NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Northeast Site Solutions
Denise Sabo
199 Brickyard Rd Farmington, CT 06032
860-209-4690
denise@northeastsitesolutions.com

June 10, 2016

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

RE: Notice of Exempt Modification
200 Colt Highway, Farmington CT 06032
Latitude: 41.70088000
Longitude: -72.83218400
T-Mobile Site#: CT11134A_L1900

Dear Ms. Bachman:

T-Mobile currently maintains nine (3) antennas at the 103-foot level of the existing 120-foot monopole at 200 Colt Highway, Farmington CT 06032. The tower is owned by WVIT/Outlet Broadcasting Inc. The property is owned by Outlet Broadcasting Inc. T-Mobile now intends to install three (3) new 700 MHz antennas and (3) new 1900/2100 MHz antenna. The new antennas would be installed at the 103-foot level of the tower. T-Mobile also intends to:

Remove: NONE
Remove and Replace: NONE

Install New:
(3) AIR21 B4A/B2p Antennas on new pipe masts
(3)LNX-6515DS-A1M Antennas on new pipe masts
(3) RRUS11 B12
(3) Sabre C10-857-011 Antenna Mount

Existing to Remain:
(3)AIR21 B2A/B4P Antenna on existing pipe masts
(3) Twin AWS TMA
(8) 1-1/4" Coax
(1) Hybrid Fiber Line

This facility was approved by the Town of Farmington PZC. The tower was built in the 1980's the original zoning approval file is not available – See attached letter from the Town Planner.

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Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to Kathleen Eagen, Town Manager for the Town of Farmington, as well as the property owner and the tower owner.

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

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site. ·

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

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

Attachments

cc: Kathleen Eagen, Town Manager - as elected official
Outlet Broadcasting Inc. - as tower owner
Outlet Broadcasting Inc - as property owner

Exhibit A

Denise Sabo
Project Manager, Northeast Site Solutions
54 Main St. Unit 3
Sturbridge, MA 01566

June 8th, 2016

RE : Zoning Compliance Letter for transmission towers at 190 & 200 Colt Highway, Farmington, CT.

Dear Ms. Sabo

The purpose of this letter is to confirm zoning compliance for the above referenced subject property.

Please be advised the subject property is located in the Residential R80 zone. As you requested we have searched town archives and we have been unable to locate the original zoning approval. As I have indicated the town zoning authority has consistently signed off on building permits for modifications to the towers which indicates zoning compliance. We are not aware of any zoning violations at the subject property at this time.

Thank you.

Sincerely,

William Warner, AICP
Town Planner
Farmington, CT

Exhibit B

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2012.

Information on the Property Records for the Municipality of Farmington was last updated on 6/8/2016.

Property Summary Information

Parcel Data And Values (http://www.propertyrecordcards.com/PropertyResults.aspx?towncode=052&uniqueid=03750200#tabParcel)

Building (http://www.propertyrecordcards.com/PropertyResults.aspx?towncode=052&uniqueid=03750200#)

Outbuildings (http://www.propertyrecordcards.com/PropertyResults.aspx?towncode=052&uniqueid=03750200#tabOutbuildings)

Sales (http://www.propertyrecordcards.com/PropertyResults.aspx?towncode=052&uniqueid=03750200#tabSales)

Google Map (http://www.propertyrecordcards.com/PropertyResults.aspx?towncode=052&uniqueid=03750200#tabGoogleMap)

Parcel Information

Location:	200 COLT HIGHWAY	Property Use:	Industrial	Primary Use:	Utility Building
Unique ID:	03750200	Map Block Lot:	0141 7B	Acres:	10.00
490 Acres:	0.00	Zone:	EE	Volume / Page:	0554/0608

Developers Map / Lot:		Census:	4602-02		

Value Information

	Appraised Value	70% Assessed Value
Land	600,000	420,000
Buildings	291,886	204,320
Detached Outbuildings	0	0
Total	891,886	624,320

Owner's Information

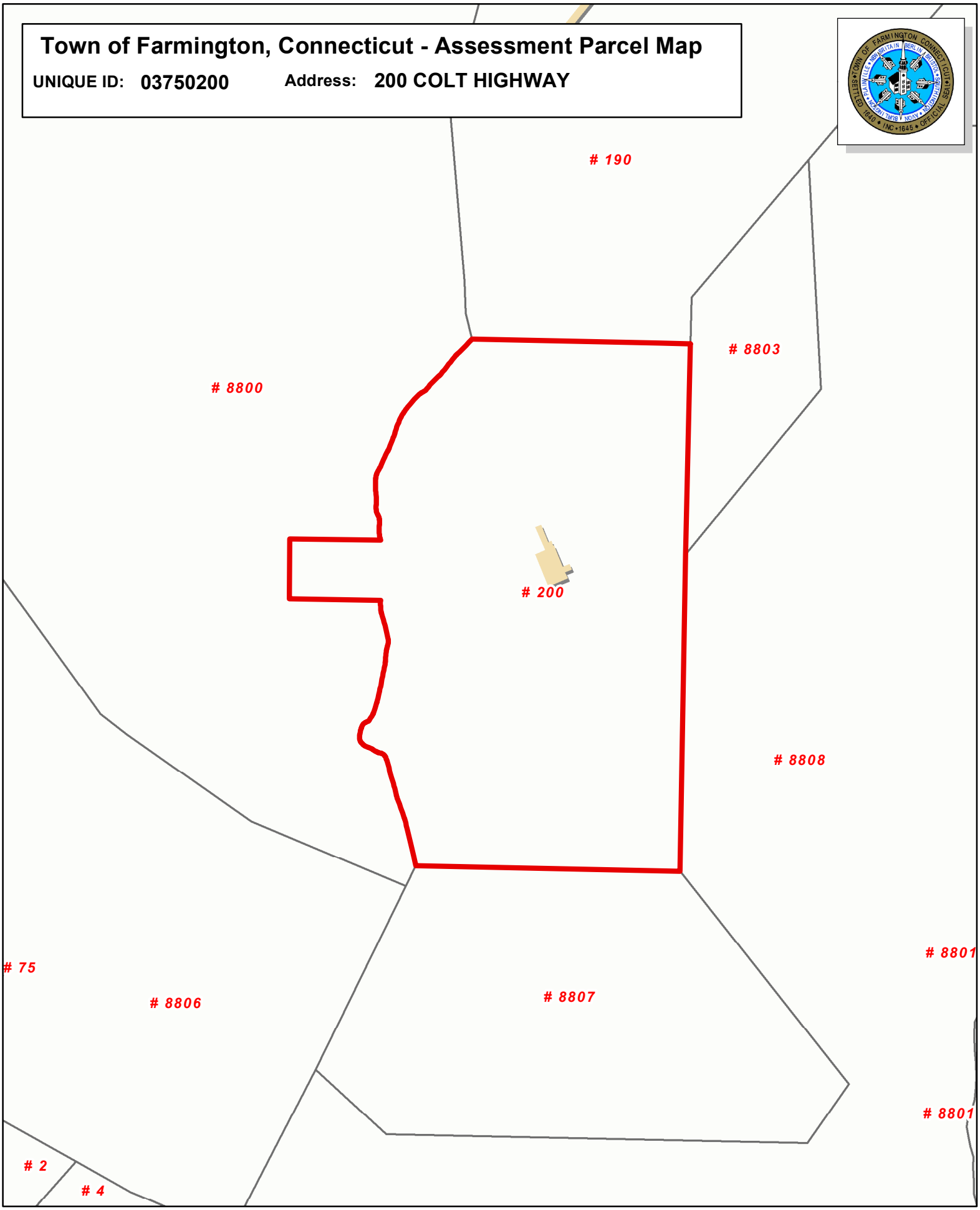
Owner's Data
OUTLET BROADCASTING INC E-PROPERTY TAX DEPT 201 ONE COMCAST CENTER,32ND FL PHILADELPHIA, PA 19103

Back To Search (JavaScript:window.history.back(1);)

Print View (http://www.propertyrecordcards.com/PrintPage.aspx?towncode=052&uniqueid=03750200)

Town of Farmington, Connecticut - Assessment Parcel Map

UNIQUE ID: 03750200 **Address:** 200 COLT HIGHWAY



Map Produced July 2015

Approximate Scale: 1 inch = 200 feet

Exhibit C

T-MOBILE NORTHEAST LLC

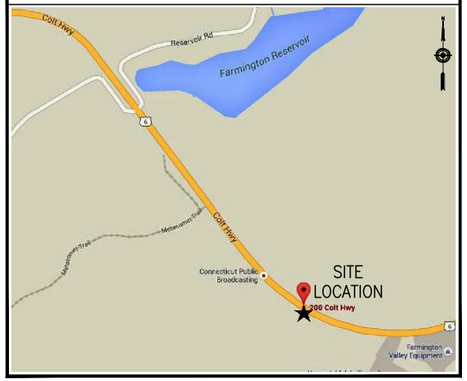
SITE #: CT11134A

SITE NAME: FARMINGTON/ I-84 X37_1

SITE ADDRESS:
200 COLT HIGHWAY
FARMINGTON, CT 06032

WIRELESS BROADBAND FACILITY
CONSTRUCTION DRAWINGS
(702CU CONFIGURATION)

VICINITY MAP



DO NOT SCALE DRAWINGS

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

CALL BEFORE YOU DIG:

WWW.CBYD.COM

CALL 800 922 4455, OR 811

CALL THREE WORKING DAYS PRIOR TO DIGGING

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

COLOR CODE FOR UTILITY LOCATIONS

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

GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES. RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONSTRUCT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE T-MOBILE REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF THE CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES, THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXPENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING OF ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUM OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS AND INSPECTIONS WHICH ARE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY, OR LOCAL GOVERNMENT AUTHORITY.
11. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC., DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
12. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
13. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS, AS WELL AS THE LATEST EDITIONS OF ANY PERTINENT STATE SAFETY REGULATIONS.
14. THE CONTRACTOR SHALL NOTIFY THE T-MOBILE REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE T-MOBILE REPRESENTATIVE.
15. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC., ON THE JOB.
16. THE CONTRACTOR SHALL RETURN ALL DISTURBED AREAS TO THEIR ORIGINAL CONDITION AT THE COMPLETION OF WORK.
17. REFER TO STRUCTURAL ANALYSIS DOCUMENT ENTITLED, "STRUCTURAL ANALYSIS REPORT GUYED TOWER" PREPARED BY ATLANTIS DESIGN GROUP, INC., "T-MOBILE SITE ID CT11134A", DATED MAY 26, 2016

SITE INFORMATION

SITE NUMBER:	CT11134A
SITE NAME:	FARMINGTON/ I-84 X37_1
SITE ADDRESS:	200 COLT HIGHWAY FARMINGTON, CT 06032
LAT./LONG.:	N 41.70088000/ W -72.83218400
JURISDICTION:	TOWN OF FARMINGTON, CT
PROPERTY OWNER:	WVIT/OUTLET BROADCASTING 1422 NEW BRITAIN AVE, WEST HARTFORD, CT 06110-1632 (860) 521-3030 JOE DIMAGGIO, CHIEF ENGINEER. KIETH BARBERIA, DIRECTOR OF TECHNOLOGY 860-313-4210

CODE COMPLIANCE

CONNECTICUT STATE BUILDING CODE

2005 CONNECTICUT BUILDING CODE WITH 2013 AMENDMENT
2011 NATIONAL ELECTRICAL CODE

CONSTRUCTION TYPE: 2B USE GROUP: N/A

PROJECT SUB-CONTRACTORS

APPLICANT:	T-MOBILE NORTHEAST, LLC. 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 (860) 692-7100
PROJECT MANAGER	LISA LIN ALLEN NORTHEAST SITE SOLUTIONS 54 MAIN STREET STURBRIDGE, MA 01566 (508) 434-5237
A&E:	ATLANTIS DESIGN GROUP INC. 54 JACQUELINE ROAD, SUITE #7 WALTHAM, MA 02452 (617)-852-3611

SHEET INDEX

SHEET	DESCRIPTION
T-1	TITLE SHEET
N-1	GENERAL AND ELECTRICAL NOTES
A-1	SITE LAYOUT AND SITE PLAN
A-2	ELEVATION
A-3	DETAILS
E-1	GROUNDING DIAGRAM
E-2	GROUNDING DETAILS

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

NORTHEAST SITE SOLUTIONS
54 MAIN STREET, UNIT 3
STURBRIDGE, MA 01566
(508) 434-5237

ATLANTIS DESIGN GROUP, INC.
54 Jacqueline Road, Suite #7
Waltham, MA 02452
Phone number: 617-852-3611
Fax Number : 781-742-2247

