May 9, 2014

VIA OVERNIGHT DELIVERY

Ms. Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Sprint Spectrum, L.P. – Notice of Exempt Modification
22 Seles Road, Ashford, CT

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Sprint Spectrum, L.P. ("Sprint"). Sprint is undertaking modifications to certain existing sites in its Connecticut network in order to implement updated technology. In order to do so, Sprint will modify antenna and equipment configurations at a number of existing sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the First Selectman of the Town of Ashford.

Sprint plans to modify the existing facility at 22 Seles Road, owned by Cordless Data Transfer, Inc. (coordinates 41°51'48.35"N, -72°10'57.27"W). Attached are drawings depicting the planned changes, and documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration. Also included is a power density calculation reflecting the modification to Sprint's operations at the site.

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. Sprint will remove the six (6) existing antennas; add three (3) dual-band panel antennas to the existing frames on existing mounting pipes; and add six (6) RRHs (remote radio heads) all at a centerline height of approximately 170.5' from the tower base. Sprint will also install three (3) hybriflex cables along the existing coaxial cable run, and remove the existing coaxial cables.

2. Sprint will replace the two (2) existing cabinets with three (3) new cabinets (including two (2) battery cabinets); the existing power plant will be replaced by a battery cabinet; and a fiber/power distribution box will be added to a new H-frame, all on the existing concrete pad. These changes will have no effect on the site boundaries, Sprint's lease area or the landlord's lease area.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more. The incremental effect of the proposed changes will be negligible.

4. The changes to the facility will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site. As indicated in the attached power density calculations, Sprint's operations at the site will result in a power density of 4.42%; the combined site operations will result in a total power density of 16.172%.

Please feel free to contact me at jgaudet@hpcwireless.com or 860 789-7454 with any questions or concerns regarding this matter. Thank you for your consideration.

Respectfully submitted,

Jennifer Young Gaudet

Jennifer Young Gaudet

Attachments

cc: Mr. Michael Zambo, First Selectman, Town of Ashford
Raymond C. and Kathleen P. Baker (underlying property owners)

DRAWN BY: KJG CHECKED BY: KAB

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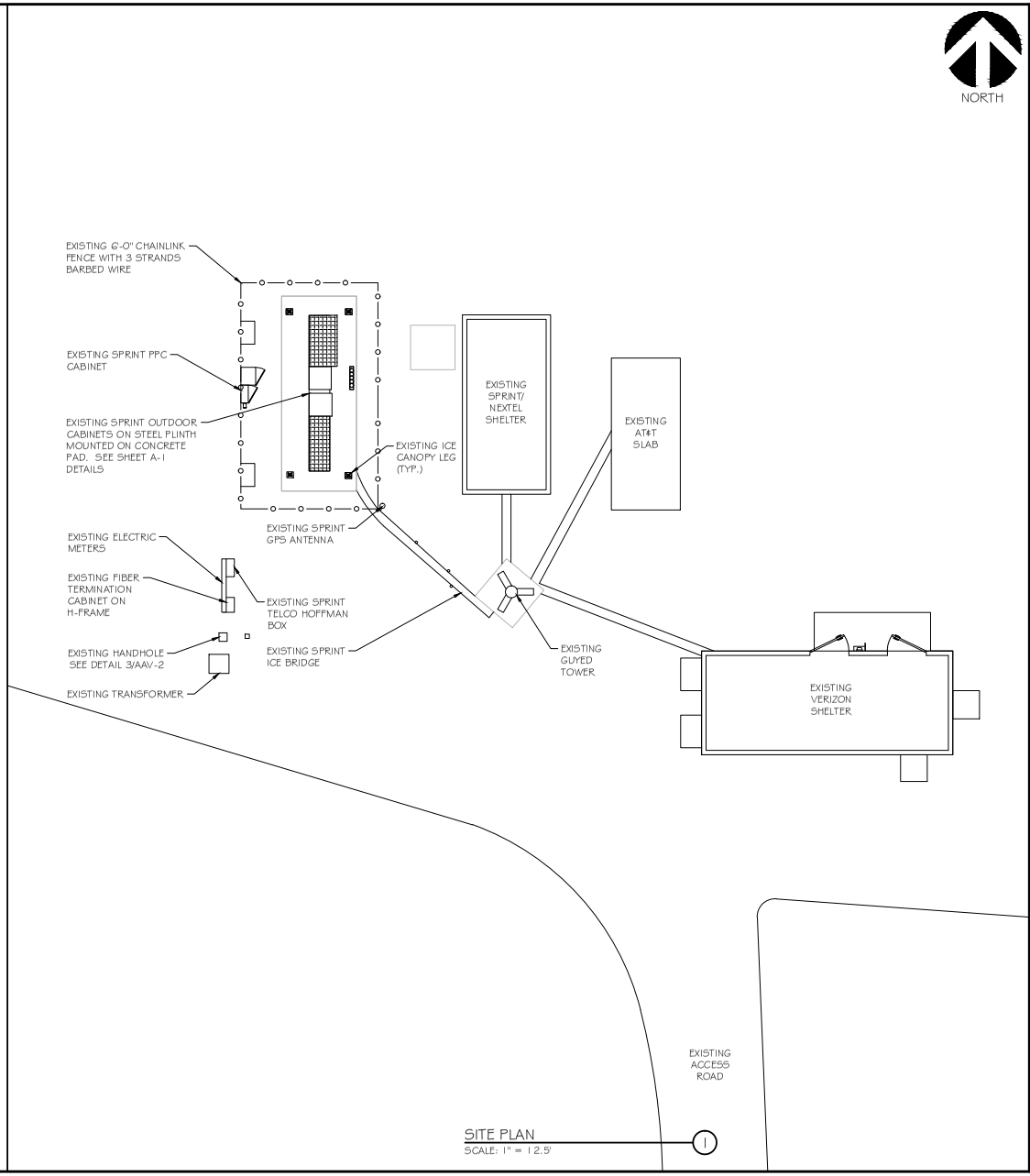
VICINITY MAP

GENERAL NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES ORDINANCES, LAWS, AND REGULATIONS OF ALL MUNICIPALITIES, UTILITIES COMPANY, OR OTHER PUBLIC AUTHORITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY, OR MUNICIPAL AUTHORITIES.
3. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR THE OVERALL INTENT OF THESE DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THE FACILITY.
5. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT, AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
6. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
7. CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTH WITH RF ENGINEERING PRIOR TO INSTALLATION.
8. TRANSMITTER EQUIPMENT AND ANTENNAS ARE DESIGNED TO MEET ANSI/EIA/TIA 222-G REQUIREMENTS.
9. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL
10. CONTRACTOR SHALL MAKE A UTILITY "ONE-CALL" TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
11. IF ANY UNDERGROUND UTILITIES OR STRUCTURES EXIST BENEATH THE PROJECT AREA, CONTRACTOR MUST LOCATE IT AND CONTACT THE APPLICANT & THE OWNER'S REPRESENTATIVE.
12. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION BY TECHNICIANS APPROXIMATELY 2 TIMES PER MONTH.
13. RAMAKER & ASSOCIATES HAS NOT PERFORMED A STRUCTURAL ANALYSIS FOR THIS PROJECT. PRIOR TO THE INSTALLATION OF THE PROPOSED EQUIPMENT OR MODIFICATION OF THE EXISTING STRUCTURE, A STRUCTURAL ANALYSIS SHALL BE PERFORMED BY SPRINT'S AGENT TO CERTIFY THAT THE EXISTING/PROPOSED COMMUNICATION STRUCTURE AND COMPONENTS ARE STRUCTURALLY ADEQUATE TO SUPPORT ALL EXISTING AND PROPOSED ANTENNAS, COAXIAL CABLES, AND OTHER APPURTENANCES.
14. PROPERTY LINE INFORMATION WAS PREPARED USING DEEDS, TAX MAPS, AND PLANS OF RECORD AND SHOULD NOT BE CONSTRUED AS AN ACCURATE BOUNDARY SURVEY.
15. THIS PLAN IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
16. THE PROPOSED FACILITY WILL CAUSE ONLY A "DE MINIMIS" INCREASE IN STORMWATER RUNOFF; THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
17. NO SIGNIFICANT NOISE, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
18. THE FACILITY IS UNMANNED AND NOT INTENDED FOR HUMAN HABITATION (NO HANDICAP ACCESS REQUIRED).
19. POWER TO THE FACILITY WILL BE MONITORED BY A SEPARATE METER.



SITE PLAN
SCALE: 1" = 12.5'

Sprint
6391 Sprint Parkway
Overland Park, KS 66251

Alcatel·Lucent

RAMAKER & ASSOCIATES, INC.
1120 Dallas Street, Sauk City, WI 53583
Phone: 608-643-4100 Fax: 608-643-7999
www.Ramaker.com

NETWORK VISION MMBTS LAUNCH NORTHERN CT MARKET

Certification & Seal:

MARK	DATE	DESCRIPTION
D	11/15/13	FINAL PRELIM. CD'S - MOVE RRH UNITS TO TOWER
C	11/07/12	FINAL PRELIM. CD'S - EASEMENT NOTE REMOVED
B	11/05/12	FINAL PRELIMINARY CD'S
A	9/05/12	90% CD REVIEW

ISSUE PHASE: FINAL PRELIMINARY DATE ISSUED: 11/15/2013

PROJECT TITLE:

MOHONK LAKE
SITE #: CT33XC015

PROJECT INFORMATION:
20 SELES ROAD
ASHFORD, CT 06728
WINDHAM COUNTY

SHEET TITLE:

OVERALL SITE PLAN

0 6.25' 12.5' 25'

11" x 17" - 1" = 12.5'
22" x 34" - 1" = 6.25'

PROJECT NUMBER: 22973

SHEET NUMBER: C-1

DRAWN BY: K.JG CHECKED BY: K.AB

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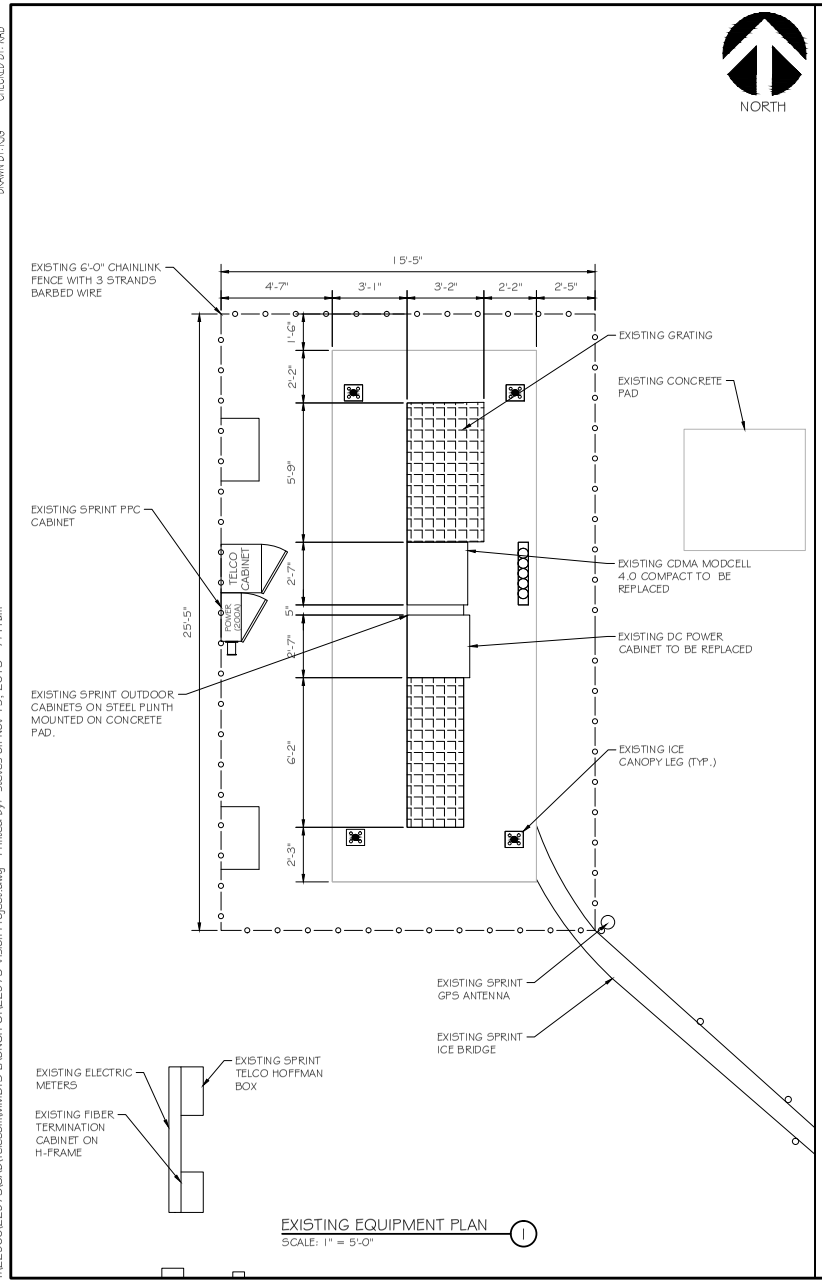
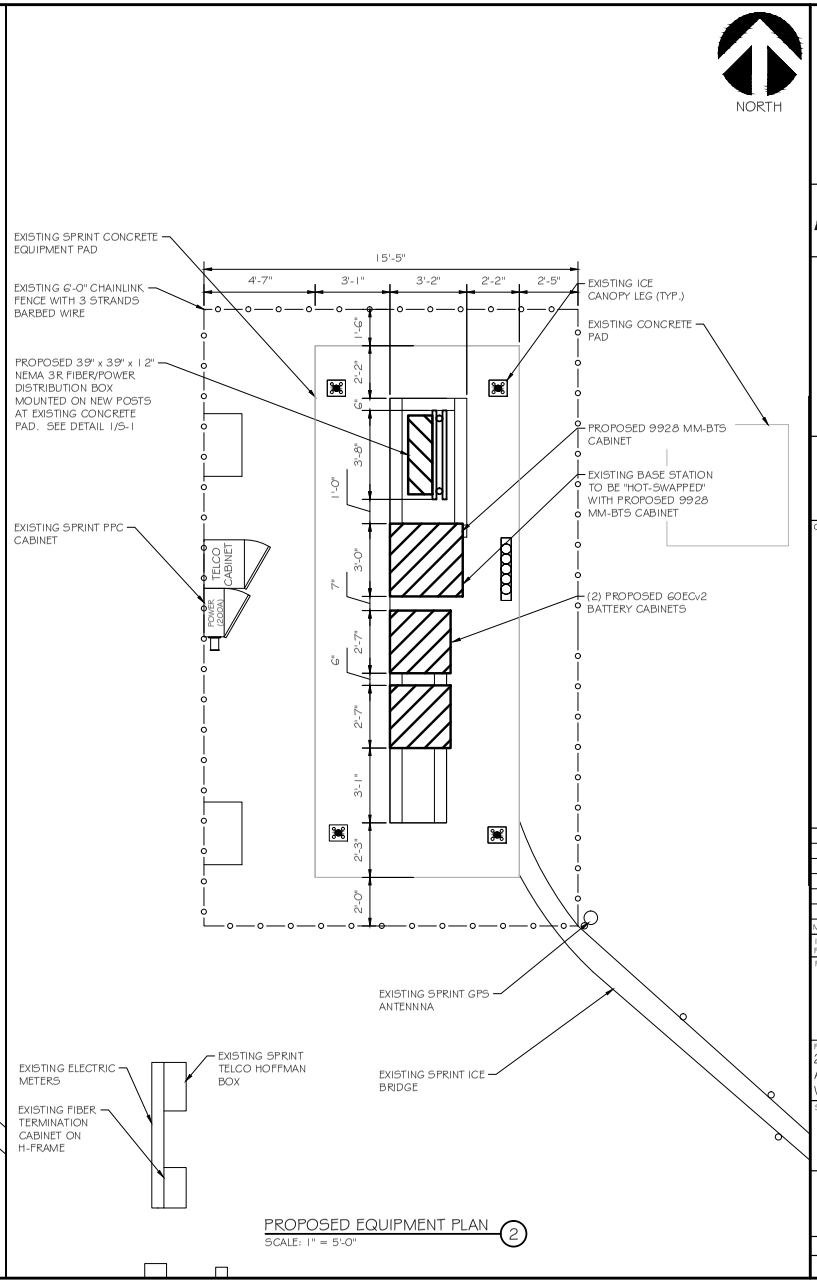


EXISTING EQUIPMENT PLAN (1)
SCALE: 1" = 5'-0"



PROPOSED EQUIPMENT PLAN (2)
SCALE: 1" = 5'-0"

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MARK	DATE	DESCRIPTION
D	11/15/13	FINAL PRELIM. CD'S - MOVE RRH UNITS TO TOWER
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B	11/05/12	FINAL PRELIMINARY CD'S
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ISSUE PHASE: FINAL PRELIMINARY DATE ISSUED: 11/15/2013

PROJECT TITLE:
MOHONK LAKE
SITE #: CT33XC015

PROJECT INFORMATION:
20 SELES ROAD
ASHFORD, CT 06728
WINDHAM COUNTY

SHEET TITLE:
EQUIPMENT PLAN

0 2.5' 5' 10'
11" x 17" - 1" = 5'
22" x 34" - 1" = 2.5'

PROJECT NUMBER: 22973
SHEET NUMBER: A-1

DRAWN BY: K.JG CHECKED BY: KAB

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NOTES:

I. SCOPE

A. THIS SECTION COVERS THE SPECIFICATIONS FOR ANTENNA AND COAXIAL CABLE INSTALLATION OF: ANTENNAS, COAXIAL, CONNECTIONS, AND ICE BRIDGE.

B. REFERENCE SPRINT STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES FOR GENERAL REQUIREMENTS.

II. ANTENNAS:

A. ANTENNAS SHALL BE PLUMB AND INSTALLED SO THAT THE ENTIRE WHIP EXTENDS ABOVE VERTICAL PIPE MOUNT. DIRECTIONAL ANTENNAS SHALL BE ORIENTED TO PROPER AZIMUTH, PROVIDED ON THE RF SPECIFICATION SHEET. NOTE: THE ANTENNA MAY BE ORIENTED USING THE REFLECTOR AS THE REFERENCE, ADJUSTING ITS AZIMUTH 180 DEGREES FROM MAXIMUM ANTENNA RADIATION.

B. MICROWAVE ANTENNAS (DISHES) SHALL BE ASSEMBLED PER MANUFACTURER'S DRAWINGS. STIFF ARMS AND RADOMES SHALL BE INSTALLED WITH POLARIZATION PROVIDED BY RF SPECIFICATION SHEET. IF PATH IS NOT READY TO ALIGN, DISH SHOULD BE POINTED TOWARD CALCULATED AZIMUTH, OR DIRECTION OF FIELD STAKE DENOTING OPPOSITE END. 2 STIFF ARMS SHALL BE PROVIDED FOR MICROWAVE DISHES 6'-0" IN DIAMETER OR GREATER.

C. A TRANSIT SHALL BE USED TO PROPERLY ALIGN CELLULAR AND MICROWAVE ANTENNAS.

III. COAXIAL CABLE:

A. COAXIAL CABLE SHALL BE SUPPORTED WITH SNAP-IN HANGERS. SNAP-IN HANGERS SHOULD BE USED EVERY 3 FEET THE ENTIRE HEIGHT OF THE TOWER. ANGLE ADAPTERS OR ROUND MEMBER ADAPTERS WITH BUTTERFLY CLAMPS SHALL BE USED ELSEWHERE, I.E. SIDEARMS, PLATFORMS, AND MICROWAVE MOUNTS.

B. COAXIAL CABLE SHALL ALSO BE SUPPORTED WITH HOISTING GRIPS, INSTALLED AT MAXIMUM INTERVALS OF 200 FEET. HOISTING GRIPS SHALL BE ATTACHED WITH SHACKLES, BOLTED IN THE 7/8" HOLE OF WAVEGUIDE LADDER.

C. ALL JUMPERS USED BETWEEN COAXIAL CABLE AND ANTENNA SHALL BE SUPPORTED WITHIN 18 INCHES OF ANTENNA, USING BUTTERFLY CLAMPS WITH ANGLE ADAPTERS OR ROUND MEMBER ADAPTERS AROUND PIPES. CELLULAR ANTENNAS TYPICALLY USE 6' JUMPERS; MICROWAVE DISHES USE 3' JUMPERS.

D. COAXIAL CABLE SHALL BE NEATLY BENT WHEN REQUIRED, USING A MINIMUM BENDING RADIUS OF 10 TIMES THE DIAMETER OF THE COAXIAL CABLE. DRIP LOOPS SHOULD BEGIN AT THE ICE BRIDGE. THE END IN THE COAXIAL CABLE SHOULD BE AT A LOWER HEIGHT THAN THE ENTRY PORT.

E. COAXIAL CABLE SHALL BE SUPPORTED WITH SNAP-IN HANGERS ON THE WAVEGUIDE LADDER UNDER ICE BRIDGE. COAXIAL CABLE SHOULD BE NEATLY CUT 16" INSIDE BUILDING AND TERMINATED AT THE QUARTER WAVE SHORTS.

F. CONNECTORS WILL NORMALLY BE PROVIDED FIRST OFF REEL FROM FACTORY. CONNECTORS TERMINATED IN BUILDING SHALL BE NEATLY INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

G. COAXIAL CABLES SHOULD BE LABELED WITH TAGS INSIDE THE BUILDING.

H. USE 2" WIDE COLORED TAPE TO INDICATE SECTORS. CONTRACTOR TO USE SECTOR COLOR CODING AS INDICATED IN THESE DRAWINGS OR AS PROVIDED BY SPRINT.

I. ALL EXCEPTIONS NEED TO BE VERIFIED WITH THE PROJECT MANAGER.

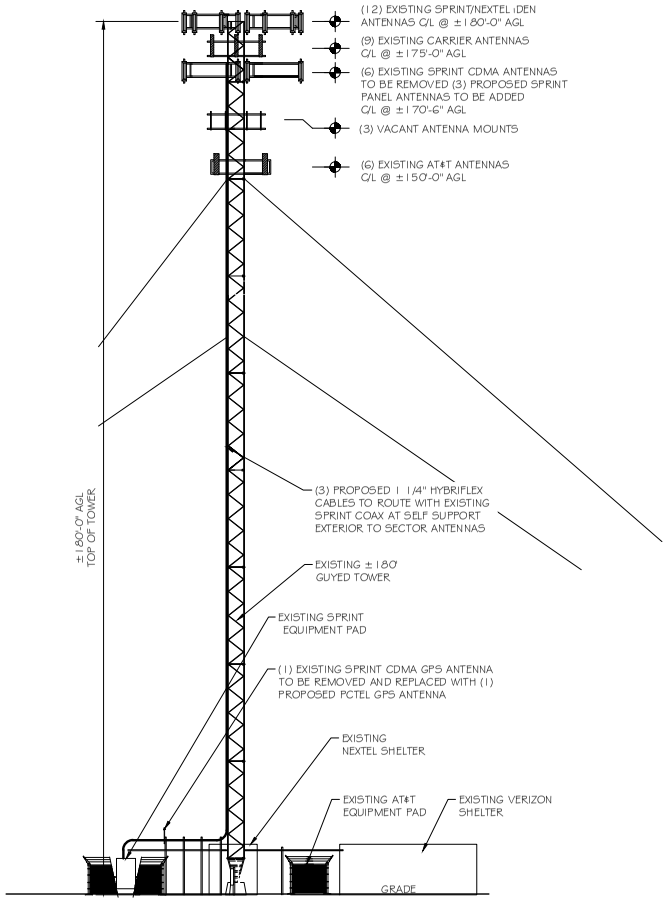
IV. CONNECTORS:

A. ALL CONNECTIONS AND GROUNDING KITS SHALL BE WEATHERPROOFED USING COLD SHRINK OR ANDREW APPROVED WEATHER STRIPPING. NOTE: NO PORTION OF CONNECTOR SHALL BE EXPOSED TO THE ELEMENTS.

