



10 INDUSTRIAL AVE,  
SUITE 3  
MAHWAH NJ 07430

PHONE: 201.684.0055  
FAX: 201.684.0066

October 13, 2016

Melanie A. Bachman  
Acting Executive Director  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

T-Mobile Northeast LLC – CNH371A  
Tower Share Application  
6 Mountain Road, Washington, CT 06777  
Latitude- 41.66888000  
Longitude- -73.36527000

Dear Ms. Bachman,

This letter and attachments are submitted on behalf of T-Mobile Northeast LLC (“T-Mobile”). T-Mobile plans to install antennas and related equipment at the American Tower site located at 6 Mountain Road in Washington, CT. Please note, T-Mobile was previously approved for a tower-sharing request at this facility, in Connecticut Siting Council decisions dated March 17, 2011 and July 25, 2016. The proposed equipment configuration has been re-designed.

T-Mobile will install six (6) 700/1900 MHz antennas, three (3) TMAs, and three (3) Smart Bias Tees at the 136’ level of the existing 171’ monopole. Twelve (12) coax cables will also be installed inside the existing monopole. T-Mobile’s equipment cabinets will be placed on a 10’ X 20’ concrete pad within the existing fenced equipment compound. Included are plans prepared by Hudson Design Group dated October 12, 2016, depicting the planned changes and attached as **Exhibit A**. Also included is a structural analysis prepared by A.T. Engineering Service, PLLC, dated September 26, 2016, confirming that the existing tower is structurally capable of supporting T-Mobile’s equipment and attached as **Exhibit B**. Please note, this analysis depicts certain T-Mobile equipment as “to be removed”, which is due to T-Mobile having an existing lease in place with the owner, American Tower, and the previously-leased equipment is being depicted as being removed within this analysis. There is no T-Mobile equipment currently on this tower.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of T-Mobile’s intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Mark E. Lyon, First Selectman of the Town of Washington. American Tower Corporation, the tower owner, and Ray & Carol Underwood, the underlying property owners. Please see the attached letter from American Tower authorizing the proposed shared use of the facility attached as **Exhibit C**.

The planned modifications of the facility fall squarely within those activities explicitly provided for in R.C.S.A. 16-50j-89.

1. The proposed modifications will not result in an increase in the height of the existing structure. The top of the monopole is approximately 171'; T-Mobile's proposed antennas will be located at a center line height of 136'.
2. The proposed modifications will not require the extension of the site boundary as depicted on the attached site plan. T-Mobile's equipment will be located entirely within the existing compound area.
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. The incremental effect of the proposed changes will be negligible.
4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 4.08% as evidenced by the power density calculations attached as **Exhibit D**.

Connecticut General Statutes 16-50aa indicates that the Council must approve the shared use of a telecommunications facility provided it finds the shared use is technically, legally, environmentally, and economically feasible and meets public safety concerns. As demonstrated in this letter, T-Mobile respectfully submits that the shared use of this facility satisfies these criteria.

- A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting T-Mobile's proposed loading. The structural analysis is included as Exhibit B.
- B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this monopole in Washington. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit T-Mobile to obtain a building permit for the proposed installation. Further, a Letter of Authorization from the owner is included as Exhibit C, authorizing T-Mobile to file this application for shared use.
- C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental effect. The installation of T-Mobile's equipment at the 136' level of the existing 171' monopole would have an insignificant visual impact on the area around the tower. T-Mobile's ground equipment would be installed within the existing facility compound. T-Mobile's shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit D, the proposed antennas will not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.
- D. Economic Feasibility. T-Mobile will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Authorization has been provided by the owner to assist T-Mobile with this tower sharing application.
- E. Public Safety Concerns. As discussed above, the monopole is structurally capable of supporting T-Mobile's proposed loading. T-Mobile is not aware of any public safety concerns relative to the proposed sharing of the existing monopole. T-Mobile's intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through Washington.

Sincerely,

*Kyle Richers*

Kyle Richers  
Transcend Wireless  
10 Industrial Ave., Suite 3  
Mahwah, New Jersey  
krichers@transcendwireless.com  
908-447-4716

cc: Mark E. Lyon, First Selectman, Town of Washington  
American Tower, tower owner  
Ray & Carol Underwood, property owner

# SITE NUMBER: CTNH371A

6 MOUNTAIN ROAD  
WASHINGTON, CT 06777  
LITCHFIELD COUNTY

## SITE NAME: MOUNTAIN RD- VERIZON COLO

### RF DESIGN GUIDELINE: 707A

#### T-MOBILE TECHNICIAN SITE SAFETY NOTES

LOCATION	SPECIAL RESTRICTIONS
SECTOR A: ANTENNA/TMA/RRH	ACCESS NOT PERMITTED
SECTOR B: ANTENNA/TMA/RRH	ACCESS NOT PERMITTED
SECTOR C: ANTENNA/TMA/RRH	ACCESS NOT PERMITTED
GPS/LMU:	UNRESTRICTED CAUTION: OSHA-APPROVED PORTABLE 8' STEP-LADDER REQUIRED
RADIO CABINETS:	UNRESTRICTED
PPC DISCONNECT:	UNRESTRICTED
MAIN CIRCUIT D/C:	UNRESTRICTED
NIU/T DEMARC:	UNRESTRICTED
OTHER/SPECIAL:	NONE

#### T-MOBILE NORTHEAST LLC

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



TRANSCEND WIRELESS  
10 INDUSTRIAL AVE  
MAHWAH, NJ 07430  
TEL: (201) 684-0055  
FAX: (201) 684-0066



1600 OSGOOD STREET  
BUILDING 20 NORTH, SUITE 3090  
N. ANDOVER, MA 01845  
TEL: (978) 557-5553  
FAX: (978) 336-5586



*Daniel P. Haman*

CHECKED BY: DR

APPROVED BY: DPH

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
3	10/12/16	REVISED PER COMMENTS	SLY
2	09/07/16	ISSUED FOR CONSTRUCTION	SLY
1	06/01/16	ISSUED FOR CONSTRUCTION	VP
0	04/29/16	ISSUED FOR REVIEW	MC

SITE NUMBER:  
CTNH371A  
ATC SITE ID:  
413782  
SITE NAME:  
MOUNTAIN RD-  
VERIZON COLO  
SITE ADDRESS:  
6 MOUNTAIN ROAD  
WASHINGTON, CT 06777  
LITCHFIELD COUNTY

SHEET TITLE  
TITLE SHEET

SHEET NUMBER  
T-1

#### GENERAL NOTES

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.

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.

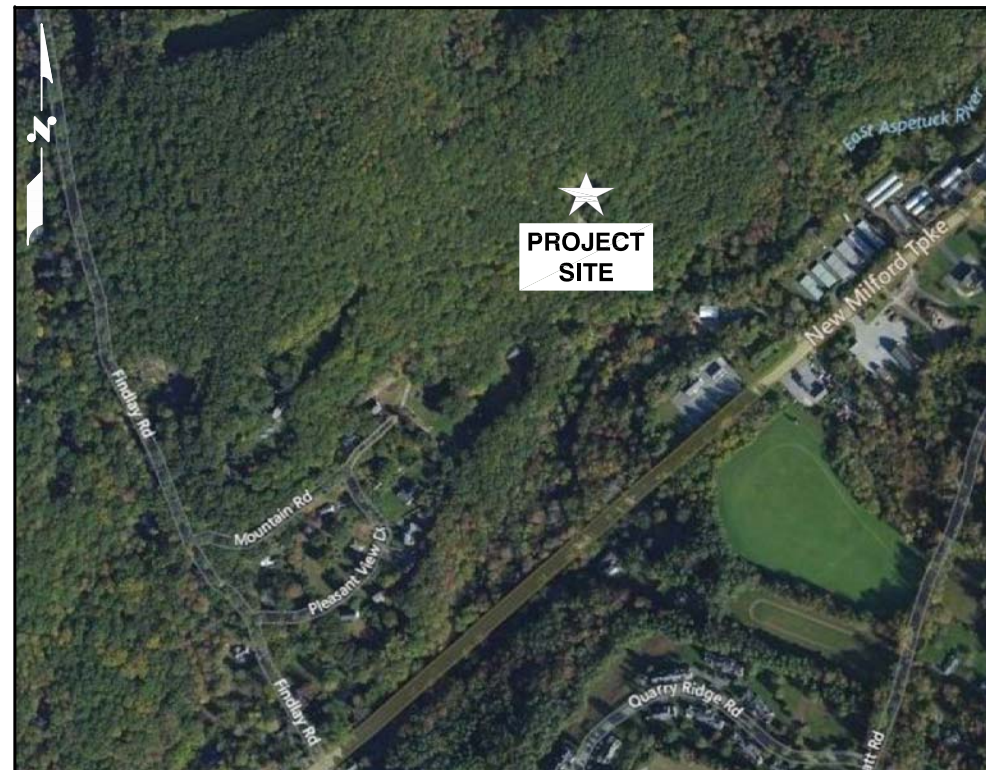
CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T-MOBILE NORTHEAST, LLC REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

#### SPECIAL STRUCTURAL NOTES

TOWER OWNER SHALL PROVIDE GLOBAL STRUCTURAL STABILITY ANALYSIS OF EXISTING ANTENNA SUPPORT STRUCTURE. GENERAL CONTRACTOR SCOPE OF WORK SHALL INCLUDE ALL REQUIRED STRUCTURAL MODIFICATIONS, RE-BUNDLING OF COAXIAL CABLES OR OTHER SPECIAL MODIFICATIONS AS OUTLINED THEREIN.

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.

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



#### PROJECT SUMMARY

SCOPE OF WORK: UNMANNED TELECOMMUNICATIONS FACILITY T-MOBILE EQUIPMENT INSTALLATION

ZONING JURISDICTION: WASHINGTON, CT  
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).

SITE ADDRESS: 6 MOUNTAIN ROAD WASHINGTON, CT 06777

LATITUDE: 41° 40' 08.91" N  
LONGITUDE: 73° 21' 55.05" W

JURISDICTION: NATIONAL, STATE & LOCAL CODES OR ORDINANCES

CURRENT USE: TELECOMMUNICATIONS FACILITY  
PROPOSED USE: TELECOMMUNICATIONS FACILITY

TOWER OWNER: AMERICAN TOWER CORPORATION  
116 HUNTINGTON AVENUE 11TH FLOOR  
BOSTON, MA 02116

ATC SITE ID: 413782  
ATC SITE NAME: WASHINGTON NORTH CT

#### APPROVALS

PROJECT MANAGER	DATE
CONSTRUCTION	DATE
RF ENGINEERING	DATE
ZONING / SITE ACQ.	DATE
OPERATIONS	DATE
TOWER OWNER	DATE

#### DRIVING DIRECTIONS:

HEAD NORTHEAST ON GRIFFIN ROAD SOUTH TOWARD WEST NEWBERRY ROAD. TURN LEFT ONTO CT-187 NORTH. TAKE THE CT-189 NORTH RAMP TO TARIFFVILLE/GRANBY. CONTINUE ONTO CT-189 NORTH. TURN RIGHT ONTO SALMON BROOK STREET. SLIGHT LEFT ONTO NORTH GRANBY ROAD. TURN LEFT ONTO CT-20 WEST/WEST GRANBY ROAD (CONTINUE TO FOLLOW CT-20 WEST). TURN LEFT ONTO CT-219 SOUTH. TURN LEFT ONTO CT-179 SOUTH/CT-219 SOUTH (CONTINUE TO FOLLOW CT-219 SOUTH). TURN RIGHT ONTO CT-318 WEST. TURN LEFT ONTO CT-181 SOUTH/CT-318 WEST (CONTINUE TO FOLLOW CT-318 WEST). TURN RIGHT ONTO US-44 WEST/NEW HARTFORD ROAD. TURN LEFT ONTO CT-8 SOUTH (SIGNS FOR CT-8 SOUTH/TORRINGTON/WATERBURY). TAKE EXIT 42 FOR CT-118 TOWARD HARWINTON/LITCHFIELD. SLIGHT RIGHT ONTO EAST STREET. CONTINUE ONTO US-202 WEST/WEST ST (CONTINUE TO FOLLOW US-202 WEST). TURN RIGHT ONTO FINDLAY ROAD. TURN RIGHT ONTO MOUNTAIN ROAD. DESTINATION WILL BE ON THE LEFT. ARRIVE AT 6 MOUNTAIN ROAD, WASHINGTON, CT 06777.



CALL BEFORE YOU DIG  
CALL TOLL FREE 888-DIG-SAFE OR CALL 811  
UNDERGROUND SERVICE ALERT



#### DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	3
GN-1	GENERAL NOTES	3
A-1	COMPOUND PLAN, EQUIPMENT PLAN & TOWER ELEVATION	3
A-2	TOWER EQUIPMENT DETAILS	3
A-3	GROUND EQUIPMENT DETAILS	3
E-1	ELECTRICAL DETAILS & NOTES	3
G-1	GROUNDING SCHEMATIC & RISER DIAGRAM	3
G-2	GROUNDING DETAILS & NOTES	3

**GROUNDING NOTES**

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTNING 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.
2. 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.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. 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.
5. 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.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
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

**GENERAL NOTES**

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
 CONTRACTOR – TRANSCEND WIRELESS  
 SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)  
 OWNER – 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 DRAWINGS. 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.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. 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 T1 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, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
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.
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 AIR-ENTRAINED 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 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). 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.
16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR 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 EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE 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.
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 STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.  
 BUILDING CODE: IBC 2012 WITH 2016 CT BUILDING CODE AMENDMENTS  
 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;  
  
 AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)  
 MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;  
  
 TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G,  
 STRUCTURAL STANDARDS FOR STEEL  
  
 EQUIPMENT 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.

ABBREVIATIONS					
AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

**T-MOBILE NORTHEAST LLC**

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



TRANSCEND WIRELESS  
 10 INDUSTRIAL AVE  
 MAHWAH, NJ 07430  
 TEL: (201) 684-0055  
 FAX: (201) 684-0066



1600 OSGOOD STREET  
 BUILDING 20 NORTH, SUITE 3090  
 N. ANDOVER, MA 01845  
 TEL: (978) 557-5553  
 FAX: (978) 336-5586



CHECKED BY: DR

APPROVED BY: DPH

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
3	10/12/16	REVISED PER COMMENTS	SLY
2	09/07/16	ISSUED FOR CONSTRUCTION	SLY
1	06/01/16	ISSUED FOR CONSTRUCTION	VP
0	04/29/16	ISSUED FOR REVIEW	MC

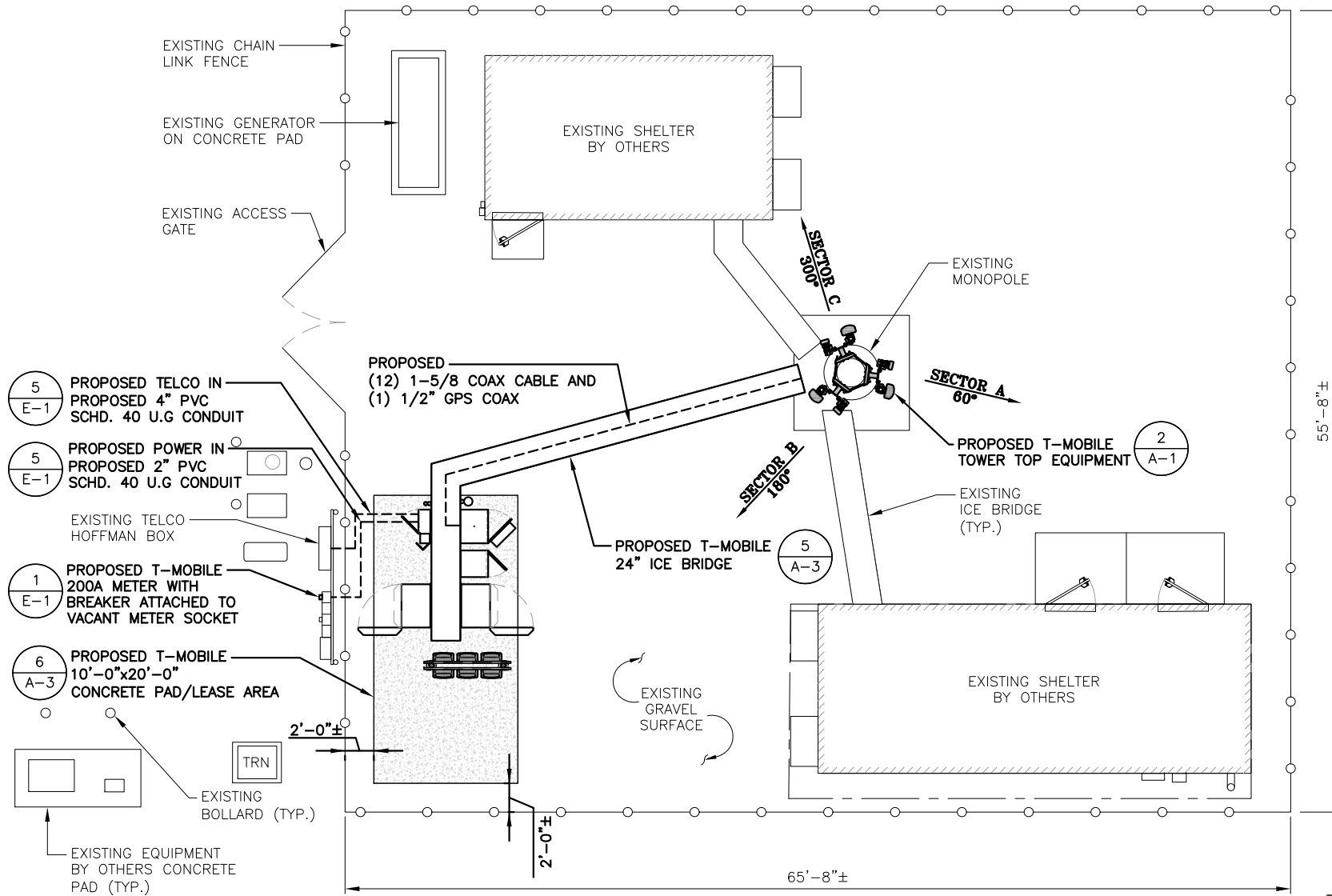
SITE NUMBER:  
 CTNH371A  
 ATC SITE ID:  
 413782  
 SITE NAME:  
 MOUNTAIN RD-  
 VERIZON COLO  
 SITE ADDRESS:  
 6 MOUNTAIN ROAD  
 WASHINGTON, CT 06777  
 LITCHFIELD COUNTY

SHEET TITLE  
 GENERAL NOTES

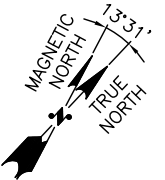
SHEET NUMBER  
**GN-1**

**STRUCTURAL NOTES:**  
 PRIOR TO COMMENCING CONSTRUCTION, GC SHALL REFER TO STRUCTURAL ANALYSIS PROVIDED BY TOWER OWNER, DATED: MAY 17, 2016 TO DETERMINE IF THERE ANY SUPPLEMENTAL OR SPECIAL INSTALLATION REQUIREMENTS FOR RF EQUIPMENT AND FOR CABLE BUNDLING, SHIELDING, MOUNTING, OR RELOCATION ARRANGEMENTS.

**SPECIAL WORK NOTE:**  
 PAINT-TO-MATCH EXISTING MONOPOLE ALL PROPOSED ANTENNA RADOMES & MOUNTS



- 5 E-1 PROPOSED TELCO IN PROPOSED 4" PVC SCHED. 40 U.G CONDUIT
- 5 E-1 PROPOSED POWER IN PROPOSED 2" PVC SCHED. 40 U.G CONDUIT
- 1 E-1 PROPOSED T-MOBILE 200A METER WITH BREAKER ATTACHED TO VACANT METER SOCKET
- 6 A-3 PROPOSED T-MOBILE 10'-0"x20'-0" CONCRETE PAD/LEASE AREA



**COMPOUND PLAN**  
 22x34 SCALE: 3/16"=1'-0"  
 11x17 SCALE: 3/32"=1'-0"



- 7 A-2 TOP OF HIGHEST APPURTENANCE ELEV. = 171'-0"± A.G.L
- TOP OF EXISTING MONOPOLE ELEV. = 171'-0"± A.G.L
- Q OF EXISTING ANTENNAS BY OTHERS ELEV. = 167'-0"± A.G.L
- Q OF EXISTING ANTENNAS BY OTHERS ELEV. = 157'-0"± A.G.L
- Q OF EXISTING ANTENNAS BY OTHERS ELEV. = 147'-0"± A.G.L
- 7 A-2 Q OF PROPOSED T-MOBILE MOUNT ELEV. = 136'-0"± A.G.L

- 3,4 A-2 PROPOSED T-MOBILE ANTENNA (TYP. OF 2 PER SECTOR, TOTAL OF 6)
- 6 A-2 PROPOSED T-MOBILE TMAs (TYP. OF 1 PER SECTOR, TOTAL OF 3)

PROPOSED PROPOSED (12) 1-5/8 COAX CABLE TO BE RUN INSIDE EXISTING MONOPOLE (REFER TO TOWER OWNER PROVIDED STRUCTURAL ANALYSIS FOR SPECIAL INSTALLATION REQUIREMENTS FOR BUNDLING, SHIELDING MOUNTING AND RELOCATION OF EXISTING CABLES)

**NOTE:**  
 \*GROUND EQUIPMENT NOT SHOWN FOR CLARITY.

GROUND LEVEL ELEV. = 0'-0"± A.G.L

**TOWER ELEVATION**  
 22x34 SCALE: 1/16"=1'-0"  
 11x17 SCALE: 1/32"=1'-0"



SOURCE: HDG 04-13-2016

**EQUIPMENT LOCATION PHOTO DETAIL**  
 SCALE: N.T.S

**T-MOBILE NORTHEAST LLC**  
 35 GRIFFIN ROAD SOUTH  
 BLOOMFIELD, CT 06002  
 OFFICE: (860) 648-1116

**Transcend Wireless**

TRANSCEND WIRELESS  
 10 INDUSTRIAL AVE  
 MAHWAH, NJ 07430  
 TEL: (201) 684-0555  
 FAX: (201) 684-0066

**Hudson Design Group LLC**

1600 OSGOOD STREET  
 BUILDING 20 NORTH, SUITE 3090  
 N. ANDOVER, MA 01845  
 TEL: (978) 557-5553  
 FAX: (978) 336-5586



CHECKED BY: DR

APPROVED BY: DPH

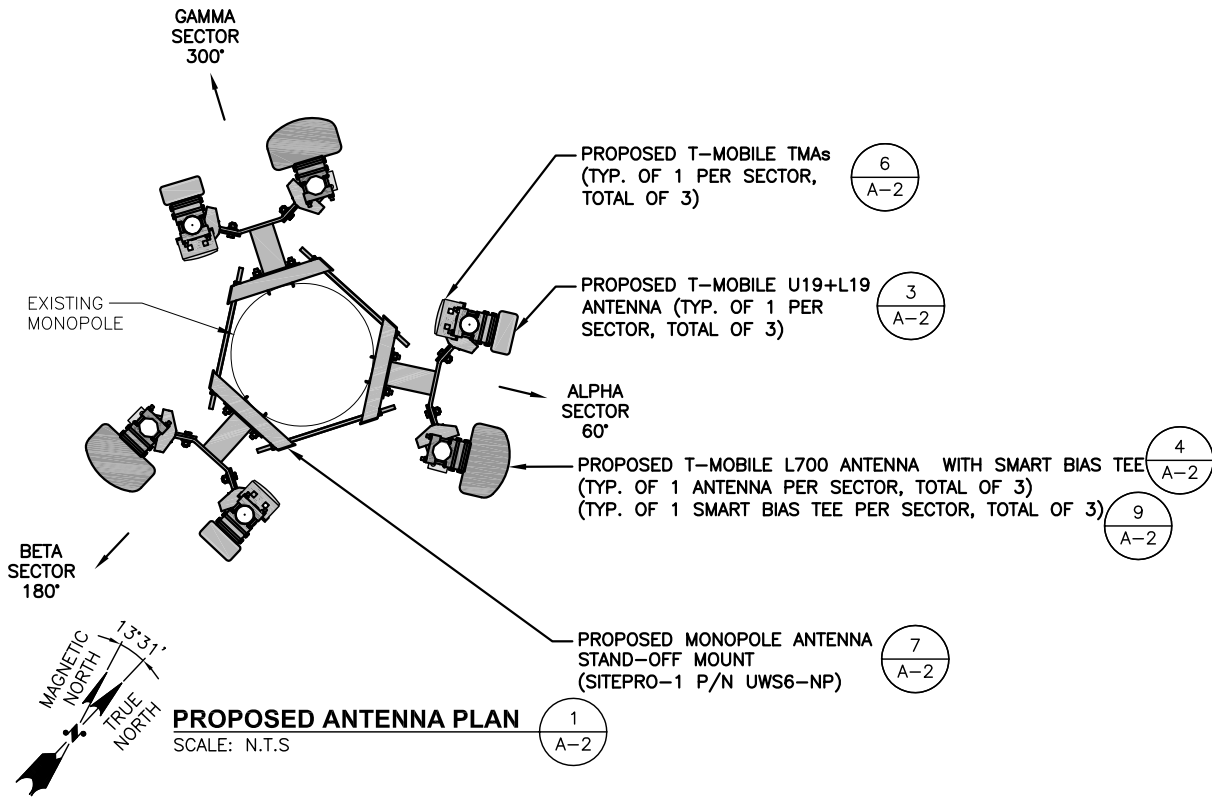
**SUBMITTALS**

REV.	DATE	DESCRIPTION	BY
3	10/12/16	REVISED PER COMMENTS	SLY
2	09/07/16	ISSUED FOR CONSTRUCTION	SLY
1	06/01/16	ISSUED FOR CONSTRUCTION	VP
0	04/29/16	ISSUED FOR REVIEW	MC

SITE NUMBER:  
 CTNH371A  
 ATC SITE ID:  
 413782  
 SITE NAME:  
 MOUNTAIN RD-  
 VERIZON COLO  
 SITE ADDRESS:  
 6 MOUNTAIN ROAD  
 WASHINGTON, CT 06777  
 LITCHFIELD COUNTY

SHEET TITLE  
 COMPOUND PLAN,  
 EQUIPMENT PLAN &  
 ELEVATION

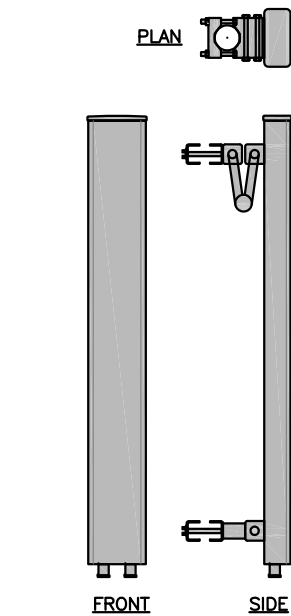
SHEET NUMBER  
**A-1**



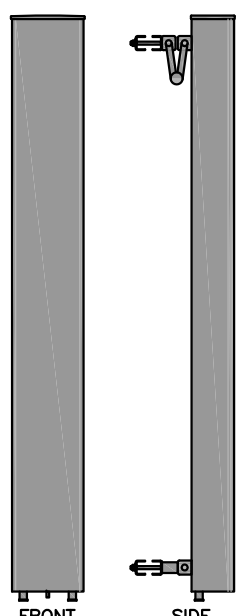
**PROPOSED ANTENNA PLAN**  
SCALE: N.T.S.

