COHEN and WOLF P.C. ATTORNEYS AT LAW

RACHEL A. SCHWARTZMAN

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

August 29, 2014

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

Re: Notice of Exempt Modification
Town of Hartland/T-Mobile co-location
T-Mobile Site ID CTHA164A
22 Welsh Road, Hartland, CT (aka 22 Welsh Road, East Hartland, CT)

Dear Attorney Bachman:

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

In this case, the Town of Hartland owns the existing lattice telecommunications tower and related facility at 22 Welsh Road, Hartland, CT (aka 22 Welsh Road, East Hartland, CT) (41.99747222/-72.8876417). T-Mobile intends to install 3 new antennas and related equipment at this existing telecommunications facility in Hartland, CT ("Hartland Facility"). Please accept this letter as notification, pursuant to R.C.S.A. §16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R. C.S.A. § 16-50j-73, a copy of this letter is being sent to the First Selectman, Wade E. Cole, and the property owner, the Town of Hartland.

The existing Hartland Facility consists of a 180-foot self-supporting lattice tower.[1] T-Mobile plans to install 3 new antennas on O.D. pipe masts, mounted on existing sector frames, with bias tees mounted behind the antennas at a centerline of 150 feet. (See the plans revised to August 4, 2014 attached hereto as **Exhibit A**[2]). T-Mobile will also replace an existing UMTS equipment cabinet with a 6102 cabinet, install 3 remote radio units at the ground level, and install coax cables from the equipment cabinets which follow the route of the existing coaxial cable installations. The existing Hartland Facility is structurally capable of supporting

[1] While the online docket for the Connecticut Siting Council does not provide a docket or petition number for approval of this structure, it does reference this structure in connection with a notices of intent captioned TS-VER-065-080201, EM-T-MOBILE-065-081113, EM-VER-065-120319A, and EM-CING-065-121108.

[2] The plans contain a few typographical errors, improperly referring to the above-referenced site as "Hartford." The correct site reference is "Hartland" or "East Hartland," as indicated above.

1115 Broad Street
P.O. Box 1821
Bridgeport, CT 06601-1821
Tel: (203) 368-0211
Fax: (203) 394-9901

158 Deer Hill Avenue
Danbury, CT 06810
Tel: (203) 792-2771
Fax: (203) 791-8149

320 Post Road West
Westport, CT 06880
Tel: (203) 222-1034
Fax: (203) 227-1373

657 Orange Center Road
Orange, CT 06477
Tel: (203) 298-4066
Fax: (203) 298-4068

T-Mobile's proposed modifications, as indicated in the structural analysis dated August 19, 2014, and attached hereto as **Exhibit B**.[3]

The planned modifications to the Hartland 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 existing antennas are at a centerline of 150 feet; the replacement antennas will be installed at the same 150-foot level. The enclosed tower drawing confirms that the proposed modification will not increase the height of the tower.

2. The proposed modifications will not require an extension on the site boundaries or lease area, as depicted on Sheet 2 of Exhibit A. T-Mobile's equipment will be located entirely within the existing compound area.

3. The proposed modification to the Facility will not increase the noise levels at the existing facility by six decibels or more.

4. The operation of the replacement antennas will not increase the total radio frequency (RF) power density, measured at the base of the tower, to a level at or above the applicable standard. According to a Radio Frequency Emissions Analysis Report prepared by EBI dated August 22, 2014. T-Mobile's operations would add 5.72% 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 34.80% of the FCC Standard as calculated for a mixed frequency site as evidenced by the engineering exhibit attached hereto as **Exhibit C.**

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

Sincerely,

Rachel Schwartzman

Rachel A. Schwartzman, Esq.

cc: First Selectman Wade E. Cole, Town of Hartland
Town of Hartland
Jamie Ford, EBI Consulting

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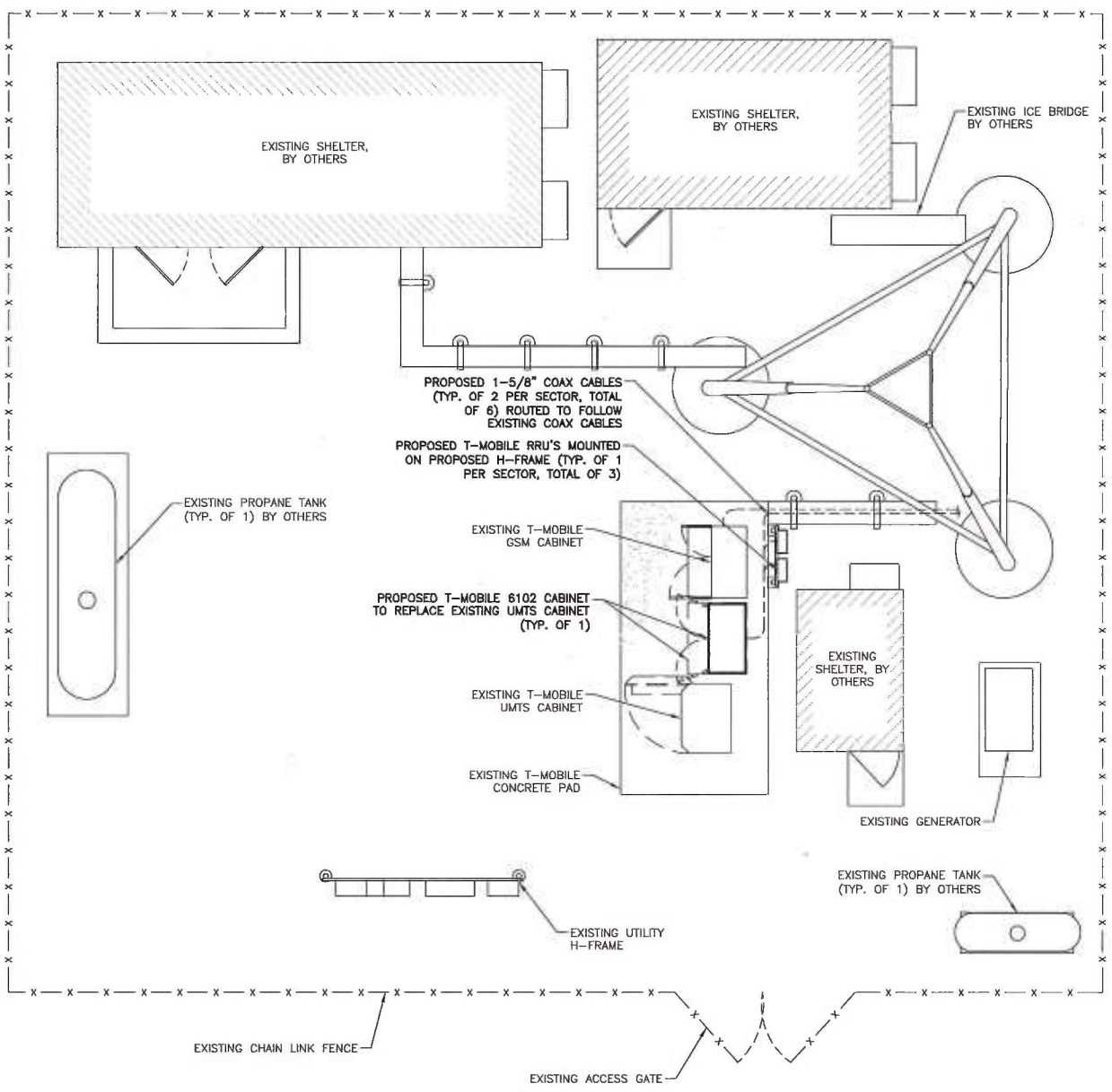
[3] The structural analysis contains a few typographical errors, improperly referring to the above-referenced site as "Hartford." The correct site reference is "Hartland" or "East Hartland," as indicated above.

