

JULIE D. KOHLER

PLEASE REPLY TO: Bridgeport
WRITER'S DIRECT DIAL: (203) 337-4157
E-Mail Address: jkohler@cohenandwolf.com

April 30, 2015

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

**Re: Notice of Exempt Modification
Cordless Data Transfer, Inc. /T-Mobile equipment upgrade
Site ID CT11258B
10 Polly Lane Bozrah, Connecticut**

Dear Attorney Bachman:

This office represents T-Mobile Northeast LLC ("T-Mobile") and has been retained to file exempt modification filings with the Connecticut Siting Council on its behalf.

In this case, Cordless Data Transfer Inc. owns the existing guyed lattice tower and related facility located at 10 Polly Lane Bozrah, Connecticut (Latitude: 41.574231; Longitude: -72.2000402). T-Mobile intends to add three (3) antennas and related equipment at this existing telecommunications facility in Bozrah ("Bozrah Facility"). Please accept this letter as notification, pursuant to R.C.S.A. § 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, copies of this letter are being sent to the First Selectman William Ballinger. Cordless Data Transfer, Inc. also owns the property.

The existing Bozrah Facility consists of a 187 foot tall guyed lattice tower.¹ T-Mobile plans to add three (3) antennas and smart bias-T's to replacement pipe masts at a centerline of 182 feet. T-Mobile will mount three (3) RRU's (remote radio units) on a proposed unistrut between the ice shield posts. It will also install a BBU cabinet on an existing concrete pad and install new coax cable. (See the plans revised to March 10, 2015 attached hereto as Exhibit A). The existing Bozrah Facility is structurally capable of supporting T-Mobile's proposed modifications, as indicated in the structural analysis dated April 24, 2015 and attached hereto as Exhibit B.

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

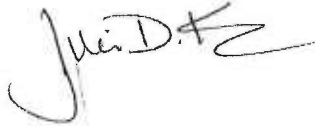
¹ The Siting Council online database does not contain any Docket or Petition approvals for the Bozrah Facility. It does contain several notices of intent however, the most recent being EM-SPRINT-013-140512, EM-CING-013-130301 and EM-VER-013-111220.

April 30, 2015
Site ID CT11258B
Page 2

1. The proposed modification will not increase the height of the tower. T-Mobile's proposed antennas will be installed at the same elevation as the existing antennas. The enclosed tower drawing confirms that the proposed modification will not increase the height of the tower.
2. The proposed modifications will not require an extension of the site boundaries. All of the modifications are proposed within the existing compound area.
3. The proposed modification to the Bozrah Facility will not increase the noise levels at the existing facility by six decibels or more.
4. The operation of the replacement antennas will not increase the total radio frequency (RF) power density, measured at the base of the tower, to a level at or above the applicable standard. According to a Radio Frequency Emissions Analysis Report prepared by EBI dated April 15, 2015, T-Mobile's operations would add 2.95% of the FCC Standard. Therefore, the calculated "worst case" power density for the planned combined operation at the site including all of the proposed antennas would be 35.11% of the FCC Standard as calculated for a mixed frequency site as evidenced by the engineering exhibit attached hereto as Exhibit C.

For the foregoing reasons, T-Mobile respectfully submits that the proposed replacement antennas and additional equipment at the Bozrah Facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Upon acknowledgement by the Council of this proposed exempt modification, T-Mobile shall commence construction approximately sixty days from the date of the Council's notice of acknowledgement.

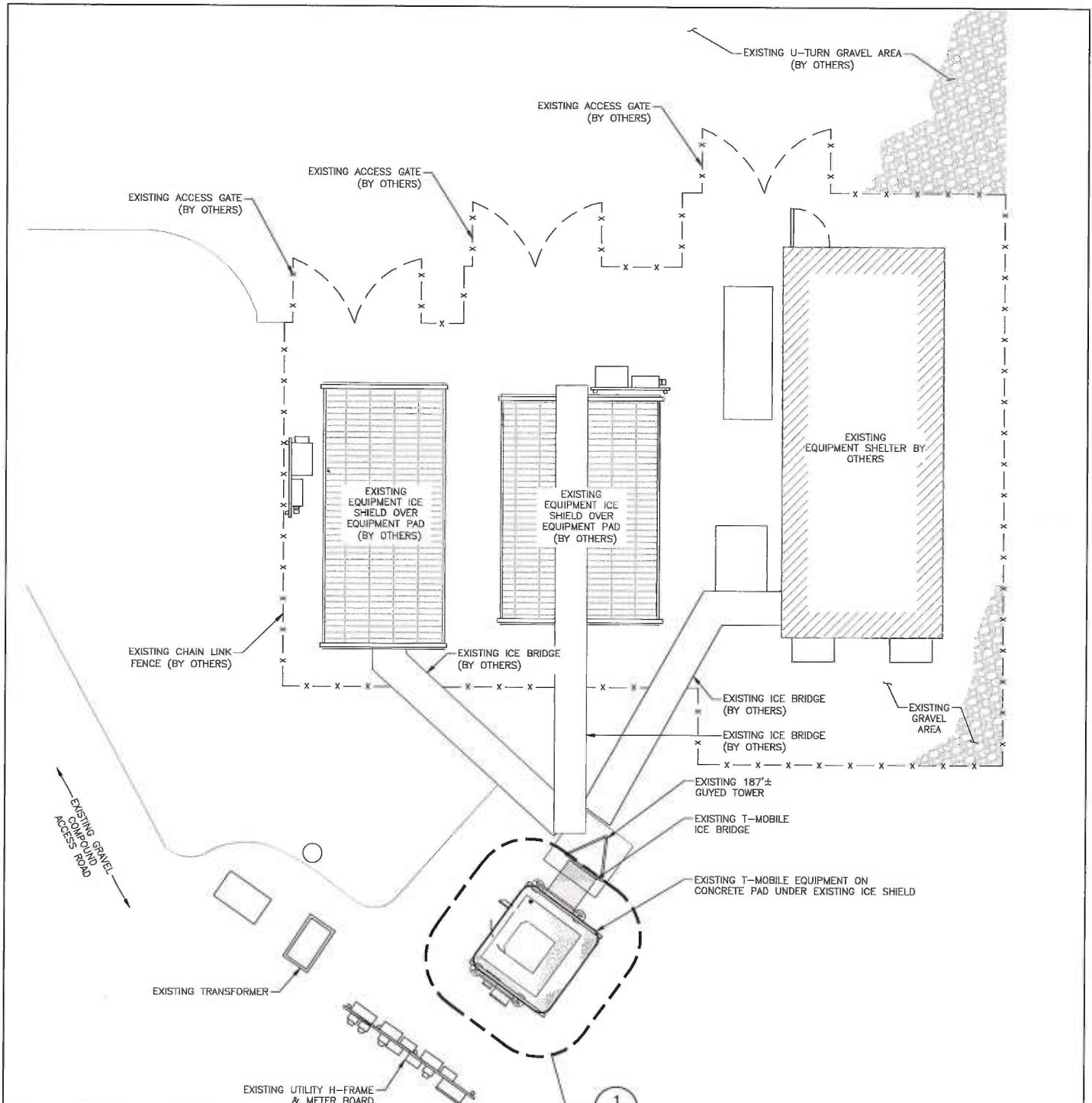
Sincerely,



Julie D. Kohler, Esq.

cc: Bozrah First Selectman, William Ballinger
Cordless Data Transfer
Jamie Ford, EBI Consulting

EXHIBIT A



CONFIGURATION
704G



APPROX. NORTH

NOTE:
 ALL EQUIPMENT LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO APPROVAL BY LESSEE/LICENSEE STRUCTURAL AND RF ENGINEERS.

SITE PLAN

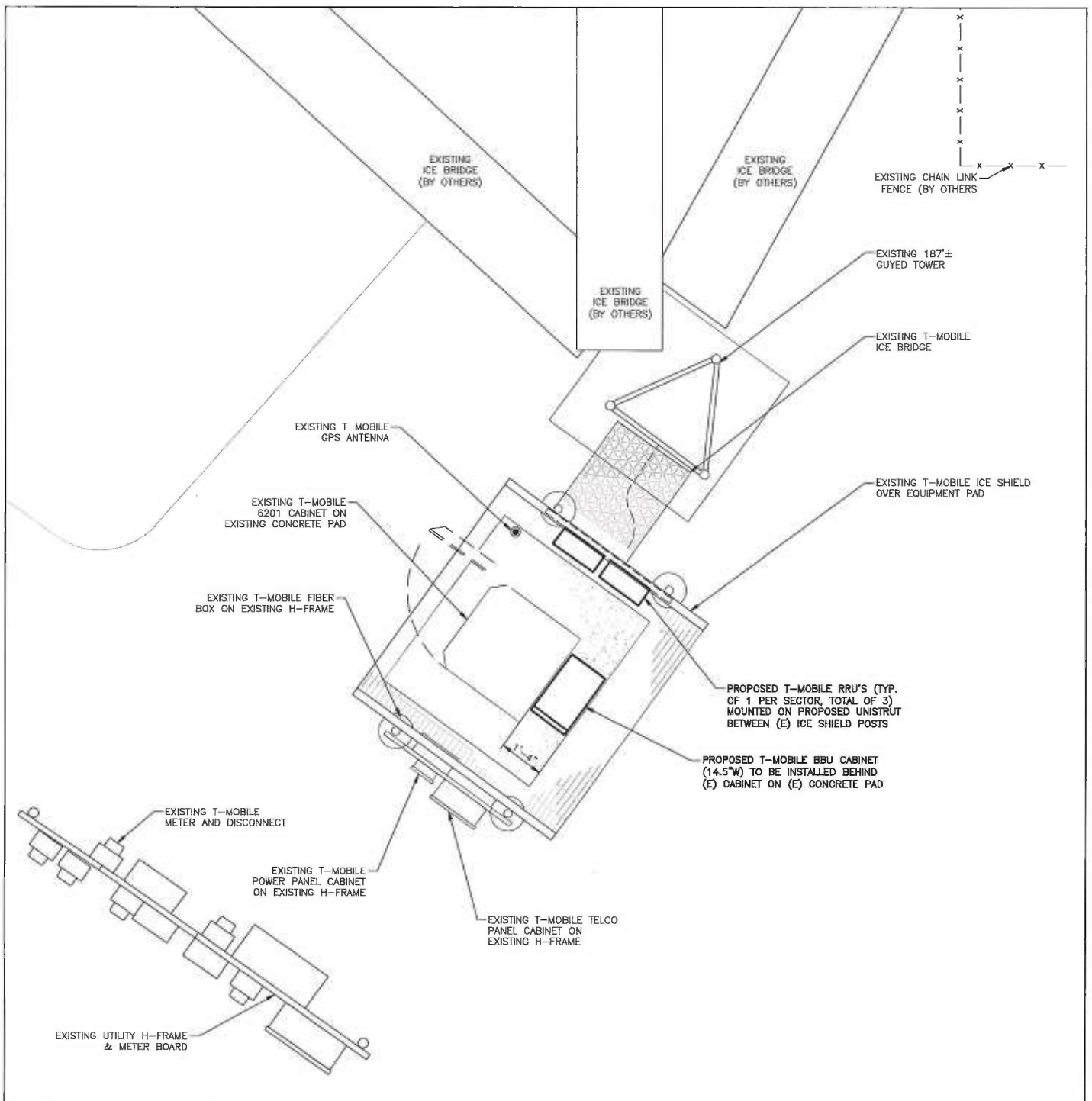
SCALE: 3/32" = 1'-0"

PREPARED BY:
EBI Consulting
 environmental | engineering | due diligence
 21 B Street | Burlington, MA 01803
 Tel: (781) 273-2500 | Fax: (781) 273-3311
 www.ebiconsulting.com
 EBI JOB NO.:
 8115000109

CLIENT:
T-Mobile Northeast, LLC
 35 GRIFFIN ROAD SOUTH
 BLOOMFIELD, CT 06002
 880.892.7100

SITE INFO:
BOZRAH-1/RT.2
CT11258B
 10 POLLY LANE
 BOZRAH, CT 06249

SUBMITTALS				DRAWN BY:	SHEET NO.:
NO.	DATE	DESCRIPTION	BY	MK	LE-1
A	3/10/15	FOR REVIEW	MK	CHECKED BY: BB	
				DATE: 3/05/15	



CONFIGURATION
704G



APPROX. NORTH

NOTE:
 ALL EQUIPMENT LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO APPROVAL BY LESSEE/LICENSEE STRUCTURAL AND RF ENGINEERS.

EQUIPMENT PLAN

SCALE: 1/4" = 1'-0"

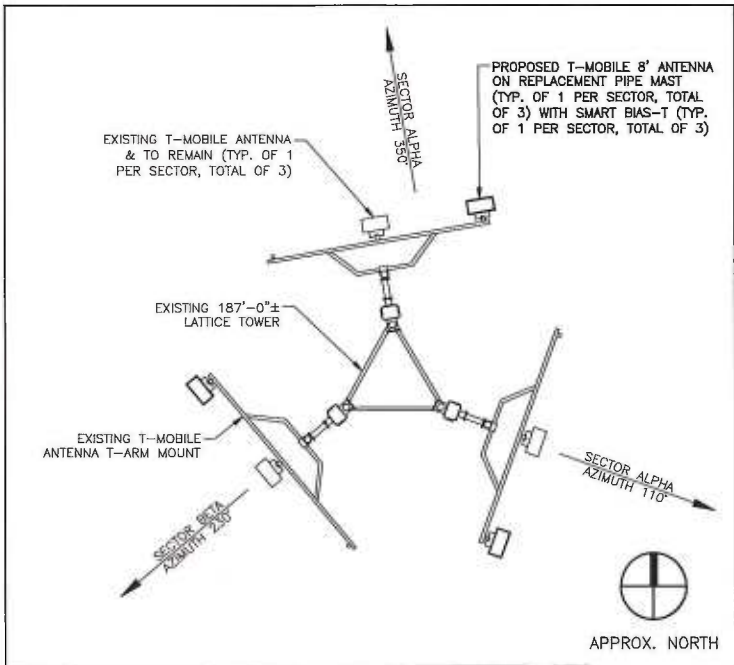
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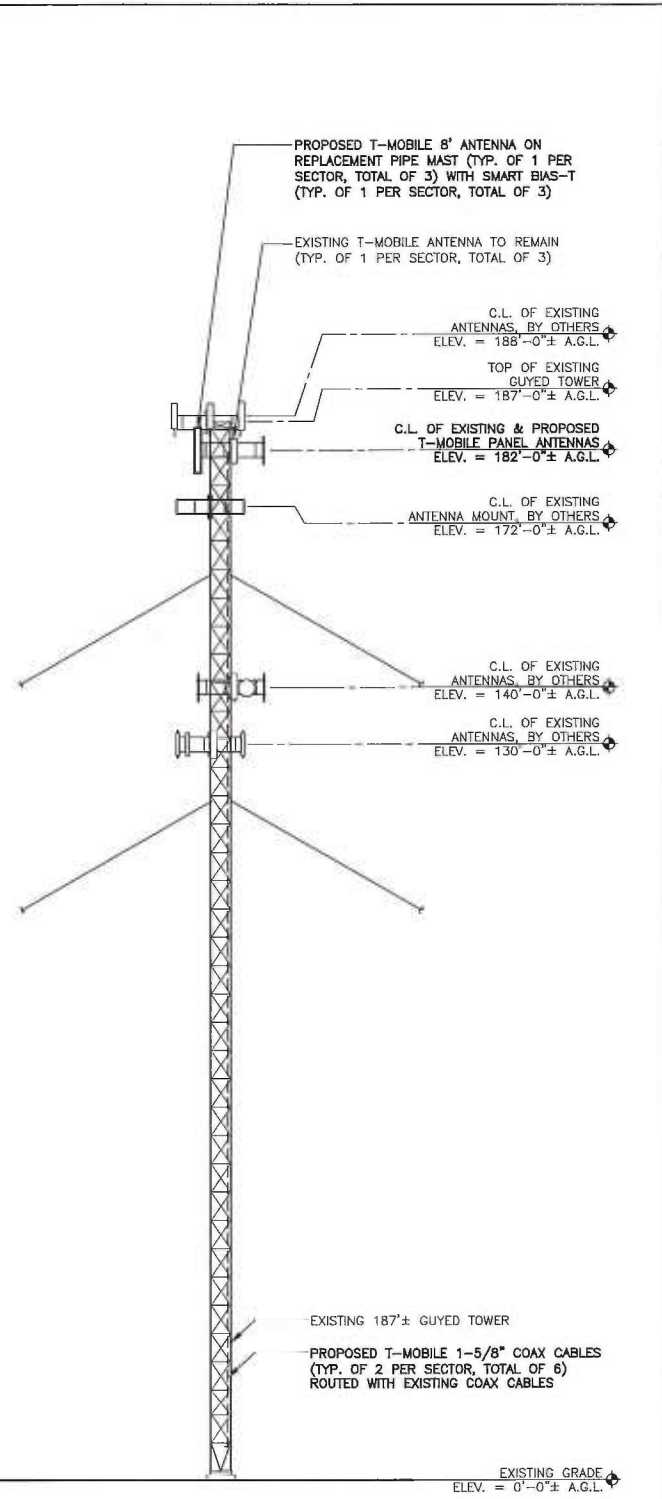
SUBMITTALS			
NO.	DATE	DESCRIPTION	BY
A	3/10/15	FOR REVIEW	MK

DRAWN BY: MK
 CHECKED BY: BB
 DATE: 3/05/15
 SHEET NO: **LE-2**



ANTENNA CONFIGURATION

NTS



TOWER ELEVATION

SCALE: 1/32" = 1'-0"

CONFIGURATION
704G

NOTE:
ALL EQUIPMENT LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO APPROVAL BY LESSEE/LICENSEE STRUCTURAL AND RF ENGINEERS.

PREPARED BY:
EBC Consulting
environmental | engineering | due diligence
21 B Street | Burlington, MA 01803
Tel: (781) 273-2500 | Fax: (781) 273-3311
www.ebiconsulting.com

EBC JOB NO.:
8115000109

CLIENT:
T-Mobile Northeast, LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860.692.7100

SITE INFO:
BOZRAH-1/RT.2
CT11258B
10 POLLY LANE
BOZRAH, CT 06249

NO.		DATE	DESCRIPTION	BY	CHKD BY
A		3/10/15	FOR REVIEW	MK	BB

DRAWN BY: MK
CHECKED BY: BB
DATE: 3/05/15
LE-3

EXHIBIT B



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
April 1, 2015

Nudd Job Number: 115-35035

Site Location: 3 Polly Lane, Bozrah, CT 06334, New London County (Latitude and Longitude: 41-34-24, -72-12-12)

Subject: Structural Analysis of an existing 187 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 considering 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 and 2009 Connecticut Building Code Amendments. 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. The original tower and foundation dimensions have been taken from original design drawings by Fred A. Nudd Corporation (Drawing Number 02-8869-1 & 97-5463-2, dated March 27, 2002 & November 3, 1997). A 7 ft, 2 bay extension has been installed in this tower, raising the overall tower height to 187 ft (Project Number 209-13046, dated April 10, 2009) and this addition has been included in this analysis. Modifications to the tower, designed and installed by Fred A. Nudd Corporation (Project Number 113-13004, dated January 27, 2013) have been included in this analysis. Subsurface soil conditions were taken from a geotechnical report by Tower Engineering Professionals, Inc. (TEP Project Number 080004.46E, dated August 24, 2009). Additional tower information was taken from a post modification inspection report by Tower Engineering Professionals, Inc. (TEP Project Number 080004.46, dated July 24, 2009). 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 T-Mobile equipment installed at a rad center of 182 ft above ground level (AGL). The new equipment to be installed, which includes antennas 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 support the design loads noted in the appurtenance loading table on the following pages when considering the existing and proposed loading. Specific section design loads, capacities and stress ratios are provided on the following pages. Maximum member usage was found to be 89%.

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 existing and proposed equipment, including after tower upgrades noted above.

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

Best Regards,
Fred A. Nudd Corporation



David Tan, P.E. (CT PE # 22092)

Code Design Criteria

TIA/EIA-222-F

Windspeed = 85 mph, fastest mile

Exposure = C

Radial Ice = 0.5 inch

Ice Windspeed = 74 mph, fastest mile

Appurtenance Loading – Existing / Remaining

Height (ft)	Carrier	Appurtenance	Mount	Coax (in)
188	AT&T Mobility	(6) Powerwave 7770 (6) Powerwave LGP17201 (2) Powerwave P65-17-XLH-RR (1) Andrew SBNH-1D6565C (1) Raycap DC6-48-60-18-8F (6) Ericsson RRUs-11	(3) 10 ft Boom / Frame	(12) 1-5/8 (1) 1.34 Fiber (2) 0.65 DC
182	T-Mobile	(3) EMS RR90-17-02DP (3) Ericsson KRY112 71	(3) 12 ft Boom / Frame	(6) 1-5/8
173	--	--	(3) 12 ft Boom / Frame	--
150.4	Sprint	(3) RFS APXV9ERR18-C-A20 (3) Alcatel Lucent 2x50W RRH, 800 MHz (3) Alcatel Lucent 4x45W RRH, 1900 MHz	(3) 12 ft Boom / Frame	(3) 1-1/4 Hybriflex
136	Verizon	(3) Antel BXA-70063-6CF (6) Antel LPA-80080-4CF (3) Antel BXA-171085-8BF (6) RFS FDOR6004/2C-3L	(3) 12 ft Boom / Frame	(12) 1-5/8

- Height measurement taken as distance from top of base foundation to center of appurtenance.

Proposed Appurtenance Loading – T-Mobile

Height (ft)	Carrier	Appurtenance	Mount	Coax (in)
182	T-Mobile	(3) Commscope LNX-6515DS-VTM (3) Andrew Smart Bias Tee	(3) 12 ft Boom / Frame	(6) 1-5/8

- Height measurement taken as distance from top of base foundation to center of appurtenance.
- T-Mobile's proposed coax must be double-stacked alongside their existing coax, creating 2 rows of 3 coax.

