



November 4, 2015

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

RE: Notice of Exempt Modification
1725 Stafford Road, Mansfield, CT 06268
Longitude: -72.307681
Latitude: 41.835971
T-Mobile Site#: CT11517B_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 1725 Stafford Road, Mansfield, CT 06268.

The 1725 Stafford Road, Mansfield, CT 06268 facility consists of a 170' Monopole 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.



NSS **NORTHEAST**
SITE SOLUTIONS

Turnkey Wireless Development

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: Town of Mansfield, 4 South Eagleville Rd, Mansfield, CT 06268, Attn: Mayor Elizabeth C Paterson (property owner)
American Tower Corporation, 10 Presidential Way, Woburn, MA 01801, Attn: Emily Hannon (tower owner)

Exhibit A

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.

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 SHOWN ON THE DRAWINGS. NEW OR RELOCATED EQUIPMENT IS NOTED 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 COMMERCIAL 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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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:

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.

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

- 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.

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.

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.

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.

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

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.

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.

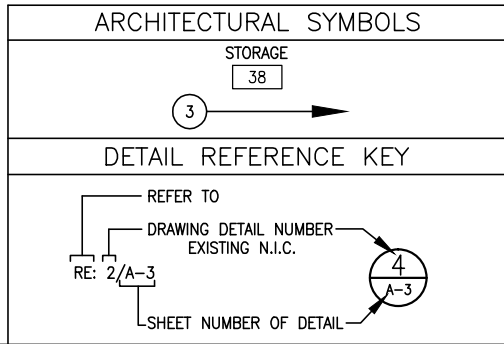
1. REFER TO SECTION 17 OF SIGNED MCSA: SEE PROFESSIONAL SERVICE AGREEMENT FOR MCSA.

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.

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.

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.



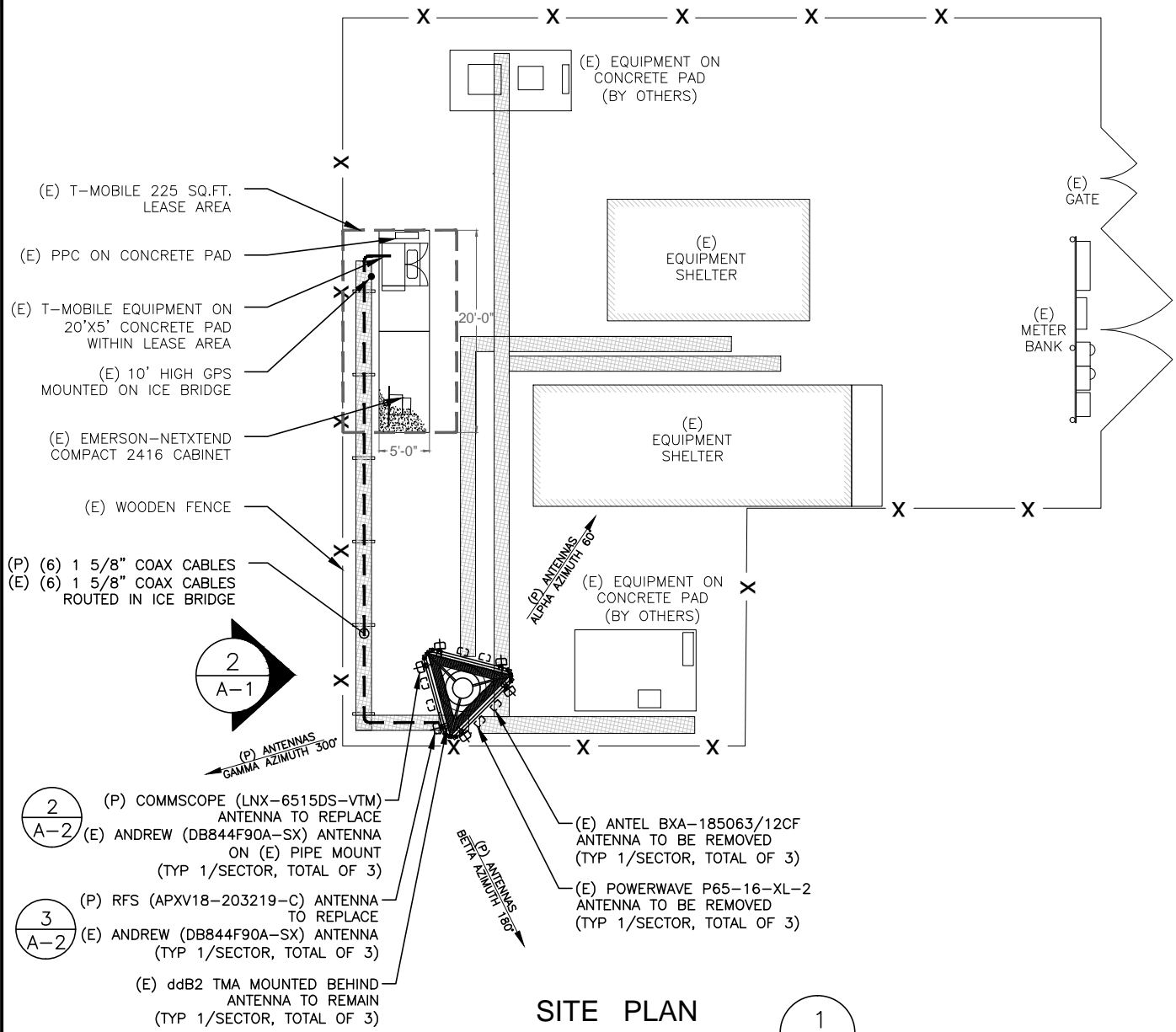
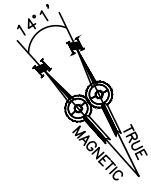
1. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THESE SHALL INCLUDE, BUT NOT BE LIMITED TO THE APPLICABLE CODES SET FORTH BY THE LOCAL GOVERNING BODY. SEE "CODE COMPLIANCE" T-1.

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.

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.

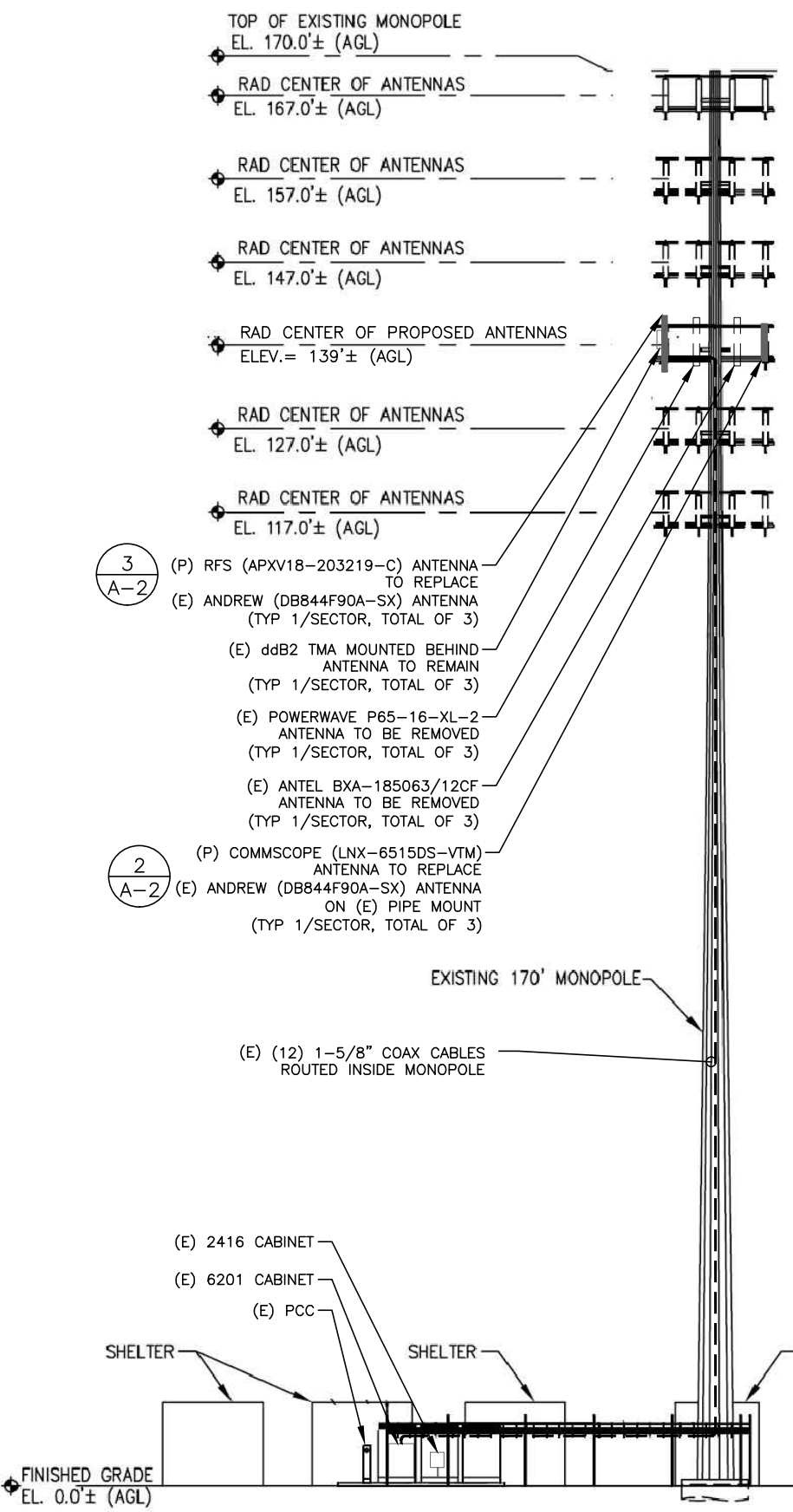
ADJ	ADJUSTABLE
AGL	ABOVE GROUND LINE
&	AND
APPROX	APPROXIMATE
@	AT
BTS	BASE TRANSMISSION STATION
CAB	CABINET
CLG	CEILING
CONC	CONCRETE
CONT	CONTINUOUS
DIA OR Ø	DIAMETER
DWG	DRAWING
EA	EACH
ELEC	ELECTRICAL
ELEV	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
EGB	EQUIPMENT GROUND BAR
(E)	EXISTING
EXT	EXTERIOR
FF	FINISHED 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

ATLANTIS GROUP, INC. HAS NOT CONDUCTED A STRUCTURAL ANALYSIS FOR THIS PROJECT AND DOES NOT ASSUME ANY LIABILITY FOR THE ADEQUACY OF THE STRUCTURE AND COMPONENTS.



SITE PLAN

SCALE: 1/16" = 1'-0" (11x17)
1/8" = 1'-0" (24x36)



ELEVATION

SCALE: 1" = 20'-0" (11x17)
1" = 10'-0" (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
- x - 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

T-Mobile

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
09/04/15	ISSUED FOR REVIEW	A
10/29/15	FINAL CD	0
11/03/15	ANTENNA REVISION	1

