Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR23 Name:

Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50 | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR24 Name:

Multiplier = 1.000

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Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50 | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR25 Name:  
Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 74.07                   | 0.50 | ----                    | ---- |

Bearing loads:

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

Auto generation details

Manual input

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Maximum truck load = 25.47 kips  
Maximum lane load = 0.00 kips  
Number of loaded lanes = 1

Loadcase ID: BR26 Name:  
Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50 | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR27 Name:  
Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50 | ----                    | ---- |

Bearing loads:

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

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|   |   |   |      |
|---|---|---|------|
| 1 | 7 | X | 0.00 |
| 1 | 7 | Z | 0.00 |
| 1 | 7 | Y | 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: BR28 Name:  
Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50                    | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR29 Name:  
Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Moment | X   | ----      | 74.07                   | 0.50                    | ----                    | ---- |

Bearing loads:

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

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|   |   |   |      |
|---|---|---|------|
| 1 | 4 | X | 0.00 |
| 1 | 4 | Z | 0.00 |
| 1 | 5 | X | 0.00 |
| 1 | 5 | Z | 0.00 |
| 1 | 6 | X | 0.00 |
| 1 | 6 | Z | 0.00 |
| 1 | 7 | X | 0.00 |
| 1 | 7 | Z | 0.00 |
| 1 | 7 | Y | 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: BR30 Name:

Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50 | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR31 Name:

Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50 | ----                    | ---- |

Bearing loads:

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

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|   |   |   |      |
|---|---|---|------|
| 1 | 1 | Z | 0.00 |
| 1 | 1 | Y | 0.00 |
| 1 | 2 | X | 0.00 |
| 1 | 2 | Z | 0.00 |
| 1 | 3 | X | 0.00 |
| 1 | 3 | Z | 0.00 |
| 1 | 4 | X | 0.00 |
| 1 | 4 | Z | 0.00 |
| 1 | 5 | X | 0.00 |
| 1 | 5 | Z | 0.00 |
| 1 | 6 | X | 0.00 |
| 1 | 6 | Z | 0.00 |
| 1 | 7 | X | 0.00 |
| 1 | 7 | Z | 0.00 |
| 1 | 7 | Y | 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: BR32 Name:

Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50 | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR33 Name:

Multiplier = 1.000

Cap loads:

| Type  | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|-------|-----|-----------|-------------------------|------|-------------------------|------|
| ----- |     |           |                         |      |                         |      |

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Moment X ---- 74.07 0.50 ----

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR34 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   | ----   | 123.46               | 0.50 | ----                 | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR35 Name:

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 PROGRAM: LEAP Bridge Concrete CE V21-v21.2.0.38  
 Bentley Systems, Inc. - www.bentley.com  
 PHONE : TOLL-FREE 1-800-778-4277

| SHEET 65 OF 123  
 | JOB NO. CMcGraw  
 | BY CPM DATE Feb/21/2023  
 | CKD. DATE

PROJECT: ODOT LUC-51-1285

Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 157.41                  | 0.50 | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR36 Name:  
 Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50 | ----                    | ---- |

Bearing loads:

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

Auto generation details

Arcadis  
 PROGRAM: LEAP Bridge Concrete CE V21-v21.2.0.38  
 Bentley Systems, Inc. - www.bentley.com  
 PHONE : TOLL-FREE 1-800-778-4277

SHEET 66 OF 123  
 JOB NO. CMcGraw  
 BY CPM DATE Feb/21/2023  
 CKD. DATE

PROJECT: ODOT LUC-51-1285

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

Loadcase ID: BR37 Name:  
 Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Moment | X   | ----      | 74.07                   | 0.50                    | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR38 Name:  
 Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Moment | X   | ----      | 74.07                   | 0.50                    | ----                    | ---- |

Bearing loads:

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

PROJECT: ODOT LUC-51-1285

|   |   |   |      |
|---|---|---|------|
| 1 | 6 | Z | 0.00 |
| 1 | 7 | X | 0.00 |
| 1 | 7 | Z | 0.00 |
| 1 | 7 | Y | 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: BR39 Name:

Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 74.07                   | 0.50 | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR40 Name:

Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50 | ----                    | ---- |

Bearing loads:

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

PROJECT: ODOT LUC-51-1285

|   |   |   |      |
|---|---|---|------|
| 1 | 3 | Z | 0.00 |
| 1 | 4 | X | 0.00 |
| 1 | 4 | Z | 0.00 |
| 1 | 5 | X | 0.00 |
| 1 | 5 | Z | 0.00 |
| 1 | 6 | X | 0.00 |
| 1 | 6 | Z | 0.00 |
| 1 | 7 | X | 0.00 |
| 1 | 7 | Z | 0.00 |
| 1 | 7 | Y | 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: BR41 Name:  
Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50                    | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
| 1      | 1         | X    | 0.00       |
| 1      | 1         | Z    | 0.00       |
| 1      | 1         | Y    | 0.00       |
| 1      | 2         | X    | 0.00       |
| 1      | 2         | Z    | 0.00       |
| 1      | 3         | X    | 0.00       |
| 1      | 3         | Z    | 0.00       |
| 1      | 4         | X    | 0.00       |
| 1      | 4         | Z    | 0.00       |
| 1      | 5         | X    | 0.00       |
| 1      | 5         | Z    | 0.00       |
| 1      | 6         | X    | 0.00       |
| 1      | 6         | Z    | 0.00       |
| 1      | 7         | X    | 0.00       |
| 1      | 7         | Z    | 0.00       |
| 1      | 7         | Y    | 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: BR42 Name:  
Multiplier = 1.000

Cap loads:

| Type   | Dir | Arm<br>ft | Mag1<br>kips, klf, k-ft | x1/L<br>kips, klf, k-ft | Mag2<br>kips, klf, k-ft | x2/L |
|--------|-----|-----------|-------------------------|-------------------------|-------------------------|------|
| Moment | X   | ----      | 123.46                  | 0.50                    | ----                    | ---- |

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
|--------|-----------|------|------------|

PROJECT: ODOT LUC-51-1285

|   |   |   |      |
|---|---|---|------|
| 1 | 1 | X | 0.00 |
| 1 | 1 | Z | 0.00 |
| 1 | 1 | Y | 0.00 |
| 1 | 2 | X | 0.00 |
| 1 | 2 | Z | 0.00 |
| 1 | 3 | X | 0.00 |
| 1 | 3 | Z | 0.00 |
| 1 | 4 | X | 0.00 |
| 1 | 4 | Z | 0.00 |
| 1 | 5 | X | 0.00 |
| 1 | 5 | Z | 0.00 |
| 1 | 6 | X | 0.00 |
| 1 | 6 | Z | 0.00 |
| 1 | 7 | X | 0.00 |
| 1 | 7 | Z | 0.00 |
| 1 | 7 | Y | 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: LL1 Name:

Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | -44.35     |   |
| 1      | 2         | Y    | -54.84     |   |
| 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    | -31.12     | L |
| 1      | 2         | Y    | -33.89     | L |
| 1      | 3         | Y    | -1.42      | 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: LL2 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    | 0.00       |   |
| 1      | 6         | Y    | -27.10     |   |
| 1      | 7         | Y    | -72.09     |   |
| 1      | 1         | Y    | 0.00       | L |
| 1      | 2         | Y    | 0.00       | L |

PROJECT: ODOT LUC-51-1285

|   |   |   |        |   |
|---|---|---|--------|---|
| 1 | 3 | Y | 0.00   | L |
| 1 | 4 | Y | 0.00   | L |
| 1 | 5 | Y | 0.00   | L |
| 1 | 6 | Y | -18.15 | L |
| 1 | 7 | Y | -48.28 | L |

Auto generation details

Generated Live Load

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    | -4.21      |   |
| 1      | 4         | Y    | -48.45     |   |
| 1      | 5         | Y    | -30.00     |   |
| 1      | 6         | Y    | -22.59     |   |
| 1      | 7         | Y    | -60.07     |   |
| 1      | 1         | Y    | 0.00       | L |
| 1      | 2         | Y    | 0.00       | L |
| 1      | 3         | Y    | -2.86      | L |
| 1      | 4         | Y    | -32.36     | L |
| 1      | 5         | Y    | -20.13     | L |
| 1      | 6         | Y    | -15.13     | L |
| 1      | 7         | Y    | -40.23     | L |

Auto generation details

Generated Live Load

Loadcase ID: LL4 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | -24.29     |   |
| 1      | 2         | Y    | -57.05     |   |
| 1      | 3         | Y    | -58.37     |   |
| 1      | 4         | Y    | -25.61     |   |
| 1      | 5         | Y    | 0.00       |   |
| 1      | 6         | Y    | 0.00       |   |
| 1      | 7         | Y    | 0.00       |   |
| 1      | 1         | Y    | -14.96     | L |
| 1      | 2         | Y    | -39.76     | L |
| 1      | 3         | Y    | -39.91     | L |
| 1      | 4         | Y    | -16.09     | 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: LL5 Name:

PROJECT: ODOT LUC-51-1285

Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | -36.96     |   |
| 1      | 2         | Y    | -65.60     |   |
| 1      | 3         | Y    | -48.45     |   |
| 1      | 4         | Y    | -14.31     |   |
| 1      | 5         | Y    | 0.00       |   |
| 1      | 6         | Y    | 0.00       |   |
| 1      | 7         | Y    | 0.00       |   |
| 1      | 1         | Y    | -25.93     | L |
| 1      | 2         | Y    | -39.75     | L |
| 1      | 3         | Y    | -37.27     | L |
| 1      | 4         | Y    | -7.77      | 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: 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    | -13.73     |   |
| 1      | 5         | Y    | -35.87     |   |
| 1      | 6         | Y    | -49.60     |   |
| 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    | -7.35      | L |
| 1      | 5         | Y    | -32.53     | L |
| 1      | 6         | Y    | -24.72     | L |
| 1      | 7         | Y    | -1.83      | L |

Auto generation details

Generated Live Load

Loadcase ID: LL7 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |  |
|--------|-----------|------|------------|--|
| 1      | 1         | Y    | -1.78      |  |
| 1      | 2         | Y    | -58.14     |  |
| 1      | 3         | Y    | -39.28     |  |
| 1      | 4         | Y    | 0.00       |  |
| 1      | 5         | Y    | 0.00       |  |
| 1      | 6         | Y    | 0.00       |  |
| 1      | 7         | Y    | 0.00       |  |

PROJECT: ODOT LUC-51-1285

|   |   |   |        |   |
|---|---|---|--------|---|
| 1 | 1 | Y | -2.34  | L |
| 1 | 2 | Y | -36.75 | L |
| 1 | 3 | Y | -27.23 | L |
| 1 | 4 | Y | -0.11  | 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: LL8 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | -17.42     |   |
| 1      | 2         | Y    | -50.19     |   |
| 1      | 3         | Y    | -65.24     |   |
| 1      | 4         | Y    | -32.47     |   |
| 1      | 5         | Y    | 0.00       |   |
| 1      | 6         | Y    | 0.00       |   |
| 1      | 7         | Y    | 0.00       |   |
| 1      | 1         | Y    | -9.76      | L |
| 1      | 2         | Y    | -38.29     | L |
| 1      | 3         | Y    | -40.13     | L |
| 1      | 4         | Y    | -22.46     | L |
| 1      | 5         | Y    | -0.08      | L |
| 1      | 6         | Y    | 0.00       | L |
| 1      | 7         | Y    | 0.00       | L |

Auto generation details

Generated Live Load

Loadcase ID: LL9 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | -24.29     |   |
| 1      | 2         | Y    | -48.45     |   |
| 1      | 3         | Y    | -9.92      |   |
| 1      | 4         | Y    | 0.00       |   |
| 1      | 5         | Y    | 0.00       |   |
| 1      | 6         | Y    | -22.59     |   |
| 1      | 7         | Y    | -60.07     |   |
| 1      | 1         | Y    | -14.96     | L |
| 1      | 2         | Y    | -35.06     | L |
| 1      | 3         | Y    | -5.34      | L |
| 1      | 4         | Y    | 0.00       | L |
| 1      | 5         | Y    | 0.00       | L |
| 1      | 6         | Y    | -15.13     | L |
| 1      | 7         | Y    | -40.23     | L |

Auto generation details

Generated Live Load

PROJECT: ODOT LUC-51-1285

Loadcase ID: LL10 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    | 0.00       |   |
| 1      | 6         | Y    | -58.14     |   |
| 1      | 7         | Y    | -41.05     |   |
| 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    | -3.33      | L |
| 1      | 6         | Y    | -33.78     | L |
| 1      | 7         | Y    | -29.33     | L |

Auto generation details

Generated Live Load

Loadcase ID: LL11 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | 0.00       |   |
| 1      | 2         | Y    | 0.00       |   |
| 1      | 3         | Y    | -39.79     |   |
| 1      | 4         | Y    | -64.19     |   |
| 1      | 5         | Y    | -37.94     |   |
| 1      | 6         | Y    | -23.41     |   |
| 1      | 7         | Y    | 0.00       |   |
| 1      | 1         | Y    | 0.00       | L |
| 1      | 2         | Y    | -0.59      | L |
| 1      | 3         | Y    | -26.34     | L |
| 1      | 4         | Y    | -40.13     | L |
| 1      | 5         | Y    | -31.12     | L |
| 1      | 6         | Y    | -12.51     | L |
| 1      | 7         | Y    | -0.03      | L |

Auto generation details

Generated Live Load

Loadcase ID: LL12 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |  |
|--------|-----------|------|------------|--|
| 1      | 1         | Y    | 0.00       |  |
| 1      | 2         | Y    | -1.74      |  |
| 1      | 3         | Y    | -48.45     |  |
| 1      | 4         | Y    | -59.85     |  |
| 1      | 5         | Y    | -42.89     |  |

PROJECT: ODOT LUC-51-1285

|   |   |   |        |   |
|---|---|---|--------|---|
| 1 | 6 | Y | -12.39 |   |
| 1 | 7 | Y | 0.00   |   |
| 1 | 1 | Y | 0.00   | L |
| 1 | 2 | Y | -2.03  | L |
| 1 | 3 | Y | -30.80 | L |
| 1 | 4 | Y | -40.13 | L |
| 1 | 5 | Y | -30.68 | L |
| 1 | 6 | Y | -7.09  | L |
| 1 | 7 | Y | 0.00   | L |

Auto generation details

Generated Live Load

Loadcase ID: LL13 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | -36.96     |   |
| 1      | 2         | Y    | -45.70     |   |
| 1      | 3         | Y    | 0.00       |   |
| 1      | 4         | Y    | 0.00       |   |
| 1      | 5         | Y    | 0.00       |   |
| 1      | 6         | Y    | -22.59     |   |
| 1      | 7         | Y    | -60.07     |   |
| 1      | 1         | Y    | -25.93     | L |
| 1      | 2         | Y    | -28.24     | L |
| 1      | 3         | Y    | -1.18      | L |
| 1      | 4         | Y    | 0.00       | L |
| 1      | 5         | Y    | 0.00       | L |
| 1      | 6         | Y    | -15.13     | L |
| 1      | 7         | Y    | -40.23     | L |

Auto generation details

Generated Live Load

Loadcase ID: LL14 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | 0.00       |   |
| 1      | 2         | Y    | 0.00       |   |
| 1      | 3         | Y    | -27.12     |   |
| 1      | 4         | Y    | -59.89     |   |
| 1      | 5         | Y    | -36.98     |   |
| 1      | 6         | Y    | -41.33     |   |
| 1      | 7         | Y    | 0.00       |   |
| 1      | 1         | Y    | 0.00       | L |
| 1      | 2         | Y    | 0.00       | L |
| 1      | 3         | Y    | -17.44     | L |
| 1      | 4         | Y    | -40.04     | L |
| 1      | 5         | Y    | -31.12     | L |
| 1      | 6         | Y    | -20.60     | L |
| 1      | 7         | Y    | -1.53      | L |

Auto generation details

PROJECT: ODOT LUC-51-1285

Generated Live Load

Loadcase ID: LL15 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | -9.65      |   |
| 1      | 2         | Y    | -41.18     |   |
| 1      | 3         | Y    | -53.25     |   |
| 1      | 4         | Y    | -36.44     |   |
| 1      | 5         | Y    | 0.00       |   |
| 1      | 6         | Y    | -19.20     |   |
| 1      | 7         | Y    | -51.06     |   |
| 1      | 1         | Y    | -5.17      | L |
| 1      | 2         | Y    | -30.67     | L |
| 1      | 3         | Y    | -34.11     | L |
| 1      | 4         | Y    | -23.42     | L |
| 1      | 5         | Y    | -0.74      | L |
| 1      | 6         | Y    | -12.86     | L |
| 1      | 7         | Y    | -34.20     | L |

