Robinson+Cole

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

Also admitted in Massachusetts

October 16, 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**
118B Wintechog Hill Road, North Stonington, Connecticut

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains twelve (12) antennas on the existing 350-foot tower at 118B Wintechog Hill Road in North Stonington, Connecticut (the "Property"). Six (6) antennas are located at the 184-foot level and six (6) antennas are located at the 174-foot level. The Property is owned by Storer Communications of Groton CT ("Storer"). The tower is owned by IWG Towers Assets I LLC ("IWG"). Cellco's use of this tower was approved by the Council in 1988. Cellco now intends to modify its facility by replacing the six (6) existing antennas at the 184-foot level with three (3) model SBNHH-1D65A, 700 MHz antennas and three (3) model SBNHH-1D65A, 2100 MHz antennas. Cellco also intends to install six (6) remote radio heads ("RRHs") behind its 700 and 2100 MHz antennas at the 184-foot level 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 Shawn P. Murphy, First Selectman for the Town of North Stonington; Juliet Hodge, North Stonington's Planning, Development and Zoning Official; Storer, the owner of the Property; and IWG, 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 184-foot level on the 350-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 in 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 Report 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 owner 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:
Shawn P. Murphy, North Stonington First Selectman
Juliet Hodge, North Stonington Planning, Development and Zoning Official
Storer Communications of Groton CT
IWG Towers Assets I LLC
Tim Parks

ATTACHMENT 1

Product Specifications

COMMSCOPE®

SBNHH-1D65A

Multiband Antenna, 698–896 and 2x 1695–2360 MHz, 65° horizontal beamwidth, internal RET. Both high bands share the same electrical tilt.

- Interleaved dipole technology providing for attractive, low wind load mechanical package

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	13.4	13.5	16.5	16.7	17.2	17.5
Beamwidth, Horizontal, degrees	66	61	70	65	62	61
Beamwidth, Vertical, degrees	17.6	15.9	7.1	6.6	6.2	5.5
Beam Tilt, degrees	0–18	0–18	0–10	0–10	0–10	0–10
USLS (First Lobe), dB	16	13	13	13	12	12
Front-to-Back Ratio at 180°, dB	25	27	28	28	27	29
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	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	13.1	13.1	16.1	16.5	16.7	17.2
Gain by all Beam Tilts Tolerance, dB	±0.5	±0.5	±0.5	±0.3	±0.5	±0.4
Gain by Beam Tilt, average, dBi	0 ° | 13.4	0 ° | 13.4	0 ° | 16.0	0 ° | 16.3	0 ° | 16.5	0 ° | 17.0
	9 ° | 13.1	9 ° | 13.1	5 ° | 16.2	5 ° | 16.5	5 ° | 16.8	5 ° | 17.3
	18 ° | 12.7	18 ° | 12.7	10 ° | 16.1	10 ° | 16.5	10 ° | 16.6	10 ° | 16.9
Beamwidth, Horizontal Tolerance, degrees	±3.1	±5.4	±2.8	±4	±6.6	±4.6
Beamwidth, Vertical Tolerance, degrees	±1.8	±1.4	±0.3	±0.4	±0.5	±0.3
USLS, beampeak to 20° above beampeak, dB	15	14	15	15	15	14
Front-to-Back Total Power at 180° ± 30°, dB	22	21	26	26	24	25
CPR at Boresight, dB	22	16	22	25	21	22
CPR at Sector, dB	10	6	12	8	5	4

* 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.

General Specifications

Antenna Type	Sector with internal RET
Band	Multiband
Brand	DualPol®
Operating Frequency Band	1695 – 2360 MHz | 698 – 896 MHz
Performance Note	Outdoor usage

Mechanical Specifications

Color	Light gray
Lightning Protection	dc Ground

Product Specifications

SBNHH-1D65A

Radiator Material	Aluminum | Low loss circuit board
Radome Material	Fiberglass, UV resistant
RF Connector Interface	7-16 DIN Female
RF Connector Location	Bottom
RF Connector Quantity, total	6
Wind Loading, frontal	445.0 N @ 150 km/h 100.0 lbf @ 150 km/h
Wind Loading, lateral	145.0 N @ 150 km/h 32.6 lbf @ 150 km/h
Wind Loading, rear	523.0 N @ 150 km/h 117.6 lbf @ 150 km/h
Wind Speed, maximum	241 km/h | 150 mph

Dimensions

Depth	180.0 mm | 7.1 in
Length	1413.0 mm | 55.6 in
Width	301.0 mm | 11.9 in
Net Weight, without mounting kit	15.2 kg | 33.5 lb

Remote Electrical Tilt (RET) Information

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

Packed Dimensions

Depth	296.0 mm | 11.7 in
Length	1589.0 mm | 62.6 in
Width	390.0 mm | 15.4 in
Shipping Weight	26.1 kg | 57.5 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

Included Products

Product Specifications

SBNHH-1D65A

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

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.

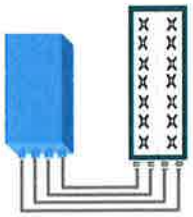
Its compactness and slim design makes the Alcatel-Lucent B13 RRH4x30-4R easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the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

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.

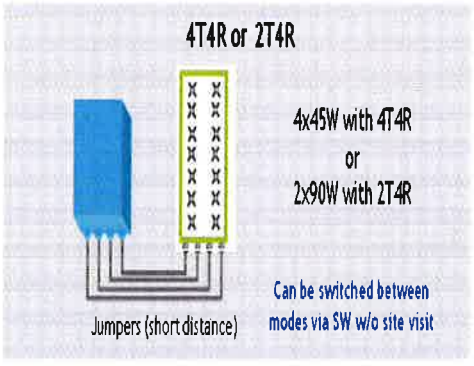
The Alcatel-Lucent B66a RRH4x45 product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x90W or 4x45W RF output power. It also supports 4-way Rx diversity at the 70 MHz instantaneous bandwidth.

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

TECHNICAL SPECIFICATIONS

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.

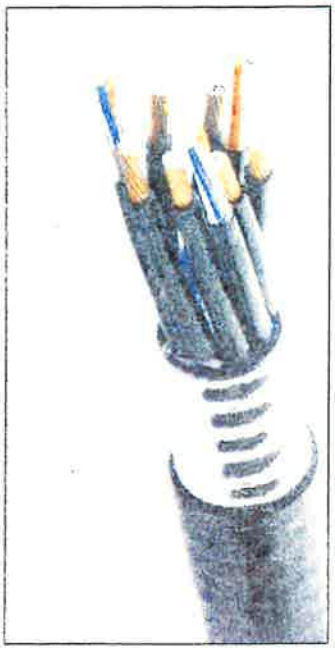


Figure 1: HYBRIFLEX Series

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)

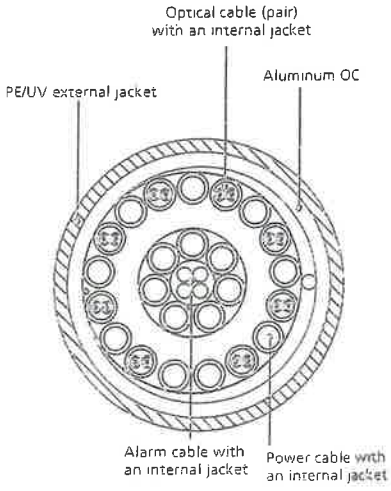


Figure 2: Construction Detail

- This data is provisional and subject to change

ATTACHMENT 2

	General	Power	Density					
Site Name: North Stonington								
Tower Height: 350Ft.								
CARRIER	**# OF CHAN.**	**WATTS ERP**	**HEIGHT**	**CALC. POWER DENS**	**FREQ.**	**MAX. PERMISS. EXP.**	**FRACTION MPE**	**Total**
*T-Mobile	4	1167	222	1900/2100	0.0360	1.0000	0.36%	
*T-Mobile	1	865	222	700	0.0067	0.4667	0.14%	
*Sprint-CDMA	2	656	249	850	0.0080	0.5667	0.14%	
*Sprint-PCS-CDMA	2	1167	249	1900	0.0142	1.0000	0.14%	
*Sprint-PCS-LTE	3	2334	249	1900	0.0426	1.0000	0.43%	
*Sprint-BRS-LTE	2	2308	249	2500	0.0281	1.0000	0.28%	
*State Police	1	100	230	866	0.0007	0.5773	0.01%	
*State Police - Microwave	1	1000	80	6700	0.0657	1.0000	0.66%	
*MobileComm	1	300	184	929	0.0034	0.6193	0.05%	
*MobileComm	1	300	159	929	0.0046	0.6193	0.07%	
*MobileComm	1	300	99	929	0.0125	0.6193	0.20%	
*PageNet	1	150	181	929	0.0018	0.6193	0.03%	
*PageNet	3	150	186	929	0.0050	0.6193	0.08%	
*Destineer	1	500	186	940	0.0055	0.6267	0.09%	
*TSR Paging	1	250	127	931	0.0061	0.6207	0.10%	
*AirTouch	1	500	86	152	0.0281	0.2000	1.40%	
*AirTouch	1	500	72	152	0.0413	0.2000	2.06%	
*Nextel	9	100	210	851	0.0078	0.5673	0.14%	
*FM Broadcast			142	107.7	0.0394	0.2000	1.97%	
*PageMart			152	929	0.0116	0.6193	0.19%	
*PageMart			152	929	0.0116	0.6193	0.19%	
Verizon PCS	**0**	**0**	**175**	**0.0000**	**1970**	**1.0000**	**0.00%**	
Verizon Cellular	**9**	**564**	**174**	**0.0603**	**869**	**0.5793**	**10.41%**	
Verizon AWS	**1**	**5499**	**184**	**0.0584**	**2145**	**1.0000**	**5.84%**	
Verizon 700	**1**	**1619**	**184**	**0.0172**	**698**	**0.4653**	**3.70%**	
								28.68%
* Source: Siting Council								

ATTACHMENT 3

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

1033 WATERVLIET SHAKER RD, ALBANY, NY 12205

Tower Analysis Report

October 6, 2017

Site Name	CT703 North Stonington
Infinigy Job Number	337-000
Client	InSite Wireless
Proposed Carrier	Verizon
Site Location	118B Wintechog Hill Rd. North Stonington, CT 06359 41° 27' 39.0" N NAD83 71° 55' 44.0" W NAD83
Structure Type	350' Guyed Tower
Structural Usage Ratio	**96.5%**
Overall Result	**Pass**

Upon reviewing the results of this analysis, it is our opinion that the structure meets the specified TIA code requirements. The tower is therefore deemed adequate to support the existing and proposed loading as listed in this report.

STATE OF CONNECTICUT
JOSEPH R. JOHNSTON
OCT 06 2017
20460
LICENSED
PROFESSIONAL ENGINEER

Richmond Lam, EI
Structural Engineer I

Contents

Introduction

Infinigy Engineering has been requested to perform a structural analysis on the existing 350' Guyed Tower. All supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The tower was analyzed using tnxTower version 7.0.7.0 tower analysis software.

Supporting Documentation

Site Inspection	Patriot Towers Site ID # 10113, dated March 12, 2013
Previous Analysis	Infinigy Engineering Project #337-000, dated March 29, 2017
Proposed Loading	CT703 North Stonington Verizon 3rd Amendment Exhibit A, dated March 6, 2017

Analysis Code Requirements

Wind Speed	105 mph (3-Second Gust Vasd) / 135 mph (3-Second Gust Vult)
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 3/4" ice
TIA Revision	ANSI/TIA-222-G
Adopted IBC	2012 IBC / 2016 Connecticut State Building Code
Structure Class	II
Exposure Category	B
Topographic Category	1
Calculated Crest Height	0 ft.

Conclusion

Upon reviewing the results of this analysis, it is our opinion that the structure meets the specified TIA code requirements. The tower is therefore deemed adequate to support the existing and proposed loading as listed in this report.

If you have any questions, require additional information, or actual conditions differ from those as detailed in this report please contact me via the information below:

Richmond Lam, EI
Structural Engineer I | Infinigy Engineering, PLLC
3000 Aerial Center Pkwy #110, Morrisville, NC 27560
(M) (864) 706-9308
rlam@infinigy.com | www.infinigy.com

Existing and Reserved Loading

Mount Height (ft)	Qty.	Appurtenance	Mount Type	Coax & Lines	Carrier
368.0	1	8' Yagi	Pipe	(1) 1/2"	--
350.0	1	Dielectric DCR-H3	Pipe	(1) 1-5/8"	WWRX FM
328.0	1	10' Yagi	Sector Frame	(1) 1/2"	--
305.0	1	15' Omni	Side Arm	--	
293.0	1	10' Omni	Side Arm		
205.0	1	Scala MF950b	Pipe	(1) 7/8"	WWRX FM
200.0	1	Scala MF950b	Pipe	(1) 7/8"	
184.0	6	Commscope SBNHH-1D65B	T-Arms	(6) 1-5/8" (2) 1-5/8" Hybrid	Verizon
	3	Alcatel Lucent 2x60 700U RRH			
	3	Alcatel Lucent 2x90 AWS RRH			
	1	Raycap RVZDC-6627-PF-48			
174.0	2	Antel BXA-80080-4CF	T-Arms	(6) 1-5/8"	
	1	Antel BXA-80063-6CF			
	3	Antel BXA-171085-8BF			
	6	RFS FD9R604/2C-3L			
169.0	1	Wade 6' Yagi	Leg	(1) 1/2"	--
157.0	1	8' Yagi	Pipe	(1) 1/2"	
137.0	1	10' Yagi	Pipe	(1) 1/2"	
117.0	1	Wade WL 4-6	Leg	(1) 1/2"	

To Be Removed Loading

Mount Height (ft)	Qty.	Appurtenance	Mount Type	Coax & Lines	Carrier
184.0	6	Commscope SBNHH-1D65B	T-Arms	(6) 1-5/8"	Verizon
174.0	6	RFS FD9R604/2C-3L			

Proposed Loading

Mount Height (ft)	Qty.	Appurtenance	Mount Type	Coax & Lines	Carrier
184.0	6	Andrew SBNHH-1D65A	T-Arms	--	Verizon

Final Configuration

Mount Height (ft)	Qty.	Appurtenance	Mount Type	Coax & Lines	Carrier
368.0	1	8' Yagi	Pipe	(1) 1/2"	--
350.0	1	Dielectric DCR-H3	Pipe	(1) 1-5/8"	WWRX FM
328.0	1	10' Yagi	Sector Frame	(1) 1/2"	--
305.0	1	15' Omni	Side Arm	--	
293.0	1	10' Omni	Side Arm		
205.0	1	Scala MF950b	Pipe	(1) 7/8"	WWRX FM
200.0	1	Scala MF950b	Pipe	(1) 7/8"	
184.0	6	Andrew SBNHH-1D65A	T-Arms	(6) 1-5/8" (2) 1-5/8" Hybrid	Verizon
	3	Alcatel Lucent 2x60 700U RRH			
	3	Alcatel Lucent 2x90 AWS RRH			
	1	Raycap RVZDC-6627-PF-48			
174.0	2	Antel BXA-80080-4CF	T-Arms		
	1	Antel BXA-80063-6CF			
	3	Antel BXA-171085-8BF			
169.0	1	Wade 6' Yagi	Leg	(1) 1/2"	--
157.0	1	8' Yagi	Pipe	(1) 1/2"	
137.0	1	10' Yagi	Pipe	(1) 1/2"	
117.0	1	Wade WL 4-6	Leg	(1) 1/2"	

Structure Usages

	Summary	
Leg (T18)	96.5	Pass
Diagonal (T2)	75.5	Pass
Horizontal (T5)	70.7	Pass
Top Girt (T19)	22.0	Pass
Bottom Girt (T19)	29.1	Pass
Guy A (T6)	60.1	Pass
Guy B (T6)	61.3	Pass
Guy C (T6)	61.6	Pass
Top Guy Pull-Off (T6)	4.6	Pass
Torque Arm Top (T5)	45.0	Pass
Torque Arm Bottom (T8)	49.2	Pass
Bolt Checks	45.0	Pass
RATING =	**96.5**	**Pass**

Foundation Reactions

Reaction Data	Previous Analysis Reactions	Previous Analysis Reactions x 1.35	Analysis Reactions	Result
Tower Base Axial (kips)	--	--	111.3	--
Tower Base Shear (kips)	--	--	2.8	--
Guy Anchor 1 Uplift (kips)	--	--	6.1	--
Guy Anchor 1 Shear (kips)	--	--	17.1	--
Guy Anchor 2 Uplift (kips)	--	--	19.6	--
Guy Anchor 2 Shear (kips)	--	--	25.0	--
Guy Anchor 3 Uplift (kips)	--	--	3.9	--
Guy Anchor 3 Shear (kips)	--	--	5.3	--
Guy Anchor 4 Uplift (kips)	--	--	17.5	--
Guy Anchor 4 Shear (kips)	--	--	23.3	--

*** Design reactions are multiplied by 1.35 per ANSI/TIA-222-G 15.5.1**

The existing foundation was not evaluated because no information was made available at the time of this analysis. A foundation mapping and geotechnical report is strongly recommended for this tower.

