

JULIE D. KOHLER

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

April 1, 2015

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

Re: Notice of Exempt Modification

Danbury Hospital/T-Mobile equipment upgrade

Site ID CT11108A

24 Hospital Avenue, Danbury

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, Danbury Hospital owns the existing building that hosts several wireless telecommunications facilities at 24 Hospital Avenue, Road, Danbury Connecticut (latitude 41.40506/ longitude -73.44555). The Council assumed jurisdiction of a facility at this site in Docket 79 in 1987 and has acknowledged multiple exempt modifications since that time. This facility is therefore within the Council's jurisdiction.¹

T-Mobile intends to replace two (2) two antennas and add one (1) antenna and related equipment at this existing rooftop telecommunications facility in Danbury ("Danbury 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, Mark D. Boughton and the property owner, Danbury Hospital.

The existing Danbury Facility consists of a 134' 7" building on which T-Mobile currently has 3 rooftop mounted arrays and associated equipment. T-Mobile plans to replace two (2) antennas on each of two sectors (beta and gamma) and add an antenna to the alpha sector. The antennas in the alpha and beta sectors are at a centerline of 154 feet, and antennas are at a centerline of 127 feet in the gamma sector. T-Mobile will add RRUs (remote radio units) behind each antenna. T-Mobile will also use spare fiber for the proposed antennas. (See the plans revised to March 10, 2105 attached hereto as Exhibit A). The existing Facility is

¹ Docket No. 79 contains no limitations or restrictions relevant to T-Mobile's proposed modifications.



April 1, 2015 Site ID CT11108A Page 2

structurally capable of supporting T-Mobile's proposed modifications, as indicated in the structural assessment dated March 6, 2015 and attached hereto as Exhibit B.

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

- 1. The proposed modification will not increase the height of the rooftop facility or the antennas. T-Mobile's equipment is simply a replacement of existing equipment at the same centerlines. The enclosed plans confirm that the proposed modification will not increase the height of the Facility.
- 2. T-Mobile's proposed equipment will be located entirely within the existing equipment area. No expansion of site boundaries is necessary.
- 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 and additional antennas will not increase the total radio frequency (RF) power density, measured at the nearest point of exposure (the rooftop), to a level at or above the applicable standard. According to a Radio Frequency Emissions Analysis Report prepared by EBI dated March 30, 2015, T-Mobile's operations would add 2.53% 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 36.57% 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 and additional antennas and equipment at the Danbury 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, Esa

cc: City of Danbury, Mayor Mark D. Boughton Danbury Hospital Elizabeth Jamieson, Transcend Wireless

EXHIBIT A

SITE NAME: DANBURY HOSPITAL

24 HOSPITAL AVENUE DANBURY, CT 06810 **FAIRFIELD COUNTY**

L700 - 702Cu CONFIGURATION SITE NUMBER: CT11108A

T-MOBILE TECHNICIAN SIT E SAFETY NOTES

TRANSCEND WIRELESS 10 INDUSTRIAL AVE MAHWAH, NJ 07430

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

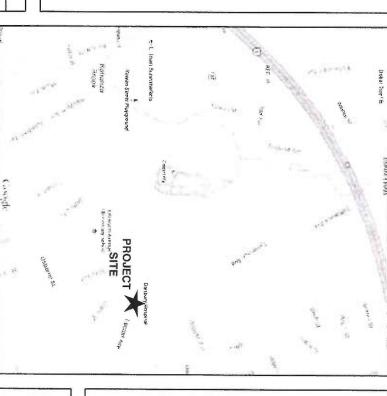
Transcend Wireless

Hudson Dexign Groupus

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

T-MOBILE NORTHEAST LLC

NONE	OTHER/SPECIAL:
UNRESTRICTED	NIU/T DEMARC:
UNRESTRICTED	MAIN CIRCUIT D/C:
UNRESTRICTED	PPC DISCONNECT:
UNRESTRICTED	RADIO CABINETS:
UNRESTRICTED	GPS/LMU:
ACCESS NOT PERMITTED	SECTOR C:
ACCESS NOT PERMITTED	SECTOR B:
ACCESS NOT PERMITTED	SECTOR A:
SPECIAL RESTRICTIONS	LOCATION



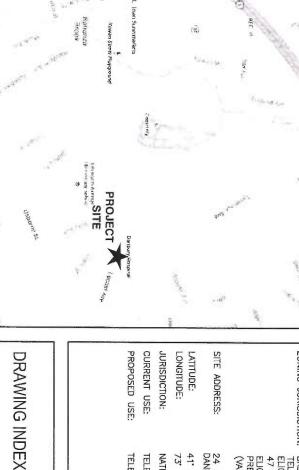
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T-MOBILE NORTHEAST, LLC REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SPECIAL STRUCTURAL NOTES

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 SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.