U19+L19 ANTENNA DIMENSIONS	
MODEL #	APXV18-206516S-A20
MANUF.	RFS
WIDTH	6.9"
DEPTH	3.15"
HEIGHT	53"
WEIGHT	18.7 LBS

L700 ANTENNA DIMENSIONS	
MODEL #	LNx6515DS-A1M
MANUF.	COMMSCOPE
WIDTH	11.9"
DEPTH	7.1"
HEIGHT	96.3"
WEIGHT	63 LBS

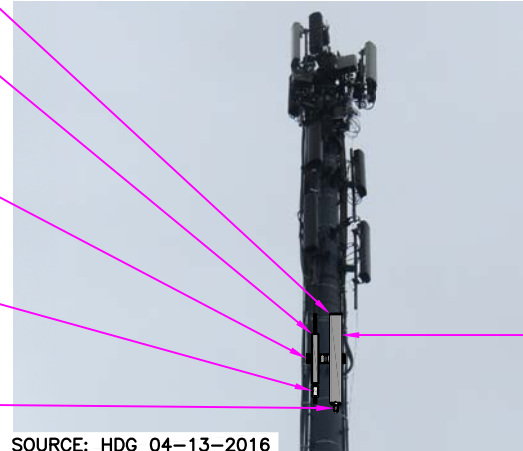


**U19+L19 ANTENNA DETAIL**  
SCALE: N.T.S.

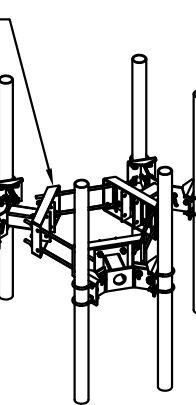


**L700 ANTENNA DETAIL**  
SCALE: N.T.S.

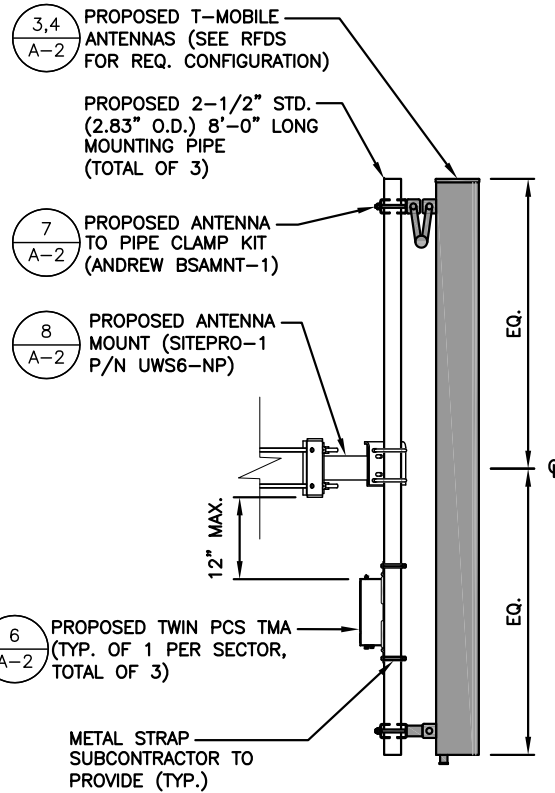
- 4 A-2 PROPOSED T-MOBILE L700 ANTENNA (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- 3 A-2 PROPOSED T-MOBILE U19+L19 ANTENNA (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- 7 A-2 PROPOSED MONOPOLE ANTENNA STAND-OFF MOUNT (SITEPRO-1 P/N UWS6-NP)
- 6 A-2 PROPOSED T-MOBILE TMA (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- 9 A-2 PROPOSED T-MOBILE SMART BIAS TEE (TYP. OF 1 PER SECTOR, TOTAL OF 3)



**PROPOSED ANTENNA MOUNT PHOTO DETAIL**  
SCALE: N.T.S.

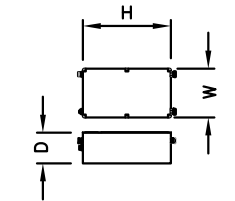


**ANTENNA MOUNTING KIT**  
SCALE: N.T.S.

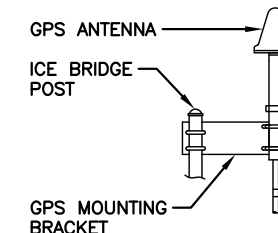


**PROPOSED ANTENNA & RRU MOUNTING DETAIL**  
SCALE: N.T.S.

TMA DIMENSIONS	
MODEL #	KRY 112 489/2
MANUF.	ERICSSON
HEIGHT	11"
WIDTH	6.1"
DEPTH	3.9"
WEIGHT	15.4 LBS



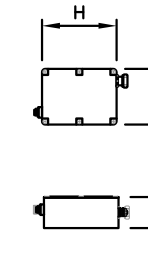
**TWIN TMA**  
SCALE: N.T.S.



**GPS ANTENNA MOUNTING DETAIL**  
SCALE: N.T.S.

GPS DIMENSIONS	
MODEL #	CCAH32ST03
MANUF.	NAIS
HEIGHT	3.9"
WIDTH	3.5"

SMART BIAS TEE DIMENSIONS	
MODEL #	ATSBT-TOP-MF-4G
MANUF.	COMMSCOPE
HEIGHT	5.63"
WIDTH	3.7"
DEPTH	2"
WEIGHT	1.8 LBS



**SMART BIAS-TEE**  
SCALE: N.T.S.

**SPECIAL WORK NOTE:**  
PAINT-TO-MATCH EXISTING MONOPOLE ALL PROPOSED ANTENNA RADOMES & MOUNTS

**STRUCTURAL NOTES:**  
PRIOR TO COMMENCING CONSTRUCTION, GC SHALL REFER TO STRUCTURAL ANALYSIS PROVIDED BY TOWER OWNER, DATED: MAY 17, 2016 TO DETERMINE IF THERE ANY SUPPLEMENTAL OR SPECIAL INSTALLATION REQUIREMENTS FOR RF EQUIPMENT AND FOR CABLE BUNDLING, SHIELDING, MOUNTING, OR RELOCATION ARRANGEMENTS.

**SPECIAL WORK NOTE:**  
VERTICALLY CENTER THE PIPE MAST AND ANTENNA ON PROPOSED FACE FRAME

**T-MOBILE NORTHEAST LLC**

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



TRANSCEND WIRELESS  
10 INDUSTRIAL AVE  
MAHWAH, NJ 07430  
TEL: (201) 684-0055  
FAX: (201) 684-0066



1600 OSGOOD STREET  
BUILDING 20 NORTH, SUITE 3090  
N. ANDOVER, MA 01845  
TEL: (978) 557-5553  
FAX: (978) 336-5586



*Daniel P. Haman*

CHECKED BY: DR

APPROVED BY: DPH

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
3	10/12/16	REVISED PER COMMENTS	SLY
2	09/07/16	ISSUED FOR CONSTRUCTION	SLY
1	06/01/16	ISSUED FOR CONSTRUCTION	VP
0	04/29/16	ISSUED FOR REVIEW	MC

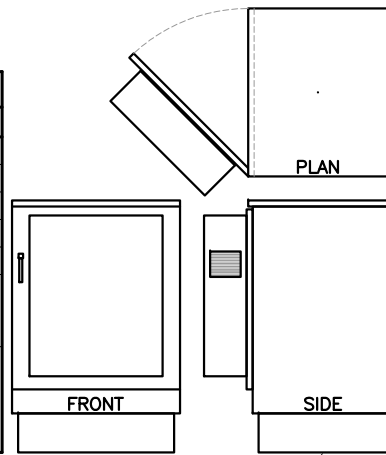
SITE NUMBER:  
CTNH371A  
ATC SITE ID:  
413782  
SITE NAME:  
MOUNTAIN RD-  
VERIZON COLO  
SITE ADDRESS:  
6 MOUNTAIN ROAD  
WASHINGTON, CT 06777  
LITCHFIELD COUNTY

SHEET TITLE  
TOWER EQUIPMENT  
DETAILS

SHEET NUMBER  
**A-2**

SSC DIMENSIONS	
MODEL #	SXF17-2824
MANUF.	PURCELL
WIDTH	28"
DEPTH	23.5"
HEIGHT	35.5"
PLINTH	6.5"
WEIGHT (BASE CONFIGURATION)	70 LBS

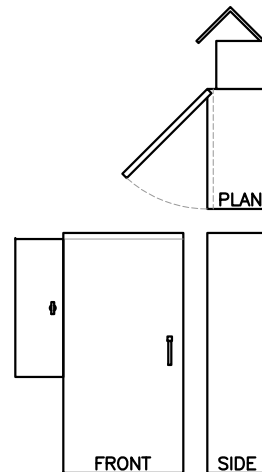
NOTE:  
INSTALL CABINET ANCHORS AND FLOOR MOUNT KIT ANCHORS PER MANUFACTURER'S INSTALLATION GUIDELINES



SSC FLOOR MOUNT KIT (DIMENSIONS TBD)

PPC DIMENSIONS	
MODEL #	3799340400
MANUF.	DELTA
WIDTH	20"
DEPTH	10"
HEIGHT	40"
WEIGHT	75 LBS

NOTE:  
INSTALL CABINET ANCHORS PER MANUFACTURER'S INSTALLATION GUIDELINES

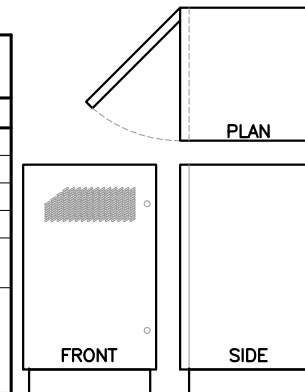


POWER PROTECTION CABINET (PPC)

SCALE: N.T.S

PBC DIMENSIONS	
MODEL #	PBC-05
MANUF.	ERICSSON
WIDTH	22.2"
DEPTH	22.8"
HEIGHT	34.1"
WEIGHT W/O BATTERIES	194 LBS

NOTE:  
1. INSTALL CABINET ANCHORS AND FLOOR MOUNT KIT ANCHORS PER MANUFACTURER'S INSTALLATION GUIDELINES



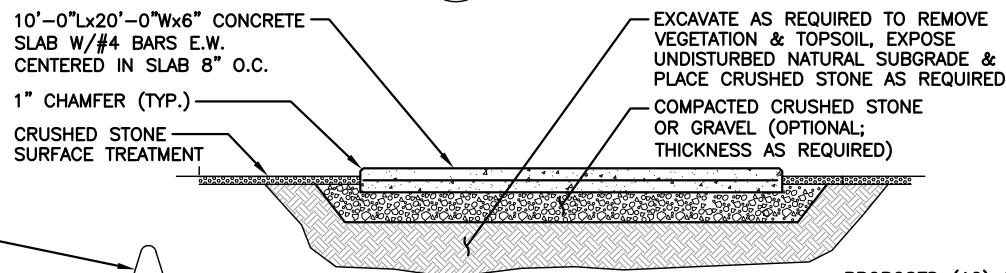
PBC FLOOR MOUNT KIT (DIMENSIONS TBD)

POWER AND BATTERY CABINET (PBC)

SCALE: N.T.S

SITE SUPPORT CABINET (SSC)

SCALE: N.T.S



CONCRETE PAD DETAIL

SCALE: N.T.S

PROPOSED (12) COAX CABLE & (1) 1/2" GPS COAX

7 PROPOSED GPS ANTENNA MOUNTED ON ICE BRIDGE POST (TYP.)

2 PROPOSED PPC CABINET

5 PROPOSED 24" WIDE ICE BRIDGE

PROPOSED LIGHT BY COOPER WITH 60 MINUTE TIMER SWITCH (FSS1530L-B-ES)

1 PROPOSED SSC CABINET

3 PROPOSED PBC

PROPOSED T-MOBILE CABINET (MODEL # TBD) (TYP. OF 2)

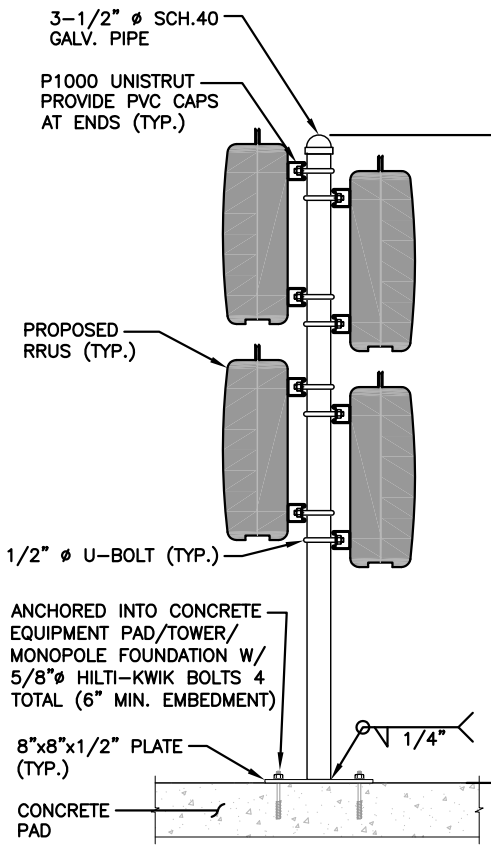
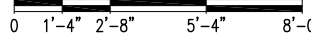
PROPOSED RRUS (TYP. OF 6)

PROPOSED T-MOBILE 10'-0"x20'-0" CONCRETE PAD/LEASE AREA

NOTE:  
SEE CONDUIT PLAN 3/E-1

EQUIPMENT PLAN

22x34 SCALE: 3/8"=1'-0"  
11x17 SCALE: 3/16"=1'-0"



H-FRAME DETAIL

SCALE: N.T.S

9 GPS ANTENNA

ICE BRIDGE POST

3-1/2" PIPE CAP

GPS MOUNTING BRACKET

24" UNIVERSAL CANTILEVER BRACKET P/N HHD24 VALMONT

ANDREW TRAPEZE KIT FOR 2 RUNGS P/N WB-TD12 OR EQUAL

3-1/2" SCHEDULE 40 PIPE COLUMN, ANDREW P/N MF-130 OR EQUAL

(V.I.F.) 6'-8" MIN. IN AREAS SUBJECT TO PEDESTRIAN TRAFFIC

ANCHORED INTO CONCRETE EQUIPMENT PAD/TOWER/MONOPOLE FOUNDATION W/ 5/8" HILTI-KWIK BOLTS 4 TOTAL (6" MIN. EMBEDMENT)

12"x12"x1/2" PLATE (TYP.)

EXISTING CONCRETE PAD

5/8" BOLT, NUT, WASHER & LOCK WASHER

12"x12"x1/2" PLATE (TYP.)

EXISTING GRATING

NOTE:  
ALL STEEL IS GALVANIZED. ALL BOLTS TO BE FURNISHED W/ WASHERS AND NUTS.

COAX ICE BRIDGE DETAIL

SCALE: N.T.S

T-MOBILE NORTHEAST LLC

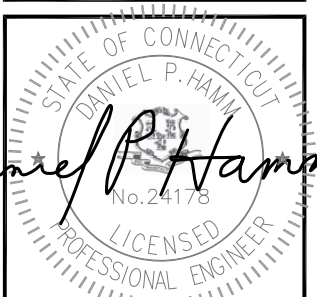
35 GRIFFIN ROAD SOUTH  
BLOOMFIELD, CT 06002  
OFFICE: (860) 648-1116

Transcend Wireless

TRANSCEND WIRELESS  
10 INDUSTRIAL AVE  
MAHWAH, NJ 07430  
TEL: (201) 684-0055  
FAX: (201) 684-0066

Hudson Design Group LLC

1600 OSGOOD STREET  
BUILDING 20 NORTH, SUITE 3090  
N. ANDOVER, MA 01845  
TEL: (978) 557-5553  
FAX: (978) 336-5866



CHECKED BY: DR

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
3	10/12/16	REVISED PER COMMENTS	SLY
2	09/07/16	ISSUED FOR CONSTRUCTION	SLY
1	06/01/16	ISSUED FOR CONSTRUCTION	VP
0	04/29/16	ISSUED FOR REVIEW	MC

SITE NUMBER:  
CTNH371A  
ATC SITE ID:  
413782

SITE NAME:  
MOUNTAIN RD-  
VERIZON COLO  
SITE ADDRESS:  
6 MOUNTAIN ROAD  
WASHINGTON, CT 06777  
LITCHFIELD COUNTY

SHEET TITLE  
GROUND EQUIPMENT  
DETAILS

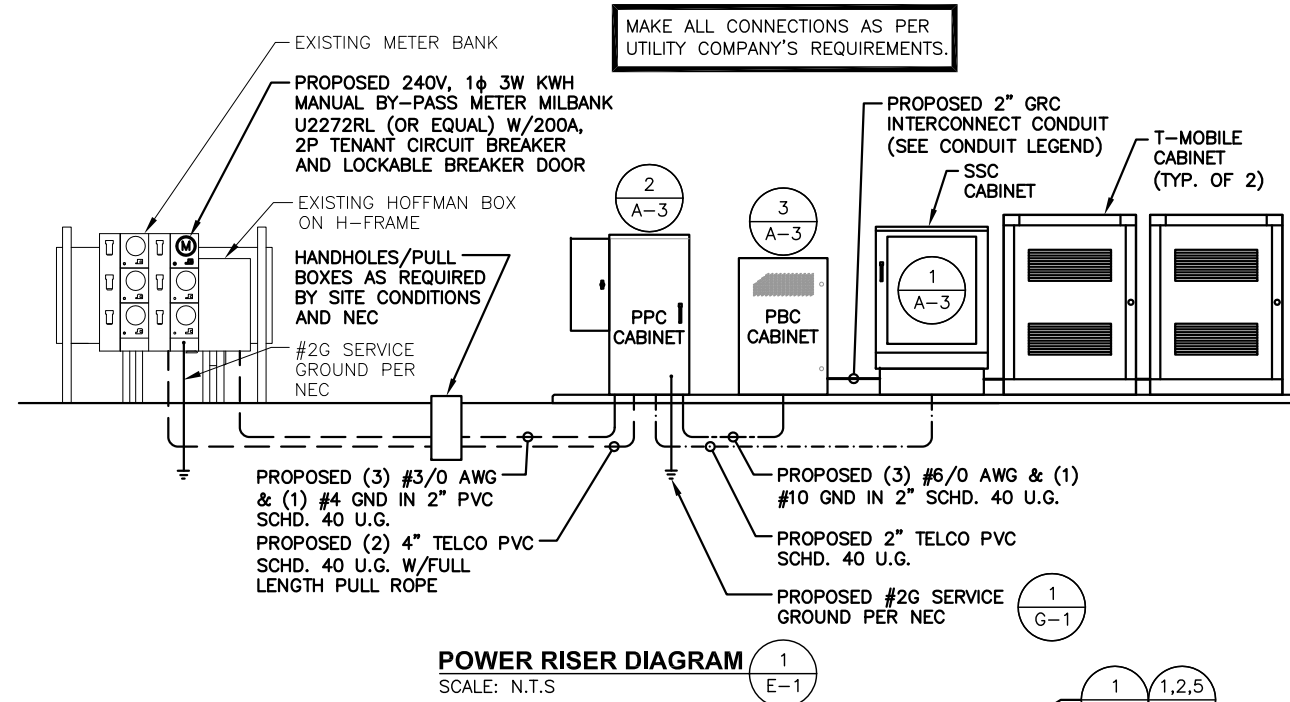
SHEET NUMBER

A-3



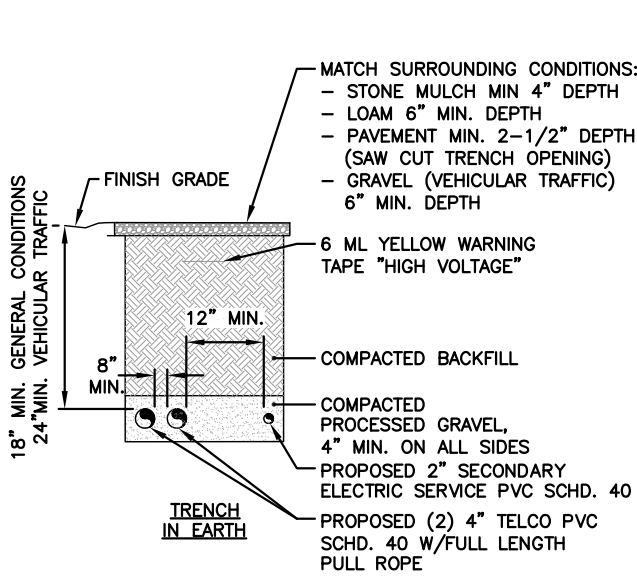
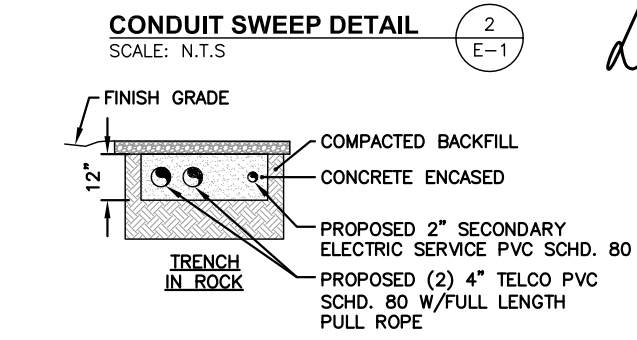
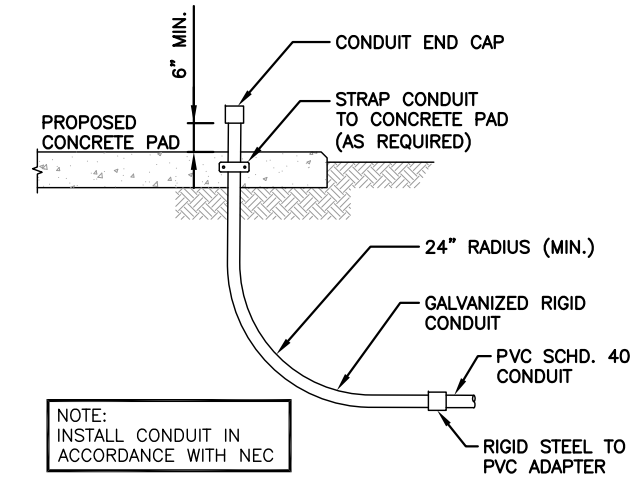
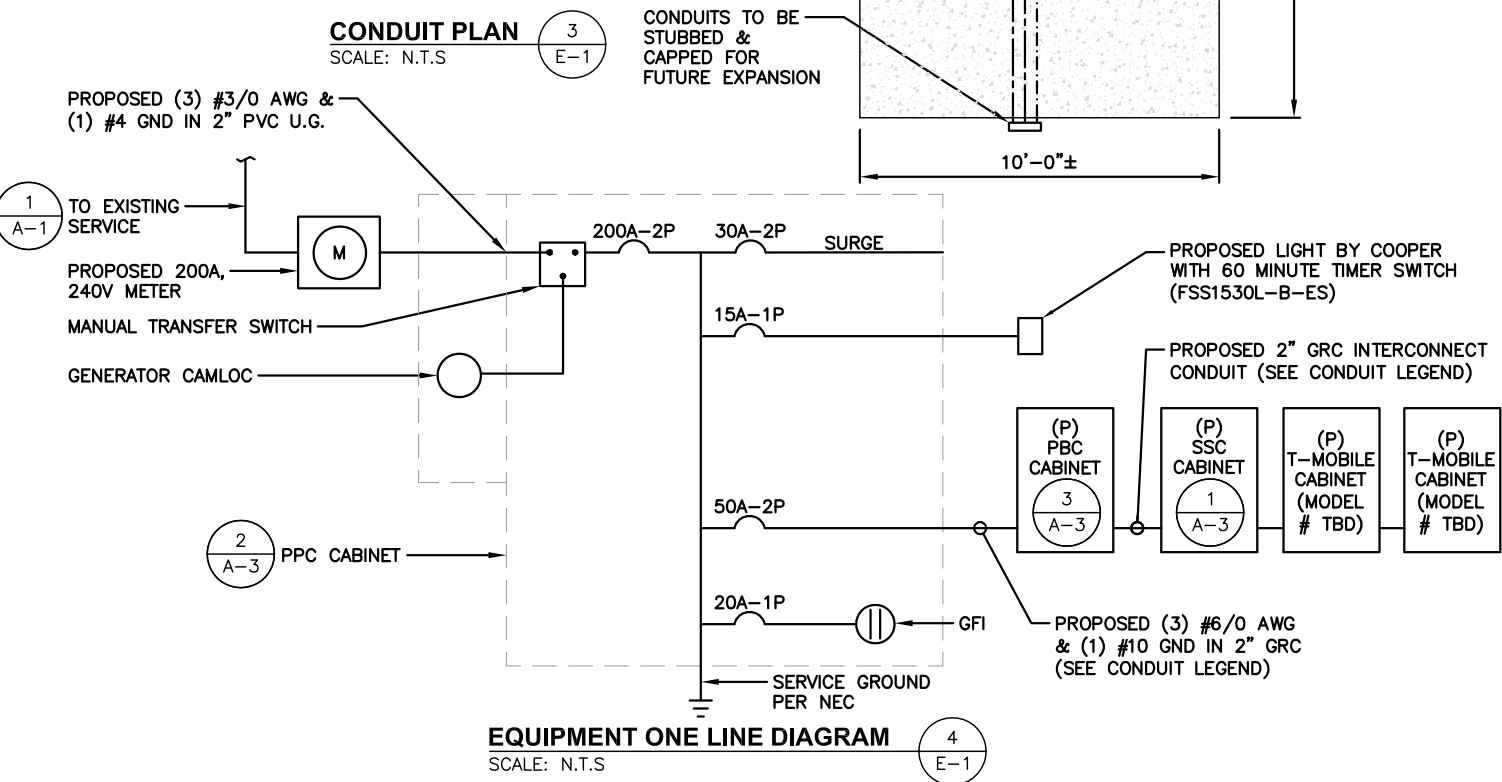
**ELECTRICAL NOTES**

- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
- GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
- ELECTRICAL AND TELCO WIRING EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS. RIGID STEEL CONDUITS SHALL BE GROUNDED AT BOTH ENDS.
- ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.
- RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL METER BANK AND PROPOSED CELL SITE POWER PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
- RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROPOSED CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON DRAWING A-3. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
- ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.



