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

September 16, 2014

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

Re: Notice of Exempt Modification
Davidson Media Station/T-Mobile co-location
Site ID CTHA220A
440 Old Turnpike Road, Southington

Dear Attorney Bachman:

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

In this case, the Davidson Media Station WXCT owns the existing telecommunications tower and related facility at 440 Old Turnpike Road, Southington Connecticut (latitude 41.582824, longitude -72.883174). T-Mobile intends to add three antennas and related equipment at this existing facility in Southington ("Southington 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 Town Manager, Garry Brumback. Davidson Media Station WXCT is also the property owner.

The existing Southington Facility consists of a 250 foot tower.[1] T-Mobile plans to add three antennas on the tower at a centerline of 147 feet.[2] T-Mobile will also install three RRUS on a proposed H-frame within the existing compound area near the base of the tower and will install and reuse coax cable. (See the plans revised to September 10, 2014 attached hereto as Exhibit A). The existing tower is structurally capable of supporting T-Mobile's proposed use with modifications, as indicated in the structural analysis dated August 22, 2014 and attached hereto as Exhibit B.[3]

---

[1] The online CSC database does not include a Docket or Petition for the approval of the facility. It does however, contain several notices of intent, the most recent being EM-METROPCS-131-130307MA and TS-POCKET-131-091110.
[2] The T-Mobile antennas located at a centerline of 155 feet will remain.
[3] The modifications identified in the structural analysis at page 1 will be completed prior to T-Mobile installing its equipment.

The planned modifications to the Southington 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 proposed antennas will be installed at the 147 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 proposed equipment in the existing compound, as reflected on the attached site plan, will not require an extension of the site boundaries as indicated on Sheet L-1 of Exhibit A. 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 proposed 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 RF Exposure Analysis prepared by EBI dated September 11, 2014 T-Mobile' operations would add 5.98% 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 6.05% of the FCC Standard as calculated for a mixed frequency site as evidenced by the engineering exhibit attached hereto as Exhibit C.

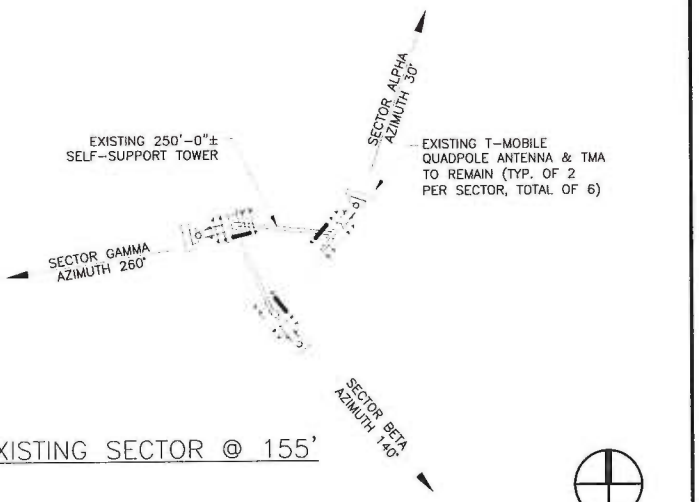
For the foregoing reasons, T-Mobile respectfully submits that the proposed antennas and equipment at the Southington Facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Upon acknowledgement by the Council of this proposed exempt modification, T-Mobile shall commence construction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

Sincerely,

Julie D. Kohler, Esq.

cc: Southington Town Manager, Garry Brumback
Davidson Media Station WXCT
Jamie Ford, EBI

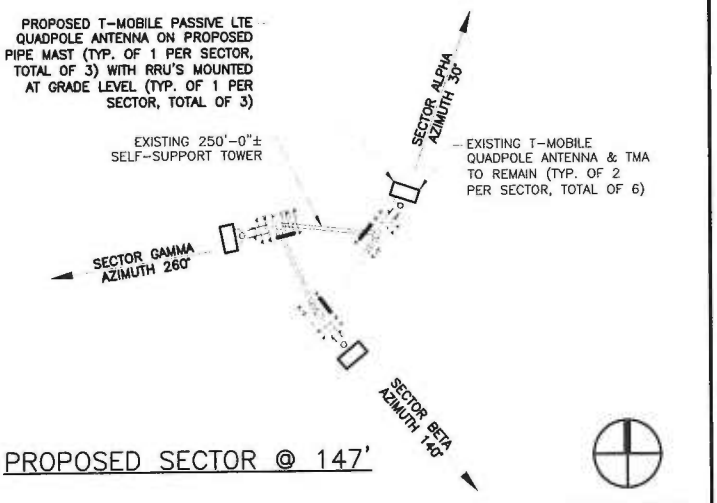
EXHIBIT A



EXISTING SECTOR @ 155'

ANTENNA CONFIGURATION

NTS



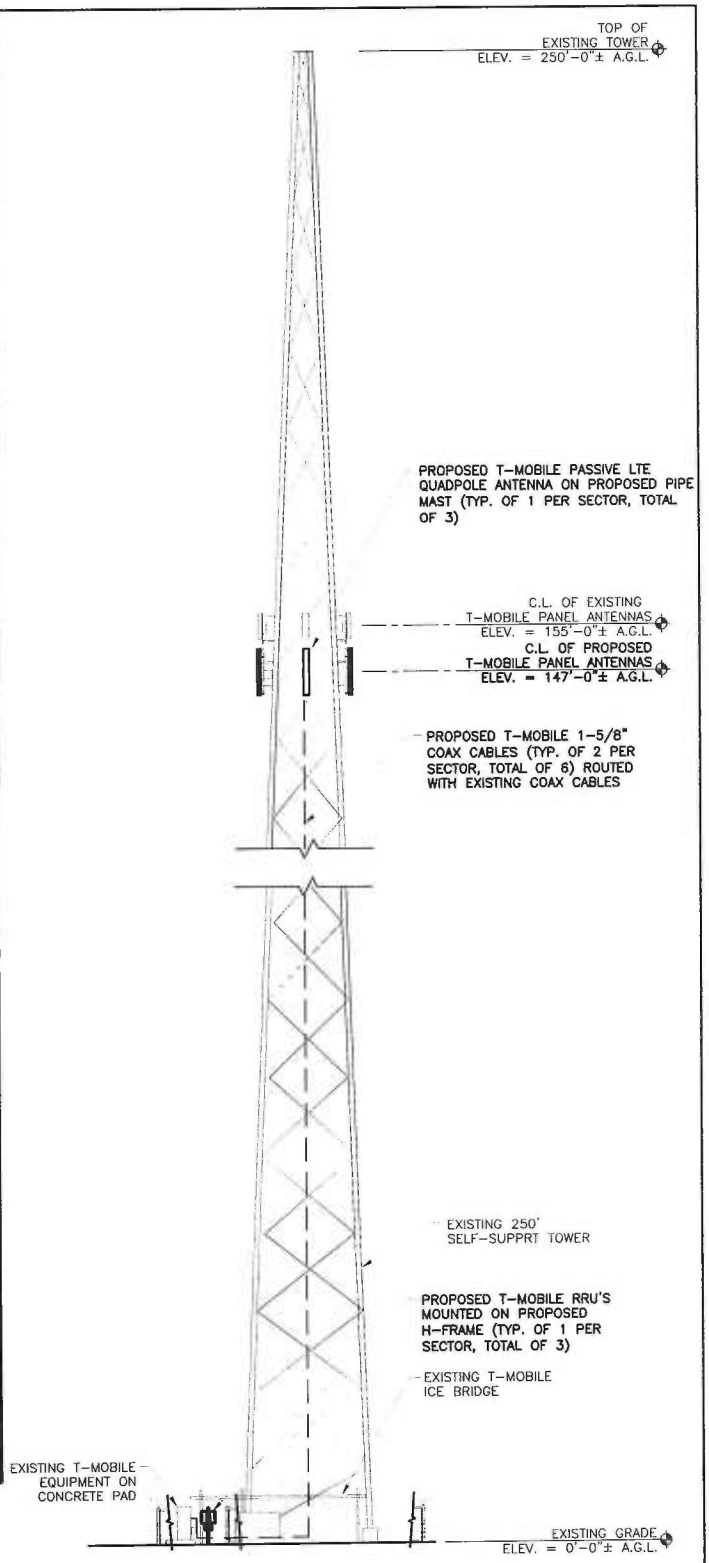
PROPOSED SECTOR @ 147'

ANTENNA CONFIGURATION

NTS

CONFIGURATION

704BU



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

TOWER ELEVATION

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

PREPARED BY:
EBI Consulting
environmental | engineering | due diligence
21 B Street | Burlington, MA 01803
Tel: (781) 273-2500 | Fax: (781) 273-3311
www.ebiconsulting.com
EBI JOB NO.: 81140834

