COHEN and WOLF P.C.
ATTORNEYS AT LAW

JULIE D. KOHLER

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

April 21, 2014

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

Re: Notice of Exempt Modification
Town of Beacon Falls/T-Mobile co-location
Site ID CT11487
139 Lopus Road, Beacon Falls

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, the Town of Beacon Falls ("Town") owns the monopole tower and related facility at 139 Lopus Road, Beacon Falls, Connecticut (latitude 41.4328278 / longitude -73.070375).[1] T-Mobile intends to replace three antennas and related equipment at this existing telecommunications facility in Beacon Falls ("Beacon Falls 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, a copy of this letter is being sent to the First Selectman Christopher J. Bielik. The Town of Beacon Falls is also the property owner. The Beacon Falls Facility is managed by American Tower Corporation and a copy of this letter will also be provided to that entity.

The existing Beacon Falls Facility consists of a 149 foot tall monopole tower.[2] The facility currently supports the equipment of T-Mobile at a centerline of 135 feet.

T-Mobile plans to replace three antennas and remove three TMAs (tower mounted amplifiers) and replace them with six antennas and three TMAs at an elevation of 135 feet.

---

[1] The online Connecticut Siting Council database ("CSC database") also has the address 401-411 Lopus Road, Beacon Falls, and in some cases just Lopus Road, Beacon Falls for this site.
[2] The CSC database does not include an approval by docket or petition for this facility so there are no specific limitation on the antenna configuration, however there have been several notices of intent filed, the most recent being EM-CING-006-120424 and TS-T-MOBILE-006-101112.

(See the plans revised to April 17, 2014 attached hereto as Exhibit A). T-Mobile will also install fiber cable, and reuse the existing coax cable. The existing Facility is structurally capable of supporting T-Mobile's proposed modifications, as indicated in the structural analysis dated April 14, 2014 and attached hereto as Exhibit B.

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

1. The proposed modification will not increase the height of the tower. T-Mobile's replacement antennas will be installed at the 135 foot level. The enclosed tower drawing confirms that the proposed modification will not increase the height of the tower.

2. The installation of the T-Mobile replacement equipment in the existing compound, as reflected on the attached site plan, will not require an extension of the site boundaries. T-Mobile's proposed equipment will be located entirely within the existing compound and concrete pad as shown on Sheet L-1 of Exhibit A.

3. The proposed modification to the 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 17, 2014 T-Mobile's operations would add 0.626% 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 20.176% of the FCC Standard as calculated for a mixed frequency site as evidenced by the engineering exhibit attached hereto as Exhibit C.

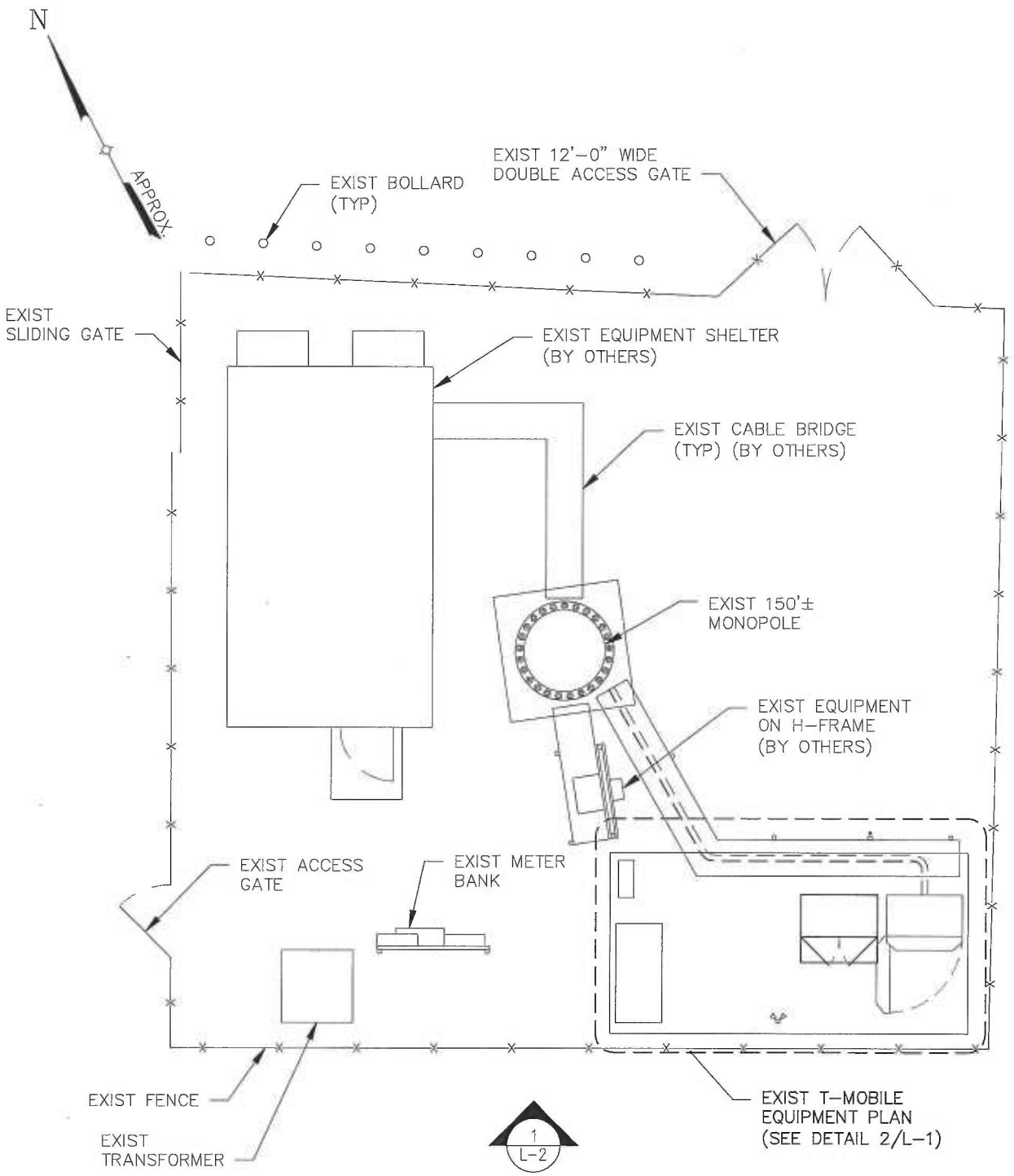
For the foregoing reasons, T-Mobile respectfully submits that the proposed replacement antennas and equipment at the Beacon Falls Facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Julie D. Kohler, Esq.

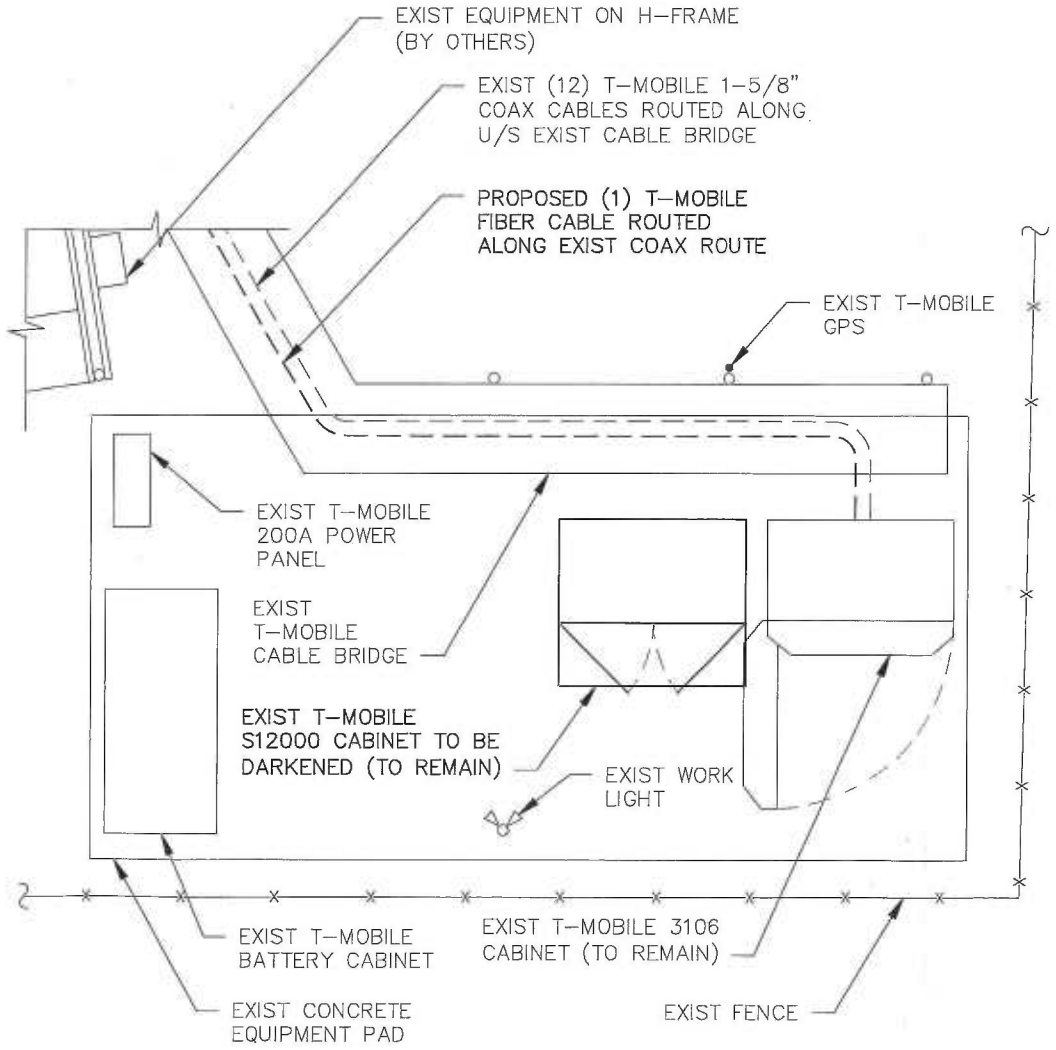
cc: Town of Beacon Falls, First Selectman Christopher J. Bielik
American Tower Corporation
Halene Fujimoto, HPC

EXHIBIT A



1 L-1 SITE PLAN

SCALE: 1/8" = 1'-0"



2 L-1 EQUIPMENT PLAN

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

STRUCTURAL NOTE:
EXIST MOUNTS AND MONOPOLE TO BE VERIFIED FOR STRUCTURAL SUITABILITY BY A STATE LICENSED P.E.

CONFIGURATION
2C

0 1 2 3
ORIGINAL SIZE IN INCHES

TECTONIC
• PLANNING • SURVEYING
• ENGINEERING • CONSTRUCTION MANAGEMENT
TECTONIC Engineering & Surveying Consultants P.C.
1279 Route 300
Newburgh, NY 12550
Phone: (845) 567-6656
Fax: (845) 567-8703

