AMERICAN TOWER®
CORPORATION

# Structural Analysis Report

| | | |
|---|---|---|
| **Structure** | : | 246 ft Guyed Tower |
| **ATC Asset Name** | : | FALCON CO |
| **ATC Asset Number** | : | 82093 |
| **Engineering Number** | : | 14846163_C3_02 |
| **Proposed Carrier** | : | VERIZON WIRELESS |
| **Carrier Site Name** | : | FALCON |
| **Carrier Site Number** | : | 5000269693 |
| **Site Location** | : | 13185 Davis Road<br>Colorado Springs, CO 80831-7570<br>38.8669° N, 104.5836° W |
| **County** | : | El Paso |
| **Date** | : | May 1, 2024 |
| **Max Usage** | : | 62% |
| **Analysis Result** | : | Pass |

Created By:

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Structural Engineer I
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COLORADO LICENSED
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Michael Deese

Digitally signed by Michael Deese
Date: 2024.05.05 13:18:53 -04'00'

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## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 246 ft Guyed tower to reflect the change in loading by VERIZON WIRELESS.

## Supporting Documents

| | |
|---|---|
| **Tower:** | Fibrebond Dwg# USW0188, dated November 13, 1996 |
| **Foundation:** | Fibrebond Dwg# F961113A, dated November 13, 1996 |
| **Geotechnical:** | Geotechnical Services Inc Job# 2408302, dated October 29, 1996 |
| **Modification:** | ATC Job# 48692032, dated March 2, 2012 |

## Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

| | |
|---|---|
| **Basic Wind Speed:** | 107 mph (3-second gust) |
| **Basic Wind Speed w/ Ice:** | 50 mph (3-second gust) w/ 0.25" radial ice concurrent |
| **Code(s):** | ANSI/TIA-222-H / 2015 IBC |
| **Exposure Category:** | C |
| **Risk Category:** | II |
| **Topographic Factor Procedure:** | Method 1 |
| **Topographic Category:** | 1 |
| **Feature:** | Flat |
| **Spectral Response:** | Ss = 0.18, $S_1$ = 0.06 |
| **Site Class:** | D - Stiff Soil - Default |

## Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please reach out to your American Tower contact. If you do not have an American Tower contact and have an Engineering question, please contact **Engineering@americantower.com** Please include the American Tower asset name, asset number, and engineering number in the subject line for any questions.

## Structure Usages

| Structural Component | Usage | Control | Location | Result |
|---|---|---|---|---|
| Leg | 39.0% | Member X | Section 5 | Pass |
| Diagonal | 62.0% | Member X | Section 2 | Pass |
| Horizontal | 35.0% | Member | Section 12 | Pass |
| Bolt | 0.1% | - | Section 6 | Pass |
| Torque Arm | 15.0% | Compression | Elevation 126 ft | Pass |
| Cable | 37.0% | Tension | Elevation 60 ft | Pass |
| Serviceability Usage | 1.7% | Rotation | Elevation 243 ft | Pass |
| Foundation | 32.3% | Shear | Anchor 1 | Pass |
| Foundation | 34.3% | Uplift | Anchor 1 | Pass |
| Foundation | 41.8% | Axial | Base | Pass |
| Foundation | 51.6% | Shear | Base | Pass |

## Maximum Reactions

| Foundation | Moment (k-ft) | Axial (k) | Uplift (k) | Shear (k) |
|---|---|---|---|---|
| Guyed – Pivot Base | - | 69.4 | - | 1.8 |
| Guyed Anchor - A1 | - | - | 21.8 | 27.0 |

***Reactions shown are maximum overall and not limited by Load Case***

Foundation usages were calculated by comparing the maximum reactions from this analysis to the reactions from the original design drawings, factored by 1.35 per ANSI/TIA-222-H, Section 15.6.2

## VERIZON WIRELESS Final Loading

| Elev (ft) | Qty | Equipment | Lines |
|---|---|---|---|
| 242.0 | 2 | Raycap RVZDC-6627-PF-48 | (3) 1 5/8" (1.63"-41.3mm) Fiber<br>(6) 1 5/8" Coax |
| | 3 | Commscope NHH-65C-R2B | |
| | 3 | Commscope NHHSS-65C-R2BT4 | |
| | 3 | Ericsson AIR 6419 B77G | |
| | 3 | Ericsson RRUS 4490 | |
| | 3 | Ericsson RRUS 4890 | |
| | 3 | Ericsson Radio 4408 B48 | |
| | 3 | Light Sector Frame | |
| 58.0 | 1 | Valmont GSA ISMD6 | - |
| 50.0 | 1 | Radio Waves SPD4-5.2 | (1) 1/2" Coax |
| 48.0 | 1 | Valmont GSA ISMD6 | - |
| 47.9 | 1 | Valmont GSA ISMD6 | - |
| 40.0 | 1 | RFS SUX6-107BB | (1) EW90 |
| 30.0 | 1 | RFS SUX6-107BB | (2) EW90 |

Install proposed lines in the place of the existing VERIZON WIRELESS lines.

## Other Existing/Reserved Loading

*No loading was considered in addition to the VERIZON WIRELESS Final Loading.*

**Standard Conditions**

All engineering services performed by ATC Tower Services LLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts, and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of ATC Tower Services LLC

It is the responsibility of the client to ensure that the information provided to ATC Tower Services LLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

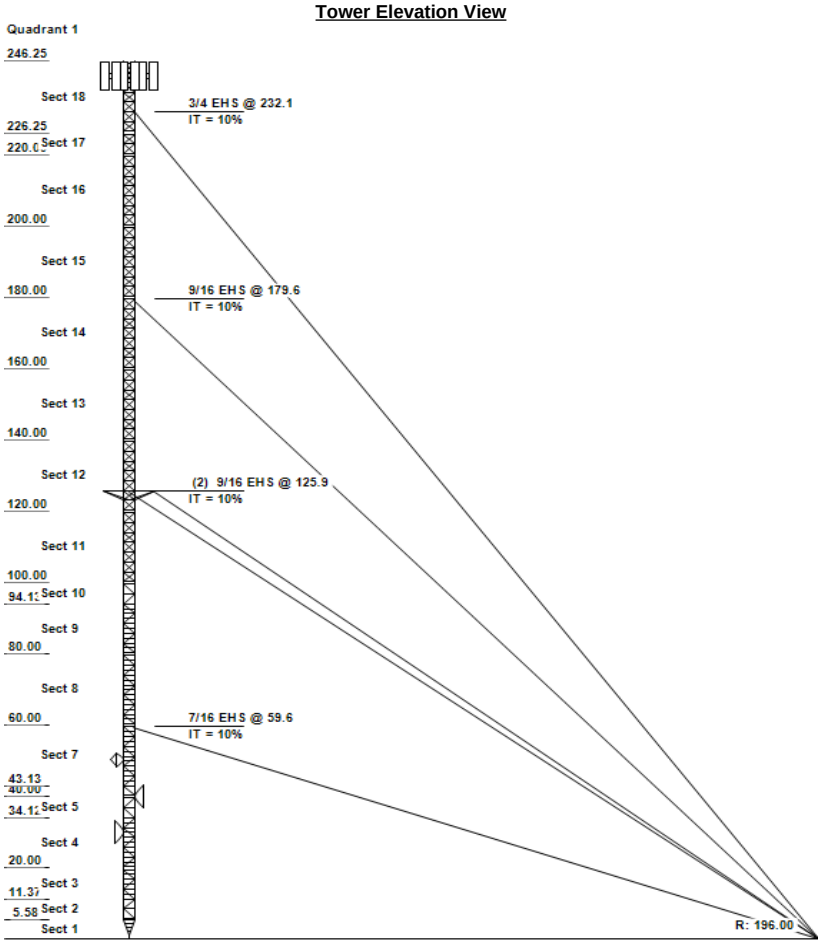
Unless explicitly agreed by both the client and ATC Tower Services LLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Tower Services LLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

## ANALYSIS PARAMETERS

| | | | | | |
|---|---|---|---|---|---|
| **Nominal Wind:** | 107 mph | **Ice Wind:** | 50 mph w/ 0.25" ice | **Service Wind:** | 60 mph |
| **Risk Category:** | II | **Exposure:** | C | **$S_s$:** 0.182 | **$S_1$:** 0.055 |
| **Topo Category:** | 1 | **Topo Factor:** | Method 1 | **Topo Feature:** | |
| **Structure Height:** | 246.25 ft | **Base Elevation:** | 0 ft | **Shape:** | Triangle |
| **Base Width:** | 3 ft | **Top Width:** | 3 ft | **Base Type:** | Pivot |

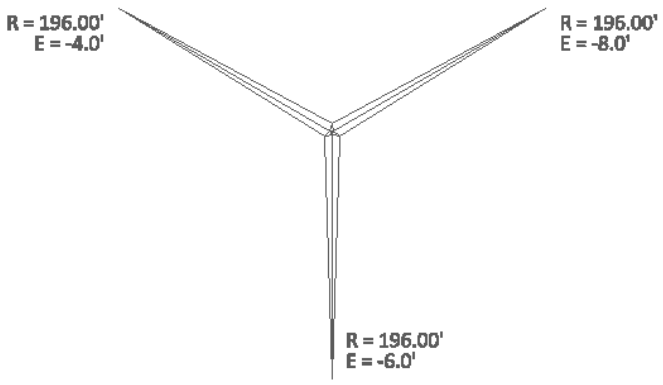
**Tower Elevation View**




**BASE REACTIONS**

| | |
|---|---|
| **Axial (k):** | 69.40 |
| **Shear (k):** | 1.81 |

**Tower Plan View**




## TOWER SECTION PROPERTIES

| Section | Leg Members | Diagonal Members | Horizontal Members |
|---|---|---|---|
| 1 | SOL 50 ksi 2" SOLID | | CHN 36 ksi C4 x 7.25 |
| 2-11 | SOL 50 ksi 2" SOLID | SOL 36 ksi 3/4" SOLID | SOL 36 ksi 3/4" SOLID |
| 12 | SOL 50 ksi 2" SOLID | SOL 36 ksi 7/8" SOLID | SOL 36 ksi 3/4" SOLID |
| 13-17 | SOL 50 ksi 1 3/4" SOL | SOL 36 ksi 3/4" SOLID | SOL 36 ksi 3/4" SOLID |
| 18 | SOL 50 ksi 1 3/4" SOL | SOL 36 ksi 7/8" SOLID | SOL 36 ksi 3/4" SOLID |

## SECONDARY BRACING MEMBERS

| Section | Sub Horizontal 1 | Sub Horizontal 2 | Sub Horizontal 3 |
|---|---|---|---|
| 3 - 4 | S1" SOLID | - | - |
| 7 - 9 | S1" SOLID | - | - |

## DISCRETE APPURTENANCE

| Elev (ft) | Description |
|---|---|
| 242.0 | (3) Ericsson Radio 4408 B48 |
| 242.0 | (3) Ericsson RRUS 4490 |
| 242.0 | (3) Ericsson RRUS 4890 |
| 242.0 | (3) Ericsson AIR 6419 B77G |
| 242.0 | (3) Commscope NHH-65C-R2B |
| 242.0 | (3) Commscope NHHSS-65C-R2BT4 |
| 242.0 | (3) Generic Flat Light Sector Fram |
| 242.0 | (2) Raycap RVZDC-6627-PF-48 |
| 126.0 | (1) Generic Torque Arm |
| 58.0 | (1) Valmont GSA ISMD6 |
| 50.0 | (1) Radio Waves SPD4-5.2 |
| 48.0 | (1) Valmont GSA ISMD6 |
| 47.9 | (1) Valmont GSA ISMD6 |
| 40.0 | (1) RFS SUX6-107BB |
| 30.0 | (1) RFS SUX6-107BB |

## LINEAR APPURTENANCE

| Elev To (ft) | Description |
|---|---|
| 242.0 | (6) 1 5/8" Coax |
| 242.0 | (3) 1 5/8" (1.63"-41.3mm) Fiber |
| 50.0 | (1) 1/2" Coax |
| 40.0 | (1) EW90 |
| 30.0 | (2) EW90 |

## GUY ANCHOR REACTIONS

| Radius (ft) | Drop (ft) | Azimuth (°) | Uplift (k) | Shear (k) |
|---|---|---|---|---|
| 196.0 | -6.00 | 0 | 21.52 | 26.97 |
| 196.0 | -8.00 | 120 | 21.76 | 26.94 |
| 196.0 | -4.00 | 240 | 21.29 | 27.00 |

## ANALYSIS PARAMETERS

| | | | |
|---|---|---|---|
| **Location:** | El Paso County, CO | **Height:** | 246.25 ft |
| **Type and Shape:** | Guyed, Triangle | **Base Elevation:** | 0.00 ft |
| **Manufacturer:** | Fibrebond | **Bottom Face Width:** | 3.00 ft |
| **Kd** | 0.85 | **Top Face Width:** | 3.00 ft |
| **Ke:** | 0.78 | | |

## ICE & WIND PARAMETERS

| | | | |
|---|---|---|---|
| **Exposure Category:** | C | **Design Wind Speed Without Ice:** | 107 mph |
| **Risk Category:** | II | **Design Wind Speed with Ice:** | 50 mph |
| **Topographic Factor Procedure:** | Method 1 | **Operational Windspeed:** | 60 mph |
| **Topographic Category:** | Flat | **Design Ice Thickness:** | 0.25 in |
| **Crest Height:** | 0 ft | **HMSL:** | 6721 ft |

## SEISMIC PARAMETERS

| | | | | | |
|---|---|---|---|---|---|
| **Analysis Method:** | Equivalent Lateral Force Method | | | | |
| **Site Class:** | D - Stiff Soil | | | **Period Based on Rayleigh Method (sec):** | 0.78 |
| **$T_L$ (sec):** | 4 | **P:** | 1.3 | **$C_s$:** | 0.038 |
| **$S_s$:** | 0.182 | **$S_1$:** | 0.055 | **$C_s$ Max:** | 0.038 |
| **$F_a$:** | 1.600 | **$F_v$:** | 2.400 | **$C_s$ Min:** | 0.030 |
| **$S_{ds}$:** | 0.194 | **$S_{d1}$:** | 0.088 | | |

## LOAD CASES

| | |
|---|---|
| 1.2D + 1.0W Normal | 1.2D + 1.0W Normal - 107 mph Wind with No Ice |
| 1.2D + 1.0W 60° | 1.2D + 1.0W 60° - 107 mph Wind with No Ice |
| 1.2D + 1.0W 90° | 1.2D + 1.0W 90° - 107 mph Wind with No Ice |
| 1.2D + 1.0W 120° | 1.2D + 1.0W 120° - 107 mph Wind with No Ice |
| 1.2D + 1.0W 180° | 1.2D + 1.0W 180° - 107 mph Wind with No Ice |
| 1.2D + 1.0W 210° | 1.2D + 1.0W 210° - 107 mph Wind with No Ice |
| 1.2D + 1.0W 240° | 1.2D + 1.0W 240° - 107 mph Wind with No Ice |
| 1.2D + 1.0W 300° | 1.2D + 1.0W 300° - 107 mph Wind with No Ice |
| 1.2D + 1.0W 330° | 1.2D + 1.0W 330° - 107 mph Wind with No Ice |
| 1.2D + 1.0Di + 1.0Wi Normal | 1.2D + 1.0Di + 1.0Wi Normal - 50 mph Wind with 0.25" Radial Ice |
| 1.2D + 1.0Di + 1.0Wi 60° | 1.2D + 1.0Di + 1.0Wi 60° - 50 mph Wind with 0.25" Radial Ice |
| 1.2D + 1.0Di + 1.0Wi 90° | 1.2D + 1.0Di + 1.0Wi 90° - 50 mph Wind with 0.25" Radial Ice |
| 1.2D + 1.0Di + 1.0Wi 120° | 1.2D + 1.0Di + 1.0Wi 120° - 50 mph Wind with 0.25" Radial Ice |
| 1.2D + 1.0Di + 1.0Wi 180° | 1.2D + 1.0Di + 1.0Wi 180° - 50 mph Wind with 0.25" Radial Ice |
| 1.2D + 1.0Di + 1.0Wi 210° | 1.2D + 1.0Di + 1.0Wi 210° - 50 mph Wind with 0.25" Radial Ice |
| 1.2D + 1.0Di + 1.0Wi 240° | 1.2D + 1.0Di + 1.0Wi 240° - 50 mph Wind with 0.25" Radial Ice |
| 1.2D + 1.0Di + 1.0Wi 300° | 1.2D + 1.0Di + 1.0Wi 300° - 50 mph Wind with 0.25" Radial Ice |
| 1.2D + 1.0Di + 1.0Wi 330° | 1.2D + 1.0Di + 1.0Wi 330° - 50 mph Wind with 0.25" Radial Ice |
| 1.2D + 1.0Ev + 1.0Eh Normal | 1.2D + 1.0Ev + 1.0Eh Normal - Seismic |
| 1.2D + 1.0Ev + 1.0Eh 60° | 1.2D + 1.0Ev + 1.0Eh 60° - Seismic |
| 1.2D + 1.0Ev + 1.0Eh 90° | 1.2D + 1.0Ev + 1.0Eh 90° - Seismic |
| 1.2D + 1.0Ev + 1.0Eh 120° | 1.2D + 1.0Ev + 1.0Eh 120° - Seismic |
| 1.2D + 1.0Ev + 1.0Eh 180° | 1.2D + 1.0Ev + 1.0Eh 180° - Seismic |
| 1.2D + 1.0Ev + 1.0Eh 210° | 1.2D + 1.0Ev + 1.0Eh 210° - Seismic |
| 1.2D + 1.0Ev + 1.0Eh 240° | 1.2D + 1.0Ev + 1.0Eh 240° - Seismic |
| 1.2D + 1.0Ev + 1.0Eh 300° | 1.2D + 1.0Ev + 1.0Eh 300° - Seismic |

| LOAD CASES | |
|---|---|
| 1.2D + 1.0Ev + 1.0Eh 330° | 1.2D + 1.0Ev + 1.0Eh 330° - Seismic |
| 1.0D + 1.0W Service Normal | 1.0D + 1.0W Service Normal - 60 mph Wind with No Ice |
| 1.0D + 1.0W Service 60° | 1.0D + 1.0W Service 60° - 60 mph Wind with No Ice |
| 1.0D + 1.0W Service 90° | 1.0D + 1.0W Service 90° - 60 mph Wind with No Ice |
| 1.0D + 1.0W Service 120° | 1.0D + 1.0W Service 120° - 60 mph Wind with No Ice |
| 1.0D + 1.0W Service 180° | 1.0D + 1.0W Service 180° - 60 mph Wind with No Ice |
| 1.0D + 1.0W Service 210° | 1.0D + 1.0W Service 210° - 60 mph Wind with No Ice |
| 1.0D + 1.0W Service 240° | 1.0D + 1.0W Service 240° - 60 mph Wind with No Ice |
| 1.0D + 1.0W Service 300° | 1.0D + 1.0W Service 300° - 60 mph Wind with No Ice |
| 1.0D + 1.0W Service 330° | 1.0D + 1.0W Service 330° - 60 mph Wind with No Ice |

TOWER LOADING – DISCRETE APPURTENANCE

Discrete Appurtenance Properties for LC: **1.2D + 1.0W**

| Elev (ft) | Description | Qty | Wt. (lb) | EPA (sf) | Length (ft) | Width (in) | Depth (in) | $K_a$ | Orient. Factor | Vert. Ecc. (ft) | $M_u$ (lb-ft) | $Q_z$ (psf) | $F_a$ (WL) (lb) | $P_a$ (DL) (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 242.0 | Ericsson Radio 4408 B48 | 3 | 15 | 1.2 | 1.5 | 7.9 | 5.1 | 0.80 | 0.50 | 0.0 | 0.00 | 29.78 | 35 | 54 |
| 242.0 | Ericsson RRUS 4490 | 3 | 68 | 2.7 | 1.7 | 15.7 | 7.0 | 0.80 | 0.50 | 0.0 | 0.00 | 29.78 | 82 | 246 |
| 242.0 | Ericsson RRUS 4890 | 3 | 70 | 2.7 | 1.7 | 15.7 | 7.2 | 0.80 | 0.50 | 0.0 | 0.00 | 29.78 | 82 | 250 |
| 242.0 | Raycap RVZDC-6627-PF-48 | 2 | 32 | 3.8 | 2.4 | 15.7 | 10.3 | 0.80 | 0.77 | 0.0 | 0.00 | 29.78 | 118 | 77 |
| 242.0 | Ericsson AIR 6419 B77G | 3 | 66 | 3.8 | 2.4 | 16.1 | 7.9 | 0.80 | 0.65 | 0.0 | 0.00 | 29.78 | 150 | 238 |
| 242.0 | Commscope NHH-65C-R2B | 3 | 52 | 11.4 | 8.0 | 11.9 | 7.1 | 0.80 | 0.70 | 0.0 | 0.00 | 29.78 | 484 | 186 |
| 242.0 | Commscope NHHSS-65C-R2BT4 | 3 | 62 | 11.4 | 8.0 | 11.9 | 7.1 | 0.80 | 0.70 | 0.0 | 0.00 | 29.78 | 484 | 223 |
| 242.0 | Generic Flat Light Sector Fram | 3 | 800 | 17.9 | 0.0 | 0.0 | 0.0 | 0.75 | 0.67 | 0.0 | 0.00 | 29.78 | 683 | 2880 |
| 126.0 | Generic Torque Arm | 1 | 500 | 15.0 | 0.0 | 0.0 | 0.0 | 1.00 | 1.00 | 0.0 | 0.00 | 25.95 | 331 | 600 |
| 58.0 | Valmont GSA ISMD6 | 1 | 300 | 2.4 | 0.3 | 72.0 | 62.0 | 1.00 | 1.00 | 0.0 | 0.00 | 22.04 | 45 | 360 |
| 50.0 | Radio Waves SPD4-5.2 | 1 | 60 | 20.9 | 4.0 | 48.0 | 0.0 | 1.00 | 1.00 | 0.0 | 0.00 | 21.36 | 380 | 72 |
| 48.0 | Valmont GSA ISMD6 | 1 | 300 | 2.4 | 0.3 | 72.0 | 62.0 | 1.00 | 1.00 | 0.0 | 0.00 | 21.18 | 43 | 360 |
| 47.9 | Valmont GSA ISMD6 | 1 | 300 | 2.4 | 0.3 | 72.0 | 62.0 | 1.00 | 1.00 | 0.0 | 0.00 | 21.17 | 43 | 360 |
| 40.0 | RFS SUX6-107BB | 1 | 209 | 42.9 | 6.6 | 79.0 | 48.9 | 1.00 | 1.00 | 0.0 | 0.00 | 20.38 | 744 | 251 |
| 30.0 | RFS SUX6-107BB | 1 | 209 | 42.9 | 6.6 | 79.0 | 48.9 | 1.00 | 1.00 | 0.0 | 0.00 | 19.19 | 700 | 251 |
| | **Totals** | **30** | **5,340** | **289.6** | | | | | | | | | 4,405 | 6,408 |

Discrete Appurtenance Properties for LC: **1.2D + 1.0Di + 1.0Wi**

| Elev (ft) | Description | Qty | Ice Wt (lb) | Ice EPA (sf) | Length (ft) | Width (in) | Depth (in) | $K_a$ | Orient. Factor | Vert. Ecc. (ft) | $M_u$ (lb-ft) | $Q_z$ (psf) | $F_a$ (WL) (lb) | $P_a$ (DL) (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 242.0 | Ericsson Radio 4408 B48 | 3 | 21 | 1.3 | 1.5 | 7.9 | 5.1 | 0.80 | 0.50 | 0.0 | 0.00 | 6.50 | 9 | 72 |
| 242.0 | Ericsson RRUS 4490 | 3 | 81 | 2.9 | 1.7 | 15.7 | 7.0 | 0.80 | 0.50 | 0.0 | 0.00 | 6.50 | 19 | 283 |
| 242.0 | Ericsson RRUS 4890 | 3 | 82 | 2.9 | 1.7 | 15.7 | 7.2 | 0.80 | 0.50 | 0.0 | 0.00 | 6.50 | 19 | 287 |
| 242.0 | Raycap RVZDC-6627-PF-48 | 2 | 51 | 4.0 | 2.4 | 15.7 | 10.3 | 0.80 | 0.77 | 0.0 | 0.00 | 6.50 | 27 | 115 |
| 242.0 | Ericsson AIR 6419 B77G | 3 | 83 | 4.0 | 2.4 | 16.1 | 7.9 | 0.80 | 0.65 | 0.0 | 0.00 | 6.50 | 35 | 289 |
| 242.0 | Commscope NHH-65C-R2B | 3 | 92 | 12.0 | 8.0 | 11.9 | 7.1 | 0.80 | 0.70 | 0.0 | 0.00 | 6.50 | 111 | 306 |
| 242.0 | Commscope NHHSS-65C-R2BT4 | 3 | 102 | 12.0 | 8.0 | 11.9 | 7.1 | 0.80 | 0.70 | 0.0 | 0.00 | 6.50 | 111 | 343 |
| 242.0 | Generic Flat Light Sector Fram | 3 | 995 | 20.5 | 0.0 | 0.0 | 0.0 | 0.75 | 0.67 | 0.0 | 0.00 | 6.50 | 171 | 3464 |
| 126.0 | Generic Torque Arm | 1 | 557 | 16.7 | 0.0 | 0.0 | 0.0 | 1.00 | 1.00 | 0.0 | 0.00 | 5.67 | 81 | 657 |
| 58.0 | Valmont GSA ISMD6 | 1 | 390 | 2.7 | 0.3 | 72.0 | 62.0 | 1.00 | 1.00 | 0.0 | 0.00 | 4.81 | 11 | 450 |
| 50.0 | Radio Waves SPD4-5.2 | 1 | 92 | 21.4 | 4.0 | 48.0 | 0.0 | 1.00 | 1.00 | 0.0 | 0.00 | 4.67 | 85 | 104 |
| 48.0 | Valmont GSA ISMD6 | 1 | 390 | 2.7 | 0.3 | 72.0 | 62.0 | 1.00 | 1.00 | 0.0 | 0.00 | 4.63 | 11 | 450 |
| 47.9 | Valmont GSA ISMD6 | 1 | 390 | 2.7 | 0.3 | 72.0 | 62.0 | 1.00 | 1.00 | 0.0 | 0.00 | 4.62 | 11 | 450 |
| 40.0 | RFS SUX6-107BB | 1 | 333 | 43.5 | 6.6 | 79.0 | 48.9 | 1.00 | 1.00 | 0.0 | 0.00 | 4.45 | 165 | 374 |
| 30.0 | RFS SUX6-107BB | 1 | 329 | 43.5 | 6.6 | 79.0 | 48.9 | 1.00 | 1.00 | 0.0 | 0.00 | 4.19 | 155 | 371 |
| | **Totals** | **30** | **6,949** | **307.9** | | | | | | | | | 1019 | 8,017 |

Discrete Appurtenance Properties for LC: **1.0D + 1.0W Service**

| Elev (ft) | Description | Qty | Wt. (lb) | EPA (sf) | Length (ft) | Width (in) | Depth (in) | $K_a$ | Orient. Factor | Vert. Ecc. (ft) | $M_u$ (lb-ft) | $Q_z$ (psf) | $F_a$ (WL) (lb) | $P_a$ (DL) (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 242.0 | Ericsson Radio 4408 B48 | 3 | 15 | 1.2 | 1.5 | 7.9 | 5.1 | 0.80 | 0.50 | 0.0 | 0.00 | 9.36 | 11 | 45 |
| 242.0 | Ericsson RRUS 4490 | 3 | 68 | 2.7 | 1.7 | 15.7 | 7.0 | 0.80 | 0.50 | 0.0 | 0.00 | 9.36 | 26 | 205 |
| 242.0 | Ericsson RRUS 4890 | 3 | 70 | 2.7 | 1.7 | 15.7 | 7.2 | 0.80 | 0.50 | 0.0 | 0.00 | 9.36 | 26 | 208 |
| 242.0 | Raycap RVZDC-6627-PF-48 | 2 | 32 | 3.8 | 2.4 | 15.7 | 10.3 | 0.80 | 0.77 | 0.0 | 0.00 | 9.36 | 37 | 64 |
| 242.0 | Ericsson AIR 6419 B77G | 3 | 66 | 3.8 | 2.4 | 16.1 | 7.9 | 0.80 | 0.65 | 0.0 | 0.00 | 9.36 | 47 | 198 |
| 242.0 | Commscope NHH-65C-R2B | 3 | 52 | 11.4 | 8.0 | 11.9 | 7.1 | 0.80 | 0.70 | 0.0 | 0.00 | 9.36 | 152 | 155 |
| 242.0 | Commscope NHHSS-65C-R2BT4 | 3 | 62 | 11.4 | 8.0 | 11.9 | 7.1 | 0.80 | 0.70 | 0.0 | 0.00 | 9.36 | 152 | 186 |
| 242.0 | Generic Flat Light Sector Fram | 3 | 800 | 17.9 | 0.0 | 0.0 | 0.0 | 0.75 | 0.67 | 0.0 | 0.00 | 9.36 | 215 | 2400 |
| 126.0 | Generic Torque Arm | 1 | 500 | 15.0 | 0.0 | 0.0 | 0.0 | 1.00 | 1.00 | 0.0 | 0.00 | 8.16 | 104 | 500 |
| 58.0 | Valmont GSA ISMD6 | 1 | 300 | 2.4 | 0.3 | 72.0 | 62.0 | 1.00 | 1.00 | 0.0 | 0.00 | 6.93 | 14 | 300 |
| 50.0 | Radio Waves SPD4-5.2 | 1 | 60 | 20.9 | 4.0 | 48.0 | 0.0 | 1.00 | 1.00 | 0.0 | 0.00 | 6.72 | 119 | 60 |
| 48.0 | Valmont GSA ISMD6 | 1 | 300 | 2.4 | 0.3 | 72.0 | 62.0 | 1.00 | 1.00 | 0.0 | 0.00 | 6.66 | 14 | 300 |
| 47.9 | Valmont GSA ISMD6 | 1 | 300 | 2.4 | 0.3 | 72.0 | 62.0 | 1.00 | 1.00 | 0.0 | 0.00 | 6.66 | 14 | 300 |
| 40.0 | RFS SUX6-107BB | 1 | 209 | 42.9 | 6.6 | 79.0 | 48.9 | 1.00 | 1.00 | 0.0 | 0.00 | 6.41 | 234 | 209 |
| 30.0 | RFS SUX6-107BB | 1 | 209 | 42.9 | 6.6 | 79.0 | 48.9 | 1.00 | 1.00 | 0.0 | 0.00 | 6.03 | 220 | 209 |
| | **Totals** | **30** | **5,340** | **289.6** | | | | | | | | | 1,385 | 5,340 |

## TOWER LOADING – LINEAR APPURTENANCE

Linear Appurtenance Properties

| Elev From (ft) | Elev To (ft) | Description | Qty | Width (in) | Weight (lb/ft) | % In Wind | Spread On Faces | Bundling | Cluster Dia (in) | Out of Zone | Spacing (in) | Orient. Factor | $K_a$ Override |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5.0 | 40.0 | EW90 | 1 | 1.32 | 0.32 | 100 | 2 | Individual | 0.00 | N | 1.00 | 1.00 | 0.00 |
| 5.0 | 30.0 | EW90 | 2 | 1.32 | 0.32 | 100 | 2 | Individual | 0.00 | N | 1.00 | 1.00 | 0.00 |
| 0.0 | 242.0 | 1 5/8" Coax | 6 | 1.98 | 0.82 | 100 | 2 | Individual | 0.00 | N | 1.00 | 1.00 | 0.00 |
| 0.0 | 242.0 | 1 5/8" (1.63"-41.3mm) Fiber | 3 | 1.63 | 1.61 | 100 | 2 | Individual | 0.00 | N | 1.00 | 1.00 | 0.00 |
| 0.0 | 50.0 | 1/2" Coax | 1 | 0.63 | 0.15 | 100 | 3 | Individual | 0.00 | N | 1.00 | 1.00 | 0.00 |