**CONDUIT LEGEND**

—	2" $\phi$ GRC INETRCONNECT KIT, -48V DC, ON CONCRETE PAD, (1) CONDUIT PBC TO SSC AND (1) CONDUIT PBC TO FUTURE BBU, ANCHOR AT 3' INTERVALS, GROUNDING BOND AT EACH END
- - -	2" $\phi$ PVC SCHD. 40 CONDUIT, AC-POWER, BELOW CONCRETE PAD, (1) CONDUIT PPC TO PBC, (2) CONDUIT PPC TO FUTURE PBC
- · - · -	2" $\phi$ PVC SCHD. 40 CONDUIT, TELCO, BELOW CONCRETE PAD, (1) CONDUIT PPC TO SSC AND (1) CONDUIT SSC FOR DAISY CHAIN TO FUTURE SSC



**SPECIAL WORK NOTE:**  
EXISTING UNDERGROUND UTILITY LOCATIONS ARE UNKNOWN. WHERE DIRECTED OR REQUIRED, HAND-EXCAVATE PROPOSED UTILITY TRENCHING



**LEGEND**

A	AMPERE
V	VOLT
KWH	KILOWATT - HOUR
C	CONDUIT
GRC	GALVANIZED RIGID CONDUIT
BGR	BURIED GROUND RING
BTCW	BARE TINNED SOLID COPPER WIRE
G	GROUND
⊕	GROUND
MGB	MASTER GROUND BAR
○	MECHANICAL CONNECTION
●	CADWELD CONNECTION
EGB	EQUIPMENT GROUND BAR
—G—	GROUND COPPER WIRE, SIZE AS NOTED
—	EXPOSED WIRING
—	#6G AWG INSULATED STRANDED
—	COAXIAL CABLE/HYBRID CABLE
⊙	5/8"x8' COPPER CLAD STAINLESS STEEL GROUND ROD
⊕	GROUND ROD WITH TEST WELL
⊙	EXOTHERMIC (CAD WELD) OR MECHANICAL (COMPRESSION TYPE) CONNECTION
PPC	POWER PROTECTION CABINET
⊗	OMNI-DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALL

**T-MOBILE NORTHEAST LLC**

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

**Transcend Wireless**

TRANSCEND WIRELESS  
10 INDUSTRIAL AVE  
MAHWAH, NJ 07430  
TEL: (201) 684-0055  
FAX: (201) 684-0066

**Hudson Design Group LLC**

1600 OSGOOD STREET  
BUILDING 20 NORTH, SUITE 3090  
N. ANDOVER, MA 01845  
TEL: (978) 557-5553  
FAX: (978) 336-5566

STATE OF CONNECTICUT  
DANIEL P. HAMM  
No. 24178  
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: DR

APPROVED BY: DPH

**SUBMITTALS**

REV.	DATE	DESCRIPTION	BY
3	10/12/16	REVISED PER COMMENTS	SLY
2	09/07/16	ISSUED FOR CONSTRUCTION	SLY
1	06/01/16	ISSUED FOR CONSTRUCTION	VP
0	04/29/16	ISSUED FOR REVIEW	MC

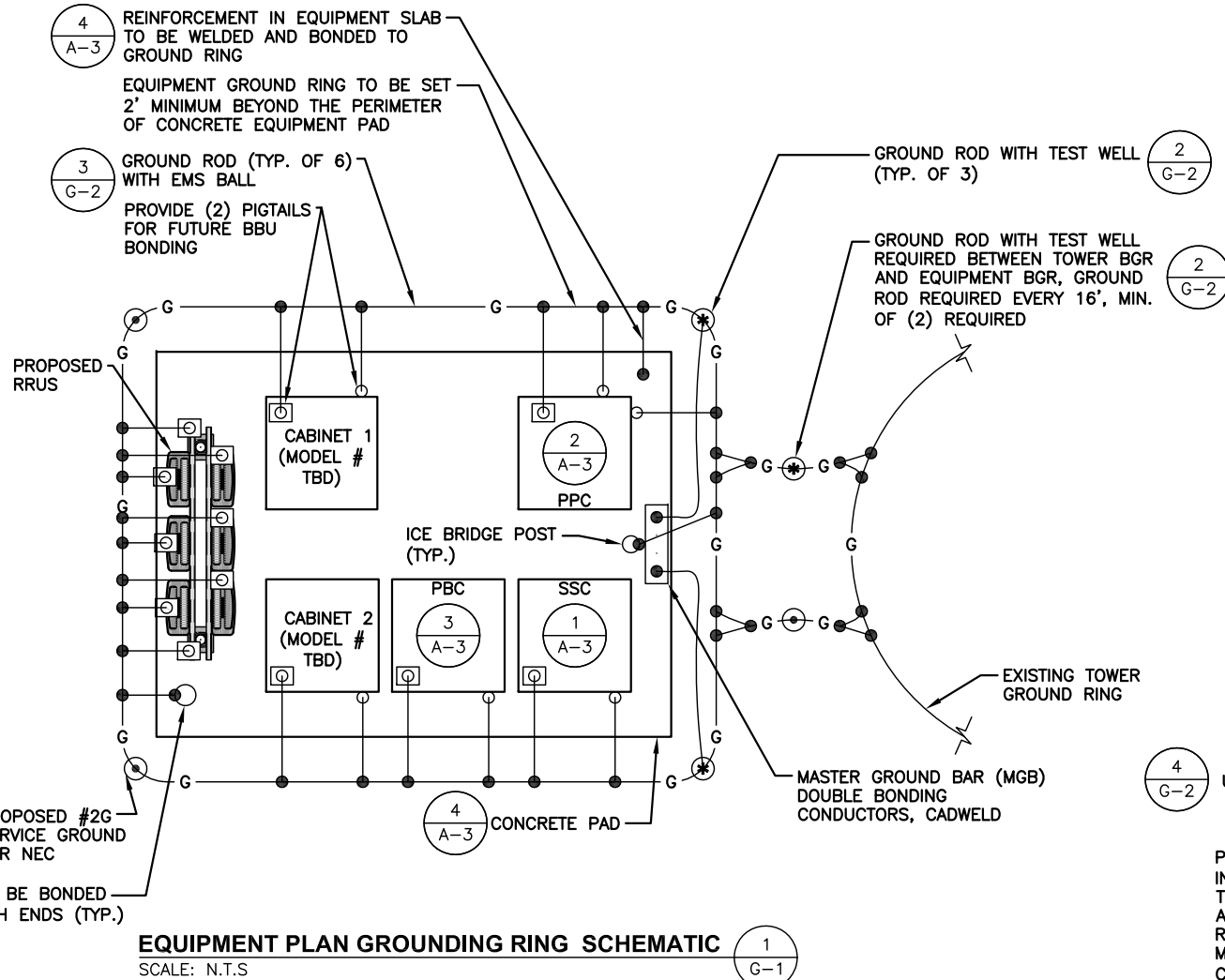
SITE NUMBER:  
CTNH371A  
ATC SITE ID:  
413782  
SITE NAME:  
MOUNTAIN RD-  
VERIZON COLO  
SITE ADDRESS:  
6 MOUNTAIN ROAD  
WASHINGTON, CT 06777  
LITCHFIELD COUNTY

SHEET TITLE  
**ELECTRICAL DETAILS & NOTES**

SHEET NUMBER  
**E-1**

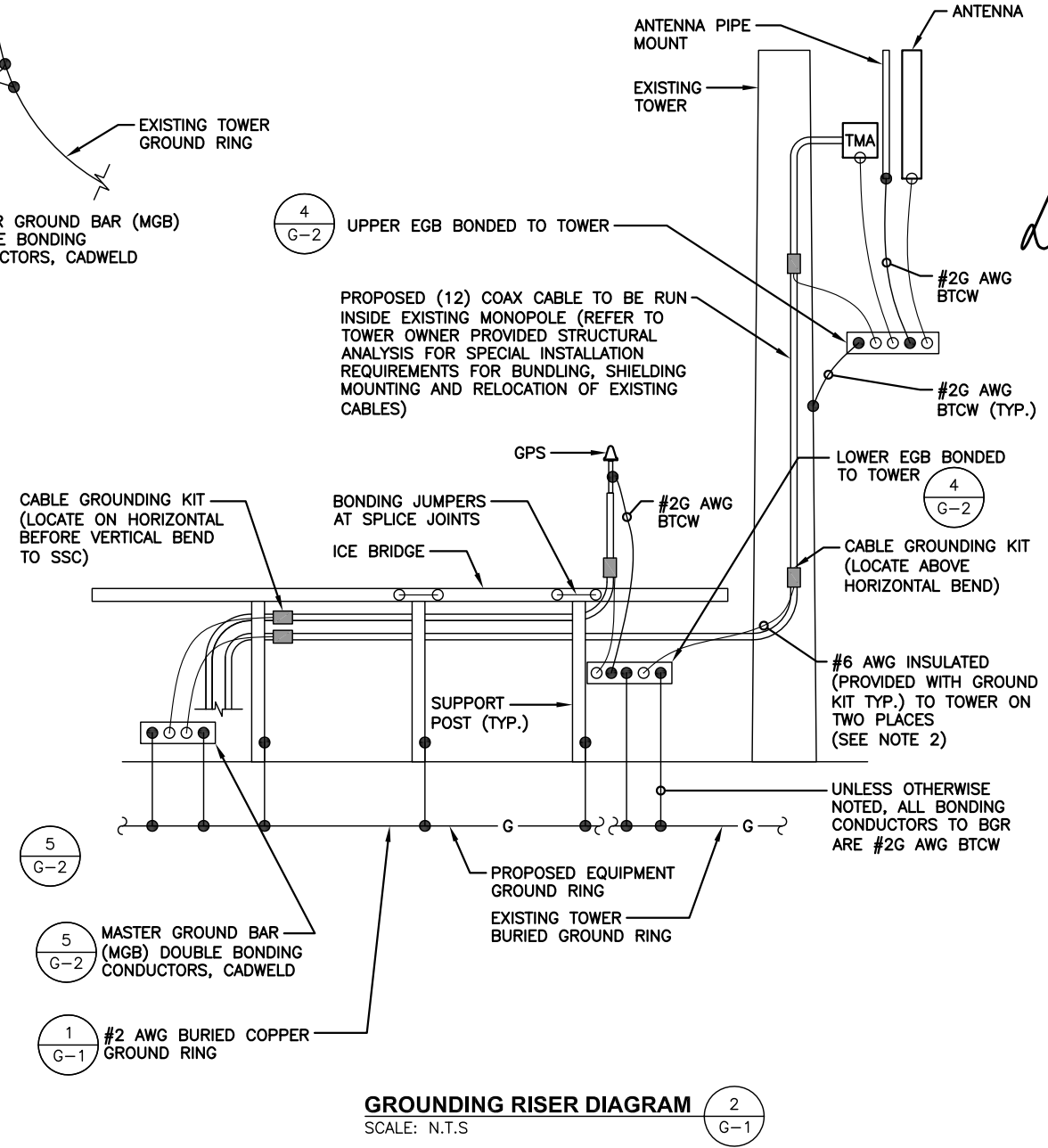
**ELECTRICAL NOTES**

- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
- GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
- ELECTRICAL AND TELCO WIRING EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS. RIGID STEEL CONDUITS SHALL BE GROUNDED AT BOTH ENDS.
- ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.
- RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL METER BANK AND PROPOSED CELL SITE POWER PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
- RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROPOSED CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON DRAWING A-3. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
- ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.



**NOTE:**

- BASE BID TO INCLUDE INSTALLATION OF A BURIED GROUND RING AND (6) GROUND RODS OR SINGLE XIT HORIZONTAL CHEMICAL ROD AS DETERMINED BY FIELD CONDITIONS. ADDITIONAL RODS AS REQUIRED TO ACHIEVE 5 OHMS RESISTANCE.
- MAXIMUM VERTICAL/HORIZONTAL DISTANCE BETWEEN CABLE GROUNDING KITS SHALL NOT EXCEED 100 FEET. INSTALL ADDITIONAL KITS AS REQUIRED BY FIELD CONDITIONS.
- ALL CONNECTIONS TO EQUIPMENT PER MANUFACTURER'S GUIDELINES.
- ALL ABOVE-GRADE DOWNLOADS TO BGR SHALL BE INSTALLED IN 1" NON-METALLIC CONDUIT SECURED EVERY 2' WITH NON-METALLIC CLIPS.



**LEGEND**

A	AMPERE
V	VOLT
KWH	KILOWATT - HOUR
C	CONDUIT
GRC	GALVANIZED RIGID CONDUIT
BGR	BURIED GROUND RING
BTCW	BARE TINNED SOLID COPPER WIRE
G	GROUND
⊥	GROUND
MGB	MASTER GROUND BAR
○	MECHANICAL CONNECTION
●	CADWELDED CONNECTION
EGB	EQUIPMENT GROUND BAR
—G—	GROUND COPPER WIRE, SIZE AS NOTED
—	EXPOSED WIRING
—	#6G AWG INSULATED STRANDED
—	COAXIAL CABLE/HYBRID CABLE
⊙	5/8"x8' COPPER CLAD STAINLESS STEEL GROUND ROD
⊛	GROUND ROD WITH TEST WELL
⊕	EXOTHERMIC (CAD WELD) OR MECHANICAL (COMPRESSION TYPE) CONNECTION
PPC	POWER PROTECTION CABINET
⊗	OMNI-DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALL

**T-MOBILE NORTHEAST LLC**

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

**Transcend Wireless**

TRANSCEND WIRELESS  
10 INDUSTRIAL AVE  
MAHWAH, NJ 07430  
TEL: (201) 684-0055  
FAX: (201) 684-0066

**Hudson Design Group LLC**

1600 OSGOOD STREET  
BUILDING 20 NORTH, SUITE 3090  
N. ANDOVER, MA 01845  
TEL: (978) 557-5553  
FAX: (978) 336-5586

STATE OF CONNECTICUT  
DANIEL P. HAMM  
No. 24178  
LICENSED PROFESSIONAL ENGINEER

*Daniel P. Hamm*

CHECKED BY: DR

APPROVED BY: DPH

**SUBMITTALS**

REV.	DATE	DESCRIPTION	BY
3	10/12/16	REVISED PER COMMENTS	SLY
2	09/07/16	ISSUED FOR CONSTRUCTION	SLY
1	06/01/16	ISSUED FOR CONSTRUCTION	VP
0	04/29/16	ISSUED FOR REVIEW	MC

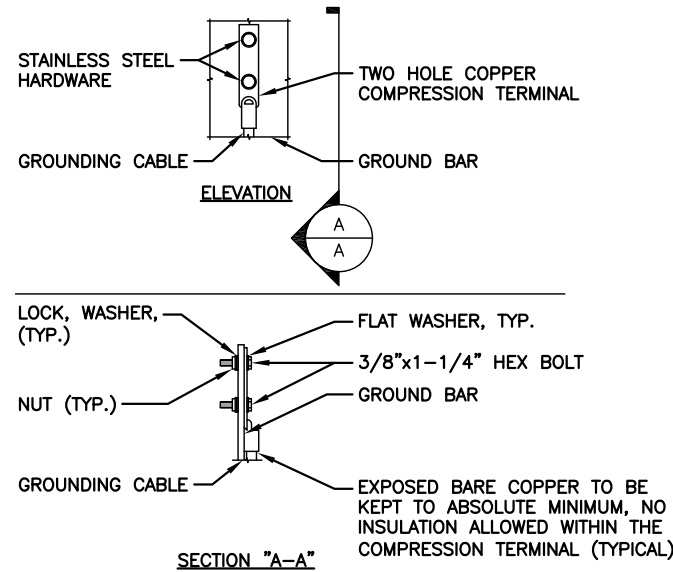
SITE NUMBER:  
CTNH371A  
ATC SITE ID:  
413782  
SITE NAME:  
MOUNTAIN RD-  
VERIZON COLO  
SITE ADDRESS:  
6 MOUNTAIN ROAD  
WASHINGTON, CT 06777  
LITCHFIELD COUNTY

SHEET TITLE  
GROUNDING  
SCHEMATIC &  
RISER DIAGRAM

SHEET NUMBER  
**G-1**

**ELECTRICAL NOTES**

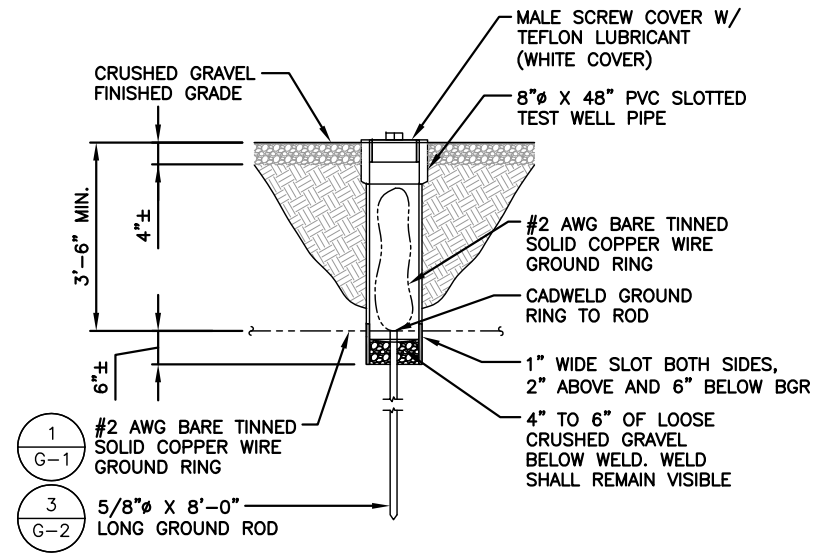
- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
- GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
- ELECTRICAL AND TELCO WIRING EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS. RIGID STEEL CONDUITS SHALL BE GROUNDED AT BOTH ENDS.
- ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.
- RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL METER BANK AND PROPOSED CELL SITE POWER PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
- RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROPOSED CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON DRAWING A-3. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
- ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.



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.

**TYPICAL GROUND BAR CONNECTION DETAIL**

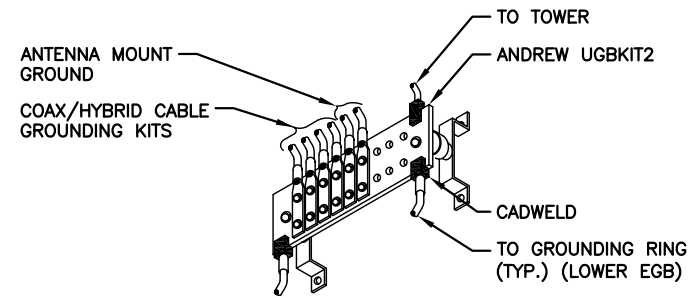
SCALE: N.T.S. (1) G-2



NOTE:  
 1. PROPOSED BGR TO BE INSTALLED 3'-6" MIN. BELOW GRADE OR BELOW LOCAL FROST DEPTH, WHICHEVER IS GREATER.  
 2. ONE TEST WELL SHALL BE PROVIDED BETWEEN THE TOWER GROUND LOOP AND TWO ON THE EQUIPMENT GROUND LOOP

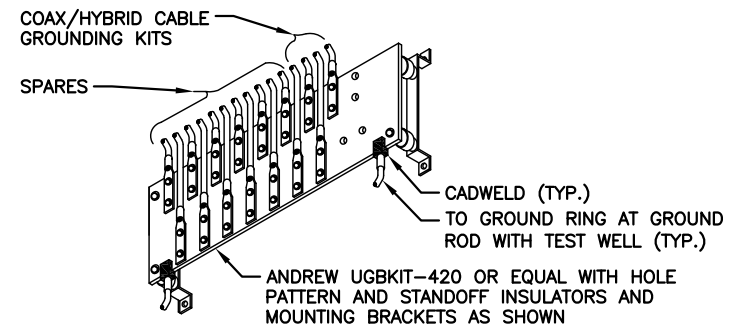
**GROUND ROD TEST WELL DETAIL**

SCALE: N.T.S. (2) G-2



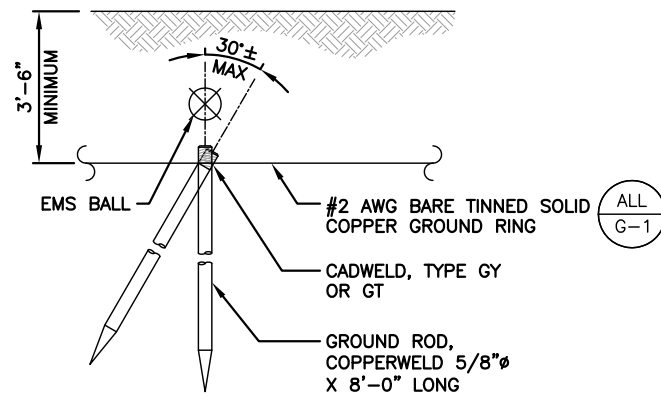
**EQUIPMENT GROUND BAR (EGB)**

SCALE: N.T.S. (4) G-2



**MASTER GROUND BAR (MGB)**

SCALE: N.T.S. (5) G-2



NOTE:  
 1. PROPOSED BGR TO BE INSTALLED 3'-6" MIN. BELOW GRADE OR BELOW LOCAL FROST DEPTH, WHICHEVER IS GREATER.  
 2. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 30 DEGREES FROM THE VERTICAL.