Auto generation details

Generated Live Load

Loadcase ID: LL16 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | -11.35     |   |
| 1      | 2         | Y    | -48.45     |   |
| 1      | 3         | Y    | -62.64     |   |
| 1      | 4         | Y    | -42.87     |   |
| 1      | 5         | Y    | 0.00       |   |
| 1      | 6         | Y    | 0.00       |   |
| 1      | 7         | Y    | 0.00       |   |
| 1      | 1         | Y    | -6.08      | L |
| 1      | 2         | Y    | -36.08     | L |
| 1      | 3         | Y    | -40.13     | L |
| 1      | 4         | Y    | -27.56     | L |
| 1      | 5         | Y    | -0.87      | L |
| 1      | 6         | Y    | 0.00       | L |
| 1      | 7         | Y    | 0.00       | L |

Auto generation details

Generated Live Load

Loadcase ID: LL17 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       |  |

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|   |   |   |        |   |
|---|---|---|--------|---|
| 1 | 4 | Y | -3.41  |   |
| 1 | 5 | Y | -46.19 |   |
| 1 | 6 | Y | -39.28 |   |
| 1 | 7 | Y | -10.32 |   |
| 1 | 1 | Y | 0.00   | L |
| 1 | 2 | Y | 0.00   | L |
| 1 | 3 | Y | 0.00   | L |
| 1 | 4 | Y | -2.86  | L |
| 1 | 5 | Y | -27.00 | L |
| 1 | 6 | Y | -30.93 | L |
| 1 | 7 | Y | -5.64  | L |

Auto generation details

Generated Live Load

Loadcase ID: LL18 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    | -21.31     |   |
| 1      | 5         | Y    | -37.94     |   |
| 1      | 6         | Y    | -45.99     |   |
| 1      | 7         | Y    | -60.07     |   |
| 1      | 1         | Y    | 0.00       | L |
| 1      | 2         | Y    | 0.00       | L |
| 1      | 3         | Y    | 0.00       | L |
| 1      | 4         | Y    | -12.57     | L |
| 1      | 5         | Y    | -30.25     | L |
| 1      | 6         | Y    | -27.64     | L |
| 1      | 7         | Y    | -40.26     | L |

Auto generation details

Generated Live Load

Loadcase ID: LL19 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | -13.62     |   |
| 1      | 2         | Y    | -58.14     |   |
| 1      | 3         | Y    | -27.43     |   |
| 1      | 4         | Y    | 0.00       |   |
| 1      | 5         | Y    | 0.00       |   |
| 1      | 6         | Y    | 0.00       |   |
| 1      | 7         | Y    | 0.00       |   |
| 1      | 1         | Y    | -7.30      | L |
| 1      | 2         | Y    | -42.59     | L |
| 1      | 3         | Y    | -16.54     | 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 |

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Auto generation details

Generated Live Load

Loadcase ID: LL20 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | -20.91     |   |
| 1      | 2         | Y    | -58.14     |   |
| 1      | 3         | Y    | -20.14     |   |
| 1      | 4         | Y    | 0.00       |   |
| 1      | 5         | Y    | 0.00       |   |
| 1      | 6         | Y    | 0.00       |   |
| 1      | 7         | Y    | 0.00       |   |
| 1      | 1         | Y    | -11.71     | L |
| 1      | 2         | Y    | -43.52     | L |
| 1      | 3         | Y    | -11.20     | 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: LL21 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | -31.42     |   |
| 1      | 2         | Y    | -38.84     |   |
| 1      | 3         | Y    | -33.82     |   |
| 1      | 4         | Y    | -54.56     |   |
| 1      | 5         | Y    | -32.25     |   |
| 1      | 6         | Y    | -19.90     |   |
| 1      | 7         | Y    | 0.00       |   |
| 1      | 1         | Y    | -22.04     | L |
| 1      | 2         | Y    | -24.51     | L |
| 1      | 3         | Y    | -23.40     | L |
| 1      | 4         | Y    | -34.11     | L |
| 1      | 5         | Y    | -26.45     | L |
| 1      | 6         | Y    | -10.64     | L |
| 1      | 7         | Y    | -0.02      | L |

Auto generation details

Generated Live Load

Loadcase ID: LL22 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |  |
|--------|-----------|------|------------|--|
| 1      | 1         | Y    | -31.42     |  |

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|   |   |   |        |   |
|---|---|---|--------|---|
| 1 | 2 | Y | -55.76 |   |
| 1 | 3 | Y | -44.76 |   |
| 1 | 4 | Y | -53.35 |   |
| 1 | 5 | Y | -25.50 |   |
| 1 | 6 | Y | 0.00   |   |
| 1 | 7 | Y | 0.00   |   |
| 1 | 1 | Y | -22.04 | L |
| 1 | 2 | Y | -33.79 | L |
| 1 | 3 | Y | -34.11 | L |
| 1 | 4 | Y | -34.11 | L |
| 1 | 5 | Y | -17.11 | L |
| 1 | 6 | Y | -0.00  | L |
| 1 | 7 | Y | 0.00   | L |

Auto generation details

Generated Live Load

Loadcase ID: LL23 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | 0.00       |   |
| 1      | 2         | Y    | -34.21     |   |
| 1      | 3         | Y    | -66.97     |   |
| 1      | 4         | Y    | -48.45     |   |
| 1      | 5         | Y    | -15.69     |   |
| 1      | 6         | Y    | 0.00       |   |
| 1      | 7         | Y    | 0.00       |   |
| 1      | 1         | Y    | -0.22      | L |
| 1      | 2         | Y    | -24.01     | L |
| 1      | 3         | Y    | -40.13     | L |
| 1      | 4         | Y    | -37.75     | L |
| 1      | 5         | Y    | -8.62      | L |
| 1      | 6         | Y    | 0.00       | L |
| 1      | 7         | Y    | 0.00       | L |

Auto generation details

Generated Live Load

Loadcase ID: LL24 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | -36.96     |   |
| 1      | 2         | Y    | -45.70     |   |
| 1      | 3         | Y    | -4.21      |   |
| 1      | 4         | Y    | -48.45     |   |
| 1      | 5         | Y    | -30.00     |   |
| 1      | 6         | Y    | 0.00       |   |
| 1      | 7         | Y    | 0.00       |   |
| 1      | 1         | Y    | -25.93     | L |
| 1      | 2         | Y    | -28.24     | L |
| 1      | 3         | Y    | -4.05      | L |
| 1      | 4         | Y    | -32.36     | L |
| 1      | 5         | Y    | -20.13     | L |
| 1      | 6         | Y    | -0.00      | L |

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1 7 Y 0.00 L

Auto generation details

Generated Live Load

Loadcase ID: LL25 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | 0.00       |   |
| 1      | 2         | Y    | -10.32     |   |
| 1      | 3         | Y    | -58.14     |   |
| 1      | 4         | Y    | -30.73     |   |
| 1      | 5         | Y    | 0.00       |   |
| 1      | 6         | Y    | 0.00       |   |
| 1      | 7         | Y    | 0.00       |   |
| 1      | 1         | Y    | 0.00       | L |
| 1      | 2         | Y    | -5.64      | L |
| 1      | 3         | Y    | -41.48     | L |
| 1      | 4         | Y    | -19.31     | 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: LL26 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | -36.96     |   |
| 1      | 2         | Y    | -45.70     |   |
| 1      | 3         | Y    | 0.00       |   |
| 1      | 4         | Y    | -34.28     |   |
| 1      | 5         | Y    | -48.38     |   |
| 1      | 6         | Y    | 0.00       |   |
| 1      | 7         | Y    | 0.00       |   |
| 1      | 1         | Y    | -25.93     | L |
| 1      | 2         | Y    | -28.24     | L |
| 1      | 3         | Y    | -1.40      | L |
| 1      | 4         | Y    | -24.04     | L |
| 1      | 5         | Y    | -28.35     | L |
| 1      | 6         | Y    | -2.76      | L |
| 1      | 7         | Y    | 0.00       | L |

Auto generation details

Generated Live Load

Loadcase ID: LL27 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |
|--------|-----------|------|------------|
|--------|-----------|------|------------|

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|   |   |   |        |   |
|---|---|---|--------|---|
| 1 | 1 | Y | -36.96 |   |
| 1 | 2 | Y | -45.70 |   |
| 1 | 3 | Y | 0.00   |   |
| 1 | 4 | Y | -27.38 |   |
| 1 | 5 | Y | -42.89 |   |
| 1 | 6 | Y | -12.39 |   |
| 1 | 7 | Y | 0.00   |   |
| 1 | 1 | Y | -25.93 | L |
| 1 | 2 | Y | -28.24 | L |
| 1 | 3 | Y | -1.18  | L |
| 1 | 4 | Y | -17.67 | L |
| 1 | 5 | Y | -30.60 | L |
| 1 | 6 | Y | -7.09  | L |
| 1 | 7 | Y | 0.00   | L |

Auto generation details

Generated Live Load

Loadcase ID: LL28 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | 0.00       |   |
| 1      | 2         | Y    | -34.21     |   |
| 1      | 3         | Y    | -48.45     |   |
| 1      | 4         | Y    | 0.00       |   |
| 1      | 5         | Y    | 0.00       |   |
| 1      | 6         | Y    | -48.45     |   |
| 1      | 7         | Y    | -34.21     |   |
| 1      | 1         | Y    | -0.22      | L |
| 1      | 2         | Y    | -24.01     | L |
| 1      | 3         | Y    | -29.61     | L |
| 1      | 4         | Y    | -1.53      | L |
| 1      | 5         | Y    | -2.77      | L |
| 1      | 6         | Y    | -28.15     | L |
| 1      | 7         | Y    | -24.44     | L |

Auto generation details

Generated Live Load

Loadcase ID: LL29 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | 0.00       |   |
| 1      | 2         | Y    | 0.00       |   |
| 1      | 3         | Y    | -32.55     |   |
| 1      | 4         | Y    | -58.14     |   |
| 1      | 5         | Y    | -8.50      |   |
| 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    | -20.92     | L |
| 1      | 4         | Y    | -40.69     | L |

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|   |   |   |       |   |
|---|---|---|-------|---|
| 1 | 5 | Y | -4.82 | L |
| 1 | 6 | Y | 0.00  | L |
| 1 | 7 | Y | 0.00  | L |

Auto generation details

Generated Live Load

Loadcase ID: LL30 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | -36.96     |   |
| 1      | 2         | Y    | -45.70     |   |
| 1      | 3         | Y    | 0.00       |   |
| 1      | 4         | Y    | 0.00       |   |
| 1      | 5         | Y    | -31.04     |   |
| 1      | 6         | Y    | -34.51     |   |
| 1      | 7         | Y    | -17.10     |   |
| 1      | 1         | Y    | -25.93     | L |
| 1      | 2         | Y    | -28.24     | L |
| 1      | 3         | Y    | -1.18      | L |
| 1      | 4         | Y    | -0.39      | L |
| 1      | 5         | Y    | -16.24     | L |
| 1      | 6         | Y    | -29.19     | L |
| 1      | 7         | Y    | -9.55      | L |

Auto generation details

Generated Live Load

Loadcase ID: LL31 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | -17.42     |   |
| 1      | 2         | Y    | -48.45     |   |
| 1      | 3         | Y    | -16.79     |   |
| 1      | 4         | Y    | 0.00       |   |
| 1      | 5         | Y    | -31.04     |   |
| 1      | 6         | Y    | -34.51     |   |
| 1      | 7         | Y    | -17.10     |   |
| 1      | 1         | Y    | -9.76      | L |
| 1      | 2         | Y    | -36.27     | L |
| 1      | 3         | Y    | -9.33      | L |
| 1      | 4         | Y    | -0.39      | L |
| 1      | 5         | Y    | -16.24     | L |
| 1      | 6         | Y    | -29.19     | L |
| 1      | 7         | Y    | -9.55      | L |

Auto generation details

Generated Live Load

Loadcase ID: LL32 Name:  
Multiplier = 1.000

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Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | 0.00       |   |
| 1      | 2         | Y    | -19.90     |   |
| 1      | 3         | Y    | -52.66     |   |
| 1      | 4         | Y    | -62.76     |   |
| 1      | 5         | Y    | -30.00     |   |
| 1      | 6         | Y    | 0.00       |   |
| 1      | 7         | Y    | 0.00       |   |
| 1      | 1         | Y    | 0.00       | L |
| 1      | 2         | Y    | -11.51     | L |
| 1      | 3         | Y    | -38.95     | L |
| 1      | 4         | Y    | -40.13     | L |
| 1      | 5         | Y    | -20.13     | L |
| 1      | 6         | Y    | -0.00      | L |
| 1      | 7         | Y    | 0.00       | L |

Auto generation details

Generated Live Load

Loadcase ID: LL33 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | 0.00       |   |
| 1      | 2         | Y    | 0.00       |   |
| 1      | 3         | Y    | -22.23     |   |
| 1      | 4         | Y    | -58.14     |   |
| 1      | 5         | Y    | -18.82     |   |
| 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    | -12.62     | L |
| 1      | 4         | Y    | -43.46     | L |
| 1      | 5         | Y    | -10.34     | L |
| 1      | 6         | Y    | 0.00       | L |
| 1      | 7         | Y    | 0.00       | L |

Auto generation details

Generated Live Load

Loadcase ID: LL34 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | 0.00       |   |
| 1      | 2         | Y    | -34.21     |   |
| 1      | 3         | Y    | -48.45     |   |
| 1      | 4         | Y    | 0.00       |   |
| 1      | 5         | Y    | -31.04     |   |
| 1      | 6         | Y    | -34.51     |   |
| 1      | 7         | Y    | -17.10     |   |
| 1      | 1         | Y    | -0.22      | L |
| 1      | 2         | Y    | -24.01     | L |

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|   |   |   |        |   |
|---|---|---|--------|---|
| 1 | 3 | Y | -29.61 | L |
| 1 | 4 | Y | -1.91  | L |
| 1 | 5 | Y | -16.24 | L |
| 1 | 6 | Y | -29.19 | L |
| 1 | 7 | Y | -9.55  | L |

Auto generation details

Generated Live Load

Loadcase ID: LL35 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | 0.00       |   |
| 1      | 2         | Y    | -21.85     |   |
| 1      | 3         | Y    | -49.70     |   |
| 1      | 4         | Y    | -48.41     |   |
| 1      | 5         | Y    | -46.95     |   |
| 1      | 6         | Y    | -29.33     |   |
| 1      | 7         | Y    | -14.54     |   |
| 1      | 1         | Y    | 0.00       | L |
| 1      | 2         | Y    | -13.75     | L |
| 1      | 3         | Y    | -33.93     | L |
| 1      | 4         | Y    | -34.11     | L |
| 1      | 5         | Y    | -26.45     | L |
| 1      | 6         | Y    | -24.81     | L |
| 1      | 7         | Y    | -8.11      | L |

Auto generation details

Generated Live Load

Loadcase ID: LL36 Name:  
Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | 0.00       |   |
| 1      | 2         | Y    | 0.00       |   |
| 1      | 3         | Y    | -10.02     |   |
| 1      | 4         | Y    | -48.45     |   |
| 1      | 5         | Y    | -55.23     |   |
| 1      | 6         | Y    | -34.51     |   |
| 1      | 7         | Y    | -17.10     |   |
| 1      | 1         | Y    | 0.00       | L |
| 1      | 2         | Y    | 0.00       | L |
| 1      | 3         | Y    | -5.39      | L |
| 1      | 4         | Y    | -35.47     | L |
| 1      | 5         | Y    | -31.12     | L |
| 1      | 6         | Y    | -29.19     | L |
| 1      | 7         | Y    | -9.55      | L |

Auto generation details

Generated Live Load

Loadcase ID: LL37 Name:

PROJECT: ODOT LUC-51-1285

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    | -41.13     |   |
| 1      | 5         | Y    | -58.06     |   |
| 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    | -0.26      | L |
| 1      | 4         | Y    | -28.85     | L |
| 1      | 5         | Y    | -34.02     | L |
| 1      | 6         | Y    | -3.31      | L |
| 1      | 7         | Y    | 0.00       | L |

Auto generation details

Generated Live Load

Loadcase ID: LL38 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    | -32.86     |   |
| 1      | 5         | Y    | -51.46     |   |
| 1      | 6         | Y    | -14.87     |   |
| 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    | -21.20     | L |
| 1      | 5         | Y    | -36.73     | L |
| 1      | 6         | Y    | -8.50      | L |
| 1      | 7         | Y    | 0.00       | L |

Auto generation details

Generated Live Load

Loadcase ID: LL39 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    | -25.57     |  |
| 1      | 5         | Y    | -45.53     |  |
| 1      | 6         | Y    | -28.09     |  |
| 1      | 7         | Y    | 0.00       |  |