## SECTION FORCES

1.2D + 1.0W Normal — Gust Response Factor (Gh): 0.85
107 mph Wind with No Ice — Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 29.63 | 0.750 | 11.088 | 0.00 | 0.188 | 2.64 | 1.00 | 1.00 | 0.0 | 7.22 | 19.03 | 0.00 | 1376 | 0 | 479 | 399 | 878 |
| 17 | 223 | 29.27 | 0.000 | 3.339 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 1.94 | 5.24 | 0.00 | 394 | 0 | 130 | 156 | 287 |
| 16 | 210 | 28.90 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 412 | 494 | 906 |
| 15 | 190 | 28.30 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 403 | 484 | 887 |
| 14 | 170 | 27.64 | 0.750 | 10.516 | 0.00 | 0.179 | 2.67 | 1.00 | 1.00 | 0.0 | 6.87 | 18.31 | 0.00 | 1314 | 0 | 430 | 473 | 903 |
| 13 | 150 | 26.92 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 384 | 461 | 844 |
| 12 | 130 | 26.12 | 0.000 | 12.068 | 0.00 | 0.190 | 2.63 | 1.00 | 1.00 | 0.0 | 7.06 | 18.55 | 0.00 | 1553 | 0 | 412 | 447 | 859 |
| 11 | 110 | 25.22 | 0.000 | 11.499 | 0.00 | 0.182 | 2.66 | 1.00 | 1.00 | 0.0 | 6.70 | 17.82 | 0.00 | 1442 | 0 | 382 | 431 | 813 |
| 10 | 97 | 24.57 | 0.000 | 2.798 | 0.00 | 0.150 | 2.77 | 1.00 | 1.00 | 0.0 | 1.61 | 4.46 | 0.00 | 371 | 0 | 93 | 123 | 217 |
| 9 | 87 | 24.01 | 0.000 | 8.243 | 0.00 | 0.184 | 2.65 | 1.00 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 1061 | 0 | 258 | 290 | 549 |
| 8 | 70 | 22.93 | 0.000 | 11.541 | 0.00 | 0.182 | 2.66 | 1.00 | 1.00 | 0.0 | 6.69 | 17.76 | 0.00 | 1490 | 0 | 346 | 392 | 738 |
| 7 | 52 | 21.50 | 0.750 | 9.472 | 0.00 | 0.191 | 2.63 | 1.00 | 1.00 | 0.0 | 6.24 | 16.39 | 0.00 | 1303 | 0 | 300 | 315 | 615 |
| 6 | 42 | 20.55 | 0.000 | 1.642 | 0.00 | 0.166 | 2.71 | 1.00 | 1.00 | 0.0 | 0.95 | 2.59 | 0.00 | 212 | 0 | 45 | 57 | 102 |
| 5 | 37 | 20.06 | 0.000 | 2.802 | 0.00 | 0.150 | 2.77 | 1.00 | 1.00 | 0.0 | 1.61 | 4.47 | 0.00 | 375 | 0 | 76 | 113 | 189 |
| 4 | 27 | 18.77 | 0.000 | 8.239 | 0.00 | 0.184 | 2.65 | 1.00 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 1076 | 0 | 202 | 278 | 480 |
| 3 | 16 | 16.74 | 0.000 | 4.890 | 0.00 | 0.179 | 2.67 | 1.00 | 1.00 | 0.0 | 2.83 | 7.55 | 0.00 | 646 | 0 | 107 | 157 | 265 |
| 2 | 8 | 16.60 | 0.000 | 2.949 | 0.00 | 0.161 | 2.73 | 1.00 | 1.00 | 0.0 | 1.71 | 4.66 | 0.00 | 391 | 0 | 66 | 105 | 171 |
| 1 | 3 | 16.60 | 2.722 | 1.948 | 0.00 | 0.502 | 1.90 | 1.00 | 1.00 | 0.0 | 4.06 | 7.70 | 0.00 | 527 | 0 | 109 | 70 | 179 |
| | | | | | | | | | | | | | **Totals** | **17,316** | **0** | | | **9,881** |

1.2D + 1.0W 60° — Gust Response Factor (Gh): 0.85
107 mph Wind with No Ice — Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 29.63 | 0.750 | 11.088 | 0.00 | 0.188 | 2.64 | 0.80 | 1.00 | 0.0 | 7.07 | 18.64 | 0.00 | 1376 | 0 | 469 | 399 | 868 |
| 17 | 223 | 29.27 | 0.000 | 3.339 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 1.94 | 5.24 | 0.00 | 394 | 0 | 130 | 156 | 287 |
| 16 | 210 | 28.90 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 412 | 494 | 906 |
| 15 | 190 | 28.30 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 403 | 484 | 887 |
| 14 | 170 | 27.64 | 0.750 | 10.516 | 0.00 | 0.179 | 2.67 | 0.80 | 1.00 | 0.0 | 6.72 | 17.91 | 0.00 | 1314 | 0 | 421 | 473 | 894 |
| 13 | 150 | 26.92 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 384 | 461 | 844 |
| 12 | 130 | 26.12 | 0.000 | 12.068 | 0.00 | 0.190 | 2.63 | 0.80 | 1.00 | 0.0 | 7.06 | 18.55 | 0.00 | 1553 | 0 | 412 | 447 | 859 |
| 11 | 110 | 25.22 | 0.000 | 11.499 | 0.00 | 0.182 | 2.66 | 0.80 | 1.00 | 0.0 | 6.70 | 17.82 | 0.00 | 1442 | 0 | 382 | 431 | 813 |
| 10 | 97 | 24.57 | 0.000 | 2.798 | 0.00 | 0.150 | 2.77 | 0.80 | 1.00 | 0.0 | 1.61 | 4.46 | 0.00 | 371 | 0 | 93 | 123 | 217 |
| 9 | 87 | 24.01 | 0.000 | 8.243 | 0.00 | 0.184 | 2.65 | 0.80 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 1061 | 0 | 258 | 290 | 549 |
| 8 | 70 | 22.93 | 0.000 | 11.541 | 0.00 | 0.182 | 2.66 | 0.80 | 1.00 | 0.0 | 6.69 | 17.76 | 0.00 | 1490 | 0 | 346 | 392 | 738 |
| 7 | 52 | 21.50 | 0.750 | 9.472 | 0.00 | 0.191 | 2.63 | 0.80 | 1.00 | 0.0 | 6.09 | 16.00 | 0.00 | 1303 | 0 | 292 | 315 | 607 |
| 6 | 42 | 20.55 | 0.000 | 1.642 | 0.00 | 0.166 | 2.71 | 0.80 | 1.00 | 0.0 | 0.95 | 2.59 | 0.00 | 212 | 0 | 45 | 57 | 102 |
| 5 | 37 | 20.06 | 0.000 | 2.802 | 0.00 | 0.150 | 2.77 | 0.80 | 1.00 | 0.0 | 1.61 | 4.47 | 0.00 | 375 | 0 | 76 | 113 | 189 |
| 4 | 27 | 18.77 | 0.000 | 8.239 | 0.00 | 0.184 | 2.65 | 0.80 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 1076 | 0 | 202 | 278 | 480 |
| 3 | 16 | 16.74 | 0.000 | 4.890 | 0.00 | 0.179 | 2.67 | 0.80 | 1.00 | 0.0 | 2.83 | 7.55 | 0.00 | 646 | 0 | 107 | 157 | 265 |
| 2 | 8 | 16.60 | 0.000 | 2.949 | 0.00 | 0.161 | 2.73 | 0.80 | 1.00 | 0.0 | 1.71 | 4.66 | 0.00 | 391 | 0 | 66 | 105 | 171 |
| 1 | 3 | 16.60 | 2.722 | 1.948 | 0.00 | 0.502 | 1.90 | 0.80 | 1.00 | 0.0 | 3.51 | 6.67 | 0.00 | 527 | 0 | 94 | 70 | 164 |
| | | | | | | | | | | | | | **Totals** | **17,316** | **0** | | | **9,840** |

1.2D + 1.0W 90° — Gust Response Factor (Gh): 0.85
107 mph Wind with No Ice — Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 29.63 | 0.750 | 11.088 | 0.00 | 0.188 | 2.64 | 0.85 | 1.00 | 0.0 | 7.11 | 18.74 | 0.00 | 1376 | 0 | 472 | 399 | 871 |
| 17 | 223 | 29.27 | 0.000 | 3.339 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 1.94 | 5.24 | 0.00 | 394 | 0 | 130 | 156 | 287 |
| 16 | 210 | 28.90 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 412 | 494 | 906 |
| 15 | 190 | 28.30 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 403 | 484 | 887 |
| 14 | 170 | 27.64 | 0.750 | 10.516 | 0.00 | 0.179 | 2.67 | 0.85 | 1.00 | 0.0 | 6.75 | 18.01 | 0.00 | 1314 | 0 | 423 | 473 | 896 |
| 13 | 150 | 26.92 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 384 | 461 | 844 |
| 12 | 130 | 26.12 | 0.000 | 12.068 | 0.00 | 0.190 | 2.63 | 0.85 | 1.00 | 0.0 | 7.06 | 18.55 | 0.00 | 1553 | 0 | 412 | 447 | 859 |
| 11 | 110 | 25.22 | 0.000 | 11.499 | 0.00 | 0.182 | 2.66 | 0.85 | 1.00 | 0.0 | 6.70 | 17.82 | 0.00 | 1442 | 0 | 382 | 431 | 813 |
| 10 | 97 | 24.57 | 0.000 | 2.798 | 0.00 | 0.150 | 2.77 | 0.85 | 1.00 | 0.0 | 1.61 | 4.46 | 0.00 | 371 | 0 | 93 | 123 | 217 |
| 9 | 87 | 24.01 | 0.000 | 8.243 | 0.00 | 0.184 | 2.65 | 0.85 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 1061 | 0 | 258 | 290 | 549 |
| 8 | 70 | 22.93 | 0.000 | 11.541 | 0.00 | 0.182 | 2.66 | 0.85 | 1.00 | 0.0 | 6.69 | 17.76 | 0.00 | 1490 | 0 | 346 | 392 | 738 |
| 7 | 52 | 21.50 | 0.750 | 9.472 | 0.00 | 0.191 | 2.63 | 0.85 | 1.00 | 0.0 | 6.13 | 16.10 | 0.00 | 1303 | 0 | 294 | 315 | 609 |
| 6 | 42 | 20.55 | 0.000 | 1.642 | 0.00 | 0.166 | 2.71 | 0.85 | 1.00 | 0.0 | 0.95 | 2.59 | 0.00 | 212 | 0 | 45 | 57 | 102 |
| 5 | 37 | 20.06 | 0.000 | 2.802 | 0.00 | 0.150 | 2.77 | 0.85 | 1.00 | 0.0 | 1.61 | 4.47 | 0.00 | 375 | 0 | 76 | 113 | 189 |
| 4 | 27 | 18.77 | 0.000 | 8.239 | 0.00 | 0.184 | 2.65 | 0.85 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 1076 | 0 | 202 | 278 | 480 |
| 3 | 16 | 16.74 | 0.000 | 4.890 | 0.00 | 0.179 | 2.67 | 0.85 | 1.00 | 0.0 | 2.83 | 7.55 | 0.00 | 646 | 0 | 107 | 157 | 265 |
| 2 | 8 | 16.60 | 0.000 | 2.949 | 0.00 | 0.161 | 2.73 | 0.85 | 1.00 | 0.0 | 1.71 | 4.66 | 0.00 | 391 | 0 | 66 | 105 | 171 |
| 1 | 3 | 16.60 | 2.722 | 1.948 | 0.00 | 0.502 | 1.90 | 0.85 | 1.00 | 0.0 | 3.65 | 6.93 | 0.00 | 527 | 0 | 98 | 70 | 168 |
| | | | | | | | | | | | | | **Totals** | **17,316** | **0** | | | **9,850** |

1.2D + 1.0W 120° — Gust Response Factor (Gh): 0.85
107 mph Wind with No Ice — Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 29.63 | 0.750 | 11.088 | 0.00 | 0.188 | 2.64 | 1.00 | 1.00 | 0.0 | 7.22 | 19.03 | 0.00 | 1376 | 0 | 479 | 399 | 878 |
| 17 | 223 | 29.27 | 0.000 | 3.339 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 1.94 | 5.24 | 0.00 | 394 | 0 | 130 | 156 | 287 |

## SECTION FORCES

1.2D + 1.0W 120° Gust Response Factor (Gh): 0.85
107 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_Z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 210 | 28.90 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 412 | 494 | 906 |
| 15 | 190 | 28.30 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 403 | 484 | 887 |
| 14 | 170 | 27.64 | 0.750 | 10.516 | 0.00 | 0.179 | 2.67 | 1.00 | 1.00 | 0.0 | 6.87 | 18.31 | 0.00 | 1314 | 0 | 430 | 473 | 903 |
| 13 | 150 | 26.92 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 384 | 461 | 844 |
| 12 | 130 | 26.12 | 0.000 | 12.068 | 0.00 | 0.190 | 2.63 | 1.00 | 1.00 | 0.0 | 7.06 | 18.55 | 0.00 | 1553 | 0 | 412 | 447 | 859 |
| 11 | 110 | 25.22 | 0.000 | 11.499 | 0.00 | 0.182 | 2.66 | 1.00 | 1.00 | 0.0 | 6.70 | 17.82 | 0.00 | 1442 | 0 | 382 | 431 | 813 |
| 10 | 97 | 24.57 | 0.000 | 2.798 | 0.00 | 0.150 | 2.77 | 1.00 | 1.00 | 0.0 | 1.61 | 4.46 | 0.00 | 371 | 0 | 93 | 123 | 217 |
| 9 | 87 | 24.01 | 0.000 | 8.243 | 0.00 | 0.184 | 2.65 | 1.00 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 1061 | 0 | 258 | 290 | 549 |
| 8 | 70 | 22.93 | 0.000 | 11.541 | 0.00 | 0.182 | 2.66 | 1.00 | 1.00 | 0.0 | 6.69 | 17.76 | 0.00 | 1490 | 0 | 346 | 392 | 738 |
| 7 | 52 | 21.50 | 0.750 | 9.472 | 0.00 | 0.191 | 2.63 | 1.00 | 1.00 | 0.0 | 6.24 | 16.39 | 0.00 | 1303 | 0 | 300 | 315 | 615 |
| 6 | 42 | 20.55 | 0.000 | 1.642 | 0.00 | 0.166 | 2.71 | 1.00 | 1.00 | 0.0 | 0.95 | 2.59 | 0.00 | 212 | 0 | 45 | 57 | 102 |
| 5 | 37 | 20.06 | 0.000 | 2.802 | 0.00 | 0.150 | 2.77 | 1.00 | 1.00 | 0.0 | 1.61 | 4.47 | 0.00 | 375 | 0 | 76 | 113 | 189 |
| 4 | 27 | 18.77 | 0.000 | 8.239 | 0.00 | 0.184 | 2.65 | 1.00 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 1076 | 0 | 202 | 278 | 480 |
| 3 | 16 | 16.74 | 0.000 | 4.890 | 0.00 | 0.179 | 2.67 | 1.00 | 1.00 | 0.0 | 2.83 | 7.55 | 0.00 | 646 | 0 | 107 | 157 | 265 |
| 2 | 8 | 16.60 | 0.000 | 2.949 | 0.00 | 0.161 | 2.73 | 1.00 | 1.00 | 0.0 | 1.71 | 4.66 | 0.00 | 391 | 0 | 66 | 105 | 171 |
| 1 | 3 | 16.60 | 2.722 | 1.948 | 0.00 | 0.502 | 1.90 | 1.00 | 1.00 | 0.0 | 4.06 | 7.70 | 0.00 | 527 | 0 | 109 | 70 | 179 |
| | | | | | | | | | | | | | **Totals** | **17,316** | **0** | | | **9,881** |

1.2D + 1.0W 180° Gust Response Factor (Gh): 0.85
107 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_Z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 29.63 | 0.750 | 11.088 | 0.00 | 0.188 | 2.64 | 0.80 | 1.00 | 0.0 | 7.07 | 18.64 | 0.00 | 1376 | 0 | 469 | 399 | 868 |
| 17 | 223 | 29.27 | 0.000 | 3.339 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 1.94 | 5.24 | 0.00 | 394 | 0 | 130 | 156 | 287 |
| 16 | 210 | 28.90 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 412 | 494 | 906 |
| 15 | 190 | 28.30 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 403 | 484 | 887 |
| 14 | 170 | 27.64 | 0.750 | 10.516 | 0.00 | 0.179 | 2.67 | 0.80 | 1.00 | 0.0 | 6.72 | 17.91 | 0.00 | 1314 | 0 | 421 | 473 | 894 |
| 13 | 150 | 26.92 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 384 | 461 | 844 |
| 12 | 130 | 26.12 | 0.000 | 12.068 | 0.00 | 0.190 | 2.63 | 0.80 | 1.00 | 0.0 | 7.06 | 18.55 | 0.00 | 1553 | 0 | 412 | 447 | 859 |
| 11 | 110 | 25.22 | 0.000 | 11.499 | 0.00 | 0.182 | 2.66 | 0.80 | 1.00 | 0.0 | 6.70 | 17.82 | 0.00 | 1442 | 0 | 382 | 431 | 813 |
| 10 | 97 | 24.57 | 0.000 | 2.798 | 0.00 | 0.150 | 2.77 | 0.80 | 1.00 | 0.0 | 1.61 | 4.46 | 0.00 | 371 | 0 | 93 | 123 | 217 |
| 9 | 87 | 24.01 | 0.000 | 8.243 | 0.00 | 0.184 | 2.65 | 0.80 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 1061 | 0 | 258 | 290 | 549 |
| 8 | 70 | 22.93 | 0.000 | 11.541 | 0.00 | 0.182 | 2.66 | 0.80 | 1.00 | 0.0 | 6.69 | 17.76 | 0.00 | 1490 | 0 | 346 | 392 | 738 |
| 7 | 52 | 21.50 | 0.750 | 9.472 | 0.00 | 0.191 | 2.63 | 0.80 | 1.00 | 0.0 | 6.09 | 16.00 | 0.00 | 1303 | 0 | 292 | 315 | 607 |
| 6 | 42 | 20.55 | 0.000 | 1.642 | 0.00 | 0.166 | 2.71 | 0.80 | 1.00 | 0.0 | 0.95 | 2.59 | 0.00 | 212 | 0 | 45 | 57 | 102 |
| 5 | 37 | 20.06 | 0.000 | 2.802 | 0.00 | 0.150 | 2.77 | 0.80 | 1.00 | 0.0 | 1.61 | 4.47 | 0.00 | 375 | 0 | 76 | 113 | 189 |
| 4 | 27 | 18.77 | 0.000 | 8.239 | 0.00 | 0.184 | 2.65 | 0.80 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 1076 | 0 | 202 | 278 | 480 |
| 3 | 16 | 16.74 | 0.000 | 4.890 | 0.00 | 0.179 | 2.67 | 0.80 | 1.00 | 0.0 | 2.83 | 7.55 | 0.00 | 646 | 0 | 107 | 157 | 265 |
| 2 | 8 | 16.60 | 0.000 | 2.949 | 0.00 | 0.161 | 2.73 | 0.80 | 1.00 | 0.0 | 1.71 | 4.66 | 0.00 | 391 | 0 | 66 | 105 | 171 |
| 1 | 3 | 16.60 | 2.722 | 1.948 | 0.00 | 0.502 | 1.90 | 0.80 | 1.00 | 0.0 | 3.51 | 6.67 | 0.00 | 527 | 0 | 94 | 70 | 164 |
| | | | | | | | | | | | | | **Totals** | **17,316** | **0** | | | **9,840** |

1.2D + 1.0W 210° Gust Response Factor (Gh): 0.85
107 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_Z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 29.63 | 0.750 | 11.088 | 0.00 | 0.188 | 2.64 | 0.85 | 1.00 | 0.0 | 7.11 | 18.74 | 0.00 | 1376 | 0 | 472 | 399 | 871 |
| 17 | 223 | 29.27 | 0.000 | 3.339 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 1.94 | 5.24 | 0.00 | 394 | 0 | 130 | 156 | 287 |
| 16 | 210 | 28.90 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 412 | 494 | 906 |
| 15 | 190 | 28.30 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 403 | 484 | 887 |
| 14 | 170 | 27.64 | 0.750 | 10.516 | 0.00 | 0.179 | 2.67 | 0.85 | 1.00 | 0.0 | 6.75 | 18.01 | 0.00 | 1314 | 0 | 423 | 473 | 896 |
| 13 | 150 | 26.92 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 384 | 461 | 844 |
| 12 | 130 | 26.12 | 0.000 | 12.068 | 0.00 | 0.190 | 2.63 | 0.85 | 1.00 | 0.0 | 7.06 | 18.55 | 0.00 | 1553 | 0 | 412 | 447 | 859 |
| 11 | 110 | 25.22 | 0.000 | 11.499 | 0.00 | 0.182 | 2.66 | 0.85 | 1.00 | 0.0 | 6.70 | 17.82 | 0.00 | 1442 | 0 | 382 | 431 | 813 |
| 10 | 97 | 24.57 | 0.000 | 2.798 | 0.00 | 0.150 | 2.77 | 0.85 | 1.00 | 0.0 | 1.61 | 4.46 | 0.00 | 371 | 0 | 93 | 123 | 217 |
| 9 | 87 | 24.01 | 0.000 | 8.243 | 0.00 | 0.184 | 2.65 | 0.85 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 1061 | 0 | 258 | 290 | 549 |
| 8 | 70 | 22.93 | 0.000 | 11.541 | 0.00 | 0.182 | 2.66 | 0.85 | 1.00 | 0.0 | 6.69 | 17.76 | 0.00 | 1490 | 0 | 346 | 392 | 738 |
| 7 | 52 | 21.50 | 0.750 | 9.472 | 0.00 | 0.191 | 2.63 | 0.85 | 1.00 | 0.0 | 6.13 | 16.10 | 0.00 | 1303 | 0 | 294 | 315 | 609 |
| 6 | 42 | 20.55 | 0.000 | 1.642 | 0.00 | 0.166 | 2.71 | 0.85 | 1.00 | 0.0 | 0.95 | 2.59 | 0.00 | 212 | 0 | 45 | 57 | 102 |
| 5 | 37 | 20.06 | 0.000 | 2.802 | 0.00 | 0.150 | 2.77 | 0.85 | 1.00 | 0.0 | 1.61 | 4.47 | 0.00 | 375 | 0 | 76 | 113 | 189 |
| 4 | 27 | 18.77 | 0.000 | 8.239 | 0.00 | 0.184 | 2.65 | 0.85 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 1076 | 0 | 202 | 278 | 480 |
| 3 | 16 | 16.74 | 0.000 | 4.890 | 0.00 | 0.179 | 2.67 | 0.85 | 1.00 | 0.0 | 2.83 | 7.55 | 0.00 | 646 | 0 | 107 | 157 | 265 |
| 2 | 8 | 16.60 | 0.000 | 2.949 | 0.00 | 0.161 | 2.73 | 0.85 | 1.00 | 0.0 | 1.71 | 4.66 | 0.00 | 391 | 0 | 66 | 105 | 171 |
| 1 | 3 | 16.60 | 2.722 | 1.948 | 0.00 | 0.502 | 1.90 | 0.85 | 1.00 | 0.0 | 3.65 | 6.93 | 0.00 | 527 | 0 | 98 | 70 | 168 |
| | | | | | | | | | | | | | **Totals** | **17,316** | **0** | | | **9,850** |

1.2D + 1.0W 240° Gust Response Factor (Gh): 0.85
107 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_Z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 29.63 | 0.750 | 11.088 | 0.00 | 0.188 | 2.64 | 1.00 | 1.00 | 0.0 | 7.22 | 19.03 | 0.00 | 1376 | 0 | 479 | 399 | 878 |
| 17 | 223 | 29.27 | 0.000 | 3.339 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 1.94 | 5.24 | 0.00 | 394 | 0 | 130 | 156 | 287 |
| 16 | 210 | 28.90 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 412 | 494 | 906 |
| 15 | 190 | 28.30 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 403 | 484 | 887 |

## SECTION FORCES

1.2D + 1.0W 240° Gust Response Factor (Gh): 0.85
107 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 | 170 | 27.64 | 0.750 | 10.516 | 0.00 | 0.179 | 2.67 | 1.00 | 1.00 | 0.0 | 6.87 | 18.31 | 0.00 | 1314 | 0 | 430 | 473 | 903 |
| 13 | 150 | 26.92 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 384 | 461 | 844 |
| 12 | 130 | 26.12 | 0.000 | 12.068 | 0.00 | 0.190 | 2.63 | 1.00 | 1.00 | 0.0 | 7.06 | 18.55 | 0.00 | 1553 | 0 | 412 | 447 | 859 |
| 11 | 110 | 25.22 | 0.000 | 11.499 | 0.00 | 0.182 | 2.66 | 1.00 | 1.00 | 0.0 | 6.70 | 17.82 | 0.00 | 1442 | 0 | 382 | 431 | 813 |
| 10 | 97 | 24.57 | 0.000 | 2.798 | 0.00 | 0.150 | 2.77 | 1.00 | 1.00 | 0.0 | 1.61 | 4.46 | 0.00 | 371 | 0 | 93 | 123 | 217 |
| 9 | 87 | 24.01 | 0.000 | 8.243 | 0.00 | 0.184 | 2.65 | 1.00 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 1061 | 0 | 258 | 290 | 549 |
| 8 | 70 | 22.93 | 0.000 | 11.541 | 0.00 | 0.182 | 2.66 | 1.00 | 1.00 | 0.0 | 6.69 | 17.76 | 0.00 | 1490 | 0 | 346 | 392 | 738 |
| 7 | 52 | 21.50 | 0.750 | 9.472 | 0.00 | 0.191 | 2.63 | 1.00 | 1.00 | 0.0 | 6.24 | 16.39 | 0.00 | 1303 | 0 | 300 | 315 | 615 |
| 6 | 42 | 20.55 | 0.000 | 1.642 | 0.00 | 0.166 | 2.71 | 1.00 | 1.00 | 0.0 | 0.95 | 2.59 | 0.00 | 212 | 0 | 45 | 57 | 102 |
| 5 | 37 | 20.06 | 0.000 | 2.802 | 0.00 | 0.150 | 2.77 | 1.00 | 1.00 | 0.0 | 1.61 | 4.47 | 0.00 | 375 | 0 | 76 | 113 | 189 |
| 4 | 27 | 18.77 | 0.000 | 8.239 | 0.00 | 0.184 | 2.65 | 1.00 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 1076 | 0 | 202 | 278 | 480 |
| 3 | 16 | 16.74 | 0.000 | 4.890 | 0.00 | 0.179 | 2.67 | 1.00 | 1.00 | 0.0 | 2.83 | 7.55 | 0.00 | 646 | 0 | 107 | 157 | 265 |
| 2 | 8 | 16.60 | 0.000 | 2.949 | 0.00 | 0.161 | 2.73 | 1.00 | 1.00 | 0.0 | 1.71 | 4.66 | 0.00 | 391 | 0 | 66 | 105 | 171 |
| 1 | 3 | 16.60 | 2.722 | 1.948 | 0.00 | 0.502 | 1.90 | 1.00 | 1.00 | 0.0 | 4.06 | 7.70 | 0.00 | 527 | 0 | 109 | 70 | 179 |
| | | | | | | | | | | | | | **Totals** | **17,316** | **0** | | | **9,881** |

1.2D + 1.0W 300° Gust Response Factor (Gh): 0.85
107 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 29.63 | 0.750 | 11.088 | 0.00 | 0.188 | 2.64 | 0.80 | 1.00 | 0.0 | 7.07 | 18.64 | 0.00 | 1376 | 0 | 469 | 399 | 868 |
| 17 | 223 | 29.27 | 0.000 | 3.339 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 1.94 | 5.24 | 0.00 | 394 | 0 | 130 | 156 | 287 |
| 16 | 210 | 28.90 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 412 | 494 | 906 |
| 15 | 190 | 28.30 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 403 | 484 | 887 |
| 14 | 170 | 27.64 | 0.750 | 10.516 | 0.00 | 0.179 | 2.67 | 0.80 | 1.00 | 0.0 | 6.72 | 17.91 | 0.00 | 1314 | 0 | 421 | 473 | 894 |
| 13 | 150 | 26.92 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 384 | 461 | 844 |
| 12 | 130 | 26.12 | 0.000 | 12.068 | 0.00 | 0.190 | 2.63 | 0.80 | 1.00 | 0.0 | 7.06 | 18.55 | 0.00 | 1553 | 0 | 412 | 447 | 859 |
| 11 | 110 | 25.22 | 0.000 | 11.499 | 0.00 | 0.182 | 2.66 | 0.80 | 1.00 | 0.0 | 6.70 | 17.82 | 0.00 | 1442 | 0 | 382 | 431 | 813 |
| 10 | 97 | 24.57 | 0.000 | 2.798 | 0.00 | 0.150 | 2.77 | 0.80 | 1.00 | 0.0 | 1.61 | 4.46 | 0.00 | 371 | 0 | 93 | 123 | 217 |
| 9 | 87 | 24.01 | 0.000 | 8.243 | 0.00 | 0.184 | 2.65 | 0.80 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 1061 | 0 | 258 | 290 | 549 |
| 8 | 70 | 22.93 | 0.000 | 11.541 | 0.00 | 0.182 | 2.66 | 0.80 | 1.00 | 0.0 | 6.69 | 17.76 | 0.00 | 1490 | 0 | 346 | 392 | 738 |
| 7 | 52 | 21.50 | 0.750 | 9.472 | 0.00 | 0.191 | 2.63 | 0.80 | 1.00 | 0.0 | 6.09 | 16.00 | 0.00 | 1303 | 0 | 292 | 315 | 607 |
| 6 | 42 | 20.55 | 0.000 | 1.642 | 0.00 | 0.166 | 2.71 | 0.80 | 1.00 | 0.0 | 0.95 | 2.59 | 0.00 | 212 | 0 | 45 | 57 | 102 |
| 5 | 37 | 20.06 | 0.000 | 2.802 | 0.00 | 0.150 | 2.77 | 0.80 | 1.00 | 0.0 | 1.61 | 4.47 | 0.00 | 375 | 0 | 76 | 113 | 189 |
| 4 | 27 | 18.77 | 0.000 | 8.239 | 0.00 | 0.184 | 2.65 | 0.80 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 1076 | 0 | 202 | 278 | 480 |
| 3 | 16 | 16.74 | 0.000 | 4.890 | 0.00 | 0.179 | 2.67 | 0.80 | 1.00 | 0.0 | 2.83 | 7.55 | 0.00 | 646 | 0 | 107 | 157 | 265 |
| 2 | 8 | 16.60 | 0.000 | 2.949 | 0.00 | 0.161 | 2.73 | 0.80 | 1.00 | 0.0 | 1.71 | 4.66 | 0.00 | 391 | 0 | 66 | 105 | 171 |
| 1 | 3 | 16.60 | 2.722 | 1.948 | 0.00 | 0.502 | 1.90 | 0.80 | 1.00 | 0.0 | 3.51 | 6.67 | 0.00 | 527 | 0 | 94 | 70 | 164 |
| | | | | | | | | | | | | | **Totals** | **17,316** | **0** | | | **9,840** |

