Robinson+Cole

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January 4, 2023

Melanie A. Bachman, Esq.
Executive Director/Staff Attorney
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **EM-VER-078-220907 – Cellco Partnership d/b/a Verizon Wireless – 82 North Eagleville Road, Mansfield, Connecticut**

Dear Attorney Bachman:

Pursuant to Condition No. 1 of the Siting Council's November 1, 2022 approval of the above referenced Notice of Exempt Modification, enclosed is a revised Structural Analysis referencing the recently revised Connecticut State Building Code effective October 1, 2022.

Please contact me if you have any questions regarding this proposal.

Sincerely,

Kenneth C. Baldwin

Attachments

CENTEK engineering

Centered on Solutions℠

Structural Analysis Report

327' Existing Guyed Lattice Tower

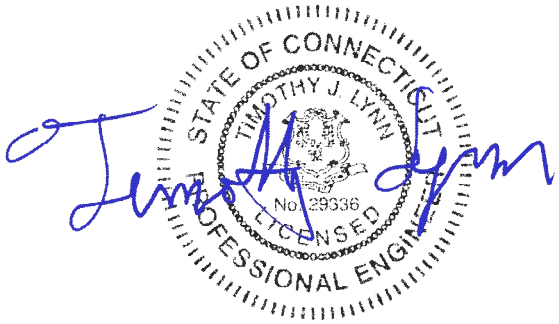
Verizon Site Ref: Storrs

North Eagleville Road
Mansfield, CT

Centek Project No. 21007.33

~~Date: November 4, 2021~~
Rev 2: January 3, 2023

Max Stress Ratio = 84.2%



Prepared for:

Verizon Wireless
20 Alexander Drive
Wallingford, CT 06492

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Introduction

The purpose of this report is to summarize the results of the non-linear, P-Δ structural analysis of the antenna upgrade proposed by Verizon on the existing guyed lattice tower located in Storrs, CT.

The host tower is a 327-ft, three legged, guyed lattice tower. The original tower design documents were unavailable for use in this report. The tower geometry, structure member sizes and foundation information were obtained from a previous structural report prepared by Paul J. ford & Company job no. 42917-0010.002.8800_R1 dated January 9, 2018.

Antenna and appurtenance information were obtained from a previous structural report prepared by Centek job no. 17004.42 dated January 18, 2018 and a RF data sheet.

The tower consists of one (1) pole section, fifteen (15) straight and one (1) tapered base vertical sections consisting of solid round legs steel grade of ASTM A572-50. Diagonal and horizontal lateral support bracing consists of solid round steel grade of ASTM A36. The vertical tower sections are connected by bolted flanges with the diagonal and horizontal bracing to legs consisting of welded connections. The width of the tower face is 3.67-ft throughout its length.

Antenna and Appurtenance Summary

The existing and proposed loads considered in the analysis consist of the following:

- UNKNOWN (EXISTING):
  Antennas: One (1) 4-ft lighting rod and one (1) light beacon mounted to the top of the tower.
  Cables: One (1) 1/2" rigid conduit
- UNKNOWN (EXISTING):
  Antennas: One (1) Shively Labs 6813 FM antenna and one (1) Celwave PD1110 omni-directional antenna flush mounted with an elevation of 305-ft above grade.
  Cables: One (1) 7/8" ∅ and one (1) 1/2" ∅ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (EXISTING):
  Antennas: One (1) Celwave PD1110 omni-directional antenna mounted on one (1) 4-ft sidearm with an elevation of 277-ft above grade.
  Cables: One (1) 1/2" ∅ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (EXISTING):
  Antennas: One (1) Kathrein Scala OGT9-840 and one (1) Decibel DB810K omni-directional antennas mounted on 3-ft side arms with an elevation of 267-ft above grade.
  Cables: Two (2) 1-5/8" ∅ coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (EXISTING):
  Antennas: One (1) Kathrein Scala AP14-850/105 panel antenna mounted on a 3-ft standoff with an elevation of 261-ft above grade.
  Cables: One (1) 1-5/8 ∅ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.

- UNKNOWN (EXISTING):
  Antennas: Two (2) Kathrein Scala OGT9-840 omni-directional antennas (inverted) leg mounted with an elevation of 256.5-ft above grade.
  Cables: Two (2) 1-5/8" ∅ coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (EXISTING):
  Antennas: One (1) Kathrein Scala AP14-850/105 panel antenna mounted on a 3-ft standoff with an elevation of 252-ft above grade.
  Cables: One (1) 1-5/8 ∅ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (EXISTING):
  Antennas: Three (3) Sinclair SC479-HF1LDF omni-directional antennas, two (2) Bird 432-83H-01T tower top amplifiers and two (2) Antel BXA-70063/2CF panel antennas mounted on two (2) sector mounts with an elevation of 250-ft above grade.
  Cables: Five (5) 1-5/8" ∅ and two (2) 1/2 "∅ coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (EXISTING):
  Antennas: Two (2) Sinclair SC479-HF1LDF omni-directional antennas and one (1) Bird 432-83H-01T tower top amplifier mounted on one (1) sector mount with an elevation of 240-ft above grade.
  Cables: Two (2) 1-5/8" ∅ and one (1) 1/2 "∅ coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (EXISTING):
  Antennas: One (1) Shively Labs 6813 FM antenna flush mounted with an elevation of 211-ft above grade.
  Cables: One (1) 7/8" ∅ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (RESERVED):
  Antennas: One (1) RFI BA40-67-DIN dipole antenna leg mounted with an elevation of 205-ft above grade.
  Cables: One (1) 7/8" ∅ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (EXISTING):
  Antennas: One (1) Shively Labs 6813 FM antenna flush mounted with an elevation of 198-ft above grade.
  Cables: One (1) 1/2" ∅ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (EXISTING):
  Antennas: One (1) Shively Labs 6812 FM antenna flush mounted with an elevation of 198-ft above grade.
  Cables: One (1) 7/8" ∅ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.

- UNKNOWN (EXISTING):
  Antennas: One (1) 6-ft Yagi antenna flush mounted with an elevation of 190-ft above grade.
  Cables: One (1) 1/2" ∅ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (EXISTING):
  Antennas: One (1) 2'x1'x5" panel antenna flush mounted with an elevation of 172'-2"-ft above grade.
  Cables: One (1) 7/8" ∅ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (EXISTING):
  Antennas: One (1) 8' omni-directional antenna flush mounted with an elevation of 172-ft above grade.
  Cables: One (1) 7/8" ∅ coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (EXISTING):
  Antennas: One (1) 2'x1'x5" panel antenna flush mounted with an elevation of 158'-10"-ft above grade.
  Cables: One (1) 1/2" ∅ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (EXISTING):
  Antennas: Three (3) light beacons mounted to the tower with an elevation of 157'.
  Cables: One (1) 1/2" rigid conduit.
- UNKNOWN (RESERVED):
  Antennas: One (1) RFI BA40-67-DIN dipole antenna leg mounted with an elevation of 150-ft above grade.
  Cables: One (1) 7/8" ∅ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (EXISTING):
  Antennas: Two (2) 6-ft microwave dishes pipe mounted with a RAD center elevation of 116-ft above grade.
  Cables: Two (2) EW63 cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (EXISTING):
  Antennas: One (1) Celwave PD1110 omni-directional antenna mounted on one (1) 2-ft sidearm with an elevation of 112-ft above grade.
  Cables: One (1) 7/8" ∅ coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (FUTURE):
  Antennas: One (1) 6-ft microwave dish pipe mounted with a RAD center elevation of 104-ft above grade.
  Cables: One (1) EW63 cable running on a leg/face of the existing tower as specified in Section 3 of this report.

- UNKNOWN (EXISTING):
  Antennas: One (1) Kathrein PR-850 paraflector leg mounted with an elevation of 94-ft above grade.
  Cables: One (1) 1/2" ∅ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (EXISTING):
  Antennas: One (1) Decibel ASP-962 yagi leg mounted with an elevation of 94-ft above grade.
  Cables: One (1) 1/2" ∅ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (EXISTING):
  Antennas: One (1) Decibel DB212-1 dipole leg mounted with an elevation of 70-ft above grade.
  Cables: One (1) 7/8" ∅ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (EXISTING):
  Antennas: One (1) 6-ft yagi mounted on a 2-ft sidearm with an elevation of 18-ft above grade.
  Cables: One (1) 1/2" ∅ coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- AT&T (EXISTING TO REMAIN):
  Antennas: Three (3) Powerwave 7770 panel antennas, one (1) CCI OPA-65R-LCUU-H6 panel antenna, two (2) CCI OPA-65R-LCUU-H8 panel antennas, one (1) CCI HPA-65R-BUU-H6 panel antenna, two (2) CCI HPA-65R-BUU-H8 panel antennas, two (2) CCI TPA-65R-LCUUUU-H8 panel antenna, one (1) Qunitel QS66512-2 panel antenna, three (3) CCI DTMABP7819VG12A TMAs, six (6) CCI TPX-070821 triplexers, three (3) Ericsson RRUS-11, six (6) Ericsson RRUS-32, six (6) Ericsson RRUS-32, three (3) B14 4478 and three (3) Raycap DC6-48-60-18-8F surge arrestors mounted on three (3) 12-ft V-Frames with a RAD center elevation of 185-ft above grade level.
  Coax Cables: Twelve (12) 1-5/8" ∅ coax cables, three (3) fiber cables and six (6) dc control cables running on the inside of the existing tower.
- VERIZON (EXISTING TO REMAIN):
  Antennas: Three (3) Antel BXA-80063-4CF panel antennas, four (4) Andrew JAHH-65B-R3B panel antennas, four (4) Andrew JAHH-45B-R3B panel antennas and two (2) Raycap RVZDC-6627-PF-48 distribution boxes mounted on (1) 13-ft platform w/ handrails with a rad center elevation of 84-ft above grade level.
  Cables: Six (6) 1-1/4" ∅ coax cables and two (2) 1-1/4" ∅ fiber cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- VERIZON (EXISTING TO REMOVE):
  Antennas: Four (4) B13 RRH 4x30, eight (8) B25 RRH 4x30 and four (4) B66Z RRH 4x45 mounted on (1) 13-ft platform w/ handrails with a rad center elevation of 84-ft above grade level.

- **VERIZON (PROPOSED):**
  <u>Antennas:</u> Four (4) Samsung XXDWMM-12.5-65 panel antennas, four (4) Samsung MT6407-77A panel antennas, four (4) Samsung B2/B66A remote radio heads, four (4) Samsung B5/B13 remote radio heads, four (4) CBRS remote radio heads and four (4) Commscope CBC78T-DS-43 diplexers mounted on (1) 13-ft platform w/ handrails with a rad center elevation of 84-ft above grade level.
  .

Primary Assumptions Used in the Analysis

- The tower structure's theoretical capacity not including any assessment of the condition of the tower.
- The tower carries the horizontal and vertical loads due to the weight of antennas, ice load and wind.
- Tower is properly installed and maintained.
- Tower is in plumb condition.
- Tower loading for antennas and mounts as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds are fabricated with ER-70S-6 electrodes.
- All members are assumed to be as specified in the original tower design documents.
- All members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- All member protective coatings are in good condition.
- All tower members were properly designed, detailed, fabricated, installed and have been properly maintained since erection.
- Any deviation from the analyzed antenna loading will require a new analysis for verification of structural adequacy.
- All coax cables routed as specified in Section 3 of this report.
- **The Verizon antenna mount information was taken from the mount analysis report prepared by Maser Consulting job no. 21781092A dated November 29, 2021 and construction drawings prepared by Centek dated September 1, 2022.**

Analysis

The existing tower was analyzed using a comprehensive computer program entitled tnxTower. The program analyzes the tower, considering the worst case loading condition. The tower is considered as loaded by concentric forces along the tower, and the model assumes that the tower members are subjected to bending, axial, and shear forces.

The existing tower was analyzed for the controlling basic wind speed with no ice and the applicable wind and ice combination to determine stresses in members as per guidelines of TIA-222-H entitled "Structural Standard for Antenna Support Structures, Antennas and Small Wind Turbine Support Structures", the American Institute of Steel Construction (AISC) and the Manual of Steel Construction; Load and Resistance Factor Design (LRFD).

The controlling wind speed is determined by evaluating the local available wind speed data as provided in Appendix P of the CSBC[1] and the wind speed data available in the TIA-222-H Standard.

Tower Loading

Tower loading was determined by the basic wind speed as applied to projected surface areas with modification factors per TIA-222-H, gravity loads of the tower structure and its components, and the application of 1.5" radial ice on the tower structure and its components.

Load Cases:	Load Case 1; 130 mph (Risk Cat III) wind speed w/ no ice plus gravity load – used in calculation of tower stresses and rotation.	*[Appendix P of the 2022 CT Building Code]*
	Load Case 2; 50 mph wind speed w/ 1.50" radial ice plus gravity load – used in calculation of tower stresses.	*[Annex B of TIA-222-H]*

[1] The 2021 International Building Code as amended by the 2022 Connecticut State Building Code (CSBC).

Tower Capacity

- Calculated stresses were found to be within allowable limits.

Tower Section	Elevation	Stress Ratio (percentage of capacity)	Result
Leg (T8)	140'-0"-160'-0"	72.7%	**PASS**
Diagonal (T11)	80'-0"-100'-0"	55.9%	**PASS**
Horizontal (T7)	160'-0"-180'-0"	84.2%	**PASS**
Guy A @ 235-ft radius (T13)	56.5-ft	59.9%	**PASS**

Foundations and Anchorage

The existing tower base foundation consists of a 3.0-ft diameter x 2.5-ft long reinforced concrete pier on a 10-ft square x 2.0-ft thick reinforced concrete pad bearing directly on the existing sub grade. Additionally, guy wire loading is transferred to three (3) 4.5'x4.0'x24.0' concrete support blocks. The sub-grade conditions used as the basis for the foundation analysis were derived from the aforementioned structural report.

- The worst case tower base and guy anchor reactions developed from the governing Load Case 1 were used in the verification of the anchorage foundations:

Tower Guy Reactions	
Vector	**Inner**
Horizontal (In Plane of GW)	137 kips
Horizontal (Out of Plane of GW)	5 kips
Vertical	113 kips
Resultant Force at end of Guy Wire	177 kips
Tower Base Reactions	
Vector	**Proposed Reaction**
Horizontal Shear	6.0 kips
Axial Compression	572.0 kips

Foundation	Design Limit	TIA-222-G Section 9.4 FS[(1)]	Proposed Loading (FS)[(1)]	Result
Reinf. Conc. Anchor Block	Uplift	1.0	2.19	**PASS**
	Sliding	1.0	3.0	**PASS**
		Ultimate Bearing	**Proposed**	
Base Foundation	Bearing	11.0 ksf	5.46 ksf	**PASS**

Note 1: FS denotes 'Factor of Safety'.

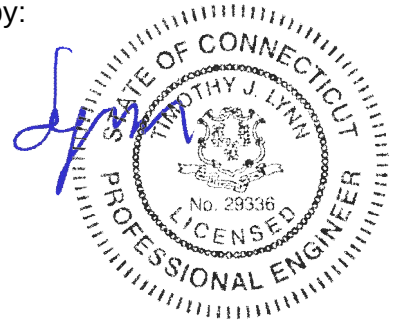
Conclusion

This analysis shows that the subject tower **is adequate** to support the proposed modified antenna configuration with the below recommendations.

The analysis is based, in part, on the information provided to this office by Verizon. If the existing conditions are different than the information in this report, Centek Engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:



Timothy J. Lynn, PE
Structural Engineer

Standard Conditions for Furnishing of Professional Engineering Services on Existing Structures

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessarily limited to:

- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from the field and/or drawings in the possession of Centek Engineering, Inc. or generated by field inspections or measurements of the structure.
- It is the responsibility of the client to ensure that the information provided to Centek Engineering, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the “as new” condition.
- All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222
- All services performed, results obtained, and recommendations made are in accordance with generally accepted engineering principles and practices. Centek Engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

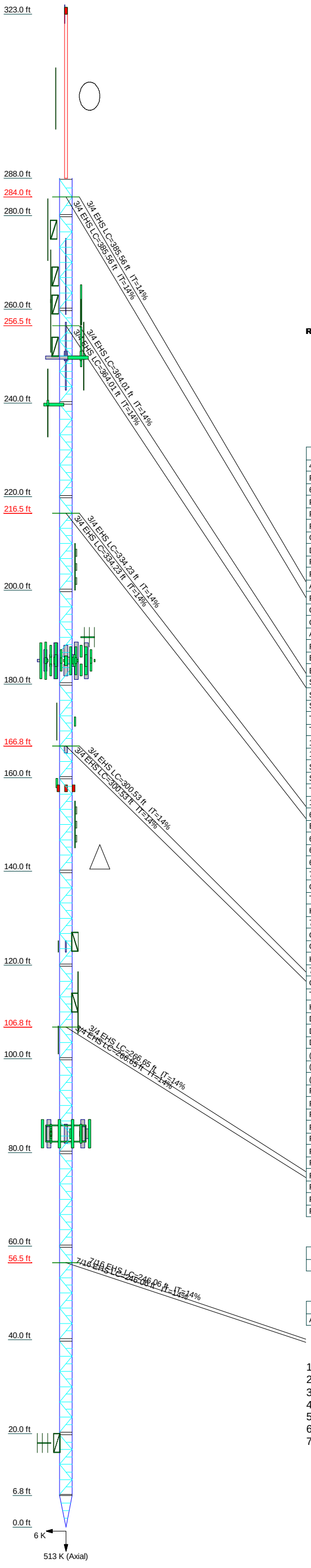
GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM

tnxTower, is an integrated structural analysis and design software package for Designed specifically for the telecommunications industry, tnxTower, formerly ERITower, automates much of the tower analysis and design required by the TIA/EIA 222 Standard.

tnxTower Features:

- tnxTower can analyze and design 3- and 4-sided guyed towers, 3- and 4-sided self-supporting towers and either round or tapered ground mounted poles with or without guys.
- The program analyzes towers using the TIA-222-H standard or any of the previous TIA/EIA standards back to RS-222 (1959). Steel design is checked using the AISC LRFD specifications.
- Linear and non-linear (P-delta) analyses can be used in determining displacements and forces in the structure. Wind pressures and forces are automatically calculated.
- Extensive graphics plots include material take-off, shear-moment, leg compression, displacement, twist, feed line, guy anchor and stress plots.
- tnxTower contains unique features such as True Cable behavior, hog rod take-up, foundation stiffness and much more.

Section	Legs	Leg Grade	Diagonals	Diagonal Grade	Top Girts	Bottom Girts	Horizontals	Sec. Horizontals	Top Guy Pull-Offs	Face Width (ft)	# Panels @ (ft)	Weight (K)
T1	L1											3.2
T2	P10.75x0.843		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		0.895833	N.A.	
T3	SR 2	A618-50	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		3.67	2 @ 3.75	1.4
T4	SR 2 1/4		SR 1 3/8									1.4
T5	SR 2 1/2		SR 1 1/2						N.A.			2.6
T6	SR 1 1/4											1.6
T7	SR 2 3/4		SR 1 1/2									2.9
T8	SR 2 1/2	A572-50	SR 1 3/8	A36	SR 1	SR 1	SR 1	SR 1			78 @ 3.25	1.7
T9	SR 2 3/4		SR 1 1/4									1.9
T10			SR 1 1/2						A			2.9
T11			SR 1 3/8									2.2
T12	SR 3		SR 1 1/4						N.A.			2.1
T13												2.9
T14												2.1
T15											4 @ 3.1875	1.4
T16			N.A.	N.A.	12x3/8	N.A.	9x3/8	N.A.			B	0.9
												35.0



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
4-ft Lightning Rod	323	RRUS-32 (AT⌶ - Existing)	185
Flash Beacon Lighting	323	RRUS-32 (AT⌶ - Existing)	185
6813 1-Bay w/radome	305	RRUS-32 (AT⌶ - Existing)	185
PD1110	305	RRUS-32 (AT⌶ - Existing)	185
PD1110	277	B14 4478 (AT⌶ - Existing)	185
ROHN 4-ft Side Arm	277	B14 4478 (AT⌶ - Existing)	185
OGT9-840	267	B14 4478 (AT⌶ - Existing)	185
DB810K	267	DC6-48-60-18-8F Surge Arrestor (AT⌶ - Existing)	185
ROHN 3-ft Side Arm	267	DC6-48-60-18-8F Surge Arrestor (AT⌶ - Existing)	185
ROHN 3-ft Side Arm	267	DC6-48-60-18-8F Surge Arrestor (AT⌶ - Existing)	185
AP14-850/105	261	12' V-Frame (AT⌶ - Existing)	185
ROHN 3-ft Side Arm	261	12' V-Frame (AT⌶ - Existing)	185
OGT9-840	256.5	12' V-Frame (AT⌶ - Existing)	185
OGT9-840	256.5	8' x 3" Dia Omni	172
AP14-850/105	252	24"x12"x5" Panel	172
ROHN 3-ft Side Arm	252	16"x12"x3" TTA	166
BXA-70063-2CF	250	24"x12"x5" Panel	158.8
BXA-70063-2CF	250	Beacon	157
SC479-HF1LDF	250	Beacon	157
SC479-HF1LDF	250	Beacon	157
SC479-HF1LDF	250	BA40-67-DIN	150
TTA 432-83H-01T	250	Sabre 2' Sidearm	125
TTA 432-83H-01T	250	6'x4' Ice Shield	124
10-ft T-Frame	250	9'x10' Ice Shield	124
10-ft T-Frame	250	2'6"x4" Pipe Mount	124
SC479-HF1LDF	240	2'6"x4" Pipe Mount	124
SC479-HF1LDF	240	PD1110	112
TTA 432-83H-01T	240	Sabre 2' Sidearm	112
10-ft T-Frame	240	6'x4" Pipe Mount	104
6813 1-Bay w/radome	211	PR-900	94
BA40-67-DIN	205	ASP-962	94
6812	198	CBRS RRH-RT4401-48A (Verizon - Proposed)	84
6813 1-Bay w/radome	198	CBC78T-DS-43 (Verizon - Proposed)	84
6' Yagi	190	13' Platform w/rails (Verizon)	84
7770.00 (AT⌶ - Existing)	185	BXA-80063-4CF (Verizon)	84
OPA-65R-LCUU-H8 (AT⌶ - Existing)	185	BXA-80063-4CF (Verizon)	84
TPA-65R-LCUUUU-H8 (AT⌶ - Existing)	185	BXA-80063-4CF (Verizon)	84
HPA-65R-BUU-H8 (AT⌶ - Existing)	185	(2) JAHH-65B-R3B (Verizon)	84
7770.00 (AT⌶ - Existing)	185	(2) JAHH-65B-R3B (Verizon)	84
OPA-65R-LCUU-H6 (AT⌶ - Existing)	185	(2) JAHH-45B-R3B (Verizon)	84
QS66512-2 (AT⌶ - Existing)	185	(2) JAHH-45B-R3B (Verizon)	84
HPA-65R-BUU-H6 (AT⌶ - Existing)	185	RVZDC-6627-PF-48 (Verizon)	84
7770.00 (AT⌶ - Existing)	185	RVZDC-6627-PF-48 (Verizon)	84
OPA-65R-LCUU-H8 (AT⌶ - Existing)	185	(2) MT6407-77A (Verizon - Proposed)	84
TPA-65R-LCUUUU-H8 (AT⌶ - Existing)	185	MT6407-77A (Verizon - Proposed)	84
HPA-65R-BUU-H8 (AT⌶ - Existing)	185	MT6407-77A (Verizon - Proposed)	84
DTMABP7819VG12A TMA (AT⌶ - Existing)	185	(2) XXDWMM-12.5-75-8T (Verizon - Proposed)	84
DTMABP7819VG12A TMA (AT⌶ - Existing)	185	XXDWMM-12.5-75-8T (Verizon - Proposed)	84
DTMABP7819VG12A TMA (AT⌶ - Existing)	185	XXDWMM-12.5-75-8T (Verizon - Proposed)	84
(2) TPX-070821 (AT⌶ - Existing)	185	(2) B2/B66A RRH (Verizon - Proposed)	84
(2) TPX-070821 (AT⌶ - Existing)	185	B2/B66A RRH (Verizon - Proposed)	84
(2) TPX-070821 (AT⌶ - Existing)	185	B2/B66A RRH (Verizon - Proposed)	84
RRUS-11 (AT⌶ - Existing)	185	(2) B5/B13 RRH (Verizon - Proposed)	84
RRUS-11 (AT⌶ - Existing)	185	B5/B13 RRH (Verizon - Proposed)	84
RRUS-11 (AT⌶ - Existing)	185	B5/B13 RRH (Verizon - Proposed)	84
RRUS-32 (AT⌶ - Existing)	185	(2) CBRS RRH-RT4401-48A (Verizon - Proposed)	84
RRUS-32 (AT⌶ - Existing)	185	CBRS RRH-RT4401-48A (Verizon - Proposed)	84
RRUS-32 (AT⌶ - Existing)	185	(2) CBC78T-DS-43 (Verizon - Proposed)	84
RRUS-32 (AT⌶ - Existing)	185	CBC78T-DS-43 (Verizon - Proposed)	84
RRUS-32 (AT⌶ - Existing)	185	DB212-1 (CSP-10)	70
RRUS-32 (AT⌶ - Existing)	185	Sabre 2' Sidearm	18
RRUS-32 (AT⌶ - Existing)	185	6' Yagi	18
RRUS-32 (AT⌶ - Existing)	185		

SYMBOL LIST

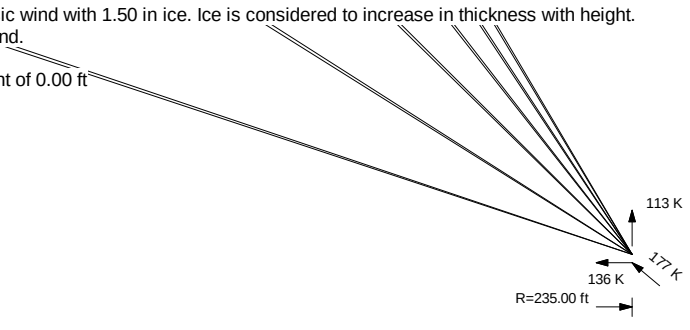
MARK	SIZE	MARK	SIZE
A	1" S.R. w/ 1" S.R. Crosby Clipped	B	4 @ 1.625

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-H Standard.
2. Tower designed for a 130 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category III.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 84.2%



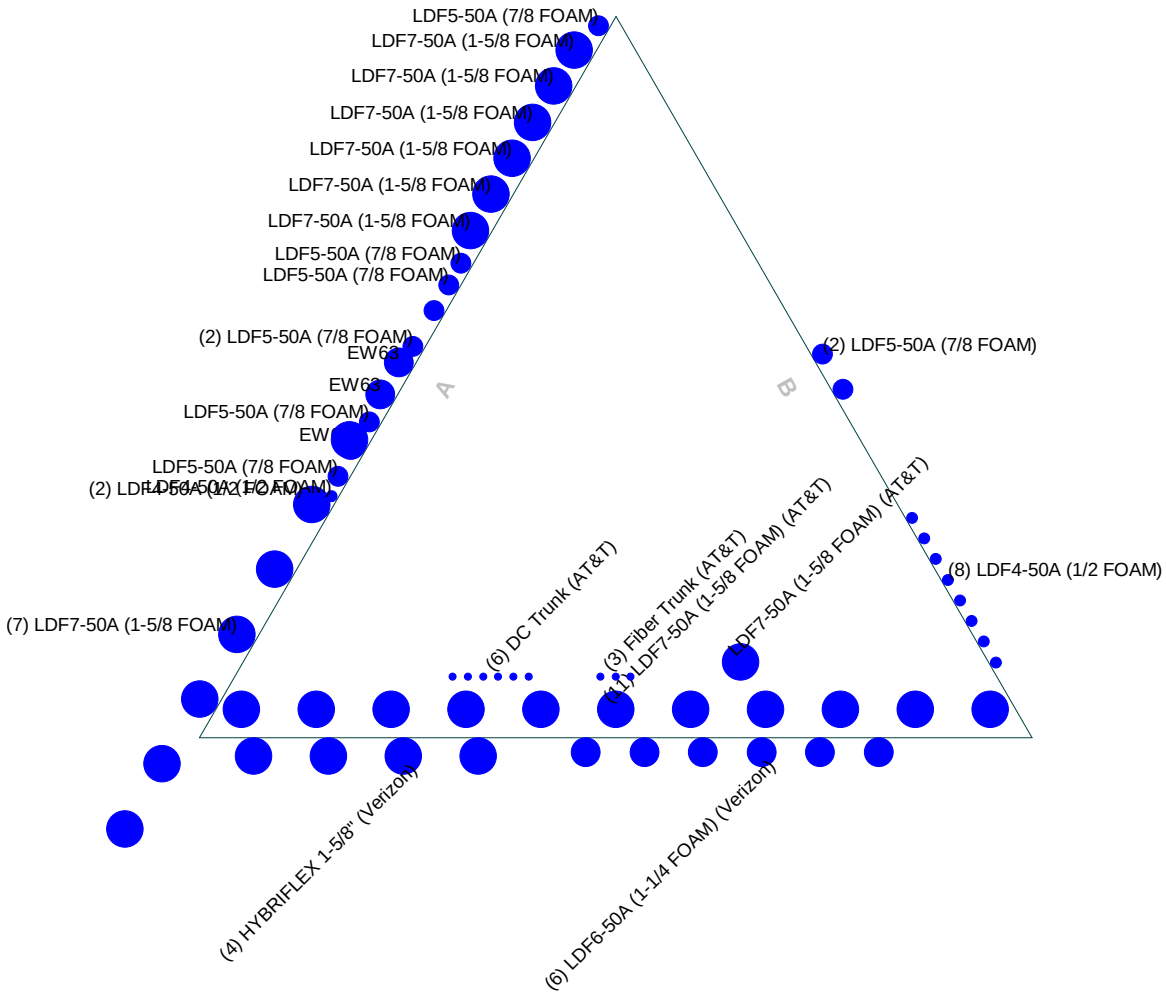
ALL REACTIONS ARE FACTORED

Centek Engineering Inc.
63-2 North Branford Rd.
Branford, CT 06405
Phone: (203) 488-0580
FAX: (203) 488-8587

Job: ***21007.33 - Storrs***			
Project: ***327' Guyed Tower - N. Eagleville Road Storrs, CT***			
Client: Verizon	Drawn by: TJL	App'd:	
Code: TIA-222-H	Date: 01/03/23	Scale: NTS	
Path: J:\Jobs\21007\00 WIP\33_STORRS CT\05_Structural\Tower\Backup Documentation\Calcs\Rev 2\[E1R\327-ft Guyed Tower - Storrs, CT.eri		Dwg No. E-1	

Feed Line Plan

Round Flat App In Face App Out Face



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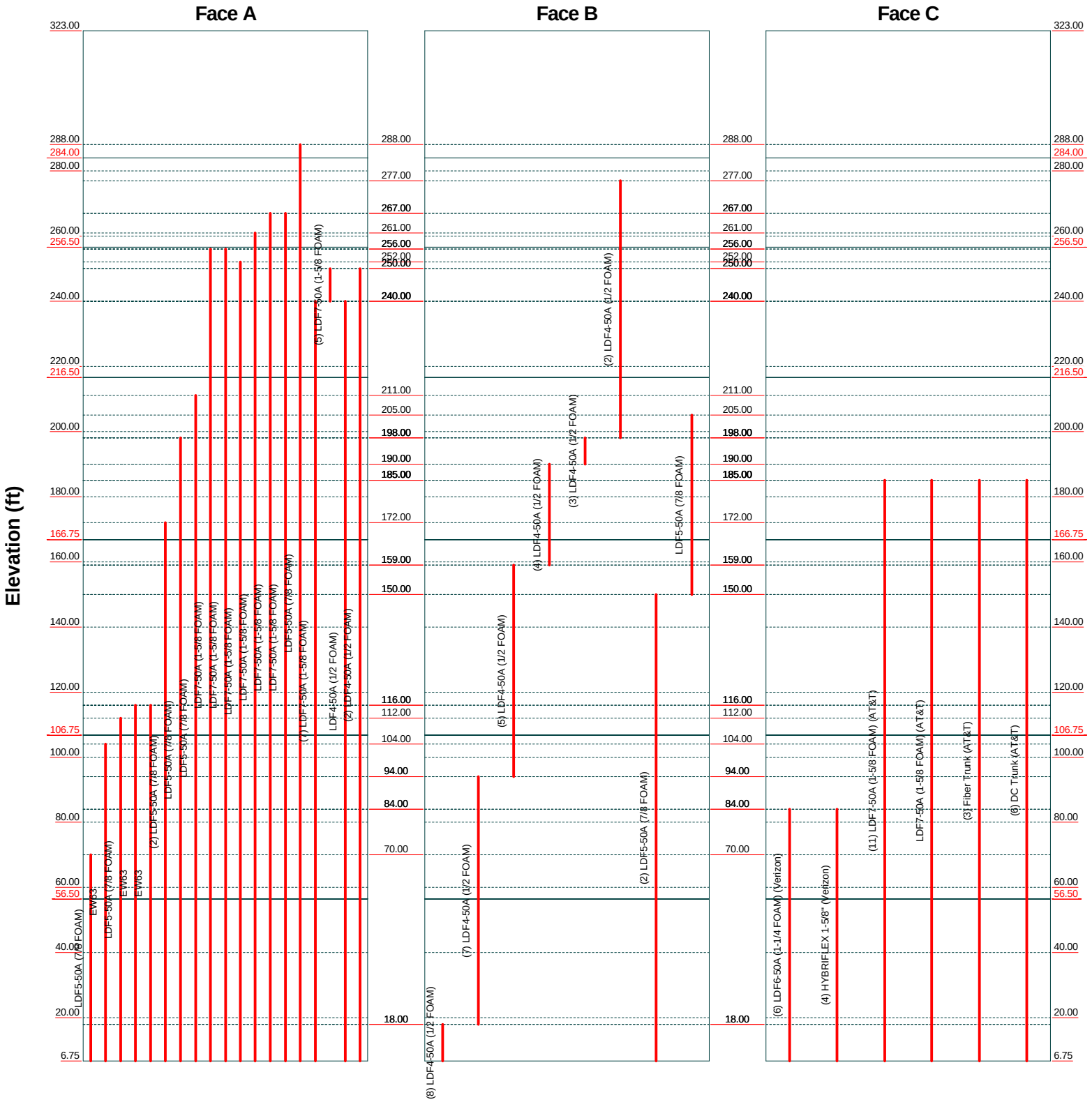
Path: J:\Jobs\21007\00.W\33_STORRS.CT\05_Structural\Tower\Backup Documentation\Calcs\Rev (2)\ER\327-ft Guyed Tower - Storrs, CT.eri			Dwg No. E-7

Feed Line Distribution Chart
6'9" - 323'

Round | Flat | App In Face | App Out Face | Truss Leg



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Code: TIA-222-H		Date: 01/03/23	Scale: NTS
Path: J:\Jobs\21007\00.W\33_STORRS.CT\05_Structural\Tower\Backup Documentation\Calcs\Rev (2)\ER\327-ft Guyed Tower - Storrs, CT.eri			Dwg No. E-7

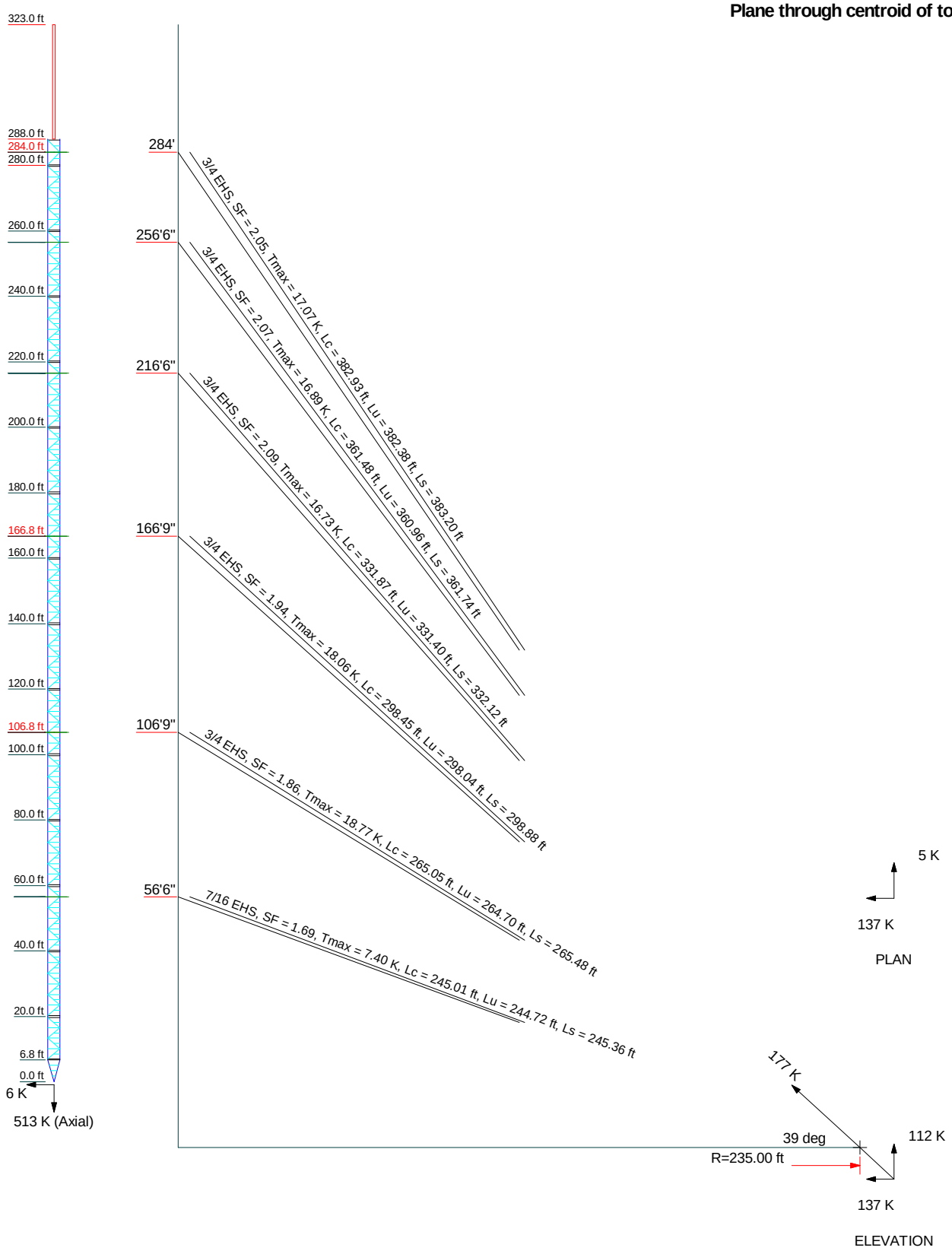
Guy Tensions and Tower Reactions

TIA-222-H - 130 mph/50 mph 1.5000 in Ice Exposure C

Maximum Values

Anchor 'C'@235 ft Azimuth 240 deg Elev -20.1 ft

Plane through centroid of tower



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Job: ***21007.33 - Storrs***			
Project: ***327' Guyed Tower - N. Eagleville Road Storrs, CT***			
Client: Verizon	Drawn by: TJL	App'd:	
Code: TIA-222-H	Date: 01/03/23	Scale: NTS	
Path: J:\Jobs\21007\00.WI\33_STORRS,CT\05_Structural\Tower\Backup Documentation\Calcs\Rev (2)\ER\327-ft Guyed Tower - Storrs, CT.eri		Dwg No. E-6	

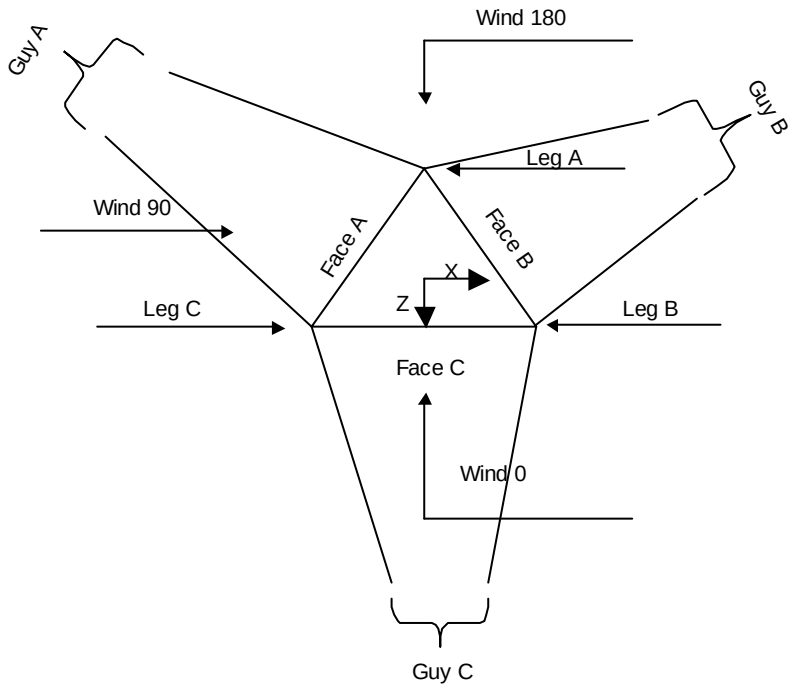
Tower Input Data

The main tower is a 3x guyed tower with an overall height of 323.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 3.67 ft at the top and tapered at the base.
An index plate is provided at the 3x guyed -tower connection.
There is a pole section.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower base elevation above sea level: 0.00 ft.
Basic wind speed of 130 mph.
Risk Category III.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 1.5000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Stress ratio used in tower member design is 1.
Safety factor used in guy design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area	√	SR Leg Bolts Resist Compression
√	Use Code Stress Ratios	√	Use Clear Spans For KL/r	√	All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys	√	Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice		Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-H Bracing Resist. Exemption
√	Include Bolts In Member Capacity	√	Autocalc Torque Arm Areas		Use TIA-222-H Tension Splice Exemption
√	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg	√	Sort Capacity Reports By Component		Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
√	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known



Face Guyed

Pole Section Geometry

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L1	323.00-288.00	35.00	P10.75x0.843	A618-50 (50 ksi)	

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 323.00-288.00				1	1	1.025			

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	288.00-280.00			3.67	1	8.00
T2	280.00-260.00			3.67	1	20.00
T3	260.00-240.00			3.67	1	20.00
T4	240.00-220.00			3.67	1	20.00
T5	220.00-200.00			3.67	1	20.00
T6	200.00-180.00			3.67	1	20.00
T7	180.00-160.00			3.67	1	20.00
T8	160.00-140.00			3.67	1	20.00
T9	140.00-120.00			3.67	1	20.00
T10	120.00-100.00			3.67	1	20.00
T11	100.00-80.00			3.67	1	20.00
T12	80.00-60.00			3.67	1	20.00
T13	60.00-40.00			3.67	1	20.00
T14	40.00-20.00			3.67	1	20.00
T15	20.00-6.75			3.67	1	13.25
T16	6.75-0.00			3.67	1	6.75