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

DRAWN BY: FG
CHECKED BY: SM

PROFESSIONAL SEAL

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SITE NAME
CT11517B

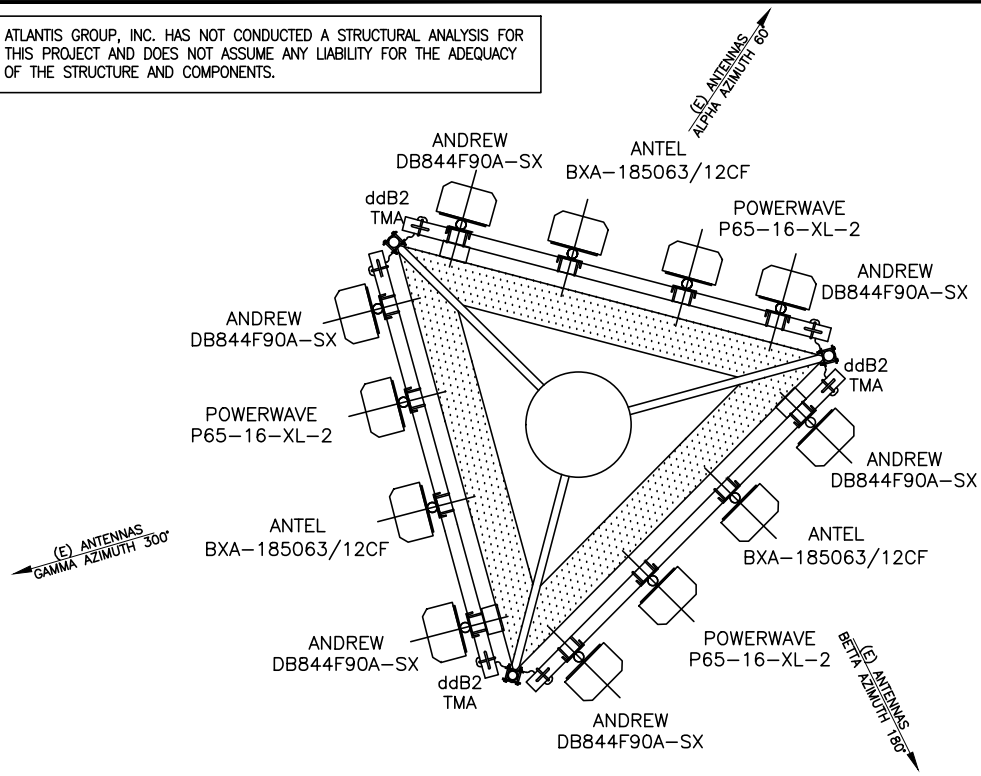
SITE NAME
TCP MONOPOLE

SITE ADDRESS
1725 STAFFORD ROAD
MANSFIELD, CT 06268

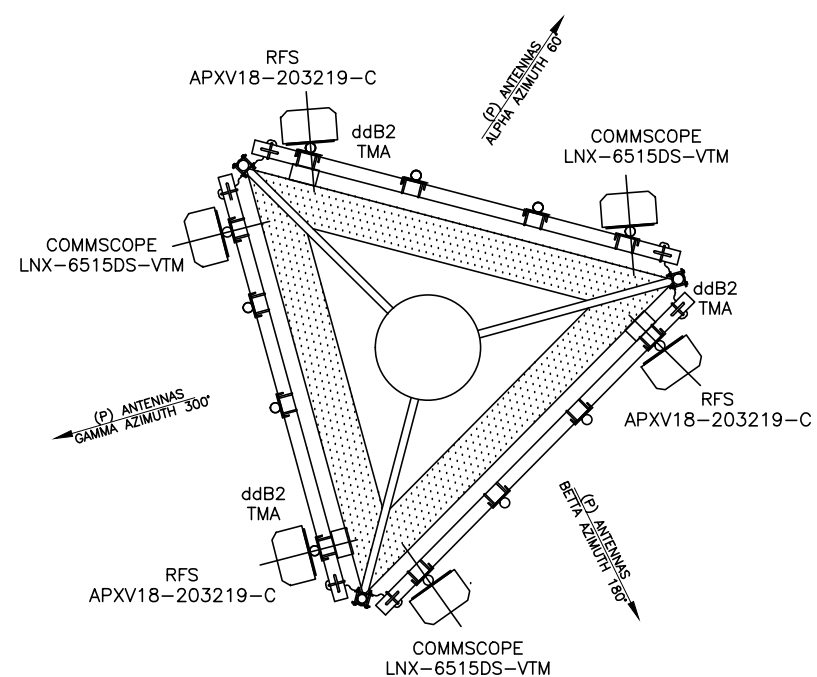
SHEET TITLE
SITE PLAN
AND
ELEVATION

SHEET NUMBER
A-1

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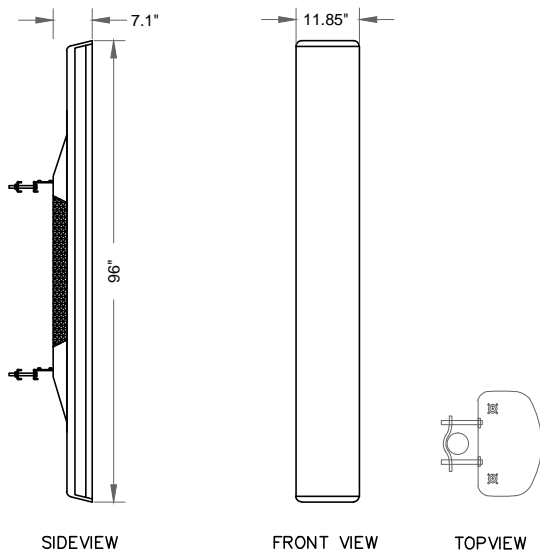
EXISTING ANTENNA CONFIGURATION



PROPOSED ANTENNA CONFIGURATION

ANTENNA PLAN
SCALE: N.T.S.

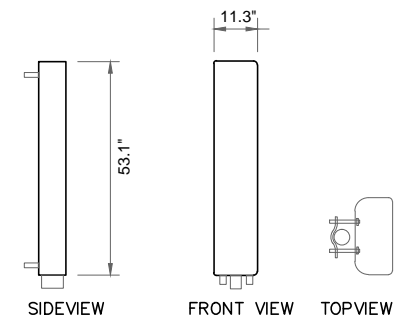
1
A-2



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

COMMSCOPE ANTENNA DETAIL
SCALE: N.T.S.

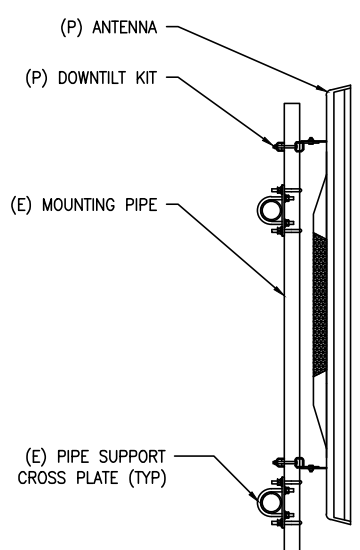
2
A-2



MANUFACTURE: RFS
MODEL NO. APXV18-203219-C
DIMENSIONS - HxWxD, (IN) 54.1x11.3

RFS APXV18-203219-C
ANTENNA DETAIL
SCALE: N.T.S.

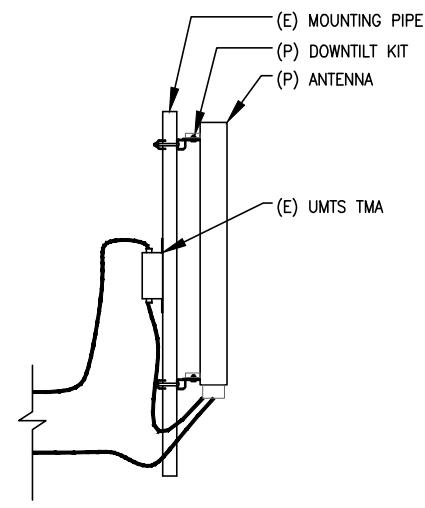
3
A-2



COMMSCOPE
ANTENNA

ANTENNA MOUNT DETAILS
SCALE: N.T.S.

4
A-2



RFS APX18206514-04
ANTENNA

T-Mobile

T-MOBILE NORTHEAST, LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860) 692-7100
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SUBMITTALS		
DATE	DESCRIPTION	REVISION
09/04/15	ISSUED FOR REVIEW	A
10/29/15	FINAL CD	0
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DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

DRAWN BY: FG
CHECKED BY: SM

PROFESSIONAL SEAL

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SITE NAME
CT11517B
SITE NAME
TCP MONOPOLE
SITE ADDRESS
1725 STAFFORD ROAD
MANSFIELD, CT 06268

SHEET TITLE
ANTENNA PLAN
AND
DETAILS

SHEET NUMBER
A-2

- 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.



E-1

E-2

Exhibit B



AMERICAN TOWER®
C O R P O R A T I O N

Structural Analysis Report

Structure : 170 ft Monopole
ATC Site Name : Mansfield Center 2 CT, CT
ATC Site Number : 376047
Engineering Number : 63853821
Proposed Carrier : T-Mobile
Carrier Site Name : CT517/TCP Mansfield
Carrier Site Number : CT11517B
Site Location : 1725 Stafford Road
Storrs Mansfield, CT 06268-1138
41.835953,-72.307847
County : Tolland
Date : October 19, 2015
Max Usage : 79%
Result : Pass

Reviewed by:
Scott Wirgau, PE
Structural Team Leader

Prepared By:
Brendan M. Smith, E.I.
Structural Engineer I



Oct 20 2015 3:19 PM

COA: PEC.0001553



Table of Contents

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



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 170 ft monopole to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	PennSummit, PJF Job #29202-0365, dated December 6, 2002
Foundation Drawing	PennSummit, PJF Job #29202-0365, dated December 6, 2002

Analysis

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

Basic Wind Speed:	85 mph (Fastest Mile)
Basic Wind Speed w/ Ice:	74 mph (Fastest Mile)w/ 1/2" radial ice concurrent
Code:	ANSI/TIA/EIA-222-F / 2003 IBC , Sec. 1609.1.1, Exception (5) & Sec. 3108.4 w/ 2005 CT Supplement & 2009 CT Amendment

Conclusion

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

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

Existing and Reserved Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
170.0	174.0	3	Antel BXA-70080-4BF-EDIN-X	Low Profile Platform	(12) 1 5/8" Coax (1) 1 5/8" Hybriflex	Verizon
		3	Andrew LNX-6514DS-A1M			
		6	Commscope HBXX-6517DS-A2M			
	170.0	6	RFS FD9R6004/2C-3L			
		6	Alcatel-Lucent RRH2X60-AWS			
		1	RFS DB-T1-6Z-8AB-0Z			
165.0	165.0	1	CSS RET-200	T-Arms	(6) 1 5/8" Coax (1) 3/8" Coax	Metro PCS
		6	Andrew HBX-6516DS-VTM			
150.0	158.0	6	Powerwave LGP21901	Low Profile Platform	(12) 1 5/8" Coax (12) 1/2" Coax (3) 3" Conduit	AT&T Mobility
		6	Powerwave LGP21401			
		6	Powerwave 7770.00			
		2	KMW AM-X-CD-16-65-00T-RET			
		1	Powerwave P65-17-XLH-RR			
	150.0	6	Ericsson RRUS 11 (Band 12)			
140.0	-	-	-	Low Profile Platform	(12) 1 5/8" Coax	T-Mobile
130.0	129.0	3	Alcatel-Lucent RRH 1900MHz	Low Profile Platform	(3) 1 1/4" Hybriflex (1) 1 5/8" Hybriflex	Sprint Nextel
		3	Alcatel-Lucent 800MHz RRH			
		3	Alcatel-Lucent TD-RRH8x20-25			
		3	RFS APXV9TM14-ALU-I20			
		3	RFS APXV9ERR18-C (62 lbs)			

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
140.0	140.0	3	Powerwave P65-16-XL-2	-	-	T-Mobile
		3	Antel BXA-185063/12CF			
		6	Andrew DB844F90A-SX			

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
140.0	140.0	3	Andrew ATSBT-BOTTOM-MF	Low Profile Platform	-	T-Mobile
		3	Ericsson KRY 112 144/1			
	139.0	3	RFS APXV18-203219-C (54.1" x 11.3")			
		3	Commscope LNX-6515DS-VTM			

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

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	71%	Pass
Shaft	73%	Pass
Base Plate	55%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Design
Moment (Kips-Ft)	4,048.3	76%
Shear (Kips)	33.0	79%

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required. The foundation also exceeds a factor of safety of 2.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
140.0	Andrew ATSBT-BOTTOM-MF	T-Mobile	1.762	1.524
	Ericsson KRY 112 144/1			
	RFS APXV18-203219-C (54.1" x 11.3")			
	Commscope LNX-6515DS-VTM			

*Deflection and Sway was evaluated considering a design wind speed of 50 mph (Fastest Mile) per ANSI/TIA/EIA-222-F.



Standard Conditions

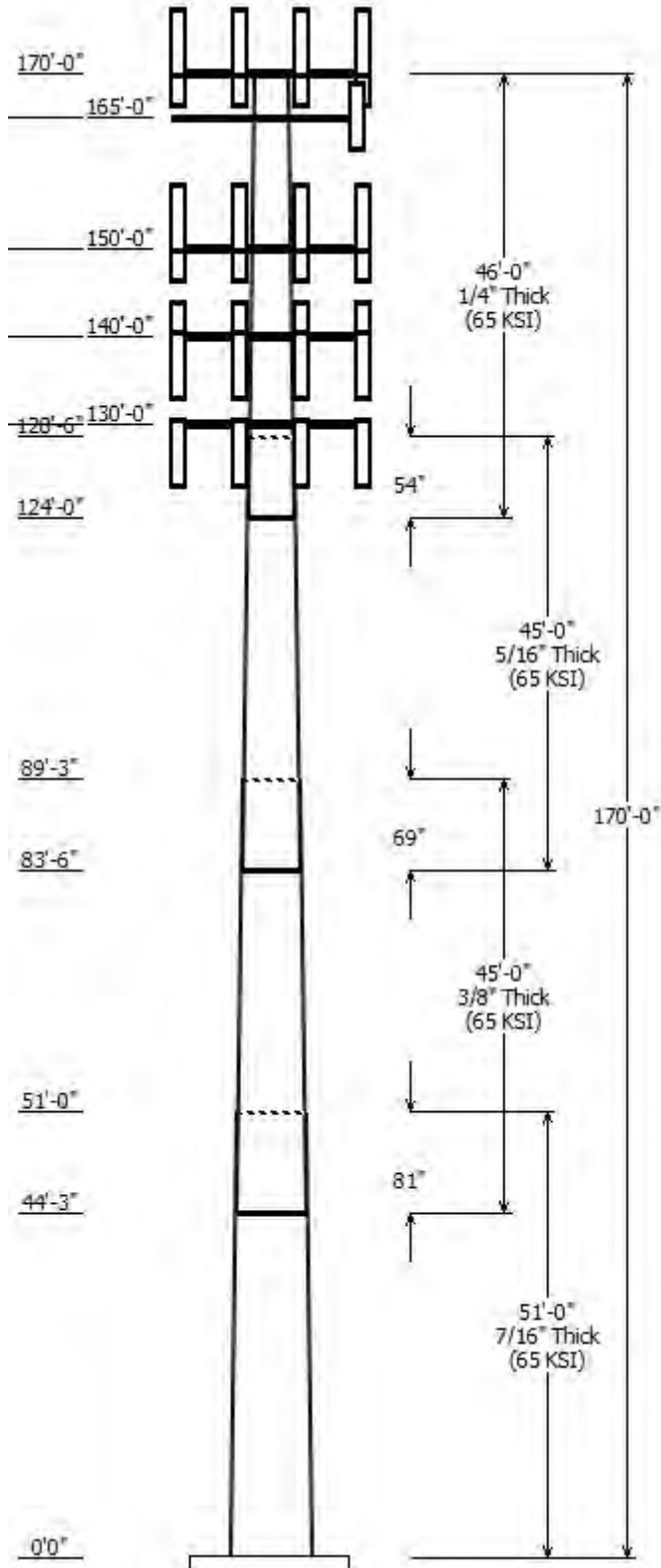
All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

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

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

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

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



Job Information

Pole : 376047

Code: TIA/EIA-222-F

Description :

Client : T- Mobile

Location : Mansfield Center 2 CT, CT

Shape : 18 Sides

Height : 170.00 (ft)