Foundation Reaction Comparison

Design Load	Capacity (kips)	Analysis (kips)	Percentage
Base Axial	143.7	136.4	95
Anchor Uplift	61.7	57.3	93
Anchor Shear	58.9	53.5	91

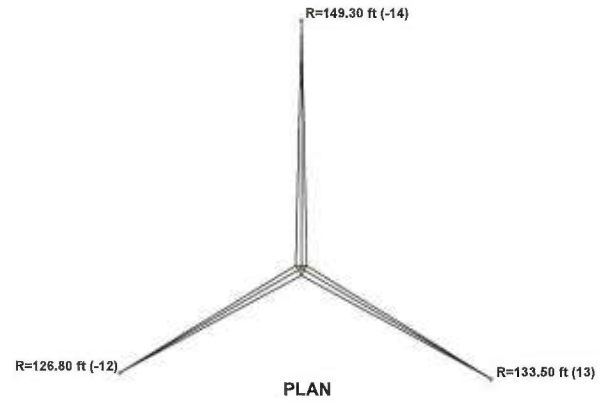
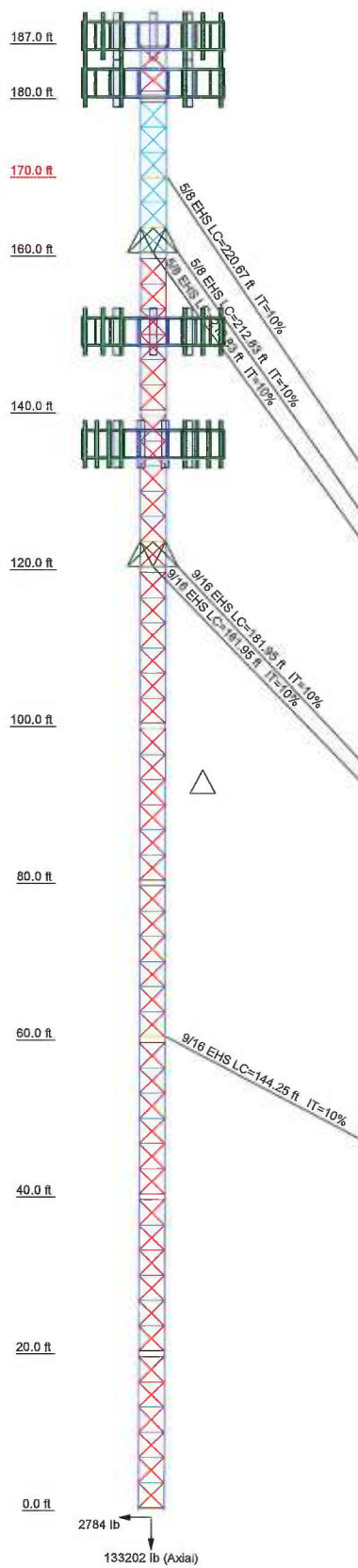
- *Percentage less than 100% denote foundation is satisfactory for loading*
- *Percentage greater than 100% indicates foundation analysis is required*

Maximum Member Usage

Member	Percentage
Leg	89
Diagonal	87
Horizontal	68
Bolts	56
Guys	77
Anchor Rod	85

- *Percentage less than 100% denote member stress levels are satisfactory for loading*
- *Percentage greater than 100% indicates member strengthening is required*

Section	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs					P2.5x.203					
Leg Grade					A500M-60					A
Diagonals					SR 5/8				C3x4.1	SR 5/8
Diagonal Grade					A36					
Top Girts					L1 1/2x1 1/2x3/16					
Bottom Girts					N.A.					
Horizontals					L1 1/2x1 1/2x3/16					
Top Guy Pull-Offs					L1 1/2x1 1/2x3/16					
Face Width (ft)					N.A.					N.A.
# Panels @ (ft)					3.5					
Weight (lb)	7213.8	659.2	659.2	659.2	659.2	659.2	923.0	659.2	1448.3	234.8



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) Powerwave 7770.00 (ATI)	187	Sector Frame	173
(2) Powerwave 7770.00 (ATI)	187	Sector Frame	173
(2) Powerwave 7770.00 (ATI)	187	RFS APXV9ERR18-C-A20 (Sprint)	150.4
(2) Powerwave LGP17201 (ATI)	187	Alcatel Lucent 1900 MHz RRH (Sprint)	150.4
(2) Powerwave LGP17201 (ATI)	187	Alcatel Lucent 800 MHz RRH (Sprint)	150.4
(2) Powerwave LGP17201 (ATI)	187	RFS APXV9ERR18-C-A20 (Sprint)	150.4
Powerwave P65-17-XLH-RR (ATI)	187	Alcatel Lucent 1900 MHz RRH (Sprint)	150.4
Powerwave P65-17-XLH-RR (ATI)	187	Alcatel Lucent 800 MHz RRH (Sprint)	150.4
Andrew SBNH-1D6565C (ATI)	187	Sector Frame	150.4
(2) Ericsson RRU11 (ATI)	187	Sector Frame	150.4
(2) Ericsson RRU11 (ATI)	187	Sector Frame	150.4
(2) Ericsson RRU11 (ATI)	187	RFS APXV9ERR18-C-A20 (Sprint)	150.4
Raycap DC6-48-60-18-9F (ATI)	187	Alcatel Lucent 1900 MHz RRH (Sprint)	150.4
Sector Frame	187	Alcatel Lucent 800 MHz RRH (Sprint)	150.4
Sector Frame	187	Antel BXA-171085-8BF (Verizon)	136
Sector Frame	187	Antel BXA-171085-8BF (Verizon)	136
Sector Frame	182	(2) RFS FD0R6004/2C-3L (Verizon)	136
Sector Frame	182	Sector Frame	136
Sector Frame	182	Sector Frame	136
EMS RR90-17-02DP	182	Sector Frame	136
EMS RR90-17-02DP	182	(2) Antel LPA-80080-4CF (Verizon)	136
EMS RR90-17-02DP	182	(2) Antel LPA-80080-4CF (Verizon)	136
Commscope LNX-6515DS-VTM	182	Antel BXA-70063-6CF (Verizon)	136
Commscope LNX-6515DS-VTM	182	Antel BXA-70063-6CF (Verizon)	136
Commscope LNX-6515DS-VTM	182	Antel BXA-70063-6CF (Verizon)	136
Ericsson KRY112 71	182	Antel BXA-171085-8BF (Verizon)	136
Ericsson KRY112 71	182	(2) RFS FD0R6004/2C-3L (Verizon)	136
Ericsson KRY112 71	182	(2) RFS FD0R6004/2C-3L (Verizon)	136
Sector Frame	173	(2) Antel LPA-80080-4CF (Verizon)	136

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	A500M-54	B	2 @ 2.84896

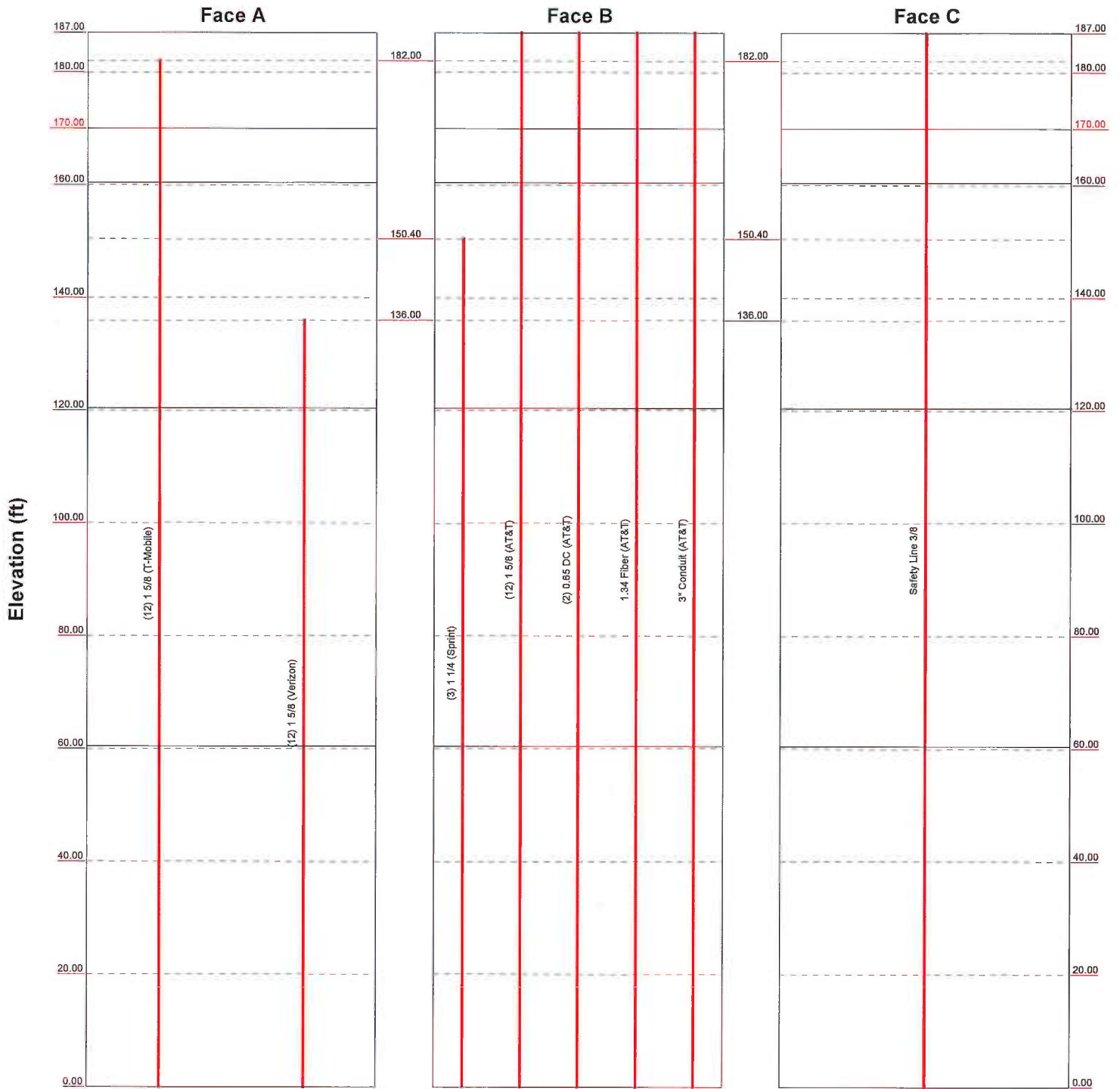
MATERIAL STRENGTH

Project: 187' G42WPAR GT Bozrah, CT			
Client: CDT	Drawn by: FAN	App'd:	
Code: TIA/EIA-222-F	Date: 04/01/15	Scale: NTS	
Phone:	Path:	Dwg No. E-1	

Feedline Distribution Chart

0' - 187'

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



Phone: FAX:	Job: 115-35035	Project: 187' G42WPAR GT Bozrah, CT	
	Client: CDT	Drawn by: FAN	App'd:
	Code: TIA/EIA-222-F	Date: 04/01/15	Scale: NTS
	Path:		Dwg No. E-7

<i>RISA</i>Tower Phone: FAX:	Job	115-35035	Page	1 of 48
	Project	187' G42WPAR GT Bozrah, CT	Date	23:07:16 04/01/15
	Client	CDT	Designed by	FAN

Tower Input Data

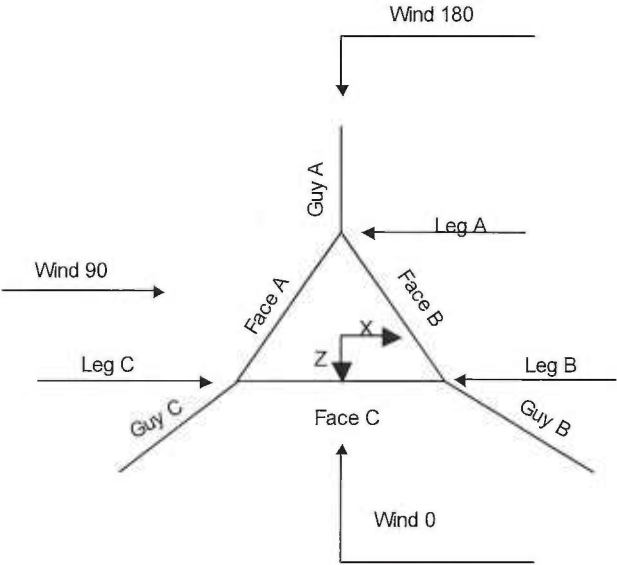
The main tower is a 3x guyed tower with an overall height of 187.00 ft above the ground line.
 The base of the tower is set at an elevation of 0.00 ft above the ground line.
 The face width of the tower is 3.50 ft at the top and 3.50 ft at the base.
 This tower is designed using the TIA/EIA-222-F standard.
 The following design criteria apply:

- Tower is located in New London 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

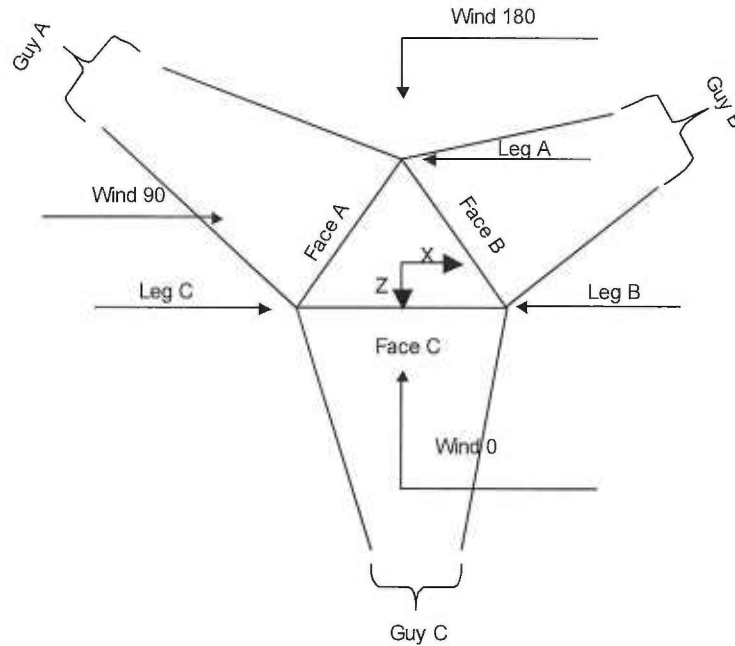
- | | | |
|--|--|---|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile √ Include Bolts In Member Capacity √ Leg Bolts Are At Top Of Section √ Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) Add IBC .6D+W Combination | <ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area √ Use Clear Spans For KL/r √ Retension Guys To Initial Tension Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. √ Autocalc Torque Arm Areas SR Members Have Cut Ends Sort Capacity Reports By Component √ Triangulate Diamond Inner Bracing | <ul style="list-style-type: none"> Treat Feedline Bundles As Cylinder Use ASCE 10 X-Brace Ly Rules √ Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression √ All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feedline Torque Include Angle Block Shear Check <li style="padding-left: 20px;">Poles Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets |
|--|--|---|

<i>RISATower</i> Phone: FAX:	Job 115-35035	Page 2 of 48
	Project 187' G42WPAR GT Bozrah, CT	Date 23:07:16 04/01/15
	Client CDT	Designed by FAN



Corner & Starmount Guyed Tower

RISATower Phone: FAX:	Job 115-35035	Page 3 of 48
	Project 187' G42WPAR GT Bozrah, CT	Date 23:07:16 04/01/15
	Client CDT	Designed by FAN



Face Guyed

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T1	187.00-180.00			3.50	1	7.00
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)

RISATower Phone: FAX:	Job 115-35035	Page 4 of 48
	Project 187' G42WPAR GT Bozrah, CT	Date 23:07:16 04/01/15
	Client CDT	Designed by FAN

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	187.00-180.00	2.85	TX Brace	No	Yes	3.7500	11.8750
T2	180.00-160.00	3.21	X 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	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
ft						
T1 187.00-180.00	Pipe	P2.5x.203	A500M-54 (54 ksi)	Solid Round	5/8	A36 (36 ksi)
T2 180.00-160.00	Pipe	P2.5x.203	A500M-60 (60 ksi)	Channel	C3x4.1	A36 (36 ksi)
T3 160.00-140.00	Pipe	P2.5x.203	A500M-60 (60 ksi)	Solid Round	5/8	A36 (36 ksi)
T4 140.00-120.00	Pipe	P2.5x.203	A500M-60 (60 ksi)	Solid Round	5/8	A36 (36 ksi)
T5 120.00-100.00	Pipe	P2.5x.203	A500M-60 (60 ksi)	Solid Round	5/8	A36 (36 ksi)
T6 100.00-80.00	Pipe	P2.5x.203	A500M-60 (60 ksi)	Solid Round	5/8	A36 (36 ksi)
T7 80.00-60.00	Pipe	P2.5x.203	A500M-60 (60 ksi)	Solid Round	5/8	A36 (36 ksi)
T8 60.00-40.00	Pipe	P2.5x.203	A500M-60 (60 ksi)	Solid Round	5/8	A36 (36 ksi)
T9 40.00-20.00	Pipe	P2.5x.203	A500M-60 (60 ksi)	Solid Round	5/8	A36 (36 ksi)
T10 20.00-0.00	Pipe	P2.5x.203	A500M-60 (60 ksi)	Solid Round	5/8	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
ft						
T1 187.00-180.00	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

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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	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36
T7 80.00-60.00	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36
T8 60.00-40.00	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36
T9 40.00-20.00	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36
T10 20.00-0.00	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36

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 187.00-180.00	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)	Equal 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 187.00-180.00	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

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

Tower Section Geometry (cont'd)

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	Legs	K Factors ¹						
				X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace
ft				Y	Y	Y	Y	Y	Y	Y
T1	No	No	1	1	1	1	0.65	0.65	1	1
187.00-180.00				1	1	1	0.65	0.65	1	1
T2	No	No	1	2.84	1	2.84	0.65	0.65	1	1
180.00-160.00				2.84	1	2.84	0.65	0.65	1	1
T3	No	No	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	No	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	No	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	No	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	No	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	No	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	No	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	No	1	1	1	1	0.65	0.65	1	1
20.00-0.00				1	1	1	0.65	0.65	1	1

¹Note: 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)

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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 187.00-180.00	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 187.00-180.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T2 180.00-160.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T3 160.00-140.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T4 140.00-120.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T5 120.00-100.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T6 100.00-80.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T7 80.00-60.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T8 60.00-40.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T9 40.00-20.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T10 20.00-0.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0

Guy Data

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Guy Elevation	Cable Weight A	Cable Weight B	Cable Weight C	Cable Weight D	Tower Intercept A	Tower Intercept B	Tower Intercept C	Tower Intercept D
ft	lb	lb	lb	lb	ft	ft	ft	ft
160.375	185.43	160.46	172.88		4.91	3.69	4.27	
					3.8 sec/pulse	3.3 sec/pulse	3.6 sec/pulse	
120.375	133.69	113.83	121.98		3.76	2.73	3.13	
					3.3 sec/pulse	2.9 sec/pulse	3.1 sec/pulse	
60.375	110.62	93.70	96.71		2.59	1.86	1.98	
					2.8 sec/pulse	2.4 sec/pulse	2.4 sec/pulse	
170	191.45	166.35	179.25		5.23	3.96	4.58	
					3.9 sec/pulse	3.4 sec/pulse	3.7 sec/pulse	

Guy Data (cont'd)

Guy Elevation	Calc K Single Angles	Calc K Solid Rounds	Torque Arm		Pull Off		Diagonal	
			K _x	K _y	K _x	K _y	K _x	K _y
160.375	No	No	1	1	1	1	1	1
120.375	No	No	1	1	1	1	1	1
60.375	No	No			1	1	1	1
170	No	No			1	1	1	1

Guy Data (cont'd)

Guy Elevation	Torque-Arm				Pull Off				Diagonal			
	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U
160.375	0.7500	2	0.0000	0.75	0.7500	2	0.0000	0.75	0.6250	0	0.0000	0.75
	A325N				A325N				A325N			
120.375	0.7500	2	0.0000	0.75	0.7500	2	0.0000	0.75	0.6250	0	0.0000	0.75
	A325N				A325N				A325N			
60.375	0.6250	0	0.0000	0.75	0.0000	0	0.0000	0.75	0.6250	0	0.0000	0.75
	A325N				A325N				A325N			
170	0.6250	0	0.0000	0.75	0.0000	0	0.0000	0.75	0.6250	0	0.0000	0.75
	A325N				A325N				A325N			

Guy Pressures

Guy Elevation	Guy Location	z	q _z	q _z	Ice Thickness
ft		ft	psf	Ice psf	in
160.375	A	73.19	23	17	0.5000
	B	86.69	24	18	0.5000
	C	74.19	23	17	0.5000
120.375	A	53.19	21	16	0.5000
	B	66.69	23	17	0.5000
	C	54.19	21	16	0.5000
60.375	A	23.19	18	14	0.5000
	B	36.69	19	14	0.5000

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Guy Elevation ft	Guy Location	z ft	q _z psf	q _z Ice psf	Ice Thickness in
170	C	24.19	18	14	0.5000
	A	78.00	24	18	0.5000
	B	91.50	25	19	0.5000
	C	79.00	24	18	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	49.8072	4381.64 4240.00	-66.08	3385.51	-2780.78	-6841.19	9866.26	-11849.29
	A	49.8072	4381.64 4240.00	66.08	3385.51	-2780.78	-6841.19	-9866.26	11849.29
	B	48.2525	4359.71 4240.00	2516.34	3288.21	1364.85	13289.14	10169.67	0.00
	B	48.2525	4359.71 4240.00	2440.16	3288.21	1496.79	-6644.57	-10169.67	-11508.73
	C	54.0892	4380.02 4240.00	-2152.63	3577.15	1324.66	-7228.44	8986.18	12520.03
	C	54.0892	4380.02 4240.00	-2223.50	3577.15	1201.91	14456.88	-8986.18	0.00
120.375	A	42.3687	3590.09 3500.00	580.37 -62.22	20501.74 2455.77	-173.35 -2618.03	190.62 -4962.43	-0.00 9288.82	1011.30 -8595.18
	A	42.3687	3590.09 3500.00	62.22	2455.77	-2618.03	-4962.43	-9288.82	8595.18
	B	39.2275	3571.99 3500.00	2407.49	2293.02	1305.81	9267.15	9729.75	0.00
	B	39.2275	3571.99 3500.00	2334.61	2293.02	1432.04	-4633.57	-9729.75	-8025.58
	C	46.6806	3588.75 3500.00	-2070.72	2639.61	1274.25	-5333.93	8644.21	9238.63
	C	46.6806	3588.75 3500.00	-2138.89	2639.61	1156.17	10667.85	-8644.21	0.00
60.375	A	26.7935	3549.86 3500.00	532.49 0.00	14776.80 1644.21	-67.79 -3146.13	42.64 -3322.49	-0.00 0.00	1213.05 0.00
	B	19.8153	3531.76 3500.00	2864.32	1238.65	1653.71	1251.49	0.00	-2167.64
	C	30.1148	3548.52 3500.00	-2639.91	1816.55	1524.15	1835.37	-0.00	3178.96
170	A	51.3251	4389.46 4240.00	224.41 0.00	4699.41 3464.12	31.74 -2695.78	-235.63 -7000.04	0.00 0.00	1011.32 0.00
	B	50.0556	4367.53 4240.00	2392.65	3382.65	1381.40	3417.70	0.00	-5919.63
	C	55.5654	4387.84 4240.00	-2112.22	3647.53	1219.49	3685.33	-0.00	6383.18
Sum:				280.43	10494.30	-94.89	102.99	0.00	463.55