T-Mobile
NORTHEAST LLC.
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

APPROVALS
T-MOBILE
LANDLORD
RF
CONSTRUCTION

PROJECT NUMBER	DESIGNED BY
6644.CT11487B	JQ

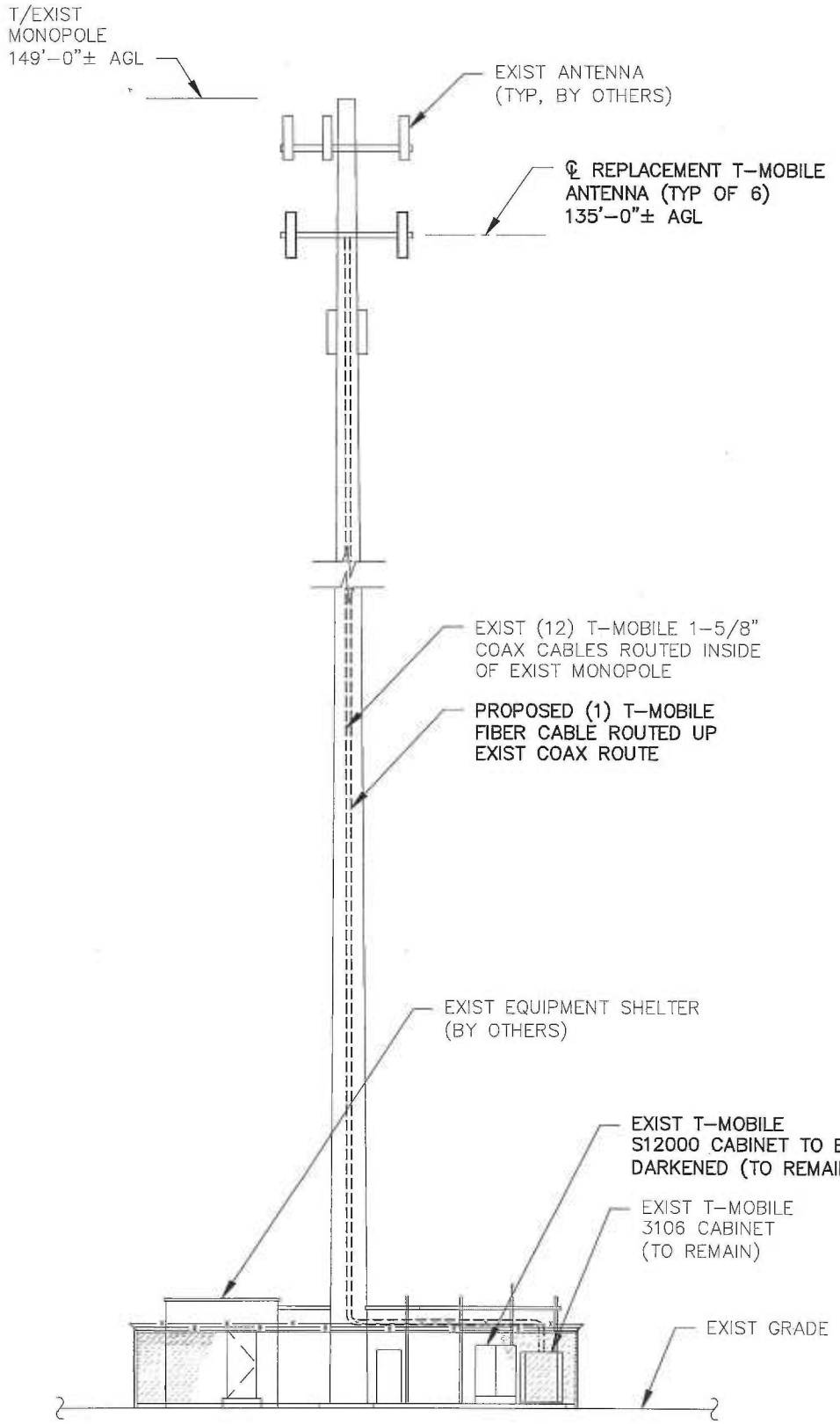
REV	DATE	REVISION	DRAWN BY
0	02/27/14	FOR COMMENT	SF
1	04/17/14	PER COMMENTS	AS

ISSUED BY | DATE

SITE INFORMATION
CT11487B
CT487/BEACON FALLS
139 LOPUS ROAD
BEACON FALLS,
CT 06403

SHEET TITLE
SITE PLAN AND EQUIPMENT PLAN

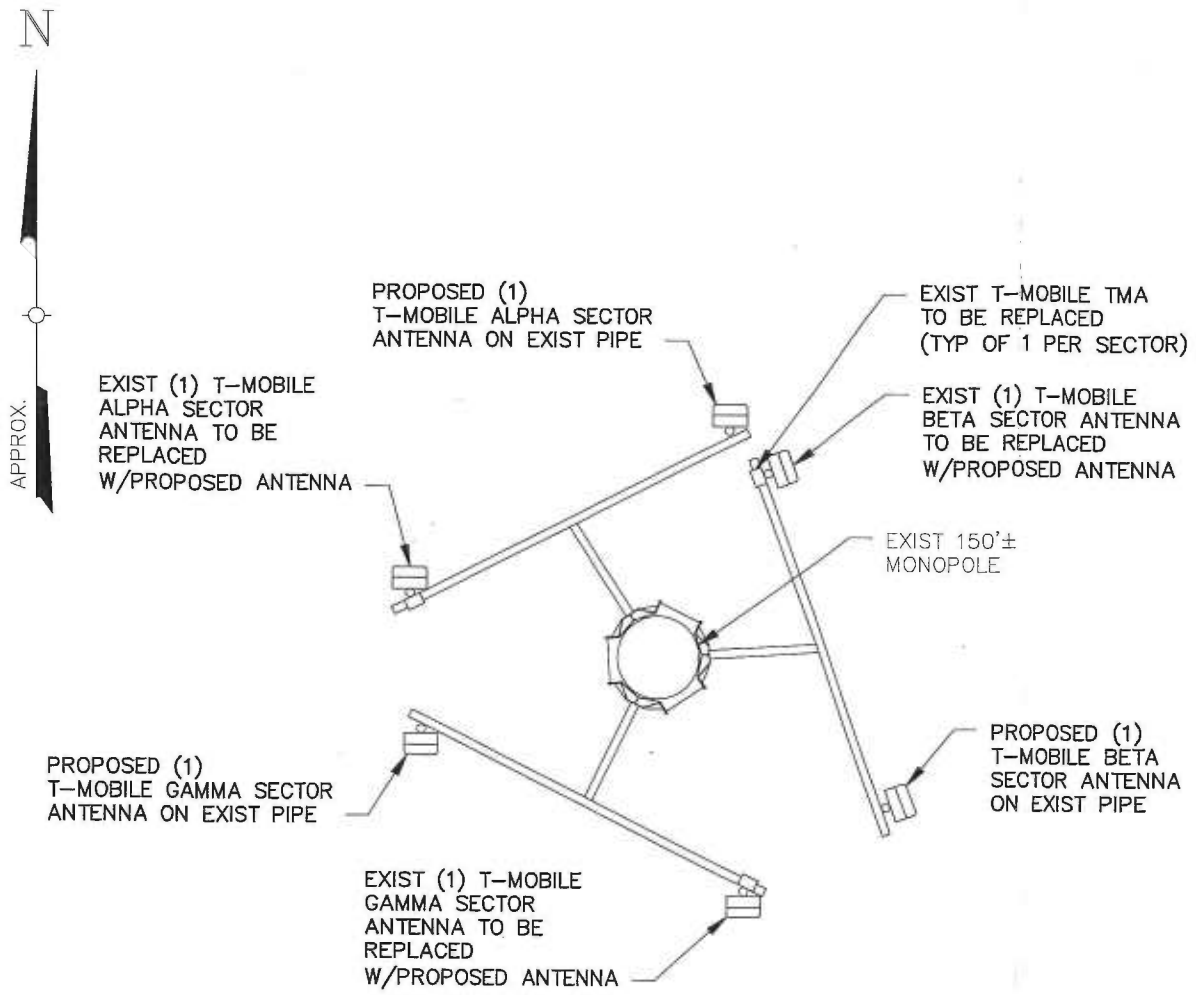
SHEET NUMBER
L-1



NOTE: SOME EXISTING SITE FEATURES BY OTHERS NOT SHOWN FOR CLARITY.

1 / L-2 ELEVATION

SCALE: 1/16" = 1'-0"



2 / L-2 ANTENNA PLAN

SCALE: 3/16" = 1'-0"

STRUCTURAL NOTE:
EXIST MOUNTS AND MONOPOLE TO BE VERIFIED FOR STRUCTURAL SUITABILITY BY A STATE LICENSED P.E.

CONFIGURATION
2C

0 1 2 3
ORIGINAL SIZE IN INCHES

TECTONIC
• PLANNING • SURVEYING
• ENGINEERING • CONSTRUCTION MANAGEMENT
TECTONIC Engineering & Surveying Consultants P.C.
1279 Route 300
Newburgh, NY 12550
Phone: (845) 567-6656
Fax: (845) 567-8703

T-Mobile
NORTHEAST LLC.
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

APPROVALS
T-MOBILE
LANDLORD
RF
CONSTRUCTION

PROJECT NUMBER	DESIGNED BY
6644.CT11487B	JQ

REV	DATE	REVISION	DRAWN BY
0	02/27/14	FOR COMMENT	SF
1	04/17/14	PER COMMENTS	AS

ISSUED BY | DATE

SITE INFORMATION
CT11487B
CT487/BEACON FALLS
139 LOPUS ROAD
BEACON FALLS,
CT 06403

SHEET TITLE
ELEVATION &
ANTENNA PLAN

SHEET NUMBER
L-2

EXHIBIT B

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**149 ft Monopole**
ATC Site Name	:	**Beacon Falls CT, CT**
ATC Site Number	:	**370641**
Engineering Number	:	**57741921**
Proposed Carrier	:	**T-Mobile**
Carrier Site Name	:	**BeaconFalls**
Carrier Site Number	:	**CT11487B**
Site Location	:	**401-411 Lopus Road** **Beacon Falls, CT 06403-0000** **41.432833,-73.070222**
County	:	**New Haven**
Date	:	**April 14, 2014**
Max Usage	:	**71%**
Result	:	**Pass**

Joseph R. King, E.I.

STATE OF CONNECTICUT
WILLIAM GARRETT
No. 23235
LICENSED
PROFESSIONAL ENGINEER

Apr 14 2014 3:34 PM

AMERICAN TOWER®
CORPORATION

Eng. Number 57741921
April 14, 2014

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 149 ft monopole to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	EEI Job #13674, dated October 14, 2005
Foundation Drawing	EEI Job #13674, dated October 19, 2005
Geotechnical Report	Tectonic Project #3917.BEACON, dated August 17, 2005

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/EIA-222.

Basic Wind Speed:	95 mph (Fastest Mile)
Basic Wind Speed w/ Ice:	82 mph (Fastest Mile)w/ 1/2" radial ice concurrent
Code:	ANSI/TIA/EIA-222-F / 2003 IBC , Sec. 1609.1.1, Exception (4) & Sec. 3108.4 w/ 2005 CT Supplement & 2009 CT Amendment

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
145.5	145.5	6	Powerwave Allagon LGP13519	Low Profile Platform	(12) 1 5/8" Coax (1) 2" Conduit	AT&T Mobility
		6	Powerwave Allagon LGP21401			
		1	Raycap DC6-48-60-18-8F			
		6	Ericsson RRUS 11 (Band 12)			
		6	Powerwave Allagon 7770.00			
		3	KMW AM-X-CD-16-65-00T-RET			
135.0	135.0	6	Ericsson AIR 21	T-Arms	(12) 1 5/8" Coax (1) 1.57" Hybrid	T-Mobile
125.0	126.0	9	APX16DWV-16DWVS-C_A20	Flush	(9) 1 5/8" Coax	Youghiogheny

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
135.0	135.0	3	Andrew ETW190VS12UB	-	-	T-Mobile
		3	RFS ATMAA1412D-1A20			
		6	RFS APX16DWV-16DWV-S-E-ACU			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
135.0	135.0	3	Ericsson KRY 112 144/1	T-Arms	-	T-Mobile

[1]Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	53%	Pass
Shaft	71%	Pass
Base Plate	58%	Pass

Foundations

Reaction Component	Original Design Reactions	Analysis Reactions	% of Design
Moment (Kips-Ft)	3,762.3	2,723.4	72%
Shear (Kips)	34.9	26.3	75%

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Deflection (ft)	Sway (Rotation) (°)
135.0	1.390	1.279

***Deflection and Sway was evaluated considering a design wind speed of 50 mph (Fastest Mile) per ANSI/TIA/EIA-222-F.**

AMERICAN TOWER®
CORPORATION

Standard Conditions

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

-- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.

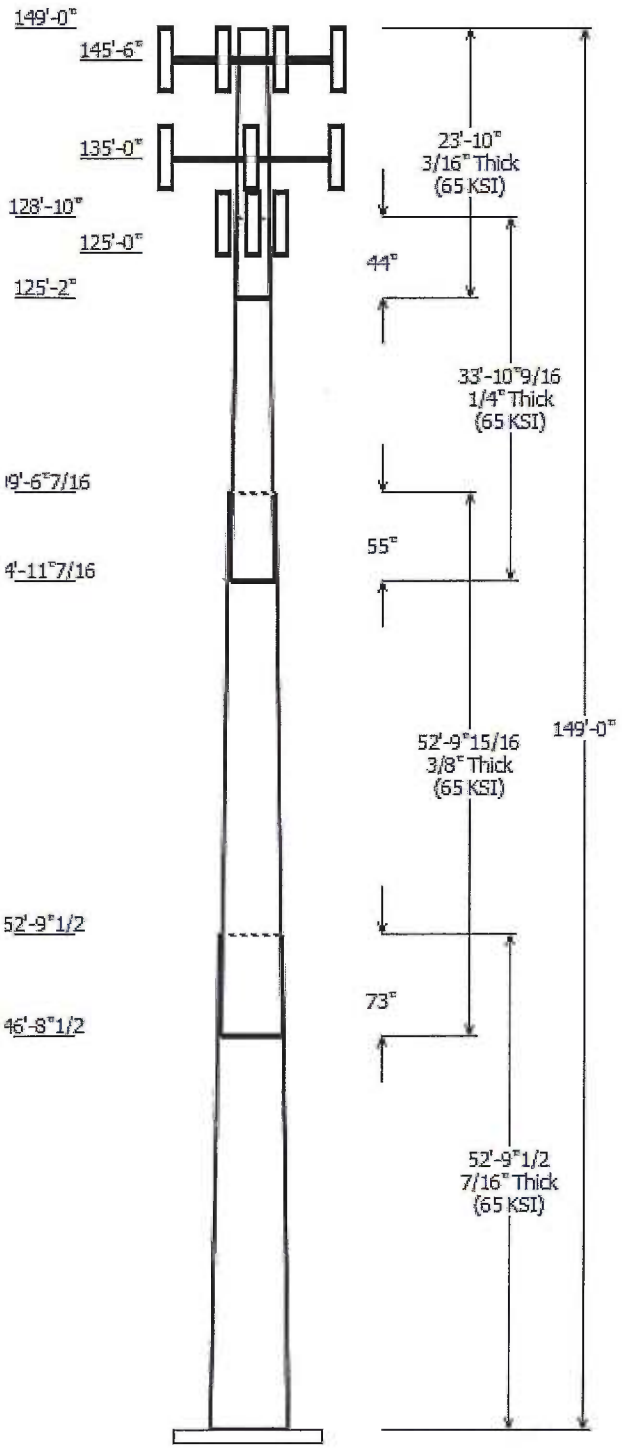
-- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to ATC Tower Services, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Tower Services, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

© 2007 - 2014 by ATC IP LLC. All rights reserved.