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|   |   |   |        |   |
|---|---|---|--------|---|
| 1 | 1 | Y | 0.00   | L |
| 1 | 2 | Y | 0.00   | L |
| 1 | 3 | Y | 0.00   | L |
| 1 | 4 | Y | -15.09 | L |
| 1 | 5 | Y | -36.30 | L |
| 1 | 6 | Y | -15.01 | L |
| 1 | 7 | Y | -0.03  | L |

Auto generation details

Generated Live Load

Loadcase ID: LL40 Name:  
 Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | 0.00       |   |
| 1      | 2         | Y    | -1.74      |   |
| 1      | 3         | Y    | -48.45     |   |
| 1      | 4         | Y    | -32.47     |   |
| 1      | 5         | Y    | 0.00       |   |
| 1      | 6         | Y    | -22.59     |   |
| 1      | 7         | Y    | -60.07     |   |
| 1      | 1         | Y    | 0.00       | L |
| 1      | 2         | Y    | -2.03      | L |
| 1      | 3         | Y    | -30.80     | L |
| 1      | 4         | Y    | -22.46     | L |
| 1      | 5         | Y    | -0.08      | L |
| 1      | 6         | Y    | -15.13     | L |
| 1      | 7         | Y    | -40.23     | L |

Auto generation details

Generated Live Load

Loadcase ID: LL41 Name:  
 Multiplier = 1.000

Bearing loads:

| Line # | Bearing # | Dir. | Load, kips |   |
|--------|-----------|------|------------|---|
| 1      | 1         | Y    | 0.00       |   |
| 1      | 2         | Y    | -8.60      |   |
| 1      | 3         | Y    | -48.45     |   |
| 1      | 4         | Y    | -25.61     |   |
| 1      | 5         | Y    | 0.00       |   |
| 1      | 6         | Y    | -48.45     |   |
| 1      | 7         | Y    | -34.21     |   |
| 1      | 1         | Y    | 0.00       | L |
| 1      | 2         | Y    | -4.70      | L |
| 1      | 3         | Y    | -34.57     | L |
| 1      | 4         | Y    | -16.09     | L |
| 1      | 5         | Y    | -2.77      | L |
| 1      | 6         | Y    | -28.15     | L |
| 1      | 7         | Y    | -24.44     | L |

Auto generation details

Generated Live Load

PROJECT: ODOT LUC-51-1285

Loadcase ID: LL42 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    | -34.28     |   |
| 1      | 5         | Y    | -48.38     |   |
| 1      | 6         | Y    | -22.59     |   |
| 1      | 7         | Y    | -60.07     |   |
| 1      | 1         | Y    | 0.00       | L |
| 1      | 2         | Y    | 0.00       | L |
| 1      | 3         | Y    | -0.22      | L |
| 1      | 4         | Y    | -24.04     | L |
| 1      | 5         | Y    | -28.35     | L |
| 1      | 6         | Y    | -17.88     | L |
| 1      | 7         | Y    | -40.23     | L |

Auto generation details

Generated Live Load

Loadcase ID: EV1 Name:  
Multiplier = 1.000

EV1 taken at 5 feet of earth  
above footings.

Footing loads:

| Footing # | Type | Dir | Mag1  | y1/L     | Mag2 | y2/L |
|-----------|------|-----|-------|----------|------|------|
| 1         | UDL  | Y   | 1.800 | klf 0.31 | ---- | 0.69 |
| 1         | UDL  | Y   | 3.600 | klf 0.69 | ---- | 1.00 |
| 2         | UDL  | Y   | 3.600 | klf 0.00 | ---- | 0.31 |
| 2         | UDL  | Y   | 1.800 | klf 0.31 | ---- | 0.69 |
| 2         | UDL  | Y   | 3.600 | klf 0.69 | ---- | 1.00 |
| 3         | UDL  | Y   | 3.600 | klf 0.00 | ---- | 0.31 |
| 3         | UDL  | Y   | 1.800 | klf 0.31 | ---- | 0.69 |
| 3         | UDL  | Y   | 3.600 | klf 0.69 | ---- | 1.00 |
| 4         | UDL  | Y   | 3.600 | klf 0.00 | ---- | 0.31 |
| 4         | UDL  | Y   | 1.800 | klf 0.31 | ---- | 0.69 |
| 4         | UDL  | Y   | 3.600 | klf 0.69 | ---- | 1.00 |
| 1         | UDL  | Y   | 3.600 | klf 0.00 | ---- | 0.31 |

Selected load groups:

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

STRUCTURE MODEL

=====

FRAME Model:

| Member | Node | Hinge Check Pt | Dist(ft) | Memb length(ft) |
|--------|------|----------------|----------|-----------------|
| -----  |      |                |          |                 |

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|              |    |    |     |       |       |
|--------------|----|----|-----|-------|-------|
| Column No. 1 | 1  | 1  | -   | 0.00  |       |
|              |    | 2  | -   | 23.09 | 23.09 |
| Column No. 2 | 2  | 3  | -   | 0.00  |       |
|              |    | 4  | -   | 23.09 | 23.09 |
| Column No. 3 | 3  | 5  | -   | 0.00  |       |
|              |    | 6  | -   | 23.09 | 23.09 |
| Column No. 4 | 4  | 7  | -   | 0.00  |       |
|              |    | 8  | -   | 23.09 | 23.09 |
| Cap          | 5  | 9  | -   | 0.00  |       |
|              |    | 10 | - f | 0.17  | 0.17  |
|              | 6  | 10 | - f | 0.17  |       |
|              |    | 2  | -   | 1.50  | 1.33  |
|              | 7  | 2  | -   | 1.50  |       |
|              |    | 11 | - f | 2.83  | 1.33  |
|              | 8  | 11 | - f | 2.83  |       |
|              |    | 12 | -   | 7.26  | 4.43  |
|              | 9  | 12 | -   | 7.26  |       |
|              |    | 13 | -   | 8.76  | 1.50  |
|              | 10 | 13 | -   | 8.76  |       |
|              |    | 14 | - f | 12.59 | 3.83  |
|              | 11 | 14 | - f | 12.59 |       |
|              |    | 4  | -   | 13.92 | 1.33  |
|              | 12 | 4  | -   | 13.92 |       |
|              |    | 15 | -   | 14.52 | 0.60  |
|              | 13 | 15 | -   | 14.52 |       |
|              |    | 16 | - f | 15.25 | 0.73  |
|              | 14 | 16 | - f | 15.25 |       |
|              |    | 17 | -   | 16.02 | 0.77  |
|              | 15 | 17 | -   | 16.02 |       |
|              |    | 18 | -   | 21.78 | 5.76  |
|              | 16 | 18 | -   | 21.78 |       |
|              |    | 19 | -   | 23.28 | 1.50  |
|              | 17 | 19 | -   | 23.28 |       |
|              |    | 20 | - f | 25.00 | 1.72  |
|              | 18 | 20 | - f | 25.00 |       |
|              |    | 6  | -   | 26.33 | 1.33  |
|              | 19 | 6  | -   | 26.33 |       |
|              |    | 21 | - f | 27.66 | 1.33  |
|              | 20 | 21 | - f | 27.66 |       |
|              |    | 22 | -   | 29.04 | 1.38  |
|              | 21 | 22 | -   | 29.04 |       |
|              |    | 23 | -   | 30.54 | 1.50  |
|              | 22 | 23 | -   | 30.54 |       |
|              |    | 24 | -   | 34.54 | 4.00  |
|              | 23 | 24 | -   | 34.54 |       |
|              |    | 25 | -   | 36.04 | 1.50  |
|              | 24 | 25 | -   | 36.04 |       |
|              |    | 26 | - f | 37.42 | 1.38  |
|              | 25 | 26 | - f | 37.42 |       |
|              |    | 8  | -   | 38.75 | 1.33  |
|              | 26 | 8  | -   | 38.75 |       |
|              |    | 27 | - f | 40.08 | 1.33  |
|              | 27 | 27 | - f | 40.08 |       |
|              |    | 28 | -   | 41.80 | 1.72  |
|              | 28 | 28 | -   | 41.80 |       |
|              |    | 29 | -   | 45.33 | 3.53  |

Node coordinates:  
Number X(ft) Y(ft) Node type

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|    |       |        |                    |
|----|-------|--------|--------------------|
| 1  | 1.50  | 622.56 | fixed at ground    |
| 2  | 1.50  | 645.65 | column-cap bearing |
| 3  | 13.92 | 622.56 | fixed at ground    |
| 4  | 13.92 | 645.65 | column-cap         |
| 5  | 26.33 | 622.56 | fixed at ground    |
| 6  | 26.33 | 645.65 | column-cap         |
| 7  | 38.75 | 622.56 | fixed at ground    |
| 8  | 38.75 | 645.65 | column-cap         |
| 9  | 0.00  | 645.65 |                    |
| 10 | 0.17  | 645.65 | face of support    |
| 11 | 2.83  | 645.65 | face of support    |
| 12 | 7.26  | 645.65 |                    |
| 13 | 8.76  | 645.65 | bearing            |
| 14 | 12.59 | 645.65 | face of support    |
| 15 | 14.52 | 645.65 |                    |
| 16 | 15.25 | 645.65 | face of support    |
| 17 | 16.02 | 645.65 | bearing            |
| 18 | 21.78 | 645.65 |                    |
| 19 | 23.28 | 645.65 | bearing            |
| 20 | 25.00 | 645.65 | face of support    |
| 21 | 27.66 | 645.65 | face of support    |
| 22 | 29.04 | 645.65 |                    |
| 23 | 30.54 | 645.65 | bearing            |
| 24 | 34.54 | 645.65 | bearing            |
| 25 | 36.04 | 645.65 |                    |
| 26 | 37.42 | 645.65 | face of support    |
| 27 | 40.08 | 645.65 | face of support    |
| 28 | 41.80 | 645.65 | bearing            |
| 29 | 45.33 | 645.65 |                    |

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PROJECT: ODOT LUC-51-1285

# 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 : centerline of column.

## CAP GEOMETRY:

Stepped Cap : Length(X) = 45.33 ft Depth(Z) = 36.00 in

## Cap Section Properties:

| Sec. | Area<br>ft ^2 | Iz<br>in ^4 | Iy<br>in ^4 |
|------|---------------|-------------|-------------|
| 1    | 10.50         | 222264.00   | 163296.00   |
| 2    | 10.88         | 247138.19   | 169173.56   |
| 3    | 11.26         | 273815.94   | 175054.00   |
| 4    | 11.63         | 302332.81   | 180931.56   |
| 5    | 12.01         | 332779.44   | 186811.94   |
| 6    | 12.39         | 365188.13   | 192689.50   |

## MAIN REINFORCEMENT:

|        | Bar size   | Quantity | Bar dist.<br>in | As total<br>in^2 | From<br>ft | To<br>ft | Hook |    |
|--------|------------|----------|-----------------|------------------|------------|----------|------|----|
| TOP    |            |          |                 |                  |            |          |      |    |
|        | US#11[M36] | 5        | 3.33            | 7.800            | 0.00       | 45.33    | Both | 90 |
| BOTTOM |            |          |                 |                  |            |          |      |    |
|        | US#11[M36] | 5        | 3.33            | 7.800            | 0.00       | 45.33    | None |    |

## STIRRUPS:

| From<br>ft | To<br>ft | Stirrup Size | n legs | Spacing<br>in | Aprv/s<br>in^2 / ft | Bar Type |
|------------|----------|--------------|--------|---------------|---------------------|----------|
| 4.50       | 10.50    | US#5[M16]    | 4      | 18.00         | 0.83                | Stirrup  |
| 10.50      | 12.33    | US#5[M16]    | 4      | 11.00         | 1.35                | Stirrup  |
| 15.50      | 16.50    | US#5[M16]    | 4      | 6.00          | 2.48                | Stirrup  |
| 16.50      | 22.50    | US#5[M16]    | 4      | 18.00         | 0.83                | Stirrup  |
| 22.50      | 24.50    | US#5[M16]    | 4      | 6.00          | 2.48                | Stirrup  |
| 27.83      | 29.33    | US#5[M16]    | 4      | 9.00          | 1.65                | Stirrup  |
| 29.34      | 35.34    | US#5[M16]    | 4      | 12.00         | 1.24                | Stirrup  |
| 35.34      | 37.00    | US#5[M16]    | 4      | 9.00          | 1.65                | Stirrup  |
| 40.33      | 43.33    | US#5[M16]    | 4      | 18.00         | 0.83                | Stirrup  |

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|       |       |           |   |       |      |         |
|-------|-------|-----------|---|-------|------|---------|
| 3.00  | 4.50  | US#5[M16] | 4 | 6.00  | 2.48 | Stirrup |
| 43.33 | 45.33 | US#5[M16] | 4 | 6.00  | 2.48 | Stirrup |
| 0.00  | 3.00  | US#5[M16] | 4 | 18.00 | 0.83 | Stirrup |
| 12.42 | 15.42 | US#5[M16] | 4 | 18.00 | 0.83 | Stirrup |
| 24.82 | 27.82 | US#5[M16] | 4 | 18.00 | 0.83 | Stirrup |
| 37.26 | 40.26 | US#5[M16] | 4 | 18.00 | 0.83 | Stirrup |

Clear Cover on Sides = 2.00 in

FLEXURE DESIGN:

=====

Span 1: From 0.00 ft To 1.50 ft

| Loc | AbsLoc | H  | Mmax    | Mr      | Comb | CL | c    | dt    | eps_t | Phi  | Asb-req | Asb-prv | Asb-eff | Ast  |
|-----|--------|----|---------|---------|------|----|------|-------|-------|------|---------|---------|---------|------|
| ft  | ft     | in | Mmin    | Mr      | Comb | CL | c    | dt    | eps_t | Phi  | Asb-req | Asb-prv | Asb-eff | Ast  |
|     |        |    | kips-ft | kips-ft |      |    |      | in    |       |      | in^2    | in^2    | in^2    | in^2 |
| 0.2 | 0.2    | 42 | 0.0     | 607.1   | 0    | T  | 2.87 | 38.67 | 0.037 | 0.90 | 0.63    | 7.80    | 3.52    | 0.0  |
|     |        |    | -120.5  | -1179.4 | C    | T  | 3.60 | 38.67 | 0.029 | 0.90 | 0.63    | 7.80    | 7.10    | 0.0  |
| 1.5 | 1.5    | 42 | 0.0     | 1291.3  | 0    | T  | 3.74 | 38.67 | 0.028 | 0.90 | 0.63    | 7.80    | 7.80    | 0.0  |
|     |        |    | -120.5  | -1291.3 | C    | T  | 3.74 | 38.67 | 0.028 | 0.90 | 0.63    | 7.80    | 7.80    | 0.0  |

Span 2: From 1.50 ft To 13.92 ft

| Loc  | AbsLoc | H  | Mmax    | Mr      | Comb | CL | c    | dt    | eps_t | Phi  | Asb-req | Asb-prv | Asb-eff | Ast  |
|------|--------|----|---------|---------|------|----|------|-------|-------|------|---------|---------|---------|------|
| ft   | ft     | in | Mmin    | Mr      | Comb | CL | c    | dt    | eps_t | Phi  | Asb-req | Asb-prv | Asb-eff | Ast  |
|      |        |    | kips-ft | kips-ft |      |    |      | in    |       |      | in^2    | in^2    | in^2    | in^2 |
| 0.0  | 1.5    | 42 | 1.0     | 1291.3  | 3614 | T  | 3.74 | 38.67 | 0.028 | 0.90 | 0.63    | 7.80    | 7.80    | 0.0  |
|      |        |    | -125.5  | -1291.3 | 7    | T  | 3.74 | 38.67 | 0.028 | 0.90 | 0.63    | 7.80    | 7.80    | 0.0  |
| 1.3  | 2.8    | 42 | 74.7    | 1291.3  | 13   | T  | 3.74 | 38.67 | 0.028 | 0.90 | 0.63    | 7.80    | 7.80    | 0.0  |
|      |        |    | -120.5  | -1291.3 | C    | T  | 3.74 | 38.67 | 0.028 | 0.90 | 0.63    | 7.80    | 7.80    | 0.0  |
| 5.8  | 7.3    | 44 | 588.6   | 1291.3  | 20   | T  | 3.74 | 38.67 | 0.028 | 0.90 | 3.46    | 7.80    | 7.80    | 0.0  |
|      |        |    | 0.0     | -1291.3 | 0    | T  | 3.74 | 38.67 | 0.028 | 0.90 | 0.63    | 7.80    | 7.80    | 0.0  |
| 7.3  | 8.8    | 44 | 761.5   | 1344.3  | 20   | T  | 3.74 | 40.18 | 0.029 | 0.90 | 4.33    | 7.80    | 7.80    | 0.0  |
|      |        |    | 0.0     | -1344.3 | 0    | T  | 3.74 | 40.18 | 0.029 | 0.90 | 0.64    | 7.80    | 7.80    | 0.0  |
| 11.1 | 12.6   | 44 | 0.0     | 1344.3  | 0    | T  | 3.74 | 40.18 | 0.029 | 0.90 | 0.64    | 7.80    | 7.80    | 0.0  |
|      |        |    | -300.5  | -1344.3 | 21   | T  | 3.74 | 40.18 | 0.029 | 0.90 | 0.64    | 7.80    | 7.80    | 2.0  |
| 12.4 | 13.9   | 44 | 0.0     | 1344.3  | 0    | T  | 3.74 | 40.18 | 0.029 | 0.90 | 0.64    | 7.80    | 7.80    | 0.0  |
|      |        |    | -624.3  | -1344.3 | 22   | T  | 3.74 | 40.18 | 0.029 | 0.90 | 0.64    | 7.80    | 7.80    | 3.0  |