EXHIBIT A



CONFIGURATION

704G

APPROX. NORTH

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

SITE PLAN

SCALE: 1:10

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.: 81140832

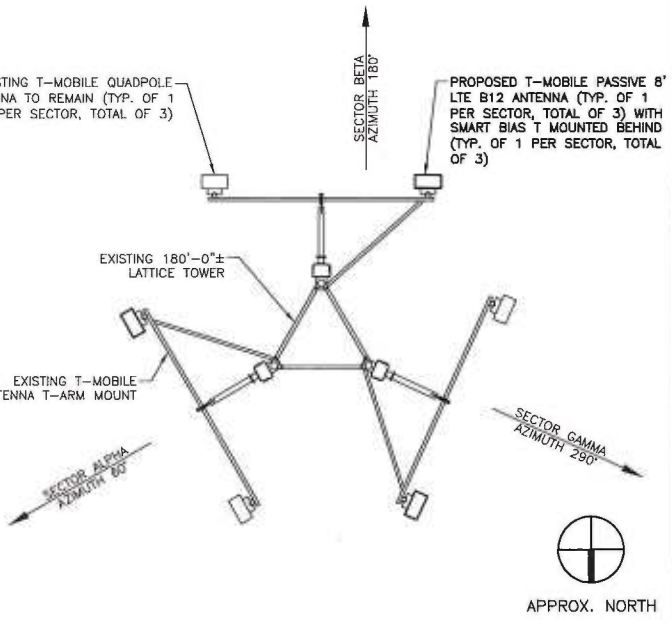
CLIENT:
T-Mobile Northeast, LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860.692.7100

SITE INFO:
CTHA164A
EASTHARTLAND_RT20
22 WELSH ROAD
HARTFORD, CT 06027

SUBMITTALS			
NO.	DATE	DESCRIPTION	BY
A	08/04/14	FOR REVIEW	MK
0	08/04/14	PER CLIENT'S REDLINES	MK

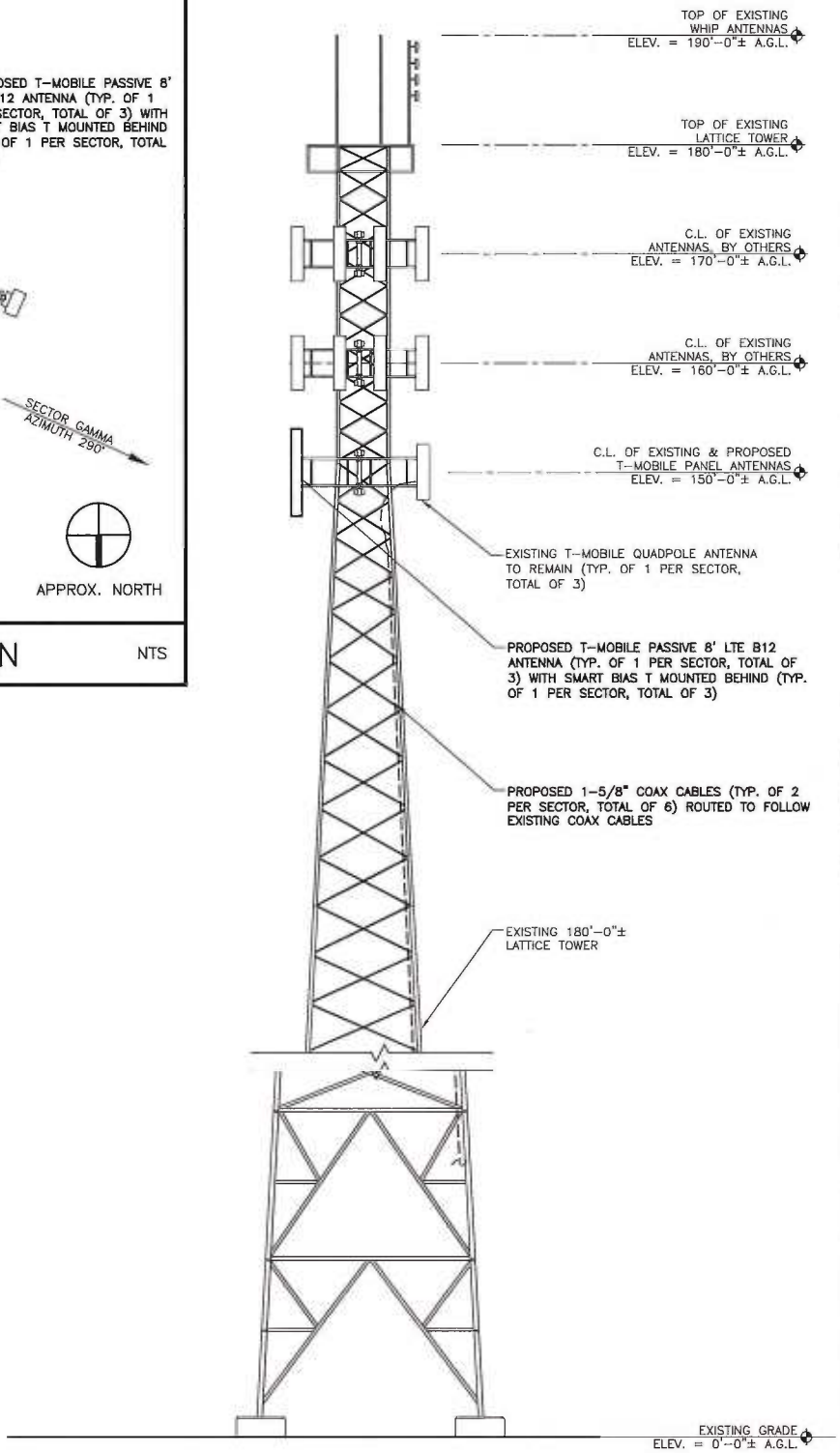
DRAWN BY: MK
CHECKED BY: PM
DATE: 08/04/14

SHEET NO: LE-1



ANTENNA CONFIGURATION

NTS



CONFIGURATION

704G

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

TOWER ELEVATION

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

PREPARED BY:
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www.ebiconsulting.com
EBI JOB NO.: B1140B32

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

SITE INFO:
CTHA164A
EASTHARTLAND_RT20
22 WELSH ROAD
HARTFORD, CT 06027

SUBMITTALS				DRAWN BY:	SHEET NO:
NO.	DATE	DESCRIPTION	BY	MK	LE-2
A	08/04/14	FOR REVIEW	MK	CHECKED BY: PM	
0	08/04/14	PER CLIENT'S REDLINES	MK		
				DATE: 08/04/14	

EXHIBIT B

EBI Consulting
environmental | engineering | due diligence

21 B Street
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STRUCTURAL ANALYSIS REPORT

August 19, 2014

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

Subject:700 MHz Upgrade Project
Site #: CTHA164A
EBI Reference #: 81140832
Site Name: East Hartland_Rt. 20
Address: 22 Welsh Road, Hartford, CT 06027

Dear Mr. Richard:

EBI Consulting's structural engineers have prepared this structural report for the self-supporting lattice tower at the above address, in accordance with the CT State Building Code (with amendments) and ANSI/TIA/EIA-222 Revision F. Information from the following sources was utilized in our analysis:

1. Tower analysis by Hudson Design Group LLC dated 10-23-12
2. Tower analysis by URS Corporation dated 6-10-08
3. Photographs from site visit by EBI on 7-24-14

The tower was analyzed for a wind speed of 80 mph without ice and with 1/2" radial ice at a reduced wind speed of 69 mph.

The proposed (3) Commscope LNX-6515DS-VTM panel antennas shall be installed on proposed 2-7/8" O.D. pipe masts, mounted to existing sector frames. Additionally, (6) 1-5/8" coax cables will be installed from the equipment cabinets to the proposed T-Mobile equipment, following the route of the existing coaxial cable installations. The three proposed RRUS11 B12 remote radio units are to be located at the ground level. The coax shall be located in a 3rd row as shown on the attached feedline sketch.

Local Equipment Support:

Our inspection of the tower mounting frame shows that the structural elements HAVE ADEQUATE CAPACITY for the proposed loading. The sector frame is estimated to consist of:

- T-shaped in plan with a nominal face width between 10'-0" and 12'-0".
- Horizontal face members are made from Sch. 40 pipe with a minimum outer diameter of 2-3/8".
- Main supporting standoff members are hollow structural steel sections, HSS3x3x3/16" or larger.
- Stiff arm sway braces are present to provide additional stability and to reduce local torsion on the tower leg.

