STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

August 20, 2013

Julie D. Kohler, Esq.
Cohen and Wolf, P.C.
1115 Broad Street
Bridgeport, CT 06604

RE: **EM-T-MOBILE-017-130729** – T-Mobile Northeast LLC notice of intent to modify an existing telecommunications facility located at 985 Farmington Avenue, Bristol, Connecticut.

Dear Attorney Kohler:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated July 25, 2013. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,

Melanie A. Bachman
Acting Executive Director

MAB/CDM/jb

c: The Honorable Arthur J. Ward, Mayor, City of Bristol
William J. Veits, Planner Commission Chairman, City of Bristol
Crown Castle

CSC
CONNECTICUT SITING COUNCIL

COHEN and WOLF P.C.
ATTORNEYS AT LAW

RACHEL A. SCHWARTZMAN

Please Reply To: Bridgeport
Writer's Direct Dial: (203) 337-4110
E-Mail: rschwartzman@cohenandwolf.com

February 26, 2015

Attorney Melanie Bachman
Acting Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06501

Re: EM-T-MOBILE-107-130729
T-Mobile Site ID CT11272D
985 Farmington Avenue, Bristol, CT
Notice of Construction Completion

Dear Attorney Bachman:

The Connecticut Siting Council ("Council") acknowledged the above referenced T-Mobile Northeast LLC ("T-Mobile") notice of exempt modification on August 20, 2013. T-Mobile hereby notifies the Council that construction of the acknowledged modifications were complete as of November 12, 2013.

Please don't hesitate to contact me with any questions.

Sincerely,

Rachel A. Schwartzman

cc: Samuel Simons, T-Mobile
Mark Richard, T-Mobile
Robert Stanford, Vertical Development, LLC
Julie Kohler, Esq.

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

July 25, 2013

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

Re: Notice of Exempt Modification
Crown Castle/T-Mobile co-location
Site ID CT11272D
985 Farmington Avenue, Bristol

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, Crown Castle ("Crown") owns the existing flagpole telecommunications tower and related facility at 985 Farmington Avenue, Bristol Connecticut (latitude 41.69553 / longitude -72.91126). T-Mobile intends to replace three antennas and related equipment at this existing telecommunications facility in Bristol ("Bristol 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 Mayor Arthur J. Ward, and the property owner, Farmington Avenue Professionals.

The existing Bristol Facility consists of a 119 foot tall flagpole structure. T-Mobile plans to replace three antennas at a centerline of 115 feet (its antennas at a centerline of 107 feet will remain). (See the plans revised to July 24, 2013 attached hereto as Exhibit A). T-Mobile will also replace an equipment cabinet and reuse existing coax cables. The existing Facility is structurally capable of supporting T-Mobile's proposed modifications, as indicated in the structural analysis dated July 1, 2013 and attached hereto as Exhibit B.

The planned modifications to the Bristol 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 115 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 area.

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 July 23, 2013 T-Mobile's operations would add 0.950% 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 9.120% of the FCC Standard as calculated for a mixed frequency site as evidenced by the engineering exhibit attached hereto as Exhibit C.

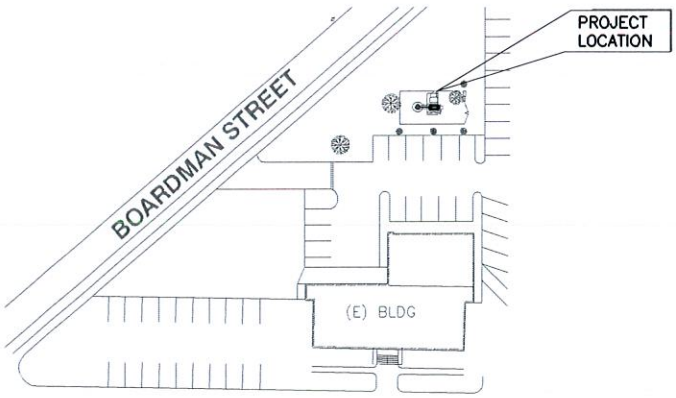
For the foregoing reasons, T-Mobile respectfully submits that the proposed replacement antennas and equipment at the Bristol Facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

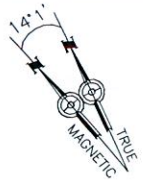
Sincerely,

Julie D. Kohler, Esq.

cc: City of Bristol, Mayor Arthur J. Ward
Crown Castle
Farmington Avenue Professionals
Scott Chase, Northeast Site Solutions

EXHIBIT A

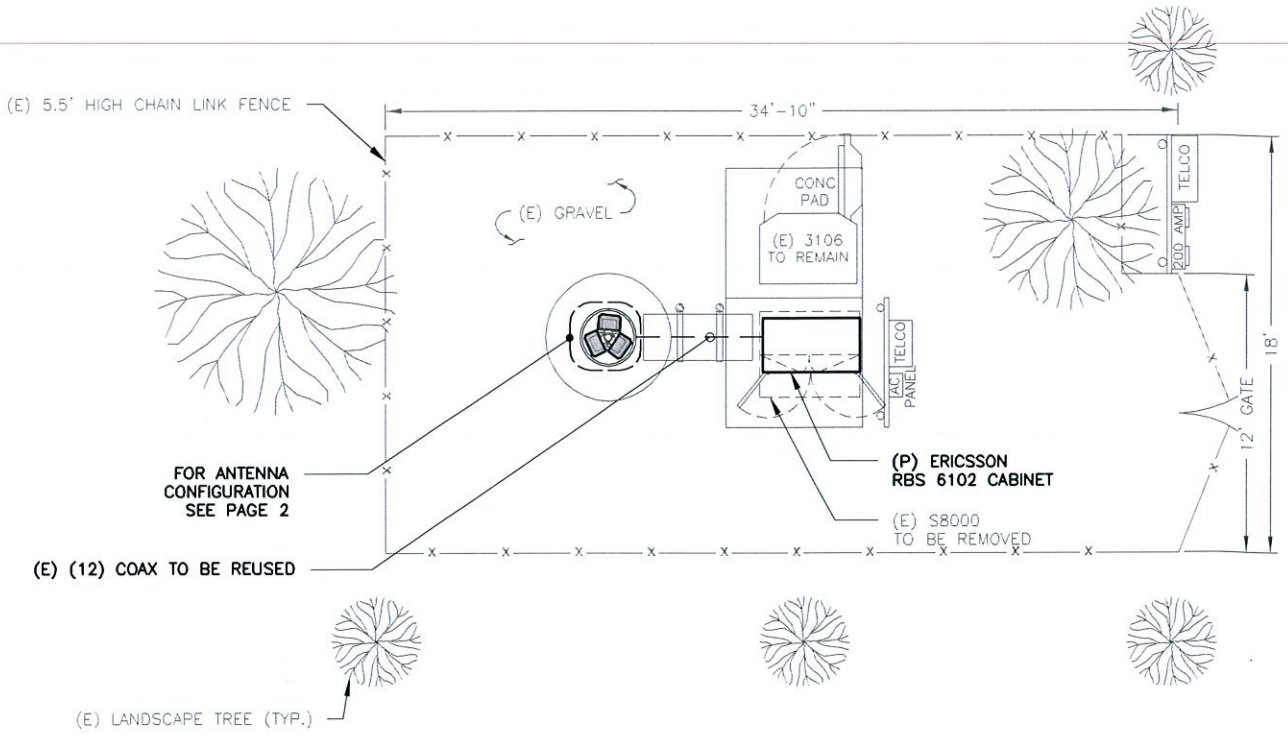




KEY PLAN

N.T.S.

1
LE-3



COMPOUND PLAN

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

1
LE-1

Configuration

4B

SUBMITTALS	
LE REV A	06.26.13
LE REV 0	07.24.13

ATLANTIS GROUP
1340 Centre Street
Suite 203
Newton, MA 02459
Office: 617-965-0789
Fax: 617-213-5056

LEASE EXHIBIT

SITE NUMBER:
CT11272D

SITE NAME:
FARMINGTON / RT 6

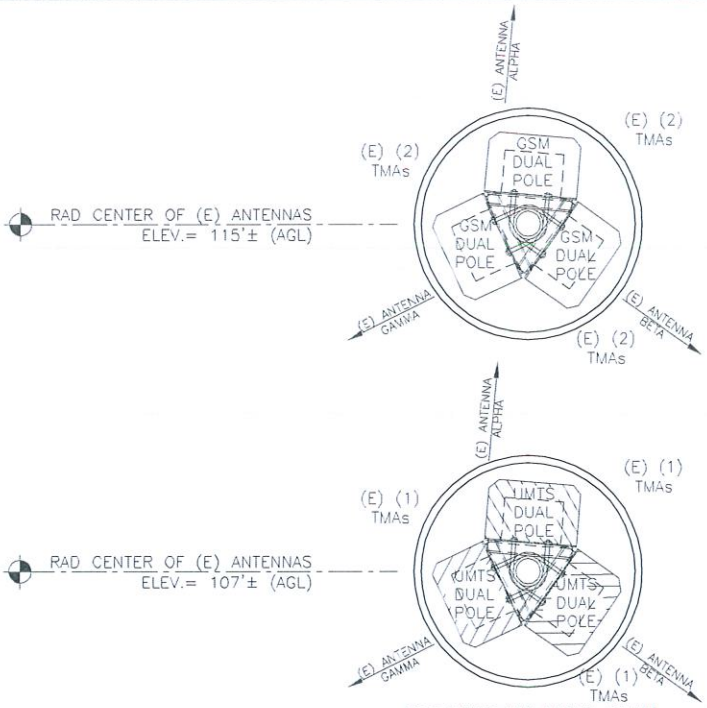
SITE ADDRESS:
985 FARMINGTON AVENUE
BRISTOL, CT 06010