Deflection, Twist, and Sway

Antenna Elevation (ft)	Deflection (in)	Twist (°)	Sway (°)
184.0	1.085	0.010	0.026

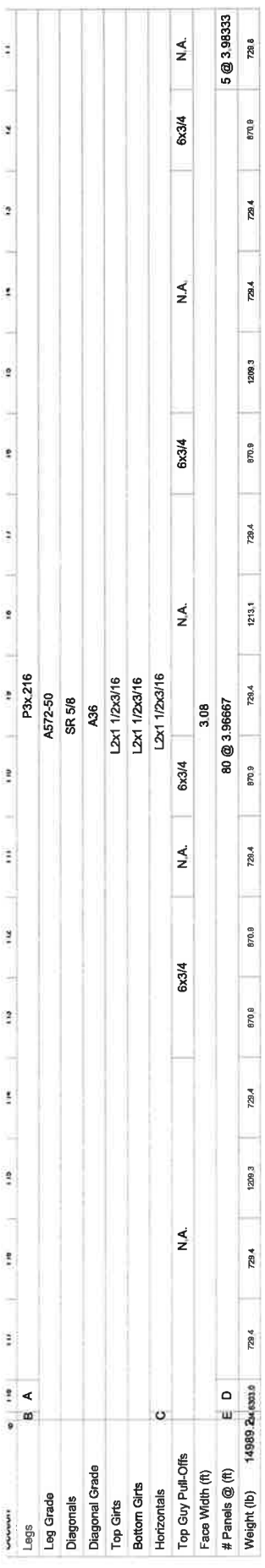
*Per ANSI/TIA-222-G Section 2.8.2 maximum serviceability structural deflection limit is 3% of structure height.
*Per ANSI/TIA-222-G Section 2.8.2 maximum serviceability structural twist and sway limit is 4 degrees.
*Per ANSI/TIA-222-G Section 2.8.3 deflection, Twist, and sway values were calculated using a basic 3-second gust wind speed of 60 mph.
*It is the responsibility of the client to ensure their proposed and/or existing equipment will meet ANSI/TIA-222-G Annex D or other appropriate microwave signal degradation limits based on the provided values above.

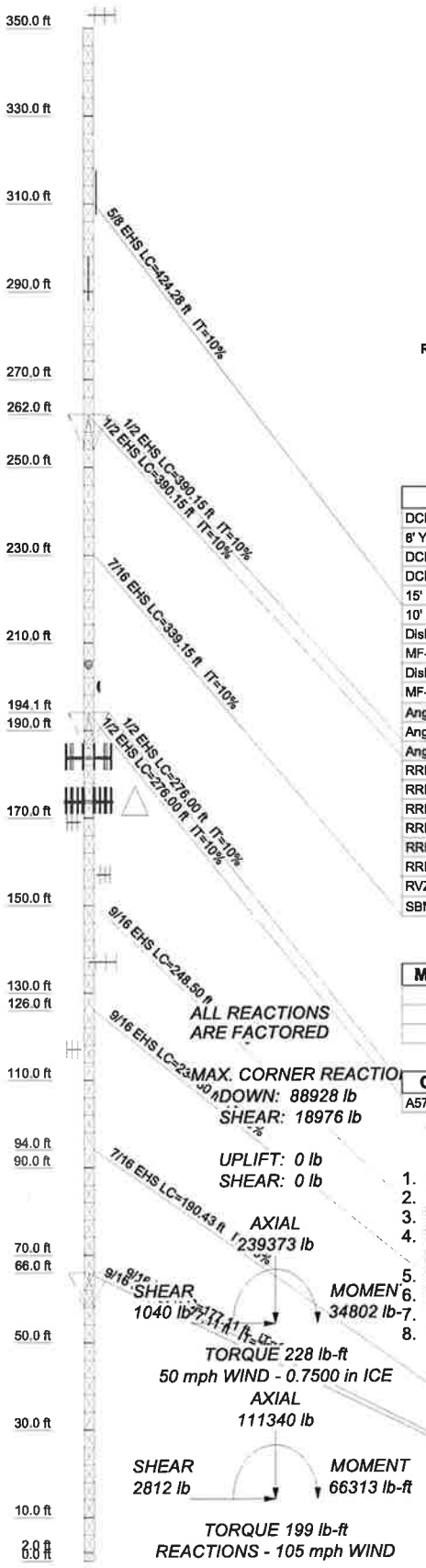
Assumptions and Limitations

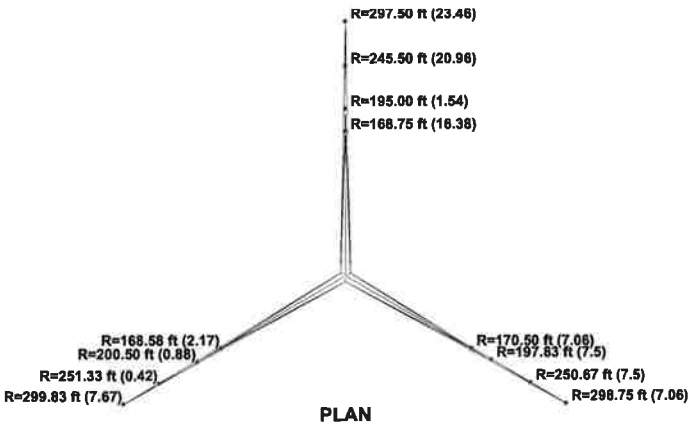
Our structural calculations are completed assuming all information provided to Infinigy Engineering is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition of "like new" and all members and connections to be free of corrosion and/or structural defects. The structure owner and/or contractor shall verify the structure's condition prior to installation of any proposed equipment. If actual conditions differ from those described in this report Infinigy Engineering should be notified immediately to complete a revised evaluation.

Our evaluation is completed using standard TIA, AISC, ACI, and ASCE methods and procedures. Our structural results are proprietary and should not be used by others as their own. Infinigy Engineering is not responsible for decisions made by others that are or are not based on our supplied assumptions and conclusions.

This report is an evaluation of the tower structure only and does not reflect adequacy of any existing antenna mounts, mount connections, or coax mounting attachments. These elements are assumed to be adequate for the purposes of this analysis and are assumed to have been installed per their manufacturer requirements.







PLAN

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
DCR-H3 (WWRX FM)	355	SBNHH-1D65A (Verizon)	184
6' Yagi	353	SBNHH-1D65A (Verizon)	184
DCR-H3 (WWRX FM)	350	SBNHH-1D65A (Verizon)	184
DCR-H3 (WWRX FM)	345	SBNHH-1D65A (Verizon)	184
15' Omni	305	SBNHH-1D65A (Verizon)	184
10' Omni	293	Angle T-Arm (Verizon)	174
Dish Pipe Mount (WWRX FM)	205	Angle T-Arm (Verizon)	174
MF-950B (WWRX FM)	205	BXA-171085-8BF-EDIN-X (Verizon)	174
Dish Pipe Mount (WWRX FM)	200	BXA-171085-8BF-EDIN-X (Verizon)	174
MF-950B (WWRX FM)	200	Angle T-Arm (Verizon)	174
Angle T-Arm (Verizon)	184	BXA-80080-4CF (Verizon)	174
Angle T-Arm (Verizon)	184	BXA-80063/6CF (Verizon)	174
Angle T-Arm (Verizon)	184	BXA-80080-4CF (Verizon)	174
RRH 2x60 700U (Verizon)	184	BXA-171085-8BF-EDIN-X (Verizon)	174
RRH 2x60 700U (Verizon)	184	6' Yagi	169
RRH 2x60 700U (Verizon)	184	Antenna Pipe Mount	157
RRH 2x90 AWS (Verizon)	184	8' Yagi	157
RRH 2x90 AWS (Verizon)	184	Antenna Pipe Mount	137
RRH 2x90 AWS (Verizon)	184	10' Yagi	137
RVZDC-6627-PF-48 (Verizon)	184	WL 4-6/S	117
SBNHH-1D65A (Verizon)	184		

SYMBOL LIST

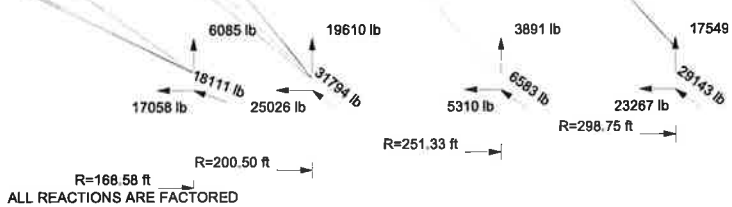
MARK	SIZE	MARK	SIZE
A	ROHN 3 STD M	D	2 @ 3.91667
B	P3x.216(P4.0x .226 half pipe)	E	1 @ 1.91667
C	N.A.		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in New London County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 105 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 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. TOWER RATING: 96.5%



Infinigy Engineering
1033 Watervliet Shaker Rd.
Albany, NY 12205
Phone: (518) 690-0790
FAX:

Job:	337-000		
Project:	North Stonington		
Client:	InSite Wireless	Drawn by: BDavenport	App'd:
Code:	TIA-222-G	Date: 10/06/17	Scale: N
Path:	C:\Users\BDavenport\Desktop\North Stonington.eri		Dwg No.

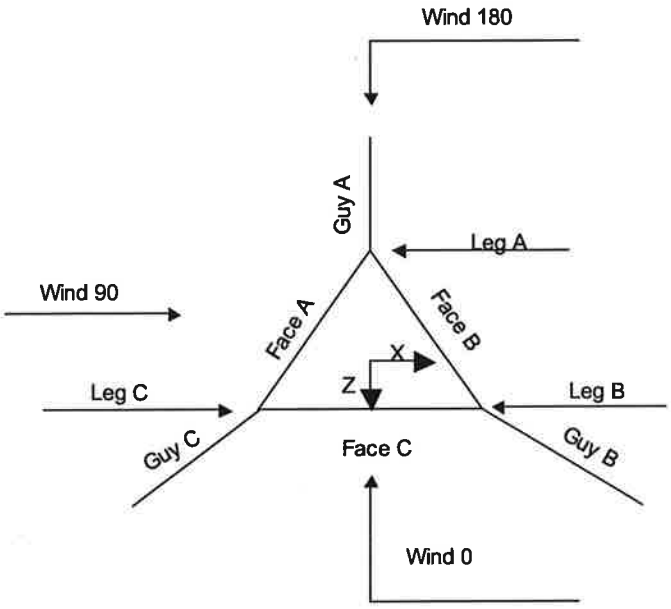
Tower Input Data

The main tower is a 3x guyed tower with an overall height of 350.00 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 3.08 ft at the top and 3.08 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

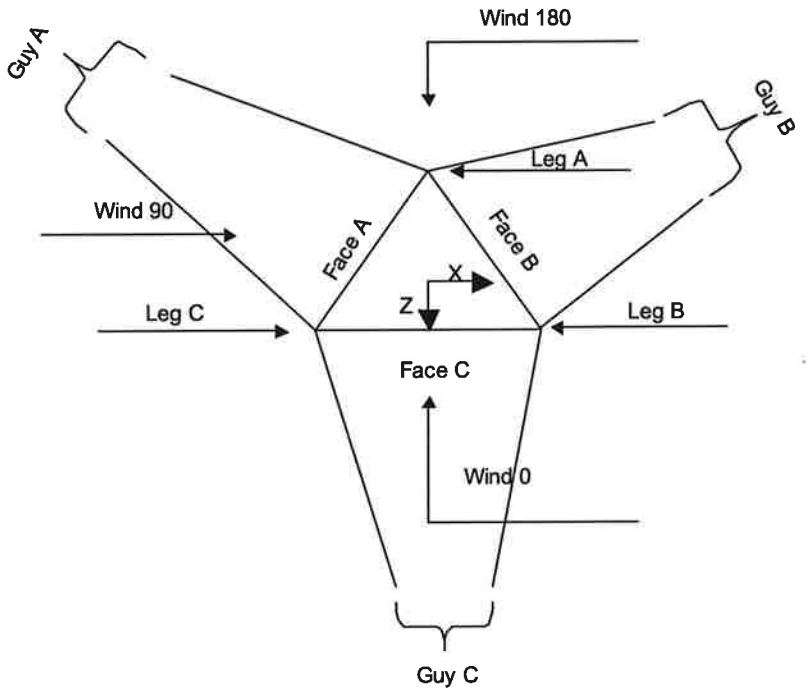
Tower is located in New London County, Connecticut.
Basic wind speed of 105 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
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, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area	√	SR Leg Bolts Resist Compression
√	Use Code Stress Ratios	√	Use Clear Spans For KL/r	√	All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys	√	Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice		Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients	√	Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-G Bracing Resist. Exemption
√	Include Bolts In Member Capacity	√	Autocalc Torque Arm Areas		Use TIA-222-G Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
√	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component		Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)	√	Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric				



Corner & Starmount Guyed Tower



Face Guyed

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	350.00-330.00			3.08	1	20.00
T2	330.00-310.00			3.08	1	20.00
T3	310.00-290.00			3.08	1	20.00
T4	290.00-270.00			3.08	1	20.00
T5	270.00-250.00			3.08	1	20.00
T6	250.00-230.00			3.08	1	20.00
T7	230.00-210.00			3.08	1	20.00
T8	210.00-190.00			3.08	1	20.00
T9	190.00-170.00			3.08	1	20.00
T10	170.00-150.00			3.08	1	20.00
T11	150.00-130.00			3.08	1	20.00
T12	130.00-110.00			3.08	1	20.00
T13	110.00-90.00			3.08	1	20.00
T14	90.00-70.00			3.08	1	20.00
T15	70.00-50.00			3.08	1	20.00
T16	50.00-30.00			3.08	1	20.00

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T17	30.00-10.00			3.08	1	20.00
T18	10.00-2.00			3.08	1	8.00
T19	2.00-0.00			3.08	1	2.00

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	350.00-330.00	3.98	TX Brace	No	Yes	0.0000	1.0000
T2	330.00-310.00	3.97	TX Brace	No	Yes	1.0000	1.0000
T3	310.00-290.00	3.97	TX Brace	No	Yes	1.0000	1.0000
T4	290.00-270.00	3.97	TX Brace	No	Yes	1.0000	1.0000
T5	270.00-250.00	3.97	TX Brace	No	Yes	1.0000	1.0000
T6	250.00-230.00	3.97	TX Brace	No	Yes	1.0000	1.0000
T7	230.00-210.00	3.97	TX Brace	No	Yes	1.0000	1.0000
T8	210.00-190.00	3.97	TX Brace	No	Yes	1.0000	1.0000
T9	190.00-170.00	3.97	TX Brace	No	Yes	1.0000	1.0000
T10	170.00-150.00	3.97	TX Brace	No	Yes	1.0000	1.0000
T11	150.00-130.00	3.97	TX Brace	No	Yes	1.0000	1.0000
T12	130.00-110.00	3.97	TX Brace	No	Yes	1.0000	1.0000
T13	110.00-90.00	3.97	TX Brace	No	Yes	1.0000	1.0000
T14	90.00-70.00	3.97	TX Brace	No	Yes	1.0000	1.0000
T15	70.00-50.00	3.97	TX Brace	No	Yes	1.0000	1.0000
T16	50.00-30.00	3.97	TX Brace	No	Yes	1.0000	1.0000
T17	30.00-10.00	3.97	TX Brace	No	Yes	1.0000	1.0000
T18	10.00-2.00	3.92	TX Brace	No	Yes	1.0000	1.0000
T19	2.00-0.00	1.92	TX Brace	No	Yes	1.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 350.00-330.00	Pipe	P3x.216	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T2 330.00-310.00	Pipe	P3x.216	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T3 310.00-290.00	Pipe	P3x.216	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T4 290.00-270.00	Pipe	P3x.216	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T5 270.00-250.00	Pipe	P3x.216	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T6 250.00-230.00	Pipe	P3x.216	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T7 230.00-210.00	Pipe	P3x.216	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T8 210.00-190.00	Pipe	P3x.216	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T9 190.00-170.00	Pipe	P3x.216	A572-50	Solid Round	5/8	A36