**GROUND ROD DETAIL**

SCALE: N.T.S. (3) G-2

**LEGEND**

A	AMPERE
V	VOLT
KWH	KILOWATT - HOUR
C	CONDUIT
GRC	GALVANIZED RIGID CONDUIT
BGR	BURIED GROUND RING
BTCW	BARE TINNED SOLID COPPER WIRE
G	GROUND
⊕	GROUND
MGB	MASTER GROUND BAR
○	MECHANICAL CONNECTION
●	CADWELD CONNECTION
EGB	EQUIPMENT GROUND BAR
—G—	GROUND COPPER WIRE, SIZE AS NOTED
—	EXPOSED WIRING
—	#6G AWG INSULATED STRANDED
—	COAXIAL CABLE/HYBRID CABLE
⊙	5/8"x8' COPPER CLAD STAINLESS STEEL GROUND ROD
⊛	GROUND ROD WITH TEST WELL
⊙	EXOTHERMIC (CAD WELD) OR MECHANICAL (COMPRESSION TYPE) CONNECTION
PPC	POWER PROTECTION CABINET
⊗	OMNI-DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALL

**T-MOBILE NORTHEAST LLC**

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

**Transcend Wireless**

TRANSCEND WIRELESS  
 10 INDUSTRIAL AVE  
 MAHWAH, NJ 07430  
 TEL: (201) 684-0055  
 FAX: (201) 684-0066



1600 OSGOOD STREET  
 BUILDING 20 NORTH, SUITE 3090  
 N. ANDOVER, MA 01845  
 TEL: (978) 557-5553  
 FAX: (978) 336-5586



*Daniel P. Haman*

CHECKED BY: DR

APPROVED BY: DPH

**SUBMITTALS**

REV.	DATE	DESCRIPTION	BY
3	10/12/16	REVISED PER COMMENTS	SLY
2	09/07/16	ISSUED FOR CONSTRUCTION	SLY
1	06/01/16	ISSUED FOR CONSTRUCTION	VP
0	04/29/16	ISSUED FOR REVIEW	MC

SITE NUMBER:  
 CTNH371A  
 ATC SITE ID:  
 413782

SITE NAME:  
 MOUNTAIN RD—  
 VERIZON COLO  
 SITE ADDRESS:  
 6 MOUNTAIN ROAD  
 WASHINGTON, CT 06777  
 LITCHFIELD COUNTY

SHEET TITLE  
 GROUNDING  
 DETAILS  
 & NOTES

SHEET NUMBER

**G-2**



**AMERICAN TOWER®**  
CORPORATION

---

## Structural Analysis Report

**Structure** : 158.6 ft Monopole  
**ATC Site Name** : Washington North CT, CT  
**ATC Site Number** : 413782  
**Engineering Number** : OAA664177\_C3\_07  
**Proposed Carrier** : T-Mobile  
**Carrier Site Name** : N/A  
**Carrier Site Number** : CTNH371A  
**Site Location** : 6 Mountain Road  
New Preston, CT 06777-1518  
41.669147,-73.365281  
**County** : Litchfield  
**Date** : September 26, 2016  
**Max Usage** : 93%  
**Result** : Pass

Prepared By:  
Charles Dalton Wally, E.I.  
Structural Engineer I

Reviewed By:

**COA: PEC.0001553**



**Table of Contents**

Introduction .....	1
Supporting Documents .....	1
Analysis .....	1
Conclusion.....	1
Existing and Reserved Equipment.....	2
Equipment to be Removed.....	2
Proposed Equipment .....	2
Structure Usages .....	3
Foundations .....	3
Deflection, Twist, and Sway.....	3
Standard Conditions .....	4
Calculations .....	Attached



## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 158.6 ft monopole to reflect the change in loading by T-Mobile.

## Supporting Documents

<b>Tower Drawings</b>	EEI Job #15143, dated October 24, 2007
<b>Foundation Drawing</b>	EEI Job #15143, dated October 24, 2007
<b>Geotechnical Report</b>	JGI Project #J2075402, dated October 10, 2007

## Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

<b>Basic Wind Speed:</b>	93 mph (3-Second Gust, $V_{asd}$ ) / 120 mph (3-Second Gust, $V_{ult}$ )
<b>Basic Wind Speed w/ Ice:</b>	40 mph (3-Second Gust) w/ 1" radial ice concurrent
<b>Code:</b>	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
<b>Structure Class:</b>	II
<b>Exposure Category:</b>	B
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft
<b>Spectral Response:</b>	$S_s = 0.19$ , $S_1 = 0.06$
<b>Site Class:</b>	D - Stiff Soil

## Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at [Engineering@americantower.com](mailto:Engineering@americantower.com). Please include the American Tower site name, site number, and engineering number in the subject line for any questions.



**Existing and Reserved Equipment**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
167.0	167.0	12	RCU (Remote Control Unit)	Flush	(12) 1 5/8" Coax (2) 0.78" 8 AWG 6	AT&T Mobility
		6	Powerwave TT08-19DB111-001			
		6	Ericsson RRUS 11 B2			
		1	KMW AM-X-CD-17-65-00T-RET			
		3	Powerwave P90-14-XLH-RR (7.3" Depth)			
		2	Kathrein 800-10864K			
162.0	162.0	1	Raycap DC6-48-60-18-8F ("Squid")	Flush	(1) 0.39" Fiber Trunk	Verizon
157.0	157.0	3	Andrew DBXNH-6565A-VTM	Stand-Offs	(12) 1 5/8" Coax	
146.0	146.0	3	Antel BXA-70063/6CF __ 2°	Stand-Offs	(6) 1 5/8" Coax	
		1	VZW Unused Reserve: 10,801 sq in			
136.0	136.0	1	E-911 GPS	T-Arms	(12) 1 5/8" Coax	T-Mobile

**Equipment to be Removed**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
140.0	140.0	9	RFS APX16DWV-16DWV-S-E-ACU	-	(12) 1 5/8" Coax	T-Mobile
		6	TTA			

**Proposed Equipment**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
136.0	136.0	3	RFS ATMAA1412D-1A20	T-Arms	-	T-Mobile
		3	RFS APXV18-206516S-C-A20			
		3	Commscope LNX-6515DS-A1M (96.6" Height)			

<sup>1</sup>Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).



**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	48%	Pass
Shaft	93%	Pass
Base Plate	75%	Pass

**Foundations**

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	2,398.5	2,398.5	2,183.8	91%
Shear (Kips)	23.6	23.6	18.5	78%

\* The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

**Deflection and Sway\***

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
136.0	RFS ATMAA1412D-1A20	T-Mobile	2.376	2.181
	RFS APXV18-206516S-C-A20			
	Commscope LNX-6515DS-A1M (96.6" Height)			

\*Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G





## **Standard Conditions**

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

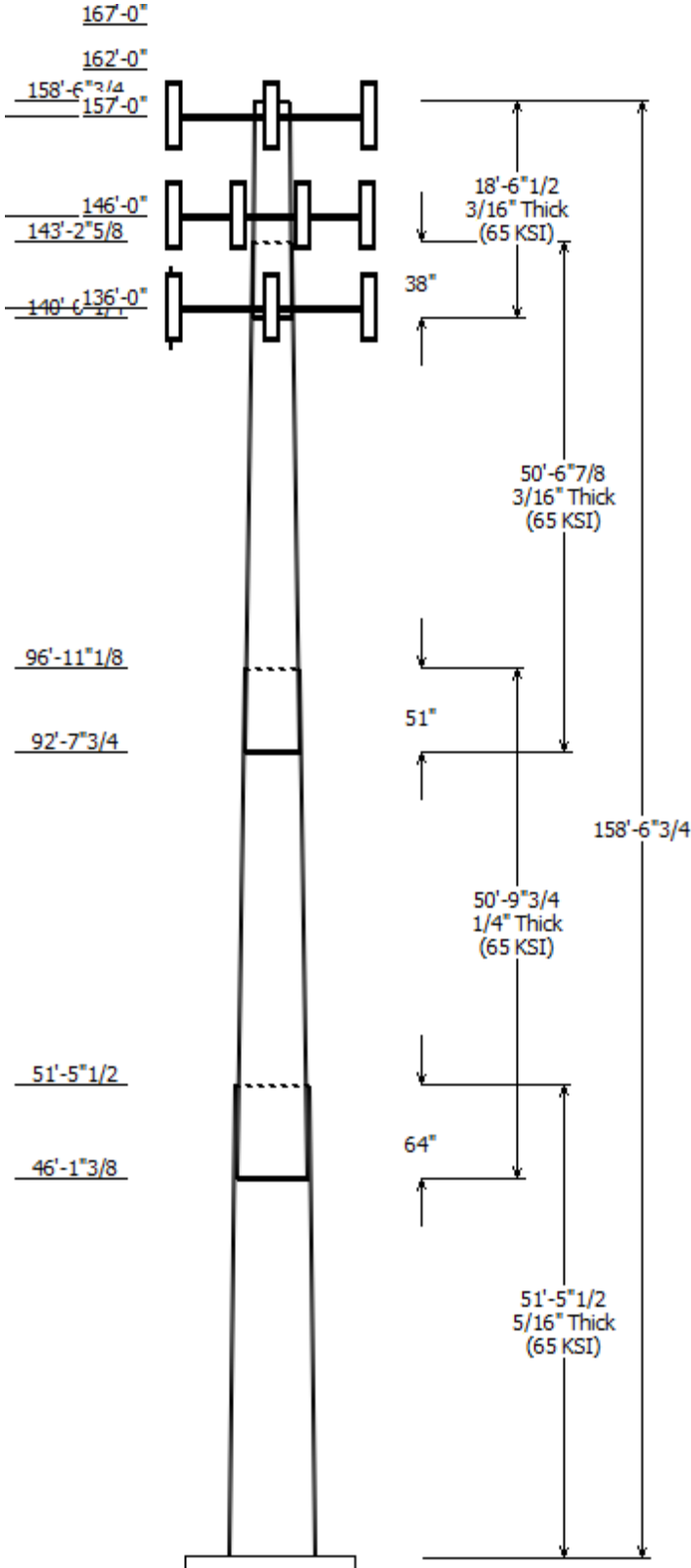
- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

© 2007 - 2016 by ATC IP LLC. All rights reserved.



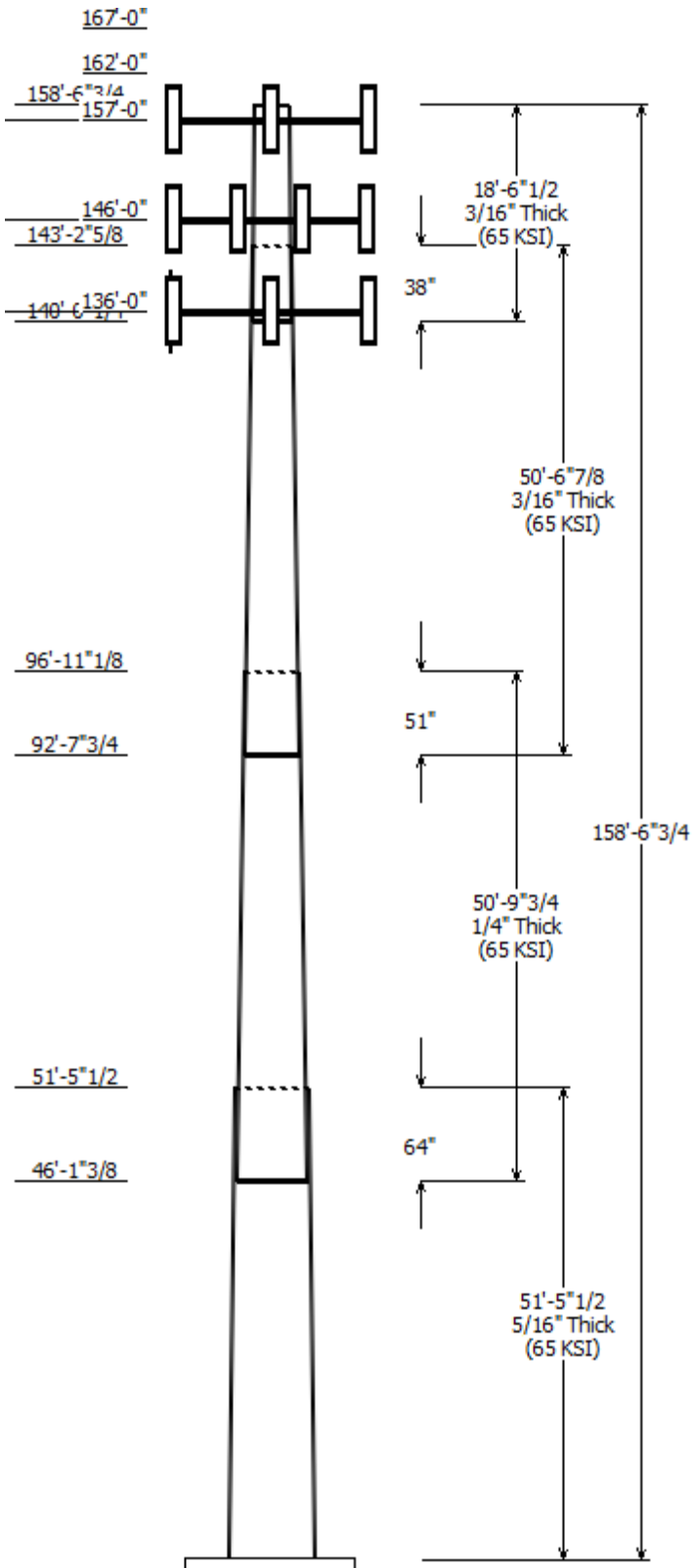
Job Information	
Pole :	413782
Code:	ANSI/TIA-222-G
Description :	159 ft EEI Monopole
Client :	T- Mobile
Struct Class :	II
Location :	Washington North CT, CT
Shape :	18 Sides
Exposure :	B
Height :	158.56 (ft)
Topo :	1
Base Elev (ft):	0.00
Taper:	0.19077(in/ft)

Sections Properties								
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Steel Taper (in/ft)	Steel Grade (ksi)
		Accross Top	Flats Bottom					
1	51.458	37.18	47.00	0.313		0.000	0.190800	65
2	50.810	29.00	38.70	0.250	Slip Joint	64.094	0.190800	65
3	50.573	20.55	30.20	0.188	Slip Joint	51.375	0.190800	65
4	18.542	18.00	21.53	0.188	Slip Joint	38.375	0.190800	65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
167.000	167.000	1	KMW AM-X-CD-17-65-00T-RET
167.000	167.000	2	Kathrein Scala 800-10864K
167.000	167.000	3	Powerwave Allgon P90-14-
167.000	167.000	12	RCU (Remote Control Unit)
167.000	167.000	6	Ericsson RRUS 11 B2
167.000	167.000	6	Powerwave Allgon TT08-
162.000	162.000	1	Raycap DC6-48-60-18-8F
157.000	157.000	3	Stand-Off
157.000	157.000	3	Andrew DBXNH-6565A-VTM
146.000	146.000	1	VZW Unused Reserve: 10,801
146.000	146.000	3	Stand-Off
146.000	146.000	3	Antel BXA-70063/6CF __ 2°
136.000	136.000	3	RFS ATMAA1412D-1A20
136.000	136.000	3	Flat T-Arm
136.000	136.000	1	E-911 GPS
136.000	136.000	3	RFS APXV18-206516S-C-A20
136.000	136.000	3	Commscope LNX-6515DS-A1M

Linear Appurtenance			
From Elev (ft)	To Elev (ft)	Description	Exposed To Wind
0.000	136.0	1 5/8" Coax	No
0.000	146.0	1 5/8" Coax	No
0.000	157.0	1 5/8" Coax	No
0.000	162.0	0.39" Fiber Trunk	Yes
0.000	167.0	0.78" 8 AWG 6	Yes
0.000	167.0	1 5/8" Coax	Yes

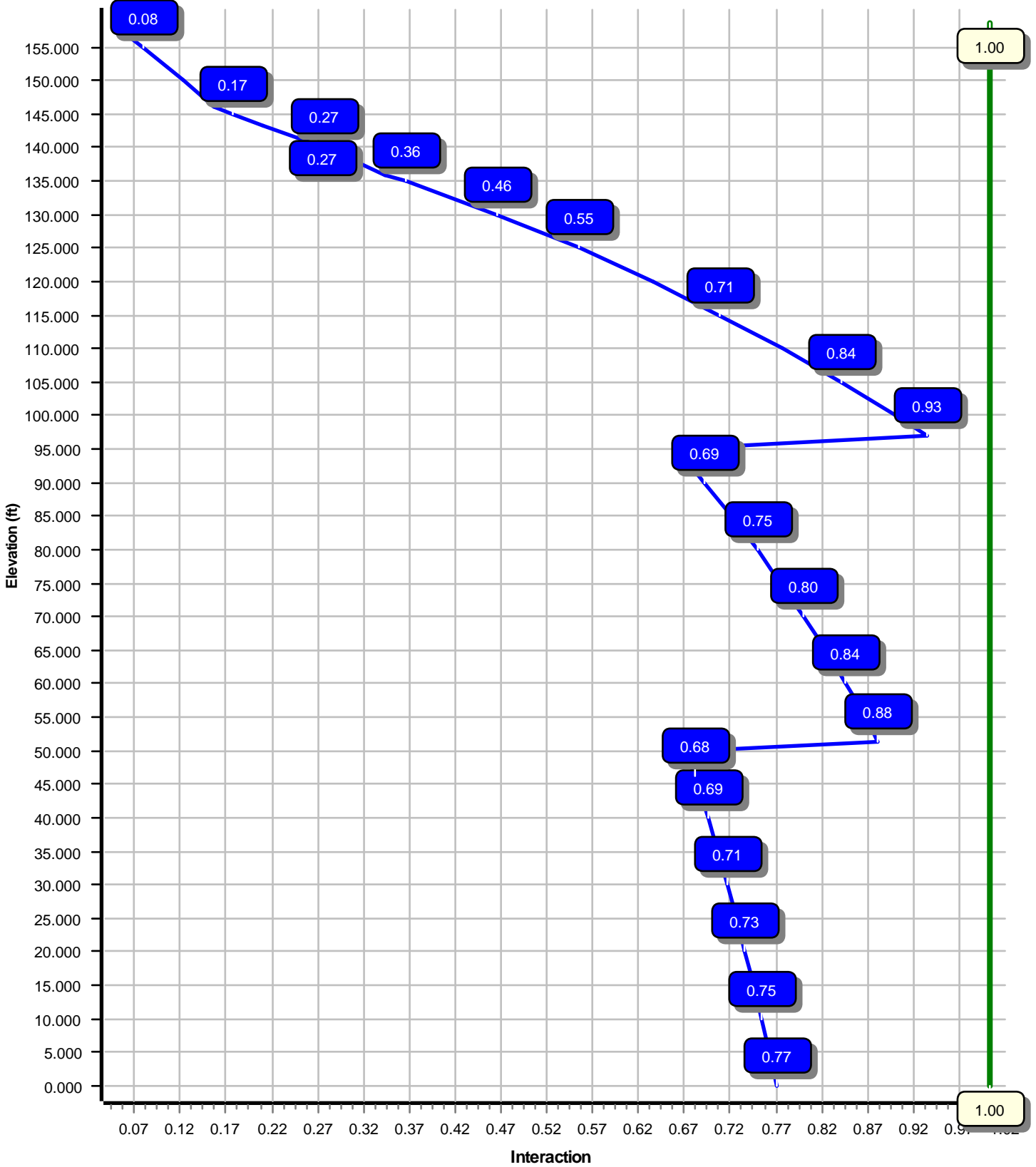
Load Cases	
1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph



Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2183.78	18.45	28.68
0.9D + 1.6W	2074.32	17.79	21.50
1.2D + 1.0Di + 1.0Wi	475.21	3.88	55.92
(1.2 + 0.2Sds) * DL + E ELFM	104.55	0.84	27.62
(1.2 + 0.2Sds) * DL + E EMAM	121.84	1.15	27.62
(0.9 - 0.2Sds) * DL + E ELFM	102.98	0.84	19.13
(0.9 - 0.2Sds) * DL + E EMAM	119.92	1.15	19.13
1.0D + 1.0W	543.84	4.63	23.93

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000

**Load Case : 1.2D + 1.6W**  
**Max Ratio 93.05% at 96.9 ft**



Site Number: 413782

Code: ANSI/TIA-222-G

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: Washington North CT, CT

Engineering Number: OAA664177\_C3\_07

9/26/2016 3:09:48 PM

Customer: T- Mobile

Analysis Parameters

Location:	Litchfield County, CT		
Code:	ANSI/TIA-222-G	Height (ft):	158.
Shape:	18 Sides	Base Diameter (in):	47.00
Pole Type:	Taper	Top Diameter (in):	18.00
Pole Manufacturer:	EEL	Taper (in/ft) :	0.191

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	93 mph
Exposure Category:	B	Design Wind Speed With Ice:	40 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0.0 ft	Design Ice Thickness:	0.50 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	2.63		
T <sub>L</sub> (sec):	6	p:	1.3
S <sub>s</sub> :	0.191	S <sub>1</sub> :	0.065
F <sub>a</sub> :	1.600	F <sub>v</sub> :	2.400
S <sub>ds</sub> :	0.204	S <sub>d1</sub> :	0.104
		C <sub>s</sub> :	0.030
		C <sub>s</sub> Max:	0.030
		C <sub>s</sub> Min:	0.030

Load Cases

1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph with 1.00 in Radial Ice
(1.2 + 0.2S <sub>ds</sub> ) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2S <sub>ds</sub> ) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2S <sub>ds</sub> ) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2S <sub>ds</sub> ) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 413782

Code: ANSI/TIA-222-G

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: Washington North CT, CT

Engineering Number: OAA664177\_C3\_07

9/26/2016 3:09:48 PM

Customer: T-Mobile

**Shaft Section Properties**

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	51.458	0.3125	65		0.00	7,256	47.00	0.00	46.31	12752.5	25.11	150.40	37.18	51.46	36.57	6281.0	19.57	118.99	0.190776
2-18	50.810	0.2500	65	Slip	64.09	4,610	38.70	46.12	30.51	5699.5	25.89	154.81	29.00	96.93	22.82	2384.4	19.05	116.03	0.190776
3-18	50.573	0.1875	65	Slip	51.38	2,580	30.20	92.65	17.86	2032.7	26.99	161.07	20.55	143.22	12.12	635.0	17.92	109.61	0.190776
4-18	18.542	0.1875	65	Slip	38.38	735	21.53	140.02	12.71	731.7	18.84	114.87	18.00	158.56	10.60	424.9	15.52	96.00	0.190776
Shaft Weight						15,181													

**Discrete Appurtenance Properties**

Attach Elev (ft)	Description	Qty	Weight (lb)	No Ice EPAa (sf)	Orientation Factor	Weight (lb)	Ice EPAa (sf)	Orientation Factor	Distance From Face (ft)	Vert Ecc (ft)
167.00	Ericsson RRUS 11 B2	6	50.70	2.790	0.67	147.93	4.262	0.67	0.000	0.000
167.00	Kathrein Scala 800-10864K	2	55.10	7.120	0.73	261.80	10.017	0.73	0.000	0.000
167.00	KMW AM-X-CD-17-65-00T-	1	30.80	4.990	0.76	180.89	7.497	0.76	0.000	0.000
167.00	Powerwave Allgon P90-14-	3	30.00	5.070	0.67	194.07	7.584	0.67	0.000	0.000
167.00	Powerwave Allgon TT08-	6	22.00	0.920	0.50	57.67	1.911	0.50	0.000	0.000
167.00	RCU (Remote Control Unit)	12	1.00	0.160	0.50	8.43	0.675	0.50	0.000	0.000
162.00	Raycap DC6-48-60-18-8F	1	31.80	1.280	1.00	114.65	2.097	1.00	0.000	0.000
157.00	Andrew DBXNH-6565A-VTM	3	34.20	5.370	0.80	203.86	8.014	0.80	0.000	0.000
157.00	Stand-Off	3	75.00	2.500	0.67	124.06	4.252	0.67	0.000	0.000
146.00	Antel BXA-70063/6CF __ 2°	3	17.00	7.570	0.74	205.37	11.244	0.74	0.000	0.000
146.00	Stand-Off	3	75.00	2.500	0.67	123.72	4.240	0.67	0.000	0.000
146.00	VZW Unused Reserve:	1	1096.40	75.070	1.00	2,113.81	144.731	1.00	0.000	0.000
136.00	Commscope LNX-6515DS-	3	43.70	11.470	0.84	347.73	15.761	0.84	0.000	0.000
136.00	E-911 GPS	1	5.00	0.580	0.50	33.49	1.165	0.50	0.000	0.000
136.00	Flat T-Arm	3	250.00	12.900	0.67	526.41	23.716	0.67	0.000	0.000
136.00	RFS APXV18-206516S-C-A20	3	18.70	3.620	0.78	111.19	6.078	0.78	0.000	0.000
136.00	RFS ATMAA1412D-1A20	3	13.00	1.000	0.50	65.10	1.596	0.50	0.000	0.000
Totals		57	3392.20			10,005.70			Number of Loadings : 17	

**Linear Appurtenance Properties**

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Projected Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	167.00	2	0.78" 8 AWG 6	0.78	0.59	N	0.00	Y	AT&T Mobility
0.00	167.00	12	1 5/8" Coax	1.98	0.82	N	3.96	Y	AT&T Mobility
0.00	162.00	1	0.39" Fiber Trunk	0.39	0.06	N	0.00	Y	AT&T Mobility
0.00	157.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
0.00	146.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
0.00	136.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	T-Mobile