Job Information

Pole : 370641 Code: TIA/EIA-222 Rev F
Description :
Client : T-MOBILE
Location : Beacon Falls CT
Shape : 18 Sides
Height : 149.00 (ft)
Base Elev (ft): 0.00
Taper: 0.26258 (in/ft)

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Across Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
1	52.790	42.13	56.00	0.438		0.000	0.262584	65
2	52.830	30.61	44.48	0.375	Slip Joint	73.000	0.262584	65
3	33.880	23.42	32.31	0.250	Slip Joint	55.000	0.262584	65
4	23.833	18.50	24.75	0.188	Slip Joint	44.000	0.262584	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
145.500	145.500	1	Raycap DC6-48-60-18-8F
145.500	145.500	3	KMW AM-X-CD-16-65-00T-RET
145.500	145.500	6	Powerwave Allagon 7770.00
145.500	145.500	6	Ericsson RRUS 11 (Band 12)
145.500	145.500	6	Powerwave Allagon LGP21401
145.500	145.500	6	Powerwave Allagon LGP13519
145.500	145.500	1	Flat Low Profile Platform
135.000	135.000	3	Ericsson KRY 112 144/1
135.000	135.000	6	Ericsson AIR 21
135.000	135.000	3	Round T-Arm
125.000	126.000	9	APX16DWV-16DWVS-C_A20

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	125.0	1 5/8" Coax	No
0.000	135.0	1 5/8" Coax	No
0.000	135.0	1.57" Hybrid	No
0.000	145.5	1 5/8" Coax	No
0.000	145.5	2" Conduit	No

Load Cases

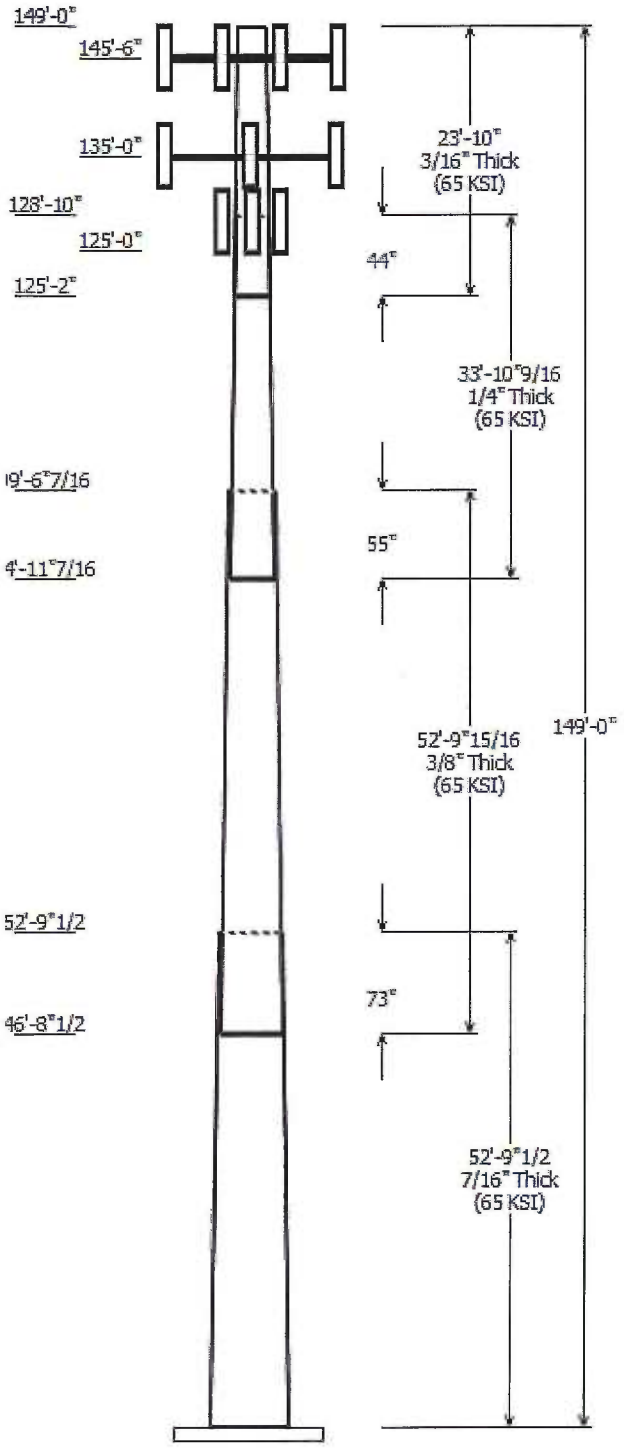
No Ice	95.00 mph Wind with No Ice
Ice	82.27 mph Wind with Ice
Twist/Sway	50.00 mph Wind with No Ice

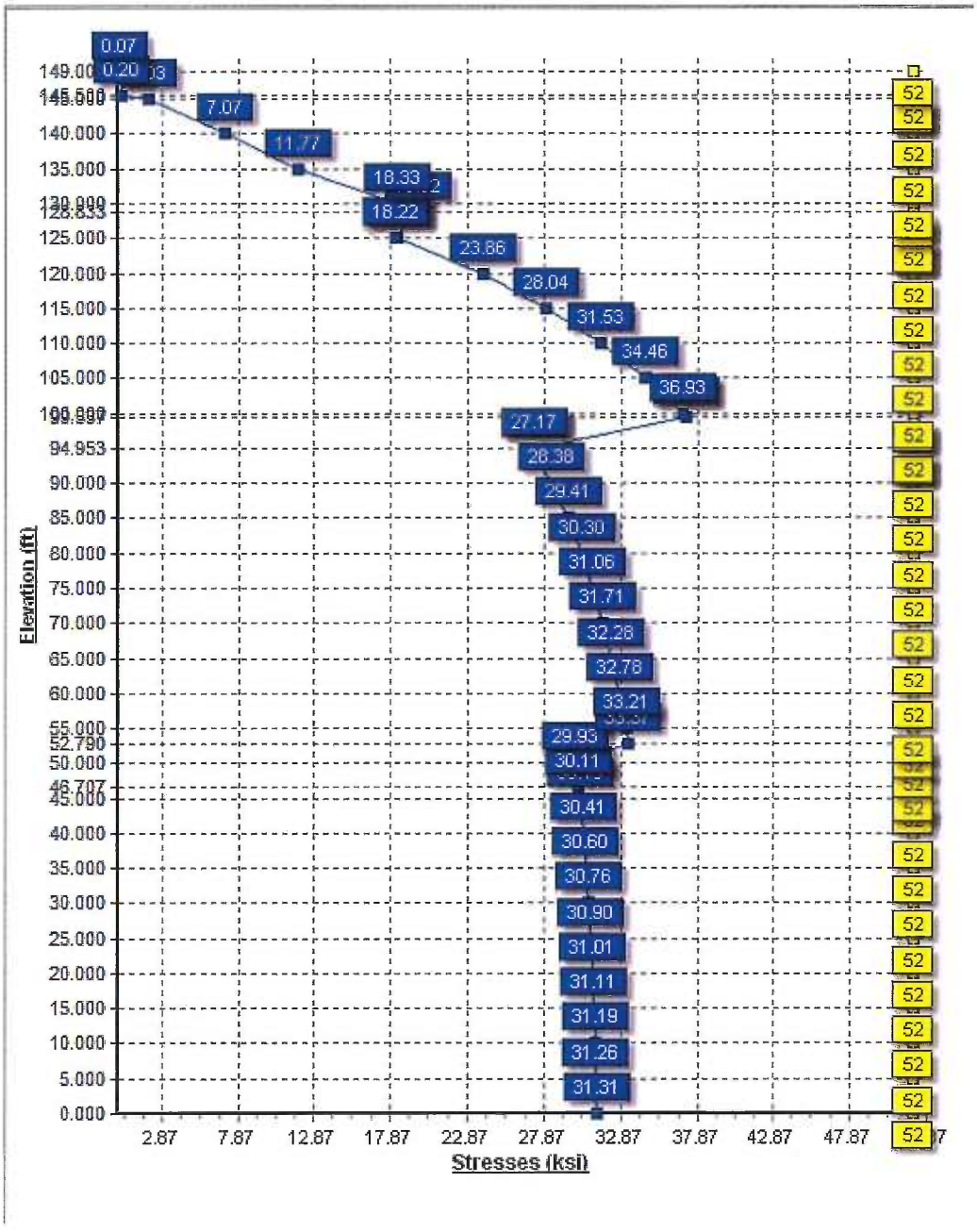
Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
No Ice	2723.40	26.34	31.97
Ice	2218.58	21.02	37.38
Twist/Sway	754.93	7.29	32.00

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000


149'-0"
145'-6"
135'-0"
128'-10"
125'-0"
125'-2"
9'-6"7/16
4'-11"7/16
52'-9"1/2
46'-8"1/2
23'-10"
3/16" Thick
(65 KSI)
44"
33'-10"9/16
1/4" Thick
(65 KSI)
55"
52'-9"15/16
3/8" Thick
(65 KSI)
73"
52'-9"1/2
7/16" Thick
(65 KSI)
149'-0"

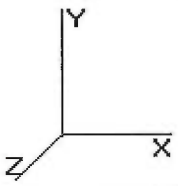

Elevation (ft)
Stresses (ksi)
0.07
0.20
7.07
11.77
18.33
18.22
23.86
28.04
31.53
34.46
36.93
27.17
28.38
29.41
30.30
31.06
31.71
32.28
32.78
33.21
29.93
30.11
30.41
30.60
30.76
30.90
31.01
31.11
31.19
31.26
31.31
52
2.87
7.87
12.87
17.87
22.87
27.87
32.87
37.87
42.87
47.87

Pole : 370641
Location : Beacon Falls CT
Height : 149.0 (ft)
Base Dia : 56.00 (in)
Top Dia : 18.50 (in)
Shape : 18 Sides
Taper : 0.262584 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

© 2007 - 2014 by ATC IP LLC. All rights reserved.



4/14/2014 2:23:13 PM

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (sqin)	Bottom Ix (in^4)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (sqin)	Top Ix (in^4)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	52.790	0.4375	65		0.00	12,130	56.00	0.00	77.15	30093.0	21.16	128.00	42.13	52.79	57.90	12721.8	15.57	96.32	0.262584
2-18	52.830	0.3750	65	Slip	73.00	7,954	44.48	46.71	52.50	12906.3	19.51	118.63	30.61	99.54	35.99	4157.6	12.98	81.64	0.262584
3-18	33.880	0.2500	65	Slip	55.00	2,526	32.31	94.95	25.44	3305.6	21.38	129.27	23.42	128.83	18.39	1247.0	15.11	93.68	0.262584
4-18	23.833	0.1875	65	Slip	44.00	1,035	24.75	125.17	14.62	1115.3	21.87	132.04	18.50	149.00	10.90	461.7	15.99	98.67	0.262584
				Shaft Weight		23,646													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor	Distance From Face (ft)	Vert Ecc (ft)
145.50	Ericsson RRUS 11 (Band 12)	6	50.00	2.990	0.67	60.80	2.880	0.67	0.000	0.000
145.50	Flat Low Profile Platform	1	1500.00	26.100	1.00	1,700.00	31.600	1.00	0.000	0.000
145.50	KMW AM-X-CD-16-65-00T-	3	48.50	8.260	0.79	95.00	9.080	0.79	0.000	0.000
145.50	Powerwave Allagon 7770.00	6	35.00	5.880	0.77	67.63	6.530	0.77	0.000	0.000
145.50	Powerwave Allagon	6	5.30	0.340	0.50	14.00	0.440	0.50	0.000	0.000
145.50	Powerwave Allagon	6	14.10	1.290	0.50	21.26	1.530	0.50	0.000	0.000
145.50	Raycap DC6-48-60-18-8F	1	31.80	1.470	1.00	49.50	1.670	1.00	0.000	0.000
135.00	Ericsson AIR 21	6	91.00	6.530	0.86	132.60	7.200	0.86	0.000	0.000
135.00	Ericsson KRY 112 144/1	3	11.00	0.410	0.50	14.10	0.550	0.50	0.000	0.000
135.00	Round T-Arm	3	250.00	9.700	0.67	314.00	12.100	0.67	0.000	0.000
125.00	APX16DWV-16DWVS-C_A20	9	40.70	7.070	1.00	132.00	7.300	1.00	0.000	1.000
	Totals	50	3999.00			5,984.54			Number of Loadings :	11

Linear Appurtenance Properties

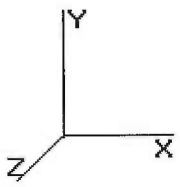
Elev From (ft)	Elev To (ft)	Description	No Ice Weight (lb/ft)	No Ice CaAa (sf/ft)	Ice Weight (lb/ft)	Ice CaAa (sf/ft)	Exposed To Wind
0.00	145.50	(12) 1 5/8" Coax	9.84	0.00	0.00	0.00	N
0.00	145.50	(1) 2" Conduit	3.65	0.00	0.00	0.00	N
0.00	135.00	(12) 1 5/8" Coax	9.84	0.00	0.00	0.00	N
0.00	135.00	(1) 1.57" Hybrid	1.07	0.00	0.00	0.00	N
0.00	125.00	(9) 1 5/8" Coax	7.38	0.00	0.00	0.00	N
		Total Weight	4,358.15 (lb)		0.00 (lb)		

Pole : 370641
Location : Beacon Falls CT
Height : 149.0 (ft)
Base Dia : 56.00 (in)
Top Dia : 18.50 (in)
Shape : 18 Sides
Taper : 0.262584 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

© 2007 - 2014 by ATC IP LLC. All rights reserved.