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T10 170.00-150.00	Pipe	P3x.216	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T11 150.00-130.00	Pipe	P3x.216	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T12 130.00-110.00	Pipe	P3x.216	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T13 110.00-90.00	Pipe	P3x.216	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T14 90.00-70.00	Pipe	P3x.216	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T15 70.00-50.00	Pipe	P3x.216	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T16 50.00-30.00	Pipe	P3x.216	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T17 30.00-10.00	Pipe	P3x.216	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T18 10.00-2.00	Arbitrary Shape	ROHN 3 STD M	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T19 2.00-0.00	Arbitrary Shape	P3x.216(P4.0x .226 half pipe)	A572-50 (50 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 350.00-330.00	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T2 330.00-310.00	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T3 310.00-290.00	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T4 290.00-270.00	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T5 270.00-250.00	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T6 250.00-230.00	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T7 230.00-210.00	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T8 210.00-190.00	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T9 190.00-170.00	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T10 170.00-150.00	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T11 150.00-130.00	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T12 130.00-110.00	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T13 110.00-90.00	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T14 90.00-70.00	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T15 70.00-50.00	Single Angle	L2x1 1/2x3/16	A36	Single Angle	L2x1 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
T16 50.00-30.00	Single Angle	L2x1 1/2x3/16	(36 ksi) A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	(36 ksi) A36 (36 ksi)
T17 30.00-10.00	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T18 10.00-2.00	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T19 2.00-0.00	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)	Single Angle	L2x1 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 350.00-330.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T2 330.00-310.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T3 310.00-290.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T4 290.00-270.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T5 270.00-250.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T6 250.00-230.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T7 230.00-210.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T8 210.00-190.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T9 190.00-170.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T10 170.00-150.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T11 150.00-130.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T12 130.00-110.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T13 110.00-90.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T14 90.00-70.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T15 70.00-50.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T16 50.00-30.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T17 30.00-10.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T18 10.00-2.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x1 1/2x3/16	A36 (36 ksi)
T19 2.00-0.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x1 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	Double Angle Stitch Bolt Spacing Redundants in
T1 350.00-330.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 330.00-310.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T3 310.00-290.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T4 290.00-270.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T5 270.00-250.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T6 250.00-230.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T7 230.00-210.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T8 210.00-190.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T9 190.00-170.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T10 170.00-150.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T11 150.00-130.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T12 130.00-110.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T13 110.00-90.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T14 90.00-70.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T15 70.00-50.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T16 50.00-30.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T17 30.00-10.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T18 10.00-2.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T19 2.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

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 350.00-330.00	No	Yes	1	1 1	1 1	1 1	0.65 0.65	0.65 0.65	1 1	1 1

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X	X Brace Diags Y	K Single Diags X	K Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
T2	No	Yes	1	1	1	1		0.65		0.65		1		1	
330.00-310.00				1	1	1		0.65		0.65		1		1	
T3	No	Yes	1	1	1	1		0.65		0.65		1		1	
310.00-290.00				1	1	1		0.65		0.65		1		1	
T4	No	Yes	1	1	1	1		0.65		0.65		1		1	
290.00-270.00				1	1	1		0.65		0.65		1		1	
T5	No	Yes	1	1	1	1		0.65		0.65		1		1	
270.00-250.00				1	1	1		0.65		0.65		1		1	
T6	No	Yes	1	1	1	1		0.65		0.65		1		1	
250.00-230.00				1	1	1		0.65		0.65		1		1	
T7	No	Yes	1	1	1	1		0.65		0.65		1		1	
230.00-210.00				1	1	1		0.65		0.65		1		1	
T8	No	Yes	1	1	1	1		0.65		0.65		1		1	
210.00-190.00				1	1	1		0.65		0.65		1		1	
T9	No	Yes	1	1	1	1		0.65		0.65		1		1	
190.00-170.00				1	1	1		0.65		0.65		1		1	
T10	No	Yes	1	1	1	1		0.65		0.65		1		1	
170.00-150.00				1	1	1		0.65		0.65		1		1	
T11	No	Yes	1	1	1	1		0.65		0.65		1		1	
150.00-130.00				1	1	1		0.65		0.65		1		1	
T12	No	Yes	1	1	1	1		0.65		0.65		1		1	
130.00-110.00				1	1	1		0.65		0.65		1		1	
T13	No	Yes	1	1	1	1		0.65		0.65		1		1	
110.00-90.00				1	1	1		0.65		0.65		1		1	
T14	No	Yes	1	1	1	1		0.65		0.65		1		1	
90.00-70.00				1	1	1		0.65		0.65		1		1	
T15	No	Yes	1	1	1	1		0.65		0.65		1		1	
70.00-50.00				1	1	1		0.65		0.65		1		1	
T16	No	Yes	1	1	1	1		0.65		0.65		1		1	
50.00-30.00				1	1	1		0.65		0.65		1		1	
T17	No	Yes	1	1	1	1		0.65		0.65		1		1	
30.00-10.00				1	1	1		0.65		0.65		1		1	
T18	No	Yes	0.01	1	1	1		0.65		0.65		1		1	
10.00-2.00				1	1	1		0.65		0.65		1		1	
T19 2.00-0.00	No	Yes	1	1	1	1		0.65		0.65		1		1	
				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 Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
350.00-330.00														
T2	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
330.00-310.00														
T3	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
310.00-290.00														

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
T4 290.00-270.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 270.00-250.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 250.00-230.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 230.00-210.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 210.00-190.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 190.00-170.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 170.00-150.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 150.00-130.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 130.00-110.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 110.00-90.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 90.00-70.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T15 70.00-50.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T16 50.00-30.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T17 30.00-10.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T18 10.00-2.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T19 2.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 350.00-330.00	Flange	0.7500 A325N	3	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 330.00-310.00	Flange	0.7500 A325N	3	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 310.00-290.00	Flange	0.7500 A325N	3	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 290.00-270.00	Flange	0.7500 A325N	3	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 270.00-250.00	Flange	0.7500 A325N	3	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 250.00-230.00	Flange	0.7500 A325N	3	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 230.00-210.00	Flange	0.7500 A325N	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Tower Elevation ft	Leg Connection Type	Leg Bolt Size in	Leg No.	Diagonal Bolt Size in	Diagonal No.	Top Girt Bolt Size in	Top Girt No.	Bottom Girt Bolt Size in	Bottom Girt No.	Mid Girt Bolt Size in	Mid Girt No.	Long Horizontal Bolt Size in	Long Horizontal No.	Short Horizontal Bolt Size in	Short Horizontal No.
T8	Flange	0.7500	3	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
210.00-190.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T9	Flange	0.7500	3	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
190.00-170.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T10	Flange	0.7500	3	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
170.00-150.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T11	Flange	0.7500	3	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
150.00-130.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T12	Flange	0.7500	3	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
130.00-110.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T13	Flange	0.7500	3	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
110.00-90.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T14	Flange	0.7500	3	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
90.00-70.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T15	Flange	0.7500	3	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
70.00-50.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T16	Flange	0.7500	3	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
50.00-30.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T17	Flange	0.7500	3	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
30.00-10.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T18 10.00-2.00	Flange	0.7500	3	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T19 2.00-0.00	Flange	0.7500	3	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	

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 %
310.083	EHS	A	5/8	4240.00	10%	21000	0.813	411.52	297.50	0.0000	23.46	100%
		B	5/8	4240.00	10%	21000	0.813	423.96	298.75	0.0000	7.06	100%
		C	5/8	4240.00	10%	21000	0.813	424.28	299.83	0.0000	7.67	100%
261.983	EHS	A	1/2	2690.00	10%	21000	0.517	378.38	297.50	0.0000	23.46	100%
		B	1/2	2690.00	10%	21000	0.517	389.86	298.75	0.0000	7.06	100%
		C	1/2	2690.00	10%	21000	0.517	390.28	299.83	0.0000	7.67	100%
230.083	EHS	A	7/16	2080.00	10%	21000	0.399	320.89	245.50	0.0000	20.96	100%
		B	7/16	2080.00	10%	21000	0.399	333.64	250.67	0.0000	7.50	100%
		C	7/16	2080.00	10%	21000	0.399	338.88	251.33	0.0000	0.42	100%
194.05	EHS	A	1/2	2690.00	10%	21000	0.517	271.41	195.00	0.0000	1.54	100%
		B	1/2	2690.00	10%	21000	0.517	269.25	197.83	0.0000	7.50	100%
		C	1/2	2690.00	10%	21000	0.517	275.77	200.50	0.0000	0.88	100%
150.083	EHS	A	9/16	3500.00	10%	21000	0.671	243.52	195.00	0.0000	1.54	100%
		B	9/16	3500.00	10%	21000	0.671	242.22	197.83	0.0000	7.50	100%
		C	9/16	3500.00	10%	21000	0.671	248.30	200.50	0.0000	0.88	100%
125.95	EHS	A	9/16	3500.00	10%	21000	0.671	229.62	195.00	0.0000	1.54	100%
		B	9/16	3500.00	10%	21000	0.671	228.87	197.83	0.0000	7.50	100%
		C	9/16	3500.00	10%	21000	0.671	234.61	200.50	0.0000	0.88	100%
94.05	EHS	A	9/16	3500.00	10%	21000	0.671	184.00	168.75	0.0000	16.38	100%
		B	7/16	2080.00	10%	21000	0.399	189.67	170.50	0.0000	7.06	100%
		C	7/16	2080.00	10%	21000	0.399	190.28	168.58	0.0000	2.17	100%

65.95	EHS	A	7/16	2080.00	10%	21000	0.399	172.52	168.75	0.0000	16.38	100%
		B	9/16	3500.00	10%	21000	0.671	177.07	170.50	0.0000	7.06	100%
		C	9/16	3500.00	10%	21000	0.671	176.96	168.58	0.0000	2.17	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
310.083	Corner						
261.983	Torque Arm	12.00	36.8699	Bat Ear	A36 (36 ksi)	Equal Angle	L3x3x1/4
230.083	Corner						
194.05	Torque Arm	12.00	36.8699	Bat Ear	A36 (36 ksi)	Equal Angle	L3x3x1/4
150.083	Corner						
125.95	Corner						
94.05	Corner						
65.95	Torque Arm	12.00	36.8699	Bat Ear	A36 (36 ksi)	Equal Angle	L3x3x1/4

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
310.08	A572-50 (50 ksi)	Solid Round			Yes	A36 (36 ksi)	Flat Bar	6x3/4
261.98	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Double Angle	
230.08	A572-50 (50 ksi)	Solid Round			Yes	A36 (36 ksi)	Flat Bar	6x3/4
194.05	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Double Angle	
150.08	A572-50 (50 ksi)	Solid Round			Yes	A36 (36 ksi)	Flat Bar	6x3/4
125.95	A572-50 (50 ksi)	Solid Round			Yes	A36 (36 ksi)	Flat Bar	6x3/4
94.05	A572-50 (50 ksi)	Solid Round			Yes	A36 (36 ksi)	Flat Bar	6x3/4
65.95	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Flat Bar	

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
310.083	334.57	344.68	344.94		15.82 6.9 sec/pulse	16.77 7.1 sec/pulse	16.79 7.1 sec/pulse	
261.983	195.62	201.56	201.77		13.47 6.3 sec/pulse	14.27 6.5 sec/pulse	14.30 6.5 sec/pulse	
230.083	128.04	133.12	135.21		9.69 5.4 sec/pulse	10.46 5.6 sec/pulse	10.79 5.7 sec/pulse	
194.05	140.32	139.20	142.57		6.96 4.6 sec/pulse	6.85 4.5 sec/pulse	7.18 4.6 sec/pulse	
150.083	163.40	162.53	166.61		5.61 4.1 sec/pulse	5.55 4.1 sec/pulse	5.83 4.2 sec/pulse	
125.95	154.08	153.57	157.43		5.00 3.9 sec/pulse	4.97 3.8 sec/pulse	5.22 3.9 sec/pulse	
94.05	123.46	75.68	75.92		3.22 3.1 sec/pulse	3.43 3.2 sec/pulse	3.45 3.2 sec/pulse	
65.95	68.84	118.81	118.74		2.84 2.9 sec/pulse	2.99 3.0 sec/pulse	2.99 3.0 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
310.083	No	No			1	1	1	1
261.983	No	No	0.33	1	1	1	1	1
230.083	No	No			1	1	1	1
194.05	No	No	0.33	1	1	1	1	1
150.083	No	No			1	1	1	1
125.95	No	No			1	1	1	1
94.05	No	No			1	1	1	1
65.95	No	No	0.33	1	1	1	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
310.083	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
261.983	0.7500 A325N	2	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
230.083	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
194.05	0.7500 A325N	2	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
150.083	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
125.95	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
94.05	0.7500 A325N	2	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75

Guy Elevation ft	Torque-Arm				Pull Off				Diagonal			
	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U
65.95	0.7500 A325N	2	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
310.083	A	166.77	27	6	1.7638
	B	158.57	27	6	1.7549
	C	158.88	27	6	1.7553
261.983	A	142.72	26	6	1.7366
	B	134.52	26	6	1.7263
	C	134.83	26	6	1.7267
230.083	A	125.52	25	6	1.7144
	B	118.79	25	6	1.7050
	C	115.25	25	6	1.6998
194.05	A	97.80	24	5	1.6721
	B	100.78	24	5	1.6772
	C	97.47	24	5	1.6716
150.083	A	75.81	22	5	1.6301
	B	78.79	22	5	1.6364
	C	75.48	22	5	1.6294
125.95	A	63.75	21	5	1.6021
	B	66.73	21	5	1.6094
	C	63.42	21	5	1.6012
94.05	A	55.22	20	5	1.5792
	B	50.56	20	4	1.5654
	C	48.11	19	4	1.5576
65.95	A	41.17	18	4	1.5335
	B	36.51	18	4	1.5152
	C	34.06	17	4	1.5047

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
1/2	B	No	Ar (CaAa)	350.00 - 8.00	0.4500	0	1	1	0.0000	0.5800		0.25
1/2	B	No	Ar (CaAa)	169.00 - 8.00	0.4500	0	1	1	0.0000	0.5800		0.25
1/2	B	No	Ar (CaAa)	157.00 - 8.00	0.4500	0	1	1	0.0000	0.5800		0.25
1/2	B	No	Ar (CaAa)	137.00 - 8.00	0.4500	0	1	1	0.0000	0.5800		0.25
1/2	B	No	Ar (CaAa)	117.00 - 8.00	0.4500	0	2	2	0.0000	0.5800		0.25
1 5/8 (Verizon)	A	No	Ar (CaAa)	184.00 - 8.00	0.0000	0	6	6	0.0000	1.9800		1.04
***												
***												
***												
1 5/8 (WWRX FM)	B	No	Ar (CaAa)	250.00 - 8.00	0.0000	0	1	1	0.0000	1.9800		1.04
7/8 (WWRX FM)	B	No	Ar (CaAa)	205.00 - 8.00	0.0000	0	1	1	0.0000	1.1100		0.54

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
7/8 (WWRX FM)	B	No	Ar (CaAa)	200.00 - 8.00	0.0000	0	1	1	0.0000	1.1100		0.54
***												
1-5/8" Hybird (Verizon)	A	No	Ar (CaAa)	184.00 - 8.00	0.0000	0	1	1	0.0000	1.6250		1.00
1-5/8" Hybird (Verizon)	B	No	Ar (CaAa)	184.00 - 8.00	0.0000	0	1	1	0.0000	1.6250		1.00

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C_AA_A ft^2/ft	Weight plf
***							
***							

