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 28, 2012

Jennifer Young Gaudet
HPC Development LLC
46 Mill Plain Road, 2nd Floor
Danbury, CT 06811

RE: **EM-T-MOBILE-077-121203** – T-Mobile Northeast LLC notice of intent to modify an existing telecommunications facility located at 53 Slater Street, Manchester, Connecticut.

Dear Ms. Gaudet:

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 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;
- Not more than 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 November 30, 2012. 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,

LRoberts

Linda Roberts
Executive Director

LR/CDM/jbw

c: The Honorable Leo V. Diana, Mayor, Town of Manchester
Scott A. Shanley, General Manager, Town of Manchester
James Davis, Zoning Enforcement Officer, Town of Manchester
Crown Castle

EM-T-MOBILE-077-121203

HPC Wireless Services
46 Mill Plain Rd.
Floor 2
Danbury, CT, 06811
P.: 203.797.1112

HPC WIRELESS SERVICES

ORIGINAL

November 30, 2012

RECEIVED
DEC - 3 2012
CONNECTICUT
SITING COUNCIL

VIA OVERNIGHT COURIER

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051
Attn: Ms. Linda Roberts, Executive Director

Re: T-Mobile Northeast LLC – exempt modification
53 Slater Street, Manchester, Connecticut

Dear Ms. Roberts:

This letter and attachments are submitted on behalf of T-Mobile Northeast LLC ("T-Mobile"). T-Mobile is making modifications to certain existing sites in its Connecticut system in order to implement LTE technology. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction that constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the Mayor of the Town of Manchester.

T-Mobile plans to modify the existing wireless communications facility owned by Crown Castle and located at 53 Slater Street in the Town of Manchester (coordinates 41°-48'-18" N, 72°-32'-01" W). Attached are a compound plan and elevation depicting the planned changes, and documentation of the structural sufficiency of the structure to accommodate the revised antenna configuration. Also included is a power density report reflecting the modification to T-Mobile's operations at the site.

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

1. T-Mobile will replace its six (6) existing panel antennas with six (6) new antennas at a center line of approximately 133'. T-Mobile will also remove three (3) of six (6)

TMAs and relocate the other three (3) on the platform. A hybrid cable will be run from the equipment to the antennas along the existing coaxial cable run. The proposed modifications will not extend the height of the approximately 155' structure.

2. There will be no changes to T-Mobile's ground equipment, and therefore no effect on the site boundaries.

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

4. The changes to the facility will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site. As indicated on the attached report prepared by EBI Consulting, T-Mobile's operations at the site will result in a power density of approximately 0.646%; the combined site operations will result in a total power density of approximately 47.266%.

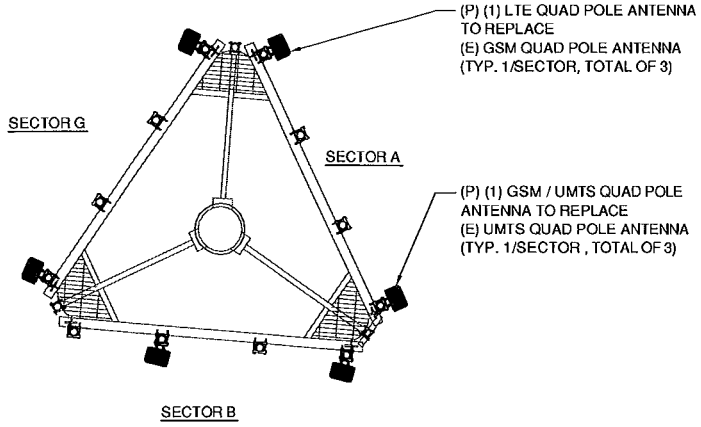
Please feel free to contact me by phone at (860) 798-7454 or by e-mail at jgaudet@hpcwireless.com with questions concerning this matter. Thank you for your consideration.

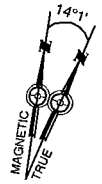
Respectfully yours,

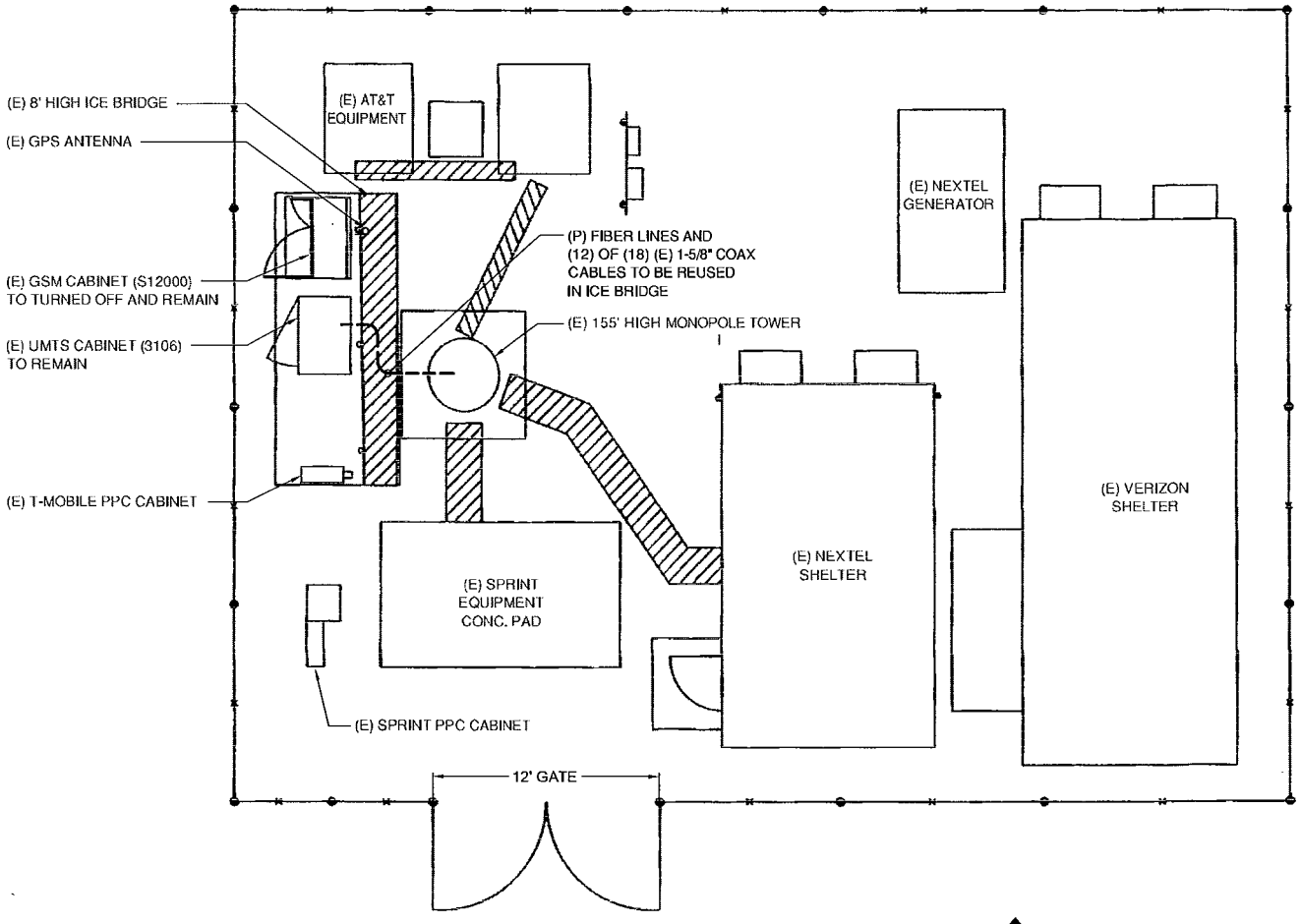
Jennifer Young Gaudet (JSS)

Jennifer Young Gaudet

cc: Honorable Leo V. Diana, Mayor, Town of Manchester
One Hundred Twenty One Connecticut Avenue Associates, LLC (underlying property owner)







ALL EQUIPMENT LOCATIONS ARE APPROXIMATE AND ARE SUBJECT TO APPROVAL BY LESSEE / LICENSEE'S STRUCTURAL & RF ENGINEERS. LOCATIONS OF POWER & TELEPHONE FACILITIES ARE SUBJECT TO APPROVAL BY UTILITY COMPANIES.

SITE PLAN
N.T.S.

1 / LE-1

1 / LE-2

Configuration
2C

SUBMITTALS	
LE REV A	04.25.12
LE REV 0	11.19.12

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

LEASE EXHIBIT

SITE NUMBER:
CT11377C

SITE NAME:
SPRINT MANCHESTER/SLATER

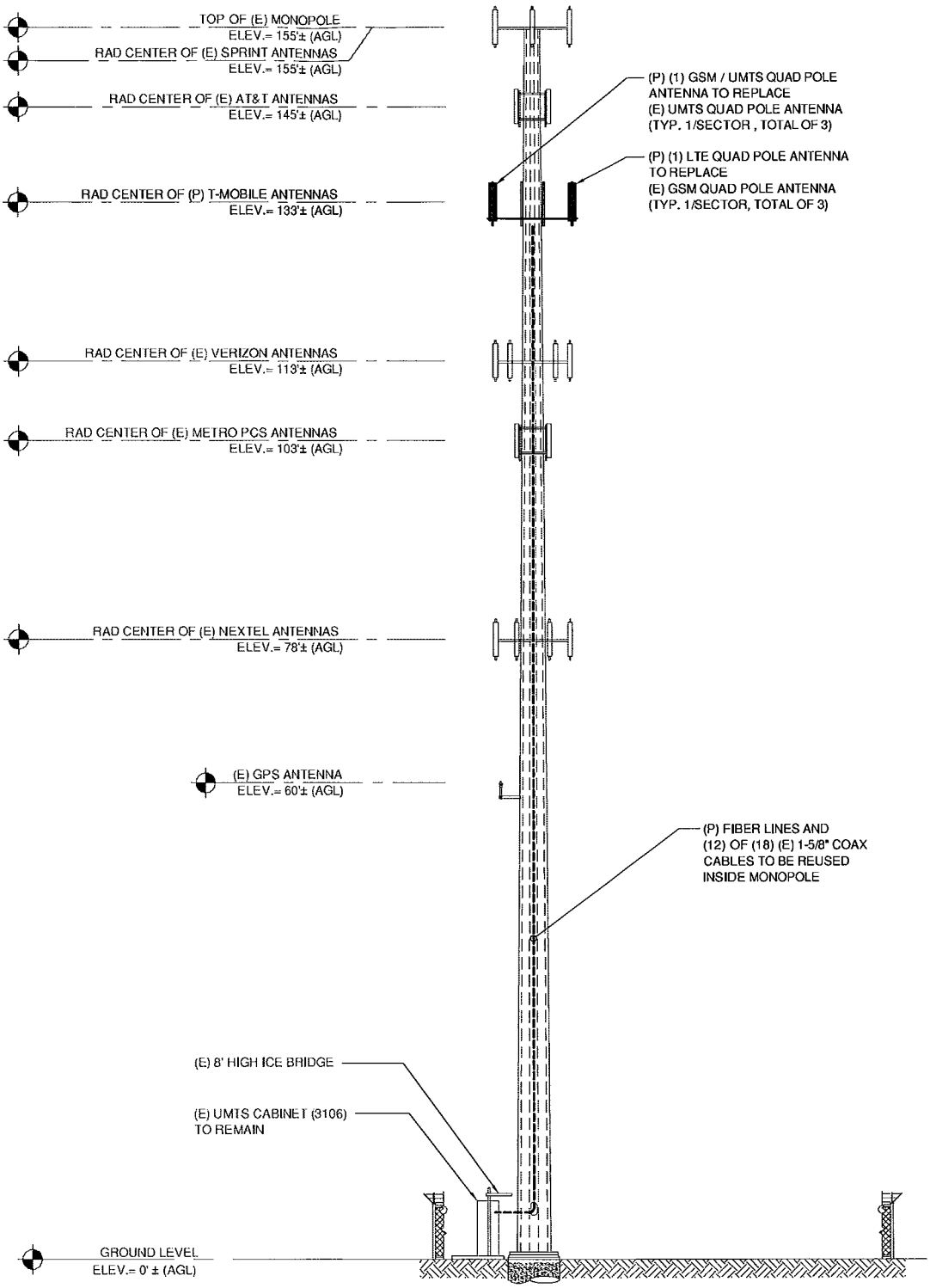
SITE ADDRESS:
55 SLATER STREET
MANCHESTER, CT 06040