Site Number: 413782

Code: ANSI/TIA-222-G

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: Washington North CT, CT

Engineering Number: OAA664177\_C3\_07

9/26/2016 3:09:48 PM

Customer: T-Mobile

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	F'y (ksi)	S (in <sup>3</sup> )	Z (in <sup>3</sup> )	Weight (lb)
0.00		0.3125	47.000	46.306	12,752.5	25.11	150.40	71.9	534.4	0.0	0.0
5.00		0.3125	46.046	45.360	11,986.7	24.57	147.35	72.5	512.7	0.0	779.8
10.00		0.3125	45.092	44.414	11,252.2	24.03	144.30	73.1	491.5	0.0	763.7
15.00		0.3125	44.138	43.468	10,548.4	23.49	141.24	73.8	470.7	0.0	747.6
20.00		0.3125	43.184	42.522	9,874.5	22.96	138.19	74.4	450.4	0.0	731.5
25.00		0.3125	42.231	41.576	9,229.9	22.42	135.14	75.0	430.5	0.0	715.4
30.00		0.3125	41.277	40.630	8,614.1	21.88	132.09	75.7	411.0	0.0	699.3
35.00		0.3125	40.323	39.684	8,026.2	21.34	129.03	76.3	392.0	0.0	683.2
40.00		0.3125	39.369	38.738	7,465.7	20.80	125.98	76.9	373.5	0.0	667.1
45.00		0.3125	38.415	37.792	6,932.0	20.26	122.93	77.6	355.4	0.0	651.0
46.12	Bot - Section 2	0.3125	38.202	37.580	6,816.3	20.14	122.25	77.7	351.4	0.0	143.3
50.00		0.3125	37.461	36.846	6,424.3	19.73	119.88	78.2	337.8	0.0	890.9
51.46	Top - Section 1	0.2500	37.683	29.702	5,258.3	25.17	150.73	71.8	274.8	0.0	330.1
55.00		0.2500	37.007	29.166	4,978.7	24.69	148.03	72.4	265.0	0.0	354.7
60.00		0.2500	36.053	28.409	4,601.1	24.02	144.21	73.2	251.4	0.0	489.8
65.00		0.2500	35.100	27.652	4,243.0	23.35	140.40	73.9	238.1	0.0	476.9
70.00		0.2500	34.146	26.895	3,904.1	22.67	136.58	74.7	225.2	0.0	464.0
75.00		0.2500	33.192	26.138	3,583.6	22.00	132.77	75.5	212.7	0.0	451.2
80.00		0.2500	32.238	25.381	3,281.3	21.33	128.95	76.3	200.5	0.0	438.3
85.00		0.2500	31.284	24.625	2,996.4	20.65	125.14	77.1	188.6	0.0	425.4
90.00		0.2500	30.330	23.868	2,728.5	19.98	121.32	77.9	177.2	0.0	412.5
92.65	Bot - Section 3	0.2500	29.825	23.467	2,593.4	19.63	119.30	78.3	171.3	0.0	213.1
95.00		0.2500	29.376	23.111	2,477.1	19.31	117.50	78.7	166.1	0.0	328.6
96.93	Top - Section 2	0.1875	29.384	17.375	1,871.2	26.22	156.71	70.6	125.4	0.0	265.2
100.0		0.1875	28.797	17.026	1,760.7	25.67	153.59	71.2	120.4	0.0	179.9
105.0		0.1875	27.843	16.458	1,590.4	24.77	148.50	72.3	112.5	0.0	284.8
110.0		0.1875	26.890	15.891	1,431.5	23.88	143.41	73.3	104.9	0.0	275.2
115.0		0.1875	25.936	15.323	1,283.5	22.98	138.32	74.4	97.5	0.0	265.5
120.0		0.1875	24.982	14.755	1,146.0	22.08	133.24	75.4	90.4	0.0	255.9
125.0		0.1875	24.028	14.188	1,018.8	21.19	128.15	76.5	83.5	0.0	246.2
130.0		0.1875	23.074	13.620	901.3	20.29	123.06	77.5	76.9	0.0	236.6
135.0		0.1875	22.120	13.052	793.3	19.39	117.97	78.6	70.6	0.0	226.9
136.0		0.1875	21.929	12.939	772.7	19.21	116.96	78.8	69.4	0.0	44.2
140.0		0.1875	21.166	12.485	694.2	18.49	112.89	79.6	64.6	0.0	173.0
140.0	Bot - Section 4	0.1875	21.162	12.482	693.8	18.49	112.87	79.7	64.6	0.0	0.9
143.2	Top - Section 3	0.1875	20.927	12.342	670.7	18.27	111.61	79.9	63.1	0.0	270.1
145.0		0.1875	20.587	12.140	638.3	17.95	109.80	80.3	61.1	0.0	74.2
146.0		0.1875	20.397	12.027	620.6	17.77	108.78	80.5	59.9	0.0	41.1
150.0		0.1875	19.634	11.572	552.9	17.05	104.71	81.3	55.5	0.0	160.6
155.0		0.1875	18.680	11.005	475.5	16.16	99.62	82.4	50.1	0.0	192.1
157.0		0.1875	18.298	10.778	446.6	15.80	97.59	82.6	48.1	0.0	74.1
158.5		0.1875	18.000	10.600	424.9	15.52	96.00	82.6	46.5	0.0	56.8
15,180.9											

<b>Load Case:</b> 1.2D + 1.6W	93 mph with No Ice	30 Iterations
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :1.20		
Wind Load Factor :1.60		

**Applied Segment Forces Summary**

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		165.8	0.0					0.0	0.0	165.8	0.0	0.0	0.0
5.00		328.2	935.8					0.0	214.1	328.2	1,149.8	0.0	0.0
10.00		321.4	916.5					0.0	214.1	321.4	1,130.5	0.0	0.0
15.00		314.6	897.1					0.0	214.1	314.6	1,111.2	0.0	0.0
20.00		307.8	877.8					0.0	214.1	307.8	1,091.9	0.0	0.0
25.00		301.0	858.5					0.0	214.1	301.0	1,072.6	0.0	0.0
30.00		297.7	839.2					0.0	214.1	297.7	1,053.3	0.0	0.0
35.00		300.3	819.9					0.0	214.1	300.3	1,033.9	0.0	0.0
40.00		304.8	800.6					0.0	214.1	304.8	1,014.6	0.0	0.0
45.00		187.9	781.2					0.0	214.1	187.9	995.3	0.0	0.0
46.12	Bot - Section 2	157.2	171.9					0.0	47.8	157.2	219.7	0.0	0.0
50.00		168.9	1,069.1					0.0	166.2	168.9	1,235.3	0.0	0.0
51.46	Top - Section 1	158.9	396.1					0.0	62.4	158.9	458.6	0.0	0.0
55.00		272.7	425.7					0.0	151.6	272.7	577.3	0.0	0.0
60.00		321.1	587.7					0.0	214.1	321.1	801.8	0.0	0.0
65.00		322.6	572.3					0.0	214.1	322.6	786.4	0.0	0.0
70.00		323.4	556.8					0.0	214.1	323.4	770.9	0.0	0.0
75.00		323.7	541.4					0.0	214.1	323.7	755.5	0.0	0.0
80.00		323.4	525.9					0.0	214.1	323.4	740.0	0.0	0.0
85.00		322.6	510.5					0.0	214.1	322.6	724.6	0.0	0.0
90.00		246.0	495.0					0.0	214.1	246.0	709.1	0.0	0.0
92.65	Bot - Section 3	161.3	255.7					0.0	113.3	161.3	369.0	0.0	0.0
95.00		138.7	394.3					0.0	100.8	138.7	495.1	0.0	0.0
96.93	Top - Section 2	161.1	318.3					0.0	82.5	161.1	400.8	0.0	0.0
100.00		258.4	215.8					0.0	131.6	258.4	347.4	0.0	0.0
105.00		318.2	341.8					0.0	214.1	318.2	555.9	0.0	0.0
110.00		315.5	330.2					0.0	214.1	315.5	544.3	0.0	0.0
115.00		312.6	318.6					0.0	214.1	312.6	532.7	0.0	0.0
120.00		309.3	307.0					0.0	214.1	309.3	521.1	0.0	0.0
125.00		305.8	295.5					0.0	214.1	305.8	509.5	0.0	0.0
130.00		302.0	283.9					0.0	214.1	302.0	497.9	0.0	0.0
135.00		179.8	272.3					0.0	214.1	179.8	486.4	0.0	0.0
136.00	Appertunance(s)	147.9	53.1	1,945.5	0.0	0.0	1,177.4	0.0	42.8	2,093.4	1,273.3	0.0	0.0
140.00		118.8	207.6					0.0	124.0	118.8	331.7	0.0	0.0
140.02	Bot - Section 4	95.8	1.1					0.0	0.6	95.8	1.7	0.0	0.0
143.22	Top - Section 3	147.3	324.2					0.0	99.2	147.3	423.3	0.0	0.0
145.00		81.3	89.0					0.0	55.2	81.3	144.3	0.0	0.0
146.00	Appertunance(s)	144.9	49.3	3,949.9	0.0	0.0	1,646.9	0.0	31.0	4,094.8	1,727.2	0.0	0.0
150.00		316.4	192.7					0.0	100.4	316.4	293.1	0.0	0.0
155.00		278.7	230.5					80.7	125.5	359.4	356.0	0.0	0.0
157.00	Appertunance(s)	138.0	88.9	745.5	0.0	0.0	393.1	32.4	50.2	915.9	532.3	0.0	0.0
158.56		60.0	68.2					25.3	20.8	85.3	89.0	0.0	0.0
<b>Totals:</b>										16,840.9	27,864.4	0.00	0.00



Site Number: 413782

Code: ANSI/TIA-222-G

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: Washington North CT, CT

Engineering Number: OAA664177\_C3\_07

9/26/2016 3:09:49 PM

Customer: T-Mobile

Load Case: 1.2D + 1.6W

93 mph with No Ice

30 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-28.68	-18.45	0.00	-2,183.78	0.00	2,183.78	2,995.17	1,497.58	5,752.58	2,880.56	0.00	0.00	0.768
5.00	-27.45	-18.24	0.00	-2,091.51	0.00	2,091.51	2,959.81	1,479.91	5,567.76	2,788.02	0.13	-0.24	0.760
10.00	-26.25	-18.02	0.00	-2,000.32	0.00	2,000.32	2,923.38	1,461.69	5,383.76	2,695.88	0.51	-0.48	0.751
15.00	-25.06	-17.81	0.00	-1,910.20	0.00	1,910.20	2,885.88	1,442.94	5,200.69	2,604.21	1.14	-0.73	0.742
20.00	-23.90	-17.59	0.00	-1,821.17	0.00	1,821.17	2,847.29	1,423.65	5,018.68	2,513.07	2.04	-0.98	0.733
25.00	-22.75	-17.37	0.00	-1,733.24	0.00	1,733.24	2,807.63	1,403.81	4,837.86	2,422.53	3.20	-1.24	0.724
30.00	-21.63	-17.15	0.00	-1,646.39	0.00	1,646.39	2,766.89	1,383.44	4,658.36	2,332.64	4.64	-1.50	0.714
35.00	-20.53	-16.91	0.00	-1,560.66	0.00	1,560.66	2,725.06	1,362.53	4,480.31	2,243.49	6.35	-1.76	0.703
40.00	-19.44	-16.67	0.00	-1,476.11	0.00	1,476.11	2,682.17	1,341.08	4,303.83	2,155.12	8.33	-2.03	0.692
45.00	-18.41	-16.49	0.00	-1,392.78	0.00	1,392.78	2,638.19	1,319.10	4,129.06	2,067.60	10.61	-2.30	0.681
46.12	-18.15	-16.37	0.00	-1,374.35	0.00	1,374.35	2,628.22	1,314.11	4,090.25	2,048.17	11.15	-2.37	0.678
50.00	-16.88	-16.20	0.00	-1,310.78	0.00	1,310.78	2,593.14	1,296.57	3,956.11	1,981.00	13.17	-2.58	0.668
51.46	-16.39	-16.06	0.00	-1,287.16	0.00	1,287.16	1,919.32	959.66	2,955.63	1,480.01	13.97	-2.67	0.879
55.00	-15.75	-15.83	0.00	-1,230.30	0.00	1,230.30	1,899.39	949.70	2,871.79	1,438.03	16.02	-2.87	0.864
60.00	-14.88	-15.56	0.00	-1,151.14	0.00	1,151.14	1,870.33	935.17	2,753.97	1,379.03	19.21	-3.21	0.843
65.00	-14.02	-15.27	0.00	-1,073.36	0.00	1,073.36	1,840.20	920.10	2,636.91	1,320.41	22.76	-3.55	0.821
70.00	-13.18	-14.98	0.00	-996.99	0.00	996.99	1,808.98	904.49	2,520.72	1,262.23	26.66	-3.90	0.797
75.00	-12.36	-14.68	0.00	-922.08	0.00	922.08	1,776.69	888.34	2,405.54	1,204.56	30.93	-4.25	0.773
80.00	-11.56	-14.37	0.00	-848.68	0.00	848.68	1,743.32	871.66	2,291.50	1,147.45	35.57	-4.60	0.747
85.00	-10.78	-14.06	0.00	-776.82	0.00	776.82	1,708.87	854.43	2,178.71	1,090.98	40.57	-4.96	0.719
90.00	-10.03	-13.80	0.00	-706.54	0.00	706.54	1,673.34	836.67	2,067.32	1,035.20	45.94	-5.31	0.689
92.65	-9.64	-13.63	0.00	-670.04	0.00	670.04	1,654.10	827.05	2,008.98	1,005.98	48.93	-5.50	0.672
95.00	-9.12	-13.47	0.00	-637.95	0.00	637.95	1,636.74	818.37	1,957.44	980.18	51.68	-5.67	0.657
96.93	-8.70	-13.30	0.00	-612.00	0.00	612.00	1,103.35	551.67	1,325.55	663.76	53.99	-5.80	0.930
100.00	-8.30	-13.05	0.00	-571.14	0.00	571.14	1,091.13	545.56	1,284.38	643.14	57.80	-6.02	0.896
105.00	-7.69	-12.73	0.00	-505.89	0.00	505.89	1,070.38	535.19	1,217.67	609.74	64.32	-6.46	0.837
110.00	-7.10	-12.41	0.00	-442.23	0.00	442.23	1,048.55	524.27	1,151.42	576.56	71.30	-6.88	0.774
115.00	-6.52	-12.08	0.00	-380.19	0.00	380.19	1,025.64	512.82	1,085.75	543.68	78.71	-7.29	0.706
120.00	-5.97	-11.74	0.00	-319.81	0.00	319.81	1,001.65	500.83	1,020.79	511.15	86.53	-7.68	0.632
125.00	-5.44	-11.40	0.00	-261.10	0.00	261.10	976.59	488.30	956.67	479.05	94.74	-8.04	0.551
130.00	-4.93	-11.06	0.00	-204.09	0.00	204.09	950.45	475.22	893.52	447.42	103.31	-8.36	0.462
135.00	-4.44	-10.82	0.00	-148.80	0.00	148.80	923.23	461.61	831.46	416.35	112.19	-8.64	0.363
136.00	-3.48	-8.57	0.00	-137.98	0.00	137.98	917.66	458.83	819.19	410.21	114.00	-8.69	0.341
140.00	-3.16	-8.40	0.00	-103.71	0.00	103.71	894.93	447.47	770.63	385.89	121.33	-8.87	0.273
140.02	-3.17	-8.31	0.00	-103.54	0.00	103.54	894.81	447.41	770.38	385.76	121.37	-8.87	0.272
143.22	-2.76	-8.10	0.00	-76.96	0.00	76.96	887.67	443.84	755.59	378.35	127.33	-8.99	0.207
145.00	-2.62	-8.00	0.00	-62.52	0.00	62.52	877.23	438.62	734.36	367.72	130.68	-9.04	0.173
146.00	-1.56	-3.69	0.00	-54.52	0.00	54.52	871.31	435.66	722.52	361.80	132.57	-9.07	0.153
150.00	-1.31	-3.33	0.00	-39.76	0.00	39.76	847.20	423.60	675.75	338.38	140.18	-9.16	0.119
155.00	-1.02	-2.92	0.00	-23.10	0.00	23.10	816.09	408.05	618.71	309.81	149.77	-9.24	0.076
157.00	-0.64	-1.93	0.00	-17.25	0.00	17.25	800.73	400.36	594.40	297.64	153.63	-9.26	0.059
158.56	0.00	-1.80	0.00	-14.24	0.00	14.24	787.55	393.77	574.90	287.88	156.65	-9.28	0.049

Site Number: 413782

Code: ANSI/TIA-222-G

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: Washington North CT, CT

Engineering Number: OAA664177\_C3\_07

9/26/2016 3:09:49 PM

Customer: T- Mobile

**Load Case: 0.9D + 1.6W**

93 mph with No Ice (Reduced DL)

30 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

**Applied Segment Forces Summary**

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		165.8	0.0					0.0	0.0	165.8	0.0	0.0	0.0
5.00		328.2	701.8					0.0	160.6	328.2	862.4	0.0	0.0
10.00		321.4	687.3					0.0	160.6	321.4	847.9	0.0	0.0
15.00		314.6	672.9					0.0	160.6	314.6	833.4	0.0	0.0
20.00		307.8	658.4					0.0	160.6	307.8	818.9	0.0	0.0
25.00		301.0	643.9					0.0	160.6	301.0	804.4	0.0	0.0
30.00		297.7	629.4					0.0	160.6	297.7	789.9	0.0	0.0
35.00		300.3	614.9					0.0	160.6	300.3	775.5	0.0	0.0
40.00		304.7	600.4					0.0	160.6	304.7	761.0	0.0	0.0
45.00		187.6	585.9					0.0	160.6	187.6	746.5	0.0	0.0
46.12	Bot - Section 2	155.9	128.9					0.0	35.9	155.9	164.8	0.0	0.0
50.00		167.2	801.8					0.0	124.7	167.2	926.5	0.0	0.0
51.46	Top - Section 1	156.8	297.1					0.0	46.8	156.8	343.9	0.0	0.0
55.00		268.0	319.3					0.0	113.7	268.0	433.0	0.0	0.0
60.00		313.4	440.8					0.0	160.6	313.4	601.4	0.0	0.0
65.00		312.2	429.2					0.0	160.6	312.2	589.8	0.0	0.0
70.00		310.2	417.6					0.0	160.6	310.2	578.2	0.0	0.0
75.00		307.5	406.0					0.0	160.6	307.5	566.6	0.0	0.0
80.00		304.2	394.4					0.0	160.6	304.2	555.0	0.0	0.0
85.00		300.4	382.9					0.0	160.6	300.4	543.4	0.0	0.0
90.00		227.2	371.3					0.0	160.6	227.2	531.8	0.0	0.0
92.65	Bot - Section 3	147.7	191.8					0.0	85.0	147.7	276.7	0.0	0.0
95.00		126.4	295.7					0.0	75.6	126.4	371.3	0.0	0.0
96.93	Top - Section 2	146.2	238.7					0.0	61.9	146.2	300.6	0.0	0.0
100.00		233.0	161.9					0.0	98.7	233.0	260.5	0.0	0.0
105.00		284.0	256.4					0.0	160.6	284.0	416.9	0.0	0.0
110.00		278.0	247.7					0.0	160.6	278.0	408.2	0.0	0.0
115.00		271.5	239.0					0.0	160.6	271.5	399.5	0.0	0.0
120.00		264.7	230.3					0.0	160.6	264.7	390.8	0.0	0.0
125.00		257.6	221.6					0.0	160.6	257.6	382.2	0.0	0.0
130.00		250.2	212.9					0.0	160.6	250.2	373.5	0.0	0.0
135.00		147.4	204.2					0.0	160.6	147.4	364.8	0.0	0.0
136.00	Appertunance(s)	119.2	39.8	1,945.5	0.0	0.0	883.1	0.0	32.1	2,064.7	955.0	0.0	0.0
140.00		95.6	155.7					0.0	93.0	95.6	248.7	0.0	0.0
140.02	Bot - Section 4	75.9	0.8					0.0	0.5	75.9	1.3	0.0	0.0
143.22	Top - Section 3	116.8	243.1					0.0	74.4	116.8	317.5	0.0	0.0
145.00		64.2	66.8					0.0	41.4	64.2	108.2	0.0	0.0
146.00	Appertunance(s)	113.0	37.0	3,949.9	0.0	0.0	1,235.2	0.0	23.3	4,062.9	1,295.4	0.0	0.0
150.00		290.8	144.5					0.0	75.3	290.8	219.9	0.0	0.0
155.00		278.7	172.9					80.7	94.1	359.4	267.0	0.0	0.0
157.00	Appertunance(s)	138.0	66.7	745.5	0.0	0.0	294.8	32.4	37.7	915.9	399.2	0.0	0.0
158.56		60.0	51.1					25.3	15.6	85.3	66.7	0.0	0.0
<b>Totals:</b>										16,190.2	20,898.3	0.00	0.00

Site Number: 413782

Code: ANSI/TIA-222-G

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: Washington North CT, CT

Engineering Number: OAA664177\_C3\_07

9/26/2016 3:09:50 PM

Customer: T-Mobile

Load Case: 0.9D + 1.6W

93 mph with No Ice (Reduced DL)

30 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces

Seg	Pu	Vu	Tu	Mu	Mu	Resultant	phi	phi	phi	phi	Total		
Elev	FY (-)	FX (-)	MY	MZ	MX	Moment	Pn	Vn	Tn	Mn	Deflect	Rotation	Ratio
(ft)	(kips)	(kips)	(ft-kips)	(ft-kips)	(ft-kips)	(ft-kips)	(kips)	(kips)	(ft-kips)	(ft-kips)	(in)	(deg)	
0.00	-21.50	-17.79	0.00	-2,074.32	0.00	2,074.32	2,995.17	1,497.58	5,752.58	2,880.56	0.00	0.00	0.727
5.00	-20.57	-17.54	0.00	-1,985.39	0.00	1,985.39	2,959.81	1,479.91	5,567.76	2,788.02	0.12	-0.23	0.719
10.00	-19.65	-17.29	0.00	-1,897.69	0.00	1,897.69	2,923.38	1,461.69	5,383.76	2,695.88	0.48	-0.46	0.711
15.00	-18.75	-17.05	0.00	-1,811.24	0.00	1,811.24	2,885.88	1,442.94	5,200.69	2,604.21	1.08	-0.69	0.702
20.00	-17.87	-16.80	0.00	-1,726.01	0.00	1,726.01	2,847.29	1,423.65	5,018.68	2,513.07	1.94	-0.93	0.693
25.00	-17.00	-16.56	0.00	-1,641.99	0.00	1,641.99	2,807.63	1,403.81	4,837.86	2,422.53	3.04	-1.17	0.684
30.00	-16.15	-16.31	0.00	-1,559.20	0.00	1,559.20	2,766.89	1,383.44	4,658.36	2,332.64	4.40	-1.42	0.674
35.00	-15.31	-16.06	0.00	-1,477.63	0.00	1,477.63	2,725.06	1,362.53	4,480.31	2,243.49	6.02	-1.67	0.664
40.00	-14.49	-15.80	0.00	-1,397.33	0.00	1,397.33	2,682.17	1,341.08	4,303.83	2,155.12	7.90	-1.92	0.654
45.00	-13.70	-15.62	0.00	-1,318.34	0.00	1,318.34	2,638.19	1,319.10	4,129.06	2,067.60	10.06	-2.18	0.643
46.12	-13.51	-15.49	0.00	-1,300.89	0.00	1,300.89	2,628.22	1,314.11	4,090.25	2,048.17	10.58	-2.24	0.640
50.00	-12.55	-15.32	0.00	-1,240.74	0.00	1,240.74	2,593.14	1,296.57	3,956.11	1,981.00	12.48	-2.45	0.631
51.46	-12.18	-15.17	0.00	-1,218.41	0.00	1,218.41	1,919.32	959.66	2,955.63	1,480.01	13.25	-2.53	0.830
55.00	-11.69	-14.94	0.00	-1,164.67	0.00	1,164.67	1,899.39	949.70	2,871.79	1,438.03	15.19	-2.72	0.816
60.00	-11.03	-14.66	0.00	-1,089.97	0.00	1,089.97	1,870.33	935.17	2,753.97	1,379.03	18.21	-3.04	0.797
65.00	-10.37	-14.37	0.00	-1,016.68	0.00	1,016.68	1,840.20	920.10	2,636.91	1,320.41	21.57	-3.37	0.776
70.00	-9.73	-14.08	0.00	-944.81	0.00	944.81	1,808.98	904.49	2,520.72	1,262.23	25.27	-3.70	0.754
75.00	-9.11	-13.79	0.00	-874.39	0.00	874.39	1,776.69	888.34	2,405.54	1,204.56	29.32	-4.03	0.731
80.00	-8.50	-13.50	0.00	-805.43	0.00	805.43	1,743.32	871.66	2,291.50	1,147.45	33.71	-4.36	0.707
85.00	-7.90	-13.20	0.00	-737.94	0.00	737.94	1,708.87	854.43	2,178.71	1,090.98	38.45	-4.70	0.681
90.00	-7.34	-12.96	0.00	-671.93	0.00	671.93	1,673.34	836.67	2,067.32	1,035.20	43.54	-5.03	0.654
92.65	-7.03	-12.81	0.00	-637.63	0.00	637.63	1,654.10	827.05	2,008.98	1,005.98	46.38	-5.21	0.638
95.00	-6.64	-12.67	0.00	-607.47	0.00	607.47	1,636.74	818.37	1,957.44	980.18	48.99	-5.37	0.624
96.93	-6.32	-12.51	0.00	-583.05	0.00	583.05	1,103.35	551.67	1,325.55	663.76	51.18	-5.50	0.885
100.00	-6.02	-12.29	0.00	-544.59	0.00	544.59	1,091.13	545.56	1,284.38	643.14	54.78	-5.71	0.853
105.00	-5.55	-12.00	0.00	-483.14	0.00	483.14	1,070.38	535.19	1,217.67	609.74	60.98	-6.13	0.798
110.00	-5.09	-11.72	0.00	-423.12	0.00	423.12	1,048.55	524.27	1,151.42	576.56	67.60	-6.53	0.739
115.00	-4.65	-11.43	0.00	-364.52	0.00	364.52	1,025.64	512.82	1,085.75	543.68	74.63	-6.92	0.676
120.00	-4.22	-11.15	0.00	-307.35	0.00	307.35	1,001.65	500.83	1,020.79	511.15	82.07	-7.29	0.606
125.00	-3.82	-10.87	0.00	-251.61	0.00	251.61	976.59	488.30	956.67	479.05	89.87	-7.64	0.530
130.00	-3.43	-10.59	0.00	-197.27	0.00	197.27	950.45	475.22	893.52	447.42	98.02	-7.95	0.445
135.00	-3.06	-10.40	0.00	-144.34	0.00	144.34	923.23	461.61	831.46	416.35	106.48	-8.22	0.351
136.00	-2.39	-8.22	0.00	-133.95	0.00	133.95	917.66	458.83	819.19	410.21	108.20	-8.27	0.329
140.00	-2.15	-8.09	0.00	-101.06	0.00	101.06	894.93	447.47	770.63	385.89	115.19	-8.45	0.265
140.02	-2.15	-8.02	0.00	-100.89	0.00	100.89	894.81	447.41	770.38	385.76	115.22	-8.45	0.264
143.22	-1.84	-7.86	0.00	-75.24	0.00	75.24	887.67	443.84	755.59	378.35	120.90	-8.56	0.201
145.00	-1.74	-7.78	0.00	-61.24	0.00	61.24	877.23	438.62	734.36	367.72	124.10	-8.62	0.169
146.00	-1.07	-3.57	0.00	-53.46	0.00	53.46	871.31	435.66	722.52	361.80	125.90	-8.64	0.149
150.00	-0.89	-3.25	0.00	-39.17	0.00	39.17	847.20	423.60	675.75	338.38	133.15	-8.73	0.117
155.00	-0.68	-2.86	0.00	-22.91	0.00	22.91	816.09	408.05	618.71	309.81	142.30	-8.81	0.075
157.00	-0.42	-1.89	0.00	-17.19	0.00	17.19	800.73	400.36	594.40	297.64	145.98	-8.83	0.058
158.56	0.00	-1.80	0.00	-14.24	0.00	14.24	787.55	393.77	574.90	287.88	148.86	-8.85	0.049