1.2D + 1.0W 330° Gust Response Factor (Gh): 0.85
107 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 29.63 | 0.750 | 11.088 | 0.00 | 0.188 | 2.64 | 0.85 | 1.00 | 0.0 | 7.11 | 18.74 | 0.00 | 1376 | 0 | 472 | 399 | 871 |
| 17 | 223 | 29.27 | 0.000 | 3.339 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 1.94 | 5.24 | 0.00 | 394 | 0 | 130 | 156 | 287 |
| 16 | 210 | 28.90 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 412 | 494 | 906 |
| 15 | 190 | 28.30 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 403 | 484 | 887 |
| 14 | 170 | 27.64 | 0.750 | 10.516 | 0.00 | 0.179 | 2.67 | 0.85 | 1.00 | 0.0 | 6.75 | 18.01 | 0.00 | 1314 | 0 | 423 | 473 | 896 |
| 13 | 150 | 26.92 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1261 | 0 | 384 | 461 | 844 |
| 12 | 130 | 26.12 | 0.000 | 12.068 | 0.00 | 0.190 | 2.63 | 0.85 | 1.00 | 0.0 | 7.06 | 18.55 | 0.00 | 1553 | 0 | 412 | 447 | 859 |
| 11 | 110 | 25.22 | 0.000 | 11.499 | 0.00 | 0.182 | 2.66 | 0.85 | 1.00 | 0.0 | 6.70 | 17.82 | 0.00 | 1442 | 0 | 382 | 431 | 813 |
| 10 | 97 | 24.57 | 0.000 | 2.798 | 0.00 | 0.150 | 2.77 | 0.85 | 1.00 | 0.0 | 1.61 | 4.46 | 0.00 | 371 | 0 | 93 | 123 | 217 |
| 9 | 87 | 24.01 | 0.000 | 8.243 | 0.00 | 0.184 | 2.65 | 0.85 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 1061 | 0 | 258 | 290 | 549 |
| 8 | 70 | 22.93 | 0.000 | 11.541 | 0.00 | 0.182 | 2.66 | 0.85 | 1.00 | 0.0 | 6.69 | 17.76 | 0.00 | 1490 | 0 | 346 | 392 | 738 |
| 7 | 52 | 21.50 | 0.750 | 9.472 | 0.00 | 0.191 | 2.63 | 0.85 | 1.00 | 0.0 | 6.13 | 16.10 | 0.00 | 1303 | 0 | 294 | 315 | 609 |
| 6 | 42 | 20.55 | 0.000 | 1.642 | 0.00 | 0.166 | 2.71 | 0.85 | 1.00 | 0.0 | 0.95 | 2.59 | 0.00 | 212 | 0 | 45 | 57 | 102 |
| 5 | 37 | 20.06 | 0.000 | 2.802 | 0.00 | 0.150 | 2.77 | 0.85 | 1.00 | 0.0 | 1.61 | 4.47 | 0.00 | 375 | 0 | 76 | 113 | 189 |
| 4 | 27 | 18.77 | 0.000 | 8.239 | 0.00 | 0.184 | 2.65 | 0.85 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 1076 | 0 | 202 | 278 | 480 |
| 3 | 16 | 16.74 | 0.000 | 4.890 | 0.00 | 0.179 | 2.67 | 0.85 | 1.00 | 0.0 | 2.83 | 7.55 | 0.00 | 646 | 0 | 107 | 157 | 265 |
| 2 | 8 | 16.60 | 0.000 | 2.949 | 0.00 | 0.161 | 2.73 | 0.85 | 1.00 | 0.0 | 1.71 | 4.66 | 0.00 | 391 | 0 | 66 | 105 | 171 |
| 1 | 3 | 16.60 | 2.722 | 1.948 | 0.00 | 0.502 | 1.90 | 0.85 | 1.00 | 0.0 | 3.65 | 6.93 | 0.00 | 527 | 0 | 98 | 70 | 168 |
| | | | | | | | | | | | | | **Totals** | **17,316** | **0** | | | **9,850** |

1.2D + 1.0Di + 1.0Wi Normal Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
50 mph Wind with 0.25" Radial Ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

| Section # | Elev (ft) | $Q_z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 6.47 | 0.750 | 17.225 | 6.14 | 0.281 | 2.35 | 1.00 | 1.00 | 0.3 | 11.10 | 26.05 | 6.14 | 1636 | 260 | 143 | 139 | 282 |
| 17 | 223 | 6.39 | 0.000 | 5.245 | 1.91 | 0.262 | 2.40 | 1.00 | 1.00 | 0.3 | 3.12 | 7.50 | 1.91 | 483 | 89 | 41 | 56 | 96 |
| 16 | 210 | 6.31 | 0.000 | 16.760 | 6.07 | 0.262 | 2.40 | 1.00 | 1.00 | 0.3 | 9.97 | 23.95 | 6.07 | 1544 | 282 | 128 | 176 | 304 |
| 15 | 190 | 6.18 | 0.000 | 16.699 | 6.01 | 0.261 | 2.40 | 1.00 | 1.00 | 0.3 | 9.93 | 23.88 | 6.01 | 1540 | 279 | 125 | 172 | 297 |
| 14 | 170 | 6.04 | 0.750 | 16.454 | 5.94 | 0.269 | 2.38 | 1.00 | 1.00 | 0.3 | 10.57 | 25.17 | 5.94 | 1586 | 272 | 129 | 166 | 295 |
| 13 | 150 | 5.88 | 0.000 | 16.559 | 5.86 | 0.259 | 2.41 | 1.00 | 1.00 | 0.3 | 9.84 | 23.72 | 5.86 | 1533 | 271 | 119 | 163 | 281 |

## SECTION FORCES

1.2D + 1.0Di + 1.0Wi Normal — Gust Response Factor (Gh): 0.85 — Ice Importance Factor: 1.00
50 mph Wind with 0.25" Radial Ice — Wind Importance Factor (Iw): 1.00 — Ice Dead Load Factor: 1.00

| Section # | Elev (ft) | $Q_Z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 130 | 5.70 | 0.000 | 17.850 | 5.78 | 0.278 | 2.36 | 1.00 | 1.00 | 0.3 | 10.72 | 25.27 | 5.78 | 1833 | 279 | 123 | 154 | 276 |
| 11 | 110 | 5.51 | 0.000 | 17.184 | 5.69 | 0.267 | 2.39 | 1.00 | 1.00 | 0.3 | 10.26 | 24.50 | 5.69 | 1708 | 267 | 115 | 150 | 265 |
| 10 | 97 | 5.36 | 0.000 | 4.000 | 1.20 | 0.212 | 2.56 | 1.00 | 1.00 | 0.3 | 2.33 | 5.96 | 1.20 | 438 | 67 | 27 | 46 | 73 |
| 9 | 87 | 5.24 | 0.000 | 11.301 | 3.06 | 0.249 | 2.44 | 1.00 | 1.00 | 0.3 | 6.68 | 16.29 | 3.06 | 1244 | 183 | 73 | 103 | 175 |
| 8 | 70 | 5.01 | 0.000 | 15.696 | 4.15 | 0.244 | 2.45 | 1.00 | 1.00 | 0.3 | 9.25 | 22.71 | 4.15 | 1740 | 250 | 97 | 139 | 236 |
| 7 | 52 | 4.70 | 0.750 | 12.790 | 3.32 | 0.250 | 2.44 | 1.00 | 1.00 | 0.3 | 8.30 | 20.23 | 3.32 | 1505 | 201 | 81 | 111 | 192 |
| 6 | 42 | 4.49 | 0.000 | 2.338 | 0.70 | 0.233 | 2.49 | 1.00 | 1.00 | 0.3 | 1.38 | 3.43 | 0.70 | 248 | 36 | 13 | 21 | 34 |
| 5 | 37 | 4.38 | 0.000 | 3.894 | 1.09 | 0.206 | 2.57 | 1.00 | 1.00 | 0.3 | 2.27 | 5.83 | 1.09 | 439 | 64 | 22 | 42 | 64 |
| 4 | 27 | 4.10 | 0.000 | 10.959 | 2.72 | 0.242 | 2.46 | 1.00 | 1.00 | 0.2 | 6.46 | 15.90 | 2.72 | 1256 | 179 | 55 | 99 | 155 |
| 3 | 16 | 3.65 | 0.000 | 6.378 | 1.49 | 0.231 | 2.50 | 1.00 | 1.00 | 0.2 | 3.74 | 9.34 | 1.49 | 749 | 103 | 29 | 57 | 86 |
| 2 | 8 | 3.63 | 0.000 | 3.994 | 1.04 | 0.215 | 2.55 | 1.00 | 1.00 | 0.2 | 2.34 | 5.95 | 1.04 | 452 | 61 | 18 | 38 | 56 |
| 1 | 3 | 3.63 | 2.722 | 2.621 | 0.67 | 0.564 | 1.83 | 1.00 | 1.00 | 0.2 | 4.61 | 8.45 | 0.67 | 596 | 69 | 26 | 16 | 42 |
| | | | | | | | | | | | | | **Totals** | **20,529** | **3,214** | | | **3,209** |

1.2D + 1.0Di + 1.0Wi 60° — Gust Response Factor (Gh): 0.85 — Ice Importance Factor: 1.00
50 mph Wind with 0.25" Radial Ice — Wind Importance Factor (Iw): 1.00 — Ice Dead Load Factor: 1.00

| Section # | Elev (ft) | $Q_Z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 6.47 | 0.750 | 17.225 | 6.14 | 0.281 | 2.35 | 0.80 | 1.00 | 0.3 | 10.95 | 25.69 | 6.14 | 1636 | 260 | 141 | 139 | 280 |
| 17 | 223 | 6.39 | 0.000 | 5.245 | 1.91 | 0.262 | 2.40 | 0.80 | 1.00 | 0.3 | 3.12 | 7.50 | 1.91 | 483 | 89 | 41 | 56 | 96 |
| 16 | 210 | 6.31 | 0.000 | 16.760 | 6.07 | 0.262 | 2.40 | 0.80 | 1.00 | 0.3 | 9.97 | 23.95 | 6.07 | 1544 | 282 | 128 | 176 | 304 |
| 15 | 190 | 6.18 | 0.000 | 16.699 | 6.01 | 0.261 | 2.40 | 0.80 | 1.00 | 0.3 | 9.93 | 23.88 | 6.01 | 1540 | 279 | 125 | 172 | 297 |
| 14 | 170 | 6.04 | 0.750 | 16.454 | 5.94 | 0.269 | 2.38 | 0.80 | 1.00 | 0.3 | 10.42 | 24.81 | 5.94 | 1586 | 272 | 127 | 166 | 293 |
| 13 | 150 | 5.88 | 0.000 | 16.559 | 5.86 | 0.259 | 2.41 | 0.80 | 1.00 | 0.3 | 9.84 | 23.72 | 5.86 | 1533 | 271 | 119 | 163 | 281 |
| 12 | 130 | 5.70 | 0.000 | 17.850 | 5.78 | 0.278 | 2.36 | 0.80 | 1.00 | 0.3 | 10.72 | 25.27 | 5.78 | 1833 | 279 | 123 | 154 | 276 |
| 11 | 110 | 5.51 | 0.000 | 17.184 | 5.69 | 0.267 | 2.39 | 0.80 | 1.00 | 0.3 | 10.26 | 24.50 | 5.69 | 1708 | 267 | 115 | 150 | 265 |
| 10 | 97 | 5.36 | 0.000 | 4.000 | 1.20 | 0.212 | 2.56 | 0.80 | 1.00 | 0.3 | 2.33 | 5.96 | 1.20 | 438 | 67 | 27 | 46 | 73 |
| 9 | 87 | 5.24 | 0.000 | 11.301 | 3.06 | 0.249 | 2.44 | 0.80 | 1.00 | 0.3 | 6.68 | 16.29 | 3.06 | 1244 | 183 | 73 | 103 | 175 |
| 8 | 70 | 5.01 | 0.000 | 15.696 | 4.15 | 0.244 | 2.45 | 0.80 | 1.00 | 0.3 | 9.25 | 22.71 | 4.15 | 1740 | 250 | 97 | 139 | 236 |
| 7 | 52 | 4.70 | 0.750 | 12.790 | 3.32 | 0.250 | 2.44 | 0.80 | 1.00 | 0.3 | 8.15 | 19.86 | 3.32 | 1505 | 201 | 79 | 111 | 190 |
| 6 | 42 | 4.49 | 0.000 | 2.338 | 0.70 | 0.233 | 2.49 | 0.80 | 1.00 | 0.3 | 1.38 | 3.43 | 0.70 | 248 | 36 | 13 | 21 | 34 |
| 5 | 37 | 4.38 | 0.000 | 3.894 | 1.09 | 0.206 | 2.57 | 0.80 | 1.00 | 0.3 | 2.27 | 5.83 | 1.09 | 439 | 64 | 22 | 42 | 64 |
| 4 | 27 | 4.10 | 0.000 | 10.959 | 2.72 | 0.242 | 2.46 | 0.80 | 1.00 | 0.2 | 6.46 | 15.90 | 2.72 | 1256 | 179 | 55 | 99 | 155 |
| 3 | 16 | 3.65 | 0.000 | 6.378 | 1.49 | 0.231 | 2.50 | 0.80 | 1.00 | 0.2 | 3.74 | 9.34 | 1.49 | 749 | 103 | 29 | 57 | 86 |
| 2 | 8 | 3.63 | 0.000 | 3.994 | 1.04 | 0.215 | 2.55 | 0.80 | 1.00 | 0.2 | 2.34 | 5.95 | 1.04 | 452 | 61 | 18 | 38 | 56 |
| 1 | 3 | 3.63 | 2.722 | 2.621 | 0.67 | 0.564 | 1.83 | 0.80 | 1.00 | 0.2 | 4.07 | 7.45 | 0.67 | 596 | 69 | 23 | 16 | 39 |
| | | | | | | | | | | | | | **Totals** | **20,529** | **3,214** | | | **3,200** |

1.2D + 1.0Di + 1.0Wi 90° — Gust Response Factor (Gh): 0.85 — Ice Importance Factor: 1.00
50 mph Wind with 0.25" Radial Ice — Wind Importance Factor (Iw): 1.00 — Ice Dead Load Factor: 1.00

| Section # | Elev (ft) | $Q_Z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 6.47 | 0.750 | 17.225 | 6.14 | 0.281 | 2.35 | 0.85 | 1.00 | 0.3 | 10.98 | 25.78 | 6.14 | 1636 | 260 | 142 | 139 | 280 |
| 17 | 223 | 6.39 | 0.000 | 5.245 | 1.91 | 0.262 | 2.40 | 0.85 | 1.00 | 0.3 | 3.12 | 7.50 | 1.91 | 483 | 89 | 41 | 56 | 96 |
| 16 | 210 | 6.31 | 0.000 | 16.760 | 6.07 | 0.262 | 2.40 | 0.85 | 1.00 | 0.3 | 9.97 | 23.95 | 6.07 | 1544 | 282 | 128 | 176 | 304 |
| 15 | 190 | 6.18 | 0.000 | 16.699 | 6.01 | 0.261 | 2.40 | 0.85 | 1.00 | 0.3 | 9.93 | 23.88 | 6.01 | 1540 | 279 | 125 | 172 | 297 |
| 14 | 170 | 6.04 | 0.750 | 16.454 | 5.94 | 0.269 | 2.38 | 0.85 | 1.00 | 0.3 | 10.46 | 24.90 | 5.94 | 1586 | 272 | 128 | 166 | 293 |
| 13 | 150 | 5.88 | 0.000 | 16.559 | 5.86 | 0.259 | 2.41 | 0.85 | 1.00 | 0.3 | 9.84 | 23.72 | 5.86 | 1533 | 271 | 119 | 163 | 281 |
| 12 | 130 | 5.70 | 0.000 | 17.850 | 5.78 | 0.278 | 2.36 | 0.85 | 1.00 | 0.3 | 10.72 | 25.27 | 5.78 | 1833 | 279 | 123 | 154 | 276 |
| 11 | 110 | 5.51 | 0.000 | 17.184 | 5.69 | 0.267 | 2.39 | 0.85 | 1.00 | 0.3 | 10.26 | 24.50 | 5.69 | 1708 | 267 | 115 | 150 | 265 |
| 10 | 97 | 5.36 | 0.000 | 4.000 | 1.20 | 0.212 | 2.56 | 0.85 | 1.00 | 0.3 | 2.33 | 5.96 | 1.20 | 438 | 67 | 27 | 46 | 73 |
| 9 | 87 | 5.24 | 0.000 | 11.301 | 3.06 | 0.249 | 2.44 | 0.85 | 1.00 | 0.3 | 6.68 | 16.29 | 3.06 | 1244 | 183 | 73 | 103 | 175 |
| 8 | 70 | 5.01 | 0.000 | 15.696 | 4.15 | 0.244 | 2.45 | 0.85 | 1.00 | 0.3 | 9.25 | 22.71 | 4.15 | 1740 | 250 | 97 | 139 | 236 |
| 7 | 52 | 4.70 | 0.750 | 12.790 | 3.32 | 0.250 | 2.44 | 0.85 | 1.00 | 0.3 | 8.19 | 19.96 | 3.32 | 1505 | 201 | 80 | 111 | 190 |
| 6 | 42 | 4.49 | 0.000 | 2.338 | 0.70 | 0.233 | 2.49 | 0.85 | 1.00 | 0.3 | 1.38 | 3.43 | 0.70 | 248 | 36 | 13 | 21 | 34 |
| 5 | 37 | 4.38 | 0.000 | 3.894 | 1.09 | 0.206 | 2.57 | 0.85 | 1.00 | 0.3 | 2.27 | 5.83 | 1.09 | 439 | 64 | 22 | 42 | 64 |
| 4 | 27 | 4.10 | 0.000 | 10.959 | 2.72 | 0.242 | 2.46 | 0.85 | 1.00 | 0.2 | 6.46 | 15.90 | 2.72 | 1256 | 179 | 55 | 99 | 155 |
| 3 | 16 | 3.65 | 0.000 | 6.378 | 1.49 | 0.231 | 2.50 | 0.85 | 1.00 | 0.2 | 3.74 | 9.34 | 1.49 | 749 | 103 | 29 | 57 | 86 |
| 2 | 8 | 3.63 | 0.000 | 3.994 | 1.04 | 0.215 | 2.55 | 0.85 | 1.00 | 0.2 | 2.34 | 5.95 | 1.04 | 452 | 61 | 18 | 38 | 56 |
| 1 | 3 | 3.63 | 2.722 | 2.621 | 0.67 | 0.564 | 1.83 | 0.85 | 1.00 | 0.2 | 4.20 | 7.70 | 0.67 | 596 | 69 | 24 | 16 | 40 |
| | | | | | | | | | | | | | **Totals** | **20,529** | **3,214** | | | **3,202** |

1.2D + 1.0Di + 1.0Wi 120° — Gust Response Factor (Gh): 0.85 — Ice Importance Factor: 1.00
50 mph Wind with 0.25" Radial Ice — Wind Importance Factor (Iw): 1.00 — Ice Dead Load Factor: 1.00

| Section # | Elev (ft) | $Q_Z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 6.47 | 0.750 | 17.225 | 6.14 | 0.281 | 2.35 | 1.00 | 1.00 | 0.3 | 11.10 | 26.05 | 6.14 | 1636 | 260 | 143 | 139 | 282 |
| 17 | 223 | 6.39 | 0.000 | 5.245 | 1.91 | 0.262 | 2.40 | 1.00 | 1.00 | 0.3 | 3.12 | 7.50 | 1.91 | 483 | 89 | 41 | 56 | 96 |
| 16 | 210 | 6.31 | 0.000 | 16.760 | 6.07 | 0.262 | 2.40 | 1.00 | 1.00 | 0.3 | 9.97 | 23.95 | 6.07 | 1544 | 282 | 128 | 176 | 304 |
| 15 | 190 | 6.18 | 0.000 | 16.699 | 6.01 | 0.261 | 2.40 | 1.00 | 1.00 | 0.3 | 9.93 | 23.88 | 6.01 | 1540 | 279 | 125 | 172 | 297 |
| 14 | 170 | 6.04 | 0.750 | 16.454 | 5.94 | 0.269 | 2.38 | 1.00 | 1.00 | 0.3 | 10.57 | 25.17 | 5.94 | 1586 | 272 | 129 | 166 | 295 |
| 13 | 150 | 5.88 | 0.000 | 16.559 | 5.86 | 0.259 | 2.41 | 1.00 | 1.00 | 0.3 | 9.84 | 23.72 | 5.86 | 1533 | 271 | 119 | 163 | 281 |
| 12 | 130 | 5.70 | 0.000 | 17.850 | 5.78 | 0.278 | 2.36 | 1.00 | 1.00 | 0.3 | 10.72 | 25.27 | 5.78 | 1833 | 279 | 123 | 154 | 276 |
| 11 | 110 | 5.51 | 0.000 | 17.184 | 5.69 | 0.267 | 2.39 | 1.00 | 1.00 | 0.3 | 10.26 | 24.50 | 5.69 | 1708 | 267 | 115 | 150 | 265 |

## SECTION FORCES

1.2D + 1.0Di + 1.0Wi 120° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
50 mph Wind with 0.25" Radial Ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

| Section # | Elev (ft) | $Q_Z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 97 | 5.36 | 0.000 | 4.000 | 1.20 | 0.212 | 2.56 | 1.00 | 1.00 | 0.3 | 2.33 | 5.96 | 1.20 | 438 | 67 | 27 | 46 | 73 |
| 9 | 87 | 5.24 | 0.000 | 11.301 | 3.06 | 0.249 | 2.44 | 1.00 | 1.00 | 0.3 | 6.68 | 16.29 | 3.06 | 1244 | 183 | 73 | 103 | 175 |
| 8 | 70 | 5.01 | 0.000 | 15.696 | 4.15 | 0.244 | 2.45 | 1.00 | 1.00 | 0.3 | 9.25 | 22.71 | 4.15 | 1740 | 250 | 97 | 139 | 236 |
| 7 | 52 | 4.70 | 0.750 | 12.790 | 3.32 | 0.250 | 2.44 | 1.00 | 1.00 | 0.3 | 8.30 | 20.23 | 3.32 | 1505 | 201 | 81 | 111 | 192 |
| 6 | 42 | 4.49 | 0.000 | 2.338 | 0.70 | 0.233 | 2.49 | 1.00 | 1.00 | 0.3 | 1.38 | 3.43 | 0.70 | 248 | 36 | 13 | 21 | 34 |
| 5 | 37 | 4.38 | 0.000 | 3.894 | 1.09 | 0.206 | 2.57 | 1.00 | 1.00 | 0.3 | 2.27 | 5.83 | 1.09 | 439 | 64 | 22 | 42 | 64 |
| 4 | 27 | 4.10 | 0.000 | 10.959 | 2.72 | 0.242 | 2.46 | 1.00 | 1.00 | 0.2 | 6.46 | 15.90 | 2.72 | 1256 | 179 | 55 | 99 | 155 |
| 3 | 16 | 3.65 | 0.000 | 6.378 | 1.49 | 0.231 | 2.50 | 1.00 | 1.00 | 0.2 | 3.74 | 9.34 | 1.49 | 749 | 103 | 29 | 57 | 86 |
| 2 | 8 | 3.63 | 0.000 | 3.994 | 1.04 | 0.215 | 2.55 | 1.00 | 1.00 | 0.2 | 2.34 | 5.95 | 1.04 | 452 | 61 | 18 | 38 | 56 |
| 1 | 3 | 3.63 | 2.722 | 2.621 | 0.67 | 0.564 | 1.83 | 1.00 | 1.00 | 0.2 | 4.61 | 8.45 | 0.67 | 596 | 69 | 26 | 16 | 42 |
| | | | | | | | | | | | | | **Totals** | **20,529** | **3,214** | | | **3,209** |

1.2D + 1.0Di + 1.0Wi 180° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
50 mph Wind with 0.25" Radial Ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

| Section # | Elev (ft) | $Q_Z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 6.47 | 0.750 | 17.225 | 6.14 | 0.281 | 2.35 | 0.80 | 1.00 | 0.3 | 10.95 | 25.69 | 6.14 | 1636 | 260 | 141 | 139 | 280 |
| 17 | 223 | 6.39 | 0.000 | 5.245 | 1.91 | 0.262 | 2.40 | 0.80 | 1.00 | 0.3 | 3.12 | 7.50 | 1.91 | 483 | 89 | 41 | 56 | 96 |
| 16 | 210 | 6.31 | 0.000 | 16.760 | 6.07 | 0.262 | 2.40 | 0.80 | 1.00 | 0.3 | 9.97 | 23.95 | 6.07 | 1544 | 282 | 128 | 176 | 304 |
| 15 | 190 | 6.18 | 0.000 | 16.699 | 6.01 | 0.261 | 2.40 | 0.80 | 1.00 | 0.3 | 9.93 | 23.88 | 6.01 | 1540 | 279 | 125 | 172 | 297 |
| 14 | 170 | 6.04 | 0.750 | 16.454 | 5.94 | 0.269 | 2.38 | 0.80 | 1.00 | 0.3 | 10.42 | 24.81 | 5.94 | 1586 | 272 | 127 | 166 | 293 |
| 13 | 150 | 5.88 | 0.000 | 16.559 | 5.86 | 0.259 | 2.41 | 0.80 | 1.00 | 0.3 | 9.84 | 23.72 | 5.86 | 1533 | 271 | 119 | 163 | 281 |
| 12 | 130 | 5.70 | 0.000 | 17.850 | 5.78 | 0.278 | 2.36 | 0.80 | 1.00 | 0.3 | 10.72 | 25.27 | 5.78 | 1833 | 279 | 123 | 154 | 276 |
| 11 | 110 | 5.51 | 0.000 | 17.184 | 5.69 | 0.267 | 2.39 | 0.80 | 1.00 | 0.3 | 10.26 | 24.50 | 5.69 | 1708 | 267 | 115 | 150 | 265 |
| 10 | 97 | 5.36 | 0.000 | 4.000 | 1.20 | 0.212 | 2.56 | 0.80 | 1.00 | 0.3 | 2.33 | 5.96 | 1.20 | 438 | 67 | 27 | 46 | 73 |
| 9 | 87 | 5.24 | 0.000 | 11.301 | 3.06 | 0.249 | 2.44 | 0.80 | 1.00 | 0.3 | 6.68 | 16.29 | 3.06 | 1244 | 183 | 73 | 103 | 175 |
| 8 | 70 | 5.01 | 0.000 | 15.696 | 4.15 | 0.244 | 2.45 | 0.80 | 1.00 | 0.3 | 9.25 | 22.71 | 4.15 | 1740 | 250 | 97 | 139 | 236 |
| 7 | 52 | 4.70 | 0.750 | 12.790 | 3.32 | 0.250 | 2.44 | 0.80 | 1.00 | 0.3 | 8.15 | 19.86 | 3.32 | 1505 | 201 | 79 | 111 | 190 |
| 6 | 42 | 4.49 | 0.000 | 2.338 | 0.70 | 0.233 | 2.49 | 0.80 | 1.00 | 0.3 | 1.38 | 3.43 | 0.70 | 248 | 36 | 13 | 21 | 34 |
| 5 | 37 | 4.38 | 0.000 | 3.894 | 1.09 | 0.206 | 2.57 | 0.80 | 1.00 | 0.3 | 2.27 | 5.83 | 1.09 | 439 | 64 | 22 | 42 | 64 |
| 4 | 27 | 4.10 | 0.000 | 10.959 | 2.72 | 0.242 | 2.46 | 0.80 | 1.00 | 0.2 | 6.46 | 15.90 | 2.72 | 1256 | 179 | 55 | 99 | 155 |
| 3 | 16 | 3.65 | 0.000 | 6.378 | 1.49 | 0.231 | 2.50 | 0.80 | 1.00 | 0.2 | 3.74 | 9.34 | 1.49 | 749 | 103 | 29 | 57 | 86 |
| 2 | 8 | 3.63 | 0.000 | 3.994 | 1.04 | 0.215 | 2.55 | 0.80 | 1.00 | 0.2 | 2.34 | 5.95 | 1.04 | 452 | 61 | 18 | 38 | 56 |
| 1 | 3 | 3.63 | 2.722 | 2.621 | 0.67 | 0.564 | 1.83 | 0.80 | 1.00 | 0.2 | 4.07 | 7.45 | 0.67 | 596 | 69 | 23 | 16 | 39 |
| | | | | | | | | | | | | | **Totals** | **20,529** | **3,214** | | | **3,200** |

1.2D + 1.0Di + 1.0Wi 210° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
50 mph Wind with 0.25" Radial Ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

| Section # | Elev (ft) | $Q_Z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 6.47 | 0.750 | 17.225 | 6.14 | 0.281 | 2.35 | 0.85 | 1.00 | 0.3 | 10.98 | 25.78 | 6.14 | 1636 | 260 | 142 | 139 | 280 |
| 17 | 223 | 6.39 | 0.000 | 5.245 | 1.91 | 0.262 | 2.40 | 0.85 | 1.00 | 0.3 | 3.12 | 7.50 | 1.91 | 483 | 89 | 41 | 56 | 96 |
| 16 | 210 | 6.31 | 0.000 | 16.760 | 6.07 | 0.262 | 2.40 | 0.85 | 1.00 | 0.3 | 9.97 | 23.95 | 6.07 | 1544 | 282 | 128 | 176 | 304 |
| 15 | 190 | 6.18 | 0.000 | 16.699 | 6.01 | 0.261 | 2.40 | 0.85 | 1.00 | 0.3 | 9.93 | 23.88 | 6.01 | 1540 | 279 | 125 | 172 | 297 |
| 14 | 170 | 6.04 | 0.750 | 16.454 | 5.94 | 0.269 | 2.38 | 0.85 | 1.00 | 0.3 | 10.46 | 24.90 | 5.94 | 1586 | 272 | 128 | 166 | 293 |
| 13 | 150 | 5.88 | 0.000 | 16.559 | 5.86 | 0.259 | 2.41 | 0.85 | 1.00 | 0.3 | 9.84 | 23.72 | 5.86 | 1533 | 271 | 119 | 163 | 281 |
| 12 | 130 | 5.70 | 0.000 | 17.850 | 5.78 | 0.278 | 2.36 | 0.85 | 1.00 | 0.3 | 10.72 | 25.27 | 5.78 | 1833 | 279 | 123 | 154 | 276 |
| 11 | 110 | 5.51 | 0.000 | 17.184 | 5.69 | 0.267 | 2.39 | 0.85 | 1.00 | 0.3 | 10.26 | 24.50 | 5.69 | 1708 | 267 | 115 | 150 | 265 |
| 10 | 97 | 5.36 | 0.000 | 4.000 | 1.20 | 0.212 | 2.56 | 0.85 | 1.00 | 0.3 | 2.33 | 5.96 | 1.20 | 438 | 67 | 27 | 46 | 73 |
| 9 | 87 | 5.24 | 0.000 | 11.301 | 3.06 | 0.249 | 2.44 | 0.85 | 1.00 | 0.3 | 6.68 | 16.29 | 3.06 | 1244 | 183 | 73 | 103 | 175 |
| 8 | 70 | 5.01 | 0.000 | 15.696 | 4.15 | 0.244 | 2.45 | 0.85 | 1.00 | 0.3 | 9.25 | 22.71 | 4.15 | 1740 | 250 | 97 | 139 | 236 |
| 7 | 52 | 4.70 | 0.750 | 12.790 | 3.32 | 0.250 | 2.44 | 0.85 | 1.00 | 0.3 | 8.19 | 19.96 | 3.32 | 1505 | 201 | 80 | 111 | 190 |
| 6 | 42 | 4.49 | 0.000 | 2.338 | 0.70 | 0.233 | 2.49 | 0.85 | 1.00 | 0.3 | 1.38 | 3.43 | 0.70 | 248 | 36 | 13 | 21 | 34 |
| 5 | 37 | 4.38 | 0.000 | 3.894 | 1.09 | 0.206 | 2.57 | 0.85 | 1.00 | 0.3 | 2.27 | 5.83 | 1.09 | 439 | 64 | 22 | 42 | 64 |
| 4 | 27 | 4.10 | 0.000 | 10.959 | 2.72 | 0.242 | 2.46 | 0.85 | 1.00 | 0.2 | 6.46 | 15.90 | 2.72 | 1256 | 179 | 55 | 99 | 155 |
| 3 | 16 | 3.65 | 0.000 | 6.378 | 1.49 | 0.231 | 2.50 | 0.85 | 1.00 | 0.2 | 3.74 | 9.34 | 1.49 | 749 | 103 | 29 | 57 | 86 |
| 2 | 8 | 3.63 | 0.000 | 3.994 | 1.04 | 0.215 | 2.55 | 0.85 | 1.00 | 0.2 | 2.34 | 5.95 | 1.04 | 452 | 61 | 18 | 38 | 56 |
| 1 | 3 | 3.63 | 2.722 | 2.621 | 0.67 | 0.564 | 1.83 | 0.85 | 1.00 | 0.2 | 4.20 | 7.70 | 0.67 | 596 | 69 | 24 | 16 | 40 |
| | | | | | | | | | | | | | **Totals** | **20,529** | **3,214** | | | **3,202** |