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Guy-Mast Forces (Excluding Wind) - Ice

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom lb	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		lb	lb	lb	lb-ft	lb-ft	lb-ft
160.375	A	49.8072	6170.17 5908.80	-92.57	4784.25	-3895.30	-9667.66	13820.61	-16744.88
	A	49.8072	6170.17 5908.80	92.57	4784.25	-3895.30	-9667.66	-13820.61	16744.88
	B	48.2525	6115.37 5894.47	3513.81	4628.02	1905.87	18703.92	14200.89	0.00
	B	48.2525	6115.37 5894.47	3407.44	4628.02	2090.11	-9351.96	-14200.89	-16198.07
	C	54.0892	6135.90 5877.53	-2999.67	5024.34	1845.89	-10152.80	12522.15	17585.17
	C	54.0892	6135.90 5877.53	-3098.43	5024.34	1674.85	20305.61	-12522.15	0.00
120.375			Sum:	823.14	28873.21	-273.88	169.45	-0.00	1387.10
	A	42.3687	5086.23 4909.01	-87.70	3499.16	-3690.25	-7070.84	13093.09	-12247.05
	A	42.3687	5086.23 4909.01	87.70	3499.16	-3690.25	-7070.84	-13093.09	12247.05
	B	39.2275	5035.00 4893.39	3379.55	3251.13	1833.05	13139.28	13658.28	0.00
	B	39.2275	5035.00 4893.39	3277.24	3251.13	2010.25	-6569.64	-13658.28	-11378.95
	C	46.6806	5051.68 4877.10	-2900.00	3731.61	1784.56	-7540.56	12106.04	13060.63
60.375	C	46.6806	5051.68 4877.10	-2995.47	3731.61	1619.19	15081.11	-12106.04	0.00
			Sum:	761.32	20963.79	-133.46	-31.48	-0.00	1681.68
	A	26.7935	5027.79 4929.70	0.00	2352.96	-4443.22	-4754.69	0.00	0.00
	B	19.8153	4977.71 4915.23	4029.46	1768.87	2326.41	1787.20	0.00	-3095.53
	C	30.1148	4992.70 4897.25	-3703.81	2576.07	2138.39	2602.77	-0.00	4508.13
			Sum:	325.65	6697.91	21.58	-364.72	0.00	1412.60
170	A	51.3251	6180.71 5904.91	0.00	4894.02	-3774.87	-9889.48	0.00	0.00
	B	50.0556	6126.48 5891.16	3340.19	4760.04	1928.46	4809.36	0.00	-8330.06
	C	55.5654	6146.76 5873.97	-2942.46	5122.37	1698.83	5175.45	-0.00	8964.14
			Sum:	397.74	14776.43	-147.58	95.33	0.00	634.08

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom lb	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		lb	lb	lb	lb-ft	lb-ft	lb-ft
160.375	A	49.8072	4381.64 4240.00	-66.08	3385.51	-2780.78	-6841.19	9866.26	-11849.29
	A	49.8072	4381.64	66.08	3385.51	-2780.78	-6841.19	-9866.26	11849.29

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Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom lb	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		lb	lb	lb	lb-ft	lb-ft	lb-ft
			4240.00						
	B	48.2525	4359.71	2516.34	3288.21	1364.85	13289.14	10169.67	0.00
			4240.00						
	B	48.2525	4359.71	2440.16	3288.21	1496.79	-6644.57	-10169.67	-11508.73
			4240.00						
	C	54.0892	4380.02	-2152.63	3577.15	1324.66	-7228.44	8986.18	12520.03
			4240.00						
	C	54.0892	4380.02	-2223.50	3577.15	1201.91	14456.88	-8986.18	0.00
			4240.00						
			Sum:	580.37	20501.74	-173.35	190.62	-0.00	1011.30
120.375	A	42.3687	3590.09	-62.22	2455.77	-2618.03	-4962.43	9288.82	-8595.18
			3500.00						
	A	42.3687	3590.09	62.22	2455.77	-2618.03	-4962.43	-9288.82	8595.18
			3500.00						
	B	39.2275	3571.99	2407.49	2293.02	1305.81	9267.15	9729.75	0.00
			3500.00						
	B	39.2275	3571.99	2334.61	2293.02	1432.04	-4633.57	-9729.75	-8025.58
			3500.00						
	C	46.6806	3588.75	-2070.72	2639.61	1274.25	-5333.93	8644.21	9238.63
			3500.00						
	C	46.6806	3588.75	-2138.89	2639.61	1156.17	10667.85	-8644.21	0.00
			3500.00						
			Sum:	532.49	14776.80	-67.79	42.64	-0.00	1213.05
60.375	A	26.7935	3549.86	0.00	1644.21	-3146.13	-3322.49	0.00	0.00
			3500.00						
	B	19.8153	3531.76	2864.32	1238.65	1653.71	1251.49	0.00	-2167.64
			3500.00						
	C	30.1148	3548.52	-2639.91	1816.55	1524.15	1835.37	-0.00	3178.96
			3500.00						
			Sum:	224.41	4699.41	31.74	-235.63	0.00	1011.32
170	A	51.3251	4389.46	0.00	3464.12	-2695.78	-7000.04	0.00	0.00
			4240.00						
	B	50.0556	4367.53	2392.65	3382.65	1381.40	3417.70	0.00	-5919.63
			4240.00						
	C	55.5654	4387.84	-2112.22	3647.53	1219.49	3685.33	-0.00	6383.18
			4240.00						
			Sum:	280.43	10494.30	-94.89	102.99	0.00	463.55

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 (T-Mobile)	A	Yes	Ar (CfAe)	182.00 - 0.00	0.0000	-0.25	12	9	1.9800	1.9800		1.04
1 1/4 (Sprint)	B	Yes	Ar (CfAe)	150.40 - 0.00	0.0000	0.25	3	3	1.5500	1.5500		0.66
1 5/8 (AT&T)	B	Yes	Ar (CfAe)	187.00 - 0.00	0.0000	-0.25	12	4	1.0000	1.9800		1.04
1 5/8 (Verizon)	A	Yes	Ar (CfAe)	136.00 - 0.00	0.0000	0.4	12	6	1.0000	1.9800		1.04
0.65 DC (AT&T)	B	Yes	Ar (CfAe)	187.00 - 0.00	0.0000	-0.25	2	2	0.5800	0.0000		0.25
1.34 Fiber	B	Yes	Ar (CfAe)	187.00 - 0.00	0.0000	-0.25	1	1	0.5800	0.0000		0.25

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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
(AT&T) 3" Conduit	B	Yes	Ar (CfAe)	187.00 - 0.00	0.0000	-0.25	1	1	1.0000	3.0000		2.80
(AT&T) Safety Line 3/8	C	No	Ar (CfAe)	187.00 - 0.00	0.0000	-0.25	1	1	0.3750	0.3750		0.22

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight lb
T1	187.00-180.00	A	2.970	0.000	0.000	0.000	24.96
		B	6.370	0.000	0.000	0.000	112.21
		C	0.219	0.000	0.000	0.000	1.54
T2	180.00-160.00	A	29.700	0.000	0.000	0.000	249.60
		B	18.200	0.000	0.000	0.000	320.60
		C	0.625	0.000	0.000	0.000	4.40
T3	160.00-140.00	A	29.700	0.000	0.000	0.000	249.60
		B	22.230	0.000	0.000	0.000	341.19
		C	0.625	0.000	0.000	0.000	4.40
T4	140.00-120.00	A	45.540	0.000	0.000	0.000	449.28
		B	25.950	0.000	0.000	0.000	360.20
		C	0.625	0.000	0.000	0.000	4.40
T5	120.00-100.00	A	49.500	0.000	0.000	0.000	499.20
		B	25.950	0.000	0.000	0.000	360.20
		C	0.625	0.000	0.000	0.000	4.40
T6	100.00-80.00	A	49.500	0.000	0.000	0.000	499.20
		B	25.950	0.000	0.000	0.000	360.20
		C	0.625	0.000	0.000	0.000	4.40
T7	80.00-60.00	A	49.500	0.000	0.000	0.000	499.20
		B	25.950	0.000	0.000	0.000	360.20
		C	0.625	0.000	0.000	0.000	4.40
T8	60.00-40.00	A	49.500	0.000	0.000	0.000	499.20
		B	25.950	0.000	0.000	0.000	360.20
		C	0.625	0.000	0.000	0.000	4.40
T9	40.00-20.00	A	49.500	0.000	0.000	0.000	499.20
		B	25.950	0.000	0.000	0.000	360.20
		C	0.625	0.000	0.000	0.000	4.40
T10	20.00-0.00	A	49.500	0.000	0.000	0.000	499.20
		B	25.950	0.000	0.000	0.000	360.20
		C	0.625	0.000	0.000	0.000	4.40

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 _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight lb
T1	187.00-180.00	A	0.500	4.470	0.000	0.000	0.000	61.32
		B		5.238	5.553	0.000	0.000	306.98
		C		0.802	0.000	0.000	0.000	5.28
T2	180.00-160.00	A	0.500	44.700	0.000	0.000	0.000	613.19
		B		14.967	15.867	0.000	0.000	877.08
		C		2.292	0.000	0.000	0.000	15.09
T3	160.00-140.00	A	0.500	44.700	0.000	0.000	613.19	

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Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight lb
		B		21.597	15.867	0.000	0.000	936.74
		C		2.292	0.000	0.000	0.000	15.09
T4	140.00-120.00	A	0.500	48.673	19.867	0.000	0.000	1222.32
		B		27.717	15.867	0.000	0.000	991.81
		C		2.292	0.000	0.000	0.000	15.09
T5	120.00-100.00	A	0.500	49.667	24.833	0.000	0.000	1374.60
		B		27.717	15.867	0.000	0.000	991.81
		C		2.292	0.000	0.000	0.000	15.09
T6	100.00-80.00	A	0.500	49.667	24.833	0.000	0.000	1374.60
		B		27.717	15.867	0.000	0.000	991.81
		C		2.292	0.000	0.000	0.000	15.09
T7	80.00-60.00	A	0.500	49.667	24.833	0.000	0.000	1374.60
		B		27.717	15.867	0.000	0.000	991.81
		C		2.292	0.000	0.000	0.000	15.09
T8	60.00-40.00	A	0.500	49.667	24.833	0.000	0.000	1374.60
		B		27.717	15.867	0.000	0.000	991.81
		C		2.292	0.000	0.000	0.000	15.09
T9	40.00-20.00	A	0.500	49.667	24.833	0.000	0.000	1374.60
		B		27.717	15.867	0.000	0.000	991.81
		C		2.292	0.000	0.000	0.000	15.09
T10	20.00-0.00	A	0.500	49.667	24.833	0.000	0.000	1374.60
		B		27.717	15.867	0.000	0.000	991.81
		C		2.292	0.000	0.000	0.000	15.09

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	187.00-180.00	A	0.114	0.606	0.159	0.239
		B	0.244	1.462	0.341	0.578
		C	0.000	0.000	0.000	0.000
T2	180.00-160.00	A	0.000	4.336	7.405	11.145
		B	0.000	2.991	4.538	7.687
		C	0.000	0.000	0.000	0.000
T3	160.00-140.00	A	1.259	6.231	1.299	1.956
		B	0.942	5.222	0.973	1.639
		C	0.000	0.000	0.000	0.000
T4	140.00-120.00	A	1.931	9.554	2.087	3.141
		B	1.100	6.075	1.189	1.998
		C	0.000	0.000	0.000	0.000
T5	120.00-100.00	A	2.098	10.384	2.166	3.259
		B	1.100	6.075	1.135	1.907
		C	0.000	0.000	0.000	0.000
T6	100.00-80.00	A	2.098	10.384	2.166	3.259
		B	1.100	6.075	1.135	1.907
		C	0.000	0.000	0.000	0.000
T7	80.00-60.00	A	2.098	10.384	2.166	3.259
		B	1.100	6.075	1.135	1.907
		C	0.000	0.000	0.000	0.000
T8	60.00-40.00	A	2.098	10.384	2.166	3.259
		B	1.100	6.075	1.135	1.907
		C	0.000	0.000	0.000	0.000
T9	40.00-20.00	A	2.098	10.384	2.166	3.259
		B	1.100	6.075	1.135	1.907
		C	0.000	0.000	0.000	0.000

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Section	Elevation	Face	A_R	A_R Ice	A_F	A_F Ice
	ft		ft ²	ft ²	ft ²	ft ²
T10	20.00-0.00	A	2.098	10.384	2.166	3.259
		B	1.100	6.075	1.135	1.907
		C	0.000	0.000	0.000	0.000

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
T1	187.00-180.00	-0.0104	-3.6044	-0.2109	-2.2962
T2	180.00-160.00	-2.5526	-1.6422	-2.5738	-0.9530
T3	160.00-140.00	-3.1545	-2.3488	-2.8671	-1.4490
T4	140.00-120.00	-2.6873	-4.7055	-2.3458	-3.1560
T5	120.00-100.00	-2.7484	-5.2653	-2.3829	-3.5702
T6	100.00-80.00	-2.7484	-5.2653	-2.3829	-3.5702
T7	80.00-60.00	-2.7484	-5.2653	-2.3829	-3.5702
T8	60.00-40.00	-2.7484	-5.2653	-2.3829	-3.5702
T9	40.00-20.00	-2.7484	-5.2653	-2.3829	-3.5702
T10	20.00-0.00	-2.7484	-5.2653	-2.3829	-3.5702

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C_{AA} Front ft ²	C_{AA} Side ft ²	Weight lb	
(2) Antel LPA-80080-4CF (Verizon)	A	From Leg	3.00	0.0000	136.00	No Ice	2.62	5.40	12.00
			0.00			1/2" Ice	2.92	5.71	45.10
			0.00						
(2) Antel LPA-80080-4CF (Verizon)	B	From Leg	3.00	0.0000	136.00	No Ice	2.62	5.40	12.00
			0.00			1/2" Ice	2.92	5.71	45.10
			0.00						
(2) Antel LPA-80080-4CF (Verizon)	C	From Leg	3.00	0.0000	136.00	No Ice	2.62	5.40	12.00
			0.00			1/2" Ice	2.92	5.71	45.10
			0.00						
Antel BXA-70063-6CF (Verizon)	A	From Leg	3.00	0.0000	136.00	No Ice	7.57	2.43	17.00
			0.00			1/2" Ice	8.02	2.91	59.50
			0.00						
Antel BXA-70063-6CF (Verizon)	B	From Leg	3.00	0.0000	136.00	No Ice	7.57	2.43	17.00
			0.00			1/2" Ice	8.02	2.91	59.50
			0.00						
Antel BXA-70063-6CF (Verizon)	C	From Leg	3.00	0.0000	136.00	No Ice	7.57	2.43	17.00
			0.00			1/2" Ice	8.02	2.91	59.50
			0.00						
(2) Powerwave 7770.00 (AT&T)	A	From Leg	3.00	0.0000	187.00	No Ice	5.88	2.93	35.00
			0.00			1/2" Ice	6.25	3.29	67.60
			1.00						
(2) Powerwave 7770.00 (AT&T)	B	From Leg	3.00	0.0000	187.00	No Ice	5.88	2.93	35.00
			0.00			1/2" Ice	6.25	3.29	67.60

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A _A Front	C _A A _A Side	Weight					
			Horz	Lateral						Vert				
			ft	ft	°	ft	ft ²	ft ²	lb					
(2) Powerwave 7770.00 (AT&T)	C	From Leg	1.00		0.0000	187.00	No Ice	5.88	2.93	35.00				
			3.00								1/2" Ice	6.25	3.29	67.60
			0.00											
(2) Powerwave LGP17201 (AT&T)	A	From Leg	1.00		0.0000	187.00	No Ice	1.95	0.50	31.00				
			3.00								1/2" Ice	2.11	0.60	41.90
			0.00											
(2) Powerwave LGP17201 (AT&T)	B	From Leg	1.00		0.0000	187.00	No Ice	1.95	0.50	31.00				
			3.00								1/2" Ice	2.11	0.60	41.90
			0.00											
(2) Powerwave LGP17201 (AT&T)	C	From Leg	1.00		0.0000	187.00	No Ice	1.95	0.50	31.00				
			3.00								1/2" Ice	2.11	0.60	41.90
			0.00											
Antel BXA-171085-8BF (Verizon)	A	From Leg	1.00		0.0000	136.00	No Ice	2.94	2.16	10.50				
			3.00								1/2" Ice	3.25	2.48	29.30
			0.00											
Antel BXA-171085-8BF (Verizon)	B	From Leg	1.00		0.0000	136.00	No Ice	2.94	2.16	10.50				
			3.00								1/2" Ice	3.25	2.48	29.30
			0.00											
Antel BXA-171085-8BF (Verizon)	C	From Leg	1.00		0.0000	136.00	No Ice	2.94	2.16	10.50				
			3.00								1/2" Ice	3.25	2.48	29.30
			0.00											
(2) RFS FD0R6004/2C-3L (Verizon)	A	From Leg	0.00		0.0000	136.00	No Ice	0.00	0.08	2.60				
			3.00								1/2" Ice	0.00	0.12	4.90
			0.00											
(2) RFS FD0R6004/2C-3L (Verizon)	B	From Leg	0.00		0.0000	136.00	No Ice	0.00	0.08	2.60				
			3.00								1/2" Ice	0.00	0.12	4.90
			0.00											
(2) RFS FD0R6004/2C-3L (Verizon)	A	From Leg	0.00		0.0000	136.00	No Ice	0.00	0.08	2.60				
			3.00								1/2" Ice	0.00	0.12	4.90
			0.00											
Powerwave P65-17-XLH-RR (AT&T)	A	From Leg	1.00		0.0000	187.00	No Ice	11.47	4.00	62.00				
			3.00								1/2" Ice	12.08	4.68	124.10
			0.00											
Powerwave P65-17-XLH-RR (AT&T)	B	From Leg	1.00		0.0000	187.00	No Ice	11.47	4.00	62.00				
			3.00								1/2" Ice	12.08	4.68	124.10
			0.00											
Andrew SBNH-1D6565C (AT&T)	C	From Leg	1.00		0.0000	187.00	No Ice	11.41	7.70	60.90				
			3.00								1/2" Ice	12.03	8.36	126.60
			0.00											
(2) Ericsson RRU11 (AT&T)	A	From Leg	1.00		0.0000	187.00	No Ice	2.99	0.36	50.00				
			3.00								1/2" Ice	3.19	0.48	63.50
			0.00											
(2) Ericsson RRU11 (AT&T)	B	From Leg	1.00		0.0000	187.00	No Ice	2.99	0.36	50.00				
			3.00								1/2" Ice	3.19	0.48	63.50
			0.00											
(2) Ericsson RRU11 (AT&T)	C	From Leg	1.00		0.0000	187.00	No Ice	2.99	0.36	50.00				
			3.00								1/2" Ice	3.19	0.48	63.50
			0.00											
Raycap DC6-48-60-18-8F (AT&T)	A	From Leg	1.00		0.0000	187.00	No Ice	2.57	2.57	31.80				
			3.00								1/2" Ice	2.77	2.77	54.40
			0.00											
RFS APXV9ERR18-C-A20 (Sprint)	A	From Leg	1.00		0.0000	150.40	No Ice	8.02	5.81	62.00				
			3.00								1/2" Ice	8.48	6.27	114.00
			0.00											
Alcatel Lucent 1900 MHz RRH	A	From Leg	1.00		0.0000	150.40	No Ice	2.32	2.24	60.00				
			3.00								1/2" Ice	2.53	2.44	83.10
			0.00											

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A _A Front	C _A A _A Side	Weight
			Horz	Lateral					
			ft	ft	°	ft	ft ²	ft ²	lb
(Sprint)			0.00						
Alcatel Lucent 800 MHz RRH	A	From Leg	3.00		0.0000	150.40	No Ice 1.71	1.32	60.00
			0.00				1/2" Ice 1.88	1.47	77.30
(Sprint)			0.00						
RFS APXV9ERR18-C-A20	B	From Leg	3.00		0.0000	150.40	No Ice 8.02	5.81	62.00
(Sprint)			0.00				1/2" Ice 8.48	6.27	114.00
			0.00						
Alcatel Lucent 1900 MHz RRH	B	From Leg	3.00		0.0000	150.40	No Ice 2.32	2.24	60.00
			0.00				1/2" Ice 2.53	2.44	83.10
(Sprint)			0.00						
Alcatel Lucent 800 MHz RRH	B	From Leg	3.00		0.0000	150.40	No Ice 1.71	1.32	60.00
			0.00				1/2" Ice 1.88	1.47	77.30
(Sprint)			0.00						
RFS APXV9ERR18-C-A20	C	From Leg	3.00		0.0000	150.40	No Ice 8.02	5.81	62.00
(Sprint)			0.00				1/2" Ice 8.48	6.27	114.00
			0.00						
Alcatel Lucent 1900 MHz RRH	C	From Leg	3.00		0.0000	150.40	No Ice 2.32	2.24	60.00
			0.00				1/2" Ice 2.53	2.44	83.10
(Sprint)			0.00						
Alcatel Lucent 800 MHz RRH	C	From Leg	3.00		0.0000	150.40	No Ice 1.71	1.32	60.00
			0.00				1/2" Ice 1.88	1.47	77.30
(Sprint)			0.00						
Sector Frame	A	From Leg	0.00		0.0000	136.00	No Ice 17.50	8.75	465.00
			0.00				1/2" Ice 22.50	11.00	600.00
			0.00						
Sector Frame	B	From Leg	0.00		0.0000	136.00	No Ice 17.50	8.75	465.00
			0.00				1/2" Ice 22.50	11.00	600.00
			0.00						
Sector Frame	C	From Leg	0.00		0.0000	136.00	No Ice 17.50	8.75	465.00
			0.00				1/2" Ice 22.50	11.00	600.00
			0.00						
Sector Frame	A	From Leg	0.00		0.0000	173.00	No Ice 17.50	8.75	465.00
			0.00				1/2" Ice 22.50	11.00	600.00
			0.00						
Sector Frame	B	From Leg	0.00		0.0000	173.00	No Ice 17.50	8.75	465.00
			0.00				1/2" Ice 22.50	11.00	600.00
			0.00						
Sector Frame	C	From Leg	0.00		0.0000	173.00	No Ice 17.50	8.75	465.00
			0.00				1/2" Ice 22.50	11.00	600.00
			0.00						
Sector Frame	A	From Leg	0.00		0.0000	182.00	No Ice 17.50	8.75	465.00
			0.00				1/2" Ice 22.50	11.00	600.00
			0.00						
Sector Frame	B	From Leg	0.00		0.0000	182.00	No Ice 17.50	8.75	465.00
			0.00				1/2" Ice 22.50	11.00	600.00
			0.00						
Sector Frame	C	From Leg	0.00		0.0000	182.00	No Ice 17.50	8.75	465.00
			0.00				1/2" Ice 22.50	11.00	600.00
			0.00						
Sector Frame	A	From Leg	0.00		0.0000	187.00	No Ice 14.40	7.00	251.00
			0.00				1/2" Ice 18.00	9.00	344.00
			0.00						
Sector Frame	B	From Leg	0.00		0.0000	187.00	No Ice 14.40	7.00	251.00
			0.00				1/2" Ice 18.00	9.00	344.00
			0.00						
Sector Frame	C	From Leg	0.00		0.0000	187.00	No Ice 14.40	7.00	251.00
			0.00				1/2" Ice 18.00	9.00	344.00

