NORTHEAST
SITE SOLUTIONS
Turnkey Wireless Development

Northeast Site Solutions
Denise Sabo
199 Brickyard Rd Farmington, CT 06032
860-209-4690
denise@northeastsitesolutions.com

July 23, 2018

Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification
100 Sunset Ridge Road, East Hartford CT 06108
Latitude: 41.771800
Longitude: -72.590300
T-Mobile Site#: CT11737C_L700 4x2

Dear Ms. Bachman:

T-Mobile is requesting to file an exempt modification for an existing 140-foot Lattice Tower located at 100 Sunset Ridge Road, East Hartford CT. T-Mobile currently maintains nine (9) antennas at the 120-foot level of the existing 140-foot tower. The tower and property are owned by the Town of East Hartford. T-Mobile now intends to replace three (3) existing antenna with three (3) new 600/700 MHz antenna. The new antennas would be installed at the 120-foot and level of the tower.

Planned Modifications:

Remove:
NONE

Remove and Replace:
(3) LNX6515DS A1M **(Remove) –** (3) APXVAARR24-43-U-NA20 Antenna **(Replace)**
(3) RRU **(Remove) –** (3) RRU 4449 B71+B12 **(Replace)**

Install New:
NONE

Existing to Remain:
(6) 1-5/8" Coax
(1) Hybrid line
(3) AIR21 B2A_B4P Antenna
(3) AIR32DB B66Aa B2a Antenna
(3) TMA

This facility was first approved by the Connecticut Siting Council. TS No. TS-T-Mobile-043-060621 – Approved in 2006 for the addition of Omnipoint telecommunication equipment to existing tower. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to Mayor Marcia A. Leclerc, as Elected Official for the Town of East Hartford and Jeffrey Cormier, Town Planner as well as the property owner and the tower owner.

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

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Denise Sabo
Mobile: 860-209-4690
Fax: 413-521-0558
Office: 199 Brickyard Rd, Farmington, CT 06032
Email: denise@northeastsitesolutions.com

Attachments
cc: Mayor Marcia A. Leclerc - as elected official
Jeffrey Cormier - Town Planner
Town of East Hartford - Tower and property owner

Exhibit A

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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

July 28, 2006

Karina Fournier
Zoning Department
T-Mobile
30 Cold Spring Road
Rocky Hill, CT 06067

RE: **TS-T-MOBILE-043-060621** - Omnipoint Communications, Inc. request for an order to approve tower sharing at a telecommunications facility located at 100 Sunset Ridge Drive, East Hartford, Connecticut.

Dear Ms. Fournier:

At a public meeting held July 27, 2006, the Connecticut Siting Council (Council) ruled that the shared use of this tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Any additional change to this facility may require an explicit request to this agency pursuant to General Statutes § 16-50aa or notice pursuant to Regulations of Connecticut State Agencies Section 16-50j-73, as applicable. Such request or notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction. Please be advised that the validity of this action shall expire one year from the date of this letter.

The proposed shared use is to be implemented as specified in your letter dated June 21, 2006, including the placement of all necessary equipment and shelters within the tower compound.

Thank you for your attention and cooperation.

Very truly yours,

Colin C. Tait

Colin C. Tait
Chairman

CCT/MP/laf

c: The Honorable Melody A. Currey, Mayor, Town of East Hartford
Michael J. Dayton, Town Planner, Town of East Hartford

Exhibit B

Town of East Hartford Property Summary Report

100 SUNSET RIDGE DR

MAP LOT:	57-134A	**CAMA PID:**	13740
LOCATION:	100 SUNSET RIDGE DR		
OWNER NAME:	TOWN OF EAST HARTFORD / VETERANS MEMORIAL CLUBHSE		

13740 03/24/2016

OWNER OF RECORD
TOWN OF EAST HARTFORD
VETERANS MEMORIAL CLUBHSE
740 MAIN STREET
EAST HARTFORD, CT 06108

LIVING AREA:	6169	**ZONING:**	R2	**ACREAGE:**	1.64

SALES HISTORY

OWNER	BOOK / PAGE	SALE DATE	SALE PRICE
TOWN OF EAST HARTFORD VETERANS MEMORIAL CLUBHSE	159/ 39	01-Jan-1900	$0.00

CURRENT PARCEL ASSESSMENT

TOTAL:	$836,930.00	**IMPROVEMENTS:**	$738,230.00	**LAND:**	$98,700.00

ASSESSING HISTORY

FISCAL YEAR	TOTAL VALUE	IMPROVEMENT VALUE	LAND VALUE
2017	$836,930.00	$738,230.00	$98,700.00
2016	$836,930.00	$738,230.00	$98,700.00
2015	$807,050.00	$708,350.00	$98,700.00
2014	$807,050.00	$708,350.00	$98,700.00
2013	$807,050.00	$708,350.00	$98,700.00

Town of East Hartford Property Summary Report

100 SUNSET RIDGE DR

MAP LOT:	57-134A	**CAMA PID:**	13740
LOCATION:	100 SUNSET RIDGE DR		
OWNER NAME:	TOWN OF EAST HARTFORD / VETERANS MEMORIAL CLUBHSE		

BUILDING # 1

YEAR BUILT	1930	**EXT WALL 1**	Stone/Masonry
STYLE	Cultural Facility	**INT WALLS 1**	Plaster
MODEL	Comm/Ind	**HEAT FUEL**	Other
STORIES	1.0	**HEAT TYPE**	Steam
OCCUPANCY	Exempt	**AC TYPE**	None
ROOF	Drmrs/Ex Gable	**BEDROOMS**	
ROOF COVER	Asphalt	**FULL BATHS**	15
FLOOR COVER 1	Hardwood	**HALF BATHS**	
% BSMT	null	**TOTAL ROOMS**	0
% FIN BSMT	null	**% REC RM**	null
% SEMI FIN	null	**% ATTIC FINISH**	null
BSMT GARAGE	null	**FIREPLACES**	null

13740 03/24/2016

EXTRA FEATURES

DESCRIPTION	CODE	UNITS
Fin Bsmt	FBM	1567 S.F.
Fireplace	FPL	1 UNITS


Sunset Ridge Dr
Sunset Ridge Dr
57-134A
1.64 ac
57-136
0.35 ac
94

Exhibit C

ANTENNA UPGRADES BY

T-Mobile

T-MOBILE NORTHEAST LLC

PROJECT: L700 4X2

SITE NUMBER: CT11737C
SITE NAME: CT737/E HARTFORD TOWN SST
SITE ADDRESS: 100 SUNSET RIDGE RD
EAST HARTFORD, CT 06108
(RF CONFIGURATION 67D92DB)

PROJECT SCOPE:

UPGRADE OF EXISTING WIRELESS FACILITY AS FOLLOWS:
REPLACE (3) EXISTING ANTENNAS,
REPLACE(3) REMOTE RADIO UNITS AT ANTENNAS.

PROJECT NOTES:

1. THIS IS AN UNMANNED TELECOMMUNICATION FACILITY AND NOT FOR HUMAN HABITATION:
   HANDICAPPED ACCESS IS NOT REQUIRED.
   POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED.
   NO OUTDOOR STORAGE OR ANY
   SOLID WASTE RECEPTACLES REQUIRED.
2. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACES THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
3. DEVELOPMENT AND USE OF THE SITE WILL CONFORM TO ALL APPLICABLE CODES, ORDINANCES AND SPECIFICATIONS.
4. REFER TO STRUCTURAL ANALYSIS REPORT TITLED " STRUCTURAL ANALYSIS REPORT - SELF SUPPORT TOWER " SITE ID: CT11737C, DATED JUNE 25, 2018, PREPARED BY DESTEK.

APPLICABLE STATE ADOPTION CODES:

2016 CONNECTICUT STATE BUILDING CODE (CSBC).

ANSI/TIA-222-G-2005 STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

2014 NATIONAL ELECTRICAL CODE (NFPA 70) FOR POWER AND GROUNDING REQUIREMENTS.

APPROVALS:

FSA CM	DATE
RF ENGINEER	DATE
FOPS	DATE
T-MOBILE ENGINEERING AND DEVELOPMENT	DATE
	DATE
	DATE

SITE IMAGE:

VICINITY MAP:

PROJECT INFORMATION:

ADDRESS:	100 SUNSET RIDGE RD EAST HARTFORD, CT 06108
STRUCTURE TYPE:	LATTICE TOWER
COORDINATES:	41.771800 N, -72.590300 W
ZONING DISTRICT:	R2
PARCEL ID:	13740
TOWER HEIGHT:	140'-0" AGL
TOP OF T-MOBILE ANTENNAS ELEV:	124'-0" AGL

PROJECT TEAM:

APPLICANT:	T-MOBILE NORTHEAST, LLC. 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 860-692-7100
LANDLORD:	TOWN OF EAST HARTFORD VETERANS MEMORIAL CLUBHSE 740 MAIN STREET EAST HARTFORD, CT 06108
PROJECT MANAGER:	NORTHEAST SITE SOLUTIONS 420 MAIN STREET, BLDG 4 STURBRIDGE, MA 01566 SHELDON FREINCLE SHELDON@NORTHEASTSITE SOLUTIONS.COM 201-776-8521
CONSULTANTS:	FORESITE LLC 462 WALNUT ST NEWTON, MA 02460 SAEED MOSSAVAT SMOSSAVAT@FORESITELLC.COM 617-212-3123

SHEET INDEX:

T-1:	TITLE SHEET
N-1:	GENERAL NOTES
A-1:	PLAN
A-2:	ELEVATION
A-3:	ANTENNA PLAN
A-4:	ANTENNA DETAILS
E-1:	GROUNDING DETAILS

APPLICANT:

T-Mobile

T-MOBILE NORTHEAST LLC

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER

NSS NORTHEAST SITE SOLUTIONS
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203-275-6669

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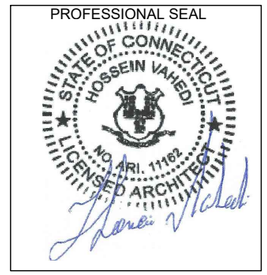
PROFESSIONAL SEAL



REV	DESCRIPTION	DATE
A	PRELIMINARY	07/03/18
B	REVISED PER COMMENTS	07/09/18
C	REVISED PER NEW RFDS	07/19/18
0	ISSUED FOR PERMIT	07/24/18

SITE NUMBER: CT11737C
SITE NAME: CT737/E HARTFORD TOWN SST
SITE ADDRESS: 100 SUNSET RIDGE RD
EAST HARTFORD, CT 06108

SHEET TITLE:

T-1: TITLE SHEET

GENERAL NOTES:

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.

2. THE ARCHITECT/ENGINEER HAS MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.

3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE CLIENT'S REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK.

5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS.

6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S / VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.

7. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS DURING CONSTRUCTION.

8. THE CONTRACTOR SHALL COMPLY WITH ALL PERTINENT SECTIONS OF THE BASIC STATE BUILDING CODE, LATEST EDITION, AND ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJEC

9. THE CONTRACTOR SHALL NOTIFY THE CLIENT'S REPRESENTATIVE IN WRITING WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE CLIENT'S REPRESENTATIVE.

10. THE WORK SHALL CONFORM TO THE CODES AND STANDARDS OF THE FOLLOWING AGENCIES AS FURTHER CITED HEREIN:

A. ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS, AS PUBLISHED IN "COMPILATION OF ASTM STANDARDS BUILDING CODES" OR LATEST EDITION.

B. AWS: AMERICAN WELDING SOCIETY INC. AS PUBLISHED IN "STANDARD D1.1–08, STRUCTURAL WELDING CODE" OR LATEST EDITION.

C. AISC: AMERICAN INSTITUTE FOR STEEL CONSTRUCTION AS PUBLISHED IN "CODE FOR STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES"; "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" (LATEST EDITION).

11. BOLTING:

A. BOLTS SHALL BE CONFORMING TO ASTM A325 HIGH STRENGTH, HOT DIP GALVANIZED WITH ASTM A153 HEAVY HEX TYPE NUTS.

B. BOLTS SHALL BE 3/4"ø MINIMUM (UNLESS OTHERWISE NOTED)

C. ALL CONNECTIONS SHALL BE 2 BOLTS MINIMUM.

12. FABRICATION:

A. FABRICATION OF STEEL SHALL CONFORM TO THE AISC AND AWS STANDARDS AND CODES (LATEST EDITION).

B. ALL STRUCTURAL STEEL SHALL BE HOT–DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 (LATEST EDITION), UNLESS OTHERWISE NOTED.

13. ERECTION OF STEEL:

A. PROVIDE ALL ERECTION EQUIPMENT, BRACING, PLANKING, FIELD BOLTS, NUTS, WASHERS, DRIFT PINS, AND SIMILAR MATERIALS WHICH DO NOT FORM A PART OF THE COMPLETED CONSTRUCTION BUT ARE NECESSARY FOR ITS PROPER ERECTION.

B. ERECT AND ANCHOR ALL STRUCTURAL STEEL IN ACCORDANCE WITH AISC REFERENCE STANDARDS. ALL WORK SHALL BE ACCURATELY SET TO ESTABLISHED LINES AND ELEVATIONS AND RIGIDLY FASTENED IN PLACE WITH SUITABLE ATTACHMENTS TO THE CONSTRUCTION OF THE BUILDING.

C. TEMPORARY BRACING, GUYING AND SUPPORT SHALL BE PROVIDED TO KEEP THE STRUCTURE SAFE AND ALIGNED AT ALL TIMES DURING CONSTRUCTION, AND TO PREVENT DANGER TO PERSONS AND PROPERTY. CHECK ALL TEMPORARY LOADS AND STAY WITHIN SAFE CAPACITY OF ALL BUILDING COMPONENTS.

14. ANTENNA INSTALLATION:

A. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND CLIENT'S REPRESENTATIVE SPECIFICATIONS.

B. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.

C. INSTALL COAXIAL / FIBER CABLES AND TERMINATIONS BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTORS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS.

15. ANTENNA AND COAXIAL / FIBER CABLE GROUNDING:

A. ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH ANDREWS CONNECTOR/SPLICE WEATHERPROOFING KIT TYPE #221213 OR EQUAL.