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Global Tower Analysis 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	180.5 - 160.5	Leg	1 1/2	3	-18751.90	45254.82	41.4	Pass
		Diagonal	3/4	22	-2349.34	5113.24	45.9	Pass
		Horizontal	3/4	16	-346.44	2918.06	11.9	Pass
		Top Girt	3/4	4	-117.69	2918.06	4.0	Pass
		Bottom Girt	3/4	7	-322.27	2918.06	11.0	Pass
T2	160.5 - 140.5	Leg	Pirod 105216	67	-45571.70	122940.05	37.1	Pass
		Diagonal	L2 1/2x2 1/2x3/16	73	-7061.79	12052.33	58.6	Pass
T3	140.5 - 120.5	Leg	Pirod 105216	82	-86045.30	122940.05	70.0	Pass
		Diagonal	L2 1/2x2 1/2x3/16	88	-7051.42	10228.20	68.9	Pass
T4	120.5 - 100.5	Leg	Pirod 105217	97	-123384.00	184672.48	66.8	Pass
		Diagonal	L2 1/2x2 1/2x3/16	103	-6914.37	7532.46	91.8	Pass
T5	100.5 - 80.5	Leg	Pirod 105218	112	-157989.00	258238.08	61.2	Pass
		Diagonal	L3x3x3/16	118	-6965.71	10547.75	66.0	Pass
T6	80.5 - 60.5	Leg	Pirod 105218	127	-189661.00	258238.08	73.4	Pass
		Diagonal	L3x3x3/16	133	-6997.73	8612.18	81.3	Pass
T7	60.5 - 40.5	Leg	Pirod 105219	142	-220381.00	343622.06	64.1	Pass
		Diagonal	L3x3x3/8	148	-7189.29	13191.02	54.5	Pass
T8	40.5 - 20.5	Leg	Pirod 105219	157	-249944.00	343622.06	72.7	Pass
		Diagonal	L3x3x3/8	169	-7847.15	12011.04	65.3	Pass
T9	20.5 - 0.5	Leg	Pirod 105220	172	-279559.00	440811.08	63.4	Pass
		Diagonal	L3 1/2x3 1/2x3/8	184	-10031.00	16050.65	62.5	Pass
							Summary	
						Leg (T6)	73.4	Pass
						Diagonal (T4)	91.8	Pass
						Horizontal (T1)	11.9	Pass
						Top Girt (T1)	4.0	Pass
						Bottom Girt (T1)	11.0	Pass
						Bolt Checks	63.5	Pass
						RATING =	**91.8**	**Pass**

The maximum stress under the proposed conditions and configurations is **91.8%** of the tower capacity, governed by the tower diagonal in section T-4, and is considered adequate.

Global Tower Analysis Foundation:

Max. corner reaction at base:	Previous Report Reactions (kips)	Proposed Loading Reactions (kips)
Axial (kips)	67	72
Moment (foot-kips)	4979	4493
Shear (kips)	46	43

The previous structural analysis was made available to EBI Consulting for comparing current reactions with previous reactions. It can be seen that the current shear and moment reactions are less than the

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previous analysis and that the foundation will have adequate capacity for the proposed loading, because the small increase in axial load will increase the safety factor against overturning which controls the foundation design. The previous foundation design remains valid for the proposed loading.

Limitations and Assumptions:

This report is based on the following:

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. Modifications listed in the previous report have been installed.

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

A. Adding antennas
B. Removing/replacing antennas
C. Adding coaxial cables

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, or you are aware of any defects arising from the original design, material, fabrication, or erection deficiencies, you should disregard this report and immediately contact EBI. EBI disclaims all liability for any representation, recommendation, or conclusion not expressly stated herein.

THE CONCLUSION OF THE TOWER STRUCTURAL ANALYSIS IS THAT THE TOWER HAS ADEQUATE CAPACITY FOR THE PROPOSED LOADING. Please contact this office should you have any questions regarding this matter.

Sincerely,
EBI Consulting
August 19, 2014

Matthew Hykes, P.E.
Professional Engineer

Maribel Dentinger, P.E.
Professional Engineer

EBI Consulting
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STRUCTURAL PHOTO LOG

Photo 1: General view of an existing T-Mobile sector.	
Photo 2: General view of the existing feedlines.	
Photo 3: Existing tower base.	

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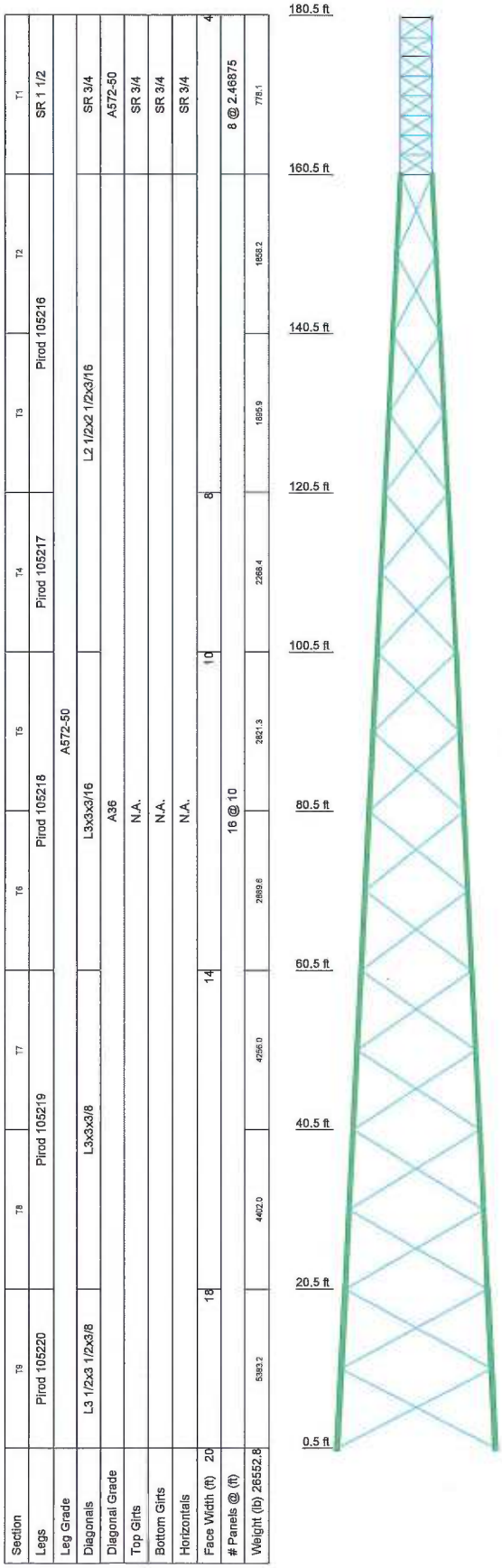
Photo 4: Overall view of upper portion of tower.	

APPENDIX A

TNX Tower Results



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
20' dipole	180.5	(2) Powerwave LGP21900	155.5
Omni 3"x20'	180.5	(2) Powerwave LGP21900	155.5
Omni 3"x20'	180.5	(2) Powerwave 7750 w pipe	155.5
Omni 3"x20'	180.5	(2) Powerwave 7750 w pipe	155.5
6 Arm Halo Mount	178	T-Frame (3)	155
T-Frame (3)	167.5	(2) Powerwave 7020.00 Dual Band RET	154.8
(2) LPA-80080-6CF	167.5	(2) Powerwave 7020.00 Dual Band RET	154.8
(2) LPA-185080/12CF	167.5	DAS-HY-DFDM	154.8
(2) LPA-80080-6CF	167.5	(2) Powerwave 7020.00 Dual Band RET	154.8
(2) LPA-185080/12CF	167.5	DAS-HY-DFDM	154.8
(2) LPA-80080-6CF	167.5	DAS-HY-DFDM	154.8
(2) LPA-185080/12CF	167.5	APX16DWV-16DWVS	150
(2) Powerwave TMA LGP21400	157.5	APX16DWV-16DWVS	150
(2) Powerwave TMA LGP21400	157.5	APX16DWV-16DWVS	150
(2) Powerwave TMA LGP21400	157.5	Gen. Diplexer	150
KMW AM-X-CD-16-65-00T-RET	155.7	Gen. Diplexer	150
KMW AM-X-CD-16-65-00T-RET	155.7	Gen. Diplexer	150
KMW AM-X-CD-16-65-00T-RET	155.7	LNX-6515DS-VTM w pipe	150
(2) Ericsson RRU	155.7	LNX-6515DS-VTM w pipe	150
(2) Ericsson RRU	155.7	LNX-6515DS-VTM w pipe	150
(2) Ericsson RRU	155.7	T-Frame (3)	148
DC6-48-60-18-8F	155.7		
(2) Powerwave 7750 w pipe	155.5		
(2) Powerwave LGP21900	155.5		

