

# Mount Structural Analysis Report

6-ft Standoff in Columbia County

L3Harris Site ID / Name: X808 / Lake City

American Tower Site ID / Name: 2543 / Lake City

Site Address: 3501 N US Hwy 441, Lake City, Columbia County, FL 32055.

Site Coordinates: 30.238192, -82.636808

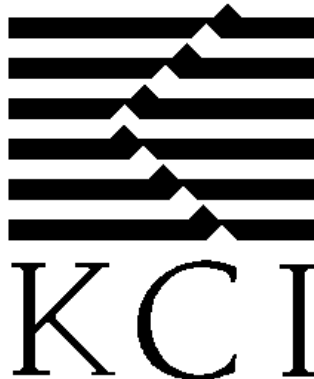
*Prepared for:*

**L3Harris**

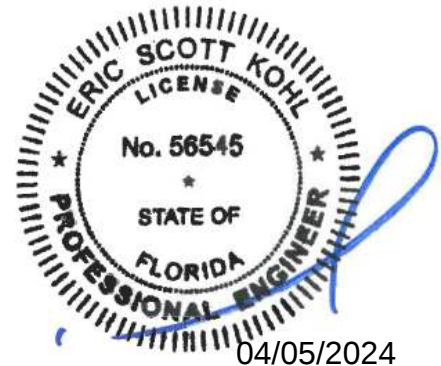
April 4, 2024

KCI J.O: 012300219N

Eng. File: 24.068.22.03 Rev. 1



4505 Falls of Neuse Road, Suite 400  
Raleigh, North Carolina 27609  
(919) 783-9214  
FL License Number: EB0004898  
Eric Kohl License No. 56545



Eric Kohl

Digitally signed by Eric Kohl  
DN: E=eric.kohl@kci.com, CN=Eric  
Kohl, O=KCI Technologies, Inc.,  
L=Raleigh, S=North Carolina, C=US  
Date: 2024.04.05 16:27:10-04'00'

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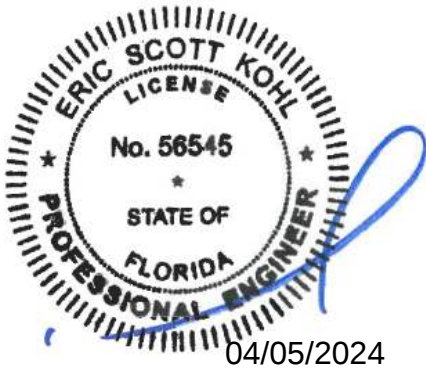
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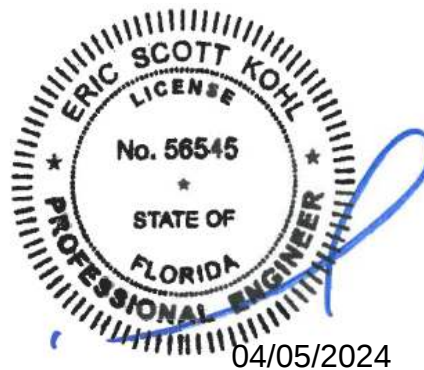


## A. EXECUTIVE SUMMARY

KCI Technologies, Inc. has completed a Mount Structural Analysis Report of the X808 / Lake City Site.

This analysis has been performed in accordance with the 2021 International Building Code (2023 Florida Building Code, 8th Edition) and TIA-222-H based upon an ultimate 3-second gust wind speed of 119 mph. Applicable Standard references and design criteria are listed in Section C - Applicable Codes and Provisions of Analysis.

The results of this analysis indicate that **none** of the structural components of the structure will exceed the nominal loads established by the 2021 International Building Code (2023 Florida Building Code, 8th Edition) and TIA-222-H for the proposed appurtenance configuration.



The purpose of this report is to assess the impact of adding antennas and transmission lines to the existing structure, including whether or not structural modifications are required. Any modifications recommended herein are conceptual only. This is not a construction document. This report may not be suitable for bidding and definitely is not a substitute for complete and properly engineered plans/specifications required to accomplish any recommended modifications. KCI Technologies, Inc. assumes no liability for use of this report for any other purpose than that for which it was intended.

## B. PURPOSE/BACKGROUND

KCI Technologies, Inc. was requested to conduct a Mount Structural Analysis Report of the X808 / Lake City Site. L3Harris provided the following information:

- Project matrix with proposed appurtenance information, dated September 6, 2023.
- Site information package provided by L3Harris Technologies.
- Recent field photos of existing appurtenances and mounts.

## C. CONDITIONS INVESTIGATED

This is a (1) 6-ft Standoff, installed on a Guyed Tower at 282.0-ft. The structure is located at 3501 N US Hwy 441, Lake City, Columbia County, FL 32055.

**TABLE 1. LOADING TABLE:**

| Rad Center (ft) | Antenna Information         | Mount Elevation (ft) | Mount Type        | Carrier  | Notes |
|-----------------|-----------------------------|----------------------|-------------------|----------|-------|
| 285.0           | (1) DB810K-YP               | 282.0                | (1) 6-ft Standoff | L3Harris | 1     |
|                 | (1) SE414-SWBPALDF(D00)_R90 |                      |                   |          | 2, 3  |

1. Appurtenances to be removed and therefore, not considered in the analysis.
2. Proposed appurtenances.
3. Final appurtenance configuration.

## D. APPLICABLE CODES AND PROVISIONS OF ANALYSIS

KCI utilized the following codes and criteria to conduct the structural analysis:

|                                          |                                  |
|------------------------------------------|----------------------------------|
| <b>Building Code:</b>                    | 2021 International Building Code |
| <b>TIA-222 Revision:</b>                 | TIA-222-H                        |
| <b>Risk Category:</b>                    | II                               |
| <b>Ultimate Wind Speed:</b>              | 119 mph                          |
| <b>Exposure Category:</b>                | C                                |
| <b>Ice Thickness:</b>                    | 0 in                             |
| <b>Wind Speed with Ice:</b>              | 0 mph                            |
| <b>Topographic Factor</b>                | 1.0                              |
| <b>Seismic <math>S_s</math>:</b>         | 0.130                            |
| <b>Seismic <math>S_1</math>:</b>         | 0.060                            |
| <b>Service Wind Speed:</b>               | 30 mph                           |
| <b>Man. Live Load at Mid/End-Points:</b> | 500 lbs                          |
| <b>Man. Live Load at Mount Pipes:</b>    | 250 lbs                          |

The following assumptions were made in the analysis:

- 1- Contractor to contact Engineer of Record during installation of new equipment if existing mount equipment is found to be damaged. Engineer of Record shall then provide remediation steps as appropriate to ensure structural sufficiency of mount for proposed equipment.
- 2- The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specifications.

- 3- The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
- 4- All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
- 5- Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate: ASTM A36 (GR 36)

HSS (Rectangular): ASTM 500 (GR B-46)

Pipe: ASTM A53 (GR 35)

Connection Bolts: ASTM A325

This analysis may be affected if any assumptions are not valid or have been made in error. KCI should be notified to determine the effect on the structural integrity of the antenna mounting system.

## E. RESULTS

The results of this analysis indicate that **none** of the structural components of the structure will exceed the nominal loads established by the 2021 International Building Code (2023 Florida Building Code, 8th Edition) and TIA-222-H for the proposed appurtenance configuration.

**TABLE 2. RESULTS SUMMARY:**

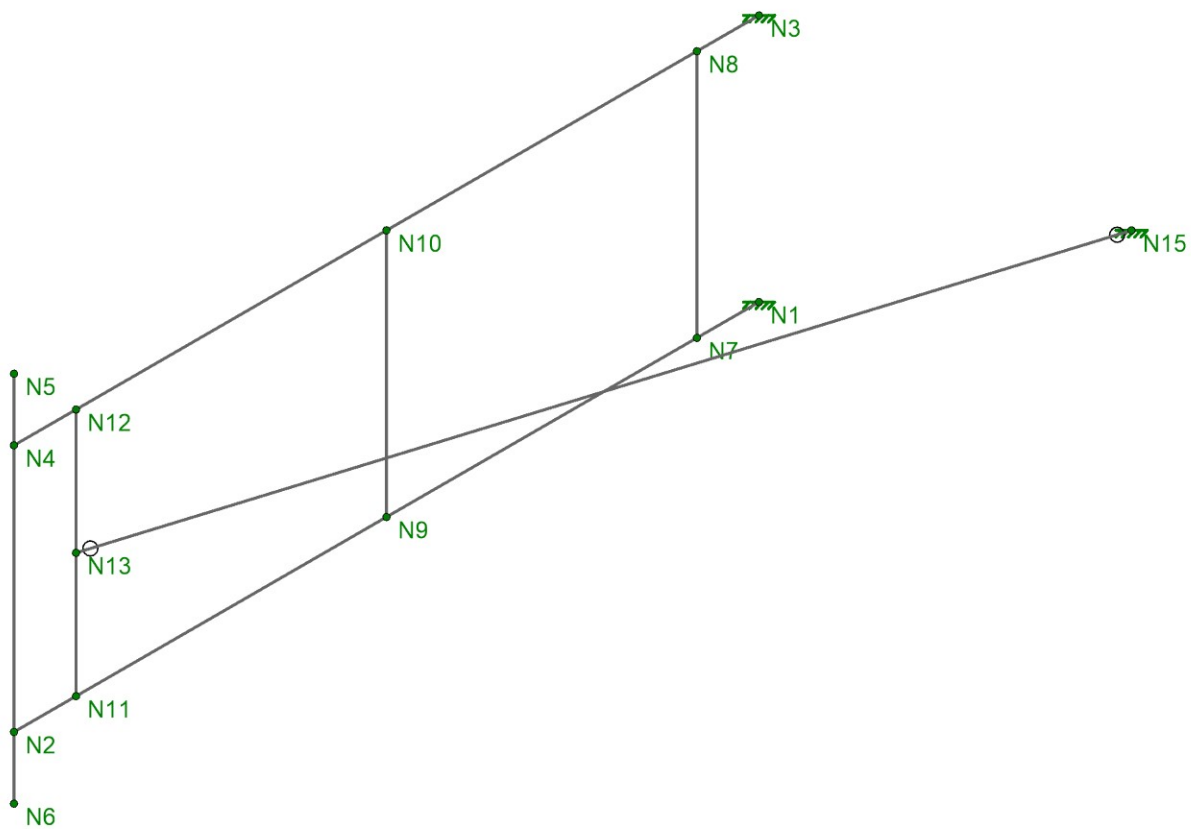
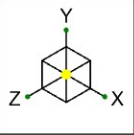
| Notes | Component  | Critical Member | Centerline (ft) | % Capacity   | Pass / Fail |
|-------|------------|-----------------|-----------------|--------------|-------------|
| 1     | Standoff   | M1              | 282.0           | 38.1         | Pass        |
|       | Bracing    | V6              |                 | 49.4         | Pass        |
|       | Tie Back   | M7              |                 | 7.2          | Pass        |
|       | Pipe Mount | P1              |                 | 16.1         | Pass        |
|       |            |                 |                 | <b>49.4%</b> | <b>Pass</b> |

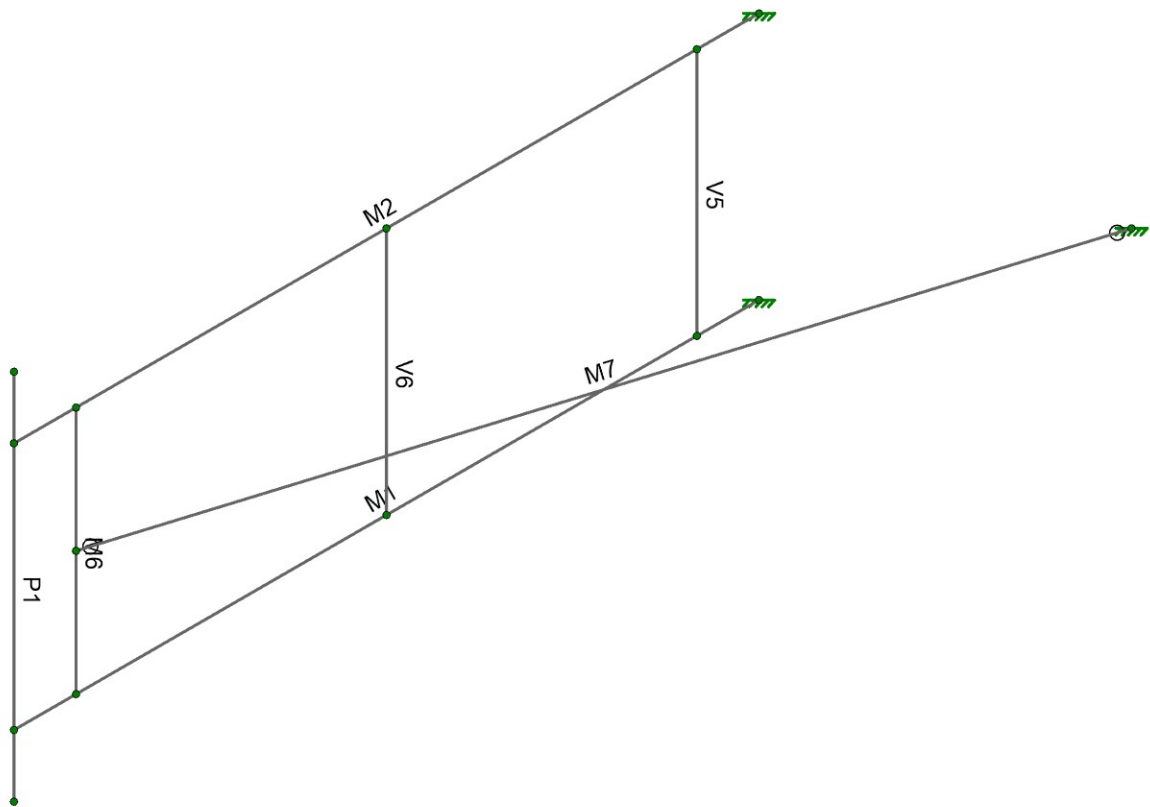
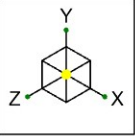
1. See additional documentation in Appendix for calculations supporting the % capacity consumed.