<b>Load Case:</b> 1.2D + 1.0Di + 1.0Wi	40 mph with 1.00 in Radial Ice	29 Iterations
Gust Response Factor :1.10	Ice Dead Load Factor :1.00	Wind Importance Factor :1.00
Dead Load Factor :1.20		Ice Importance Factor :1.00
Wind Load Factor :1.00		

**Applied Segment Forces Summary**

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		37.7	0.0					0.0	0.0	37.7	0.0	0.0	0.0
5.00		74.9	1,396.4					0.0	432.5	74.9	1,828.9	0.0	0.0
10.00		73.9	1,422.1					0.0	461.2	73.9	1,883.4	0.0	0.0
15.00		72.7	1,419.5					0.0	476.1	72.7	1,895.6	0.0	0.0
20.00		71.4	1,407.5					0.0	486.5	71.4	1,894.1	0.0	0.0
25.00		70.1	1,390.8					0.0	494.6	70.1	1,885.4	0.0	0.0
30.00		69.5	1,371.0					0.0	501.3	69.5	1,872.3	0.0	0.0
35.00		70.4	1,349.1					0.0	507.0	70.4	1,856.1	0.0	0.0
40.00		71.7	1,325.6					0.0	512.0	71.7	1,837.7	0.0	0.0
45.00		44.2	1,301.0					0.0	516.5	44.2	1,817.5	0.0	0.0
46.12	Bot - Section 2	36.8	288.3					0.0	116.0	36.8	404.2	0.0	0.0
50.00		39.5	1,473.4					0.0	404.5	39.5	1,877.9	0.0	0.0
51.46	Top - Section 1	37.2	547.8					0.0	152.5	37.2	700.3	0.0	0.0
55.00		63.7	789.5					0.0	371.7	63.7	1,161.2	0.0	0.0
60.00		74.7	1,093.0					0.0	527.6	74.7	1,620.6	0.0	0.0
65.00		74.6	1,069.3					0.0	530.7	74.6	1,600.0	0.0	0.0
70.00		74.4	1,045.0					0.0	533.7	74.4	1,578.7	0.0	0.0
75.00		74.1	1,020.3					0.0	536.4	74.1	1,556.8	0.0	0.0
80.00		73.6	995.3					0.0	539.0	73.6	1,534.3	0.0	0.0
85.00		73.0	969.8					0.0	541.5	73.0	1,511.3	0.0	0.0
90.00		55.4	944.1					0.0	543.8	55.4	1,487.9	0.0	0.0
92.65	Bot - Section 3	36.1	490.7					0.0	288.7	36.1	779.4	0.0	0.0
95.00		30.9	603.5					0.0	257.4	30.9	860.9	0.0	0.0
96.93	Top - Section 2	35.9	488.0					0.0	211.0	35.9	699.0	0.0	0.0
100.00		57.4	482.1					0.0	337.1	57.4	819.3	0.0	0.0
105.00		70.3	763.6					0.0	550.2	70.3	1,313.8	0.0	0.0
110.00		69.1	740.8					0.0	552.1	69.1	1,292.9	0.0	0.0
115.00		67.9	717.7					0.0	554.0	67.9	1,271.7	0.0	0.0
120.00		66.7	694.4					0.0	555.8	66.7	1,250.2	0.0	0.0
125.00		65.3	670.9					0.0	557.6	65.3	1,228.5	0.0	0.0
130.00		63.9	647.3					0.0	559.2	63.9	1,206.5	0.0	0.0
135.00		37.8	623.5					0.0	560.9	37.8	1,184.3	0.0	0.0
136.00	Appertunance(s)	30.8	122.9	357.8	0.0	0.0	2,924.9	0.0	112.4	388.6	3,160.2	0.0	0.0
140.00		24.7	478.8					0.0	402.8	24.7	881.6	0.0	0.0
140.02	Bot - Section 4	19.7	2.5					0.0	2.1	19.7	4.6	0.0	0.0
143.22	Top - Section 3	30.3	539.4					0.0	322.8	30.3	862.1	0.0	0.0
145.00		16.7	207.4					0.0	180.1	16.7	387.4	0.0	0.0
146.00	Appertunance(s)	29.6	115.3	839.9	0.0	0.0	1,000.2	0.0	101.2	869.5	1,216.6	0.0	0.0
150.00		52.4	448.1					0.0	381.6	52.4	829.7	0.0	0.0
155.00		40.0	536.8					20.6	478.3	60.6	1,015.2	0.0	0.0
157.00	Appertunance(s)	20.0	209.6	133.7	0.0	0.0	715.4	8.3	191.7	161.9	1,116.7	0.0	0.0
158.56		8.7	161.2					6.5	131.5	15.2	292.7	0.0	0.0
<b>Totals:</b>										3,574.47	53,477.4	0.00	0.00

Site Number: 413782

Code: ANSI/TIA-222-G

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: Washington North CT, CT

Engineering Number: OAA664177\_C3\_07

9/26/2016 3:09:52 PM

Customer: T-Mobile

Load Case: 1.2D + 1.0Di + 1.0Wi

40 mph with 1.00 in Radial Ice

29 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-55.92	-3.88	0.00	-475.21	0.00	475.21	2,995.17	1,497.58	5,752.58	2,880.56	0.00	0.00	0.184
5.00	-54.09	-3.85	0.00	-455.82	0.00	455.82	2,959.81	1,479.91	5,567.76	2,788.02	0.03	-0.05	0.182
10.00	-52.20	-3.82	0.00	-436.56	0.00	436.56	2,923.38	1,461.69	5,383.76	2,695.88	0.11	-0.10	0.180
15.00	-50.30	-3.79	0.00	-417.44	0.00	417.44	2,885.88	1,442.94	5,200.69	2,604.21	0.25	-0.16	0.178
20.00	-48.41	-3.76	0.00	-398.47	0.00	398.47	2,847.29	1,423.65	5,018.68	2,513.07	0.44	-0.21	0.176
25.00	-46.52	-3.73	0.00	-379.65	0.00	379.65	2,807.63	1,403.81	4,837.86	2,422.53	0.70	-0.27	0.173
30.00	-44.64	-3.70	0.00	-360.99	0.00	360.99	2,766.89	1,383.44	4,658.36	2,332.64	1.01	-0.33	0.171
35.00	-42.78	-3.66	0.00	-342.50	0.00	342.50	2,725.06	1,362.53	4,480.31	2,243.49	1.39	-0.39	0.168
40.00	-40.94	-3.62	0.00	-324.20	0.00	324.20	2,682.17	1,341.08	4,303.83	2,155.12	1.82	-0.44	0.166
45.00	-39.12	-3.58	0.00	-306.12	0.00	306.12	2,638.19	1,319.10	4,129.06	2,067.60	2.32	-0.50	0.163
46.12	-38.72	-3.56	0.00	-302.12	0.00	302.12	2,628.22	1,314.11	4,090.25	2,048.17	2.44	-0.52	0.162
50.00	-36.84	-3.53	0.00	-288.28	0.00	288.28	2,593.14	1,296.57	3,956.11	1,981.00	2.88	-0.57	0.160
51.46	-36.14	-3.50	0.00	-283.14	0.00	283.14	1,919.32	959.66	2,955.63	1,480.01	3.05	-0.58	0.210
55.00	-34.97	-3.46	0.00	-270.73	0.00	270.73	1,899.39	949.70	2,871.79	1,438.03	3.50	-0.63	0.207
60.00	-33.35	-3.41	0.00	-253.41	0.00	253.41	1,870.33	935.17	2,753.97	1,379.03	4.20	-0.70	0.202
65.00	-31.74	-3.36	0.00	-236.34	0.00	236.34	1,840.20	920.10	2,636.91	1,320.41	4.98	-0.78	0.196
70.00	-30.16	-3.30	0.00	-219.54	0.00	219.54	1,808.98	904.49	2,520.72	1,262.23	5.84	-0.86	0.191
75.00	-28.60	-3.24	0.00	-203.02	0.00	203.02	1,776.69	888.34	2,405.54	1,204.56	6.78	-0.93	0.185
80.00	-27.07	-3.18	0.00	-186.80	0.00	186.80	1,743.32	871.66	2,291.50	1,147.45	7.79	-1.01	0.178
85.00	-25.55	-3.12	0.00	-170.89	0.00	170.89	1,708.87	854.43	2,178.71	1,090.98	8.89	-1.09	0.172
90.00	-24.06	-3.06	0.00	-155.32	0.00	155.32	1,673.34	836.67	2,067.32	1,035.20	10.07	-1.17	0.164
92.65	-23.28	-3.02	0.00	-147.23	0.00	147.23	1,654.10	827.05	2,008.98	1,005.98	10.73	-1.21	0.160
95.00	-22.42	-2.98	0.00	-140.12	0.00	140.12	1,636.74	818.37	1,957.44	980.18	11.34	-1.24	0.157
96.93	-21.72	-2.95	0.00	-134.38	0.00	134.38	1,103.35	551.67	1,325.55	663.76	11.84	-1.27	0.222
100.00	-20.90	-2.90	0.00	-125.32	0.00	125.32	1,091.13	545.56	1,284.38	643.14	12.68	-1.32	0.214
105.00	-19.58	-2.83	0.00	-110.84	0.00	110.84	1,070.38	535.19	1,217.67	609.74	14.12	-1.42	0.200
110.00	-18.29	-2.75	0.00	-96.70	0.00	96.70	1,048.55	524.27	1,151.42	576.56	15.65	-1.51	0.185
115.00	-17.01	-2.68	0.00	-82.93	0.00	82.93	1,025.64	512.82	1,085.75	543.68	17.28	-1.60	0.169
120.00	-15.76	-2.60	0.00	-69.54	0.00	69.54	1,001.65	500.83	1,020.79	511.15	19.00	-1.68	0.152
125.00	-14.53	-2.51	0.00	-56.55	0.00	56.55	976.59	488.30	956.67	479.05	20.81	-1.76	0.133
130.00	-13.33	-2.43	0.00	-43.97	0.00	43.97	950.45	475.22	893.52	447.42	22.69	-1.83	0.112
135.00	-12.14	-2.36	0.00	-31.83	0.00	31.83	923.23	461.61	831.46	416.35	24.64	-1.89	0.090
136.00	-9.00	-1.87	0.00	-29.47	0.00	29.47	917.66	458.83	819.19	410.21	25.04	-1.90	0.082
140.00	-8.12	-1.82	0.00	-21.99	0.00	21.99	894.93	447.47	770.63	385.89	26.65	-1.94	0.066
140.02	-8.11	-1.80	0.00	-21.96	0.00	21.96	894.81	447.41	770.38	385.76	26.66	-1.94	0.066
143.22	-7.25	-1.74	0.00	-16.20	0.00	16.20	887.67	443.84	755.59	378.35	27.97	-1.97	0.051
145.00	-6.86	-1.71	0.00	-13.09	0.00	13.09	877.23	438.62	734.36	367.72	28.71	-1.98	0.043
146.00	-5.68	-0.80	0.00	-11.38	0.00	11.38	871.31	435.66	722.52	361.80	29.12	-1.98	0.038
150.00	-4.85	-0.72	0.00	-8.16	0.00	8.16	847.20	423.60	675.75	338.38	30.79	-2.00	0.030
155.00	-3.84	-0.63	0.00	-4.54	0.00	4.54	816.09	408.05	618.71	309.81	32.90	-2.02	0.019
157.00	-2.73	-0.43	0.00	-3.29	0.00	3.29	800.73	400.36	594.40	297.64	33.74	-2.02	0.014
158.56	0.00	-0.33	0.00	-2.62	0.00	2.62	787.55	393.77	574.90	287.88	34.40	-2.03	0.009

<b>Load Case: 1.0D + 1.0W</b>	<b>Serviceability 60 mph</b>	<b>28 Iterations</b>
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :1.00		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		43.1	0.0					0.0	0.0	43.1	0.0	0.0	0.0
5.00		85.4	779.8					0.0	178.4	85.4	958.2	0.0	0.0
10.00		83.6	763.7					0.0	178.4	83.6	942.1	0.0	0.0
15.00		81.8	747.6					0.0	178.4	81.8	926.0	0.0	0.0
20.00		80.1	731.5					0.0	178.4	80.1	909.9	0.0	0.0
25.00		78.3	715.4					0.0	178.4	78.3	893.8	0.0	0.0
30.00		77.4	699.3					0.0	178.4	77.4	877.7	0.0	0.0
35.00		78.1	683.2					0.0	178.4	78.1	861.6	0.0	0.0
40.00		79.3	667.1					0.0	178.4	79.3	845.5	0.0	0.0
45.00		48.8	651.0					0.0	178.4	48.8	829.4	0.0	0.0
46.12	Bot - Section 2	40.5	143.3					0.0	39.9	40.5	183.1	0.0	0.0
50.00		43.5	890.9					0.0	138.5	43.5	1,029.4	0.0	0.0
51.46	Top - Section 1	40.8	330.1					0.0	52.0	40.8	382.1	0.0	0.0
55.00		69.7	354.7					0.0	126.4	69.7	481.1	0.0	0.0
60.00		81.5	489.8					0.0	178.4	81.5	668.2	0.0	0.0
65.00		81.2	476.9					0.0	178.4	81.2	655.3	0.0	0.0
70.00		80.7	464.0					0.0	178.4	80.7	642.4	0.0	0.0
75.00		80.0	451.2					0.0	178.4	80.0	629.6	0.0	0.0
80.00		79.1	438.3					0.0	178.4	79.1	616.7	0.0	0.0
85.00		78.2	425.4					0.0	178.4	78.2	603.8	0.0	0.0
90.00		59.1	412.5					0.0	178.4	59.1	590.9	0.0	0.0
92.65	Bot - Section 3	38.4	213.1					0.0	94.4	38.4	307.5	0.0	0.0
95.00		32.9	328.6					0.0	84.0	32.9	412.6	0.0	0.0
96.93	Top - Section 2	38.0	265.2					0.0	68.8	38.0	334.0	0.0	0.0
100.00		60.6	179.9					0.0	109.6	60.6	289.5	0.0	0.0
105.00		73.9	284.8					0.0	178.4	73.9	463.2	0.0	0.0
110.00		72.3	275.2					0.0	178.4	72.3	453.6	0.0	0.0
115.00		70.6	265.5					0.0	178.4	70.6	443.9	0.0	0.0
120.00		68.9	255.9					0.0	178.4	68.9	434.3	0.0	0.0
125.00		67.0	246.2					0.0	178.4	67.0	424.6	0.0	0.0
130.00		65.1	236.6					0.0	178.4	65.1	415.0	0.0	0.0
135.00		38.3	226.9					0.0	178.4	38.3	405.3	0.0	0.0
136.00	Appertunance(s)	31.0	44.2	506.1	0.0	0.0	981.2	0.0	35.7	537.1	1,061.1	0.0	0.0
140.00		24.9	173.0					0.0	103.4	24.9	276.4	0.0	0.0
140.02	Bot - Section 4	19.8	0.9					0.0	0.5	19.8	1.4	0.0	0.0
143.22	Top - Section 3	30.4	270.1					0.0	82.6	30.4	352.8	0.0	0.0
145.00		16.7	74.2					0.0	46.0	16.7	120.2	0.0	0.0
146.00	Appertunance(s)	29.4	41.1	1,027.5	0.0	0.0	1,372.4	0.0	25.8	1,057.0	1,439.4	0.0	0.0
150.00		75.7	160.6					0.0	83.7	75.7	244.3	0.0	0.0
155.00		72.5	192.1					21.3	104.6	93.8	296.7	0.0	0.0
157.00	Appertunance(s)	35.9	74.1	193.9	0.0	0.0	327.6	8.6	41.8	238.4	443.6	0.0	0.0
158.56		15.6	56.8					6.7	17.3	22.3	74.1	0.0	0.0
								Totals:		4,212.33	23,220.3	0.00	0.00

Site Number: 413782

Code: ANSI/TIA-222-G

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: Washington North CT, CT

Engineering Number: OAA664177\_C3\_07

9/26/2016 3:09:53 PM

Customer: T- Mobile

Load Case: 1.0D + 1.0W

Serviceability 60 mph

28 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg	Pu	Vu	Tu	Mu	Mu	Resultant	phi	phi	phi	phi	Total		
Elev	FY (-)	FX (-)	MY	MZ	MX	Moment	Pn	Vn	Tn	Mn	Deflect	Rotation	Ratio
(ft)	(kips)	(kips)	(ft-kips)	(ft-kips)	(ft-kips)	(ft-kips)	(kips)	(kips)	(ft-kips)	(ft-kips)	(in)	(deg)	
0.00	-23.93	-4.63	0.00	-543.84	0.00	543.84	2,995.17	1,497.58	5,752.58	2,880.56	0.00	0.00	0.197
5.00	-22.97	-4.57	0.00	-520.71	0.00	520.71	2,959.81	1,479.91	5,567.76	2,788.02	0.03	-0.06	0.195
10.00	-22.02	-4.50	0.00	-497.88	0.00	497.88	2,923.38	1,461.69	5,383.76	2,695.88	0.13	-0.12	0.192
15.00	-21.09	-4.44	0.00	-475.36	0.00	475.36	2,885.88	1,442.94	5,200.69	2,604.21	0.28	-0.18	0.190
20.00	-20.17	-4.38	0.00	-453.14	0.00	453.14	2,847.29	1,423.65	5,018.68	2,513.07	0.51	-0.24	0.187
25.00	-19.28	-4.32	0.00	-431.24	0.00	431.24	2,807.63	1,403.81	4,837.86	2,422.53	0.80	-0.31	0.185
30.00	-18.39	-4.26	0.00	-409.63	0.00	409.63	2,766.89	1,383.44	4,658.36	2,332.64	1.15	-0.37	0.182
35.00	-17.53	-4.20	0.00	-388.34	0.00	388.34	2,725.06	1,362.53	4,480.31	2,243.49	1.58	-0.44	0.180
40.00	-16.68	-4.13	0.00	-367.36	0.00	367.36	2,682.17	1,341.08	4,303.83	2,155.12	2.07	-0.51	0.177
45.00	-15.85	-4.08	0.00	-346.72	0.00	346.72	2,638.19	1,319.10	4,129.06	2,067.60	2.64	-0.57	0.174
46.12	-15.66	-4.05	0.00	-342.16	0.00	342.16	2,628.22	1,314.11	4,090.25	2,048.17	2.78	-0.59	0.173
50.00	-14.63	-4.01	0.00	-326.43	0.00	326.43	2,593.14	1,296.57	3,956.11	1,981.00	3.28	-0.64	0.170
51.46	-14.25	-3.97	0.00	-320.59	0.00	320.59	1,919.32	959.66	2,955.63	1,480.01	3.48	-0.66	0.224
55.00	-13.76	-3.91	0.00	-306.53	0.00	306.53	1,899.39	949.70	2,871.79	1,438.03	3.99	-0.71	0.220
60.00	-13.09	-3.84	0.00	-286.98	0.00	286.98	1,870.33	935.17	2,753.97	1,379.03	4.78	-0.80	0.215
65.00	-12.43	-3.77	0.00	-267.79	0.00	267.79	1,840.20	920.10	2,636.91	1,320.41	5.67	-0.89	0.210
70.00	-11.78	-3.69	0.00	-248.95	0.00	248.95	1,808.98	904.49	2,520.72	1,262.23	6.64	-0.97	0.204
75.00	-11.15	-3.62	0.00	-230.48	0.00	230.48	1,776.69	888.34	2,405.54	1,204.56	7.70	-1.06	0.198
80.00	-10.53	-3.55	0.00	-212.38	0.00	212.38	1,743.32	871.66	2,291.50	1,147.45	8.86	-1.15	0.191
85.00	-9.92	-3.47	0.00	-194.66	0.00	194.66	1,708.87	854.43	2,178.71	1,090.98	10.11	-1.24	0.184
90.00	-9.33	-3.41	0.00	-177.31	0.00	177.31	1,673.34	836.67	2,067.32	1,035.20	11.45	-1.32	0.177
92.65	-9.02	-3.37	0.00	-168.29	0.00	168.29	1,654.10	827.05	2,008.98	1,005.98	12.20	-1.37	0.173
95.00	-8.60	-3.33	0.00	-160.36	0.00	160.36	1,636.74	818.37	1,957.44	980.18	12.88	-1.41	0.169
96.93	-8.27	-3.29	0.00	-153.94	0.00	153.94	1,103.35	551.67	1,325.55	663.76	13.46	-1.45	0.239
100.00	-7.98	-3.24	0.00	-143.82	0.00	143.82	1,091.13	545.56	1,284.38	643.14	14.41	-1.50	0.231
105.00	-7.51	-3.16	0.00	-127.64	0.00	127.64	1,070.38	535.19	1,217.67	609.74	16.04	-1.61	0.216
110.00	-7.05	-3.09	0.00	-111.81	0.00	111.81	1,048.55	524.27	1,151.42	576.56	17.79	-1.72	0.201
115.00	-6.60	-3.02	0.00	-96.36	0.00	96.36	1,025.64	512.82	1,085.75	543.68	19.65	-1.82	0.184
120.00	-6.17	-2.95	0.00	-81.26	0.00	81.26	1,001.65	500.83	1,020.79	511.15	21.61	-1.92	0.165
125.00	-5.74	-2.87	0.00	-66.53	0.00	66.53	976.59	488.30	956.67	479.05	23.67	-2.01	0.145
130.00	-5.33	-2.80	0.00	-52.16	0.00	52.16	950.45	475.22	893.52	447.42	25.82	-2.10	0.122
135.00	-4.92	-2.75	0.00	-38.16	0.00	38.16	923.23	461.61	831.46	416.35	28.06	-2.17	0.097
136.00	-3.88	-2.18	0.00	-35.40	0.00	35.40	917.66	458.83	819.19	410.21	28.51	-2.18	0.091
140.00	-3.60	-2.14	0.00	-26.70	0.00	26.70	894.93	447.47	770.63	385.89	30.36	-2.23	0.073
140.02	-3.60	-2.12	0.00	-26.66	0.00	26.66	894.81	447.41	770.38	385.76	30.37	-2.23	0.073
143.22	-3.25	-2.08	0.00	-19.87	0.00	19.87	887.67	443.84	755.59	378.35	31.87	-2.26	0.056
145.00	-3.13	-2.06	0.00	-16.16	0.00	16.16	877.23	438.62	734.36	367.72	32.72	-2.27	0.048
146.00	-1.73	-0.95	0.00	-14.10	0.00	14.10	871.31	435.66	722.52	361.80	33.19	-2.28	0.041
150.00	-1.49	-0.86	0.00	-10.31	0.00	10.31	847.20	423.60	675.75	338.38	35.11	-2.30	0.032
155.00	-1.20	-0.76	0.00	-6.00	0.00	6.00	816.09	408.05	618.71	309.81	37.53	-2.32	0.021
157.00	-0.77	-0.50	0.00	-4.49	0.00	4.49	800.73	400.36	594.40	297.64	38.51	-2.33	0.016
158.56	0.00	-0.47	0.00	-3.70	0.00	3.70	787.55	393.77	574.90	287.88	39.27	-2.33	0.013

### Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.19
Spectral Response Acceleration at 1.0 Second Period ( $S_1$ ):	0.06
Long-Period Transition Period ( $T_L$ ):	6
Importance Factor ( $I_E$ ):	1.00
Site Coefficient $F_a$ :	1.60
Site Coefficient $F_v$ :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period ( $S_{ds}$ ):	0.20
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.10
Seismic Response Coefficient ( $C_s$ ):	0.03
Upper Limit $C_s$	0.03
Lower Limit $C_s$	0.03
Period based on Rayleigh Method (sec):	2.63
Redundancy Factor ( $\rho$ ):	1.30
Seismic Force Distribution Exponent (k):	2.00
Total Unfactored Dead Load:	23.93 k
Seismic Base Shear (E):	0.93 k