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	Project	187' G42WPAR GT Bozrah, CT	Date	23:07:16 04/01/15
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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight lb
Sector Frame	A	From Leg	0.00	0.0000	150.40	No Ice	17.50	8.75	465.00
			0.00			1/2" Ice	22.50	11.00	600.00
Sector Frame	B	From Leg	0.00	0.0000	150.40	No Ice	17.50	8.75	465.00
			0.00			1/2" Ice	22.50	11.00	600.00
Sector Frame	C	From Leg	0.00	0.0000	150.40	No Ice	17.50	8.75	465.00
			0.00			1/2" Ice	22.50	11.00	600.00
EMS RR90-17-02DP	A	From Leg	3.00	0.0000	182.00	No Ice	4.36	2.00	14.00
			0.00			1/2" Ice	4.71	2.40	36.50
EMS RR90-17-02DP	B	From Leg	3.00	0.0000	182.00	No Ice	4.36	2.00	14.00
			0.00			1/2" Ice	4.71	2.40	36.50
EMS RR90-17-02DP	C	From Leg	3.00	0.0000	182.00	No Ice	4.36	2.00	14.00
			0.00			1/2" Ice	4.71	2.40	36.50
Commscope LNX-6515DS-VTM	A	From Leg	3.00	0.0000	182.00	No Ice	11.39	4.47	44.00
			0.00			1/2" Ice	12.00	5.13	109.60
Commscope LNX-6515DS-VTM	B	From Leg	3.00	0.0000	182.00	No Ice	11.39	4.47	44.00
			0.00			1/2" Ice	12.00	5.13	109.60
Commscope LNX-6515DS-VTM	C	From Leg	3.00	0.0000	182.00	No Ice	11.39	4.47	44.00
			0.00			1/2" Ice	12.00	5.13	109.60
Ericsson KRY112 71	A	From Leg	3.00	0.0000	182.00	No Ice	0.58	0.23	20.00
			0.00			1/2" Ice	0.68	0.32	25.20
Ericsson KRY112 71	A	From Leg	3.00	0.0000	182.00	No Ice	0.58	0.23	20.00
			0.00			1/2" Ice	0.68	0.32	25.20
Ericsson KRY112 71	A	From Leg	3.00	0.0000	182.00	No Ice	0.58	0.23	20.00
			0.00			1/2" Ice	0.68	0.32	25.20

Tower Pressures - No Ice

$$G_H = 1.118$$

Section Elevation ft	z ft	K _Z	q _z psf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _{AA} In Face ft ²	C _{AA} Out Face ft ²
T1 187.00-180.00	183.50	1.633	30	26.177	A	1.064	7.086	3.354	41.16	0.000	0.000
					B	0.881	10.356		29.85	0.000	0.000
					C	1.223	4.449		59.14	0.000	0.000
T2	170.00	1.597	30	74.792	A	8.853	39.283	9.583	19.91	0.000	0.000

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Section Elevation ft	z ft	K _Z	q _z psf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
180.00-160.00					B	11.720	27.783		24.26	0.000	0.000
					C	16.258	10.208		36.21	0.000	0.000
T3 160.00-140.00	150.00	1.541	29	74.792	A	1.553	40.789	9.583	22.63	0.000	0.000
					B	1.880	33.635		26.98	0.000	0.000
					C	2.853	12.973		60.56	0.000	0.000
T4 140.00-120.00	130.00	1.48	27	74.792	A	0.901	55.957	9.583	16.85	0.000	0.000
					B	1.799	37.198		24.57	0.000	0.000
					C	2.989	12.973		60.04	0.000	0.000
T5 120.00-100.00	110.00	1.411	26	74.792	A	0.687	59.749	9.583	15.86	0.000	0.000
					B	1.718	37.198		24.63	0.000	0.000
					C	2.853	12.973		60.56	0.000	0.000
T6 100.00-80.00	90.00	1.332	25	74.792	A	0.687	59.749	9.583	15.86	0.000	0.000
					B	1.718	37.198		24.63	0.000	0.000
					C	2.853	12.973		60.56	0.000	0.000
T7 80.00-60.00	70.00	1.24	23	74.792	A	0.687	59.749	9.583	15.86	0.000	0.000
					B	1.718	37.198		24.63	0.000	0.000
					C	2.853	12.973		60.56	0.000	0.000
T8 60.00-40.00	50.00	1.126	21	74.792	A	0.687	59.749	9.583	15.86	0.000	0.000
					B	1.718	37.198		24.63	0.000	0.000
					C	2.853	12.973		60.56	0.000	0.000
T9 40.00-20.00	30.00	1	18	74.792	A	0.687	59.749	9.583	15.86	0.000	0.000
					B	1.718	37.198		24.63	0.000	0.000
					C	2.853	12.973		60.56	0.000	0.000
T10 20.00-0.00	10.00	1	18	74.792	A	0.687	59.749	9.583	15.86	0.000	0.000
					B	1.718	37.198		24.63	0.000	0.000
					C	2.853	12.973		60.56	0.000	0.000

Tower Pressure - With Ice

$$G_H = 1.118$$

Section Elevation ft	z ft	K _Z	q _z psf	t _z in	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
T1 187.00-180.00	183.50	1.633	23	0.5000	26.760	A	0.983	11.477	4.521	36.28	0.000	0.000
						B	6.198	11.389		25.71	0.000	0.000
						C	1.223	8.415		46.91	0.000	0.000
T2 180.00-160.00	170.00	1.597	22	0.5000	76.458	A	5.113	59.606	12.917	19.96	0.000	0.000
						B	24.437	31.218		23.21	0.000	0.000
						C	16.258	21.533		34.18	0.000	0.000
T3 160.00-140.00	150.00	1.541	21	0.5000	76.458	A	0.897	60.475	12.917	21.05	0.000	0.000
						B	17.081	38.381		23.29	0.000	0.000
						C	2.853	24.298		47.57	0.000	0.000
T4 140.00-120.00	130.00	1.48	21	0.5000	76.458	A	19.714	61.126	12.917	15.98	0.000	0.000
						B	16.858	43.648		21.35	0.000	0.000
						C	2.989	24.298		47.34	0.000	0.000
T5 120.00-100.00	110.00	1.411	20	0.5000	76.458	A	24.427	61.288	12.917	15.07	0.000	0.000
						B	16.813	43.648		21.36	0.000	0.000
						C	2.853	24.298		47.57	0.000	0.000
T6 100.00-80.00	90.00	1.332	18	0.5000	76.458	A	24.427	61.288	12.917	15.07	0.000	0.000
						B	16.813	43.648		21.36	0.000	0.000
						C	2.853	24.298		47.57	0.000	0.000
T7 80.00-60.00	70.00	1.24	17	0.5000	76.458	A	24.427	61.288	12.917	15.07	0.000	0.000
						B	16.813	43.648		21.36	0.000	0.000
						C	2.853	24.298		47.57	0.000	0.000

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Section Elevation	z	K _Z	q _z	t _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _d A _d In Face	C _d A _d Out Face
ft	ft		psf	in	ft ²	e	ft ²	ft ²	ft ²		ft ²	ft ²
T8 60.00-40.00	50.00	1.126	16	0.5000	76.458	A	24.427	61.288	12.917	15.07	0.000	0.000
						B	16.813	43.648		21.36	0.000	0.000
						C	2.853	24.298		47.57	0.000	0.000
T9 40.00-20.00	30.00	1	14	0.5000	76.458	A	24.427	61.288	12.917	15.07	0.000	0.000
						B	16.813	43.648		21.36	0.000	0.000
						C	2.853	24.298		47.57	0.000	0.000
T10 20.00-0.00	10.00	1	14	0.5000	76.458	A	24.427	61.288	12.917	15.07	0.000	0.000
						B	16.813	43.648		21.36	0.000	0.000
						C	2.853	24.298		47.57	0.000	0.000

Tower Pressure - Service

$$G_H = 1.118$$

Section Elevation	z	K _Z	q _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _d A _d In Face	C _d A _d Out Face
ft	ft		psf	ft ²	e	ft ²	ft ²	ft ²		ft ²	ft ²
T1 187.00-180.00	183.50	1.633	10	26.177	A	1.064	7.086	3.354	41.16	0.000	0.000
					B	0.881	10.356		29.85	0.000	0.000
					C	1.223	4.449		59.14	0.000	0.000
T2 180.00-160.00	170.00	1.597	10	74.792	A	8.853	39.283	9.583	19.91	0.000	0.000
					B	11.720	27.783		24.26	0.000	0.000
					C	16.258	10.208		36.21	0.000	0.000
T3 160.00-140.00	150.00	1.541	10	74.792	A	1.553	40.789	9.583	22.63	0.000	0.000
					B	1.880	33.635		26.98	0.000	0.000
					C	2.853	12.973		60.56	0.000	0.000
T4 140.00-120.00	130.00	1.48	9	74.792	A	0.901	55.957	9.583	16.85	0.000	0.000
					B	1.799	37.198		24.57	0.000	0.000
					C	2.989	12.973		60.04	0.000	0.000
T5 120.00-100.00	110.00	1.411	9	74.792	A	0.687	59.749	9.583	15.86	0.000	0.000
					B	1.718	37.198		24.63	0.000	0.000
					C	2.853	12.973		60.56	0.000	0.000
T6 100.00-80.00	90.00	1.332	9	74.792	A	0.687	59.749	9.583	15.86	0.000	0.000
					B	1.718	37.198		24.63	0.000	0.000
					C	2.853	12.973		60.56	0.000	0.000
T7 80.00-60.00	70.00	1.24	8	74.792	A	0.687	59.749	9.583	15.86	0.000	0.000
					B	1.718	37.198		24.63	0.000	0.000
					C	2.853	12.973		60.56	0.000	0.000
T8 60.00-40.00	50.00	1.126	7	74.792	A	0.687	59.749	9.583	15.86	0.000	0.000
					B	1.718	37.198		24.63	0.000	0.000
					C	2.853	12.973		60.56	0.000	0.000
T9 40.00-20.00	30.00	1	6	74.792	A	0.687	59.749	9.583	15.86	0.000	0.000
					B	1.718	37.198		24.63	0.000	0.000
					C	2.853	12.973		60.56	0.000	0.000
T10 20.00-0.00	10.00	1	6	74.792	A	0.687	59.749	9.583	15.86	0.000	0.000
					B	1.718	37.198		24.63	0.000	0.000
					C	2.853	12.973		60.56	0.000	0.000

Tower Forces - No Ice - Wind Normal To Face

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	Project 187' G42WPAR GT Bozrah, CT	Date 23:07:16 04/01/15
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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T1 187.00-180.00	138.71	234.83	A	0.311	2.266	0.619	1	1	5.453	526.27	75.18	B
			B	0.429	2.009	0.664	1	1	7.757			
			C	0.217	2.541	0.594	1	1	3.865			
T2 180.00-160.00	574.60	1205.82	A	0.644	1.783	0.781	1	1	39.543	2330.12	116.51	A
		TA 242.49	B	0.528	1.866	0.712	1	1	31.509			
			C	0.354	2.163	0.634	1	1	22.728			
T3 160.00-140.00	595.19	658.24	A	0.566	1.829	0.733	1	1	31.470	1834.88	91.74	A
			B	0.475	1.935	0.685	1	1	24.921			
			C	0.212	2.558	0.593	1	1	10.544			
T4 140.00-120.00	813.88	680.49	A	0.76	1.792	0.865	1	1	49.290	2703.03	135.15	A
		TA 242.49	B	0.521	1.874	0.709	1	1	28.159			
			C	0.213	2.552	0.593	1	1	10.684			
T5 120.00-100.00	863.80	658.24	A	0.808	1.822	0.903	1	1	54.642	2905.03	145.25	A
			B	0.52	1.875	0.708	1	1	28.056			
			C	0.212	2.558	0.593	1	1	10.544			
T6 100.00-80.00	863.80	658.24	A	0.808	1.822	0.903	1	1	54.642	2743.16	137.16	A
			B	0.52	1.875	0.708	1	1	28.056			
			C	0.212	2.558	0.593	1	1	10.544			
T7 80.00-60.00	863.80	658.24	A	0.808	1.822	0.903	1	1	54.642	2553.09	127.65	A
			B	0.52	1.875	0.708	1	1	28.056			
			C	0.212	2.558	0.593	1	1	10.544			
T8 60.00-40.00	863.80	658.24	A	0.808	1.822	0.903	1	1	54.642	2319.08	115.95	A
			B	0.52	1.875	0.708	1	1	28.056			
			C	0.212	2.558	0.593	1	1	10.544			
T9 40.00-20.00	863.80	658.24	A	0.808	1.822	0.903	1	1	54.642	2059.48	102.97	A
			B	0.52	1.875	0.708	1	1	28.056			
			C	0.212	2.558	0.593	1	1	10.544			
T10 20.00-0.00	863.80	658.24	A	0.808	1.822	0.903	1	1	54.642	2059.48	102.97	A
			B	0.52	1.875	0.708	1	1	28.056			
			C	0.212	2.558	0.593	1	1	10.544			
Sum Weight:	7305.18	7213.83								22033.62		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T1 187.00-180.00	138.71	234.83	A	0.311	2.266	0.619	0.8	1	5.240	514.32	73.47	B
			B	0.429	2.009	0.664	0.8	1	7.581			
			C	0.217	2.541	0.594	0.8	1	3.620			
T2 180.00-160.00	574.60	1205.82	A	0.644	1.783	0.781	0.8	1	37.773	2225.78	111.29	A
		TA 242.49	B	0.528	1.866	0.712	0.8	1	29.165			
			C	0.354	2.163	0.634	0.8	1	19.477			
T3 160.00-140.00	595.19	658.24	A	0.566	1.829	0.733	0.8	1	31.160	1816.77	90.84	A
			B	0.475	1.935	0.685	0.8	1	24.544			
			C	0.212	2.558	0.593	0.8	1	9.973			
T4 140.00-120.00	813.88	680.49	A	0.76	1.792	0.865	0.8	1	49.110	2693.14	134.66	A
		TA 242.49	B	0.521	1.874	0.709	0.8	1	27.800			
			C	0.213	2.552	0.593	0.8	1	10.087			
T5 120.00-100.00	863.80	658.24	A	0.808	1.822	0.903	0.8	1	54.504	2897.72	144.89	A
			B	0.52	1.875	0.708	0.8	1	27.713			
			C	0.212	2.558	0.593	0.8	1	9.973			
T6 100.00-80.00	863.80	658.24	A	0.808	1.822	0.903	0.8	1	54.504	2736.26	136.81	A
			B	0.52	1.875	0.708	0.8	1	27.713			
			C	0.212	2.558	0.593	0.8	1	9.973			

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T7 80.00-60.00	863.80	658.24	A	0.808	1.822	0.903	0.8	1	54.504	2546.67	127.33	A
			B	0.52	1.875	0.708	0.8	1	27.713			
			C	0.212	2.558	0.593	0.8	1	9.973			
T8 60.00-40.00	863.80	658.24	A	0.808	1.822	0.903	0.8	1	54.504	2313.25	115.66	A
			B	0.52	1.875	0.708	0.8	1	27.713			
			C	0.212	2.558	0.593	0.8	1	9.973			
T9 40.00-20.00	863.80	658.24	A	0.808	1.822	0.903	0.8	1	54.504	2054.30	102.71	A
			B	0.52	1.875	0.708	0.8	1	27.713			
			C	0.212	2.558	0.593	0.8	1	9.973			
T10 20.00-0.00	863.80	658.24	A	0.808	1.822	0.903	0.8	1	54.504	2054.30	102.71	A
			B	0.52	1.875	0.708	0.8	1	27.713			
			C	0.212	2.558	0.593	0.8	1	9.973			
Sum Weight:	7305.18	7213.83								21852.50		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T1 187.00-180.00	138.71	234.83	A	0.311	2.266	0.619	0.85	1	5.293	517.31	73.90	B
			B	0.429	2.009	0.664	0.85	1	7.625			
			C	0.217	2.541	0.594	0.85	1	3.682			
T2 180.00-160.00	574.60	1205.82	A	0.644	1.783	0.781	0.85	1	38.215	2251.87	112.59	A
		TA 242.49	B	0.528	1.866	0.712	0.85	1	29.751			
			C	0.354	2.163	0.634	0.85	1	20.290			
T3 160.00-140.00	595.19	658.24	A	0.566	1.829	0.733	0.85	1	31.237	1821.30	91.06	A
			B	0.475	1.935	0.685	0.85	1	24.638			
			C	0.212	2.558	0.593	0.85	1	10.116			
T4 140.00-120.00	813.88	680.49	A	0.76	1.792	0.865	0.85	1	49.155	2695.61	134.78	A
		TA 242.49	B	0.521	1.874	0.709	0.85	1	27.890			
			C	0.213	2.552	0.593	0.85	1	10.236			
T5 120.00-100.00	863.80	658.24	A	0.808	1.822	0.903	0.85	1	54.539	2899.55	144.98	A
			B	0.52	1.875	0.708	0.85	1	27.798			
			C	0.212	2.558	0.593	0.85	1	10.116			
T6 100.00-80.00	863.80	658.24	A	0.808	1.822	0.903	0.85	1	54.539	2737.98	136.90	A
			B	0.52	1.875	0.708	0.85	1	27.798			
			C	0.212	2.558	0.593	0.85	1	10.116			
T7 80.00-60.00	863.80	658.24	A	0.808	1.822	0.903	0.85	1	54.539	2548.28	127.41	A
			B	0.52	1.875	0.708	0.85	1	27.798			
			C	0.212	2.558	0.593	0.85	1	10.116			
T8 60.00-40.00	863.80	658.24	A	0.808	1.822	0.903	0.85	1	54.539	2314.71	115.74	A
			B	0.52	1.875	0.708	0.85	1	27.798			
			C	0.212	2.558	0.593	0.85	1	10.116			
T9 40.00-20.00	863.80	658.24	A	0.808	1.822	0.903	0.85	1	54.539	2055.59	102.78	A
			B	0.52	1.875	0.708	0.85	1	27.798			
			C	0.212	2.558	0.593	0.85	1	10.116			
T10 20.00-0.00	863.80	658.24	A	0.808	1.822	0.903	0.85	1	54.539	2055.59	102.78	A
			B	0.52	1.875	0.708	0.85	1	27.798			
			C	0.212	2.558	0.593	0.85	1	10.116			
Sum Weight:	7305.18	7213.83								21897.78		

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	Project 187' G42WPAR GT Bozrah, CT	Date 23:07:16 04/01/15
	Client CDT	Designed by FAN

Tower Forces - With Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T1 187.00-180.00	373.58	364.12	A	0.466	1.949	0.681	1	1	8.794	685.07	97.87	B
			B	0.657	1.78	0.79	1	1	15.199			
			C	0.36	2.148	0.636	1	1	6.576			
T2 180.00-160.00	1505.36	1912.59 TA 376.86	A	0.846	1.858	0.935	1	1	60.869	2802.14	140.11	A
			B	0.728	1.78	0.84	1	1	50.667			
			C	0.494	1.908	0.695	1	1	31.214			
T3 160.00-140.00	1565.02	1013.22	A	0.803	1.818	0.899	1	1	55.240	2401.24	120.06	A
			B	0.725	1.78	0.838	1	1	49.257			
			C	0.355	2.16	0.634	1	1	18.265			
T4 140.00-120.00	2229.22	1039.55 TA 376.86	A	1	2.1	1	1	1	80.840	3509.77*	175.49	A
			B	0.791	1.81	0.889	1	1	55.677			
			C	0.357	2.156	0.635	1	1	18.417			
T5 120.00-100.00	2381.50	1013.22	A	1	2.1	1	1	1	85.715	3346.19*	167.31	A
			B	0.791	1.809	0.889	1	1	55.611			
			C	0.355	2.16	0.634	1	1	18.265			
T6 100.00-80.00	2381.50	1013.22	A	1	2.1	1	1	1	85.715	3159.73*	157.99	A
			B	0.791	1.809	0.889	1	1	55.611			
			C	0.355	2.16	0.634	1	1	18.265			
T7 80.00-60.00	2381.50	1013.22	A	1	2.1	1	1	1	85.715	2940.80*	147.04	A
			B	0.791	1.809	0.889	1	1	55.611			
			C	0.355	2.16	0.634	1	1	18.265			
T8 60.00-40.00	2381.50	1013.22	A	1	2.1	1	1	1	85.715	2671.25*	133.56	A
			B	0.791	1.809	0.889	1	1	55.611			
			C	0.355	2.16	0.634	1	1	18.265			
T9 40.00-20.00	2381.50	1013.22	A	1	2.1	1	1	1	85.715	2372.23*	118.61	A
			B	0.791	1.809	0.889	1	1	55.611			
			C	0.355	2.16	0.634	1	1	18.265			
T10 20.00-0.00	2381.50	1013.22	A	1	2.1	1	1	1	85.715	2372.23*	118.61	A
			B	0.791	1.809	0.889	1	1	55.611			
			C	0.355	2.16	0.634	1	1	18.265			
Sum Weight:	19962.20	11162.53								26260.65		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T1 187.00-180.00	373.58	364.12	A	0.466	1.949	0.681	0.8	1	8.598	629.19	89.88	B
			B	0.657	1.78	0.79	0.8	1	13.959			
			C	0.36	2.148	0.636	0.8	1	6.331			
T2 180.00-160.00	1505.36	1912.59 TA 376.86	A	0.846	1.858	0.935	0.8	1	59.847	2755.06	137.75	A
			B	0.728	1.78	0.84	0.8	1	45.779			
			C	0.494	1.908	0.695	0.8	1	27.963			
T3 160.00-140.00	1565.02	1013.22	A	0.803	1.818	0.899	0.8	1	55.061	2393.44	119.67	A
			B	0.725	1.78	0.838	0.8	1	45.841			
			C	0.355	2.16	0.634	0.8	1	17.694			
T4 140.00-120.00	2229.22	1039.55 TA 376.86	A	1	2.1	1	0.8	1	76.897	3509.77*	175.49	A
			B	0.791	1.81	0.889	0.8	1	52.306			
			C	0.357	2.156	0.635	0.8	1	17.819			
T5 120.00-100.00	2381.50	1013.22	A	1	2.1	1	0.8	1	80.830	3346.19*	167.31	A
			B	0.791	1.809	0.889	0.8	1	52.249			