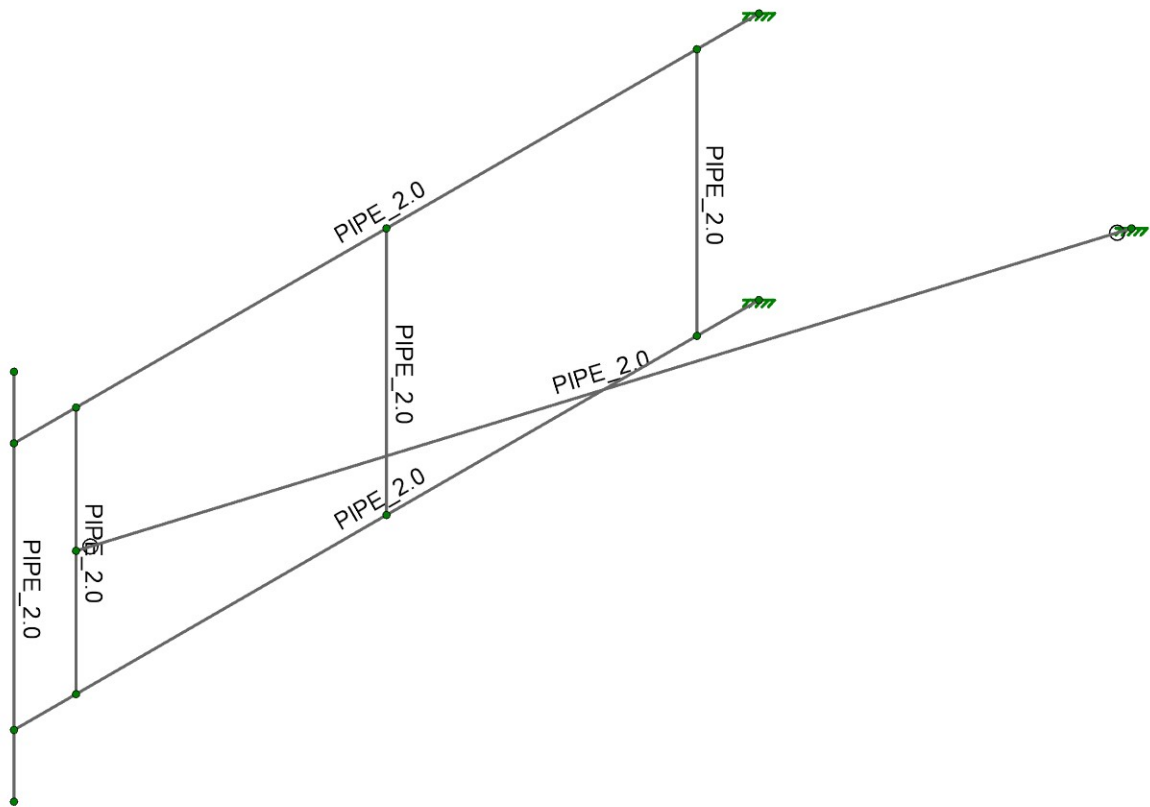
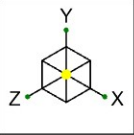
## F. RECOMMENDATIONS

The results of this analysis indicate that **none** of the structural components of the structure will exceed the nominal loads established by the 2021 International Building Code (2023 Florida Building Code, 8th Edition) and TIA-222-H for the proposed appurtenance configuration.

## **G. APPENDIX**

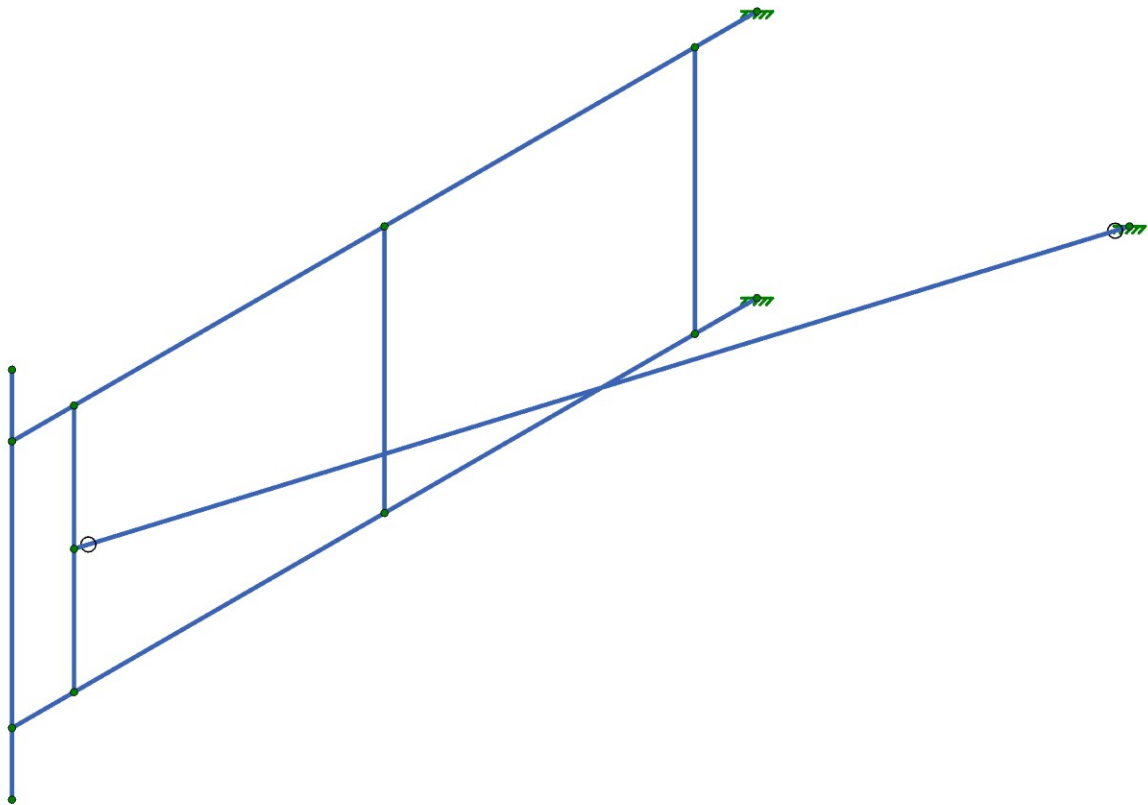


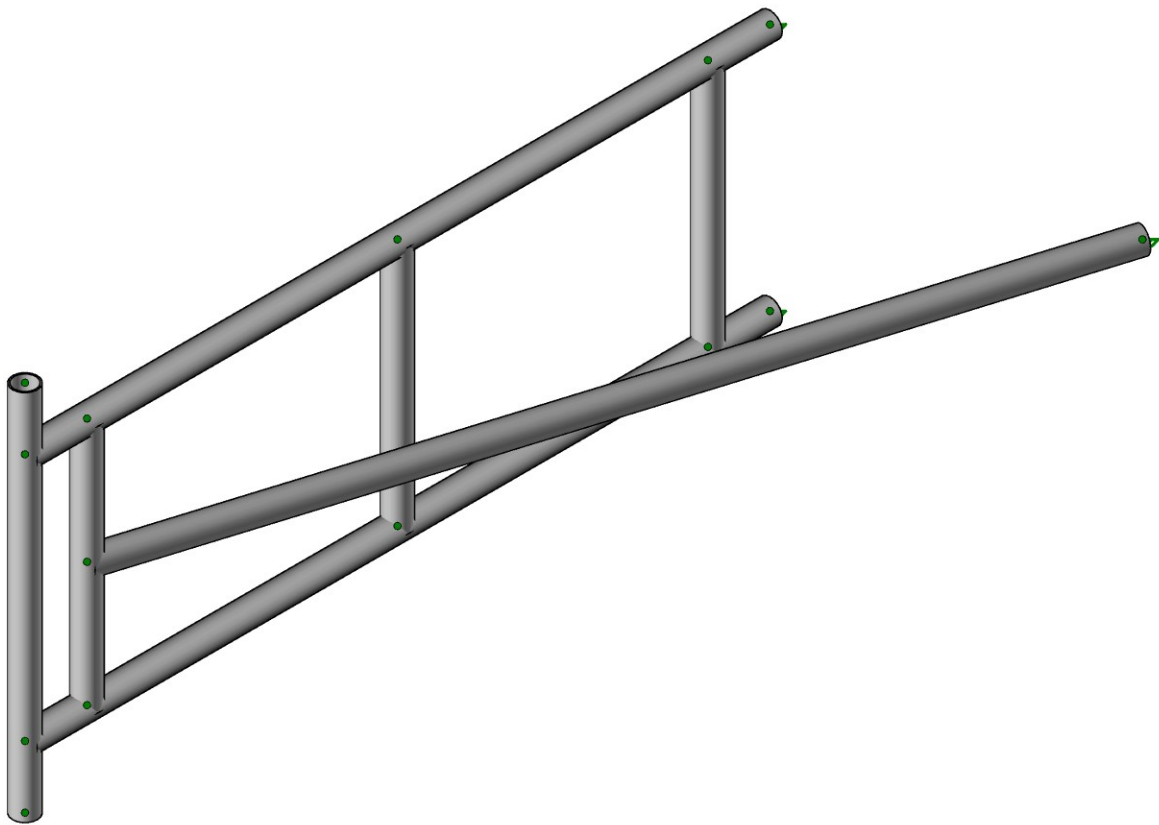
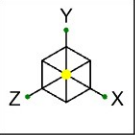






Member Material Sets  
■ A53 Gr.B





KCI TECHNOLOGIES INC.  
Derek.Kromer  
24.068.22.03

X808\_Lake City

SK-5  
Jan 18, 2024 at 03:51 PM  
6-ft Standoff with Three Vert...

## Mount Analysis Tool

|                             |              |     |
|-----------------------------|--------------|-----|
| Project No:                 | 24.068.22.03 | -   |
| Site ID:                    | X808         | -   |
| Site Name:                  | Lake City    | -   |
| Application No.:            | NA           | -   |
| Tower Type                  | Guyed        | -   |
| Mount Type                  | Sector Mount | -   |
| Analysis Code:              | TIA-222-H    | -   |
| IBC Code:                   | 2021 IBC     | -   |
| Max Stress Ratio:           | 100%         | %   |
| Tower Height:               | 330.0        | ft  |
| Effective Mount Centerline: | 282.0        | ft  |
| Ultimate Wind Speed:        | 119          | mph |
| Maintenance Wind Speed:     | 30           | mph |
| Design Ice Wind Speed:      | 0            | mph |
| Ultimate Ice Thickness:     | 0.00         | in  |
| Risk Category:              | II           | -   |
| Exposure Category:          | C            | -   |
| Topographic Factor Kzt:     | 1.00         | -   |
| Ss:                         | 0.130        | g   |
| S1:                         | 0.060        | g   |
| Site Class:                 | D (assumed)  | -   |
| Structure Ground Elevation: | 0            | ft  |
| Roof Speed Up Factor (Ks):  | 1.00         | -   |
| Risa Y-Coordinate           | 12.00        | in  |

### Maintenance and Additional Loads

|                          |       |     |
|--------------------------|-------|-----|
| Pipe Mount Load, LM:     | 500.0 | lbs |
| Horizontal Load, LV:     | 250.0 | lbs |
| Rigging, R:              |       | lbs |
| Rigging Angle, RA:       |       | deg |
| Other Load, Oth:         |       | lbs |
| Other Load Factor, OthF: |       | -   |

### KCI TECHNOLOGIES INC.

4505 Falls of Neuse Road, Suite 400  
Raleigh, NC 27609  
Phone: 999 222 333

Date: Thursday, April 4, 2024

P.Eng: Derek.Kromer

Email: Derek.Kromer@kci.com



### Wind Parameters

|                       |     |       |     |
|-----------------------|-----|-------|-----|
| Shielding Factor:     | Ka  | 0.90  | -   |
| Gust Factor:          | Gh  | 1.00  | -   |
| Wind Pressure:        | qz  | 54.22 | psf |
| Maint. Wind Pressure: | qmz | 3.45  | psf |

### Ice Parameters:

|                       |     |      |     |
|-----------------------|-----|------|-----|
| Design Ice Thickness: | tiz | 0.00 | in  |
| Ice Wind Pressure:    | qiz | 0.00 | psf |

