

JULIE D. KOHLER

PLEASE REPLY TO: Bridgeport

WRITER'S DIRECT DIAL: (203) 337-4157
E-Mail Address: jkohler@cohenandwolf.com

November 18, 2014

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

Re: Notice of Exempt Modification AT&T Towers/T-Mobile co-location Site ID CT11403A

Andrews Road, Wolcott

Dear Attorney Bachman:

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

In this case, AT&T Towers owns the existing lattice telecommunications tower and related facility at Andrews Road, Wolcott Connecticut (latitude 41- 35-40.73/ longitude -73-22-28.7). T-Mobile intends to replace six antennas and related equipment at this existing telecommunications facility in Wolcott ("Wolcott Facility"). Please accept this letter as notification, pursuant to R.C.S.A. § 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the Mayor, Thomas G. Dunn. AT&T is also the property owner.

The existing Wolcott Facility consists of an 80 foot tall lattice structure. T-Mobile plans to add three (3) antenna and three (3) RRUs (remote radio units) on a proposed pipe mount with existing tie backs at a centerline of 77 feet. T-Mobile will also relocate three (3) other antenna to proposed mounts with existing tie backs at the same centerline. (See the plans revised to November 7, 2014 attached hereto as Exhibit A). The existing Facility is structurally capable of supporting T-Mobile's proposed modifications, as indicated in the structural analysis dated October 29, 2014 and attached hereto as Exhibit B.

The planned modifications to the Wolcott Facility fall squarely within those activities

¹ The online CSC database does not reflect a Docket or Petition for this Facility. T-Mobile's last modification on the Facility is captioned EM-T-MOBILE-166-130726.



November 18, 2014 Site ID CT11403A Page 2

explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

- 1. The proposed modification will not increase the height of the tower. T-Mobile's proposed antennas will be installed at the 77 foot level. The enclosed tower drawing confirms that the proposed modification will not increase the height of the tower.
- 2 . The installation of the T-Mobile replacement equipment in the existing compound, as reflected on the attached site plan, will not require an extension of the site boundaries. T-Mobile's proposed equipment will be located entirely within the existing compound area.
- 3 . The proposed modification to the Facility will not increase the noise levels at the existing facility by six decibels or more.
- 4. The operation of the replacement antennas will not increase the total radio frequency (RF) power density, measured at the base of the tower, to a level at or above the applicable standard. According to a Radio Frequency Emissions Analysis Report prepared by EBI dated November 6, 2014 T-Mobile's operations would add 23.94% of the FCC Standard. Therefore, the calculated "worst case" power density for the planned combined operation at the site including all of the proposed antennas would be 53.05% of the FCC Standard as calculated for a mixed frequency site as evidenced by the engineering exhibit attached hereto as Exhibit C.

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

Sincerely,

Julie D. Kohler, Esq.

Town of Wolcott, Mayor Thomas G. Dunn

AT&T Towers

CC:

Elizabeth Jamieson, Transcend Wireless

EXHIBIT A

SITE NAME: WOLCOTT/ ANDREWS RD._1

107/109 ANDREWS ROAD **NEW HAVEN COUNTY** WOLCOTT, CT 06716

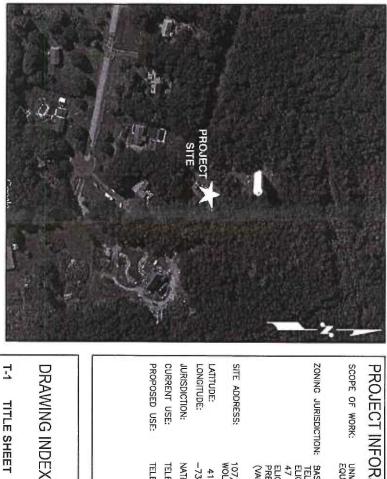
L700 - 702CU CONFIGURATION SITE NUMBER: CT11403A

GENERAL NOTES

- 1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
- 2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANTARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
- 3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T-MOBILE NORTHEAST, LLC REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SPECIAL STRUCTURAL NOTES

- STRUCTURAL DESIGNS AND DETAILS FOR ANTENNA MOUNTS COMPLETED BY HUDSON DESIGN ON BEHALF OF T-MOBILE ARE INCLUSIVE OF THE ENTIRE ANTENNA SUPPORT STRUCTURAE (GLOBAL STRUCTURAE STABILITY ANALYSIS BY OTHERS), EXISTING COMER PLAFFORM, EXISTING ANTENNA MOUNTS AND ALL OTHER ASPECTS OF THE STRUCTURE THAT WILL SUPPORT THE T-MOBILE MODERNIZATION EQUIPMENT DEPLOYMENT AS DEPICTED HEREIN.
- 2. HUDSON DESIGN ASSUMES THAT THE TOWER IS PROPERLY CONSTRUCTED AND MAINTAINED.
 ALL STRUCTURAL MEMBERS AND THEIR CONNECTION ARE ASSUMED TO BE IN GOOD
 CONDITION AND ARE FREE FROM DEFECTS WITH NO DETERIORATION TO ITS MEMBER
 CAPACITIES



