



## Structural Design Report

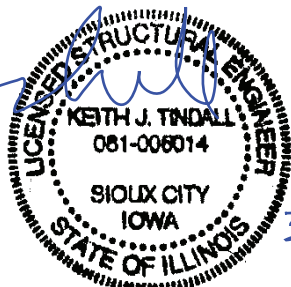
300' S3TL Series HD1 Self-Supporting Tower  
Site: Diehl Road Data Center (New Tower), IL

Prepared for: VERSOCOM  
by: Sabre Industries™

Job Number: 24-4381-TJH

March 26, 2024

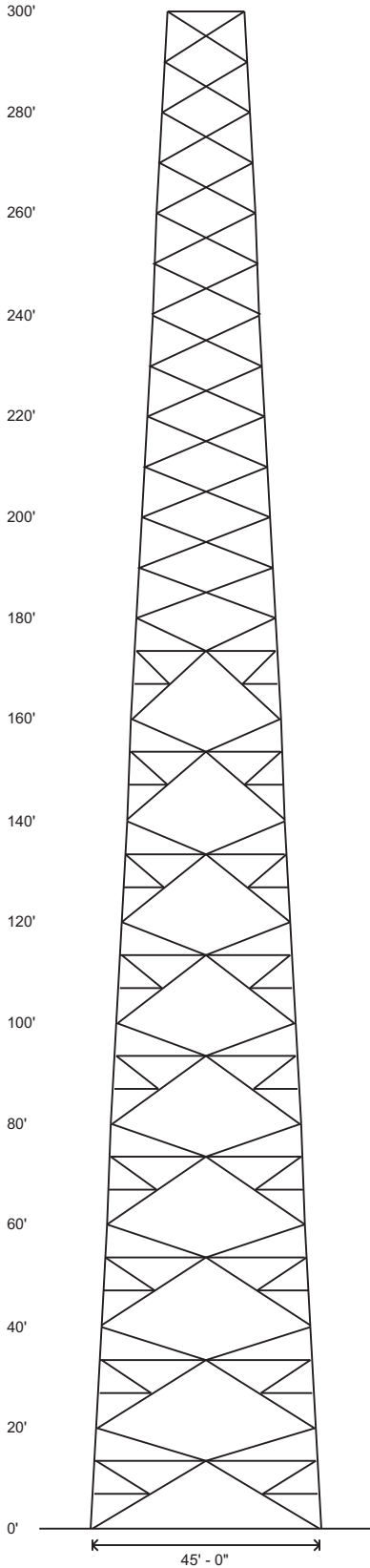
|  |      |
|--|------|
| Tower Profile.....                           | 1-3  |
| Foundation Design Summary (Preliminary)..... | 4    |
| Maximum Leg Loads.....                       | 5    |
| Maximum Diagonal Loads.....                  | 6    |
| Maximum Foundation Loads.....                | 7    |
| Calculations.....                            | 8-61 |



3/26/24

license expires 11-30- 24

|                    |                 |                 |            |                 |               |               |               |               |                 |
|--------------------|-----------------|-----------------|------------|-----------------|---------------|---------------|---------------|---------------|-----------------|
| Legs               | 20.00 OD X .625 | 20.00 OD X .500 | C          | 12.75 OD X .500 | D             | E             | F             | G             | 5.563 OD X .258 |
| Diagonals          | L 6 X 6 X 5/8   | H               | I          | L 6 X 6 X 1/2   | L 6 X 6 X 1/2 | L 6 X 6 X 3/8 | L 6 X 6 X 1/2 | L 5 X 5 X 3/8 | L 4 X 4 X 3/8   |
| Horizontals        | H               | J               | K          | L               | M             | J             | NONE          | NONE          | L               |
| Internals          | N               | O               | P          | Q               | R             | S             | T             | U             |                 |
| Sub-Diagonals      | Q               | R               | S          | T               | U             | V             | W             | X             |                 |
| Sub-Horizontals    | U               | V               | W          | X               | Y             | Z             | AA            | AB            |                 |
| Brace Bolts        | (2) 1"          | (2) 1 1/8"      | (2) 1 1/8" | (2) 1"          | (2) 1"        | (2) 7/8"      | (1) 1 1/4"    | (1) 1 1/8"    | (1) 3/4"        |
| Top Face Width     | 43'             | 41'             | 39'        | 37'             | 35'           | 33'           | 29'           | 27'           | 25'             |
| Panel Count/Height | 22119           | 20688           | 16983      | 16289           | 14920         | 13396         | 12253         | 11135         | 10390           |
| Section Weight     |                 |                 |            |                 |               |               |               |               | 8114            |
|                    |                 |                 |            |                 |               |               |               |               | 5027            |
|                    |                 |                 |            |                 |               |               |               |               | 7995            |
|                    |                 |                 |            |                 |               |               |               |               | 12 @ 10'        |
|                    |                 |                 |            |                 |               |               |               |               | 3592            |
|                    |                 |                 |            |                 |               |               |               |               | 2960            |



### Design Criteria - ANSI/TIA-222-G

|                                      |  |
|--------------------------------------|--|
| Nominal Wind Speed (No Ice)          | 90 mph                                 |
| Wind Speed (Ice)                     | 40 mph                                 |
| Design Ice Thickness                 | 0.75 in                                |
| Structure Class                      | II                                     |
| Exposure Category                    | C                                      |
| Topographic Category                 | 1                                      |
| Risk Category                        | II                                     |
| Seismic Importance Factor, Ie        | 1.00                                   |
| 0.2-sec Spectral Response, Ss        | 0.159 g                                |
| 1-sec Spectral Response, S1          | 0.066 g                                |
| Site Class                           | C                                      |
| Seismic Design Category              |  |
| Basic Seismic Force-Resisting System | Telecommunication Tower (Truss: Steel) |

### Base Reactions - Wind/Ice

| Total Foundation |        | Individual Footing |        |
|------------------|--------|--------------------|--------|
| Shear (kips)     | 294.53 | Shear (kips)       | 175.03 |
| Axial (kips)     | 730.73 | Compression (kips) | 1609   |
| Moment (ft-kips) | 58294  | Uplift (kips)      | 1363   |

### Base Reactions - Seismic

| Total Foundation |        | Individual Footing |       |
|------------------|--------|--------------------|-------|
| Shear (kips)     | 10.39  | Shear (kips)       | 14.12 |
| Axial (kips)     | 425.27 | Compression (kips) | 200   |
| Moment (ft-kips) | 2266   | Uplift (kips)      | 0     |

### Notes

- 1) All legs are A500 (50 ksi Min. Yield).
- 2) All braces are A572 Grade 50.
- 3) All brace bolts are A325-X.
- 4) The tower model is S3TL Series HD1.
- 5) Transmission lines are to be attached to 15 hole waveguide ladders with stackable hangers.
- 6) Azimuths are relative (not based on true north).
- 7) Foundation loads shown are maximums.
- 8) All unequal angles are oriented with the short leg vertical.
- 9) Weights shown are estimates. Final weights may vary.
- 10) Tower Rating: 99.9%
- 11) No grout is required under the base plates.

**Sabre Industries**  
7101 Southbridge Drive  
P.O. Box 658  
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Fax: (712) 279-0814


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|              |  |
|--------------|--|
| Job:         | 24-4381-TJH                            |
| Customer:    | VERSOCOM                               |
| Site Name:   | Diehl Road Data Center (New Tower), IL |
| Description: | 300' S3TL                              |
| Date:        | 3/26/2024                              |
| By:          | KJT                                    |

**Designed Appurtenance Loading**

| Elev | Description                            | Tx-Line    |
|------|--|------------|
| 300  | Face Dish Mount                        |            |
| 300  | Face Dish Mount                        |            |
| 300  | Face Dish Mount                        |            |
| 300  | Leg Dish Mount                         |            |
| 300  | Leg Dish Mount                         |            |
| 300  | Leg Dish Mount                         |            |
| 300  | Lights, Beacon Mount & Lightning Rod   | (1) 1"     |
| 300  | Special Top Platform for Dish Mounting |            |
| 300  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 300  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 300  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 300  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 300  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 300  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 293  | Face Dish Mount                        |            |
| 293  | Face Dish Mount                        |            |
| 293  | Face Dish Mounts                       |            |
| 293  | Leg Dish Mount                         |            |
| 293  | Leg Dish Mount                         |            |
| 293  | Leg Dish Mount                         |            |
| 293  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 293  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 293  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 293  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 293  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 286  | Face Dish Mount                        |            |
| 286  | Face Dish Mount                        |            |
| 286  | Face Dish Mount                        |            |
| 286  | Face Dish Mounts                       |            |
| 286  | Leg Dish Mount                         |            |
| 286  | Leg Dish Mount                         |            |
| 286  | Leg Dish Mount                         |            |
| 286  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 286  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 286  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 286  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 286  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 286  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 279  | Face Dish Mount                        |            |
| 279  | Face Dish Mount                        |            |
| 279  | Face Dish Mount                        |            |
| 279  | Face Dish Mounts                       |            |
| 279  | Leg Dish Mount                         |            |
| 279  | Leg Dish Mount                         |            |
| 279  | Leg Dish Mount                         |            |
| 279  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 279  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 279  | (1) 6' Solid Dish                      | (1) 1 5/8" |
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| 279  | (1) 6' Solid Dish                      | (1) 1 5/8" |
| 272  | Face Dish Mount                        |            |
| 272  | Face Dish Mount                        |            |
| 272  | Face Dish Mount                        |            |
| 272  | Face Dish Mounts                       |            |
| 272  | Leg Dish Mount                         |            |

| Elev | Description       | Tx-Line    |
|------|-------------------|------------|
| 272  | Leg Dish Mount    |            |
| 272  | Leg Dish Mount    |            |
| 272  | (1) 6' Solid Dish | (1) 1 5/8" |
| 272  | (1) 6' Solid Dish | (1) 1 5/8" |
| 272  | (1) 6' Solid Dish | (1) 1 5/8" |
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| 272  | (1) 6' Solid Dish | (1) 1 5/8" |
| 265  | Face Dish Mount   |            |
| 265  | Face Dish Mount   |            |
| 265  | Face Dish Mount   |            |
| 265  | Face Dish Mounts  |            |
| 265  | Leg Dish Mount    |            |
| 265  | Leg Dish Mount    |            |
| 265  | Leg Dish Mount    |            |
| 265  | (1) 6' Solid Dish | (1) 1 5/8" |
| 265  | (1) 6' Solid Dish | (1) 1 5/8" |
| 265  | (1) 6' Solid Dish | (1) 1 5/8" |
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| 265  | (1) 6' Solid Dish | (1) 1 5/8" |
| 265  | (1) 6' Solid Dish | (1) 1 5/8" |
| 258  | Face Dish Mount   |            |
| 258  | Face Dish Mount   |            |
| 258  | Face Dish Mount   |            |
| 258  | Face Dish Mounts  |            |
| 258  | Leg Dish Mount    |            |
| 258  | Leg Dish Mount    |            |
| 258  | (1) 6' Solid Dish | (1) 1 5/8" |
| 258  | (1) 6' Solid Dish | (1) 1 5/8" |
| 258  | (1) 6' Solid Dish | (1) 1 5/8" |
| 258  | (1) 6' Solid Dish | (1) 1 5/8" |
| 258  | (1) 6' Solid Dish | (1) 1 5/8" |
| 258  | (1) 6' Solid Dish | (1) 1 5/8" |
| 258  | (1) 6' Solid Dish | (1) 1 5/8" |
| 251  | Face Dish Mount   |            |
| 251  | Face Dish Mount   |            |
| 251  | Face Dish Mount   |            |
| 251  | Face Dish Mounts  |            |
| 251  | Leg Dish Mount    |            |
| 251  | Leg Dish Mount    |            |
| 251  | Leg Dish Mount    |            |
| 251  | (1) 6' Solid Dish | (1) 1 5/8" |
| 251  | (1) 6' Solid Dish | (1) 1 5/8" |
| 251  | (1) 6' Solid Dish | (1) 1 5/8" |
| 251  | (1) 6' Solid Dish | (1) 1 5/8" |
| 251  | (1) 6' Solid Dish | (1) 1 5/8" |
| 244  | Face Dish Mount   |            |
| 244  | Face Dish Mount   |            |
| 244  | Face Dish Mount   |            |
| 244  | Face Dish Mounts  |            |
| 244  | Leg Dish Mount    |            |
| 244  | Leg Dish Mount    |            |
| 244  | Leg Dish Mount    |            |
| 244  | (1) 6' Solid Dish | (1) 1 5/8" |
| 244  | (1) 6' Solid Dish | (1) 1 5/8" |
| 244  | (1) 6' Solid Dish | (1) 1 5/8" |
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|   |  |
|---|--|
|  <p><b>Sabre Industries</b><br/>7101 Southbridge Drive<br/>P.O. Box 658<br/>Sioux City, IA 51102-0658<br/>Phone: (712) 258-6690<br/>Fax: (712) 279-0814</p> <p><small>Information contained herein is the sole property of Sabre Communications Corporation, constitutes a trade secret as defined by Iowa Code Ch. 550 and shall not be reproduced, copied or used in whole or part for any purpose whatsoever without the prior written consent of Sabre Communications Corporation.</small></p> | Job: <b>24-4381-TJH</b>                                  |
|   | Customer: <b>VERSOCOM</b>                                |
|   | Site Name: <b>Diehl Road Data Center (New Tower), IL</b> |
|   | Description: <b>300' S3TL</b>                            |
|   | Date: <b>3/26/2024</b> By: <b>KJT</b>                    |

### Designed Appurtenance Loading


| Elev | Description       | Tx-Line    |
|------|-------------------|------------|
| 244  | (1) 6' Solid Dish | (1) 1 5/8" |
| 244  | (1) 6' Solid Dish | (1) 1 5/8" |
| 237  | Face Dish Mount   |            |
| 237  | Face Dish Mount   |            |
| 237  | Face Dish Mount   |            |
| 237  | Face Dish Mounts  |            |
| 237  | Leg Dish Mount    |            |
| 237  | Leg Dish Mount    |            |
| 237  | Leg Dish Mount    |            |
| 237  | (1) 6' Solid Dish | (1) 1 5/8" |
| 237  | (1) 6' Solid Dish | (1) 1 5/8" |
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| 237  | (1) 6' Solid Dish | (1) 1 5/8" |
| 237  | (1) 6' Solid Dish | (1) 1 5/8" |
| 237  | (1) 6' Solid Dish | (1) 1 5/8" |
| 230  | Face Dish Mount   |            |
| 230  | Face Dish Mount   |            |
| 230  | Face Dish Mount   |            |
| 230  | Face Dish Mounts  |            |
| 230  | Leg Dish Mount    |            |
| 230  | Leg Dish Mount    |            |
| 230  | Leg Dish Mount    |            |
| 230  | (1) 6' Solid Dish | (1) 1 5/8" |
| 230  | (1) 6' Solid Dish | (1) 1 5/8" |
| 230  | (1) 6' Solid Dish | (1) 1 5/8" |
| 230  | (1) 6' Solid Dish | (1) 1 5/8" |
| 230  | (1) 6' Solid Dish | (1) 1 5/8" |
| 230  | (1) 6' Solid Dish | (1) 1 5/8" |
| 223  | Face Dish Mount   |            |
| 223  | Face Dish Mount   |            |
| 223  | Face Dish Mount   |            |
| 223  | Face Dish Mounts  |            |
| 223  | Leg Dish Mount    |            |
| 223  | Leg Dish Mount    |            |
| 223  | Leg Dish Mount    |            |
| 223  | (1) 6' Solid Dish | (1) 1 5/8" |
| 223  | (1) 6' Solid Dish | (1) 1 5/8" |
| 223  | (1) 6' Solid Dish | (1) 1 5/8" |
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| Elev | Description       | Tx-Line    |
|------|-------------------|------------|
| 223  | (1) 6' Solid Dish | (1) 1 5/8" |
| 216  | Face Dish Mount   |            |
| 216  | Face Dish Mount   |            |
| 216  | Face Dish Mount   |            |
| 216  | Face Dish Mounts  |            |
| 216  | Leg Dish Mount    |            |
| 216  | Leg Dish Mount    |            |
| 216  | Leg Dish Mount    |            |
| 216  | (1) 6' Solid Dish | (1) 1 5/8" |
| 216  | (1) 6' Solid Dish | (1) 1 5/8" |
| 216  | (1) 6' Solid Dish | (1) 1 5/8" |
| 216  | (1) 6' Solid Dish | (1) 1 5/8" |
| 216  | (1) 6' Solid Dish | (1) 1 5/8" |
| 216  | (1) 6' Solid Dish | (1) 1 5/8" |
| 209  | Face Dish Mount   |            |
| 209  | Face Dish Mount   |            |
| 209  | Face Dish Mount   |            |
| 209  | Face Dish Mounts  |            |
| 209  | Leg Dish Mount    |            |
| 209  | Leg Dish Mount    |            |
| 209  | Leg Dish Mount    |            |
| 209  | (1) 6' Solid Dish | (1) 1 5/8" |
| 209  | (1) 6' Solid Dish | (1) 1 5/8" |
| 209  | (1) 6' Solid Dish | (1) 1 5/8" |
| 209  | (1) 6' Solid Dish | (1) 1 5/8" |
| 209  | (1) 6' Solid Dish | (1) 1 5/8" |
| 202  | Face Dish Mount   |            |
| 202  | Face Dish Mount   |            |
| 202  | Face Dish Mount   |            |
| 202  | Face Dish Mounts  |            |
| 202  | Leg Dish Mount    |            |
| 202  | Leg Dish Mount    |            |
| 202  | Leg Dish Mount    |            |
| 202  | (1) 6' Solid Dish | (1) 1 5/8" |
| 202  | (1) 6' Solid Dish | (1) 1 5/8" |
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| 202  | (1) 6' Solid Dish | (1) 1 5/8" |

### Material List

| Display | Value           |
|---------|-----------------|
| A       | 18.00 OD X .500 |
| B       | 16.00 OD X .500 |
| C       | 14.00 OD X .500 |
| D       | 12.75 OD X .375 |
| E       | 8.625 OD X .500 |
| F       | 8.625 OD X .322 |
| G       | 5.563 OD X .375 |
| H       | L 6 X 6 X 1/2   |
| I       | L 6 X 6 X 5/8   |
| J       | NONE            |
| K       | L 5 X 5 X 3/8   |
| L       | L 5 X 5 X 5/16  |

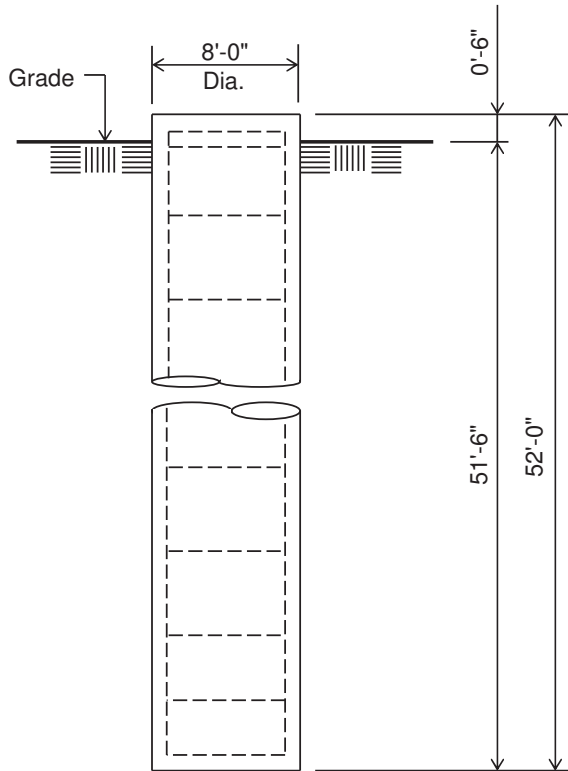
| Display | Value                 |
|---------|-----------------------|
| M       | L 4 X 4 X 5/16        |
| N       | L 4 X 4 X 1/4         |
| O       | L 3 1/2 X 3 1/2 X 1/4 |
| P       | L 3 X 3 X 1/4         |
| Q       | L 4 X 4 X 1/2         |
| R       | L 5 X 3 1/2 X 5/16    |
| S       | L 4 X 3 1/2 X 5/16    |
| T       | L 3 X 3 X 5/16        |
| U       | L 4 X 4 X 3/8         |
| V       | 1 @ 13.333'           |
| W       | 1 @ 6.667'            |

|   |  |
|---|--|
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|   | Customer: <b>VERSOCOM</b>                                |
|   | Site Name: <b>Diehl Road Data Center (New Tower), IL</b> |
|   | Description: <b>300' S3TL</b>                            |
|   | Date: <b>3/26/2024</b> By: <b>KJT</b>                    |

**Customer: VERSOCOM**  
**Site: Diehl Road Data Center (New Tower), IL**

300 ft. Model S3TL Series HD1 Self Supporting Tower

**PRELIMINARY--NOT FOR CONSTRUCTION**



**ELEVATION VIEW**

(96.8 cu. yds.)  
(3 REQUIRED; NOT TO SCALE)

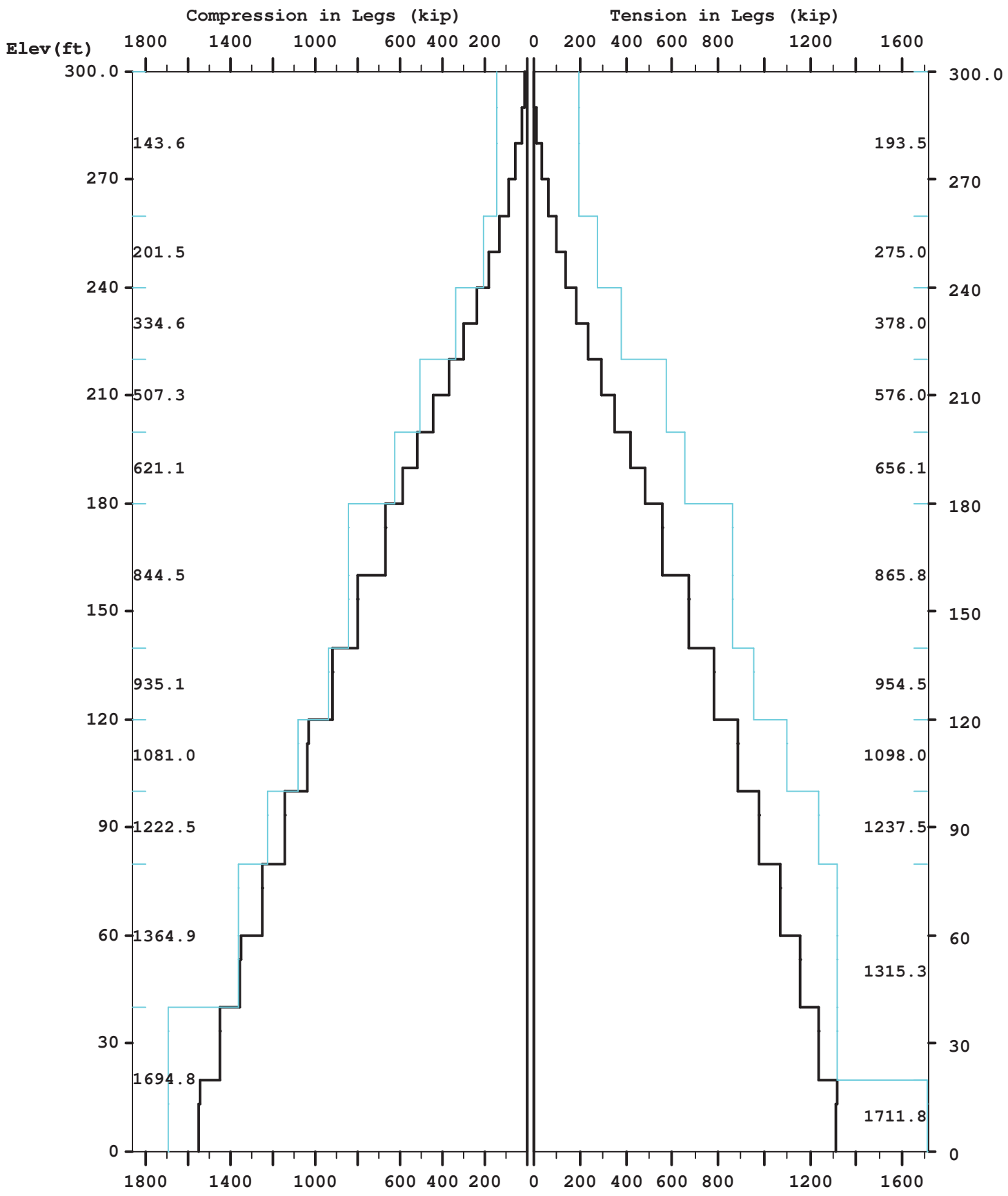
**Notes:**

- 1) Concrete shall have a minimum 28-day compressive strength of 4,500 psi, in accordance with ACI 318-11.
- 2) Rebar to conform to ASTM specification A615 Grade 60.
- 3) All rebar to have a minimum of 3" concrete cover.
- 4) All exposed concrete corners to be chamfered 3/4".
- 5) The foundation design is based on the geotechnical report by Terracon, Project No. MR175299, dated August 4, 2017.
- 6) See the geotechnical report for drilled pier installation requirements, if specified.
- 7) The foundation is based on the following factored loads:  
Factored uplift (kips) = 1,363.00  
Factored download (kips) = 1,609.00  
Factored shear (kips) = 175.00
- 8) The bottom anchor bolt template shall be positioned as closely as possible to the bottom of the anchor bolts.
- 9) This design assume the skin friction and bearing parameters for the layer from 38'-40' given in the above referenced geotechnical report continue to the bottom of the foundation. These parameters must be verified prior to installation of the foundation.

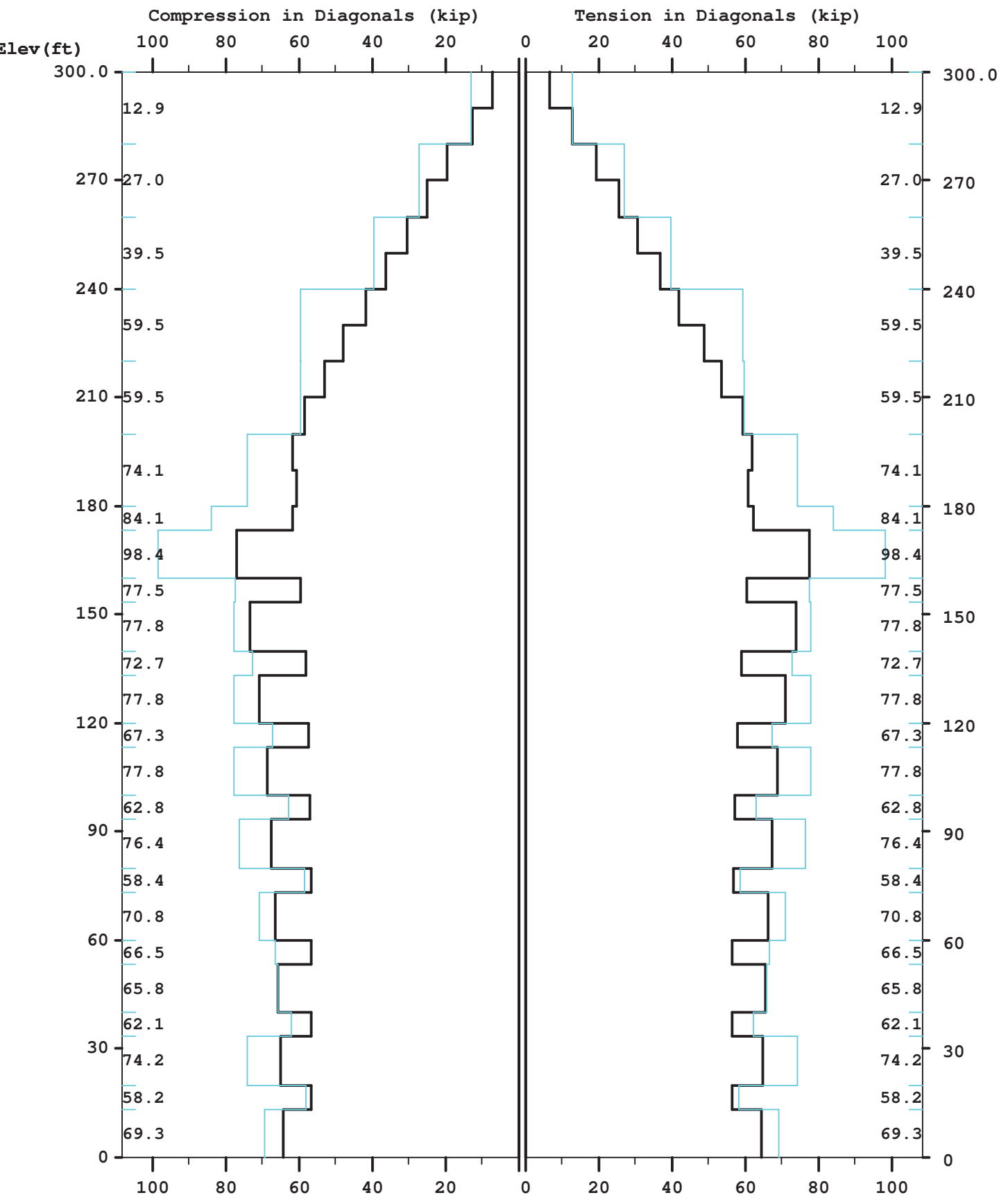
| Rebar Schedule per Pier |  |
|-------------------------|--|
| Pier                    | (36) #10 vertical rebar w/ #5 rebar ties, two (2) within top 5" of pier then 12" C/C |
| Anchor Bolts per Leg    |  |
|                         | (8) 2" dia. x 99" F1554-105 on a 25.25" B.C. w/ 12" max. projection above concrete.  |

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Maximum

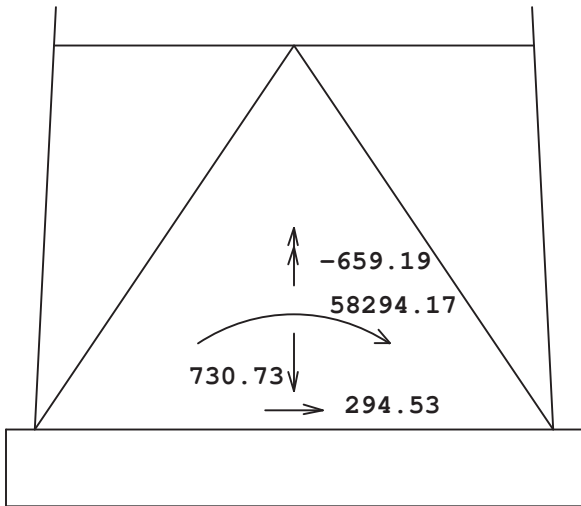


Maximum

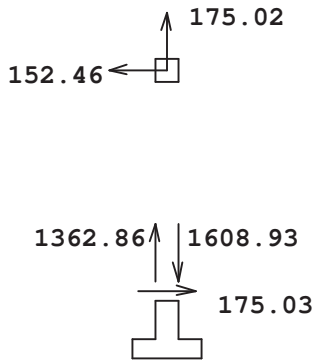


Maximum

TOTAL FOUNDATION LOADS (kip, ft-kip)



INDIVIDUAL FOOTING LOADS (kip)





Latticed Tower Analysis (Unguyed)  
 Processed under license at:

(c)2024 Guymast Inc. 416-736-7453

Sabre Towers and Poles

on: 26 mar 2024 at: 16:38:46

MAST GEOMETRY ( ft )

| PANEL TYPE | NO.OF LEGS | ELEV.AT BOTTOM | ELEV.AT TOP | F.W..AT BOTTOM | F.W..AT TOP | TYPICAL PANEL HEIGHT |
|------------|------------|----------------|-------------|----------------|-------------|----------------------|
| X          | 3          | 290.00         | 300.00      | 16.00          | 15.00       | 10.00                |
| X          | 3          | 280.00         | 290.00      | 17.00          | 16.00       | 10.00                |
| X          | 3          | 260.00         | 280.00      | 19.00          | 17.00       | 10.00                |
| X          | 3          | 240.00         | 260.00      | 21.00          | 19.00       | 10.00                |
| X          | 3          | 220.00         | 240.00      | 23.00          | 21.00       | 10.00                |
| X          | 3          | 200.00         | 220.00      | 25.00          | 23.00       | 10.00                |
| X          | 3          | 180.00         | 200.00      | 27.00          | 25.00       | 10.00                |
| V          | 3          | 173.33         | 180.00      | 27.67          | 27.00       | 6.67                 |
| A          | 3          | 160.00         | 173.33      | 29.00          | 27.67       | 13.33                |
| V          | 3          | 153.33         | 160.00      | 29.67          | 29.00       | 6.67                 |
| A          | 3          | 140.00         | 153.33      | 31.00          | 29.67       | 13.33                |
| V          | 3          | 133.33         | 140.00      | 31.67          | 31.00       | 6.67                 |
| A          | 3          | 120.00         | 133.33      | 33.00          | 31.67       | 13.33                |
| V          | 3          | 113.33         | 120.00      | 33.67          | 33.00       | 6.67                 |
| A          | 3          | 100.00         | 113.33      | 35.00          | 33.67       | 13.33                |
| V          | 3          | 93.33          | 100.00      | 35.67          | 35.00       | 6.67                 |
| A          | 3          | 80.00          | 93.33       | 37.00          | 35.67       | 13.33                |
| V          | 3          | 73.33          | 80.00       | 37.67          | 37.00       | 6.67                 |
| A          | 3          | 60.00          | 73.33       | 39.00          | 37.67       | 13.33                |
| V          | 3          | 53.33          | 60.00       | 39.67          | 39.00       | 6.67                 |
| A          | 3          | 40.00          | 53.33       | 41.00          | 39.67       | 13.33                |
| V          | 3          | 33.33          | 40.00       | 41.67          | 41.00       | 6.67                 |
| A          | 3          | 20.00          | 33.33       | 43.00          | 41.67       | 13.33                |
| V          | 3          | 13.33          | 20.00       | 43.67          | 43.00       | 6.67                 |
| A          | 3          | 0.00           | 13.33       | 45.00          | 43.67       | 13.33                |