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	350.00-330.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	1.160	0.000	5.00
		C	0.000	0.000	0.000	0.000	0.00
T2	330.00-310.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	1.160	0.000	5.00
		C	0.000	0.000	0.000	0.000	0.00
T3	310.00-290.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	1.160	0.000	5.00
		C	0.000	0.000	0.000	0.000	0.00
T4	290.00-270.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	1.160	0.000	5.00
		C	0.000	0.000	0.000	0.000	0.00
T5	270.00-250.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	1.160	0.000	5.00
		C	0.000	0.000	0.000	0.000	0.00
T6	250.00-230.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	5.120	0.000	25.80
		C	0.000	0.000	0.000	0.000	0.00
T7	230.00-210.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	5.120	0.000	25.80
		C	0.000	0.000	0.000	0.000	0.00
T8	210.00-190.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	7.895	0.000	39.30
		C	0.000	0.000	0.000	0.000	0.00
T9	190.00-170.00	A	0.000	0.000	18.907	0.000	101.36
		B	0.000	0.000	11.835	0.000	61.40
		C	0.000	0.000	0.000	0.000	0.00
T10	170.00-150.00	A	0.000	0.000	27.010	0.000	144.80
		B	0.000	0.000	14.318	0.000	73.90
		C	0.000	0.000	0.000	0.000	0.00
T11	150.00-130.00	A	0.000	0.000	27.010	0.000	144.80
		B	0.000	0.000	15.536	0.000	79.15
		C	0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T12	130.00-110.00	A	0.000	0.000	27.010	0.000	144.80
		B	0.000	0.000	17.102	0.000	85.90
		C	0.000	0.000	0.000	0.000	0.00
T13	110.00-90.00	A	0.000	0.000	27.010	0.000	144.80
		B	0.000	0.000	18.610	0.000	92.40
		C	0.000	0.000	0.000	0.000	0.00
T14	90.00-70.00	A	0.000	0.000	27.010	0.000	144.80
		B	0.000	0.000	18.610	0.000	92.40
		C	0.000	0.000	0.000	0.000	0.00
T15	70.00-50.00	A	0.000	0.000	27.010	0.000	144.80
		B	0.000	0.000	18.610	0.000	92.40
		C	0.000	0.000	0.000	0.000	0.00
T16	50.00-30.00	A	0.000	0.000	27.010	0.000	144.80
		B	0.000	0.000	18.610	0.000	92.40
		C	0.000	0.000	0.000	0.000	0.00
T17	30.00-10.00	A	0.000	0.000	27.010	0.000	144.80
		B	0.000	0.000	18.610	0.000	92.40
		C	0.000	0.000	0.000	0.000	0.00
T18	10.00-2.00	A	0.000	0.000	2.701	0.000	14.48
		B	0.000	0.000	1.861	0.000	9.24
		C	0.000	0.000	0.000	0.000	0.00
T19	2.00-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00

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	350.00-330.00	A	1.894	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	8.736	0.000	119.50
		C		0.000	0.000	0.000	0.000	0.00
T2	330.00-310.00	A	1.883	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	8.690	0.000	118.28
		C		0.000	0.000	0.000	0.000	0.00
T3	310.00-290.00	A	1.870	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	8.642	0.000	117.00
		C		0.000	0.000	0.000	0.000	0.00
T4	290.00-270.00	A	1.858	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	8.590	0.000	115.64
		C		0.000	0.000	0.000	0.000	0.00
T5	270.00-250.00	A	1.844	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	8.536	0.000	114.21
		C		0.000	0.000	0.000	0.000	0.00
T6	250.00-230.00	A	1.829	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	19.754	0.000	303.74
		C		0.000	0.000	0.000	0.000	0.00
T7	230.00-210.00	A	1.813	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	19.627	0.000	299.92
		C		0.000	0.000	0.000	0.000	0.00
T8	210.00-190.00	A	1.796	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	31.245	0.000	468.75
		C		0.000	0.000	0.000	0.000	0.00
T9	190.00-170.00	A	1.777	0.000	0.000	35.946	0.000	533.51
		B		0.000	0.000	45.249	0.000	681.16
		C		0.000	0.000	0.000	0.000	0.00
T10	170.00-150.00	A	1.757	0.000	0.000	51.135	0.000	753.53

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
		B		0.000	0.000	58.582	0.000	856.11
		C		0.000	0.000	0.000	0.000	0.00
T11	150.00-130.00	A	1.733	0.000	0.000	50.893	0.000	743.91
		B		0.000	0.000	66.493	0.000	947.64
		C		0.000	0.000	0.000	0.000	0.00
T12	130.00-110.00	A	1.707	0.000	0.000	50.618	0.000	733.04
		B		0.000	0.000	76.217	0.000	1033.92
		C		0.000	0.000	0.000	0.000	0.00
T13	110.00-90.00	A	1.676	0.000	0.000	50.298	0.000	720.47
		B		0.000	0.000	84.879	0.000	1082.99
		C		0.000	0.000	0.000	0.000	0.00
T14	90.00-70.00	A	1.639	0.000	0.000	49.915	0.000	705.53
		B		0.000	0.000	83.435	0.000	1047.82
		C		0.000	0.000	0.000	0.000	0.00
T15	70.00-50.00	A	1.592	0.000	0.000	49.434	0.000	686.94
		B		0.000	0.000	81.620	0.000	1004.46
		C		0.000	0.000	0.000	0.000	0.00
T16	50.00-30.00	A	1.529	0.000	0.000	48.779	0.000	661.97
		B		0.000	0.000	79.149	0.000	946.97
		C		0.000	0.000	0.000	0.000	0.00
T17	30.00-10.00	A	1.427	0.000	0.000	47.722	0.000	622.39
		B		0.000	0.000	75.150	0.000	857.65
		C		0.000	0.000	0.000	0.000	0.00
T18	10.00-2.00	A	1.265	0.000	0.000	4.606	0.000	56.19
		B		0.000	0.000	6.883	0.000	72.59
		C		0.000	0.000	0.000	0.000	0.00
T19	2.00-0.00	A	1.057	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	350.00-330.00	0.1291	-0.0745	0.1812	-0.1046
T2	330.00-310.00	0.1197	-0.0691	0.1601	-0.0924
T3	310.00-290.00	0.1291	-0.0746	0.1836	-0.1060
T4	290.00-270.00	0.1291	-0.0746	0.1846	-0.1066
T5	270.00-250.00	0.1291	-0.0746	0.1857	-0.1072
T6	250.00-230.00	0.4611	-0.2662	0.3565	-0.2058
T7	230.00-210.00	0.4919	-0.2840	0.4035	-0.2330
T8	210.00-190.00	0.6778	-0.3913	0.5873	-0.3391
T9	190.00-170.00	-0.3541	-0.8581	0.2805	-0.5622
T10	170.00-150.00	-0.5086	-0.9324	0.2602	-0.6167
T11	150.00-130.00	-0.4655	-0.9674	0.3646	-0.6938
T12	130.00-110.00	-0.3846	-0.9529	0.3890	-0.6669
T13	110.00-90.00	-0.3217	-0.9633	0.3850	-0.6575
T14	90.00-70.00	-0.3301	-0.9885	0.4036	-0.7008
T15	70.00-50.00	-0.3301	-0.9885	0.3994	-0.7087
T16	50.00-30.00	-0.3301	-0.9885	0.3926	-0.7191
T17	30.00-10.00	-0.3301	-0.9885	0.3795	-0.7356
T18	10.00-2.00	-0.1653	-0.4949	0.1782	-0.3848
T19	2.00-0.00	0.0000	0.0000	0.0000	0.0000

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	1/2	330.00 - 350.00	0.6000	0.3338
T2	1	1/2	310.00 - 330.00	0.6000	0.3060
T3	1	1/2	290.00 - 310.00	0.6000	0.3392
T4	1	1/2	270.00 - 290.00	0.6000	0.3418
T5	1	1/2	250.00 - 270.00	0.6000	0.3445
T6	1	1/2	230.00 - 250.00	0.6000	0.3170
T6	11	1 5/8	230.00 - 250.00	0.6000	0.3170
T7	1	1/2	210.00 - 230.00	0.6000	0.3507
T7	11	1 5/8	210.00 - 230.00	0.6000	0.3507
T8	1	1/2	190.00 - 210.00	0.6000	0.3542
T8	11	1 5/8	190.00 - 210.00	0.6000	0.3542
T8	12	7/8	190.00 - 205.00	0.6000	0.3542
T8	13	7/8	190.00 - 200.00	0.6000	0.3542
T9	1	1/2	170.00 - 190.00	0.6000	0.3580
T9	6	1 5/8	170.00 - 184.00	0.6000	0.3580
T9	11	1 5/8	170.00 - 190.00	0.6000	0.3580
T9	12	7/8	170.00 - 190.00	0.6000	0.3580
T9	13	7/8	170.00 - 190.00	0.6000	0.3580
T9	15	1-5/8" Hybird	170.00 - 184.00	0.6000	0.3580
T9	16	1-5/8" Hybird	170.00 - 184.00	0.6000	0.3580
T10	1	1/2	150.00 - 170.00	0.6000	0.3321
T10	2	1/2	150.00 - 169.00	0.6000	0.3321
T10	3	1/2	150.00 - 157.00	0.6000	0.3321
T10	6	1 5/8	150.00 - 170.00	0.6000	0.3321
T10	11	1 5/8	150.00 - 170.00	0.6000	0.3321
T10	12	7/8	150.00 - 170.00	0.6000	0.3321
T10	13	7/8	150.00 - 170.00	0.6000	0.3321
T10	15	1-5/8" Hybird	150.00 - 170.00	0.6000	0.3321

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T10	16	1-5/8" Hybird	150.00 - 170.00	0.6000	0.3321
T11	1	1/2	130.00 - 150.00	0.6000	0.3670
T11	2	1/2	130.00 - 150.00	0.6000	0.3670
T11	3	1/2	130.00 - 150.00	0.6000	0.3670
T11	4	1/2	130.00 - 137.00	0.6000	0.3670
T11	6	1 5/8	130.00 - 150.00	0.6000	0.3670
T11	11	1 5/8	130.00 - 150.00	0.6000	0.3670
T11	12	7/8	130.00 - 150.00	0.6000	0.3670
T11	13	7/8	130.00 - 150.00	0.6000	0.3670
T11	15	1-5/8" Hybird	130.00 - 150.00	0.6000	0.3670
T11	16	1-5/8" Hybird	130.00 - 150.00	0.6000	0.3670
T12	1	1/2	110.00 - 130.00	0.6000	0.3425
T12	2	1/2	110.00 - 130.00	0.6000	0.3425
T12	3	1/2	110.00 - 130.00	0.6000	0.3425
T12	4	1/2	110.00 - 130.00	0.6000	0.3425
T12	5	1/2	110.00 - 117.00	0.6000	0.3425
T12	6	1 5/8	110.00 - 130.00	0.6000	0.3425
T12	11	1 5/8	110.00 - 130.00	0.6000	0.3425
T12	12	7/8	110.00 - 130.00	0.6000	0.3425
T12	13	7/8	110.00 - 130.00	0.6000	0.3425
T12	15	1-5/8" Hybird	110.00 - 130.00	0.6000	0.3425
T12	16	1-5/8" Hybird	110.00 - 130.00	0.6000	0.3425
T13	1	1/2	90.00 - 110.00	0.6000	0.3489
T13	2	1/2	90.00 - 110.00	0.6000	0.3489
T13	3	1/2	90.00 - 110.00	0.6000	0.3489
T13	4	1/2	90.00 - 110.00	0.6000	0.3489
T13	5	1/2	90.00 - 110.00	0.6000	0.3489
T13	6	1 5/8	90.00 - 110.00	0.6000	0.3489
T13	11	1 5/8	90.00 - 110.00	0.6000	0.3489
T13	12	7/8	90.00 - 110.00	0.6000	0.3489
T13	13	7/8	90.00 - 110.00	0.6000	0.3489
T13	15	1-5/8" Hybird	90.00 - 110.00	0.6000	0.3489
T13	16	1-5/8" Hybird	90.00 - 110.00	0.6000	0.3489
T14	1	1/2	70.00 - 90.00	0.6000	0.3863
T14	2	1/2	70.00 - 90.00	0.6000	0.3863
T14	3	1/2	70.00 - 90.00	0.6000	0.3863
T14	4	1/2	70.00 - 90.00	0.6000	0.3863
T14	5	1/2	70.00 - 90.00	0.6000	0.3863
T14	6	1 5/8	70.00 - 90.00	0.6000	0.3863
T14	11	1 5/8	70.00 - 90.00	0.6000	0.3863

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T14	12	7/8	70.00 - 90.00	0.6000	0.3863
T14	13	7/8	70.00 - 90.00	0.6000	0.3863
T14	15	1-5/8" Hybird	70.00 - 90.00	0.6000	0.3863
T14	16	1-5/8" Hybird	70.00 - 90.00	0.6000	0.3863
T15	1	1/2	50.00 - 70.00	0.6000	0.3959
T15	2	1/2	50.00 - 70.00	0.6000	0.3959
T15	3	1/2	50.00 - 70.00	0.6000	0.3959
T15	4	1/2	50.00 - 70.00	0.6000	0.3959
T15	5	1/2	50.00 - 70.00	0.6000	0.3959
T15	6	1 5/8	50.00 - 70.00	0.6000	0.3959
T15	11	1 5/8	50.00 - 70.00	0.6000	0.3959
T15	12	7/8	50.00 - 70.00	0.6000	0.3959
T15	13	7/8	50.00 - 70.00	0.6000	0.3959
T15	15	1-5/8" Hybird	50.00 - 70.00	0.6000	0.3959
T15	16	1-5/8" Hybird	50.00 - 70.00	0.6000	0.3959
T16	1	1/2	30.00 - 50.00	0.6000	0.4090
T16	2	1/2	30.00 - 50.00	0.6000	0.4090
T16	3	1/2	30.00 - 50.00	0.6000	0.4090
T16	4	1/2	30.00 - 50.00	0.6000	0.4090
T16	5	1/2	30.00 - 50.00	0.6000	0.4090
T16	6	1 5/8	30.00 - 50.00	0.6000	0.4090
T16	11	1 5/8	30.00 - 50.00	0.6000	0.4090
T16	12	7/8	30.00 - 50.00	0.6000	0.4090
T16	13	7/8	30.00 - 50.00	0.6000	0.4090
T16	15	1-5/8" Hybird	30.00 - 50.00	0.6000	0.4090
T16	16	1-5/8" Hybird	30.00 - 50.00	0.6000	0.4090
T17	1	1/2	10.00 - 30.00	0.6000	0.4303
T17	2	1/2	10.00 - 30.00	0.6000	0.4303
T17	3	1/2	10.00 - 30.00	0.6000	0.4303
T17	4	1/2	10.00 - 30.00	0.6000	0.4303
T17	5	1/2	10.00 - 30.00	0.6000	0.4303
T17	6	1 5/8	10.00 - 30.00	0.6000	0.4303
T17	11	1 5/8	10.00 - 30.00	0.6000	0.4303
T17	12	7/8	10.00 - 30.00	0.6000	0.4303
T17	13	7/8	10.00 - 30.00	0.6000	0.4303
T17	15	1-5/8" Hybird	10.00 - 30.00	0.6000	0.4303
T17	16	1-5/8" Hybird	10.00 - 30.00	0.6000	0.4303
T18	1	1/2	8.00 - 10.00	0.6000	0.4826
T18	2	1/2	8.00 - 10.00	0.6000	0.4826
T18	3	1/2	8.00 - 10.00	0.6000	0.4826
T18	4	1/2	8.00 - 10.00	0.6000	0.4826
T18	5	1/2	8.00 - 10.00	0.6000	0.4826
T18	6	1 5/8	8.00 - 10.00	0.6000	0.4826
T18	11	1 5/8	8.00 - 10.00	0.6000	0.4826
T18	12	7/8	8.00 - 10.00	0.6000	0.4826
T18	13	7/8	8.00 - 10.00	0.6000	0.4826
T18	15	1-5/8" Hybird	8.00 - 10.00	0.6000	0.4826
T18	16	1-5/8" Hybird	8.00 - 10.00	0.6000	0.4826