Base Elev (ft): 0.00

Taper: 0.24702(in/ft)

Sections Properties

Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)		Steel Taper (in/ft)	Grade (ksi)
		Top	Bottom						
1	51.000	51.52	64.12	0.438		0.000	0.247029	65	
2	45.000	42.82	53.93	0.375	Slip Joint	81.000	0.247029	65	
3	45.000	33.75	44.86	0.313	Slip Joint	69.000	0.247029	65	
4	46.000	24.00	35.36	0.250	Slip Joint	54.000	0.247029	65	

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
170.000	174.000	6	Commscope HBXX-6517DS-
170.000	170.000	1	RFS DB-T1-6Z-8AB-0Z
170.000	174.000	3	Antel BXA-70080-4BF-EDIN-X
170.000	170.000	6	Alcatel-Lucent RRH2X60-AWS
170.000	170.000	6	RFS FD9R6004/2C-3L
170.000	174.000	3	Andrew LNX-6514DS-A1M
170.000	170.000	1	Flat Low Profile Platform
165.000	165.000	3	Round T-Arm
165.000	165.000	6	Andrew HBX-6516DS-VTM
165.000	165.000	1	CSS RET-200
150.000	150.000	1	Flat Low Profile Platform
150.000	158.000	1	Powerwave P65-17-XLH-RR
150.000	158.000	2	KMW AM-X-CD-16-65-00T-RET
150.000	158.000	6	Powerwave 7770.00
150.000	150.000	6	Ericsson RRUS 11 (Band 12)
150.000	158.000	6	Powerwave LGP21401
150.000	158.000	6	Powerwave LGP21901
140.000	139.000	3	Commscope LNX-6515DS-VTM
140.000	139.000	3	RFS APXV18-203219-C (54.1" x 1
140.000	140.000	3	Ericsson KRY 112 144/1
140.000	140.000	3	Andrew ATSBT-BOTTOM-MF
140.000	140.000	1	Round Low Profile Platform
130.000	130.000	1	Flat Low Profile Platform
130.000	129.000	3	RFS APXV9ERR18-C (62 lbs)
130.000	129.000	3	RFS APXV9TM14-ALU-I20
130.000	129.000	3	Alcatel-Lucent TD-RRH8x20-25
130.000	129.000	3	Alcatel-Lucent 800 MHz RRH
130.000	129.000	3	Alcatel-Lucent RRH 1900 MHz

Linear Appurtenance

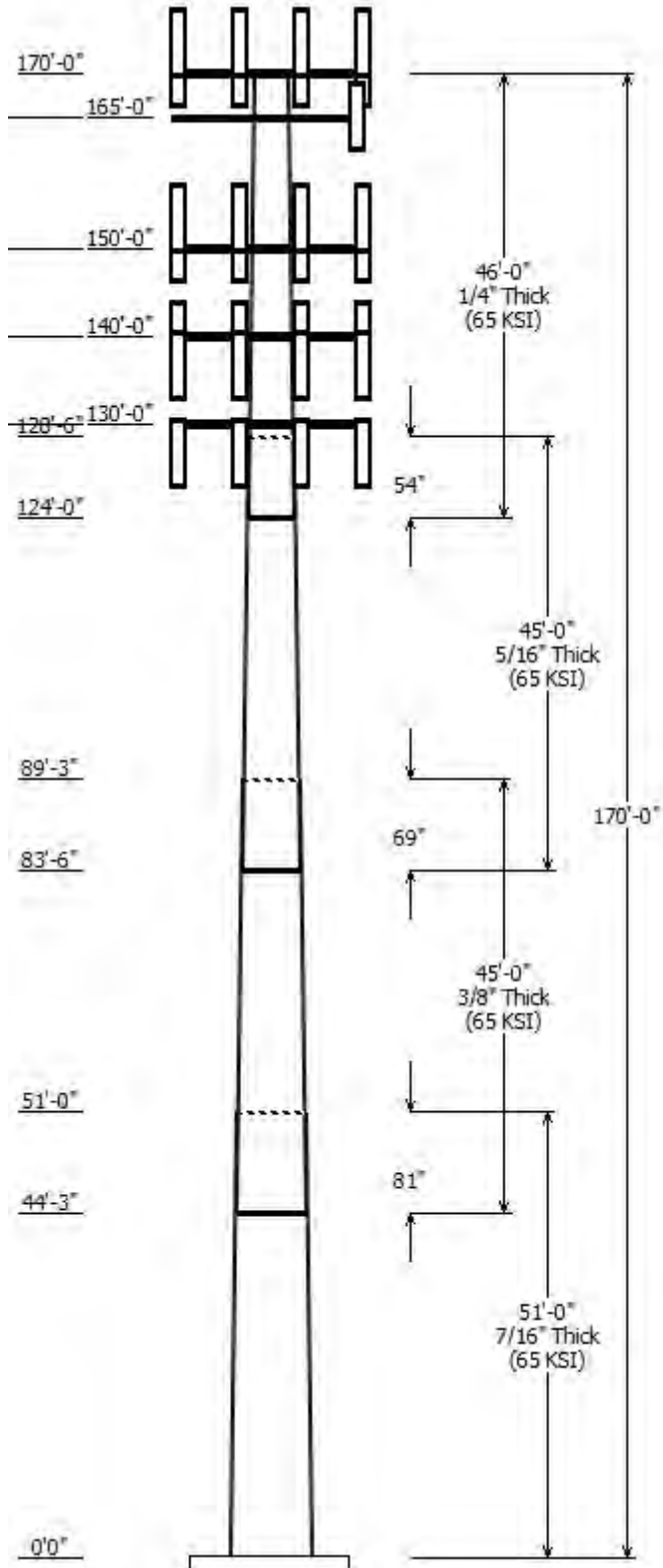
Elev (ft)		Description	Exposed To Wind
From	To		
5.000	130.0	1 1/4" Hybriflex	No
5.000	130.0	1 5/8" Hybriflex	No
5.000	140.0	1 5/8" Coax	No
5.000	150.0	1 5/8" Coax	No
5.000	150.0	1/2" Coax	No
5.000	150.0	3" Conduit	No
5.000	165.0	1 5/8" Coax	No
5.000	165.0	3/8" Coax	No

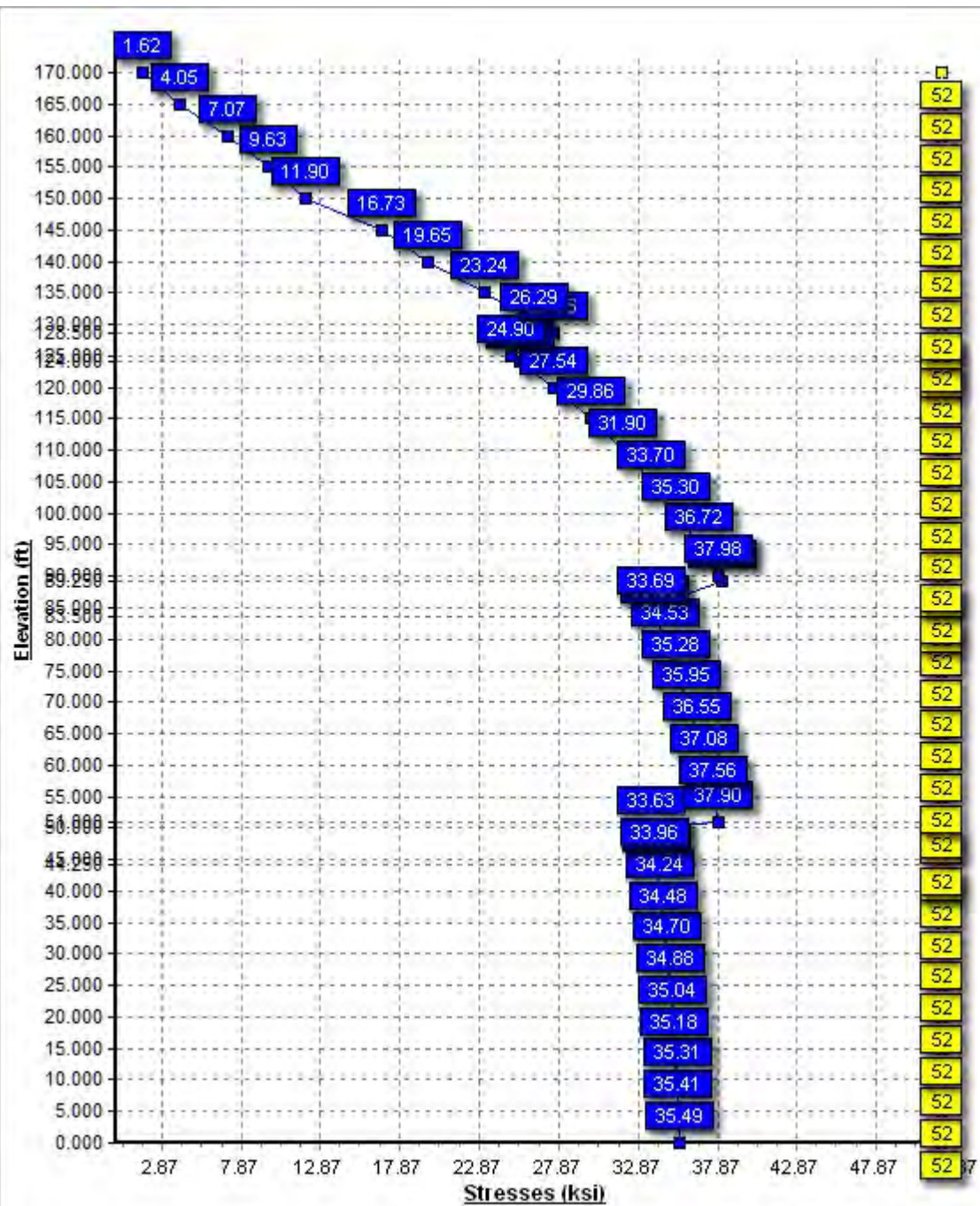
5.000	170.0	1 5/8" Coax	No
5.000	170.0	1 5/8" Hybriflex	No

Load Cases	
No Ice	85.00 mph Wind with No Ice
Ice	73.61 mph Wind with Ice
Twist/Sway	50.00 mph Wind with No Ice

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
No Ice	4048.26	32.97	50.05
Ice	3413.99	27.07	57.60
Twist/Sway	1401.93	11.41	50.08

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





Site Number: 376047

Code: TIA/EIA-222-F

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Site Name: Mansfield Center 2 CT, CT

Engineering Number: 63853821

10/20/2015 2:39:46 PM

Customer: T- Mobile

Analysis Parameters

Location: Tolland County, CT

Code: TIA/EIA-222-F

Height (ft): 170

Shape: 18 Sides

Base Diameter (in): 64.12

Pole Type: Taper

Top Diameter (in): 24.00

Pole Manufacturer:

Taper (in/ft) : 0.247

Load Cases

No Ice 85.00 mph Wind with No Ice

Ice 73.61 mph Wind with Ice

Twist/Sway 50.00 mph Wind with No Ice

Site Number: 376047

Code: TIA/EIA-222-F

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Site Name: Mansfield Center 2 CT, CT

Engineering Number: 63853821

10/20/2015 2:39:46 PM

Customer: T- Mobile

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom				Top				W/t Ratio	D/t Ratio	Taper (in/ft)
							Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)			
1-18	51.000	0.4375	65		0.00	13,828	64.12	0.00	88.43	45308.8	24.43	146.56	51.52	51.00	70.93	23387.1	19.35 117.76 0.247029
2-18	45.000	0.3750	65	Slip	81.00	8,749	53.93	44.25	63.75	23109.7	23.95	143.84	42.82	89.25	50.52	11501.0	18.72 114.19 0.247029
3-18	45.000	0.3125	65	Slip	69.00	5,923	44.86	83.50	44.19	11084.1	23.91	143.58	33.75	128.50	33.17	4685.6	17.63 108.01 0.247029
4-18	46.000	0.2500	65	Slip	54.00	3,655	35.36	124.00	27.86	4340.1	23.53	141.45	24.00	170.00	18.84	1343.0	15.52 96.00 0.247029
Shaft Weight						32,155											