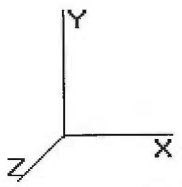


Segment Properties (Max Len : 5 ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)
0.00		0.4375	56.000	77.153	30,093.2	21.16	128.00	65	52	0.0
5.00		0.4375	54.687	75.330	28,009.9	20.63	125.00	65	52	1,297.2
10.00		0.4375	53.374	73.507	26,025.1	20.10	122.00	65	52	1,266.1
15.00		0.4375	52.061	71.683	24,136.3	19.57	119.00	65	52	1,235.1
20.00		0.4375	50.748	69.860	22,341.2	19.04	116.00	65	52	1,204.1
25.00		0.4375	49.435	68.037	20,637.4	18.51	113.00	65	52	1,173.1
30.00		0.4375	48.122	66.214	19,022.5	17.98	109.99	65	52	1,142.1
35.00		0.4375	46.810	64.391	17,494.1	17.46	106.99	65	52	1,111.1
40.00		0.4375	45.497	62.568	16,049.9	16.93	103.99	65	52	1,080.0
45.00		0.4375	44.184	60.745	14,687.4	16.40	100.99	65	52	1,049.0
46.71	Bot - Section 2	0.4375	43.736	60.123	14,240.6	16.22	99.97	65	52	351.0
50.00		0.4375	42.871	58.922	13,404.3	15.87	97.99	65	52	1,249.6
52.79	Top - Section 1	0.3750	42.888	50.600	11,554.4	18.76	114.37	65	52	1,039.1
55.00		0.3750	42.308	49.909	11,087.7	18.48	112.82	65	52	377.9
60.00		0.3750	40.995	48.346	10,078.5	17.87	109.32	65	52	835.8
65.00		0.3750	39.682	46.784	9,132.4	17.25	105.82	65	52	809.3
70.00		0.3750	38.369	45.221	8,247.6	16.63	102.32	65	52	782.7
75.00		0.3750	37.056	43.658	7,421.8	16.01	98.82	65	52	756.1
80.00		0.3750	35.743	42.096	6,653.0	15.40	95.32	65	52	729.5
85.00		0.3750	34.430	40.533	5,939.3	14.78	91.81	65	52	702.9
90.00		0.3750	33.117	38.970	5,278.5	14.16	88.31	65	52	676.3
94.95	Bot - Section 3	0.3750	31.817	37.422	4,674.1	13.55	84.84	65	52	643.8
95.00		0.3750	31.805	37.408	4,668.6	13.54	84.81	65	52	10.0
99.54	Top - Section 2	0.2500	31.113	24.489	2,947.2	20.53	124.45	65	52	951.9
100.0		0.2500	30.992	24.393	2,912.5	20.45	123.97	65	52	38.5
105.0		0.2500	29.679	23.351	2,555.0	19.52	118.71	65	52	406.2
110.0		0.2500	28.366	22.309	2,228.1	18.60	113.46	65	52	388.4
115.0		0.2500	27.053	21.267	1,930.3	17.67	108.21	65	52	370.7
120.0		0.2500	25.740	20.226	1,660.3	16.74	102.96	65	52	353.0
125.0		0.2500	24.427	19.184	1,416.7	15.82	97.71	65	52	335.3
125.1	Bot - Section 4	0.2500	24.383	19.149	1,409.1	15.79	97.53	65	52	10.9
128.8	Top - Section 3	0.1875	23.795	14.049	989.3	20.97	126.91	65	52	413.0
130.0		0.1875	23.489	13.867	951.3	20.68	125.28	65	52	55.4
135.0		0.1875	22.176	13.086	799.4	19.44	118.27	65	52	229.3
140.0		0.1875	20.863	12.304	664.6	18.21	111.27	65	52	216.0
145.0		0.1875	19.550	11.523	545.8	16.97	104.27	65	52	202.7
145.5		0.1875	19.419	11.445	534.8	16.85	103.57	65	52	19.5
149.0		0.1875	18.500	10.898	461.7	15.99	98.67	65	52	133.0
										23,645.5

Pole :	370641	Code: TIA/EIA-222 Rev F	4/14/2014 2:23:13 PM
Location :	Beacon Falls CT		Page: 3
Height :	149.0 (ft)		
Base Dia :	56.00 (in)		
Top Dia :	18.50 (in)	Base Elev : 0.000 (ft)	
Shape :	18 Sides		
Taper :	0.262584 (in/ft)		

© 2007 - 2014 by ATC IP LLC. All rights reserved.



Load Case: No Ice — 95.00 mph Wind with No Ice — 23 Iterations

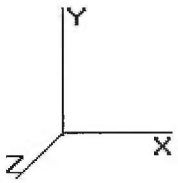
Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Shaft Segment Forces

Seg Top Elev (ft)	Description	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00 23.104	39.04	443.33	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00 23.104	39.04	432.93	0.650	0.000	5.00	23.060	14.99	585.3	0.0	1,297.2
10.00		0.00	1.00 23.104	39.04	422.54	0.650	0.000	5.00	22.513	14.63	571.4	0.0	1,266.1
15.00		0.00	1.00 23.104	39.04	412.15	0.650	0.000	5.00	21.966	14.28	557.5	0.0	1,235.1
20.00		0.00	1.00 23.104	39.04	401.75	0.650	0.000	5.00	21.419	13.92	543.6	0.0	1,204.1
25.00		0.00	1.00 23.104	39.04	391.36	0.650	0.000	5.00	20.872	13.57	529.7	0.0	1,173.1
30.00		0.00	1.00 23.104	39.04	380.97	0.650	0.000	5.00	20.325	13.21	515.8	0.0	1,142.1
35.00		0.00	1.01 23.496	39.70	373.70	0.650	0.000	5.00	19.778	12.86	510.5	0.0	1,111.1
40.00		0.00	1.05 24.409	41.25	370.21	0.650	0.000	5.00	19.230	12.50	515.6	0.0	1,080.0
45.00		0.00	1.09 25.245	42.66	365.63	0.650	0.000	5.00	18.683	12.14	518.1	0.0	1,049.0
46.71	Bot - Section 2	0.00	1.10 25.515	43.12	363.85	0.650	0.000	1.71	6.252	4.06	175.2	0.0	351.0
50.00		0.00	1.12 26.016	43.96	360.15	0.650	0.000	3.29	12.090	7.86	345.5	0.0	1,249.6
52.79	Top - Section 1	0.00	1.14 26.423	44.65	356.75	0.650	0.000	2.79	10.057	6.54	291.9	0.0	1,039.1
55.00		0.00	1.15 26.735	45.18	360.29	0.650	0.000	2.21	7.845	5.10	230.4	0.0	377.9
60.00		0.00	1.18 27.407	46.31	353.47	0.650	0.000	5.00	17.355	11.28	522.5	0.0	835.8
65.00		0.00	1.21 28.042	47.39	346.09	0.650	0.000	5.00	16.808	10.93	517.7	0.0	809.3
70.00		0.00	1.24 28.642	48.40	338.20	0.650	0.000	5.00	16.261	10.57	511.6	0.0	782.7
75.00		0.00	1.26 29.212	49.36	329.86	0.650	0.000	5.00	15.714	10.21	504.2	0.0	756.1
80.00		0.00	1.28 29.755	50.28	321.12	0.650	0.000	5.00	15.167	9.86	495.7	0.0	729.5
85.00		0.00	1.31 30.275	51.16	312.02	0.650	0.000	5.00	14.620	9.50	486.2	0.0	702.9
90.00		0.00	1.33 30.774	52.00	302.58	0.650	0.000	5.00	14.072	9.15	475.7	0.0	676.3
94.95	Bot - Section 3	0.00	1.35 31.248	52.81	292.93	0.650	0.000	4.95	13.402	8.71	460.0	0.0	643.8
95.00		0.00	1.35 31.253	52.81	292.84	0.650	0.000	0.05	0.126	0.08	4.3	0.0	10.0
99.54	Top - Section 2	0.00	1.37 31.672	53.52	283.75	0.650	0.000	4.54	11.988	7.79	417.1	0.0	951.9
100.0		0.00	1.37 31.714	53.59	287.45	0.650	0.000	0.46	1.199	0.78	41.8	0.0	38.5
105.0		0.00	1.39 32.159	54.34	277.20	0.650	0.000	5.00	12.640	8.22	446.5	0.0	406.2
110.0		0.00	1.41 32.590	55.07	266.70	0.650	0.000	5.00	12.093	7.86	432.9	0.0	388.4
115.0		0.00	1.42 33.006	55.78	255.98	0.650	0.000	5.00	11.546	7.50	418.6	0.0	370.7
120.0		0.00	1.44 33.410	56.46	245.04	0.650	0.000	5.00	10.998	7.15	403.7	0.0	353.0
125.0	Appertunance(s)	0.00	1.46 33.802	57.12	233.90	0.650	0.000	5.00	10.451	6.79	388.1	0.0	335.3
125.1	Bot - Section 4	0.00	1.46 33.815	57.14	233.53	0.650	0.000	0.17	0.339	0.22	12.6	0.0	10.9
128.8	Top - Section 3	0.00	1.47 34.095	57.62	225.23	0.650	0.000	3.67	7.418	4.82	277.8	0.0	413.0
130.0		0.00	1.48 34.183	57.76	226.18	0.650	0.000	1.17	2.298	1.49	86.3	0.0	55.4
135.0	Appertunance(s)	0.00	1.49 34.554	58.39	214.70	0.650	0.000	5.00	9.514	6.18	361.1	0.0	229.3
140.0		0.00	1.51 34.914	59.00	203.04	0.650	0.000	5.00	8.967	5.83	343.9	0.0	216.0
145.0		0.00	1.52 35.266	59.60	191.22	0.650	0.000	5.00	8.419	5.47	326.2	0.0	202.7
145.5	Appertunance(s)	0.00	1.52 35.301	59.65	190.02	0.650	0.000	0.50	0.812	0.53	31.5	0.0	19.5
149.0		0.00	1.53 35.542	60.06	181.65	0.650	0.000	3.50	5.530	3.59	215.9	0.0	133.0
						Totals:		149.00			14,072.5	0.0	23,645.5

Pole :	370641	Code: TIA/EIA-222 Rev F	4/14/2014 2:23:13 PM
Location :	Beacon Falls CT		Page: 4
Height :	149.0 (ft)		
Base Dia :	56.00 (in)		
Top Dia :	18.50 (in)	Base Elev : 0.000 (ft)	
Shape :	18 Sides		
Taper :	0.262584 (in/ft)		

© 2007 - 2014 by ATC IP LLC. All rights reserved.



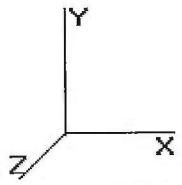
Load Case: No Ice — 95.00 mph Wind with No Ice — 23 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Discrete Appurtenance Segment Forces

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orientation Factor	Total EPAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
125.0	APX16DWV-16DWVS-	9	33.879	57.256	1.00	63.63	0.000	1.000	3,643.18	0.00	3,643.18	366.30
135.0	Round T-Arm	3	34.554	58.396	0.67	19.50	0.000	0.000	1,138.53	0.00	0.00	750.00
135.0	Ericsson AIR 21	6	34.554	58.396	0.86	33.69	0.000	0.000	1,967.63	0.00	0.00	546.00
135.0	Ericsson KRY 112 144	3	34.554	58.396	0.50	0.62	0.000	0.000	35.91	0.00	0.00	33.00
145.5	Flat Low Profile Pla	1	35.301	59.659	1.00	26.10	0.000	0.000	1,557.09	0.00	0.00	1,500.00
145.5	Powerwave Allagon	6	35.301	59.659	0.50	1.02	0.000	0.000	60.85	0.00	0.00	31.80
145.5	Powerwave Allagon	6	35.301	59.659	0.50	3.87	0.000	0.000	230.88	0.00	0.00	84.60
145.5	Ericsson RRUS 11 (Ba	6	35.301	59.659	0.67	12.02	0.000	0.000	717.09	0.00	0.00	300.00
145.5	Powerwave Allagon 77	6	35.301	59.659	0.77	27.17	0.000	0.000	1,620.66	0.00	0.00	210.00
145.5	KMW AM-X-CD-16-65-	3	35.301	59.659	0.79	19.58	0.000	0.000	1,167.89	0.00	0.00	145.50
145.5	Raycap DC6-48-60-18-	1	35.301	59.659	1.00	1.47	0.000	0.000	87.70	0.00	0.00	31.80
									12,227.40			3,999.00

Pole :	370641	Code: TIA/EIA-222 Rev F	4/14/2014 2:23:13 PM
Location :	Beacon Falls CT		Page: 5
Height :	149.0 (ft)		
Base Dia :	56.00 (in)		
Top Dia :	18.50 (in)	Base Elev : 0.000 (ft)	
Shape :	18 Sides		
Taper :	0.262584 (in/ft)		



© 2007 - 2014 by ATC IP LLC. All rights reserved.

Load Case: No Ice — 95.00 mph Wind with No Ice — 23 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Applied Segment Forces Summary

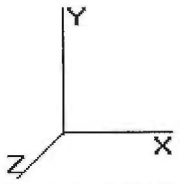
Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	585.25	1,456.06	0.00	0.00
10.00	571.37	1,425.04	0.00	0.00
15.00	557.48	1,394.02	0.00	0.00
20.00	543.60	1,363.01	0.00	0.00
25.00	529.72	1,331.99	0.00	0.00
30.00	515.83	1,300.97	0.00	0.00
35.00	510.46	1,269.95	0.00	0.00
40.00	515.64	1,238.93	0.00	0.00
45.00	518.12	1,207.92	0.00	0.00
46.71	175.24	405.21	0.00	0.00
50.00	345.52	1,354.26	0.00	0.00
52.79	291.91	1,127.76	0.00	0.00
55.00	230.39	448.14	0.00	0.00
60.00	522.50	994.75	0.00	0.00
65.00	517.74	968.16	0.00	0.00
70.00	511.61	941.58	0.00	0.00
75.00	504.24	914.99	0.00	0.00
80.00	495.74	888.40	0.00	0.00
85.00	486.21	861.82	0.00	0.00
90.00	475.72	835.23	0.00	0.00
94.95	460.04	801.22	0.00	0.00
95.00	4.31	11.46	0.00	0.00
99.54	417.08	1,096.05	0.00	0.00
100.0	41.77	53.25	0.00	0.00
105.0	446.52	565.05	0.00	0.00
110.0	432.91	547.33	0.00	0.00
115.0	418.61	529.60	0.00	0.00
120.0	403.66	511.88	0.00	0.00
125.0	4,031.26	860.45	0.00	3,643.18
125.1	12.59	14.94	0.00	0.00
128.8	277.83	502.48	0.00	0.00
130.0	86.31	83.88	0.00	0.00
135.0	3,503.17	1,680.28	0.00	0.00
140.0	343.90	283.44	0.00	0.00
145.0	326.17	270.15	0.00	0.00
145.5	5,473.64	2,329.98	0.00	0.00
149.0	215.90	133.05	0.00	0.00
Totals:	26,299.94	32,002.68	0.00	3,643.18

Pole : 370641
Location : Beacon Falls CT
Height : 149.0 (ft)
Base Dia : 56.00 (in)
Top Dia : 18.50 (in)
Shape : 18 Sides
Taper : 0.262584 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

© 2007 - 2014 by ATC IP LLC. All rights reserved.