CALL TOLL FREE 800-BEFORE YOU DIG OR CALL 811 -922-4455

UNDERGROUND SERVICE ALERT

GPS/LMU: RADIO CABINETS:

PPC DISCONNECT:
MAIN CIRCUIT D/C: NIU/T DEMARC:

UNRESTRICTED UNRESTRICTED

JNRESTRICTED JNRESTRICTED ACCESS NOT PERMITTED

JUNESTRICTED

OTHER/SPECIAL:

SECTOR A:
SECTOR B:
SECTOR C:

ACCESS NOT PERMITTED

SPECIAL RESTRICTIONS

T-MOBILE TECHNICIAN SITE SAFETY NOTES

PROJECT INFORMATION

ZONING JURISDICTION: BASED ON INFORMATION PROVIDED BY T-MOBILE, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS AN ELIGIBLE FACILITY UNDER THE TAX RELIEF ACT OF 2012, 47 USC 1455(A), AND IS SUBJECT TO AN EXPEDITED ELIGIBLE FACILITIES REQUEST/REVIEW AND ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW).

UNMANNED TELECOMMUNICATIONS FACILITY T-MOBILE EQUIPMENT MODERNIZATION

LONGITUDE:

CURRENT USE: JURISDICTION:

> 41" 37' 3.7" N -73" 0' 16.1" W 107/109 ANDREWS ROAD WOLCOTT, CT 06716

TELECOMMUNICATIONS FACILITY NATIONAL, STATE & LOCAL CODES OR ORDINANCES

TELECOMMUNICATIONS FACILITY

REV

TITLE SHEET

11/07/14 ISSUED FOR REVIEW 08/22/14 ISSUED FOR REVIEW

SITE NUMBER: CT11403 SITE NAME: WOLCOTT/

GN-1 GENERAL NOTES COMPOUND, EQUIPMENT PLAN & ELEVATION

A-2 **ANTENNA PLAN & DETAILS**

GROUNDING DETAILS

T-MOBILE NORTHEAST LLC

OFFICE: 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 DFFICE: (860) 648-1116

Transcend Wireless

TEL: [201] 684-0055 FAX:[201] 684-0066

400 OSCOOD STREET UILDING 20 NORTH, SUITE 3090 I. ANDOVER, MA 01845 Hudson Design Groupus TEL: (978) 557-5553 FAX: (978) 335-5586

CHECKED BY:	DRAWN BY:	PROJECT NO:	TOWER OWNER	OPERATIONS	ZONING/SITE ACQ.	RF ENGINEERING	CONSTRUCTION	APPHOVALS APPHOVALS APPHOVALS
DR	JC	CT11403A	DATE	DATE	DATE	DATE	DATE	ALS TO THE

107/109 ANDREWS ROAD WOLCOTT, CT 06716 NEW HAVEN COUNTY ANDREWS RD._1 SHEET TITLE TITLE SHEET

SHEET NUMBER

GROUNDING NOTES

- THE SUBCONTRACTOR PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING TELCORDIA AND TA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION CODE, AND GENERAL COMPLIANCE WITH ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION. SHALL REVIEW AND INSPECT THE
- ALL GROUND ELECTRODE SYSTEMS (INCLUDING AC POWER GES'S) SHALL BE BONDED TOGETHER, AT BELOW GRADE, BY TWO OR MORE COPPER BONDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND CONDUCTORS IN ACCORDANCE WITH THE NEC. S
- THE SUBCONTRACTOR SHALL PERFORM IEEE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS. FALL-DF-POTENTIAL RESISTANCE TO EARTH TESTING (PEI 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. PER H
- METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

Ö

EACH BTS CABINET FRAME SHALL BE DIRECTLY

- CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
- EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
- APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
- ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
- ALUMINUM CONDUCTOR OR COPPER CLAD STEEL
 CONDUCTOR SHALL NOT BE USED FOR GROUNDING
- 10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
- 11. METAL CONDUIT SHALL BE MADE ELECTRICALLY
 CONTINUOUS WITH LISTED BONDING FITTINGS OR BY
 BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
- 12. . ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

EG

EQUIPMENT GROUND

EQUIPMENT GROUND RING

BTS BCW

BASE TRANSCEIVER STATION

AWG AGL

BARE COPPER WIRE

AMERICAN WIRE GAUGE ABOVE GRADE LEVEL

MGB G.C.

ABBREVIATIONS

GENERAL CONTRACTOR

잒

RADIO FREQUENCY

MASTER GROUND BUS

EXISTING

EXISTING

N.T.S.