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Weight (lb)	No Ice EPAA (sf)	Orientation Factor	Weight (lb)	Ice EPAA (sf)	Orientation Factor	Distance From Face (ft)	Vert Ecc (ft)
170.00	Alcatel-Lucent RRH2X60-	6	44.00	2.190	0.67	55.40	2.500	0.67	0.000	0.000
170.00	Andrew LNX-6514DS-A1M	3	65.10	8.410	0.69	89.30	9.240	0.69	0.000	4.000
170.00	Antel BXA-70080-4BF-EDIN-X	3	9.90	3.450	0.71	25.43	4.337	0.71	0.000	4.000
170.00	Commscope HBXX-6517DS-	6	40.80	8.730	0.67	88.80	9.640	0.67	0.000	4.000
170.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	1,700.00	31.600	1.00	0.000	0.000
170.00	RFS DB-T1-6Z-8AB-0Z	1	44.00	5.600	0.71	80.00	6.080	0.71	0.000	0.000
170.00	RFS FD9R6004/2C-3L	6	3.10	0.360	0.50	5.40	0.500	0.50	0.000	0.000
165.00	Andrew HBX-6516DS-VTM	6	9.90	3.360	0.67	29.10	3.870	0.67	0.000	0.000
165.00	CSS RET-200	1	1.20	0.080	0.50	15.00	3.160	0.50	0.000	0.000
165.00	Round T-Arm	3	250.00	9.700	0.67	314.00	12.100	0.67	0.000	0.000
150.00	Ericsson RRUS 11 (Band 12)	6	50.00	2.990	0.67	69.90	3.340	0.67	0.000	0.000
150.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	1,700.00	31.600	1.00	0.000	0.000
150.00	KMW AM-X-CD-16-65-00T-	2	48.50	8.260	0.66	95.00	9.080	0.66	0.000	8.000
150.00	Powerwave 7770.00	6	35.00	5.880	0.64	67.63	6.530	0.64	0.000	8.000
150.00	Powerwave LGP21401	6	14.10	1.290	0.50	21.26	1.530	0.50	0.000	8.000
150.00	Powerwave LGP21901	6	5.50	0.230	0.50	7.70	0.340	0.50	0.000	8.000
150.00	Powerwave P65-17-XLH-RR	1	59.00	11.460	0.67	121.00	12.390	0.67	0.000	8.000
140.00	Andrew ATSBT-BOTTOM-MF	3	1.80	0.200	0.50	3.50	0.300	0.50	0.000	0.000
140.00	Commscope LNX-6515DS-	3	50.30	11.440	0.84	115.20	12.370	0.84	0.000	-1.000
140.00	Ericsson KRY 112 144/1	3	11.00	0.410	0.50	14.10	0.550	0.50	0.000	0.000
140.00	RFS APXV18-203219-C (54.1"	3	39.00	5.940	0.73	65.60	6.560	0.73	0.000	-1.000
140.00	Round Low Profile Platform	1	1500.00	21.700	1.00	1,700.00	27.200	1.00	0.000	0.000
130.00	Alcatel-Lucent 800 MHz RRH	3	53.00	2.490	0.67	74.10	2.820	0.67	0.000	-1.000
130.00	Alcatel-Lucent RRH 1900 MHz	3	46.00	2.430	0.67	64.00	2.720	0.67	0.000	-1.000
130.00	Alcatel-Lucent TD-RRH8x20-	3	66.00	4.330	0.67	90.00	5.160	0.67	0.000	-1.000
130.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	1,700.00	31.600	1.00	0.000	0.000
130.00	RFS APXV9ERR18-C (62 lbs)	3	62.00	8.260	0.85	113.90	9.080	0.85	0.000	-1.000
130.00	RFS APXV9TM14-ALU-I20	3	55.10	6.900	0.76	92.40	7.580	0.76	0.000	-1.000
Totals		93	9543.20			12,461.73			Number of Loadings :	28

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	No Ice Weight (lb/ft)	No Ice CaAa (sf/ft)	Ice Weight (lb/ft)	Ice CaAa (sf/ft)	Exposed To Wind
5.00	170.00	12	1 5/8" Coax	9.84	0.00	0.00	0.00	N
5.00	170.00	1	1 5/8" Hybriflex	1.30	0.00	0.00	0.00	N
5.00	165.00	6	1 5/8" Coax	4.92	0.00	0.00	0.00	N
5.00	165.00	1	3/8" Coax	0.08	0.00	0.00	0.00	N
5.00	150.00	12	1 5/8" Coax	9.84	0.00	0.00	0.00	N
5.00	150.00	12	1/2" Coax	1.80	0.00	0.00	0.00	N
5.00	150.00	3	3" Conduit	15.16	0.00	0.00	0.00	N
5.00	140.00	12	1 5/8" Coax	9.84	0.00	0.00	0.00	N
5.00	130.00	3	1 1/4" Hybriflex	3.00	0.00	0.00	0.00	N
5.00	130.00	1	1 5/8" Hybriflex	1.30	0.00	0.00	0.00	N

Site Number: 376047

Code: TIA/EIA-222-F

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Site Name: Mansfield Center 2 CT, CT

Engineering Number: 63853821

10/20/2015 2:39:46 PM

Customer: T- Mobile

Total Weight	8,390.00 (lb)	0.00 (lb)
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Site Number: 376047

Code: TIA/EIA-222-F

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Site Name: Mansfield Center 2 CT, CT

Engineering Number: 63853821

10/20/2015 2:39:46 PM

Customer: T- Mobile

Segment Properties (Max Len : 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Fa (ksi)	Weight (lb)
0.00		0.4375	64.120	88.428	45,308.8	24.43	146.56	65	52	0	0.0
5.00		0.4375	62.885	86.713	42,723.3	23.93	143.74	65	52	0	1,489.9
10.00		0.4375	61.650	84.998	40,238.0	23.44	140.91	65	52	0	1,460.7
15.00		0.4375	60.415	83.283	37,851.1	22.94	138.09	65	52	0	1,431.6
20.00		0.4375	59.179	81.568	35,560.4	22.44	135.27	65	52	0	1,402.4
25.00		0.4375	57.944	79.852	33,364.1	21.94	132.44	65	52	0	1,373.2
30.00		0.4375	56.709	78.137	31,260.1	21.45	129.62	65	52	0	1,344.0
35.00		0.4375	55.474	76.422	29,246.5	20.95	126.80	65	52	0	1,314.8
40.00		0.4375	54.239	74.707	27,321.3	20.45	123.97	65	52	0	1,285.6
44.25	Bot - Section 2	0.4375	53.189	73.249	25,752.9	20.03	121.57	65	52	0	1,069.9
45.00		0.4375	53.004	72.992	25,482.5	19.95	121.15	65	52	0	349.0
50.00		0.4375	51.769	71.277	23,728.1	19.45	118.33	65	52	0	2,295.7
51.00	Top - Section 1	0.3750	52.272	61.768	21,017.9	23.17	139.39	65	52	0	452.6
55.00		0.3750	51.283	60.592	19,840.1	22.70	136.76	65	52	0	832.7
60.00		0.3750	50.048	59.121	18,430.8	22.12	133.46	65	52	0	1,018.4
65.00		0.3750	48.813	57.651	17,089.8	21.54	130.17	65	52	0	993.4
70.00		0.3750	47.578	56.181	15,815.5	20.96	126.87	65	52	0	968.4
75.00		0.3750	46.343	54.711	14,606.2	20.38	123.58	65	52	0	943.4
80.00		0.3750	45.108	53.241	13,460.1	19.80	120.29	65	52	0	918.3
83.50	Bot - Section 3	0.3750	44.243	52.212	12,694.6	19.39	117.98	65	52	0	628.0
85.00		0.3750	43.873	51.771	12,375.7	19.22	116.99	65	52	0	490.0
89.25	Top - Section 2	0.3125	43.448	42.783	10,057.4	23.10	139.03	65	52	0	1,365.9
90.00		0.3125	43.262	42.599	9,928.4	23.00	138.44	65	52	0	109.0
95.00		0.3125	42.027	41.374	9,096.2	22.30	134.49	65	52	0	714.4
100.0		0.3125	40.792	40.149	8,311.9	21.61	130.53	65	52	0	693.5
105.0		0.3125	39.557	38.924	7,574.0	20.91	126.58	65	52	0	672.7
110.0		0.3125	38.322	37.699	6,881.2	20.21	122.63	65	52	0	651.8
115.0		0.3125	37.087	36.474	6,231.9	19.52	118.68	65	52	0	631.0
120.0		0.3125	35.851	35.249	5,624.8	18.82	114.72	65	52	0	610.1
124.0	Bot - Section 4	0.3125	34.863	34.269	5,168.6	18.26	111.56	65	52	0	473.1
125.0		0.3125	34.616	34.024	5,058.5	18.12	110.77	65	52	0	210.7
128.5	Top - Section 3	0.2500	34.252	26.979	3,940.8	22.75	137.01	65	52	0	725.5
130.0		0.2500	33.881	26.685	3,813.4	22.49	135.52	65	52	0	137.0
135.0		0.2500	32.646	25.705	3,408.5	21.61	130.58	65	52	0	445.7
140.0		0.2500	31.411	24.725	3,033.3	20.74	125.64	65	52	0	429.0
145.0		0.2500	30.176	23.745	2,686.7	19.87	120.70	65	52	0	412.3
150.0		0.2500	28.941	22.765	2,367.6	19.00	115.76	65	52	0	395.7
155.0		0.2500	27.705	21.785	2,074.8	18.13	110.82	65	52	0	379.0
160.0		0.2500	26.470	20.805	1,807.2	17.26	105.88	65	52	0	362.3
165.0		0.2500	25.235	19.825	1,563.6	16.39	100.94	65	52	0	345.6
170.0		0.2500	24.000	18.845	1,343.0	15.52	96.00	65	52	0	329.0
											32,155.2

Site Number: 376047

Code: TIA/EIA-222-F

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Site Name: Mansfield Center 2 CT, CT

Engineering Number: 63853821

10/20/2015 2:39:46 PM

Customer: T- Mobile

Load Case: No Ice

85.00 mph Wind with No Ice

23 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Dead Load (lb)	Linear Forces		Sum of Forces			
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		268.8	0.0					0.0	0.0	268.8	0.0	0.0	0.0
5.00		532.4	1,489.9					0.0	0.0	532.4	1,489.9	0.0	0.0
10.00		521.9	1,460.7					0.0	285.4	521.9	1,746.1	0.0	0.0
15.00		511.5	1,431.6					0.0	285.4	511.5	1,717.0	0.0	0.0
20.00		501.0	1,402.4					0.0	285.4	501.0	1,687.8	0.0	0.0
25.00		490.5	1,373.2					0.0	285.4	490.5	1,658.6	0.0	0.0
30.00		480.1	1,344.0					0.0	285.4	480.1	1,629.4	0.0	0.0
35.00		478.3	1,314.8					0.0	285.4	478.3	1,600.2	0.0	0.0
40.00		448.1	1,285.6					0.0	285.4	448.1	1,571.0	0.0	0.0
44.25	Bot - Section 2	244.5	1,069.9					0.0	242.6	244.5	1,312.4	0.0	0.0
45.00		286.9	349.0					0.0	42.8	286.9	391.8	0.0	0.0
50.00		299.7	2,295.7					0.0	285.4	299.7	2,581.1	0.0	0.0
51.00	Top - Section 1	250.8	452.6					0.0	57.1	250.8	509.7	0.0	0.0
55.00		452.1	832.7					0.0	228.3	452.1	1,061.0	0.0	0.0
60.00		502.5	1,018.4					0.0	285.4	502.5	1,303.8	0.0	0.0
65.00		501.4	993.4					0.0	285.4	501.4	1,278.8	0.0	0.0
70.00		499.2	968.4					0.0	285.4	499.2	1,253.8	0.0	0.0
75.00		495.9	943.4					0.0	285.4	495.9	1,228.8	0.0	0.0
80.00		418.6	918.3					0.0	285.4	418.6	1,203.7	0.0	0.0
83.50	Bot - Section 3	245.7	628.0					0.0	199.8	245.7	827.7	0.0	0.0
85.00		283.0	490.0					0.0	85.6	283.0	575.6	0.0	0.0
89.25	Top - Section 2	245.4	1,365.9					0.0	242.6	245.4	1,608.5	0.0	0.0
90.00		278.9	109.0					0.0	42.8	278.9	151.8	0.0	0.0
95.00		481.2	714.4					0.0	285.4	481.2	999.8	0.0	0.0
100.00		474.0	693.5					0.0	285.4	474.0	978.9	0.0	0.0
105.00		466.1	672.7					0.0	285.4	466.1	958.1	0.0	0.0
110.00		457.5	651.8					0.0	285.4	457.5	937.2	0.0	0.0
115.00		448.5	631.0					0.0	285.4	448.5	916.4	0.0	0.0
120.00		395.9	610.1					0.0	285.4	395.9	895.5	0.0	0.0
124.00	Bot - Section 4	217.6	473.1					0.0	228.3	217.6	701.4	0.0	0.0
125.00		194.6	210.7					0.0	57.1	194.6	267.7	0.0	0.0
128.50	Top - Section 3	214.9	725.5					0.0	199.8	214.9	925.3	0.0	0.0
130.00	Appertunance(s)	273.4	137.0	3,762.9	0.0	-2,555.9	2,346.3	0.0	85.6	4,036.3	2,568.9	0.0	0.0
135.00		413.3	445.7					0.0	263.9	413.3	709.6	0.0	0.0
140.00	Appertunance(s)	401.8	429.0	3,040.5	0.0	-1,972.2	1,806.3	0.0	263.9	3,442.3	2,499.2	0.0	0.0
145.00		389.9	412.3					0.0	214.7	389.9	627.0	0.0	0.0
150.00	Appertunance(s)	377.6	395.7	4,072.2	0.0	17,885.2	2,283.6	0.0	214.7	4,449.7	2,894.0	0.0	0.0
155.00		364.9	379.0					0.0	80.7	364.9	459.7	0.0	0.0
160.00		351.8	362.3					0.0	80.7	351.8	443.0	0.0	0.0
165.00	Appertunance(s)	338.3	345.6	1,635.9	0.0	0.0	810.6	0.0	80.7	1,974.2	1,236.9	0.0	0.0
170.00	Appertunance(s)	165.8	329.0	5,003.7	0.0	12,033.7	2,296.4	0.0	55.7	5,169.4	2,681.1	0.0	0.0
Totals:										33,178.7	50,088.4	0.00	0.00

Site Number: 376047

Code: TIA/EIA-222-F

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Site Name: Mansfield Center 2 CT, CT