SUBMITTALS		
DATE	DESCRIPTION	REVISION
05/31/16	ISSUED FOR REVIEW	A
06/06/16	FINAL CD	0

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

DRAWN BY:	MB
CHECKED BY:	KM

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

PROFESSIONAL SEAL

SITE NAME
CT11134A
SITE NAME
FARMINGTON/ I-84 X37_1
SITE ADDRESS
200 COLT HIGHWAY
FARMINGTON, CT 06032

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

ELECTRICAL NOTES:

WORK INCLUDED

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

GENERAL REQUIREMENTS

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

GUARANTEE

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

CLEANING

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

COORDINATION AND SUPERVISION

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

SUBMITTALS

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

CUTTING AND PATCHING

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

TESTS, INSPECTION AND APPROVAL

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

SPECIAL REQUIREMENTS

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

GROUNDING

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

RACEWAYS

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

WIRES AND CABLES

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

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

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

WIRING DEVICES

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

DISCONNECT SWITCHES AND FUSES

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

INSTALLATION

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

GENERAL NOTES:

INTENT

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

CONFLICTS

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

CONTRACTS AND WARRANTIES

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

STORAGE

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

CLEANUP

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

CHANGE ORDER PROCEDURE:

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

RELATED DOCUMENTS AND COORDINATION

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

SHOP DRAWINGS

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

PRODUCTS AND SUBSTITUTIONS

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

QUALITY ASSURANCE

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

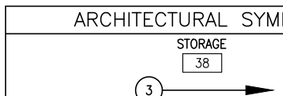
ADMINISTRATION

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

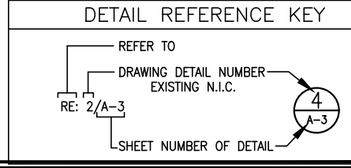
INSURANCE AND BONDS

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

ARCHITECTURAL SYMBOLS



DETAIL REFERENCE KEY



ABBREVIATIONS

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

T-MOBILE NORTHEAST, LLC
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(508) 434-5237

ATLANTIS DESIGN GROUP, INC.
54 Jacqueline Road, Suite #7
Waltham, MA 02452
Phone number: 617-852-3611
Fax Number : 781-742-2247

SUBMITTALS

DATE	DESCRIPTION	REVISION
05/31/16	ISSUED FOR REVIEW	A
06/06/16	FINAL CD	0

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

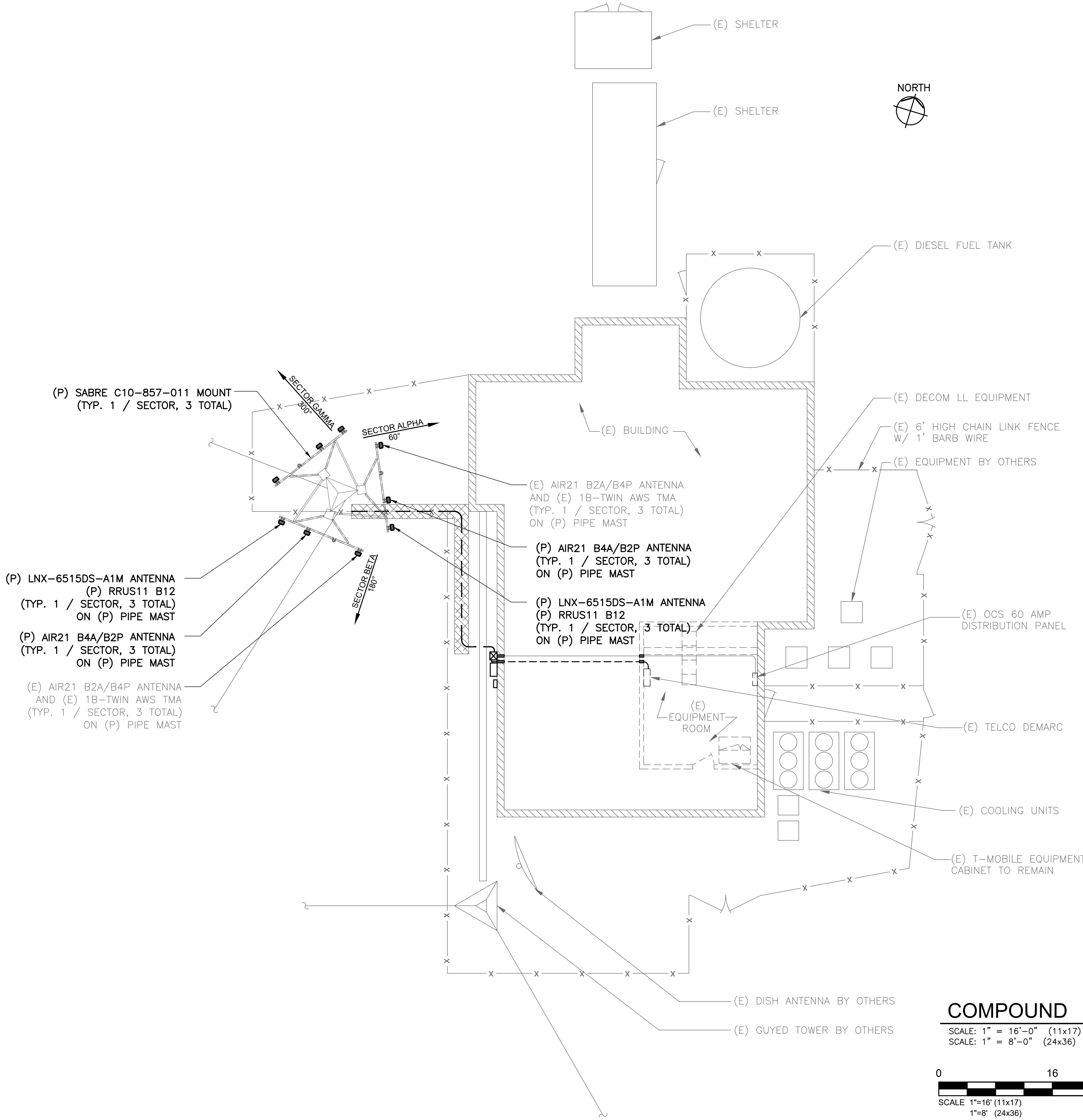
DRAWN BY: MB
CHECKED BY: KM

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

SITE NAME
CT11134A
SITE NAME
FARMINGTON/ I-84 X37_1
SITE ADDRESS
200 COLT HIGHWAY
FARMINGTON, CT 06032

SHEET TITLE
GENERAL AND ELECTRICAL NOTES

SHEET NUMBER
N-1



COMPOUND PLAN (2 / A-1)

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

0 16 32 48

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

GENERAL SITE NOTES

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

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

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

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

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

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

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

SITE LEGEND

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

T - Mobile

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RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

DRAWN BY: MB
CHECKED BY: KM

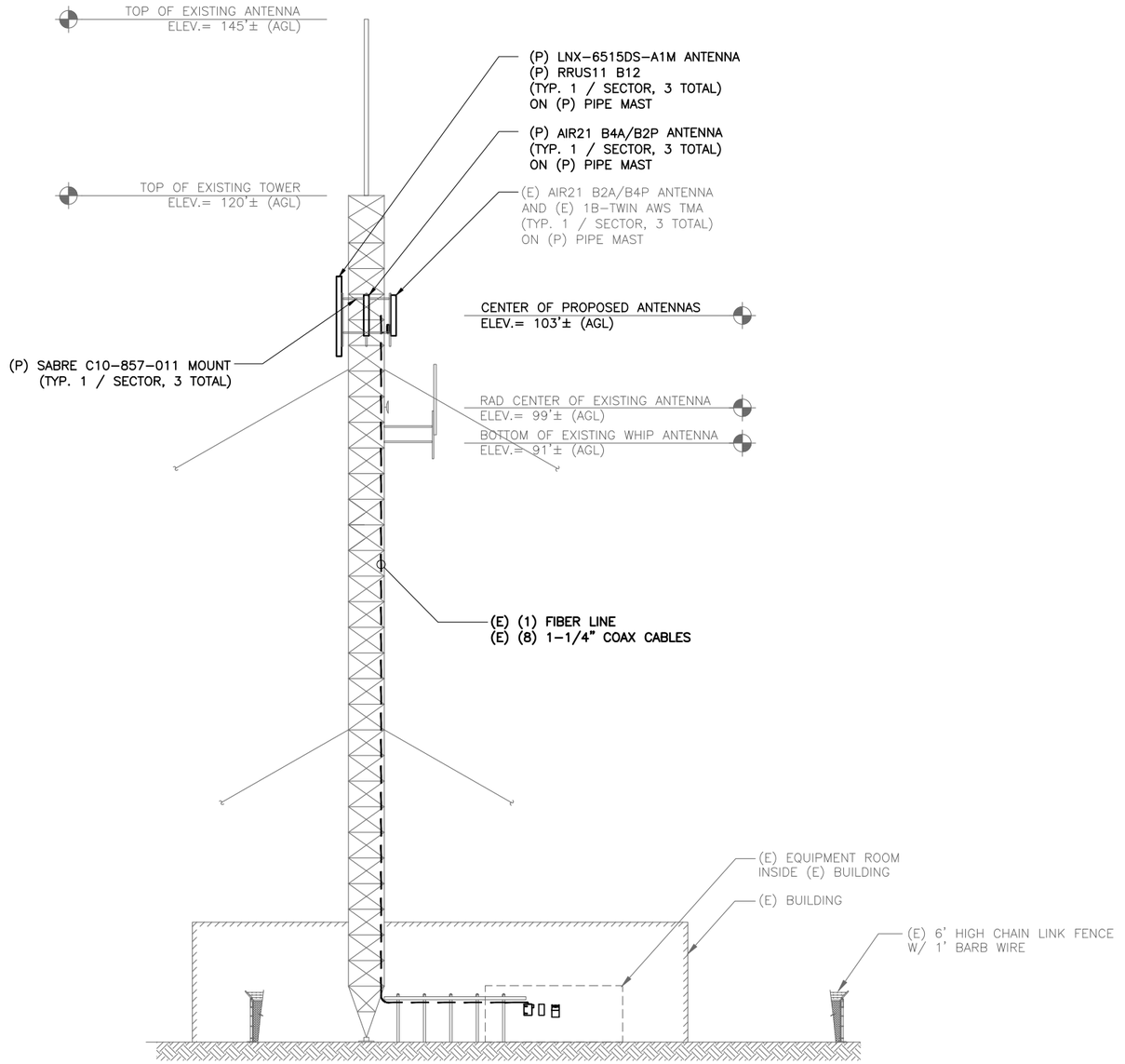
STATE OF CONNECTICUT HOSSEIN VAHEDI NO. ARI. 11162 LICENSED ARCHITECT

PROFESSIONAL SEAL

SITE NAME
CT11134A
SITE NAME
FARMINGTON/ I-84 X37_1
SITE ADDRESS
200 COLT HIGHWAY
FARMINGTON, CT 06032

SHEET TITLE
SITE PLAN

SHEET NUMBER
A-1



ELEVATION

SCALE: 1" = 20'-0"

10 0 10 20 30

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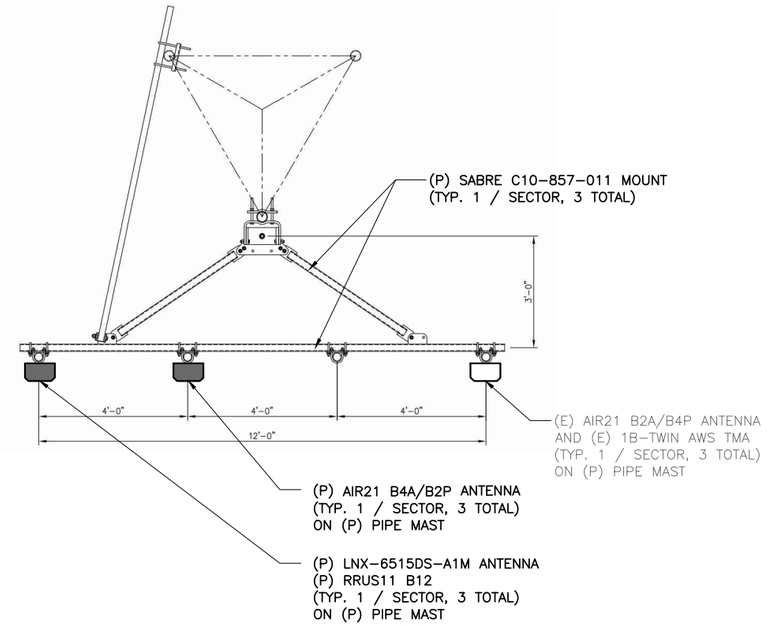
FARMINGTON, CT 06032