TBRR

TO BE REMOVED
TO BE REMOVED
AND REPLACED

TO BE DETERMINED

7BR GEL

굮

TYPICAL

PROPOSED Z

NEW

MINIMUM

쮸

REFERENCE NOT TO SCALE

REQ

GENERAL NOTES

 FOR THE PURPOSE OF CONSTRUCTION DRAWING, DEFINITIONS SHALL APPLY; THE FOLLOWING

SUBCONTRACTOR -OWNER - T-MOBILE CONTRACTOR - TRANSCEND WIRELESS
SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)

- 2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWNICS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
- 3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK, ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED SHOW OUTLINE ONLY.

4.5

- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING ERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- 6. "KITING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
- 7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- B. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
- 9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND TI CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
- 10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAYEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF
- 11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- 12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
- ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
- 14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AR-ENTRANED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ks)) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A5: TYPE E (Fy = 36 ks)). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPET GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH UMTS SPECIFICATIONS AND CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE SITES." "GENERAL

17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

Hudson Design Groupuc

TEL: (978) 557-5553 FAX: (978) 336-5586

EER * TUO!

18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MANIFENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

OPERATIONS

OWER OWNER

CT11403A DATE ZONING/SITE ACQ.

DATE DATE

ENGINEERING

PATE DATE

CONSTRUCTION

APPROVALS

ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

T-MOBILE NORTHEAST LLC

35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 DFFICE: (860) 648—1116

Transcend Wireless

TEL: (201) 684-0055 FAX:(201) 684-0066

20. APPLICABLE BUILDING CODES:
SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE,
AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION
(AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND
DESIGN.

27. APPLICABLE BUILDING CODES

STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE
DESIGN.

BUILDING CODE: IBC 2003 W/ 2005 CT SUPPLEMENT + 2009 AMENDMENT ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS LIGHTENING CODE: REFER TO ELECTRICAL DRAWINGS

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

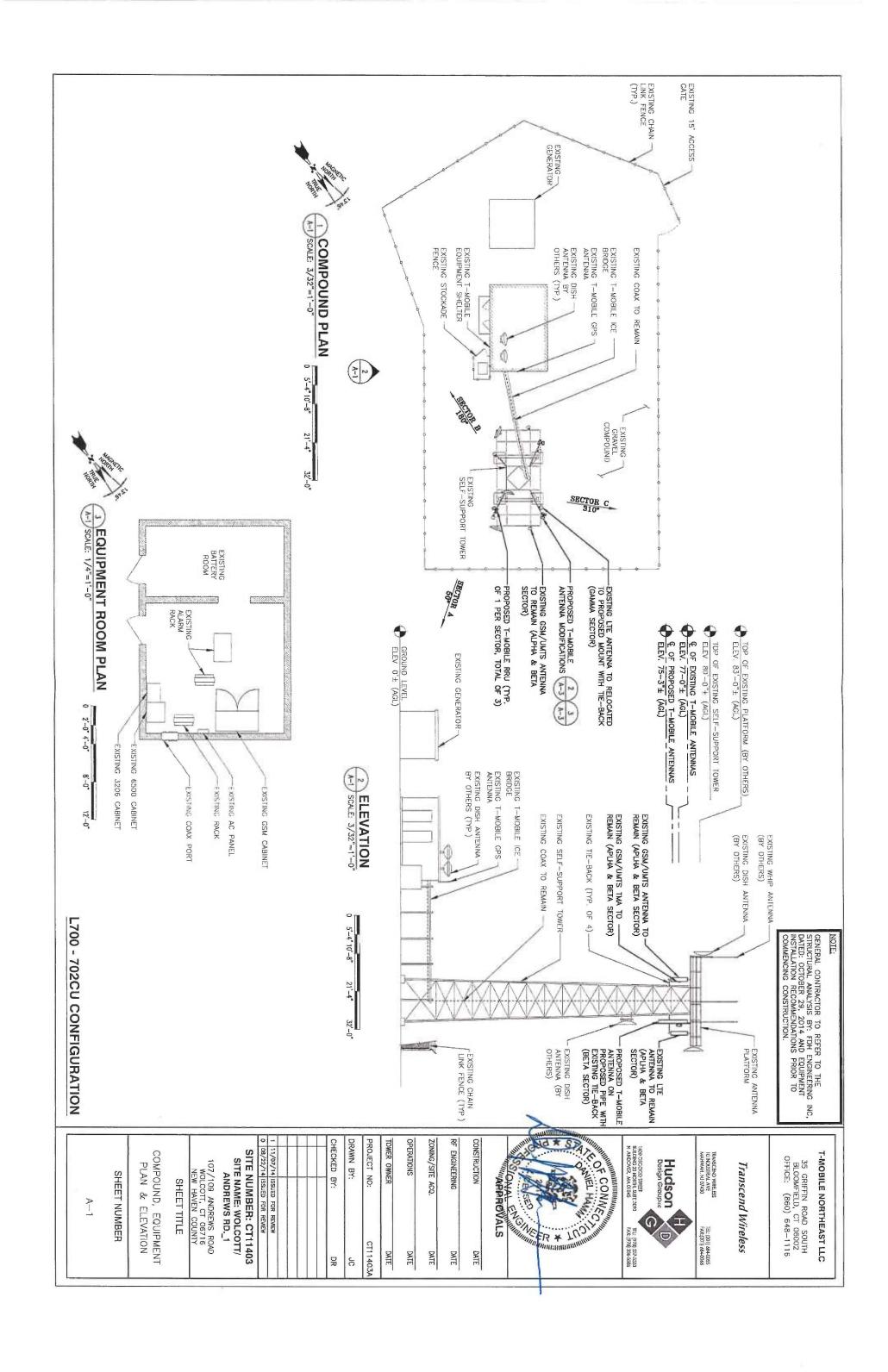
MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION;

