NORTHEAST SITE SOLUTIONS

Turnkey Wireless Development

September 22, 2015

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

RE: Notice of Exempt Modification
119 Empire Avenue, Meriden CT 06450
Longitude: -72.7792
Latitude: 41.5732
T-Mobile Site#: CT11603E_L700

Members of the Siting Council:

On behalf of T-Mobile, Northeast Site Solutions (NSS) is submitting an exempt modification application to the Connecticut Siting Council for modification of existing equipment at a tower facility located at 119 Empire Avenue, Meriden CT 06450.

The 119 Empire Avenue, Meriden CT facility consists of a 124' Monopole Tower owned and operated by American Tower Corporation. In order to accommodate technological changes and enhance system performance in the State of Connecticut, T-Mobile plans to modify the equipment configurations at many of its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the chief elected official of the municipality in which the affected cell site is located.

As part of T-Mobile's L700 Project, T-Mobile desires to upgrade their equipment to meet the new standards of 4G technology. The new equipment will allow customers to download files and browse the internet at a high rate of speed while also allowing their phones to be compatible with the latest 4G technology.

Attached is a summary of the planned modifications, including power density calculations reflecting the change in T-Mobile's operations at the site along with the required fee of $625.

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The changes to the facility do not constitute modifications as defined in Connecticut General Statutes significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. The overall height of the structure will be unaffected.

2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more.

4. The changes in radio frequency power density will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

For the foregoing reasons, Northeast Site Solutions (NSS) on behalf of T-Mobile, respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at 860.209.4690 with any questions you may have concerning this matter.

Sincerely,

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

cc: Meriden City Hall, 142 East Main Street, Meriden, CT 06450, Attn: Jim Anderson, Zoning Enforcement Officer
Property Owner-119 Empire Avenue LLC 1150 Old Colony Road, Meriden, CT 06451
Structure Owner-American Tower Corporation, 10 Presidential Way, Woburn, MA 01801, Attn: Emily Hannon

T-MOBILE USA, INC.
12920 SE 38TH STREET
BELLEVUE, WA 98006
(425) 378-4000

3176733
9/2/2015
2000011160

Invoice Number	Inv. Date	Description	Deductions	Voucher	Amount Paid
CKSEE0103	8/31/2015	SR CT11603 SITING COUNCIL FILI	0.00	1101588438	625.00

DO NOT ACCEPT THIS CHECK UNLESS THE FACE FADES FROM BLACK TO RED WITH LOGO IN BACKGROUND. THE BACK OF THIS DOCUMENT HAS HEAT-SENSITIVE INK THAT CHANGES FROM ORANGE TO YELLOW.
COPYBAN CAPTURE™ ANTI-FRAUD PROTECTION

T-MOBILE USA, INC.
12920 SE 38th Street
Bellevue, WA 98006
(425) 378-4000

The Bank of New York Mellon
Pittsburgh, PA
60-160/433

3176733
9/2/2015
VID 2000011160

PAY $625 00
SIX TWO FIVE CTS CTS

*$625.00

Six Hundred Twenty Five Dollars Only*******

To The Order Of
CONNECTICUT SITING COUNCIL
10 FRANKLIN SQ
NEW BRITAIN, CT 06051

VOID AFTER 180 DAYS
THIS CHECK CLEARS THROUGH POSITIVE PAY

⑈0003176733⑈ ⑆043301601⑆ 013⑈8430⑈

Exhibit A

T-MOBILE NORTHEAST LLC

SITE #: CT11603E

SITE NAME: CT603/ATLAS CONTAINER WT

SITE ADDRESS:
119 EMPIRE AVE
MERIDEN, CT 06468

WIRELESS BROADBAND FACILITY
CONSTRUCTION DRAWINGS
(702CU CONFIGURATION)

VICINITY MAP

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CALL BEFORE YOU DIG:

WWW.CBYD.COM

CALL 800 922 4455, OR 811

CALL THREE WORKING DAYS PRIOR TO DIGGING

SAFETY PRECAUTIONS SHALL BE IMPLEMENTED BY CONTRACTOR(S) AT ALL TRENCHING IN ACCORDANCE WITH CURRENT OSHA STANDARDS.

COLOR CODE FOR UTILITY LOCATIONS

ELECTRIC – RED		**SEWER**	**– GREEN**
GAS/OIL	– YELLOW	**SURVEY**	**– PINK**
TEL/CATV	– ORANGE	PROPOSED EXCAVATION	– WHITE
WATER	– BLUE	RECLAIMED WATER	– PURPLE

GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES. RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONSTRUCT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE T–MOBILE REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF THE CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES, THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXPENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING OF ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUM OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS AND INSPECTIONS WHICH ARE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY, OR LOCAL GOVERNMENT AUTHORITY.
11. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC., DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
12. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
13. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS, AS WELL AS THE LATEST EDITIONS OF ANY PERTINENT STATE SAFETY REGULATIONS.
14. THE CONTRACTOR SHALL NOTIFY THE T–MOBILE REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE T–MOBILE REPRESENTATIVE.
15. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC., ON THE JOB.
16. THE CONTRACTOR SHALL RETURN ALL DISTURBED AREAS TO THEIR ORIGINAL CONDITION AT THE COMPLETION OF WORK.
17. REFER TO STRUCTURAL ANALYSIS DOCUMENT ENTITLED, "STRUCTURAL ANALYSIS REPORT – MONOPOLE" PREPARED BY ATLANTIS GROUP, INC., "T–MOBILE SITE ID CT11603E", DATED SEPTEMBER 17, 2015.

SITE INFORMATION

SITE NUMBER:	CT11603E
SITE NAME:	CT603/ATLAS CONTAINER WT
SITE ADDRESS:	119 EMPIRE AVE MERIDEN, CT 06468
LAT./LONG.:	N 41.57320/ W –72.77920
JURISDICTION:	MERIDEN, CT
PROPERTY OWNER:	EMILY HANNON SR. ACCOUNT PROJECT MANAGER AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN, MA 01801 781–926–4660 (OFFICE) EMILY.HANNON@AMERICANTOWER.COM

CODE COMPLIANCE

CONNECTICUT STATE BUILDING CODE

2005 CONNECTICUT BUILDING CODE WITH 2013 AMENDMENT
2011 NATIONAL ELECTRICAL CODE.

CONSTRUCTION TYPE: 2B USE GROUP: N/A

PROJECT SUB–CONTRACTORS

APPLICANT:	T–MOBILE NORTHEAST, LLC. 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 (860) 692–7100
PROJECT MANAGER	LISA LIN ALLEN NORTHEAST SITE SOLUTIONS 54 MAIN STREET STURBRIDGE, MA 01566 (508) 434–5237
ARCHITECT/ENGINEER:	ATLANTIS GROUP INC. 1340 CENTRE STREET SUITE 212 NEWTON CENTER, MA 02459 (617) 965–0789

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E–1	GROUNDING AND POWER ONE LINE DIAGRAM
E–2	GROUNDING DETAILS

T-MOBILE NORTHEAST, LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860) 692-7100
FAX:(860) 692-7159

ATLANTIS GROUP
1340 Centre Street, Suite 212
Newton Center, MA 02459
Office: 617–965–0789
Fax: 617–213–5056

SUBMITTALS

DATE	DESCRIPTION	REVISION
09/03/15	ISSUED FOR REVIEW	A
09/21/15	FINAL CD	0

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO:	CT11603E
DRAWN BY:	FG
CHECKED BY:	SM

STATE OF CONNECTICUT
HOSSEIN VAHEDI
No. ARI. 11162
LICENSED ARCHITECT

PROFESSIONAL SEAL

SITE NUMBER
CT11603E
SITE NAME
CT603/ATLAS CONTAINER WT
SITE ADDRESS
119 EMPIRE AVE
MERIDEN, CT 06468

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

ELECTRICAL NOTES:

WORK INCLUDED

1. INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, PLANT SERVICES AND ADMINISTRATIVE TASKS REQUIRED TO COMPLETE AND MAKE OPERABLE THE ELECTRICAL WORK SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
   A. PREPARE AND SUBMIT SHOP DRAWINGS, DIAGRAMS AND ILLUSTRATIONS.
   B. PROCURE ALL NECESSARY PERMITS AND APPROVALS AND PAY ALL REQUIRED FEES AND CHARGES IN CONNECTION WITH THE WORK OF THIS CONTRACT.
   C. SUBMIT AS-BUILT DRAWINGS, OPERATING AND MAINTENANCE INSTRUCTIONS AND MANUALS.
   D. EXECUTE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING OF EXISTING OR NEWLY INSTALLED CONSTRUCTION REQUIRED FOR THE WORK OF THIS CONTRACT. FOR SLAB PENETRATIONS THROUGH POST TENSION SLABS, X-RAY EXACT AREA OF PENETRATION PRIOR TO PERFORMING WORK. COORDINATE ALL X-RAY WORK WITH BUILDING ENGINEER.
   E. PROVIDE HANGERS, SUPPORTS, FOUNDATIONS, STRUCTURAL FRAMING SUPPORTS, AND BASES FOR CONDUIT AND EQUIPMENT PROVIDED OR INSTALLED UNDER THE WORK OF HIS CONTRACT. PROVIDE COUNTER FLASHING, SLEEVES AND SEALS FOR FLOOR AND WALL PENETRATIONS.
   F. MAINTAIN ALL EXISTING ELECTRICAL SERVICES IN THE BUILDING AREAS NOT AFFECTED BY THE ALTERATION DURING THE PROGRESS OF THE WORK INCLUDING PROVIDING ALL TEMPORARY JUMPERS, CONDUITS, CAPS, PROTECTIVE DEVICES, CONNECTIONS AND EQUIPMENT REQUIRED. PROVIDE TEMPORARY LIGHT AND POWER FOR CONSTRUCTION PURPOSES.
2. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO CALL FOR AN INSTALLATION THAT IS COMPLETE IN EVERY RESPECT. IT IS NOT THE INTENT TO GIVE EVERY DETAIL ON THE DRAWINGS AND IN THE SPECIFICATIONS. IF AN ITEM OF WORK IS INDICATED IN THE DRAWINGS, IT IS CONSIDERED SUFFICIENT FOR INCLUSION IN THE CONTRACT. FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT USUALLY FURNISHED OR NEEDED TO MAKE A COMPLETE INSTALLATION WHETHER OR NOT SPECIFICALLY MENTIONED IN THE CONTRACT DOCUMENTS.

GENERAL REQUIREMENTS

1. PROVIDE ALL WORK IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND LOCAL AND STATE ELECTRICAL CODES.
2. THE ELECTRICAL PLANS ARE DIAGRAMMATIC ONLY. REFER TO THE ARCHITECTURAL PLANS FOR THE EXACT DIMENSIONS OF THE BUILDING.
3. LOAD CALCULATIONS ARE BASED ON EXISTING BUILDING INFORMATION/DRAWINGS PROVIDED TO ENGINEERING. CONTRACTOR IS TO VERIFY ALL EXISTING RATINGS AND LOADS PRIOR TO PURCHASING OF SPECIFIED EQUIPMENT FOR COMPLIANCE TO NEC. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES AND REQUEST FURTHER DIRECTION BY ENGINEER.
4. EXISTING BUILDING EQUIPMENT IS NOTED ON THE DRAWINGS. NEW OR RELOCATED EQUIPMENT IS SHOWN WITH SOLID LINES. FUTURE EQUIPMENT (NOT IN THIS CONTRACT) IS DEPICTED WITH SHADED LINES. REQUEST CLARIFICATION OF DRAWINGS OR OF SPECIFICATIONS PRIOR TO PRICING OR INSTALLATION.
5. GENERAL
   A. AFTER CAREFULLY STUDYING THE DRAWINGS AND SPECIFICATIONS, AND BEFORE SUBMITTING THE PROPOSAL, MAKE A MANDATORY SITE VISIT TO ASCERTAIN CONDITIONS OF THE SITE, AND THE NATURE AND EXACT QUANTITY OF WORK TO BE PERFORMED. NO EXTRA COMPENSATION WILL BE ALLOWED FOR FAILURE TO NOTIFY THE OWNER, IN WRITING, OF ANY DISCREPANCIES THAT MAY HAVE BEEN NOTED BETWEEN THE EXISTING CONDITIONS AND THE DRAWINGS AND SPECIFICATIONS.
   B. VERIFY ALL MEASUREMENTS AT THE SITE AND BE RESPONSIBLE FOR CORRECTNESS OF SAME.
6. QUALITY, WORKMANSHIP, MATERIALS AND SAFETY
   A. PROVIDE NEW MATERIALS AND EQUIPMENT OF A DOMESTIC MANUFACTURER BY THOSE REGULARLY ENGAGED IN THE PRODUCTION AND MANUFACTURE OF SPECIFIED MATERIALS AND EQUIPMENT. WHERE UL, OR OTHER AGENCY, HAS ESTABLISHED STANDARDS FOR MATERIALS, PROVIDE MATERIALS WHICH ARE LISTED AND LABELED ACCORDINGLY. THE COMMERCIALLY STANDARD ITEMS OF EQUIPMENT AND THE SPECIFIC NAMES MENTIONED HEREIN ARE INTENDED FOR THE PROPER FUNCTIONING OF THE WORK.
   B. WORK SHALL BE PERFORMED BY WORKMEN SKILLED IN THE TRADE REQUIRED FOR THE WORK. INSTALL MATERIALS AND EQUIPMENT TO PRESENT A NEAT APPEARANCE WHEN COMPLETED AND IN ACCORDANCE WITH THE APPROVED RECOMMENDATIONS OF THE MANUFACTURER AND IN ACCORDANCE WITH CONTRACT DOCUMENTS.
   C. PROVIDE LABOR, MATERIALS, APPARATUS AND APPLIANCES ESSENTIAL TO THE FUNCTIONING OF THE SYSTEMS DESCRIBED OR INDICATED HEREIN, OR WHICH MAY BE REASONABLY IMPLIED AS ESSENTIAL WHENEVER MENTIONED IN THE CONTRACT DOCUMENT OR NOT.
   D. MAKE WRITTEN REQUESTS FOR SUPPLEMENTARY INSTRUCTIONS TO ARCHITECT/ENGINEER IN CASE OF DOUBT AS TO WORK INTENDED OR IN EVENT OF NEED FOR EXPLANATION THEREOF.
   E. PERFORMANCE AND MATERIAL REQUIREMENTS SCHEDULED OR SPECIFIED ARE MINIMUM STANDARD ACCEPTABLE. THE RIGHT TO JUDGE THE QUALITY OF EQUIPMENT THAT DEVIATES FROM THE CONTRACT DOCUMENT REMAINS SOLELY WITH ARCHITECT/ENGINEER. CONTRACT DOCUMENT OR NOT.