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	288.00-280.00	3.75	K Brace Left	No	Yes+Steps	3.0000	3.0000
T2	280.00-260.00	3.25	K Brace Left	No	Yes+Steps	3.0000	3.0000
T3	260.00-240.00	3.25	K Brace Left	No	Yes+Steps	3.0000	3.0000
T4	240.00-220.00	3.25	K Brace Left	No	Yes+Steps	3.0000	3.0000
T5	220.00-200.00	3.25	K Brace Left	No	Yes+Steps	3.0000	3.0000
T6	200.00-180.00	3.25	K Brace Left	No	Yes+Steps	3.0000	3.0000
T7	180.00-160.00	3.25	K Brace Left	No	Yes+Steps	3.0000	3.0000
T8	160.00-140.00	3.25	K Brace Left	No	Yes+Steps	3.0000	3.0000
T9	140.00-120.00	3.25	K Brace Left	No	Yes+Steps	3.0000	3.0000
T10	120.00-100.00	3.25	K Brace Left	No	Yes+Steps	3.0000	3.0000
T11	100.00-80.00	3.25	K Brace Left	No	Yes+Steps	3.0000	3.0000
T12	80.00-60.00	3.25	K Brace Left	No	Yes+Steps	3.0000	3.0000
T13	60.00-40.00	3.25	K Brace Left	No	Yes+Steps	3.0000	3.0000
T14	40.00-20.00	3.25	K Brace Left	No	Yes+Steps	3.0000	3.0000
T15	20.00-6.75	3.19	K Brace Left	No	Yes+Steps	3.0000	3.0000
T16	6.75-0.00	1.63	X Brace	No	Yes	0.0000	3.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 288.00-280.00	Solid Round	2	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T2 280.00-260.00	Solid Round	2	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T3 260.00-240.00	Solid Round	2 1/4	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T4 240.00-220.00	Solid Round	2 1/4	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T5 220.00-200.00	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	1 1/2	A36 (36 ksi)
T6 200.00-180.00	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T7 180.00-160.00	Solid Round	2 3/4	A572-50 (50 ksi)	Solid Round	1 1/2	A36 (36 ksi)
T8 160.00-140.00	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T9 140.00-120.00	Solid Round	2 3/4	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T10 120.00-100.00	Solid Round	2 3/4	A572-50 (50 ksi)	Solid Round	1 1/2	A36 (36 ksi)
T11 100.00-80.00	Solid Round	3	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T12 80.00-60.00	Solid Round	3	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T13 60.00-40.00	Solid Round	3	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T14 40.00-20.00	Solid Round	3	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T15 20.00-6.75	Solid Round	3	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T16 6.75-0.00	Solid Round	3	A572-50 (50 ksi)	Solid Round		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 288.00-280.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T2 280.00-260.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T3 260.00-240.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T4 240.00-220.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T5 220.00-200.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T6 200.00-180.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T7 180.00-160.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T8 160.00-140.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T9 140.00-120.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T10 120.00-100.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T11 100.00-80.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T12 80.00-60.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T13 60.00-40.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T14 40.00-20.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T15 20.00-6.75	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T16 6.75-0.00	Flat Bar	12x3/8	A36 (36 ksi)	Flat Bar	12x3/8	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 288.00-280.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T2 280.00-260.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T3 260.00-240.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T4 240.00-220.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T5 220.00-200.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T6 200.00-180.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T7 180.00-160.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T8 160.00-140.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T9 140.00-120.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T10 120.00-100.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T11 100.00-80.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T12 80.00-60.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T13 60.00-40.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T14 40.00-20.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T15 20.00-6.75	None	Solid Round		A572-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T16 6.75-0.00	None	Solid Round		A572-50 (50 ksi)	Flat Bar	9x3/8	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T1 288.00-280.00	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T2 280.00-260.00	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T3 260.00-240.00	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T4 240.00-220.00	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T5 220.00-200.00	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T6 200.00-180.00	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T7 180.00-160.00	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T8 160.00-140.00	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T9 140.00-120.00	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T10 120.00-100.00	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T11 100.00-80.00	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T12 80.00-60.00	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T13 60.00-40.00	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T14 40.00-20.00	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T15 20.00-6.75	Solid Round	1	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 288.00-280.00	0.00	0.0000	A36 (36 ksi)	1	1	1.025	36.0000	36.0000	36.0000
T2 280.00-260.00	0.00	0.0000	A36 (36 ksi)	1	1	1.025	36.0000	36.0000	36.0000
T3 260.00-240.00	0.00	0.0000	A36 (36 ksi)	1	1	1.025	36.0000	36.0000	36.0000
T4 240.00-220.00	0.00	0.0000	A36 (36 ksi)	1	1	1.025	36.0000	36.0000	36.0000
T5 220.00-200.00	0.00	0.0000	A36 (36 ksi)	1	1	1.025	36.0000	36.0000	36.0000
T6 200.00-180.00	0.00	0.0000	A36 (36 ksi)	1	1	1.025	36.0000	36.0000	36.0000
T7 180.00-160.00	0.00	0.0000	A36 (36 ksi)	1	1	1.025	36.0000	36.0000	36.0000
T8 160.00-140.00	0.00	0.0000	A36 (36 ksi)	1	1	1.025	36.0000	36.0000	36.0000
T9	0.00	0.0000	A36	1	1	1.025	36.0000	36.0000	36.0000

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
140.00-120.00			(36 ksi)						
T10	0.00	0.0000	A36	1	1	1.025	36.0000	36.0000	36.0000
120.00-100.00			(36 ksi)						
T11	0.00	0.0000	A36	1	1	1.025	36.0000	36.0000	36.0000
100.00-80.00			(36 ksi)						
T12	0.00	0.0000	A36	1	1	1.025	36.0000	36.0000	36.0000
80.00-60.00			(36 ksi)						
T13	0.00	0.0000	A36	1	1	1.025	36.0000	36.0000	36.0000
60.00-40.00			(36 ksi)						
T14	0.00	0.0000	A36	1	1	1.025	36.0000	36.0000	36.0000
40.00-20.00			(36 ksi)						
T15 20.00-6.75	0.00	0.0000	A36	1	1	1.025	36.0000	36.0000	36.0000
			(36 ksi)						
T16 6.75-0.00	0.00	0.0000	A36	1	1	1.025	36.0000	36.0000	36.0000
			(36 ksi)						

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1	Yes	Yes	1	1	1	1	1	1	1	1
288.00-280.00				1	1	1	1	1	1	1
T2	Yes	Yes	1	1	1	1	1	1	1	1
280.00-260.00				1	1	1	1	1	1	1
T3	Yes	Yes	1	1	1	1	1	1	1	1
260.00-240.00				1	1	1	1	1	1	1
T4	Yes	Yes	1	1	1	1	1	1	1	1
240.00-220.00				1	1	1	1	1	1	1
T5	Yes	Yes	1	1	1	1	1	1	1	1
220.00-200.00				1	1	1	1	1	1	1
T6	Yes	Yes	1	1	1	1	1	1	1	1
200.00-180.00				1	1	1	1	1	1	1
T7	Yes	Yes	1	1	1	1	1	1	1	1
180.00-160.00				1	1	1	1	1	1	1
T8	Yes	Yes	1	1	1	1	1	1	1	1
160.00-140.00				1	1	1	1	1	1	1
T9	Yes	Yes	1	1	1	1	1	1	1	1
140.00-120.00				1	1	1	1	1	1	1
T10	Yes	Yes	1	1	1	1	1	1	1	1
120.00-100.00				1	1	1	1	1	1	1
T11	Yes	Yes	1	1	1	1	1	1	1	1
100.00-80.00				1	1	1	1	1	1	1
T12	Yes	Yes	1	1	1	1	1	1	1	1
80.00-60.00				1	1	1	1	1	1	1
T13	Yes	Yes	1	1	1	1	1	1	1	1
60.00-40.00				1	1	1	1	1	1	1
T14	Yes	Yes	1	1	1	1	1	1	1	1
40.00-20.00				1	1	1	1	1	1	1
T15	Yes	Yes	1	1	1	1	1	1	1	1
20.00-6.75				1	1	1	1	1	1	1
T16 6.75-0.00	Yes	Yes	1	1	1	1	1	1	1	1

			K Factors[1]							
Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	Legs	X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace
				X	X	X	X	X	X	X
ft				Y	Y	Y	Y	Y	Y	Y
				1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 288.00-280.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 280.00-260.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 260.00-240.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 240.00-220.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 220.00-200.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 200.00-180.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 180.00-160.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 160.00-140.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 140.00-120.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 120.00-100.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 100.00-80.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 80.00-60.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 60.00-40.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 40.00-20.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T15 20.00-6.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T16 6.75-0.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 288.00-280.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 280.00-260.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 260.00-240.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 240.00-220.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 220.00-200.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 200.00-180.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 180.00-160.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 160.00-140.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 140.00-120.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 120.00-100.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 100.00-80.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 80.00-60.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 60.00-40.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 40.00-20.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T15 20.00-6.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T16 6.75-0.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 288.00-280.00	Flange	1.0000 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325X	0	0.5000 A325N	0	0.6250 A325X	0
T2 280.00-260.00	Flange	1.0000 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325X	0	0.5000 A325N	0	0.6250 A325X	0
T3 260.00-240.00	Flange	1.0000 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325X	0	0.5000 A325N	0	0.6250 A325X	0
T4 240.00-220.00	Flange	1.0000 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325X	0	0.5000 A325N	0	0.6250 A325X	0
T5 220.00-200.00	Flange	1.0000 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325X	0	0.5000 A325N	0	0.6250 A325X	0
T6 200.00-180.00	Flange	1.0000 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325X	0	0.5000 A325N	0	0.6250 A325X	0
T7 180.00-160.00	Flange	1.0000 A325N	4	0.5000 A325N	0	0.5000 A325N	0	0.5000 A325N	0	0.6250 A325X	0	0.5000 A325N	0	0.6250 A325X	0

Tower Elevation ft	Leg Connection Type	Leg Bolt Size in	Leg No.	Diagonal Bolt Size in	Diagonal No.	Top Girt Bolt Size in	Top Girt No.	Bottom Girt Bolt Size in	Bottom Girt No.	Mid Girt Bolt Size in	Mid Girt No.	Long Horizontal Bolt Size in	Long Horizontal No.	Short Horizontal Bolt Size in	Short Horizontal No.
T8	Flange	1.0000	4	0.5000	0	0.5000	0	0.5000	0	0.6250	0	0.5000	0	0.6250	0
160.00-140.00		A325N		A325N		A325N		A325N		A325X		A325N		A325X	
T9	Flange	1.0000	4	0.5000	0	0.5000	0	0.5000	0	0.6250	0	0.5000	0	0.6250	0
140.00-120.00		A325N		A325N		A325N		A325N		A325X		A325N		A325X	
T10	Flange	1.0000	4	0.5000	0	0.5000	0	0.5000	0	0.6250	0	0.5000	0	0.6250	0
120.00-100.00		A325N		A325N		A325N		A325N		A325X		A325N		A325X	
T11	Flange	1.0000	4	0.5000	0	0.5000	0	0.5000	0	0.6250	0	0.5000	0	0.6250	0
100.00-80.00		A325N		A325N		A325N		A325N		A325X		A325N		A325X	
T12	Flange	1.3750	4	0.5000	0	0.5000	0	0.5000	0	0.6250	0	0.5000	0	0.6250	0
80.00-60.00		A325N		A325N		A325N		A325N		A325X		A325N		A325X	
T13	Flange	1.3750	4	0.5000	0	0.5000	0	0.5000	0	0.6250	0	0.5000	0	0.6250	0
60.00-40.00		A325N		A325N		A325N		A325N		A325X		A325N		A325X	
T14	Flange	1.3750	4	0.5000	0	0.5000	0	0.5000	0	0.6250	0	0.5000	0	0.6250	0
40.00-20.00		A325N		A325N		A325N		A325N		A325X		A325N		A325X	
T15 20.00-6.75	Flange	1.3750	4	0.5000	0	0.5000	0	0.5000	0	0.6250	0	0.5000	0	0.6250	0
		A325N		A325N		A325N		A325N		A325X		A325N		A325X	
T16 6.75-0.00	Flange	1.3750	4	0.5000	0	0.5000	0	0.5000	0	0.6250	0	0.5000	0	0.6250	0
		A325N		A325N		A325N		A325N		A325X		A325N		A325X	

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
284	EHS	A	3/4	8.16	14%	19000	1.155	385.07	235.00	0.0000	-23.40	100%
		B	3/4	8.16	14%	19000	1.155	359.88	235.00	0.0000	8.90	100%
		C	3/4	8.16	14%	19000	1.155	382.45	235.00	0.0000	-20.10	100%
256.5	EHS	A	3/4	8.16	14%	19000	1.155	363.55	235.00	0.0000	-23.40	100%
		B	3/4	8.16	14%	19000	1.155	339.38	235.00	0.0000	8.90	100%
		C	3/4	8.16	14%	19000	1.155	361.03	235.00	0.0000	-20.10	100%
216.5	EHS	A	3/4	8.16	14%	19000	1.155	333.82	235.00	0.0000	-23.40	100%
		B	3/4	8.16	14%	19000	1.155	311.47	235.00	0.0000	8.90	100%
		C	3/4	8.16	14%	19000	1.155	331.46	235.00	0.0000	-20.10	100%
166.75	EHS	A	3/4	8.16	14%	19000	1.155	300.15	235.00	0.0000	-23.40	100%
		B	3/4	8.16	14%	19000	1.155	280.86	235.00	0.0000	8.90	100%
		C	3/4	8.16	14%	19000	1.155	298.08	235.00	0.0000	-20.10	100%
106.75	EHS	A	3/4	8.16	14%	19000	1.155	266.31	235.00	0.0000	-23.40	100%
		B	3/4	8.16	14%	19000	1.155	252.15	235.00	0.0000	8.90	100%
		C	3/4	8.16	14%	19000	1.155	264.72	235.00	0.0000	-20.10	100%
56.5	EHS	A	7/16	2.91	14%	21000	0.399	245.77	235.00	0.0000	-23.40	100%
		B	7/16	2.91	14%	21000	0.399	237.27	235.00	0.0000	8.90	100%
		C	7/16	2.91	14%	21000	0.399	244.72	235.00	0.0000	-20.10	100%

Guy Data*(cont'd)*

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
284	Torque Arm	8.00	0.0000	Channel	A36 (36 ksi)	Channel	C15x33.9
256.5	Torque Arm	8.00	0.0000	Channel	A36 (36 ksi)	Channel	C15x33.9
216.5	Torque Arm	8.00	0.0000	Channel	A36 (36 ksi)	Channel	C15x33.9
166.75	Torque Arm	8.00	0.0000	Channel	A36 (36 ksi)	Channel	C15x33.9
106.75	Torque Arm	8.00	0.0000	Channel	A36 (36 ksi)	Channel	C15x33.9
56.5	Torque Arm	8.00	0.0000	Channel	A36 (36 ksi)	Channel	C15x33.9

Guy Data *(cont'd)*

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
284.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	
256.50	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	
216.50	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	
166.75	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	
106.75	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Arbitrary Shape	1" S.R. w/ 1" S.R. Crosby Clipped
56.50	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	

Guy Data *(cont'd)*

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
284	0.44	0.42	0.44		10.28 5.5 sec/pulse	9.00 5.2 sec/pulse	10.15 5.5 sec/pulse	
256.5	0.42	0.39	0.42		9.18 5.2 sec/pulse	8.02 4.9 sec/pulse	9.06 5.2 sec/pulse	
216.5	0.39	0.36	0.38		7.76 4.8 sec/pulse	6.77 4.5 sec/pulse	7.66 4.8 sec/pulse	
166.75	0.35	0.32	0.34		6.30 4.3 sec/pulse	5.53 4.1 sec/pulse	6.21 4.3 sec/pulse	
106.75	0.31	0.29	0.31		4.98 3.9 sec/pulse	4.47 3.7 sec/pulse	4.92 3.8 sec/pulse	
56.5	0.10	0.09	0.10		4.12 3.5 sec/pulse	3.85 3.4 sec/pulse	4.09 3.5 sec/pulse	

Guy Data *(cont'd)*

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
284	No	No	1	1	1	1	1	1
256.5	No	No	1	1	1	1	1	1
216.5	No	No	1	1	1	1	1	1
166.75	No	No	1	1	1	1	1	1
106.75	No	No	1	1	0.7	0.7	1	1
56.5	No	No	1	1	1	1	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
284	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
256.5	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
216.5	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
166.75	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
106.75	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
56.5	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
284	A	130.30	49	7	1.9789
	B	146.45	50	7	2.0022
	C	131.95	49	7	1.9814
256.5	A	116.55	48	7	1.9570
	B	132.70	49	7	1.9826
	C	118.20	48	7	1.9597
216.5	A	96.55	46	7	1.9205
	B	112.70	48	7	1.9504
	C	98.20	46	7	1.9238
166.75	A	71.68	43	6	1.8641
	B	87.83	45	7	1.9024
	C	73.33	44	6	1.8684
106.75	A	41.68	39	6	1.7657
	B	57.83	41	6	1.8245

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
	C	43.33	39	6	1.7726
56.5	A	16.55	32	5	1.6100
	B	32.70	37	5	1.7234
	C	18.20	33	5	1.6253

Guy-Tensioning Information

Guy Elevation ft		H ft	V ft	Temperature At Time Of Tensioning: 0 F Initial Tension K	0 F Intercept ft	20 F Initial Tension K	20 F Intercept ft	40 F Initial Tension K	40 F Intercept ft	60 F Initial Tension K	60 F Intercept ft	80 F Initial Tension K	80 F Intercept ft	100 F Initial Tension K	100 F Intercept ft	120 F Initial Tension K	120 F Intercept ft
284	A	232.72	307.40	9.021	9.32	8.733	9.62	8.447	9.94	8.162	10.28	7.879	10.65	7.598	11.03	7.320	11.44
	B	232.72	275.10	9.146	8.05	8.816	8.34	8.488	8.66	8.162	9.00	7.838	9.37	7.518	9.76	7.200	10.18
	C	232.72	304.10	9.033	9.18	8.741	9.48	8.451	9.80	8.162	10.15	7.875	10.51	7.591	10.89	7.309	11.31
256.5	A	232.72	279.90	9.126	8.23	8.803	8.52	8.481	8.84	8.162	9.18	7.845	9.55	7.531	9.94	7.219	10.36
	B	232.72	247.60	9.270	7.07	8.898	7.37	8.529	7.68	8.162	8.02	7.798	8.39	7.439	8.79	7.083	9.22
	C	232.72	276.60	9.140	8.10	8.812	8.40	8.486	8.72	8.162	9.06	7.841	9.42	7.522	9.82	7.206	10.24
216.5	A	232.72	239.90	9.307	6.82	8.923	7.11	8.541	7.42	8.162	7.76	7.786	8.13	7.415	8.53	7.047	8.97
	B	232.72	207.60	9.479	5.84	9.037	6.13	8.598	6.44	8.162	6.77	7.731	7.15	7.305	7.56	6.885	8.01
	C	232.72	236.60	9.324	6.71	8.934	7.00	8.546	7.32	8.162	7.66	7.781	8.03	7.404	8.43	7.032	8.87
166.75	A	232.72	190.15	9.582	5.37	9.105	5.65	8.631	5.96	8.162	6.30	7.698	6.67	7.239	7.09	6.789	7.56
	B	232.72	157.85	9.784	4.62	9.239	4.89	8.698	5.19	8.162	5.53	7.633	5.91	7.113	6.33	6.603	6.82
	C	232.72	186.85	9.602	5.29	9.118	5.57	8.638	5.87	8.162	6.21	7.694	6.59	7.231	7.00	6.775	7.47
106.75	A	232.72	130.15	9.968	4.08	9.360	4.35	8.758	4.64	8.162	4.98	7.575	5.36	6.998	5.80	6.435	6.30
	B	232.72	97.85	10.179	3.59	9.500	3.85	8.827	4.14	8.162	4.47	7.508	4.86	6.867	5.31	6.245	5.84
	C	232.72	126.85	9.990	4.03	9.375	4.29	8.765	4.58	8.162	4.92	7.568	5.30	6.984	5.74	6.415	6.25
56.5	A	232.72	79.90	3.721	3.23	3.448	3.48	3.178	3.78	2.912	4.12	2.650	4.53	2.395	5.01	2.149	5.58
	B	232.72	47.60	3.781	2.97	3.488	3.21	3.198	3.51	2.912	3.85	2.632	4.26	2.359	4.75	2.097	5.34
	C	232.72	76.60	3.728	3.19	3.453	3.45	3.181	3.74	2.912	4.09	2.648	4.49	2.391	4.97	2.143	5.55

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF6-50A (1-1/4 FOAM) (Verizon)	C	No	No	Ar (CaAa)	84.00 - 5.00	0.0000	-0.14	6	6	1.5500	1.5500		0.66
HYBRIFLEX 1-5/8" (Verizon)	C	No	No	Ar (CaAa)	84.00 - 5.00	0.0000	0.3	4	4	1.9800	1.9800		1.90
LDF7-50A (1-5/8 FOAM) (AT&T)	C	No	No	Ar (CaAa)	185.00 - 5.00	-0.5000	0	11	11	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM) (AT&T)	C	No	No	Ar (CaAa)	185.00 - 5.00	-3.0000	-0.15	1	1	1.9800	1.9800		0.82
Fiber Trunk (AT&T)	C	No	No	Ar (CaAa)	185.00 - 5.00	-3.0000	0	3	3	0.4000	0.4000		1.00
DC Trunk (AT&T)	C	No	No	Ar (CaAa)	185.00 - 5.00	-3.0000	0.15	6	6	0.4000	0.4000		0.11
LDF4-50A (1/2 FOAM)	B	No	No	Ar (CaAa)	18.00 - 5.00	0.0000	0.3	8	8	0.6300	0.6300		0.15
LDF4-50A (1/2 FOAM)	B	No	No	Ar (CaAa)	94.00 - 18.00	0.0000	0.3	7	7	0.6300	0.6300		0.15
LDF4-50A	B	No	No	Ar (CaAa)	159.00 -	0.0000	0.3	5	5	0.6300	0.6300		0.15

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
(1/2 FOAM)					94.00								
LDF4-50A	B	No	No	Ar (CaAa)	190.00 - 159.00	0.0000	0.3	4	4	0.6300	0.6300		0.15
(1/2 FOAM)													
LDF4-50A	B	No	No	Ar (CaAa)	198.00 - 190.00	0.0000	0.3	3	3	0.6300	0.6300		0.15
(1/2 FOAM)													
LDF4-50A	B	No	No	Ar (CaAa)	277.00 - 198.00	0.0000	0.3	2	2	0.6300	0.6300		0.15
(1/2 FOAM)													
LDF5-50A	A	No	No	Ar (CaAa)	70.00 - 5.00	0.0000	-0.145	1	1	1.0900	1.0900		0.33
(7/8 FOAM)													
EW63	A	No	No	Ar (CaAa)	104.00 - 5.00	0.0000	-0.105	1	1	1.5742	1.5742		0.51
LDF5-50A	A	No	No	Ar (CaAa)	112.00 - 5.00	0.0000	-0.07	1	1	1.0900	1.0900		0.33
(7/8 FOAM)													
EW63	A	No	No	Ar (CaAa)	116.00 - 5.00	0.0000	-0.035	1	1	1.5742	1.5742		0.51
EW63	A	No	No	Ar (CaAa)	116.00 - 5.00	0.0000	0.01	1	1	1.5742	1.5742		0.51
LDF5-50A	A	No	No	Ar (CaAa)	172.00 - 5.00	0.0000	0.06	2	2	1.0900	1.0900		0.33
(7/8 FOAM)													
LDF5-50A	A	No	No	Ar (CaAa)	198.00 - 5.00	0.0000	0.12	1	1	1.0900	1.0900		0.33
(7/8 FOAM)													
LDF5-50A	A	No	No	Ar (CaAa)	211.00 - 5.00	0.0000	0.15	1	1	1.0900	1.0900		0.33
(7/8 FOAM)													
LDF7-50A	A	No	No	Ar (CaAa)	256.00 - 5.00	0.0000	0.19	1	1	1.9800	1.9800		0.82
(1-5/8 FOAM)													
LDF7-50A	A	No	No	Ar (CaAa)	256.00 - 5.00	0.0000	0.24	1	1	1.9800	1.9800		0.82
(1-5/8 FOAM)													
LDF7-50A	A	No	No	Ar (CaAa)	252.00 - 5.00	0.0000	0.29	1	1	1.9800	1.9800		0.82
(1-5/8 FOAM)													
LDF7-50A	A	No	No	Ar (CaAa)	261.00 - 5.00	0.0000	0.34	1	1	1.9800	1.9800		0.82
(1-5/8 FOAM)													
LDF7-50A	A	No	No	Ar (CaAa)	267.00 - 5.00	0.0000	0.39	1	1	1.9800	1.9800		0.82
(1-5/8 FOAM)													
LDF7-50A	A	No	No	Ar (CaAa)	267.00 - 5.00	0.0000	0.44	1	1	1.9800	1.9800		0.82
(1-5/8 FOAM)													
LDF5-50A	A	No	No	Ar (CaAa)	288.00 - 5.00	0.0000	0.48	1	1	1.0900	1.0900		0.33
(7/8 FOAM)													
LDF7-50A	A	No	No	Ar (CaAa)	240.00 - 5.00	0.0000	-0.37	7	7	1.9800	1.9800		0.82
(1-5/8 FOAM)													
LDF7-50A	A	No	No	Ar (CaAa)	250.00 - 240.00	2.5000	-0.37	5	5	1.9800	1.9800		0.82
(1-5/8 FOAM)													
LDF4-50A	A	No	No	Ar (CaAa)	240.00 - 5.00	0.0000	-0.17	1	1	0.6300	0.6300		0.15
(1/2 FOAM)													
LDF4-50A	A	No	No	Ar (CaAa)	250.00 - 5.00	0.0000	-0.19	2	1	0.6300	0.6300		0.15
(1/2 FOAM)													
LDF5-50A	B	No	No	Ar (CaAa)	150.00 - 5.00	0.0000	0	2	2	1.0900	1.0900		0.33
(7/8 FOAM)													
LDF5-50A	B	No	No	Ar (CaAa)	205.00 - 150.00	0.0000	0	1	1	1.0900	1.0900		0.33
(7/8 FOAM)													

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	323.00-288.00	A	0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
T1	288.00-280.00	A	0.000	0.000	0.872	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
T2	280.00-260.00	A	0.000	0.000	5.150	0.000	0.02
		B	0.000	0.000	2.142	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00
T3	260.00-240.00	A	0.000	0.000	33.932	0.000	0.14
		B	0.000	0.000	2.520	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00
T4	240.00-220.00	A	0.000	0.000	57.440	0.000	0.23
		B	0.000	0.000	2.520	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00
T5	220.00-200.00	A	0.000	0.000	58.639	0.000	0.23
		B	0.000	0.000	3.065	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00
T6	200.00-180.00	A	0.000	0.000	61.582	0.000	0.24
		B	0.000	0.000	6.464	0.000	0.02
		C	0.000	0.000	13.680	0.000	0.07
T7	180.00-160.00	A	0.000	0.000	64.416	0.000	0.25
		B	0.000	0.000	7.220	0.000	0.02
		C	0.000	0.000	54.720	0.000	0.27
T8	160.00-140.00	A	0.000	0.000	66.160	0.000	0.26
		B	0.000	0.000	9.507	0.000	0.02
		C	0.000	0.000	54.720	0.000	0.27
T9	140.00-120.00	A	0.000	0.000	66.160	0.000	0.26
		B	0.000	0.000	10.660	0.000	0.03
		C	0.000	0.000	54.720	0.000	0.27
T10	120.00-100.00	A	0.000	0.000	73.135	0.000	0.28
		B	0.000	0.000	10.660	0.000	0.03
		C	0.000	0.000	54.720	0.000	0.27
T11	100.00-80.00	A	0.000	0.000	77.785	0.000	0.29
		B	0.000	0.000	12.424	0.000	0.03
		C	0.000	0.000	61.608	0.000	0.32
T12	80.00-60.00	A	0.000	0.000	78.875	0.000	0.30
		B	0.000	0.000	13.180	0.000	0.03
		C	0.000	0.000	89.160	0.000	0.50
T13	60.00-40.00	A	0.000	0.000	79.965	0.000	0.30
		B	0.000	0.000	13.180	0.000	0.03
		C	0.000	0.000	89.160	0.000	0.50
T14	40.00-20.00	A	0.000	0.000	79.965	0.000	0.30
		B	0.000	0.000	13.180	0.000	0.03
		C	0.000	0.000	89.160	0.000	0.50
T15	20.00-6.75	A	0.000	0.000	52.977	0.000	0.20
		B	0.000	0.000	9.441	0.000	0.02
		C	0.000	0.000	59.069	0.000	0.33
T16	6.75-0.00	A	0.000	0.000	6.997	0.000	0.03
		B	0.000	0.000	1.264	0.000	0.00
		C	0.000	0.000	7.801	0.000	0.04

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	323.00-288.00	A	2.155	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	0.000	0.000	0.00
T1	288.00-280.00	A	2.139	0.000	0.000	4.295	0.000	0.07
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
T2	280.00-260.00	A	2.129	0.000	0.000	20.050	0.000	0.35
		B		0.000	0.000	16.687	0.000	0.17
		C		0.000	0.000	0.000	0.000	0.00
T3	260.00-240.00	A	2.112	0.000	0.000	113.539	0.000	1.98
		B		0.000	0.000	19.518	0.000	0.19
		C		0.000	0.000	0.000	0.000	0.00
T4	240.00-220.00	A	2.095	0.000	0.000	190.019	0.000	3.27
		B		0.000	0.000	19.394	0.000	0.19
		C		0.000	0.000	0.000	0.000	0.00
T5	220.00-200.00	A	2.076	0.000	0.000	194.933	0.000	3.32
		B		0.000	0.000	21.882	0.000	0.23
		C		0.000	0.000	0.000	0.000	0.00
T6	200.00-180.00	A	2.055	0.000	0.000	207.999	0.000	3.50
		B		0.000	0.000	33.169	0.000	0.42
		C		0.000	0.000	42.620	0.000	0.69
T7	180.00-160.00	A	2.032	0.000	0.000	221.283	0.000	3.62
		B		0.000	0.000	34.529	0.000	0.44
		C		0.000	0.000	169.948	0.000	2.72
T8	160.00-140.00	A	2.007	0.000	0.000	228.734	0.000	3.66
		B		0.000	0.000	42.932	0.000	0.52
		C		0.000	0.000	169.358	0.000	2.69
T9	140.00-120.00	A	1.978	0.000	0.000	227.027	0.000	3.60
		B		0.000	0.000	48.697	0.000	0.55
		C		0.000	0.000	168.692	0.000	2.65
T10	120.00-100.00	A	1.946	0.000	0.000	250.718	0.000	3.94
		B		0.000	0.000	48.250	0.000	0.54
		C		0.000	0.000	167.927	0.000	2.62
T11	100.00-80.00	A	1.907	0.000	0.000	264.889	0.000	4.10
		B		0.000	0.000	51.796	0.000	0.59
		C		0.000	0.000	187.097	0.000	2.89
T12	80.00-60.00	A	1.860	0.000	0.000	266.109	0.000	4.05
		B		0.000	0.000	52.908	0.000	0.60
		C		0.000	0.000	265.693	0.000	4.09
T13	60.00-40.00	A	1.798	0.000	0.000	266.007	0.000	3.95
		B		0.000	0.000	52.086	0.000	0.57
		C		0.000	0.000	263.500	0.000	3.98
T14	40.00-20.00	A	1.709	0.000	0.000	258.862	0.000	3.71
		B		0.000	0.000	50.893	0.000	0.54
		C		0.000	0.000	260.316	0.000	3.81
T15	20.00-6.75	A	1.576	0.000	0.000	164.490	0.000	2.23
		B		0.000	0.000	34.239	0.000	0.35
		C		0.000	0.000	169.345	0.000	2.36
T16	6.75-0.00	A	1.373	0.000	0.000	20.312	0.000	0.25
		B		0.000	0.000	4.329	0.000	0.04
		C		0.000	0.000	21.741	0.000	0.28

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	323.00-288.00	0.0000	0.0000	0.0000	0.0000
T1	288.00-280.00	-0.0578	-1.5811	-0.0671	-1.8340

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
T2	280.00-260.00	0.6934	-2.7492	1.4712	-2.2154
T3	260.00-240.00	-4.1337	-5.3168	-2.7333	-4.4590
T4	240.00-220.00	-7.2750	-3.0438	-5.7312	-2.8537
T5	220.00-200.00	-7.0154	-3.1070	-5.5829	-2.9836
T6	200.00-180.00	-5.6891	-1.6571	-4.7363	-1.9271
T7	180.00-160.00	-4.1681	1.3784	-3.8065	0.7473
T8	160.00-140.00	-4.0258	1.2622	-3.7012	0.5727
T9	140.00-120.00	-3.8920	1.2046	-3.5450	0.5249
T10	120.00-100.00	-4.1616	0.9253	-3.9117	0.2978
T11	100.00-80.00	-4.1410	1.3008	-3.9982	0.6674
T12	80.00-60.00	-3.9538	2.8418	-3.9110	2.1588
T13	60.00-40.00	-4.0066	2.8224	-4.0006	2.2101
T14	40.00-20.00	-4.0066	2.8224	-4.0241	2.3202
T15	20.00-6.75	-3.8959	2.8286	-3.9513	2.4889
T16	6.75-0.00	-0.7357	0.5672	0.0000	0.0000

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	27	LDF5-50A (7/8 FOAM)	280.00 - 288.00	0.6000	0.4719
T2	12	LDF4-50A (1/2 FOAM)	260.00 - 277.00	0.6000	0.4658
T2	24	LDF7-50A (1-5/8 FOAM)	260.00 - 261.00	0.6000	0.4658
T2	25	LDF7-50A (1-5/8 FOAM)	260.00 - 267.00	0.6000	0.4658
T2	26	LDF7-50A (1-5/8 FOAM)	260.00 - 267.00	0.6000	0.4658
T2	27	LDF5-50A (7/8 FOAM)	260.00 - 280.00	0.6000	0.4658
T3	12	LDF4-50A (1/2 FOAM)	240.00 - 260.00	0.6000	0.4629
T3	21	LDF7-50A (1-5/8 FOAM)	240.00 - 256.00	0.6000	0.4629
T3	22	LDF7-50A (1-5/8 FOAM)	240.00 - 256.00	0.6000	0.4629
T3	23	LDF7-50A (1-5/8 FOAM)	240.00 - 252.00	0.6000	0.4629
T3	24	LDF7-50A (1-5/8 FOAM)	240.00 - 260.00	0.6000	0.4629
T3	25	LDF7-50A (1-5/8 FOAM)	240.00 - 260.00	0.6000	0.4629
T3	26	LDF7-50A (1-5/8 FOAM)	240.00 - 260.00	0.6000	0.4629
T3	27	LDF5-50A (7/8 FOAM)	240.00 - 260.00	0.6000	0.4629
T3	29	LDF7-50A (1-5/8 FOAM)	240.00 - 250.00	0.6000	0.4629
T3	31	LDF4-50A (1/2 FOAM)	240.00 - 250.00	0.6000	0.4629

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T4	12	LDF4-50A (1/2 FOAM)	220.00 - 240.00	0.6000	0.4657
T4	21	LDF7-50A (1-5/8 FOAM)	220.00 - 240.00	0.6000	0.4657
T4	22	LDF7-50A (1-5/8 FOAM)	220.00 - 240.00	0.6000	0.4657
T4	23	LDF7-50A (1-5/8 FOAM)	220.00 - 240.00	0.6000	0.4657
T4	24	LDF7-50A (1-5/8 FOAM)	220.00 - 240.00	0.6000	0.4657
T4	25	LDF7-50A (1-5/8 FOAM)	220.00 - 240.00	0.6000	0.4657
T4	26	LDF7-50A (1-5/8 FOAM)	220.00 - 240.00	0.6000	0.4657
T4	27	LDF5-50A (7/8 FOAM)	220.00 - 240.00	0.6000	0.4657
T4	28	LDF7-50A (1-5/8 FOAM)	220.00 - 240.00	0.6000	0.4657
T4	30	LDF4-50A (1/2 FOAM)	220.00 - 240.00	0.6000	0.4657
T4	31	LDF4-50A (1/2 FOAM)	220.00 - 240.00	0.6000	0.4657
T5	12	LDF4-50A (1/2 FOAM)	200.00 - 220.00	0.6000	0.4598
T5	20	LDF5-50A (7/8 FOAM)	200.00 - 211.00	0.6000	0.4598
T5	21	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.4598
T5	22	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.4598
T5	23	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.4598
T5	24	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.4598
T5	25	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.4598
T5	26	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.4598
T5	27	LDF5-50A (7/8 FOAM)	200.00 - 220.00	0.6000	0.4598
T5	28	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.4598
T5	30	LDF4-50A (1/2 FOAM)	200.00 - 220.00	0.6000	0.4598
T5	31	LDF4-50A (1/2 FOAM)	200.00 - 220.00	0.6000	0.4598
T5	33	LDF5-50A (7/8 FOAM)	200.00 - 205.00	0.6000	0.4598
T6	3	LDF7-50A (1-5/8 FOAM)	180.00 - 185.00	0.6000	0.4700
T6	4	LDF7-50A (1-5/8 FOAM)	180.00 - 185.00	0.6000	0.4700
T6	5	Fiber Trunk	180.00 - 185.00	0.6000	0.4700
T6	6	DC Trunk	180.00 - 185.00	0.6000	0.4700
T6	10	LDF4-50A (1/2 FOAM)	180.00 - 190.00	0.6000	0.4700
T6	11	LDF4-50A (1/2 FOAM)	190.00 - 198.00	0.6000	0.4700
T6	12	LDF4-50A (1/2 FOAM)	198.00 - 200.00	0.6000	0.4700

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T6	19	LDF5-50A (7/8 FOAM)	180.00 - 198.00	0.6000	0.4700
T6	20	LDF5-50A (7/8 FOAM)	180.00 - 200.00	0.6000	0.4700
T6	21	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.4700
T6	22	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.4700
T6	23	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.4700
T6	24	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.4700
T6	25	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.4700
T6	26	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.4700
T6	27	LDF5-50A (7/8 FOAM)	180.00 - 200.00	0.6000	0.4700
T6	28	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.4700
T6	30	LDF4-50A (1/2 FOAM)	180.00 - 200.00	0.6000	0.4700
T6	31	LDF4-50A (1/2 FOAM)	180.00 - 200.00	0.6000	0.4700
T6	33	LDF5-50A (7/8 FOAM)	180.00 - 200.00	0.6000	0.4700
T7	3	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.4612
T7	4	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.4612
T7	5	Fiber Trunk	160.00 - 180.00	0.6000	0.4612
T7	6	DC Trunk	160.00 - 180.00	0.6000	0.4612
T7	10	LDF4-50A (1/2 FOAM)	160.00 - 180.00	0.6000	0.4612
T7	18	LDF5-50A (7/8 FOAM)	160.00 - 172.00	0.6000	0.4612
T7	19	LDF5-50A (7/8 FOAM)	160.00 - 180.00	0.6000	0.4612
T7	20	LDF5-50A (7/8 FOAM)	160.00 - 180.00	0.6000	0.4612
T7	21	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.4612
T7	22	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.4612
T7	23	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.4612
T7	24	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.4612
T7	25	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.4612
T7	26	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.4612
T7	27	LDF5-50A (7/8 FOAM)	160.00 - 180.00	0.6000	0.4612
T7	28	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.4612
T7	30	LDF4-50A (1/2 FOAM)	160.00 - 180.00	0.6000	0.4612
T7	31	LDF4-50A (1/2 FOAM)	160.00 - 180.00	0.6000	0.4612

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T7	33	LDF5-50A (7/8 FOAM)	160.00 - 180.00	0.6000	0.4612
T8	3	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.4743
T8	4	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.4743
T8	5	Fiber Trunk	140.00 - 160.00	0.6000	0.4743
T8	6	DC Trunk	140.00 - 160.00	0.6000	0.4743
T8	9	LDF4-50A (1/2 FOAM)	140.00 - 159.00	0.6000	0.4743
T8	10	LDF4-50A (1/2 FOAM)	159.00 - 160.00	0.6000	0.4743
T8	18	LDF5-50A (7/8 FOAM)	140.00 - 160.00	0.6000	0.4743
T8	19	LDF5-50A (7/8 FOAM)	140.00 - 160.00	0.6000	0.4743
T8	20	LDF5-50A (7/8 FOAM)	140.00 - 160.00	0.6000	0.4743
T8	21	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.4743
T8	22	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.4743
T8	23	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.4743
T8	24	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.4743
T8	25	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.4743
T8	26	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.4743
T8	27	LDF5-50A (7/8 FOAM)	140.00 - 160.00	0.6000	0.4743
T8	28	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.4743
T8	30	LDF4-50A (1/2 FOAM)	140.00 - 160.00	0.6000	0.4743
T8	31	LDF4-50A (1/2 FOAM)	140.00 - 160.00	0.6000	0.4743
T8	32	LDF5-50A (7/8 FOAM)	140.00 - 150.00	0.6000	0.4743
T8	33	LDF5-50A (7/8 FOAM)	150.00 - 160.00	0.6000	0.4743
T9	3	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.4766
T9	4	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.4766
T9	5	Fiber Trunk	120.00 - 140.00	0.6000	0.4766
T9	6	DC Trunk	120.00 - 140.00	0.6000	0.4766
T9	9	LDF4-50A (1/2 FOAM)	120.00 - 140.00	0.6000	0.4766
T9	18	LDF5-50A (7/8 FOAM)	120.00 - 140.00	0.6000	0.4766
T9	19	LDF5-50A (7/8 FOAM)	120.00 - 140.00	0.6000	0.4766
T9	20	LDF5-50A (7/8 FOAM)	120.00 - 140.00	0.6000	0.4766
T9	21	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.4766

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T9	22	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.4766
T9	23	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.4766
T9	24	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.4766
T9	25	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.4766
T9	26	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.4766
T9	27	LDF5-50A (7/8 FOAM)	120.00 - 140.00	0.6000	0.4766
T9	28	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.4766
T9	30	LDF4-50A (1/2 FOAM)	120.00 - 140.00	0.6000	0.4766
T9	31	LDF4-50A (1/2 FOAM)	120.00 - 140.00	0.6000	0.4766
T9	32	LDF5-50A (7/8 FOAM)	120.00 - 140.00	0.6000	0.4766
T10	3	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.4760
T10	4	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.4760
T10	5	Fiber Trunk	100.00 - 120.00	0.6000	0.4760
T10	6	DC Trunk	100.00 - 120.00	0.6000	0.4760
T10	9	LDF4-50A (1/2 FOAM)	100.00 - 120.00	0.6000	0.4760
T10	14	EW63	100.00 - 104.00	0.6000	0.4760
T10	15	LDF5-50A (7/8 FOAM)	100.00 - 112.00	0.6000	0.4760
T10	16	EW63	100.00 - 116.00	0.6000	0.4760
T10	17	EW63	100.00 - 116.00	0.6000	0.4760
T10	18	LDF5-50A (7/8 FOAM)	100.00 - 120.00	0.6000	0.4760
T10	19	LDF5-50A (7/8 FOAM)	100.00 - 120.00	0.6000	0.4760
T10	20	LDF5-50A (7/8 FOAM)	100.00 - 120.00	0.6000	0.4760
T10	21	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.4760
T10	22	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.4760
T10	23	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.4760
T10	24	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.4760
T10	25	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.4760
T10	26	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.4760
T10	27	LDF5-50A (7/8 FOAM)	100.00 - 120.00	0.6000	0.4760
T10	28	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.4760
T10	30	LDF4-50A (1/2 FOAM)	100.00 - 120.00	0.6000	0.4760