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

GENERAL NOTES



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

STRUCTURAL DESIGNS AND DETAILS FOR ANTENNA MOUNTS COMPLETED BY HUDSON DESIGN ON BEHALF OF T-MOBILE ARE INCLUSIVE OF THE ENTIRE ANTENNA SUPPORT STRUCTURE (GLOBAL STRUCTURAL STABILITY ANALYSIS BY OTHERS), EXISTING TOWER PLATFORM, EXISTING ANTENNA MOUNTS AND ALL OTHER ASPECTS OF THE STRUCTURE THAT WILL SUPPORT THE T-MOBILE MODERNIZATION EQUIPMENT DEPLOYMENT AS DEPICTED HEREIN.

UNDERGROUND SERVICE ALERT	or call 811	CALL TOLL FREE 800-922-4455	BEFORE YOU DIG	CALL (S)	
					_

GROUNDING DETAILS

ANTENNA PLAN & MOUNTING DETAIL

0

SHEET NUMBER

11

0

TITLE SHEET

ELEVATION

7

TITLE SHEET

GN-1 GENERAL NOTES

ROOFTOP PLAN

0

SHEET TITLE

0

SITE NUMBER: CT11108A

SITE NAME: DANBURY HOSPITAL

24 HOSPITAL AVENUE DANBURY, CT 06810

RF ENGINEERING

CONSTRUCTION

DATE

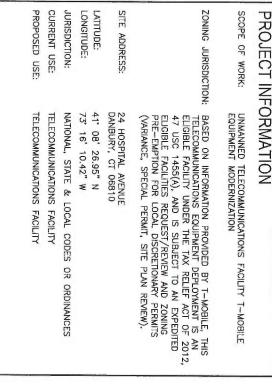
PROJECT MANAGER

APPROVALS

ZONING / SITE ACQ

OPERATIONS

DATE



REV 0 02/23/15	1 03/10/15 ISSUED		CHECKED	DRAWN BY:	PROJECT NO:	TOWER OWNER	OPERATIONS	ZONING/SITE ACQ.	NG RF ENGINEERING	OF 2012, CONSTRUCTION	E. THIS
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ROUNDING NOTES

- 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 PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING
- 12 ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
- THE SUBCONTRACTOR SHALL PERFORM IEEE SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS. SUBCONTRACTOR SHALL FURNISH AND INSTALL FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE
- METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRA COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT. STRANDED
- 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 STRANDED COPPER FOR OUTDOOR BTS. AWG
- EXOTHERMIC WELDS SHALL BE USED FOR CONNECTIONS BELOW GRADE. ALL GROUNDING
- APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
- ICE BRIDGE BONDING CONDUCTORS SHALL CE BRIDGE BONDING CONDUCTORS SHALL BE EXIDED 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.
- 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

1. FOR THE DEFINITIONS S E PURPOSE OF CONSTRUCTION DRAWING, SHALL APPLY: HE FOLLOWING

ENERAL NOTES

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

- 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 DRAWNIGS. 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.
- 4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- 5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- 6. "KITTING 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.
- THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- 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.
- AND AND 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 유
- 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
- 12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
- 13. 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 ARR-ENTRANED AND SHALL HAVE 4000 PS; STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

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

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.

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 COULPIEMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

20. APPLICABLE BUILDING CODES:
SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, 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 STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION;

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 CONFLIBETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

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 A53 TYPE E (Fy = 36 ks)). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

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.

BUILDING CODE: IBC 2003 W/ 2005 CT SUPPLEMENT + 2009 AMENDMI 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:

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

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

ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL STANDARDS.

EXISTING EXISTING EQUIPMENT GROUND RING EQUIPMENT GROUND BARE COPPER WIRE AMERICAN WIRE GAUGE BASE TRANSCEIVER STATION ABOVE GRADE LEVEL N.T.S. REF PROPOSED Z MGB G.C. ABBREVIATIONS NEW MASTER GROUND GENERAL CONTRACTOR NOT TO SCALE MINIMUM BUS TBRR T\P 꼮 TBR TBD TYPICAL TO BE REMOVED AND REPLACED RADIO TO BE REMOVED TO BE DETERMINED FREQUENCY

BCW

AGL

EG

T-MOBILE NORTHEAST LLC

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

Transcend Wireless

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

4.00 OSCOOD STREET SUILDING 20 NORTH SUITE 3090 SLANDOVER, MA 01845 Hudson Design Groupus CONNEC TEL: (978) 557-5553 FAX: (978) 336-5586