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: MB | CHECKED BY: SM



ELEVATION 1
N.T.S LE-2

Configuration
2C

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LE REV A	04.25.12
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BLOOMFIELD, CT 06002
OFFICE: (860) 692-7100
FAX: (860) 692-7159

DRAWN BY: MB | CHECKED BY: SM

Date: **November 05, 2012**

Marianne Dunst
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
(412) 416-2000

Subject: **Structural Analysis Report**

Carrier Designation:	***T-Mobile* Co-Locate**	
	Carrier Site Number:	CT11377C
	Carrier Site Name:	CT11377C
Crown Castle Designation:	**Crown Castle BU Number:**	876347
	Crown Castle Site Name:	BUCKLAND MALL
	Crown Castle JDE Job Number:	209307
	Crown Castle Work Order Number:	546751
	Crown Castle Application Number:	168176 Rev. 1
Engineering Firm Designation:	**Crown Castle Project Number:**	546751
Site Data:	**53 Slater Street, MANCHESTER, Hartford County, CT** **Latitude *41° 48' 18"*, Longitude *-72° 32' 1"*** **155 Foot - Monopole Tower**	

Dear Marianne Dunst,

Crown Castle 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 546751, in accordance with application 168176, revision 1.

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:

LC7: Existing + Reserved + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

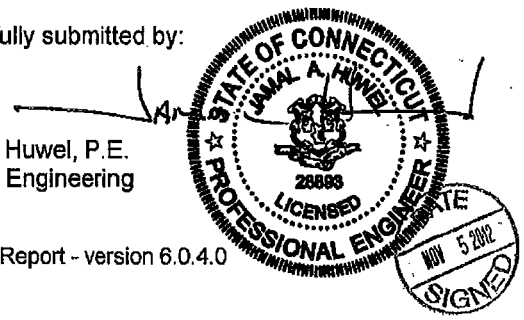
The analysis has been performed in accordance with the TIA/EIA-222-F standard and 2005 CT State Building Code based upon a wind speed of 80 mph fastest mile.

All modifications and equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at *Crown Castle* 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.

Structural analysis prepared by: Daniel Smilowitz, E.I.T. / MRC

Respectfully submitted by:



Jamal A. Huwel, P.E.
Manager Engineering

tnxTower Report - version 6.0.4.0

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 155 ft Monopole tower designed by SEA Consultants Inc in February of 2002. The tower was originally designed for a wind speed of 80 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, 37.6 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
133.0	133.0	3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	1	1-5/8	-
		3	ericsson	ERICSSON AIR 21 B4A B2P w/ Mount Pipe			
		3	ericsson	KRY 112 144/1			

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
155.0	155.0	3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe	3	1-1/4	2
		3	argus technologies	LLPX310R	5 3 3	1/2 5/16 1/4	1
		3	samsung telecommunications	WIMAX DAP HEAD			
		1	tower mounts	Platform Mount [LP 713-1]			
	151.0	1	andrew	VHLP1-23			
		1	andrew	VHLP2-11			
		1	andrew	VHLP2.5-18			
		3	dragonwave	HORIZON COMPACT			
153.0	153.0	3	alcatel lucent	800MHz 2X50W RRH W/FILTER	-	-	2
		3	alcatel lucent	PCS 1900MHz 4x45W-65MHz			
		1	tower mounts	Side Arm Mount [SO 102-3]			
143.0	145.0	3	kathrein	800 10121 w/ Mount Pipe	6	1-1/4	1
		6	powerwave technologies	LGP21401			
		1	tower mounts	Side Arm Mount [SO 102-3]	2 1	3/4 3/8	2
		6	ericsson	RRUS-11			
		3	kmw communications	AM-X-CD-16-65-00T-RET w/ Mount Pipe			
		1	raycap	DC6-48-60-18-8F			
	143.0	1	tower mounts	T-Arm Mount [TA 702-3]			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
133.0	133.0	3	andrew	ETW190VS12UB	6	1-5/8	3
		6	rfs celwave	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe			
		3	rfs celwave	ATMAA1412D-1A20			
		1	tower mounts	Platform Mount [LP 403-1]	12	1-5/8	1
113.0	113.0	2	antel	BXA-70063/6CFx2 w/ Mount Pipe	-	-	2
		1	antel	BXA-70063/6CFx4 w/ Mount Pipe			
		6	rfs celwave	FD9R6004/2C-3L			
		3	rymsa wireless	MG D3-800Tx w/ Mount Pipe			
		6	decibel	DB844G65ZAXY w/ Mount Pipe	12	1-5/8	1
		1	tower mounts	Platform Mount [LP 601-1]			
103.0	103.0	3	rfs celwave	APXV18-206517S-C	6	1-5/8	1
		1	tower mounts	Pipe Mount [PM 601-3]			
78.0	78.0	12	decibel	844G65VTZASX w/ Mount Pipe	12	1-5/8	1
		1	tower mounts	Platform Mount [LP 303-1]			
60.0	60.0	1	tower mounts	Side Arm Mount [SO 701-1]	1	1/2	1
		1	trimble	ACUTIME 2000			

Notes:
1) Existing Equipment
2) Reserved Equipment
3) Equipment To Be Removed; Not Considered in Analysis

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)
155	155	9	Decibel	DB980H90	-	-
145	145	6	Allgon	7250.03	-	-
133	133	6	EMS	RR90-17-00DP PCS	-	-
50	50	1	Generic	GPS Antenna	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	FDH Engineering, Inc.	1533476	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Paul J. Ford	1615406	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Paul J. Ford	2068033	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.

This analysis may be affected if any assumptions are not valid or have been made in error. Crown Castle 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 (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	155 - 115.5	Pole	TP29.308x22x0.25	1	-7.94	1080.07	54.6	Pass
L2	115.5 - 79.25	Pole	TP35.514x28.1142x0.3125	2	-14.77	1772.22	81.0	Pass
L3	79.25 - 43.75	Pole	TP41.456x34.0565x0.375	3	-24.13	2481.90	93.4	Pass
L4	43.75 - 0	Pole	TP48.8x39.7348x0.4375	4	-38.54	3491.31	97.1	Pass
							Summary	
						Pole (L4)	97.1	Pass
						RATING =	**97.1**	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	90.2	Pass
1	Base Plate	0	77.5	Pass
1	Base Foundation	0	65.9	Pass

Structure Rating (max from all components) =	97.1%

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

4.1) Recommendations

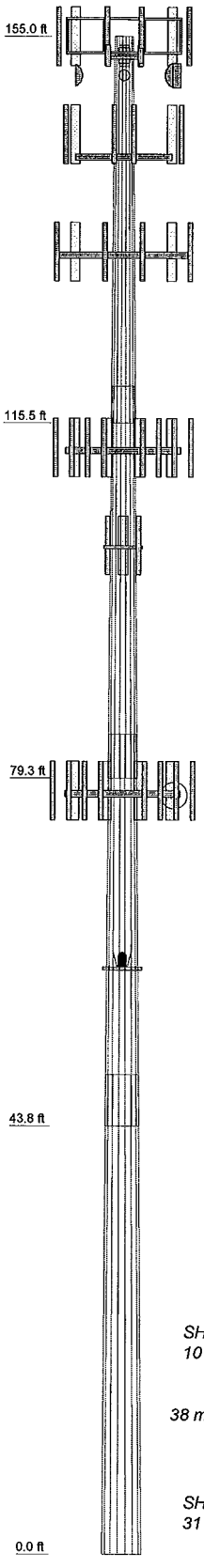
The tower and its foundation have sufficient capacity to carry the existing, reserved, and proposed loads. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

Section	1	2	3	4
Length (ft)	39.50	40.00	40.00	49.00
Number of Sides	18	18	18	18
Thickness (in)	0.2500	0.3125	0.3750	0.4375
Socket Length (ft)	3.75	4.50	5.25	
Top Dia (in)	22.0000	28.1142	34.0565	39.7348
Bot Dia (in)	29.3080	35.5140	41.4560	48.8000
Grade	A607-60		A607-65	
Weight (K)	2.7	4.3	6.1	10.1

23.2



AXIAL
66 K
SHEAR
10 K
MOMENT
1100 kip-ft
TORQUE 1 kip-ft
38 mph WIND - 1.0000 in ICE