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T10	31	LDF4-50A (1/2 FOAM)	100.00 - 120.00	0.6000	0.4760
T10	32	LDF5-50A (7/8 FOAM)	100.00 - 120.00	0.6000	0.4760
T11	1	LDF6-50A (1-1/4 FOAM)	80.00 - 84.00	0.6000	0.4789
T11	2	HYBRIFLEX 1-5/8"	80.00 - 84.00	0.6000	0.4789
T11	3	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.4789
T11	4	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.4789
T11	5	Fiber Trunk	80.00 - 100.00	0.6000	0.4789
T11	6	DC Trunk	80.00 - 100.00	0.6000	0.4789
T11	8	LDF4-50A (1/2 FOAM)	80.00 - 94.00	0.6000	0.4789
T11	9	LDF4-50A (1/2 FOAM)	94.00 - 100.00	0.6000	0.4789
T11	14	EW63	80.00 - 100.00	0.6000	0.4789
T11	15	LDF5-50A (7/8 FOAM)	80.00 - 100.00	0.6000	0.4789
T11	16	EW63	80.00 - 100.00	0.6000	0.4789
T11	17	EW63	80.00 - 100.00	0.6000	0.4789
T11	18	LDF5-50A (7/8 FOAM)	80.00 - 100.00	0.6000	0.4789
T11	19	LDF5-50A (7/8 FOAM)	80.00 - 100.00	0.6000	0.4789
T11	20	LDF5-50A (7/8 FOAM)	80.00 - 100.00	0.6000	0.4789
T11	21	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.4789
T11	22	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.4789
T11	23	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.4789
T11	24	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.4789
T11	25	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.4789
T11	26	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.4789
T11	27	LDF5-50A (7/8 FOAM)	80.00 - 100.00	0.6000	0.4789
T11	28	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.4789
T11	30	LDF4-50A (1/2 FOAM)	80.00 - 100.00	0.6000	0.4789
T11	31	LDF4-50A (1/2 FOAM)	80.00 - 100.00	0.6000	0.4789
T11	32	LDF5-50A (7/8 FOAM)	80.00 - 100.00	0.6000	0.4789
T12	1	LDF6-50A (1-1/4 FOAM)	60.00 - 80.00	0.6000	0.4898
T12	2	HYBRIFLEX 1-5/8"	60.00 - 80.00	0.6000	0.4898
T12	3	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.4898
T12	4	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.4898
T12	5	Fiber Trunk	60.00 - 80.00	0.6000	0.4898
T12	6	DC Trunk	60.00 - 80.00	0.6000	0.4898
T12	8	LDF4-50A (1/2 FOAM)	60.00 - 80.00	0.6000	0.4898
T12	13	LDF5-50A (7/8 FOAM)	60.00 - 70.00	0.6000	0.4898
T12	14	EW63	60.00 - 80.00	0.6000	0.4898
T12	15	LDF5-50A (7/8 FOAM)	60.00 - 80.00	0.6000	0.4898
T12	16	EW63	60.00 - 80.00	0.6000	0.4898
T12	17	EW63	60.00 - 80.00	0.6000	0.4898
T12	18	LDF5-50A (7/8 FOAM)	60.00 - 80.00	0.6000	0.4898
T12	19	LDF5-50A (7/8 FOAM)	60.00 - 80.00	0.6000	0.4898
T12	20	LDF5-50A (7/8 FOAM)	60.00 - 80.00	0.6000	0.4898
T12	21	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.4898
T12	22	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.4898
T12	23	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.4898
T12	24	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.4898
T12	25	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.4898
T12	26	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.4898
T12	27	LDF5-50A (7/8 FOAM)	60.00 - 80.00	0.6000	0.4898
T12	28	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.4898
T12	30	LDF4-50A (1/2 FOAM)	60.00 - 80.00	0.6000	0.4898
T12	31	LDF4-50A (1/2 FOAM)	60.00 - 80.00	0.6000	0.4898
T12	32	LDF5-50A (7/8 FOAM)	60.00 - 80.00	0.6000	0.4898
T13	1	LDF6-50A (1-1/4 FOAM)	40.00 - 60.00	0.6000	0.4996
T13	2	HYBRIFLEX 1-5/8"	40.00 - 60.00	0.6000	0.4996
T13	3	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.4996
T13	4	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.4996
T13	5	Fiber Trunk	40.00 - 60.00	0.6000	0.4996
T13	6	DC Trunk	40.00 - 60.00	0.6000	0.4996

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T13	8	LDF4-50A (1/2 FOAM)	40.00 - 60.00	0.6000	0.4996
T13	13	LDF5-50A (7/8 FOAM)	40.00 - 60.00	0.6000	0.4996
T13	14	EW63	40.00 - 60.00	0.6000	0.4996
T13	15	LDF5-50A (7/8 FOAM)	40.00 - 60.00	0.6000	0.4996
T13	16	EW63	40.00 - 60.00	0.6000	0.4996
T13	17	EW63	40.00 - 60.00	0.6000	0.4996
T13	18	LDF5-50A (7/8 FOAM)	40.00 - 60.00	0.6000	0.4996
T13	19	LDF5-50A (7/8 FOAM)	40.00 - 60.00	0.6000	0.4996
T13	20	LDF5-50A (7/8 FOAM)	40.00 - 60.00	0.6000	0.4996
T13	21	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.4996
T13	22	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.4996
T13	23	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.4996
T13	24	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.4996
T13	25	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.4996
T13	26	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.4996
T13	27	LDF5-50A (7/8 FOAM)	40.00 - 60.00	0.6000	0.4996
T13	28	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.4996
T13	30	LDF4-50A (1/2 FOAM)	40.00 - 60.00	0.6000	0.4996
T13	31	LDF4-50A (1/2 FOAM)	40.00 - 60.00	0.6000	0.4996
T13	32	LDF5-50A (7/8 FOAM)	40.00 - 60.00	0.6000	0.4996
T14	1	LDF6-50A (1-1/4 FOAM)	20.00 - 40.00	0.6000	0.5141
T14	2	HYBRIFLEX 1-5/8"	20.00 - 40.00	0.6000	0.5141
T14	3	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5141
T14	4	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5141
T14	5	Fiber Trunk	20.00 - 40.00	0.6000	0.5141
T14	6	DC Trunk	20.00 - 40.00	0.6000	0.5141
T14	8	LDF4-50A (1/2 FOAM)	20.00 - 40.00	0.6000	0.5141
T14	13	LDF5-50A (7/8 FOAM)	20.00 - 40.00	0.6000	0.5141
T14	14	EW63	20.00 - 40.00	0.6000	0.5141
T14	15	LDF5-50A (7/8 FOAM)	20.00 - 40.00	0.6000	0.5141
T14	16	EW63	20.00 - 40.00	0.6000	0.5141
T14	17	EW63	20.00 - 40.00	0.6000	0.5141
T14	18	LDF5-50A (7/8 FOAM)	20.00 - 40.00	0.6000	0.5141
T14	19	LDF5-50A (7/8 FOAM)	20.00 - 40.00	0.6000	0.5141
T14	20	LDF5-50A (7/8 FOAM)	20.00 - 40.00	0.6000	0.5141
T14	21	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5141
T14	22	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5141
T14	23	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5141
T14	24	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5141
T14	25	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5141
T14	26	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5141
T14	27	LDF5-50A (7/8 FOAM)	20.00 - 40.00	0.6000	0.5141
T14	28	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5141
T14	30	LDF4-50A (1/2 FOAM)	20.00 - 40.00	0.6000	0.5141
T14	31	LDF4-50A (1/2 FOAM)	20.00 - 40.00	0.6000	0.5141
T14	32	LDF5-50A (7/8 FOAM)	20.00 - 40.00	0.6000	0.5141
T15	1	LDF6-50A (1-1/4 FOAM)	6.75 - 20.00	0.6000	0.5282
T15	2	HYBRIFLEX 1-5/8"	6.75 - 20.00	0.6000	0.5282
T15	3	LDF7-50A (1-5/8 FOAM)	6.75 - 20.00	0.6000	0.5282
T15	4	LDF7-50A (1-5/8 FOAM)	6.75 - 20.00	0.6000	0.5282
T15	5	Fiber Trunk	6.75 - 20.00	0.6000	0.5282
T15	6	DC Trunk	6.75 - 20.00	0.6000	0.5282
T15	7	LDF4-50A (1/2 FOAM)	6.75 - 18.00	0.6000	0.5282
T15	8	LDF4-50A (1/2 FOAM)	18.00 - 20.00	0.6000	0.5282
T15	13	LDF5-50A (7/8 FOAM)	6.75 - 20.00	0.6000	0.5282
T15	14	EW63	6.75 - 20.00	0.6000	0.5282
T15	15	LDF5-50A (7/8 FOAM)	6.75 - 20.00	0.6000	0.5282
T15	16	EW63	6.75 - 20.00	0.6000	0.5282
T15	17	EW63	6.75 - 20.00	0.6000	0.5282
T15	18	LDF5-50A (7/8 FOAM)	6.75 - 20.00	0.6000	0.5282
T15	19	LDF5-50A (7/8 FOAM)	6.75 - 20.00	0.6000	0.5282
T15	20	LDF5-50A (7/8 FOAM)	6.75 - 20.00	0.6000	0.5282

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T15	21	LDF7-50A (1-5/8 FOAM)	6.75 - 20.00	0.6000	0.5282
T15	22	LDF7-50A (1-5/8 FOAM)	6.75 - 20.00	0.6000	0.5282
T15	23	LDF7-50A (1-5/8 FOAM)	6.75 - 20.00	0.6000	0.5282
T15	24	LDF7-50A (1-5/8 FOAM)	6.75 - 20.00	0.6000	0.5282
T15	25	LDF7-50A (1-5/8 FOAM)	6.75 - 20.00	0.6000	0.5282
T15	26	LDF7-50A (1-5/8 FOAM)	6.75 - 20.00	0.6000	0.5282
T15	27	LDF5-50A (7/8 FOAM)	6.75 - 20.00	0.6000	0.5282
T15	28	LDF7-50A (1-5/8 FOAM)	6.75 - 20.00	0.6000	0.5282
T15	30	LDF4-50A (1/2 FOAM)	6.75 - 20.00	0.6000	0.5282
T15	31	LDF4-50A (1/2 FOAM)	6.75 - 20.00	0.6000	0.5282
T15	32	LDF5-50A (7/8 FOAM)	6.75 - 20.00	0.6000	0.5282
T16	1	LDF6-50A (1-1/4 FOAM)	5.00 - 6.75	0.2447	0.0000
T16	2	HYBRIFLEX 1-5/8"	5.00 - 6.75	0.2447	0.0000
T16	3	LDF7-50A (1-5/8 FOAM)	5.00 - 6.75	0.2447	0.0000
T16	4	LDF7-50A (1-5/8 FOAM)	5.00 - 6.75	0.2447	0.0000
T16	5	Fiber Trunk	5.00 - 6.75	0.2447	0.0000
T16	6	DC Trunk	5.00 - 6.75	0.2447	0.0000
T16	7	LDF4-50A (1/2 FOAM)	5.00 - 6.75	0.2447	0.0000
T16	13	LDF5-50A (7/8 FOAM)	5.00 - 6.75	0.2447	0.0000
T16	14	EW63	5.00 - 6.75	0.2447	0.0000
T16	15	LDF5-50A (7/8 FOAM)	5.00 - 6.75	0.2447	0.0000
T16	16	EW63	5.00 - 6.75	0.2447	0.0000
T16	17	EW63	5.00 - 6.75	0.2447	0.0000
T16	18	LDF5-50A (7/8 FOAM)	5.00 - 6.75	0.2447	0.0000
T16	19	LDF5-50A (7/8 FOAM)	5.00 - 6.75	0.2447	0.0000
T16	20	LDF5-50A (7/8 FOAM)	5.00 - 6.75	0.2447	0.0000
T16	21	LDF7-50A (1-5/8 FOAM)	5.00 - 6.75	0.2447	0.0000
T16	22	LDF7-50A (1-5/8 FOAM)	5.00 - 6.75	0.2447	0.0000
T16	23	LDF7-50A (1-5/8 FOAM)	5.00 - 6.75	0.2447	0.0000
T16	24	LDF7-50A (1-5/8 FOAM)	5.00 - 6.75	0.2447	0.0000
T16	25	LDF7-50A (1-5/8 FOAM)	5.00 - 6.75	0.2447	0.0000
T16	26	LDF7-50A (1-5/8 FOAM)	5.00 - 6.75	0.2447	0.0000
T16	27	LDF5-50A (7/8 FOAM)	5.00 - 6.75	0.2447	0.0000
T16	28	LDF7-50A (1-5/8 FOAM)	5.00 - 6.75	0.2447	0.0000
T16	30	LDF4-50A (1/2 FOAM)	5.00 - 6.75	0.2447	0.0000
T16	31	LDF4-50A (1/2 FOAM)	5.00 - 6.75	0.2447	0.0000
T16	32	LDF5-50A (7/8 FOAM)	5.00 - 6.75	0.2447	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
4-ft Lightning Rod	A	From Face	0.00 0.00 0.00	0.0000	323.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.40 0.81 1.06 1.58	0.40 0.81 1.06 1.58	0.01 0.01 0.02 0.04
Flash Beacon Lighting	B	None		0.0000	323.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.70 3.10 3.50 4.30	2.70 3.10 3.50 4.30	0.05 0.07 0.09 0.13

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
6813 1-Bay w/radome	C	From Leg	2.00 0.00 0.00	0.0000	305.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.90 6.00 7.10 9.30	4.90 6.00 7.10 9.30	0.10 0.20 0.29 0.49
PD1110	C	From Leg	3.00 0.00 0.00	0.0000	305.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.50 3.84 5.20 7.97	2.50 3.84 5.20 7.97	0.02 0.04 0.07 0.15
PD1110	C	From Leg	4.00 0.00 0.00	0.0000	277.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.50 3.84 5.20 7.97	2.50 3.84 5.20 7.97	0.02 0.04 0.07 0.15
ROHN 4-ft Side Arm	C	From Leg	2.00 0.00 0.00	0.0000	277.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.28 7.88 10.48 15.68	5.28 7.88 10.48 15.68	0.07 0.08 0.10 0.14
OGT9-840	C	From Leg	3.00 0.00 0.00	0.0000	267.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.27 3.44 4.61 6.81	2.27 3.44 4.61 6.81	0.02 0.04 0.06 0.13
DB810K	A	From Leg	3.00 0.00 0.00	0.0000	267.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.08 5.73 7.41 10.81	4.08 5.73 7.41 10.81	0.04 0.07 0.11 0.22
ROHN 3-ft Side Arm	A	From Leg	1.50 0.00 0.00	0.0000	267.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.10 5.00 6.90 10.70	3.10 5.00 6.90 10.70	0.07 0.10 0.13 0.19
ROHN 3-ft Side Arm	C	From Leg	1.50 0.00 0.00	0.0000	267.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.10 5.00 6.90 10.70	3.10 5.00 6.90 10.70	0.07 0.10 0.13 0.19
AP14-850/105	B	From Leg	3.00 0.00 0.00	0.0000	261.00	No Ice 1/2" Ice 1" Ice 2" Ice	10.61 11.25 11.89 13.20	5.64 6.28 6.89 8.14	0.03 0.08 0.14 0.28
ROHN 3-ft Side Arm	C	From Leg	1.50 0.00 0.00	0.0000	261.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.10 5.00 6.90 10.70	3.10 5.00 6.90 10.70	0.07 0.10 0.13 0.19
OGT9-840	C	From Leg	3.00 0.00 0.00	0.0000	256.50	No Ice 1/2" Ice 1" Ice 2" Ice	2.27 3.44 4.61 6.81	2.27 3.44 4.61 6.81	0.02 0.04 0.06 0.13
OGT9-840	B	From Leg	3.00 0.00 0.00	0.0000	256.50	No Ice 1/2" Ice 1" Ice 2" Ice	2.27 3.44 4.61 6.81	2.27 3.44 4.61 6.81	0.02 0.04 0.06 0.13
AP14-850/105	B	From Leg	3.00 0.00 0.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice 2" Ice	10.61 11.25 11.89 13.20	5.64 6.28 6.89 8.14	0.03 0.08 0.14 0.28
ROHN 3-ft Side Arm	C	From Leg	1.50 0.00 0.00	0.0000	252.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.10 5.00 6.90 10.70	3.10 5.00 6.90 10.70	0.07 0.10 0.13 0.19
BXA-70063-2CF	A	From Leg	3.00	0.0000	250.00	No Ice	2.22	1.11	0.01

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2" Ice	2.42	1.27	0.03
			0.00			1" Ice	2.63	1.44	0.04
						2" Ice	3.06	1.79	0.09
BXA-70063-2CF	B	From Leg	3.00	0.0000	250.00	No Ice	2.22	1.11	0.01
			0.00			1/2" Ice	2.42	1.27	0.03
			0.00			1" Ice	2.63	1.44	0.04
						2" Ice	3.06	1.79	0.09
SC479-HF1LDF	A	From Leg	4.00	0.0000	250.00	No Ice	4.20	4.20	0.03
			0.00			1/2" Ice	6.54	6.54	0.07
			0.00			1" Ice	8.04	8.04	0.11
						2" Ice	10.81	10.81	0.23
SC479-HF1LDF	B	From Leg	4.00	0.0000	250.00	No Ice	4.20	4.20	0.03
			0.00			1/2" Ice	6.54	6.54	0.07
			0.00			1" Ice	8.04	8.04	0.11
						2" Ice	10.81	10.81	0.23
SC479-HF1LDF	B	From Leg	4.00	0.0000	250.00	No Ice	4.20	4.20	0.03
			0.00			1/2" Ice	6.54	6.54	0.07
			0.00			1" Ice	8.04	8.04	0.11
						2" Ice	10.81	10.81	0.23
TTA 432-83H-01T	A	From Leg	4.00	0.0000	250.00	No Ice	1.40	0.82	0.03
			0.00			1/2" Ice	1.55	0.94	0.04
			0.00			1" Ice	1.70	1.06	0.05
						2" Ice	2.04	1.34	0.09
TTA 432-83H-01T	B	From Leg	4.00	0.0000	250.00	No Ice	1.40	0.82	0.03
			0.00			1/2" Ice	1.55	0.94	0.04
			0.00			1" Ice	1.70	1.06	0.05
						2" Ice	2.04	1.34	0.09
10-ft T-Frame	A	From Leg	2.00	0.0000	250.00	No Ice	13.60	13.60	0.38
			0.00			1/2" Ice	17.50	17.50	0.53
			0.00			1" Ice	21.40	21.40	0.68
						2" Ice	29.20	29.20	0.99
10-ft T-Frame	B	From Leg	2.00	0.0000	250.00	No Ice	13.60	13.60	0.38
			0.00			1/2" Ice	17.50	17.50	0.53
			0.00			1" Ice	21.40	21.40	0.68
						2" Ice	29.20	29.20	0.99
SC479-HF1LDF	C	From Leg	4.00	0.0000	240.00	No Ice	4.22	4.22	0.03
			0.00			1/2" Ice	6.54	6.54	0.07
			0.00			1" Ice	8.04	8.04	0.11
						2" Ice	10.81	10.81	0.23
SC479-HF1LDF	C	From Leg	4.00	0.0000	240.00	No Ice	4.22	4.22	0.03
			0.00			1/2" Ice	6.54	6.54	0.07
			0.00			1" Ice	8.04	8.04	0.11
						2" Ice	10.81	10.81	0.23
TTA 432-83H-01T	C	From Leg	4.00	0.0000	240.00	No Ice	1.40	0.82	0.03
			0.00			1/2" Ice	1.55	0.94	0.04
			0.00			1" Ice	1.70	1.06	0.05
						2" Ice	2.04	1.34	0.09
10-ft T-Frame	C	From Leg	2.00	0.0000	240.00	No Ice	13.60	13.60	0.38
			0.00			1/2" Ice	17.50	17.50	0.53
			0.00			1" Ice	21.40	21.40	0.68
						2" Ice	29.20	29.20	0.99
6813 1-Bay w/radome	C	From Leg	2.00	0.0000	211.00	No Ice	4.90	4.90	0.10
			0.00			1/2" Ice	6.00	6.00	0.20
			0.00			1" Ice	7.10	7.10	0.29
						2" Ice	9.30	9.30	0.49
6813 1-Bay w/radome	B	From Leg	2.00	0.0000	198.00	No Ice	4.90	4.90	0.10
			0.00			1/2" Ice	6.00	6.00	0.20

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1" Ice	7.10	7.10	0.29
						2" Ice	9.30	9.30	0.49
6812	A	From Leg	3.00	0.0000	198.00	No Ice	0.20	0.20	0.00
			0.00			1/2" Ice	0.36	0.36	0.00
			0.00			1" Ice	0.52	0.52	0.00
						2" Ice	0.84	0.84	0.01
6' Yagi	B	From Leg	3.00	0.0000	190.00	No Ice	5.00	5.00	0.04
			0.00			1/2" Ice	6.50	6.50	0.06
			0.00			1" Ice	8.00	8.00	0.08
						2" Ice	11.00	11.00	0.12
24"x12"x5" Panel	B	From Leg	1.00	0.0000	172.00	No Ice	2.40	1.09	0.03
			0.00			1/2" Ice	2.60	1.24	0.05
			0.00			1" Ice	2.81	1.41	0.07
						2" Ice	3.26	1.77	0.12
8' x 3" Dia Omni	C	From Leg	1.00	0.0000	172.00	No Ice	2.40	2.40	0.03
			0.00			1/2" Ice	3.19	3.19	0.04
			0.00			1" Ice	3.67	3.67	0.07
						2" Ice	4.68	4.68	0.13
16"x12"x3" TTA	A	From Leg	1.00	0.0000	166.00	No Ice	1.60	0.44	0.01
			0.00			1/2" Ice	1.76	0.55	0.02
			0.00			1" Ice	1.93	0.66	0.03
						2" Ice	2.28	0.91	0.07
24"x12"x5" Panel	C	From Leg	1.00	0.0000	158.80	No Ice	2.40	1.09	0.03
			0.00			1/2" Ice	2.60	1.24	0.05
			0.00			1" Ice	2.81	1.41	0.07
						2" Ice	3.26	1.77	0.12
Beacon	A	From Leg	0.50	0.0000	157.00	No Ice	0.17	0.17	0.01
			0.00			1/2" Ice	0.31	0.31	0.01
			0.00			1" Ice	0.39	0.39	0.02
						2" Ice	0.58	0.58	0.03
Beacon	B	From Leg	0.50	0.0000	157.00	No Ice	0.17	0.17	0.01
			0.00			1/2" Ice	0.31	0.31	0.01
			0.00			1" Ice	0.39	0.39	0.02
						2" Ice	0.58	0.58	0.03
Beacon	C	From Leg	0.50	0.0000	157.00	No Ice	0.17	0.17	0.01
			0.00			1/2" Ice	0.31	0.31	0.01
			0.00			1" Ice	0.39	0.39	0.02
						2" Ice	0.58	0.58	0.03
Sabre 2' Sidearm	B	From Leg	1.00	0.0000	125.00	No Ice	3.90	3.90	0.09
			0.00			1/2" Ice	4.40	4.40	0.10
			0.00			1" Ice	4.90	4.90	0.11
						2" Ice	5.90	5.90	0.13
6'x4' Ice Shield	C	From Leg	1.00	0.0000	124.00	No Ice	0.02	0.03	0.28
			0.00			1/2" Ice	0.05	0.06	0.40
			0.00			1" Ice	0.08	0.09	0.52
						2" Ice	0.13	0.15	0.75
9'x10' Ice Shield	A	From Leg	1.00	0.0000	124.00	No Ice	0.88	1.00	1.07
			0.00			1/2" Ice	1.20	2.00	1.40
			0.00			1" Ice	1.52	3.00	1.73
						2" Ice	2.16	5.00	2.39
2'6"x4" Pipe Mount	C	From Leg	0.50	0.0000	124.00	No Ice	0.64	0.64	0.03
			0.00			1/2" Ice	0.91	0.91	0.04
			0.00			1" Ice	1.09	1.09	0.05
						2" Ice	1.47	1.47	0.07
2'6"x4" Pipe Mount	A	From Leg	0.50	0.0000	124.00	No Ice	0.64	0.64	0.03
			0.00			1/2" Ice	0.91	0.91	0.04
			0.00			1" Ice	1.09	1.09	0.05

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	1.47	1.47	0.07
PD1110	B	From Leg	2.00 0.00 0.00	0.0000	112.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.50 3.84 5.20 7.97	2.50 3.84 5.20 7.97	0.02 0.04 0.07 0.15
Sabre 2' Sidearm	B	From Leg	1.00 0.00 0.00	0.0000	112.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.90 4.40 4.90 5.90	3.90 4.40 4.90 5.90	0.09 0.10 0.11 0.13
6'x4" Pipe Mount	C	From Leg	0.50 0.00 0.00	0.0000	104.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.73 2.46 2.83 3.61	1.73 2.46 2.83 3.61	0.05 0.07 0.09 0.15
PR-900	C	From Leg	0.50 0.00 0.00	0.0000	94.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.35 11.43 16.51 26.67	6.35 11.43 16.51 26.67	0.04 0.05 0.06 0.08
ASP-962	B	From Leg	0.50 0.00 0.00	0.0000	94.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.16 0.29 0.42 0.67	0.16 0.29 0.42 0.67	0.00 0.00 0.00 0.00
DB212-1 (CSP-10)	C	From Leg	0.00 0.00 0.00	0.0000	70.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.50 8.10 11.70 18.90	4.50 8.10 11.70 18.90	0.03 0.04 0.05 0.07
6' Yagi	C	From Leg	3.00 0.00 0.00	0.0000	18.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.00 6.50 8.00 11.00	5.00 6.50 8.00 11.00	0.04 0.06 0.08 0.12
Sabre 2' Sidearm	C	From Leg	1.00 0.00 0.00	0.0000	18.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.90 4.40 4.90 5.90	3.90 4.40 4.90 5.90	0.09 0.10 0.11 0.13
BXA-80063-4CF (Verizon)	A	From Leg	3.00 0.00 0.00	0.0000	84.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.71 5.03 5.35 6.02	2.52 2.82 3.13 3.75	0.01 0.04 0.07 0.15
BXA-80063-4CF (Verizon)	B	From Leg	3.00 0.00 0.00	0.0000	84.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.71 5.03 5.35 6.02	2.52 2.82 3.13 3.75	0.01 0.04 0.07 0.15
BXA-80063-4CF (Verizon)	C	From Leg	3.00 0.00 0.00	0.0000	84.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.71 5.03 5.35 6.02	2.52 2.82 3.13 3.75	0.01 0.04 0.07 0.15
(2) JAHH-65B-R3B (Verizon)	A	From Leg	3.00 0.00 0.00	0.0000	84.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.11 9.58 10.05 11.02	5.98 6.44 6.91 7.86	0.06 0.12 0.19 0.33
(2) JAHH-65B-R3B (Verizon)	B	From Leg	3.00 0.00 0.00	0.0000	84.00	No Ice 1/2" Ice 1" Ice 2" Ice	9.11 9.58 10.05 11.02	5.98 6.44 6.91 7.86	0.06 0.12 0.19 0.33
(2) JAHH-45B-R3B (Verizon)	C	From Leg	3.00 0.00 0.00	0.0000	84.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.40 11.89 12.38 13.39	5.28 5.74 6.20 7.14	0.09 0.16 0.23 0.39

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) JAHH-45B-R3B	B	From Leg	3.00	0.0000	84.00	No Ice	11.40	5.28	0.09
(Verizon)			0.00			1/2" Ice	11.89	5.74	0.16
			0.00			1" Ice	12.38	6.20	0.23
						2" Ice	13.39	7.14	0.39
RVZDC-6627-PF-48	A	From Leg	3.00	0.0000	84.00	No Ice	3.25	2.15	0.03
(Verizon)			6.00			1/2" Ice	3.48	2.35	0.06
			0.00			1" Ice	3.71	2.55	0.09
						2" Ice	4.20	2.98	0.17
RVZDC-6627-PF-48	B	From Leg	3.00	0.0000	84.00	No Ice	3.25	2.15	0.03
(Verizon)			6.00			1/2" Ice	3.48	2.35	0.06
			0.00			1" Ice	3.71	2.55	0.09
						2" Ice	4.20	2.98	0.17
(2) MT6407-77A	A	From Leg	3.00	0.0000	84.00	No Ice	4.71	1.84	0.09
(Verizon - Proposed)			0.00			1/2" Ice	5.00	2.06	0.12
			0.00			1" Ice	5.29	2.29	0.15
						2" Ice	5.91	2.77	0.23
MT6407-77A	B	From Leg	3.00	0.0000	84.00	No Ice	4.71	1.84	0.09
(Verizon - Proposed)			0.00			1/2" Ice	5.00	2.06	0.12
			0.00			1" Ice	5.29	2.29	0.15
						2" Ice	5.91	2.77	0.23
MT6407-77A	C	From Leg	3.00	0.0000	84.00	No Ice	4.71	1.84	0.09
(Verizon - Proposed)			0.00			1/2" Ice	5.00	2.06	0.12
			0.00			1" Ice	5.29	2.29	0.15
						2" Ice	5.91	2.77	0.23
(2) XXDWMM-12.5-75-8T	A	From Leg	3.00	0.0000	84.00	No Ice	0.89	0.17	0.00
(Verizon - Proposed)			0.00			1/2" Ice	1.01	0.25	0.01
			0.00			1" Ice	1.14	0.34	0.02
						2" Ice	1.42	0.53	0.03
XXDWMM-12.5-75-8T	B	From Leg	3.00	0.0000	84.00	No Ice	0.89	0.17	0.00
(Verizon - Proposed)			0.00			1/2" Ice	1.01	0.25	0.01
			0.00			1" Ice	1.14	0.34	0.02
						2" Ice	1.42	0.53	0.03
XXDWMM-12.5-75-8T	C	From Leg	3.00	0.0000	84.00	No Ice	0.89	0.17	0.00
(Verizon - Proposed)			0.00			1/2" Ice	1.01	0.25	0.01
			0.00			1" Ice	1.14	0.34	0.02
						2" Ice	1.42	0.53	0.03
(2) B2/B66A RRH	A	From Leg	3.00	0.0000	84.00	No Ice	2.54	1.61	0.06
(Verizon - Proposed)			0.00			1/2" Ice	2.75	1.79	0.08
			0.00			1" Ice	2.97	1.98	0.10
						2" Ice	3.43	2.37	0.16
B2/B66A RRH	B	From Leg	3.00	0.0000	84.00	No Ice	2.54	1.61	0.06
(Verizon - Proposed)			0.00			1/2" Ice	2.75	1.79	0.08
			0.00			1" Ice	2.97	1.98	0.10
						2" Ice	3.43	2.37	0.16
B2/B66A RRH	C	From Leg	3.00	0.0000	84.00	No Ice	2.54	1.61	0.06
(Verizon - Proposed)			0.00			1/2" Ice	2.75	1.79	0.08
			0.00			1" Ice	2.97	1.98	0.10
						2" Ice	3.43	2.37	0.16
(2) B5/B13 RRH	A	From Leg	3.00	0.0000	84.00	No Ice	1.87	1.02	0.07
(Verizon - Proposed)			0.00			1/2" Ice	2.03	1.15	0.09
			0.00			1" Ice	2.21	1.29	0.11
						2" Ice	2.59	1.59	0.15
B5/B13 RRH	B	From Leg	3.00	0.0000	84.00	No Ice	1.87	1.02	0.07
(Verizon - Proposed)			0.00			1/2" Ice	2.03	1.15	0.09
			0.00			1" Ice	2.21	1.29	0.11
						2" Ice	2.59	1.59	0.15
B5/B13 RRH	C	From Leg	3.00	0.0000	84.00	No Ice	1.87	1.02	0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(Verizon - Proposed)			0.00			1/2" Ice	2.03	1.15	0.09
			0.00			1" Ice	2.21	1.29	0.11
						2" Ice	2.59	1.59	0.15
(2) CBRS RRH-RT4401-48A	A	From Leg	3.00	0.0000	84.00	No Ice	0.86	0.42	0.02
(Verizon - Proposed)			0.00			1/2" Ice	0.98	0.51	0.03
			0.00			1" Ice	1.10	0.61	0.04
						2" Ice	1.37	0.83	0.06
CBRS RRH-RT4401-48A	B	From Leg	3.00	0.0000	84.00	No Ice	0.86	0.42	0.02
(Verizon - Proposed)			0.00			1/2" Ice	0.98	0.51	0.03
			0.00			1" Ice	1.10	0.61	0.04
						2" Ice	1.37	0.83	0.06
CBRS RRH-RT4401-48A	C	From Leg	3.00	0.0000	84.00	No Ice	0.86	0.42	0.02
(Verizon - Proposed)			0.00			1/2" Ice	0.98	0.51	0.03
			0.00			1" Ice	1.10	0.61	0.04
						2" Ice	1.37	0.83	0.06
(2) CBC78T-DS-43	A	From Leg	3.00	0.0000	84.00	No Ice	0.37	0.26	0.01
(Verizon - Proposed)			0.00			1/2" Ice	0.45	0.32	0.02
			0.00			1" Ice	0.53	0.40	0.02
						2" Ice	0.72	0.56	0.04
CBC78T-DS-43	B	From Leg	3.00	0.0000	84.00	No Ice	0.37	0.26	0.01
(Verizon - Proposed)			0.00			1/2" Ice	0.45	0.32	0.02
			0.00			1" Ice	0.53	0.40	0.02
						2" Ice	0.72	0.56	0.04
CBC78T-DS-43	C	From Leg	3.00	0.0000	84.00	No Ice	0.37	0.26	0.01
(Verizon - Proposed)			0.00			1/2" Ice	0.45	0.32	0.02
			0.00			1" Ice	0.53	0.40	0.02
						2" Ice	0.72	0.56	0.04
13' Platform w/rails	A	None		0.0000	84.00	No Ice	31.30	31.30	1.82
(Verizon)						1/2" Ice	40.20	40.20	2.45
						1" Ice	49.10	49.10	3.08
						2" Ice	66.90	66.90	4.34
7770.00	A	From Leg	3.00	0.0000	185.00	No Ice	5.51	2.93	0.04
(AT&T - Existing)			-6.00			1/2" Ice	5.87	3.27	0.07
			0.00			1" Ice	6.23	3.63	0.11
						2" Ice	6.99	4.35	0.20
OPA-65R-LCUU-H8	A	From Leg	3.00	0.0000	185.00	No Ice	12.98	7.52	0.09
(AT&T - Existing)			-3.00			1/2" Ice	13.56	8.09	0.16
			0.00			1" Ice	14.15	8.67	0.24
						2" Ice	15.35	9.85	0.43
TPA-65R-LCUUUU-H8	A	From Leg	3.00	0.0000	185.00	No Ice	13.30	8.82	0.08
(AT&T - Existing)			3.00			1/2" Ice	13.90	9.42	0.15
			0.00			1" Ice	14.50	10.03	0.24
						2" Ice	15.74	11.26	0.44
HPA-65R-BUU-H8	A	From Leg	3.00	0.0000	185.00	No Ice	12.98	7.52	0.07
(AT&T - Existing)			6.00			1/2" Ice	13.56	8.09	0.14
			0.00			1" Ice	14.15	8.67	0.22
						2" Ice	15.35	9.85	0.41
7770.00	B	From Leg	3.00	0.0000	185.00	No Ice	5.51	2.93	0.04
(AT&T - Existing)			-6.00			1/2" Ice	5.87	3.27	0.07
			0.00			1" Ice	6.23	3.63	0.11
						2" Ice	6.99	4.35	0.20
OPA-65R-LCUU-H6	B	From Leg	3.00	0.0000	185.00	No Ice	9.66	5.52	0.07
(AT&T - Existing)			-3.00			1/2" Ice	10.13	5.97	0.13
			0.00			1" Ice	10.61	6.43	0.20
						2" Ice	11.58	7.38	0.35
QS66512-2	B	From Leg	3.00	0.0000	185.00	No Ice	8.13	6.80	0.11
(AT&T - Existing)			3.00			1/2" Ice	8.59	7.27	0.17

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1" Ice	9.05	7.72	0.23
						2" Ice	10.00	8.65	0.38
HPA-65R-BUU-H6	B	From Leg	3.00	0.0000	185.00	No Ice	9.66	6.45	0.05
(AT&T - Existing)			6.00			1/2" Ice	10.13	6.91	0.11
			0.00			1" Ice	10.61	7.38	0.18
						2" Ice	11.58	8.31	0.34
7770.00	C	From Leg	3.00	0.0000	185.00	No Ice	5.51	2.93	0.04
(AT&T - Existing)			-6.00			1/2" Ice	5.87	3.27	0.07
			0.00			1" Ice	6.23	3.63	0.11
						2" Ice	6.99	4.35	0.20
OPA-65R-LCUU-H8	C	From Leg	3.00	0.0000	185.00	No Ice	12.98	7.52	0.09
(AT&T - Existing)			-3.00			1/2" Ice	13.56	8.09	0.16
			0.00			1" Ice	14.15	8.67	0.24
						2" Ice	15.35	9.85	0.43
TPA-65R-LCUUUU-H8	C	From Leg	3.00	0.0000	185.00	No Ice	13.30	8.82	0.08
(AT&T - Existing)			3.00			1/2" Ice	13.90	9.42	0.15
			0.00			1" Ice	14.50	10.03	0.24
						2" Ice	15.74	11.26	0.44
HPA-65R-BUU-H8	C	From Leg	3.00	0.0000	185.00	No Ice	12.98	7.52	0.07
(AT&T - Existing)			6.00			1/2" Ice	13.56	8.09	0.14
			0.00			1" Ice	14.15	8.67	0.22
						2" Ice	15.35	9.85	0.41
DTMABP7819VG12A TMA	A	From Leg	3.00	0.0000	185.00	No Ice	1.36	0.51	0.02
(AT&T - Existing)			-6.00			1/2" Ice	1.51	0.61	0.03
			0.00			1" Ice	1.66	0.72	0.04
						2" Ice	1.99	0.96	0.07
DTMABP7819VG12A TMA	B	From Leg	3.00	0.0000	185.00	No Ice	1.36	0.51	0.02
(AT&T - Existing)			-6.00			1/2" Ice	1.51	0.61	0.03
			0.00			1" Ice	1.66	0.72	0.04
						2" Ice	1.99	0.96	0.07
DTMABP7819VG12A TMA	C	From Leg	3.00	0.0000	185.00	No Ice	1.36	0.51	0.02
(AT&T - Existing)			-6.00			1/2" Ice	1.51	0.61	0.03
			0.00			1" Ice	1.66	0.72	0.04
						2" Ice	1.99	0.96	0.07
(2) TPX-070821	A	From Leg	3.00	0.0000	185.00	No Ice	0.47	0.10	0.01
(AT&T - Existing)			-3.00			1/2" Ice	0.56	0.15	0.01
			0.00			1" Ice	0.66	0.20	0.02
						2" Ice	0.87	0.33	0.03
(2) TPX-070821	B	From Leg	3.00	0.0000	185.00	No Ice	0.47	0.10	0.01
(AT&T - Existing)			-3.00			1/2" Ice	0.56	0.15	0.01
			0.00			1" Ice	0.66	0.20	0.02
						2" Ice	0.87	0.33	0.03
(2) TPX-070821	C	From Leg	3.00	0.0000	185.00	No Ice	0.47	0.10	0.01
(AT&T - Existing)			-3.00			1/2" Ice	0.56	0.15	0.01
			0.00			1" Ice	0.66	0.20	0.02
						2" Ice	0.87	0.33	0.03
RRUS-11	A	From Leg	1.00	0.0000	185.00	No Ice	2.57	1.07	0.05
(AT&T - Existing)			1.00			1/2" Ice	2.76	1.21	0.07
			0.00			1" Ice	2.97	1.36	0.09
						2" Ice	3.41	1.68	0.15
RRUS-11	B	From Leg	1.00	0.0000	185.00	No Ice	2.57	1.07	0.05
(AT&T - Existing)			1.00			1/2" Ice	2.76	1.21	0.07
			0.00			1" Ice	2.97	1.36	0.09
						2" Ice	3.41	1.68	0.15
RRUS-11	C	From Leg	1.00	0.0000	185.00	No Ice	2.57	1.07	0.05
(AT&T - Existing)			1.00			1/2" Ice	2.76	1.21	0.07
			0.00			1" Ice	2.97	1.36	0.09

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	3.41	1.68	0.15
RRUS-32	A	From Leg	2.00	0.0000	185.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			2.00			1/2" Ice	3.56	2.64	0.10
			0.00			1" Ice	3.81	2.86	0.14
						2" Ice	4.33	3.32	0.21
RRUS-32	B	From Leg	2.00	0.0000	185.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			2.00			1/2" Ice	3.56	2.64	0.10
			0.00			1" Ice	3.81	2.86	0.14
						2" Ice	4.33	3.32	0.21
RRUS-32	C	From Leg	2.00	0.0000	185.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			2.00			1/2" Ice	3.56	2.64	0.10
			0.00			1" Ice	3.81	2.86	0.14
						2" Ice	4.33	3.32	0.21
RRUS-32	A	From Leg	3.00	0.0000	185.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			-3.00			1/2" Ice	3.56	2.64	0.10
			0.00			1" Ice	3.81	2.86	0.14
						2" Ice	4.33	3.32	0.21
RRUS-32	B	From Leg	3.00	0.0000	185.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			-3.00			1/2" Ice	3.56	2.64	0.10
			0.00			1" Ice	3.81	2.86	0.14
						2" Ice	4.33	3.32	0.21
RRUS-32	C	From Leg	3.00	0.0000	185.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			-3.00			1/2" Ice	3.56	2.64	0.10
			0.00			1" Ice	3.81	2.86	0.14
						2" Ice	4.33	3.32	0.21
RRUS-32	A	From Leg	3.00	0.0000	185.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			0.00			1/2" Ice	3.56	2.64	0.10
			2.00			1" Ice	3.81	2.86	0.14
						2" Ice	4.33	3.32	0.21
RRUS-32	B	From Leg	3.00	0.0000	185.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			0.00			1/2" Ice	3.56	2.64	0.10
			2.00			1" Ice	3.81	2.86	0.14
						2" Ice	4.33	3.32	0.21
RRUS-32	C	From Leg	3.00	0.0000	185.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			0.00			1/2" Ice	3.56	2.64	0.10
			2.00			1" Ice	3.81	2.86	0.14
						2" Ice	4.33	3.32	0.21
RRUS-32	A	From Leg	3.00	0.0000	185.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			0.00			1/2" Ice	3.56	2.64	0.10
			-2.00			1" Ice	3.81	2.86	0.14
						2" Ice	4.33	3.32	0.21
RRUS-32	B	From Leg	3.00	0.0000	185.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			0.00			1/2" Ice	3.56	2.64	0.10
			-2.00			1" Ice	3.81	2.86	0.14
						2" Ice	4.33	3.32	0.21
RRUS-32	C	From Leg	3.00	0.0000	185.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			0.00			1/2" Ice	3.56	2.64	0.10
			-2.00			1" Ice	3.81	2.86	0.14
						2" Ice	4.33	3.32	0.21
B14 4478	A	From Leg	3.00	0.0000	185.00	No Ice	1.84	1.06	0.06
(AT&T - Existing)			3.00			1/2" Ice	2.01	1.20	0.08
			0.00			1" Ice	2.19	1.34	0.09
						2" Ice	2.57	1.66	0.14
B14 4478	B	From Leg	3.00	0.0000	185.00	No Ice	1.84	1.06	0.06
(AT&T - Existing)			3.00			1/2" Ice	2.01	1.20	0.08
			0.00			1" Ice	2.19	1.34	0.09
						2" Ice	2.57	1.66	0.14

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
B14 4478	C	From Leg	3.00	0.0000	185.00	No Ice	1.84	1.06	0.06
(AT&T - Existing)			3.00			1/2" Ice	2.01	1.20	0.08
			0.00			1" Ice	2.19	1.34	0.09
						2" Ice	2.57	1.66	0.14
DC6-48-60-18-8F Surge Arrestor	A	None		0.0000	185.00	No Ice	1.91	1.91	0.02
(AT&T - Existing)						1/2" Ice	2.10	2.10	0.04
						1" Ice	2.29	2.29	0.06
						2" Ice	2.71	2.71	0.12
DC6-48-60-18-8F Surge Arrestor	B	None		0.0000	185.00	No Ice	1.91	1.91	0.02
(AT&T - Existing)						1/2" Ice	2.10	2.10	0.04
						1" Ice	2.29	2.29	0.06
						2" Ice	2.71	2.71	0.12
DC6-48-60-18-8F Surge Arrestor	C	None		0.0000	185.00	No Ice	1.91	1.91	0.02
(AT&T - Existing)						1/2" Ice	2.10	2.10	0.04
						1" Ice	2.29	2.29	0.06
						2" Ice	2.71	2.71	0.12
12' V-Frame	A	None		0.0000	185.00	No Ice	9.22	12.97	0.30
(AT&T - Existing)						1/2" Ice	9.22	12.97	0.40
						1" Ice	9.22	12.97	0.50
						2" Ice	9.22	12.97	0.70
12' V-Frame	B	None		0.0000	185.00	No Ice	9.22	12.97	0.30
(AT&T - Existing)						1/2" Ice	9.22	12.97	0.40
						1" Ice	9.22	12.97	0.50
						2" Ice	9.22	12.97	0.70
12' V-Frame	C	None		0.0000	185.00	No Ice	9.22	12.97	0.30
(AT&T - Existing)						1/2" Ice	9.22	12.97	0.40
						1" Ice	9.22	12.97	0.50
						2" Ice	9.22	12.97	0.70
BA40-67-DIN	B	From Leg	1.00	0.0000	205.00	No Ice	2.05	2.05	0.01
			0.00			1/2" Ice	2.59	2.59	0.03
			0.00			1" Ice	3.02	3.02	0.05
						2" Ice	3.89	3.89	0.10
BA40-67-DIN	B	From Leg	1.00	0.0000	150.00	No Ice	2.08	2.08	0.01
			0.00			1/2" Ice	2.59	2.59	0.03
			0.00			1" Ice	3.02	3.02	0.05
						2" Ice	3.89	3.89	0.10