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HW	DRAWN BY:	0	
CT11108	PROJECT NO:	סו	
DATE	TOWER OWNER	I al	
DATE	OPERATIONS	ol	
DATE	ZONING/SITE ACQ.	72	
DATE	RF ENGINEERING	ام	
DATE	CONSTRUCTION	ol	
ALS	APPROVALS		

SITE NUMBER: CT11108A ISSUED FOR REVIEW

SSUED FOR REVIEW

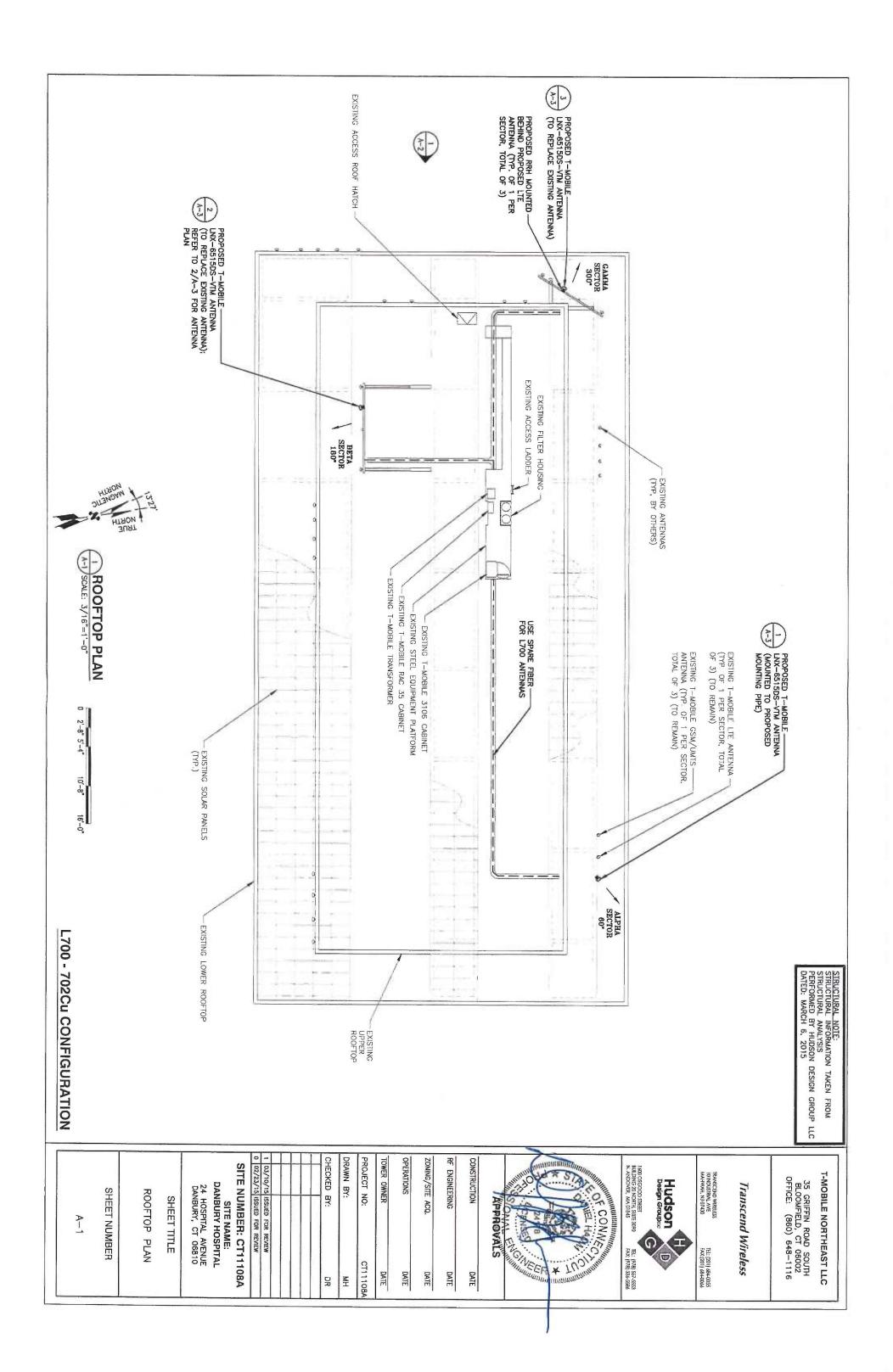
SITE NAME: DANBURY HOSPITAL 24 HOSPITAL AVENUE DANBURY, CT 06810

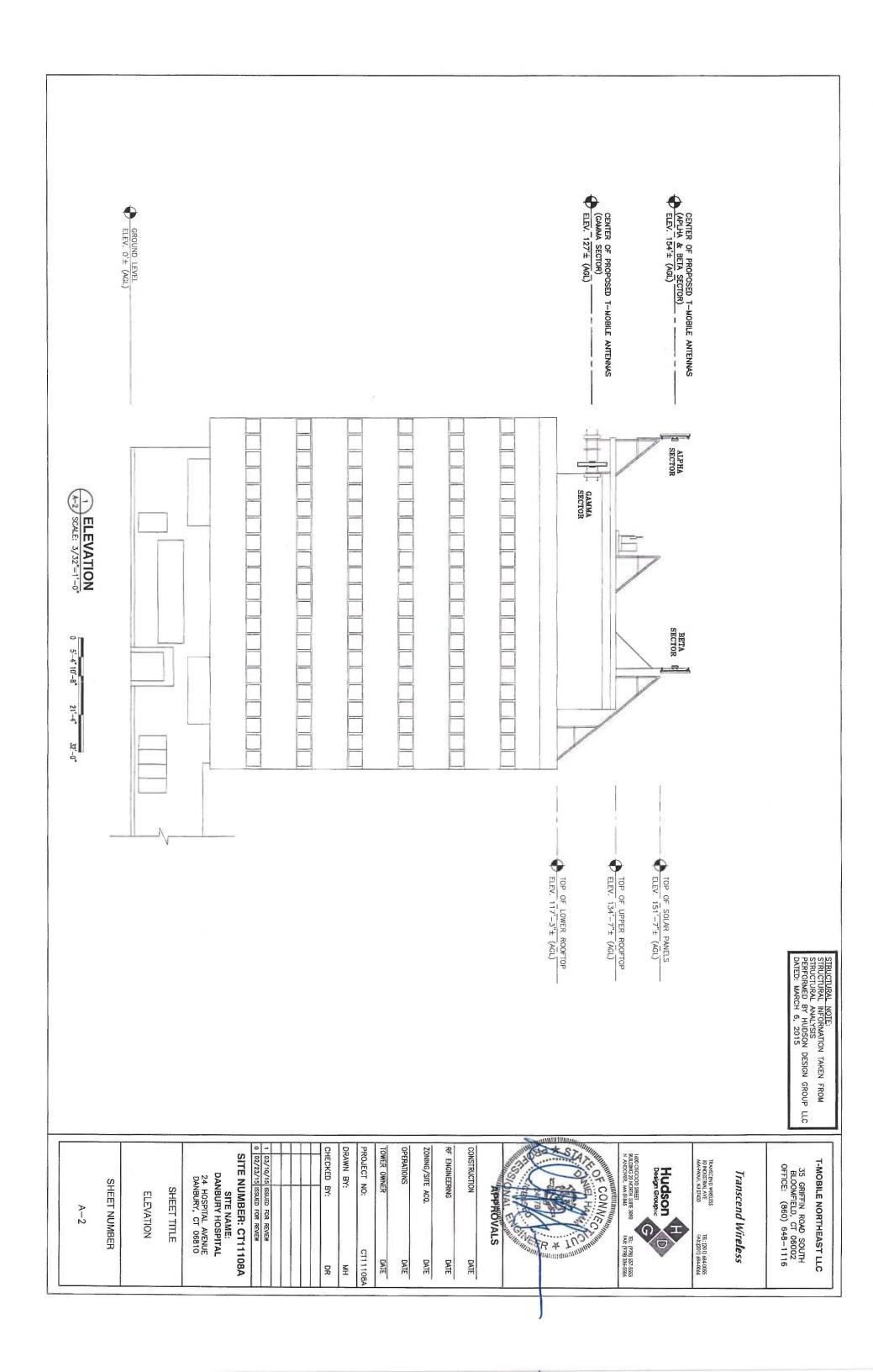
GENERAL NOTES

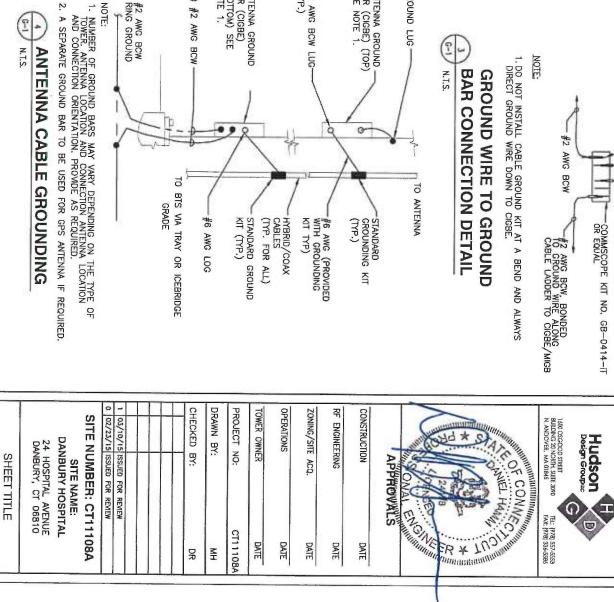
SHEET TITLE

SHEET NUMBER

GN-1







ANTENNA GROUND BAR (CIGBE) (BOTTOM) SEE NOTE 1.