SHEET TITLE
ELEVATION
AND
ANTENNA DETAILS

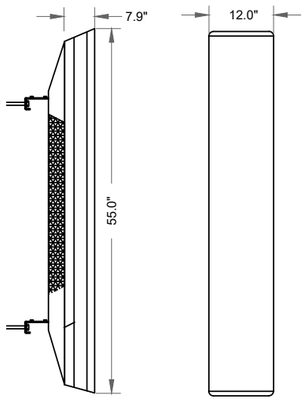
SHEET NUMBER
A-2



ANTENNA PLAN

SCALE: N.T.S

1 / A-3



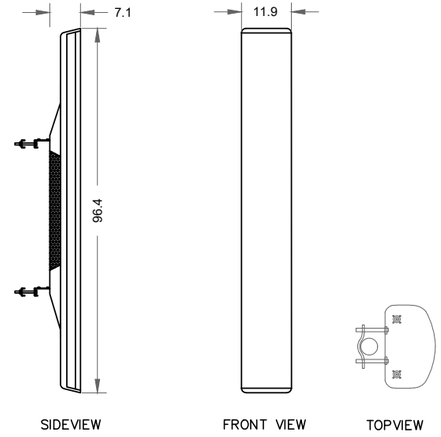
SIDEVIEW FRONT VIEW TOPVIEW

MANUFACTURER: ERICSSON
MODEL NO.:ERICSSON AIR21 B2A/B4P
DIMENSIONS – HxWxD, (IN) 55.0"x12.0"x7.9"

ERICSSON AIR21 B2A/B4P ANTENNA DETAILS

SCALE: N.T.S

2 / A-3



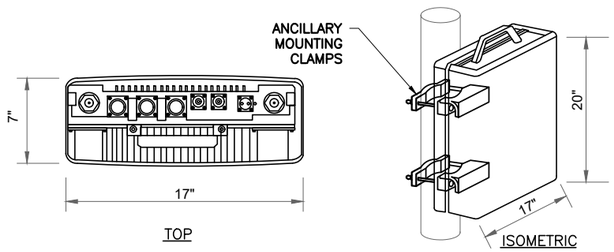
SIDEVIEW FRONT VIEW TOPVIEW

MANUFACTURE: COMMSCOPE
MODEL NO. LNX-6515DS-A1M
DIMENSIONS – HxWxD, (IN) 96.4x11.9x7.1
WEIGHT – 50.3 LB

COMMSCOPE LNX-6515DS-A1M ANTENNA DETAILS

SCALE: N.T.S

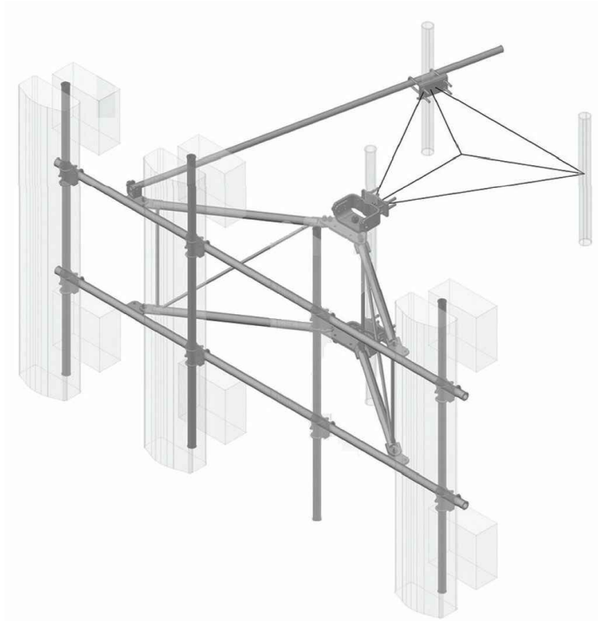
3 / A-3



RRUS DETAILS

SCALE: N.T.S

4 / A-3



SABRE C10-857-011 MOUNT DETAIL

SCALE: N.T.S

5 / A-3

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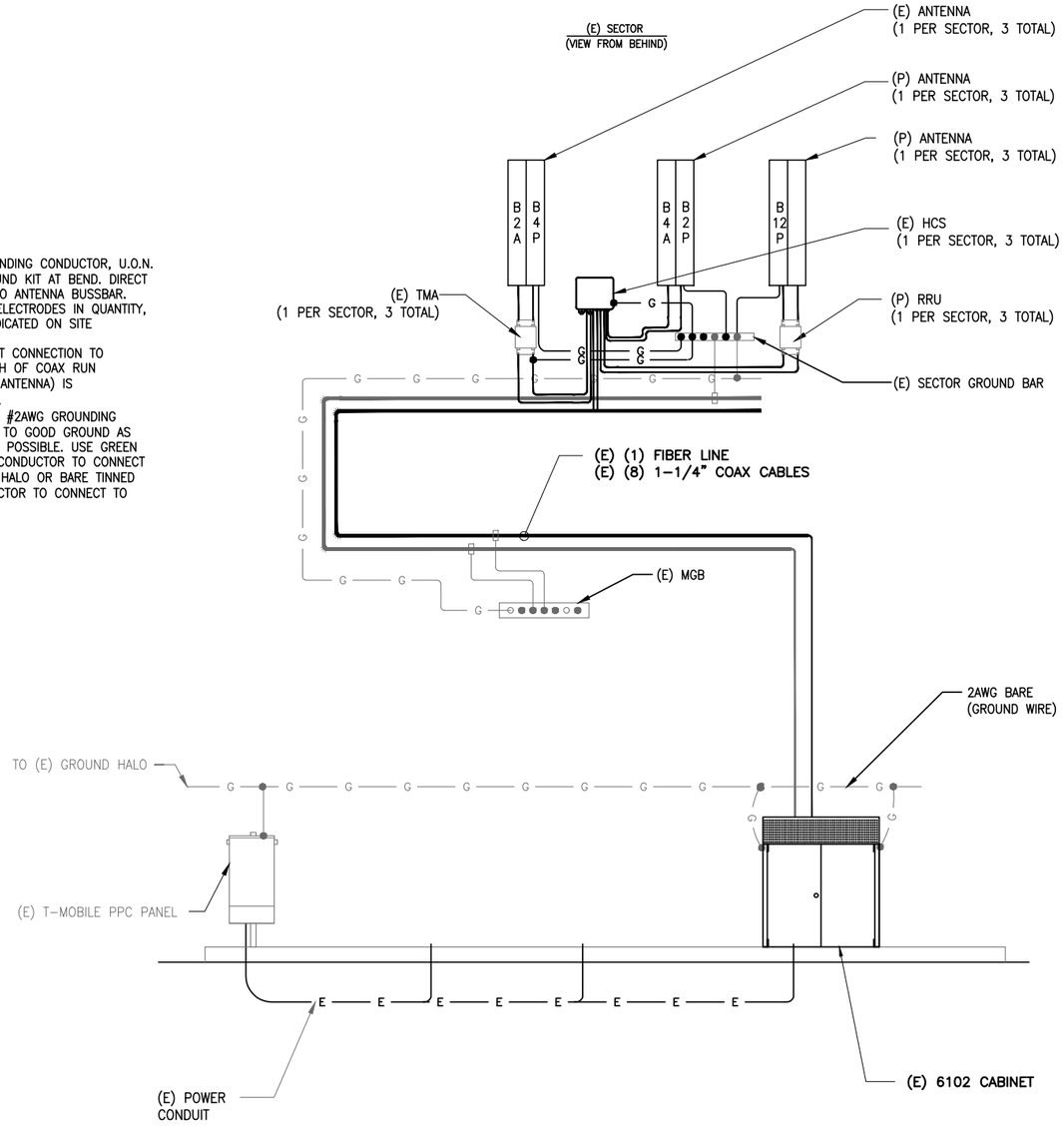
FARMINGTON, CT 06032

SHEET TITLE
DETAILS

SHEET NUMBER
A-3

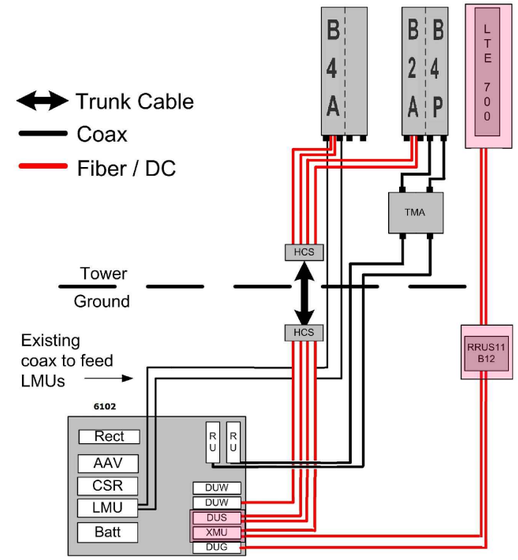
NOTES:
A. PROVIDE #2AWG GROUNDING CONDUCTOR, U.O.N.
B. DO NOT INSTALL GROUND KIT AT BEND. DIRECT GROUND WIRE DOWN TO ANTENNA BUSSBAR.
C. PROVIDE GROUNDING ELECTRODES IN QUANTITY, TYPE AND SIZE AS INDICATED ON SITE GROUNDING PLAN.
D. ADD COAX GROUND KIT CONNECTION TO BUSSBAR WHEN LENGTH OF COAX RUN (FROM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



GROUNDING DIAGRAM

SCALE: N.T.S

1 / E-1



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

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

702CU CONFIGURATION
COAX/FIBER PLUMBING DIAGRAM

SCALE: N.T.S

2 / E-1

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54 Jacqueline Road, Suite #7
Waltham, MA 02452
Phone number: 617-852-3611
Fax Number : 781-742-2247

SUBMITTALS

DATE	DESCRIPTION	REVISION
05/31/16	ISSUED FOR REVIEW	A
06/06/16	FINAL CD	0

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

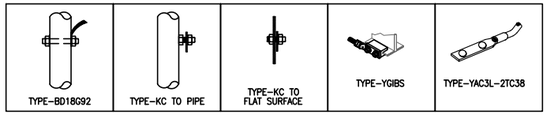
DRAWN BY: MB
CHECKED BY: KM

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

SITE NAME
CT11134A
SITE NAME
FARMINGTON/ I-84 X37_1
SITE ADDRESS
200 COLT HIGHWAY
FARMINGTON, CT 06032

SHEET TITLE
GROUNDING AND ONE LINE DIAGRAM
COAX/FIBER DIAGRAM

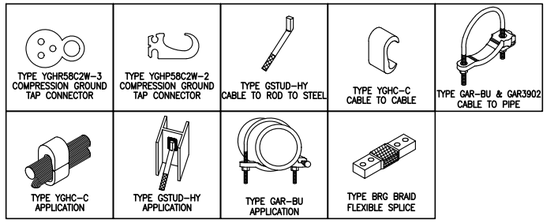
SHEET NUMBER
E-1



BURNDY GROUNDING DETAILS

1 E-2

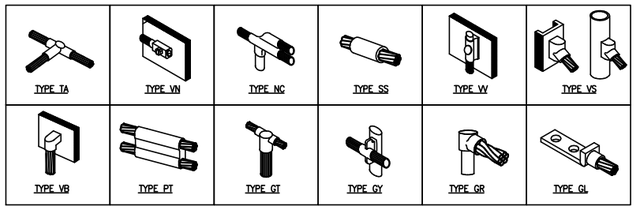
SCALE: N.T.S.



BURNDY GROUNDING PRODUCTS

2 E-2

SCALE: N.T.S.



CADWELD GROUNDING CONNECTION PRODUCTS

3 E-2

SCALE: N.T.S.

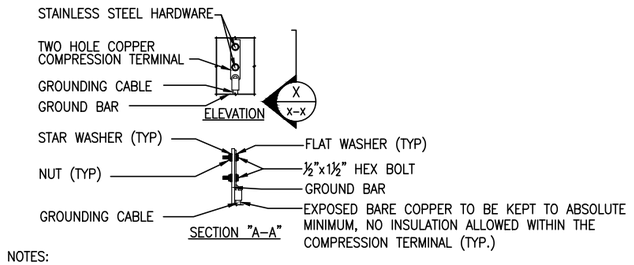
TERMINATION TYPES:
A. MECHANICAL COMPRESSION LUG
B. DOUBLE BARRELL COMPRESSION CONNECTOR
C. EXOTHERMIC TERMINATION
D. BEAM CLAMP

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

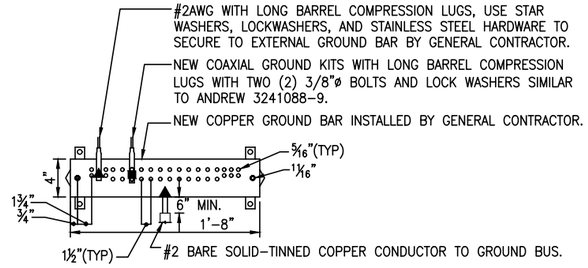
GROUNDING TERMINATION MARTIX

4 E-2

SCALE: N.T.S.



