NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

August 23, 2016

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

RE: Notice of Exempt Modification
2 Hinckley Road, Norwich CT 06360
Latitude: 41.6488
Longitude: -72.9474
T-Mobile Site#: CT11254B_L1900

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 148-foot level of the existing 150-foot lattice tower at 2 Hinckley Road, Norwich CT 06360. The 150-foot lattice tower is owned by Cordless Data Transfer, Inc. The property is owned by Paul H Seidlik & James C Irwin. T-Mobile now intends to replace six (6) of its existing antennas with three (3) new 1900 MHz antenna and three (3) new 700 MHz antenna. The new antennas would be installed at the 148-foot level of the tower.

Planned Modifications:

Remove: (6) 1-5/8" Coax
(3)KRY 112 71 TMA

Remove and Replace:
(3) APX16DWV-16DWVS-A20 (REMOVE) - (3) AIR32 B66/B2A Antenna **(REPLACE)**
(3) Commscope LNX 6515DS Antenna (REMOVE) -(3) Commscope DBXNH-6565B-A2M Antenna **(REPLACE)**

Install New: (1) 1-5/8" Hybrid Cable
(3) KRY 112 144/2 TMA

Existing to Remain:
(12) 1-5/8" Coax

This facility was approved by the CT Siting Council. Petition No.579 –on August 27, 2002 Cordless Data Transfer was approved for to expand the height of the existing 140ft tower to 153-foot AGL. Please see attached.

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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 Mayor Deberey Hinchey, Elected Official for the City of Norwich, 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: Deberey Hinchey- Mayor - as elected official
Cordless Data Transfer, Inc - as tower owner
Paul H Seidlik & James C Irwin - as property owner

Exhibit A

Petition No. 579
Cordless Data Transfer
Norwich, Connecticut
Staff Report
September 5, 2002

On August 27, 2002, Connecticut Siting Council member Gerald Heffernan and staff Robert Mercier conducted an inspection of an existing 140-foot lattice tower owned and operated by Cordless Data Transfer and located at 2 Hinckley Hill Road in Norwich, Connecticut. T-Mobile is petitioning the Council for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need (Certificate) is required for a proposed 10- foot tower extension.

T-Mobile proposes to install twelve panel antennas at the top of the proposed 10-foot extension. The total height of the structure would be 153 feet above ground level including antennas. Three cabinets would be placed within the existing compound. Locating antennas at the 150-foot level will provide T-Mobile with adequate coverage on Route 12 and would allow call handoff to an existing facility at the Preston Town Hall.

The proposed site is located on a wooded ridge and is screened from surrounding residential areas by existing vegetation.

A structural analysis of the existing 140-foot tower performed by a professional engineer from Fred A. Nudd Corporation indicates that the tower and foundation can support the proposed modifications. The worst-case power density for the telecommunications operations at the site has been calculated to be 3.7% of the applicable standard for uncontrolled environments.

T-Mobile contends that the proposed extension of the structure would not cause a substantial adverse environmental effect, and therefore, a certificate would not be required.

Exhibit B

2 HINCKLEY HILL RD

Location	2 HINCKLEY HILL RD	**Mblu**	119/ 1/ 1/ 2/
Acct#	1190010011	**Owner**	SIEDLIK PAUL H +
Assessment	$5,800	**Appraisal**	$8,300
PID	109831	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2013	$0	$8,300	$8,300
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2013	$0	$5,800	$5,800

Parcel Addreses

Additional Addresses
No Additional Addresses available for this parcel

Owner of Record

Owner SIEDLIK PAUL H +
BURGER PAULA J
Address 2 HINCKLEY HILL RD
PRESTON, CT 06365

Sale Price $6,531
Certificate
Book & Page 2432/0041
Sale Date 10/16/2007
Instrument 1N

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
SIEDLIK PAUL H +	$6,531		2432/0041	1N	10/16/2007
IRWIN JAMES C +	$0		2379/0091	1A	05/08/2007

Building Information

Building 1 : Section 1

Year Built:

Building Photo

Living Area: 0
Replacement Cost: $0
Building Percent Good:
Replacement Cost Less Depreciation: $0

Building Attributes	
Field	**Description**
Style	Vacant Land
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Fireplace (s)	
Whirlpool	
park	

(./CT11254B-Property Card_files/default.jpg)

Building Layout

Building Layout

Building Sub-Areas (sq ft)	LegendLegend
No Data for Building Sub-Areas	

Extra Features

Extra Features	LegendLegend
No Data for Extra Features	

Land

Land Use

Land Line Valuation

Use Code	1301	**Size (Acres)**	0.91
Description	Unbuildable lot	**Frontage**	
Zone	R40	**Depth**	
Neighborhood	0060	**Assessed Value**	$5,800
Alt Land Appr	No	**Appraised Value**	$8,300
Category			

