Robinson+Cole

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Also admitted in Massachusetts

December 4, 2017

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

Re: **Notice of Exempt Modification – Facility Modification**
20 Seles Road, Ashford, Connecticut

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains twelve (12) antennas at the top level top of an existing 190-foot guyed lattice tower at 20 Seles Road in Ashford, Connecticut (the "Property"). The tower is owned by Cordless Data Transfer ("CDT"). Cellco's use of the tower was approved by the Council in 2001. Cellco now intends to replace six (6) of its existing antennas with three (3) model JAHH-65B-R3B, 700 MHz antennas and three (3) model JAHH-65B-R3B, 850/2100 MHz antennas, at the same level on the tower. Cellco also intends to install nine (9) remote radio heads ("RRHs") and two (2) HYBRIFLEX™ fiber optic antenna cables. Included in Attachment 1 are specifications for Cellco's replacement antennas, RRHs and HYBRIFLEX™ cables.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Michael J. Zambo, First Selectman for the Town of Ashford; Michael Gardner, Ashford's Land Use Administrator; Raymond and Kathleen Baker, the owners of the Property; and CDT, the tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antennas and RRHs will be installed at the top of the 190-foot tower.

2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative General Power Density table for Cellco's modified facility is included behind Attachment 2.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The tower and its foundation can support Cellco's proposed modifications. (*See* Structural Analysis included in Attachment 3).

A copy of the parcel map and owner information for the Property is included in Attachment 4. A Certificate of Mailing verifying that this filing was sent to municipal officials and the owners of the Property is included in Attachment 5.

For the foregoing reasons, Cellco respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:
Michael J. Zambo, Ashford First Selectman
Michael Gardner, Ashford Land Use Administrator
Raymond and Kathleen Baker
Cordless Data Transfer
Tim Parks

ATTACHMENT 1

Product Specifications

COMMSCOPE®

JAHH-65B-R3B

8-port sector antenna, 2x 698–787, 2x 824-894 and 4x 1695–2360 MHz, 65° HPBW, 3x RET and low bands have diplexers. Internal SBT's on first LB(Port 1) and first HB (Port 5).

- Internal SBT on low and high band allow remote RET control from the radio over the RF jumper cable
- One RET for 700MHz, one RET for 850MHz, and one RET for both high bands to ensure same tilt level for 4x Rx or 4x MIMO
- Internal filter on low band and interleaved dipole technology providing for attractive, low wind load mechanical package
- Separate RS-485 RET input/output for low and high band

Electrical Specifications

Frequency Band, MHz	698–787	824–894	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	14.5	15.8	18.0	18.4	18.5	18.8
Beamwidth, Horizontal, degrees	67	65	63	63	65	68
Beamwidth, Vertical, degrees	12.4	10.5	5.7	5.2	4.9	4.4
Beam Tilt, degrees	2–14	2–14	0–10	0–10	0–10	0–10
USLS (First Lobe), dB	18	18	20	20	21	23
Front-to-Back Ratio at 180°, dB	32	34	31	35	36	38
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	30	30	30	30
VSWR | Return Loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350	350	350	300
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–787	824–894	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	14.3	14.9	17.6	18.1	18.2	18.5
Gain by all Beam Tilts Tolerance, dB	±0.3	±0.5	±0.6	±0.4	±0.5	±0.6
	2 ° | 14.3	2 ° | 15.0	0 ° | 17.2	0 ° | 17.6	0 ° | 17.7	0 ° | 17.9
Gain by Beam Tilt, average, dBi	8 ° | 14.3	8 ° | 14.9	5 ° | 17.6	5 ° | 18.2	5 ° | 18.3	5 ° | 18.7
	14 ° | 14.3	14 ° | 15.4	10 ° | 17.6	10 ° | 18.2	10 ° | 18.3	10 ° | 18.7
Beamwidth, Horizontal Tolerance, degrees	±1.2	±1.4	±4	±2.4	±2.9	±2.7
Beamwidth, Vertical Tolerance, degrees	±0.9	±0.5	±0.3	±0.2	±0.3	±0.1
USLS, beampeak to 20° above beampeak, dB	18	17	17	18	19	18
Front-to-Back Total Power at 180° ± 30°, dB	25	24	26	29	27	29
CPR at Boresight, dB	22	23	20	21	21	24
CPR at Sector, dB	11	12	11	11	11	8

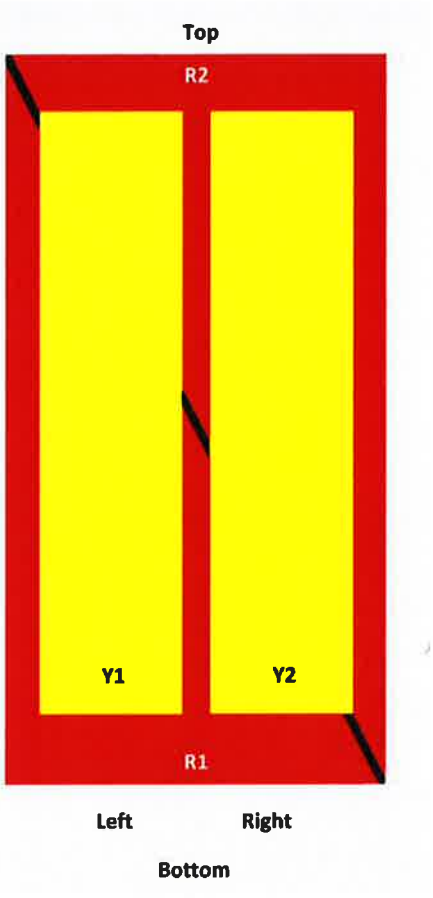
* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, download the whitepaper Time to Raise the Bar on BSAs.

Array Layout

Product Specifications

JAHH-65B-R3B

JAHH-65A-R3B_JAHH-65B-R3B_JAHH-65C-R3B



Array	Freq (MHz)	Conns	RET (SRET)	AISG RET UID
R1	698-798	1-2	1	ANxxxxxxxxxxxxxxxx1
R2	824-894	3-4	2	ANxxxxxxxxxxxxxxxx2
Y1	1695-2360	5-6	3	ANxxxxxxxxxxxxxxxx3
Y2	1695-2360	7-8		

View from the front of the antenna

(Sizes of colored boxes are not true depictions of array sizes)

General Specifications

Operating Frequency Band	1695 – 2360 MHz | 698 – 787 MHz | 824 – 894 MHz
Antenna Type	Sector
Band	Multiband
Performance Note	Outdoor usage

Mechanical Specifications

RF Connector Quantity, total	8
RF Connector Quantity, low band	4
RF Connector Quantity, high band	4
RF Connector Interface	4.3-10 Female
Color	Light gray

Product Specifications

JAHH-65B-R3B

Grounding Type	RF connector body grounded to reflector and mounting bracket
Radiator Material	Aluminum | Low loss circuit board
Radome Material	Fiberglass, UV resistant
Reflector Material	Aluminum
RF Connector Location	Bottom
Wind Loading, frontal	746.0 N @ 150 km/h 167.7 lbf @ 150 km/h
Wind Loading, lateral	243.0 N @ 150 km/h 54.6 lbf @ 150 km/h
Wind Loading, rear	776.0 N @ 150 km/h 174.5 lbf @ 150 km/h
Wind Speed, maximum	241 km/h | 150 mph

Dimensions

Length	1828.0 mm | 72.0 in
Width	350.0 mm | 13.8 in
Depth	208.0 mm | 8.2 in
Net Weight, without mounting kit	28.7 kg | 63.3 lb

Remote Electrical Tilt (RET) Information

Input Voltage	10–30 Vdc
Internal Bias Tee	Port 1 | Port 5
Internal RET	High band (1) | Low band (2)
Power Consumption, idle state, maximum	2.0 W
Power Consumption, normal conditions, maximum	13.0 W
Protocol	3GPP/AISG 2.0 (Single RET)
RET Interface	8-pin DIN Female | 8-pin DIN Male
RET Interface, quantity	2 female | 2 male

Packed Dimensions

Length	1975.0 mm | 77.8 in
Width	456.0 mm | 18.0 in
Depth	357.0 mm | 14.1 in
Shipping Weight	42.0 kg | 92.6 lb

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2011/65/EU	Compliant by Exemption
China RoHS SJ/T 11364-2006	Above Maximum Concentration Value (MCV)
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

Product Specifications

JAHH-65B-R3B

Included Products

BSAMNT-1 — Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

* Footnotes

Performance Note	Severe environmental conditions may degrade optimum performance

NOKIA

AirScale RRH 4T4R B5 160W AHCA

Capacity, performance, low total cost of ownership and investment protection

Nokia AirScale Remote Radio Head (RRH) AHCA supports band 5 - full band - along with 4×4 MIMO and 256QAM modulation to deliver higher data rates. It offers Nokia's unique book mounting for faster roll out and radio-integrated Passive Intermodulation (PIM) cancellation for enhanced network performance.

Furthermore, 4TX and 4RX paths in a single radio unit gives the flexibility to support 2T2R-2 sectors or 4T4R-single sector from a single unit, for cost-effective scaling of both coverage and capacity.

Capacity and performance

AirScale RRH 4T4R delivers 160 W (4×40 W) transmit power and can support 2×2 MIMO, 4×2 MIMO and 4×4 MIMO. The radio supports 256 QAM modulation in the downlink (DL) for up to 30 percent higher throughput. The Virtual Spectrum Analyzer feature enables both uplink and downlink spectrum to be analyzed.

Low total cost of ownership

With up to two sectors in a single radio, light weight and zero-bolt book mounting, AirScale RRH 4T4R allows operators to achieve faster roll outs and more cost-effective installation and maintenance of radios and tower space.

Investment protection

AirScale RRH 4T4R complements the AirScale System Module, offering a complete base station solution that is software upgradeable to 5G. AirScale System

Module offers 28 Gbps capacity that can be further enhanced by chaining more modules or through Cloud RAN. AirScale RRH is part of the AirScale Base Station portfolio, the next generation Nokia base station platform, and is backwards-compatible with the Nokia Flexi Multiradio 10 Base Station to best use an operator's existing investments.

NOKIA

Product name	AirScale RRH 4T4R B5 160W AHCA - 473966A
Supported frequency bands	3GPP band 5
Frequencies	DL 869-894MHz, UL 824-849MHz
Number of TX/RX ports	4/4
Instantaneous Bandwidth IBW	25MHz
Occupied Bandwidth OBW	25MHz
Output power	4T4R 40 W/ 2T4R 60W
Dimensions (mm) height x width x depth	337 x 295 x 165
Volume (liters)	16.4
Weight (kg)	16
Supply Voltage / Voltage Range	DC-48V / -36V to -60V
Typical Power Consumption	207 W (ETSI 24h Avg – 4x20W mode)
Antenna ports	4TX/4RX, 4.3-10+
Optical ports	2 x CPRI 9.8 Gbps
ALD control interfaces	AISG3.0 from ANT1, 2, 3, 4 and RET (Power supply ANT1 and ANT3)
Other interfaces	External alarm MDR-26 serial connector (4 inputs, 1 output) DC circular power connector
Operational temperature range	-40°C to 55°C (with no solar load)
Ingress protection class	IP65
Installation options	Pole or wall, RAS, vertical or horizontal book mount
Surge protection	Class II 5kA

Nokia Oyj
Karaportti 3
FI-02610 Espoo
Finland
Tel. +358 (0) 10 44 88 000

Product code: SR1611002341EN (April)

ALCATEL-LUCENT B13 RRH4X30-4R

Alcatel-Lucent B13 Remote Radio Head 4x30-4R is the newest addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering.

Supporting 2Tx/4Tx MIMO and 4-way Rx diversity, Alcatel-Lucent B13 RRH4x30-4R allows operators to have a compact radio solution to deploy LTE in the 700U band (700 MHz, 3GPP band 13), providing them with the means to achieve high capacity, high quality and high coverage with minimum site requirements.

The Alcatel-Lucent B13 RRH4x30-4R product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x60 W or 4x30 W RF output power. It supports also 4-way Rx diversity and up to 10MHz instantaneous bandwidth.

The Alcatel-Lucent B13 RRH4x30-4R is a near zero-footprint solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

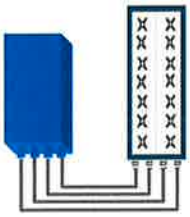
Its compactness and slim design makes the Alcatel-Lucent B13 RRH4x30-4R easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

FEATURES

- Supporting LTE in 700 MHz band (700U, 3GPP band 13)
- LTE 2Tx or 4Tx MIMO (SW switchable)
- Output power: Up to 2x60W or 4x30W
- 10MHz LTE carrier with 4Rx Diversity
- Convection-cooled (fan-less)
- Supports AISG 2.0 ALD devices (RET, TMA) through RS485 or RF ports

BENEFITS

- Compact to reduce additional footprint when adding LTE in 700U band
- MIMO scheme operation selection (2Tx or 4Tx) by software only
- Improves downlink spectral efficiency through MIMO4
- Increases LTE coverage thanks to 4Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options: Pole or Wall



4x30W with 4T4R
or
2x60W with 2T4R

Can be switched between modes via SW w/o site visit

Alcatel·Lucent

TECHNICAL SPECIFICATIONS

Features & performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R by SW)
Frequency band	U700 (C) (3GPP bands 13): DL: 746 - 756 MHz / UL: 777 - 787 MHz
Instantaneous bandwidth - #carriers	10MHz – 1 LTE carrier (in 10MHz occupied bandwidth)
LTE carrier bandwidth	10 MHz
RF output power	2x60W or 4x30W (by SW)
Noise figure – RX Diversity scheme	2 dB typ. (<2.5 dB max) – 2 or 4 way Rx diversity
Sizes (HxWxD) in mm (in.) Volume in L Weight in kg (lb) (w/o mounting HW)	550 x 305 x 230 (21.6" x 12.0" x 9") (with solar shield) 38 (with solar shield) 26 (57.2) (with solar shield)
DC voltage range DC power consumption	-40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption 550W typical @100% RF load (in 2Tx or 4TX mode)
Environmental conditions Wind load (@150km/h or 93mph)	-40°C (-40°F) /+55°C (+131°F) IP65 Frontal:<200N / Lateral :<150N
Antenna ports	4 ports 7/16 DIN female (50 ohms) VSWR < 1.5
CPRI ports	2 CPRI ports (HW ready for Rate7, 9.8 Gbps) SFP single mode dual fiber
AISG interfaces	1 AISG2.0 output (RS485) Integrated Smart Bias Tees (x2)
Misc. Interfaces	4 external alarms (1 connector) – 4 RF Tx & 4 RF Rx monitor ports - 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27

ALCATEL-LUCENT B66A RRH4X45

The Alcatel-Lucent B66a Remote Radio Head 4x45 is the newest addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering. Its operational range covers beyond that of B4 (AWS) and B10 (AWS+).

Supporting 2Tx/4Tx MIMO and 2-way/4-way Rx diversity, the Alcatel-Lucent B66a RRH4x45 allows operators to have a compact radio solution to deploy LTE in the 2100 band (3GPP band 4, 10, and 66), providing them with the means to achieve high capacity, high quality, high reliability, large instantaneous bandwidth, and high coverage with minimum site requirements.

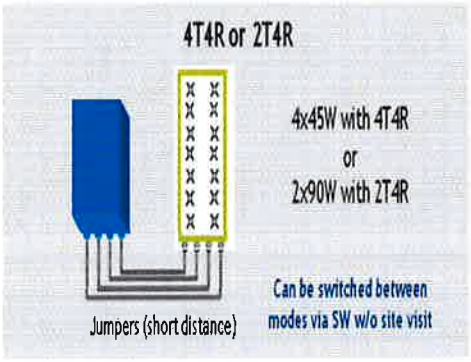
The Alcatel-Lucent B66a RRH4x45 product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x90W or 4x45W RF output power. It also supports 4-way Rx diversity at the 70 MHz instantaneous bandwidth.

The Alcatel-Lucent B66a RRH4x45 is a compact (near zero-footprint) solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

Its compactness and slim design makes the Alcatel-Lucent B66a RRH4x45 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

FEATURES

- Supporting LTE in 2110 - 2180 MHz band/DL, 1710-1780MHz/UL (3GPP band 4, 10, and 66a)
- LTE 2Tx or 4Tx MIMO (SW selectable)
- Configuration: 2T2R/2T4R/4T4R
- Output power: Up to 2x90W or 4x45W (SW configurable)
- 70MHz LTE carrier with 4Rx Diversity
- Convection-cooled (fan-less)
- Supports AISG 2.0 ALD devices (RET, TMA) through RS485 or RF ports



BENEFITS

- Compact to reduce additional footprint when adding LTE in AWS 1-3 band
- Selection of MIMO configuration (2Tx or 4Tx) by software only
- Improves downlink spectral efficiency through 4Tx MIMO
- Increases LTE coverage thanks to 4Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options: Pole or Wall

Features & Performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R selectable by SW)
Frequency band	AWS 1-3, B4/B66a DL: 2110-2180 MHz / UL: 1710-1780 MHz
Instantaneous bandwidth - #carriers	70 MHz – 4 LTE MIMO carriers (in 70 MHz occupied bandwidth)
LTE carrier bandwidth	5, 10, 15, 20 MHz
RF output power	2x90W or 4x45W (selectable by SW)
Noise figure – RX Diversity scheme Receiver Sensivity (FRC A1-3)	2 dB typical (<2.5 dB max) – 2 or 4 way Rx diversity -104.5 dBm maximum
Sizes (HxWxD) in mm (in.) Volume in Liters Weight in kg (lb) (w/o mounting HW)	655x299x182 (25.8x11.8x7.2) (with solar shield) 640x290x160 (25.2x11.4x6.3) (without solar shield) 35.5 (with solar shield) 29.7 (without solar shield) 25.8kg (56.8lb) (with solar shield)
DC voltage range DC power consumption	Nominal: -48V, -40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption 750W typical @100% RF load (In 2Tx or 4Tx mode); Add 58W for 2A*29V for AISG
Environmental conditions Wind load (@150km/h or 93mph)	-40°C (-40°F) /+55°C (+131°F) UL50E Type 4 Enclosure 250N (56lb) Frontal/150N (34lb) Lateral
Antenna ports	4 ports 4.3-10 female (50 ohms) VSWR < 1.5
CPRI ports	2 CPRI ports (HW ready for Rate 7, 9.8 Gbps) SFP: SMDF (HW supports also SMSF and MMDF)
AISG interfaces	1 AISG 2.0 output (RS485) Integrated Smart Bias Tees (x2)
Misc. Interfaces	4 external alarms (1 connector) 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-487 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27 / FCC Part 15 / GR-3178-CORE

Product Data Sheet HB158-1-08U8-S8J18

HYBRIFLEX™ RRH Hybrid Feeder Cabling Solution, 1-5/8", Single-Mode Fiber

Product Description

RFS' HYBRIFLEX Remote Radio Head (RRH) hybrid feeder cabling solution combines optical fiber and DC power for RRHs in a single lightweight aluminum corrugated cable, making it the world's most innovative solution for RRH deployments.

It was developed to reduce installation complexity and costs at Cellular sites. HYBRIFLEX allows mobile operators deploying an RRH architecture to standardize the RRH installation process and eliminate the need for and cost of cable grounding. HYBRIFLEX combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable. It eliminates the need for junction boxes and can connect multiple RRHs with a single feeder. Standard RFS CELLFLEX® accessories can be used with HYBRIFLEX cable. Both pre-connectorized and on-site options are available.

Figure 1: HYBRIFLEX Series

Features/Benefits

- Aluminum corrugated armor with outstanding bending characteristics – minimizes installation time and enables mechanical protection and shielding
- Same accessories as 1 5/8" coaxial cable
- Outer conductor grounding – Eliminates typical grounding requirements and saves on installation costs
- Lightweight solution and compact design – Decreases tower loading
- Robust cabling – Eliminates need for expensive cable trays and ducts
- Installation of tight bundled fiber optic cable pairs directly to the RRH – Reduces CAPEX and wind load by eliminating need for interconnection
- Optical fiber and power cables housed in single corrugated cable – Saves CAPEX by standardizing RRH cable installation and reducing installation requirements
- Outdoor polyethylene jacket – Ensures long-lasting cable protection

Technical Specifications

Outer Conductor Armor	Corrugated Aluminum	[mm (in)]	46.5 (1.83)
Jacket:	Polyethylene, PE	[mm (in)]	50.3 (1.98)
UV-Protection	Individual and External Jacket		Yes
Weight, Approximate		[kg/m (lb/ft)]	1.9 (1.30)
Minimum Bending Radius, Single Bending		[mm (in)]	200 (8)
Minimum Bending Radius, Repeated Bending		[mm (in)]	500 (20)
Recommended/Maximum Clamp Spacing		[m (ft)]	1.0 / 1.2 (3.25 / 4.0)
DC-Resistance Outer Conductor Armor		[Ω/km (Ω/1000ft)]	068 (0.205)
DC-Resistance Power Cable, 8.4mm²(8AWG)		[Ω/km (Ω/1000ft)]	2.1 (0.307)
Version			Single-mode OM3
Quantity, Fiber Count			16 (8 pairs)
Core/Clad		[µm]	50/125
Primary Coating (Acrylate)		[µm]	245
Buffer Diameter, Nominal		[µm]	900
Secondary Protection, Jacket, Nominal		[mm (in)]	2.0 (0.08)
Minimum Bending Radius		[mm (in)]	104 (4.1)
Insertion Loss @ wavelength 850nm		dB/km	3.0
Insertion Loss @ wavelength 1310nm		dB/km	1.0
Standards (Meets or exceeds)			UL94-V0, UL1666 RoHS Compliant
Size (Power)		[mm² (AWG)]	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		[mm² (AWG)]	0.8 (18)
Quantity, Wire Count (Alarm)			4 (2 pairs)
Type			UV protected
Strands			19
Primary Jacket Diameter, Nominal		[mm (in)]	6.8 (0.27)
Standards (Meets or exceeds)			NFPA 130, ICEA S-95-658 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1202/FT4 RoHS Compliant
Installation Temperature		[°C (°F)]	-40 to +65 (-40 to149)
Operation Temperature		[°C (°F)]	-40 to +65 (-40 to149)

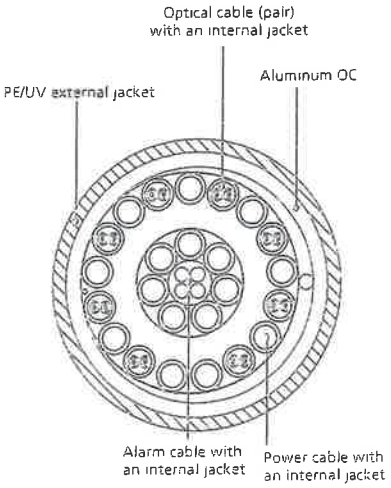


Figure 2: Construction Detail

* This data is provisional and subject to change

ATTACHMENT 2

	General	Power	Density					
Site Name: Ashford W								
Tower Height: 190ft								
CARRIER	**# OF CHAN.**	**WATTS ERP**	**HEIGHT**	**CALC. POWER DENS**	**FREQ.**	**MAX. PERMISS. EXP.**	**FRACTION MPE**	**Total**
*Nextel	9	100	182	851	0.0104	0.5673	0.18%	
*Sprint	2	557	170.5	1900	0.0148	1.0000	0.15%	
*AT&T	2	565	138	880	0.0233	0.5867	0.40%	
*AT&T	2	875	138	1900	0.0361	1.0000	0.36%	
*AT&T	1	283	138	880	0.0058	0.5867	0.10%	
*AT&T	4	525	138	1900	0.0433	1.0000	0.43%	
*AT&T	1	1771	138	734	0.0366	0.4893	0.75%	
Verizon PCS	**1**	**0**	**188**	**0.0000**	**1970**	**1.0000**	**0.00%**	
Verizon Cellular	**9**	**400**	**189**	**0.0362**	**869**	**0.5793**	**6.26%**	
Verizon 850 LTE	**1**	**3710**	**188**	**0.0377**	**869**	**0.5793**	**6.52%**	
Verizon AWS	**1**	**8326**	**188**	**0.0847**	**2145**	**1.0000**	**8.47%**	
Verizon 700	**1**	**2063**	**188**	**0.0210**	**746**	**0.4973**	**4.22%**	
								27.83%
* Source: Siting Council								

ATTACHMENT 3

FRED A. NUDD CORPORATION

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ONTARIO, NY 14519
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www.nuddtowers.com

Mark LeGault
Cordless Data Transfer, Inc.
600 Old Hartford Road
Colchester, CT 06415
October 19, 2017

Nudd Job Number: 117-23150

Site Location: 20 Seles Road, Ashford, CT 06258, Windham County (Lat. & Long. = 41-51-48, -72-10-57)

Subject: Structural Analysis of an existing 190 ft Guyed Tower

Fred A. Nudd Corporation has completed a three-dimensional, finite element model structural analysis of the above noted guyed tower. This tower was analyzed considered appurtenance loads noted in the appurtenance loading table on the following page. The design loading criteria and strength design are per the ANSI/TIA-222-G standard, which is the recommended design standard per the 2012 International Building Code (Sec. 1609 & 3108), , and the 2016 Connecticut Sate Building Code. Tower and foundation dimensions have been taken from drawings by Fred A. Nudd, project number 00-6111A-1 & 98-6111-2, dated July 28, 2000 & June 1998, respectively. Geotechnical information was taken from a subsurface exploration report by Tower Engineering Professionals, Inc., project number 090004.13, dated September 22, 2009. Design criteria per each analysis are noted on the following page. The tower is assumed to be in good, undamaged and equivalent to as new condition and has been maintained / inspected per criteria by TIA-222.

The purpose of this analysis is to determine the structure's ability to support new Verizon equipment installed at a rad center of 190 ft above ground level (AGL). The new equipment to be installed, which includes antennas, diplexers, and associated hardware are listed on the following page in the appurtenance loading table.