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	Project 187' G42WPAR GT Bozrah, CT	Date 23:07:16 04/01/15
	Client CDT	Designed by FAN

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T6 100.00-80.00	2381.50	1013.22	C	0.355	2.16	0.634	0.8	1	17.694	3159.73*	157.99	A
			A	1	2.1	1	0.8	1	80.830			
			B	0.791	1.809	0.889	0.8	1	52.249			
T7 80.00-60.00	2381.50	1013.22	C	0.355	2.16	0.634	0.8	1	17.694	2940.80*	147.04	A
			A	1	2.1	1	0.8	1	80.830			
			B	0.791	1.809	0.889	0.8	1	52.249			
T8 60.00-40.00	2381.50	1013.22	C	0.355	2.16	0.634	0.8	1	17.694	2671.25*	133.56	A
			A	1	2.1	1	0.8	1	80.830			
			B	0.791	1.809	0.889	0.8	1	52.249			
T9 40.00-20.00	2381.50	1013.22	C	0.355	2.16	0.634	0.8	1	17.694	2372.23*	118.61	A
			A	1	2.1	1	0.8	1	80.830			
			B	0.791	1.809	0.889	0.8	1	52.249			
T10 20.00-0.00	2381.50	1013.22	C	0.355	2.16	0.634	0.8	1	17.694	2372.23*	118.61	A
			A	1	2.1	1	0.8	1	80.830			
			B	0.791	1.809	0.889	0.8	1	52.249			
Sum Weight:	19962.20	11162.53								26149.90		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T1 187.00-180.00	373.58	364.12	A	0.466	1.949	0.681	0.85	1	8.647	643.16	91.88	B
			B	0.657	1.78	0.79	0.85	1	14.269			
			C	0.36	2.148	0.636	0.85	1	6.393			
T2 180.00-160.00	1505.36	1912.59 TA 376.86	A	0.846	1.858	0.935	0.85	1	60.102	2766.83	138.34	A
			B	0.728	1.78	0.84	0.85	1	47.001			
			C	0.494	1.908	0.695	0.85	1	28.776			
T3 160.00-140.00	1565.02	1013.22	A	0.803	1.818	0.899	0.85	1	55.106	2395.39	119.77	A
			B	0.725	1.78	0.838	0.85	1	46.695			
			C	0.355	2.16	0.634	0.85	1	17.837			
T4 140.00-120.00	2229.22	1039.55 TA 376.86	A	1	2.1	1	0.85	1	77.882	3509.77*	175.49	A
			B	0.791	1.81	0.889	0.85	1	53.148			
			C	0.357	2.156	0.635	0.85	1	17.968			
T5 120.00-100.00	2381.50	1013.22	A	1	2.1	1	0.85	1	82.051	3346.19*	167.31	A
			B	0.791	1.809	0.889	0.85	1	53.089			
			C	0.355	2.16	0.634	0.85	1	17.837			
T6 100.00-80.00	2381.50	1013.22	A	1	2.1	1	0.85	1	82.051	3159.73*	157.99	A
			B	0.791	1.809	0.889	0.85	1	53.089			
			C	0.355	2.16	0.634	0.85	1	17.837			
T7 80.00-60.00	2381.50	1013.22	A	1	2.1	1	0.85	1	82.051	2940.80*	147.04	A
			B	0.791	1.809	0.889	0.85	1	53.089			
			C	0.355	2.16	0.634	0.85	1	17.837			
T8 60.00-40.00	2381.50	1013.22	A	1	2.1	1	0.85	1	82.051	2671.25*	133.56	A
			B	0.791	1.809	0.889	0.85	1	53.089			
			C	0.355	2.16	0.634	0.85	1	17.837			
T9 40.00-20.00	2381.50	1013.22	A	1	2.1	1	0.85	1	82.051	2372.23*	118.61	A
			B	0.791	1.809	0.889	0.85	1	53.089			
			C	0.355	2.16	0.634	0.85	1	17.837			
T10 20.00-0.00	2381.50	1013.22	A	1	2.1	1	0.85	1	82.051	2372.23*	118.61	A
			B	0.791	1.809	0.889	0.85	1	53.089			
			C	0.355	2.16	0.634	0.85	1	17.837			

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	Project 187' G42WPAR GT Bozrah, CT	Date 23:07:16 04/01/15
	Client CDT	Designed by FAN

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
Sum Weight:	19962.20	11162.53			*2A _g limit					26177.59		

Tower Forces - Service - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
187.00-180.00	138.71	234.83	A	0.311	2.266	0.619	1	1	5.453	182.10	26.01	B
			B	0.429	2.009	0.664	1	1	7.757			
			C	0.217	2.541	0.594	1	1	3.865			
180.00-160.00	574.60	1205.82	A	0.644	1.783	0.781	1	1	39.543	806.27	40.31	A
			B	0.528	1.866	0.712	1	1	31.509			
			C	0.354	2.163	0.634	1	1	22.728			
160.00-140.00	595.19	658.24	A	0.566	1.829	0.733	1	1	31.470	634.91	31.75	A
			B	0.475	1.935	0.685	1	1	24.921			
			C	0.212	2.558	0.593	1	1	10.544			
140.00-120.00	813.88	680.49	A	0.76	1.792	0.865	1	1	49.290	935.30	46.77	A
			B	0.521	1.874	0.709	1	1	28.159			
			C	0.213	2.552	0.593	1	1	10.684			
120.00-100.00	863.80	658.24	A	0.808	1.822	0.903	1	1	54.642	1005.20	50.26	A
			B	0.52	1.875	0.708	1	1	28.056			
			C	0.212	2.558	0.593	1	1	10.544			
100.00-80.00	863.80	658.24	A	0.808	1.822	0.903	1	1	54.642	949.19	47.46	A
			B	0.52	1.875	0.708	1	1	28.056			
			C	0.212	2.558	0.593	1	1	10.544			
80.00-60.00	863.80	658.24	A	0.808	1.822	0.903	1	1	54.642	883.42	44.17	A
			B	0.52	1.875	0.708	1	1	28.056			
			C	0.212	2.558	0.593	1	1	10.544			
60.00-40.00	863.80	658.24	A	0.808	1.822	0.903	1	1	54.642	802.45	40.12	A
			B	0.52	1.875	0.708	1	1	28.056			
			C	0.212	2.558	0.593	1	1	10.544			
40.00-20.00	863.80	658.24	A	0.808	1.822	0.903	1	1	54.642	712.62	35.63	A
			B	0.52	1.875	0.708	1	1	28.056			
			C	0.212	2.558	0.593	1	1	10.544			
20.00-0.00	863.80	658.24	A	0.808	1.822	0.903	1	1	54.642	712.62	35.63	A
			B	0.52	1.875	0.708	1	1	28.056			
			C	0.212	2.558	0.593	1	1	10.544			
Sum Weight:	7305.18	7213.83								7624.09		

Tower Forces - Service - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
187.00-180.00	138.71	234.83	A	0.311	2.266	0.619	0.8	1	5.240	177.96	25.42	B
			B	0.429	2.009	0.664	0.8	1	7.581			
			C	0.217	2.541	0.594	0.8	1	3.620			
T2	574.60	1205.82	A	0.644	1.783	0.781	0.8	1	37.773	770.17	38.51	A

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	Project 187' G42WPAR GT Bozrah, CT	Date 23:07:16 04/01/15
	Client CDT	Designed by FAN

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face	
ft	lb	lb							ft ²	lb	plf		
180.00-160.00		TA 242.49	B	0.528	1.866	0.712	0.8	1	29.165				
			C	0.354	2.163	0.634	0.8	1	19.477				
T3	595.19	658.24	A	0.566	1.829	0.733	0.8	1	31.160	628.64	31.43	A	
160.00-140.00			B	0.475	1.935	0.685	0.8	1	24.544				
			C	0.212	2.558	0.593	0.8	1	9.973				
T4	813.88	680.49	A	0.76	1.792	0.865	0.8	1	49.110	931.88	46.59	A	
140.00-120.00		TA 242.49	B	0.521	1.874	0.709	0.8	1	27.800				
			C	0.213	2.552	0.593	0.8	1	10.087				
T5	863.80	658.24	A	0.808	1.822	0.903	0.8	1	54.504	1002.67	50.13	A	
120.00-100.00			B	0.52	1.875	0.708	0.8	1	27.713				
			C	0.212	2.558	0.593	0.8	1	9.973				
T6	863.80	658.24	A	0.808	1.822	0.903	0.8	1	54.504	946.80	47.34	A	
100.00-80.00			B	0.52	1.875	0.708	0.8	1	27.713				
			C	0.212	2.558	0.593	0.8	1	9.973				
T7	863.80	658.24	A	0.808	1.822	0.903	0.8	1	54.504	881.20	44.06	A	
80.00-60.00			B	0.52	1.875	0.708	0.8	1	27.713				
			C	0.212	2.558	0.593	0.8	1	9.973				
T8	863.80	658.24	A	0.808	1.822	0.903	0.8	1	54.504	800.43	40.02	A	
60.00-40.00			B	0.52	1.875	0.708	0.8	1	27.713				
			C	0.212	2.558	0.593	0.8	1	9.973				
T9	863.80	658.24	A	0.808	1.822	0.903	0.8	1	54.504	710.83	35.54	A	
40.00-20.00			B	0.52	1.875	0.708	0.8	1	27.713				
			C	0.212	2.558	0.593	0.8	1	9.973				
T10	863.80	658.24	A	0.808	1.822	0.903	0.8	1	54.504	710.83	35.54	A	
20.00-0.00			B	0.52	1.875	0.708	0.8	1	27.713				
			C	0.212	2.558	0.593	0.8	1	9.973				
Sum Weight:	7305.18	7213.83								7561.42			

Tower Forces - Service - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T1	138.71	234.83	A	0.311	2.266	0.619	0.85	1	5.293	179.00	25.57	B
187.00-180.00			B	0.429	2.009	0.664	0.85	1	7.625			
			C	0.217	2.541	0.594	0.85	1	3.682			
T2	574.60	1205.82	A	0.644	1.783	0.781	0.85	1	38.215	779.19	38.96	A
180.00-160.00		TA 242.49	B	0.528	1.866	0.712	0.85	1	29.751			
			C	0.354	2.163	0.634	0.85	1	20.290			
T3	595.19	658.24	A	0.566	1.829	0.733	0.85	1	31.237	630.21	31.51	A
160.00-140.00			B	0.475	1.935	0.685	0.85	1	24.638			
			C	0.212	2.558	0.593	0.85	1	10.116			
T4	813.88	680.49	A	0.76	1.792	0.865	0.85	1	49.155	932.74	46.64	A
140.00-120.00		TA 242.49	B	0.521	1.874	0.709	0.85	1	27.890			
			C	0.213	2.552	0.593	0.85	1	10.236			
T5	863.80	658.24	A	0.808	1.822	0.903	0.85	1	54.539	1003.30	50.17	A
120.00-100.00			B	0.52	1.875	0.708	0.85	1	27.798			
			C	0.212	2.558	0.593	0.85	1	10.116			
T6	863.80	658.24	A	0.808	1.822	0.903	0.85	1	54.539	947.40	47.37	A
100.00-80.00			B	0.52	1.875	0.708	0.85	1	27.798			
			C	0.212	2.558	0.593	0.85	1	10.116			
T7	863.80	658.24	A	0.808	1.822	0.903	0.85	1	54.539	881.76	44.09	A
80.00-60.00			B	0.52	1.875	0.708	0.85	1	27.798			
			C	0.212	2.558	0.593	0.85	1	10.116			
T8	863.80	658.24	A	0.808	1.822	0.903	0.85	1	54.539	800.94	40.05	A

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	Project 187' G42WPAR GT Bozrah, CT	Date 23:07:16 04/01/15
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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
60.00-40.00			B	0.52	1.875	0.708	0.85	1	27.798			
			C	0.212	2.558	0.593	0.85	1	10.116			
T9	863.80	658.24	A	0.808	1.822	0.903	0.85	1	54.539	711.28	35.56	A
40.00-20.00			B	0.52	1.875	0.708	0.85	1	27.798			
			C	0.212	2.558	0.593	0.85	1	10.116			
T10	863.80	658.24	A	0.808	1.822	0.903	0.85	1	54.539	711.28	35.56	A
20.00-0.00			B	0.52	1.875	0.708	0.85	1	27.798			
			C	0.212	2.558	0.593	0.85	1	10.116			
Sum Weight:	7305.18	7213.83								7577.09		

Discrete Appurtenance Pressures - No Ice G_H = 1.118

Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	z ft	K _z	q _z psf	C _{AAC} Front ft ²	C _{AAC} Side ft ²
Torque Arm Face C	180.0000	0.00	0.00	2.53	161.37	1.574	29	4.25	6.25
Torque Arm Face B	60.0000	0.00	2.19	-1.26	161.37	1.574	29	4.25	6.25
Torque Arm Face A	300.0000	0.00	-2.19	-1.26	161.37	1.574	29	4.25	6.25
Torque Arm Face C	180.0000	0.00	0.00	2.53	121.37	1.451	27	4.25	6.25
Torque Arm Face B	60.0000	0.00	2.19	-1.26	121.37	1.451	27	4.25	6.25
Torque Arm Face A	300.0000	0.00	-2.19	-1.26	121.37	1.451	27	4.25	6.25
Antel LPA-80080-4CF	0.0000	24.00	0.00	-5.02	136.00	1.499	28	5.24	10.80
Antel LPA-80080-4CF	120.0000	24.00	4.35	2.51	136.00	1.499	28	5.24	10.80
Antel LPA-80080-4CF	240.0000	24.00	-4.35	2.51	136.00	1.499	28	5.24	10.80
Antel BXA-70063-6CF	0.0000	17.00	0.00	-5.02	136.00	1.499	28	7.57	2.43
Antel BXA-70063-6CF	120.0000	17.00	4.35	2.51	136.00	1.499	28	7.57	2.43
Antel BXA-70063-6CF	240.0000	17.00	-4.35	2.51	136.00	1.499	28	7.57	2.43
Powerwave 7770.00	0.0000	70.00	0.00	-5.02	188.00	1.644	30	11.76	5.86
Powerwave 7770.00	120.0000	70.00	4.35	2.51	188.00	1.644	30	11.76	5.86
Powerwave 7770.00	240.0000	70.00	-4.35	2.51	188.00	1.644	30	11.76	5.86
Powerwave LGP17201	0.0000	62.00	0.00	-5.02	188.00	1.644	30	3.90	1.00
Powerwave LGP17201	120.0000	62.00	4.35	2.51	188.00	1.644	30	3.90	1.00
Powerwave LGP17201	240.0000	62.00	-4.35	2.51	188.00	1.644	30	3.90	1.00
Antel BXA-171085-8BF	0.0000	10.50	0.00	-5.02	136.00	1.499	28	2.94	2.16
Antel BXA-171085-8BF	120.0000	10.50	4.35	2.51	136.00	1.499	28	2.94	2.16
Antel BXA-171085-8BF	240.0000	10.50	-4.35	2.51	136.00	1.499	28	2.94	2.16
RFS FD0R6004/2C-3L	0.0000	5.20	0.00	-5.02	136.00	1.499	28	0.00	0.16
RFS FD0R6004/2C-3L	120.0000	5.20	4.35	2.51	136.00	1.499	28	0.00	0.16
RFS FD0R6004/2C-3L	0.0000	5.20	0.00	-5.02	136.00	1.499	28	0.00	0.16
Powerwave	0.0000	62.00	0.00	-5.02	188.00	1.644	30	11.47	4.00
P65-17-XLH-RR									
Powerwave	120.0000	62.00	4.35	2.51	188.00	1.644	30	11.47	4.00
P65-17-XLH-RR									
Andrew	240.0000	60.90	-4.35	2.51	188.00	1.644	30	11.41	7.70
SBNH-1D6565C									
Ericsson RRU11	0.0000	100.00	0.00	-5.02	188.00	1.644	30	5.98	0.72
Ericsson RRU11	120.0000	100.00	4.35	2.51	188.00	1.644	30	5.98	0.72
Ericsson RRU11	240.0000	100.00	-4.35	2.51	188.00	1.644	30	5.98	0.72
Raycap	0.0000	31.80	0.00	-5.02	188.00	1.644	30	2.57	2.57
DC6-48-60-18-8F									
RFS	0.0000	62.00	0.00	-5.02	150.40	1.542	29	8.02	5.81
APXV9ERR18-C-A20									
Alcatel Lucent 1900 MHz RRH	0.0000	60.00	0.00	-5.02	150.40	1.542	29	2.32	2.24
Alcatel Lucent 800 MHz RRH	0.0000	60.00	0.00	-5.02	150.40	1.542	29	1.71	1.32

RISATower	Job	115-35035	Page	28 of 48	
	Project	187' G42WPAR GT Bozrah, CT		Date	23:07:16 04/01/15
	Client	CDT		Designed by	FAN
Phone: FAX:					

Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	z ft	K _z	q _z psf	C _{AAC} Front ft ²	C _{AAC} Side ft ²
RFS	120.0000	62.00	4.35	2.51	150.40	1.542	29	8.02	5.81
APXV9ERR18-C-A20									
Alcatel Lucent 1900 MHz RRH	120.0000	60.00	4.35	2.51	150.40	1.542	29	2.32	2.24
Alcatel Lucent 800 MHz RRH	120.0000	60.00	4.35	2.51	150.40	1.542	29	1.71	1.32
RFS	240.0000	62.00	-4.35	2.51	150.40	1.542	29	8.02	5.81
APXV9ERR18-C-A20									
Alcatel Lucent 1900 MHz RRH	240.0000	60.00	-4.35	2.51	150.40	1.542	29	2.32	2.24
Alcatel Lucent 800 MHz RRH	240.0000	60.00	-4.35	2.51	150.40	1.542	29	1.71	1.32
Sector Frame	0.0000	465.00	0.00	-2.02	136.00	1.499	28	17.50	8.75
Sector Frame	120.0000	465.00	1.75	1.01	136.00	1.499	28	17.50	8.75
Sector Frame	240.0000	465.00	-1.75	1.01	136.00	1.499	28	17.50	8.75
Sector Frame	0.0000	465.00	0.00	-2.02	173.00	1.605	30	17.50	8.75
Sector Frame	120.0000	465.00	1.75	1.01	173.00	1.605	30	17.50	8.75
Sector Frame	240.0000	465.00	-1.75	1.01	173.00	1.605	30	17.50	8.75
Sector Frame	0.0000	465.00	0.00	-2.02	182.00	1.629	30	17.50	8.75
Sector Frame	120.0000	465.00	1.75	1.01	182.00	1.629	30	17.50	8.75
Sector Frame	240.0000	465.00	-1.75	1.01	182.00	1.629	30	17.50	8.75
Sector Frame	0.0000	251.00	0.00	-2.02	187.00	1.641	30	14.40	7.00
Sector Frame	120.0000	251.00	1.75	1.01	187.00	1.641	30	14.40	7.00
Sector Frame	240.0000	251.00	-1.75	1.01	187.00	1.641	30	14.40	7.00
Sector Frame	0.0000	465.00	0.00	-2.02	150.40	1.542	29	17.50	8.75
Sector Frame	120.0000	465.00	1.75	1.01	150.40	1.542	29	17.50	8.75
Sector Frame	240.0000	465.00	-1.75	1.01	150.40	1.542	29	17.50	8.75
EMS RR90-17-02DP	0.0000	14.00	0.00	-5.02	182.00	1.629	30	4.36	2.00
EMS RR90-17-02DP	120.0000	14.00	4.35	2.51	182.00	1.629	30	4.36	2.00
EMS RR90-17-02DP	240.0000	14.00	-4.35	2.51	182.00	1.629	30	4.36	2.00
Commscope	0.0000	44.00	0.00	-5.02	182.00	1.629	30	11.39	4.47
LNX-6515DS-VTM									
Commscope	120.0000	44.00	4.35	2.51	182.00	1.629	30	11.39	4.47
LNX-6515DS-VTM									
Commscope	240.0000	44.00	-4.35	2.51	182.00	1.629	30	11.39	4.47
LNX-6515DS-VTM									
Ericsson KRY112 71	0.0000	20.00	0.00	-5.02	182.00	1.629	30	0.58	0.23
Ericsson KRY112 71	0.0000	20.00	0.00	-5.02	182.00	1.629	30	0.58	0.23
Ericsson KRY112 71	0.0000	20.00	0.00	-5.02	182.00	1.629	30	0.58	0.23
Sum Weight:		8195.80							

Discrete Appurtenance Pressures - With Ice G_H = 1.118

Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	z ft	K _z	q _z psf	C _{AAC} Front ft ²	C _{AAC} Side ft ²	t _z in
Torque Arm Face C	180.0000	0.00	0.00	2.53	161.37	1.574	22	4.99	7.22	0.5000
Torque Arm Face B	60.0000	0.00	2.19	-1.26	161.37	1.574	22	4.99	7.22	0.5000
Torque Arm Face A	300.0000	0.00	-2.19	-1.26	161.37	1.574	22	4.99	7.22	0.5000
Torque Arm Face C	180.0000	0.00	0.00	2.53	121.37	1.451	20	4.99	7.22	0.5000
Torque Arm Face B	60.0000	0.00	2.19	-1.26	121.37	1.451	20	4.99	7.22	0.5000
Torque Arm Face A	300.0000	0.00	-2.19	-1.26	121.37	1.451	20	4.99	7.22	0.5000
Antel LPA-80080-4CF	0.0000	90.20	0.00	-5.02	136.00	1.499	21	5.84	11.42	0.5000
Antel LPA-80080-4CF	120.0000	90.20	4.35	2.51	136.00	1.499	21	5.84	11.42	0.5000
Antel LPA-80080-4CF	240.0000	90.20	-4.35	2.51	136.00	1.499	21	5.84	11.42	0.5000
Antel BXA-70063-6CF	0.0000	59.50	0.00	-5.02	136.00	1.499	21	8.02	2.91	0.5000
Antel BXA-70063-6CF	120.0000	59.50	4.35	2.51	136.00	1.499	21	8.02	2.91	0.5000