B. COAXIAL CABLE SHALL BE GROUNDED USING GROUNDING KITS AT THE TOP (BELOW THE BEND), BOTTOM (ABOVE THE BEND ON TOWER GROUND BAR), AND ON BUILDING GROUND BAR BEFORE ENTRY INTO WAVEGUIDE PORTS. 4" CABLE BOOTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

C. GROUNDING KITS SHALL BE NEATLY INSTALLED SO THAT THE JUMPER RUNS IN THE SAME DIRECTION AS THE COAXIAL AND GROUND BAR. JUMPER WIRE SHOULD RUN IN A DIRECT PATH TO THE GROUND BAR/ TOWER LADDER, BUT HAVE ADEQUATE SLACK FOR EXPANSION, CONTRACTION, AND REPAIR. NON-OXIDE GREASE SHOULD BE APPLIED BETWEEN LUG AND BAR/TOWER.

D. TOWER GROUND BAR SHALL BE INSTALLED ON THE ANGLE BEHIND THE FIRST DIAGONAL WAVEGUIDE LADDER RUNG, ABOVE 8'-6". GROUND BAR SHALL BE ISOLATED FROM ANGLE USING NEWTON BUSHINGS PROVIDED.



ELEVATION 1
SCALE: 1"= 25'-0"

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NETWORK VISION MMBTS LAUNCH NORTHERN CT MARKET

Certification # Seal:

MARK	DATE	DESCRIPTION
D	11/15/13	FINAL PRELIM. CD'S - MOVE RRH UNITS TO TOWER
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ISSUE PHASE: FINAL PRELIMINARY DATE ISSUED: 11/15/2013

PROJECT TITLE:
MOHONK LAKE
SITE #: CT33XC015

PROJECT INFORMATION:
20 SELES ROAD
ASHFORD, CT 06728
WINDHAM COUNTY

SHEET TITLE:
SITE ELEVATION & NOTES

0 12.5' 25' 50'
11" x 17" - 1" = 25'
22" x 34" - 1" = 12.5'

PROJECT NUMBER: 22973
SHEET NUMBER: A-2

FRED A. NUDD CORPORATION

1743 ROUTE 104, BOX 577
ONTARIO, NY 14519
(315) 524-2531 FAX (315) 524-4249

www.nuddtowers.com

Mark LeGault
Cordless Data Transfer, Inc.
600 Old Hartford Road
Colchester, CT 06415
Mach 29, 2014

Nudd Job Number: 114-13065

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

Subject: Structural Analysis of an existing 190 ft Guyed Tower

Fred A. Nudd Corporation has completed a three-dimensional, finite element model structural analysis of the above noted guyed tower. This tower was analyzed considered appurtenance loads noted in the appurtenance loading table on the following page. The design loading criteria and strength design are per the TIA/EIA-222-F standard, which is the recommended design standard per the 2003 International Building Code (Sec. 1609 & 3108), including 2005 Connecticut Building Code Amendments and the 2008 Connecticut Supplement. Additional standards used in this analysis include the AISC Manual for Steel Construction, Allowable Stress Design, 9th Ed. and ACI 318-05, Building Code Requirements for Structural Concrete and Commentary. Tower and foundation dimensions have been taken from drawings by Fred A. Nudd, project number 00-6111A-1 & 98-6111-2, dated July 28, 2000 & June 1998, respectively. Geotechnical information was taken from a subsurface exploration report by Tower Engineering Professionals, Inc., project number 090004.13, dated September 22, 2009. Design criteria per each analysis are noted on the following page. The tower is assumed to be in good, undamaged and equivalent to as new condition and has been maintained / inspected per criteria by TIA-222.

The purpose of this analysis is to determine the structure's ability to support new Sprint equipment installed at a rad center of 170.5 ft above ground level (AGL). The new equipment to be installed, which includes antennas, diplexers, and associated hardware are listed on the following page in the appurtenance loading table.

Results of the analysis indicate the tower will be able to the support the design loads noted in the appurtenance loading table on the following page. Specific section design loads, capacities and stress ratios are provided on the following pages. Maximum member usage was found to be 94%.

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

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

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

Best Regards,

Fred. A. Nudd Corporation

Code Design Criteria

TIA-222-F
Windspeed = 85 mph, fastest mile
Exposure = C
Radial Ice = 0.5 inch
Ice Windspeed = 74 mph, fastest mile

Appurtenance Loading – Existing and To Remain on Tower

Elevation (ft)[1]	Antenna	Mount	Coax (in)
190	(3) Antel BXA-70063-6CF (2) Antel LPA-80080-4CF (4) Antel LPA-80063-4CF (1) Antel BXA-171085-8BF (2) Antel BXA-171063-8BF (6) RFS FD9R6004/2C-3L	(3) 12 ft Sector Frame	(12) 1-5/8
178	(9) Swedcom ALP-E-9011	(3) 12 ft Boom / Frame	(9) 1-1/4
150	-	(3) 12 ft Boom / Frame	-
138	(6) Powerwave 7770 (6) TMA (6) Diplextors (3) KMW AM-X-CD-17-65-00T-RET (1) Raycap DC6-48-60-18-8F (6) Ericsson RRU11	(3) 12 ft Boom / Frame	(12) 1-5/8 (2) 3/4 DC Cables (1) 3/8 Fiberline

[1]*Note elevation is measured from grade to center of antenna*

Appurtenance Loading – Final Configuration for Sprint

Height (ft)	Carrier	Appurtenance	Mount	Coax (in)
170.5	Sprint	(3) RFS APXV9ERR18-C-A20 (6) Alcatel Lucent 4x40W RRH, 1900 MHz (6) Alcatel Lucent 2x50W RRH, 800 MHz	(3) 12 ft Boom / Frame	(3) 1-1/4 Hybriflex

- *Height measurement taken as distance from top of base foundation to center of appurtenance.*
- *Sprint's proposed coax may be installed on any tower face.*

Maximum Member Usage Results

Member	Usage (%)[1]
Leg	94
Diagonal	92
Horizontal	60
Guy Wires	82
Bolts	52
Anchor Rod	85

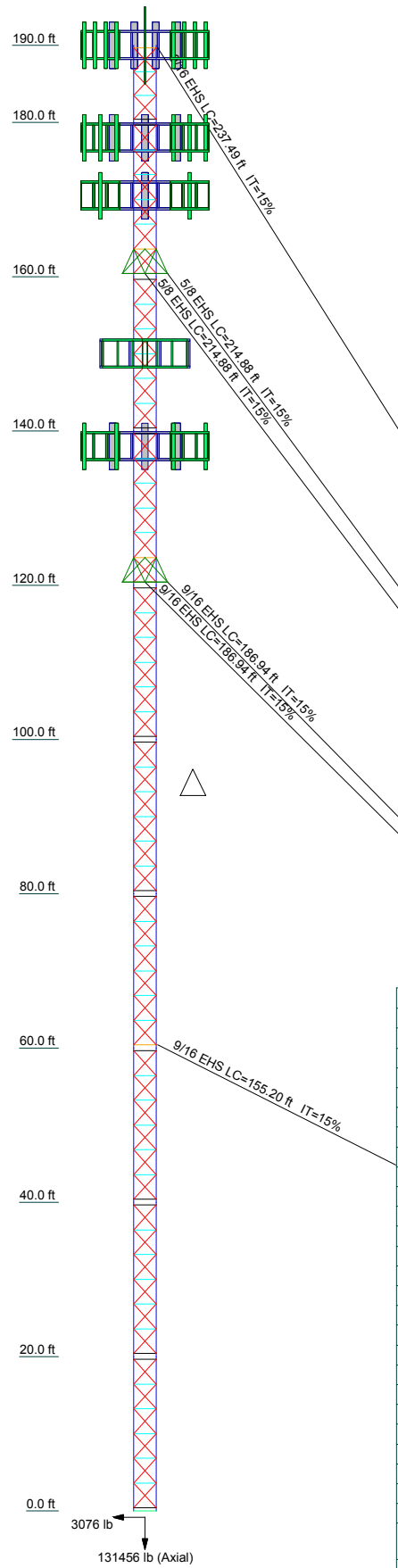
[1]*Usage above 100% indicates the applied design load exceeds the member strength capacity and requires strengthening.*

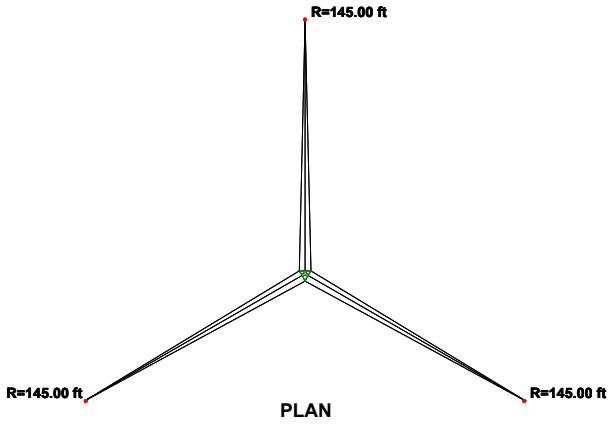
Foundation Usage Results

Base Reaction	Capacity (kips)	Analysis (kips)	Usage (%)[1]
Compression	211.8	133.8	63
Uplift	65.3	51.9	79
Shear	64.5	59.9	93

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

Section	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs					P2.5x.203					
Leg Grade					A500M-58					
Diagonals					SR 5/8					
Diagonal Grade					A36					
Top Girts					L1 1/2x1 1/2x3/16					N.A.
Bottom Girts		L1 1/2x1 1/2x3/16		N.A.		L1 1/2x1 1/2x3/16	N.A.	L1 1/2x1 1/2x3/16	N.A.	A
Horizontals					L1 1/2x1 1/2x3/16					
Top Guy Pull-Offs		N.A.		L1 1/2x1 1/2x3/16		N.A.	L1 1/2x1 1/2x3/16	N.A.	L1 1/2x1 1/2x3/16	
Bot Guy Pull-Offs				N.A.			L1 1/2x1 1/2x3/16	N.A.	L1 1/2x1 1/2x3/16	N.A.
Face Width (ft)					3.5					
# Panels @ (ft)					54 @ 3.20833					3 @ 3.08333
Weight (lb)	6689.9	658.2	658.2	658.2	658.2	658.2	672.6	658.2	872.6	337.0





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Antel BXA-70063-6CF (Verizon)	190	(2) Alcatel Lucent 4X40W RRH (Sprint)	170.5
Antel BXA-70063-6CF (Verizon)	190	(2) Alcatel Lucent 2X50W RRH (Sprint)	170.5
Antel BXA-70063-6CF (Verizon)	190	RFS APXV9ERR18-C (Sprint)	170.5
Sector Frame Mount (Verizon)	190	(2) Alcatel Lucent 4X40W RRH (Sprint)	170.5
Sector Frame Mount (Verizon)	190	(2) Alcatel Lucent 2X50W RRH (Sprint)	170.5
Sector Frame Mount (Verizon)	190	Sector Frame Mount (Empty Mount)	150
(2) Antel LPA-80080-4CF (Verizon)	190	Sector Frame Mount (Empty Mount)	150
(2) Antel LPA-80063/4CF (Verizon)	190	Sector Frame Mount (Empty Mount)	150
(2) Antel LPA-80063/4CF (Verizon)	190	KMW AM-X-CD-17-65-00T-RET (ATI)	138
Antel BXA-171085-8BF (Verizon)	190	KMW AM-X-CD-17-65-00T-RET (ATI)	138
Antel BXA-171063-8BF (Verizon)	190	KMW AM-X-CD-17-65-00T-RET (ATI)	138
Antel BXA-171063-8BF (Verizon)	190	(2) Ericsson RRUS11 (ATI)	138
(2) RFS FD9R6004/2C-3L (Verizon)	190	(2) Ericsson RRUS11 (ATI)	138
(2) RFS FD9R6004/2C-3L (Verizon)	190	(2) Ericsson RRUS11 (ATI)	138
(2) RFS FD9R6004/2C-3L (Verizon)	190	Raycap DC6-48-60-18-8F (ATI)	138
Lightning Rod	190	Sector Frame Mount (ATI)	138
Sector Frame Mount (Nextel)	178	Sector Frame Mount (ATI)	138
Sector Frame Mount (Nextel)	178	(2) Allgon 7770.00 (ATI)	138
(3) Swedcom ALP-E-9011 (Nextel)	178	(2) Allgon 7770.00 (ATI)	138
(3) Swedcom ALP-E-9011 (Nextel)	178	(2) Allgon 7770.00 (ATI)	138
(3) Swedcom ALP-E-9011 (Nextel)	178	(2) Powerwave LGP21401 (ATI)	138
Sector Frame Mount (Nextel)	178	(2) Powerwave LGP21401 (ATI)	138
Sector Frame Mount (Sprint)	170.5	(2) Powerwave LGP21401 (ATI)	138
Sector Frame Mount (Sprint)	170.5	(2) Powerwave LGP21901 (ATI)	138
Sector Frame Mount (Sprint)	170.5	(2) Powerwave LGP21901 (ATI)	138
RFS APXV9ERR18-C (Sprint)	170.5	(2) Powerwave LGP21901 (ATI)	138
(2) Alcatel Lucent 4X40W RRH (Sprint)	170.5	Sector Frame Mount (ATI)	138
(2) Alcatel Lucent 2X50W RRH (Sprint)	170.5		
RFS APXV9ERR18-C (Sprint)	170.5		

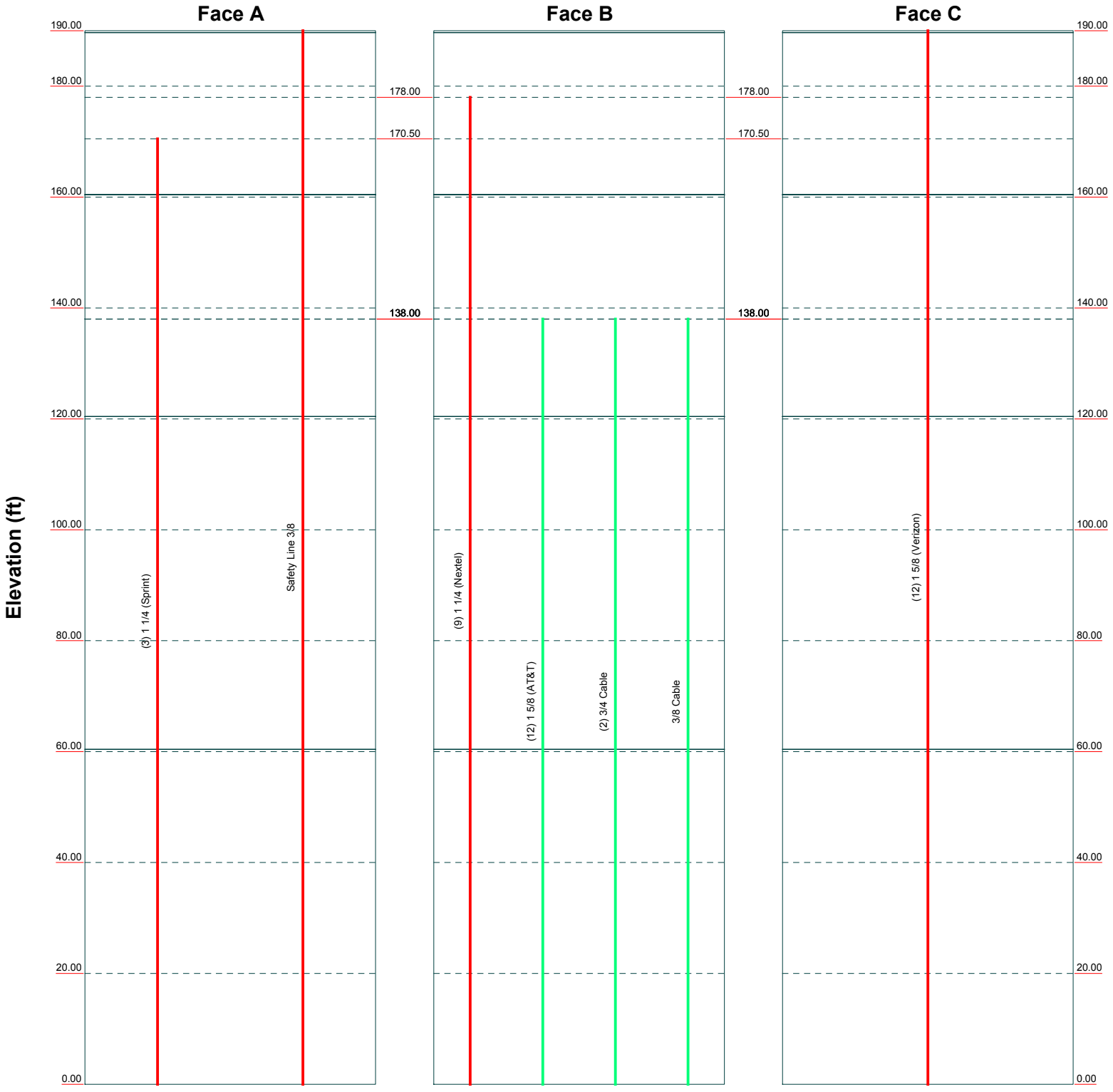
SYMBOL LIST

MARK	SIZE	MARK	SIZE

Phone: FAX:	Job: 114-13065		
	Project: Ashford, CT		
	Client: CDT	Drawn by: FAN	App'd:
	Code: TIA/EIA-222-F	Date: 03/29/14	Scale: NTS
	Path:		Dwg No. E-1

Feedline Distribution Chart
0' - 190'

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



Phone: FAX:	Job: ***114-13065***		
	Project: ***Ashford, CT***		
	Client: CDT	Drawn by: FAN	App'd:
	Code: TIA/EIA-222-F	Date: 03/29/14	Scale: NTS
	Path:		Dwg No. E-7

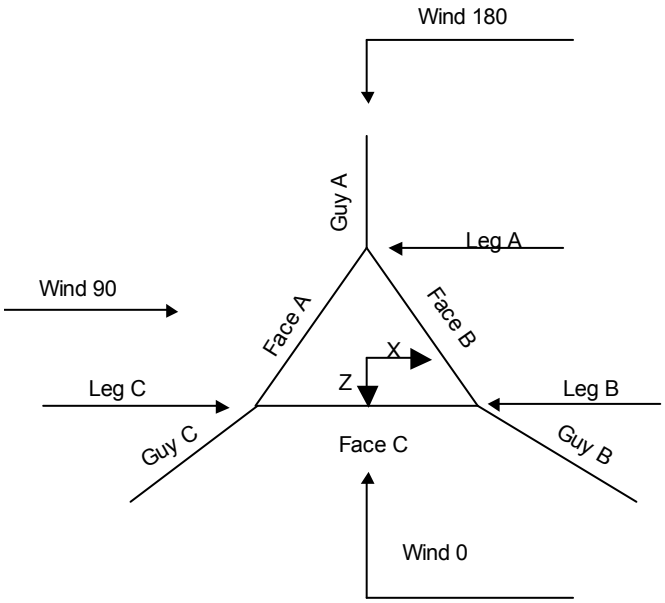
Tower Input Data

The main tower is a 3x guyed tower with an overall height of 190.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 3.50 ft at the top and 3.50 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

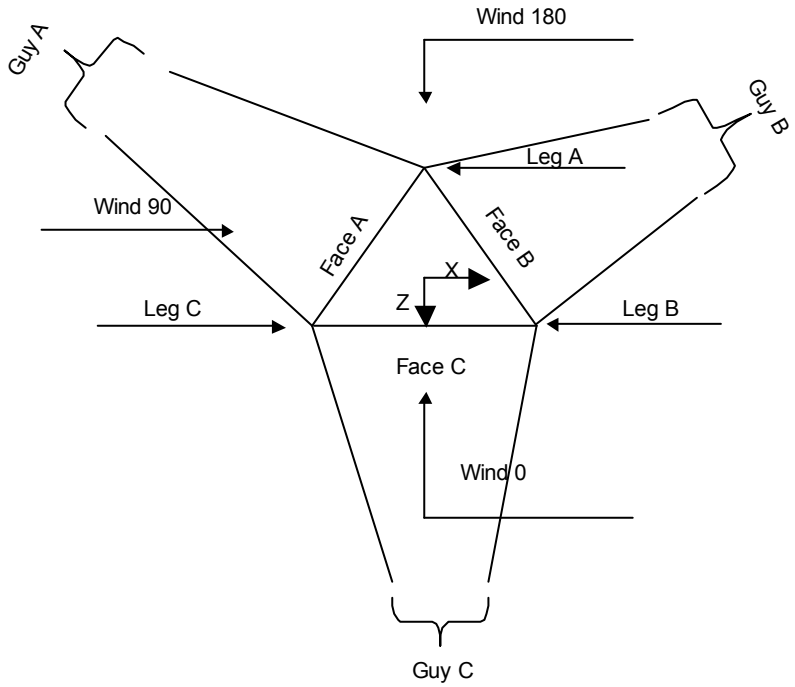
Tower is located in Windham County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56 pcf.
A wind speed of 74 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
Weld together tower sections have flange connections..
Tension only take-up is 0.0313 in.
Pressures are calculated at each section.
Safety factor used in guy design is 2.
Stress ratio used in tower member design is 1.333.
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Options

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



Corner & Starmount Guyed Tower



Face Guyed

Tower Section Geometry

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

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	190.00-180.00	3.08	TX Brace	No	Yes	4.5000	4.5000
T2	180.00-160.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T3	160.00-140.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T4	140.00-120.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T5	120.00-100.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T6	100.00-80.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T7	80.00-60.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T8	60.00-40.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T9	40.00-20.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T10	20.00-0.00	3.21	TX Brace	No	Yes	4.5000	4.5000

Tower Section Geometry *(cont'd)*

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

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 190.00-180.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T2 180.00-160.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T3 160.00-140.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T4 140.00-120.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T5 120.00-100.00	Equal Angle	L1 1/2x1 1/2x3/16	A36	Equal Angle	L1 1/2x1 1/2x3/16	A36

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T6 100.00-80.00	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36 (36 ksi)
T7 80.00-60.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T8 60.00-40.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T9 40.00-20.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T10 20.00-0.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 190.00-180.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T2 180.00-160.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T3 160.00-140.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T4 140.00-120.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T5 120.00-100.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T6 100.00-80.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T7 80.00-60.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T8 60.00-40.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T9 40.00-20.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T10 20.00-0.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
T1 190.00-180.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T2 180.00-160.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T3	0.00	0.0000	A36	1	1	1	36.0000	36.0000

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
160.00-140.00			(36 ksi)					
T4	0.00	0.0000	A36	1	1	1	36.0000	36.0000
140.00-120.00			(36 ksi)					
T5	0.00	0.0000	A36	1	1	1	36.0000	36.0000
120.00-100.00			(36 ksi)					
T6	0.00	0.0000	A36	1	1	1	36.0000	36.0000
100.00-80.00			(36 ksi)					
T7 80.00-60.00	0.00	0.0000	A36	1	1	1	36.0000	36.0000
			(36 ksi)					
T8 60.00-40.00	0.00	0.0000	A36	1	1	1	36.0000	36.0000
			(36 ksi)					
T9 40.00-20.00	0.00	0.0000	A36	1	1	1	36.0000	36.0000
			(36 ksi)					
T10 20.00-0.00	0.00	0.0000	A36	1	1	1	36.0000	36.0000
			(36 ksi)					