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
8' Yagi	A	From Leg	0.00	0.0000	353.00	No Ice	11.52	11.52	30.25
			0.00			1/2" Ice	20.57	20.57	107.80
			0.00			1" Ice	29.61	29.61	185.35
***									
15' Omni	B	From Leg	1.00	0.0000	305.00	No Ice	4.50	4.50	15.00
			0.00			1/2" Ice	6.03	6.03	47.48
			7.50			1" Ice	7.58	7.58	89.58
***									
10' Omni	A	From Leg	1.00	0.0000	293.00	No Ice	3.00	3.00	33.30
			0.00			1/2" Ice	4.03	4.03	55.09
			0.00			1" Ice	5.03	5.03	83.44
***									
Angle T-Arm (Verizon)	A	From Leg	3.00	0.0000	184.00	No Ice	12.90	4.39	250.00
			0.00			1/2" Ice	15.30	6.00	314.00
			0.00			1" Ice	17.70	7.61	378.00
Angle T-Arm (Verizon)	B	From Leg	3.00	0.0000	184.00	No Ice	12.90	4.39	250.00
			0.00			1/2" Ice	15.30	6.00	314.00
			0.00			1" Ice	17.70	7.61	378.00
Angle T-Arm (Verizon)	C	From Leg	3.00	0.0000	184.00	No Ice	12.90	4.39	250.00
			0.00			1/2" Ice	15.30	6.00	314.00
			0.00			1" Ice	17.70	7.61	378.00
***									
***									
BXA-80080-4CF (Verizon)	A	From Leg	3.00	0.0000	174.00	No Ice	4.80	2.84	14.30
			0.00			1/2" Ice	5.12	3.15	45.30
			0.00			1" Ice	5.45	3.47	80.73
BXA-80080-4CF (Verizon)	B	From Leg	3.00	0.0000	174.00	No Ice	4.80	2.84	14.30
			0.00			1/2" Ice	5.12	3.15	45.30
			0.00			1" Ice	5.45	3.47	80.73
BXA-80063/6CF (Verizon)	C	From Leg	3.00	0.0000	174.00	No Ice	7.58	4.05	14.90
			0.00			1/2" Ice	8.03	4.49	56.90
			0.00			1" Ice	8.48	4.93	104.76
BXA-171085-8BF-EDIN-X (Verizon)	A	From Leg	3.00	0.0000	174.00	No Ice	2.94	2.16	10.50
			0.00			1/2" Ice	3.26	2.46	29.28
			0.00			1" Ice	3.57	2.77	52.05
BXA-171085-8BF-EDIN-X (Verizon)	B	From Leg	3.00	0.0000	174.00	No Ice	2.94	2.16	10.50
			0.00			1/2" Ice	3.26	2.46	29.28
			0.00			1" Ice	3.57	2.77	52.05
BXA-171085-8BF-EDIN-X (Verizon)	C	From Leg	3.00	0.0000	174.00	No Ice	2.94	2.16	10.50
			0.00			1/2" Ice	3.26	2.46	29.28
			0.00			1" Ice	3.57	2.77	52.05
Angle T-Arm (Verizon)	A	From Leg	3.00	0.0000	174.00	No Ice	12.90	4.39	250.00
			0.00			1/2" Ice	15.30	6.00	314.00
			0.00			1" Ice	17.70	7.61	378.00
Angle T-Arm (Verizon)	B	From Leg	3.00	0.0000	174.00	No Ice	12.90	4.39	250.00
			0.00			1/2" Ice	15.30	6.00	314.00
			0.00			1" Ice	17.70	7.61	378.00
Angle T-Arm (Verizon)	C	From Leg	3.00	0.0000	174.00	No Ice	12.90	4.39	250.00
			0.00			1/2" Ice	15.30	6.00	314.00
			0.00			1" Ice	17.70	7.61	378.00
***									
6' Yagi	C	From Leg	1.00	0.0000	169.00	No Ice	8.95	8.95	25.00
			0.00			1/2" Ice	15.80	15.80	98.00
			0.00			1" Ice	22.65	22.65	171.00
***									
8' Yagi	B	From Leg	1.00	0.0000	157.00	No Ice	11.52	11.52	30.25
			0.00			1/2" Ice	20.57	20.57	107.80

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
			0.00			1" Ice	29.61	29.61	185.35
Antenna Pipe Mount	B	From Leg	1.00	0.0000	157.00	No Ice	1.90	1.90	29.20
			0.00			1/2" Ice	2.73	2.73	50.32
			0.00			1" Ice	3.42	3.42	73.68
***									
10' Yagi	A	From Leg	1.00	0.0000	137.00	No Ice	12.00	12.00	30.00
			0.00			1/2" Ice	21.59	21.59	127.20
			0.00			1" Ice	31.18	31.18	224.00
Antenna Pipe Mount	A	From Leg	1.00	0.0000	137.00	No Ice	1.90	1.90	29.20
			0.00			1/2" Ice	2.73	2.73	50.32
			0.00			1" Ice	3.42	3.42	73.68
***									
WL 4-6/S	C	From Leg	1.00	0.0000	117.00	No Ice	4.33	4.33	56.00
			0.00			1/2" Ice	7.67	7.67	94.05
			0.00			1" Ice	10.20	10.20	212.00
***									
***									
***									
DCR-H3 (WWRX FM)	C	From Leg	3.00	0.0000	355.00	No Ice	4.93	4.93	81.00
			0.00			1/2" Ice	5.01	5.01	131.57
			0.00			1" Ice	5.06	5.06	184.72
DCR-H3 (WWRX FM)	C	From Leg	3.00	0.0000	350.00	No Ice	4.93	4.93	81.00
			0.00			1/2" Ice	5.01	5.01	131.57
			0.00			1" Ice	5.06	5.06	184.72
DCR-H3 (WWRX FM)	C	From Leg	3.00	0.0000	345.00	No Ice	4.93	4.93	81.00
			0.00			1/2" Ice	5.01	5.01	131.57
			0.00			1" Ice	5.06	5.06	184.72
***									
Dish Pipe Mount (WWRX FM)	A	From Leg	1.00	0.0000	205.00	No Ice	1.79	1.79	54.66
			0.00			1/2" Ice	2.46	2.46	80.59
			0.00			1" Ice	2.85	2.85	110.49
***									
Dish Pipe Mount (WWRX FM)	B	From Leg	1.00	0.0000	200.00	No Ice	1.80	1.80	54.66
			0.00			1/2" Ice	2.46	2.46	80.59
			0.00			1" Ice	2.85	2.85	110.49
***									
RRH 2x60 700U (Verizon)	A	From Leg	3.00	0.0000	184.00	No Ice	2.06	1.32	56.00
			0.00			1/2" Ice	2.24	1.48	73.28
			0.00			1" Ice	2.43	1.64	93.35
RRH 2x60 700U (Verizon)	B	From Leg	3.00	0.0000	184.00	No Ice	2.06	1.32	56.00
			0.00			1/2" Ice	2.24	1.48	73.28
			0.00			1" Ice	2.43	1.64	93.35
RRH 2x60 700U (Verizon)	C	From Leg	3.00	0.0000	184.00	No Ice	2.06	1.32	56.00
			0.00			1/2" Ice	2.24	1.48	73.28
			0.00			1" Ice	2.43	1.64	93.35
RRH 2x90 AWS (Verizon)	A	From Leg	3.00	0.0000	184.00	No Ice	2.47	1.37	64.00
			0.00			1/2" Ice	2.68	1.54	82.19
			0.00			1" Ice	2.90	1.73	103.39
RRH 2x90 AWS (Verizon)	B	From Leg	3.00	0.0000	184.00	No Ice	2.47	1.37	64.00
			0.00			1/2" Ice	2.68	1.54	82.19
			0.00			1" Ice	2.90	1.73	103.39
RRH 2x90 AWS (Verizon)	C	From Leg	3.00	0.0000	184.00	No Ice	2.47	1.37	64.00
			0.00			1/2" Ice	2.68	1.54	82.19
			0.00			1" Ice	2.90	1.73	103.39
RVZDC-6627-PF-48 (Verizon)	A	From Leg	3.00	0.0000	184.00	No Ice	2.51	3.78	32.00
			0.00			1/2" Ice	2.72	4.03	63.40
			0.00			1" Ice	2.94	4.29	98.56

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
***									
SBNHH-1D65A (Verizon)	A	From Leg	3.00 0.00 0.00	0.0000	184.00	No Ice 1/2" Ice 1" Ice	5.88 6.25 6.62	3.86 4.22 4.57	34.00 73.03 117.06
SBNHH-1D65A (Verizon)	B	From Leg	3.00 0.00 0.00	0.0000	184.00	No Ice 1/2" Ice 1" Ice	5.88 6.25 6.62	3.86 4.22 4.57	34.00 73.03 117.06
SBNHH-1D65A (Verizon)	C	From Leg	3.00 0.00 0.00	0.0000	184.00	No Ice 1/2" Ice 1" Ice	5.88 6.25 6.62	3.86 4.22 4.57	34.00 73.03 117.06
SBNHH-1D65A (Verizon)	A	From Leg	3.00 0.00 0.00	0.0000	184.00	No Ice 1/2" Ice 1" Ice	5.88 6.25 6.62	3.86 4.22 4.57	34.00 73.03 117.06
SBNHH-1D65A (Verizon)	B	From Leg	3.00 0.00 0.00	0.0000	184.00	No Ice 1/2" Ice 1" Ice	5.88 6.25 6.62	3.86 4.22 4.57	34.00 73.03 117.06
SBNHH-1D65A (Verizon)	C	From Leg	3.00 0.00 0.00	0.0000	184.00	No Ice 1/2" Ice 1" Ice	5.88 6.25 6.62	3.86 4.22 4.57	34.00 73.03 117.06

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
MF-950B (WWRX FM)	A	Grid	From Leg	1.00 0.00 0.00	0.0000		205.00	2.73	No Ice 1/2" Ice 1" Ice	5.85 6.22 6.58	13.00 44.93 76.86
MF-950B (WWRX FM)	B	Grid	From Leg	1.00 0.00 0.00	0.0000		200.00	2.73	No Ice 1/2" Ice 1" Ice	5.85 6.22 6.58	13.00 44.93 76.86

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

Comb. No.	Description
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 Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	350 - 330	3.734	37	0.2306	0.2404
T2	330 - 310	2.781	37	0.2152	0.1926
T3	310 - 290	1.955	37	0.1641	0.1397
T4	290 - 270	1.396	37	0.1090	0.0917
T5	270 - 250	1.046	29	0.0613	0.0484
T6	250 - 230	0.921	29	0.0181	0.0287
T7	230 - 210	0.912	29	0.0327	0.0185
T8	210 - 190	0.965	29	0.0384	0.0124
T9	190 - 170	1.029	29	0.0323	0.0115
T10	170 - 150	1.034	29	0.0304	0.0145
T11	150 - 130	0.867	29	0.0560	0.0290
T12	130 - 110	0.687	29	0.0498	0.0392
T13	110 - 90	0.525	29	0.0456	0.0303
T14	90 - 70	0.352	33	0.0722	0.0204
T15	70 - 50	0.511	33	0.0502	0.0063
T16	50 - 30	0.479	33	0.0312	0.0037
T17	30 - 10	0.270	33	0.0550	0.0036
T18	10 - 2	0.046	33	0.0315	0.0015
T19	2 - 0	0.004	33	0.0052	0.0003

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
355.00	DCR-H3	37	3.734	0.2306	0.2404	157837
353.00	8' Yagi	37	3.734	0.2306	0.2404	157837
350.00	DCR-H3	37	3.734	0.2306	0.2404	157837
345.00	DCR-H3	37	3.492	0.2289	0.2289	157837
310.08	Guy	37	1.958	0.1643	0.1399	14216
305.00	15' Omni	37	1.790	0.1496	0.1273	15455
293.00	10' Omni	37	1.466	0.1167	0.0988	23518
261.98	Guy	29	0.975	0.0421	0.0379	22186
230.08	Guy	29	0.912	0.0326	0.0185	53944
205.00	MF-950B	29	0.981	0.0384	0.0124	161381
200.00	MF-950B	29	0.998	0.0378	0.0121	104831
194.05	Guy	29	1.017	0.0355	0.0117	73831
184.00	Angle T-Arm	29	1.044	0.0251	0.0114	33820
174.00	BXA-80080-4CF	29	1.046	0.0254	0.0130	19327
169.00	6' Yagi	29	1.029	0.0318	0.0150	18078
157.00	8' Yagi	29	0.937	0.0489	0.0232	50752
150.08	Guy	29	0.868	0.0560	0.0289	215122
137.00	10' Yagi	29	0.745	0.0567	0.0377	86083
125.95	Guy	29	0.656	0.0436	0.0385	52725
117.00	WL 4-6/S	29	0.588	0.0399	0.0343	37081
94.05	Guy	29	0.357	0.0690	0.0228	19167
65.95	Guy	33	0.526	0.0399	0.0048	15712

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	350 - 330	24.940	10	1.4406	1.2188
T2	330 - 310	19.208	11	1.3703	0.9829
T3	310 - 290	14.601	12	1.1198	0.7230
T4	290 - 270	11.383	12	0.8125	0.5025
T5	270 - 250	9.171	4	0.4908	0.3047
T6	250 - 230	8.048	4	0.2005	0.2122
T7	230 - 210	7.526	4	0.0942	0.1518
T8	210 - 190	7.323	4	0.1076	0.1091
T9	190 - 170	7.181	4	0.1117	0.1094
T10	170 - 150	6.717	4	0.2337	0.1160
T11	150 - 130	5.398	4	0.3446	0.1769
T12	130 - 110	4.059	4	0.3163	0.2192
T13	110 - 90	2.967	4	0.2600	0.1686
T14	90 - 70	1.993	4	0.2197	0.1140
T15	70 - 50	1.636	8	0.1537	0.0390
T16	50 - 30	1.309	8	0.1058	0.0481
T17	30 - 10	0.735	8	0.1480	0.1698
T18	10 - 2	0.131	8	0.0866	0.1310
T19	2 - 0	0.011	8	0.0147	0.0026

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
355.00	DCR-H3	10	24.940	1.4406	1.2188	39303
353.00	8' Yagi	10	24.940	1.4406	1.2188	39303
350.00	DCR-H3	10	24.940	1.4406	1.2188	39303
345.00	DCR-H3	10	23.425	1.4334	1.1620	39303
310.08	Guy	12	14.617	1.1211	0.7240	3023
305.00	15' Omni	12	13.677	1.0440	0.6646	3195
293.00	10' Omni	12	11.796	0.8590	0.5346	4303
261.98	Guy	4	8.614	0.3493	0.2566	3283
230.08	Guy	4	7.528	0.0944	0.1521	7644
205.00	MF-950B	4	7.291	0.1144	0.1106	23251
200.00	MF-950B	4	7.260	0.1189	0.1110	23303
194.05	Guy	4	7.217	0.1181	0.1104	14500
184.00	Angle T-Arm	4	7.111	0.0925	0.1078	6632
174.00	BXA-80080-4CF	4	6.878	0.1910	0.1107	3887
169.00	6' Yagi	4	6.669	0.2434	0.1178	3654
157.00	8' Yagi	4	5.912	0.3250	0.1519	10007
150.08	Guy	4	5.404	0.3444	0.1766	27870
137.00	10' Yagi	4	4.498	0.3353	0.2143	16704
125.95	Guy	4	3.821	0.3022	0.2145	13628
117.00	WL 4-6/S	4	3.330	0.2765	0.1908	12991
94.05	Guy	4	2.182	0.2297	0.1268	6881
65.95	Guy	8	1.587	0.1363	0.0309	6970

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	350	Leg	A325N	0.7500	3	4683.23	29820.60	0.157 ✔	1	Bolt Tension
T2	330	Leg	A325N	0.7500	3	8654.44	29820.60	0.290 ✔	1	Bolt Tension
T3	310	Leg	A325N	0.7500	3	5923.15	29820.60	0.199 ✔	1	Bolt Tension
T4	290	Leg	A325N	0.7500	3	6010.11	29820.60	0.202 ✔	1	Bolt Tension
T5	270	Leg	A325N	0.7500	3	4102.34	29820.60	0.138 ✔	1	Bolt Tension
		Torque Arm Top@261.983	A325N	0.7500	2	5018.06	11146.90	0.450 ✔	1	Member Block Shear
		Torque Arm Bottom@261.983	A325N	0.7500	2	4510.87	17892.40	0.252 ✔	1	Bolt Shear
T6	250	Leg	A325N	0.7500	3	4474.69	29820.60	0.150 ✔	1	Bolt Tension
T7	230	Leg	A325N	0.7500	3	4257.25	29820.60	0.143 ✔	1	Bolt Tension
T8	210	Leg	A325N	0.7500	3	4289.69	29820.60	0.144 ✔	1	Bolt Tension
		Torque Arm Top@194.05	A325N	0.7500	2	3773.92	11146.90	0.339 ✔	1	Member Block Shear
		Torque Arm Bottom@194.05	A325N	0.7500	2	4796.03	17892.40	0.268 ✔	1	Bolt Shear
T9	190	Leg	A325N	0.7500	3	6440.78	29820.60	0.216 ✔	1	Bolt Tension
T10	170	Leg	A325N	0.7500	3	6495.97	29820.60	0.218 ✔	1	Bolt Tension
T11	150	Leg	A325N	0.7500	3	6646.05	29820.60	0.223 ✔	1	Bolt Tension
T12	130	Leg	A325N	0.7500	3	7542.46	29820.60	0.253 ✔	1	Bolt Tension