### Seismic Parameters

|                                |    |        |     |
|--------------------------------|----|--------|-----|
| Seismic Response Coefficient:  | Cs | 0.07   | -   |
| Total Wt. of Mount and Appurt: | W  | 122.49 | lbs |
| Total Seismic Shear Force:     | Vs | 8.49   | lbs |

### Load Combinations

|                         |
|-------------------------|
| 1.2 D + 1.0 W           |
| 0.9 D + 1.0 W           |
| 1.2 D + 1.0 Di + 1.0 Wi |
| 1.2 D + 1.0 E           |
| 0.9 D + 1.0 E           |
| 1.4 D                   |
| 1.2 D + 1.0 WM + 1.5 Lv |
| 1.2 D + 1.0 WM + 1.5 LH |
| -                       |
| -                       |

### Topographic Factor Kzt:

|                |      |    |
|----------------|------|----|
| Topo. Category | 1    | -  |
| Crest, H       | 0.00 | ft |
| S. Distance, L | 0.00 | ft |
| D. Crest, x    | 0.00 | ft |

### W.Directions

360° each: 30

### Overall Max Stress Ratio

49.40%

PASS

### Node Boundary Conditions

|   | Node Label | X [k/in] | Y [k/in] | Z [k/in] | X Rot [k-ft/rad] | Y Rot [k-ft/rad] | Z Rot [k-ft/rad] |
|---|------------|----------|----------|----------|------------------|------------------|------------------|
| 1 | N1         | Reaction | Reaction | Reaction | Reaction         | Reaction         | Reaction         |
| 2 | N3         | Reaction | Reaction | Reaction | Reaction         | Reaction         | Reaction         |
| 3 | N15        | Reaction | Reaction | Reaction | Reaction         | Reaction         | Reaction         |

### Node Coordinates

|    | Label | X [in] | Y [in] | Z [in] | Detach From Diaphragm |
|----|-------|--------|--------|--------|-----------------------|
| 1  | N1    | 0      | 0      | 0      |                       |
| 2  | N2    | 0      | 0      | 72     |                       |
| 3  | N3    | 0      | 24     | 0      |                       |
| 4  | N4    | 0      | 24     | 72     |                       |
| 5  | N5    | 0      | 30     | 72     |                       |
| 6  | N6    | 0      | -6     | 72     |                       |
| 7  | N7    | 0      | 0      | 6      |                       |
| 8  | N8    | 0      | 24     | 6      |                       |
| 9  | N9    | 0      | 0      | 36     |                       |
| 10 | N10   | 0      | 24     | 36     |                       |
| 11 | N11   | 0      | 0      | 66     |                       |
| 12 | N12   | 0      | 24     | 66     |                       |
| 13 | N13   | 0      | 12     | 66     |                       |
| 14 | N15   | 24     | 12     | -12    |                       |

### Hot Rolled Steel Properties

|    | Label          | E [ksi] | G [ksi] | Nu  | Therm. Coeff. [ $10^{-6}/^{\circ}\text{F}$ ] | Density [lb/ft <sup>3</sup> ] | Yield [ksi] | Ry  | Fu [ksi] | Rt  |
|----|----------------|---------|---------|-----|----------------------------------------------|-------------------------------|-------------|-----|----------|-----|
| 1  | A992           | 29000   | 11154   | 0.3 | 0.65                                         | 490                           | 50          | 1.1 | 65       | 1.1 |
| 2  | A36 Gr.36      | 29000   | 11154   | 0.3 | 0.65                                         | 490                           | 36          | 1.5 | 58       | 1.2 |
| 3  | A572 Gr.50     | 29000   | 11154   | 0.3 | 0.65                                         | 490                           | 50          | 1.1 | 65       | 1.1 |
| 4  | A500 Gr.B RND  | 29000   | 11154   | 0.3 | 0.65                                         | 527                           | 42          | 1.4 | 58       | 1.3 |
| 5  | A500 Gr.B RECT | 29000   | 11154   | 0.3 | 0.65                                         | 527                           | 46          | 1.4 | 58       | 1.3 |
| 6  | A500 Gr.C RND  | 29000   | 11154   | 0.3 | 0.65                                         | 527                           | 46          | 1.4 | 62       | 1.3 |
| 7  | A500 Gr.C RECT | 29000   | 11154   | 0.3 | 0.65                                         | 527                           | 50          | 1.4 | 62       | 1.3 |
| 8  | A53 Gr.B       | 29000   | 11154   | 0.3 | 0.65                                         | 490                           | 35          | 1.6 | 60       | 1.2 |
| 9  | A1085          | 29000   | 11154   | 0.3 | 0.65                                         | 490                           | 50          | 1.4 | 65       | 1.3 |
| 10 | A913 Gr.65     | 29000   | 11154   | 0.3 | 0.65                                         | 490                           | 65          | 1.1 | 80       | 1.1 |

### General Materials Properties

|   | Label       | E [ksi] | G [ksi] | Nu   | Therm. Coeff. [ $10^{-6}/^{\circ}\text{F}$ ] | Density [lb/ft <sup>3</sup> ] | Plate Methodology |
|---|-------------|---------|---------|------|----------------------------------------------|-------------------------------|-------------------|
| 1 | gen Conc3NW | 3155    | 1372    | 0.15 | 0.6                                          | 145                           | Isotropic         |
| 2 | gen Conc4NW | 3644    | 1584    | 0.15 | 0.6                                          | 145                           | Isotropic         |
| 3 | gen Conc3LW | 2085    | 906     | 0.15 | 0.6                                          | 109.999                       | Isotropic         |
| 4 | gen Conc4LW | 2408    | 1047    | 0.15 | 0.6                                          | 109.999                       | Isotropic         |
| 5 | gen Alum    | 10100   | 4077    | 0.3  | 1.29                                         | 173                           | Isotropic         |
| 6 | gen Steel   | 29000   | 11154   | 0.3  | 0.65                                         | 490                           | Isotropic         |
| 7 | gen Plywood | 1800    | 38      | 0    | 0.3                                          | 35                            | Isotropic         |
| 8 | RIGID       | 1e+6    |         | 0.3  | 0                                            | 0                             | Isotropic         |
| 9 | gen Ortho   |         |         |      | 0.65                                         | 490                           | Orthotropic       |

### Hot Rolled Steel Section Sets

|   | Label      | Shape    | Type | Design List | Material  | Design Rule | Area [in <sup>2</sup> ] | Iyy [in <sup>4</sup> ] | Izz [in <sup>4</sup> ] | J [in <sup>4</sup> ] |
|---|------------|----------|------|-------------|-----------|-------------|-------------------------|------------------------|------------------------|----------------------|
| 1 | Standoff   | PIPE 2.0 | Beam | HSS Pipe    | A53 Gr.B  | Typical     | 1.02                    | 0.627                  | 0.627                  | 1.25                 |
| 2 | Bracing    | SR3/4    | Beam | BAR         | A36 Gr.36 | Typical     | 0.442                   | 0.016                  | 0.016                  | 0.031                |
| 3 | Pipe Mount | PIPE 2.0 | Beam | Pipe        | A53 Gr.B  | Typical     | 1.02                    | 0.627                  | 0.627                  | 1.25                 |
| 4 | Tieback    | PIPE 2.0 | Beam | Pipe        | A53 Gr.B  | Typical     | 1.02                    | 0.627                  | 0.627                  | 1.25                 |

### General Section Sets

|   | Label | Shape | Type | Material    | Area [in <sup>2</sup> ] | Iyy [in <sup>4</sup> ] | Izz [in <sup>4</sup> ] | J [in <sup>4</sup> ] |
|---|-------|-------|------|-------------|-------------------------|------------------------|------------------------|----------------------|
| 1 | GEN1  | RE4X4 | Beam | gen Conc3NW | 16                      | 21.333                 | 21.333                 | 31.573               |
| 2 | RIGID |       | None | RIGID       | 1e+6                    | 1e+6                   | 1e+6                   | 1e+6                 |

### Member Primary Data

|   | Label | I Node | J Node | Section/Shape | Type | Design List | Material | Design Rule |
|---|-------|--------|--------|---------------|------|-------------|----------|-------------|
| 1 | M1    | N1     | N2     | Standoff      | Beam | HSS Pipe    | A53 Gr.B | Typical     |
| 2 | M2    | N3     | N4     | Standoff      | Beam | HSS Pipe    | A53 Gr.B | Typical     |
| 3 | P1    | N5     | N6     | Pipe Mount    | Beam | Pipe        | A53 Gr.B | Typical     |
| 4 | V5    | N8     | N7     | Standoff      | Beam | HSS Pipe    | A53 Gr.B | Typical     |
| 5 | V6    | N10    | N9     | Standoff      | Beam | HSS Pipe    | A53 Gr.B | Typical     |
| 6 | M6    | N12    | N11    | Standoff      | Beam | HSS Pipe    | A53 Gr.B | Typical     |
| 7 | M7    | N13    | N15    | Standoff      | Beam | HSS Pipe    | A53 Gr.B | Typical     |

### Member Advanced Data

|   | Label | I Release | J Release | Physical | Deflection Ratio Options | Seismic DR |
|---|-------|-----------|-----------|----------|--------------------------|------------|
| 1 | M1    |           |           | Yes      | Default                  | None       |
| 2 | M2    |           |           | Yes      | Default                  | None       |
| 3 | P1    |           |           | Yes      | Default                  | None       |
| 4 | V5    |           |           | Yes      | Default                  | None       |
| 5 | V6    |           |           | Yes      | Default                  | None       |
| 6 | M6    |           |           | Yes      | Default                  | None       |
| 7 | M7    | BenPIN    | BenPIN    | Yes      | Default                  | None       |

### Basic Load Cases

|    | BLC Description    | Category | Y Gravity | Point | Distributed |
|----|--------------------|----------|-----------|-------|-------------|
| 1  | Dead               | None     | -1        | 2     |             |
| 2  | Dead Ice           | None     |           | 2     | 7           |
| 3  | Wind Front         | None     |           | 2     | 7           |
| 4  | Wind Side          | None     |           | 2     | 7           |
| 5  | Wind Front Ice     | None     |           | 2     | 7           |
| 6  | Wind Side Ice      | None     |           | 2     | 7           |
| 7  | Wind Front Service | None     |           | 2     | 7           |
| 8  | Wind Side Service  | None     |           | 2     | 7           |
| 9  | Seismic Front      | None     |           | 2     | 7           |
| 10 | Seismic Side       | None     |           | 2     | 7           |

### Load Combinations

|   | Description         | Solve | P-Delta | BLC | Factor | BLC | Factor | BLC | Factor | BLC | Factor |
|---|---------------------|-------|---------|-----|--------|-----|--------|-----|--------|-----|--------|
| 1 | 1.2 D + 1.0 W [000] | Yes   | Y       | 1   | 1.2    | 3   | 1      | 4   |        |     |        |
| 2 | 1.2 D + 1.0 W [030] | Yes   | Y       | 1   | 1.2    | 3   | 0.75   | 4   | 0.25   |     |        |
| 3 | 1.2 D + 1.0 W [060] | Yes   | Y       | 1   | 1.2    | 3   | 0.25   | 4   | 0.75   |     |        |