Span 3: From 13.92 ft To 26.33 ft

| Loc  | AbsLoc | H  | Mmax    | Mr      | Comb | CL | c    | dt    | eps_t | Phi  | Asb-req | Asb-prv | Asb-eff | Ast  |
|------|--------|----|---------|---------|------|----|------|-------|-------|------|---------|---------|---------|------|
| ft   | ft     | in | Mmin    | Mr      | Comb | CL | c    | dt    | eps_t | Phi  | Asb-req | Asb-prv | Asb-eff | Ast  |
|      |        |    | kips-ft | kips-ft |      |    |      | in    |       |      | in^2    | in^2    | in^2    | in^2 |
| 0.0  | 13.9   | 44 | 0.0     | 1344.3  | 0    | T  | 3.74 | 40.18 | 0.029 | 0.90 | 0.64    | 7.80    | 7.80    | 0.0  |
|      |        |    | -612.9  | -1344.3 | 22   | T  | 3.74 | 40.18 | 0.029 | 0.90 | 0.64    | 7.80    | 7.80    | 3.0  |
| 0.6  | 14.5   | 45 | 0.0     | 1344.3  | 0    | T  | 3.74 | 40.18 | 0.029 | 0.90 | 0.64    | 7.80    | 7.80    | 0.0  |
|      |        |    | -435.1  | -1344.3 | 24   | T  | 3.74 | 40.18 | 0.029 | 0.90 | 0.64    | 7.80    | 7.80    | 2.0  |
| 1.3  | 15.2   | 45 | 82.0    | 1397.4  | 193  | T  | 3.74 | 41.69 | 0.030 | 0.90 | 0.65    | 7.80    | 7.80    | 0.0  |
|      |        |    | -278.2  | -1397.4 | 26   | T  | 3.74 | 41.69 | 0.030 | 0.90 | 0.65    | 7.80    | 7.80    | 2.0  |
| 2.1  | 16.0   | 45 | 334.9   | 1397.4  | 25   | T  | 3.74 | 41.69 | 0.030 | 0.90 | 2.41    | 7.80    | 7.80    | 0.0  |
|      |        |    | -134.2  | -1397.4 | 195  | T  | 3.74 | 41.69 | 0.030 | 0.90 | 0.65    | 7.80    | 7.80    | 0.0  |
| 7.9  | 21.8   | 47 | 421.1   | 1397.4  | 29   | T  | 3.74 | 41.69 | 0.030 | 0.90 | 2.83    | 7.80    | 7.80    | 0.0  |
|      |        |    | -75.1   | -1397.4 | 198  | T  | 3.74 | 41.69 | 0.030 | 0.90 | 0.65    | 7.80    | 7.80    | 0.0  |
| 9.4  | 23.3   | 47 | 470.8   | 1450.5  | 29   | T  | 3.74 | 43.21 | 0.032 | 0.90 | 2.91    | 7.80    | 7.80    | 0.0  |
|      |        |    | -77.0   | -1450.5 | 199  | T  | 3.74 | 43.21 | 0.032 | 0.90 | 0.66    | 7.80    | 7.80    | 0.0  |
| 11.1 | 25.0   | 47 | 0.0     | 1450.5  | 0    | T  | 3.74 | 43.21 | 0.032 | 0.90 | 0.66    | 7.80    | 7.80    | 0.0  |
|      |        |    | -356.1  | -1450.5 | 34   | T  | 3.74 | 43.21 | 0.032 | 0.90 | 0.66    | 7.80    | 7.80    | 2.0  |
| 12.4 | 26.3   | 47 | 0.0     | 1450.5  | 0    | T  | 3.74 | 43.21 | 0.032 | 0.90 | 0.66    | 7.80    | 7.80    | 0.0  |
|      |        |    | -681.7  | -1450.5 | 35   | T  | 3.74 | 43.21 | 0.032 | 0.90 | 0.66    | 7.80    | 7.80    | 3.0  |

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Span 4: From 26.33 ft To 38.75 ft

| Loc  | AbsLoc | H  | Mmax    | Mr      | Comb | CL | c    | dt    | eps_t | Phi  | Asb-req | Asb-prv | Asb-eff | Ast  |
|------|--------|----|---------|---------|------|----|------|-------|-------|------|---------|---------|---------|------|
| ft   | ft     | in | Mmin    | Mr      | Comb | CL | c    | dt    | eps_t | Phi  | Asb-req | Asb-prv | Asb-eff | Ast  |
|      |        |    | kips-ft | kips-ft |      |    |      | in    |       |      | in^2    | in^2    | in^2    | in^2 |
| 0.0  | 26.3   | 47 | 0.0     | 1450.5  | 0    | T  | 3.74 | 43.21 | 0.032 | 0.90 | 0.66    | 7.80    | 7.80    | 0.0  |
|      |        |    | -657.7  | -1450.5 | 35   | T  | 3.74 | 43.21 | 0.032 | 0.90 | 0.66    | 7.80    | 7.80    | 3.0  |
| 1.3  | 27.7   | 47 | 0.0     | 1450.5  | 0    | T  | 3.74 | 43.21 | 0.032 | 0.90 | 0.66    | 7.80    | 7.80    | 0.0  |
|      |        |    | -379.2  | -1450.5 | 15   | T  | 3.74 | 43.21 | 0.032 | 0.90 | 0.66    | 7.80    | 7.80    | 2.0  |
| 2.7  | 29.0   | 48 | 232.8   | 1450.5  | 38   | T  | 3.74 | 43.21 | 0.032 | 0.90 | 1.61    | 7.80    | 7.80    | 0.0  |
|      |        |    | -204.6  | -1450.5 | 183  | T  | 3.74 | 43.21 | 0.032 | 0.90 | 0.66    | 7.80    | 7.80    | 1.0  |
| 4.2  | 30.5   | 48 | 641.4   | 1503.6  | 39   | T  | 3.74 | 44.72 | 0.033 | 0.90 | 3.25    | 7.80    | 7.80    | 0.0  |
|      |        |    | -70.1   | -1503.6 | 208  | T  | 3.74 | 44.72 | 0.033 | 0.90 | 0.67    | 7.80    | 7.80    | 0.0  |
| 8.2  | 34.5   | 48 | 659.6   | 1503.6  | 6    | T  | 3.74 | 44.72 | 0.033 | 0.90 | 3.34    | 7.80    | 7.80    | 0.0  |
|      |        |    | -108.4  | -1503.6 | 208  | T  | 3.74 | 44.72 | 0.033 | 0.90 | 0.67    | 7.80    | 7.80    | 0.0  |
| 9.7  | 36.0   | 50 | 249.1   | 1503.6  | 174  | T  | 3.74 | 44.72 | 0.033 | 0.90 | 1.66    | 7.80    | 7.80    | 0.0  |
|      |        |    | -427.0  | -1503.6 | 2    | T  | 3.74 | 44.72 | 0.033 | 0.90 | 0.67    | 7.80    | 7.80    | 2.0  |
| 11.1 | 37.4   | 50 | 0.0     | 1556.6  | 0    | T  | 3.74 | 46.23 | 0.034 | 0.90 | 0.68    | 7.80    | 7.80    | 0.0  |
|      |        |    | -776.6  | -1556.6 | 2    | T  | 3.74 | 46.23 | 0.034 | 0.90 | 0.68    | 7.80    | 7.80    | 3.0  |
| 12.4 | 38.8   | 50 | 0.0     | 1556.6  | 0    | T  | 3.74 | 46.23 | 0.034 | 0.90 | 0.68    | 7.80    | 7.80    | 0.0  |
|      |        |    | -1117.3 | -1556.6 | 2    | T  | 3.74 | 46.23 | 0.034 | 0.90 | 0.68    | 7.80    | 7.80    | 5.0  |

Span 5: From 38.75 ft To 45.33 ft

| Loc | AbsLoc | H  | Mmax    | Mr      | Comb | CL | c    | dt    | eps_t | Phi  | Asb-req | Asb-prv | Asb-eff | Ast  |
|-----|--------|----|---------|---------|------|----|------|-------|-------|------|---------|---------|---------|------|
| ft  | ft     | in | Mmin    | Mr      | Comb | CL | c    | dt    | eps_t | Phi  | Asb-req | Asb-prv | Asb-eff | Ast  |
|     |        |    | kips-ft | kips-ft |      |    |      | in    |       |      | in^2    | in^2    | in^2    | in^2 |
| 0.0 | 38.8   | 50 | 0.0     | 1556.6  | 0    | T  | 3.74 | 46.23 | 0.034 | 0.90 | 0.68    | 7.80    | 7.80    | 0.0  |
|     |        |    | -1227.0 | -1556.6 | 2    | T  | 3.74 | 46.23 | 0.034 | 0.90 | 0.68    | 7.80    | 7.80    | 6.0  |
| 1.3 | 40.1   | 50 | 0.0     | 1556.6  | 0    | T  | 3.74 | 46.23 | 0.034 | 0.90 | 0.68    | 7.80    | 7.80    | 0.0  |
|     |        |    | -696.0  | -1556.6 | 2    | T  | 3.74 | 46.23 | 0.034 | 0.90 | 0.68    | 7.80    | 7.80    | 3.0  |
| 3.1 | 41.8   | 50 | 0.0     | 1556.6  | 0    | T  | 3.74 | 46.23 | 0.034 | 0.90 | 0.68    | 7.80    | 7.80    | 0.0  |
|     |        |    | -17.7   | -1556.6 | 7897 | T  | 3.74 | 46.23 | 0.034 | 0.90 | 0.68    | 7.80    | 7.80    | 0.0  |

Note:

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 combin

SHEAR AND TORSION DESIGN:

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Beta-Theta Method used for design.

Span 1: From 0.00 ft To 1.50 ft

| Loc  | AbsLoc | Pos | Vu     | Comb   | Tu      | Comb  | phi*Vn | T-lim   | Avs/s  | Ats/s   | Av/s   | Aprv/s | Alx  |
|------|--------|-----|--------|--------|---------|-------|--------|---------|--------|---------|--------|--------|------|
| ft   | ft     |     | kips   |        | kips-ft |       | kips   | kips-ft | <----- | in^2/ft | <----- |        | in^2 |
| 0.17 | 0.17   | L   | 0.4    | 7897   | 0.0     | 0     | 613.5  | 69.2    | 0.00   | 0.00    | 0.00   | 0.83   | 0.00 |
| Loc  | AbsLoc | Pos | Vc     | Vs     | Beta    | Theta | b      | dv      | Esp_s  |         |        |        |      |
| ft   | ft     |     | kips   | kips   |         | deg   | in     | in      |        |         |        |        |      |
| 0.17 | 0.17   | L   | 404.71 | 276.90 | 4.79    | 29.01 | 36.00  | 37.14   | 0.0000 |         |        |        |      |

Span 2: From 1.50 ft To 13.92 ft

| Loc | AbsLoc | Pos | Vu | Comb | Tu | Comb | phi*Vn | T-lim | Avs/s | Ats/s | Av/s | Aprv/s | Alx |
|-----|--------|-----|----|------|----|------|--------|-------|-------|-------|------|--------|-----|
|-----|--------|-----|----|------|----|------|--------|-------|-------|-------|------|--------|-----|

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| ft    | ft    |   | kips  |    | kips-ft |    | kips  | kips-ft | <----- in^2/ft -----> |      |      |      | in^2 |
|-------|-------|---|-------|----|---------|----|-------|---------|-----------------------|------|------|------|------|
| 1.33  | 2.83  | R | 125.9 | 61 | 56.4    | 64 | 414.1 | 69.9    | 0.46                  | 0.00 | 0.46 | 0.83 | 0.00 |
| 5.76  | 7.26  | L | 117.1 | 61 | 56.4    | 64 | 388.6 | 69.9    | 0.46                  | 0.00 | 0.46 | 0.83 | 0.00 |
|       |       | R | 117.1 | 61 | 56.4    | 64 | 407.8 | 73.6    | 0.46                  | 0.00 | 0.46 | 0.83 | 0.00 |
| 7.26  | 8.76  | L | 114.1 | 61 | 56.4    | 64 | 386.5 | 73.6    | 0.46                  | 0.00 | 0.46 | 0.83 | 0.00 |
|       |       | R | 253.9 | 47 | 50.1    | 64 | 333.0 | 72.9    | 0.49                  | 0.00 | 0.49 | 0.83 | 0.52 |
| 11.09 | 12.59 | L | 261.7 | 47 | 50.1    | 64 | 328.6 | 72.9    | 0.54                  | 0.00 | 0.54 | 0.83 | 0.00 |

| Loc<br>ft | AbsLoc<br>ft | Pos | Vc<br>kips | Vs<br>kips | Beta | Theta<br>deg | b<br>in | dv<br>in | Esp_s  |
|-----------|--------------|-----|------------|------------|------|--------------|---------|----------|--------|
| 1.33      | 2.83         | R   | 222.45     | 237.61     | 2.63 | 32.84        | 36.00   | 37.08    | 0.0011 |
| 5.76      | 7.26         | L   | 201.91     | 229.92     | 2.39 | 33.70        | 36.00   | 37.08    | 0.0013 |
|           |              | R   | 212.77     | 240.34     | 2.42 | 33.58        | 36.00   | 38.59    | 0.0013 |
| 7.26      | 8.76         | L   | 196.14     | 233.34     | 2.23 | 34.37        | 36.00   | 38.59    | 0.0015 |
|           |              | R   | 157.11     | 212.84     | 1.79 | 36.86        | 36.00   | 38.59    | 0.0022 |
| 11.09     | 12.59        | L   | 154.14     | 210.98     | 1.75 | 37.10        | 36.00   | 38.59    | 0.0023 |

Span 3: From 13.92 ft To 26.33 ft

| Loc<br>ft | AbsLoc<br>ft | Pos | Vu<br>kips | Comb | Tu<br>kips-ft | Comb | phi*Vn<br>kips | T-lim<br>kips-ft | Avs/s<br><----- in^2/ft -----> | Ats/s | Av/s  | Aprv/s | Alx<br>in^2 |
|-----------|--------------|-----|------------|------|---------------|------|----------------|------------------|--------------------------------|-------|-------|--------|-------------|
| 1.33      | 15.25        | R   | 391.9      | 65   | 137.0         | 64   | 220.1#         | 77.3             | 1.36                           | 0.15  | 1.66* | 0.83** | 0.58        |
| 2.10      | 16.02        | L   | 390.3      | 65   | 137.0         | 64   | 563.7          | 77.3             | 1.35                           | 0.15  | 1.64  | 2.48   | 0.00        |
|           |              | R   | 65.7       | 66   | 130.7         | 63   | 928.4          | 77.3             | 0.26                           | 0.10  | 0.46  | 2.48   | 0.00        |
| 7.86      | 21.78        | L   | 53.6       | 66   | 130.7         | 63   | 432.4          | 77.3             | 0.26                           | 0.10  | 0.46  | 0.83   | 0.00        |
|           |              | R   | 53.6       | 66   | 130.7         | 63   | 454.1          | 81.1             | 0.26                           | 0.10  | 0.46  | 0.83   | 0.00        |
| 9.36      | 23.28        | L   | 50.3       | 24   | 168.5         | 21   | 928.5          | 81.1             | 0.21                           | 0.12  | 0.46  | 2.48   | 0.00        |
|           |              | R   | 343.6      | 32   | 162.2         | 35   | 612.3          | 79.9             | 0.97                           | 0.16  | 1.29  | 2.48   | 0.00        |
| 11.09     | 25.00        | L   | 347.3      | 32   | 162.2         | 35   | 237.2#         | 79.9             | 0.99                           | 0.16  | 1.32* | 0.83** | 0.32        |

| Loc<br>ft | AbsLoc<br>ft | Pos | Vc<br>kips | Vs<br>kips | Beta | Theta<br>deg | b<br>in | dv<br>in | Esp_s  |
|-----------|--------------|-----|------------|------------|------|--------------|---------|----------|--------|
| 1.33      | 15.25        | R   | 122.22     | 122.34     | 1.34 | 41.07        | 36.00   | 40.11    | 0.0034 |
| 2.10      | 16.02        | L   | 122.59     | 503.75     | 1.34 | 41.02        | 36.00   | 40.11    | 0.0034 |
|           |              | R   | 285.13     | 746.47     | 3.12 | 31.51        | 36.00   | 40.11    | 0.0007 |
| 7.86      | 21.78        | L   | 277.00     | 203.48     | 3.03 | 31.72        | 36.00   | 40.11    | 0.0008 |
|           |              | R   | 290.22     | 214.34     | 3.06 | 31.65        | 36.00   | 41.62    | 0.0008 |
| 9.36      | 23.28        | L   | 283.57     | 748.08     | 2.99 | 31.82        | 36.00   | 41.62    | 0.0008 |
|           |              | R   | 138.44     | 541.84     | 1.46 | 39.67        | 36.00   | 41.62    | 0.0030 |
| 11.09     | 25.00        | L   | 137.40     | 126.16     | 1.45 | 39.78        | 36.00   | 41.62    | 0.0031 |