NORTHEAST TOWERS
199 BRICKYARD ROAD
FARMINGTON, CT 06032
OFFICE: (860) 677-1999

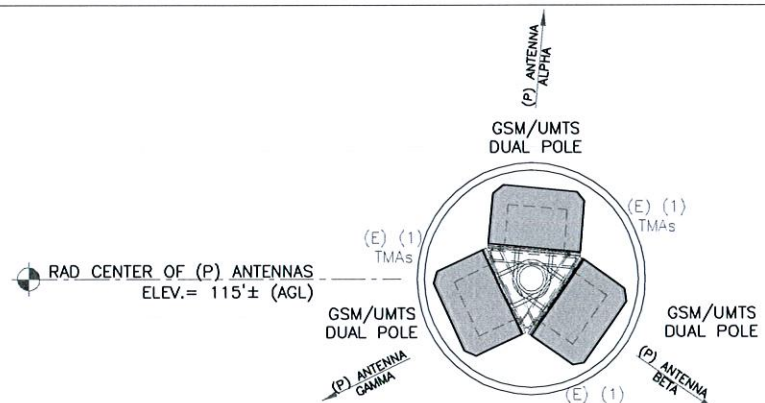
FOR

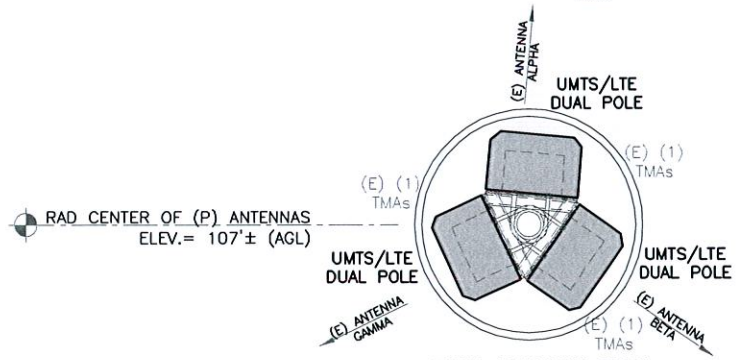
T-MOBILE NORTHEAST, LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860) 692-7100
FAX: (860) 692-7159

DRAWN BY: MTH | CHECKED BY: SM



EXISTING ANTENNA PLAN





FINAL ANTENNA PLAN

Configuration

4B

SUBMITTALS	
LE REV A	06.26.13
LE REV 0	07.24.13

ATLANTIS GROUP
1340 Centre Street
Suite 203
Newton, MA 02459
Office: 617-965-0789
Fax: 617-213-5056

LEASE EXHIBIT

SITE NUMBER:
CT11272D

SITE NAME:
FARMINGTON / RT 6

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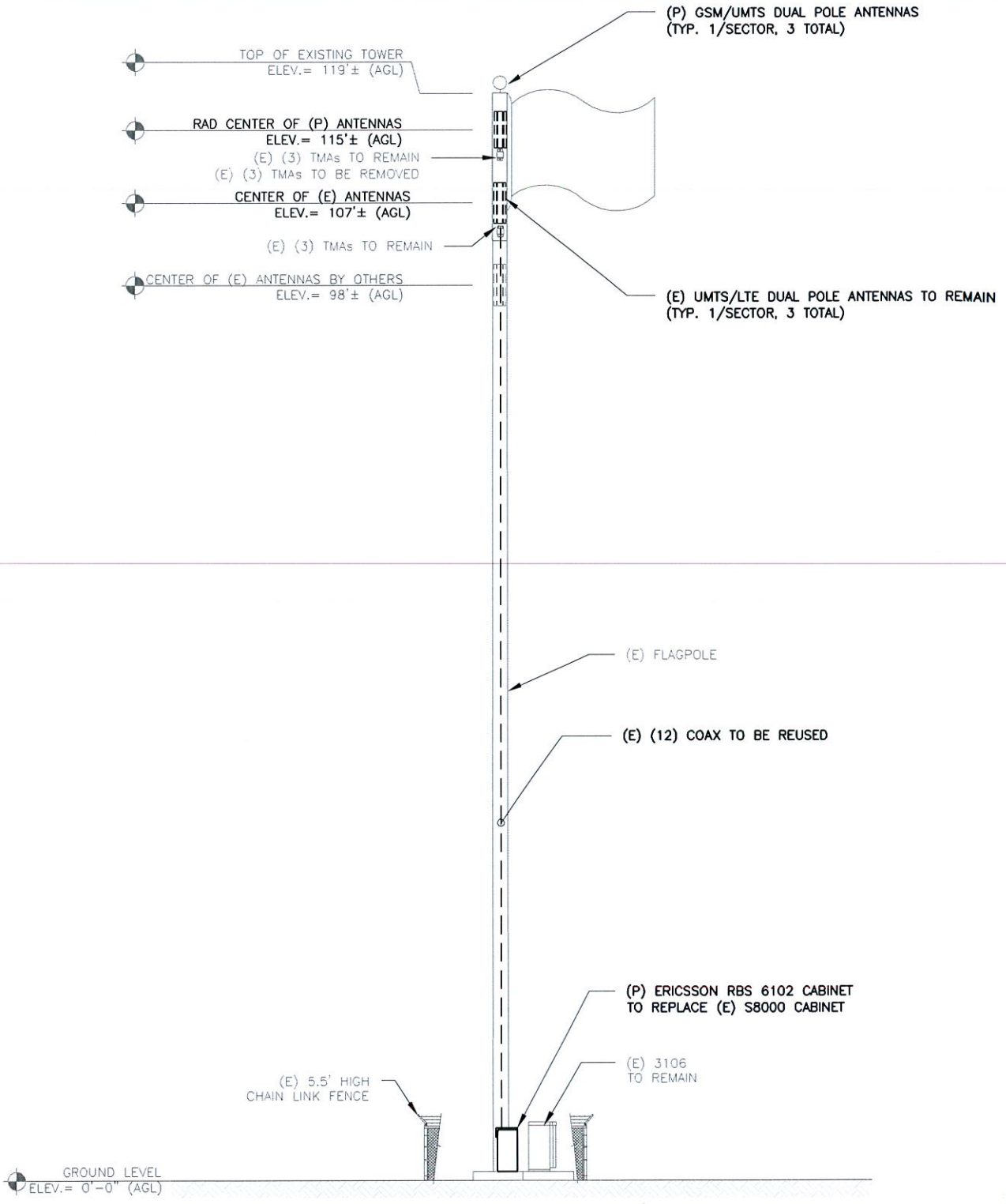

EAST ELEVATION

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

1
LE-3

Configuration

4B

SUBMITTALS	
LE REV A	06.26.13
LE REV 0	07.24.13

ATLANTIS GROUP
1340 Centre Street
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OFFICE: (860) 692-7100
FAX: (860) 692-7159

DRAWN BY: MTH | CHECKED BY: SM

EXHIBIT B

Date: **July 1, 2013**

Veronica Harris
Crown Castle
1200 McArthur Blvd
Mahwah, NJ 07430
201-236-9094

GPD Group
520 South Main Street, Suite 2531
Akron, OH 44311
(614) 859-1607
dpalkovic@gpdgroup.com

Subject:	**Structural Analysis Report**	
Carrier Designation:	***T-Mobile* Co-Locate**	
	Carrier Site Number:	CT11272D
	Carrier Site Name:	CT11272D
Crown Castle Designation:	**Crown Castle BU Number:**	824012
	Crown Castle Site Name:	Farmington / Rt 6
	Crown Castle JDE Job Number:	232575
	Crown Castle Work Order Number:	624820
	Crown Castle Application Number:	186957 Rev. 4
Engineering Firm Designation:	**GPD Project Number:**	2013775.824012.01
Site Data:	**985 Farmington Avenue, Bristol, Hartford County, CT** **Latitude *41° 41' 43.9"*, Longitude *-72° 54' 40.5"*** **119 Foot – EEI Monopole Tower**	

Dear Veronica Harris,

GPD is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 557266, in accordance with application 186957, revision 4.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC5: Existing + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

The analysis has been performed in accordance with the TIA/EIA-222-F standard and 2005 CT State Building Code based upon a wind speed of 80 mph fastest mile.

We at *GPD* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:

07/01/2013

John N. Kabak, P.E.
Connecticut #: PEN.0028336

TABLE OF CONTENTS

1) INTRODUCTION

The existing 119' flagpole monopole has four major sections. The top section consists of (2) 4"ø x 8' solid round masts housed inside (2) 8' x 20"ø stealth concealment canisters stacked on one another from 103' – 119'. The bottom three sections are connected by slip joints, have 18 sides, and are evenly tapered from 33.0" (flat-flat) at the base to 19.5" (flat-flat) at 103'. The structure is galvanized and has no tower lighting.

This tower is a 119 ft Monopole tower designed by ENGINEERED ENDEAVORS, INC. in 2000. The tower was originally designed for a wind speed of 0 mph per TIA/EIA 222-F.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 80 mph with no ice, 38 mph with 1 inch ice thickness and 50 mph under service loads.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
115.0	115.0	3	Ericsson	KRY 112 144/1			
		3	RFS Celwave	APXV18-206516S-C-A20			
107.0	107.0	3	Ericsson	KRY 112 144/1	6	7/8	1

Notes:
1) See Appendix B for the proposed coax layout.