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. TOWER RATING: 91.8%

MAX. CORNER REACTIONS AT BASE:
DOWN: 283537 lb
SHEAR: 22059 lb

UPLIFT: -229111 lb
SHEAR: 31027 lb

AXIAL
72466 lb

SHEAR
42709 lb

MOMENT
4492625 lb-ft

TORQUE 7224 lb-ft
69 mph WIND - 0.5000 in ICE

AXIAL
40924 lb

SHEAR
36034 lb

MOMENT
3731088 lb-ft

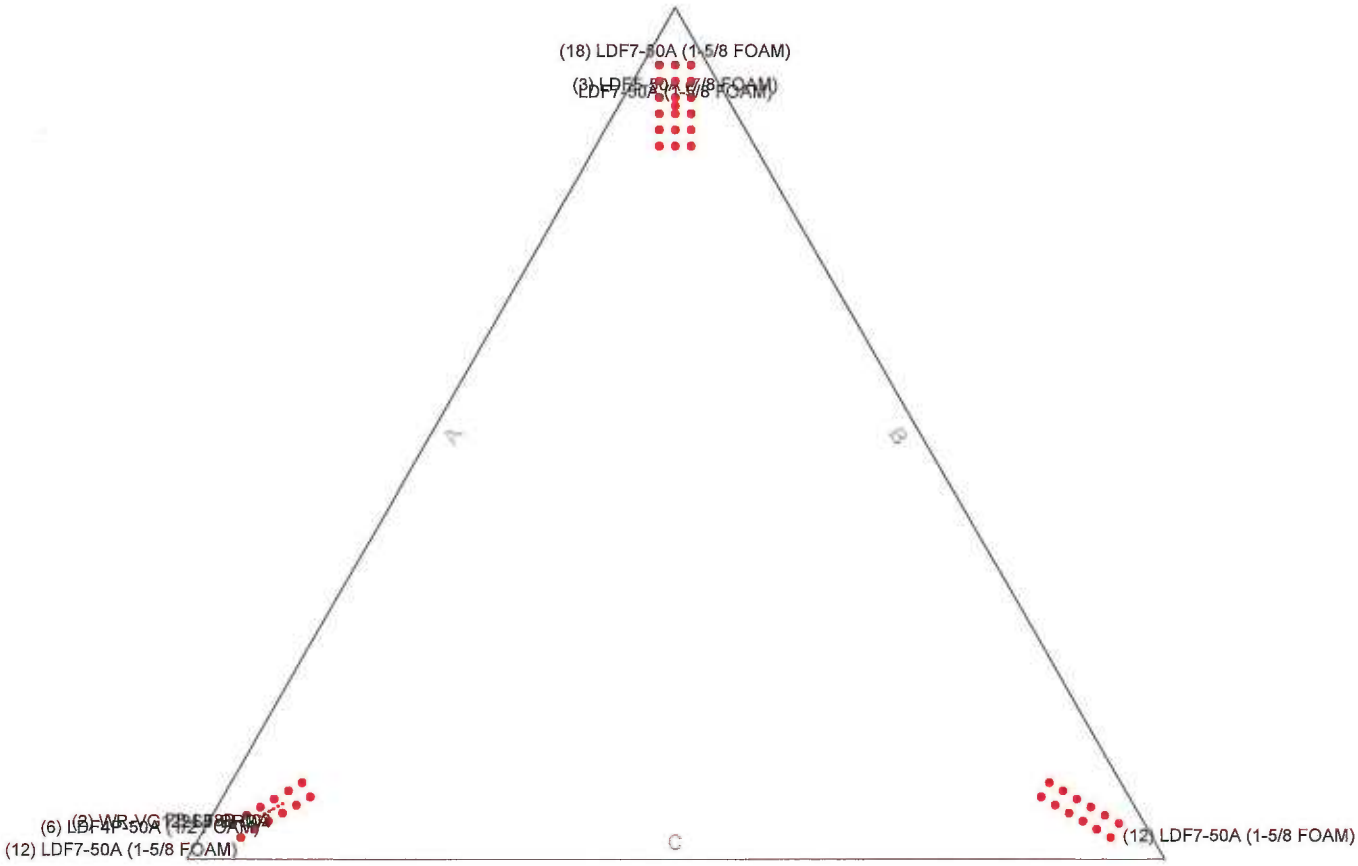
TORQUE 5986 lb-ft
REACTIONS - 80 mph WIND

EBI
21 B Street
Burlington, MA 01803
Phone: (781) 425-5100
FAX: (781) 425-5141

Job: *CTHA164A*			
Project: *81140832*			
Client: T-Mobile	Drawn by: MHykes	App'd:	
Code: TIA/EIA-222-F	Date: 08/20/14	Scale: NTS	
Path: C:\Misc Jobs_Turnkey TMO CT\CTHA164A\Structural\Calculations\tower\CTHA164A.er		Dwg No. E-1	

Feed Line Plan

Round Flat App In Face App Out Face Truss-Leg



EBI 21 B Street Burlington, MA 01803 Phone: (781) 425-5100 FAX: (781) 425-5141	Job: ***CTHA164A***		
	Project: ***81140832***		
	Client: T-Mobile	Drawn by: MHykes	App'd:
	Code: TIA/EIA-222-F	Date: 08/19/14	Scale: NTS
	Path: C:\Misc Jobs_Turnkey TMO CT\CTHA164A\Structural\Calculations\tower\CTHA164A.er		Dwg No. E-7

tnxTower	Job	Page
	CTHA164A	1 of 16
EBI 21 B Street Burlington, MA 01803 Phone: (781) 425-5100 FAX: (781) 425-5141	Project 81140832	Date 10:40:28 08/20/14
	Client T-Mobile	Designed by MHykes

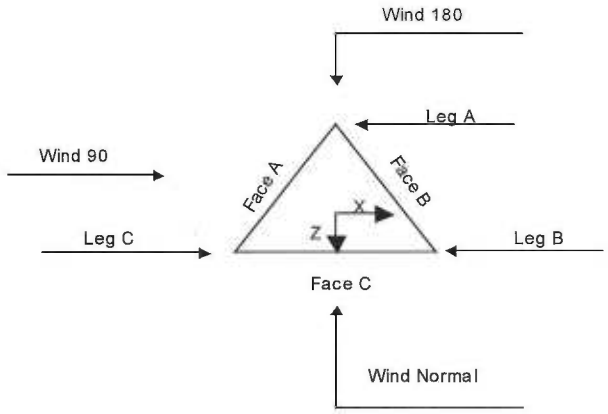
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 180.50 ft above the ground line.
The base of the tower is set at an elevation of 0.50 ft above the ground line.
The face width of the tower is 4.00 ft at the top and 20.00 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.
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.

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	Use TIA-222-G Tension Splice Capacity Exemption	



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	180.50-160.50			4.00	1	20.00
T2-T3	160.50-120.50			4.00	2	20.00
T4	120.50-100.50			8.00	1	20.00
T5-T6	100.50-60.50			10.00	2	20.00
T7-T8	60.50-20.50			14.00	2	20.00
T9	20.50-0.50			18.00	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	180.50-160.50	2.47	X Brace	No	Steps	3.0000	0.0000
T2-T3	160.50-120.50	10.00	X Brace	No	No	0.0000	0.0000
T4	120.50-100.50	10.00	X Brace	No	No	0.0000	0.0000
T5-T6	100.50-60.50	10.00	X Brace	No	No	0.0000	0.0000
T7-T8	60.50-20.50	10.00	X Brace	No	No	0.0000	0.0000
T9	20.50-0.50	10.00	X Brace	No	No	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 180.50-160.50	Solid Round	1 1/2	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T2-T3 160.50-120.50	Truss Leg	Pirod 105216	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T4 120.50-100.50	Truss Leg	Pirod 105217	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T5-T6 100.50-60.50	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T7-T8 60.50-20.50	Truss Leg	Pirod 105219	A572-50 (50 ksi)	Equal Angle	L3x3x3/8	A36 (36 ksi)
T9 20.50-0.50	Truss Leg	Pirod 105220	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x3/8	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 180.50-160.50	Solid Round	3/4	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 180.50-160.50	None	Flat Bar		A36 (36 ksi)	Solid Round	3/4	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
T1 180.50-160.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T2-T3 160.50-120.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T4 120.50-100.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T5-T6	0.00	0.0000	A36	1	1	1	36.0000	36.0000