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
T13	110	Leg	A325N	0.7500	3	8014.67	29820.60	0.269 ✔	1	Bolt Tension
T14	90	Leg	A325N	0.7500	3	8856.96	29820.60	0.297 ✔	1	Bolt Tension
T15	70	Leg	A325N	0.7500	3	9161.14	29820.60	0.307 ✔	1	Bolt Tension
		Torque Arm Top@65.95	A325N	0.7500	2	3334.37	11146.90	0.299 ✔	1	Member Block Shear
		Torque Arm Bottom@65.95	A325N	0.7500	2	2263.44	17892.40	0.127 ✔	1	Bolt Shear
T16	50	Leg	A325N	0.7500	3	8710.68	29820.60	0.292 ✔	1	Bolt Tension
T17	30	Leg	A325N	0.7500	3	9439.18	29820.60	0.317 ✔	1	Bolt Tension
T18	10	Leg	A325N	0.7500	3	9768.74	29820.60	0.328 ✔	1	Bolt Tension
T19	2	Leg	A325N	0.7500	3	10544.60	29820.60	0.354 ✔	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.
T2	310.08 (A) (912)	5/8 EHS	4240.00	42399.99	14029.30	25440.00	1.000	1.813 ✔
	310.08 (B) (911)	5/8 EHS	4240.00	42399.99	14274.00	25440.00	1.000	1.782 ✔
	310.08 (C) (907)	5/8 EHS	4240.00	42399.99	14179.00	25440.00	1.000	1.794 ✔
T5	261.98 (A) (925)	1/2 EHS	2690.00	26900.04	9584.73	16140.00	1.000	1.684 ✔
	261.98 (A) (926)	1/2 EHS	2690.00	26900.04	9588.56	16140.00	1.000	1.683 ✔
	261.98 (B) (919)	1/2 EHS	2690.00	26900.04	9784.58	16140.00	1.000	1.650 ✔
	261.98 (B) (920)	1/2 EHS	2690.00	26900.04	9786.95	16140.00	1.000	1.649 ✔
	261.98 (C) (913)	1/2 EHS	2690.00	26900.04	9800.31	16140.00	1.000	1.647 ✔
	261.98 (C) (914)	1/2 EHS	2690.00	26900.04	9794.39	16140.00	1.000	1.648 ✔
T6	230.08 (A) (936)	7/16 EHS	2080.00	20800.02	7503.61	12480.00	1.000	1.663 ✔
	230.08 (B) (935)	7/16 EHS	2080.00	20800.02	7645.26	12480.00	1.000	1.632 ✔
	230.08 (C) (931)	7/16 EHS	2080.00	20800.02	7689.78	12480.00	1.000	1.623 ✔
T8	194.05 (A) (949)	1/2 EHS	2690.00	26900.04	7634.43	16140.00	1.000	2.114 ✔
	194.05 (A) (950)	1/2 EHS	2690.00	26900.04	7629.69	16140.00	1.000	2.115 ✔
	194.05 (B) (943)	1/2 EHS	2690.00	26900.04	7628.75	16140.00	1.000	2.116 ✔
	194.05 (B) (944)	1/2 EHS	2690.00	26900.04	7630.57	16140.00	1.000	2.115 ✔
	194.05 (C) (937)	1/2 EHS	2690.00	26900.04	7717.55	16140.00	1.000	2.091 ✔

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.
	194.05 (C) (938)	1/2 EHS	2690.00	26900.04	7721.25	16140.00	1.000	2.090 ✔
T10	150.08 (A) (960)	9/16 EHS	3500.00	35000.04	9148.62	21000.00	1.000	2.295 ✔
	150.08 (B) (959)	9/16 EHS	3500.00	35000.04	9258.30	21000.00	1.000	2.268 ✔
	150.08 (C) (955)	9/16 EHS	3500.00	35000.04	9303.72	21000.00	1.000	2.257 ✔
T12	125.95 (A) (966)	9/16 EHS	3500.00	35000.04	8239.64	21000.00	1.000	2.549 ✔
	125.95 (B) (965)	9/16 EHS	3500.00	35000.04	8413.45	21000.00	1.000	2.496 ✔
	125.95 (C) (961)	9/16 EHS	3500.00	35000.04	8535.61	21000.00	1.000	2.460 ✔
T13	94.05 (A) (972)	9/16 EHS	3500.00	35000.04	7557.49	21000.00	1.000	2.779 ✔
	94.05 (B) (971)	7/16 EHS	2080.00	20800.02	5345.09	12480.00	1.000	2.335 ✔
	94.05 (C) (967)	7/16 EHS	2080.00	20800.02	5395.62	12480.00	1.000	2.313 ✔
T15	65.95 (A) (985)	7/16 EHS	2080.00	20800.02	5561.60	12480.00	1.000	2.244 ✔
	65.95 (A) (986)	7/16 EHS	2080.00	20800.02	5557.46	12480.00	1.000	2.246 ✔
	65.95 (B) (979)	9/16 EHS	3500.00	35000.04	6778.39	21000.00	1.000	3.098 ✔
	65.95 (B) (980)	9/16 EHS	3500.00	35000.04	6733.40	21000.00	1.000	3.119 ✔
	65.95 (C) (973)	9/16 EHS	3500.00	35000.04	6825.75	21000.00	1.000	3.077 ✔
	65.95 (C) (974)	9/16 EHS	3500.00	35000.04	6875.84	21000.00	1.000	3.054 ✔

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	350 - 330	P3x.216	20.00	3.98	41.1 K=1.00	2.2285	1.00	-19765.30	88640.30	0.223 [1] ✔
T2	330 - 310	P3x.216	20.00	3.97	40.9 K=1.00	2.2285	1.00	-42077.00	88731.70	0.474 [1] ✔
T3	310 - 290	P3x.216	20.00	3.97	40.9 K=1.00	2.2285	1.00	-44417.60	88731.70	0.501 [1] ✔
T4	290 - 270	P3x.216	20.00	3.97	40.9 K=1.00	2.2285	1.00	-47652.60	88731.70	0.537 [1] ✔
T5	270 - 250	P3x.216	20.00	3.97	40.9 K=1.00	2.2285	1.00	-52304.90	88731.70	0.589 [1] ✔
T6	250 - 230	P3x.216	20.00	3.97	40.9 K=1.00	2.2285	1.00	-40375.80	88731.70	0.455 [1] ✔
T7	230 - 210	P3x.216	20.00	3.97	40.9 K=1.00	2.2285	1.00	-42993.30	88731.70	0.485 [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 $\frac{P_u}{\phi P_n}$
T8	210 - 190	P3x.216	20.00	3.97	40.9 K=1.00	2.2285	1.00	-42803.30	88731.70	0.482 [1] ✓
T9	190 - 170	P3x.216	20.00	3.97	40.9 K=1.00	2.2285	1.00	-59485.80	88731.70	0.670 [1] ✓
T10	170 - 150	P3x.216	20.00	3.97	40.9 K=1.00	2.2285	1.00	-59041.00	88731.70	0.665 [1] ✓
T11	150 - 130	P3x.216	20.00	3.97	40.9 K=1.00	2.2285	1.00	-60275.70	88731.70	0.679 [1] ✓
T12	130 - 110	P3x.216	20.00	3.97	40.9 K=1.00	2.2285	1.00	-67882.10	88731.70	0.765 [1] ✓
T13	110 - 90	P3x.216	20.00	3.97	40.9 K=1.00	2.2285	1.00	-73185.10	88731.70	0.825 [1] ✓
T14	90 - 70	P3x.216	20.00	3.97	40.9 K=1.00	2.2285	1.00	-79712.70	88731.70	0.898 [1] ✓
T15	70 - 50	P3x.216	20.00	3.97	40.9 K=1.00	2.2285	1.00	-83691.10	88731.70	0.943 [1] ✓
T16	50 - 30	P3x.216	20.00	3.97	40.9 K=1.00	2.2285	1.00	-82696.40	88731.70	0.932 [1] ✓
T17	30 - 10	P3x.216	20.00	3.97	40.9 K=1.00	2.2285	1.00	-84952.60	88731.70	0.957 [1] ✓
T18	10 - 2	ROHN 3 STD M	8.00	3.92	0.4 K=0.01	2.2285	0.91	-87918.70	91076.80	0.965 [1] ✓
T19	2 - 0	P3x.216(P4.0x .226 half pipe)	2.00	1.92	20.2 K=1.00	3.5682	0.93	-94901.50	145536.00	0.652 [1] ✓

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	350 - 330	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-5468.75	15826.20	0.346 [1] ✓
T2	330 - 310	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-6467.32	15826.20	0.409 [1] ✓
T3	310 - 290	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-6081.10	15826.20	0.384 [1] ✓
T4	290 - 270	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-6019.99	15826.20	0.380 [1] ✓
T5	270 - 250	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-11193.70	15826.20	0.707 [1] ✓
T6	250 - 230	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-4936.78	15826.20	0.312 [1] ✓
T7	230 - 210	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-4408.69	15826.20	0.279 [1] ✓
T8	210 - 190	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-6167.56	15826.20	0.390 [1] ✓
T9	190 - 170	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-5230.49	15826.20	0.330 [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	170 - 150	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-4035.53	15826.20	0.255 [1] ✔
T11	150 - 130	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-3182.35	15826.20	0.201 [1] ✔
T12	130 - 110	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-3209.46	15826.20	0.203 [1] ✔
T13	110 - 90	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-3212.61	15826.20	0.203 [1] ✔
T14	90 - 70	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-3010.97	15826.20	0.190 [1] ✔
T15	70 - 50	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-6712.57	15826.20	0.424 [1] ✔
T16	50 - 30	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-2641.06	15826.20	0.167 [1] ✔
T17	30 - 10	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-2628.04	15826.20	0.166 [1] ✔
T18	10 - 2	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-2956.49	15826.20	0.187 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	350 - 330	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-2755.35	15826.20	0.174 [1] ✔
T2	330 - 310	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-2857.92	15826.20	0.181 [1] ✔
T3	310 - 290	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-1007.93	15826.20	0.064 [1] ✔
T4	290 - 270	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-3010.88	15826.20	0.190 [1] ✔
T5	270 - 250	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-3073.93	15826.20	0.194 [1] ✔
T6	250 - 230	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-2604.95	15826.20	0.165 [1] ✔
T7	230 - 210	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-924.94	15826.20	0.058 [1] ✔
T8	210 - 190	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-1997.72	15826.20	0.126 [1] ✔
T9	190 - 170	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-2264.00	15826.20	0.143 [1] ✔
T10	170 - 150	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-2207.83	15826.20	0.140 [1] ✔
T11	150 - 130	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-639.81	15826.20	0.040 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T12	130 - 110	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-1709.32	15826.20	0.108 [1] ✔
T13	110 - 90	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-1551.32	15826.20	0.098 [1] ✔
T14	90 - 70	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-1645.63	15826.20	0.104 [1] ✔
T15	70 - 50	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-1588.77	15826.20	0.100 [1] ✔
T16	50 - 30	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-1376.13	15826.20	0.087 [1] ✔
T17	30 - 10	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-1278.04	15826.20	0.081 [1] ✔
T18	10 - 2	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-1417.66	15826.20	0.090 [1] ✔
T19	2 - 0	L2x1 1/2x3/16	3.08	2.89	70.1 K=0.65	0.6211	-3413.29	15539.40	0.220 [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	350 - 330	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-2940.67	15826.20	0.186 [1] ✔
T2	330 - 310	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-216.66	15826.20	0.014 [*1] ✔
T3	310 - 290	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-3019.03	15826.20	0.191 [1] ✔
T4	290 - 270	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-3168.96	15826.20	0.200 [1] ✔
T5	270 - 250	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-2565.86	15826.20	0.162 [1] ✔
T6	250 - 230	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-269.83	15826.20	0.017 [1] ✔
T7	230 - 210	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-2019.78	15826.20	0.128 [1] ✔
T8	210 - 190	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-2309.07	15826.20	0.146 [1] ✔
T9	190 - 170	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-2148.63	15826.20	0.136 [1] ✔
T10	170 - 150	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-194.17	15826.20	0.012 [1] ✔
T11	150 - 130	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-1857.30	15826.20	0.117 [1] ✔
T12	130 - 110	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-1557.87	15826.20	0.098 [1] ✔
T13	110 - 90	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-1549.85	15826.20	0.098 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T14	90 - 70	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-1544.78	15826.20	0.098 [1]
T15	70 - 50	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-1372.37	15826.20	0.087 [1]
T16	50 - 30	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-1257.42	15826.20	0.079 [1]
T17	30 - 10	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-1469.78	15826.20	0.093 [1]
T18	10 - 2	L2x1 1/2x3/16	3.08	2.79	67.6 K=0.65	0.6211	-3247.55	15826.20	0.205 [1]

* DL controls
[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 $\frac{P_u}{\phi P_n}$
T2	330 - 310	6x3/4	3.08	2.79	154.5 K=1.00	4.5000	-1569.74	42563.90	0.037 *[1]
T6	250 - 230	6x3/4	3.08	2.79	154.5 K=1.00	4.5000	-1954.97	42563.90	0.046 [1]
T10	170 - 150	6x3/4	3.08	2.79	154.5 K=1.00	4.5000	-1406.81	42563.90	0.033 [1]
T12	130 - 110	6x3/4	3.08	2.79	154.5 K=1.00	4.5000	-1497.18	42563.90	0.035 [1]
T13	110 - 90	6x3/4	3.08	2.79	154.5 K=1.00	4.5000	-1646.54	42563.90	0.039 [1]

* DL controls
[1] P_u / ϕP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T5	270 - 250 (915)	L3x3x1/4	6.23	6.09	78.5 K=1.00	1.4400	-2062.70	33720.30	0.061 [1]
T5	270 - 250 (916)	L3x3x1/4	6.23	6.09	78.5 K=1.00	1.4400	-1894.15	33720.30	0.056 [1]
T5	270 - 250 (921)	L3x3x1/4	6.23	6.09	78.5 K=1.00	1.4400	-1660.44	33720.30	0.049 [1]
T5	270 - 250 (922)	L3x3x1/4	6.23	6.09	78.5	1.4400	-1810.56	33720.30	0.054 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
					K=1.00				✔
T5	270 - 250 (927)	L3x3x1/4	6.23	6.09	78.5	1.4400	-1721.67	33720.30	0.051 [1]
					K=1.00				✔
T5	270 - 250 (928)	L3x3x1/4	6.23	6.09	78.5	1.4400	-1704.00	33720.30	0.051 [1]
					K=1.00				✔
T15	70 - 50 (975)	L3x3x1/4	6.23	6.09	78.5	1.4400	-1748.88	33720.30	0.052 [1]
					K=1.00				✔
T15	70 - 50 (981)	L3x3x1/4	6.23	6.09	78.5	1.4400	-877.04	33720.30	0.026 [1]
					K=1.00				✔
T15	70 - 50 (982)	L3x3x1/4	6.23	6.09	78.5	1.4400	-823.67	33720.30	0.024 [1]
					K=1.00				✔
T15	70 - 50 (987)	L3x3x1/4	6.23	6.09	78.5	1.4400	-1776.96	33720.30	0.053 [1]
					K=1.00				✔