### Load Combinations (Continued)

|    | Description                   | Solve | P-Delta | BLC | Factor | BLC | Factor | BLC | Factor | BLC | Factor |
|----|-------------------------------|-------|---------|-----|--------|-----|--------|-----|--------|-----|--------|
| 4  | 1.2 D + 1.0 W [090]           | Yes   | Y       | 1   | 1.2    | 3   |        | 4   | 1      |     |        |
| 5  | 1.2 D + 1.0 W [120]           | Yes   | Y       | 1   | 1.2    | 3   | -0.25  | 4   | 0.75   |     |        |
| 6  | 1.2 D + 1.0 W [150]           | Yes   | Y       | 1   | 1.2    | 3   | -0.75  | 4   | 0.25   |     |        |
| 7  | 1.2 D + 1.0 W [180]           | Yes   | Y       | 1   | 1.2    | 3   | -1     | 4   |        |     |        |
| 8  | 1.2 D + 1.0 W [210]           | Yes   | Y       | 1   | 1.2    | 3   | -0.75  | 4   | -0.25  |     |        |
| 9  | 1.2 D + 1.0 W [240]           | Yes   | Y       | 1   | 1.2    | 3   | -0.25  | 4   | -0.75  |     |        |
| 10 | 1.2 D + 1.0 W [270]           | Yes   | Y       | 1   | 1.2    | 3   |        | 4   | -1     |     |        |
| 11 | 1.2 D + 1.0 W [300]           | Yes   | Y       | 1   | 1.2    | 3   | 0.25   | 4   | -0.75  |     |        |
| 12 | 1.2 D + 1.0 W [330]           | Yes   | Y       | 1   | 1.2    | 3   | 0.75   | 4   | -0.25  |     |        |
| 13 | 0.9 D + 1.0 W [000]           | Yes   | Y       | 1   | 0.9    | 3   | 1      | 4   |        |     |        |
| 14 | 0.9 D + 1.0 W [030]           | Yes   | Y       | 1   | 0.9    | 3   | 0.75   | 4   | 0.25   |     |        |
| 15 | 0.9 D + 1.0 W [060]           | Yes   | Y       | 1   | 0.9    | 3   | 0.25   | 4   | 0.75   |     |        |
| 16 | 0.9 D + 1.0 W [090]           | Yes   | Y       | 1   | 0.9    | 3   |        | 4   | 1      |     |        |
| 17 | 0.9 D + 1.0 W [120]           | Yes   | Y       | 1   | 0.9    | 3   | -0.25  | 4   | 0.75   |     |        |
| 18 | 0.9 D + 1.0 W [150]           | Yes   | Y       | 1   | 0.9    | 3   | -0.75  | 4   | 0.25   |     |        |
| 19 | 0.9 D + 1.0 W [180]           | Yes   | Y       | 1   | 0.9    | 3   | -1     | 4   |        |     |        |
| 20 | 0.9 D + 1.0 W [210]           | Yes   | Y       | 1   | 0.9    | 3   | -0.75  | 4   | -0.25  |     |        |
| 21 | 0.9 D + 1.0 W [240]           | Yes   | Y       | 1   | 0.9    | 3   | -0.25  | 4   | -0.75  |     |        |
| 22 | 0.9 D + 1.0 W [270]           | Yes   | Y       | 1   | 0.9    | 3   |        | 4   | -1     |     |        |
| 23 | 0.9 D + 1.0 W [300]           | Yes   | Y       | 1   | 0.9    | 3   | 0.25   | 4   | -0.75  |     |        |
| 24 | 0.9 D + 1.0 W [330]           | Yes   | Y       | 1   | 0.9    | 3   | 0.75   | 4   | -0.25  |     |        |
| 25 | 1.2 D + 1.0 Di + 1.0 Wi [000] | Yes   | Y       | 1   | 1.2    | 2   | 1      | 5   | 1      | 6   |        |
| 26 | 1.2 D + 1.0 Di + 1.0 Wi [030] | Yes   | Y       | 1   | 1.2    | 2   | 1      | 5   | 0.75   | 6   | 0.25   |
| 27 | 1.2 D + 1.0 Di + 1.0 Wi [060] | Yes   | Y       | 1   | 1.2    | 2   | 1      | 5   | 0.25   | 6   | 0.75   |
| 28 | 1.2 D + 1.0 Di + 1.0 Wi [090] | Yes   | Y       | 1   | 1.2    | 2   | 1      | 5   |        | 6   | 1      |
| 29 | 1.2 D + 1.0 Di + 1.0 Wi [120] | Yes   | Y       | 1   | 1.2    | 2   | 1      | 5   | -0.25  | 6   | 0.75   |
| 30 | 1.2 D + 1.0 Di + 1.0 Wi [150] | Yes   | Y       | 1   | 1.2    | 2   | 1      | 5   | -0.75  | 6   | 0.25   |
| 31 | 1.2 D + 1.0 Di + 1.0 Wi [180] | Yes   | Y       | 1   | 1.2    | 2   | 1      | 5   | -1     | 6   |        |
| 32 | 1.2 D + 1.0 Di + 1.0 Wi [210] | Yes   | Y       | 1   | 1.2    | 2   | 1      | 5   | -0.75  | 6   | -0.25  |
| 33 | 1.2 D + 1.0 Di + 1.0 Wi [240] | Yes   | Y       | 1   | 1.2    | 2   | 1      | 5   | -0.25  | 6   | -0.75  |
| 34 | 1.2 D + 1.0 Di + 1.0 Wi [270] | Yes   | Y       | 1   | 1.2    | 2   | 1      | 5   |        | 6   | -1     |
| 35 | 1.2 D + 1.0 Di + 1.0 Wi [300] | Yes   | Y       | 1   | 1.2    | 2   | 1      | 5   | 0.25   | 6   | -0.75  |
| 36 | 1.2 D + 1.0 Di + 1.0 Wi [330] | Yes   | Y       | 1   | 1.2    | 2   | 1      | 5   | 0.75   | 6   | -0.25  |
| 37 | 1.2 D + 1.0 E [000]           | Yes   | Y       | 1   | 1.2    | 9   | 1      | 10  |        |     |        |
| 38 | 1.2 D + 1.0 E [030]           | Yes   | Y       | 1   | 1.2    | 9   | 0.75   | 10  | 0.25   |     |        |
| 39 | 1.2 D + 1.0 E [060]           | Yes   | Y       | 1   | 1.2    | 9   | 0.25   | 10  | 0.75   |     |        |
| 40 | 1.2 D + 1.0 E [090]           | Yes   | Y       | 1   | 1.2    | 9   |        | 10  | 1      |     |        |
| 41 | 1.2 D + 1.0 E [120]           | Yes   | Y       | 1   | 1.2    | 9   | -0.25  | 10  | 0.75   |     |        |
| 42 | 1.2 D + 1.0 E [150]           | Yes   | Y       | 1   | 1.2    | 9   | -0.75  | 10  | 0.25   |     |        |
| 43 | 1.2 D + 1.0 E [180]           | Yes   | Y       | 1   | 1.2    | 9   | -1     | 10  |        |     |        |
| 44 | 1.2 D + 1.0 E [210]           | Yes   | Y       | 1   | 1.2    | 9   | -0.75  | 10  | -0.25  |     |        |
| 45 | 1.2 D + 1.0 E [240]           | Yes   | Y       | 1   | 1.2    | 9   | -0.25  | 10  | -0.75  |     |        |
| 46 | 1.2 D + 1.0 E [270]           | Yes   | Y       | 1   | 1.2    | 9   |        | 10  | -1     |     |        |
| 47 | 1.2 D + 1.0 E [300]           | Yes   | Y       | 1   | 1.2    | 9   | 0.25   | 10  | -0.75  |     |        |
| 48 | 1.2 D + 1.0 E [330]           | Yes   | Y       | 1   | 1.2    | 9   | 0.75   | 10  | -0.25  |     |        |
| 49 | 0.9 D + 1.0 E [000]           | Yes   | Y       | 1   | 0.9    | 9   | 1      | 10  |        |     |        |
| 50 | 0.9 D + 1.0 E [030]           | Yes   | Y       | 1   | 0.9    | 9   | 0.75   | 10  | 0.25   |     |        |
| 51 | 0.9 D + 1.0 E [060]           | Yes   | Y       | 1   | 0.9    | 9   | 0.25   | 10  | 0.75   |     |        |
| 52 | 0.9 D + 1.0 E [090]           | Yes   | Y       | 1   | 0.9    | 9   |        | 10  | 1      |     |        |
| 53 | 0.9 D + 1.0 E [120]           | Yes   | Y       | 1   | 0.9    | 9   | -0.25  | 10  | 0.75   |     |        |
| 54 | 0.9 D + 1.0 E [150]           | Yes   | Y       | 1   | 0.9    | 9   | -0.75  | 10  | 0.25   |     |        |
| 55 | 0.9 D + 1.0 E [180]           | Yes   | Y       | 1   | 0.9    | 9   | -1     | 10  |        |     |        |
| 56 | 0.9 D + 1.0 E [210]           | Yes   | Y       | 1   | 0.9    | 9   | -0.75  | 10  | -0.25  |     |        |
| 57 | 0.9 D + 1.0 E [240]           | Yes   | Y       | 1   | 0.9    | 9   | -0.25  | 10  | -0.75  |     |        |
| 58 | 0.9 D + 1.0 E [270]           | Yes   | Y       | 1   | 0.9    | 9   |        | 10  | -1     |     |        |

### Load Combinations (Continued)

|    | Description                        | Solve | P-Delta | BLC | Factor | BLC | Factor | BLC | Factor | BLC | Factor |
|----|------------------------------------|-------|---------|-----|--------|-----|--------|-----|--------|-----|--------|
| 59 | 0.9 D + 1.0 E [300]                | Yes   | Y       | 1   | 0.9    | 9   | 0.25   | 10  | -0.75  |     |        |
| 60 | 0.9 D + 1.0 E [330]                | Yes   | Y       | 1   | 0.9    | 9   | 0.75   | 10  | -0.25  |     |        |
| 61 | 1.4 D                              | Yes   | Y       | 1   | 1.4    |     |        |     |        |     |        |
| 62 | 1.2 D + 1.0 WM [000] + 1.5 Lv [P1] | Yes   | Y       | 1   | 1.2    | 7   | 1      | 8   |        | M1  | 1.5    |
| 63 | 1.2 D + 1.0 WM [030] + 1.5 Lv [P1] | Yes   | Y       | 1   | 1.2    | 7   | 0.75   | 8   | 0.25   | M1  | 1.5    |
| 64 | 1.2 D + 1.0 WM [060] + 1.5 Lv [P1] | Yes   | Y       | 1   | 1.2    | 7   | 0.25   | 8   | 0.75   | M1  | 1.5    |
| 65 | 1.2 D + 1.0 WM [090] + 1.5 Lv [P1] | Yes   | Y       | 1   | 1.2    | 7   |        | 8   | 1      | M1  | 1.5    |
| 66 | 1.2 D + 1.0 WM [120] + 1.5 Lv [P1] | Yes   | Y       | 1   | 1.2    | 7   | -0.25  | 8   | 0.75   | M1  | 1.5    |
| 67 | 1.2 D + 1.0 WM [150] + 1.5 Lv [P1] | Yes   | Y       | 1   | 1.2    | 7   | -0.75  | 8   | 0.25   | M1  | 1.5    |
| 68 | 1.2 D + 1.0 WM [180] + 1.5 Lv [P1] | Yes   | Y       | 1   | 1.2    | 7   | -1     | 8   |        | M1  | 1.5    |
| 69 | 1.2 D + 1.0 WM [210] + 1.5 Lv [P1] | Yes   | Y       | 1   | 1.2    | 7   | -0.75  | 8   | -0.25  | M1  | 1.5    |
| 70 | 1.2 D + 1.0 WM [240] + 1.5 Lv [P1] | Yes   | Y       | 1   | 1.2    | 7   | -0.25  | 8   | -0.75  | M1  | 1.5    |
| 71 | 1.2 D + 1.0 WM [270] + 1.5 Lv [P1] | Yes   | Y       | 1   | 1.2    | 7   |        | 8   | -1     | M1  | 1.5    |
| 72 | 1.2 D + 1.0 WM [300] + 1.5 Lv [P1] | Yes   | Y       | 1   | 1.2    | 7   | 0.25   | 8   | -0.75  | M1  | 1.5    |
| 73 | 1.2 D + 1.0 WM [330] + 1.5 Lv [P1] | Yes   | Y       | 1   | 1.2    | 7   | 0.75   | 8   | -0.25  | M1  | 1.5    |
| 74 | 1.2 D + 1.0 WM [000] + 1.5 LH [M1] | Yes   | Y       | 1   | 1.2    | 7   | 1      | 8   |        | M2  | 1.5    |
| 75 | 1.2 D + 1.0 WM [030] + 1.5 LH [M1] | Yes   | Y       | 1   | 1.2    | 7   | 0.75   | 8   | 0.25   | M2  | 1.5    |
| 76 | 1.2 D + 1.0 WM [060] + 1.5 LH [M1] | Yes   | Y       | 1   | 1.2    | 7   | 0.25   | 8   | 0.75   | M2  | 1.5    |
| 77 | 1.2 D + 1.0 WM [090] + 1.5 LH [M1] | Yes   | Y       | 1   | 1.2    | 7   |        | 8   | 1      | M2  | 1.5    |
| 78 | 1.2 D + 1.0 WM [120] + 1.5 LH [M1] | Yes   | Y       | 1   | 1.2    | 7   | -0.25  | 8   | 0.75   | M2  | 1.5    |
| 79 | 1.2 D + 1.0 WM [150] + 1.5 LH [M1] | Yes   | Y       | 1   | 1.2    | 7   | -0.75  | 8   | 0.25   | M2  | 1.5    |
| 80 | 1.2 D + 1.0 WM [180] + 1.5 LH [M1] | Yes   | Y       | 1   | 1.2    | 7   | -1     | 8   |        | M2  | 1.5    |
| 81 | 1.2 D + 1.0 WM [210] + 1.5 LH [M1] | Yes   | Y       | 1   | 1.2    | 7   | -0.75  | 8   | -0.25  | M2  | 1.5    |
| 82 | 1.2 D + 1.0 WM [240] + 1.5 LH [M1] | Yes   | Y       | 1   | 1.2    | 7   | -0.25  | 8   | -0.75  | M2  | 1.5    |
| 83 | 1.2 D + 1.0 WM [270] + 1.5 LH [M1] | Yes   | Y       | 1   | 1.2    | 7   |        | 8   | -1     | M2  | 1.5    |
| 84 | 1.2 D + 1.0 WM [300] + 1.5 LH [M1] | Yes   | Y       | 1   | 1.2    | 7   | 0.25   | 8   | -0.75  | M2  | 1.5    |
| 85 | 1.2 D + 1.0 WM [330] + 1.5 LH [M1] | Yes   | Y       | 1   | 1.2    | 7   | 0.75   | 8   | -0.25  | M2  | 1.5    |
| 86 | 1.2 D + 1.0 WM [000] + 1.5 LH [M2] | Yes   | Y       | 1   | 1.2    | 7   | 1      | 8   |        | M3  | 1.5    |
| 87 | 1.2 D + 1.0 WM [030] + 1.5 LH [M2] | Yes   | Y       | 1   | 1.2    | 7   | 0.75   | 8   | 0.25   | M3  | 1.5    |
| 88 | 1.2 D + 1.0 WM [060] + 1.5 LH [M2] | Yes   | Y       | 1   | 1.2    | 7   | 0.25   | 8   | 0.75   | M3  | 1.5    |
| 89 | 1.2 D + 1.0 WM [090] + 1.5 LH [M2] | Yes   | Y       | 1   | 1.2    | 7   |        | 8   | 1      | M3  | 1.5    |
| 90 | 1.2 D + 1.0 WM [120] + 1.5 LH [M2] | Yes   | Y       | 1   | 1.2    | 7   | -0.25  | 8   | 0.75   | M3  | 1.5    |
| 91 | 1.2 D + 1.0 WM [150] + 1.5 LH [M2] | Yes   | Y       | 1   | 1.2    | 7   | -0.75  | 8   | 0.25   | M3  | 1.5    |
| 92 | 1.2 D + 1.0 WM [180] + 1.5 LH [M2] | Yes   | Y       | 1   | 1.2    | 7   | -1     | 8   |        | M3  | 1.5    |
| 93 | 1.2 D + 1.0 WM [210] + 1.5 LH [M2] | Yes   | Y       | 1   | 1.2    | 7   | -0.75  | 8   | -0.25  | M3  | 1.5    |
| 94 | 1.2 D + 1.0 WM [240] + 1.5 LH [M2] | Yes   | Y       | 1   | 1.2    | 7   | -0.25  | 8   | -0.75  | M3  | 1.5    |
| 95 | 1.2 D + 1.0 WM [270] + 1.5 LH [M2] | Yes   | Y       | 1   | 1.2    | 7   |        | 8   | -1     | M3  | 1.5    |
| 96 | 1.2 D + 1.0 WM [300] + 1.5 LH [M2] | Yes   | Y       | 1   | 1.2    | 7   | 0.25   | 8   | -0.75  | M3  | 1.5    |
| 97 | 1.2 D + 1.0 WM [330] + 1.5 LH [M2] | Yes   | Y       | 1   | 1.2    | 7   | 0.75   | 8   | -0.25  | M3  | 1.5    |