GUARANTEE

1. GUARANTEE MATERIALS, PARTS AND LABOR FOR WORK FOR ONE YEAR FROM THE DATE OF ISSUANCE OF OCCUPANCY PERMIT. DURING THAT PERIOD, MAKE GOOD FAULTS OR IMPERFECTIONS THAT MAY ARISE DUE TO DEFECTS OR OMISSIONS IN MATERIALS OR WORKMANSHIP WITH NO ADDITIONAL COMPENSATION AND AS DIRECTED BY ARCHITECT.

CLEANING

1. REMOVE ALL CONSTRUCTION DEBRIS RESULTING FROM THE WORK.
2. CLEAN EQUIPMENT AND SYSTEMS FOLLOWING THE COMPLETION OF THE PROJECT TO THE SATISFACTION OF THE ENGINEER.

COORDINATION AND SUPERVISION

1. CAREFULLY LAY OUT ALL WORK IN ADVANCE TO AVOID UNNECESSARY CUTTING, CHANNELING, CHASING OR DRILLING OF FLOORS, WALLS, PARTITIONS, CEILINGS OR OTHER SURFACES. WHERE SUCH WORK IS NECESSARY, HOWEVER, PATCH AND REPAIR THE WORK IN AN APPROVED MANNER BY SKILLED MECHANICS AT NO ADDITIONAL COST TO THE OWNER. RENDER FULL COOPERATION TO OTHER TRADES WHERE WORK WILL BE INSTALLED IN CLOSE PROXIMITY TO WORK OF OTHER TRADES. ASSIST IN WORKING OUT SPACE CONDITIONS. IF WORK IS INSTALLED BEFORE COORDINATION WITH OTHER TRADES, OR CAUSES INTERFERENCE, MAKE CHANGES NECESSARY TO CORRECT CONDITIONS WITHOUT EXTRA CHARGE.

SUBMITTALS

1. AS-BUILT DRAWINGS:
   A. UPON COMPLETION OF THE WORK, FURNISH TO THE OWNER "AS-BUILT" DRAWINGS.
2. SERVICE MANUALS:
   A. UPON COMPLETION OF THE WORK, FULLY INSTRUCT T-MOBILE AS TO THE OPERATION AND MAINTENANCE OF ALL MATERIAL, EQUIPMENT AND SYSTEMS.
   B. PROVIDE 3 COMPLETE BOUND SETS OF INSTRUCTIONS FOR OPERATING AND MAINTAINING ALL SYSTEMS AND EQUIPMENT.

CUTTING AND PATCHING

1. PROVIDE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING REQUIRED TO COMPLETE THE WORK.
2. OBTAIN OWNER APPROVAL PRIOR TO CUTTING THROUGH FLOORS OR WALLS FOR PIPING OR CONDUIT.

TESTS, INSPECTION AND APPROVAL

1. BEFORE ENERGIZING ANY ELECTRICAL INSTALLATION, INSPECT EACH UNIT IN DETAIL. TIGHTEN ALL BOLTS AND CONNECTIONS (TORQUE-TIGHTEN WHERE REQUIRED) AND DETERMINE THAT ALL COMPONENTS ARE ALIGNED, AND THE EQUIPMENT IS IN SAFE, OPERATIONAL CONDITION.
2. PROVIDE THE COMPLETE ELECTRICAL SYSTEM FREE OF GROUND FAULTS AND SHORT CIRCUITS SUCH THAT THE SYSTEM WILL OPERATE SATISFACTORILY UNDER FULL LOAD CONDITIONS, WITHOUT EXCESSIVE HEATING AT ANY POINT IN THE SYSTEM.

SPECIAL REQUIREMENTS

1. DO NOT LEAVE ANY WORK INCOMPLETE NOR ANY HAZARDOUS SITUATIONS CREATED WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS. DO NOT INTERFERE WITH OR CUTOFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNER'S WRITTEN PERMISSION.
2. WHEN NECESSARY TO TEMPORARILY DISCONNECT ANY EXISTING BUILDING UTILITIES AND SERVICE SYSTEMS, INCLUDING FEEDER OR BRANCH CIRCUITING SUPPLYING EXISTING FACILITIES, CONFER WITH THE OWNER AND ARRANGE THE PERIOD OF INTERRUPTION FOR A TIME MUTUALLY AGREED UPON. SHUTDOWN NOTE: SCHEDULE AND NOTIFY OWNER 48 HOURS PRIOR TO SHUTDOWN. ALL SHUTDOWN WORK TO BE SCHEDULED AT A TIME CONVENIENT TO OWNER.

GROUNDING

1. ROUTE ALL GROUNDING CONDUCTORS AS SHOWN ON CONDUIT/GROUNDING RISER.
2. ROUTE 500 KCMIL CU. THHN CONDUCTOR FROM THE MGB LOCATION TO BUILDING STEEL. VERIFY BUILDING STEEL IS EFFECTIVELY GROUNDED PER NEC TO THE MAIN SERVICE GROUNDING ELECTRODE CONDUCTOR (GEC).
3. MAKE ALL GROUND CONNECTIONS FROM MGB TO ELECTRICAL EQUIPMENT WITH 2 HOLE, CRIMP TYPE, BURNDY COMPRESSION TERMINATIONS, SIZED AS REQUIRED.
4. USE 1 HOLE, CRIMP TYPE, BURNDY COMPRESSIONS TERMINATIONS, SIZED AS REQUIRED, AT EQUIPMENT GROUND CONNECTIONS.
5. HIRE AN INDEPENDENT LAB TO PERFORM THE SPECIFIED OHMS TESTING. PROVIDE 4 SETS OF THE CERTIFIED DOCUMENTS TO THE OWNER FOR VERIFICATION PRIOR TO THE PROJECT COMPLETION.

RACEWAYS

1. ALL WIRING TO BE INSTALLED IN CONDUIT SYSTEMS IN ACCORDANCE WITH THE FOLLOWING:
   A. EXTERIOR FEEDERS AND CONTROL, WHERE UNDERGROUND, TO BE IN SCH 40 PVC.
   B. EXTERIOR, ABOVE GROUND POWER CONDUITS TO BE GALVANIZED RIGID STEEL (RGS).
   C. ALL TELECOMMUNICATION CONDUITS, INTERIOR/EXTERIOR, TO BE EMT.
   D. INSTALL PULL ROPES IN ALL NEW EMPTY CONDUITS INSTALLED ON THIS PROJECT.
   E. ALL TELECOM CONDUITS AND PULL BOXES INSTALLED ON THIS PROJECT TO BE LABELED "T-MOBILE". OWNER WILL PROVIDE LABELS FOR CONTRACTOR TO INSTALL.
   F. INTERIOR FEEDERS TO BE INSTALLED IN E.M.T. WITH STEEL COMPRESSION FITTINGS.
   G. MINIMUM SIZE CONDUIT TO BE ¾" TRADE SIZE UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
   H. FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT TO BE INSTALLED IN LIQUID-TIGHT FLEXIBLE METAL CONDUIT.
   I. CONDUIT TO BE RUN CONCEALED IN CEILINGS, FINISHED AREAS OR DRYWALL PARTITIONS, UNLESS OTHERWISE NOTED.
   J. THE ROUTING OF CONDUITS INDICATED ON THE DRAWINGS IS DIAGRAMMATIC. BEFORE INSTALLING ANY WORK, EXAMINE THE WORKING LAYOUTS AND SHOP DRAWINGS OF THE OTHER TRADES TO DETERMINE THE EXACT LOCATIONS AND CLEARANCES.
   K. ALL EXTERIOR MOUNTING HARDWARE TO BE GALVANIZED STEEL. COORDINATE WITH BUILDING ENGINEER PRIOR TO ATTACHING TO BUILDING STRUCTURE.
   L. PENETRATIONS OF WALLS, FLOORS AND ROOFS, FOR THE PASSAGE OF ELECTRICAL RACEWAYS, TO BE PROPERLY SEALED AFTER INSTALLATION OF RACEWAYS SO AS TO MAINTAIN THE STRUCTURAL OR WATERPROOF INTEGRITY OF THE WALL, FLOOR OR ROOF SYSTEM TO BE PENETRATED. SEAL ALL CONDUIT PENETRATIONS THROUGH FIRE OR SMOKE RATED WALLS, CEILINGS OR SMOKE TIGHT CORRIDOR PARTITIONS TO MAINTAIN PROPER RATING OF WALL OR CEILING.
   M. PROVIDE ALL CONDUIT ENDS WITH INSULATED METALLIC GROUNDING BUSHINGS.
   N. CONDUIT TO BE SUPPORTED AT MAXIMUM DISTANCE OF 8'-0", OR AS REQUIRED BY NEC, IN HORIZONTAL AND VERTICAL DIRECTIONS.
   O. PROVIDE STAINLESS STEEL BLANK COVER PLATES FOR ALL JUNCTION BOXES AND/OR OUTLET BOXES NOT USED IN EXPOSED AREAS. PROVIDE ALL OTHER UNUSED BOXES WITH STANDARD STEEL COVER PLATES.
   P. WHERE APPLICABLE, PROVIDE ROOFTOP CONDUIT SUPPORT SYSTEM, CONFORMING TO ROOFTOP WARRANTY REQUIREMENTS, PER BUILDING.

WIRES AND CABLES

1. CONTRACTOR TO COORDINATE WITH EQUIPMENT SUPPLIER AND VENDOR FOR EXACT EQUIPMENT OVER-CURRENT PROTECTION VOLTAGE, WIRE SIZE AND PLUG CONFIGURATION, IF APPLICABLE, PRIOR TO BID.
2. ALL EQUIPMENT/DEVICES TO BE PROVIDED WITH INSULATED GROUND CONDUCTOR.
3. ALL WIRE AND CABLE TO BE 600VOLT, COPPER, WITH THWN/THHN INSULATION, EXCEPT AS NOTED.
4. WIRE FOR POWER AND LIGHTING WILL NOT BE LESS THAN NO. 12AWG. ALL WIRE NO. 8 AND LARGER TO BE STRANDED.
5. CONTROL WIRING IS NOT TO BE LESS THAN NO. 14AWG, FLEXIBLE IN SINGLE CONDUCTORS OR MULTI-CONDUCTOR CABLES. CONTROL WIRING WILL CONSIST OF MULTI-CONDUCTOR CABLES WHEREVER POSSIBLE. CABLES TO BE PROVIDED WITH AN OVERALL FLAME-RETARDANT, EXTRUDED JACKET AND RATED FOR PLENUM USE. ALL CONTROL WIRE TO BE 600VOLT RATED.
6. WIRE PREVIOUSLY PULLED INTO CONDUIT IS CONSIDERED USED AND IS NOT TO BE RE-PULLED.
7. HOME RUNS AND BRANCH CIRCUIT WIRING FOR 20A, 120V CIRCUITS:

LENGTH (FT.)	HOME RUN WIRE SIZE
0 TO 50	NO. 12
51 TO 100	NO. 10
101 TO 150	NO. 8

8. VOLTAGE DROP IS NOT TO EXCEED 3%.
9. MAKE ALL CONNECTIONS WITH UL APPROVED, SOLDERLESS, PRESSURE TYPE INSULATED CONNECTORS: SCOTCHLOK OR AND APPROVED EQUAL.

WIRING DEVICES

1. ALL RECEPTACLES INSTALLED IN THIS PROJECT TO BE GROUNDING TYPE, WITH GROUNDING PIN SLOT CONNECTED TO DEVICE GROUND SCREW FOR GROUND WIRE CONNECTION.

DISCONNECT SWITCHES AND FUSES

1. DISCONNECT SWITCHES TO BE VOLTAGE-RATED TO SUIT THE CHARACTERISTICS OF THE SYSTEM FROM WHICH THEY ARE SUPPLIED.
2. PROVIDE HEAVY-DUTY, METAL-ENCLOSED, EXTERNALLY-OPERATED DISCONNECT SWITCHES, FUSED OR UNFUSED, OF SUCH TYPE AND SIZE AS REQUIRED TO PROPERLY PROTECT OR DISCONNECT THE LOAD FOR WHICH THEY ARE INTENDED.
3. PROVIDE NEMA 1 DISCONNECT SWITCHES FOR INTERIOR INSTALLATION, NEMA 3R FOR EXTERIOR INSTALLATION.
4. DISCONNECT SWITCHES TO BE MANUFACTURED BY:
   A. GENERAL ELECTRIC COMPANY
   B. SQUARE-D
5. PROVIDE RK-1 TYPE FUSES, UNLESS NOTED OTHERWISE.

INSTALLATION

1. INSTALL DISCONNECT SWITCHES WHERE INDICATED ON DRAWINGS.
2. INSTALL FUSES IN FUSIBLE DISCONNECT SWITCHES. FUSES MUST MATCH IN TYPE AND RATING.
3. FUSES TO BE MOUNTED SO THAT THE LABELS SHOWING THEIR RATINGS CAN BE READ WITHOUT REQUIRING FUSE REMOVAL.
4. FURNISH AND DEPOSIT SPARE FUSES AT THE JOB SITE AS FOLLOWS:
   A. THREE SPARES FOR EACH TYPE AND SIZE, IN EXCESS OF 60A, USED FOR INITIAL FUSING.
   B. TEN PERCENT SPARES FOR EACH TYPE AND SIZE, UP TO AND INCLUDING 60A, USED FOR INITIAL FUSING. IN NO CASE WILL LESS THAN THREE FUSES OF ONE PARTICULAR TYPE AND SIZE BE FURNISHED.

GENERAL NOTES:

INTENT

1. THESE SPECIFICATIONS AND CONSTRUCTION DRAWINGS ACCOMPANYING THEM DESCRIBE THE WORK TO BE DONE AND THE MATERIALS TO BE FURNISHED FOR CONSTRUCTION.
2. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY. HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED, OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN, INDICATED OR SPECIFIED IN BOTH
3. THE INTENTION OF THE DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.
4. THE PURPOSE OF THE SPECIFICATIONS IS TO INTERPRET THE INTENT OF THE DRAWINGS AND TO DESIGNATE THE METHOD OF THE PROCEDURE, TYPE AND QUALITY OF MATERIALS REQUIRED TO COMPLETE THE WORK.
5. MINOR DEVIATIONS FROM THE DESIGN LAYOUT ARE ANTICIPATED AND SHALL BE CONSIDERED AS PART OF THE WORK. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK WILL BE MADE OR PERMITTED BY THE OWNER WITHOUT ISSUING A CHANGE ORDER.