Tower Pressures - No Ice

G_H = 0.850 (base tower), 1.350 (upper structure)

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
L1	305.55	1.601	59	31.354	A	0.000	31.354	31.354	100.00	0.000	0.000
323.00-288.00					B	0.000	31.354		100.00	0.000	0.000
					C	0.000	31.354		100.00	0.000	0.000
T1	284.00	1.577	58	30.693	A	0.000	4.690	2.667	56.85	0.872	0.000
288.00-280.00					B	0.000	4.690		56.85	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	0.000	4.982		53.52	0.000	0.000
T2	270.00	1.56	57	76.733	A	0.000	11.927	6.667	55.89	5.150	0.000
280.00-260.00					B	0.000	11.927		55.89	2.142	0.000
					C	0.000	12.803		52.07	0.000	0.000
T3	250.00	1.535	56	77.150	A	0.000	12.730	7.500	58.92	33.932	0.000
260.00-240.00					B	0.000	12.730		58.92	2.520	0.000
					C	0.000	13.600		55.15	0.000	0.000
T4	230.00	1.508	55	77.150	A	0.000	12.730	7.500	58.92	57.440	0.000
240.00-220.00					B	0.000	12.730		58.92	2.520	0.000
					C	0.000	13.600		55.15	0.000	0.000
T5	210.00	1.48	54	77.567	A	0.000	13.821	8.333	60.30	58.639	0.000
220.00-200.00					B	0.000	13.821		60.30	3.065	0.000
					C	0.000	14.686		56.74	0.000	0.000
T6	190.00	1.449	53	77.567	A	0.000	13.243	8.333	62.93	61.582	0.000
200.00-180.00					B	0.000	13.243		62.93	6.464	0.000
					C	0.000	14.108		59.07	13.680	0.000
T7	170.00	1.415	52	77.983	A	0.000	14.621	9.167	62.70	64.416	0.000
180.00-160.00					B	0.000	14.621		62.70	7.220	0.000
					C	0.000	15.481		59.21	54.720	0.000
T8	150.00	1.378	51	77.567	A	0.000	13.532	8.333	61.58	66.160	0.000
160.00-140.00					B	0.000	13.532		61.58	9.507	0.000
					C	0.000	14.397		57.88	54.720	0.000
T9	130.00	1.337	49	77.983	A	0.000	14.046	9.167	65.26	66.160	0.000
140.00-120.00					B	0.000	14.046		65.26	10.660	0.000
					C	0.000	14.907		61.49	54.720	0.000
T10	110.00	1.291	47	77.983	A	0.573	14.334	9.167	61.49	73.135	0.000
120.00-100.00					B	0.573	14.334		61.49	10.660	0.000
					C	0.573	15.194		58.13	54.720	0.000
T11	90.00	1.238	46	78.400	A	0.000	15.136	10.000	66.07	77.785	0.000
100.00-80.00					B	0.000	15.136		66.07	12.424	0.000
					C	0.000	15.991		62.54	61.608	0.000
T12	70.00	1.174	43	78.400	A	0.000	14.850	10.000	67.34	78.875	0.000
80.00-60.00					B	0.000	14.850		67.34	13.180	0.000
					C	0.000	15.705		63.67	89.160	0.000
T13	50.00	1.094	40	78.400	A	0.000	14.850	10.000	67.34	79.965	0.000
60.00-40.00					B	0.000	14.850		67.34	13.180	0.000
					C	0.000	15.705		63.67	89.160	0.000
T14	30.00	0.982	36	78.400	A	0.000	14.850	10.000	67.34	79.965	0.000
40.00-20.00					B	0.000	14.850		67.34	13.180	0.000
					C	0.000	15.705		63.67	89.160	0.000
T15 20.00-6.75	13.38	0.85	31	51.940	A	0.000	9.937	6.625	66.67	52.977	0.000
					B	0.000	9.937		66.67	9.441	0.000
					C	0.000	10.507		63.05	59.069	0.000
T16 6.75-0.00	3.38	0.85	31	14.135	A	7.139	3.537	3.537	33.13	6.997	0.000
					B	7.139	3.537		33.13	1.264	0.000
					C	7.139	3.537		33.13	7.801	0.000

Tower Pressure - With Ice

G_H = 0.850 (base tower), 1.350 (upper structure)

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1	305.55	1.601	9	2.1550	43.925	A	0.000	43.925	43.925	100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
323.00-288.00						B	0.000	43.925		100.00	0.000	0.000
						C	0.000	43.925		100.00	0.000	0.000
T1	284.00	1.577	9	2.1393	33.546	A	0.000	17.714	8.371	47.26	4.295	0.000
288.00-280.00						B	0.000	17.714		47.26	0.000	0.000
						C	0.000	19.255		43.48	0.000	0.000
T2	270.00	1.56	8	2.1285	83.828	A	0.000	44.778	20.857	46.58	20.050	0.000
280.00-260.00						B	0.000	44.778		46.58	16.687	0.000
						C	0.000	49.382		42.24	0.000	0.000
T3	250.00	1.535	8	2.1122	84.191	A	0.000	45.218	21.581	47.73	113.539	0.000
260.00-240.00						B	0.000	45.218		47.73	19.518	0.000
						C	0.000	49.767		43.36	0.000	0.000
T4	230.00	1.508	8	2.0946	84.132	A	0.000	44.948	21.464	47.75	190.019	0.000
240.00-220.00						B	0.000	44.948		47.75	19.394	0.000
						C	0.000	49.466		43.39	0.000	0.000
T5	210.00	1.48	8	2.0757	84.486	A	0.000	45.639	22.171	48.58	194.933	0.000
220.00-200.00						B	0.000	45.639		48.58	21.882	0.000
						C	0.000	50.097		44.26	0.000	0.000
T6	190.00	1.449	8	2.0550	84.417	A	0.000	44.744	22.033	49.24	207.999	0.000
200.00-180.00						B	0.000	44.744		49.24	33.169	0.000
						C	0.000	49.167		44.81	42.620	0.000
T7	170.00	1.415	8	2.0323	84.758	A	0.000	45.668	22.715	49.74	221.283	0.000
180.00-160.00						B	0.000	45.668		49.74	34.529	0.000
						C	0.000	50.025		45.41	169.948	0.000
T8	150.00	1.378	7	2.0070	84.257	A	0.000	44.297	21.713	49.02	228.734	0.000
160.00-140.00						B	0.000	44.297		49.02	42.932	0.000
						C	0.000	48.637		44.64	169.358	0.000
T9	130.00	1.337	7	1.9785	84.578	A	0.000	44.272	22.357	50.50	227.027	0.000
140.00-120.00						B	0.000	44.272		50.50	48.697	0.000
						C	0.000	48.536		46.06	168.692	0.000
T10	110.00	1.291	7	1.9457	84.469	A	1.317	42.943	22.138	50.02	250.718	0.000
120.00-100.00						B	1.317	42.943		50.02	48.250	0.000
						C	1.317	47.151		45.68	167.927	0.000
T11	90.00	1.238	7	1.9070	84.757	A	0.000	44.170	22.714	51.42	264.889	0.000
100.00-80.00						B	0.000	44.170		51.42	51.796	0.000
						C	0.000	48.287		47.04	187.097	0.000
T12 80.00-60.00	70.00	1.174	6	1.8597	84.599	A	0.000	43.164	22.398	51.89	266.109	0.000
						B	0.000	43.164		51.89	52.908	0.000
						C	0.000	47.200		47.45	265.693	0.000
T13 60.00-40.00	50.00	1.094	6	1.7982	84.394	A	0.000	42.227	21.988	52.07	266.007	0.000
						B	0.000	42.227		52.07	52.086	0.000
						C	0.000	46.158		47.64	263.500	0.000
T14 40.00-20.00	30.00	0.982	5	1.7086	84.095	A	0.000	40.864	21.391	52.35	258.862	0.000
						B	0.000	40.864		52.35	50.893	0.000
						C	0.000	44.641		47.92	260.316	0.000
T15 20.00-6.75	13.38	0.85	5	1.5760	55.420	A	0.000	26.149	13.586	51.95	164.490	0.000
						B	0.000	26.149		51.95	34.239	0.000
						C	0.000	28.516		47.64	169.345	0.000
T16 6.75-0.00	3.38	0.85	5	1.3733	15.736	A	7.139	8.694	6.776	42.80	20.312	0.000
						B	7.139	8.694		42.80	4.329	0.000
						C	7.139	8.694		42.80	21.741	0.000

Tower Pressure - Service

G_H = 0.850 (base tower), 1.350 (upper structure)

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1	305.55	1.601	13	31.354	A	0.000	31.354	31.354	100.00	0.000	0.000
323.00-288.00					B	0.000	31.354		100.00	0.000	0.000
					C	0.000	31.354		100.00	0.000	0.000
T1	284.00	1.577	12	30.693	A	0.000	4.690	2.667	56.85	0.872	0.000
288.00-280.00					B	0.000	4.690		56.85	0.000	0.000
					C	0.000	4.982		53.52	0.000	0.000
T2	270.00	1.56	12	76.733	A	0.000	11.927	6.667	55.89	5.150	0.000
280.00-260.00					B	0.000	11.927		55.89	2.142	0.000
					C	0.000	12.803		52.07	0.000	0.000
T3	250.00	1.535	12	77.150	A	0.000	12.730	7.500	58.92	33.932	0.000
260.00-240.00					B	0.000	12.730		58.92	2.520	0.000
					C	0.000	13.600		55.15	0.000	0.000
T4	230.00	1.508	12	77.150	A	0.000	12.730	7.500	58.92	57.440	0.000
240.00-220.00					B	0.000	12.730		58.92	2.520	0.000
					C	0.000	13.600		55.15	0.000	0.000
T5	210.00	1.48	12	77.567	A	0.000	13.821	8.333	60.30	58.639	0.000
220.00-200.00					B	0.000	13.821		60.30	3.065	0.000
					C	0.000	14.686		56.74	0.000	0.000
T6	190.00	1.449	11	77.567	A	0.000	13.243	8.333	62.93	61.582	0.000
200.00-180.00					B	0.000	13.243		62.93	6.464	0.000
					C	0.000	14.108		59.07	13.680	0.000
T7	170.00	1.415	11	77.983	A	0.000	14.621	9.167	62.70	64.416	0.000
180.00-160.00					B	0.000	14.621		62.70	7.220	0.000
					C	0.000	15.481		59.21	54.720	0.000
T8	150.00	1.378	11	77.567	A	0.000	13.532	8.333	61.58	66.160	0.000
160.00-140.00					B	0.000	13.532		61.58	9.507	0.000
					C	0.000	14.397		57.88	54.720	0.000
T9	130.00	1.337	10	77.983	A	0.000	14.046	9.167	65.26	66.160	0.000
140.00-120.00					B	0.000	14.046		65.26	10.660	0.000
					C	0.000	14.907		61.49	54.720	0.000
T10	110.00	1.291	10	77.983	A	0.573	14.334	9.167	61.49	73.135	0.000
120.00-100.00					B	0.573	14.334		61.49	10.660	0.000
					C	0.573	15.194		58.13	54.720	0.000
T11	90.00	1.238	10	78.400	A	0.000	15.136	10.000	66.07	77.785	0.000
100.00-80.00					B	0.000	15.136		66.07	12.424	0.000
					C	0.000	15.991		62.54	61.608	0.000
T12	70.00	1.174	9	78.400	A	0.000	14.850	10.000	67.34	78.875	0.000
80.00-60.00					B	0.000	14.850		67.34	13.180	0.000
					C	0.000	15.705		63.67	89.160	0.000
T13	50.00	1.094	9	78.400	A	0.000	14.850	10.000	67.34	79.965	0.000
60.00-40.00					B	0.000	14.850		67.34	13.180	0.000
					C	0.000	15.705		63.67	89.160	0.000
T14	30.00	0.982	8	78.400	A	0.000	14.850	10.000	67.34	79.965	0.000
40.00-20.00					B	0.000	14.850		67.34	13.180	0.000
					C	0.000	15.705		63.67	89.160	0.000
T15 20.00-6.75	13.38	0.85	7	51.940	A	0.000	9.937	6.625	66.67	52.977	0.000
					B	0.000	9.937		66.67	9.441	0.000
					C	0.000	10.507		63.05	59.069	0.000
T16 6.75-0.00	3.38	0.85	7	14.135	A	7.139	3.537	3.537	33.13	6.997	0.000
					B	7.139	3.537		33.13	1.264	0.000
					C	7.139	3.537		33.13	7.801	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L1	0.00	3.20	A	1	0.6	59	1	1	31.354	1.50	42.72	C
323.00-288.00			B	1	0.6		1	1	31.354			
			C	1	0.6		1	1	31.354			
T1	0.00	0.53	A	0.153	2.761	58	1	1	2.663	0.41	50.84	C
288.00-280.00		TA 0.83	B	0.153	2.761		1	1	2.663			
			C	0.162	2.727		1	1	2.834			
T2	0.02	1.36	A	0.155	2.752	57	1	1	6.776	1.18	58.85	C
280.00-260.00			B	0.155	2.752		1	1	6.776			
			C	0.167	2.71		1	1	7.291			
T3	0.14	1.53	A	0.165	2.717	56	1	1	7.246	2.05	102.32	C
260.00-240.00		TA 0.83	B	0.165	2.717		1	1	7.246			
			C	0.176	2.677		1	1	7.762			
T4	0.23	1.53	A	0.165	2.717	55	1	1	7.246	2.68	133.78	C
240.00-220.00			B	0.165	2.717		1	1	7.246			
			C	0.176	2.677		1	1	7.762			
T5	0.24	1.81	A	0.178	2.671	54	1	1	7.892	2.74	136.80	C
220.00-200.00		TA 0.83	B	0.178	2.671		1	1	7.892			
			C	0.189	2.632		1	1	8.411			
T6	0.33	1.65	A	0.171	2.697	53	1	1	7.548	3.19	159.55	C
200.00-180.00			B	0.171	2.697		1	1	7.548			
			C	0.182	2.658		1	1	8.063			
T7	0.54	2.03	A	0.187	2.638	52	1	1	8.369	4.38	218.83	C
180.00-160.00		TA 0.83	B	0.187	2.638		1	1	8.369			
			C	0.199	2.601		1	1	8.890			
T8	0.55	1.73	A	0.174	2.684	51	1	1	7.719	4.31	215.47	C
160.00-140.00			B	0.174	2.684		1	1	7.719			
			C	0.186	2.645		1	1	8.237			
T9	0.55	1.86	A	0.18	2.664	49	1	1	8.024	4.24	211.86	C
140.00-120.00			B	0.18	2.664		1	1	8.024			
			C	0.191	2.626		1	1	8.541			
T10	0.58	2.03	A	0.191	2.626	47	1	1	8.787	4.33	216.36	C
120.00-100.00		TA 0.83	B	0.191	2.626		1	1	8.787			
			C	0.202	2.589		1	1	9.308			
T11	0.64	2.18	A	0.193	2.619	46	1	1	8.677	4.44	222.19	C
100.00-80.00			B	0.193	2.619		1	1	8.677			
			C	0.204	2.583		1	1	9.198			
T12	0.83	2.10	A	0.189	2.632	43	1	1	8.505	4.85	242.48	C
80.00-60.00			B	0.189	2.632		1	1	8.505			
			C	0.2	2.595		1	1	9.023			
T13	0.83	2.10	A	0.189	2.632	40	1	1	8.505	4.54	227.01	C
60.00-40.00		TA 0.83	B	0.189	2.632		1	1	8.505			
			C	0.2	2.595		1	1	9.023			
T14	0.83	2.10	A	0.189	2.632	36	1	1	8.505	4.08	203.87	C
40.00-20.00			B	0.189	2.632		1	1	8.505			
			C	0.2	2.595		1	1	9.023			
T15	0.55	1.40	A	0.191	2.625	31	1	1	5.694	2.35	177.52	C
20.00-6.75			B	0.191	2.625		1	1	5.694			
			C	0.202	2.588		1	1	6.041			
T16 6.75-0.00	0.07	0.90	A	0.755	1.79	31	1	1	10.151	0.59	86.98	C
			B	0.755	1.79		1	1	10.151			
			C	0.755	1.79		1	1	10.151			
Sum Weight:	6.96	35.03								51.83		

Tower Forces - No Ice - Wind 45 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L1	0.00	3.20	A	1	0.6	59	1	1	31.354	1.50	42.72	C
323.00-288.00			B	1	0.6		1	1	31.354			
			C	1	0.6		1	1	31.354			
T1	0.00	0.53	A	0.153	2.761	58	0.825	1	2.663	0.41	50.84	C
288.00-280.00		TA 0.83	B	0.153	2.761		0.825	1	2.663			
			C	0.162	2.727		0.825	1	2.834			
T2	0.02	1.36	A	0.155	2.752	57	0.825	1	6.776	1.18	58.85	C
280.00-260.00			B	0.155	2.752		0.825	1	6.776			
			C	0.167	2.71		0.825	1	7.291			
T3	0.14	1.53	A	0.165	2.717	56	0.825	1	7.246	2.05	102.32	C
260.00-240.00		TA 0.83	B	0.165	2.717		0.825	1	7.246			
			C	0.176	2.677		0.825	1	7.762			
T4	0.23	1.53	A	0.165	2.717	55	0.825	1	7.246	2.68	133.78	C
240.00-220.00			B	0.165	2.717		0.825	1	7.246			
			C	0.176	2.677		0.825	1	7.762			
T5	0.24	1.81	A	0.178	2.671	54	0.825	1	7.892	2.74	136.80	C
220.00-200.00		TA 0.83	B	0.178	2.671		0.825	1	7.892			
			C	0.189	2.632		0.825	1	8.411			
T6	0.33	1.65	A	0.171	2.697	53	0.825	1	7.548	3.19	159.55	C
200.00-180.00			B	0.171	2.697		0.825	1	7.548			
			C	0.182	2.658		0.825	1	8.063			
T7	0.54	2.03	A	0.187	2.638	52	0.825	1	8.369	4.38	218.83	C
180.00-160.00		TA 0.83	B	0.187	2.638		0.825	1	8.369			
			C	0.199	2.601		0.825	1	8.890			
T8	0.55	1.73	A	0.174	2.684	51	0.825	1	7.719	4.31	215.47	C
160.00-140.00			B	0.174	2.684		0.825	1	7.719			
			C	0.186	2.645		0.825	1	8.237			
T9	0.55	1.86	A	0.18	2.664	49	0.825	1	8.024	4.24	211.86	C
140.00-120.00			B	0.18	2.664		0.825	1	8.024			
			C	0.191	2.626		0.825	1	8.541			
T10	0.58	2.03	A	0.191	2.626	47	0.825	1	8.686	4.32	215.83	C
120.00-100.00		TA 0.83	B	0.191	2.626		0.825	1	8.686			
			C	0.202	2.589		0.825	1	9.208			
T11	0.64	2.18	A	0.193	2.619	46	0.825	1	8.677	4.44	222.19	C
100.00-80.00			B	0.193	2.619		0.825	1	8.677			
			C	0.204	2.583		0.825	1	9.198			
T12	0.83	2.10	A	0.189	2.632	43	0.825	1	8.505	4.85	242.48	C
80.00-60.00			B	0.189	2.632		0.825	1	8.505			
			C	0.2	2.595		0.825	1	9.023			
T13	0.83	2.10	A	0.189	2.632	40	0.825	1	8.505	4.54	227.01	C
60.00-40.00		TA 0.83	B	0.189	2.632		0.825	1	8.505			
			C	0.2	2.595		0.825	1	9.023			
T14	0.83	2.10	A	0.189	2.632	36	0.825	1	8.505	4.08	203.87	C
40.00-20.00			B	0.189	2.632		0.825	1	8.505			
			C	0.2	2.595		0.825	1	9.023			
T15	0.55	1.40	A	0.191	2.625	31	0.825	1	5.694	2.35	177.52	C
20.00-6.75			B	0.191	2.625		0.825	1	5.694			
			C	0.202	2.588		0.825	1	6.041			
T16 6.75-0.00	0.07	0.90	A	0.755	1.79	31	0.825	1	8.902	0.53	78.18	C
			B	0.755	1.79		0.825	1	8.902			
			C	0.755	1.79		0.825	1	8.902			
Sum Weight:	6.96	35.03								51.76		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L1	0.00	3.20	A	1	0.6	59	1	1	31.354	1.50	42.72	C
323.00-288.00			B	1	0.6		1	1	31.354			
			C	1	0.6		1	1	31.354			
T1	0.00	0.53	A	0.153	2.761	58	0.8	1	2.663	0.41	50.84	C
288.00-280.00		TA 0.83	B	0.153	2.761		0.8	1	2.663			
			C	0.162	2.727		0.8	1	2.834			
T2	0.02	1.36	A	0.155	2.752	57	0.8	1	6.776	1.18	58.85	C
280.00-260.00			B	0.155	2.752		0.8	1	6.776			
			C	0.167	2.71		0.8	1	7.291			
T3	0.14	1.53	A	0.165	2.717	56	0.8	1	7.246	2.05	102.32	C
260.00-240.00		TA 0.83	B	0.165	2.717		0.8	1	7.246			
			C	0.176	2.677		0.8	1	7.762			
T4	0.23	1.53	A	0.165	2.717	55	0.8	1	7.246	2.68	133.78	C
240.00-220.00			B	0.165	2.717		0.8	1	7.246			
			C	0.176	2.677		0.8	1	7.762			
T5	0.24	1.81	A	0.178	2.671	54	0.8	1	7.892	2.74	136.80	C
220.00-200.00		TA 0.83	B	0.178	2.671		0.8	1	7.892			
			C	0.189	2.632		0.8	1	8.411			
T6	0.33	1.65	A	0.171	2.697	53	0.8	1	7.548	3.19	159.55	C
200.00-180.00			B	0.171	2.697		0.8	1	7.548			
			C	0.182	2.658		0.8	1	8.063			
T7	0.54	2.03	A	0.187	2.638	52	0.8	1	8.369	4.38	218.83	C
180.00-160.00		TA 0.83	B	0.187	2.638		0.8	1	8.369			
			C	0.199	2.601		0.8	1	8.890			
T8	0.55	1.73	A	0.174	2.684	51	0.8	1	7.719	4.31	215.47	C
160.00-140.00			B	0.174	2.684		0.8	1	7.719			
			C	0.186	2.645		0.8	1	8.237			
T9	0.55	1.86	A	0.18	2.664	49	0.8	1	8.024	4.24	211.86	C
140.00-120.00			B	0.18	2.664		0.8	1	8.024			
			C	0.191	2.626		0.8	1	8.541			
T10	0.58	2.03	A	0.191	2.626	47	0.8	1	8.672	4.32	215.76	C
120.00-100.00		TA 0.83	B	0.191	2.626		0.8	1	8.672			
			C	0.202	2.589		0.8	1	9.194			
T11	0.64	2.18	A	0.193	2.619	46	0.8	1	8.677	4.44	222.19	C
100.00-80.00			B	0.193	2.619		0.8	1	8.677			
			C	0.204	2.583		0.8	1	9.198			
T12	0.83	2.10	A	0.189	2.632	43	0.8	1	8.505	4.85	242.48	C
80.00-60.00			B	0.189	2.632		0.8	1	8.505			
			C	0.2	2.595		0.8	1	9.023			
T13	0.83	2.10	A	0.189	2.632	40	0.8	1	8.505	4.54	227.01	C
60.00-40.00		TA 0.83	B	0.189	2.632		0.8	1	8.505			
			C	0.2	2.595		0.8	1	9.023			
T14	0.83	2.10	A	0.189	2.632	36	0.8	1	8.505	4.08	203.87	C
40.00-20.00			B	0.189	2.632		0.8	1	8.505			
			C	0.2	2.595		0.8	1	9.023			
T15	0.55	1.40	A	0.191	2.625	31	0.8	1	5.694	2.35	177.52	C
20.00-6.75			B	0.191	2.625		0.8	1	5.694			
			C	0.202	2.588		0.8	1	6.041			
T16 6.75-0.00	0.07	0.90	A	0.755	1.79	31	0.8	1	8.723	0.52	76.92	C
			B	0.755	1.79		0.8	1	8.723			
			C	0.755	1.79		0.8	1	8.723			
Sum Weight:	6.96	35.03								51.75		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L1	0.00	3.20	A	1	0.6	59	1	1	31.354	1.50	42.72	C
323.00-288.00			B	1	0.6		1	1	31.354			
			C	1	0.6		1	1	31.354			
T1	0.00	0.53	A	0.153	2.761	58	0.85	1	2.663	0.41	50.84	C
288.00-280.00		TA 0.83	B	0.153	2.761		0.85	1	2.663			
			C	0.162	2.727		0.85	1	2.834			
T2	0.02	1.36	A	0.155	2.752	57	0.85	1	6.776	1.18	58.85	C
280.00-260.00			B	0.155	2.752		0.85	1	6.776			
			C	0.167	2.71		0.85	1	7.291			
T3	0.14	1.53	A	0.165	2.717	56	0.85	1	7.246	2.05	102.32	C
260.00-240.00		TA 0.83	B	0.165	2.717		0.85	1	7.246			
			C	0.176	2.677		0.85	1	7.762			
T4	0.23	1.53	A	0.165	2.717	55	0.85	1	7.246	2.68	133.78	C
240.00-220.00			B	0.165	2.717		0.85	1	7.246			
			C	0.176	2.677		0.85	1	7.762			
T5	0.24	1.81	A	0.178	2.671	54	0.85	1	7.892	2.74	136.80	C
220.00-200.00		TA 0.83	B	0.178	2.671		0.85	1	7.892			
			C	0.189	2.632		0.85	1	8.411			
T6	0.33	1.65	A	0.171	2.697	53	0.85	1	7.548	3.19	159.55	C
200.00-180.00			B	0.171	2.697		0.85	1	7.548			
			C	0.182	2.658		0.85	1	8.063			
T7	0.54	2.03	A	0.187	2.638	52	0.85	1	8.369	4.38	218.83	C
180.00-160.00		TA 0.83	B	0.187	2.638		0.85	1	8.369			
			C	0.199	2.601		0.85	1	8.890			
T8	0.55	1.73	A	0.174	2.684	51	0.85	1	7.719	4.31	215.47	C
160.00-140.00			B	0.174	2.684		0.85	1	7.719			
			C	0.186	2.645		0.85	1	8.237			
T9	0.55	1.86	A	0.18	2.664	49	0.85	1	8.024	4.24	211.86	C
140.00-120.00			B	0.18	2.664		0.85	1	8.024			
			C	0.191	2.626		0.85	1	8.541			
T10	0.58	2.03	A	0.191	2.626	47	0.85	1	8.701	4.32	215.91	C
120.00-100.00		TA 0.83	B	0.191	2.626		0.85	1	8.701			
			C	0.202	2.589		0.85	1	9.222			
T11	0.64	2.18	A	0.193	2.619	46	0.85	1	8.677	4.44	222.19	C
100.00-80.00			B	0.193	2.619		0.85	1	8.677			
			C	0.204	2.583		0.85	1	9.198			
T12	0.83	2.10	A	0.189	2.632	43	0.85	1	8.505	4.85	242.48	C
80.00-60.00			B	0.189	2.632		0.85	1	8.505			
			C	0.2	2.595		0.85	1	9.023			
T13	0.83	2.10	A	0.189	2.632	40	0.85	1	8.505	4.54	227.01	C
60.00-40.00		TA 0.83	B	0.189	2.632		0.85	1	8.505			
			C	0.2	2.595		0.85	1	9.023			
T14	0.83	2.10	A	0.189	2.632	36	0.85	1	8.505	4.08	203.87	C
40.00-20.00			B	0.189	2.632		0.85	1	8.505			
			C	0.2	2.595		0.85	1	9.023			
T15	0.55	1.40	A	0.191	2.625	31	0.85	1	5.694	2.35	177.52	C
20.00-6.75			B	0.191	2.625		0.85	1	5.694			
			C	0.202	2.588		0.85	1	6.041			
T16 6.75-0.00	0.07	0.90	A	0.755	1.79	31	0.85	1	9.080	0.54	79.44	C
			B	0.755	1.79		0.85	1	9.080			
			C	0.755	1.79		0.85	1	9.080			
Sum Weight:	6.96	35.03								51.77		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.00	4.39	A	1	1.2	9	1	1	43.925	0.62	17.71	C
323.00-288.00			B	1	1.2		1	1	43.925			
			C	1	1.2		1	1	43.925			
T1	0.07	1.38	A	0.528	1.866	9	1	1	12.409	0.20	25.12	C
288.00-280.00		TA 1.93	B	0.528	1.866		1	1	12.409			
			C	0.574	1.822		1	1	14.010			
T2	0.51	3.52	A	0.534	1.86	8	1	1	31.524	0.60	29.94	C
280.00-260.00			B	0.534	1.86		1	1	31.524			
			C	0.589	1.811		1	1	36.390			
T3	2.17	3.71	A	0.537	1.856	8	1	1	31.910	0.91	45.45	C
260.00-240.00		TA 1.92	B	0.537	1.856		1	1	31.910			
			C	0.591	1.81		1	1	36.736			
T4	3.46	3.68	A	0.534	1.859	8	1	1	31.647	1.14	57.02	C
240.00-220.00			B	0.534	1.859		1	1	31.647			
			C	0.588	1.812		1	1	36.417			
T5	3.55	4.00	A	0.54	1.853	8	1	1	32.290	1.14	57.02	C
220.00-200.00		TA 1.90	B	0.54	1.853		1	1	32.290			
			C	0.593	1.809		1	1	37.039			
T6	4.61	3.74	A	0.53	1.864	8	1	1	31.395	1.19*	59.38	C
200.00-180.00			B	0.53	1.864		1	1	31.395			
			C	0.582	1.816		1	1	36.028			
T7	6.78	4.18	A	0.539	1.855	8	1	1	32.273	1.16*	58.24	C
180.00-160.00		TA 1.87	B	0.539	1.855		1	1	32.273			
			C	0.59	1.81		1	1	36.899			
T8	6.87	3.77	A	0.526	1.869	7	1	1	30.974	1.13*	56.39	C
160.00-140.00			B	0.526	1.869		1	1	30.974			
			C	0.577	1.82		1	1	35.485			
T9	6.80	3.87	A	0.523	1.871	7	1	1	30.899	1.10*	54.92	C
140.00-120.00			B	0.523	1.871		1	1	30.899			
			C	0.574	1.823		1	1	35.311			
T10	7.09	3.96	A	0.524	1.871	7	1	1	31.302	1.06*	52.96	C
120.00-100.00		TA 1.82	B	0.524	1.871		1	1	31.302			
			C	0.574	1.823		1	1	35.619			
T11	7.58	4.13	A	0.521	1.874	7	1	1	30.771	1.02*	50.94	C
100.00-80.00			B	0.521	1.874		1	1	30.771			
			C	0.57	1.826		1	1	35.008			
T12	8.73	3.96	A	0.51	1.887	6	1	1	29.808	0.96*	48.22	C
80.00-60.00			B	0.51	1.887		1	1	29.808			
			C	0.558	1.836		1	1	33.885			
T13	8.50	3.86	A	0.5	1.9	6	1	1	28.934	0.90*	44.82	C
60.00-40.00		TA 1.74	B	0.5	1.9		1	1	28.934			
			C	0.547	1.846		1	1	32.837			
T14	8.06	3.73	A	0.486	1.919	5	1	1	27.685	0.80*	40.11	C
40.00-20.00			B	0.486	1.919		1	1	27.685			
			C	0.531	1.863		1	1	31.344			
T15	4.94	2.38	A	0.472	1.939	5	1	1	17.525	0.46*	34.52	C
20.00-6.75			B	0.472	1.939		1	1	17.525			
			C	0.515	1.882		1	1	19.761			
T16 6.75-0.00	0.57	1.60	A	1	2.1	5	1	1	15.833	0.13*	19.24	C
			B	1	2.1		1	1	15.833			
			C	1	2.1		1	1	15.833			
Sum Weight:	80.29	71.04			*2.1A_g limit					14.52		

Tower Forces - With Ice - Wind 45 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L1	0.00	4.39	A	1	1.2	9	1	1	43.925	0.62	17.71	C
323.00-288.00			B	1	1.2		1	1	43.925			
			C	1	1.2		1	1	43.925			
T1	0.07	1.38	A	0.528	1.866	9	0.825	1	12.409	0.20	25.12	C
288.00-280.00		TA 1.93	B	0.528	1.866		0.825	1	12.409			
			C	0.574	1.822		0.825	1	14.010			
T2	0.51	3.52	A	0.534	1.86	8	0.825	1	31.524	0.60	29.94	C
280.00-260.00			B	0.534	1.86		0.825	1	31.524			
			C	0.589	1.811		0.825	1	36.390			
T3	2.17	3.71	A	0.537	1.856	8	0.825	1	31.910	0.91	45.45	C
260.00-240.00		TA 1.92	B	0.537	1.856		0.825	1	31.910			
			C	0.591	1.81		0.825	1	36.736			
T4	3.46	3.68	A	0.534	1.859	8	0.825	1	31.647	1.14	57.02	C
240.00-220.00			B	0.534	1.859		0.825	1	31.647			
			C	0.588	1.812		0.825	1	36.417			
T5	3.55	4.00	A	0.54	1.853	8	0.825	1	32.290	1.14	57.02	C
220.00-200.00		TA 1.90	B	0.54	1.853		0.825	1	32.290			
			C	0.593	1.809		0.825	1	37.039			
T6	4.61	3.74	A	0.53	1.864	8	0.825	1	31.395	1.19*	59.38	C
200.00-180.00			B	0.53	1.864		0.825	1	31.395			
			C	0.582	1.816		0.825	1	36.028			
T7	6.78	4.18	A	0.539	1.855	8	0.825	1	32.273	1.16*	58.24	C
180.00-160.00		TA 1.87	B	0.539	1.855		0.825	1	32.273			
			C	0.59	1.81		0.825	1	36.899			
T8	6.87	3.77	A	0.526	1.869	7	0.825	1	30.974	1.13*	56.39	C
160.00-140.00			B	0.526	1.869		0.825	1	30.974			
			C	0.577	1.82		0.825	1	35.485			
T9	6.80	3.87	A	0.523	1.871	7	0.825	1	30.899	1.10*	54.92	C
140.00-120.00			B	0.523	1.871		0.825	1	30.899			
			C	0.574	1.823		0.825	1	35.311			
T10	7.09	3.96	A	0.524	1.871	7	0.825	1	31.071	1.06*	52.96	C
120.00-100.00		TA 1.82	B	0.524	1.871		0.825	1	31.071			
			C	0.574	1.823		0.825	1	35.388			
T11	7.58	4.13	A	0.521	1.874	7	0.825	1	30.771	1.02*	50.94	C
100.00-80.00			B	0.521	1.874		0.825	1	30.771			
			C	0.57	1.826		0.825	1	35.008			
T12	8.73	3.96	A	0.51	1.887	6	0.825	1	29.808	0.96*	48.22	C
80.00-60.00			B	0.51	1.887		0.825	1	29.808			
			C	0.558	1.836		0.825	1	33.885			
T13	8.50	3.86	A	0.5	1.9	6	0.825	1	28.934	0.90*	44.82	C
60.00-40.00		TA 1.74	B	0.5	1.9		0.825	1	28.934			
			C	0.547	1.846		0.825	1	32.837			
T14	8.06	3.73	A	0.486	1.919	5	0.825	1	27.685	0.80*	40.11	C
40.00-20.00			B	0.486	1.919		0.825	1	27.685			
			C	0.531	1.863		0.825	1	31.344			
T15	4.94	2.38	A	0.472	1.939	5	0.825	1	17.525	0.46*	34.52	C
20.00-6.75			B	0.472	1.939		0.825	1	17.525			
			C	0.515	1.882		0.825	1	19.761			
T16 6.75-0.00	0.57	1.60	A	1	2.1	5	0.825	1	14.584	0.12	17.83	C
			B	1	2.1		0.825	1	14.584			
			C	1	2.1		0.825	1	14.584			
Sum Weight:	80.29	71.04			*2.1A_g limit					14.51		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.00	4.39	A	1	1.2	9	1	1	43.925	0.62	17.71	C
323.00-288.00			B	1	1.2		1	1	43.925			
			C	1	1.2		1	1	43.925			
T1	0.07	1.38	A	0.528	1.866	9	0.8	1	12.409	0.20	25.12	C
288.00-280.00		TA 1.93	B	0.528	1.866		0.8	1	12.409			
			C	0.574	1.822		0.8	1	14.010			
T2	0.51	3.52	A	0.534	1.86	8	0.8	1	31.524	0.60	29.94	C
280.00-260.00			B	0.534	1.86		0.8	1	31.524			
			C	0.589	1.811		0.8	1	36.390			
T3	2.17	3.71	A	0.537	1.856	8	0.8	1	31.910	0.91	45.45	C
260.00-240.00		TA 1.92	B	0.537	1.856		0.8	1	31.910			
			C	0.591	1.81		0.8	1	36.736			
T4	3.46	3.68	A	0.534	1.859	8	0.8	1	31.647	1.14	57.02	C
240.00-220.00			B	0.534	1.859		0.8	1	31.647			
			C	0.588	1.812		0.8	1	36.417			
T5	3.55	4.00	A	0.54	1.853	8	0.8	1	32.290	1.14	57.02	C
220.00-200.00		TA 1.90	B	0.54	1.853		0.8	1	32.290			
			C	0.593	1.809		0.8	1	37.039			
T6	4.61	3.74	A	0.53	1.864	8	0.8	1	31.395	1.19*	59.38	C
200.00-180.00			B	0.53	1.864		0.8	1	31.395			
			C	0.582	1.816		0.8	1	36.028			
T7	6.78	4.18	A	0.539	1.855	8	0.8	1	32.273	1.16*	58.24	C
180.00-160.00		TA 1.87	B	0.539	1.855		0.8	1	32.273			
			C	0.59	1.81		0.8	1	36.899			
T8	6.87	3.77	A	0.526	1.869	7	0.8	1	30.974	1.13*	56.39	C
160.00-140.00			B	0.526	1.869		0.8	1	30.974			
			C	0.577	1.82		0.8	1	35.485			
T9	6.80	3.87	A	0.523	1.871	7	0.8	1	30.899	1.10*	54.92	C
140.00-120.00			B	0.523	1.871		0.8	1	30.899			
			C	0.574	1.823		0.8	1	35.311			
T10	7.09	3.96	A	0.524	1.871	7	0.8	1	31.038	1.06*	52.96	C
120.00-100.00		TA 1.82	B	0.524	1.871		0.8	1	31.038			
			C	0.574	1.823		0.8	1	35.355			
T11	7.58	4.13	A	0.521	1.874	7	0.8	1	30.771	1.02*	50.94	C
100.00-80.00			B	0.521	1.874		0.8	1	30.771			
			C	0.57	1.826		0.8	1	35.008			
T12	8.73	3.96	A	0.51	1.887	6	0.8	1	29.808	0.96*	48.22	C
80.00-60.00			B	0.51	1.887		0.8	1	29.808			
			C	0.558	1.836		0.8	1	33.885			
T13	8.50	3.86	A	0.5	1.9	6	0.8	1	28.934	0.90*	44.82	C
60.00-40.00		TA 1.74	B	0.5	1.9		0.8	1	28.934			
			C	0.547	1.846		0.8	1	32.837			
T14	8.06	3.73	A	0.486	1.919	5	0.8	1	27.685	0.80*	40.11	C
40.00-20.00			B	0.486	1.919		0.8	1	27.685			
			C	0.531	1.863		0.8	1	31.344			
T15	4.94	2.38	A	0.472	1.939	5	0.8	1	17.525	0.46*	34.52	C
20.00-6.75			B	0.472	1.939		0.8	1	17.525			
			C	0.515	1.882		0.8	1	19.761			
T16 6.75-0.00	0.57	1.60	A	1	2.1	5	0.8	1	14.405	0.12	17.61	C
			B	1	2.1		0.8	1	14.405			
			C	1	2.1		0.8	1	14.405			
Sum Weight:	80.29	71.04			*2.1A_g limit					14.50		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.00	4.39	A	1	1.2	9	1	1	43.925	0.62	17.71	C
323.00-288.00			B	1	1.2		1	1	43.925			
			C	1	1.2		1	1	43.925			
T1	0.07	1.38	A	0.528	1.866	9	0.85	1	12.409	0.20	25.12	C
288.00-280.00		TA 1.93	B	0.528	1.866		0.85	1	12.409			
			C	0.574	1.822		0.85	1	14.010			
T2	0.51	3.52	A	0.534	1.86	8	0.85	1	31.524	0.60	29.94	C
280.00-260.00			B	0.534	1.86		0.85	1	31.524			
			C	0.589	1.811		0.85	1	36.390			
T3	2.17	3.71	A	0.537	1.856	8	0.85	1	31.910	0.91	45.45	C
260.00-240.00		TA 1.92	B	0.537	1.856		0.85	1	31.910			
			C	0.591	1.81		0.85	1	36.736			
T4	3.46	3.68	A	0.534	1.859	8	0.85	1	31.647	1.14	57.02	C
240.00-220.00			B	0.534	1.859		0.85	1	31.647			
			C	0.588	1.812		0.85	1	36.417			
T5	3.55	4.00	A	0.54	1.853	8	0.85	1	32.290	1.14	57.02	C
220.00-200.00		TA 1.90	B	0.54	1.853		0.85	1	32.290			
			C	0.593	1.809		0.85	1	37.039			
T6	4.61	3.74	A	0.53	1.864	8	0.85	1	31.395	1.19*	59.38	C
200.00-180.00			B	0.53	1.864		0.85	1	31.395			
			C	0.582	1.816		0.85	1	36.028			
T7	6.78	4.18	A	0.539	1.855	8	0.85	1	32.273	1.16*	58.24	C
180.00-160.00		TA 1.87	B	0.539	1.855		0.85	1	32.273			
			C	0.59	1.81		0.85	1	36.899			
T8	6.87	3.77	A	0.526	1.869	7	0.85	1	30.974	1.13*	56.39	C
160.00-140.00			B	0.526	1.869		0.85	1	30.974			
			C	0.577	1.82		0.85	1	35.485			
T9	6.80	3.87	A	0.523	1.871	7	0.85	1	30.899	1.10*	54.92	C
140.00-120.00			B	0.523	1.871		0.85	1	30.899			
			C	0.574	1.823		0.85	1	35.311			
T10	7.09	3.96	A	0.524	1.871	7	0.85	1	31.104	1.06*	52.96	C
120.00-100.00		TA 1.82	B	0.524	1.871		0.85	1	31.104			
			C	0.574	1.823		0.85	1	35.421			
T11	7.58	4.13	A	0.521	1.874	7	0.85	1	30.771	1.02*	50.94	C
100.00-80.00			B	0.521	1.874		0.85	1	30.771			
			C	0.57	1.826		0.85	1	35.008			
T12	8.73	3.96	A	0.51	1.887	6	0.85	1	29.808	0.96*	48.22	C
80.00-60.00			B	0.51	1.887		0.85	1	29.808			
			C	0.558	1.836		0.85	1	33.885			
T13	8.50	3.86	A	0.5	1.9	6	0.85	1	28.934	0.90*	44.82	C
60.00-40.00		TA 1.74	B	0.5	1.9		0.85	1	28.934			
			C	0.547	1.846		0.85	1	32.837			
T14	8.06	3.73	A	0.486	1.919	5	0.85	1	27.685	0.80*	40.11	C
40.00-20.00			B	0.486	1.919		0.85	1	27.685			
			C	0.531	1.863		0.85	1	31.344			
T15	4.94	2.38	A	0.472	1.939	5	0.85	1	17.525	0.46*	34.52	C
20.00-6.75			B	0.472	1.939		0.85	1	17.525			
			C	0.515	1.882		0.85	1	19.761			
T16 6.75-0.00	0.57	1.60	A	1	2.1	5	0.85	1	14.762	0.12	18.05	C
			B	1	2.1		0.85	1	14.762			
			C	1	2.1		0.85	1	14.762			
Sum Weight:	80.29	71.04			*2.1A_g limit					14.51		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L1	0.00	3.20	A	1	0.688	13	1	1	31.354	0.37	10.44	C
323.00-288.00			B	1	0.688		1	1	31.354			
			C	1	0.688		1	1	31.354			
T1	0.00	0.53	A	0.153	2.761	12	1	1	2.663	0.09	10.83	C
288.00-280.00		TA 0.83	B	0.153	2.761		1	1	2.663			
			C	0.162	2.727		1	1	2.834			
T2	0.02	1.36	A	0.155	2.752	12	1	1	6.776	0.25	12.54	C
280.00-260.00			B	0.155	2.752		1	1	6.776			
			C	0.167	2.71		1	1	7.291			
T3	0.14	1.53	A	0.165	2.717	12	1	1	7.246	0.44	21.80	C
260.00-240.00		TA 0.83	B	0.165	2.717		1	1	7.246			
			C	0.176	2.677		1	1	7.762			
T4	0.23	1.53	A	0.165	2.717	12	1	1	7.246	0.57	28.50	C
240.00-220.00			B	0.165	2.717		1	1	7.246			
			C	0.176	2.677		1	1	7.762			
T5	0.24	1.81	A	0.178	2.671	12	1	1	7.892	0.58	29.14	C
220.00-200.00		TA 0.83	B	0.178	2.671		1	1	7.892			
			C	0.189	2.632		1	1	8.411			
T6	0.33	1.65	A	0.171	2.697	11	1	1	7.548	0.68	33.99	C
200.00-180.00			B	0.171	2.697		1	1	7.548			
			C	0.182	2.658		1	1	8.063			
T7	0.54	2.03	A	0.187	2.638	11	1	1	8.369	0.93	46.61	C
180.00-160.00		TA 0.83	B	0.187	2.638		1	1	8.369			
			C	0.199	2.601		1	1	8.890			
T8	0.55	1.73	A	0.174	2.684	11	1	1	7.719	0.92	45.90	C
160.00-140.00			B	0.174	2.684		1	1	7.719			
			C	0.186	2.645		1	1	8.237			
T9	0.55	1.86	A	0.18	2.664	10	1	1	8.024	0.90	45.13	C
140.00-120.00			B	0.18	2.664		1	1	8.024			
			C	0.191	2.626		1	1	8.541			
T10	0.58	2.03	A	0.191	2.626	10	1	1	8.787	0.92	46.09	C
120.00-100.00		TA 0.83	B	0.191	2.626		1	1	8.787			
			C	0.202	2.589		1	1	9.308			
T11	0.64	2.18	A	0.193	2.619	10	1	1	8.677	0.95	47.33	C
100.00-80.00			B	0.193	2.619		1	1	8.677			
			C	0.204	2.583		1	1	9.198			
T12	0.83	2.10	A	0.189	2.632	9	1	1	8.505	1.03	51.65	C
80.00-60.00			B	0.189	2.632		1	1	8.505			
			C	0.2	2.595		1	1	9.023			
T13	0.83	2.10	A	0.189	2.632	9	1	1	8.505	0.97	48.36	C
60.00-40.00		TA 0.83	B	0.189	2.632		1	1	8.505			
			C	0.2	2.595		1	1	9.023			
T14	0.83	2.10	A	0.189	2.632	8	1	1	8.505	0.87	43.43	C
40.00-20.00			B	0.189	2.632		1	1	8.505			
			C	0.2	2.595		1	1	9.023			
T15	0.55	1.40	A	0.191	2.625	7	1	1	5.694	0.50	37.81	C
20.00-6.75			B	0.191	2.625		1	1	5.694			
			C	0.202	2.588		1	1	6.041			
T16 6.75-0.00	0.07	0.90	A	0.755	1.79	7	1	1	10.151	0.13	18.53	C
			B	0.755	1.79		1	1	10.151			
			C	0.755	1.79		1	1	10.151			
Sum Weight:	6.96	35.03								11.09		