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X	X Brace Diags Y	K Brace Diags X	K Brace Diags Y	Single Diags X	Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
T1	No	Yes	1	1		1		1		0.65		0.65		1		1	
190.00-180.00				1		1		1		0.65		0.65		1		1	
T2	No	Yes	1	1		1		1		0.65		0.65		1		1	
180.00-160.00				1		1		1		0.65		0.65		1		1	
T3	No	Yes	1	1		1		1		0.65		0.65		1		1	
160.00-140.00				1		1		1		0.65		0.65		1		1	
T4	No	Yes	1	1		1		1		0.65		0.65		1		1	
140.00-120.00				1		1		1		0.65		0.65		1		1	
T5	No	Yes	1	1		1		1		0.65		0.65		1		1	
120.00-100.00				1		1		1		0.65		0.65		1		1	
T6	No	Yes	1	1		1		1		0.65		0.65		1		1	
100.00-80.00				1		1		1		0.65		0.65		1		1	
T7	No	Yes	1	1		1		1		0.65		0.65		1		1	
80.00-60.00				1		1		1		0.65		0.65		1		1	
T8	No	Yes	1	1		1		1		0.65		0.65		1		1	
60.00-40.00				1		1		1		0.65		0.65		1		1	
T9	No	Yes	1	1		1		1		0.65		0.65		1		1	
40.00-20.00				1		1		1		0.65		0.65		1		1	
T10	No	Yes	1	1		1		1		0.65		0.65		1		1	
20.00-0.00				1		1		1		0.65		0.65		1		1	

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

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 190.00-180.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T2 180.00-160.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T3 160.00-140.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T4 140.00-120.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T5 120.00-100.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T6 100.00-80.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T7 80.00-60.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T8 60.00-40.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T9 40.00-20.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T10 20.00-0.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 190.00-180.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 180.00-160.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 160.00-140.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 140.00-120.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 120.00-100.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 100.00-80.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 80.00-60.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T8 60.00-40.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T9 40.00-20.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T10 20.00-0.00	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension lb	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
160.375	EHS	A	5/8	6360.00	15%	21000	0.813	214.61	145.00	0.0000	0.00	100%
		B	5/8	6360.00	15%	21000	0.813	214.61	145.00	0.0000	0.00	100%
		C	5/8	6360.00	15%	21000	0.813	214.61	145.00	0.0000	0.00	100%
120.375	EHS	A	9/16	5250.00	15%	21000	0.671	186.70	145.00	0.0000	0.00	100%
		B	9/16	5250.00	15%	21000	0.671	186.70	145.00	0.0000	0.00	100%
		C	9/16	5250.00	15%	21000	0.671	186.70	145.00	0.0000	0.00	100%
60.375	EHS	A	9/16	5250.00	15%	21000	0.671	155.01	145.00	0.0000	0.00	100%
		B	9/16	5250.00	15%	21000	0.671	155.01	145.00	0.0000	0.00	100%
		C	9/16	5250.00	15%	21000	0.671	155.01	145.00	0.0000	0.00	100%
189.625	EHS	A	9/16	5250.00	15%	21000	0.671	237.18	145.00	0.0000	0.00	100%
		B	9/16	5250.00	15%	21000	0.671	237.18	145.00	0.0000	0.00	100%
		C	9/16	5250.00	15%	21000	0.671	237.18	145.00	0.0000	0.00	100%

Guy Data *(cont'd)*

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
160.375	Torque Arm	7.00	30.0000	Dog Ear	A36 (36 ksi)	Single Angle	L2x2x5/16 L3x3x1/4
120.375	Torque Arm	7.00	30.0000	Dog Ear	A36 (36 ksi)	Single Angle	L2x2x5/16 L3x3x1/4
60.375	Corner						
189.625	Corner						

Guy Data *(cont'd)*

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
160.38	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16
120.38	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16
60.38	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16
189.63	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16

Guy Data *(cont'd)*

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

Guy Elevation ft	Cable Weight A lb	Cable Weight B lb	Cable Weight C lb	Cable Weight D lb	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
160.375	174.48	174.48	174.48		2.92 2.9 sec/pulse	2.92 2.9 sec/pulse	2.92 2.9 sec/pulse	
120.375	125.27	125.27	125.27		2.21 2.6 sec/pulse	2.21 2.6 sec/pulse	2.21 2.6 sec/pulse	
60.375	104.01	104.01	104.01		1.53 2.1 sec/pulse	1.53 2.1 sec/pulse	1.53 2.1 sec/pulse	
189.625	159.15	159.15	159.15		3.56 3.3 sec/pulse	3.56 3.3 sec/pulse	3.56 3.3 sec/pulse	

Guy Data *(cont'd)*

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
160.375	No	No	1	1	0.65	0.65	1	1
120.375	No	No	1	1	0.65	0.65	1	1
60.375	No	No			0.65	0.65	1	1
189.625	No	No			0.65	0.65	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
160.375	0.7500 A325N	2	0.0000	1	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	1
120.375	0.7500 A325N	2	0.0000	1	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	1
60.375	0.6250 A325N	0	0.0000	0.75	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	1
189.625	0.6250 A325N	0	0.0000	0.75	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	1

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
160.375	A	80.19	24	18	0.5000
	B	80.19	24	18	0.5000
	C	80.19	24	18	0.5000
120.375	A	60.19	22	16	0.5000
	B	60.19	22	16	0.5000
	C	60.19	22	16	0.5000
60.375	A	30.19	18	14	0.5000
	B	30.19	18	14	0.5000

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
	C	30.19	18	14	0.5000
189.625	A	94.81	25	19	0.5000
	B	94.81	25	19	0.5000
	C	94.81	25	19	0.5000

Guy-Mast Forces (Excluding Wind) - No Ice

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

Guy-Mast Forces (Excluding Wind) - Ice

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom	F_x	F_y	F_z	M_x	M_y	M_z
ft		°	lb	lb	lb	lb	lb-ft	lb-ft	lb-ft
160.375	A	48.2735	8233.12 / 7992.84	-132.12	6215.76	-5397.33	-12560.35	19157.63	-21755.17
	A	48.2735	8233.12 / 7992.84	132.12	6215.76	-5397.33	-12560.35	-19157.63	21755.17
	B	48.2735	8233.12 / 7992.84	4740.29	6215.76	2584.24	25120.71	19157.63	0.00
	B	48.2735	8233.12 / 7992.84	4608.16	6215.76	2813.09	-12560.35	-19157.63	-21755.17
	C	48.2735	8233.12 / 7992.84	-4608.16	6215.76	2813.09	-12560.35	19157.63	21755.17
	C	48.2735	8233.12 / 7992.84	-4740.29	6215.76	2584.24	25120.71	-19157.63	0.00
			Sum:	0.00	37294.58	0.00	-0.00	0.00	0.00
120.375	A	40.0857	6777.01 / 6618.32	-125.38	4435.90	-5122.00	-8963.74	18180.36	-15525.66
	A	40.0857	6777.01 / 6618.32	125.38	4435.90	-5122.00	-8963.74	-18180.36	15525.66
	B	40.0857	6777.01 / 6618.32	4498.47	4435.90	2452.42	17927.48	18180.36	0.00
	B	40.0857	6777.01 / 6618.32	4373.09	4435.90	2669.58	-8963.74	-18180.36	-15525.66
	C	40.0857	6777.01 / 6618.32	-4373.09	4435.90	2669.58	-8963.74	18180.36	15525.66
	C	40.0857	6777.01 / 6618.32	-4498.47	4435.90	2452.42	17927.48	-18180.36	0.00
			Sum:	0.00	26615.41	0.00	-0.00	0.00	0.00
60.375	A	22.8926	6717.98 / 6638.39	0.00	2700.07	-6151.50	-5456.09	0.00	0.00
	B	22.8926	6717.98 / 6638.39	5327.35	2700.07	3075.75	2728.05	0.00	-4725.12
	C	22.8926	6717.98 / 6638.39	-5327.35	2700.07	3075.75	2728.05	-0.00	4725.12
			Sum:	0.00	8100.20	0.00	0.00	0.00	0.00
189.625	A	52.9833	6845.85 / 6595.87	0.00	5522.71	-4045.41	-11159.87	0.00	0.00
	B	52.9833	6845.85 / 6595.87	3503.43	5522.71	2022.71	5579.94	0.00	-9664.73
	C	52.9833	6845.85 / 6595.87	-3503.43	5522.71	2022.71	5579.94	-0.00	9664.73
			Sum:	0.00	16568.12	0.00	0.00	0.00	0.00

Guy-Mast Forces (Excluding Wind) - Service

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

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

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1 5/8 (Verizon)	C	Yes	Ar (CfAe)	190.00 - 0.00	0.0000	0.25	12	6	1.0000 0.5000	1.9800		1.04
1 1/4 (Sprint)	A	Yes	Ar (CfAe)	170.50 - 0.00	0.0000	0.25	3	3	1.5500	1.5500		0.66
1 1/4 (Nextel)	B	Yes	Ar (CfAe)	178.00 - 0.00	0.0000	-0.25	9	9	1.0000 0.5000	1.5500		0.66
Safety Line 3/8	A	No	Ar (CfAe)	190.00 - 0.00	0.0000	0	1	1	0.3750	0.3750		0.22

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft^2/ft	Weight plf
1 5/8 (AT&T)	B	No	CaAa (Out Of Face)	138.00 - 0.00	0.0000	0.1	12	No Ice	0.20	1.04
								1/2" Ice	0.30	2.55
3/4 Cable	B	No	CaAa (Out Of Face)	138.00 - 0.00	0.0000	0.1	2	No Ice	0.08	0.19
								1/2" Ice	0.16	0.88
3/8 Cable	B	No	CaAa (Out Of Face)	138.00 - 0.00	0.0000	0.1	1	No Ice	0.04	0.19
								1/2" Ice	0.16	0.88

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	190.00-180.00	A	0.313	0.000	0.000	0.000	2.20
		B	0.000	0.000	0.000	0.000	0.00
		C	9.900	0.000	0.000	0.000	124.80
T2	180.00-160.00	A	4.694	0.000	0.000	0.000	25.19
		B	20.925	0.000	0.000	0.000	106.92
		C	19.800	0.000	0.000	0.000	249.60
T3	160.00-140.00	A	8.375	0.000	0.000	0.000	44.00
		B	23.250	0.000	0.000	0.000	118.80
		C	19.800	0.000	0.000	0.000	249.60
T4	140.00-120.00	A	8.375	0.000	0.000	0.000	44.00
		B	23.250	0.000	0.000	46.143	353.70
		C	19.800	0.000	0.000	0.000	249.60
T5	120.00-100.00	A	8.375	0.000	0.000	0.000	44.00
		B	23.250	0.000	0.000	51.270	379.80
		C	19.800	0.000	0.000	0.000	249.60
T6	100.00-80.00	A	8.375	0.000	0.000	0.000	44.00
		B	23.250	0.000	0.000	51.270	379.80
		C	19.800	0.000	0.000	0.000	249.60
T7	80.00-60.00	A	8.375	0.000	0.000	0.000	44.00
		B	23.250	0.000	0.000	51.270	379.80
		C	19.800	0.000	0.000	0.000	249.60
T8	60.00-40.00	A	8.375	0.000	0.000	0.000	44.00
		B	23.250	0.000	0.000	51.270	379.80
		C	19.800	0.000	0.000	0.000	249.60
T9	40.00-20.00	A	8.375	0.000	0.000	0.000	44.00
		B	23.250	0.000	0.000	51.270	379.80
		C	19.800	0.000	0.000	0.000	249.60
T10	20.00-0.00	A	8.375	0.000	0.000	0.000	44.00
		B	23.250	0.000	0.000	51.270	379.80
		C	19.800	0.000	0.000	0.000	249.60

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	190.00-180.00	A	0.500	1.146	0.000	0.000	0.000	7.55
		B		0.000	0.000	0.000	0.000	0.00
		C		2.483	12.417	0.000	0.000	353.35

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
T2	180.00-160.00	A	0.500	8.985	0.000	0.000	0.000	75.33
		B		3.825	30.600	0.000	0.000	387.93
		C		4.967	24.833	0.000	0.000	706.70
T3	160.00-140.00	A	0.500	15.042	0.000	0.000	0.000	129.83
		B		4.250	34.000	0.000	0.000	431.04
		C		4.967	24.833	0.000	0.000	706.70
T4	140.00-120.00	A	0.500	15.042	0.000	0.000	0.000	129.83
		B		4.250	34.000	0.000	73.169	1029.37
		C		4.967	24.833	0.000	0.000	706.70
T5	120.00-100.00	A	0.500	15.042	0.000	0.000	0.000	129.83
		B		4.250	34.000	0.000	81.299	1095.85
		C		4.967	24.833	0.000	0.000	706.70
T6	100.00-80.00	A	0.500	15.042	0.000	0.000	0.000	129.83
		B		4.250	34.000	0.000	81.299	1095.85
		C		4.967	24.833	0.000	0.000	706.70
T7	80.00-60.00	A	0.500	15.042	0.000	0.000	0.000	129.83
		B		4.250	34.000	0.000	81.299	1095.85
		C		4.967	24.833	0.000	0.000	706.70
T8	60.00-40.00	A	0.500	15.042	0.000	0.000	0.000	129.83
		B		4.250	34.000	0.000	81.299	1095.85
		C		4.967	24.833	0.000	0.000	706.70
T9	40.00-20.00	A	0.500	15.042	0.000	0.000	0.000	129.83
		B		4.250	34.000	0.000	81.299	1095.85
		C		4.967	24.833	0.000	0.000	706.70
T10	20.00-0.00	A	0.500	15.042	0.000	0.000	0.000	129.83
		B		4.250	34.000	0.000	81.299	1095.85
		C		4.967	24.833	0.000	0.000	706.70

Feed Line Shielding

Section	Elevation ft	Face	A_R ft^2	A_R Ice ft^2	A_F ft^2	A_F Ice ft^2
T1	190.00-180.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.412	2.110	0.495	0.745
T2	180.00-160.00	A	0.172	0.933	0.178	0.293
		B	0.887	4.798	0.915	1.506
		C	0.839	4.154	0.866	1.304
T3	160.00-140.00	A	0.329	1.777	0.339	0.558
		B	0.986	5.332	1.017	1.673
		C	0.839	4.154	0.866	1.304
T4	140.00-120.00	A	0.329	1.777	0.339	0.558
		B	0.986	5.332	1.017	1.673
		C	0.839	4.154	0.866	1.304
T5	120.00-100.00	A	0.329	1.777	0.339	0.558
		B	0.986	5.332	1.017	1.673
		C	0.839	4.154	0.866	1.304
T6	100.00-80.00	A	0.329	1.777	0.339	0.558
		B	0.986	5.332	1.017	1.673
		C	0.839	4.154	0.866	1.304
T7	80.00-60.00	A	0.329	1.777	0.339	0.558
		B	0.986	5.332	1.017	1.673
		C	0.839	4.154	0.866	1.304
T8	60.00-40.00	A	0.329	1.777	0.339	0.558
		B	0.986	5.332	1.017	1.673
		C	0.839	4.154	0.866	1.304

Section	Elevation ft	Face	A_R ft^2	A_R Ice ft^2	A_F ft^2	A_F Ice ft^2
T9	40.00-20.00	A	0.329	1.777	0.339	0.558
		B	0.986	5.332	1.017	1.673
		C	0.839	4.154	0.866	1.304
T10	20.00-0.00	A	0.329	1.777	0.339	0.558
		B	0.986	5.332	1.017	1.673
		C	0.839	4.154	0.866	1.304

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	190.00-180.00	-2.9946	3.8953	-2.1949	2.5376
T2	180.00-160.00	-1.2098	-1.1373	-0.8635	-1.4732
T3	160.00-140.00	-1.2173	-1.9907	-0.9079	-2.2219
T4	140.00-120.00	3.6940	1.7023	3.8411	1.6608
T5	120.00-100.00	3.8638	1.8300	4.0022	1.7924
T6	100.00-80.00	3.8638	1.8300	4.0022	1.7924
T7	80.00-60.00	3.8638	1.8300	4.0022	1.7924
T8	60.00-40.00	3.8638	1.8300	4.0022	1.7924
T9	40.00-20.00	3.8638	1.8300	4.0022	1.7924
T10	20.00-0.00	3.8638	1.8300	4.0022	1.7924

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Antel BXA-70063-6CF	A	From Leg	3.00	0.0000	190.00	No Ice	7.73	2.94	17.00
(Verizon)			0.00			1/2" Ice	8.19	3.40	59.00
			0.00						
Antel BXA-70063-6CF	B	From Leg	3.00	0.0000	190.00	No Ice	7.73	2.94	17.00
(Verizon)			0.00			1/2" Ice	8.19	3.40	59.00
			0.00						
Antel BXA-70063-6CF	C	From Leg	3.00	0.0000	190.00	No Ice	7.73	2.94	17.00
(Verizon)			0.00			1/2" Ice	8.19	3.40	59.00
			0.00						
Sector Frame Mount	A	From Leg	1.50	0.0000	190.00	No Ice	13.60	13.60	465.00
(Verizon)			0.00			1/2" Ice	18.40	18.40	600.00
			0.00						
Sector Frame Mount	B	From Leg	1.50	0.0000	190.00	No Ice	13.60	13.60	465.00
(Verizon)			0.00			1/2" Ice	18.40	18.40	600.00
			0.00						
Sector Frame Mount	C	From Leg	1.50	0.0000	190.00	No Ice	13.60	13.60	465.00
(Verizon)			0.00			1/2" Ice	18.40	18.40	600.00
			0.00						
(2) Antel LPA-80080-4CF	A	From Leg	3.00	0.0000	190.00	No Ice	1.51	6.79	12.00
(Verizon)			0.00			1/2" Ice	1.81	7.14	45.10

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						
(2) Antel LPA-80063/4CF	B	From Leg	3.00	0.0000	190.00	No Ice	7.00	3.48	20.00
(Verizon)			0.00			1/2" Ice	7.36	3.82	72.60
			0.00						
(2) Antel LPA-80063/4CF	C	From Leg	3.00	0.0000	190.00	No Ice	7.00	3.48	20.00
(Verizon)			0.00			1/2" Ice	7.36	3.82	72.60
			0.00						
Antel BXA-171085-8BF	A	From Leg	3.00	0.0000	190.00	No Ice	2.94	1.49	10.50
(Verizon)			0.00			1/2" Ice	3.25	1.80	29.30
			0.00						
Antel BXA-171063-8BF	B	From Leg	3.00	0.0000	190.00	No Ice	2.94	1.49	10.50
(Verizon)			0.00			1/2" Ice	3.25	1.80	29.30
			0.00						
Antel BXA-171063-8BF	C	From Leg	3.00	0.0000	190.00	No Ice	2.94	1.49	10.50
(Verizon)			0.00			1/2" Ice	3.25	1.80	29.30
			0.00						
(2) RFS FD9R6004/2C-3L	A	From Leg	3.00	0.0000	190.00	No Ice	0.37	0.08	2.60
(Verizon)			0.00			1/2" Ice	0.44	0.12	4.90
			0.00						
(2) RFS FD9R6004/2C-3L	B	From Leg	3.00	0.0000	190.00	No Ice	0.37	0.08	2.60
(Verizon)			0.00			1/2" Ice	0.44	0.12	4.90
			0.00						
(2) RFS FD9R6004/2C-3L	C	From Leg	3.00	0.0000	190.00	No Ice	0.37	0.08	2.60
(Verizon)			0.00			1/2" Ice	0.44	0.12	4.90
			0.00						
Sector Frame Mount	A	From Leg	1.50	0.0000	178.00	No Ice	13.60	13.60	465.00
(Nextel)			0.00			1/2" Ice	18.40	18.40	600.00
			0.00						
Sector Frame Mount	B	From Leg	1.50	0.0000	178.00	No Ice	13.60	13.60	465.00
(Nextel)			0.00			1/2" Ice	18.40	18.40	600.00
			0.00						
Sector Frame Mount	C	From Leg	1.50	0.0000	178.00	No Ice	13.60	13.60	465.00
(Nextel)			0.00			1/2" Ice	18.40	18.40	600.00
			0.00						
(3) Swedcom ALP-E-9011	A	From Leg	3.00	0.0000	178.00	No Ice	2.72	3.34	20.00
(Nextel)			0.00			1/2" Ice	3.00	3.63	43.80
			0.00						
(3) Swedcom ALP-E-9011	B	From Leg	3.00	0.0000	178.00	No Ice	2.72	3.34	20.00
(Nextel)			0.00			1/2" Ice	3.00	3.63	43.80
			0.00						
(3) Swedcom ALP-E-9011	C	From Leg	3.00	0.0000	178.00	No Ice	2.72	3.34	20.00
(Nextel)			0.00			1/2" Ice	3.00	3.63	43.80
			0.00						
Sector Frame Mount	A	From Leg	1.50	0.0000	138.00	No Ice	13.60	13.60	465.00
(AT&T)			0.00			1/2" Ice	18.40	18.40	600.00
			0.00						
Sector Frame Mount	B	From Leg	1.50	0.0000	138.00	No Ice	13.60	13.60	465.00
(AT&T)			0.00			1/2" Ice	18.40	18.40	600.00
			0.00						
Sector Frame Mount	C	From Leg	1.50	0.0000	138.00	No Ice	13.60	13.60	465.00
(AT&T)			0.00			1/2" Ice	18.40	18.40	600.00
			0.00						
(2) Allgon 7770.00	A	From Leg	3.00	0.0000	138.00	No Ice	5.88	2.93	35.00
(AT&T)			0.00			1/2" Ice	6.25	3.29	67.60
			0.00						
(2) Allgon 7770.00	B	From Leg	3.00	0.0000	138.00	No Ice	5.88	2.93	35.00
(AT&T)			0.00			1/2" Ice	6.25	3.29	67.60

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

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Sector Frame Mount (Sprint)	B	From Leg	1.50 0.00 0.00	0.0000	170.50	No Ice 1/2" Ice	13.60 18.40	13.60 18.40	465.00 600.00
Sector Frame Mount (Sprint)	C	From Leg	1.50 0.00 0.00	0.0000	170.50	No Ice 1/2" Ice	13.60 18.40	13.60 18.40	465.00 600.00
RFS APXV9ERR18-C (Sprint)	A	From Leg	3.00 0.00 0.00	0.0000	170.50	No Ice 1/2" Ice	8.02 8.50	5.81 6.27	62.00 114.00
(2) Alcatel Lucent 4X40W RRH (Sprint)	A	From Leg	3.00 0.00 0.00	0.0000	170.50	No Ice 1/2" Ice	2.32 2.53	2.24 2.44	60.00 83.10
(2) Alcatel Lucent 2X50W RRH (Sprint)	A	From Leg	3.00 0.00 0.00	0.0000	170.50	No Ice 1/2" Ice	2.06 2.24	1.36 1.52	60.00 78.30
RFS APXV9ERR18-C (Sprint)	B	From Leg	3.00 0.00 0.00	0.0000	170.50	No Ice 1/2" Ice	8.02 8.50	5.81 6.27	62.00 114.00
(2) Alcatel Lucent 4X40W RRH (Sprint)	B	From Leg	3.00 0.00 0.00	0.0000	170.50	No Ice 1/2" Ice	2.32 2.53	2.24 2.44	60.00 83.10
(2) Alcatel Lucent 2X50W RRH (Sprint)	B	From Leg	3.00 0.00 0.00	0.0000	170.50	No Ice 1/2" Ice	2.06 2.24	1.36 1.52	60.00 78.30
RFS APXV9ERR18-C (Sprint)	C	From Leg	3.00 0.00 0.00	0.0000	170.50	No Ice 1/2" Ice	8.02 8.50	5.81 6.27	62.00 114.00
(2) Alcatel Lucent 4X40W RRH (Sprint)	C	From Leg	3.00 0.00 0.00	0.0000	170.50	No Ice 1/2" Ice	2.32 2.53	2.24 2.44	60.00 83.10
(2) Alcatel Lucent 2X50W RRH (Sprint)	C	From Leg	3.00 0.00 0.00	0.0000	170.50	No Ice 1/2" Ice	2.06 2.24	1.36 1.52	60.00 78.30