Results of the analysis indicate the tower will be able to the support the design loads noted in the appurtenance loading table on the following page. Specific section design loads, capacities and stress ratios are provided on the following pages. Maximum member usage was found to be 100%.

The tower base foundation and anchors were analyzed considering onsite soil information from the aforementioned geotechnical report. Based on this analysis, the foundation and anchors will be able support the proposed appurtenance loading, in addition to the existing wireless equipment and tower superstructure. Specific design loads, capacities and stress ratios are provided on the following pages.

In conclusion, the tower superstructure and substructure can support the listed existing and proposed appurtenance loading.

We trust this report satisfies your needs. Please contact us with any questions or concerns regarding this report.

Best Regards,

Fred. A. Nudd Corporation

Code Design Criteria

TIA-222-G
Windspeed = 126 mph, 3-second gust, V_{ult} = 100 mph, 3-second gust, V_{asd}
Exposure = B
Radial Ice = 1.00 inch
Ice Windspeed = 50 mph, 3-second gust

Appurtenance Loading – Existing Equipment to Remain on Tower

Elevation (ft)	Carrier	Antenna	Mount	Coax (in)
190	Verizon	(2) Antel LPA-80080-4CF (4) Antel LPA-80063-4CF	(3) 12 ft Sector Frame	(6) 1-5/8
178	--	-	(3) 12 ft Boom / Frame	-
170.5	Sprint	(3) RFS APXV9ERR18-C-A20 (3) Alcatel Lucent 2x50W RRH, 800 MHz (3) Alcatel Lucent 4x40W RRH, 1900 MHz	(3) 12 ft Boom / Frame	(3) 1-1/4 Hybriflex
150	--	-	(3) 12 ft Boom / Frame	-
138	AT&T	(6) Powerwave 7770 (6) TMA (6) Diplextors (3) KMW AM-X-CD-17-65-00T-RET (1) Raycap DC6-48-60-18-8F (6) Ericsson RRU11	(3) 12 ft Boom / Frame	(12) 1-5/8 (2) 3/4 DC Cables (1) 3/8 Fiberline

- *Note elevation is measured from grade to center of antenna.*

Appurtenance Loading – Proposed Equipment Configuration for Verizon

Height (ft)	Carrier	Appurtenance	Mount	Coax (in)
190	Verizon	(6) Commscope JAHH-65B-R3B (3) Alcatel Lucent B66A RRH4x45 (AWS) (3) Alcatel Lucent B13 RRH4x30 (700) (3) Alcatel Lucent RRH 4T4R B5 (160) (2) RFS DB-C1-12C-24AB-0Z	--	(2) 1-5/8 Fiber

- *Height measurement taken as distance from top of base foundation to center of appurtenance.*
- *Additional equipment to be installed on the installed mount at 190 ft.*
- *The additional coax is to be installed alongside the currently installed Verizon coax.*

Maximum Member Usage Results

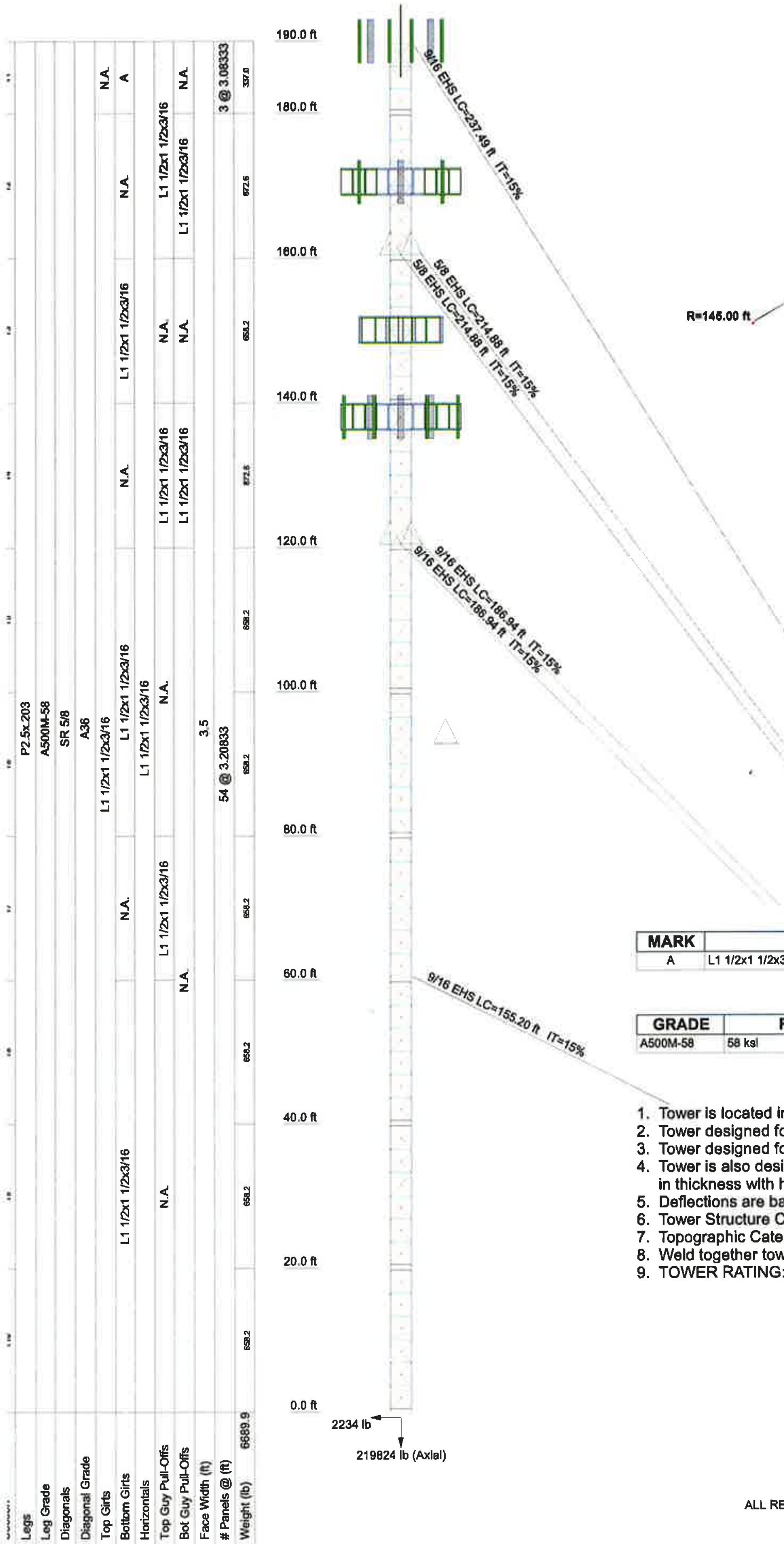
Member	Usage (%)[1]
Leg	100
Diagonal	57
Horizontal	49
Guy Wires	52
Bolts	36
Anchor Rod	68

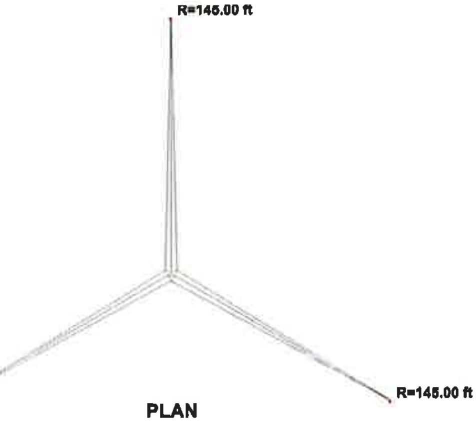
[1]*Usage above 100% indicates the applied design load exceeds the member strength capacity and requires strengthening.*

Foundation Usage Results

Base Reaction	Capacity (kips)	Analysis (kips)	Usage (%)[1]
Compression	254.1	219.8	88
Uplift	92.3	42.0	46
Shear	54.1	47.2	87

[1]*Usage above 100% indicates the applied design load exceeds the member strength capacity and requires strengthening.*





PLAN

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L1 1/2x1 1/2x3/16		

MATERIAL STRENGTH

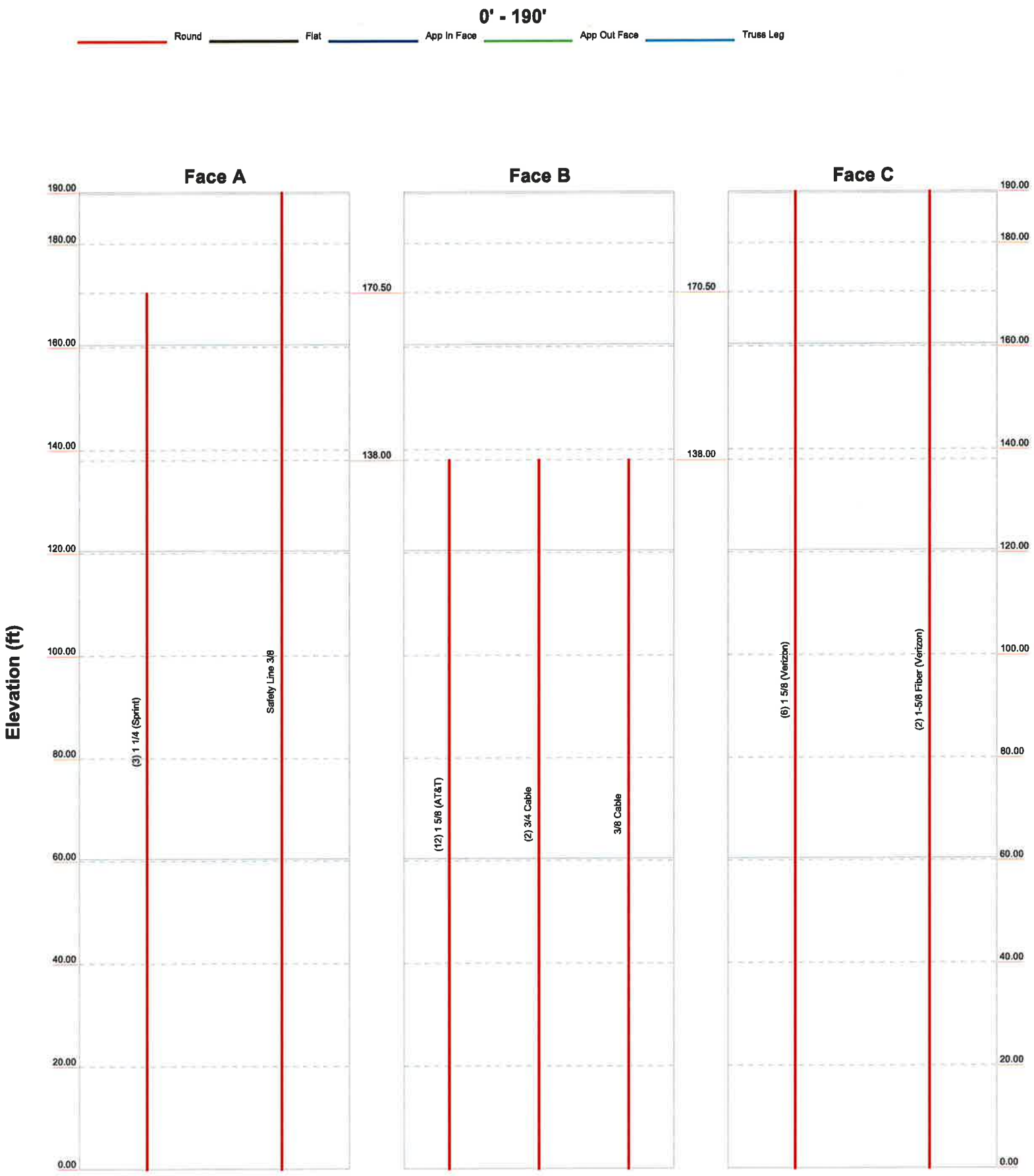
GRADE	Fy	Fu	GRADE	Fy	Fu
A500M-58	58 ksi	70 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in Windham County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 100 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. Weld together tower sections have flange connections.
9. TOWER RATING: 99.9%

ALL REACTIONS ARE FACTORED

Phone: FAX:	Job: **117-23150**		
	Project: **Ashford, CT**		
	Client: CDT	Drawn by: FAN	App'd:
	Code: TIA-222-G	Date: 10/19/17	Scale: N
	Path:		Dwg No.



Phone: FAX:	Job: 117-23150		
	Project: Ashford, CT		
	Client: CDT	Drawn by: FAN	App'd:
	Code: TIA-222-G	Date: 10/19/17	Scale: N
	Path:		Dwg No.

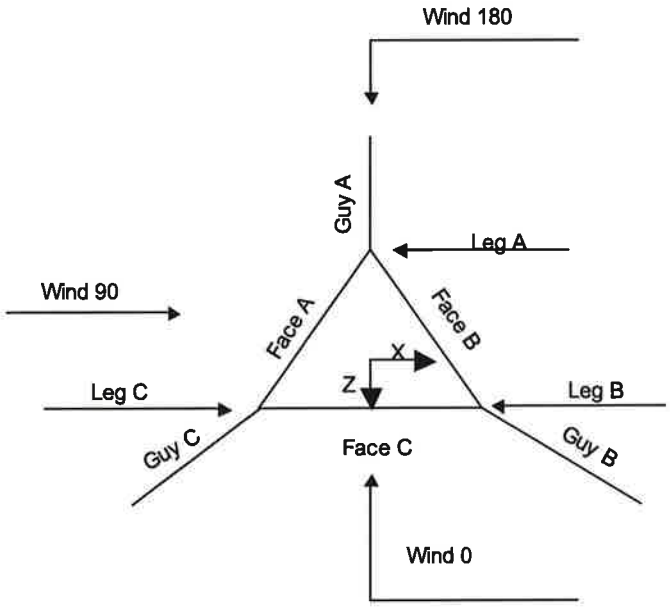
Tower Input Data

The main tower is a 3x guyed tower with an overall height of 190.00 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 3.50 ft at the top and 3.50 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

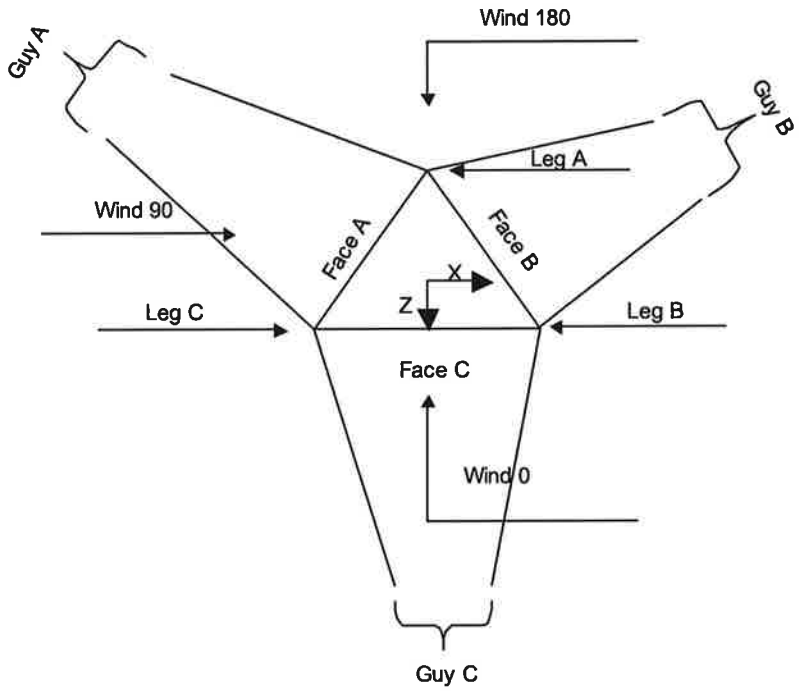
Tower is located in Windham County, Connecticut.
Basic wind speed of 100 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Weld together tower sections have flange connections..
Tension only take-up is 0.0313 in.
Pressures are calculated at each section.
Safety factor used in guy design is 1.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Treat Feedline Bundles As Cylinder
Consider Moments - Horizontals	Assume Legs Pinned	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Diagonals	√ Assume Rigid Index Plate	√ Calculate Redundant Bracing Forces
Use Moment Magnification	√ Use Clear Spans For Wind Area	Ignore Redundant Members in FEA
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	SR Leg Bolts Resist Compression
√ Use Code Safety Factors - Guys	√ Retension Guys To Initial Tension	√ All Leg Panels Have Same Allowable
Escalate Ice	Bypass Mast Stability Checks	Offset Girt At Foundation
Always Use Max Kz	√ Use Azimuth Dish Coefficients	√ Consider Feedline Torque
Use Special Wind Profile	√ Project Wind Area of Appurt.	Include Angle Block Shear Check
√ Include Bolts In Member Capacity	√ Autocalc Torque Arm Areas	**Poles**
√ Leg Bolts Are At Top Of Section	SR Members Have Cut Ends	Include Shear-Torsion Interaction
√ Secondary Horizontal Braces Leg	Sort Capacity Reports By Component	Always Use Sub-Critical Flow
Use Diamond Inner Bracing (4 Sided)	√ Triangulate Diamond Inner Bracing	Use Top Mounted Sockets
Add IBC .6D+W Combination		



Corner & Starmount Guyed Tower



Face Guyed

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	190.00-180.00			3.50	1	10.00
T2	180.00-160.00			3.50	1	20.00
T3	160.00-140.00			3.50	1	20.00
T4	140.00-120.00			3.50	1	20.00
T5	120.00-100.00			3.50	1	20.00
T6	100.00-80.00			3.50	1	20.00
T7	80.00-60.00			3.50	1	20.00
T8	60.00-40.00			3.50	1	20.00
T9	40.00-20.00			3.50	1	20.00
T10	20.00-0.00			3.50	1	20.00

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	190.00-180.00	3.08	TX Brace	No	Yes	4.5000	4.5000
T2	180.00-160.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T3	160.00-140.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T4	140.00-120.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T5	120.00-100.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T6	100.00-80.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T7	80.00-60.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T8	60.00-40.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T9	40.00-20.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T10	20.00-0.00	3.21	TX Brace	No	Yes	4.5000	4.5000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 190.00-180.00	Pipe	P2.5x.203	A500M-58 (58 ksi)	Solid Round	5/8	A36 (36 ksi)
T2 180.00-160.00	Pipe	P2.5x.203	A500M-58 (58 ksi)	Solid Round	5/8	A36 (36 ksi)
T3 160.00-140.00	Pipe	P2.5x.203	A500M-58 (58 ksi)	Solid Round	5/8	A36 (36 ksi)
T4 140.00-120.00	Pipe	P2.5x.203	A500M-58 (58 ksi)	Solid Round	5/8	A36 (36 ksi)
T5 120.00-100.00	Pipe	P2.5x.203	A500M-58 (58 ksi)	Solid Round	5/8	A36 (36 ksi)
T6 100.00-80.00	Pipe	P2.5x.203	A500M-58 (58 ksi)	Solid Round	5/8	A36 (36 ksi)
T7 80.00-60.00	Pipe	P2.5x.203	A500M-58 (58 ksi)	Solid Round	5/8	A36 (36 ksi)
T8 60.00-40.00	Pipe	P2.5x.203	A500M-58 (58 ksi)	Solid Round	5/8	A36 (36 ksi)
T9 40.00-20.00	Pipe	P2.5x.203	A500M-58 (58 ksi)	Solid Round	5/8	A36 (36 ksi)
T10 20.00-0.00	Pipe	P2.5x.203	A500M-58 (58 ksi)	Solid Round	5/8	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 190.00-180.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T2 180.00-160.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T3 160.00-140.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T4 140.00-120.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T5 120.00-100.00	Equal Angle	L1 1/2x1 1/2x3/16	A36	Equal Angle	L1 1/2x1 1/2x3/16	A36

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T6 100.00-80.00	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36 (36 ksi)
T7 80.00-60.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T8 60.00-40.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T9 40.00-20.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T10 20.00-0.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	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 190.00-180.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T2 180.00-160.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T3 160.00-140.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T4 140.00-120.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T5 120.00-100.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T6 100.00-80.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T7 80.00-60.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T8 60.00-40.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T9 40.00-20.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T10 20.00-0.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 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
T1 190.00-180.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T2 180.00-160.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T3	0.00	0.0000	A36	1	1	1	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
160.00-140.00			(36 ksi)					
T4	0.00	0.0000	A36	1	1	1	36.0000	36.0000
140.00-120.00			(36 ksi)					
T5	0.00	0.0000	A36	1	1	1	36.0000	36.0000
120.00-100.00			(36 ksi)					
T6	0.00	0.0000	A36	1	1	1	36.0000	36.0000
100.00-80.00			(36 ksi)					
T7 80.00-60.00	0.00	0.0000	A36	1	1	1	36.0000	36.0000
			(36 ksi)					
T8 60.00-40.00	0.00	0.0000	A36	1	1	1	36.0000	36.0000
			(36 ksi)					
T9 40.00-20.00	0.00	0.0000	A36	1	1	1	36.0000	36.0000
			(36 ksi)					
T10 20.00-0.00	0.00	0.0000	A36	1	1	1	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	No	Yes	1	1	1	1	0.65	0.65	1	1
190.00-180.00				1	1	1	0.65	0.65	1	1
T2	No	Yes	1	1	1	1	0.65	0.65	1	1
180.00-160.00				1	1	1	0.65	0.65	1	1
T3	No	Yes	1	1	1	1	0.65	0.65	1	1
160.00-140.00				1	1	1	0.65	0.65	1	1
T4	No	Yes	1	1	1	1	0.65	0.65	1	1
140.00-120.00				1	1	1	0.65	0.65	1	1
T5	No	Yes	1	1	1	1	0.65	0.65	1	1
120.00-100.00				1	1	1	0.65	0.65	1	1
T6	No	Yes	1	1	1	1	0.65	0.65	1	1
100.00-80.00				1	1	1	0.65	0.65	1	1
T7	No	Yes	1	1	1	1	0.65	0.65	1	1
80.00-60.00				1	1	1	0.65	0.65	1	1
T8	No	Yes	1	1	1	1	0.65	0.65	1	1
60.00-40.00				1	1	1	0.65	0.65	1	1
T9	No	Yes	1	1	1	1	0.65	0.65	1	1
40.00-20.00				1	1	1	0.65	0.65	1	1
T10	No	Yes	1	1	1	1	0.65	0.65	1	1
20.00-0.00				1	1	1	0.65	0.65	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 190.00-180.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T2 180.00-160.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T3 160.00-140.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T4 140.00-120.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T5 120.00-100.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T6 100.00-80.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T7 80.00-60.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T8 60.00-40.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T9 40.00-20.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T10 20.00-0.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	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 190.00-180.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 180.00-160.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 160.00-140.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 140.00-120.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 120.00-100.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 100.00-80.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 80.00-60.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T8 60.00-40.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T9 40.00-20.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T10 20.00-0.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension lb	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
160.375	EHS	A	5/8	6360.00	15%	21000	0.813	214.61	145.00	0.0000	0.00	100%
		B	5/8	6360.00	15%	21000	0.813	214.61	145.00	0.0000	0.00	100%
		C	5/8	6360.00	15%	21000	0.813	214.61	145.00	0.0000	0.00	100%
120.375	EHS	A	9/16	5250.00	15%	21000	0.671	186.70	145.00	0.0000	0.00	100%
		B	9/16	5250.00	15%	21000	0.671	186.70	145.00	0.0000	0.00	100%
		C	9/16	5250.00	15%	21000	0.671	186.70	145.00	0.0000	0.00	100%
60.375	EHS	A	9/16	5250.00	15%	21000	0.671	155.01	145.00	0.0000	0.00	100%
		B	9/16	5250.00	15%	21000	0.671	155.01	145.00	0.0000	0.00	100%
		C	9/16	5250.00	15%	21000	0.671	155.01	145.00	0.0000	0.00	100%
189.625	EHS	A	9/16	5250.00	15%	21000	0.671	237.18	145.00	0.0000	0.00	100%
		B	9/16	5250.00	15%	21000	0.671	237.18	145.00	0.0000	0.00	100%
		C	9/16	5250.00	15%	21000	0.671	237.18	145.00	0.0000	0.00	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
160.375	Torque Arm	7.00	30.0000	Dog Ear	A36 (36 ksi)	Single Angle	L2x2x5/16 L3x3x1/4
120.375	Torque Arm	7.00	30.0000	Dog Ear	A36 (36 ksi)	Single Angle	L2x2x5/16 L3x3x1/4
60.375	Corner						
189.625	Corner						

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
160.38	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16
120.38	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16
60.38	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16
189.63	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16

Guy Data (cont'd)

Guy Elevation ft	Cable Weight A lb	Cable Weight B lb	Cable Weight C lb	Cable Weight D lb	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft

Guy Elevation ft	Cable Weight A lb	Cable Weight B lb	Cable Weight C lb	Cable Weight D lb	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
160.375	174.48	174.48	174.48		2.92 2.9 sec/pulse	2.92 2.9 sec/pulse	2.92 2.9 sec/pulse	
120.375	125.27	125.27	125.27		2.21 2.6 sec/pulse	2.21 2.6 sec/pulse	2.21 2.6 sec/pulse	
60.375	104.01	104.01	104.01		1.53 2.1 sec/pulse	1.53 2.1 sec/pulse	1.53 2.1 sec/pulse	
189.625	159.15	159.15	159.15		3.56 3.3 sec/pulse	3.56 3.3 sec/pulse	3.56 3.3 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
160.375	No	No	1	1	0.65	0.65	1	1
120.375	No	No	1	1	0.65	0.65	1	1
60.375	No	No			0.65	0.65	1	1
189.625	No	No			0.65	0.65	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
160.375	0.7500 A325N	2	0.0000	1	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	1
120.375	0.7500 A325N	2	0.0000	1	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	1
60.375	0.6250 A325N	0	0.0000	0.75	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	1
189.625	0.6250 A325N	0	0.0000	0.75	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	1