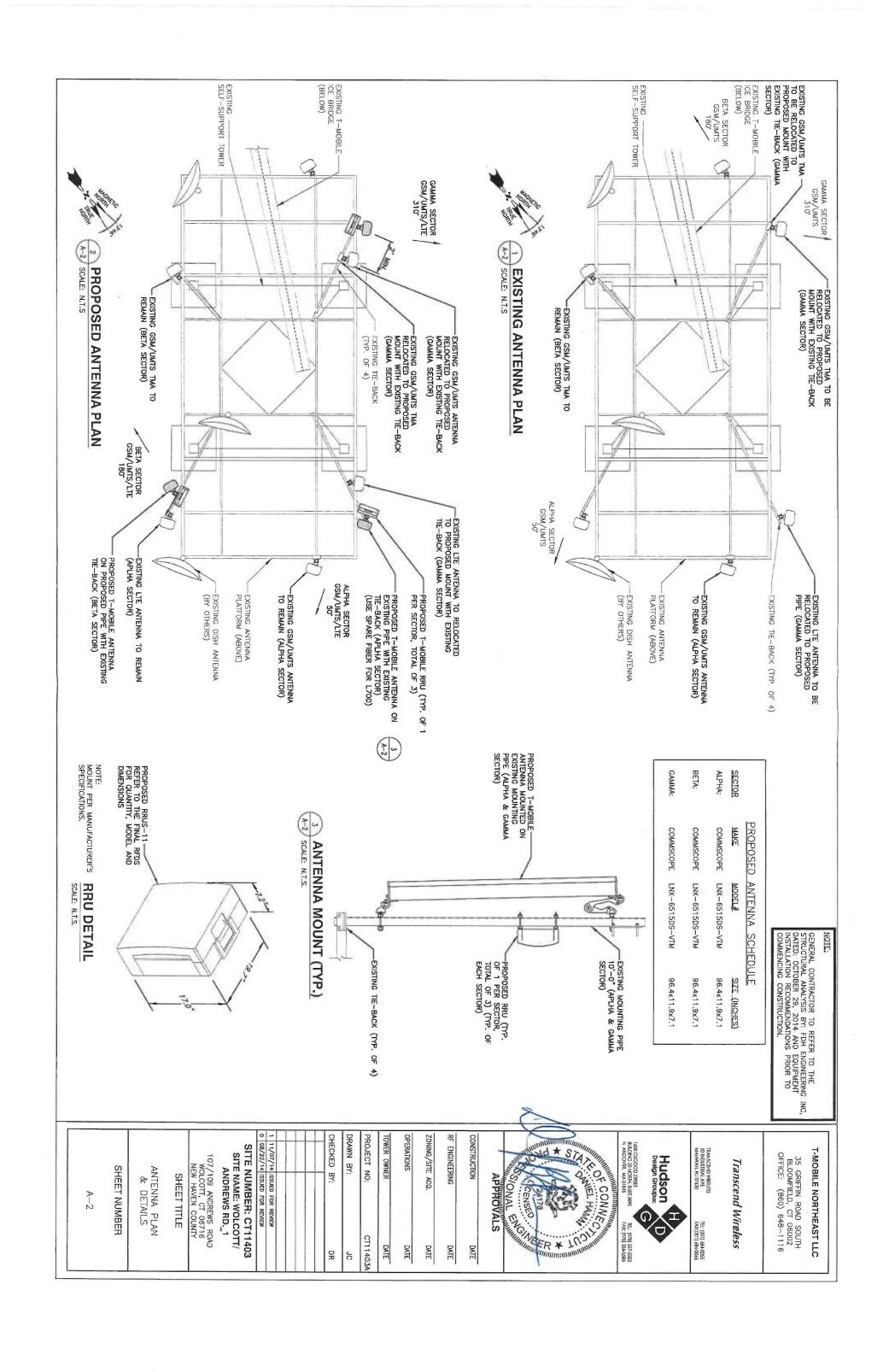
TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-F, STRUCTURAL STANDARDS FOR STEEL

CHECKED BY: DRAWN BY: PROJECT NO:

吊 S

SITE NUMBER: CT11403 SITE NAME: WOLCOTT/ 107/109 ANDREWS ROAD WOLCOTT, CT 06716 NEW HAVEN COUNTY GENERAL NOTES SHEET NUMBER ANDREWS RD._1 SSUED FOR REVIEW SHEET TITLE GN-1





ANTENNA GROUND — BAR (CIGBE) (TOP) SEE NOTE 1. #2 AWG BCW LUG-(TYP.) (2) #2 AWG BCW ANTENNA GROUND BAR-(CIGBE) (BOTTOM) SEE NOTE 1. GROUND LUG #2 AWG BCW RING GROUND NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATION AND CONNECTION ANTENNA LOCATION AND CONNECTION ORIENTATION, PROVIDE AS REQUIRED.
 A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED. 5 ANTENNA CABLE GROUNDING 9 TO BTS VIA TRAY OR ICEBRIDGE TO ANTENNA GRADE STANDARD GROUND KIT (TYP.) #6 AWG (PROVIDED WITH GROUNDING KIT TYP) STANDARD GROUNDING KIT (TYP.) HYBRID/COAX CABLES (TYP. FOR ALL) #5 AWG F06 CHECKED BY: DRAWN BY: ZONING/SITE ACQ. RF ENGINEERING CONSTRUCTION PROJECT NO: TOWER OWNER SITE NUMBER: CT11403 SITE NAME: WOLCOTT/ ANDREWS RD._1 1/07/14 ISSUED FOR REVIEW 107/109 ANDREWS ROAD WOLCOTT, CT 06716 NEW HAVEN COUNTY APPHOVALS

CT11403A DATE DATE DATE DATE DATE

DR S

GROUNDING DETAILS

SHEET TITLE

SHEET NUMBER

G-1

GROUNDING RISER DIAGRAM

ST N.T.S.

N.T.S. CONNECTION DETAIL TYPICAL GROUND BAR NOTE:

1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.

2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.

GROUNDING-CABLE

SECTION "A-A"

EXPOSED BARE COPPER TO BE KEPT TO ABSOLUTE MINIMUM, NO INSULATION ALLOWED WITHIN THE COMPRESSION TERMINAL (TYPICAL)

GROUND BAR

STAINLESS STEEL HARDWARE

GROUNDING CABLE-

1000

TWO HOLE COPPER COMPRESSION TERMINAL

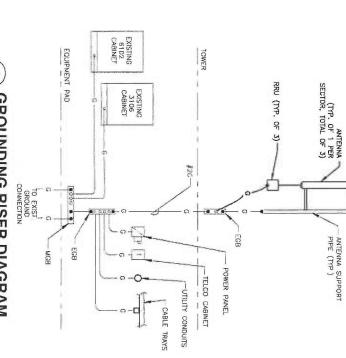
GROUND BAR

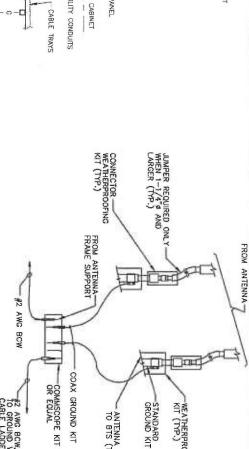
LOCK WASHER,— (TYP.)

- FLAT WASHER, TYP. - 3/8"x1-1/4" HEX BOLT

ELEVATION

NUT, TYP-





1600 OSGOOD STREET BUILDING 20 NORTH, SUITE 3090 N ANDOVER, MA 01845 Hudson
Design Groupuc
Titl: TEL: (201) 684-0055 FAX:(201) 684-0066

COMMSCOPE KIT NO. GB-0414-IT OR EQUAL

12 AWG BCW, BONDED TO GROUND WIRE ALONG CABLE LADDER TO CIGBE/MICE

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

OF CONNEC

TEL: (978) 557-5553 FAX: (978) 336-5586

TO NOT REAL AND ADDRESS OF THE PARTY OF THE

NIS

BAR CONNECTION DETAIL GROUND WIRE TO GROUND NOTE

Transcend Wireless

35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 OFFICE: (860) 648--1116

GROUND KIT (TYP.)

O BTS (TYP.)

-WEATHERPROOFING KIT (TYP.)