B. ALL COAXIAL / FIBER CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL / FIBER CABLE (NOT WITHIN BENDS).

16. RELATED WORK, FURNISH THE FOLLOWING WORK AS SPECIFIED UNDER CONSTRUCTION DOCUMENTS, BUT COORDINATE WITH OTHER TRADES PRIOR TO BID:

A. FLASHING OF OPENING INTO OUTSIDE WALLS

B. SEALING AND CAULKING ALL OPENINGS

C. PAINTING

D. CUTTING AND PATCHING

17. REQUIREMENTS OF REGULATORY AGENCIES:

A. FURNISH U.L. LISTED EQUIPMENT WHERE SUCH LABEL IS AVAILABLE. INSTALL IN CONFORMANCE WITH U.L. STANDARDS WHERE APPLICABLE.

B. INSTALL ANTENNA, ANTENNA CABLES, GROUNDING SYSTEM IN ACCORDANCE WITH DRAWINGS AND SPECIFICATION IN EFFECT AT PROJECT LOCATION AND RECOMMENDATIONS OF STATE AND LOCAL BUILDING CODES, AND SPECIAL CODES HAVING JURISDICTION OVER SPECIFIC PORTIONS OF WORK. THIS WORK INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING:

C. TIA–EIA – 222 (LATEST EDITION). STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES.

D. FAA – FEDERAL AVIATION ADMINISTRATION ADVISORY CIRCULAR AC 70/7460–IH, OBSTRUCTION MARKING AND LIGHTING.

E. FCC – FEDERAL COMMUNICATIONS COMMISSION RULES AND REGULATIONS FORM 715, OBSTRUCTION MARKING AND LIGHTING SPECIFICATION FOR ANTENNA STRUCTURES AND FORM 715A, HIGH INTENSITY OBSTRUCTION LIGHTING SPECIFICATIONS FOR ANTENNA STRUCTURES.

F. AISC – AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS (LATEST EDITION).

G. NEC – NATIONAL ELECTRICAL CODE – ON TOWER LIGHTING KITS.

H. UL – UNDERWRITER'S LABORATORIES APPROVED ELECTRICAL PRODUCTS.

I. IN ALL CASES, PART 77 OF THE FAA RULES AND PARTS 17 AND 22 OF THE FCC RULES ARE APPLICABLE AND IN THE EVENT OF CONFLICT, SUPERSEDE ANY OTHER STANDARDS OR SPECIFICATIONS.

J. 2009 LIFE SAFETY CODE NFPA – 101.

APPLICANT:
T-Mobile
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER
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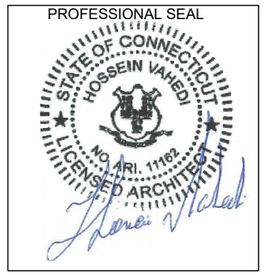

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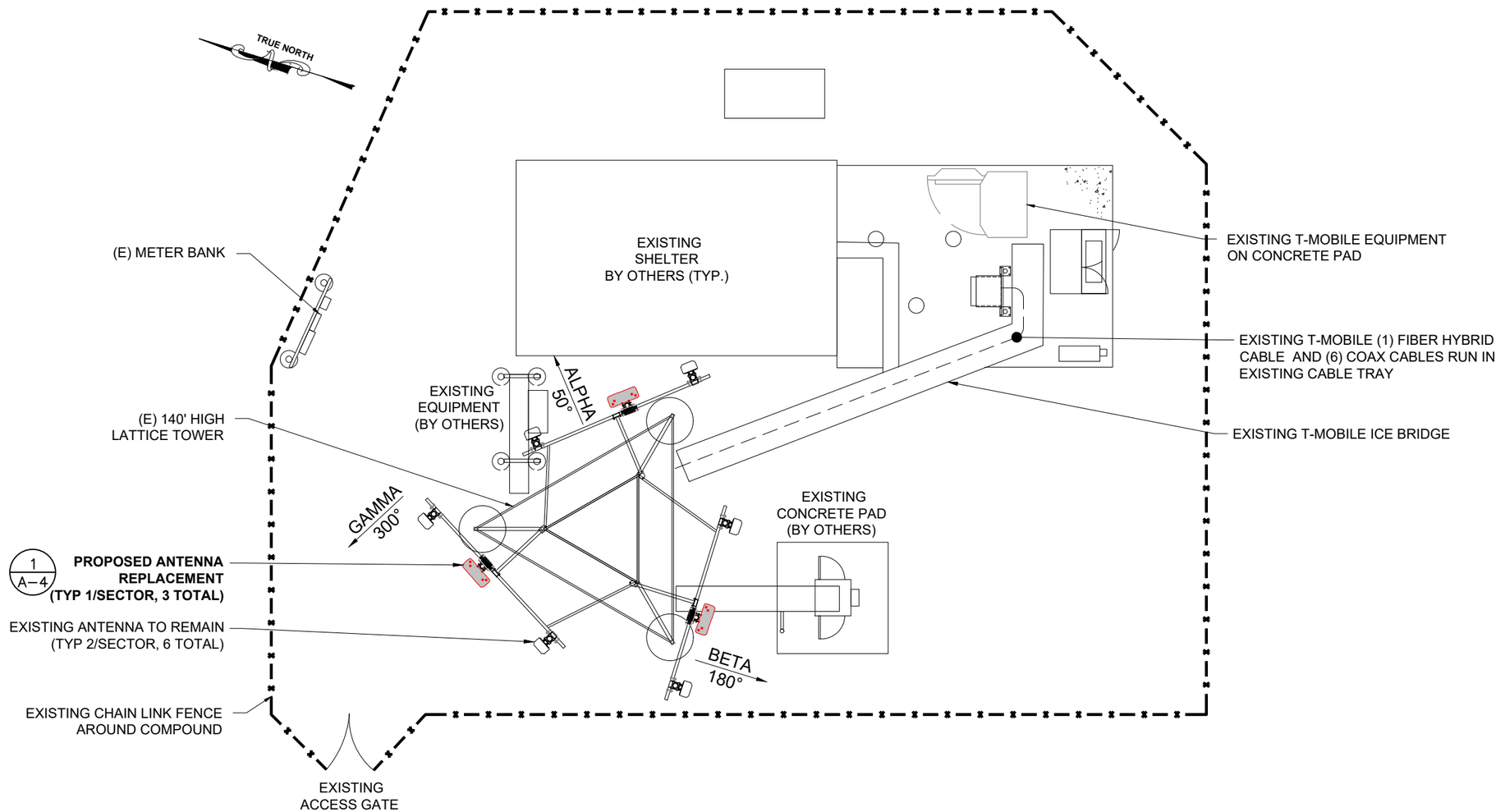
SHEET TITLE:
N-1: NOTES AND DISCLAIMERS



SITE PLAN

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

1
A-1

APPLICANT:

T-MOBILE NORTHEAST LLC

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER

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NEWTON, MA 02460
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PROFESSIONAL SEAL

STATE OF CONNECTICUT · HOSSEIN VAHEDI · NO. ARI. 11162 · LICENSED ARCHITECT

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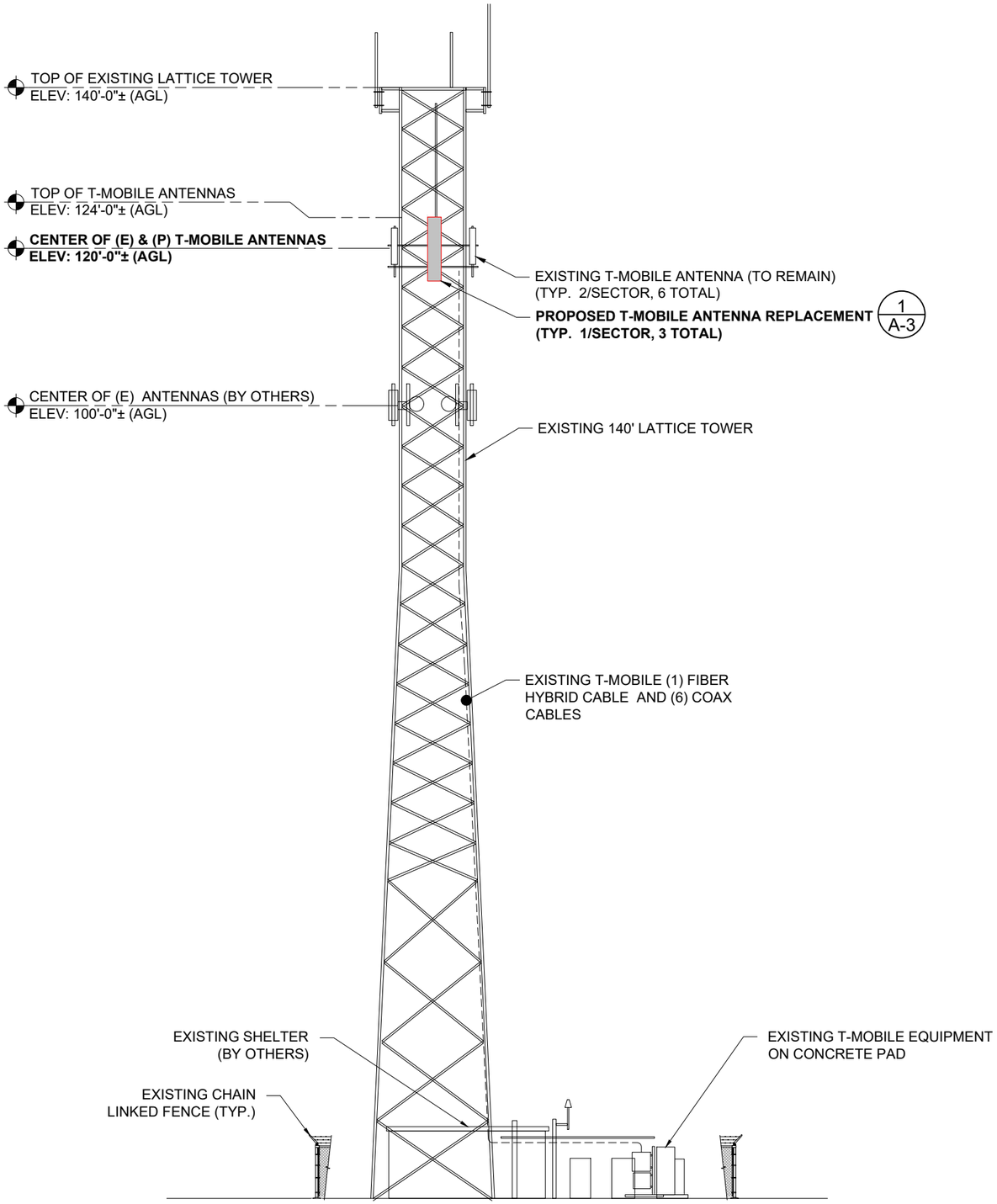
SHEET TITLE:
A-1: PLAN

STRUCTURAL NOTES:
PRIOR TO COMMENCING CONSTRUCTION, GC SHALL REFER TO TOWER STRUCTURAL ANALYSIS PROVIDED BY DESTEK TO DETERMINE IF THERE ARE ANY SUPPLEMENTAL OR SPECIAL REQUIREMENTS FOR TOWER TOP EQUIPMENT AND FOR CABLE BUNDLING, SHIELDING, MOUNTING OR RELOCATION ARRANGEMENTS.

REFER TO STRUCTURAL ANALYSIS REPORT TITLED " STRUCTURAL ANALYSIS REPORT - SELF SUPPORT TOWER " SITE ID: CT11737C, DATED JUNE 25, 2018, PREPARED BY DESTEK.



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

1
A-2

APPLICANT:
T-Mobile
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER
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SHEET TITLE:
A-2: ELEVATION

STRUCTURAL NOTES:
PRIOR TO COMMENCING CONSTRUCTION, GC SHALL REFER TO TOWER STRUCTURAL ANALYSIS PROVIDED BY DESTEK TO DETERMINE IF THERE ARE ANY SUPPLEMENTAL OR SPECIAL REQUIREMENTS FOR TOWER TOP EQUIPMENT AND FOR CABLE BUNDLING, SHIELDING, MOUNTING OR RELOCATION ARRANGEMENTS.

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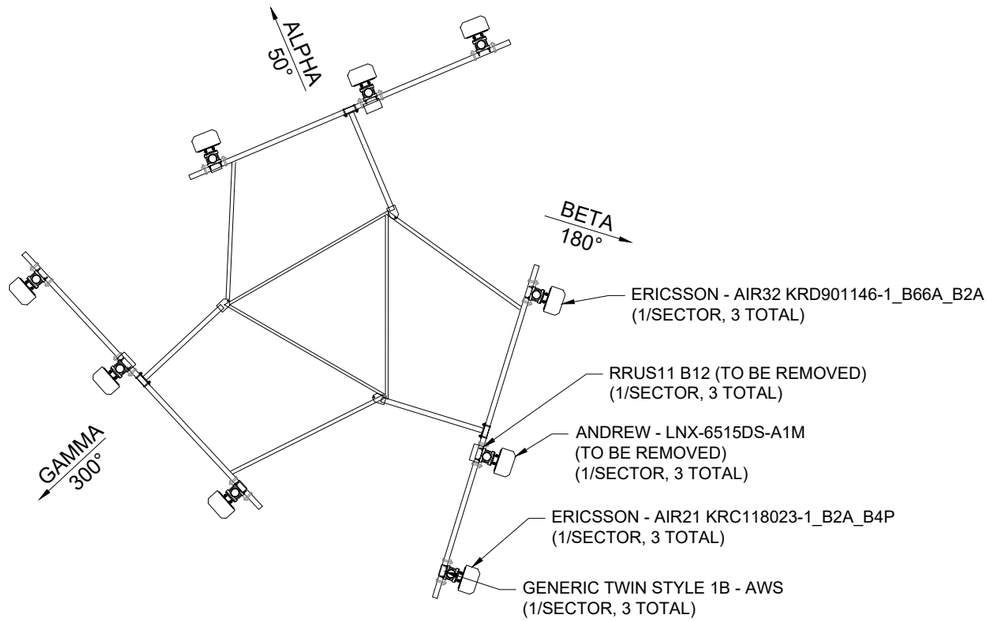
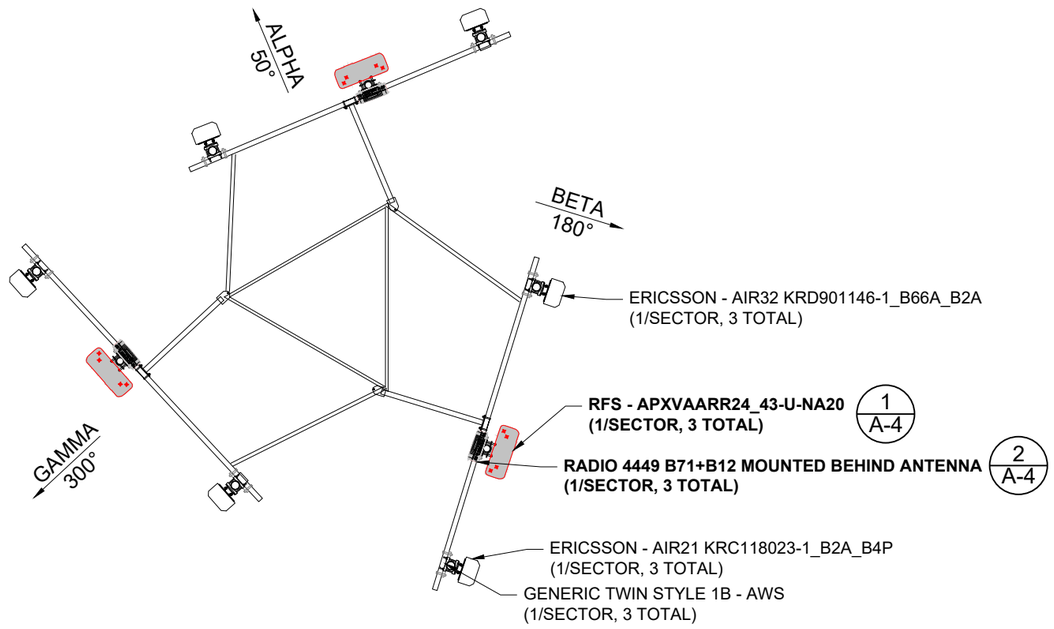
EXISTING ANTENNA PLAN