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
160.375	A	80.19	20	5	2.1857
	B	80.19	20	5	2.1857
	C	80.19	20	5	2.1857
120.375	A	60.19	19	5	2.1239
	B	60.19	19	5	2.1239
	C	60.19	19	5	2.1239
60.375	A	30.19	15	4	1.9823
	B	30.19	15	4	1.9823

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
	C	30.19	15	4	1.9823
189.625	A	94.81	21	5	2.2226
	B	94.81	21	5	2.2226
	C	94.81	21	5	2.2226

Guy-Mast Forces (Excluding Wind) - No Ice

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top Bottom lb	F_x lb	F_y lb	F_z lb	M_x lb-ft	M_y lb-ft	M_z lb-ft
160.375	A	48.2735	6490.22 6360.00	-104.64	4882.39	-4274.84	-9865.97	15173.38	-17088.36
	A	48.2735	6490.22 6360.00	104.64	4882.39	-4274.84	-9865.97	-15173.38	17088.36
	B	48.2735	6490.22 6360.00	3754.44	4882.39	2046.79	19731.94	15173.38	0.00
	B	48.2735	6490.22 6360.00	3649.79	4882.39	2228.04	-9865.97	-15173.38	-17088.36
	C	48.2735	6490.22 6360.00	-3649.79	4882.39	2228.04	-9865.97	15173.38	17088.36
	C	48.2735	6490.22 6360.00	-3754.44	4882.39	2046.79	19731.94	-15173.38	0.00
			Sum:	0.00	29294.33	0.00	-0.00	0.00	0.00
120.375	A	40.0857	5330.67 5250.00	-99.04	3469.21	-4046.08	-7010.33	14361.42	-12142.24
	A	40.0857	5330.67 5250.00	99.04	3469.21	-4046.08	-7010.33	-14361.42	12142.24
	B	40.0857	5330.67 5250.00	3553.53	3469.21	1937.27	14020.66	14361.42	0.00
	B	40.0857	5330.67 5250.00	3454.49	3469.21	2108.82	-7010.33	-14361.42	-12142.24
	C	40.0857	5330.67 5250.00	-3454.49	3469.21	2108.82	-7010.33	14361.42	12142.24
	C	40.0857	5330.67 5250.00	-3553.53	3469.21	1937.27	14020.66	-14361.42	0.00
			Sum:	0.00	20815.27	0.00	-0.00	0.00	0.00
60.375	A	22.8926	5290.46 5250.00	0.00	2102.12	-4854.90	-4247.81	0.00	0.00
	B	22.8926	5290.46 5250.00	4204.47	2102.12	2427.45	2123.90	0.00	-3678.71
	C	22.8926	5290.46 5250.00	-4204.47	2102.12	2427.45	2123.90	-0.00	3678.71
			Sum:	0.00	6306.36	0.00	0.00	0.00	0.00
189.625	A	52.9833	5377.07 5250.00	0.00	4322.16	-3198.73	-8733.90	0.00	0.00
	B	52.9833	5377.07 5250.00	2770.18	4322.16	1599.36	4366.95	0.00	-7563.78
	C	52.9833	5377.07 5250.00	-2770.18	4322.16	1599.36	4366.95	-0.00	7563.78
			Sum:	0.00	12966.47	0.00	0.00	0.00	0.00

Guy-Mast Forces (Excluding Wind) - Ice

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom	F_x	F_y	F_z	M_x	M_y	M_z
ft		°	lb	lb	lb	lb	lb-ft	lb-ft	lb-ft
160.375	A	48.2735	11257.75 9926.09	-172.02	8793.49	-7027.21	-17769.24	24942.86	-30777.22
	A	48.2735	11257.75 9926.09	172.02	8793.49	-7027.21	-17769.24	-24942.86	30777.22
	B	48.2735	11257.75 9926.09	6171.76	8793.49	3364.63	35538.47	24942.86	0.00
	B	48.2735	11257.75 9926.09	5999.74	8793.49	3662.58	-17769.24	-24942.86	-30777.22
	C	48.2735	11257.75 9926.09	-5999.74	8793.49	3662.58	-17769.24	24942.86	30777.22
	C	48.2735	11257.75 9926.09	-6171.76	8793.49	3364.63	35538.47	-24942.86	0.00
			Sum:	0.00	52760.95	0.00	-0.00	0.00	0.00
120.375	A	40.0857	9516.06 8597.94	-169.12	6541.87	-6908.74	-13219.33	24522.34	-22896.56
	A	40.0857	9516.06 8597.94	169.12	6541.87	-6908.74	-13219.33	-24522.34	22896.56
	B	40.0857	9516.06 8597.94	6067.71	6541.87	3307.91	26438.67	24522.34	0.00
	B	40.0857	9516.06 8597.94	5898.59	6541.87	3600.83	-13219.33	-24522.34	-22896.56
	C	40.0857	9516.06 8597.94	-5898.59	6541.87	3600.83	-13219.33	24522.34	22896.56
	C	40.0857	9516.06 8597.94	-6067.71	6541.87	3307.91	26438.67	-24522.34	0.00
			Sum:	0.00	39251.24	0.00	-0.00	0.00	0.00
60.375	A	22.8926	8905.54 8493.69	0.00	3912.05	-8000.28	-7905.18	0.00	0.00
	B	22.8926	8905.54 8493.69	6928.45	3912.05	4000.14	3952.59	0.00	-6846.09
	C	22.8926	8905.54 8493.69	-6928.45	3912.05	4000.14	3952.59	-0.00	6846.09
			Sum:	0.00	11736.15	-0.00	0.00	0.00	0.00
189.625	A	52.9833	10097.77 8539.50	0.00	8411.96	-5586.05	-16998.27	0.00	0.00
	B	52.9833	10097.77 8539.50	4837.66	8411.96	2793.02	8499.13	0.00	-14720.93
	C	52.9833	10097.77 8539.50	-4837.66	8411.96	2793.02	8499.13	-0.00	14720.93
			Sum:	0.00	25235.88	0.00	0.00	0.00	0.00

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom	F_x	F_y	F_z	M_x	M_y	M_z
ft		°	lb	lb	lb	lb	lb-ft	lb-ft	lb-ft
160.375	A	48.2735	6490.22 6360.00	-104.64	4882.39	-4274.84	-9865.97	15173.38	-17088.36
	A	48.2735	6490.22	104.64	4882.39	-4274.84	-9865.97	-15173.38	17088.36

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top Bottom lb	F_x lb	F_y lb	F_z lb	M_x lb-ft	M_y lb-ft	M_z lb-ft
			6360.00						
	B	48.2735	6490.22	3754.44	4882.39	2046.79	19731.94	15173.38	0.00
			6360.00						
	B	48.2735	6490.22	3649.79	4882.39	2228.04	-9865.97	-15173.38	-17088.36
			6360.00						
	C	48.2735	6490.22	-3649.79	4882.39	2228.04	-9865.97	15173.38	17088.36
			6360.00						
	C	48.2735	6490.22	-3754.44	4882.39	2046.79	19731.94	-15173.38	0.00
			6360.00						
			Sum:	0.00	29294.33	0.00	-0.00	0.00	0.00
120.375	A	40.0857	5330.67	-99.04	3469.21	-4046.08	-7010.33	14361.42	-12142.24
			5250.00						
	A	40.0857	5330.67	99.04	3469.21	-4046.08	-7010.33	-14361.42	12142.24
			5250.00						
	B	40.0857	5330.67	3553.53	3469.21	1937.27	14020.66	14361.42	0.00
			5250.00						
	B	40.0857	5330.67	3454.49	3469.21	2108.82	-7010.33	-14361.42	-12142.24
			5250.00						
	C	40.0857	5330.67	-3454.49	3469.21	2108.82	-7010.33	14361.42	12142.24
			5250.00						
	C	40.0857	5330.67	-3553.53	3469.21	1937.27	14020.66	-14361.42	0.00
			5250.00						
			Sum:	0.00	20815.27	0.00	-0.00	0.00	0.00
60.375	A	22.8926	5290.46	0.00	2102.12	-4854.90	-4247.81	0.00	0.00
			5250.00						
	B	22.8926	5290.46	4204.47	2102.12	2427.45	2123.90	0.00	-3678.71
			5250.00						
	C	22.8926	5290.46	-4204.47	2102.12	2427.45	2123.90	-0.00	3678.71
			5250.00						
			Sum:	0.00	6306.36	0.00	0.00	0.00	0.00
189.625	A	52.9833	5377.07	0.00	4322.16	-3198.73	-8733.90	0.00	0.00
			5250.00						
	B	52.9833	5377.07	2770.18	4322.16	1599.36	4366.95	0.00	-7563.78
			5250.00						
	C	52.9833	5377.07	-2770.18	4322.16	1599.36	4366.95	-0.00	7563.78
			5250.00						
			Sum:	0.00	12966.47	0.00	0.00	0.00	0.00

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	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 5/8 (Verizon)	C	No	Ar (CaAa)	190.00 - 0.00	0.0000	0.25	6	6	1.0000	1.9800		1.04
1 1/4 (Sprint)	A	No	Ar (CaAa)	170.50 - 0.00	0.0000	0.25	3	3	1.0000	1.5500		0.66
1 5/8 (AT&T)	B	No	Ar (CaAa)	138.00 - 0.00	6.0000	0.5	12	6	1.0000	1.9800		1.04
Safety Line 3/8	A	No	Ar (CaAa)	190.00 - 0.00	0.0000	0	1	1	0.3750	0.3750		0.22
3/4 Cable	B	No	Ar (CaAa)	138.00 - 0.00	0.0000	0.1	2	1	0.6300	0.6300		0.19
3/8 Cable	B	No	Ar (CaAa)	138.00 - 0.00	0.0000	0.1	1	1	0.0000	0.3750		0.19
1-5/8 Fiber	C	No	Ar (CaAa)	190.00 - 0.00	0.0000	-0.25	2	2	1.9800	1.9800		0.75

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
(Verizon)												

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 lb
T1	190.00-180.00	A	0.000	0.000	0.375	0.000	2.20
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	15.840	0.000	77.40
T2	180.00-160.00	A	0.000	0.000	5.633	0.000	25.19
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	31.680	0.000	154.80
T3	160.00-140.00	A	0.000	0.000	10.050	0.000	44.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	31.680	0.000	154.80
T4	140.00-120.00	A	0.000	0.000	10.050	0.000	44.00
		B	0.000	0.000	45.711	0.000	234.90
		C	0.000	0.000	31.680	0.000	154.80
T5	120.00-100.00	A	0.000	0.000	10.050	0.000	44.00
		B	0.000	0.000	50.790	0.000	261.00
		C	0.000	0.000	31.680	0.000	154.80
T6	100.00-80.00	A	0.000	0.000	10.050	0.000	44.00
		B	0.000	0.000	50.790	0.000	261.00
		C	0.000	0.000	31.680	0.000	154.80
T7	80.00-60.00	A	0.000	0.000	10.050	0.000	44.00
		B	0.000	0.000	50.790	0.000	261.00
		C	0.000	0.000	31.680	0.000	154.80
T8	60.00-40.00	A	0.000	0.000	10.050	0.000	44.00
		B	0.000	0.000	50.790	0.000	261.00
		C	0.000	0.000	31.680	0.000	154.80
T9	40.00-20.00	A	0.000	0.000	10.050	0.000	44.00
		B	0.000	0.000	50.790	0.000	261.00
		C	0.000	0.000	31.680	0.000	154.80
T10	20.00-0.00	A	0.000	0.000	10.050	0.000	44.00
		B	0.000	0.000	50.790	0.000	261.00
		C	0.000	0.000	31.680	0.000	154.80

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 lb
T1	190.00-180.00	A	2.376	0.000	0.000	5.128	0.000	82.07
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	44.114	0.000	752.29
T2	180.00-160.00	A	2.356	0.000	0.000	27.203	0.000	415.52
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	87.966	0.000	1492.14
T3	160.00-140.00	A	2.327	0.000	0.000	42.294	0.000	634.80
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	87.580	0.000	1474.00
T4	140.00-120.00	A	2.294	0.000	0.000	41.937	0.000	623.16
		B		0.000	0.000	80.512	0.000	1775.87

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 lb
		C		0.000	0.000	87.146	0.000	1453.64
T5	120.00-100.00	A	2.256	0.000	0.000	41.528	0.000	609.91
		B		0.000	0.000	88.788	0.000	1942.37
		C		0.000	0.000	86.647	0.000	1430.36
T6	100.00-80.00	A	2.211	0.000	0.000	41.045	0.000	594.46
		B		0.000	0.000	87.999	0.000	1906.38
		C		0.000	0.000	86.059	0.000	1403.09
T7	80.00-60.00	A	2.156	0.000	0.000	40.453	0.000	575.81
		B		0.000	0.000	87.032	0.000	1862.84
		C		0.000	0.000	85.340	0.000	1369.97
T8	60.00-40.00	A	2.085	0.000	0.000	39.686	0.000	552.01
		B		0.000	0.000	85.776	0.000	1807.13
		C		0.000	0.000	84.407	0.000	1327.35
T9	40.00-20.00	A	1.981	0.000	0.000	38.570	0.000	518.26
		B		0.000	0.000	83.949	0.000	1727.82
		C		0.000	0.000	83.052	0.000	1266.22
T10	20.00-0.00	A	1.775	0.000	0.000	36.359	0.000	454.38
		B		0.000	0.000	80.329	0.000	1576.62
		C		0.000	0.000	80.371	0.000	1147.97

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	190.00-180.00	-0.8400	1.9798	-0.3523	0.4932
T2	180.00-160.00	-0.9022	1.4870	-0.3924	0.4072
T3	160.00-140.00	-0.9443	1.0962	-0.4124	0.3144
T4	140.00-120.00	3.1917	1.4948	1.7390	0.6608
T5	120.00-100.00	3.3976	1.5147	1.8683	0.6863
T6	100.00-80.00	3.3976	1.5147	1.8633	0.6919
T7	80.00-60.00	3.3976	1.5147	1.8574	0.6989
T8	60.00-40.00	3.3976	1.5147	1.8501	0.7085
T9	40.00-20.00	3.3976	1.5147	1.8400	0.7234
T10	20.00-0.00	3.3976	1.5147	1.8218	0.7559

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	1 5/8	180.00 - 190.00	0.6000	0.2458
T1	4	Safety Line 3/8	180.00 - 190.00	0.6000	0.2458
T1	7	1-5/8 Fiber	180.00 - 190.00	0.6000	0.2458
T2	1	1 5/8	160.00 - 180.00	0.6000	0.2654
T2	2	1 1/4	160.00 - 170.50	0.6000	0.2654
T2	4	Safety Line 3/8	160.00 -	0.6000	0.2654

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T2	7	1-5/8 Fiber	180.00 - 160.00	0.6000	0.2654
T3	1	1 5/8	180.00 - 140.00	0.6000	0.2713
T3	2	1 1/4	160.00 - 140.00	0.6000	0.2713
T3	4	Safety Line 3/8	160.00 - 140.00	0.6000	0.2713
T3	7	1-5/8 Fiber	160.00 - 140.00	0.6000	0.2713
T4	1	1 5/8	160.00 - 120.00	0.6000	0.2781
T4	2	1 1/4	140.00 - 120.00	0.6000	0.2781
T4	3	1 5/8	140.00 - 120.00	1.0000	1.0000
T4	4	Safety Line 3/8	138.00 - 120.00	0.6000	0.2781
T4	5	3/4 Cable	140.00 - 120.00	0.6000	0.2781
T4	6	3/8 Cable	138.00 - 120.00	0.6000	0.2781
T4	7	1-5/8 Fiber	138.00 - 120.00	0.6000	0.2781
T5	1	1 5/8	140.00 - 100.00	0.6000	0.2859
T5	2	1 1/4	120.00 - 100.00	0.6000	0.2859
T5	3	1 5/8	120.00 - 100.00	1.0000	1.0000
T5	4	Safety Line 3/8	120.00 - 100.00	0.6000	0.2859
T5	5	3/4 Cable	120.00 - 100.00	0.6000	0.2859
T5	6	3/8 Cable	120.00 - 100.00	0.6000	0.2859
T5	7	1-5/8 Fiber	120.00 - 100.00	0.6000	0.2859
T6	1	1 5/8	120.00 - 80.00	0.6000	0.2952
T6	2	1 1/4	80.00 - 100.00	0.6000	0.2952
T6	3	1 5/8	80.00 - 100.00	1.0000	1.0000
T6	4	Safety Line 3/8	80.00 - 100.00	0.6000	0.2952
T6	5	3/4 Cable	80.00 - 100.00	0.6000	0.2952
T6	6	3/8 Cable	80.00 - 100.00	0.6000	0.2952
T6	7	1-5/8 Fiber	80.00 - 100.00	0.6000	0.2952
T7	1	1 5/8	60.00 - 80.00	0.6000	0.3065
T7	2	1 1/4	60.00 - 80.00	0.6000	0.3065
T7	3	1 5/8	60.00 - 80.00	1.0000	1.0000
T7	4	Safety Line 3/8	60.00 - 80.00	0.6000	0.3065
T7	5	3/4 Cable	60.00 - 80.00	0.6000	0.3065
T7	6	3/8 Cable	60.00 - 80.00	0.6000	0.3065
T7	7	1-5/8 Fiber	60.00 - 80.00	0.6000	0.3065
T8	1	1 5/8	40.00 - 60.00	0.6000	0.3214
T8	2	1 1/4	40.00 - 60.00	0.6000	0.3214
T8	3	1 5/8	40.00 - 60.00	1.0000	1.0000
T8	4	Safety Line 3/8	40.00 - 60.00	0.6000	0.3214
T8	5	3/4 Cable	40.00 - 60.00	0.6000	0.3214
T8	6	3/8 Cable	40.00 - 60.00	0.6000	0.3214
T8	7	1-5/8 Fiber	40.00 - 60.00	0.6000	0.3214
T9	1	1 5/8	20.00 - 40.00	0.6000	0.3431
T9	2	1 1/4	20.00 - 40.00	0.6000	0.3431

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T9	3	1 5/8	20.00 - 40.00	1.0000	1.0000
T9	4	Safety Line 3/8	20.00 - 40.00	0.6000	0.3431
T9	5	3/4 Cable	20.00 - 40.00	0.6000	0.3431
T9	6	3/8 Cable	20.00 - 40.00	0.6000	0.3431
T9	7	1-5/8 Fiber	20.00 - 40.00	0.6000	0.3431
T10	1	1 5/8	0.00 - 20.00	0.6000	0.3869
T10	2	1 1/4	0.00 - 20.00	0.6000	0.3869
T10	3	1 5/8	0.00 - 20.00	1.0000	1.0000
T10	4	Safety Line 3/8	0.00 - 20.00	0.6000	0.3869
T10	5	3/4 Cable	0.00 - 20.00	0.6000	0.3869
T10	6	3/8 Cable	0.00 - 20.00	0.6000	0.3869
T10	7	1-5/8 Fiber	0.00 - 20.00	0.6000	0.3869

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 lb
Sector Frame Mount	A	From Leg	1.50	0.0000	190.00	No Ice	13.60	13.60	465.00
			0.00			1/2" Ice	18.40	18.40	600.00
			0.00			1" Ice	23.20	23.20	735.00
Sector Frame Mount	B	From Leg	1.50	0.0000	190.00	No Ice	13.60	13.60	465.00
			0.00			1/2" Ice	18.40	18.40	600.00
			0.00			1" Ice	23.20	23.20	735.00
Sector Frame Mount	C	From Leg	1.50	0.0000	190.00	No Ice	13.60	13.60	465.00
			0.00			1/2" Ice	18.40	18.40	600.00
			0.00			1" Ice	23.20	23.20	735.00
(2) Antel LPA-80080-4CF (Verizon)	A	From Leg	3.00	0.0000	190.00	No Ice	1.51	6.79	12.00
			0.00			1/2" Ice	1.81	7.14	45.10
			0.00			1" Ice	2.53	7.50	50.65
(2) Antel LPA-80063/4CF (Verizon)	B	From Leg	3.00	0.0000	190.00	No Ice	7.00	3.48	20.00
			0.00			1/2" Ice	7.36	3.82	72.60
			0.00			1" Ice	2.53	3.99	50.65
(2) Antel LPA-80063/4CF (Verizon)	C	From Leg	3.00	0.0000	190.00	No Ice	7.00	3.48	20.00
			0.00			1/2" Ice	7.36	3.82	72.60
			0.00			1" Ice	2.53	3.99	50.65
Sector Frame Mount	A	From Leg	1.50	0.0000	178.00	No Ice	13.60	13.60	465.00
			0.00			1/2" Ice	18.40	18.40	600.00
			0.00			1" Ice	23.20	23.20	735.00
Sector Frame Mount	B	From Leg	1.50	0.0000	178.00	No Ice	13.60	13.60	465.00
			0.00			1/2" Ice	18.40	18.40	600.00
			0.00			1" Ice	23.20	23.20	735.00
Sector Frame Mount	C	From Leg	1.50	0.0000	178.00	No Ice	13.60	13.60	465.00
			0.00			1/2" Ice	18.40	18.40	600.00
			0.00			1" Ice	23.20	23.20	735.00
(2) Allgon 7770.00 (AT&T)	A	From Leg	3.00	0.0000	138.00	No Ice	5.88	2.93	35.00
			0.00			1/2" Ice	6.25	3.29	67.60
			0.00			1" Ice	6.64	3.67	85.58
(2) Allgon 7770.00 (AT&T)	B	From Leg	3.00	0.0000	138.00	No Ice	5.88	2.93	35.00
			0.00			1/2" Ice	6.25	3.29	67.60
			0.00			1" Ice	6.64	3.67	85.58

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 lb
(2) Allgon 7770.00 (AT&T)	C	From Leg	3.00 / 0.00 / 0.00	0.0000	138.00	No Ice	5.88	2.93	35.00
						1/2" Ice	6.25	3.29	67.60
						1" Ice	6.64	3.67	85.58
(2) Powerwave LGP21401 (AT&T)	A	From Leg	3.00 / 0.00 / 0.00	0.0000	138.00	No Ice	1.95	0.53	31.00
						1/2" Ice	2.11	0.63	30.30
						1" Ice	2.28	0.75	203.29
(2) Powerwave LGP21401 (AT&T)	B	From Leg	3.00 / 0.00 / 0.00	0.0000	138.00	No Ice	1.95	0.53	31.00
						1/2" Ice	2.11	0.63	30.30
						1" Ice	2.28	0.75	203.29
(2) Powerwave LGP21401 (AT&T)	C	From Leg	3.00 / 0.00 / 0.00	0.0000	138.00	No Ice	1.95	0.53	31.00
						1/2" Ice	2.11	0.63	30.30
						1" Ice	2.28	0.75	203.29
(2) Powerwave LGP21901 (AT&T)	A	From Leg	3.00 / 0.00 / 0.00	0.0000	138.00	No Ice	0.27	0.13	25.00
						1/2" Ice	0.33	0.18	30.30
						1" Ice	0.41	0.23	203.29
(2) Powerwave LGP21901 (AT&T)	B	From Leg	3.00 / 0.00 / 0.00	0.0000	138.00	No Ice	0.27	0.13	25.00
						1/2" Ice	0.33	0.18	30.30
						1" Ice	0.41	0.23	203.29
(2) Powerwave LGP21901 (AT&T)	C	From Leg	3.00 / 0.00 / 0.00	0.0000	138.00	No Ice	0.27	0.13	25.00
						1/2" Ice	0.33	0.18	30.30
						1" Ice	0.41	0.23	203.29
Sector Frame Mount	A	From Leg	1.50 / 0.00 / 0.00	0.0000	150.00	No Ice	13.60	13.60	465.00
						1/2" Ice	18.40	18.40	600.00
						1" Ice	23.20	23.20	735.00
Sector Frame Mount	B	From Leg	1.50 / 0.00 / 0.00	0.0000	150.00	No Ice	13.60	13.60	465.00
						1/2" Ice	18.40	18.40	600.00
						1" Ice	23.20	23.20	735.00
Sector Frame Mount	C	From Leg	1.50 / 0.00 / 0.00	0.0000	150.00	No Ice	13.60	13.60	465.00
						1/2" Ice	18.40	18.40	600.00
						1" Ice	23.20	23.20	735.00
Lightning Rod	C	None		0.0000	190.00	No Ice	1.00	1.00	40.00
						1/2" Ice	2.02	2.02	49.26
						1" Ice	3.05	3.05	64.89
KMW AM-X-CD-17-65-00T-RET (AT&T)	A	From Leg	3.00 / 0.00 / 0.00	0.0000	138.00	No Ice	11.31	6.80	25.00
						1/2" Ice	11.93	7.48	86.40
						1" Ice	12.53	8.12	155.40
KMW AM-X-CD-17-65-00T-RET (AT&T)	B	From Leg	3.00 / 0.00 / 0.00	0.0000	138.00	No Ice	11.31	6.80	25.00
						1/2" Ice	11.93	7.48	86.40
						1" Ice	12.53	8.12	155.40
KMW AM-X-CD-17-65-00T-RET (AT&T)	C	From Leg	3.00 / 0.00 / 0.00	0.0000	138.00	No Ice	11.31	6.80	25.00
						1/2" Ice	11.93	7.48	86.40
						1" Ice	12.53	8.12	155.40
(2) Ericsson RRUS11 (AT&T)	A	From Leg	3.00 / 0.00 / 0.00	0.0000	138.00	No Ice	2.99	0.36	25.00
						1/2" Ice	3.19	0.48	38.50
						1" Ice	3.41	0.60	54.60
(2) Ericsson RRUS11 (AT&T)	B	From Leg	3.00 / 0.00 / 0.00	0.0000	138.00	No Ice	2.99	0.36	25.00
						1/2" Ice	3.19	0.48	38.50
						1" Ice	3.41	0.60	54.60
(2) Ericsson RRUS11 (AT&T)	C	From Leg	3.00 / 0.00 / 0.00	0.0000	138.00	No Ice	2.99	0.36	25.00
						1/2" Ice	3.19	0.48	38.50
						1" Ice	3.41	0.60	54.60
Raycap DC6-48-60-18-8F (AT&T)	A	From Leg	3.00 / 0.00 / 0.00	0.0000	138.00	No Ice	1.47	1.47	25.00
						1/2" Ice	1.67	1.67	47.60
						1" Ice	1.88	1.88	73.70
Sector Frame Mount (Sprint)	A	From Leg	1.50 / 0.00 / 0.00	0.0000	170.50	No Ice	13.60	13.60	465.00
						1/2" Ice	18.40	18.40	600.00
						1" Ice	23.20	23.20	735.00