CONFLICTS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATIONS OF ALL MEASUREMENTS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS. ANY SUCH DISCREPANCY IN DIMENSION WHICH MAY BE FOUND SHALL BE SUBMITTED TO THE OWNER FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.
2. THE BIDDER, IF AWARDED THE CONTRACT, WILL NOT BE ALLOWED ANY EXTRA COMPENSATION BY REASON OF ANY MATTER OR THING CONCERNING SUCH BIDDER MIGHT HAVE FULLY INFORMED THEMSELVES PRIOR TO THE BIDDING.
3. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF DIFFICULTIES OR CONDITIONS THAT MAY BE ENCOUNTERED, OR OF ANY OTHER RELEVANT MATTER CONCERNING THE WORK TO BE PERFORMED IN THE EXECUTION OF THE WORK WILL BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMISSION ON THE PART OF THE CONTRACTOR TO FULFILL EVERY DETAIL OF ALL THE REQUIREMENTS OF THE CONTRACT DOCUMENTS GOVERNING THE WORK.

CONTRACTS AND WARRANTIES

1. CONTRACTOR IS RESPONSIBLE FOR APPLICATION AND PAYMENT OF CONTRACTOR LICENSES AND BONDS.
2. SEE MASTER CONTRACTION SERVICES AGREEMENT FOR ADDITIONAL DETAILS.

STORAGE

1. ALL MATERIALS MUST BE STORED IN A LEVEL AND DRY FASHION AND IN A MANNER THAT DOES NOT NECESSARILY OBSTRUCT THE FLOW OF OTHER WORK. ANY STORAGE METHOD MUST MEET ALL RECOMMENDATIONS OF THE ASSOCIATED MANUFACTURER.

CLEANUP

1. THE CONTRACTORS SHALL, AT ALL TIMES, KEEP THE SITE FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY THEIR EMPLOYEES AT WORK AND AT THE COMPLETION OF THE WORK. THEY SHALL REMOVE ALL RUBBISH FROM AND ABOUT THE BUILDING AREA, INCLUDING ALL THEIR TOOLS, SCAFFOLDING AND SURPLUS MATERIALS AND SHALL LEAVE THEIR WORK CLEAN AND READY TO USE.
2. EXTERIOR
   A. VISUALLY INSPECT EXTERIOR SURFACES AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER.
   B. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
   C. IF NECESSARY, TO ACHIEVE A UNIFORM DEGREE OF CLEANLINESS, HOSE DOWN THE EXTERIOR OF THE STRUCTURE.
3. INTERIOR
   A. VISUALLY INSPECT INTERIOR SURFACE AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER FROM WALLS, FLOOR, AND CEILING.
   B. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
   C. REMOVE PAINT DROPPINGS, SPOTS, STAINS, AND DIRT FROM FINISHED SURFACES.

CHANGE ORDER PROCEDURE:

1. REFER TO SECTION 17 OF SIGNED MCSA: SEE PROFESSIONAL SERVICE AGREEMENT FOR MCSA.

RELATED DOCUMENTS AND COORDINATION

1. GENERAL CARPENTRY, ELECTRICAL AND ANTENNA DRAWINGS ARE INTERRELATED. IN PERFORMANCE OF THE WORK, THE CONTRACTOR MUST REFER TO ALL DRAWINGS. ALL COORDINATION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

SHOP DRAWINGS

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AS REQUIRED AND LISTED IN THESE SPECIFICATIONS TO THE OWNER FOR APPROVAL.
2. ALL SHOP DRAWINGS SHALL BE REVIEWED, CHECKED AND CORRECTED BY CONTRACTOR PRIOR TO SUBMITTAL TO THE OWNER.

PRODUCTS AND SUBSTITUTIONS

1. SUBMIT 3 COPIES OF EACH REQUEST FOR SUBSTITUTION. IN EACH REQUEST, IDENTIFY THE PRODUCT OR FABRICATION OR INSTALLATION METHOD TO BE REPLACED BY THE SUBSTITUTION. INCLUDE RELATED SPECIFICATION SECTION AND DRAWING NUMBERS AND COMPLETE DOCUMENTATION SHOWING COMPLIANCE WITH THE REQUIREMENTS FOR SUBSTITUTIONS.
2. SUBMIT ALL NECESSARY PRODUCT DATA AND CUT SHEETS WHICH PROPERLY INDICATE AND DESCRIBE THE ITEMS, PRODUCTS AND MATERIALS BEING INSTALLED. THE CONTRACTOR SHALL, IF DEEMED NECESSARY BY THE OWNER, SUBMIT ACTUAL SAMPLES TO THE OWNER FOR APPROVAL IN LIEU OF CUT SHEETS.

QUALITY ASSURANCE

1. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THESE SHALL INCLUDE, BUT NOT BE LIMITED TO THE APPLICABLE CODES SET FORTH BY THE LOCAL GOVERNING BODY. SEE "CODE COMPLIANCE" T-1.

ADMINISTRATION

1. BEFORE THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR WILL ASSIGN A PROJECT MANAGER WHO WILL ACT AS A SINGLE POINT OF CONTACT FOR ALL PERSONNEL INVOLVED IN THIS PROJECT. THIS PROJECT MANAGER WILL DEVELOP A MASTER SCHEDULE FOR THE PROJECT WHICH WILL BE SUBMITTED TO THE OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK.
2. SUBMIT A BAR TYPE PROGRESS CHART, NOT MORE THAN 3 DAYS AFTER THE DATE ESTABLISHED FOR COMMENCEMENT OF THE WORK ON THE SCHEDULE, INDICATING A TIME BAR FOR EACH MAJOR CATEGORY OR UNIT OF WORK TO BE PERFORMED AT THE SITE, PROPERLY SEQUENCED AND COORDINATED WITH OTHER ELEMENTS OF WORK AND SHOWING COMPLETION OF THE WORK SUFFICIENTLY IN ADVANCE OF THE DATE ESTABLISHED FOR SUBSTANTIAL COMPLETION OF THE WORK.
3. PRIOR TO COMMENCING CONSTRUCTION, THE OWNER SHALL SCHEDULE AN ON-SITE MEETING WITH ALL MAJOR PARTIES. THIS WOULD INCLUDE, BUT NOT LIMITED TO, THE OWNER, PROJECT MANAGER, CONTRACTOR, LAND OWNER REPRESENTATIVE, LOCAL TELEPHONE COMPANY, TOWER ERECTION FOREMAN (IF SUBCONTRACTED).
4. CONTRACTOR SHALL BE EQUIPPED WITH SOME MEANS OF CONSTANT COMMUNICATIONS, SUCH AS A MOBILE PHONE OR A BEEPER. THIS EQUIPMENT WILL NOT BE SUPPLIED BY THE OWNER, NOR WILL WIRELESS SERVICE BE ARRANGED.
5. DURING CONSTRUCTION, CONTRACTOR MUST ENSURE THAT EMPLOYEES AND SUBCONTRACTORS WEAR HARD HATS AT ALL TIMES. CONTRACTOR WILL COMPLY WITH ALL WPCS SAFETY REQUIREMENTS IN THEIR AGREEMENT.
6. PROVIDE WRITTEN DAILY UPDATES ON SITE PROGRESS TO THE OWNER.
7. COMPLETE INVENTORY OF CONSTRUCTION MATERIALS AND EQUIPMENT IS REQUIRED PRIOR TO START OF CONSTRUCTION.
8. NOTIFY THE OWNER/PROJECT MANAGER IN WRITING NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, TOWER ERECTIONS, AND EQUIPMENT CABINET PLACEMENTS.

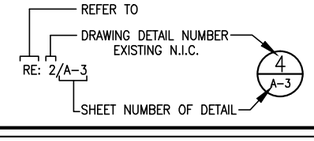
INSURANCE AND BONDS

1. CONTRACTOR, AT THEIR OWN EXPENSE, SHALL CARRY AND MAINTAIN, FOR THE DURATION OF THE PROJECT, ALL INSURANCE, AS REQUIRED AND LISTED, AND SHALL NOT COMMENCE WITH THEIR WORK UNTIL THEY HAVE PRESENTED AN ORIGINAL CERTIFICATE OF INSURANCE STATING ALL COVERAGES TO THE OWNER. REFER TO THE MASTER AGREEMENT FOR REQUIRED INSURANCE LIMITS.
2. THE OWNER SHALL BE NAMED AS AN ADDITIONAL INSURED ON ALL POLICIES.
3. CONTRACTOR MUST PROVIDE PROOF OF INSURANCE.

ARCHITECTURAL SYMBOLS

STORAGE
38
3

DETAIL REFERENCE KEY



ABBREVIATIONS

ADJ	ADJUSTABLE
AGL	ABOVE GROUND LINE
&	AND
APPROX	APPROXIMATE
@	AT
BTS	BASE TRANSMISSION STATION
CAB	CABINET
CLG	CEILING
CONC	CONCRETE
CONT	CONTINUOUS
DIA OR ø	DIAMETER
DWG	DRAWING
EA	EACH
ELEC	ELECTRICAL
ELEV	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
EGB	EQUIPMENT GROUND BAR
(E)	EXISTING
EXT	EXTERIOR
FF	FINISHED FLOOR
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GRND	GROUND
LG	LONG
MAX	MAXIMUM
MECH	MECHANICAL
MW	MICROWAVE DISH
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MTL	METAL
(N)	NEW
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OPP	OPPOSITE
(P)	PROPOSED
PCS	PERSONAL COMMUNICATION SYSTEM
PPC	POWER PROTECTION CABINET
SF	SQUARE FOOT
SHT	SHEET
SIM	SIMILAR
SS	STAINLESS STEEL
STL	STEEL
TOC	TOP OF CONCRETE
TOM	TOP OF MASONRY
TYP	TYPICAL
VIF	VERIFY IN FIELD
UON	UNLESS OTHERWISE NOTED
WWF	WELDED WIRE FABRIC
W/	WITH

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SUBMITTALS

DATE	DESCRIPTION	REVISION
09/03/15	ISSUED FOR REVIEW	A
09/21/15	FINAL CD	0

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO: CT11603E
DRAWN BY: FG
CHECKED BY: SM

STATE OF CONNECTICUT
HOSSEIN VAHEDI
No. ARI.11162
LICENSED ARCHITECT

PROFESSIONAL SEAL

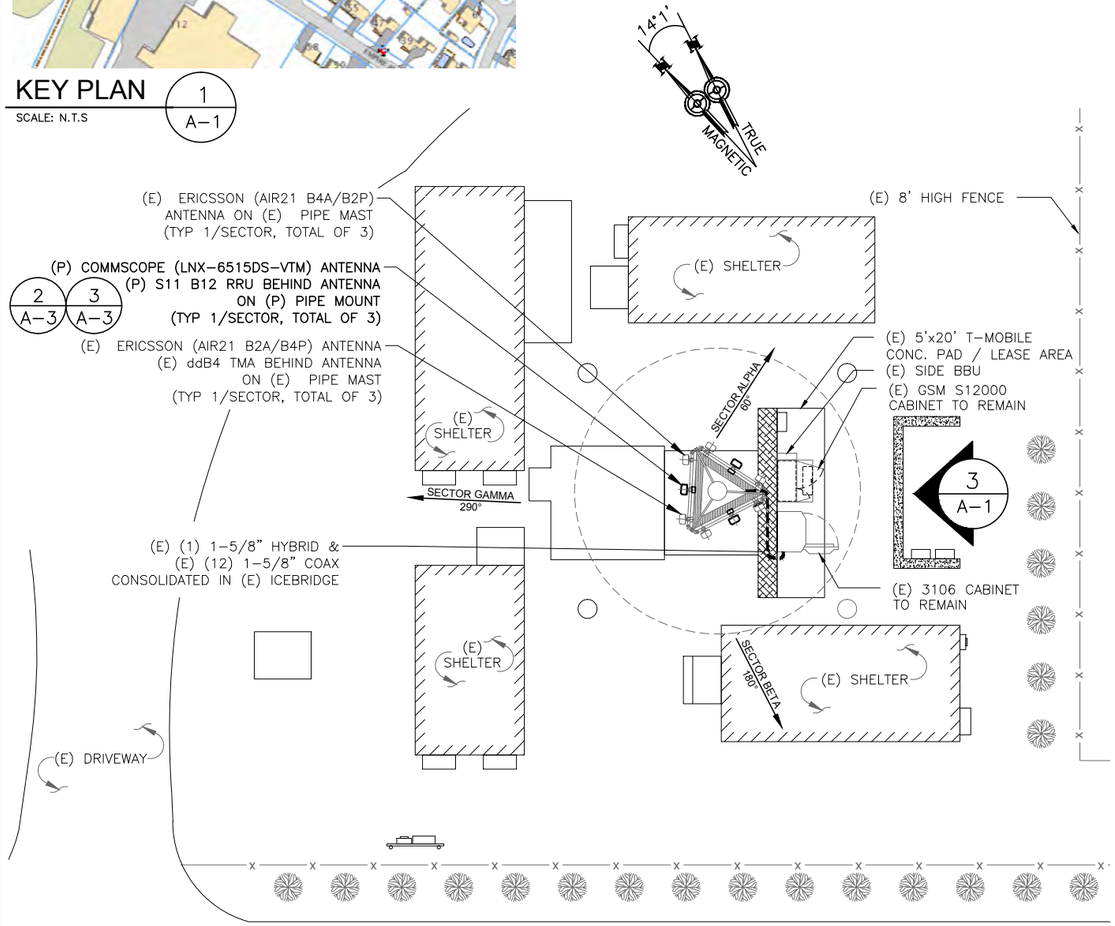
SITE NUMBER
CT11603E
SITE NAME
CT603/ATLAS
CONTAINER WT
SITE ADDRESS
119 EMPIRE AVE
MERIDEN, CT 06468

SHEET TITLE
GENERAL AND ELECTRICAL NOTES

SHEET NUMBER
N-1

REFER TO STRUCTURAL ANALYSIS DOCUMENT ENTITLED, "STRUCTURAL ANALYSIS REPORT – MONOPOLE" PREPARED BY ATLANTIS GROUP, INC., "T-MOBILE SITE ID CT11603E", DATED SEPTEMBER 17, 2015.