AXIAL
39 K
SHEAR
31 K
MOMENT
3329 kip-ft
TORQUE 1 kip-ft
REACTIONS - 80 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
LLPX310R	155	800 10121 w/ Mount Pipe	143
LLPX310R	155	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	133
LLPX310R	155		
WIMAX DAP HEAD	155	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	133
WIMAX DAP HEAD	155		
WIMAX DAP HEAD	155	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	133
HORIZON COMPACT	155		
HORIZON COMPACT	155	KRY 112 144/1	133
HORIZON COMPACT	155	KRY 112 144/1	133
10' x 3" Pipe Mount	155	KRY 112 144/1	133
10' x 3" Pipe Mount	155	Platform Mount [LP 403-1]	133
10' x 3" Pipe Mount	155	(2) 5' x 2" Pipe Mount	133
APXVSPP18-C-A20 w/ Mount Pipe	155	(2) 5' x 2" Pipe Mount	133
APXVSPP18-C-A20 w/ Mount Pipe	155	(2) 5' x 2" Pipe Mount	133
APXVSPP18-C-A20 w/ Mount Pipe	155	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	133
Platform Mount [LP 713-1]	155	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	133
VHLP2.5-18	155		
VHLP1-23	155	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	133
VHLP2-11	155		
PCS 1900MHz 4x45W-65MHz	153	MG D3-800Tx w/ Mount Pipe	113
PCS 1900MHz 4x45W-65MHz	153	MG D3-800Tx w/ Mount Pipe	113
PCS 1900MHz 4x45W-65MHz	153	MG D3-800Tx w/ Mount Pipe	113
Side Arm Mount [SO 102-3]	153	BXA-70063/6CFx2 w/ Mount Pipe	113
800MHz 2X50W RRH W/FILTER	153	BXA-70063/6CFx2 w/ Mount Pipe	113
800MHz 2X50W RRH W/FILTER	153	BXA-70063/6CFx4 w/ Mount Pipe	113
800MHz 2X50W RRH W/FILTER	153	(2) FD9R6004/2C-3L	113
Side Arm Mount [SO 102-3]	145	(2) FD9R6004/2C-3L	113
(2) LGP21401	143	(2) FD9R6004/2C-3L	113
(2) LGP21401	143	Platform Mount [LP 601-1]	113
AM-X-CD-16-65-00T-RET w/ Mount Pipe	143	(2) DB844G65ZAXY w/ Mount Pipe	113
		(2) DB844G65ZAXY w/ Mount Pipe	113
AM-X-CD-16-65-00T-RET w/ Mount Pipe	143	(2) DB844G65ZAXY w/ Mount Pipe	113
		Pipe Mount [PM 601-3]	103
AM-X-CD-16-65-00T-RET w/ Mount Pipe	143	APXV18-206517S-C	103
		APXV18-206517S-C	103
(2) RRUS-11	143	APXV18-206517S-C	103
(2) RRUS-11	143	Platform Mount [LP 303-1]	78
(2) RRUS-11	143	(4) 844G65VTZASX w/ Mount Pipe	78
DC6-48-60-18-8F	143	(4) 844G65VTZASX w/ Mount Pipe	78
(2) LGP21401	143	(4) 844G65VTZASX w/ Mount Pipe	78
T-Arm Mount [TA 702-3]	143	Side Arm Mount [SO 701-1]	60
800 10121 w/ Mount Pipe	143	ACUTIME 2000	60
800 10121 w/ Mount Pipe	143		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-60	60 ksi	75 ksi	A607-65	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.
5. TOWER RATING: 97.1%

CROWN CASTLE
We Are Solutions
Crown Castle
2000 Corporate Drive
Canonsburg, PA
Phone: (724) 416-2245
FAX: (724) 416-4245

Job: **BU# 876347**			
Project:			
Client: Crown Castle	Drawn by: MChavda	App'd:	
Code: TIA/EIA-222-F	Date: 11/05/12	Scale: NTS	
Path: R:\SA Models - Letters\Work Area\DSmillowitz\876347-546751\876347.eri		Dwg No. E-1	

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 1.0000 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	Poles
Leg Bolts Are At Top Of Section	SR Members Have Cut Ends	√ Include Shear-Torsion Interaction
Secondary Horizontal Braces Leg	Sort Capacity Reports By Component	Always Use Sub-Critical Flow
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Use Top Mounted Sockets
Add IBC .6D+W Combination		

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	155.00-115.50	39.50	3.75	18	22.0000	29.3080	0.2500	1.0000	A607-60 (60 ksi)
L2	115.50-79.25	40.00	4.50	18	28.1142	35.5140	0.3125	1.2500	A607-65 (65 ksi)
L3	79.25-43.75	40.00	5.25	18	34.0565	41.4560	0.3750	1.5000	A607-65 (65 ksi)
L4	43.75-0.00	49.00		18	39.7348	48.8000	0.4375	1.7500	A607-65 (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/ft
L1	22.3394	17.2586	1031.4832	7.7212	11.1760	92.2945	2064.3237	8.6310	3.4320	13.728
	29.7601	23.0575	2459.6966	10.3156	14.8885	165.2082	4922.6297	11.5310	4.7182	18.873
L2	29.2523	27.5758	2692.8279	9.8696	14.2820	188.5468	5389.1990	13.7905	4.3981	14.074
	36.0619	34.9155	5466.1042	12.4965	18.0411	302.9804	10939.4008	17.4611	5.7005	18.241
L3	35.4272	40.0894	5745.8039	11.9569	17.3007	332.1137	11499.1684	20.0485	5.3339	14.224
	42.0955	48.8967	10425.5424	14.5838	21.0596	495.0483	20864.8031	24.4530	6.6363	17.697
L4	41.3340	54.5692	10646.6064	13.9505	20.1853	527.4439	21307.2218	27.2898	6.2233	14.225
	49.5528	67.1574	19844.8883	17.1687	24.7904	800.5070	39715.8890	33.5851	7.8188	17.872

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 155.00-115.50				1	1	1		
L2 115.50-79.25				1	1	1		
L3 79.25-43.75				1	1	1		
L4 43.75-0.00				1	1	1		

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
***										

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
***								
HB114-1-08U4-M5J(1 1/4")	C	No	CaAa (Out Of Face)	155.00 - 0.00	1	No Ice	0.15	1.08
						1/2" Ice	0.25	2.33
						1" Ice	0.35	4.18
						2" Ice	0.55	9.73
						4" Ice	0.95	28.15
HB114-1-08U4-M5J(1 1/4")	C	No	CaAa (Out Of Face)	155.00 - 0.00	2	No Ice	0.00	1.08
						1/2" Ice	0.00	2.33
						1" Ice	0.00	4.18
						2" Ice	0.00	9.73
						4" Ice	0.00	28.15
***								
ATCB-B01-005(5/16)	B	No	Inside Pole	155.00 - 0.00	3	No Ice	0.00	0.07
						1/2" Ice	0.00	0.07
						1" Ice	0.00	0.07
						2" Ice	0.00	0.07
						4" Ice	0.00	0.07

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
FSJ1-50A(1/4")	B	No	Inside Pole	155.00 - 0.00	3	No Ice	0.00	0.04
						1/2" Ice	0.00	0.04
						1" Ice	0.00	0.04
						2" Ice	0.00	0.04
						4" Ice	0.00	0.04
2" Rigid Conduit	B	No	CaAa (Out Of Face)	155.00 - 0.00	1	No Ice	0.20	2.80
						1/2" Ice	0.30	4.33
						1" Ice	0.40	6.47
						2" Ice	0.60	12.57
						4" Ice	1.00	32.12
2" Rigid Conduit	B	No	CaAa (Out Of Face)	155.00 - 0.00	1	No Ice	0.00	2.80
						1/2" Ice	0.00	4.33
						1" Ice	0.00	6.47
						2" Ice	0.00	12.57
						4" Ice	0.00	32.12
FSJ4-50B(1/2")	B	No	CaAa (Out Of Face)	155.00 - 0.00	2	No Ice	0.05	0.14
						1/2" Ice	0.15	0.76
						1" Ice	0.25	2.00
						2" Ice	0.45	6.30
						4" Ice	0.85	22.23
FSJ4-50B(1/2")	B	No	CaAa (Out Of Face)	155.00 - 0.00	3	No Ice	0.00	0.14
						1/2" Ice	0.00	0.76
						1" Ice	0.00	2.00
						2" Ice	0.00	6.30
						4" Ice	0.00	22.23
***								
LDF6-50A(1-1/4")	A	No	Inside Pole	145.00 - 0.00	6	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
						1" Ice	0.00	0.66
						2" Ice	0.00	0.66
						4" Ice	0.00	0.66
FB-L98B-002-75000(3/8")	A	No	Inside Pole	143.00 - 0.00	1	No Ice	0.00	0.06
						1/2" Ice	0.00	0.06
						1" Ice	0.00	0.06
						2" Ice	0.00	0.06
						4" Ice	0.00	0.06
WR-VG86ST-BRD(3/4)	A	No	Inside Pole	143.00 - 0.00	2	No Ice	0.00	0.59
						1/2" Ice	0.00	0.59
						1" Ice	0.00	0.59
						2" Ice	0.00	0.59
						4" Ice	0.00	0.59
***								
LCF158-50JA-A0(1 5/8")	A	No	Inside Pole	133.00 - 0.00	12	No Ice	0.00	0.08
						1/2" Ice	0.00	0.08
						1" Ice	0.00	0.08
						2" Ice	0.00	0.08
						4" Ice	0.00	0.08
MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	C	No	Inside Pole	133.00 - 0.00	1	No Ice	0.00	1.07
						1/2" Ice	0.00	1.07
						1" Ice	0.00	1.07
						2" Ice	0.00	1.07
						4" Ice	0.00	1.07
***								
561(1-5/8")	C	No	Inside Pole	113.00 - 0.00	12	No Ice	0.00	1.35
						1/2" Ice	0.00	1.35
						1" Ice	0.00	1.35
						2" Ice	0.00	1.35
						4" Ice	0.00	1.35
***								
AVA7-50(1-5/8)	B	No	CaAa (Out Of Face)	103.00 - 0.00	2	No Ice	0.20	0.70
						1/2" Ice	0.30	2.23
						1" Ice	0.40	4.38
						2" Ice	0.60	10.50
						4" Ice	1.00	30.07
AVA7-50(1-5/8)	B	No	CaAa (Out Of Face)	103.00 - 0.00	4	No Ice	0.00	0.70
						1/2" Ice	0.00	2.23
						1" Ice	0.00	4.38
						2" Ice	0.00	10.50
						4" Ice	0.00	30.07

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")	C	No	Inside Pole	78.00 - 0.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
***								
LDF4-50A(1/2")	C	No	Inside Pole	60.00 - 0.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
						2" Ice	0.00	0.15
						4" Ice	0.00	0.15
***								