(2) #2 AWG BCW

#2 AWG BCW RING GROUND

GROUNDING DETAILS

SHEET NUMBER



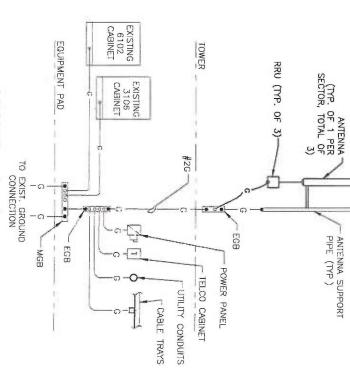
ANTENNA GROUND — BAR (CIGBE) (TOP) SEE NOTE 1.

9

GROUND LUG-

N.T.S.

#2 AWG BCW LUG-



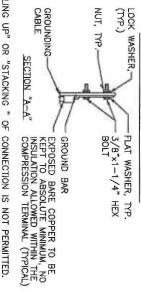
CONNECTION DETAIL TYPICAL GROUND BAR

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.



ELEVATION 00 0 TWO HOLE COPPER COMPRESSION TERMINAL GROUND BAR

STAINLESS STEEL HARDWARE

GROUNDING CABLE-

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

WEATHERPROOFING KIT (TYP.)

JUMPER REQUIRED ONLY-WHEN 1-1/4 AND AND LARGER (TYP.)

STANDARD GROUND KIT (TYP.)

Transcend Wireless

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

FROM ANTENNA-7

WEATHERPROOFING

FROM ANTENNA FRAME SUPPORT

COAX GROUND KIT

- ANTENNA CABLE TO BTS (TYP.)

-COMMSCOPE KIT NO. GB-0414-IT

NOTE:

T-MOBILE NORTHEAST LLC

EXHIBIT B



March 6, 2015

Transcend Wireless

TaxVolie

Transcend Wireless 10 Industrial Avenue Mahwah, NJ 07430

RE:

T-Mobile Site Number:

Site Name:

Site Address:

CT11108A

Danbury Hospital 24 Hospital Avenue

Danbury, CT 06810

To Whom It May Concern:

Hudson Design Group LLC (HDG) has been authorized by Transcend Wireless to perform a structural assessment on the above mention site to determine its capability of supporting the proposed antennas;

- (3) Commscope LNX-6515DS-VTM antennas (1 per sector) mounted on proposed/existing steel pipes.
- (3) RRUS-11 RRH's (1 per sector) mounted behind the antennas.

Based on our evaluation, we have determined that the existing structure <u>IS CAPABLE</u> of supporting the proposed antenna installation. HDG reviewed the existing and proposed antenna loading along with field photographs to determine this assessment. Reference the latest HDG construction drawings for the proposed antenna locations and attachment details.

This assessment was conducted in accordance with EIA/TIA-222-F, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2003 with 2005 Connecticut Supplement with 2009 Amendments, and the ASCE 7-05 Minimum Design Loads for Buildings and Other Structures.

Reference Documents:

- Construction Drawings prepared by Atlantis Group dated September 18, 2013.
- Structural Evaluation Letter prepared by Atlantis Group dated September 19, 2013.

This determination was based on the following limitations and assumptions:

- HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
- 2. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities. Contractor is to perform a pre-inspection to confirm.
- 3. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
- 4. All the components supporting the T-Mobile antennas mounts are assumed to be designed to all applicable codes and designed for identical to or larger than the currently proposed loads.
- 5. The new and existing mounts have been adequately secured to the building structure.

Please feel free to contact our office should you have any questions.

Respectfully Submitted, Hudson Design Group LLC

Michael Cabral Structural Dept. Head 24178

CENSED

MINIMUM

Daniel P. Hamm, PE Principal

EXHIBIT C



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

ON SITE MEASUREMENTS PERFORMED: MARCH 24, 2015

T-Mobile Existing Facility

Site ID: CT11108A

Danbury Hospital 24 Hospital Avenue Danbury, CT 06810

March 30, 2015

EBI Project Number: 6215001609

Site Compliance Summary				
Compliance Status:	COMPLIANT			
Site total MPE% of				
FCC general public allowable limit:	36.57%			



March 30, 2015

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

Emissions Analysis for Site: CT11108A - Danbury Hospital

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **24 Hospital Avenue**, **Danbury**, **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. For this analysis, power density measurements were taken on site by EBI Consulting's field technicians on March 24, 2015 to determine the existing radio frequency (RF) emissions values present on and surrounding the rooftop walking surface of the hospital. Theoretical calculations were then performed to determine the additional contribution to this composite value from the proposed T-Mobile upgrades to the existing facility

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 97-01 and 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.