KEY PLAN (1 / A-1)
SCALE: N.T.S

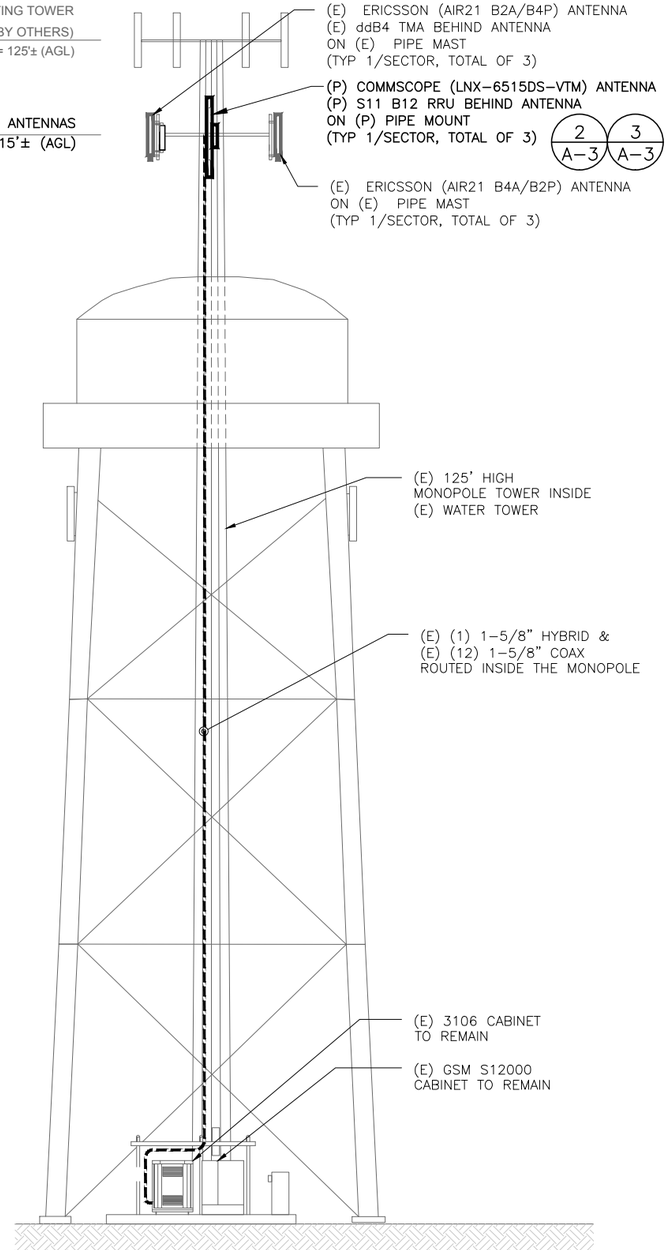


SITE PLAN (2 / A-1)
SCALE: 1/16" = 1'-0" (11x17)
1/8" = 1'-0" (24X36)

0 16 32 48
SCALE 1"=16' (11x17)
1"=8' (24x36)

TOP OF EXISTING TOWER
RAD CENTER OF EXISTING ANTENNAS (BY OTHERS)
ELEV. = 125'± (AGL)

RAD CENTER OF PROPOSED ANTENNAS
ELEV.= 115'± (AGL)



ELEVATION (3 / A-1)
SCALE: 1/16" = 1'-0" (11x17)
1/8" = 1'-0" (24X36)

0 16 32 48
SCALE 1"=16' (11x17)
1"=8' (24x36)

GENERAL SITE NOTES

1. SITE INFORMATION WAS OBTAINED FROM A FIELD INVESTIGATION PERFORMED BY ATLANTIS GROUP, INC. CONTRACTOR TO FIELD VERIFY DIMENSIONS AS NECESSARY BEFORE CONSTRUCTION.

2. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE SIGNS OF ADVERTISING.

3. THE PROPOSED DEVELOPMENT IS UNMANNED AND THEREFORE DOES NOT REQUIRE A MEANS OF WATER SUPPLY OR SEWAGE DISPOSAL.

4. NO LANDSCAPING WORK IS PROPOSED IN CONJUNCTION WITH THIS DEVELOPMENT OTHER THAN THAT WHICH IS SHOWN.

5. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES.

6. UTILITIES SHOWN ON PLAN ARE TAKEN FROM OWNERS RECORDS AND FIELD LOCATION OF VISIBLE SURFACE FEATURES. THE EXISTENCE, EXTENT AND EXACT HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES HAS NOT BEEN VERIFIED. ANY CONTRACTOR PERFORMING WORK ON THIS SITE MUST CONTACT CALL BEFORE YOU DIG THREE WORKING DAYS PRIOR TO COMMENCING WORK.

7. ALL OBSOLETE OR UNUSED FACILITIES SHALL BE REMOVED WITHIN 12 MONTHS OF CESSATION OF OPERATIONS.

SITE LEGEND

- SITE PROPERTY LINE
- STREET OR ROAD
- CHAIN LINK FENCE
- OPAQUE WOODEN FENCE
- BOARD ON BOARD FENCE
- DECIDUOUS TREES/SHRUBS
- EVERGREEN TREES/SHRUBS
- TREE LINE
- UTILITY POLE
- (E) EXISTING
- (N) NEW
- (P) PROPOSED
- (F) FUTURE
- PROP. LTE ANTENNA
- PROP. UMTS/GSM ANTENNA
- EX. GSM ANTENNA
- EX. UMTS ANTENNA

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RF MAN.			
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OPS			
CONSTR.			
SITE AC.			

PROJECT NO:	CT11603E
DRAWN BY:	FG
CHECKED BY:	SM

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NO. ARI.11162
LICENSED ARCHITECT

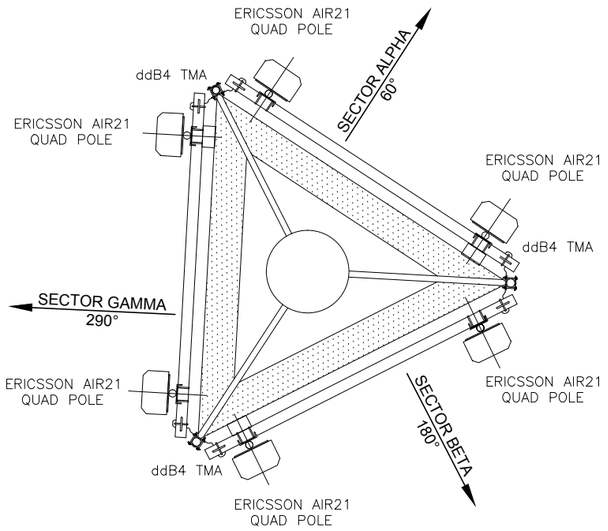
PROFESSIONAL SEAL

SITE NUMBER
CT11603E
SITE NAME
CT603/ATLAS
CONTAINER WT
SITE ADDRESS
119 EMPIRE AVE
MERIDEN, CT 06468

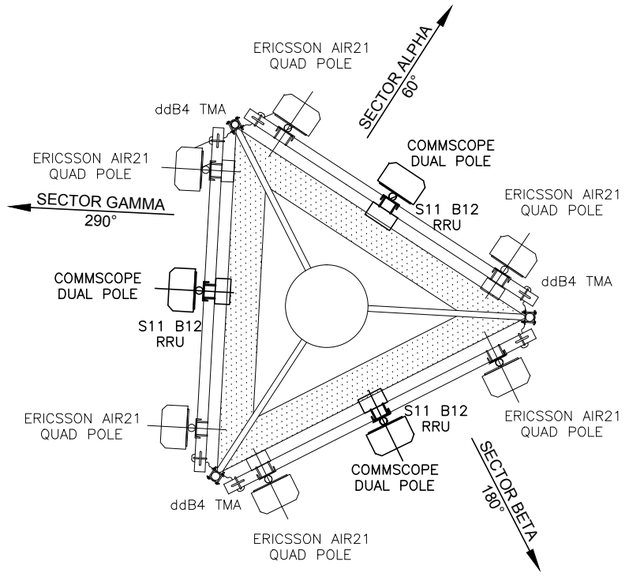
SHEET TITLE
SITE PLAN AND ELEVATION

SHEET NUMBER
A-1

REFER TO STRUCTURAL ANALYSIS DOCUMENT ENTITLED, "STRUCTURAL ANALYSIS REPORT – MONOPOLE" PREPARED BY ATLANTIS GROUP, INC., "T-MOBILE SITE ID CT11603E", DATED SEPTEMBER 17, 2015.

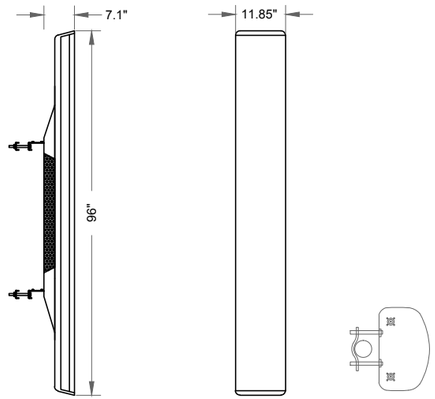


EXISTING ANTENNA CONFIGURATION



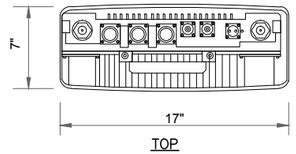
PROPOSED ANTENNA CONFIGURATION

ANTENNA PLAN
SCALE: N.T.S
1 / A–2

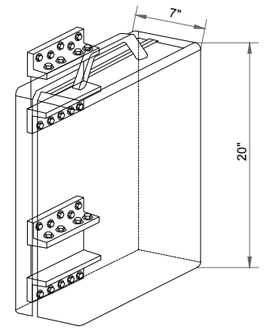


MANUFACTURE: COMMSCOPE DUAL POLE
MODEL NO. LNX–6515DS–VTM
DIMENSIONS – HxWxD, (IN) 96x11.85x7.1

COMMSCOPE ANTENNA DETAIL
SCALE: N.T.S
2 / A–2

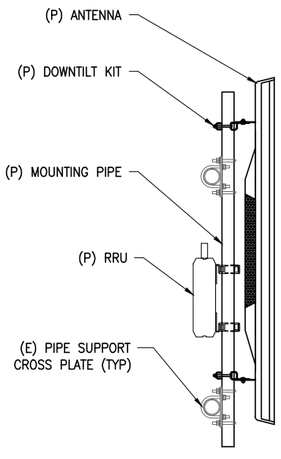


TOP



ISOMETRIC

RRUS 11 B12 DETAILS
SCALE: N.T.S
3 / A–2



ANTENNA MOUNT DETAIL
SCALE: N.T.S
4 / A–2

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CONSTR.			
SITE AC.			

PROJECT NO:	CT11603E
DRAWN BY:	FG
CHECKED BY:	SM

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

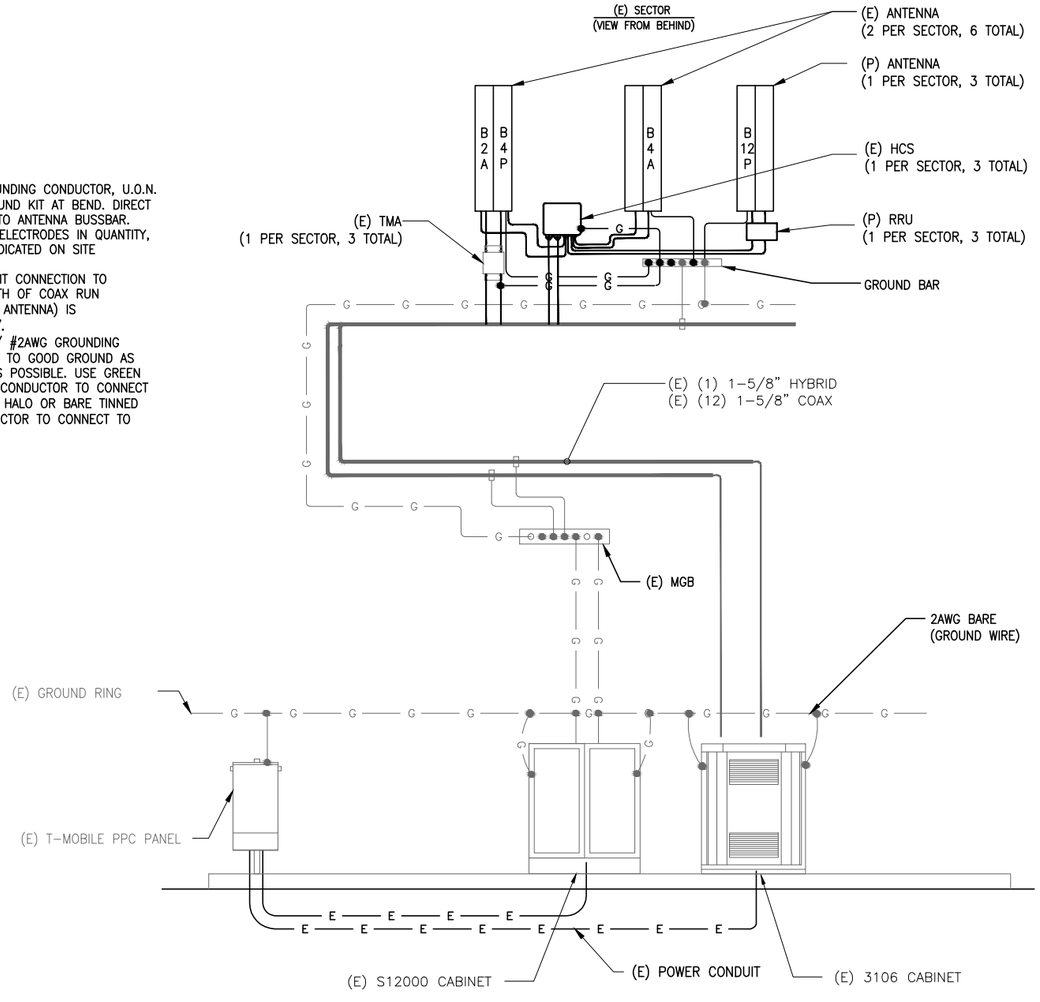
PROFESSIONAL SEAL

SITE NUMBER
CT11603E
SITE NAME
CT603/ATLAS
CONTAINER WT
SITE ADDRESS
119 EMPIRE AVE
MERIDEN, CT 06468

SHEET TITLE
ANTENNA PLAN
AND
DETAILS

SHEET NUMBER
A-2

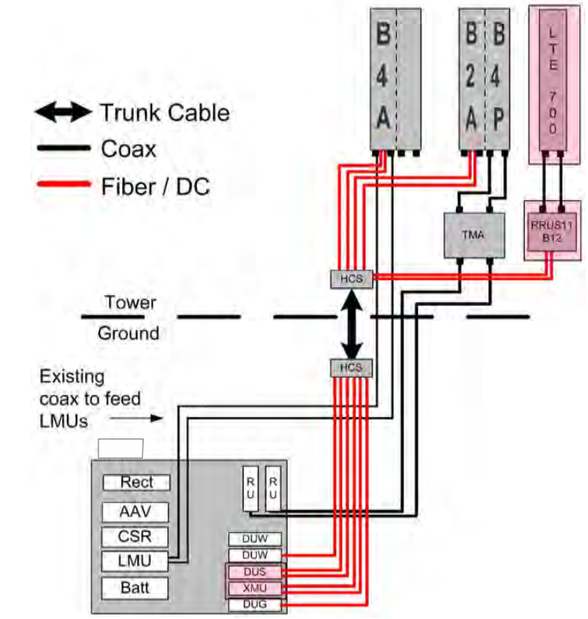
NOTES:
A. PROVIDE #2AWG GROUNDING CONDUCTOR, U.O.N.
B. DO NOT INSTALL GROUND KIT AT BEND. DIRECT GROUND WIRE DOWN TO ANTENNA BUSSBAR.
C. PROVIDE GROUNDING ELECTRODES IN QUANTITY, TYPE AND SIZE AS INDICATED ON SITE GROUNDING PLAN.
D. ADD COAX GROUND KIT CONNECTION TO BUSSBAR WHEN LENGTH OF COAX RUN (FROM EQUIPMENT TO ANTENNA) IS GREATER THAN 20'-0".
E. GROUND HCS BOX W/ #2AWG GROUNDING CONDUCTOR ATTACHED TO GOOD GROUND AS DIRECT AND SHORT AS POSSIBLE. USE GREEN STRANDED INSULATED CONDUCTOR TO CONNECT TO BUSSBAR/GROUND HALO OR BARE TINNED SOLID COPPER CONDUCTOR TO CONNECT TO GROUND RING.