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
115.0	115.0				6	1-5/8	
		6	Andrew	ETW190VS12UB			1
		3	EMS Wireless	RR90-17-02DP			
107.0	107.0	3	Andrew	ETW190VS12UB	6	1-5/8	1
		3	RFS Celwave	APXV18-206516S-C-A20			
98.0	98.0	3	Andrew	HBX-6516DS-VTM	1	3/8	
		3	Commscope	ATM200-A20	6	7/8	

Notes:
1) Equipment To Be Removed

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
115	115	2		SPA 1900/65/19/2/DS		
107	107	2		SPA 1900/65/19/2/DS		

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Geotechnical Engineering, dated: 11/29/99	3594408	CCISITES
4-TOWER MANUFACTURER DRAWINGS	EEI Job #: 6078, dated: 2/14/00	3594409	CCISITES
4-TOWER STRUCTURAL ANALYSIS REPORTS	GPD Group Project #: 2011194.42, dated: 07/28/11	3594405	CCISITES

3.1) Analysis Method

tnxTower (version 6.0.4.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by TIA/EIA-222-F.
5) Mount sizes, weights, and manufacturers are best estimates based on photos provided and determined without the benefit of a site visit by GPD.
6) All member connections and foundation steel reinforcing are assumed designed to meet or exceed the load carrying capacity of the connected member and surrounding soils respectively unless otherwise specified in this report.
7) The flag was not considered in the analysis.
8) stealth mast information was not provided and it was assumed based on previous experience with similar structures.
9) All equipment model numbers, quantities, and centerline elevations are as provided in the CCI CAD package dated 06/25/13 with any adjustments as noted below.

This analysis may be affected if any assumptions are not valid or have been made in error. GPD Group should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (lb)	SF*P allow (lb)	% Capacity	Pass / Fail
L1	119 - 103	Pole	TP4x4x2	1	-1.781	502.529	41.6	Pass
L2	103 - 76.29	Pole	TP23.26x19.5x0.188	2	-4.074	698.940	20.7	Pass
L3	76.29 - 45.54	Pole	TP27.09x20.419x0.188	3	-6.087	808.652	42.8	Pass
L4	45.54 - 0	Pole	TP33x25.95x0.25	4	-10.902	1350.995	51.0	Pass
							Summary	
						Pole (L3)	42.8	Pass
						Rating =	42.8	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	67.2	Pass
1	Base Plate	0	99.8	Pass
1	Base Foundation	0	51.9	Pass

Structure Rating (max from all components)	99.8

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

The existing tower and its foundation are sufficient for the proposed loading and do not require modifications.

5) DISCLAIMER OF WARRANTIES

GPD GROUP has not performed a site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD GROUP in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

GPD GROUP does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD GROUP provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the code specified amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD GROUP, but are beyond the scope of this report.

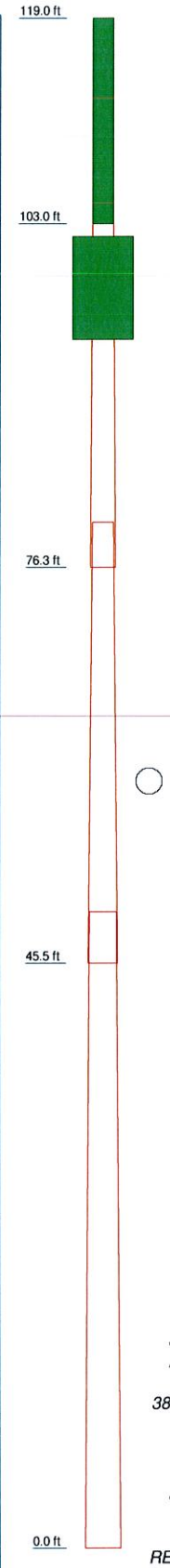
Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

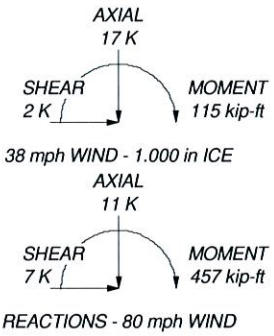
GPD GROUP makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD GROUP will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD GROUP pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

TNXTOWER OUTPUT

Section	1	2	3	4
Length (ft)	16.000	26.710	34.170	49.460
Number of Sides	1	18	18	18
Thickness (in)	2.000	0.188	0.188	0.250
Socket Length (ft)		3.420	3.920	
Top Dia (in)	4.000	19.500	20.419	25.950
Bot Dia (in)	4.000	23.260	27.090	33.000
Grade	A572-50		A572-65	
Weight (K)	0.7	1.1	1.6	3.9





38 mph WIND - 1.000 in ICE

REACTIONS - 80 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
APXV18-206516S-C-A20 w/ Mount Pipe	115	APXV18-206516S-C-A20 w/ Mount Pipe	107
APXV18-206516S-C-A20 w/ Mount Pipe	115	KRY 112 144/1	107
APXV18-206516S-C-A20 w/ Mount Pipe	115	KRY 112 144/1	107
KRY 112 144/1	115	KRY 112 144/1	107
KRY 112 144/1	115	HBX-6516DS-VTM w/ Mount Pipe	98
KRY 112 144/1	115	HBX-6516DS-VTM w/ Mount Pipe	98
20"x16' Fiberglass Enclosure	111	HBX-6516DS-VTM w/ Mount Pipe	98
APXV18-206516S-C-A20 w/ Mount Pipe	107	ATM200-A20	98
APXV18-206516S-C-A20 w/ Mount Pipe	107	ATM200-A20	98
		ATM200-A20	98
		58" x 96" Stealth Canister	98

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A572-65	65 ksi	80 ksi

TOWER DESIGN NOTES

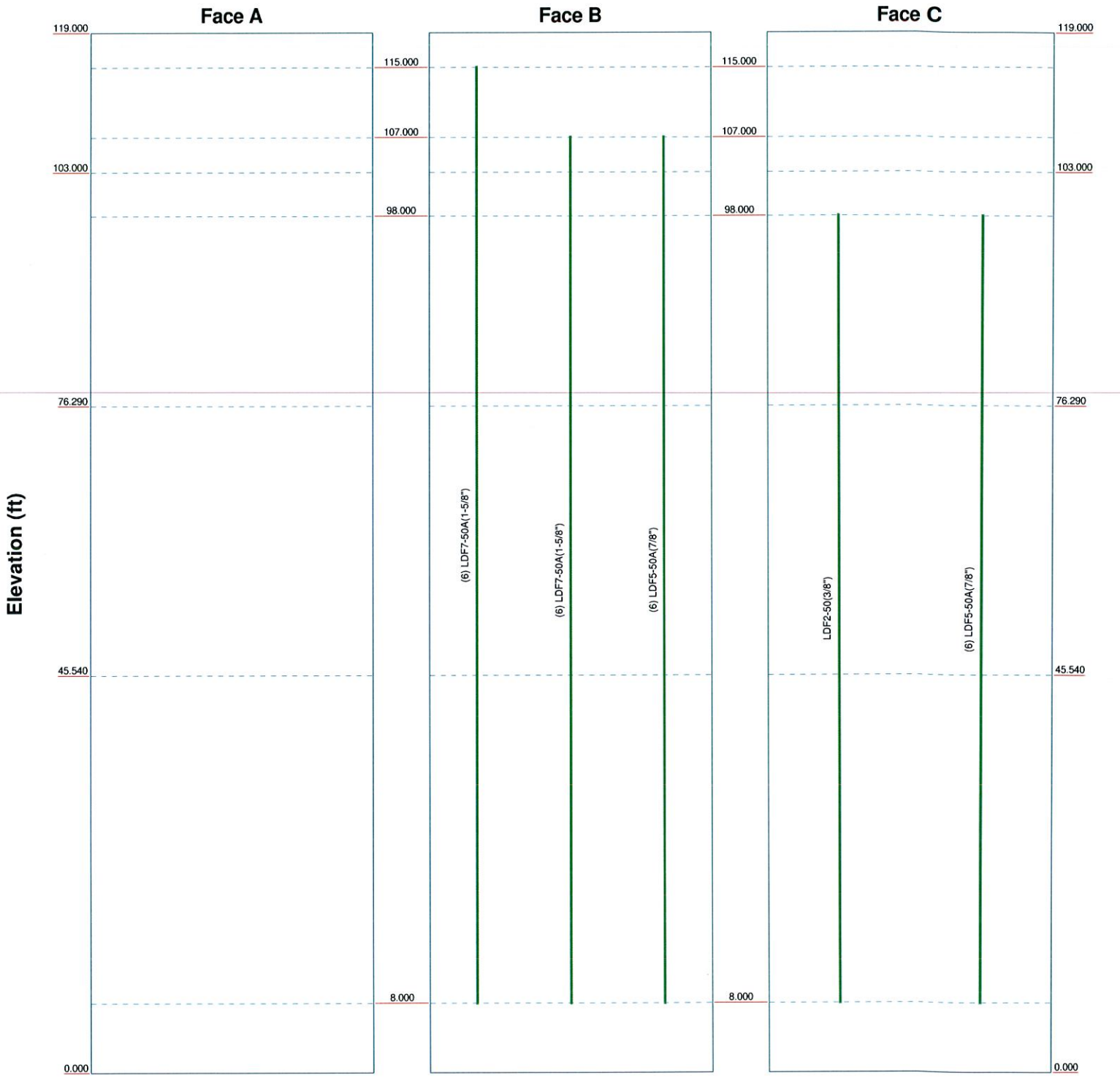
1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.