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	155.00-115.50	A	0.000	0.000	0.000	0.000	0.17
		B	0.000	0.000	0.000	12.008	0.26
		C	0.000	0.000	0.000	6.083	0.15
L2	115.50-79.25	A	0.000	0.000	0.000	0.000	0.22
		B	0.000	0.000	0.000	20.568	0.34
		C	0.000	0.000	0.000	5.582	0.70
L3	79.25-43.75	A	0.000	0.000	0.000	0.000	0.22
		B	0.000	0.000	0.000	25.063	0.39
		C	0.000	0.000	0.000	5.467	1.07
L4	43.75-0.00	A	0.000	0.000	0.000	0.000	0.27
		B	0.000	0.000	0.000	30.888	0.48
		C	0.000	0.000	0.000	6.737	1.33

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	155.00-115.50	A	1.184	0.000	0.000	0.000	0.000	0.17
		B		0.000	0.000	0.000	40.061	1.16
		C		0.000	0.000	0.000	15.434	0.64
L2	115.50-79.25	A	1.138	0.000	0.000	0.000	0.000	0.22
		B		0.000	0.000	0.000	57.557	1.85
		C		0.000	0.000	0.000	14.164	1.15
L3	79.25-43.75	A	1.077	0.000	0.000	0.000	0.000	0.22
		B		0.000	0.000	0.000	65.466	2.10
		C		0.000	0.000	0.000	13.548	1.48
L4	43.75-0.00	A	1.000	0.000	0.000	0.000	0.000	0.27
		B		0.000	0.000	0.000	78.018	2.41
		C		0.000	0.000	0.000	16.164	1.80

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	155.00-115.50	0.1605	0.2829	0.4629	0.6023
L2	115.50-79.25	0.4328	0.4319	0.8730	0.8275
L3	79.25-43.75	0.5645	0.5077	1.0799	0.9488
L4	43.75-0.00	0.5827	0.5241	1.1300	0.9933

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
***									
LLPX310R	A	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.84 5.19 5.55 6.30 7.91	1.96 2.23 2.50 3.13 4.55	0.03 0.05 0.08 0.16 0.36
LLPX310R	B	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.84 5.19 5.55 6.30 7.91	1.96 2.23 2.50 3.13 4.55	0.03 0.05 0.08 0.16 0.36
LLPX310R	C	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.84 5.19 5.55 6.30 7.91	1.96 2.23 2.50 3.13 4.55	0.03 0.05 0.08 0.16 0.36
WIMAX DAP HEAD	A	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.80 1.99 2.18 2.59 3.51	0.78 0.92 1.07 1.39 2.14	0.03 0.04 0.06 0.09 0.20
WIMAX DAP HEAD	B	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.80 1.99 2.18 2.59 3.51	0.78 0.92 1.07 1.39 2.14	0.03 0.04 0.06 0.09 0.20
WIMAX DAP HEAD	C	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.80 1.99 2.18 2.59 3.51	0.78 0.92 1.07 1.39 2.14	0.03 0.04 0.06 0.09 0.20
HORIZON COMPACT	A	From Leg	4.00 0.00 -4.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.84 0.97 1.10 1.39 2.08	0.43 0.52 0.63 0.86 1.43	0.01 0.02 0.03 0.05 0.12
HORIZON COMPACT	B	From Leg	4.00 0.00 -4.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.84 0.97 1.10 1.39 2.08	0.43 0.52 0.63 0.86 1.43	0.01 0.02 0.03 0.05 0.12
HORIZON COMPACT	C	From Leg	4.00 0.00 -4.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.84 0.97 1.10 1.39 2.08	0.43 0.52 0.63 0.86 1.43	0.01 0.02 0.03 0.05 0.12
10' x 3" Pipe Mount	A	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	3.00 4.03 5.03	3.00 4.03 5.03	0.08 0.10 0.13

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
						1" Ice	6.26	6.26	0.21
						2" Ice	8.83	8.83	0.45
						4" Ice			
10' x 3" Pipe Mount	B	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.00 4.03 5.03 6.26 8.83	3.00 4.03 5.03 6.26 8.83	0.08 0.10 0.13 0.21 0.45
10' x 3" Pipe Mount	C	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.00 4.03 5.03 6.26 8.83	3.00 4.03 5.03 6.26 8.83	0.08 0.10 0.13 0.21 0.45
***									
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.50 9.15 9.77 11.03 13.68	6.95 8.13 9.02 10.84 14.85	0.08 0.15 0.22 0.41 0.91
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.50 9.15 9.77 11.03 13.68	6.95 8.13 9.02 10.84 14.85	0.08 0.15 0.22 0.41 0.91
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.50 9.15 9.77 11.03 13.68	6.95 8.13 9.02 10.84 14.85	0.08 0.15 0.22 0.41 0.91
Platform Mount [LP 713-1]	C	None		0.0000	155.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	31.27 39.68 48.09 64.91 98.55	31.27 39.68 48.09 64.91 98.55	1.51 1.93 2.35 3.19 4.86
***									
800MHz 2X50W RRH W/FILTER	A	From Leg	1.00 0.00 0.00	0.0000	153.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.40 2.61 2.83 3.30 4.34	2.25 2.46 2.68 3.13 4.15	0.06 0.09 0.11 0.17 0.34
800MHz 2X50W RRH W/FILTER	B	From Leg	1.00 0.00 0.00	0.0000	153.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.40 2.61 2.83 3.30 4.34	2.25 2.46 2.68 3.13 4.15	0.06 0.09 0.11 0.17 0.34
800MHz 2X50W RRH W/FILTER	C	From Leg	1.00 0.00 0.00	0.0000	153.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.40 2.61 2.83 3.30 4.34	2.25 2.46 2.68 3.13 4.15	0.06 0.09 0.11 0.17 0.34
PCS 1900MHz 4x45W-65MHz	A	From Leg	1.00 0.00 0.00	0.0000	153.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.71 2.95 3.20 3.72 4.86	2.61 2.85 3.09 3.61 4.74	0.06 0.08 0.11 0.17 0.35

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
PCS 1900MHz 4x45W-65MHz	B	From Leg	1.00 0.00 0.00	0.0000	153.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.71 2.95 3.20 3.72 4.86	2.61 2.85 3.09 3.61 4.74	0.06 0.08 0.11 0.17 0.35
PCS 1900MHz 4x45W-65MHz	C	From Leg	1.00 0.00 0.00	0.0000	153.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.71 2.95 3.20 3.72 4.86	2.61 2.85 3.09 3.61 4.74	0.06 0.08 0.11 0.17 0.35
Side Arm Mount [SO 102-3]	C	None		0.0000	153.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.00 3.48 3.96 4.92 6.84	3.00 3.48 3.96 4.92 6.84	0.08 0.11 0.14 0.20 0.32
***									
***									
800 10121 w/ Mount Pipe	A	From Leg	3.00 0.00 2.00	0.0000	143.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.69 6.18 6.68 7.70 9.86	4.60 5.35 6.05 7.53 10.83	0.07 0.11 0.17 0.30 0.68
800 10121 w/ Mount Pipe	B	From Leg	3.00 0.00 2.00	0.0000	143.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.69 6.18 6.68 7.70 9.86	4.60 5.35 6.05 7.53 10.83	0.07 0.11 0.17 0.30 0.68
800 10121 w/ Mount Pipe	C	From Leg	3.00 0.00 2.00	0.0000	143.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.69 6.18 6.68 7.70 9.86	4.60 5.35 6.05 7.53 10.83	0.07 0.11 0.17 0.30 0.68
(2) LGP21401	A	From Leg	3.00 0.00 2.00	0.0000	143.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.29 1.45 1.61 1.97 2.79	0.23 0.31 0.40 0.61 1.12	0.01 0.02 0.03 0.05 0.14
(2) LGP21401	B	From Leg	3.00 0.00 2.00	0.0000	143.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.29 1.45 1.61 1.97 2.79	0.23 0.31 0.40 0.61 1.12	0.01 0.02 0.03 0.05 0.14
(2) LGP21401	C	From Leg	3.00 0.00 2.00	0.0000	143.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.29 1.45 1.61 1.97 2.79	0.23 0.31 0.40 0.61 1.12	0.01 0.02 0.03 0.05 0.14
AM-X-CD-16-65-00T-RET w/ Mount Pipe	A	From Leg	3.00 0.00 2.00	0.0000	143.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.50 9.15 9.77 11.03 13.68	6.30 7.48 8.37 10.18 14.02	0.07 0.14 0.21 0.38 0.87
AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Leg	3.00 0.00 2.00	0.0000	143.00	No Ice 1/2" Ice	8.50 9.15 9.77	6.30 7.48 8.37	0.07 0.14 0.21

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
						1" Ice	11.03	10.18	0.38
						2" Ice	13.68	14.02	0.87
						4" Ice			
AM-X-CD-16-65-00T-RET w/ Mount Pipe	C	From Leg	3.00 0.00 2.00	0.0000	143.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.50 9.15 9.77 11.03 13.68	6.30 7.48 8.37 10.18 14.02	0.07 0.14 0.21 0.38 0.87
(2) RRUS-11	A	From Leg	3.00 0.00 2.00	0.0000	143.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.25 3.49 3.74 4.27 5.43	1.37 1.55 1.74 2.14 3.04	0.05 0.07 0.09 0.15 0.31
(2) RRUS-11	B	From Leg	3.00 0.00 2.00	0.0000	143.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.25 3.49 3.74 4.27 5.43	1.37 1.55 1.74 2.14 3.04	0.05 0.07 0.09 0.15 0.31
(2) RRUS-11	C	From Leg	3.00 0.00 2.00	0.0000	143.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.25 3.49 3.74 4.27 5.43	1.37 1.55 1.74 2.14 3.04	0.05 0.07 0.09 0.15 0.31
DC6-48-60-18-8F	A	From Leg	3.00 0.00 2.00	0.0000	143.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.27 1.46 1.66 2.09 3.10	1.27 1.46 1.66 2.09 3.10	0.02 0.04 0.05 0.10 0.21
Side Arm Mount [SO 102-3]	C	None		0.0000	145.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.00 3.48 3.96 4.92 6.84	3.00 3.48 3.96 4.92 6.84	0.08 0.11 0.14 0.20 0.32
T-Arm Mount [TA 702-3]	C	None		0.0000	143.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	5.64 6.55 7.46 9.28 12.92	5.64 6.55 7.46 9.28 12.92	0.34 0.43 0.52 0.70 1.06
***									
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	133.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.83 7.35 7.86 8.93 11.18	5.64 6.48 7.26 8.86 12.29	0.11 0.17 0.23 0.38 0.81
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	133.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.83 7.35 7.86 8.93 11.18	5.64 6.48 7.26 8.86 12.29	0.11 0.17 0.23 0.38 0.81
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	133.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.83 7.35 7.86 8.93 11.18	5.64 6.48 7.26 8.86 12.29	0.11 0.17 0.23 0.38 0.81
ERICSSON AIR 21 B4A	A	From Leg	4.00	0.0000	133.00	No Ice	6.83	5.64	0.11