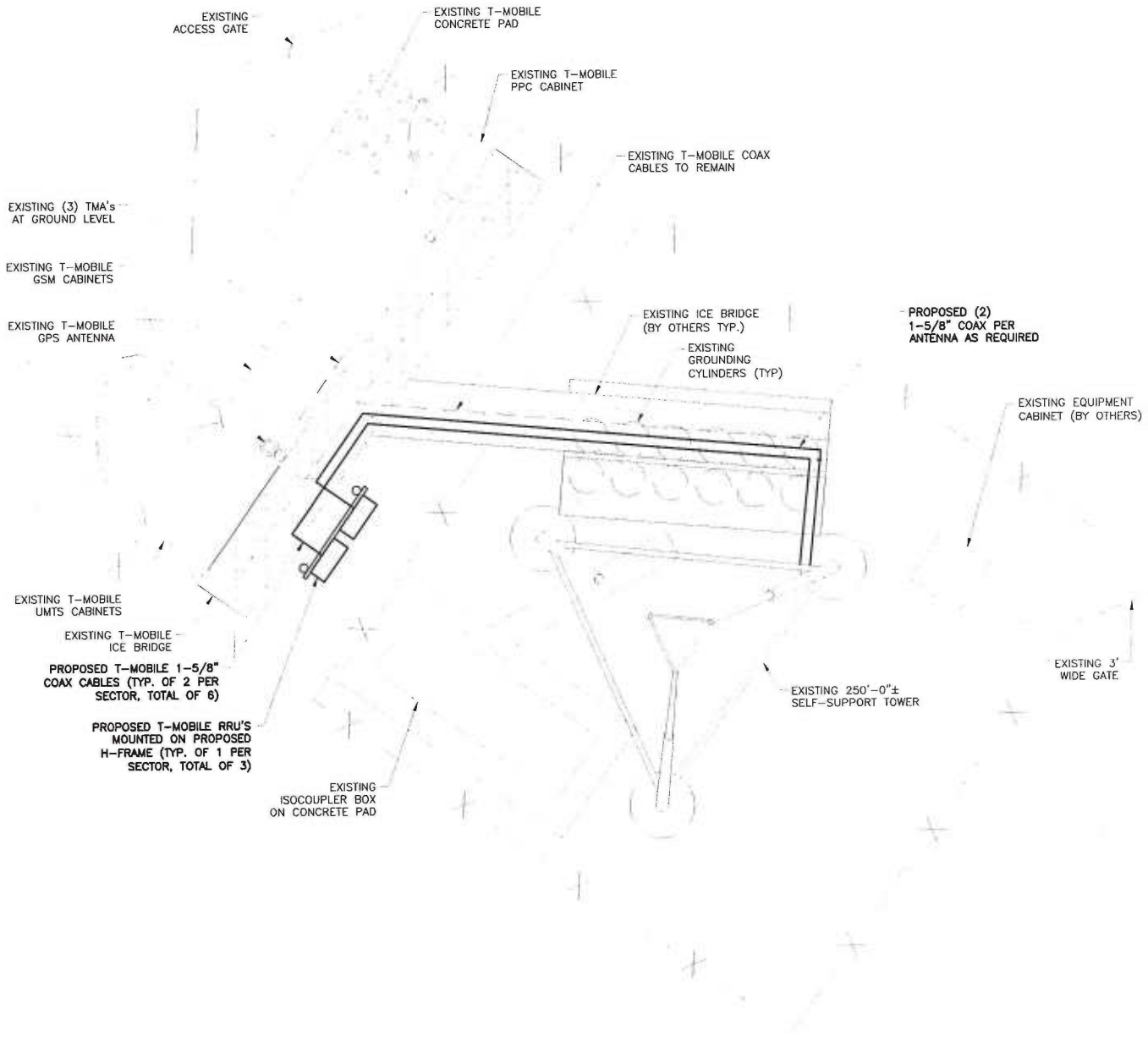
CLIENT:
T-Mobile Northeast, LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860.892.7100

SITE INFO:
CTHA220A
HA220/WNTY
TOWER_SST
440 OLD TURNPIKE RD.
SOUTHINGTON, CT 06489

SUBMITTALS			
NO.	DATE	DESCRIPTION	BY
A	07/31/14	FOR REVIEW	SS
0	09/10/14	PER COMMENTS	SS

DRAWN BY: SS
CHECKED BY: PM
DATE: 07/31/14

SHEET NO: LE-2



CONFIGURATION

704BU

APPROX. NORTH

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

SITE PLAN

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

PREPARED BY:
EBI Consulting
environmental engineering | live diligence
21 B Street | Burlington, MA 01803
Tel: (781) 273-2500 | Fax: (781) 273-3311
www.ebiconsulting.com
EBI JOB NO.: 81140834

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

SITE INFO:
CTHA220A
HA220/WNTY
TOWER_SST
440 OLD TURNPIKE RD.
SOUTHINGTON, CT 06489

SUBMITTALS			
NO.	DATE	DESCRIPTION	BY
A	07/31/14	FOR REVIEW	SS
0	09/10/14	PER COMMENTS	SS

DRAWN BY: SS
CHECKED BY: PM
DATE: 07/31/14

SHEET NO: LE-1

EXHIBIT B

EBI Consulting
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21 B Street
Burlington, MA 01803
Tel: (781) 273- 2500
Fax: (781) 273- 3311
www.ebiconsulting.com

TOWER STRUCTURAL ANALYSIS REPORT – POST MODIFICATION

August 22, 2014

T-Mobile, USA
35 Griffin Road South
Bloomfield, CT 06002
Attention: Mark Richard

Subject: 700 MHz Upgrade Project
Site #: CTHA220A
EBI Reference #: 81140834
Site Name: HA220/WNTY Tower_SST
Address: 440 Old Turnpike Road, Southington, CT 06489

Dear Mr. Richard,

This letter is to confirm EBI's structural analysis of the modified self-supporting tower at the above listed site for supporting the proposed T-Mobile equipment upgrade. The intent of this analysis is to demonstrate that the tower, once modified, has adequate structural capacity to support the proposed antenna modification listed herein.

EBI Consulting has prepared this structural analysis report of the 250.0 foot self-supporting tower for the additional loads imposed by the proposed antenna configuration by T-Mobile. This analysis has been performed in accordance with the 2005 CT State Building Code (including 2009, 2011, and 2013 Amendments) and ANSI/TIA/EIA-222 Revision F, with an 80 mph fastest-mile wind speed without ice, and a 69.3 mph fastest-mile wind speed with 0.5" radial ice. Information from the following sources was utilized in our analysis:

- Existing Structural Analysis Report prepared by All-Points Technology Corporation, P.C., Project No. CT107860, dated January 5, 2006
- Photographs taken by EBI personnel from site visits on June 18, 2014 and July 24, 2014

The (12) existing coax cables shall be re-distributed, with (3) of them moved to another tower face and the remaining (9) to be stacked in (3) rows of (3). The (6) proposed cables shall be stacked on top of the (1) row of existing cables into (2) rows of (3). The bottom (2) sections of the tower (0' – 40'), T12 and T13, shall be reinforced with secondary horizontal members, L2x2x1/4 for the T12 section (20' – 40') and L2-1/2x2-1/2x1/4 for the T13 section (0' – 20'). By engineering analysis, the existing tower has sufficient capacity with the modifications listed herein of supporting the existing and proposed equipment, listed herein. The tower under this configuration has a maximum usage of approximately 98.7%. This analysis did not provide for any future equipment or tower extensions.