MEMBER PROPERTIES

| MEMBER TYPE | BOTTOM ELEV ft | TOP ELEV ft | X-SECTN AREA in.sq | RADIUS OF GYRAT in | ELASTIC MODULUS ksi | THERMAL EXPANSN /deg |
|-------------|----------------|-------------|--------------------|--------------------|---------------------|----------------------|
| LE          | 260.00         | 300.00      | 4.299              | 1.878              | 29000.              | 0.0000117            |
| LE          | 240.00         | 260.00      | 6.111              | 1.878              | 29000.              | 0.0000117            |
| LE          | 220.00         | 240.00      | 8.399              | 1.878              | 29000.              | 0.0000117            |
| LE          | 200.00         | 220.00      | 12.763             | 1.878              | 29000.              | 0.0000117            |
| LE          | 180.00         | 200.00      | 14.579             | 1.878              | 29000.              | 0.0000117            |
| LE          | 140.00         | 180.00      | 19.242             | 1.878              | 29000.              | 0.0000117            |
| LE          | 120.00         | 140.00      | 21.206             | 1.878              | 29000.              | 0.0000117            |
| LE          | 100.00         | 120.00      | 24.347             | 1.878              | 29000.              | 0.0000117            |
| LE          | 80.00          | 100.00      | 27.489             | 1.878              | 29000.              | 0.0000117            |
| LE          | 40.00          | 80.00       | 30.631             | 1.878              | 29000.              | 0.0000117            |
| LE          | 0.00           | 40.00       | 38.043             | 1.878              | 29000.              | 0.0000117            |
| DI          | 280.00         | 300.00      | 1.688              | 0.946              | 29000.              | 0.0000117            |
| DI          | 260.00         | 280.00      | 2.859              | 0.946              | 29000.              | 0.0000117            |
| DI          | 240.00         | 260.00      | 3.609              | 0.946              | 29000.              | 0.0000117            |
| DI          | 220.00         | 240.00      | 5.750              | 0.946              | 29000.              | 0.0000117            |
| DI          | 200.00         | 220.00      | 4.359              | 0.946              | 29000.              | 0.0000117            |
| DI          | 173.33         | 200.00      | 5.750              | 0.946              | 29000.              | 0.0000117            |
| DI          | 160.00         | 173.33      | 7.109              | 0.946              | 29000.              | 0.0000117            |

|    |        |        |       |       |        |           |
|----|--------|--------|-------|-------|--------|-----------|
| DI | 60.00  | 160.00 | 5.750 | 0.946 | 29000. | 0.0000117 |
| DI | 53.33  | 60.00  | 7.109 | 0.946 | 29000. | 0.0000117 |
| DI | 40.00  | 53.33  | 5.750 | 0.946 | 29000. | 0.0000117 |
| DI | 0.00   | 40.00  | 7.109 | 0.946 | 29000. | 0.0000117 |
| HO | 290.00 | 300.00 | 3.027 | 1.566 | 29000. | 0.0000117 |
| HO | 160.00 | 173.33 | 2.402 | 1.566 | 29000. | 0.0000117 |
| HO | 140.00 | 153.33 | 2.402 | 1.566 | 29000. | 0.0000117 |
| HO | 120.00 | 133.33 | 3.027 | 1.566 | 29000. | 0.0000117 |
| HO | 100.00 | 113.33 | 3.027 | 1.566 | 29000. | 0.0000117 |
| HO | 80.00  | 93.33  | 3.027 | 1.566 | 29000. | 0.0000117 |
| HO | 60.00  | 73.33  | 3.609 | 1.566 | 29000. | 0.0000117 |
| HO | 40.00  | 53.33  | 3.609 | 1.566 | 29000. | 0.0000117 |
| HO | 20.00  | 33.33  | 5.750 | 1.566 | 29000. | 0.0000117 |
| HO | 0.00   | 13.33  | 5.750 | 1.566 | 29000. | 0.0000117 |
| BR | 160.00 | 173.33 | 1.688 | 0.000 | 29000. | 0.0000117 |
| BR | 140.00 | 153.33 | 1.438 | 0.000 | 29000. | 0.0000117 |
| BR | 120.00 | 133.33 | 1.688 | 0.000 | 29000. | 0.0000117 |
| BR | 100.00 | 113.33 | 1.688 | 0.000 | 29000. | 0.0000117 |
| BR | 80.00  | 93.33  | 1.688 | 0.000 | 29000. | 0.0000117 |
| BR | 60.00  | 73.33  | 1.688 | 0.000 | 29000. | 0.0000117 |
| BR | 40.00  | 53.33  | 1.688 | 0.000 | 29000. | 0.0000117 |
| BR | 20.00  | 33.33  | 1.688 | 0.000 | 29000. | 0.0000117 |
| BR | 0.00   | 13.33  | 1.938 | 0.000 | 29000. | 0.0000117 |

FACTORED MEMBER RESISTANCES

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| BOTTOM<br>ELEV<br>ft | TOP<br>ELEV<br>ft | LEGS        |             | DIAGONALS   |             | HORIZONTALS |             | INT BRACING |             |
|----------------------|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                      |                   | COMP<br>kip | TENS<br>kip | COMP<br>kip | TENS<br>kip | COMP<br>kip | TENS<br>kip | COMP<br>kip | TENS<br>kip |
| 290.0                | 300.0             | 143.65      | 193.50      | 12.87       | 12.87       | 21.87       | 21.87       | 0.00        | 0.00        |
| 280.0                | 290.0             | 143.65      | 193.50      | 12.87       | 12.87       | 0.00        | 0.00        | 0.00        | 0.00        |
| 260.0                | 280.0             | 143.65      | 193.50      | 27.03       | 27.03       | 0.00        | 0.00        | 0.00        | 0.00        |
| 240.0                | 260.0             | 201.46      | 274.95      | 39.49       | 39.49       | 0.00        | 0.00        | 0.00        | 0.00        |
| 220.0                | 240.0             | 334.65      | 378.00      | 59.47       | 59.47       | 0.00        | 0.00        | 0.00        | 0.00        |
| 200.0                | 220.0             | 507.33      | 576.00      | 59.53       | 59.53       | 0.00        | 0.00        | 0.00        | 0.00        |
| 180.0                | 200.0             | 621.06      | 656.10      | 74.06       | 74.06       | 0.00        | 0.00        | 0.00        | 0.00        |
| 173.3                | 180.0             | 844.46      | 865.80      | 84.05       | 84.05       | 0.00        | 0.00        | 0.00        | 0.00        |
| 160.0                | 173.3             | 844.46      | 865.80      | 98.41       | 98.41       | 19.33       | 19.33       | 11.21       | 11.21       |
| 153.3                | 160.0             | 844.46      | 865.80      | 77.46       | 77.46       | 0.00        | 0.00        | 0.00        | 0.00        |
| 140.0                | 153.3             | 844.46      | 865.80      | 77.75       | 77.75       | 17.32       | 17.32       | 6.59        | 6.59        |
| 133.3                | 140.0             | 935.10      | 954.45      | 72.71       | 72.71       | 0.00        | 0.00        | 0.00        | 0.00        |
| 120.0                | 133.3             | 935.10      | 954.45      | 77.75       | 77.75       | 28.16       | 28.16       | 9.00        | 9.00        |
| 113.3                | 120.0             | 1081.02     | 1098.00     | 67.31       | 67.31       | 0.00        | 0.00        | 0.00        | 0.00        |
| 100.0                | 113.3             | 1081.02     | 1098.00     | 77.75       | 77.75       | 25.67       | 25.67       | 8.14        | 8.14        |
| 93.3                 | 100.0             | 1222.48     | 1237.50     | 62.84       | 62.84       | 0.00        | 0.00        | 0.00        | 0.00        |
| 80.0                 | 93.3              | 1222.48     | 1237.50     | 76.39       | 76.39       | 25.86       | 25.86       | 7.39        | 7.39        |
| 73.3                 | 80.0              | 1364.87     | 1315.31     | 58.43       | 58.43       | 0.00        | 0.00        | 0.00        | 0.00        |
| 60.0                 | 73.3              | 1364.87     | 1315.31     | 70.80       | 70.80       | 25.67       | 25.67       | 6.74        | 6.74        |
| 53.3                 | 60.0              | 1364.87     | 1315.31     | 66.49       | 66.49       | 0.00        | 0.00        | 0.00        | 0.00        |
| 40.0                 | 53.3              | 1364.87     | 1315.31     | 65.80       | 65.80       | 24.32       | 24.32       | 6.46        | 6.46        |
| 33.3                 | 40.0              | 1694.81     | 1315.31     | 62.11       | 62.11       | 0.00        | 0.00        | 0.00        | 0.00        |
| 20.0                 | 33.3              | 1694.81     | 1315.31     | 74.15       | 74.15       | 48.09       | 48.09       | 6.18        | 6.18        |
| 13.3                 | 20.0              | 1694.81     | 1711.80     | 58.15       | 58.15       | 0.00        | 0.00        | 0.00        | 0.00        |
| 0.0                  | 13.3              | 1694.81     | 1711.80     | 69.26       | 69.26       | 45.43       | 45.43       | 8.11        | 8.11        |

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\* Only 5 condition(s) shown in full

\* Some wind loads may have been derived from full-scale wind tunnel testing

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LOADING CONDITION A =====

90 mph Nominal wind with no ice. Wind Azimuth: 0° (1.2 D + 1.6 Wo)

MAST LOADING  
 =====

| LOAD<br>TYPE | ELEV<br>ft | APPLY.<br>RADIUS<br>ft | LOAD.<br>AZI | AT<br>AZI | LOAD<br>AZI | .....FORCES..... |             | .....MOMENTS.....  |                   |
|--------------|------------|------------------------|--------------|-----------|-------------|------------------|-------------|--------------------|-------------------|
|              |            |                        |              |           |             | HORIZ<br>kip     | DOWN<br>kip | VERTICAL<br>ft-kip | TORSNAL<br>ft-kip |
| C            | 300.0      | 0.00                   | 0.0          | 0.0       | 0.0         | 3.06             | 5.70        | 0.00               | 0.00              |
| C            | 300.0      | 0.00                   | 0.0          | 0.0       | 0.0         | 0.15             | 0.24        | 0.00               | 0.00              |
| C            | 293.0      | 0.00                   | 0.0          | 0.0       | 0.0         | 2.94             | 3.60        | 0.00               | 0.00              |
| C            | 286.0      | 0.00                   | 0.0          | 0.0       | 0.0         | 3.03             | 3.76        | 0.00               | 0.00              |
| C            | 279.0      | 0.00                   | 0.0          | 0.0       | 0.0         | 3.12             | 3.89        | 0.00               | 0.00              |
| C            | 272.0      | 0.00                   | 0.0          | 0.0       | 0.0         | 3.21             | 4.01        | 0.00               | 0.00              |
| C            | 265.0      | 0.00                   | 0.0          | 0.0       | 0.0         | 3.29             | 4.14        | 0.00               | 0.00              |
| C            | 258.0      | 0.00                   | 0.0          | 0.0       | 0.0         | 3.38             | 4.26        | 0.00               | 0.00              |
| C            | 251.0      | 0.00                   | 0.0          | 0.0       | 0.0         | 3.46             | 4.38        | 0.00               | 0.00              |
| C            | 244.0      | 0.00                   | 0.0          | 0.0       | 0.0         | 4.96             | 7.98        | 0.00               | 0.00              |
| C            | 237.0      | 0.00                   | 0.0          | 0.0       | 0.0         | 5.06             | 8.16        | 0.00               | 0.00              |
| C            | 230.0      | 0.00                   | 0.0          | 0.0       | 0.0         | 5.17             | 8.40        | 0.00               | 0.00              |
| C            | 223.0      | 0.00                   | 0.0          | 0.0       | 0.0         | 5.27             | 8.58        | 0.00               | 0.00              |
| C            | 216.0      | 0.00                   | 0.0          | 0.0       | 0.0         | 5.37             | 8.82        | 0.00               | 0.00              |
| C            | 209.0      | 0.00                   | 0.0          | 0.0       | 0.0         | 5.46             | 9.00        | 0.00               | 0.00              |
| C            | 202.0      | 0.00                   | 0.0          | 0.0       | 0.0         | 5.55             | 9.24        | 0.00               | 0.00              |
|              |            |                        |              |           |             |                  |             |                    |                   |
| D            | 300.0      | 0.00                   | 306.8        | 0.0       | 0.0         | 0.27             | 0.22        | 0.12               | -0.35             |
| D            | 290.0      | 0.00                   | 306.8        | 0.0       | 0.0         | 0.27             | 0.22        | 0.12               | -0.35             |
| D            | 290.0      | 0.00                   | 308.2        | 0.0       | 0.0         | 0.26             | 0.18        | 0.20               | -0.52             |
| D            | 280.0      | 0.00                   | 308.2        | 0.0       | 0.0         | 0.26             | 0.18        | 0.20               | -0.52             |
| D            | 280.0      | 0.00                   | 310.5        | 0.0       | 0.0         | 0.30             | 0.25        | 0.29               | -0.58             |
| D            | 270.0      | 0.00                   | 310.5        | 0.0       | 0.0         | 0.30             | 0.25        | 0.29               | -0.58             |
| D            | 270.0      | 0.00                   | 317.5        | 0.0       | 0.0         | 0.31             | 0.27        | 0.33               | -0.52             |
| D            | 260.0      | 0.00                   | 317.5        | 0.0       | 0.0         | 0.31             | 0.27        | 0.33               | -0.52             |
| D            | 260.0      | 0.00                   | 334.1        | 0.0       | 0.0         | 0.35             | 0.35        | 0.31               | -0.43             |
| D            | 250.0      | 0.00                   | 334.1        | 0.0       | 0.0         | 0.35             | 0.35        | 0.31               | -0.43             |
| D            | 250.0      | 0.00                   | 352.6        | 0.0       | 0.0         | 0.36             | 0.37        | 0.32               | -0.37             |
| D            | 240.0      | 0.00                   | 352.6        | 0.0       | 0.0         | 0.36             | 0.37        | 0.32               | -0.37             |
| D            | 240.0      | 0.00                   | 6.6          | 0.0       | 0.0         | 0.40             | 0.54        | 0.34               | -0.37             |
| D            | 230.0      | 0.00                   | 6.6          | 0.0       | 0.0         | 0.40             | 0.54        | 0.34               | -0.37             |
| D            | 230.0      | 0.00                   | 8.1          | 0.0       | 0.0         | 0.42             | 0.56        | 0.26               | -0.40             |
| D            | 220.0      | 0.00                   | 8.1          | 0.0       | 0.0         | 0.42             | 0.56        | 0.26               | -0.40             |
| D            | 220.0      | 0.00                   | 4.9          | 0.0       | 0.0         | 0.43             | 0.55        | 0.18               | -0.41             |
| D            | 210.0      | 0.00                   | 4.9          | 0.0       | 0.0         | 0.43             | 0.55        | 0.18               | -0.41             |
| D            | 210.0      | 0.00                   | 349.5        | 0.0       | 0.0         | 0.43             | 0.57        | 0.09               | -0.42             |
| D            | 200.0      | 0.00                   | 349.5        | 0.0       | 0.0         | 0.43             | 0.57        | 0.09               | -0.42             |
| D            | 200.0      | 0.00                   | 321.2        | 0.0       | 0.0         | 0.46             | 0.70        | 0.06               | -0.43             |
| D            | 180.0      | 0.00                   | 320.1        | 0.0       | 0.0         | 0.47             | 0.72        | 0.06               | -0.43             |
| D            | 180.0      | 0.00                   | 323.4        | 0.0       | 0.0         | 0.42             | 0.69        | 0.07               | -0.42             |
| D            | 173.3      | 0.00                   | 323.4        | 0.0       | 0.0         | 0.42             | 0.69        | 0.07               | -0.42             |
| D            | 173.3      | 0.00                   | 322.4        | 0.0       | 0.0         | 0.48             | 0.79        | 0.07               | -0.42             |
| D            | 160.0      | 0.00                   | 322.4        | 0.0       | 0.0         | 0.48             | 0.79        | 0.07               | -0.42             |
| D            | 160.0      | 0.00                   | 325.2        | 0.0       | 0.0         | 0.42             | 0.71        | 0.07               | -0.41             |
| D            | 153.3      | 0.00                   | 325.2        | 0.0       | 0.0         | 0.42             | 0.71        | 0.07               | -0.41             |
| D            | 153.3      | 0.00                   | 324.3        | 0.0       | 0.0         | 0.47             | 0.74        | 0.07               | -0.41             |
| D            | 140.0      | 0.00                   | 324.3        | 0.0       | 0.0         | 0.47             | 0.74        | 0.07               | -0.41             |
| D            | 140.0      | 0.00                   | 326.9        | 0.0       | 0.0         | 0.43             | 0.76        | 0.07               | -0.39             |
| D            | 133.3      | 0.00                   | 326.9        | 0.0       | 0.0         | 0.43             | 0.76        | 0.07               | -0.39             |
| D            | 133.3      | 0.00                   | 326.1        | 0.0       | 0.0         | 0.49             | 0.82        | 0.07               | -0.40             |
| D            | 120.0      | 0.00                   | 326.1        | 0.0       | 0.0         | 0.49             | 0.82        | 0.07               | -0.40             |
| D            | 120.0      | 0.00                   | 328.5        | 0.0       | 0.0         | 0.43             | 0.81        | 0.08               | -0.38             |
| D            | 113.3      | 0.00                   | 328.5        | 0.0       | 0.0         | 0.43             | 0.81        | 0.08               | -0.38             |
| D            | 113.3      | 0.00                   | 327.7        | 0.0       | 0.0         | 0.50             | 0.88        | 0.08               | -0.39             |
| D            | 100.0      | 0.00                   | 327.7        | 0.0       | 0.0         | 0.50             | 0.88        | 0.08               | -0.39             |
| D            | 100.0      | 0.00                   | 329.9        | 0.0       | 0.0         | 0.44             | 0.87        | 0.08               | -0.36             |
| D            | 93.3       | 0.00                   | 329.9        | 0.0       | 0.0         | 0.44             | 0.87        | 0.08               | -0.36             |
| D            | 93.3       | 0.00                   | 329.2        | 0.0       | 0.0         | 0.50             | 0.95        | 0.08               | -0.37             |
| D            | 80.0       | 0.00                   | 329.2        | 0.0       | 0.0         | 0.50             | 0.95        | 0.08               | -0.37             |
| D            | 80.0       | 0.00                   | 331.2        | 0.0       | 0.0         | 0.43             | 0.93        | 0.08               | -0.34             |
| D            | 73.3       | 0.00                   | 331.2        | 0.0       | 0.0         | 0.43             | 0.93        | 0.08               | -0.34             |

|   |      |      |       |     |      |      |      |       |
|---|------|------|-------|-----|------|------|------|-------|
| D | 73.3 | 0.00 | 330.6 | 0.0 | 0.50 | 1.03 | 0.08 | -0.35 |
| D | 60.0 | 0.00 | 330.6 | 0.0 | 0.50 | 1.03 | 0.08 | -0.35 |
| D | 60.0 | 0.00 | 332.4 | 0.0 | 0.41 | 1.05 | 0.09 | -0.32 |
| D | 53.3 | 0.00 | 332.4 | 0.0 | 0.41 | 1.05 | 0.09 | -0.32 |
| D | 53.3 | 0.00 | 331.8 | 0.0 | 0.48 | 1.05 | 0.09 | -0.33 |
| D | 40.0 | 0.00 | 331.8 | 0.0 | 0.48 | 1.05 | 0.09 | -0.33 |
| D | 40.0 | 0.00 | 333.5 | 0.0 | 0.38 | 1.17 | 0.09 | -0.28 |
| D | 33.3 | 0.00 | 333.5 | 0.0 | 0.38 | 1.17 | 0.09 | -0.28 |
| D | 33.3 | 0.00 | 333.0 | 0.0 | 0.45 | 1.33 | 0.09 | -0.30 |
| D | 20.0 | 0.00 | 333.0 | 0.0 | 0.45 | 1.33 | 0.09 | -0.30 |
| D | 20.0 | 0.00 | 334.6 | 0.0 | 0.34 | 1.19 | 0.09 | -0.26 |
| D | 13.3 | 0.00 | 334.6 | 0.0 | 0.34 | 1.19 | 0.09 | -0.26 |
| D | 13.3 | 0.00 | 334.1 | 0.0 | 0.41 | 1.40 | 0.09 | -0.26 |
| D | 0.0  | 0.00 | 334.1 | 0.0 | 0.41 | 1.40 | 0.09 | -0.26 |

ANTENNA LOADING

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| .....ANTENNA..... | ATTACHMENT |       |      |       | .....ANTENNA FORCES..... |       |         |         |
|-------------------|------------|-------|------|-------|--------------------------|-------|---------|---------|
| TYPE              | ELEV       | AZI   | RAD  | AZI   | AXIAL                    | SHEAR | GRAVITY | TORSION |
|                   | ft         |       | ft   |       | kip                      | kip   | kip     | ft-kip  |
| STD               | 300.0      | 60.0  | 10.2 | 120.0 | 1.78                     | -0.26 | 0.20    | 0.56    |
| STD               | 300.0      | 120.0 | 10.2 | 240.0 | -0.49                    | -0.49 | 0.20    | -0.93   |
| STD               | 300.0      | 180.0 | 10.2 | 120.0 | -1.14                    | 0.00  | 0.20    | 0.00    |
| STD               | 300.0      | 240.0 | 10.2 | 240.0 | -0.49                    | 0.49  | 0.20    | 0.93    |
| STD               | 300.0      | 0.0   | 10.2 | 0.0   | 1.68                     | 0.00  | 0.20    | 0.00    |
| STD               | 300.0      | 300.0 | 10.2 | 0.0   | 1.78                     | 0.26  | 0.20    | -0.56   |
| STD               | 293.0      | 0.0   | 10.6 | 0.0   | 1.67                     | 0.00  | 0.20    | 0.00    |
| STD               | 293.0      | 60.0  | 10.6 | 120.0 | 1.77                     | -0.26 | 0.20    | 0.56    |
| STD               | 293.0      | 120.0 | 10.6 | 240.0 | -0.49                    | -0.49 | 0.20    | -0.92   |
| STD               | 293.0      | 180.0 | 10.6 | 120.0 | -1.13                    | 0.00  | 0.20    | 0.00    |
| STD               | 293.0      | 300.0 | 10.6 | 0.0   | 1.77                     | 0.26  | 0.20    | -0.56   |
| STD               | 293.0      | 240.0 | 10.6 | 240.0 | -0.49                    | 0.49  | 0.20    | 0.92    |
| STD               | 286.0      | 0.0   | 11.0 | 0.0   | 1.66                     | 0.00  | 0.20    | 0.00    |
| STD               | 286.0      | 60.0  | 11.0 | 120.0 | 1.76                     | -0.26 | 0.20    | 0.56    |
| STD               | 286.0      | 120.0 | 11.0 | 240.0 | -0.49                    | -0.49 | 0.20    | -0.92   |
| STD               | 286.0      | 180.0 | 11.0 | 120.0 | -1.13                    | 0.00  | 0.20    | 0.00    |
| STD               | 286.0      | 240.0 | 11.0 | 240.0 | -0.49                    | 0.49  | 0.20    | 0.92    |
| STD               | 286.0      | 300.0 | 11.0 | 0.0   | 1.76                     | 0.26  | 0.20    | -0.56   |
| STD               | 279.0      | 60.0  | 11.4 | 120.0 | 1.75                     | -0.26 | 0.20    | 0.56    |
| STD               | 279.0      | 120.0 | 11.4 | 240.0 | -0.49                    | -0.49 | 0.20    | -0.91   |
| STD               | 279.0      | 180.0 | 11.4 | 120.0 | -1.12                    | 0.00  | 0.20    | 0.00    |
| STD               | 279.0      | 240.0 | 11.4 | 240.0 | -0.49                    | 0.49  | 0.20    | 0.91    |
| STD               | 279.0      | 300.0 | 11.4 | 0.0   | 1.75                     | 0.26  | 0.20    | -0.56   |
| STD               | 279.0      | 0.0   | 11.4 | 0.0   | 1.65                     | 0.00  | 0.20    | 0.00    |
| STD               | 272.0      | 60.0  | 11.8 | 120.0 | 1.75                     | -0.26 | 0.20    | 0.55    |
| STD               | 272.0      | 120.0 | 11.8 | 240.0 | -0.48                    | -0.48 | 0.20    | -0.91   |
| STD               | 272.0      | 180.0 | 11.8 | 120.0 | -1.12                    | 0.00  | 0.20    | 0.00    |
| STD               | 272.0      | 240.0 | 11.8 | 240.0 | -0.48                    | 0.48  | 0.20    | 0.91    |
| STD               | 272.0      | 300.0 | 11.8 | 0.0   | 1.75                     | 0.26  | 0.20    | -0.55   |
| STD               | 272.0      | 0.0   | 11.8 | 0.0   | 1.64                     | 0.00  | 0.20    | 0.00    |
| STD               | 265.0      | 60.0  | 12.2 | 120.0 | 1.74                     | -0.25 | 0.20    | 0.55    |
| STD               | 265.0      | 120.0 | 12.2 | 240.0 | -0.48                    | -0.48 | 0.20    | -0.90   |
| STD               | 265.0      | 240.0 | 12.2 | 240.0 | -0.48                    | 0.48  | 0.20    | 0.90    |
| STD               | 265.0      | 180.0 | 12.2 | 120.0 | -1.11                    | 0.00  | 0.20    | 0.00    |
| STD               | 265.0      | 300.0 | 12.2 | 0.0   | 1.74                     | 0.25  | 0.20    | -0.55   |
| STD               | 265.0      | 0.0   | 12.2 | 0.0   | 1.63                     | 0.00  | 0.20    | 0.00    |
| STD               | 258.0      | 60.0  | 12.6 | 120.0 | 1.73                     | -0.25 | 0.20    | 0.55    |
| STD               | 258.0      | 120.0 | 12.6 | 240.0 | -0.48                    | -0.48 | 0.20    | -0.90   |
| STD               | 258.0      | 180.0 | 12.6 | 120.0 | -1.10                    | 0.00  | 0.20    | 0.00    |
| STD               | 258.0      | 240.0 | 12.6 | 240.0 | -0.48                    | 0.48  | 0.20    | 0.90    |
| STD               | 258.0      | 300.0 | 12.6 | 0.0   | 1.73                     | 0.25  | 0.20    | -0.55   |
| STD               | 258.0      | 0.0   | 12.6 | 0.0   | 1.62                     | 0.00  | 0.20    | 0.00    |
| STD               | 251.0      | 240.0 | 13.0 | 240.0 | -0.48                    | 0.48  | 0.20    | 0.89    |
| STD               | 251.0      | 180.0 | 13.0 | 120.0 | -1.10                    | 0.00  | 0.20    | 0.00    |
| STD               | 251.0      | 120.0 | 13.0 | 240.0 | -0.48                    | -0.48 | 0.20    | -0.89   |
| STD               | 251.0      | 60.0  | 13.0 | 120.0 | 1.72                     | -0.25 | 0.20    | 0.54    |
| STD               | 251.0      | 0.0   | 13.0 | 0.0   | 1.62                     | 0.00  | 0.20    | 0.00    |

|     |       |       |      |       |       |       |      |       |
|-----|-------|-------|------|-------|-------|-------|------|-------|
| STD | 251.0 | 300.0 | 13.0 | 0.0   | 1.72  | 0.25  | 0.20 | -0.54 |
| STD | 244.0 | 60.0  | 13.4 | 120.0 | 1.71  | -0.25 | 0.20 | 0.54  |
| STD | 244.0 | 120.0 | 13.4 | 240.0 | -0.47 | -0.47 | 0.20 | -0.89 |
| STD | 244.0 | 180.0 | 13.4 | 120.0 | -1.09 | 0.00  | 0.20 | 0.00  |
| STD | 244.0 | 240.0 | 13.4 | 240.0 | -0.47 | 0.47  | 0.20 | 0.89  |
| STD | 244.0 | 300.0 | 13.4 | 0.0   | 1.71  | 0.25  | 0.20 | -0.54 |
| STD | 244.0 | 0.0   | 13.4 | 0.0   | 1.61  | 0.00  | 0.20 | 0.00  |
| STD | 237.0 | 120.0 | 13.8 | 240.0 | -0.47 | -0.47 | 0.20 | -0.88 |
| STD | 237.0 | 60.0  | 13.8 | 120.0 | 1.70  | -0.25 | 0.20 | 0.54  |
| STD | 237.0 | 180.0 | 13.8 | 120.0 | -1.09 | 0.00  | 0.20 | 0.00  |
| STD | 237.0 | 240.0 | 13.8 | 240.0 | -0.47 | 0.47  | 0.20 | 0.88  |
| STD | 237.0 | 300.0 | 13.8 | 0.0   | 1.70  | 0.25  | 0.20 | -0.54 |
| STD | 237.0 | 0.0   | 13.8 | 0.0   | 1.60  | 0.00  | 0.20 | 0.00  |
| STD | 230.0 | 60.0  | 14.2 | 120.0 | 1.68  | -0.25 | 0.20 | 0.53  |
| STD | 230.0 | 120.0 | 14.2 | 240.0 | -0.47 | -0.47 | 0.20 | -0.88 |
| STD | 230.0 | 180.0 | 14.2 | 120.0 | -1.08 | 0.00  | 0.20 | 0.00  |
| STD | 230.0 | 240.0 | 14.2 | 240.0 | -0.47 | 0.47  | 0.20 | 0.88  |
| STD | 230.0 | 300.0 | 14.2 | 0.0   | 1.68  | 0.25  | 0.20 | -0.53 |
| STD | 230.0 | 0.0   | 14.2 | 0.0   | 1.59  | 0.00  | 0.20 | 0.00  |
| STD | 223.0 | 60.0  | 14.6 | 120.0 | 1.67  | -0.25 | 0.20 | 0.53  |
| STD | 223.0 | 120.0 | 14.6 | 240.0 | -0.46 | -0.46 | 0.20 | -0.87 |
| STD | 223.0 | 180.0 | 14.6 | 120.0 | -1.07 | 0.00  | 0.20 | 0.00  |
| STD | 223.0 | 240.0 | 14.6 | 240.0 | -0.46 | 0.46  | 0.20 | 0.87  |
| STD | 223.0 | 300.0 | 14.6 | 0.0   | 1.67  | 0.25  | 0.20 | -0.53 |
| STD | 223.0 | 0.0   | 14.6 | 0.0   | 1.58  | 0.00  | 0.20 | 0.00  |
| STD | 216.0 | 120.0 | 15.0 | 240.0 | -0.46 | -0.46 | 0.20 | -0.87 |
| STD | 216.0 | 180.0 | 15.0 | 120.0 | -1.06 | 0.00  | 0.20 | 0.00  |
| STD | 216.0 | 240.0 | 15.0 | 240.0 | -0.46 | 0.46  | 0.20 | 0.87  |
| STD | 216.0 | 300.0 | 15.0 | 0.0   | 1.66  | 0.24  | 0.20 | -0.53 |
| STD | 216.0 | 0.0   | 15.0 | 0.0   | 1.56  | 0.00  | 0.20 | 0.00  |
| STD | 216.0 | 60.0  | 15.0 | 120.0 | 1.66  | -0.24 | 0.20 | 0.53  |
| STD | 209.0 | 120.0 | 15.4 | 240.0 | -0.46 | -0.46 | 0.20 | -0.86 |
| STD | 209.0 | 180.0 | 15.4 | 120.0 | -1.06 | 0.00  | 0.20 | 0.00  |
| STD | 209.0 | 240.0 | 15.4 | 240.0 | -0.46 | 0.46  | 0.20 | 0.86  |
| STD | 209.0 | 300.0 | 15.4 | 0.0   | 1.65  | 0.24  | 0.20 | -0.52 |
| STD | 209.0 | 60.0  | 15.4 | 120.0 | 1.65  | -0.24 | 0.20 | 0.52  |
| STD | 209.0 | 0.0   | 15.4 | 0.0   | 1.55  | 0.00  | 0.20 | 0.00  |
| STD | 202.0 | 60.0  | 15.8 | 120.0 | 1.64  | -0.24 | 0.20 | 0.52  |
| STD | 202.0 | 120.0 | 15.8 | 240.0 | -0.46 | -0.46 | 0.20 | -0.85 |
| STD | 202.0 | 180.0 | 15.8 | 120.0 | -1.05 | 0.00  | 0.20 | 0.00  |
| STD | 202.0 | 240.0 | 15.8 | 240.0 | -0.46 | 0.46  | 0.20 | 0.85  |
| STD | 202.0 | 0.0   | 15.8 | 0.0   | 1.54  | 0.00  | 0.20 | 0.00  |
| STD | 202.0 | 300.0 | 15.8 | 0.0   | 1.64  | 0.24  | 0.20 | -0.52 |

=====  
LOADING CONDITION M =====

90 mph Nominal wind with no ice. Wind Azimuth: 0° (0.9 D + 1.6 Wo)