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
B2P w/ Mount Pipe			0.00 0.00			1/2" Ice 1" Ice 2" Ice 4" Ice	7.35 7.86 8.93 11.18	6.48 7.26 8.86 12.29	0.17 0.23 0.38 0.81
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	133.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.83 7.35 7.86 8.93 11.18	5.64 6.48 7.26 8.86 12.29	0.11 0.17 0.23 0.38 0.81
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	133.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.83 7.35 7.86 8.93 11.18	5.64 6.48 7.26 8.86 12.29	0.11 0.17 0.23 0.38 0.81
KRY 112 144/1	A	From Leg	4.00 0.00 0.00	0.0000	133.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.41 0.50 0.59 0.81 1.36	0.20 0.27 0.35 0.53 1.00	0.01 0.01 0.02 0.03 0.08
KRY 112 144/1	B	From Leg	4.00 0.00 0.00	0.0000	133.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.41 0.50 0.59 0.81 1.36	0.20 0.27 0.35 0.53 1.00	0.01 0.01 0.02 0.03 0.08
KRY 112 144/1	C	From Leg	4.00 0.00 0.00	0.0000	133.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.41 0.50 0.59 0.81 1.36	0.20 0.27 0.35 0.53 1.00	0.01 0.01 0.02 0.03 0.08
Platform Mount [LP 403-1]	C	None		0.0000	133.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	18.85 24.30 29.75 40.65 62.45	18.85 24.30 29.75 40.65 62.45	1.50 1.80 2.09 2.69 3.87
(2) 5' x 2" Pipe Mount	A	From Leg	4.00 0.00 0.00	0.0000	133.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.00 1.39 1.70 2.35 3.78	1.00 1.39 1.70 2.35 3.78	0.03 0.04 0.05 0.08 0.20
(2) 5' x 2" Pipe Mount	B	From Leg	4.00 0.00 0.00	0.0000	133.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.00 1.39 1.70 2.35 3.78	1.00 1.39 1.70 2.35 3.78	0.03 0.04 0.05 0.08 0.20
(2) 5' x 2" Pipe Mount	C	From Leg	4.00 0.00 0.00	0.0000	133.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.00 1.39 1.70 2.35 3.78	1.00 1.39 1.70 2.35 3.78	0.03 0.04 0.05 0.08 0.20
***									
(2) DB844G65ZAXY w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	113.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.90 5.35 5.80 6.73 8.73	4.92 5.60 6.28 7.71 10.83	0.03 0.08 0.13 0.26 0.62

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
						4" Ice			
(2) DB844G65ZAXY w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	113.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.90 5.35 5.80 6.73 8.73	4.92 5.60 6.28 7.71 10.83	0.03 0.08 0.13 0.26 0.62
(2) DB844G65ZAXY w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	113.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.90 5.35 5.80 6.73 8.73	4.92 5.60 6.28 7.71 10.83	0.03 0.08 0.13 0.26 0.62
MG D3-800Tx w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	113.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.57 3.98 4.39 5.33 7.34	3.42 4.12 4.78 6.16 9.18	0.03 0.07 0.11 0.21 0.52
MG D3-800Tx w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	113.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.57 3.98 4.39 5.33 7.34	3.42 4.12 4.78 6.16 9.18	0.03 0.07 0.11 0.21 0.52
MG D3-800Tx w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	113.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.57 3.98 4.39 5.33 7.34	3.42 4.12 4.78 6.16 9.18	0.03 0.07 0.11 0.21 0.52
BXA-70063/6CFx2 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	113.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.97 8.61 9.22 10.46 13.07	5.40 6.55 7.41 9.18 12.93	0.04 0.10 0.17 0.33 0.79
BXA-70063/6CFx2 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	113.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.97 8.61 9.22 10.46 13.07	5.40 6.55 7.41 9.18 12.93	0.04 0.10 0.17 0.33 0.79
BXA-70063/6CFx4 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	113.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.97 8.61 9.22 10.46 13.07	5.40 6.55 7.41 9.18 12.93	0.04 0.10 0.17 0.33 0.79
(2) FD9R6004/2C-3L	A	From Leg	4.00 0.00 0.00	0.0000	113.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.37 0.45 0.54 0.75 1.28	0.08 0.14 0.20 0.34 0.74	0.00 0.01 0.01 0.02 0.06
(2) FD9R6004/2C-3L	B	From Leg	4.00 0.00 0.00	0.0000	113.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.37 0.45 0.54 0.75 1.28	0.08 0.14 0.20 0.34 0.74	0.00 0.01 0.01 0.02 0.06
(2) FD9R6004/2C-3L	C	From Leg	4.00 0.00 0.00	0.0000	113.00	No Ice 1/2" Ice 1" Ice	0.37 0.45 0.54 0.75	0.08 0.14 0.20 0.34	0.00 0.01 0.01 0.02

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
						2" Ice	1.28	0.74	0.06
						4" Ice			
Platform Mount [LP 601-1]	C	None		0.0000	113.00	No Ice	28.47	28.47	1.12
						1/2" Ice	33.59	33.59	1.51
						1" Ice	38.71	38.71	1.91
						2" Ice	48.95	48.95	2.69
						4" Ice	69.43	69.43	4.26
***									
APXV18-206517S-C	A	From Leg	0.50 0.00 0.00	0.0000	103.00	No Ice	5.17	3.04	0.03
						1/2" Ice	5.62	3.47	0.05
						1" Ice	6.08	3.91	0.09
						2" Ice	7.02	4.81	0.17
						4" Ice	9.12	6.70	0.40
APXV18-206517S-C	B	From Leg	0.50 0.00 0.00	0.0000	103.00	No Ice	5.17	3.04	0.03
						1/2" Ice	5.62	3.47	0.05
						1" Ice	6.08	3.91	0.09
						2" Ice	7.02	4.81	0.17
						4" Ice	9.12	6.70	0.40
APXV18-206517S-C	C	From Leg	0.50 0.00 0.00	0.0000	103.00	No Ice	5.17	3.04	0.03
						1/2" Ice	5.62	3.47	0.05
						1" Ice	6.08	3.91	0.09
						2" Ice	7.02	4.81	0.17
						4" Ice	9.12	6.70	0.40
Pipe Mount [PM 601-3]	C	None		0.0000	103.00	No Ice	4.39	4.39	0.20
						1/2" Ice	5.48	5.48	0.24
						1" Ice	6.57	6.57	0.28
						2" Ice	8.75	8.75	0.36
						4" Ice	13.11	13.11	0.53
***									
(4) 844G65VTZASX w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	78.00	No Ice	6.13	5.21	0.03
						1/2" Ice	6.59	5.89	0.08
						1" Ice	7.06	6.59	0.14
						2" Ice	8.04	8.04	0.28
						4" Ice	10.12	11.19	0.67
(4) 844G65VTZASX w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	78.00	No Ice	6.13	5.21	0.03
						1/2" Ice	6.59	5.89	0.08
						1" Ice	7.06	6.59	0.14
						2" Ice	8.04	8.04	0.28
						4" Ice	10.12	11.19	0.67
(4) 844G65VTZASX w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	78.00	No Ice	6.13	5.21	0.03
						1/2" Ice	6.59	5.89	0.08
						1" Ice	7.06	6.59	0.14
						2" Ice	8.04	8.04	0.28
						4" Ice	10.12	11.19	0.67
Platform Mount [LP 303-1]	C	None		0.0000	78.00	No Ice	14.66	14.66	1.25
						1/2" Ice	18.87	18.87	1.48
						1" Ice	23.08	23.08	1.71
						2" Ice	31.50	31.50	2.18
						4" Ice	48.34	48.34	3.10
***									
ACUTIME 2000	A	From Leg	3.00 0.00 0.00	0.0000	60.00	No Ice	0.30	0.30	0.00
						1/2" Ice	0.37	0.37	0.00
						1" Ice	0.46	0.46	0.01
						2" Ice	0.65	0.65	0.02
						4" Ice	1.15	1.15	0.08

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
Side Arm Mount [SO 701-1]	A	None		0.0000	60.00	No Ice	0.85	1.67	0.07
						1/2" Ice	1.14	2.34	0.08
						1" Ice	1.43	3.01	0.09
						2" Ice	2.01	4.35	0.12
						4" Ice	3.17	7.03	0.18
***									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
VHLP2.5-18	B	Paraboloid w/Shroud (HP)	From Leg	4.00 0.00 -4.00	0.0000		155.00	2.50	No Ice	6.68	0.05
									1/2" Ice	7.06	0.05
									1" Ice	7.46	0.06
									2" Ice	8.29	0.10
									4" Ice	10.08	0.26
VHLP1-23	A	Paraboloid w/o Radome	From Leg	4.00 0.00 -4.00	0.0000		155.00	1.27	No Ice	1.28	0.01
									1/2" Ice	1.45	0.02
									1" Ice	1.62	0.02
									2" Ice	1.97	0.04
									4" Ice	2.66	0.07
VHLP2-11	C	Paraboloid w/o Radome	From Leg	4.00 0.00 -4.00	0.0000		155.00	2.17	No Ice	3.72	0.03
									1/2" Ice	4.01	0.05
									1" Ice	4.30	0.07
									2" Ice	4.88	0.11
									4" Ice	6.04	0.19

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
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

Comb. No.	Description
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	155 - 115.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-18.04	-0.50	-0.97
			Max. Mx	5	-7.95	-337.81	0.90
			Max. My	2	-7.96	-1.05	335.91
			Max. Vy	5	13.63	-337.81	0.90
			Max. Vx	2	-13.59	-1.05	335.91
			Max. Torque	3			-0.90
L2	115.5 - 79.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-31.40	-2.04	-2.69
			Max. Mx	5	-14.78	-1001.15	1.94
			Max. My	2	-14.79	-2.30	997.04
			Max. Vy	5	21.29	-1001.15	1.94
			Max. Vx	2	-21.25	-2.30	997.04
			Max. Torque	3			-0.98
L3	79.25 - 43.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-46.56	-4.24	-4.81
			Max. Mx	5	-24.13	-1886.34	2.86
			Max. My	2	-24.13	-3.63	1879.87
			Max. Vy	5	27.54	-1886.34	2.86
			Max. Vx	2	-27.49	-3.63	1879.87
			Max. Torque	3			-1.16
L4	43.75 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-65.65	-7.49	-7.98
			Max. Mx	5	-38.54	-3325.18	4.02
			Max. My	2	-38.54	-5.54	3315.27
			Max. Vy	5	31.06	-3325.18	4.02
			Max. Vx	2	-31.01	-5.54	3315.27
			Max. Torque	3			-1.44