FINAL ANTENNA PLAN



ANTENNA PLAN
SCALE: NTS

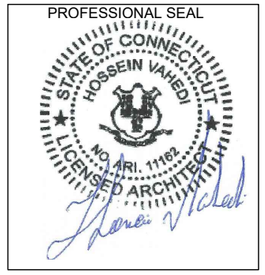
1
A-3

APPLICANT:
T-Mobile
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER
NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
203-275-6669

CONSULTANT:
FORESITE LLC
Architects . Engineers . Surveyors
462 WALNUT STREET
NEWTON, MA 02460
617-212-3123

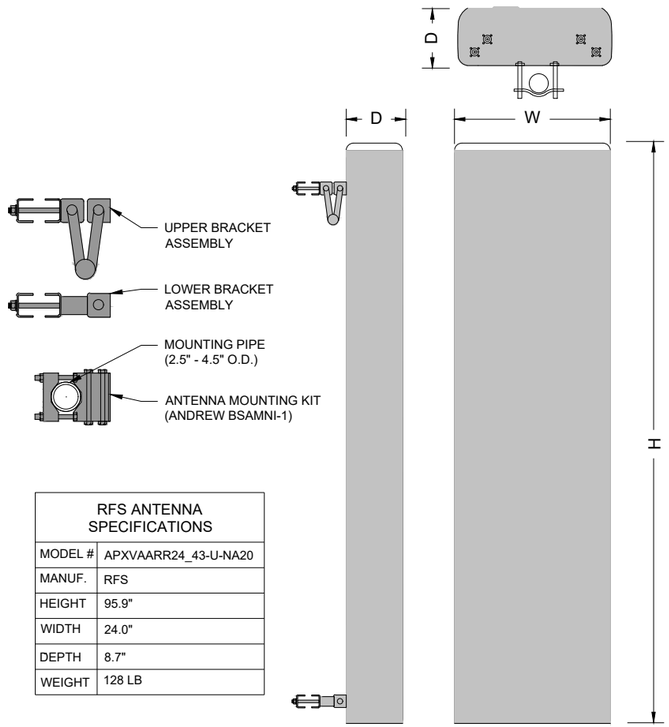
PROFESSIONAL SEAL



REV	DESCRIPTION	DATE
A	PRELIMINARY	07/03/18
B	REVISED PER COMMENTS	07/09/18
C	REVISED PER NEW RFDS	07/19/18
0	ISSUED FOR PERMIT	07/24/18

SITE NUMBER: CT11737C
SITE NAME: CT737/E HARTFORD TOWN SST
SITE ADDRESS: 100 SUNSET RIDGE RD
EAST HARTFORD, CT 06108

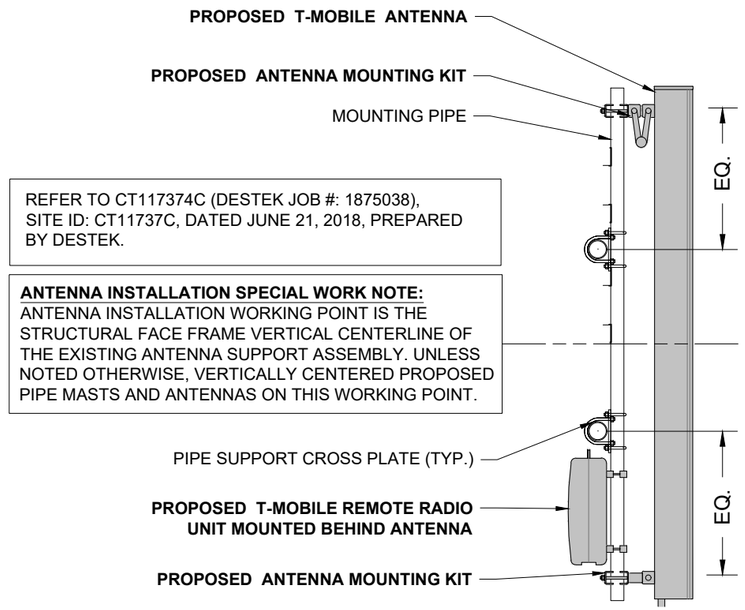
SHEET TITLE:
A-3: ANTENNA PLAN AND DETAILS



RFS ANTENNA SPECIFICATIONS	
MODEL #	APXVAARR24_43-U-NA20
MANUF.	RFS
HEIGHT	95.9"
WIDTH	24.0"
DEPTH	8.7"
WEIGHT	128 LB

RFS ANTENNA
N.T.S

1
A-4

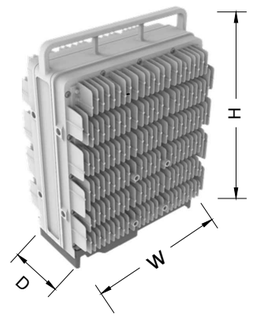


REFER TO CT117374C (DESTEK JOB #: 1875038), SITE ID: CT11737C, DATED JUNE 21, 2018, PREPARED BY DESTEK.

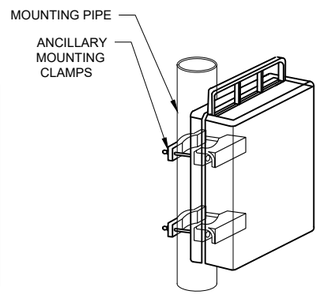
ANTENNA INSTALLATION SPECIAL WORK NOTE:
ANTENNA INSTALLATION WORKING POINT IS THE STRUCTURAL FACE FRAME VERTICAL CENTERLINE OF THE EXISTING ANTENNA SUPPORT ASSEMBLY. UNLESS NOTED OTHERWISE, VERTICALLY CENTERED PROPOSED PIPE MASTS AND ANTENNAS ON THIS WORKING POINT.

ANTENNA MOUNTING DETAIL
N.T.S

3
A-4



REMOTE RADIO UNIT SPECIFICATIONS	
MODEL #	RADIO 4449 B71+B12
MANUF.	ERICSSON
HEIGHT	14.9"
WIDTH	13.2"
DEPTH	10.4"
WEIGHT	74 LB



REMOTE RADIO UNIT MOUNTING DETAIL

RADIO 4449 B71+B12 REMOTE RADIO UNIT
N.T.S

2
A-4

APPLICANT:
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER
NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
203-275-6669

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462 WALNUT STREET
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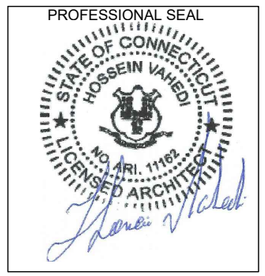
617-212-3123

PROFESSIONAL SEAL



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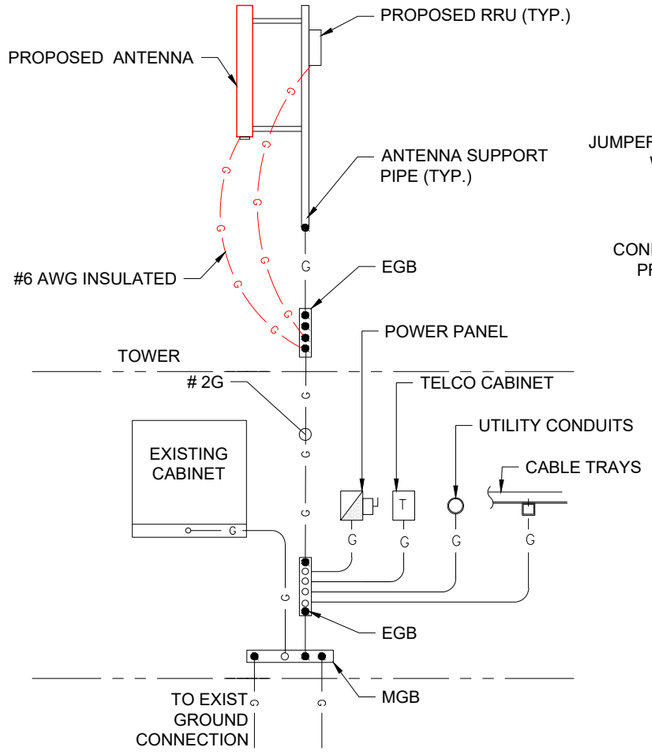
0	ISSUED FOR PERMIT	07/24/18

SITE NUMBER: CT11737C
SITE NAME: CT737/E HARTFORD TOWN SST
SITE ADDRESS: 100 SUNSET RIDGE RD
EAST HARTFORD, CT 06108

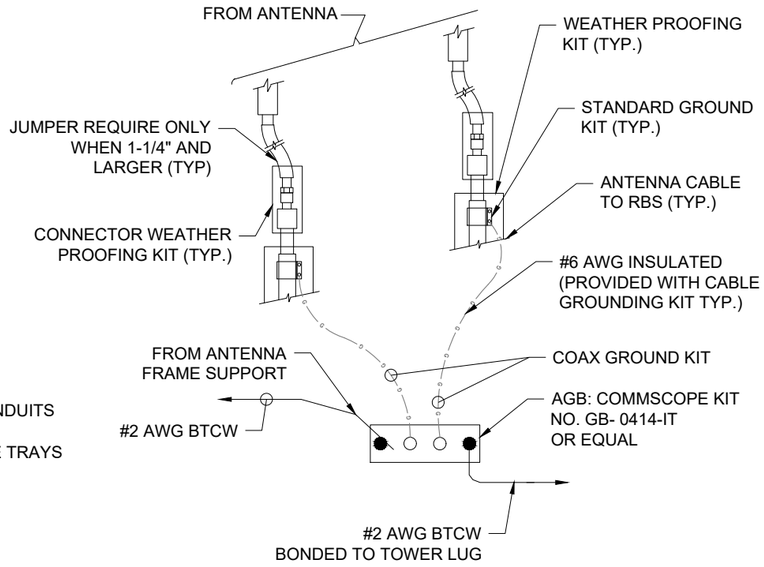
SHEET TITLE:
A-4: ANTENNA DETAILS

ELECTRICAL & GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PRODUCED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) ND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
6. RIGID STEEL CONDUITS SHALL BE GROUNDED AT BOTH ENDS.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLING BETWEEN ELECTRICAL ROOM AND PROPOSED CELL SITE ARE PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROPOSED CELL SITE TELECOM CABINET AND RBS CABINET AS INDICATED ON DRAWING A -1. PROVIDE FULL LENGTH PULL ROPE INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NAME 3R ENCLOSURE.
11. GROUNDING SHALL COMPLY WITH NEC ART. 250.
12. GROUNDING COAX CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURES COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
13. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSTALLATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE GROUND.
14. ALL GROUND CONNECTION TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
15. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AS RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY BOND ANY METER OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
16. CONNECTIONS TO MGB SHALL BE ARRANGED IN THREE MAIN GROUPS: SURGE PROCEDURES (COAXIAL CABLE GROUND KITS, TELCO AND POWER PANEL GROUND); (GROUNDING ELECTRODE RING OR BUILDING STEEL); NON-SURGING OBJECTS (EGB GROUND IN RBS UNIT).
17. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
18. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTION.
19. BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
20 BOND ANTENNA EGB'S AND MGB TO WATER MAIN.
21. TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION.
22. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
23. VERIFY PROPOSED SERVICE UPGRADE WITH LOCAL UTILITY COMPANY PRIOR TO CONSTRUCTION.