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.

MEASUREMENT METHODOLOGY

Frequencies from 300 KHz to 50 GHz were measured using the Narda EA5091 probe in conjunction with the NBM 550 survey meter. The EA5091 probe is "shaped" such that in a mixed signal environment (i.e.: more than one frequency band is used in a particular location) it accurately measures the percent of MPE.

FCC OET Bulletin No. 65 - Edition 97-01 states "A useful characteristic of broadband probes used in multiple-frequency RF environments is a frequency-dependent response that corresponds to the variation in MPE limits with frequency. Broadband probes having such a "shaped" response permit direct assessment of compliance at sites where RF fields result from antennas transmitting over a wide range of frequencies. Such probes can express the composite RF field as a percentage of the applicable MPEs".

Probe Description – As suggested in FCC OET Bulletin No. 65 - Edition 97-01, the response of the measurement instrument should be essentially isotropic, (i.e., independent of orientation or rotation angle of the probe). For this reason, the Narda EA5091 Isotropic probe was used for these measurements.

Sampling Method: At each measurement location, a spatially averaged measurement is collected over the height of an average human body. The NBM 550 survey meter performs a time average measurement while the user slowly moves the probe over a distance range of 0 cm to 200 cm (about 6 feet) above ground level. The results recorded at each measurement location include both average and peak values over the spatial distance.

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A summary of equipment specifications for the probe and meter are listed in Table 1below.

Manufacturer:	NARDA Microwave
Probe Model:	NARDA EA5091
Probe Calibration date:	September 17, 2014
Survey Meter Model:	NARDA NBM 550
Survey Meter calibration Date:	September 8, 2014
Calibration Interval:	24 Months
Probe S	pecifics
Frequency Range:	300 KHz to 50 GHz
Field(s) Measured:	E Field
Measurement Range (% of Controlled	
Environment standard):	0.3 to 600%
Specification Standards:	FCC 1997

Table 1: Measurement Equipment Information

Instrument Measurement Uncertainty: The total measurement uncertainty of the NARDA measurement probe and meter is no greater than ±3 dB. The factors which contribute to this include the probe's frequency response deviation, calibration uncertainty, ellipse ratio, and isotropic response. Every effort is taken to reduce the overall uncertainty during measurement collection including rotating the probe about the axis of the handle and pointing the probe directly at the likely highest source of emissions.

A summary of all sample points taken on site are displayed in Appendix A



CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **24 Hospital Avenue, Danbury, 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 utilizing the actual antenna gains in the direction of the rooftop were used per the manufacturers' specifications. These values are approximately 33 dB lower than the maximum gain of the antennas.

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

- Existing 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. (Captured in Measured Values)
- Existing 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. (Captured in Measured Values)
- 3) Existing 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. (Captured in Measured Values)
- 4) Proposed 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.
 (Calculated and Added to Measured Values)
- 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. For all rooftop calculations the actual antenna gains in the direction of the rooftop were used per the manufacturers' specifications. These values are approximately 33 dB lower than the maximum gain of the antennas. The sample point for all calculations was the top of a 6 foot person on the rooftop walking surface.

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- 7) The antennas used in this modeling are the Ericsson AIR21 B4A/B2P& 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& B4A/B2P) have a maximum gain of 15.9 dBd at their main lobe. The Commscope LNX-6515DS-VTM has a maximum gain of 14.6 dBd at its main lobe. For these rooftop calculations the actual antenna gains in the direction of the rooftop were used per the manufacturers' specifications. These values are approximately 33 dB lower than the maximum gain of the antennas.
- 8) The antenna mounting height centerline of the proposed antennas is **36.75 feet** above ground level (AGL).
- 9) Composite emissions value measurements were taken on site to determine existing RF emissions levels. The largest calculated theoretical emissions value for the T-Mobile proposed facility upgrades (700 MHz antennas) was then added to the largest power density value measured on site to determine the anticipated largest onsite composite value with the contribution of the proposed T-Mobile facility upgrade. The existing T-Mobile equipment operating in the 1900 MHz and 2100 MHz bands was measured during the survey and was not calculated as part of this study to prevent duplicate contributions.