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	19	65.65	-8.49	-4.86
	Max. H_x	11	38.57	31.02	0.11
	Max. H_z	2	38.57	-0.03	30.97
	Max. M_x	2	3315.27	-0.03	30.97
	Max. M_z	5	3325.18	-31.02	0.04
	Max. Torsion	9	1.19	15.40	-26.81
	Min. Vert	1	38.57	0.00	0.00
	Min. H_x	5	38.57	-31.02	0.04
	Min. H_z	8	38.57	-0.09	-30.92
	Min. M_x	8	-3309.91	-0.09	-30.92
	Min. M_z	11	-3322.00	31.02	0.11
	Min. Torsion	3	-1.44	-15.62	26.74

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	38.57	0.00	0.00	1.51	-1.31	0.00
Dead+Wind 0 deg - No Ice	38.57	0.03	-30.97	-3315.27	-5.54	0.86
Dead+Wind 30 deg - No Ice	38.57	15.62	-26.74	-2857.09	-1680.42	1.44
Dead+Wind 60 deg - No Ice	38.57	26.91	-15.42	-1645.92	-2887.90	1.03
Dead+Wind 90 deg - No Ice	38.57	31.02	-0.04	-4.02	-3325.18	0.41
Dead+Wind 120 deg - No Ice	38.57	26.95	15.40	1646.30	-2893.24	0.07
Dead+Wind 150 deg - No Ice	38.57	15.50	26.75	2862.31	-1661.66	-0.28
Dead+Wind 180 deg - No Ice	38.57	0.09	30.92	3309.91	-15.09	-0.80
Dead+Wind 210 deg - No Ice	38.57	-15.40	26.81	2871.35	1643.16	-1.19
Dead+Wind 240 deg - No Ice	38.57	-26.88	15.39	1645.11	2880.11	-0.93
Dead+Wind 270 deg - No Ice	38.57	-31.02	-0.11	-15.50	3322.00	-0.79
Dead+Wind 300 deg - No Ice	38.57	-26.87	-15.49	-1658.07	2878.75	-0.24
Dead+Wind 330 deg - No Ice	38.57	-15.58	-26.76	-2860.10	1671.69	0.41
Dead+Ice+Temp	65.65	0.00	0.00	7.98	-7.49	0.00
Dead+Wind 0 deg+Ice+Temp	65.65	0.01	-9.77	-1078.98	-9.02	0.43
Dead+Wind 30 deg+Ice+Temp	65.65	4.92	-8.44	-929.59	-556.71	0.64
Dead+Wind 60 deg+Ice+Temp	65.65	8.49	-4.87	-532.61	-952.63	0.53
Dead+Wind 90 deg+Ice+Temp	65.65	9.78	-0.01	6.34	-1096.26	0.29
Dead+Wind 120 deg+Ice+Temp	65.65	8.49	4.86	548.03	-954.03	0.07
Dead+Wind 150 deg+Ice+Temp	65.65	4.89	8.44	946.38	-551.26	-0.16
Dead+Wind 180 deg+Ice+Temp	65.65	0.02	9.76	1092.86	-11.16	-0.41
Dead+Wind 210 deg+Ice+Temp	65.65	-4.86	8.46	948.89	532.04	-0.58
Dead+Wind 240 deg+Ice+Temp	65.65	-8.48	4.86	548.01	935.98	-0.50
Dead+Wind 270 deg+Ice+Temp	65.65	-9.78	-0.03	3.53	1080.90	-0.39
Dead+Wind 300 deg+Ice+Temp	65.65	-8.47	-4.89	-535.67	935.62	-0.11
Dead+Wind 330 deg+Ice+Temp	65.65	-4.91	-8.44	-930.26	539.69	0.20
Dead+Wind 0 deg - Service	38.57	0.01	-12.10	-1296.14	-3.01	0.34
Dead+Wind 30 deg - Service	38.57	6.10	-10.44	-1116.87	-658.31	0.57
Dead+Wind 60 deg - Service	38.57	10.51	-6.02	-643.01	-1130.75	0.41
Dead+Wind 90 deg - Service	38.57	12.12	-0.01	-0.61	-1301.84	0.16
Dead+Wind 120 deg -	38.57	10.53	6.02	645.09	-1132.85	0.03

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Service						
Dead+Wind 150 deg - Service	38.57	6.05	10.45	1120.84	-650.96	-0.11
Dead+Wind 180 deg - Service	38.57	0.03	12.08	1295.96	-6.75	-0.31
Dead+Wind 210 deg - Service	38.57	-6.02	10.47	1124.38	642.04	-0.47
Dead+Wind 240 deg - Service	38.57	-10.50	6.01	644.62	1126.02	-0.37
Dead+Wind 270 deg - Service	38.57	-12.12	-0.04	-5.10	1298.92	-0.31
Dead+Wind 300 deg - Service	38.57	-10.50	-6.05	-647.77	1125.50	-0.09
Dead+Wind 330 deg - Service	38.57	-6.09	-10.45	-1118.05	653.22	0.16

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-38.57	0.00	0.00	38.57	0.00	0.000%
2	0.03	-38.57	-30.97	-0.03	38.57	30.97	0.000%
3	15.62	-38.57	-26.74	-15.62	38.57	26.74	0.000%
4	26.91	-38.57	-15.42	-26.91	38.57	15.42	0.000%
5	31.02	-38.57	-0.04	-31.02	38.57	0.04	0.000%
6	26.95	-38.57	15.40	-26.95	38.57	-15.40	0.000%
7	15.50	-38.57	26.75	-15.50	38.57	-26.75	0.000%
8	0.09	-38.57	30.92	-0.09	38.57	-30.92	0.000%
9	-15.40	-38.57	26.81	15.40	38.57	-26.81	0.000%
10	-26.88	-38.57	15.39	26.88	38.57	-15.39	0.000%
11	-31.02	-38.57	-0.11	31.02	38.57	0.11	0.000%
12	-26.87	-38.57	-15.49	26.87	38.57	15.49	0.000%
13	-15.58	-38.57	-26.76	15.58	38.57	26.76	0.000%
14	0.00	-65.65	0.00	-0.00	65.65	-0.00	0.000%
15	0.01	-65.65	-9.77	-0.01	65.65	9.77	0.000%
16	4.92	-65.65	-8.44	-4.92	65.65	8.44	0.000%
17	8.48	-65.65	-4.87	-8.49	65.65	4.87	0.000%
18	9.78	-65.65	-0.01	-9.78	65.65	0.01	0.000%
19	8.49	-65.65	4.86	-8.49	65.65	-4.86	0.000%
20	4.89	-65.65	8.44	-4.89	65.65	-8.44	0.000%
21	0.02	-65.65	9.76	-0.02	65.65	-9.76	0.000%
22	-4.86	-65.65	8.46	4.86	65.65	-8.46	0.000%
23	-8.48	-65.65	4.86	8.48	65.65	-4.86	0.000%
24	-9.78	-65.65	-0.03	9.78	65.65	0.03	0.000%
25	-8.47	-65.65	-4.89	8.47	65.65	4.89	0.000%
26	-4.91	-65.65	-8.44	4.91	65.65	8.44	0.000%
27	0.01	-38.57	-12.10	-0.01	38.57	12.10	0.000%
28	6.10	-38.57	-10.44	-6.10	38.57	10.44	0.000%
29	10.51	-38.57	-6.02	-10.51	38.57	6.02	0.000%
30	12.12	-38.57	-0.01	-12.12	38.57	0.01	0.000%
31	10.53	-38.57	6.02	-10.53	38.57	-6.02	0.000%
32	6.05	-38.57	10.45	-6.05	38.57	-10.45	0.000%
33	0.03	-38.57	12.08	-0.03	38.57	-12.08	0.000%
34	-6.02	-38.57	10.47	6.02	38.57	-10.47	0.000%
35	-10.50	-38.57	6.01	10.50	38.57	-6.01	0.000%
36	-12.12	-38.57	-0.04	12.12	38.57	0.04	0.000%
37	-10.50	-38.57	-6.05	10.50	38.57	6.05	0.000%
38	-6.09	-38.57	-10.45	6.09	38.57	10.45	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	4	0.00000001	0.00090656
3	Yes	6	0.00000001	0.00007956
4	Yes	6	0.00000001	0.00007674
5	Yes	4	0.00000001	0.00047164
6	Yes	6	0.00000001	0.00007789
7	Yes	6	0.00000001	0.00007778
8	Yes	5	0.00000001	0.00004904
9	Yes	6	0.00000001	0.00007602
10	Yes	6	0.00000001	0.00007832
11	Yes	4	0.00000001	0.00047884
12	Yes	6	0.00000001	0.00007761
13	Yes	6	0.00000001	0.00007745
14	Yes	4	0.00000001	0.00005904
15	Yes	5	0.00000001	0.00057106
16	Yes	5	0.00000001	0.00097381
17	Yes	5	0.00000001	0.00094737
18	Yes	5	0.00000001	0.00057941
19	Yes	5	0.00000001	0.00097949
20	Yes	5	0.00000001	0.00097571
21	Yes	5	0.00000001	0.00057854
22	Yes	5	0.00000001	0.00094240
23	Yes	5	0.00000001	0.00096636
24	Yes	5	0.00000001	0.00057215
25	Yes	5	0.00000001	0.00094035
26	Yes	5	0.00000001	0.00093916
27	Yes	4	0.00000001	0.00022516
28	Yes	5	0.00000001	0.00020062
29	Yes	5	0.00000001	0.00018792
30	Yes	4	0.00000001	0.00016476
31	Yes	5	0.00000001	0.00019371
32	Yes	5	0.00000001	0.00019284
33	Yes	4	0.00000001	0.00023304
34	Yes	5	0.00000001	0.00018457
35	Yes	5	0.00000001	0.00019499
36	Yes	4	0.00000001	0.00018653
37	Yes	5	0.00000001	0.00019135
38	Yes	5	0.00000001	0.00019050

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	155 - 115.5	46.591	31	2.5205	0.0046
L2	119.25 - 79.25	28.462	31	2.2214	0.0023
L3	83.75 - 43.75	14.047	31	1.5859	0.0012
L4	49 - 0	4.811	31	0.9027	0.0006