GROUNDING DIAGRAM

1 / E-1

SCALE: N.T.S



TRUNK FIBER NOTES:
1. IN GENERAL THIS CABLE WILL HANDLE SIMILARLY TO ⅞" COAXIAL CABLE, AND SIMILAR INSTALLATION TECHNIQUES APPLY. ALL CABLES ARE INDIVIDUALLY SERIALIZED, BE SURE TO WRITE DOWN THE CABLE SERIAL NUMBER FOR FUTURE REFERENCE.
2. THE TERMINATED FIBER ENDS (THE BROKEN OUT FIBERS PLUS CONNECTORS) HOWEVER ARE FRAGILE, AND THESE MUST BE PROTECTED DURING THE INSTALLATION PROCESS.
3. LEAVE THE PROTECTIVE TUBE AND SOCK AROUND THE FIBER TAILS AND CONNECTORS IN PLACE DURING HOISTING AND SECURING THE CABLE. REMOVE THIS ONLY JUST PRIOR TO MAKING THE FINAL CONNECTIONS TO THE OVP BOX.
4. DO NOT BEND THE FIBER ENDS (IN THE ORANGE FURCATION TUBES) TIGHTER THAN ¾" (19MM) BEND RADIUS, ELSE THERE IS A RISK OF BREAKING THE GLASS FIBERS.
5. BE SURE THAT THE LACE UP ENDS AND FIBER CONNECTORS ARE NOT DAMAGED BY ATTACHMENT OF A HOISTING GRIP OR DURING THE HOISTING PROCESS. ATTACH A HOISTING GRIP ON THE JACKETED CABLE NO LESS THAN 6 INCHES BELOW THE FIBER BREAKOUT POINT. IF A HOISTING GRIP IS NOT EASILY ATTACHED, USE A SIMPLE LINE ATTACHED BELOW THE FIBER BREAK-OUT POINT (I.E. AT THE CABLE OUTER JACKET). PREVENT THE FIBER TAILS (IN PROTECTIVE TUBE) AT THE CABLE END FROM UNDUE MOVEMENT DURING HOISTING BY SECURING THE PROTECTIVE TUBE (WITH OUTER SOCK) TO THE HOISTING LINE.
6. DURING HOISTING ENSURE THAT THERE IS A FREE PATH AND THAT THE CABLE, AND ESPECIALLY THE FIBER ENDS, WILL NOT BE SNAGGED ON TOWER MEMBERS OR OTHER OBSTACLES.
7. INSTALLATION TEMPERATURE RANGE IS -22F TO 158F (-30C TO +70C).
8. MINIMUM CABLE BEND RADII ARE 22.2" (565MM) LOADED (WITH TENSION ON THE CABLE) AND 11.1" (280MM) UNLOADED.
9. MAXIMUM CABLE TENSILE LOAD IS 3560 N (800 LB) SHORT TERM (DURING INSTALLATION) AND 1070 N (240 LB) LONG TERM.
10. COMMSCOPE NON LACE UP GRIP RECOMMENDED FOR MONOPOLE INSTALLATIONS.
11. MAXIMUM HANGER SPACING 3FT (0.9 M).

HYBRID FIBER/POWER JUMPER NOTES:
1. IN GENERAL THIS CABLE WILL HANDLE SIMILARLY TO A ⅜" COAXIAL CABLE.
2. THE TERMINATED FIBER ENDS HOWEVER ARE FRAGILE AND MUST BE PROTECTED DURING INSTALLATION. LEAVE THE PACKAGING AROUND THE FIBER ENDS IN PLACE UNTIL READY TO CONNECT THE JUMPER BETWEEN OVP AND RRU OR BBU.
3. DO NOT BEND THE FIBER BREAKOUT CABLE (BETWEEN THE MAIN CABLE AND THE FIBER CONNECTOR) TIGHTER THAN ¾" (19MM) RADIUS, ELSE THERE IS A RISK OF BREAKING THE GLASS.
4. ATTACH THE MAIN CABLE SECURELY TO THE STRUCTURE OR EQUIPMENT USING HANGERS AND/OR CABLE TIES TO PREVENT STRAIN ON CONNECTIONS FROM MOVEMENT IN WIND OR SNOW/ICE CONDITIONS.
5. ENSURE THE LC FIBER CONNECTORS ARE SEATED FIRMLY IN PANEL IN OVP OR IN EQUIPMENT.
6. INSTALLATION TEMPERATURE RANGE IS -22F TO 158F (-30C TO 70C).
7. MINIMUM CABLE BEND RADII ARE 10.3 INCH (265MM) LOADED (WITH TENSION ON THE CABLE) AND 5.2 INCH (130MM) UNLOADED.
8. MAXIMUM CABLE TENSILE LOAD IS 350 LB (1560N) SHORT TERM (DURING INSTALLATION) AND 105 LB (470N) LONG TERM.
9. STANDARD LENGTHS AVAILABLE ARE 6 FEET, 15 FEET AND 20 FEET

702CU CONFIGURATION
COAX/FIBER PLUMBING DIAGRAM

2 / E-1

SCALE: N.T.S

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OFFICE: (860) 692-7100
FAX:(860) 692-7159

ATLANTIS GROUP
1340 Centre Street, Suite 212
Newton Center, MA 02459
Office: 617-965-0789
Fax: 617-213-5056

SUBMITTALS

DATE	DESCRIPTION	REVISION
09/03/15	ISSUED FOR REVIEW	A
09/21/15	FINAL CD	0

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO: CT11603E
DRAWN BY: FG
CHECKED BY: SM

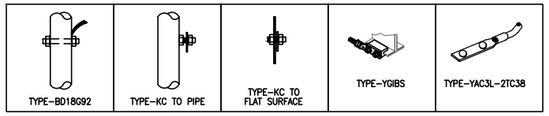
STATE OF CONNECTICUT
HOSSEIN VAHEDI
NO. ARI. 11162
LICENSED ARCHITECT

PROFESSIONAL SEAL

SITE NUMBER
CT11603E
SITE NAME
CT603/ATLAS
CONTAINER WT
SITE ADDRESS
119 EMPIRE AVE
MERIDEN, CT 06468

SHEET TITLE
GROUNDING AND ONE LINE DIAGRAM
COAX/FIBER DIAGRAM

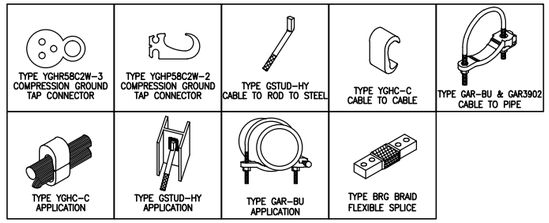
SHEET NUMBER
E-1



BURNDY GROUNDING DETAILS

1 E-2

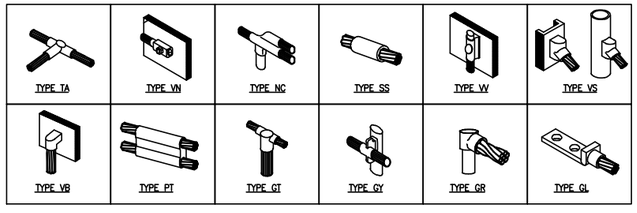
SCALE: N.T.S



BURNDY GROUNDING PRODUCTS

2 E-2

SCALE: N.T.S



CADWELD GROUNDING CONNECTION PRODUCTS

3 E-2

SCALE: N.T.S

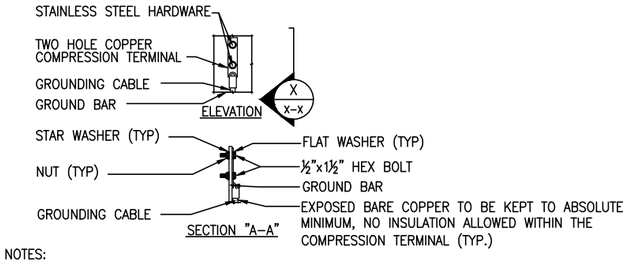
TERMINATION TYPES:
A. MECHANICAL COMPRESSION LUG
B. DOUBLE BARRELL COMPRESSION CONNECTOR
C. EXOTHERMIC TERMINATION
D. BEAM CLAMP

	SOLID #2 TINNED COPPER	#6 GROUND LEAD	#2/0 STRANDED MAIN DOWN CONDUCTOR	MASTER GRND BAR	STRUCTURAL OR TOWER STEEL	BLDG SERVICE ENTR OR GRND RING	GROUND ROD
SOLID #2 TINNED COPPER	B OR C	B OR C		C	A, C, OR D		C
#6 GROUND LEAD	B OR C			A	A, C, OR D		
#2/0 STRANDED GRNDG ELECTRODE CONDUCTOR				A	A, C, OR D	A	
MASTER GROUND BAR	C	A	A				
STRUCTURAL OR TOWER STEEL	A, C, OR D	A, C, OR D	A, C, OR D				
GROUND RING	C		C				C

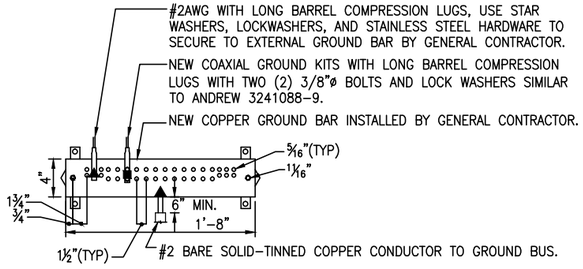
GROUNDING TERMINATION MATRIX

7 E-2

SCALE: N.T.S



NOTES:
1. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

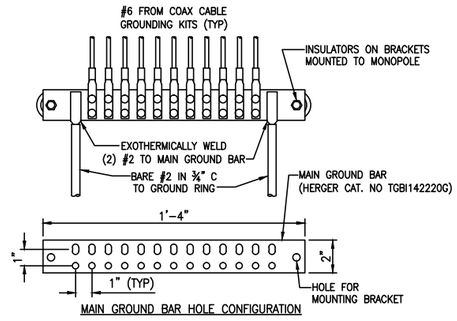


NOTES:
1. ALL HARDWARE STAINLESS STEEL COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
2. FOR GROUND BOND TO STEEL ONLY: INSERT A TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH KOPR-SHIELD.
3. ALL HOLES ARE COUNTERSUNK 1⁄16".

TYPICAL GROUND BAR CONNECTIONS DETAIL

4 E-2

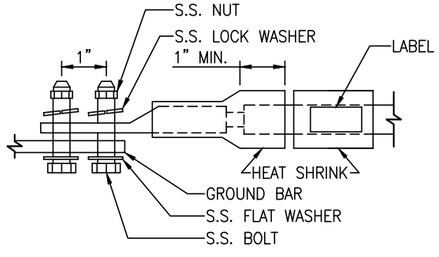
SCALE: N.T.S



GROUND BAR DETAIL

5 E-2

SCALE: N.T.S



LUG NOTES:
1. ALL HARDWARE IS 18-8 STAINLESS STEEL, INCLUDING LOCK WASHERS.
2. ALL HARDWARE SHALL BE S.S. ⅜"ø OR LARGER.
3. FOR GROUND BOND TO STEEL ONLY: INSERT A DRAGON TOOTH WASHER BETWEEN LUG AND STEEL. COAT ALL SURFACES WITH ANTI-OXIDIZATION COMPOUND PRIOR TO MATING.

GROUND BAR DETAIL

6 E-2

SCALE: N.T.S

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SUBMITTALS		
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RFE			
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PROJECT NO:	CT11603E
DRAWN BY:	FG
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STATE OF CONNECTICUT
HOSSEIN VAHEDI
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LICENSED ARCHITECT

PROFESSIONAL SEAL

SITE NUMBER
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SITE NAME
CT603/ATLAS CONTAINER WT
SITE ADDRESS
119 EMPIRE AVE
MERIDEN, CT 06468

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
E-2

Exhibit B

STRUCTURAL ANALYSIS REPORT
MONOPOLE

Prepared For:

T-Mobile

35 Griffin Road South
Bloomfield, CT 06002

Site ID: CT11603E
Site Name: CT603/Atlas Container WT
119 Empire Ave
Meriden, CT 06450

September 17, 2015

Submitted By:

Atlantis Group, Inc.
1340 Centre Street, Suite 212
Newton, Massachusetts 02459
Phone: 617-965-0789, Fax: 617-213-5056

Prepared For:

35 Griffin Road South
Bloomfield, CT 06002

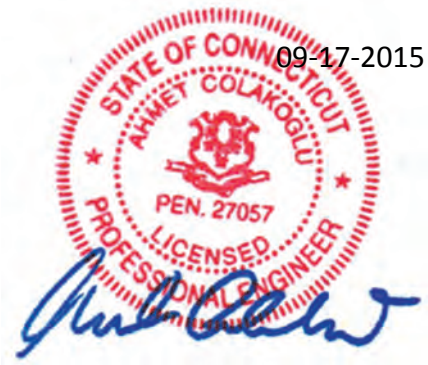
RESULT: PASS

Site ID: CT11603E
Site Name: CT603/Atlas Container WT
119 Empire Ave
Meriden, CT 06450

Prepared By:

Destek Engineering, LLC
Professional Engineering Corporation
License # PEC 001429

09-17-2015



Ahmet Colakoglu, P.E.
Connecticut Professional Engineer
License No: 27057

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

CONTENTS

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

1.0 SUBJECT AND REFERENCES

The purpose of this analysis is to evaluate the structural capacity of the existing 124 feet tall monopole located at 119 Empire Ave, Meriden CT 06450, for the addition and alteration of wireless telecommunication appurtenances proposed by T-Mobile.