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

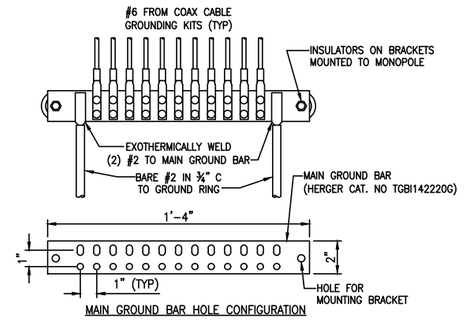


NOTES:
1. ALL HARDWARE STAINLESS STEEL COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
2. FOR GROUND BOND TO STEEL ONLY: INSERT A TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH KOPR-SHIELD.
3. ALL HOLES ARE COUNTERSUNK 1/16".

TYPICAL GROUND BAR CONNECTIONS DETAIL

5 E-2

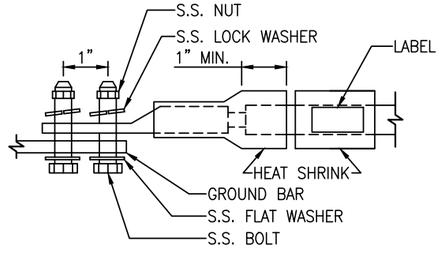
SCALE: N.T.S.



GROUND BAR DETAIL

6 E-2

SCALE: N.T.S.



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

GROUND BAR DETAIL

7 E-2

SCALE: N.T.S.

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Phone number: 617-852-3611
Fax Number : 781-742-2247

SUBMITTALS		
DATE	DESCRIPTION	REVISION
05/31/16	ISSUED FOR REVIEW	A
06/06/16	FINAL CD	0

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

DRAWN BY: MB
CHECKED BY: KM

PROFESSIONAL SEAL

SITE NAME
CT11134A
SITE NAME
FARMINGTON/ I-84 X37_1
SITE ADDRESS
200 COLT HIGHWAY
FARMINGTON, CT 06032

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
E-2

Exhibit D

STRUCTURAL ANALYSIS REPORT – REV.2
GUYED TOWER

ATLANTIS DESIGN GROUP, INC.

Prepared For:

T-Mobile

35 Griffin Road South
Bloomfield, CT 06002

Site ID: CT11134A
Site Name: Farmington/I-84 X37_1
200 Colt Highway
Farmington, CT 06032

May 26, 2016

Submitted By:

Atlantis Design Group, Inc.
54 Jacqueline Road, Suite #7
Waltham, Massachusetts 02452
Phone: 617-852-3611

Prepared For:

35 Griffin Road South
Bloomfield, CT 06002

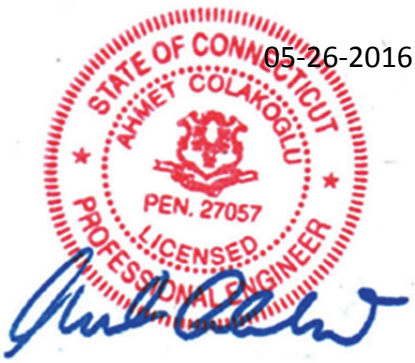
RESULT: PASS

Site ID: CT11134A
Site Name: Farmington/I-84 X37_1
200 Colt Highway
Farmington, CT 06032

Prepared By:

Destek Engineering, LLC
Professional Engineering Corporation
License # PEC 001429

05-26-2016



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

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

CONTENTS

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

1.0 SUBJECT AND REFERENCES

The purpose of this analysis is to evaluate the structural capacity of the existing 120 feet high guyed tower, located at 200 Colt Highway, Farmington, CT 06032, for the alteration and addition of wireless telecommunication appurtenances proposed by T-Mobile.

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

- Structural Analysis report prepared by Atlantis, dated 05/09/2013.
- RFDS prepared by T-Mobile dated 4/19/2016.

1.1 STRUCTURE

The subject structure is a 120 feet high, triangular based guyed tower. Solid rod legs are X-braced along the tower height with solid rods. The tower is guyed at one (1) elevation at 103.5 ft. above the grade line. Guy wires are terminated at anchors 250 feet away from the tower. Please refer to the tower elevation drawing in Appendix A, for details about the tower geometry, member sizes, etc.

2.0 EXISTING AND PROPOSED APPURTENANCES

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

Existing Configuration of T-MOBILE Appurtenances:

Sector	Rad Center (ft)	Antenna & TMA	Mount	FEED LINES
Alpha	103	(1) AIR21 B2A/B4P	(3) Pipe Mounts	(8) 1-1/4” (1) Hybrid Fiber Coax
Beta	103	(1) AIR21 B2A/B4P		
Gamma	103	(1) AIR21 B2A/B4P (1) Generic Twin AWS TMA		

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Proposed Configuration of T-MOBILE Appurtenances:

Sector	Rad Center (ft)	Antenna & TMA	Mount	FEED LINES
Alpha	103	(1) AIR21 B2A/B4P (1) AIR21 B4A/B2P (1) LNX-6515DS-A1M (1) Generic Twin AWS TMA (1) RRUS11 B12	(3) New Sector Mounts	(8) 1-1/4” (1) Hybrid Fiber Coax
Beta	103	(1) AIR21 B2A/B4P (1) AIR21 B4A/B2P (1) LNX-6515DS-A1M (1) Generic Twin AWS TMA (1) RRUS11 B12		
Gamma	103	(1) AIR21 B2A/B4P (1) AIR21 B4A/B2P (1) LNX-6515DS-A1M (1) Generic Twin AWS TMA (1) RRUS11 B12		

Existing and Remaining Appurtenances by Others:

RAD CENTER (FT) CARRIER	ANTENNA & TMA	MOUNT	FEED LINES
120	(1) TFU-30 GTH-R	Leg Mounted	(1) 6-1/8”
113	(1) DB225	Leg Mounted	(1) 1-1/4”
96.8	(1) 12’ Whip	(1) Standoff Mount	(1) 1/2”
91.5	(1) PR-850 Grid Dish	Leg Mounted	(1) 1-1/4”

3.0 CODES AND LOADING

The tower was analyzed per *TIA/EIA-222-F* as referenced by *2005 State Building Code with all of the adopted Addendums and Supplements.* The following wind loading was used in compliance with the standard for New London County:

- Basic wind speed 80 mph (W) without ice.
- Basic wind speed 69.3 mph (W_i) with 1/2” radial ice.

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

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

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

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

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

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

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

The analysis results presented in this report are only applicable for the previously mentioned existing and proposed appurtenances. Any deviation of the appurtenances and appurtenance placement will require Destek to generate an additional structural analysis. Additionally, the proposed linear appurtenances should be placed per recommendations of this report.

5.0 ANALYSIS AND ASSUMPTIONS

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

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6.0 RESULTS AND CONCLUSION

Based on a feasibility analysis per TIA-222-F, the existing guyed tower is found to have **adequate** structural capacity for the proposed changes by T-Mobile. For the aforementioned load combinations and as a maximum, the tower guy wires at 103.5 feet AGL will be stressed to **62.9%** of capacity. Maximum usage of tower legs and bracing is 11.0% and 45.6%, respectively.

Based on the stress level of the legs and assuming the foundation system was designed to have at least the capacity of the superstructure, tower foundation system is considered to have **adequate** structural strength.

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

Should you have any questions about this report, please contact us at (770) 693-0835.

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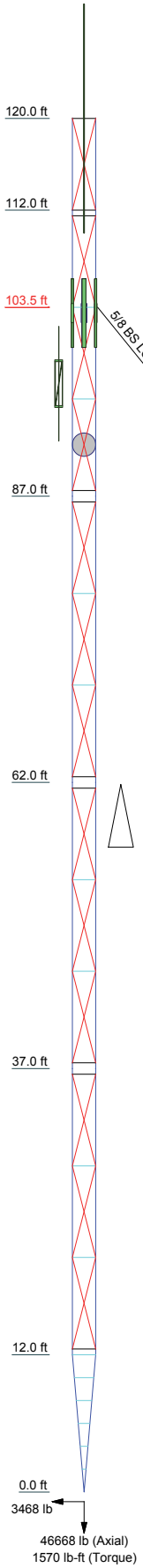
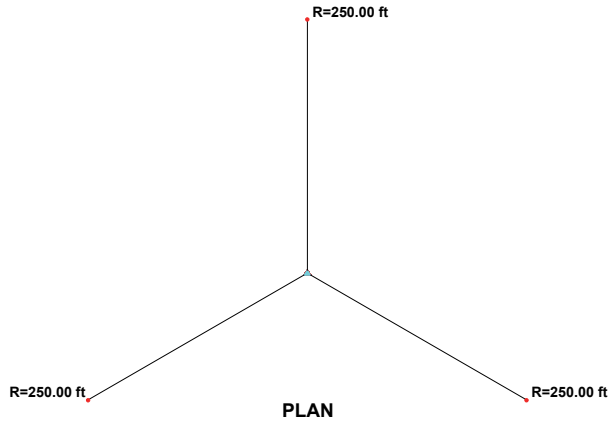
APPENDIX A
SOFTWARE OUTPUT



Section	T1	T2	T3	T4	T5	T6
Legs				SR 4 1/2		
Leg Grade				A7-33		
Diagonals			SR 3/4			N.A.
Diagonal Grade			A7-33			N.A.
Top Girts			L2 1/2x2 1/2x1/4			N.A.
Bottom Girts			L2 1/2x2 1/2x1/4			N.A.
Horizontals				L2 1/2x2 1/2x1/4		
Face Width (ft)				6		
# Panels @ (ft)			13 @ 8			6 @ 2
Weight (lb) 22302.1	1534.8	4621.1	4621.1	4621.1	4621.1	2262.9



DESIGNED APPURTENANCE LOADING

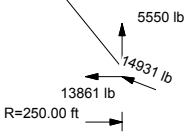
TYPE	ELEVATION	TYPE	ELEVATION
TFU-30 GTH-R	120	LNX-6515DS-A1M (T-Mobile)	103
(2) DB225-4-A	113	LNX-6515DS-A1M (T-Mobile)	103
AIR21 B2A/B4P (T-Mobile)	103	LNX-6515DS-A1M (T-Mobile)	103
AIR21 B2A/B4P (T-Mobile)	103	RRUS 11 B12	103
AIR21 B2A/B4P (T-Mobile)	103	RRUS 11 B12	103
AIR21 B4A/B2P (T-Mobile)	103	RRUS 11 B12	103
AIR21 B4A/B2P (T-Mobile)	103	Sector Mount [SM 401-3] (T-Mobile)	103
AIR21 B4A/B2P (T-Mobile)	103	12' x 1.25" Dia. Whip	96.83
Generic Twin AWS TMA (T-Mobile)	103	Pirod 4' Side Mount Standoff (1)	96.83
Generic Twin AWS TMA (T-Mobile)	103	PR-850	91.5
Generic Twin AWS TMA (T-Mobile)	103		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A7-33	33 ksi	60 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 69 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 62.9%



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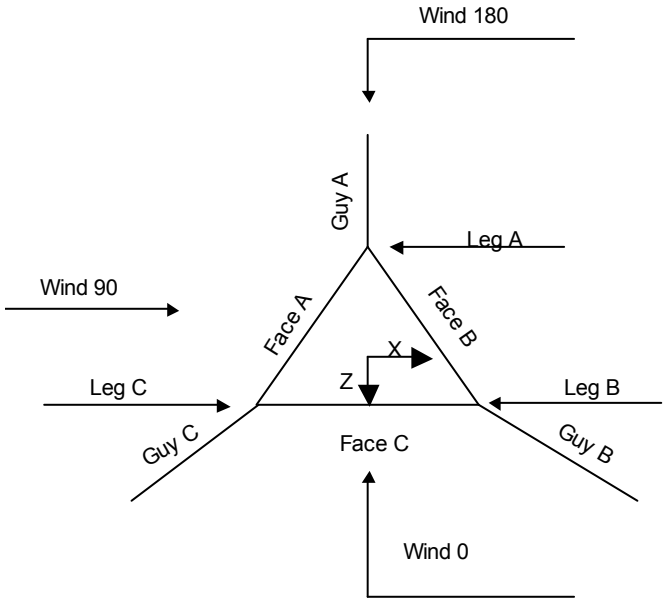
Marietta, GA 30066
Phone: (770) 693-0835
FAX:

Job: ***CT11134A***			
Project: ***CT11134A***			
Client: T-Mobile	Drawn by: Ahmet Colakoglu	App'd:	
Code: TIA/EIA-222-F	Date: 05/26/16	Scale: NTS	
Path: Z:\Projects\2016\64 - Atlantis Design Group\059 - CT11134A\Tnxtower\CT11134A Rev.2.eri		Dwg No. E-1	

Tower Input Data

The main tower is a 3x guyed tower with an overall height of 120.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 6.00 ft at the top and tapered at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Hartford County, Connecticut.
Basic wind speed of 80 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56 pcf.
A wind speed of 69 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
Tension only take-up is 0.0313 in.
Pressures are calculated at each section.
Safety factor used in guy design is 2.
Stress ratio used in tower member design is 1.333.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.