<h1 style="margin: 0;">RISATower</h1> <p style="margin: 5px 0 0 0;">Phone: FAX:</p>	Job 115-35035	Page 29 of 48
	Project 187' G42WPAR GT Bozrah, CT	Date 23:07:16 04/01/15
	Client CDT	Designed by FAN

Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _y ft	z ft	K _x	q _x psf	C _A Ac Front ft ²	C _A Ac Side ft ²	t _z in
Antel BXA-70063-6CF	240.0000	59.50	-4.35	2.51	136.00	1.499	21	8.02	2.91	0.5000
Powerwave 7770.00	0.0000	135.20	0.00	-5.02	188.00	1.644	23	12.50	6.58	0.5000
Powerwave 7770.00	120.0000	135.20	4.35	2.51	188.00	1.644	23	12.50	6.58	0.5000
Powerwave 7770.00	240.0000	135.20	-4.35	2.51	188.00	1.644	23	12.50	6.58	0.5000
Powerwave LGP17201	0.0000	83.80	0.00	-5.02	188.00	1.644	23	4.22	1.20	0.5000
Powerwave LGP17201	120.0000	83.80	4.35	2.51	188.00	1.644	23	4.22	1.20	0.5000
Powerwave LGP17201	240.0000	83.80	-4.35	2.51	188.00	1.644	23	4.22	1.20	0.5000
Antel BXA-171085-8BF	0.0000	29.30	0.00	-5.02	136.00	1.499	21	3.25	2.48	0.5000
Antel BXA-171085-8BF	120.0000	29.30	4.35	2.51	136.00	1.499	21	3.25	2.48	0.5000
Antel BXA-171085-8BF	240.0000	29.30	-4.35	2.51	136.00	1.499	21	3.25	2.48	0.5000
RFS FD0R6004/2C-3L	0.0000	9.80	0.00	-5.02	136.00	1.499	21	0.00	0.24	0.5000
RFS FD0R6004/2C-3L	120.0000	9.80	4.35	2.51	136.00	1.499	21	0.00	0.24	0.5000
RFS FD0R6004/2C-3L	0.0000	9.80	0.00	-5.02	136.00	1.499	21	0.00	0.24	0.5000
Powerwave	0.0000	124.10	0.00	-5.02	188.00	1.644	23	12.08	4.68	0.5000
P65-17-XLH-RR										
Powerwave	120.0000	124.10	4.35	2.51	188.00	1.644	23	12.08	4.68	0.5000
P65-17-XLH-RR										
Andrew	240.0000	126.60	-4.35	2.51	188.00	1.644	23	12.03	8.36	0.5000
SBNH-1D6565C										
Ericsson RRU11	0.0000	127.00	0.00	-5.02	188.00	1.644	23	6.38	0.96	0.5000
Ericsson RRU11	120.0000	127.00	4.35	2.51	188.00	1.644	23	6.38	0.96	0.5000
Ericsson RRU11	240.0000	127.00	-4.35	2.51	188.00	1.644	23	6.38	0.96	0.5000
Raycap	0.0000	54.40	0.00	-5.02	188.00	1.644	23	2.77	2.77	0.5000
DC6-48-60-18-8F										
RFS	0.0000	114.00	0.00	-5.02	150.40	1.542	21	8.48	6.27	0.5000
APXV9ERR18-C-A20										
Alcatel Lucent 1900	0.0000	83.10	0.00	-5.02	150.40	1.542	21	2.53	2.44	0.5000
MHz RRH										
Alcatel Lucent 800 MHz	0.0000	77.30	0.00	-5.02	150.40	1.542	21	1.88	1.47	0.5000
RRH										
RFS	120.0000	114.00	4.35	2.51	150.40	1.542	21	8.48	6.27	0.5000
APXV9ERR18-C-A20										
Alcatel Lucent 1900	120.0000	83.10	4.35	2.51	150.40	1.542	21	2.53	2.44	0.5000
MHz RRH										
Alcatel Lucent 800 MHz	120.0000	77.30	4.35	2.51	150.40	1.542	21	1.88	1.47	0.5000
RRH										
RFS	240.0000	114.00	-4.35	2.51	150.40	1.542	21	8.48	6.27	0.5000
APXV9ERR18-C-A20										
Alcatel Lucent 1900	240.0000	83.10	-4.35	2.51	150.40	1.542	21	2.53	2.44	0.5000
MHz RRH										
Alcatel Lucent 800 MHz	240.0000	77.30	-4.35	2.51	150.40	1.542	21	1.88	1.47	0.5000
RRH										
Sector Frame	0.0000	600.00	0.00	-2.02	136.00	1.499	21	22.50	11.00	0.5000
Sector Frame	120.0000	600.00	1.75	1.01	136.00	1.499	21	22.50	11.00	0.5000
Sector Frame	240.0000	600.00	-1.75	1.01	136.00	1.499	21	22.50	11.00	0.5000
Sector Frame	0.0000	600.00	0.00	-2.02	173.00	1.605	22	22.50	11.00	0.5000
Sector Frame	120.0000	600.00	1.75	1.01	173.00	1.605	22	22.50	11.00	0.5000
Sector Frame	240.0000	600.00	-1.75	1.01	173.00	1.605	22	22.50	11.00	0.5000
Sector Frame	0.0000	600.00	0.00	-2.02	182.00	1.629	23	22.50	11.00	0.5000
Sector Frame	120.0000	600.00	1.75	1.01	182.00	1.629	23	22.50	11.00	0.5000
Sector Frame	240.0000	600.00	-1.75	1.01	182.00	1.629	23	22.50	11.00	0.5000
Sector Frame	0.0000	344.00	0.00	-2.02	187.00	1.641	23	18.00	9.00	0.5000
Sector Frame	120.0000	344.00	1.75	1.01	187.00	1.641	23	18.00	9.00	0.5000
Sector Frame	240.0000	344.00	-1.75	1.01	187.00	1.641	23	18.00	9.00	0.5000
Sector Frame	0.0000	600.00	0.00	-2.02	150.40	1.542	21	22.50	11.00	0.5000
Sector Frame	120.0000	600.00	1.75	1.01	150.40	1.542	21	22.50	11.00	0.5000
Sector Frame	240.0000	600.00	-1.75	1.01	150.40	1.542	21	22.50	11.00	0.5000
EMS RR90-17-02DP	0.0000	36.50	0.00	-5.02	182.00	1.629	23	4.71	2.40	0.5000
EMS RR90-17-02DP	120.0000	36.50	4.35	2.51	182.00	1.629	23	4.71	2.40	0.5000
EMS RR90-17-02DP	240.0000	36.50	-4.35	2.51	182.00	1.629	23	4.71	2.40	0.5000
Commscope	0.0000	109.60	0.00	-5.02	182.00	1.629	23	12.00	5.13	0.5000

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	Project 187' G42WPAR GT Bozrah, CT	Date 23:07:16 04/01/15
	Client CDT	Designed by FAN

Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	z ft	K _z	q _z psf	C _A Ac Front ft ²	C _A Ac Side ft ²	t _z in
LNX-6515DS-VTM Commscope	120.0000	109.60	4.35	2.51	182.00	1.629	23	12.00	5.13	0.5000
LNX-6515DS-VTM Commscope	240.0000	109.60	-4.35	2.51	182.00	1.629	23	12.00	5.13	0.5000
LNX-6515DS-VTM Ericsson KRY112 71	0.0000	25.20	0.00	-5.02	182.00	1.629	23	0.68	0.32	0.5000
Ericsson KRY112 71	0.0000	25.20	0.00	-5.02	182.00	1.629	23	0.68	0.32	0.5000
Ericsson KRY112 71	0.0000	25.20	0.00	-5.02	182.00	1.629	23	0.68	0.32	0.5000
Sum Weight:		11602.70								

Discrete Appurtenance Pressures - Service G_H = 1.118

Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _z ft	z ft	K _z	q _z psf	C _A Ac Front ft ²	C _A Ac Side ft ²
Torque Arm Face C	180.0000	0.00	0.00	2.53	161.37	1.574	10	4.25	6.25
Torque Arm Face B	60.0000	0.00	2.19	-1.26	161.37	1.574	10	4.25	6.25
Torque Arm Face A	300.0000	0.00	-2.19	-1.26	161.37	1.574	10	4.25	6.25
Torque Arm Face C	180.0000	0.00	0.00	2.53	121.37	1.451	9	4.25	6.25
Torque Arm Face B	60.0000	0.00	2.19	-1.26	121.37	1.451	9	4.25	6.25
Torque Arm Face A	300.0000	0.00	-2.19	-1.26	121.37	1.451	9	4.25	6.25
Antel LPA-80080-4CF	0.0000	24.00	0.00	-5.02	136.00	1.499	10	5.24	10.80
Antel LPA-80080-4CF	120.0000	24.00	4.35	2.51	136.00	1.499	10	5.24	10.80
Antel LPA-80080-4CF	240.0000	24.00	-4.35	2.51	136.00	1.499	10	5.24	10.80
Antel BXA-70063-6CF	0.0000	17.00	0.00	-5.02	136.00	1.499	10	7.57	2.43
Antel BXA-70063-6CF	120.0000	17.00	4.35	2.51	136.00	1.499	10	7.57	2.43
Antel BXA-70063-6CF	240.0000	17.00	-4.35	2.51	136.00	1.499	10	7.57	2.43
Powerwave 7770.00	0.0000	70.00	0.00	-5.02	188.00	1.644	11	11.76	5.86
Powerwave 7770.00	120.0000	70.00	4.35	2.51	188.00	1.644	11	11.76	5.86
Powerwave 7770.00	240.0000	70.00	-4.35	2.51	188.00	1.644	11	11.76	5.86
Powerwave LGP17201	0.0000	62.00	0.00	-5.02	188.00	1.644	11	3.90	1.00
Powerwave LGP17201	120.0000	62.00	4.35	2.51	188.00	1.644	11	3.90	1.00
Powerwave LGP17201	240.0000	62.00	-4.35	2.51	188.00	1.644	11	3.90	1.00
Antel BXA-171085-8BF	0.0000	10.50	0.00	-5.02	136.00	1.499	10	2.94	2.16
Antel BXA-171085-8BF	120.0000	10.50	4.35	2.51	136.00	1.499	10	2.94	2.16
Antel BXA-171085-8BF	240.0000	10.50	-4.35	2.51	136.00	1.499	10	2.94	2.16
RFS FD0R6004/2C-3L	0.0000	5.20	0.00	-5.02	136.00	1.499	10	0.00	0.16
RFS FD0R6004/2C-3L	120.0000	5.20	4.35	2.51	136.00	1.499	10	0.00	0.16
RFS FD0R6004/2C-3L	0.0000	5.20	0.00	-5.02	136.00	1.499	10	0.00	0.16
Powerwave	0.0000	62.00	0.00	-5.02	188.00	1.644	11	11.47	4.00
P65-17-XLH-RR									
Powerwave	120.0000	62.00	4.35	2.51	188.00	1.644	11	11.47	4.00
P65-17-XLH-RR									
Andrew	240.0000	60.90	-4.35	2.51	188.00	1.644	11	11.41	7.70
SBNH-1D6565C									
Ericsson RRUs11	0.0000	100.00	0.00	-5.02	188.00	1.644	11	5.98	0.72
Ericsson RRUs11	120.0000	100.00	4.35	2.51	188.00	1.644	11	5.98	0.72
Ericsson RRUs11	240.0000	100.00	-4.35	2.51	188.00	1.644	11	5.98	0.72
Raycap	0.0000	31.80	0.00	-5.02	188.00	1.644	11	2.57	2.57
DC6-48-60-18-8F									
RFS	0.0000	62.00	0.00	-5.02	150.40	1.542	10	8.02	5.81
APXV9ERR18-C-A20									
Alcatel Lucent 1900	0.0000	60.00	0.00	-5.02	150.40	1.542	10	2.32	2.24
MHz RRH									
Alcatel Lucent 800 MHz	0.0000	60.00	0.00	-5.02	150.40	1.542	10	1.71	1.32
RRH									
RFS	120.0000	62.00	4.35	2.51	150.40	1.542	10	8.02	5.81

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Description	Aiming Azimuth °	Weight lb	Offset _x ft	Offset _y ft	z ft	K _x	q _x psf	C _d A _c Front ft ²	C _d A _c Side ft ²
APXV9ERR18-C-A20									
Alcatel Lucent 1900 MHz RRH	120.0000	60.00	4.35	2.51	150.40	1.542	10	2.32	2.24
Alcatel Lucent 800 MHz RRH	120.0000	60.00	4.35	2.51	150.40	1.542	10	1.71	1.32
RFS	240.0000	62.00	-4.35	2.51	150.40	1.542	10	8.02	5.81
APXV9ERR18-C-A20									
Alcatel Lucent 1900 MHz RRH	240.0000	60.00	-4.35	2.51	150.40	1.542	10	2.32	2.24
Alcatel Lucent 800 MHz RRH	240.0000	60.00	-4.35	2.51	150.40	1.542	10	1.71	1.32
Sector Frame	0.0000	465.00	0.00	-2.02	136.00	1.499	10	17.50	8.75
Sector Frame	120.0000	465.00	1.75	1.01	136.00	1.499	10	17.50	8.75
Sector Frame	240.0000	465.00	-1.75	1.01	136.00	1.499	10	17.50	8.75
Sector Frame	0.0000	465.00	0.00	-2.02	173.00	1.605	10	17.50	8.75
Sector Frame	120.0000	465.00	1.75	1.01	173.00	1.605	10	17.50	8.75
Sector Frame	240.0000	465.00	-1.75	1.01	173.00	1.605	10	17.50	8.75
Sector Frame	0.0000	465.00	0.00	-2.02	182.00	1.629	10	17.50	8.75
Sector Frame	120.0000	465.00	1.75	1.01	182.00	1.629	10	17.50	8.75
Sector Frame	240.0000	465.00	-1.75	1.01	182.00	1.629	10	17.50	8.75
Sector Frame	0.0000	251.00	0.00	-2.02	187.00	1.641	11	14.40	7.00
Sector Frame	120.0000	251.00	1.75	1.01	187.00	1.641	11	14.40	7.00
Sector Frame	240.0000	251.00	-1.75	1.01	187.00	1.641	11	14.40	7.00
Sector Frame	0.0000	465.00	0.00	-2.02	150.40	1.542	10	17.50	8.75
Sector Frame	120.0000	465.00	1.75	1.01	150.40	1.542	10	17.50	8.75
Sector Frame	240.0000	465.00	-1.75	1.01	150.40	1.542	10	17.50	8.75
EMS RR90-17-02DP	0.0000	14.00	0.00	-5.02	182.00	1.629	10	4.36	2.00
EMS RR90-17-02DP	120.0000	14.00	4.35	2.51	182.00	1.629	10	4.36	2.00
EMS RR90-17-02DP	240.0000	14.00	-4.35	2.51	182.00	1.629	10	4.36	2.00
Commscope	0.0000	44.00	0.00	-5.02	182.00	1.629	10	11.39	4.47
LNX-6515DS-VTM									
Commscope	120.0000	44.00	4.35	2.51	182.00	1.629	10	11.39	4.47
LNX-6515DS-VTM									
Commscope	240.0000	44.00	-4.35	2.51	182.00	1.629	10	11.39	4.47
LNX-6515DS-VTM									
Ericsson KRY112 71	0.0000	20.00	0.00	-5.02	182.00	1.629	10	0.58	0.23
Ericsson KRY112 71	0.0000	20.00	0.00	-5.02	182.00	1.629	10	0.58	0.23
Ericsson KRY112 71	0.0000	20.00	0.00	-5.02	182.00	1.629	10	0.58	0.23
Sum Weight:		8195.80							

Force Totals (Does not include forces on guys)

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Torques lb-ft
Leg Weight	3252.97			
Bracing Weight	3960.86			
Total Member Self-Weight	7213.83			
Guy Weight	2614.62			
Total Weight	25329.44			
Wind 0 deg - No Ice		-53.22	-35338.99	-5462.21
Wind 30 deg - No Ice		17509.56	-30460.22	-8988.64
Wind 60 deg - No Ice		30341.45	-17532.85	-10121.11
Wind 90 deg - No Ice		35111.29	53.22	-8565.33
Wind 120 deg - No Ice		30551.52	17715.58	-4713.61
Wind 150 deg - No Ice		17601.73	30513.43	423.32

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<i>Load Case</i>	<i>Vertical Forces</i>	<i>Sum of Forces X</i>	<i>Sum of Forces Z</i>	<i>Sum of Torques</i>
	<i>lb</i>	<i>lb</i>	<i>lb</i>	<i>lb-ft</i>
Wind 180 deg - No Ice		53.22	35157.87	5424.60
Wind 210 deg - No Ice		-17509.56	30460.22	8988.64
Wind 240 deg - No Ice		-30498.30	17623.41	10175.82
Wind 270 deg - No Ice		-35111.29	-53.22	8565.33
Wind 300 deg - No Ice		-30394.66	-17625.02	4696.52
Wind 330 deg - No Ice		-17601.73	-30513.43	-423.32
Member Ice	3948.69			
Guy Ice	2336.99			
Total Weight Ice	47679.04			
Wind 0 deg - Ice		-38.78	-38028.79	-5605.20
Wind 30 deg - Ice		18906.04	-32842.57	-8273.28
Wind 60 deg - Ice		32761.02	-18925.44	-8729.30
Wind 90 deg - Ice		37879.24	38.78	-6854.87
Wind 120 deg - Ice		32895.71	19047.97	-3143.88
Wind 150 deg - Ice		18973.20	32881.35	1418.41
Wind 180 deg - Ice		38.78	37918.04	5592.26
Wind 210 deg - Ice		-18906.04	32842.57	8273.28
Wind 240 deg - Ice		-32856.93	18980.81	8749.08
Wind 270 deg - Ice		-37879.24	-38.78	6854.87
Wind 300 deg - Ice		-32799.80	-18992.60	3137.03
Wind 330 deg - Ice		-18973.20	-32881.35	-1418.41
Total Weight	25329.44			
Wind 0 deg - Service		-18.41	-12228.03	-1890.04
Wind 30 deg - Service		6058.67	-10539.87	-3110.26
Wind 60 deg - Service		10498.77	-6066.73	-3502.12
Wind 90 deg - Service		12149.24	18.41	-2963.78
Wind 120 deg - Service		10571.46	6129.96	-1631.01
Wind 150 deg - Service		6090.56	10558.28	146.48
Wind 180 deg - Service		18.41	12165.35	1877.02
Wind 210 deg - Service		-6058.67	10539.87	3110.26
Wind 240 deg - Service		-10553.05	6098.07	3521.04
Wind 270 deg - Service		-12149.24	-18.41	2963.78
Wind 300 deg - Service		-10517.18	-6098.62	1625.09
Wind 330 deg - Service		-6090.56	-10558.28	-146.48

Load Combinations

<i>Comb. No.</i>	<i>Description</i>
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

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Comb. No.	Description
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 Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Guy C @ 126.8 ft Elev -12 ft Azimuth 240 deg	Max. Vert	10	-2262.87	-1322.36	760.82
	Max. H _x	10	-2262.87	-1322.36	760.82
	Max. H _z	17	-57346.78	-46332.03	26825.56
	Min. Vert	17	-57346.78	-46332.03	26825.56
	Min. H _x	17	-57346.78	-46332.03	26825.56
	Min. H _z	10	-2262.87	-1322.36	760.82
Guy B @ 133.5 ft Elev 13 ft Azimuth 120 deg	Max. Vert	6	-930.06	755.37	436.11
	Max. H _x	25	-46067.43	47375.81	27396.32
	Max. H _z	25	-46067.43	47375.81	27396.32
	Min. Vert	25	-46067.43	47375.81	27396.32
	Min. H _x	6	-930.06	755.37	436.11
	Min. H _z	6	-930.06	755.37	436.11
Guy A @ 149.3 ft Elev -14 ft Azimuth 0 deg	Max. Vert	2	-1444.79	-1.29	-1213.98
	Max. H _x	24	-27171.80	1954.38	-28811.41
	Max. H _z	2	-1444.79	-1.29	-1213.98
	Min. Vert	21	-48738.47	20.02	-52834.11
	Min. H _x	18	-25566.32	-1981.30	-27311.78
	Min. H _z	21	-48738.47	20.02	-52834.11
	Max. Vert	16	133202.46	-1212.79	2006.73
	Max. H _x	24	126268.88	2623.81	-114.68
	Max. H _z	15	131865.22	63.43	2444.12
	Max. M _x	1	0.00	-3.58	-53.21
	Max. M _z	1	0.00	-3.58	-53.21
Max. Torsion	1	0.00	-3.58	-53.21	

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Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
	Min. Vert	1	73173.73	-3.58	-53.21
	Min. H _x	18	132198.31	-2516.99	-143.76
	Min. H _z	21	123713.33	9.89	-2784.29
	Min. M _x	1	0.00	-3.58	-53.21
	Min. M _z	1	0.00	-3.58	-53.21
	Min. Torsion	1	0.00	-3.58	-53.21

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	73173.73	3.58	53.21	0.00	0.00	0.00
Dead+Wind 0 deg - No Ice+Guy	98577.13	-39.52	-2432.49	0.00	0.00	0.00
Dead+Wind 30 deg - No Ice+Guy	96908.41	1184.21	-2058.65	0.00	0.00	0.00
Dead+Wind 60 deg - No Ice+Guy	90294.15	2122.87	-1183.05	0.00	0.00	0.00
Dead+Wind 90 deg - No Ice+Guy	96592.10	2446.43	56.69	0.00	0.00	0.00
Dead+Wind 120 deg - No Ice+Guy	100088.63	2123.59	1303.16	0.00	0.00	0.00
Dead+Wind 150 deg - No Ice+Guy	93721.48	1249.49	2244.48	0.00	0.00	0.00
Dead+Wind 180 deg - No Ice+Guy	85194.98	-2.21	2612.16	0.00	0.00	0.00
Dead+Wind 210 deg - No Ice+Guy	90923.08	-1263.35	2227.72	0.00	0.00	0.00
Dead+Wind 240 deg - No Ice+Guy	94302.39	-2183.30	1296.30	0.00	0.00	0.00
Dead+Wind 270 deg - No Ice+Guy	90220.63	-2524.17	48.93	0.00	0.00	0.00
Dead+Wind 300 deg - No Ice+Guy	86633.66	-2180.54	-1219.25	0.00	0.00	0.00
Dead+Wind 330 deg - No Ice+Guy	93234.62	-1261.79	-2120.76	0.00	0.00	0.00
Dead+Ice+Temp+Guy	102279.57	10.12	147.36	0.00	0.00	0.00
Dead+Wind 0 deg+Ice+Temp+Guy	131865.22	-63.43	-2444.12	0.00	0.00	0.00
Dead+Wind 30 deg+Ice+Temp+Guy	133202.46	1212.79	-2006.73	0.00	0.00	0.00
Dead+Wind 60 deg+Ice+Temp+Guy	130097.39	2170.94	-1104.13	0.00	0.00	0.00
Dead+Wind 90 deg+Ice+Temp+Guy	132198.31	2516.99	143.76	0.00	0.00	0.00
Dead+Wind 120 deg+Ice+Temp+Guy	132561.80	2218.46	1456.30	0.00	0.00	0.00
Dead+Wind 150 deg+Ice+Temp+Guy	128739.56	1274.38	2417.98	0.00	0.00	0.00
Dead+Wind 180 deg+Ice+Temp+Guy	123713.33	-9.89	2784.29	0.00	0.00	0.00
Dead+Wind 210 deg+Ice+Temp+Guy	126642.90	-1283.25	2383.86	0.00	0.00	0.00
Dead+Wind 240 deg+Ice+Temp+Guy	128008.37	-2267.56	1419.13	0.00	0.00	0.00
Dead+Wind 270 deg+Ice+Temp+Guy	126268.88	-2623.81	114.68	0.00	0.00	0.00