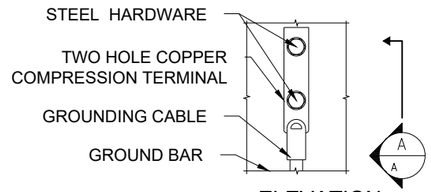


GROUNDING RISER DIAGRAM (1 / E-1)
SCALE: N.T.S

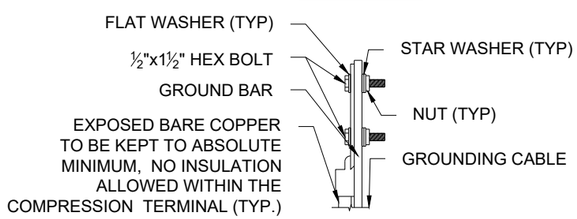


NOTES:
INSTALL CABLE GROUND KIT ABOVE HORIZONTAL BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO AGB/EGB

TOWER TOP CABLE GROUNDING DETAIL (2 / E-1)
SCALE: N.T.S



ELEVATION



SECTION A-A

NOTES:
1. "DOUBLING UP" OR "STACKING " OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

TYPICAL GROUND BAR CONNECTIONS DETAIL (3 / E-1)
SCALE: N.T.S

APPLICANT:
T-Mobile
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
860-692-7100

PROJECT MANAGER
NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
203-275-6669

CONSULTANT:
FORESITE LLC
Architects . Engineers . Surveyors
462 WALNUT STREET
NEWTON, MA 02460
617-212-3123

PROFESSIONAL SEAL
STATE OF CONNECTICUT
HOSSEIN VAHEDI
NO. ARI. 11162.
LICENSED ARCHITECT

REV	DESCRIPTION	DATE
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SITE NUMBER: CT11737C
SITE NAME: CT737/E HARTFORD TOWN SST
SITE ADDRESS: 100 SUNSET RIDGE RD
EAST HARTFORD, CT 06108

SHEET TITLE:
E-1: GROUNDING AND ELECTRICAL DETAILS

Exhibit D

STRUCTURAL ANALYSIS REPORT
SELF SUPPORT TOWER

Prepared For:

T-Mobile Northeast, LLC
35 Griffin Road South
Bloomfield, CT 06002

Structure Rating	
Self-Support Tower:	**Pass(51.1%)**

Sincerely,
Destek Engineering, LLC
License No: PEC0001429

06/25/2018

Ahmet Colakoglu, PE
Connecticut Professional Engineer
License No: 27057

Site ID: CT11737C
Site Name: 100 Sunset Ridge Road,
East Hartford, CT 06118

Destek Job No: 1875038

June 25, 2018

CONTENTS

1.0 – SUBJECT AND REFERENCES

1.1 – STRUCTURE

2.0 – EXISTING AND PROPOSED APPURTENANCES

3.0 - CODES AND LOADING

4.0 - STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING STRUCTURES

5.0 - ANALYSIS AND ASSUMPTIONS

6.0 – RESULTS AND CONCLUSION

APPENDIX

A –CALCULATIONS

DESTEK ENGINEERING, LLC
1281 Kennestone Circle, Suite 100, Marietta, GA 30066 -Tel: (770) 693-0835

1.0 SUBJECT AND REFERENCES

The purpose of this analysis is to evaluate the structural capacity of the existing 140 feet tall self-support tower, located at 100 Sunset Ridge Road, East Hartford, CT 06118 for the additions and alterations proposed by T-Mobile.

The structural analysis of the site is based on the following documents provided to Destek Engineering, LLC (Destek):

- Structural Analysis Report prepared by Hudson Design Group, dated 06/10/2016.
- Construction Drawings prepared by Hudson Design Group, dated 05/10/2016
- RFDS provided by T-Mobile, dated 05/14/2018.
- Site Audit pictures, dated 01/27/2017.

1.1 STRUCTURE

The subject structure is a 3-sided 140 feet tall, self-support tower formed by 7 sections which are X-braced using single angle diagonals. The tower tapers from 16.0 feet wide at the base to 8 feet wide at 80 feet. Between 80 and 140 feet, the tower is 8.0 feet wide. Please refer to the software output in Appendix A, for tower geometry, member sizes and other details.

2.0 EXISTING AND PROPOSED APPURTENANCES

This analysis was based on the following existing and proposed appurtenances:

Existing Configuration of T-MOBILE Appurtenances:

RAD CENTER (FT)	ANTENNA & TMA	COAX	MOUNT
120	(3) AIR21 KRC118023-1_B2A/B4P (3) LNX-6515DS-A1M (3) AIR32 KRD901146-1_B66A/B2A (3) RRUS11_B12 (3) Generic Twin Style 1B-AWS TMA	(6) 1-5/8'' + (1) 9x18 hybrid + (1) 6x12 hybrid	(3) Sector Mounts

Proposed and Final Configuration of T-MOBILE Appurtenances:

RAD CENTER (FT)	ANTENNA & TMA	COAX	MOUNT
120	(3) APXVAARR24_43-U-NA20 (3)) AIR32 KRD901146-1_B66A/B2A (3) AIR21 KRC118023-1_B2A/B4P (3) Radio 4449 B12/B71 (3) Generic Twin Style 1B-AWS TMA	(6) 1-5/8'' + (1) 6x12 hybrid	(3) Sector Mounts

DESTEK ENGINEERING, LLC
1281 Kennestone Circle, Suite 100, Marietta, GA 30066 -Tel: (770) 693-0835

Existing and Remaining Appurtenances by Others:

RAD CENTER (FT)	ANTENNA & TMA	COAX	MOUNT
138	Lightning Rod	(7) 7/8"	(3) Side-Arm Mounts
138	(3) 7' Omni		
135	1' Dish		Pipe Mount
130	(3) 20' Omni		(3) Sector Mounts
100	(3) Panel Antenna	(3) 3'' conduit	(3) Side-Arm Mounts
100	(3) 9442 RRH 700		
100	2' Dish		
100	1' Dish		
95	(2) 1' Dish		

3.0 CODES AND LOADING

The tower was analyzed per *TIA/EIA-222-G* as referenced by the *2016 Connecticut State Building Code* with all of the adopted Addendums and Supplements. The following wind loading was used in compliance with the standard for Hartford, CT:

- Basic wind speed 97 mph without ice (W_o)
- Basic wind speed 50 mph with 1" escalating ice (W_i)
- Exposure Category C
- Topographic Category 1
- Structure Class II

The following load combinations were used with wind blowing at 0°, 30°, 45°, 60°, and 90° measured from a line normal to the face of the self-support Tower.

- 1.2 D + 1.6 W_0
- 0.9 D + 1.6 W_0
- 1.2 D + 1.0 D_i + 1.0 W_i

D: Dead Load of structure and appurtenances
W_0: Wind Load, without ice
W_i: Wind Load, with ice
D_i: Weight of Ice

DESTEK ENGINEERING, LLC
1281 Kennestone Circle, Suite 100, Marietta, GA 30066 -Tel: (770) 693-0835

4.0 STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING STRUCTURES

The analysis is based on the information provided to Destek and is assumed to be current and correct. Unless otherwise noted, the structure and the foundation system are assumed to be in good condition, free of defects and can achieve theoretical strength.

It is assumed that the structure has been maintained and shall be maintained during its service. The superstructure and the foundation system are assumed to be designed with proper engineering practice and fabricated, constructed and erected in accordance with the design documents. Destek will accept no liability which may arise due to any existing deficiency in design, material, fabrication, erection, construction, etc. or lack of maintenance.

The analysis results presented in this report are only applicable for the previously mentioned existing and proposed additions and alterations. Any deviation of the proposed equipment and placement, etc., will require Destek to generate an additional structural analysis.

5.0 ANALYSIS AND ASSUMPTIONS

The tower was analyzed by utilizing tnxTower, a non-linear, three-dimensional, finite element-analysis software package, a product of Tower Numerics, Inc. Software output for this analysis is provided in Appendix A of this report.

All member end connection details are sufficient to resist the maximum supported member loading.

DESTEK ENGINEERING, LLC
1281 Kennestone Circle, Suite 100, Marietta, GA 30066 -Tel: (770) 693-0835

6.0 RESULTS AND CONCLUSION

Based on a structural analysis per ANSI/TIA-222-G, the existing self-support tower **has adequate** structural capacity for the proposed changes by T-Mobile. For the aforementioned load combinations and as a maximum, the tower diagonals between 100' and 120' are stressed to **51.1%** of capacity. The tower legs between 0' and 20' are stressed to **46.3%** of capacity. The existing foundation could not be analyzed as there were no information pertaining to the tower and the guy anchor foundation.

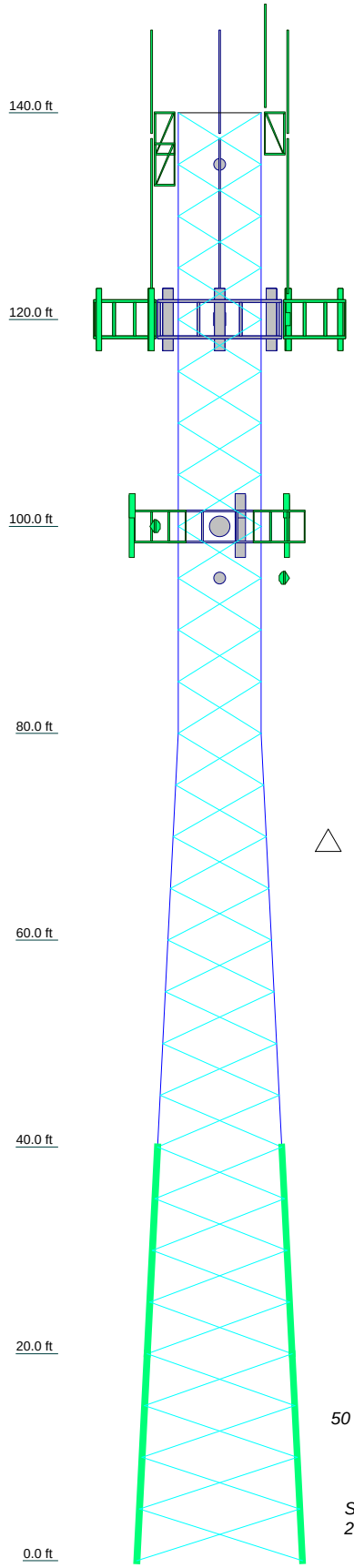
Therefore, the proposed additions and alterations by T-Mobile **can** be implemented as intended with the conditions outlined in this report.

Should you have any questions about this report, please contact us at (770) 693-0835.

DESTEK ENGINEERING, LLC
1281 Kennestone Circle, Suite 100, Marietta, GA 30066 -Tel: (770) 693-0835

APPENDIX A
CALCULATIONS &
COAX LAYOUT

Section	Legs	Leg Grade	Diagonals	Diagonal Grade	Top Girts	Face Width (ft)	# Panels @ (ft)	Weight (K)
T1			L1 3/4x1 3/4x1/8		L3x3x3/8	8		1.3
T2	SR 2 1/4		L1 3/4x1 3/4x1/4					1.4
T3	SR 2 3/4							2.3
T4	SR 3	A572-50	L 2.5 x 2.5 x 5/16	A36	N.A.	10	28 @ 5	2.7
T5	SR 3 1/4							3.1
T6	Pirod 105218		L3x3x5/16			12		4.2
T7	Pirod 105219					14		5.0
						16		20.1



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 2"x15'	138	RADIO 4449 B12/B71	120
Omni 2"x7'	138	RADIO 4449 B12/B71	120
Omni 2"x7'	138	RADIO 4449 B12/B71	120
Omni 2"x7'	138	6'-P2x0.154	120
3' Side Mount Standoff	138	6'-P2x0.154	120
3' Side Mount Standoff	138	6'-P2x0.154	120
3' Side Mount Standoff	138	PiROD 12' T-Frame	120
3' Side Mount Standoff	135	PiROD 12' T-Frame	120
Andrew VHLP1	135	PiROD 12' T-Frame	120
Omni 3"x20'	130	AIR 21 B2A/B4P w/ Mount Pipe	120
Omni 3"x20'	130	Panel Antenna 6'x1'x4.5"	100
Omni 3"x20'	130	Panel Antenna 6'x1'x4.5"	100
AIR 21 B2A/B4P w/ Mount Pipe	120	9442 RRH 700	100
AIR 21 B2A/B4P w/ Mount Pipe	120	9442 RRH 700	100
Gen. TMA	120	9442 RRH 700	100
Gen. TMA	120	Side Arm Mount [SO 101-1]	100
Gen. TMA	120	Side Arm Mount [SO 101-1]	100
AIR -32 B2A/B66AA w/ Mount Pipe	120	Side Arm Mount [SO 101-1]	100
AIR -32 B2A/B66AA w/ Mount Pipe	120	Panel Antenna 6'x1'x4.5"	100
AIR -32 B2A/B66AA w/ Mount Pipe	120	Andrew VHLP2-11	100
APXVAARR24_43-U-NA20 w/ Mount Pipe	120	Andrew VHLP1	100
		Andrew VHLP1	95
APXVAARR24_43-U-NA20 w/ Mount Pipe	120	Andrew VHLP1	95
APXVAARR24_43-U-NA20 w/ Mount Pipe	120		

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 Exposure C to the TIA-222-G Standard.
3. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 51.1%

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 165 K
SHEAR: 18 K

UPLIFT: -135 K
SHEAR: 15 K

AXIAL 99 K
SHEAR 9 K
MOMENT 768 kip-ft

TORQUE 3 kip-ft
50 mph WIND - 1.0000 in ICE

AXIAL 32 K
SHEAR 28 K
MOMENT 2135 kip-ft

TORQUE 15 kip-ft
REACTIONS - 97 mph WIND

Destek Engineering, LLC.
1281 Kennestone Cir. Suite#100
Marietta, GA 30066
Phone: (770) 693-0835
FAX:

Job: CT11737C			
Project: 1875038			
Client: Fore Site LLC	Drawn by:	App'd:	
Code: TIA-222-G	Date: 06/22/18	Scale: NTS	
Path: Z:\Projects\2018\75 - ForeSite LLC\1875038 - CT11737C\Calcs\TNX\CT11737C.eri		Dwg No. E-1	

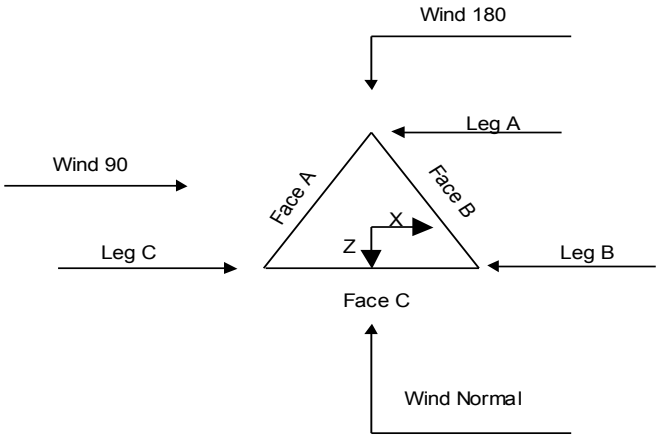
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 140.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 8.00 ft at the top and 16.00 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Hartford County, Connecticut.
Basic wind speed of 97 mph.
Structure Class II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
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	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	√ Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	√ SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	√ Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	√ Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-G Bracing Resist. Exemption
√ Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Use TIA-222-G Tension Splice Exemption
Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Poles
√ Secondary Horizontal Braces Leg	√ Sort Capacity Reports By Component	√ Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
SR Members Are Concentric		