Corner & Starmount Guyed Tower

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	120.00-112.00			6.00	1	8.00
T2	112.00-87.00			6.00	1	25.00
T3	87.00-62.00			6.00	1	25.00
T4	62.00-37.00			6.00	1	25.00
T5	37.00-12.00			6.00	1	25.00
T6	12.00-0.00			6.00	1	12.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	120.00-112.00	8.00	TX Brace	No	Yes	0.0000	0.0000
T2	112.00-87.00	8.00	TX Brace	No	Yes	6.0000	6.0000
T3	87.00-62.00	8.00	TX Brace	No	Yes	6.0000	6.0000
T4	62.00-37.00	8.00	TX Brace	No	Yes	6.0000	6.0000
T5	37.00-12.00	8.00	TX Brace	No	Yes	6.0000	6.0000
T6	12.00-0.00	2.00	X Brace	No	Yes	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 120.00-112.00	Solid Round	4 1/2	A7-33 (33 ksi)	Solid Round	3/4	A7-33 (33 ksi)
T2 112.00-87.00	Solid Round	4 1/2	A7-33 (33 ksi)	Solid Round	3/4	A7-33 (33 ksi)
T3 87.00-62.00	Solid Round	4 1/2	A7-33 (33 ksi)	Solid Round	3/4	A7-33 (33 ksi)
T4 62.00-37.00	Solid Round	4 1/2	A7-33 (33 ksi)	Solid Round	3/4	A7-33 (33 ksi)
T5 37.00-12.00	Solid Round	4 1/2	A7-33 (33 ksi)	Solid Round	3/4	A7-33 (33 ksi)
T6 12.00-0.00	Solid Round	4 1/2	A7-33 (33 ksi)	Solid Round		A7-33 (33 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 120.00-112.00	Single Angle	L2 1/2x2 1/2x1/4	A7-33 (33 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A7-33 (33 ksi)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T2 112.00-87.00	Single Angle	L2 1/2x2 1/2x1/4	A7-33 (33 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A7-33 (33 ksi)
T3 87.00-62.00	Single Angle	L2 1/2x2 1/2x1/4	A7-33 (33 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A7-33 (33 ksi)
T4 62.00-37.00	Single Angle	L2 1/2x2 1/2x1/4	A7-33 (33 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A7-33 (33 ksi)
T5 37.00-12.00	Single Angle	L2 1/2x2 1/2x1/4	A7-33 (33 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A7-33 (33 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 120.00-112.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A7-33 (33 ksi)
T2 112.00-87.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A7-33 (33 ksi)
T3 87.00-62.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A7-33 (33 ksi)
T4 62.00-37.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A7-33 (33 ksi)
T5 37.00-12.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A7-33 (33 ksi)
T6 12.00-0.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A7-33 (33 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 120.00-112.00	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000
T2 112.00-87.00	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000
T3 87.00-62.00	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000
T4 62.00-37.00	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000
T5 37.00-12.00	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000
T6 12.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1	Yes	Yes	1	1	1	1	1	1	1	1
120.00-112.00				1	1	1	1	1	1	1
T2	Yes	Yes	1	1	1	1	1	1	1	1
112.00-87.00				1	1	1	1	1	1	1
T3	Yes	Yes	1	1	1	1	1	1	1	1
87.00-62.00				1	1	1	1	1	1	1
T4	Yes	Yes	1	1	1	1	1	1	1	1
62.00-37.00				1	1	1	1	1	1	1
T5	Yes	Yes	1	1	1	1	1	1	1	1
37.00-12.00				1	1	1	1	1	1	1
T6 12.00-0.00	Yes	Yes	0.2	1	1	1	1	1	1	1
				1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	U	Diagonal Net Width Deduct in	U	Top Girt Net Width Deduct in	U	Bottom Girt Net Width Deduct in	U	Mid Girt Net Width Deduct in	U	Long Horizontal Net Width Deduct in	U	Short Horizontal Net Width Deduct in	U
T1 120.00-112.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 112.00-87.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 87.00-62.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 62.00-37.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 37.00-12.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 12.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension lb	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
103.5	BS	A	5/8	4800.00	10%	24000	0.820	267.17	250.00	0.0000	0.00	100%
		B	5/8	4800.00	10%	24000	0.820	267.17	250.00	0.0000	0.00	100%
		C	5/8	4800.00	10%	24000	0.820	267.17	250.00	0.0000	0.00	100%

Guy Data *(cont'd)*

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
103.5	Corner						

Guy Data *(cont'd)*

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
103.50	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Solid Round	

Guy Data *(cont'd)*

Guy Elevation ft	Cable Weight A lb	Cable Weight B lb	Cable Weight C lb	Cable Weight D lb	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
103.5	219.08	219.08	219.08		6.05 4.2 sec/pulse	6.05 4.2 sec/pulse	6.05 4.2 sec/pulse	

Guy Data *(cont'd)*

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
103.5	No	No			1	1	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
103.5	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
103.5	A	51.75	19	14	0.5000
	B	51.75	19	14	0.5000
	C	51.75	19	14	0.5000

Guy-Tensioning Information

				Temperature At Time Of Tensioning													
				0 F		20 F		40 F		60 F		80 F		100 F		120 F	
Guy Elevation ft		H ft	V ft	Initial Tension lb	Intercept ft	Initial Tension lb	Intercept ft	Initial Tension lb	Intercept ft	Initial Tension lb	Intercept ft	Initial Tension lb	Intercept ft	Initial Tension lb	Intercept ft	Initial Tension lb	Intercept ft
103.5	A	246.54	103.50	6481	4.49	5905	4.92	5343	5.44	4800	6.05	4282	6.78	3798	7.63	3357	8.62
	B	246.54	103.50	6481	4.49	5905	4.92	5343	5.44	4800	6.05	4282	6.78	3798	7.63	3357	8.62
	C	246.54	103.50	6481	4.49	5905	4.92	5343	5.44	4800	6.05	4282	6.78	3798	7.63	3357	8.62

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
MACX675A (6-1/8 AIR)	A	Yes	Ar (CfAe)	120.00 - 10.00	-18.0000	0	1	1	6.0800	6.0800		4.52
Climbing Ladder *****	C	Yes	Af (CfAe)	120.00 - 0.00	0.0000	0.3	2	2	24.0000 0.2500	2.0000	6.2832	7.90
Feedline Ladder (Af)	B	Yes	Af (CfAe)	103.00 - 0.00	-6.0000	0.3	2	2	12.0000 3.0000	3.0000	12.0000	8.40
LDF6-50A (1-1/4 FOAM) (T-Mobile) ******	B	Yes	Ar (CfAe)	103.00 - 0.00	-8.0000	0.3	8	4	1.5500	1.5500		0.66
LDF6-50A (1-1/4 FOAM)	B	Yes	Ar (CfAe)	113.00 - 0.00	0.0000	-0.05	1	1	1.5500	1.5500		0.66
LDF4-50A (1/2 FOAM)	B	Yes	Ar (CfAe)	96.80 - 0.00	0.0000	0.05	1	1	0.6300	0.6300		0.15
LDF6-50A (1-1/4 FOAM) ********** ********** *********	C	Yes	Ar (CfAe)	91.50 - 0.00	0.0000	0	1	1	1.5500	1.5500		0.66

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	120.00-112.00	A	4.053	0.000	0.000	0.000	36.16

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
		B	0.129	0.000	0.000	0.000	0.66
		C	0.000	2.667	0.000	0.000	126.40
T2	112.00-87.00	A	12.667	0.000	0.000	0.000	113.00
		B	12.010	8.000	0.000	0.000	371.25
		C	0.581	8.333	0.000	0.000	397.97
T3	87.00-62.00	A	12.667	0.000	0.000	0.000	113.00
		B	17.458	12.500	0.000	0.000	572.25
		C	3.229	8.333	0.000	0.000	411.50
T4	62.00-37.00	A	12.667	0.000	0.000	0.000	113.00
		B	17.458	12.500	0.000	0.000	572.25
		C	3.229	8.333	0.000	0.000	411.50
T5	37.00-12.00	A	12.667	0.000	0.000	0.000	113.00
		B	17.458	12.500	0.000	0.000	572.25
		C	3.229	8.333	0.000	0.000	411.50
T6	12.00-0.00	A	1.013	0.000	0.000	0.000	9.04
		B	8.380	6.000	0.000	0.000	274.68
		C	1.550	4.000	0.000	0.000	197.52

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	120.00-112.00	A	0.500	4.720	0.000	0.000	0.000	68.32
		B		0.212	0.000	0.000	0.000	1.91
		C		0.000	3.556	0.000	0.000	151.84
T2	112.00-87.00	A	0.500	14.750	0.000	0.000	0.000	213.49
		B		20.244	9.778	0.000	0.000	656.06
		C		0.956	11.111	0.000	0.000	483.09
T3	87.00-62.00	A	0.500	14.750	0.000	0.000	0.000	213.49
		B		29.958	15.278	0.000	0.000	1006.34
		C		5.313	11.111	0.000	0.000	522.29
T4	62.00-37.00	A	0.500	14.750	0.000	0.000	0.000	213.49
		B		29.958	15.278	0.000	0.000	1006.34
		C		5.313	11.111	0.000	0.000	522.29
T5	37.00-12.00	A	0.500	14.750	0.000	0.000	0.000	213.49
		B		29.958	15.278	0.000	0.000	1006.34
		C		5.313	11.111	0.000	0.000	522.29
T6	12.00-0.00	A	0.500	1.180	0.000	0.000	0.000	17.08
		B		14.380	7.333	0.000	0.000	483.04
		C		2.550	5.333	0.000	0.000	250.70

Feed Line Shielding

Section	Elevation ft	Face	A_R ft^2	A_R Ice ft^2	A_F ft^2	A_F Ice ft^2
T1	120.00-112.00	A	0.106	0.385	0.211	0.246
		B	0.003	0.017	0.007	0.011
		C	0.069	0.326	0.139	0.208
T2	112.00-87.00	A	0.317	1.057	0.422	0.492
		B	0.500	2.215	0.667	1.030
		C	0.223	0.964	0.297	0.449
T3	87.00-62.00	A	0.317	1.057	0.422	0.492

Section	Elevation ft	Face	A_R ft^2	A_R Ice ft^2	A_F ft^2	A_F Ice ft^2
		B	0.749	3.341	0.999	1.554
		C	0.289	1.277	0.385	0.594
T4	62.00-37.00	A	0.317	1.057	0.422	0.492
		B	0.749	3.341	0.999	1.554
		C	0.289	1.277	0.385	0.594
T5	37.00-12.00	A	0.317	1.057	0.422	0.492
		B	0.749	3.341	0.999	1.554
		C	0.289	1.277	0.385	0.594
T6	12.00-0.00	A	0.000	0.049	0.106	0.123
		B	0.000	0.933	1.498	2.331
		C	0.000	0.356	0.578	0.891

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	120.00-112.00	-1.4419	1.4722	-1.2936	1.3197
T2	112.00-87.00	1.9802	2.6558	2.2172	2.4687
T3	87.00-62.00	3.3816	3.5658	3.6599	3.3940
T4	62.00-37.00	3.3816	3.5658	3.6599	3.3940
T5	37.00-12.00	3.3816	3.5658	3.6599	3.3940
T6	12.00-0.00	2.1588	2.0766	2.4668	2.0347