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

- Structural Analysis Report prepared by the American Tower dated 12/11/2014.
- Network Modernization RFDS v3.0 provided by T-Mobile.

1.1 STRUCTURE

The monopole is formed by the following sections:

Section Length (ft)	Lap Splice (ft)	Shaft Thickness (in)	Top Dia/Bottom Dia (in/in)	Steel Yield Strength (ksi)
7.287	4.58	0.2500	30.00/32.46	65
51.540	6.50	0.3750	30.41/47.87	65
50.420	8.33	0.3750	44.92/61.99	65
34.170	-	0.4375	58.42/70.00	65

- The pole is 18-sided and connected to the foundation with anchor bolts and a base plate.

2.0 EXISTING AND PROPOSED APPURTENANCES

The analysis is based on the following existing and proposed appurtenances:

Existing Configuration of T-MOBILE Appurtenances:

Rad Center (ft)	Antenna & TMA		Mount	Feedlines*
115	GSM/UMTS LTE TMA	(3) AIR21 B2A/B4P (3) AIR21 B4A/B2P (3) dd B4	(1) Low Profile Platform	(12) 1 5/8” Coax (1) Fiber Cable

Proposed and Final Configuration of T-MOBILE Appurtenances:

Rad Center (ft)	Antenna & TMA		Mount	Feedlines*
115	GSM/UMTS LTE LTE TMA LTE	(3) AIR21 B2A/B4P (3) AIR21 B4A/B2P (3) LNX 6515DS-VTM (3) dd B4 (3) S11 B12 RRU	(1) Low Profile Platform	(12) 1 5/8” Coax (1) Fiber Cable

***All Feedlines are inside Shaft.**

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Existing Appurtenances by Others

Carrier	Rad Center (ft)	Antenna & TMA	Mount	Feedlines*
Verizon	125	(6) RFS FD9R6004/2C-3L (3) Rymsa MG D3-800T0 (6) Antel LPA-80080/4CF (1) Powerwave P65-16-XL-2 (2) Andrew LNX-6514DS-T4M	(1) Low Profile Platform	(12) 1 5/8" Coax

***All Feedlines are inside Shaft.**

3.0 CODES AND LOADING

The Monopole was analyzed per *TIA/EIA-222-F* as referenced by *2005 Connecticut State Building Code with all the Addendums and Supplements*, International Code Council. The following wind loading was used in compliance with the standard for New Haven County:

- Basic wind speed 85 mph (W) without ice
- Basic wind speed 73.6 mph (W_i) with 1/2" radial ice.

The following load combinations were used with wind blowing at 0^o, 60^o and 90^o, measured from a line normal to the face of the tower.

- $D + W_o$
- $D + W_i + I$

D: Dead Load
W_o: Wind Load, without ice
W_i: Wind Load with ice
I: Ice Gravity Load

DESTEK ENGINEERING, LLC
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4.0 STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING STRUCTURES

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

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

The analysis does not include a qualification of the mounts attached on the structure or their connections. The analysis is performed to verify the capacity of the main structural members, which is the current practice in the tower industry.

The analysis results presented in this report are only applicable for the previously mentioned existing and proposed appurtenances. Any deviation of the appurtenances and appurtenance placement will require to generate an additional structural analysis.

5.0 ANALYSIS AND ASSUMPTIONS

The tower was analyzed by utilizing tnx Tower, a non-linear 3-Dimensional finite element software, a product of Tower Numerics, Inc. Software output for this analysis is provided in Appendix-A of this report.

The monopole is analyzed as a stand-alone structure with the assumption that no forces are transmitted between the water tank and the monopole structure.

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6.0 RESULTS AND CONCLUSION

The existing monopole is found to have **adequate** structural capacity for the proposed changes by T-Mobile. For the aforementioned load combinations, the shaft from the 25.9 feet AGL to 69.8 feet AGL is stressed to **29.7%** of capacity as a maximum. Anchor bolts and base plate are stressed to **79.4%** of capacity.

The monopole foundation could not be analyzed due to lack of information.

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

Reactions:

Maximums	**Destek Analysis**
Base Shear (kips)	21.7
Base Moment (kip-ft)	1917

Should you need any clarifications or have any questions about this letter, please contact us at (617) 965-0789.

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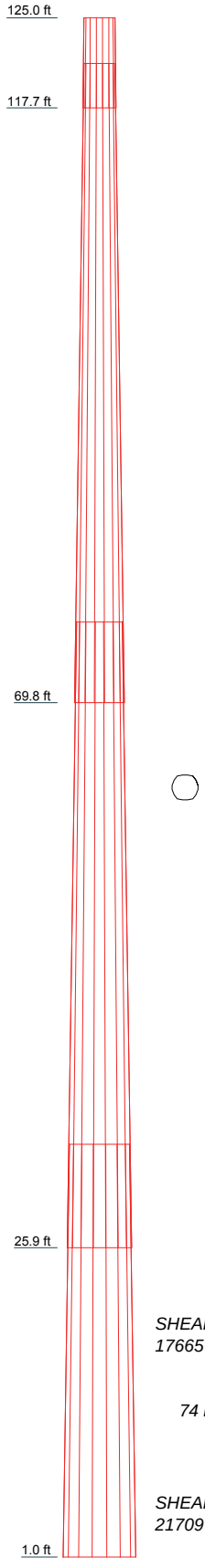
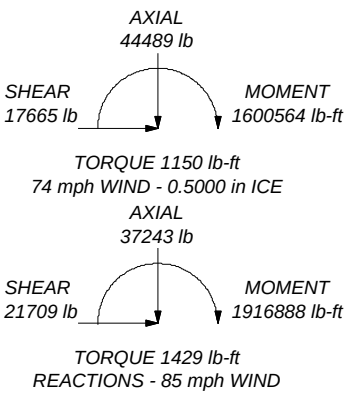
APPENDIX A
SOFTWARE OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (lb)
1	7.29	18	0.2500	3.64	30.0000	32.4600		609.6
2	51.54	18	0.3750	6.50	30.7300	47.8700		8125.4
3	50.42	18	0.3750	8.33	44.9584	61.9900	A572-65	10843.4
4	33.23	18	0.4375		58.4262	70.0000		10012.9
								29591.3





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
VHLP2.5-180	155	MG D3-800TV w/ Mount Pipe	126
VHLP2.5-180	155	AIR21 B4A/B2P with pipe	116
VHLP2.5-180	155	dd B4 TMA	116
PX3F-52	155	dd B4 TMA	116
PX3F-52	155	dd B4 TMA	116
MG D3-800TV w/ Mount Pipe	126	LNX-6515DS-VTM w/ Mount Pipe	116
(2) LPA-80080/4CF w/ Mount Pipe	126	LNX-6515DS-VTM w/ Mount Pipe	116
(2) LPA-80080/4CF w/ Mount Pipe	126	LNX-6515DS-VTM w/ Mount Pipe	116
(2) LPA-80080/4CF w/ Mount Pipe	126	RRUS 11 B12	116
P65.16.XL.2 w/ Mount Pipe	126	RRUS 11 B12	116
LNX-6514DS-T4M w/ Mount Pipe	126	RRUS 11 B12	116
LNX-6514DS-T4M w/ Mount Pipe	126	Platform Mount [LP 403-1]	116
Platform Mount [LP 403-1]	126	AIR21 B2A/B4P with pipe	116
(2) FD9R6004/2C-3L	126	AIR21 B2A/B4P with pipe	116
(2) FD9R6004/2C-3L	126	AIR21 B2A/B4P with pipe	116
(2) FD9R6004/2C-3L	126	AIR21 B4A/B2P with pipe	116
MG D3-800TV w/ Mount Pipe	126	AIR21 B4A/B2P with pipe	116

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 74 mph basic wind with 0.50 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 29.7%

Destek Engineering, LLC
1281 Kennestone Circle, Suite 100
Marietta, GA 30066
Phone: (770) 693 0835
FAX:

Job: ***CT11603E***			
Project:			
Client: T-Mobile	Drawn by: Ahmet Colakoglu	App'd:	
Code: TIA/EIA-222-F	Date: 09/17/15	Scale: NTS	
Path: Y:\2015\17 - Atlantis\1517038 - CT11603E\Tnx\CT11603E.eri		Dwg No. E-1	

Tower Input Data

There is a pole section.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in New Haven County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.5000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 74 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Treat Feedline Bundles As Cylinder
	Consider Moments - Horizontals		Assume Legs Pinned		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Calculate Redundant Bracing Forces
	Use Moment Magnification	√	Use Clear Spans For Wind Area		Ignore Redundant Members in FEA
√	Use Code Stress Ratios		Use Clear Spans For KL/r		SR Leg Bolts Resist Compression
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		All Leg Panels Have Same Allowable
√	Escalate Ice	√	Bypass Mast Stability Checks		Offset Girt At Foundation
	Always Use Max Kz	√	Use Azimuth Dish Coefficients	√	Consider Feedline Torque
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Include Angle Block Shear Check
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Poles
	Leg Bolts Are At Top Of Section		SR Members Have Cut Ends	√	Include Shear-Torsion Interaction
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component		Always Use Sub-Critical Flow
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Use Top Mounted Sockets
	Add IBC .6D+W Combination		Use TIA-222-G Tension Splice Capacity Exemption		

Tapered Pole Section Geometry

Section	*Elevation* *ft*	*Section Length* *ft*	*Splice Length* *ft*	*Number of Sides*	*Top Diameter* *in*	*Bottom Diameter* *in*	*Wall Thickness* *in*	*Bend Radius* *in*	*Pole Grade*
L1	125.00-117.71	7.29	3.64	18	30.0000	32.4600	0.2500	1.0000	A572-65 (65 ksi)
L2	117.71-69.82	51.54	6.50	18	30.7300	47.8700	0.3750	1.5000	A572-65 (65 ksi)
L3	69.82-25.90	50.42	8.33	18	44.9584	61.9900	0.3750	1.5000	A572-65 (65 ksi)
L4	25.90-1.00	33.23		18	58.4262	70.0000	0.4375	1.7500	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	30.4628	23.6066	2639.6436	10.5612	15.2400	173.2050	5282.7605	11.8056	4.8400	19.36
	32.9607	25.5586	3350.0906	11.4346	16.4897	203.1629	6704.5894	12.7817	5.2730	21.092
L2	32.4344	36.1300	4205.9718	10.7760	15.6108	269.4264	8417.4778	18.0685	4.7485	12.663
	48.6085	56.5309	16110.8820	16.8607	24.3180	662.5096	32242.9631	28.2708	7.7651	20.707
L3	47.8815	53.0654	13325.8387	15.8271	22.8389	583.4723	26669.2120	26.5377	7.2527	19.34
	62.9463	73.3373	35175.0723	21.8733	31.4909	1116.9909	70396.4289	36.6756	10.2502	27.334
L4	62.2738	80.5245	34209.9019	20.5860	29.6805	1152.6056	68464.8182	40.2699	9.5130	21.744
	71.0799	96.5962	59053.8172	24.6947	35.5600	1660.6810	118185.3388	48.3073	11.5500	26.4

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
L1 125.00-117.71				1	1	1		
L2 117.71-69.82				1	1	1		
L3 69.82-25.90				1	1	1		
L4 25.90-1.00				1	1	1		

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
LDF7-50A(1-5/8")	C	No	Inside Pole	125.00 - 1.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
LDF7-50A(1-5/8")	C	No	Inside Pole	115.00 - 1.00	15	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
L1	125.00-117.71	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	71.70
L2	117.71-69.82	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	1027.06

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
L3	69.82-25.90	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	972.39
L4	25.90-1.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	551.21

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
L1	125.00-117.71	A	0.585	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	71.70
L2	117.71-69.82	A	0.566	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	1027.06
L3	69.82-25.90	A	0.522	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	972.39
L4	25.90-1.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	551.21

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	125.00-117.71	0.0000	0.0000	0.0000	0.0000
L2	117.71-69.82	0.0000	0.0000	0.0000	0.0000
L3	69.82-25.90	0.0000	0.0000	0.0000	0.0000
L4	25.90-1.00	0.0000	0.0000	0.0000	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
(2) FD9R6004/2C-3L	A	From Leg	3.00 0.00 0.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.37 0.45 0.54 0.75 1.28	0.08 0.14 0.20 0.34 0.74	3.10 5.40 8.79 19.61 62.87

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
(2) FD9R6004/2C-3L	B	From Leg	3.00 0.00 0.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.37 0.45 0.54 0.75 1.28	0.08 0.14 0.20 0.34 0.74	3.10 5.40 8.79 19.61 62.87
(2) FD9R6004/2C-3L	C	From Leg	3.00 0.00 0.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.37 0.45 0.54 0.75 1.28	0.08 0.14 0.20 0.34 0.74	3.10 5.40 8.79 19.61 62.87
MG D3-800TV w/ Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.57 3.98 4.39 5.33 7.34	3.42 4.12 4.78 6.16 9.18	37.28 71.09 110.70 210.38 520.04
MG D3-800TV w/ Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.57 3.98 4.39 5.33 7.34	3.42 4.12 4.78 6.16 9.18	37.28 71.09 110.70 210.38 520.04
MG D3-800TV w/ Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.57 3.98 4.39 5.33 7.34	3.42 4.12 4.78 6.16 9.18	37.28 71.09 110.70 210.38 520.04
(2) LPA-80080/4CF w/ Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.86 3.22 3.59 4.45 6.32	7.23 7.92 8.63 10.11 13.34	30.01 76.24 128.40 253.39 612.99
(2) LPA-80080/4CF w/ Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.86 3.22 3.59 4.45 6.32	7.23 7.92 8.63 10.11 13.34	30.01 76.24 128.40 253.39 612.99
(2) LPA-80080/4CF w/ Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.86 3.22 3.59 4.45 6.32	7.23 7.92 8.63 10.11 13.34	30.01 76.24 128.40 253.39 612.99
P65.16.XL.2 w/ Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.64 9.29 9.91 11.18 13.83	5.78 6.95 7.83 9.63 13.44	58.55 121.57 192.43 361.32 841.76
LNX-6514DS-T4M w/ Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.57 9.22 9.84 11.10 13.75	7.00 8.19 9.08 10.90 14.93	58.15 126.70 203.21 383.80 889.19
LNX-6514DS-T4M w/ Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	126.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.57 9.22 9.84 11.10 13.75	7.00 8.19 9.08 10.90 14.93	58.15 126.70 203.21 383.80 889.19
Platform Mount [LP 403-1]	C	None		0.0000	126.00	No Ice 1/2" Ice	18.85 24.30	18.85 24.30	1500.00 1796.56