Load Case (1.2 + 0.2Sds) \* DL + E ELFM

Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	$W_z$ (lb-ft)	$C_{vx}$	Horizontal Force (lb)	Vertical Force (lb)
41	157.78	74	1,846	0.009	9	92
40	156.00	116	2,822	0.014	13	144
39	152.50	297	6,899	0.035	33	368
38	148.00	244	5,351	0.027	25	303
37	145.50	67	1,417	0.007	7	83
36	144.11	120	2,497	0.013	12	149
35	141.62	353	7,075	0.036	33	438
34	140.01	1	28	0.000	0	2
33	138.00	276	5,263	0.027	25	343
32	135.50	80	1,467	0.007	7	99
31	132.50	405	7,116	0.036	34	503
30	127.50	415	6,746	0.034	32	515
29	122.50	425	6,372	0.032	30	527
28	117.50	434	5,996	0.030	28	539
27	112.50	444	5,618	0.028	27	551
26	107.50	454	5,242	0.027	25	563
25	102.50	463	4,867	0.025	23	575
24	98.46	289	2,807	0.014	13	359
23	95.96	334	3,076	0.016	15	414
22	93.82	413	3,632	0.018	17	512
21	91.32	307	2,564	0.013	12	382
20	87.50	591	4,524	0.023	21	733
19	82.50	604	4,110	0.021	19	749



Site Number: 413782

Code: ANSI/TIA-222-G

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: Washington North CT, CT

Engineering Number: OAA664177\_C3\_07

9/26/2016 3:09:53 PM

Customer: T- Mobile

18	77.50	617	3,704	0.019	17	765
17	72.50	630	3,309	0.017	16	781
16	67.50	642	2,927	0.015	14	797
15	62.50	655	2,560	0.013	12	813
14	57.50	668	2,209	0.011	10	829
13	53.23	481	1,363	0.007	6	597
12	50.73	382	983	0.005	5	474
11	48.06	1,029	2,378	0.012	11	1,277
10	45.56	183	380	0.002	2	227
9	42.50	829	1,498	0.008	7	1,029
8	37.50	846	1,189	0.006	6	1,049
7	32.50	862	910	0.005	4	1,069
6	27.50	878	664	0.003	3	1,089
5	22.50	894	452	0.002	2	1,109
4	17.50	910	279	0.001	1	1,129
3	12.50	926	145	0.001	1	1,149
2	7.50	942	53	0.000	0	1,169
1	2.50	958	6	0.000	0	1,189
RCU (Remote Control	167.00	12	335	0.002	2	15
Powerwave Allgon TT0	167.00	132	3,681	0.019	17	164
Ericsson RRUS 11 B2	167.00	304	8,484	0.043	40	377
KMW AM-X-CD-17-65-00	167.00	31	859	0.004	4	38
Powerwave Allgon P90	167.00	90	2,510	0.013	12	112
Kathrein Scala 800-1	167.00	110	3,073	0.016	15	137
Raycap DC6-48-60-18-	162.00	32	835	0.004	4	39
Stand-Off	157.00	225	5,546	0.028	26	279
Andrew DBXNH-6565A-V	157.00	103	2,529	0.013	12	127
Stand-Off	146.00	225	4,796	0.024	23	279
Antel BXA-70063/6CF	146.00	51	1,087	0.006	5	63
VZW Unused Reserve:	146.00	1,096	23,371	0.118	110	1,360
E-911 GPS	136.00	5	92	0.000	0	6
RFS ATMAA1412D-1A20	136.00	39	721	0.004	3	48
RFS APXV18-206516S-C	136.00	56	1,038	0.005	5	70
Commscope LNX-6515DS	136.00	131	2,425	0.012	11	163
Flat T-Arm	136.00	750	13,872	0.070	66	931
		23,931	197,597	1.000	933	29,693

Load Case (0.9 - 0.2Sds) \* DL + E ELMF

Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
41	157.78	74	1,846	0.009	9	64
40	156.00	116	2,822	0.014	13	100
39	152.50	297	6,899	0.035	33	255
38	148.00	244	5,351	0.027	25	210
37	145.50	67	1,417	0.007	7	58
36	144.11	120	2,497	0.013	12	103
35	141.62	353	7,075	0.036	33	303
34	140.01	1	28	0.000	0	1
33	138.00	276	5,263	0.027	25	237
32	135.50	80	1,467	0.007	7	69
31	132.50	405	7,116	0.036	34	348
30	127.50	415	6,746	0.034	32	357
29	122.50	425	6,372	0.032	30	365
28	117.50	434	5,996	0.030	28	373
27	112.50	444	5,618	0.028	27	381
26	107.50	454	5,242	0.027	25	390
25	102.50	463	4,867	0.025	23	398
24	98.46	289	2,807	0.014	13	249
23	95.96	334	3,076	0.016	15	287

Site Number: 413782

Code: ANSI/TIA-222-G

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: Washington North CT, CT

Engineering Number: OAA664177\_C3\_07

9/26/2016 3:09:53 PM

Customer: T- Mobile

22	93.82	413	3,632	0.018	17	354
21	91.32	307	2,564	0.013	12	264
20	87.50	591	4,524	0.023	21	508
19	82.50	604	4,110	0.021	19	519
18	77.50	617	3,704	0.019	17	530
17	72.50	630	3,309	0.017	16	541
16	67.50	642	2,927	0.015	14	552
15	62.50	655	2,560	0.013	12	563
14	57.50	668	2,209	0.011	10	574
13	53.23	481	1,363	0.007	6	413
12	50.73	382	983	0.005	5	328
11	48.06	1,029	2,378	0.012	11	885
10	45.56	183	380	0.002	2	157
9	42.50	829	1,498	0.008	7	713
8	37.50	846	1,189	0.006	6	727
7	32.50	862	910	0.005	4	740
6	27.50	878	664	0.003	3	754
5	22.50	894	452	0.002	2	768
4	17.50	910	279	0.001	1	782
3	12.50	926	145	0.001	1	796
2	7.50	942	53	0.000	0	810
1	2.50	958	6	0.000	0	823
RCU (Remote Control	167.00	12	335	0.002	2	10
Powerwave Allgon TT0	167.00	132	3,681	0.019	17	113
Ericsson RRUS 11 B2	167.00	304	8,484	0.043	40	261
KMW AM-X-CD-17-65-00	167.00	31	859	0.004	4	26
Powerwave Allgon P90	167.00	90	2,510	0.013	12	77
Kathrein Scala 800-1	167.00	110	3,073	0.016	15	95
Raycap DC6-48-60-18-	162.00	32	835	0.004	4	27
Stand-Off	157.00	225	5,546	0.028	26	193
Andrew DBXNH-6565A-V	157.00	103	2,529	0.013	12	88
Stand-Off	146.00	225	4,796	0.024	23	193
Antel BXA-70063/6CF	146.00	51	1,087	0.006	5	44
VZW Unused Reserve:	146.00	1,096	23,371	0.118	110	942
E-911 GPS	136.00	5	92	0.000	0	4
RFS ATMAA1412D-1A20	136.00	39	721	0.004	3	34
RFS APXV18-206516S-C	136.00	56	1,038	0.005	5	48
Commscope LNX-6515DS	136.00	131	2,425	0.012	11	113
Flat T-Arm	136.00	750	13,872	0.070	66	644
		23,931	197,597	1.000	933	20,563

Load Case (1.2 + 0.2Sds) \* DL + E ELFM

Seismic Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-27.62	-0.84	0.00	-104.55	0.00	104.55	2,995.17	1,497.58	5,752.58	2,880.56	0.00	0.00	0.046
5.00	-26.45	-0.85	0.00	-100.34	0.00	100.34	2,959.81	1,479.91	5,567.76	2,788.02	0.01	-0.01	0.045
10.00	-25.30	-0.85	0.00	-96.11	0.00	96.11	2,923.38	1,461.69	5,383.76	2,695.88	0.02	-0.02	0.044
15.00	-24.17	-0.85	0.00	-91.86	0.00	91.86	2,885.88	1,442.94	5,200.69	2,604.21	0.05	-0.03	0.044
20.00	-23.07	-0.86	0.00	-87.59	0.00	87.59	2,847.29	1,423.65	5,018.68	2,513.07	0.10	-0.05	0.043
25.00	-21.98	-0.86	0.00	-83.31	0.00	83.31	2,807.63	1,403.81	4,837.86	2,422.53	0.15	-0.06	0.042
30.00	-20.91	-0.86	0.00	-79.03	0.00	79.03	2,766.89	1,383.44	4,658.36	2,332.64	0.22	-0.07	0.041
35.00	-19.86	-0.85	0.00	-74.75	0.00	74.75	2,725.06	1,362.53	4,480.31	2,243.49	0.30	-0.08	0.041
40.00	-18.83	-0.85	0.00	-70.49	0.00	70.49	2,682.17	1,341.08	4,303.83	2,155.12	0.40	-0.10	0.040
45.00	-18.60	-0.85	0.00	-66.25	0.00	66.25	2,638.19	1,319.10	4,129.06	2,067.60	0.51	-0.11	0.039
46.12	-17.32	-0.84	0.00	-65.30	0.00	65.30	2,628.22	1,314.11	4,090.25	2,048.17	0.54	-0.11	0.038
50.00	-16.85	-0.83	0.00	-62.05	0.00	62.05	2,593.14	1,296.57	3,956.11	1,981.00	0.63	-0.12	0.038
51.46	-16.25	-0.83	0.00	-60.84	0.00	60.84	1,919.32	959.66	2,955.63	1,480.01	0.67	-0.13	0.050
55.00	-15.42	-0.82	0.00	-57.91	0.00	57.91	1,899.39	949.70	2,871.79	1,438.03	0.77	-0.14	0.048
60.00	-14.61	-0.81	0.00	-53.82	0.00	53.82	1,870.33	935.17	2,753.97	1,379.03	0.92	-0.15	0.047
65.00	-13.81	-0.80	0.00	-49.77	0.00	49.77	1,840.20	920.10	2,636.91	1,320.41	1.09	-0.17	0.045
70.00	-13.03	-0.78	0.00	-45.79	0.00	45.79	1,808.98	904.49	2,520.72	1,262.23	1.28	-0.19	0.043
75.00	-12.27	-0.77	0.00	-41.88	0.00	41.88	1,776.69	888.34	2,405.54	1,204.56	1.48	-0.20	0.042
80.00	-11.52	-0.75	0.00	-38.05	0.00	38.05	1,743.32	871.66	2,291.50	1,147.45	1.70	-0.22	0.040
85.00	-10.78	-0.73	0.00	-34.32	0.00	34.32	1,708.87	854.43	2,178.71	1,090.98	1.93	-0.23	0.038
90.00	-10.40	-0.71	0.00	-30.70	0.00	30.70	1,673.34	836.67	2,067.32	1,035.20	2.19	-0.25	0.036
92.65	-9.89	-0.70	0.00	-28.81	0.00	28.81	1,654.10	827.05	2,008.98	1,005.98	2.33	-0.26	0.035
95.00	-9.48	-0.68	0.00	-27.17	0.00	27.17	1,636.74	818.37	1,957.44	980.18	2.45	-0.26	0.034
96.93	-9.12	-0.67	0.00	-25.86	0.00	25.86	1,103.35	551.67	1,325.55	663.76	2.56	-0.27	0.047
100.00	-8.54	-0.64	0.00	-23.81	0.00	23.81	1,091.13	545.56	1,284.38	643.14	2.74	-0.28	0.045
105.00	-7.98	-0.62	0.00	-20.60	0.00	20.60	1,070.38	535.19	1,217.67	609.74	3.04	-0.30	0.041
110.00	-7.43	-0.59	0.00	-17.51	0.00	17.51	1,048.55	524.27	1,151.42	576.56	3.36	-0.31	0.037
115.00	-6.89	-0.56	0.00	-14.56	0.00	14.56	1,025.64	512.82	1,085.75	543.68	3.70	-0.33	0.033
120.00	-6.36	-0.53	0.00	-11.76	0.00	11.76	1,001.65	500.83	1,020.79	511.15	4.05	-0.34	0.029
125.00	-5.85	-0.50	0.00	-9.11	0.00	9.11	976.59	488.30	956.67	479.05	4.42	-0.36	0.025
130.00	-5.34	-0.46	0.00	-6.63	0.00	6.63	950.45	475.22	893.52	447.42	4.80	-0.37	0.020
135.00	-5.25	-0.45	0.00	-4.33	0.00	4.33	923.23	461.61	831.46	416.35	5.19	-0.38	0.016
136.00	-3.69	-0.33	0.00	-3.88	0.00	3.88	917.66	458.83	819.19	410.21	5.27	-0.38	0.013
140.00	-3.68	-0.33	0.00	-2.55	0.00	2.55	894.93	447.47	770.63	385.89	5.59	-0.38	0.011
140.02	-3.25	-0.30	0.00	-2.55	0.00	2.55	894.81	447.41	770.38	385.76	5.59	-0.38	0.010
143.22	-3.10	-0.28	0.00	-1.60	0.00	1.60	887.67	443.84	755.59	378.35	5.85	-0.39	0.008
145.00	-3.01	-0.28	0.00	-1.09	0.00	1.09	877.23	438.62	734.36	367.72	5.99	-0.39	0.006
146.00	-1.01	-0.10	0.00	-0.82	0.00	0.82	871.31	435.66	722.52	361.80	6.07	-0.39	0.003
150.00	-0.64	-0.06	0.00	-0.42	0.00	0.42	847.20	423.60	675.75	338.38	6.40	-0.39	0.002
155.00	-0.50	-0.05	0.00	-0.10	0.00	0.10	816.09	408.05	618.71	309.81	6.80	-0.39	0.001
157.00	0.00	0.00	0.00	0.00	0.00	0.00	800.73	400.36	594.40	297.64	6.97	-0.39	0.000
158.56	0.00	0.00	0.00	0.00	0.00	0.00	787.55	393.77	574.90	287.88	7.09	-0.39	0.000

Load Case (0.9 - 0.2Sds) \* DL + E ELM

Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-19.13	-0.84	0.00	-102.98	0.00	102.98	2,995.17	1,497.58	5,752.58	2,880.56	0.00	0.00	0.042
5.00	-18.32	-0.84	0.00	-98.78	0.00	98.78	2,959.81	1,479.91	5,567.76	2,788.02	0.01	-0.01	0.042
10.00	-17.52	-0.85	0.00	-94.56	0.00	94.56	2,923.38	1,461.69	5,383.76	2,695.88	0.02	-0.02	0.041
15.00	-16.74	-0.85	0.00	-90.32	0.00	90.32	2,885.88	1,442.94	5,200.69	2,604.21	0.05	-0.03	0.040
20.00	-15.97	-0.85	0.00	-86.08	0.00	86.08	2,847.29	1,423.65	5,018.68	2,513.07	0.10	-0.05	0.040
25.00	-15.22	-0.85	0.00	-81.84	0.00	81.84	2,807.63	1,403.81	4,837.86	2,422.53	0.15	-0.06	0.039
30.00	-14.48	-0.85	0.00	-77.60	0.00	77.60	2,766.89	1,383.44	4,658.36	2,332.64	0.22	-0.07	0.038
35.00	-13.75	-0.84	0.00	-73.37	0.00	73.37	2,725.06	1,362.53	4,480.31	2,243.49	0.30	-0.08	0.038
40.00	-13.04	-0.84	0.00	-69.15	0.00	69.15	2,682.17	1,341.08	4,303.83	2,155.12	0.39	-0.10	0.037
45.00	-12.88	-0.84	0.00	-64.97	0.00	64.97	2,638.19	1,319.10	4,129.06	2,067.60	0.50	-0.11	0.036
46.12	-12.00	-0.83	0.00	-64.03	0.00	64.03	2,628.22	1,314.11	4,090.25	2,048.17	0.53	-0.11	0.036
50.00	-11.67	-0.82	0.00	-60.83	0.00	60.83	2,593.14	1,296.57	3,956.11	1,981.00	0.62	-0.12	0.035
51.46	-11.25	-0.82	0.00	-59.63	0.00	59.63	1,919.32	959.66	2,955.63	1,480.01	0.66	-0.13	0.046
55.00	-10.68	-0.81	0.00	-56.74	0.00	56.74	1,899.39	949.70	2,871.79	1,438.03	0.76	-0.13	0.045
60.00	-10.12	-0.80	0.00	-52.71	0.00	52.71	1,870.33	935.17	2,753.97	1,379.03	0.91	-0.15	0.044
65.00	-9.56	-0.78	0.00	-48.73	0.00	48.73	1,840.20	920.10	2,636.91	1,320.41	1.07	-0.17	0.042
70.00	-9.02	-0.77	0.00	-44.82	0.00	44.82	1,808.98	904.49	2,520.72	1,262.23	1.25	-0.18	0.040
75.00	-8.49	-0.75	0.00	-40.98	0.00	40.98	1,776.69	888.34	2,405.54	1,204.56	1.45	-0.20	0.039
80.00	-7.97	-0.73	0.00	-37.22	0.00	37.22	1,743.32	871.66	2,291.50	1,147.45	1.67	-0.21	0.037
85.00	-7.47	-0.71	0.00	-33.56	0.00	33.56	1,708.87	854.43	2,178.71	1,090.98	1.90	-0.23	0.035
90.00	-7.20	-0.70	0.00	-30.01	0.00	30.01	1,673.34	836.67	2,067.32	1,035.20	2.15	-0.24	0.033
92.65	-6.85	-0.68	0.00	-28.16	0.00	28.16	1,654.10	827.05	2,008.98	1,005.98	2.28	-0.25	0.032
95.00	-6.56	-0.67	0.00	-26.56	0.00	26.56	1,636.74	818.37	1,957.44	980.18	2.41	-0.26	0.031
96.93	-6.31	-0.65	0.00	-25.27	0.00	25.27	1,103.35	551.67	1,325.55	663.76	2.52	-0.26	0.044
100.00	-5.91	-0.63	0.00	-23.27	0.00	23.27	1,091.13	545.56	1,284.38	643.14	2.69	-0.27	0.042
105.00	-5.52	-0.60	0.00	-20.12	0.00	20.12	1,070.38	535.19	1,217.67	609.74	2.98	-0.29	0.038
110.00	-5.14	-0.58	0.00	-17.10	0.00	17.10	1,048.55	524.27	1,151.42	576.56	3.30	-0.31	0.035
115.00	-4.77	-0.55	0.00	-14.22	0.00	14.22	1,025.64	512.82	1,085.75	543.68	3.63	-0.32	0.031
120.00	-4.41	-0.52	0.00	-11.48	0.00	11.48	1,001.65	500.83	1,020.79	511.15	3.97	-0.34	0.027
125.00	-4.05	-0.48	0.00	-8.89	0.00	8.89	976.59	488.30	956.67	479.05	4.33	-0.35	0.023
130.00	-3.70	-0.45	0.00	-6.48	0.00	6.48	950.45	475.22	893.52	447.42	4.71	-0.36	0.018
135.00	-3.63	-0.44	0.00	-4.23	0.00	4.23	923.23	461.61	831.46	416.35	5.09	-0.37	0.014
136.00	-2.55	-0.32	0.00	-3.79	0.00	3.79	917.66	458.83	819.19	410.21	5.17	-0.37	0.012
140.00	-2.55	-0.32	0.00	-2.49	0.00	2.49	894.93	447.47	770.63	385.89	5.48	-0.38	0.009
140.02	-2.25	-0.29	0.00	-2.49	0.00	2.49	894.81	447.41	770.38	385.76	5.48	-0.38	0.009
143.22	-2.14	-0.28	0.00	-1.56	0.00	1.56	887.67	443.84	755.59	378.35	5.73	-0.38	0.007
145.00	-2.09	-0.27	0.00	-1.07	0.00	1.07	877.23	438.62	734.36	367.72	5.87	-0.38	0.005
146.00	-0.70	-0.10	0.00	-0.80	0.00	0.80	871.31	435.66	722.52	361.80	5.95	-0.38	0.003
150.00	-0.44	-0.06	0.00	-0.41	0.00	0.41	847.20	423.60	675.75	338.38	6.27	-0.38	0.002
155.00	-0.34	-0.05	0.00	-0.10	0.00	0.10	816.09	408.05	618.71	309.81	6.67	-0.38	0.001
157.00	0.00	0.00	0.00	0.00	0.00	0.00	800.73	400.36	594.40	297.64	6.83	-0.38	0.000
158.56	0.00	0.00	0.00	0.00	0.00	0.00	787.55	393.77	574.90	287.88	6.95	-0.38	0.000

### Equivalent Modal Forces Analysis

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.19
Spectral Response Acceleration at 1.0 Second Period ( $S_1$ ):	0.06
Importance Factor ( $I_E$ ):	1.00
Site Coefficient $F_a$ :	1.60
Site Coefficient $F_v$ :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period ( $S_{ds}$ ):	0.20
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.10
Period Based on Rayleigh Method (sec):	2.63
Redundancy Factor ( $\rho$ ):	1.30

Load Case (1.2 + 0.2Sds) \* DL + E EMAM

Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
41	157.78	74	1.871	1.883	1.105	0.372	24	92
40	156.00	116	1.829	1.676	1.029	0.344	35	144
39	152.50	297	1.748	1.314	0.891	0.292	75	368
38	148.00	244	1.647	0.930	0.735	0.230	49	303
37	145.50	67	1.591	0.752	0.658	0.198	12	83
36	144.11	120	1.561	0.663	0.619	0.182	19	149
35	141.62	353	1.508	0.520	0.552	0.153	47	438
34	140.01	1	1.474	0.438	0.512	0.136	0	2
33	138.00	276	1.432	0.346	0.465	0.115	28	343
32	135.50	80	1.380	0.247	0.412	0.091	6	99
31	132.50	405	1.320	0.149	0.354	0.065	23	503
30	127.50	415	1.222	0.026	0.272	0.027	10	515
29	122.50	425	1.128	-0.053	0.205	-0.004	-2	527
28	117.50	434	1.038	-0.098	0.151	-0.028	-10	539
27	112.50	444	0.951	-0.119	0.109	-0.044	-17	551
26	107.50	454	0.869	-0.121	0.076	-0.053	-21	563
25	102.50	463	0.790	-0.110	0.051	-0.055	-22	575
24	98.46	289	0.729	-0.095	0.036	-0.051	-13	359
23	95.96	334	0.692	-0.084	0.028	-0.046	-13	414
22	93.82	413	0.662	-0.075	0.023	-0.041	-15	512
21	91.32	307	0.627	-0.063	0.018	-0.034	-9	382
20	87.50	591	0.576	-0.044	0.012	-0.020	-10	733
19	82.50	604	0.512	-0.020	0.008	-0.001	-1	749
18	77.50	617	0.452	0.001	0.006	0.018	9	765
17	72.50	630	0.395	0.020	0.007	0.033	18	781
16	67.50	642	0.343	0.035	0.009	0.045	25	797
15	62.50	655	0.294	0.047	0.013	0.052	30	813
14	57.50	668	0.249	0.056	0.017	0.056	33	829
13	53.23	481	0.213	0.061	0.022	0.058	24	597
12	50.73	382	0.193	0.064	0.024	0.058	19	474
11	48.06	1,029	0.174	0.066	0.027	0.058	52	1,277
10	45.56	183	0.156	0.067	0.029	0.058	9	227
9	42.50	829	0.136	0.069	0.032	0.057	41	1,029
8	37.50	846	0.106	0.071	0.036	0.056	41	1,049

Site Number: 413782

Code: ANSI/TIA-222-G

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: Washington North CT, CT

Engineering Number: OAA664177\_C3\_07

9/26/2016 3:09:53 PM

Customer: T- Mobile

7	32.50	862	0.079	0.072	0.040	0.055	41	1,069
6	27.50	878	0.057	0.071	0.042	0.053	41	1,089
5	22.50	894	0.038	0.070	0.041	0.052	40	1,109
4	17.50	910	0.023	0.066	0.039	0.049	39	1,129
3	12.50	926	0.012	0.057	0.033	0.044	35	1,149
2	7.50	942	0.004	0.042	0.024	0.035	28	1,169
1	2.50	958	0.000	0.017	0.009	0.016	14	1,189
RCU (Remote Control	167.00	12	2.096	3.257	1.576	0.535	6	15
Powerwave Allgon TT0	167.00	132	2.096	3.257	1.576	0.535	61	164
Ericsson RRUS 11 B2	167.00	304	2.096	3.257	1.576	0.535	141	377
KMW AM-X-CD-17-65-00	167.00	31	2.096	3.257	1.576	0.535	14	38
Powerwave Allgon P90	167.00	90	2.096	3.257	1.576	0.535	42	112
Kathrein Scala 800-1	167.00	110	2.096	3.257	1.576	0.535	51	137
Raycap DC6-48-60-18-	162.00	32	1.973	2.446	1.304	0.443	12	39
Stand-Off	157.00	225	1.853	1.790	1.071	0.360	70	279
Andrew DBXNH-6565A-	157.00	103	1.853	1.790	1.071	0.360	32	127
Stand-Off	146.00	225	1.602	0.786	0.673	0.204	40	279
Antel BXA-70063/6CF	146.00	51	1.602	0.786	0.673	0.204	9	63
VZW Unused Reserve:	146.00	1,096	1.602	0.786	0.673	0.204	194	1,360
E-911 GPS	136.00	5	1.390	0.266	0.422	0.096	0	6
RFS ATMAA1412D-1A20	136.00	39	1.390	0.266	0.422	0.096	3	48
RFS APXV18-206516S-C	136.00	56	1.390	0.266	0.422	0.096	5	70
Commscope LNX-	136.00	131	1.390	0.266	0.422	0.096	11	163
Flat T-Arm	136.00	750	1.390	0.266	0.422	0.096	62	931
		23,931	60.095	38.267	25.797	8.145	1,486	29,693