MAST LOADING  
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| LOAD TYPE | ELEV<br>ft | APPLY.<br>RADIUS<br>ft | LOAD.<br>AZI | AT<br>AZI | .....FORCES..... |             | .....MOMENTS.....  |                   |
|-----------|------------|------------------------|--------------|-----------|------------------|-------------|--------------------|-------------------|
|           |            |                        |              |           | HORIZ<br>kip     | DOWN<br>kip | VERTICAL<br>ft-kip | TORSNAL<br>ft-kip |
| C         | 300.0      | 0.00                   | 0.0          | 0.0       | 3.06             | 4.28        | 0.00               | 0.00              |
| C         | 300.0      | 0.00                   | 0.0          | 0.0       | 0.15             | 0.18        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                   | 0.0          | 0.0       | 2.94             | 2.70        | 0.00               | 0.00              |
| C         | 286.0      | 0.00                   | 0.0          | 0.0       | 3.03             | 2.82        | 0.00               | 0.00              |
| C         | 279.0      | 0.00                   | 0.0          | 0.0       | 3.12             | 2.92        | 0.00               | 0.00              |
| C         | 272.0      | 0.00                   | 0.0          | 0.0       | 3.21             | 3.01        | 0.00               | 0.00              |
| C         | 265.0      | 0.00                   | 0.0          | 0.0       | 3.29             | 3.11        | 0.00               | 0.00              |
| C         | 258.0      | 0.00                   | 0.0          | 0.0       | 3.38             | 3.19        | 0.00               | 0.00              |
| C         | 251.0      | 0.00                   | 0.0          | 0.0       | 3.46             | 3.29        | 0.00               | 0.00              |
| C         | 244.0      | 0.00                   | 0.0          | 0.0       | 4.96             | 5.99        | 0.00               | 0.00              |
| C         | 237.0      | 0.00                   | 0.0          | 0.0       | 5.06             | 6.12        | 0.00               | 0.00              |

|   |       |      |       |     |      |      |      |       |
|---|-------|------|-------|-----|------|------|------|-------|
| C | 230.0 | 0.00 | 0.0   | 0.0 | 5.17 | 6.30 | 0.00 | 0.00  |
| C | 223.0 | 0.00 | 0.0   | 0.0 | 5.27 | 6.43 | 0.00 | 0.00  |
| C | 216.0 | 0.00 | 0.0   | 0.0 | 5.37 | 6.61 | 0.00 | 0.00  |
| C | 209.0 | 0.00 | 0.0   | 0.0 | 5.46 | 6.75 | 0.00 | 0.00  |
| C | 202.0 | 0.00 | 0.0   | 0.0 | 5.55 | 6.93 | 0.00 | 0.00  |
|   |       |      |       |     |      |      |      |       |
| D | 300.0 | 0.00 | 306.8 | 0.0 | 0.27 | 0.17 | 0.09 | -0.35 |
| D | 290.0 | 0.00 | 306.8 | 0.0 | 0.27 | 0.17 | 0.09 | -0.35 |
| D | 290.0 | 0.00 | 308.2 | 0.0 | 0.26 | 0.13 | 0.15 | -0.52 |
| D | 280.0 | 0.00 | 308.2 | 0.0 | 0.26 | 0.13 | 0.15 | -0.52 |
| D | 280.0 | 0.00 | 310.5 | 0.0 | 0.30 | 0.19 | 0.22 | -0.58 |
| D | 270.0 | 0.00 | 310.5 | 0.0 | 0.30 | 0.19 | 0.22 | -0.58 |
| D | 270.0 | 0.00 | 317.5 | 0.0 | 0.31 | 0.20 | 0.25 | -0.52 |
| D | 260.0 | 0.00 | 317.5 | 0.0 | 0.31 | 0.20 | 0.25 | -0.52 |
| D | 260.0 | 0.00 | 334.1 | 0.0 | 0.35 | 0.26 | 0.23 | -0.43 |
| D | 250.0 | 0.00 | 334.1 | 0.0 | 0.35 | 0.26 | 0.23 | -0.43 |
| D | 250.0 | 0.00 | 352.6 | 0.0 | 0.36 | 0.27 | 0.24 | -0.37 |
| D | 240.0 | 0.00 | 352.6 | 0.0 | 0.36 | 0.27 | 0.24 | -0.37 |
| D | 240.0 | 0.00 | 6.6   | 0.0 | 0.40 | 0.40 | 0.25 | -0.37 |
| D | 230.0 | 0.00 | 6.6   | 0.0 | 0.40 | 0.40 | 0.25 | -0.37 |
| D | 230.0 | 0.00 | 8.1   | 0.0 | 0.42 | 0.42 | 0.20 | -0.40 |
| D | 220.0 | 0.00 | 8.1   | 0.0 | 0.42 | 0.42 | 0.20 | -0.40 |
| D | 220.0 | 0.00 | 4.9   | 0.0 | 0.43 | 0.41 | 0.14 | -0.41 |
| D | 210.0 | 0.00 | 4.9   | 0.0 | 0.43 | 0.41 | 0.14 | -0.41 |
| D | 210.0 | 0.00 | 349.5 | 0.0 | 0.43 | 0.43 | 0.07 | -0.42 |
| D | 200.0 | 0.00 | 349.5 | 0.0 | 0.43 | 0.43 | 0.07 | -0.42 |
| D | 200.0 | 0.00 | 321.2 | 0.0 | 0.46 | 0.53 | 0.05 | -0.43 |
| D | 180.0 | 0.00 | 320.1 | 0.0 | 0.47 | 0.54 | 0.05 | -0.43 |
| D | 180.0 | 0.00 | 323.4 | 0.0 | 0.42 | 0.52 | 0.05 | -0.42 |
| D | 173.3 | 0.00 | 323.4 | 0.0 | 0.42 | 0.52 | 0.05 | -0.42 |
| D | 173.3 | 0.00 | 322.4 | 0.0 | 0.48 | 0.59 | 0.05 | -0.42 |
| D | 160.0 | 0.00 | 322.4 | 0.0 | 0.48 | 0.59 | 0.05 | -0.42 |
| D | 160.0 | 0.00 | 325.2 | 0.0 | 0.42 | 0.53 | 0.05 | -0.41 |
| D | 153.3 | 0.00 | 325.2 | 0.0 | 0.42 | 0.53 | 0.05 | -0.41 |
| D | 153.3 | 0.00 | 324.3 | 0.0 | 0.47 | 0.55 | 0.05 | -0.41 |
| D | 140.0 | 0.00 | 324.3 | 0.0 | 0.47 | 0.55 | 0.05 | -0.41 |
| D | 140.0 | 0.00 | 326.9 | 0.0 | 0.43 | 0.57 | 0.06 | -0.39 |
| D | 133.3 | 0.00 | 326.9 | 0.0 | 0.43 | 0.57 | 0.06 | -0.39 |
| D | 133.3 | 0.00 | 326.1 | 0.0 | 0.49 | 0.61 | 0.05 | -0.40 |
| D | 120.0 | 0.00 | 326.1 | 0.0 | 0.49 | 0.61 | 0.05 | -0.40 |
| D | 120.0 | 0.00 | 328.5 | 0.0 | 0.43 | 0.61 | 0.06 | -0.38 |
| D | 113.3 | 0.00 | 328.5 | 0.0 | 0.43 | 0.61 | 0.06 | -0.38 |
| D | 113.3 | 0.00 | 327.7 | 0.0 | 0.50 | 0.66 | 0.06 | -0.39 |
| D | 100.0 | 0.00 | 327.7 | 0.0 | 0.50 | 0.66 | 0.06 | -0.39 |
| D | 100.0 | 0.00 | 329.9 | 0.0 | 0.44 | 0.65 | 0.06 | -0.36 |
| D | 93.3  | 0.00 | 329.9 | 0.0 | 0.44 | 0.65 | 0.06 | -0.36 |
| D | 93.3  | 0.00 | 329.2 | 0.0 | 0.50 | 0.71 | 0.06 | -0.37 |
| D | 80.0  | 0.00 | 329.2 | 0.0 | 0.50 | 0.71 | 0.06 | -0.37 |
| D | 80.0  | 0.00 | 331.2 | 0.0 | 0.43 | 0.70 | 0.06 | -0.34 |
| D | 73.3  | 0.00 | 331.2 | 0.0 | 0.43 | 0.70 | 0.06 | -0.34 |
| D | 73.3  | 0.00 | 330.6 | 0.0 | 0.50 | 0.77 | 0.06 | -0.35 |
| D | 60.0  | 0.00 | 330.6 | 0.0 | 0.50 | 0.77 | 0.06 | -0.35 |
| D | 60.0  | 0.00 | 332.4 | 0.0 | 0.41 | 0.79 | 0.07 | -0.32 |
| D | 53.3  | 0.00 | 332.4 | 0.0 | 0.41 | 0.79 | 0.07 | -0.32 |
| D | 53.3  | 0.00 | 331.8 | 0.0 | 0.48 | 0.79 | 0.06 | -0.33 |
| D | 40.0  | 0.00 | 331.8 | 0.0 | 0.48 | 0.79 | 0.06 | -0.33 |
| D | 40.0  | 0.00 | 333.5 | 0.0 | 0.38 | 0.88 | 0.07 | -0.28 |
| D | 33.3  | 0.00 | 333.5 | 0.0 | 0.38 | 0.88 | 0.07 | -0.28 |
| D | 33.3  | 0.00 | 333.0 | 0.0 | 0.45 | 1.00 | 0.07 | -0.30 |
| D | 20.0  | 0.00 | 333.0 | 0.0 | 0.45 | 1.00 | 0.07 | -0.30 |
| D | 20.0  | 0.00 | 334.6 | 0.0 | 0.34 | 0.90 | 0.07 | -0.26 |
| D | 13.3  | 0.00 | 334.6 | 0.0 | 0.34 | 0.90 | 0.07 | -0.26 |
| D | 13.3  | 0.00 | 334.1 | 0.0 | 0.41 | 1.05 | 0.07 | -0.26 |
| D | 0.0   | 0.00 | 334.1 | 0.0 | 0.41 | 1.05 | 0.07 | -0.26 |

ANTENNA LOADING

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.....ANTENNA..... ATTACHMENT .....ANTENNA FORCES.....

| TYPE | ELEV<br>ft | AZI   | RAD<br>ft | AZI   | AXIAL<br>kip | SHEAR<br>kip | GRAVITY<br>kip | TORSION<br>ft-kip |
|------|------------|-------|-----------|-------|--------------|--------------|----------------|-------------------|
| STD  | 300.0      | 60.0  | 10.2      | 120.0 | 1.78         | -0.26        | 0.15           | 0.56              |
| STD  | 300.0      | 120.0 | 10.2      | 240.0 | -0.49        | -0.49        | 0.15           | -0.93             |
| STD  | 300.0      | 180.0 | 10.2      | 120.0 | -1.14        | 0.00         | 0.15           | 0.00              |
| STD  | 300.0      | 240.0 | 10.2      | 240.0 | -0.49        | 0.49         | 0.15           | 0.93              |
| STD  | 300.0      | 0.0   | 10.2      | 0.0   | 1.68         | 0.00         | 0.15           | 0.00              |
| STD  | 300.0      | 300.0 | 10.2      | 0.0   | 1.78         | 0.26         | 0.15           | -0.56             |
| STD  | 293.0      | 0.0   | 10.6      | 0.0   | 1.67         | 0.00         | 0.15           | 0.00              |
| STD  | 293.0      | 60.0  | 10.6      | 120.0 | 1.77         | -0.26        | 0.15           | 0.56              |
| STD  | 293.0      | 120.0 | 10.6      | 240.0 | -0.49        | -0.49        | 0.15           | -0.92             |
| STD  | 293.0      | 180.0 | 10.6      | 120.0 | -1.13        | 0.00         | 0.15           | 0.00              |
| STD  | 293.0      | 300.0 | 10.6      | 0.0   | 1.77         | 0.26         | 0.15           | -0.56             |
| STD  | 293.0      | 240.0 | 10.6      | 240.0 | -0.49        | 0.49         | 0.15           | 0.92              |
| STD  | 286.0      | 0.0   | 11.0      | 0.0   | 1.66         | 0.00         | 0.15           | 0.00              |
| STD  | 286.0      | 60.0  | 11.0      | 120.0 | 1.76         | -0.26        | 0.15           | 0.56              |
| STD  | 286.0      | 120.0 | 11.0      | 240.0 | -0.49        | -0.49        | 0.15           | -0.92             |
| STD  | 286.0      | 180.0 | 11.0      | 120.0 | -1.13        | 0.00         | 0.15           | 0.00              |
| STD  | 286.0      | 240.0 | 11.0      | 240.0 | -0.49        | 0.49         | 0.15           | 0.92              |
| STD  | 286.0      | 300.0 | 11.0      | 0.0   | 1.76         | 0.26         | 0.15           | -0.56             |
| STD  | 279.0      | 60.0  | 11.4      | 120.0 | 1.75         | -0.26        | 0.15           | 0.56              |
| STD  | 279.0      | 120.0 | 11.4      | 240.0 | -0.49        | -0.49        | 0.15           | -0.91             |
| STD  | 279.0      | 180.0 | 11.4      | 120.0 | -1.12        | 0.00         | 0.15           | 0.00              |
| STD  | 279.0      | 240.0 | 11.4      | 240.0 | -0.49        | 0.49         | 0.15           | 0.91              |
| STD  | 279.0      | 300.0 | 11.4      | 0.0   | 1.75         | 0.26         | 0.15           | -0.56             |
| STD  | 279.0      | 0.0   | 11.4      | 0.0   | 1.65         | 0.00         | 0.15           | 0.00              |
| STD  | 272.0      | 60.0  | 11.8      | 120.0 | 1.75         | -0.26        | 0.15           | 0.55              |
| STD  | 272.0      | 120.0 | 11.8      | 240.0 | -0.48        | -0.48        | 0.15           | -0.91             |
| STD  | 272.0      | 180.0 | 11.8      | 120.0 | -1.12        | 0.00         | 0.15           | 0.00              |
| STD  | 272.0      | 240.0 | 11.8      | 240.0 | -0.48        | 0.48         | 0.15           | 0.91              |
| STD  | 272.0      | 300.0 | 11.8      | 0.0   | 1.75         | 0.26         | 0.15           | -0.55             |
| STD  | 272.0      | 0.0   | 11.8      | 0.0   | 1.64         | 0.00         | 0.15           | 0.00              |
| STD  | 265.0      | 60.0  | 12.2      | 120.0 | 1.74         | -0.25        | 0.15           | 0.55              |
| STD  | 265.0      | 120.0 | 12.2      | 240.0 | -0.48        | -0.48        | 0.15           | -0.90             |
| STD  | 265.0      | 240.0 | 12.2      | 240.0 | -0.48        | 0.48         | 0.15           | 0.90              |
| STD  | 265.0      | 180.0 | 12.2      | 120.0 | -1.11        | 0.00         | 0.15           | 0.00              |
| STD  | 265.0      | 300.0 | 12.2      | 0.0   | 1.74         | 0.25         | 0.15           | -0.55             |
| STD  | 265.0      | 0.0   | 12.2      | 0.0   | 1.63         | 0.00         | 0.15           | 0.00              |
| STD  | 258.0      | 60.0  | 12.6      | 120.0 | 1.73         | -0.25        | 0.15           | 0.55              |
| STD  | 258.0      | 120.0 | 12.6      | 240.0 | -0.48        | -0.48        | 0.15           | -0.90             |
| STD  | 258.0      | 180.0 | 12.6      | 120.0 | -1.10        | 0.00         | 0.15           | 0.00              |
| STD  | 258.0      | 240.0 | 12.6      | 240.0 | -0.48        | 0.48         | 0.15           | 0.90              |
| STD  | 258.0      | 300.0 | 12.6      | 0.0   | 1.73         | 0.25         | 0.15           | -0.55             |
| STD  | 258.0      | 0.0   | 12.6      | 0.0   | 1.62         | 0.00         | 0.15           | 0.00              |
| STD  | 251.0      | 240.0 | 13.0      | 240.0 | -0.48        | 0.48         | 0.15           | 0.89              |
| STD  | 251.0      | 180.0 | 13.0      | 120.0 | -1.10        | 0.00         | 0.15           | 0.00              |
| STD  | 251.0      | 120.0 | 13.0      | 240.0 | -0.48        | -0.48        | 0.15           | -0.89             |
| STD  | 251.0      | 60.0  | 13.0      | 120.0 | 1.72         | -0.25        | 0.15           | 0.54              |
| STD  | 251.0      | 0.0   | 13.0      | 0.0   | 1.62         | 0.00         | 0.15           | 0.00              |
| STD  | 251.0      | 300.0 | 13.0      | 0.0   | 1.72         | 0.25         | 0.15           | -0.54             |
| STD  | 244.0      | 60.0  | 13.4      | 120.0 | 1.71         | -0.25        | 0.15           | 0.54              |
| STD  | 244.0      | 120.0 | 13.4      | 240.0 | -0.47        | -0.47        | 0.15           | -0.89             |
| STD  | 244.0      | 180.0 | 13.4      | 120.0 | -1.09        | 0.00         | 0.15           | 0.00              |
| STD  | 244.0      | 240.0 | 13.4      | 240.0 | -0.47        | 0.47         | 0.15           | 0.89              |
| STD  | 244.0      | 300.0 | 13.4      | 0.0   | 1.71         | 0.25         | 0.15           | -0.54             |
| STD  | 244.0      | 0.0   | 13.4      | 0.0   | 1.61         | 0.00         | 0.15           | 0.00              |
| STD  | 237.0      | 120.0 | 13.8      | 240.0 | -0.47        | -0.47        | 0.15           | -0.88             |
| STD  | 237.0      | 60.0  | 13.8      | 120.0 | 1.70         | -0.25        | 0.15           | 0.54              |
| STD  | 237.0      | 180.0 | 13.8      | 120.0 | -1.09        | 0.00         | 0.15           | 0.00              |
| STD  | 237.0      | 240.0 | 13.8      | 240.0 | -0.47        | 0.47         | 0.15           | 0.88              |
| STD  | 237.0      | 300.0 | 13.8      | 0.0   | 1.70         | 0.25         | 0.15           | -0.54             |
| STD  | 237.0      | 0.0   | 13.8      | 0.0   | 1.60         | 0.00         | 0.15           | 0.00              |
| STD  | 230.0      | 60.0  | 14.2      | 120.0 | 1.68         | -0.25        | 0.15           | 0.53              |
| STD  | 230.0      | 120.0 | 14.2      | 240.0 | -0.47        | -0.47        | 0.15           | -0.88             |
| STD  | 230.0      | 180.0 | 14.2      | 120.0 | -1.08        | 0.00         | 0.15           | 0.00              |
| STD  | 230.0      | 240.0 | 14.2      | 240.0 | -0.47        | 0.47         | 0.15           | 0.88              |
| STD  | 230.0      | 300.0 | 14.2      | 0.0   | 1.68         | 0.25         | 0.15           | -0.53             |
| STD  | 230.0      | 0.0   | 14.2      | 0.0   | 1.59         | 0.00         | 0.15           | 0.00              |

|     |       |       |      |       |       |       |      |       |
|-----|-------|-------|------|-------|-------|-------|------|-------|
| STD | 223.0 | 60.0  | 14.6 | 120.0 | 1.67  | -0.25 | 0.15 | 0.53  |
| STD | 223.0 | 120.0 | 14.6 | 240.0 | -0.46 | -0.46 | 0.15 | -0.87 |
| STD | 223.0 | 180.0 | 14.6 | 120.0 | -1.07 | 0.00  | 0.15 | 0.00  |
| STD | 223.0 | 240.0 | 14.6 | 240.0 | -0.46 | 0.46  | 0.15 | 0.87  |
| STD | 223.0 | 300.0 | 14.6 | 0.0   | 1.67  | 0.25  | 0.15 | -0.53 |
| STD | 223.0 | 0.0   | 14.6 | 0.0   | 1.58  | 0.00  | 0.15 | 0.00  |
| STD | 216.0 | 120.0 | 15.0 | 240.0 | -0.46 | -0.46 | 0.15 | -0.87 |
| STD | 216.0 | 180.0 | 15.0 | 120.0 | -1.06 | 0.00  | 0.15 | 0.00  |
| STD | 216.0 | 240.0 | 15.0 | 240.0 | -0.46 | 0.46  | 0.15 | 0.87  |
| STD | 216.0 | 300.0 | 15.0 | 0.0   | 1.66  | 0.24  | 0.15 | -0.53 |
| STD | 216.0 | 0.0   | 15.0 | 0.0   | 1.56  | 0.00  | 0.15 | 0.00  |
| STD | 216.0 | 60.0  | 15.0 | 120.0 | 1.66  | -0.24 | 0.15 | 0.53  |
| STD | 209.0 | 120.0 | 15.4 | 240.0 | -0.46 | -0.46 | 0.15 | -0.86 |
| STD | 209.0 | 180.0 | 15.4 | 120.0 | -1.06 | 0.00  | 0.15 | 0.00  |
| STD | 209.0 | 240.0 | 15.4 | 240.0 | -0.46 | 0.46  | 0.15 | 0.86  |
| STD | 209.0 | 300.0 | 15.4 | 0.0   | 1.65  | 0.24  | 0.15 | -0.52 |
| STD | 209.0 | 60.0  | 15.4 | 120.0 | 1.65  | -0.24 | 0.15 | 0.52  |
| STD | 209.0 | 0.0   | 15.4 | 0.0   | 1.55  | 0.00  | 0.15 | 0.00  |
| STD | 202.0 | 60.0  | 15.8 | 120.0 | 1.64  | -0.24 | 0.15 | 0.52  |
| STD | 202.0 | 120.0 | 15.8 | 240.0 | -0.46 | -0.46 | 0.15 | -0.85 |
| STD | 202.0 | 180.0 | 15.8 | 120.0 | -1.05 | 0.00  | 0.15 | 0.00  |
| STD | 202.0 | 240.0 | 15.8 | 240.0 | -0.46 | 0.46  | 0.15 | 0.85  |
| STD | 202.0 | 0.0   | 15.8 | 0.0   | 1.54  | 0.00  | 0.15 | 0.00  |
| STD | 202.0 | 300.0 | 15.8 | 0.0   | 1.64  | 0.24  | 0.15 | -0.52 |

=====

LOADING CONDITION Y =====

40 mph wind with 0.75 ice. Wind Azimuth: 00 (1.2 D + 1.0 Di + 1.0 Wi)

MAST LOADING

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| LOAD TYPE | ELEV<br>ft | APPLY.<br>RADIUS<br>ft | LOAD.<br>AZI | AT<br>AZI | .....FORCES..... |             | .....MOMENTS.....  |                   |
|-----------|------------|------------------------|--------------|-----------|------------------|-------------|--------------------|-------------------|
|           |            |                        |              |           | HORIZ<br>kip     | DOWN<br>kip | VERTICAL<br>ft-kip | TORSNAL<br>ft-kip |
| C         | 300.0      | 0.00                   | 0.0          | 0.0       | 0.61             | 12.81       | 0.00               | 0.00              |
| C         | 300.0      | 0.00                   | 0.0          | 0.0       | 0.04             | 1.18        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                   | 0.0          | 0.0       | 0.50             | 8.08        | 0.00               | 0.00              |
| C         | 286.0      | 0.00                   | 0.0          | 0.0       | 0.52             | 8.48        | 0.00               | 0.00              |
| C         | 279.0      | 0.00                   | 0.0          | 0.0       | 0.54             | 8.57        | 0.00               | 0.00              |
| C         | 272.0      | 0.00                   | 0.0          | 0.0       | 0.55             | 9.05        | 0.00               | 0.00              |
| C         | 265.0      | 0.00                   | 0.0          | 0.0       | 0.54             | 9.13        | 0.00               | 0.00              |
| C         | 258.0      | 0.00                   | 0.0          | 0.0       | 0.58             | 9.60        | 0.00               | 0.00              |
| C         | 251.0      | 0.00                   | 0.0          | 0.0       | 0.59             | 10.81       | 0.00               | 0.00              |
| C         | 244.0      | 0.00                   | 0.0          | 0.0       | 0.79             | 17.69       | 0.00               | 0.00              |
| C         | 237.0      | 0.00                   | 0.0          | 0.0       | 0.81             | 18.21       | 0.00               | 0.00              |
| C         | 230.0      | 0.00                   | 0.0          | 0.0       | 0.82             | 18.60       | 0.00               | 0.00              |
| C         | 223.0      | 0.00                   | 0.0          | 0.0       | 0.83             | 18.93       | 0.00               | 0.00              |
| C         | 216.0      | 0.00                   | 0.0          | 0.0       | 0.85             | 19.50       | 0.00               | 0.00              |
| C         | 209.0      | 0.00                   | 0.0          | 0.0       | 0.86             | 19.82       | 0.00               | 0.00              |
| C         | 202.0      | 0.00                   | 0.0          | 0.0       | 0.88             | 20.39       | 0.00               | 0.00              |
| D         | 300.0      | 0.00                   | 306.9        | 0.0       | 0.06             | 0.62        | 0.54               | -0.08             |
| D         | 290.0      | 0.00                   | 306.9        | 0.0       | 0.06             | 0.62        | 0.54               | -0.08             |
| D         | 290.0      | 0.00                   | 308.2        | 0.0       | 0.05             | 0.52        | 0.83               | -0.08             |
| D         | 280.0      | 0.00                   | 308.2        | 0.0       | 0.05             | 0.52        | 0.83               | -0.08             |
| D         | 280.0      | 0.00                   | 311.1        | 0.0       | 0.06             | 0.64        | 1.05               | -0.08             |
| D         | 270.0      | 0.00                   | 311.1        | 0.0       | 0.06             | 0.64        | 1.05               | -0.08             |
| D         | 270.0      | 0.00                   | 321.8        | 0.0       | 0.06             | 0.69        | 1.07               | -0.08             |
| D         | 260.0      | 0.00                   | 321.8        | 0.0       | 0.06             | 0.69        | 1.07               | -0.08             |
| D         | 260.0      | 0.00                   | 341.9        | 0.0       | 0.06             | 0.84        | 1.04               | -0.07             |
| D         | 250.0      | 0.00                   | 341.9        | 0.0       | 0.06             | 0.84        | 1.04               | -0.07             |
| D         | 250.0      | 0.00                   | 358.8        | 0.0       | 0.06             | 0.89        | 1.09               | -0.07             |
| D         | 240.0      | 0.00                   | 358.8        | 0.0       | 0.06             | 0.89        | 1.09               | -0.07             |
| D         | 240.0      | 0.00                   | 6.9          | 0.0       | 0.07             | 1.15        | 1.09               | -0.07             |



|   |       |      |       |     |      |      |      |       |
|---|-------|------|-------|-----|------|------|------|-------|
| D | 230.0 | 0.00 | 6.9   | 0.0 | 0.07 | 1.15 | 1.09 | -0.07 |
| D | 230.0 | 0.00 | 5.9   | 0.0 | 0.07 | 1.22 | 0.75 | -0.07 |
| D | 220.0 | 0.00 | 5.9   | 0.0 | 0.07 | 1.22 | 0.75 | -0.07 |
| D | 220.0 | 0.00 | 359.0 | 0.0 | 0.07 | 1.24 | 0.45 | -0.07 |
| D | 210.0 | 0.00 | 359.0 | 0.0 | 0.07 | 1.24 | 0.45 | -0.07 |
| D | 210.0 | 0.00 | 338.8 | 0.0 | 0.07 | 1.29 | 0.26 | -0.07 |
| D | 200.0 | 0.00 | 338.8 | 0.0 | 0.07 | 1.29 | 0.26 | -0.07 |
| D | 200.0 | 0.00 | 321.2 | 0.0 | 0.07 | 1.46 | 0.30 | -0.08 |
| D | 180.0 | 0.00 | 320.1 | 0.0 | 0.08 | 1.49 | 0.29 | -0.08 |
| D | 180.0 | 0.00 | 323.4 | 0.0 | 0.07 | 1.39 | 0.31 | -0.07 |
| D | 173.3 | 0.00 | 323.4 | 0.0 | 0.07 | 1.39 | 0.31 | -0.07 |
| D | 173.3 | 0.00 | 322.4 | 0.0 | 0.08 | 1.67 | 0.30 | -0.07 |
| D | 160.0 | 0.00 | 322.4 | 0.0 | 0.08 | 1.67 | 0.30 | -0.07 |
| D | 160.0 | 0.00 | 325.2 | 0.0 | 0.07 | 1.42 | 0.32 | -0.07 |
| D | 153.3 | 0.00 | 325.2 | 0.0 | 0.07 | 1.42 | 0.32 | -0.07 |
| D | 153.3 | 0.00 | 324.3 | 0.0 | 0.08 | 1.62 | 0.31 | -0.07 |
| D | 140.0 | 0.00 | 324.3 | 0.0 | 0.08 | 1.62 | 0.31 | -0.07 |
| D | 140.0 | 0.00 | 326.9 | 0.0 | 0.07 | 1.48 | 0.33 | -0.07 |
| D | 133.3 | 0.00 | 326.9 | 0.0 | 0.07 | 1.48 | 0.33 | -0.07 |
| D | 133.3 | 0.00 | 326.1 | 0.0 | 0.08 | 1.74 | 0.32 | -0.07 |
| D | 120.0 | 0.00 | 326.1 | 0.0 | 0.08 | 1.74 | 0.32 | -0.07 |
| D | 120.0 | 0.00 | 328.5 | 0.0 | 0.07 | 1.55 | 0.34 | -0.07 |
| D | 113.3 | 0.00 | 328.5 | 0.0 | 0.07 | 1.55 | 0.34 | -0.07 |
| D | 113.3 | 0.00 | 327.7 | 0.0 | 0.08 | 1.82 | 0.33 | -0.07 |
| D | 100.0 | 0.00 | 327.7 | 0.0 | 0.08 | 1.82 | 0.33 | -0.07 |
| D | 100.0 | 0.00 | 329.9 | 0.0 | 0.07 | 1.63 | 0.35 | -0.06 |
| D | 93.3  | 0.00 | 329.9 | 0.0 | 0.07 | 1.63 | 0.35 | -0.06 |
| D | 93.3  | 0.00 | 329.2 | 0.0 | 0.08 | 1.93 | 0.34 | -0.06 |
| D | 80.0  | 0.00 | 329.2 | 0.0 | 0.08 | 1.93 | 0.34 | -0.06 |
| D | 80.0  | 0.00 | 331.2 | 0.0 | 0.07 | 1.69 | 0.35 | -0.06 |
| D | 73.3  | 0.00 | 331.2 | 0.0 | 0.07 | 1.69 | 0.35 | -0.06 |
| D | 73.3  | 0.00 | 330.6 | 0.0 | 0.08 | 2.02 | 0.35 | -0.06 |
| D | 60.0  | 0.00 | 330.6 | 0.0 | 0.08 | 2.02 | 0.35 | -0.06 |
| D | 60.0  | 0.00 | 332.4 | 0.0 | 0.07 | 1.81 | 0.35 | -0.05 |
| D | 53.3  | 0.00 | 332.4 | 0.0 | 0.07 | 1.81 | 0.35 | -0.05 |
| D | 53.3  | 0.00 | 331.8 | 0.0 | 0.08 | 2.03 | 0.35 | -0.06 |
| D | 40.0  | 0.00 | 331.8 | 0.0 | 0.08 | 2.03 | 0.35 | -0.06 |
| D | 40.0  | 0.00 | 333.6 | 0.0 | 0.06 | 1.90 | 0.35 | -0.05 |
| D | 33.3  | 0.00 | 333.6 | 0.0 | 0.06 | 1.90 | 0.35 | -0.05 |
| D | 33.3  | 0.00 | 333.0 | 0.0 | 0.07 | 2.31 | 0.35 | -0.05 |
| D | 20.0  | 0.00 | 333.0 | 0.0 | 0.07 | 2.31 | 0.35 | -0.05 |
| D | 20.0  | 0.00 | 334.6 | 0.0 | 0.05 | 1.68 | 0.14 | -0.03 |
| D | 13.3  | 0.00 | 334.6 | 0.0 | 0.05 | 1.68 | 0.14 | -0.03 |
| D | 13.3  | 0.00 | 334.1 | 0.0 | 0.06 | 2.20 | 0.26 | -0.04 |
| D | 0.0   | 0.00 | 334.1 | 0.0 | 0.06 | 2.20 | 0.26 | -0.04 |

ANTENNA LOADING

=====

| .....ANTENNA..... | ATTACHMENT |       |      |       | .....ANTENNA FORCES..... |       |         |         |
|-------------------|------------|-------|------|-------|--------------------------|-------|---------|---------|
| TYPE              | ELEV       | AZI   | RAD  | AZI   | AXIAL                    | SHEAR | GRAVITY | TORSION |
|                   | ft         |       | ft   |       | kip                      | kip   | kip     | ft-kip  |
| STD               | 300.0      | 60.0  | 10.2 | 120.0 | 0.24                     | -0.04 | 0.80    | 0.08    |
| STD               | 300.0      | 120.0 | 10.2 | 240.0 | -0.07                    | -0.07 | 0.80    | -0.13   |
| STD               | 300.0      | 180.0 | 10.2 | 120.0 | -0.16                    | 0.00  | 0.80    | 0.00    |
| STD               | 300.0      | 240.0 | 10.2 | 240.0 | -0.07                    | 0.07  | 0.80    | 0.13    |
| STD               | 300.0      | 0.0   | 10.2 | 0.0   | 0.23                     | 0.00  | 0.80    | 0.00    |
| STD               | 300.0      | 300.0 | 10.2 | 0.0   | 0.24                     | 0.04  | 0.80    | -0.08   |
| STD               | 293.0      | 0.0   | 10.6 | 0.0   | 0.23                     | 0.00  | 0.80    | 0.00    |
| STD               | 293.0      | 60.0  | 10.6 | 120.0 | 0.24                     | -0.04 | 0.80    | 0.08    |
| STD               | 293.0      | 120.0 | 10.6 | 240.0 | -0.07                    | -0.07 | 0.80    | -0.13   |
| STD               | 293.0      | 180.0 | 10.6 | 120.0 | -0.16                    | 0.00  | 0.80    | 0.00    |
| STD               | 293.0      | 300.0 | 10.6 | 0.0   | 0.24                     | 0.04  | 0.80    | -0.08   |
| STD               | 293.0      | 240.0 | 10.6 | 240.0 | -0.07                    | 0.07  | 0.80    | 0.13    |
| STD               | 286.0      | 0.0   | 11.0 | 0.0   | 0.23                     | 0.00  | 0.80    | 0.00    |
| STD               | 286.0      | 60.0  | 11.0 | 120.0 | 0.24                     | -0.04 | 0.80    | 0.08    |
| STD               | 286.0      | 120.0 | 11.0 | 240.0 | -0.07                    | -0.07 | 0.80    | -0.13   |
| STD               | 286.0      | 180.0 | 11.0 | 120.0 | -0.15                    | 0.00  | 0.80    | 0.00    |

|     |       |       |      |       |       |       |      |       |
|-----|-------|-------|------|-------|-------|-------|------|-------|
| STD | 286.0 | 240.0 | 11.0 | 240.0 | -0.07 | 0.07  | 0.80 | 0.13  |
| STD | 286.0 | 300.0 | 11.0 | 0.0   | 0.24  | 0.04  | 0.80 | -0.08 |
| STD | 279.0 | 60.0  | 11.4 | 120.0 | 0.24  | -0.04 | 0.80 | 0.08  |
| STD | 279.0 | 120.0 | 11.4 | 240.0 | -0.07 | -0.07 | 0.80 | -0.13 |
| STD | 279.0 | 180.0 | 11.4 | 120.0 | -0.15 | 0.00  | 0.80 | 0.00  |
| STD | 279.0 | 240.0 | 11.4 | 240.0 | -0.07 | 0.07  | 0.80 | 0.13  |
| STD | 279.0 | 300.0 | 11.4 | 0.0   | 0.24  | 0.04  | 0.80 | -0.08 |
| STD | 279.0 | 0.0   | 11.4 | 0.0   | 0.22  | 0.00  | 0.80 | 0.00  |
| STD | 272.0 | 60.0  | 11.8 | 120.0 | 0.24  | -0.04 | 0.79 | 0.08  |
| STD | 272.0 | 120.0 | 11.8 | 240.0 | -0.07 | -0.07 | 0.79 | -0.13 |
| STD | 272.0 | 180.0 | 11.8 | 120.0 | -0.15 | 0.00  | 0.79 | 0.00  |
| STD | 272.0 | 240.0 | 11.8 | 240.0 | -0.07 | 0.07  | 0.79 | 0.13  |
| STD | 272.0 | 300.0 | 11.8 | 0.0   | 0.24  | 0.04  | 0.79 | -0.08 |
| STD | 272.0 | 0.0   | 11.8 | 0.0   | 0.22  | 0.00  | 0.79 | 0.00  |
| STD | 265.0 | 60.0  | 12.2 | 120.0 | 0.24  | -0.04 | 0.79 | 0.08  |
| STD | 265.0 | 120.0 | 12.2 | 240.0 | -0.07 | -0.07 | 0.79 | -0.13 |
| STD | 265.0 | 240.0 | 12.2 | 240.0 | -0.07 | 0.07  | 0.79 | 0.13  |
| STD | 265.0 | 180.0 | 12.2 | 120.0 | -0.15 | 0.00  | 0.79 | 0.00  |
| STD | 265.0 | 300.0 | 12.2 | 0.0   | 0.24  | 0.04  | 0.79 | -0.08 |
| STD | 265.0 | 0.0   | 12.2 | 0.0   | 0.22  | 0.00  | 0.79 | 0.00  |
| STD | 258.0 | 60.0  | 12.6 | 120.0 | 0.23  | -0.04 | 0.79 | 0.08  |
| STD | 258.0 | 120.0 | 12.6 | 240.0 | -0.06 | -0.06 | 0.79 | -0.13 |
| STD | 258.0 | 180.0 | 12.6 | 120.0 | -0.15 | 0.00  | 0.79 | 0.00  |
| STD | 258.0 | 240.0 | 12.6 | 240.0 | -0.06 | 0.06  | 0.79 | 0.13  |
| STD | 258.0 | 300.0 | 12.6 | 0.0   | 0.23  | 0.04  | 0.79 | -0.08 |
| STD | 258.0 | 0.0   | 12.6 | 0.0   | 0.22  | 0.00  | 0.79 | 0.00  |
| STD | 251.0 | 240.0 | 13.0 | 240.0 | -0.06 | 0.06  | 0.79 | 0.13  |
| STD | 251.0 | 180.0 | 13.0 | 120.0 | -0.15 | 0.00  | 0.79 | 0.00  |
| STD | 251.0 | 120.0 | 13.0 | 240.0 | -0.06 | -0.06 | 0.79 | -0.13 |
| STD | 251.0 | 60.0  | 13.0 | 120.0 | 0.23  | -0.03 | 0.79 | 0.08  |
| STD | 251.0 | 0.0   | 13.0 | 0.0   | 0.22  | 0.00  | 0.79 | 0.00  |
| STD | 251.0 | 300.0 | 13.0 | 0.0   | 0.23  | 0.03  | 0.79 | -0.08 |
| STD | 244.0 | 60.0  | 13.4 | 120.0 | 0.23  | -0.03 | 0.79 | 0.08  |
| STD | 244.0 | 120.0 | 13.4 | 240.0 | -0.06 | -0.06 | 0.79 | -0.13 |
| STD | 244.0 | 180.0 | 13.4 | 120.0 | -0.15 | 0.00  | 0.79 | 0.00  |
| STD | 244.0 | 240.0 | 13.4 | 240.0 | -0.06 | 0.06  | 0.79 | 0.13  |
| STD | 244.0 | 300.0 | 13.4 | 0.0   | 0.23  | 0.03  | 0.79 | -0.08 |
| STD | 244.0 | 0.0   | 13.4 | 0.0   | 0.22  | 0.00  | 0.79 | 0.00  |
| STD | 237.0 | 120.0 | 13.8 | 240.0 | -0.06 | -0.06 | 0.79 | -0.13 |
| STD | 237.0 | 60.0  | 13.8 | 120.0 | 0.23  | -0.03 | 0.79 | 0.08  |
| STD | 237.0 | 180.0 | 13.8 | 120.0 | -0.15 | 0.00  | 0.79 | 0.00  |
| STD | 237.0 | 240.0 | 13.8 | 240.0 | -0.06 | 0.06  | 0.79 | 0.13  |
| STD | 237.0 | 300.0 | 13.8 | 0.0   | 0.23  | 0.03  | 0.79 | -0.08 |
| STD | 237.0 | 0.0   | 13.8 | 0.0   | 0.22  | 0.00  | 0.79 | 0.00  |
| STD | 230.0 | 60.0  | 14.2 | 120.0 | 0.23  | -0.03 | 0.78 | 0.08  |
| STD | 230.0 | 120.0 | 14.2 | 240.0 | -0.06 | -0.06 | 0.78 | -0.13 |
| STD | 230.0 | 180.0 | 14.2 | 120.0 | -0.15 | 0.00  | 0.78 | 0.00  |
| STD | 230.0 | 240.0 | 14.2 | 240.0 | -0.06 | 0.06  | 0.78 | 0.13  |
| STD | 230.0 | 300.0 | 14.2 | 0.0   | 0.23  | 0.03  | 0.78 | -0.08 |
| STD | 230.0 | 0.0   | 14.2 | 0.0   | 0.22  | 0.00  | 0.78 | 0.00  |
| STD | 223.0 | 60.0  | 14.6 | 120.0 | 0.23  | -0.03 | 0.78 | 0.08  |
| STD | 223.0 | 120.0 | 14.6 | 240.0 | -0.06 | -0.06 | 0.78 | -0.12 |
| STD | 223.0 | 180.0 | 14.6 | 120.0 | -0.15 | 0.00  | 0.78 | 0.00  |
| STD | 223.0 | 240.0 | 14.6 | 240.0 | -0.06 | 0.06  | 0.78 | 0.12  |
| STD | 223.0 | 300.0 | 14.6 | 0.0   | 0.23  | 0.03  | 0.78 | -0.08 |
| STD | 223.0 | 0.0   | 14.6 | 0.0   | 0.22  | 0.00  | 0.78 | 0.00  |
| STD | 216.0 | 120.0 | 15.0 | 240.0 | -0.06 | -0.06 | 0.78 | -0.12 |
| STD | 216.0 | 180.0 | 15.0 | 120.0 | -0.14 | 0.00  | 0.78 | 0.00  |
| STD | 216.0 | 240.0 | 15.0 | 240.0 | -0.06 | 0.06  | 0.78 | 0.12  |
| STD | 216.0 | 300.0 | 15.0 | 0.0   | 0.23  | 0.03  | 0.78 | -0.08 |
| STD | 216.0 | 0.0   | 15.0 | 0.0   | 0.21  | 0.00  | 0.78 | 0.00  |
| STD | 216.0 | 60.0  | 15.0 | 120.0 | 0.23  | -0.03 | 0.78 | 0.08  |
| STD | 209.0 | 120.0 | 15.4 | 240.0 | -0.06 | -0.06 | 0.78 | -0.12 |
| STD | 209.0 | 180.0 | 15.4 | 120.0 | -0.14 | 0.00  | 0.78 | 0.00  |
| STD | 209.0 | 240.0 | 15.4 | 240.0 | -0.06 | 0.06  | 0.78 | 0.12  |
| STD | 209.0 | 300.0 | 15.4 | 0.0   | 0.22  | 0.03  | 0.78 | -0.08 |
| STD | 209.0 | 60.0  | 15.4 | 120.0 | 0.22  | -0.03 | 0.78 | 0.08  |
| STD | 209.0 | 0.0   | 15.4 | 0.0   | 0.21  | 0.00  | 0.78 | 0.00  |
| STD | 202.0 | 60.0  | 15.8 | 120.0 | 0.22  | -0.03 | 0.78 | 0.07  |

|     |       |       |      |       |       |       |      |       |
|-----|-------|-------|------|-------|-------|-------|------|-------|
| STD | 202.0 | 120.0 | 15.8 | 240.0 | -0.06 | -0.06 | 0.78 | -0.12 |
| STD | 202.0 | 180.0 | 15.8 | 120.0 | -0.14 | 0.00  | 0.78 | 0.00  |
| STD | 202.0 | 240.0 | 15.8 | 240.0 | -0.06 | 0.06  | 0.78 | 0.12  |
| STD | 202.0 | 0.0   | 15.8 | 0.0   | 0.21  | 0.00  | 0.78 | 0.00  |
| STD | 202.0 | 300.0 | 15.8 | 0.0   | 0.22  | 0.03  | 0.78 | -0.07 |