GPD
520 S. Main St., Suite 2531
Akron, OH 44311
Phone: 330-572-2100
FAX: 330-572-2101

Job: BU#: 824012 FARMINGTON/RT. 6		
Project: 2013775.824012.01		
Client: Crown Castle	Drawn by: ahammada	App'd:
Code: TIA/EIA-222-F	Date: 07/01/13	Scale: NTS
Path: \\AKRN04.gpdoo.com\DATA\2013\2013775\824012\01\Ants Calculations\ Working\ RSA 824012 Farmington Rt 6.eri		Dwg No. E-1

Feedline Distribution Chart
0' - 119'

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



GPD
520 S. Main St., Suite 2531
Akron, OH 44311
Phone: 330-572-2100
FAX: 330-572-2101

Job: BU#: 824012 FARMINGTON/RT. 6			
Project: 2013775.824012.01			
Client: Crown Castle	Drawn by: ahammada	App'd:	
Code: TIA/EIA-222-F	Date: 07/01/13	Scale: NTS	
Path: \\AKRN04.gpdcorp.com\DATA\2013\2013775\824012\01\Ants Calculations\Working RSA\824012 Farmington Rt 6.eri		Dwg No. E-7	

Tower Input Data

There is a pole section.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

1) Tower is located in Hartford County, Connecticut.
2) Basic wind speed of 80 mph.
3) Nominal ice thickness of 1.000 in.
4) Ice thickness is considered to increase with height.
5) Ice density of 56 pcf.
6) A wind speed of 38 mph is used in combination with ice.
7) Temperature drop of 50 °F.
8) Deflections calculated using a wind speed of 50 mph.
9) A non-linear (P-delta) analysis was used.
10) Pressures are calculated at each section.
11) Stress ratio used in pole design is 1.333.
12) Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	119.000-103.000	16.000	0.000	Round	4.000	4.000	2.000		A572-50 (50 ksi)
L2	103.000-76.290	26.710	3.420	18	19.500	23.260	0.188	0.750	A572-65 (65 ksi)
L3	76.290-45.540	34.170	3.920	18	20.419	27.090	0.188	0.750	A572-65 (65 ksi)
L4	45.540-0.000	49.460		18	25.950	33.000	0.250	1.000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	4.000	12.566	6.288	0.708	2.000	3.144	12.559	6.279	0.000	0

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
	4.000	12.566	6.288	0.708	2.000	3.144	12.559	6.279	0.000	0
L2	19.801	11.493	541.578	6.856	9.906	54.672	1083.869	5.748	3.102	16.544
	23.619	13.731	923.484	8.191	11.816	78.155	1848.184	6.867	3.764	20.073
L3	21.412	12.040	622.622	7.182	10.373	60.024	1246.063	6.021	3.264	17.407
	27.508	16.010	1463.941	9.550	13.762	106.378	2929.808	8.007	4.438	23.668
L4	26.917	20.393	1701.641	9.123	13.182	129.084	3405.521	10.198	4.127	16.509
	33.509	25.987	3521.424	11.626	16.764	210.059	7047.481	12.996	5.368	21.472

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
L1 119.000-103.000				1	0	1		
L2 103.000-76.290				1	1	1		
L3 76.290-45.540				1	1	1		
L4 45.540-0.000				1	1	1		

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
LDF7-50A(1-5/8")	B	No	Inside Pole	115.000 - 8.000	6	No Ice	0.000	0.820
						1/2" Ice	0.000	0.820
						1" Ice	0.000	0.820
						2" Ice	0.000	0.820
						4" Ice	0.000	0.820
LDF7-50A(1-5/8")	B	No	Inside Pole	107.000 - 8.000	6	No Ice	0.000	0.820
						1/2" Ice	0.000	0.820
						1" Ice	0.000	0.820
						2" Ice	0.000	0.820
						4" Ice	0.000	0.820
LDF5-50A(7/8")	B	No	Inside Pole	107.000 - 8.000	6	No Ice	0.000	0.330
						1/2" Ice	0.000	0.330
						1" Ice	0.000	0.330
						2" Ice	0.000	0.330
						4" Ice	0.000	0.330
LDF2-50(3/8")	C	No	Inside Pole	98.000 - 8.000	1	No Ice	0.000	0.080
						1/2" Ice	0.000	0.080
						1" Ice	0.000	0.080
						2" Ice	0.000	0.080
						4" Ice	0.000	0.080
LDF5-50A(7/8")	C	No	Inside Pole	98.000 - 8.000	6	No Ice	0.000	0.330
						1/2" Ice	0.000	0.330
						1" Ice	0.000	0.330
						2" Ice	0.000	0.330
						4" Ice	0.000	0.330

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	119.000-103.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.087
		C	0.000	0.000	0.000	0.000	0.000
L2	103.000-76.290	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.316

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	0.000	0.000	0.045
L3	76.290-45.540	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.363
		C	0.000	0.000	0.000	0.000	0.063
L4	45.540-0.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.444
		C	0.000	0.000	0.000	0.000	0.077

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	119.000-103.000	A	1.157	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.087
		C		0.000	0.000	0.000	0.000	0.000
L2	103.000-76.290	A	1.127	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.316
		C		0.000	0.000	0.000	0.000	0.045
L3	76.290-45.540	A	1.076	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.363
		C		0.000	0.000	0.000	0.000	0.063
L4	45.540-0.000	A	1.000	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.444
		C		0.000	0.000	0.000	0.000	0.077

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	119.000-103.000	0.000	0.000	0.000	0.000
L2	103.000-76.290	0.000	0.000	0.000	0.000
L3	76.290-45.540	0.000	0.000	0.000	0.000
L4	45.540-0.000	0.000	0.000	0.000	0.000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
20"x16' Fiberglass Enclosure	C	None		0.000	111.000	No Ice	22.874	22.874	0.750
						1/2" Ice	23.887	23.887	0.962
						1" Ice	24.909	24.909	1.185
						2" Ice	26.980	26.980	1.669
						4" Ice	31.235	31.235	2.786
APXV18-206516S-C-A20 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	115.000	No Ice	0.000	0.000	0.041
						1/2" Ice	0.000	0.000	0.074
						1" Ice	0.000	0.000	0.117
						2" Ice	0.000	0.000	0.223
						4" Ice	0.000	0.000	0.549
APXV18-206516S-C-A20	B	From Leg	4.000	0.000	115.000	No Ice	0.000	0.000	0.041

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
w/ Mount Pipe			0.000 0.000			1/2" Ice	0.000	0.000	0.074
						1" Ice	0.000	0.000	0.117
						2" Ice	0.000	0.000	0.223
						4" Ice	0.000	0.000	0.549
APXV18-206516S-C-A20 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	115.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000	0.041 0.074 0.117 0.223 0.549
KRY 112 144/1	A	From Leg	4.000 0.000 0.000	0.000	115.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000	0.011 0.014 0.018 0.031 0.081
KRY 112 144/1	B	From Leg	4.000 0.000 0.000	0.000	115.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000	0.011 0.014 0.018 0.031 0.081
KRY 112 144/1	C	From Leg	4.000 0.000 0.000	0.000	115.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000	0.011 0.014 0.018 0.031 0.081
APXV18-206516S-C-A20 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	107.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000	0.041 0.074 0.117 0.223 0.549
APXV18-206516S-C-A20 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	107.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000	0.041 0.074 0.117 0.223 0.549
APXV18-206516S-C-A20 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	107.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000	0.041 0.074 0.117 0.223 0.549
KRY 112 144/1	A	From Leg	4.000 0.000 0.000	0.000	107.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000	0.011 0.014 0.018 0.031 0.081
KRY 112 144/1	B	From Leg	4.000 0.000 0.000	0.000	107.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000	0.011 0.014 0.018 0.031 0.081
KRY 112 144/1	C	From Leg	4.000 0.000 0.000	0.000	107.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000	0.011 0.014 0.018 0.031 0.081

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment ° 	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
HBX-6516DS-VTM w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000 0.000	0.028 0.059 0.098 0.195 0.494
HBX-6516DS-VTM w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000 0.000	0.028 0.059 0.098 0.195 0.494
HBX-6516DS-VTM w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000 0.000	0.028 0.059 0.098 0.195 0.494
ATM200-A20	A	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000 0.000	0.001 0.002 0.005 0.015 0.056
ATM200-A20	B	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000 0.000	0.001 0.002 0.005 0.015 0.056
ATM200-A20	C	From Leg	4.000 0.000 0.000	0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.000 0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000 0.000	0.001 0.002 0.005 0.015 0.056
58" x 96" Stealth Canister	C	None		0.000	98.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	30.933 31.794 32.667 34.444 38.133	30.933 31.794 32.667 34.444 38.133	1.000 1.374 1.760 2.564 4.311

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice

Comb. No.	Description
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	119 - 103	Pole	Max Tension	30	0.000	0.000	0.000
			Max. Compression	14	-3.074	0.000	0.000
			Max. Mx	5	-1.781	-8.169	0.000
			Max. My	2	-1.781	0.000	8.169
			Max. Vy	5	1.011	-5.170	0.000
			Max. Vx	2	-1.011	0.000	5.170
			Max. Torque	4			0.000
L2	103 - 76.29	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-7.331	0.000	0.000
			Max. Mx	5	-4.074	-65.306	0.000
			Max. My	2	-4.074	0.000	65.306
			Max. Vy	5	3.240	-65.306	0.000
			Max. Vx	2	-3.240	0.000	65.306
			Max. Torque	4			0.000
L3	76.29 - 45.54	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-10.445	0.000	0.000
			Max. Mx	5	-6.087	-182.854	0.000
			Max. My	2	-6.087	0.000	182.854
			Max. Vy	5	4.523	-182.854	0.000
			Max. Vx	2	-4.523	0.000	182.854
			Max. Torque	4			0.000
L4	45.54 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-17.143	0.000	0.000
			Max. Mx	5	-10.902	-456.841	0.000
			Max. My	2	-10.902	0.000	456.841
			Max. Vy	5	6.569	-456.841	0.000
			Max. Vx	2	-6.569	0.000	456.841
			Max. Torque	4			0.000