Tower Forces - Service - Wind 45 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L1	0.00	3.20	A	1	0.688	13	1	1	31.354	0.37	10.44	C
323.00-288.00			B	1	0.688		1	1	31.354			
			C	1	0.688		1	1	31.354			
T1	0.00	0.53	A	0.153	2.761	12	0.825	1	2.663	0.09	10.83	C
288.00-280.00		TA 0.83	B	0.153	2.761		0.825	1	2.663			
			C	0.162	2.727		0.825	1	2.834			
T2	0.02	1.36	A	0.155	2.752	12	0.825	1	6.776	0.25	12.54	C
280.00-260.00			B	0.155	2.752		0.825	1	6.776			
			C	0.167	2.71		0.825	1	7.291			
T3	0.14	1.53	A	0.165	2.717	12	0.825	1	7.246	0.44	21.80	C
260.00-240.00		TA 0.83	B	0.165	2.717		0.825	1	7.246			
			C	0.176	2.677		0.825	1	7.762			
T4	0.23	1.53	A	0.165	2.717	12	0.825	1	7.246	0.57	28.50	C
240.00-220.00			B	0.165	2.717		0.825	1	7.246			
			C	0.176	2.677		0.825	1	7.762			
T5	0.24	1.81	A	0.178	2.671	12	0.825	1	7.892	0.58	29.14	C
220.00-200.00		TA 0.83	B	0.178	2.671		0.825	1	7.892			
			C	0.189	2.632		0.825	1	8.411			
T6	0.33	1.65	A	0.171	2.697	11	0.825	1	7.548	0.68	33.99	C
200.00-180.00			B	0.171	2.697		0.825	1	7.548			
			C	0.182	2.658		0.825	1	8.063			
T7	0.54	2.03	A	0.187	2.638	11	0.825	1	8.369	0.93	46.61	C
180.00-160.00		TA 0.83	B	0.187	2.638		0.825	1	8.369			
			C	0.199	2.601		0.825	1	8.890			
T8	0.55	1.73	A	0.174	2.684	11	0.825	1	7.719	0.92	45.90	C
160.00-140.00			B	0.174	2.684		0.825	1	7.719			
			C	0.186	2.645		0.825	1	8.237			
T9	0.55	1.86	A	0.18	2.664	10	0.825	1	8.024	0.90	45.13	C
140.00-120.00			B	0.18	2.664		0.825	1	8.024			
			C	0.191	2.626		0.825	1	8.541			
T10	0.58	2.03	A	0.191	2.626	10	0.825	1	8.686	0.92	45.98	C
120.00-100.00		TA 0.83	B	0.191	2.626		0.825	1	8.686			
			C	0.202	2.589		0.825	1	9.208			
T11	0.64	2.18	A	0.193	2.619	10	0.825	1	8.677	0.95	47.33	C
100.00-80.00			B	0.193	2.619		0.825	1	8.677			
			C	0.204	2.583		0.825	1	9.198			
T12	0.83	2.10	A	0.189	2.632	9	0.825	1	8.505	1.03	51.65	C
80.00-60.00			B	0.189	2.632		0.825	1	8.505			
			C	0.2	2.595		0.825	1	9.023			
T13	0.83	2.10	A	0.189	2.632	9	0.825	1	8.505	0.97	48.36	C
60.00-40.00		TA 0.83	B	0.189	2.632		0.825	1	8.505			
			C	0.2	2.595		0.825	1	9.023			
T14	0.83	2.10	A	0.189	2.632	8	0.825	1	8.505	0.87	43.43	C
40.00-20.00			B	0.189	2.632		0.825	1	8.505			
			C	0.2	2.595		0.825	1	9.023			
T15	0.55	1.40	A	0.191	2.625	7	0.825	1	5.694	0.50	37.81	C
20.00-6.75			B	0.191	2.625		0.825	1	5.694			
			C	0.202	2.588		0.825	1	6.041			
T16 6.75-0.00	0.07	0.90	A	0.755	1.79	7	0.825	1	8.902	0.11	16.65	C
			B	0.755	1.79		0.825	1	8.902			
			C	0.755	1.79		0.825	1	8.902			
Sum Weight:	6.96	35.03								11.07		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L1	0.00	3.20	A	1	0.688	13	1	1	31.354	0.37	10.44	C
323.00-288.00			B	1	0.688		1	1	31.354			
			C	1	0.688		1	1	31.354			
T1	0.00	0.53	A	0.153	2.761	12	0.8	1	2.663	0.09	10.83	C
288.00-280.00		TA 0.83	B	0.153	2.761		0.8	1	2.663			
			C	0.162	2.727		0.8	1	2.834			
T2	0.02	1.36	A	0.155	2.752	12	0.8	1	6.776	0.25	12.54	C
280.00-260.00			B	0.155	2.752		0.8	1	6.776			
			C	0.167	2.71		0.8	1	7.291			
T3	0.14	1.53	A	0.165	2.717	12	0.8	1	7.246	0.44	21.80	C
260.00-240.00		TA 0.83	B	0.165	2.717		0.8	1	7.246			
			C	0.176	2.677		0.8	1	7.762			
T4	0.23	1.53	A	0.165	2.717	12	0.8	1	7.246	0.57	28.50	C
240.00-220.00			B	0.165	2.717		0.8	1	7.246			
			C	0.176	2.677		0.8	1	7.762			
T5	0.24	1.81	A	0.178	2.671	12	0.8	1	7.892	0.58	29.14	C
220.00-200.00		TA 0.83	B	0.178	2.671		0.8	1	7.892			
			C	0.189	2.632		0.8	1	8.411			
T6	0.33	1.65	A	0.171	2.697	11	0.8	1	7.548	0.68	33.99	C
200.00-180.00			B	0.171	2.697		0.8	1	7.548			
			C	0.182	2.658		0.8	1	8.063			
T7	0.54	2.03	A	0.187	2.638	11	0.8	1	8.369	0.93	46.61	C
180.00-160.00		TA 0.83	B	0.187	2.638		0.8	1	8.369			
			C	0.199	2.601		0.8	1	8.890			
T8	0.55	1.73	A	0.174	2.684	11	0.8	1	7.719	0.92	45.90	C
160.00-140.00			B	0.174	2.684		0.8	1	7.719			
			C	0.186	2.645		0.8	1	8.237			
T9	0.55	1.86	A	0.18	2.664	10	0.8	1	8.024	0.90	45.13	C
140.00-120.00			B	0.18	2.664		0.8	1	8.024			
			C	0.191	2.626		0.8	1	8.541			
T10	0.58	2.03	A	0.191	2.626	10	0.8	1	8.672	0.92	45.96	C
120.00-100.00		TA 0.83	B	0.191	2.626		0.8	1	8.672			
			C	0.202	2.589		0.8	1	9.194			
T11	0.64	2.18	A	0.193	2.619	10	0.8	1	8.677	0.95	47.33	C
100.00-80.00			B	0.193	2.619		0.8	1	8.677			
			C	0.204	2.583		0.8	1	9.198			
T12	0.83	2.10	A	0.189	2.632	9	0.8	1	8.505	1.03	51.65	C
80.00-60.00			B	0.189	2.632		0.8	1	8.505			
			C	0.2	2.595		0.8	1	9.023			
T13	0.83	2.10	A	0.189	2.632	9	0.8	1	8.505	0.97	48.36	C
60.00-40.00		TA 0.83	B	0.189	2.632		0.8	1	8.505			
			C	0.2	2.595		0.8	1	9.023			
T14	0.83	2.10	A	0.189	2.632	8	0.8	1	8.505	0.87	43.43	C
40.00-20.00			B	0.189	2.632		0.8	1	8.505			
			C	0.2	2.595		0.8	1	9.023			
T15	0.55	1.40	A	0.191	2.625	7	0.8	1	5.694	0.50	37.81	C
20.00-6.75			B	0.191	2.625		0.8	1	5.694			
			C	0.202	2.588		0.8	1	6.041			
T16 6.75-0.00	0.07	0.90	A	0.755	1.79	7	0.8	1	8.723	0.11	16.39	C
			B	0.755	1.79		0.8	1	8.723			
			C	0.755	1.79		0.8	1	8.723			
Sum Weight:	6.96	35.03								11.07		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
L1	0.00	3.20	A	1	0.688	13	1	1	31.354	0.37	10.44	C
323.00-288.00			B	1	0.688		1	1	31.354			
			C	1	0.688		1	1	31.354			
T1	0.00	0.53	A	0.153	2.761	12	0.85	1	2.663	0.09	10.83	C
288.00-280.00		TA 0.83	B	0.153	2.761		0.85	1	2.663			
			C	0.162	2.727		0.85	1	2.834			
T2	0.02	1.36	A	0.155	2.752	12	0.85	1	6.776	0.25	12.54	C
280.00-260.00			B	0.155	2.752		0.85	1	6.776			
			C	0.167	2.71		0.85	1	7.291			
T3	0.14	1.53	A	0.165	2.717	12	0.85	1	7.246	0.44	21.80	C
260.00-240.00		TA 0.83	B	0.165	2.717		0.85	1	7.246			
			C	0.176	2.677		0.85	1	7.762			
T4	0.23	1.53	A	0.165	2.717	12	0.85	1	7.246	0.57	28.50	C
240.00-220.00			B	0.165	2.717		0.85	1	7.246			
			C	0.176	2.677		0.85	1	7.762			
T5	0.24	1.81	A	0.178	2.671	12	0.85	1	7.892	0.58	29.14	C
220.00-200.00		TA 0.83	B	0.178	2.671		0.85	1	7.892			
			C	0.189	2.632		0.85	1	8.411			
T6	0.33	1.65	A	0.171	2.697	11	0.85	1	7.548	0.68	33.99	C
200.00-180.00			B	0.171	2.697		0.85	1	7.548			
			C	0.182	2.658		0.85	1	8.063			
T7	0.54	2.03	A	0.187	2.638	11	0.85	1	8.369	0.93	46.61	C
180.00-160.00		TA 0.83	B	0.187	2.638		0.85	1	8.369			
			C	0.199	2.601		0.85	1	8.890			
T8	0.55	1.73	A	0.174	2.684	11	0.85	1	7.719	0.92	45.90	C
160.00-140.00			B	0.174	2.684		0.85	1	7.719			
			C	0.186	2.645		0.85	1	8.237			
T9	0.55	1.86	A	0.18	2.664	10	0.85	1	8.024	0.90	45.13	C
140.00-120.00			B	0.18	2.664		0.85	1	8.024			
			C	0.191	2.626		0.85	1	8.541			
T10	0.58	2.03	A	0.191	2.626	10	0.85	1	8.701	0.92	45.99	C
120.00-100.00		TA 0.83	B	0.191	2.626		0.85	1	8.701			
			C	0.202	2.589		0.85	1	9.222			
T11	0.64	2.18	A	0.193	2.619	10	0.85	1	8.677	0.95	47.33	C
100.00-80.00			B	0.193	2.619		0.85	1	8.677			
			C	0.204	2.583		0.85	1	9.198			
T12	0.83	2.10	A	0.189	2.632	9	0.85	1	8.505	1.03	51.65	C
80.00-60.00			B	0.189	2.632		0.85	1	8.505			
			C	0.2	2.595		0.85	1	9.023			
T13	0.83	2.10	A	0.189	2.632	9	0.85	1	8.505	0.97	48.36	C
60.00-40.00		TA 0.83	B	0.189	2.632		0.85	1	8.505			
			C	0.2	2.595		0.85	1	9.023			
T14	0.83	2.10	A	0.189	2.632	8	0.85	1	8.505	0.87	43.43	C
40.00-20.00			B	0.189	2.632		0.85	1	8.505			
			C	0.2	2.595		0.85	1	9.023			
T15	0.55	1.40	A	0.191	2.625	7	0.85	1	5.694	0.50	37.81	C
20.00-6.75			B	0.191	2.625		0.85	1	5.694			
			C	0.202	2.588		0.85	1	6.041			
T16 6.75-0.00	0.07	0.90	A	0.755	1.79	7	0.85	1	9.080	0.11	16.92	C
			B	0.755	1.79		0.85	1	9.080			
			C	0.755	1.79		0.85	1	9.080			
Sum Weight:	6.96	35.03								11.07		

Force Totals (Does not include forces on guys)

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Torques kip-ft
Leg Weight	20.02			
Bracing Weight	15.01			
Total Member Self-Weight	35.03			
Guy Weight	11.74			
Total Weight	64.77			
Wind 0 deg - No Ice		-0.22	-78.21	-17.94
Wind 30 deg - No Ice		38.97	-67.57	-10.63
Wind 45 deg - No Ice		55.23	-55.10	-5.74
Wind 60 deg - No Ice		67.71	-38.87	-0.47
Wind 90 deg - No Ice		78.34	0.22	9.82
Wind 120 deg - No Ice		67.47	38.99	17.47
Wind 135 deg - No Ice		55.14	55.01	19.63
Wind 150 deg - No Ice		39.05	67.26	20.45
Wind 180 deg - No Ice		0.22	77.52	17.94
Wind 210 deg - No Ice		-38.67	67.04	10.63
Wind 225 deg - No Ice		-55.23	55.10	5.74
Wind 240 deg - No Ice		-67.25	38.60	0.47
Wind 270 deg - No Ice		-77.72	-0.22	-9.82
Wind 300 deg - No Ice		-67.40	-38.95	-17.47
Wind 315 deg - No Ice		-55.11	-54.98	-19.63
Wind 330 deg - No Ice		-39.05	-67.26	-20.45
Member Ice	36.02			
Guy Ice	66.65			
Total Weight Ice	264.87			
Wind 0 deg - Ice		-0.03	-20.92	-5.28
Wind 30 deg - Ice		10.45	-18.09	-3.58
Wind 45 deg - Ice		14.79	-14.76	-2.33
Wind 60 deg - Ice		18.12	-10.42	-0.92
Wind 90 deg - Ice		20.95	0.03	1.99
Wind 120 deg - Ice		17.98	10.38	4.46
Wind 135 deg - Ice		14.69	14.66	5.26
Wind 150 deg - Ice		10.40	17.94	5.71
Wind 180 deg - Ice		0.03	20.69	5.43
Wind 210 deg - Ice		-10.34	17.90	3.70
Wind 225 deg - Ice		-14.79	14.76	2.33
Wind 240 deg - Ice		-17.94	10.32	0.97
Wind 270 deg - Ice		-20.73	-0.03	-2.01
Wind 300 deg - Ice		-17.97	-10.37	-4.46
Wind 315 deg - Ice		-14.68	-14.65	-5.26
Wind 330 deg - Ice		-10.40	-17.94	-5.71
Total Weight	64.77			
Wind 0 deg - Service		-0.05	-16.76	-3.83
Wind 30 deg - Service		8.35	-14.48	-2.24
Wind 45 deg - Service		11.83	-11.81	-1.19
Wind 60 deg - Service		14.51	-8.33	-0.05
Wind 90 deg - Service		16.78	0.05	2.15
Wind 120 deg - Service		14.46	8.35	3.77
Wind 135 deg - Service		11.81	11.79	4.22
Wind 150 deg - Service		8.37	14.41	4.39
Wind 180 deg - Service		0.05	16.61	3.83
Wind 210 deg - Service		-8.29	14.36	2.24
Wind 225 deg - Service		-11.83	11.81	1.19
Wind 240 deg - Service		-14.41	8.27	0.05
Wind 270 deg - Service		-16.65	-0.05	-2.15

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Torques kip-ft
Wind 300 deg - Service		-14.44	-8.35	-3.77
Wind 315 deg - Service		-11.81	-11.78	-4.22
Wind 330 deg - Service		-8.37	-14.41	-4.39

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice+1.0 Guy
3	1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy
4	1.2 Dead+1.0 Wind 45 deg - No Ice+1.0 Guy
5	1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy
6	1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy
7	1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy
8	1.2 Dead+1.0 Wind 135 deg - No Ice+1.0 Guy
9	1.2 Dead+1.0 Wind 150 deg - No Ice+1.0 Guy
10	1.2 Dead+1.0 Wind 180 deg - No Ice+1.0 Guy
11	1.2 Dead+1.0 Wind 210 deg - No Ice+1.0 Guy
12	1.2 Dead+1.0 Wind 225 deg - No Ice+1.0 Guy
13	1.2 Dead+1.0 Wind 240 deg - No Ice+1.0 Guy
14	1.2 Dead+1.0 Wind 270 deg - No Ice+1.0 Guy
15	1.2 Dead+1.0 Wind 300 deg - No Ice+1.0 Guy
16	1.2 Dead+1.0 Wind 315 deg - No Ice+1.0 Guy
17	1.2 Dead+1.0 Wind 330 deg - No Ice+1.0 Guy
18	1.2 Dead+1.0 Ice+1.0 Temp+Guy
19	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy
20	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy
21	1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp+1.0 Guy
22	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy
23	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy
24	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy
25	1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp+1.0 Guy
26	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy
27	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy
28	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy
29	1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp+1.0 Guy
30	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy
31	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy
32	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy
33	1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp+1.0 Guy
34	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy
35	Dead+Wind 0 deg - Service+Guy
36	Dead+Wind 30 deg - Service+Guy
37	Dead+Wind 45 deg - Service+Guy
38	Dead+Wind 60 deg - Service+Guy
39	Dead+Wind 90 deg - Service+Guy
40	Dead+Wind 120 deg - Service+Guy
41	Dead+Wind 135 deg - Service+Guy
42	Dead+Wind 150 deg - Service+Guy
43	Dead+Wind 180 deg - Service+Guy
44	Dead+Wind 210 deg - Service+Guy
45	Dead+Wind 225 deg - Service+Guy
46	Dead+Wind 240 deg - Service+Guy

Comb. No.	Description
47	Dead+Wind 270 deg - Service+Guy
48	Dead+Wind 300 deg - Service+Guy
49	Dead+Wind 315 deg - Service+Guy
50	Dead+Wind 330 deg - Service+Guy

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	323 - 288	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	24	-5.94	-12.97	-9.48
			Max. Mx	14	-4.05	45.66	-0.11
			Max. My	10	-4.05	0.61	-45.46
			Max. Vy	6	2.34	-44.99	-0.16
			Max. Vx	10	2.34	0.61	-45.46
			Max. Torque	17			1.65
T1	288 - 280	Leg	Max Tension	10	14.85	-0.01	0.96
			Max. Compression	30	-29.82	-0.73	0.28
			Max. Mx	22	3.04	-2.44	1.33
			Max. My	27	4.14	0.05	-2.81
			Max. Vy	31	-9.27	0.95	-0.51
			Max. Vx	19	-10.53	-0.03	1.07
		Diagonal	Max Tension	15	2.36	0.00	0.00
			Max. Compression	10	-2.25	0.00	0.00
			Max. Mx	19	0.66	0.04	0.00
			Max. My	26	-0.48	0.00	-0.00
			Max. Vy	19	0.03	0.00	0.00
			Max. Vx	26	0.00	0.00	0.00
		Horizontal	Max Tension	9	3.72	0.00	0.00
			Max. Compression	17	-3.34	0.00	0.00
			Max. Mx	25	-0.51	0.02	0.00
			Max. My	25	0.15	0.00	0.00
			Max. Vy	25	-0.02	0.00	0.00
			Max. Vx	25	-0.00	0.00	0.00
		Secondary Horizontal	Max Tension	24	0.00	0.00	0.00
			Max. Compression	24	-0.00	-0.00	-0.00
			Max. Mx	33	-0.00	-0.00	-0.00
			Max. My	30	-0.00	-0.00	0.00
			Max. Vy	33	0.01	-0.00	-0.00
			Max. Vx	30	-0.00	-0.00	0.00
		Top Girt	Max Tension	25	6.55	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	31	6.45	0.02	0.00
			Max. My	25	6.33	0.00	-0.00
			Max. Vy	31	-0.02	0.00	0.00
			Max. Vx	25	0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	20	-1.83	0.00	0.00
			Max. Mx	18	-1.44	0.02	0.00
			Max. My	19	-1.79	0.00	-0.00
			Max. Vy	18	-0.02	0.00	0.00
			Max. Vx	19	0.00	0.00	0.00
		Guy A	Bottom Tension	27	14.90		
			Top Tension	10	17.23		
			Top Cable Vert	27	14.47		
			Top Cable Norm	27	9.35		
			Top Cable Tan	27	0.01		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Bot Cable Vert	10	-11.55		
			Bot Cable Norm	10	9.42		
			Bot Cable Tan	10	0.01		
		Guy B	Bottom Tension	32	14.35		
			Top Tension	15	16.22		
			Top Cable Vert	32	13.16		
			Top Cable Norm	32	9.49		
			Top Cable Tan	32	0.01		
			Bot Cable Vert	15	-10.63		
			Bot Cable Norm	15	9.63		
			Bot Cable Tan	15	0.01		
		Guy C	Bottom Tension	22	14.72		
			Top Tension	22	17.07		
			Top Cable Vert	22	14.30		
			Top Cable Norm	22	9.34		
			Top Cable Tan	22	0.01		
			Bot Cable Vert	22	-10.90		
			Bot Cable Norm	22	9.90		
			Bot Cable Tan	22	0.00		
		Torque Arm Top	Max Tension	14	7.20	-23.47	0.00
			Max. Compression	6	-0.14	0.00	0.00
			Max. Mx	27	3.13	-57.68	0.00
			Max. My	26	5.28	-49.71	0.00
			Max. Vy	27	14.58	-57.68	0.00
			Max. Vx	26	0.00	-49.71	0.00
T2	280 - 260	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.52	0.02	-0.06
			Max. Mx	22	-26.66	-0.55	0.17
			Max. My	27	-26.12	0.12	-0.57
			Max. Vy	23	-2.01	-0.54	0.16
			Max. Vx	27	-2.27	0.12	-0.57
		Diagonal	Max Tension	11	1.61	0.00	0.00
			Max. Compression	3	-2.12	0.00	0.00
			Max. Mx	19	-0.27	0.03	0.00
			Max. My	26	0.29	0.00	-0.00
			Max. Vy	19	-0.03	0.00	0.00
			Max. Vx	26	0.00	0.00	0.00
		Horizontal	Max Tension	16	0.60	0.00	0.00
			Max. Compression	8	-0.38	0.00	0.00
			Max. Mx	22	0.10	0.02	0.00
			Max. My	25	-0.09	0.00	-0.00
			Max. Vy	22	-0.02	0.00	0.00
			Max. Vx	25	0.00	0.00	0.00
		Secondary Horizontal	Max Tension	30	0.00	-0.00	-0.00
			Max. Compression	24	-0.00	-0.00	-0.00
			Max. Mx	18	-0.00	-0.00	0.00
			Max. My	19	-0.00	-0.00	0.00
			Max. Vy	18	0.01	-0.00	0.00
			Max. Vx	19	-0.00	0.00	0.00
		Top Girt	Max Tension	20	1.32	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	18	1.05	0.02	0.00
			Max. My	19	1.29	0.00	-0.00
			Max. Vy	18	-0.02	0.00	0.00
			Max. Vx	19	0.00	0.00	0.00
		Bottom Girt	Max Tension	2	0.10	0.00	0.00
			Max. Compression	10	-1.33	0.00	0.00
			Max. Mx	29	-1.03	0.02	0.00
			Max. My	34	-0.85	0.00	0.00
			Max. Vy	29	-0.02	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	34	-0.00	0.00	0.00
T3	260 - 240	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	27	-62.88	0.27	0.02
			Max. Mx	22	-57.01	2.40	-0.92
			Max. My	27	-27.94	-0.16	-2.68
			Max. Vy	33	-1.75	0.77	-0.45
			Max. Vx	19	-1.93	0.06	0.91
		Diagonal	Max Tension	14	3.73	0.00	0.00
			Max. Compression	17	-4.69	0.00	0.00
			Max. Mx	19	0.71	0.03	0.00
			Max. My	34	0.17	0.00	0.00
			Max. Vy	19	-0.03	0.00	0.00
			Max. Vx	34	-0.00	0.00	0.00
		Horizontal	Max Tension	9	5.31	0.00	0.00
			Max. Compression	17	-4.65	0.00	0.00
			Max. Mx	25	0.35	0.02	0.00
			Max. My	34	-0.11	0.00	0.00
			Max. Vy	25	-0.02	0.00	0.00
			Max. Vx	34	-0.00	0.00	0.00
		Secondary Horizontal	Max Tension	30	0.00	-0.00	-0.00
			Max. Compression	24	-0.00	-0.00	-0.00
			Max. Mx	31	0.00	-0.00	-0.00
			Max. My	19	-0.00	-0.00	0.00
			Max. Vy	31	0.01	-0.00	-0.00
			Max. Vx	19	-0.00	0.00	0.00
		Top Girt	Max Tension	26	1.99	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	29	1.80	0.02	0.00
			Max. My	34	1.56	0.00	0.00
			Max. Vy	29	-0.02	0.00	0.00
			Max. Vx	34	-0.00	0.00	0.00
		Bottom Girt	Max Tension	10	0.97	0.00	0.00
			Max. Compression	2	-0.66	0.00	0.00
			Max. Mx	26	0.41	0.02	0.00
			Max. My	19	0.11	0.00	0.00
			Max. Vy	26	-0.02	0.00	0.00
			Max. Vx	19	-0.00	0.00	0.00
		Guy A	Bottom Tension	27	15.38		
			Top Tension	10	17.03		
			Top Cable Vert	27	13.83		
			Top Cable Norm	27	9.93		
			Top Cable Tan	27	0.00		
			Bot Cable Vert	10	-11.51		
			Bot Cable Norm	10	10.20		
			Bot Cable Tan	10	0.01		
		Guy B	Bottom Tension	32	14.78		
			Top Tension	15	15.97		
			Top Cable Vert	32	12.42		
			Top Cable Norm	32	10.05		
			Top Cable Tan	32	0.01		
			Bot Cable Vert	15	-10.46		
			Bot Cable Norm	15	10.43		
			Bot Cable Tan	15	0.01		
		Guy C	Bottom Tension	22	15.23		
			Top Tension	5	16.89		
			Top Cable Vert	22	13.66		
			Top Cable Norm	22	9.93		
			Top Cable Tan	22	0.00		
			Bot Cable Vert	5	-11.34		
			Bot Cable Norm	5	10.17		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Bot Cable Tan	5	0.01		
		Torque Arm Top	Max Tension	14	8.45	-20.30	0.00
			Max. Compression	6	-1.27	-44.53	0.00
			Max. Mx	27	3.07	-55.18	0.00
			Max. My	26	5.72	-47.42	0.00
			Max. Vy	27	13.95	-55.18	0.00
			Max. Vx	26	0.00	-47.42	0.00
T4	240 - 220	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	22	-63.17	-0.20	-0.26
			Max. Mx	14	-46.12	-0.58	-0.19
			Max. My	10	-43.24	-0.01	0.58
			Max. Vy	14	-2.76	0.11	-0.29
			Max. Vx	2	-2.70	0.17	0.23
		Diagonal	Max Tension	6	3.87	0.00	0.00
			Max. Compression	14	-4.43	0.00	0.00
			Max. Mx	19	-0.20	0.03	0.00
			Max. My	34	-1.05	0.00	0.00
			Max. Vy	19	-0.03	0.00	0.00
			Max. Vx	34	-0.00	0.00	0.00
		Horizontal	Max Tension	4	0.70	0.00	0.00
			Max. Compression	7	-0.24	0.00	0.00
			Max. Mx	28	0.37	0.02	0.00
			Max. My	19	0.38	0.00	0.00
			Max. Vy	28	-0.02	0.00	0.00
			Max. Vx	19	-0.00	0.00	0.00
		Secondary Horizontal	Max Tension	30	0.00	-0.00	-0.00
			Max. Compression	24	-0.00	-0.00	-0.00
			Max. Mx	27	-0.00	-0.00	0.00
			Max. My	19	-0.00	-0.00	0.00
			Max. Vy	27	0.01	-0.00	0.00
			Max. Vx	19	-0.00	0.00	0.00
		Top Girt	Max Tension	5	0.78	0.00	0.00
			Max. Compression	13	-0.63	0.00	0.00
			Max. Mx	26	0.39	0.02	0.00
			Max. My	19	-0.08	0.00	-0.00
			Max. Vy	26	-0.02	0.00	0.00
			Max. Vx	19	0.00	0.00	0.00
		Bottom Girt	Max Tension	2	0.88	0.00	0.00
			Max. Compression	10	-1.69	0.00	0.00
			Max. Mx	23	-0.66	0.02	0.00
			Max. My	19	-0.70	0.00	0.00
			Max. Vy	23	-0.02	0.00	0.00
			Max. Vx	19	-0.00	0.00	0.00
T5	220 - 200	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	22	-91.30	-0.27	-0.47
			Max. Mx	22	-83.30	2.42	-0.59
			Max. My	27	-57.20	-0.42	-2.47
			Max. Vy	14	-2.76	0.80	-0.40
			Max. Vx	2	-2.70	0.02	0.91
		Diagonal	Max Tension	3	5.38	0.00	0.00
			Max. Compression	11	-6.83	0.00	0.00
			Max. Mx	30	0.53	0.04	0.00
			Max. My	34	-0.16	0.00	0.00
			Max. Vy	30	-0.03	0.00	0.00
			Max. Vx	34	-0.00	0.00	0.00
		Horizontal	Max Tension	9	8.63	0.00	0.00
			Max. Compression	17	-7.51	0.00	0.00
			Max. Mx	23	0.68	0.02	0.00
			Max. My	19	0.14	0.00	0.00
			Max. Vy	23	-0.02	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	19	-0.00	0.00	0.00
		Secondary Horizontal	Max Tension	30	0.00	-0.00	-0.00
			Max. Compression	24	-0.00	-0.00	-0.00
			Max. Mx	33	0.00	-0.00	0.00
			Max. My	19	-0.00	-0.00	0.00
			Max. Vy	33	0.01	-0.00	0.00
			Max. Vx	19	-0.00	0.00	0.00
		Top Girt	Max Tension	10	2.26	0.00	0.00
			Max. Compression	2	-0.30	0.00	0.00
			Max. Mx	23	1.56	0.02	0.00
			Max. My	19	1.52	0.00	0.00
			Max. Vy	23	-0.02	0.00	0.00
			Max. Vx	19	-0.00	0.00	0.00
		Bottom Girt	Max Tension	16	1.22	0.00	0.00
			Max. Compression	12	-0.69	0.00	0.00
			Max. Mx	27	0.26	0.02	0.00
			Max. My	19	0.61	0.00	0.00
			Max. Vy	27	-0.02	0.00	0.00
			Max. Vx	19	-0.00	0.00	0.00
		Guy A	Bottom Tension	10	16.62		
			Top Tension	10	16.89		
			Top Cable Vert	10	12.38		
			Top Cable Norm	10	11.50		
			Top Cable Tan	10	0.01		
			Bot Cable Vert	10	-11.64		
			Bot Cable Norm	10	11.86		
			Bot Cable Tan	10	0.01		
		Guy B	Bottom Tension	15	15.87		
			Top Tension	15	16.11		
			Top Cable Vert	15	10.96		
			Top Cable Norm	15	11.81		
			Top Cable Tan	15	0.01		
			Bot Cable Vert	15	-10.29		
			Bot Cable Norm	15	12.08		
			Bot Cable Tan	15	0.01		
		Guy C	Bottom Tension	22	16.45		
			Top Tension	5	16.73		
			Top Cable Vert	22	12.67		
			Top Cable Norm	22	10.92		
			Top Cable Tan	22	0.00		
			Bot Cable Vert	5	-11.44		
			Bot Cable Norm	5	11.83		
			Bot Cable Tan	5	0.01		
		Torque Arm Top	Max Tension	3	10.93	-14.92	-0.00
			Max. Compression	6	-3.36	-43.65	0.00
			Max. Mx	27	3.09	-51.30	0.00
			Max. My	9	8.03	-29.35	0.00
			Max. Vy	27	12.98	-51.30	0.00
			Max. Vx	9	0.00	-29.35	0.00
T6	200 - 180	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	21	-95.84	0.22	0.67
			Max. Mx	14	-54.06	-1.45	0.01
			Max. My	10	-39.13	-0.17	1.39
			Max. Vy	6	3.62	-0.23	-0.34
			Max. Vx	11	3.44	0.42	-0.03
		Diagonal	Max Tension	11	7.24	0.00	0.00
			Max. Compression	3	-8.66	0.00	0.00
			Max. Mx	19	0.46	0.03	0.00
			Max. My	34	-0.91	0.00	0.00
			Max. Vy	19	-0.02	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	34	0.00	0.00	0.00
		Horizontal	Max Tension	5	2.85	0.00	0.00
			Max. Compression	13	-2.03	0.00	0.00
			Max. Mx	32	0.34	0.02	0.00
			Max. My	8	-0.04	0.00	-0.00
			Max. Vy	32	0.02	0.00	0.00
			Max. Vx	8	0.00	0.00	0.00
		Secondary Horizontal	Max Tension	30	0.00	-0.00	-0.00
			Max. Compression	24	-0.00	-0.00	-0.00
			Max. Mx	33	0.00	-0.00	0.00
			Max. My	19	-0.00	-0.00	0.00
			Max. Vy	33	0.01	-0.00	0.00
			Max. Vx	19	-0.00	0.00	0.00
		Top Girt	Max Tension	8	0.78	0.00	0.00
			Max. Compression	16	-0.60	0.00	0.00
			Max. Mx	27	0.22	0.02	0.00
			Max. My	19	-0.02	0.00	0.00
			Max. Vy	27	0.02	0.00	0.00
			Max. Vx	19	0.00	0.00	0.00
		Bottom Girt	Max Tension	7	2.13	0.00	0.00
			Max. Compression	10	-1.58	0.00	0.00
			Max. Mx	24	0.12	0.02	0.00
			Max. My	9	-1.24	0.00	0.00
			Max. Vy	24	0.02	0.00	0.00
			Max. Vx	9	-0.00	0.00	0.00
T7	180 - 160	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-115.65	-0.32	-0.74
			Max. Mx	23	-87.83	-2.33	0.20
			Max. My	10	-38.65	0.48	-2.37
			Max. Vy	6	3.62	-1.13	-0.29
			Max. Vx	11	3.44	0.89	-0.89
		Diagonal	Max Tension	3	8.90	0.00	0.00
			Max. Compression	11	-9.88	0.00	0.00
			Max. Mx	30	0.25	0.04	0.00
			Max. My	9	-4.23	0.00	-0.00
			Max. Vy	30	-0.03	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Horizontal	Max Tension	17	12.23	0.00	0.00
			Max. Compression	8	-10.60	0.00	0.00
			Max. Mx	32	1.34	0.02	0.00
			Max. My	9	0.65	0.00	0.00
			Max. Vy	32	-0.02	0.00	0.00
			Max. Vx	9	-0.00	0.00	0.00
		Secondary Horizontal	Max Tension	30	0.00	-0.00	-0.00
			Max. Compression	24	-0.00	-0.00	-0.00
			Max. Mx	34	-0.00	-0.00	0.00
			Max. My	10	-0.00	-0.00	0.00
			Max. Vy	34	0.01	-0.00	0.00
			Max. Vx	10	-0.00	-0.00	0.00
		Top Girt	Max Tension	10	2.05	0.00	0.00
			Max. Compression	2	-1.71	0.00	0.00
			Max. Mx	24	0.55	0.02	0.00
			Max. My	9	1.72	0.00	0.00
			Max. Vy	24	-0.02	0.00	0.00
			Max. Vx	9	-0.00	0.00	0.00
		Bottom Girt	Max Tension	9	1.78	0.00	0.00
			Max. Compression	2	-1.06	0.00	0.00
			Max. Mx	32	0.41	0.02	0.00
			Max. My	8	0.92	0.00	-0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	32	-0.02	0.00	0.00
			Max. Vx	8	0.00	0.00	0.00
		Guy A	Bottom Tension	10	17.98		
			Top Tension	10	18.20		
			Top Cable Vert	10	11.73		
			Top Cable Norm	10	13.92		
			Top Cable Tan	10	0.00		
			Bot Cable Vert	10	-11.12		
			Bot Cable Norm	10	14.13		
			Bot Cable Tan	10	0.00		
		Guy B	Bottom Tension	15	17.26		
			Top Tension	15	17.44		
			Top Cable Vert	15	9.99		
			Top Cable Norm	15	14.30		
			Top Cable Tan	15	0.00		
			Bot Cable Vert	15	-9.45		
			Bot Cable Norm	15	14.44		
			Bot Cable Tan	15	0.00		
		Guy C	Bottom Tension	5	17.84		
			Top Tension	5	18.06		
			Top Cable Vert	5	11.51		
			Top Cable Norm	5	13.91		
			Top Cable Tan	5	0.00		
			Bot Cable Vert	5	-10.92		
			Bot Cable Norm	5	14.11		
			Bot Cable Tan	5	0.00		
		Torque Arm Top	Max Tension	3	14.34	0.00	0.00
			Max. Compression	7	-6.29	-32.38	-0.00
			Max. Mx	10	-3.88	-45.43	0.00
			Max. My	8	2.27	-37.87	0.00
			Max. Vy	27	11.43	-45.11	0.00
			Max. Vx	8	0.00	-37.87	0.00
T8	160 - 140	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	24	-120.81	-0.39	-0.68
			Max. Mx	24	-117.88	0.90	-0.00
			Max. My	24	-119.12	-0.45	-0.78
			Max. Vy	14	2.44	-0.06	-0.37
			Max. Vx	2	2.15	0.39	0.12
		Diagonal	Max Tension	7	4.13	0.00	0.00
			Max. Compression	14	-4.88	0.00	0.00
			Max. Mx	30	-0.20	0.03	0.00
			Max. My	9	-1.02	0.00	-0.00
			Max. Vy	30	-0.03	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Horizontal	Max Tension	15	1.06	0.00	0.00
			Max. Compression	7	-0.11	0.00	0.00
			Max. Mx	24	0.85	0.02	0.00
			Max. My	10	0.30	0.00	0.00
			Max. Vy	24	-0.02	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
		Secondary Horizontal	Max Tension	30	0.00	-0.00	0.00
			Max. Compression	25	-0.00	-0.00	0.00
			Max. Mx	34	0.00	-0.00	0.00
			Max. My	10	-0.00	-0.00	0.00
			Max. Vy	34	0.01	-0.00	0.00
			Max. Vx	10	-0.00	-0.00	0.00
		Top Girt	Max Tension	2	1.17	0.00	0.00
			Max. Compression	9	-0.72	0.00	0.00
			Max. Mx	32	0.37	0.02	0.00
			Max. My	8	-0.26	0.00	-0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	32	-0.02	0.00	0.00
			Max. Vx	8	0.00	0.00	0.00
		Bottom Girt	Max Tension	7	0.48	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	22	0.45	0.02	0.00
			Max. My	10	0.22	0.00	0.00
			Max. Vy	22	-0.02	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
T9	140 - 120	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	23	-124.19	0.86	0.01
			Max. Mx	23	-122.46	-1.03	0.01
			Max. My	9	-75.48	0.03	0.92
			Max. Vy	6	2.58	-0.28	-0.41
			Max. Vx	11	2.50	0.51	-0.04
		Diagonal	Max Tension	11	4.41	0.00	0.00
			Max. Compression	3	-6.02	0.00	0.00
			Max. Mx	22	-0.30	0.03	0.00
			Max. My	9	-1.87	0.00	-0.00
			Max. Vy	22	-0.02	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Horizontal	Max Tension	4	1.25	0.00	0.00
			Max. Compression	12	-0.05	0.00	0.00
			Max. Mx	19	1.05	0.02	0.00
			Max. My	10	0.46	0.00	0.00
			Max. Vy	19	-0.02	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
		Secondary Horizontal	Max Tension	21	0.00	-0.00	0.00
			Max. Compression	33	-0.00	-0.00	0.00
			Max. Mx	34	0.00	-0.00	0.00
			Max. My	39	0.00	-0.00	-0.00
			Max. Vy	34	0.01	-0.00	0.00
			Max. Vx	39	0.00	-0.00	-0.00
		Top Girt	Max Tension	10	0.62	0.00	0.00
			Max. Compression	6	-0.09	0.00	0.00
			Max. Mx	22	0.27	0.02	0.00
			Max. My	10	0.62	0.00	0.00
			Max. Vy	22	-0.02	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
		Bottom Girt	Max Tension	3	1.19	0.00	0.00
			Max. Compression	10	-0.75	0.00	0.00
			Max. Mx	21	0.61	0.02	0.00
			Max. My	10	-0.75	0.00	0.00
			Max. Vy	21	-0.02	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
T10	120 - 100	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	24	-144.58	1.08	0.10
			Max. Mx	6	-41.91	-2.10	-0.10
			Max. My	10	-36.38	0.60	-2.08
			Max. Vy	14	7.12	1.29	-0.42
			Max. Vx	3	5.80	-0.19	1.27
		Diagonal	Max Tension	14	12.64	0.00	0.00
			Max. Compression	6	-14.24	0.00	0.00
			Max. Mx	30	1.42	0.04	0.00
			Max. My	8	3.54	0.00	-0.00
			Max. Vy	30	0.03	0.00	0.00
			Max. Vx	8	0.00	0.00	0.00
		Horizontal	Max Tension	24	1.61	0.00	0.00
			Max. Compression	15	-0.19	0.00	0.00
			Max. Mx	33	1.45	0.02	0.00
			Max. My	7	0.21	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	33	-0.02	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
		Secondary Horizontal	Max Tension	30	0.00	-0.00	0.00
			Max. Compression	23	-0.00	-0.00	-0.00
			Max. Mx	34	0.00	-0.00	0.00
			Max. My	7	-0.00	-0.00	-0.00
			Max. Vy	34	0.01	-0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
		Top Girt	Max Tension	10	1.65	0.00	0.00
			Max. Compression	2	-0.96	0.00	0.00
			Max. Mx	21	0.26	0.02	0.00
			Max. My	10	1.65	0.00	0.00
			Max. Vy	21	-0.02	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
		Bottom Girt	Max Tension	10	3.33	0.00	0.00
			Max. Compression	2	-2.43	0.00	0.00
			Max. Mx	20	0.18	0.02	0.00
			Max. My	7	1.98	0.00	-0.00
			Max. Vy	20	-0.02	0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
		Guy A	Bottom Tension	10	18.91		
			Top Tension	10	19.06		
			Top Cable Vert	10	9.47		
			Top Cable Norm	10	16.54		
			Top Cable Tan	10	0.00		
			Bot Cable Vert	10	-9.03		
			Bot Cable Norm	10	16.62		
			Bot Cable Tan	10	0.00		
		Guy B	Bottom Tension	15	18.32		
			Top Tension	15	18.43		
			Top Cable Vert	15	7.30		
			Top Cable Norm	15	16.92		
			Top Cable Tan	15	0.00		
			Bot Cable Vert	15	-6.91		
			Bot Cable Norm	15	16.96		
			Bot Cable Tan	15	0.00		
		Guy C	Bottom Tension	5	18.63		
			Top Tension	5	18.77		
			Top Cable Vert	5	9.15		
			Top Cable Norm	5	16.39		
			Top Cable Tan	5	0.00		
			Bot Cable Vert	5	-8.71		
			Bot Cable Norm	5	16.47		
			Bot Cable Tan	5	0.00		
		Top Guy Pull-Off	Max Tension	17	16.43	0.00	0.00
			Max. Compression	9	-14.45	0.00	0.00
			Max. Mx	33	5.14	0.01	0.00
			Max. My	7	11.85	0.00	0.00
			Max. Vy	33	-0.01	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
		Torque Arm Top	Max Tension	14	17.73	-5.88	-0.00
			Max. Compression	6	-8.39	0.00	0.00
			Max. Mx	10	-5.95	-36.76	0.00
			Max. My	7	6.88	-27.69	0.00
			Max. Vy	10	9.26	-36.76	0.00
			Max. Vx	7	0.00	-27.69	0.00
T11	100 - 80	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	27	-166.13	1.21	0.04
			Max. Mx	14	-81.51	-2.26	-0.52
			Max. My	9	-78.02	0.61	1.87