T-MOBILE NORTHEAST LLC

EXHIBIT B



FDH Engineering, Inc., 6521 Meridien Drive Raleigh, NC 27616, Ph. 919.755.1012

Structural Analysis for Transcend Wireless, LLC

80' Self-Support Tower

Transcend Wireless Site Name: Wolcott
Transcend Wireless Site ID: SNET037-A
T-Mobile Towers Site Name: Wolcott/ Andrews Rd._1
T-Mobile Towers Site ID: CT11403A

FDH Project Number 146FQS1400

Analysis Results

Tower Components	74.0%	Sufficient
Foundation	22.3%	Sufficient

Prepared By:

Drew Alexander, El Project Engineer Reviewed By:

Bradley R. Newman, PE Senior Project Engineer CT PE License No. 29630

FDH Engineering, Inc. 6521 Meridien Drive Raleigh, NC 27616 (919) 755-1012 info@fdh-inc.com



October 29, 2014

Prepared pursuant to TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures and 2005 CT State Building Code

Structural Analysis Report Transcend Wireless, LLC Site ID: SNET037-A October 29, 2014

TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
Conclusions	
Recommendation	3
APPURTENANCE LISTING	4
RESULTS	6
GENERAL COMMENTS	7
LIMITATIONS	7
APPENDIX	8

EXECUTIVE SUMMARY

At the request of Transcend Wireless, FDH Engineering, Inc. performed a structural analysis of the existing self-supported tower located in Wolcott, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads pursuant to the *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, TIA/EIA-222-F* and *2005 CT State Building Code*. Information pertaining to the existing/proposed antenna loading, current tower geometry, the member sizes, geotechnical data, and foundation dimensions was obtained from:

FDH Engineering, Inc. (Project No. 1308551500) Dispersive Wave Propagation Testing of an Existing Towe
Foundation dated June 25, 2013
FDH Engineering, Inc. (Project No. 1304701600) Geotechnical Evaluation of Subsurface Conditions dated June
26, 2013
FDH Engineering, Inc. (Project No. 1308541500) Self-Support Tower Mapping Report dated July 1, 2013
Transcend Wireless, LLC

The basic design wind speed per the TIA/EIA-222-F standards is 85 mph without ice and 38 mph with 3/4" radial ice. Ice is considered to increase in thickness with height.

Conclusions

With the existing and proposed antennas from T-Mobile in place at 77 ft, the tower meets the requirements of the *TIA/EIA-222-F* standard and *2005 CT State Building Code* provided the **Recommendation** listed below is satisfied. Furthermore, given the existing foundation dimensions listed (see FDH Project No. 1308551500), and given the existing soil parameters (see FDH Project No. 1304701600), the foundation should have the necessary capacity to support both the proposed and existing loading For a more detailed description of the analysis of the tower, see the **Results** section of this report.

Our structural analysis has been performed assuming all information provided to FDH Engineering, Inc. is accurate (i.e., the steel data, tower layout, existing antenna loading, and proposed antenna loading) and that the tower has been properly erected and maintained per the original design drawings.

Recommendation

To ensure the requirements of the TIA/EIA-222-F standard and 2005 CT State Building Code are met with the existing and proposed loading in place, we have the following recommendation:

- 1. Coax lines must be installed as shown in Figure 1.
- 2. The proposed TMAs should be installed directly behind the existing and proposed panel antennas.
- 3. RRH/RRU Stipulation: The equipment may be installed in any arrangement as determined by the client.

APPURTENANCE LISTING

The proposed and existing antennas with their corresponding cables/coax lines are shown in **Table 1**. If the actual layout determined in the field deviates from the layout, FDH Engineering, Inc. should be contacted to perform a revised analysis.

Table 1 - Appurtenance Loading

Existing Loading:

Antenna Elevation (ft)	Description	Coax and Lines	Carrier	Mount Elevation (ft)	Mount Type	
88.8	(1) 2.4"ø x 21.5' Omni					
85.5	(2) 2"ø x20' (4 element) Dipole	(4) 1/2"	AT&T		Platform	
84	(1) 6.6' Yagi (2) 4' Grid Dish			80		
77	(6) Ericsson AIR21 w/ Mount Pipe (3) Andrew One Base Twin Dual Duplex TMA	(12) 1-5/8" (1) 1-5/8" Hybrid	T-Mobile			
63	(1) 4' Dish	(1) 1/2"	AT&T	63	Pipe Mount	

Proposed Carrier - Final Loading:

Antenna Elevation (ft)	Description	Coax and Lines	Carrier	Mount Elevation (ft)	Mount Type
77	(3) Ericsson AIR21 B2A/B4P (3) Ericsson AIR21 B4A/B2P (3) Commscope SBNHH-1D65C (2) Ericsson KRY112 61/2 (3) RRUS 11 B12	(4) 1-5/8" (3) RET (5) 1/4" Fiber	T-Mobile	80	Platform

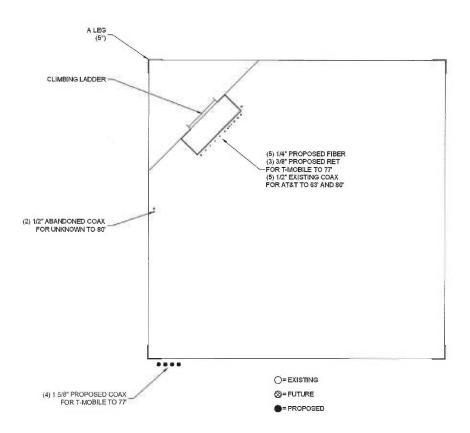


Figure 1 - Coax Layout

RESULTS

The following yield strength of steel for individual members was used for analysis:

Table 2 - Material Strength

Member Type	Yield Strength		
Legs	36 ksi (assumed)		
Bracing	36 ksi (assumed)		

Table 3 displays the summary of the ratio (as a percentage) of force in the member to their capacities. Values greater than 100% indicate locations where the maximum force in the member exceeds its capacity. *Note: Capacities up to 105% are considered acceptable.* **Table 4** displays the maximum foundation reactions. **Table 5** displays the maximum antenna rotations at service wind speeds (dishes only).