The analysis provided herein by EBI Consulting includes the following existing and proposed equipment (please note (3) RRUS11 B12 units are also proposed by T-Mobile, but will be installed at grade on separate support structures):

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Tel: (781) 273- 2500
Fax: (781) 273- 3311
www.ebiconsulting.com

Proposed equipment configuration:

Carrier	Elevation	Manufacturer	Model	Quantity	Mount type	Coax
---	254.5'	---	Flash Beacon	1	---	1"
	254.5'	---	4' Lightning Rod	1	---	---
T-Mobile	155'	RFS	APX16PV_16PVL	3	Stand-off	(12) 1 5/8"
		---	d B2 (TMA)	6		
	147'	**Commscope**	**LNX-6515DS-VTM**	**3**	**Stand-off**	**(6) 1 5/8"**
---	123.5'	---	OB Lights	2	---	---

**Tower base is 4.5' above grade*
Note: Proposed equipment shown in bold.

Summary of Results: (Refer to attached TNX Tower Analysis for detailed analysis results)

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
T1	254.5 - 244.5	Leg	1 1/4	3	-2906.62	17115.85	17.0	Pass
		Diagonal	1/2	10	-425.44	1979.44	21.5	Pass
		Top Girt	1/2	4	-25.52	3840.68	0.7	Pass
		Bottom Girt	1/2	7	-81.91	3840.68	2.1	Pass
T2	244.5 - 224.5	Leg	1 1/4	29	-12190.80	21706.84	56.2	Pass
		Diagonal	1/2	37	-535.70	1918.57	27.9	Pass
		Top Girt	1/2	32	-63.77	3816.38	1.7	Pass
		Bottom Girt	1/2	35	-196.36	2202.94	8.9	Pass
T3	224.5 - 204.5	Leg	1 1/2	79	-23334.60	40710.08	57.3	Pass
		Diagonal	1/2	90	-658.16	1627.39	40.4	Pass
		Top Girt	1/2	82	-66.57	2216.23	3.0	Pass
		Bottom Girt	1/2	87	-281.24	1217.12	23.1	Pass
T4	204.5 - 184.5	Leg	1 3/4	130	-35679.20	63631.28	56.1	Pass
		Diagonal	5/8	142	-811.96	3324.98	24.4	Pass
		Top Girt	5/8	134	-35.38	2984.80	1.2	Pass
		Bottom Girt	5/8	137	-394.77	1881.54	21.0	Pass
T5	184.5 - 164.5	Leg	2	182	-49054.30	90516.16	54.2	Pass
		Diagonal	5/8	195	-940.11	2771.67	33.9	Pass
		Top Girt	5/8	186	-36.15	1888.25	1.9	Pass
		Bottom Girt	5/8	189	-459.94	1297.39	35.5	Pass
T6	164.5 - 144.5	Leg	2	232	-67246.00	90516.16	74.3	Pass
		Diagonal	3/4	241	-1814.42	4741.59	38.3	Pass
		Top Girt	3/4	235	-30.76	2658.82	1.2	Pass
		Bottom Girt	3/4	240	-859.25	1942.01	44.2	Pass
T7	144.5 - 124.5	Leg	2 1/4	284	-93002.90	121371.78	76.6	Pass
		Diagonal	3/4	292	-2012.81	3990.39	50.4	Pass
		Top Girt	3/4	286	-243.40	1946.89	12.5	Pass
		Bottom Girt	3/4	291	-780.21	1483.59	52.6	Pass
T8	124.5 - 104.5	Leg	2 1/2	335	-118470.00	156195.60	75.8	Pass
		Diagonal	3/4	343	-2191.75	3382.17	64.8	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
		Top Girt	3/4	337	-145.23	1486.84	9.8	Pass
		Bottom Girt	3/4	342	-784.99	1170.23	67.1	Pass
T9	104.5 - 84.5	Leg	2 1/2	385	-143484.00	156195.60	91.9	Pass
		Diagonal	7/8	395	-2314.39	5306.43	43.6	Pass
		Top Girt	1	389	-66.20	3669.88	1.8	Pass
		Bottom Girt	7/8	392	-901.77	1738.45	51.9	Pass
T10	84.5 - 64.5	Leg	2 3/4	438	-168243.00	194980.57	86.3	Pass
		Diagonal	7/8	446	-2478.84	4573.54	54.2	Pass
		Top Girt	7/8	441	-57.24	1741.47	3.3	Pass
		Bottom Girt	7/8	444	-860.89	1436.27	59.9	Pass
T11	64.5 - 44.5	Leg	2 3/4	487	-192371.00	194980.57	98.7	Pass
		Diagonal	1	498	-2494.37	6727.65	37.1	Pass
		Top Girt	1	490	-83.38	2434.76	3.4	Pass
		Bottom Girt	1	493	-535.36	2043.46	26.2	Pass
T12	44.5 - 24.5	Leg	2 3/4	538	-189726.00	208763.79	90.9	Pass
		Diagonal	L2x2x3/16	581	-2815.91	10856.02	25.9	Pass
							36.1 (b)	
		Secondary Horizontal	L2x2x1/4	547	-3290.26	3463.19	95.0	Pass
T13	24.5 - 4.5	Leg	2 3/4	588	-177235.00	209055.71	84.8	Pass
		Diagonal	L2 1/2x2 1/2x3/16	601	-1577.79	11758.97	13.4	Pass
							21.1 (b)	
		Secondary Horizontal	L2 1/2x2 1/2x1/4	595	-3073.62	4333.12	70.9	Pass
						Summary		
						Leg (T11)	98.7	Pass
						Diagonal (T8)	64.8	Pass
						Secondary Horizontal (T12)	95.0	Pass
						Top Girt (T7)	12.5	Pass
						Bottom Girt (T8)	67.1	Pass
						Bolt Checks	78.6	Pass
						RATING =	**98.7**	**Pass**

The maximum stress under the proposed conditions and configurations is **98.7%** of the tower capacity, governed by stresses in the tower legs. Therefore **the tower <u>has sufficient structural capacity with the modifications listed herein</u>** for the proposed equipment configurations.

<u>Foundation:</u>

The reactions at the base are as follows:

Reaction Type	Current analysis reactions (TIA-222-F)
Shear (k)	9.9
Uplift (k)	152.6
Compression (k)	172.6
Total moment (k-ft)	1411

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Fax: (781) 273- 3311
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Foundation and soils information was not available at the time of this analysis. Thus, evaluation of those elements was unable to be performed for determining their adequacy. EBI makes no claim on the foundation and soil adequacy for supporting the existing and proposed installations, neither written nor implied.

Limitations and Assumptions:

This report is based on the following assumptions:

1. Tower is properly installed and maintained.
2. All members are as specified in the original design documents and are in good condition.
3. All required members are in place.
4. All bolts are in place and are tightly fastened.
5. Tower is in plumb condition.
6. All member protective coatings are in good condition.
7. All tower members were properly designed, detailed, fabricated, and installed, and have been properly maintained since erection.
8. Foundations were properly designed, constructed, and analyzed to support original and previous analysis design loads.

EBI is not responsible for any modifications prior to or hereafter in which EBI is not or was not directly involved. Modifications include but are not limited to:

1. Adding antennas
2. Removing/replacing antennas
3. Adding or moving coaxial cables
4. Extending the height of the tower

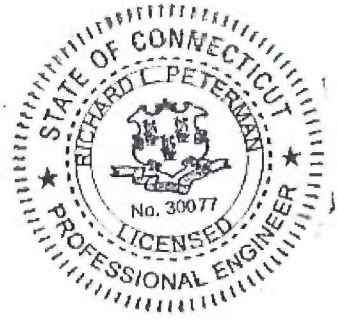
EBI hereby states that this document represents the entire report and that it assumes no liability for any factual changes that may occur after the date of this report. All representations, recommendations, and conclusions are based upon information contained and set forth herein. If you are aware of any information which conflicts with that which is contained herein, you should disregard this report and immediately contact EBI. EBI disclaims all liability for any representation, recommendation, or conclusion not expressly stated herein.

Please contact us at 781-273-2500 if you have any questions.

Sincerely yours,
EBI Consulting
August 22, 2014

Brandon Kelsey, E.I.T

Richard L. Peterman, P.E.
Professional Engineer



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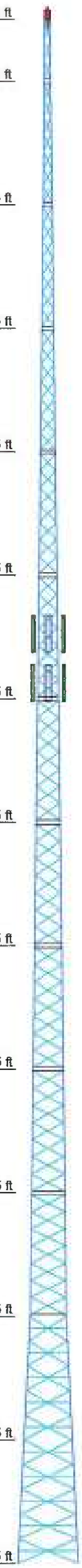
PHOTOGRAPH/ DOCUMENT LOG

Photo 1: Overall view of the existing self-supporting tower.	
Photo 2: Close-up of the existing T-Mobile antenna installation.	
Photo 3: Close-up of the existing T-Mobile coaxial cable installation.	