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	14	7.10	-0.49	-0.47
			Max. Vx	3	5.80	0.66	-0.18
		Diagonal	Max Tension	6	11.87	0.00	0.00
			Max. Compression	14	-13.95	0.00	0.00
			Max. Mx	22	-2.46	0.03	0.00
			Max. My	9	-4.22	0.00	-0.00
			Max. Vy	22	-0.03	0.00	0.00
			Max. Vx	9	-0.00	0.00	0.00
		Horizontal	Max Tension	10	2.73	0.00	0.00
			Max. Compression	2	-1.21	0.00	0.00
			Max. Mx	19	1.43	0.02	0.00
			Max. My	9	2.37	0.00	-0.00
			Max. Vy	19	-0.02	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Secondary Horizontal	Max Tension	22	0.00	-0.00	0.00
			Max. Compression	24	-0.00	-0.00	0.00
			Max. Mx	34	0.00	-0.00	0.00
			Max. My	7	-0.00	-0.00	-0.00
			Max. Vy	34	0.01	-0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
		Top Girt	Max Tension	2	2.74	0.00	0.00
			Max. Compression	10	-2.12	0.00	0.00
			Max. Mx	20	0.97	0.02	0.00
			Max. My	7	2.09	0.00	0.00
			Max. Vy	20	-0.02	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
		Bottom Girt	Max Tension	9	1.27	0.00	0.00
			Max. Compression	17	-0.52	0.00	0.00
			Max. Mx	24	0.80	0.02	0.00
			Max. My	9	0.35	0.00	-0.00
			Max. Vy	24	-0.02	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
T12	80 - 60	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	27	-172.53	1.22	0.17
			Max. Mx	25	-167.32	1.47	-0.01
			Max. My	24	-160.22	0.70	1.28
			Max. Vy	15	1.95	-0.42	-0.49
			Max. Vx	9	1.67	0.10	1.05
		Diagonal	Max Tension	17	2.33	0.00	0.00
			Max. Compression	15	-4.50	0.00	0.00
			Max. Mx	23	-0.98	0.03	0.00
			Max. My	8	-0.94	0.00	-0.00
			Max. Vy	23	-0.02	0.00	0.00
			Max. Vx	8	0.00	0.00	0.00
		Horizontal	Max Tension	34	1.57	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	20	1.37	0.02	0.00
			Max. My	9	1.22	0.00	-0.00
			Max. Vy	20	-0.02	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Secondary Horizontal	Max Tension	23	0.00	-0.00	-0.00
			Max. Compression	31	-0.00	-0.00	0.00
			Max. Mx	34	0.00	-0.00	0.00
			Max. My	6	0.00	-0.00	-0.00
			Max. Vy	34	0.01	-0.00	0.00
			Max. Vx	6	0.00	-0.00	-0.00
		Top Girt	Max Tension	17	0.90	0.00	0.00
			Max. Compression	10	-0.15	0.00	0.00
			Max. Mx	24	0.54	0.02	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	9	0.28	0.00	-0.00
			Max. Vy	24	-0.02	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Bottom Girt	Max Tension	9	0.91	0.00	0.00
			Max. Compression	17	-0.32	0.00	0.00
			Max. Mx	20	0.35	0.02	0.00
			Max. My	9	0.91	0.00	-0.00
			Max. Vy	20	-0.02	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
T13	60 - 40	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	27	-183.33	1.32	0.04
			Max. Mx	25	-178.00	1.57	-0.02
			Max. My	31	-164.98	0.38	-1.54
			Max. Vy	14	-1.63	-0.05	-0.53
			Max. Vx	9	1.67	-0.19	0.64
		Diagonal	Max Tension	15	3.40	0.00	0.00
			Max. Compression	10	-5.92	0.00	0.00
			Max. Mx	23	-1.42	0.03	0.00
			Max. My	8	-3.16	0.00	-0.00
			Max. Vy	23	-0.02	0.00	0.00
			Max. Vx	8	0.00	0.00	0.00
		Horizontal	Max Tension	9	6.98	0.00	0.00
			Max. Compression	17	-5.05	0.00	0.00
			Max. Mx	20	2.66	0.02	0.00
			Max. My	9	1.09	0.00	-0.00
			Max. Vy	20	0.02	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Secondary Horizontal	Max Tension	23	0.00	-0.00	-0.00
			Max. Compression	14	-0.00	-0.00	-0.00
			Max. Mx	34	0.00	-0.00	0.00
			Max. My	2	0.00	-0.00	0.00
			Max. Vy	34	0.01	-0.00	0.00
			Max. Vx	2	-0.00	-0.00	0.00
		Top Girt	Max Tension	16	1.14	0.00	0.00
			Max. Compression	8	-0.16	0.00	0.00
			Max. Mx	20	0.99	0.02	0.00
			Max. My	9	-0.13	0.00	-0.00
			Max. Vy	20	0.02	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Bottom Girt	Max Tension	9	0.98	0.00	0.00
			Max. Compression	17	-0.17	0.00	0.00
			Max. Mx	20	0.69	0.02	0.00
			Max. My	9	0.71	0.00	-0.00
			Max. Vy	20	0.02	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Guy A	Bottom Tension	27	7.25		
			Top Tension	10	7.48		
			Top Cable Vert	27	2.93		
			Top Cable Norm	27	6.88		
			Top Cable Tan	27	0.00		
			Bot Cable Vert	10	-2.29		
			Bot Cable Norm	10	6.88		
			Bot Cable Tan	10	0.00		
		Guy B	Bottom Tension	33	7.06		
			Top Tension	15	7.28		
			Top Cable Vert	33	2.03		
			Top Cable Norm	33	6.99		
			Top Cable Tan	33	0.02		
			Bot Cable Vert	15	-1.36		
			Bot Cable Norm	15	6.93		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Bot Cable Tan	15	0.00		
		Guy C	Bottom Tension	22	7.06		
			Top Tension	22	7.40		
			Top Cable Vert	22	2.82		
			Top Cable Norm	22	6.84		
			Top Cable Tan	22	0.00		
			Bot Cable Vert	22	-1.69		
			Bot Cable Norm	22	6.85		
			Bot Cable Tan	22	0.00		
		Torque Arm Top	Max Tension	6	7.26	0.00	0.00
			Max. Compression	6	-3.45	0.00	0.00
			Max. Mx	28	3.18	-12.23	0.00
			Max. My	9	-1.54	-5.44	0.00
			Max. Vy	28	3.21	-12.23	0.00
			Max. Vx	9	0.00	-5.44	0.00
T14	40 - 20	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	27	-183.34	1.27	0.04
			Max. Mx	25	-178.34	1.59	-0.01
			Max. My	24	-173.58	0.77	1.39
			Max. Vy	6	2.66	-0.28	-0.71
			Max. Vx	9	2.82	0.11	1.30
		Diagonal	Max Tension	17	4.35	0.00	0.00
			Max. Compression	9	-6.70	0.00	0.00
			Max. Mx	26	-0.44	0.03	0.00
			Max. My	8	-1.09	0.00	-0.00
			Max. Vy	26	-0.02	0.00	0.00
			Max. Vx	8	0.00	0.00	0.00
		Horizontal	Max Tension	26	1.64	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	20	1.32	0.02	0.00
			Max. My	9	1.36	0.00	-0.00
			Max. Vy	20	-0.02	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Secondary Horizontal	Max Tension	23	0.00	-0.00	-0.00
			Max. Compression	14	-0.00	-0.00	-0.00
			Max. Mx	34	0.00	-0.00	0.00
			Max. My	2	0.00	-0.00	0.00
			Max. Vy	34	0.01	-0.00	0.00
			Max. Vx	2	-0.00	-0.00	0.00
		Top Girt	Max Tension	16	0.88	0.00	0.00
			Max. Compression	7	-0.24	0.00	0.00
			Max. Mx	20	0.59	0.02	0.00
			Max. My	9	-0.14	0.00	-0.00
			Max. Vy	20	-0.02	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Bottom Girt	Max Tension	7	1.37	0.00	0.00
			Max. Compression	16	-0.52	0.00	0.00
			Max. Mx	18	0.64	0.02	0.00
			Max. My	9	1.27	0.00	-0.00
			Max. Vy	18	-0.02	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
T15	20 - 6.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	27	-180.25	1.34	-0.14
			Max. Mx	23	-174.29	-2.06	0.13
			Max. My	10	-110.08	0.67	-1.92
			Max. Vy	6	7.66	-2.03	0.29
			Max. Vx	11	7.63	0.75	-1.88
		Diagonal	Max Tension	6	5.88	0.00	0.00
			Max. Compression	9	-7.52	0.00	0.00
			Max. Mx	26	0.26	0.02	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	8	0.79	0.00	-0.00
			Max. Vy	26	0.02	0.00	0.00
			Max. Vx	8	0.00	0.00	0.00
		Horizontal	Max Tension	19	1.57	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	18	1.47	0.01	0.00
			Max. My	9	0.87	0.00	-0.00
			Max. Vy	18	-0.02	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Secondary Horizontal	Max Tension	23	0.00	-0.00	-0.00
			Max. Compression	14	-0.00	-0.00	-0.00
			Max. Mx	34	0.00	-0.00	0.00
			Max. My	2	0.00	-0.00	0.00
			Max. Vy	34	0.01	-0.00	0.00
			Max. Vx	6	0.00	-0.00	-0.00
		Top Girt	Max Tension	15	1.53	0.00	0.00
			Max. Compression	7	-0.84	0.00	0.00
			Max. Mx	18	0.71	0.01	0.00
			Max. My	9	-0.61	0.00	-0.00
			Max. Vy	18	-0.02	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
		Bottom Girt	Max Tension	22	4.36	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	18	4.11	0.01	0.00
			Max. My	9	2.96	0.00	-0.00
			Max. Vy	18	-0.02	0.00	0.00
			Max. Vx	9	0.00	0.00	0.00
T16	6.75 - 0	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	23	-183.04	-0.54	0.09
			Max. Mx	28	-181.56	1.34	-0.04
			Max. My	8	-99.44	0.31	-0.37
			Max. Vy	26	1.43	-1.09	0.12
			Max. Vx	8	-0.24	-0.32	0.09
		Horizontal	Max Tension	24	0.67	-0.57	0.02
			Max. Compression	24	-0.14	-0.29	0.02
			Max. Mx	34	0.65	-0.95	-0.03
			Max. My	25	0.67	-0.91	-0.03
			Max. Vy	2	-0.66	-0.64	-0.01
			Max. Vx	23	-0.05	-0.86	-0.02
		Top Girt	Max Tension	23	26.98	-0.59	-0.04
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	6	12.37	1.37	0.02
			Max. My	25	26.76	-0.70	-0.04
			Max. Vy	23	-0.64	-0.89	-0.04
			Max. Vx	23	-0.03	-0.89	-0.04

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Mast	Max. Vert	24	513.42	-0.78	-0.25
	Max. H_x	14	269.93	5.65	0.02
	Max. H_z	2	264.32	0.01	6.01
	Max. M_x	1	0.00	-0.01	0.02
	Max. M_z	1	0.00	-0.01	0.02

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Max. Torsion	1	0.00	-0.01	0.02
	Min. Vert	1	227.74	-0.01	0.02
	Min. H_x	6	273.89	-5.71	-0.08
	Min. H_z	10	278.11	-0.09	-5.47
	Min. M_x	1	0.00	-0.01	0.02
	Min. M_z	1	0.00	-0.01	0.02
	Min. Torsion	1	0.00	-0.01	0.02
Guy C @ 235 ft Elev -20.1 ft Azimuth 240 deg	Max. Vert	13	-24.90	-18.71	10.79
	Max. H_x	13	-24.90	-18.71	10.79
	Max. H_z	5	-111.54	-118.56	68.45
	Min. Vert	5	-111.54	-118.56	68.45
	Min. H_x	5	-111.54	-118.56	68.45
	Min. H_z	13	-24.90	-18.71	10.79
Guy B @ 235 ft Elev 8.9 ft Azimuth 120 deg	Max. Vert	7	-19.51	16.78	9.70
	Max. H_x	15	-97.12	120.35	69.44
	Max. H_z	15	-97.12	120.35	69.44
	Min. Vert	15	-97.12	120.35	69.44
	Min. H_x	7	-19.51	16.78	9.70
	Min. H_z	7	-19.51	16.78	9.70
Guy A @ 235 ft Elev -23.4 ft Azimuth 0 deg	Max. Vert	2	-25.33	-0.02	-21.64
	Max. H_x	14	-70.71	5.22	-80.49
	Max. H_z	2	-25.33	-0.02	-21.64
	Min. Vert	10	-112.83	0.04	-136.28
	Min. H_x	6	-68.17	-5.24	-77.77
	Min. H_z	10	-112.83	0.04	-136.28

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	227.74	0.01	-0.02	-0.00	-0.00	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice+1.0 Guy	264.32	-0.01	-6.01	-0.00	-0.00	0.00
1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy	272.28	2.82	-4.86	-0.00	-0.00	0.00
1.2 Dead+1.0 Wind 45 deg - No Ice+1.0 Guy	276.20	3.98	-3.88	-0.00	-0.00	0.00
1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy	277.87	4.85	-2.71	-0.00	-0.00	0.00
1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy	273.89	5.71	0.08	-0.00	-0.00	-0.00
1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy	266.99	5.32	3.04	-0.00	-0.00	-0.00
1.2 Dead+1.0 Wind 135 deg - No Ice+1.0 Guy	270.16	4.23	4.06	-0.00	-0.00	-0.00
1.2 Dead+1.0 Wind 150 deg - No Ice+1.0 Guy	274.00	2.92	4.82	-0.00	-0.00	-0.00
1.2 Dead+1.0 Wind 180 deg - No Ice+1.0 Guy	278.11	0.09	5.47	-0.00	-0.00	-0.00
1.2 Dead+1.0 Wind 210 deg -	272.41	-2.76	4.80	-0.00	-0.00	-0.00

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
No Ice+1.0 Guy						
1.2 Dead+1.0 Wind 225 deg - No Ice+1.0 Guy	267.76	-4.09	4.01	-0.00	-0.00	-0.00
1.2 Dead+1.0 Wind 240 deg - No Ice+1.0 Guy	264.24	-5.17	2.95	-0.00	-0.00	0.00
1.2 Dead+1.0 Wind 270 deg - No Ice+1.0 Guy	269.93	-5.65	-0.02	-0.00	-0.00	0.00
1.2 Dead+1.0 Wind 300 deg - No Ice+1.0 Guy	274.29	-4.83	-2.81	-0.00	-0.00	0.00
1.2 Dead+1.0 Wind 315 deg - No Ice+1.0 Guy	273.09	-3.97	-3.97	-0.00	-0.00	0.00
1.2 Dead+1.0 Wind 330 deg - No Ice+1.0 Guy	269.91	-2.83	-4.91	-0.00	-0.00	0.00
1.2 Dead+1.0 Ice+1.0 Temp+Guy	502.76	0.14	-0.11	-0.00	-0.00	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy	509.35	0.12	-0.88	-0.00	-0.00	0.00
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy	508.30	0.49	-0.76	-0.00	-0.00	0.00
1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp+1.0 Guy	507.49	0.65	-0.64	-0.00	-0.00	0.00
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy	507.49	0.77	-0.47	-0.00	-0.00	0.00
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy	510.58	0.87	-0.09	-0.00	-0.00	-0.00
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy	513.42	0.78	0.25	-0.00	-0.00	-0.00
1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp+1.0 Guy	512.64	0.67	0.39	-0.00	-0.00	-0.00
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy	510.77	0.53	0.51	-0.00	-0.00	-0.00
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy	507.80	0.15	0.61	-0.00	-0.00	-0.00
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy	508.68	-0.25	0.52	-0.00	-0.00	-0.00
1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp+1.0 Guy	509.58	-0.41	0.40	-0.00	-0.00	0.00
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy	509.72	-0.54	0.25	-0.00	-0.00	0.00
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy	506.77	-0.63	-0.11	-0.00	-0.00	0.00
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy	504.42	-0.52	-0.49	-0.00	-0.00	0.00
1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp+1.0 Guy	505.03	-0.40	-0.66	-0.00	-0.00	0.00
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy	506.59	-0.25	-0.78	-0.00	-0.00	0.00
Dead+Wind 0 deg - Service+Guy	229.34	0.01	-1.27	-0.00	-0.00	0.00
Dead+Wind 30 deg - Service+Guy	229.14	0.64	-1.08	-0.00	-0.00	0.00
Dead+Wind 45 deg - Service+Guy	229.00	0.89	-0.88	-0.00	-0.00	0.00
Dead+Wind 60 deg - Service+Guy	228.98	1.09	-0.63	-0.00	-0.00	0.00
Dead+Wind 90 deg - Service+Guy	229.43	1.25	-0.02	-0.00	-0.00	-0.00
Dead+Wind 120 deg - Service+Guy	229.86	1.10	0.60	-0.00	-0.00	-0.00
Dead+Wind 135 deg - Service+Guy	229.74	0.89	0.86	-0.00	-0.00	-0.00

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead+Wind 150 deg - Service+Guy	229.45	0.63	1.05	-0.00	-0.00	-0.00
Dead+Wind 180 deg - Service+Guy	229.00	0.02	1.21	-0.00	-0.00	-0.00
Dead+Wind 210 deg - Service+Guy	229.17	-0.59	1.04	-0.00	-0.00	-0.00
Dead+Wind 225 deg - Service+Guy	229.33	-0.86	0.85	-0.00	-0.00	-0.00
Dead+Wind 240 deg - Service+Guy	229.36	-1.06	0.60	-0.00	-0.00	0.00
Dead+Wind 270 deg - Service+Guy	228.93	-1.22	-0.03	-0.00	-0.00	0.00
Dead+Wind 300 deg - Service+Guy	228.58	-1.06	-0.64	-0.00	-0.00	0.00
Dead+Wind 315 deg - Service+Guy	228.67	-0.86	-0.89	-0.00	-0.00	0.00
Dead+Wind 330 deg - Service+Guy	228.92	-0.61	-1.08	-0.00	-0.00	0.00

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-64.77	0.00	0.00	64.77	0.00	0.007%
2	-0.02	-76.37	-97.83	0.03	76.37	97.76	0.052%
3	48.84	-75.35	-84.68	-48.84	75.35	84.62	0.050%
4	69.09	-74.60	-69.11	-69.10	74.60	69.01	0.080%
5	84.55	-74.33	-48.86	-84.45	74.33	48.87	0.084%
6	97.58	-75.66	0.13	-97.55	75.66	-0.11	0.027%
7	84.15	-76.93	48.65	-84.11	76.93	-48.63	0.036%
8	68.77	-76.56	68.63	-68.73	76.56	-68.61	0.037%
9	48.62	-75.69	84.03	-48.58	75.68	-84.02	0.027%
10	0.02	-74.38	97.13	0.03	74.38	-97.04	0.088%
11	-48.53	-75.40	84.15	48.47	75.40	-84.12	0.052%
12	-69.09	-76.15	69.11	69.02	76.15	-69.07	0.064%
13	-84.09	-76.42	48.59	84.03	76.42	-48.55	0.053%
14	-96.97	-75.09	-0.13	96.93	75.09	0.17	0.043%
15	-84.08	-73.82	-48.61	84.05	73.82	48.60	0.029%
16	-68.74	-74.19	-68.60	68.77	74.19	68.52	0.070%
17	-48.62	-75.07	-84.03	48.63	75.07	83.98	0.041%
18	0.00	-275.46	0.00	0.02	275.46	0.01	0.009%
19	0.20	-276.41	-39.10	-0.19	276.41	39.09	0.004%
20	19.61	-275.44	-33.99	-19.59	275.44	33.98	0.006%
21	27.63	-274.74	-27.79	-27.61	274.74	27.79	0.007%
22	33.70	-274.48	-19.72	-33.64	274.48	19.72	0.022%
23	38.70	-275.69	-0.08	-38.68	275.69	0.09	0.009%
24	33.35	-276.87	19.29	-33.32	276.87	-19.27	0.011%
25	27.25	-276.52	27.23	-27.23	276.52	-27.21	0.010%
26	19.19	-275.71	33.43	-19.17	275.71	-33.41	0.009%
27	-0.20	-274.51	38.87	0.23	274.51	-38.81	0.023%
28	-19.50	-275.48	33.80	19.50	275.48	-33.78	0.006%
29	-27.63	-276.19	27.79	27.63	276.19	-27.77	0.006%
30	-33.52	-276.45	19.61	33.51	276.45	-19.60	0.006%
31	-38.48	-275.24	0.08	38.46	275.24	-0.07	0.010%
32	-33.34	-274.06	-19.28	33.32	274.06	19.27	0.008%
33	-27.25	-274.40	-27.22	27.23	274.40	27.21	0.007%
34	-19.19	-275.22	-33.43	19.19	275.22	33.42	0.003%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
35	-0.00	-64.98	-20.94	0.01	64.98	20.92	0.029%
36	10.45	-64.76	-18.12	-10.44	64.76	18.11	0.029%
37	14.79	-64.60	-14.79	-14.77	64.60	14.78	0.030%
38	18.10	-64.55	-10.46	-18.07	64.55	10.45	0.032%
39	20.88	-64.83	0.03	-20.86	64.83	-0.02	0.035%
40	18.01	-65.10	10.41	-17.99	65.10	-10.40	0.041%
41	14.72	-65.02	14.69	-14.70	65.02	-14.67	0.039%
42	10.40	-64.84	17.98	-10.39	64.84	-17.96	0.036%
43	0.00	-64.56	20.79	-0.00	64.56	-20.77	0.034%
44	-10.39	-64.78	18.01	10.38	64.78	-17.99	0.031%
45	-14.79	-64.93	14.79	14.77	64.93	-14.77	0.031%
46	-18.00	-64.99	10.40	17.98	64.99	-10.38	0.031%
47	-20.75	-64.71	-0.03	20.74	64.71	0.03	0.024%
48	-18.00	-64.44	-10.40	17.98	64.44	10.40	0.020%
49	-14.71	-64.52	-14.68	14.70	64.52	14.67	0.020%
50	-10.40	-64.70	-17.98	10.40	64.70	17.97	0.023%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	8	0.00082541	0.00009020
2	Yes	10	0.00112235	0.00124230
3	Yes	10	0.00088032	0.00087110
4	Yes	9	0.00124082	0.00108999
5	Yes	8	0.00092909	0.00118321
6	Yes	11	0.00056028	0.00064064
7	Yes	11	0.00095305	0.00105966
8	Yes	11	0.00087452	0.00101605
9	Yes	11	0.00054724	0.00064972
10	Yes	8	0.00092196	0.00121025
11	Yes	10	0.00091988	0.00092022
12	Yes	10	0.00128797	0.00129158
13	Yes	10	0.00117448	0.00129740
14	Yes	10	0.00082522	0.00068304
15	Yes	8	0.00037032	0.00095714
16	Yes	9	0.00116082	0.00081779
17	Yes	10	0.00076377	0.00064717
18	Yes	9	0.00090497	0.00015956
19	Yes	10	0.00080404	0.00019572
20	Yes	10	0.00078239	0.00018203
21	Yes	10	0.00065328	0.00017394
22	Yes	9	0.00141299	0.00040994
23	Yes	10	0.00067697	0.00029923
24	Yes	10	0.00086869	0.00038972
25	Yes	10	0.00082872	0.00036416
26	Yes	10	0.00071845	0.00030699
27	Yes	9	0.00144682	0.00043164
28	Yes	10	0.00079495	0.00020689
29	Yes	10	0.00083926	0.00022249
30	Yes	10	0.00083032	0.00023005
31	Yes	9	0.00148641	0.00036027
32	Yes	9	0.00056373	0.00022671
33	Yes	9	0.00104815	0.00024986
34	Yes	10	0.00064957	0.00014671
35	Yes	7	0.00121236	0.00041973

36	Yes	7	0.00096753	0.00035734
37	Yes	7	0.00081178	0.00033006
38	Yes	7	0.00071083	0.00033716
39	Yes	7	0.00082847	0.00044147
40	Yes	7	0.00104734	0.00053146
41	Yes	7	0.00097737	0.00050563
42	Yes	7	0.00083633	0.00044828
43	Yes	7	0.00072712	0.00035537
44	Yes	7	0.00095660	0.00037658
45	Yes	7	0.00110523	0.00041658
46	Yes	7	0.00118316	0.00043379
47	Yes	7	0.00093578	0.00038510
48	Yes	7	0.00061695	0.00034564
49	Yes	7	0.00073741	0.00035267
50	Yes	7	0.00096460	0.00037651

Maximum Tower Deflections - Service Wind

Section No.	*Elevation* ft	*Horz. Deflection* in	*Gov. Load Comb.*	*Tilt* °	*Twist* °
L1	323 - 288	1.699	43	0.1173	0.0754
T1	288 - 280	1.132	43	0.0125	0.0686
T2	280 - 260	1.147	43	0.0187	0.0601
T3	260 - 240	1.210	43	0.0272	0.0521
T4	240 - 220	1.286	43	0.0270	0.0789
T5	220 - 200	1.328	43	0.0270	0.0685
T6	200 - 180	1.387	43	0.0241	0.0748
T7	180 - 160	1.380	43	0.0114	0.0625
T8	160 - 140	1.328	43	0.0091	0.0577
T9	140 - 120	1.291	43	0.0129	0.0614
T10	120 - 100	1.227	43	0.0136	0.0567
T11	100 - 80	1.205	43	0.0123	0.0592
T12	80 - 60	1.206	43	0.0154	0.0790
T13	60 - 40	1.080	43	0.0436	0.0977
T14	40 - 20	0.843	43	0.0721	0.1234
T15	20 - 6.75	0.472	43	0.1010	0.1420
T16	6.75 - 0	0.163	43	0.1121	0.1419

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	*Appurtenance*	*Gov. Load Comb.*	*Deflection* in	*Tilt* °	*Twist* °	*Radius of Curvature* ft
323.00	4-ft Lightning Rod	43	1.699	0.1173	0.0754	64212
305.00	6813 1-Bay w/radome	43	1.310	0.0416	0.1009	17837
284.00	Guy	43	1.135	0.0150	0.0486	18582
277.00	PD1110	43	1.156	0.0210	0.0665	202741
267.00	OGT9-840	43	1.186	0.0252	0.0601	108895
261.00	AP14-850/105	43	1.206	0.0270	0.0525	79542
256.50	Guy	43	1.223	0.0276	0.0532	105414
252.00	AP14-850/105	43	1.242	0.0278	0.0593	277777
250.00	BXA-70063-2CF	43	1.250	0.0277	0.0629	214465
240.00	SC479-HF1LDF	43	1.286	0.0270	0.0789	65168
216.50	Guy	43	1.338	0.0273	0.0681	98136
211.00	6813 1-Bay w/radome	43	1.356	0.0274	0.0701	510678

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
205.00	BA40-67-DIN	43	1.375	0.0265	0.0734	75924
198.00	6813 1-Bay w/radome	43	1.390	0.0227	0.0747	47924
190.00	6' Yagi	43	1.394	0.0151	0.0705	59940
185.00	7770.00	43	1.389	0.0123	0.0664	66321
172.00	24"x12"x5" Panel	43	1.360	0.0103	0.0586	251458
166.75	Guy	43	1.345	0.0093	0.0576	239023
166.00	16"x12"x3" TTA	43	1.343	0.0092	0.0575	192067
158.80	24"x12"x5" Panel	43	1.326	0.0092	0.0579	94391
157.00	Beacon	43	1.322	0.0094	0.0582	113130
150.00	BA40-67-DIN	43	1.311	0.0103	0.0599	265817
125.00	Sabre 2' Sidearm	43	1.242	0.0150	0.0581	147379
124.00	6'x4' Ice Shield	43	1.239	0.0149	0.0578	121814
112.00	PD1110	43	1.210	0.0102	0.0557	71014
106.75	Guy	43	1.205	0.0111	0.0563	67900
104.00	6'x4" Pipe Mount	43	1.204	0.0122	0.0572	64748
94.00	PR-900	43	1.210	0.0099	0.0641	319843
84.00	BXA-80063-4CF	43	1.213	0.0111	0.0748	34735
70.00	DB212-1	43	1.160	0.0288	0.0882	35897
56.50	Guy	43	1.046	0.0487	0.1017	51116
18.00	6' Yagi	43	0.428	0.1030	0.1425	45969

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	323 - 288	9.913	10	0.5321	0.3783
T1	288 - 280	7.106	10	0.1296	0.3460
T2	280 - 260	7.094	10	0.1381	0.3029
T3	260 - 240	7.194	10	0.1401	0.2677
T4	240 - 220	7.381	10	0.1201	0.3395
T5	220 - 200	7.436	10	0.1046	0.3119
T6	200 - 180	7.583	10	0.1015	0.3144
T7	180 - 160	7.431	10	0.0778	0.2951
T8	160 - 140	7.071	10	0.0766	0.2937
T9	140 - 120	6.797	10	0.0809	0.3162
T10	120 - 100	6.416	8	0.0797	0.3015
T11	100 - 80	6.508	7	0.0653	0.3158
T12	80 - 60	6.684	7	0.0833	0.3976
T13	60 - 40	6.078	7	0.2350	0.4715
T14	40 - 20	4.754	7	0.4064	0.5854
T15	20 - 6.75	2.651	7	0.5683	0.6732
T16	6.75 - 0	0.916	7	0.6291	0.6839

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
323.00	4-ft Lightning Rod	10	9.913	0.5321	0.3783	15206
305.00	6813 1-Bay w/radome	10	8.044	0.2312	0.3945	4224
284.00	Guy	10	7.079	0.1344	0.3203	4506

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
277.00	PD1110	10	7.107	0.1402	0.3067	28905
267.00	OGT9-840	10	7.150	0.1424	0.2814	14503
261.00	AP14-850/105	10	7.186	0.1406	0.2679	10104
256.50	Guy	10	7.226	0.1378	0.2730	10658
252.00	AP14-850/105	10	7.273	0.1339	0.2897	13350
250.00	BXA-70063-2CF	10	7.294	0.1319	0.2991	15060
240.00	SC479-HF1LDF	10	7.381	0.1201	0.3395	15048
216.50	Guy	10	7.460	0.1076	0.3087	16372
211.00	6813 1-Bay w/radome	10	7.509	0.1107	0.3091	54534
205.00	BA40-67-DIN	10	7.559	0.1090	0.3127	17617
198.00	6813 1-Bay w/radome	10	7.586	0.0966	0.3140	10754
190.00	6' Yagi	10	7.553	0.0702	0.3073	12748
185.00	7770.00	10	7.502	0.0670	0.3010	14553
172.00	24"x12"x5" Panel	10	7.288	0.0795	0.2898	66252
166.75	Guy	10	7.188	0.0727	0.2897	23690
166.00	16"x12"x3" TTA	10	7.174	0.0715	0.2899	21699
158.80	24"x12"x5" Panel	10	7.053	0.0782	0.2950	15851
157.00	Beacon	10	7.027	0.0799	0.2971	18795
150.00	BA40-67-DIN	10	6.937	0.0788	0.3068	76875
125.00	Sabre 2' Sidearm	10	6.498	0.0892	0.3062	28741
124.00	6'x4' Ice Shield	10	6.478	0.0880	0.3051	23985
112.00	PD1110	8	6.427	0.0541	0.2989	14078
106.75	Guy	8	6.451	0.0627	0.3026	13619
104.00	6'x4" Pipe Mount	8	6.469	0.0654	0.3067	13389
94.00	PR-900	7	6.602	0.0554	0.3367	20792
84.00	BXA-80063-4CF	7	6.696	0.0587	0.3807	5863
70.00	DB212-1	7	6.484	0.1527	0.4332	5806
56.50	Guy	7	5.896	0.2660	0.4886	7450
18.00	6' Yagi	7	2.401	0.5796	0.6766	8523

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	288	Leg	A325N	1.0000	4	3.32	54.52	0.061 ✔	1	Bolt Tension
T2	280	Leg	A325N	1.0000	4	2.46	54.52	0.045 ✔	1	Bolt Tension
T3	260	Leg	A325N	1.0000	4	2.54	54.52	0.047 ✔	1	Bolt Tension
T4	240	Leg	A325N	1.0000	4	5.26	54.52	0.097 ✔	1	Bolt Tension
T5	220	Leg	A325N	1.0000	4	5.03	54.52	0.092 ✔	1	Bolt Tension
T6	200	Leg	A325N	1.0000	4	7.61	54.52	0.140 ✔	1	Bolt Tension
T7	180	Leg	A325N	1.0000	4	7.87	54.52	0.144 ✔	1	Bolt Tension
T8	160	Leg	A325N	1.0000	4	9.64	54.52	0.177 ✔	1	Bolt Tension
T9	140	Leg	A325N	1.0000	4	10.07	54.52	0.185 ✔	1	Bolt Tension
T10	120	Leg	A325N	1.0000	4	10.35	54.52	0.190 ✔	1	Bolt Tension
T11	100	Leg	A325N	1.0000	4	12.05	54.52	0.221 ✔	1	Bolt Tension
T12	80	Leg	A325N	1.3750	4	13.84	103.94	0.133 ✔	1	Bolt Tension
T13	60	Leg	A325N	1.3750	4	14.38	103.94	0.138 ✔	1	Bolt Tension

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T14	40	Leg	A325N	1.3750	4	15.28	103.94	0.147 ✔	1	Bolt Tension
T15	20	Leg	A325N	1.3750	4	15.02	103.94	0.145 ✔	1	Bolt Tension
T16	6.75	Leg	A325N	1.3750	4	15.20	103.94	0.146 ✔	1	Bolt Tension

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
T1	284.00 (A) (703)	3/4 EHS	8.16	58.30	17.13	34.98	1.000	2.043 ✔
	284.00 (A) (704)	3/4 EHS	8.16	58.30	17.23	34.98	1.000	2.031 ✔
	284.00 (B) (699)	3/4 EHS	8.16	58.30	16.22	34.98	1.000	2.157 ✔
	284.00 (B) (700)	3/4 EHS	8.16	58.30	16.19	34.98	1.000	2.160 ✔
	284.00 (C) (695)	3/4 EHS	8.16	58.30	17.05	34.98	1.000	2.052 ✔
	284.00 (C) (696)	3/4 EHS	8.16	58.30	17.07	34.98	1.000	2.049 ✔
T3	256.50 (A) (715)	3/4 EHS	8.16	58.30	16.95	34.98	1.000	2.064 ✔
	256.50 (A) (716)	3/4 EHS	8.16	58.30	17.03	34.98	1.000	2.054 ✔
	256.50 (B) (711)	3/4 EHS	8.16	58.30	15.97	34.98	1.000	2.190 ✔
	256.50 (B) (712)	3/4 EHS	8.16	58.30	15.92	34.98	1.000	2.197 ✔
	256.50 (C) (707)	3/4 EHS	8.16	58.30	16.89	34.98	1.000	2.071 ✔
	256.50 (C) (708)	3/4 EHS	8.16	58.30	16.89	34.98	1.000	2.071 ✔
T5	216.50 (A) (727)	3/4 EHS	8.16	58.30	16.76	34.98	1.000	2.088 ✔
	216.50 (A) (728)	3/4 EHS	8.16	58.30	16.89	34.98	1.000	2.070 ✔
	216.50 (B) (723)	3/4 EHS	8.16	58.30	16.11	34.98	1.000	2.171 ✔
	216.50 (B) (724)	3/4 EHS	8.16	58.30	15.82	34.98	1.000	2.212 ✔
	216.50 (C) (719)	3/4 EHS	8.16	58.30	16.73	34.98	1.000	2.091 ✔
	216.50 (C) (720)	3/4 EHS	8.16	58.30	16.72	34.98	1.000	2.092 ✔
T7	166.75 (A) (739)	3/4 EHS	8.16	58.30	17.75	34.98	1.000	1.970 ✔
	166.75 (A) (740)	3/4 EHS	8.16	58.30	18.20	34.98	1.000	1.922 ✔
	166.75 (B) (735)	3/4 EHS	8.16	58.30	17.44	34.98	1.000	2.006 ✔
	166.75 (B) (736)	3/4 EHS	8.16	58.30	17.00	34.98	1.000	2.058 ✔

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
	166.75 (C) (731)	3/4 EHS	8.16	58.30	18.06	34.98	1.000	1.937 ✔
	166.75 (C) (732)	3/4 EHS	8.16	58.30	17.92	34.98	1.000	1.952 ✔
T10	106.75 (A) (751)	3/4 EHS	8.16	58.30	18.51	34.98	1.000	1.890 ✔
	106.75 (A) (752)	3/4 EHS	8.16	58.30	19.06	34.98	1.000	1.835 ✔
	106.75 (B) (747)	3/4 EHS	8.16	58.30	18.43	34.98	1.000	1.898 ✔
	106.75 (B) (748)	3/4 EHS	8.16	58.30	17.74	34.98	1.000	1.972 ✔
	106.75 (C) (743)	3/4 EHS	8.16	58.30	18.74	34.98	1.000	1.867 ✔
	106.75 (C) (744)	3/4 EHS	8.16	58.30	18.77	34.98	1.000	1.863 ✔
T13	56.50 (A) (763)	7/16 EHS	2.91	20.80	7.39	12.48	1.000	1.689 ✔
	56.50 (A) (764)	7/16 EHS	2.91	20.80	7.48	12.48	1.000	1.669 ✔
	56.50 (B) (759)	7/16 EHS	2.91	20.80	7.28	12.48	1.000	1.715 ✔
	56.50 (B) (760)	7/16 EHS	2.91	20.80	7.23	12.48	1.000	1.726 ✔
	56.50 (C) (755)	7/16 EHS	2.91	20.80	7.37	12.48	1.000	1.694 ✔
	56.50 (C) (756)	7/16 EHS	2.91	20.80	7.40	12.48	1.000	1.686 ✔

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	323 - 288 (1)	P10.75x0.843	35.00	35.00	119.5	26.2373	-4.06	415.23	0.010

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	323 - 288 (1)	P10.75x0.843	45.68	311.02	0.147	0.00	311.02	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	323 - 288 (1)	P10.75x0.843	2.33	354.20	0.007	0.01	308.51	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	323 - 288 (1)	0.010	0.147	0.000	0.007	0.000	0.157 ✔	1.000	4.8.2 ✔

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	Mast Stability Index	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	288 - 280	2	8.00	3.75	90.0 K=1.00	3.1416	1.00	-29.82	78.19	0.381 [1]
T2	280 - 260	2	20.00	3.25	78.0 K=1.00	3.1416	1.00	-30.52	90.61	0.337 [1]
T3	260 - 240	2 1/4	20.00	3.25	69.3 K=1.00	3.9761	1.00	-62.88	125.90	0.499 [1]
T4	240 - 220	2 1/4	20.00	3.25	69.3 K=1.00	3.9761	1.00	-63.17	125.90	0.502 [1]
T5	220 - 200	2 1/2	20.00	3.25	62.4 K=1.00	4.9087	1.00	-91.30	166.16	0.549 [1]
T6	200 - 180	2 1/2	20.00	3.25	62.4 K=1.00	4.9087	1.00	-95.84	166.16	0.577 [1]
T7	180 - 160	2 3/4	20.00	3.25	56.7 K=1.00	5.9396	1.00	-115.65	211.24	0.547 [1]
T8	160 - 140	2 1/2	20.00	3.25	62.4 K=1.00	4.9087	1.00	-120.81	166.16	0.727 [1]
T9	140 - 120	2 3/4	20.00	3.25	56.7 K=1.00	5.9396	1.00	-124.19	211.24	0.588 [1]
T10	120 - 100	2 3/4	20.00	3.25	56.7 K=1.00	5.9396	1.00	-144.58	211.24	0.684 [1]
T11	100 - 80	3	20.00	3.25	52.0 K=1.00	7.0686	1.00	-166.13	261.02	0.636 [1]
T12	80 - 60	3	20.00	3.25	52.0 K=1.00	7.0686	1.00	-172.53	261.02	0.661 [1]
T13	60 - 40	3	20.00	3.25	52.0 K=1.00	7.0686	1.00	-183.33	261.02	0.702 [1]
T14	40 - 20	3	20.00	3.25	52.0 K=1.00	7.0686	1.00	-183.34	261.02	0.702 [1]
T15	20 - 6.75	3	13.25	3.19	51.0 K=1.00	7.0686	1.00	-180.25	263.00	0.685 [1]
T16	6.75 - 0	3	7.07	1.97	31.4 K=1.00	7.0686	0.97	-183.04	285.56	0.641 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	Mast Stability Index	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$

[1] P_u / ϕP_n controls

Leg Bending Design Data (Compression)

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	288 - 280	2	0.00	5.00	0.000	0.00	5.00	0.000
T2	280 - 260	2	0.00	5.00	0.000	0.00	5.00	0.000
T3	260 - 240	2 1/4	0.00	7.12	0.000	0.00	7.12	0.000
T4	240 - 220	2 1/4	0.00	7.12	0.000	0.00	7.12	0.000
T5	220 - 200	2 1/2	0.00	9.77	0.000	0.00	9.77	0.000
T6	200 - 180	2 1/2	0.00	9.77	0.000	0.00	9.77	0.000
T7	180 - 160	2 3/4	0.00	13.00	0.000	0.00	13.00	0.000
T8	160 - 140	2 1/2	0.00	9.77	0.000	0.00	9.77	0.000
T9	140 - 120	2 3/4	0.00	13.00	0.000	0.00	13.00	0.000
T10	120 - 100	2 3/4	0.00	13.00	0.000	0.00	13.00	0.000
T11	100 - 80	3	0.00	16.88	0.000	0.00	16.88	0.000
T12	80 - 60	3	0.00	16.88	0.000	0.00	16.88	0.000
T13	60 - 40	3	0.00	16.88	0.000	0.00	16.88	0.000
T14	40 - 20	3	0.00	16.88	0.000	0.00	16.88	0.000
T15	20 - 6.75	3	0.00	16.88	0.000	0.00	16.88	0.000
T16	6.75 - 0	3	0.00	16.88	0.000	0.00	16.88	0.000