If the assumptions outlined in this report differ from actual field conditions, FDH Engineering, Inc. should be contacted to perform a revised analysis. Furthermore, as no information pertaining to the allowable twist and sway requirements for the existing or proposed appurtenances was provided, deflection and rotation were not taken into consideration when performing this analysis.

See the **Appendix** for detailed modeling information

Table 3 - Summary of Working Percentage of Structural Components

Section No.	Elevation ft	Component Type	Size	% Capacity	Pass Fail
T1	80 - 60	Leg	L4x4x3/8	25.4 30.9 (b)	Pass
		Diagonal	L2 1/2x2 1/2x1/4	13.4 13.7 (b)	Pass
		Top Girt	L3x3x1/4	0.6	Pass
T2	60 - 40	Leg	L5x5x1/2	29.9 44.2 (b)	Pass
		Diagonal	L2 1/2x2 1/2x1/4	13.7	Pass
		Top Girt	C7x12.25	0.2 0.3 (b)	Pass
Т3	40 - 20	Leg	L6x6x1/2	31.8 44.5 (b)	Pass
		Diagonal	L3x3x5/16	30.1	Pass
		Secondary Horizontal	L2 1/2x2 1/2x1/4	3.5	Pass
		Top Girt	L2 1/2x2 1/2x1/4	21.9	Pass
		Mid Girt	L2 1/2x2 1/2x1/4	50.5	Pass
T4	20 - 0	Leg	L6x6x5/8	35.4 49.1 (b)	Pass
		Diagonal	L3x3x5/16	39.2	Pass
		Secondary Horizontal	L2 1/2x2 1/2x1/4	6.2	Pass
		Top Girt	L2 1/2x2 1/2x1/4	54.1	Pass
		Mid Girt	L2 1/2x2 1/2x1/4	74.0	Pass

Table 4 - Maximum Base Reactions

Load Type	Direction	Current Analysis* (TIA/EIA-222-F)
Individual Foundation	Horizontal	9 k
	Uplift	59 k
	Compression	69 k
Overturning Moment		971 k-ft

^{*}Foundation determined to be adequate per independent analysis.

Table 5 – Maximum Antenna Rotations at Service Wind Speed (Dishes Only)

Antenna	Centerline Elevation (ft)	Tilt (deg)*	Twist (deg)*
(2) 4' Grid Dish	84	0.0506	0.0058
(1) 4' Dish	63	0.0438	0.0043

^{*}Allowable tilt and twist values to be reviewed by the carrier.

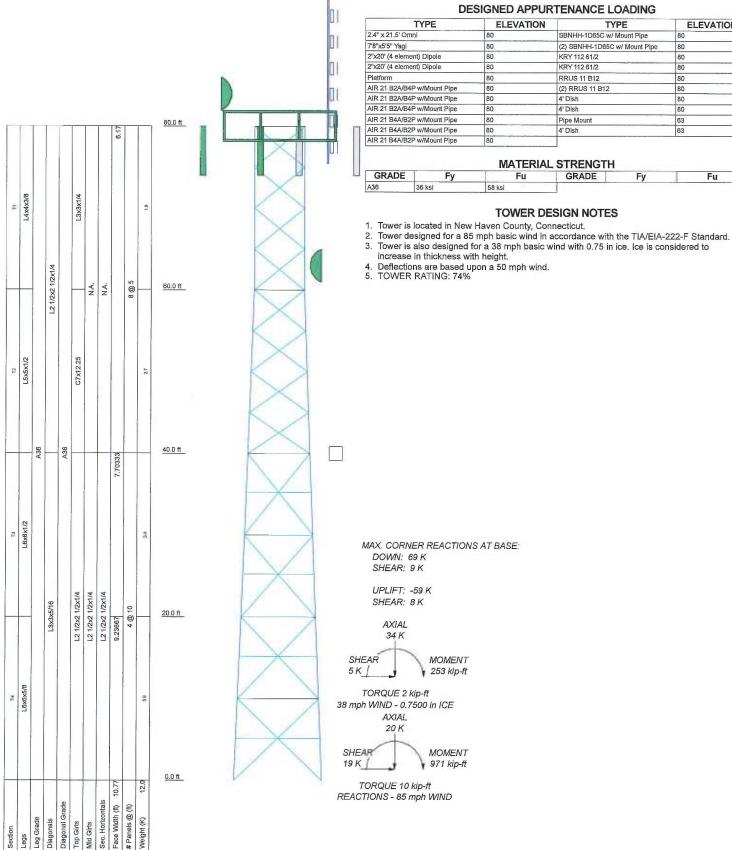
GENERAL COMMENTS

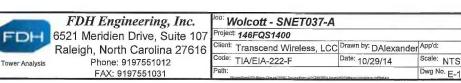
This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of Transcend Wireless to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading information) modeled. If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, FDH Engineering, Inc. should be notified immediately to perform a revised analysis.