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	15	17.143	0.000	1.606
	Max. H_x	11	10.907	6.560	0.000
	Max. H_z	2	10.907	0.000	6.560
	Max. M_x	2	456.841	0.000	6.560
	Max. M_z	5	456.841	-6.560	0.000
	Max. Torsion	4	0.000	-5.681	3.280
	Min. Vert	1	10.907	0.000	0.000
	Min. H_x	5	10.907	-6.560	0.000
	Min. H_z	8	10.907	0.000	-6.560
	Min. M_x	8	-456.841	0.000	-6.560
	Min. M_z	11	-456.841	6.560	0.000
	Min. Torsion	6	-0.000	-5.681	-3.280

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	10.907	0.000	0.000	0.000	0.000	0.000
Dead+Wind 0 deg - No Ice	10.907	0.000	-6.560	-456.841	0.000	0.000
Dead+Wind 30 deg - No Ice	10.907	3.280	-5.681	-395.636	-228.420	0.000
Dead+Wind 60 deg - No Ice	10.907	5.681	-3.280	-228.420	-395.636	-0.000
Dead+Wind 90 deg - No Ice	10.907	6.560	0.000	0.000	-456.841	0.000
Dead+Wind 120 deg - No Ice	10.907	5.681	3.280	228.420	-395.636	0.000
Dead+Wind 150 deg - No Ice	10.907	3.280	5.681	395.636	-228.420	-0.000
Dead+Wind 180 deg - No Ice	10.907	0.000	6.560	456.841	0.000	0.000
Dead+Wind 210 deg - No Ice	10.907	-3.280	5.681	395.636	228.420	0.000
Dead+Wind 240 deg - No Ice	10.907	-5.681	3.280	228.420	395.636	-0.000
Dead+Wind 270 deg - No Ice	10.907	-6.560	0.000	0.000	456.841	0.000
Dead+Wind 300 deg - No Ice	10.907	-5.681	-3.280	-228.420	395.636	0.000
Dead+Wind 330 deg - No Ice	10.907	-3.280	-5.681	-395.636	228.420	-0.000
Dead+Ice+Temp	17.143	0.000	0.000	0.000	0.000	0.000
Dead+Wind 0 deg+Ice+Temp	17.143	0.000	-1.606	-115.412	0.000	0.000
Dead+Wind 30 deg+Ice+Temp	17.143	0.803	-1.391	-99.950	-57.706	0.000
Dead+Wind 60 deg+Ice+Temp	17.143	1.391	-0.803	-57.706	-99.950	-0.000
Dead+Wind 90 deg+Ice+Temp	17.143	1.606	0.000	0.000	-115.412	0.000
Dead+Wind 120 deg+Ice+Temp	17.143	1.391	0.803	57.706	-99.950	0.000
Dead+Wind 150 deg+Ice+Temp	17.143	0.803	1.391	99.950	-57.706	-0.000
Dead+Wind 180 deg+Ice+Temp	17.143	0.000	1.606	115.412	0.000	0.000
Dead+Wind 210 deg+Ice+Temp	17.143	-0.803	1.391	99.950	57.706	0.000
Dead+Wind 240 deg+Ice+Temp	17.143	-1.391	0.803	57.706	99.950	-0.000
Dead+Wind 270 deg+Ice+Temp	17.143	-1.606	0.000	0.000	115.412	0.000
Dead+Wind 300 deg+Ice+Temp	17.143	-1.391	-0.803	-57.706	99.950	0.000
Dead+Wind 330 deg+Ice+Temp	17.143	-0.803	-1.391	-99.950	57.706	-0.000
Dead+Wind 0 deg - Service	10.907	0.000	-2.563	-178.525	0.000	0.000
Dead+Wind 30 deg - Service	10.907	1.281	-2.219	-154.608	-89.263	0.000
Dead+Wind 60 deg - Service	10.907	2.219	-1.281	-89.263	-154.608	-0.000
Dead+Wind 90 deg - Service	10.907	2.563	0.000	0.000	-178.525	0.000
Dead+Wind 120 deg - Service	10.907	2.219	1.281	89.263	-154.608	0.000
Dead+Wind 150 deg - Service	10.907	1.281	2.219	154.608	-89.263	-0.000
Dead+Wind 180 deg -	10.907	0.000	2.563	178.525	0.000	0.000

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Service Dead+Wind 210 deg - Service	10.907	-1.281	2.219	154.608	89.263	0.000
Service Dead+Wind 240 deg - Service	10.907	-2.219	1.281	89.263	154.608	-0.000
Service Dead+Wind 270 deg - Service	10.907	-2.563	0.000	0.000	178.525	0.000
Service Dead+Wind 300 deg - Service	10.907	-2.219	-1.281	-89.263	154.608	0.000
Service Dead+Wind 330 deg - Service	10.907	-1.281	-2.219	-154.608	89.263	-0.000

Solution Summary

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
1	0.000	-10.907	0.000	0.000	10.907	0.000	0.000%
2	0.000	-10.907	-6.560	0.000	10.907	6.560	0.000%
3	3.280	-10.907	-5.681	-3.280	10.907	5.681	0.000%
4	5.681	-10.907	-3.280	-5.681	10.907	3.280	0.000%
5	6.560	-10.907	0.000	-6.560	10.907	0.000	0.000%
6	5.681	-10.907	3.280	-5.681	10.907	-3.280	0.000%
7	3.280	-10.907	5.681	-3.280	10.907	-5.681	0.000%
8	0.000	-10.907	6.560	0.000	10.907	-6.560	0.000%
9	-3.280	-10.907	5.681	3.280	10.907	-5.681	0.000%
10	-5.681	-10.907	3.280	5.681	10.907	-3.280	0.000%
11	-6.560	-10.907	0.000	6.560	10.907	0.000	0.000%
12	-5.681	-10.907	-3.280	5.681	10.907	3.280	0.000%
13	-3.280	-10.907	-5.681	3.280	10.907	5.681	0.000%
14	0.000	-17.143	0.000	0.000	17.143	0.000	0.000%
15	0.000	-17.143	-1.606	0.000	17.143	1.606	0.000%
16	0.803	-17.143	-1.391	-0.803	17.143	1.391	0.000%
17	1.391	-17.143	-0.803	-1.391	17.143	0.803	0.000%
18	1.606	-17.143	0.000	-1.606	17.143	0.000	0.000%
19	1.391	-17.143	0.803	-1.391	17.143	-0.803	0.000%
20	0.803	-17.143	1.391	-0.803	17.143	-1.391	0.000%
21	0.000	-17.143	1.606	0.000	17.143	-1.606	0.000%
22	-0.803	-17.143	1.391	0.803	17.143	-1.391	0.000%
23	-1.391	-17.143	0.803	1.391	17.143	-0.803	0.000%
24	-1.606	-17.143	0.000	1.606	17.143	0.000	0.000%
25	-1.391	-17.143	-0.803	1.391	17.143	0.803	0.000%
26	-0.803	-17.143	-1.391	0.803	17.143	1.391	0.000%
27	0.000	-10.907	-2.563	0.000	10.907	2.563	0.000%
28	1.281	-10.907	-2.219	-1.281	10.907	2.219	0.000%
29	2.219	-10.907	-1.281	-2.219	10.907	1.281	0.000%
30	2.563	-10.907	0.000	-2.563	10.907	0.000	0.000%
31	2.219	-10.907	1.281	-2.219	10.907	-1.281	0.000%
32	1.281	-10.907	2.219	-1.281	10.907	-2.219	0.000%
33	0.000	-10.907	2.563	0.000	10.907	-2.563	0.000%
34	-1.281	-10.907	2.219	1.281	10.907	-2.219	0.000%
35	-2.219	-10.907	1.281	2.219	10.907	-1.281	0.000%
36	-2.563	-10.907	0.000	2.563	10.907	0.000	0.000%
37	-2.219	-10.907	-1.281	2.219	10.907	1.281	0.000%
38	-1.281	-10.907	-2.219	1.281	10.907	2.219	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00000001

3	Yes	5	0.00000001	0.00071562
4	Yes	5	0.00000001	0.00071562
5	Yes	5	0.00000001	0.00000001
6	Yes	5	0.00000001	0.00071562
7	Yes	5	0.00000001	0.00071562
8	Yes	5	0.00000001	0.00000001
9	Yes	5	0.00000001	0.00071562
10	Yes	5	0.00000001	0.00071562
11	Yes	5	0.00000001	0.00000001
12	Yes	5	0.00000001	0.00071562
13	Yes	5	0.00000001	0.00071562
14	Yes	4	0.00000001	0.00000001
15	Yes	5	0.00000001	0.00022990
16	Yes	5	0.00000001	0.00026683
17	Yes	5	0.00000001	0.00026683
18	Yes	5	0.00000001	0.00022990
19	Yes	5	0.00000001	0.00026683
20	Yes	5	0.00000001	0.00026683
21	Yes	5	0.00000001	0.00022990
22	Yes	5	0.00000001	0.00026683
23	Yes	5	0.00000001	0.00026683
24	Yes	5	0.00000001	0.00022990
25	Yes	5	0.00000001	0.00026683
26	Yes	5	0.00000001	0.00026683
27	Yes	4	0.00000001	0.00041480
28	Yes	5	0.00000001	0.00005521
29	Yes	5	0.00000001	0.00005521
30	Yes	4	0.00000001	0.00041480
31	Yes	5	0.00000001	0.00005521
32	Yes	5	0.00000001	0.00005521
33	Yes	4	0.00000001	0.00041480
34	Yes	5	0.00000001	0.00005521
35	Yes	5	0.00000001	0.00005521
36	Yes	4	0.00000001	0.00041480
37	Yes	5	0.00000001	0.00005521
38	Yes	5	0.00000001	0.00005521