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
						1" Ice	29.75	29.75	2093.12
						2" Ice	40.65	40.65	2686.24
						4" Ice	62.45	62.45	3872.48
Existing									
AIR21 B2A/B4P with pipe	A	From Leg	3.00	0.0000	116.00	No Ice	6.87	6.29	134.62
			0.00			1/2" Ice	7.38	7.05	201.01
			0.00			1" Ice	7.90	7.84	276.18
						2" Ice	8.96	9.46	445.12
						4" Ice	11.23	13.02	896.75
AIR21 B2A/B4P with pipe	B	From Leg	3.00	0.0000	116.00	No Ice	6.87	6.29	134.62
			0.00			1/2" Ice	7.38	7.05	201.01
			0.00			1" Ice	7.90	7.84	276.18
						2" Ice	8.96	9.46	445.12
						4" Ice	11.23	13.02	896.75
AIR21 B2A/B4P with pipe	C	From Leg	3.00	0.0000	116.00	No Ice	6.87	6.29	134.62
			0.00			1/2" Ice	7.38	7.05	201.01
			0.00			1" Ice	7.90	7.84	276.18
						2" Ice	8.96	9.46	445.12
						4" Ice	11.23	13.02	896.75
AIR21 B4A/B2P with pipe	A	From Leg	3.00	0.0000	116.00	No Ice	6.85	5.78	126.90
			0.00			1/2" Ice	7.41	6.70	184.69
			0.00			1" Ice	7.94	7.50	249.28
						2" Ice	9.05	9.14	402.12
						4" Ice	11.38	12.65	833.05
AIR21 B4A/B2P with pipe	B	From Leg	3.00	0.0000	116.00	No Ice	6.85	5.78	126.90
			0.00			1/2" Ice	7.41	6.70	184.69
			0.00			1" Ice	7.94	7.50	249.28
						2" Ice	9.05	9.14	402.12
						4" Ice	11.38	12.65	833.05
AIR21 B4A/B2P with pipe	C	From Leg	3.00	0.0000	116.00	No Ice	6.85	5.78	126.90
			0.00			1/2" Ice	7.41	6.70	184.69
			0.00			1" Ice	7.94	7.50	249.28
						2" Ice	9.05	9.14	402.12
						4" Ice	11.38	12.65	833.05
dd B4 TMA	A	From Leg	3.00	0.0000	116.00	No Ice	0.64	0.52	22.43
			0.00			1/2" Ice	0.82	0.71	31.53
			0.00			1" Ice	1.00	0.91	43.17
						2" Ice	1.43	1.39	73.26
						4" Ice	2.47	2.57	178.83
dd B4 TMA	B	From Leg	3.00	0.0000	116.00	No Ice	0.64	0.52	22.43
			0.00			1/2" Ice	0.82	0.71	31.53
			0.00			1" Ice	1.00	0.91	43.17
						2" Ice	1.43	1.39	73.26
						4" Ice	2.47	2.57	178.83
dd B4 TMA	C	From Leg	3.00	0.0000	116.00	No Ice	0.64	0.52	22.43
			0.00			1/2" Ice	0.82	0.71	31.53
			0.00			1" Ice	1.00	0.91	43.17
						2" Ice	1.43	1.39	73.26
						4" Ice	2.47	2.57	178.83
Proposed									
LNX-6515DS-VTM w/ Mount Pipe	A	From Leg	3.00	0.0000	116.00	No Ice	11.65	9.84	83.25
			0.00			1/2" Ice	12.37	11.37	172.75
			0.00			1" Ice	13.10	12.92	272.22
						2" Ice	14.56	15.27	505.42
						4" Ice	17.83	20.14	1149.83
LNX-6515DS-VTM w/ Mount Pipe	B	From Leg	3.00	0.0000	116.00	No Ice	11.65	9.84	83.25
			0.00			1/2" Ice	12.37	11.37	172.75

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1" Ice	13.10	12.92	272.22
						2" Ice	14.56	15.27	505.42
						4" Ice	17.83	20.14	1149.83
LNX-6515DS-VTM w/ Mount Pipe	C	From Leg	3.00 0.00 0.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	11.65 12.37 13.10	9.84 11.37 12.92	83.25 172.75 272.22
						2" Ice	14.56	15.27	505.42
						4" Ice	17.83	20.14	1149.83
RRUS 11 B12	A	From Leg	3.00 0.00 0.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	3.31 3.55 3.80	1.36 1.54 1.73	50.70 71.57 95.49
						2" Ice	4.33	2.13	153.24
						4" Ice	5.50	3.04	313.85
RRUS 11 B12	B	From Leg	3.00 0.00 0.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	3.31 3.55 3.80	1.36 1.54 1.73	50.70 71.57 95.49
						2" Ice	4.33	2.13	153.24
						4" Ice	5.50	3.04	313.85
RRUS 11 B12	C	From Leg	3.00 0.00 0.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	3.31 3.55 3.80	1.36 1.54 1.73	50.70 71.57 95.49
						2" Ice	4.33	2.13	153.24
						4" Ice	5.50	3.04	313.85
Platform Mount [LP 403-1]	C	None		0.0000	116.00	No Ice	18.85	18.85	1500.00
						1/2" Ice	24.30	24.30	1796.56
						1" Ice	29.75	29.75	2093.12
						2" Ice	40.65	40.65	2686.24
						4" Ice	62.45	62.45	3872.48

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
VHLP2.5-180	A	Paraboloid w/Shroud (HP)	From Face	0.50 0.00 0.00	0.0000		155.00	2.50	No Ice 1/2" Ice 1" Ice	4.90 5.24 5.58	70.00 100.00 130.00
									2" Ice	6.26	190.00
									4" Ice	7.62	310.00
VHLP2.5-180	B	Paraboloid w/Shroud (HP)	From Face	0.50 -1.00 0.00	45.0000		155.00	2.50	No Ice 1/2" Ice 1" Ice	4.90 5.24 5.58	70.00 100.00 130.00
									2" Ice	6.26	190.00
									4" Ice	7.62	310.00
VHLP2.5-180	B	Paraboloid w/Shroud (HP)	From Face	0.50 1.00 0.00	90.0000		155.00	2.50	No Ice 1/2" Ice 1" Ice	4.90 5.24 5.58	70.00 100.00 130.00
									2" Ice	6.26	190.00
									4" Ice	7.62	310.00

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft²	Weight lb
PX3F-52	C	Paraboloid w/Shroud (HP)	From Leg	0.50 1.00 0.00	0.0000		155.00	3.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.07 7.47 7.87 8.67 10.27	40.00 80.00 120.00 200.00 360.00
PX3F-52	A	Paraboloid w/Shroud (HP)	From Leg	0.50 1.00 0.00	45.0000		155.00	3.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.07 7.47 7.87 8.67 10.27	40.00 80.00 120.00 200.00 360.00

Load Combinations

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
L1	125 - 117.713	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-3957.15	-71.30	406.08
			Max. Mx	5	-2498.20	-64571.47	2506.93
			Max. My	2	-2504.00	-3552.26	57893.23
			Max. Vy	5	5505.32	-64571.47	2506.93
			Max. Vx	8	5352.33	1350.58	-57420.69
			Max. Torque	6			1430.19
L2	117.713 - 69.8165	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-17415.72	-71.30	406.08
			Max. Mx	5	-13314.48	-576926.11	5614.59
			Max. My	2	-13319.77	-8305.09	563233.42
			Max. Vy	5	13999.36	-576926.11	5614.59
			Max. Vx	8	13844.48	3277.34	-562807.98
			Max. Torque	6			1430.16
L3	69.8165 - 25.8965	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-30056.26	-71.30	406.09
			Max. Mx	5	-24368.61	-1254784.06	8506.56
			Max. My	2	-24370.76	-12741.50	1234543.29
			Max. Vy	5	18197.87	-1254784.06	8506.56
			Max. Vx	8	18044.29	5076.65	-1234163.00
			Max. Torque	6			1429.31
L4	25.8965 - 1	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-44488.82	-71.30	406.10
			Max. Mx	5	-37240.35	-1916857.80	10762.98
			Max. My	2	-37240.40	-16208.96	1891501.82
			Max. Vy	5	21713.33	-1916857.80	10762.98
			Max. Vx	8	21561.57	6483.49	-1891158.33
			Max. Torque	6			1429.15

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	14	44488.82	-0.00	0.00
	Max. H_x	11	37242.65	21700.90	-38.44
	Max. H_z	2	37242.65	-103.65	21556.55
	Max. M_x	2	1891501.82	-103.65	21556.55
	Max. M_z	5	1916857.80	-21709.38	67.44
	Max. Torsion	6	1429.13	-18832.15	-10591.62
	Min. Vert	30	37242.65	-7510.94	23.33
	Min. H_x	5	37242.65	-21709.38	67.44
	Min. H_z	8	37242.65	42.06	-21557.67
	Min. M_x	8	-1891158.33	42.06	-21557.67
	Min. M_z	11	-1915404.52	21700.90	-38.44
	Min. Torsion	11	-1273.43	21700.90	-38.44

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	37242.66	0.00	-0.00	-255.09	-65.47	0.00
Dead+Wind 0 deg - No Ice	37242.65	103.65	-21556.55	-1891501.82	-16208.95	218.82
Dead+Wind 30 deg - No Ice	37242.65	10850.05	-18695.47	-1642318.87	-957740.61	-319.15
Dead+Wind 60 deg - No Ice	37242.65	18861.72	-10647.03	-925438.84	-1669533.79	-728.27
Dead+Wind 90 deg - No Ice	37242.65	21709.38	-67.44	-10762.95	-1916857.80	-1177.42
Dead+Wind 120 deg - No Ice	37242.65	18832.15	10591.62	916291.37	-1664929.51	-1429.13
Dead+Wind 150 deg - No Ice	37242.65	10790.03	18632.80	1632041.77	-948393.93	-568.53
Dead+Wind 180 deg - No Ice	37242.65	-42.06	21557.67	1891158.33	6483.49	11.10
Dead+Wind 210 deg - No Ice	37242.65	-10939.67	18627.18	1631165.36	971566.25	627.87
Dead+Wind 240 deg - No Ice	37242.65	-18844.74	10746.07	940344.74	1666755.58	995.73
Dead+Wind 270 deg - No Ice	37242.65	-21700.90	38.44	5728.60	1915404.52	1273.43
Dead+Wind 300 deg - No Ice	37242.65	-18826.23	-10672.21	-929360.38	1663873.88	1120.67
Dead+Wind 330 deg - No Ice	37242.65	-10906.05	-18623.86	-1631166.62	966330.81	729.77
Dead+Ice+Temp	44488.82	0.00	-0.00	-406.10	-71.30	0.00
Dead+Wind 0 deg+Ice+Temp	44488.82	79.95	-17538.71	-1579869.18	-12567.27	175.31
Dead+Wind 30 deg+Ice+Temp	44488.82	8826.40	-15210.12	-1371572.20	-799384.13	-265.85
Dead+Wind 60 deg+Ice+Temp	44488.82	15346.90	-8660.98	-773208.11	-1393761.45	-610.21
Dead+Wind 90 deg+Ice+Temp	44488.82	17664.66	-51.45	-8455.58	-1600541.65	-958.55
Dead+Wind 120 deg+Ice+Temp	44488.82	15323.51	8621.15	766153.24	-1390106.28	-1150.23
Dead+Wind 150 deg+Ice+Temp	44488.82	8782.72	15160.33	1362962.26	-792558.97	-469.71
Dead+Wind 180 deg+Ice+Temp	44488.82	-30.27	17539.16	1579108.82	4657.90	-2.80
Dead+Wind 210 deg+Ice+Temp	44488.82	-8899.27	15154.52	1362054.64	810626.63	498.56
Dead+Wind 240 deg+Ice+Temp	44488.82	-15333.15	8741.24	784920.02	1391465.87	807.47
Dead+Wind 270 deg+Ice+Temp	44488.82	-17658.07	27.62	3901.39	1599366.00	1048.21
Dead+Wind 300 deg+Ice+Temp	44488.82	-15319.38	-8686.12	-777137.18	1389315.40	932.69
Dead+Wind 330 deg+Ice+Temp	44488.82	-8876.07	-15153.48	-1362721.26	807001.56	610.27
Dead+Wind 0 deg - Service	37242.65	35.85	-7458.07	-654604.76	-5651.36	64.41
Dead+Wind 30 deg - Service	37242.65	3753.86	-6468.20	-568391.04	-331409.35	-118.90
Dead+Wind 60 deg - Service	37242.65	6525.71	-3683.64	-320360.27	-577680.79	-278.11
Dead+Wind 90 deg - Service	37242.65	7510.94	-23.33	-3893.36	-663252.37	-400.25
Dead+Wind 120 deg - Service	37242.65	6515.48	3664.47	316855.99	-576087.60	-465.10
Dead+Wind 150 deg - Service	37242.65	3733.10	6446.52	564495.74	-328175.42	-190.66
Dead+Wind 180 deg - Service	37242.65	-14.55	7458.46	654146.81	2199.59	-0.76
Dead+Wind 210 deg - Service	37242.65	-3784.87	6444.58	564192.99	336105.62	196.72
Dead+Wind 240 deg - Service	37242.65	-6519.84	3717.90	325178.13	576632.90	328.93
Dead+Wind 270 deg - Service	37242.65	-7508.00	13.30	1812.24	662662.48	445.00
Dead+Wind 300 deg - Service	37242.65	-6513.43	-3692.35	-321716.97	575635.45	409.64
Dead+Wind 330 deg - Service	37242.65	-3773.24	-6443.43	-564532.48	334294.11	270.24

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
1	0.00	-37242.66	0.00	-0.00	37242.66	0.00	0.000%
2	103.65	-37242.66	-21557.11	-103.65	37242.65	21556.55	0.001%
3	10850.33	-37242.66	-18695.95	-10850.05	37242.65	18695.47	0.001%
4	18862.21	-37242.66	-10647.30	-18861.72	37242.65	10647.03	0.001%