1.2D + 1.0Di + 1.0Wi 240° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
50 mph Wind with 0.25" Radial Ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

| Section # | Elev (ft) | $Q_Z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 6.47 | 0.750 | 17.225 | 6.14 | 0.281 | 2.35 | 1.00 | 1.00 | 0.3 | 11.10 | 26.05 | 6.14 | 1636 | 260 | 143 | 139 | 282 |
| 17 | 223 | 6.39 | 0.000 | 5.245 | 1.91 | 0.262 | 2.40 | 1.00 | 1.00 | 0.3 | 3.12 | 7.50 | 1.91 | 483 | 89 | 41 | 56 | 96 |
| 16 | 210 | 6.31 | 0.000 | 16.760 | 6.07 | 0.262 | 2.40 | 1.00 | 1.00 | 0.3 | 9.97 | 23.95 | 6.07 | 1544 | 282 | 128 | 176 | 304 |
| 15 | 190 | 6.18 | 0.000 | 16.699 | 6.01 | 0.261 | 2.40 | 1.00 | 1.00 | 0.3 | 9.93 | 23.88 | 6.01 | 1540 | 279 | 125 | 172 | 297 |
| 14 | 170 | 6.04 | 0.750 | 16.454 | 5.94 | 0.269 | 2.38 | 1.00 | 1.00 | 0.3 | 10.57 | 25.17 | 5.94 | 1586 | 272 | 129 | 166 | 295 |
| 13 | 150 | 5.88 | 0.000 | 16.559 | 5.86 | 0.259 | 2.41 | 1.00 | 1.00 | 0.3 | 9.84 | 23.72 | 5.86 | 1533 | 271 | 119 | 163 | 281 |
| 12 | 130 | 5.70 | 0.000 | 17.850 | 5.78 | 0.278 | 2.36 | 1.00 | 1.00 | 0.3 | 10.72 | 25.27 | 5.78 | 1833 | 279 | 123 | 154 | 276 |
| 11 | 110 | 5.51 | 0.000 | 17.184 | 5.69 | 0.267 | 2.39 | 1.00 | 1.00 | 0.3 | 10.26 | 24.50 | 5.69 | 1708 | 267 | 115 | 150 | 265 |
| 10 | 97 | 5.36 | 0.000 | 4.000 | 1.20 | 0.212 | 2.56 | 1.00 | 1.00 | 0.3 | 2.33 | 5.96 | 1.20 | 438 | 67 | 27 | 46 | 73 |
| 9 | 87 | 5.24 | 0.000 | 11.301 | 3.06 | 0.249 | 2.44 | 1.00 | 1.00 | 0.3 | 6.68 | 16.29 | 3.06 | 1244 | 183 | 73 | 103 | 175 |

## SECTION FORCES

1.2D + 1.0Di + 1.0Wi 240° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
50 mph Wind with 0.25" Radial Ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

| Section # | Elev (ft) | $Q_Z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | 70 | 5.01 | 0.000 | 15.696 | 4.15 | 0.244 | 2.45 | 1.00 | 1.00 | 0.3 | 9.25 | 22.71 | 4.15 | 1740 | 250 | 97 | 139 | 236 |
| 7 | 52 | 4.70 | 0.750 | 12.790 | 3.32 | 0.250 | 2.44 | 1.00 | 1.00 | 0.3 | 8.30 | 20.23 | 3.32 | 1505 | 201 | 81 | 111 | 192 |
| 6 | 42 | 4.49 | 0.000 | 2.338 | 0.70 | 0.233 | 2.49 | 1.00 | 1.00 | 0.3 | 1.38 | 3.43 | 0.70 | 248 | 36 | 13 | 21 | 34 |
| 5 | 37 | 4.38 | 0.000 | 3.894 | 1.09 | 0.206 | 2.57 | 1.00 | 1.00 | 0.3 | 2.27 | 5.83 | 1.09 | 439 | 64 | 22 | 42 | 64 |
| 4 | 27 | 4.10 | 0.000 | 10.959 | 2.72 | 0.242 | 2.46 | 1.00 | 1.00 | 0.2 | 6.46 | 15.90 | 2.72 | 1256 | 179 | 55 | 99 | 155 |
| 3 | 16 | 3.65 | 0.000 | 6.378 | 1.49 | 0.231 | 2.50 | 1.00 | 1.00 | 0.2 | 3.74 | 9.34 | 1.49 | 749 | 103 | 29 | 57 | 86 |
| 2 | 8 | 3.63 | 0.000 | 3.994 | 1.04 | 0.215 | 2.55 | 1.00 | 1.00 | 0.2 | 2.34 | 5.95 | 1.04 | 452 | 61 | 18 | 38 | 56 |
| 1 | 3 | 3.63 | 2.722 | 2.621 | 0.67 | 0.564 | 1.83 | 1.00 | 1.00 | 0.2 | 4.61 | 8.45 | 0.67 | 596 | 69 | 26 | 16 | 42 |
| | | | | | | | | | | | | | **Totals** | **20,529** | **3,214** | | | **3,209** |

1.2D + 1.0Di + 1.0Wi 300° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
50 mph Wind with 0.25" Radial Ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

| Section # | Elev (ft) | $Q_Z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 6.47 | 0.750 | 17.225 | 6.14 | 0.281 | 2.35 | 0.80 | 1.00 | 0.3 | 10.95 | 25.69 | 6.14 | 1636 | 260 | 141 | 139 | 280 |
| 17 | 223 | 6.39 | 0.000 | 5.245 | 1.91 | 0.262 | 2.40 | 0.80 | 1.00 | 0.3 | 3.12 | 7.50 | 1.91 | 483 | 89 | 41 | 56 | 96 |
| 16 | 210 | 6.31 | 0.000 | 16.760 | 6.07 | 0.262 | 2.40 | 0.80 | 1.00 | 0.3 | 9.97 | 23.95 | 6.07 | 1544 | 282 | 128 | 176 | 304 |
| 15 | 190 | 6.18 | 0.000 | 16.699 | 6.01 | 0.261 | 2.40 | 0.80 | 1.00 | 0.3 | 9.93 | 23.88 | 6.01 | 1540 | 279 | 125 | 172 | 297 |
| 14 | 170 | 6.04 | 0.750 | 16.454 | 5.94 | 0.269 | 2.38 | 0.80 | 1.00 | 0.3 | 10.42 | 24.81 | 5.94 | 1586 | 272 | 127 | 166 | 293 |
| 13 | 150 | 5.88 | 0.000 | 16.559 | 5.86 | 0.259 | 2.41 | 0.80 | 1.00 | 0.3 | 9.84 | 23.72 | 5.86 | 1533 | 271 | 119 | 163 | 281 |
| 12 | 130 | 5.70 | 0.000 | 17.850 | 5.78 | 0.278 | 2.36 | 0.80 | 1.00 | 0.3 | 10.72 | 25.27 | 5.78 | 1833 | 279 | 123 | 154 | 276 |
| 11 | 110 | 5.51 | 0.000 | 17.184 | 5.69 | 0.267 | 2.39 | 0.80 | 1.00 | 0.3 | 10.26 | 24.50 | 5.69 | 1708 | 267 | 115 | 150 | 265 |
| 10 | 97 | 5.36 | 0.000 | 4.000 | 1.20 | 0.212 | 2.56 | 0.80 | 1.00 | 0.3 | 2.33 | 5.96 | 1.20 | 438 | 67 | 27 | 46 | 73 |
| 9 | 87 | 5.24 | 0.000 | 11.301 | 3.06 | 0.249 | 2.44 | 0.80 | 1.00 | 0.3 | 6.68 | 16.29 | 3.06 | 1244 | 183 | 73 | 103 | 175 |
| 8 | 70 | 5.01 | 0.000 | 15.696 | 4.15 | 0.244 | 2.45 | 0.80 | 1.00 | 0.3 | 9.25 | 22.71 | 4.15 | 1740 | 250 | 97 | 139 | 236 |
| 7 | 52 | 4.70 | 0.750 | 12.790 | 3.32 | 0.250 | 2.44 | 0.80 | 1.00 | 0.3 | 8.15 | 19.86 | 3.32 | 1505 | 201 | 79 | 111 | 190 |
| 6 | 42 | 4.49 | 0.000 | 2.338 | 0.70 | 0.233 | 2.49 | 0.80 | 1.00 | 0.3 | 1.38 | 3.43 | 0.70 | 248 | 36 | 13 | 21 | 34 |
| 5 | 37 | 4.38 | 0.000 | 3.894 | 1.09 | 0.206 | 2.57 | 0.80 | 1.00 | 0.3 | 2.27 | 5.83 | 1.09 | 439 | 64 | 22 | 42 | 64 |
| 4 | 27 | 4.10 | 0.000 | 10.959 | 2.72 | 0.242 | 2.46 | 0.80 | 1.00 | 0.2 | 6.46 | 15.90 | 2.72 | 1256 | 179 | 55 | 99 | 155 |
| 3 | 16 | 3.65 | 0.000 | 6.378 | 1.49 | 0.231 | 2.50 | 0.80 | 1.00 | 0.2 | 3.74 | 9.34 | 1.49 | 749 | 103 | 29 | 57 | 86 |
| 2 | 8 | 3.63 | 0.000 | 3.994 | 1.04 | 0.215 | 2.55 | 0.80 | 1.00 | 0.2 | 2.34 | 5.95 | 1.04 | 452 | 61 | 18 | 38 | 56 |
| 1 | 3 | 3.63 | 2.722 | 2.621 | 0.67 | 0.564 | 1.83 | 0.80 | 1.00 | 0.2 | 4.07 | 7.45 | 0.67 | 596 | 69 | 23 | 16 | 39 |
| | | | | | | | | | | | | | **Totals** | **20,529** | **3,214** | | | **3,200** |

1.2D + 1.0Di + 1.0Wi 330° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
50 mph Wind with 0.25" Radial Ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

| Section # | Elev (ft) | $Q_Z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 6.47 | 0.750 | 17.225 | 6.14 | 0.281 | 2.35 | 0.85 | 1.00 | 0.3 | 10.98 | 25.78 | 6.14 | 1636 | 260 | 142 | 139 | 280 |
| 17 | 223 | 6.39 | 0.000 | 5.245 | 1.91 | 0.262 | 2.40 | 0.85 | 1.00 | 0.3 | 3.12 | 7.50 | 1.91 | 483 | 89 | 41 | 56 | 96 |
| 16 | 210 | 6.31 | 0.000 | 16.760 | 6.07 | 0.262 | 2.40 | 0.85 | 1.00 | 0.3 | 9.97 | 23.95 | 6.07 | 1544 | 282 | 128 | 176 | 304 |
| 15 | 190 | 6.18 | 0.000 | 16.699 | 6.01 | 0.261 | 2.40 | 0.85 | 1.00 | 0.3 | 9.93 | 23.88 | 6.01 | 1540 | 279 | 125 | 172 | 297 |
| 14 | 170 | 6.04 | 0.750 | 16.454 | 5.94 | 0.269 | 2.38 | 0.85 | 1.00 | 0.3 | 10.46 | 24.90 | 5.94 | 1586 | 272 | 128 | 166 | 293 |
| 13 | 150 | 5.88 | 0.000 | 16.559 | 5.86 | 0.259 | 2.41 | 0.85 | 1.00 | 0.3 | 9.84 | 23.72 | 5.86 | 1533 | 271 | 119 | 163 | 281 |
| 12 | 130 | 5.70 | 0.000 | 17.850 | 5.78 | 0.278 | 2.36 | 0.85 | 1.00 | 0.3 | 10.72 | 25.27 | 5.78 | 1833 | 279 | 123 | 154 | 276 |
| 11 | 110 | 5.51 | 0.000 | 17.184 | 5.69 | 0.267 | 2.39 | 0.85 | 1.00 | 0.3 | 10.26 | 24.50 | 5.69 | 1708 | 267 | 115 | 150 | 265 |
| 10 | 97 | 5.36 | 0.000 | 4.000 | 1.20 | 0.212 | 2.56 | 0.85 | 1.00 | 0.3 | 2.33 | 5.96 | 1.20 | 438 | 67 | 27 | 46 | 73 |
| 9 | 87 | 5.24 | 0.000 | 11.301 | 3.06 | 0.249 | 2.44 | 0.85 | 1.00 | 0.3 | 6.68 | 16.29 | 3.06 | 1244 | 183 | 73 | 103 | 175 |
| 8 | 70 | 5.01 | 0.000 | 15.696 | 4.15 | 0.244 | 2.45 | 0.85 | 1.00 | 0.3 | 9.25 | 22.71 | 4.15 | 1740 | 250 | 97 | 139 | 236 |
| 7 | 52 | 4.70 | 0.750 | 12.790 | 3.32 | 0.250 | 2.44 | 0.85 | 1.00 | 0.3 | 8.19 | 19.96 | 3.32 | 1505 | 201 | 80 | 111 | 190 |
| 6 | 42 | 4.49 | 0.000 | 2.338 | 0.70 | 0.233 | 2.49 | 0.85 | 1.00 | 0.3 | 1.38 | 3.43 | 0.70 | 248 | 36 | 13 | 21 | 34 |
| 5 | 37 | 4.38 | 0.000 | 3.894 | 1.09 | 0.206 | 2.57 | 0.85 | 1.00 | 0.3 | 2.27 | 5.83 | 1.09 | 439 | 64 | 22 | 42 | 64 |
| 4 | 27 | 4.10 | 0.000 | 10.959 | 2.72 | 0.242 | 2.46 | 0.85 | 1.00 | 0.2 | 6.46 | 15.90 | 2.72 | 1256 | 179 | 55 | 99 | 155 |
| 3 | 16 | 3.65 | 0.000 | 6.378 | 1.49 | 0.231 | 2.50 | 0.85 | 1.00 | 0.2 | 3.74 | 9.34 | 1.49 | 749 | 103 | 29 | 57 | 86 |
| 2 | 8 | 3.63 | 0.000 | 3.994 | 1.04 | 0.215 | 2.55 | 0.85 | 1.00 | 0.2 | 2.34 | 5.95 | 1.04 | 452 | 61 | 18 | 38 | 56 |
| 1 | 3 | 3.63 | 2.722 | 2.621 | 0.67 | 0.564 | 1.83 | 0.85 | 1.00 | 0.2 | 4.20 | 7.70 | 0.67 | 596 | 69 | 24 | 16 | 40 |
| | | | | | | | | | | | | | **Totals** | **20,529** | **3,214** | | | **3,202** |

1.0D + 1.0W Service Normal Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_Z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 9.32 | 0.750 | 11.088 | 0.00 | 0.188 | 2.64 | 1.00 | 1.00 | 0.0 | 7.22 | 19.03 | 0.00 | 1147 | 0 | 151 | 125 | 276 |
| 17 | 223 | 9.20 | 0.000 | 3.339 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 1.94 | 5.24 | 0.00 | 328 | 0 | 41 | 49 | 90 |
| 16 | 210 | 9.09 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 129 | 155 | 285 |
| 15 | 190 | 8.90 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 127 | 152 | 279 |
| 14 | 170 | 8.69 | 0.750 | 10.516 | 0.00 | 0.179 | 2.67 | 1.00 | 1.00 | 0.0 | 6.87 | 18.31 | 0.00 | 1095 | 0 | 135 | 149 | 284 |
| 13 | 150 | 8.47 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 121 | 145 | 265 |
| 12 | 130 | 8.21 | 0.000 | 12.068 | 0.00 | 0.190 | 2.63 | 1.00 | 1.00 | 0.0 | 7.06 | 18.55 | 0.00 | 1294 | 0 | 130 | 141 | 270 |
| 11 | 110 | 7.93 | 0.000 | 11.499 | 0.00 | 0.182 | 2.66 | 1.00 | 1.00 | 0.0 | 6.70 | 17.82 | 0.00 | 1202 | 0 | 120 | 136 | 256 |
| 10 | 97 | 7.72 | 0.000 | 2.798 | 0.00 | 0.150 | 2.77 | 1.00 | 1.00 | 0.0 | 1.61 | 4.46 | 0.00 | 309 | 0 | 29 | 39 | 68 |
| 9 | 87 | 7.55 | 0.000 | 8.243 | 0.00 | 0.184 | 2.65 | 1.00 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 884 | 0 | 81 | 91 | 173 |
| 8 | 70 | 7.21 | 0.000 | 11.541 | 0.00 | 0.182 | 2.66 | 1.00 | 1.00 | 0.0 | 6.69 | 17.76 | 0.00 | 1241 | 0 | 109 | 123 | 232 |
| 7 | 52 | 6.76 | 0.750 | 9.472 | 0.00 | 0.191 | 2.63 | 1.00 | 1.00 | 0.0 | 6.24 | 16.39 | 0.00 | 1086 | 0 | 94 | 99 | 193 |

## SECTION FORCES

1.0D + 1.0W Service Normal — Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice — Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 42 | 6.46 | 0.000 | 1.642 | 0.00 | 0.166 | 2.71 | 1.00 | 1.00 | 0.0 | 0.95 | 2.59 | 0.00 | 177 | 0 | 14 | 18 | 32 |
| 5 | 37 | 6.31 | 0.000 | 2.802 | 0.00 | 0.150 | 2.77 | 1.00 | 1.00 | 0.0 | 1.61 | 4.47 | 0.00 | 312 | 0 | 24 | 35 | 59 |
| 4 | 27 | 5.90 | 0.000 | 8.239 | 0.00 | 0.184 | 2.65 | 1.00 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 897 | 0 | 64 | 88 | 151 |
| 3 | 16 | 5.26 | 0.000 | 4.890 | 0.00 | 0.179 | 2.67 | 1.00 | 1.00 | 0.0 | 2.83 | 7.55 | 0.00 | 538 | 0 | 34 | 49 | 83 |
| 2 | 8 | 5.22 | 0.000 | 2.949 | 0.00 | 0.161 | 2.73 | 1.00 | 1.00 | 0.0 | 1.71 | 4.66 | 0.00 | 326 | 0 | 21 | 33 | 54 |
| 1 | 3 | 5.22 | 2.722 | 1.948 | 0.00 | 0.502 | 1.90 | 1.00 | 1.00 | 0.0 | 4.06 | 7.70 | 0.00 | 439 | 0 | 34 | 22 | 56 |
| | | | | | | | | | | | | | **Totals** | **14,430** | **0** | | | **3,107** |

1.0D + 1.0W Service 60° — Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice — Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 9.32 | 0.750 | 11.088 | 0.00 | 0.188 | 2.64 | 0.80 | 1.00 | 0.0 | 7.07 | 18.64 | 0.00 | 1147 | 0 | 148 | 125 | 273 |
| 17 | 223 | 9.20 | 0.000 | 3.339 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 1.94 | 5.24 | 0.00 | 328 | 0 | 41 | 49 | 90 |
| 16 | 210 | 9.09 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 129 | 155 | 285 |
| 15 | 190 | 8.90 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 127 | 152 | 279 |
| 14 | 170 | 8.69 | 0.750 | 10.516 | 0.00 | 0.179 | 2.67 | 0.80 | 1.00 | 0.0 | 6.72 | 17.91 | 0.00 | 1095 | 0 | 132 | 149 | 281 |
| 13 | 150 | 8.47 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 121 | 145 | 265 |
| 12 | 130 | 8.21 | 0.000 | 12.068 | 0.00 | 0.190 | 2.63 | 0.80 | 1.00 | 0.0 | 7.06 | 18.55 | 0.00 | 1294 | 0 | 130 | 141 | 270 |
| 11 | 110 | 7.93 | 0.000 | 11.499 | 0.00 | 0.182 | 2.66 | 0.80 | 1.00 | 0.0 | 6.70 | 17.82 | 0.00 | 1202 | 0 | 120 | 136 | 256 |
| 10 | 97 | 7.72 | 0.000 | 2.798 | 0.00 | 0.150 | 2.77 | 0.80 | 1.00 | 0.0 | 1.61 | 4.46 | 0.00 | 309 | 0 | 29 | 39 | 68 |
| 9 | 87 | 7.55 | 0.000 | 8.243 | 0.00 | 0.184 | 2.65 | 0.80 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 884 | 0 | 81 | 91 | 173 |
| 8 | 70 | 7.21 | 0.000 | 11.541 | 0.00 | 0.182 | 2.66 | 0.80 | 1.00 | 0.0 | 6.69 | 17.76 | 0.00 | 1241 | 0 | 109 | 123 | 232 |
| 7 | 52 | 6.76 | 0.750 | 9.472 | 0.00 | 0.191 | 2.63 | 0.80 | 1.00 | 0.0 | 6.09 | 16.00 | 0.00 | 1086 | 0 | 92 | 99 | 191 |
| 6 | 42 | 6.46 | 0.000 | 1.642 | 0.00 | 0.166 | 2.71 | 0.80 | 1.00 | 0.0 | 0.95 | 2.59 | 0.00 | 177 | 0 | 14 | 18 | 32 |
| 5 | 37 | 6.31 | 0.000 | 2.802 | 0.00 | 0.150 | 2.77 | 0.80 | 1.00 | 0.0 | 1.61 | 4.47 | 0.00 | 312 | 0 | 24 | 35 | 59 |
| 4 | 27 | 5.90 | 0.000 | 8.239 | 0.00 | 0.184 | 2.65 | 0.80 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 897 | 0 | 64 | 88 | 151 |
| 3 | 16 | 5.26 | 0.000 | 4.890 | 0.00 | 0.179 | 2.67 | 0.80 | 1.00 | 0.0 | 2.83 | 7.55 | 0.00 | 538 | 0 | 34 | 49 | 83 |
| 2 | 8 | 5.22 | 0.000 | 2.949 | 0.00 | 0.161 | 2.73 | 0.80 | 1.00 | 0.0 | 1.71 | 4.66 | 0.00 | 326 | 0 | 21 | 33 | 54 |
| 1 | 3 | 5.22 | 2.722 | 1.948 | 0.00 | 0.502 | 1.90 | 0.80 | 1.00 | 0.0 | 3.51 | 6.67 | 0.00 | 439 | 0 | 30 | 22 | 52 |
| | | | | | | | | | | | | | **Totals** | **14,430** | **0** | | | **3,094** |

1.0D + 1.0W Service 90° — Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice — Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 9.32 | 0.750 | 11.088 | 0.00 | 0.188 | 2.64 | 0.85 | 1.00 | 0.0 | 7.11 | 18.74 | 0.00 | 1147 | 0 | 148 | 125 | 274 |
| 17 | 223 | 9.20 | 0.000 | 3.339 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 1.94 | 5.24 | 0.00 | 328 | 0 | 41 | 49 | 90 |
| 16 | 210 | 9.09 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 129 | 155 | 285 |
| 15 | 190 | 8.90 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 127 | 152 | 279 |
| 14 | 170 | 8.69 | 0.750 | 10.516 | 0.00 | 0.179 | 2.67 | 0.85 | 1.00 | 0.0 | 6.75 | 18.01 | 0.00 | 1095 | 0 | 133 | 149 | 282 |
| 13 | 150 | 8.47 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 121 | 145 | 265 |
| 12 | 130 | 8.21 | 0.000 | 12.068 | 0.00 | 0.190 | 2.63 | 0.85 | 1.00 | 0.0 | 7.06 | 18.55 | 0.00 | 1294 | 0 | 130 | 141 | 270 |
| 11 | 110 | 7.93 | 0.000 | 11.499 | 0.00 | 0.182 | 2.66 | 0.85 | 1.00 | 0.0 | 6.70 | 17.82 | 0.00 | 1202 | 0 | 120 | 136 | 256 |
| 10 | 97 | 7.72 | 0.000 | 2.798 | 0.00 | 0.150 | 2.77 | 0.85 | 1.00 | 0.0 | 1.61 | 4.46 | 0.00 | 309 | 0 | 29 | 39 | 68 |
| 9 | 87 | 7.55 | 0.000 | 8.243 | 0.00 | 0.184 | 2.65 | 0.85 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 884 | 0 | 81 | 91 | 173 |
| 8 | 70 | 7.21 | 0.000 | 11.541 | 0.00 | 0.182 | 2.66 | 0.85 | 1.00 | 0.0 | 6.69 | 17.76 | 0.00 | 1241 | 0 | 109 | 123 | 232 |
| 7 | 52 | 6.76 | 0.750 | 9.472 | 0.00 | 0.191 | 2.63 | 0.85 | 1.00 | 0.0 | 6.13 | 16.10 | 0.00 | 1086 | 0 | 93 | 99 | 192 |
| 6 | 42 | 6.46 | 0.000 | 1.642 | 0.00 | 0.166 | 2.71 | 0.85 | 1.00 | 0.0 | 0.95 | 2.59 | 0.00 | 177 | 0 | 14 | 18 | 32 |
| 5 | 37 | 6.31 | 0.000 | 2.802 | 0.00 | 0.150 | 2.77 | 0.85 | 1.00 | 0.0 | 1.61 | 4.47 | 0.00 | 312 | 0 | 24 | 35 | 59 |
| 4 | 27 | 5.90 | 0.000 | 8.239 | 0.00 | 0.184 | 2.65 | 0.85 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 897 | 0 | 64 | 88 | 151 |
| 3 | 16 | 5.26 | 0.000 | 4.890 | 0.00 | 0.179 | 2.67 | 0.85 | 1.00 | 0.0 | 2.83 | 7.55 | 0.00 | 538 | 0 | 34 | 49 | 83 |
| 2 | 8 | 5.22 | 0.000 | 2.949 | 0.00 | 0.161 | 2.73 | 0.85 | 1.00 | 0.0 | 1.71 | 4.66 | 0.00 | 326 | 0 | 21 | 33 | 54 |
| 1 | 3 | 5.22 | 2.722 | 1.948 | 0.00 | 0.502 | 1.90 | 0.85 | 1.00 | 0.0 | 3.65 | 6.93 | 0.00 | 439 | 0 | 31 | 22 | 53 |
| | | | | | | | | | | | | | **Totals** | **14,430** | **0** | | | **3,097** |

1.0D + 1.0W Service 120° — Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice — Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 9.32 | 0.750 | 11.088 | 0.00 | 0.188 | 2.64 | 1.00 | 1.00 | 0.0 | 7.22 | 19.03 | 0.00 | 1147 | 0 | 151 | 125 | 276 |
| 17 | 223 | 9.20 | 0.000 | 3.339 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 1.94 | 5.24 | 0.00 | 328 | 0 | 41 | 49 | 90 |
| 16 | 210 | 9.09 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 129 | 155 | 285 |
| 15 | 190 | 8.90 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 127 | 152 | 279 |
| 14 | 170 | 8.69 | 0.750 | 10.516 | 0.00 | 0.179 | 2.67 | 1.00 | 1.00 | 0.0 | 6.87 | 18.31 | 0.00 | 1095 | 0 | 135 | 149 | 284 |
| 13 | 150 | 8.47 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 121 | 145 | 265 |
| 12 | 130 | 8.21 | 0.000 | 12.068 | 0.00 | 0.190 | 2.63 | 1.00 | 1.00 | 0.0 | 7.06 | 18.55 | 0.00 | 1294 | 0 | 130 | 141 | 270 |
| 11 | 110 | 7.93 | 0.000 | 11.499 | 0.00 | 0.182 | 2.66 | 1.00 | 1.00 | 0.0 | 6.70 | 17.82 | 0.00 | 1202 | 0 | 120 | 136 | 256 |
| 10 | 97 | 7.72 | 0.000 | 2.798 | 0.00 | 0.150 | 2.77 | 1.00 | 1.00 | 0.0 | 1.61 | 4.46 | 0.00 | 309 | 0 | 29 | 39 | 68 |
| 9 | 87 | 7.55 | 0.000 | 8.243 | 0.00 | 0.184 | 2.65 | 1.00 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 884 | 0 | 81 | 91 | 173 |
| 8 | 70 | 7.21 | 0.000 | 11.541 | 0.00 | 0.182 | 2.66 | 1.00 | 1.00 | 0.0 | 6.69 | 17.76 | 0.00 | 1241 | 0 | 109 | 123 | 232 |
| 7 | 52 | 6.76 | 0.750 | 9.472 | 0.00 | 0.191 | 2.63 | 1.00 | 1.00 | 0.0 | 6.24 | 16.39 | 0.00 | 1086 | 0 | 94 | 99 | 193 |
| 6 | 42 | 6.46 | 0.000 | 1.642 | 0.00 | 0.166 | 2.71 | 1.00 | 1.00 | 0.0 | 0.95 | 2.59 | 0.00 | 177 | 0 | 14 | 18 | 32 |
| 5 | 37 | 6.31 | 0.000 | 2.802 | 0.00 | 0.150 | 2.77 | 1.00 | 1.00 | 0.0 | 1.61 | 4.47 | 0.00 | 312 | 0 | 24 | 35 | 59 |

## SECTION FORCES

1.0D + 1.0W Service 120° Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 27 | 5.90 | 0.000 | 8.239 | 0.00 | 0.184 | 2.65 | 1.00 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 897 | 0 | 64 | 88 | 151 |
| 3 | 16 | 5.26 | 0.000 | 4.890 | 0.00 | 0.179 | 2.67 | 1.00 | 1.00 | 0.0 | 2.83 | 7.55 | 0.00 | 538 | 0 | 34 | 49 | 83 |
| 2 | 8 | 5.22 | 0.000 | 2.949 | 0.00 | 0.161 | 2.73 | 1.00 | 1.00 | 0.0 | 1.71 | 4.66 | 0.00 | 326 | 0 | 21 | 33 | 54 |
| 1 | 3 | 5.22 | 2.722 | 1.948 | 0.00 | 0.502 | 1.90 | 1.00 | 1.00 | 0.0 | 4.06 | 7.70 | 0.00 | 439 | 0 | 34 | 22 | 56 |
| | | | | | | | | | | | | | **Totals** | **14,430** | **0** | | | **3,107** |

1.0D + 1.0W Service 180° Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 9.32 | 0.750 | 11.088 | 0.00 | 0.188 | 2.64 | 0.80 | 1.00 | 0.0 | 7.07 | 18.64 | 0.00 | 1147 | 0 | 148 | 125 | 273 |
| 17 | 223 | 9.20 | 0.000 | 3.339 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 1.94 | 5.24 | 0.00 | 328 | 0 | 41 | 49 | 90 |
| 16 | 210 | 9.09 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 129 | 155 | 285 |
| 15 | 190 | 8.90 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 127 | 152 | 279 |
| 14 | 170 | 8.69 | 0.750 | 10.516 | 0.00 | 0.179 | 2.67 | 0.80 | 1.00 | 0.0 | 6.72 | 17.91 | 0.00 | 1095 | 0 | 132 | 149 | 281 |
| 13 | 150 | 8.47 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 121 | 145 | 265 |
| 12 | 130 | 8.21 | 0.000 | 12.068 | 0.00 | 0.190 | 2.63 | 0.80 | 1.00 | 0.0 | 7.06 | 18.55 | 0.00 | 1294 | 0 | 130 | 141 | 270 |
| 11 | 110 | 7.93 | 0.000 | 11.499 | 0.00 | 0.182 | 2.66 | 0.80 | 1.00 | 0.0 | 6.70 | 17.82 | 0.00 | 1202 | 0 | 120 | 136 | 256 |
| 10 | 97 | 7.72 | 0.000 | 2.798 | 0.00 | 0.150 | 2.77 | 0.80 | 1.00 | 0.0 | 1.61 | 4.46 | 0.00 | 309 | 0 | 29 | 39 | 68 |
| 9 | 87 | 7.55 | 0.000 | 8.243 | 0.00 | 0.184 | 2.65 | 0.80 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 884 | 0 | 81 | 91 | 173 |
| 8 | 70 | 7.21 | 0.000 | 11.541 | 0.00 | 0.182 | 2.66 | 0.80 | 1.00 | 0.0 | 6.69 | 17.76 | 0.00 | 1241 | 0 | 109 | 123 | 232 |
| 7 | 52 | 6.76 | 0.750 | 9.472 | 0.00 | 0.191 | 2.63 | 0.80 | 1.00 | 0.0 | 6.09 | 16.00 | 0.00 | 1086 | 0 | 92 | 99 | 191 |
| 6 | 42 | 6.46 | 0.000 | 1.642 | 0.00 | 0.166 | 2.71 | 0.80 | 1.00 | 0.0 | 0.95 | 2.59 | 0.00 | 177 | 0 | 14 | 18 | 32 |
| 5 | 37 | 6.31 | 0.000 | 2.802 | 0.00 | 0.150 | 2.77 | 0.80 | 1.00 | 0.0 | 1.61 | 4.47 | 0.00 | 312 | 0 | 24 | 35 | 59 |
| 4 | 27 | 5.90 | 0.000 | 8.239 | 0.00 | 0.184 | 2.65 | 0.80 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 897 | 0 | 64 | 88 | 151 |
| 3 | 16 | 5.26 | 0.000 | 4.890 | 0.00 | 0.179 | 2.67 | 0.80 | 1.00 | 0.0 | 2.83 | 7.55 | 0.00 | 538 | 0 | 34 | 49 | 83 |
| 2 | 8 | 5.22 | 0.000 | 2.949 | 0.00 | 0.161 | 2.73 | 0.80 | 1.00 | 0.0 | 1.71 | 4.66 | 0.00 | 326 | 0 | 21 | 33 | 54 |
| 1 | 3 | 5.22 | 2.722 | 1.948 | 0.00 | 0.502 | 1.90 | 0.80 | 1.00 | 0.0 | 3.51 | 6.67 | 0.00 | 439 | 0 | 30 | 22 | 52 |
| | | | | | | | | | | | | | **Totals** | **14,430** | **0** | | | **3,094** |