Load Case: No Ice — 95.00 mph Wind with No Ice — 23 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Calculated Shaft Forces and Deflections

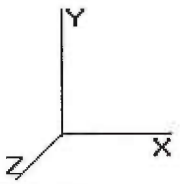
Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-26.335	-31.973	0.000	0.000	0.000	-2,723.396	0.000	0.000	0.000	0.000
5.00	-25.816	-30.460	0.000	0.000	0.000	-2,591.721	-0.068	0.000	0.068	-0.126
10.00	-25.306	-28.980	0.000	0.000	0.000	-2,462.643	-0.268	0.000	0.268	-0.254
15.00	-24.804	-27.532	0.000	0.000	0.000	-2,336.116	-0.605	0.000	0.605	-0.385
20.00	-24.312	-26.116	0.000	0.000	0.000	-2,212.097	-1.081	0.000	1.081	-0.519
25.00	-23.828	-24.732	0.000	0.000	0.000	-2,090.541	-1.698	0.000	1.698	-0.656
30.00	-23.354	-23.380	0.000	0.000	0.000	-1,971.402	-2.461	0.000	2.461	-0.796
35.00	-22.880	-22.060	0.000	0.000	0.000	-1,854.636	-3.371	0.000	3.371	-0.939
40.00	-22.396	-20.773	0.000	0.000	0.000	-1,740.238	-4.434	0.000	4.434	-1.085
45.00	-21.888	-19.537	0.000	0.000	0.000	-1,628.261	-5.651	0.000	5.651	-1.235
46.71	-21.730	-19.106	0.000	0.000	0.000	-1,590.905	-6.102	0.000	6.102	-1.288
50.00	-21.382	-17.725	0.000	0.000	0.000	-1,519.344	-7.027	0.000	7.027	-1.390
52.79	-21.085	-16.576	0.000	0.000	0.000	-1,459.688	-7.866	0.000	7.866	-1.478
55.00	-20.878	-16.089	0.000	0.000	0.000	-1,413.092	-8.567	0.000	8.567	-1.549
60.00	-20.373	-15.047	0.000	0.000	0.000	-1,308.705	-10.284	0.000	10.284	-1.724
65.00	-19.869	-14.034	0.000	0.000	0.000	-1,206.840	-12.184	0.000	12.184	-1.901
70.00	-19.366	-13.049	0.000	0.000	0.000	-1,107.496	-14.273	0.000	14.273	-2.082
75.00	-18.867	-12.093	0.000	0.000	0.000	-1,010.665	-16.551	0.000	16.551	-2.264
80.00	-18.371	-11.167	0.000	0.000	0.000	-916.333	-19.022	0.000	19.022	-2.449
85.00	-17.881	-10.269	0.000	0.000	0.000	-824.479	-21.686	0.000	21.686	-2.635
90.00	-17.396	-9.401	0.000	0.000	0.000	-735.077	-24.546	0.000	24.546	-2.822
94.95	-16.910	-8.597	0.000	0.000	0.000	-648.908	-27.572	0.000	27.572	-3.007
95.00	-16.918	-8.561	0.000	0.000	0.000	-648.119	-27.601	0.000	27.601	-3.009
99.54	-16.454	-7.462	0.000	0.000	0.000	-571.368	-30.542	0.000	30.542	-3.177
100.0	-16.428	-7.371	0.000	0.000	0.000	-563.745	-30.851	0.000	30.851	-3.195
105.0	-15.979	-6.763	0.000	0.000	0.000	-481.608	-34.335	0.000	34.335	-3.450
110.0	-15.539	-6.179	0.000	0.000	0.000	-401.714	-38.081	0.000	38.081	-3.696
115.0	-15.108	-5.620	0.000	0.000	0.000	-324.022	-42.077	0.000	42.077	-3.928
120.0	-14.686	-5.087	0.000	0.000	0.000	-248.484	-46.305	0.000	46.305	-4.139
125.0	-10.610	-4.511	0.000	0.000	0.000	-171.410	-50.739	0.000	50.739	-4.320
125.1	-10.601	-4.486	0.000	0.000	0.000	-169.641	-50.890	0.000	50.890	-4.326
128.8	-10.290	-3.993	0.000	0.000	0.000	-130.772	-54.255	0.000	54.255	-4.437
130.0	-10.204	-3.900	0.000	0.000	0.000	-118.767	-55.343	0.000	55.343	-4.470
135.0	-6.584	-2.490	0.000	0.000	0.000	-67.748	-60.102	0.000	60.102	-4.610
140.0	-6.220	-2.228	0.000	0.000	0.000	-34.830	-64.979	0.000	64.979	-4.701
145.0	-5.874	-1.984	0.000	0.000	0.000	-3.728	-69.926	0.000	69.926	-4.742
145.5	-0.226	-0.115	0.000	0.000	0.000	-0.791	-70.422	0.000	70.422	-4.743
149.0	-0.216	0.000	0.000	0.000	0.000	0.000	-73.895	0.000	73.895	-4.744

Pole : 370641
Location : Beacon Falls CT
Height : 149.0 (ft)
Base Dia : 56.00 (in)
Top Dia : 18.50 (in)
Shape : 18 Sides
Taper : 0.262584 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

© 2007 - 2014 by ATC IP LLC. All rights reserved.



Load Case: No Ice — 95.00 mph Wind with No Ice — 23 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Calculated Stresses

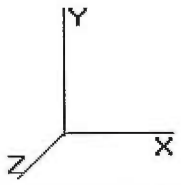
Seg Elev (ft)	Applied Stresses Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)	Allowable Stress (Fb) (ksi)		Stress Ratio
0.00	0.41	0.69	0.00	0.00	0.00	30.88	31.31	52.0	0.0	0.602
5.00	0.40	0.69	0.00	0.00	0.00	30.83	31.26	52.0	0.0	0.601
10.00	0.39	0.69	0.00	0.00	0.00	30.77	31.19	52.0	0.0	0.600
15.00	0.38	0.70	0.00	0.00	0.00	30.70	31.11	52.0	0.0	0.598
20.00	0.37	0.70	0.00	0.00	0.00	30.61	31.01	52.0	0.0	0.597
25.00	0.36	0.71	0.00	0.00	0.00	30.51	30.90	52.0	0.0	0.594
30.00	0.35	0.71	0.00	0.00	0.00	30.38	30.76	52.0	0.0	0.592
35.00	0.34	0.72	0.00	0.00	0.00	30.23	30.60	52.0	0.0	0.589
40.00	0.33	0.72	0.00	0.00	0.00	30.05	30.41	52.0	0.0	0.585
45.00	0.32	0.73	0.00	0.00	0.00	29.84	30.19	52.0	0.0	0.581
46.71	0.32	0.73	0.00	0.00	0.00	29.77	30.11	52.0	0.0	0.579
50.00	0.30	0.73	0.00	0.00	0.00	29.61	29.93	52.0	0.0	0.576
52.79	0.33	0.84	0.00	0.00	0.00	33.01	33.37	52.0	0.0	0.642
55.00	0.32	0.84	0.00	0.00	0.00	32.85	33.21	52.0	0.0	0.639
60.00	0.31	0.85	0.00	0.00	0.00	32.43	32.78	52.0	0.0	0.631
65.00	0.30	0.86	0.00	0.00	0.00	31.95	32.28	52.0	0.0	0.621
70.00	0.29	0.86	0.00	0.00	0.00	31.39	31.71	52.0	0.0	0.610
75.00	0.28	0.87	0.00	0.00	0.00	30.74	31.06	52.0	0.0	0.597
80.00	0.27	0.88	0.00	0.00	0.00	29.99	30.30	52.0	0.0	0.583
85.00	0.25	0.89	0.00	0.00	0.00	29.12	29.41	52.0	0.0	0.566
90.00	0.24	0.90	0.00	0.00	0.00	28.10	28.38	52.0	0.0	0.546
94.95	0.23	0.91	0.00	0.00	0.00	26.91	27.19	52.0	0.0	0.523
95.00	0.23	0.91	0.00	0.00	0.00	26.90	27.17	52.0	0.0	0.523
99.54	0.30	1.35	0.00	0.00	0.00	36.75	37.13	52.0	0.0	0.714
100.00	0.30	1.36	0.00	0.00	0.00	36.55	36.93	52.0	0.0	0.710
105.00	0.29	1.38	0.00	0.00	0.00	34.08	34.46	52.0	0.0	0.663
110.00	0.28	1.40	0.00	0.00	0.00	31.16	31.53	52.0	0.0	0.607
115.00	0.26	1.43	0.00	0.00	0.00	27.67	28.04	52.0	0.0	0.539
120.00	0.25	1.46	0.00	0.00	0.00	23.47	23.86	52.0	0.0	0.459
125.00	0.24	1.11	0.00	0.00	0.00	18.01	18.34	52.0	0.0	0.353
125.17	0.23	1.12	0.00	0.00	0.00	17.89	18.22	52.0	0.0	0.351
128.83	0.28	1.48	0.00	0.00	0.00	19.16	19.62	52.0	0.0	0.377
130.00	0.28	1.48	0.00	0.00	0.00	17.87	18.33	52.0	0.0	0.353
135.00	0.19	1.01	0.00	0.00	0.00	11.45	11.77	52.0	0.0	0.226
140.00	0.18	1.02	0.00	0.00	0.00	6.66	7.07	52.0	0.0	0.136
145.00	0.17	1.03	0.00	0.00	0.00	0.81	2.03	52.0	0.0	0.039
145.50	0.01	0.04	0.00	0.00	0.00	0.18	0.20	52.0	0.0	0.004
149.00	0.00	0.04	0.00	0.00	0.00	0.00	0.07	52.0	0.0	0.001

Pole : 370641
Location : Beacon Falls CT
Height : 149.0 (ft)
Base Dia : 56.00 (in)
Top Dia : 18.50 (in)
Shape : 18 Sides
Taper : 0.262584 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

© 2007 - 2014 by ATC IP LLC. All rights reserved.



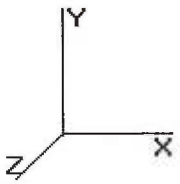
Load Case: Ice — 82.27 mph Wind with Ice — 23 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Shaft Segment Forces

Seg Top Elev (ft)	Description		Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	17.327	29.28	383.92	0.650	0.500	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	17.327	29.28	374.92	0.650	0.500	5.00	23.476	15.26	446.8	170.3	1,467.5
10.00		0.00	1.00	17.327	29.28	365.92	0.650	0.500	5.00	22.929	14.90	436.4	166.2	1,432.4
15.00		0.00	1.00	17.327	29.28	356.92	0.650	0.500	5.00	22.382	14.55	426.0	162.2	1,397.3
20.00		0.00	1.00	17.327	29.28	347.92	0.650	0.500	5.00	21.835	14.19	415.6	158.1	1,362.2
25.00		0.00	1.00	17.327	29.28	338.92	0.650	0.500	5.00	21.288	13.84	405.2	154.1	1,327.2
30.00		0.00	1.00	17.327	29.28	329.92	0.650	0.500	5.00	20.741	13.48	394.8	150.0	1,292.1
35.00		0.00	1.01	17.621	29.77	323.62	0.650	0.500	5.00	20.194	13.13	390.9	146.0	1,257.0
40.00		0.00	1.05	18.306	30.93	320.60	0.650	0.500	5.00	19.647	12.77	395.1	141.9	1,222.0
45.00		0.00	1.09	18.933	31.99	316.64	0.650	0.500	5.00	19.100	12.42	397.2	137.9	1,186.9
46.71	Bot - Section 2	0.00	1.10	19.135	32.33	315.09	0.650	0.500	1.71	6.394	4.16	134.4	46.6	397.6
50.00		0.00	1.12	19.511	32.97	311.89	0.650	0.500	3.29	12.364	8.04	265.0	89.7	1,339.3
52.79	Top - Section 1	0.00	1.14	19.816	33.48	308.94	0.650	0.500	2.79	10.289	6.69	224.0	74.7	1,113.8
55.00		0.00	1.15	20.050	33.88	312.01	0.650	0.500	2.21	8.029	5.22	176.8	58.4	436.3
60.00		0.00	1.18	20.554	34.73	306.11	0.650	0.500	5.00	17.771	11.55	401.3	128.0	963.9
65.00		0.00	1.21	21.030	35.54	299.71	0.650	0.500	5.00	17.224	11.20	397.9	124.0	933.3
70.00		0.00	1.24	21.480	36.30	292.88	0.650	0.500	5.00	16.677	10.84	393.5	119.9	902.6
75.00		0.00	1.26	21.908	37.02	285.66	0.650	0.500	5.00	16.130	10.48	388.2	115.9	872.0
80.00		0.00	1.28	22.315	37.71	278.09	0.650	0.500	5.00	15.583	10.13	382.0	111.8	841.3
85.00		0.00	1.31	22.705	38.37	270.21	0.650	0.500	5.00	15.036	9.77	375.0	107.8	810.7
90.00		0.00	1.33	23.079	39.00	262.03	0.650	0.500	5.00	14.489	9.42	367.3	103.7	780.1
94.95	Bot - Section 3	0.00	1.35	23.435	39.60	253.68	0.650	0.500	4.95	13.815	8.98	355.6	98.8	742.6
95.00		0.00	1.35	23.438	39.61	253.60	0.650	0.500	0.05	0.129	0.08	3.3	0.9	10.9
99.54	Top - Section 2	0.00	1.37	23.753	40.14	245.73	0.650	0.500	4.54	12.366	8.04	322.7	88.5	1,040.4
100.0		0.00	1.37	23.784	40.19	248.93	0.650	0.500	0.46	1.237	0.80	32.3	9.0	47.5
105.0		0.00	1.39	24.118	40.76	240.05	0.650	0.500	5.00	13.056	8.49	345.9	93.1	499.3
110.0		0.00	1.41	24.441	41.30	230.96	0.650	0.500	5.00	12.509	8.13	335.9	89.1	477.5
115.0		0.00	1.42	24.753	41.83	221.68	0.650	0.500	5.00	11.962	7.78	325.3	85.0	455.7
120.0		0.00	1.44	25.056	42.34	212.20	0.650	0.500	5.00	11.415	7.42	314.2	81.0	433.9
125.0	Appertunance(s)	0.00	1.46	25.350	42.84	202.56	0.650	0.500	5.00	10.868	7.06	302.6	76.9	412.2
125.1	Bot - Section 4	0.00	1.46	25.360	42.85	202.23	0.650	0.500	0.17	0.353	0.23	9.8	2.6	13.4
128.8	Top - Section 3	0.00	1.47	25.570	43.21	195.05	0.650	0.500	3.67	7.723	5.02	216.9	55.0	468.0
130.0		0.00	1.48	25.636	43.32	195.87	0.650	0.500	1.17	2.396	1.56	67.5	17.3	72.7
135.0	Appertunance(s)	0.00	1.49	25.914	43.79	185.93	0.650	0.500	5.00	9.930	6.45	282.7	70.0	299.3
140.0		0.00	1.51	26.184	44.25	175.83	0.650	0.500	5.00	9.383	6.10	269.9	65.9	281.9
145.0		0.00	1.52	26.448	44.69	165.59	0.650	0.500	5.00	8.836	5.74	256.7	61.9	264.6
145.5	Appertunance(s)	0.00	1.52	26.474	44.74	164.56	0.650	0.500	0.50	0.854	0.55	24.8	6.1	25.7
149.0		0.00	1.53	26.655	45.04	157.31	0.650	0.500	3.50	5.822	3.78	170.5	41.0	174.1
							Totals:		149.00			10,850.2	3,409.5	27,055.0