Engineering Number: 63853821

10/20/2015 2:39:48 PM

Customer: T- Mobile

Load Case: No Ice

85.00 mph Wind with No Ice

23 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-32.966	-50.051	0.000	0.000	0.000	-4,048.257	0.000	0.000	0.000	0.000
5.00	-32.538	-48.491	0.000	0.000	0.000	-3,883.431	-0.067	0.000	0.067	-0.125
10.00	-32.114	-46.675	0.000	0.000	0.000	-3,720.744	-0.266	0.000	0.266	-0.251
15.00	-31.695	-44.889	0.000	0.000	0.000	-3,560.175	-0.598	0.000	0.598	-0.380
20.00	-31.281	-43.134	0.000	0.000	0.000	-3,401.701	-1.067	0.000	1.067	-0.511
25.00	-30.870	-41.408	0.000	0.000	0.000	-3,245.302	-1.673	0.000	1.673	-0.644
30.00	-30.464	-39.712	0.000	0.000	0.000	-3,090.954	-2.420	0.000	2.420	-0.779
35.00	-30.054	-38.047	0.000	0.000	0.000	-2,938.635	-3.309	0.000	3.309	-0.916
40.00	-29.662	-36.417	0.000	0.000	0.000	-2,788.366	-4.343	0.000	4.343	-1.055
44.25	-29.435	-35.073	0.000	0.000	0.000	-2,662.305	-5.338	0.000	5.338	-1.176
45.00	-29.191	-34.645	0.000	0.000	0.000	-2,640.229	-5.525	0.000	5.525	-1.198
50.00	-28.882	-32.028	0.000	0.000	0.000	-2,494.278	-6.856	0.000	6.856	-1.341
51.00	-28.660	-31.487	0.000	0.000	0.000	-2,465.397	-7.140	0.000	7.140	-1.371
55.00	-28.256	-30.368	0.000	0.000	0.000	-2,350.760	-8.339	0.000	8.339	-1.488
60.00	-27.801	-28.999	0.000	0.000	0.000	-2,209.483	-9.986	0.000	9.986	-1.651
65.00	-27.342	-27.657	0.000	0.000	0.000	-2,070.479	-11.804	0.000	11.804	-1.817
70.00	-26.878	-26.342	0.000	0.000	0.000	-1,933.774	-13.796	0.000	13.796	-1.983
75.00	-26.412	-25.055	0.000	0.000	0.000	-1,799.386	-15.964	0.000	15.964	-2.151
80.00	-26.006	-23.803	0.000	0.000	0.000	-1,667.329	-18.307	0.000	18.307	-2.320
83.50	-25.761	-22.948	0.000	0.000	0.000	-1,576.307	-20.053	0.000	20.053	-2.440
85.00	-25.492	-22.340	0.000	0.000	0.000	-1,537.667	-20.828	0.000	20.828	-2.492
89.25	-25.206	-20.707	0.000	0.000	0.000	-1,429.326	-23.113	0.000	23.113	-2.637
90.00	-24.960	-20.520	0.000	0.000	0.000	-1,410.422	-23.529	0.000	23.529	-2.664
95.00	-24.497	-19.462	0.000	0.000	0.000	-1,285.624	-26.422	0.000	26.422	-2.857
100.0	-24.034	-18.430	0.000	0.000	0.000	-1,163.142	-29.517	0.000	29.517	-3.048
105.0	-23.573	-17.422	0.000	0.000	0.000	-1,042.973	-32.810	0.000	32.810	-3.237
110.0	-23.114	-16.439	0.000	0.000	0.000	-925.108	-36.299	0.000	36.299	-3.422
115.0	-22.658	-15.483	0.000	0.000	0.000	-809.538	-39.979	0.000	39.979	-3.601
120.0	-22.244	-14.556	0.000	0.000	0.000	-696.249	-43.842	0.000	43.842	-3.773
124.0	-22.000	-13.839	0.000	0.000	0.000	-607.274	-47.059	0.000	47.059	-3.905
125.0	-21.804	-13.558	0.000	0.000	0.000	-585.274	-47.880	0.000	47.880	-3.938
128.5	-21.542	-12.622	0.000	0.000	0.000	-508.961	-50.806	0.000	50.806	-4.045
130.0	-17.353	-10.314	0.000	0.000	0.000	-476.649	-52.084	0.000	52.084	-4.090
135.0	-16.914	-9.591	0.000	0.000	0.000	-389.887	-56.453	0.000	56.453	-4.252
140.0	-13.311	-7.328	0.000	0.000	0.000	-305.316	-60.983	0.000	60.983	-4.397
145.0	-12.887	-6.706	0.000	0.000	0.000	-238.763	-65.654	0.000	65.654	-4.524
150.0	-8.227	-4.164	0.000	0.000	0.000	-156.443	-70.450	0.000	70.450	-4.634
155.0	-7.831	-3.725	0.000	0.000	0.000	-115.308	-75.343	0.000	75.343	-4.715
160.0	-7.447	-3.306	0.000	0.000	0.000	-76.154	-80.313	0.000	80.313	-4.781
165.0	-5.377	-2.235	0.000	0.000	0.000	-38.920	-85.342	0.000	85.342	-4.826
170.0	-5.169	0.000	0.000	0.000	0.000	-12.034	-90.406	0.000	90.406	-4.850

Site Number: 376047

Code: TIA/EIA-222-F

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Site Name: Mansfield Center 2 CT, CT

Engineering Number: 63853821

10/20/2015 2:39:48 PM

Customer: T- Mobile

Load Case: No Ice

85.00 mph Wind with No Ice

23 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Calculated Stresses

Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Allowable Stress (Fa) (ksi)	Stress Ratio
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.57	0.75	0.00	0.00	0.00	34.90	35.49	52.0	0.0	0.683
5.00	0.56	0.76	0.00	0.00	0.00	34.83	35.41	52.0	0.0	0.681
10.00	0.55	0.76	0.00	0.00	0.00	34.73	35.31	52.0	0.0	0.679
15.00	0.54	0.77	0.00	0.00	0.00	34.62	35.18	52.0	0.0	0.677
20.00	0.53	0.77	0.00	0.00	0.00	34.49	35.04	52.0	0.0	0.674
25.00	0.52	0.78	0.00	0.00	0.00	34.34	34.88	52.0	0.0	0.671
30.00	0.51	0.79	0.00	0.00	0.00	34.16	34.70	52.0	0.0	0.668
35.00	0.50	0.79	0.00	0.00	0.00	33.96	34.48	52.0	0.0	0.663
40.00	0.49	0.80	0.00	0.00	0.00	33.73	34.24	52.0	0.0	0.659
44.25	0.48	0.81	0.00	0.00	0.00	33.50	34.01	52.0	0.0	0.654
45.00	0.47	0.81	0.00	0.00	0.00	33.46	33.96	52.0	0.0	0.653
50.00	0.45	0.82	0.00	0.00	0.00	33.15	33.63	52.0	0.0	0.647
51.00	0.51	0.94	0.00	0.00	0.00	37.36	37.90	52.0	0.0	0.729
55.00	0.50	0.94	0.00	0.00	0.00	37.02	37.56	52.0	0.0	0.723
60.00	0.49	0.95	0.00	0.00	0.00	36.55	37.08	52.0	0.0	0.713
65.00	0.48	0.96	0.00	0.00	0.00	36.03	36.55	52.0	0.0	0.703
70.00	0.47	0.96	0.00	0.00	0.00	35.44	35.95	52.0	0.0	0.692
75.00	0.46	0.97	0.00	0.00	0.00	34.78	35.28	52.0	0.0	0.679
80.00	0.45	0.98	0.00	0.00	0.00	34.04	34.53	52.0	0.0	0.664
83.50	0.44	0.99	0.00	0.00	0.00	33.47	33.95	52.0	0.0	0.653
85.00	0.43	0.99	0.00	0.00	0.00	33.21	33.69	52.0	0.0	0.648
89.25	0.48	1.19	0.00	0.00	0.00	37.62	38.16	52.0	0.0	0.734
90.00	0.48	1.18	0.00	0.00	0.00	37.44	37.98	52.0	0.0	0.731
95.00	0.47	1.19	0.00	0.00	0.00	36.19	36.72	52.0	0.0	0.706
100.00	0.46	1.21	0.00	0.00	0.00	34.78	35.30	52.0	0.0	0.679
105.00	0.45	1.22	0.00	0.00	0.00	33.19	33.70	52.0	0.0	0.648
110.00	0.44	1.24	0.00	0.00	0.00	31.39	31.90	52.0	0.0	0.614
115.00	0.42	1.25	0.00	0.00	0.00	29.35	29.86	52.0	0.0	0.574
120.00	0.41	1.27	0.00	0.00	0.00	27.04	27.54	52.0	0.0	0.530
124.00	0.40	1.29	0.00	0.00	0.00	24.96	25.46	52.0	0.0	0.490
125.00	0.40	1.29	0.00	0.00	0.00	24.40	24.90	52.0	0.0	0.479
128.50	0.47	1.61	0.00	0.00	0.00	26.95	27.56	52.0	0.0	0.530
130.00	0.39	1.31	0.00	0.00	0.00	25.80	26.29	52.0	0.0	0.506
135.00	0.37	1.33	0.00	0.00	0.00	22.75	23.24	52.0	0.0	0.447
140.00	0.30	1.08	0.00	0.00	0.00	19.26	19.65	52.0	0.0	0.378
145.00	0.28	1.09	0.00	0.00	0.00	16.34	16.73	52.0	0.0	0.322
150.00	0.18	0.73	0.00	0.00	0.00	11.65	11.90	52.0	0.0	0.229
155.00	0.17	0.72	0.00	0.00	0.00	9.38	9.63	52.0	0.0	0.185
160.00	0.16	0.72	0.00	0.00	0.00	6.80	7.07	52.0	0.0	0.136
165.00	0.11	0.55	0.00	0.00	0.00	3.83	4.05	52.0	0.0	0.078
170.00	0.00	0.55	0.00	0.00	0.00	1.31	1.62	52.0	0.0	0.031

Site Number: 376047

Code: TIA/EIA-222-F

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Site Name: Mansfield Center 2 CT, CT

Engineering Number: 63853821

10/20/2015 2:39:48 PM

Customer: T- Mobile

Load Case: Ice

73.61 mph Wind with Ice

22 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Dead Load (lb)	Linear Forces		Sum of Forces			
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		204.8	0.0					0.0	0.0	204.8	0.0	0.0	0.0
5.00		405.6	1,685.5					0.0	0.0	405.6	1,685.5	0.0	0.0
10.00		397.8	1,652.5					0.0	285.4	397.8	1,937.9	0.0	0.0
15.00		389.9	1,619.5					0.0	285.4	389.9	1,904.9	0.0	0.0
20.00		382.1	1,586.5					0.0	285.4	382.1	1,871.9	0.0	0.0
25.00		374.2	1,553.5					0.0	285.4	374.2	1,838.9	0.0	0.0
30.00		366.4	1,520.5					0.0	285.4	366.4	1,805.9	0.0	0.0
35.00		365.1	1,487.6					0.0	285.4	365.1	1,773.0	0.0	0.0
40.00		342.2	1,454.6					0.0	285.4	342.2	1,740.0	0.0	0.0
44.25	Bot - Section 2	186.8	1,210.7					0.0	242.6	186.8	1,453.3	0.0	0.0
45.00		219.2	374.1					0.0	42.8	219.2	417.0	0.0	0.0
50.00		229.0	2,459.3					0.0	285.4	229.0	2,744.7	0.0	0.0
51.00	Top - Section 1	191.7	485.2					0.0	57.1	191.7	542.3	0.0	0.0
55.00		345.7	960.6					0.0	228.3	345.7	1,188.9	0.0	0.0
60.00		384.3	1,174.4					0.0	285.4	384.3	1,459.8	0.0	0.0
65.00		383.7	1,145.5					0.0	285.4	383.7	1,430.9	0.0	0.0
70.00		382.2	1,116.7					0.0	285.4	382.2	1,402.1	0.0	0.0
75.00		379.9	1,087.9					0.0	285.4	379.9	1,373.3	0.0	0.0
80.00		320.8	1,059.1					0.0	285.4	320.8	1,344.5	0.0	0.0
83.50	Bot - Section 3	188.4	724.6					0.0	199.8	188.4	924.4	0.0	0.0
85.00		217.0	531.7					0.0	85.6	217.0	617.3	0.0	0.0
89.25	Top - Section 2	188.2	1,481.2					0.0	242.6	188.2	1,723.8	0.0	0.0
90.00		214.1	129.2					0.0	42.8	214.1	172.0	0.0	0.0
95.00		369.5	845.6					0.0	285.4	369.5	1,131.0	0.0	0.0
100.00		364.2	820.9					0.0	285.4	364.2	1,106.3	0.0	0.0
105.00		358.4	796.3					0.0	285.4	358.4	1,081.7	0.0	0.0
110.00		352.1	771.6					0.0	285.4	352.1	1,057.0	0.0	0.0
115.00		345.4	747.0					0.0	285.4	345.4	1,032.4	0.0	0.0
120.00		305.1	722.3					0.0	285.4	305.1	1,007.7	0.0	0.0
124.00	Bot - Section 4	167.8	560.4					0.0	228.3	167.8	788.7	0.0	0.0
125.00		150.1	232.6					0.0	57.1	150.1	289.7	0.0	0.0
128.50	Top - Section 3	165.8	800.6					0.0	199.8	165.8	1,000.4	0.0	0.0
130.00	Appertunance(s)	211.1	168.8	3,239.7	0.0	-2,143.7	3,003.2	0.0	85.6	3,450.8	3,257.6	0.0	0.0
135.00		319.4	548.0					0.0	263.9	319.4	811.9	0.0	0.0
140.00	Appertunance(s)	310.9	527.5	2,618.7	0.0	-1,609.9	2,295.2	0.0	263.9	2,929.6	3,086.6	0.0	0.0
145.00		302.1	507.0					0.0	214.7	302.1	721.7	0.0	0.0
150.00	Appertunance(s)	292.9	486.5	3,496.1	0.0	14,953.7	3,009.9	0.0	214.7	3,789.0	3,711.1	0.0	0.0
155.00		283.5	466.0					0.0	80.7	283.5	546.7	0.0	0.0
160.00		273.8	445.5					0.0	80.7	273.8	526.2	0.0	0.0
165.00	Appertunance(s)	263.8	425.0	1,539.3	0.0	0.0	1,131.6	0.0	80.7	1,803.1	1,637.3	0.0	0.0
170.00	Appertunance(s)	129.4	404.6	4,307.5	0.0	10,120.3	3,021.8	0.0	55.7	4,436.9	3,482.1	0.0	0.0
Totals:										27,225.7	57,628.3	0.00	0.00