Span 4: From 26.33 ft To 38.75 ft

| Loc<br>ft | AbsLoc<br>ft | Pos | Vu<br>kips | Comb | Tu<br>kips-ft | Comb | phi*Vn<br>kips | T-lim<br>kips-ft | Avs/s<br><----- in^2/ft -----> | Ats/s | Av/s | Aprv/s | Alx<br>in^2 |
|-----------|--------------|-----|------------|------|---------------|------|----------------|------------------|--------------------------------|-------|------|--------|-------------|
| 1.33      | 27.66        | L   | 294.4      | 36   | 69.5          | 35   | 336.9          | 80.9             | 0.65                           | 0.00  | 0.65 | 0.83   | 0.00        |
|           |              | R   | 294.4      | 36   | 69.5          | 35   | 336.9          | 80.9             | 0.65                           | 0.00  | 0.65 | 0.83   | 0.00        |
| 2.71      | 29.04        | L   | 291.4      | 36   | 69.5          | 35   | 536.7          | 80.9             | 0.63                           | 0.00  | 0.63 | 1.65   | 0.00        |
|           |              | R   | 291.4      | 36   | 69.5          | 35   | 556.2          | 84.7             | 0.59                           | 0.00  | 0.59 | 1.65   | 0.00        |
| 4.21      | 30.54        | L   | 288.0      | 36   | 69.5          | 35   | 455.8          | 84.7             | 0.57                           | 0.00  | 0.57 | 1.24   | 0.00        |
|           |              | R   | 63.9       | 42   | 63.2          | 22   | 607.3          | 83.5             | 0.00                           | 0.00  | 0.00 | 1.24   | 0.00        |
| 8.21      | 34.54        | L   | 72.9       | 42   | 63.2          | 22   | 598.3          | 83.5             | 0.00                           | 0.00  | 0.00 | 1.24   | 0.00        |
|           |              | R   | 321.4      | 18   | 56.9          | 35   | 432.3          | 83.5             | 0.78                           | 0.00  | 0.78 | 1.24   | 0.00        |
| 9.71      | 36.04        | L   | 324.8      | 18   | 56.9          | 35   | 528.9          | 83.5             | 0.80                           | 0.00  | 0.80 | 1.65   | 0.00        |
|           |              | R   | 324.8      | 18   | 56.9          | 35   | 547.4          | 87.3             | 0.75                           | 0.00  | 0.75 | 1.65   | 0.00        |
| 11.09     | 37.42        | L   | 328.0      | 18   | 56.9          | 35   | 341.6          | 87.3             | 0.77                           | 0.00  | 0.77 | 0.83   | 1.28        |
|           |              | R   | 328.0      | 18   | 56.9          | 35   | 341.6          | 87.3             | 0.77                           | 0.00  | 0.77 | 0.83   | 1.28        |

| Loc | AbsLoc | Pos | Vc | Vs | Beta | Theta | b | dv | Esp_s |
|-----|--------|-----|----|----|------|-------|---|----|-------|
|-----|--------|-----|----|----|------|-------|---|----|-------|

PROJECT: ODOT LUC-51-1285

| ft    | ft    |   | kips   | kips   |      | deg   | in    | in    |        |
|-------|-------|---|--------|--------|------|-------|-------|-------|--------|
| 1.33  | 27.66 | L | 154.57 | 219.75 | 1.63 | 38.07 | 36.00 | 41.62 | 0.0026 |
|       |       | R | 154.57 | 219.75 | 1.63 | 38.07 | 36.00 | 41.62 | 0.0026 |
| 2.71  | 29.04 | L | 155.62 | 440.71 | 1.64 | 37.97 | 36.00 | 41.62 | 0.0026 |
|       |       | R | 161.28 | 456.72 | 1.64 | 37.97 | 36.00 | 43.13 | 0.0026 |
| 4.21  | 30.54 | L | 162.53 | 343.90 | 1.66 | 37.87 | 36.00 | 43.13 | 0.0025 |
|       |       | R | 259.79 | 414.93 | 2.65 | 32.80 | 36.00 | 43.13 | 0.0011 |
| 8.21  | 34.54 | L | 253.29 | 411.50 | 2.58 | 33.02 | 36.00 | 43.13 | 0.0011 |
|       |       | R | 150.04 | 330.29 | 1.53 | 38.99 | 36.00 | 43.13 | 0.0029 |
| 9.71  | 36.04 | L | 148.97 | 438.66 | 1.52 | 39.10 | 36.00 | 43.13 | 0.0029 |
|       |       | R | 154.19 | 454.03 | 1.52 | 39.10 | 36.00 | 44.64 | 0.0029 |
| 11.09 | 37.42 | L | 153.16 | 226.35 | 1.51 | 39.20 | 36.00 | 44.64 | 0.0029 |
|       |       | R | 153.16 | 226.35 | 1.51 | 39.20 | 36.00 | 44.64 | 0.0029 |

Span 5: From 38.75 ft To 45.33 ft

| Loc<br>ft | AbsLoc<br>ft | Pos | Vu<br>kips | Comb | Tu<br>kips-ft | Comb | phi*Vn<br>kips | T-lim<br>kips-ft | Avs/s<br><----- | Ats/s<br>in^2/ft | Av/s  | Aprv/s<br>-----> | Alx<br>in^2 |
|-----------|--------------|-----|------------|------|---------------|------|----------------|------------------|-----------------|------------------|-------|------------------|-------------|
| 1.33      | 40.08        | R   | 397.9      | 2    | 9.9           | 43   | 309.7#         | 87.9             | 1.21            | 0.00             | 1.21* | 0.83**           | 2.06        |
| 3.05      | 41.80        | L   | 393.9      | 2    | 9.9           | 43   | 311.4#         | 87.9             | 1.19            | 0.00             | 1.19* | 0.83**           | 0.00        |
|           |              | R   | 9.8        | 7897 | 0.0           | 0    | 708.2          | 87.9             | 0.00            | 0.00             | 0.00  | 0.83             | 0.00        |

| Loc<br>ft | AbsLoc<br>ft | Pos | Vc<br>kips | Vs<br>kips | Beta | Theta<br>deg | b<br>in | dv<br>in | Esp_s  |
|-----------|--------------|-----|------------|------------|------|--------------|---------|----------|--------|
| 1.33      | 40.08        | R   | 134.09     | 210.02     | 1.32 | 41.31        | 36.00   | 44.64    | 0.0035 |
| 3.05      | 41.80        | L   | 135.07     | 210.94     | 1.33 | 41.19        | 36.00   | 44.64    | 0.0035 |
|           |              | R   | 458.00     | 328.89     | 4.51 | 29.30        | 36.00   | 44.64    | 0.0001 |

Note:

\* Shear resistance provided by shear reinforcement (Vs) is greater than maximum allowed.

\*\* Provided stirrup area ( Aprv/s ) is not adequate.

- 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 resistance of concrete.
- Vs is the nominal shear resistance of transverse reinforcement.
- Beta is the factor indicating ability of diagonally cracked concrete to transmit tension and shear.
- Theta is the angle of inclination of diagonal compressive stress.
- # Vu is greater than phi\*Vn.
- Actual cap moment is based on magnified moment from column design at the following locations ( ft ): 0.17 , 1.50 , 2.83
- Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination.

CRACKING/FATIGUE CHECK:

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Span 1: From 0.00 ft To 1.50 ft

PROJECT: ODOT LUC-51-1285

|      |        | <----- Cracking -----> |      |      |     |      |      | <---- Fatigue ----> |       |
|------|--------|------------------------|------|------|-----|------|------|---------------------|-------|
| Loc  | AbsLoc | H                      | Comb | fs-t | dc  | Srqt | Sprt | fs-t                | FTH-t |
| Loc  | AbsLoc | H                      | Comb | fs-b | dc  | Srqb | Sprb | fs-b                | FTH-b |
| ft   | ft     | in                     |      | ksi  | in  | in   | in   | ksi                 | ksi   |
| 0.17 | 0.2    | 42.0                   | 6385 | 0.0  | 2.7 | 36.0 | 7.3  | 0.00                | 26.00 |
|      |        |                        | 0    | 0.0  | 2.7 | 5.0  | 7.3  | 0.00                | 26.00 |
| 1.50 | 1.5    | 42.0                   | 6385 | 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 |

Span 2: From 1.50 ft To 13.92 ft

|       |        | <----- Cracking -----> |      |      |     |      |      | <---- Fatigue ----> |       |
|-------|--------|------------------------|------|------|-----|------|------|---------------------|-------|
| Loc   | AbsLoc | H                      | Comb | fs-t | dc  | Srqt | Sprt | fs-t                | FTH-t |
| Loc   | AbsLoc | H                      | Comb | fs-b | dc  | Srqb | Sprb | fs-b                | FTH-b |
| ft    | ft     | in                     |      | ksi  | in  | in   | in   | ksi                 | ksi   |
| 0.00  | 1.5    | 42.0                   | 7399 | 3.4  | 2.7 | 36.0 | 7.3  | 1.00                | 26.93 |
|       |        |                        | 0    | 0.0  | 2.7 | 5.0  | 7.3  | 1.00                | 25.44 |
| 1.33  | 2.8    | 42.0                   | 0    | 0.0  | 2.7 | 5.0  | 7.3  | 0.48                | 26.29 |
|       |        |                        | 6649 | 2.5  | 2.7 | 36.0 | 7.3  | 0.48                | 26.29 |
| 5.76  | 7.3    | 43.5                   | 0    | 0.0  | 2.7 | 5.0  | 7.3  | 3.83                | 29.82 |
|       |        |                        | 6656 | 16.1 | 2.7 | 34.2 | 7.3  | 3.68                | 29.67 |
| 7.26  | 8.8    | 43.5                   | 0    | 0.0  | 2.7 | 5.0  | 7.3  | 4.87                | 30.72 |
|       |        |                        | 6656 | 20.6 | 2.7 | 25.6 | 7.3  | 4.87                | 30.72 |
| 11.09 | 12.6   | 43.5                   | 6657 | 8.7  | 2.7 | 36.0 | 7.3  | 1.92                | 28.54 |
|       |        |                        | 0    | 0.0  | 2.7 | 5.0  | 7.3  | 1.92                | 28.54 |
| 12.42 | 13.9   | 43.5                   | 6658 | 17.9 | 2.7 | 30.3 | 7.3  | 2.14                | 22.25 |
|       |        |                        | 0    | 0.0  | 2.7 | 5.0  | 7.3  | 2.14                | 30.53 |

Span 3: From 13.92 ft To 26.33 ft

|       |        | <----- Cracking -----> |      |      |     |      |      | <---- Fatigue ----> |       |
|-------|--------|------------------------|------|------|-----|------|------|---------------------|-------|
| Loc   | AbsLoc | H                      | Comb | fs-t | dc  | Srqt | Sprt | fs-t                | FTH-t |
| Loc   | AbsLoc | H                      | Comb | fs-b | dc  | Srqb | Sprb | fs-b                | FTH-b |
| ft    | ft     | in                     |      | ksi  | in  | in   | in   | ksi                 | ksi   |
| 0.00  | 13.9   | 43.5                   | 7414 | 17.3 | 2.7 | 31.6 | 7.3  | 3.00                | 30.70 |
|       |        |                        | 0    | 0.0  | 2.7 | 5.0  | 7.3  | 3.00                | 22.39 |
| 0.60  | 14.5   | 45.0                   | 7416 | 11.7 | 2.7 | 36.0 | 7.3  | 2.30                | 29.14 |
|       |        |                        | 0    | 0.0  | 2.7 | 5.0  | 7.3  | 2.39                | 29.27 |
| 1.33  | 15.2   | 45.0                   | 7418 | 7.1  | 2.7 | 36.0 | 7.3  | 3.88                | 27.49 |
|       |        |                        | 6661 | 0.9  | 2.7 | 36.0 | 7.3  | 3.88                | 27.49 |
| 2.10  | 16.0   | 45.0                   | 7419 | 2.3  | 2.7 | 36.0 | 7.3  | 5.95                | 28.34 |
|       |        |                        | 6661 | 8.2  | 2.7 | 36.0 | 7.3  | 5.95                | 28.34 |
| 7.86  | 21.8   | 46.5                   | 6666 | 0.2  | 2.7 | 36.0 | 7.3  | 5.52                | 29.22 |
|       |        |                        | 7421 | 10.1 | 2.7 | 36.0 | 7.3  | 5.32                | 29.10 |
| 9.36  | 23.3   | 46.5                   | 6667 | 0.2  | 2.7 | 36.0 | 7.3  | 5.90                | 29.35 |
|       |        |                        | 7421 | 11.2 | 2.7 | 36.0 | 7.3  | 5.90                | 29.35 |
| 11.09 | 25.0   | 46.5                   | 6670 | 9.3  | 2.7 | 36.0 | 7.3  | 2.42                | 28.16 |
|       |        |                        | 0    | 0.0  | 2.7 | 5.0  | 7.3  | 2.42                | 28.16 |
| 12.42 | 26.3   | 46.5                   | 6671 | 18.2 | 2.7 | 29.9 | 7.3  | 3.15                | 22.04 |
|       |        |                        | 0    | 0.0  | 2.7 | 5.0  | 7.3  | 3.15                | 31.12 |

Span 4: From 26.33 ft To 38.75 ft

|     |        | <----- Cracking -----> |      |      |    |      |      | <---- Fatigue ----> |       |
|-----|--------|------------------------|------|------|----|------|------|---------------------|-------|
| Loc | AbsLoc | H                      | Comb | fs-t | dc | Srqt | Sprt | fs-t                | FTH-t |
| Loc | AbsLoc | H                      | Comb | fs-b | dc | Srqb | Sprb | fs-b                | FTH-b |
| ft  | ft     | in                     |      | ksi  | in | in   | in   | ksi                 | ksi   |

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|       |      |          |      |     |      |     |      |       |
|-------|------|----------|------|-----|------|-----|------|-------|
| 0.00  | 26.3 | 46.57427 | 17.4 | 2.7 | 31.6 | 7.3 | 3.12 | 30.98 |
|       |      | 0        | 0.0  | 2.7 | 5.0  | 7.3 | 3.12 | 22.16 |
| 1.33  | 27.7 | 46.57407 | 9.8  | 2.7 | 36.0 | 7.3 | 2.63 | 28.63 |
|       |      | 0        | 0.0  | 2.7 | 5.0  | 7.3 | 2.63 | 28.63 |
| 2.71  | 29.0 | 48.07407 | 4.3  | 2.7 | 36.0 | 7.3 | 5.33 | 26.57 |
|       |      | 6674     | 5.0  | 2.7 | 36.0 | 7.3 | 5.33 | 27.38 |
| 4.21  | 30.5 | 48.0     | 0.0  | 2.7 | 5.0  | 7.3 | 8.36 | 30.58 |
|       |      | 6675     | 15.1 | 2.7 | 36.0 | 7.3 | 8.36 | 30.58 |
| 8.21  | 34.5 | 48.06676 | 0.3  | 2.7 | 36.0 | 7.3 | 7.50 | 30.08 |
|       |      | 7398     | 15.2 | 2.7 | 36.0 | 7.3 | 7.50 | 30.08 |
| 9.71  | 36.0 | 49.66638 | 9.5  | 2.7 | 36.0 | 7.3 | 4.33 | 26.88 |
|       |      | 7398     | 4.3  | 2.7 | 36.0 | 7.3 | 4.33 | 26.71 |
| 11.09 | 37.4 | 49.66638 | 18.3 | 2.7 | 29.9 | 7.3 | 1.67 | 28.93 |
|       |      | 0        | 0.0  | 2.7 | 5.0  | 7.3 | 1.67 | 28.93 |
| 12.42 | 38.8 | 49.66638 | 27.0 | 2.7 | 18.6 | 7.3 | 1.17 | 21.16 |
|       |      | 0        | 0.0  | 2.7 | 5.0  | 7.3 | 1.17 | 31.27 |