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	119 - 103	20.001	30	1.756	0.000
L2	103 - 76.29	14.469	30	1.158	0.000
L3	79.71 - 45.54	9.030	30	1.044	0.000
L4	49.46 - 0	3.554	30	0.647	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
115.000	APXV18-206516S-C-A20 w/ Mount Pipe	30	18.532	1.578	0.000	4472
111.000	20"x16' Fiberglass Enclosure	30	17.097	1.412	0.000	2795
107.000	APXV18-206516S-C-A20 w/ Mount Pipe	30	15.731	1.268	0.000	1865
98.000	HBX-6516DS-VTM w/ Mount Pipe	30	13.069	1.078	0.000	1784

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	119 - 103	51.140	2	4.490	0.000
L2	103 - 76.29	37.007	2	2.962	0.000
L3	79.71 - 45.54	23.099	2	2.671	0.000
L4	49.46 - 0	9.092	2	1.655	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
115.000	APXV18-206516S-C-A20 w/ Mount Pipe	2	47.388	4.036	0.000	1767
111.000	20"x16' Fiberglass Enclosure	2	43.723	3.611	0.000	1104
107.000	APXV18-206516S-C-A20 w/ Mount Pipe	2	40.233	3.243	0.000	736
98.000	HBX-6516DS-VTM w/ Mount Pipe	2	33.429	2.757	0.000	702

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L1	119 - 103 (1)	TP4x4x2	16.000	0.000	0.0	30.000	12.566	-1.781	376.991	0.005
L2	103 - 76.29 (2)	TP23.26x19.5x0.188	26.710	0.000	0.0	39.000	13.445	-4.074	524.336	0.008
L3	76.29 - 45.54 (3)	TP27.09x20.419x0.188	34.170	0.000	0.0	39.000	15.555	-6.087	606.641	0.010
L4	45.54 - 0 (4)	TP33x25.95x0.25	49.460	0.000	0.0	39.000	25.987	-10.902	1013.500	0.011

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	119 - 103 (1)	TP4x4x2	8.169	31.181	33.000	0.945	0.000	0.000	33.000	0.000
L2	103 - 76.29 (2)	TP23.26x19.5x0.188	65.306	10.461	39.000	0.268	0.000	0.000	39.000	0.000
L3	76.29 - 45.54 (3)	TP27.09x20.419x0.188	182.854	21.857	39.000	0.560	0.000	0.000	39.000	0.000
L4	45.54 - 0 (4)	TP33x25.95x0.25	456.841	26.098	39.000	0.669	0.000	0.000	39.000	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	119 - 103 (1)	TP4x4x2	0.995	0.079	20.000	0.008	0.000	0.000	20.000	0.000
L2	103 - 76.29 (2)	TP23.26x19.5x0.188	3.241	0.241	26.000	0.019	0.000	0.000	26.000	0.000
L3	76.29 - 45.54 (3)	TP27.09x20.419x0.188	4.523	0.291	26.000	0.022	0.000	0.000	26.000	0.000
L4	45.54 - 0 (4)	TP33x25.95x0.25	6.569	0.253	26.000	0.019	0.000	0.000	26.000	0.000

Pole Interaction Design Data

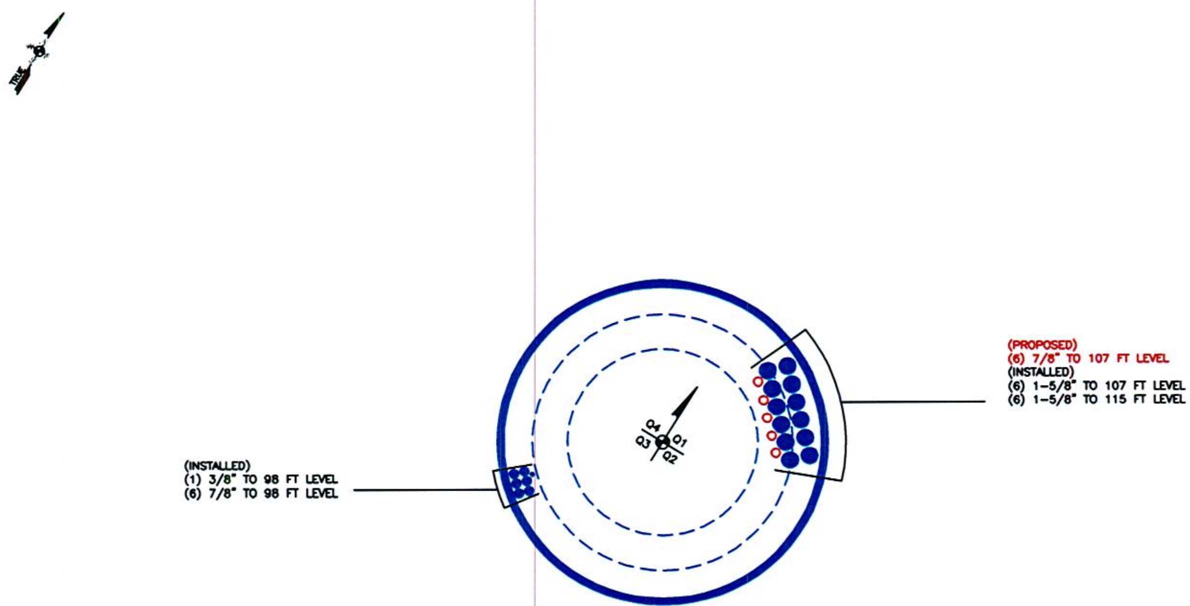
Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	119 - 103 (1)	0.005	0.945	0.000	0.008	0.000	0.950 ✔	1.333	H1-3+VT ✔
L2	103 - 76.29 (2)	0.008	0.268	0.000	0.019	0.000	0.276 ✔	1.333	H1-3+VT ✔
L3	76.29 - 45.54 (3)	0.010	0.560	0.000	0.022	0.000	0.571 ✔	1.333	H1-3+VT ✔
L4	45.54 - 0 (4)	0.011	0.669	0.000	0.019	0.000	0.680 ✔	1.333	H1-3+VT ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
L1	119 - 103	Pole	TP4x4x2	1	-1.781	502.529	41.6	Pass
L2	103 - 76.29	Pole	TP23.26x19.5x0.188	2	-4.074	698.940	20.7	Pass
L3	76.29 - 45.54	Pole	TP27.09x20.419x0.188	3	-6.087	808.652	42.8	Pass
L4	45.54 - 0	Pole	TP33x25.95x0.25	4	-10.902	1350.995	51.0	Pass
						Summary	ELC:	Load Case 5
						Pole (L1)	41.6	Pass
						Rating =	41.6	Pass

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 824012 TOWER ID: C_BASELEVEL

CROWN REGION ADDRESS

USA

1	19/04/13	NEW BUILD PER WORK ORDER # 601087	AK
2	25/06/13	UPDATED PER WORK ORDER # 634605	ESG

DRAWN BY: AH
CHECKED BY:
DRAWING DATE: 19/4/13

SITE NUMBER:
SITE NAME:

SITE NAME
FARMINGTON / RT 6

BUSINESS UNIT NUMBER
824012

SITE ADDRESS
985 FARMINGTON AVE
BRISTOL, CT 06010
HARTFORD COUNTY
USA

SHEET TITLE
BASE LEVEL

SHEET NUMBER
A1-0

BASE LEVEL DRAWING	1" = 1'-0"	1

PLOT DATE: 6/25/2013 FILE NAME: 824012_BASELEVEL.dwg
Xref R:\TEMPLATES\TYPICAL BLOCKS FOR TEMPLATES\TITLE BLOCK STD-VER 5.1.dwg

APPENDIX C

ADDITIONAL CALCULATIONS

Stiffened or Unstiffened, Ungrouted, Circular Base Plate - Any Rod Material

TIA Rev F

Site Data

BU#: *824012*
Site Name: *Farmington / Rt 6*
App #: *186957 Rev. 4*

Pole Manufacturer:	*Other*

Reactions		
Moment:	457	ft-kips
Axial:	11	kips
Shear:	7	kips

Anchor Rod Data		
Qty:	4	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	41	in

Plate Data		
Diam:	47	in
Thick:	1.5	in
Grade:	60	ksi
Single-Rod B-eff:	18.25	in

Stiffener Data (Welding at both sides)		
Config:	0	*
Weld Type:		
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data		
Diam:	33	in
Thick:	0.25	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor		
ASIF:	1.333	

If No stiffeners, Criteria:	AISC ASD	<-Only Applcable to Unstiffened Cases

Anchor Rod Results

Maximum Rod Tension:	131.0 Kips	Non-Rigid
Allowable Tension:	195.0 Kips	Service, ASD
Anchor Rod Stress Ratio:	67.2% **Pass**	Fty*ASIF

Base Plate Results Flexural Check

Base Plate Stress:	59.8 ksi	Non-Rigid
Allowable Plate Stress:	60.0 ksi	Service ASD
Base Plate Stress Ratio:	99.8% **Pass**	0.75*Fy*ASIF
		Y.L. Length: 24.33

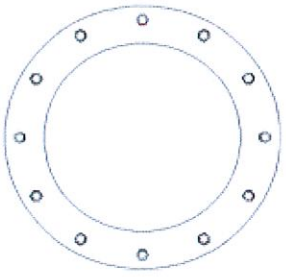
n/a

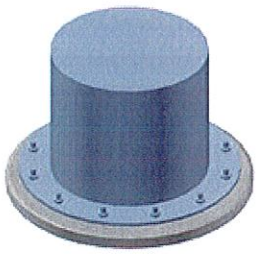
Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a





* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Site Number	824012
Site Name	Farmington / Rt 6

Caisson Analysis

Pier Properties		
Moment	457	kip-ft
Shear	7	kip
Pier Diameter	5.5	ft
Height Above Grade	1.00	ft
Depth Below Grade	14.00	ft
Donut Diameter		ft
Donut Depth		ft

Analysis Properties		
TIA Code	F	
Soil Safety Factor	2.00	
Water Table Depth	29.0	ft
Ignored Soil Depth	3.5	ft
Cohesion Based on	PLS Caisson	
Max Soil Capacity	110%	

Soil Properties

Layer	Top of Soil Layer (ft)	Layer Thickness (ft)	Bottom of Soil Layer (ft)	Soil Unit Weight (pcf)	Cohesion (psf)	Friction Angle (degrees)
Soil.Layer	*Soil.Top*	*Soil.Thick*	*Soil.Bottom*	*Soil.Weight*	*Soil.Cohesion*	*Soil.Phi*
1	0.00	15	15.00	135		38
2						
3						
4						
5						
6						
7						
8						
9						
10						

Critical Depths Below Grade		
Rotation Axis	10.34	ft
Zero Shear	4.24	ft

Results		
Soil Capacity	51.9%	OK
Max Pier Moment	491	kip-ft

Moment At User Defined Depths Below Grade	
kip-ft	kip-ft
kip-ft	kip-ft

V1.0

Moment Capacity of Drilled Concrete Shaft (Caisson) for TIA Rev F or G

Note: Shaft assumed to have ties, not spiral, transverse reinforcing

Site Data

BU#: *824012*
Site Name: *Farmington / Rt 6*
App #: *186957 Rev. 4*

Maximum Shaft Superimposed Forces		
TIA Revision:	F	
Max. Service Shaft M:	491.1881	ft-kips **(* Note)**
Max. Service Shaft P:	11	kips
Max Axial Force Type:	Comp.	