Site Number: 376047

Code: TIA/EIA-222-F

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Site Name: Mansfield Center 2 CT, CT

Engineering Number: 63853821

10/20/2015 2:39:50 PM

Customer: T- Mobile

Load Case: Ice

73.61 mph Wind with Ice

22 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-27.074	-57.603	0.000	0.000	0.000	-3,413.989	0.000	0.000	0.000	0.000
5.00	-26.770	-55.868	0.000	0.000	0.000	-3,278.621	-0.057	0.000	0.057	-0.105
10.00	-26.469	-53.882	0.000	0.000	0.000	-3,144.772	-0.224	0.000	0.224	-0.212
15.00	-26.169	-51.928	0.000	0.000	0.000	-3,012.432	-0.505	0.000	0.505	-0.321
20.00	-25.873	-50.009	0.000	0.000	0.000	-2,881.587	-0.901	0.000	0.901	-0.432
25.00	-25.578	-48.122	0.000	0.000	0.000	-2,752.227	-1.413	0.000	1.413	-0.544
30.00	-25.286	-46.270	0.000	0.000	0.000	-2,624.338	-2.045	0.000	2.045	-0.659
35.00	-24.990	-44.450	0.000	0.000	0.000	-2,497.909	-2.798	0.000	2.798	-0.775
40.00	-24.705	-42.668	0.000	0.000	0.000	-2,372.961	-3.674	0.000	3.674	-0.894
44.25	-24.538	-41.192	0.000	0.000	0.000	-2,267.967	-4.517	0.000	4.517	-0.997
45.00	-24.362	-40.749	0.000	0.000	0.000	-2,249.564	-4.675	0.000	4.675	-1.015
50.00	-24.130	-37.978	0.000	0.000	0.000	-2,127.759	-5.804	0.000	5.804	-1.137
51.00	-23.968	-37.413	0.000	0.000	0.000	-2,103.630	-6.045	0.000	6.045	-1.163
55.00	-23.674	-36.182	0.000	0.000	0.000	-2,007.758	-7.063	0.000	7.063	-1.263
60.00	-23.340	-34.675	0.000	0.000	0.000	-1,889.393	-8.460	0.000	8.460	-1.403
65.00	-23.002	-33.197	0.000	0.000	0.000	-1,772.694	-10.005	0.000	10.005	-1.544
70.00	-22.660	-31.750	0.000	0.000	0.000	-1,657.684	-11.699	0.000	11.699	-1.687
75.00	-22.315	-30.333	0.000	0.000	0.000	-1,544.385	-13.543	0.000	13.543	-1.831
80.00	-22.012	-28.952	0.000	0.000	0.000	-1,432.813	-15.538	0.000	15.538	-1.976
83.50	-21.827	-28.007	0.000	0.000	0.000	-1,355.772	-17.026	0.000	17.026	-2.079
85.00	-21.629	-27.366	0.000	0.000	0.000	-1,323.032	-17.686	0.000	17.686	-2.124
89.25	-21.407	-25.623	0.000	0.000	0.000	-1,231.112	-19.634	0.000	19.634	-2.249
90.00	-21.229	-25.424	0.000	0.000	0.000	-1,215.057	-19.989	0.000	19.989	-2.271
95.00	-20.884	-24.249	0.000	0.000	0.000	-1,108.912	-22.457	0.000	22.457	-2.438
100.0	-20.538	-23.101	0.000	0.000	0.000	-1,004.494	-25.099	0.000	25.099	-2.603
105.0	-20.191	-21.981	0.000	0.000	0.000	-901.807	-27.913	0.000	27.913	-2.766
110.0	-19.845	-20.888	0.000	0.000	0.000	-800.852	-30.896	0.000	30.896	-2.926
115.0	-19.498	-19.823	0.000	0.000	0.000	-701.631	-34.044	0.000	34.044	-3.081
120.0	-19.181	-18.790	0.000	0.000	0.000	-604.140	-37.351	0.000	37.351	-3.230
124.0	-18.991	-17.989	0.000	0.000	0.000	-527.416	-40.107	0.000	40.107	-3.345
125.0	-18.843	-17.688	0.000	0.000	0.000	-508.426	-40.810	0.000	40.810	-3.373
128.5	-18.637	-16.678	0.000	0.000	0.000	-442.476	-43.318	0.000	43.318	-3.467
130.0	-15.016	-13.612	0.000	0.000	0.000	-414.521	-44.414	0.000	44.414	-3.506
135.0	-14.677	-12.788	0.000	0.000	0.000	-339.441	-48.161	0.000	48.161	-3.647
140.0	-11.574	-9.874	0.000	0.000	0.000	-266.059	-52.048	0.000	52.048	-3.773
145.0	-11.241	-9.154	0.000	0.000	0.000	-208.191	-56.059	0.000	56.059	-3.884
150.0	-7.214	-5.701	0.000	0.000	0.000	-137.035	-60.177	0.000	60.177	-3.980
155.0	-6.899	-5.168	0.000	0.000	0.000	-100.964	-64.382	0.000	64.382	-4.051
160.0	-6.592	-4.657	0.000	0.000	0.000	-66.470	-68.654	0.000	68.654	-4.108
165.0	-4.678	-3.151	0.000	0.000	0.000	-33.509	-72.977	0.000	72.977	-4.148
170.0	-4.437	0.000	0.000	0.000	0.000	-10.120	-77.329	0.000	77.329	-4.168

Site Number: 376047

Code: TIA/EIA-222-F

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Site Name: Mansfield Center 2 CT, CT

Engineering Number: 63853821

10/20/2015 2:39:50 PM

Customer: T- Mobile

Load Case: Ice

73.61 mph Wind with Ice

22 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Calculated Stresses

Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Allowable Stress (Fa) (ksi)	Stress Ratio
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.65	0.62	0.00	0.00	0.00	29.44	30.11	52.0	0.0	0.579
5.00	0.64	0.62	0.00	0.00	0.00	29.40	30.07	52.0	0.0	0.578
10.00	0.63	0.63	0.00	0.00	0.00	29.36	30.01	52.0	0.0	0.577
15.00	0.62	0.63	0.00	0.00	0.00	29.29	29.94	52.0	0.0	0.576
20.00	0.61	0.64	0.00	0.00	0.00	29.22	29.85	52.0	0.0	0.574
25.00	0.60	0.65	0.00	0.00	0.00	29.12	29.75	52.0	0.0	0.572
30.00	0.59	0.65	0.00	0.00	0.00	29.01	29.62	52.0	0.0	0.570
35.00	0.58	0.66	0.00	0.00	0.00	28.87	29.47	52.0	0.0	0.567
40.00	0.57	0.67	0.00	0.00	0.00	28.70	29.30	52.0	0.0	0.564
44.25	0.56	0.68	0.00	0.00	0.00	28.54	29.12	52.0	0.0	0.560
45.00	0.56	0.67	0.00	0.00	0.00	28.51	29.09	52.0	0.0	0.560
50.00	0.53	0.68	0.00	0.00	0.00	28.28	28.84	52.0	0.0	0.555
51.00	0.61	0.78	0.00	0.00	0.00	31.87	32.51	52.0	0.0	0.625
55.00	0.60	0.79	0.00	0.00	0.00	31.62	32.24	52.0	0.0	0.620
60.00	0.59	0.80	0.00	0.00	0.00	31.26	31.87	52.0	0.0	0.613
65.00	0.58	0.80	0.00	0.00	0.00	30.85	31.46	52.0	0.0	0.605
70.00	0.57	0.81	0.00	0.00	0.00	30.38	30.98	52.0	0.0	0.596
75.00	0.55	0.82	0.00	0.00	0.00	29.85	30.44	52.0	0.0	0.586
80.00	0.54	0.83	0.00	0.00	0.00	29.25	29.83	52.0	0.0	0.574
83.50	0.54	0.84	0.00	0.00	0.00	28.79	29.36	52.0	0.0	0.565
85.00	0.53	0.84	0.00	0.00	0.00	28.58	29.14	52.0	0.0	0.561
89.25	0.60	1.01	0.00	0.00	0.00	32.40	33.05	52.0	0.0	0.636
90.00	0.60	1.00	0.00	0.00	0.00	32.26	32.90	52.0	0.0	0.633
95.00	0.59	1.02	0.00	0.00	0.00	31.22	31.85	52.0	0.0	0.613
100.00	0.58	1.03	0.00	0.00	0.00	30.03	30.66	52.0	0.0	0.590
105.00	0.56	1.05	0.00	0.00	0.00	28.70	29.32	52.0	0.0	0.564
110.00	0.55	1.06	0.00	0.00	0.00	27.17	27.79	52.0	0.0	0.535
115.00	0.54	1.08	0.00	0.00	0.00	25.44	26.05	52.0	0.0	0.501
120.00	0.53	1.10	0.00	0.00	0.00	23.46	24.07	52.0	0.0	0.463
124.00	0.52	1.12	0.00	0.00	0.00	21.67	22.28	52.0	0.0	0.429
125.00	0.52	1.12	0.00	0.00	0.00	21.20	21.80	52.0	0.0	0.419
128.50	0.62	1.39	0.00	0.00	0.00	23.43	24.17	52.0	0.0	0.465
130.00	0.51	1.13	0.00	0.00	0.00	22.44	23.03	52.0	0.0	0.443
135.00	0.50	1.15	0.00	0.00	0.00	19.81	20.40	52.0	0.0	0.393
140.00	0.40	0.94	0.00	0.00	0.00	16.79	17.26	52.0	0.0	0.332
145.00	0.39	0.95	0.00	0.00	0.00	14.25	14.72	52.0	0.0	0.283
150.00	0.25	0.64	0.00	0.00	0.00	10.21	10.51	52.0	0.0	0.202
155.00	0.24	0.64	0.00	0.00	0.00	8.21	8.52	52.0	0.0	0.164
160.00	0.22	0.64	0.00	0.00	0.00	5.93	6.25	52.0	0.0	0.120
165.00	0.16	0.48	0.00	0.00	0.00	3.29	3.55	52.0	0.0	0.068
170.00	0.00	0.47	0.00	0.00	0.00	1.10	1.37	52.0	0.0	0.026

Site Number: 376047

Code: TIA/EIA-222-F

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Site Name: Mansfield Center 2 CT, CT

Engineering Number: 63853821

10/20/2015 2:39:51 PM

Customer: T- Mobile

Load Case: Twist/Sway

50.00 mph Wind with No Ice

22 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Dead Load (lb)	Linear Forces		Sum of Forces			
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		93.0	0.0					0.0	0.0	93.0	0.0	0.0	0.0
5.00		184.2	1,489.9					0.0	0.0	184.2	1,489.9	0.0	0.0
10.00		180.6	1,460.7					0.0	285.4	180.6	1,746.1	0.0	0.0
15.00		177.0	1,431.6					0.0	285.4	177.0	1,717.0	0.0	0.0
20.00		173.4	1,402.4					0.0	285.4	173.4	1,687.8	0.0	0.0
25.00		169.7	1,373.2					0.0	285.4	169.7	1,658.6	0.0	0.0
30.00		166.1	1,344.0					0.0	285.4	166.1	1,629.4	0.0	0.0
35.00		165.5	1,314.8					0.0	285.4	165.5	1,600.2	0.0	0.0
40.00		155.0	1,285.6					0.0	285.4	155.0	1,571.0	0.0	0.0
44.25	Bot - Section 2	84.6	1,069.9					0.0	242.6	84.6	1,312.4	0.0	0.0
45.00		99.3	349.0					0.0	42.8	99.3	391.8	0.0	0.0
50.00		103.7	2,295.7					0.0	285.4	103.7	2,581.1	0.0	0.0
51.00	Top - Section 1	86.8	452.6					0.0	57.1	86.8	509.7	0.0	0.0
55.00		156.4	832.7					0.0	228.3	156.4	1,061.0	0.0	0.0
60.00		173.9	1,018.4					0.0	285.4	173.9	1,303.8	0.0	0.0
65.00		173.5	993.4					0.0	285.4	173.5	1,278.8	0.0	0.0
70.00		172.7	968.4					0.0	285.4	172.7	1,253.8	0.0	0.0
75.00		171.6	943.4					0.0	285.4	171.6	1,228.8	0.0	0.0
80.00		144.8	918.3					0.0	285.4	144.8	1,203.7	0.0	0.0
83.50	Bot - Section 3	85.0	628.0					0.0	199.8	85.0	827.7	0.0	0.0
85.00		97.9	490.0					0.0	85.6	97.9	575.6	0.0	0.0
89.25	Top - Section 2	84.9	1,365.9					0.0	242.6	84.9	1,608.5	0.0	0.0
90.00		96.5	109.0					0.0	42.8	96.5	151.8	0.0	0.0
95.00		166.5	714.4					0.0	285.4	166.5	999.8	0.0	0.0
100.00		164.0	693.5					0.0	285.4	164.0	978.9	0.0	0.0
105.00		161.3	672.7					0.0	285.4	161.3	958.1	0.0	0.0
110.00		158.3	651.8					0.0	285.4	158.3	937.2	0.0	0.0
115.00		155.2	631.0					0.0	285.4	155.2	916.4	0.0	0.0
120.00		137.0	610.1					0.0	285.4	137.0	895.5	0.0	0.0
124.00	Bot - Section 4	75.3	473.1					0.0	228.3	75.3	701.4	0.0	0.0
125.00		67.3	210.7					0.0	57.1	67.3	267.7	0.0	0.0
128.50	Top - Section 3	74.3	725.5					0.0	199.8	74.3	925.3	0.0	0.0
130.00	Appertunance(s)	94.6	137.0	1,302.1	0.0	-884.4	2,346.3	0.0	85.6	1,396.6	2,568.9	0.0	0.0
135.00		143.0	445.7					0.0	263.9	143.0	709.6	0.0	0.0
140.00	Appertunance(s)	139.0	429.0	1,052.1	0.0	-682.4	1,806.3	0.0	263.9	1,191.1	2,499.2	0.0	0.0
145.00		134.9	412.3					0.0	214.7	134.9	627.0	0.0	0.0
150.00	Appertunance(s)	130.6	395.7	1,409.1	0.0	6,188.6	2,283.6	0.0	214.7	1,539.7	2,894.0	0.0	0.0
155.00		126.2	379.0					0.0	80.7	126.2	459.7	0.0	0.0
160.00		121.7	362.3					0.0	80.7	121.7	443.0	0.0	0.0
165.00	Appertunance(s)	117.1	345.6	566.1	0.0	0.0	810.6	0.0	80.7	683.1	1,236.9	0.0	0.0
170.00	Appertunance(s)	57.4	329.0	1,731.4	0.0	4,163.9	2,296.4	0.0	55.7	1,788.7	2,681.1	0.0	0.0
Totals:										11,480.5	50,088.4	0.00	0.00