### Member Point Loads (BLC 1 : Dead)

|   | Member Label | Direction | Magnitude [lb, k-ft] | Location [(in, %)] |
|---|--------------|-----------|----------------------|--------------------|
| 1 | P1           | Y         | -13                  | 0                  |
| 2 | P1           | Y         | -13                  | 0                  |

### Member Point Loads (BLC 2 : Dead Ice)

|   | Member Label | Direction | Magnitude [lb, k-ft] | Location [(in, %)] |
|---|--------------|-----------|----------------------|--------------------|
| 1 | P1           | Y         | 0                    | 0                  |
| 2 | P1           | Y         | 0                    | 0                  |

#### Member Point Loads (BLC 3 : Wind Front)

|   | Member Label | Direction | Magnitude [lb, k-ft] | Location [(in, %)] |
|---|--------------|-----------|----------------------|--------------------|
| 1 | P1           | Z         | -269.4               | 0                  |
| 2 | P1           | Z         | -269.4               | 0                  |

#### Member Point Loads (BLC 4 : Wind Side)

|   | Member Label | Direction | Magnitude [lb, k-ft] | Location [(in, %)] |
|---|--------------|-----------|----------------------|--------------------|
| 1 | P1           | X         | -104.268             | 0                  |
| 2 | P1           | X         | -104.268             | 0                  |

#### Member Point Loads (BLC 5 : Wind Front Ice)

|   | Member Label | Direction | Magnitude [lb, k-ft] | Location [(in, %)] |
|---|--------------|-----------|----------------------|--------------------|
| 1 | P1           | Z         | 0                    | 0                  |
| 2 | P1           | Z         | 0                    | 0                  |

#### Member Point Loads (BLC 6 : Wind Side Ice)

|   | Member Label | Direction | Magnitude [lb, k-ft] | Location [(in, %)] |
|---|--------------|-----------|----------------------|--------------------|
| 1 | P1           | X         | 0                    | 0                  |
| 2 | P1           | X         | 0                    | 0                  |

#### Member Point Loads (BLC 7 : Wind Front Service)

|   | Member Label | Direction | Magnitude [lb, k-ft] | Location [(in, %)] |
|---|--------------|-----------|----------------------|--------------------|
| 1 | P1           | Z         | -17.122              | 0                  |
| 2 | P1           | Z         | -17.122              | 0                  |

#### Member Point Loads (BLC 8 : Wind Side Service)

|   | Member Label | Direction | Magnitude [lb, k-ft] | Location [(in, %)] |
|---|--------------|-----------|----------------------|--------------------|
| 1 | P1           | X         | -6.627               | 0                  |
| 2 | P1           | X         | -6.627               | 0                  |

#### Member Point Loads (BLC 9 : Seismic Front)

|   | Member Label | Direction | Magnitude [lb, k-ft] | Location [(in, %)] |
|---|--------------|-----------|----------------------|--------------------|
| 1 | P1           | Z         | -0.901               | 0                  |
| 2 | P1           | Z         | -0.901               | 0                  |

#### Member Point Loads (BLC 10 : Seismic Side)

|   | Member Label | Direction | Magnitude [lb, k-ft] | Location [(in, %)] |
|---|--------------|-----------|----------------------|--------------------|
| 1 | P1           | X         | -0.901               | 0                  |
| 2 | P1           | X         | -0.901               | 0                  |

#### Member Distributed Loads (BLC 2 : Dead Ice)

|   | Member Label | Direction | Start Magnitude [lb/ft, F, psf, k-ft/in] | End Magnitude [lb/ft, F, psf, k-ft/in] | Start Location [(in, %)] | End Location [(in, %)] |
|---|--------------|-----------|------------------------------------------|----------------------------------------|--------------------------|------------------------|
| 1 | M1           | Y         | 0                                        | 0                                      | 0                        | %100                   |
| 2 | M2           | Y         | 0                                        | 0                                      | 0                        | %100                   |
| 3 | P1           | Y         | 0                                        | 0                                      | 0                        | %100                   |

#### Member Distributed Loads (BLC 2 : Dead Ice) (Continued)

| Member Label | Direction | Start Magnitude [lb/ft, F, psf, k-ft/in] | End Magnitude [lb/ft, F, psf, k-ft/in] | Start Location [(in, %)] | End Location [(in, %)] |
|--------------|-----------|------------------------------------------|----------------------------------------|--------------------------|------------------------|
| 4            | V5        | Y                                        | 0                                      | 0                        | %100                   |
| 5            | V6        | Y                                        | 0                                      | 0                        | %100                   |
| 6            | M6        | Y                                        | 0                                      | 0                        | %100                   |
| 7            | M7        | Y                                        | 0                                      | 0                        | %100                   |

#### Member Distributed Loads (BLC 3 : Wind Front)

| Member Label | Direction | Start Magnitude [lb/ft, F, psf, k-ft/in] | End Magnitude [lb/ft, F, psf, k-ft/in] | Start Location [(in, %)] | End Location [(in, %)] |
|--------------|-----------|------------------------------------------|----------------------------------------|--------------------------|------------------------|
| 1            | M1        | PZ                                       | 0                                      | 0                        | %100                   |
| 2            | M2        | PZ                                       | 0                                      | 0                        | %100                   |
| 3            | P1        | PZ                                       | -11.589                                | 0                        | %100                   |
| 4            | V5        | PZ                                       | -11.589                                | 0                        | %100                   |
| 5            | V6        | PZ                                       | -11.589                                | 0                        | %100                   |
| 6            | M6        | PZ                                       | -11.589                                | 0                        | %100                   |
| 7            | M7        | PZ                                       | -3.408                                 | 0                        | %100                   |

#### Member Distributed Loads (BLC 4 : Wind Side)

| Member Label | Direction | Start Magnitude [lb/ft, F, psf, k-ft/in] | End Magnitude [lb/ft, F, psf, k-ft/in] | Start Location [(in, %)] | End Location [(in, %)] |
|--------------|-----------|------------------------------------------|----------------------------------------|--------------------------|------------------------|
| 1            | M1        | PX                                       | -11.589                                | 0                        | %100                   |
| 2            | M2        | PX                                       | -11.589                                | 0                        | %100                   |
| 3            | P1        | PX                                       | -11.589                                | 0                        | %100                   |
| 4            | V5        | PX                                       | -11.589                                | 0                        | %100                   |
| 5            | V6        | PX                                       | -11.589                                | 0                        | %100                   |
| 6            | M6        | PX                                       | -11.589                                | 0                        | %100                   |
| 7            | M7        | PX                                       | -11.077                                | 0                        | %100                   |

#### Member Distributed Loads (BLC 5 : Wind Front Ice)

| Member Label | Direction | Start Magnitude [lb/ft, F, psf, k-ft/in] | End Magnitude [lb/ft, F, psf, k-ft/in] | Start Location [(in, %)] | End Location [(in, %)] |
|--------------|-----------|------------------------------------------|----------------------------------------|--------------------------|------------------------|
| 1            | M1        | PZ                                       | 0                                      | 0                        | %100                   |
| 2            | M2        | PZ                                       | 0                                      | 0                        | %100                   |
| 3            | P1        | PZ                                       | 0                                      | 0                        | %100                   |
| 4            | V5        | PZ                                       | 0                                      | 0                        | %100                   |
| 5            | V6        | PZ                                       | 0                                      | 0                        | %100                   |
| 6            | M6        | PZ                                       | 0                                      | 0                        | %100                   |
| 7            | M7        | PZ                                       | 0                                      | 0                        | %100                   |

#### Member Distributed Loads (BLC 6 : Wind Side Ice)

| Member Label | Direction | Start Magnitude [lb/ft, F, psf, k-ft/in] | End Magnitude [lb/ft, F, psf, k-ft/in] | Start Location [(in, %)] | End Location [(in, %)] |
|--------------|-----------|------------------------------------------|----------------------------------------|--------------------------|------------------------|
| 1            | M1        | PX                                       | 0                                      | 0                        | %100                   |
| 2            | M2        | PX                                       | 0                                      | 0                        | %100                   |
| 3            | P1        | PX                                       | 0                                      | 0                        | %100                   |
| 4            | V5        | PX                                       | 0                                      | 0                        | %100                   |
| 5            | V6        | PX                                       | 0                                      | 0                        | %100                   |
| 6            | M6        | PX                                       | 0                                      | 0                        | %100                   |
| 7            | M7        | PX                                       | 0                                      | 0                        | %100                   |

#### Member Distributed Loads (BLC 7 : Wind Front Service)

| Member Label | Direction | Start Magnitude [lb/ft, F, psf, k-ft/in] | End Magnitude [lb/ft, F, psf, k-ft/in] | Start Location [(in, %)] | End Location [(in, %)] |
|--------------|-----------|------------------------------------------|----------------------------------------|--------------------------|------------------------|
| 1            | M1        | PZ                                       | 0                                      | 0                        | %100                   |
| 2            | M2        | PZ                                       | 0                                      | 0                        | %100                   |

#### Member Distributed Loads (BLC 7 : Wind Front Service) (Continued)

|   | Member Label | Direction | Start Magnitude [lb/ft, F, psf, k-ft/in] | End Magnitude [lb/ft, F, psf, k-ft/in] | Start Location [(in, %)] | End Location [(in, %)] |
|---|--------------|-----------|------------------------------------------|----------------------------------------|--------------------------|------------------------|
| 3 | P1           | PZ        | -0.737                                   | -0.737                                 | 0                        | %100                   |
| 4 | V5           | PZ        | -0.737                                   | -0.737                                 | 0                        | %100                   |
| 5 | V6           | PZ        | -0.737                                   | -0.737                                 | 0                        | %100                   |
| 6 | M6           | PZ        | -0.737                                   | -0.737                                 | 0                        | %100                   |
| 7 | M7           | PZ        | -0.217                                   | -0.217                                 | 0                        | %100                   |

#### Member Distributed Loads (BLC 8 : Wind Side Service)

|   | Member Label | Direction | Start Magnitude [lb/ft, F, psf, k-ft/in] | End Magnitude [lb/ft, F, psf, k-ft/in] | Start Location [(in, %)] | End Location [(in, %)] |
|---|--------------|-----------|------------------------------------------|----------------------------------------|--------------------------|------------------------|
| 1 | M1           | PX        | -0.737                                   | -0.737                                 | 0                        | %100                   |
| 2 | M2           | PX        | -0.737                                   | -0.737                                 | 0                        | %100                   |
| 3 | P1           | PX        | -0.737                                   | -0.737                                 | 0                        | %100                   |
| 4 | V5           | PX        | -0.737                                   | -0.737                                 | 0                        | %100                   |
| 5 | V6           | PX        | -0.737                                   | -0.737                                 | 0                        | %100                   |
| 6 | M6           | PX        | -0.737                                   | -0.737                                 | 0                        | %100                   |
| 7 | M7           | PX        | -0.704                                   | -0.704                                 | 0                        | %100                   |