1.0D + 1.0W Service 210° Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 9.32 | 0.750 | 11.088 | 0.00 | 0.188 | 2.64 | 0.85 | 1.00 | 0.0 | 7.11 | 18.74 | 0.00 | 1147 | 0 | 148 | 125 | 274 |
| 17 | 223 | 9.20 | 0.000 | 3.339 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 1.94 | 5.24 | 0.00 | 328 | 0 | 41 | 49 | 90 |
| 16 | 210 | 9.09 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 129 | 155 | 285 |
| 15 | 190 | 8.90 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 127 | 152 | 279 |
| 14 | 170 | 8.69 | 0.750 | 10.516 | 0.00 | 0.179 | 2.67 | 0.85 | 1.00 | 0.0 | 6.75 | 18.01 | 0.00 | 1095 | 0 | 133 | 149 | 282 |
| 13 | 150 | 8.47 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 121 | 145 | 265 |
| 12 | 130 | 8.21 | 0.000 | 12.068 | 0.00 | 0.190 | 2.63 | 0.85 | 1.00 | 0.0 | 7.06 | 18.55 | 0.00 | 1294 | 0 | 130 | 141 | 270 |
| 11 | 110 | 7.93 | 0.000 | 11.499 | 0.00 | 0.182 | 2.66 | 0.85 | 1.00 | 0.0 | 6.70 | 17.82 | 0.00 | 1202 | 0 | 120 | 136 | 256 |
| 10 | 97 | 7.72 | 0.000 | 2.798 | 0.00 | 0.150 | 2.77 | 0.85 | 1.00 | 0.0 | 1.61 | 4.46 | 0.00 | 309 | 0 | 29 | 39 | 68 |
| 9 | 87 | 7.55 | 0.000 | 8.243 | 0.00 | 0.184 | 2.65 | 0.85 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 884 | 0 | 81 | 91 | 173 |
| 8 | 70 | 7.21 | 0.000 | 11.541 | 0.00 | 0.182 | 2.66 | 0.85 | 1.00 | 0.0 | 6.69 | 17.76 | 0.00 | 1241 | 0 | 109 | 123 | 232 |
| 7 | 52 | 6.76 | 0.750 | 9.472 | 0.00 | 0.191 | 2.63 | 0.85 | 1.00 | 0.0 | 6.13 | 16.10 | 0.00 | 1086 | 0 | 93 | 99 | 192 |
| 6 | 42 | 6.46 | 0.000 | 1.642 | 0.00 | 0.166 | 2.71 | 0.85 | 1.00 | 0.0 | 0.95 | 2.59 | 0.00 | 177 | 0 | 14 | 18 | 32 |
| 5 | 37 | 6.31 | 0.000 | 2.802 | 0.00 | 0.150 | 2.77 | 0.85 | 1.00 | 0.0 | 1.61 | 4.47 | 0.00 | 312 | 0 | 24 | 35 | 59 |
| 4 | 27 | 5.90 | 0.000 | 8.239 | 0.00 | 0.184 | 2.65 | 0.85 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 897 | 0 | 64 | 88 | 151 |
| 3 | 16 | 5.26 | 0.000 | 4.890 | 0.00 | 0.179 | 2.67 | 0.85 | 1.00 | 0.0 | 2.83 | 7.55 | 0.00 | 538 | 0 | 34 | 49 | 83 |
| 2 | 8 | 5.22 | 0.000 | 2.949 | 0.00 | 0.161 | 2.73 | 0.85 | 1.00 | 0.0 | 1.71 | 4.66 | 0.00 | 326 | 0 | 21 | 33 | 54 |
| 1 | 3 | 5.22 | 2.722 | 1.948 | 0.00 | 0.502 | 1.90 | 0.85 | 1.00 | 0.0 | 3.65 | 6.93 | 0.00 | 439 | 0 | 31 | 22 | 53 |
| | | | | | | | | | | | | | **Totals** | **14,430** | **0** | | | **3,097** |

1.0D + 1.0W Service 240° Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 9.32 | 0.750 | 11.088 | 0.00 | 0.188 | 2.64 | 1.00 | 1.00 | 0.0 | 7.22 | 19.03 | 0.00 | 1147 | 0 | 151 | 125 | 276 |
| 17 | 223 | 9.20 | 0.000 | 3.339 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 1.94 | 5.24 | 0.00 | 328 | 0 | 41 | 49 | 90 |
| 16 | 210 | 9.09 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 129 | 155 | 285 |
| 15 | 190 | 8.90 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 127 | 152 | 279 |
| 14 | 170 | 8.69 | 0.750 | 10.516 | 0.00 | 0.179 | 2.67 | 1.00 | 1.00 | 0.0 | 6.87 | 18.31 | 0.00 | 1095 | 0 | 135 | 149 | 284 |
| 13 | 150 | 8.47 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 1.00 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 121 | 145 | 265 |
| 12 | 130 | 8.21 | 0.000 | 12.068 | 0.00 | 0.190 | 2.63 | 1.00 | 1.00 | 0.0 | 7.06 | 18.55 | 0.00 | 1294 | 0 | 130 | 141 | 270 |
| 11 | 110 | 7.93 | 0.000 | 11.499 | 0.00 | 0.182 | 2.66 | 1.00 | 1.00 | 0.0 | 6.70 | 17.82 | 0.00 | 1202 | 0 | 120 | 136 | 256 |
| 10 | 97 | 7.72 | 0.000 | 2.798 | 0.00 | 0.150 | 2.77 | 1.00 | 1.00 | 0.0 | 1.61 | 4.46 | 0.00 | 309 | 0 | 29 | 39 | 68 |
| 9 | 87 | 7.55 | 0.000 | 8.243 | 0.00 | 0.184 | 2.65 | 1.00 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 884 | 0 | 81 | 91 | 173 |
| 8 | 70 | 7.21 | 0.000 | 11.541 | 0.00 | 0.182 | 2.66 | 1.00 | 1.00 | 0.0 | 6.69 | 17.76 | 0.00 | 1241 | 0 | 109 | 123 | 232 |
| 7 | 52 | 6.76 | 0.750 | 9.472 | 0.00 | 0.191 | 2.63 | 1.00 | 1.00 | 0.0 | 6.24 | 16.39 | 0.00 | 1086 | 0 | 94 | 99 | 193 |
| 6 | 42 | 6.46 | 0.000 | 1.642 | 0.00 | 0.166 | 2.71 | 1.00 | 1.00 | 0.0 | 0.95 | 2.59 | 0.00 | 177 | 0 | 14 | 18 | 32 |
| 5 | 37 | 6.31 | 0.000 | 2.802 | 0.00 | 0.150 | 2.77 | 1.00 | 1.00 | 0.0 | 1.61 | 4.47 | 0.00 | 312 | 0 | 24 | 35 | 59 |
| 4 | 27 | 5.90 | 0.000 | 8.239 | 0.00 | 0.184 | 2.65 | 1.00 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 897 | 0 | 64 | 88 | 151 |
| 3 | 16 | 5.26 | 0.000 | 4.890 | 0.00 | 0.179 | 2.67 | 1.00 | 1.00 | 0.0 | 2.83 | 7.55 | 0.00 | 538 | 0 | 34 | 49 | 83 |

## SECTION FORCES

1.0D + 1.0W Service 240° Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 8 | 5.22 | 0.000 | 2.949 | 0.00 | 0.161 | 2.73 | 1.00 | 1.00 | 0.0 | 1.71 | 4.66 | 0.00 | 326 | 0 | 21 | 33 | 54 |
| 1 | 3 | 5.22 | 2.722 | 1.948 | 0.00 | 0.502 | 1.90 | 1.00 | 1.00 | 0.0 | 4.06 | 7.70 | 0.00 | 439 | 0 | 34 | 22 | 56 |
| | | | | | | | | | | | | | **Totals** | **14,430** | **0** | | | **3,107** |

1.0D + 1.0W Service 300° Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 9.32 | 0.750 | 11.088 | 0.00 | 0.188 | 2.64 | 0.80 | 1.00 | 0.0 | 7.07 | 18.64 | 0.00 | 1147 | 0 | 148 | 125 | 273 |
| 17 | 223 | 9.20 | 0.000 | 3.339 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 1.94 | 5.24 | 0.00 | 328 | 0 | 41 | 49 | 90 |
| 16 | 210 | 9.09 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 129 | 155 | 285 |
| 15 | 190 | 8.90 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 127 | 152 | 279 |
| 14 | 170 | 8.69 | 0.750 | 10.516 | 0.00 | 0.179 | 2.67 | 0.80 | 1.00 | 0.0 | 6.72 | 17.91 | 0.00 | 1095 | 0 | 132 | 149 | 281 |
| 13 | 150 | 8.47 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.80 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 121 | 145 | 265 |
| 12 | 130 | 8.21 | 0.000 | 12.068 | 0.00 | 0.190 | 2.63 | 0.80 | 1.00 | 0.0 | 7.06 | 18.55 | 0.00 | 1294 | 0 | 130 | 141 | 270 |
| 11 | 110 | 7.93 | 0.000 | 11.499 | 0.00 | 0.182 | 2.66 | 0.80 | 1.00 | 0.0 | 6.70 | 17.82 | 0.00 | 1202 | 0 | 120 | 136 | 256 |
| 10 | 97 | 7.72 | 0.000 | 2.798 | 0.00 | 0.150 | 2.77 | 0.80 | 1.00 | 0.0 | 1.61 | 4.46 | 0.00 | 309 | 0 | 29 | 39 | 68 |
| 9 | 87 | 7.55 | 0.000 | 8.243 | 0.00 | 0.184 | 2.65 | 0.80 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 884 | 0 | 81 | 91 | 173 |
| 8 | 70 | 7.21 | 0.000 | 11.541 | 0.00 | 0.182 | 2.66 | 0.80 | 1.00 | 0.0 | 6.69 | 17.76 | 0.00 | 1241 | 0 | 109 | 123 | 232 |
| 7 | 52 | 6.76 | 0.750 | 9.472 | 0.00 | 0.191 | 2.63 | 0.80 | 1.00 | 0.0 | 6.09 | 16.00 | 0.00 | 1086 | 0 | 92 | 99 | 191 |
| 6 | 42 | 6.46 | 0.000 | 1.642 | 0.00 | 0.166 | 2.71 | 0.80 | 1.00 | 0.0 | 0.95 | 2.59 | 0.00 | 177 | 0 | 14 | 18 | 32 |
| 5 | 37 | 6.31 | 0.000 | 2.802 | 0.00 | 0.150 | 2.77 | 0.80 | 1.00 | 0.0 | 1.61 | 4.47 | 0.00 | 312 | 0 | 24 | 35 | 59 |
| 4 | 27 | 5.90 | 0.000 | 8.239 | 0.00 | 0.184 | 2.65 | 0.80 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 897 | 0 | 64 | 88 | 151 |
| 3 | 16 | 5.26 | 0.000 | 4.890 | 0.00 | 0.179 | 2.67 | 0.80 | 1.00 | 0.0 | 2.83 | 7.55 | 0.00 | 538 | 0 | 34 | 49 | 83 |
| 2 | 8 | 5.22 | 0.000 | 2.949 | 0.00 | 0.161 | 2.73 | 0.80 | 1.00 | 0.0 | 1.71 | 4.66 | 0.00 | 326 | 0 | 21 | 33 | 54 |
| 1 | 3 | 5.22 | 2.722 | 1.948 | 0.00 | 0.502 | 1.90 | 0.80 | 1.00 | 0.0 | 3.51 | 6.67 | 0.00 | 439 | 0 | 30 | 22 | 52 |
| | | | | | | | | | | | | | **Totals** | **14,430** | **0** | | | **3,094** |

1.0D + 1.0W Service 330° Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

| Section # | Elev (ft) | $Q_z$ (psf) | $A_f$ (sf) | $A_r$ (sf) | Ice $A_r$ (sf) | e | $C_f$ | $D_f$ | $D_r$ | $T_{iz}$ (in) | $A_e$ (sf) | $EPA_a$ (sf) | $EPA_{ai}$ (sf) | Wt (lb) | Ice Wt (lb) | $F_{st}$ (lb) | $F_a$ (lb) | Force (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | 236 | 9.32 | 0.750 | 11.088 | 0.00 | 0.188 | 2.64 | 0.85 | 1.00 | 0.0 | 7.11 | 18.74 | 0.00 | 1147 | 0 | 148 | 125 | 274 |
| 17 | 223 | 9.20 | 0.000 | 3.339 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 1.94 | 5.24 | 0.00 | 328 | 0 | 41 | 49 | 90 |
| 16 | 210 | 9.09 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 129 | 155 | 285 |
| 15 | 190 | 8.90 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 127 | 152 | 279 |
| 14 | 170 | 8.69 | 0.750 | 10.516 | 0.00 | 0.179 | 2.67 | 0.85 | 1.00 | 0.0 | 6.75 | 18.01 | 0.00 | 1095 | 0 | 133 | 149 | 282 |
| 13 | 150 | 8.47 | 0.000 | 10.694 | 0.00 | 0.170 | 2.70 | 0.85 | 1.00 | 0.0 | 6.21 | 16.76 | 0.00 | 1051 | 0 | 121 | 145 | 265 |
| 12 | 130 | 8.21 | 0.000 | 12.068 | 0.00 | 0.190 | 2.63 | 0.85 | 1.00 | 0.0 | 7.06 | 18.55 | 0.00 | 1294 | 0 | 130 | 141 | 270 |
| 11 | 110 | 7.93 | 0.000 | 11.499 | 0.00 | 0.182 | 2.66 | 0.85 | 1.00 | 0.0 | 6.70 | 17.82 | 0.00 | 1202 | 0 | 120 | 136 | 256 |
| 10 | 97 | 7.72 | 0.000 | 2.798 | 0.00 | 0.150 | 2.77 | 0.85 | 1.00 | 0.0 | 1.61 | 4.46 | 0.00 | 309 | 0 | 29 | 39 | 68 |
| 9 | 87 | 7.55 | 0.000 | 8.243 | 0.00 | 0.184 | 2.65 | 0.85 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 884 | 0 | 81 | 91 | 173 |
| 8 | 70 | 7.21 | 0.000 | 11.541 | 0.00 | 0.182 | 2.66 | 0.85 | 1.00 | 0.0 | 6.69 | 17.76 | 0.00 | 1241 | 0 | 109 | 123 | 232 |
| 7 | 52 | 6.76 | 0.750 | 9.472 | 0.00 | 0.191 | 2.63 | 0.85 | 1.00 | 0.0 | 6.13 | 16.10 | 0.00 | 1086 | 0 | 93 | 99 | 192 |
| 6 | 42 | 6.46 | 0.000 | 1.642 | 0.00 | 0.166 | 2.71 | 0.85 | 1.00 | 0.0 | 0.95 | 2.59 | 0.00 | 177 | 0 | 14 | 18 | 32 |
| 5 | 37 | 6.31 | 0.000 | 2.802 | 0.00 | 0.150 | 2.77 | 0.85 | 1.00 | 0.0 | 1.61 | 4.47 | 0.00 | 312 | 0 | 24 | 35 | 59 |
| 4 | 27 | 5.90 | 0.000 | 8.239 | 0.00 | 0.184 | 2.65 | 0.85 | 1.00 | 0.0 | 4.78 | 12.66 | 0.00 | 897 | 0 | 64 | 88 | 151 |
| 3 | 16 | 5.26 | 0.000 | 4.890 | 0.00 | 0.179 | 2.67 | 0.85 | 1.00 | 0.0 | 2.83 | 7.55 | 0.00 | 538 | 0 | 34 | 49 | 83 |
| 2 | 8 | 5.22 | 0.000 | 2.949 | 0.00 | 0.161 | 2.73 | 0.85 | 1.00 | 0.0 | 1.71 | 4.66 | 0.00 | 326 | 0 | 21 | 33 | 54 |
| 1 | 3 | 5.22 | 2.722 | 1.948 | 0.00 | 0.502 | 1.90 | 0.85 | 1.00 | 0.0 | 3.65 | 6.93 | 0.00 | 439 | 0 | 31 | 22 | 53 |
| | | | | | | | | | | | | | **Totals** | **14,430** | **0** | | | **3,097** |

## EQUIVALENT LATERAL FORCE METHOD

| | |
|---|---|
| Spectral Response Acceleration for Short Period ($S_S$): | 0.18 |
| Spectral Response Acceleration at 1.0 Second Period ($S_1$): | 0.06 |
| Long-Period Transition Period ($T_L$ – Seconds): | 4 |
| Importance Factor ($I_e$): | 1.00 |
| Site Coefficient $F_a$: | 1.60 |
| Site Coefficient $F_v$: | 2.40 |
| Response Modification Coefficient (R): | 3.00 |
| Design Spectral Response Acceleration at Short Period ($S_{ds}$): | 0.19 |
| Design Spectral Response Acceleration at 1.0 Second Period ($S_{d1}$): | 0.09 |
| Seismic Response Coefficient ($C_s$): | 0.04 |
| Upper Limit $C_S$: | 0.04 |
| Lower Limit $C_S$: | 0.03 |
| Period based on Rayleigh Method (sec): | 0.78 |
| Redundancy Factor (p): | 1.30 |
| Seismic Force Distribution Exponent (k): | 1.14 |
| Total Unfactored Dead Load: | 19.77 k |
| Seismic Base Shear (E): | 0.97 k |

## SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh

| Section/Appurtenance | Height Above Base (ft) | Weight (lb) | $W_Z$ (lb-ft) | Cvx | Horizontal Force (lb) | Vertical Force (lb) |
|---|---|---|---|---|---|---|
| 18 | 236.25 | 1,147 | 578,349 | 0.106 | 103 | 1,420 |
| 17 | 223.12 | 328 | 155,216 | 0.028 | 28 | 407 |
| 16 | 210.00 | 1,051 | 463,723 | 0.085 | 82 | 1,302 |
| 15 | 190.00 | 1,051 | 413,771 | 0.076 | 73 | 1,302 |
| 14 | 170.00 | 1,095 | 379,766 | 0.070 | 67 | 1,357 |
| 13 | 150.00 | 1,051 | 316,117 | 0.058 | 56 | 1,302 |
| 12 | 130.00 | 1,294 | 330,693 | 0.061 | 59 | 1,603 |
| 11 | 110.00 | 1,202 | 253,798 | 0.046 | 45 | 1,488 |
| 10 | 97.06 | 309 | 56,644 | 0.010 | 10 | 383 |
| 9 | 87.06 | 884 | 143,097 | 0.026 | 25 | 1,095 |
| 8 | 70.00 | 1,241 | 156,730 | 0.029 | 28 | 1,538 |
| 7 | 51.56 | 1,086 | 96,803 | 0.018 | 17 | 1,345 |
| 6 | 41.56 | 177 | 12,327 | 0.002 | 2 | 219 |
| 5 | 37.06 | 312 | 19,118 | 0.004 | 3 | 387 |
| 4 | 27.06 | 897 | 38,354 | 0.007 | 7 | 1,111 |
| 3 | 15.68 | 538 | 12,373 | 0.002 | 2 | 667 |
| 2 | 8.48 | 326 | 3,715 | 0.001 | 1 | 404 |
| 1 | 2.79 | 439 | 1,412 | 0.000 | 0 | 544 |
| Ericsson Radio 4408 B48 | 242.00 | 45 | 23,330 | 0.004 | 4 | 56 |
| Ericsson RRUS 4490 | 242.00 | 205 | 106,385 | 0.020 | 19 | 254 |
| Ericsson RRUS 4890 | 242.00 | 208 | 108,096 | 0.020 | 19 | 258 |
| Raycap RVZDC-6627-PF-48 | 242.00 | 64 | 33,181 | 0.006 | 6 | 79 |
| Ericsson AIR 6419 B77G | 242.00 | 198 | 102,808 | 0.019 | 18 | 246 |
| Commscope NHH-65C-R2B | 242.00 | 155 | 80,255 | 0.015 | 14 | 192 |
| Commscope NHHSS-65C-R2BT4 | 242.00 | 186 | 96,431 | 0.018 | 17 | 230 |
| Generic Flat Light Sector Frame | 242.00 | 2,400 | 1,244,270 | 0.228 | 221 | 2,973 |
| Generic Torque Arm | 126.00 | 500 | 123,278 | 0.023 | 22 | 619 |
| Valmont GSA ISMD6 | 58.00 | 300 | 30,572 | 0.006 | 5 | 372 |
| Radio Waves SPD4-5.2 | 50.00 | 60 | 5,164 | 0.001 | 1 | 74 |
| Valmont GSA ISMD6 | 48.00 | 300 | 24,645 | 0.004 | 4 | 372 |
| Valmont GSA ISMD6 | 47.90 | 300 | 24,587 | 0.004 | 4 | 372 |
| RFS SUX6-107BB | 40.00 | 209 | 13,950 | 0.003 | 2 | 259 |
| RFS SUX6-107BB | 30.00 | 209 | 10,053 | 0.002 | 2 | 259 |
| **Totals** | | **19,769** | **5,459,012** | **1.000** | **969** | **24,491** |

FORCE/STRESS SUMMARY

**Section 1 – 0.0' to 5.58'**

| Member Compression | Pu (kip) | Load Case | Len (ft) | Bracing % X | Y | Z | KL/R | $F'_y$ (ksi) | $\Phi_c P_n$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 2" SOLID | -28.10 | 1.2D + 1.0W 60° | 1.169 | 100 | 100 | 100 | 28.04 | 50.00 | 133.47 | 0.00 | 0.00 | 0 | 0 | 21 | Member X |
| H CHN - C4 x 7.25 | -0.04 | 1.2D + 1.0W N | 0.6 | 100 | 100 | 100 | 68.00 | 36.00 | 65.53 | 0.00 | 0.00 | 0 | 0 | 0 | Member Y |

| Member Tension | Pu (kip) | Load Case | $F_y$ (ksi) | $F_u$ (ksi) | $\Phi_c Pn$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | Blk Shear $\Phi_t P_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H CHN - C4 x 7.25 | 3.49 | 1.2D + 1.0W N | 36.0 | 58 | 69.01 | 0.00 | 0.00 | 0.00 | 0 | 0 | 5 | Member |

| Max Splice Forces | Pu (kip) | Load Case | $\Phi R_{nt}$ (kip) | Use % | Num Bolts | Bolt Type |
|---|---|---|---|---|---|---|

**Section 2 – 5.6' to 11.37'**

| Member Compression | Pu (kip) | Load Case | Len (ft) | Bracing % X | Y | Z | KL/R | $F'_y$ (ksi) | $\Phi_c P_n$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 2" SOLID | -29.51 | 1.2D + 1.0W 60° | 2.749 | 100 | 100 | 100 | 65.98 | 50.00 | 102.84 | 0.00 | 0.00 | 0 | 0 | 28 | Member X |
| D SOL - 3/4" SOLID | -1.88 | 1.2D + 1.0W 90° | 4.069 | 100 | 100 | 100 | 182.30 | 36.00 | 3.00 | 0.00 | 0.00 | 0 | 0 | 62 | Member X |

| Member Tension | Pu (kip) | Load Case | $F_y$ (ksi) | $F_u$ (ksi) | $\Phi_c Pn$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | Blk Shear $\Phi_t P_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H SOL - 3/4" SOLID | 0.68 | 1.2D + 1.0W N | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 4 | Member |
| D SOL - 3/4" SOLID | 1.41 | 1.2D + 1.0W N | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 9 | Member |

| Max Splice Forces | Pu (kip) | Load Case | $\Phi R_{nt}$ (kip) | Use % | Num Bolts | Bolt Type |
|---|---|---|---|---|---|---|

**Section 3 – 11.4' to 20.00'**

| Member Compression | Pu (kip) | Load Case | Len (ft) | Bracing % X | Y | Z | KL/R | $F'_y$ (ksi) | $\Phi_c P_n$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 2" SOLID | -34.72 | 1.2D + 1.0W 60° | 2.752 | 50 | 50 | 50 | 33.02 | 50.00 | 130.54 | 0.00 | 0.00 | 0 | 0 | 26 | Member X |
| H SOL - 3/4" SOLID | -0.53 | 1.2D + 1.0W N | 3 | 100 | 100 | 100 | 124.81 | 36.00 | 6.30 | 0.00 | 0.00 | 0 | 0 | 8 | Member X |
| D SOL - 3/4" SOLID | -1.77 | 1.2D + 1.0W 90° | 4.071 | 50 | 50 | 50 | 91.19 | 36.00 | 9.24 | 0.00 | 0.00 | 0 | 0 | 19 | Member X |

| Member Tension | Pu (kip) | Load Case | $F_y$ (ksi) | $F_u$ (ksi) | $\Phi_c Pn$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | Blk Shear $\Phi_t P_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H SOL - 3/4" SOLID | 0.64 | 1.2D + 1.0W 60° | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 4 | Member |
| D SOL - 3/4" SOLID | 1.33 | 1.2D + 1.0W N | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 9 | Member |

| Max Splice Forces | Pu (kip) | Load Case | $\Phi R_{nt}$ (kip) | Use % | Num Bolts | Bolt Type |
|---|---|---|---|---|---|---|

**Section 4 – 20.0' to 34.12'**

| Member Compression | Pu (kip) | Load Case | Len (ft) | Bracing % X | Y | Z | KL/R | $F'_y$ (ksi) | $\Phi_c P_n$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 2" SOLID | -40.50 | 1.2D + 1.0W 300° | 2.749 | 50 | 50 | 50 | 32.99 | 50.00 | 130.56 | 0.00 | 0.00 | 0 | 0 | 31 | Member X |
| H SOL - 3/4" SOLID | -0.42 | 1.2D + 1.0W 60° | 3 | 100 | 100 | 100 | 124.81 | 36.00 | 6.30 | 0.00 | 0.00 | 0 | 0 | 6 | Member X |
| D SOL - 3/4" SOLID | -1.45 | 1.2D + 1.0W N | 4.069 | 50 | 50 | 50 | 91.15 | 36.00 | 9.24 | 0.00 | 0.00 | 0 | 0 | 15 | Member X |

| Member Tension | Pu (kip) | Load Case | $F_y$ (ksi) | $F_u$ (ksi) | $\Phi_c Pn$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | Blk Shear $\Phi_t P_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H SOL - 3/4" SOLID | 0.56 | 1.2D + 1.0W N | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 3 | Member |
| D SOL - 3/4" SOLID | 1.16 | 1.2D + 1.0W N | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 8 | Member |

| Max Splice Forces | Pu (kip) | Load Case | $\Phi R_{nt}$ (kip) | Use % | Num Bolts | Bolt Type |
|---|---|---|---|---|---|---|

**Section 5 – 34.1' to 40.00'**

FORCE/STRESS SUMMARY

| Member Compression | Pu (kip) | Load Case | Len (ft) | Bracing % X | Y | Z | KL/R | $F'_y$ (ksi) | $\Phi_c P_n$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 2" SOLID | -40.47 | 1.2D + 1.0W 60° | 2.753 | 100 | 100 | 100 | 66.06 | 50.00 | 102.75 | 0.00 | 0.00 | 0 | 0 | 39 | Member X |
| D SOL - 3/4" SOLID | -0.32 | 1.2D + 1.0W N | 4.072 | 100 | 100 | 100 | 182.40 | 36.00 | 3.00 | 0.00 | 0.00 | 0 | 0 | 10 | Member X |

| Member Tension | Pu (kip) | Load Case | $F_y$ (ksi) | $F_u$ (ksi) | $\Phi_c Pn$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | Blk Shear $\Phi_t P_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 2" SOLID | 0.12 | 1.2D + 1.0W N | 50.0 | 65 | 141.37 | 0.00 | 0.00 | | 0 | 0 | 0 | Member |
| H SOL - 3/4" SOLID | 0.19 | 1.2D + 1.0W N | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 1 | Member |

| Max Splice Forces | Pu (kip) | Load Case | $\Phi R_{nt}$ (kip) | Use % | Num Bolts | Bolt Type |
|---|---|---|---|---|---|---|

FORCE/STRESS SUMMARY

**Section 6 – 40.0' to 43.13'**

| Member Compression | Pu (kip) | Load Case | Len (ft) | Bracing % X | Y | Z | KL/R | $F'_y$ (ksi) | $\Phi_c P_n$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 2" SOLID | -39.67 | 1.2D + 1.0W 60° | 2.755 | 100 | 100 | 100 | 66.12 | 50.00 | 102.69 | 0.00 | 0.00 | 0 | 0 | 38 | Member X |
| H SOL - 3/4" SOLID | -0.27 | 1.2D + 1.0W N | 3 | 100 | 100 | 100 | 124.81 | 36.00 | 6.30 | 0.00 | 0.00 | 0 | 0 | 4 | Member X |
| D SOL - 3/4" SOLID | -1.00 | 1.2D + 1.0W 60° | 4.073 | 100 | 100 | 100 | 182.48 | 36.00 | 3.00 | 0.00 | 0.00 | 0 | 0 | 33 | Member X |

| Member Tension | Pu (kip) | Load Case | $F_y$ (ksi) | $F_u$ (ksi) | $\Phi_c Pn$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | Blk Shear $\Phi_t P_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 2" SOLID | 0.20 | 1.2D + 1.0W N | 50.0 | 65 | 141.37 | 0.00 | 0.00 | | 0 | 0 | 0 | Member |
| H SOL - 3/4" SOLID | 0.42 | 1.2D + 1.0W 60° | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 2 | Member |
| D SOL - 3/4" SOLID | 0.76 | 1.2D + 1.0W 90° | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 5 | Member |

| Max Splice Forces | Pu (kip) | Load Case | $\Phi R_{nt}$ (kip) | Use % | Num Bolts | Bolt Type |
|---|---|---|---|---|---|---|
| Bot Tension | 0.15 | 1.2D + 1.0W 240° | 120.41 | 0 | 4 | 0.75" A325 |

**Section 7 – 43.1' to 60.00'**

| Member Compression | Pu (kip) | Load Case | Len (ft) | Bracing % X | Y | Z | KL/R | $F'_y$ (ksi) | $\Phi_c P_n$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 2" SOLID | -38.53 | 1.2D + 1.0W 60° | 2.749 | 50 | 50 | 50 | 32.99 | 50.00 | 130.56 | 0.00 | 0.00 | 0 | 0 | 29 | Member X |
| H SOL - 3/4" SOLID | -0.08 | 1.2D + 1.0W N | 3 | 100 | 100 | 100 | 124.81 | 36.00 | 6.30 | 0.00 | 0.00 | 0 | 0 | 1 | Member X |
| D SOL - 3/4" SOLID | -1.90 | 1.2D + 1.0W 90° | 4.069 | 50 | 50 | 50 | 91.15 | 36.00 | 9.24 | 0.00 | 0.00 | 0 | 0 | 20 | Member X |

| Member Tension | Pu (kip) | Load Case | $F_y$ (ksi) | $F_u$ (ksi) | $\Phi_c Pn$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | Blk Shear $\Phi_t P_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H SOL - 3/4" SOLID | 0.36 | 1.2D + 1.0W 60° | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 2 | Member |
| D SOL - 3/4" SOLID | 1.66 | 1.2D + 1.0W 90° | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 11 | Member |

| Max Splice Forces | Pu (kip) | Load Case | $\Phi R_{nt}$ (kip) | Use % | Num Bolts | Bolt Type |
|---|---|---|---|---|---|---|