Section	Legs	Leg Grade	Diagonals	Diagonal Grade	Top Girts	Bottom Girts	Sec. Horizontals	Face Width (ft)	# Panels @ (ft)	Weight (lb)
T1	SR 1 1/4	A572-50	SR 1/2	A36	SR 1/2	SR 1/2	N.A.	1	3 @ 3.1111	168.6
T2	SR 1 1/4	A572-50	SR 1/2	A36	SR 1/2	SR 1/2	N.A.		70 @ 2.76191	340.7
T3	SR 1 1/2	A572-50	SR 1/2	A36	SR 1/2	SR 1/2	N.A.	1.5	70 @ 2.76191	459.7
T4	SR 1 3/4	A572-50	SR 1/2	A36	SR 1/2	SR 1/2	N.A.	2	70 @ 2.76191	661.5
T5	SR 2	A572-50	SR 5/8	A36	SR 5/8	SR 5/8	N.A.	2.5	70 @ 2.76191	829.7
T6	SR 2	A572-50	SR 5/8	A36	SR 5/8	SR 5/8	N.A.	3	70 @ 2.76191	840.1
T7	SR 2 1/4	A572-50	SR 3/4	A36	SR 3/4	SR 3/4	N.A.	3.5	70 @ 2.76191	1139.8
T8	SR 2 1/2	A572-50	SR 3/4	A36	SR 3/4	SR 3/4	N.A.	4	70 @ 2.76191	1360.7
T9	SR 2 1/2	A572-50	SR 7/8	A36	SR 1	SR 7/8	N.A.	4.5	70 @ 2.76191	1541.3
T10	SR 2 3/4	A572-50	SR 7/8	A36	SR 7/8	SR 7/8	N.A.	5	70 @ 2.76191	1787.1
T11	SR 2 3/4	A572-50	SR 1	A36	SR 1	SR 1	N.A.	5.5	70 @ 2.76191	2021.0
T12	SR 2 3/4	A572-50	L2x2x3/16	A36	N.A.	N.A.	L2x2x1/4	6	10 @ 4	2138.4
T13	SR 2 3/4	A572-50	L2 1/2x2 1/2x3/16	A36	N.A.	N.A.	L2 1/2x2 1/2x1/4	8	10 @ 4	2668.3
(base)								10		16056.9



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Flash Beacon Lighting	254.5	Side Arm Mount [SO 201-1] (TMO)	155
Generic Lightning Rod 4' copper	254.5	Commscope LNX-6515DS-VTM w/ mount pipe (TMO)	147
RFS APX16PV_16PVL w/ mount pipe (TMO)	155	Commscope LNX-6515DS-VTM w/ mount pipe (TMO)	147
RFS APX16PV_16PVL w/ mount pipe (TMO)	155	Commscope LNX-6515DS-VTM w/ mount pipe (TMO)	147
RFS APX16PV_16PVL w/ mount pipe (TMO)	155	Side Arm Mount [SO 201-1] (TMO)	147
(2) d B2 TMA (TMO)	155	Side Arm Mount [SO 201-1] (TMO)	147
(2) d B2 TMA (TMO)	155	Side Arm Mount [SO 201-1] (TMO)	147
(2) d B2 TMA (TMO)	155	Obstruction Light	124
Side Arm Mount [SO 201-1] (TMO)	155	Obstruction Light	124
Side Arm Mount [SO 201-1] (TMO)	155		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 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 69 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. Weld together tower sections have flange connections.
6. Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications.
7. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
8. Welds are fabricated with ER-70S-6 electrodes.
9. TOWER RATING: 98.7%

MAX. CORNER REACTIONS AT BASE:
DOWN: 172597 lb
SHEAR: 8085 lb

UPLIFT: -152619 lb
SHEAR: 9922 lb

AXIAL 29138 lb
SHEAR 12529 lb
MOMENT 1410617 lb-ft
TORQUE 9 lb-ft
69 mph WIND - 0.5000 in ICE

AXIAL 19690 lb
SHEAR 11785 lb
MOMENT 1229815 lb-ft
TORQUE 5 lb-ft
REACTIONS - 80 mph WIND

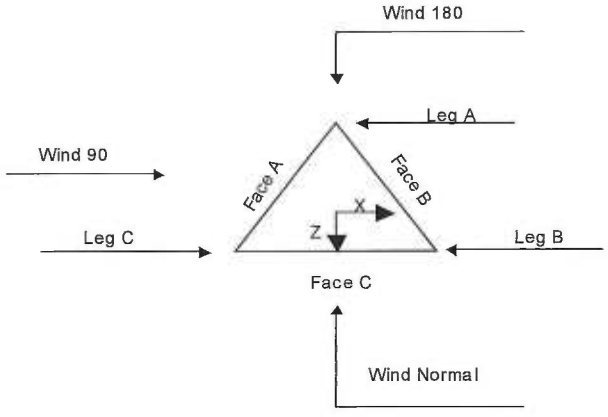
EBI Consulting, 21 B St, Burlington, MA 01803, Phone: (781) 273 - 2500, FAX: (781) 273 - 3311	Job: CTHA220A		
	Project: 250' SST		
	Client: T-Mobile	Drawn by: Brandon Kelsey	App'd:
	Code: TIA/EIA-222-F	Date: 08/25/14	Scale: NTS
	Path:		Dwg No. E-1

tnxTower	Job	Page
	CTHA220A	1 of 17
EBI Consulting 21 B St Burlington, MA 01803 Phone: (781) 273 - 2500 FAX: (781) 273 - 3311	Project 250' SST	Date 10:54:00 08/25/14
	Client T-Mobile	Designed by Brandon Kelsey

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 254.50 ft above the ground line.
The base of the tower is set at an elevation of 4.50 ft above the ground line.
The face width of the tower is 1.00 ft at the top and 10.00 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Hartford County, Connecticut.
Basic wind speed of 80 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56 pcf.
A wind speed of 69 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
Weld together tower sections have flange connections..
Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications..
Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards..
Welds are fabricated with ER-70S-6 electrodes..
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.333.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	254.50-244.50			1.00	1	10.00
T2	244.50-224.50			1.00	1	20.00
T3	224.50-204.50			1.50	1	20.00
T4	204.50-184.50			2.00	1	20.00
T5	184.50-164.50			2.50	1	20.00
T6	164.50-144.50			3.00	1	20.00
T7	144.50-124.50			3.50	1	20.00
T8	124.50-104.50			4.00	1	20.00
T9	104.50-84.50			4.50	1	20.00
T10	84.50-64.50			5.00	1	20.00
T11	64.50-44.50			5.50	1	20.00
T12	44.50-24.50			6.00	1	20.00
T13	24.50-4.50			8.00	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	254.50-244.50	3.11	X Brace	No	Steps	4.0000	4.0000
T2	244.50-224.50	2.76	X Brace	No	Steps	4.0000	4.0000
T3	224.50-204.50	2.76	X Brace	No	Steps	4.0000	4.0000
T4	204.50-184.50	2.76	X Brace	No	Steps	4.0000	4.0000
T5	184.50-164.50	2.76	X Brace	No	Steps	4.0000	4.0000
T6	164.50-144.50	2.76	X Brace	No	Steps	4.0000	4.0000
T7	144.50-124.50	2.76	X Brace	No	Steps	4.0000	4.0000
T8	124.50-104.50	2.76	X Brace	No	Steps	4.0000	4.0000
T9	104.50-84.50	2.76	X Brace	No	Steps	4.0000	4.0000
T10	84.50-64.50	2.76	X Brace	No	Steps	4.0000	4.0000
T11	64.50-44.50	2.76	X Brace	No	Steps	4.0000	4.0000
T12	44.50-24.50	4.00	X Brace	No	Yes	0.0000	0.0000
T13	24.50-4.50	4.00	X Brace	No	Yes	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 254.50-244.50	Solid Round	1 1/4	A572-50 (50 ksi)	Solid Round	1/2	A36 (36 ksi)
T2 244.50-224.50	Solid Round	1 1/4	A572-50 (50 ksi)	Solid Round	1/2	A36 (36 ksi)
T3 224.50-204.50	Solid Round	1 1/2	A572-50 (50 ksi)	Solid Round	1/2	A36 (36 ksi)
T4 204.50-184.50	Solid Round	1 3/4	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T5 184.50-164.50	Solid Round	2	A572-50	Solid Round	5/8	A36

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T6 164.50-144.50	Solid Round	2	(50 ksi) A572-50 (50 ksi)	Solid Round	3/4	(36 ksi) A36 (36 ksi)
T7 144.50-124.50	Solid Round	2 1/4	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T8 124.50-104.50	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T9 104.50-84.50	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	7/8	A36 (36 ksi)
T10 84.50-64.50	Solid Round	2 3/4	A572-50 (50 ksi)	Solid Round	7/8	A36 (36 ksi)
T11 64.50-44.50	Solid Round	2 3/4	A572-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T12 44.50-24.50	Solid Round	2 3/4	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T13 24.50-4.50	Solid Round	2 3/4	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 254.50-244.50	Solid Round	1/2	A36 (36 ksi)	Solid Round	1/2	A36 (36 ksi)
T2 244.50-224.50	Solid Round	1/2	A36 (36 ksi)	Solid Round	1/2	A36 (36 ksi)
T3 224.50-204.50	Solid Round	1/2	A36 (36 ksi)	Solid Round	1/2	A36 (36 ksi)
T4 204.50-184.50	Solid Round	5/8	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T5 184.50-164.50	Solid Round	5/8	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T6 164.50-144.50	Solid Round	3/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T7 144.50-124.50	Solid Round	3/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T8 124.50-104.50	Solid Round	3/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T9 104.50-84.50	Solid Round	1	A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T10 84.50-64.50	Solid Round	7/8	A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T11 64.50-44.50	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
ft						
T12 44.50-24.50	Equal Angle	L2x2x1/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T13 24.50-4.50	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals
ft	ft^2	in					in	in
T1 254.50-244.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T2 244.50-224.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T3 224.50-204.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T4 204.50-184.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T5 184.50-164.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T6 164.50-144.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T7 144.50-124.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T8 124.50-104.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T9 104.50-84.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T10 84.50-64.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T11 64.50-44.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T12 44.50-24.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T13 24.50-4.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X	X Brace Diags Y	K Single Diags X	K Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
ft															
T1	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
254.50-244.50				1	1	1	1	1	1	1	1	1	1	1	1
T2	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1
244.50-224.50				1	1	1	1	1	1	1	1	1	1	1	1
T3	No	No	1	1	1	1	1	1	1	1	1	1	1	1	1