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Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturing Moment, M _x lb-ft	Overturing Moment, M _z lb-ft	Torque lb-ft
deg+Ice+Temp+Guy						
Dead+Wind 300	125381.53	-2288.74	-1169.07	0.00	0.00	0.00
deg+Ice+Temp+Guy						
Dead+Wind 330	129226.46	-1342.45	-2093.08	0.00	0.00	0.00
deg+Ice+Temp+Guy						
Dead+Wind 0 deg - Service+Guy	74241.95	-0.18	-864.23	0.00	0.00	0.00
Dead+Wind 30 deg - Service+Guy	74315.27	445.46	-734.73	0.00	0.00	0.00
Dead+Wind 60 deg - Service+Guy	74334.47	773.88	-395.91	0.00	0.00	0.00
Dead+Wind 90 deg - Service+Guy	73899.93	901.86	61.68	0.00	0.00	0.00
Dead+Wind 120 deg - Service+Guy	73420.19	792.75	518.73	0.00	0.00	0.00
Dead+Wind 150 deg - Service+Guy	73246.30	459.21	844.49	0.00	0.00	0.00
Dead+Wind 180 deg - Service+Guy	73291.66	5.39	960.57	0.00	0.00	0.00
Dead+Wind 210 deg - Service+Guy	73269.98	-447.70	839.35	0.00	0.00	0.00
Dead+Wind 240 deg - Service+Guy	73435.56	-778.85	509.90	0.00	0.00	0.00
Dead+Wind 270 deg - Service+Guy	73940.74	-894.05	54.39	0.00	0.00	0.00
Dead+Wind 300 deg - Service+Guy	74347.99	-771.57	-400.85	0.00	0.00	0.00
Dead+Wind 330 deg - Service+Guy	74337.70	-445.41	-736.56	0.00	0.00	0.00

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-25328.81	0.00	1.72	25328.97	6.33	0.026%
2	10.97	-25447.03	-38846.50	-9.62	25446.15	38829.64	0.036%
3	19361.29	-25295.48	-33556.24	-19361.78	25294.69	33540.01	0.035%
4	33520.59	-25157.05	-19355.51	-33517.42	25156.82	19353.73	0.008%
5	38750.53	-25373.94	13.98	-38736.00	25373.21	-2.35	0.040%
6	33661.04	-25584.55	19423.93	-33631.50	25583.04	-19407.97	0.072%
7	19344.07	-25407.27	33498.45	-19320.18	25406.32	-33490.75	0.054%
8	-10.97	-25210.58	38665.38	41.92	25210.51	-38664.36	0.067%
9	-19361.29	-25362.13	33556.24	19329.86	25361.00	-33545.43	0.072%
10	-33677.45	-25500.56	19446.07	33647.40	25499.11	-19428.73	0.075%
11	-38750.53	-25283.67	-13.98	38733.61	25282.89	29.21	0.049%
12	-33504.19	-25073.06	-19333.37	33508.43	25072.95	19324.36	0.022%
13	-19344.07	-25250.34	-33498.45	19347.31	25249.58	33482.66	0.035%
14	0.00	-47677.85	0.00	3.46	47677.83	-2.53	0.009%
15	90.37	-47917.22	-45028.44	-89.28	47916.03	45002.73	0.039%
16	22602.35	-47611.89	-39021.77	-22606.35	47610.87	38996.21	0.039%
17	39106.77	-47332.75	-22563.59	-39104.19	47332.55	22562.41	0.004%
18	45143.08	-47770.20	-39.64	-45119.12	47769.16	63.55	0.052%
19	39102.29	-48194.78	22456.65	-39067.13	48193.04	-22437.47	0.061%
20	22450.02	-47836.16	38837.20	-22421.20	47835.21	-38830.18	0.045%
21	-90.37	-47438.47	44917.69	124.34	47438.52	-44919.40	0.052%
22	-22602.35	-47743.81	39021.77	22563.49	47742.65	-39012.18	0.061%
23	-39202.68	-48022.95	22618.96	39168.15	48021.39	-22600.39	0.059%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
24	-45143.08	-47585.50	39.64	45122.73	47584.70	-19.42	0.044%
25	-39006.38	-47160.91	-22401.27	39011.80	47160.82	22390.99	0.018%
26	-22450.02	-47519.54	-38837.20	22454.49	47518.88	38820.60	0.026%
27	3.80	-25369.71	-13441.69	-3.12	25369.65	13433.11	0.030%
28	6699.41	-25317.27	-11611.16	-6697.27	25317.18	11598.72	0.044%
29	11598.82	-25269.37	-6697.41	-11592.42	25269.30	6691.81	0.030%
30	13408.49	-25344.42	4.84	-13397.84	25344.35	-0.78	0.040%
31	11647.42	-25417.30	6721.08	-11638.66	25417.23	-6716.18	0.035%
32	6693.45	-25355.95	11591.16	-6683.12	25355.91	-11585.55	0.041%
33	-3.80	-25287.90	13379.02	5.62	25287.90	-13374.17	0.018%
34	-6699.41	-25340.34	11611.16	6694.37	25340.33	-11606.66	0.024%
35	-11653.10	-25388.24	6728.74	11645.60	25388.20	-6723.73	0.031%
36	-13408.49	-25313.19	-4.84	13403.60	25313.16	7.63	0.020%
37	-11593.14	-25240.31	-6689.75	11592.07	25240.27	6685.68	0.015%
38	-6693.45	-25301.66	-11591.16	6695.16	25301.58	11580.08	0.039%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	13	0.0000001	0.00010349
2	Yes	26	0.00028929	0.00017173
3	Yes	25	0.00030363	0.00018039
4	Yes	19	0.00030767	0.00018515
5	Yes	27	0.00029149	0.00014405
6	Yes	27	0.00039526	0.00021724
7	Yes	26	0.00036654	0.00017519
8	Yes	17	0.00038025	0.00016788
9	Yes	23	0.00039358	0.00020607
10	Yes	24	0.00038466	0.00021206
11	Yes	23	0.00036201	0.00016066
12	Yes	18	0.00032357	0.00011488
13	Yes	24	0.00038143	0.00019031
14	Yes	13	0.0000001	0.00004780
15	Yes	26	0.00032155	0.00015633
16	Yes	25	0.00034922	0.00017222
17	Yes	20	0.00034535	0.00018417
18	Yes	27	0.00033481	0.00012210
19	Yes	28	0.00033150	0.00014230
20	Yes	27	0.00028672	0.00010712
21	Yes	19	0.00027937	0.00011367
22	Yes	24	0.00032435	0.00014263
23	Yes	25	0.00030577	0.00014145
24	Yes	24	0.00032010	0.00010906
25	Yes	20	0.00031955	0.00009403
26	Yes	25	0.00031619	0.00012918
27	Yes	14	0.0000001	0.00009357
28	Yes	13	0.00037603	0.00013576
29	Yes	13	0.00039673	0.00013363
30	Yes	13	0.0000001	0.00013909
31	Yes	14	0.0000001	0.00012332
32	Yes	13	0.0000001	0.00013586
33	Yes	13	0.0000001	0.00009349
34	Yes	13	0.0000001	0.00009233
35	Yes	13	0.0000001	0.00011413
36	Yes	13	0.0000001	0.00007732

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37	Yes	13	0.00000001	0.00007546
38	Yes	13	0.00000001	0.00011096

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	187 - 180	3.291	29	0.2550	0.1086
T2	180 - 160	2.886	29	0.2472	0.1021
T3	160 - 140	2.047	29	0.1386	0.0997
T4	140 - 120	1.655	29	0.0760	0.1401
T5	120 - 100	1.418	29	0.0261	0.1658
T6	100 - 80	1.399	29	0.0181	0.3014
T7	80 - 60	1.298	28	0.0407	0.4075
T8	60 - 40	1.104	28	0.0409	0.4845
T9	40 - 20	0.946	28	0.0599	0.5438
T10	20 - 0	0.584	28	0.1153	0.5786

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
187.00	(2) Powerwave 7770.00	29	3.291	0.2550	0.1086	13358
182.00	Sector Frame	29	2.998	0.2512	0.1040	13358
173.00	Sector Frame	29	2.533	0.2177	0.0966	8693
170.00	Guy	29	2.401	0.1998	0.0952	8422
160.38	Guy	29	2.057	0.1405	0.0992	7750
150.40	RFS APXV9ERR18-C-A20	29	1.824	0.1021	0.1196	13984
136.00	(2) Antel LPA-80080-4CF	29	1.596	0.0657	0.1431	55807
120.38	Guy	29	1.421	0.0269	0.1643	13953
60.38	Guy	28	1.107	0.0409	0.4832	32303

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	187 - 180	14.249	6	0.9823	0.5318
T2	180 - 160	12.735	6	0.9598	0.5128
T3	160 - 140	9.694	16	0.6396	0.5064
T4	140 - 120	8.076	16	0.3930	0.6330
T5	120 - 100	7.013	19	0.1749	0.7157
T6	100 - 80	7.089	19	0.1003	1.2011
T7	80 - 60	6.808	19	0.2050	1.4978
T8	60 - 40	5.954	19	0.2231	1.7090
T9	40 - 20	4.948	19	0.3527	1.9057
T10	20 - 0	2.952	19	0.5981	2.0065

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Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
187.00	(2) Powerwave 7770.00	6	14.249	0.9823	0.5318	4854
182.00	Sector Frame	6	13.157	0.9710	0.5182	4854
173.00	Sector Frame	16	11.406	0.8750	0.4960	3071
170.00	Guy	16	10.956	0.8236	0.4919	2963
160.38	Guy	16	9.734	0.6459	0.5048	2722
150.40	RFS APXV9ERR18-C-A20	16	8.819	0.5066	0.5701	4513
136.00	(2) Antel LPA-80080-4CF	16	7.805	0.3480	0.6399	9286
120.38	Guy	19	7.020	0.1781	0.7103	3243
60.38	Guy	19	5.971	0.2228	1.7050	7327

Bolt Design Data

Section No.	Elevation	Component Type	Bolt Grade	Bolt Size	Number Of Bolts	Maximum Load per Bolt	Allowable Load	Ratio Load Allowable	Allowable Ratio	Criteria
	ft			in		lb	lb			
T1	187	Leg	A325N	0.7500	4	74.86	19428.80	0.004	✓	1.333 Bolt Tension
T2	180	Leg	A325N	0.7500	4	2362.16	19398.70	0.122	✓	1.333 Bolt Tension
		Top Guy	A325N	0.7500	2	4613.06	9277.52	0.497	✓	1.333 Bolt Shear
		Pull-Off@160.375								
		Torque Arm Top@160.375	A325N	0.7500	2	6938.04	9277.52	0.748	✓	1.333 Bolt Shear
		Torque Arm Bottom@160.375	A325N	0.7500	2	5824.41	9277.52	0.628	✓	1.333 Bolt Shear
T3	160	Leg	A325N	0.7500	4	4607.64	19407.90	0.237	✓	1.333 Bolt Tension
T4	140	Leg	A325N	0.7500	4	0.00	19435.30	0.000	✓	1.333 Bolt Tension
		Top Guy	A325N	0.7500	2	3110.75	9277.52	0.335	✓	1.333 Bolt Shear
		Pull-Off@120.375								
		Torque Arm Top@120.375	A325N	0.7500	2	4816.39	9277.52	0.519	✓	1.333 Bolt Shear
		Torque Arm Bottom@120.375	A325N	0.7500	2	4842.25	9277.52	0.522	✓	1.333 Bolt Shear
T5	120	Leg	A325N	0.7500	4	0.00	19374.60	0.000	✓	1.333 Bolt Tension
T6	100	Leg	A325N	0.7500	4	0.00	19421.80	0.000	✓	1.333 Bolt Tension
T7	80	Leg	A325N	0.7500	4	0.00	19432.30	0.000	✓	1.333 Bolt Tension
T8	60	Leg	A325N	0.7500	4	0.00	19393.10	0.000	✓	1.333 Bolt Tension
T9	40	Leg	A325N	0.7500	4	0.00	19433.20	0.000	✓	1.333 Bolt Tension
T10	20	Leg	A325N	0.7500	4	0.00	19435.50	0.000	✓	1.333 Bolt Tension

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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.
T2	160.38 (A) (577)	5/8 EHS	4240.00	42399.99	12886.30	21200.00	2.000	3.290 ✓
	160.38 (A) (578)	5/8 EHS	4240.00	42399.99	13330.80	21200.00	2.000	3.181 ✓
	160.38 (B) (571)	5/8 EHS	4240.00	42399.99	13069.00	21200.00	2.000	3.244 ✓
	160.38 (B) (572)	5/8 EHS	4240.00	42399.99	13247.30	21200.00	2.000	3.201 ✓
	160.38 (C) (565)	5/8 EHS	4240.00	42399.99	14694.10	21200.00	2.000	2.886 ✓
	160.38 (C) (566)	5/8 EHS	4240.00	42399.99	14027.80	21200.00	2.000	3.023 ✓
	170.00 (A) (606)	5/8 EHS	4240.00	42399.99	13743.00	21200.00	2.000	3.085 ✓
	170.00 (B) (605)	5/8 EHS	4240.00	42399.99	13974.20	21200.00	2.000	3.034 ✓
	170.00 (C) (604)	5/8 EHS	4240.00	42399.99	14924.70	21200.00	2.000	2.841 ✓
T4	120.38 (A) (595)	9/16 EHS	3500.00	35000.04	10420.20	17500.00	2.000	3.359 ✓
	120.38 (A) (596)	9/16 EHS	3500.00	35000.04	11025.10	17500.00	2.000	3.175 ✓
	120.38 (B) (589)	9/16 EHS	3500.00	35000.04	10307.00	17500.00	2.000	3.396 ✓
	120.38 (B) (590)	9/16 EHS	3500.00	35000.04	10734.60	17500.00	2.000	3.260 ✓
	120.38 (C) (583)	9/16 EHS	3500.00	35000.04	12307.50	17500.00	2.000	2.844 ✓
	120.38 (C) (584)	9/16 EHS	3500.00	35000.04	11218.80	17500.00	2.000	3.120 ✓
T7	60.38 (A) (603)	9/16 EHS	3500.00	35000.04	12473.20	17500.00	2.000	2.806 ✓
	60.38 (B) (602)	9/16 EHS	3500.00	35000.04	12380.40	17500.00	2.000	2.827 ✓
	60.38 (C) (601)	9/16 EHS	3500.00	35000.04	13386.40	17500.00	2.000	2.615 ✓

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 P/P_a
T1	187 - 180	P2.5x.203	7.00	2.85	36.1 K=1.00	1.00	28.272	1.7040	-12999.70	48176.80	0.270 ✓
T2	180 - 160	P2.5x.203	20.00	3.21	40.6 K=1.00	1.00	30.219	1.7040	-52754.50	51494.50	1.024 ✓
T3	160 - 140	P2.5x.203	20.00	3.21	40.6 K=1.00	1.00	30.219	1.7040	-52912.60	51494.50	1.028 ✓
T4	140 - 120	P2.5x.203	20.00	3.21	40.6	1.00	30.219	1.7040	-59266.60	51494.50	1.151 ✓

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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 P/P _a
T5	120 - 100	P2.5x.203	20.00	3.21	K=1.00 40.6	0.99	29.988	1.7040	-57382.10	51101.40	1.123
T6	100 - 80	P2.5x.203	20.00	3.21	K=1.00 40.6	0.99	29.924	1.7040	-47418.60	50992.10	0.930
T7	80 - 60	P2.5x.203	20.00	3.21	K=1.00 40.6	0.99	29.910	1.7040	-46203.80	50968.80	0.907
T8	60 - 40	P2.5x.203	20.00	3.21	K=1.00 40.6	0.99	29.899	1.7040	-56122.70	50949.60	1.102
T9	40 - 20	P2.5x.203	20.00	3.21	K=1.00 40.6	0.99	29.919	1.7040	-60499.50	50983.60	1.187
T10	20 - 0	P2.5x.203	20.00	3.21	K=1.00 40.6	0.99	29.907	1.7040	-58970.00	50962.40	1.157

Diagonal 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 P/P _a
T2	180 - 160	C3x4.1	4.75	2.21	186.6 K=2.84	4.291	1.2100	-5264.28	5191.95	1.014

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 P/P _a
T1	187 - 180	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-5264.16	7695.87	0.684*
T2	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-2220.64	7695.87	0.289
T3	160 - 140	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-3791.79	7695.87	0.493*
T4	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-3615.87	7695.87	0.470*
T5	120 - 100	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-5149.85	7695.87	0.669
T6	100 - 80	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-3111.25	7695.87	0.404*
T7	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-3156.80	7695.87	0.410*
T8	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-2937.53	7695.87	0.382*
T9	40 - 20	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-2866.77	7695.87	0.373*

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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 $\frac{P}{P_a}$
T10	20 - 0	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-2903.78	7695.87	0.377*

* 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 $\frac{P}{P_a}$
T1	187 - 180	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-2644.77	7695.87	0.344*
T2	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-456.99	7695.87	0.059
T3	160 - 140	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-3350.33	7695.87	0.435
T4	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-1929.91	7695.87	0.251*
T5	120 - 100	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-3066.95	7695.87	0.399
T6	100 - 80	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-1645.07	7695.87	0.214*
T7	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-1624.57	7695.87	0.211*
T8	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-1412.61	7695.87	0.184*
T9	40 - 20	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-1517.13	7695.87	0.197*
T10	20 - 0	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-1494.22	7695.87	0.194*

* 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	187 - 180	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-3815.17	7695.87	0.496
T2	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-1303.52	7695.87	0.169
T3	160 - 140	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-1921.90	7695.87	0.250*
T4	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	14.594	0.5273	-3792.64	7695.87	0.493
T5	120 - 100	L1 1/2x1 1/2x3/16	3.50	3.26	86.7	14.594	0.5273	-1644.72	7695.87	0.214*

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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 $\frac{P}{P_a}$
T6	100 - 80	L1 1/2x1 1/2x3/16	3.50	3.26	K=0.65 86.7	14.594	0.5273	-1628.58	7695.87	0.212*
T8	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	K=0.65 86.7	14.594	0.5273	-1513.41	7695.87	0.197*
T9	40 - 20	L1 1/2x1 1/2x3/16	3.50	3.26	K=0.65 86.7	14.594	0.5273	-1493.47	7695.87	0.194*
T10	20 - 0	L1 1/2x1 1/2x3/16	3.50	3.26	K=0.65 86.7	14.594	0.5273	-322.14	7695.87	0.042*

* 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 $\frac{P}{P_a}$
T2	180 - 160	L2x2x5/16	3.50	3.26	K=1.00 100.3	12.937	1.1500	-3464.68	14877.70	0.233
T4	140 - 120	L2x2x5/16	3.50	3.26	K=1.00 100.3	12.937	1.1500	-6221.50	14877.70	0.418
T7	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	K=1.00 133.4	8.395	0.5273	-1266.34	4427.01	0.286

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 (569)	L3x3x1/4	3.50	3.38	K=1.00 68.5	16.584	1.4400	-11648.80	23880.20	0.488
T2	180 - 160 (570)	L3x3x1/4	3.50	3.38	K=1.00 68.5	16.584	1.4400	-10640.30	23880.20	0.446
T2	180 - 160 (575)	L3x3x1/4	3.50	3.38	K=1.00 68.5	16.584	1.4400	-10966.30	23880.20	0.459
T2	180 - 160 (576)	L3x3x1/4	3.50	3.38	K=1.00 68.5	16.584	1.4400	-10265.80	23880.20	0.430
T2	180 - 160 (581)	L3x3x1/4	3.50	3.38	K=1.00 68.5	16.584	1.4400	-10296.60	23880.20	0.431
T2	180 - 160 (582)	L3x3x1/4	3.50	3.38	K=1.00 68.5	16.584	1.4400	-10148.50	23880.20	0.425
T4	140 - 120 (587)	L3x3x1/4	3.50	3.38	K=1.00 68.5	16.584	1.4400	-9684.50	23880.20	0.406
T4	140 - 120 (588)	L3x3x1/4	3.50	3.38	K=1.00 68.5	16.584	1.4400	-8615.79	23880.20	0.361
T4	140 - 120 (593)	L3x3x1/4	3.50	3.38	K=1.00 68.5	16.584	1.4400	-8453.26	23880.20	0.354

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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 (594)	L3x3x1/4	3.50	3.38	68.5 K=1.00	16.584	1.4400	-6973.13	23880.20	0.292 ✓
T4	140 - 120 (599)	L3x3x1/4	3.50	3.38	68.5 K=1.00	16.584	1.4400	-7433.09	23880.20	0.311 ✓
T4	140 - 120 (600)	L3x3x1/4	3.50	3.38	68.5 K=1.00	16.584	1.4400	-7911.20	23880.20	0.331 ✓

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	187 - 180	P2.5x.203	7.00	2.85	36.1	32.400	1.7040	9454.46	55211.20	0.171 ✓
T2	180 - 160	P2.5x.203	20.00	3.21	40.6	36.000	1.7040	29584.50	61345.80	0.482 ✓
T3	160 - 140	P2.5x.203	20.00	3.21	40.6	36.000	1.7040	18430.60	61345.80	0.300 ✓