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 lb
Sector Frame Mount (Sprint)	B	From Leg	1.50	0.0000	170.50	No Ice	13.60	13.60	465.00
			0.00			1/2" Ice	18.40	18.40	600.00
			0.00			1" Ice	23.20	23.20	735.00
Sector Frame Mount (Sprint)	C	From Leg	1.50	0.0000	170.50	No Ice	13.60	13.60	465.00
			0.00			1/2" Ice	18.40	18.40	600.00
			0.00			1" Ice	23.20	23.20	735.00
RFS APXV9ERR18-C (Sprint)	A	From Leg	3.00	0.0000	170.50	No Ice	8.02	5.81	62.00
			0.00			1/2" Ice	8.50	6.27	114.00
			0.00			1" Ice	4.66	3.02	55.13
Alcatel Lucent 1900 RRH (Sprint)	A	From Leg	3.00	0.0000	170.50	No Ice	2.32	2.24	60.00
			0.00			1/2" Ice	2.53	2.44	83.10
			0.00			1" Ice	4.66	3.02	55.13
Alcatel Lucent 800 RRH (Sprint)	A	From Leg	3.00	0.0000	170.50	No Ice	2.06	1.36	60.00
			0.00			1/2" Ice	2.24	1.52	78.30
			0.00			1" Ice	4.66	3.02	55.13
RFS APXV9ERR18-C (Sprint)	B	From Leg	3.00	0.0000	170.50	No Ice	8.02	5.81	62.00
			0.00			1/2" Ice	8.50	6.27	114.00
			0.00			1" Ice	4.66	3.02	55.13
Alcatel Lucent 1900 RRH (Sprint)	B	From Leg	3.00	0.0000	170.50	No Ice	2.32	2.24	60.00
			0.00			1/2" Ice	2.53	2.44	83.10
			0.00			1" Ice	4.66	3.02	55.13
Alcatel Lucent 800 RRH (Sprint)	B	From Leg	3.00	0.0000	170.50	No Ice	2.06	1.36	60.00
			0.00			1/2" Ice	2.24	1.52	78.30
			0.00			1" Ice	4.66	3.02	55.13
RFS APXV9ERR18-C (Sprint)	C	From Leg	3.00	0.0000	170.50	No Ice	8.02	5.81	62.00
			0.00			1/2" Ice	8.50	6.27	114.00
			0.00			1" Ice	4.66	3.02	55.13
Alcatel Lucent 1900 RRH (Sprint)	C	From Leg	3.00	0.0000	170.50	No Ice	2.32	2.24	60.00
			0.00			1/2" Ice	2.53	2.44	83.10
			0.00			1" Ice	4.66	3.02	55.13
Alcatel Lucent 800 RRH (Sprint)	C	From Leg	3.00	0.0000	170.50	No Ice	2.06	1.36	60.00
			0.00			1/2" Ice	2.24	1.52	78.30
			0.00			1" Ice	4.66	3.02	55.13
Sector Frame Mount	A	From Leg	1.50	0.0000	138.00	No Ice	13.60	13.60	465.00
			0.00			1/2" Ice	18.40	18.40	600.00
			0.00			1" Ice	23.20	23.20	735.00
Sector Frame Mount	B	From Leg	1.50	0.0000	138.00	No Ice	13.60	13.60	465.00
			0.00			1/2" Ice	18.40	18.40	600.00
			0.00			1" Ice	23.20	23.20	735.00
Sector Frame Mount	C	From Leg	1.50	0.0000	138.00	No Ice	13.60	13.60	465.00
			0.00			1/2" Ice	18.40	18.40	600.00
			0.00			1" Ice	23.20	23.20	735.00
(2) Commscope JAHH-65B-R3B	A	From Leg	3.00	0.0000	190.00	No Ice	9.11	3.44	63.30
			0.00			1/2" Ice	10.03	4.36	185.70
			0.00			1" Ice	10.96	5.27	334.10
Alcatel Lucent B66A RRH4x45	A	From Leg	3.00	0.0000	190.00	No Ice	2.54	1.61	51.00
			0.00			1/2" Ice	2.92	1.96	94.30
			0.00			1" Ice	3.35	2.33	150.90
Alcatel Lucent B13 RRH4x30	A	From Leg	3.00	0.0000	190.00	No Ice	2.16	1.62	57.20
			0.00			1/2" Ice	2.51	1.94	99.40
			0.00			1" Ice	2.89	2.29	154.20
Alcatel Lucent RRH 4T4R B5	A	From Leg	3.00	0.0000	190.00	No Ice	1.28	0.72	50.00
			0.00			1/2" Ice	1.54	0.93	74.70
			0.00			1" Ice	1.84	1.18	109.10
RFS DB-C1-12C-24AB-0Z	A	From Leg	3.00	0.0000	190.00	No Ice	2.80	1.17	44.00
			0.00			1/2" Ice	3.29	1.52	120.20
			0.00			1" Ice	3.81	1.91	213.00

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 lb
(2) Commscope JAHH-65B-R3B	B	From Leg	3.00	0.0000	190.00	No Ice	9.11	3.44	63.30
			0.00			1/2" Ice	10.03	4.36	185.70
			0.00			1" Ice	10.96	5.27	334.10
Alcatel Lucent B66A RRH4x45	B	From Leg	3.00	0.0000	190.00	No Ice	2.54	1.61	51.00
			0.00			1/2" Ice	2.92	1.96	94.30
			0.00			1" Ice	3.35	2.33	150.90
Alcatel Lucent B13 RRH4x30	B	From Leg	3.00	0.0000	190.00	No Ice	2.16	1.62	57.20
			0.00			1/2" Ice	2.51	1.94	99.40
			0.00			1" Ice	2.89	2.29	154.20
Alcatel Lucent RRH 4T4R B5	B	From Leg	3.00	0.0000	190.00	No Ice	1.28	0.72	50.00
			0.00			1/2" Ice	1.54	0.93	74.70
			0.00			1" Ice	1.84	1.18	109.10
RFS DB-C1-12C-24AB-0Z	B	From Leg	3.00	0.0000	190.00	No Ice	2.80	1.17	44.00
			0.00			1/2" Ice	3.29	1.52	120.20
			0.00			1" Ice	3.81	1.91	213.00
(2) Commscope JAHH-65B-R3B	C	From Leg	3.00	0.0000	190.00	No Ice	9.11	3.44	63.30
			0.00			1/2" Ice	10.03	4.36	185.70
			0.00			1" Ice	10.96	5.27	334.10
Alcatel Lucent B66A RRH4x45	C	From Leg	3.00	0.0000	190.00	No Ice	2.54	1.61	51.00
			0.00			1/2" Ice	2.92	1.96	94.30
			0.00			1" Ice	3.35	2.33	150.90
Alcatel Lucent B13 RRH4x30	C	From Leg	3.00	0.0000	190.00	No Ice	2.16	1.62	57.20
			0.00			1/2" Ice	2.51	1.94	99.40
			0.00			1" Ice	2.89	2.29	154.20
Alcatel Lucent RRH 4T4R B5	C	From Leg	3.00	0.0000	190.00	No Ice	1.28	0.72	50.00
			0.00			1/2" Ice	1.54	0.93	74.70
			0.00			1" Ice	1.84	1.18	109.10

Tower Pressures - No Ice

$G_H = 0.850$

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
T1	185.00	1.178	26	37.396	A	1.630	6.150	4.792	61.59	0.375	0.000
190.00-180.00					B	1.630	6.150		61.59	0.000	0.000
					C	1.630	6.150		61.59	15.840	0.000
T2	170.00	1.15	25	74.792	A	2.853	12.348	9.583	63.05	5.633	0.000
180.00-160.00					B	2.853	12.348		63.05	0.000	0.000
					C	2.853	12.348		63.05	31.680	0.000
T3	150.00	1.11	24	74.792	A	2.853	12.348	9.583	63.05	10.050	0.000
160.00-140.00					B	2.853	12.348		63.05	0.000	0.000
					C	2.853	12.348		63.05	31.680	0.000
T4	130.00	1.065	23	74.792	A	2.853	12.348	9.583	63.05	10.050	0.000
140.00-120.00					B	2.853	12.348		63.05	45.711	0.000
					C	2.853	12.348		63.05	31.680	0.000
T5	110.00	1.016	22	74.792	A	2.853	12.348	9.583	63.05	10.050	0.000
120.00-100.00					B	2.853	12.348		63.05	50.790	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	2.853	12.348		63.05	31.680	0.000
T6	90.00	0.959	21	74.792	A	2.853	12.348	9.583	63.05	10.050	0.000
100.00-80.00					B	2.853	12.348		63.05	50.790	0.000
					C	2.853	12.348		63.05	31.680	0.000
T7 80.00-60.00	70.00	0.892	19	74.792	A	2.853	12.348	9.583	63.05	10.050	0.000
					B	2.853	12.348		63.05	50.790	0.000
					C	2.853	12.348		63.05	31.680	0.000
T8 60.00-40.00	50.00	0.811	18	74.792	A	2.853	12.348	9.583	63.05	10.050	0.000
					B	2.853	12.348		63.05	50.790	0.000
					C	2.853	12.348		63.05	31.680	0.000
T9 40.00-20.00	30.00	0.701	15	74.792	A	2.853	12.348	9.583	63.05	10.050	0.000
					B	2.853	12.348		63.05	50.790	0.000
					C	2.853	12.348		63.05	31.680	0.000
T10 20.00-0.00	10.00	0.7	15	74.792	A	2.853	12.348	9.583	63.05	10.050	0.000
					B	2.853	12.348		63.05	50.790	0.000
					C	2.853	12.348		63.05	31.680	0.000

Tower Pressure - With Ice

$G_H = 0.850$

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
T1	185.00	1.178	6	2.3763	41.356	A	1.630	29.561	12.713	40.76	5.128	0.000
190.00-180.00						B	1.630	29.561		40.76	0.000	0.000
						C	1.630	29.561		40.76	44.114	0.000
T2	170.00	1.15	6	2.3563	82.646	A	2.853	57.862	25.292	41.66	27.203	0.000
180.00-160.00						B	2.853	57.862		41.66	0.000	0.000
						C	2.853	57.862		41.66	87.966	0.000
T3	150.00	1.11	6	2.3270	82.548	A	2.853	57.296	25.096	41.72	42.294	0.000
160.00-140.00						B	2.853	57.296		41.72	0.000	0.000
						C	2.853	57.296		41.72	87.580	0.000
T4	130.00	1.065	6	2.2939	82.438	A	2.853	56.658	24.876	41.80	41.937	0.000
140.00-120.00						B	2.853	56.658		41.80	80.512	0.000
						C	2.853	56.658		41.80	87.146	0.000
T5	110.00	1.016	6	2.2559	82.311	A	2.853	55.923	24.623	41.89	41.528	0.000
120.00-100.00						B	2.853	55.923		41.89	88.788	0.000
						C	2.853	55.923		41.89	86.647	0.000
T6 100.00-80.00	90.00	0.959	5	2.2111	82.162	A	2.853	55.058	24.324	42.00	41.045	0.000
						B	2.853	55.058		42.00	87.999	0.000
						C	2.853	55.058		42.00	86.059	0.000
T7 80.00-60.00	70.00	0.892	5	2.1562	81.979	A	2.853	53.998	23.958	42.14	40.453	0.000
						B	2.853	53.998		42.14	87.032	0.000
						C	2.853	53.998		42.14	85.340	0.000
T8 60.00-40.00	50.00	0.811	4	2.0849	81.741	A	2.853	52.620	23.482	42.33	39.686	0.000
						B	2.853	52.620		42.33	85.776	0.000
						C	2.853	52.620		42.33	84.407	0.000
T9 40.00-20.00	30.00	0.701	4	1.9810	81.395	A	2.853	50.614	22.790	42.62	38.570	0.000
						B	2.853	50.614		42.62	83.949	0.000
						C	2.853	50.614		42.62	83.052	0.000
T10 20.00-0.00	10.00	0.7	4	1.7749	80.708	A	2.853	46.633	21.416	43.28	36.359	0.000
						B	2.853	46.633		43.28	80.329	0.000
						C	2.853	46.633		43.28	80.371	0.000

Tower Pressure - Service

$G_H = 0.850$

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
T1	185.00	1.178	9	37.396	A	1.630	6.150	4.792	61.59	0.375	0.000
190.00-180.00					B	1.630	6.150		61.59	0.000	0.000
					C	1.630	6.150		61.59	15.840	0.000
T2	170.00	1.15	9	74.792	A	2.853	12.348	9.583	63.05	5.633	0.000
180.00-160.00					B	2.853	12.348		63.05	0.000	0.000
					C	2.853	12.348		63.05	31.680	0.000
T3	150.00	1.11	9	74.792	A	2.853	12.348	9.583	63.05	10.050	0.000
160.00-140.00					B	2.853	12.348		63.05	0.000	0.000
					C	2.853	12.348		63.05	31.680	0.000
T4	130.00	1.065	8	74.792	A	2.853	12.348	9.583	63.05	10.050	0.000
140.00-120.00					B	2.853	12.348		63.05	45.711	0.000
					C	2.853	12.348		63.05	31.680	0.000
T5	110.00	1.016	8	74.792	A	2.853	12.348	9.583	63.05	10.050	0.000
120.00-100.00					B	2.853	12.348		63.05	50.790	0.000
					C	2.853	12.348		63.05	31.680	0.000
T6	90.00	0.959	8	74.792	A	2.853	12.348	9.583	63.05	10.050	0.000
100.00-80.00					B	2.853	12.348		63.05	50.790	0.000
					C	2.853	12.348		63.05	31.680	0.000
T7 80.00-60.00	70.00	0.892	7	74.792	A	2.853	12.348	9.583	63.05	10.050	0.000
					B	2.853	12.348		63.05	50.790	0.000
					C	2.853	12.348		63.05	31.680	0.000
T8 60.00-40.00	50.00	0.811	6	74.792	A	2.853	12.348	9.583	63.05	10.050	0.000
					B	2.853	12.348		63.05	50.790	0.000
					C	2.853	12.348		63.05	31.680	0.000
T9 40.00-20.00	30.00	0.701	5	74.792	A	2.853	12.348	9.583	63.05	10.050	0.000
					B	2.853	12.348		63.05	50.790	0.000
					C	2.853	12.348		63.05	31.680	0.000
T10 20.00-0.00	10.00	0.7	5	74.792	A	2.853	12.348	9.583	63.05	10.050	0.000
					B	2.853	12.348		63.05	50.790	0.000
					C	2.853	12.348		63.05	31.680	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	79.60	336.97	A	0.208	2.569	26	1	1	5.172	501.57	50.16	C
190.00-180.00			B	0.208	2.569		1	1	5.172			
			C	0.208	2.569		1	1	5.172			
T2	179.99	658.24	A	0.203	2.585	25	1	1	9.953	1023.53	51.18	C
180.00-160.00		TA 214.38	B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T3	198.80	658.24	A	0.203	2.585	24	1	1	9.953	1041.97	52.10	C
160.00-140.00			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T4	433.70	658.24	A	0.203	2.585	23	1	1	9.953	1671.00	83.55	B
140.00-120.00		TA 214.38	B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T5	459.80	658.24	A	0.203	2.585	22	1	1	9.953	1676.06	83.80	B
120.00-100.00			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T6	459.80	658.24	A	0.203	2.585	21	1	1	9.953	1582.67	79.13	B
100.00-80.00			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T7	459.80	658.24	A	0.203	2.585	19	1	1	9.953	1473.01	73.65	B
80.00-60.00			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T8	459.80	658.24	A	0.203	2.585	18	1	1	9.953	1338.00	66.90	B
60.00-40.00			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T9	459.80	658.24	A	0.203	2.585	15	1	1	9.953	1156.30	57.81	B
40.00-20.00			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T10	459.80	658.24	A	0.203	2.585	15	1	1	9.953	1155.32	57.77	B
20.00-0.00			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
Sum Weight:	3650.89	6689.93								12619.42		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	79.60	336.97	A	0.208	2.569	26	0.8	1	4.846	483.32	48.33	B
190.00-180.00			B	0.208	2.569		0.8	1	4.846			
			C	0.208	2.569		0.8	1	4.846			
T2	179.99	658.24	A	0.203	2.585	25	0.8	1	9.383	992.15	49.61	B
180.00-160.00		TA 214.38	B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T3	198.80	658.24	A	0.203	2.585	24	0.8	1	9.383	1011.69	50.58	B
160.00-140.00			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T4	433.70	658.24	A	0.203	2.585	23	0.8	1	9.383	1641.94	82.10	A
140.00-120.00		TA 214.38	B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T5	459.80	658.24	A	0.203	2.585	22	0.8	1	9.383	1648.36	82.42	A
120.00-100.00			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T6	459.80	658.24	A	0.203	2.585	21	0.8	1	9.383	1556.51	77.83	A
100.00-80.00			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T7	459.80	658.24	A	0.203	2.585	19	0.8	1	9.383	1448.66	72.43	A
80.00-60.00			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T8	459.80	658.24	A	0.203	2.585	18	0.8	1	9.383	1315.88	65.79	A
60.00-40.00			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T9	459.80	658.24	A	0.203	2.585	15	0.8	1	9.383	1137.18	56.86	A
40.00-20.00			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T10	459.80	658.24	A	0.203	2.585	15	0.8	1	9.383	1136.22	56.81	A

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
20.00-0.00			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
Sum Weight:	3650.89	6689.93								12371.91		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	79.60	336.97	A	0.208	2.569	26	0.85	1	4.927	487.88	48.79	B
190.00-180.00			B	0.208	2.569		0.85	1	4.927			
			C	0.208	2.569		0.85	1	4.927			
T2	179.99	658.24	A	0.203	2.585	25	0.85	1	9.526	999.99	50.00	B
180.00-160.00		TA 214.38	B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T3	198.80	658.24	A	0.203	2.585	24	0.85	1	9.526	1019.26	50.96	B
160.00-140.00			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T4	433.70	658.24	A	0.203	2.585	23	0.85	1	9.526	1629.37	81.47	A
140.00-120.00		TA 214.38	B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T5	459.80	658.24	A	0.203	2.585	22	0.85	1	9.526	1622.38	81.12	A
120.00-100.00			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T6	459.80	658.24	A	0.203	2.585	21	0.85	1	9.526	1531.98	76.60	A
100.00-80.00			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T7	459.80	658.24	A	0.203	2.585	19	0.85	1	9.526	1425.84	71.29	A
80.00-60.00			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T8	459.80	658.24	A	0.203	2.585	18	0.85	1	9.526	1295.15	64.76	A
60.00-40.00			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T9	459.80	658.24	A	0.203	2.585	15	0.85	1	9.526	1119.27	55.96	A
40.00-20.00			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T10	459.80	658.24	A	0.203	2.585	15	0.85	1	9.526	1118.32	55.92	A
20.00-0.00			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
Sum Weight:	3650.89	6689.93								12249.45		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	834.36	2074.29	A	0.754	1.789	6	1	1	26.776	325.21	32.52	C

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
190.00-180.00			B	0.754	1.789		1	1	26.776			
			C	0.754	1.789		1	1	26.776			
T2	1907.66	3976.13	A	0.735	1.782	6	1	1	51.234	644.47	32.22	C
180.00-160.00		TA	B	0.735	1.782		1	1	51.234			
		1038.49	C	0.735	1.782		1	1	51.234			
T3	2108.80	3909.50	A	0.729	1.781	6	1	1	50.509	638.76	31.94	C
160.00-140.00			B	0.729	1.781		1	1	50.509			
			C	0.729	1.781		1	1	50.509			
T4	3852.67	3835.10	A	0.722	1.779	6	1	1	49.698	846.41	42.32	B
140.00-120.00		TA	B	0.722	1.779		1	1	49.698			
		1008.03	C	0.722	1.779		1	1	49.698			
T5	3982.63	3750.58	A	0.714	1.778	6	1	1	48.775	811.67*	40.58	B
120.00-100.00			B	0.714	1.778		1	1	48.775			
			C	0.714	1.778		1	1	48.775			
T6	3903.93	3652.29	A	0.705	1.776	5	1	1	47.699	765.05*	38.25	B
100.00-80.00			B	0.705	1.776		1	1	47.699			
			C	0.705	1.776		1	1	47.699			
T7	3808.63	3533.98	A	0.693	1.776	5	1	1	46.400	710.46*	35.52	B
80.00-60.00			B	0.693	1.776		1	1	46.400			
			C	0.693	1.776		1	1	46.400			
T8	3686.49	3383.50	A	0.679	1.776	4	1	1	44.741	642.59	32.13	B
60.00-40.00			B	0.679	1.776		1	1	44.741			
			C	0.679	1.776		1	1	44.741			
T9	3512.29	3171.29	A	0.657	1.78	4	1	1	42.387	545.32	27.27	B
40.00-20.00			B	0.657	1.78		1	1	42.387			
			C	0.657	1.78		1	1	42.387			
T10	3178.98	2773.77	A	0.613	1.796	4	1	1	37.928	526.04	26.30	B
20.00-0.00			B	0.613	1.796		1	1	37.928			
			C	0.613	1.796		1	1	37.928			
Sum Weight:	30776.44	36106.94			*2.1A_g limit					6455.99		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	834.36	2074.29	A	0.754	1.789	6	0.8	1	26.450	322.03	32.20	B
190.00-180.00			B	0.754	1.789		0.8	1	26.450			
			C	0.754	1.789		0.8	1	26.450			
T2	1907.66	3976.13	A	0.735	1.782	6	0.8	1	50.663	639.06	31.95	B
180.00-160.00		TA	B	0.735	1.782		0.8	1	50.663			
		1038.49	C	0.735	1.782		0.8	1	50.663			
T3	2108.80	3909.50	A	0.729	1.781	6	0.8	1	49.938	633.55	31.68	B
160.00-140.00			B	0.729	1.781		0.8	1	49.938			
			C	0.729	1.781		0.8	1	49.938			
T4	3852.67	3835.10	A	0.722	1.779	6	0.8	1	49.127	841.41	42.07	A
140.00-120.00		TA	B	0.722	1.779		0.8	1	49.127			
		1008.03	C	0.722	1.779		0.8	1	49.127			
T5	3982.63	3750.58	A	0.714	1.778	6	0.8	1	48.204	811.67*	40.58	A
120.00-100.00			B	0.714	1.778		0.8	1	48.204			
			C	0.714	1.778		0.8	1	48.204			
T6	3903.93	3652.29	A	0.705	1.776	5	0.8	1	47.128	765.05*	38.25	A

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
100.00-80.00			B	0.705	1.776		0.8	1	47.128			
			C	0.705	1.776		0.8	1	47.128			
T7	3808.63	3533.98	A	0.693	1.776	5	0.8	1	45.829	710.46*	35.52	A
80.00-60.00			B	0.693	1.776		0.8	1	45.829			
			C	0.693	1.776		0.8	1	45.829			
T8	3686.49	3383.50	A	0.679	1.776	4	0.8	1	44.170	638.79	31.94	A
60.00-40.00			B	0.679	1.776		0.8	1	44.170			
			C	0.679	1.776		0.8	1	44.170			
T9	3512.29	3171.29	A	0.657	1.78	4	0.8	1	41.817	542.03	27.10	A
40.00-20.00			B	0.657	1.78		0.8	1	41.817			
			C	0.657	1.78		0.8	1	41.817			
T10	3178.98	2773.77	A	0.613	1.796	4	0.8	1	37.357	522.73	26.14	A
20.00-0.00			B	0.613	1.796		0.8	1	37.357			
			C	0.613	1.796		0.8	1	37.357			
Sum Weight:	30776.44	36106.94			*2.1A_g limit					6426.79		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	834.36	2074.29	A	0.754	1.789	6	0.85	1	26.531	316.59	31.66	B
190.00-180.00			B	0.754	1.789		0.85	1	26.531			
			C	0.754	1.789		0.85	1	26.531			
T2	1907.66	3976.13	A	0.735	1.782	6	0.85	1	50.806	627.28	31.36	B
180.00-160.00		TA	B	0.735	1.782		0.85	1	50.806			
		1038.49	C	0.735	1.782		0.85	1	50.806			
T3	2108.80	3909.50	A	0.729	1.781	6	0.85	1	50.081	621.89	31.09	B
160.00-140.00			B	0.729	1.781		0.85	1	50.081			
			C	0.729	1.781		0.85	1	50.081			
T4	3852.67	3835.10	A	0.722	1.779	6	0.85	1	49.270	835.15	41.76	A
140.00-120.00		TA	B	0.722	1.779		0.85	1	49.270			
		1008.03	C	0.722	1.779		0.85	1	49.270			
T5	3982.63	3750.58	A	0.714	1.778	6	0.85	1	48.347	811.67*	40.58	A
120.00-100.00			B	0.714	1.778		0.85	1	48.347			
			C	0.714	1.778		0.85	1	48.347			
T6	3903.93	3652.29	A	0.705	1.776	5	0.85	1	47.271	765.05*	38.25	A
100.00-80.00			B	0.705	1.776		0.85	1	47.271			
			C	0.705	1.776		0.85	1	47.271			
T7	3808.63	3533.98	A	0.693	1.776	5	0.85	1	45.972	706.19	35.31	A
80.00-60.00			B	0.693	1.776		0.85	1	45.972			
			C	0.693	1.776		0.85	1	45.972			
T8	3686.49	3383.50	A	0.679	1.776	4	0.85	1	44.313	634.25	31.71	A
60.00-40.00			B	0.679	1.776		0.85	1	44.313			
			C	0.679	1.776		0.85	1	44.313			
T9	3512.29	3171.29	A	0.657	1.78	4	0.85	1	41.959	539.42	26.97	A
40.00-20.00			B	0.657	1.78		0.85	1	41.959			
			C	0.657	1.78		0.85	1	41.959			
T10	3178.98	2773.77	A	0.613	1.796	4	0.85	1	37.500	522.76	26.14	A
20.00-0.00			B	0.613	1.796		0.85	1	37.500			
			C	0.613	1.796		0.85	1	37.500			
Sum Weight:	30776.44	36106.94			*2.1A_g					6380.25		