[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 $\frac{P_u}{\phi P_n}$
T5	270 - 250 (917)	L3x3x1/4	10.09	9.85	127.1	1.4400	-8863.10	19924.80	0.445 [1]
					K=1.00				✔
T5	270 - 250 (918)	L3x3x1/4	10.09	9.85	127.1	1.4400	-8581.93	19924.80	0.431 [1]
					K=1.00				✔
T5	270 - 250 (923)	L3x3x1/4	10.09	9.85	127.1	1.4400	-8862.74	19924.80	0.445 [1]
					K=1.00				✔
T5	270 - 250 (924)	L3x3x1/4	10.09	9.85	127.1	1.4400	-9021.74	19924.80	0.453 [1]
					K=1.00				✔
T5	270 - 250 (929)	L3x3x1/4	10.09	9.85	127.1	1.4400	-8812.81	19924.80	0.442 [1]
					K=1.00				✔
T5	270 - 250 (930)	L3x3x1/4	10.09	9.85	127.1	1.4400	-8689.30	19924.80	0.436 [1]
					K=1.00				✔
T8	210 - 190 (941)	L3x3x1/4	10.22	9.98	128.8	1.4400	-9536.29	19484.70	0.489 [1]
					K=1.00				✔
T8	210 - 190 (942)	L3x3x1/4	10.22	9.98	128.8	1.4400	-9592.06	19484.70	0.492 [1]
					K=1.00				✔
T8	210 - 190 (947)	L3x3x1/4	10.22	9.98	128.8	1.4400	-9227.37	19484.70	0.474 [1]
					K=1.00				✔
T8	210 - 190 (948)	L3x3x1/4	10.22	9.98	128.8	1.4400	-9283.00	19484.70	0.476 [1]
					K=1.00				✔
T8	210 - 190 (953)	L3x3x1/4	10.22	9.98	128.8	1.4400	-9378.91	19484.70	0.481 [1]
					K=1.00				✔
T8	210 - 190 (954)	L3x3x1/4	10.22	9.98	128.8	1.4400	-9489.57	19484.70	0.487 [1]
					K=1.00				✔
T15	70 - 50 (977)	L3x3x1/4	10.09	9.85	127.1	1.4400	-4526.88	19924.80	0.227 [1]
					K=1.00				✔
T15	70 - 50 (978)	L3x3x1/4	10.09	9.85	127.1	1.4400	-3029.32	19924.80	0.152 [1]
					K=1.00				✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T15	70 - 50 (983)	L3x3x1/4	10.09	9.85	127.1 K=1.00	1.4400	-4190.85	19924.80	0.210 [1] ✔
T15	70 - 50 (984)	L3x3x1/4	10.09	9.85	127.1 K=1.00	1.4400	-4399.01	19924.80	0.221 [1] ✔
T15	70 - 50 (989)	L3x3x1/4	10.09	9.85	127.1 K=1.00	1.4400	-4299.85	19924.80	0.216 [1] ✔
T15	70 - 50 (990)	L3x3x1/4	10.09	9.85	127.1 K=1.00	1.4400	-3026.34	19924.80	0.152 [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	350 - 330	P3x.216	20.00	3.98	41.1	2.2285	14049.70	100281.00	0.140 [1] ✔
T2	330 - 310	P3x.216	20.00	3.97	40.9	2.2285	25963.30	100281.00	0.259 [1] ✔
T3	310 - 290	P3x.216	20.00	3.97	40.9	2.2285	25962.80	100281.00	0.259 [1] ✔
T4	290 - 270	P3x.216	20.00	3.97	40.9	2.2285	18030.30	100281.00	0.180 [1] ✔
T5	270 - 250	P3x.216	20.00	3.97	40.9	2.2285	18029.60	100281.00	0.180 [1] ✔
T6	250 - 230	P3x.216	20.00	3.97	40.9	2.2285	7.43	100281.00	0.000 [1] ✔
T9	190 - 170	P3x.216	20.00	3.97	40.9	2.2285	2477.39	100281.00	0.025 [1] ✔
T10	170 - 150	P3x.216	20.00	3.97	40.9	2.2285	2476.51	100281.00	0.025 [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	350 - 330	5/8	5.04	4.56	350.1	0.3068	6437.99	9940.20	0.648 [1] ✔
T2	330 - 310	5/8	5.02	4.55	349.2	0.3068	7501.91	9940.20	0.755 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T3	310 - 290	5/8	5.02	4.55	349.2	0.3068	6118.25	9940.20	0.616 [1]
T4	290 - 270	5/8	5.02	4.55	349.2	0.3068	5733.44	9940.20	0.577 [1]
T5	270 - 250	5/8	5.02	4.55	349.2	0.3068	5922.61	9940.20	0.596 [1]
T6	250 - 230	5/8	5.02	4.55	349.2	0.3068	4399.03	9940.20	0.443 [1]
T7	230 - 210	5/8	5.02	4.55	349.2	0.3068	4459.86	9940.20	0.449 [1]
T8	210 - 190	5/8	5.02	4.55	349.2	0.3068	5741.82	9940.20	0.578 [1]
T9	190 - 170	5/8	5.02	4.55	349.2	0.3068	5148.89	9940.20	0.518 [1]
T10	170 - 150	5/8	5.02	4.55	349.2	0.3068	5617.31	9940.20	0.565 [1]
T11	150 - 130	5/8	5.02	4.55	349.2	0.3068	3954.74	9940.20	0.398 [1]
T12	130 - 110	5/8	5.02	4.55	349.2	0.3068	4274.60	9940.20	0.430 [1]
T13	110 - 90	5/8	5.02	4.55	349.2	0.3068	3727.54	9940.20	0.375 [1]
T14	90 - 70	5/8	5.02	4.55	349.2	0.3068	3443.81	9940.20	0.346 [1]
T15	70 - 50	5/8	5.02	4.55	349.2	0.3068	3370.23	9940.20	0.339 [1]
T16	50 - 30	5/8	5.02	4.55	349.2	0.3068	2568.92	9940.20	0.258 [1]
T17	30 - 10	5/8	5.02	4.55	349.2	0.3068	3288.42	9940.20	0.331 [1]
T18	10 - 2	5/8	4.98	4.51	346.4	0.3068	3445.76	9940.20	0.347 [1]
T19	2 - 0	5/8	3.63	3.41	261.6	0.3068	7334.04	9940.20	0.738 [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 $\frac{P_u}{\phi P_n}$
T5	270 - 250	L2x1 1/2x3/16	3.08	2.79	76.1	0.6211	2410.70	20123.40	0.120 [1]
T8	210 - 190	L2x1 1/2x3/16	3.08	2.79	76.1	0.6211	1713.79	20123.40	0.085 [1]
T12	130 - 110	L2x1 1/2x3/16	3.08	2.79	76.1	0.6211	444.01	20123.40	0.022 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T13	110 - 90	L2x1 1/2x3/16	3.08	2.79	76.1	0.6211	322.26	20123.40	0.016 [1] ✔
T14	90 - 70	L2x1 1/2x3/16	3.08	2.79	76.1	0.6211	5.40	20123.40	0.000 [1] ✔
T15	70 - 50	L2x1 1/2x3/16	3.08	2.79	76.1	0.6211	2856.35	20123.40	0.142 [1] ✔
T16	50 - 30	L2x1 1/2x3/16	3.08	2.79	76.1	0.6211	11.71	20123.40	0.001 [1] ✔
T17	30 - 10	L2x1 1/2x3/16	3.08	2.79	76.1	0.6211	13.10	20123.40	0.001 [1] ✔
T18	10 - 2	L2x1 1/2x3/16	3.08	2.79	76.1	0.6211	2.80	20123.40	0.000* [1] ✔

* DL controls
[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 $\frac{P_u}{\phi P_n}$
T11	150 - 130	L2x1 1/2x3/16	3.08	2.79	76.1	0.6211	164.43	20123.40	0.008 [1] ✔
T14	90 - 70	L2x1 1/2x3/16	3.08	2.79	76.1	0.6211	44.85	20123.40	0.002 [1] ✔
T15	70 - 50	L2x1 1/2x3/16	3.08	2.79	76.1	0.6211	7.80	20123.40	0.000 [1] ✔
T18	10 - 2	L2x1 1/2x3/16	3.08	2.79	76.1	0.6211	19.67	20123.40	0.001 [1] ✔

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T2	330 - 310	L2x1 1/2x3/16	3.08	2.79	76.1	0.6211	46.95	20123.40	0.002 [1] ✔
T6	250 - 230	L2x1 1/2x3/16	3.08	2.79	76.1	0.6211	46.79	20123.40	0.002 [1] ✔
T10	170 - 150	L2x1 1/2x3/16	3.08	2.79	76.1	0.6211	343.61	20123.40	0.017 [1] ✔
T12	130 - 110	L2x1 1/2x3/16	3.08	2.79	76.1	0.6211	10.53	20123.40	0.001 [1] ✔
T15	70 - 50	L2x1 1/2x3/16	3.08	2.79	76.1	0.6211	2.68	20123.40	0.000 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T16	50 - 30	L2x1 1/2x3/16	3.08	2.79	76.1	0.6211	5.72	20123.40	0.000 [1]
T19	2 - 0	L2x1 1/2x3/16	3.08	2.89	79.0	0.6211	5853.81	20123.40	0.291* [1]

* DL controls
[1] P_u / ϕP_n controls

Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T2	330 - 310	6x3/4	3.08	2.79	154.5	4.5000	340.14	145800.00	0.002 [1]
T6	250 - 230	6x3/4	3.08	2.79	154.5	4.5000	338.99	145800.00	0.002 [1]
T10	170 - 150	6x3/4	3.08	2.79	154.5	4.5000	2489.57	145800.00	0.017 [1]
T12	130 - 110	6x3/4	3.08	2.79	154.5	4.5000	3216.97	145800.00	0.022 [1]
T13	110 - 90	6x3/4	3.08	2.79	154.5	4.5000	2334.87	145800.00	0.016 [1]

[1] P_u / ϕP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T5	270 - 250 (915)	L3x3x1/4	6.23	6.09	78.5	1.4400	10036.10	46656.00	0.215 [1]
T5	270 - 250 (916)	L3x3x1/4	6.23	6.09	78.5	1.4400	9789.37	46656.00	0.210 [1]
T5	270 - 250 (921)	L3x3x1/4	6.23	6.09	78.5	1.4400	9957.41	46656.00	0.213 [1]
T5	270 - 250 (922)	L3x3x1/4	6.23	6.09	78.5	1.4400	9932.90	46656.00	0.213 [1]
T5	270 - 250 (927)	L3x3x1/4	6.23	6.09	78.5	1.4400	10002.40	46656.00	0.214 [1]
T5	270 - 250 (928)	L3x3x1/4	6.23	6.09	78.5	1.4400	9730.34	46656.00	0.209 [1]
T8	210 - 190 (939)	L3x3x1/4	6.23	6.09	78.5	1.4400	7129.87	46656.00	0.153 [1]

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	210 - 190 (940)	L3x3x1/4	6.23	6.09	78.5	1.4400	7471.95	46656.00	0.160 [1] ✔
T8	210 - 190 (945)	L3x3x1/4	6.23	6.09	78.5	1.4400	7380.65	46656.00	0.158 [1] ✔
T8	210 - 190 (946)	L3x3x1/4	6.23	6.09	78.5	1.4400	7471.81	46656.00	0.160 [1] ✔
T8	210 - 190 (951)	L3x3x1/4	6.23	6.09	78.5	1.4400	7115.11	46656.00	0.153 [1] ✔
T8	210 - 190 (952)	L3x3x1/4	6.23	6.09	78.5	1.4400	7547.85	46656.00	0.162 [1] ✔
T15	70 - 50 (975)	L3x3x1/4	6.23	6.09	78.5	1.4400	4137.95	46656.00	0.089 [1] ✔
T15	70 - 50 (976)	L3x3x1/4	6.23	6.09	78.5	1.4400	6668.75	46656.00	0.143 [1] ✔
T15	70 - 50 (981)	L3x3x1/4	6.23	6.09	78.5	1.4400	6038.54	46656.00	0.129 [1] ✔
T15	70 - 50 (982)	L3x3x1/4	6.23	6.09	78.5	1.4400	6029.46	46656.00	0.129 [1] ✔
T15	70 - 50 (987)	L3x3x1/4	6.23	6.09	78.5	1.4400	4007.92	46656.00	0.086 [1] ✔
T15	70 - 50 (988)	L3x3x1/4	6.23	6.09	78.5	1.4400	6581.98	46656.00	0.141 [1] ✔