Tower Elevation ft	Gusset Area (per face) ft²	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
100.50-60.50			(36 ksi)					
T7-T8	0.00	0.0000	A36	1	1	1	36.0000	36.0000
60.50-20.50			(36 ksi)					
T9 20.50-0.50	0.00	0.0000	A36	1	1	1	36.0000	36.0000
			(36 ksi)					

Tower Section Geometry *(cont'd)*

Tower Elevation ft	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
T1	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
180.50-160.50				1	1	1	1	1	1	1	1	1	1	1	1
T2-T3	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
160.50-120.50				1	1	1	1	1	1	1	1	1	1	1	1
T4	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
120.50-100.50				1	1	1	1	1	1	1	1	1	1	1	1
T5-T6	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
100.50-60.50				1	1	1	1	1	1	1	1	1	1	1	1
T7-T8	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
60.50-20.50				1	1	1	1	1	1	1	1	1	1	1	1
T9 20.50-0.50	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	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	Truss-Leg K Factors: Truss-Legs Used As Leg Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals	Truss-Legs Used As Inner Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals
T2-T3	1	0.5	0.85	1	0.5	0.85
160.50-120.50						
T4	1	0.5	0.85	1	0.5	0.85
120.50-100.50						
T5-T6	1	0.5	0.85	1	0.5	0.85
100.50-60.50						
T7-T8	1	0.5	0.85	1	0.5	0.85
60.50-20.50						
T9 20.50-0.50	1	0.5	0.85	1	0.5	0.85

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 180.50-160.50	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
T2-T3 160.50-120.50	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
T4 120.50-100.50	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
T5-T6 100.50-60.50	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
T7-T8 60.50-20.50	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
T9 20.50-0.50	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 180.50-160.50	Flange	0.0000 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2-T3 160.50-120.50	Flange	1.0000 A325N	6	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 120.50-100.50	Flange	1.0000 A325N	6	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5-T6 100.50-60.50	Flange	1.0000 A325N	6	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7-T8 60.50-20.50	Flange	1.2500 A325N	6	1.2500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T9 20.50-0.50	Flange	1.2500 A325N	6	1.2500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF5-50A (7/8 FOAM)	A	No	Ar (Leg)	0.50 - 178.50	0.0000	0.1	3	3	1.0900	1.0900		0.54
LDF7-50A (1-5/8 FOAM)	A	No	Ar (Leg)	0.50 - 178.50	0.0000	0.1	1	1	1.9800	1.9800		1.04
LDF7-50A (1-5/8 FOAM)	A	No	Ar (Leg)	0.50 - 148.50	0.0000	0.1	19	6	1.9800	1.9800		1.04
LDF7-50A (1-5/8 FOAM)	C	No	Ar (Leg)	0.50 - 155.50	0.0000	0.1	12	6	1.9800	1.9800		1.04
LDF4P-50A (1/2 FOAM)	C	No	Ar (Leg)	0.50 - 155.50	0.0000	0.1	6	6	0.6300	0.6300		0.25

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF7-50A (1-5/8 FOAM)	B	No	Ar (Leg)	0.50 - 167.50	0.0000	0.1	12	6	1.9800	1.9800		1.04
FB-L98B-002	C	No	Ar (Leg)	0.50 - 155.50	0.0000	0.1	1	1	0.4000	0.4000		0.25
WR-VG122S T-BRDA	C	No	Ar (Leg)	0.50 - 155.50	0.0000	0.1	2	2	0.4000	0.4000		0.25

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	180.50-160.50	A	7.875	0.000	0.000	0.000	47.88
		B	14.805	0.000	0.000	0.000	87.36
		C	6.930	0.000	0.000	0.000	0.00
T2	160.50-140.50	A	37.745	0.000	0.000	0.000	211.28
		B	36.470	0.000	0.000	0.000	249.60
		C	40.875	0.000	0.000	0.000	220.95
T3	140.50-120.50	A	56.650	0.000	0.000	0.000	448.40
		B	48.350	0.000	0.000	0.000	249.60
		C	47.900	0.000	0.000	0.000	294.60
T4	120.50-100.50	A	56.650	0.000	0.000	0.000	448.40
		B	48.350	0.000	0.000	0.000	249.60
		C	47.900	0.000	0.000	0.000	294.60
T5	100.50-80.50	A	56.650	0.000	0.000	0.000	448.40
		B	48.350	0.000	0.000	0.000	249.60
		C	47.900	0.000	0.000	0.000	294.60
T6	80.50-60.50	A	56.650	0.000	0.000	0.000	448.40
		B	48.350	0.000	0.000	0.000	249.60
		C	47.900	0.000	0.000	0.000	294.60
T7	60.50-40.50	A	56.650	0.000	0.000	0.000	448.40
		B	48.350	0.000	0.000	0.000	249.60
		C	47.900	0.000	0.000	0.000	294.60
T8	40.50-20.50	A	56.650	0.000	0.000	0.000	448.40
		B	48.350	0.000	0.000	0.000	249.60
		C	47.900	0.000	0.000	0.000	294.60
T9	20.50-0.50	A	56.650	0.000	0.000	0.000	448.40
		B	48.350	0.000	0.000	0.000	249.60
		C	47.900	0.000	0.000	0.000	294.60

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	180.50-160.50	A	0.500	13.875	0.000	0.000	0.000	127.60
		B		24.305	0.000	0.000	0.000	214.62
		C		10.430	0.000	0.000	0.000	0.00
T2	160.50-140.50	A	0.500	55.224	8.875	0.000	0.000	530.13
		B		57.137	0.000	0.000	0.000	613.19
		C		57.688	8.875	0.000	0.000	577.10
T3	140.50-120.50	A	0.500	82.400	11.833	0.000	0.000	1112.65
		B		75.017	0.000	0.000	0.000	613.19
		C		66.983	11.833	0.000	0.000	769.46
T4	120.50-100.50	A	0.500	82.400	11.833	0.000	0.000	1112.65

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
		B		75.017	0.000	0.000	0.000	613.19
		C		66.983	11.833	0.000	0.000	769.46
T5	100.50-80.50	A	0.500	82.400	11.833	0.000	0.000	1112.65
		B		75.017	0.000	0.000	0.000	613.19
		C		66.983	11.833	0.000	0.000	769.46
T6	80.50-60.50	A	0.500	82.400	11.833	0.000	0.000	1112.65
		B		75.017	0.000	0.000	0.000	613.19
		C		66.983	11.833	0.000	0.000	769.46
T7	60.50-40.50	A	0.500	82.400	11.833	0.000	0.000	1112.65
		B		75.017	0.000	0.000	0.000	613.19
		C		66.983	11.833	0.000	0.000	769.46
T8	40.50-20.50	A	0.500	82.400	11.833	0.000	0.000	1112.65
		B		75.017	0.000	0.000	0.000	613.19
		C		66.983	11.833	0.000	0.000	769.46
T9	20.50-0.50	A	0.500	82.400	11.833	0.000	0.000	1112.65
		B		75.017	0.000	0.000	0.000	613.19
		C		66.983	11.833	0.000	0.000	769.46

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	180.50-160.50	2.2389	-1.6452	1.8343	-1.7586
T2	160.50-140.50	-0.2773	0.4599	-0.3543	0.2921
T3	140.50-120.50	-1.1596	-0.7421	-1.2253	-0.8323
T4	120.50-100.50	-1.4424	-0.9230	-1.5338	-1.0418
T5	100.50-80.50	-1.6640	-1.0649	-1.7957	-1.2197
T6	80.50-60.50	-1.9320	-1.2364	-2.0906	-1.4200
T7	60.50-40.50	-2.1421	-1.3709	-2.3296	-1.5824
T8	40.50-20.50	-2.3847	-1.5261	-2.6004	-1.7663
T9	20.50-0.50	-2.4931	-1.5955	-2.7626	-1.8764

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
6 Arm Halo Mount	A	None		0.0000	178.00	No Ice	25.40	25.40	1800.00
						1/2" Ice	26.60	26.60	2960.00
20' dipole	A	From Leg	5.50 -3.00 7.00	0.0000	180.50	No Ice 1/2" Ice	8.00 10.00	8.00 10.00	60.00 116.00
Omni 3"x20'	A	From Face	5.50 -3.00 7.00	0.0000	180.50	No Ice 1/2" Ice	6.00 8.00	6.00 8.00	50.00 93.20
Omni 3"x20'	B	From Face	5.50 -3.00	0.0000	180.50	No Ice 1/2" Ice	6.00 8.00	6.00 8.00	50.00 93.20