Pole :	370641	Code: TIA/EIA-222 Rev F	4/14/2014 2:23:13 PM
Location :	Beacon Falls CT		Page: 9
Height :	149.0 (ft)		
Base Dia :	56.00 (in)		
Top Dia :	18.50 (in)	Base Elev : 0.000 (ft)	
Shape :	18 Sides		
Taper :	0.262584 (in/ft)		



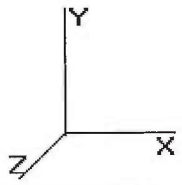
© 2007 - 2014 by ATC IP LLC. All rights reserved.

Load Case: Ice — 82.27 mph Wind with Ice — 23 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Discrete Appurtenance Segment Forces

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orientation Factor	Total EPAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
125.0	APX16DWV-16DWVS-	9	25.408	42.939	1.00	65.70	0.000	1.000	2,821.11	0.00	2,821.11	1,188.00
135.0	Round T-Arm	3	25.914	43.794	0.67	24.32	0.000	0.000	1,065.12	0.00	0.00	942.00
135.0	Ericsson AIR 21	6	25.914	43.794	0.86	37.15	0.000	0.000	1,627.04	0.00	0.00	795.60
135.0	Ericsson KRY 112 144	3	25.914	43.794	0.50	0.83	0.000	0.000	36.13	0.00	0.00	42.30
145.5	Flat Low Profile Pla	1	26.474	44.741	1.00	31.60	0.000	0.000	1,413.83	0.00	0.00	1,700.00
145.5	Powerwave Allagon	6	26.474	44.741	0.50	1.32	0.000	0.000	59.06	0.00	0.00	84.00
145.5	Powerwave Allagon	6	26.474	44.741	0.50	4.59	0.000	0.000	205.36	0.00	0.00	127.56
145.5	Ericsson RRUS 11 (Ba	6	26.474	44.741	0.67	11.58	0.000	0.000	518.00	0.00	0.00	364.80
145.5	Powerwave Allagon 77	6	26.474	44.741	0.77	30.17	0.000	0.000	1,349.78	0.00	0.00	405.78
145.5	KMW AM-X-CD-16-65-	3	26.474	44.741	0.79	21.52	0.000	0.000	962.82	0.00	0.00	285.00
145.5	Raycap DC6-48-60-18-	1	26.474	44.741	1.00	1.67	0.000	0.000	74.72	0.00	0.00	49.50
									10,132.96			5,984.54



© 2007 - 2014 by ATC IP LLC. All rights reserved.

Load Case: Ice — 82.27 mph Wind with Ice — 23 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Applied Segment Forces Summary

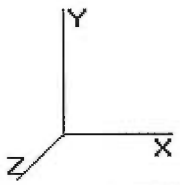
Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	446.84	1,626.35	0.00	0.00
10.00	436.43	1,591.28	0.00	0.00
15.00	426.02	1,556.21	0.00	0.00
20.00	415.61	1,521.14	0.00	0.00
25.00	405.19	1,486.07	0.00	0.00
30.00	394.78	1,451.01	0.00	0.00
35.00	390.89	1,415.94	0.00	0.00
40.00	395.09	1,380.87	0.00	0.00
45.00	397.23	1,345.80	0.00	0.00
46.71	134.41	451.80	0.00	0.00
50.00	265.01	1,443.94	0.00	0.00
52.79	223.98	1,202.47	0.00	0.00
55.00	176.84	506.53	0.00	0.00
60.00	401.26	1,122.79	0.00	0.00
65.00	397.91	1,092.15	0.00	0.00
70.00	393.51	1,061.52	0.00	0.00
75.00	388.18	1,030.88	0.00	0.00
80.00	382.00	1,000.24	0.00	0.00
85.00	375.03	969.60	0.00	0.00
90.00	367.33	938.96	0.00	0.00
94.95	355.63	900.01	0.00	0.00
95.00	3.33	12.40	0.00	0.00
99.54	322.66	1,184.56	0.00	0.00
100.0	32.33	62.26	0.00	0.00
105.0	345.91	658.17	0.00	0.00
110.0	335.85	636.40	0.00	0.00
115.0	325.27	614.62	0.00	0.00
120.0	314.19	592.85	0.00	0.00
125.0	3,123.75	1,759.07	0.00	2,821.11
125.1	9.83	17.50	0.00	0.00
128.8	216.94	557.46	0.00	0.00
130.0	67.46	101.15	0.00	0.00
135.0	3,010.96	2,201.16	0.00	0.00
140.0	269.89	349.36	0.00	0.00
145.0	256.72	332.02	0.00	0.00
145.5	4,608.39	3,049.07	0.00	0.00
149.0	170.45	174.09	0.00	0.00
Totals:	20,983.12	37,397.69	0.00	2,821.11

Pole : 370641
Location : Beacon Falls CT
Height : 149.0 (ft)
Base Dia : 56.00 (in)
Top Dia : 18.50 (in)
Shape : 18 Sides
Taper : 0.262584 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

© 2007 - 2014 by ATC IP LLC. All rights reserved.



Load Case: Ice — 82.27 mph Wind with Ice — 23 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Calculated Shaft Forces and Deflections

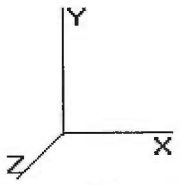
Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-21.017	-37.378	0.000	0.000	0.000	-2,218.576	0.000	0.000	0.000	0.000
5.00	-20.633	-35.715	0.000	0.000	0.000	-2,113.493	-0.055	0.000	0.055	-0.102
10.00	-20.255	-34.088	0.000	0.000	0.000	-2,010.329	-0.219	0.000	0.219	-0.207
15.00	-19.884	-32.496	0.000	0.000	0.000	-1,909.054	-0.493	0.000	0.493	-0.314
20.00	-19.518	-30.940	0.000	0.000	0.000	-1,809.636	-0.881	0.000	0.881	-0.424
25.00	-19.159	-29.419	0.000	0.000	0.000	-1,712.046	-1.386	0.000	1.386	-0.536
30.00	-18.806	-27.934	0.000	0.000	0.000	-1,616.253	-2.009	0.000	2.009	-0.651
35.00	-18.452	-26.485	0.000	0.000	0.000	-1,522.226	-2.753	0.000	2.753	-0.768
40.00	-18.090	-25.072	0.000	0.000	0.000	-1,429.966	-3.622	0.000	3.622	-0.888
45.00	-17.705	-23.707	0.000	0.000	0.000	-1,339.516	-4.618	0.000	4.618	-1.011
46.71	-17.589	-23.238	0.000	0.000	0.000	-1,309.299	-4.988	0.000	4.988	-1.055
50.00	-17.326	-21.776	0.000	0.000	0.000	-1,251.375	-5.745	0.000	5.745	-1.139
52.79	-17.101	-20.559	0.000	0.000	0.000	-1,203.036	-6.432	0.000	6.432	-1.211
55.00	-16.949	-20.026	0.000	0.000	0.000	-1,165.245	-7.007	0.000	7.007	-1.270
60.00	-16.569	-18.871	0.000	0.000	0.000	-1,080.503	-8.415	0.000	8.415	-1.414
65.00	-16.189	-17.748	0.000	0.000	0.000	-997.658	-9.975	0.000	9.975	-1.561
70.00	-15.809	-16.657	0.000	0.000	0.000	-916.715	-11.689	0.000	11.689	-1.710
75.00	-15.430	-15.597	0.000	0.000	0.000	-837.671	-13.561	0.000	13.561	-1.861
80.00	-15.054	-14.570	0.000	0.000	0.000	-760.521	-15.593	0.000	15.593	-2.014
85.00	-14.681	-13.575	0.000	0.000	0.000	-685.252	-17.785	0.000	17.785	-2.169
90.00	-14.311	-12.613	0.000	0.000	0.000	-611.850	-20.140	0.000	20.140	-2.324
94.95	-13.933	-11.710	0.000	0.000	0.000	-540.965	-22.634	0.000	22.634	-2.478
95.00	-13.944	-11.680	0.000	0.000	0.000	-540.315	-22.658	0.000	22.658	-2.480
99.54	-13.583	-10.493	0.000	0.000	0.000	-477.055	-25.082	0.000	25.082	-2.620
100.0	-13.569	-10.405	0.000	0.000	0.000	-470.762	-25.338	0.000	25.338	-2.635
105.0	-13.228	-9.715	0.000	0.000	0.000	-402.916	-28.213	0.000	28.213	-2.849
110.0	-12.892	-9.052	0.000	0.000	0.000	-336.777	-31.308	0.000	31.308	-3.054
115.0	-12.560	-8.415	0.000	0.000	0.000	-272.320	-34.613	0.000	34.613	-3.249
120.0	-12.235	-7.807	0.000	0.000	0.000	-209.518	-38.112	0.000	38.112	-3.426
125.0	-9.017	-6.230	0.000	0.000	0.000	-145.523	-41.785	0.000	41.785	-3.580
125.1	-9.012	-6.205	0.000	0.000	0.000	-144.020	-41.910	0.000	41.910	-3.585
128.8	-8.766	-5.654	0.000	0.000	0.000	-110.976	-44.701	0.000	44.701	-3.679
130.0	-8.700	-5.545	0.000	0.000	0.000	-100.749	-45.603	0.000	45.603	-3.707
135.0	-5.557	-3.538	0.000	0.000	0.000	-57.249	-49.552	0.000	49.552	-3.825
140.0	-5.267	-3.202	0.000	0.000	0.000	-29.466	-53.601	0.000	53.601	-3.902
145.0	-4.989	-2.887	0.000	0.000	0.000	-3.131	-57.710	0.000	57.710	-3.937
145.5	-0.182	-0.162	0.000	0.000	0.000	-0.637	-58.122	0.000	58.122	-3.938
149.0	-0.170	0.000	0.000	0.000	0.000	0.000	-61.007	0.000	61.007	-3.938

Pole : 370641
Location : Beacon Falls CT
Height : 149.0 (ft)
Base Dia : 56.00 (in)
Top Dia : 18.50 (in)
Shape : 18 Sides
Taper : 0.262584 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

© 2007 - 2014 by ATC IP LLC. All rights reserved.



Load Case: Ice — 82.27 mph Wind with Ice — 23 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Calculated Stresses