#### Member Distributed Loads (BLC 9 : Seismic Front)

|   | Member Label | Direction | Start Magnitude [lb/ft, F, psf, k-ft/in] | End Magnitude [lb/ft, F, psf, k-ft/in] | Start Location [(in, %)] | End Location [(in, %)] |
|---|--------------|-----------|------------------------------------------|----------------------------------------|--------------------------|------------------------|
| 1 | M1           | Z         | -0.241                                   | -0.241                                 | 0                        | %100                   |
| 2 | M2           | Z         | -0.241                                   | -0.241                                 | 0                        | %100                   |
| 3 | P1           | Z         | -0.241                                   | -0.241                                 | 0                        | %100                   |
| 4 | V5           | Z         | -0.241                                   | -0.241                                 | 0                        | %100                   |
| 5 | V6           | Z         | -0.241                                   | -0.241                                 | 0                        | %100                   |
| 6 | M6           | Z         | -0.241                                   | -0.241                                 | 0                        | %100                   |
| 7 | M7           | Z         | -0.241                                   | -0.241                                 | 0                        | %100                   |

#### Member Distributed Loads (BLC 10 : Seismic Side)

|   | Member Label | Direction | Start Magnitude [lb/ft, F, psf, k-ft/in] | End Magnitude [lb/ft, F, psf, k-ft/in] | Start Location [(in, %)] | End Location [(in, %)] |
|---|--------------|-----------|------------------------------------------|----------------------------------------|--------------------------|------------------------|
| 1 | M1           | X         | -0.241                                   | -0.241                                 | 0                        | %100                   |
| 2 | M2           | X         | -0.241                                   | -0.241                                 | 0                        | %100                   |
| 3 | P1           | X         | -0.241                                   | -0.241                                 | 0                        | %100                   |
| 4 | V5           | X         | -0.241                                   | -0.241                                 | 0                        | %100                   |
| 5 | V6           | X         | -0.241                                   | -0.241                                 | 0                        | %100                   |
| 6 | M6           | X         | -0.241                                   | -0.241                                 | 0                        | %100                   |
| 7 | M7           | X         | -0.241                                   | -0.241                                 | 0                        | %100                   |

#### Node Reactions

|    | LC | Node Label | X [lb]   | Y [lb]    | Z [lb]    | MX [k-ft] | MY [k-ft] | MZ [k-ft] |
|----|----|------------|----------|-----------|-----------|-----------|-----------|-----------|
| 1  | 1  | N1         | 0.566    | 71.483    | 146.642   | -0.055    | 0.003     | 0         |
| 2  | 1  | N3         | 0.392    | 61.346    | 496.758   | -0.054    | 0.003     | 0         |
| 3  | 1  | N15        | -0.957   | 14.161    | 6.519     | 0         | 0         | 0         |
| 4  | 1  | Totals:    | 0        | 146.99    | 649.919   |           |           |           |
| 5  | 1  | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 6  | 2  | N1         | -7.999   | 72.462    | 326.338   | -0.055    | -0.001    | -0.011    |
| 7  | 2  | N3         | 33.771   | 60.249    | 470.988   | -0.054    | 0.044     | -0.011    |
| 8  | 2  | N15        | 105.205  | 14.28     | -309.887  | 0.005     | 0         | -0.015    |
| 9  | 2  | Totals:    | 130.977  | 146.99    | 487.439   |           |           |           |
| 10 | 2  | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 11 | 3  | N1         | -25.136  | 74.39     | 685.017   | -0.056    | -0.008    | -0.032    |
| 12 | 3  | N3         | 100.626  | 58.053    | 418.803   | -0.055    | 0.127     | -0.033    |

### Node Reactions (Continued)

|    | LC | Node Label | X [lb]   | Y [lb]    | Z [lb]    | MX [k-ft] | MY [k-ft] | MZ [k-ft] |
|----|----|------------|----------|-----------|-----------|-----------|-----------|-----------|
| 13 | 3  | N15        | 317.442  | 14.547    | -941.34   | 0.014     | 0         | -0.044    |
| 14 | 3  | Totals:    | 392.932  | 146.99    | 162.48    |           |           |           |
| 15 | 3  | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 16 | 4  | N1         | -33.708  | 75.339    | 863.999   | -0.056    | -0.011    | -0.043    |
| 17 | 4  | N3         | 134.102  | 56.955    | 392.388   | -0.056    | 0.169     | -0.044    |
| 18 | 4  | N15        | 423.515  | 14.696    | -1256.387 | 0.018     | 0         | -0.059    |
| 19 | 4  | Totals:    | 523.909  | 146.99    | 0         |           |           |           |
| 20 | 4  | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 21 | 5  | N1         | -25.222  | 71.813    | 724.009   | -0.057    | -0.009    | -0.032    |
| 22 | 5  | N3         | 100.797  | 60.598    | 56.353    | -0.056    | 0.126     | -0.033    |
| 23 | 5  | N15        | 317.357  | 14.579    | -942.842  | 0.014     | 0         | -0.044    |
| 24 | 5  | Totals:    | 392.932  | 146.99    | -162.48   |           |           |           |
| 25 | 5  | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 26 | 6  | N1         | -8.621   | 64.793    | 445.107   | -0.057    | -0.005    | -0.011    |
| 27 | 6  | N3         | 33.485   | 67.885    | -614.523  | -0.058    | 0.04      | -0.011    |
| 28 | 6  | N15        | 106.114  | 14.313    | -318.023  | 0.004     | 0         | -0.015    |
| 29 | 6  | Totals:    | 130.977  | 146.99    | -487.439  |           |           |           |
| 30 | 6  | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 31 | 7  | N1         | -0.505   | 61.298    | 306.19    | -0.057    | -0.003    | 0         |
| 32 | 7  | N3         | -0.52    | 71.528    | -949.371  | -0.058    | -0.003    | 0         |
| 33 | 7  | N15        | 1.024    | 14.164    | -6.738    | 0         | 0         | 0         |
| 34 | 7  | Totals:    | 0        | 146.99    | -649.919  |           |           |           |
| 35 | 7  | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 36 | 8  | N1         | 7.829    | 60.352    | 127.551   | -0.057    | 0.001     | 0.011     |
| 37 | 8  | N3         | -34.369  | 72.623    | -922.828  | -0.058    | -0.044    | 0.011     |
| 38 | 8  | N15        | -104.437 | 14.015    | 307.838   | -0.004    | 0         | 0.015     |
| 39 | 8  | Totals:    | -130.977 | 146.99    | -487.439  |           |           |           |
| 40 | 8  | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 41 | 9  | N1         | 24.489   | 58.43     | -230.434  | -0.056    | 0.007     | 0.032     |
| 42 | 9  | N3         | -101.974 | 74.813    | -870.378  | -0.057    | -0.128    | 0.032     |
| 43 | 9  | N15        | -315.446 | 13.747    | 938.332   | -0.013    | 0         | 0.043     |
| 44 | 9  | Totals:    | -392.932 | 146.99    | -162.48   |           |           |           |
| 45 | 9  | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 46 | 10 | N1         | 32.814   | 57.455    | -409.779  | -0.056    | 0.01      | 0.043     |
| 47 | 10 | N3         | -135.731 | 75.907    | -844.472  | -0.056    | -0.169    | 0.043     |
| 48 | 10 | N15        | -420.992 | 13.628    | 1254.251  | -0.018    | 0         | 0.058     |
| 49 | 10 | Totals:    | -523.909 | 146.99    | 0         |           |           |           |
| 50 | 10 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 51 | 11 | N1         | 24.935   | 60.947    | -271.207  | -0.055    | 0.009     | 0.032     |
| 52 | 11 | N3         | -101.353 | 72.266    | -509.756  | -0.056    | -0.126    | 0.032     |
| 53 | 11 | N15        | -316.513 | 13.777    | 943.442   | -0.013    | 0         | 0.044     |
| 54 | 11 | Totals:    | -392.932 | 146.99    | 162.48    |           |           |           |
| 55 | 11 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 56 | 12 | N1         | 8.811    | 67.961    | 7.001     | -0.055    | 0.005     | 0.011     |
| 57 | 12 | N3         | -33.291  | 64.986    | 160.857   | -0.054    | -0.04     | 0.011     |
| 58 | 12 | N15        | -106.498 | 14.044    | 319.582   | -0.004    | 0         | 0.014     |
| 59 | 12 | Totals:    | -130.977 | 146.99    | 487.439   |           |           |           |
| 60 | 12 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 61 | 13 | N1         | 0.556    | 54.873    | 89.825    | -0.041    | 0.003     | 0         |
| 62 | 13 | N3         | 0.4      | 44.748    | 553.579   | -0.04     | 0.003     | 0         |
| 63 | 13 | N15        | -0.956   | 10.621    | 6.516     | 0         | 0         | 0         |
| 64 | 13 | Totals:    | 0        | 110.243   | 649.919   |           |           |           |
| 65 | 13 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 66 | 14 | N1         | -8.008   | 55.874    | 269.57    | -0.041    | -0.001    | -0.011    |
| 67 | 14 | N3         | 33.768   | 43.663    | 527.796   | -0.04     | 0.044     | -0.011    |

### Node Reactions (Continued)

|     | LC | Node Label | X [lb]   | Y [lb]    | Z [lb]    | MX [k-ft] | MY [k-ft] | MZ [k-ft] |
|-----|----|------------|----------|-----------|-----------|-----------|-----------|-----------|
| 68  | 14 | N15        | 105.218  | 10.706    | -309.927  | 0.005     | 0         | -0.015    |
| 69  | 14 | Totals:    | 130.977  | 110.243   | 487.439   |           |           |           |
| 70  | 14 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 71  | 15 | N1         | -25.143  | 57.845    | 628.344   | -0.042    | -0.008    | -0.032    |
| 72  | 15 | N3         | 100.597  | 41.491    | 475.589   | -0.041    | 0.127     | -0.033    |
| 73  | 15 | N15        | 317.477  | 10.906    | -941.454  | 0.014     | 0         | -0.044    |
| 74  | 15 | Totals:    | 392.932  | 110.243   | 162.48    |           |           |           |
| 75  | 15 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 76  | 16 | N1         | -33.713  | 58.816    | 807.374   | -0.042    | -0.011    | -0.043    |
| 77  | 16 | N3         | 134.06   | 40.405    | 449.163   | -0.042    | 0.169     | -0.044    |
| 78  | 16 | N15        | 423.561  | 11.022    | -1256.537 | 0.018     | 0         | -0.059    |
| 79  | 16 | Totals:    | 523.909  | 110.243   | 0         |           |           |           |
| 80  | 16 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 81  | 17 | N1         | -25.229  | 55.278    | 667.428   | -0.043    | -0.009    | -0.032    |
| 82  | 17 | N3         | 100.768  | 44.027    | 113.047   | -0.042    | 0.126     | -0.033    |
| 83  | 17 | N15        | 317.392  | 10.938    | -942.955  | 0.014     | 0         | -0.044    |
| 84  | 17 | Totals:    | 392.932  | 110.243   | -162.48   |           |           |           |
| 85  | 17 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 86  | 18 | N1         | -8.631   | 48.232    | 388.615   | -0.043    | -0.005    | -0.011    |
| 87  | 18 | N3         | 33.482   | 51.272    | -557.992  | -0.044    | 0.04      | -0.011    |
| 88  | 18 | N15        | 106.126  | 10.738    | -318.063  | 0.004     | 0         | -0.015    |
| 89  | 18 | Totals:    | 130.977  | 110.243   | -487.439  |           |           |           |
| 90  | 18 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 91  | 19 | N1         | -0.516   | 44.725    | 249.743   | -0.043    | -0.003    | 0         |
| 92  | 19 | N3         | -0.51    | 54.895    | -892.92   | -0.044    | -0.003    | 0         |
| 93  | 19 | N15        | 1.025    | 10.623    | -6.742    | 0         | 0         | 0         |
| 94  | 19 | Totals:    | 0        | 110.243   | -649.919  |           |           |           |
| 95  | 19 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 96  | 20 | N1         | 7.817    | 43.757    | 71.057    | -0.043    | 0.001     | 0.011     |
| 97  | 20 | N3         | -34.347  | 55.978    | -866.366  | -0.044    | -0.044    | 0.011     |
| 98  | 20 | N15        | -104.447 | 10.507    | 307.87    | -0.004    | 0         | 0.015     |
| 99  | 20 | Totals:    | -130.977 | 110.243   | -487.439  |           |           |           |
| 100 | 20 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 101 | 21 | N1         | 24.474   | 41.792    | -287.022  | -0.042    | 0.007     | 0.032     |
| 102 | 21 | N3         | -101.927 | 58.144    | -813.894  | -0.043    | -0.128    | 0.032     |
| 103 | 21 | N15        | -315.478 | 10.306    | 938.437   | -0.013    | 0         | 0.044     |
| 104 | 21 | Totals:    | -392.932 | 110.243   | -162.48   |           |           |           |
| 105 | 21 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 106 | 22 | N1         | 32.798   | 40.796    | -466.415  | -0.042    | 0.01      | 0.043     |
| 107 | 22 | N3         | -135.672 | 59.226    | -787.977  | -0.042    | -0.169    | 0.043     |
| 108 | 22 | N15        | -421.035 | 10.221    | 1254.392  | -0.018    | 0         | 0.058     |
| 109 | 22 | Totals:    | -523.909 | 110.243   | 0         |           |           |           |
| 110 | 22 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 111 | 23 | N1         | 24.92    | 44.3      | -327.888  | -0.041    | 0.009     | 0.032     |
| 112 | 23 | N3         | -101.307 | 55.606    | -453.18   | -0.042    | -0.126    | 0.032     |
| 113 | 23 | N15        | -316.545 | 10.337    | 943.547   | -0.013    | 0         | 0.044     |
| 114 | 23 | Totals:    | -392.932 | 110.243   | 162.48    |           |           |           |
| 115 | 23 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 116 | 24 | N1         | 8.8      | 51.338    | -49.77    | -0.041    | 0.005     | 0.011     |
| 117 | 24 | N3         | -33.269  | 48.367    | 217.595   | -0.04     | -0.04     | 0.011     |
| 118 | 24 | N15        | -106.508 | 10.537    | 319.614   | -0.004    | 0         | 0.014     |
| 119 | 24 | Totals:    | -130.977 | 110.243   | 487.439   |           |           |           |
| 120 | 24 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 121 | 25 | N1         | 0.042    | 66.393    | 226.522   | -0.056    | 0         | 0         |
| 122 | 25 | N3         | -0.037   | 66.435    | -226.537  | -0.056    | 0         | 0         |