Span 5: From 38.75 ft To 45.33 ft

|      |        | <----- Cracking -----> |      |      |     |      |      | <----- Fatigue -----> |       |
|------|--------|------------------------|------|------|-----|------|------|-----------------------|-------|
| Loc  | AbsLoc | H                      | Comb | fs-t | dc  | Srqt | Sprt | fs-t                  | FTH-t |
| Loc  | AbsLoc | H                      | Comb | fs-b | dc  | Srqb | Sprb | fs-b                  | FTH-b |
| ft   | ft     | in                     |      | ksi  | in  | in   | in   | ksi                   | ksi   |
| 0.00 | 38.8   | 49.66386               |      | 28.7 | 2.7 | 17.1 | 7.3  | 0.00                  | 30.82 |
|      |        | 0                      |      | 0.0  | 2.7 | 5.0  | 7.3  | 0.00                  | 21.18 |
| 1.33 | 40.1   | 49.66386               |      | 16.3 | 2.7 | 34.2 | 7.3  | 0.00                  | 23.24 |
|      |        | 0                      |      | 0.0  | 2.7 | 5.0  | 7.3  | 0.00                  | 28.76 |
| 3.05 | 41.8   | 49.66385               |      | 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 |

Note:

\* 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 combin

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# COLUMN DESIGN

COLUMN DESIGN - Column: 1

Column Type: Round D = 36.00 in

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

## Column Section Properties:

| Sec. | Area<br>ft^2 | Ix<br>in^4 | Iz<br>in^4 |
|------|--------------|------------|------------|
| 0    | 7.07         | 82447.96   | 82447.96   |

## DESIGN PARAMETERS:

f'c = 4000.0 psi fy = 60000.0 psi  
 phi as per LRFD 2007 with 2006 interims.  
 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

| Layer | Size       | No. bars | Bar Dist.<br>in | From<br>ft | To<br>ft | Hook   |
|-------|------------|----------|-----------------|------------|----------|--------|
| 1     | US#11[M36] | 10       | 2.00            | 0.00       | 23.09    | Bot 90 |

## Note:

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

| Layer | Size      | Type   | Pitch<br>in | From<br>ft | To<br>ft |
|-------|-----------|--------|-------------|------------|----------|
| 1     | US#4[M13] | Spiral | 4.50        | 0.00       | 23.09    |

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

| (global coordinates) |      |            |            |            |               |               |               |
|----------------------|------|------------|------------|------------|---------------|---------------|---------------|
| Loc<br>ft            | Comb | Fx<br>kips | Fy<br>kips | Fz<br>kips | Mx<br>kips-ft | My<br>kips-ft | Mz<br>kips-ft |
| 622.56               | 58   | 7.4        | 319.8      | 5.9        | 193.5         | -7.9          | -50.2         |
| 645.65               | 58   | -7.4       | 291.5      | -5.9       | -53.4         | -7.9          | -120.5        |
| 622.56               | 4831 | 4.6        | 331.2      | 8.9        | 248.9         | -8.3          | -46.4         |
| 645.65               | 4831 | -4.2       | 310.8      | -8.0       | -43.5         | -8.3          | -69.0         |

Column Design

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| Bot/Top Elev.<br>ft | Comb | Pu<br>kips | Mux<br>kips-ft | Muz<br>kips-ft | pMn<br>kips-ft | Incl<br>deg | pPn/Pu | pMn/Mu |
|---------------------|------|------------|----------------|----------------|----------------|-------------|--------|--------|
| 622.56              | 4831 | 331.2      | 248.9          | 46.4           | 1213.2         | 10.55       | 1.00   | 4.79   |
| 645.65              | 58   | 291.5      | 53.4           | 120.5          | 1188.8         | 66.09       | 1.00   | 9.02   |
| Column Design       |      |            |                |                |                |             |        |        |
| =====               |      |            |                |                |                |             |        |        |

| Bot/Top Elev.<br>ft | As_min<br>in^2 | As_max<br>in^2 | As_prov<br>in^2 |
|---------------------|----------------|----------------|-----------------|
| 622.56              | 9.16           | 81.43          | 15.60           |
| 645.65              | 9.16           | 81.43          | 15.60           |

SHEAR DESIGN:

=====

| Loc<br>ft | Pos | Vu<br>kips | Comb | phi*Vn<br>kips | Av/s<br>in^2/ft | Aprv/s<br>in^2/ft | Vc<br>kips | Vs<br>kips | Beta | Theta<br>deg | b<br>in |    |
|-----------|-----|------------|------|----------------|-----------------|-------------------|------------|------------|------|--------------|---------|----|
| 622.56    | L   | 10.43319   |      | 504.0          | 0.00            | 1.07              | 310.76     | 249.21     | 5.38 | 28.50        | 36.00   | 21 |
| 645.65    | R   | 9.7        | 127  | 348.0          | 0.00            | 0.00              | 386.68     | 0.00       | 6.41 | 27.83        | 36.00   | 21 |

SHEAR DESIGN:

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Note:

Min reinforcement = 0.9000 % of Ag.

- Pos is the design position. L suggests the calculation is done at immediate left of "Loc" and R suggests at immediate right of it.
- Av/s is the total required area of steel per unit length due to shear plus torsion.
- Aprvs/s is the total provided area of transverse steel reinforcement.
- Vc is the nominal shear resistance of concrete.
- Vs is the nominal shear resistance of transverse reinforcement.
- Beta is the factor indicating ability of diagonally cracked concrete to transmit tension and shear.
- Theta is the angle of inclination of diagonal compressive stress.
- # Vu is greater than phi\*Vn.
- Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination.

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# COLUMN DESIGN

COLUMN DESIGN - Column: 2

Column Type: Round D = 36.00 in

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

## Column Section Properties:

| Sec. | Area<br>ft^2 | Ix<br>in^4 | Iz<br>in^4 |
|------|--------------|------------|------------|
| 1    | 7.07         | 82447.96   | 82447.96   |

## DESIGN PARAMETERS:

f'c = 4000.0 psi fy = 60000.0 psi  
 phi as per LRFD 2007 with 2006 interims.  
 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

| Layer | Size       | No. bars | Bar Dist.<br>in | From<br>ft | To<br>ft | Hook   |
|-------|------------|----------|-----------------|------------|----------|--------|
| 1     | US#11[M36] | 10       | 2.00            | 0.00       | 23.09    | Bot 90 |

## Note:

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

| Layer | Size      | Type   | Pitch<br>in | From<br>ft | To<br>ft |
|-------|-----------|--------|-------------|------------|----------|
| 1     | US#4[M13] | Spiral | 4.50        | 0.00       | 23.09    |

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

| (global coordinates) |      |            |            |            |               |               |               |
|----------------------|------|------------|------------|------------|---------------|---------------|---------------|
| Loc<br>ft            | Comb | Fx<br>kips | Fy<br>kips | Fz<br>kips | Mx<br>kips-ft | My<br>kips-ft | Mz<br>kips-ft |
| 622.56               | 223  | -6.7       | 331.8      | 5.2        | 197.2         | -7.0          | 64.2          |
| 645.65               | 223  | 6.7        | 311.4      | -5.2       | -71.1         | -7.0          | 91.7          |
| 622.56               | 4831 | -3.3       | 330.6      | 9.5        | 263.6         | -7.3          | 46.3          |
| 645.65               | 4831 | 3.8        | 310.2      | -8.6       | -45.1         | -7.3          | 53.1          |

Column Design

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| Bot/Top Elev.<br>ft | Comb | Pu<br>kips | Mux<br>kips-ft | Muz<br>kips-ft | pMn<br>kips-ft | Incl<br>deg | pPn/Pu | pMn/Mu |
|---------------------|------|------------|----------------|----------------|----------------|-------------|--------|--------|
| 622.56              | 4831 | 330.6      | 263.6          | 46.3           | 1212.9         | 9.96        | 1.00   | 4.53   |
| 645.65              | 223  | 311.4      | 71.1           | 91.7           | 1196.2         | 52.21       | 1.00   | 10.31  |

Column Design

=====

| Bot/Top Elev.<br>ft | As_min<br>in^2 | As_max<br>in^2 | As_prov<br>in^2 |
|---------------------|----------------|----------------|-----------------|
| 622.56              | 9.16           | 81.43          | 15.60           |
| 645.65              | 9.16           | 81.43          | 15.60           |

#### SHEAR DESIGN:

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| Loc<br>ft | Pos | Vu<br>kips | Comb | phi*Vn<br>kips | Av/s<br>in^2/ft | Aprv/s<br>in^2/ft | Vc<br>kips | Vs<br>kips | Beta | Theta<br>deg | b<br>in |    |
|-----------|-----|------------|------|----------------|-----------------|-------------------|------------|------------|------|--------------|---------|----|
| 622.56    | L   | 10.92227   |      | 507.7          | 0.00            | 1.07              | 314.41     | 249.72     | 5.44 | 28.45        | 36.00   | 21 |
| 645.65    | R   | 10.1 127   |      | 352.1          | 0.00            | 0.00              | 391.17     | 0.00       | 6.48 | 27.79        | 36.00   | 21 |

#### SHEAR DESIGN:

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#### Note:

Min reinforcement = 0.9000 % of Ag.

- Pos is the design position. L suggests the calculation is done at immediate left of "Loc" and R suggests at immediate right of it.
  - Av/s is the total required area of steel per unit length due to shear plus torsion.
  - Aprvs/s is the total provided area of transverse steel reinforcement.
  - Vc is the nominal shear resistance of concrete.
  - Vs is the nominal shear resistance of transverse reinforcement.
  - Beta is the factor indicating ability of diagonally cracked concrete to transmit tension and shear.
  - Theta is the angle of inclination of diagonal compressive stress.
  - # Vu is greater tha phi\*Vn.
- Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combin

PROJECT: ODOT LUC-51-1285

# COLUMN DESIGN

COLUMN DESIGN - Column: 3

Column Type: Round D = 36.00 in

Code: AASHTO LRFD 9

Units: US

Pier View : Downstation.

Design/Analysis Method: P - Delta.

## Column Section Properties:

| Sec. | Area<br>ft^2 | Ix<br>in^4 | Iz<br>in^4 |
|------|--------------|------------|------------|
| 2    | 7.07         | 82447.96   | 82447.96   |

## DESIGN PARAMETERS:

f'c = 4000.0 psi fy = 60000.0 psi  
phi as per LRFD 2007 with 2006 interims.  
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

| Layer | Size       | No. bars | Bar Dist.<br>in | From<br>ft | To<br>ft | Hook   |
|-------|------------|----------|-----------------|------------|----------|--------|
| 1     | US#11[M36] | 10       | 2.00            | 0.00       | 23.09    | Bot 90 |

## Note:

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

| Layer | Size      | Type   | Pitch<br>in | From<br>ft | To<br>ft |
|-------|-----------|--------|-------------|------------|----------|
| 1     | US#4[M13] | Spiral | 4.50        | 0.00       | 23.09    |

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

| (global coordinates) |      |            |            |            |               |               |               |
|----------------------|------|------------|------------|------------|---------------|---------------|---------------|
| Loc<br>ft            | Comb | Fx<br>kips | Fy<br>kips | Fz<br>kips | Mx<br>kips-ft | My<br>kips-ft | Mz<br>kips-ft |
| 622.56               | 225  | -5.8       | 359.5      | 4.2        | 213.9         | -5.1          | 58.0          |
| 645.65               | 225  | 5.8        | 339.1      | -4.2       | -110.9        | -5.1          | 77.4          |
| 622.56               | 4831 | -0.3       | 217.7      | 9.8        | 274.4         | -5.7          | 30.5          |
| 645.65               | 4831 | 0.7        | 197.4      | -8.9       | -50.0         | -5.7          | 27.6          |

Column Design

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| Bot/Top Elev.<br>ft | Comb | Pu<br>kips | Mux<br>kips-ft | Muz<br>kips-ft | pMn<br>kips-ft | Incl<br>deg | pPn/Pu | pMn/Mu |
|---------------------|------|------------|----------------|----------------|----------------|-------------|--------|--------|
| 622.56              | 4831 | 217.7      | 274.4          | 30.5           | 1136.6         | 6.34        | 1.00   | 4.12   |
| 645.65              | 225  | 339.1      | 110.9          | 77.4           | 1222.9         | 34.91       | 1.00   | 9.05   |
| Column Design       |      |            |                |                |                |             |        |        |

| Bot/Top Elev.<br>ft | As_min<br>in^2 | As_max<br>in^2 | As_prov<br>in^2 |
|---------------------|----------------|----------------|-----------------|
| 622.56              | 9.16           | 81.43          | 15.60           |
| 645.65              | 9.16           | 81.43          | 15.60           |

#### SHEAR DESIGN:

| Loc<br>ft | Pos | Vu<br>kips | Comb | phi*Vn<br>kips | Av/s<br>in^2/ft | Aprv/s<br>in^2/ft | Vc<br>kips | Vs<br>kips | Beta | Theta<br>deg | b<br>in |    |
|-----------|-----|------------|------|----------------|-----------------|-------------------|------------|------------|------|--------------|---------|----|
| 622.56    | L   | 11.0       | 1863 | 543.4          | 0.00            | 1.07              | 349.68     | 254.09     | 6.05 | 28.03        | 36.00   | 21 |
| 645.65    | R   | 10.1       | 99   | 342.1          | 0.00            | 0.00              | 380.16     | 0.00       | 6.30 | 27.89        | 36.00   | 21 |

#### SHEAR DESIGN:

#### Note:

Min reinforcement = 0.9000 % of Ag.

- Pos is the design position. L suggests the calculation is done at immediate left of "Loc" and R suggests at immediate right of it.
- Av/s is the total required area of steel per unit length due to shear plus torsion.
- Aprvs/s is the total provided area of transverse steel reinforcement.
- Vc is the nominal shear resistance of concrete.
- Vs is the nominal shear resistance of transverse reinforcement.
- Beta is the factor indicating ability of diagonally cracked concrete to transmit tension and shear.
- Theta is the angle of inclination of diagonal compressive stress.
- # Vu is greater than phi\*Vn.
- Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination.

PROJECT: ODOT LUC-51-1285

# COLUMN DESIGN

COLUMN DESIGN - Column: 4

Column Type: Round D = 36.00 in

Code: AASHTO LRFD 9

Units: US

Pier View : Downstation.

Design/Analysis Method: P - Delta.

## Column Section Properties:

| Sec. | Area<br>ft^2 | Ix<br>in^4 | Iz<br>in^4 |
|------|--------------|------------|------------|
| 3    | 7.07         | 82447.96   | 82447.96   |

## DESIGN PARAMETERS:

f'c = 4000.0 psi fy = 60000.0 psi  
phi as per LRFD 2007 with 2006 interims.  
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

| Layer | Size       | No. bars | Bar Dist.<br>in | From<br>ft | To<br>ft | Hook   |
|-------|------------|----------|-----------------|------------|----------|--------|
| 1     | US#11[M36] | 10       | 2.00            | 0.00       | 23.09    | Bot 90 |

## Note:

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

| Layer | Size      | Type   | Pitch<br>in | From<br>ft | To<br>ft |
|-------|-----------|--------|-------------|------------|----------|
| 1     | US#4[M13] | Spiral | 4.50        | 0.00       | 23.09    |

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

| (global coordinates) |      |            |            |            |               |               |               |
|----------------------|------|------------|------------|------------|---------------|---------------|---------------|
| Loc<br>ft            | Comb | Fx<br>kips | Fy<br>kips | Fz<br>kips | Mx<br>kips-ft | My<br>kips-ft | Mz<br>kips-ft |
| 622.56               | 2    | 6.1        | 687.2      | 6.0        | 122.6         | -3.1          | -96.2         |
| 645.65               | 2    | -6.1       | 659.0      | -6.0       | 92.3          | -3.1          | -108.8        |
| 622.56               | 4831 | 0.5        | 233.4      | 11.9       | 296.5         | -4.5          | -32.7         |
| 645.65               | 4831 | -0.0       | 213.0      | -11.0      | -29.8         | -4.5          | -29.8         |

Column Design

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=====

| Bot/Top Elev.<br>ft | Comb | Pu<br>kips | Mux<br>kips-ft | Muz<br>kips-ft | pMn<br>kips-ft | Incl<br>deg | pPn/Pu | pMn/Mu |
|---------------------|------|------------|----------------|----------------|----------------|-------------|--------|--------|
| 622.56              | 4831 | 233.4      | 296.5          | 32.7           | 1148.5         | 6.29        | 1.00   | 3.85   |
| 645.65              | 2    | 659.0      | 92.3           | 108.8          | 1365.3         | 49.70       | 1.00   | 9.57   |
| Column Design       |      |            |                |                |                |             |        |        |

| Bot/Top Elev.<br>ft | As_min<br>in^2 | As_max<br>in^2 | As_prov<br>in^2 |
|---------------------|----------------|----------------|-----------------|
| 622.56              | 9.16           | 81.43          | 15.60           |
| 645.65              | 9.16           | 81.43          | 15.60           |

#### SHEAR DESIGN:

| Loc<br>ft | Pos | Vu<br>kips | Comb | phi*Vn<br>kips | Av/s<br>in^2/ft | Aprv/s<br>in^2/ft | Vc<br>kips | Vs<br>kips | Beta | Theta<br>deg | b<br>in |    |
|-----------|-----|------------|------|----------------|-----------------|-------------------|------------|------------|------|--------------|---------|----|
| 622.56    | L   | 11.96343   |      | 452.5          | 0.00            | 1.07              | 261.50     | 241.28     | 4.53 | 29.28        | 36.00   | 21 |
| 645.65    | R   | 11.0       | 127  | 319.5          | 0.00            | 0.00              | 354.98     | 0.00       | 5.88 | 28.14        | 36.00   | 21 |

#### SHEAR DESIGN:

#### Note:

Min reinforcement = 0.9000 % of Ag.