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
TFU-30 GTH-R	B	None		0.0000	120.00	No Ice	50.00	50.00	100.00
						1/2" Ice	53.43	53.43	348.92
(2) DB225-4-A	A	From Leg	2.00	0.0000	113.00	No Ice	3.21	3.21	148.00
			0.00			1/2" Ice	5.78	5.78	192.40
			0.00						
****									
*****									
Pirod 4' Side Mount Standoff (1)	C	From Leg	4.00 0.00 0.00	0.0000	96.83	No Ice 1/2" Ice	2.72 4.91	2.72 4.91	50.00 89.00
12' x 1.25" Dia. Whip	C	From Leg	4.00	0.0000	96.83	No Ice	3.16	3.16	80.55
			0.00			1/2" Ice	5.11	5.11	109.17
			0.00						
PR-850	A	From Leg	0.00	0.0000	91.50	No Ice	6.35	6.35	38.00
			0.00			1/2" Ice	11.43	11.43	49.40
			0.00						
**********									
**********									
AIR21 B2A/B4P	A	From Leg	0.00	0.0000	103.00	No Ice	6.53	4.36	70.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
(T-Mobile)			0.00 0.00			1/2" Ice	6.98	4.77	111.90
AIR21 B2A/B4P	B	From Leg	0.00	0.0000	103.00	No Ice	6.53	4.36	70.00
(T-Mobile)			0.00 0.00			1/2" Ice	6.98	4.77	111.90
AIR21 B2A/B4P	C	From Leg	0.00	0.0000	103.00	No Ice	6.53	4.36	70.00
(T-Mobile)			0.00 0.00			1/2" Ice	6.98	4.77	111.90
AIR21 B4A/B2P	A	From Leg	0.00	0.0000	103.00	No Ice	6.53	4.36	105.00
(T-Mobile)			0.00 0.00			1/2" Ice	6.98	4.77	146.90
AIR21 B4A/B2P	B	From Leg	0.00	0.0000	103.00	No Ice	6.53	4.36	105.00
(T-Mobile)			0.00 0.00			1/2" Ice	6.98	4.77	146.90
AIR21 B4A/B2P	C	From Leg	0.00	0.0000	103.00	No Ice	6.53	4.36	105.00
(T-Mobile)			0.00 0.00			1/2" Ice	6.98	4.77	146.90
Generic Twin AWS TMA	A	From Leg	0.00	0.0000	103.00	No Ice	0.64	0.52	22.43
(T-Mobile)			0.00 0.00			1/2" Ice	0.82	0.71	31.53
Generic Twin AWS TMA	B	From Leg	0.00	0.0000	103.00	No Ice	0.64	0.52	22.43
(T-Mobile)			0.00 0.00			1/2" Ice	0.82	0.71	31.53
Generic Twin AWS TMA	C	From Leg	0.00	0.0000	103.00	No Ice	0.64	0.52	22.43
(T-Mobile)			0.00 0.00			1/2" Ice	0.82	0.71	31.53
LNX-6515DS-A1M	A	From Leg	0.00	0.0000	103.00	No Ice	11.45	7.70	50.30
(T-Mobile)			0.00 0.00			1/2" Ice	12.06	8.29	116.17
LNX-6515DS-A1M	B	From Leg	0.00	0.0000	103.00	No Ice	11.45	7.70	50.30
(T-Mobile)			0.00 0.00			1/2" Ice	12.06	8.29	116.17
LNX-6515DS-A1M	C	From Leg	0.00	0.0000	103.00	No Ice	11.45	7.70	50.30
(T-Mobile)			0.00 0.00			1/2" Ice	12.06	8.29	116.17
RRUS 11 B12	A	From Leg	0.00	0.0000	103.00	No Ice	3.31	1.36	50.70
			0.00 0.00			1/2" Ice	3.55	1.54	71.57
RRUS 11 B12	B	From Leg	0.00	0.0000	103.00	No Ice	3.31	1.36	50.70
			0.00 0.00			1/2" Ice	3.55	1.54	71.57
RRUS 11 B12	C	From Leg	0.00	0.0000	103.00	No Ice	3.31	1.36	50.70
			0.00 0.00			1/2" Ice	3.55	1.54	71.57
Sector Mount [SM 401-3]	C	None		0.0000	103.00	No Ice	17.87	17.87	804.48
(T-Mobile)						1/2" Ice	25.31	25.31	1164.57

Load Combinations

Comb. No.	Description

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
T1	120 - 112	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	15	-7076.21	5.80	-272.44
			Max. Mx	18	-5947.03	349.04	18.12
			Max. My	8	-4371.20	-3.71	376.66
			Max. Vy	5	-540.05	-0.00	0.00
			Max. Vx	2	552.04	0.00	-0.00
		Diagonal	Max Tension	9	3997.28	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-2112.94	0.00	0.00
			Max. Mx	14	-1800.45	-28.69	0.00
			Max. My	10	-1960.35	0.00	-0.00
			Max. Vy	14	19.13	0.00	0.00
			Max. Vx	10	0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	10	-2006.90	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Mx	14	-1848.56	-28.69	0.00
			Max. My	10	-1794.66	0.00	-0.00
			Max. Vy	14	19.13	0.00	0.00
			Max. Vx	10	0.00	0.00	0.00
T2	112 - 87	Leg	Max Tension	6	2439.12	-499.36	-307.60
			Max. Compression	17	-17670.44	-587.53	276.93
			Max. Mx	11	-8593.60	793.78	57.33
			Max. My	8	-8581.31	11.39	-798.37
			Max. Vy	18	-1108.86	-613.30	89.65
			Max. Vx	2	1194.47	44.86	574.77
		Diagonal	Max Tension	18	5320.61	0.00	0.00
		Horizontal	Max Tension	19	3291.08	0.00	0.00
			Max. Compression	21	-3489.06	0.00	0.00
			Max. Mx	14	195.10	-28.69	0.00
			Max. My	10	231.25	0.00	-0.00
			Max. Vy	14	19.13	0.00	0.00
			Max. Vx	10	0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	21	-1913.45	0.00	0.00
			Max. Mx	14	-1800.07	-28.69	0.00
			Max. My	10	-1866.95	0.00	-0.00
			Max. Vy	14	19.13	0.00	0.00
			Max. Vx	10	0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-2090.09	0.00	0.00
			Max. Mx	14	-1703.24	-28.69	0.00
			Max. My	10	-1918.59	0.00	-0.00
			Max. Vy	14	19.13	0.00	0.00
			Max. Vx	10	0.00	0.00	0.00
		Guy A	Bottom Tension	21	14930.64		
			Top Tension	21	15086.16		
			Top Cable Vert	21	6048.62		
			Top Cable Norm	21	13820.50		
			Top Cable Tan	21	0.19		
			Bot Cable Vert	21	-5549.64		
			Bot Cable Norm	21	13860.93		
			Bot Cable Tan	21	0.19		
		Guy B	Bottom Tension	25	14837.04		
			Top Tension	25	14992.57		
			Top Cable Vert	25	6012.55		
			Top Cable Norm	25	13734.13		
			Top Cable Tan	25	0.23		
			Bot Cable Vert	25	-5513.57		
			Bot Cable Norm	25	13774.56		
			Bot Cable Tan	25	0.23		
		Guy C	Bottom Tension	17	14868.62		
			Top Tension	17	15024.14		
			Top Cable Vert	17	6024.72		
			Top Cable Norm	17	13763.27		
			Top Cable Tan	17	0.42		
			Bot Cable Vert	17	-5525.74		
			Bot Cable Norm	17	13803.70		
			Bot Cable Tan	17	0.42		
T3	87 - 62	Leg	Max Tension	6	9567.73	-95.43	-66.79
			Max. Compression	17	-29555.07	-150.06	40.15
			Max. Mx	10	2013.29	-566.68	271.71
			Max. My	2	2012.30	-32.27	-614.35
			Max. Vy	18	-1104.30	-60.02	51.74
			Max. Vx	2	1188.98	6.10	-21.09
		Diagonal	Max Tension	18	4450.70	0.00	0.00
		Horizontal	Max Tension	17	511.91	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Compression	8	-3551.38	0.00	0.00
			Max. Mx	14	232.61	-28.69	0.00
			Max. My	10	358.37	0.00	-0.00
			Max. Vy	14	19.13	0.00	0.00
			Max. Vx	10	0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	10	-1866.89	0.00	0.00
			Max. Mx	14	-1671.88	-28.69	0.00
			Max. My	10	-1578.61	0.00	0.00
			Max. Vy	14	19.13	0.00	0.00
			Max. Vx	10	-0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-1894.99	0.00	0.00
			Max. Mx	14	-1666.01	-28.69	0.00
			Max. My	10	-1794.21	0.00	-0.00
			Max. Vy	14	19.13	0.00	0.00
			Max. Vx	10	0.00	0.00	0.00
T4	62 - 37	Leg	Max Tension	6	9537.10	49.98	31.41
			Max. Compression	17	-32444.16	181.15	-112.26
			Max. Mx	10	2960.40	-262.44	116.88
			Max. My	15	4575.34	-4.14	-304.21
			Max. Vy	10	-420.46	-53.33	40.17
			Max. Vx	15	-469.25	5.79	-70.50
		Diagonal	Max Tension	10	3346.79	0.00	0.00
		Horizontal	Max Tension	17	561.95	0.00	0.00
			Max. Compression	8	-3529.60	0.00	0.00
			Max. Mx	14	270.26	-28.69	0.00
			Max. My	22	526.89	0.00	0.00
			Max. Vy	14	19.13	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-1729.15	0.00	0.00
			Max. Mx	14	-1663.03	-28.69	0.00
			Max. My	22	-1661.00	0.00	0.00
			Max. Vy	14	19.13	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-1681.77	0.00	0.00
			Max. Mx	14	-1642.03	-28.69	0.00
			Max. My	22	-1633.67	0.00	0.00
			Max. Vy	14	19.13	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
T5	37 - 12	Leg	Max Tension	6	6847.36	56.55	35.57
			Max. Compression	17	-31574.61	98.59	-58.46
			Max. Mx	25	-21451.52	1356.39	820.61
			Max. My	21	-21436.86	110.44	-1613.55
			Max. Vy	17	3426.24	-1316.92	925.49
			Max. Vx	21	3888.84	110.44	-1613.55
		Diagonal	Max Tension	10	4371.08	0.00	0.00
		Horizontal	Max Tension	17	546.89	0.00	0.00
			Max. Compression	12	-3472.21	0.00	0.00
			Max. Mx	14	312.13	-28.69	0.00
			Max. My	22	515.00	0.00	0.00
			Max. Vy	14	19.13	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-1890.32	0.00	0.00
			Max. Mx	14	-1645.46	-28.69	0.00
			Max. My	22	-1642.01	0.00	0.00
			Max. Vy	14	19.13	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
		Bottom Girt	Max Tension	19	61.83	0.00	0.00
			Max. Compression	8	-664.10	0.00	0.00
			Max. Mx	14	-261.55	-28.69	0.00
			Max. My	22	-215.52	0.00	0.00
			Max. Vy	14	19.13	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
T6	12 - 0	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-23366.03	-87.05	-59.70
			Max. Mx	21	-22231.83	1601.32	86.23
			Max. My	10	-17148.25	-28.02	-455.83
			Max. Vy	21	828.89	-114.79	7.91
			Max. Vx	3	-198.17	-192.13	269.17
		Horizontal	Max Tension	19	1036.87	16.64	-1.88
			Max. Compression	19	-61.47	4.24	12.96
			Max. Mx	16	624.19	63.62	-52.59
			Max. My	3	391.57	-44.49	65.98
			Max. Vy	10	-114.10	59.44	-10.18
			Max. Vx	10	-50.46	-4.77	21.38

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Mast	Max. Vert	19	46668.21	-2930.03	-1644.97
	Max. H_x	24	46140.03	3292.50	59.46
	Max. H_z	15	46608.39	20.50	3467.58
	Max. M_x	1	0.00	0.66	39.84
	Max. M_z	1	0.00	0.66	39.84
	Max. Torsion	10	1569.74	2873.70	-1618.37
	Min. Vert	1	35336.69	0.66	39.84
	Min. H_x	18	46154.35	-3251.25	59.74
	Min. H_z	21	46211.71	20.68	-3161.51
	Min. M_x	1	0.00	0.66	39.84
	Min. M_z	1	0.00	0.66	39.84
	Min. Torsion	3	-1507.03	-1595.10	2757.60
Guy C @ 250 ft Elev 0 ft Azimuth 240 deg	Max. Vert	10	-192.68	-558.76	322.62
	Max. H_x	10	-192.68	-558.76	322.62
	Max. H_z	17	-5525.74	-11954.56	6901.49
	Min. Vert	17	-5525.74	-11954.56	6901.49
	Min. H_x	17	-5525.74	-11954.56	6901.49
	Min. H_z	10	-192.68	-558.76	322.62
Guy B @ 250 ft Elev 0 ft Azimuth 120 deg	Max. Vert	6	-192.65	558.69	322.56
	Max. H_x	25	-5513.57	11929.23	6887.08
	Max. H_z	25	-5513.57	11929.23	6887.08
	Min. Vert	25	-5513.57	11929.23	6887.08
	Min. H_x	6	-192.65	558.69	322.56
	Min. H_z	6	-192.65	558.69	322.56
Guy A @ 250 ft Elev 0 ft Azimuth 0 deg	Max. Vert	2	-194.37	0.01	-649.26
	Max. H_x	24	-2981.83	361.30	-7583.69
	Max. H_z	2	-194.37	0.01	-649.26