Site Number: 376047

Code: TIA/EIA-222-F

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Site Name: Mansfield Center 2 CT, CT

Engineering Number: 63853821

10/20/2015 2:39:52 PM

Customer: T- Mobile

Load Case: Twist/Sway

50.00 mph Wind with No Ice

22 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-11.407	-50.084	0.000	0.000	0.000	-1,401.930	0.000	0.000	0.000	0.000
5.00	-11.259	-48.586	0.000	0.000	0.000	-1,344.899	-0.023	0.000	0.023	-0.043
10.00	-11.112	-46.831	0.000	0.000	0.000	-1,288.607	-0.092	0.000	0.092	-0.087
15.00	-10.967	-45.106	0.000	0.000	0.000	-1,233.047	-0.207	0.000	0.207	-0.132
20.00	-10.824	-43.410	0.000	0.000	0.000	-1,178.212	-0.369	0.000	0.369	-0.177
25.00	-10.682	-41.743	0.000	0.000	0.000	-1,124.093	-0.579	0.000	0.579	-0.223
30.00	-10.542	-40.106	0.000	0.000	0.000	-1,070.682	-0.838	0.000	0.838	-0.270
35.00	-10.401	-38.498	0.000	0.000	0.000	-1,017.972	-1.146	0.000	1.146	-0.317
40.00	-10.265	-36.920	0.000	0.000	0.000	-965.970	-1.504	0.000	1.504	-0.365
44.25	-10.187	-35.604	0.000	0.000	0.000	-922.344	-1.849	0.000	1.849	-0.407
45.00	-10.103	-35.207	0.000	0.000	0.000	-914.704	-1.914	0.000	1.914	-0.415
50.00	-9.996	-32.622	0.000	0.000	0.000	-864.191	-2.375	0.000	2.375	-0.465
51.00	-9.919	-32.109	0.000	0.000	0.000	-854.195	-2.473	0.000	2.473	-0.475
55.00	-9.780	-31.041	0.000	0.000	0.000	-814.518	-2.889	0.000	2.889	-0.515
60.00	-9.624	-29.729	0.000	0.000	0.000	-765.617	-3.459	0.000	3.459	-0.572
65.00	-9.465	-28.443	0.000	0.000	0.000	-717.500	-4.089	0.000	4.089	-0.629
70.00	-9.306	-27.182	0.000	0.000	0.000	-670.174	-4.779	0.000	4.779	-0.687
75.00	-9.145	-25.946	0.000	0.000	0.000	-623.647	-5.530	0.000	5.530	-0.745
80.00	-9.006	-24.736	0.000	0.000	0.000	-577.922	-6.342	0.000	6.342	-0.804
83.50	-8.921	-23.905	0.000	0.000	0.000	-546.403	-6.947	0.000	6.947	-0.845
85.00	-8.829	-23.326	0.000	0.000	0.000	-533.022	-7.216	0.000	7.216	-0.863
89.25	-8.730	-21.714	0.000	0.000	0.000	-495.501	-8.008	0.000	8.008	-0.914
90.00	-8.646	-21.558	0.000	0.000	0.000	-488.953	-8.152	0.000	8.152	-0.923
95.00	-8.486	-20.552	0.000	0.000	0.000	-445.727	-9.155	0.000	9.155	-0.990
100.0	-8.327	-19.566	0.000	0.000	0.000	-403.296	-10.227	0.000	10.227	-1.056
105.0	-8.169	-18.602	0.000	0.000	0.000	-361.660	-11.369	0.000	11.369	-1.122
110.0	-8.011	-17.659	0.000	0.000	0.000	-320.816	-12.579	0.000	12.579	-1.186
115.0	-7.854	-16.738	0.000	0.000	0.000	-280.761	-13.854	0.000	13.854	-1.248
120.0	-7.712	-15.839	0.000	0.000	0.000	-241.489	-15.194	0.000	15.194	-1.308
124.0	-7.628	-15.136	0.000	0.000	0.000	-210.642	-16.310	0.000	16.310	-1.353
125.0	-7.561	-14.866	0.000	0.000	0.000	-203.014	-16.594	0.000	16.594	-1.365
128.5	-7.470	-13.940	0.000	0.000	0.000	-176.552	-17.609	0.000	17.609	-1.402
130.0	-6.018	-11.402	0.000	0.000	0.000	-165.346	-18.052	0.000	18.052	-1.418
135.0	-5.867	-10.691	0.000	0.000	0.000	-135.256	-19.568	0.000	19.568	-1.474
140.0	-4.618	-8.220	0.000	0.000	0.000	-105.919	-21.139	0.000	21.139	-1.524
145.0	-4.472	-7.594	0.000	0.000	0.000	-82.830	-22.760	0.000	22.760	-1.568
150.0	-2.855	-4.742	0.000	0.000	0.000	-54.283	-24.424	0.000	24.424	-1.606
155.0	-2.718	-4.285	0.000	0.000	0.000	-40.008	-26.121	0.000	26.121	-1.634
160.0	-2.585	-3.844	0.000	0.000	0.000	-26.419	-27.846	0.000	27.846	-1.657
165.0	-1.866	-2.628	0.000	0.000	0.000	-13.496	-29.591	0.000	29.591	-1.673
170.0	-1.789	0.000	0.000	0.000	0.000	-4.164	-31.348	0.000	31.348	-1.681

Site Number: 376047

Code: TIA/EIA-222-F

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Site Name: Mansfield Center 2 CT, CT

Engineering Number: 63853821

10/20/2015 2:39:52 PM

Customer: T- Mobile

Load Case: Twist/Sway

50.00 mph Wind with No Ice

22 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Calculated Stresses

Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Allowable Stress (Fa) (ksi)	Stress Ratio
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.57	0.26	0.00	0.00	0.00	12.09	12.66	52.0	0.0	0.244
5.00	0.56	0.26	0.00	0.00	0.00	12.06	12.63	52.0	0.0	0.243
10.00	0.55	0.26	0.00	0.00	0.00	12.03	12.59	52.0	0.0	0.242
15.00	0.54	0.27	0.00	0.00	0.00	11.99	12.54	52.0	0.0	0.241
20.00	0.53	0.27	0.00	0.00	0.00	11.95	12.49	52.0	0.0	0.240
25.00	0.52	0.27	0.00	0.00	0.00	11.89	12.43	52.0	0.0	0.239
30.00	0.51	0.27	0.00	0.00	0.00	11.83	12.36	52.0	0.0	0.238
35.00	0.50	0.27	0.00	0.00	0.00	11.76	12.28	52.0	0.0	0.236
40.00	0.49	0.28	0.00	0.00	0.00	11.68	12.19	52.0	0.0	0.234
44.25	0.49	0.28	0.00	0.00	0.00	11.61	12.10	52.0	0.0	0.233
45.00	0.48	0.28	0.00	0.00	0.00	11.59	12.08	52.0	0.0	0.232
50.00	0.46	0.28	0.00	0.00	0.00	11.49	11.95	52.0	0.0	0.230
51.00	0.52	0.32	0.00	0.00	0.00	12.94	13.47	52.0	0.0	0.259
55.00	0.51	0.33	0.00	0.00	0.00	12.83	13.35	52.0	0.0	0.257
60.00	0.50	0.33	0.00	0.00	0.00	12.67	13.18	52.0	0.0	0.254
65.00	0.49	0.33	0.00	0.00	0.00	12.49	12.99	52.0	0.0	0.250
70.00	0.48	0.33	0.00	0.00	0.00	12.28	12.78	52.0	0.0	0.246
75.00	0.47	0.34	0.00	0.00	0.00	12.06	12.54	52.0	0.0	0.241
80.00	0.46	0.34	0.00	0.00	0.00	11.80	12.28	52.0	0.0	0.236
83.50	0.46	0.34	0.00	0.00	0.00	11.60	12.07	52.0	0.0	0.232
85.00	0.45	0.34	0.00	0.00	0.00	11.51	11.98	52.0	0.0	0.230
89.25	0.51	0.41	0.00	0.00	0.00	13.04	13.57	52.0	0.0	0.261
90.00	0.51	0.41	0.00	0.00	0.00	12.98	13.51	52.0	0.0	0.260
95.00	0.50	0.41	0.00	0.00	0.00	12.55	13.06	52.0	0.0	0.251
100.00	0.49	0.42	0.00	0.00	0.00	12.06	12.57	52.0	0.0	0.242
105.00	0.48	0.42	0.00	0.00	0.00	11.51	12.01	52.0	0.0	0.231
110.00	0.47	0.43	0.00	0.00	0.00	10.89	11.38	52.0	0.0	0.219
115.00	0.46	0.43	0.00	0.00	0.00	10.18	10.67	52.0	0.0	0.205
120.00	0.45	0.44	0.00	0.00	0.00	9.38	9.86	52.0	0.0	0.190
124.00	0.44	0.45	0.00	0.00	0.00	8.66	9.13	52.0	0.0	0.176
125.00	0.44	0.45	0.00	0.00	0.00	8.46	8.93	52.0	0.0	0.172
128.50	0.52	0.56	0.00	0.00	0.00	9.35	9.91	52.0	0.0	0.191
130.00	0.43	0.45	0.00	0.00	0.00	8.95	9.41	52.0	0.0	0.181
135.00	0.42	0.46	0.00	0.00	0.00	7.89	8.35	52.0	0.0	0.161
140.00	0.33	0.38	0.00	0.00	0.00	6.68	7.05	52.0	0.0	0.136
145.00	0.32	0.38	0.00	0.00	0.00	5.67	6.02	52.0	0.0	0.116
150.00	0.21	0.25	0.00	0.00	0.00	4.04	4.27	52.0	0.0	0.082
155.00	0.20	0.25	0.00	0.00	0.00	3.25	3.48	52.0	0.0	0.067
160.00	0.18	0.25	0.00	0.00	0.00	2.36	2.58	52.0	0.0	0.050
165.00	0.13	0.19	0.00	0.00	0.00	1.33	1.50	52.0	0.0	0.029
170.00	0.00	0.19	0.00	0.00	0.00	0.45	0.56	52.0	0.0	0.011

Site Number: 376047**Code: TIA/EIA-222-F**

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Site Name: Mansfield Center 2 CT, CT**Engineering Number: 63853821****10/20/2015 2:39:53 PM****Customer: T- Mobile**

Analysis Summary

Load Case	Reactions						Combined Stress (ksi)	Max Stresses		
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)		Allowable Stress (ksi)	Elev (ft)	Stress Ratio
No Ice	33.0	0.00	50.05	0.00	0.00	4048.26	38.16	52.0	89.25	0.734
Ice	27.1	0.00	57.60	0.00	0.00	3413.99	33.05	52.0	89.25	0.636
Twist/Sway	11.4	0.00	50.08	0.00	0.00	1401.93	13.57	52.0	89.25	0.261

Site Number: 376047

Code: TIA/EIA-222-F

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Site Name: Mansfield Center 2 CT, CT

Engineering Number: 63853821

10/20/2015 2:39:53 PM

Customer: T- Mobile

Base Summary

Reactions

Original Design			Analysis			Moment Design %
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	
5,555.00	45.00	45.00	4,048.26	57.60	32.97	72.88

Base Plate

Yield (ksi)	Thick (in)	Width (in)	Style	Poly Sides	Clip Len (in)	Effective Len (in)	Moment (kip-in)	Allow Stress (ksi)	Applied Stress (ksi)	Stress Ratio
55.0	3.250	70.000		0	6.00	10.175	543.02	55.00	30.31	0.55

Anchor Bolts

Bolt Circle	Num Bolts	Bolt Type	Bolt Dia (in)	Yield (ksi)	Ultimate (ksi)	Arrange	Cluster Dist (in)	Start Angle (deg)	Compression			Tension		
									Force (kip)	Allow (kip)	Ratio	Force (kip)	Allow (kip)	Ratio
72.00	20	2.25" 18J	2.25	75.00	100.00	Clustered	6.00	45.0	137.82	195.00	0.71	132.06	195.00	0.68

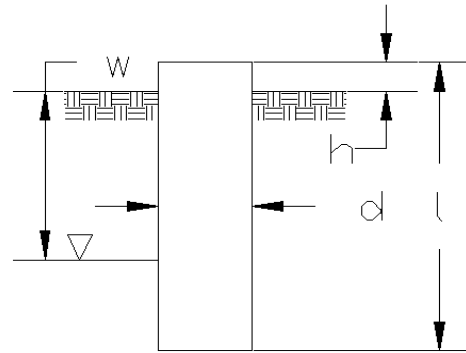
Site Name: Mansfield Center 2 CT, CT
 Site Number: 376047
 Engineer: Brendan M Smith
 Engineering Number: 63853821
 Date: 10/20/15