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F lb	w plf	Ctrl. Face
					limit							

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F lb	w plf	Ctrl. Face
T1	79.60	336.97	A	0.208	2.569	9	1	1	5.172	180.57	18.06	C
190.00-180.00			B	0.208	2.569		1	1	5.172			
			C	0.208	2.569		1	1	5.172			
T2	179.99	658.24	A	0.203	2.585	9	1	1	9.953	368.47	18.42	C
180.00-160.00		TA 214.38	B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T3	198.80	658.24	A	0.203	2.585	9	1	1	9.953	375.11	18.76	C
160.00-140.00			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T4	433.70	658.24	A	0.203	2.585	8	1	1	9.953	601.56	30.08	B
140.00-120.00		TA 214.38	B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T5	459.80	658.24	A	0.203	2.585	8	1	1	9.953	603.38	30.17	B
120.00-100.00			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T6	459.80	658.24	A	0.203	2.585	8	1	1	9.953	569.76	28.49	B
100.00-80.00			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T7	459.80	658.24	A	0.203	2.585	7	1	1	9.953	530.28	26.51	B
80.00-60.00			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T8	459.80	658.24	A	0.203	2.585	6	1	1	9.953	481.68	24.08	B
60.00-40.00			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T9	459.80	658.24	A	0.203	2.585	5	1	1	9.953	416.27	20.81	B
40.00-20.00			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T10	459.80	658.24	A	0.203	2.585	5	1	1	9.953	415.92	20.80	B
20.00-0.00			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
Sum Weight:	3650.89	6689.93								4542.99		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F lb	w plf	Ctrl. Face
T1	79.60	336.97	A	0.208	2.569	9	0.8	1	4.846	173.99	17.40	B
190.00-180.00			B	0.208	2.569		0.8	1	4.846			
			C	0.208	2.569		0.8	1	4.846			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T2	179.99	658.24	A	0.203	2.585	9	0.8	1	9.383	357.17	17.86	B
180.00-160.00		TA 214.38	B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T3	198.80	658.24	A	0.203	2.585	9	0.8	1	9.383	364.21	18.21	B
160.00-140.00			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T4	433.70	658.24	A	0.203	2.585	8	0.8	1	9.383	591.10	29.55	A
140.00-120.00		TA 214.38	B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T5	459.80	658.24	A	0.203	2.585	8	0.8	1	9.383	593.41	29.67	A
120.00-100.00			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T6	459.80	658.24	A	0.203	2.585	8	0.8	1	9.383	560.34	28.02	A
100.00-80.00			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T7	459.80	658.24	A	0.203	2.585	7	0.8	1	9.383	521.52	26.08	A
80.00-60.00			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T8	459.80	658.24	A	0.203	2.585	6	0.8	1	9.383	473.72	23.69	A
60.00-40.00			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T9	459.80	658.24	A	0.203	2.585	5	0.8	1	9.383	409.39	20.47	A
40.00-20.00			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T10	459.80	658.24	A	0.203	2.585	5	0.8	1	9.383	409.04	20.45	A
20.00-0.00			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
Sum Weight:	3650.89	6689.93								4453.89		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	79.60	336.97	A	0.208	2.569	9	0.85	1	4.927	175.64	17.56	B
190.00-180.00			B	0.208	2.569		0.85	1	4.927			
			C	0.208	2.569		0.85	1	4.927			
T2	179.99	658.24	A	0.203	2.585	9	0.85	1	9.526	360.00	18.00	B
180.00-160.00		TA 214.38	B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T3	198.80	658.24	A	0.203	2.585	9	0.85	1	9.526	366.93	18.35	B
160.00-140.00			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T4	433.70	658.24	A	0.203	2.585	8	0.85	1	9.526	586.57	29.33	A
140.00-120.00		TA 214.38	B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T5	459.80	658.24	A	0.203	2.585	8	0.85	1	9.526	584.06	29.20	A
120.00-100.00			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T6	459.80	658.24	A	0.203	2.585	8	0.85	1	9.526	551.51	27.58	A
100.00-80.00			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T7	459.80	658.24	A	0.203	2.585	7	0.85	1	9.526	513.30	25.67	A

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
80.00-60.00			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T8	459.80	658.24	A	0.203	2.585	6	0.85	1	9.526	466.25	23.31	A
60.00-40.00			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T9	459.80	658.24	A	0.203	2.585	5	0.85	1	9.526	402.94	20.15	A
40.00-20.00			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T10	459.80	658.24	A	0.203	2.585	5	0.85	1	9.526	402.60	20.13	A
20.00-0.00			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
Sum Weight:	3650.89	6689.93								4409.80		

Discrete Appurtenance Pressures - No Ice $G_H = 0.850$

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft²	C_AA_C Side ft²
Torque Arm Face C	180.0000	0.00	0.00	2.53	161.26	1.133	25	3.54	5.32
Torque Arm Face B	60.0000	0.00	2.19	-1.26	161.26	1.133	25	3.54	5.32
Torque Arm Face A	300.0000	0.00	-2.19	-1.26	161.26	1.133	25	3.54	5.32
Torque Arm Face C	180.0000	0.00	0.00	2.53	121.26	1.044	23	3.54	5.32
Torque Arm Face B	60.0000	0.00	2.19	-1.26	121.26	1.044	23	3.54	5.32
Torque Arm Face A	300.0000	0.00	-2.19	-1.26	121.26	1.044	23	3.54	5.32
Sector Frame Mount	0.0000	465.00	0.00	-3.52	190.00	1.187	26	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	190.00	1.187	26	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	190.00	1.187	26	13.60	13.60
Antel LPA-80080-4CF	0.0000	24.00	0.00	-5.02	190.00	1.187	26	3.02	13.58
Antel LPA-80063/4CF	120.0000	40.00	4.35	2.51	190.00	1.187	26	14.00	6.96
Antel LPA-80063/4CF	240.0000	40.00	-4.35	2.51	190.00	1.187	26	14.00	6.96
Sector Frame Mount	0.0000	465.00	0.00	-3.52	178.00	1.165	25	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	178.00	1.165	25	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	178.00	1.165	25	13.60	13.60
Allgon 7770.00	0.0000	70.00	0.00	-5.02	138.00	1.083	24	11.76	5.86
Allgon 7770.00	120.0000	70.00	4.35	2.51	138.00	1.083	24	11.76	5.86
Allgon 7770.00	240.0000	70.00	-4.35	2.51	138.00	1.083	24	11.76	5.86
Powerwave LGP21401	0.0000	62.00	0.00	-5.02	138.00	1.083	24	3.90	1.06
Powerwave LGP21401	120.0000	62.00	4.35	2.51	138.00	1.083	24	3.90	1.06
Powerwave LGP21401	240.0000	62.00	-4.35	2.51	138.00	1.083	24	3.90	1.06
Powerwave LGP21901	0.0000	50.00	0.00	-5.02	138.00	1.083	24	0.54	0.26
Powerwave LGP21901	120.0000	50.00	4.35	2.51	138.00	1.083	24	0.54	0.26
Powerwave LGP21901	240.0000	50.00	-4.35	2.51	138.00	1.083	24	0.54	0.26
Sector Frame Mount	0.0000	465.00	0.00	-3.52	150.00	1.110	24	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	150.00	1.110	24	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	150.00	1.110	24	13.60	13.60
Lightning Rod	0.0000	40.00	0.00	0.00	190.00	1.187	26	1.00	1.00
KMW AM-X-CD-17-65-00T-RET	0.0000	25.00	0.00	-5.02	138.00	1.083	24	11.31	6.80
KMW AM-X-CD-17-65-00T-RET	120.0000	25.00	4.35	2.51	138.00	1.083	24	11.31	6.80
KMW AM-X-CD-17-65-00T-R	240.0000	25.00	-4.35	2.51	138.00	1.083	24	11.31	6.80

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
ET									
Ericsson RRUS11	0.0000	50.00	0.00	-5.02	138.00	1.083	24	5.98	0.72
Ericsson RRUS11	120.0000	50.00	4.35	2.51	138.00	1.083	24	5.98	0.72
Ericsson RRUS11	240.0000	50.00	-4.35	2.51	138.00	1.083	24	5.98	0.72
Raycap DC6-48-60-18-8F	0.0000	25.00	0.00	-5.02	138.00	1.083	24	1.47	1.47
Sector Frame Mount	0.0000	465.00	0.00	-3.52	170.50	1.151	25	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	170.50	1.151	25	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	170.50	1.151	25	13.60	13.60
RFS APXV9ERR18-C	0.0000	62.00	0.00	-5.02	170.50	1.151	25	8.02	5.81
Alcatel Lucent 1900 RRH	0.0000	60.00	0.00	-5.02	170.50	1.151	25	2.32	2.24
Alcatel Lucent 800 RRH	0.0000	60.00	0.00	-5.02	170.50	1.151	25	2.06	1.36
RFS APXV9ERR18-C	120.0000	62.00	4.35	2.51	170.50	1.151	25	8.02	5.81
Alcatel Lucent 1900 RRH	120.0000	60.00	4.35	2.51	170.50	1.151	25	2.32	2.24
Alcatel Lucent 800 RRH	120.0000	60.00	4.35	2.51	170.50	1.151	25	2.06	1.36
RFS APXV9ERR18-C	240.0000	62.00	-4.35	2.51	170.50	1.151	25	8.02	5.81
Alcatel Lucent 1900 RRH	240.0000	60.00	-4.35	2.51	170.50	1.151	25	2.32	2.24
Alcatel Lucent 800 RRH	240.0000	60.00	-4.35	2.51	170.50	1.151	25	2.06	1.36
Sector Frame Mount	0.0000	465.00	0.00	-3.52	138.00	1.083	24	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	138.00	1.083	24	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	138.00	1.083	24	13.60	13.60
Commscope JAHH-65B-R3B	0.0000	126.60	0.00	-5.02	190.00	1.187	26	18.22	6.88
Alcatel Lucent B66A RRH4x45	0.0000	51.00	0.00	-5.02	190.00	1.187	26	2.54	1.61
Alcatel Lucent B13 RRH4x30	0.0000	57.20	0.00	-5.02	190.00	1.187	26	2.16	1.62
Alcatel Lucent RRH 4T4R B5	0.0000	50.00	0.00	-5.02	190.00	1.187	26	1.28	0.72
RFS DB-C1-12C-24AB-0Z	0.0000	44.00	0.00	-5.02	190.00	1.187	26	2.80	1.17
Commscope JAHH-65B-R3B	120.0000	126.60	4.35	2.51	190.00	1.187	26	18.22	6.88
Alcatel Lucent B66A RRH4x45	120.0000	51.00	4.35	2.51	190.00	1.187	26	2.54	1.61
Alcatel Lucent B13 RRH4x30	120.0000	57.20	4.35	2.51	190.00	1.187	26	2.16	1.62
Alcatel Lucent RRH 4T4R B5	120.0000	50.00	4.35	2.51	190.00	1.187	26	1.28	0.72
RFS DB-C1-12C-24AB-0Z	120.0000	44.00	4.35	2.51	190.00	1.187	26	2.80	1.17
Commscope JAHH-65B-R3B	240.0000	126.60	-4.35	2.51	190.00	1.187	26	18.22	6.88
Alcatel Lucent B66A RRH4x45	240.0000	51.00	-4.35	2.51	190.00	1.187	26	2.54	1.61
Alcatel Lucent B13 RRH4x30	240.0000	57.20	-4.35	2.51	190.00	1.187	26	2.16	1.62
Alcatel Lucent RRH 4T4R B5	240.0000	50.00	-4.35	2.51	190.00	1.187	26	1.28	0.72
	Sum Weight:	9403.40							

Discrete Appurtenance Pressures - With Ice $G_H = 0.850$

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
Torque Arm Face C	180.0000	0.00	0.00	2.53	161.26	1.133	6	6.77	9.91	2.3563
Torque Arm Face B	60.0000	0.00	2.19	-1.26	161.26	1.133	6	6.77	9.91	2.3563
Torque Arm Face A	300.0000	0.00	-2.19	-1.26	161.26	1.133	6	6.77	9.91	2.3563
Torque Arm Face C	180.0000	0.00	0.00	2.53	121.26	1.044	6	6.68	9.79	2.2939
Torque Arm Face B	60.0000	0.00	2.19	-1.26	121.26	1.044	6	6.68	9.79	2.2939
Torque Arm Face A	300.0000	0.00	-2.19	-1.26	121.26	1.044	6	6.68	9.79	2.2939
Sector Frame Mount	0.0000	1108.31	0.00	-3.52	190.00	1.187	6	36.47	36.47	2.3826
Sector Frame Mount	120.0000	1108.31	3.05	1.76	190.00	1.187	6	36.47	36.47	2.3826
Sector Frame Mount	240.0000	1108.31	-3.05	1.76	190.00	1.187	6	36.47	36.47	2.3826
Antel LPA-80080-4CF	0.0000	286.09	0.00	-5.02	190.00	1.187	6	6.88	10.15	2.3826
Antel LPA-80063/4CF	120.0000	286.09	4.35	2.51	190.00	1.187	6	6.88	10.15	2.3826
Antel LPA-80063/4CF	240.0000	286.09	-4.35	2.51	190.00	1.187	6	6.88	10.15	2.3826
Sector Frame Mount	0.0000	1104.12	0.00	-3.52	178.00	1.165	6	36.32	36.32	2.3671
Sector Frame Mount	120.0000	1104.12	3.05	1.76	178.00	1.165	6	36.32	36.32	2.3671
Sector Frame Mount	240.0000	1104.12	-3.05	1.76	178.00	1.165	6	36.32	36.32	2.3671
Allgon 7770.00	0.0000	418.14	0.00	-5.02	138.00	1.083	6	16.19	9.71	2.3076
Allgon 7770.00	120.0000	418.14	4.35	2.51	138.00	1.083	6	16.19	9.71	2.3076
Allgon 7770.00	240.0000	418.14	-4.35	2.51	138.00	1.083	6	16.19	9.71	2.3076
Powerwave LGP21401	0.0000	678.91	0.00	-5.02	138.00	1.083	6	15.18	15.18	2.3076
Powerwave LGP21401	120.0000	678.91	4.35	2.51	138.00	1.083	6	15.18	15.18	2.3076
Powerwave LGP21401	240.0000	678.91	-4.35	2.51	138.00	1.083	6	15.18	15.18	2.3076
Powerwave LGP21901	0.0000	678.91	0.00	-5.02	138.00	1.083	6	15.18	15.18	2.3076
Powerwave LGP21901	120.0000	678.91	4.35	2.51	138.00	1.083	6	15.18	15.18	2.3076
Powerwave LGP21901	240.0000	678.91	-4.35	2.51	138.00	1.083	6	15.18	15.18	2.3076
Sector Frame Mount	0.0000	1093.28	0.00	-3.52	150.00	1.110	6	35.94	35.94	2.3270
Sector Frame Mount	120.0000	1093.28	3.05	1.76	150.00	1.110	6	35.94	35.94	2.3270
Sector Frame Mount	240.0000	1093.28	-3.05	1.76	150.00	1.110	6	35.94	35.94	2.3270
Lightning Rod	0.0000	151.24	0.00	0.00	190.00	1.187	6	5.63	5.63	2.3826
KMW AM-X-CD-17-65-00T-RET	0.0000	209.07	0.00	-5.02	138.00	1.083	6	8.09	4.86	2.3076
KMW AM-X-CD-17-65-00T-RET	120.0000	209.07	4.35	2.51	138.00	1.083	6	8.09	4.86	2.3076
KMW AM-X-CD-17-65-00T-RET	240.0000	209.07	-4.35	2.51	138.00	1.083	6	8.09	4.86	2.3076
Ericsson RRUS11	0.0000	418.14	0.00	-5.02	138.00	1.083	6	16.19	9.71	2.3076
Ericsson RRUS11	120.0000	418.14	4.35	2.51	138.00	1.083	6	16.19	9.71	2.3076
Ericsson RRUS11	240.0000	418.14	-4.35	2.51	138.00	1.083	6	16.19	9.71	2.3076
Raycap DC6-48-60-18-8F	0.0000	209.07	0.00	-5.02	138.00	1.083	6	8.09	4.86	2.3076
Sector Frame Mount	0.0000	1101.38	0.00	-3.52	170.50	1.151	6	36.23	36.23	2.3570
Sector Frame Mount	120.0000	1101.38	3.05	1.76	170.50	1.151	6	36.23	36.23	2.3570
Sector Frame Mount	240.0000	1101.38	-3.05	1.76	170.50	1.151	6	36.23	36.23	2.3570
RFS APXV9ERR18-C	0.0000	156.47	0.00	-5.02	170.50	1.151	6	5.81	4.07	2.3570
Alcatel Lucent 1900 RRH	0.0000	156.47	0.00	-5.02	170.50	1.151	6	5.81	4.07	2.3570
Alcatel Lucent 800 RRH	0.0000	156.47	0.00	-5.02	170.50	1.151	6	5.81	4.07	2.3570
RFS APXV9ERR18-C	120.0000	156.47	4.35	2.51	170.50	1.151	6	5.81	4.07	2.3570
Alcatel Lucent 1900 RRH	120.0000	156.47	4.35	2.51	170.50	1.151	6	5.81	4.07	2.3570
Alcatel Lucent 800 RRH	120.0000	156.47	4.35	2.51	170.50	1.151	6	5.81	4.07	2.3570
RFS APXV9ERR18-C	240.0000	156.47	-4.35	2.51	170.50	1.151	6	5.81	4.07	2.3570
Alcatel Lucent 1900 RRH	240.0000	156.47	-4.35	2.51	170.50	1.151	6	5.81	4.07	2.3570
Alcatel Lucent 800 RRH	240.0000	156.47	-4.35	2.51	170.50	1.151	6	5.81	4.07	2.3570
Sector Frame Mount	0.0000	1088.06	0.00	-3.52	138.00	1.083	6	35.75	35.75	2.3076
Sector Frame Mount	120.0000	1088.06	3.05	1.76	138.00	1.083	6	35.75	35.75	2.3076
Sector Frame Mount	240.0000	1088.06	-3.05	1.76	138.00	1.083	6	35.75	35.75	2.3076
Commscope	0.0000	1293.13	0.00	-5.02	190.00	1.187	6	26.99	15.65	2.3826

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
JAHH-65B-R3B Alcatel Lucent B66A RRH4x45	0.0000	257.33	0.00	-5.02	190.00	1.187	6	4.35	3.28	2.3826
Alcatel Lucent B13 RRH4x30	0.0000	258.29	0.00	-5.02	190.00	1.187	6	3.83	3.14	2.3826
Alcatel Lucent RRH 4T4R B5	0.0000	167.70	0.00	-5.02	190.00	1.187	6	1.60	1.72	2.3826
RFS DB-C1-12C-24AB-0Z	0.0000	407.11	0.00	-5.02	190.00	1.187	6	5.13	2.84	2.3826
Commscope JAHH-65B-R3B	120.0000	1293.13	4.35	2.51	190.00	1.187	6	26.99	15.65	2.3826
Alcatel Lucent B66A RRH4x45	120.0000	257.33	4.35	2.51	190.00	1.187	6	4.35	3.28	2.3826
Alcatel Lucent B13 RRH4x30	120.0000	258.29	4.35	2.51	190.00	1.187	6	3.83	3.14	2.3826
Alcatel Lucent RRH 4T4R B5	120.0000	167.70	4.35	2.51	190.00	1.187	6	1.60	1.72	2.3826
RFS DB-C1-12C-24AB-0Z	120.0000	407.11	4.35	2.51	190.00	1.187	6	5.13	2.84	2.3826
Commscope JAHH-65B-R3B	240.0000	1293.13	-4.35	2.51	190.00	1.187	6	26.99	15.65	2.3826
Alcatel Lucent B66A RRH4x45	240.0000	257.33	-4.35	2.51	190.00	1.187	6	4.35	3.28	2.3826
Alcatel Lucent B13 RRH4x30	240.0000	258.29	-4.35	2.51	190.00	1.187	6	3.83	3.14	2.3826
Alcatel Lucent RRH 4T4R B5	240.0000	167.70	-4.35	2.51	190.00	1.187	6	1.60	1.72	2.3826
	Sum Weight:	33065.32								

Discrete Appurtenance Pressures - Service $G_H = 0.850$

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Torque Arm Face C	180.0000	0.00	0.00	2.53	161.26	1.133	9	3.54	5.32
Torque Arm Face B	60.0000	0.00	2.19	-1.26	161.26	1.133	9	3.54	5.32
Torque Arm Face A	300.0000	0.00	-2.19	-1.26	161.26	1.133	9	3.54	5.32
Torque Arm Face C	180.0000	0.00	0.00	2.53	121.26	1.044	8	3.54	5.32
Torque Arm Face B	60.0000	0.00	2.19	-1.26	121.26	1.044	8	3.54	5.32
Torque Arm Face A	300.0000	0.00	-2.19	-1.26	121.26	1.044	8	3.54	5.32
Sector Frame Mount	0.0000	465.00	0.00	-3.52	190.00	1.187	9	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	190.00	1.187	9	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	190.00	1.187	9	13.60	13.60
Antel LPA-80080-4CF	0.0000	24.00	0.00	-5.02	190.00	1.187	9	3.02	13.58
Antel LPA-80063/4CF	120.0000	40.00	4.35	2.51	190.00	1.187	9	14.00	6.96
Antel LPA-80063/4CF	240.0000	40.00	-4.35	2.51	190.00	1.187	9	14.00	6.96
Sector Frame Mount	0.0000	465.00	0.00	-3.52	178.00	1.165	9	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	178.00	1.165	9	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	178.00	1.165	9	13.60	13.60
Allgon 7770.00	0.0000	70.00	0.00	-5.02	138.00	1.083	8	11.76	5.86
Allgon 7770.00	120.0000	70.00	4.35	2.51	138.00	1.083	8	11.76	5.86
Allgon 7770.00	240.0000	70.00	-4.35	2.51	138.00	1.083	8	11.76	5.86
Powerwave LGP21401	0.0000	62.00	0.00	-5.02	138.00	1.083	8	3.90	1.06
Powerwave LGP21401	120.0000	62.00	4.35	2.51	138.00	1.083	8	3.90	1.06
Powerwave LGP21401	240.0000	62.00	-4.35	2.51	138.00	1.083	8	3.90	1.06
Powerwave LGP21901	0.0000	50.00	0.00	-5.02	138.00	1.083	8	0.54	0.26
Powerwave LGP21901	120.0000	50.00	4.35	2.51	138.00	1.083	8	0.54	0.26

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Powerwave LGP21901	240.0000	50.00	-4.35	2.51	138.00	1.083	8	0.54	0.26
Sector Frame Mount	0.0000	465.00	0.00	-3.52	150.00	1.110	9	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	150.00	1.110	9	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	150.00	1.110	9	13.60	13.60
Lightning Rod	0.0000	40.00	0.00	0.00	190.00	1.187	9	1.00	1.00
KMW AM-X-CD-17-65-00T-RET	0.0000	25.00	0.00	-5.02	138.00	1.083	8	11.31	6.80
KMW AM-X-CD-17-65-00T-RET	120.0000	25.00	4.35	2.51	138.00	1.083	8	11.31	6.80
KMW AM-X-CD-17-65-00T-RET	240.0000	25.00	-4.35	2.51	138.00	1.083	8	11.31	6.80
Ericsson RRUS11	0.0000	50.00	0.00	-5.02	138.00	1.083	8	5.98	0.72
Ericsson RRUS11	120.0000	50.00	4.35	2.51	138.00	1.083	8	5.98	0.72
Ericsson RRUS11	240.0000	50.00	-4.35	2.51	138.00	1.083	8	5.98	0.72
Raycap DC6-48-60-18-8F	0.0000	25.00	0.00	-5.02	138.00	1.083	8	1.47	1.47
Sector Frame Mount	0.0000	465.00	0.00	-3.52	170.50	1.151	9	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	170.50	1.151	9	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	170.50	1.151	9	13.60	13.60
RFS APXV9ERR18-C	0.0000	62.00	0.00	-5.02	170.50	1.151	9	8.02	5.81
Alcatel Lucent 1900 RRH	0.0000	60.00	0.00	-5.02	170.50	1.151	9	2.32	2.24
Alcatel Lucent 800 RRH	0.0000	60.00	0.00	-5.02	170.50	1.151	9	2.06	1.36
RFS APXV9ERR18-C	120.0000	62.00	4.35	2.51	170.50	1.151	9	8.02	5.81
Alcatel Lucent 1900 RRH	120.0000	60.00	4.35	2.51	170.50	1.151	9	2.32	2.24
Alcatel Lucent 800 RRH	120.0000	60.00	4.35	2.51	170.50	1.151	9	2.06	1.36
RFS APXV9ERR18-C	240.0000	62.00	-4.35	2.51	170.50	1.151	9	8.02	5.81
Alcatel Lucent 1900 RRH	240.0000	60.00	-4.35	2.51	170.50	1.151	9	2.32	2.24
Alcatel Lucent 800 RRH	240.0000	60.00	-4.35	2.51	170.50	1.151	9	2.06	1.36
Sector Frame Mount	0.0000	465.00	0.00	-3.52	138.00	1.083	8	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	138.00	1.083	8	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	138.00	1.083	8	13.60	13.60
Commscope JAHH-65B-R3B	0.0000	126.60	0.00	-5.02	190.00	1.187	9	18.22	6.88
Alcatel Lucent B66A RRH4x45	0.0000	51.00	0.00	-5.02	190.00	1.187	9	2.54	1.61
Alcatel Lucent B13 RRH4x30	0.0000	57.20	0.00	-5.02	190.00	1.187	9	2.16	1.62
Alcatel Lucent RRH 4T4R B5	0.0000	50.00	0.00	-5.02	190.00	1.187	9	1.28	0.72
RFS DB-C1-12C-24AB-0Z	0.0000	44.00	0.00	-5.02	190.00	1.187	9	2.80	1.17
Commscope JAHH-65B-R3B	120.0000	126.60	4.35	2.51	190.00	1.187	9	18.22	6.88
Alcatel Lucent B66A RRH4x45	120.0000	51.00	4.35	2.51	190.00	1.187	9	2.54	1.61
Alcatel Lucent B13 RRH4x30	120.0000	57.20	4.35	2.51	190.00	1.187	9	2.16	1.62
Alcatel Lucent RRH 4T4R B5	120.0000	50.00	4.35	2.51	190.00	1.187	9	1.28	0.72
RFS DB-C1-12C-24AB-0Z	120.0000	44.00	4.35	2.51	190.00	1.187	9	2.80	1.17
Commscope JAHH-65B-R3B	240.0000	126.60	-4.35	2.51	190.00	1.187	9	18.22	6.88
Alcatel Lucent B66A RRH4x45	240.0000	51.00	-4.35	2.51	190.00	1.187	9	2.54	1.61