[1] P_u / ϕP_n controls

Torque-Arm Bottom 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	
T8	210 - 190 (941)	L3x3x1/4	10.22	9.98	128.8	1.4400	2146.15	46656.00	0.046 [1] ✔
T8	210 - 190 (942)	L3x3x1/4	10.22	9.98	128.8	1.4400	2075.69	46656.00	0.044 [1] ✔
T8	210 - 190 (947)	L3x3x1/4	10.22	9.98	128.8	1.4400	2014.00	46656.00	0.043 [1] ✔
T8	210 - 190 (948)	L3x3x1/4	10.22	9.98	128.8	1.4400	1962.02	46656.00	0.042 [1] ✔
T8	210 - 190 (953)	L3x3x1/4	10.22	9.98	128.8	1.4400	2156.94	46656.00	0.046 [1] ✔
T8	210 - 190 (954)	L3x3x1/4	10.22	9.98	128.8	1.4400	2026.57	46656.00	0.043 [1] ✔
T15	70 - 50 (977)	L3x3x1/4	10.09	9.85	127.1	1.4400	370.14	46656.00	0.008 [1] ✔
T15	70 - 50 (978)	L3x3x1/4	10.09	9.85	127.1	1.4400	439.02	46656.00	0.009 [1] ✔
T15	70 - 50 (983)	L3x3x1/4	10.09	9.85	127.1	1.4400	192.37	46656.00	0.004 [1] ✔
T15	70 - 50 (984)	L3x3x1/4	10.09	9.85	127.1	1.4400	200.43	46656.00	0.004 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T15	70 - 50 (989)	L3x3x1/4	10.09	9.85	127.1	1.4400	423.69	46656.00	0.009 [1]
T15	70 - 50 (990)	L3x3x1/4	10.09	9.85	127.1	1.4400	508.44	46656.00	0.011 [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	350 - 330	Leg	P3x.216	1	-19765.30	88640.30	22.3	Pass
		Diagonal	5/8	14	6437.99	9940.20	64.8	Pass
		Horizontal	L2x1 1/2x3/16	17	-5468.75	15826.20	34.6	Pass
		Top Girt	L2x1 1/2x3/16	5	-2755.35	15826.20	17.4	Pass
		Bottom Girt	L2x1 1/2x3/16	8	-2940.67	15826.20	18.6	Pass
T2	330 - 310	Leg	P3x.216	52	-42077.00	88731.70	47.4	Pass
		Diagonal	5/8	65	7501.91	9940.20	75.5	Pass
		Horizontal	L2x1 1/2x3/16	68	-6467.32	15826.20	40.9	Pass
		Top Girt	L2x1 1/2x3/16	56	-2857.92	15826.20	18.1	Pass
		Bottom Girt	L2x1 1/2x3/16	59	-216.66	15826.20	1.4	Pass
		Guy A@310.083	5/8	912	14029.30	25440.00	55.1	Pass
		Guy B@310.083	5/8	911	14274.00	25440.00	56.1	Pass
		Guy C@310.083	5/8	907	14179.00	25440.00	55.7	Pass
		Top Guy Pull-Off@310.083	6x3/4	909	-1569.74	42563.90	3.7	Pass
T3	310 - 290	Leg	P3x.216	103	-44417.60	88731.70	50.1	Pass
		Diagonal	5/8	150	6118.25	9940.20	61.6	Pass
		Horizontal	L2x1 1/2x3/16	146	-6081.10	15826.20	38.4	Pass
		Top Girt	L2x1 1/2x3/16	107	-1007.93	15826.20	6.4	Pass
		Bottom Girt	L2x1 1/2x3/16	110	-3019.03	15826.20	19.1	Pass
T4	290 - 270	Leg	P3x.216	156	-47652.60	88731.70	53.7	Pass
		Diagonal	5/8	164	5733.44	9940.20	57.7	Pass
		Horizontal	L2x1 1/2x3/16	169	-6019.99	15826.20	38.0	Pass
		Top Girt	L2x1 1/2x3/16	158	-3010.88	15826.20	19.0	Pass
		Bottom Girt	L2x1 1/2x3/16	160	-3168.96	15826.20	20.0	Pass
T5	270 - 250	Leg	P3x.216	207	-52304.90	88731.70	58.9	Pass
		Diagonal	5/8	235	5922.61	9940.20	59.6	Pass
		Horizontal	L2x1 1/2x3/16	238	-11193.70	15826.20	70.7	Pass
		Top Girt	L2x1 1/2x3/16	208	-3073.93	15826.20	19.4	Pass
		Bottom Girt	L2x1 1/2x3/16	211	-2565.86	15826.20	16.2	Pass
		Guy A@261.983	1/2	926	9588.56	16140.00	59.4	Pass
		Guy B@261.983	1/2	920	9786.95	16140.00	60.6	Pass
		Guy C@261.983	1/2	913	9800.31	16140.00	60.7	Pass
		Torque Arm Top@261.983	L3x3x1/4	915	10036.10	46656.00	21.5 45.0 (b)	Pass
		Torque Arm Bottom@261.983	L3x3x1/4	924	-9021.74	19924.80	45.3	Pass
T6	250 - 230	Leg	P3x.216	256	-40375.80	88731.70	45.5	Pass
		Diagonal	5/8	302	4399.03	9940.20	44.3	Pass
		Horizontal	L2x1 1/2x3/16	298	-4936.78	15826.20	31.2	Pass
		Top Girt	L2x1 1/2x3/16	259	-2604.95	15826.20	16.5	Pass
		Bottom Girt	L2x1 1/2x3/16	263	-269.83	15826.20	1.7	Pass
		Guy A@230.083	7/16	936	7503.61	12480.00	60.1	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
		Guy B@230.083	7/16	935	7645.26	12480.00	61.3	Pass
		Guy C@230.083	7/16	931	7689.78	12480.00	61.6	Pass
		Top Guy Pull-Off@230.083	6x3/4	933	-1954.97	42563.90	4.6	Pass
T7	230 - 210	Leg	P3x.216	307	-42993.30	88731.70	48.5	Pass
		Diagonal	5/8	354	4459.86	9940.20	44.9	Pass
		Horizontal	L2x1 1/2x3/16	349	-4408.69	15826.20	27.9	Pass
		Top Girt	L2x1 1/2x3/16	310	-924.94	15826.20	5.8	Pass
		Bottom Girt	L2x1 1/2x3/16	313	-2019.78	15826.20	12.8	Pass
T8	210 - 190	Leg	P3x.216	360	-42803.30	88731.70	48.2	Pass
		Diagonal	5/8	368	5741.82	9940.20	57.8	Pass
		Horizontal	L2x1 1/2x3/16	375	-6167.56	15826.20	39.0	Pass
		Top Girt	L2x1 1/2x3/16	361	-1997.72	15826.20	12.6	Pass
		Bottom Girt	L2x1 1/2x3/16	364	-2309.07	15826.20	14.6	Pass
		Guy A@194.05	1/2	949	7634.43	16140.00	47.3	Pass
		Guy B@194.05	1/2	944	7630.57	16140.00	47.3	Pass
		Guy C@194.05	1/2	938	7721.25	16140.00	47.8	Pass
		Torque Arm Top@194.05	L3x3x1/4	952	7547.85	46656.00	16.2 33.9 (b)	Pass
		Torque Arm Bottom@194.05	L3x3x1/4	942	-9592.06	19484.70	49.2	Pass
T9	190 - 170	Leg	P3x.216	411	-59485.80	88731.70	67.0	Pass
		Diagonal	5/8	458	5148.89	9940.20	51.8	Pass
		Horizontal	L2x1 1/2x3/16	451	-5230.49	15826.20	33.0	Pass
		Top Girt	L2x1 1/2x3/16	412	-2264.00	15826.20	14.3	Pass
		Bottom Girt	L2x1 1/2x3/16	415	-2148.63	15826.20	13.6	Pass
T10	170 - 150	Leg	P3x.216	462	-59041.00	88731.70	66.5	Pass
		Diagonal	5/8	469	5617.31	9940.20	56.5	Pass
		Horizontal	L2x1 1/2x3/16	502	-4035.53	15826.20	25.5	Pass
		Top Girt	L2x1 1/2x3/16	463	-2207.83	15826.20	14.0	Pass
		Bottom Girt	L2x1 1/2x3/16	466	343.61	20123.40	1.7	Pass
		Guy A@150.083	9/16	960	9148.62	21000.00	43.6	Pass
		Guy B@150.083	9/16	959	9258.30	21000.00	44.1	Pass
		Guy C@150.083	9/16	955	9303.72	21000.00	44.3	Pass
		Top Guy Pull-Off@150.083	6x3/4	957	-1406.81	42563.90	3.3	Pass
T11	150 - 130	Leg	P3x.216	512	-60275.70	88731.70	67.9	Pass
		Diagonal	5/8	523	3954.74	9940.20	39.8	Pass
		Horizontal	L2x1 1/2x3/16	554	-3182.35	15826.20	20.1	Pass
		Top Girt	L2x1 1/2x3/16	514	-639.81	15826.20	4.0	Pass
		Bottom Girt	L2x1 1/2x3/16	518	-1857.30	15826.20	11.7	Pass
T12	130 - 110	Leg	P3x.216	562	-67882.10	88731.70	76.5	Pass
		Diagonal	5/8	610	4274.60	9940.20	43.0	Pass
		Horizontal	L2x1 1/2x3/16	596	-3209.46	15826.20	20.3	Pass
		Top Girt	L2x1 1/2x3/16	566	-1709.32	15826.20	10.8	Pass
		Bottom Girt	L2x1 1/2x3/16	569	-1557.87	15826.20	9.8	Pass
		Guy A@125.95	9/16	966	8239.64	21000.00	39.2	Pass
		Guy B@125.95	9/16	965	8413.45	21000.00	40.1	Pass
		Guy C@125.95	9/16	961	8535.61	21000.00	40.6	Pass
		Top Guy Pull-Off@125.95	6x3/4	963	-1497.18	42563.90	3.5	Pass
T13	110 - 90	Leg	P3x.216	613	-73185.10	88731.70	82.5	Pass
		Diagonal	5/8	624	3727.54	9940.20	37.5	Pass
		Horizontal	L2x1 1/2x3/16	638	-3212.61	15826.20	20.3	Pass
		Top Girt	L2x1 1/2x3/16	617	-1551.32	15826.20	9.8	Pass
		Bottom Girt	L2x1 1/2x3/16	620	-1549.85	15826.20	9.8	Pass
		Guy A@94.05	9/16	972	7557.49	21000.00	36.0	Pass
		Guy B@94.05	7/16	971	5345.09	12480.00	42.8	Pass
		Guy C@94.05	7/16	967	5395.62	12480.00	43.2	Pass
		Top Guy Pull-Off@94.05	6x3/4	970	-1646.54	42563.90	3.9	Pass

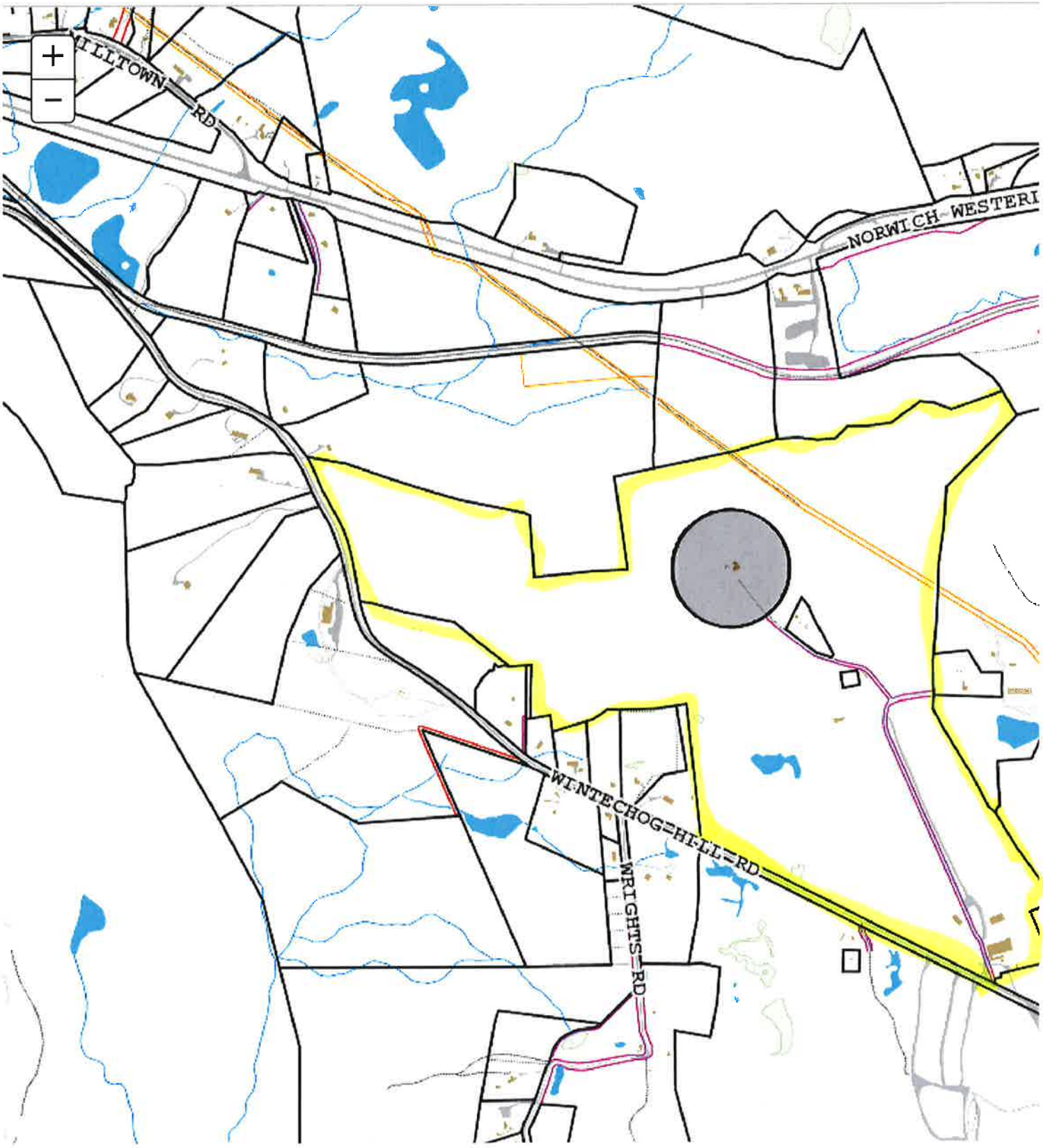
Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T14	90 - 70	Leg	P3x.216	666	-79712.70	88731.70	89.8	Pass
		Diagonal	5/8	678	3443.81	9940.20	34.6	Pass
		Horizontal	L2x1 1/2x3/16	679	-3010.97	15826.20	19.0	Pass
		Top Girt	L2x1 1/2x3/16	668	-1645.63	15826.20	10.4	Pass
		Bottom Girt	L2x1 1/2x3/16	670	-1544.78	15826.20	9.8	Pass
T15	70 - 50	Leg	P3x.216	717	-83691.10	88731.70	94.3	Pass
		Diagonal	5/8	755	3370.23	9940.20	33.9	Pass
		Horizontal	L2x1 1/2x3/16	757	-6712.57	15826.20	42.4	Pass
		Top Girt	L2x1 1/2x3/16	718	-1588.77	15826.20	10.0	Pass
		Bottom Girt	L2x1 1/2x3/16	721	-1372.37	15826.20	8.7	Pass
		Guy A@65.95	7/16	985	5561.60	12480.00	44.6	Pass
		Guy B@65.95	9/16	979	6778.39	21000.00	32.3	Pass
		Guy C@65.95	9/16	974	6875.84	21000.00	32.7	Pass
		Torque Arm Top@65.95	L3x3x1/4	976	6668.75	46656.00	14.3 29.9 (b)	Pass
		Torque Arm Bottom@65.95	L3x3x1/4	977	-4526.88	19924.80	22.7	Pass
T16	50 - 30	Leg	P3x.216	768	-82696.40	88731.70	93.2	Pass
		Diagonal	5/8	779	2568.92	9940.20	25.8	Pass
		Horizontal	L2x1 1/2x3/16	808	-2641.06	15826.20	16.7	Pass
		Top Girt	L2x1 1/2x3/16	769	-1376.13	15826.20	8.7	Pass
		Bottom Girt	L2x1 1/2x3/16	774	-1257.42	15826.20	7.9	Pass
T17	30 - 10	Leg	P3x.216	818	-84952.60	88731.70	95.7	Pass
		Diagonal	5/8	830	3288.42	9940.20	33.1	Pass
		Horizontal	L2x1 1/2x3/16	834	-2628.04	15826.20	16.6	Pass
		Top Girt	L2x1 1/2x3/16	820	-1278.04	15826.20	8.1	Pass
		Bottom Girt	L2x1 1/2x3/16	825	-1469.78	15826.20	9.3	Pass
T18	10 - 2	Leg	ROHN 3 STD M	869	-87918.70	91076.80	96.5	Pass
		Diagonal	5/8	890	3445.76	9940.20	34.7	Pass
		Horizontal	L2x1 1/2x3/16	885	-2956.49	15826.20	18.7	Pass
		Top Girt	L2x1 1/2x3/16	873	-1417.66	15826.20	9.0	Pass
		Bottom Girt	L2x1 1/2x3/16	876	-3247.55	15826.20	20.5	Pass
T19	2 - 0	Leg	P3x.216(P4.0x .226 half pipe)	893	-94901.50	145536.00	65.2	Pass
		Diagonal	5/8	905	7334.04	9940.20	73.8	Pass
		Top Girt	L2x1 1/2x3/16	897	-3413.29	15539.40	22.0	Pass
		Bottom Girt	L2x1 1/2x3/16	899	5853.81	20123.40	29.1	Pass
							Summary	
						Leg (T18)	96.5	Pass
						Diagonal (T2)	75.5	Pass
						Horizontal (T5)	70.7	Pass
						Top Girt (T19)	22.0	Pass
						Bottom Girt (T19)	29.1	Pass
						Guy A (T6)	60.1	Pass
						Guy B (T6)	61.3	Pass
						Guy C (T6)	61.6	Pass
						Top Guy Pull-Off (T6)	4.6	Pass
						Torque Arm Top (T5)	45.0	Pass
						Torque Arm Bottom (T8)	49.2	Pass
						Bolt Checks	45.0	Pass
						RATING =	**96.5**	**Pass**

Program Version 7.0.7.0 - 7/18/2016 File:C:/Users/BDavenport/Desktop/North Stonington.eri

ATTACHMENT 4

Town of North Stonington, Connecticut
Geographic & Property Information Application

Full Extent | Refresh Map | **Search** | Print Map | Help | Map Layers



Full Extent | Zoom In | Zoom Out | Prev Extent | Next Extent | Pan | **Parcel Information** | Simple

MapXpress v1.2

Town of North Stonington, CT

Property Listing Report

Map Block Lot 93-0723 Account S3715000

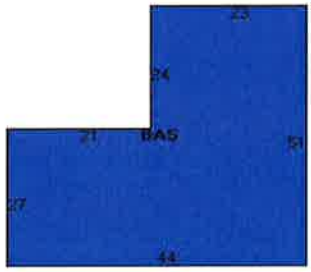
Property Information

Property Location	118B WINTECHOG HL
Owner	STORER COMM OF GROTON INC
Co-Owner	
Mailing Address	ONE COMCAST CENTER - 32ND FLOO PHILADELPHIA PA 19103
Land Use	4320 CBL-TV TR
Land Class	I
Zoning Code	R80
Census Tract	7071
Sub Lot	

Neighborhood	0500
Acreage	8.83
Utilities	
Lot Setting/Desc	Rural Above
Survey Map	
Additional Info	

Photo

Sketch



Primary Construction Details

Year Built	1973
Stories	1
Building Style	Warehouse
Building Use	Ind/Comm
Building Condition	Excellent+10
Floors	Concr-Finished
Total Rooms	

Bedrooms	
Full Bathrooms	0
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	Flat
Roof Cover	T&G/Rubber

Exterior Walls	Concr/Cinder
Interior Walls	Minim/Masonry
Heating Type	Electr Basebrd
Heating Fuel	Electric
AC Type	Central
Gross Bldg Area	1740
Total Living Area	1740

Report Created On 10/12/2017

Town of North Stonington, CT

Property Listing Report | **Map Block Lot** 93-0723 | **Account** S3715000

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	103000	72100
Extras	0	0
Outbuildings	26800	18760
Land	299300	209510
Total	429100	300370

Outbuilding and Extra Items

Type	Description
COMMUNIC BLD	192.00000000 S.F.
COMMUNIC BLD	96.00000000 S.F.
FENCE-6' CHAIN	270.00000000 L.F.

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	1740	1740
Total Area	1740	1740

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
STORER COMM OF GROTON INC	55/ 911	1/5/1981	0

Report Created On 10/12/2017

ATTACHMENT 5

UNITED STATES POSTAL SERVICE®

K/D

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	neopost 10/16/2017 US POSTAGE $002.38 ZIP 06103 041L122033
	Postmaster, per *(name of receiving employee)* DP		

USPS® Tracking Number / Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	Shawn P. Murphy, First Selectman Town of North Stonington 40 Main Street North Stonington, CT 06359				
2.	Juliet Hodge, Planning, Development and Zoning Official Town of North Stonington 40 Main Street North Stonington, CT 06359		OLD STATE HOUSE STATION 06103 OCT 16 2017 USPS		
3.	Storer Communications of Groton CT One Comcast Center, 32nd Floor Philadelphia, PA 19103				
4.					
5.					
6.					