Program Last Updated: 8/10/2015
 American Tower Corporation

Design Base Loads (Unfactored) - Analysis per TIA-222-F Standards

Analyze or Design a Foundation? Analyze
 Foundation Mapped: N
 Moment (M): 4048.3 k-ft
 Shear/Leg (V): 33.0 k
 Axial Load (P): 50.1 k
 Uplift/Leg (U): 0.0 k
 Tower Type (GT / SST / MP): MP

Diameter of Caisson (d): 8.0 ft
 Caisson Embedment (L-h): 27.5 ft
 Caisson Height Above Ground (h): 0.5 ft
 Depth Below Ground Surface to Water Table (w): 99.0 ft
 Unit Weight of Concrete: 150.0 pcf
 Unit Weight of Water: 62.4 pcf
 Tension Skin Friction/Compression Skin Friction: 1.00
 Pullout Angle: 30.0 degrees



Engineer Notes

Soil Mechanical Properties

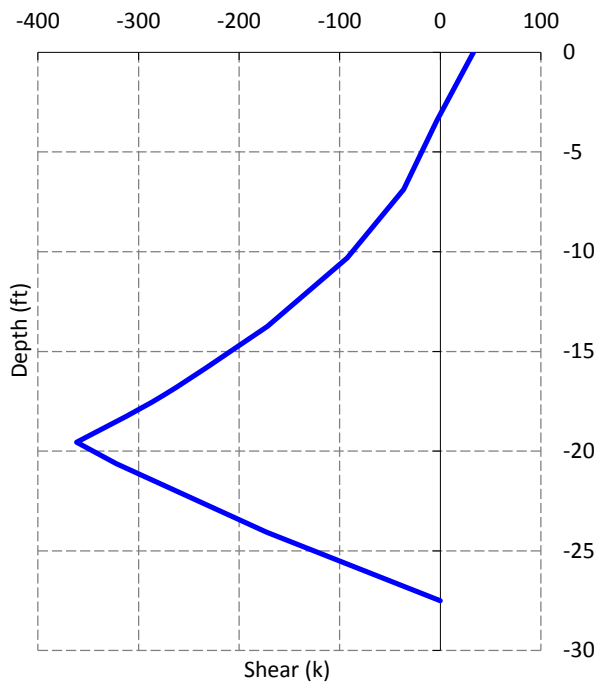
Depth (ft)		γ_{Soil}	Cohesion	ϕ	Allowable Skin	Allowable Bearing
Top	Bottom	(pcf)	(psf)	(degree)	Friction (psf)	Pressure (psf)
0.0	2.0	100	0	0	0	0
2.0	5.0	110	0	30	75	0
5.0	27.5	110	0	30	350	3500

Required Embedment: 25.6 ft - OK, Caisson Embedment Satisfactory
 Volume of Concrete: 1407.4 ft³ = 52.1 yd³
 Weight of Concrete (Buoyancy Effect Considered): 211.1 k
 Average Soil Unit Weight: 109.3 pcf
 Skin Friction Resistance: 203.6 k
 Compressive Bearing Resistance: 175.9 k
 Pullout Weight (Minus Concrete Weight): 1392.8 k
 Allowable Uplift Capacity (U_{Allow}): 372.5 k
 Allowable Compressive Capacity (P_{Allow}): 379.5 k
 Compressive Design Load (P): 106.3 k
 U / U_{Allow} : 0.00 Result: OK
 P / P_{Allow} : 0.28 Result: OK
 Total Lateral Resistance: 2322.1 k
 Inflection Point (Below Ground Surface): 19.6 ft
 Design Overturning Moment At Inflection Point (M_D): 4710.0 k-ft
 Nominal Moment Capacity (M_{Allow}): 12157.1 k-ft
 M_{Allow} / M_D Factor of Safety: 2.58 Result: OK

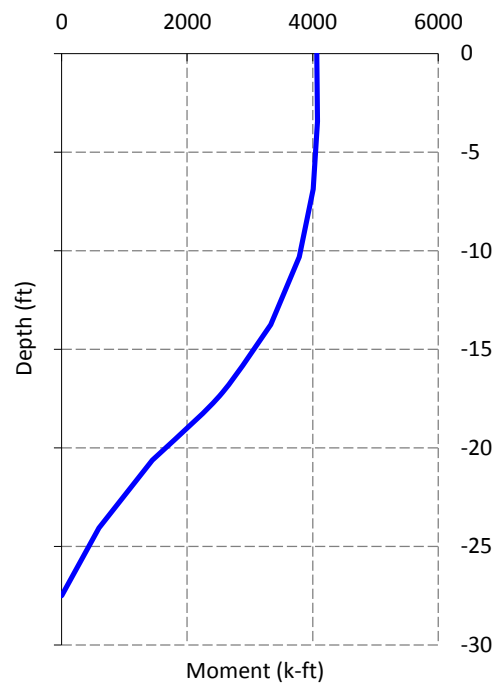
Caisson Strength Capacity

Concrete Compressive Strength (f'_c):	3000 psi
Vertical Steel Rebar Size #:	11
Vertical Steel Rebar Area:	1.56 in ²
Design # of Vertical Steel Rebars:	32
Vertical Steel Rebar Yield Strength (F_y):	60 ksi
Horizontal Tie / Stirrup Size #:	5
Horizontal Tie / Stirrup Area:	0.31 in ²
Design Horizontal Tie / Stirrup Spacing:	18.0 in
Horizontal Tie / Stirrup Steel Yield Strength (F_y):	60 ksi
Rebar Cage Diameter:	88.0 in
Strength Bending/Tension Reduction Factor (ϕ_B):	0.90 ACI318-05 - 9.3.2.1
Strength Shear Reduction Factor (ϕ_V):	0.75 ACI318-05 - 9.3.2.3
Strength Compression Reduction Factor (ϕ_P):	0.65 ACI318-05 - 9.3.2.2
Wind Design Factor:	1.30 ACI318-05 - 9.2.1
Steel Elastic Modulus:	29000 ksi
Design Moment (M_u):	5299.3 k-ft
Nominal Moment Capacity ($\phi_B M_n$):	9671.8 k-ft - ACI318-005 - 10.2
$M_u / \phi_B M_n$:	0.55 Result: OK
Design Shear (V_u):	470.0 k
Nominal Shear Capacity ($\phi_V V_n$):	596.7 k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u / \phi_V V_n$:	0.79 Result: OK
Design Tension (T_u):	0.0 k
Nominal Tension Capacity ($\phi_T T_n$):	2695.7 k - ACI318-05 - 10.2
$T_u / \phi_T T_n$:	0.00 Result: OK
Design Compression (P_u):	138.3 k
Nominal Compression Capacity ($\phi_P P_n$):	9531.7 k - ACI318-05 - 10.3.6.2
$P_u / \phi_P P_n$:	0.01 Result: OK
Bending Reinforcement Ratio:	0.007 ACI318-05 - 10.8.4 & 10.9.1
$M_u / \phi_B M_n + T_u / \phi_T T_n$:	0.55 Result: OK

Design Unfactored Shear / Depth



Design Unfactored Moment / Depth



Nominal and Factored Moment Capacity and Factored Design Loads

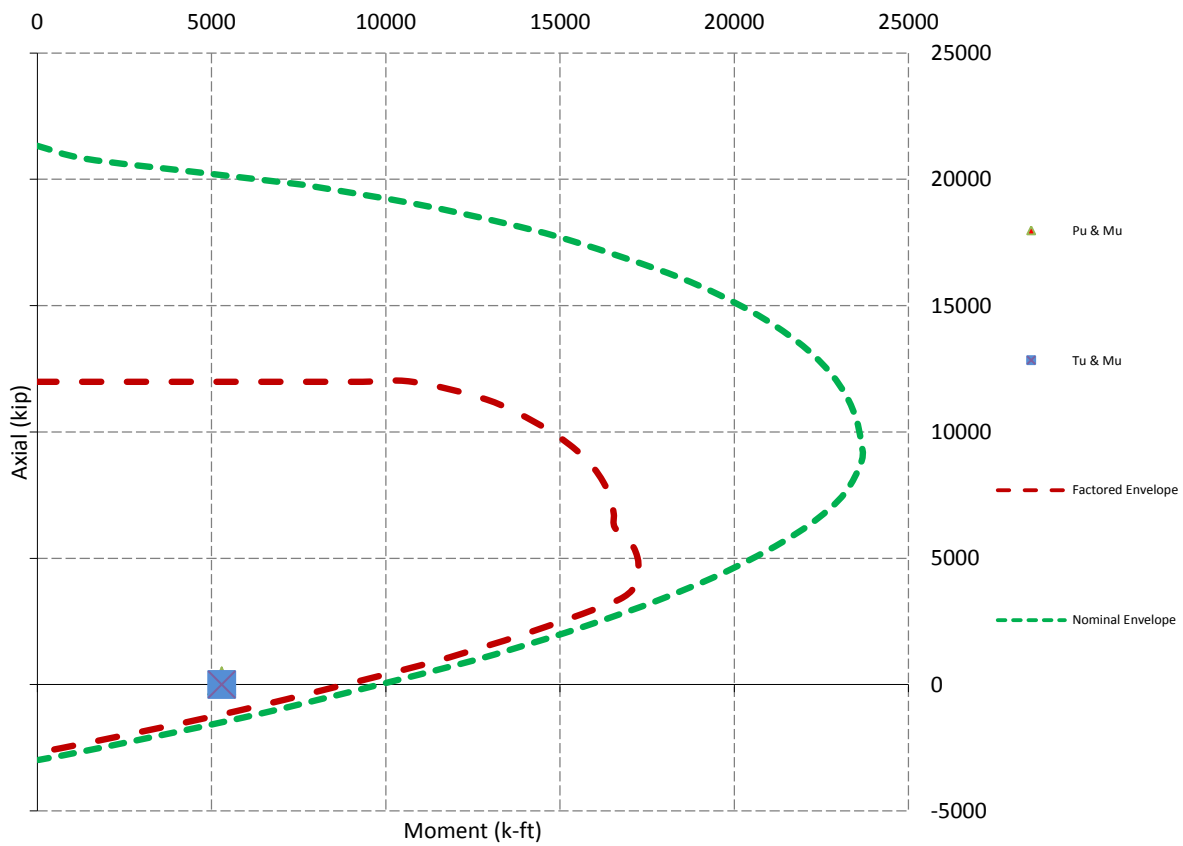


Exhibit C

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

T-Mobile Existing Facility

Site ID: CT11517B

**TCP Monopole
1725 Stafford Road
Mansfield, CT 06268**

October 23, 2015

EBI Project Number: 6215005343

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	6.45 %

October 23, 2015

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

Emissions Analysis for Site: **CT11517B – TCP Monopole**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **1725 Stafford Road, Mansfield, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the 700 MHz Band is approximately $467 \mu\text{W}/\text{cm}^2$, and the general population exposure limit for the 1900 MHz (PCS) band is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **1725 Stafford Road, Mansfield, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

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

- 1) 2 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel
- 2) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 3) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 4) 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) Since the radios are ground mounted there are additional cabling losses accounted for. For each RF path the following losses were calculated. 1.07 dB of cable loss at 700 MHz and 2.27 dB of cable loss at 1900 MHz. This is based on manufacturers Specifications for 220 feet of 1-5/8" coax cable on each path.
- 6) 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.
- 7) 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.
 - 8) The antennas used in this modeling are the **RFS APXV18-203219-C-A20** for 1900 MHz (PCS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **RFS APXV18-203219-C-A20** has a maximum gain of **18.5 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.
 - 9) The antenna mounting height centerline of the proposed antennas is **139 feet** above ground level (AGL).
 - 10) 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.



T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APXV18-203219-C-A20	Make / Model:	RFS APXV18-203219-C-A20	Make / Model:	RFS APXV18-203219-C-A20
Gain:	18.5 dBd	Gain:	18.5 dBd	Gain:	18.5 dBd
Height (AGL):	139	Height (AGL):	139	Height (AGL):	139
Frequency Bands	1900 MHz(PCS)	Frequency Bands	1900 MHz(PCS)	Frequency Bands	1900 MHz(PCS)
Channel Count	6	Channel Count	6	# PCS Channels:	6
Total TX Power:	240	Total TX Power:	240	# AWS Channels:	240
ERP (W):	10,074.22	ERP (W):	10,074.22	ERP (W):	10,074.22
Antenna A1 MPE%	2.05	Antenna B1 MPE%	2.05	Antenna C1 MPE%	2.05
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	139	Height (AGL):	139	Height (AGL):	139
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):	651.81	ERP (W):	651.81	ERP (W):	651.81
Antenna A2 MPE%	0.28	Antenna B2 MPE%	0.28	Antenna C2 MPE%	0.28

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	2.33 %
Town	0.37 %
AT&T	1.53 %
Verizon Wireless	1.48 %
Sprint	0.74 %
Site Total MPE %:	6.45 %

T-Mobile Sector 1 Total:	2.33 %
T-Mobile Sector 2 Total:	2.33 %
T-Mobile Sector 3 Total:	2.33 %
Site Total:	6.45 %

T-Mobile _per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 1900 MHz (PCS) LTE	2	2518.55	139	10.24	2100	1000	1.02 %
T-Mobile 1900 MHz (PCS) GSM	2	1259.28	139	5.12	1900	1000	0.51 %
T-Mobile 1900 MHz (PCS) UMTS	2	1259.28	139	5.12	2100	1000	0.51 %
T-Mobile 700 MHz LTE	1	651.81	139	1.32	700	467	0.28 %
						Total:	2.33%

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:	2.33 %
Sector 2:	2.33 %
Sector 3 :	2.33 %
T-Mobile Per Sector Maximum:	2.33 %
Site Total:	6.45 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **6.45%** 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.



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