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
224.50-204.50				1	1	1	1	1	1	1
T4	No	No	1	1	1	1	1	1	1	1
204.50-184.50				1	1	1	1	1	1	1
T5	No	No	1	1	1	1	1	1	1	1
184.50-164.50				1	1	1	1	1	1	1
T6	No	No	1	1	1	1	1	1	1	1
164.50-144.50				1	1	1	1	1	1	1
T7	No	No	1	1	1	1	1	1	1	1
144.50-124.50				1	1	1	1	1	1	1
T8	No	No	1	1	1	1	1	1	1	1
124.50-104.50				1	1	1	1	1	1	1
T9	No	No	1	1	1	1	1	1	1	1
104.50-84.50				1	1	1	1	1	1	1
T10	No	No	1	1	1	1	1	1	1	1
84.50-64.50				1	1	1	1	1	1	1
T11	No	No	1	1	1	1	1	1	1	1
64.50-44.50				1	1	1	1	1	1	1
T12	No	No	1	1	1	1	1	1	1	1
44.50-24.50				1	1	1	1	1	1	1
T13	No	No	1	1	1	1	1	1	1	1
24.50-4.50				1	1	1	1	1	1	1

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

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
254.50-244.50														
T2	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
244.50-224.50														
T3	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
224.50-204.50														
T4	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
204.50-184.50														
T5	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
184.50-164.50														
T6	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
164.50-144.50														
T7	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
144.50-124.50														
T8	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
124.50-104.50														
T9	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
104.50-84.50														
T10	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
84.50-64.50														

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T11 64.50-44.50	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 44.50-24.50	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 24.50-4.50	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 254.50-244.50	Flange	0.6250 A325N	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 244.50-224.50	Flange	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 224.50-204.50	Flange	0.6250 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 204.50-184.50	Flange	0.6250 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 184.50-164.50	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 164.50-144.50	Flange	0.7500 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 144.50-124.50	Flange	0.8750 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T8 124.50-104.50	Flange	0.8750 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T9 104.50-84.50	Flange	0.8750 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T10 84.50-64.50	Flange	1.0000 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T11 64.50-44.50	Flange	1.1250 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T12 44.50-24.50	Flange	1.1250 A325N	4	0.6250 A325N	1	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2
T13 24.50-4.50	Flange	1.2500 A325N	3	0.8750 A325N	1	0.8750 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2

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
1" conduit	C	No	Ar (CfAe)	254.50 - 9.00	1	1	1.0000 0.0000	1.0000		1.00
LDF7-50A (1-5/8	A	No	Ar (CfAe)	155.00 - 6.50	9	3	1.9800	1.9800		0.82

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
FOAM) (TMO) LDF7-50A (1-5/8 FOAM) (TMO)	B	No	Ar (CfAe)	155.00 - 6.50	9	3	1.9800	1.9800		0.82

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	254.50-244.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.833	0.000	0.000	0.000	10.00
T2	244.50-224.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	1.667	0.000	0.000	0.000	20.00
T3	224.50-204.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	1.667	0.000	0.000	0.000	20.00
T4	204.50-184.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	1.667	0.000	0.000	0.000	20.00
T5	184.50-164.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	1.667	0.000	0.000	0.000	20.00
T6	164.50-144.50	A	5.197	0.000	0.000	0.000	77.49
		B	5.197	0.000	0.000	0.000	77.49
		C	1.667	0.000	0.000	0.000	20.00
T7	144.50-124.50	A	9.900	0.000	0.000	0.000	147.60
		B	9.900	0.000	0.000	0.000	147.60
		C	1.667	0.000	0.000	0.000	20.00
T8	124.50-104.50	A	9.900	0.000	0.000	0.000	147.60
		B	9.900	0.000	0.000	0.000	147.60
		C	1.667	0.000	0.000	0.000	20.00
T9	104.50-84.50	A	9.900	0.000	0.000	0.000	147.60
		B	9.900	0.000	0.000	0.000	147.60
		C	1.667	0.000	0.000	0.000	20.00
T10	84.50-64.50	A	9.900	0.000	0.000	0.000	147.60
		B	9.900	0.000	0.000	0.000	147.60
		C	1.667	0.000	0.000	0.000	20.00
T11	64.50-44.50	A	9.900	0.000	0.000	0.000	147.60
		B	9.900	0.000	0.000	0.000	147.60
		C	1.667	0.000	0.000	0.000	20.00
T12	44.50-24.50	A	9.900	0.000	0.000	0.000	147.60
		B	9.900	0.000	0.000	0.000	147.60
		C	1.667	0.000	0.000	0.000	20.00
T13	24.50-4.50	A	8.910	0.000	0.000	0.000	132.84
		B	8.910	0.000	0.000	0.000	132.84
		C	1.292	0.000	0.000	0.000	15.50

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	254.50-244.50	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		1.667	0.000	0.000	0.000	19.16
T2	244.50-224.50	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		3.333	0.000	0.000	0.000	38.33
T3	224.50-204.50	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		3.333	0.000	0.000	0.000	38.33
T4	204.50-184.50	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		3.333	0.000	0.000	0.000	38.33
T5	184.50-164.50	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		3.333	0.000	0.000	0.000	38.33
T6	164.50-144.50	A	0.500	7.823	0.000	0.000	0.000	220.65
		B		7.823	0.000	0.000	0.000	220.65
		C		3.333	0.000	0.000	0.000	38.33
T7	144.50-124.50	A	0.500	14.900	0.000	0.000	0.000	420.29
		B		14.900	0.000	0.000	0.000	420.29
		C		3.333	0.000	0.000	0.000	38.33
T8	124.50-104.50	A	0.500	14.900	0.000	0.000	0.000	420.29
		B		14.900	0.000	0.000	0.000	420.29
		C		3.333	0.000	0.000	0.000	38.33
T9	104.50-84.50	A	0.500	14.900	0.000	0.000	0.000	420.29
		B		14.900	0.000	0.000	0.000	420.29
		C		3.333	0.000	0.000	0.000	38.33
T10	84.50-64.50	A	0.500	14.900	0.000	0.000	0.000	420.29
		B		14.900	0.000	0.000	0.000	420.29
		C		3.333	0.000	0.000	0.000	38.33
T11	64.50-44.50	A	0.500	14.900	0.000	0.000	0.000	420.29
		B		14.900	0.000	0.000	0.000	420.29
		C		3.333	0.000	0.000	0.000	38.33
T12	44.50-24.50	A	0.500	14.900	0.000	0.000	0.000	420.29
		B		14.900	0.000	0.000	0.000	420.29
		C		3.333	0.000	0.000	0.000	38.33
T13	24.50-4.50	A	0.500	13.410	0.000	0.000	0.000	378.26
		B		13.410	0.000	0.000	0.000	378.26
		C		2.583	0.000	0.000	0.000	29.70

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Flash Beacon Lighting	C	None			0.0000	254.50	No Ice	2.70	2.70	50.00
							1/2" Ice	3.10	3.10	70.00
Generic Lightning Rod 4' copper	A	None			0.0000	254.50	No Ice	0.50	0.50	0.00
							1/2" Ice	1.00	1.00	0.00
Obstruction Light	A	None			0.0000	124.00	No Ice	0.18	0.18	8.00
							1/2" Ice	0.25	0.25	10.50
Obstruction Light	B	None			0.0000	124.00	No Ice	0.18	0.18	8.00
							1/2" Ice	0.25	0.25	10.50