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	140.00-120.00			8.00	1	20.00
T2	120.00-100.00			8.00	1	20.00
T3	100.00-80.00			8.00	1	20.00
T4	80.00-60.00			8.00	1	20.00
T5	60.00-40.00			10.00	1	20.00
T6	40.00-20.00			12.00	1	20.00
T7	20.00-0.00			14.00	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	140.00-120.00	5.00	X Brace	No	No	0.0000	0.0000
T2	120.00-100.00	5.00	X Brace	No	No	0.0000	0.0000
T3	100.00-80.00	5.00	X Brace	No	No	0.0000	0.0000
T4	80.00-60.00	5.00	X Brace	No	No	0.0000	0.0000
T5	60.00-40.00	5.00	X Brace	No	No	0.0000	0.0000
T6	40.00-20.00	5.00	X Brace	No	No	0.0000	0.0000
T7	20.00-0.00	5.00	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 140.00-120.00	Solid Round	2 1/4	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x1/8	A36 (36 ksi)
T2 120.00-100.00	Solid Round	2 1/4	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x1/4	A36 (36 ksi)
T3 100.00-80.00	Solid Round	2 3/4	A572-50 (50 ksi)	Equal Angle	L 2.5 x 2.5 x 5/16	A36 (36 ksi)
T4 80.00-60.00	Solid Round	3	A572-50 (50 ksi)	Equal Angle	L 2.5 x 2.5 x 5/16	A36 (36 ksi)
T5 60.00-40.00	Solid Round	3 1/4	A572-50 (50 ksi)	Equal Angle	L 2.5 x 2.5 x 5/16	A36 (36 ksi)
T6 40.00-20.00	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
T7 20.00-0.00	Truss Leg	Pirod 105219	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	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 140.00-120.00	Equal Angle	L3x3x3/8	A36 (36 ksi)	Solid Round		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T1 140.00-120.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T2 120.00-100.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T3 100.00-80.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T4 80.00-60.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T5 60.00-40.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T6 40.00-20.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T7 20.00-0.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	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	Double Angle Stitch Bolt Spacing Redundants in
T1 140.00-120.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 120.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T3 100.00-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T4 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T5 60.00-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T6 40.00-20.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T7 20.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

Tower Section Geometry *(cont'd)*

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
T1	No	No	1	1	1	1	1	1	1	1
140.00-120.00				1	1	1	1	1	1	1
T2	No	No	1	1	1	1	1	1	1	1
120.00-100.00				1	1	1	1	1	1	1
T3	No	No	1	1	1	1	1	1	1	1
100.00-80.00				1	1	1	1	1	1	1
T4	No	No	1	1	1	1	1	1	1	1
80.00-60.00				1	1	1	1	1	1	1
T5	No	No	1	1	1	1	1	1	1	1
60.00-40.00				1	1	1	1	1	1	1
T6	No	No	1	1	1	1	1	1	1	0.5
40.00-20.00				1	1	1	1	1	1	0.85
T7 20.00-0.00	No	No	1	1	1	1	1	1	1	0.5
				1	1	1	1	1	1	0.85

[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

T6 40.00-20.00	1	0.5	0.85	1	0.5	0.85
T7 20.00-0.00	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 140.00-120.00	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 120.00-100.00	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
T3 100.00-80.00	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 80.00-60.00	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 60.00-40.00	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
T6 40.00-20.00	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 20.00-0.00	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

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
Feedline Ladder (Af) *****	C	No	Af (CaAa)	120.00 - 6.00	0.0000	0.45	1	1	0.0000	3.0000		8.40
LDF7-50A (1-5/8 FOAM)	C	No	Ar (CaAa)	120.00 - 6.00	-2.0000	0.44	6	3	0.0000	1.9800		0.82
1 5/8 Fiber Cable	C	No	Ar (CaAa)	120.00 - 6.00	-3.0000	0.46	1	1	0.0000	1.9800		1.04
1 5/8 Fiber Cable	C	No	Ar (CaAa)	120.00 - 6.00	-3.0000	0.47	1	1	0.0000	1.9800		1.04
3" conduit	C	No	Ar (CaAa)	100.00 - 6.00	-4.0000	0.47	3	3	0.0000	3.5000		3.00
VXL5-50 (7/8 FOAM)	C	No	Ar (CaAa)	140.00 - 6.00	-4.0000	0.44	7	4	0.0000	1.0800		0.29

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	140.00-120.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	15.120	0.000	0.04
T2	120.00-100.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	56.800	0.000	0.35
T3	100.00-80.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	77.800	0.000	0.53
T4	80.00-60.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	77.800	0.000	0.53
T5	60.00-40.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	77.800	0.000	0.53
T6	40.00-20.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	77.800	0.000	0.53
T7	20.00-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	54.460	0.000	0.37

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	140.00-120.00	A	2.294	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	27.938	0.000	0.38
T2	120.00-100.00	A	2.256	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	106.297	0.000	1.99
T3	100.00-80.00	A	2.211	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	147.367	0.000	2.71
T4	80.00-60.00	A	2.156	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	145.568	0.000	2.64
T5	60.00-40.00	A	2.085	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	143.229	0.000	2.55
T6	40.00-20.00	A	1.981	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	139.827	0.000	2.43
T7	20.00-0.00	A	1.775	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	93.156	0.000	1.53

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	140.00-120.00	-3.2523	1.8258	-0.8503	0.4774
T2	120.00-100.00	-7.1222	4.2596	-4.9064	2.9659
T3	100.00-80.00	-7.4541	4.1855	-4.8126	2.8008
T4	80.00-60.00	-8.1477	4.6423	-5.2903	3.1085
T5	60.00-40.00	-9.5058	5.5302	-6.1880	3.6870

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
T6	40.00-20.00	-8.9196	5.2634	-5.1834	3.1334
T7	20.00-0.00	-7.8200	4.6558	-4.6154	2.7970

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	7	VXL5-50 (7/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T2	1	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T2	3	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T2	4	1 5/8 Fiber Cable	100.00 - 120.00	0.6000	0.6000
T2	5	1 5/8 Fiber Cable	100.00 - 120.00	0.6000	0.6000
T2	7	VXL5-50 (7/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T3	1	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T3	3	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T3	4	1 5/8 Fiber Cable	80.00 - 100.00	0.6000	0.6000
T3	5	1 5/8 Fiber Cable	80.00 - 100.00	0.6000	0.6000
T3	6	3" conduit	80.00 - 100.00	0.6000	0.6000
T3	7	VXL5-50 (7/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T4	1	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T4	3	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T4	4	1 5/8 Fiber Cable	60.00 - 80.00	0.6000	0.6000
T4	5	1 5/8 Fiber Cable	60.00 - 80.00	0.6000	0.6000
T4	6	3" conduit	60.00 - 80.00	0.6000	0.6000
T4	7	VXL5-50 (7/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T5	1	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T5	3	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T5	4	1 5/8 Fiber Cable	40.00 - 60.00	0.6000	0.6000
T5	5	1 5/8 Fiber Cable	40.00 - 60.00	0.6000	0.6000
T5	6	3" conduit	40.00 - 60.00	0.6000	0.6000
T5	7	VXL5-50 (7/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T6	1	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.5178
T6	3	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5178
T6	4	1 5/8 Fiber Cable	20.00 - 40.00	0.6000	0.5178
T6	5	1 5/8 Fiber Cable	20.00 - 40.00	0.6000	0.5178
T6	6	3" conduit	20.00 - 40.00	0.6000	0.5178
T6	7	VXL5-50 (7/8 FOAM)	20.00 - 40.00	0.6000	0.5178
T7	1	Feedline Ladder (Af)	6.00 - 20.00	0.6000	0.5668
T7	3	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.5668
T7	4	1 5/8 Fiber Cable	6.00 - 20.00	0.6000	0.5668
T7	5	1 5/8 Fiber Cable	6.00 - 20.00	0.6000	0.5668
T7	6	3" conduit	6.00 - 20.00	0.6000	0.5668
T7	7	VXL5-50 (7/8 FOAM)	6.00 - 20.00	0.6000	0.5668

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
****									
Lightning Rod 2"x15'	B	From Leg	0.50	0.0000	138.00	No Ice	3.00	3.00	0.08
			0.00			1/2" Ice	4.53	4.53	0.10
			7.50			1" Ice	6.06	6.06	0.13
138ft									
Omni 2"x7'	A	From Leg	3.00	0.0000	138.00	No Ice	1.40	1.40	0.03
			0.00			1/2" Ice	2.13	2.13	0.04
			5.00			1" Ice	2.86	2.86	0.05
Omni 2"x7'	B	From Leg	3.00	0.0000	138.00	No Ice	1.40	1.40	0.03
			0.00			1/2" Ice	2.13	2.13	0.04
			5.00			1" Ice	2.86	2.86	0.05
Omni 2"x7'	C	From Leg	3.00	0.0000	138.00	No Ice	1.40	1.40	0.03
			0.00			1/2" Ice	2.13	2.13	0.04
			5.00			1" Ice	2.86	2.86	0.05
3' Side Mount Standoff	A	From Leg	1.50	0.0000	138.00	No Ice	1.50	1.50	0.04
			0.00			1/2" Ice	2.20	2.20	0.07
			0.00			1" Ice	2.90	2.90	0.10
3' Side Mount Standoff	B	From Leg	1.50	0.0000	138.00	No Ice	1.50	1.50	0.04
			0.00			1/2" Ice	2.20	2.20	0.07
			0.00			1" Ice	2.90	2.90	0.10
3' Side Mount Standoff	C	From Leg	1.50	0.0000	138.00	No Ice	1.50	1.50	0.04
			0.00			1/2" Ice	2.20	2.20	0.07
			0.00			1" Ice	2.90	2.90	0.10
135ft									
3' Side Mount Standoff	C	From Leg	1.50	0.0000	135.00	No Ice	1.50	1.50	0.04
			0.00			1/2" Ice	2.20	2.20	0.07
			0.00			1" Ice	2.90	2.90	0.10
130ft									
Omni 3"x20'	A	From Leg	3.00	0.0000	130.00	No Ice	6.00	6.00	0.05
			0.00			1/2" Ice	8.03	8.03	0.09
			0.00			1" Ice	10.06	10.06	0.14
Omni 3"x20'	B	From Leg	3.00	0.0000	130.00	No Ice	6.00	6.00	0.05
			0.00			1/2" Ice	8.03	8.03	0.09
			0.00			1" Ice	10.06	10.06	0.14
Omni 3"x20'	C	From Leg	3.00	0.0000	130.00	No Ice	6.00	6.00	0.05
			0.00			1/2" Ice	8.03	8.03	0.09
			0.00			1" Ice	10.06	10.06	0.14
120ft T Mobile									
AIR 21 B2A/B4P w/ Mount Pipe	A	From Leg	3.00	0.0000	120.00	No Ice	6.16	5.55	0.10
			0.00			1/2" Ice	6.60	6.30	0.16
			0.00			1" Ice	7.03	7.00	0.22
AIR 21 B2A/B4P w/ Mount Pipe	B	From Leg	3.00	0.0000	120.00	No Ice	6.16	5.55	0.10
			0.00			1/2" Ice	6.60	6.30	0.16
			0.00			1" Ice	7.03	7.00	0.22
AIR 21 B2A/B4P w/ Mount Pipe	C	From Leg	3.00	0.0000	120.00	No Ice	6.16	5.55	0.10
			0.00			1/2" Ice	6.60	6.30	0.16
			0.00			1" Ice	7.03	7.00	0.22
Gen. TMA	A	From Leg	3.00	0.0000	120.00	No Ice	0.68	0.45	0.01
			0.00			1/2" Ice	0.80	0.56	0.02
			0.00			1" Ice	0.92	0.67	0.02
Gen. TMA	B	From Leg	3.00	0.0000	120.00	No Ice	0.68	0.45	0.01
			0.00			1/2" Ice	0.80	0.56	0.02
			0.00			1" Ice	0.92	0.67	0.02
Gen. TMA	C	From Leg	3.00	0.0000	120.00	No Ice	0.68	0.45	0.01