- Pos is the design position. L suggests the calculation is done at immediate left of "Loc" and R suggests at immediate right of it.
- Av/s is the total required area of steel per unit length due to shear plus torsion.
- Aprvs/s is the total provided area of transverse steel reinforcement.
- Vc is the nominal shear resistance of concrete.
- Vs is the nominal shear resistance of transverse reinforcement.
- Beta is the factor indicating ability of diagonally cracked concrete to transmit tension and shear.
- Theta is the angle of inclination of diagonal compressive stress.
- # Vu is greater than phi\*Vn.
- Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combination.

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PROJECT: ODOT LUC-51-1285

# ISOLATED FOOTING DESIGN

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

## Geometry:

=====

Name : Footing 1  
 Shape : Rectangular, Type : Spread

Bf(X) = 6.00 ft, Hf(Z) = 8.00 ft, Thickness(Y) = 36.00 in

Ag = 48.00 ft^2, Ix = 256.00 ft^4, Iz = 144.00 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.<br>in | As total<br>in^2 | Spacing<br>in | Hook |
|-----|----------|-----------|-----------------|------------------|---------------|------|
| X   | 15       | US#4[M13] | 32.00           | 3.00             | 6.39          | None |
| X   | 15       | US#7[M22] | 4.00            | 9.00             | 6.37          | None |
| Z   | 11       | US#7[M22] | 3.00            | 6.60             | 6.51          | None |
| Z   | 11       | US#4[M13] | 33.00           | 2.20             | 6.55          | None |

## Max Soil Pressures, Service:

=====

| Corner | X<br>ft | Z<br>ft | -----<br>comb | Ovs   | Column Loads<br>P, kips | Mxx, kft | Mzz, kft | Soil press.<br>ksf |
|--------|---------|---------|---------------|-------|-------------------------|----------|----------|--------------------|
| 1      | -3.00   | -4.00   | 7855          | 1.000 | -328.45                 | -382.22  | 32.61    | 13.49              |
|        |         |         | 6762          | 1.000 | -217.61                 | -228.45  | -13.42   | 7.82               |
| 2      | 3.00    | -4.00   | 6763          | 1.000 | -327.12                 | -379.92  | 13.45    | 12.47              |
|        |         |         | 7151          | 1.000 | -218.83                 | -230.75  | 24.88    | 7.65               |
| 3      | 3.00    | 4.00    | 6721          | 1.000 | -327.74                 | -194.25  | 18.04    | 3.42               |
|        |         |         | 7865          | 1.000 | -218.72                 | -348.03  | 23.28    | -1.37*             |
| 4      | -3.00   | 4.00    | 7141          | 1.000 | -329.07                 | -196.56  | 37.19    | 4.56               |
|        |         |         | 6804          | 1.000 | -217.51                 | -345.72  | -15.01   | -1.18*             |

## Max Soil Pressures, Factored:

=====

PROJECT: ODOT LUC-51-1285

| Corner | X<br>ft | Z<br>ft | -----<br>comb | Ovs | Column Loads<br>P, kips | Mxx, kft | Mzz, kft | Soil press.<br>ksf |
|--------|---------|---------|---------------|-----|-------------------------|----------|----------|--------------------|
| 1      | -3.00   | -4.00   | 43            | --- | -465.51                 | -262.93  | 44.39    | 14.73              |
|        |         |         | 5250          | --- | -194.05                 | -64.61   | -17.79   | 4.68               |
| 2      | 3.00    | -4.00   | 43            | --- | -465.51                 | -262.93  | 44.39    | 12.88              |
|        |         |         | 5639          | --- | -195.63                 | -67.61   | 33.02    | 4.44               |
| 3      | 3.00    | 4.00    | 1             | --- | -466.41                 | -25.31   | 49.62    | 8.29               |
|        |         |         | 6353          | --- | -195.50                 | -223.63  | 30.94    | -0.07*             |
| 4      | -3.00   | 4.00    | 1             | --- | -466.41                 | -25.31   | 49.62    | 10.36              |
|        |         |         | 5292          | --- | -193.92                 | -220.63  | -19.87   | 0.18               |

Note:

- \* 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 combin:

Max. Soil Pressure Used in Design:

=====

Factored soil pressure = 14.73 ksf Comb 43  
Service soil pressure = 13.49 ksf Comb 7855  
Fatigue soil pressure = 0.54 ksf Comb 0

Flexure:

=====

| Dir | Loc<br>ft | d<br>in | Mmax<br>kft | Comb | CL | Asb_req<br>in^2 | Asb_prv<br>in^2 | Asb_eff<br>in^2 | Ast_req<br>in^2 | Ast_prv<br>in^2 | Ast_eff<br>in^2 |
|-----|-----------|---------|-------------|------|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| X   | -1.33     | 32.00   | 159.9       | 43   | T  | 2.27            | 9.00            | 8.74            | 2.27            | 3.00 *          | 1.70 *          |
| X   | 1.33      | 32.00   | 159.9       | 43   | T  | 2.27            | 9.00            | 8.74            | 2.27            | 3.00 *          | 1.70 *          |
| Z   | -1.33     | 33.00   | 295.0       | 43   | T  | 2.67            | 6.60            | 6.39            | 1.56            | 2.20            | 2.12            |
| Z   | 1.33      | 33.00   | 289.2       | 43   | T  | 2.62            | 6.60            | 6.52            | 1.56            | 2.20            | 2.12            |

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 combin:

Cracking/Fatigue

=====

Crack control and fatigue check

| Dir | Loc<br>ft | d<br>in | Mmax<br>kft | Comb | fs<br>ksi | Srq<br>in | Spr<br>in | fs<br>ksi | FTH<br>ksi |
|-----|-----------|---------|-------------|------|-----------|-----------|-----------|-----------|------------|
| X   | -1.33     | 32.00   | 145.6       | 7855 | 21.89     | 24.1      | 6.4       | 0.35      | 25.26      |
| X   | 1.33      | 32.00   | 145.6       | 7855 | 21.89     | 24.1      | 6.4       | 0.35      | 25.26      |
| Z   | -1.33     | 33.00   | 266.3       | 7855 | 32.20     | 14.8      | 6.5       | 0.88      | 24.15      |
| Z   | 1.33      | 33.00   | 266.3       | 7855 | 32.20     | 14.8      | 6.5       | 0.86      | 24.18      |

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

One Way Shear :

=====

(Beta-Theta Method)

| Col | Dir | Dist<br>ft | Comb | dv<br>in | Vu<br>kips | Mu<br>kft | theta<br>deg | beta               | phi*Vc<br>kips |
|-----|-----|------------|------|----------|------------|-----------|--------------|--------------------|----------------|
| 1   | X   | -3.93      | ---- | -----    | -----      | -----     | -----        | Outside of Footing |                |
|     | X   | 3.93       | ---- | -----    | -----      | -----     | -----        | Outside of Footing |                |
|     | Z   | -4.01      | ---- | -----    | -----      | -----     | -----        | Outside of Footing |                |
|     | Z   | 4.01       | ---- | -----    | -----      | -----     | -----        | Outside of Footing |                |

Note:

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

Two Way Shear:

=====

| #        | Bo<br>ft | Ao<br>ft^2 | Comb | Avg. dv<br>in | Vu<br>kips | phi*Vc<br>kips |
|----------|----------|------------|------|---------------|------------|----------------|
| Columns: |          |            |      |               |            |                |
| 1        | 17.72    | 24.98      | 43   | 31.68         | 339.0      | 1527.8         |

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 combin

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PROJECT: ODOT LUC-51-1285

# ISOLATED FOOTING DESIGN

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

## Geometry:

=====

Name : Footing 2  
 Shape : Rectangular, Type : Spread

Bf(X) = 6.00 ft, Hf(Z) = 8.00 ft, Thickness(Y) = 36.00 in

Ag = 48.00 ft^2, Ix = 256.00 ft^4, Iz = 144.00 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.<br>in | As total<br>in^2 | Spacing<br>in | Hook |
|-----|----------|-----------|-----------------|------------------|---------------|------|
| X   | 15       | US#4[M13] | 32.00           | 3.00             | 6.39          | None |
| X   | 15       | US#7[M22] | 4.00            | 9.00             | 6.37          | None |
| Z   | 11       | US#7[M22] | 3.00            | 6.60             | 6.51          | None |
| Z   | 11       | US#4[M13] | 33.00           | 2.20             | 6.55          | None |

## Max Soil Pressures, Service:

=====

| Corner | X<br>ft | Z<br>ft | -----<br>comb | Ovs   | Column Loads<br>P, kips | Mxx, kft | Mzz, kft | Soil press.<br>ksf |
|--------|---------|---------|---------------|-------|-------------------------|----------|----------|--------------------|
| 1      | -3.00   | -4.00   | 7876          | 1.000 | -446.83                 | -378.36  | -10.66   | 15.00              |
|        |         |         | 6722          | 1.000 | -291.43                 | -268.86  | -51.70   | 9.20               |
| 2      | 3.00    | -4.00   | 6766          | 1.000 | -451.65                 | -367.97  | -39.89   | 15.99              |
|        |         |         | 7157          | 1.000 | -294.72                 | -271.36  | -8.67    | 10.56              |
| 3      | 3.00    | 4.00    | 6724          | 1.000 | -451.62                 | -257.38  | -38.19   | 6.18               |
|        |         |         | 7871          | 1.000 | -294.75                 | -358.98  | -10.36   | 0.75               |
| 4      | -3.00   | 4.00    | 7162          | 1.000 | -446.81                 | -251.99  | -8.97    | 5.18               |
|        |         |         | 6764          | 1.000 | -291.46                 | -356.49  | -53.39   | -0.61*             |

## Max Soil Pressures, Factored:

=====

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| Corner | X<br>ft | Z<br>ft | -----<br>comb | Ovs | Column Loads<br>P, kips | Mxx, kft           | Mzz, kft         | Soil press.<br>ksf |
|--------|---------|---------|---------------|-----|-------------------------|--------------------|------------------|--------------------|
| 1      | -3.00   | -4.00   | 64<br>5210    | --- | -636.64<br>-260.34      | -220.99<br>-97.41  | -16.41<br>-55.36 | 16.37<br>5.79      |
| 2      | 3.00    | -4.00   | 46<br>5645    | --- | -644.44<br>-264.79      | -207.18<br>-100.67 | -31.86<br>1.80   | 17.33<br>7.05      |
| 3      | 3.00    | 4.00    | 4<br>6359     | --- | -644.44<br>-264.83      | -106.74<br>-216.51 | -31.86<br>-0.41  | 12.42<br>2.14      |
| 4      | -3.00   | 4.00    | 22<br>5252    | --- | -636.64<br>-260.37      | -92.93<br>-213.26  | -16.41<br>-57.56 | 11.47<br>0.89      |

Note:

- \* 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 combin

Max. Soil Pressure Used in Design:

=====

Factored soil pressure = 17.33 ksf Comb 46  
Service soil pressure = 15.99 ksf Comb 6766  
Fatigue soil pressure = 1.81 ksf Comb 0

Flexure:

=====

| Dir | Loc<br>ft | d<br>in | Mmax<br>kft | Comb | CL | Asb_req<br>in^2 | Asb_prv<br>in^2 | Asb_eff<br>in^2 | Ast_req<br>in^2 | Ast_prv<br>in^2 | Ast_eff<br>in^2 |
|-----|-----------|---------|-------------|------|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| X   | -1.33     | 32.00   | 188.9       | 46   | T  | 2.27            | 9.00            | 8.74            | 2.27            | 3.00 *          | 1.70 *          |
| X   | 1.33      | 32.00   | 188.9       | 46   | T  | 2.27            | 9.00            | 8.74            | 2.27            | 3.00 *          | 1.70 *          |
| Z   | -1.33     | 33.00   | 350.5       | 46   | T  | 3.18            | 6.60            | 5.37            | 1.56            | 2.20            | 2.12            |
| Z   | 1.33      | 33.00   | 344.7       | 46   | T  | 3.12            | 6.60            | 5.46            | 1.56            | 2.20            | 2.12            |

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 combin

Cracking/Fatigue

=====

Crack control and fatigue check

| Dir | Loc<br>ft | d<br>in | Mmax<br>kft | Comb | Cracking<br>fs<br>ksi | Srq<br>in | Spr<br>in | Fatigue<br>fs<br>ksi | FTH<br>ksi |
|-----|-----------|---------|-------------|------|-----------------------|-----------|-----------|----------------------|------------|
| X   | -1.33     | 32.00   | 173.5       | 6766 | 26.08                 | 19.4      | 6.4       | 0.02                 | 24.64      |
| X   | 1.33      | 32.00   | 173.5       | 6766 | 26.08                 | 19.4      | 6.4       | 0.02                 | 24.64      |
| Z   | -1.33     | 33.00   | 319.7       | 6766 | 38.66**               | 12.7      | 6.5       | 0.07                 | 21.96      |
| Z   | 1.33      | 33.00   | 319.7       | 6766 | 38.66**               | 12.7      | 6.5       | 0.06                 | 22.03      |

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\*\* Stress (fs) is higher than steel yield strength ( $0.6 \cdot f_y$ ).  
 Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combin

One Way Shear :

=====

(Beta-Theta Method)

| Col | Dir | Dist<br>ft | Comb | dv<br>in | Vu<br>kips | Mu<br>kft | theta<br>deg | beta               | phi*Vc<br>kips |
|-----|-----|------------|------|----------|------------|-----------|--------------|--------------------|----------------|
| 1   | X   | -3.93      | ---- | -----    | -----      | -----     | -----        | Outside of Footing |                |
|     | X   | 3.93       | ---- | -----    | -----      | -----     | -----        | Outside of Footing |                |
|     | Z   | -4.01      | ---- | -----    | -----      | -----     | -----        | Outside of Footing |                |
|     | Z   | 4.01       | ---- | -----    | -----      | -----     | -----        | Outside of Footing |                |

Note:

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

Two Way Shear:

=====

| # | Bo<br>ft | Ao<br>ft^2 | Comb | Avg. dv<br>in | Vu<br>kips | phi*Vc<br>kips |
|---|----------|------------|------|---------------|------------|----------------|
| 1 | 17.72    | 24.98      | 46   | 31.68         | 398.8      | 1527.8         |

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 combin

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# ISOLATED FOOTING DESIGN

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

## Geometry:

=====

Name : Footing 3  
 Shape : Rectangular, Type : Spread

Bf(X) = 6.00 ft, Hf(Z) = 8.00 ft, Thickness(Y) = 36.00 in

Ag = 48.00 ft^2, Ix = 256.00 ft^4, Iz = 144.00 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.<br>in | As total<br>in^2 | Spacing<br>in | Hook |
|-----|----------|-----------|-----------------|------------------|---------------|------|
| X   | 15       | US#4[M13] | 32.00           | 3.00             | 6.39          | None |
| X   | 15       | US#7[M22] | 4.00            | 9.00             | 6.37          | None |
| Z   | 11       | US#7[M22] | 3.00            | 6.60             | 6.51          | None |
| Z   | 11       | US#4[M13] | 33.00           | 2.20             | 6.55          | None |

## Max Soil Pressures, Service:

=====

| Corner | X<br>ft | Z<br>ft | comb | Ovs   | Column Loads<br>P, kips | Mxx, kft | Mzz, kft | Soil press.<br>ksf |
|--------|---------|---------|------|-------|-------------------------|----------|----------|--------------------|
| 1      | -3.00   | -4.00   | 7868 | 1.000 | -451.90                 | -386.32  | -8.39    | 15.28              |
|        |         |         | 6721 | 1.000 | -289.56                 | -236.38  | -28.72   | 9.13               |
| 2      | 3.00    | -4.00   | 6797 | 1.000 | -444.84                 | -390.00  | -37.41   | 16.14              |
|        |         |         | 7141 | 1.000 | -289.95                 | -239.00  | -8.27    | 9.95               |
| 3      | 3.00    | 4.00    | 6755 | 1.000 | -444.88                 | -276.21  | -35.72   | 5.70               |
|        |         |         | 7855 | 1.000 | -289.79                 | -432.46  | -13.28   | -0.44*             |
| 4      | -3.00   | 4.00    | 7154 | 1.000 | -451.93                 | -285.14  | -6.69    | 4.82               |
|        |         |         | 6763 | 1.000 | -289.39                 | -429.84  | -33.73   | -1.39*             |