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Alcatel Lucent B13 RRH4x30	240.0000	57.20	-4.35	2.51	190.00	1.187	9	2.16	1.62
Alcatel Lucent RRH 4T4R B5	240.0000	50.00	-4.35	2.51	190.00	1.187	9	1.28	0.72
	Sum Weight:	9403.40							

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice+1.0 Guy
3	1.2 Dead+1.6 Wind 30 deg - No Ice+1.0 Guy
4	1.2 Dead+1.6 Wind 60 deg - No Ice+1.0 Guy
5	1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy
6	1.2 Dead+1.6 Wind 120 deg - No Ice+1.0 Guy
7	1.2 Dead+1.6 Wind 150 deg - No Ice+1.0 Guy
8	1.2 Dead+1.6 Wind 180 deg - No Ice+1.0 Guy
9	1.2 Dead+1.6 Wind 210 deg - No Ice+1.0 Guy
10	1.2 Dead+1.6 Wind 240 deg - No Ice+1.0 Guy
11	1.2 Dead+1.6 Wind 270 deg - No Ice+1.0 Guy
12	1.2 Dead+1.6 Wind 300 deg - No Ice+1.0 Guy
13	1.2 Dead+1.6 Wind 330 deg - No Ice+1.0 Guy
14	1.2 Dead+1.0 Ice+1.0 Temp+Guy
15	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy
16	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy
17	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy
18	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy
19	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy
20	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy
21	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy
22	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy
23	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy
24	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy
25	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy
26	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy
27	Dead+Wind 0 deg - Service+Guy
28	Dead+Wind 30 deg - Service+Guy
29	Dead+Wind 60 deg - Service+Guy
30	Dead+Wind 90 deg - Service+Guy
31	Dead+Wind 120 deg - Service+Guy
32	Dead+Wind 150 deg - Service+Guy
33	Dead+Wind 180 deg - Service+Guy
34	Dead+Wind 210 deg - Service+Guy
35	Dead+Wind 240 deg - Service+Guy
36	Dead+Wind 270 deg - Service+Guy
37	Dead+Wind 300 deg - Service+Guy
38	Dead+Wind 330 deg - Service+Guy

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
T1	190 - 180	Leg	Max Tension	5	0.01	-0.13	0.18
			Max. Compression	25	-18579.48	-63.25	-35.55
			Max. Mx	11	-11115.37	534.57	0.19
			Max. My	2	-12715.02	-6.84	420.03
			Max. Vy	11	-1426.22	534.42	-0.01
			Max. Vx	2	-1121.73	-6.94	420.03
		Diagonal	Max Tension	12	4591.17	0.00	0.00
		Horizontal	Max Tension	25	321.81	0.00	0.00
			Max. Compression	6	-5639.89	0.00	0.00
			Max. Mx	14	293.13	-23.29	0.00
			Max. My	11	245.26	0.00	0.00
			Max. Vy	14	26.62	0.00	0.00
			Max. Vx	11	-0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-2895.25	0.00	0.00
			Max. Mx	14	-2562.30	-23.29	0.00
			Max. My	11	-2811.20	0.00	0.00
			Max. Vy	14	26.62	0.00	0.00
			Max. Vx	11	-0.00	0.00	0.00
		Guy A	Bottom Tension	21	10140.85		
			Top Tension	8	10914.57		
			Top Cable Vert	21	9153.57		
			Top Cable Norm	21	5944.75		
			Top Cable Tan	21	0.15		
			Bot Cable Vert	8	-7982.17		
			Bot Cable Norm	8	6254.74		
			Bot Cable Tan	8	0.19		
		Guy B	Bottom Tension	25	10397.93		
			Top Tension	12	10877.36		
			Top Cable Vert	25	9123.97		
			Top Cable Norm	25	5922.01		
			Top Cable Tan	25	0.05		
			Bot Cable Vert	12	-8186.67		
			Bot Cable Norm	12	6410.57		
			Bot Cable Tan	12	0.59		
		Guy C	Bottom Tension	17	10375.04		
			Top Tension	4	10891.89		
			Top Cable Vert	17	9135.52		
			Top Cable Norm	17	5930.88		
			Top Cable Tan	17	0.20		
			Bot Cable Vert	4	-8168.46		
			Bot Cable Norm	4	6396.69		
			Bot Cable Tan	4	0.82		
		Top Guy Pull-Off	Max Tension	23	709.77	0.00	0.00
			Max. Compression	12	-2584.15	0.00	0.00
			Max. Mx	14	-75.52	-23.29	0.00
			Max. My	11	-933.60	0.00	0.00
			Max. Vy	14	26.62	0.00	0.00
			Max. Vx	11	-0.00	0.00	0.00
T2	180 - 160	Leg	Max Tension	12	1208.31	32.09	12.63
			Max. Compression	19	-38535.32	-155.60	-95.92
			Max. Mx	5	-5923.40	-582.83	-31.55
			Max. My	2	-15058.39	-9.38	573.36
			Max. Vy	5	-1204.02	-582.83	-31.55
			Max. Vx	8	-1265.95	47.37	-558.20
		Diagonal	Max Tension	13	5665.02	0.00	0.00
		Horizontal	Max Tension	19	667.45	0.00	0.00
			Max. Compression	8	-5279.97	0.00	0.00
			Max. Mx	14	613.88	-23.03	0.00
			Max. My	3	572.20	0.00	0.00
			Max. Vy	14	26.33	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Vx	3	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	12	-2970.82	0.00	0.00
			Max. Mx	14	-2445.87	-23.03	0.00
			Max. My	11	-2732.58	0.00	0.00
			Max. Vy	14	26.33	0.00	0.00
			Max. Vx	11	-0.00	0.00	0.00
		Guy A	Bottom Tension	8	11791.71		
			Top Tension	8	11921.38		
			Top Cable Vert	8	8991.63		
			Top Cable Norm	8	7827.52		
			Top Cable Tan	8	3.04		
			Bot Cable Vert	8	-8680.72		
			Bot Cable Norm	8	7980.56		
			Bot Cable Tan	8	3.68		
		Guy B	Bottom Tension	12	11900.49		
			Top Tension	12	12030.17		
			Top Cable Vert	12	9072.62		
			Top Cable Norm	12	7900.16		
			Top Cable Tan	12	2.60		
			Bot Cable Vert	12	-8761.71		
			Bot Cable Norm	12	8053.20		
			Bot Cable Tan	12	4.12		
		Guy C	Bottom Tension	4	11872.45		
			Top Tension	4	12002.12		
			Top Cable Vert	4	9051.64		
			Top Cable Norm	4	7881.55		
			Top Cable Tan	4	3.30		
			Bot Cable Vert	4	-8740.73		
			Bot Cable Norm	4	8034.59		
			Bot Cable Tan	4	3.42		
		Top Guy Pull-Off	Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-7591.02	0.00	0.00
			Max. Mx	14	-3695.65	-23.03	0.00
			Max. My	9	-4568.95	0.00	0.00
			Max. Vy	14	26.33	0.00	0.00
			Max. Vx	9	-0.00	0.00	0.00
		Bottom Guy Pull-Off	Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-3731.17	0.00	0.00
			Max. Mx	14	-1571.32	-23.03	0.00
			Max. My	9	-2188.64	0.00	0.00
			Max. Vy	14	26.33	0.00	0.00
			Max. Vx	9	-0.00	0.00	0.00
		Torque Arm Top	Max Tension	19	12773.12	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	25	11838.16	-40.77	0.00
			Max. My	22	11718.65	0.00	0.04
			Max. Vy	25	34.34	0.00	0.00
			Max. Vx	22	-0.03	0.00	0.00
		Torque Arm Bottom	Max Tension	10	2205.56	0.00	0.00
			Max. Compression	4	-8435.37	0.00	0.00
			Max. Mx	25	-3713.96	-38.09	0.00
			Max. My	3	-4557.67	0.00	-0.00
			Max. Vy	25	43.53	0.00	0.00
			Max. Vx	3	0.00	0.00	0.00
T3	160 - 140	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	16	-40743.51	-69.78	69.22
			Max. Mx	5	-30774.12	362.57	-30.76
			Max. My	8	-24417.86	-7.35	390.03
			Max. Vy	5	-1201.72	-132.17	9.49

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Vx	8	-1265.58	20.14	-84.04
		Diagonal	Max Tension	4	4863.25	0.00	0.00
		Horizontal	Max Tension	16	705.70	0.00	0.00
			Max. Compression	6	-4541.07	0.00	0.00
			Max. Mx	14	663.98	-22.66	0.00
			Max. My	9	556.11	0.00	0.00
			Max. Vy	14	-25.90	0.00	0.00
			Max. Vx	9	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-3195.08	0.00	0.00
			Max. Mx	14	-1599.37	-22.66	0.00
			Max. My	9	-2200.73	0.00	0.00
			Max. Vy	14	-25.90	0.00	0.00
			Max. Vx	9	-0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-2385.74	0.00	0.00
			Max. Mx	14	-1501.10	-22.66	0.00
			Max. My	9	-2166.64	0.00	0.00
			Max. Vy	14	-25.90	0.00	0.00
			Max. Vx	9	-0.00	0.00	0.00
T4	140 - 120	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	23	-59744.19	1.01	-6.28
			Max. Mx	10	-22190.85	752.54	-591.54
			Max. My	2	-19287.18	-127.37	920.07
			Max. Vy	10	1577.43	752.17	-592.27
			Max. Vx	2	1974.30	-127.37	920.07
		Diagonal	Max Tension	3	4683.87	0.00	0.00
		Horizontal	Max Tension	23	1034.80	0.00	0.00
			Max. Compression	8	-4460.17	0.00	0.00
			Max. Mx	14	958.01	-22.24	0.00
			Max. My	9	749.61	0.00	0.00
			Max. Vy	14	25.42	0.00	0.00
			Max. Vx	9	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-2308.95	0.00	0.00
			Max. Mx	14	-1414.74	-22.24	0.00
			Max. My	9	-2154.20	0.00	0.00
			Max. Vy	14	25.42	0.00	0.00
			Max. Vx	9	-0.00	0.00	0.00
		Guy A	Bottom Tension	21	9926.67		
			Top Tension	8	10231.44		
			Top Cable Vert	21	7047.93		
			Top Cable Norm	21	7416.80		
			Top Cable Tan	21	2.90		
			Bot Cable Vert	8	-6302.94		
			Bot Cable Norm	8	7668.88		
			Bot Cable Tan	8	2.16		
		Guy B	Bottom Tension	25	9757.59		
			Top Tension	12	10148.17		
			Top Cable Vert	25	6994.54		
			Top Cable Norm	25	7352.66		
			Top Cable Tan	25	2.67		
			Bot Cable Vert	12	-6194.52		
			Bot Cable Norm	12	7539.12		
			Bot Cable Tan	12	2.36		
		Guy C	Bottom Tension	17	9908.18		
			Top Tension	4	10237.74		
			Top Cable Vert	17	7051.97		
			Top Cable Norm	17	7421.65		
			Top Cable Tan	17	2.83		
			Bot Cable Vert	4	-6291.08		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Bot Cable Norm	4	7654.70		
			Bot Cable Tan	4	2.20		
		Top Guy Pull-Off	Max Tension	1	0.00	0.00	0.00
			Max. Compression	2	-6201.84	0.00	0.00
			Max. Mx	14	-1849.15	-22.24	0.00
			Max. My	9	-3752.07	0.00	0.00
			Max. Vy	14	25.42	0.00	0.00
			Max. Vx	9	-0.00	0.00	0.00
		Bottom Guy Pull-Off	Max Tension	4	115.10	0.00	0.00
			Max. Compression	6	-3900.01	0.00	0.00
			Max. Mx	14	-680.99	-22.24	0.00
			Max. My	9	-1820.28	0.00	0.00
			Max. Vy	14	25.42	0.00	0.00
			Max. Vx	9	-0.00	0.00	0.00
		Torque Arm Top	Max Tension	19	9834.62	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	21	9250.41	-39.58	0.00
			Max. My	16	8809.62	0.00	-0.04
			Max. Vy	21	-33.34	0.00	0.00
			Max. Vx	16	0.04	0.00	0.00
		Torque Arm Bottom	Max Tension	10	3429.47	0.00	0.00
			Max. Compression	7	-6553.19	0.00	0.00
			Max. Mx	21	-1804.76	-37.05	0.00
			Max. My	22	-1874.30	0.00	0.00
			Max. Vy	21	42.35	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
T5	120 - 100	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	16	-59647.20	23.40	-11.02
			Max. Mx	4	-35072.29	466.04	-352.55
			Max. My	8	-34520.79	-66.69	567.81
			Max. Vy	10	1577.55	160.62	-102.24
			Max. Vx	2	1973.92	-6.22	180.67
		Diagonal	Max Tension	10	5230.73	0.00	0.00
		Horizontal	Max Tension	16	1033.12	0.00	0.00
			Max. Compression	6	-3727.72	0.00	0.00
			Max. Mx	14	1002.72	-21.77	0.00
			Max. My	22	1021.64	0.00	0.00
			Max. Vy	14	24.88	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-3101.52	0.00	0.00
			Max. Mx	14	-683.74	-21.77	0.00
			Max. My	9	-1813.27	0.00	0.00
			Max. Vy	14	24.88	0.00	0.00
			Max. Vx	9	-0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-2165.68	0.00	0.00
			Max. Mx	14	-620.71	-21.77	0.00
			Max. My	16	-482.77	0.00	-0.00
			Max. Vy	14	24.88	0.00	0.00
			Max. Vx	16	0.00	0.00	0.00
T6	100 - 80	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-63051.02	-68.96	-36.97
			Max. Mx	10	-25492.25	-332.59	22.35
			Max. My	9	-27634.88	-163.14	336.25
			Max. Vy	10	810.35	-28.84	19.29
			Max. Vx	2	894.15	15.52	-0.19
		Diagonal	Max Tension	10	3890.24	0.00	0.00
		Horizontal	Max Tension	25	1092.08	0.00	0.00
			Max. Compression	8	-3819.09	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Mx	14	1045.90	-21.22	0.00
			Max. My	3	658.15	0.00	0.00
			Max. Vy	14	24.25	0.00	0.00
			Max. Vx	3	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-1947.50	0.00	0.00
			Max. Mx	14	-580.08	-21.22	0.00
			Max. My	16	-569.25	0.00	-0.00
			Max. Vy	14	24.25	0.00	0.00
			Max. Vx	16	0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	2	-1862.27	0.00	0.00
			Max. Mx	14	-510.25	-21.22	0.00
			Max. My	3	-1800.14	0.00	0.00
			Max. Vy	14	24.25	0.00	0.00
			Max. Vx	3	-0.00	0.00	0.00
T7	80 - 60	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	19	-67347.70	-10.44	-7.03
			Max. Mx	4	-25793.47	-781.28	317.02
			Max. My	8	-25690.44	-107.48	-836.27
			Max. Vy	4	-1748.06	-781.28	317.02
			Max. Vx	8	-1853.52	-107.48	-836.27
		Diagonal	Max Tension	3	4296.66	0.00	0.00
		Horizontal	Max Tension	19	1166.50	0.00	0.00
			Max. Compression	2	-3855.94	0.00	0.00
			Max. Mx	14	1142.19	-20.55	0.00
			Max. My	3	638.74	0.00	0.00
			Max. Vy	14	-23.49	0.00	0.00
			Max. Vx	3	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-2114.89	0.00	0.00
			Max. Mx	14	-470.40	-20.55	0.00
			Max. My	3	-1797.86	0.00	0.00
			Max. Vy	14	-23.49	0.00	0.00
			Max. Vx	3	-0.00	0.00	0.00
		Guy A	Bottom Tension	8	10531.51		
			Top Tension	8	10571.87		
			Top Cable Vert	8	4161.61		
			Top Cable Norm	8	9718.31		
			Top Cable Tan	8	1.29		
			Bot Cable Vert	8	-4032.37		
			Bot Cable Norm	8	9728.96		
			Bot Cable Tan	8	1.29		
		Guy B	Bottom Tension	12	10499.66		
			Top Tension	12	10540.02		
			Top Cable Vert	12	4149.27		
			Top Cable Norm	12	9688.94		
			Top Cable Tan	12	0.22		
			Bot Cable Vert	12	-4020.03		
			Bot Cable Norm	12	9699.60		
			Bot Cable Tan	12	0.22		
		Guy C	Bottom Tension	4	10507.90		
			Top Tension	4	10548.26		
			Top Cable Vert	4	4152.46		
			Top Cable Norm	4	9696.54		
			Top Cable Tan	4	1.32		
			Bot Cable Vert	4	-4023.22		
			Bot Cable Norm	4	9707.20		
			Bot Cable Tan	4	1.32		
		Top Guy Pull-Off	Max Tension	19	4010.79	0.00	0.00
			Max. Compression	8	-824.54	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Mx	14	3289.85	-20.55	0.00
			Max. My	3	648.64	0.00	0.00
			Max. Vy	14	-23.49	0.00	0.00
			Max. Vx	3	-0.00	0.00	0.00
T8	60 - 40	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-72782.38	-11.23	-6.26
			Max. Mx	4	-25794.05	528.93	-191.38
			Max. My	8	-25691.23	90.62	553.68
			Max. Vy	4	-1748.97	-126.41	63.26
			Max. Vx	8	-1855.54	-8.19	-141.72
		Diagonal	Max Tension	4	4185.45	0.00	0.00
		Horizontal	Max Tension	25	1260.63	0.00	0.00
			Max. Compression	12	-3523.24	0.00	0.00
			Max. Mx	14	1186.68	-19.70	0.00
			Max. My	3	736.25	0.00	0.00
			Max. Vy	14	22.52	0.00	0.00
			Max. Vx	3	-0.00	0.00	0.00
		Top Girt	Max Tension	17	222.82	0.00	0.00
			Max. Compression	6	-1828.84	0.00	0.00
			Max. Mx	14	89.23	-19.70	0.00
			Max. My	3	-1511.00	0.00	0.00
			Max. Vy	14	22.52	0.00	0.00
			Max. Vx	3	-0.00	0.00	0.00
		Bottom Girt	Max Tension	19	90.11	0.00	0.00
			Max. Compression	8	-2090.64	0.00	0.00
			Max. Mx	14	-144.89	-19.70	0.00
			Max. My	3	-1656.49	0.00	0.00
			Max. Vy	14	22.52	0.00	0.00
			Max. Vx	3	-0.00	0.00	0.00
T9	40 - 20	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-75839.36	-81.49	-45.59
			Max. Mx	5	-22388.01	235.72	10.94
			Max. My	8	-29342.36	19.02	242.98
			Max. Vy	4	-532.02	11.12	-7.44
			Max. Vx	8	-553.43	20.43	36.01
		Diagonal	Max Tension	10	3145.10	0.00	0.00
		Horizontal	Max Tension	25	1313.58	0.00	0.00
			Max. Compression	12	-3719.28	0.00	0.00
			Max. Mx	14	1223.85	-18.50	0.00
			Max. My	3	787.23	0.00	0.00
			Max. Vy	14	21.14	0.00	0.00
			Max. Vx	3	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	2	-1758.12	0.00	0.00
			Max. Mx	14	-104.60	-18.50	0.00
			Max. My	3	-1684.03	0.00	0.00
			Max. Vy	14	21.14	0.00	0.00
			Max. Vx	3	-0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-1822.08	0.00	0.00
			Max. Mx	14	-73.02	-18.50	0.00
			Max. My	3	-1646.25	0.00	0.00
			Max. Vy	14	21.14	0.00	0.00
			Max. Vx	3	-0.00	0.00	0.00
T10	20 - 0	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-75904.01	-31.18	-17.60
			Max. Mx	11	-32740.55	1199.65	545.51
			Max. My	8	-32943.69	-19.47	-1362.12
			Max. Vy	11	-3234.57	1199.65	545.51
			Max. Vx	8	3699.89	-19.47	-1362.12
		Diagonal	Max Tension	3	3545.40	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
		Horizontal	Max Tension	25	1314.70	0.00	0.00
			Max. Compression	8	-3577.58	0.00	0.00
			Max. Mx	14	1258.04	-16.23	0.00
			Max. My	3	771.42	0.00	0.00
			Max. Vy	14	18.55	0.00	0.00
			Max. Vx	3	-0.00	0.00	0.00
		Top Girt	Max Tension	22	66.25	0.00	0.00
			Max. Compression	12	-2040.03	0.00	0.00
			Max. Mx	14	-40.73	-16.23	0.00
			Max. My	3	-1650.44	0.00	0.00
			Max. Vy	14	18.55	0.00	0.00
			Max. Vx	3	-0.00	0.00	0.00
		Bottom Girt	Max Tension	25	1064.58	0.00	0.00
			Max. Compression	8	-353.18	0.00	0.00
			Max. Mx	14	1012.70	-16.23	0.00
			Max. My	3	-332.46	0.00	0.00
			Max. Vy	14	18.55	0.00	0.00
			Max. Vx	3	-0.00	0.00	0.00
		Base Beam	Max Tension	1	0.00	0.00	0.00
			Max. Compression	12	-3711.25	1372.00	-0.08
			Max. Mx	19	-73346.72	-147317.74	-457.71
			Max. My	11	-32426.86	-64591.94	-1230.06
			Max. Vy	15	-73360.43	-147284.81	-556.17
			Max. Vx	11	-600.21	-64591.94	-1230.06

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Guy C @ 145 ft Elev 0 ft Azimuth 240 deg	Max. Vert	10	-5011.90	-4221.69	2444.27
	Max. H_x	10	-5011.90	-4221.69	2444.27
	Max. H_z	4	-42003.76	-40867.17	23582.35
	Min. Vert	4	-42003.76	-40867.17	23582.35
	Min. H_x	4	-42003.76	-40867.17	23582.35
	Min. H_z	10	-5011.90	-4221.69	2444.27
Guy B @ 145 ft Elev 0 ft Azimuth 120 deg	Max. Vert	6	-4958.91	4181.00	2411.67
	Max. H_x	12	-41999.22	40844.88	23584.46
	Max. H_z	12	-41999.22	40844.88	23584.46
	Min. Vert	12	-41999.22	40844.88	23584.46
	Min. H_x	6	-4958.91	4181.00	2411.67
	Min. H_z	6	-4958.91	4181.00	2411.67
Guy A @ 145 ft Elev 0 ft Azimuth 0 deg	Max. Vert	2	-5228.49	6.55	-5039.28
	Max. H_x	24	-29024.92	1203.43	-37011.83
	Max. H_z	2	-5228.49	6.55	-5039.28
	Min. Vert	8	-41676.38	-10.75	-46934.75
	Min. H_x	18	-29043.73	-1205.01	-37029.49
	Min. H_z	8	-41676.38	-10.75	-46934.75
Mast	Max. Vert	19	219823.91	-176.97	-103.74
	Max. H_x	11	97322.56	2149.55	27.24
	Max. H_z	2	95958.58	27.98	2233.64

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
	Max. M_x	1	0.00	25.45	14.08
	Max. M_z	1	0.00	25.45	14.08
	Max. Torsion	1	0.00	25.45	14.08
	Min. Vert	1	89118.13	25.45	14.08
	Min. H_x	5	97345.50	-2087.81	26.44
	Min. H_z	8	97790.54	27.55	-2132.99
	Min. M_x	1	0.00	25.45	14.08
	Min. M_z	1	0.00	25.45	14.08
	Min. Torsion	1	0.00	25.45	14.08