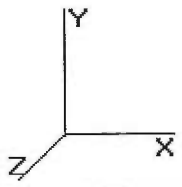
Seg Elev (ft)	Applied Stresses Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)	Allowable Stress (Fb) (ksi)		Stress Ratio
0.00	0.48	0.55	0.00	0.00	0.00	25.15	25.66	52.0	0.0	0.494
5.00	0.47	0.55	0.00	0.00	0.00	25.14	25.63	52.0	0.0	0.493
10.00	0.46	0.56	0.00	0.00	0.00	25.12	25.60	52.0	0.0	0.493
15.00	0.45	0.56	0.00	0.00	0.00	25.09	25.56	52.0	0.0	0.492
20.00	0.44	0.56	0.00	0.00	0.00	25.04	25.51	52.0	0.0	0.491
25.00	0.43	0.57	0.00	0.00	0.00	24.99	25.44	52.0	0.0	0.489
30.00	0.42	0.57	0.00	0.00	0.00	24.91	25.35	52.0	0.0	0.488
35.00	0.41	0.58	0.00	0.00	0.00	24.82	25.25	52.0	0.0	0.486
40.00	0.40	0.58	0.00	0.00	0.00	24.70	25.12	52.0	0.0	0.483
45.00	0.39	0.59	0.00	0.00	0.00	24.55	24.96	52.0	0.0	0.480
46.71	0.39	0.59	0.00	0.00	0.00	24.50	24.91	52.0	0.0	0.479
50.00	0.37	0.59	0.00	0.00	0.00	24.38	24.77	52.0	0.0	0.477
52.79	0.41	0.68	0.00	0.00	0.00	27.21	27.64	52.0	0.0	0.532
55.00	0.40	0.68	0.00	0.00	0.00	27.09	27.52	52.0	0.0	0.529
60.00	0.39	0.69	0.00	0.00	0.00	26.78	27.19	52.0	0.0	0.523
65.00	0.38	0.70	0.00	0.00	0.00	26.41	26.82	52.0	0.0	0.516
70.00	0.37	0.70	0.00	0.00	0.00	25.98	26.38	52.0	0.0	0.507
75.00	0.36	0.71	0.00	0.00	0.00	25.48	25.87	52.0	0.0	0.498
80.00	0.35	0.72	0.00	0.00	0.00	24.89	25.27	52.0	0.0	0.486
85.00	0.33	0.73	0.00	0.00	0.00	24.20	24.57	52.0	0.0	0.473
90.00	0.32	0.74	0.00	0.00	0.00	23.39	23.75	52.0	0.0	0.457
94.95	0.31	0.75	0.00	0.00	0.00	22.44	22.79	52.0	0.0	0.438
95.00	0.31	0.75	0.00	0.00	0.00	22.43	22.78	52.0	0.0	0.438
99.54	0.43	1.12	0.00	0.00	0.00	30.68	31.17	52.0	0.0	0.600
100.00	0.43	1.12	0.00	0.00	0.00	30.52	31.01	52.0	0.0	0.597
105.00	0.42	1.14	0.00	0.00	0.00	28.51	29.00	52.0	0.0	0.558
110.00	0.41	1.16	0.00	0.00	0.00	26.12	26.60	52.0	0.0	0.512
115.00	0.40	1.19	0.00	0.00	0.00	23.25	23.74	52.0	0.0	0.457
120.00	0.39	1.22	0.00	0.00	0.00	19.79	20.29	52.0	0.0	0.390
125.00	0.32	0.95	0.00	0.00	0.00	15.29	15.70	52.0	0.0	0.302
125.17	0.32	0.95	0.00	0.00	0.00	15.18	15.59	52.0	0.0	0.300
128.83	0.40	1.26	0.00	0.00	0.00	16.26	16.81	52.0	0.0	0.323
130.00	0.40	1.26	0.00	0.00	0.00	15.16	15.71	52.0	0.0	0.302
135.00	0.27	0.86	0.00	0.00	0.00	9.68	10.06	52.0	0.0	0.193
140.00	0.26	0.86	0.00	0.00	0.00	5.64	6.08	52.0	0.0	0.117
145.00	0.25	0.87	0.00	0.00	0.00	0.68	1.78	52.0	0.0	0.034
145.50	0.01	0.03	0.00	0.00	0.00	0.14	0.16	52.0	0.0	0.003
149.00	0.00	0.03	0.00	0.00	0.00	0.00	0.05	52.0	0.0	0.001

Pole : 370641
Location : Beacon Falls CT
Height : 149.0 (ft)
Base Dia : 56.00 (in)
Top Dia : 18.50 (in)
Shape : 18 Sides
Taper : 0.262584 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

© 2007 - 2014 by ATC IP LLC. All rights reserved.

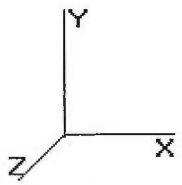


Load Case: Twist/Sway — 50.00 mph Wind with No Ice — 22 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Shaft Segment Forces

Seg Top Elev (ft)	Description		Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Ap (sf)	EPAs (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	6.400	10.81	233.33	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	6.400	10.81	227.86	0.650	0.000	5.00	23.060	14.99	162.1	0.0	1,297.2
10.00		0.00	1.00	6.400	10.81	222.39	0.650	0.000	5.00	22.513	14.63	158.3	0.0	1,266.1
15.00		0.00	1.00	6.400	10.81	216.92	0.650	0.000	5.00	21.966	14.28	154.4	0.0	1,235.1
20.00		0.00	1.00	6.400	10.81	211.45	0.650	0.000	5.00	21.419	13.92	150.6	0.0	1,204.1
25.00		0.00	1.00	6.400	10.81	205.98	0.650	0.000	5.00	20.872	13.57	146.7	0.0	1,173.1
30.00		0.00	1.00	6.400	10.81	200.51	0.650	0.000	5.00	20.325	13.21	142.9	0.0	1,142.1
35.00		0.00	1.01	6.509	10.99	196.68	0.650	0.000	5.00	19.778	12.86	141.4	0.0	1,111.1
40.00		0.00	1.05	6.762	11.42	194.85	0.650	0.000	5.00	19.230	12.50	142.8	0.0	1,080.0
45.00		0.00	1.09	6.993	11.81	192.43	0.650	0.000	5.00	18.683	12.14	143.5	0.0	1,049.0
46.71	Bot - Section 2	0.00	1.10	7.068	11.94	191.50	0.650	0.000	1.71	6.252	4.06	48.5	0.0	351.0
50.00		0.00	1.12	7.207	12.17	189.55	0.650	0.000	3.29	12.090	7.86	95.7	0.0	1,249.6
52.79	Top - Section 1	0.00	1.14	7.319	12.37	187.76	0.650	0.000	2.79	10.057	6.54	80.9	0.0	1,039.1
55.00		0.00	1.15	7.406	12.51	189.62	0.650	0.000	2.21	7.845	5.10	63.8	0.0	377.9
60.00		0.00	1.18	7.592	12.83	186.04	0.650	0.000	5.00	17.355	11.28	144.7	0.0	835.8
65.00		0.00	1.21	7.768	13.12	182.15	0.650	0.000	5.00	16.808	10.93	143.4	0.0	809.3
70.00		0.00	1.24	7.934	13.40	178.00	0.650	0.000	5.00	16.261	10.57	141.7	0.0	782.7
75.00		0.00	1.26	8.092	13.67	173.61	0.650	0.000	5.00	15.714	10.21	139.7	0.0	756.1
80.00		0.00	1.28	8.242	13.93	169.01	0.650	0.000	5.00	15.167	9.86	137.3	0.0	729.5
85.00		0.00	1.31	8.387	14.17	164.22	0.650	0.000	5.00	14.620	9.50	134.7	0.0	702.9
90.00		0.00	1.33	8.525	14.40	159.25	0.650	0.000	5.00	14.072	9.15	131.8	0.0	676.3
94.95	Bot - Section 3	0.00	1.35	8.656	14.62	154.17	0.650	0.000	4.95	13.402	8.71	127.4	0.0	643.8
95.00		0.00	1.35	8.657	14.63	154.12	0.650	0.000	0.05	0.126	0.08	1.2	0.0	10.0
99.54	Top - Section 2	0.00	1.37	8.773	14.82	149.34	0.650	0.000	4.54	11.988	7.79	115.5	0.0	951.9
100.0		0.00	1.37	8.785	14.84	151.29	0.650	0.000	0.46	1.199	0.78	11.6	0.0	38.5
105.0		0.00	1.39	8.908	15.05	145.89	0.650	0.000	5.00	12.640	8.22	123.7	0.0	406.2
110.0		0.00	1.41	9.028	15.25	140.37	0.650	0.000	5.00	12.093	7.86	119.9	0.0	388.4
115.0		0.00	1.42	9.143	15.45	134.72	0.650	0.000	5.00	11.546	7.50	116.0	0.0	370.7
120.0		0.00	1.44	9.255	15.64	128.97	0.650	0.000	5.00	10.998	7.15	111.8	0.0	353.0
125.0	Appertunance(s)	0.00	1.46	9.363	15.82	123.10	0.650	0.000	5.00	10.451	6.79	107.5	0.0	335.3
125.1	Bot - Section 4	0.00	1.46	9.367	15.83	122.91	0.650	0.000	0.17	0.339	0.22	3.5	0.0	10.9
128.8	Top - Section 3	0.00	1.47	9.445	15.96	118.54	0.650	0.000	3.67	7.418	4.82	77.0	0.0	413.0
130.0		0.00	1.48	9.469	16.00	119.04	0.650	0.000	1.17	2.298	1.49	23.9	0.0	55.4
135.0	Appertunance(s)	0.00	1.49	9.572	16.17	113.00	0.650	0.000	5.00	9.514	6.18	100.0	0.0	229.3
140.0		0.00	1.51	9.672	16.34	106.86	0.650	0.000	5.00	8.967	5.83	95.3	0.0	216.0
145.0		0.00	1.52	9.769	16.51	100.64	0.650	0.000	5.00	8.419	5.47	90.4	0.0	202.7
145.5	Appertunance(s)	0.00	1.52	9.779	16.52	100.01	0.650	0.000	0.50	0.812	0.53	8.7	0.0	19.5
149.0		0.00	1.53	9.845	16.63	95.606	0.650	0.000	3.50	5.530	3.59	59.8	0.0	133.0
							Totals:		149.00			3,898.2	0.0	23,645.5



© 2007 - 2014 by ATC IP LLC. All rights reserved.

Load Case: Twist/Sway — 50.00 mph Wind with No Ice — 22 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

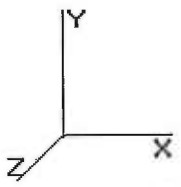
Discrete Appurtenance Segment Forces

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orientation Factor	Total EPAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
125.0	APX16DWV-16DWVS-	9	9.385	15.860	1.00	63.63	0.000	1.000	1,009.19	0.00	1,009.19	366.30
135.0	Round T-Arm	3	9.572	16.176	0.67	19.50	0.000	0.000	315.38	0.00	0.00	750.00
135.0	Ericsson AIR 21	6	9.572	16.176	0.86	33.69	0.000	0.000	545.05	0.00	0.00	546.00
135.0	Ericsson KRY 112 144	3	9.572	16.176	0.50	0.62	0.000	0.000	9.95	0.00	0.00	33.00
145.5	Flat Low Profile Pla	1	9.779	16.526	1.00	26.10	0.000	0.000	431.33	0.00	0.00	1,500.00
145.5	Powerwave Allagon	6	9.779	16.526	0.50	1.02	0.000	0.000	16.86	0.00	0.00	31.80
145.5	Powerwave Allagon	6	9.779	16.526	0.50	3.87	0.000	0.000	63.96	0.00	0.00	84.60
145.5	Ericsson RRUS 11 (Ba	6	9.779	16.526	0.67	12.02	0.000	0.000	198.64	0.00	0.00	300.00
145.5	Powerwave Allagon 77	6	9.779	16.526	0.77	27.17	0.000	0.000	448.94	0.00	0.00	210.00
145.5	KMW AM-X-CD-16-65-	3	9.779	16.526	0.79	19.58	0.000	0.000	323.52	0.00	0.00	145.50
145.5	Raycap DC6-48-60-18-	1	9.779	16.526	1.00	1.47	0.000	0.000	24.29	0.00	0.00	31.80
									3,387.09			3,999.00

Pole : 370641
Location : Beacon Falls CT
Height : 149.0 (ft)
Base Dia : 56.00 (in)
Top Dia : 18.50 (in)
Shape : 18 Sides
Taper : 0.262584 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)



© 2007 - 2014 by ATC IP LLC. All rights reserved.

Load Case: Twist/Sway — 50.00 mph Wind with No Ice — 22 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Applied Segment Forces Summary

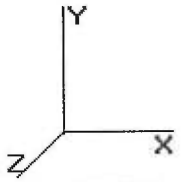
Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	162.12	1,456.06	0.00	0.00
10.00	158.27	1,425.04	0.00	0.00
15.00	154.43	1,394.02	0.00	0.00
20.00	150.58	1,363.01	0.00	0.00
25.00	146.74	1,331.99	0.00	0.00
30.00	142.89	1,300.97	0.00	0.00
35.00	141.40	1,269.95	0.00	0.00
40.00	142.84	1,238.93	0.00	0.00
45.00	143.52	1,207.92	0.00	0.00
46.71	48.54	405.21	0.00	0.00
50.00	95.71	1,354.26	0.00	0.00
52.79	80.86	1,127.76	0.00	0.00
55.00	63.82	448.14	0.00	0.00
60.00	144.74	994.75	0.00	0.00
65.00	143.42	968.16	0.00	0.00
70.00	141.72	941.58	0.00	0.00
75.00	139.68	914.99	0.00	0.00
80.00	137.32	888.40	0.00	0.00
85.00	134.68	861.82	0.00	0.00
90.00	131.78	835.23	0.00	0.00
94.95	127.43	801.22	0.00	0.00
95.00	1.19	11.46	0.00	0.00
99.54	115.53	1,096.05	0.00	0.00
100.0	11.57	53.25	0.00	0.00
105.0	123.69	565.05	0.00	0.00
110.0	119.92	547.33	0.00	0.00
115.0	115.96	529.60	0.00	0.00
120.0	111.82	511.88	0.00	0.00
125.0	1,116.69	860.45	0.00	1,009.19
125.1	3.49	14.94	0.00	0.00
128.8	76.96	502.48	0.00	0.00
130.0	23.91	83.88	0.00	0.00
135.0	970.41	1,680.28	0.00	0.00
140.0	95.26	283.44	0.00	0.00
145.0	90.35	270.15	0.00	0.00
145.5	1,516.24	2,329.98	0.00	0.00
149.0	59.81	133.05	0.00	0.00
Totals:	7,285.30	32,002.68	0.00	1,009.19

Pole : 370641
Location : Beacon Falls CT
Height : 149.0 (ft)
Base Dia : 56.00 (in)
Top Dia : 18.50 (in)
Shape : 18 Sides
Taper : 0.262584 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

© 2007 - 2014 by ATC IP LLC. All rights reserved.