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
			7.00						
Omni 3"x20'	C	From Face	5.50 -3.00 7.00	0.0000	180.50	No Ice 1/2" Ice	6.00 8.00	6.00 8.00	50.00 93.20
***									
T-Frame (3)	C	None		0.0000	167.50	No Ice 1/2" Ice	18.73 27.19	18.73 27.19	860.80 1262.42
(2) LPA-80080-6CF	A	From Leg	3.00 0.00 0.00	0.0000	167.50	No Ice 1/2" Ice	4.60 5.10	10.80 12.00	47.00 111.00
(2) LPA-185080/12CF	A	From Leg	3.00 0.00 0.00	0.0000	167.50	No Ice 1/2" Ice	3.80 4.33	6.23 7.40	36.00 78.00
(2) LPA-80080-6CF	B	From Leg	3.00 0.00 0.00	0.0000	167.50	No Ice 1/2" Ice	4.60 5.10	10.80 12.00	47.00 111.00
(2) LPA-185080/12CF	B	From Leg	3.00 0.00 0.00	0.0000	167.50	No Ice 1/2" Ice	3.80 4.33	6.23 7.40	36.00 78.00
(2) LPA-80080-6CF	C	From Leg	3.00 0.00 0.00	0.0000	167.50	No Ice 1/2" Ice	4.60 5.10	10.80 12.00	47.00 111.00
(2) LPA-185080/12CF	C	From Leg	3.00 0.00 0.00	0.0000	167.50	No Ice 1/2" Ice	3.80 4.33	6.23 7.40	36.00 78.00
***									
T-Frame (3)	C	None		0.0000	155.00	No Ice 1/2" Ice	18.73 27.19	18.73 27.19	860.80 1262.42
(2) Powerwave 7750 w pipe	A	From Leg	4.00 0.00 0.00	0.0000	155.50	No Ice 1/2" Ice	6.25 6.80	4.33 5.18	61.00 107.00
(2) Powerwave 7750 w pipe	B	From Leg	4.00 0.00 0.00	0.0000	155.50	No Ice 1/2" Ice	6.25 6.80	4.33 5.18	61.00 107.00
(2) Powerwave 7750 w pipe	C	From Leg	4.00 0.00 0.00	0.0000	155.50	No Ice 1/2" Ice	6.25 6.80	4.33 5.18	61.00 107.00
(2) Powerwave LGP21900	A	From Leg	4.00 0.00 0.00	0.0000	155.50	No Ice 1/2" Ice	0.23 0.30	0.12 0.17	5.50 7.70
(2) Powerwave LGP21900	B	From Leg	4.00 0.00 0.00	0.0000	155.50	No Ice 1/2" Ice	0.23 0.30	0.12 0.17	5.50 7.70
(2) Powerwave LGP21900	C	From Leg	4.00 0.00 0.00	0.0000	155.50	No Ice 1/2" Ice	0.23 0.30	0.12 0.17	5.50 7.70
(2) Powerwave TMA LGP21400	A	From Leg	4.00 0.00 0.00	0.0000	157.50	No Ice 1/2" Ice	1.23 1.38	0.41 0.52	14.10 21.30
(2) Powerwave TMA LGP21400	B	From Leg	4.00 0.00 0.00	0.0000	157.50	No Ice 1/2" Ice	1.23 1.38	0.41 0.52	14.10 21.30
(2) Powerwave TMA LGP21400	C	From Leg	4.00 0.00 0.00	0.0000	157.50	No Ice 1/2" Ice	1.23 1.38	0.41 0.52	14.10 21.30
(2) Powerwave 7020.00 Dual Band RET	A	From Leg	4.00 0.00	0.0000	154.80	No Ice 1/2" Ice	0.40 0.49	0.20 0.27	2.20 5.10

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 lb
			0.00						
(2) Powerwave 7020.00 Dual Band RET	B	From Leg	4.00 0.00 0.00	0.0000	154.80	No Ice 1/2" Ice	0.40 0.49	0.20 0.27	2.20 5.10
(2) Powerwave 7020.00 Dual Band RET	C	From Leg	4.00 0.00 0.00	0.0000	154.80	No Ice 1/2" Ice	0.40 0.49	0.20 0.27	2.20 5.10
DAS-HY-DFDM	A	From Leg	4.00 0.00 0.00	0.0000	154.80	No Ice 1/2" Ice	0.12 0.18	0.03 0.06	5.00 6.20
DAS-HY-DFDM	B	From Leg	4.00 0.00 0.00	0.0000	154.80	No Ice 1/2" Ice	0.12 0.18	0.03 0.06	5.00 6.20
DAS-HY-DFDM	C	From Leg	4.00 0.00 0.00	0.0000	154.80	No Ice 1/2" Ice	0.12 0.18	0.03 0.06	5.00 6.20
KMW AM-X-CD-16-65-00T-RET	A	From Leg	4.00 0.00 0.00	0.0000	155.70	No Ice 1/2" Ice	8.50 9.15	6.30 7.48	74.10 136.00
KMW AM-X-CD-16-65-00T-RET	B	From Leg	4.00 0.00 0.00	0.0000	155.70	No Ice 1/2" Ice	8.50 9.15	6.30 7.48	74.10 136.00
KMW AM-X-CD-16-65-00T-RET	C	From Leg	4.00 0.00 0.00	0.0000	155.70	No Ice 1/2" Ice	8.50 9.15	6.30 7.48	74.10 136.00
(2) Ericsson RRU	A	From Leg	4.00 0.00 0.00	0.0000	155.70	No Ice 1/2" Ice	2.07 2.26	1.08 1.23	44.00 58.60
(2) Ericsson RRU	B	From Leg	4.00 0.00 0.00	0.0000	155.70	No Ice 1/2" Ice	2.07 2.26	1.08 1.23	44.00 58.60
(2) Ericsson RRU	C	From Leg	4.00 0.00 0.00	0.0000	155.70	No Ice 1/2" Ice	2.07 2.26	1.08 1.23	44.00 58.60
DC6-48-60-18-8F	A	From Leg	0.50 0.00 0.00	0.0000	155.70	No Ice 1/2" Ice	2.45 2.95	2.45 2.95	38.30 64.60
***									
T-Frame (3)	C	None		0.0000	148.00	No Ice 1/2" Ice	18.73 27.19	18.73 27.19	860.80 1262.42
APX16DWV-16DWVS	A	From Leg	2.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice	10.00 10.60	6.40 7.30	40.40 110.00
APX16DWV-16DWVS	B	From Leg	2.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice	10.00 10.60	6.40 7.30	40.40 110.00
APX16DWV-16DWVS	C	From Leg	2.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice	10.00 10.60	6.40 7.30	40.40 110.00
Gen. Diplexer	A	From Leg	2.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice	0.34 0.42	0.20 0.27	7.00 9.80
Gen. Diplexer	B	From Leg	2.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice	0.34 0.42	0.20 0.27	7.00 9.80
Gen. Diplexer	C	From Leg	2.00 0.00	0.0000	150.00	No Ice 1/2" Ice	0.34 0.42	0.20 0.27	7.00 9.80

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 lb
			0.00						
**									
LNX-6515DS-VTM w pipe	A	From Leg	2.00	0.0000	150.00	No Ice	11.39	9.96	112.32
			0.00			1/2" Ice	12.01	11.38	202.80
			0.00						
LNX-6515DS-VTM w pipe	B	From Leg	2.00	0.0000	150.00	No Ice	11.39	9.96	112.32
			0.00			1/2" Ice	12.01	11.38	202.80
			0.00						
LNX-6515DS-VTM w pipe	C	From Leg	2.00	0.0000	150.00	No Ice	11.39	9.96	112.32
			0.00			1/2" Ice	12.01	11.38	202.80
			0.00						

Truss-Leg Properties

Section Designation	Area in^2	Area Ice in^2	Self Weight lb	Ice Weight lb	Equiv. Diameter in	Equiv. Diameter Ice in	Leg Area in^2
Pirod 105216	1998.0891	3357.4497	481.19	428.24	6.9378	11.6578	3.6816
Pirod 105216	1998.0891	3357.4497	481.19	428.24	6.9378	11.6578	3.6816
Pirod 105217	2130.7479	3520.4599	589.86	443.34	7.3984	12.2238	5.3014
Pirod 105218	2263.4687	3690.8612	718.59	458.46	7.8593	12.8155	7.2158
Pirod 105218	2263.4687	3690.8612	718.59	458.46	7.8593	12.8155	7.2158
Pirod 105219	2441.8688	3942.2854	899.30	485.72	8.4787	13.6885	9.4248
Pirod 105219	2441.8688	3942.2854	899.30	485.72	8.4787	13.6885	9.4248
Pirod 105220	2578.8005	4132.5504	1067.77	500.74	8.9542	14.3491	11.9282