Tower Pressures - No Ice

$G_H = 1.117$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
T1	185.00	1.636	30	37.396	A	1.630	6.462	4.792	59.21	0.000	0.000
190.00-180.00					B	1.630	6.150		61.59	0.000	0.000
					C	1.135	15.637		28.57	0.000	0.000
T2	170.00	1.597	30	74.792	A	2.675	16.869	9.583	49.04	0.000	0.000
180.00-160.00					B	1.937	32.386		27.92	0.000	0.000
					C	1.987	31.308		28.78	0.000	0.000
T3	150.00	1.541	29	74.792	A	2.514	20.394	9.583	41.83	0.000	0.000
160.00-140.00					B	1.836	34.612		26.29	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	1.987	31.308		28.78	0.000	0.000
T4	130.00	1.48	27	74.792	A	2.514	20.394	9.583	41.83	0.000	0.000
140.00-120.00					B	1.836	34.612		26.29	0.000	46.143
					C	1.987	31.308		28.78	0.000	0.000
T5	110.00	1.411	26	74.792	A	2.514	20.394	9.583	41.83	0.000	0.000
120.00-100.00					B	1.836	34.612		26.29	0.000	51.270
					C	1.987	31.308		28.78	0.000	0.000
T6	90.00	1.332	25	74.792	A	2.514	20.394	9.583	41.83	0.000	0.000
100.00-80.00					B	1.836	34.612		26.29	0.000	51.270
					C	1.987	31.308		28.78	0.000	0.000
T7 80.00-60.00	70.00	1.24	23	74.792	A	2.514	20.394	9.583	41.83	0.000	0.000
					B	1.836	34.612		26.29	0.000	51.270
					C	1.987	31.308		28.78	0.000	0.000
T8 60.00-40.00	50.00	1.126	21	74.792	A	2.514	20.394	9.583	41.83	0.000	0.000
					B	1.836	34.612		26.29	0.000	51.270
					C	1.987	31.308		28.78	0.000	0.000
T9 40.00-20.00	30.00	1	18	74.792	A	2.514	20.394	9.583	41.83	0.000	0.000
					B	1.836	34.612		26.29	0.000	51.270
					C	1.987	31.308		28.78	0.000	0.000
T10 20.00-0.00	10.00	1	18	74.792	A	2.514	20.394	9.583	41.83	0.000	0.000
					B	1.836	34.612		26.29	0.000	51.270
					C	1.987	31.308		28.78	0.000	0.000

Tower Pressure - With Ice

$G_H = 1.117$

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	185.00	1.636	23	0.5000	38.229	A	1.630	12.221	6.458	46.63	0.000	0.000
190.00-180.00						B	1.630	11.076		50.83	0.000	0.000
						C	13.302	11.449		26.09	0.000	0.000
T2	170.00	1.597	22	0.5000	76.458	A	2.560	30.058	12.917	39.60	0.000	0.000
180.00-160.00						B	31.947	21.032		24.38	0.000	0.000
						C	26.382	22.819		26.25	0.000	0.000
T3	150.00	1.541	21	0.5000	76.458	A	2.295	35.270	12.917	34.38	0.000	0.000
160.00-140.00						B	35.179	20.924		23.02	0.000	0.000
						C	26.382	22.819		26.25	0.000	0.000
T4	130.00	1.48	21	0.5000	76.458	A	2.295	35.270	12.917	34.38	0.000	0.000
140.00-120.00						B	35.179	20.924		23.02	0.000	73.169
						C	26.382	22.819		26.25	0.000	0.000
T5	110.00	1.411	20	0.5000	76.458	A	2.295	35.270	12.917	34.38	0.000	0.000
120.00-100.00						B	35.179	20.924		23.02	0.000	81.299
						C	26.382	22.819		26.25	0.000	0.000
T6 100.00-80.00	90.00	1.332	18	0.5000	76.458	A	2.295	35.270	12.917	34.38	0.000	0.000
						B	35.179	20.924		23.02	0.000	81.299
						C	26.382	22.819		26.25	0.000	0.000
T7 80.00-60.00	70.00	1.24	17	0.5000	76.458	A	2.295	35.270	12.917	34.38	0.000	0.000
						B	35.179	20.924		23.02	0.000	81.299
						C	26.382	22.819		26.25	0.000	0.000
T8 60.00-40.00	50.00	1.126	16	0.5000	76.458	A	2.295	35.270	12.917	34.38	0.000	0.000
						B	35.179	20.924		23.02	0.000	81.299
						C	26.382	22.819		26.25	0.000	0.000
T9 40.00-20.00	30.00	1	14	0.5000	76.458	A	2.295	35.270	12.917	34.38	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
						B	35.179	20.924		23.02	0.000	81.299
						C	26.382	22.819		26.25	0.000	0.000
T10 20.00-0.00	10.00	1	14	0.5000	76.458	A	2.295	35.270	12.917	34.38	0.000	0.000
						B	35.179	20.924		23.02	0.000	81.299
						C	26.382	22.819		26.25	0.000	0.000

Tower Pressure - Service

$G_H = 1.117$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	185.00	1.636	10	37.396	A	1.630	6.462	4.792	59.21	0.000	0.000
190.00-180.00					B	1.630	6.150		61.59	0.000	0.000
					C	1.135	15.637		28.57	0.000	0.000
T2	170.00	1.597	10	74.792	A	2.675	16.869	9.583	49.04	0.000	0.000
180.00-160.00					B	1.937	32.386		27.92	0.000	0.000
					C	1.987	31.308		28.78	0.000	0.000
T3	150.00	1.541	10	74.792	A	2.514	20.394	9.583	41.83	0.000	0.000
160.00-140.00					B	1.836	34.612		26.29	0.000	0.000
					C	1.987	31.308		28.78	0.000	0.000
T4	130.00	1.48	9	74.792	A	2.514	20.394	9.583	41.83	0.000	0.000
140.00-120.00					B	1.836	34.612		26.29	0.000	46.143
					C	1.987	31.308		28.78	0.000	0.000
T5	110.00	1.411	9	74.792	A	2.514	20.394	9.583	41.83	0.000	0.000
120.00-100.00					B	1.836	34.612		26.29	0.000	51.270
					C	1.987	31.308		28.78	0.000	0.000
T6	90.00	1.332	9	74.792	A	2.514	20.394	9.583	41.83	0.000	0.000
100.00-80.00					B	1.836	34.612		26.29	0.000	51.270
					C	1.987	31.308		28.78	0.000	0.000
T7 80.00-60.00	70.00	1.24	8	74.792	A	2.514	20.394	9.583	41.83	0.000	0.000
					B	1.836	34.612		26.29	0.000	51.270
					C	1.987	31.308		28.78	0.000	0.000
T8 60.00-40.00	50.00	1.126	7	74.792	A	2.514	20.394	9.583	41.83	0.000	0.000
					B	1.836	34.612		26.29	0.000	51.270
					C	1.987	31.308		28.78	0.000	0.000
T9 40.00-20.00	30.00	1	6	74.792	A	2.514	20.394	9.583	41.83	0.000	0.000
					B	1.836	34.612		26.29	0.000	51.270
					C	1.987	31.308		28.78	0.000	0.000
T10 20.00-0.00	10.00	1	6	74.792	A	2.514	20.394	9.583	41.83	0.000	0.000
					B	1.836	34.612		26.29	0.000	51.270
					C	1.987	31.308		28.78	0.000	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	127.00	336.97	A	0.216	2.542	0.594	1	1	5.468	778.63	77.86	C

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
190.00-180.00			B	0.208	2.569	0.592	1	1	5.271			
			C	0.449	1.976	0.673	1	1	11.653			
T2	381.71	658.24	A	0.261	2.404	0.605	1	1	12.878	1544.04	77.20	B
180.00-160.00		TA 214.38	B	0.459	1.959	0.677	1	1	23.876			
			C	0.445	1.982	0.671	1	1	22.997			
T3	412.40	658.24	A	0.306	2.279	0.618	1	1	15.114	1572.62	78.63	B
160.00-140.00			B	0.487	1.917	0.691	1	1	25.757			
			C	0.445	1.982	0.671	1	1	22.997			
T4	647.30	658.24	A	0.306	2.279	0.618	1	1	15.114	2920.38	146.02	B
140.00-120.00		TA 214.38	B	0.487	1.917	0.691	1	1	25.757			
			C	0.445	1.982	0.671	1	1	22.997			
T5	673.40	658.24	A	0.306	2.279	0.618	1	1	15.114	2933.71	146.69	B
120.00-100.00			B	0.487	1.917	0.691	1	1	25.757			
			C	0.445	1.982	0.671	1	1	22.997			
T6	673.40	658.24	A	0.306	2.279	0.618	1	1	15.114	2770.24	138.51	B
100.00-80.00			B	0.487	1.917	0.691	1	1	25.757			
			C	0.445	1.982	0.671	1	1	22.997			
T7	673.40	658.24	A	0.306	2.279	0.618	1	1	15.114	2578.30	128.92	B
80.00-60.00			B	0.487	1.917	0.691	1	1	25.757			
			C	0.445	1.982	0.671	1	1	22.997			
T8	673.40	658.24	A	0.306	2.279	0.618	1	1	15.114	2341.98	117.10	B
60.00-40.00			B	0.487	1.917	0.691	1	1	25.757			
			C	0.445	1.982	0.671	1	1	22.997			
T9	673.40	658.24	A	0.306	2.279	0.618	1	1	15.114	2079.81	103.99	B
40.00-20.00			B	0.487	1.917	0.691	1	1	25.757			
			C	0.445	1.982	0.671	1	1	22.997			
T10	673.40	658.24	A	0.306	2.279	0.618	1	1	15.114	2079.81	103.99	B
20.00-0.00			B	0.487	1.917	0.691	1	1	25.757			
			C	0.445	1.982	0.671	1	1	22.997			
Sum Weight:	5608.81	6689.93								21599.53		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	127.00	336.97	A	0.216	2.542	0.594	0.8	1	5.142	763.46	76.35	C
190.00-180.00			B	0.208	2.569	0.592	0.8	1	4.945			
			C	0.449	1.976	0.673	0.8	1	11.426			
T2	381.71	658.24	A	0.261	2.404	0.605	0.8	1	12.343	1518.99	75.95	B
180.00-160.00		TA 214.38	B	0.459	1.959	0.677	0.8	1	23.488			
			C	0.445	1.982	0.671	0.8	1	22.599			
T3	412.40	658.24	A	0.306	2.279	0.618	0.8	1	14.611	1550.20	77.51	B
160.00-140.00			B	0.487	1.917	0.691	0.8	1	25.390			
			C	0.445	1.982	0.671	0.8	1	22.599			
T4	647.30	658.24	A	0.306	2.279	0.618	0.8	1	14.611	2898.87	144.94	B
140.00-120.00		TA 214.38	B	0.487	1.917	0.691	0.8	1	25.390			
			C	0.445	1.982	0.671	0.8	1	22.599			
T5	673.40	658.24	A	0.306	2.279	0.618	0.8	1	14.611	2913.20	145.66	B
120.00-100.00			B	0.487	1.917	0.691	0.8	1	25.390			
			C	0.445	1.982	0.671	0.8	1	22.599			
T6	673.40	658.24	A	0.306	2.279	0.618	0.8	1	14.611	2750.87	137.54	B
100.00-80.00			B	0.487	1.917	0.691	0.8	1	25.390			
			C	0.445	1.982	0.671	0.8	1	22.599			
T7	673.40	658.24	A	0.306	2.279	0.618	0.8	1	14.611	2560.27	128.01	B

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
80.00-60.00			B	0.487	1.917	0.691	0.8	1	25.390			
			C	0.445	1.982	0.671	0.8	1	22.599			
T8	673.40	658.24	A	0.306	2.279	0.618	0.8	1	14.611	2325.60	116.28	B
60.00-40.00			B	0.487	1.917	0.691	0.8	1	25.390			
			C	0.445	1.982	0.671	0.8	1	22.599			
T9	673.40	658.24	A	0.306	2.279	0.618	0.8	1	14.611	2065.27	103.26	B
40.00-20.00			B	0.487	1.917	0.691	0.8	1	25.390			
			C	0.445	1.982	0.671	0.8	1	22.599			
T10	673.40	658.24	A	0.306	2.279	0.618	0.8	1	14.611	2065.27	103.26	B
20.00-0.00			B	0.487	1.917	0.691	0.8	1	25.390			
			C	0.445	1.982	0.671	0.8	1	22.599			
Sum Weight:	5608.81	6689.93								21411.99		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	127.00	336.97	A	0.216	2.542	0.594	0.85	1	5.223	767.25	76.73	C
190.00-180.00			B	0.208	2.569	0.592	0.85	1	5.027			
			C	0.449	1.976	0.673	0.85	1	11.482			
T2	381.71	658.24	A	0.261	2.404	0.605	0.85	1	12.476	1525.25	76.26	B
180.00-160.00		TA 214.38	B	0.459	1.959	0.677	0.85	1	23.585			
			C	0.445	1.982	0.671	0.85	1	22.699			
T3	412.40	658.24	A	0.306	2.279	0.618	0.85	1	14.737	1555.81	77.79	B
160.00-140.00			B	0.487	1.917	0.691	0.85	1	25.481			
			C	0.445	1.982	0.671	0.85	1	22.699			
T4	647.30	658.24	A	0.306	2.279	0.618	0.85	1	14.737	2904.25	145.21	B
140.00-120.00		TA 214.38	B	0.487	1.917	0.691	0.85	1	25.481			
			C	0.445	1.982	0.671	0.85	1	22.699			
T5	673.40	658.24	A	0.306	2.279	0.618	0.85	1	14.737	2918.33	145.92	B
120.00-100.00			B	0.487	1.917	0.691	0.85	1	25.481			
			C	0.445	1.982	0.671	0.85	1	22.699			
T6	673.40	658.24	A	0.306	2.279	0.618	0.85	1	14.737	2755.71	137.79	B
100.00-80.00			B	0.487	1.917	0.691	0.85	1	25.481			
			C	0.445	1.982	0.671	0.85	1	22.699			
T7	673.40	658.24	A	0.306	2.279	0.618	0.85	1	14.737	2564.78	128.24	B
80.00-60.00			B	0.487	1.917	0.691	0.85	1	25.481			
			C	0.445	1.982	0.671	0.85	1	22.699			
T8	673.40	658.24	A	0.306	2.279	0.618	0.85	1	14.737	2329.70	116.48	B
60.00-40.00			B	0.487	1.917	0.691	0.85	1	25.481			
			C	0.445	1.982	0.671	0.85	1	22.699			
T9	673.40	658.24	A	0.306	2.279	0.618	0.85	1	14.737	2068.90	103.45	B
40.00-20.00			B	0.487	1.917	0.691	0.85	1	25.481			
			C	0.445	1.982	0.671	0.85	1	22.699			
T10	673.40	658.24	A	0.306	2.279	0.618	0.85	1	14.737	2068.90	103.45	B
20.00-0.00			B	0.487	1.917	0.691	0.85	1	25.481			
			C	0.445	1.982	0.671	0.85	1	22.699			
Sum Weight:	5608.81	6689.93								21458.88		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	360.90	521.56	A	0.362	2.143	0.637	1	1	9.415	1006.88	100.69	C
190.00-180.00			B	0.332	2.213	0.626	1	1	8.567			
			C	0.647	1.782	0.784	1	1	22.275			
T2	1169.96	1013.22	A	0.427	2.014	0.663	1	1	22.483	2157.90	107.90	B
180.00-160.00		TA 326.59	B	0.693	1.776	0.815	1	1	49.085			
			C	0.644	1.783	0.781	1	1	44.208			
T3	1267.56	1013.22	A	0.491	1.912	0.693	1	1	26.741	2249.65	112.48	B
160.00-140.00			B	0.734	1.782	0.845	1	1	52.852			
			C	0.644	1.783	0.781	1	1	44.208			
T4	1865.90	1013.22	A	0.491	1.912	0.693	1	1	26.741	3837.32	191.87	B
140.00-120.00		TA 326.59	B	0.734	1.782	0.845	1	1	52.852			
			C	0.644	1.783	0.781	1	1	44.208			
T5	1932.38	1013.22	A	0.491	1.912	0.693	1	1	26.741	3836.20	191.81	B
120.00-100.00			B	0.734	1.782	0.845	1	1	52.852			
			C	0.644	1.783	0.781	1	1	44.208			
T6	1932.38	1013.22	A	0.491	1.912	0.693	1	1	26.741	3622.44	181.12	B
100.00-80.00			B	0.734	1.782	0.845	1	1	52.852			
			C	0.644	1.783	0.781	1	1	44.208			
T7	1932.38	1013.22	A	0.491	1.912	0.693	1	1	26.741	3371.45	168.57	B
80.00-60.00			B	0.734	1.782	0.845	1	1	52.852			
			C	0.644	1.783	0.781	1	1	44.208			
T8	1932.38	1013.22	A	0.491	1.912	0.693	1	1	26.741	3062.43	153.12	B
60.00-40.00			B	0.734	1.782	0.845	1	1	52.852			
			C	0.644	1.783	0.781	1	1	44.208			
T9	1932.38	1013.22	A	0.491	1.912	0.693	1	1	26.741	2719.61	135.98	B
40.00-20.00			B	0.734	1.782	0.845	1	1	52.852			
			C	0.644	1.783	0.781	1	1	44.208			
T10	1932.38	1013.22	A	0.491	1.912	0.693	1	1	26.741	2719.61	135.98	B
20.00-0.00			B	0.734	1.782	0.845	1	1	52.852			
			C	0.644	1.783	0.781	1	1	44.208			
Sum Weight:	16258.61	10293.73								28583.50		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	360.90	521.56	A	0.362	2.143	0.637	0.8	1	9.089	886.63	88.66	C
190.00-180.00			B	0.332	2.213	0.626	0.8	1	8.241			
			C	0.647	1.782	0.784	0.8	1	19.615			
T2	1169.96	1013.22	A	0.427	2.014	0.663	0.8	1	21.971	1877.01	93.85	B
180.00-160.00		TA 326.59	B	0.693	1.776	0.815	0.8	1	42.696			
			C	0.644	1.783	0.781	0.8	1	38.932			
T3	1267.56	1013.22	A	0.491	1.912	0.693	0.8	1	26.282	1950.17	97.51	B
160.00-140.00			B	0.734	1.782	0.845	0.8	1	45.816			
			C	0.644	1.783	0.781	0.8	1	38.932			
T4	1865.90	1013.22	A	0.491	1.912	0.693	0.8	1	26.282	3549.83	177.49	B
140.00-120.00		TA 326.59	B	0.734	1.782	0.845	0.8	1	45.816			
			C	0.644	1.783	0.781	0.8	1	38.932			
T5	1932.38	1013.22	A	0.491	1.912	0.693	0.8	1	26.282	3562.11	178.11	B
120.00-100.00			B	0.734	1.782	0.845	0.8	1	45.816			
			C	0.644	1.783	0.781	0.8	1	38.932			
T6	1932.38	1013.22	A	0.491	1.912	0.693	0.8	1	26.282	3363.63	168.18	B
100.00-80.00			B	0.734	1.782	0.845	0.8	1	45.816			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
			C	0.644	1.783	0.781	0.8	1	38.932			
T7	1932.38	1013.22	A	0.491	1.912	0.693	0.8	1	26.282	3130.57	156.53	B
80.00-60.00			B	0.734	1.782	0.845	0.8	1	45.816			
			C	0.644	1.783	0.781	0.8	1	38.932			
T8	1932.38	1013.22	A	0.491	1.912	0.693	0.8	1	26.282	2843.63	142.18	B
60.00-40.00			B	0.734	1.782	0.845	0.8	1	45.816			
			C	0.644	1.783	0.781	0.8	1	38.932			
T9	1932.38	1013.22	A	0.491	1.912	0.693	0.8	1	26.282	2525.31	126.27	B
40.00-20.00			B	0.734	1.782	0.845	0.8	1	45.816			
			C	0.644	1.783	0.781	0.8	1	38.932			
T10	1932.38	1013.22	A	0.491	1.912	0.693	0.8	1	26.282	2525.31	126.27	B
20.00-0.00			B	0.734	1.782	0.845	0.8	1	45.816			
			C	0.644	1.783	0.781	0.8	1	38.932			
Sum Weight:	16258.61	10293.73								26214.19		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	360.90	521.56	A	0.362	2.143	0.637	0.85	1	9.170	916.69	91.67	C
190.00-180.00			B	0.332	2.213	0.626	0.85	1	8.323			
			C	0.647	1.782	0.784	0.85	1	20.280			
T2	1169.96	1013.22	A	0.427	2.014	0.663	0.85	1	22.099	1947.24	97.36	B
180.00-160.00		TA 326.59	B	0.693	1.776	0.815	0.85	1	44.293			
			C	0.644	1.783	0.781	0.85	1	40.251			
T3	1267.56	1013.22	A	0.491	1.912	0.693	0.85	1	26.397	2025.04	101.25	B
160.00-140.00			B	0.734	1.782	0.845	0.85	1	47.575			
			C	0.644	1.783	0.781	0.85	1	40.251			
T4	1865.90	1013.22	A	0.491	1.912	0.693	0.85	1	26.397	3621.71	181.09	B
140.00-120.00		TA 326.59	B	0.734	1.782	0.845	0.85	1	47.575			
			C	0.644	1.783	0.781	0.85	1	40.251			
T5	1932.38	1013.22	A	0.491	1.912	0.693	0.85	1	26.397	3630.63	181.53	B
120.00-100.00			B	0.734	1.782	0.845	0.85	1	47.575			
			C	0.644	1.783	0.781	0.85	1	40.251			
T6	1932.38	1013.22	A	0.491	1.912	0.693	0.85	1	26.397	3428.33	171.42	B
100.00-80.00			B	0.734	1.782	0.845	0.85	1	47.575			
			C	0.644	1.783	0.781	0.85	1	40.251			
T7	1932.38	1013.22	A	0.491	1.912	0.693	0.85	1	26.397	3190.79	159.54	B
80.00-60.00			B	0.734	1.782	0.845	0.85	1	47.575			
			C	0.644	1.783	0.781	0.85	1	40.251			
T8	1932.38	1013.22	A	0.491	1.912	0.693	0.85	1	26.397	2898.33	144.92	B
60.00-40.00			B	0.734	1.782	0.845	0.85	1	47.575			
			C	0.644	1.783	0.781	0.85	1	40.251			
T9	1932.38	1013.22	A	0.491	1.912	0.693	0.85	1	26.397	2573.88	128.69	B
40.00-20.00			B	0.734	1.782	0.845	0.85	1	47.575			
			C	0.644	1.783	0.781	0.85	1	40.251			
T10	1932.38	1013.22	A	0.491	1.912	0.693	0.85	1	26.397	2573.88	128.69	B
20.00-0.00			B	0.734	1.782	0.845	0.85	1	47.575			
			C	0.644	1.783	0.781	0.85	1	40.251			
Sum Weight:	16258.61	10293.73								26806.52		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F lb	w plf	Ctrl. Face
T1	127.00	336.97	A	0.216	2.542	0.594	1	1	5.468	269.42	26.94	C
190.00-180.00			B	0.208	2.569	0.592	1	1	5.271			
			C	0.449	1.976	0.673	1	1	11.653			
T2	381.71	658.24	A	0.261	2.404	0.605	1	1	12.878	534.27	26.71	B
180.00-160.00		TA 214.38	B	0.459	1.959	0.677	1	1	23.876			
			C	0.445	1.982	0.671	1	1	22.997			
T3	412.40	658.24	A	0.306	2.279	0.618	1	1	15.114	544.16	27.21	B
160.00-140.00			B	0.487	1.917	0.691	1	1	25.757			
			C	0.445	1.982	0.671	1	1	22.997			
T4	647.30	658.24	A	0.306	2.279	0.618	1	1	15.114	1010.51	50.53	B
140.00-120.00		TA 214.38	B	0.487	1.917	0.691	1	1	25.757			
			C	0.445	1.982	0.671	1	1	22.997			
T5	673.40	658.24	A	0.306	2.279	0.618	1	1	15.114	1015.13	50.76	B
120.00-100.00			B	0.487	1.917	0.691	1	1	25.757			
			C	0.445	1.982	0.671	1	1	22.997			
T6	673.40	658.24	A	0.306	2.279	0.618	1	1	15.114	958.56	47.93	B
100.00-80.00			B	0.487	1.917	0.691	1	1	25.757			
			C	0.445	1.982	0.671	1	1	22.997			
T7	673.40	658.24	A	0.306	2.279	0.618	1	1	15.114	892.15	44.61	B
80.00-60.00			B	0.487	1.917	0.691	1	1	25.757			
			C	0.445	1.982	0.671	1	1	22.997			
T8	673.40	658.24	A	0.306	2.279	0.618	1	1	15.114	810.37	40.52	B
60.00-40.00			B	0.487	1.917	0.691	1	1	25.757			
			C	0.445	1.982	0.671	1	1	22.997			
T9	673.40	658.24	A	0.306	2.279	0.618	1	1	15.114	719.66	35.98	B
40.00-20.00			B	0.487	1.917	0.691	1	1	25.757			
			C	0.445	1.982	0.671	1	1	22.997			
T10	673.40	658.24	A	0.306	2.279	0.618	1	1	15.114	719.66	35.98	B
20.00-0.00			B	0.487	1.917	0.691	1	1	25.757			
			C	0.445	1.982	0.671	1	1	22.997			
Sum Weight:	5608.81	6689.93								7473.89		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F lb	w plf	Ctrl. Face
T1	127.00	336.97	A	0.216	2.542	0.594	0.8	1	5.142	264.17	26.42	C
190.00-180.00			B	0.208	2.569	0.592	0.8	1	4.945			
			C	0.449	1.976	0.673	0.8	1	11.426			
T2	381.71	658.24	A	0.261	2.404	0.605	0.8	1	12.343	525.60	26.28	B
180.00-160.00		TA 214.38	B	0.459	1.959	0.677	0.8	1	23.488			
			C	0.445	1.982	0.671	0.8	1	22.599			
T3	412.40	658.24	A	0.306	2.279	0.618	0.8	1	14.611	536.40	26.82	B
160.00-140.00			B	0.487	1.917	0.691	0.8	1	25.390			
			C	0.445	1.982	0.671	0.8	1	22.599			
T4	647.30	658.24	A	0.306	2.279	0.618	0.8	1	14.611	1003.07	50.15	B
140.00-120.00		TA 214.38	B	0.487	1.917	0.691	0.8	1	25.390			
			C	0.445	1.982	0.671	0.8	1	22.599			
T5	673.40	658.24	A	0.306	2.279	0.618	0.8	1	14.611	1008.03	50.40	B
120.00-100.00			B	0.487	1.917	0.691	0.8	1	25.390			
			C	0.445	1.982	0.671	0.8	1	22.599			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T6	673.40	658.24	A	0.306	2.279	0.618	0.8	1	14.611	951.86	47.59	B
100.00-80.00			B	0.487	1.917	0.691	0.8	1	25.390			
			C	0.445	1.982	0.671	0.8	1	22.599			
T7	673.40	658.24	A	0.306	2.279	0.618	0.8	1	14.611	885.91	44.30	B
80.00-60.00			B	0.487	1.917	0.691	0.8	1	25.390			
			C	0.445	1.982	0.671	0.8	1	22.599			
T8	673.40	658.24	A	0.306	2.279	0.618	0.8	1	14.611	804.71	40.24	B
60.00-40.00			B	0.487	1.917	0.691	0.8	1	25.390			
			C	0.445	1.982	0.671	0.8	1	22.599			
T9	673.40	658.24	A	0.306	2.279	0.618	0.8	1	14.611	714.63	35.73	B
40.00-20.00			B	0.487	1.917	0.691	0.8	1	25.390			
			C	0.445	1.982	0.671	0.8	1	22.599			
T10	673.40	658.24	A	0.306	2.279	0.618	0.8	1	14.611	714.63	35.73	B
20.00-0.00			B	0.487	1.917	0.691	0.8	1	25.390			
			C	0.445	1.982	0.671	0.8	1	22.599			
Sum Weight:	5608.81	6689.93								7408.99		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	127.00	336.97	A	0.216	2.542	0.594	0.85	1	5.223	265.48	26.55	C
190.00-180.00			B	0.208	2.569	0.592	0.85	1	5.027			
			C	0.449	1.976	0.673	0.85	1	11.482			
T2	381.71	658.24	A	0.261	2.404	0.605	0.85	1	12.476	527.77	26.39	B
180.00-160.00		TA 214.38	B	0.459	1.959	0.677	0.85	1	23.585			
			C	0.445	1.982	0.671	0.85	1	22.699			
T3	412.40	658.24	A	0.306	2.279	0.618	0.85	1	14.737	538.34	26.92	B
160.00-140.00			B	0.487	1.917	0.691	0.85	1	25.481			
			C	0.445	1.982	0.671	0.85	1	22.699			
T4	647.30	658.24	A	0.306	2.279	0.618	0.85	1	14.737	1004.93	50.25	B
140.00-120.00		TA 214.38	B	0.487	1.917	0.691	0.85	1	25.481			
			C	0.445	1.982	0.671	0.85	1	22.699			
T5	673.40	658.24	A	0.306	2.279	0.618	0.85	1	14.737	1009.80	50.49	B
120.00-100.00			B	0.487	1.917	0.691	0.85	1	25.481			
			C	0.445	1.982	0.671	0.85	1	22.699			
T6	673.40	658.24	A	0.306	2.279	0.618	0.85	1	14.737	953.53	47.68	B
100.00-80.00			B	0.487	1.917	0.691	0.85	1	25.481			
			C	0.445	1.982	0.671	0.85	1	22.699			
T7	673.40	658.24	A	0.306	2.279	0.618	0.85	1	14.737	887.47	44.37	B
80.00-60.00			B	0.487	1.917	0.691	0.85	1	25.481			
			C	0.445	1.982	0.671	0.85	1	22.699			
T8	673.40	658.24	A	0.306	2.279	0.618	0.85	1	14.737	806.12	40.31	B
60.00-40.00			B	0.487	1.917	0.691	0.85	1	25.481			
			C	0.445	1.982	0.671	0.85	1	22.699			
T9	673.40	658.24	A	0.306	2.279	0.618	0.85	1	14.737	715.88	35.79	B
40.00-20.00			B	0.487	1.917	0.691	0.85	1	25.481			
			C	0.445	1.982	0.671	0.85	1	22.699			
T10	673.40	658.24	A	0.306	2.279	0.618	0.85	1	14.737	715.88	35.79	B
20.00-0.00			B	0.487	1.917	0.691	0.85	1	25.481			
			C	0.445	1.982	0.671	0.85	1	22.699			
Sum Weight:	5608.81	6689.93								7425.22		