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	89118.13	-25.45	-14.08	0.00	0.00	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice+1.0 Guy	95958.58	-27.98	-2233.64	0.00	0.00	0.00
1.2 Dead+1.6 Wind 30 deg - No Ice+1.0 Guy	97140.45	1043.87	-1831.34	0.00	0.00	0.00
1.2 Dead+1.6 Wind 60 deg - No Ice+1.0 Guy	97893.38	1839.46	-1086.70	0.00	0.00	0.00
1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy	97345.50	2087.81	-26.44	0.00	0.00	0.00
1.2 Dead+1.6 Wind 120 deg - No Ice+1.0 Guy	96173.90	1875.53	1079.68	0.00	0.00	0.00
1.2 Dead+1.6 Wind 150 deg - No Ice+1.0 Guy	97213.92	1018.42	1816.28	0.00	0.00	0.00
1.2 Dead+1.6 Wind 180 deg - No Ice+1.0 Guy	97790.54	-27.55	2132.99	0.00	0.00	0.00
1.2 Dead+1.6 Wind 210 deg - No Ice+1.0 Guy	97201.37	-1073.88	1818.33	0.00	0.00	0.00
1.2 Dead+1.6 Wind 240 deg - No Ice+1.0 Guy	96148.00	-1933.35	1081.85	0.00	0.00	0.00
1.2 Dead+1.6 Wind 270 deg - No Ice+1.0 Guy	97322.56	-2149.55	-27.24	0.00	0.00	0.00
1.2 Dead+1.6 Wind 300 deg - No Ice+1.0 Guy	97886.28	-1900.01	-1090.51	0.00	0.00	0.00
1.2 Dead+1.6 Wind 330 deg - No Ice+1.0 Guy	97128.29	-1101.33	-1835.35	0.00	0.00	0.00
1.2 Dead+1.0 Ice+1.0 Temp+Guy	217822.27	-152.68	-84.55	0.00	0.00	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy	219794.94	-149.56	-461.75	0.00	0.00	0.00
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy	219169.41	44.25	-413.55	0.00	0.00	0.00
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy	218606.19	192.77	-280.86	0.00	0.00	0.00
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy	219181.29	232.08	-85.59	0.00	0.00	0.00
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy	219823.91	176.97	103.74	0.00	0.00	0.00
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy	219183.73	38.36	249.76	0.00	0.00	0.00
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy	218608.47	-150.93	313.55	0.00	0.00	0.00
1.2 Dead+1.0 Wind 210	219168.77	-340.50	251.61	0.00	0.00	0.00

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
deg+1.0 Ice+1.0 Temp+1.0 Guy 1.2 Dead+1.0 Wind 240	219791.36	-479.38	108.18	0.00	0.00	0.00
deg+1.0 Ice+1.0 Temp+1.0 Guy 1.2 Dead+1.0 Wind 270	219146.32	-537.86	-85.35	0.00	0.00	0.00
deg+1.0 Ice+1.0 Temp+1.0 Guy 1.2 Dead+1.0 Wind 300	218575.37	-497.66	-282.67	0.00	0.00	0.00
deg+1.0 Ice+1.0 Temp+1.0 Guy 1.2 Dead+1.0 Wind 330	219149.21	-346.67	-415.66	0.00	0.00	0.00
deg+1.0 Ice+1.0 Temp+1.0 Guy Dead+Wind 0 deg - Service+Guy	89291.30	-25.63	-515.34	0.00	0.00	0.00
Dead+Wind 30 deg - Service+Guy	89250.09	216.96	-433.55	0.00	0.00	0.00
Dead+Wind 60 deg - Service+Guy	89210.66	401.99	-260.06	0.00	0.00	0.00
Dead+Wind 90 deg - Service+Guy	89248.10	460.17	-13.63	0.00	0.00	0.00
Dead+Wind 120 deg - Service+Guy	89289.16	409.84	236.55	0.00	0.00	0.00
Dead+Wind 150 deg - Service+Guy	89248.59	217.74	405.07	0.00	0.00	0.00
Dead+Wind 180 deg - Service+Guy	89210.81	-25.42	478.08	0.00	0.00	0.00
Dead+Wind 210 deg - Service+Guy	89249.17	-268.63	405.02	0.00	0.00	0.00
Dead+Wind 240 deg - Service+Guy	89289.69	-460.91	236.46	0.00	0.00	0.00
Dead+Wind 270 deg - Service+Guy	89248.29	-511.38	-13.81	0.00	0.00	0.00
Dead+Wind 300 deg - Service+Guy	89210.41	-453.26	-260.31	0.00	0.00	0.00
Dead+Wind 330 deg - Service+Guy	89249.70	-268.22	-433.75	0.00	0.00	0.00

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
1	0.00	-22331.48	0.00	0.00	22331.48	0.00	0.000%
2	-19.84	-26486.15	-34838.60	18.88	26484.04	34736.66	0.233%
3	17338.50	-26280.33	-29642.46	-17360.39	26279.00	29556.05	0.206%
4	30226.78	-26074.50	-17204.11	-30223.84	26074.55	17200.91	0.010%
5	34711.37	-26280.33	19.84	-34648.55	26278.84	38.20	0.196%
6	30589.58	-26486.15	17436.48	-30456.93	26482.85	-17359.66	0.348%
7	17372.86	-26280.33	29662.30	-17290.36	26278.91	-29637.13	0.199%
8	19.84	-26074.50	34442.58	-20.23	26074.57	-34438.86	0.009%
9	-17338.50	-26280.33	29642.46	17255.07	26278.94	-29618.13	0.201%
10	-30569.74	-26486.15	17402.12	30435.97	26482.86	-17326.39	0.349%
11	-34711.37	-26280.33	-19.84	34649.14	26278.87	77.48	0.195%
12	-30246.62	-26074.50	-17238.47	30243.39	26074.55	17235.73	0.010%
13	-17372.86	-26280.33	-29662.30	17393.42	26279.00	29577.03	0.203%
14	0.00	-132197.64	0.00	1.28	132197.64	0.69	0.001%
15	-4.37	-132465.44	-15162.91	4.32	132465.02	15115.64	0.035%
16	7526.27	-132197.64	-13055.86	-7526.18	132197.28	13006.82	0.037%
17	13088.38	-131929.84	-7563.07	-13060.04	131929.54	7547.51	0.024%
18	15060.11	-132197.64	4.37	-15017.02	132197.27	20.62	0.037%
19	13118.04	-132465.44	7585.24	-13076.90	132465.03	-7561.33	0.036%

Load Comb.	Sum of Applied Forces PX lb	PY lb	PZ lb	Sum of Reactions PX lb	PY lb	PZ lb	% Error
20	7533.84	-132197.64	13060.23	-7490.57	132197.27	-13035.38	0.038%
21	4.37	-131929.84	15133.70	-3.28	131929.54	-15101.40	0.024%
22	-7526.27	-132197.64	13055.86	7484.28	132197.28	-13031.38	0.037%
23	-13113.67	-132465.44	7577.67	13073.09	132465.03	-7554.28	0.035%
24	-15060.11	-132197.64	-4.37	15017.99	132197.29	28.65	0.037%
25	-13092.75	-131929.84	-7570.63	13065.61	131929.55	7554.56	0.024%
26	-7533.84	-132197.64	-13060.23	7533.94	132197.28	13011.03	0.037%
27	-4.46	-22377.79	-7838.68	4.46	22377.79	7836.28	0.010%
28	3901.16	-22331.48	-6669.55	-3900.79	22331.48	6667.84	0.007%
29	6801.03	-22285.17	-3870.92	-6800.03	22285.17	3870.32	0.005%
30	7810.06	-22331.48	4.46	-7808.42	22331.48	-3.96	0.007%
31	6882.65	-22377.79	3923.21	-6880.62	22377.79	-3922.02	0.010%
32	3908.89	-22331.48	6674.02	-3907.64	22331.48	-6672.83	0.007%
33	4.46	-22285.17	7749.58	-4.47	22285.17	-7748.40	0.005%
34	-3901.16	-22331.48	6669.55	3899.90	22331.48	-6668.37	0.007%
35	-6878.19	-22377.79	3915.48	6876.15	22377.79	-3914.29	0.010%
36	-7810.06	-22331.48	-4.46	7808.42	22331.48	4.97	0.007%
37	-6805.49	-22285.17	-3878.66	6804.50	22285.17	3878.06	0.005%
38	-3908.89	-22331.48	-6674.02	3908.52	22331.48	6672.31	0.007%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	13	0.00000001	0.00000001
2	Yes	14	0.00100347	0.00060622
3	Yes	13	0.00104326	0.00040466
4	Yes	13	0.00030798	0.00017789
5	Yes	13	0.00110861	0.00039250
6	Yes	13	0.00145799	0.00087028
7	Yes	13	0.00107583	0.00038851
8	Yes	13	0.00030673	0.00017753
9	Yes	13	0.00106624	0.00039718
10	Yes	13	0.00146495	0.00087896
11	Yes	13	0.00109224	0.00038997
12	Yes	13	0.00030299	0.00015836
13	Yes	13	0.00103397	0.00039456
14	Yes	13	0.00000001	0.00000315
15	Yes	16	0.00111934	0.00016938
16	Yes	15	0.00121930	0.00017474
17	Yes	14	0.00119991	0.00014426
18	Yes	15	0.00122943	0.00016882
19	Yes	16	0.00111890	0.00016490
20	Yes	15	0.00123040	0.00016882
21	Yes	14	0.00119626	0.00014328
22	Yes	15	0.00120439	0.00017285
23	Yes	16	0.00110650	0.00016737
24	Yes	15	0.00121012	0.00017136
25	Yes	14	0.00119541	0.00014771
26	Yes	15	0.00122662	0.00017386
27	Yes	13	0.00000001	0.00003160
28	Yes	13	0.00000001	0.00002791
29	Yes	13	0.00000001	0.00002563
30	Yes	13	0.00000001	0.00002601
31	Yes	13	0.00000001	0.00003022
32	Yes	13	0.00000001	0.00002663

33	Yes	13	0.00000001	0.00002603
34	Yes	13	0.00000001	0.00002780
35	Yes	13	0.00000001	0.00003110
36	Yes	13	0.00000001	0.00002699
37	Yes	13	0.00000001	0.00002477
38	Yes	13	0.00000001	0.00002682

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	190 - 180	1.145	30	0.0451	0.0230
T2	180 - 160	1.044	37	0.0490	0.0157
T3	160 - 140	0.850	29	0.0339	0.0157
T4	140 - 120	0.766	29	0.0226	0.0324
T5	120 - 100	0.685	33	0.0063	0.0460
T6	100 - 80	0.713	27	0.0026	0.0943
T7	80 - 60	0.682	27	0.0190	0.1319
T8	60 - 40	0.577	27	0.0208	0.1590
T9	40 - 20	0.502	27	0.0299	0.1802
T10	20 - 0	0.315	27	0.0613	0.1925

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
190.00	Sector Frame Mount	30	1.145	0.0451	0.0230	133823
189.63	Guy	30	1.141	0.0453	0.0227	133823
178.00	Sector Frame Mount	37	1.023	0.0486	0.0144	114030
170.50	Sector Frame Mount	29	0.942	0.0438	0.0123	71776
160.38	Guy	29	0.853	0.0342	0.0155	25984
150.00	Sector Frame Mount	29	0.802	0.0279	0.0241	85486
138.00	(2) Allgon 7770.00	29	0.758	0.0211	0.0335	66025
120.38	Guy	33	0.685	0.0066	0.0454	24968
60.38	Guy	27	0.579	0.0208	0.1586	53008

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	190 - 180	6.037	5	0.2727	0.1157
T2	180 - 160	5.434	5	0.2854	0.0821
T3	160 - 140	4.286	12	0.2039	0.1028
T4	140 - 120	3.765	4	0.1378	0.1802
T5	120 - 100	3.306	8	0.0482	0.2426
T6	100 - 80	3.357	8	0.0311	0.4560
T7	80 - 60	3.252	2	0.0945	0.6214
T8	60 - 40	2.856	2	0.1002	0.7400

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T9	40 - 20	2.493	2	0.1493	0.8342
T10	20 - 0	1.551	2	0.3037	0.8893

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
190.00	Sector Frame Mount	5	6.037	0.2727	0.1157	32675
189.63	Guy	5	6.015	0.2736	0.1143	32675
178.00	Sector Frame Mount	5	5.309	0.2826	0.0835	30253
170.50	Sector Frame Mount	5	4.836	0.2563	0.0872	13223
160.38	Guy	12	4.301	0.2056	0.1018	5205
150.00	Sector Frame Mount	4	3.992	0.1689	0.1414	13770
138.00	(2) Allgon 7770.00	4	3.713	0.1303	0.1853	16926
120.38	Guy	8	3.310	0.0498	0.2401	4788
60.38	Guy	2	2.863	0.1003	0.7379	11762

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	190	Leg	A325N	0.7500	4	351.24	29820.60	0.012 ✔	1	Bolt Tension
T2	180	Leg	A325N	0.7500	4	1173.51	29820.60	0.039 ✔	1	Bolt Tension
		Torque Arm Top@160.375	A325N	0.7500	2	6386.56	17892.40	0.357 ✔	1	Bolt Shear
		Torque Arm Bottom@160.375	A325N	0.7500	2	4217.68	17892.40	0.236 ✔	1	Bolt Shear
T3	160	Leg	A325N	0.7500	4	2970.77	29820.60	0.100 ✔	1	Bolt Tension
T4	140	Leg	A325N	0.7500	4	3203.41	29820.60	0.107 ✔	1	Bolt Tension
		Torque Arm Top@120.375	A325N	0.7500	2	4917.31	17892.40	0.275 ✔	1	Bolt Shear
		Torque Arm Bottom@120.375	A325N	0.7500	2	3276.59	17892.40	0.183 ✔	1	Bolt Shear
T5	120	Leg	A325N	0.7500	4	4898.11	29820.60	0.164 ✔	1	Bolt Tension
T6	100	Leg	A325N	0.7500	4	4926.86	29820.60	0.165 ✔	1	Bolt Tension
T7	80	Leg	A325N	0.7500	4	5183.77	29820.60	0.174 ✔	1	Bolt Tension
T8	60	Leg	A325N	0.7500	4	5614.73	29820.60	0.188 ✔	1	Bolt Tension
T9	40	Leg	A325N	0.7500	4	6067.53	29820.60	0.203 ✔	1	Bolt Tension
T10	20	Leg	A325N	0.7500	4	6293.71	29820.60	0.211 ✔	1	Bolt Tension

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension lb	Breaking Load lb	Actual T_u lb	Allowable ϕT_n lb	Required S.F.	Actual S.F.
T1	189.63 (A) (615)	9/16 EHS	5250.00	35000.04	10914.60	21000.00	1.000	1.924 ✔
	189.63 (B) (614)	9/16 EHS	5250.00	35000.04	10877.40	21000.00	1.000	1.931 ✔
	189.63 (C) (613)	9/16 EHS	5250.00	35000.04	10891.90	21000.00	1.000	1.928 ✔
T2	160.38 (A) (586)	5/8 EHS	6360.00	42399.99	11921.40	25440.00	1.000	2.134 ✔
	160.38 (A) (587)	5/8 EHS	6360.00	42399.99	11863.80	25440.00	1.000	2.144 ✔
	160.38 (B) (580)	5/8 EHS	6360.00	42399.99	11929.20	25440.00	1.000	2.133 ✔
	160.38 (B) (581)	5/8 EHS	6360.00	42399.99	12030.20	25440.00	1.000	2.115 ✔
	160.38 (C) (574)	5/8 EHS	6360.00	42399.99	11952.30	25440.00	1.000	2.128 ✔
	160.38 (C) (575)	5/8 EHS	6360.00	42399.99	12002.10	25440.00	1.000	2.120 ✔
T4	120.38 (A) (604)	9/16 EHS	5250.00	35000.04	10231.40	21000.00	1.000	2.052 ✔
	120.38 (A) (605)	9/16 EHS	5250.00	35000.04	10179.00	21000.00	1.000	2.063 ✔
	120.38 (B) (598)	9/16 EHS	5250.00	35000.04	10134.90	21000.00	1.000	2.072 ✔
	120.38 (B) (599)	9/16 EHS	5250.00	35000.04	10148.20	21000.00	1.000	2.069 ✔
	120.38 (C) (592)	9/16 EHS	5250.00	35000.04	10195.90	21000.00	1.000	2.060 ✔
	120.38 (C) (593)	9/16 EHS	5250.00	35000.04	10237.70	21000.00	1.000	2.051 ✔
T7	60.38 (A) (612)	9/16 EHS	5250.00	35000.04	10571.90	21000.00	1.000	1.986 ✔
	60.38 (B) (611)	9/16 EHS	5250.00	35000.04	10540.00	21000.00	1.000	1.992 ✔
	60.38 (C) (610)	9/16 EHS	5250.00	35000.04	10548.30	21000.00	1.000	1.991 ✔

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	Mast Stability Index	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	190 - 180	P2.5x.203	10.00	3.08	39.1 K=1.00	1.7040	1.00	-18579.50	78157.90	0.238 [1] ✔
T2	180 - 160	P2.5x.203	20.00	3.21	40.6 K=1.00	1.7040	1.00	-38535.30	77325.90	0.498 [1] ✔
T3	160 - 140	P2.5x.203	20.00	3.21	40.6	1.7040	1.00	-40743.50	77325.90	0.527 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	Mast Stability Index	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
					K=1.00					✔
T4	140 - 120	P2.5x.203	20.00	3.21	40.6	1.7040	1.00	-59744.20	77325.90	0.773 [1]
					K=1.00					✔
T5	120 - 100	P2.5x.203	20.00	3.21	40.6	1.7040	0.98	-59647.20	76068.80	0.784 [1]
					K=1.00					✔
T6	100 - 80	P2.5x.203	20.00	3.21	40.6	1.7040	0.98	-63051.00	76085.20	0.829 [1]
					K=1.00					✔
T7	80 - 60	P2.5x.203	20.00	3.21	40.6	1.7040	0.98	-67347.70	76057.80	0.885 [1]
					K=1.00					✔
T8	60 - 40	P2.5x.203	20.00	3.21	40.6	1.7040	0.98	-72782.40	75967.60	0.958 [1]
					K=1.00					✔
T9	40 - 20	P2.5x.203	20.00	3.21	40.6	1.7040	0.98	-75839.40	75978.80	0.998 [1]
					K=1.00					✔
T10	20 - 0	P2.5x.203	20.00	3.21	40.6	1.7040	0.98	-75904.00	75972.40	0.999 [1]
					K=1.00					✔

[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 lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	190 - 180	L1 1/2x1 1/2x3/16	3.50	3.26	86.7	0.5273	-5639.89	11503.00	0.490 [1]
					K=0.65				✔
T2	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	86.7	0.5273	-5279.97	11503.00	0.459 [1]
					K=0.65				✔
T3	160 - 140	L1 1/2x1 1/2x3/16	3.50	3.26	86.7	0.5273	-4541.07	11503.00	0.395 [1]
					K=0.65				✔
T4	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	86.7	0.5273	-4460.17	11503.00	0.388 [1]
					K=0.65				✔
T5	120 - 100	L1 1/2x1 1/2x3/16	3.50	3.26	86.7	0.5273	-3727.72	11503.00	0.324 [1]
					K=0.65				✔
T6	100 - 80	L1 1/2x1 1/2x3/16	3.50	3.26	86.7	0.5273	-3819.09	11503.00	0.332 [1]
					K=0.65				✔
T7	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	86.7	0.5273	-3855.94	11503.00	0.335 [1]
					K=0.65				✔
T8	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	86.7	0.5273	-3523.24	11503.00	0.306 [1]
					K=0.65				✔
T9	40 - 20	L1 1/2x1 1/2x3/16	3.50	3.26	86.7	0.5273	-3719.28	11503.00	0.323 [1]
					K=0.65				✔
T10	20 - 0	L1 1/2x1 1/2x3/16	3.50	3.26	86.7	0.5273	-3577.58	11503.00	0.311 [1]
					K=0.65				✔

[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 lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-2970.82	11503.00	0.258 [1] ✔
T3	160 - 140	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-3195.08	11503.00	0.278 [1] ✔
T4	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-2308.95	11503.00	0.201 [1] ✔
T5	120 - 100	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-3101.52	11503.00	0.270 [1] ✔
T6	100 - 80	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-1947.50	11503.00	0.169 [1] ✔
T7	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-2114.89	11503.00	0.184 [1] ✔
T8	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-1828.84	11503.00	0.159 [1] ✔
T9	40 - 20	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-1758.12	11503.00	0.153 [1] ✔
T10	20 - 0	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-2040.03	11503.00	0.177 [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 lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	190 - 180	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-2895.25	11503.00	0.252 [1] ✔
T3	160 - 140	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-2385.74	11503.00	0.207 [1] ✔
T5	120 - 100	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-2165.68	11503.00	0.188 [1] ✔
T6	100 - 80	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-1862.27	11503.00	0.162 [1] ✔
T8	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-2090.64	11503.00	0.182 [1] ✔
T9	40 - 20	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-1822.08	11503.00	0.158 [1] ✔
T10	20 - 0	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-353.18	11503.00	0.031 [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 lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	190 - 180	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-2584.15	11503.00	0.225 [1] ✔
T2	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-7591.02	11503.00	0.660 [1] ✔
T4	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-6201.84	11503.00	0.539 [1] ✔
T7	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-824.54	11503.00	0.072 [1] ✔

[1] P_u / ϕP_n controls

Bottom Guy Pull-Off Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-3731.17	11503.00	0.324 [1] ✔
T4	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-3900.01	11503.00	0.339 [1] ✔

[1] P_u / ϕP_n controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 160 (578)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-8157.97	36439.50	0.224 [1] ✔
T2	180 - 160 (579)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-8073.65	36439.50	0.222 [1] ✔
T2	180 - 160 (584)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-8435.37	36439.50	0.231 [1] ✔
T2	180 - 160 (585)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-8396.26	36439.50	0.230 [1] ✔
T2	180 - 160 (590)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-8268.30	36439.50	0.227 [1] ✔
T2	180 - 160 (591)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-8253.67	36439.50	0.227 [1] ✔
T4	140 - 120 (596)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-6005.16	36439.50	0.165 [1] ✔
T4	140 - 120 (597)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-6009.83	36439.50	0.165 [1] ✔
T4	140 - 120 (602)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-6532.83	36439.50	0.179 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T4	140 - 120 (603)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-6507.04	36439.50	0.179 [1] ✔
T4	140 - 120 (608)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-6523.02	36439.50	0.179 [1] ✔
T4	140 - 120 (609)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-6553.19	36439.50	0.180 [1] ✔

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	190 - 180	P2.5x.203	10.00	3.08	39.1	1.7040	0.01	88951.40	0.000 [1] ✔
T2	180 - 160	P2.5x.203	20.00	3.21	40.6	1.7040	1208.31	88951.40	0.014 [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 lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	190 - 180	5/8	4.66	4.35	333.7	0.3068	4591.17	9940.20	0.462 [1] ✔
T2	180 - 160	5/8	4.75	4.42	339.7	0.3068	5665.02	9940.20	0.570 [1] ✔
T3	160 - 140	5/8	4.75	4.42	339.7	0.3068	4863.25	9940.20	0.489 [1] ✔
T4	140 - 120	5/8	4.75	4.42	339.7	0.3068	4683.87	9940.20	0.471 [1] ✔
T5	120 - 100	5/8	4.75	4.42	339.7	0.3068	5230.73	9940.20	0.526 [1] ✔
T6	100 - 80	5/8	4.75	4.42	339.7	0.3068	3890.24	9940.20	0.391 [1] ✔
T7	80 - 60	5/8	4.75	4.42	339.7	0.3068	4296.66	9940.20	0.432 [1] ✔
T8	60 - 40	5/8	4.75	4.42	339.7	0.3068	4185.45	9940.20	0.421 [1] ✔
T9	40 - 20	5/8	4.75	4.42	339.7	0.3068	3145.10	9940.20	0.316 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T10	20 - 0	5/8	4.75	4.42	339.7	0.3068	3545.40	9940.20	0.357 [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 lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	190 - 180	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	321.81	17085.90	0.019 [1]
T2	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	667.45	17085.90	0.039 [1]
T3	160 - 140	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	705.70	17085.90	0.041 [1]
T4	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	1034.80	17085.90	0.061 [1]
T5	120 - 100	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	1033.12	17085.90	0.060 [1]
T6	100 - 80	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	1092.08	17085.90	0.064 [1]
T7	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	1166.50	17085.90	0.068 [1]
T8	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	1260.63	17085.90	0.074 [1]
T9	40 - 20	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	1313.58	17085.90	0.077 [1]
T10	20 - 0	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	1314.70	17085.90	0.077 [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 lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T8	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	222.82	17085.90	0.013 [1]
T10	20 - 0	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	66.25	17085.90	0.004 [1]

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T8	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	90.11	17085.90	0.005 [1] ✔
T10	20 - 0	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	1064.58	17085.90	0.062 [1] ✔

[1] P_u / ϕP_n controls

Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T1	190 - 180	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	709.77	17085.90	0.042 [1] ✔
T7	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	4010.79	17085.90	0.235 [1] ✔

[1] P_u / ϕP_n controls

Bottom Guy Pull-Off Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T4	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	115.10	17085.90	0.007 [1] ✔

[1] P_u / ϕP_n controls

Torque-Arm Top Design Data

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	lb	lb	
T2	180 - 160 (576)	L2x2x5/16	4.75	4.59	91.6	1.1500	12754.20	37260.00	0.342 [1] ✔
T2	180 - 160 (577)	L2x2x5/16	4.75	4.59	91.6	1.1500	12773.10	37260.00	0.343 [1] ✔
T2	180 - 160 (582)	L2x2x5/16	4.75	4.59	91.6	1.1500	12718.90	37260.00	0.341 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 160 (583)	L2x2x5/16	4.75	4.59	91.6	1.1500	12751.80	37260.00	0.342 [1]
T2	180 - 160 (588)	L2x2x5/16	4.75	4.59	91.6	1.1500	12714.50	37260.00	0.341 [1]
T2	180 - 160 (589)	L2x2x5/16	4.75	4.59	91.6	1.1500	12766.00	37260.00	0.343 [1]
T4	140 - 120 (594)	L2x2x5/16	4.75	4.59	91.6	1.1500	9815.32	37260.00	0.263 [1]
T4	140 - 120 (595)	L2x2x5/16	4.75	4.59	91.6	1.1500	9834.62	37260.00	0.264 [1]
T4	140 - 120 (600)	L2x2x5/16	4.75	4.59	91.6	1.1500	9760.31	37260.00	0.262 [1]
T4	140 - 120 (601)	L2x2x5/16	4.75	4.59	91.6	1.1500	9829.40	37260.00	0.264 [1]
T4	140 - 120 (606)	L2x2x5/16	4.75	4.59	91.6	1.1500	9742.36	37260.00	0.261 [1]
T4	140 - 120 (607)	L2x2x5/16	4.75	4.59	91.6	1.1500	9831.75	37260.00	0.264 [1]