=====  
LOADING CONDITION k =====

Seismic - Azimuth: 0° (1.2 D + 1.0 Ev + 1.0 Eh)

MAST LOADING  
=====

| LOAD TYPE | ELEV<br>ft | APPLY..<br>RADIUS<br>ft | LOAD..AT<br>AZI | LOAD<br>AZI | .....FORCES..... |             | .....MOMENTS.....  |                   |
|-----------|------------|-------------------------|-----------------|-------------|------------------|-------------|--------------------|-------------------|
|           |            |                         |                 |             | HORIZ<br>kip     | DOWN<br>kip | VERTICAL<br>ft-kip | TORSNAL<br>ft-kip |
| C         | 300.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.42        | 0.00               | 0.00              |
| C         | 300.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.42        | 0.00               | 0.00              |
| C         | 300.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.36        | 0.00               | 0.00              |
| C         | 300.0      | 0.00                    | 0.0             | 0.0         | 0.28             | 5.83        | 0.00               | 0.00              |
| C         | 300.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.36        | 0.00               | 0.00              |
| C         | 300.0      | 0.00                    | 0.0             | 0.0         | 0.01             | 0.25        | 0.00               | 0.00              |
| C         | 300.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.36        | 0.00               | 0.00              |
| C         | 300.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.36        | 0.00               | 0.00              |
| C         | 300.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.36        | 0.00               | 0.00              |
| C         | 300.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.36        | 0.00               | 0.00              |
| C         | 300.0      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.06        | 0.00               | 0.00              |
| C         | 300.0      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.06        | 0.00               | 0.00              |
| C         | 300.0      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.06        | 0.00               | 0.00              |
| C         | 300.0      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.06        | 0.00               | 0.00              |
| C         | 300.0      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.06        | 0.00               | 0.00              |
| C         | 300.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.42        | 0.00               | 0.00              |
| C         | 300.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.42        | 0.00               | 0.00              |
| C         | 300.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.42        | 0.00               | 0.00              |
| C         | 296.5      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.10        | 0.00               | 0.00              |
| C         | 296.5      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.04        | 0.00               | 0.00              |
| C         | 296.5      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.04        | 0.00               | 0.00              |
| C         | 296.5      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.04        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.42        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.42        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.42        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.42        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.42        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.36        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.36        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.36        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.17             | 3.68        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.36        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.02             | 0.36        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.06        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.06        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.06        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.06        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.06        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.06        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.06        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.06        | 0.00               | 0.00              |
| C         | 293.0      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.06        | 0.00               | 0.00              |
| C         | 290.0      | 0.00                    | 0.0             | 0.0         | 0.17             | 3.63        | 0.00               | 0.00              |
| C         | 289.5      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.04        | 0.00               | 0.00              |
| C         | 289.5      | 0.00                    | 0.0             | 0.0         | 0.01             | 0.15        | 0.00               | 0.00              |
| C         | 289.5      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.04        | 0.00               | 0.00              |
| C         | 289.5      | 0.00                    | 0.0             | 0.0         | 0.00             | 0.04        | 0.00               | 0.00              |
| C         | 286.0      | 0.00                    | 0.0             | 0.0         | 0.17             | 3.84        | 0.00               | 0.00              |













|   |       |      |       |       |      |       |      |      |
|---|-------|------|-------|-------|------|-------|------|------|
| C | 90.0  | 0.00 | 0.0   | 0.0   | 0.00 | 0.15  | 0.00 | 0.00 |
| C | 90.0  | 0.00 | 0.0   | 0.0   | 0.01 | 0.89  | 0.00 | 0.00 |
| C | 90.0  | 0.00 | 0.0   | 0.0   | 0.23 | 18.32 | 0.00 | 0.00 |
| C | 70.0  | 0.00 | 0.0   | 0.0   | 0.01 | 0.88  | 0.00 | 0.00 |
| C | 70.0  | 0.00 | 0.0   | 0.0   | 0.01 | 0.89  | 0.00 | 0.00 |
| C | 70.0  | 0.00 | 0.0   | 0.0   | 0.00 | 0.15  | 0.00 | 0.00 |
| C | 70.0  | 0.00 | 0.0   | 0.0   | 0.01 | 0.89  | 0.00 | 0.00 |
| C | 70.0  | 0.00 | 0.0   | 0.0   | 0.19 | 20.00 | 0.00 | 0.00 |
| C | 50.0  | 0.00 | 0.0   | 0.0   | 0.01 | 0.88  | 0.00 | 0.00 |
| C | 50.0  | 0.00 | 0.0   | 0.0   | 0.01 | 0.89  | 0.00 | 0.00 |
| C | 50.0  | 0.00 | 0.0   | 0.0   | 0.00 | 0.15  | 0.00 | 0.00 |
| C | 50.0  | 0.00 | 0.0   | 0.0   | 0.01 | 0.89  | 0.00 | 0.00 |
| C | 50.0  | 0.00 | 0.0   | 0.0   | 0.14 | 20.85 | 0.00 | 0.00 |
| C | 30.0  | 0.00 | 0.0   | 0.0   | 0.10 | 25.40 | 0.00 | 0.00 |
| C | 30.0  | 0.00 | 0.0   | 0.0   | 0.00 | 0.89  | 0.00 | 0.00 |
| C | 30.0  | 0.00 | 0.0   | 0.0   | 0.00 | 0.88  | 0.00 | 0.00 |
| C | 30.0  | 0.00 | 0.0   | 0.0   | 0.00 | 0.89  | 0.00 | 0.00 |
| C | 30.0  | 0.00 | 0.0   | 0.0   | 0.00 | 0.15  | 0.00 | 0.00 |
| C | 10.0  | 0.00 | 0.0   | 0.0   | 0.00 | 0.88  | 0.00 | 0.00 |
| C | 10.0  | 0.00 | 0.0   | 0.0   | 0.03 | 27.15 | 0.00 | 0.00 |
| C | 10.0  | 0.00 | 0.0   | 0.0   | 0.00 | 0.89  | 0.00 | 0.00 |
| C | 10.0  | 0.00 | 0.0   | 0.0   | 0.00 | 0.15  | 0.00 | 0.00 |
| C | 10.0  | 0.00 | 0.0   | 0.0   | 0.00 | 0.89  | 0.00 | 0.00 |
| D | 300.0 | 0.00 | 180.0 | 180.0 | 0.00 | 0.00  | 0.00 | 0.00 |
| D | 0.0   | 0.00 | 180.0 | 180.0 | 0.00 | 0.00  | 0.00 | 0.00 |

ANTENNA LOADING  
 =====

| .....ANTENNA..... | ATTACHMENT |       |      |       | .....ANTENNA FORCES..... |       |         |         |
|-------------------|------------|-------|------|-------|--------------------------|-------|---------|---------|
| TYPE              | ELEV       | AZI   | RAD  | AZI   | AXIAL                    | SHEAR | GRAVITY | TORSION |
|                   | ft         |       | ft   |       | kip                      | kip   | kip     | ft-kip  |
| STD               | 300.0      | 60.0  | 10.2 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 300.0      | 120.0 | 10.2 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 300.0      | 180.0 | 10.2 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 300.0      | 240.0 | 10.2 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 300.0      | 0.0   | 10.2 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 300.0      | 300.0 | 10.2 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 293.0      | 0.0   | 10.6 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 293.0      | 60.0  | 10.6 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 293.0      | 120.0 | 10.6 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 293.0      | 180.0 | 10.6 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 293.0      | 300.0 | 10.6 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 293.0      | 240.0 | 10.6 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 286.0      | 0.0   | 11.0 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 286.0      | 60.0  | 11.0 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 286.0      | 120.0 | 11.0 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 286.0      | 180.0 | 11.0 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 286.0      | 240.0 | 11.0 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 286.0      | 300.0 | 11.0 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 279.0      | 60.0  | 11.4 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 279.0      | 120.0 | 11.4 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 279.0      | 180.0 | 11.4 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 279.0      | 240.0 | 11.4 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 279.0      | 300.0 | 11.4 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 279.0      | 0.0   | 11.4 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 272.0      | 60.0  | 11.8 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 272.0      | 120.0 | 11.8 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 272.0      | 180.0 | 11.8 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 272.0      | 240.0 | 11.8 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 272.0      | 300.0 | 11.8 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 272.0      | 0.0   | 11.8 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 265.0      | 60.0  | 12.2 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 265.0      | 120.0 | 12.2 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 265.0      | 240.0 | 12.2 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 265.0      | 180.0 | 12.2 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 265.0      | 300.0 | 12.2 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |

|     |       |       |      |       |      |      |      |      |
|-----|-------|-------|------|-------|------|------|------|------|
| STD | 265.0 | 0.0   | 12.2 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 258.0 | 60.0  | 12.6 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 258.0 | 120.0 | 12.6 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 258.0 | 180.0 | 12.6 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 258.0 | 240.0 | 12.6 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 258.0 | 300.0 | 12.6 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 258.0 | 0.0   | 12.6 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 251.0 | 240.0 | 13.0 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 251.0 | 180.0 | 13.0 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 251.0 | 120.0 | 13.0 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 251.0 | 60.0  | 13.0 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 251.0 | 0.0   | 13.0 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 251.0 | 300.0 | 13.0 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 244.0 | 60.0  | 13.4 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 244.0 | 120.0 | 13.4 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 244.0 | 180.0 | 13.4 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 244.0 | 240.0 | 13.4 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 244.0 | 300.0 | 13.4 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 244.0 | 0.0   | 13.4 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 237.0 | 120.0 | 13.8 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 237.0 | 60.0  | 13.8 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 237.0 | 180.0 | 13.8 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 237.0 | 240.0 | 13.8 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 237.0 | 300.0 | 13.8 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 237.0 | 0.0   | 13.8 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 230.0 | 60.0  | 14.2 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 230.0 | 120.0 | 14.2 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 230.0 | 180.0 | 14.2 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 230.0 | 240.0 | 14.2 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 230.0 | 300.0 | 14.2 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 230.0 | 0.0   | 14.2 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 223.0 | 60.0  | 14.6 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 223.0 | 120.0 | 14.6 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 223.0 | 180.0 | 14.6 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 223.0 | 240.0 | 14.6 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 223.0 | 300.0 | 14.6 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 223.0 | 0.0   | 14.6 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 216.0 | 120.0 | 15.0 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 216.0 | 180.0 | 15.0 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 216.0 | 240.0 | 15.0 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 216.0 | 300.0 | 15.0 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 216.0 | 0.0   | 15.0 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 216.0 | 60.0  | 15.0 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 209.0 | 120.0 | 15.4 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 209.0 | 180.0 | 15.4 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 209.0 | 240.0 | 15.4 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 209.0 | 300.0 | 15.4 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 209.0 | 60.0  | 15.4 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 209.0 | 0.0   | 15.4 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 202.0 | 60.0  | 15.8 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 202.0 | 120.0 | 15.8 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 202.0 | 180.0 | 15.8 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 202.0 | 240.0 | 15.8 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 202.0 | 0.0   | 15.8 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 202.0 | 300.0 | 15.8 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |

=====  
LOADING CONDITION n =====

Seismic - Azimuth: 00 (0.9 D - 1.0 Ev + 1.0 Eh)

MAST LOADING  
=====

| LOAD TYPE | ELEV ft | APPLY RADIUS ft | LOAD AT AZI | LOAD AZI | .....FORCES..... |          | .....MOMENTS..... |                |
|-----------|---------|-----------------|-------------|----------|------------------|----------|-------------------|----------------|
|           |         |                 |             |          | HORIZ kip        | DOWN kip | VERTICAL ft-kip   | TORSNAL ft-kip |











|   |       |      |     |     |      |       |      |      |
|---|-------|------|-----|-----|------|-------|------|------|
| C | 202.0 | 0.00 | 0.0 | 0.0 | 0.01 | 0.30  | 0.00 | 0.00 |
| C | 202.0 | 0.00 | 0.0 | 0.0 | 0.01 | 0.30  | 0.00 | 0.00 |
| C | 202.0 | 0.00 | 0.0 | 0.0 | 0.01 | 0.30  | 0.00 | 0.00 |
| C | 202.0 | 0.00 | 0.0 | 0.0 | 0.01 | 0.30  | 0.00 | 0.00 |
| C | 202.0 | 0.00 | 0.0 | 0.0 | 0.01 | 0.30  | 0.00 | 0.00 |
| C | 202.0 | 0.00 | 0.0 | 0.0 | 0.01 | 0.30  | 0.00 | 0.00 |
| C | 202.0 | 0.00 | 0.0 | 0.0 | 0.01 | 0.25  | 0.00 | 0.00 |
| C | 202.0 | 0.00 | 0.0 | 0.0 | 0.01 | 0.25  | 0.00 | 0.00 |
| C | 202.0 | 0.00 | 0.0 | 0.0 | 0.01 | 0.25  | 0.00 | 0.00 |
| C | 202.0 | 0.00 | 0.0 | 0.0 | 0.01 | 0.25  | 0.00 | 0.00 |
| C | 202.0 | 0.00 | 0.0 | 0.0 | 0.01 | 0.25  | 0.00 | 0.00 |
| C | 202.0 | 0.00 | 0.0 | 0.0 | 0.01 | 0.25  | 0.00 | 0.00 |
| C | 202.0 | 0.00 | 0.0 | 0.0 | 0.01 | 0.25  | 0.00 | 0.00 |
| C | 202.0 | 0.00 | 0.0 | 0.0 | 0.29 | 6.72  | 0.00 | 0.00 |
| C | 202.0 | 0.00 | 0.0 | 0.0 | 0.00 | 0.04  | 0.00 | 0.00 |
| C | 202.0 | 0.00 | 0.0 | 0.0 | 0.00 | 0.04  | 0.00 | 0.00 |
| C | 202.0 | 0.00 | 0.0 | 0.0 | 0.00 | 0.04  | 0.00 | 0.00 |
| C | 202.0 | 0.00 | 0.0 | 0.0 | 0.00 | 0.04  | 0.00 | 0.00 |
| C | 202.0 | 0.00 | 0.0 | 0.0 | 0.00 | 0.04  | 0.00 | 0.00 |
| C | 201.0 | 0.00 | 0.0 | 0.0 | 0.00 | 0.06  | 0.00 | 0.00 |
| C | 201.0 | 0.00 | 0.0 | 0.0 | 0.00 | 0.06  | 0.00 | 0.00 |
| C | 201.0 | 0.00 | 0.0 | 0.0 | 0.00 | 0.06  | 0.00 | 0.00 |
| C | 201.0 | 0.00 | 0.0 | 0.0 | 0.00 | 0.01  | 0.00 | 0.00 |
| C | 190.0 | 0.00 | 0.0 | 0.0 | 0.03 | 0.62  | 0.00 | 0.00 |
| C | 190.0 | 0.00 | 0.0 | 0.0 | 0.00 | 0.11  | 0.00 | 0.00 |
| C | 190.0 | 0.00 | 0.0 | 0.0 | 0.03 | 0.63  | 0.00 | 0.00 |
| C | 190.0 | 0.00 | 0.0 | 0.0 | 0.03 | 0.63  | 0.00 | 0.00 |
| C | 190.0 | 0.00 | 0.0 | 0.0 | 0.37 | 9.06  | 0.00 | 0.00 |
| C | 170.0 | 0.00 | 0.0 | 0.0 | 0.35 | 9.81  | 0.00 | 0.00 |
| C | 170.0 | 0.00 | 0.0 | 0.0 | 0.02 | 0.63  | 0.00 | 0.00 |
| C | 170.0 | 0.00 | 0.0 | 0.0 | 0.02 | 0.62  | 0.00 | 0.00 |
| C | 170.0 | 0.00 | 0.0 | 0.0 | 0.02 | 0.63  | 0.00 | 0.00 |
| C | 170.0 | 0.00 | 0.0 | 0.0 | 0.00 | 0.11  | 0.00 | 0.00 |
| C | 150.0 | 0.00 | 0.0 | 0.0 | 0.00 | 0.11  | 0.00 | 0.00 |
| C | 150.0 | 0.00 | 0.0 | 0.0 | 0.02 | 0.63  | 0.00 | 0.00 |
| C | 150.0 | 0.00 | 0.0 | 0.0 | 0.02 | 0.63  | 0.00 | 0.00 |
| C | 150.0 | 0.00 | 0.0 | 0.0 | 0.02 | 0.62  | 0.00 | 0.00 |
| C | 150.0 | 0.00 | 0.0 | 0.0 | 0.30 | 9.71  | 0.00 | 0.00 |
| C | 130.0 | 0.00 | 0.0 | 0.0 | 0.28 | 10.69 | 0.00 | 0.00 |
| C | 130.0 | 0.00 | 0.0 | 0.0 | 0.02 | 0.63  | 0.00 | 0.00 |
| C | 130.0 | 0.00 | 0.0 | 0.0 | 0.02 | 0.63  | 0.00 | 0.00 |
| C | 130.0 | 0.00 | 0.0 | 0.0 | 0.00 | 0.11  | 0.00 | 0.00 |
| C | 130.0 | 0.00 | 0.0 | 0.0 | 0.02 | 0.62  | 0.00 | 0.00 |
| C | 110.0 | 0.00 | 0.0 | 0.0 | 0.00 | 0.11  | 0.00 | 0.00 |
| C | 110.0 | 0.00 | 0.0 | 0.0 | 0.01 | 0.63  | 0.00 | 0.00 |
| C | 110.0 | 0.00 | 0.0 | 0.0 | 0.01 | 0.63  | 0.00 | 0.00 |
| C | 110.0 | 0.00 | 0.0 | 0.0 | 0.01 | 0.62  | 0.00 | 0.00 |
| C | 110.0 | 0.00 | 0.0 | 0.0 | 0.26 | 11.69 | 0.00 | 0.00 |
| C | 90.0  | 0.00 | 0.0 | 0.0 | 0.01 | 0.62  | 0.00 | 0.00 |
| C | 90.0  | 0.00 | 0.0 | 0.0 | 0.01 | 0.63  | 0.00 | 0.00 |
| C | 90.0  | 0.00 | 0.0 | 0.0 | 0.00 | 0.11  | 0.00 | 0.00 |
| C | 90.0  | 0.00 | 0.0 | 0.0 | 0.01 | 0.63  | 0.00 | 0.00 |
| C | 90.0  | 0.00 | 0.0 | 0.0 | 0.23 | 13.02 | 0.00 | 0.00 |
| C | 70.0  | 0.00 | 0.0 | 0.0 | 0.01 | 0.62  | 0.00 | 0.00 |
| C | 70.0  | 0.00 | 0.0 | 0.0 | 0.01 | 0.63  | 0.00 | 0.00 |
| C | 70.0  | 0.00 | 0.0 | 0.0 | 0.00 | 0.11  | 0.00 | 0.00 |
| C | 70.0  | 0.00 | 0.0 | 0.0 | 0.01 | 0.63  | 0.00 | 0.00 |
| C | 70.0  | 0.00 | 0.0 | 0.0 | 0.19 | 14.21 | 0.00 | 0.00 |
| C | 50.0  | 0.00 | 0.0 | 0.0 | 0.01 | 0.62  | 0.00 | 0.00 |
| C | 50.0  | 0.00 | 0.0 | 0.0 | 0.01 | 0.63  | 0.00 | 0.00 |
| C | 50.0  | 0.00 | 0.0 | 0.0 | 0.00 | 0.11  | 0.00 | 0.00 |
| C | 50.0  | 0.00 | 0.0 | 0.0 | 0.01 | 0.63  | 0.00 | 0.00 |
| C | 50.0  | 0.00 | 0.0 | 0.0 | 0.14 | 14.82 | 0.00 | 0.00 |
| C | 30.0  | 0.00 | 0.0 | 0.0 | 0.10 | 18.05 | 0.00 | 0.00 |
| C | 30.0  | 0.00 | 0.0 | 0.0 | 0.00 | 0.63  | 0.00 | 0.00 |
| C | 30.0  | 0.00 | 0.0 | 0.0 | 0.00 | 0.62  | 0.00 | 0.00 |
| C | 30.0  | 0.00 | 0.0 | 0.0 | 0.00 | 0.63  | 0.00 | 0.00 |
| C | 30.0  | 0.00 | 0.0 | 0.0 | 0.00 | 0.11  | 0.00 | 0.00 |
| C | 10.0  | 0.00 | 0.0 | 0.0 | 0.00 | 0.62  | 0.00 | 0.00 |



|   |       |      |       |       |      |       |      |      |
|---|-------|------|-------|-------|------|-------|------|------|
| C | 10.0  | 0.00 | 0.0   | 0.0   | 0.03 | 19.30 | 0.00 | 0.00 |
| C | 10.0  | 0.00 | 0.0   | 0.0   | 0.00 | 0.63  | 0.00 | 0.00 |
| C | 10.0  | 0.00 | 0.0   | 0.0   | 0.00 | 0.11  | 0.00 | 0.00 |
| C | 10.0  | 0.00 | 0.0   | 0.0   | 0.00 | 0.63  | 0.00 | 0.00 |
| D | 300.0 | 0.00 | 180.0 | 180.0 | 0.00 | 0.00  | 0.00 | 0.00 |
| D | 0.0   | 0.00 | 180.0 | 180.0 | 0.00 | 0.00  | 0.00 | 0.00 |

ANTENNA LOADING

=====

| .....ANTENNA..... |       | ATTACHMENT |      |       | .....ANTENNA FORCES..... |       |         |         |
|-------------------|-------|------------|------|-------|--------------------------|-------|---------|---------|
| TYPE              | ELEV  | AZI        | RAD  | AZI   | AXIAL                    | SHEAR | GRAVITY | TORSION |
|                   | ft    |            | ft   |       | kip                      | kip   | kip     | ft-kip  |
| STD               | 300.0 | 60.0       | 10.2 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 300.0 | 120.0      | 10.2 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 300.0 | 180.0      | 10.2 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 300.0 | 240.0      | 10.2 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 300.0 | 0.0        | 10.2 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 300.0 | 300.0      | 10.2 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 293.0 | 0.0        | 10.6 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 293.0 | 60.0       | 10.6 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 293.0 | 120.0      | 10.6 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 293.0 | 180.0      | 10.6 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 293.0 | 300.0      | 10.6 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 293.0 | 240.0      | 10.6 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 286.0 | 0.0        | 11.0 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 286.0 | 60.0       | 11.0 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 286.0 | 120.0      | 11.0 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 286.0 | 180.0      | 11.0 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 286.0 | 240.0      | 11.0 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 286.0 | 300.0      | 11.0 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 279.0 | 60.0       | 11.4 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 279.0 | 120.0      | 11.4 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 279.0 | 180.0      | 11.4 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 279.0 | 240.0      | 11.4 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 279.0 | 300.0      | 11.4 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 279.0 | 0.0        | 11.4 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 272.0 | 60.0       | 11.8 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 272.0 | 120.0      | 11.8 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 272.0 | 180.0      | 11.8 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 272.0 | 240.0      | 11.8 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 272.0 | 300.0      | 11.8 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 272.0 | 0.0        | 11.8 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 265.0 | 60.0       | 12.2 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 265.0 | 120.0      | 12.2 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 265.0 | 240.0      | 12.2 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 265.0 | 180.0      | 12.2 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 265.0 | 300.0      | 12.2 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 265.0 | 0.0        | 12.2 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 258.0 | 60.0       | 12.6 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 258.0 | 120.0      | 12.6 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 258.0 | 180.0      | 12.6 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 258.0 | 240.0      | 12.6 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 258.0 | 300.0      | 12.6 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 258.0 | 0.0        | 12.6 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 251.0 | 240.0      | 13.0 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 251.0 | 180.0      | 13.0 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 251.0 | 120.0      | 13.0 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 251.0 | 60.0       | 13.0 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 251.0 | 0.0        | 13.0 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 251.0 | 300.0      | 13.0 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 244.0 | 60.0       | 13.4 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 244.0 | 120.0      | 13.4 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 244.0 | 180.0      | 13.4 | 120.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 244.0 | 240.0      | 13.4 | 240.0 | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 244.0 | 300.0      | 13.4 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |
| STD               | 244.0 | 0.0        | 13.4 | 0.0   | 0.00                     | 0.00  | 0.00    | 0.00    |

|     |       |       |      |       |      |      |      |      |
|-----|-------|-------|------|-------|------|------|------|------|
| STD | 237.0 | 120.0 | 13.8 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 237.0 | 60.0  | 13.8 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 237.0 | 180.0 | 13.8 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 237.0 | 240.0 | 13.8 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 237.0 | 300.0 | 13.8 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 237.0 | 0.0   | 13.8 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 230.0 | 60.0  | 14.2 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 230.0 | 120.0 | 14.2 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 230.0 | 180.0 | 14.2 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 230.0 | 240.0 | 14.2 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 230.0 | 300.0 | 14.2 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 230.0 | 0.0   | 14.2 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 223.0 | 60.0  | 14.6 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 223.0 | 120.0 | 14.6 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 223.0 | 180.0 | 14.6 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 223.0 | 240.0 | 14.6 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 223.0 | 300.0 | 14.6 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 223.0 | 0.0   | 14.6 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 216.0 | 120.0 | 15.0 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 216.0 | 180.0 | 15.0 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 216.0 | 240.0 | 15.0 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 216.0 | 300.0 | 15.0 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 216.0 | 0.0   | 15.0 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 216.0 | 60.0  | 15.0 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 209.0 | 120.0 | 15.4 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 209.0 | 180.0 | 15.4 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 209.0 | 240.0 | 15.4 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 209.0 | 300.0 | 15.4 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 209.0 | 60.0  | 15.4 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 209.0 | 0.0   | 15.4 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 202.0 | 60.0  | 15.8 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 202.0 | 120.0 | 15.8 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 202.0 | 180.0 | 15.8 | 120.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 202.0 | 240.0 | 15.8 | 240.0 | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 202.0 | 0.0   | 15.8 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |
| STD | 202.0 | 300.0 | 15.8 | 0.0   | 0.00 | 0.00 | 0.00 | 0.00 |

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MAXIMUM ANTENNA AND REFLECTOR ROTATIONS:

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| ELEV<br>ft | AZI<br>deg | TYPE<br>* | .....BEAM DEFLECTIONS (deg)..... |         |          |         |
|------------|------------|-----------|----------------------------------|---------|----------|---------|
|            |            |           | ROLL                             | YAW     | PITCH    | TOTAL   |
| 300.0      | 60.0       | STD       | 0.990 K                          | 0.397 M | -0.910 H | 0.946 H |
| 300.0      | 120.0      | STD       | -0.983 C                         | 0.405 A | 0.918 L  | 0.942 A |
| 300.0      | 180.0      | STD       | 1.003 G                          | 0.401 M | 0.894 J  | 0.935 D |
| 300.0      | 240.0      | STD       | -0.990 K                         | 0.397 M | 0.910 H  | 0.946 H |
| 300.0      | 0.0        | STD       | -1.003 G                         | 0.401 M | -0.894 J | 0.935 D |
| 300.0      | 300.0      | STD       | 0.983 C                          | 0.405 A | -0.918 L | 0.942 A |
| 293.0      | 0.0        | STD       | -1.002 G                         | 0.394 M | -0.893 J | 0.933 D |
| 293.0      | 60.0       | STD       | 0.989 K                          | 0.390 M | -0.909 H | 0.944 H |
| 293.0      | 120.0      | STD       | -0.982 C                         | 0.397 A | 0.917 L  | 0.938 A |
| 293.0      | 180.0      | STD       | 1.002 G                          | 0.394 M | 0.893 J  | 0.933 D |
| 293.0      | 300.0      | STD       | 0.982 C                          | 0.397 A | -0.917 L | 0.938 A |
| 293.0      | 240.0      | STD       | -0.989 K                         | 0.390 M | 0.909 H  | 0.944 H |
| 286.0      | 0.0        | STD       | -0.999 G                         | 0.383 M | -0.891 J | 0.928 D |
| 286.0      | 60.0       | STD       | 0.986 K                          | 0.379 M | -0.906 H | 0.939 H |
| 286.0      | 120.0      | STD       | -0.979 C                         | 0.387 A | 0.914 L  | 0.931 A |
| 286.0      | 180.0      | STD       | 0.999 G                          | 0.383 M | 0.891 J  | 0.928 D |
| 286.0      | 240.0      | STD       | -0.986 K                         | 0.379 M | 0.906 H  | 0.939 H |
| 286.0      | 300.0      | STD       | 0.979 C                          | 0.387 A | -0.914 L | 0.931 A |
| 279.0      | 60.0       | STD       | 0.979 K                          | 0.366 M | -0.900 H | 0.932 H |
| 279.0      | 120.0      | STD       | -0.972 C                         | 0.373 A | 0.909 L  | 0.921 A |
| 279.0      | 180.0      | STD       | 0.993 G                          | 0.370 M | 0.885 J  | 0.920 D |
| 279.0      | 240.0      | STD       | -0.979 K                         | 0.366 M | 0.900 H  | 0.932 H |
| 279.0      | 300.0      | STD       | 0.972 C                          | 0.373 A | -0.909 L | 0.921 A |
| 279.0      | 0.0        | STD       | -0.993 G                         | 0.370 M | -0.885 J | 0.920 D |
| 272.0      | 60.0       | STD       | 0.967 K                          | 0.355 M | -0.889 H | 0.919 H |

|       |       |     |        |   |       |   |        |   |       |   |
|-------|-------|-----|--------|---|-------|---|--------|---|-------|---|
| 272.0 | 120.0 | STD | -0.960 | C | 0.362 | A | 0.897  | L | 0.907 | A |
| 272.0 | 180.0 | STD | 0.980  | G | 0.358 | M | 0.874  | J | 0.907 | D |
| 272.0 | 240.0 | STD | -0.967 | K | 0.355 | M | 0.889  | H | 0.919 | H |
| 272.0 | 300.0 | STD | 0.960  | C | 0.362 | A | -0.897 | L | 0.907 | A |
| 272.0 | 0.0   | STD | -0.980 | G | 0.358 | M | -0.874 | J | 0.907 | D |
| 265.0 | 60.0  | STD | 0.949  | K | 0.341 | M | -0.872 | H | 0.901 | H |
| 265.0 | 120.0 | STD | -0.942 | C | 0.348 | A | 0.880  | L | 0.887 | A |
| 265.0 | 240.0 | STD | -0.949 | K | 0.341 | M | 0.872  | H | 0.901 | H |
| 265.0 | 180.0 | STD | 0.962  | G | 0.344 | M | 0.858  | J | 0.888 | D |
| 265.0 | 300.0 | STD | 0.942  | C | 0.348 | A | -0.880 | L | 0.887 | A |
| 265.0 | 0.0   | STD | -0.962 | G | 0.344 | M | -0.858 | J | 0.888 | D |
| 258.0 | 60.0  | STD | 0.928  | K | 0.327 | M | -0.853 | H | 0.880 | H |
| 258.0 | 120.0 | STD | -0.921 | C | 0.333 | A | 0.861  | L | 0.865 | A |
| 258.0 | 180.0 | STD | 0.941  | G | 0.330 | M | 0.839  | J | 0.868 | D |
| 258.0 | 240.0 | STD | -0.928 | K | 0.327 | M | 0.853  | H | 0.880 | H |
| 258.0 | 300.0 | STD | 0.921  | C | 0.333 | A | -0.861 | L | 0.865 | A |
| 258.0 | 0.0   | STD | -0.941 | G | 0.330 | M | -0.839 | J | 0.868 | D |
| 251.0 | 240.0 | STD | -0.907 | K | 0.313 | M | 0.834  | H | 0.859 | H |
| 251.0 | 180.0 | STD | 0.919  | G | 0.316 | M | 0.820  | J | 0.847 | D |
| 251.0 | 120.0 | STD | -0.900 | C | 0.319 | A | 0.842  | L | 0.844 | L |
| 251.0 | 60.0  | STD | 0.907  | K | 0.313 | M | -0.834 | H | 0.859 | H |
| 251.0 | 0.0   | STD | -0.919 | G | 0.316 | M | -0.820 | J | 0.847 | D |
| 251.0 | 300.0 | STD | 0.900  | C | 0.319 | A | -0.842 | L | 0.844 | L |
| 244.0 | 60.0  | STD | 0.880  | K | 0.298 | M | -0.809 | H | 0.833 | H |
| 244.0 | 120.0 | STD | -0.873 | C | 0.304 | A | 0.817  | L | 0.819 | L |
| 244.0 | 180.0 | STD | 0.892  | G | 0.301 | M | 0.796  | J | 0.821 | D |
| 244.0 | 240.0 | STD | -0.880 | K | 0.298 | M | 0.809  | H | 0.833 | H |
| 244.0 | 300.0 | STD | 0.873  | C | 0.304 | A | -0.817 | L | 0.819 | L |
| 244.0 | 0.0   | STD | -0.892 | G | 0.301 | M | -0.796 | J | 0.821 | D |
| 237.0 | 120.0 | STD | -0.846 | C | 0.290 | A | 0.792  | L | 0.794 | L |
| 237.0 | 60.0  | STD | 0.853  | K | 0.284 | M | -0.784 | H | 0.806 | H |
| 237.0 | 180.0 | STD | 0.864  | G | 0.287 | M | 0.772  | J | 0.795 | D |
| 237.0 | 240.0 | STD | -0.853 | K | 0.284 | M | 0.784  | H | 0.806 | H |
| 237.0 | 300.0 | STD | 0.846  | C | 0.290 | A | -0.792 | L | 0.794 | L |
| 237.0 | 0.0   | STD | -0.864 | G | 0.287 | M | -0.772 | J | 0.795 | D |
| 230.0 | 60.0  | STD | 0.827  | K | 0.274 | M | -0.760 | H | 0.782 | H |
| 230.0 | 120.0 | STD | -0.820 | C | 0.279 | A | 0.768  | L | 0.770 | L |
| 230.0 | 180.0 | STD | 0.837  | G | 0.276 | M | 0.748  | J | 0.770 | D |
| 230.0 | 240.0 | STD | -0.827 | K | 0.274 | M | 0.760  | H | 0.782 | H |
| 230.0 | 300.0 | STD | 0.820  | C | 0.279 | A | -0.768 | L | 0.770 | L |
| 230.0 | 0.0   | STD | -0.837 | G | 0.276 | M | -0.748 | J | 0.770 | D |
| 223.0 | 60.0  | STD | 0.795  | K | 0.262 | M | -0.731 | H | 0.751 | H |
| 223.0 | 120.0 | STD | -0.789 | C | 0.267 | A | 0.738  | L | 0.740 | L |
| 223.0 | 180.0 | STD | 0.805  | G | 0.264 | M | 0.720  | J | 0.740 | D |
| 223.0 | 240.0 | STD | -0.795 | K | 0.262 | M | 0.731  | H | 0.751 | H |
| 223.0 | 300.0 | STD | 0.789  | C | 0.267 | A | -0.738 | L | 0.740 | L |
| 223.0 | 0.0   | STD | -0.805 | G | 0.264 | M | -0.720 | J | 0.740 | D |
| 216.0 | 120.0 | STD | -0.762 | C | 0.252 | A | 0.713  | L | 0.715 | L |
| 216.0 | 180.0 | STD | 0.777  | G | 0.250 | M | 0.695  | J | 0.714 | D |
| 216.0 | 240.0 | STD | -0.768 | K | 0.248 | M | 0.706  | H | 0.725 | H |
| 216.0 | 300.0 | STD | 0.762  | C | 0.252 | A | -0.713 | L | 0.715 | L |
| 216.0 | 0.0   | STD | -0.777 | G | 0.250 | M | -0.695 | J | 0.714 | D |
| 216.0 | 60.0  | STD | 0.768  | K | 0.248 | M | -0.706 | H | 0.725 | H |
| 209.0 | 120.0 | STD | -0.738 | C | 0.235 | A | 0.690  | L | 0.692 | L |
| 209.0 | 180.0 | STD | 0.753  | G | 0.233 | M | 0.673  | J | 0.690 | D |
| 209.0 | 240.0 | STD | -0.744 | K | 0.231 | M | 0.683  | H | 0.701 | H |
| 209.0 | 300.0 | STD | 0.738  | C | 0.235 | A | -0.690 | L | 0.692 | L |
| 209.0 | 60.0  | STD | 0.744  | K | 0.231 | M | -0.683 | H | 0.701 | H |
| 209.0 | 0.0   | STD | -0.753 | G | 0.233 | M | -0.673 | J | 0.690 | D |
| 202.0 | 60.0  | STD | 0.716  | K | 0.213 | M | -0.658 | H | 0.673 | H |
| 202.0 | 120.0 | STD | -0.710 | C | 0.217 | A | 0.665  | L | 0.666 | L |
| 202.0 | 180.0 | STD | 0.724  | G | 0.215 | M | 0.648  | J | 0.663 | D |
| 202.0 | 240.0 | STD | -0.716 | K | 0.213 | M | 0.658  | H | 0.673 | H |
| 202.0 | 0.0   | STD | -0.724 | G | 0.215 | M | -0.648 | J | 0.663 | D |
| 202.0 | 300.0 | STD | 0.710  | C | 0.217 | A | -0.665 | L | 0.666 | L |