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 lb
RFS APX16PV_16PVL w/ mount pipe (TMO)	A	From Leg	1.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	6.80 7.27	3.31 3.94	68.55 115.26
RFS APX16PV_16PVL w/ mount pipe (TMO)	B	From Leg	1.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	6.80 7.27	3.31 3.94	68.55 115.26
RFS APX16PV_16PVL w/ mount pipe (TMO)	C	From Leg	1.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	6.80 7.27	3.31 3.94	68.55 115.26
(2) d B2 TMA (TMO)	A	From Leg	1.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	0.31 0.39	0.16 0.22	10.00 12.30
(2) d B2 TMA (TMO)	B	From Leg	1.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	0.31 0.39	0.16 0.22	10.00 12.30
(2) d B2 TMA (TMO)	C	From Leg	1.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	0.31 0.39	0.16 0.22	10.00 12.30
Commscope LNX-6515DS-VTM w/ mount pipe (TMO)	A	From Leg	1.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice	11.72 12.44	10.28 11.81	96.11 189.92
Commscope LNX-6515DS-VTM w/ mount pipe (TMO)	B	From Leg	1.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice	11.72 12.44	10.28 11.81	96.11 189.92
Commscope LNX-6515DS-VTM w/ mount pipe (TMO)	C	From Leg	1.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice	11.72 12.44	10.28 11.81	96.11 189.92
Side Arm Mount [SO 201-1] (TMO)	A	From Leg	1.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	2.96 4.10	2.11 2.93	96.00 117.05
Side Arm Mount [SO 201-1] (TMO)	B	From Leg	1.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	2.96 4.10	2.11 2.93	96.00 117.05
Side Arm Mount [SO 201-1] (TMO)	C	From Leg	1.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	2.96 4.10	2.11 2.93	96.00 117.05
Side Arm Mount [SO 201-1] (TMO)	A	From Leg	1.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice	2.96 4.10	2.11 2.93	96.00 117.05
Side Arm Mount [SO 201-1] (TMO)	B	From Leg	1.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice	2.96 4.10	2.11 2.93	96.00 117.05
Side Arm Mount [SO 201-1] (TMO)	C	From Leg	1.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice	2.96 4.10	2.11 2.93	96.00 117.05

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	254.5	Leg	A325N	0.6250	3	0.00	13499.00	0.000 ✔	1.333	Bolt Tension
T2	244.5	Leg	A325N	0.6250	2	1353.56	13498.60	0.100 ✔	1.333	Bolt Tension
T3	224.5	Leg	A325N	0.6250	4	2917.76	13498.40	0.216 ✔	1.333	Bolt Tension
T4	204.5	Leg	A325N	0.6250	4	5600.70	13497.60	0.415 ✔	1.333	Bolt Tension
T5	184.5	Leg	A325N	0.7500	4	8543.69	19436.70	0.440 ✔	1.333	Bolt Tension
T6	164.5	Leg	A325N	0.7500	4	11711.70	19435.40	0.603 ✔	1.333	Bolt Tension
T7	144.5	Leg	A325N	0.8750	4	15716.70	26446.10	0.594 ✔	1.333	Bolt Tension
T8	124.5	Leg	A325N	0.8750	4	21775.90	26442.20	0.824 ✔	1.333	Bolt Tension
T9	104.5	Leg	A325N	0.8750	4	27716.50	26438.10	1.048 ✔	1.333	Bolt Tension
T10	84.5	Leg	A325N	1.0000	4	33507.60	34539.10	0.970 ✔	1.333	Bolt Tension
T11	64.5	Leg	A325N	1.1250	4	39188.40	43719.50	0.896 ✔	1.333	Bolt Tension
T12	44.5	Leg	A325N	1.1250	4	44026.50	43736.70	1.007 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.6250	1	2452.64	5097.66	0.481 ✔	1.333	Member Bearing
		Secondary Horizontal	A325N	0.6250	2	1645.13	6442.72	0.255 ✔	1.333	Bolt Shear
T13	24.5	Leg	A325N	1.2500	3	53375.80	53995.70	0.989 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.8750	1	2004.68	7136.72	0.281 ✔	1.333	Member Bearing
		Secondary Horizontal	A325N	0.6250	2	1536.81	6442.72	0.239 ✔	1.333	Bolt Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	254.5 - 244.5	1 1/4	10.00	3.11	119.5 K=1.00	10.463	1.2272	-2906.62	12840.10	0.226 ✔
T2	244.5 - 224.5	1 1/4	20.00	2.76	106.1 K=1.00	13.270	1.2272	-12190.80	16284.20	0.749 ✔
T3	224.5 - 204.5	1 1/2	20.00	2.76	88.4 K=1.00	17.282	1.7672	-23334.60	30540.20	0.764 ✔
T4	204.5 - 184.5	1 3/4	20.00	2.76	75.8 K=1.00	19.846	2.4053	-35679.20	47735.40	0.747 ✔
T5	184.5 - 164.5	2	20.00	2.76	66.3 K=1.00	21.615	3.1416	-49054.30	67904.10	0.722 ✔
T6	164.5 - 144.5	2	20.00	2.76	66.3 K=1.00	21.615	3.1416	-67246.00	67904.10	0.990 ✔
T7	144.5 - 124.5	2 1/4	20.00	2.76	58.9 K=1.00	22.900	3.9761	-93002.90	91051.60	1.021 ✔
T8	124.5 - 104.5	2 1/2	20.00	2.76	53.0	23.871	4.9087	-118470.00	117176.00	1.011

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
					K=1.00					✔
T9	104.5 - 84.5	2 1/2	20.00	2.76	53.0 K=1.00	23.871	4.9087	-143484.00	117176.00	1.225 ✔
T10	84.5 - 64.5	2 3/4	20.00	2.76	48.2 K=1.00	24.627	5.9396	-168243.00	146272.00	1.150 ✔
T11	64.5 - 44.5	2 3/4	20.00	2.76	48.2 K=1.00	24.627	5.9396	-192371.00	146272.00	1.315 ✔
T12	44.5 - 24.5	2 3/4	20.03	2.07	36.1 K=1.00	26.368	5.9396	-189726.00	156612.00	1.211 ✔
T13	24.5 - 4.5	2 3/4	20.03	2.05	35.8 K=1.00	26.404	5.9396	-177235.00	156831.00	1.130 ✔

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	254.5 - 244.5	1/2	3.27	1.46	140.5 K=1.00	7.563	0.1963	-425.44	1484.95	0.286 ✔
T2	244.5 - 224.5	1/2	3.12	1.49	142.7 K=1.00	7.330	0.1963	-535.70	1439.29	0.372 ✔
T3	224.5 - 204.5	1/2	3.39	1.61	155.0 K=1.00	6.218	0.1963	-658.16	1220.85	0.539 ✔
T4	204.5 - 184.5	5/8	3.70	1.76	135.5 K=1.00	8.130	0.3068	-811.96	2494.36	0.326 ✔
T5	184.5 - 164.5	5/8	4.05	1.93	148.4 K=1.00	6.777	0.3068	-940.11	2079.27	0.452 ✔
T6	164.5 - 144.5	3/4	4.42	2.13	136.2 K=1.00	8.052	0.4418	-1814.42	3557.08	0.510 ✔
T7	144.5 - 124.5	3/4	4.83	2.32	148.5 K=1.00	6.776	0.4418	-2012.81	2993.54	0.672 ✔
T8	124.5 - 104.5	3/4	5.24	2.52	161.3 K=1.00	5.743	0.4418	-2191.75	2537.26	0.864 ✔
T9	104.5 - 84.5	7/8	5.67	2.74	150.2 K=1.00	6.620	0.6013	-2314.39	3980.82	0.581 ✔
T10	84.5 - 64.5	7/8	6.12	2.95	161.8 K=1.00	5.706	0.6013	-2478.84	3431.01	0.722 ✔
T11	64.5 - 44.5	1	6.57	3.18	152.4 K=1.00	6.426	0.7854	-2494.37	5047.00	0.494 ✔
T12	44.5 - 24.5	L2x2x3/16	7.38	3.68	112.1 K=1.00	11.390	0.7150	-2815.91	8144.05	0.346 ✔
T13	24.5 - 4.5	L2 1/2x2 1/2x3/16	10.22	5.09	123.5 K=1.00	9.780	0.9020	-1577.79	8821.43	0.179 ✔

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T12	44.5 - 24.5	L2x2x1/4	7.79	7.57	232.2 K=1.00	2.770	0.9380	-3290.26	2598.04	1.266 ✔
T13	24.5 - 4.5	L2 1/2x2 1/2x1/4	9.80	9.57	233.8 K=1.00	2.732	1.1900	-3073.62	3250.65	0.946 ✔