**Section 8 – 60.0' to 80.00'**

| Member Compression | Pu (kip) | Load Case | Len (ft) | Bracing % X | Y | Z | KL/R | $F'_y$ (ksi) | $\Phi_c P_n$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 2" SOLID | -27.47 | 1.2D + 1.0W 60° | 2.75 | 50 | 50 | 50 | 33.00 | 50.00 | 130.55 | 0.00 | 0.00 | 0 | 0 | 21 | Member X |
| H SOL - 3/4" SOLID | -0.09 | 1.2D + 1.0W 60° | 3 | 100 | 100 | 100 | 124.81 | 36.00 | 6.30 | 0.00 | 0.00 | 0 | 0 | 1 | Member X |
| D SOL - 3/4" SOLID | -0.50 | 1.2D + 1.0W 90° | 4.07 | 50 | 50 | 50 | 91.16 | 36.00 | 9.24 | 0.00 | 0.00 | 0 | 0 | 5 | Member X |

| Member Tension | Pu (kip) | Load Case | $F_y$ (ksi) | $F_u$ (ksi) | $\Phi_c Pn$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | Blk Shear $\Phi_t P_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H SOL - 3/4" SOLID | 0.16 | 1.2D + 1.0W N | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 1 | Member |
| D SOL - 3/4" SOLID | 0.29 | 1.2D + 1.0W 60° | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 2 | Member |

| Max Splice Forces | Pu (kip) | Load Case | $\Phi R_{nt}$ (kip) | Use % | Num Bolts | Bolt Type |
|---|---|---|---|---|---|---|

**Section 9 – 80.0' to 94.13'**

| Member Compression | Pu (kip) | Load Case | Len (ft) | Bracing % X | Y | Z | KL/R | $F'_y$ (ksi) | $\Phi_c P_n$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 2" SOLID | -27.00 | 1.2D + 1.0W 60° | 2.751 | 50 | 50 | 50 | 33.01 | 50.00 | 130.54 | 0.00 | 0.00 | 0 | 0 | 20 | Member X |
| H SOL - 3/4" SOLID | -0.18 | 1.2D + 1.0W N | 3 | 100 | 100 | 100 | 124.81 | 36.00 | 6.30 | 0.00 | 0.00 | 0 | 0 | 2 | Member X |
| D SOL - 3/4" SOLID | -0.91 | 1.2D + 1.0W N | 4.071 | 50 | 50 | 50 | 91.18 | 36.00 | 9.24 | 0.00 | 0.00 | 0 | 0 | 9 | Member X |

FORCE/STRESS SUMMARY

| Member Tension | Pu (kip) | Load Case | $F_y$ (ksi) | $F_u$ (ksi) | $\Phi_c P_n$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | Blk Shear $\Phi_t P_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H SOL - 3/4" SOLID | 0.15 | 1.2D + 1.0W N | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 1 | Member |
| D SOL - 3/4" SOLID | 0.49 | 1.2D + 1.0W N | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 3 | Member |

| Max Splice Forces | Pu (kip) | Load Case | $\Phi R_{nt}$ (kip) | Use % | Num Bolts | Bolt Type |
|---|---|---|---|---|---|---|

FORCE/STRESS SUMMARY

## Section 10 – 94.1' to 100.00'

| Member Compression | Pu (kip) | Load Case | Len (ft) | Bracing % X | Y | Z | KL/R | $F'_y$ (ksi) | $\Phi_c P_n$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 2" SOLID | -23.20 | 1.2D + 1.0W 60° | 2.748 | 100 | 100 | 100 | 65.94 | 50.00 | 102.87 | 0.00 | 0.00 | 0 | 0 | 22 | Member X |
| H SOL - 3/4" SOLID | -0.32 | 1.2D + 1.0W 60° | 3 | 100 | 100 | 100 | 124.81 | 36.00 | 6.30 | 0.00 | 0.00 | 0 | 0 | 5 | Member X |
| D SOL - 3/4" SOLID | -1.12 | 1.2D + 1.0W N | 4.068 | 100 | 100 | 100 | 182.25 | 36.00 | 3.00 | 0.00 | 0.00 | 0 | 0 | 37 | Member X |

| Member Tension | Pu (kip) | Load Case | $F_y$ (ksi) | $F_u$ (ksi) | $\Phi_c Pn$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | Blk Shear $\Phi_t P_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H SOL - 3/4" SOLID | 0.49 | 1.2D + 1.0W N | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 3 | Member |
| D SOL - 3/4" SOLID | 0.90 | 1.2D + 1.0W N | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 6 | Member |

| Max Splice Forces | Pu (kip) | Load Case | $\Phi R_{nt}$ (kip) | Use % | Num Bolts | Bolt Type |
|---|---|---|---|---|---|---|

## Section 11 – 100.0' to 120.00'

| Member Compression | Pu (kip) | Load Case | Len (ft) | Bracing % X | Y | Z | KL/R | $F'_y$ (ksi) | $\Phi_c P_n$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 2" SOLID | -24.18 | 1.2D + 1.0W N | 2.75 | 100 | 100 | 100 | 66.00 | 50.00 | 102.81 | 0.00 | 0.00 | 0 | 0 | 23 | Member X |
| D SOL - 3/4" SOLID | -1.61 | 1.2D + 1.0W 90° | 4.07 | 50 | 50 | 50 | 117.21 | 36.00 | 6.94 | 0.00 | 0.00 | 0 | 0 | 23 | Member X |

| Member Tension | Pu (kip) | Load Case | $F_y$ (ksi) | $F_u$ (ksi) | $\Phi_c Pn$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | Blk Shear $\Phi_t P_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H SOL - 3/4" SOLID | 1.05 | 1.2D + 1.0W 60° | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 7 | Member |
| D SOL - 3/4" SOLID | 0.16 | 1.2D + 1.0W N | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 1 | Member |

| Max Splice Forces | Pu (kip) | Load Case | $\Phi R_{nt}$ (kip) | Use % | Num Bolts | Bolt Type |
|---|---|---|---|---|---|---|

## Section 12 – 120.0' to 140.00'

| Member Compression | Pu (kip) | Load Case | Len (ft) | Bracing % X | Y | Z | KL/R | $F'_y$ (ksi) | $\Phi_c P_n$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 2" SOLID | -28.98 | 1.2D + 1.0W N | 2.75 | 100 | 100 | 100 | 66.00 | 50.00 | 102.81 | 0.00 | 0.00 | 0 | 0 | 28 | Member X |
| H SOL - 3/4" SOLID | -1.61 | 1.2D + 1.0W N | 3 | 100 | 100 | 100 | 124.81 | 36.00 | 6.30 | 0.00 | 0.00 | 0 | 0 | 25 | Member X |
| D SOL - 7/8" SOLID | -2.32 | 1.2D + 1.0W 90° | 4.07 | 50 | 50 | 50 | 100.49 | 36.00 | 11.45 | 0.00 | 0.00 | 0 | 0 | 20 | Member X |

| Member Tension | Pu (kip) | Load Case | $F_y$ (ksi) | $F_u$ (ksi) | $\Phi_c Pn$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | Blk Shear $\Phi_t P_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 2" SOLID | 2.91 | 1.2D + 1.0W 60° | 50.0 | 65 | 141.37 | 0.00 | 0.00 | | 0 | 0 | 2 | Member |
| H SOL - 3/4" SOLID | 5.03 | 1.2D + 1.0W 300° | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 35 | Member |
| D SOL - 7/8" SOLID | 1.22 | 1.2D + 1.0W N | 36.0 | 58 | 19.48 | 0.00 | 0.00 | 0.00 | 0 | 0 | 6 | Member |

| Max Splice Forces | Pu (kip) | Load Case | $\Phi R_{nt}$ (kip) | Use % | Num Bolts | Bolt Type |
|---|---|---|---|---|---|---|

## Section 13 – 140.0' to 160.00'

| Member Compression | Pu (kip) | Load Case | Len (ft) | Bracing % X | Y | Z | KL/R | $F'_y$ (ksi) | $\Phi_c P_n$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 1 3/4" SOLID | -21.66 | 1.2D + 1.0W N | 2.75 | 100 | 100 | 100 | 75.43 | 50.00 | 71.40 | 0.00 | 0.00 | 0 | 0 | 30 | Member X |
| D SOL - 3/4" SOLID | -1.12 | 1.2D + 1.0W N | 4.07 | 50 | 50 | 50 | 117.21 | 36.00 | 6.94 | 0.00 | 0.00 | 0 | 0 | 16 | Member X |

| Member Tension | Pu (kip) | Load Case | $F_y$ (ksi) | $F_u$ (ksi) | $\Phi_c Pn$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | Blk Shear $\Phi_t P_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H SOL - 3/4" SOLID | 1.12 | 1.2D + 1.0W 60° | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 7 | Member |

| Max Splice Forces | Pu (kip) | Load Case | $\Phi R_{nt}$ (kip) | Use % | Num Bolts | Bolt Type |
|---|---|---|---|---|---|---|

FORCE/STRESS SUMMARY

**Section 14 – 160.0' to 180.00'**

| Member Compression | Pu (kip) | Load Case | Len (ft) | Bracing % X | Y | Z | KL/R | $F'_y$ (ksi) | $\Phi_c P_n$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 1 3/4" SOLID | -18.70 | 1.2D + 1.0W N | 2.75 | 100 | 100 | 100 | 75.43 | 50.00 | 71.40 | 0.00 | 0.00 | 0 | 0 | 26 | Member X |
| D SOL - 3/4" SOLID | -0.84 | 1.2D + 1.0W N | 4.07 | 50 | 50 | 50 | 117.21 | 36.00 | 6.94 | 0.00 | 0.00 | 0 | 0 | 12 | Member X |

| Member Tension | Pu (kip) | Load Case | $F_y$ (ksi) | $F_u$ (ksi) | $\Phi_c Pn$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | Blk Shear $\Phi_t P_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H SOL - 3/4" SOLID | 1.08 | 1.2D + 1.0W 60° | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 7 | Member |

| Max Splice Forces | Pu (kip) | Load Case | $\Phi R_{nt}$ (kip) | Use % | Num Bolts | Bolt Type |
|---|---|---|---|---|---|---|

FORCE/STRESS SUMMARY

## Section 15 – 180.0' to 200.00'

| Member Compression | Pu (kip) | Load Case | Len (ft) | Bracing % X | Y | Z | KL/R | $F'_y$ (ksi) | $\Phi_c P_n$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 1 3/4" SOLID | -17.04 | 1.2D + 1.0W N | 2.75 | 100 | 100 | 100 | 75.43 | 50.00 | 71.40 | 0.00 | 0.00 | 0 | 0 | 23 | Member X |
| H SOL - 3/4" SOLID | -0.08 | 1.2D + 1.0W N | 3 | 100 | 100 | 100 | 124.81 | 36.00 | 6.30 | 0.00 | 0.00 | 0 | 0 | 1 | Member X |
| D SOL - 3/4" SOLID | -1.09 | 1.2D + 1.0W N | 4.07 | 50 | 50 | 50 | 117.21 | 36.00 | 6.94 | 0.00 | 0.00 | 0 | 0 | 15 | Member X |

| Member Tension | Pu (kip) | Load Case | $F_y$ (ksi) | $F_u$ (ksi) | $\Phi_c Pn$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | Blk Shear $\Phi_t P_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H SOL - 3/4" SOLID | 0.76 | 1.2D + 1.0W 60° | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 5 | Member |
| D SOL - 3/4" SOLID | 0.15 | 1.2D + 1.0W 180° | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 1 | Member |

| Max Splice Forces | Pu (kip) | Load Case | $\Phi R_{nt}$ (kip) | Use % | Num Bolts | Bolt Type |
|---|---|---|---|---|---|---|

## Section 16 – 200.0' to 220.00'

| Member Compression | Pu (kip) | Load Case | Len (ft) | Bracing % X | Y | Z | KL/R | $F'_y$ (ksi) | $\Phi_c P_n$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 1 3/4" SOLID | -10.59 | 1.2D + 1.0W N | 2.75 | 100 | 100 | 100 | 75.43 | 50.00 | 71.40 | 0.00 | 0.00 | 0 | 0 | 14 | Member X |
| D SOL - 3/4" SOLID | -0.66 | 1.2D + 1.0W 90° | 4.07 | 50 | 50 | 50 | 117.21 | 36.00 | 6.94 | 0.00 | 0.00 | 0 | 0 | 9 | Member X |

| Member Tension | Pu (kip) | Load Case | $F_y$ (ksi) | $F_u$ (ksi) | $\Phi_c Pn$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | Blk Shear $\Phi_t P_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H SOL - 3/4" SOLID | 0.58 | 1.2D + 1.0W N | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 4 | Member |

| Max Splice Forces | Pu (kip) | Load Case | $\Phi R_{nt}$ (kip) | Use % | Num Bolts | Bolt Type |
|---|---|---|---|---|---|---|

## Section 17 – 220.0' to 226.25'

| Member Compression | Pu (kip) | Load Case | Len (ft) | Bracing % X | Y | Z | KL/R | $F'_y$ (ksi) | $\Phi_c P_n$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 1 3/4" SOLID | -11.59 | 1.2D + 1.0W N | 2.75 | 100 | 100 | 100 | 75.43 | 50.00 | 71.40 | 0.00 | 0.00 | 0 | 0 | 16 | Member X |
| D SOL - 3/4" SOLID | -0.80 | 1.2D + 1.0W 90° | 4.07 | 50 | 50 | 50 | 117.21 | 36.00 | 6.94 | 0.00 | 0.00 | 0 | 0 | 11 | Member X |

| Member Tension | Pu (kip) | Load Case | $F_y$ (ksi) | $F_u$ (ksi) | $\Phi_c Pn$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | Blk Shear $\Phi_t P_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| H SOL - 3/4" SOLID | 0.61 | 1.2D + 1.0W N | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 4 | Member |
| D SOL - 3/4" SOLID | 0.02 | 1.2D + 1.0W 60° | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | Member |

| Max Splice Forces | Pu (kip) | Load Case | $\Phi R_{nt}$ (kip) | Use % | Num Bolts | Bolt Type |
|---|---|---|---|---|---|---|

## Section 18 – 226.2' to 246.25'

| Member Compression | Pu (kip) | Load Case | Len (ft) | Bracing % X | Y | Z | KL/R | $F'_y$ (ksi) | $\Phi_c P_n$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 1 3/4" SOLID | -13.34 | 1.2D + 1.0W N | 2.75 | 100 | 100 | 100 | 75.43 | 50.00 | 71.40 | 0.00 | 0.00 | 0 | 0 | 18 | Member X |
| H SOL - 3/4" SOLID | -0.38 | 1.2D + 1.0W N | 3 | 100 | 100 | 100 | 124.81 | 36.00 | 6.30 | 0.00 | 0.00 | 0 | 0 | 6 | Member X |
| D SOL - 7/8" SOLID | -1.28 | 1.2D + 1.0W 90° | 4.07 | 50 | 50 | 50 | 100.49 | 36.00 | 11.45 | 0.00 | 0.00 | 0 | 0 | 11 | Member X |

| Member Tension | Pu (kip) | Load Case | $F_y$ (ksi) | $F_u$ (ksi) | $\Phi_c Pn$ (kip) | Shear $\Phi R_{nv}$ (kip) | Bear $\Phi R_n$ (kip) | Blk Shear $\Phi_t P_n$ (kip) | # Bolt | # Hole | Use % | Controls |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L SOL - 1 3/4" SOLID | 7.62 | 1.2D + 1.0W 60° | 50.0 | 65 | 108.24 | 0.00 | 0.00 | | 0 | 0 | 7 | Member |
| H SOL - 3/4" SOLID | 0.97 | 1.2D + 1.0W 60° | 36.0 | 58 | 14.31 | 0.00 | 0.00 | 0.00 | 0 | 0 | 6 | Member |
| D SOL - 7/8" SOLID | 1.36 | 1.2D + 1.0W 180° | 36.0 | 58 | 19.48 | 0.00 | 0.00 | 0.00 | 0 | 0 | 7 | Member |

| Max Splice Forces | Pu (kip) | Load Case | $\Phi R_{nt}$ (kip) | Use % | Num Bolts | Bolt Type |
|---|---|---|---|---|---|---|

DETAILED CABLE FORCES

| Load Case | Elevation (ft) | Cable | Anchor Node | Tower Node | Available Tension (kip) | Applied Tension (kip) | Use (%) |
|---|---|---|---|---|---|---|---|
| **1.2D + 1.0W Normal** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 0.6 | 5 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 3.41 | 27 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 3.39 | 27 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 4.74 | 23 |
| | | 9/16 EHS | A1 | T2 | 21 | 1.84 | 9 |
| | | 9/16 EHS | A1a | T2a | 21 | 4.54 | 22 |
| | | 9/16 EHS | A1b | T2a | 21 | 4.59 | 22 |
| | | 9/16 EHS | A1a | T2b | 21 | 4.68 | 22 |
| | | 9/16 EHS | A1 | T2b | 21 | 1.84 | 9 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 1.76 | 8 |
| | | 9/16 EHS | A1b | 84a | 21 | 5.14 | 24 |
| | | 9/16 EHS | A1a | 84b | 21 | 5.09 | 24 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 2.16 | 6 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 9.53 | 27 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 9.44 | 27 |
| **1.2D + 1.0W 60°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 1.64 | 13 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 1.64 | 13 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 4.62 | 37 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 3.27 | 16 |
| | | 9/16 EHS | A1 | T2 | 21 | 3.25 | 15 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.06 | 15 |
| | | 9/16 EHS | A1a | T2a | 21 | 5.89 | 28 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.05 | 15 |
| | | 9/16 EHS | A1a | T2b | 21 | 5.89 | 28 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.41 | 16 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.43 | 16 |
| | | 9/16 EHS | A1a | 84b | 21 | 6.48 | 31 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 5.23 | 15 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 5.26 | 15 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 12.66 | 36 |
| **1.2D + 1.0W 90°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.47 | 20 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 0.83 | 7 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 4.22 | 34 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 2.37 | 11 |
| | | 9/16 EHS | A1 | T2 | 21 | 4.01 | 19 |
| | | 9/16 EHS | A1a | T2a | 21 | 5.46 | 26 |
| | | 9/16 EHS | A1b | T2a | 21 | 2.25 | 11 |
| | | 9/16 EHS | A1a | T2b | 21 | 5.48 | 26 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.8 | 18 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 4.33 | 21 |
| | | 9/16 EHS | A1b | 84a | 21 | 2.38 | 11 |
| | | 9/16 EHS | A1a | 84b | 21 | 6.05 | 29 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 7.41 | 21 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 3.24 | 9 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 11.73 | 34 |
| **1.2D + 1.0W 120°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 3.4 | 27 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 0.6 | 5 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 3.39 | 27 |
| | 125.88 | 9/16 EHS | A1 | T2 | 21 | 4.72 | 22 |
| | | 9/16 EHS | A1b | T2 | 21 | 1.85 | 9 |
| | | 9/16 EHS | A1a | T2a | 21 | 4.69 | 22 |
| | | 9/16 EHS | A1b | T2a | 21 | 1.86 | 9 |
| | | 9/16 EHS | A1a | T2b | 21 | 4.55 | 22 |
| | | 9/16 EHS | A1 | T2b | 21 | 4.57 | 22 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 5.13 | 24 |
| | | 9/16 EHS | A1b | 84a | 21 | 1.78 | 8 |
| | | 9/16 EHS | A1a | 84b | 21 | 5.1 | 24 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 9.52 | 27 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 2.2 | 6 |

DETAILED CABLE FORCES

| Load Case | Elevation (ft) | Cable | Anchor Node | Tower Node | Available Tension (kip) | Applied Tension (kip) | Use (%) |
|---|---|---|---|---|---|---|---|
| | | 3/4 EHS | A1a | 110b | 34.98 | 9.47 | 27 |
| **1.2D + 1.0W 180°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 4.63 | 37 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 1.64 | 13 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 1.63 | 13 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 3.05 | 15 |
| | | 9/16 EHS | A1 | T2 | 21 | 5.92 | 28 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.27 | 16 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.23 | 15 |
| | | 9/16 EHS | A1 | T2b | 21 | 5.91 | 28 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.03 | 14 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 6.5 | 31 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.42 | 16 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.39 | 16 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 12.7 | 36 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 5.23 | 15 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 5.19 | 15 |
| **1.2D + 1.0W 210°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 4.23 | 34 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.47 | 20 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 0.82 | 7 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 3.8 | 18 |
| | | 9/16 EHS | A1 | T2 | 21 | 5.49 | 26 |
| | | 9/16 EHS | A1a | T2a | 21 | 2.33 | 11 |
| | | 9/16 EHS | A1b | T2a | 21 | 4.02 | 19 |
| | | 9/16 EHS | A1 | T2b | 21 | 5.48 | 26 |
| | | 9/16 EHS | A1a | T2b | 21 | 2.22 | 11 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 6.06 | 29 |
| | | 9/16 EHS | A1b | 84a | 21 | 4.33 | 21 |
| | | 9/16 EHS | A1a | 84b | 21 | 2.34 | 11 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 11.73 | 34 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 7.4 | 21 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 3.17 | 9 |
| **1.2D + 1.0W 240°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 3.4 | 27 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 3.41 | 27 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 0.6 | 5 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 4.58 | 22 |
| | | 9/16 EHS | A1 | T2 | 21 | 4.56 | 22 |
| | | 9/16 EHS | A1b | T2a | 21 | 4.73 | 23 |
| | | 9/16 EHS | A1a | T2a | 21 | 1.82 | 9 |
| | | 9/16 EHS | A1a | T2b | 21 | 1.82 | 9 |
| | | 9/16 EHS | A1 | T2b | 21 | 4.7 | 22 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 5.1 | 24 |
| | | 9/16 EHS | A1b | 84a | 21 | 5.13 | 24 |
| | | 9/16 EHS | A1a | 84b | 21 | 1.73 | 8 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 9.45 | 27 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 9.49 | 27 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 2.12 | 6 |
| **1.2D + 1.0W 300°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 1.63 | 13 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 4.65 | 37 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 1.63 | 13 |
| | 125.88 | 9/16 EHS | A1 | T2 | 21 | 3.03 | 14 |
| | | 9/16 EHS | A1b | T2 | 21 | 5.94 | 28 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.01 | 14 |
| | | 9/16 EHS | A1b | T2a | 21 | 5.94 | 28 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.24 | 15 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.22 | 15 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.39 | 16 |
| | | 9/16 EHS | A1b | 84a | 21 | 6.53 | 31 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.38 | 16 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 5.19 | 15 |

DETAILED CABLE FORCES

| Load Case | Elevation (ft) | Cable | Anchor Node | Tower Node | Available Tension (kip) | Applied Tension (kip) | Use (%) |
|---|---|---|---|---|---|---|---|
| | | 3/4 EHS | A1b | 110a | 34.98 | 12.74 | 36 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 5.17 | 15 |
| **1.2D + 1.0W 330°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 0.82 | 7 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 4.24 | 34 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.46 | 20 |
| | 125.88 | 9/16 EHS | A1 | T2 | 21 | 2.22 | 11 |
| | | 9/16 EHS | A1b | T2 | 21 | 5.51 | 26 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.76 | 18 |
| | | 9/16 EHS | A1b | T2a | 21 | 5.52 | 26 |
| | | 9/16 EHS | A1 | T2b | 21 | 2.35 | 11 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.98 | 19 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 2.36 | 11 |
| | | 9/16 EHS | A1b | 84a | 21 | 6.09 | 29 |
| | | 9/16 EHS | A1a | 84b | 21 | 4.29 | 20 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 3.19 | 9 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 11.79 | 34 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 7.34 | 21 |
| **1.2D + 1.0Di + 1.0Wi Normal** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.07 | 17 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.99 | 24 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.97 | 24 |
| | 125.88 | 9/16 EHS | A1 | T2 | 21 | 3.54 | 17 |
| | | 9/16 EHS | A1b | T2 | 21 | 4.47 | 21 |
| | | 9/16 EHS | A1a | T2a | 21 | 4.36 | 21 |
| | | 9/16 EHS | A1b | T2a | 21 | 4.41 | 21 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.54 | 17 |
| | | 9/16 EHS | A1a | T2b | 21 | 4.42 | 21 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.28 | 16 |
| | | 9/16 EHS | A1b | 84a | 21 | 4.43 | 21 |
| | | 9/16 EHS | A1a | 84b | 21 | 4.38 | 21 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 4.93 | 14 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 7.16 | 20 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 7.09 | 20 |
| **1.2D + 1.0Di + 1.0Wi 60°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.36 | 19 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.37 | 19 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 3.24 | 26 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 3.85 | 18 |
| | | 9/16 EHS | A1 | T2 | 21 | 3.83 | 18 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.77 | 18 |
| | | 9/16 EHS | A1a | T2a | 21 | 4.66 | 22 |
| | | 9/16 EHS | A1a | T2b | 21 | 4.66 | 22 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.75 | 18 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.67 | 17 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.68 | 18 |
| | | 9/16 EHS | A1a | 84b | 21 | 4.69 | 22 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 5.68 | 16 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 5.71 | 16 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 7.83 | 22 |
| **1.2D + 1.0Di + 1.0Wi 90°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.68 | 21 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.15 | 17 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 3.17 | 25 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 3.63 | 17 |
| | | 9/16 EHS | A1 | T2 | 21 | 4.14 | 20 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.61 | 17 |
| | | 9/16 EHS | A1a | T2a | 21 | 4.6 | 22 |
| | | 9/16 EHS | A1a | T2b | 21 | 4.59 | 22 |
| | | 9/16 EHS | A1 | T2b | 21 | 4.05 | 19 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 4.05 | 19 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.4 | 16 |
| | | 9/16 EHS | A1a | 84b | 21 | 4.61 | 22 |

DETAILED CABLE FORCES

| Load Case | Elevation (ft) | Cable | Anchor Node | Tower Node | Available Tension (kip) | Applied Tension (kip) | Use (%) |
|---|---|---|---|---|---|---|---|
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 6.4 | 18 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 5.17 | 15 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 7.63 | 22 |
| **1.2D + 1.0Di + 1.0Wi 120°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.98 | 24 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.08 | 17 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.97 | 24 |
| | 125.88 | 9/16 EHS | A1 | T2 | 21 | 4.45 | 21 |
| | | 9/16 EHS | A1b | T2 | 21 | 3.56 | 17 |
| | | 9/16 EHS | A1a | T2a | 21 | 4.42 | 21 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.56 | 17 |
| | | 9/16 EHS | A1a | T2b | 21 | 4.37 | 21 |
| | | 9/16 EHS | A1 | T2b | 21 | 4.38 | 21 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 4.41 | 21 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.3 | 16 |
| | | 9/16 EHS | A1a | 84b | 21 | 4.38 | 21 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 7.13 | 20 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 4.96 | 14 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 7.1 | 20 |
| **1.2D + 1.0Di + 1.0Wi 180°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 3.26 | 26 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.37 | 19 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.35 | 19 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 3.76 | 18 |
| | | 9/16 EHS | A1 | T2 | 21 | 4.69 | 22 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.8 | 18 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.85 | 18 |
| | | 9/16 EHS | A1 | T2b | 21 | 4.69 | 22 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.72 | 18 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 4.73 | 23 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.68 | 18 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.64 | 17 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 7.87 | 23 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 5.69 | 16 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 5.64 | 16 |
| **1.2D + 1.0Di + 1.0Wi 210°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 3.18 | 25 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.69 | 22 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.13 | 17 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 4.06 | 19 |
| | | 9/16 EHS | A1 | T2 | 21 | 4.61 | 22 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.59 | 17 |
| | | 9/16 EHS | A1b | T2a | 21 | 4.16 | 20 |
| | | 9/16 EHS | A1 | T2b | 21 | 4.62 | 22 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.57 | 17 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 4.63 | 22 |
| | | 9/16 EHS | A1b | 84a | 21 | 4.07 | 19 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.36 | 16 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 7.65 | 22 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 6.42 | 18 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 5.11 | 15 |
| **1.2D + 1.0Di + 1.0Wi 240°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.98 | 24 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.99 | 24 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.06 | 17 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 4.4 | 21 |
| | | 9/16 EHS | A1 | T2 | 21 | 4.38 | 21 |
| | | 9/16 EHS | A1b | T2a | 21 | 4.47 | 21 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.51 | 17 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.52 | 17 |
| | | 9/16 EHS | A1 | T2b | 21 | 4.44 | 21 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 4.4 | 21 |
| | | 9/16 EHS | A1b | 84a | 21 | 4.43 | 21 |

DETAILED CABLE FORCES

| Load Case | Elevation (ft) | Cable | Anchor Node | Tower Node | Available Tension (kip) | Applied Tension (kip) | Use (%) |
|---|---|---|---|---|---|---|---|
| | | 9/16 EHS | A1a | 84b | 21 | 3.26 | 16 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 7.12 | 20 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 7.15 | 20 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 4.91 | 14 |
| **1.2D + 1.0Di + 1.0Wi 300°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.36 | 19 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 3.27 | 26 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.35 | 19 |
| | 125.88 | 9/16 EHS | A1 | T2 | 21 | 3.74 | 18 |
| | | 9/16 EHS | A1b | T2 | 21 | 4.7 | 22 |
| | | 9/16 EHS | A1b | T2a | 21 | 4.71 | 22 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.72 | 18 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.81 | 18 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.82 | 18 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.66 | 17 |
| | | 9/16 EHS | A1b | 84a | 21 | 4.74 | 23 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.64 | 17 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 5.66 | 16 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 7.89 | 23 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 5.64 | 16 |
| **1.2D + 1.0Di + 1.0Wi 330°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.14 | 17 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 3.19 | 26 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.67 | 21 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 4.64 | 22 |
| | | 9/16 EHS | A1 | T2 | 21 | 3.58 | 17 |
| | | 9/16 EHS | A1a | T2a | 21 | 4.02 | 19 |
| | | 9/16 EHS | A1b | T2a | 21 | 4.63 | 22 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.61 | 17 |
| | | 9/16 EHS | A1a | T2b | 21 | 4.12 | 20 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.37 | 16 |
| | | 9/16 EHS | A1b | 84a | 21 | 4.66 | 22 |
| | | 9/16 EHS | A1a | 84b | 21 | 4.03 | 19 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 5.13 | 15 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 7.69 | 22 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 6.37 | 18 |
| **1.2D + 1.0Ev + 1.0Eh Normal** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.01 | 16 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.08 | 17 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.06 | 17 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 3.34 | 16 |
| | | 9/16 EHS | A1 | T2 | 21 | 3.22 | 15 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.35 | 16 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.31 | 16 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.22 | 15 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.32 | 16 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.1 | 15 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.34 | 16 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.31 | 16 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 4.92 | 14 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 5.64 | 16 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 5.59 | 16 |
| **1.2D + 1.0Ev + 1.0Eh 60°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.03 | 16 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.03 | 16 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.08 | 17 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 3.27 | 16 |
| | | 9/16 EHS | A1 | T2 | 21 | 3.26 | 16 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.35 | 16 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.28 | 16 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.35 | 16 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.26 | 16 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.17 | 15 |

DETAILED CABLE FORCES

| Load Case | Elevation (ft) | Cable | Anchor Node | Tower Node | Available Tension (kip) | Applied Tension (kip) | Use (%) |
|---|---|---|---|---|---|---|---|
| | | 9/16 EHS | A1b | 84a | 21 | 3.19 | 15 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.38 | 16 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 5.15 | 15 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 5.17 | 15 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 5.83 | 17 |
| **1.2D + 1.0Ev + 1.0Eh 90°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.05 | 16 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.02 | 16 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.08 | 17 |
| | 125.88 | 9/16 EHS | A1 | T2 | 21 | 3.29 | 16 |
| | | 9/16 EHS | A1b | T2 | 21 | 3.24 | 15 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.25 | 15 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.34 | 16 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.29 | 16 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.34 | 16 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.25 | 15 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.13 | 15 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.36 | 16 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 5.38 | 15 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 5 | 14 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 5.77 | 16 |
| **1.2D + 1.0Ev + 1.0Eh 120°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.07 | 17 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.01 | 16 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.06 | 17 |
| | 125.88 | 9/16 EHS | A1 | T2 | 21 | 3.33 | 16 |
| | | 9/16 EHS | A1b | T2 | 21 | 3.23 | 15 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.31 | 16 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.24 | 15 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.33 | 16 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.32 | 16 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.32 | 16 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.11 | 15 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.31 | 16 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 5.62 | 16 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 4.94 | 14 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 5.6 | 16 |
| **1.2D + 1.0Ev + 1.0Eh 180°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.09 | 17 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.03 | 16 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.02 | 16 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 3.27 | 16 |
| | | 9/16 EHS | A1 | T2 | 21 | 3.37 | 16 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.24 | 15 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.27 | 16 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.24 | 15 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.36 | 16 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.4 | 16 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.19 | 15 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.16 | 15 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 5.85 | 17 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 5.17 | 15 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 5.13 | 15 |
| **1.2D + 1.0Ev + 1.0Eh 210°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.08 | 17 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.06 | 16 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2 | 16 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 3.31 | 16 |
| | | 9/16 EHS | A1 | T2 | 21 | 3.36 | 16 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.31 | 16 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.21 | 15 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.35 | 16 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.22 | 15 |