MAXIMUM TENSION IN MAST MEMBERS (kip)

=====

| ELEV<br>ft | LEGS               | DIAG    | HORIZ  | BRACE  |
|------------|--------------------|---------|--------|--------|
| 300.0      | -----<br>2.02 M    | 6.62 M  | 1.64 F | 0.00 A |
| 290.0      | -----<br>14.33 M   | 12.80 A | 0.06 c | 0.00 A |
| 280.0      | -----<br>35.25 M   | 19.43 M | 0.01 E | 0.00 A |
| 270.0      | -----<br>63.99 M   | 25.37 A | 0.08 c | 0.00 A |
| 260.0      | -----<br>99.24 M   | 30.75 M | 0.04 E | 0.00 A |
| 250.0      | -----<br>139.78 M  | 36.91 A | 0.07 E | 0.00 A |
| 240.0      | -----<br>185.77 M  | 41.97 M | 0.04 A | 0.00 A |
| 230.0      | -----<br>236.00 M  | 48.68 A | 0.06 E | 0.00 A |
| 220.0      | -----<br>292.99 M  | 53.40 M | 0.07 I | 0.00 A |
| 210.0      | -----<br>352.90 M  | 59.33 M | 0.04 E | 0.00 A |
| 200.0      | -----<br>418.38 M  | 61.91 M | 0.23 k | 0.00 A |
| 190.0      | -----<br>484.23 M  | 60.81 M | 0.06 S | 0.00 A |
| 180.0      | -----<br>558.37 M  | 62.13 M | 0.56 I | 0.00 A |
| 173.3      | -----<br>556.48 M  | 77.43 M | 1.81 M | 0.00 W |
| 160.0      | -----<br>675.31 M  | 60.29 M | 0.36 E | 0.00 A |
| 153.3      | -----<br>673.48 M  | 73.87 M | 1.78 M | 0.00 M |
| 140.0      | -----<br>784.03 M  | 58.77 M | 0.43 I | 0.00 A |
| 133.3      | -----<br>782.03 M  | 71.05 M | 1.82 M | 0.00 A |
| 120.0      | -----<br>885.38 M  | 57.78 M | 0.39 A | 0.00 A |
| 113.3      | -----<br>883.24 M  | 68.94 M | 1.82 M | 0.00 A |
| 100.0      | -----<br>980.82 M  | 57.08 M | 0.39 A | 0.00 A |
| 93.3       | -----<br>978.50 M  | 67.33 M | 1.83 M | 0.00 M |
| 80.0       | -----<br>1071.19 M | 56.66 M | 0.37 A | 0.00 A |
| 73.3       | -----<br>1068.69 M | 66.35 P | 1.80 M | 0.00 H |
| 60.0       | -----<br>1157.11 M | 56.51 P | 0.35 A | 0.00 A |
| 53.3       | -----<br>1154.48 M | 65.61 P | 1.71 M | 0.00 T |
| 40.0       | -----<br>1239.13 M | 56.52 P | 0.33 A | 0.00 A |
| 33.3       | -----<br>1235.93 M | 64.94 P | 1.56 M | 0.00 Q |
| 20.0       | -----<br>1316.66 M | 56.50 P | 0.06 A | 0.00 Q |
| 13.3       | -----<br>1313.33 M | 64.25 P | 1.41 M | 0.00 S |
| 0.0        | -----              |         | 0.00 A | 0.00 A |

MAXIMUM COMPRESSION IN MAST MEMBERS (kip)

=====

| ELEV<br>ft | LEGS       | DIAG     | HORIZ   | BRACE  |
|------------|------------|----------|---------|--------|
| 300.0      | -----      |          | -2.25 U | 0.00 A |
|            | -8.80 a    | -6.96 C  |         |        |
| 290.0      | -----      |          | -0.02 W | 0.00 A |
|            | -24.84 C   | -12.41 M |         |        |
| 280.0      | -----      |          | -0.01 W | 0.00 A |
|            | -51.20 G   | -19.29 C |         |        |
| 270.0      | -----      |          | -0.04 W | 0.00 A |
|            | -87.03 G   | -24.78 M |         |        |
| 260.0      | -----      |          | -0.03 W | 0.00 A |
|            | -128.42 G  | -30.47 A |         |        |
| 250.0      | -----      |          | -0.05 W | 0.00 A |
|            | -178.24 G  | -36.02 M |         |        |
| 240.0      | -----      |          | -0.03 S | 0.00 A |
|            | -234.25 G  | -41.52 A |         |        |
| 230.0      | -----      |          | -0.04 W | 0.00 A |
|            | -298.00 G  | -47.70 A |         |        |
| 220.0      | -----      |          | -0.05 S | 0.00 A |
|            | -366.98 G  | -52.88 A |         |        |
| 210.0      | -----      |          | -0.04 W | 0.00 A |
|            | -440.16 G  | -58.36 A |         |        |
| 200.0      | -----      |          | -0.11 R | 0.00 A |
|            | -516.93 G  | -61.55 A |         |        |
| 190.0      | -----      |          | -0.07 A | 0.00 A |
|            | -588.25 G  | -60.41 A |         |        |
| 180.0      | -----      |          | -0.47 S | 0.00 A |
|            | -667.76 G  | -61.52 A |         |        |
| 173.3      | -----      |          | -2.13 G | 0.00 C |
|            | -670.28 G  | -77.03 A |         |        |
| 160.0      | -----      |          | -0.33 W | 0.00 A |
|            | -796.85 G  | -59.49 A |         |        |
| 153.3      | -----      |          | -2.10 G | 0.00 S |
|            | -799.29 G  | -73.36 A |         |        |
| 140.0      | -----      |          | -0.38 S | 0.00 A |
|            | -917.94 G  | -58.06 D |         |        |
| 133.3      | -----      |          | -2.17 G | 0.00 G |
|            | -920.60 G  | -70.60 A |         |        |
| 120.0      | -----      |          | -0.35 W | 0.00 A |
|            | -1032.63 G | -57.30 D |         |        |
| 113.3      | -----      |          | -2.18 G | 0.00 S |
|            | -1035.49 G | -68.68 D |         |        |
| 100.0      | -----      |          | -0.35 S | 0.00 A |
|            | -1142.33 G | -56.87 D |         |        |
| 93.3       | -----      |          | -2.21 G | 0.00 S |
|            | -1145.42 G | -67.38 D |         |        |
| 80.0       | -----      |          | -0.32 S | 0.00 A |
|            | -1247.95 G | -56.71 D |         |        |
| 73.3       | -----      |          | -2.19 G | 0.00 O |
|            | -1251.28 G | -66.46 D |         |        |
| 60.0       | -----      |          | -0.30 S | 0.00 A |
|            | -1350.26 G | -56.71 D |         |        |
| 53.3       | -----      |          | -2.11 G | 0.00 B |
|            | -1353.76 G | -65.73 D |         |        |
| 40.0       | -----      |          | -0.26 S | 0.00 A |
|            | -1449.38 G | -56.74 D |         |        |
| 33.3       | -----      |          | -2.00 G | 0.00 M |
|            | -1453.64 G | -65.06 D |         |        |
| 20.0       | -----      |          | -0.05 S | 0.00 M |
|            | -1546.65 G | -56.67 D |         |        |
| 13.3       | -----      |          | -1.85 G | 0.00 A |
|            | -1551.09 G | -64.34 D |         |        |
| 0.0        | -----      |          | 0.00 A  | 0.00 A |

FORCE/RESISTANCE RATIO IN LEGS  
 =====

| MAST<br>ELEV<br>ft | -- LEG COMPRESSION -- |                |                           | ---- LEG TENSION --- |                |                           |
|--------------------|-----------------------|----------------|---------------------------|----------------------|----------------|---------------------------|
|                    | MAX<br>COMP           | COMP<br>RESIST | FORCE/<br>RESIST<br>RATIO | MAX<br>TENS          | TENS<br>RESIST | FORCE/<br>RESIST<br>RATIO |
| 300.00             | 8.80                  | 143.65         | 0.06                      | 2.02                 | 193.50         | 0.01                      |
| 290.00             | 24.84                 | 143.65         | 0.17                      | 14.33                | 193.50         | 0.07                      |
| 280.00             | 51.20                 | 143.65         | 0.36                      | 35.25                | 193.50         | 0.18                      |
| 270.00             | 87.03                 | 143.65         | 0.61                      | 63.99                | 193.50         | 0.33                      |
| 260.00             | 128.42                | 201.46         | 0.64                      | 99.24                | 274.95         | 0.36                      |
| 250.00             | 178.24                | 201.46         | 0.88                      | 139.78               | 274.95         | 0.51                      |
| 240.00             | 234.25                | 334.65         | 0.70                      | 185.77               | 378.00         | 0.49                      |
| 230.00             | 298.00                | 334.65         | 0.89                      | 236.00               | 378.00         | 0.62                      |
| 220.00             | 366.98                | 507.33         | 0.72                      | 292.99               | 576.00         | 0.51                      |
| 210.00             | 440.16                | 507.33         | 0.87                      | 352.90               | 576.00         | 0.61                      |
| 200.00             | 516.93                | 621.06         | 0.83                      | 418.38               | 656.10         | 0.64                      |
| 190.00             | 588.25                | 621.06         | 0.95                      | 484.23               | 656.10         | 0.74                      |
| 180.00             | 667.76                | 844.46         | 0.79                      | 558.37               | 865.80         | 0.64                      |
| 173.33             | 670.28                | 844.46         | 0.79                      | 556.48               | 865.80         | 0.64                      |
| 160.00             | 796.85                | 844.46         | 0.94                      | 675.31               | 865.80         | 0.78                      |
| 153.33             | 799.29                | 844.46         | 0.95                      | 673.48               | 865.80         | 0.78                      |
| 140.00             | 917.94                | 935.10         | 0.98                      | 784.03               | 954.45         | 0.82                      |
| 133.33             | 920.60                | 935.10         | 0.98                      | 782.03               | 954.45         | 0.82                      |
| 120.00             | 1032.63               | 1081.02        | 0.96                      | 885.38               | 1098.00        | 0.81                      |
| 113.33             | 1035.49               | 1081.02        | 0.96                      | 883.24               | 1098.00        | 0.80                      |
| 100.00             | 1142.33               | 1222.48        | 0.93                      | 980.82               | 1237.50        | 0.79                      |
| 93.33              | 1145.42               | 1222.48        | 0.94                      | 978.50               | 1237.50        | 0.79                      |
| 80.00              | 1247.95               | 1364.87        | 0.91                      | 1071.19              | 1315.31        | 0.81                      |
| 73.33              | 1251.28               | 1364.87        | 0.92                      | 1068.69              | 1315.31        | 0.81                      |
| 60.00              | 1350.26               | 1364.87        | 0.99                      | 1157.11              | 1315.31        | 0.88                      |
| 53.33              | 1353.76               | 1364.87        | 0.99                      | 1154.48              | 1315.31        | 0.88                      |
| 40.00              | 1449.38               | 1694.81        | 0.86                      | 1239.13              | 1315.31        | 0.94                      |
| 33.33              | 1453.64               | 1694.81        | 0.86                      | 1235.93              | 1315.31        | 0.94                      |
| 20.00              | 1546.65               | 1694.81        | 0.91                      | 1316.66              | 1711.80        | 0.77                      |
| 13.33              |                       |                |                           |                      |                |                           |

1551.09 1694.81 0.92 1313.33 1711.80 0.77  
 0.00 -----

FORCE/RESISTANCE RATIO IN DIAGONALS  
 =====

| MAST<br>ELEV<br>ft | - DIAG COMPRESSION - |                |                           | --- DIAG TENSION --- |                |                           |
|--------------------|----------------------|----------------|---------------------------|----------------------|----------------|---------------------------|
|                    | MAX<br>COMP          | COMP<br>RESIST | FORCE/<br>RESIST<br>RATIO | MAX<br>TENS          | TENS<br>RESIST | FORCE/<br>RESIST<br>RATIO |
| 300.00             | 6.96                 | 12.87          | 0.54                      | 6.62                 | 12.87          | 0.51                      |
| 290.00             | 12.41                | 12.87          | 0.96                      | 12.80                | 12.87          | 0.99                      |
| 280.00             | 19.29                | 27.03          | 0.71                      | 19.43                | 27.03          | 0.72                      |
| 270.00             | 24.78                | 27.03          | 0.92                      | 25.37                | 27.03          | 0.94                      |
| 260.00             | 30.47                | 39.49          | 0.77                      | 30.75                | 39.49          | 0.78                      |
| 250.00             | 36.02                | 39.49          | 0.91                      | 36.91                | 39.49          | 0.93                      |
| 240.00             | 41.52                | 59.47          | 0.70                      | 41.97                | 59.47          | 0.71                      |
| 230.00             | 47.70                | 59.47          | 0.80                      | 48.68                | 59.47          | 0.82                      |
| 220.00             | 52.88                | 59.53          | 0.89                      | 53.40                | 59.53          | 0.90                      |
| 210.00             | 58.36                | 59.53          | 0.98                      | 59.33                | 59.53          | 1.00                      |
| 200.00             | 61.55                | 74.06          | 0.83                      | 61.91                | 74.06          | 0.84                      |
| 190.00             | 60.41                | 74.06          | 0.82                      | 60.81                | 74.06          | 0.82                      |
| 180.00             | 61.52                | 84.05          | 0.73                      | 62.13                | 84.05          | 0.74                      |
| 173.33             | 77.03                | 98.41          | 0.78                      | 77.43                | 98.41          | 0.79                      |
| 160.00             | 59.49                | 77.46          | 0.77                      | 60.29                | 77.46          | 0.78                      |
| 153.33             | 73.36                | 77.75          | 0.94                      | 73.87                | 77.75          | 0.95                      |
| 140.00             | 58.06                | 72.71          | 0.80                      | 58.77                | 72.71          | 0.81                      |
| 133.33             | 70.60                | 77.75          | 0.91                      | 71.05                | 77.75          | 0.91                      |
| 120.00             | 57.30                | 67.31          | 0.85                      | 57.78                | 67.31          | 0.86                      |
| 113.33             | 68.68                | 77.75          | 0.88                      | 68.94                | 77.75          | 0.89                      |
| 100.00             | 56.87                | 62.84          | 0.90                      | 57.08                | 62.84          | 0.91                      |
| 93.33              | 67.38                | 76.39          | 0.88                      | 67.33                | 76.39          | 0.88                      |
| 80.00              | 56.71                | 58.43          | 0.97                      | 56.66                | 58.43          | 0.97                      |
| 73.33              | 66.46                | 70.80          | 0.94                      | 66.35                | 70.80          | 0.94                      |
| 60.00              | 56.71                | 66.49          | 0.85                      | 56.51                | 66.49          | 0.85                      |
| 53.33              | 65.73                | 65.80          | 1.00                      | 65.61                | 65.80          | 1.00                      |
| 40.00              | 56.74                | 62.11          | 0.91                      | 56.52                | 62.11          | 0.91                      |
| 33.33              | 65.06                | 74.15          | 0.88                      | 64.94                | 74.15          | 0.88                      |
| 20.00              | 56.67                | 58.15          | 0.97                      | 56.50                | 58.15          | 0.97                      |

13.33 -----  
 64.34 69.26 0.93 64.25 69.26 0.93  
 0.00 -----

MAXIMUM INDIVIDUAL FOUNDATION LOADS: (kip)

```
=====
```

| -----LOAD---COMPONENTS----- |           |           |            | TOTAL    |
|-----------------------------|-----------|-----------|------------|----------|
| NORTH                       | EAST      | DOWN      | UPLIFT     | SHEAR    |
| 175.02 G                    | -152.46 C | 1608.93 G | -1362.86 M | 175.03 G |

MAXIMUM TOTAL LOADS ON FOUNDATION : (kip & kip-ft)

```
=====
```

| -----HORIZONTAL----- |          |         | DOWN    | -----OVERTURNING----- |            |           | TORSION  |
|----------------------|----------|---------|---------|-----------------------|------------|-----------|----------|
| NORTH                | EAST     | TOTAL   |         | NORTH                 | EAST       | TOTAL     |          |
|                      |          | @ 0.0   |         |                       |            | @ 0.0     |          |
| 294.5 G              | -266.3 D | 294.5 G | 730.7 h | 58294.2 G             | -52447.3 D | 58294.2 G | -659.2 M |

```
=====
```

Latticed Tower Analysis (Unguyed) (c)2024 Guymast Inc. 416-736-7453  
 Processed under license at:

Sabre Towers and Poles on: 26 mar 2024 at: 16:39:35

```
=====
```

```
*****
***** Service Load Condition *****
*****
```

```
=====
```

\* Only 1 condition(s) shown in full  
 \* Some wind loads may have been derived from full-scale wind tunnel testing

```
=====
```

LOADING CONDITION A =====

60 mph wind with no ice. Wind Azimuth: 00 (1.0 D + 1.0 Wo)

MAST LOADING

```
=====
```

| LOAD TYPE | ELEV ft | APPLY..LOAD..AT RADIUS ft | AZI | LOAD AZI | .....FORCES..... |          | .....MOMENTS..... |                |
|-----------|---------|---------------------------|-----|----------|------------------|----------|-------------------|----------------|
|           |         |                           |     |          | HORIZ kip        | DOWN kip | VERTICAL ft-kip   | TORSNAL ft-kip |
| C         | 300.0   | 0.00                      | 0.0 | 0.0      | 0.85             | 4.75     | 0.00              | 0.00           |
| C         | 300.0   | 0.00                      | 0.0 | 0.0      | 0.04             | 0.20     | 0.00              | 0.00           |
| C         | 293.0   | 0.00                      | 0.0 | 0.0      | 0.82             | 3.00     | 0.00              | 0.00           |
| C         | 286.0   | 0.00                      | 0.0 | 0.0      | 0.84             | 3.13     | 0.00              | 0.00           |
| C         | 279.0   | 0.00                      | 0.0 | 0.0      | 0.87             | 3.24     | 0.00              | 0.00           |
| C         | 272.0   | 0.00                      | 0.0 | 0.0      | 0.89             | 3.34     | 0.00              | 0.00           |
| C         | 265.0   | 0.00                      | 0.0 | 0.0      | 0.91             | 3.45     | 0.00              | 0.00           |
| C         | 258.0   | 0.00                      | 0.0 | 0.0      | 0.94             | 3.55     | 0.00              | 0.00           |



|   |       |      |       |     |      |      |      |       |
|---|-------|------|-------|-----|------|------|------|-------|
| C | 251.0 | 0.00 | 0.0   | 0.0 | 0.96 | 3.65 | 0.00 | 0.00  |
| C | 244.0 | 0.00 | 0.0   | 0.0 | 1.38 | 6.65 | 0.00 | 0.00  |
| C | 237.0 | 0.00 | 0.0   | 0.0 | 1.41 | 6.80 | 0.00 | 0.00  |
| C | 230.0 | 0.00 | 0.0   | 0.0 | 1.44 | 7.00 | 0.00 | 0.00  |
| C | 223.0 | 0.00 | 0.0   | 0.0 | 1.46 | 7.15 | 0.00 | 0.00  |
| C | 216.0 | 0.00 | 0.0   | 0.0 | 1.49 | 7.35 | 0.00 | 0.00  |
| C | 209.0 | 0.00 | 0.0   | 0.0 | 1.52 | 7.50 | 0.00 | 0.00  |
| C | 202.0 | 0.00 | 0.0   | 0.0 | 1.54 | 7.70 | 0.00 | 0.00  |
|   |       |      |       |     |      |      |      |       |
| D | 300.0 | 0.00 | 306.8 | 0.0 | 0.08 | 0.18 | 0.10 | -0.10 |
| D | 290.0 | 0.00 | 306.8 | 0.0 | 0.08 | 0.18 | 0.10 | -0.10 |
| D | 290.0 | 0.00 | 308.2 | 0.0 | 0.07 | 0.15 | 0.17 | -0.14 |
| D | 280.0 | 0.00 | 308.2 | 0.0 | 0.07 | 0.15 | 0.17 | -0.14 |
| D | 280.0 | 0.00 | 310.5 | 0.0 | 0.08 | 0.21 | 0.25 | -0.16 |
| D | 270.0 | 0.00 | 310.5 | 0.0 | 0.08 | 0.21 | 0.25 | -0.16 |
| D | 270.0 | 0.00 | 317.5 | 0.0 | 0.09 | 0.22 | 0.27 | -0.14 |
| D | 260.0 | 0.00 | 317.5 | 0.0 | 0.09 | 0.22 | 0.27 | -0.14 |
| D | 260.0 | 0.00 | 334.1 | 0.0 | 0.10 | 0.29 | 0.26 | -0.12 |
| D | 250.0 | 0.00 | 334.1 | 0.0 | 0.10 | 0.29 | 0.26 | -0.12 |
| D | 250.0 | 0.00 | 352.6 | 0.0 | 0.10 | 0.30 | 0.27 | -0.10 |
| D | 240.0 | 0.00 | 352.6 | 0.0 | 0.10 | 0.30 | 0.27 | -0.10 |
| D | 240.0 | 0.00 | 6.6   | 0.0 | 0.11 | 0.45 | 0.28 | -0.10 |
| D | 230.0 | 0.00 | 6.6   | 0.0 | 0.11 | 0.45 | 0.28 | -0.10 |
| D | 230.0 | 0.00 | 8.1   | 0.0 | 0.12 | 0.47 | 0.22 | -0.11 |
| D | 220.0 | 0.00 | 8.1   | 0.0 | 0.12 | 0.47 | 0.22 | -0.11 |
| D | 220.0 | 0.00 | 4.9   | 0.0 | 0.12 | 0.46 | 0.15 | -0.11 |
| D | 210.0 | 0.00 | 4.9   | 0.0 | 0.12 | 0.46 | 0.15 | -0.11 |
| D | 210.0 | 0.00 | 349.5 | 0.0 | 0.12 | 0.48 | 0.08 | -0.12 |
| D | 200.0 | 0.00 | 349.5 | 0.0 | 0.12 | 0.48 | 0.08 | -0.12 |
| D | 200.0 | 0.00 | 321.2 | 0.0 | 0.13 | 0.59 | 0.05 | -0.12 |
| D | 180.0 | 0.00 | 320.1 | 0.0 | 0.13 | 0.60 | 0.05 | -0.12 |
| D | 180.0 | 0.00 | 323.4 | 0.0 | 0.12 | 0.58 | 0.06 | -0.12 |
| D | 173.3 | 0.00 | 323.4 | 0.0 | 0.12 | 0.58 | 0.06 | -0.12 |
| D | 173.3 | 0.00 | 322.4 | 0.0 | 0.13 | 0.65 | 0.06 | -0.12 |
| D | 160.0 | 0.00 | 322.4 | 0.0 | 0.13 | 0.65 | 0.06 | -0.12 |
| D | 160.0 | 0.00 | 325.2 | 0.0 | 0.12 | 0.59 | 0.06 | -0.11 |
| D | 153.3 | 0.00 | 325.2 | 0.0 | 0.12 | 0.59 | 0.06 | -0.11 |
| D | 153.3 | 0.00 | 324.3 | 0.0 | 0.13 | 0.62 | 0.06 | -0.11 |
| D | 140.0 | 0.00 | 324.3 | 0.0 | 0.13 | 0.62 | 0.06 | -0.11 |
| D | 140.0 | 0.00 | 326.9 | 0.0 | 0.12 | 0.63 | 0.06 | -0.11 |
| D | 133.3 | 0.00 | 326.9 | 0.0 | 0.12 | 0.63 | 0.06 | -0.11 |
| D | 133.3 | 0.00 | 326.1 | 0.0 | 0.14 | 0.68 | 0.06 | -0.11 |
| D | 120.0 | 0.00 | 326.1 | 0.0 | 0.14 | 0.68 | 0.06 | -0.11 |
| D | 120.0 | 0.00 | 328.5 | 0.0 | 0.12 | 0.68 | 0.06 | -0.11 |
| D | 113.3 | 0.00 | 328.5 | 0.0 | 0.12 | 0.68 | 0.06 | -0.11 |
| D | 113.3 | 0.00 | 327.7 | 0.0 | 0.14 | 0.73 | 0.06 | -0.11 |
| D | 100.0 | 0.00 | 327.7 | 0.0 | 0.14 | 0.73 | 0.06 | -0.11 |
| D | 100.0 | 0.00 | 329.9 | 0.0 | 0.12 | 0.73 | 0.07 | -0.10 |
| D | 93.3  | 0.00 | 329.9 | 0.0 | 0.12 | 0.73 | 0.07 | -0.10 |
| D | 93.3  | 0.00 | 329.2 | 0.0 | 0.14 | 0.79 | 0.07 | -0.10 |
| D | 80.0  | 0.00 | 329.2 | 0.0 | 0.14 | 0.79 | 0.07 | -0.10 |
| D | 80.0  | 0.00 | 331.2 | 0.0 | 0.12 | 0.78 | 0.07 | -0.10 |
| D | 73.3  | 0.00 | 331.2 | 0.0 | 0.12 | 0.78 | 0.07 | -0.10 |
| D | 73.3  | 0.00 | 330.6 | 0.0 | 0.14 | 0.86 | 0.07 | -0.10 |
| D | 60.0  | 0.00 | 330.6 | 0.0 | 0.14 | 0.86 | 0.07 | -0.10 |
| D | 60.0  | 0.00 | 332.4 | 0.0 | 0.11 | 0.88 | 0.07 | -0.09 |
| D | 53.3  | 0.00 | 332.4 | 0.0 | 0.11 | 0.88 | 0.07 | -0.09 |
| D | 53.3  | 0.00 | 331.8 | 0.0 | 0.13 | 0.87 | 0.07 | -0.09 |
| D | 40.0  | 0.00 | 331.8 | 0.0 | 0.13 | 0.87 | 0.07 | -0.09 |
| D | 40.0  | 0.00 | 333.5 | 0.0 | 0.11 | 0.97 | 0.08 | -0.08 |
| D | 33.3  | 0.00 | 333.5 | 0.0 | 0.11 | 0.97 | 0.08 | -0.08 |
| D | 33.3  | 0.00 | 333.0 | 0.0 | 0.12 | 1.11 | 0.07 | -0.08 |
| D | 20.0  | 0.00 | 333.0 | 0.0 | 0.12 | 1.11 | 0.07 | -0.08 |
| D | 20.0  | 0.00 | 334.6 | 0.0 | 0.09 | 1.00 | 0.08 | -0.07 |
| D | 13.3  | 0.00 | 334.6 | 0.0 | 0.09 | 1.00 | 0.08 | -0.07 |
| D | 13.3  | 0.00 | 334.1 | 0.0 | 0.11 | 1.16 | 0.08 | -0.07 |
| D | 0.0   | 0.00 | 334.1 | 0.0 | 0.11 | 1.16 | 0.08 | -0.07 |