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
T2	160.5	Leg	A325N	1.0000	6	3651.92	34556.30	0.106 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.0000	1	6901.08	8156.25	0.846 ✔	1.333	Member Bearing
T3	140.5	Leg	A325N	1.0000	6	8985.34	34557.50	0.260 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.0000	1	6703.19	8156.25	0.822 ✔	1.333	Member Bearing
T4	120.5	Leg	A325N	1.0000	6	14707.10	34557.50	0.426 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.0000	1	6738.19	8156.25	0.826 ✔	1.333	Member Bearing
T5	100.5	Leg	A325N	1.0000	6	19760.00	34557.50	0.572 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.0000	1	6788.56	8156.25	0.832 ✔	1.333	Member Bearing
T6	80.5	Leg	A325N	1.0000	6	24316.90	34557.50	0.704 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.0000	1	6834.47	8156.25	0.838 ✔	1.333	Member Bearing

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
T7	60.5	Leg	A325N	1.2500	6	28463.10	53996.00	0.527 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.2500	1	7178.10	20390.60	0.352 ✔	1.333	Member Bearing
T8	40.5	Leg	A325N	1.2500	6	32323.70	53995.90	0.599 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.2500	1	8424.30	20390.60	0.413 ✔	1.333	Member Bearing
T9	20.5	Leg	A325N	1.2500	6	36185.20	53993.40	0.670 ✔	1.333	Bolt Tension
		Diagonal	A325N	1.2500	1	11860.40	20390.60	0.582 ✔	1.333	Member Bearing

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 P / P_a
T1	180.5 - 160.5	1 1/2	20.00	2.47	79.0 K=1.00	19.212	1.7672	-18751.90	33949.60	0.552 ✔
T2	160.5 - 140.5	Pirod 105216	20.03	10.02	45.4 K=1.00	25.051	3.6816	-45571.70	92228.10	0.494 ✔
T3	140.5 - 120.5	Pirod 105216	20.03	10.02	45.4 K=1.00	25.051	3.6816	-86045.30	92228.10	0.933 ✔
T4	120.5 - 100.5	Pirod 105217	20.03	10.02	37.8 K=1.00	26.132	5.3014	-123384.00	138539.00	0.891 ✔
T5	100.5 - 80.5	Pirod 105218	20.03	10.02	32.4 K=1.00	26.848	7.2158	-157989.00	193727.00	0.816 ✔
T6	80.5 - 60.5	Pirod 105218	20.03	10.02	32.4 K=1.00	26.848	7.2158	-189661.00	193727.00	0.979 ✔
T7	60.5 - 40.5	Pirod 105219	20.03	10.02	28.4 K=1.00	27.351	9.4248	-220381.00	257781.00	0.855 ✔
T8	40.5 - 20.5	Pirod 105219	20.03	10.02	28.4 K=1.00	27.351	9.4248	-249944.00	257781.00	0.970 ✔
T9	20.5 - 0.5	Pirod 105220	20.03	10.02	25.2 K=1.00	27.723	11.9282	-279559.00	330691.00	0.845 ✔

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	F_a ksi	A in^2	Actual V lb	Allow. V_a lb	Stress Ratio
T2	160.5 - 140.5	0.5	1.48	121.0	10.133	0.1963	870.99	2226.75	0.391 ✔
T3	140.5 - 120.5	0.5	1.48	121.0	10.133	0.1963	198.19	2226.75	0.089 ✔

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	F_a ksi	A in^2	Actual V lb	Allow. V_a lb	Stress Ratio
T4	120.5 - 100.5	0.5	1.47	120.0	10.279	0.1963	169.72	2258.95	0.075 ✓
T5	100.5 - 80.5	0.5	1.46	119.0	10.423	0.1963	166.24	2290.46	0.073 ✓
T6	80.5 - 60.5	0.5	1.46	119.0	10.423	0.1963	286.30	2290.46	0.125 ✓
T7	60.5 - 40.5	0.625	1.45	94.4	13.671	0.3068	289.24	4694.36	0.062 ✓
T8	40.5 - 20.5	0.625	1.45	94.4	13.671	0.3068	966.82	4694.36	0.206 ✓
T9	20.5 - 0.5	0.625	1.43	93.6	13.766	0.3068	1556.70	4726.89	0.329 ✓

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	180.5 - 160.5	3/4	4.70	2.28	131.1 K=0.90	8.683	0.4418	-2349.34	3835.89	0.612 ✓
T2	160.5 - 140.5	L2 1/2x2 1/2x3/16	11.42	5.02	121.8 K=1.00	10.024	0.9020	-7061.79	9041.51	0.781 ✓
T3	140.5 - 120.5	L2 1/2x2 1/2x3/16	12.50	5.47	132.5 K=1.00	8.507	0.9020	-7051.42	7673.07	0.919 ✓
T4	120.5 - 100.5	L2 1/2x2 1/2x3/16	13.80	6.37	154.4 K=1.00	6.265	0.9020	-6914.37	5650.76	1.224 ✓
T5	100.5 - 80.5	L3x3x3/16	15.24	7.12	143.4 K=1.00	7.259	1.0900	-6965.71	7912.79	0.880 ✓
T6	80.5 - 60.5	L3x3x3/16	16.80	7.88	158.7 K=1.00	5.927	1.0900	-6997.73	6460.75	1.083 ✓
T7	60.5 - 40.5	L3x3x3/8	18.45	8.73	178.4 K=1.00	4.690	2.1100	-7189.29	9895.74	0.727 ✓
T8	40.5 - 20.5	L3x3x3/8	19.30	9.15	187.0 K=1.00	4.270	2.1100	-7847.15	9010.53	0.871 ✓
T9	20.5 - 0.5	L3 1/2x3 1/2x3/8	21.03	10.04	175.4 K=1.00	4.855	2.4800	-10031.00	12041.00	0.833 ✓

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 $\frac{P}{P_a}$
T1	180.5 - 160.5	3/4	4.00	3.88	173.6 K=0.70	4.955	0.4418	-346.44	2189.09	0.158 ✓

Top Girt Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	F_a	A	Actual P	Allow. P_a	Ratio $\frac{P}{P_a}$
	ft		ft	ft		ksi	in^2	lb	lb	
T1	180.5 - 160.5	3/4	4.00	3.88	173.6 K=0.70	4.955	0.4418	-117.69	2189.09	0.054 ✔

Bottom Girt Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	F_a	A	Actual P	Allow. P_a	Ratio $\frac{P}{P_a}$
	ft		ft	ft		ksi	in^2	lb	lb	
T1	180.5 - 160.5	3/4	4.00	3.88	173.6 K=0.70	4.955	0.4418	-322.27	2189.09	0.147 ✔

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	F_a	A	Actual P	Allow. P_a	Ratio $\frac{P}{P_a}$
	ft		ft	ft		ksi	in^2	lb	lb	
T1	180.5 - 160.5	1 1/2	20.00	2.47	79.0	30.000	1.7672	15407.10	53014.40	0.291 ✔
T2	160.5 - 140.5	Pirod 105216	20.03	10.02	45.4	30.000	3.6816	36483.00	110447.00	0.330 ✔
T3	140.5 - 120.5	Pirod 105216	20.03	10.02	45.4	30.000	3.6816	71110.90	110447.00	0.644 ✔
T4	120.5 - 100.5	Pirod 105217	20.03	10.02	37.8	30.000	5.3014	103446.00	159043.00	0.650 ✔
T5	100.5 - 80.5	Pirod 105218	20.03	10.02	32.4	30.000	7.2158	132449.00	216475.00	0.612 ✔
T6	80.5 - 60.5	Pirod 105218	20.03	10.02	32.4	30.000	7.2158	158432.00	216475.00	0.732 ✔
T7	60.5 - 40.5	Pirod 105219	20.03	10.02	28.4	30.000	9.4248	182251.00	282743.00	0.645 ✔
T8	40.5 - 20.5	Pirod 105219	20.03	10.02	28.4	30.000	9.4248	203002.00	282743.00	0.718 ✔
T9	20.5 - 0.5	Pirod 105220	20.03	10.02	25.2	30.000	11.9282	220360.00	357847.00	0.616 ✔