Discrete Appurtenance Pressures - No Ice $G_H = 1.117$

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Torque Arm Face C	180.0000	0.00	0.00	2.53	161.26	1.573	29	3.54	5.32
Torque Arm Face B	60.0000	0.00	2.19	-1.26	161.26	1.573	29	3.54	5.32
Torque Arm Face A	300.0000	0.00	-2.19	-1.26	161.26	1.573	29	3.54	5.32
Torque Arm Face C	180.0000	0.00	0.00	2.53	121.26	1.450	27	3.54	5.32
Torque Arm Face B	60.0000	0.00	2.19	-1.26	121.26	1.450	27	3.54	5.32
Torque Arm Face A	300.0000	0.00	-2.19	-1.26	121.26	1.450	27	3.54	5.32
Antel BXA-70063-6CF	0.0000	17.00	0.00	-5.02	190.00	1.649	30	7.73	2.94
Antel BXA-70063-6CF	120.0000	17.00	4.35	2.51	190.00	1.649	30	7.73	2.94
Antel BXA-70063-6CF	240.0000	17.00	-4.35	2.51	190.00	1.649	30	7.73	2.94
Sector Frame Mount	0.0000	465.00	0.00	-3.52	190.00	1.649	30	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	190.00	1.649	30	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	190.00	1.649	30	13.60	13.60
Antel LPA-80080-4CF	0.0000	24.00	0.00	-5.02	190.00	1.649	30	3.02	13.58
Antel LPA-80063/4CF	120.0000	40.00	4.35	2.51	190.00	1.649	30	14.00	6.96
Antel LPA-80063/4CF	240.0000	40.00	-4.35	2.51	190.00	1.649	30	14.00	6.96
Antel BXA-171085-8BF	0.0000	10.50	0.00	-5.02	190.00	1.649	30	2.94	1.49
Antel BXA-171063-8BF	120.0000	10.50	4.35	2.51	190.00	1.649	30	2.94	1.49
Antel BXA-171063-8BF	240.0000	10.50	-4.35	2.51	190.00	1.649	30	2.94	1.49
RFS FD9R6004/2C-3L	0.0000	5.20	0.00	-5.02	190.00	1.649	30	0.74	0.16
RFS FD9R6004/2C-3L	120.0000	5.20	4.35	2.51	190.00	1.649	30	0.74	0.16
RFS FD9R6004/2C-3L	240.0000	5.20	-4.35	2.51	190.00	1.649	30	0.74	0.16
Sector Frame Mount	0.0000	465.00	0.00	-3.52	178.00	1.619	30	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	178.00	1.619	30	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	178.00	1.619	30	13.60	13.60
Swedcom ALP-E-9011	0.0000	60.00	0.00	-5.02	178.00	1.619	30	8.16	10.02
Swedcom ALP-E-9011	120.0000	60.00	4.35	2.51	178.00	1.619	30	8.16	10.02
Swedcom ALP-E-9011	240.0000	60.00	-4.35	2.51	178.00	1.619	30	8.16	10.02
Sector Frame Mount	0.0000	465.00	0.00	-3.52	138.00	1.505	28	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	138.00	1.505	28	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	138.00	1.505	28	13.60	13.60
Allgon 7770.00	0.0000	70.00	0.00	-5.02	138.00	1.505	28	11.76	5.86
Allgon 7770.00	120.0000	70.00	4.35	2.51	138.00	1.505	28	11.76	5.86
Allgon 7770.00	240.0000	70.00	-4.35	2.51	138.00	1.505	28	11.76	5.86
Powerwave LGP21401	0.0000	62.00	0.00	-5.02	138.00	1.505	28	3.90	1.06
Powerwave LGP21401	120.0000	62.00	4.35	2.51	138.00	1.505	28	3.90	1.06
Powerwave LGP21401	240.0000	62.00	-4.35	2.51	138.00	1.505	28	3.90	1.06
Powerwave LGP21901	0.0000	50.00	0.00	-5.02	138.00	1.505	28	0.54	0.26
Powerwave LGP21901	120.0000	50.00	4.35	2.51	138.00	1.505	28	0.54	0.26
Powerwave LGP21901	240.0000	50.00	-4.35	2.51	138.00	1.505	28	0.54	0.26
Sector Frame Mount	0.0000	465.00	0.00	-3.52	150.00	1.541	29	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	150.00	1.541	29	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	150.00	1.541	29	13.60	13.60
Lightning Rod	0.0000	40.00	0.00	0.00	190.00	1.649	30	1.00	1.00
KMW AM-X-CD-17-65-00T-RET	0.0000	25.00	0.00	-5.02	138.00	1.505	28	11.31	6.80
KMW AM-X-CD-17-65-00T-RET	120.0000	25.00	4.35	2.51	138.00	1.505	28	11.31	6.80
KMW AM-X-CD-17-65-00T-RET	240.0000	25.00	-4.35	2.51	138.00	1.505	28	11.31	6.80
Ericsson RRUS11	0.0000	50.00	0.00	-5.02	138.00	1.505	28	5.98	0.72
Ericsson RRUS11	120.0000	50.00	4.35	2.51	138.00	1.505	28	5.98	0.72
Ericsson RRUS11	240.0000	50.00	-4.35	2.51	138.00	1.505	28	5.98	0.72

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Raycap DC6-48-60-18-8F	0.0000	25.00	0.00	-5.02	138.00	1.505	28	1.47	1.47
Sector Frame Mount	0.0000	465.00	0.00	-3.52	170.50	1.599	30	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	170.50	1.599	30	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	170.50	1.599	30	13.60	13.60
RFS APXV9ERR18-C	0.0000	62.00	0.00	-5.02	170.50	1.599	30	8.02	5.81
Alcatel Lucent 4X40W RRH	0.0000	120.00	0.00	-5.02	170.50	1.599	30	4.64	4.48
Alcatel Lucent 2X50W RRH	0.0000	120.00	0.00	-5.02	170.50	1.599	30	4.12	2.72
RFS APXV9ERR18-C	120.0000	62.00	4.35	2.51	170.50	1.599	30	8.02	5.81
Alcatel Lucent 4X40W RRH	120.0000	120.00	4.35	2.51	170.50	1.599	30	4.64	4.48
Alcatel Lucent 2X50W RRH	120.0000	120.00	4.35	2.51	170.50	1.599	30	4.12	2.72
RFS APXV9ERR18-C	240.0000	62.00	-4.35	2.51	170.50	1.599	30	8.02	5.81
Alcatel Lucent 4X40W RRH	240.0000	120.00	-4.35	2.51	170.50	1.599	30	4.64	4.48
Alcatel Lucent 2X50W RRH	240.0000	120.00	-4.35	2.51	170.50	1.599	30	4.12	2.72
	Sum Weight:	9099.10							

Discrete Appurtenance Pressures - With Ice $G_H = 1.117$

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
Torque Arm Face C	180.0000	0.00	0.00	2.53	161.26	1.573	22	4.28	6.36	0.5000
Torque Arm Face B	60.0000	0.00	2.19	-1.26	161.26	1.573	22	4.28	6.36	0.5000
Torque Arm Face A	300.0000	0.00	-2.19	-1.26	161.26	1.573	22	4.28	6.36	0.5000
Torque Arm Face C	180.0000	0.00	0.00	2.53	121.26	1.450	20	4.28	6.36	0.5000
Torque Arm Face B	60.0000	0.00	2.19	-1.26	121.26	1.450	20	4.28	6.36	0.5000
Torque Arm Face A	300.0000	0.00	-2.19	-1.26	121.26	1.450	20	4.28	6.36	0.5000
Antel BXA-70063-6CF	0.0000	59.00	0.00	-5.02	190.00	1.649	23	8.19	3.40	0.5000
Antel BXA-70063-6CF	120.0000	59.00	4.35	2.51	190.00	1.649	23	8.19	3.40	0.5000
Antel BXA-70063-6CF	240.0000	59.00	-4.35	2.51	190.00	1.649	23	8.19	3.40	0.5000
Sector Frame Mount	0.0000	600.00	0.00	-3.52	190.00	1.649	23	18.40	18.40	0.5000
Sector Frame Mount	120.0000	600.00	3.05	1.76	190.00	1.649	23	18.40	18.40	0.5000
Sector Frame Mount	240.0000	600.00	-3.05	1.76	190.00	1.649	23	18.40	18.40	0.5000
Antel LPA-80080-4CF	0.0000	90.20	0.00	-5.02	190.00	1.649	23	3.62	14.28	0.5000
Antel LPA-80063/4CF	120.0000	145.20	4.35	2.51	190.00	1.649	23	14.72	7.64	0.5000
Antel LPA-80063/4CF	240.0000	145.20	-4.35	2.51	190.00	1.649	23	14.72	7.64	0.5000
Antel BXA-171085-8BF	0.0000	29.30	0.00	-5.02	190.00	1.649	23	3.25	1.80	0.5000
Antel BXA-171063-8BF	120.0000	29.30	4.35	2.51	190.00	1.649	23	3.25	1.80	0.5000
Antel BXA-171063-8BF	240.0000	29.30	-4.35	2.51	190.00	1.649	23	3.25	1.80	0.5000
RFS FD9R6004/2C-3L	0.0000	9.80	0.00	-5.02	190.00	1.649	23	0.88	0.24	0.5000
RFS FD9R6004/2C-3L	120.0000	9.80	4.35	2.51	190.00	1.649	23	0.88	0.24	0.5000
RFS FD9R6004/2C-3L	240.0000	9.80	-4.35	2.51	190.00	1.649	23	0.88	0.24	0.5000
Sector Frame Mount	0.0000	600.00	0.00	-3.52	178.00	1.619	22	18.40	18.40	0.5000
Sector Frame Mount	120.0000	600.00	3.05	1.76	178.00	1.619	22	18.40	18.40	0.5000
Sector Frame Mount	240.0000	600.00	-3.05	1.76	178.00	1.619	22	18.40	18.40	0.5000
Swedcom ALP-E-9011	0.0000	131.40	0.00	-5.02	178.00	1.619	22	9.00	10.89	0.5000
Swedcom ALP-E-9011	120.0000	131.40	4.35	2.51	178.00	1.619	22	9.00	10.89	0.5000
Swedcom ALP-E-9011	240.0000	131.40	-4.35	2.51	178.00	1.619	22	9.00	10.89	0.5000
Sector Frame Mount	0.0000	600.00	0.00	-3.52	138.00	1.505	21	18.40	18.40	0.5000
Sector Frame Mount	120.0000	600.00	3.05	1.76	138.00	1.505	21	18.40	18.40	0.5000
Sector Frame Mount	240.0000	600.00	-3.05	1.76	138.00	1.505	21	18.40	18.40	0.5000

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
Allgon 7770.00	0.0000	135.20	0.00	-5.02	138.00	1.505	21	12.50	6.58	0.5000
Allgon 7770.00	120.0000	135.20	4.35	2.51	138.00	1.505	21	12.50	6.58	0.5000
Allgon 7770.00	240.0000	135.20	-4.35	2.51	138.00	1.505	21	12.50	6.58	0.5000
Powerwave LGP21401	0.0000	60.60	0.00	-5.02	138.00	1.505	21	4.22	1.26	0.5000
Powerwave LGP21401	120.0000	60.60	4.35	2.51	138.00	1.505	21	4.22	1.26	0.5000
Powerwave LGP21401	240.0000	60.60	-4.35	2.51	138.00	1.505	21	4.22	1.26	0.5000
Powerwave LGP21901	0.0000	60.60	0.00	-5.02	138.00	1.505	21	0.66	0.36	0.5000
Powerwave LGP21901	120.0000	60.60	4.35	2.51	138.00	1.505	21	0.66	0.36	0.5000
Powerwave LGP21901	240.0000	60.60	-4.35	2.51	138.00	1.505	21	0.66	0.36	0.5000
Sector Frame Mount	0.0000	600.00	0.00	-3.52	150.00	1.541	21	18.40	18.40	0.5000
Sector Frame Mount	120.0000	600.00	3.05	1.76	150.00	1.541	21	18.40	18.40	0.5000
Sector Frame Mount	240.0000	600.00	-3.05	1.76	150.00	1.541	21	18.40	18.40	0.5000
Lightning Rod	0.0000	49.26	0.00	0.00	190.00	1.649	23	2.02	2.02	0.5000
KMW AM-X-CD-17-65-00T-RET	0.0000	86.40	0.00	-5.02	138.00	1.505	21	11.93	7.48	0.5000
KMW AM-X-CD-17-65-00T-RET	120.0000	86.40	4.35	2.51	138.00	1.505	21	11.93	7.48	0.5000
KMW AM-X-CD-17-65-00T-RET	240.0000	86.40	-4.35	2.51	138.00	1.505	21	11.93	7.48	0.5000
Ericsson RRUS11	0.0000	77.00	0.00	-5.02	138.00	1.505	21	6.38	0.96	0.5000
Ericsson RRUS11	120.0000	77.00	4.35	2.51	138.00	1.505	21	6.38	0.96	0.5000
Ericsson RRUS11	240.0000	77.00	-4.35	2.51	138.00	1.505	21	6.38	0.96	0.5000
Raycap DC6-48-60-18-8F	0.0000	47.60	0.00	-5.02	138.00	1.505	21	1.67	1.67	0.5000
Sector Frame Mount	0.0000	600.00	0.00	-3.52	170.50	1.599	22	18.40	18.40	0.5000
Sector Frame Mount	120.0000	600.00	3.05	1.76	170.50	1.599	22	18.40	18.40	0.5000
Sector Frame Mount	240.0000	600.00	-3.05	1.76	170.50	1.599	22	18.40	18.40	0.5000
RFS APXV9ERR18-C	0.0000	114.00	0.00	-5.02	170.50	1.599	22	8.50	6.27	0.5000
Alcatel Lucent 4X40W RRH	0.0000	166.20	0.00	-5.02	170.50	1.599	22	5.06	4.88	0.5000
Alcatel Lucent 2X50W RRH	0.0000	156.60	0.00	-5.02	170.50	1.599	22	4.48	3.04	0.5000
RFS APXV9ERR18-C	120.0000	114.00	4.35	2.51	170.50	1.599	22	8.50	6.27	0.5000
Alcatel Lucent 4X40W RRH	120.0000	166.20	4.35	2.51	170.50	1.599	22	5.06	4.88	0.5000
Alcatel Lucent 2X50W RRH	120.0000	156.60	4.35	2.51	170.50	1.599	22	4.48	3.04	0.5000
RFS APXV9ERR18-C	240.0000	114.00	-4.35	2.51	170.50	1.599	22	8.50	6.27	0.5000
Alcatel Lucent 4X40W RRH	240.0000	166.20	-4.35	2.51	170.50	1.599	22	5.06	4.88	0.5000
Alcatel Lucent 2X50W RRH	240.0000	156.60	-4.35	2.51	170.50	1.599	22	4.48	3.04	0.5000
	Sum Weight:	12735.76								

Discrete Appurtenance Pressures - Service $G_H = 1.117$

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Torque Arm Face C	180.0000	0.00	0.00	2.53	161.26	1.573	10	3.54	5.32
Torque Arm Face B	60.0000	0.00	2.19	-1.26	161.26	1.573	10	3.54	5.32
Torque Arm Face A	300.0000	0.00	-2.19	-1.26	161.26	1.573	10	3.54	5.32
Torque Arm Face C	180.0000	0.00	0.00	2.53	121.26	1.450	9	3.54	5.32
Torque Arm Face B	60.0000	0.00	2.19	-1.26	121.26	1.450	9	3.54	5.32