[1] P_u / ϕP_n controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 160 (578)	L3x3x1/4	3.50	3.38	43.6	1.4400	1972.99	46656.00	0.042 [1]
T2	180 - 160 (579)	L3x3x1/4	3.50	3.38	43.6	1.4400	1878.91	46656.00	0.040 [1]
T2	180 - 160 (584)	L3x3x1/4	3.50	3.38	43.6	1.4400	2205.56	46656.00	0.047 [1]
T2	180 - 160 (585)	L3x3x1/4	3.50	3.38	43.6	1.4400	2152.10	46656.00	0.046 [1]
T2	180 - 160 (590)	L3x3x1/4	3.50	3.38	43.6	1.4400	2073.28	46656.00	0.044 [1]
T2	180 - 160 (591)	L3x3x1/4	3.50	3.38	43.6	1.4400	2008.44	46656.00	0.043 [1]
T4	140 - 120 (596)	L3x3x1/4	3.50	3.38	43.6	1.4400	2859.99	46656.00	0.061 [1]
T4	140 - 120 (597)	L3x3x1/4	3.50	3.38	43.6	1.4400	2880.32	46656.00	0.062 [1]
T4	140 - 120 (602)	L3x3x1/4	3.50	3.38	43.6	1.4400	3429.47	46656.00	0.074 [1]
T4	140 - 120 (603)	L3x3x1/4	3.50	3.38	43.6	1.4400	3296.40	46656.00	0.071 [1]
T4	140 - 120 (608)	L3x3x1/4	3.50	3.38	43.6	1.4400	3305.35	46656.00	0.071 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T4	140 - 120 (609)	L3x3x1/4	3.50	3.38	43.6	1.4400	3394.67	46656.00	0.073 [1] ✔

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	190 - 180	Leg	P2.5x.203	2	-18579.50	78157.90	23.8	Pass
		Diagonal	5/8	30	4591.17	9940.20	46.2	Pass
		Horizontal	L1 1/2x1 1/2x3/16	27	-5639.89	11503.00	49.0	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	9	-2895.25	11503.00	25.2	Pass
		Guy A@189.625	9/16	615	10914.60	21000.00	52.0	Pass
		Guy B@189.625	9/16	614	10877.40	21000.00	51.8	Pass
		Guy C@189.625	9/16	613	10891.90	21000.00	51.9	Pass
		Top Guy Pull-Off@189.625	L1 1/2x1 1/2x3/16	6	-2584.15	11503.00	22.5	Pass
T2	180 - 160	Leg	P2.5x.203	35	-38535.30	77325.90	49.8	Pass
		Diagonal	5/8	54	5665.02	9940.20	57.0	Pass
		Horizontal	L1 1/2x1 1/2x3/16	85	-5279.97	11503.00	45.9	Pass
		Top Girt	L1 1/2x1 1/2x3/16	39	-2970.82	11503.00	25.8	Pass
		Guy A@160.375	5/8	586	11921.40	25440.00	46.9	Pass
		Guy B@160.375	5/8	581	12030.20	25440.00	47.3	Pass
		Guy C@160.375	5/8	575	12002.10	25440.00	47.2	Pass
		Top Guy Pull-Off@160.375	L1 1/2x1 1/2x3/16	51	-7591.02	11503.00	66.0	Pass
		Bottom Guy Pull-Off@160.375	L1 1/2x1 1/2x3/16	42	-3731.17	11503.00	32.4	Pass
		Torque Arm Top@160.375	L2x2x5/16	577	12773.10	37260.00	34.3 35.7 (b)	Pass
		Torque Arm Bottom@160.375	L3x3x1/4	584	-8435.37	36439.50	23.1 23.6 (b)	Pass
T3	160 - 140	Leg	P2.5x.203	94	-40743.50	77325.90	52.7	Pass
		Diagonal	5/8	149	4863.25	9940.20	48.9	Pass
		Horizontal	L1 1/2x1 1/2x3/16	147	-4541.07	11503.00	39.5	Pass
		Top Girt	L1 1/2x1 1/2x3/16	99	-3195.08	11503.00	27.8	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	100	-2385.74	11503.00	20.7	Pass
T4	140 - 120	Leg	P2.5x.203	154	-59744.20	77325.90	77.3	Pass
		Diagonal	5/8	177	4683.87	9940.20	47.1	Pass
		Horizontal	L1 1/2x1 1/2x3/16	205	-4460.17	11503.00	38.8	Pass
		Top Girt	L1 1/2x1 1/2x3/16	157	-2308.95	11503.00	20.1	Pass
		Guy A@120.375	9/16	604	10231.40	21000.00	48.7	Pass
		Guy B@120.375	9/16	599	10148.20	21000.00	48.3	Pass
		Guy C@120.375	9/16	593	10237.70	21000.00	48.8	Pass
		Top Guy Pull-Off@120.375	L1 1/2x1 1/2x3/16	169	-6201.84	11503.00	53.9	Pass
		Bottom Guy Pull-Off@120.375	L1 1/2x1 1/2x3/16	162	-3900.01	11503.00	33.9	Pass
		Torque Arm Top@120.375	L2x2x5/16	595	9834.62	37260.00	26.4 27.5 (b)	Pass
		Torque Arm Bottom@120.375	L3x3x1/4	609	-6553.19	36439.50	18.0 18.3 (b)	Pass
T5	120 - 100	Leg	P2.5x.203	214	-59647.20	76068.80	78.4	Pass
		Diagonal	5/8	268	5230.73	9940.20	52.6	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
		Horizontal	L1 1/2x1 1/2x3/16	267	-3727.72	11503.00	32.4	Pass
		Top Girt	L1 1/2x1 1/2x3/16	219	-3101.52	11503.00	27.0	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	220	-2165.68	11503.00	18.8	Pass
T6	100 - 80	Leg	P2.5x.203	275	-63051.00	76085.20	82.9	Pass
		Diagonal	5/8	328	3890.24	9940.20	39.1	Pass
		Horizontal	L1 1/2x1 1/2x3/16	289	-3819.09	11503.00	33.2	Pass
		Top Girt	L1 1/2x1 1/2x3/16	279	-1947.50	11503.00	16.9	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	281	-1862.27	11503.00	16.2	Pass
T7	80 - 60	Leg	P2.5x.203	335	-67347.70	76057.80	88.5	Pass
		Diagonal	5/8	348	4296.66	9940.20	43.2	Pass
		Horizontal	L1 1/2x1 1/2x3/16	349	-3855.94	11503.00	33.5	Pass
		Top Girt	L1 1/2x1 1/2x3/16	337	-2114.89	11503.00	18.4	Pass
		Guy A@60.375	9/16	612	10571.90	21000.00	50.3	Pass
		Guy B@60.375	9/16	611	10540.00	21000.00	50.2	Pass
		Guy C@60.375	9/16	610	10548.30	21000.00	50.2	Pass
		Top Guy Pull-Off@60.375	L1 1/2x1 1/2x3/16	342	4010.79	17085.90	23.5	Pass
T8	60 - 40	Leg	P2.5x.203	395	-72782.40	75967.60	95.8	Pass
		Diagonal	5/8	449	4185.45	9940.20	42.1	Pass
		Horizontal	L1 1/2x1 1/2x3/16	411	-3523.24	11503.00	30.6	Pass
		Top Girt	L1 1/2x1 1/2x3/16	399	-1828.84	11503.00	15.9	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	400	-2090.64	11503.00	18.2	Pass
T9	40 - 20	Leg	P2.5x.203	455	-75839.40	75978.80	99.8	Pass
		Diagonal	5/8	508	3145.10	9940.20	31.6	Pass
		Horizontal	L1 1/2x1 1/2x3/16	471	-3719.28	11503.00	32.3	Pass
		Top Girt	L1 1/2x1 1/2x3/16	459	-1758.12	11503.00	15.3	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	460	-1822.08	11503.00	15.8	Pass
T10	20 - 0	Leg	P2.5x.203	515	-75904.00	75972.40	99.9	Pass
		Diagonal	5/8	528	3545.40	9940.20	35.7	Pass
		Horizontal	L1 1/2x1 1/2x3/16	565	-3577.58	11503.00	31.1	Pass
		Top Girt	L1 1/2x1 1/2x3/16	519	-2040.03	11503.00	17.7	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	522	1064.58	17085.90	6.2	Pass
							Summary	
						Leg (T10)	99.9	Pass
						Diagonal (T2)	57.0	Pass
						Horizontal (T1)	49.0	Pass
						Top Girt (T3)	27.8	Pass
						Bottom Girt (T1)	25.2	Pass
						Guy A (T1)	52.0	Pass
						Guy B (T1)	51.8	Pass
						Guy C (T1)	51.9	Pass
						Top Guy Pull-Off (T2)	66.0	Pass
						Bottom Guy Pull-Off (T4)	33.9	Pass
						Torque Arm Top (T2)	35.7	Pass
						Torque Arm Bottom (T2)	23.6	Pass
						Bolt Checks	35.7	Pass
						RATING =	**99.9**	**Pass**

Site Name: **Ashford, CT**
Date: **10/19/2017**

Design Base Loads (Factored) per TIA-222-G

Moment (M_u):	0.0	k-ft	Concrete Compressive Strength (f'_c):	3000	psi
Shear/Leg (V_u):	2.2	k	Vertical Steel Rebar Size #:	5	
Compression/Leg (P_u):	219.8	k	Vertical Steel Rebar Area:	0.31	in^2
Uplift/Leg (T_u):	0.0	k	# of Vertical Steel Rebars:	8	
Tower Type (GT / SST):	GT		Vertical Steel Rebar Yield Strength (F_y):	60	ksi
Diameter of Prismatic Portion of Pier (d):	2.0	ft	Tie / Stirrup Size #:	4	
Depth to Base of Foundation:	4.5	ft	Tie / Stirrup Area:	0.20	in^2
Pier Height Above Ground (h):	1.00	ft	Tie / Stirrup Spacing:	10.0	in
Length / Width of Pad (w):	5.5	ft	Tie / Stirrup Steel Yield Strength (F_y):	40	ksi
Thickness of Pad (t):	1.5	ft	Rebar Cage Diameter:	16.0	in
Depth Below Ground Surface to Water Table (w):	20.0	ft	Bending/Tension Reduction Factor (ϕ_B):	0.90	
Unit Weight of Concrete:	150.0	pcf	Shear Reduction Factor (ϕ_V):	0.75	
Unit Weight of Water:	62.4	pcf	Compression Reduction Factor (ϕ_V):	0.65	
Unit Weight of Soil Above Water Table:	115.0	pcf	Steel Elastic Modulus:	29000	ksi
Unit Weight of Soil Below Water Table:	50.0	pcf	Pad Steel Rebar Size #:	5	
Friction Angle of Uplift from Top of Pad:	33	Degrees	Pad Steel Rebar Area:	0.31	in^2
Friction Angle of Uplift from Base of Pad:	33	Degrees	Pad Steel Rebar Yield Strength (F_y):	60	ksi
Uplift Angle Started at Top or Base of Pad (T/B):	B		# of Rebar in Top of Pad:	0	
Ultimate Skin Friction:	0	psf	# of Rebar in Base of Pad:	5	
Ultimate Compressive Bearing Pressure:	14000	psf	Pad Clear Cover:	3	in
Bearing Strength Reduction Factor (ϕ_s):	0.60				
Uplift Strength Reduction Factor (ϕ_s):	0.75				

Axial Capacities and Design Moment

Nominal Uplift Capacity per Leg ($\phi_s T_n$):	30.4	k
Nominal Compressive Capacity per Leg ($\phi_s P_n$):	254.1	k
P_u:	222.7	k
$T_u/\phi_s T_n$:	0.00	Result: OK
$P_u/\phi_s P_n$:	0.88	Result: OK

Pad Strength Capacity

β:	0.85	ACI318-05 - 10.2.7.3
Lower Pad Flexural Reinforcement Ratio:	0.0016	OK - Minimum Reinforcement Ratio Met - A
Upper Pad Flexural Reinforcement Ratio:	0.0000	OK - Minimum Reinforcement Ratio Met - A
Lower Pad Flexural Reinforcement Spacing:	15	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Upper Pad Flexural Reinforcement Spacing:	0	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
One Way Design Shear (V_u):	21.3	k
One Way Shear Capacity (ϕV_c):	81.2	k - ACI318-05 - 11.3.1.1
$V_u / \phi V_c$:	0.26	Result: OK
Punching Design Shear (V_u):	159.9	k
Nominal Punching Shear Capacity ($\phi_c V_n$):	293.3	k - ACI318-05 - 11.12.2.1
$V_u / \phi V_c$:	0.54	Result: OK
Flexural Loading Due to Soil Pressure (M_u):	61.9	k-ft
Lower Steel Pad Moment Capacity (ϕM_n):	100.5	k-ft - ACI318-05 - 10.3
$M_u / \phi M_n$:	0.62	Result: OK
Flexural Loading Due to Uplift (M_u):	0.0	k-ft
Upper Steel Pad Moment Capacity (ϕM_n):	0.0	k-ft - ACI318-05 - 10.3
$M_u / \phi M_n$:	0.00	Result: OK

Pier Strength Capacity

Design Moment (M_u):	4.9	k-ft
Nominal Moment Capacity ($\phi_B M_n$):	88.9	k-ft - ACI318-005 - 10.2
$M_u/\phi_B M_n$:	0.06	Result: OK
Design Shear (V_u):	2.2	k
Nominal Shear Capacity ($\phi_V V_n$):	67.9	k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u/\phi_V V_n$:	0.03	Result: OK
Design Tension (T_u):	0.0	k
Nominal Tension Capacity ($\phi_T T_n$):	133.9	k - ACI318-05 - 10.2
$T_u/\phi_T T_n$:	0.00	Result: OK
Design Compression (P_u):	219.8	k
Nominal Compression Capacity ($\phi_P P_n$):	701.9	k - ACI318-05 - 10.3.6.2
$P_u/\phi_P P_n$:	0.31	Result: OK
Pier Reinforcement Ratio:	0.005	Reinforcement Ratio is Satisfactory - ACI318-05 - 10.9.1 & 10.8.4
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.06	Result: OK

Site Name: Ashford, CT
Date: 10/19/2017

Design Standard per TIA-222-G

Uplift (Factored - P_u):	42.0	k
Shear (Factored - V_u):	47.2	k
Anchor Base Depth (d):	8.0	ft
Width of Anchor (W):	5.5	ft
Length of Anchor (L):	11.5	ft
Thickness of Anchor (t):	2.0	ft
Depth Below Ground Surface to Water Table (w):	20.0	ft
Soil Uplift at Base / Top of Anchor (B/T):	T	
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Soil Above Water Table:	115.0	pcf
Unit Weight of Water:	62.4	pcf
Submerged Soil Unit Weight:	50.0	pcf
Internal Angle of Friction:	33	Degrees
Cohesion:	0	psf
Ultimate Skin Friction of Pad Sides to Soil:	450	psf
Ultimate Coefficient of Shear Friction:	0.30	
Maximum Top Conical Failure Angle:	33	Degrees
Maximum Base Conical Failure Angle:	33	Degrees
Allowable Capacity Increase:	1.00	(Due to Transient Loads)
Uplift Strength Reduction Factor (ϕ_u):	0.75	
Shear Strength Reduction Factor (ϕ_v):	0.75	
Concrete Uplift Strength Reduction Factor (ϕ_u):	0.90	

Uplift

Weight of Concrete (Buoyancy Effect Considered):	19.0	k
Weight of Soil (Buoyancy Effect Considered):	100.3	k
Ultimate Uplift Resistance from Skin Friction:	20.3	k
Nominal Factored Uplift Resistance ($\phi_u P_n$)::	92.3	k
P_u / $\phi_u P_n$:	0.46	Result: OK

Shear

Ultimate Shear Friction Resistance Due to Normal Force - Uplift:	9.3	k
Passive Pressure:	2731	psf
Ultimate Passure Pressure Resistance:	62.8	k
Nominal Shear Resistance ($\phi_v V_n$):	54.1	k
V_u / $\phi_v V_n$:	0.87	Result: OK

Anchor Rod Capacity

# of Anchor Rods:	1		Rod F_y:	48	ksi
Anchor Rod Gross Area:	2.41	in^2	Rod F_u:	62	ksi
Anchor Rod Net Area:	2.41	in^2	ϕ_y:	0.80	
Resultant Tensile Load (T_u):	63.2	k	ϕ_t:	0.65	
Anchor Rod Tensile Resistance (ϕT_n)::	92.5	k			
T_u / ϕT_n:	0.68	Result: OK			

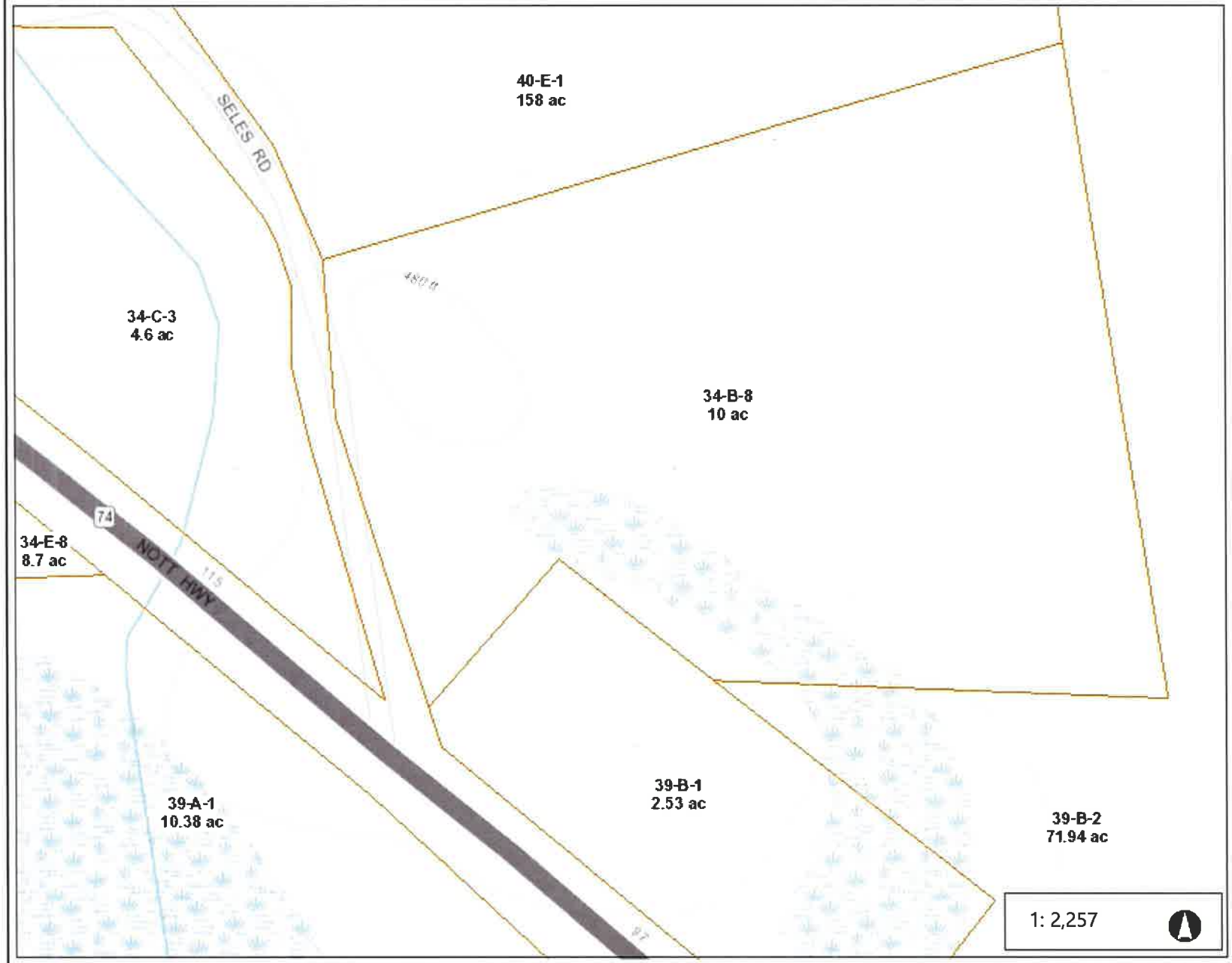
Strength Analysis of Reinforced Concrete

Concrete Compressive Srength (f'_c):	3000	psi
Longitudinal Rebar Yield Strength:	60000	psi
# Longitudinal Rebar (Top):	6	
# Longitudinal Rebar (1 Side):	5	
Rebar Size:	4	
Strength Reduction Factor for Shear (ϕ_v):	0.75	
Strength Reduction Factor for Flexure (ϕ_b):	0.9	
Compression Zone Factor (β_1):	0.85	
Area of Single Rebar:	0.20	in^2
One Way Shear due to Shear Load (V_u):	13.0	k
Nominal One Way Shear Capacity for Shear Load ($\phi_c V_n$):	122.3	k
$V_u/\phi_v V_n$:	0.11	Result: OK
One Way Shear due to Uplift (V_u):	18.0	k
Nominal One Way Shear Capacity for Uplift ($\phi_c V_n$):	108.4	k
$V_u/\phi_v V_n$:	0.17	Result: OK
Pad Flexure due to Shear Load (M_u):	67.8	k-ft
Nominal Flexural Capacity for Shear Load ($\phi_b M_n$):	279.0	k-ft
Pad Flexure due to Uplift (M_u):	60.4	k-ft
Nominal Flexural Capacity for Uplift ($\phi_b M_n$):	107.9	k-ft
$M_u/\phi_b M_n$ (Max.):	0.56	Result: OK

ATTACHMENT 4

neccog

Neccog GIS Site



Legend

- Town
- Buildings
- Parcels
- Parcel Label

1: 2,257

Notes

Enter Map Description

0.1 0 0.04 0.1 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere

20 SELES RD

Location	20 SELES RD	**Mblu**	34/ B/ 8/ /
Acct#	00016400	**Owner**	BAKER RAYMOND C & KATHLEEN P
Assessment	$111,670	**Appraisal**	$178,900
PID	152	**Building Count**	1
Lot Type		**topoTopography**	Above Grade
Location	Bus. District,Rural		

Current Value

Appraisal					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2016	$108,000	$3,000	$2,700	$65,200	$178,900
Assessment					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2016	$75,600	$2,100	$1,900	$32,070	$111,670

Parcel Addreses

Additional Addresses		
Address	**City, State Zip**	**Type**
20 SELES RD		Primary

Owner of Record

Owner	BAKER RAYMOND C & KATHLEEN P	**Sale Price**	$0
Co-Owner		**Certificate**	C
Address	20 SELES RD ASHFORD, CT 06278	**Book & Page**	058/ 245
		Sale Date	07/15/1968

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
BAKER RAYMOND C & KATHLEEN P	$0	C	058/ 245	07/15/1968

Building Information

Building 1 : Section 1

Building Photo

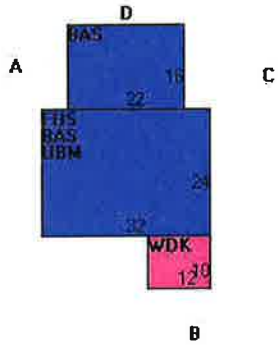
Year Built:	1968
Living Area:	1,581
Replacement Cost:	$142,141
Building Percent Good:	76
Replacement Cost Less Depreciation:	$108,000

Building Photo

(http://images.vgsi.com/photos/AshfordCTPhotos//\00\00\00/7

Building Attributes	
Field	**Description**
Style	Cape Cod
Model	Residential
Grade:	C
Stories:	1.5
Occupancy	1
Exterior Wall 1	Clapboard
Exterior Wall 2	Vinyl Siding
Roof Structure:	Gable
Roof Cover	Asphalt Shingl
Interior Wall 1	Plywood Panel
Interior Wall 2	Drywall
Interior Flr 1	Carpet
Interior Flr 2	
Heat Fuel	Oil
Heat Type:	Forced Air
AC Type:	None
Total Bedrooms:	3 Bedrooms
Total Bthrms:	1
Total Half Baths:	1
Total Xtra Fixtrs:	0
Total Rooms:	6
Bath Style:	Average
Kitchen Style:	Average
Bsmt. Garages	1

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	1,120	1,120
FHS	Finished Half Story	768	461
UBM	Unfinished Basement	768	0
WDK	Wood Deck	120	0
		2,776	1,581

Extra Features

Extra Features							Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Assessed Value**	**Bldg #**
FPL2	Fireplace 1.5 Sty			1 units	$3,000	$2,100	1

Parcel Information

Use Code	101
Description	Single Family
Deeded Acres	10

Land

Land Use

Use Code	101
Description	Single Family
Zone	RA
Neighborhood	
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	10
Frontage	
Depth	
Assessed Value	$32,070
Appraised Value	$65,200

Special Land			
Land Use Code	**Land Use Description**	**Units**	**Unit Type**
630	Open Space	9	AC

Outbuildings

Outbuildings							Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Assessed Value**	**Bldg #**
BRN1	Barn 1 Story	FR	Frame	520 S.F.	$2,400	$1,700	1
CNP	Canopy			180 S.F.	$300	$200	1

Valuation History

Appraisal					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2016	$115,100	$3,200	$2,700	$65,200	$186,200
2015	$101,300	$3,300	$2,700	$74,800	$182,100
2014	$101,300	$3,300	$9,000	$74,800	$188,400

Assessment					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2016	$80,600	$2,200	$1,900	$32,070	$116,770
2015	$70,900	$2,300	$1,900	$36,020	$111,120
2014	$70,900	$2,300	$6,300	$36,020	$115,520

ATTACHMENT 5

UNITED STATES POSTAL SERVICE®

Certificate of Mailing — Firm

Name and Address of Sender	TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here *Postmark with Date of Receipt.*
Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	3	3	OLD STATE HOUSE STATION 06103 DEC – 4 2017 USPS $002.38
	Postmaster, per *(name of receiving employee)*		

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3.		Raymond and Kathleen Baker 20 Seles Road Ashford, CT 06278				
4.						
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