Leg Interaction Design Data (Compression)

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	288 - 280	2	0.381	0.000	0.000	0.381 [1] ✔	1.000	4.8.1 ✔
T2	280 - 260	2	0.337	0.000	0.000	0.337 [1] ✔	1.000	4.8.1 ✔
T3	260 - 240	2 1/4	0.499	0.000	0.000	0.499 [1] ✔	1.000	4.8.1 ✔
T4	240 - 220	2 1/4	0.502	0.000	0.000	0.502 [1] ✔	1.000	4.8.1 ✔
T5	220 - 200	2 1/2	0.549	0.000	0.000	0.549 [1] ✔	1.000	4.8.1 ✔
T6	200 - 180	2 1/2	0.577	0.000	0.000	0.577 [1] ✔	1.000	4.8.1 ✔
T7	180 - 160	2 3/4	0.547	0.000	0.000	0.547 [1] ✔	1.000	4.8.1 ✔
T8	160 - 140	2 1/2	0.727	0.000	0.000	0.727 [1] ✔	1.000	4.8.1 ✔
T9	140 - 120	2 3/4	0.588	0.000	0.000	0.588 [1] ✔	1.000	4.8.1 ✔

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T10	120 - 100	2 3/4	0.684	0.000	0.000	0.684 [1] ✔	1.000	4.8.1 ✔
T11	100 - 80	3	0.636	0.000	0.000	0.636 [1] ✔	1.000	4.8.1 ✔
T12	80 - 60	3	0.661	0.000	0.000	0.661 [1] ✔	1.000	4.8.1 ✔
T13	60 - 40	3	0.702	0.000	0.000	0.702 [1] ✔	1.000	4.8.1 ✔
T14	40 - 20	3	0.702	0.000	0.000	0.702 [1] ✔	1.000	4.8.1 ✔
T15	20 - 6.75	3	0.685	0.000	0.000	0.685 [1] ✔	1.000	4.8.1 ✔
T16	6.75 - 0	3	0.641	0.000	0.000	0.641 [1] ✔	1.000	4.8.1 ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	288 - 280	1 3/8	5.25	5.01	122.4 K=0.70	1.4849	-2.25	21.86	0.103 [1] ✔
T2	280 - 260	1 3/8	4.90	4.68	114.4 K=0.70	1.4849	-2.12	24.17	0.088 [1] ✔
T3	260 - 240	1 3/8	4.90	4.65	113.7 K=0.70	1.4849	-4.69	24.37	0.192 [1] ✔
T4	240 - 220	1 3/8	4.90	4.65	113.7 K=0.70	1.4849	-4.43	24.37	0.182 [1] ✔
T5	220 - 200	1 1/2	4.90	4.62	103.6 K=0.70	1.7672	-6.83	32.55	0.210 [1] ✔
T6	200 - 180	1 1/4	4.90	4.62	124.3 K=0.70	1.2272	-8.66	17.63	0.491 [1] ✔
T7	180 - 160	1 1/2	4.90	4.60	103.0 K=0.70	1.7672	-9.88	32.77	0.301 [1] ✔
T8	160 - 140	1 3/8	4.90	4.62	113.0 K=0.70	1.4849	-4.88	24.57	0.199 [1] ✔
T9	140 - 120	1 1/4	4.90	4.60	123.5 K=0.70	1.2272	-6.02	17.80	0.338 [1] ✔
T10	120 - 100	1 1/2	4.90	4.60	103.0 K=0.70	1.7672	-14.24	32.77	0.435 [1] ✔
T11	100 - 80	1 3/8	4.90	4.57	111.6 K=0.70	1.4849	-13.95	24.96	0.559 [1] ✔
T12	80 - 60	1 1/4	4.90	4.57	122.8 K=0.70	1.2272	-4.50	17.98	0.250 [1] ✔
T13	60 - 40	1 1/4	4.90	4.57	122.8 K=0.70	1.2272	-5.92	17.98	0.329 [1] ✔
T14	40 - 20	1 1/4	4.90	4.57	122.8 K=0.70	1.2272	-6.70	17.98	0.373 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T15	20 - 6.75	1 1/4	4.86	4.53	121.8 K=0.70	1.2272	-7.52	18.22	0.413 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	288 - 280	1	3.67	3.50	117.7 K=0.70	0.7854	-3.34	12.27	0.272 [1]
T2	280 - 260	1	3.67	3.50	117.7 K=0.70	0.7854	-0.38	12.27	0.031 [1]
T3	260 - 240	1	3.67	3.48	117.0 K=0.70	0.7854	-4.65	12.38	0.376 [1]
T4	240 - 220	1	3.67	3.48	117.0 K=0.70	0.7854	-0.24	12.38	0.019 [1]
T5	220 - 200	1	3.67	3.46	116.3 K=0.70	0.7854	-7.51	12.48	0.601 [1]
T6	200 - 180	1	3.67	3.46	116.3 K=0.70	0.7854	-2.03	12.48	0.163 [1]
T7	180 - 160	1	3.67	3.44	115.6 K=0.70	0.7854	-10.60	12.59	0.842 [1]
T8	160 - 140	1	3.67	3.46	116.3 K=0.70	0.7854	-0.11	12.48	0.009 [1]
T9	140 - 120	1	3.67	3.44	115.6 K=0.70	0.7854	-0.05	12.59	0.004 [1]
T10	120 - 100	1	3.67	3.44	115.6 K=0.70	0.7854	-0.19	12.59	0.015 [1]
T11	100 - 80	1	3.67	3.42	114.9 K=0.70	0.7854	-1.21	12.70	0.096 [1]
T13	60 - 40	1	3.67	3.42	114.9 K=0.70	0.7854	-5.05	12.70	0.398 [1]
T16	6.75 - 0	9x3/8	1.90	1.65	183.2 K=1.00	3.3750	-0.14	22.71	0.006 [1]

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	288 - 280	1	1.84	1.75	81.5 K=0.97	0.7854	-0.00	17.94	0.000 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	280 - 260	1	1.84	1.75	81.5 K=0.97	0.7854	-0.00	17.94	0.000 [1]
T3	260 - 240	1	1.84	1.74	81.3 K=0.97	0.7854	-0.00	17.96	0.000 [1]
T4	240 - 220	1	1.84	1.74	81.3 K=0.97	0.7854	-0.00	17.96	0.000 [1]
T5	220 - 200	1	1.84	1.73	81.2 K=0.98	0.7854	-0.00	17.99	0.000 [1]
T6	200 - 180	1	1.84	1.73	81.2 K=0.98	0.7854	-0.00	17.99	0.000 [1]
T7	180 - 160	1	1.84	1.72	81.0 K=0.98	0.7854	-0.00	18.02	0.000 [1]
T8	160 - 140	1	1.84	1.73	81.2 K=0.98	0.7854	-0.00	17.99	0.000 [1]
T9	140 - 120	1	1.84	1.72	81.0 K=0.98	0.7854	-0.00	18.02	0.000 [1]
T10	120 - 100	1	1.84	1.72	81.0 K=0.98	0.7854	-0.00	18.02	0.000 [1]
T11	100 - 80	1	1.84	1.71	80.8 K=0.98	0.7854	-0.00	18.05	0.000 [1]
T12	80 - 60	1	1.84	1.71	80.8 K=0.98	0.7854	-0.00	18.05	0.000 [1]
T13	60 - 40	1	1.84	1.71	80.8 K=0.98	0.7854	-0.00	18.05	0.000 [1]
T14	40 - 20	1	1.84	1.71	80.8 K=0.98	0.7854	-0.00	18.05	0.000 [1]
T15	20 - 6.75	1	1.84	1.71	80.8 K=0.98	0.7854	-0.00	18.05	0.000 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T4	240 - 220	1	3.67	3.48	117.0 K=0.70	0.7854	-0.63	12.38	0.051 [1]
T5	220 - 200	1	3.67	3.46	116.3 K=0.70	0.7854	-0.30	12.48	0.024 [1]
T6	200 - 180	1	3.67	3.46	116.3 K=0.70	0.7854	-0.60	12.48	0.048 [1]
T7	180 - 160	1	3.67	3.44	115.6 K=0.70	0.7854	-1.71	12.59	0.136 [1]
T8	160 - 140	1	3.67	3.46	116.3 K=0.70	0.7854	-0.72	12.48	0.058 [1]
T9	140 - 120	1	3.67	3.44	115.6 K=0.70	0.7854	-0.09	12.59	0.007 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T10	120 - 100	1	3.67	3.44	115.6 K=0.70	0.7854	-0.96	12.59	0.077 [1] ✔
T11	100 - 80	1	3.67	3.42	114.9 K=0.70	0.7854	-2.12	12.70	0.167 [1] ✔
T12	80 - 60	1	3.67	3.42	114.9 K=0.70	0.7854	-0.15	12.70	0.012 [1] ✔
T13	60 - 40	1	3.67	3.42	114.9 K=0.70	0.7854	-0.16	12.70	0.013 [1] ✔
T14	40 - 20	1	3.67	3.42	114.9 K=0.70	0.7854	-0.24	12.70	0.019 [1] ✔
T15	20 - 6.75	1	3.67	3.42	114.9 K=0.70	0.7854	-0.84	12.70	0.066 [1] ✔

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	288 - 280	1	3.67	3.50	117.7 K=0.70	0.7854	-1.83	12.27	0.149 [1] ✔
T2	280 - 260	1	3.67	3.50	117.7 K=0.70	0.7854	-1.33	12.27	0.109 [1] ✔
T3	260 - 240	1	3.67	3.48	117.0 K=0.70	0.7854	-0.66	12.38	0.054 [1] ✔
T4	240 - 220	1	3.67	3.48	117.0 K=0.70	0.7854	-1.69	12.38	0.137 [1] ✔
T5	220 - 200	1	3.67	3.46	116.3 K=0.70	0.7854	-0.69	12.48	0.056 [1] ✔
T6	200 - 180	1	3.67	3.46	116.3 K=0.70	0.7854	-1.58	12.48	0.127 [1] ✔
T7	180 - 160	1	3.67	3.44	115.6 K=0.70	0.7854	-1.06	12.59	0.085 [1] ✔
T9	140 - 120	1	3.67	3.44	115.6 K=0.70	0.7854	-0.75	12.59	0.060 [1] ✔
T10	120 - 100	1	3.67	3.44	115.6 K=0.70	0.7854	-2.43	12.59	0.193 [1] ✔
T11	100 - 80	1	3.67	3.42	114.9 K=0.70	0.7854	-0.52	12.70	0.041 [1] ✔
T12	80 - 60	1	3.67	3.42	114.9 K=0.70	0.7854	-0.32	12.70	0.025 [1] ✔
T13	60 - 40	1	3.67	3.42	114.9 K=0.70	0.7854	-0.17	12.70	0.014 [1] ✔
T14	40 - 20	1	3.67	3.42	114.9 K=0.70	0.7854	-0.52	12.70	0.041 [1] ✔

[1] P_u / ϕP_n controls

Top Guy Pull-Off Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T10	120 - 100	1" S.R. w/ 1" S.R. Crosby Clipped	3.67	3.44	81.8 K=0.70	0.7850	-14.45	17.88	0.808 [1]

[1] P_u / ϕP_n controls

Top Guy Pull-Off Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T10	120 - 100	1" S.R. w/ 1" S.R. Crosby Clipped	0.00	0.40	0.000	0.00	0.40	0.000

Top Guy Pull-Off Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T10	120 - 100	1" S.R. w/ 1" S.R. Crosby Clipped	0.808	0.000	0.000	0.808 [1] ✔	1.000	4.8.1 ✔

[1] P_u / ϕP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	288 - 280 (697)	C15x33.9	4.00	3.92	52.1 K=1.00	9.9600	-0.06	279.81	0.000
T1	288 - 280 (698)	C15x33.9	4.00	3.92	52.1 K=1.00	9.9600	-0.03	279.81	0.000
T1	288 - 280 (701)	C15x33.9	4.00	3.92	52.1 K=1.00	9.9600	-0.05	279.81	0.000
T1	288 - 280 (702)	C15x33.9	4.00	3.92	52.1 K=1.00	9.9600	-0.14	279.81	0.001
T3	260 - 240 (709)	C15x33.9	4.00	3.91	51.9 K=1.00	9.9600	-0.30	280.02	0.001
T3	260 - 240 (710)	C15x33.9	4.00	3.91	51.9 K=1.00	9.9600	-0.17	280.02	0.001
T3	260 - 240 (713)	C15x33.9	4.00	3.91	51.9	9.9600	-0.23	280.02	0.001

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T3	260 - 240 (714)	C15x33.9	4.00	3.91	K=1.00 51.9	9.9600	-0.19	280.02	0.001
T3	260 - 240 (717)	C15x33.9	4.00	3.91	K=1.00 51.9	9.9600	-0.54	280.02	0.002
T3	260 - 240 (718)	C15x33.9	4.00	3.91	K=1.00 51.9	9.9600	-0.04	280.02	0.000
T5	220 - 200 (721)	C15x33.9	4.00	3.90	K=1.00 51.8	9.9600	-1.88	280.23	0.007
T5	220 - 200 (722)	C15x33.9	4.00	3.90	K=1.00 51.8	9.9600	-1.73	280.23	0.006
T5	220 - 200 (725)	C15x33.9	4.00	3.90	K=1.00 51.8	9.9600	-1.66	280.23	0.006
T5	220 - 200 (726)	C15x33.9	4.00	3.90	K=1.00 51.8	9.9600	-1.65	280.23	0.006
T5	220 - 200 (729)	C15x33.9	4.00	3.90	K=1.00 51.8	9.9600	-1.33	280.23	0.005
T5	220 - 200 (730)	C15x33.9	4.00	3.90	K=1.00 51.8	9.9600	-1.43	280.23	0.005
T7	180 - 160 (733)	C15x33.9	4.00	3.89	K=1.00 51.6	9.9600	-3.73	280.44	0.013
T7	180 - 160 (734)	C15x33.9	4.00	3.89	K=1.00 51.6	9.9600	-3.88	280.44	0.014
T7	180 - 160 (737)	C15x33.9	4.00	3.89	K=1.00 51.6	9.9600	-3.59	280.44	0.013
T7	180 - 160 (738)	C15x33.9	4.00	3.89	K=1.00 51.6	9.9600	-3.64	280.44	0.013
T7	180 - 160 (741)	C15x33.9	4.00	3.89	K=1.00 51.6	9.9600	-3.11	280.44	0.011
T7	180 - 160 (742)	C15x33.9	4.00	3.89	K=1.00 51.6	9.9600	-3.35	280.44	0.012
T10	120 - 100 (745)	C15x33.9	4.00	3.89	K=1.00 51.6	9.9600	-5.56	280.44	0.020
T10	120 - 100 (746)	C15x33.9	4.00	3.89	K=1.00 51.6	9.9600	-5.95	280.44	0.021
T10	120 - 100 (749)	C15x33.9	4.00	3.89	K=1.00 51.6	9.9600	-5.68	280.44	0.020
T10	120 - 100 (750)	C15x33.9	4.00	3.89	K=1.00 51.6	9.9600	-5.80	280.44	0.021
T10	120 - 100 (753)	C15x33.9	4.00	3.89	K=1.00 51.6	9.9600	-4.87	280.44	0.017
T10	120 - 100 (754)	C15x33.9	4.00	3.89	K=1.00 51.6	9.9600	-5.26	280.44	0.019
T13	60 - 40 (757)	C15x33.9	4.00	3.88	K=1.00 51.5	9.9600	-2.49	280.65	0.009
T13	60 - 40 (758)	C15x33.9	4.00	3.88	K=1.00 51.5	9.9600	-2.93	280.65	0.010
T13	60 - 40 (761)	C15x33.9	4.00	3.88	K=1.00 51.5	9.9600	-2.43	280.65	0.009
T13	60 - 40 (762)	C15x33.9	4.00	3.88	K=1.00 51.5	9.9600	-2.16	280.65	0.008
T13	60 - 40 (765)	C15x33.9	4.00	3.88	K=1.00 51.5	9.9600	-1.77	280.65	0.006
T13	60 - 40 (766)	C15x33.9	4.00	3.88	K=1.00 51.5	9.9600	-1.77	280.65	0.006
					K=1.00				

Torque-Arm Top Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	288 - 280 (697)	C15x33.9	-46.39	135.28	0.343	0.00	12.60	0.000
T1	288 - 280 (698)	C15x33.9	-46.17	135.28	0.341	-0.00	12.60	0.000
T1	288 - 280 (701)	C15x33.9	-42.83	135.28	0.317	0.00	12.60	0.000
T1	288 - 280 (702)	C15x33.9	-45.47	135.28	0.336	0.00	12.60	0.000
T3	260 - 240 (709)	C15x33.9	-48.15	135.33	0.356	0.00	12.60	0.000
T3	260 - 240 (710)	C15x33.9	-47.93	135.33	0.354	0.00	12.60	0.000
T3	260 - 240 (713)	C15x33.9	-44.11	135.33	0.326	-0.00	12.60	0.000
T3	260 - 240 (714)	C15x33.9	-47.73	135.33	0.353	-0.00	12.60	0.000
T3	260 - 240 (717)	C15x33.9	-43.25	135.33	0.320	-0.00	12.60	0.000
T3	260 - 240 (718)	C15x33.9	-48.25	135.33	0.357	0.00	12.60	0.000
T5	220 - 200 (721)	C15x33.9	-47.92	135.39	0.354	0.00	12.60	0.000
T5	220 - 200 (722)	C15x33.9	-47.69	135.39	0.352	-0.00	12.60	0.000
T5	220 - 200 (725)	C15x33.9	-42.81	135.39	0.316	-0.00	12.60	0.000
T5	220 - 200 (726)	C15x33.9	-47.49	135.39	0.351	-0.00	12.60	0.000
T5	220 - 200 (729)	C15x33.9	-42.66	135.39	0.315	-0.00	12.60	0.000
T5	220 - 200 (730)	C15x33.9	-47.99	135.39	0.354	0.00	12.60	0.000
T7	180 - 160 (733)	C15x33.9	-44.78	135.44	0.331	-0.00	12.60	0.000
T7	180 - 160 (734)	C15x33.9	-45.43	135.44	0.335	0.00	12.60	0.000
T7	180 - 160 (737)	C15x33.9	-44.93	135.44	0.332	-0.00	12.60	0.000
T7	180 - 160 (738)	C15x33.9	-38.60	135.44	0.285	-0.00	12.60	0.000
T7	180 - 160 (741)	C15x33.9	-38.74	135.44	0.286	-0.00	12.60	0.000
T7	180 - 160 (742)	C15x33.9	-45.16	135.44	0.333	0.00	12.60	0.000
T10	120 - 100 (745)	C15x33.9	-35.80	135.44	0.264	0.00	12.60	0.000
T10	120 - 100 (746)	C15x33.9	-36.76	135.44	0.271	0.00	12.60	0.000
T10	120 - 100 (749)	C15x33.9	-35.98	135.44	0.266	-0.00	12.60	0.000
T10	120 - 100 (750)	C15x33.9	-28.11	135.44	0.208	-0.00	12.60	0.000
T10	120 - 100 (753)	C15x33.9	-28.21	135.44	0.208	-0.00	12.60	0.000
T10	120 - 100 (754)	C15x33.9	-36.45	135.44	0.269	0.00	12.60	0.000
T13	60 - 40 (757)	C15x33.9	-9.61	135.50	0.071	0.00	12.60	0.000
T13	60 - 40 (758)	C15x33.9	-9.14	135.50	0.067	0.00	12.60	0.000
T13	60 - 40 (761)	C15x33.9	-6.08	135.50	0.045	0.00	12.60	0.000
T13	60 - 40 (762)	C15x33.9	-9.21	135.50	0.068	0.00	12.60	0.000
T13	60 - 40 (765)	C15x33.9	-5.94	135.50	0.044	0.00	12.60	0.000
T13	60 - 40 (766)	C15x33.9	-9.45	135.50	0.070	0.00	12.60	0.000

Torque-Arm Top Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	288 - 280 (697)	C15x33.9	0.000	0.343	0.000	0.343 ✔	1.000	4.8.1 ✔
T1	288 - 280 (698)	C15x33.9	0.000	0.341	0.000	0.341 ✔	1.000	4.8.1 ✔
T1	288 - 280 (701)	C15x33.9	0.000	0.317	0.000	0.317 ✔	1.000	4.8.1 ✔
T1	288 - 280 (702)	C15x33.9	0.001	0.336	0.000	0.336 ✔	1.000	4.8.1 ✔
T3	260 - 240 (709)	C15x33.9	0.001	0.356	0.000	0.356 ✔	1.000	4.8.1 ✔
T3	260 - 240 (710)	C15x33.9	0.001	0.354	0.000	0.354 ✔	1.000	4.8.1 ✔
T3	260 - 240 (713)	C15x33.9	0.001	0.326	0.000	0.326	1.000	4.8.1 ✔

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T3	260 - 240 (714)	C15x33.9	0.001	0.353	0.000	0.353	1.000	4.8.1
T3	260 - 240 (717)	C15x33.9	0.002	0.320	0.000	0.321	1.000	4.8.1
T3	260 - 240 (718)	C15x33.9	0.000	0.357	0.000	0.357	1.000	4.8.1
T5	220 - 200 (721)	C15x33.9	0.007	0.354	0.000	0.357	1.000	4.8.1
T5	220 - 200 (722)	C15x33.9	0.006	0.352	0.000	0.355	1.000	4.8.1
T5	220 - 200 (725)	C15x33.9	0.006	0.316	0.000	0.319	1.000	4.8.1
T5	220 - 200 (726)	C15x33.9	0.006	0.351	0.000	0.354	1.000	4.8.1
T5	220 - 200 (729)	C15x33.9	0.005	0.315	0.000	0.317	1.000	4.8.1
T5	220 - 200 (730)	C15x33.9	0.005	0.354	0.000	0.357	1.000	4.8.1
T7	180 - 160 (733)	C15x33.9	0.013	0.331	0.000	0.337	1.000	4.8.1
T7	180 - 160 (734)	C15x33.9	0.014	0.335	0.000	0.342	1.000	4.8.1
T7	180 - 160 (737)	C15x33.9	0.013	0.332	0.000	0.338	1.000	4.8.1
T7	180 - 160 (738)	C15x33.9	0.013	0.285	0.000	0.291	1.000	4.8.1
T7	180 - 160 (741)	C15x33.9	0.011	0.286	0.000	0.292	1.000	4.8.1
T7	180 - 160 (742)	C15x33.9	0.012	0.333	0.000	0.339	1.000	4.8.1
T10	120 - 100 (745)	C15x33.9	0.020	0.264	0.000	0.274	1.000	4.8.1
T10	120 - 100 (746)	C15x33.9	0.021	0.271	0.000	0.282	1.000	4.8.1
T10	120 - 100 (749)	C15x33.9	0.020	0.266	0.000	0.276	1.000	4.8.1
T10	120 - 100 (750)	C15x33.9	0.021	0.208	0.000	0.218	1.000	4.8.1
T10	120 - 100 (753)	C15x33.9	0.017	0.208	0.000	0.217	1.000	4.8.1
T10	120 - 100 (754)	C15x33.9	0.019	0.269	0.000	0.278	1.000	4.8.1
T13	60 - 40 (757)	C15x33.9	0.009	0.071	0.000	0.075	1.000	4.8.1
T13	60 - 40 (758)	C15x33.9	0.010	0.067	0.000	0.073	1.000	4.8.1
T13	60 - 40 (761)	C15x33.9	0.009	0.045	0.000	0.049	1.000	4.8.1
T13	60 - 40 (762)	C15x33.9	0.008	0.068	0.000	0.072	1.000	4.8.1
T13	60 - 40 (765)	C15x33.9	0.006	0.044	0.000	0.047	1.000	4.8.1

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T13	60 - 40 (766)	C15x33.9	0.006	0.070	0.000	0.073 ✔	1.000	4.8.1 ✔

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	288 - 280	2	8.00	3.75	90.0	3.1416	14.85	141.37	0.105 [1]

[1] P_u / ϕP_n controls

Leg Bending Design Data (Tension)

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	288 - 280	2	0.00	5.00	0.000	0.00	5.00	0.000

Leg Interaction Design Data (Tension)

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	288 - 280	2	0.105	0.000	0.000	0.105 [1] ✔	1.000	4.8.1 ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	288 - 280	1 3/8	5.25	5.01	174.9	1.4849	2.36	48.11	0.049 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	280 - 260	1 3/8	4.90	4.68	163.4	1.4849	1.61	48.11	0.033 [1] ✔
T3	260 - 240	1 3/8	4.90	4.65	162.4	1.4849	3.73	48.11	0.077 [1] ✔
T4	240 - 220	1 3/8	4.90	4.65	162.4	1.4849	3.87	48.11	0.080 [1] ✔
T5	220 - 200	1 1/2	4.90	4.62	148.0	1.7672	5.38	57.26	0.094 [1] ✔
T6	200 - 180	1 1/4	4.90	4.62	177.6	1.2272	7.24	39.76	0.182 [1] ✔
T7	180 - 160	1 1/2	4.90	4.60	147.1	1.7672	8.90	57.26	0.155 [1] ✔
T8	160 - 140	1 3/8	4.90	4.62	161.4	1.4849	4.13	48.11	0.086 [1] ✔
T9	140 - 120	1 1/4	4.90	4.60	176.5	1.2272	4.41	39.76	0.111 [1] ✔
T10	120 - 100	1 1/2	4.90	4.60	147.1	1.7672	12.64	57.26	0.221 [1] ✔
T11	100 - 80	1 3/8	4.90	4.57	159.5	1.4849	11.87	48.11	0.247 [1] ✔
T12	80 - 60	1 1/4	4.90	4.57	175.4	1.2272	2.33	39.76	0.059 [1] ✔
T13	60 - 40	1 1/4	4.90	4.57	175.4	1.2272	3.40	39.76	0.085 [1] ✔
T14	40 - 20	1 1/4	4.90	4.57	175.4	1.2272	4.35	39.76	0.109 [1] ✔
T15	20 - 6.75	1 1/4	4.86	4.53	173.9	1.2272	5.88	39.76	0.148 [1] ✔

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	288 - 280	1	3.67	3.50	168.2	0.7854	3.72	25.45	0.146 [1] ✔
T2	280 - 260	1	3.67	3.50	168.2	0.7854	0.60	25.45	0.023 [1] ✔
T3	260 - 240	1	3.67	3.48	167.2	0.7854	5.31	25.45	0.209 [1] ✔
T4	240 - 220	1	3.67	3.48	167.2	0.7854	0.70	25.45	0.028 [1] ✔
T5	220 - 200	1	3.67	3.46	166.2	0.7854	8.63	25.45	0.339 [1] ✔
T6	200 - 180	1	3.67	3.46	166.2	0.7854	2.85	25.45	0.112 [1] ✔
T7	180 - 160	1	3.67	3.44	165.2	0.7854	12.23	25.45	0.480 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T8	160 - 140	1	3.67	3.46	166.2	0.7854	1.06	25.45	0.042 [1]
T9	140 - 120	1	3.67	3.44	165.2	0.7854	1.25	25.45	0.049 [1]
T10	120 - 100	1	3.67	3.44	165.2	0.7854	1.61	25.45	0.063 [1]
T11	100 - 80	1	3.67	3.42	164.2	0.7854	2.73	25.45	0.107 [1]
T12	80 - 60	1	3.67	3.42	164.2	0.7854	1.57	25.45	0.062 [1]
T13	60 - 40	1	3.67	3.42	164.2	0.7854	6.98	25.45	0.274 [1]
T14	40 - 20	1	3.67	3.42	164.2	0.7854	1.64	25.45	0.064 [1]
T15	20 - 6.75	1	3.67	3.42	164.2	0.7854	1.57	25.45	0.062 [1]
T16	6.75 - 0	9x3/8	2.79	2.54	281.2	3.3750	0.67	109.35	0.006 [1]

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	288 - 280	1	1.84	1.75	84.1	0.7854	0.00	25.45	0.000 [1]
T2	280 - 260	1	1.84	1.75	84.1	0.7854	0.00	25.45	0.000 [1]
T3	260 - 240	1	1.84	1.74	83.6	0.7854	0.00	25.45	0.000 [1]
T4	240 - 220	1	1.84	1.74	83.6	0.7854	0.00	25.45	0.000 [1]
T5	220 - 200	1	1.84	1.73	83.1	0.7854	0.00	25.45	0.000 [1]
T6	200 - 180	1	1.84	1.73	83.1	0.7854	0.00	25.45	0.000 [1]
T7	180 - 160	1	1.84	1.72	82.6	0.7854	0.00	25.45	0.000 [1]
T8	160 - 140	1	1.84	1.73	83.1	0.7854	0.00	25.45	0.000 [1]
T9	140 - 120	1	1.84	1.72	82.6	0.7854	0.00	25.45	0.000 [1]
T10	120 - 100	1	1.84	1.72	82.6	0.7854	0.00	25.45	0.000 [1]
T11	100 - 80	1	1.84	1.71	82.1	0.7854	0.00	25.45	0.000 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T12	80 - 60	1	1.84	1.71	82.1	0.7854	0.00	25.45	0.000 [1] ✔
T13	60 - 40	1	1.84	1.71	82.1	0.7854	0.00	25.45	0.000 [1] ✔
T14	40 - 20	1	1.84	1.71	82.1	0.7854	0.00	25.45	0.000 [1] ✔
T15	20 - 6.75	1	1.84	1.71	82.1	0.7854	0.00	25.45	0.000 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	288 - 280	1	3.67	3.50	168.2	0.7854	6.55	25.45	0.257 [1] ✔
T2	280 - 260	1	3.67	3.50	168.2	0.7854	1.32	25.45	0.052 [1] ✔
T3	260 - 240	1	3.67	3.48	167.2	0.7854	1.99	25.45	0.078 [1] ✔
T4	240 - 220	1	3.67	3.48	167.2	0.7854	0.78	25.45	0.031 [1] ✔
T5	220 - 200	1	3.67	3.46	166.2	0.7854	2.26	25.45	0.089 [1] ✔
T6	200 - 180	1	3.67	3.46	166.2	0.7854	0.78	25.45	0.031 [1] ✔
T7	180 - 160	1	3.67	3.44	165.2	0.7854	2.05	25.45	0.080 [1] ✔
T8	160 - 140	1	3.67	3.46	166.2	0.7854	1.17	25.45	0.046 [1] ✔
T9	140 - 120	1	3.67	3.44	165.2	0.7854	0.62	25.45	0.024 [1] ✔
T10	120 - 100	1	3.67	3.44	165.2	0.7854	1.65	25.45	0.065 [1] ✔
T11	100 - 80	1	3.67	3.42	164.2	0.7854	2.74	25.45	0.107 [1] ✔
T12	80 - 60	1	3.67	3.42	164.2	0.7854	0.90	25.45	0.035 [1] ✔
T13	60 - 40	1	3.67	3.42	164.2	0.7854	1.14	25.45	0.045 [1] ✔
T14	40 - 20	1	3.67	3.42	164.2	0.7854	0.88	25.45	0.035 [1] ✔
T15	20 - 6.75	1	3.67	3.42	164.2	0.7854	1.53	25.45	0.060 [1] ✔
T16	6.75 - 0	12x3/8	3.67	3.42	379.1	4.5000	26.98	145.80	0.185 [1] ✔

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	280 - 260	1	3.67	3.50	168.2	0.7854	0.10	25.45	0.004 [1] ✔
T3	260 - 240	1	3.67	3.48	167.2	0.7854	0.97	25.45	0.038 [1] ✔
T4	240 - 220	1	3.67	3.48	167.2	0.7854	0.88	25.45	0.035 [1] ✔
T5	220 - 200	1	3.67	3.46	166.2	0.7854	1.22	25.45	0.048 [1] ✔
T6	200 - 180	1	3.67	3.46	166.2	0.7854	2.13	25.45	0.084 [1] ✔
T7	180 - 160	1	3.67	3.44	165.2	0.7854	1.78	25.45	0.070 [1] ✔
T8	160 - 140	1	3.67	3.46	166.2	0.7854	0.48	25.45	0.019 [1] ✔
T9	140 - 120	1	3.67	3.44	165.2	0.7854	1.19	25.45	0.047 [1] ✔
T10	120 - 100	1	3.67	3.44	165.2	0.7854	3.33	25.45	0.131 [1] ✔
T11	100 - 80	1	3.67	3.42	164.2	0.7854	1.27	25.45	0.050 [1] ✔
T12	80 - 60	1	3.67	3.42	164.2	0.7854	0.91	25.45	0.036 [1] ✔
T13	60 - 40	1	3.67	3.42	164.2	0.7854	0.98	25.45	0.038 [1] ✔
T14	40 - 20	1	3.67	3.42	164.2	0.7854	1.37	25.45	0.054 [1] ✔
T15	20 - 6.75	1	3.67	3.42	164.2	0.7854	4.36	25.45	0.171 [1] ✔

[1] P_u / ϕP_n controls

Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T10	120 - 100	1" S.R. w/ 1" S.R. Crosby Clipped	3.67	3.44	116.9	0.7850	16.43	25.43	0.646 [1]

[1] P_u / ϕP_n controls

Top Guy Pull-Off Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T10	120 - 100	1" S.R. w/ 1" S.R. Crosby Clipped	0.00	0.40	0.000	0.00	0.40	0.000

Top Guy Pull-Off Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T10	120 - 100	1" S.R. w/ 1" S.R. Crosby Clipped	0.646	0.000	0.000	0.646 [1] ✔	1.000	4.8.1 ✔

[1] P_u / ϕP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	288 - 280 (697)	C15x33.9	4.00	3.92	52.1	9.9600	2.86	322.70	0.009
T1	288 - 280 (698)	C15x33.9	4.00	3.92	52.1	9.9600	2.97	322.70	0.009
T1	288 - 280 (701)	C15x33.9	4.00	3.92	52.1	9.9600	2.86	322.70	0.009
T1	288 - 280 (702)	C15x33.9	4.00	3.92	52.1	9.9600	3.01	322.70	0.009
T1	288 - 280 (705)	C15x33.9	4.00	3.92	52.1	9.9600	2.92	322.70	0.009
T1	288 - 280 (706)	C15x33.9	4.00	3.92	52.1	9.9600	3.13	322.70	0.010
T3	260 - 240 (709)	C15x33.9	4.00	3.91	51.9	9.9600	2.88	322.70	0.009
T3	260 - 240 (710)	C15x33.9	4.00	3.91	51.9	9.9600	2.94	322.70	0.009
T3	260 - 240 (713)	C15x33.9	4.00	3.91	51.9	9.9600	2.88	322.70	0.009
T3	260 - 240 (714)	C15x33.9	4.00	3.91	51.9	9.9600	2.99	322.70	0.009
T3	260 - 240 (717)	C15x33.9	4.00	3.91	51.9	9.9600	2.97	322.70	0.009
T3	260 - 240 (718)	C15x33.9	4.00	3.91	51.9	9.9600	3.07	322.70	0.010
T5	220 - 200 (721)	C15x33.9	4.00	3.90	51.8	9.9600	2.89	322.70	0.009
T5	220 - 200 (722)	C15x33.9	4.00	3.90	51.8	9.9600	2.94	322.70	0.009
T5	220 - 200 (725)	C15x33.9	4.00	3.90	51.8	9.9600	2.96	322.70	0.009
T5	220 - 200 (726)	C15x33.9	4.00	3.90	51.8	9.9600	2.98	322.70	0.009
T5	220 - 200 (729)	C15x33.9	4.00	3.90	51.8	9.9600	3.04	322.70	0.009
T5	220 - 200 (730)	C15x33.9	4.00	3.90	51.8	9.9600	3.09	322.70	0.010
T7	180 - 160 (733)	C15x33.9	4.00	3.89	51.6	9.9600	3.11	322.70	0.010
T7	180 - 160 (734)	C15x33.9	4.00	3.89	51.6	9.9600	3.15	322.70	0.010
T7	180 - 160 (737)	C15x33.9	4.00	3.89	51.6	9.9600	3.72	322.70	0.012
T7	180 - 160 (738)	C15x33.9	4.00	3.89	51.6	9.9600	3.67	322.70	0.011
T7	180 - 160 (741)	C15x33.9	4.00	3.89	51.6	9.9600	3.34	322.70	0.010
T7	180 - 160 (742)	C15x33.9	4.00	3.89	51.6	9.9600	3.18	322.70	0.010
T10	120 - 100 (745)	C15x33.9	4.00	3.89	51.6	9.9600	3.58	322.70	0.011
T10	120 - 100 (746)	C15x33.9	4.00	3.89	51.6	9.9600	3.42	322.70	0.011
T10	120 - 100 (749)	C15x33.9	4.00	3.89	51.6	9.9600	3.91	322.70	0.012
T10	120 - 100 (750)	C15x33.9	4.00	3.89	51.6	9.9600	4.16	322.70	0.013
T10	120 - 100 (753)	C15x33.9	4.00	3.89	51.6	9.9600	5.28	322.70	0.016

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T10	120 - 100 (754)	C15x33.9	4.00	3.89	51.6	9.9600	3.25	322.70	0.010
T13	60 - 40 (757)	C15x33.9	4.00	3.88	51.5	9.9600	2.78	322.70	0.009
T13	60 - 40 (758)	C15x33.9	4.00	3.88	51.5	9.9600	2.95	322.70	0.009
T13	60 - 40 (761)	C15x33.9	4.00	3.88	51.5	9.9600	2.73	322.70	0.008
T13	60 - 40 (762)	C15x33.9	4.00	3.88	51.5	9.9600	3.12	322.70	0.010
T13	60 - 40 (765)	C15x33.9	4.00	3.88	51.5	9.9600	2.78	322.70	0.009
T13	60 - 40 (766)	C15x33.9	4.00	3.88	51.5	9.9600	3.18	322.70	0.010

Torque-Arm Top Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	288 - 280 (697)	C15x33.9	-57.49	135.28	0.425	0.00	12.60	0.000
T1	288 - 280 (698)	C15x33.9	-57.13	135.28	0.422	0.00	12.60	0.000
T1	288 - 280 (701)	C15x33.9	-52.71	135.28	0.390	-0.00	12.60	0.000
T1	288 - 280 (702)	C15x33.9	-56.90	135.28	0.421	0.00	12.60	0.000
T1	288 - 280 (705)	C15x33.9	-52.52	135.28	0.388	-0.00	12.60	0.000
T1	288 - 280 (706)	C15x33.9	-57.68	135.28	0.426	0.00	12.60	0.000
T3	260 - 240 (709)	C15x33.9	-55.01	135.33	0.406	0.00	12.60	0.000
T3	260 - 240 (710)	C15x33.9	-54.70	135.33	0.404	-0.00	12.60	0.000
T3	260 - 240 (713)	C15x33.9	-49.75	135.33	0.368	-0.00	12.60	0.000
T3	260 - 240 (714)	C15x33.9	-54.42	135.33	0.402	-0.00	12.60	0.000
T3	260 - 240 (717)	C15x33.9	-49.53	135.33	0.366	-0.00	12.60	0.000
T3	260 - 240 (718)	C15x33.9	-55.18	135.33	0.408	0.00	12.60	0.000
T5	220 - 200 (721)	C15x33.9	-51.13	135.39	0.378	0.00	12.60	0.000
T5	220 - 200 (722)	C15x33.9	-50.85	135.39	0.376	-0.00	12.60	0.000
T5	220 - 200 (725)	C15x33.9	-45.30	135.39	0.335	-0.00	12.60	0.000
T5	220 - 200 (726)	C15x33.9	-50.52	135.39	0.373	-0.00	12.60	0.000
T5	220 - 200 (729)	C15x33.9	-45.05	135.39	0.333	-0.00	12.60	0.000
T5	220 - 200 (730)	C15x33.9	-51.30	135.39	0.379	0.00	12.60	0.000
T7	180 - 160 (733)	C15x33.9	-44.26	135.44	0.327	-0.00	12.60	0.000
T7	180 - 160 (734)	C15x33.9	-45.11	135.44	0.333	0.00	12.60	0.000
T7	180 - 160 (737)	C15x33.9	-44.32	135.44	0.327	-0.00	12.60	0.000
T7	180 - 160 (738)	C15x33.9	-38.02	135.44	0.281	-0.00	12.60	0.000
T7	180 - 160 (741)	C15x33.9	-38.30	135.44	0.283	-0.00	12.60	0.000
T7	180 - 160 (742)	C15x33.9	-44.75	135.44	0.330	0.00	12.60	0.000
T10	120 - 100 (745)	C15x33.9	-34.17	135.44	0.252	-0.00	12.60	0.000
T10	120 - 100 (746)	C15x33.9	-35.30	135.44	0.261	0.00	12.60	0.000
T10	120 - 100 (749)	C15x33.9	-34.18	135.44	0.252	-0.00	12.60	0.000
T10	120 - 100 (750)	C15x33.9	-27.06	135.44	0.200	-0.00	12.60	0.000
T10	120 - 100 (753)	C15x33.9	-27.05	135.44	0.200	-0.00	12.60	0.000
T10	120 - 100 (754)	C15x33.9	-34.95	135.44	0.258	0.00	12.60	0.000
T13	60 - 40 (757)	C15x33.9	-12.19	135.50	0.090	-0.00	12.60	0.000
T13	60 - 40 (758)	C15x33.9	-11.97	135.50	0.088	-0.00	12.60	0.000
T13	60 - 40 (761)	C15x33.9	-8.91	135.50	0.066	0.00	12.60	0.000
T13	60 - 40 (762)	C15x33.9	-11.74	135.50	0.087	0.00	12.60	0.000
T13	60 - 40 (765)	C15x33.9	-8.77	135.50	0.065	0.00	12.60	0.000
T13	60 - 40 (766)	C15x33.9	-12.23	135.50	0.090	0.00	12.60	0.000

Torque-Arm Top Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	288 - 280 (697)	C15x33.9	0.009	0.425	0.000	0.429 ✔	1.000	4.8.1 ✔
T1	288 - 280 (698)	C15x33.9	0.009	0.422	0.000	0.427 ✔	1.000	4.8.1 ✔
T1	288 - 280 (701)	C15x33.9	0.009	0.390	0.000	0.394 ✔	1.000	4.8.1 ✔
T1	288 - 280 (702)	C15x33.9	0.009	0.421	0.000	0.425 ✔	1.000	4.8.1 ✔
T1	288 - 280 (705)	C15x33.9	0.009	0.388	0.000	0.393 ✔	1.000	4.8.1 ✔
T1	288 - 280 (706)	C15x33.9	0.010	0.426	0.000	0.431 ✔	1.000	4.8.1 ✔
T3	260 - 240 (709)	C15x33.9	0.009	0.406	0.000	0.411 ✔	1.000	4.8.1 ✔
T3	260 - 240 (710)	C15x33.9	0.009	0.404	0.000	0.409 ✔	1.000	4.8.1 ✔
T3	260 - 240 (713)	C15x33.9	0.009	0.368	0.000	0.372 ✔	1.000	4.8.1 ✔
T3	260 - 240 (714)	C15x33.9	0.009	0.402	0.000	0.407 ✔	1.000	4.8.1 ✔
T3	260 - 240 (717)	C15x33.9	0.009	0.366	0.000	0.371 ✔	1.000	4.8.1 ✔
T3	260 - 240 (718)	C15x33.9	0.010	0.408	0.000	0.412 ✔	1.000	4.8.1 ✔
T5	220 - 200 (721)	C15x33.9	0.009	0.378	0.000	0.382 ✔	1.000	4.8.1 ✔
T5	220 - 200 (722)	C15x33.9	0.009	0.376	0.000	0.380 ✔	1.000	4.8.1 ✔
T5	220 - 200 (725)	C15x33.9	0.009	0.335	0.000	0.339 ✔	1.000	4.8.1 ✔
T5	220 - 200 (726)	C15x33.9	0.009	0.373	0.000	0.378 ✔	1.000	4.8.1 ✔
T5	220 - 200 (729)	C15x33.9	0.009	0.333	0.000	0.337 ✔	1.000	4.8.1 ✔
T5	220 - 200 (730)	C15x33.9	0.010	0.379	0.000	0.384 ✔	1.000	4.8.1 ✔
T7	180 - 160 (733)	C15x33.9	0.010	0.327	0.000	0.332 ✔	1.000	4.8.1 ✔
T7	180 - 160 (734)	C15x33.9	0.010	0.333	0.000	0.338 ✔	1.000	4.8.1 ✔
T7	180 - 160 (737)	C15x33.9	0.012	0.327	0.000	0.333 ✔	1.000	4.8.1 ✔
T7	180 - 160 (738)	C15x33.9	0.011	0.281	0.000	0.286 ✔	1.000	4.8.1 ✔
T7	180 - 160 (741)	C15x33.9	0.010	0.283	0.000	0.288 ✔	1.000	4.8.1 ✔
T7	180 - 160 (742)	C15x33.9	0.010	0.330	0.000	0.335 ✔	1.000	4.8.1 ✔
T10	120 - 100 (745)	C15x33.9	0.011	0.252	0.000	0.258 ✔	1.000	4.8.1 ✔
T10	120 - 100 (746)	C15x33.9	0.011	0.261	0.000	0.266 ✔	1.000	4.8.1 ✔