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Torque Arm Face A	300.0000	0.00	-2.19	-1.26	121.26	1.450	9	3.54	5.32
Antel BXA-70063-6CF	0.0000	17.00	0.00	-5.02	190.00	1.649	11	7.73	2.94
Antel BXA-70063-6CF	120.0000	17.00	4.35	2.51	190.00	1.649	11	7.73	2.94
Antel BXA-70063-6CF	240.0000	17.00	-4.35	2.51	190.00	1.649	11	7.73	2.94
Sector Frame Mount	0.0000	465.00	0.00	-3.52	190.00	1.649	11	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	190.00	1.649	11	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	190.00	1.649	11	13.60	13.60
Antel LPA-80080-4CF	0.0000	24.00	0.00	-5.02	190.00	1.649	11	3.02	13.58
Antel LPA-80063/4CF	120.0000	40.00	4.35	2.51	190.00	1.649	11	14.00	6.96
Antel LPA-80063/4CF	240.0000	40.00	-4.35	2.51	190.00	1.649	11	14.00	6.96
Antel BXA-171085-8BF	0.0000	10.50	0.00	-5.02	190.00	1.649	11	2.94	1.49
Antel BXA-171063-8BF	120.0000	10.50	4.35	2.51	190.00	1.649	11	2.94	1.49
Antel BXA-171063-8BF	240.0000	10.50	-4.35	2.51	190.00	1.649	11	2.94	1.49
RFS FD9R6004/2C-3L	0.0000	5.20	0.00	-5.02	190.00	1.649	11	0.74	0.16
RFS FD9R6004/2C-3L	120.0000	5.20	4.35	2.51	190.00	1.649	11	0.74	0.16
RFS FD9R6004/2C-3L	240.0000	5.20	-4.35	2.51	190.00	1.649	11	0.74	0.16
Sector Frame Mount	0.0000	465.00	0.00	-3.52	178.00	1.619	10	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	178.00	1.619	10	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	178.00	1.619	10	13.60	13.60
Swedcom ALP-E-9011	0.0000	60.00	0.00	-5.02	178.00	1.619	10	8.16	10.02
Swedcom ALP-E-9011	120.0000	60.00	4.35	2.51	178.00	1.619	10	8.16	10.02
Swedcom ALP-E-9011	240.0000	60.00	-4.35	2.51	178.00	1.619	10	8.16	10.02
Sector Frame Mount	0.0000	465.00	0.00	-3.52	138.00	1.505	10	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	138.00	1.505	10	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	138.00	1.505	10	13.60	13.60
Allgon 7770.00	0.0000	70.00	0.00	-5.02	138.00	1.505	10	11.76	5.86
Allgon 7770.00	120.0000	70.00	4.35	2.51	138.00	1.505	10	11.76	5.86
Allgon 7770.00	240.0000	70.00	-4.35	2.51	138.00	1.505	10	11.76	5.86
Powerwave LGP21401	0.0000	62.00	0.00	-5.02	138.00	1.505	10	3.90	1.06
Powerwave LGP21401	120.0000	62.00	4.35	2.51	138.00	1.505	10	3.90	1.06
Powerwave LGP21401	240.0000	62.00	-4.35	2.51	138.00	1.505	10	3.90	1.06
Powerwave LGP21901	0.0000	50.00	0.00	-5.02	138.00	1.505	10	0.54	0.26
Powerwave LGP21901	120.0000	50.00	4.35	2.51	138.00	1.505	10	0.54	0.26
Powerwave LGP21901	240.0000	50.00	-4.35	2.51	138.00	1.505	10	0.54	0.26
Sector Frame Mount	0.0000	465.00	0.00	-3.52	150.00	1.541	10	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	150.00	1.541	10	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	150.00	1.541	10	13.60	13.60
Lightning Rod	0.0000	40.00	0.00	0.00	190.00	1.649	11	1.00	1.00
KMW AM-X-CD-17-65-00T-RET	0.0000	25.00	0.00	-5.02	138.00	1.505	10	11.31	6.80
KMW AM-X-CD-17-65-00T-RET	120.0000	25.00	4.35	2.51	138.00	1.505	10	11.31	6.80
KMW AM-X-CD-17-65-00T-RET	240.0000	25.00	-4.35	2.51	138.00	1.505	10	11.31	6.80
Ericsson RRUS11	0.0000	50.00	0.00	-5.02	138.00	1.505	10	5.98	0.72
Ericsson RRUS11	120.0000	50.00	4.35	2.51	138.00	1.505	10	5.98	0.72
Ericsson RRUS11	240.0000	50.00	-4.35	2.51	138.00	1.505	10	5.98	0.72
Raycap DC6-48-60-18-8F	0.0000	25.00	0.00	-5.02	138.00	1.505	10	1.47	1.47
Sector Frame Mount	0.0000	465.00	0.00	-3.52	170.50	1.599	10	13.60	13.60
Sector Frame Mount	120.0000	465.00	3.05	1.76	170.50	1.599	10	13.60	13.60
Sector Frame Mount	240.0000	465.00	-3.05	1.76	170.50	1.599	10	13.60	13.60
RFS APXV9ERR18-C	0.0000	62.00	0.00	-5.02	170.50	1.599	10	8.02	5.81
Alcatel Lucent 4X40W RRH	0.0000	120.00	0.00	-5.02	170.50	1.599	10	4.64	4.48
Alcatel Lucent 2X50W RRH	0.0000	120.00	0.00	-5.02	170.50	1.599	10	4.12	2.72
RFS APXV9ERR18-C	120.0000	62.00	4.35	2.51	170.50	1.599	10	8.02	5.81

Description	Aiming Azimuth °	Weight lb	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Alcatel Lucent 4X40W RRH	120.0000	120.00	4.35	2.51	170.50	1.599	10	4.64	4.48
Alcatel Lucent 2X50W RRH	120.0000	120.00	4.35	2.51	170.50	1.599	10	4.12	2.72
RFS APXV9ERR18-C	240.0000	62.00	-4.35	2.51	170.50	1.599	10	8.02	5.81
Alcatel Lucent 4X40W RRH	240.0000	120.00	-4.35	2.51	170.50	1.599	10	4.64	4.48
Alcatel Lucent 2X50W RRH	240.0000	120.00	-4.35	2.51	170.50	1.599	10	4.12	2.72
	Sum Weight:	9099.10							

Load Combinations

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
T1	190 - 180	Leg	Max Tension	16	0.03	-1.11	0.07
			Max. Compression	17	-15765.79	118.42	-71.61
			Max. Mx	11	-9890.96	513.84	-4.14
			Max. My	2	-558.09	-7.00	369.10
			Max. Vy	11	-1369.75	513.62	-4.45
			Max. Vx	2	-986.21	-7.00	369.10
		Diagonal	Max Tension	10	3787.42	0.00	0.00
		Horizontal	Max Tension	17	273.07	0.00	0.00
			Max. Compression	11	-4634.06	0.00	0.00
			Max. Mx	14	174.19	-5.12	0.00
			Max. My	24	262.50	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	24	-0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-2519.67	0.00	0.00
			Max. Mx	14	-2318.48	-5.12	0.00
			Max. My	22	-2240.22	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
		Guy A	Bottom Tension	21	12150.44		
			Top Tension	21	12398.58		
			Top Cable Vert	21	10084.30		
			Top Cable Norm	21	7213.30		
			Top Cable Tan	21	0.21		
			Bot Cable Vert	21	-9473.36		
			Bot Cable Norm	21	7608.46		
			Bot Cable Tan	21	0.21		
		Guy B	Bottom Tension	25	12393.29		
			Top Tension	25	12641.38		
			Top Cable Vert	25	10277.30		
			Top Cable Norm	25	7360.82		
			Top Cable Tan	25	1.07		
			Bot Cable Vert	25	-9666.36		
			Bot Cable Norm	25	7755.98		
			Bot Cable Tan	25	1.07		
		Guy C	Bottom Tension	17	12360.93		
			Top Tension	17	12609.02		
			Top Cable Vert	17	10251.56		
			Top Cable Norm	17	7341.18		
			Top Cable Tan	17	1.27		
			Bot Cable Vert	17	-9640.62		
			Bot Cable Norm	17	7736.34		
			Bot Cable Tan	17	1.27		
		Top Guy Pull-Off	Max Tension	23	1766.62	0.00	0.00
			Max. Compression	12	-2103.83	0.00	0.00
			Max. Mx	14	-536.18	-5.12	0.00
			Max. My	24	49.41	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	24	-0.00	0.00	0.00
T2	180 - 160	Leg	Max Tension	12	2188.59	16.85	5.21
			Max. Compression	23	-40891.36	557.14	-197.86
			Max. Mx	18	-11816.20	-649.99	-43.11
			Max. My	15	-14583.69	-73.68	709.43
			Max. Vy	18	-1393.26	-649.77	-43.48
			Max. Vx	21	-1577.97	53.25	-688.05
		Diagonal	Max Tension	16	5944.51	0.00	0.00
		Horizontal	Max Tension	23	708.26	0.00	0.00
			Max. Compression	8	-4640.78	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Mx	14	381.73	-5.12	0.00
			Max. My	22	657.01	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-2528.32	0.00	0.00
			Max. Mx	14	-2242.85	-5.12	0.00
			Max. My	22	-2193.18	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
		Guy A	Bottom Tension	21	14496.36		
			Top Tension	21	14735.19		
			Top Cable Vert	21	11174.32		
			Top Cable Norm	21	9605.21		
			Top Cable Tan	21	5.85		
			Bot Cable Vert	21	-10594.33		
			Bot Cable Norm	21	9894.67		
			Bot Cable Tan	21	6.87		
		Guy B	Bottom Tension	25	14569.05		
			Top Tension	25	14807.88		
			Top Cable Vert	25	11228.48		
			Top Cable Norm	25	9653.73		
			Top Cable Tan	25	5.01		
			Bot Cable Vert	25	-10648.49		
			Bot Cable Norm	25	9943.19		
			Bot Cable Tan	25	7.71		
		Guy C	Bottom Tension	17	14529.10		
			Top Tension	17	14767.92		
			Top Cable Vert	17	11198.58		
			Top Cable Norm	17	9627.21		
			Top Cable Tan	17	6.23		
			Bot Cable Vert	17	-10618.59		
			Bot Cable Norm	17	9916.67		
			Bot Cable Tan	17	6.49		
		Top Guy Pull-Off	Max Tension	17	87.35	0.00	0.00
			Max. Compression	23	-7139.63	0.00	0.00
			Max. Mx	14	-3630.78	-5.12	0.00
			Max. My	22	-3598.58	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
		Bottom Guy Pull-Off	Max Tension	25	115.75	0.00	0.00
			Max. Compression	10	-3388.56	0.00	0.00
			Max. Mx	14	-1664.40	-5.12	0.00
			Max. My	22	-1537.65	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
		Torque Arm Top	Max Tension	23	12949.61	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	24	12479.72	-12.19	0.00
			Max. My	16	9454.86	0.00	-0.05
			Max. Vy	24	10.27	0.00	0.00
			Max. Vx	16	-0.04	0.00	0.00
		Torque Arm Bottom	Max Tension	23	2826.03	0.00	0.00
			Max. Compression	17	-10361.72	0.00	0.00
			Max. Mx	26	-8461.24	-11.66	0.00
			Max. My	22	-5595.81	0.00	0.00
			Max. Vy	26	13.33	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
T3	160 - 140	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	23	-38675.14	141.89	-71.81

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Mx	18	-36434.46	426.94	-42.70
			Max. My	21	-29083.27	-25.03	494.35
			Max. Vy	18	-1392.22	-127.37	6.95
			Max. Vx	21	-1579.16	13.75	-97.38
		Diagonal	Max Tension	4	4410.83	0.00	0.00
		Horizontal	Max Tension	23	669.87	0.00	0.00
			Max. Compression	10	-3605.42	0.00	0.00
			Max. Mx	14	405.40	-5.12	0.00
			Max. My	22	623.17	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	10	-2765.08	0.00	0.00
			Max. Mx	14	-1687.00	-5.12	0.00
			Max. My	22	-1541.43	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-1955.81	0.00	0.00
			Max. Mx	14	-1634.56	-5.12	0.00
			Max. My	22	-1446.47	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
T4	140 - 120	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	23	-58017.73	1050.33	-142.65
			Max. Mx	23	-24625.00	1219.08	-989.27
			Max. My	15	-23594.83	-278.61	1583.35
			Max. Vy	23	2479.94	1217.93	-991.48
			Max. Vx	15	3252.13	-278.61	1583.35
		Diagonal	Max Tension	16	5326.24	0.00	0.00
		Horizontal	Max Tension	23	1004.90	0.00	0.00
			Max. Compression	16	-3811.63	0.00	0.00
			Max. Mx	14	564.81	-5.12	0.00
			Max. My	22	915.79	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-1890.81	0.00	0.00
			Max. Mx	14	-1615.98	-5.12	0.00
			Max. My	22	-1437.85	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
		Guy A	Bottom Tension	21	12792.60		
			Top Tension	21	12950.41		
			Top Cable Vert	21	8475.87		
			Top Cable Norm	21	9791.47		
			Top Cable Tan	21	4.26		
			Bot Cable Vert	21	-8059.21		
			Bot Cable Norm	21	9934.78		
			Bot Cable Tan	21	4.20		
		Guy B	Bottom Tension	25	12471.87		
			Top Tension	25	12629.71		
			Top Cable Vert	25	8270.56		
			Top Cable Norm	25	9545.02		
			Top Cable Tan	25	3.69		
			Bot Cable Vert	25	-7853.90		
			Bot Cable Norm	25	9688.33		
			Bot Cable Tan	25	4.77		
		Guy C	Bottom Tension	17	12703.16		
			Top Tension	17	12860.97		
			Top Cable Vert	17	8418.58		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Top Cable Norm	17	9722.77		
			Top Cable Tan	17	4.03		
			Bot Cable Vert	17	-8001.92		
			Bot Cable Norm	17	9866.08		
			Bot Cable Tan	17	4.43		
		Top Guy Pull-Off	Max Tension	17	691.81	0.00	0.00
			Max. Compression	15	-5719.51	0.00	0.00
			Max. Mx	14	-2613.80	-5.12	0.00
			Max. My	22	-2802.13	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
		Bottom Guy Pull-Off	Max Tension	17	1467.94	0.00	0.00
			Max. Compression	19	-3842.13	0.00	0.00
			Max. Mx	14	-1187.38	-5.12	0.00
			Max. My	15	284.13	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	15	-0.00	0.00	0.00
		Torque Arm Top	Max Tension	23	9497.13	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	17	8275.45	-12.16	0.00
			Max. My	16	6272.50	0.00	-0.07
			Max. Vy	17	10.25	0.00	0.00
			Max. Vx	16	-0.06	0.00	0.00
		Torque Arm Bottom	Max Tension	15	5141.77	0.00	0.00
			Max. Compression	20	-8973.23	0.00	0.00
			Max. Mx	17	2452.05	-11.66	0.00
			Max. My	16	2621.44	0.00	-0.00
			Max. Vy	17	13.33	0.00	0.00
			Max. Vx	16	0.00	0.00	0.00
T5	120 - 100	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	23	-56305.22	195.97	-70.94
			Max. Mx	23	-28772.71	-645.36	550.46
			Max. My	15	-23613.55	170.25	-854.85
			Max. Vy	23	2484.15	286.60	-221.72
			Max. Vx	15	3256.65	-56.90	365.22
		Diagonal	Max Tension	15	8125.44	0.00	0.00
		Horizontal	Max Tension	23	975.23	0.00	0.00
			Max. Compression	15	-5565.65	0.00	0.00
			Max. Mx	14	581.54	-5.12	0.00
			Max. My	15	955.79	0.00	-0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	15	0.00	0.00	0.00
		Top Girt	Max Tension	25	470.21	0.00	0.00
			Max. Compression	22	-3188.35	0.00	0.00
			Max. Mx	14	-1201.30	-5.12	0.00
			Max. My	15	-2038.14	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	15	-0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	15	-2025.42	0.00	0.00
			Max. Mx	14	-1173.89	-5.12	0.00
			Max. My	15	-1297.92	0.00	-0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	15	0.00	0.00	0.00
T6	100 - 80	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	21	-50033.43	-6.74	29.54
			Max. Mx	23	-27124.33	-530.57	29.31
			Max. My	15	-39727.71	130.74	-576.44
			Max. Vy	23	1283.91	-49.19	14.86
			Max. Vx	15	1476.95	0.61	-23.70

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
		Diagonal	Max Tension	15	4216.78	0.00	0.00
		Horizontal	Max Tension	21	866.60	0.00	0.00
			Max. Compression	8	-2927.17	0.00	0.00
			Max. Mx	14	597.76	-5.12	0.00
			Max. My	16	846.06	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	21	-1518.65	0.00	0.00
			Max. Mx	14	-1164.45	-5.12	0.00
			Max. My	15	-985.26	0.00	-0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	15	0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	33	-1392.01	0.00	0.00
			Max. Mx	14	-1132.20	-5.12	0.00
			Max. My	16	-1133.01	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
T7	80 - 60	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	21	-47418.77	180.55	-219.07
			Max. Mx	17	-32111.48	-1192.01	372.02
			Max. My	21	-32004.99	-304.55	-1223.09
			Max. Vy	17	-2583.64	-1191.46	371.45
			Max. Vx	21	-2677.74	-304.79	-1222.18
		Diagonal	Max Tension	16	4804.52	0.00	0.00
		Horizontal	Max Tension	21	821.32	0.00	0.00
			Max. Compression	16	-3380.85	0.00	0.00
			Max. Mx	14	625.26	-5.12	0.00
			Max. My	16	813.78	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-1655.68	0.00	0.00
			Max. Mx	14	-1123.04	-5.12	0.00
			Max. My	16	-1261.89	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
		Guy A	Bottom Tension	21	14192.75		
			Top Tension	21	14272.04		
			Top Cable Vert	21	5648.68		
			Top Cable Norm	21	13106.62		
			Top Cable Tan	21	4.13		
			Bot Cable Vert	21	-5391.76		
			Bot Cable Norm	21	13128.71		
			Bot Cable Tan	21	4.13		
		Guy B	Bottom Tension	25	14136.30		
			Top Tension	25	14215.59		
			Top Cable Vert	25	5626.84		
			Top Cable Norm	25	13054.57		
			Top Cable Tan	25	0.66		
			Bot Cable Vert	25	-5369.92		
			Bot Cable Norm	25	13076.66		
			Bot Cable Tan	25	0.66		
		Guy C	Bottom Tension	17	14161.95		
			Top Tension	17	14241.24		
			Top Cable Vert	17	5636.76		
			Top Cable Norm	17	13078.22		
			Top Cable Tan	17	3.45		
			Bot Cable Vert	17	-5379.85		
			Bot Cable Norm	17	13100.31		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Bot Cable Tan	17	3.45		
		Top Guy Pull-Off	Max Tension	15	5001.11	0.00	0.00
			Max. Compression	8	-462.17	0.00	0.00
			Max. Mx	14	1770.79	-5.12	0.00
			Max. My	16	1892.12	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
T8	60 - 40	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-56980.24	-37.20	-24.06
			Max. Mx	17	-39001.78	748.72	-281.08
			Max. My	21	-38908.32	145.45	790.64
			Max. Vy	17	-2589.71	-222.34	45.49
			Max. Vx	21	-2684.71	-79.91	-216.70
		Diagonal	Max Tension	20	5718.11	0.00	0.00
		Horizontal	Max Tension	25	986.93	0.00	0.00
			Max. Compression	20	-3807.72	0.00	0.00
			Max. Mx	14	670.93	-5.12	0.00
			Max. My	16	971.93	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
		Top Girt	Max Tension	21	32.50	0.00	0.00
			Max. Compression	21	-1846.58	0.00	0.00
			Max. Mx	14	-736.43	-5.12	0.00
			Max. My	16	-988.11	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
		Bottom Girt	Max Tension	19	0.16	0.00	0.00
			Max. Compression	8	-1662.57	0.00	0.00
			Max. Mx	14	-941.58	-5.12	0.00
			Max. My	16	-715.29	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
T9	40 - 20	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-62222.48	-11.82	-7.57
			Max. Mx	18	-26495.49	360.52	-9.89
			Max. My	21	-34034.64	5.13	395.15
			Max. Vy	17	-792.65	37.92	-19.86
			Max. Vx	21	-911.94	14.83	53.94
		Diagonal	Max Tension	2	2669.02	0.00	0.00
		Horizontal	Max Tension	25	1077.72	0.00	0.00
			Max. Compression	12	-2879.01	0.00	0.00
			Max. Mx	14	686.40	-5.12	0.00
			Max. My	16	1048.67	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	37	-1285.41	0.00	0.00
			Max. Mx	14	-931.05	-5.12	0.00
			Max. My	16	-792.91	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-1364.59	0.00	0.00
			Max. Mx	14	-900.68	-5.12	0.00
			Max. My	16	-708.76	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
T10	20 - 0	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-60457.28	-91.23	-50.12
			Max. Mx	24	-44105.67	1380.09	416.23
			Max. My	21	-44296.89	-69.64	-1485.77

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Vy	24	-3483.25	1380.09	416.23
			Max. Vx	21	3839.94	-69.64	-1485.77
		Diagonal	Max Tension	16	3603.68	0.00	0.00
		Horizontal	Max Tension	25	1047.15	0.00	0.00
			Max. Compression	8	-2722.69	0.00	0.00
			Max. Mx	14	705.01	-5.12	0.00
			Max. My	16	1020.56	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
		Top Girt	Max Tension	23	33.22	0.00	0.00
			Max. Compression	12	-1607.04	0.00	0.00
			Max. Mx	14	-890.08	-5.12	0.00
			Max. My	16	-781.54	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
		Bottom Girt	Max Tension	25	544.40	0.00	0.00
			Max. Compression	27	-159.46	0.00	0.00
			Max. Mx	14	150.37	-5.12	0.00
			Max. My	16	-28.04	0.00	0.00
			Max. Vy	14	5.85	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
		Base Beam	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-3912.87	1521.07	1.49
			Max. Mx	17	-44219.32	-88222.31	1496.77
			Max. My	15	-43203.08	-86270.97	-1882.86
			Max. Vy	25	-44356.83	-88111.92	-16.88
			Max. Vx	15	-899.31	-86270.97	-1882.86

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Guy C @ 145 ft Elev 0 ft Azimuth 240 deg	Max. Vert	10	-3219.65	-2638.91	1528.70
	Max. H_x	10	-3219.65	-2638.91	1528.70
	Max. H_z	17	-51858.89	-51905.54	29945.87
	Min. Vert	17	-51858.89	-51905.54	29945.87
	Min. H_x	17	-51858.89	-51905.54	29945.87
	Min. H_z	10	-3219.65	-2638.91	1528.70
Guy B @ 145 ft Elev 0 ft Azimuth 120 deg	Max. Vert	6	-3195.79	2615.34	1507.71
	Max. H_x	25	-51815.22	51831.70	29930.69
	Max. H_z	25	-51815.22	51831.70	29930.69
	Min. Vert	25	-51815.22	51831.70	29930.69
	Min. H_x	6	-3195.79	2615.34	1507.71
	Min. H_z	6	-3195.79	2615.34	1507.71
Guy A @ 145 ft Elev 0 ft Azimuth 0 deg	Max. Vert	2	-3475.07	6.34	-3253.46
	Max. H_x	24	-28906.45	1906.77	-32492.60
	Max. H_z	2	-3475.07	6.34	-3253.46
	Min. Vert	21	-51544.60	-23.78	-59687.83
	Min. H_x	18	-28920.73	-1907.32	-32514.49
	Min. H_z	21	-51544.60	-23.78	-59687.83

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Mast	Max. Vert	17	131455.59	-2415.04	1446.21
	Max. H_x	24	130921.66	2856.46	81.96
	Max. H_z	15	129234.70	12.44	3076.25
	Max. M_x	1	0.00	18.37	20.34
	Max. M_z	1	0.00	18.37	20.34
	Max. Torsion	1	0.00	18.37	20.34
	Min. Vert	1	90771.52	18.37	20.34
	Min. H_x	18	130966.66	-2758.32	84.09
	Min. H_z	21	131314.54	38.12	-2780.22
	Min. M_x	1	0.00	18.37	20.34
	Min. M_z	1	0.00	18.37	20.34
	Min. Torsion	1	0.00	18.37	20.34