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
	Min. Vert	21	-5549.64	-0.19	-13860.93
	Min. H_x	18	-2986.65	-361.42	-7595.20
	Min. H_z	21	-5549.64	-0.19	-13860.93

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	35336.69	-0.66	-39.84	0.00	0.00	-0.00
Dead+Wind 0 deg - No Ice+Guy	38947.35	-0.80	-3359.14	0.00	0.00	928.76
Dead+Wind 30 deg - No Ice+Guy	37851.38	1595.10	-2757.60	0.00	0.00	1507.03
Dead+Wind 60 deg - No Ice+Guy	36982.29	2694.25	-1597.18	0.00	0.00	1380.72
Dead+Wind 90 deg - No Ice+Guy	37892.59	3149.33	-64.58	0.00	0.00	959.06
Dead+Wind 120 deg - No Ice+Guy	38993.80	2872.32	1618.41	0.00	0.00	641.35
Dead+Wind 150 deg - No Ice+Guy	37893.11	1553.50	2699.94	0.00	0.00	67.23
Dead+Wind 180 deg - No Ice+Guy	36996.08	-0.73	3072.14	0.00	0.00	-805.04
Dead+Wind 210 deg - No Ice+Guy	37892.40	-1554.92	2699.92	0.00	0.00	-1512.00
Dead+Wind 240 deg - No Ice+Guy	38992.94	-2873.70	1618.37	0.00	0.00	-1569.74
Dead+Wind 270 deg - No Ice+Guy	37891.78	-3150.72	-64.58	0.00	0.00	-959.28
Dead+Wind 300 deg - No Ice+Guy	36981.96	-2695.72	-1597.11	0.00	0.00	-575.60
Dead+Wind 330 deg - No Ice+Guy	37851.32	-1596.64	-2757.52	0.00	0.00	-61.54
Dead+Ice+Temp+Guy	44440.90	-20.13	-57.72	0.00	0.00	-0.00
Dead+Wind 0 deg+Ice+Temp+Guy	46608.39	-20.50	-3467.58	0.00	0.00	844.05
Dead+Wind 30 deg+Ice+Temp+Guy	46118.22	1616.04	-2893.08	0.00	0.00	1417.67
Dead+Wind 60 deg+Ice+Temp+Guy	46198.56	2767.79	-1669.32	0.00	0.00	973.84
Dead+Wind 90 deg+Ice+Temp+Guy	46154.35	3251.25	-59.74	0.00	0.00	337.66
Dead+Wind 120 deg+Ice+Temp+Guy	46668.21	2930.03	1644.97	0.00	0.00	286.23
Dead+Wind 150 deg+Ice+Temp+Guy	46158.24	1614.57	2775.52	0.00	0.00	98.66
Dead+Wind 180 deg+Ice+Temp+Guy	46211.71	-20.68	3161.51	0.00	0.00	-732.92
Dead+Wind 210 deg+Ice+Temp+Guy	46146.07	-1655.94	2775.69	0.00	0.00	-1417.20
Dead+Wind 240 deg+Ice+Temp+Guy	46648.09	-2971.45	1645.27	0.00	0.00	-1130.11
Dead+Wind 270 deg+Ice+Temp+Guy	46140.03	-3292.50	-59.46	0.00	0.00	-337.57
Dead+Wind 300 deg+Ice+Temp+Guy	46191.69	-2808.90	-1669.10	0.00	0.00	-240.29

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
Dead+Wind 330 deg+Ice+Temp+Guy	46116.09	-1657.05	-2892.99	0.00	0.00	-99.05
Dead+Wind 0 deg - Service+Guy	35681.82	-0.72	-1366.78	0.00	0.00	372.51
Dead+Wind 30 deg - Service+Guy	35563.80	623.84	-1120.65	0.00	0.00	604.03
Dead+Wind 60 deg - Service+Guy	35509.45	1057.34	-651.24	0.00	0.00	546.61
Dead+Wind 90 deg - Service+Guy	35570.66	1247.07	-41.08	0.00	0.00	378.86
Dead+Wind 120 deg - Service+Guy	35694.65	1147.88	622.90	0.00	0.00	257.85
Dead+Wind 150 deg - Service+Guy	35572.56	622.51	1040.82	0.00	0.00	29.54
Dead+Wind 180 deg - Service+Guy	35514.04	-0.68	1181.58	0.00	0.00	-318.10
Dead+Wind 210 deg - Service+Guy	35572.44	-623.87	1040.81	0.00	0.00	-604.13
Dead+Wind 240 deg - Service+Guy	35694.42	-1149.24	622.89	0.00	0.00	-630.32
Dead+Wind 270 deg - Service+Guy	35570.49	-1248.44	-41.08	0.00	0.00	-378.86
Dead+Wind 300 deg - Service+Guy	35509.34	-1058.74	-651.22	0.00	0.00	-228.50
Dead+Wind 330 deg - Service+Guy	35563.74	-625.26	-1120.64	0.00	0.00	-29.39

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
1	0.00	-30040.57	0.00	-0.01	30040.57	0.04	0.000%
2	0.00	-30104.40	-13647.61	-0.00	30104.39	13647.35	0.001%
3	6551.82	-30040.57	-11348.09	-6551.89	30040.55	11347.40	0.002%
4	11200.49	-29976.74	-6466.60	-11200.38	29976.74	6466.96	0.001%
5	13103.65	-30040.57	-0.00	-13103.06	30040.55	0.40	0.002%
6	11819.17	-30104.40	6823.80	-11818.95	30104.39	-6823.68	0.001%
7	6551.82	-30040.57	11348.09	-6551.18	30040.55	-11347.79	0.002%
8	-0.00	-29976.74	12933.21	0.02	29976.75	-12933.69	0.001%
9	-6551.82	-30040.57	11348.09	6551.17	30040.55	-11347.79	0.002%
10	-11819.17	-30104.40	6823.80	11818.95	30104.39	-6823.68	0.001%
11	-13103.65	-30040.57	0.00	13103.06	30040.55	0.40	0.002%
12	-11200.49	-29976.74	-6466.60	11200.38	29976.74	6466.95	0.001%
13	-6551.82	-30040.57	-11348.09	6551.88	30040.55	11347.40	0.002%
14	0.00	-37242.00	0.00	0.03	37241.99	0.07	0.000%
15	0.00	-37366.46	-13497.89	-0.00	37366.45	13497.48	0.001%
16	6538.09	-37242.00	-11324.31	-6538.26	37241.99	11323.61	0.002%
17	11218.09	-37117.54	-6476.77	-11218.13	37117.54	6477.06	0.001%
18	13076.19	-37242.00	-0.00	-13075.60	37241.99	0.52	0.002%
19	11689.52	-37366.46	6748.95	-11689.14	37366.45	-6748.73	0.001%
20	6538.09	-37242.00	11324.31	-6537.35	37241.99	-11324.07	0.002%
21	-0.00	-37117.54	12953.54	0.08	37117.54	-12953.72	0.001%
22	-6538.09	-37242.00	11324.31	6537.37	37241.99	-11324.09	0.002%
23	-11689.52	-37366.46	6748.95	11689.15	37366.45	-6748.74	0.001%
24	-13076.19	-37242.00	0.00	13075.62	37241.99	0.51	0.002%
25	-11218.09	-37117.54	-6476.77	11218.17	37117.54	6476.99	0.001%
26	-6538.09	-37242.00	-11324.31	6538.25	37241.99	11323.61	0.002%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
27	-0.00	-30065.50	-5331.10	-0.00	30065.50	5330.90	0.001%
28	2559.31	-30040.57	-4432.85	-2559.43	30040.57	4432.44	0.001%
29	4375.19	-30015.64	-2526.02	-4375.40	30015.64	2526.19	0.001%
30	5118.61	-30040.57	-0.00	-5118.29	30040.57	0.32	0.002%
31	4616.86	-30065.50	2665.55	-4616.68	30065.50	-2665.44	0.001%
32	2559.31	-30040.57	4432.85	-2558.86	30040.57	-4432.74	0.001%
33	-0.00	-30015.64	5052.03	0.00	30015.64	-5052.31	0.001%
34	-2559.31	-30040.57	4432.85	2558.86	30040.57	-4432.74	0.001%
35	-4616.86	-30065.50	2665.55	4616.68	30065.50	-2665.44	0.001%
36	-5118.61	-30040.57	0.00	5118.29	30040.57	0.32	0.002%
37	-4375.19	-30015.64	-2526.02	4375.40	30015.64	2526.19	0.001%
38	-2559.31	-30040.57	-4432.85	2559.43	30040.57	4432.44	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	13	0.00000001	0.00004825
3	Yes	12	0.00000001	0.00013317
4	Yes	9	0.00000001	0.00005133
5	Yes	12	0.00000001	0.00013083
6	Yes	13	0.00000001	0.00004817
7	Yes	12	0.00000001	0.00012801
8	Yes	8	0.00000001	0.00010659
9	Yes	12	0.00000001	0.00013646
10	Yes	13	0.00000001	0.00005158
11	Yes	12	0.00000001	0.00013142
12	Yes	9	0.00000001	0.00005040
13	Yes	12	0.00000001	0.00012551
14	Yes	6	0.00000001	0.00000931
15	Yes	12	0.00000001	0.00007215
16	Yes	11	0.00000001	0.00012966
17	Yes	9	0.00000001	0.00005625
18	Yes	11	0.00000001	0.00013466
19	Yes	12	0.00000001	0.00007489
20	Yes	11	0.00000001	0.00013429
21	Yes	9	0.00000001	0.00004771
22	Yes	11	0.00000001	0.00013666
23	Yes	12	0.00000001	0.00007615
24	Yes	11	0.00000001	0.00013198
25	Yes	9	0.00000001	0.00005075
26	Yes	11	0.00000001	0.00012488
27	Yes	10	0.00000001	0.00006027
28	Yes	9	0.00000001	0.00012489
29	Yes	8	0.00000001	0.00008181
30	Yes	9	0.00000001	0.00013407
31	Yes	10	0.00000001	0.00006477
32	Yes	9	0.00000001	0.00013340
33	Yes	8	0.00000001	0.00008294
34	Yes	9	0.00000001	0.00013396
35	Yes	10	0.00000001	0.00006519
36	Yes	9	0.00000001	0.00013428
37	Yes	8	0.00000001	0.00008197
38	Yes	9	0.00000001	0.00012457

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	120 - 112	2.517	35	0.0943	0.0493
T2	112 - 87	2.353	31	0.0941	0.0496
T3	87 - 62	1.883	31	0.0943	0.0548
T4	62 - 37	1.401	31	0.0990	0.0587
T5	37 - 12	0.865	31	0.1053	0.0552
T6	12 - 0	0.280	31	0.1098	0.0436

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
120.00	TFU-30 GTH-R	35	2.517	0.0943	0.0493	119948
113.00	(2) DB225-4-A	31	2.373	0.0941	0.0495	92291
103.50	Guy	31	2.189	0.0939	0.0505	129298
103.00	AIR21 B2A/B4P	31	2.179	0.0939	0.0506	135274
96.83	Pirod 4' Side Mount Standoff (1)	31	2.064	0.0939	0.0520	314796
91.50	PR-850	31	1.966	0.0940	0.0535	Inf

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	120 - 112	9.790	6	0.3740	0.1205
T2	112 - 87	9.148	6	0.3737	0.1211
T3	87 - 62	7.246	6	0.3741	0.1337
T4	62 - 37	5.316	6	0.3864	0.1449
T5	37 - 12	3.246	6	0.4026	0.1372
T6	12 - 0	1.050	6	0.4141	0.1085

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
120.00	TFU-30 GTH-R	6	9.790	0.3740	0.1205	46740
113.00	(2) DB225-4-A	6	9.228	0.3737	0.1210	35966
103.50	Guy	6	8.489	0.3731	0.1237	50554
103.00	AIR21 B2A/B4P	6	8.451	0.3731	0.1239	52909
96.83	Pirod 4' Side Mount Standoff (1)	6	7.984	0.3730	0.1268	124496
91.50	PR-850	6	7.584	0.3733	0.1302	413505

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension lb	Breaking Load lb	Actual T lb	Allowable T_a lb	Required S.F.	Actual S.F.
T2	103.50 (A) (171)	5/8 BS	4800.00	47999.95	15086.20	24000.00	2.000	3.182 ✔
	103.50 (B) (170)	5/8 BS	4800.00	47999.95	14992.60	24000.00	2.000	3.202 ✔
	103.50 (C) (169)	5/8 BS	4800.00	47999.95	15024.10	24000.00	2.000	3.195 ✔