## Max Soil Pressures, Factored:

=====

PROJECT: ODOT LUC-51-1285

| Corner | X<br>ft | Z<br>ft | -----<br>comb | Ovs | Column Loads<br>P, kips | Mxx, kft | Mzz, kft | Soil press.<br>ksf |
|--------|---------|---------|---------------|-----|-------------------------|----------|----------|--------------------|
| 1      | -3.00   | -4.00   | 56            | --- | -646.41                 | -207.34  | -12.53   | 16.45              |
|        |         |         | 5209          | --- | -259.03                 | -36.19   | -24.39   | 5.45               |
| 2      | 3.00    | -4.00   | 77            | --- | -634.76                 | -218.38  | -27.53   | 17.21              |
|        |         |         | 5629          | --- | -259.55                 | -39.61   | 2.28     | 5.98               |
| 3      | 3.00    | 4.00    | 35            | --- | -634.76                 | -116.04  | -27.53   | 11.98              |
|        |         |         | 6343          | --- | -259.33                 | -298.23  | -4.40    | 0.83               |
| 4      | -3.00   | 4.00    | 14            | --- | -646.41                 | -127.08  | -12.53   | 11.22              |
|        |         |         | 5251          | --- | -258.81                 | -294.81  | -31.07   | 0.14               |

Note:

- \* 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 combin:

Max. Soil Pressure Used in Design:

=====

Factored soil pressure = 17.21 ksf Comb 77  
Service soil pressure = 16.14 ksf Comb 6797  
Fatigue soil pressure = 2.00 ksf Comb 0

Flexure:

=====

| Dir | Loc<br>ft | d<br>in | Mmax<br>kft | Comb | CL | Asb_req<br>in^2 | Asb_prv<br>in^2 | Asb_eff<br>in^2 | Ast_req<br>in^2 | Ast_prv<br>in^2 | Ast_eff<br>in^2 |
|-----|-----------|---------|-------------|------|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| X   | -1.33     | 32.00   | 187.6       | 77   | T  | 2.27            | 9.00            | 8.74            | 2.27            | 3.00 *          | 1.70 *          |
| X   | 1.33      | 32.00   | 187.6       | 77   | T  | 2.27            | 9.00            | 8.74            | 2.27            | 3.00 *          | 1.70 *          |
| Z   | -1.33     | 33.00   | 348.0       | 77   | T  | 3.15            | 6.60            | 5.40            | 1.56            | 2.20            | 2.12            |
| Z   | 1.33      | 33.00   | 342.2       | 77   | T  | 3.10            | 6.60            | 5.50            | 1.56            | 2.20            | 2.12            |

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 combin:

Cracking/Fatigue

=====

Crack control and fatigue check

| Dir | Loc<br>ft | d<br>in | Mmax<br>kft | Comb | Cracking<br>fs<br>ksi | Srq<br>in | Spr<br>in | Fatigue<br>fs<br>ksi | FTH<br>ksi |
|-----|-----------|---------|-------------|------|-----------------------|-----------|-----------|----------------------|------------|
| X   | -1.33     | 32.00   | 175.2       | 6797 | 26.33                 | 19.2      | 6.4       | 0.84                 | 24.91      |
| X   | 1.33      | 32.00   | 175.2       | 6797 | 26.33                 | 19.2      | 6.4       | 0.84                 | 24.91      |
| Z   | -1.33     | 33.00   | 322.9       | 6797 | 39.05**               | 12.7      | 6.5       | 2.47                 | 22.79      |
| Z   | 1.33      | 33.00   | 322.9       | 6797 | 39.05**               | 12.7      | 6.5       | 2.43                 | 22.84      |

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\*\* Stress (fs) is higher than steel yield strength ( $0.6 \cdot f_y$ ).  
 Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combin

One Way Shear :

=====

(Beta-Theta Method)

| Col | Dir | Dist<br>ft | Comb | dv<br>in | Vu<br>kips | Mu<br>kft | theta<br>deg | beta       | phi*Vc<br>kips |
|-----|-----|------------|------|----------|------------|-----------|--------------|------------|----------------|
| 1   | X   | -3.93      | ---- | -----    | -----      | -----     | -----        | Outside of | Footing        |
|     | X   | 3.93       | ---- | -----    | -----      | -----     | -----        | Outside of | Footing        |
|     | Z   | -4.01      | ---- | -----    | -----      | -----     | -----        | Outside of | Footing        |
|     | Z   | 4.01       | ---- | -----    | -----      | -----     | -----        | Outside of | Footing        |

Note:

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

Two Way Shear:

=====

| #        | Bo<br>ft | Ao<br>ft^2 | Comb | Avg. dv<br>in | Vu<br>kips | phi*Vc<br>kips |
|----------|----------|------------|------|---------------|------------|----------------|
| Columns: |          |            |      |               |            |                |
| 1        | 17.72    | 24.98      | 77   | 31.68         | 396.1      | 1527.8         |

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 combin

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PROJECT: ODOT LUC-51-1285

# ISOLATED FOOTING DESIGN

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

## Geometry:

=====

Name : Footing 4  
 Shape : Rectangular, Type : Spread

Bf(X) = 6.00 ft, Hf(Z) = 8.00 ft, Thickness(Y) = 36.00 in

Ag = 48.00 ft^2, Ix = 256.00 ft^4, Iz = 144.00 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.<br>in | As total<br>in^2 | Spacing<br>in | Hook |
|-----|----------|-----------|-----------------|------------------|---------------|------|
| X   | 15       | US#4[M13] | 32.00           | 3.00             | 6.39          | None |
| X   | 15       | US#7[M22] | 4.00            | 9.00             | 6.37          | None |
| Z   | 11       | US#7[M22] | 3.00            | 6.60             | 6.51          | None |
| Z   | 11       | US#4[M13] | 33.00           | 2.20             | 6.55          | None |

## Max Soil Pressures, Service:

=====

| Corner | X<br>ft | Z<br>ft | -----<br>comb Ovs        | Column Loads<br>P, kips Mxx, kft Mzz, kft | Soil press.<br>ksf          |
|--------|---------|---------|--------------------------|-------------------------------------------|-----------------------------|
| 1      | -3.00   | -4.00   | 7872 1.000<br>6721 1.000 | -493.39 -423.14<br>-306.60 -243.29        | -3.25 16.82<br>-20.50 9.76  |
| 2      | 3.00    | -4.00   | 6780 1.000<br>7141 1.000 | -494.76 -420.40<br>-305.24 -246.04        | -22.86 17.35<br>-0.89 10.22 |
| 3      | 3.00    | 4.00    | 6738 1.000<br>7855 1.000 | -494.65 -286.75<br>-305.93 -466.60        | -21.23 6.27<br>-5.54 -0.80* |
| 4      | -3.00   | 4.00    | 7158 1.000<br>6763 1.000 | -493.29 -289.49<br>-307.30 -463.85        | -1.63 5.72<br>-25.14 -1.37* |

## Max Soil Pressures, Factored:

=====

PROJECT: ODOT LUC-51-1285

| Corner | X<br>ft | Z<br>ft | -----<br>comb | Ovs | Column Loads<br>P, kips | Mxx, kft | Mzz, kft | Soil press.<br>ksf |
|--------|---------|---------|---------------|-----|-------------------------|----------|----------|--------------------|
| 1      | -3.00   | -4.00   | 60            | --- | -712.30                 | -244.21  | -6.30    | 18.52              |
|        |         |         | 5209          | --- | -275.05                 | -28.12   | -16.23   | 5.83               |
| 2      | 3.00    | -4.00   | 60            | --- | -712.30                 | -244.21  | -6.30    | 18.79              |
|        |         |         | 5629          | --- | -273.27                 | -31.70   | 9.34     | 5.99               |
| 3      | 3.00    | 4.00    | 18            | --- | -712.30                 | -110.74  | -6.30    | 13.24              |
|        |         |         | 6343          | --- | -274.20                 | -326.82  | 3.14     | 0.54               |
| 4      | -3.00   | 4.00    | 18            | --- | -712.30                 | -110.74  | -6.30    | 12.98              |
|        |         |         | 5251          | --- | -275.98                 | -323.24  | -22.42   | 0.23               |

Note:

- \* 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 combin

Max. Soil Pressure Used in Design:

=====

Factored soil pressure = 18.79 ksf Comb 60  
 Service soil pressure = 17.35 ksf Comb 6780  
 Fatigue soil pressure = 1.30 ksf Comb 0

Flexure:

=====

| Dir | Loc<br>ft | d<br>in | Mmax<br>kft | Comb | CL | Asb_req<br>in^2 | Asb_prv<br>in^2 | Asb_eff<br>in^2 | Ast_req<br>in^2 | Ast_prv<br>in^2 | Ast_eff<br>in^2 |
|-----|-----------|---------|-------------|------|----|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| X   | -1.33     | 32.00   | 205.2       | 60   | T  | 2.27            | 9.00            | 8.74            | 2.27            | 3.00 *          | 1.70 *          |
| X   | 1.33      | 32.00   | 205.2       | 60   | T  | 2.27            | 9.00            | 8.74            | 2.27            | 3.00 *          | 1.70 *          |
| Z   | -1.33     | 33.00   | 381.8       | 60   | T  | 3.46            | 6.60            | 4.92            | 1.56            | 2.20            | 2.12            |
| Z   | 1.33      | 33.00   | 376.0       | 60   | T  | 3.41            | 6.60            | 5.00            | 1.56            | 2.20            | 2.12            |

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 combin

Cracking/Fatigue

=====

Crack control and fatigue check

| Dir | Loc<br>ft | d<br>in | Mmax<br>kft | Comb | fs<br>ksi | Srq<br>in | Spr<br>in | fs<br>ksi | FTH<br>ksi |
|-----|-----------|---------|-------------|------|-----------|-----------|-----------|-----------|------------|
| X   | -1.33     | 32.00   | 188.7       | 6780 | 28.37     | 17.5      | 6.4       | 0.75      | 24.98      |
| X   | 1.33      | 32.00   | 188.7       | 6780 | 28.37     | 17.5      | 6.4       | 0.75      | 24.98      |
| Z   | -1.33     | 33.00   | 348.8       | 6780 | 42.18**   | 12.7      | 6.5       | 2.42      | 22.70      |
| Z   | 1.33      | 33.00   | 348.8       | 6780 | 42.18**   | 12.7      | 6.5       | 2.38      | 22.75      |

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\*\* Stress (fs) is higher than steel yield strength ( $0.6 \cdot f_y$ ).  
 Comb 0 -- For cases when there is no moment in a section, Zero moment might be reported for combin

#### One Way Shear :

=====

(Beta-Theta Method)

| Col | Dir | Dist<br>ft | Comb | dv<br>in | Vu<br>kips | Mu<br>kft | theta<br>deg | beta       | phi*Vc<br>kips |
|-----|-----|------------|------|----------|------------|-----------|--------------|------------|----------------|
| 1   | X   | -3.93      | ---- | -----    | -----      | -----     | -----        | Outside of | Footing        |
|     | X   | 3.93       | ---- | -----    | -----      | -----     | -----        | Outside of | Footing        |
|     | Z   | -4.01      | ---- | -----    | -----      | -----     | -----        | Outside of | Footing        |
|     | Z   | 4.01       | ---- | -----    | -----      | -----     | -----        | Outside of | Footing        |

#### Note:

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

#### Two Way Shear:

=====

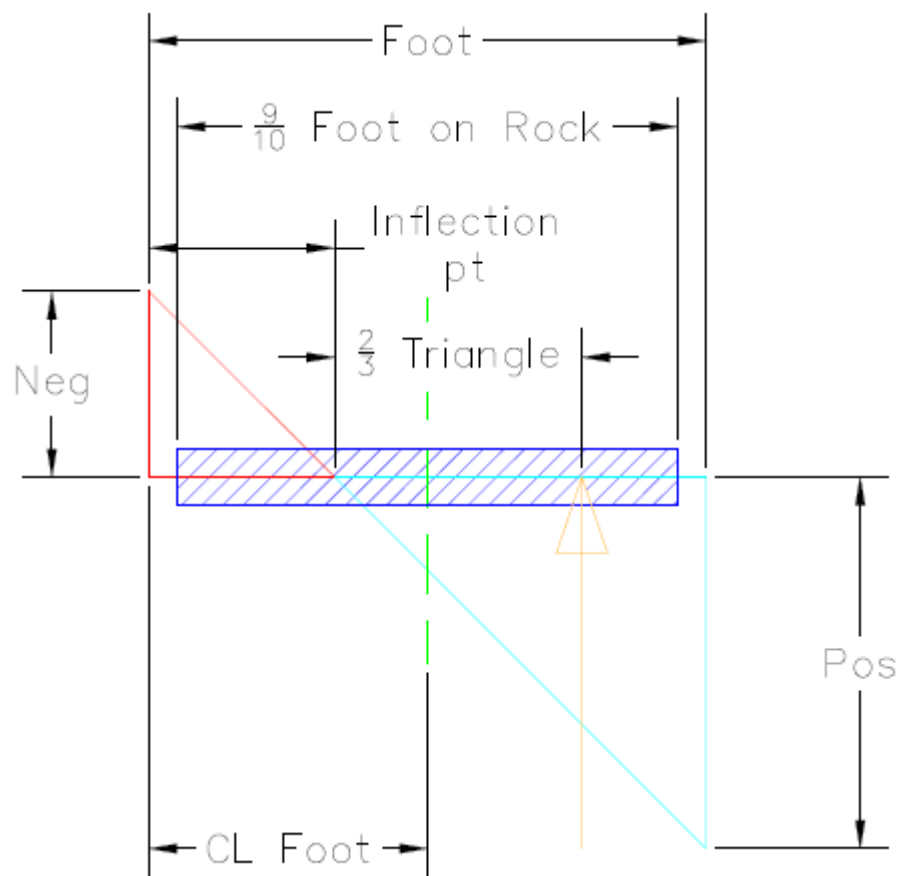
| #        | Bo<br>ft | Ao<br>ft^2 | Comb | Avg. dv<br>in | Vu<br>kips | phi*Vc<br>kips |
|----------|----------|------------|------|---------------|------------|----------------|
| Columns: |          |            |      |               |            |                |
| 1        | 17.72    | 24.98      | 60   | 31.68         | 432.4      | 1527.8         |

#### 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 combin

ECCENTRICITY CHECK FOR FOOTINGS: UPLIFT



How much it will reduce uplift by

$$EV\_End \cdot (2 \cdot Z2\_L1) \cdot Footing_{length} = 18 \cdot kip$$

$$EV\_Middle \cdot (Z2\_L2 - Z1\_L2) \cdot Footing_{length} = 5.4 \cdot kip$$

$$Total\_Force := EV\_End \cdot (2 \cdot Z2\_L1) \cdot Footing_{length} + EV\_Middle \cdot (Z2\_L2 - Z1\_L2) \cdot Footing_{length} = 23.4 \cdot kip$$

$$Pressure := Total\_Force \div (Footing_{width} \cdot Footing_{length}) = 0.488 \cdot ksf$$

LEFT PIER CAP

$$Neg\_Press\_L := -1.37 \cdot klf$$

$$Pos\_Press\_L := 13.49 \cdot klf$$

$$Inflection\_Point := Footing_{length} \cdot \frac{Neg\_Press\_L}{(Pos\_Press\_L - Neg\_Press\_L)} = 0.738 \cdot ft$$

$$Centroid\_Dist\_Past\_Inflection := \frac{2}{3} \cdot (Footing_{length} - Inflection\_Point) = 4.842 \cdot ft$$

AASHTO 11.6.3.3

For Foundation on rock, the location of the resultant reaction forces shall be with the middle 9/10th of base

$$Ecc\_Limit_1 := 0.05 \cdot Footing_{length} = 0.400 \cdot ft \quad Ecc\_Limit_2 := 0.95 \cdot Footing_{length} = 7.600 \cdot ft$$

Eccent limit is based on distance from edge of footing

$$Centroid\_Location := Inflection\_Point + Centroid\_Dist\_Past\_Inflection = 5.579 \cdot ft$$

$$Eccen\_Check := \text{if}(Ecc\_Limit_1 \leq Centroid\_Location \leq Ecc\_Limit_2, "Okay", "No Good") = "Okay"$$