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T10	120 - 100 (749)	C15x33.9	0.012	0.252	0.000	0.258 ✔	1.000	4.8.1 ✔
T10	120 - 100 (750)	C15x33.9	0.013	0.200	0.000	0.206 ✔	1.000	4.8.1 ✔
T10	120 - 100 (753)	C15x33.9	0.016	0.200	0.000	0.208 ✔	1.000	4.8.1 ✔
T10	120 - 100 (754)	C15x33.9	0.010	0.258	0.000	0.263 ✔	1.000	4.8.1 ✔
T13	60 - 40 (757)	C15x33.9	0.009	0.090	0.000	0.094 ✔	1.000	4.8.1 ✔
T13	60 - 40 (758)	C15x33.9	0.009	0.088	0.000	0.093 ✔	1.000	4.8.1 ✔
T13	60 - 40 (761)	C15x33.9	0.008	0.066	0.000	0.070 ✔	1.000	4.8.1 ✔
T13	60 - 40 (762)	C15x33.9	0.010	0.087	0.000	0.091 ✔	1.000	4.8.1 ✔
T13	60 - 40 (765)	C15x33.9	0.009	0.065	0.000	0.069 ✔	1.000	4.8.1 ✔
T13	60 - 40 (766)	C15x33.9	0.010	0.090	0.000	0.095 ✔	1.000	4.8.1 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	323 - 288	Pole	P10.75x0.843	1	-4.06	415.23	15.7	Pass
T1	288 - 280	Leg	2	2	-29.82	78.19	38.1	Pass
T2	280 - 260	Leg	2	22	-30.52	90.61	33.7	Pass
T3	260 - 240	Leg	2 1/4	72	-62.88	125.90	49.9	Pass
T4	240 - 220	Leg	2 1/4	118	-63.17	125.90	50.2	Pass
T5	220 - 200	Leg	2 1/2	166	-91.30	166.16	54.9	Pass
T6	200 - 180	Leg	2 1/2	214	-95.84	166.16	57.7	Pass
T7	180 - 160	Leg	2 3/4	262	-115.65	211.24	54.7	Pass
T8	160 - 140	Leg	2 1/2	310	-120.81	166.16	72.7	Pass
T9	140 - 120	Leg	2 3/4	360	-124.19	211.24	58.8	Pass
T10	120 - 100	Leg	2 3/4	408	-144.58	211.24	68.4	Pass
T11	100 - 80	Leg	3	456	-166.13	261.02	63.6	Pass
T12	80 - 60	Leg	3	504	-172.53	261.02	66.1	Pass
T13	60 - 40	Leg	3	552	-183.33	261.02	70.2	Pass
T14	40 - 20	Leg	3	600	-183.34	261.02	70.2	Pass
T15	20 - 6.75	Leg	3	648	-180.25	263.00	68.5	Pass
T16	6.75 - 0	Leg	3	680	-183.04	285.56	64.1	Pass
T1	288 - 280	Diagonal	1 3/8	20	-2.25	21.86	10.3	Pass
T2	280 - 260	Diagonal	1 3/8	33	-2.12	24.17	8.8	Pass
T3	260 - 240	Diagonal	1 3/8	108	-4.69	24.37	19.2	Pass
T4	240 - 220	Diagonal	1 3/8	127	-4.43	24.37	18.2	Pass
T5	220 - 200	Diagonal	1 1/2	205	-6.83	32.55	21.0	Pass
T6	200 - 180	Diagonal	1 1/4	225	-8.66	17.63	49.1	Pass
T7	180 - 160	Diagonal	1 1/2	294	-9.88	32.77	30.1	Pass
T8	160 - 140	Diagonal	1 3/8	354	-4.88	24.57	19.9	Pass
T9	140 - 120	Diagonal	1 1/4	369	-6.02	17.80	33.8	Pass
T10	120 - 100	Diagonal	1 1/2	415	-14.24	32.77	43.5	Pass
T11	100 - 80	Diagonal	1 3/8	498	-13.95	24.96	55.9	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T12	80 - 60	Diagonal	1 1/4	546	-4.50	17.98	25.0	Pass
T13	60 - 40	Diagonal	1 1/4	589	-5.92	17.98	32.9	Pass
T14	40 - 20	Diagonal	1 1/4	608	-6.70	17.98	37.3	Pass
T15	20 - 6.75	Diagonal	1 1/4	656	-7.52	18.22	41.3	Pass
T1	288 - 280	Horizontal	1	15	-3.34	12.27	27.2	Pass
T2	280 - 260	Horizontal	1	63	-0.38	12.27	3.1	Pass
T3	260 - 240	Horizontal	1	111	-4.65	12.38	37.6	Pass
T4	240 - 220	Horizontal	1	133	0.70	25.45	2.8	Pass
T5	220 - 200	Horizontal	1	207	-7.51	12.48	60.1	Pass
T6	200 - 180	Horizontal	1	229	-2.03	12.48	16.3	Pass
T7	180 - 160	Horizontal	1	284	-10.60	12.59	84.2	Pass
T8	160 - 140	Horizontal	1	351	1.06	25.45	4.2	Pass
T9	140 - 120	Horizontal	1	373	1.25	25.45	4.9	Pass
T10	120 - 100	Horizontal	1	433	1.61	25.45	6.3	Pass
T11	100 - 80	Horizontal	1	468	2.73	25.45	10.7	Pass
T12	80 - 60	Horizontal	1	529	1.57	25.45	6.2	Pass
T13	60 - 40	Horizontal	1	591	-5.05	12.70	39.8	Pass
T14	40 - 20	Horizontal	1	620	1.64	25.45	6.4	Pass
T15	20 - 6.75	Horizontal	1	673	1.57	25.45	6.2	Pass
T16	6.75 - 0	Horizontal	9x3/8	687	0.10	109.35	1.0	Pass
T1	288 - 280	Secondary Horizontal	1	21	-0.00	17.94	0.1	Pass
T2	280 - 260	Secondary Horizontal	1	69	-0.00	17.94	0.1	Pass
T3	260 - 240	Secondary Horizontal	1	103	-0.00	17.96	0.1	Pass
T4	240 - 220	Secondary Horizontal	1	165	-0.00	17.96	0.1	Pass
T5	220 - 200	Secondary Horizontal	1	178	0.00	25.45	0.1	Pass
T6	200 - 180	Secondary Horizontal	1	226	0.00	25.45	0.1	Pass
T7	180 - 160	Secondary Horizontal	1	274	0.00	25.45	0.1	Pass
T8	160 - 140	Secondary Horizontal	1	322	0.00	25.45	0.1	Pass
T9	140 - 120	Secondary Horizontal	1	370	0.00	25.45	0.1	Pass
T10	120 - 100	Secondary Horizontal	1	418	0.00	25.45	0.1	Pass
T11	100 - 80	Secondary Horizontal	1	466	0.00	25.45	0.1	Pass
T12	80 - 60	Secondary Horizontal	1	542	0.00	25.45	0.1	Pass
T13	60 - 40	Secondary Horizontal	1	590	0.00	25.45	0.1	Pass
T14	40 - 20	Secondary Horizontal	1	638	0.00	25.45	0.1	Pass
T15	20 - 6.75	Secondary Horizontal	1	672	-0.00	18.05	0.1	Pass
T1	288 - 280	Top Girt	1	7	6.55	25.45	25.7	Pass
T2	280 - 260	Top Girt	1	27	1.32	25.45	5.2	Pass
T3	260 - 240	Top Girt	1	75	1.99	25.45	7.8	Pass
T4	240 - 220	Top Girt	1	121	-0.63	12.38	5.1	Pass
T5	220 - 200	Top Girt	1	171	2.26	25.45	8.9	Pass
T6	200 - 180	Top Girt	1	218	-0.60	12.48	4.8	Pass
T7	180 - 160	Top Girt	1	267	-1.71	12.59	13.6	Pass
T8	160 - 140	Top Girt	1	315	-0.72	12.48	5.8	Pass
T9	140 - 120	Top Girt	1	363	0.62	25.45	2.4	Pass
T10	120 - 100	Top Girt	1	411	-0.96	12.59	7.7	Pass
T11	100 - 80	Top Girt	1	459	-2.12	12.70	16.7	Pass
T12	80 - 60	Top Girt	1	507	0.90	25.45	3.5	Pass
T13	60 - 40	Top Girt	1	554	1.14	25.45	4.5	Pass
T14	40 - 20	Top Girt	1	602	0.88	25.45	3.5	Pass
T15	20 - 6.75	Top Girt	1	650	-0.84	12.70	6.6	Pass
T16	6.75 - 0	Top Girt	12x3/8	685	26.98	145.80	18.5	Pass
T1	288 - 280	Bottom Girt	1	10	-1.83	12.27	14.9	Pass
T2	280 - 260	Bottom Girt	1	30	-1.33	12.27	10.9	Pass
T3	260 - 240	Bottom Girt	1	78	-0.66	12.38	5.4	Pass
T4	240 - 220	Bottom Girt	1	126	-1.69	12.38	13.7	Pass
T5	220 - 200	Bottom Girt	1	172	-0.69	12.48	5.6	Pass
T6	200 - 180	Bottom Girt	1	222	-1.58	12.48	12.7	Pass
T7	180 - 160	Bottom Girt	1	270	-1.06	12.59	8.5	Pass
T8	160 - 140	Bottom Girt	1	318	0.48	25.45	1.9	Pass
T9	140 - 120	Bottom Girt	1	366	-0.75	12.59	6.0	Pass
T10	120 - 100	Bottom Girt	1	414	-2.43	12.59	19.3	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	øP$_{allow}$ K	% Capacity	Pass Fail
T11	100 - 80	Bottom Girt	1	462	1.27	25.45	5.0	Pass
T12	80 - 60	Bottom Girt	1	509	0.91	25.45	3.6	Pass
T13	60 - 40	Bottom Girt	1	558	0.98	25.45	3.8	Pass
T14	40 - 20	Bottom Girt	1	605	1.37	25.45	5.4	Pass
T15	20 - 6.75	Bottom Girt	1	654	4.36	25.45	17.1	Pass
T1	288 - 280	Guy A@284	3/4	704	17.23	34.98	49.2	Pass
T3	260 - 240	Guy A@256.5	3/4	716	17.03	34.98	48.7	Pass
T5	220 - 200	Guy A@216.5	3/4	728	16.89	34.98	48.3	Pass
T7	180 - 160	Guy A@166.75	3/4	740	18.20	34.98	52.0	Pass
T10	120 - 100	Guy A@106.75	3/4	752	19.06	34.98	54.5	Pass
T13	60 - 40	Guy A@56.5	7/16	764	7.48	12.48	59.9	Pass
T1	288 - 280	Guy B@284	3/4	699	16.22	34.98	46.4	Pass
T3	260 - 240	Guy B@256.5	3/4	711	15.97	34.98	45.7	Pass
T5	220 - 200	Guy B@216.5	3/4	723	16.11	34.98	46.1	Pass
T7	180 - 160	Guy B@166.75	3/4	735	17.44	34.98	49.9	Pass
T10	120 - 100	Guy B@106.75	3/4	747	18.43	34.98	52.7	Pass
T13	60 - 40	Guy B@56.5	7/16	759	7.28	12.48	58.3	Pass
T1	288 - 280	Guy C@284	3/4	696	17.07	34.98	48.8	Pass
T3	260 - 240	Guy C@256.5	3/4	707	16.89	34.98	48.3	Pass
T5	220 - 200	Guy C@216.5	3/4	719	16.73	34.98	47.8	Pass
T7	180 - 160	Guy C@166.75	3/4	731	18.06	34.98	51.6	Pass
T10	120 - 100	Guy C@106.75	3/4	744	18.77	34.98	53.7	Pass
T13	60 - 40	Guy C@56.5	7/16	756	7.40	12.48	59.3	Pass
T10	120 - 100	Top Guy Pull-Off@106.75	1" S.R. w/ 1" S.R. Crosby Clipped	428	-14.45	17.88	80.8	Pass
T1	288 - 280	Torque Arm Top@284	C15x33.9	706	3.13	322.70	43.1	Pass
T3	260 - 240	Torque Arm Top@256.5	C15x33.9	718	3.07	322.70	41.2	Pass
T5	220 - 200	Torque Arm Top@216.5	C15x33.9	730	3.09	322.70	38.4	Pass
T7	180 - 160	Torque Arm Top@166.75	C15x33.9	734	-3.88	280.44	34.2	Pass
T10	120 - 100	Torque Arm Top@106.75	C15x33.9	746	-5.95	280.44	28.2	Pass
T13	60 - 40	Torque Arm Top@56.5	C15x33.9	766	3.18	322.70	9.5	Pass

Summary		
Pole (L1)	15.7	Pass
Leg (T8)	72.7	Pass
Diagonal (T11)	55.9	Pass
Horizontal (T7)	84.2	Pass
Secondary Horizontal (T1)	0.1	Pass
Top Girt (T1)	25.7	Pass
Bottom Girt (T10)	19.3	Pass
Guy A (T13)	59.9	Pass
Guy B (T13)	58.3	Pass
Guy C (T13)	59.3	Pass
Top Guy Pull-Off (T10)	80.8	Pass
Torque Arm Top (T1)	43.1	Pass
Bolt Checks	22.1	Pass
RATING =	**84.2**	**Pass**

Centek Engineering Inc.
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Branford, CT 06405 F: (203) 488-8587

Subject:	Base Foundation Analysis
Location:	327-ft Guyed Lattice Tower Storrs, CT
Rev. 2: 1/3/23	Prepared by: T.J.L. Checked by: C.F.C. Job No. 21007.33

Guyed Tower Base Foundation:

Input Data:

Tower Data

Shear Force =	Shear := 6·kip	(User Input from tnxTower)	
Axial Force =	Axial := 513·kip	(User Input from tnxTower)	
Tower Height =	$H_t := 323 \cdot ft$	(User Input)	

Footing Data:

Overall Depth of Footing =	$D_f := 4 \cdot ft$	(User Input)	
Length of Pier =	$L_p := 2.5 \cdot ft$	(User Input)	
Extension of Pier Above Grade =	$L_{pag} := 0.5 \cdot ft$	(User Input)	
Diameter of Pier =	$D_p := 3.0 \cdot ft$	(User Input)	
Width of Pad =	$W_{pad} := 10 \cdot ft$	(User Input)	
Thickness of Pad =	$t_{pad} := 2.0 \cdot ft$	(User Input)	

Material Properties:

Concrete Compressive Strength =	$f_c := 3000 \cdot psi$	(User Input)	
Steel Reinforcment Yield Strength =	$f_y := 60000 \cdot psi$	(User Input)	
Internal Friction Angle of Soil =	$\Phi_s := 30 \cdot deg$	(User Input)	
Ultimate Soil Bearing Capacity =	$q_s := 11000 \cdot psf$	(User Input)	
Unit Weight of Soil =	$\gamma_{soil} := 120 \cdot pcf$	(User Input)	
Unit Weight of Concrete =	$\gamma_{conc} := 150 \cdot pcf$	(User Input)	
Foundation Bouyancy =	Bouyancy := 0	(User Input)	(Yes=1 / No=0)
Depth to Neglect =	$n := 0 \cdot ft$	(User Input)	
Cohesion of Clay Type Soil =	$c := 0 \cdot ksf$	(User Input)	(Use 0 for Sandy Soil)
Seismic Zone Factor =	Z := 2	(User Input)	
Coefficient of Friction Between Concrete =	$\mu := 0.45$	(User Input)	

Calculated Factors:

Coefficient of Lateral Soil Pressure =

$$K_p := \frac{1 + \sin(\Phi_s)}{1 - \sin(\Phi_s)} = 3$$

Load Factor =

$$LF := \begin{cases} 1.333 & \text{if } H_t \le 700 \cdot ft \\ 1.7 & \text{if } H_t \ge 1200 \cdot ft \\ 1.333 + \left(\frac{H_t - 700ft}{1200ft - 700ft}\right) \cdot 0.4 & \text{otherwise} \end{cases} = 1.333$$

Stability of Footing:

Adjusted Concrete Unit Weight = $\gamma_c := if\left(Bouyancy = 1, \gamma_{conc} - 62.4pcf, \gamma_{conc}\right) = 150 \cdot pcf$

Adjusted Soil Unit Weight = $\gamma_s := if\left(Bouyancy = 1, \gamma_{soil} - 62.4pcf, \gamma_{soil}\right) = 120 \cdot pcf$

Passive Pressure = $P_{top} := 0$

$P_{bot} := K_p \cdot \gamma_s \cdot D_f + c \cdot 2 \cdot \sqrt{K_p} = 1.44 \cdot ksf$

$P_{ave} := \frac{P_{top} + P_{bot}}{2} = 0.72 \cdot ksf$

$A_p := D_p \cdot L_p = 7.5$

Soil Shear Resistance = $Sl_1 := P_{ave} \cdot A_p = 5.4 \cdot kip$

Weight of Concrete = $WT_c := \left(\frac{1}{4} \cdot \pi \cdot D_p^{\,2} \cdot L_p + W_{pad}^{\,2} \cdot t_{pad}\right) \cdot \gamma_c = 32.65 \cdot kip$

Total Weight = $WT_{tot} := WT_c + Axial = 545.65 \cdot kip$

Soil/Concrete Friction Resistance = $Sl_2 := \mu \cdot WT_{tot} = 245.54 \cdot kips$

Total Sliding Resistance = $Sl_{tot} := Sl_1 + Sl_2 = 250.94 \cdot kips$

Sliding Resistance Ratio = $Sliding\_Resistance_{ratio} := \frac{0.75 Sl_{tot}}{Shear} = 31.37$

$Sliding\_Resistance\_Check := if\left[\left(\frac{Shear}{0.75 Sl_{tot}} < 1.0\right), "Okay", "No Good"\right]$

Sliding_Resistance_Check = "Okay"

Bearing Pressure Caused by Footing:

Maximum Pressure in Mat = $P_{max} := \frac{WT_{tot}}{W_{pad}^{\,2}} = 5.46 \cdot ksf$

$Max\_Pressure\_Check := if\left(P_{max} < 0.6 q_s, "Okay", "No Good"\right)$

Max_Pressure_Check = "Okay"

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Job :	Verizon ~ Storrs: 327-ft Guyed Lattice Tower	Project No.	21007.33	Sheet	1	of	2
Address:	North Eagleville Rd., Storrs, CT	Computed by	TJL	Date		1/3/23	
Description:	Guy Anchor Evaluation	Checked by	CFC	Date			

CHECK UPLIFT RESISTANCE

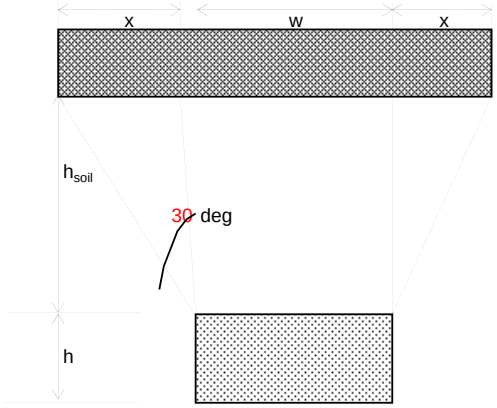
ANCHOR (A) AT 235.0 ft RADIUS

RESULTS FROM COMPUTER ANALYSIS:

Uplift =	113	kips
Sliding =	136	kips
Wdepth =	50	ft

CONCRETE PARAMETERS:

γ_{conc} =	150	pcf
$\gamma_{conc.sub}$ =	87.6	pcf
w =	4.5	ft
h =	4	ft
d =	24	ft
Vol. =	432.00	ft^3
Vol.sub =	0.00	ft^3
Wc =	*64.80*	kips
Ø =	*0.90*	
	58.32	



Foundation Section

SOIL PARAMETERS:

γ_{soil} =	120	pcf
$\gamma_{soil.sub}$ =	57.6	pcf
h_{soil} =	8	ft
x =	*4.62*	ft

Soil Weight (Wr):

B1 =	108.00
B2 =	108.00
B3 =	456.61

W.soil =	251.73	kips
W.soil.sub =	0.00	kips
Total =	*251.73*	kips
Ø =	*0.75*	
	188.80	

SF AGAINST SLIDING

2.19 **>** *1* ***OK***

GUY ANCHORS AGAINST UPLIFT ARE ADEQUATE

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Job :	Verizon ~ Storrs: 327-ft Guyed Lattice Tower	Project No.	21007.33	Sheet	2	of	2
Address:	North Eagleville Rd., Storrs, CT	Computed by	TJL	Date		1/3/23	
Description:	Guy Anchor Evaluation	Checked by	CFC	Date			

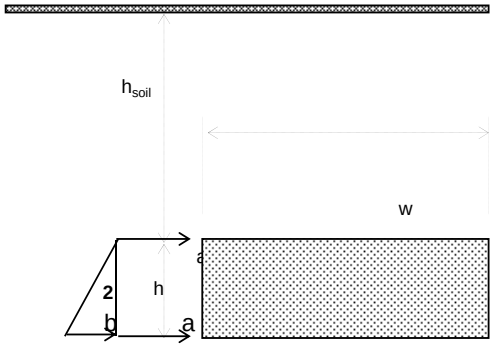
CHECK SLIDING RESISTANCE

SOIL PARAMETERS

$\gamma soil$ =	120	pcf
$\gamma soil$ =	57.6	pcf
h_{soil} =	8	ft
h =	4	ft
ϕ =	30	degrees

ANCHOR PARAMETERS

w =	4.5	ft
h =	4.0	ft
d =	24.0	ft



Foundation Elevation View

K_p = 3.00

HORIZONTAL FORCES

	2.88	ksf
	4.32	ksf
RESIST TO SLIDING =	345.60	k

SOIL & CONCRETE WEIGHT =	Wr + Wc =	247.12	k
UPLIFT REACTIONS =		-113	k
SUM =		134.12	k

COEF. OF FRICTION, (0.45) =	60.35	k
RESIST TO SLIDING =	345.60	k
SUM =	405.95	k

SF AGAINST SLIDING

SF = 3.0 > 1 OK

GUY ANCHORS AGAINST SLIDING ARE ADEQUATE

verizon fuze | RFDS

EAST > North East > New England > New England West > STORRS CT

Brauer, Mark - mark.brauer2@verizonwireless.com - 4/7/2021 16:2:2

Project Details

Carrier Aggregation:	false
MPT Id:	
eCIP-0:	false
Project Name:	5G 850MHz - Carrier Add
FUZE Project ID:	16499984
Designed Sector Carrier 4G:	19
Designed Sector Carrier 5G:	4
Additional Sector Carrier 4G:	N/A
Additional Sector Carrier 5G:	N/A
SiteTraker Project Id:	
FP Solution Type & Tech Type:	MODIFICATION;4G_Radio Swap,5G_850,5G_vDU add - Sub3
Suffix:	

Location Information

Site ID:	324933
E-NodeB ID:	064225
PSLC:	468927
Switch Name:	Wallingford 1
Tower Owner:	
Tower Type:	Self Support (Lattice Tower)
Site Type:	MACRO
Street Address:	82 North Eagleville Rd. UCONN Campus
City:	Storrs Mansfield
State:	CT
Zip Code:	06268
County:	Tolland
Latitude:	41.813889 / 41° 48' 50.0004" N
Longitude:	-72.259444 / 72° 15' 33.9984" W

RFDS Project Scope:

Sub 6 add
CBRS add
Samsung RRH upgrade
Will require diplexers to break apart 700/850 low band for existing JAHH antennas

Antenna Summary

Added

700	850	1900	AWS	CBRS	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity
					5G	Samsung	MT6407-77A	85	86.5	0(A) 120(B) 190(C) 280(D)	false	false	PHYSICAL	4
				LTE		Samsung	XXDWMM-12.5-65	81.6	82	10(A) 110(B) 190(C) 280(D)	false	false	PHYSICAL	4

Removed

700	850	1900	AWS	CBRS	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity

No data available.

Retained

700	850	1900	AWS	CBRS	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity
LTE	5G	LTE	LTE			ANDREW	JAHH-65B-R3B	83.6	86.6	10(A) 280(D)	false	false	PHYSICAL	4
	CDMA					ANTEL	BXA-80063/4 (97250)	83.6	85.7	0(D1) 180(D2) 270(D3)	false	false	PHYSICAL	3
LTE	5G	LTE	LTE			COMMSCOPE	JAHH-45B-R3B	83.6	86.6	120(B) 190(C)	false	false	PHYSICAL	4

Added: 8 **Removed:** 0 **Retained:** 11

Equipment Summary

Added

Equipment Type	Location	700	850	1900	AWS	CBRS	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity
Diplexer	Tower							Comscope	CBC78T-DS-43-2x			PHYSICAL	4
RRU	Tower			LTE	LTE			Samsung	B2/B66A RRH-BR049 (RFV01U-D1A)			PHYSICAL	4
RRU	Tower	LTE	5G					Samsung	B5/B13 RRH-BR04C (RFV01U-D2A)			PHYSICAL	4
RRU	Tower					LTE		Samsung	CBRS RRH - RT4401-48A			PHYSICAL	4
RRU	Tower						5G	Samsung	MT6407-77A			PHYSICAL	4

Removed

Equipment Type	Location	700	850	1900	AWS	CBRS	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity
RRU	Tower		LTE					Nokia	AHCA AirScale RRH 4T4R B5 160W			PHYSICAL	4
RRU	Tower	LTE						Nokia	UHBA B13 RRH 4x30			PHYSICAL	4
RRU	Tower			LTE				Nokia	UHFA B25 RRH 4x30			PHYSICAL	4
RRU	Tower			LTE				Nokia	UHFA B25 RRH 4x30			PHYSICAL	4
RRU	Tower				LTE			Nokia	UHIE B66A RRH 4x45			PHYSICAL	4

Retained

Equipment Type	Location	700	850	1900	AWS	CBRS	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity
Mount	Tower							Commscope	BASMNT-SBS-2-2			PHYSICAL	2
Mount	Tower							Commscope	BASMNT-SBS-2-3			PHYSICAL	2
Hybrid Cable	Tower								12x24			PHYSICAL	2
OVP Box	Tower								OVP-12			PHYSICAL	2
Coaxial Cables	Tower											PHYSICAL	6

Service Info

700 MHz LTE	0000			5GLS		
Sector	**01**	**02**	**03**	**01**	**02**	**03**
Azimuth	10	120	190	10	120	190
Cell / ENode B ID	064225	064225	064225	064225	064225	064225
Antenna Model	JAHH-65B-R3B	JAHH-45B-R3B	JAHH-45B-R3B	JAHH-65B-R3B	JAHH-45B-R3B	JAHH-45B-R3B
Antenna Make	ANDREW	COMMSCOPE	COMMSCOPE	ANDREW	COMMSCOPE	COMMSCOPE
Antenna Centerline(Ft)	83.6	83.6	83.6	83.6	83.6	83.6
Mechanical Down-Tilt(Deg.)	0	0	0	0	0	0
Electrical Down-Tilt	3	8	8	3	8	8
Tip Height	86.6	86.6	86.6	86.6	86.6	86.6
Regulatory Power	106.09	169.34	169.34	70.09	111.88	111.88
Total ERP (W)						
TMA Make						
TMA Model						
RRU Make	Nokia	Nokia	Nokia	Samsung	Samsung	Samsung
RRU Model	UHBA B13 RRH 4x30	UHBA B13 RRH 4x30	UHBA B13 RRH 4x30	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)
Number of Tx, Rx Lines	2,4	2,4	2,4	4,4	4,4	4,4
Position						
Transmitter Id	1955729	1955730	1952381	10134462	10134466	10134470
Source	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API

04	**04**
280	280
064225	064225
JAHH-65B-R3B	JAHH-65B-R3B
ANDREW	ANDREW
83.6	83.6
0	0
4	4
86.6	86.6
106.55	70.4
Nokia	Samsung
UHBA B13 RRH 4x30	B5/B13 RRH-BR04C (RFV01U-D2A)
2,4	4,4
1955913	10134474
ATOLL_API	ATOLL_API

850 MHz LTE

0000

Sector	01	02	03	04
Azimuth	10	120	190	280
Cell / ENode B ID	064225	064225	064225	064225
Antenna Model	JAHH-65B-R3B	JAHH-45B-R3B	JAHH-45B-R3B	JAHH-65B-R3B
Antenna Make	ANDREW	COMMSCOPE	COMMSCOPE	ANDREW
Antenna Centerline(Ft)	83.6	83.6	83.6	83.6
Mechanical Down-Tilt(Deg.)	0	0	0	0
Electrical Down-Tilt	2	2	2	2
Tip Height	86.6	86.6	86.6	86.6
Regulatory Power	128.36	209.18	209.18	128.36
Total ERP (W)				
TMA Make				
TMA Model				
RRU Make	Nokia	Nokia	Nokia	Nokia
RRU Model	AHCA AirScale RRH 4T4R B5 160W	AHCA AirScale RRH 4T4R B5 160W	AHCA AirScale RRH 4T4R B5 160W	AHCA AirScale RRH 4T4R B5 160W
Number of Tx, Rx Lines	2,4	2,4	2,4	2,4
Position				
Transmitter Id	1947585	1959883	1954606	1947586
Source	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API

850 MHz CDMA	0000			5GLS		
Sector	**D1**	**D2**	**D3**	**D1**	**D2**	**D3**
Azimuth	0	180	270	0	180	270
Cell / ENode B ID						
Antenna Model	BXA-80063/4 (97250)	BXA-80063/4 (97250)	BXA-80063/4 (97250)	BXA-80063/4 (97250)	BXA-80063/4 (97250)	BXA-80063/4 (97250)
Antenna Make	ANTEL	ANTEL	ANTEL	ANTEL	ANTEL	ANTEL
Antenna Centerline(Ft)	83.6	83.6	83.6	83.6	83.6	83.6
Mechanical Down-Tilt(Deg.)	4	6	4	4	6	4
Electrical Down-Tilt	0	0	0	0	0	0
Tip Height	85.7	85.7	85.7	85.7	85.7	85.7
Regulatory Power	415.91	415.91	415.91	415.91	415.91	415.91
Total ERP (W)						
TMA Make						
TMA Model						
RRU Make						
RRU Model						
Number of Tx, Rx Lines						
Position						
Transmitter Id						
Source	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API

850 MHz 5GNR

	5GLS		
Sector	**0001**	**0002**	**0003**
Azimuth	10	120	190
Cell / ENode B ID	0649225	0649225	0649225
Antenna Model	JAHH-65B-R3B	JAHH-45B-R3B	JAHH-45B-R3B
Antenna Make	ANDREW	COMMSCOPE	COMMSCOPE
Antenna Centerline(Ft)	83.6	83.6	83.6
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	2	2	2
Tip Height	86.6	86.6	86.6
Regulatory Power	201.81	328.88	328.88
Total ERP (W)			
TMA Make			
TMA Model			
RRU Make	Samsung	Samsung	Samsung
RRU Model	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Transmitter Id	10134518	10134519	10134520
Source	ATOLL_API	ATOLL_API	ATOLL_API

0004
280
0649225
JAHH-65B-R3B
ANDREW
83.6
0
2
86.6
201.81
Samsung
B5/B13 RRH-BR04C (RFV01U-D2A)
4,4
10134625
ATOLL_API

1900 MHz LTE

	0000			5GLS		
Sector	**01**	**02**	**03**	**01**	**02**	**03**
Azimuth	10	120	190	10	120	190
Cell / ENode B ID	064225	064225	064225	064225	064225	064225
Antenna Model	JAHH-65B-R3B	JAHH-45B-R3B	JAHH-45B-R3B	JAHH-65B-R3B	JAHH-45B-R3B	JAHH-45B-R3B
Antenna Make	ANDREW	COMMSCOPE	COMMSCOPE	ANDREW	COMMSCOPE	COMMSCOPE
Antenna Centerline(Ft)	83.6	83.6	83.6	83.6	83.6	83.6
Mechanical Down-Tilt(Deg.)	0	0	0	0	0	0
Electrical Down-Tilt	2	0	0	2	0	0
Tip Height	86.6	86.6	86.6	86.6	86.6	86.6
Regulatory Power	210.89	309.57	309.57	278.01	408.09	408.09
Total ERP (W)						
TMA Make						
TMA Model						
RRU Make	Nokia	Nokia	Nokia	Samsung	Samsung	Samsung
RRU Model	UHFA B25 RRH 4x30	UHFA B25 RRH 4x30	UHFA B25 RRH 4x30	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)
Number of Tx, Rx Lines	2,4	2,4	2,4	4,4	2,4	4,4
Position						
Transmitter Id	1955914	1955916	1949602	10134463	10134467	10134471
Source	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API

04	**04**
280	280
064225	064225
JAHH-65B-R3B	JAHH-65B-R3B
ANDREW	ANDREW
83.6	83.6
0	0
1	1
86.6	86.6
204.62	269.75
Nokia	Samsung
UHFA B25 RRH 4x30	B2/B66A RRH-BR049 (RFV01U-D1A)
2,4	4,4
1954604	10134475
ATOLL_API	ATOLL_API

2100 MHz LTE

	0000			5GLS		
Sector	**01**	**02**	**03**	**01**	**02**	**03**
Azimuth	10	120	190	10	120	190
Cell / ENode B ID	064225	064225	064225	064225	064225	064225
Antenna Model	JAHH-65B-R3B	JAHH-45B-R3B	JAHH-45B-R3B	JAHH-65B-R3B	JAHH-45B-R3B	JAHH-45B-R3B
Antenna Make	ANDREW	COMMSCOPE	COMMSCOPE	ANDREW	COMMSCOPE	COMMSCOPE
Antenna Centerline(Ft)	83.6	83.6	83.6	83.6	83.6	83.6
Mechanical Down-Tilt(Deg.)	0	0	0	0	0	0
Electrical Down-Tilt	2	0	0	2	0	0
Tip Height	86.6	86.6	86.6	86.6	86.6	86.6
Regulatory Power	152.7	237.81	237.81	136.09	211.95	211.95
Total ERP (W)						
TMA Make						
TMA Model						
RRU Make	Nokia	Nokia	Nokia	Samsung	Samsung	Samsung
RRU Model	UHIE B66A RRH 4x45	UHIE B66A RRH 4x45	UHIE B66A RRH 4x45	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)
Number of Tx, Rx Lines	2,4	2,4	2,4	4,4	4,4	4,4
Position						
Transmitter Id	1954605	1955731	1964376	10134464	10134468	10134472
Source	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API

04
280
064225
JAHH-65B-R3B
ANDREW
83.6
0
1
86.6
148.33
Nokia
UHIE B66A RRH 4x45
2,4
1955732
ATOLL_API

04
280
064225
JAHH-65B-R3B
ANDREW
83.6
0
1
86.6
132.2
Samsung
B2/B66A RRH-BR049 (RFV01U-D1A)
4,4
10134476
ATOLL_API

CBRS 3_5 GHz

	5GLS		
Sector	**19**	**20**	**21**
Azimuth	10	110	190
Cell / ENode B ID	064225	064225	064225
Antenna Model	XXDWMM-12.5-65	XXDWMM-12.5-65	XXDWMM-12.5-65
Antenna Make	Samsung	Samsung	Samsung
Antenna Centerline(Ft)	81.6	81.6	81.6
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	8	8	8
Tip Height	82	82	82
Regulatory Power	8.08	8.08	8.08
Total ERP (W)			
TMA Make			
TMA Model			
RRU Make	Samsung	Samsung	Samsung
RRU Model	CBRS RRH - RT4401-48A	CBRS RRH - RT4401-48A	CBRS RRH - RT4401-48A
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Transmitter Id	10134647	10134648	10134649
Source	ATOLL_API	ATOLL_API	ATOLL_API

22
280
064225
XXDWMM-12.5-65
Samsung
81.6
0
8
82
8.08
Samsung
CBRS RRH - RT4401-48A
4,4
10134667
ATOLL_API

nL-Sub6

	5GLS		
Sector	**0001**	**0002**	**0003**
Azimuth	0	120	190
Cell / ENode B ID	0649225	0649225	0649225
Antenna Model	MT6407-77A	MT6407-77A	MT6407-77A
Antenna Make	Samsung	Samsung	Samsung
Antenna Centerline(Ft)	85	85	85
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	6	6	6
Tip Height	86.5	86.5	86.5
Regulatory Power	1247.92	1247.92	1247.92
Total ERP (W)			
TMA Make			
TMA Model			
RRU Make	Samsung	Samsung	Samsung
RRU Model	MT6407-77A	MT6407-77A	MT6407-77A
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Transmitter Id	10134848	10134849	10134850
Source	ATOLL_API	ATOLL_API	ATOLL_API

	5GLS
Sector	**0004**
Azimuth	280
Cell / ENode B ID	0649225
Antenna Model	MT6407-77A
Antenna Make	Samsung
Antenna Centerline(Ft)	85
Mechanical Down-Tilt(Deg.)	0
Electrical Down-Tilt	6
Tip Height	86.5
Regulatory Power	1247.92
Total ERP (W)	
TMA Make	
TMA Model	
RRU Make	Samsung
RRU Model	MT6407-77A
Number of Tx, Rx Lines	4,4
Position	
Transmitter Id	10134913
Source	ATOLL_API

Service Comments

Callsigns Per Antenna

Sector	Antenna Ma	Antenna Mo	Ant CL Height AGL	Tip Height	Azimuth (TN	Electrical Tilt	Mechanical Tilt	Gain	Beamwidth	Regulatory Power	Callsigns						
											700	850	1900	2100	28 GHz	31 GHz	39 GHz

No data available.

Callsigns

Callsign	Market	Radio Code	Market Number	Block	State	County	Licensee Name	Wholly Owned	Total MHZ	Freq Range 1	Freq Range 2	Freq Range 3	Freq Range 4	Regulatory Power	Threshold (W)	POPs/Sq Mi	Status	Action	Approved for Insvc
WQJQ689	Northeast	WU	REA001	C	CT	Tolland	Cellco Partnership	Yes	22.000	746.000-757.000	776.000-787.000	.000-.000	.000-.000	111.88	1000	372.22	Active	retained	Yes
KNKA404	Hartford-New Britain-Bristol, CT	CL	CMA032	A	CT	Tolland	Cellco Partnership	Yes	25.000	824.000-835.000	869.000-880.000	845.000-846.500	890.000-891.500	415.91	500	372.22	Active	added	Yes
WPOJ730	Hartford, CT	CW	BTA184	C	CT	Tolland	Cellco Partnership	Yes	15.000	1895.000-1902.500	1975.000 1982.500	.000-.000	.000-.000	408.09	1640	372.22	Active	added	Yes
KNLH251	Hartford, CT	CW	BTA184	F	CT	Tolland	Cellco Partnership	Yes	10.000	1890.000-1895.000	1970.000 1975.000	.000-.000	.000-.000	408.09	1640	372.22	Active	added	Yes
CBRS_CALL	UNLICENSE	3.5 GHz	UNLICENSE	UNLICENSE	CT	Tolland	UNLICENSE	UNLICENSE	UNLICENSE	UNLICENSED-UNLICEI	UNLICENSED-UNLICEI	UNLICENSED-UNLICEI	UNLICENSED-UNLICEI	8.08		372.22	Active	added	No
WQGB276	Hartford-New Britain-Bristol, CT	AW	CMA032	A	CT	Tolland	Cellco Partnership	Yes	20.000	1710.000 1720.000	2110.000 2120.000	.000-.000	.000-.000	211.95	1640	372.22	Active	retained	Yes
WQGA906	New York-No. New Jer.-Long Island, NY-NJ-CT-PA-MA-	AW	BEA010	B	CT	Tolland	Cellco Partnership	Yes	20.000	1720.000 1730.000	2120.000-2130.000	.000-.000	.000-.000	211.95	1640	372.22	Active	retained	Yes
WPOH943	Hartford, CT	LD	BTA184	A	CT	Tolland	Cellco Partnership	Yes	300.000	29100.000-29250.000	31075.000-31225.000	.000-.000	.000-.000			372.22	Active		No
WPLM398	Hartford, CT	LD	BTA184	B	CT	Tolland	Cellco Partnership	Yes	150.000	31000.000-31075.000	31225.000-31300.000	.000-.000	.000-.000			372.22	Active		No
WRBA712	Hartford, CT	UU	BTA184	L1	CT	Tolland	Cellco Partnership	Yes	325.000	27500.000-27600.000	27700.000-27925.000	.000-.000	.000-.000			372.22	Active		Yes
WRBA713	Hartford, CT	UU	BTA184	L2	CT	Tolland	Cellco Partnership	Yes	325.000	27925.000-28050.000	28150.000-28350.000	.000-.000	.000-.000			372.22	Active		Yes
WRHD609	New York, NY	UU	PEA001	M1	CT	Tolland	Straight Path um, LLC	Yes	100.000	37600.000-37700.000	.000-.000	.000-.000	.000-.000			372.22	Active		Yes
WRHD610	New York, NY	UU	PEA001	M10	CT	Tolland	Straight Path um, LLC	Yes	100.000	38500.000-38600.000	.000-.000	.000-.000	.000-.000			372.22	Active		Yes
WRHD611	New York, NY	UU	PEA001	M2	CT	Tolland	Straight Path um, LLC	Yes	100.000	37700.000-37800.000	.000-.000	.000-.000	.000-.000			372.22	Active		Yes

WRHD612	New York, NY	UU	PEA001	M3	CT		Tolland	Straight Path um, LLC	Yes	100.000	37800.000-37900.00(	.000-.000	.000-.000	.000-.000			372.22	Active		Yes
WRHD613	New York, NY	UU	PEA001	M4	CT		Tolland	Straight Path um, LLC	Yes	100.000	37900.000-38000.00(	.000-.000	.000-.000	.000-.000			372.22	Active		Yes
WRHD614	New York, NY	UU	PEA001	M5	CT		Tolland	Straight Path um, LLC	Yes	100.000	38000.000-38100.00	.000-.000	.000-.000	.000-.000			372.22	Active		Yes
WRHD615	New York, NY	UU	PEA001	M6	CT		Tolland	Straight Path um, LLC	Yes	100.000	38100.000-38200.00(	.000-.000	.000-.000	.000-.000			372.22	Active		Yes
WRHD616	New York, NY	UU	PEA001	M7	CT		Tolland	Straight Path um, LLC	Yes	100.000	38200.000-38300.00(	.000-.000	.000-.000	.000-.000			372.22	Active		Yes
WRHD617	New York, NY	UU	PEA001	M8	CT		Tolland	Straight Path um, LLC	Yes	100.000	38300.000-38400.00(	.000-.000	.000-.000	.000-.000			372.22	Active		Yes
WRHD618	New York, NY	UU	PEA001	M9	CT		Tolland	Straight Path um, LLC	Yes	100.000	38400.000-38500.00	.000-.000	.000-.000	.000-.000			372.22	Active		Yes
WRHD619	New York, NY	UU	PEA001	N1	CT		Tolland	Straight Path um, LLC	Yes	100.000	38600.000-38700.00	.000-.000	.000-.000	.000-.000			372.22	Active		No

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