Load Comb.	Sum of Applied Forces PX lb	PY lb	PZ lb	Sum of Reactions PX lb	PY lb	PZ lb	% Error
5	21709.95	-37242.66	-67.45	-21709.38	37242.65	67.44	0.001%
6	18832.64	-37242.66	10591.89	-18832.15	37242.65	-10591.62	0.001%
7	10790.31	-37242.66	18633.28	-10790.03	37242.65	-18632.80	0.001%
8	-42.06	-37242.66	21558.23	42.06	37242.65	-21557.67	0.001%
9	-10939.96	-37242.66	18627.66	10939.67	37242.65	-18627.18	0.001%
10	-18845.24	-37242.66	10746.35	18844.74	37242.65	-10746.07	0.001%
11	-21701.47	-37242.66	38.45	21700.90	37242.65	-38.44	0.001%
12	-18826.72	-37242.66	-10672.48	18826.23	37242.65	10672.21	0.001%
13	-10906.34	-37242.66	-18624.34	10906.05	37242.65	18623.86	0.001%
14	0.00	-44488.82	0.00	-0.00	44488.82	0.00	0.000%
15	79.95	-44488.82	-17538.72	-79.95	44488.82	17538.71	0.000%
16	8826.40	-44488.82	-15210.12	-8826.40	44488.82	15210.12	0.000%
17	15346.90	-44488.82	-8660.98	-15346.90	44488.82	8660.98	0.000%
18	17664.67	-44488.82	-51.45	-17664.66	44488.82	51.45	0.000%
19	15323.51	-44488.82	8621.15	-15323.51	44488.82	-8621.15	0.000%
20	8782.72	-44488.82	15160.33	-8782.72	44488.82	-15160.33	0.000%
21	-30.27	-44488.82	17539.17	30.27	44488.82	-17539.16	0.000%
22	-8899.27	-44488.82	15154.52	8899.27	44488.82	-15154.52	0.000%
23	-15333.15	-44488.82	8741.24	15333.15	44488.82	-8741.24	0.000%
24	-17658.08	-44488.82	27.62	17658.07	44488.82	-27.62	0.000%
25	-15319.38	-44488.82	-8686.12	15319.38	44488.82	8686.12	0.000%
26	-8876.07	-44488.82	-15153.48	8876.07	44488.82	15153.48	0.000%
27	35.87	-37242.66	-7459.21	-35.85	37242.65	7458.07	0.003%
28	3754.44	-37242.66	-6469.19	-3753.86	37242.65	6468.20	0.003%
29	6526.72	-37242.66	-3684.19	-6525.71	37242.65	3683.64	0.003%
30	7512.09	-37242.66	-23.34	-7510.94	37242.65	23.33	0.003%
31	6516.49	-37242.66	3665.01	-6515.48	37242.65	-3664.47	0.003%
32	3733.67	-37242.66	6447.50	-3733.10	37242.65	-6446.52	0.003%
33	-14.55	-37242.66	7459.60	14.55	37242.65	-7458.46	0.003%
34	-3785.45	-37242.66	6445.56	3784.87	37242.65	-6444.58	0.003%
35	-6520.84	-37242.66	3718.46	6519.84	37242.65	-3717.90	0.003%
36	-7509.16	-37242.66	13.30	7508.00	37242.65	-13.30	0.003%
37	-6514.44	-37242.66	-3692.90	6513.43	37242.65	3692.35	0.003%
38	-3773.82	-37242.66	-6444.41	3773.24	37242.65	6443.43	0.003%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	8	0.00000001	0.00006728
3	Yes	8	0.00000001	0.00008110
4	Yes	8	0.00000001	0.00009794
5	Yes	8	0.00000001	0.00007494
6	Yes	8	0.00000001	0.00006894
7	Yes	8	0.00000001	0.00009135
8	Yes	8	0.00000001	0.00006683
9	Yes	8	0.00000001	0.00009418
10	Yes	8	0.00000001	0.00007502
11	Yes	8	0.00000001	0.00007489
12	Yes	8	0.00000001	0.00010471
13	Yes	8	0.00000001	0.00007662
14	Yes	6	0.00000001	0.00000001
15	Yes	9	0.00000001	0.00014650
16	Yes	10	0.00000001	0.00003044
17	Yes	10	0.00000001	0.00003058

18	Yes	9	0.00000001	0.00014901
19	Yes	10	0.00000001	0.00003028
20	Yes	10	0.00000001	0.00003019
21	Yes	9	0.00000001	0.00014632
22	Yes	10	0.00000001	0.00003046
23	Yes	10	0.00000001	0.00003061
24	Yes	9	0.00000001	0.00014887
25	Yes	10	0.00000001	0.00003058
26	Yes	10	0.00000001	0.00003037
27	Yes	7	0.00000001	0.00012946
28	Yes	7	0.00000001	0.00012480
29	Yes	7	0.00000001	0.00012654
30	Yes	7	0.00000001	0.00013222
31	Yes	7	0.00000001	0.00012524
32	Yes	7	0.00000001	0.00012405
33	Yes	7	0.00000001	0.00012924
34	Yes	7	0.00000001	0.00012475
35	Yes	7	0.00000001	0.00012594
36	Yes	7	0.00000001	0.00013212
37	Yes	7	0.00000001	0.00012663
38	Yes	7	0.00000001	0.00012425

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
L1	125 - 117.713 (1)	TP32.46x30x0.25	7.29	0.00	0.0	39.000	24.5826	-2498.20	958723.00	0.003
L2	117.713 - 69.8165 (2)	TP47.87x30.73x0.375	51.54	0.00	0.0	39.000	53.9581	-13314.50	2104360.00	0.006
L3	69.8165 - 25.8965 (3)	TP61.99x44.9584x0.375	50.42	0.00	0.0	38.247	69.9881	-24368.60	2676810.00	0.009
L4	25.8965 - 1 (4)	TP70x58.4262x0.4375	33.23	0.00	0.0	38.001	96.5962	-37240.40	3670720.00	0.010

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x lb-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y lb-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	125 - 117.713 (1)	TP32.46x30x0.25	64620.08	4.127	39.000	0.106	0.00	0.000	39.000	0.000
L2	117.713 - 69.8165 (2)	TP47.87x30.73x0.375	576953.33	11.475	39.000	0.294	0.00	0.000	39.000	0.000
L3	69.8165 - 25.8965 (3)	TP61.99x44.9584x0.375	1254816.67	14.806	38.247	0.387	0.00	0.000	38.247	0.000
L4	25.8965 - 1 (4)	TP70x58.4262x0.4375	1916891.67	13.851	38.001	0.365	0.00	0.000	38.001	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V lb	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T lb-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	125 - 117.713 (1)	TP32.46x30x0.25	5505.75	0.224	26.000	0.017	1177.98	0.037	26.000	0.001
L2	117.713 - 69.8165 (2)	TP47.87x30.73x0.375	13999.50	0.259	26.000	0.020	1177.62	0.011	26.000	0.000
L3	69.8165 - 25.8965 (3)	TP61.99x44.9584x0.375	18198.00	0.260	26.000	0.020	1177.45	0.007	26.000	0.000
L4	25.8965 - 1 (4)	TP70x58.4262x0.4375	21713.40	0.225	26.000	0.017	1177.42	0.004	26.000	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	125 - 117.713 (1)	0.003	0.106	0.000	0.017	0.001	0.109 ✔	1.333	H1-3+VT ✔
L2	117.713 - 69.8165 (2)	0.006	0.294	0.000	0.020	0.000	0.301 ✔	1.333	H1-3+VT ✔
L3	69.8165 - 25.8965 (3)	0.009	0.387	0.000	0.020	0.000	0.396 ✔	1.333	H1-3+VT ✔
L4	25.8965 - 1 (4)	0.010	0.365	0.000	0.017	0.000	0.375 ✔	1.333	H1-3+VT ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
L1	125 - 117.713	Pole	TP32.46x30x0.25	1	-2498.20	1277977.71	8.1	Pass
L2	117.713 - 69.8165	Pole	TP47.87x30.73x0.375	2	-13314.50	2805111.76	22.6	Pass
L3	69.8165 - 25.8965	Pole	TP61.99x44.9584x0.375	3	-24368.60	3568187.58	29.7	Pass
L4	25.8965 - 1	Pole	TP70x58.4262x0.4375	4	-37240.40	4893069.56	28.1	Pass
						Summary		
						Pole (L3)	29.7	Pass
						RATING =	**29.7**	**Pass**

Square, Stiffened / Unstiffened Base Plate, Any Rod Material - Rev. F /G

Assumptions: 1) Rod groups at corners. Total # rods divisible by 4. Maximum total # of rods = 48 (12 per Corner).
2) Rod Spacing = Straight Center-to-Center distance between any (2) adjacent rods (same corner)
3) Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#:
Site Name: *CT603/Atlas Container W*
App #:

Anchor Rod Data		
Qty:	12	
Diam:	2.25	in
Rod Material:	A615-J	
Yield, Fy:	75	ksi
Strength, Fu:	100	ksi
Bolt Circle:	80	in
Anchor Spacing:	6	in

Plate Data		
W=Side:	76.5	in
Thick:	2.25	in
Grade:	60	ksi
Clip Distance:	6	in

Stiffener Data (Welding at both sides)		
Configuration:	Unstiffened	
Weld Type:		**
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data		
Diam:	70	in
Thick:	0.4375	in
Grade:	65	ksi
# of Sides:	0	"0" IF Round

Stress Increase Factor		
ASD ASIF:	1.333	

Base Reactions		
TIA Revision:	F	
Unfactored Moment, M:	1917	ft-kips
Unfactored Axial, P:	37.2	kips
Unfactored Shear, V:	21.7	kips

Anchor Rod Results

TIA F --> Maximum Rod Tension	92.8	Kips
Allowable Tension:	195.0	Kips
Anchor Rod Stress Ratio:	47.6%	**Pass**

Base Plate Results Flexural Check

Base Plate Stress:	47.6	ksi
Allowable PL Bending Stress:	60.0	ksi
Base Plate Stress Ratio:	79.4%	**Pass**

PL Ref. Data	
Yield Line (in):	34.47
Max PL Length:	38.19

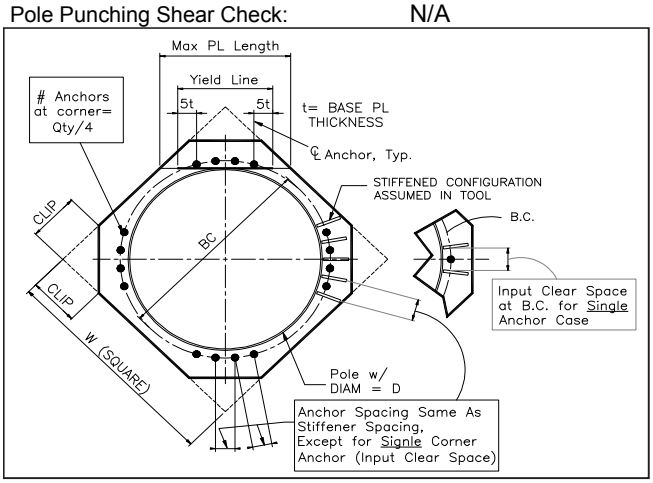
N/A - Unstiffened

Stiffener Results

Horizontal Weld :	N/A
Vertical Weld:	N/A
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	N/A
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	N/A
Plate Comp. (AISC Bracket):	N/A

Pole Results

Pole Punching Shear Check: N/A



** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Exhibit C

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

T-Mobile Existing Facility

Site ID: CT11603E

CT603/ Atlas Container WT
119 Empire Avenue
Meriden, CT 06468

September 22, 2015

EBI Project Number: 6215004837

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	11.73 %

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

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September 22, 2015

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

Emissions Analysis for Site: **CT11603E – CT603/ Atlas Container WT**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **119 Empire Avenue, Meriden, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

General population/uncontrolled exposure limits apply to situations in which the general 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 ($\mu W/cm^2$). The general population exposure limit for the 700 MHz Band is approximately 467 $\mu W/cm^2$, and the general population exposure limit for the PCS and AWS bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **119 Empire Avenue, Meriden, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

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

1) 2 GSM / 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 UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

4) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

5) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

6) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

7) The antennas used in this modeling are the **Ericsson AIR21 (B4A/B2P** & **B2A/B4P)** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR21 (B4A/B2P** & **B2A/B4P)** have a maximum gain of **15.9 dBd** at their main lobe. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe. 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 **115 feet** above ground level (AGL).

9) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

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T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	115	Height (AGL):	115	Height (AGL):	115
Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)
Channel Count	2	Channel Count	2	# PCS Channels:	2
Total TX Power:	120	Total TX Power:	120	# AWS Channels:	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A1 MPE%	1.41	Antenna B1 MPE%	1.41	Antenna C1 MPE%	1.41
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	115	Height (AGL):	115	Height (AGL):	115
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power:	120	Total TX Power:	120	Total TX Power:	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A2 MPE%	1.41	Antenna B2 MPE%	1.41	Antenna C2 MPE%	1.41
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	115	Height (AGL):	115	Height (AGL):	115
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power:	30	Total TX Power:	30	Total TX Power:	30
ERP (W):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A3 MPE%	0.56	Antenna B3 MPE%	0.56	Antenna C3 MPE%	0.56

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**3.39 %**
Cingular	1.29 %
AT&T	0.95 %
Nextel	2.71 %
Sprint	0.67 %
Verizon Wireless	2.56 %
Clearwire	0.16 %
Site Total MPE %:	**11.73 %**

T-Mobile Sector 1 Total:	3.39 %
T-Mobile Sector 2 Total:	3.39 %
T-Mobile Sector 3 Total:	3.39 %
Site Total:	11.73 %

T-Mobile _per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile 2100 MHz (AWS) LTE	**2**	**2334.27**	**115**	**14.13**	**2100**	**1000**	**1.41 %**
T-Mobile 700 MHz LTE	**1**	**865.21**	**115**	**2.62**	**700**	**467**	**0.56 %**
T-Mobile 1900 MHz (PCS) UMTS	**2**	**1167.14**	**115**	**7.06**	**1900**	**1000**	**0.71 %**
T-Mobile 2100 MHz (AWS) UMTS	**2**	**1167.14**	**115**	**7.06**	**2100**	**1000**	**0.71 %**
						Total:	**3.39%**

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Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector 1:	3.39 %
Sector 2:	3.39 %
Sector 3 :	3.39 %
T-Mobile Per Sector Maximum:	3.39 %
Site Total:	11.73 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **11.73%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Scott Heffernan
RF Engineering Director

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