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

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T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	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):	36.75	Height (AGL):	36.75	Height (AGL):	36.75
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):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
	0.08		0.08		5.37
Antenna A1 MPE%	(Active in measured	Antenna B1 MPE%	(Active in measured	Antenna C1 MPE%	(Active in measured
	values)		values)		values)
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):	36.75	Height (AGL):	36.75	Height (AGL):	36.75
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):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A2 MPE%	0.08 (Active in measured	Antenna B2 MPE%	0.08 (Active in measured	Antenna C2 MPE%	5.37 (Active in measured
	values)		values)		values)
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):	9.75	Height (AGL):	9.75	Height (AGL):	9.75
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):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A3 MPE%	0.04 (Calculated)	Antenna B3 MPE%	0.04 (Calculated)	Antenna C3 MPE%	2.45 (Calculated)

Site Composite MPE%					
Carrier	MPE % (General Public)				
Maximum T-Mobile Contribution	2.53 %				
Maximum Surveyed Measurement Value	34.04 %				
Site Total MPE %:	36.57 %				

T-Mobile Sector 1 700 MHz Total:	0.04 %
T-Mobile Sector 2 700 MHz Total:	0.04 %
T-Mobile Sector 3 700 MHz Total;	2.45 %
Anticipated Site Total (Measured and Calculated):	36.57%



Summary

All calculations performed and measurements taken on site 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:	0.04 %
Sector 2:	0.04 %
Sector 3:	2.45 %
T-Mobile Total:	2.53%
Site Total:	36.57%
Site Compliance Status:	COMPLIANT

The largest value observed while conducting the on-site measurements was 34.04% of the allowable limits for general public exposure to RF Emissions.

The anticipated composite MPE value for this site assuming all carriers present is **36.57%** of the allowable FCC established general public limit sampled on the rooftop level. All ground levels will be far below values measured and calculated for the rooftop walking area.

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

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APPENDIX A

On Site Measurements



Accessible Areas on Rooftop % FCC MPE Spatial Averages

Location Reference	% Occupational MPE	% General Population MPE	
1' in front of T-Mobile Sector A	0.2697	1.3485	
3' in front of T-Mobile Sector A	0.2273	1.1365	
6' in front of T-Mobile Sector A	Inaccessible	Inaccessible	
Behind T-Mobile Sector A	0.2156	1.0780	
1' in front of T-Mobile Sector B	0.4097	2.0485	
3' in front of T-Mobile Sector B	0.4569	2.2845	
6' in front of T-Mobile Sector B	0.4475	2.2375	
Behind T-Mobile Sector B	Inaccessible	Inaccessible	
1' in front of T-Mobile Sector C	Inaccessible	Inaccessible	
3' in front of T-Mobile Sector C	Inaccessible	Inaccessible	
6' in front of T-Mobile Sector C	Inaccessible	Inaccessible	
Behind T-Mobile Sector C	Inaccessible	Inaccessible	
ATT Sector B	0.2203	1.1015	
ATT Sector B	0.2465	1.2325	
ATT Sector B	1.98	9.9000	
behind VZW B	1.055	5.2750	
E roof door	0.759	3.7950	
VZW Sector A	0.3652	1.8260	
SPT Sector A	0.1281	0.6405	
ATT Sector A	0.2992	1.4960	
Upper roof	0.1879	0.9395	
Upper roof	0.2521	1.2605	
Upper roof	0.444	2.2200	
TMO equip	0.715	3.5750	
TMO equip	1.096	5.4800	
Upper roof	2.556	12.7800	
W roof hatch	2.859	14.2950	
E roof hatch	6.807 (Maximum)	34.0350 (Maximum)	
N roof	0.1198	0.5990	
VZW Sector C	1.547	7.7350	
VZW Sector C	2.365	11.8250	
VZW Sector C	2.071	10.3550	
VZW Sector C	2.443	12.2150	
ATT Sector C	2.492	12.4600	



Accessible Areas at Ground Level % FCC MPE **Spatial Averages** % General **Location Reference** % Occupational MPE **Population MPE** Ground 1 0.123 0.6150 Ground 2 0.1184 0.5920 Ground 3 0.0897 0.4485



APPENDIX B

Site Photos

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I. Verizon Sector B antennas



2. Signage on east roof access door



3. Signage beside east roof access door



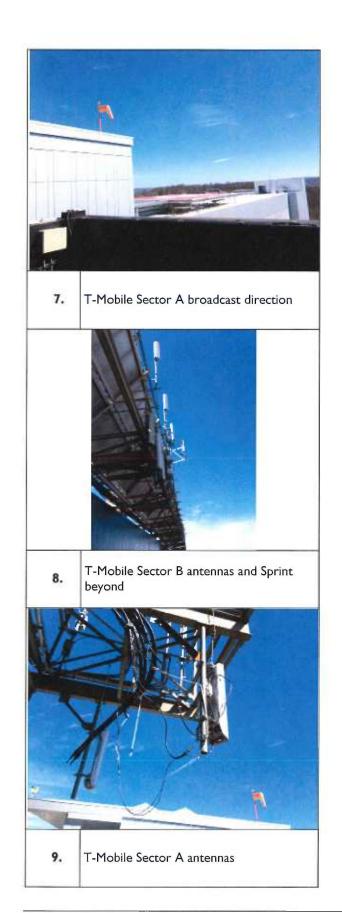
4. Signage on east upper roof access hatch