### Node Reactions (Continued)

|     | LC | Node Label | X [lb]   | Y [lb]    | Z [lb]    | MX [k-ft] | MY [k-ft] | MZ [k-ft] |
|-----|----|------------|----------|-----------|-----------|-----------|-----------|-----------|
| 123 | 25 | N15        | -0.005   | 14.163    | 0.015     | 0         | 0         | 0         |
| 124 | 25 | Totals:    | 0        | 146.99    | 0         |           |           |           |
| 125 | 25 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 126 | 26 | N1         | 0.042    | 66.393    | 226.522   | -0.056    | 0         | 0         |
| 127 | 26 | N3         | -0.037   | 66.435    | -226.537  | -0.056    | 0         | 0         |
| 128 | 26 | N15        | -0.005   | 14.163    | 0.015     | 0         | 0         | 0         |
| 129 | 26 | Totals:    | 0        | 146.99    | 0         |           |           |           |
| 130 | 26 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 131 | 27 | N1         | 0.042    | 66.393    | 226.522   | -0.056    | 0         | 0         |
| 132 | 27 | N3         | -0.037   | 66.435    | -226.537  | -0.056    | 0         | 0         |
| 133 | 27 | N15        | -0.005   | 14.163    | 0.015     | 0         | 0         | 0         |
| 134 | 27 | Totals:    | 0        | 146.99    | 0         |           |           |           |
| 135 | 27 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 136 | 28 | N1         | 0.042    | 66.393    | 226.522   | -0.056    | 0         | 0         |
| 137 | 28 | N3         | -0.037   | 66.435    | -226.537  | -0.056    | 0         | 0         |
| 138 | 28 | N15        | -0.005   | 14.163    | 0.015     | 0         | 0         | 0         |
| 139 | 28 | Totals:    | 0        | 146.99    | 0         |           |           |           |
| 140 | 28 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 141 | 29 | N1         | 0.042    | 66.393    | 226.522   | -0.056    | 0         | 0         |
| 142 | 29 | N3         | -0.037   | 66.435    | -226.537  | -0.056    | 0         | 0         |
| 143 | 29 | N15        | -0.005   | 14.163    | 0.015     | 0         | 0         | 0         |
| 144 | 29 | Totals:    | 0        | 146.99    | 0         |           |           |           |
| 145 | 29 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 146 | 30 | N1         | 0.042    | 66.393    | 226.522   | -0.056    | 0         | 0         |
| 147 | 30 | N3         | -0.037   | 66.435    | -226.537  | -0.056    | 0         | 0         |
| 148 | 30 | N15        | -0.005   | 14.163    | 0.015     | 0         | 0         | 0         |
| 149 | 30 | Totals:    | 0        | 146.99    | 0         |           |           |           |
| 150 | 30 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 151 | 31 | N1         | 0.042    | 66.393    | 226.522   | -0.056    | 0         | 0         |
| 152 | 31 | N3         | -0.037   | 66.435    | -226.537  | -0.056    | 0         | 0         |
| 153 | 31 | N15        | -0.005   | 14.163    | 0.015     | 0         | 0         | 0         |
| 154 | 31 | Totals:    | 0        | 146.99    | 0         |           |           |           |
| 155 | 31 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 156 | 32 | N1         | 0.042    | 66.393    | 226.522   | -0.056    | 0         | 0         |
| 157 | 32 | N3         | -0.037   | 66.435    | -226.537  | -0.056    | 0         | 0         |
| 158 | 32 | N15        | -0.005   | 14.163    | 0.015     | 0         | 0         | 0         |
| 159 | 32 | Totals:    | 0        | 146.99    | 0         |           |           |           |
| 160 | 32 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 161 | 33 | N1         | 0.042    | 66.393    | 226.522   | -0.056    | 0         | 0         |
| 162 | 33 | N3         | -0.037   | 66.435    | -226.537  | -0.056    | 0         | 0         |
| 163 | 33 | N15        | -0.005   | 14.163    | 0.015     | 0         | 0         | 0         |
| 164 | 33 | Totals:    | 0        | 146.99    | 0         |           |           |           |
| 165 | 33 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 166 | 34 | N1         | 0.042    | 66.393    | 226.522   | -0.056    | 0         | 0         |
| 167 | 34 | N3         | -0.037   | 66.435    | -226.537  | -0.056    | 0         | 0         |
| 168 | 34 | N15        | -0.005   | 14.163    | 0.015     | 0         | 0         | 0         |
| 169 | 34 | Totals:    | 0        | 146.99    | 0         |           |           |           |
| 170 | 34 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 171 | 35 | N1         | 0.042    | 66.393    | 226.522   | -0.056    | 0         | 0         |
| 172 | 35 | N3         | -0.037   | 66.435    | -226.537  | -0.056    | 0         | 0         |
| 173 | 35 | N15        | -0.005   | 14.163    | 0.015     | 0         | 0         | 0         |
| 174 | 35 | Totals:    | 0        | 146.99    | 0         |           |           |           |
| 175 | 35 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 176 | 36 | N1         | 0.042    | 66.393    | 226.522   | -0.056    | 0         | 0         |
| 177 | 36 | N3         | -0.037   | 66.435    | -226.537  | -0.056    | 0         | 0         |

### Node Reactions (Continued)

|     | LC | Node Label | X [lb]   | Y [lb]    | Z [lb]    | MX [k-ft] | MY [k-ft] | MZ [k-ft] |
|-----|----|------------|----------|-----------|-----------|-----------|-----------|-----------|
| 178 | 36 | N15        | -0.005   | 14.163    | 0.015     | 0         | 0         | 0         |
| 179 | 36 | Totals:    | 0        | 146.99    | 0         |           |           |           |
| 180 | 36 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 181 | 37 | N1         | 0.05     | 66.503    | 228.995   | -0.056    | 0         | 0         |
| 182 | 37 | N3         | -0.029   | 66.325    | -221.387  | -0.056    | 0         | 0         |
| 183 | 37 | N15        | -0.021   | 14.163    | 0.885     | 0         | 0         | 0         |
| 184 | 37 | Totals:    | 0        | 146.99    | 8.493     |           |           |           |
| 185 | 37 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 186 | 38 | N1         | 0.157    | 66.506    | 230.57    | -0.056    | 0         | 0         |
| 187 | 38 | N3         | 0.441    | 66.319    | -220.521  | -0.056    | 0.001     | 0         |
| 188 | 38 | N15        | 1.526    | 14.164    | -3.68     | 0         | 0         | 0         |
| 189 | 38 | Totals:    | 2.123    | 146.99    | 6.37      |           |           |           |
| 190 | 38 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 191 | 39 | N1         | 0.37     | 66.513    | 233.722   | -0.056    | 0.001     | 0         |
| 192 | 39 | N3         | 1.382    | 66.309    | -218.79   | -0.056    | 0.002     | 0         |
| 193 | 39 | N15        | 4.618    | 14.168    | -12.809   | 0         | 0         | 0         |
| 194 | 39 | Totals:    | 6.37     | 146.99    | 2.123     |           |           |           |
| 195 | 39 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 196 | 40 | N1         | 0.476    | 66.517    | 235.298   | -0.056    | 0.001     | 0         |
| 197 | 40 | N3         | 1.852    | 66.303    | -217.924  | -0.056    | 0.002     | 0         |
| 198 | 40 | N15        | 6.164    | 14.17     | -17.374   | 0         | 0         | -0.001    |
| 199 | 40 | Totals:    | 8.493    | 146.99    | 0         |           |           |           |
| 200 | 40 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 201 | 41 | N1         | 0.366    | 66.458    | 232.486   | -0.056    | 0.001     | 0         |
| 202 | 41 | N3         | 1.378    | 66.364    | -221.365  | -0.056    | 0.002     | 0         |
| 203 | 41 | N15        | 4.626    | 14.168    | -13.244   | 0         | 0         | 0         |
| 204 | 41 | Totals:    | 6.37     | 146.99    | -2.123    |           |           |           |
| 205 | 41 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 206 | 42 | N1         | 0.145    | 66.341    | 226.862   | -0.056    | 0         | 0         |
| 207 | 42 | N3         | 0.429    | 66.484    | -228.247  | -0.056    | 0.001     | 0         |
| 208 | 42 | N15        | 1.549    | 14.164    | -4.984    | 0         | 0         | 0         |
| 209 | 42 | Totals:    | 2.123    | 146.99    | -6.37     |           |           |           |
| 210 | 42 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 211 | 43 | N1         | 0.034    | 66.283    | 224.049   | -0.056    | 0         | 0         |
| 212 | 43 | N3         | -0.045   | 66.545    | -231.688  | -0.056    | 0         | 0         |
| 213 | 43 | N15        | 0.011    | 14.163    | -0.854    | 0         | 0         | 0         |
| 214 | 43 | Totals:    | 0        | 146.99    | -8.493    |           |           |           |
| 215 | 43 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 216 | 44 | N1         | -0.073   | 66.279    | 222.474   | -0.056    | 0         | 0         |
| 217 | 44 | N3         | -0.515   | 66.55     | -232.554  | -0.056    | -0.001    | 0         |
| 218 | 44 | N15        | -1.535   | 14.161    | 3.71      | 0         | 0         | 0         |
| 219 | 44 | Totals:    | -2.123   | 146.99    | -6.37     |           |           |           |
| 220 | 44 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 221 | 45 | N1         | -0.286   | 66.272    | 219.322   | -0.056    | -0.001    | 0         |
| 222 | 45 | N3         | -1.456   | 66.561    | -234.285  | -0.056    | -0.002    | 0         |
| 223 | 45 | N15        | -4.627   | 14.157    | 12.84     | 0         | 0         | 0         |
| 224 | 45 | Totals:    | -6.37    | 146.99    | -2.123    |           |           |           |
| 225 | 45 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 226 | 46 | N1         | -0.393   | 66.269    | 217.746   | -0.056    | -0.001    | 0         |
| 227 | 46 | N3         | -1.927   | 66.566    | -235.151  | -0.056    | -0.002    | 0         |
| 228 | 46 | N15        | -6.173   | 14.155    | 17.405    | 0         | 0         | 0         |
| 229 | 46 | Totals:    | -8.493   | 146.99    | 0         |           |           |           |
| 230 | 46 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 231 | 47 | N1         | -0.282   | 66.327    | 220.558   | -0.056    | -0.001    | 0         |
| 232 | 47 | N3         | -1.452   | 66.506    | -231.71   | -0.056    | -0.002    | 0         |