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
155.00	LLPX310R	31	46.591	2.5205	0.0046	26146
153.00	800MHz 2X50W RRH W/FILTER	31	45.538	2.5086	0.0045	26146
151.00	VHLP2.5-18	31	44.485	2.4966	0.0043	26146
145.00	Side Arm Mount [SO 102-3]	31	41.339	2.4591	0.0039	13072
143.00	800 10121 w/ Mount Pipe	31	40.297	2.4458	0.0038	10893
133.00	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	31	35.167	2.3695	0.0031	5941
113.00	(2) DB844G65ZAXY w/ Mount Pipe	31	25.602	2.1315	0.0021	3544
103.00	APXV18-206517S-C	31	21.305	1.9619	0.0017	3380
78.00	(4) 844G65VTZASX w/ Mount Pipe	31	12.153	1.4707	0.0011	2936
60.00	ACUTIME 2000	31	7.132	1.1150	0.0008	2512

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	155 - 115.5	118.600	6	6.4237	0.0111
L2	119.25 - 79.25	72.519	6	5.6640	0.0055
L3	83.75 - 43.75	35.826	6	4.0459	0.0030
L4	49 - 0	12.279	6	2.3040	0.0015

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
155.00	LLPX310R	6	118.600	6.4237	0.0111	10507
153.00	800MHz 2X50W RRH W/FILTER	6	115.924	6.3935	0.0107	10507
151.00	VHLP2.5-18	6	113.249	6.3631	0.0104	10507
145.00	Side Arm Mount [SO 102-3]	6	105.254	6.2680	0.0093	5252
143.00	800 10121 w/ Mount Pipe	6	102.606	6.2344	0.0090	4376
133.00	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	6	89.566	6.0405	0.0074	2384
113.00	(2) DB844G65ZAXY w/ Mount Pipe	6	65.245	5.4351	0.0049	1417
103.00	APXV18-206517S-C	6	54.308	5.0033	0.0041	1347
78.00	(4) 844G65VTZASX w/ Mount Pipe	6	31.000	3.7522	0.0028	1162
60.00	ACUTIME 2000	6	18.198	2.8454	0.0019	990

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	155 - 115.5 (1)	TP29.308x22x0.25	39.50	0.00	0.0	36.000	22.5070	-7.94	810.25	0.010
L2	115.5 - 79.25 (2)	TP35.514x28.1142x0.3125	40.00	0.00	0.0	39.000	34.0898	-14.77	1329.50	0.011
L3	79.25 - 43.75 (3)	TP41.456x34.0565x0.375	40.00	0.00	0.0	39.000	47.7407	-24.13	1861.89	0.013
L4	43.75 - 0 (4)	TP48.8x39.7348x0.4375	49.00	0.00	0.0	39.000	67.1574	-38.54	2619.14	0.015

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	155 - 115.5 (1)	TP29.308x22x0.25	338.56	25.815	36.000	0.717	0.00	0.000	36.000	0.000
L2	115.5 - 79.25 (2)	TP35.514x28.1142x0.3125	1002.74	41.671	39.000	1.068	0.00	0.000	39.000	0.000
L3	79.25 - 43.75 (3)	TP41.456x34.0565x0.375	1888.78	48.039	39.000	1.232	0.00	0.000	39.000	0.000
L4	43.75 - 0 (4)	TP48.8x39.7348x0.4375	3328.83	49.901	39.000	1.280	0.00	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	155 - 115.5 (1)	TP29.308x22x0.25	13.65	0.607	24.000	0.051	0.04	0.002	24.000	0.000
L2	115.5 - 79.25 (2)	TP35.514x28.1142x0.3125	21.31	0.625	26.000	0.048	0.00	0.000	26.000	0.000
L3	79.25 - 43.75 (3)	TP41.456x34.0565x0.375	27.56	0.577	26.000	0.044	0.01	0.000	26.000	0.000
L4	43.75 - 0 (4)	TP48.8x39.7348x0.4375	31.07	0.463	26.000	0.036	0.07	0.000	26.000	0.000

Pole Interaction Design Data

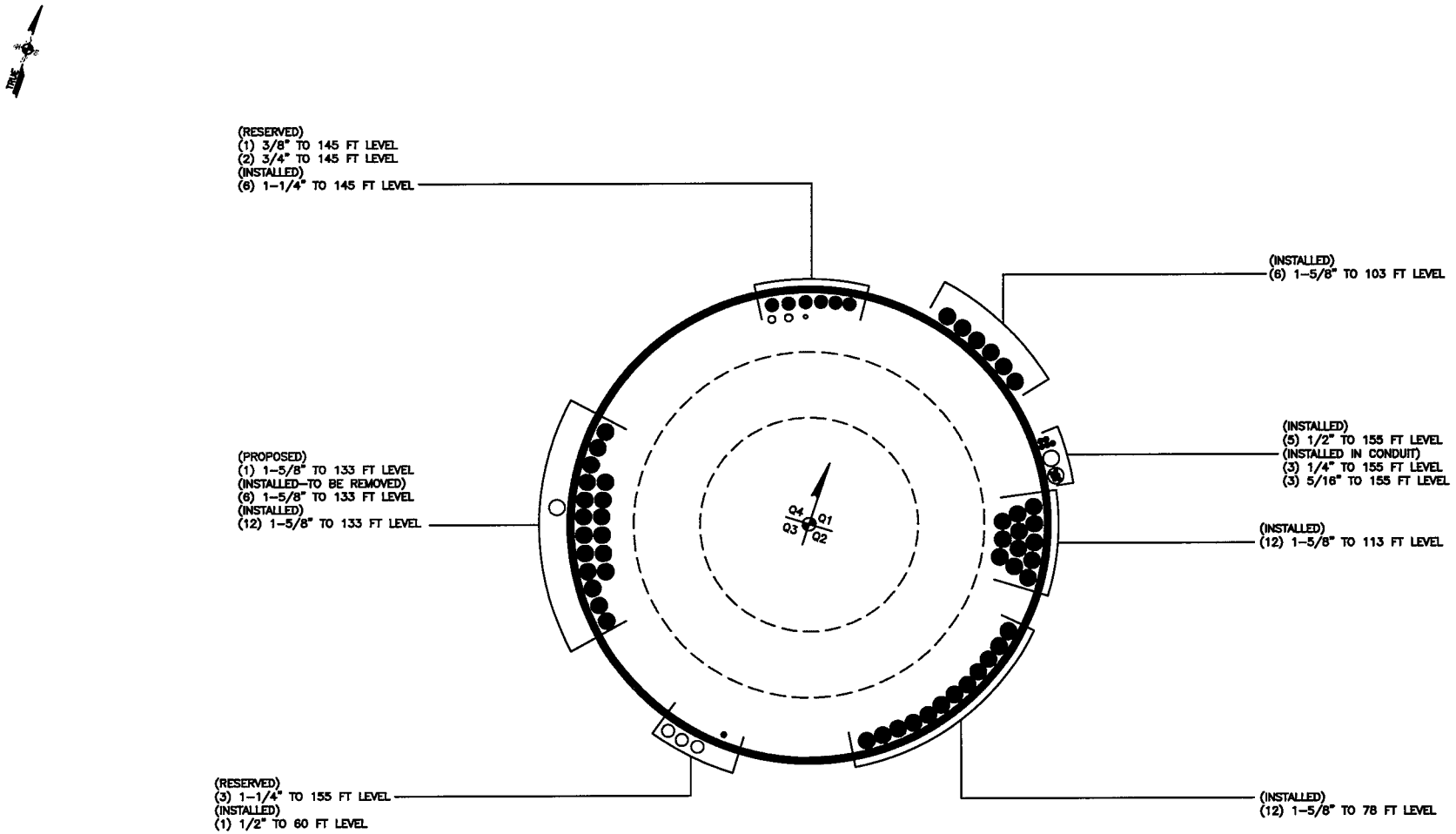
Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	155 - 115.5 (1)	0.010	0.717	0.000	0.051	0.000	0.728 ✔	1.333	H1-3+VT ✔
L2	115.5 - 79.25 (2)	0.011	1.068	0.000	0.048	0.000	1.080 ✔	1.333	H1-3+VT ✔
L3	79.25 - 43.75 (3)	0.013	1.232	0.000	0.044	0.000	1.245 ✔	1.333	H1-3+VT ✔
L4	43.75 - 0 (4)	0.015	1.280	0.000	0.036	0.000	1.295 ✔	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	155 - 115.5	Pole	TP29.308x22x0.25	1	-7.94	1080.07	54.6	Pass
L2	115.5 - 79.25	Pole	TP35.514x28.1142x0.3125	2	-14.77	1772.22	81.0	Pass
L3	79.25 - 43.75	Pole	TP41.456x34.0565x0.375	3	-24.13	2481.90	93.4	Pass
L4	43.75 - 0	Pole	TP48.8x39.7348x0.4375	4	-38.54	3491.31	97.1	Pass
							Summary	
						Pole (L4)	97.1	Pass
						RATING =	**97.1**	**Pass**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876347 TOWER ID: C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

Maximum Allowable Moment of a Circular Pier

Axial Load (Negative for Compression) = -39.00 kips

Pier Properties

Concrete:

Pier Diameter = 7.0 ft

Concrete Area = 5541.8 in^2

Reinforcement:

Clear Cover = 3.00 in

Cage Diameter = 6.38 ft

Bar Size = 11

Bar Diameter = 1.41 in

Bar Area = 1.56 in^2

Number of Bars = 32

Material Properties

Concrete compressive strength = 3000 psi

Reinforcement yield strength = 60000 psi

Modulus of elasticity = 29000 ksi

Reinforcement yield strain = 0.00207

Limiting compressive strain = 0.003

Seismic Properties

Seismic Zone = 1

Minimum Area of Steel

Required area of steel = 27.71 in^2

Provided area of steel = 49.92 in^2 OK

Axial Loading

Load factor = 1.3

Reduction factor = 0.9

Factored axial load = -56.3333 kips

Neutral Axis

Distance from extreme edge to neutral axis =	16.43	in
Equivalent compression zone factor =	0.85	
Distance from extreme edge to equivalent compression zone factor =	13.96	in
Distance from centroid to neutral axis =	25.57	in

Compression Zone

Area of steel in compression zone =	10.92	in^2
Angle from centroid of pier to intersection of equivalent compression zone and edge of pier =	48.13	deg
Area of concrete in compression =	604.91	in^2
Force in concrete = 0.85 * f`c * Acc =	1542.52	kips
Total reinforcement forces =	-1486.18	kips
Factored axial load =	-56.33	kips
Force in concrete =	-1542.52	kips
Sum of the forces in concrete =	0.00	kips OK

Maximum Moment

First moment of the concrete area in compression about the centoid =	20390.98	in^3
Distance between centroid of concrete in compression and centroid of pier =	33.71	in
Moment of concrete in compression =	51997.00	in-kips
Total reinforcement moment =	50178.48	in-kips
Nominal moment strength of column =	102175.48	in-kips
Factored moment strength of column =	70736.87	in-kips