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00				1/2" Ice	0.80	0.56	0.02
			0.00				1" Ice	0.92	0.67	0.02
AIR -32 B2A/B66AA w/ Mount Pipe	A	From Leg	3.00	0.00	0.0000	120.00	No Ice	6.75	6.07	0.15
			0.00				1/2" Ice	7.20	6.87	0.21
			0.00				1" Ice	7.65	7.58	0.28
AIR -32 B2A/B66AA w/ Mount Pipe	B	From Leg	3.00	0.00	0.0000	120.00	No Ice	6.75	6.07	0.15
			0.00				1/2" Ice	7.20	6.87	0.21
			0.00				1" Ice	7.65	7.58	0.28
AIR -32 B2A/B66AA w/ Mount Pipe	C	From Leg	3.00	0.00	0.0000	120.00	No Ice	6.75	6.07	0.15
			0.00				1/2" Ice	7.20	6.87	0.21
			0.00				1" Ice	7.65	7.58	0.28
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	3.00	0.00	0.0000	120.00	No Ice	20.48	11.02	0.16
			0.00				1/2" Ice	21.23	12.55	0.30
			0.00				1" Ice	21.99	14.10	0.44
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	3.00	0.00	0.0000	120.00	No Ice	20.48	11.02	0.16
			0.00				1/2" Ice	21.23	12.55	0.30
			0.00				1" Ice	21.99	14.10	0.44
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	3.00	0.00	0.0000	120.00	No Ice	20.48	11.02	0.16
			0.00				1/2" Ice	21.23	12.55	0.30
			0.00				1" Ice	21.99	14.10	0.44
RADIO 4449 B12/B71	A	From Leg	3.00	0.00	0.0000	120.00	No Ice	1.65	1.30	0.08
			0.00				1/2" Ice	1.81	1.44	0.09
			0.00				1" Ice	1.98	1.60	0.11
RADIO 4449 B12/B71	B	From Leg	3.00	0.00	0.0000	120.00	No Ice	1.65	1.30	0.08
			0.00				1/2" Ice	1.81	1.44	0.09
			0.00				1" Ice	1.98	1.60	0.11
RADIO 4449 B12/B71	C	From Leg	3.00	0.00	0.0000	120.00	No Ice	1.65	1.30	0.08
			0.00				1/2" Ice	1.81	1.44	0.09
			0.00				1" Ice	1.98	1.60	0.11
6'-P2x0.154	A	From Leg	3.00	0.00	0.0000	120.00	No Ice	1.43	1.43	0.02
			0.00				1/2" Ice	1.92	1.92	0.03
			0.00				1" Ice	2.29	2.29	0.05
6'-P2x0.154	B	From Leg	3.00	0.00	0.0000	120.00	No Ice	1.43	1.43	0.02
			0.00				1/2" Ice	1.92	1.92	0.03
			0.00				1" Ice	2.29	2.29	0.05
6'-P2x0.154	C	From Leg	3.00	0.00	0.0000	120.00	No Ice	1.43	1.43	0.02
			0.00				1/2" Ice	1.92	1.92	0.03
			0.00				1" Ice	2.29	2.29	0.05
PiROD 12' T-Frame	A	From Leg	3.00	0.00	0.0000	120.00	No Ice	12.20	12.20	0.36
			0.00				1/2" Ice	17.60	17.60	0.49
			0.00				1" Ice	23.00	23.00	0.62
PiROD 12' T-Frame	B	From Leg	3.00	0.00	0.0000	120.00	No Ice	12.20	12.20	0.36
			0.00				1/2" Ice	17.60	17.60	0.49
			0.00				1" Ice	23.00	23.00	0.62
PiROD 12' T-Frame	C	From Leg	3.00	0.00	0.0000	120.00	No Ice	12.20	12.20	0.36
			0.00				1/2" Ice	17.60	17.60	0.49
			0.00				1" Ice	23.00	23.00	0.62
100ft										
Panel Antenna 6'x1'x4.5"	A	From Leg	4.00	0.00	0.0000	100.00	No Ice	8.64	8.64	0.07
			2.00				1/2" Ice	9.29	9.29	0.13
			0.00				1" Ice	9.94	9.94	0.19
Panel Antenna 6'x1'x4.5"	B	From Leg	4.00	0.00	0.0000	100.00	No Ice	8.64	8.64	0.07
			2.00				1/2" Ice	9.29	9.29	0.13
			0.00				1" Ice	9.94	9.94	0.19
Panel Antenna 6'x1'x4.5"	C	From Leg	4.00	0.00	0.0000	100.00	No Ice	8.64	8.64	0.07
			2.00				1/2" Ice	9.29	9.29	0.13
			0.00				1" Ice	9.94	9.94	0.19

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
9442 RRH 700	A	From Leg	4.00 2.00 2.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice	3.02 3.26 3.50	1.50 1.69 1.88	0.04 0.06 0.09
9442 RRH 700	B	From Leg	4.00 2.00 2.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice	3.02 3.26 3.50	1.50 1.69 1.88	0.04 0.06 0.09
9442 RRH 700	C	From Leg	4.00 2.00 2.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice	3.02 3.26 3.50	1.50 1.69 1.88	0.04 0.06 0.09
Side Arm Mount [SO 101-1]	A	From Leg	2.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice	3.75 4.45 5.15	1.28 1.39 1.50	0.08 0.11 0.14
Side Arm Mount [SO 101-1]	B	From Leg	2.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice	3.75 4.45 5.15	1.28 1.39 1.50	0.08 0.11 0.14
Side Arm Mount [SO 101-1]	C	From Leg	2.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice	3.75 4.45 5.15	1.28 1.39 1.50	0.08 0.11 0.14

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
***											
135ft											
Andrew VHLP1	A	Paraboloid w/Radome	From Leg	2.00 0.00 0.00	0.0000		135.00	1.25	No Ice 1/2" Ice 1" Ice	1.23 1.40 1.57	0.01 0.03 0.04
100ft											
Andrew VHLP2-11	A	Paraboloid w/Radome	From Leg	4.00 0.00 0.00	0.0000		100.00	2.00	No Ice 1/2" Ice 1" Ice	3.14 3.41 3.68	0.05 0.07 0.09
95ft											
Andrew VHLP1	A	Paraboloid w/Radome	From Leg	2.00 0.00 0.00	0.0000		95.00	1.25	No Ice 1/2" Ice 1" Ice	1.23 1.40 1.57	0.01 0.03 0.04
95ft											
Andrew VHLP1	B	Paraboloid w/Radome	From Leg	2.00 0.00 0.00	0.0000		95.00	1.25	No Ice 1/2" Ice 1" Ice	1.23 1.40 1.57	0.01 0.03 0.04
100ft											
Andrew VHLP1	C	Paraboloid w/Radome	From Leg	2.00 0.00 0.00	0.0000		100.00	1.25	No Ice 1/2" Ice 1" Ice	1.23 1.40 1.57	0.01 0.03 0.04

Truss-Leg Properties

Section Designation	Area	Area Ice	Self Weight	Ice Weight	Equiv. Diameter	Equiv. Diameter Ice	Leg Area
	in^2	in^2	K	K	in	in	in^2
Pirod 105218	2263.4687	6856.2743	0.72	2.41	7.8593	23.8065	7.2158
Pirod 105219	2441.8688	6746.0737	0.90	2.34	8.4787	23.4239	9.4248

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service

Comb. No.	Description
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	140 - 120	Leg	Max Tension	15	3.28	0.00	0.01
			Max. Compression	18	-4.74	0.06	-0.04
			Max. Mx	8	-0.74	0.18	0.03
			Max. My	2	-0.15	-0.02	-0.18
			Max. Vy	20	0.20	0.00	-0.05
			Max. Vx	2	0.22	-0.01	0.03
		Diagonal	Max Tension	22	1.15	0.00	0.00
			Max. Compression	10	-1.26	0.00	0.00
			Max. Mx	33	-0.08	0.04	0.00
			Max. My	24	-1.02	0.00	0.00
			Max. Vy	33	-0.04	0.04	0.00
			Max. Vx	24	-0.00	0.00	0.00
		Top Girt	Max Tension	19	0.14	0.00	0.00
			Max. Compression	22	-0.18	0.00	0.00
			Max. Mx	26	-0.08	-0.22	0.00
			Max. My	24	-0.01	0.00	0.00
			Max. Vy	26	-0.11	0.00	0.00
			Max. Vx	24	0.00	0.00	0.00
T2	120 - 100	Leg	Max Tension	15	22.63	0.01	0.01
			Max. Compression	18	-28.30	0.10	-0.05
			Max. Mx	20	-1.82	0.16	-0.01
			Max. My	24	-2.03	0.08	0.16
			Max. Vy	20	1.31	0.02	-0.09
			Max. Vx	2	1.33	-0.01	0.07
		Diagonal	Max Tension	20	3.53	0.00	0.00
			Max. Compression	20	-3.58	0.00	0.00
			Max. Mx	34	0.62	0.04	0.00
			Max. My	20	-2.77	0.01	0.01
			Max. Vy	34	-0.04	0.04	0.00
			Max. Vx	20	-0.00	0.01	0.01
T3	100 - 80	Leg	Max Tension	15	53.83	0.01	0.00
			Max. Compression	18	-63.81	0.18	-0.10
			Max. Mx	20	-3.22	0.24	-0.03
			Max. My	24	-4.13	0.10	0.24
			Max. Vy	8	-0.43	-0.06	-0.08
			Max. Vx	2	0.47	-0.01	0.11
		Diagonal	Max Tension	16	5.25	0.00	0.00
			Max. Compression	16	-5.39	0.00	0.00
			Max. Mx	34	0.62	0.08	-0.00
			Max. My	24	-4.80	-0.00	0.01
			Max. Vy	34	-0.06	0.08	-0.00
			Max. Vx	24	-0.00	-0.00	0.01
T4	80 - 60	Leg	Max Tension	15	76.98	-0.06	-0.01
			Max. Compression	18	-91.08	0.12	0.00
			Max. Mx	18	-71.77	0.20	-0.00
			Max. My	12	-5.10	-0.04	-0.27
			Max. Vy	2	0.08	0.20	0.02
			Max. Vx	12	0.12	-0.04	-0.27
		Diagonal	Max Tension	4	3.62	0.00	0.00
			Max. Compression	2	-3.74	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	35	1.09	0.08	0.01
			Max. My	16	-3.38	-0.01	-0.01
			Max. Vy	33	0.07	0.08	0.01
			Max. Vx	36	-0.00	0.00	0.00
T5	60 - 40	Leg	Max Tension	15	96.31	-0.07	-0.01
			Max. Compression	18	-114.65	0.21	-0.00
			Max. Mx	2	-113.06	0.21	0.02
			Max. My	12	-7.70	0.00	-0.30
			Max. Vy	3	-0.06	0.21	0.02
			Max. Vx	12	0.10	0.00	-0.30
		Diagonal	Max Tension	4	3.96	0.00	0.00
			Max. Compression	2	-3.99	0.00	0.00
			Max. Mx	33	0.76	0.10	-0.01
			Max. My	38	-0.38	0.09	0.01
			Max. Vy	33	0.08	0.10	-0.01
			Max. Vx	38	0.00	0.00	0.00
T6	40 - 20	Leg	Max Tension	15	114.25	-2.40	0.00
			Max. Compression	18	-137.60	2.50	-0.00
			Max. Mx	18	-120.10	2.98	-0.00
			Max. My	16	-7.31	-0.04	2.63
			Max. Vy	19	-0.61	2.97	-0.00
			Max. Vx	12	0.45	-0.01	-2.18
		Diagonal	Max Tension	4	4.66	0.00	0.00
			Max. Compression	2	-4.79	0.00	0.00
			Max. Mx	35	1.15	0.15	0.02
			Max. My	38	-0.49	0.13	0.02
			Max. Vy	33	0.10	0.15	0.02
			Max. Vx	38	0.00	0.00	0.00
T7	20 - 0	Leg	Max Tension	15	132.68	-2.32	0.01
			Max. Compression	18	-161.61	0.00	-0.00
			Max. Mx	35	-82.82	13.15	-0.00
			Max. My	16	-9.61	-0.16	3.22
			Max. Vy	29	-3.22	-4.32	0.00
			Max. Vx	12	-0.69	-0.12	-3.15
		Diagonal	Max Tension	30	7.62	0.00	0.00
			Max. Compression	2	-6.08	0.00	0.00
			Max. Mx	33	-1.35	0.17	0.02
			Max. My	38	-3.21	0.16	0.02
			Max. Vy	33	0.10	0.17	0.02
			Max. Vx	38	-0.01	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	164.76	15.61	-9.02
	Max. H_x	18	164.76	15.61	-9.02
	Max. H_z	7	-132.97	-13.07	7.54
	Min. Vert	7	-132.97	-13.07	7.54
	Min. H_x	7	-132.97	-13.07	7.54
	Min. H_z	18	164.76	15.61	-9.02
Leg B	Max. Vert	10	162.71	-15.82	-8.58
	Max. H_x	23	-134.50	13.30	7.21
	Max. H_z	23	-134.50	13.30	7.21
	Min. Vert	23	-134.50	13.30	7.21
	Min. H_x	10	162.71	-15.82	-8.58

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg A	Min. H_z	10	162.71	-15.82	-8.58
	Max. Vert	2	162.76	-0.52	17.99
	Max. H_x	19	-68.89	1.37	-7.87
	Max. H_z	2	162.76	-0.52	17.99
	Min. Vert	15	-135.11	0.44	-15.17
	Min. H_x	6	81.06	-1.22	8.82
	Min. H_z	15	-135.11	0.44	-15.17

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	26.78	-0.00	0.00	8.00	13.62	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	32.13	0.00	-28.03	-2106.81	16.39	-13.99
0.9 Dead+1.6 Wind 0 deg - No Ice	24.10	0.00	-28.03	-2107.57	12.28	-13.98
1.2 Dead+1.6 Wind 30 deg - No Ice	32.13	13.02	-22.58	-1711.41	-976.16	-7.48
0.9 Dead+1.6 Wind 30 deg - No Ice	24.10	13.02	-22.58	-1712.47	-979.49	-7.47
1.2 Dead+1.6 Wind 60 deg - No Ice	32.13	22.33	-12.89	-974.71	-1689.63	0.07
0.9 Dead+1.6 Wind 60 deg - No Ice	24.10	22.33	-12.89	-976.35	-1692.40	0.07
1.2 Dead+1.6 Wind 90 deg - No Ice	32.13	26.04	0.03	12.47	-1967.21	6.77
0.9 Dead+1.6 Wind 90 deg - No Ice	24.10	26.04	0.03	10.06	-1969.76	6.76
1.2 Dead+1.6 Wind 120 deg - No Ice	32.13	24.26	14.02	1069.09	-1814.78	12.87
0.9 Dead+1.6 Wind 120 deg - No Ice	24.10	24.26	14.02	1065.85	-1817.46	12.86
1.2 Dead+1.6 Wind 150 deg - No Ice	32.13	13.06	22.61	1734.21	-979.42	14.49
0.9 Dead+1.6 Wind 150 deg - No Ice	24.10	13.05	22.61	1730.44	-982.74	14.48
1.2 Dead+1.6 Wind 180 deg - No Ice	32.13	0.00	25.86	1987.46	16.40	12.60
0.9 Dead+1.6 Wind 180 deg - No Ice	24.10	0.00	25.86	1983.49	12.29	12.59
1.2 Dead+1.6 Wind 210 deg - No Ice	32.13	-13.06	22.61	1734.25	1012.23	7.60
0.9 Dead+1.6 Wind 210 deg - No Ice	24.10	-13.05	22.61	1730.48	1007.34	7.59
1.2 Dead+1.6 Wind 240 deg - No Ice	32.13	-24.26	14.02	1069.10	1847.57	0.07
0.9 Dead+1.6 Wind 240 deg - No Ice	24.10	-24.26	14.02	1065.86	1842.04	0.07
1.2 Dead+1.6 Wind 270 deg - No Ice	32.13	-26.04	0.03	12.47	1999.92	-6.77
0.9 Dead+1.6 Wind 270 deg - No Ice	24.10	-26.03	0.03	10.06	1994.26	-6.76
1.2 Dead+1.6 Wind 300 deg - No Ice	32.13	-22.33	-12.89	-974.65	1722.32	-11.62
0.9 Dead+1.6 Wind 300 deg -	24.10	-22.33	-12.89	-976.28	1716.86	-11.61