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	187 - 180	5/8	4.51	4.20	322.9	21.600	0.3068	6410.33	6626.80	0.967 ✓
T2	180 - 160	C3x4.1	4.75	2.21	65.7	21.600	1.2100	5291.70	26136.00	0.202 ✓
T3	160 - 140	5/8	4.75	4.42	339.7	21.600	0.3068	6008.10	6626.80	0.907 ✓
T4	140 - 120	5/8	4.75	4.42	339.7	21.600	0.3068	4115.10	6626.80	0.621 ✓
T5	120 - 100	5/8	4.75	4.42	339.7	21.600	0.3068	7685.87	6626.80	1.160 ✓
T6	100 - 80	5/8	4.75	4.42	339.7	21.600	0.3068	4453.74	6626.80	0.672 ✓
T7	80 - 60	5/8	4.75	4.42	339.7	21.600	0.3068	4177.59	6626.80	0.630 ✓
T8	60 - 40	5/8	4.75	4.42	339.7	21.600	0.3068	5737.04	6626.80	0.866 ✓
T9	40 - 20	5/8	4.75	4.42	339.7	21.600	0.3068	2814.32	6626.80	0.425 ✓
T10	20 - 0	5/8	4.75	4.42	339.7	21.600	0.3068	3602.55	6626.80	0.544 ✓

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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 $\frac{P}{P_a}$
										✓

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	187 - 180	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	225.16	11390.60	0.020
T2	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	3788.54	11390.60	0.333
T3	160 - 140	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	916.47	11390.60	0.080
T4	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	1026.53	11390.60	0.090
T5	120 - 100	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	993.89	11390.60	0.087
T6	100 - 80	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	821.31	11390.60	0.072
T7	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	800.27	11390.60	0.070
T8	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	972.07	11390.60	0.085
T9	40 - 20	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	1047.88	11390.60	0.092
T10	20 - 0	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	1021.39	11390.60	0.090

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 $\frac{P}{P_a}$
T2	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	602.78	11390.60	0.053
T3	160 - 140	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	496.21	11390.60	0.044
T5	120 - 100	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	367.31	11390.60	0.032
T10	20 - 0	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	27.20	11390.60	0.002

Bottom Girt Design Data (Tension)

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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	4982.77	11390.60	0.437 ✓
T4	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	1160.83	11390.60	0.102 ✓
T10	20 - 0	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	539.24	11390.60	0.047 ✓

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 $\frac{P}{P_a}$
T2	180 - 160	L2x2x5/16	3.50	3.26	65.1	29.000	0.6574	9226.12	19065.20	0.484 ✓
T2	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	4163.70	11390.60	0.366 ✓
T4	140 - 120	L2x2x5/16	3.50	3.26	65.1	29.000	0.6574	943.31	19065.20	0.049 ✓
T7	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	21.600	0.5273	4161.27	11390.60	0.365 ✓

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 (567)	L3x3x1/4	4.75	4.59	59.2	29.000	0.9159	13470.60	26562.20	0.507 ✓
T2	180 - 160 (568)	L3x3x1/4	4.75	4.59	59.2	29.000	0.9159	12786.30	26562.20	0.481 ✓
T2	180 - 160 (573)	L3x3x1/4	4.75	4.59	59.2	29.000	0.9159	12702.10	26562.20	0.478 ✓
T2	180 - 160 (574)	L3x3x1/4	4.75	4.59	59.2	29.000	0.9159	13876.10	26562.20	0.522 ✓
T2	180 - 160 (579)	L3x3x1/4	4.75	4.59	59.2	29.000	0.9159	12233.20	26562.20	0.461 ✓
T2	180 - 160 (580)	L3x3x1/4	4.75	4.59	59.2	29.000	0.9159	12550.90	26562.20	0.473 ✓
T4	140 - 120 (585)	L3x3x1/4	4.75	4.59	59.2	29.000	0.9159	9632.78	26562.20	0.363 ✓
T4	140 - 120 (586)	L3x3x1/4	4.75	4.59	59.2	29.000	0.9159	8986.71	26562.20	0.338 ✓
T4	140 - 120 (591)	L3x3x1/4	4.75	4.59	59.2	29.000	0.9159	8394.26	26562.20	0.316 ✓
T4	140 - 120 (592)	L3x3x1/4	4.75	4.59	59.2	29.000	0.9159	9618.56	26562.20	0.362 ✓
T4	140 - 120 (597)	L3x3x1/4	4.75	4.59	59.2	29.000	0.9159	8234.71	26562.20	0.310 ✓

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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 (598)	L3x3x1/4	4.75	4.59	59.2	29.000	0.9159	8745.46	26562.20	0.329

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 (569)	L3x3x1/4	3.50	3.38	43.6	29.000	0.9159	3724.98	26562.20	0.140
T2	180 - 160 (570)	L3x3x1/4	3.50	3.38	43.6	29.000	0.9159	3264.21	26562.20	0.123
T2	180 - 160 (575)	L3x3x1/4	3.50	3.38	43.6	29.000	0.9159	3680.28	26562.20	0.139
T2	180 - 160 (576)	L3x3x1/4	3.50	3.38	43.6	29.000	0.9159	3208.70	26562.20	0.121
T2	180 - 160 (581)	L3x3x1/4	3.50	3.38	43.6	29.000	0.9159	3934.79	26562.20	0.148
T2	180 - 160 (582)	L3x3x1/4	3.50	3.38	43.6	29.000	0.9159	4020.46	26562.20	0.151
T4	140 - 120 (587)	L3x3x1/4	3.50	3.38	43.6	29.000	0.9159	4208.03	26562.20	0.158
T4	140 - 120 (588)	L3x3x1/4	3.50	3.38	43.6	29.000	0.9159	4025.78	26562.20	0.152
T4	140 - 120 (593)	L3x3x1/4	3.50	3.38	43.6	29.000	0.9159	3586.86	26562.20	0.135
T4	140 - 120 (594)	L3x3x1/4	3.50	3.38	43.6	29.000	0.9159	3635.65	26562.20	0.137
T4	140 - 120 (599)	L3x3x1/4	3.50	3.38	43.6	29.000	0.9159	4250.40	26562.20	0.160
T4	140 - 120 (600)	L3x3x1/4	3.50	3.38	43.6	29.000	0.9159	4123.46	26562.20	0.155

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P _{allow} lb	% Capacity	Pass Fail
T1	187 - 180	Leg	P2.5x.203	3	-12999.70	64219.67	20.2	Pass
		Diagonal	5/8	14	6410.33	8833.52	72.6	Pass
		Horizontal	L1 1/2x1 1/2x3/16	16	-5264.16	7695.87	68.4	Pass
		Top Girt	L1 1/2x1 1/2x3/16	4	-2644.77	7695.87	34.4	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	7	-3815.17	10258.59	37.2	Pass
T2	180 - 160	Leg	P2.5x.203	27	-52754.50	68642.17	76.9	Pass
		Diagonal	C3x4.1	39	-5264.28	6920.87	76.1	Pass
		Horizontal	L1 1/2x1 1/2x3/16	51	3788.54	15183.67	25.0	Pass
		Top Girt	L1 1/2x1 1/2x3/16	28	-456.99	10258.59	4.5	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	33	4982.77	15183.67	32.8	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P _{allow} lb	% Capacity	Pass Fail
		Guy A@160.375	5/8	578	13330.80	21200.00	62.9	Pass
		Guy A@170	5/8	606	13743.00	21200.00	64.8	Pass
		Guy B@160.375	5/8	572	13247.30	21200.00	62.5	Pass
		Guy B@170	5/8	605	13974.20	21200.00	65.9	Pass
		Guy C@160.375	5/8	565	14694.10	21200.00	69.3	Pass
		Guy C@170	5/8	604	14924.70	21200.00	70.4	Pass
		Top Guy	L2x2x5/16	41	9226.12	25413.91	36.3	Pass
		Pull-Off@160.375					37.3 (b)	
		Top Guy	L1 1/2x1 1/2x3/16	60	4163.70	15183.67	27.4	Pass
		Pull-Off@170						
		Torque Arm	L3x3x1/4	574	13876.10	35407.41	39.2	Pass
		Top@160.375					56.1 (b)	
		Torque Arm	L3x3x1/4	569	-11648.80	31832.30	36.6	Pass
		Bottom@160.375					47.1 (b)	
T3	160 - 140	Leg	P2.5x.203	87	-52912.60	68642.17	77.1	Pass
		Diagonal	5/8	144	6008.10	8833.52	68.0	Pass
		Horizontal	L1 1/2x1 1/2x3/16	137	-3791.79	7695.87	49.3	Pass
		Top Girt	L1 1/2x1 1/2x3/16	89	-3350.33	10258.59	32.7	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	93	-1921.90	7695.87	25.0	Pass
T4	140 - 120	Leg	P2.5x.203	147	-59266.60	68642.17	86.3	Pass
		Diagonal	5/8	163	4115.10	8833.52	46.6	Pass
		Horizontal	L1 1/2x1 1/2x3/16	197	-3615.87	7695.87	47.0	Pass
		Top Girt	L1 1/2x1 1/2x3/16	149	-1929.91	7695.87	25.1	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	152	-3792.64	10258.59	37.0	Pass
		Guy A@120.375	9/16	596	11025.10	17500.00	63.0	Pass
		Guy B@120.375	9/16	590	10734.60	17500.00	61.3	Pass
		Guy C@120.375	9/16	583	12307.50	17500.00	70.3	Pass
		Top Guy	L2x2x5/16	162	-6221.50	19831.97	31.4	Pass
		Pull-Off@120.375						
		Torque Arm	L3x3x1/4	585	9632.78	35407.41	27.2	Pass
		Top@120.375					38.9 (b)	
		Torque Arm	L3x3x1/4	587	-9684.50	31832.30	30.4	Pass
		Bottom@120.375					39.2 (b)	
T5	120 - 100	Leg	P2.5x.203	207	-57382.10	68118.16	84.2	Pass
		Diagonal	5/8	263	7685.87	8833.52	87.0	Pass
		Horizontal	L1 1/2x1 1/2x3/16	258	-5149.85	10258.59	50.2	Pass
		Top Girt	L1 1/2x1 1/2x3/16	210	-3066.95	10258.59	29.9	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	213	-1644.72	7695.87	21.4	Pass
T6	100 - 80	Leg	P2.5x.203	267	-47418.60	67972.47	69.8	Pass
		Diagonal	5/8	324	4453.74	8833.52	50.4	Pass
		Horizontal	L1 1/2x1 1/2x3/16	316	-3111.25	7695.87	40.4	Pass
		Top Girt	L1 1/2x1 1/2x3/16	268	-1645.07	7695.87	21.4	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	273	-1628.58	7695.87	21.2	Pass
T7	80 - 60	Leg	P2.5x.203	327	-46203.80	67941.41	68.0	Pass
		Diagonal	5/8	343	4177.59	8833.52	47.3	Pass
		Horizontal	L1 1/2x1 1/2x3/16	342	-3156.80	7695.87	41.0	Pass
		Top Girt	L1 1/2x1 1/2x3/16	328	-1624.57	7695.87	21.1	Pass
		Guy A@60.375	9/16	603	12473.20	17500.00	71.3	Pass
		Guy B@60.375	9/16	602	12380.40	17500.00	70.7	Pass
		Guy C@60.375	9/16	601	13386.40	17500.00	76.5	Pass
		Top Guy	L1 1/2x1 1/2x3/16	331	4161.27	15183.67	27.4	Pass
		Pull-Off@60.375						
T8	60 - 40	Leg	P2.5x.203	387	-56122.70	67915.82	82.6	Pass
		Diagonal	5/8	443	5737.04	8833.52	64.9	Pass
		Horizontal	L1 1/2x1 1/2x3/16	436	-2937.53	7695.87	38.2	Pass
		Top Girt	L1 1/2x1 1/2x3/16	388	-1412.61	7695.87	18.4	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	393	-1513.41	7695.87	19.7	Pass
T9	40 - 20	Leg	P2.5x.203	445	-60499.50	67961.14	89.0	Pass
		Diagonal	5/8	504	2814.32	8833.52	31.9	Pass
		Horizontal	L1 1/2x1 1/2x3/16	496	-2866.77	7695.87	37.3	Pass
		Top Girt	L1 1/2x1 1/2x3/16	448	-1517.13	7695.87	19.7	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P _{allow} lb	% Capacity	Pass Fail		
T10	20 - 0	Bottom Girt	L1 1/2x1 1/2x3/16	453	-1493.47	7695.87	19.4	Pass		
		Leg	P2.5x.203	505	-58970.00	67932.87	86.8	Pass		
		Diagonal	5/8	517	3602.55	8833.52	40.8	Pass		
		Horizontal	L1 1/2x1 1/2x3/16	520	-2903.78	7695.87	37.7	Pass		
		Top Girt	L1 1/2x1 1/2x3/16	508	-1494.22	7695.87	19.4	Pass		
		Bottom Girt	L1 1/2x1 1/2x3/16	513	-322.14	7695.87	4.2	Pass		
		Summary								
				Leg (T9)				89.0	Pass	
				Diagonal (T5)				87.0	Pass	
				Horizontal (T1)				68.4	Pass	
		Top Girt (T1)				34.4	Pass			
		Bottom Girt (T1)				37.2	Pass			
		Guy A (T7)				71.3	Pass			
		Guy B (T7)				70.7	Pass			
		Guy C (T7)				76.5	Pass			
		Top Guy Pull-Off (T2)				37.3	Pass			
		Torque Arm Top (T2)				56.1	Pass			
		Torque Arm Bottom (T2)				47.1	Pass			
		Bolt Checks				56.1	Pass			
		RATING =				89.0	Pass			

Site Name: **Bozrah**
 Client: **CDT**
 Job Number: **115-35035**
 Date: **4/1/2015**

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):	2.8 k	Vertical Steel Rebar Size #:	5
Compression/Leg (P):	133.2 k	Vertical Steel Rebar Area:	0.31 in ²
Uplift/Leg (U):	0.0 k	# of Vertical Steel Rebars:	8
Tower Type (GT / SST):	SST	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_C):	0.65
Unit Weight of Soil Above Water Table:	100.0 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:	30 Degrees	Pad Steel Rebar Size #:	5
Friction Angle of Uplift from Base of Pad:	30 Degrees	Pad Steel Rebar Area:	0.31 in ²
Uplift Angle Started at Top or Base of Pad (T/B):	T	Pad Steel Rebar Yield Strength (F_y):	60 ksi
Allowable Skin Friction:	0 psf	# of Rebar in Top of Pad:	
Allowable Compressive Bearing Pressure:	4750 psf	# of Rebar in Base of Pad:	10
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):	15.0 k
Allowable Skin Friction Resistance:	0.0 k
Controlling Failure Mode (Top / Base):	Top
Allowable Uplift Capacity per Leg:	14.5 k
Compressive Design Load:	136.4 k
Allowable Compression Capacity per Leg:	143.7 k
Uplift Design Load/Uplift Capacity:	0.00 Result: OK
Compression Design Load/Compression Capacity:	0.95 Result: OK

Depth (ft)		Ultimate Lateral Bearing Pressure (psf)	Increment (psf/ft)	γ_{soil} (pcf)	Cohesion (psf)	ϕ (degree)
Top	Bottom					
0.0	2.0	0.0	115.0	115	0	0
2.0	3.0	885.9	443.0	115	0	36

Inflection Point (Below Ground Surface): 3.0 ft
 Unfactored Design Moment At Inflection Point: 6.3 k-ft

Pad Strength Capacity

β :	0.85 ACI318-05 - 10.2.7.3
Lower Pad Flexural Reinforcement Ratio:	0.0033 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:	7 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):	17.0 k
One Way Shear Capacity (ϕV_c):	81.2 k - ACI318-05 - 11.3.1.1
$V_u / \phi V_c$:	0.21 Result: OK
Punching Design Shear (V_u):	125.3 k
Nominal Punching Shear Capacity ($\phi_c V_n$):	293.3 k - ACI318-05 - 11.12.2.1
$V_u / \phi V_c$:	0.43 Result: OK
Flexural Loading Due to Soil Pressure (M_u):	49.4 k-ft
Lower Steel Pad Moment Capacity (ϕM_n):	197.2 k-ft - ACI318-05 - 10.3
$M_u / \phi M_n$:	0.25 Result: OK
Flexural Loading Due to Uplift (M_u):	0.0 k-ft
Upper Steel Pad Moment Capacity (ϕM_n):	0.0 k-ft - ACI318-05 - 10.3
$M_u / \phi M_n$:	0.00 Result: OK

Pier Strength Capacity

Design Moment (M_u):	8.2 k-ft
Nominal Moment Capacity ($\phi_B M_n$):	88.9 k-ft - ACI318-005 - 10.2
$M_u / \phi_B M_n$:	0.09 Result: OK
Design Shear (V_u):	3.6 k
Nominal Shear Capacity ($\phi_V V_n$):	67.9 k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u / \phi_V V_n$:	0.05 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):	173.2 k
Nominal Compression Capacity ($\phi_P P_n$):	701.9 k - ACI318-05 - 10.3.6.2
$P_u / \phi_P P_n$:	0.25 Result: OK
Pier Reinforcement Ratio:	0.005 Reinforcement Ratio is Satisfactory - ACI318-05 - 10.9.1 & 10.8.4
$M_u / \phi_B M_n + T_u / \phi_T T_n$:	0.09 Result: OK

Site Name: **Bozrah**
 Client: **CDT**
 Job Number: **115-35035**
 Date: **4/1/2015**

Design Standard per TIA-222-F

Uplift (Unfactored):	57.3 k
Shear (Unfactored):	53.5 k
Berm Present:	N
Design Anchor Rod:	Y
Mapped Foundation:	N
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:	36 Degrees
Cohesion:	500 psf
Allowable Skin Friction of Pad Sides to Soil:	500 psf
Ultimate Coefficient of Shear Friction:	0.30
Maximum Top Conical Failure Angle:	30 Degrees
Maximum Base Conical Failure Angle:	30 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):	92.9 k
Uplift Resistance from Skin Friction:	22.5 k
Allowable Uplift Resistance (FS = 1.5 to 2):	61.7 k
Uplift Design Load/Allowable Uplift Resistance:	0.93 Result: OK

Shear

Ultimate Shear Friction Resistance Due to Normal Force - Uplift:	1.6 k
Passive Pressure:	5063 psf
Ultimate Passive Pressure Resistance:	116.5 k
Allowable Shear Resistance (FS = 1.5 to 2):	59.0 k
Shear Design Load/Allowable Shear Resistance:	0.91 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:	78.5 k
Anchor Rod Tensile Resistance:	92.4 k
Resultant Tensile Load / Anchor Rod Tensile Resistance:	0.85 Result: OK

Strength Analysis of Reinforced Concrete

Concrete Compressive Strength (f'_c):	3000 psi
Longitudinal Rebar Yield Strength:	60000 psi
# Longitudinal Rebar (Top):	9
# Longitudinal Rebar (1 Side):	3
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):	19.2 k
Nominal One Way Shear Capacity for Shear Load ($\phi_c V_n$):	122.3 k
$V_u/\phi_v V_n$:	0.16 Result: OK
One Way Shear due to Uplift (V_u):	31.9 k
Nominal One Way Shear Capacity for Uplift ($\phi_c V_n$):	108.4 k
$V_u/\phi_v V_n$:	0.29 Result: OK
Pad Flexure due to Shear Load (M_u):	100.0 k-ft
Nominal Flexural Capacity for Shear Load ($\phi_b M_n$):	167.4 k-ft
Pad Flexure due to Uplift (M_u):	107.2 k-ft
Nominal Flexural Capacity for Uplift ($\phi_b M_n$):	161.9 k-ft
$M_u/\phi_b M_n$ (Max.):	0.66 Result: OK

EXHIBIT C

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

T-Mobile Existing Facility

Site ID: CT11258B

Bozrah-1 / Rt2
10 Polly Lane
Bozrah, CT 06249

April 15, 2015

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	35.11 %

April 15, 2015

T-Mobile USA
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 06002

Emissions Analysis for Site: **CT11258B – Bozrah-1 / Rt2**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **10 Polly Lane, Bozrah, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ 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 ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the 700 MHz Band is $467 \mu\text{W}/\text{cm}^2$, and the general population exposure limit for the PCS band is $1000 \mu\text{W}/\text{cm}^2$. 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 T-Mobile Wireless antenna facility located at **10 Polly Lane, Bozrah, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. 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 equipment was calculated using the following assumptions:

- 1) 2 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel
- 2) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 3) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 4) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.
- 5) 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.

- 6) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 7) The antennas used in this modeling are the **EMS RR90_17_02DP** for 1900 MHz (PCS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **EMS RR90_17_02DP** has a maximum gain of **14.4 dBd** at its main lobe. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antenna mounting height centerline of the proposed antennas is **182 feet** above ground level (AGL).
- 9) 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 calculations were done with respect to uncontrolled / general public threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	EMS RR90_17_02DP	Make / Model:	EMS RR90_17_02DP	Make / Model:	EMS RR90_17_02DP
Gain:	14.4 dBd	Gain:	14.4 dBd	Gain:	14.4 dBd
Height (AGL):	182	Height (AGL):	182	Height (AGL):	182
Frequency Bands	1900 MHz(PCS)	Frequency Bands	1900 MHz(PCS)	Frequency Bands	1900 MHz(PCS)
Channel Count	6	Channel Count	6	# PCS Channels:	6
Total TX Power:	240	Total TX Power:	240	# AWS Channels:	240
ERP (W):	6,610.15	ERP (W):	6,610.15	ERP (W):	6,610.15
Antenna A1 MPE%	0.77	Antenna B1 MPE%	0.77	Antenna C1 MPE%	0.77
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Commscope LNX- 6515DS-VTM	Make / Model:	Commscope LNX- 6515DS-VTM	Make / Model:	Commscope LNX- 6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	182	Height (AGL):	182	Height (AGL):	182
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power:	30	Total TX Power:	30	Total TX Power:	30
ERP (W):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A2 MPE%	0.22	Antenna B2 MPE%	0.22	Antenna C2 MPE%	0.22

Site Composite MPE%	
Carrier	MPE%
T-Mobile	2.95
AT&T	9.72 %
Sprint	1.77 %
Nextel	1.86 %
Verizon Wireless	18.81 %
Site Total MPE %:	35.11 %

T-Mobile Sector 1 Total:	0.98 %
T-Mobile Sector 2 Total:	0.98 %
T-Mobile Sector 3 Total:	0.98 %
Site Total:	35.11 %

Summary

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

The anticipated maximum composite contributions from the T-Mobile facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general public exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector 1:	0.98 %
Sector 2:	0.98 %
Sector 3 :	0.98 %
T-Mobile Total:	2.95 %
Site Total:	35.11 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **35.11%** 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.



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