(*) Note: Max Shaft Superimposed Moment does not necessarily equal to the shaft top reaction moment

Enter Load Factors Below:		
For M (WL)	1.3	<---- Enter Factor
For P (DL)	1.3	<---- Enter Factor

Load Factor	Shaft Factored Loads		
1.30	Mu:	638.5445	ft-kips
1.30	Pu:	14.3	kips

Pier Properties

Concrete:

Pier Diameter =	5.5	ft
Concrete Area =	3421.2	in^2

Reinforcement:

Clear Cover to **Tie**=	4.00	in
Horiz. **Tie** Bar Size=	5	
Vert. Cage Diameter =	4.65	ft
Vert. Cage Diameter =	55.75	in
Vertical Bar Size =	8	
Bar Diameter =	1.00	in
Bar Area =	0.79	in^2
Number of Bars =	22	
As Total=	17.38	in^2
A s/ Aconc, Rho:	0.0051	0.51%

Material Properties		
Concrete Comp. strength, f'c =	4000	psi
Reinforcement yield strength, Fy =	60	ksi
Reinforcing Modulus of Elasticity, E =	29000	ksi
Reinforcement yield strain =	0.00207	
Limiting compressive strain =	0.003	
ACI 318 Code		
Select Analysis ACI Code=	2005	
Seismic Properties		
Seismic Design Category =	B	
Seismic Risk =	**Low**	

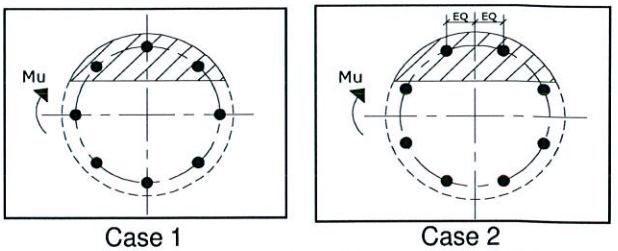
Solve (Run) <-- Press Upon Completing All Input

ACI 10.5 , ACI 21.10.4, and IBC 1810.
Min As for Flexural, Tension Controlled, Shafts:

(3)*(Sqrt(f'c)/Fy:	0.0032
200 / Fy:	0.0033

Results:

Governing Orientation Case: **2**



Case 1 Case 2

Dist. From Edge to Neutral Axis: **9.02** in
Extreme Steel Strain, εt: **0.0172**
εt > 0.0050, Tension Controlled
Reduction Factor,φ: **0.900**

Minimum Rho Check:

Actual Req'd Min. Rho:	0.33%	Flexural
Provided Rho:	0.51%	**OK**

Ref. Shaft Max Axial Capacities, ϕ Max(Pn or Tn):		
Max Pu = (φ=0.65) Pn.		
Pn per ACI 318 (10-2)	6560.20	kips
at Mu=(ϕ=0.65)Mn=	3117.54	ft-kips
Max Tu, (φ=0.9) Tn =	938.52	kips
at Mu=ϕ=(0.90)Mn=	0.00	ft-kips

Output Note: Negative Pu=Tension

For Axial Compression, φ Pn = Pu:	14.30	kips
Drilled Shaft Moment Capacity, φMn:	**2195.31**	ft-kips
Drilled Shaft Superimposed Mu:	**638.54**	ft-kips

(Mu/φMn, Drilled Shaft Flexure CSR:	**29.1%**

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev F

Site Data

BU#: *824012*
Site Name: *Farmington / Rt 6*
App #: *186957 Rev. 4*

Manufacturer:	Other

Reactions		
Moment:	8.169	ft-kips
Axial:	1.781	kips
Shear:	1	kips
Exterior Flange Run, T+Q:	0	kips

Elevation: 103 feet

Bolt Data			
Qty:	12		
Diam:	0.875	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:	100	<-- Disregard	Bolt Fty: 44.00
N/A:	75	<-- Disregard	
Circle:	16	in	

Interior Flange Bolt Results

Maximum Bolt Tension:	1.9 Kips, Ext. T=Interior T
Allowable Tension:	35.3 Kips
Bolt Stress Ratio:	5.4% **Pass**

Plate Data		
Plate Outer Diam:	19.125	in
Plate Inner Diam:	13.75	in (Hole @ Ctr)
Thick:	1.5	in
Grade:	60	ksi
Effective Width:	5.06	in

Interior Flange Plate Results Flexural Check

Controlling Bolt Axial Force:	2.2 Kips, Ext. C= Interior C
Plate Stress:	1.8 ksi
Allowable Plate Stress:	60.0 ksi
Plate Stress Ratio:	3.0% **Pass**

Stiffener Data (Welding at Both Sides)		
Config:	0	*
Weld Type:		
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

n/a

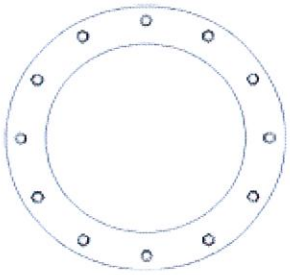
Stiffener Results

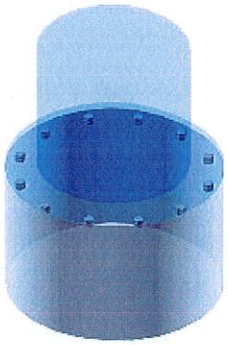
Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a

Pole Data		
Pole OuterDiam:	19.5	in
Thick:	0.1875	in
Pole Inner Diam:	19.125	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi





Stress Increase Factor		
ASIF:	1.333	

* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Stealth Mast Stresses

BU#: 824012 FARMINGTON/RT 6.

GPD Project #: 2013775.824012.01 **ELEVATION:** 103' - 119'

RISA Reactions		
Moment	8.169	k-ft
Axial	1.78	k

Pole Properties		
Section	BOTTOM	
ASIF	1.333	
Diameter	4	in
Thickness	0	in
F_y	50	ksi
Length	16	ft
K	2.1	
A	12.57	in^2
r	1.00	in
S	6.28	in^3

Calculations		
KL/r	403.2	
C_c	107.0	
D/t	N/A	
F_a	0.92	ksi
C_m	0.85	
F_e'	1.22	ksi
F_b	37.5	ksi
f_a	0.14	ksi
f_b	15.60	ksi
f_a/F_a	0.15	
H1-1	0.55	
H1-2	0.42	
H1-3	N/A	
Capacity	41.6%	Pass

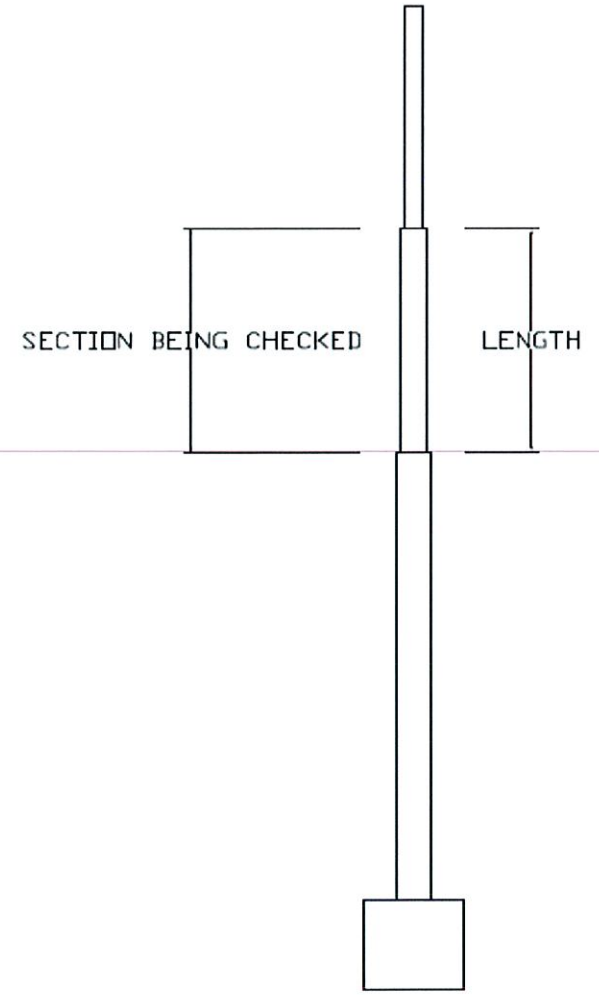


EXHIBIT C

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

T-Mobile Existing Facility

Site ID: CT11272D

Farmington Route 6
985 Farmington Avenue
Bristol, CT 06010

July 23, 2013

EBI Project Number: 62138514

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

EBI Consulting
environmental | engineering | due diligence

July 23, 2013

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

Re: Emissions Values for Site: **CT11272D - Farmington Route 6**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at 985 Farmington Avenue, Bristol 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 band 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 985 Farmington Avenue, Bristol 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) were considered for each sector of the proposed installation.
2) 2 UMTS channels (2110.000 MHz 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 MHz 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 centerlines of the proposed antennas are **107 and 115 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 calculation were done with respect to uncontrolled / general public threshold limits