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	254.5 - 244.5	1/2	1.00	0.90	86.0 K=1.00	14.674	0.1963	-25.52	2881.23	0.009 ✔
T2	244.5 - 224.5	1/2	1.01	0.90	86.8 K=1.00	14.581	0.1963	-63.77	2863.00	0.022 ✔
T3	224.5 - 204.5	1/2	1.51	1.38	132.8 K=1.00	8.467	0.1963	-66.57	1662.59	0.040 ✔
T4	204.5 - 184.5	5/8	2.01	1.86	143.0 K=1.00	7.299	0.3068	-35.38	2239.16	0.016 ✔
T5	184.5 - 164.5	5/8	2.51	2.34	179.8 K=1.00	4.617	0.3068	-36.15	1416.54	0.026 ✔
T6	164.5 - 144.5	3/4	3.01	2.84	181.9 K=1.00	4.515	0.4418	-30.76	1994.61	0.015 ✔
T7	144.5 - 124.5	3/4	3.51	3.32	212.5 K=1.00	3.306	0.4418	-243.40	1460.53	0.167 ✔
T8	124.5 - 104.5	KL/R > 200 (C) - 286 3/4	4.01	3.80	243.2 K=1.00	2.525	0.4418	-145.23	1115.41	0.130 ✔
T9	104.5 - 84.5	KL/R > 200 (C) - 337 1	4.51	4.30	206.4 K=1.00	3.505	0.7854	-66.20	2753.10	0.024 ✔
T10	84.5 - 64.5	KL/R > 200 (C) - 389 7/8	5.01	4.78	262.2 K=1.00	2.173	0.6013	-57.24	1306.43	0.044 ✔
T11	64.5 - 44.5	KL/R > 200 (C) - 440 1	5.51	5.28	253.4 K=1.00	2.326	0.7854	-83.38	1826.53	0.046 ✔
		KL/R > 200 (C) - 490								

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	254.5 - 244.5	1/2	1.00	0.90	86.0 K=1.00	14.674	0.1963	-81.91	2881.23	0.028 ✔
T2	244.5 - 224.5	1/2	1.49	1.39	133.2 K=1.00	8.417	0.1963	-196.36	1652.62	0.119 ✔
T3	224.5 - 204.5	1/2	1.99	1.87	179.2	4.650	0.1963	-281.24	913.07	0.308

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
					K=1.00					✔
T4	204.5 - 184.5	5/8	2.49	2.35	180.2	4.601	0.3068	-394.77	1411.51	0.280
					K=1.00					✔
T5	184.5 - 164.5	5/8	2.99	2.83	217.0	3.172	0.3068	-459.94	973.29	0.473
					K=1.00					✔
		KL/R > 200 (C) - 188								
T6	164.5 - 144.5	3/4	3.49	3.33	212.8	3.298	0.4418	-859.25	1456.87	0.590
					K=1.00					✔
		KL/R > 200 (C) - 239								
T7	144.5 - 124.5	3/4	3.99	3.80	243.5	2.519	0.4418	-780.21	1112.97	0.701
					K=1.00					✔
		KL/R > 200 (C) - 290								
T8	124.5 - 104.5	3/4	4.49	4.28	274.1	1.987	0.4418	-784.99	877.89	0.894
					K=1.00					✔
		KL/R > 200 (C) - 341								
T9	104.5 - 84.5	7/8	4.99	4.78	262.4	2.169	0.6013	-901.77	1304.16	0.691
					K=1.00					✔
		KL/R > 200 (C) - 392								
T10	84.5 - 64.5	7/8	5.49	5.26	288.7	1.792	0.6013	-860.89	1077.47	0.799
					K=1.00					✔
		KL/R > 200 (C) - 443								
T11	64.5 - 44.5	1	5.99	5.76	276.6	1.952	0.7854	-535.36	1532.98	0.349
					K=1.00					✔
		KL/R > 200 (C) - 493								

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	254.5 - 244.5	1 1/4	10.00	3.11	119.5	30.000	1.2272	2706.98	36815.50	0.074
										✔
T2	244.5 - 224.5	1 1/4	20.00	2.76	106.1	30.000	1.2272	11672.80	36815.50	0.317
										✔
T3	224.5 - 204.5	1 1/2	20.00	2.76	88.4	30.000	1.7672	22405.20	53014.40	0.423
										✔
T4	204.5 - 184.5	1 3/4	20.00	2.76	75.8	30.000	2.4053	34177.90	72158.50	0.474
										✔
T5	184.5 - 164.5	2	20.00	2.76	66.3	30.000	3.1416	46851.00	94247.80	0.497
										✔
T6	164.5 - 144.5	2	20.00	2.76	66.3	30.000	3.1416	62871.20	94247.80	0.667
										✔
T7	144.5 - 124.5	2 1/4	20.00	2.76	58.9	30.000	3.9761	87108.80	119282.00	0.730
										✔
T8	124.5 - 104.5	2 1/2	20.00	2.76	53.0	30.000	4.9087	110872.00	147262.00	0.753
										✔
T9	104.5 - 84.5	2 1/2	20.00	2.76	53.0	30.000	4.9087	134037.00	147262.00	0.910

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T10	84.5 - 64.5	2 3/4	20.00	2.76	48.2	30.000	5.9396	156761.00	178187.00	0.880 ✔
T11	64.5 - 44.5	2 3/4	20.00	2.76	48.2	30.000	5.9396	178619.00	178187.00	1.002 ✔
T12	44.5 - 24.5	2 3/4	20.03	2.07	36.1	30.000	5.9396	176106.00	178187.00	0.988 ✔
T13	24.5 - 4.5	2 3/4	20.03	2.05	35.8	30.000	5.9396	160127.00	178187.00	0.899 ✔

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	254.5 - 244.5	1/2	3.27	1.46	140.5	21.600	0.1963	418.20	4241.15	0.099 ✔
T2	244.5 - 224.5	1/2	3.12	1.49	142.7	21.600	0.1963	512.22	4241.15	0.121 ✔
T3	224.5 - 204.5	1/2	3.39	1.61	155.0	21.600	0.1963	624.68	4241.15	0.147 ✔
T4	204.5 - 184.5	5/8	3.70	1.76	135.5	21.600	0.3068	767.82	6626.80	0.116 ✔
T5	184.5 - 164.5	5/8	4.05	1.93	148.4	21.600	0.3068	897.46	6626.80	0.135 ✔
T6	164.5 - 144.5	3/4	4.42	2.13	136.2	21.600	0.4418	1748.96	9542.59	0.183 ✔
T7	144.5 - 124.5	3/4	4.83	2.32	148.5	21.600	0.4418	1931.81	9542.59	0.202 ✔
T8	124.5 - 104.5	3/4	5.24	2.52	161.3	21.600	0.4418	2116.90	9542.59	0.222 ✔
T9	104.5 - 84.5	7/8	5.67	2.74	150.2	21.600	0.6013	2198.61	12988.50	0.169 ✔
T10	84.5 - 64.5	7/8	6.12	2.95	161.8	21.600	0.6013	2377.95	12988.50	0.183 ✔
T11	64.5 - 44.5	1	6.57	3.18	152.4	21.600	0.7854	2300.21	16964.60	0.136 ✔
T12	44.5 - 24.5	L2x2x3/16	7.38	3.68	71.6	29.000	0.4308	2452.64	12492.70	0.196 ✔
T13	24.5 - 4.5	L2 1/2x2 1/2x3/16	10.59	5.28	81.4	29.000	0.5359	2004.68	15540.40	0.129 ✔

Secondary Horizontal Design Data (Tension)

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

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T12	44.5 - 24.5	L2x2x1/4	7.79	7.57	149.1	29.000	0.5629	3290.26	16323.40	0.202 ✔
T13	24.5 - 4.5	L2 1/2x2 1/2x1/4	9.80	9.57	149.3	29.000	0.7519	3073.62	21804.40	0.141 ✔

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	254.5 - 244.5	1/2	1.00	0.90	86.0	21.600	0.1963	26.40	4241.15	0.006 ✔
T2	244.5 - 224.5	1/2	1.01	0.90	86.8	21.600	0.1963	65.68	4241.15	0.015 ✔
T3	224.5 - 204.5	1/2	1.51	1.38	132.8	21.600	0.1963	74.26	4241.15	0.018 ✔
T4	204.5 - 184.5	5/8	2.01	1.86	143.0	21.600	0.3068	42.58	6626.80	0.006 ✔
T5	184.5 - 164.5	5/8	2.51	2.34	179.8	21.600	0.3068	42.31	6626.80	0.006 ✔
T6	164.5 - 144.5	3/4	3.01	2.84	181.9	21.600	0.4418	26.28	9542.59	0.003 ✔
T7	144.5 - 124.5	3/4	3.51	3.32	212.5	21.600	0.4418	267.48	9542.59	0.028 ✔
T8	124.5 - 104.5	3/4	4.01	3.80	243.2	21.600	0.4418	160.02	9542.59	0.017 ✔
T9	104.5 - 84.5	1	4.51	4.30	206.4	21.600	0.7854	68.49	16964.60	0.004 ✔
T10	84.5 - 64.5	7/8	5.01	4.78	262.2	21.600	0.6013	56.04	12988.50	0.004 ✔
T11	64.5 - 44.5	1	5.51	5.28	253.4	21.600	0.7854	90.38	16964.60	0.005 ✔