ANTENNA LOADING

=====

| .....ANTENNA..... |       | ATTACHMENT |      | .....ANTENNA FORCES..... |       |       |         |         |
|-------------------|-------|------------|------|--------------------------|-------|-------|---------|---------|
| TYPE              | ELEV  | AZI        | RAD  | AZI                      | AXIAL | SHEAR | GRAVITY | TORSION |
|                   | ft    |            | ft   |                          | kip   | kip   | kip     | ft-kip  |
| STD               | 300.0 | 60.0       | 10.2 | 120.0                    | 0.50  | -0.07 | 0.17    | 0.16    |
| STD               | 300.0 | 120.0      | 10.2 | 240.0                    | -0.14 | -0.14 | 0.17    | -0.26   |
| STD               | 300.0 | 180.0      | 10.2 | 120.0                    | -0.32 | 0.00  | 0.17    | 0.00    |
| STD               | 300.0 | 240.0      | 10.2 | 240.0                    | -0.14 | 0.14  | 0.17    | 0.26    |
| STD               | 300.0 | 0.0        | 10.2 | 0.0                      | 0.47  | 0.00  | 0.17    | 0.00    |
| STD               | 300.0 | 300.0      | 10.2 | 0.0                      | 0.50  | 0.07  | 0.17    | -0.16   |
| STD               | 293.0 | 0.0        | 10.6 | 0.0                      | 0.46  | 0.00  | 0.17    | 0.00    |
| STD               | 293.0 | 60.0       | 10.6 | 120.0                    | 0.49  | -0.07 | 0.17    | 0.16    |
| STD               | 293.0 | 120.0      | 10.6 | 240.0                    | -0.14 | -0.14 | 0.17    | -0.26   |
| STD               | 293.0 | 180.0      | 10.6 | 120.0                    | -0.31 | 0.00  | 0.17    | 0.00    |
| STD               | 293.0 | 300.0      | 10.6 | 0.0                      | 0.49  | 0.07  | 0.17    | -0.16   |
| STD               | 293.0 | 240.0      | 10.6 | 240.0                    | -0.14 | 0.14  | 0.17    | 0.26    |
| STD               | 286.0 | 0.0        | 11.0 | 0.0                      | 0.46  | 0.00  | 0.17    | 0.00    |
| STD               | 286.0 | 60.0       | 11.0 | 120.0                    | 0.49  | -0.07 | 0.17    | 0.16    |
| STD               | 286.0 | 120.0      | 11.0 | 240.0                    | -0.14 | -0.14 | 0.17    | -0.25   |
| STD               | 286.0 | 180.0      | 11.0 | 120.0                    | -0.31 | 0.00  | 0.17    | 0.00    |
| STD               | 286.0 | 240.0      | 11.0 | 240.0                    | -0.14 | 0.14  | 0.17    | 0.25    |
| STD               | 286.0 | 300.0      | 11.0 | 0.0                      | 0.49  | 0.07  | 0.17    | -0.16   |
| STD               | 279.0 | 60.0       | 11.4 | 120.0                    | 0.49  | -0.07 | 0.17    | 0.16    |
| STD               | 279.0 | 120.0      | 11.4 | 240.0                    | -0.14 | -0.14 | 0.17    | -0.25   |
| STD               | 279.0 | 180.0      | 11.4 | 120.0                    | -0.31 | 0.00  | 0.17    | 0.00    |
| STD               | 279.0 | 240.0      | 11.4 | 240.0                    | -0.14 | 0.14  | 0.17    | 0.25    |
| STD               | 279.0 | 300.0      | 11.4 | 0.0                      | 0.49  | 0.07  | 0.17    | -0.16   |
| STD               | 279.0 | 0.0        | 11.4 | 0.0                      | 0.46  | 0.00  | 0.17    | 0.00    |
| STD               | 272.0 | 60.0       | 11.8 | 120.0                    | 0.49  | -0.07 | 0.17    | 0.15    |
| STD               | 272.0 | 120.0      | 11.8 | 240.0                    | -0.13 | -0.13 | 0.17    | -0.25   |
| STD               | 272.0 | 180.0      | 11.8 | 120.0                    | -0.31 | 0.00  | 0.17    | 0.00    |
| STD               | 272.0 | 240.0      | 11.8 | 240.0                    | -0.13 | 0.13  | 0.17    | 0.25    |
| STD               | 272.0 | 300.0      | 11.8 | 0.0                      | 0.49  | 0.07  | 0.17    | -0.15   |
| STD               | 272.0 | 0.0        | 11.8 | 0.0                      | 0.46  | 0.00  | 0.17    | 0.00    |
| STD               | 265.0 | 60.0       | 12.2 | 120.0                    | 0.48  | -0.07 | 0.17    | 0.15    |
| STD               | 265.0 | 120.0      | 12.2 | 240.0                    | -0.13 | -0.13 | 0.17    | -0.25   |
| STD               | 265.0 | 240.0      | 12.2 | 240.0                    | -0.13 | 0.13  | 0.17    | 0.25    |
| STD               | 265.0 | 180.0      | 12.2 | 120.0                    | -0.31 | 0.00  | 0.17    | 0.00    |
| STD               | 265.0 | 300.0      | 12.2 | 0.0                      | 0.48  | 0.07  | 0.17    | -0.15   |
| STD               | 265.0 | 0.0        | 12.2 | 0.0                      | 0.45  | 0.00  | 0.17    | 0.00    |
| STD               | 258.0 | 60.0       | 12.6 | 120.0                    | 0.48  | -0.07 | 0.17    | 0.15    |
| STD               | 258.0 | 120.0      | 12.6 | 240.0                    | -0.13 | -0.13 | 0.17    | -0.25   |
| STD               | 258.0 | 180.0      | 12.6 | 120.0                    | -0.31 | 0.00  | 0.17    | 0.00    |
| STD               | 258.0 | 240.0      | 12.6 | 240.0                    | -0.13 | 0.13  | 0.17    | 0.25    |
| STD               | 258.0 | 300.0      | 12.6 | 0.0                      | 0.48  | 0.07  | 0.17    | -0.15   |
| STD               | 258.0 | 0.0        | 12.6 | 0.0                      | 0.45  | 0.00  | 0.17    | 0.00    |
| STD               | 251.0 | 240.0      | 13.0 | 240.0                    | -0.13 | 0.13  | 0.17    | 0.25    |
| STD               | 251.0 | 180.0      | 13.0 | 120.0                    | -0.31 | 0.00  | 0.17    | 0.00    |
| STD               | 251.0 | 120.0      | 13.0 | 240.0                    | -0.13 | -0.13 | 0.17    | -0.25   |
| STD               | 251.0 | 60.0       | 13.0 | 120.0                    | 0.48  | -0.07 | 0.17    | 0.15    |
| STD               | 251.0 | 0.0        | 13.0 | 0.0                      | 0.45  | 0.00  | 0.17    | 0.00    |
| STD               | 251.0 | 300.0      | 13.0 | 0.0                      | 0.48  | 0.07  | 0.17    | -0.15   |
| STD               | 244.0 | 60.0       | 13.4 | 120.0                    | 0.47  | -0.07 | 0.17    | 0.15    |
| STD               | 244.0 | 120.0      | 13.4 | 240.0                    | -0.13 | -0.13 | 0.17    | -0.25   |
| STD               | 244.0 | 180.0      | 13.4 | 120.0                    | -0.30 | 0.00  | 0.17    | 0.00    |
| STD               | 244.0 | 240.0      | 13.4 | 240.0                    | -0.13 | 0.13  | 0.17    | 0.25    |
| STD               | 244.0 | 300.0      | 13.4 | 0.0                      | 0.47  | 0.07  | 0.17    | -0.15   |
| STD               | 244.0 | 0.0        | 13.4 | 0.0                      | 0.45  | 0.00  | 0.17    | 0.00    |
| STD               | 237.0 | 120.0      | 13.8 | 240.0                    | -0.13 | -0.13 | 0.17    | -0.25   |
| STD               | 237.0 | 60.0       | 13.8 | 120.0                    | 0.47  | -0.07 | 0.17    | 0.15    |
| STD               | 237.0 | 180.0      | 13.8 | 120.0                    | -0.30 | 0.00  | 0.17    | 0.00    |
| STD               | 237.0 | 240.0      | 13.8 | 240.0                    | -0.13 | 0.13  | 0.17    | 0.25    |
| STD               | 237.0 | 300.0      | 13.8 | 0.0                      | 0.47  | 0.07  | 0.17    | -0.15   |
| STD               | 237.0 | 0.0        | 13.8 | 0.0                      | 0.44  | 0.00  | 0.17    | 0.00    |
| STD               | 230.0 | 60.0       | 14.2 | 120.0                    | 0.47  | -0.07 | 0.17    | 0.15    |
| STD               | 230.0 | 120.0      | 14.2 | 240.0                    | -0.13 | -0.13 | 0.17    | -0.24   |
| STD               | 230.0 | 180.0      | 14.2 | 120.0                    | -0.30 | 0.00  | 0.17    | 0.00    |

|     |       |       |      |       |       |       |      |       |
|-----|-------|-------|------|-------|-------|-------|------|-------|
| STD | 230.0 | 240.0 | 14.2 | 240.0 | -0.13 | 0.13  | 0.17 | 0.24  |
| STD | 230.0 | 300.0 | 14.2 | 0.0   | 0.47  | 0.07  | 0.17 | -0.15 |
| STD | 230.0 | 0.0   | 14.2 | 0.0   | 0.44  | 0.00  | 0.17 | 0.00  |
| STD | 223.0 | 60.0  | 14.6 | 120.0 | 0.47  | -0.07 | 0.17 | 0.15  |
| STD | 223.0 | 120.0 | 14.6 | 240.0 | -0.13 | -0.13 | 0.17 | -0.24 |
| STD | 223.0 | 180.0 | 14.6 | 120.0 | -0.30 | 0.00  | 0.17 | 0.00  |
| STD | 223.0 | 240.0 | 14.6 | 240.0 | -0.13 | 0.13  | 0.17 | 0.24  |
| STD | 223.0 | 300.0 | 14.6 | 0.0   | 0.47  | 0.07  | 0.17 | -0.15 |
| STD | 223.0 | 0.0   | 14.6 | 0.0   | 0.44  | 0.00  | 0.17 | 0.00  |
| STD | 216.0 | 120.0 | 15.0 | 240.0 | -0.13 | -0.13 | 0.17 | -0.24 |
| STD | 216.0 | 180.0 | 15.0 | 120.0 | -0.30 | 0.00  | 0.17 | 0.00  |
| STD | 216.0 | 240.0 | 15.0 | 240.0 | -0.13 | 0.13  | 0.17 | 0.24  |
| STD | 216.0 | 300.0 | 15.0 | 0.0   | 0.46  | 0.07  | 0.17 | -0.15 |
| STD | 216.0 | 0.0   | 15.0 | 0.0   | 0.44  | 0.00  | 0.17 | 0.00  |
| STD | 216.0 | 60.0  | 15.0 | 120.0 | 0.46  | -0.07 | 0.17 | 0.15  |
| STD | 209.0 | 120.0 | 15.4 | 240.0 | -0.13 | -0.13 | 0.17 | -0.24 |
| STD | 209.0 | 180.0 | 15.4 | 120.0 | -0.29 | 0.00  | 0.17 | 0.00  |
| STD | 209.0 | 240.0 | 15.4 | 240.0 | -0.13 | 0.13  | 0.17 | 0.24  |
| STD | 209.0 | 300.0 | 15.4 | 0.0   | 0.46  | 0.07  | 0.17 | -0.14 |
| STD | 209.0 | 60.0  | 15.4 | 120.0 | 0.46  | -0.07 | 0.17 | 0.14  |
| STD | 209.0 | 0.0   | 15.4 | 0.0   | 0.43  | 0.00  | 0.17 | 0.00  |
| STD | 202.0 | 60.0  | 15.8 | 120.0 | 0.46  | -0.07 | 0.17 | 0.14  |
| STD | 202.0 | 120.0 | 15.8 | 240.0 | -0.13 | -0.13 | 0.17 | -0.24 |
| STD | 202.0 | 180.0 | 15.8 | 120.0 | -0.29 | 0.00  | 0.17 | 0.00  |
| STD | 202.0 | 240.0 | 15.8 | 240.0 | -0.13 | 0.13  | 0.17 | 0.24  |
| STD | 202.0 | 0.0   | 15.8 | 0.0   | 0.43  | 0.00  | 0.17 | 0.00  |
| STD | 202.0 | 300.0 | 15.8 | 0.0   | 0.46  | 0.07  | 0.17 | -0.14 |

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MAXIMUM MAST DISPLACEMENTS:  
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| ELEV<br>ft | -----DEFLECTIONS (ft)----- |          |         | --TILTS (DEG)--- |          | TWIST<br>DEG |
|------------|----------------------------|----------|---------|------------------|----------|--------------|
|            | NORTH                      | EAST     | DOWN    | NORTH            | EAST     |              |
| 300.0      | 0.794 G                    | 0.712 J  | 0.025 G | 0.281 G          | 0.251 J  | -0.111 A     |
| 290.0      | 0.745 G                    | 0.667 J  | 0.025 G | 0.281 G          | 0.251 J  | -0.109 A     |
| 280.0      | 0.695 G                    | 0.623 J  | 0.025 G | 0.279 G          | 0.249 J  | -0.103 A     |
| 270.0      | 0.645 G                    | 0.579 J  | 0.024 G | 0.274 G          | 0.244 J  | -0.099 A     |
| 260.0      | 0.597 G                    | 0.535 J  | 0.023 G | 0.265 G          | 0.237 J  | -0.093 A     |
| 250.0      | 0.550 G                    | 0.493 J  | 0.022 G | 0.257 G          | 0.229 J  | -0.087 A     |
| 240.0      | 0.504 G                    | 0.453 J  | 0.021 G | 0.245 G          | 0.219 J  | -0.081 A     |
| 230.0      | 0.461 G                    | 0.414 J  | 0.020 G | 0.234 G          | 0.210 J  | -0.077 A     |
| 220.0      | 0.419 G                    | 0.377 J  | 0.019 G | 0.221 G          | 0.198 J  | -0.072 A     |
| 210.0      | 0.379 G                    | 0.341 J  | 0.018 G | 0.212 G          | 0.190 J  | -0.065 A     |
| 200.0      | 0.340 G                    | 0.306 J  | 0.017 F | 0.200 G          | 0.180 J  | -0.058 A     |
| 190.0      | 0.304 G                    | 0.273 J  | 0.016 G | 0.189 G          | 0.169 J  | -0.053 A     |
| 180.0      | 0.268 G                    | 0.240 J  | 0.015 G | 0.176 G          | 0.158 J  | -0.048 A     |
| 173.3      | 0.250 G                    | -0.224 D | 0.014 K | 0.170 G          | -0.152 D | -0.045 A     |
| 160.0      | 0.210 G                    | -0.188 D | 0.013 K | 0.155 G          | -0.139 D | -0.040 A     |
| 153.3      | 0.193 G                    | 0.173 J  | 0.012 G | 0.148 G          | 0.133 J  | -0.038 A     |
| 140.0      | 0.158 G                    | 0.142 J  | 0.011 G | 0.132 G          | 0.118 J  | -0.033 A     |
| 133.3      | 0.145 G                    | -0.130 D | 0.011 G | 0.125 G          | -0.112 D | -0.031 A     |
| 120.0      | 0.115 G                    | -0.103 D | 0.009 G | 0.109 G          | -0.098 D | -0.027 A     |
| 113.3      | 0.104 G                    | 0.094 J  | 0.009 G | 0.102 G          | 0.092 J  | -0.025 A     |
| 100.0      | 0.080 G                    | 0.072 J  | 0.008 G | 0.088 G          | 0.079 J  | -0.021 A     |
| 93.3       | 0.071 G                    | -0.064 D | 0.007 G | 0.082 G          | -0.073 D | -0.019 A     |
| 80.0       | 0.052 G                    | -0.046 D | 0.006 G | 0.068 G          | -0.061 D | -0.016 A     |
| 73.3       | 0.045 G                    | 0.041 J  | 0.006 G | 0.063 G          | 0.056 J  | -0.014 A     |
| 60.0       | 0.030 G                    | 0.027 J  | 0.005 G | 0.050 G          | 0.045 J  | -0.011 A     |
| 53.3       | 0.026 G                    | -0.023 D | 0.004 G | 0.044 G          | -0.040 D | -0.009 A     |
| 40.0       | 0.015 G                    | -0.013 D | 0.003 G | 0.031 G          | -0.028 D | -0.007 A     |
| 33.3       | 0.013 G                    | 0.012 J  | 0.003 H | 0.027 G          | -0.024 D | -0.005 A     |
| 20.0       | 0.006 G                    | 0.005 J  | 0.002 J | 0.016 G          | -0.014 D | -0.003 A     |
| 13.3       | 0.003 G                    | 0.002 J  | 0.001 J | 0.011 G          | -0.010 D | -0.002 A     |
| 0.0        | 0.000 A                    | 0.000 A  | 0.000 A | 0.000 A          | 0.000 A  | 0.000 A      |

MAXIMUM ANTENNA AND REFLECTOR ROTATIONS:

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| ELEV<br>ft | AZI<br>deg | TYPE<br>* | .....BEAM DEFLECTIONS (deg)..... |         |          |         |
|------------|------------|-----------|----------------------------------|---------|----------|---------|
|            |            |           | ROLL                             | YAW     | PITCH    | TOTAL   |
| 300.0      | 60.0       | STD       | 0.277 K                          | 0.111 A | -0.255 H | 0.265 H |
| 300.0      | 120.0      | STD       | -0.275 C                         | 0.112 A | 0.257 L  | 0.263 A |
| 300.0      | 180.0      | STD       | 0.281 G                          | 0.111 A | 0.251 J  | 0.262 D |
| 300.0      | 240.0      | STD       | -0.277 K                         | 0.111 A | 0.255 H  | 0.265 H |
| 300.0      | 0.0        | STD       | -0.281 G                         | 0.111 A | -0.251 J | 0.262 D |
| 300.0      | 300.0      | STD       | 0.275 C                          | 0.112 A | -0.257 L | 0.263 A |
| 293.0      | 0.0        | STD       | -0.281 G                         | 0.109 A | -0.251 J | 0.261 D |
| 293.0      | 60.0       | STD       | 0.277 K                          | 0.109 A | -0.255 H | 0.264 H |
| 293.0      | 120.0      | STD       | -0.275 C                         | 0.110 A | 0.257 L  | 0.262 A |
| 293.0      | 180.0      | STD       | 0.281 G                          | 0.109 A | 0.251 J  | 0.261 D |
| 293.0      | 300.0      | STD       | 0.275 C                          | 0.110 A | -0.257 L | 0.262 A |
| 293.0      | 240.0      | STD       | -0.277 K                         | 0.109 A | 0.255 H  | 0.264 H |
| 286.0      | 0.0        | STD       | -0.280 G                         | 0.106 A | -0.250 J | 0.260 D |
| 286.0      | 60.0       | STD       | 0.276 K                          | 0.106 A | -0.254 H | 0.263 H |
| 286.0      | 120.0      | STD       | -0.274 C                         | 0.107 A | 0.256 L  | 0.260 A |
| 286.0      | 180.0      | STD       | 0.280 G                          | 0.106 A | 0.250 J  | 0.260 D |
| 286.0      | 240.0      | STD       | -0.276 K                         | 0.106 A | 0.254 H  | 0.263 H |
| 286.0      | 300.0      | STD       | 0.274 C                          | 0.107 A | -0.256 L | 0.260 A |
| 279.0      | 60.0       | STD       | 0.275 K                          | 0.102 A | -0.253 H | 0.261 H |
| 279.0      | 120.0      | STD       | -0.273 C                         | 0.103 A | 0.255 L  | 0.258 A |
| 279.0      | 180.0      | STD       | 0.278 G                          | 0.103 A | 0.248 J  | 0.258 D |
| 279.0      | 240.0      | STD       | -0.275 K                         | 0.102 A | 0.253 H  | 0.261 H |
| 279.0      | 300.0      | STD       | 0.273 C                          | 0.103 A | -0.255 L | 0.258 A |
| 279.0      | 0.0        | STD       | -0.278 G                         | 0.103 A | -0.248 J | 0.258 D |
| 272.0      | 60.0       | STD       | 0.271 K                          | 0.099 A | -0.249 H | 0.257 H |
| 272.0      | 120.0      | STD       | -0.269 C                         | 0.100 A | 0.252 L  | 0.254 A |
| 272.0      | 180.0      | STD       | 0.275 G                          | 0.099 A | 0.245 J  | 0.254 D |
| 272.0      | 240.0      | STD       | -0.271 K                         | 0.099 A | 0.249 H  | 0.257 H |
| 272.0      | 300.0      | STD       | 0.269 C                          | 0.100 A | -0.252 L | 0.254 A |
| 272.0      | 0.0        | STD       | -0.275 G                         | 0.099 A | -0.245 J | 0.254 D |
| 265.0      | 60.0       | STD       | 0.266 K                          | 0.095 A | -0.245 H | 0.252 H |
| 265.0      | 120.0      | STD       | -0.264 C                         | 0.096 A | 0.247 L  | 0.248 A |
| 265.0      | 240.0      | STD       | -0.266 K                         | 0.095 A | 0.245 H  | 0.252 H |
| 265.0      | 180.0      | STD       | 0.269 G                          | 0.096 A | 0.241 J  | 0.249 D |
| 265.0      | 300.0      | STD       | 0.264 C                          | 0.096 A | -0.247 L | 0.248 A |
| 265.0      | 0.0        | STD       | -0.269 G                         | 0.096 A | -0.241 J | 0.249 D |
| 258.0      | 60.0       | STD       | 0.260 K                          | 0.091 A | -0.239 H | 0.246 H |
| 258.0      | 120.0      | STD       | -0.258 C                         | 0.092 A | 0.241 L  | 0.242 L |
| 258.0      | 180.0      | STD       | 0.263 G                          | 0.092 A | 0.235 J  | 0.243 D |
| 258.0      | 240.0      | STD       | -0.260 K                         | 0.091 A | 0.239 H  | 0.246 H |
| 258.0      | 300.0      | STD       | 0.258 C                          | 0.092 A | -0.241 L | 0.242 L |
| 258.0      | 0.0        | STD       | -0.263 G                         | 0.092 A | -0.235 J | 0.243 D |
| 251.0      | 240.0      | STD       | -0.254 K                         | 0.088 A | 0.234 H  | 0.240 H |
| 251.0      | 180.0      | STD       | 0.257 G                          | 0.088 A | 0.230 J  | 0.237 D |
| 251.0      | 120.0      | STD       | -0.252 C                         | 0.088 A | 0.236 L  | 0.237 L |
| 251.0      | 60.0       | STD       | 0.254 K                          | 0.088 A | -0.234 H | 0.240 H |
| 251.0      | 0.0        | STD       | -0.257 G                         | 0.088 A | -0.230 J | 0.237 D |
| 251.0      | 300.0      | STD       | 0.252 C                          | 0.088 A | -0.236 L | 0.237 L |
| 244.0      | 60.0       | STD       | 0.247 K                          | 0.083 A | -0.227 H | 0.233 H |
| 244.0      | 120.0      | STD       | -0.245 C                         | 0.084 A | 0.229 L  | 0.230 L |
| 244.0      | 180.0      | STD       | 0.250 G                          | 0.084 A | 0.223 J  | 0.230 D |
| 244.0      | 240.0      | STD       | -0.247 K                         | 0.083 A | 0.227 H  | 0.233 H |
| 244.0      | 300.0      | STD       | 0.245 C                          | 0.084 A | -0.229 L | 0.230 L |
| 244.0      | 0.0        | STD       | -0.250 G                         | 0.084 A | -0.223 J | 0.230 D |
| 237.0      | 120.0      | STD       | -0.237 C                         | 0.080 A | 0.222 L  | 0.222 L |
| 237.0      | 60.0       | STD       | 0.239 K                          | 0.080 A | -0.220 H | 0.226 H |
| 237.0      | 180.0      | STD       | 0.242 G                          | 0.080 A | 0.216 J  | 0.223 D |
| 237.0      | 240.0      | STD       | -0.239 K                         | 0.080 A | 0.220 H  | 0.226 H |
| 237.0      | 300.0      | STD       | 0.237 C                          | 0.080 A | -0.222 L | 0.222 L |
| 237.0      | 0.0        | STD       | -0.242 G                         | 0.080 A | -0.216 J | 0.223 D |
| 230.0      | 60.0       | STD       | 0.232 K                          | 0.077 A | -0.213 H | 0.219 H |
| 230.0      | 120.0      | STD       | -0.230 C                         | 0.077 A | 0.215 L  | 0.216 L |
| 230.0      | 180.0      | STD       | 0.234 G                          | 0.077 A | 0.210 J  | 0.216 D |
| 230.0      | 240.0      | STD       | -0.232 K                         | 0.077 A | 0.213 H  | 0.219 H |

|       |       |     |          |         |          |         |
|-------|-------|-----|----------|---------|----------|---------|
| 230.0 | 300.0 | STD | 0.230 C  | 0.077 A | -0.215 L | 0.216 L |
| 230.0 | 0.0   | STD | -0.234 G | 0.077 A | -0.210 J | 0.216 D |
| 223.0 | 60.0  | STD | 0.223 K  | 0.073 A | -0.205 H | 0.210 H |
| 223.0 | 120.0 | STD | -0.221 C | 0.074 A | 0.207 L  | 0.207 L |
| 223.0 | 180.0 | STD | 0.225 G  | 0.073 A | 0.202 J  | 0.207 D |
| 223.0 | 240.0 | STD | -0.223 K | 0.073 A | 0.205 H  | 0.210 H |
| 223.0 | 300.0 | STD | 0.221 C  | 0.074 A | -0.207 L | 0.207 L |
| 223.0 | 0.0   | STD | -0.225 G | 0.073 A | -0.202 J | 0.207 D |
| 216.0 | 120.0 | STD | -0.213 C | 0.070 A | 0.200 L  | 0.200 L |
| 216.0 | 180.0 | STD | 0.218 G  | 0.069 A | 0.195 J  | 0.200 D |
| 216.0 | 240.0 | STD | -0.215 K | 0.069 A | 0.198 H  | 0.203 H |
| 216.0 | 300.0 | STD | 0.213 C  | 0.070 A | -0.200 L | 0.200 L |
| 216.0 | 0.0   | STD | -0.218 G | 0.069 A | -0.195 J | 0.200 D |
| 216.0 | 60.0  | STD | 0.215 K  | 0.069 A | -0.198 H | 0.203 H |
| 209.0 | 120.0 | STD | -0.206 C | 0.065 A | 0.193 L  | 0.194 L |
| 209.0 | 180.0 | STD | 0.211 G  | 0.065 A | 0.189 J  | 0.193 D |
| 209.0 | 240.0 | STD | -0.208 K | 0.065 A | 0.191 H  | 0.196 H |
| 209.0 | 300.0 | STD | 0.206 C  | 0.065 A | -0.193 L | 0.194 L |
| 209.0 | 60.0  | STD | 0.208 K  | 0.065 A | -0.191 H | 0.196 H |
| 209.0 | 0.0   | STD | -0.211 G | 0.065 A | -0.189 J | 0.193 D |
| 202.0 | 60.0  | STD | 0.200 K  | 0.060 A | -0.184 H | 0.188 H |
| 202.0 | 120.0 | STD | -0.199 C | 0.060 A | 0.186 L  | 0.186 L |
| 202.0 | 180.0 | STD | 0.203 G  | 0.060 A | 0.182 J  | 0.185 D |
| 202.0 | 240.0 | STD | -0.200 K | 0.060 A | 0.184 H  | 0.188 H |
| 202.0 | 0.0   | STD | -0.203 G | 0.060 A | -0.182 J | 0.185 D |
| 202.0 | 300.0 | STD | 0.199 C  | 0.060 A | -0.186 L | 0.186 L |

MAXIMUM TENSION IN MAST MEMBERS (kip)

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| ELEV<br>ft | LEGS     | DIAG    | HORIZ  | BRACE  |
|------------|----------|---------|--------|--------|
| 300.0      | -----    |         | 0.47 F | 0.00 A |
|            | 0.00 A   | 1.73 A  |        |        |
| 290.0      | -----    |         | 0.02 E | 0.00 A |
|            | 0.25 A   | 3.67 A  |        |        |
| 280.0      | -----    |         | 0.01 E | 0.00 A |
|            | 4.40 A   | 5.31 A  |        |        |
| 270.0      | -----    |         | 0.03 E | 0.00 A |
|            | 10.21 A  | 7.21 A  |        |        |
| 260.0      | -----    |         | 0.01 E | 0.00 A |
|            | 18.19 A  | 8.43 A  |        |        |
| 250.0      | -----    |         | 0.03 E | 0.00 A |
|            | 26.56 A  | 10.42 A |        |        |
| 240.0      | -----    |         | 0.01 A | 0.00 A |
|            | 36.29 A  | 11.54 A |        |        |
| 230.0      | -----    |         | 0.03 E | 0.00 A |
|            | 45.85 A  | 13.61 A |        |        |
| 220.0      | -----    |         | 0.02 I | 0.00 A |
|            | 58.06 A  | 14.77 A |        |        |
| 210.0      | -----    |         | 0.02 E | 0.00 A |
|            | 70.38 A  | 16.47 A |        |        |
| 200.0      | -----    |         | 0.04 I | 0.00 A |
|            | 85.31 A  | 17.23 A |        |        |
| 190.0      | -----    |         | 0.01 G | 0.00 A |
|            | 102.20 A | 16.90 A |        |        |
| 180.0      | -----    |         | 0.18 I | 0.00 A |
|            | 121.65 A | 17.26 A |        |        |
| 173.3      | -----    |         | 0.45 A | 0.00 E |
|            | 119.55 A | 21.53 A |        |        |
| 160.0      | -----    |         | 0.12 E | 0.00 A |
|            | 151.09 A | 16.73 A |        |        |
| 153.3      | -----    |         | 0.44 A | 0.00 A |
|            | 149.06 A | 20.53 A |        |        |
| 140.0      | -----    |         | 0.14 I | 0.00 A |
|            | 178.30 A | 16.31 A |        |        |
| 133.3      | -----    |         | 0.45 A | 0.00 B |

|       |          |         |        |        |
|-------|----------|---------|--------|--------|
| 120.0 | 176.08 A | 19.75 A | 0.13 A | 0.00 A |
| 113.3 | 203.17 A | 16.03 A | 0.45 A | 0.00 B |
| 100.0 | 200.79 A | 19.16 A | 0.13 A | 0.00 A |
| 93.3  | 226.15 A | 15.83 A | 0.44 A | 0.00 G |
| 80.0  | 223.58 A | 18.71 A | 0.13 A | 0.00 A |
| 73.3  | 247.42 A | 15.71 A | 0.43 A | 0.00 H |
| 60.0  | 244.65 A | 18.43 D | 0.12 A | 0.00 A |
| 53.3  | 267.10 A | 15.66 D | 0.40 A | 0.00 G |
| 40.0  | 264.18 A | 18.22 D | 0.12 A | 0.00 A |
| 33.3  | 285.49 A | 15.66 D | 0.35 A | 0.00 G |
| 20.0  | 281.93 A | 18.03 D | 0.02 A | 0.00 G |
| 13.3  | 301.72 A | 15.67 D | 0.30 A | 0.00 G |
| 0.0   | 298.02 A | 17.84 D | 0.00 A | 0.00 A |

MAXIMUM COMPRESSION IN MAST MEMBERS (kip)

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| ELEV<br>ft | LEGS      | DIAG     | HORIZ   | BRACE  |
|------------|-----------|----------|---------|--------|
| 300.0      | -3.65 C   | -2.09 C  | -0.62 I | 0.00 A |
| 290.0      | -10.42 C  | -3.42 A  | 0.00 A  | 0.00 A |
| 280.0      | -19.44 G  | -5.59 C  | 0.00 K  | 0.00 A |
| 270.0      | -31.62 G  | -6.88 A  | 0.00 A  | 0.00 A |
| 260.0      | -45.00 G  | -8.71 A  | 0.00 K  | 0.00 A |
| 250.0      | -61.69 G  | -10.00 A | 0.00 A  | 0.00 A |
| 240.0      | -80.23 G  | -11.81 A | 0.00 G  | 0.00 A |
| 230.0      | -102.12 G | -13.32 A | 0.00 K  | 0.00 A |
| 220.0      | -124.71 G | -14.87 A | -0.01 G | 0.00 A |
| 210.0      | -149.05 G | -16.32 A | 0.00 K  | 0.00 A |
| 200.0      | -173.40 G | -17.16 A | -0.03 F | 0.00 A |
| 190.0      | -194.59 G | -16.86 A | -0.03 A | 0.00 A |
| 180.0      | -217.82 G | -17.17 A | -0.10 G | 0.00 A |
| 173.3      | -219.92 G | -21.48 A | -0.64 G | 0.00 C |
| 160.0      | -256.59 G | -16.62 A | -0.07 K | 0.00 A |
| 153.3      |           |          | -0.63 G | 0.00 G |

|       |           |          |         |        |
|-------|-----------|----------|---------|--------|
| 140.0 | -258.63 G | -20.46 A | -0.08 G | 0.00 A |
| 133.3 | -293.07 G | -16.22 A | -0.65 G | 0.00 G |
| 120.0 | -295.29 G | -19.69 A | -0.07 K | 0.00 A |
| 113.3 | -328.01 G | -16.01 D | -0.66 G | 0.00 G |
| 100.0 | -330.39 G | -19.15 D | -0.07 G | 0.00 A |
| 93.3  | -361.77 G | -15.89 D | -0.67 G | 0.00 A |
| 80.0  | -364.35 G | -18.79 D | -0.06 G | 0.00 A |
| 73.3  | -394.65 G | -15.85 D | -0.67 G | 0.00 B |
| 60.0  | -397.43 G | -18.53 D | -0.06 G | 0.00 A |
| 53.3  | -426.91 G | -15.85 D | -0.65 G | 0.00 B |
| 40.0  | -429.83 G | -18.33 D | -0.04 G | 0.00 A |
| 33.3  | -458.47 G | -15.86 D | -0.63 G | 0.00 F |
| 20.0  | -462.02 G | -18.15 D | -0.01 G | 0.00 F |
| 13.3  | -490.31 G | -15.82 D | -0.59 G | 0.00 B |
| 0.0   | -494.01 G | -17.94 D | 0.00 A  | 0.00 A |

MAXIMUM INDIVIDUAL FOUNDATION LOADS: (kip)

| -----LOAD-----COMPONENTS----- |          |          |           | TOTAL   |
|-------------------------------|----------|----------|-----------|---------|
| NORTH                         | EAST     | DOWN     | UPLIFT    | SHEAR   |
| 52.34 G                       | -45.57 C | 511.76 G | -309.95 A | 52.34 G |

MAXIMUM TOTAL LOADS ON FOUNDATION : (kip & kip-ft)

| -----HORIZONTAL----- |        |        | DOWN    | -----OVERTURNING----- |            |           | TORSION  |
|----------------------|--------|--------|---------|-----------------------|------------|-----------|----------|
| NORTH                | EAST   | TOTAL  |         | NORTH                 | EAST       | TOTAL     |          |
|                      | @      | 0.0    |         |                       | @          | 0.0       |          |
| 82.0 G               | 74.2 J | 82.0 G | 282.7 J | 16271.1 G             | -14648.6 D | 16271.1 G | -183.1 A |

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**Seismic Load Effects**  
**Equivalent Lateral Force Procedure**  
**ANSI/TIA-222-G**

|                         |         | Vertical Distribution of Seismic Forces |              |              |              |                       |              |                        |                        |
|-------------------------|---------|---|--------------|--------------|--------------|-----------------------|--------------|------------------------|------------------------|
|                         |         | $h_n$ (ft.)                             | $w_n$ (kips) | $W_n$ (kips) | $w/h_n^{ke}$ | $F_x$ or $E_h$ (kips) | $E_v$ (kips) | $1.2D + 1.0E_v$ (kips) | $0.9D - 1.0E_v$ (kips) |
| <b>Parameters</b>       |         |   |              |              |              |                       |              |                        |                        |
| Risk Category           | 0.0     | 300.00                                  | 0.2900       | 0.2900       | 0.2900       | 154.7777              | 0.0169       | 0.0080                 | 0.3560                 |
| R                       | 3.000   | 300.00                                  | 4.7500       | 4.7500       | 2,535.1526   | 0.2762                | 0.1311       | 5.8311                 | 4.1439                 |
| $S_s$                   | 0.159   | 300.00                                  | 0.2900       | 0.2900       | 154.7777     | 0.0169                | 0.0080       | 0.3560                 | 0.2530                 |
| $S_1$                   | 0.066   | 300.00                                  | 0.2900       | 0.2900       | 106.7433     | 0.0116                | 0.0055       | 0.2455                 | 0.1745                 |
| Site Class              | C       | 300.00                                  | 0.2900       | 0.2900       | 154.7777     | 0.0169                | 0.0080       | 0.3560                 | 0.2530                 |
| $T_L$ (sec)             | 12.000  | 300.00                                  | 0.2900       | 0.2900       | 154.7777     | 0.0169                | 0.0080       | 0.3560                 | 0.2530                 |
| $F_a$                   | 1.300   | 300.00                                  | 0.2900       | 0.2900       | 154.7777     | 0.0169                | 0.0080       | 0.3560                 | 0.2530                 |
| $F_v$                   | 1.500   | 300.00                                  | 0.0500       | 0.0500       | 26.6858      | 0.0029                | 0.0014       | 0.0614                 | 0.0436                 |
| $S_{MS}$                | 0.207   | 300.00                                  | 0.0500       | 0.0500       | 26.6858      | 0.0029                | 0.0014       | 0.0614                 | 0.0436                 |
| $S_{M1}$                | 0.099   | 300.00                                  | 0.0500       | 0.0500       | 26.6858      | 0.0029                | 0.0014       | 0.0614                 | 0.0436                 |
| $S_{DS}$                | 0.138   | 300.00                                  | 0.0500       | 0.0500       | 26.6858      | 0.0029                | 0.0014       | 0.0614                 | 0.0436                 |
| $S_{D1}$                | 0.066   | 300.00                                  | 0.0500       | 0.0500       | 26.6858      | 0.0029                | 0.0014       | 0.0614                 | 0.0436                 |
| $T_s$                   | 0.478   | 300.00                                  | 0.0500       | 0.0500       | 26.6858      | 0.0029                | 0.0014       | 0.0614                 | 0.0436                 |
| $I_e$                   | 1.000   | 300.00                                  | 0.3400       | 0.3400       | 181.4636     | 0.0198                | 0.0094       | 0.4174                 | 0.2966                 |
| $\Omega$                | 1.500   | 300.00                                  | 0.3400       | 0.3400       | 181.4636     | 0.0198                | 0.0094       | 0.4174                 | 0.2966                 |
| $C_s$                   | 0.031   | 300.00                                  | 0.3400       | 0.3400       | 181.4636     | 0.0198                | 0.0094       | 0.4174                 | 0.2966                 |
| $h$ (ft)                | 300.00  | 300.00                                  | 0.3400       | 0.3400       | 181.4636     | 0.0198                | 0.0094       | 0.4174                 | 0.2966                 |
| $K_f$                   | 4.540   | 300.00                                  | 0.3400       | 0.3400       | 181.4636     | 0.0198                | 0.0094       | 0.4174                 | 0.2966                 |
| $W_a$ (ft)              | 30.00   | 300.00                                  | 0.3400       | 0.3400       | 181.4636     | 0.0198                | 0.0094       | 0.4174                 | 0.2966                 |
| $W_o$ (ft)              | 45.00   | 296.50                                  | 0.0350       | 0.0750       | 18.4403      | 0.0020                | 0.0010       | 0.0430                 | 0.0305                 |
| $W$ (kips)              | 346.419 | 296.50                                  | 0.0350       | 0.0750       | 18.4403      | 0.0020                | 0.0010       | 0.0430                 | 0.0305                 |
| $W_1$ (kips)            | 205.927 | 296.50                                  | 0.0350       | 0.0750       | 18.4403      | 0.0020                | 0.0010       | 0.0430                 | 0.0305                 |
| $W_2$ (kips)            | 26.442  | 296.50                                  | 0.0825       | 0.1768       | 43.4663      | 0.0047                | 0.0023       | 0.1013                 | 0.0720                 |
| $f_1$ (Hertz)           | 1.425   | 293.00                                  | 0.2900       | 0.2900       | 150.8062     | 0.0164                | 0.0080       | 0.3560                 | 0.2530                 |
| $T$ (sec)               | 0.702   | 293.00                                  | 0.2900       | 0.2900       | 150.8062     | 0.0164                | 0.0080       | 0.3560                 | 0.2530                 |
| $k_e$                   | 1.1010  | 293.00                                  | 0.2900       | 0.2900       | 150.8062     | 0.0164                | 0.0080       | 0.3560                 | 0.2530                 |
| $V_s$ (kips)            | 10.739  | 293.00                                  | 0.2900       | 0.2900       | 150.8062     | 0.0164                | 0.0080       | 0.3560                 | 0.2530                 |
| Seismic Design Category |         | 293.00                                  | 3.0000       | 3.0000       | 1,560.0643   | 0.1700                | 0.0828       | 3.6828                 | 2.6172                 |
|                         |         | 293.00                                  | 0.2900       | 0.2900       | 150.8062     | 0.0164                | 0.0080       | 0.3560                 | 0.2530                 |
|                         |         | 293.00                                  | 0.2900       | 0.2900       | 150.8062     | 0.0164                | 0.0080       | 0.3560                 | 0.2530                 |
|                         |         | 293.00                                  | 0.0500       | 0.0500       | 26.0011      | 0.0028                | 0.0014       | 0.0614                 | 0.0436                 |
|                         |         | 293.00                                  | 0.0500       | 0.0500       | 26.0011      | 0.0028                | 0.0014       | 0.0614                 | 0.0436                 |
|                         |         | 293.00                                  | 0.0500       | 0.0500       | 26.0011      | 0.0028                | 0.0014       | 0.0614                 | 0.0436                 |
|                         |         | 293.00                                  | 0.0500       | 0.0500       | 26.0011      | 0.0028                | 0.0014       | 0.0614                 | 0.0436                 |