Load Case: Twist/Sway — 50.00 mph Wind with No Ice — 22 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Calculated Shaft Forces and Deflections

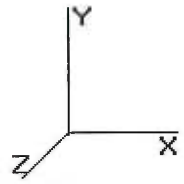
Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-7.295	-32.000	0.000	0.000	0.000	-754.929	0.000	0.000	0.000	0.000
5.00	-7.151	-30.540	0.000	0.000	0.000	-718.457	-0.019	0.000	0.019	-0.035
10.00	-7.009	-29.111	0.000	0.000	0.000	-682.704	-0.074	0.000	0.074	-0.070
15.00	-6.871	-27.713	0.000	0.000	0.000	-647.657	-0.168	0.000	0.168	-0.107
20.00	-6.734	-26.345	0.000	0.000	0.000	-613.304	-0.300	0.000	0.300	-0.144
25.00	-6.601	-25.009	0.000	0.000	0.000	-579.633	-0.471	0.000	0.471	-0.182
30.00	-6.469	-23.705	0.000	0.000	0.000	-546.630	-0.682	0.000	0.682	-0.221
35.00	-6.338	-22.431	0.000	0.000	0.000	-514.284	-0.935	0.000	0.935	-0.260
40.00	-6.205	-21.188	0.000	0.000	0.000	-482.593	-1.229	0.000	1.229	-0.301
45.00	-6.064	-19.978	0.000	0.000	0.000	-451.570	-1.567	0.000	1.567	-0.342
46.71	-6.020	-19.571	0.000	0.000	0.000	-441.221	-1.692	0.000	1.692	-0.357
50.00	-5.924	-18.215	0.000	0.000	0.000	-421.394	-1.948	0.000	1.948	-0.385
52.79	-5.842	-17.085	0.000	0.000	0.000	-404.865	-2.181	0.000	2.181	-0.410
55.00	-5.785	-16.634	0.000	0.000	0.000	-391.955	-2.375	0.000	2.375	-0.430
60.00	-5.646	-15.636	0.000	0.000	0.000	-363.030	-2.851	0.000	2.851	-0.478
65.00	-5.507	-14.664	0.000	0.000	0.000	-334.801	-3.379	0.000	3.379	-0.527
70.00	-5.368	-13.719	0.000	0.000	0.000	-307.269	-3.958	0.000	3.958	-0.577
75.00	-5.230	-12.801	0.000	0.000	0.000	-280.430	-4.590	0.000	4.590	-0.628
80.00	-5.093	-11.910	0.000	0.000	0.000	-254.281	-5.275	0.000	5.275	-0.679
85.00	-4.958	-11.045	0.000	0.000	0.000	-228.815	-6.014	0.000	6.014	-0.731
90.00	-4.824	-10.207	0.000	0.000	0.000	-204.026	-6.808	0.000	6.808	-0.783
94.95	-4.690	-9.406	0.000	0.000	0.000	-180.130	-7.647	0.000	7.647	-0.834
95.00	-4.692	-9.393	0.000	0.000	0.000	-179.911	-7.656	0.000	7.656	-0.834
99.54	-4.564	-8.296	0.000	0.000	0.000	-158.623	-8.472	0.000	8.472	-0.881
100.0	-4.557	-8.240	0.000	0.000	0.000	-156.509	-8.557	0.000	8.557	-0.886
105.0	-4.434	-7.672	0.000	0.000	0.000	-133.722	-9.524	0.000	9.524	-0.957
110.0	-4.313	-7.122	0.000	0.000	0.000	-111.553	-10.564	0.000	10.564	-1.025
115.0	-4.194	-6.590	0.000	0.000	0.000	-89.989	-11.674	0.000	11.674	-1.090
120.0	-4.078	-6.076	0.000	0.000	0.000	-69.018	-12.848	0.000	12.848	-1.148
125.0	-2.946	-5.238	0.000	0.000	0.000	-47.617	-14.079	0.000	14.079	-1.199
125.1	-2.944	-5.222	0.000	0.000	0.000	-47.126	-14.121	0.000	14.121	-1.200
128.8	-2.858	-4.720	0.000	0.000	0.000	-36.331	-15.055	0.000	15.055	-1.231
130.0	-2.835	-4.636	0.000	0.000	0.000	-32.996	-15.357	0.000	15.357	-1.240
135.0	-1.829	-2.976	0.000	0.000	0.000	-18.823	-16.679	0.000	16.679	-1.279
140.0	-1.728	-2.694	0.000	0.000	0.000	-9.678	-18.034	0.000	18.034	-1.305
145.0	-1.632	-2.426	0.000	0.000	0.000	-1.036	-19.408	0.000	19.408	-1.316
145.5	-0.063	-0.132	0.000	0.000	0.000	-0.220	-19.546	0.000	19.546	-1.316
149.0	-0.060	0.000	0.000	0.000	0.000	0.000	-20.511	0.000	20.511	-1.316

Pole : 370641
Location : Beacon Falls CT
Height : 149.0 (ft)
Base Dia : 56.00 (in)
Top Dia : 18.50 (in)
Shape : 18 Sides
Taper : 0.262584 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

© 2007 - 2014 by ATC IP LLC. All rights reserved.

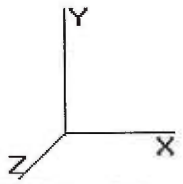


Load Case: Twist/Sway — 50.00 mph Wind with No Ice — 22 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Calculated Stresses

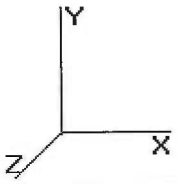
Seg Elev (ft)	Applied Stresses Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)	Allowable Stress (Fb) (ksi)		Stress Ratio
0.00	0.41	0.19	0.00	0.00	0.00	8.56	8.98	52.0	0.0	0.173
5.00	0.41	0.19	0.00	0.00	0.00	8.55	8.96	52.0	0.0	0.172
10.00	0.40	0.19	0.00	0.00	0.00	8.53	8.93	52.0	0.0	0.172
15.00	0.39	0.19	0.00	0.00	0.00	8.51	8.90	52.0	0.0	0.171
20.00	0.38	0.19	0.00	0.00	0.00	8.49	8.87	52.0	0.0	0.171
25.00	0.37	0.20	0.00	0.00	0.00	8.46	8.83	52.0	0.0	0.170
30.00	0.36	0.20	0.00	0.00	0.00	8.43	8.79	52.0	0.0	0.169
35.00	0.35	0.20	0.00	0.00	0.00	8.38	8.74	52.0	0.0	0.168
40.00	0.34	0.20	0.00	0.00	0.00	8.33	8.68	52.0	0.0	0.167
45.00	0.33	0.20	0.00	0.00	0.00	8.28	8.61	52.0	0.0	0.166
46.71	0.33	0.20	0.00	0.00	0.00	8.26	8.59	52.0	0.0	0.165
50.00	0.31	0.20	0.00	0.00	0.00	8.21	8.53	52.0	0.0	0.164
52.79	0.34	0.23	0.00	0.00	0.00	9.16	9.50	52.0	0.0	0.183
55.00	0.33	0.23	0.00	0.00	0.00	9.11	9.45	52.0	0.0	0.182
60.00	0.32	0.24	0.00	0.00	0.00	9.00	9.33	52.0	0.0	0.179
65.00	0.31	0.24	0.00	0.00	0.00	8.86	9.19	52.0	0.0	0.177
70.00	0.30	0.24	0.00	0.00	0.00	8.71	9.02	52.0	0.0	0.174
75.00	0.29	0.24	0.00	0.00	0.00	8.53	8.83	52.0	0.0	0.170
80.00	0.28	0.24	0.00	0.00	0.00	8.32	8.62	52.0	0.0	0.166
85.00	0.27	0.25	0.00	0.00	0.00	8.08	8.36	52.0	0.0	0.161
90.00	0.26	0.25	0.00	0.00	0.00	7.80	8.07	52.0	0.0	0.155
94.95	0.25	0.25	0.00	0.00	0.00	7.47	7.73	52.0	0.0	0.149
95.00	0.25	0.25	0.00	0.00	0.00	7.47	7.73	52.0	0.0	0.149
99.54	0.34	0.38	0.00	0.00	0.00	10.20	10.56	52.0	0.0	0.203
100.00	0.34	0.38	0.00	0.00	0.00	10.15	10.50	52.0	0.0	0.202
105.00	0.33	0.38	0.00	0.00	0.00	9.46	9.81	52.0	0.0	0.189
110.00	0.32	0.39	0.00	0.00	0.00	8.65	9.00	52.0	0.0	0.173
115.00	0.31	0.40	0.00	0.00	0.00	7.68	8.02	52.0	0.0	0.154
120.00	0.30	0.41	0.00	0.00	0.00	6.52	6.86	52.0	0.0	0.132
125.00	0.27	0.31	0.00	0.00	0.00	5.00	5.30	52.0	0.0	0.102
125.17	0.27	0.31	0.00	0.00	0.00	4.97	5.27	52.0	0.0	0.101
128.83	0.34	0.41	0.00	0.00	0.00	5.32	5.70	52.0	0.0	0.110
130.00	0.33	0.41	0.00	0.00	0.00	4.96	5.35	52.0	0.0	0.103
135.00	0.23	0.28	0.00	0.00	0.00	3.18	3.44	52.0	0.0	0.066
140.00	0.22	0.28	0.00	0.00	0.00	1.85	2.13	52.0	0.0	0.041
145.00	0.21	0.29	0.00	0.00	0.00	0.23	0.66	52.0	0.0	0.013
145.50	0.01	0.01	0.00	0.00	0.00	0.05	0.06	52.0	0.0	0.001
149.00	0.00	0.01	0.00	0.00	0.00	0.00	0.02	52.0	0.0	0.000



© 2007 - 2014 by ATC IP LLC. All rights reserved.

Analysis Summary

	Reactions						Max Stresses			
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
No Ice	26.3	0.00	31.97	0.00	0.00	2723.40	37.13	52.0	99.54	0.714
Ice	21.0	0.00	37.38	0.00	0.00	2218.58	31.17	52.0	99.54	0.600
Twist/Sway	7.3	0.00	32.00	0.00	0.00	754.93	10.56	52.0	99.54	0.203



© 2007 - 2014 by ATC IP LLC. All rights reserved.

Base Summary

Reactions

Original Design			Analysis			
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment Design %
3,762.30	38.90	34.90	2,723.40	37.38	26.34	72.39

Base Plate

Yield (ksi)	Thick (in)	Width (in)	Style	Poly Sides	Clip Len (in)	Effective Len (in)	Moment (kip-in)	Allow Stress (ksi)	Applied Stress (ksi)	Stress Ratio
60.0	2.500	71.000	Round	0	0.00	8.887	319.87	60.00	34.55	0.58

Anchor Bolts

								Start	Compression			Tension		
Bolt Circle	Num Bolts	Bolt Type	Bolt Dia (in)	Yield (ksi)	Ultimate (ksi)	Arrange	Cluster Dist (in)	Angle (deg)	Force (kip)	Allow (kip)	Ratio	Force (kip)	Allow (kip)	Ratio
65.00	20	2.25" 18J	2.25	75.00	100.00	Radial	0.00	0.0	102.43	195.00	0.53	98.69	195.00	0.51

EXHIBIT C

EBI Consulting
environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CT11487B

CT487 / Beacon Falls

139 Lopus Road
Beacon Falls, CT 06403

April 17, 2014

EBI PROJECT NUMBER: 62142552

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

EBI Consulting
environmental | engineering | due diligence

April 17, 2014

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

Re: Emissions Values for Site: **CT11487B - CT487 / Beacon Falls**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at 139 Lopus Road, Beacon Falls, 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of μW/cm2 calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter (μW/cm2). The general population exposure limit for the cellular band is 567 μW/cm2, and the general population exposure limit for the PCS and AWS bands is 1000 μW/cm2. 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 139 Lopus Road, Beacon Falls, 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, the actual antenna pattern gain value in the direction of the sample area was used. For this report the sample point is 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 (1935.000 MHz—to 1945.000 MHz / 1980.000 MHz—to 1985.000 MHz) were considered for each sector of the proposed installation.
2) 2 UMTS channels (2110.000 to 2120.000 MHz / 2140.000 MHz to 2145.000 MHz) were considered for each sector of the proposed installation.
3) 2 LTE channels (2110.000 to 2120.000 MHz / 2140.000 MHz to 2145.000 MHz) were considered for each sector of the proposed installation.
4) 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.
5) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The actual gain in this direction was used per the manufactures supplied specifications.
6) The antenna used in this modeling is the Ericsson AIR21 for LTE, UMTS and GSM. This is based on feedback from the carrier with regards to anticipated antenna selection. This antenna has a 15.6 dBd gain value at its main lobe. Actual antenna gain values were used for all calculations as per the manufacturers specifications

7) The antenna mounting height centerline of the proposed antennas is **135 feet** above ground level (AGL)
8) 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.

Site ID	CT11487B - CT487 / Beacon Falls
Site Addresss	139 Lopus Road, Beacon Falls, CT 06403
Site Type	Monopole

Sector 1																	
Antenna Number	Antenna Make	Antenna Model	Status	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	Ericsson	AIR21 B4A/B2P	Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	135	129	None	0	0	48.326044	1.044018	0.10440%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	135	129	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	135	129	1-5/8"	0	0	24.163022	0.522009	0.05220%
2B	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	135	129	1-5/8"	0	0	24.163022	0.522009	0.05220%
														Sector total Power Density Value:			0.209%

Sector 2																	
Antenna Number	Antenna Make	Antenna Model	Status	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	Ericsson	AIR21 B4A/B2P	Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	135	129	None	0	0	48.326044	1.044018	0.10440%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	135	129	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	135	129	1-5/8"	0	0	24.163022	0.522009	0.05220%
2b	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	135	129	1-5/8"	0	0	24.163022	0.522009	0.05220%
														Sector total Power Density Value:			0.209%

Sector 3																	
Antenna Number	Antenna Make	Antenna Model	Status	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	Ericsson	AIR21 B4A/B2P	Active	AWS - 2100 MHz	LTE	60	2	120	-3.95	135	129	None	0	0	48.326044	1.044018	0.10440%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	135	129	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	135	129	1-5/8"	0	0	24.163022	0.522009	0.05220%
2b	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	135	129	1-5/8"	0	0	24.163022	0.522009	0.05220%
														Sector total Power Density Value:			0.209%

Site Composite MPE %	
Carrier	MPE %
T-Mobile	0.626%
AT&T	15.190%
MetroPCS	4.360%
Total Site MPE %	20.176%

EBI Consulting
environmental | engineering | due diligence

Summary

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

The anticipated Maximum Composite contributions from the T-Mobile facility are **0.626% (0.209% from each sector)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **20.176%** 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 within the allowable 100% threshold standard per the federal government.

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803