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	254.5 - 244.5	1/2	1.00	0.90	86.0	21.600	0.1963	81.44	4241.15	0.019 ✔
T2	244.5 - 224.5	1/2	1.49	1.39	133.2	21.600	0.1963	183.96	4241.15	0.043 ✔
T3	224.5 - 204.5	1/2	1.99	1.87	179.2	21.600	0.1963	266.90	4241.15	0.063 ✔
T4	204.5 - 184.5	5/8	2.49	2.35	180.2	21.600	0.3068	382.52	6626.80	0.058 ✔
T5	184.5 - 164.5	5/8	2.99	2.83	217.0	21.600	0.3068	452.53	6626.80	0.068

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T6	164.5 - 144.5	3/4	3.49	3.33	212.8	21.600	0.4418	851.10	9542.59	0.089
T7	144.5 - 124.5	3/4	3.99	3.80	243.5	21.600	0.4418	781.25	9542.59	0.082
T8	124.5 - 104.5	3/4	4.49	4.28	274.1	21.600	0.4418	793.97	9542.59	0.083
T9	104.5 - 84.5	7/8	4.99	4.78	262.4	21.600	0.6013	916.30	12988.50	0.071
T10	84.5 - 64.5	7/8	5.49	5.26	288.7	21.600	0.6013	889.13	12988.50	0.068
T11	64.5 - 44.5	1	5.99	5.76	276.6	21.600	0.7854	310.41	16964.60	0.018

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
T1	254.5 - 244.5	Leg	1 1/4	3	-2906.62	17115.85	17.0	Pass
		Diagonal	1/2	10	-425.44	1979.44	21.5	Pass
		Top Girt	1/2	4	-25.52	3840.68	0.7	Pass
		Bottom Girt	1/2	7	-81.91	3840.68	2.1	Pass
T2	244.5 - 224.5	Leg	1 1/4	29	-12190.80	21706.84	56.2	Pass
		Diagonal	1/2	37	-535.70	1918.57	27.9	Pass
		Top Girt	1/2	32	-63.77	3816.38	1.7	Pass
		Bottom Girt	1/2	35	-196.36	2202.94	8.9	Pass
T3	224.5 - 204.5	Leg	1 1/2	79	-23334.60	40710.08	57.3	Pass
		Diagonal	1/2	90	-658.16	1627.39	40.4	Pass
		Top Girt	1/2	82	-66.57	2216.23	3.0	Pass
		Bottom Girt	1/2	87	-281.24	1217.12	23.1	Pass
T4	204.5 - 184.5	Leg	1 3/4	130	-35679.20	63631.28	56.1	Pass
		Diagonal	5/8	142	-811.96	3324.98	24.4	Pass
		Top Girt	5/8	134	-35.38	2984.80	1.2	Pass
		Bottom Girt	5/8	137	-394.77	1881.54	21.0	Pass
T5	184.5 - 164.5	Leg	2	182	-49054.30	90516.16	54.2	Pass
		Diagonal	5/8	195	-940.11	2771.67	33.9	Pass
		Top Girt	5/8	186	-36.15	1888.25	1.9	Pass
		Bottom Girt	5/8	189	-459.94	1297.39	35.5	Pass
T6	164.5 - 144.5	Leg	2	232	-67246.00	90516.16	74.3	Pass
		Diagonal	3/4	241	-1814.42	4741.59	38.3	Pass
		Top Girt	3/4	235	-30.76	2658.82	1.2	Pass
		Bottom Girt	3/4	240	-859.25	1942.01	44.2	Pass
T7	144.5 - 124.5	Leg	2 1/4	284	-93002.90	121371.78	76.6	Pass
		Diagonal	3/4	292	-2012.81	3990.39	50.4	Pass
		Top Girt	3/4	286	-243.40	1946.89	12.5	Pass
		Bottom Girt	3/4	291	-780.21	1483.59	52.6	Pass
T8	124.5 - 104.5	Leg	2 1/2	335	-118470.00	156195.60	75.8	Pass
		Diagonal	3/4	343	-2191.75	3382.17	64.8	Pass
		Top Girt	3/4	337	-145.23	1486.84	9.8	Pass
		Bottom Girt	3/4	342	-784.99	1170.23	67.1	Pass
T9	104.5 - 84.5	Leg	2 1/2	385	-143484.00	156195.60	91.9	Pass
		Diagonal	7/8	395	-2314.39	5306.43	43.6	Pass
		Top Girt	1	389	-66.20	3669.88	1.8	Pass
		Bottom Girt	7/8	392	-901.77	1738.45	51.9	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
T10	84.5 - 64.5	Leg	2 3/4	438	-168243.00	194980.57	86.3	Pass
		Diagonal	7/8	446	-2478.84	4573.54	54.2	Pass
		Top Girt	7/8	441	-57.24	1741.47	3.3	Pass
		Bottom Girt	7/8	444	-860.89	1436.27	59.9	Pass
T11	64.5 - 44.5	Leg	2 3/4	487	-192371.00	194980.57	98.7	Pass
		Diagonal	1	498	-2494.37	6727.65	37.1	Pass
		Top Girt	1	490	-83.38	2434.76	3.4	Pass
		Bottom Girt	1	493	-535.36	2043.46	26.2	Pass
T12	44.5 - 24.5	Leg	2 3/4	538	-189726.00	208763.79	90.9	Pass
		Diagonal	L2x2x3/16	581	-2815.91	10856.02	25.9	Pass
							36.1 (b)	
		Secondary Horizontal	L2x2x1/4	547	-3290.26	3463.19	95.0	Pass
T13	24.5 - 4.5	Leg	2 3/4	588	-177235.00	209055.71	84.8	Pass
		Diagonal	L2 1/2x2 1/2x3/16	601	-1577.79	11758.97	13.4	Pass
							21.1 (b)	
		Secondary Horizontal	L2 1/2x2 1/2x1/4	595	-3073.62	4333.12	70.9	Pass
							Summary	
						Leg (T11)	98.7	Pass
						Diagonal (T8)	64.8	Pass
						Secondary Horizontal (T12)	95.0	Pass
						Top Girt (T7)	12.5	Pass
						Bottom Girt (T8)	67.1	Pass
						Bolt Checks	78.6	Pass
						RATING =	**98.7**	**Pass**

EXHIBIT C

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

T-Mobile Existing Facility

Site ID: CTHA220A

WNTY Tower
440 Old Turnpike Road
Southington, CT 06489

September 11, 2014

EBI Project Number: 62144623

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	6.05 %

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

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September 11, 2014

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

Emissions Analysis for Site: **CTHA220A – WNTY Tower**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **440 Old Turnpike Road, Southington, 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 $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the 700 MHz Band is 467 $\mu W/cm^2$, and the general population exposure limit for the PCS and AWS bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **440 Old Turnpike Road, Southington, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel

2) **2** UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

4) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

5) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

6) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

7) The antennas used in this modeling are the **RFS APX16DWV-16DWVS-E-A20** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **RFS APX16DWV-16DWVS-E-A20** has a maximum gain of **16.3 dBd** at its main lobe. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

8) The antenna mounting height centerlines of the proposed antennas are **155 and 147 feet** above ground level (AGL).

9) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

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T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APX16DWV-16DWVS-E-A20	Make / Model:	RFS APX16DWV-16DWVS-E-A20	Make / Model:	RFS APX16DWV-16DWVS-E-A20
Gain:	16.3 dBd	Gain:	16.3 dBd	Gain:	16.3 dBd
Height (AGL):	155	Height (AGL):	155	Height (AGL):	155
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	6	Channel Count	6	# PCS Channels:	6
Total TX Power:	240	Total TX Power:	240	# AWS Channels:	240
ERP (W):	3,833.82	ERP (W):	3,833.82	ERP (W):	3,833.82
Antenna A1 MPE%	1.66	Antenna B1 MPE%	1.66	Antenna C1 MPE%	1.66
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	147	Height (AGL):	147	Height (AGL):	147
Frequency Bands	700 Mhz	Frequency Bands	700 Mhz	Frequency Bands	700 Mhz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power:	30	Total TX Power:	30	Total TX Power:	30
ERP (W):	445.37	ERP (W):	445.37	ERP (W):	445.37
Antenna A2 MPE%	0.34	Antenna B2 MPE%	0.34	Antenna C2 MPE%	0.34

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile	**5.98**
WXCT	0.07 %
Site Total MPE %:	**6.05 %**

T-Mobile Sector 1 Total:	1.99 %
T-Mobile Sector 2 Total:	1.99 %
T-Mobile Sector 3 Total:	1.99 %
Site Total:	6.05 %

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

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Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector 1:	1.99 %
Sector 2:	1.99 %
Sector 3 :	1.99 %
T-Mobile Total:	5.98 %
Site Total:	6.05 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **6.05%** 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