DETAILED CABLE FORCES

| Load Case | Elevation (ft) | Cable | Anchor Node | Tower Node | Available Tension (kip) | Applied Tension (kip) | Use (%) |
|---|---|---|---|---|---|---|---|
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.38 | 16 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.26 | 16 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.1 | 15 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 5.79 | 17 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 5.4 | 15 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 4.96 | 14 |
| **1.2D + 1.0Ev + 1.0Eh 240°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.07 | 17 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.08 | 17 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2 | 16 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 3.34 | 16 |
| | | 9/16 EHS | A1 | T2 | 21 | 3.33 | 16 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.35 | 16 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.2 | 15 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.21 | 15 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.33 | 16 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.32 | 16 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.34 | 16 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.08 | 15 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 5.61 | 16 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 5.64 | 16 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 4.9 | 14 |
| **1.2D + 1.0Ev + 1.0Eh 300°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.03 | 16 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.1 | 17 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.02 | 16 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 3.38 | 16 |
| | | 9/16 EHS | A1 | T2 | 21 | 3.26 | 16 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.24 | 15 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.38 | 16 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.24 | 15 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.26 | 16 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.17 | 15 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.41 | 16 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.16 | 15 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 5.15 | 15 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 5.87 | 17 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 5.12 | 15 |
| **1.2D + 1.0Ev + 1.0Eh 330°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.01 | 16 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.09 | 17 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.04 | 16 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 3.37 | 16 |
| | | 9/16 EHS | A1 | T2 | 21 | 3.23 | 15 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.27 | 16 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.37 | 16 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.28 | 16 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.23 | 15 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.12 | 15 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.39 | 16 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.23 | 15 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 4.98 | 14 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 5.81 | 17 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 5.36 | 15 |
| **1.0D + 1.0W Service Normal** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 1.47 | 12 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.43 | 19 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.41 | 19 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 3.72 | 18 |
| | | 9/16 EHS | A1 | T2 | 21 | 2.83 | 13 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.65 | 17 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.61 | 17 |
| | | 9/16 EHS | A1 | T2b | 21 | 2.83 | 13 |

DETAILED CABLE FORCES

| Load Case | Elevation (ft) | Cable | Anchor Node | Tower Node | Available Tension (kip) | Applied Tension (kip) | Use (%) |
|---|---|---|---|---|---|---|---|
| | | 9/16 EHS | A1a | T2b | 21 | 3.68 | 18 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 2.72 | 13 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.74 | 18 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.7 | 18 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 4.02 | 11 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 6.39 | 18 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 6.33 | 18 |
| **1.0D + 1.0W Service 60°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 1.78 | 14 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 1.78 | 14 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.72 | 22 |
| | 125.88 | 9/16 EHS | A1 | T2 | 21 | 3.13 | 15 |
| | | 9/16 EHS | A1b | T2 | 21 | 3.14 | 15 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.9 | 19 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.06 | 15 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.04 | 14 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.91 | 19 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.06 | 15 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.08 | 15 |
| | | 9/16 EHS | A1a | 84b | 21 | 4.01 | 19 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 4.85 | 14 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 4.87 | 14 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 7.14 | 20 |
| **1.0D + 1.0W Service 90°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.1 | 17 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 1.55 | 12 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.63 | 21 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 2.93 | 14 |
| | | 9/16 EHS | A1 | T2 | 21 | 3.42 | 16 |
| | | 9/16 EHS | A1b | T2a | 21 | 2.9 | 14 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.84 | 18 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.33 | 16 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.83 | 18 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.4 | 16 |
| | | 9/16 EHS | A1b | 84a | 21 | 2.83 | 13 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.92 | 19 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 5.61 | 16 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 4.28 | 12 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 6.9 | 20 |
| **1.0D + 1.0W Service 120°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.42 | 19 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 1.48 | 12 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.41 | 19 |
| | 125.88 | 9/16 EHS | A1 | T2 | 21 | 3.7 | 18 |
| | | 9/16 EHS | A1b | T2 | 21 | 2.85 | 14 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.68 | 18 |
| | | 9/16 EHS | A1b | T2a | 21 | 2.86 | 14 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.62 | 17 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.63 | 17 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.72 | 18 |
| | | 9/16 EHS | A1b | 84a | 21 | 2.74 | 13 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.7 | 18 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 6.36 | 18 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 4.05 | 12 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 6.33 | 18 |
| **1.0D + 1.0W Service 180°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.73 | 22 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 1.78 | 14 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 1.77 | 14 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 3.05 | 15 |
| | | 9/16 EHS | A1 | T2 | 21 | 3.92 | 19 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.11 | 15 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.14 | 15 |

DETAILED CABLE FORCES

| Load Case | Elevation (ft) | Cable | Anchor Node | Tower Node | Available Tension (kip) | Applied Tension (kip) | Use (%) |
|---|---|---|---|---|---|---|---|
| | | 9/16 EHS | A1 | T2b | 21 | 3.92 | 19 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.03 | 14 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 4.03 | 19 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.07 | 15 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.04 | 14 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 7.16 | 20 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 4.86 | 14 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 4.82 | 14 |
| **1.0D + 1.0W Service 210°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.64 | 21 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.11 | 17 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 1.54 | 12 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 3.34 | 16 |
| | | 9/16 EHS | A1 | T2 | 21 | 3.84 | 18 |
| | | 9/16 EHS | A1a | T2a | 21 | 2.9 | 14 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.44 | 16 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.86 | 18 |
| | | 9/16 EHS | A1a | T2b | 21 | 2.87 | 14 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.94 | 19 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.41 | 16 |
| | | 9/16 EHS | A1a | 84b | 21 | 2.8 | 13 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 6.92 | 20 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 5.63 | 16 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 4.23 | 12 |
| **1.0D + 1.0W Service 240°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 2.42 | 19 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.43 | 19 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 1.46 | 12 |
| | 125.88 | 9/16 EHS | A1b | T2 | 21 | 3.65 | 17 |
| | | 9/16 EHS | A1 | T2 | 21 | 3.63 | 17 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.72 | 18 |
| | | 9/16 EHS | A1a | T2a | 21 | 2.81 | 13 |
| | | 9/16 EHS | A1a | T2b | 21 | 2.82 | 13 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.7 | 18 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.72 | 18 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.74 | 18 |
| | | 9/16 EHS | A1a | 84b | 21 | 2.7 | 13 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 6.35 | 18 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 6.38 | 18 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 4 | 11 |
| **1.0D + 1.0W Service 300°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 1.77 | 14 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.74 | 22 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 1.77 | 14 |
| | 125.88 | 9/16 EHS | A1 | T2 | 21 | 3.04 | 14 |
| | | 9/16 EHS | A1b | T2 | 21 | 3.94 | 19 |
| | | 9/16 EHS | A1b | T2a | 21 | 3.94 | 19 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.02 | 14 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.11 | 15 |
| | | 9/16 EHS | A1 | T2b | 21 | 3.12 | 15 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 3.06 | 15 |
| | | 9/16 EHS | A1b | 84a | 21 | 4.04 | 19 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.04 | 14 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 4.83 | 14 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 7.19 | 21 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 4.81 | 14 |
| **1.0D + 1.0W Service 330°** | 59.63 | 7/16 EHS | A1 | 30 | 12.48 | 1.54 | 12 |
| | | 7/16 EHS | A1b | 30a | 12.48 | 2.65 | 21 |
| | | 7/16 EHS | A1a | 30b | 12.48 | 2.09 | 17 |
| | 125.88 | 9/16 EHS | A1 | T2 | 21 | 2.88 | 14 |
| | | 9/16 EHS | A1b | T2 | 21 | 3.88 | 18 |
| | | 9/16 EHS | A1a | T2a | 21 | 3.31 | 16 |

DETAILED CABLE FORCES

| Load Case | Elevation (ft) | Cable | Anchor Node | Tower Node | Available Tension (kip) | Applied Tension (kip) | Use (%) |
|---|---|---|---|---|---|---|---|
| | | 9/16 EHS | A1b | T2a | 21 | 3.86 | 18 |
| | | 9/16 EHS | A1a | T2b | 21 | 3.4 | 16 |
| | | 9/16 EHS | A1 | T2b | 21 | 2.92 | 14 |
| | 179.63 | 9/16 EHS | A1 | 84 | 21 | 2.81 | 13 |
| | | 9/16 EHS | A1b | 84a | 21 | 3.95 | 19 |
| | | 9/16 EHS | A1a | 84b | 21 | 3.38 | 16 |
| | 232.13 | 3/4 EHS | A1 | 110 | 34.98 | 4.25 | 12 |
| | | 3/4 EHS | A1b | 110a | 34.98 | 6.95 | 20 |
| | | 3/4 EHS | A1a | 110b | 34.98 | 5.58 | 16 |

## MAXIMUM CABLE FORCES SUMMARY

| Load Case | Elevation (ft) | Cable | Anchor Node | Tower Node | Available Tension (kip) | Applied Tension (kip) | Use (%) |
|---|---|---|---|---|---|---|---|
| **1.2D + 1.0W 60°** | 59.63 | 7/16 EHS | A1a | 30b | 12.48 | 4.62 | 37 |
| **1.2D + 1.0W 60°** | 125.88 | 9/16 EHS | A1a | T2a | 21.00 | 5.89 | 28 |
| **1.2D + 1.0W 60°** | 179.63 | 9/16 EHS | A1a | 84b | 21.00 | 6.48 | 31 |
| **1.2D + 1.0W 60°** | 232.13 | 3/4 EHS | A1a | 110b | 34.98 | 12.66 | 36 |

## MAXIMUM TORQUE ARM STRESS SUMMARY

| Load Case | Elevation (ft) | Member | Type | Compression (%) | Tension (%) |
|---|---|---|---|---|---|
| **1.2D + 1.0W Normal** | 59.60 | PL 3" x 0.625" | Horiz | 0 | 3 |
| **1.2D + 1.0W 60°** | 125.90 | 5X3.5X0.375 | Lower Kicker | 13 | 0 |
| **1.2D + 1.0W 60°** | 125.90 | 5X3.5X0.3125 | Torque Arm | 0 | 15 |
| **1.2D + 1.0W Normal** | 179.60 | PL 3" x 0.625" | Horiz | 0 | 4 |
| **1.2D + 1.0W Normal** | 232.10 | PL 3" x 0.625" | Horiz | 0 | 5 |

DEFLECTIONS AND ROTATIONS

| Load Case | Elevation (ft) | Deflection (ft) | Twist (deg) | Sway (deg) | Resultant (deg) |
|---|---|---|---|---|---|
| 1.0D + 1.0W Service 330° 60 mph Wind with No Ice | 31.37 | 0.0445 | -0.0235 | 0.0536 | 0.0586 |
| 1.0D + 1.0W Service 330° 60 mph Wind with No Ice | 40.00 | 0.0514 | -0.0136 | 0.0263 | 0.0296 |
| 1.0D + 1.0W Service 330° 60 mph Wind with No Ice | 48.63 | 0.0544 | -0.0079 | 0.0147 | 0.0167 |
| 1.0D + 1.0W Service 330° 60 mph Wind with No Ice | 56.88 | 0.0559 | -0.0044 | 0.0092 | 0.0102 |
| 1.0D + 1.0W Service 330° 60 mph Wind with No Ice | 125.88 | 0.0314 | 0.0000 | 0.0243 | 0.0243 |
| 1.0D + 1.0W Service 330° 60 mph Wind with No Ice | 243.13 | 0.0856 | 0.0000 | 0.0606 | 0.0606 |
| 1.0D + 1.0W Service 300° 60 mph Wind with No Ice | 31.37 | 0.0471 | -0.0306 | 0.0567 | 0.0644 |
| 1.0D + 1.0W Service 300° 60 mph Wind with No Ice | 40.00 | 0.0547 | -0.0188 | 0.0287 | 0.0343 |
| 1.0D + 1.0W Service 300° 60 mph Wind with No Ice | 48.63 | 0.0579 | -0.0116 | 0.0172 | 0.0207 |
| 1.0D + 1.0W Service 300° 60 mph Wind with No Ice | 56.88 | 0.06 | -0.0068 | 0.0085 | 0.0109 |
| 1.0D + 1.0W Service 300° 60 mph Wind with No Ice | 125.88 | 0.0372 | 0.0000 | 0.0207 | 0.0207 |
| 1.0D + 1.0W Service 300° 60 mph Wind with No Ice | 243.13 | 0.1026 | 0.0000 | 0.0660 | 0.066 |
| 1.0D + 1.0W Service 240° 60 mph Wind with No Ice | 31.37 | 0.0454 | -0.0306 | 0.0533 | 0.0614 |
| 1.0D + 1.0W Service 240° 60 mph Wind with No Ice | 40.00 | 0.0525 | -0.0188 | 0.0270 | 0.0329 |
| 1.0D + 1.0W Service 240° 60 mph Wind with No Ice | 48.63 | 0.0551 | -0.0116 | 0.0132 | 0.0176 |
| 1.0D + 1.0W Service 240° 60 mph Wind with No Ice | 56.88 | 0.0566 | -0.0068 | 0.0098 | 0.012 |
| 1.0D + 1.0W Service 240° 60 mph Wind with No Ice | 125.88 | 0.0264 | 0.0000 | 0.0274 | 0.0274 |
| 1.0D + 1.0W Service 240° 60 mph Wind with No Ice | 243.13 | 0.0672 | 0.0000 | 0.0535 | 0.0535 |
| 1.0D + 1.0W Service 210° 60 mph Wind with No Ice | 31.37 | 0.0442 | -0.0234 | 0.0532 | 0.0581 |
| 1.0D + 1.0W Service 210° 60 mph Wind with No Ice | 40.00 | 0.0511 | -0.0135 | 0.0259 | 0.0292 |
| 1.0D + 1.0W Service 210° 60 mph Wind with No Ice | 48.63 | 0.054 | -0.0079 | 0.0142 | 0.0162 |
| 1.0D + 1.0W Service 210° 60 mph Wind with No Ice | 56.88 | 0.0555 | -0.0044 | 0.0086 | 0.0097 |
| 1.0D + 1.0W Service 210° 60 mph Wind with No Ice | 125.88 | 0.0304 | 0.0000 | 0.0244 | 0.0244 |
| 1.0D + 1.0W Service 210° 60 mph Wind with No Ice | 243.13 | 0.0844 | 0.0000 | 0.0599 | 0.0599 |
| 1.0D + 1.0W Service 180° 60 mph Wind with No Ice | 31.37 | 0.0465 | -0.0304 | 0.0557 | 0.0634 |
| 1.0D + 1.0W Service 180° 60 mph Wind with No Ice | 40.00 | 0.054 | -0.0187 | 0.0277 | 0.0334 |
| 1.0D + 1.0W Service 180° 60 mph Wind with No Ice | 48.63 | 0.057 | -0.0115 | 0.0164 | 0.02 |
| 1.0D + 1.0W Service 180° 60 mph Wind with No Ice | 56.88 | 0.059 | -0.0068 | 0.0085 | 0.0108 |
| 1.0D + 1.0W Service 180° 60 mph Wind with No Ice | 125.88 | 0.0358 | 0.0000 | 0.0204 | 0.0204 |
| 1.0D + 1.0W Service 180° 60 mph Wind with No Ice | 243.13 | 0.1003 | 0.0000 | 0.0657 | 0.0657 |
| 1.0D + 1.0W Service 120° 60 mph Wind with No Ice | 31.37 | 0.0441 | -0.0260 | 0.0514 | 0.0576 |
| 1.0D + 1.0W Service 120° 60 mph Wind with No Ice | 40.00 | 0.051 | -0.0150 | 0.0253 | 0.0294 |
| 1.0D + 1.0W Service 120° 60 mph Wind with No Ice | 48.63 | 0.0534 | -0.0087 | 0.0116 | 0.0146 |
| 1.0D + 1.0W Service 120° 60 mph Wind with No Ice | 56.88 | 0.0547 | -0.0048 | 0.0110 | 0.012 |
| 1.0D + 1.0W Service 120° 60 mph Wind with No Ice | 125.88 | 0.0238 | 0.0000 | 0.0267 | 0.0267 |
| 1.0D + 1.0W Service 120° 60 mph Wind with No Ice | 243.13 | 0.0647 | 0.0000 | 0.0546 | 0.0546 |
| 1.0D + 1.0W Service 90° 60 mph Wind with No Ice | 31.37 | 0.0435 | -0.0234 | 0.0520 | 0.057 |
| 1.0D + 1.0W Service 90° 60 mph Wind with No Ice | 40.00 | 0.0502 | -0.0135 | 0.0247 | 0.0281 |
| 1.0D + 1.0W Service 90° 60 mph Wind with No Ice | 48.63 | 0.053 | -0.0079 | 0.0132 | 0.0154 |
| 1.0D + 1.0W Service 90° 60 mph Wind with No Ice | 56.88 | 0.0543 | -0.0044 | 0.0097 | 0.0107 |
| 1.0D + 1.0W Service 90° 60 mph Wind with No Ice | 125.88 | 0.0287 | 0.0000 | 0.0240 | 0.024 |
| 1.0D + 1.0W Service 90° 60 mph Wind with No Ice | 243.13 | 0.0824 | 0.0000 | 0.0608 | 0.0608 |
| 1.0D + 1.0W Service 60° 60 mph Wind with No Ice | 31.37 | 0.046 | -0.0305 | 0.0548 | 0.0626 |
| 1.0D + 1.0W Service 60° 60 mph Wind with No Ice | 40.00 | 0.0533 | -0.0187 | 0.0267 | 0.0327 |
| 1.0D + 1.0W Service 60° 60 mph Wind with No Ice | 48.63 | 0.0562 | -0.0115 | 0.0155 | 0.0193 |
| 1.0D + 1.0W Service 60° 60 mph Wind with No Ice | 56.88 | 0.0581 | -0.0068 | 0.0076 | 0.0101 |
| 1.0D + 1.0W Service 60° 60 mph Wind with No Ice | 125.88 | 0.0344 | 0.0000 | 0.0203 | 0.0203 |
| 1.0D + 1.0W Service 60° 60 mph Wind with No Ice | 243.13 | 0.098 | 0.0000 | 0.0660 | 0.066 |
| 1.0D + 1.0W Service Normal 60 mph Wind with No Ice | 31.37 | 0.0449 | -0.0306 | 0.0526 | 0.0609 |
| 1.0D + 1.0W Service Normal 60 mph Wind with No Ice | 40.00 | 0.052 | -0.0189 | 0.0262 | 0.0323 |
| 1.0D + 1.0W Service Normal 60 mph Wind with No Ice | 48.63 | 0.0545 | -0.0116 | 0.0126 | 0.0171 |
| 1.0D + 1.0W Service Normal 60 mph Wind with No Ice | 56.88 | 0.0559 | -0.0068 | 0.0100 | 0.0121 |
| 1.0D + 1.0W Service Normal 60 mph Wind with No Ice | 125.88 | 0.0253 | 0.0000 | 0.0272 | 0.0272 |
| 1.0D + 1.0W Service Normal 60 mph Wind with No Ice | 243.13 | 0.0665 | 0.0000 | 0.0543 | 0.0543 |
| 1.2D + 1.0Ev + 1.0Eh 330° Seismic | 31.37 | 0.0041 | -0.0140 | 0.0043 | 0.0146 |
| 1.2D + 1.0Ev + 1.0Eh 330° Seismic | 40.00 | 0.0054 | -0.0062 | 0.0052 | 0.0081 |
| 1.2D + 1.0Ev + 1.0Eh 330° Seismic | 48.63 | 0.0052 | -0.0029 | 0.0031 | 0.0043 |
| 1.2D + 1.0Ev + 1.0Eh 330° Seismic | 56.88 | 0.0063 | -0.0013 | 0.0091 | 0.0092 |
| 1.2D + 1.0Ev + 1.0Eh 330° Seismic | 125.88 | 0.006 | 0.0000 | 0.0046 | 0.0046 |

DEFLECTIONS AND ROTATIONS

| Load Case | Elevation (ft) | Deflection (ft) | Twist (deg) | Sway (deg) | Resultant (deg) |
|---|---|---|---|---|---|
| 1.2D + 1.0Ev + 1.0Eh 330° Seismic | 243.13 | 0.04 | 0.0000 | 0.0282 | 0.0282 |
| 1.2D + 1.0Ev + 1.0Eh 300° Seismic | 31.37 | 0.0045 | -0.0140 | 0.0046 | 0.0147 |
| 1.2D + 1.0Ev + 1.0Eh 300° Seismic | 40.00 | 0.006 | -0.0062 | 0.0057 | 0.0085 |
| 1.2D + 1.0Ev + 1.0Eh 300° Seismic | 48.63 | 0.0058 | -0.0029 | 0.0034 | 0.0045 |
| 1.2D + 1.0Ev + 1.0Eh 300° Seismic | 56.88 | 0.007 | -0.0013 | 0.0096 | 0.0097 |
| 1.2D + 1.0Ev + 1.0Eh 300° Seismic | 125.88 | 0.0064 | 0.0000 | 0.0042 | 0.0042 |
| 1.2D + 1.0Ev + 1.0Eh 300° Seismic | 243.13 | 0.0403 | 0.0000 | 0.0279 | 0.0279 |
| 1.2D + 1.0Ev + 1.0Eh 240° Seismic | 31.37 | 0.0045 | -0.0140 | 0.0046 | 0.0147 |
| 1.2D + 1.0Ev + 1.0Eh 240° Seismic | 40.00 | 0.006 | -0.0062 | 0.0056 | 0.0084 |
| 1.2D + 1.0Ev + 1.0Eh 240° Seismic | 48.63 | 0.0058 | -0.0029 | 0.0034 | 0.0045 |
| 1.2D + 1.0Ev + 1.0Eh 240° Seismic | 56.88 | 0.007 | -0.0013 | 0.0095 | 0.0096 |
| 1.2D + 1.0Ev + 1.0Eh 240° Seismic | 125.88 | 0.0064 | 0.0000 | 0.0046 | 0.0046 |
| 1.2D + 1.0Ev + 1.0Eh 240° Seismic | 243.13 | 0.0406 | 0.0000 | 0.0283 | 0.0283 |
| 1.2D + 1.0Ev + 1.0Eh 210° Seismic | 31.37 | 0.004 | -0.0140 | 0.0043 | 0.0146 |
| 1.2D + 1.0Ev + 1.0Eh 210° Seismic | 40.00 | 0.0054 | -0.0062 | 0.0050 | 0.008 |
| 1.2D + 1.0Ev + 1.0Eh 210° Seismic | 48.63 | 0.0052 | -0.0029 | 0.0031 | 0.0043 |
| 1.2D + 1.0Ev + 1.0Eh 210° Seismic | 56.88 | 0.0063 | -0.0013 | 0.0089 | 0.009 |
| 1.2D + 1.0Ev + 1.0Eh 210° Seismic | 125.88 | 0.006 | 0.0000 | 0.0046 | 0.0046 |
| 1.2D + 1.0Ev + 1.0Eh 210° Seismic | 243.13 | 0.0397 | 0.0000 | 0.0280 | 0.028 |
| 1.2D + 1.0Ev + 1.0Eh 180° Seismic | 31.37 | 0.004 | -0.0140 | 0.0039 | 0.0145 |
| 1.2D + 1.0Ev + 1.0Eh 180° Seismic | 40.00 | 0.0054 | -0.0062 | 0.0049 | 0.0079 |
| 1.2D + 1.0Ev + 1.0Eh 180° Seismic | 48.63 | 0.0051 | -0.0029 | 0.0028 | 0.004 |
| 1.2D + 1.0Ev + 1.0Eh 180° Seismic | 56.88 | 0.0061 | -0.0013 | 0.0088 | 0.0089 |
| 1.2D + 1.0Ev + 1.0Eh 180° Seismic | 125.88 | 0.0053 | 0.0000 | 0.0044 | 0.0044 |
| 1.2D + 1.0Ev + 1.0Eh 180° Seismic | 243.13 | 0.0386 | 0.0000 | 0.0277 | 0.0277 |
| 1.2D + 1.0Ev + 1.0Eh 120° Seismic | 31.37 | 0.0038 | -0.0140 | 0.0033 | 0.0144 |
| 1.2D + 1.0Ev + 1.0Eh 120° Seismic | 40.00 | 0.0051 | -0.0062 | 0.0043 | 0.0076 |
| 1.2D + 1.0Ev + 1.0Eh 120° Seismic | 48.63 | 0.0047 | -0.0029 | 0.0022 | 0.0036 |
| 1.2D + 1.0Ev + 1.0Eh 120° Seismic | 56.88 | 0.0057 | -0.0013 | 0.0086 | 0.0087 |
| 1.2D + 1.0Ev + 1.0Eh 120° Seismic | 125.88 | 0.0042 | 0.0000 | 0.0051 | 0.0051 |
| 1.2D + 1.0Ev + 1.0Eh 120° Seismic | 243.13 | 0.038 | 0.0000 | 0.0284 | 0.0284 |
| 1.2D + 1.0Ev + 1.0Eh 90° Seismic | 31.37 | 0.0033 | -0.0140 | 0.0030 | 0.0143 |
| 1.2D + 1.0Ev + 1.0Eh 90° Seismic | 40.00 | 0.0044 | -0.0062 | 0.0038 | 0.0073 |
| 1.2D + 1.0Ev + 1.0Eh 90° Seismic | 48.63 | 0.004 | -0.0029 | 0.0019 | 0.0035 |
| 1.2D + 1.0Ev + 1.0Eh 90° Seismic | 56.88 | 0.0049 | -0.0013 | 0.0080 | 0.0081 |
| 1.2D + 1.0Ev + 1.0Eh 90° Seismic | 125.88 | 0.0039 | 0.0000 | 0.0050 | 0.005 |
| 1.2D + 1.0Ev + 1.0Eh 90° Seismic | 243.13 | 0.0372 | 0.0000 | 0.0280 | 0.028 |
| 1.2D + 1.0Ev + 1.0Eh 60° Seismic | 31.37 | 0.0038 | -0.0140 | 0.0032 | 0.0144 |
| 1.2D + 1.0Ev + 1.0Eh 60° Seismic | 40.00 | 0.0051 | -0.0062 | 0.0043 | 0.0076 |
| 1.2D + 1.0Ev + 1.0Eh 60° Seismic | 48.63 | 0.0047 | -0.0029 | 0.0022 | 0.0036 |
| 1.2D + 1.0Ev + 1.0Eh 60° Seismic | 56.88 | 0.0057 | -0.0013 | 0.0086 | 0.0086 |
| 1.2D + 1.0Ev + 1.0Eh 60° Seismic | 125.88 | 0.0041 | 0.0000 | 0.0046 | 0.0046 |
| 1.2D + 1.0Ev + 1.0Eh 60° Seismic | 243.13 | 0.0369 | 0.0000 | 0.0276 | 0.0276 |
| 1.2D + 1.0Ev + 1.0Eh Normal Seismic | 31.37 | 0.004 | -0.0140 | 0.0040 | 0.0145 |
| 1.2D + 1.0Ev + 1.0Eh Normal Seismic | 40.00 | 0.0054 | -0.0062 | 0.0047 | 0.0078 |
| 1.2D + 1.0Ev + 1.0Eh Normal Seismic | 48.63 | 0.0051 | -0.0029 | 0.0028 | 0.0041 |
| 1.2D + 1.0Ev + 1.0Eh Normal Seismic | 56.88 | 0.0061 | -0.0013 | 0.0086 | 0.0087 |
| 1.2D + 1.0Ev + 1.0Eh Normal Seismic | 125.88 | 0.0055 | 0.0000 | 0.0048 | 0.0048 |
| 1.2D + 1.0Ev + 1.0Eh Normal Seismic | 243.13 | 0.0393 | 0.0000 | 0.0283 | 0.0283 |
| 1.2D + 1.0Di + 1.0Wi 330° 50 mph Wind with 0.25" Radial Ice | 31.37 | 0.0411 | -0.0340 | 0.0501 | 0.0606 |
| 1.2D + 1.0Di + 1.0Wi 330° 50 mph Wind with 0.25" Radial Ice | 40.00 | 0.0478 | -0.0209 | 0.0268 | 0.0339 |
| 1.2D + 1.0Di + 1.0Wi 330° 50 mph Wind with 0.25" Radial Ice | 48.63 | 0.0508 | -0.0129 | 0.0169 | 0.0212 |
| 1.2D + 1.0Di + 1.0Wi 330° 50 mph Wind with 0.25" Radial Ice | 56.88 | 0.0528 | -0.0076 | 0.0134 | 0.0154 |
| 1.2D + 1.0Di + 1.0Wi 330° 50 mph Wind with 0.25" Radial Ice | 125.88 | 0.0323 | 0.0000 | 0.0227 | 0.0227 |
| 1.2D + 1.0Di + 1.0Wi 330° 50 mph Wind with 0.25" Radial Ice | 243.13 | 0.0704 | 0.0000 | 0.0369 | 0.0369 |
| 1.2D + 1.0Di + 1.0Wi 300° 50 mph Wind with 0.25" Radial Ice | 31.37 | 0.0445 | -0.0439 | 0.0542 | 0.0697 |
| 1.2D + 1.0Di + 1.0Wi 300° 50 mph Wind with 0.25" Radial Ice | 40.00 | 0.0522 | -0.0285 | 0.0304 | 0.0417 |
| 1.2D + 1.0Di + 1.0Wi 300° 50 mph Wind with 0.25" Radial Ice | 48.63 | 0.0554 | -0.0184 | 0.0199 | 0.0271 |
| 1.2D + 1.0Di + 1.0Wi 300° 50 mph Wind with 0.25" Radial Ice | 56.88 | 0.0582 | -0.0114 | 0.0142 | 0.0182 |