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	90771.52	-18.37	-20.34	0.00	0.00	0.00
Dead+Wind 0 deg - No Ice+Guy	95488.08	-8.13	-2512.70	0.00	0.00	0.00
Dead+Wind 30 deg - No Ice+Guy	96585.78	1239.83	-2101.84	0.00	0.00	0.00
Dead+Wind 60 deg - No Ice+Guy	96712.61	2111.35	-1237.89	0.00	0.00	0.00
Dead+Wind 90 deg - No Ice+Guy	96959.46	2422.57	-45.40	0.00	0.00	0.00
Dead+Wind 120 deg - No Ice+Guy	95910.89	2163.11	1233.04	0.00	0.00	0.00
Dead+Wind 150 deg - No Ice+Guy	96729.85	1176.55	2096.64	0.00	0.00	0.00
Dead+Wind 180 deg - No Ice+Guy	96569.93	-14.79	2426.69	0.00	0.00	0.00
Dead+Wind 210 deg - No Ice+Guy	96745.37	-1205.30	2106.52	0.00	0.00	0.00
Dead+Wind 240 deg - No Ice+Guy	95934.81	-2190.45	1239.50	0.00	0.00	0.00
Dead+Wind 270 deg - No Ice+Guy	96949.70	-2460.76	-44.77	0.00	0.00	0.00
Dead+Wind 300 deg - No Ice+Guy	96707.25	-2148.96	-1242.17	0.00	0.00	0.00
Dead+Wind 330 deg - No Ice+Guy	96556.09	-1264.76	-2105.06	0.00	0.00	0.00
Dead+Ice+Temp+Guy	117010.75	-46.48	-46.65	0.00	0.00	0.00
Dead+Wind 0 deg+Ice+Temp+Guy	129234.70	-12.44	-3076.25	0.00	0.00	0.00
Dead+Wind 30 deg+Ice+Temp+Guy	130617.43	1428.18	-2430.02	0.00	0.00	0.00
Dead+Wind 60 deg+Ice+Temp+Guy	131455.59	2415.04	-1446.21	0.00	0.00	0.00
Dead+Wind 90 deg+Ice+Temp+Guy	130966.66	2758.32	-84.09	0.00	0.00	0.00
Dead+Wind 120 deg+Ice+Temp+Guy	129693.60	2585.78	1463.14	0.00	0.00	0.00
Dead+Wind 150 deg+Ice+Temp+Guy	130769.94	1323.98	2389.95	0.00	0.00	0.00
Dead+Wind 180	131314.54	-38.12	2780.22	0.00	0.00	0.00

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
deg+Ice+Temp+Guy Dead+Wind 210	130737.66	-1386.04	2419.74	0.00	0.00	0.00
deg+Ice+Temp+Guy Dead+Wind 240	129612.50	-2667.67	1497.49	0.00	0.00	0.00
deg+Ice+Temp+Guy Dead+Wind 270	130921.66	-2856.46	-81.96	0.00	0.00	0.00
deg+Ice+Temp+Guy Dead+Wind 300	131439.74	-2509.70	-1454.89	0.00	0.00	0.00
deg+Ice+Temp+Guy Dead+Wind 330	130601.02	-1483.05	-2445.84	0.00	0.00	0.00
deg+Ice+Temp+Guy Dead+Wind 0 deg - Service+Guy	91077.35	-18.33	-883.45	0.00	0.00	0.00
Dead+Wind 30 deg - Service+Guy	91070.34	411.66	-763.34	0.00	0.00	0.00
Dead+Wind 60 deg - Service+Guy	91073.41	725.34	-447.97	0.00	0.00	0.00
Dead+Wind 90 deg - Service+Guy	91065.73	842.33	-19.68	0.00	0.00	0.00
Dead+Wind 120 deg - Service+Guy	91071.48	731.55	411.13	0.00	0.00	0.00
Dead+Wind 150 deg - Service+Guy	91065.83	412.65	722.20	0.00	0.00	0.00
Dead+Wind 180 deg - Service+Guy	91071.93	-18.06	835.44	0.00	0.00	0.00
Dead+Wind 210 deg - Service+Guy	91066.56	-449.01	722.42	0.00	0.00	0.00
Dead+Wind 240 deg - Service+Guy	91071.87	-768.37	411.34	0.00	0.00	0.00
Dead+Wind 270 deg - Service+Guy	91065.52	-879.45	-19.77	0.00	0.00	0.00
Dead+Wind 300 deg - Service+Guy	91072.59	-762.40	-448.37	0.00	0.00	0.00
Dead+Wind 330 deg - Service+Guy	91069.40	-448.47	-763.73	0.00	0.00	0.00

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
1	0.00	-23985.10	0.00	-0.01	23985.09	0.01	0.000%
2	0.00	-24185.54	-38875.66	-2.52	24181.96	38737.90	0.301%
3	19663.92	-23985.10	-33539.53	-19699.71	23982.65	33411.51	0.291%
4	34024.27	-23784.65	-19344.06	-34022.30	23784.75	19342.11	0.006%
5	39327.83	-23985.10	-0.00	-39236.68	23982.40	86.35	0.273%
6	34186.69	-24185.54	19437.83	-34080.78	24182.15	-19376.30	0.265%
7	19663.92	-23985.10	33539.53	-19539.82	23982.47	-33503.38	0.283%
8	-0.00	-23784.65	38688.12	0.83	23784.79	-38686.14	0.005%
9	-19663.92	-23985.10	33539.53	19540.46	23982.58	-33506.47	0.280%
10	-34186.69	-24185.54	19437.83	34077.01	24182.05	-19376.73	0.272%
11	-39327.83	-23985.10	0.00	39237.79	23982.43	85.25	0.269%
12	-34024.27	-23784.65	-19344.06	34022.36	23784.75	19341.36	0.007%
13	-19663.92	-23985.10	-33539.53	19696.73	23982.58	33410.97	0.290%
14	0.00	-44250.30	0.00	0.02	44250.30	0.01	0.000%
15	0.00	-44658.61	-48405.76	-6.88	44651.34	48212.26	0.294%
16	23533.96	-44250.30	-40369.39	-23593.19	44246.85	40210.95	0.263%
17	40261.37	-43841.99	-23018.23	-40272.06	43842.77	23025.50	0.020%

Load Comb.	Sum of Applied Forces PX lb	PY lb	PZ lb	Sum of Reactions PX lb	PY lb	PZ lb	% Error
18	47067.93	-44250.30	-0.00	-46959.80	44246.71	116.19	0.246%
19	42313.25	-44658.61	24202.88	-42146.70	44651.41	-24105.95	0.292%
20	23533.96	-44250.30	40369.39	-23375.87	44246.62	-40332.51	0.252%
21	-0.00	-43841.99	46036.46	5.69	43842.82	-46050.49	0.024%
22	-23533.96	-44250.30	40369.39	23373.81	44246.98	-40342.34	0.252%
23	-42313.25	-44658.61	24202.88	42149.34	44651.66	-24114.73	0.282%
24	-47067.93	-44250.30	0.00	46962.59	44246.80	113.34	0.240%
25	-40261.37	-43841.99	-23018.23	40274.14	43842.82	23019.33	0.020%
26	-23533.96	-44250.30	-40369.39	23582.13	44246.56	40211.31	0.257%
27	0.00	-24054.45	-13451.79	-0.01	24054.42	13446.55	0.019%
28	6804.12	-23985.10	-11605.37	-6804.08	23985.08	11601.69	0.013%
29	11773.10	-23915.74	-6693.45	-11771.83	23915.74	6692.62	0.006%
30	13608.25	-23985.10	-0.00	-13605.14	23985.08	1.71	0.013%
31	11829.30	-24054.45	6725.89	-11824.86	24054.42	-6723.31	0.019%
32	6804.12	-23985.10	11605.37	-6801.07	23985.08	-11603.50	0.013%
33	-0.00	-23915.74	13386.89	-0.02	23915.74	-13385.36	0.006%
34	-6804.12	-23985.10	11605.37	6801.05	23985.08	-11603.51	0.013%
35	-11829.30	-24054.45	6725.89	11824.87	24054.42	-6723.33	0.019%
36	-13608.25	-23985.10	0.00	13605.15	23985.08	1.70	0.013%
37	-11773.10	-23915.74	-6693.45	11771.82	23915.74	6692.64	0.005%
38	-6804.12	-23985.10	-11605.37	6804.07	23985.08	11601.72	0.013%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	13	0.00000001	0.00000001
2	Yes	15	0.00122762	0.00070329
3	Yes	14	0.00132706	0.00058234
4	Yes	13	0.00033975	0.00021016
5	Yes	14	0.00134317	0.00053622
6	Yes	15	0.00110285	0.00060113
7	Yes	14	0.00133580	0.00055775
8	Yes	13	0.00033846	0.00021499
9	Yes	14	0.00132301	0.00054699
10	Yes	15	0.00112820	0.00063041
11	Yes	14	0.00133056	0.00053159
12	Yes	13	0.00032202	0.00019180
13	Yes	14	0.00132215	0.00058307
14	Yes	13	0.00000001	0.00000001
15	Yes	19	0.00120649	0.00060153
16	Yes	17	0.00115670	0.00064575
17	Yes	13	0.00088411	0.00100967
18	Yes	17	0.00108665	0.00050121
19	Yes	19	0.00120865	0.00056861
20	Yes	17	0.00110920	0.00052087
21	Yes	13	0.00087808	0.00108197
22	Yes	17	0.00111632	0.00061574
23	Yes	19	0.00115969	0.00056263
24	Yes	17	0.00106096	0.00048937
25	Yes	13	0.00081736	0.00047337
26	Yes	17	0.00112417	0.00053852
27	Yes	13	0.00000001	0.00006223
28	Yes	13	0.00000001	0.00005451
29	Yes	13	0.00000001	0.00004496
30	Yes	13	0.00000001	0.00004744

31	Yes	13	0.00000001	0.00005611
32	Yes	13	0.00000001	0.00004999
33	Yes	13	0.00000001	0.00004756
34	Yes	13	0.00000001	0.00005409
35	Yes	13	0.00000001	0.00005956
36	Yes	13	0.00000001	0.00004740
37	Yes	13	0.00000001	0.00004042
38	Yes	13	0.00000001	0.00005042

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	190 - 180	2.031	37	0.0703	0.0419
T2	180 - 160	1.879	37	0.0790	0.0302
T3	160 - 140	1.540	29	0.0609	0.0247
T4	140 - 120	1.372	29	0.0449	0.0573
T5	120 - 100	1.200	33	0.0168	0.0877
T6	100 - 80	1.223	33	0.0027	0.1845
T7	80 - 60	1.153	33	0.0337	0.2598
T8	60 - 40	0.976	27	0.0351	0.3142
T9	40 - 20	0.851	27	0.0500	0.3572
T10	20 - 0	0.535	27	0.1037	0.3824

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
190.00	Antel BXA-70063-6CF	37	2.031	0.0703	0.0419	46432
189.63	Guy	37	2.026	0.0708	0.0414	46432
178.00	Sector Frame Mount	37	1.845	0.0790	0.0285	32757
170.50	Sector Frame Mount	37	1.707	0.0737	0.0230	69052
160.38	Guy	29	1.545	0.0614	0.0243	15482
150.00	Sector Frame Mount	29	1.447	0.0526	0.0402	56585
138.00	Sector Frame Mount	29	1.353	0.0427	0.0597	33617
120.38	Guy	33	1.201	0.0173	0.0865	13836
60.38	Guy	27	0.978	0.0351	0.3133	30368

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	190 - 180	7.841	24	0.2983	0.1374
T2	180 - 160	7.257	24	0.3203	0.1287
T3	160 - 140	6.044	18	0.2516	0.1713
T4	140 - 120	5.436	18	0.1761	0.2959
T5	120 - 100	5.049	19	0.0705	0.4521
T6	100 - 80	5.651	15	0.0921	1.0065

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T7	80 - 60	5.743	15	0.1384	1.2824
T8	60 - 40	5.138	15	0.1523	1.5530
T9	40 - 20	4.475	15	0.2787	1.8168
T10	20 - 0	2.757	15	0.5421	1.9274

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
190.00	Antel BXA-70063-6CF	24	7.841	0.2983	0.1374	16920
189.63	Guy	24	7.820	0.2995	0.1360	16920
178.00	Sector Frame Mount	24	7.130	0.3192	0.1309	12301
170.50	Sector Frame Mount	24	6.635	0.2984	0.1398	16517
160.38	Guy	18	6.061	0.2531	0.1695	4598
150.00	Sector Frame Mount	18	5.701	0.2169	0.2349	13458
138.00	Sector Frame Mount	18	5.375	0.1655	0.3039	12602
120.38	Guy	19	5.046	0.0725	0.4449	3024
60.38	Guy	15	5.150	0.1518	1.5473	6948

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	190	Leg	A325N	0.7500	4	0.01	19433.20	0.000 ✔	1.333	Bolt Tension
T2	180	Leg	A325N	0.7500	4	0.00	19438.30	0.000 ✔	1.333	Bolt Tension
		Torque Arm Top@160.375	A325N	0.7500	2	6474.80	9277.52	0.698 ✔	1.333	Bolt Shear
		Torque Arm Bottom@160.375	A325N	0.7500	2	5180.86	9277.52	0.558 ✔	1.333	Bolt Shear
T3	160	Leg	A325N	0.7500	4	0.00	19419.80	0.000 ✔	1.333	Bolt Tension
T4	140	Leg	A325N	0.7500	4	0.00	19436.20	0.000 ✔	1.333	Bolt Tension
		Torque Arm Top@120.375	A325N	0.7500	2	4748.57	9277.52	0.512 ✔	1.333	Bolt Shear
		Torque Arm Bottom@120.375	A325N	0.7500	2	4486.62	9277.52	0.484 ✔	1.333	Bolt Shear
T5	120	Leg	A325N	0.7500	4	0.00	19361.00	0.000 ✔	1.333	Bolt Tension
T6	100	Leg	A325N	0.7500	4	0.00	19422.30	0.000 ✔	1.333	Bolt Tension
T7	80	Leg	A325N	0.7500	4	0.00	19432.00	0.000 ✔	1.333	Bolt Tension
T8	60	Leg	A325N	0.7500	4	0.00	19385.10	0.000 ✔	1.333	Bolt Tension
T9	40	Leg	A325N	0.7500	4	0.00	19432.70	0.000 ✔	1.333	Bolt Tension
T10	20	Leg	A325N	0.7500	4	0.00	19435.00	0.000 ✔	1.333	Bolt Tension

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension lb	Breaking Load lb	Actual T lb	Allowable T_a lb	Required S.F.	Actual S.F.
T1	189.63 (A) (615)	9/16 EHS	5250.00	35000.04	12398.60	17500.00	2.000	2.823 ✔
	189.63 (B) (614)	9/16 EHS	5250.00	35000.04	12641.40	17500.00	2.000	2.769 ✔
	189.63 (C) (613)	9/16 EHS	5250.00	35000.04	12609.00	17500.00	2.000	2.776 ✔
T2	160.38 (A) (586)	5/8 EHS	6360.00	42399.99	14735.20	21200.00	2.000	2.877 ✔
	160.38 (A) (587)	5/8 EHS	6360.00	42399.99	14483.00	21200.00	2.000	2.928 ✔
	160.38 (B) (580)	5/8 EHS	6360.00	42399.99	14632.80	21200.00	2.000	2.898 ✔
	160.38 (B) (581)	5/8 EHS	6360.00	42399.99	14807.90	21200.00	2.000	2.863 ✔
	160.38 (C) (574)	5/8 EHS	6360.00	42399.99	14691.10	21200.00	2.000	2.886 ✔
	160.38 (C) (575)	5/8 EHS	6360.00	42399.99	14767.90	21200.00	2.000	2.871 ✔
T4	120.38 (A) (604)	9/16 EHS	5250.00	35000.04	12950.40	17500.00	2.000	2.703 ✔
	120.38 (A) (605)	9/16 EHS	5250.00	35000.04	12262.90	17500.00	2.000	2.854 ✔
	120.38 (B) (598)	9/16 EHS	5250.00	35000.04	12480.50	17500.00	2.000	2.804 ✔
	120.38 (B) (599)	9/16 EHS	5250.00	35000.04	12629.70	17500.00	2.000	2.771 ✔
	120.38 (C) (592)	9/16 EHS	5250.00	35000.04	12321.00	17500.00	2.000	2.841 ✔
	120.38 (C) (593)	9/16 EHS	5250.00	35000.04	12861.00	17500.00	2.000	2.721 ✔
T7	60.38 (A) (612)	9/16 EHS	5250.00	35000.04	14272.00	17500.00	2.000	2.452 ✔
	60.38 (B) (611)	9/16 EHS	5250.00	35000.04	14215.60	17500.00	2.000	2.462 ✔
	60.38 (C) (610)	9/16 EHS	5250.00	35000.04	14241.20	17500.00	2.000	2.458 ✔

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	Mast Stability Index	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	190 - 180	P2.5x.203	10.00	3.08	39.1 K=1.00	1.00	29.626	1.7040	-15765.80	50483.70	0.312 ✔
T2	180 - 160	P2.5x.203	20.00	3.21	40.6	1.00	29.339	1.7040	-40891.40	49995.20	0.818

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	Mast Stability Index	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T3	160 - 140	P2.5x.203	20.00	3.21	40.6 K=1.00	1.00	29.339	1.7040	-38675.10	49995.20	0.774
T4	140 - 120	P2.5x.203	20.00	3.21	40.6 K=1.00	1.00	29.339	1.7040	-58017.70	49995.20	1.160
T5	120 - 100	P2.5x.203	20.00	3.21	40.6 K=1.00	0.99	29.080	1.7040	-56305.20	49554.30	1.136
T6	100 - 80	P2.5x.203	20.00	3.21	40.6 K=1.00	0.99	29.038	1.7040	-50033.40	49482.20	1.011
T7	80 - 60	P2.5x.203	20.00	3.21	40.6 K=1.00	0.99	29.016	1.7040	-47418.80	49444.50	0.959
T8	60 - 40	P2.5x.203	20.00	3.21	40.6 K=1.00	0.99	29.004	1.7040	-56967.40	49424.10	1.153
T9	40 - 20	P2.5x.203	20.00	3.21	40.6 K=1.00	0.99	29.026	1.7040	-62222.50	49462.60	1.258
T10	20 - 0	P2.5x.203	20.00	3.21	40.6 K=1.00	0.99	29.014	1.7040	-60457.30	49440.90	1.223

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	190 - 180	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-4621.41	7695.87	0.601*
T2	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-4294.41	7695.87	0.558*
T3	160 - 140	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-3413.89	7695.87	0.444*
T4	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-3303.55	7695.87	0.429*
T5	120 - 100	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-5565.65	7695.87	0.723
T6	100 - 80	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-2658.29	7695.87	0.345*
T7	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-2766.40	7695.87	0.359*
T8	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-3807.72	7695.87	0.495
T9	40 - 20	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-2384.82	7695.87	0.310*
T10	20 - 0	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-2423.92	7695.87	0.315*

* DL controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T2	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-2277.34	7695.87	0.296* ✔
T3	160 - 140	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-2765.08	7695.87	0.359 ✔
T4	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-1751.74	7695.87	0.228* ✔
T5	120 - 100	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-3188.35	7695.87	0.414 ✔
T6	100 - 80	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-1404.16	7695.87	0.182* ✔
T7	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-1385.97	7695.87	0.180* ✔
T8	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-1846.58	7695.87	0.240 ✔
T9	40 - 20	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-1261.05	7695.87	0.164* ✔
T10	20 - 0	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-1242.31	7695.87	0.161* ✔

* DL controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	190 - 180	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-2350.91	7695.87	0.305* ✔
T3	160 - 140	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-1765.70	7695.87	0.229* ✔
T5	120 - 100	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-2025.42	7695.87	0.263 ✔
T6	100 - 80	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-1387.65	7695.87	0.180* ✔
T8	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-1262.49	7695.87	0.164* ✔
T9	40 - 20	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-1243.98	7695.87	0.162* ✔
T10	20 - 0	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-131.85	7695.87	0.017* ✔

* DL controls

Top Guy Pull-Off Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	190 - 180	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-2103.83	7695.87	0.273 ✔
T2	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-7139.63	7695.87	0.928 ✔
T4	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-5719.51	7695.87	0.743 ✔
T7	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-462.17	7695.87	0.060 ✔

Bottom Guy Pull-Off Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T2	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-3388.56	7695.87	0.440 ✔
T4	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-3842.13	7695.87	0.499 ✔

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T2	180 - 160 (578)	L3x3x1/4	3.50	3.38	68.5 K=1.00	16.584	1.4400	-10006.90	23880.20	0.419 ✔
T2	180 - 160 (579)	L3x3x1/4	3.50	3.38	68.5 K=1.00	16.584	1.4400	-9885.09	23880.20	0.414 ✔
T2	180 - 160 (584)	L3x3x1/4	3.50	3.38	68.5 K=1.00	16.584	1.4400	-10361.70	23880.20	0.434 ✔
T2	180 - 160 (585)	L3x3x1/4	3.50	3.38	68.5 K=1.00	16.584	1.4400	-10240.10	23880.20	0.429 ✔
T2	180 - 160 (590)	L3x3x1/4	3.50	3.38	68.5 K=1.00	16.584	1.4400	-10191.40	23880.20	0.427 ✔
T2	180 - 160 (591)	L3x3x1/4	3.50	3.38	68.5 K=1.00	16.584	1.4400	-10253.50	23880.20	0.429 ✔
T4	140 - 120 (596)	L3x3x1/4	3.50	3.38	68.5 K=1.00	16.584	1.4400	-7963.02	23880.20	0.333 ✔
T4	140 - 120 (597)	L3x3x1/4	3.50	3.38	68.5 K=1.00	16.584	1.4400	-7981.90	23880.20	0.334 ✔
T4	140 - 120 (602)	L3x3x1/4	3.50	3.38	68.5 K=1.00	16.584	1.4400	-8871.16	23880.20	0.371 ✔
T4	140 - 120 (603)	L3x3x1/4	3.50	3.38	68.5 K=1.00	16.584	1.4400	-8829.40	23880.20	0.370 ✔
T4	140 - 120 (608)	L3x3x1/4	3.50	3.38	68.5	16.584	1.4400	-8913.45	23880.20	0.373

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T4	140 - 120 (609)	L3x3x1/4	3.50	3.38	K=1.00 68.5 K=1.00	16.584	1.4400	-8973.23	23880.20	0.376 ✔

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	190 - 180	P2.5x.203	10.00	3.08	39.1	34.800	1.7040	0.03	59300.90	0.000 ✔
T2	180 - 160	P2.5x.203	20.00	3.21	40.6	34.800	1.7040	2188.59	59300.90	0.037 ✔

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	190 - 180	5/8	4.66	4.35	333.7	21.600	0.3068	3368.96	6626.80	0.508* ✔
T2	180 - 160	5/8	4.75	4.42	339.7	21.600	0.3068	5944.51	6626.80	0.897 ✔
T3	160 - 140	5/8	4.75	4.42	339.7	21.600	0.3068	4410.83	6626.80	0.666 ✔
T4	140 - 120	5/8	4.75	4.42	339.7	21.600	0.3068	5326.24	6626.80	0.804 ✔
T5	120 - 100	5/8	4.75	4.42	339.7	21.600	0.3068	8125.44	6626.80	1.226 ✔
T6	100 - 80	5/8	4.75	4.42	339.7	21.600	0.3068	4216.78	6626.80	0.636 ✔
T7	80 - 60	5/8	4.75	4.42	339.7	21.600	0.3068	4804.52	6626.80	0.725 ✔
T8	60 - 40	5/8	4.75	4.42	339.7	21.600	0.3068	5718.11	6626.80	0.863 ✔
T9	40 - 20	5/8	4.75	4.42	339.7	21.600	0.3068	2669.02	6626.80	0.403 ✔
T10	20 - 0	5/8	4.75	4.42	339.7	21.600	0.3068	3603.68	6626.80	0.544 ✔

* DL controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	190 - 180	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	273.07	11390.60	0.024 ✔
T2	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	708.26	11390.60	0.062 ✔
T3	160 - 140	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	669.87	11390.60	0.059 ✔
T4	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	1004.90	11390.60	0.088 ✔
T5	120 - 100	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	975.23	11390.60	0.086 ✔
T6	100 - 80	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	866.60	11390.60	0.076 ✔
T7	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	625.26	11390.60	0.055* ✔
T8	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	986.93	11390.60	0.087 ✔
T9	40 - 20	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	1077.72	11390.60	0.095 ✔
T10	20 - 0	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	1047.15	11390.60	0.092 ✔