### Node Reactions (Continued)

|     | LC | Node Label | X [lb]   | Y [lb]    | Z [lb]    | MX [k-ft] | MY [k-ft] | MZ [k-ft] |
|-----|----|------------|----------|-----------|-----------|-----------|-----------|-----------|
| 233 | 47 | N15        | -4.635   | 14.157    | 13.275    | 0         | 0         | 0         |
| 234 | 47 | Totals:    | -6.37    | 146.99    | 2.123     |           |           |           |
| 235 | 47 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 236 | 48 | N1         | -0.061   | 66.444    | 226.182   | -0.056    | 0         | 0         |
| 237 | 48 | N3         | -0.504   | 66.385    | -224.828  | -0.056    | -0.001    | 0         |
| 238 | 48 | N15        | -1.559   | 14.161    | 5.015     | 0         | 0         | 0         |
| 239 | 48 | Totals:    | -2.123   | 146.99    | 6.37      |           |           |           |
| 240 | 48 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 241 | 49 | N1         | 0.039    | 49.911    | 172.362   | -0.042    | 0         | 0         |
| 242 | 49 | N3         | -0.02    | 49.709    | -164.751  | -0.042    | 0         | 0         |
| 243 | 49 | N15        | -0.019   | 10.622    | 0.881     | 0         | 0         | 0         |
| 244 | 49 | Totals:    | 0        | 110.243   | 8.493     |           |           |           |
| 245 | 49 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 246 | 50 | N1         | 0.146    | 49.915    | 173.938   | -0.042    | 0         | 0         |
| 247 | 50 | N3         | 0.45     | 49.704    | -163.885  | -0.042    | 0.001     | 0         |
| 248 | 50 | N15        | 1.527    | 10.623    | -3.684    | 0         | 0         | 0         |
| 249 | 50 | Totals:    | 2.123    | 110.243   | 6.37      |           |           |           |
| 250 | 50 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 251 | 51 | N1         | 0.359    | 49.923    | 177.091   | -0.042    | 0.001     | 0         |
| 252 | 51 | N3         | 1.391    | 49.694    | -162.153  | -0.042    | 0.002     | 0         |
| 253 | 51 | N15        | 4.62     | 10.626    | -12.814   | 0         | 0         | 0         |
| 254 | 51 | Totals:    | 6.37     | 110.243   | 2.123     |           |           |           |
| 255 | 51 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 256 | 52 | N1         | 0.466    | 49.926    | 178.667   | -0.042    | 0.001     | 0         |
| 257 | 52 | N3         | 1.861    | 49.689    | -161.288  | -0.042    | 0.002     | 0         |
| 258 | 52 | N15        | 6.166    | 10.627    | -17.379   | 0         | 0         | -0.001    |
| 259 | 52 | Totals:    | 8.493    | 110.243   | 0         |           |           |           |
| 260 | 52 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 261 | 53 | N1         | 0.355    | 49.868    | 175.855   | -0.042    | 0.001     | 0         |
| 262 | 53 | N3         | 1.387    | 49.749    | -164.73   | -0.042    | 0.002     | 0         |
| 263 | 53 | N15        | 4.627    | 10.626    | -13.249   | 0         | 0         | 0         |
| 264 | 53 | Totals:    | 6.37     | 110.243   | -2.123    |           |           |           |
| 265 | 53 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 266 | 54 | N1         | 0.134    | 49.75     | 170.232   | -0.042    | 0         | 0         |
| 267 | 54 | N3         | 0.438    | 49.869    | -171.613  | -0.042    | 0.001     | 0         |
| 268 | 54 | N15        | 1.551    | 10.623    | -4.988    | 0         | 0         | 0         |
| 269 | 54 | Totals:    | 2.123    | 110.243   | -6.37     |           |           |           |
| 270 | 54 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 271 | 55 | N1         | 0.023    | 49.692    | 167.42    | -0.042    | 0         | 0         |
| 272 | 55 | N3         | -0.036   | 49.929    | -175.055  | -0.042    | 0         | 0         |
| 273 | 55 | N15        | 0.012    | 10.622    | -0.858    | 0         | 0         | 0         |
| 274 | 55 | Totals:    | 0        | 110.243   | -8.493    |           |           |           |
| 275 | 55 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 276 | 56 | N1         | -0.083   | 49.688    | 165.844   | -0.042    | 0         | 0         |
| 277 | 56 | N3         | -0.506   | 49.934    | -175.921  | -0.042    | -0.001    | 0         |
| 278 | 56 | N15        | -1.534   | 10.621    | 3.707     | 0         | 0         | 0         |
| 279 | 56 | Totals:    | -2.123   | 110.243   | -6.37     |           |           |           |
| 280 | 56 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 281 | 57 | N1         | -0.297   | 49.68     | 162.692   | -0.042    | -0.001    | 0         |
| 282 | 57 | N3         | -1.446   | 49.944    | -177.652  | -0.042    | -0.002    | 0         |
| 283 | 57 | N15        | -4.626   | 10.618    | 12.837    | 0         | 0         | 0         |
| 284 | 57 | Totals:    | -6.37    | 110.243   | -2.123    |           |           |           |
| 285 | 57 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 286 | 58 | N1         | -0.403   | 49.677    | 161.116   | -0.042    | -0.001    | 0         |
| 287 | 58 | N3         | -1.917   | 49.95     | -178.518  | -0.042    | -0.002    | 0         |

### Node Reactions (Continued)

|     | LC | Node Label | X [lb]   | Y [lb]    | Z [lb]    | MX [k-ft] | MY [k-ft] | MZ [k-ft] |
|-----|----|------------|----------|-----------|-----------|-----------|-----------|-----------|
| 288 | 58 | N15        | -6.173   | 10.616    | 17.402    | 0         | 0         | 0         |
| 289 | 58 | Totals:    | -8.493   | 110.243   | 0         |           |           |           |
| 290 | 58 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 291 | 59 | N1         | -0.293   | 49.735    | 163.927   | -0.042    | -0.001    | 0         |
| 292 | 59 | N3         | -1.443   | 49.89     | -175.076  | -0.042    | -0.002    | 0         |
| 293 | 59 | N15        | -4.634   | 10.618    | 13.272    | 0         | 0         | 0         |
| 294 | 59 | Totals:    | -6.37    | 110.243   | 2.123     |           |           |           |
| 295 | 59 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 296 | 60 | N1         | -0.071   | 49.853    | 169.551   | -0.042    | 0         | 0         |
| 297 | 60 | N3         | -0.494   | 49.769    | -168.193  | -0.042    | -0.001    | 0         |
| 298 | 60 | N15        | -1.558   | 10.621    | 5.012     | 0         | 0         | 0         |
| 299 | 60 | Totals:    | -2.123   | 110.243   | 6.37      |           |           |           |
| 300 | 60 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |
| 301 | 61 | N1         | 0.049    | 77.451    | 264.276   | -0.065    | 0         | 0         |
| 302 | 61 | N3         | -0.043   | 77.514    | -264.294  | -0.065    | 0         | 0         |
| 303 | 61 | N15        | -0.006   | 16.523    | 0.018     | 0         | 0         | 0         |
| 304 | 61 | Totals:    | 0        | 171.488   | 0         |           |           |           |
| 305 | 61 | COG (in):  | X: 2.312 | Y: 15.821 | Z: 44.967 |           |           |           |

### Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks

|   | Member | Shape | Code | Check | Loc[in] | LC   | Shear | Check  | Loc[in] | LC        | phi*Pnc [lb] | phi*Pnt [lb] | phi*Mn y-y [k-ft] | phi*Mn z-z [k-ft] | Cb     | Eqn |
|---|--------|-------|------|-------|---------|------|-------|--------|---------|-----------|--------------|--------------|-------------------|-------------------|--------|-----|
| 1 | V6     | PIPE  | 2.0  | 0.494 | 24      | 65-1 | 0.099 | 1      | 71-1    | 30625.434 | 32130        | 1.872        | 1.872             | 1                 | H1-1b  |     |
| 2 | M1     | PIPE  | 2.0  | 0.381 | 6       | 65-3 | 0.086 | 66     | 4       | 20866.733 | 32130        | 1.872        | 1.872             | 1                 | H1-1b  |     |
| 3 | M2     | PIPE  | 2.0  | 0.363 | 6       | 68-1 | 0.114 | 66     | 10      | 20866.733 | 32130        | 1.872        | 1.872             | 1                 | H1-1b  |     |
| 4 | M6     | PIPE  | 2.0  | 0.281 | 24      | 65-3 | 0.108 | 12     | 10      | 30625.434 | 32130        | 1.872        | 1.872             | 1                 | H1-1b  |     |
| 5 | V5     | PIPE  | 2.0  | 0.226 | 24      | 62-3 | 0.045 | 0      | 71-1    | 30625.434 | 32130        | 1.872        | 1.872             | 1                 | H1-1b  |     |
| 6 | P1     | PIPE  | 2.0  | 0.161 | 6       | 68-1 | 0.057 | 6      | 1       | 28843.414 | 32130        | 1.872        | 1.872             | 1                 | H1-1b  |     |
| 7 | M7     | PIPE  | 2.0  | 0.072 | 81.609  | 22   | 0.041 | 81.609 | 4       | 18453.617 | 32130        | 1.872        | 1.872             | 1                 | H1-1b* |     |

## Structural Evaluation Letter

|                    |                                                                                       |
|--------------------|---------------------------------------------------------------------------------------|
| Asset Number       | 2543                                                                                  |
| Asset Name         | Five Points                                                                           |
| Proposed Carrier   | STATE OF FLORIDA                                                                      |
| Site Number        | X808                                                                                  |
| Site Name          | Lake City                                                                             |
| Site Location      | Hwy 441 & I-10<br>Lake City, FL 32055-4662, Columbia County<br>30.2382° N, 82.6368° W |
| Tower Description  | 331.7 ft Guyed                                                                        |
| Basic Wind Speed   | 119 mph (3-second gust)                                                               |
| Basic Wind w/ Ice  | No Ice Considered                                                                     |
| Applicable Code(s) | ANSI/TIA-222-H / 2021 IBC / 8th ED (2023) Florida Building Code                       |



This item has been electronically signed and sealed by Sarah F. Rucker, PE on the date shown using a digital signature.

Printed copies are not considered signed and sealed and the signature must be verified on any electronic copies.

Digitally signed by Sarah Rucker  
Date: 2024.04.11 07:15:57 -04'00'  
COA: 9053  
Created by: SARAH.KRAMER

### Evaluation Results:

The loading in the tables below was evaluated with respect to the tower and foundation capacities. As future loading is added, or if actual loading is different from these tables, re-evaluation shall be required. This tower and foundation **are adequate** to support the below loads in conformance with specified requirements.

### STATE OF FLORIDA Final Loading

| Elev (ft) | Qty | Equipment                    | Lines                          |
|-----------|-----|------------------------------|--------------------------------|
| 290.0     | 1   | Combilent CP00732            | (1) 1/2" Coax<br>(1) 7/8" Coax |
|           | 1   | Stand-Off                    |                                |
|           | 1   | Sinclair SE414-SWBPALDF(DXX) |                                |
| 283.0     | 1   | RFS PAD6-65AC                | (1) EW65                       |
| 276.0     | 2   | Sinclair SE414-SWBPALDF(DXX) | (2) 1 5/8" Coax                |
| 275.0     | 1   | Side Arm                     | -                              |
| 240.0     | 1   | RFS PAD6-65AC                | (1) EW65                       |
| 186.0     | 1   | RFS PAD6-65AC                | (1) EW65                       |
| 154.0     | 1   | RFS PAD6-65AC                | (1) EW65                       |

Install proposed lines in the place of the existing STATE OF FLORIDA lines.

### Other Existing/Reserved Loading

| Elev (ft) | Qty | Equipment                    | Lines                                    | Carrier                           |
|-----------|-----|------------------------------|------------------------------------------|-----------------------------------|
| 304.0     | 1   | Side Arm                     | -                                        | HARRIS CORPORATION                |
| 300.3     | 3   | Ericsson Radio 4460 B25+B66  | -                                        | T-MOBILE                          |
|           | 3   | Ericsson Radio 4480 B71+B85A |                                          |                                   |
| 300.0     | 1   | Side Arm                     | -                                        | HARRIS CORPORATION                |
| 295.0     | 3   | Commscope FFVV-65C-R3-V1     | -                                        | T-MOBILE                          |
|           | 3   | Sector Frame                 |                                          |                                   |
| 282.4     | 1   | 8' Dish w/ Radome            | -                                        | M/A COM PRIVATE RADIO SYSTEMS INC |
| 258.0     | 2   | JMA Wireless MX06FRO860-02   | (10) 1 5/8" Coax<br>(2) 1 5/8" Hybriflex | VERIZON WIRELESS                  |
|           | 2   | Raycap RCMDC-6627-PF-48      |                                          |                                   |
|           | 3   | Commscope TD-850B-LTE78-43   |                                          |                                   |
|           | 3   | Ericsson 8843 Rev 2          |                                          |                                   |
|           | 3   | Ericsson AIR 6449 B77        |                                          |                                   |
|           | 3   | Ericsson Radio 4449 - B13&B5 |                                          |                                   |
|           | 3   | Light Sector Frame           |                                          |                                   |
|           | 4   | JMA Wireless MX06FIT865-02   |                                          |                                   |



| Elev (ft) | Qty | Equipment                           | Lines           | Carrier                              |
|-----------|-----|-------------------------------------|-----------------|--------------------------------------|
| 242.9     | 1   | 6' Dish w/ Radome                   | -               | M/A COM PRIVATE RADIO<br>SYSTEMS INC |
| 198.0     | 1   | Andrew Microwaves PAR6-59 w/ Radome | (1) EW52        | VERIZON WIRELESS                     |
| 187.0     | 1   | 6' Dish w/ Radome                   | (1) EW52        | M/A COM PRIVATE RADIO<br>SYSTEMS INC |
| 173.0     | 1   | 6' Grid Dish                        | (1) 1 5/8" Coax | T-MOBILE                             |
| 154.8     | 1   | 6' Dish w/ Radome                   | -               | M/A COM PRIVATE RADIO<br>SYSTEMS INC |
| 146.3     | 1   | Andrew VHLPX4-6W                    | -               | VERIZON WIRELESS                     |
| 98.9      | 1   | 12' Omni                            | -               | M/A COM PRIVATE RADIO<br>SYSTEMS INC |
| 92.0      | 1   | Side Arm                            | -               | M/A COM PRIVATE RADIO<br>SYSTEMS INC |

(If table breaks across pages, please see previous page for data in merged cells)