Maximum Allowable Moment = 5894.74 ft-kips

Individual Bars

Bar #	Angle from first bar (deg)	Distance to centroid (in)	Distance to neutral axis (in)	Distance to equivalent comp. zone (in)	Strain	Area of steel in compression (in^2)	Stress (ksi)	Axial force (kips)
1	0.00	0.00	-25.57	-28.04	-0.004669	0.00	-60.00	-93.60
2	11.25	7.47	-18.10	-20.56	-0.003305	0.00	-60.00	-93.60
3	22.50	14.65	-10.92	-13.38	-0.001993	0.00	-57.80	-90.17
4	33.75	21.28	-4.30	-6.76	-0.000784	0.00	-22.74	-35.48
5	45.00	27.08	1.51	-0.96	0.0002753	0.00	7.99	12.46
6	56.25	31.84	6.27	3.81	0.001145	1.56	33.20	47.82
7	67.50	35.38	9.81	7.34	0.0017912	1.56	51.94	77.05
8	78.75	37.56	11.99	9.52	0.0021891	1.56	60.00	89.62
9	90.00	38.30	12.72	10.26	0.0023235	1.56	60.00	89.62
10	101.25	37.56	11.99	9.52	0.0021891	1.56	60.00	89.62
11	112.50	35.38	9.81	7.34	0.0017912	1.56	51.94	77.05
12	123.75	31.84	6.27	3.81	0.001145	1.56	33.20	47.82
13	135.00	27.08	1.51	-0.96	0.0002753	0.00	7.99	12.46
14	146.25	21.28	-4.30	-6.76	-0.000784	0.00	-22.74	-35.48
15	157.50	14.65	-10.92	-13.38	-0.001993	0.00	-57.80	-90.17
16	168.75	7.47	-18.10	-20.56	-0.003305	0.00	-60.00	-93.60
17	180.00	0.00	-25.57	-28.04	-0.004669	0.00	-60.00	-93.60
18	191.25	-7.47	-33.04	-35.51	-0.006033	0.00	-60.00	-93.60
19	202.50	-14.65	-40.23	-42.69	-0.007345	0.00	-60.00	-93.60
20	213.75	-21.28	-46.85	-49.31	-0.008554	0.00	-60.00	-93.60
21	225.00	-27.08	-52.65	-55.11	-0.009614	0.00	-60.00	-93.60
22	236.25	-31.84	-57.41	-59.88	-0.010483	0.00	-60.00	-93.60
23	247.50	-35.38	-60.95	-63.42	-0.01113	0.00	-60.00	-93.60
24	258.75	-37.56	-63.13	-65.59	-0.011528	0.00	-60.00	-93.60
25	270.00	-38.30	-63.87	-66.33	-0.011662	0.00	-60.00	-93.60
26	281.25	-37.56	-63.13	-65.59	-0.011528	0.00	-60.00	-93.60
27	292.50	-35.38	-60.95	-63.42	-0.01113	0.00	-60.00	-93.60
28	303.75	-31.84	-57.41	-59.88	-0.010483	0.00	-60.00	-93.60
29	315.00	-27.08	-52.65	-55.11	-0.009614	0.00	-60.00	-93.60
30	326.25	-21.28	-46.85	-49.31	-0.008554	0.00	-60.00	-93.60
31	337.50	-14.65	-40.23	-42.69	-0.007345	0.00	-60.00	-93.60
32	348.75	-7.47	-33.04	-35.51	-0.006033	0.00	-60.00	-93.60

Square, Stiffened / Unstiffened Base Plate, Any Rod Material - Rev. F /G

Assumptions: 1) Rod groups at corners. Total # rods divisible by 4. Maximum total # of rods = 48 (12 per Corner).
2) Rod Spacing = Straight Center-to-Center distance between any (2) adjacent rods (same corner)
3) Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#: *876347*
Site Name: *BUCKLAND MALL*
App #: *168176 Rev. 1*

Anchor Rod Data		
Qty:	16	
Diam:	2.25	in
Rod Material:	A615-J	
Yield, Fy:	75	ksi
Strength, Fu:	100	ksi
Bolt Circle:	56	in
Anchor Spacing:	6	in

Plate Data		
W=Side:	55	in
Thick:	3.25	in
Grade:	50	ksi
Clip Distance:	16	in

Stiffener Data (Welding at both sides)		
Configuration:	Unstiffened	
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:	48.8	in
Thick:	0.4375	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round

Stress Increase Factor		
ASD ASIF:	1.333	

Base Reactions		
TIA Revision:	F	
Unfactored Moment, M:	3329	ft-kips
Unfactored Axial, P:	39	kips
Unfactored Shear, V:	31	kips

Anchor Rod Results

TIA F --> Maximum Rod Tension	175.9 Kips
Allowable Tension:	195.0 Kips
Anchor Rod Stress Ratio:	90.2% Pass

Base Plate Results — Flexural Check

Base Plate Stress:	38.8 ksi
Allowable PL Bending Stress:	50.0 ksi
Base Plate Stress Ratio:	77.5% Pass

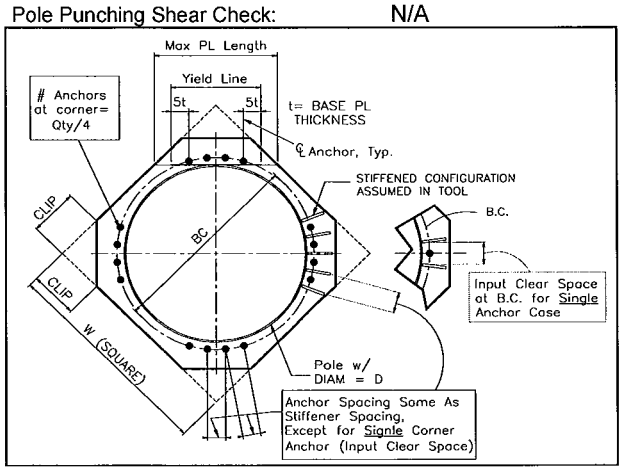
PL Ref. Data	
Yield Line (in):	28.98
Max PL Length:	28.98

N/A - Unstiffened
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



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

Monopole Pier and Pad Foundation

BU # : 876347
Site Name: BUCKLAND MALL
App. Number: 165582 Rev. 1

TIA-222 Revision:	F

Design Reactions		
Shear, **S**:	31	kips
Moment, **M**:	3329	ft-kips
Tower Height, **H**:	155	ft
Tower Weight, **Wt**:	39	kips
Base Diameter, **BD**:	4.07	ft

Foundation Dimensions		
Depth, **D**:	10	ft
Pad Width, **W**:	23	ft
Neglected Depth, **N**:	3.33	ft
Thickness, **T**:	3.00	ft
Pier Diameter, **Pd**:	7.00	ft
Ext. Above Grade, **E**:	0.50	ft
BP Dist. Above Pier:	3	in.
Clear Cover, **Cc**:	3.0	in

Soil Properties		
Soil Unit Weight, **γ**:	0.115	kcf
Ult. Bearing Capacity, Bc:	30.0	ksf
Angle of Friction, **Φ**:	30	deg
Cohesion, **Co**:	0.000	ksf
Passive Pressure, **Pp**:	3.500	ksf
Base Friction, **μ**:	0.45	

Material Properties		
Rebar Yield Strength, **Fy**:	60000	psi
Concrete Strength, **F'c**:	3000	psi
Concrete Unit Weight, **δc**:	0.150	kcf
Seismic Zone, **z**:	1	

Rebar Properties		
Pier Rebar Size, **Sp**:	11	
Pier Rebar Quanity, **mp**:	32	18
Pad Rebar Size, **Spad**:	9	
Pad Rebar Quanity, **mpad**:	33	19
Pier Tie Size, **St**:	5	4
Tie Quanity, **mt**:	12	7

Design Checks	Capacity/ Availability	Demand/ Limits	Check
Req'd Pier Diam.(ft)	7	5.566666667	**OK**
Overturning (ft-kips)	6114.92	3329.00	**54.4%**
Shear Capacity (kips)	319.29	31.00	**9.7%**
Bearing (ksf)	22.50	3.84	**17.1%**
Pad Shear - 1-way (kips)	735.51	484.46	**65.9%**
Pad Shear - 2-way (kips)	1949.60	129.50	**6.6%**
Pad Moment Capacity (k-ft)	4607.86	2923.94	**63.5%**
Pier Moment Capacity (k-ft)	5894.74	3561.50	**60.4%**

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: CT11377C

Sprint Manchester / Slater
55 Slater Street
Manchester, CT 06040

November 27, 2012

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

EBI Consulting
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November 27, 2012

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

Re: Emissions Values for Site: **CT11377C - Sprint Manchester / Slater**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at 55 Slater Street, Manchester, 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 55 Slater Street, Manchester, 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 centerline of the proposed antennas is **133 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	CT11377C - Sprint Manchester / Slater
Site Addresss	55 Slater Street, Manchester, CT 06040
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	133	127	None	0	0	48.326044	1.077159	0.10772%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	133	127	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	133	127	1-5/8"	0	0	24.163022	0.538579	0.05386%
2B	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	133	127	1-5/8"	0	0	24.163022	0.538579	0.05386%
														Sector total Power Density Value:		0.215%	

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	133	127	None	0	0	48.326044	1.077159	0.10772%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	133	127	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	133	127	1-5/8"	0	0	24.163022	0.538579	0.05386%
28	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	133	127	1-5/8"	0	0	24.163022	0.538579	0.05386%
														Sector total Power Density Value:		0.215%	

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	133	127	None	0	0	48.326044	1.077159	0.10772%
1b	Ericsson	AIR21 B4A/B2P	Not Used	-	-			0	-3.95	133	127	None	0	0	0	0	0.00000%
2a	Ericsson	AIR21 B2A / B4P	Active	PCS - 1950 MHz	GSM / UMTS	30	2	60	-3.95	133	127	1-5/8"	0	0	24.163022	0.538579	0.05386%
28	Ericsson	AIR21 B2A / B4P	Passive	AWS - 2100 MHz	UMTS	30	2	60	-3.95	133	127	1-5/8"	0	0	24.163022	0.538579	0.05386%
														Sector total Power Density Value:		0.215%	

Site Composite MPE %	
Carrier	MPE %
T-Mobile	0.646%
AT&T	5.230%
Verizon Wireless	23.150%
Nextel	9.380%
Sprint	1.650%
Clearwire	0.790%
Pocket	6.420%
Total Site MPE %	**47.266%**

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 **0.646% (0.215% 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 **47.266%** 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