Load Case (0.9 - 0.2Sds) \* DL + E EMAM

Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
41	157.78	74	1.871	1.883	1.105	0.372	24	64
40	156.00	116	1.829	1.676	1.029	0.344	35	100
39	152.50	297	1.748	1.314	0.891	0.292	75	255
38	148.00	244	1.647	0.930	0.735	0.230	49	210
37	145.50	67	1.591	0.752	0.658	0.198	12	58
36	144.11	120	1.561	0.663	0.619	0.182	19	103
35	141.62	353	1.508	0.520	0.552	0.153	47	303
34	140.01	1	1.474	0.438	0.512	0.136	0	1
33	138.00	276	1.432	0.346	0.465	0.115	28	237
32	135.50	80	1.380	0.247	0.412	0.091	6	69
31	132.50	405	1.320	0.149	0.354	0.065	23	348
30	127.50	415	1.222	0.026	0.272	0.027	10	357
29	122.50	425	1.128	-0.053	0.205	-0.004	-2	365
28	117.50	434	1.038	-0.098	0.151	-0.028	-10	373
27	112.50	444	0.951	-0.119	0.109	-0.044	-17	381
26	107.50	454	0.869	-0.121	0.076	-0.053	-21	390
25	102.50	463	0.790	-0.110	0.051	-0.055	-22	398
24	98.46	289	0.729	-0.095	0.036	-0.051	-13	249
23	95.96	334	0.692	-0.084	0.028	-0.046	-13	287
22	93.82	413	0.662	-0.075	0.023	-0.041	-15	354
21	91.32	307	0.627	-0.063	0.018	-0.034	-9	264
20	87.50	591	0.576	-0.044	0.012	-0.020	-10	508
19	82.50	604	0.512	-0.020	0.008	-0.001	-1	519
18	77.50	617	0.452	0.001	0.006	0.018	9	530
17	72.50	630	0.395	0.020	0.007	0.033	18	541
16	67.50	642	0.343	0.035	0.009	0.045	25	552
15	62.50	655	0.294	0.047	0.013	0.052	30	563
14	57.50	668	0.249	0.056	0.017	0.056	33	574
13	53.23	481	0.213	0.061	0.022	0.058	24	413

Site Number: 413782

Code: ANSI/TIA-222-G

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: Washington North CT, CT

Engineering Number: OAA664177\_C3\_07

9/26/2016 3:09:53 PM

Customer: T- Mobile

12	50.73	382	0.193	0.064	0.024	0.058	19	328
11	48.06	1,029	0.174	0.066	0.027	0.058	52	885
10	45.56	183	0.156	0.067	0.029	0.058	9	157
9	42.50	829	0.136	0.069	0.032	0.057	41	713
8	37.50	846	0.106	0.071	0.036	0.056	41	727
7	32.50	862	0.079	0.072	0.040	0.055	41	740
6	27.50	878	0.057	0.071	0.042	0.053	41	754
5	22.50	894	0.038	0.070	0.041	0.052	40	768
4	17.50	910	0.023	0.066	0.039	0.049	39	782
3	12.50	926	0.012	0.057	0.033	0.044	35	796
2	7.50	942	0.004	0.042	0.024	0.035	28	810
1	2.50	958	0.000	0.017	0.009	0.016	14	823
RCU (Remote Control	167.00	12	2.096	3.257	1.576	0.535	6	10
Powerwave Allgon TT0	167.00	132	2.096	3.257	1.576	0.535	61	113
Ericsson RRUS 11 B2	167.00	304	2.096	3.257	1.576	0.535	141	261
KMW AM-X-CD-17-65-00	167.00	31	2.096	3.257	1.576	0.535	14	26
Powerwave Allgon P90	167.00	90	2.096	3.257	1.576	0.535	42	77
Kathrein Scala 800-1	167.00	110	2.096	3.257	1.576	0.535	51	95
Raycap DC6-48-60-18-	162.00	32	1.973	2.446	1.304	0.443	12	27
Stand-Off	157.00	225	1.853	1.790	1.071	0.360	70	193
Andrew DBXNH-6565A-	157.00	103	1.853	1.790	1.071	0.360	32	88
Stand-Off	146.00	225	1.602	0.786	0.673	0.204	40	193
Antel BXA-70063/6CF	146.00	51	1.602	0.786	0.673	0.204	9	44
VZW Unused Reserve:	146.00	1,096	1.602	0.786	0.673	0.204	194	942
E-911 GPS	136.00	5	1.390	0.266	0.422	0.096	0	4
RFS ATMAA1412D-1A20	136.00	39	1.390	0.266	0.422	0.096	3	34
RFS APXV18-206516S-C	136.00	56	1.390	0.266	0.422	0.096	5	48
Commscope LNX-	136.00	131	1.390	0.266	0.422	0.096	11	113
Flat T-Arm	136.00	750	1.390	0.266	0.422	0.096	62	644
		23,931	60.095	38.267	25.797	8.145	1,486	20,563

Load Case (1.2 + 0.2Sds) \* DL + E EMAM

Seismic Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-27.62	-1.15	0.00	-121.84	0.00	121.84	2,995.17	1,497.58	5,752.58	2,880.56	0.00	0.00	0.052
5.00	-26.45	-1.12	0.00	-116.10	0.00	116.10	2,959.81	1,479.91	5,567.76	2,788.02	0.01	-0.01	0.051
10.00	-25.30	-1.10	0.00	-110.47	0.00	110.47	2,923.38	1,461.69	5,383.76	2,695.88	0.03	-0.03	0.050
15.00	-24.17	-1.06	0.00	-105.00	0.00	105.00	2,885.88	1,442.94	5,200.69	2,604.21	0.06	-0.04	0.049
20.00	-23.06	-1.03	0.00	-99.69	0.00	99.69	2,847.29	1,423.65	5,018.68	2,513.07	0.11	-0.05	0.048
25.00	-21.98	-0.99	0.00	-94.56	0.00	94.56	2,807.63	1,403.81	4,837.86	2,422.53	0.18	-0.07	0.047
30.00	-20.91	-0.95	0.00	-89.61	0.00	89.61	2,766.89	1,383.44	4,658.36	2,332.64	0.26	-0.08	0.046
35.00	-19.86	-0.92	0.00	-84.84	0.00	84.84	2,725.06	1,362.53	4,480.31	2,243.49	0.35	-0.10	0.045
40.00	-18.83	-0.88	0.00	-80.26	0.00	80.26	2,682.17	1,341.08	4,303.83	2,155.12	0.46	-0.11	0.044
45.00	-18.60	-0.87	0.00	-75.88	0.00	75.88	2,638.19	1,319.10	4,129.06	2,067.60	0.58	-0.13	0.044
46.12	-17.32	-0.82	0.00	-74.90	0.00	74.90	2,628.22	1,314.11	4,090.25	2,048.17	0.61	-0.13	0.043
50.00	-16.85	-0.80	0.00	-71.72	0.00	71.72	2,593.14	1,296.57	3,956.11	1,981.00	0.72	-0.14	0.043
51.46	-16.25	-0.78	0.00	-70.56	0.00	70.56	1,919.32	959.66	2,955.63	1,480.01	0.77	-0.15	0.056
55.00	-15.42	-0.75	0.00	-67.80	0.00	67.80	1,899.39	949.70	2,871.79	1,438.03	0.88	-0.16	0.055
60.00	-14.61	-0.72	0.00	-64.07	0.00	64.07	1,870.33	935.17	2,753.97	1,379.03	1.06	-0.18	0.054
65.00	-13.81	-0.70	0.00	-60.47	0.00	60.47	1,840.20	920.10	2,636.91	1,320.41	1.25	-0.20	0.053
70.00	-13.03	-0.68	0.00	-56.99	0.00	56.99	1,808.98	904.49	2,520.72	1,262.23	1.47	-0.22	0.052
75.00	-12.27	-0.67	0.00	-53.59	0.00	53.59	1,776.69	888.34	2,405.54	1,204.56	1.70	-0.24	0.051
80.00	-11.52	-0.67	0.00	-50.23	0.00	50.23	1,743.32	871.66	2,291.50	1,147.45	1.96	-0.26	0.050
85.00	-10.78	-0.68	0.00	-46.87	0.00	46.87	1,708.87	854.43	2,178.71	1,090.98	2.24	-0.28	0.049
90.00	-10.40	-0.69	0.00	-43.44	0.00	43.44	1,673.34	836.67	2,067.32	1,035.20	2.54	-0.30	0.048
92.65	-9.89	-0.71	0.00	-41.61	0.00	41.61	1,654.10	827.05	2,008.98	1,005.98	2.71	-0.31	0.047
95.00	-9.47	-0.72	0.00	-39.94	0.00	39.94	1,636.74	818.37	1,957.44	980.18	2.86	-0.32	0.047
96.93	-9.12	-0.73	0.00	-38.55	0.00	38.55	1,103.35	551.67	1,325.55	663.76	2.99	-0.33	0.066
100.00	-8.54	-0.76	0.00	-36.30	0.00	36.30	1,091.13	545.56	1,284.38	643.14	3.21	-0.34	0.064
105.00	-7.98	-0.78	0.00	-32.52	0.00	32.52	1,070.38	535.19	1,217.67	609.74	3.58	-0.37	0.061
110.00	-7.43	-0.79	0.00	-28.64	0.00	28.64	1,048.55	524.27	1,151.42	576.56	3.99	-0.40	0.057
115.00	-6.89	-0.80	0.00	-24.67	0.00	24.67	1,025.64	512.82	1,085.75	543.68	4.42	-0.42	0.052
120.00	-6.36	-0.80	0.00	-20.65	0.00	20.65	1,001.65	500.83	1,020.79	511.15	4.88	-0.45	0.047
125.00	-5.84	-0.79	0.00	-16.64	0.00	16.64	976.59	488.30	956.67	479.05	5.36	-0.47	0.041
130.00	-5.34	-0.77	0.00	-12.68	0.00	12.68	950.45	475.22	893.52	447.42	5.87	-0.49	0.034
135.00	-5.24	-0.76	0.00	-8.84	0.00	8.84	923.23	461.61	831.46	416.35	6.39	-0.51	0.027
136.00	-3.68	-0.64	0.00	-8.08	0.00	8.08	917.66	458.83	819.19	410.21	6.50	-0.51	0.024
140.00	-3.68	-0.64	0.00	-5.53	0.00	5.53	894.93	447.47	770.63	385.89	6.94	-0.52	0.018
140.02	-3.24	-0.59	0.00	-5.52	0.00	5.52	894.81	447.41	770.38	385.76	6.94	-0.52	0.018
143.22	-3.09	-0.57	0.00	-3.64	0.00	3.64	887.67	443.84	755.59	378.35	7.29	-0.53	0.013
145.00	-3.01	-0.56	0.00	-2.63	0.00	2.63	877.23	438.62	734.36	367.72	7.49	-0.53	0.011
146.00	-1.01	-0.24	0.00	-2.07	0.00	2.07	871.31	435.66	722.52	361.80	7.60	-0.53	0.007
150.00	-0.64	-0.17	0.00	-1.09	0.00	1.09	847.20	423.60	675.75	338.38	8.05	-0.54	0.004
155.00	-0.50	-0.13	0.00	-0.26	0.00	0.26	816.09	408.05	618.71	309.81	8.61	-0.54	0.001
157.00	0.00	0.00	0.00	0.00	0.00	0.00	800.73	400.36	594.40	297.64	8.84	-0.54	0.000
158.56	0.00	0.00	0.00	0.00	0.00	0.00	787.55	393.77	574.90	287.88	9.01	-0.54	0.000



Load Case (0.9 - 0.2Sds) \* DL + E EMAM

Seismic (Reduced DL) Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-19.13	-1.15	0.00	-119.92	0.00	119.92	2,995.17	1,497.58	5,752.58	2,880.56	0.00	0.00	0.048
5.00	-18.32	-1.12	0.00	-114.19	0.00	114.19	2,959.81	1,479.91	5,567.76	2,788.02	0.01	-0.01	0.047
10.00	-17.52	-1.09	0.00	-108.58	0.00	108.58	2,923.38	1,461.69	5,383.76	2,695.88	0.03	-0.03	0.046
15.00	-16.74	-1.06	0.00	-103.12	0.00	103.12	2,885.88	1,442.94	5,200.69	2,604.21	0.06	-0.04	0.045
20.00	-15.97	-1.02	0.00	-97.85	0.00	97.85	2,847.29	1,423.65	5,018.68	2,513.07	0.11	-0.05	0.045
25.00	-15.22	-0.98	0.00	-92.75	0.00	92.75	2,807.63	1,403.81	4,837.86	2,422.53	0.17	-0.07	0.044
30.00	-14.48	-0.94	0.00	-87.85	0.00	87.85	2,766.89	1,383.44	4,658.36	2,332.64	0.25	-0.08	0.043
35.00	-13.75	-0.90	0.00	-83.13	0.00	83.13	2,725.06	1,362.53	4,480.31	2,243.49	0.34	-0.09	0.042
40.00	-13.04	-0.87	0.00	-78.61	0.00	78.61	2,682.17	1,341.08	4,303.83	2,155.12	0.45	-0.11	0.041
45.00	-12.88	-0.86	0.00	-74.29	0.00	74.29	2,638.19	1,319.10	4,129.06	2,067.60	0.57	-0.12	0.041
46.12	-12.00	-0.81	0.00	-73.33	0.00	73.33	2,628.22	1,314.11	4,090.25	2,048.17	0.60	-0.13	0.040
50.00	-11.67	-0.79	0.00	-70.20	0.00	70.20	2,593.14	1,296.57	3,956.11	1,981.00	0.71	-0.14	0.040
51.46	-11.25	-0.76	0.00	-69.05	0.00	69.05	1,919.32	959.66	2,955.63	1,480.01	0.75	-0.14	0.053
55.00	-10.68	-0.73	0.00	-66.35	0.00	66.35	1,899.39	949.70	2,871.79	1,438.03	0.86	-0.15	0.052
60.00	-10.12	-0.70	0.00	-62.69	0.00	62.69	1,870.33	935.17	2,753.97	1,379.03	1.04	-0.17	0.051
65.00	-9.56	-0.68	0.00	-59.17	0.00	59.17	1,840.20	920.10	2,636.91	1,320.41	1.23	-0.19	0.050
70.00	-9.02	-0.66	0.00	-55.76	0.00	55.76	1,808.98	904.49	2,520.72	1,262.23	1.44	-0.21	0.049
75.00	-8.49	-0.66	0.00	-52.45	0.00	52.45	1,776.69	888.34	2,405.54	1,204.56	1.67	-0.23	0.048
80.00	-7.97	-0.66	0.00	-49.17	0.00	49.17	1,743.32	871.66	2,291.50	1,147.45	1.92	-0.25	0.047
85.00	-7.47	-0.67	0.00	-45.89	0.00	45.89	1,708.87	854.43	2,178.71	1,090.98	2.19	-0.27	0.046
90.00	-7.20	-0.68	0.00	-42.55	0.00	42.55	1,673.34	836.67	2,067.32	1,035.20	2.49	-0.29	0.045
92.65	-6.85	-0.69	0.00	-40.76	0.00	40.76	1,654.10	827.05	2,008.98	1,005.98	2.66	-0.30	0.045
95.00	-6.56	-0.70	0.00	-39.14	0.00	39.14	1,636.74	818.37	1,957.44	980.18	2.81	-0.31	0.044
96.93	-6.31	-0.72	0.00	-37.78	0.00	37.78	1,103.35	551.67	1,325.55	663.76	2.94	-0.32	0.063
100.00	-5.91	-0.74	0.00	-35.58	0.00	35.58	1,091.13	545.56	1,284.38	643.14	3.15	-0.34	0.061
105.00	-5.52	-0.76	0.00	-31.89	0.00	31.89	1,070.38	535.19	1,217.67	609.74	3.51	-0.36	0.057
110.00	-5.14	-0.78	0.00	-28.09	0.00	28.09	1,048.55	524.27	1,151.42	576.56	3.91	-0.39	0.054
115.00	-4.77	-0.79	0.00	-24.21	0.00	24.21	1,025.64	512.82	1,085.75	543.68	4.33	-0.42	0.049
120.00	-4.40	-0.79	0.00	-20.28	0.00	20.28	1,001.65	500.83	1,020.79	511.15	4.78	-0.44	0.044
125.00	-4.05	-0.78	0.00	-16.34	0.00	16.34	976.59	488.30	956.67	479.05	5.26	-0.46	0.038
130.00	-3.70	-0.75	0.00	-12.46	0.00	12.46	950.45	475.22	893.52	447.42	5.75	-0.48	0.032
135.00	-3.63	-0.75	0.00	-8.71	0.00	8.71	923.23	461.61	831.46	416.35	6.27	-0.50	0.025
136.00	-2.55	-0.63	0.00	-7.96	0.00	7.96	917.66	458.83	819.19	410.21	6.37	-0.50	0.022
140.00	-2.55	-0.63	0.00	-5.45	0.00	5.45	894.93	447.47	770.63	385.89	6.80	-0.51	0.017
140.02	-2.24	-0.58	0.00	-5.44	0.00	5.44	894.81	447.41	770.38	385.76	6.80	-0.51	0.017
143.22	-2.14	-0.56	0.00	-3.59	0.00	3.59	887.67	443.84	755.59	378.35	7.15	-0.52	0.012
145.00	-2.08	-0.55	0.00	-2.60	0.00	2.60	877.23	438.62	734.36	367.72	7.34	-0.52	0.009
146.00	-0.70	-0.24	0.00	-2.05	0.00	2.05	871.31	435.66	722.52	361.80	7.45	-0.52	0.006
150.00	-0.44	-0.16	0.00	-1.08	0.00	1.08	847.20	423.60	675.75	338.38	7.89	-0.53	0.004
155.00	-0.34	-0.13	0.00	-0.26	0.00	0.26	816.09	408.05	618.71	309.81	8.44	-0.53	0.001
157.00	0.00	0.00	0.00	0.00	0.00	0.00	800.73	400.36	594.40	297.64	8.66	-0.53	0.000
158.56	0.00	0.00	0.00	0.00	0.00	0.00	787.55	393.77	574.90	287.88	8.84	-0.53	0.000

Site Number: 413782

Code: ANSI/TIA-222-G

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: Washington North CT, CT

Engineering Number: OAA664177\_C3\_07

9/26/2016 3:09:53 PM

Customer: T-Mobile

## Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	18.45	0.00	28.68	0.00	0.00	2183.78	96.93	0.93
0.9D + 1.6W	17.79	0.00	21.50	0.00	0.00	2074.32	96.93	0.88
1.2D + 1.0Di + 1.0Wi	3.88	0.00	55.92	0.00	0.00	475.21	96.93	0.22
(1.2 + 0.2Sds) * DL + E ELFM	0.84	0.00	27.62	0.00	0.00	104.55	51.46	0.05
(1.2 + 0.2Sds) * DL + E EMAM	1.15	0.00	27.62	0.00	0.00	121.84	96.93	0.07
(0.9 - 0.2Sds) * DL + E ELFM	0.84	0.00	19.13	0.00	0.00	102.98	51.46	0.05
(0.9 - 0.2Sds) * DL + E EMAM	1.15	0.00	19.13	0.00	0.00	119.92	96.93	0.06
1.0D + 1.0W	4.63	0.00	23.93	0.00	0.00	543.84	96.93	0.24

Site Number: 413782

Code: ANSI/TIA-222-G

© 2007 - 2016 by ATC IP LLC. All rights reserved.

Site Name: Washington North CT, CT

Engineering Number: OAA664177\_C3\_07

9/26/2016 3:09:54 PM

Customer: T- Mobile

### Base Summary

#### Reactions

Original Design			Analysis			Moment Design %
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	
2,398.50	23.00	23.60	2,183.78	55.92	18.45	91.05

#### Base Plate

Yield (ksi)	Thick (in)	Width (in)	Style	Poly Sides	Clip Len (in)	Effective Len (in)	Mu (kip-in)	Phi Mn (kip-in)	Ratio
50.0	2.500	61.000	Round	0	0.00	9.323	490.44	655.54	0.75

#### Anchor Bolts

Bolt Circle	Num Bolts	Bolt Type	Bolt Dia (in)	Yield (ksi)	Ultimate (ksi)	Arrange	Cluster Dist (in)	Start Angle (deg)	Compression			Tension		
									Force (kip)	Allow (kip)	Ratio	Force (kip)	Allow (kip)	Ratio
55.00	16	2.25" 18J	2.25	75.00	100.00	Radial	0.00	0.0	122.61	260.00	0.48	115.62	260.00	0.45



**AMERICAN TOWER®**  
CORPORATION

**LETTER OF AUTHORIZATION**

**ATC SITE # / NAME: 413782/ Washington North CT**  
**SITE ADDRESS: 6 Mountain Road, New Preston, CT**  
**LICENSEE: T-Mobile Northeast LLC**

I, Margaret Robinson, Senior Counsel for American Tower\*, operator of the tower facility located at the address identified above (the "Tower Facility"), do hereby authorize **T-Mobile Northeast LLC**, successors and assigns, and/or its agent, (collectively, the "Licensee") to act as American Tower's non-exclusive agent for the sole purpose of filing and consummating any land-use or building permit application(s) as may be required by the applicable permitting authorities for Licensee's telecommunications' installation.

We understand that this application may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by Licensee only of conditions related to Licensee's installation and any such conditions of approval or modifications will be Licensee's sole responsibility.

Signature:

Print Name: Margaret Robinson  
Senior Counsel  
American Tower\*

**NOTARY BLOCK**

Commonwealth of MASSACHUSETTS  
County of Middlesex

This instrument was acknowledged before me by Margaret Robinson, Senior Counsel for American Tower\*, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same.

WITNESS my hand and official seal, this 3<sup>rd</sup> day of June, 2016.

NOTARY SEAL



**SUSANA P. RIBEIRO**  
Notary Public  
Commonwealth of Massachusetts  
My Commission Expires  
March 16, 2018

Notary Public Susana Ribeiro  
My Commission Expires: March 16, 2018

\*American Tower includes all affiliates and subsidiaries of American Tower Corporation.

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

T-Mobile Existing Facility

Site ID: CTNH371A

MountainRd- Verizon Colo  
6 Mountain Road  
Washington, CT 06777

**October 4, 2016**

**EBI Project Number: 6216004485**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general public allowable limit:	<b>4.08 %</b>

October 4, 2016

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

Emissions Analysis for Site: **CTNH371A – MountainRd- Verizon Colo**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **6 Mountain Road, Washington, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The number of  $\mu\text{W}/\text{cm}^2$  calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The general population exposure limit for the 700 MHz Band is approximately 467  $\mu\text{W}/\text{cm}^2$ , and the general population exposure limit for the 1900 MHz (PCS) band is 1000  $\mu\text{W}/\text{cm}^2$ . 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 **6 Mountain Road, Washington, 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 UMTS 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 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.
- 3) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.
- 4) Since all radios are ground mounted there are additional cabling losses accounted for. For each ground mounted RF path the following losses were calculated. 0.84 dB of additional cable loss for all ground mounted 700 MHz Channels and 1.55 dB of additional cable loss for all ground mounted 1900 MHz channels. This is based on manufacturers Specifications for 150 feet of 1-5/8" coax cable on each path.

- 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 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 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 APXV18-206516S-C-A20** for 1900 MHz (PCS) 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 APXV18-206516S-C-A20** has a maximum gain of **16.3 dBd** at its main lobe at 1900 MHz. 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 **136 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.
- 10) All calculations were done with respect to uncontrolled / general public threshold limits.



### T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APXV18-206516S-C-A20	Make / Model:	RFS APXV18-206516S-C-A20	Make / Model:	RFS APXV18-206516S-C-A20
Gain:	16.3 dBd	Gain:	16.3 dBd	Gain:	16.3 dBd
Height (AGL):	136	Height (AGL):	136	Height (AGL):	136
Frequency Bands	1900 MHz (PCS)	Frequency Bands	1900 MHz (PCS)	Frequency Bands	1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	180	Total TX Power(W):	180	Total TX Power(W):	180
ERP (W):	5,373.69	ERP (W):	5,373.69	ERP (W):	5,373.69
Antenna A1 MPE%	1.14	Antenna B1 MPE%	1.14	Antenna C1 MPE%	1.14
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	136	Height (AGL):	136	Height (AGL):	136
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power(W):	30	Total TX Power(W):	30	Total TX Power(W):	30
ERP (W):	713.05	ERP (W):	713.05	ERP (W):	713.05
Antenna A2 MPE%	0.32	Antenna B2 MPE%	0.32	Antenna C2 MPE%	0.32

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	1.47 %
Verizon Wireless	1.75 %
AT&T	0.86 %
<b>Site Total MPE %:</b>	<b>4.08 %</b>

T-Mobile Sector A Total:	1.47 %
T-Mobile Sector B Total:	1.47 %
T-Mobile Sector C Total:	1.47 %
<b>Site Total:</b>	<b>4.08 %</b>

T-Mobile_per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
T-Mobile PCS - 1950 MHz UMTS	2	895.61	136	3.81	PCS - 1950 MHz	1000	0.38%
T-Mobile PCS - 1950 MHz LTE	2	1,791.23	136	7.62	PCS - 1950 MHz	1000	0.76%
T-Mobile 700 MHz LTE	1	713.05	136	1.52	700 MHz	467	0.32%
						<b>Total:</b>	<b>1.47%</b>

## 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 A:	1.47 %
Sector B:	1.47 %
Sector C:	1.47 %
T-Mobile Per Sector Maximum:	1.47 %
Site Total:	4.08 %
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **4.08%** 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.