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
No Ice 1.2 Dead+1.6 Wind 330 deg -	32.13	-13.02	-22.58	-1711.31	1008.89	-14.62
No Ice 0.9 Dead+1.6 Wind 330 deg -	24.10	-13.02	-22.58	-1712.37	1003.99	-14.60
No Ice 1.2 Dead+1.0 Ice+1.0 Temp	99.35	0.00	-0.00	40.07	69.88	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	99.35	0.00	-8.73	-647.74	69.97	-2.61
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	99.35	4.20	-7.29	-537.69	-263.35	-1.35
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	99.35	7.31	-4.22	-294.10	-509.19	0.20
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	99.35	8.40	0.01	40.83	-596.31	1.61
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	99.35	7.56	4.37	384.36	-525.31	2.65
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	99.35	4.21	7.29	618.79	-264.17	2.92
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	99.35	0.00	8.46	710.83	69.97	2.51
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	99.35	-4.21	7.29	618.80	404.11	1.38
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	99.35	-7.56	4.37	384.36	665.25	-0.17
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	99.35	-8.40	0.01	40.83	736.23	-1.61
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	99.35	-7.31	-4.22	-294.09	649.10	-2.57
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	99.35	-4.20	-7.29	-537.66	403.27	-2.95
Dead+Wind 0 deg - Service	26.78	0.00	-6.70	-497.83	13.65	-3.35
Dead+Wind 30 deg - Service	26.78	3.11	-5.40	-403.32	-223.57	-1.79
Dead+Wind 60 deg - Service	26.78	5.34	-3.08	-227.25	-394.09	0.02
Dead+Wind 90 deg - Service	26.78	6.23	0.01	8.69	-460.43	1.62
Dead+Wind 120 deg - Service	26.78	5.80	3.35	261.23	-424.01	3.08
Dead+Wind 150 deg - Service	26.78	3.12	5.41	420.20	-224.35	3.46
Dead+Wind 180 deg - Service	26.78	0.00	6.18	480.72	13.65	3.01
Dead+Wind 210 deg - Service	26.78	-3.12	5.41	420.21	251.66	1.82
Dead+Wind 240 deg - Service	26.78	-5.80	3.35	261.24	451.32	0.02
Dead+Wind 270 deg - Service	26.78	-6.23	0.01	8.69	487.72	-1.62
Dead+Wind 300 deg - Service	26.78	-5.34	-3.08	-227.23	421.37	-2.78
Dead+Wind 330 deg - Service	26.78	-3.11	-5.40	-403.30	250.86	-3.49

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-26.78	0.00	0.00	26.78	-0.00	0.000%
2	0.00	-32.13	-28.03	-0.00	32.13	28.03	0.001%
3	0.00	-24.10	-28.03	-0.00	24.10	28.03	0.002%
4	13.02	-32.13	-22.58	-13.02	32.13	22.58	0.001%
5	13.02	-24.10	-22.58	-13.02	24.10	22.58	0.002%
6	22.33	-32.13	-12.89	-22.33	32.13	12.89	0.001%
7	22.33	-24.10	-12.89	-22.33	24.10	12.89	0.002%
8	26.04	-32.13	0.03	-26.04	32.13	-0.03	0.001%
9	26.04	-24.10	0.03	-26.04	24.10	-0.03	0.002%
10	24.26	-32.13	14.02	-24.26	32.13	-14.02	0.001%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
11	24.26	-24.10	14.02	-24.26	24.10	-14.02	0.002%
12	13.06	-32.13	22.61	-13.06	32.13	-22.61	0.001%
13	13.06	-24.10	22.61	-13.05	24.10	-22.61	0.002%
14	0.00	-32.13	25.86	-0.00	32.13	-25.86	0.001%
15	0.00	-24.10	25.86	-0.00	24.10	-25.86	0.002%
16	-13.06	-32.13	22.61	13.06	32.13	-22.61	0.001%
17	-13.06	-24.10	22.61	13.05	24.10	-22.61	0.002%
18	-24.26	-32.13	14.02	24.26	32.13	-14.02	0.001%
19	-24.26	-24.10	14.02	24.26	24.10	-14.02	0.002%
20	-26.04	-32.13	0.03	26.04	32.13	-0.03	0.001%
21	-26.04	-24.10	0.03	26.03	24.10	-0.03	0.002%
22	-22.33	-32.13	-12.89	22.33	32.13	12.89	0.001%
23	-22.33	-24.10	-12.89	22.33	24.10	12.89	0.002%
24	-13.02	-32.13	-22.58	13.02	32.13	22.58	0.001%
25	-13.02	-24.10	-22.58	13.02	24.10	22.58	0.002%
26	0.00	-99.35	0.00	-0.00	99.35	0.00	0.000%
27	0.00	-99.35	-8.73	-0.00	99.35	8.73	0.000%
28	4.20	-99.35	-7.29	-4.20	99.35	7.29	0.000%
29	7.31	-99.35	-4.22	-7.31	99.35	4.22	0.000%
30	8.40	-99.35	0.01	-8.40	99.35	-0.01	0.000%
31	7.56	-99.35	4.37	-7.56	99.35	-4.37	0.000%
32	4.21	-99.35	7.29	-4.21	99.35	-7.29	0.000%
33	0.00	-99.35	8.46	-0.00	99.35	-8.46	0.000%
34	-4.21	-99.35	7.29	4.21	99.35	-7.29	0.000%
35	-7.56	-99.35	4.37	7.56	99.35	-4.37	0.000%
36	-8.40	-99.35	0.01	8.40	99.35	-0.01	0.000%
37	-7.31	-99.35	-4.22	7.31	99.35	4.22	0.000%
38	-4.20	-99.35	-7.29	4.20	99.35	7.29	0.000%
39	0.00	-26.78	-6.70	-0.00	26.78	6.70	0.001%
40	3.11	-26.78	-5.40	-3.11	26.78	5.40	0.001%
41	5.34	-26.78	-3.08	-5.34	26.78	3.08	0.001%
42	6.23	-26.78	0.01	-6.23	26.78	-0.01	0.001%
43	5.80	-26.78	3.35	-5.80	26.78	-3.35	0.001%
44	3.12	-26.78	5.41	-3.12	26.78	-5.41	0.001%
45	0.00	-26.78	6.18	-0.00	26.78	-6.18	0.001%
46	-3.12	-26.78	5.41	3.12	26.78	-5.41	0.001%
47	-5.80	-26.78	3.35	5.80	26.78	-3.35	0.001%
48	-6.23	-26.78	0.01	6.23	26.78	-0.01	0.001%
49	-5.34	-26.78	-3.08	5.34	26.78	3.08	0.001%
50	-3.11	-26.78	-5.40	3.11	26.78	5.40	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	9	0.00000001	0.00005001
3	Yes	8	0.00000001	0.00012601
4	Yes	9	0.00000001	0.00005189
5	Yes	8	0.00000001	0.00013222
6	Yes	9	0.00000001	0.00005362
7	Yes	8	0.00000001	0.00013785
8	Yes	9	0.00000001	0.00005188
9	Yes	8	0.00000001	0.00013220
10	Yes	9	0.00000001	0.00005001
11	Yes	8	0.00000001	0.00012601

12	Yes	9	0.00000001	0.00005202
13	Yes	8	0.00000001	0.00013253
14	Yes	9	0.00000001	0.00005370
15	Yes	8	0.00000001	0.00013804
16	Yes	9	0.00000001	0.00005191
17	Yes	8	0.00000001	0.00013225
18	Yes	9	0.00000001	0.00004995
19	Yes	8	0.00000001	0.00012586
20	Yes	9	0.00000001	0.00005189
21	Yes	8	0.00000001	0.00013220
22	Yes	9	0.00000001	0.00005368
23	Yes	8	0.00000001	0.00013798
24	Yes	9	0.00000001	0.00005201
25	Yes	8	0.00000001	0.00013251
26	Yes	8	0.00000001	0.00008493
27	Yes	9	0.00000001	0.00013176
28	Yes	9	0.00000001	0.00012675
29	Yes	9	0.00000001	0.00012570
30	Yes	9	0.00000001	0.00012653
31	Yes	9	0.00000001	0.00013154
32	Yes	9	0.00000001	0.00013516
33	Yes	9	0.00000001	0.00013925
34	Yes	9	0.00000001	0.00014080
35	Yes	9	0.00000001	0.00014205
36	Yes	9	0.00000001	0.00014073
37	Yes	9	0.00000001	0.00013923
38	Yes	9	0.00000001	0.00013526
39	Yes	8	0.00000001	0.00013880
40	Yes	8	0.00000001	0.00013917
41	Yes	8	0.00000001	0.00014031
42	Yes	8	0.00000001	0.00013914
43	Yes	8	0.00000001	0.00013880
44	Yes	8	0.00000001	0.00014000
45	Yes	8	0.00000001	0.00014124
46	Yes	8	0.00000001	0.00014007
47	Yes	8	0.00000001	0.00013922
48	Yes	8	0.00000001	0.00013998
49	Yes	8	0.00000001	0.00014114
50	Yes	8	0.00000001	0.00013993

Maximum Tower Deflections - Service Wind

Section No.	*Elevation* ft	*Horz. Deflection* in	*Gov. Load Comb.*	*Tilt* °	*Twist* °
T1	140 - 120	1.892	47	0.1012	0.0120
T2	120 - 100	1.464	47	0.1002	0.0116
T3	100 - 80	1.040	47	0.0915	0.0104
T4	80 - 60	0.672	47	0.0752	0.0089
T5	60 - 40	0.387	47	0.0553	0.0067
T6	40 - 20	0.179	47	0.0375	0.0043
T7	20 - 0	0.052	47	0.0164	0.0022

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
138.00	Lightning Rod 2"x15'	47	1.850	0.1013	0.0120	Inf
135.00	Andrew VHLP1	47	1.786	0.1014	0.0119	Inf
130.00	Omni 3"x20'	47	1.679	0.1013	0.0119	913061
120.00	AIR 21 B2A/B4P w/ Mount Pipe	47	1.464	0.1002	0.0116	665596
100.00	Andrew VHLP2-11	47	1.040	0.0915	0.0104	77291
95.00	Andrew VHLP1	47	0.941	0.0880	0.0100	67969

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	140 - 120	7.739	18	0.4134	0.0502
T2	120 - 100	5.989	18	0.4092	0.0486
T3	100 - 80	4.256	18	0.3735	0.0434
T4	80 - 60	2.752	18	0.3067	0.0371
T5	60 - 40	1.587	18	0.2259	0.0281
T6	40 - 20	0.735	18	0.1533	0.0182
T7	20 - 0	0.216	18	0.0669	0.0093

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
138.00	Lightning Rod 2"x15'	18	7.565	0.4136	0.0501	448437
135.00	Andrew VHLP1	18	7.303	0.4139	0.0500	448437
130.00	Omni 3"x20'	18	6.866	0.4138	0.0497	224218
120.00	AIR 21 B2A/B4P w/ Mount Pipe	18	5.989	0.4092	0.0486	165690
100.00	Andrew VHLP2-11	18	4.256	0.3735	0.0434	18838
95.00	Andrew VHLP1	18	3.851	0.3593	0.0419	16593

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	140 - 120	2 1/4	20.00	5.00	106.7 K=1.00	3.9761	-4.74	77.87	0.061 [1]
T2	120 - 100	2 1/4	20.00	5.00	106.7 K=1.00	3.9761	-28.30	77.87	0.363 [1]
T3	100 - 80	2 3/4	20.00	5.00	87.3 K=1.00	5.9396	-63.81	153.15	0.417 [1]
T4	80 - 60	3	20.03	5.01	80.1	7.0686	-91.08	198.90	0.458 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T5	60 - 40	3 1/4	20.03	5.01	K=1.00 74.0	8.2958	-114.65	250.22	0.458 [1]
T6	40 - 20	Pirod 105218	20.03	5.01	K=1.00 32.4	7.2158	-137.60	300.68	0.458 [1]
T7	20 - 0	Pirod 105219	20.03	5.01	K=1.00 28.4	9.4248	-161.61	399.87	0.404 [1]
					K=1.00				

[1] P_u / ϕP_n controls

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T6	40 - 20	0.5	1.46	119.0	324.71	0.1963	0.61	3.38	0.180
T7	20 - 0	0.625	1.45	94.4	424.12	0.3068	3.22	6.96	0.463

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	140 - 120	L1 3/4x1 3/4x1/8	9.43	4.61	159.4 K=1.00	0.4219	-1.26	3.75	0.336 [1]
T2	120 - 100	L1 3/4x1 3/4x1/4	9.43	4.61	161.9 K=1.00	0.8125	-3.58	7.00	0.511 [1]
T3	100 - 80	L 2.5 x 2.5 x 5/16	9.43	4.58	112.4 K=1.00	1.4600	-5.39	24.31	0.221 [1]
T4	80 - 60	L 2.5 x 2.5 x 5/16	10.96	5.48	134.5 K=1.00	1.4600	-3.61	18.24	0.198 [1]
T5	60 - 40	L 2.5 x 2.5 x 5/16	12.77	6.37	156.4 K=1.00	1.4600	-3.98	13.48	0.296 [1]
T6	40 - 20	L3x3x5/16	14.63	6.92	140.9 K=1.00	1.7800	-4.79	20.25	0.237 [1]
T7	20 - 0	L3x3x5/16	16.53	7.87	160.3 K=1.00	1.7800	-6.08	15.64	0.389 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	140 - 120	L3x3x3/8	8.00	7.81	159.7 K=1.00	2.1100	-0.18	18.69	0.009 [1]