* DL controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T5	120 - 100	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	470.21	11390.60	0.041 ✔
T8	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	32.50	11390.60	0.003 ✔
T10	20 - 0	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	33.22	11390.60	0.003 ✔

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T8	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	0.16	11390.60	0.000 ✔
T10	20 - 0	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	544.40	11390.60	0.048

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
										✔

Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	190 - 180	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	1766.62	11390.60	0.155 ✔
T2	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	87.35	11390.60	0.008 ✔
T4	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	691.81	11390.60	0.061 ✔
T7	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	5001.11	11390.60	0.439 ✔

Bottom Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T2	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	115.75	11390.60	0.010 ✔
T4	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	1467.94	11390.60	0.129 ✔

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T2	180 - 160 (576)	L2x2x5/16	4.75	4.59	91.6	21.600	1.1500	12771.30	24840.00	0.514 ✔
T2	180 - 160 (577)	L2x2x5/16	4.75	4.59	91.6	21.600	1.1500	12936.00	24840.00	0.521 ✔
T2	180 - 160 (582)	L2x2x5/16	4.75	4.59	91.6	21.600	1.1500	12671.70	24840.00	0.510 ✔
T2	180 - 160 (583)	L2x2x5/16	4.75	4.59	91.6	21.600	1.1500	12695.20	24840.00	0.511 ✔
T2	180 - 160 (588)	L2x2x5/16	4.75	4.59	91.6	21.600	1.1500	12755.70	24840.00	0.514 ✔
T2	180 - 160 (589)	L2x2x5/16	4.75	4.59	91.6	21.600	1.1500	12949.60	24840.00	0.521 ✔
T4	140 - 120 (594)	L2x2x5/16	4.75	4.59	91.6	21.600	1.1500	9358.28	24840.00	0.377

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T4	140 - 120 (595)	L2x2x5/16	4.75	4.59	91.6	21.600	1.1500	9462.52	24840.00	0.381
T4	140 - 120 (600)	L2x2x5/16	4.75	4.59	91.6	21.600	1.1500	9322.67	24840.00	0.375
T4	140 - 120 (601)	L2x2x5/16	4.75	4.59	91.6	21.600	1.1500	9452.32	24840.00	0.381
T4	140 - 120 (606)	L2x2x5/16	4.75	4.59	91.6	21.600	1.1500	9262.26	24840.00	0.373
T4	140 - 120 (607)	L2x2x5/16	4.75	4.59	91.6	21.600	1.1500	9497.13	24840.00	0.382

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T2	180 - 160 (578)	L3x3x1/4	3.50	3.38	43.6	21.600	1.4400	2541.07	31104.00	0.082
T2	180 - 160 (579)	L3x3x1/4	3.50	3.38	43.6	21.600	1.4400	2394.49	31104.00	0.077
T2	180 - 160 (584)	L3x3x1/4	3.50	3.38	43.6	21.600	1.4400	2826.03	31104.00	0.091
T2	180 - 160 (585)	L3x3x1/4	3.50	3.38	43.6	21.600	1.4400	2720.75	31104.00	0.087
T2	180 - 160 (590)	L3x3x1/4	3.50	3.38	43.6	21.600	1.4400	2676.76	31104.00	0.086
T2	180 - 160 (591)	L3x3x1/4	3.50	3.38	43.6	21.600	1.4400	2681.45	31104.00	0.086
T4	140 - 120 (596)	L3x3x1/4	3.50	3.38	43.6	21.600	1.4400	4363.52	31104.00	0.140
T4	140 - 120 (597)	L3x3x1/4	3.50	3.38	43.6	21.600	1.4400	4275.24	31104.00	0.137
T4	140 - 120 (602)	L3x3x1/4	3.50	3.38	43.6	21.600	1.4400	5141.52	31104.00	0.165
T4	140 - 120 (603)	L3x3x1/4	3.50	3.38	43.6	21.600	1.4400	4738.16	31104.00	0.152
T4	140 - 120 (608)	L3x3x1/4	3.50	3.38	43.6	21.600	1.4400	4821.81	31104.00	0.155
T4	140 - 120 (609)	L3x3x1/4	3.50	3.38	43.6	21.600	1.4400	5141.77	31104.00	0.165

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
T1	190 - 180	Leg	P2.5x.203	1	-15765.80	67294.77	23.4	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P_{allow} lb	% Capacity	Pass Fail
		Diagonal	5/8	33	3368.96	6626.80	50.8	Pass
		Horizontal	L1 1/2x1 1/2x3/16	26	-4621.41	7695.87	60.1	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	9	-2350.91	7695.87	30.5	Pass
		Guy A@189.625	9/16	615	12398.60	17500.00	70.8	Pass
		Guy B@189.625	9/16	614	12641.40	17500.00	72.2	Pass
		Guy C@189.625	9/16	613	12609.00	17500.00	72.1	Pass
		Top Guy Pull-Off@189.625	L1 1/2x1 1/2x3/16	6	-2103.83	10258.59	20.5	Pass
T2	180 - 160	Leg	P2.5x.203	34	-40891.40	66643.60	61.4	Pass
		Diagonal	5/8	57	5944.51	8833.52	67.3	Pass
		Horizontal	L1 1/2x1 1/2x3/16	86	-4294.41	7695.87	55.8	Pass
		Top Girt	L1 1/2x1 1/2x3/16	38	-2277.34	7695.87	29.6	Pass
		Guy A@160.375	5/8	586	14735.20	21200.00	69.5	Pass
		Guy B@160.375	5/8	581	14807.90	21200.00	69.8	Pass
		Guy C@160.375	5/8	575	14767.90	21200.00	69.7	Pass
		Top Guy Pull-Off@160.375	L1 1/2x1 1/2x3/16	50	-7139.63	10258.59	69.6	Pass
		Bottom Guy Pull-Off@160.375	L1 1/2x1 1/2x3/16	41	-3388.56	10258.59	33.0	Pass
		Torque Arm Top@160.375	L2x2x5/16	589	12949.60	33111.72	39.1 52.4 (b)	Pass
		Torque Arm Bottom@160.375	L3x3x1/4	584	-10361.70	31832.30	32.6 41.9 (b)	Pass
T3	160 - 140	Leg	P2.5x.203	94	-38675.10	66643.60	58.0	Pass
		Diagonal	5/8	149	4410.83	8833.52	49.9	Pass
		Horizontal	L1 1/2x1 1/2x3/16	146	-3413.89	7695.87	44.4	Pass
		Top Girt	L1 1/2x1 1/2x3/16	98	-2765.08	10258.59	27.0	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	100	-1765.70	7695.87	22.9	Pass
T4	140 - 120	Leg	P2.5x.203	154	-58017.70	66643.60	87.1	Pass
		Diagonal	5/8	177	5326.24	8833.52	60.3	Pass
		Horizontal	L1 1/2x1 1/2x3/16	206	-3303.55	7695.87	42.9	Pass
		Top Girt	L1 1/2x1 1/2x3/16	158	-1751.74	7695.87	22.8	Pass
		Guy A@120.375	9/16	604	12950.40	17500.00	74.0	Pass
		Guy B@120.375	9/16	599	12629.70	17500.00	72.2	Pass
		Guy C@120.375	9/16	593	12861.00	17500.00	73.5	Pass
		Top Guy Pull-Off@120.375	L1 1/2x1 1/2x3/16	169	-5719.51	10258.59	55.8	Pass
		Bottom Guy Pull-Off@120.375	L1 1/2x1 1/2x3/16	162	-3842.13	10258.59	37.5	Pass
		Torque Arm Top@120.375	L2x2x5/16	607	9497.13	33111.72	28.7 38.4 (b)	Pass
		Torque Arm Bottom@120.375	L3x3x1/4	609	-8973.23	31832.30	28.2 36.3 (b)	Pass
T5	120 - 100	Leg	P2.5x.203	214	-56305.20	66055.88	85.2	Pass
		Diagonal	5/8	271	8125.44	8833.52	92.0	Pass
		Horizontal	L1 1/2x1 1/2x3/16	266	-5565.65	10258.59	54.3	Pass
		Top Girt	L1 1/2x1 1/2x3/16	218	-3188.35	10258.59	31.1	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	221	-2025.42	10258.59	19.7	Pass
T6	100 - 80	Leg	P2.5x.203	276	-50033.40	65959.77	75.9	Pass
		Diagonal	5/8	331	4216.78	8833.52	47.7	Pass
		Horizontal	L1 1/2x1 1/2x3/16	325	-2658.29	7695.87	34.5	Pass
		Top Girt	L1 1/2x1 1/2x3/16	279	-1404.16	7695.87	18.2	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	280	-1387.65	7695.87	18.0	Pass
T7	80 - 60	Leg	P2.5x.203	336	-47418.80	65909.52	71.9	Pass
		Diagonal	5/8	357	4804.52	8833.52	54.4	Pass
		Horizontal	L1 1/2x1 1/2x3/16	351	-2766.40	7695.87	35.9	Pass
		Top Girt	L1 1/2x1 1/2x3/16	339	-1385.97	7695.87	18.0	Pass
		Guy A@60.375	9/16	612	14272.00	17500.00	81.6	Pass
		Guy B@60.375	9/16	611	14215.60	17500.00	81.2	Pass
		Guy C@60.375	9/16	610	14241.20	17500.00	81.4	Pass
		Top Guy	L1 1/2x1 1/2x3/16	340	5001.11	15183.67	32.9	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P_{allow} lb	% Capacity	Pass Fail
		Pull-Off@60.375						
T8	60 - 40	Leg	P2.5x.203	394	-56967.40	65882.32	86.5	Pass
		Diagonal	5/8	450	5718.11	8833.52	64.7	Pass
		Horizontal	L1 1/2x1 1/2x3/16	446	-3807.72	10258.59	37.1	Pass
		Top Girt	L1 1/2x1 1/2x3/16	398	-1846.58	10258.59	18.0	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	400	-1262.49	7695.87	16.4	Pass
T9	40 - 20	Leg	P2.5x.203	455	-62222.50	65933.65	94.4	Pass
		Diagonal	5/8	511	2669.02	8833.52	30.2	Pass
		Horizontal	L1 1/2x1 1/2x3/16	505	-2384.82	7695.87	31.0	Pass
		Top Girt	L1 1/2x1 1/2x3/16	459	-1261.05	7695.87	16.4	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	460	-1243.98	7695.87	16.2	Pass
T10	20 - 0	Leg	P2.5x.203	515	-60457.30	65904.71	91.7	Pass
		Diagonal	5/8	528	3603.68	8833.52	40.8	Pass
		Horizontal	L1 1/2x1 1/2x3/16	529	-2423.92	7695.87	31.5	Pass
		Top Girt	L1 1/2x1 1/2x3/16	519	-1242.31	7695.87	16.1	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	522	544.40	15183.67	3.6	Pass
							Summary	
							Leg (T9) 94.4	Pass
							Diagonal (T5) 92.0	Pass
							Horizontal (T1) 60.1	Pass
							Top Girt (T5) 31.1	Pass
							Bottom Girt (T1) 30.5	Pass
							Guy A (T7) 81.6	Pass
							Guy B (T7) 81.2	Pass
							Guy C (T7) 81.4	Pass
							Top Guy Pull-Off (T2) 69.6	Pass
							Bottom Guy Pull-Off (T4) 37.5	Pass
							Torque Arm Top (T2) 52.4	Pass
							Torque Arm Bottom (T2) 41.9	Pass
							Bolt Checks 52.4	Pass
							RATING = 94.4	**Pass**

Site Name:	**Ashford, CT**
Job Number:	**112-13241**
Date:	**3/29/2014**

Design Base Loads (Unfactored) per TIA-222-F

Foundation Mapped:	N				
Moment (M):	0.0	k-ft	Concrete Compressive Strength (f'_c):	3000	psi
Shear/Leg (V):	3.1	k	Vertical Steel Rebar Size #:	5	
Compression/Leg (P):	131.5	k	Vertical Steel Rebar Area:	0.31	in^2
Uplift/Leg (U):	0.0	k	# of Vertical Steel Rebars:	8	
Tower Type (GT / SST):	GT		Vertical Steel Rebar Yield Strength (F_y):	60	ksi
Diameter of Prismatic Portion of Pier (d):	2.0	ft	Tie / Stirrup Size #:	4	
Depth to Base of Foundation:	4.5	ft	Tie / Stirrup Area:	0.20	in^2
Pier Height Above Ground (h):	1.00	ft	Tie / Stirrup Spacing:	10.0	in
Length / Width of Pad (w):	5.5	ft	Tie / Stirrup Steel Yield Strength (F_y):	40	ksi
Thickness of Pad (t):	1.5	ft	Rebar Cage Diameter:	16.0	in
Depth Below Ground Surface to Water Table (w):	20.0	ft	Bending/Tension Reduction Factor (ϕ_B):	0.90	
Unit Weight of Concrete:	150.0	pcf	Shear Reduction Factor (ϕ_V):	0.75	
Unit Weight of Water:	62.4	pcf	Compression Reduction Factor (ϕ_V):	0.65	
Unit Weight of Soil Above Water Table:	115.0	pcf	Wind Design Factor:	1.30	
Unit Weight of Soil Below Water Table:	50.0	pcf	Steel Elastic Modulus:	29000	ksi
Friction Angle of Uplift from Top of Pad:	33	Degrees	Pad Steel Rebar Size #:	5	
Friction Angle of Uplift from Base of Pad:	33	Degrees	Pad Steel Rebar Area:	0.31	in^2
Uplift Angle Started at Top or Base of Pad (T/B):	B		Pad Steel Rebar Yield Strength (F_y):	60	ksi
Allowable Skin Friction:	0	psf	# of Rebar in Top of Pad:	0	
Allowable Compressive Bearing Pressure:	7000	psf	# of Rebar in Base of Pad:	5	
Capacity Increase (Due to Transient Loads):	1.00		Pad Clear Cover:	3	in

Axial Capacities and Design Moment

Weight of Concrete (Bouyancy Considered):	8.7	k
Weight of Soil (Bouyancy Considered):	31.9	k
Allowable Skin Friction Resistance:	0.0	k
Controlling Failure Mode (Top / Base):	Base	
Allowable Uplift Capacity per Leg:	22.9	k
Compressive Design Load:	133.8	k
Allowable Compression Capacity per Leg:	211.8	k
Uplift Design Load/Uplift Capacity:	0.00	Result: OK
Compression Design Load/Compression Capacity:	0.63	Result: OK

Depth (ft) Top	Depth (ft) Bottom	Ultimate Lateral Bearing Pressure (psf)	Increment (psf/ft)	γ_{Soil} (pcf)	Cohesion (psf)	ϕ (degree)
0.0	2.0	0.0	115.0	115	0	0
2.0	3.0	780.2	390.1	115	0	33

Inflection Point (Below Ground Surface):	3.0	ft
Unfactored Design Moment At Inflection Point:	6.9	k-ft

Pad Strength Capacity

β:	0.85	ACI318-05 - 10.2.7.3
Lower Pad Flexural Reinforcement Ratio:	0.0016	OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Upper Pad Flexural Reinforcement Ratio:	0.0000	OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Lower Pad Flexural Reinforcement Spacing:	15	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Upper Pad Flexural Reinforcement Spacing:	0	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
One Way Design Shear (V_u):	16.6	k
One Way Shear Capacity (ϕV_c):	81.2	k - ACI318-05 - 11.3.1.1
V_u / ϕV_c:	0.20	Result: OK
Punching Design Shear (V_u):	123.9	k
Nominal Punching Shear Capacity ($\phi_c V_n$):	293.3	k - ACI318-05 - 11.12.2.1
V_u / ϕV_c:	0.42	Result: OK
Flexural Loading Due to Soil Pressure (M_u):	48.4	k-ft
Lower Steel Pad Moment Capacity (ϕM_n):	100.5	k-ft - ACI318-05 - 10.3
M_u / ϕM_n:	0.48	Result: OK
Flexural Loading Due to Uplift (M_u):	0.0	k-ft
Upper Steel Pad Moment Capacity (ϕM_n):	0.0	k-ft - ACI318-05 - 10.3
M_u / ϕM_n:	0.00	Result: OK

Pier Strength Capacity

Design Moment (M_u):	8.9	k-ft
Nominal Moment Capacity ($\phi_B M_n$):	88.9	k-ft - ACI318-005 - 10.2
$M_u/\phi_B M_n$:	0.10	Result: OK
Design Shear (V_u):	4.0	k
Nominal Shear Capacity ($\phi_V V_n$):	67.9	k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u/\phi_V V_n$:	0.06	Result: OK
Design Tension (T_u):	0.0	k
Nominal Tension Capacity ($\phi_T T_n$):	133.9	k - ACI318-05 - 10.2
$T_u/\phi_T T_n$:	0.00	Result: OK
Design Compression (P_u):	170.9	k
Nominal Compression Capacity ($\phi_P P_n$):	701.9	k - ACI318-05 - 10.3.6.2
$P_u/\phi_P P_n$:	0.24	Result: OK
Pier Reinforcement Ratio:	0.005	Reinforcement Ratio is Satisfactory - ACI318-05 - 10.9.1 & 10.8.4
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.10	Result: OK

Site Name:	**Ashford, CT**
Site Number:	**112-13241**
Date:	**3/29/2014**

Design Standard per TIA-222-F

Uplift (Unfactored):	51.9	k
Shear (Unfactored):	59.9	k
Anchor Base Depth (d):	8.0	ft
Width of Anchor (W):	5.5	ft
Length of Anchor (L):	11.5	ft
Thickness of Anchor (t):	2.0	ft
Depth Below Ground Surface to Water Table (w):	20.0	ft
Soil Uplift at Base / Top of Anchor (B/T):	T	
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Soil Above Water Table:	115.0	pcf
Unit Weight of Water:	62.4	pcf
Submerged Soil Unit Weight:	50.0	pcf
Internal Angle of Friction:	33	Degrees
Cohesion:	0	psf
Allowable Skin Friction of Pad Sides to Soil:	450	psf
Ultimate Coefficient of Shear Friction:	0.30	
Maximum Top Conical Failure Angle:	33	Degrees
Maximum Base Conical Failure Angle:	33	Degrees
Allowable Capacity Increase:	1.00	(Due to Transient Loads)

Uplift

Weight of Concrete (Buoyancy Effect Considered):	19.0	k
Weight of Soil (Buoyancy Effect Considered):	100.3	k
Uplift Resistance from Skin Friction:	20.3	k
Allowable Uplift Resistance (FS = 1.5 to 2):	65.3	k
Uplift Design Load/Allowable Uplift Resistance:	0.79	Result: OK

Shear

Ultimate Shear Friction Resistance Due to Normal Force - Uplift:	3.2	k
Ultimate Passive Pressure:	5461	psf
Ultimate Passure Pressure Resistance:	125.6	k
Allowable Shear Resistance (FS = 1.5 to 2):	64.4	k
Shear Design Load/Allowable Shear Resistance:	0.93	Result: OK

Anchor Rod Capacity

# of Anchor Rods:	1	
Anchor Rod Gross Area:	2.41	in^2
Anchor Rod Net Area:	2.41	in^2
Anchor Rod Yield Strength:	48	ksi
Anchor Rod Ultimate Strength:	62	ksi
Allowable Stress Increase:	1.33	
Resultant Tensile Load:	79.2	k
Anchor Rod Tensile Resistance:	92.4	k
Resultant Tensile Load / Anchor Rod Tensile Resistance:	0.86	Result: OK

Strength Analysis of Reinforced Concrete

Concrete Compressive Srength (f'_c):	3000	psi
Longitudinal Rebar Yield Strength:	60000	psi
# Longitudinal Rebar (Top):	6	
# Longitudinal Rebar (1 Side):	5	
Rebar Size:	4	
Wind Load Factor:	1.3	
Strength Reduction Factor for Shear (ϕ_v):	0.75	
Strength Reduction Factor for Flexure (ϕ_b):	0.9	
Compression Zone Factor (β_1):	0.85	
Area of Single Rebar:	0.20	in^2
One Way Shear due to Shear Load (V_u):	21.5	k
Nominal One Way Shear Capacity for Shear Load ($\phi_c V_n$):	122.3	k
$V_u/\phi_v V_n$:	0.18	Result: OK
One Way Shear due to Uplift (V_u):	28.8	k
Nominal One Way Shear Capacity for Uplift ($\phi_c V_n$):	108.4	k
$V_u/\phi_v V_n$:	0.27	Result: OK
Pad Flexure due to Shear Load (M_u):	112.0	k-ft
Nominal Flexural Capacity for Shear Load ($\phi_b M_n$):	279.0	k-ft
Pad Flexure due to Uplift (M_u):	96.9	k-ft
Nominal Flexural Capacity for Uplift ($\phi_b M_n$):	107.9	k-ft
$M_u/\phi_b M_n$ (Max.):	0.90	Result: OK

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RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

Sprint Existing Facility

Site ID: CT33XC015

Mohawk Lane CDT
22 Seles Road
Ashford, CT 06278

October 25, 2012

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
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October 25, 2012

Sprint
Attn: RF Engineering Manager
1 International Boulevard, Suite 800
Mahwah, NJ 07495

Re: Emissions Values for Site: **CT33XC015 – Mohawk Lane CDT**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 22 Seles Road, Ashford, CT, for the purpose of determining whether the emissions from the proposed Sprint equipment upgrades on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of μW/cm2 calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the cellular band is approximately 567 $\mu W/cm^2$, and the general population exposure limit for the PCS band is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 22 Seles Road, Ashford, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario. Actual values seen from this site will be dramatically less than those shown in this report. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

For all calculations, all emissions were calculated using the following assumptions:

1) 2 CDMA Carriers (1900 MHz) were considered for each sector of the proposed installation.
2) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
3) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The actual gain in this direction was used per the manufactures supplied specifications.
4) The antenna used in this modeling is the DB980H90E-M. This is based on feedback from the carrier with regards to anticipated antenna selection. This antenna has a 14.95 dBd gain value at its main lobe at 1900 MHz. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario.

5) The antenna mounting height centerline of the proposed antennas is **170.5 feet** above ground level (AGL)
6) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculation were done with respect to uncontrolled / general public threshold limits

Site ID	CT33XC015 - Mohawk Lane CDT
Site Addresss	22 Seles Road, Ashford, CT, 06278
Site Type	Guyed Tower

Sector 1

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	Decibel	DB980H90E-M	RRH	1900 MHz	CDMA / LTE	20	2	40	14.95	170.5	164.5	1/2 "	0.5	0	1114.4485	14.80588	1.48059%
														Sector total Power Density Value:		1.481%	

Sector 2

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
2a	Decibel	DB980H90E-M	RRH	1900 MHz	CDMA / LTE	20	2	40	14.95	170.5	164.5	1/2 "	0.5	0	1114.4485	14.80588	1.48059%
														Sector total Power Density Value:		1.481%	

Sector 3

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
3a	Decibel	DB980H90E-M	RRH	1900 MHz	CDMA / LTE	20	2	40	14.95	170.5	164.5	1/2 "	0.5	0	1114.4485	14.80588	1.48059%
														Sector total Power Density Value:		1.481%	

Site Composite MPE %

Carrier	MPE %
Sprint	4.442%
Verizon Wireless	3.180%
Nextel	1.720%
AT&T	6.830%
Total Site MPE %	**16.172%**

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Summary

All calculations performed for this analysis yielded results that were well within the allowable limits for general public exposure to RF Emissions.

The anticipated Maximum Composite contributions from the Sprint facility are **4.442% (1.481% from each sector)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **16.172%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803