**Seismic Load Effects**  
**Equivalent Lateral Force Procedure**  
**ANSI/TIA-222-G**

| Description           | h <sub>i</sub> (ft.) | w <sub>i</sub> (kips) | W <sub>2</sub> (kips) | w <sub>i</sub> h <sub>i</sub> <sup>ke</sup> | Vertical Distribution of Seismic Forces |                       |                                   |                                   |
|-----------------------|----------------------|-----------------------|-----------------------|---|---|-----------------------|-----------------------------------|-----------------------------------|
|                       |                      |                       |                       |   | F <sub>z</sub> or E <sub>b</sub> (kips) | E <sub>v</sub> (kips) | 1.2 D + 1.0 E <sub>v</sub> (kips) | 0.9 D - 1.0 E <sub>v</sub> (kips) |
| Mount Load            | 293.00               | 0.0500                | 0.0500                | 26.0011                                     | 0.0028                                  | 0.0014                | 0.0614                            | 0.0436                            |
| Mount Load            | 293.00               | 0.0500                | 0.0500                | 26.0011                                     | 0.0028                                  | 0.0014                | 0.0614                            | 0.0436                            |
| Mount/Antenna Load    | 293.00               | 0.3400                | 0.3400                | 176.8073                                    | 0.0193                                  | 0.0094                | 0.4174                            | 0.2966                            |
| Mount/Antenna Load    | 293.00               | 0.3400                | 0.3400                | 176.8073                                    | 0.0193                                  | 0.0094                | 0.4174                            | 0.2966                            |
| Mount/Antenna Load    | 293.00               | 0.3400                | 0.3400                | 176.8073                                    | 0.0193                                  | 0.0094                | 0.4174                            | 0.2966                            |
| Mount/Antenna Load    | 293.00               | 0.3400                | 0.3400                | 176.8073                                    | 0.0193                                  | 0.0094                | 0.4174                            | 0.2966                            |
| Mount/Antenna Load    | 293.00               | 0.3400                | 0.3400                | 176.8073                                    | 0.0193                                  | 0.0094                | 0.4174                            | 0.2966                            |
| Mount/Antenna Load    | 293.00               | 0.3400                | 0.3400                | 176.8073                                    | 0.0193                                  | 0.0094                | 0.4174                            | 0.2966                            |
| Structure - Section 1 | 290.00               | 2.9600                | 2.2200                | 1,521.9203                                  | 0.1658                                  | 0.0817                | 3.6337                            | 2.5823                            |
| Ladder/Line           | 289.50               | 0.0350                | 0.0400                | 17.9615                                     | 0.0020                                  | 0.0010                | 0.0430                            | 0.0305                            |
| Ladder/Line           | 289.50               | 0.1261                | 0.1441                | 64.7128                                     | 0.0070                                  | 0.0035                | 0.1548                            | 0.1100                            |
| Ladder/Line           | 289.50               | 0.0350                | 0.0400                | 17.9615                                     | 0.0020                                  | 0.0010                | 0.0430                            | 0.0305                            |
| Ladder/Line           | 289.50               | 0.0350                | 0.0400                | 17.9615                                     | 0.0020                                  | 0.0010                | 0.0430                            | 0.0305                            |
| Antenna Load          | 286.00               | 0.2900                | 0.2900                | 146.8443                                    | 0.0160                                  | 0.0080                | 0.3560                            | 0.2530                            |
| Antenna Load          | 286.00               | 0.2900                | 0.2900                | 146.8443                                    | 0.0160                                  | 0.0080                | 0.3560                            | 0.2530                            |
| Antenna Load          | 286.00               | 0.2900                | 0.2900                | 146.8443                                    | 0.0160                                  | 0.0080                | 0.3560                            | 0.2530                            |
| Antenna Load          | 286.00               | 0.2900                | 0.2900                | 146.8443                                    | 0.0160                                  | 0.0080                | 0.3560                            | 0.2530                            |
| Antenna Load          | 286.00               | 0.2900                | 0.2900                | 146.8443                                    | 0.0160                                  | 0.0080                | 0.3560                            | 0.2530                            |
| Antenna Load          | 286.00               | 3.1300                | 3.1300                | 1,584.9054                                  | 0.1727                                  | 0.0864                | 3.8424                            | 2.7306                            |
| Antenna Load          | 286.00               | 0.2900                | 0.2900                | 146.8443                                    | 0.0160                                  | 0.0080                | 0.3560                            | 0.2530                            |
| Antenna Load          | 286.00               | 0.2900                | 0.2900                | 146.8443                                    | 0.0160                                  | 0.0080                | 0.3560                            | 0.2530                            |
| Mount Load            | 286.00               | 0.0500                | 0.0500                | 25.3180                                     | 0.0028                                  | 0.0014                | 0.0614                            | 0.0436                            |
| Mount Load            | 286.00               | 0.0500                | 0.0500                | 25.3180                                     | 0.0028                                  | 0.0014                | 0.0614                            | 0.0436                            |
| Mount Load            | 286.00               | 0.0500                | 0.0500                | 25.3180                                     | 0.0028                                  | 0.0014                | 0.0614                            | 0.0436                            |
| Mount Load            | 286.00               | 0.0500                | 0.0500                | 25.3180                                     | 0.0028                                  | 0.0014                | 0.0614                            | 0.0436                            |
| Mount Load            | 286.00               | 0.0500                | 0.0500                | 25.3180                                     | 0.0028                                  | 0.0014                | 0.0614                            | 0.0436                            |
| Mount/Antenna Load    | 286.00               | 0.3400                | 0.3400                | 172.1622                                    | 0.0188                                  | 0.0094                | 0.4174                            | 0.2966                            |
| Mount/Antenna Load    | 286.00               | 0.3400                | 0.3400                | 172.1622                                    | 0.0188                                  | 0.0094                | 0.4174                            | 0.2966                            |
| Mount/Antenna Load    | 286.00               | 0.3400                | 0.3400                | 172.1622                                    | 0.0188                                  | 0.0094                | 0.4174                            | 0.2966                            |
| Mount/Antenna Load    | 286.00               | 0.3400                | 0.3400                | 172.1622                                    | 0.0188                                  | 0.0094                | 0.4174                            | 0.2966                            |
| Mount/Antenna Load    | 286.00               | 0.3400                | 0.3400                | 172.1622                                    | 0.0188                                  | 0.0094                | 0.4174                            | 0.2966                            |
| Ladder/Line           | 283.00               | 0.0300                | 0.0300                | 15.0154                                     | 0.0016                                  | 0.0008                | 0.0368                            | 0.0262                            |
| Ladder/Line           | 283.00               | 0.0300                | 0.0300                | 15.0154                                     | 0.0016                                  | 0.0008                | 0.0368                            | 0.0262                            |
| Ladder/Line           | 283.00               | 0.0300                | 0.0300                | 15.0154                                     | 0.0016                                  | 0.0008                | 0.0368                            | 0.0262                            |
| Ladder/Line           | 279.50               | 0.0050                | 0.0000                | 2.4685                                      | 0.0003                                  | 0.0001                | 0.0061                            | 0.0044                            |
| Ladder/Line           | 279.50               | 0.0050                | 0.0000                | 2.4685                                      | 0.0003                                  | 0.0001                | 0.0061                            | 0.0044                            |
| Ladder/Line           | 279.50               | 0.0050                | 0.0000                | 2.4685                                      | 0.0003                                  | 0.0001                | 0.0061                            | 0.0044                            |
| Ladder/Line           | 279.50               | 0.0243                | 0.0000                | 11.9970                                     | 0.0013                                  | 0.0007                | 0.0299                            | 0.0212                            |

**Seismic Load Effects  
Equivalent Lateral Force Procedure  
ANSI/TIA-222-G**

| Description        | h <sub>i</sub> (ft.) | w <sub>i</sub> (kips) | W <sub>2</sub> (kips) | w <sub>i</sub> h <sub>i</sub> <sup>ke</sup> | Vertical Distribution of Seismic Forces   |                       |                       | 1.2 D + 1.0 E <sub>v</sub> (kips) | 0.9 D - 1.0 E <sub>v</sub> (kips) |
|--------------------|----------------------|-----------------------|-----------------------|---|---|-----------------------|-----------------------|-----------------------------------|-----------------------------------|
|                    |                      |                       |                       |   | F <sub>sz</sub> or E <sub>sh</sub> (kips) | E <sub>v</sub> (kips) | E <sub>v</sub> (kips) |                                   |                                   |
| Antenna Load       | 279.00               | 0.2900                | 0.0000                | 142.8921                                    | 0.0156                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 279.00               | 0.2900                | 0.0000                | 142.8921                                    | 0.0156                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 279.00               | 0.2900                | 0.0000                | 142.8921                                    | 0.0156                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 279.00               | 0.2900                | 0.0000                | 142.8921                                    | 0.0156                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 279.00               | 0.2900                | 0.0000                | 142.8921                                    | 0.0156                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 279.00               | 3.2400                | 0.0000                | 1,596.4497                                  | 0.1739                                    | 0.0894                | 3.9774                | 2.8266                            |                                   |
| Mount Load         | 279.00               | 0.0500                | 0.0000                | 24.6366                                     | 0.0027                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 279.00               | 0.0500                | 0.0000                | 24.6366                                     | 0.0027                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 279.00               | 0.0500                | 0.0000                | 24.6366                                     | 0.0027                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 279.00               | 0.0500                | 0.0000                | 24.6366                                     | 0.0027                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 279.00               | 0.0500                | 0.0000                | 24.6366                                     | 0.0027                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount/Antenna Load | 279.00               | 0.3400                | 0.0000                | 167.5287                                    | 0.0183                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load | 279.00               | 0.3400                | 0.0000                | 167.5287                                    | 0.0183                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load | 279.00               | 0.3400                | 0.0000                | 167.5287                                    | 0.0183                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load | 279.00               | 0.3400                | 0.0000                | 167.5287                                    | 0.0183                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load | 279.00               | 0.3400                | 0.0000                | 167.5287                                    | 0.0183                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Ladder/Line        | 275.50               | 0.0350                | 0.0000                | 17.0076                                     | 0.0019                                    | 0.0010                | 0.0430                | 0.0305                            |                                   |
| Ladder/Line        | 275.50               | 0.0350                | 0.0000                | 17.0076                                     | 0.0019                                    | 0.0010                | 0.0430                | 0.0305                            |                                   |
| Ladder/Line        | 275.50               | 0.2135                | 0.0000                | 103.7461                                    | 0.0113                                    | 0.0059                | 0.2621                | 0.1862                            |                                   |
| Ladder/Line        | 275.50               | 0.0350                | 0.0000                | 17.0076                                     | 0.0019                                    | 0.0010                | 0.0430                | 0.0305                            |                                   |
| Antenna Load       | 272.00               | 0.2900                | 0.0000                | 138.9499                                    | 0.0151                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 272.00               | 3.3400                | 0.0000                | 1,600.3200                                  | 0.1743                                    | 0.0922                | 4.1002                | 2.9138                            |                                   |
| Antenna Load       | 272.00               | 0.2900                | 0.0000                | 138.9499                                    | 0.0151                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 272.00               | 0.2900                | 0.0000                | 138.9499                                    | 0.0151                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 272.00               | 0.2900                | 0.0000                | 138.9499                                    | 0.0151                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 272.00               | 0.2900                | 0.0000                | 138.9499                                    | 0.0151                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Mount Load         | 272.00               | 0.0500                | 0.0000                | 23.9569                                     | 0.0026                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 272.00               | 0.0500                | 0.0000                | 23.9569                                     | 0.0026                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 272.00               | 0.0500                | 0.0000                | 23.9569                                     | 0.0026                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 272.00               | 0.0500                | 0.0000                | 23.9569                                     | 0.0026                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 272.00               | 0.0500                | 0.0000                | 23.9569                                     | 0.0026                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount/Antenna Load | 272.00               | 0.3400                | 0.0000                | 162.9068                                    | 0.0177                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load | 272.00               | 0.3400                | 0.0000                | 162.9068                                    | 0.0177                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load | 272.00               | 0.3400                | 0.0000                | 162.9068                                    | 0.0177                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load | 272.00               | 0.3400                | 0.0000                | 162.9068                                    | 0.0177                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |

**Seismic Load Effects**  
**Equivalent Lateral Force Procedure**  
**ANSI/TIA-222-G**

| Description           | h <sub>i</sub> (ft.) | w <sub>i</sub> (kips) | W <sub>s</sub> (kips) | w <sub>i</sub> h <sub>i</sub> <sup>ke</sup> | Vertical Distribution of Seismic Forces |                       |                       | 1.2 D + 1.0 E <sub>v</sub> (kips) | 0.9 D - 1.0 E <sub>v</sub> (kips) |
|-----------------------|----------------------|-----------------------|-----------------------|---|---|-----------------------|-----------------------|-----------------------------------|-----------------------------------|
|                       |                      |                       |                       |   | F <sub>z</sub> or E <sub>h</sub> (kips) | E <sub>v</sub> (kips) | E <sub>v</sub> (kips) |                                   |                                   |
| Mount/Antenna Load    | 272.00               | 0.3400                | 0.0000                | 162.9068                                    | 0.0177                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 272.00               | 0.3400                | 0.0000                | 162.9068                                    | 0.0177                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Structure - Section 2 | 270.00               | 3.5920                | 0.0000                | 1,707.1349                                  | 0.1860                                  | 0.0991                | 4.4095                | 3.1337                            |                                   |
| Ladder/Line           | 268.50               | 0.2499                | 0.0000                | 118.0413                                    | 0.0129                                  | 0.0069                | 0.3068                | 0.2180                            |                                   |
| Ladder/Line           | 268.50               | 0.0350                | 0.0000                | 16.5324                                     | 0.0018                                  | 0.0010                | 0.0430                | 0.0305                            |                                   |
| Ladder/Line           | 268.50               | 0.0350                | 0.0000                | 16.5324                                     | 0.0018                                  | 0.0010                | 0.0430                | 0.0305                            |                                   |
| Ladder/Line           | 268.50               | 0.0423                | 0.0000                | 19.9806                                     | 0.0022                                  | 0.0012                | 0.0520                | 0.0369                            |                                   |
| Antenna Load          | 265.00               | 0.2900                | 0.0000                | 135.0180                                    | 0.0147                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 265.00               | 0.2900                | 0.0000                | 135.0180                                    | 0.0147                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 265.00               | 0.2900                | 0.0000                | 135.0180                                    | 0.0147                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 265.00               | 0.2900                | 0.0000                | 135.0180                                    | 0.0147                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 265.00               | 0.2900                | 0.0000                | 135.0180                                    | 0.0147                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 265.00               | 0.2900                | 0.0000                | 1,606.2487                                  | 0.1750                                  | 0.0952                | 4.2352                | 3.0098                            |                                   |
| Antenna Load          | 265.00               | 0.2900                | 0.0000                | 135.0180                                    | 0.0147                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Mount Load            | 265.00               | 0.0500                | 0.0000                | 23.2790                                     | 0.0025                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 265.00               | 0.0500                | 0.0000                | 23.2790                                     | 0.0025                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 265.00               | 0.0500                | 0.0000                | 23.2790                                     | 0.0025                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 265.00               | 0.0500                | 0.0000                | 23.2790                                     | 0.0025                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 265.00               | 0.0500                | 0.0000                | 23.2790                                     | 0.0025                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 265.00               | 0.0500                | 0.0000                | 23.2790                                     | 0.0025                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount/Antenna Load    | 265.00               | 0.3400                | 0.0000                | 158.2970                                    | 0.0172                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 265.00               | 0.3400                | 0.0000                | 158.2970                                    | 0.0172                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 265.00               | 0.3400                | 0.0000                | 158.2970                                    | 0.0172                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 265.00               | 0.3400                | 0.0000                | 158.2970                                    | 0.0172                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 265.00               | 0.3400                | 0.0000                | 158.2970                                    | 0.0172                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 265.00               | 0.3400                | 0.0000                | 158.2970                                    | 0.0172                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Ladder/Line           | 262.50               | 0.0250                | 0.0000                | 11.5186                                     | 0.0013                                  | 0.0007                | 0.0307                | 0.0218                            |                                   |
| Ladder/Line           | 262.50               | 0.1785                | 0.0000                | 82.2431                                     | 0.0090                                  | 0.0049                | 0.2191                | 0.1558                            |                                   |
| Ladder/Line           | 262.50               | 0.0250                | 0.0000                | 11.5186                                     | 0.0013                                  | 0.0007                | 0.0307                | 0.0218                            |                                   |
| Ladder/Line           | 262.50               | 0.0614                | 0.0000                | 28.2898                                     | 0.0031                                  | 0.0017                | 0.0754                | 0.0536                            |                                   |
| Ladder/Line           | 259.00               | 0.0714                | 0.0000                | 32.4146                                     | 0.0035                                  | 0.0020                | 0.0877                | 0.0623                            |                                   |
| Ladder/Line           | 259.00               | 0.0246                | 0.0000                | 11.1681                                     | 0.0012                                  | 0.0007                | 0.0302                | 0.0214                            |                                   |
| Ladder/Line           | 259.00               | 0.0100                | 0.0000                | 4.5399                                      | 0.0005                                  | 0.0003                | 0.0123                | 0.0087                            |                                   |
| Ladder/Line           | 259.00               | 0.0100                | 0.0000                | 4.5399                                      | 0.0005                                  | 0.0003                | 0.0123                | 0.0087                            |                                   |
| Antenna Load          | 258.00               | 0.2900                | 0.0000                | 131.0966                                    | 0.0143                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 258.00               | 0.2900                | 0.0000                | 131.0966                                    | 0.0143                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 258.00               | 0.2900                | 0.0000                | 131.0966                                    | 0.0143                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 258.00               | 3.5500                | 0.0000                | 1,604.8027                                  | 0.1748                                  | 0.0980                | 4.3580                | 3.0970                            |                                   |
| Antenna Load          | 258.00               | 0.2900                | 0.0000                | 131.0966                                    | 0.0143                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 258.00               | 0.2900                | 0.0000                | 131.0966                                    | 0.0143                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |

**Seismic Load Effects  
Equivalent Lateral Force Procedure  
ANSI/TIA-222-G**

| Description           | h <sub>i</sub> (ft.) | w <sub>i</sub> (kips) | W <sub>2</sub> (kips) | w <sub>i</sub> h <sub>i</sub> <sup>ke</sup> | Vertical Distribution of Seismic Forces |                       |                       | 1.2 D + 1.0 E <sub>v</sub> (kips) | 0.9 D - 1.0 E <sub>v</sub> (kips) |
|-----------------------|----------------------|-----------------------|-----------------------|---|---|-----------------------|-----------------------|-----------------------------------|-----------------------------------|
|                       |                      |                       |                       |   | F <sub>z</sub> or E <sub>h</sub> (kips) | E <sub>v</sub> (kips) | E <sub>v</sub> (kips) |                                   |                                   |
| Antenna Load          | 258.00               | 0.2900                | 0.0000                | 131.0966                                    | 0.0143                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Mount Load            | 258.00               | 0.0500                | 0.0000                | 22.6029                                     | 0.0025                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 258.00               | 0.0500                | 0.0000                | 22.6029                                     | 0.0025                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 258.00               | 0.0500                | 0.0000                | 22.6029                                     | 0.0025                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 258.00               | 0.0500                | 0.0000                | 22.6029                                     | 0.0025                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 258.00               | 0.0500                | 0.0000                | 22.6029                                     | 0.0025                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount/Antenna Load    | 258.00               | 0.3400                | 0.0000                | 153.6994                                    | 0.0167                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 258.00               | 0.3400                | 0.0000                | 153.6994                                    | 0.0167                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 258.00               | 0.3400                | 0.0000                | 153.6994                                    | 0.0167                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 258.00               | 0.3400                | 0.0000                | 153.6994                                    | 0.0167                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 258.00               | 0.3400                | 0.0000                | 153.6994                                    | 0.0167                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Ladder/Line           | 254.50               | 0.0350                | 0.0000                | 15.5858                                     | 0.0017                                  | 0.0010                | 0.0430                | 0.0305                            |                                   |
| Ladder/Line           | 254.50               | 0.1296                | 0.0000                | 57.7122                                     | 0.0063                                  | 0.0036                | 0.1591                | 0.1130                            |                                   |
| Ladder/Line           | 254.50               | 0.0350                | 0.0000                | 15.5858                                     | 0.0017                                  | 0.0010                | 0.0430                | 0.0305                            |                                   |
| Ladder/Line           | 254.50               | 0.2499                | 0.0000                | 111.2829                                    | 0.0121                                  | 0.0069                | 0.3068                | 0.2180                            |                                   |
| Antenna Load          | 251.00               | 3.6500                | 0.0000                | 1,600.7873                                  | 0.1744                                  | 0.1007                | 4.4807                | 3.1843                            |                                   |
| Antenna Load          | 251.00               | 0.2900                | 0.0000                | 127.1858                                    | 0.0139                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 251.00               | 0.2900                | 0.0000                | 127.1858                                    | 0.0139                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 251.00               | 0.2900                | 0.0000                | 127.1858                                    | 0.0139                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 251.00               | 0.2900                | 0.0000                | 127.1858                                    | 0.0139                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 251.00               | 0.2900                | 0.0000                | 127.1858                                    | 0.0139                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Mount Load            | 251.00               | 0.0500                | 0.0000                | 21.9286                                     | 0.0024                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 251.00               | 0.0500                | 0.0000                | 21.9286                                     | 0.0024                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 251.00               | 0.0500                | 0.0000                | 21.9286                                     | 0.0024                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 251.00               | 0.0500                | 0.0000                | 21.9286                                     | 0.0024                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 251.00               | 0.0500                | 0.0000                | 21.9286                                     | 0.0024                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount/Antenna Load    | 251.00               | 0.3400                | 0.0000                | 149.1144                                    | 0.0162                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 251.00               | 0.3400                | 0.0000                | 149.1144                                    | 0.0162                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 251.00               | 0.3400                | 0.0000                | 149.1144                                    | 0.0162                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 251.00               | 0.3400                | 0.0000                | 149.1144                                    | 0.0162                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 251.00               | 0.3400                | 0.0000                | 149.1144                                    | 0.0162                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Structure - Section 3 | 250.00               | 5.0270                | 0.0000                | 2,195.0319                                  | 0.2391                                  | 0.1387                | 6.1711                | 4.3856                            |                                   |
| Ladder/Line           | 247.50               | 0.0350                | 0.0000                | 15.1145                                     | 0.0016                                  | 0.0010                | 0.0430                | 0.0305                            |                                   |
| Ladder/Line           | 247.50               | 0.2499                | 0.0000                | 107.9177                                    | 0.0118                                  | 0.0069                | 0.3068                | 0.2180                            |                                   |
| Ladder/Line           | 247.50               | 0.1733                | 0.0000                | 74.8385                                     | 0.0082                                  | 0.0048                | 0.2128                | 0.1512                            |                                   |

**Seismic Load Effects**  
**Equivalent Lateral Force Procedure**  
**ANSI/TIA-222-G**

| Description        | h <sub>i</sub> (ft.) | w <sub>i</sub> (kips) | W <sub>2</sub> (kips) | w <sub>i</sub> h <sub>i</sub> <sup>ke</sup> | Vertical Distribution of Seismic Forces   |                       |                       | 1.2 D + 1.0 E <sub>v</sub> (kips) | 0.9 D - 1.0 E <sub>v</sub> (kips) |
|--------------------|----------------------|-----------------------|-----------------------|---|---|-----------------------|-----------------------|-----------------------------------|-----------------------------------|
|                    |                      |                       |                       |   | F <sub>sz</sub> or E <sub>sh</sub> (kips) | E <sub>v</sub> (kips) | E <sub>v</sub> (kips) |                                   |                                   |
| Ladder/Line        | 247.50               | 0.0350                | 0.0000                | 15.1145                                     | 0.0016                                    | 0.0010                | 0.0430                | 0.0305                            |                                   |
| Antenna Load       | 244.00               | 0.2900                | 0.0000                | 123.2861                                    | 0.0134                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 244.00               | 0.2900                | 0.0000                | 123.2861                                    | 0.0134                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 244.00               | 0.2900                | 0.0000                | 123.2861                                    | 0.0134                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 244.00               | 0.2900                | 0.0000                | 123.2861                                    | 0.0134                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 244.00               | 0.2900                | 0.0000                | 123.2861                                    | 0.0134                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 244.00               | 0.2900                | 0.0000                | 123.2861                                    | 0.0134                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 244.00               | 0.2900                | 0.0000                | 123.2861                                    | 0.0134                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Mount Load         | 244.00               | 6.6500                | 0.0000                | 2,827.0783                                  | 0.3080                                    | 0.1835                | 8.1635                | 5.8015                            |                                   |
| Mount Load         | 244.00               | 0.0500                | 0.0000                | 21.2562                                     | 0.0023                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 244.00               | 0.0500                | 0.0000                | 21.2562                                     | 0.0023                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 244.00               | 0.0500                | 0.0000                | 21.2562                                     | 0.0023                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 244.00               | 0.0500                | 0.0000                | 21.2562                                     | 0.0023                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 244.00               | 0.0500                | 0.0000                | 21.2562                                     | 0.0023                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount/Antenna Load | 244.00               | 0.3400                | 0.0000                | 144.5424                                    | 0.0157                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load | 244.00               | 0.3400                | 0.0000                | 144.5424                                    | 0.0157                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load | 244.00               | 0.3400                | 0.0000                | 144.5424                                    | 0.0157                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load | 244.00               | 0.3400                | 0.0000                | 144.5424                                    | 0.0157                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load | 244.00               | 0.3400                | 0.0000                | 144.5424                                    | 0.0157                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Ladder/Line        | 242.00               | 0.0200                | 0.0000                | 8.4258                                      | 0.0009                                    | 0.0006                | 0.0246                | 0.0174                            |                                   |
| Ladder/Line        | 242.00               | 0.1428                | 0.0000                | 60.1602                                     | 0.0066                                    | 0.0039                | 0.1753                | 0.1246                            |                                   |
| Ladder/Line        | 242.00               | 0.0200                | 0.0000                | 8.4258                                      | 0.0009                                    | 0.0006                | 0.0246                | 0.0174                            |                                   |
| Ladder/Line        | 238.50               | 0.0150                | 0.0000                | 6.2188                                      | 0.0007                                    | 0.0004                | 0.0184                | 0.0131                            |                                   |
| Ladder/Line        | 238.50               | 0.1071                | 0.0000                | 44.4022                                     | 0.0048                                    | 0.0030                | 0.1315                | 0.0934                            |                                   |
| Ladder/Line        | 238.50               | 0.0150                | 0.0000                | 6.2188                                      | 0.0007                                    | 0.0004                | 0.0184                | 0.0131                            |                                   |
| Ladder/Line        | 238.50               | 0.0930                | 0.0000                | 38.5565                                     | 0.0042                                    | 0.0026                | 0.1142                | 0.0811                            |                                   |
| Antenna Load       | 237.00               | 0.2900                | 0.0000                | 119.3977                                    | 0.0130                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 237.00               | 0.2900                | 0.0000                | 119.3977                                    | 0.0130                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 237.00               | 0.2900                | 0.0000                | 119.3977                                    | 0.0130                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 237.00               | 0.2900                | 0.0000                | 119.3977                                    | 0.0130                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 237.00               | 0.2900                | 0.0000                | 119.3977                                    | 0.0130                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 237.00               | 0.2900                | 0.0000                | 119.3977                                    | 0.0130                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 237.00               | 0.2900                | 0.0000                | 119.3977                                    | 0.0130                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 237.00               | 6.8000                | 0.0000                | 2,799.6700                                  | 0.3050                                    | 0.1877                | 8.3477                | 5.9323                            |                                   |
| Mount Load         | 237.00               | 0.0500                | 0.0000                | 20.5858                                     | 0.0022                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 237.00               | 0.0500                | 0.0000                | 20.5858                                     | 0.0022                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 237.00               | 0.0500                | 0.0000                | 20.5858                                     | 0.0022                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 237.00               | 0.0500                | 0.0000                | 20.5858                                     | 0.0022                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 237.00               | 0.0500                | 0.0000                | 20.5858                                     | 0.0022                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |

**Seismic Load Effects**  
**Equivalent Lateral Force Procedure**  
**ANSI/TIA-222-G**

| Description           | h <sub>i</sub> (ft.) | w <sub>i</sub> (kips) | W <sub>2</sub> (kips) | w <sub>i</sub> h <sub>i</sub> <sup>ke</sup> | Vertical Distribution of Seismic Forces |                       |                       | 1.2 D + 1.0 E <sub>v</sub> (kips) | 0.9 D - 1.0 E <sub>v</sub> (kips) |
|-----------------------|----------------------|-----------------------|-----------------------|---|---|-----------------------|-----------------------|-----------------------------------|-----------------------------------|
|                       |                      |                       |                       |   | F <sub>z</sub> or E <sub>h</sub> (kips) | E <sub>v</sub> (kips) | E <sub>v</sub> (kips) |                                   |                                   |
| Mount Load            | 237.00               | 0.0500                | 0.0000                | 20.5858                                     | 0.0022                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount/Antenna Load    | 237.00               | 0.3400                | 0.0000                | 139.9835                                    | 0.0152                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 237.00               | 0.3400                | 0.0000                | 139.9835                                    | 0.0152                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 237.00               | 0.3400                | 0.0000                | 139.9835                                    | 0.0152                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 237.00               | 0.3400                | 0.0000                | 139.9835                                    | 0.0152                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 237.00               | 0.3400                | 0.0000                | 139.9835                                    | 0.0152                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Ladder/Line           | 233.50               | 0.2534                | 0.0000                | 102.6338                                    | 0.0112                                  | 0.0070                | 0.3111                | 0.2211                            |                                   |
| Ladder/Line           | 233.50               | 0.0423                | 0.0000                | 17.1326                                     | 0.0019                                  | 0.0012                | 0.0520                | 0.0369                            |                                   |
| Ladder/Line           | 233.50               | 0.2499                | 0.0000                | 101.2162                                    | 0.0110                                  | 0.0069                | 0.3068                | 0.2180                            |                                   |
| Ladder/Line           | 233.50               | 0.0350                | 0.0000                | 14.1759                                     | 0.0015                                  | 0.0010                | 0.0430                | 0.0305                            |                                   |
| Antenna Load          | 230.00               | 0.2900                | 0.0000                | 115.5208                                    | 0.0126                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 230.00               | 0.2900                | 0.0000                | 115.5208                                    | 0.0126                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 230.00               | 0.2900                | 0.0000                | 115.5208                                    | 0.0126                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 230.00               | 0.2900                | 0.0000                | 115.5208                                    | 0.0126                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 230.00               | 7.0000                | 0.0000                | 2788.4341                                   | 0.3038                                  | 0.1932                | 8.5932                | 6.1068                            |                                   |
| Antenna Load          | 230.00               | 0.2900                | 0.0000                | 115.5208                                    | 0.0126                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Mount Load            | 230.00               | 0.0500                | 0.0000                | 19.9174                                     | 0.0022                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 230.00               | 0.0500                | 0.0000                | 19.9174                                     | 0.0022                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 230.00               | 0.0500                | 0.0000                | 19.9174                                     | 0.0022                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 230.00               | 0.0500                | 0.0000                | 19.9174                                     | 0.0022                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 230.00               | 0.0500                | 0.0000                | 19.9174                                     | 0.0022                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount/Antenna Load    | 230.00               | 0.3400                | 0.0000                | 135.4382                                    | 0.0148                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 230.00               | 0.3400                | 0.0000                | 135.4382                                    | 0.0148                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 230.00               | 0.3400                | 0.0000                | 135.4382                                    | 0.0148                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 230.00               | 0.3400                | 0.0000                | 135.4382                                    | 0.0148                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 230.00               | 0.3400                | 0.0000                | 135.4382                                    | 0.0148                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Structure - Section 4 | 230.00               | 7.9950                | 0.0000                | 3,184.7901                                  | 0.3469                                  | 0.2207                | 9.8147                | 6.9748                            |                                   |
| Ladder/Line           | 226.50               | 0.2499                | 0.0000                | 97.8805                                     | 0.0107                                  | 0.0069                | 0.3068                | 0.2180                            |                                   |
| Ladder/Line           | 226.50               | 0.0860                | 0.0000                | 33.6844                                     | 0.0037                                  | 0.0024                | 0.1056                | 0.0750                            |                                   |
| Ladder/Line           | 226.50               | 0.0350                | 0.0000                | 13.7088                                     | 0.0015                                  | 0.0010                | 0.0430                | 0.0305                            |                                   |
| Ladder/Line           | 226.50               | 0.2534                | 0.0000                | 99.2514                                     | 0.0108                                  | 0.0070                | 0.3111                | 0.2211                            |                                   |
| Antenna Load          | 223.00               | 0.2900                | 0.0000                | 111.6559                                    | 0.0122                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 223.00               | 0.2900                | 0.0000                | 111.6559                                    | 0.0122                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 223.00               | 0.2900                | 0.0000                | 111.6559                                    | 0.0122                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 223.00               | 7.1500                | 0.0000                | 2,752.8953                                  | 0.2999                                  | 0.1973                | 8.7773                | 6.2377                            |                                   |
| Antenna Load          | 223.00               | 0.2900                | 0.0000                | 111.6559                                    | 0.0122                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |