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	140 - 120	2 1/4	20.00	5.00	106.7	3.9761	3.28	178.92	0.018 [1]
T2	120 - 100	2 1/4	20.00	5.00	106.7	3.9761	22.63	178.92	0.126 [1]
T3	100 - 80	2 3/4	20.00	5.00	87.3	5.9396	53.83	267.28	0.201 [1]
T4	80 - 60	3	20.03	5.01	80.1	7.0686	76.98	318.09	0.242 [1]
T5	60 - 40	3 1/4	20.03	5.01	74.0	8.2958	96.31	373.31	0.258 [1]
T6	40 - 20	Pirod 105218	20.03	5.01	32.4	7.2158	114.25	324.71	0.352 [1]
T7	20 - 0	Pirod 105219	20.03	5.01	28.4	9.4248	132.68	424.12	0.313 [1]

[1] P_u / ϕP_n controls

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T6	40 - 20	0.5	1.46	119.0	324.71	0.1963	0.61	3.38	0.180
T7	20 - 0	0.625	1.45	94.4	424.12	0.3068	3.22	6.96	0.463

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	140 - 120	L1 3/4x1 3/4x1/8	9.43	4.61	101.3	0.4219	1.15	13.67	0.084 [1]
T2	120 - 100	L1 3/4x1 3/4x1/4	9.43	4.61	104.5	0.8125	3.53	26.32	0.134 [1]
T3	100 - 80	L 2.5 x 2.5 x 5/16	9.43	4.58	72.3	1.4600	5.25	47.30	0.111 [1]
T4	80 - 60	L 2.5 x 2.5 x 5/16	10.96	5.48	86.4	1.4600	3.62	47.30	0.077 [1]
T5	60 - 40	L 2.5 x 2.5 x 5/16	12.77	6.37	100.5	1.4600	3.96	47.30	0.084 [1]
T6	40 - 20	L3x3x5/16	14.63	6.92	90.0	1.7800	4.66	57.67	0.081 [1]
T7	20 - 0	L3x3x5/16	16.53	7.87	102.4	1.7800	7.62	57.67	0.132 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	140 - 120	L3x3x3/8	8.00	7.81	102.7	2.1100	0.14	68.36	0.002 [1]

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	140 - 120	Leg	2 1/4	1	-4.74	77.87	6.1	Pass
T2	120 - 100	Leg	2 1/4	31	-28.30	77.87	36.3	Pass
T3	100 - 80	Leg	2 3/4	58	-63.81	153.15	41.7	Pass
T4	80 - 60	Leg	3	85	-91.08	198.90	45.8	Pass
T5	60 - 40	Leg	3 1/4	112	-114.65	250.22	45.8	Pass
T6	40 - 20	Leg	Pirod 105218	139	-137.60	300.68	45.8	Pass
T7	20 - 0	Leg	Pirod 105219	166	-155.63	399.87	46.3	Pass
T1	140 - 120	Diagonal	L1 3/4x1 3/4x1/8	8	-1.26	3.75	33.6	Pass
T2	120 - 100	Diagonal	L1 3/4x1 3/4x1/4	34	-3.58	7.00	51.1	Pass
T3	100 - 80	Diagonal	L 2.5 x 2.5 x 5/16	66	-5.39	24.31	22.1	Pass
T4	80 - 60	Diagonal	L 2.5 x 2.5 x 5/16	92	-3.61	18.24	19.8	Pass
T5	60 - 40	Diagonal	L 2.5 x 2.5 x 5/16	119	-3.98	13.48	29.6	Pass
T6	40 - 20	Diagonal	L3x3x5/16	146	-4.79	20.25	23.7	Pass
T7	20 - 0	Diagonal	L3x3x5/16	173	-6.08	15.64	38.9	Pass
T1	140 - 120	Top Girt	L3x3x3/8	6	-0.18	18.69	0.9	Pass
							Summary	
						Leg (T7)	46.3	Pass
						Diagonal (T2)	51.1	Pass
						Top Girt (T1)	0.9	Pass
						RATING =	**51.1**	**Pass**

Exhibit E

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: CT11737C

CT737/E Hartford Town SST
100 Sunset Ridge Road
East Hartford, CT 06108

July 16, 2018

EBI Project Number: 6218005054

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	20.23 %

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

EBI Consulting
environmental | engineering | due diligence

July 16, 2018

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

Emissions Analysis for Site: **CT11737C – CT737/E Hartford Town SST**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **100 Sunset Ridge Road, East Hartford, 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 population 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 population 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 limits for the 600 MHz and 700 MHz Band are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (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 **100 Sunset Ridge Road, East Hartford, 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 for directional panel antennas, 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 (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

4) 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

5) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These channels have a transmit power of 30 Watts.

6) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These channels have a transmit power of 30 Watts.

7) 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.

8) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, 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.

9) The antennas used in this modeling are the **Ericsson AIR32 B66A/B2A**, **Ericsson AIR21 B2A/B4P** & the **RFS APXVAARR24_43-U-NA20** for 600 MHz, 700 MHz, 1900 MHz (PCS) and 2100 MHz (AWS) channels. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, 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.

10) The antenna mounting height centerline of the proposed antennas (both panel antennas and microwave dish) is **120 feet** above ground level (AGL).

11) 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.

12) All calculations were done with respect to uncontrolled / general population threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Ericsson AIR32 B66A/B2A	Make / Model:	Ericsson AIR32 B66A/B2A	Make / Model:	Ericsson AIR32 B66A/B2A
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	120	Height (AGL):	120	Height (AGL):	120
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	2	Channel Count	2	Channel Count	2
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	9,337.08	ERP (W):	9,337.08	ERP (W):	9,337.08
Antenna A1 MPE%	**2.58**	Antenna B1 MPE%	**2.58**	Antenna C1 MPE%	**2.58**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	120	Height (AGL):	120	Height (AGL):	120
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	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A2 MPE%	**1.29**	Antenna B2 MPE%	**1.29**	Antenna C2 MPE%	**1.29**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Gain:	12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 13.35 dBd	Gain:	12.95 dBd / 13.35 dBd
Height (AGL):	120	Height (AGL):	120	Height (AGL):	120
Frequency Bands	600 MHz / 700 MHz	Frequency Bands	600 MHz / 700 MHz	Frequency Bands	600 MHz / 700 MHz
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	2,481,08	ERP (W):	2,481,08	ERP (W):	2,481,08
Antenna A3 MPE%	**1.59**	Antenna B3 MPE%	**1.59**	Antenna C3 MPE%	**1.59**

Site Summary Tables

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**5.46 %**
Sprint	5.20%
Clearwire	0.09%
AT&T	6.36%
Public Works	0.62%
Fire	0.41%
Fire Admin	0.41%
Police Channels 1&2	1.02%
Parks & Rec	0.17%
Health	0.25%
800	0.24%
Site Total MPE %:	**20.23 %**

T-Mobile Sector A Total:	5.46 %
T-Mobile Sector B Total:	5.46 %
T-Mobile Sector C Total:	5.46 %
Site Total:	20.23 %

T-Mobile Max Power Values (Per Sector)

T-Mobile _Max Power Values (per sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile PCS - 1900 MHz LTE	2	2,334.27	120	12.91	PCS - 1900 MHz	1000	1.29%
T-Mobile AWS - 2100 MHz LTE	2	2,334.27	120	12.91	AWS - 2100 MHz	1000	1.29%
T-Mobile PCS - 1900 MHz GSM	2	1,167.14	120	6.46	PCS - 1900 MHz	1000	0.65%
T-Mobile AWS - 2100 MHz UMTS	2	1,167.14	120	6.46	AWS - 2100 MHz	1000	0.65%
T-Mobile 600 MHz LTE	2	591.73	120	3.27	600 MHz	400	0.81%
T-Mobile 700 MHz LTE	2	648.82	120	3.59	700 MHz	467	0.77%
						Total:	**5.46%**

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population 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 population exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector A:	5.46 %
Sector B:	5.46 %
Sector C:	5.46 %
T-Mobile Per Sector Maximum (Per Sector):	5.46 %
Site Total:	20.23 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **20.23%** of the allowable FCC established general population 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.

Exhibit F

UNITED STATES POSTAL SERVICE®

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9405 5036 9930 0270 8593 45 0067 0000 0010 6108

usps.com
$6.70
US POSTAGE
Flat Rate Env

P

07/27/2018 Mailed from 06002 062S0000001311

PRIORITY MAIL 1-DAY™

DEBORAH CHASE
T-MOBILE USA- NSS
35 GRIFFIN RD S
BLOOMFIELD CT 06002-1351

Expected Delivery Date: 07/28/18
Ref#: 737zap4x2

0024

Carrier -- Leave if No Response

C066

SHIP TO: MARCIA A LECLERC
MAYOR-EAST HARTFORD TOWN HALL
740 MAIN ST
EAST HARTFORD CT 06108-3140

USPS TRACKING #

9405 5036 9930 0270 8593 45

Electronic Rate Approved #038555749

Cut on dotted line.

Instructions

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2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
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5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0270 8593 45

Trans. #:	440445520
Print Date:	07/27/2018
Ship Date:	07/27/2018
Expected Delivery Date:	07/28/2018

Priority Mail® Postage:	**$6.70**
Total	**$6.70**

From: DEBORAH CHASE
T-MOBILE USA- NSS
35 GRIFFIN RD S
BLOOMFIELD CT 06002-1351

Ref#: 737zap4x2

To: MARCIA A LECLERC
MAYOR-EAST HARTFORD TOWN HALL
740 MAIN ST
EAST HARTFORD CT 06108-3140

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

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Click-N-Ship®

9405 5036 9930 0270 8593 52 0067 0000 0010 6108

usps.com
$6.70
US POSTAGE
Flat Rate Env

07/27/2018 Mailed from 01566 062S0000001309

P

PRIORITY MAIL 2-DAY™

DEBORAH CHASE
NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

Expected Delivery Date: 07/30/18
Ref#: 737ZAP4X2

0006

Carrier -- Leave if No Response

C066

SHIP TO: JEFFREY A CORMIER
TOWN PLANNER-EAST HARTFORD TOWN HALL
740 MAIN ST
EAST HARTFORD CT 06108-3140

USPS TRACKING #

9405 5036 9930 0270 8593 52

Electronic Rate Approved #038555749

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5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0270 8593 52

Trans. #:	440445520
Print Date:	07/27/2018
Ship Date:	07/27/2018
Expected Delivery Date:	07/30/2018

Priority Mail® Postage:	**$6.70**
Total	**$6.70**

From: DEBORAH CHASE Ref#: 737ZAP4X2
NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

To: JEFFREY A CORMIER
TOWN PLANNER-EAST HARTFORD TOWN HALL
740 MAIN ST
EAST HARTFORD CT 06108-3140

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

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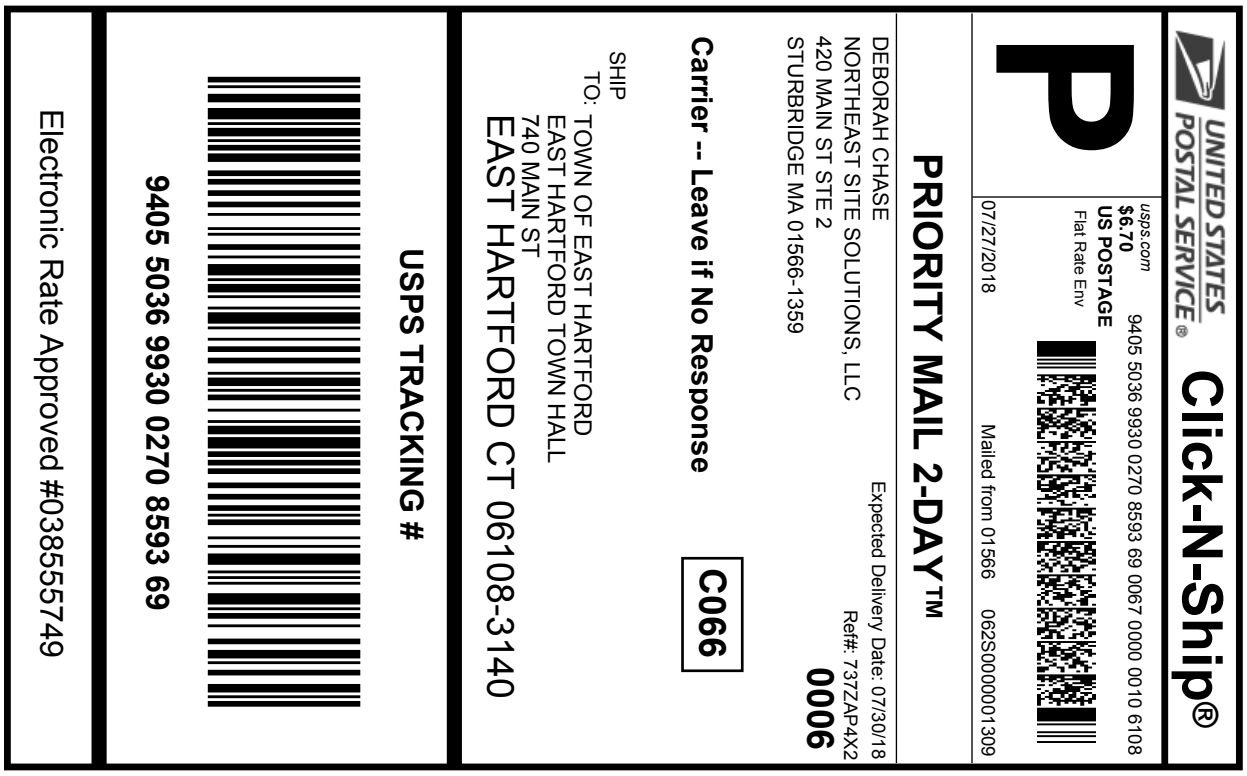

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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0270 8593 69

Trans. #:	440445520
Print Date:	07/27/2018
Ship Date:	07/27/2018
Expected Delivery Date:	07/30/2018

Priority Mail® Postage:	**$6.70**
Total	**$6.70**

From: DEBORAH CHASE Ref#: 737ZAP4X2
NORTHEAST SITE SOLUTIONS, LLC
420 MAIN ST STE 2
STURBRIDGE MA 01566-1359

To: TOWN OF EAST HARTFORD
EAST HARTFORD TOWN HALL
740 MAIN ST
EAST HARTFORD CT 06108-3140

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

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