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	Mast Stability Index	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	120 - 112	4 1/2	8.00	8.00	85.3 K=1.00	1.00	13.901	15.9043	-5950.85	221089.00	0.027* ✔
T2	112 - 87	4 1/2	25.00	8.00	85.3 K=1.00	1.00	13.901	15.9043	-17670.40	221089.00	0.080 ✔
T3	87 - 62	4 1/2	25.00	8.00	85.3 K=1.00	1.00	13.901	15.9043	-29555.10	221089.00	0.134 ✔
T4	62 - 37	4 1/2	25.00	8.00	85.3 K=1.00	1.00	13.901	15.9043	-32444.20	221089.00	0.147 ✔
T5	37 - 12	4 1/2	25.00	8.00	85.3 K=1.00	1.00	13.901	15.9043	-31574.60	221089.00	0.143 ✔
T6	12 - 0	4 1/2	12.49	2.08	4.4 K=0.20	0.92	18.158	15.9043	-23366.00	288791.00	0.081 ✔

* DL controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T2	112 - 87	L2 1/2x2 1/2x1/4	6.00	5.63	130.7 K=0.95	8.734	1.1900	-3412.15	10393.20	0.328* ✔
T3	87 - 62	L2 1/2x2 1/2x1/4	6.00	5.63	130.7 K=0.95	8.734	1.1900	-3317.06	10393.20	0.319* ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T4	62 - 37	L2 1/2x2 1/2x1/4	6.00	5.63	130.7 K=0.95	8.734	1.1900	-3281.79	10393.20	0.316* ✔
T5	37 - 12	L2 1/2x2 1/2x1/4	6.00	5.63	130.7 K=0.95	8.734	1.1900	-3302.96	10393.20	0.318* ✔
T6	12 - 0	L2 1/2x2 1/2x1/4	4.00	3.63	104.3 K=1.18	11.913	1.1900	-61.47	14176.30	0.004 ✔

* DL controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	120 - 112	L2 1/2x2 1/2x1/4	6.00	5.63	130.7 K=0.95	8.734	1.1900	-1802.34	10393.20	0.173* ✔
T2	112 - 87	L2 1/2x2 1/2x1/4	6.00	5.63	130.7 K=0.95	8.734	1.1900	-1801.22	10393.20	0.173* ✔
T3	87 - 62	L2 1/2x2 1/2x1/4	6.00	5.63	130.7 K=0.95	8.734	1.1900	-1692.12	10393.20	0.163* ✔
T4	62 - 37	L2 1/2x2 1/2x1/4	6.00	5.63	130.7 K=0.95	8.734	1.1900	-1683.45	10393.20	0.162* ✔
T5	37 - 12	L2 1/2x2 1/2x1/4	6.00	5.63	130.7 K=0.95	8.734	1.1900	-1669.40	10393.20	0.161* ✔

* DL controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	120 - 112	L2 1/2x2 1/2x1/4	6.00	5.63	130.7 K=0.95	8.734	1.1900	-1848.65	10393.20	0.178* ✔
T2	112 - 87	L2 1/2x2 1/2x1/4	6.00	5.63	130.7 K=0.95	8.734	1.1900	-1719.30	10393.20	0.165* ✔
T3	87 - 62	L2 1/2x2 1/2x1/4	6.00	5.63	130.7 K=0.95	8.734	1.1900	-1690.07	10393.20	0.163* ✔
T4	62 - 37	L2 1/2x2 1/2x1/4	6.00	5.63	130.7 K=0.95	8.734	1.1900	-1669.85	10393.20	0.161* ✔
T5	37 - 12	L2 1/2x2 1/2x1/4	6.00	5.63	130.7 K=0.95	8.734	1.1900	-664.10	10393.20	0.064 ✔

* DL controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T2	112 - 87	4 1/2	25.00	0.50	5.3	19.800	15.9043	2439.12	314905.00	0.008 ✔
T3	87 - 62	4 1/2	25.00	0.50	5.3	19.800	15.9043	9567.73	314905.00	0.030 ✔
T4	62 - 37	4 1/2	25.00	0.50	5.3	19.800	15.9043	9537.10	314905.00	0.030 ✔
T5	37 - 12	4 1/2	25.00	0.50	5.3	19.800	15.9043	6847.36	314905.00	0.022 ✔

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	120 - 112	3/4	10.00	9.38	600.0	19.800	0.4418	3008.93	8747.37	0.344* ✔
T2	112 - 87	3/4	10.00	9.38	600.0	19.800	0.4418	5320.61	8747.37	0.608 ✔
T3	87 - 62	3/4	10.00	9.38	600.0	19.800	0.4418	4450.70	8747.37	0.509 ✔
T4	62 - 37	3/4	10.00	9.38	600.0	19.800	0.4418	2821.44	8747.37	0.323* ✔
T5	37 - 12	3/4	10.00	9.38	600.0	19.800	0.4418	4371.08	8747.37	0.500 ✔

* DL controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T2	112 - 87	L2 1/2x2 1/2x1/4	6.00	5.63	87.8	19.800	1.1900	3291.08	23562.00	0.140 ✔
T3	87 - 62	L2 1/2x2 1/2x1/4	6.00	5.63	87.8	19.800	1.1900	511.91	23562.00	0.022 ✔
T4	62 - 37	L2 1/2x2 1/2x1/4	6.00	5.63	87.8	19.800	1.1900	561.95	23562.00	0.024 ✔
T5	37 - 12	L2 1/2x2 1/2x1/4	6.00	5.63	87.8	19.800	1.1900	546.89	23562.00	0.023 ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T6	12 - 0	L2 1/2x2 1/2x1/4	6.00	5.63	87.8	19.800	1.1900	1036.87	23562.00	0.044

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T5	37 - 12	L2 1/2x2 1/2x1/4	6.00	5.63	87.8	19.800	1.1900	61.83	23562.00	0.003

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
T1	120 - 112	Leg	4 1/2	3	-5950.85	221089.00	2.7	Pass
T2	112 - 87	Leg	4 1/2	16	-17670.40	294711.62	6.0	Pass
T3	87 - 62	Leg	4 1/2	49	-29555.10	294711.62	10.0	Pass
T4	62 - 37	Leg	4 1/2	82	-32444.20	294711.62	11.0	Pass
T5	37 - 12	Leg	4 1/2	115	-31574.60	294711.62	10.7	Pass
T6	12 - 0	Leg	4 1/2	149	-23366.00	384958.39	6.1	Pass
T1	120 - 112	Diagonal	3/4	13	3008.93	8747.37	34.4	Pass
T2	112 - 87	Diagonal	3/4	35	5320.61	11660.24	45.6	Pass
T3	87 - 62	Diagonal	3/4	77	4450.70	11660.24	38.2	Pass
T4	62 - 37	Diagonal	3/4	111	2821.44	8747.37	32.3	Pass
T5	37 - 12	Diagonal	3/4	125	4371.08	11660.24	37.5	Pass
T2	112 - 87	Horizontal	L2 1/2x2 1/2x1/4	32	-3412.15	10393.20	32.8	Pass
T3	87 - 62	Horizontal	L2 1/2x2 1/2x1/4	73	-3317.06	10393.20	31.9	Pass
T4	62 - 37	Horizontal	L2 1/2x2 1/2x1/4	106	-3281.79	10393.20	31.6	Pass
T5	37 - 12	Horizontal	L2 1/2x2 1/2x1/4	132	-3302.96	10393.20	31.8	Pass
T6	12 - 0	Horizontal	L2 1/2x2 1/2x1/4	153	1036.87	31408.14	3.3	Pass
T1	120 - 112	Top Girt	L2 1/2x2 1/2x1/4	4	-1802.34	10393.20	17.3	Pass
T2	112 - 87	Top Girt	L2 1/2x2 1/2x1/4	19	-1801.22	10393.20	17.3	Pass
T3	87 - 62	Top Girt	L2 1/2x2 1/2x1/4	53	-1692.12	10393.20	16.3	Pass
T4	62 - 37	Top Girt	L2 1/2x2 1/2x1/4	86	-1683.45	10393.20	16.2	Pass
T5	37 - 12	Top Girt	L2 1/2x2 1/2x1/4	119	-1669.40	10393.20	16.1	Pass
T1	120 - 112	Bottom Girt	L2 1/2x2 1/2x1/4	7	-1848.65	10393.20	17.8	Pass
T2	112 - 87	Bottom Girt	L2 1/2x2 1/2x1/4	22	-1719.30	10393.20	16.5	Pass
T3	87 - 62	Bottom Girt	L2 1/2x2 1/2x1/4	55	-1690.07	10393.20	16.3	Pass
T4	62 - 37	Bottom Girt	L2 1/2x2 1/2x1/4	88	-1669.85	10393.20	16.1	Pass
T5	37 - 12	Bottom Girt	L2 1/2x2 1/2x1/4	121	-664.10	13854.14	4.8	Pass
T2	112 - 87	Guy A@103.5	5/8	171	15086.20	24000.00	62.9	Pass
T2	112 - 87	Guy B@103.5	5/8	170	14992.60	24000.00	62.5	Pass
T2	112 - 87	Guy C@103.5	5/8	169	15024.10	24000.00	62.6	Pass
							Summary	
							Leg (T4) 11.0	Pass
							Diagonal (T2) 45.6	Pass
							Horizontal (T2) 32.8	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
						Top Girt (T1)	17.3	Pass
						Bottom Girt (T1)	17.8	Pass
						Guy A (T2)	62.9	Pass
						Guy B (T2)	62.5	Pass
						Guy C (T2)	62.6	Pass
						RATING =	**62.9**	**Pass**

Exhibit E

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

T-Mobile Existing Facility

Site ID: CT11134A

Farmington/ I-84 X37_1
200 Colt Highway
Farmington, CT 06032

June 7, 2016

EBI Project Number: 6216002689

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	48.52 %

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

EBI Consulting
environmental | engineering | due diligence

June 7, 2016

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

Emissions Analysis for Site: **CT11134A – Farmington/ I-84 X37_1**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **200 Colt Highway, Farmington, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **200 Colt Highway, Farmington, 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 UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

5) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

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

8) The antennas used in this modeling are the **Ericsson AIR21 B4A/B2P** & **B2A/B4P)** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR21 B4A/B2P** & **B2A/B4P)** have a maximum gain of **15.9 dBd** at their main lobe at 1900 MHz and 2100 MHz. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe at 700 MHz. 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 **103 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.

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T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	103	Height (AGL):	103	Height (AGL):	103
Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A1 MPE%	1.78	Antenna B1 MPE%	1.78	Antenna C1 MPE%	1.78
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	103	Height (AGL):	103	Height (AGL):	103
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	6	Channel Count	6	Channel Count	6
Total TX Power(W):	180	Total TX Power(W):	180	Total TX Power(W):	180
ERP (W):	7,002.81	ERP (W):	7,002.81	ERP (W):	7,002.81
Antenna A2 MPE%	2.68	Antenna B2 MPE%	2.68	Antenna C2 MPE%	2.68
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	103	Height (AGL):	103	Height (AGL):	103
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power(W):	30	Total TX Power(W):	30	Total TX Power(W):	30
ERP (W):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A3 MPE%	0.71	Antenna B3 MPE%	0.71	Antenna C3 MPE%	0.71

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**5.17 %**
MetroPCS (on adjacent Tower)	6.20 %
CNG (on adjacent Tower)	3.81 %
MediaFLO (on adjacent Tower)	0.04 %
Sirius XM radio (on adjacent Tower)	0.83 %
Verizon Wireless (on adjacent Tower)	25.27 %
Clearwire (on adjacent Tower)	0.51 %
Sprint (on adjacent Tower)	6.69 %
Site Total MPE %:	**48.52 %**

T-Mobile Sector 1 Total:	5.17 %
T-Mobile Sector 2 Total:	5.17 %
T-Mobile Sector 3 Total:	5.17 %
Site Total:	48.52 %

T-Mobile _Max per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile 2100 MHz (AWS) LTE	**2**	**2334.27**	**103**	**17.84**	**2100**	**1000**	**1.78 %**
T-Mobile 1900 MHz (PCS) GSM	**2**	**1167.14**	**103**	**8.92**	**1900**	**1000**	**0.89 %**
T-Mobile 1900 MHz (PCS) UMTS	**2**	**1167.14**	**103**	**8.92**	**1900**	**1000**	**0.89 %**
T-Mobile 2100 MHz (AWS) UMTS	**2**	**1167.14**	**103**	**8.92**	**2100**	**1000**	**0.89 %**
T-Mobile 700 MHz LTE	**1**	**865.21**	**103**	**3.31**	**700**	**467**	**0.71 %**
						Total:	**5.17 %**

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:	5.17 %
Sector 2:	5.17 %
Sector 3:	5.17 %
T-Mobile Per Sector Maximum:	5.17 %
Site Total:	48.52 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **48.52%** 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.