LIMITATIONS

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature and we will not release this report to any other party without the client's consent. The use of this engineering work is limited to the express purpose for which it was commissioned and it may not be reused, copied, or distributed for any other purpose without the written consent of FDH Engineering, Inc.

APPENDIX





TYPE

SBNHH-1D65C w/ Mount Pipe

KRY 112 61/2

KRY 112 61/2

RRUS 11 B12

4' Dish

4' Dish

4' Dish

Pipe Mount

GRADE

(2) RRUS 11 B12

(2) SBNHH-1D65C w/ Mount Pipe

ELEVATION

Fu

80

80

80

80

80

80

80

63

63

EXHIBIT C



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

T-Mobile Existing Facility

Site ID: CT11403A

Wolcott/ Andrews Rd._1 107 / 109 Andrews Road Wolcott, CT 06716

November 6, 2014

EBI Project Number: 62146107

Site Compliance Summary					
Compliance Status: COMPLIANT					
Site total MPE% of					
FCC general public	53.05 %				
allowable limit:					



November 6, 2014

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

Emissions Analysis for Site: CT11403A - Wolcott/ Andrews Rd._1

EBI Consulting was directed to analyze the proposed T-Mobile facility located at 107 / 109 Andrews Road, Wolcott, 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 (μ W/cm²). The number of μ W/cm² calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter (μ W/cm²). The general population exposure limit for the 700 MHz Band is 467 μ W/cm², and the general population exposure limit for the PCS and AWS bands is 1000 μ W/cm². Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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



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 107 / 109

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

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

- 1) 2 GSM channels (PCS Band 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel
- 2) 2 UMTS channels (AWS Band 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 3) 2 LTE channels (AWS Band 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 4) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.
- 5) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.



- 6) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 7) The antennas used in this modeling are the Ericsson AIR21 B4A/B2P for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the Commscope LNX-6515DS-VTM for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The Ericsson AIR21 B4A/B2P has a maximum gain of 15.9 dBd at its main lobe. The Commscope LNX-6515DS-VTM has a maximum gain of 14.6 dBd at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antenna mounting height centerline of the proposed antennas is 77 **feet** above ground level (AGL).
- 9) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

Fax: (781) 273.3311



T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	В	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	77	Height (AGL):	77	Height (AGL):	77
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	# PCS Channels:	2
Total TX Power:	120	Total TX Power:	120	# AWS Channels:	120
ERP (W):	1,906.06	ERP (W):	1,906.06	ERP (W):	1,906.06
Antenna A1 MPE%	3,33	Antenna B1 MPE%	3.33	Antenna C1 MPE%	3.33
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	77	Height (AGL):	77	Height (AGL):	77
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:	120	Total TX Power:	120	Total TX Power:	120
ERP (W):	1,906.06	ERP (W):	1,906.06	ERP (W):	1,906.06
Antenna A2 MPE%	3.33	Antenna B2 MPE%	3.33	Antenna C2 MPE%	3,33
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Commscope LNX- 6515DS-VTM	Make / Model:	Commscope LNX- 6515DS-VTM	Make / Model;	Commscope LNX- 6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	77	Height (AGL):	77	Height (AGL):	77
Frequency Bands	700 Mhz	Frequency Bands	700 Mhz	Frequency Bands	700 Mhz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power:	30	Total TX Power:	30	Total TX Power:	30
ERP (W):	445.37	ERP (W):	445.37	ERP (W):	445.37
Antenna A3 MPE%	1.32	Antenna B3 MPE%	1.32	Antenna C3 MPE%	1.32

Site Composite MPE%		
Carrier	MPE%	
T-Mobile	23,94	
Personal Vision	0.00 %	
SNET TMRS	29.11 %	
Site Total MPE %:	53.05 %	

T-Mobile Sector 1 Total:	7.98 %
T-Mobile Sector 2 Total:	7.98 %
T-Mobile Sector 3 Total:	7.98 %
Site Total:	53.05 %

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



Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector 1:	7.98 %
Sector 2:	7.98 %
Sector 3:	7.98 %
T-Mobile Total:	23.94 %
Site Total:	53.05 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **53.05%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Scott Heffernan

RF Engineering Director

EBI Consulting

21 B Street

Burlington, MA 01803'