DEFLECTIONS AND ROTATIONS

| Load Case | Elevation (ft) | Deflection (ft) | Twist (deg) | Sway (deg) | Resultant (deg) |
|---|---|---|---|---|---|
| 1.2D + 1.0Di + 1.0Wi 300° 50 mph Wind with 0.25" Radial Ice | 125.88 | 0.0392 | -0.0001 | 0.0180 | 0.018 |
| 1.2D + 1.0Di + 1.0Wi 300° 50 mph Wind with 0.25" Radial Ice | 243.13 | 0.0878 | 0.0000 | 0.0410 | 0.041 |
| 1.2D + 1.0Di + 1.0Wi 240° 50 mph Wind with 0.25" Radial Ice | 31.37 | 0.0417 | -0.0440 | 0.0486 | 0.0655 |
| 1.2D + 1.0Di + 1.0Wi 240° 50 mph Wind with 0.25" Radial Ice | 40.00 | 0.0486 | -0.0285 | 0.0263 | 0.0388 |
| 1.2D + 1.0Di + 1.0Wi 240° 50 mph Wind with 0.25" Radial Ice | 48.63 | 0.051 | -0.0185 | 0.0143 | 0.0233 |
| 1.2D + 1.0Di + 1.0Wi 240° 50 mph Wind with 0.25" Radial Ice | 56.88 | 0.053 | -0.0114 | 0.0098 | 0.0151 |
| 1.2D + 1.0Di + 1.0Wi 240° 50 mph Wind with 0.25" Radial Ice | 125.88 | 0.0249 | -0.0001 | 0.0266 | 0.0266 |
| 1.2D + 1.0Di + 1.0Wi 240° 50 mph Wind with 0.25" Radial Ice | 243.13 | 0.0484 | 0.0000 | 0.0305 | 0.0305 |
| 1.2D + 1.0Di + 1.0Wi 210° 50 mph Wind with 0.25" Radial Ice | 31.37 | 0.0409 | -0.0339 | 0.0496 | 0.0601 |
| 1.2D + 1.0Di + 1.0Wi 210° 50 mph Wind with 0.25" Radial Ice | 40.00 | 0.0476 | -0.0209 | 0.0262 | 0.0335 |
| 1.2D + 1.0Di + 1.0Wi 210° 50 mph Wind with 0.25" Radial Ice | 48.63 | 0.0505 | -0.0128 | 0.0161 | 0.0206 |
| 1.2D + 1.0Di + 1.0Wi 210° 50 mph Wind with 0.25" Radial Ice | 56.88 | 0.0523 | -0.0075 | 0.0119 | 0.0141 |
| 1.2D + 1.0Di + 1.0Wi 210° 50 mph Wind with 0.25" Radial Ice | 125.88 | 0.031 | 0.0000 | 0.0228 | 0.0228 |
| 1.2D + 1.0Di + 1.0Wi 210° 50 mph Wind with 0.25" Radial Ice | 243.13 | 0.0688 | 0.0000 | 0.0361 | 0.0361 |
| 1.2D + 1.0Di + 1.0Wi 180° 50 mph Wind with 0.25" Radial Ice | 31.37 | 0.0438 | -0.0490 | 0.0530 | 0.0722 |
| 1.2D + 1.0Di + 1.0Wi 180° 50 mph Wind with 0.25" Radial Ice | 40.00 | 0.0513 | -0.0333 | 0.0291 | 0.0442 |
| 1.2D + 1.0Di + 1.0Wi 180° 50 mph Wind with 0.25" Radial Ice | 48.63 | 0.0544 | -0.0225 | 0.0189 | 0.0294 |
| 1.2D + 1.0Di + 1.0Wi 180° 50 mph Wind with 0.25" Radial Ice | 56.88 | 0.057 | -0.0147 | 0.0130 | 0.0196 |
| 1.2D + 1.0Di + 1.0Wi 180° 50 mph Wind with 0.25" Radial Ice | 125.88 | 0.0376 | -0.0002 | 0.0176 | 0.0176 |
| 1.2D + 1.0Di + 1.0Wi 180° 50 mph Wind with 0.25" Radial Ice | 243.13 | 0.0859 | 0.0000 | 0.0410 | 0.041 |
| 1.2D + 1.0Di + 1.0Wi 120° 50 mph Wind with 0.25" Radial Ice | 31.37 | 0.0403 | -0.0382 | 0.0463 | 0.06 |
| 1.2D + 1.0Di + 1.0Wi 120° 50 mph Wind with 0.25" Radial Ice | 40.00 | 0.0468 | -0.0235 | 0.0242 | 0.0337 |
| 1.2D + 1.0Di + 1.0Wi 120° 50 mph Wind with 0.25" Radial Ice | 48.63 | 0.0489 | -0.0145 | 0.0123 | 0.019 |
| 1.2D + 1.0Di + 1.0Wi 120° 50 mph Wind with 0.25" Radial Ice | 56.88 | 0.0506 | -0.0085 | 0.0112 | 0.014 |
| 1.2D + 1.0Di + 1.0Wi 120° 50 mph Wind with 0.25" Radial Ice | 125.88 | 0.0216 | 0.0000 | 0.0258 | 0.0258 |
| 1.2D + 1.0Di + 1.0Wi 120° 50 mph Wind with 0.25" Radial Ice | 243.13 | 0.0457 | 0.0000 | 0.0323 | 0.0323 |
| 1.2D + 1.0Di + 1.0Wi 90° 50 mph Wind with 0.25" Radial Ice | 31.37 | 0.0399 | -0.0339 | 0.0479 | 0.0587 |
| 1.2D + 1.0Di + 1.0Wi 90° 50 mph Wind with 0.25" Radial Ice | 40.00 | 0.0463 | -0.0208 | 0.0245 | 0.0322 |
| 1.2D + 1.0Di + 1.0Wi 90° 50 mph Wind with 0.25" Radial Ice | 48.63 | 0.049 | -0.0128 | 0.0148 | 0.0196 |
| 1.2D + 1.0Di + 1.0Wi 90° 50 mph Wind with 0.25" Radial Ice | 56.88 | 0.0506 | -0.0075 | 0.0119 | 0.0141 |
| 1.2D + 1.0Di + 1.0Wi 90° 50 mph Wind with 0.25" Radial Ice | 125.88 | 0.0288 | 0.0000 | 0.0222 | 0.0222 |
| 1.2D + 1.0Di + 1.0Wi 90° 50 mph Wind with 0.25" Radial Ice | 243.13 | 0.0668 | 0.0000 | 0.0377 | 0.0377 |
| 1.2D + 1.0Di + 1.0Wi 60° 50 mph Wind with 0.25" Radial Ice | 31.37 | 0.0428 | -0.0382 | 0.0514 | 0.064 |
| 1.2D + 1.0Di + 1.0Wi 60° 50 mph Wind with 0.25" Radial Ice | 40.00 | 0.05 | -0.0234 | 0.0279 | 0.0364 |
| 1.2D + 1.0Di + 1.0Wi 60° 50 mph Wind with 0.25" Radial Ice | 48.63 | 0.0529 | -0.0144 | 0.0176 | 0.0227 |
| 1.2D + 1.0Di + 1.0Wi 60° 50 mph Wind with 0.25" Radial Ice | 56.88 | 0.0554 | -0.0084 | 0.0124 | 0.015 |
| 1.2D + 1.0Di + 1.0Wi 60° 50 mph Wind with 0.25" Radial Ice | 125.88 | 0.0353 | 0.0000 | 0.0176 | 0.0176 |
| 1.2D + 1.0Di + 1.0Wi 60° 50 mph Wind with 0.25" Radial Ice | 243.13 | 0.0827 | 0.0000 | 0.0421 | 0.0421 |
| 1.2D + 1.0Di + 1.0Wi Normal 50 mph Wind with 0.25" Radial Ice | 31.37 | 0.0411 | -0.0440 | 0.0476 | 0.0648 |
| 1.2D + 1.0Di + 1.0Wi Normal 50 mph Wind with 0.25" Radial Ice | 40.00 | 0.0478 | -0.0285 | 0.0252 | 0.0381 |
| 1.2D + 1.0Di + 1.0Wi Normal 50 mph Wind with 0.25" Radial Ice | 48.63 | 0.0501 | -0.0185 | 0.0135 | 0.0228 |
| 1.2D + 1.0Di + 1.0Wi Normal 50 mph Wind with 0.25" Radial Ice | 56.88 | 0.0519 | -0.0114 | 0.0098 | 0.0151 |
| 1.2D + 1.0Di + 1.0Wi Normal 50 mph Wind with 0.25" Radial Ice | 125.88 | 0.0234 | -0.0001 | 0.0263 | 0.0263 |
| 1.2D + 1.0Di + 1.0Wi Normal 50 mph Wind with 0.25" Radial Ice | 243.13 | 0.0474 | 0.0000 | 0.0320 | 0.032 |
| 1.2D + 1.0W 330° 107 mph Wind with No Ice | 31.37 | 0.1513 | -0.0406 | 0.1887 | 0.1929 |
| 1.2D + 1.0W 330° 107 mph Wind with No Ice | 40.00 | 0.1748 | -0.0317 | 0.0991 | 0.1039 |
| 1.2D + 1.0W 330° 107 mph Wind with No Ice | 48.63 | 0.1872 | -0.0244 | 0.0602 | 0.0648 |
| 1.2D + 1.0W 330° 107 mph Wind with No Ice | 56.88 | 0.1925 | -0.0185 | 0.0292 | 0.0346 |
| 1.2D + 1.0W 330° 107 mph Wind with No Ice | 125.88 | 0.1301 | -0.0010 | 0.0535 | 0.0535 |
| 1.2D + 1.0W 330° 107 mph Wind with No Ice | 243.13 | 0.4423 | 0.0001 | 0.2910 | 0.291 |
| 1.2D + 1.0W 300° 107 mph Wind with No Ice | 31.37 | 0.1634 | -0.1074 | 0.2073 | 0.2332 |
| 1.2D + 1.0W 300° 107 mph Wind with No Ice | 40.00 | 0.1901 | -0.0992 | 0.1175 | 0.1532 |
| 1.2D + 1.0W 300° 107 mph Wind with No Ice | 48.63 | 0.2049 | -0.0913 | 0.0761 | 0.1186 |
| 1.2D + 1.0W 300° 107 mph Wind with No Ice | 56.88 | 0.2131 | -0.0840 | 0.0328 | 0.0902 |
| 1.2D + 1.0W 300° 107 mph Wind with No Ice | 125.88 | 0.1652 | -0.0375 | 0.0343 | 0.0506 |
| 1.2D + 1.0W 300° 107 mph Wind with No Ice | 243.13 | 0.48 | -0.0038 | 0.2704 | 0.2704 |
| 1.2D + 1.0W 240° 107 mph Wind with No Ice | 31.37 | 0.1521 | -0.0930 | 0.1829 | 0.2052 |
| 1.2D + 1.0W 240° 107 mph Wind with No Ice | 40.00 | 0.1749 | -0.0839 | 0.0942 | 0.1258 |
| 1.2D + 1.0W 240° 107 mph Wind with No Ice | 48.63 | 0.1851 | -0.0752 | 0.0431 | 0.0866 |

DEFLECTIONS AND ROTATIONS

| Load Case | Elevation (ft) | Deflection (ft) | Twist (deg) | Sway (deg) | Resultant (deg) |
|---|---|---|---|---|---|
| 1.2D + 1.0W 240° 107 mph Wind with No Ice | 56.88 | 0.1882 | -0.0673 | 0.0210 | 0.0702 |
| 1.2D + 1.0W 240° 107 mph Wind with No Ice | 125.88 | 0.0752 | -0.0219 | 0.0858 | 0.0885 |
| 1.2D + 1.0W 240° 107 mph Wind with No Ice | 243.13 | 0.3675 | -0.0008 | 0.2933 | 0.2933 |
| 1.2D + 1.0W 210° 107 mph Wind with No Ice | 31.37 | 0.1506 | -0.0413 | 0.1875 | 0.1919 |
| 1.2D + 1.0W 210° 107 mph Wind with No Ice | 40.00 | 0.174 | -0.0329 | 0.0977 | 0.1029 |
| 1.2D + 1.0W 210° 107 mph Wind with No Ice | 48.63 | 0.1862 | -0.0259 | 0.0586 | 0.064 |
| 1.2D + 1.0W 210° 107 mph Wind with No Ice | 56.88 | 0.1913 | -0.0201 | 0.0273 | 0.0339 |
| 1.2D + 1.0W 210° 107 mph Wind with No Ice | 125.88 | 0.1274 | -0.0014 | 0.0546 | 0.0547 |
| 1.2D + 1.0W 210° 107 mph Wind with No Ice | 243.13 | 0.4379 | 0.0001 | 0.2883 | 0.2883 |
| 1.2D + 1.0W 180° 107 mph Wind with No Ice | 31.37 | 0.162 | -0.1061 | 0.2052 | 0.2307 |
| 1.2D + 1.0W 180° 107 mph Wind with No Ice | 40.00 | 0.1884 | -0.0988 | 0.1155 | 0.1514 |
| 1.2D + 1.0W 180° 107 mph Wind with No Ice | 48.63 | 0.2029 | -0.0917 | 0.0744 | 0.1178 |
| 1.2D + 1.0W 180° 107 mph Wind with No Ice | 56.88 | 0.2109 | -0.0851 | 0.0312 | 0.0906 |
| 1.2D + 1.0W 180° 107 mph Wind with No Ice | 125.88 | 0.1624 | -0.0416 | 0.0343 | 0.0536 |
| 1.2D + 1.0W 180° 107 mph Wind with No Ice | 243.13 | 0.4737 | -0.0059 | 0.2686 | 0.2686 |
| 1.2D + 1.0W 120° 107 mph Wind with No Ice | 31.37 | 0.1502 | -0.0903 | 0.1800 | 0.2014 |
| 1.2D + 1.0W 120° 107 mph Wind with No Ice | 40.00 | 0.1726 | -0.0809 | 0.0914 | 0.1218 |
| 1.2D + 1.0W 120° 107 mph Wind with No Ice | 48.63 | 0.1825 | -0.0720 | 0.0413 | 0.0829 |
| 1.2D + 1.0W 120° 107 mph Wind with No Ice | 56.88 | 0.1854 | -0.0640 | 0.0222 | 0.0674 |
| 1.2D + 1.0W 120° 107 mph Wind with No Ice | 125.88 | 0.0738 | -0.0192 | 0.0826 | 0.0848 |
| 1.2D + 1.0W 120° 107 mph Wind with No Ice | 243.13 | 0.3722 | -0.0005 | 0.2966 | 0.2966 |
| 1.2D + 1.0W 90° 107 mph Wind with No Ice | 31.37 | 0.1494 | -0.0455 | 0.1855 | 0.1909 |
| 1.2D + 1.0W 90° 107 mph Wind with No Ice | 40.00 | 0.1724 | -0.0376 | 0.0958 | 0.1027 |
| 1.2D + 1.0W 90° 107 mph Wind with No Ice | 48.63 | 0.1844 | -0.0307 | 0.0574 | 0.0649 |
| 1.2D + 1.0W 90° 107 mph Wind with No Ice | 56.88 | 0.1893 | -0.0248 | 0.0272 | 0.0368 |
| 1.2D + 1.0W 90° 107 mph Wind with No Ice | 125.88 | 0.1255 | -0.0026 | 0.0527 | 0.0528 |
| 1.2D + 1.0W 90° 107 mph Wind with No Ice | 243.13 | 0.4365 | 0.0001 | 0.2895 | 0.2895 |
| 1.2D + 1.0W 60° 107 mph Wind with No Ice | 31.37 | 0.1608 | -0.1032 | 0.2032 | 0.2276 |
| 1.2D + 1.0W 60° 107 mph Wind with No Ice | 40.00 | 0.1869 | -0.0945 | 0.1134 | 0.1471 |
| 1.2D + 1.0W 60° 107 mph Wind with No Ice | 48.63 | 0.2012 | -0.0862 | 0.0727 | 0.1126 |
| 1.2D + 1.0W 60° 107 mph Wind with No Ice | 56.88 | 0.2089 | -0.0785 | 0.0299 | 0.084 |
| 1.2D + 1.0W 60° 107 mph Wind with No Ice | 125.88 | 0.1595 | -0.0315 | 0.0343 | 0.0463 |
| 1.2D + 1.0W 60° 107 mph Wind with No Ice | 243.13 | 0.4667 | -0.0022 | 0.2674 | 0.2674 |
| 1.2D + 1.0W Normal 107 mph Wind with No Ice | 31.37 | 0.1512 | -0.0991 | 0.1815 | 0.2068 |
| 1.2D + 1.0W Normal 107 mph Wind with No Ice | 40.00 | 0.1738 | -0.0912 | 0.0928 | 0.1297 |
| 1.2D + 1.0W Normal 107 mph Wind with No Ice | 48.63 | 0.1839 | -0.0836 | 0.0423 | 0.0936 |
| 1.2D + 1.0W Normal 107 mph Wind with No Ice | 56.88 | 0.1868 | -0.0766 | 0.0212 | 0.0791 |
| 1.2D + 1.0W Normal 107 mph Wind with No Ice | 125.88 | 0.0745 | -0.0325 | 0.0842 | 0.0903 |
| 1.2D + 1.0W Normal 107 mph Wind with No Ice | 243.13 | 0.3705 | -0.0028 | 0.2954 | 0.2955 |

DETAILED REACTIONS

| Load Case | Radius (ft) | Elevation (ft) | Azimuth (deg) | Node | FX* (kip) | FY* (kip) | FZ* (kip) |
|---|---|---|---|---|---|---|---|
| | | | | | *(-) Uplift and (+) Down | | |
| 1.2D + 1.0W Normal | 0.00 | 0.00 | | 1 | 0.00 | 64.13 | -1.81 |
| | 196.00 | -6.00 | 0 | A1 | 0.00 | -4.81 | 5.74 |
| | 196.00 | -4.00 | 240 | A1a | -17.38 | -16.12 | -10.97 |
| | 196.00 | -8.00 | 120 | A1b | 17.39 | -16.53 | -10.98 |
| 1.2D + 1.0W 60° | 0.00 | 0.00 | | 1 | -1.44 | 67.65 | -0.83 |
| | 196.00 | -6.00 | 0 | A1 | -0.81 | -10.05 | 12.09 |
| | 196.00 | -4.00 | 240 | A1a | -23.38 | -21.29 | -13.50 |
| | 196.00 | -8.00 | 120 | A1b | 10.06 | -10.17 | -6.75 |
| 1.2D + 1.0W 90° | 0.00 | 0.00 | | 1 | -1.71 | 66.08 | 0.04 |
| | 196.00 | -6.00 | 0 | A1 | -1.02 | -13.28 | 16.38 |
| | 196.00 | -4.00 | 240 | A1a | -21.84 | -19.67 | -12.17 |
| | 196.00 | -8.00 | 120 | A1b | 6.58 | -6.74 | -4.24 |
| 1.2D + 1.0W 120° | 0.00 | 0.00 | | 1 | -1.56 | 64.11 | 0.90 |
| | 196.00 | -6.00 | 0 | A1 | -0.81 | -16.38 | 20.59 |
| | 196.00 | -4.00 | 240 | A1a | -18.24 | -16.17 | -9.59 |
| | 196.00 | -8.00 | 120 | A1b | 5.00 | -4.92 | -2.89 |
| 1.2D + 1.0W 180° | 0.00 | 0.00 | | 1 | 0.00 | 67.70 | 1.67 |
| | 196.00 | -6.00 | 0 | A1 | 0.00 | -21.52 | 26.97 |
| | 196.00 | -4.00 | 240 | A1a | -10.85 | -9.89 | -5.33 |
| | 196.00 | -8.00 | 120 | A1b | 10.84 | -10.14 | -5.32 |
| 1.2D + 1.0W 210° | 0.00 | 0.00 | | 1 | 0.89 | 66.13 | 1.46 |
| | 196.00 | -6.00 | 0 | A1 | 0.38 | -19.85 | 24.93 |
| | 196.00 | -4.00 | 240 | A1a | -6.91 | -6.51 | -3.55 |
| | 196.00 | -8.00 | 120 | A1b | 14.62 | -13.37 | -7.26 |
| 1.2D + 1.0W 240° | 0.00 | 0.00 | | 1 | 1.57 | 64.15 | 0.91 |
| | 196.00 | -6.00 | 0 | A1 | 0.81 | -16.28 | 20.50 |
| | 196.00 | -4.00 | 240 | A1a | -4.94 | -4.71 | -2.85 |
| | 196.00 | -8.00 | 120 | A1b | 18.16 | -16.49 | -9.54 |
| 1.2D + 1.0W 300° | 0.00 | 0.00 | | 1 | 1.45 | 67.76 | -0.83 |
| | 196.00 | -6.00 | 0 | A1 | 0.81 | -9.98 | 12.02 |
| | 196.00 | -4.00 | 240 | A1a | -10.01 | -9.86 | -6.72 |
| | 196.00 | -8.00 | 120 | A1b | 23.33 | -21.76 | -13.47 |
| 1.2D + 1.0W 330° | 0.00 | 0.00 | | 1 | 0.82 | 66.15 | -1.50 |
| | 196.00 | -6.00 | 0 | A1 | 0.38 | -6.60 | 7.77 |
| | 196.00 | -4.00 | 240 | A1a | -13.61 | -13.04 | -9.03 |
| | 196.00 | -8.00 | 120 | A1b | 21.41 | -20.10 | -12.80 |
| 1.2D + 1.0Di + 1.0Wi Normal | 0.00 | 0.00 | | 1 | 0.00 | 69.37 | -0.46 |
| | 196.00 | -6.00 | 0 | A1 | 0.00 | -9.96 | 12.87 |
| | 196.00 | -4.00 | 240 | A1a | -15.05 | -13.33 | -9.08 |
| | 196.00 | -8.00 | 120 | A1b | 15.05 | -13.68 | -9.08 |
| 1.2D + 1.0Di + 1.0Wi 60° | 0.00 | 0.00 | | 1 | -0.39 | 69.09 | -0.23 |
| | 196.00 | -6.00 | 0 | A1 | -0.34 | -11.15 | 14.35 |
| | 196.00 | -4.00 | 240 | A1a | -16.46 | -14.46 | -9.51 |
| | 196.00 | -8.00 | 120 | A1b | 12.26 | -11.30 | -7.46 |
| 1.2D + 1.0Di + 1.0Wi 90° | 0.00 | 0.00 | | 1 | -0.45 | 69.20 | 0.00 |
| | 196.00 | -6.00 | 0 | A1 | -0.42 | -12.34 | 15.97 |
| | 196.00 | -4.00 | 240 | A1a | -16.23 | -14.16 | -9.19 |
| | 196.00 | -8.00 | 120 | A1b | 11.39 | -10.43 | -6.76 |
| 1.2D + 1.0Di + 1.0Wi 120° | 0.00 | 0.00 | | 1 | -0.40 | 69.35 | 0.23 |
| | 196.00 | -6.00 | 0 | A1 | -0.33 | -13.51 | 17.58 |
| | 196.00 | -4.00 | 240 | A1a | -15.39 | -13.34 | -8.50 |
| | 196.00 | -8.00 | 120 | A1b | 11.16 | -10.11 | -6.44 |
| 1.2D + 1.0Di + 1.0Wi 180° | 0.00 | 0.00 | | 1 | 0.00 | 69.11 | 0.45 |
| | 196.00 | -6.00 | 0 | A1 | 0.00 | -14.67 | 19.03 |
| | 196.00 | -4.00 | 240 | A1a | -12.57 | -10.99 | -6.87 |
| | 196.00 | -8.00 | 120 | A1b | 12.57 | -11.27 | -6.87 |
| 1.2D + 1.0Di + 1.0Wi 210° | 0.00 | 0.00 | | 1 | 0.23 | 69.24 | 0.39 |
| | 196.00 | -6.00 | 0 | A1 | 0.16 | -14.33 | 18.63 |
| | 196.00 | -4.00 | 240 | A1a | -11.54 | -10.15 | -6.48 |

## DETAILED REACTIONS

| Load Case | Radius (ft) | Elevation (ft) | Azimuth (deg) | Node | FX* (kip) | FY* (kip) | FZ* (kip) |
|---|---|---|---|---|---|---|---|
| | | | | | *(-) Uplift and (+) Down* | | |
| 1.2D + 1.0Di + 1.0Wi 240° | 196.00 | -8.00 | 120 | A1b | 14.02 | -12.48 | -7.61 |
| | 0.00 | 0.00 | | 1 | 0.40 | 69.40 | 0.23 |
| | 196.00 | -6.00 | 0 | A1 | 0.33 | -13.50 | 17.57 |
| | 196.00 | -4.00 | 240 | A1a | -11.14 | -9.83 | -6.43 |
| | 196.00 | -8.00 | 120 | A1b | 15.38 | -13.67 | -8.49 |
| 1.2D + 1.0Di + 1.0Wi 300° | 0.00 | 0.00 | | 1 | 0.39 | 69.13 | -0.23 |
| | 196.00 | -6.00 | 0 | A1 | 0.34 | -11.13 | 14.32 |
| | 196.00 | -4.00 | 240 | A1a | -12.24 | -10.98 | -7.45 |
| | 196.00 | -8.00 | 120 | A1b | 16.46 | -14.83 | -9.51 |
| 1.2D + 1.0Di + 1.0Wi 330° | 0.00 | 0.00 | | 1 | 0.23 | 69.24 | -0.39 |
| | 196.00 | -6.00 | 0 | A1 | 0.16 | -10.28 | 13.23 |
| | 196.00 | -4.00 | 240 | A1a | -13.61 | -12.16 | -8.34 |
| | 196.00 | -8.00 | 120 | A1b | 16.06 | -14.51 | -9.45 |
| 1.2D + 1.0Ev + 1.0Eh Normal | 0.00 | 0.00 | | 1 | 0.00 | 57.59 | -0.01 |
| | 196.00 | -6.00 | 0 | A1 | 0.00 | -9.58 | 12.35 |
| | 196.00 | -4.00 | 240 | A1a | -11.43 | -10.29 | -6.60 |
| | 196.00 | -8.00 | 120 | A1b | 11.42 | -10.54 | -6.59 |
| 1.2D + 1.0Ev + 1.0Eh 60° | 0.00 | 0.00 | | 1 | -0.01 | 57.59 | -0.01 |
| | 196.00 | -6.00 | 0 | A1 | 0.00 | -9.86 | 12.63 |
| | 196.00 | -4.00 | 240 | A1a | -11.68 | -10.57 | -6.74 |
| | 196.00 | -8.00 | 120 | A1b | 10.93 | -9.98 | -6.31 |
| 1.2D + 1.0Ev + 1.0Eh 90° | 0.00 | 0.00 | | 1 | -0.01 | 57.59 | 0.00 |
| | 196.00 | -6.00 | 0 | A1 | 0.00 | -10.14 | 12.91 |
| | 196.00 | -4.00 | 240 | A1a | -11.61 | -10.50 | -6.70 |
| | 196.00 | -8.00 | 120 | A1b | 10.76 | -9.78 | -6.21 |
| 1.2D + 1.0Ev + 1.0Eh 120° | 0.00 | 0.00 | | 1 | -0.01 | 57.59 | 0.01 |
| | 196.00 | -6.00 | 0 | A1 | 0.00 | -10.42 | 13.19 |
| | 196.00 | -4.00 | 240 | A1a | -11.43 | -10.29 | -6.60 |
| | 196.00 | -8.00 | 120 | A1b | 10.69 | -9.70 | -6.17 |
| 1.2D + 1.0Ev + 1.0Eh 180° | 0.00 | 0.00 | | 1 | 0.00 | 57.58 | 0.01 |
| | 196.00 | -6.00 | 0 | A1 | 0.00 | -10.70 | 13.47 |
| | 196.00 | -4.00 | 240 | A1a | -10.94 | -9.74 | -6.32 |
| | 196.00 | -8.00 | 120 | A1b | 10.93 | -9.98 | -6.31 |
| 1.2D + 1.0Ev + 1.0Eh 210° | 0.00 | 0.00 | | 1 | 0.01 | 57.58 | 0.01 |
| | 196.00 | -6.00 | 0 | A1 | 0.00 | -10.62 | 13.40 |
| | 196.00 | -4.00 | 240 | A1a | -10.76 | -9.53 | -6.21 |
| | 196.00 | -8.00 | 120 | A1b | 11.17 | -10.26 | -6.45 |
| 1.2D + 1.0Ev + 1.0Eh 240° | 0.00 | 0.00 | | 1 | 0.01 | 57.58 | 0.01 |
| | 196.00 | -6.00 | 0 | A1 | 0.00 | -10.41 | 13.19 |
| | 196.00 | -4.00 | 240 | A1a | -10.70 | -9.46 | -6.18 |
| | 196.00 | -8.00 | 120 | A1b | 11.41 | -10.54 | -6.59 |
| 1.2D + 1.0Ev + 1.0Eh 300° | 0.00 | 0.00 | | 1 | 0.01 | 57.58 | -0.01 |
| | 196.00 | -6.00 | 0 | A1 | 0.00 | -9.85 | 12.62 |
| | 196.00 | -4.00 | 240 | A1a | -10.94 | -9.73 | -6.32 |
| | 196.00 | -8.00 | 120 | A1b | 11.66 | -10.82 | -6.73 |
| 1.2D + 1.0Ev + 1.0Eh 330° | 0.00 | 0.00 | | 1 | 0.01 | 57.58 | -0.01 |
| | 196.00 | -6.00 | 0 | A1 | 0.00 | -9.65 | 12.42 |
| | 196.00 | -4.00 | 240 | A1a | -11.18 | -10.01 | -6.46 |
| | 196.00 | -8.00 | 120 | A1b | 11.59 | -10.75 | -6.69 |
| 1.0D + 1.0W Service Normal | 0.00 | 0.00 | | 1 | 0.00 | 54.03 | -0.55 |
| | 196.00 | -6.00 | 0 | A1 | 0.00 | -8.11 | 10.27 |
| | 196.00 | -4.00 | 240 | A1a | -12.78 | -11.54 | -7.67 |
| | 196.00 | -8.00 | 120 | A1b | 12.77 | -11.84 | -7.67 |
| 1.0D + 1.0W Service 60° | 0.00 | 0.00 | | 1 | -0.46 | 53.91 | -0.27 |
| | 196.00 | -6.00 | 0 | A1 | -0.25 | -9.34 | 11.77 |
| | 196.00 | -4.00 | 240 | A1a | -14.19 | -12.73 | -8.19 |
| | 196.00 | -8.00 | 120 | A1b | 10.07 | -9.46 | -6.11 |
| 1.0D + 1.0W Service 90° | 0.00 | 0.00 | | 1 | -0.54 | 53.94 | 0.00 |
| | 196.00 | -6.00 | 0 | A1 | -0.32 | -10.53 | 13.35 |

DETAILED REACTIONS

| Load Case | Radius (ft) | Elevation (ft) | Azimuth (deg) | Node | FX* (kip) | FY* (kip) | FZ* (kip) |
|---|---|---|---|---|---|---|---|
| | | | | | *(-) Uplift and (+) Down | | |
| | 196.00 | -4.00 | 240 | A1a | -13.89 | -12.39 | -7.88 |
| | 196.00 | -8.00 | 120 | A1b | 9.19 | -8.57 | -5.44 |
| 1.0D + 1.0W Service 120° | 0.00 | 0.00 | | 1 | -0.47 | 54.01 | 0.27 |
| | 196.00 | -6.00 | 0 | A1 | -0.25 | -11.69 | 14.90 |
| | 196.00 | -4.00 | 240 | A1a | -13.03 | -11.55 | -7.23 |
| | 196.00 | -8.00 | 120 | A1b | 8.92 | -8.24 | -5.15 |
| 1.0D + 1.0W Service 180° | 0.00 | 0.00 | | 1 | 0.00 | 53.92 | 0.53 |
| | 196.00 | -6.00 | 0 | A1 | 0.00 | -12.88 | 16.37 |
| | 196.00 | -4.00 | 240 | A1a | -10.32 | -9.21 | -5.66 |
| | 196.00 | -8.00 | 120 | A1b | 10.31 | -9.45 | -5.66 |
| 1.0D + 1.0W Service 210° | 0.00 | 0.00 | | 1 | 0.27 | 53.97 | 0.46 |
| | 196.00 | -6.00 | 0 | A1 | 0.12 | -12.53 | 15.95 |
| | 196.00 | -4.00 | 240 | A1a | -9.29 | -8.34 | -5.23 |
| | 196.00 | -8.00 | 120 | A1b | 11.70 | -10.65 | -6.39 |
| 1.0D + 1.0W Service 240° | 0.00 | 0.00 | | 1 | 0.47 | 54.05 | 0.27 |
| | 196.00 | -6.00 | 0 | A1 | 0.25 | -11.68 | 14.89 |
| | 196.00 | -4.00 | 240 | A1a | -8.88 | -8.00 | -5.13 |
| | 196.00 | -8.00 | 120 | A1b | 13.02 | -11.83 | -7.22 |
| 1.0D + 1.0W Service 300° | 0.00 | 0.00 | | 1 | 0.46 | 53.93 | -0.27 |
| | 196.00 | -6.00 | 0 | A1 | 0.25 | -9.32 | 11.75 |
| | 196.00 | -4.00 | 240 | A1a | -10.05 | -9.20 | -6.10 |
| | 196.00 | -8.00 | 120 | A1b | 14.17 | -13.03 | -8.18 |
| 1.0D + 1.0W Service 330° | 0.00 | 0.00 | | 1 | 0.27 | 53.97 | -0.47 |
| | 196.00 | -6.00 | 0 | A1 | 0.12 | -8.45 | 10.66 |
| | 196.00 | -4.00 | 240 | A1a | -11.39 | -10.38 | -6.94 |
| | 196.00 | -8.00 | 120 | A1b | 13.75 | -12.68 | -8.08 |

MAXIMUM GUY ANCHOR REACTIONS

| Radius (ft) | Drop (ft) | Azimuth (deg) | Uplift (kip) | Shear (kip) |
|---|---|---|---|---|
| 196.00 | -6.00 | 0 | 21.52 | 26.97 |
| 196.00 | -8.00 | 120 | 21.76 | 26.94 |
| 196.00 | -4.00 | 240 | 21.29 | 27.00 |

MAXIMUM REACTIONS SUMMARY

| Base / Anchor Group | Vertical Load *(Compression for Base; Uplift for Anchor)* | Horizontal Shear |
|---|---|---|
| Base | 69.40 (kip) | 1.81 (kip) |
| A1 | 21.76 (kip) | 27.00 (kip) |