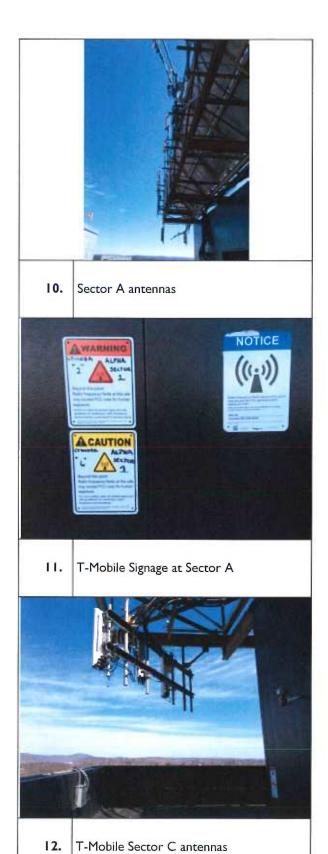


5. AT&T Sector B antennas



6. Verizon Sector A antennas above and T-Mobile Sector B antennas below

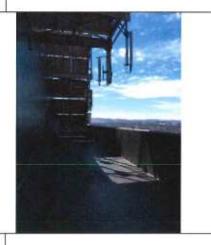












15. Sprint Sector C antennas



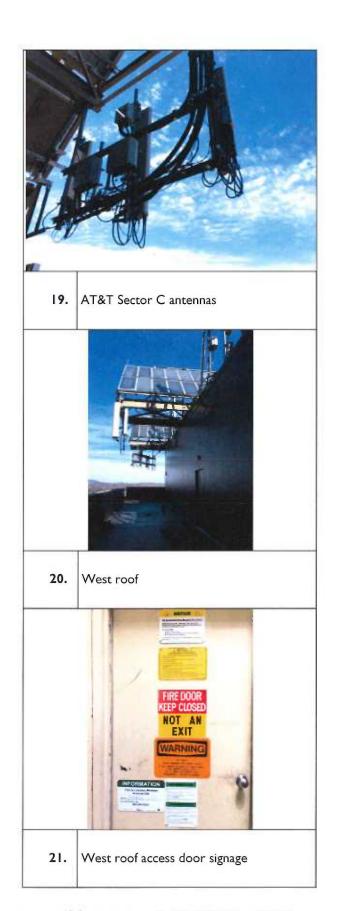
16. Verizon Sector B antennas, 1 of 2



17. Verizon Sector B antennas, 2 of 2



18. Sprint (left) and unknown (right) Sector C



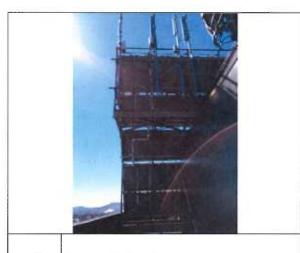




23. Signage on west roof access hatch



24. Signage on west roof access hatch



I. Verizon Sector B antennas



2. Signage on east roof access door



3. Signage beside east roof access door



4. Signage on east upper roof access hatch

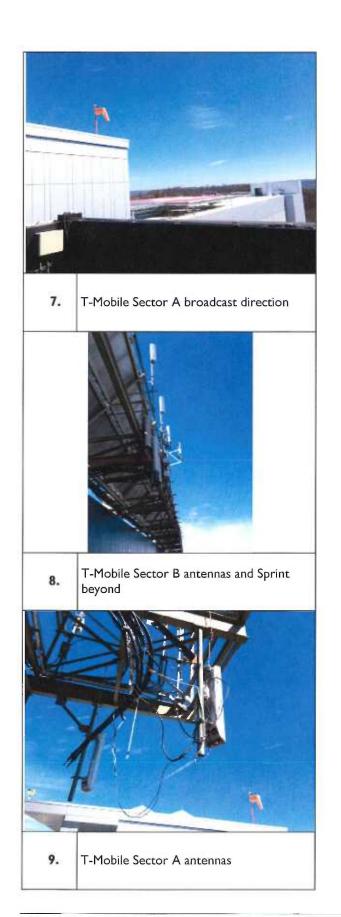


5. AT&T Sector B antennas



Verizon Sector A antennas above and T-Mobile Sector B antennas below

6.











14. T-Mobile Sector C broadcast direction



15. Sprint Sector C antennas



16. Verizon Sector B antennas, 1 of 2



17. Verizon Sector B antennas, 2 of 2



18. Sprint (left) and unknown (right) Sector C