**Seismic Load Effects**  
**Equivalent Lateral Force Procedure**  
**ANSI/TIA-222-G**

| Description        | h <sub>n</sub> (ft.) | w <sub>n</sub> (kips) | W <sub>2</sub> (kips) | w <sub>h</sub> <sup>ke</sup> | Vertical Distribution of Seismic Forces |                       |                       | 1.2 D + 1.0 E <sub>v</sub> (kips) | 0.9 D - 1.0 E <sub>v</sub> (kips) |
|--------------------|----------------------|-----------------------|-----------------------|------------------------------|---|-----------------------|-----------------------|-----------------------------------|-----------------------------------|
|                    |                      |                       |                       |                              | F <sub>z</sub> or E <sub>h</sub> (kips) | E <sub>v</sub> (kips) | E <sub>v</sub> (kips) |                                   |                                   |
| Antenna Load       | 223.00               | 0.2900                | 0.0000                | 111.6559                     | 0.0122                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 223.00               | 0.2900                | 0.0000                | 111.6559                     | 0.0122                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Mount Load         | 223.00               | 0.0500                | 0.0000                | 19.2510                      | 0.0021                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 223.00               | 0.0500                | 0.0000                | 19.2510                      | 0.0021                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 223.00               | 0.0500                | 0.0000                | 19.2510                      | 0.0021                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 223.00               | 0.0500                | 0.0000                | 19.2510                      | 0.0021                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 223.00               | 0.0500                | 0.0000                | 19.2510                      | 0.0021                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount/Antenna Load | 223.00               | 0.3400                | 0.0000                | 130.9069                     | 0.0143                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load | 223.00               | 0.3400                | 0.0000                | 130.9069                     | 0.0143                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load | 223.00               | 0.3400                | 0.0000                | 130.9069                     | 0.0143                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load | 223.00               | 0.3400                | 0.0000                | 130.9069                     | 0.0143                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load | 223.00               | 0.3400                | 0.0000                | 130.9069                     | 0.0143                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Ladder/Line        | 221.50               | 0.1071                | 0.0000                | 40.9304                      | 0.0045                                  | 0.0030                | 0.1315                | 0.0934                            |                                   |
| Ladder/Line        | 221.50               | 0.1086                | 0.0000                | 41.5037                      | 0.0045                                  | 0.0030                | 0.1333                | 0.0947                            |                                   |
| Ladder/Line        | 221.50               | 0.0150                | 0.0000                | 5.7325                       | 0.0006                                  | 0.0004                | 0.0184                | 0.0131                            |                                   |
| Ladder/Line        | 221.50               | 0.0556                | 0.0000                | 21.2486                      | 0.0023                                  | 0.0015                | 0.0682                | 0.0485                            |                                   |
| Ladder/Line        | 218.00               | 0.1448                | 0.0000                | 54.3762                      | 0.0059                                  | 0.0040                | 0.1778                | 0.1263                            |                                   |
| Ladder/Line        | 218.00               | 0.0741                | 0.0000                | 7.5105                       | 0.0008                                  | 0.0006                | 0.0246                | 0.0174                            |                                   |
| Ladder/Line        | 218.00               | 0.1428                | 0.0000                | 27.8265                      | 0.0030                                  | 0.0020                | 0.0909                | 0.0647                            |                                   |
| Antenna Load       | 216.00               | 0.2900                | 0.0000                | 53.6252                      | 0.0058                                  | 0.0039                | 0.1753                | 0.1246                            |                                   |
| Antenna Load       | 216.00               | 0.2900                | 0.0000                | 107.8032                     | 0.0117                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 216.00               | 0.2900                | 0.0000                | 107.8032                     | 0.0117                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 216.00               | 0.2900                | 0.0000                | 107.8032                     | 0.0117                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 216.00               | 0.2900                | 0.0000                | 107.8032                     | 0.0117                                  | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load       | 216.00               | 7.3500                | 0.0000                | 2,732.2530                   | 0.2976                                  | 0.2029                | 9.0229                | 6.4121                            |                                   |
| Mount Load         | 216.00               | 0.0500                | 0.0000                | 18.5868                      | 0.0020                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 216.00               | 0.0500                | 0.0000                | 18.5868                      | 0.0020                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 216.00               | 0.0500                | 0.0000                | 18.5868                      | 0.0020                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 216.00               | 0.0500                | 0.0000                | 18.5868                      | 0.0020                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load         | 216.00               | 0.0500                | 0.0000                | 18.5868                      | 0.0020                                  | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount/Antenna Load | 216.00               | 0.3400                | 0.0000                | 126.3899                     | 0.0138                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load | 216.00               | 0.3400                | 0.0000                | 126.3899                     | 0.0138                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load | 216.00               | 0.3400                | 0.0000                | 126.3899                     | 0.0138                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load | 216.00               | 0.3400                | 0.0000                | 126.3899                     | 0.0138                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load | 216.00               | 0.3400                | 0.0000                | 126.3899                     | 0.0138                                  | 0.0094                | 0.4174                | 0.2966                            |                                   |

**Seismic Load Effects**  
**Equivalent Lateral Force Procedure**  
**ANSI/TIA-222-G**

| Description           | h <sub>i</sub> (ft.) | w <sub>i</sub> (kips) | W <sub>s</sub> (kips) | w <sub>i</sub> h <sub>i</sub> <sup>ke</sup> | Vertical Distribution of Seismic Forces   |                       |                       | 1.2 D + 1.0 E <sub>v</sub> (kips) | 0.9 D - 1.0 E <sub>v</sub> (kips) |
|-----------------------|----------------------|-----------------------|-----------------------|---|---|-----------------------|-----------------------|-----------------------------------|-----------------------------------|
|                       |                      |                       |                       |   | F <sub>sz</sub> or E <sub>sh</sub> (kips) | E <sub>v</sub> (kips) | E <sub>v</sub> (kips) |                                   |                                   |
| Mount/Antenna Load    | 216.00               | 0.3400                | 0.0000                | 126.3899                                    | 0.0138                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Ladder/Line           | 212.50               | 0.2534                | 0.0000                | 92.5185                                     | 0.0101                                    | 0.0070                | 0.3111                | 0.2211                            |                                   |
| Ladder/Line           | 212.50               | 0.1733                | 0.0000                | 63.2733                                     | 0.0069                                    | 0.0048                | 0.2128                | 0.1512                            |                                   |
| Ladder/Line           | 212.50               | 0.0350                | 0.0000                | 12.7788                                     | 0.0014                                    | 0.0010                | 0.0430                | 0.0305                            |                                   |
| Ladder/Line           | 212.50               | 0.2499                | 0.0000                | 91.2407                                     | 0.0099                                    | 0.0069                | 0.3068                | 0.2180                            |                                   |
| Structure - Section 5 | 210.00               | 8.1140                | 0.0000                | 2,924.1419                                  | 0.3186                                    | 0.2239                | 9.9607                | 7.0787                            |                                   |
| Antenna Load          | 209.00               | 7.5000                | 0.0000                | 2,688.6999                                  | 0.2929                                    | 0.2070                | 9.2070                | 6.5430                            |                                   |
| Antenna Load          | 209.00               | 0.2900                | 0.0000                | 103.9631                                    | 0.0113                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 209.00               | 0.2900                | 0.0000                | 103.9631                                    | 0.0113                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 209.00               | 0.2900                | 0.0000                | 103.9631                                    | 0.0113                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 209.00               | 0.2900                | 0.0000                | 103.9631                                    | 0.0113                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 209.00               | 0.2900                | 0.0000                | 103.9631                                    | 0.0113                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 209.00               | 0.2900                | 0.0000                | 103.9631                                    | 0.0113                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Mount Load            | 209.00               | 0.0500                | 0.0000                | 17.9247                                     | 0.0020                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 209.00               | 0.0500                | 0.0000                | 17.9247                                     | 0.0020                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 209.00               | 0.0500                | 0.0000                | 17.9247                                     | 0.0020                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 209.00               | 0.0500                | 0.0000                | 17.9247                                     | 0.0020                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 209.00               | 0.0500                | 0.0000                | 17.9247                                     | 0.0020                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount/Antenna Load    | 209.00               | 0.3400                | 0.0000                | 121.8877                                    | 0.0133                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 209.00               | 0.3400                | 0.0000                | 121.8877                                    | 0.0133                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 209.00               | 0.3400                | 0.0000                | 121.8877                                    | 0.0133                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 209.00               | 0.3400                | 0.0000                | 121.8877                                    | 0.0133                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Mount/Antenna Load    | 209.00               | 0.3400                | 0.0000                | 121.8877                                    | 0.0133                                    | 0.0094                | 0.4174                | 0.2966                            |                                   |
| Ladder/Line           | 205.50               | 0.2170                | 0.0000                | 76.3599                                     | 0.0083                                    | 0.0060                | 0.2664                | 0.1893                            |                                   |
| Ladder/Line           | 205.50               | 0.0350                | 0.0000                | 12.3161                                     | 0.0013                                    | 0.0010                | 0.0430                | 0.0305                            |                                   |
| Ladder/Line           | 205.50               | 0.2499                | 0.0000                | 87.9371                                     | 0.0096                                    | 0.0069                | 0.3068                | 0.2180                            |                                   |
| Ladder/Line           | 205.50               | 0.2534                | 0.0000                | 89.1687                                     | 0.0097                                    | 0.0070                | 0.3111                | 0.2211                            |                                   |
| Antenna Load          | 202.00               | 0.2900                | 0.0000                | 100.1359                                    | 0.0109                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 202.00               | 0.2900                | 0.0000                | 100.1359                                    | 0.0109                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 202.00               | 0.2900                | 0.0000                | 100.1359                                    | 0.0109                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 202.00               | 0.2900                | 0.0000                | 100.1359                                    | 0.0109                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 202.00               | 0.2900                | 0.0000                | 100.1359                                    | 0.0109                                    | 0.0080                | 0.3560                | 0.2530                            |                                   |
| Antenna Load          | 202.00               | 7.7000                | 0.0000                | 2,658.7811                                  | 0.2896                                    | 0.2125                | 9.4525                | 6.7175                            |                                   |
| Mount Load            | 202.00               | 0.0500                | 0.0000                | 17.2648                                     | 0.0019                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 202.00               | 0.0500                | 0.0000                | 17.2648                                     | 0.0019                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 202.00               | 0.0500                | 0.0000                | 17.2648                                     | 0.0019                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |
| Mount Load            | 202.00               | 0.0500                | 0.0000                | 17.2648                                     | 0.0019                                    | 0.0014                | 0.0614                | 0.0436                            |                                   |



**Seismic Load Effects**  
**Equivalent Lateral Force Procedure**  
**ANSI/TIA-222-G**

| Description            | h <sub>n</sub> (ft.) | w <sub>n</sub> (kips) | W <sub>2</sub> (kips) | w <sub>h</sub> (kips) | Vertical Distribution of Seismic Forces |                       |  |                       |
|------------------------|----------------------|-----------------------|-----------------------|-----------------------|---|-----------------------|--|-----------------------|
|                        |                      |                       |                       |                       | W <sub>2</sub> (kips)                   | w <sub>h</sub> (kips) | F <sub>xz</sub> or E <sub>h</sub> (kips) | E <sub>v</sub> (kips) |
| Mount Load             | 202.00               | 0.0500                | 0.0000                | 17.2648               | 0.0019                                  | 0.0014                | 0.0614                                   | 0.0436                |
| Mount Load             | 202.00               | 0.0500                | 0.0000                | 17.2648               | 0.0019                                  | 0.0014                | 0.0614                                   | 0.0436                |
| Mount/Antenna Load     | 202.00               | 0.3400                | 0.0000                | 117.4007              | 0.0128                                  | 0.0094                | 0.4174                                   | 0.2966                |
| Mount/Antenna Load     | 202.00               | 0.3400                | 0.0000                | 117.4007              | 0.0128                                  | 0.0094                | 0.4174                                   | 0.2966                |
| Mount/Antenna Load     | 202.00               | 0.3400                | 0.0000                | 117.4007              | 0.0128                                  | 0.0094                | 0.4174                                   | 0.2966                |
| Mount/Antenna Load     | 202.00               | 0.3400                | 0.0000                | 117.4007              | 0.0128                                  | 0.0094                | 0.4174                                   | 0.2966                |
| Mount/Antenna Load     | 202.00               | 0.3400                | 0.0000                | 117.4007              | 0.0128                                  | 0.0094                | 0.4174                                   | 0.2966                |
| Mount/Antenna Load     | 202.00               | 0.3400                | 0.0000                | 117.4007              | 0.0128                                  | 0.0094                | 0.4174                                   | 0.2966                |
| Ladder/Line            | 201.00               | 0.0714                | 0.0000                | 24.5198               | 0.0027                                  | 0.0020                | 0.0877                                   | 0.0623                |
| Ladder/Line            | 201.00               | 0.0724                | 0.0000                | 24.8632               | 0.0027                                  | 0.0020                | 0.0889                                   | 0.0632                |
| Ladder/Line            | 201.00               | 0.0724                | 0.0000                | 24.8632               | 0.0027                                  | 0.0020                | 0.0889                                   | 0.0632                |
| Ladder/Line            | 201.00               | 0.0121                | 0.0000                | 4.1553                | 0.0005                                  | 0.0003                | 0.0148                                   | 0.0106                |
| Ladder/Line            | 190.00               | 0.1208                | 0.0000                | 38.9919               | 0.0042                                  | 0.0033                | 0.1483                                   | 0.1054                |
| Ladder/Line            | 190.00               | 0.7240                | 0.0000                | 233.6933              | 0.0255                                  | 0.0200                | 0.8888                                   | 0.6316                |
| Ladder/Line            | 190.00               | 0.7140                | 0.0000                | 230.4655              | 0.0251                                  | 0.0197                | 0.8765                                   | 0.6229                |
| Ladder/Line            | 190.00               | 0.7240                | 0.0000                | 233.6933              | 0.0255                                  | 0.0200                | 0.8888                                   | 0.6316                |
| Structure - Section 6  | 190.00               | 10.3900               | 0.0000                | 3,353.6927            | 0.3653                                  | 0.2868                | 12.7548                                  | 9.0642                |
| Ladder/Line            | 170.00               | 0.7240                | 0.0000                | 206.7582              | 0.0225                                  | 0.0200                | 0.8888                                   | 0.6316                |
| Ladder/Line            | 170.00               | 0.7140                | 0.0000                | 203.9025              | 0.0222                                  | 0.0197                | 0.8765                                   | 0.6229                |
| Ladder/Line            | 170.00               | 0.7240                | 0.0000                | 206.7582              | 0.0225                                  | 0.0200                | 0.8888                                   | 0.6316                |
| Ladder/Line            | 170.00               | 0.1208                | 0.0000                | 34.4978               | 0.0038                                  | 0.0033                | 0.1483                                   | 0.1054                |
| Structure - Section 7  | 170.00               | 11.2420               | 0.0000                | 3,210.4643            | 0.3497                                  | 0.3103                | 13.8007                                  | 9.8075                |
| Ladder/Line            | 150.00               | 0.1208                | 0.0000                | 30.0568               | 0.0033                                  | 0.0033                | 0.1483                                   | 0.1054                |
| Ladder/Line            | 150.00               | 0.7240                | 0.0000                | 180.1420              | 0.0196                                  | 0.0200                | 0.8888                                   | 0.6316                |
| Ladder/Line            | 150.00               | 0.7240                | 0.0000                | 180.1420              | 0.0196                                  | 0.0200                | 0.8888                                   | 0.6316                |
| Ladder/Line            | 150.00               | 0.7140                | 0.0000                | 177.6539              | 0.0194                                  | 0.0197                | 0.8765                                   | 0.6229                |
| Structure - Section 8  | 150.00               | 11.1350               | 0.0000                | 2,770.5545            | 0.3018                                  | 0.3073                | 13.6693                                  | 9.7142                |
| Ladder/Line            | 130.00               | 0.7240                | 0.0000                | 153.8828              | 0.0168                                  | 0.0200                | 0.8888                                   | 0.6316                |
| Ladder/Line            | 130.00               | 0.7240                | 0.0000                | 153.8828              | 0.0168                                  | 0.0200                | 0.8888                                   | 0.6316                |
| Ladder/Line            | 130.00               | 0.1208                | 0.0000                | 25.6755               | 0.0028                                  | 0.0033                | 0.1483                                   | 0.1054                |
| Ladder/Line            | 130.00               | 0.7140                | 0.0000                | 151.7574              | 0.0165                                  | 0.0197                | 0.8765                                   | 0.6229                |
| Structure - Section 9  | 130.00               | 12.2530               | 0.0000                | 2,604.3183            | 0.2837                                  | 0.3382                | 15.0418                                  | 10.6895               |
| Ladder/Line            | 110.00               | 0.1208                | 0.0000                | 21.3619               | 0.0023                                  | 0.0033                | 0.1483                                   | 0.1054                |
| Ladder/Line            | 110.00               | 0.7240                | 0.0000                | 128.0300              | 0.0139                                  | 0.0200                | 0.8888                                   | 0.6316                |
| Ladder/Line            | 110.00               | 0.7240                | 0.0000                | 128.0300              | 0.0139                                  | 0.0200                | 0.8888                                   | 0.6316                |
| Ladder/Line            | 110.00               | 0.7140                | 0.0000                | 126.2617              | 0.0138                                  | 0.0197                | 0.8765                                   | 0.6229                |
| Structure - Section 10 | 110.00               | 13.3960               | 0.0000                | 2,368.9096            | 0.2581                                  | 0.3697                | 16.4449                                  | 11.6867               |
| Ladder/Line            | 90.00                | 0.7140                | 0.0000                | 101.2323              | 0.0110                                  | 0.0197                | 0.8765                                   | 0.6229                |
| Ladder/Line            | 90.00                | 0.7240                | 0.0000                | 102.6501              | 0.0112                                  | 0.0200                | 0.8888                                   | 0.6316                |
| Ladder/Line            | 90.00                | 0.1208                | 0.0000                | 17.1273               | 0.0019                                  | 0.0033                | 0.1483                                   | 0.1054                |

**Seismic Load Effects**  
**Equivalent Lateral Force Procedure**  
**ANSI/TIA-222-G**

| Description            | h <sub>i</sub> (ft.) | w <sub>i</sub> (kips) | W <sub>2</sub> (kips) | w <sub>i</sub> h <sub>i</sub> <sup>ke</sup> | Vertical Distribution of Seismic Forces   |                       |                                 |                                 |
|------------------------|----------------------|-----------------------|-----------------------|---|---|-----------------------|---------------------------------|---------------------------------|
|                        |                      |                       |                       |   | F <sub>sz</sub> or E <sub>sh</sub> (kips) | E <sub>v</sub> (kips) | 1.2D + 1.0E <sub>v</sub> (kips) | 0.9D - 1.0E <sub>v</sub> (kips) |
| Ladder/Line            | 90.00                | 0.7240                | 0.0000                | 102.6501                                    | 0.0112                                    | 0.0200                | 0.8888                          | 0.6316                          |
| Structure - Section 11 | 90.00                | 14.9200               | 0.0000                | 2,115.3870                                  | 0.2304                                    | 0.4118                | 18.3158                         | 13.0162                         |
| Ladder/Line            | 70.00                | 0.7140                | 0.0000                | 76.7629                                     | 0.0084                                    | 0.0197                | 0.8765                          | 0.6229                          |
| Ladder/Line            | 70.00                | 0.7240                | 0.0000                | 77.8380                                     | 0.0085                                    | 0.0200                | 0.8888                          | 0.6316                          |
| Ladder/Line            | 70.00                | 0.1208                | 0.0000                | 12.9873                                     | 0.0014                                    | 0.0033                | 0.1483                          | 0.1054                          |
| Ladder/Line            | 70.00                | 0.7240                | 0.0000                | 77.8380                                     | 0.0085                                    | 0.0200                | 0.8888                          | 0.6316                          |
| Structure - Section 12 | 70.00                | 16.2890               | 0.0000                | 1,751.2468                                  | 0.1908                                    | 0.4496                | 19.9964                         | 14.2105                         |
| Ladder/Line            | 50.00                | 0.7140                | 0.0000                | 52.9986                                     | 0.0058                                    | 0.0197                | 0.8765                          | 0.6229                          |
| Ladder/Line            | 50.00                | 0.7240                | 0.0000                | 53.7409                                     | 0.0059                                    | 0.0200                | 0.8888                          | 0.6316                          |
| Ladder/Line            | 50.00                | 0.1208                | 0.0000                | 8.9667                                      | 0.0010                                    | 0.0033                | 0.1483                          | 0.1054                          |
| Ladder/Line            | 50.00                | 0.7240                | 0.0000                | 53.7409                                     | 0.0059                                    | 0.0200                | 0.8888                          | 0.6316                          |
| Structure - Section 13 | 50.00                | 16.9830               | 0.0000                | 1,260.6089                                  | 0.1373                                    | 0.4687                | 20.8483                         | 14.8160                         |
| Ladder/Line            | 30.00                | 0.7240                | 0.0000                | 30.6231                                     | 0.0033                                    | 0.0200                | 0.8888                          | 0.6316                          |
| Ladder/Line            | 30.00                | 0.7140                | 0.0000                | 30.2001                                     | 0.0033                                    | 0.0197                | 0.8765                          | 0.6229                          |
| Ladder/Line            | 30.00                | 0.7240                | 0.0000                | 30.6231                                     | 0.0033                                    | 0.0200                | 0.8888                          | 0.6316                          |
| Ladder/Line            | 30.00                | 0.1208                | 0.0000                | 5.1095                                      | 0.0006                                    | 0.0033                | 0.1483                          | 0.1054                          |
| Structure - Section 14 | 30.00                | 20.6880               | 0.0000                | 875.0422                                    | 0.0953                                    | 0.5710                | 25.3966                         | 18.0482                         |
| Ladder/Line            | 10.00                | 0.7240                | 0.0000                | 9.1356                                      | 0.0010                                    | 0.0200                | 0.8888                          | 0.6316                          |
| Ladder/Line            | 10.00                | 0.1208                | 0.0000                | 1.5243                                      | 0.0002                                    | 0.0033                | 0.1483                          | 0.1054                          |
| Ladder/Line            | 10.00                | 0.7240                | 0.0000                | 9.1356                                      | 0.0010                                    | 0.0200                | 0.8888                          | 0.6316                          |
| Ladder/Line            | 10.00                | 0.7140                | 0.0000                | 9.0094                                      | 0.0010                                    | 0.0197                | 0.8765                          | 0.6229                          |
| Structure - Section 15 | 10.00                | 22.1190               | 0.0000                | 279.1036                                    | 0.0304                                    | 0.6105                | 27.1533                         | 19.2966                         |
| Σ                      |                      | 346.42                | 26.4415               | 98,578.54                                   | 10.74                                     | 9.56                  | 425.27                          | 302.21                          |

**Leg Connection Details**

| Bottom Elevation (ft) | Top Elevation (ft) | Pipe Dimensions | Top Splice |                |                  |                      | Bottom Splice/Base |           |                |                  |                      |                 |      |       |
|-----------------------|--------------------|-----------------|------------|----------------|------------------|----------------------|--------------------|-----------|----------------|------------------|----------------------|-----------------|------|-------|
|                       |                    |                 | Bolt Qty.  | Bolt Dia. (in) | Bolt Circle (in) | Plate Thickness (in) | Plate Dia. (in)    | Bolt Qty. | Bolt Dia. (in) | Bolt Circle (in) | Plate Thickness (in) | Plate Dia. (in) |      |       |
| 280                   | 300                | 5.563 OD X .258 |            |                |                  |                      |                    |           |                | 6                | 1.00                 | 9.00            | 1.25 | 11.50 |
| 260                   | 280                | 5.563 OD X .258 | 6          | 1.00           | 9.00             | 1.25                 | 11.50              | 6         | 1.00           | 9.00             | 1.25                 | 11.50           | 1.25 | 11.50 |
| 240                   | 260                | 5.563 OD X .375 | 6          | 1.00           | 9.00             | 1.25                 | 11.50              | 6         | 1.25           | 12.50            | 1.75                 | 15.75           | 1.75 | 15.75 |
| 220                   | 240                | 8.625 OD X .322 | 6          | 1.25           | 12.50            | 1.50                 | 15.75              | 6         | 1.25           | 12.50            | 1.50                 | 15.75           | 1.50 | 15.75 |
| 200                   | 220                | 8.625 OD X .500 | 6          | 1.25           | 12.50            | 1.50                 | 15.75              | 8         | 1.50           | 17.25            | 2.00                 | 21.00           | 2.00 | 21.00 |
| 180                   | 200                | 12.75 OD X .375 | 8          | 1.50           | 17.25            | 1.75                 | 21.00              | 8         | 1.50           | 17.25            | 1.75                 | 21.00           | 1.75 | 21.00 |
| 160                   | 180                | 12.75 OD X .500 | 8          | 1.50           | 17.25            | 1.75                 | 21.00              | 8         | 1.50           | 17.25            | 1.75                 | 21.00           | 1.75 | 21.00 |
| 140                   | 160                | 12.75 OD X .500 | 8          | 1.50           | 17.25            | 1.75                 | 21.00              | 10        | 1.50           | 20.25            | 2.25                 | 24.00           | 2.25 | 24.00 |
| 120                   | 140                | 14.00 OD X .500 | 10         | 1.50           | 20.25            | 2.00                 | 24.00              | 10        | 1.50           | 20.25            | 2.00                 | 24.00           | 2.00 | 24.00 |
| 100                   | 120                | 16.00 OD X .500 | 10         | 1.50           | 20.25            | 1.75                 | 24.00              | 10        | 1.50           | 24.25            | 2.25                 | 28.00           | 2.25 | 28.00 |
| 80                    | 100                | 18.00 OD X .500 | 10         | 1.50           | 24.25            | 2.25                 | 28.00              | 10        | 2.00           | 26.00            | 2.25                 | 31.00           | 2.25 | 31.00 |
| 60                    | 80                 | 20.00 OD X .500 | 10         | 2.00           | 26.00            | 2.25                 | 31.00              | 6         | 2.25           | 25.50            | 2.00                 | 31.13           | 2.00 | 31.13 |
| 40                    | 60                 | 20.00 OD X .500 | 6          | 2.25           | 25.50            | 2.00                 | 31.13              | 6         | 2.25           | 25.50            | 2.00                 | 31.38           | 2.00 | 31.38 |
| 20                    | 40                 | 20.00 OD X .625 | 6          | 2.25           | 25.50            | 2.00                 | 31.38              | 6         | 2.25           | 25.75            | 2.00                 | 31.38           | 2.00 | 31.38 |
| 0                     | 20                 | 20.00 OD X .625 | 6          | 2.25           | 25.75            | 2.00                 | 31.38              | 8         | 2.00           | 25.25            | 4.00                 | 30.25           | 4.00 | 30.25 |

| Diagonal Bracing Connection Details |                    |               |           |                |                        |                   |                              |                             |  |
|-------------------------------------|--------------------|---------------|-----------|----------------|------------------------|-------------------|------------------------------|-----------------------------|--|
| Bottom Elevation (ft)               | Top Elevation (ft) | Angle Shape   | Bolt Qty. | Bolt Dia. (in) | Bolt End Distance (in) | Bolt Spacing (in) | Gage Distance From Heel (in) | Gusset Plate Thickness (in) |  |
| 280                                 | 300                | L 4 X 3 X 1/4 | 1         | 0.750          | 1.625                  |                   | 1.750                        | 0.375                       |  |
| 260                                 | 280                | L 4 X 4 X 3/8 | 1         | 0.875          | 1.625                  |                   | 2.000                        | 0.375                       |  |
| 240                                 | 260                | L 5 X 5 X 3/8 | 1         | 1.125          | 2.000                  |                   | 2.500                        | 0.375                       |  |
| 220                                 | 240                | L 6 X 6 X 1/2 | 1         | 1.250          | 2.250                  |                   | 3.000                        | 0.500                       |  |
| 200                                 | 220                | L 6 X 6 X 3/8 | 2         | 0.875          | 1.500                  | 2.6250            | 3.000                        | 0.500                       |  |
| 180                                 | 200                | L 6 X 6 X 1/2 | 2         | 1.000          | 1.750                  | 3.0000            | 3.000                        | 0.500                       |  |
| 173.33                              | 180                | L 6 X 6 X 1/2 | 2         | 1.125          | 2.000                  | 3.3750            | 3.000                        | 0.625                       |  |
| 160                                 | 173.33             | L 6 X 6 X 5/8 | 2         | 1.125          | 2.000                  | 3.3750            | 3.000                        | 0.625                       |  |
| 153.33                              | 160                | L 6 X 6 X 1/2 | 2         | 1.000          | 1.750                  | 3.0000            | 3.000                        | 0.500                       |  |
| 140                                 | 153.33             | L 6 X 6 X 1/2 | 2         | 1.000          | 1.750                  | 3.0000            | 3.000                        | 0.500                       |  |
| 133.33                              | 140                | L 6 X 6 X 1/2 | 2         | 1.000          | 1.750                  | 3.0000            | 3.000                        | 0.500                       |  |
| 120                                 | 133.33             | L 6 X 6 X 1/2 | 2         | 1.000          | 1.750                  | 3.0000            | 3.000                        | 0.500                       |  |
| 113.33                              | 120                | L 6 X 6 X 1/2 | 2         | 1.000          | 1.750                  | 3.0000            | 3.000                        | 0.500                       |  |
| 100                                 | 113.33             | L 6 X 6 X 1/2 | 2         | 1.000          | 1.750                  | 3.0000            | 3.000                        | 0.500                       |  |
| 93.33                               | 100                | L 6 X 6 X 1/2 | 2         | 1.000          | 1.750                  | 3.0000            | 3.000                        | 0.500                       |  |
| 80                                  | 93.33              | L 6 X 6 X 1/2 | 2         | 1.000          | 1.750                  | 3.0000            | 3.000                        | 0.500                       |  |
| 73.33                               | 80                 | L 6 X 6 X 1/2 | 2         | 1.000          | 1.750                  | 3.0000            | 3.000                        | 0.500                       |  |
| 60                                  | 73.33              | L 6 X 6 X 1/2 | 2         | 1.000          | 1.750                  | 3.0000            | 3.000                        | 0.500                       |  |
| 53.33                               | 60                 | L 6 X 6 X 5/8 | 2         | 1.000          | 1.750                  | 3.0000            | 3.000                        | 0.625                       |  |
| 40                                  | 53.33              | L 6 X 6 X 1/2 | 2         | 1.000          | 1.750                  | 3.0000            | 3.000                        | 0.625                       |  |
| 33.33                               | 40                 | L 6 X 6 X 5/8 | 2         | 1.000          | 1.750                  | 3.0000            | 3.000                        | 0.625                       |  |
| 20                                  | 33.33              | L 6 X 6 X 5/8 | 2         | 1.000          | 1.750                  | 3.0000            | 3.000                        | 0.625                       |  |
| 13.33                               | 20                 | L 6 X 6 X 5/8 | 2         | 1.000          | 1.750                  | 3.0000            | 3.000                        | 0.625                       |  |
| 0                                   | 13.33              | L 6 X 6 X 5/8 | 2         | 1.000          | 1.750                  | 3.0000            | 3.000                        | 0.625                       |  |

**DRILLED STRAIGHT PIER DESIGN BY SABRE INDUSTRIES**

300' S3TL Series HD1 VERSOCOM Diehl Road Data Center (New Tower), IL (24-4381-TJH) 03/26/24 KJT

|   |           |
|---|-----------|
| Factored Uplift (kips)                        | 1363      |
| Factored Download (kips)                      | 1609      |
| Factored Shear (kips)                         | 175       |
| Ultimate Bearing Pressure                     | <b>42</b> |
| Bearing $\Phi_s$                              | 0.75      |
| Bearing Design Strength (ksf)                 | 31.5      |
| Water Table Below Grade (ft)                  | <b>9</b>  |
| Bolt Circle Diameter (in)                     | 25.25     |
| Top of Concrete to Top of Bottom Threads (in) | 82.625    |
| Pier Diameter (ft)                            | 8         |
| Ht. Above Ground (ft)                         | 0.5       |
| Pier Length Below Ground (ft)                 | 51.5      |
| Rebar Quantity                                | 36        |
| Rebar Diameter (in)                           | 1.27      |
| Rebar Area (in <sup>2</sup> )                 | 45.60     |
| Rebar Spacing (in)                            | 7.62      |
| Tie Diameter (in)                             | 0.625     |
| Tie Spacing (in)                              | 12        |
| f'c (ksi)                                     | 4.5       |
| fy (ksi)                                      | 60        |
| Unit Wt. of Concrete (kcf)                    | 0.15      |
| Volume of Concrete (yd <sup>3</sup> )         | 96.81     |

Minimum Pier Diameter (ft) **3.44**

Minimum Area of Steel (in<sup>2</sup>) **36.19**

Length to ignore download (ft)

Ignore bottom length in download?

**0**

| Depth at Bottom of Layer (ft) | Ult. Skin Friction (ksf) | Ult. Skin Friction (Uplift) | $\gamma$ (kcf) |
|-------------------------------|--------------------------|-----------------------------|----------------|
| <b>3.5</b>                    | <b>0.00</b>              | <b>0.00</b>                 | <b>0.13</b>    |
| <b>5</b>                      | <b>0.80</b>              | <b>0.53</b>                 | <b>0.125</b>   |
| <b>12</b>                     | <b>1.70</b>              | <b>1.13</b>                 | <b>0.13</b>    |
| <b>30</b>                     | <b>1.20</b>              | <b>0.80</b>                 | <b>0.127</b>   |
| <b>38</b>                     | <b>2.00</b>              | <b>1.33</b>                 | <b>0.132</b>   |
| <b>52</b>                     | <b>3.00</b>              | <b>2.00</b>                 | <b>0.132</b>   |
|                               |                          |                             |                |
|                               |                          |                             |                |
|                               |                          |                             |                |
|                               |                          |                             |                |
|                               |                          |                             |                |
|                               |                          |                             |                |
|                               |                          |                             |                |
|                               |                          |                             |                |
|                               |                          |                             |                |
|                               |                          |                             |                |
|                               |                          |                             |                |

**DRILLED STRAIGHT PIER DESIGN BY SABRE INDUSTRIES (CONTINUED)**

**Download:**

|                                     |        |                              |        |
|-------------------------------------|--------|------------------------------|--------|
| $\Phi_s$ , Download Friction        | 0.75   |                              |        |
| $Q_f$ , Skin Friction (kips)        | 2292.1 | $W_s$ (kips)                 | 335.6  |
| $Q_b$ , End Bearing Strength (kips) | 2111.2 | $W_c$ (kips)                 | 392.1  |
| Download Design Strength (kips)     | 3302.4 | Factored Net Download (kips) | 1676.8 |

**Uplift (skin friction):**

|                               |        |                        |        |
|-------------------------------|--------|------------------------|--------|
| $\Phi_s$ , Uplift             | 0.75   |                        |        |
| $Q_f$ , Skin Friction (kips)  | 1528.8 |                        |        |
| $W_c$ (kips)                  | 392.1  |                        |        |
| $W_w$ (kips)                  | 133.3  |                        |        |
| Uplift Design Strength (kips) | 1379.5 | Factored Uplift (kips) | 1363.0 |

**Uplift (cone):**

|                               |         |                        |        |
|-------------------------------|---------|------------------------|--------|
| $W_{s,cone}$ (kips)           | 10789.3 |                        |        |
| $W_{w,cone}$ (kips)           | 3207.1  |                        |        |
| $W_c$ (kips)                  | 392.1   |                        |        |
| $W_{w,cyl}$ (kips)            | 133.3   |                        |        |
| Uplift Design Strength (kips) | 7056.9  | Factored Uplift (kips) | 1363.0 |

**Tension:**

|                                |        |              |        |
|--------------------------------|--------|--------------|--------|
| Design Tensile Strength (kips) | 2462.6 | $T_u$ (kips) | 1363.0 |
|--------------------------------|--------|--------------|--------|

**Shear:**

|   |       |   |        |
|---|-------|---|--------|
| $\phi V_n$ (kips)   | 524.1 | $V_u$ (kips)  | 175.0  |
| $\phi V_c = \phi 2(1 + N_u / (500A_g)) f'_c{}^{1/2} b_w d$ (kips) | 524.1 |   |        |
| $V_s$ (kips)  | 0.0   | *** $V_s \text{ max} = 4 f'_c{}^{1/2} b_w d$ (kips) | 1978.3 |
| Maximum Spacing (in)  | 7.62  | (Only if Shear Ties are Required)                   |        |

\*\*\* Ref. ACI 11.5.5 & 11.5.6.3

**Anchor Bolt Pull-Out:**

|   |        |                                  |        |
|---|--------|----------------------------------|--------|
| $\phi P_c = \phi \lambda (2/3) f'_c{}^{1/2} (2.8A_{SLOPE} + 4A_{FLAT})$ | 1090.3 | $P_u$ (kips)                     | 1363.0 |
| Rebar Development Length (in)   | 48.51  | Required Development Length (in) | 31.44  |

| Condition            | 1 is OK, 0 Fails |
|----------------------|------------------|
| Download             | 1                |
| Uplift               | 1                |
| Area of Steel        | 1                |
| Shear                | 1                |
| Anchor Bolt Pull-Out | 1                |
| Interaction Diagram  | 1                |