Site ID	CT11272D - Farmington Route 6
Site Addresss	985 Farmington Avenue, Bristol CT 06010
Site Type	Monopole / Flagpole

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	107	101	None	0	0	48.326044	1.703117	0.17031%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	107	101	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	115	109	1-5/8"	0	0	24.163022	0.731146	0.07311%
2B	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	115	109	1-5/8"	0	0	24.163022	0.731146	0.07311%
														Sector total Power Density Value:			0.317%

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	107	101	None	0	0	48.326044	1.703117	0.17031%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	107	101	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	115	109	1-5/8"	0	0	24.163022	0.731146	0.07311%
2B	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	115	109	1-5/8"	0	0	24.163022	0.731146	0.07311%
														Sector total Power Density Value:			0.317%

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	107	101	None	0	0	48.326044	1.703117	0.17031%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	107	101	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	115	109	1-5/8"	0	0	24.163022	0.731146	0.07311%
2B	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	115	109	1-5/8"	0	0	24.163022	0.731146	0.07311%
														Sector total Power Density Value:			0.317%

Site Composite MPE %

Carrier	MPE %
T-Mobile	0.950%
Metro PCS	8.170%
Total Site MPE %	9.120%

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Summary

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

The anticipated Maximum Composite contributions from the T-Mobile facility are **0.950% (0.317% 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 **9.120%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions

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

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

December 24, 2014

Rachel A. Schwartzman, Esq.
Cohen and Wolf, P.C.
P.O. Box 1821
Bridgeport, CT 06601

RE:

EM-T-MOBILE-004-130531	81 Montevideo Road	Avon
EM-T-MOBILE-009-130611	38 Spring Hill Lane	Bethel
EM-T-MOBILE-014-130724	405 Brushy Plain Road	Branford
EM-T-MOBILE-017-130611	2 Willis Street	Bristol
EM-T-MOBILE-017-130729	985 Farmington Avenue	Bristol
EM-T-MOBILE-033-130719	179 Shunpike Road	Cromwell
EM-T-MOBILE-034-130531A	41 Padanaram Road	Danbury
EM-T-MOBILE-034-130531B	303 Boxwood Lane	Danbury
EM-T-MOBILE-034-130726	7 West View Drive	Danbury
EM-T-MOBILE-043-130222	1455 Forbes Street	East Hartford
EM-T-MOBILE-049-130718	1 Ecology Drive	Enfield
EM-T-MOBILE-057-130220	150 Butternut Hollow Road	Greenwich
EM-T-MOBILE-080-130903	11 West Peak Drive	Meriden
EM-T-MOBILE-091-130531A	302 Ball Pond Road	New Fairfield
EM-T-MOBILE-091-130531B	37 Titicus Mountain Road	New Fairfield
EM-T-MOBILE-101-130611	125 Washington Avenue	North Haven
EM-T-MOBILE-110-130621	335 S. Washington Street	Plainville
EM-T-MOBILE-135-130318	555 Main Street	Stamford
EM-T-MOBILE-148-130531	90 N. Plains Industrial Road	Wallingford
EM-T-MOBILE-166-130726	Andrews Road	Wolcott
EM-T-MOBILE-166-130816	Route 322/Meridian Road	Wolcott

Dear Attorney Schwartzman:

The Connecticut Siting Council (Council) is in receipt of your letter dated December 23, 2014, submitted on behalf of T-Mobile, requesting an extension of time to submit a notice of completion of construction and associated post modification inspection reports for the above-referenced exempt modifications.

The Council hereby grants a 60-day extension of time to submit a notice of completion of construction and associated post modification inspection reports for the above-referenced exempt modifications to March 2, 2015.

This extension is granted with the understanding that the Council will be notified should T-Mobile need additional time beyond 60 days to submit a notice of completion and associated post modification inspection reports or decide not to proceed with construction.

Thank you for your attention to this matter.

Sincerley,

Melanie A. Bachman
Acting Executive Director

MAB/cm

COHEN and WOLF P.C.
ATTORNEYS AT LAW

RACHEL A. SCHWARTZMAN

Please Reply To: Bridgeport
Writer's Direct Dial: (203) 337-4110
E-Mail: rschwartzman@cohenandwolf.com

February 26, 2015

Attorney Melanie Bachman
Acting Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06501

Re: EM-T-MOBILE-107-130729
T-Mobile Site ID CT11272D
985 Farmington Avenue, Bristol, CT
Notice of Construction Completion

Dear Attorney Bachman:

The Connecticut Siting Council ("Council") acknowledged the above referenced T-Mobile Northeast LLC ("T-Mobile") notice of exempt modification on August 20, 2013. T-Mobile hereby notifies the Council that construction of the acknowledged modifications were complete as of November 12, 2013.

Please don't hesitate to contact me with any questions.

Sincerely,

Rachel A. Schwartzman

cc: Samuel Simons, T-Mobile
Mark Richard, T-Mobile
Robert Stanford, Vertical Development, LLC
Julie Kohler, Esq.

COHEN and WOLF P.C.
ATTORNEYS AT LAW

RACHEL A. SCHWARTZMAN

Please Reply To: Bridgeport
Writer's Direct Dial: (203) 337-4110
E-Mail: rschwartzman@cohenandwolf.com

December 23, 2014

Via Electronic and Overnight Mail

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

Re: T-Mobile Exempt Modification Compliance Filings
Connecticut Siting Council Audit Letter dated November 3, 2014
Request For Extension of Time

Dear Attorney Bachman:

T-Mobile Northeast, LLC ("T-Mobile") respectfully requests a 60-day extension of time to March 2, 2015 to respond to the Council's request, dated November 3, 2014, for exempt modification compliance data. The attached spreadsheet provides a list of the sites for which T-Mobile seeks a requested extension.

T-Mobile is actively compiling all of the requested information but needs additional time to provide the necessary documentation.

Please do not hesitate to let me know if you have any questions.

Sincerely,

Rachel Schwartzman

Rachel A. Schwartzman, Esq.

RAS/lcc
Enclosure

cc: Samuel Simons, T-Mobile Northeast, LLC (via electronic mail)
Mark Richard, T-Mobile Northeast, LLC (via electronic mail)
Robert Stanford, Vertical Development, LLC (via electronic mail)
Julie Kohler, Esq.

EM/TS #	Address	Town	Council Additional Conditions	Compliance with Council Additional Conditions Received	Notice of Completion Received	Decision Date
EM-T-MOBILE-043-130222	1455 Forbes Street	East Hartford	Yes	No	No	3/12/2013
EM-T-MOBILE-057-130220	150 Butternut Hollow Road	Greenwich	N/A	N/A	No	3/12/2013
EM-T-MOBILE-135-130318	555 Main Street	Stamford	Yes	No	No	4/9/2013
EM-T-MOBILE-006-130528	60 Rice Lane	Beacon Falls	Yes	No	No	6/26/2013
EM-T-MOBILE-002-130529	401 Wakelee Avenue	Ansonia	N/A	N/A	No	6/27/2013
EM-T-MOBILE-004-130531	81 Montevideo Road	Avon	N/A	N/A	No	7/9/2013
EM-T-MOBILE-034-130531A	41 Padanaram Road	Danbury	Yes	No	No	7/9/2013
EM-T-MOBILE-034-130531B	303 Boxwood Lane	Danbury	N/A	N/A	No	7/9/2013
EM-T-MOBILE-091-130531A	302 Ball Pond Road	New Fairfield	N/A	N/A	No	7/9/2013
EM-T-MOBILE-091-130531B	37 Titicus Mountain Road	New Fairfield	N/A	N/A	No	7/9/2013
EM-T-MOBILE-148-130531	90 N. Plains Industrial Road	Wallingford	N/A	N/A	No	7/9/2013
EM-T-MOBILE-101-130611	125 Washington Avenue	North Haven	N/A	N/A	No	7/10/2013
EM-T-MOBILE-009-130611	38 Spring Hill Lane	Bethel	Yes	No	No	7/11/2013
EM-T-MOBILE-017-130611	2 Willis Street	Bristol	Yes	No	No	7/12/2013
EM-T-MOBILE-110-130621	335 S. Washington Street	Plainville	N/A	N/A	No	7/12/2013
EM-T-MOBILE-033-130719	179 Shunpike Road	Cromwell	Yes	No	No	8/7/2013
EM-T-MOBILE-049-130718	1 Ecology Drive	Enfield	N/A	N/A	No	8/7/2013
EM-T-MOBILE-014-130724	405 Brushy Plain Road	Branford	Yes	No	No	8/13/2013
EM-T-MOBILE-017-130729	985 Farmington Avenue	Bristol	N/A	N/A	No	8/20/2013
EM-T-MOBILE-034-130726	7 West View Drive	Danbury	N/A	N/A	No	8/20/2013
EM-T-MOBILE-166-130726	Andrews Road	Wolcott	Yes	No	No	8/20/2013
EM-T-MOBILE-166-130816	Route 322/Meridian Road	Wolcott	N/A	N/A	No	9/3/2013
EM-T-MOBILE-080-130903	11 West Peak Drive	Meriden	Yes	No	No	9/18/2013