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	F_a ksi	A in^2	Actual V lb	Allow. V_a lb	Stress Ratio
T2	160.5 - 140.5	0.5	1.48	121.0	10.133	0.1963	870.99	2226.75	0.391 ✔
T3	140.5 - 120.5	0.5	1.48	121.0	10.133	0.1963	198.19	2226.75	0.089 ✔
T4	120.5 - 100.5	0.5	1.47	120.0	10.279	0.1963	169.72	2258.95	0.075 ✔
T5	100.5 - 80.5	0.5	1.46	119.0	10.423	0.1963	166.24	2290.46	0.073 ✔
T6	80.5 - 60.5	0.5	1.46	119.0	10.423	0.1963	286.30	2290.46	0.125 ✔
T7	60.5 - 40.5	0.625	1.45	94.4	13.671	0.3068	289.24	4694.36	0.062 ✔
T8	40.5 - 20.5	0.625	1.45	94.4	13.671	0.3068	966.82	4694.36	0.206 ✔
T9	20.5 - 0.5	0.625	1.43	93.6	13.766	0.3068	1556.70	4726.89	0.329 ✔

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	180.5 - 160.5	3/4	4.70	2.28	145.7	30.000	0.4418	2365.80	13253.60	0.179 ✔
T2	160.5 - 140.5	L2 1/2x2 1/2x3/16	11.42	5.02	80.1	29.000	0.5183	6901.08	15030.60	0.459 ✔
T3	140.5 - 120.5	L2 1/2x2 1/2x3/16	11.93	5.22	83.1	29.000	0.5183	6703.19	15030.60	0.446 ✔
T4	120.5 - 100.5	L2 1/2x2 1/2x3/16	13.13	6.06	96.0	29.000	0.5183	6738.19	15030.60	0.448 ✔
T5	100.5 - 80.5	L3x3x3/16	14.50	6.77	88.6	29.000	0.6593	6788.56	19119.60	0.355 ✔
T6	80.5 - 60.5	L3x3x3/16	16.01	7.50	97.9	29.000	0.6593	6834.47	19119.60	0.357 ✔
T7	60.5 - 40.5	L3x3x3/8	18.45	8.73	117.3	29.000	1.1958	7178.10	34677.70	0.207 ✔
T8	40.5 - 20.5	L3x3x3/8	20.16	9.57	128.4	29.000	1.1958	8424.30	34677.70	0.243 ✔
T9	20.5 - 0.5	L3 1/2x3 1/2x3/8	21.92	10.48	119.7	29.000	1.4733	11860.40	42725.20	0.278 ✔

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	180.5 - 160.5	3/4	4.00	3.88	248.0	30.000	0.4418	532.39	13253.60	0.040

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 $\frac{P}{P_a}$

✔

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	180.5 - 160.5	3/4	4.00	3.88	248.0	30.000	0.4418	91.14	13253.60	0.007

✔

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	180.5 - 160.5	3/4	4.00	3.88	248.0	30.000	0.4418	404.05	13253.60	0.030

✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
T1	180.5 - 160.5	Leg	1 1/2	3	-18751.90	45254.82	41.4	Pass
		Diagonal	3/4	22	-2349.34	5113.24	45.9	Pass
		Horizontal	3/4	16	-346.44	2918.06	11.9	Pass
		Top Girt	3/4	4	-117.69	2918.06	4.0	Pass
		Bottom Girt	3/4	7	-322.27	2918.06	11.0	Pass
T2	160.5 - 140.5	Leg	Pirod 105216	67	-45571.70	122940.05	37.1	Pass
		Diagonal	L2 1/2x2 1/2x3/16	73	-7061.79	12052.33	58.6	Pass
T3	140.5 - 120.5	Leg	Pirod 105216	82	-86045.30	122940.05	70.0	Pass
		Diagonal	L2 1/2x2 1/2x3/16	88	-7051.42	10228.20	68.9	Pass
T4	120.5 - 100.5	Leg	Pirod 105217	97	-123384.00	184672.48	66.8	Pass
		Diagonal	L2 1/2x2 1/2x3/16	103	-6914.37	7532.46	91.8	Pass
T5	100.5 - 80.5	Leg	Pirod 105218	112	-157989.00	258238.08	61.2	Pass
		Diagonal	L3x3x3/16	118	-6965.71	10547.75	66.0	Pass
T6	80.5 - 60.5	Leg	Pirod 105218	127	-189661.00	258238.08	73.4	Pass
		Diagonal	L3x3x3/16	133	-6997.73	8612.18	81.3	Pass
T7	60.5 - 40.5	Leg	Pirod 105219	142	-220381.00	343622.06	64.1	Pass
		Diagonal	L3x3x3/8	148	-7189.29	13191.02	54.5	Pass
T8	40.5 - 20.5	Leg	Pirod 105219	157	-249944.00	343622.06	72.7	Pass
		Diagonal	L3x3x3/8	169	-7847.15	12011.04	65.3	Pass
T9	20.5 - 0.5	Leg	Pirod 105220	172	-279559.00	440811.08	63.4	Pass
		Diagonal	L3 1/2x3 1/2x3/8	184	-10031.00	16050.65	62.5	Pass
							Summary	
						Leg (T6)	73.4	Pass
						Diagonal (T4)	91.8	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
						Horizontal (T1)	11.9	Pass
						Top Girt (T1)	4.0	Pass
						Bottom Girt (T1)	11.0	Pass
						Bolt Checks	63.5	Pass
						RATING =	**91.8**	**Pass**

EXHIBIT C

EBI Consulting
environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CTHA164A

East Hartland / Rt 20
22 Welsh Road
Hartland, CT 06027

August 22, 2014

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	34.80 %

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

EBI Consulting
environmental | engineering | due diligence

August 22, 2014

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

Emissions Analysis for Site: **CTHA164A – East Hartland / Rt 20**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **22 Welsh Road, Hartland, 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 700 MHz Band is 567 μW/cm2, and the general population exposure limit for the PCS and AWS bands is 1000 μW/cm2. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **22 Welsh Road, Hartland, 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 **Ericsson APX16DWV-16DWVS-E-A20** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-A1M** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson APX16DWV-16DWVS-E-A20** has a maximum gain of **15.6 dBd** at its main lobe. The **Commscope LNX-6515DS-A1M** has a maximum gain of **15.5 dBd** at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

8) The antenna mounting height centerline of the proposed antennas is **150 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:	Ericsson APX16DWV-16DWVS-E-A20	Make / Model:	Ericsson APX16DWV-16DWVS-E-A20	Make / Model:	Ericsson APX16DWV-16DWVS-E-A20
Gain:	15.6 dBd	Gain:	15.6 dBd	Gain:	15.6 dBd
Height (AGL):	150	Height (AGL):	150	Height (AGL):	150
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:	90	Total TX Power:	90	# AWS Channels:	90
ERP (W):	3,776.88	ERP (W):	3,776.88	ERP (W):	3,776.88
Antenna A1 MPE%	1.51	Antenna B1 MPE%	1.51	Antenna C1 MPE%	1.51
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Commscope LNX-6515DS-A1M	Make / Model:	Commscope LNX-6515DS-A1M	Make / Model:	Commscope LNX-6515DS-A1M
Gain:	15.5 dBd	Gain:	15.5 dBd	Gain:	15.5 dBd
Height (AGL):	150	Height (AGL):	150	Height (AGL):	150
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):	470.23	ERP (W):	470.23	ERP (W):	470.23
Antenna A3 MPE%	0.40	Antenna B3 MPE%	0.40	Antenna C3 MPE%	0.40

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile	**5.72**
Verizon Wireless	10.94 %
Town of Hartland	0.85 %
AT&T	17.29 %
Site Total MPE %:	**34.80 %**

T-Mobile Sector 1 Total:	1.91 %
T-Mobile Sector 2 Total:	1.91 %
T-Mobile Sector 3 Total:	1.91 %
Site Total:	34.80 %

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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:	1.91 %
Sector 2:	1.91 %
Sector 3 :	1.91 %
T-Mobile Total:	5.72 %
Site Total:	34.80 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **34.80%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

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