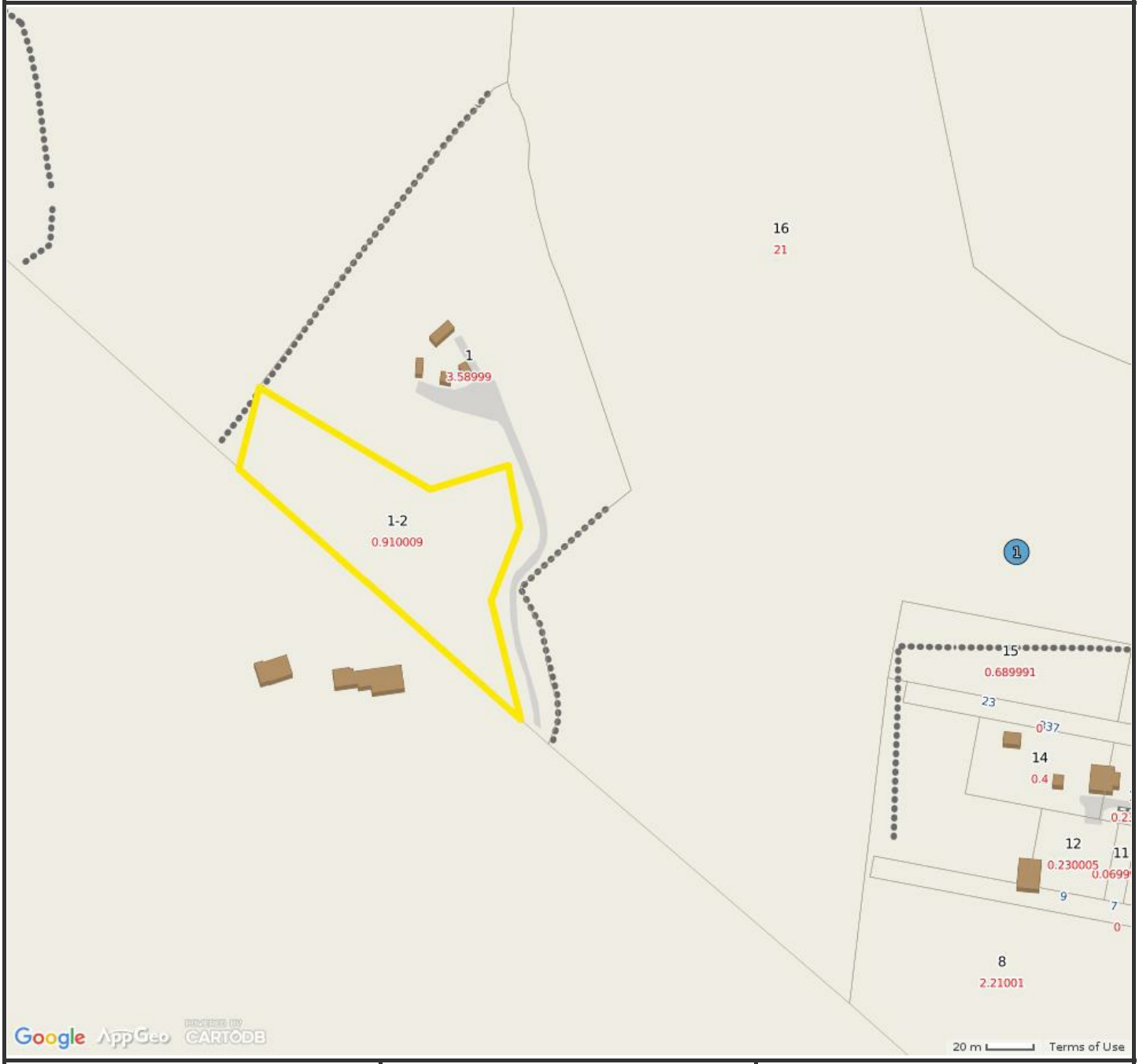
Outbuildings

Outbuildings	LegendLegend
No Data for Outbuildings	

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$0	$8,300	$8,300
2012	$0	$0	$0
2011	$0	$23,000	$23,000

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$0	$5,800	$5,800
2012	$0	$0	$0
2011	$0	$16,000	$16,000



Property Information

Property ID	119-001-001.002-0000
Location	2 HINCKLEY HILL RD
Owner	SIEDLIK PAUL H +

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

City of Norwich, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Parcels updated 10/30/2014
Properties updated daily

Exhibit C

T-MOBILE NORTHEAST LLC

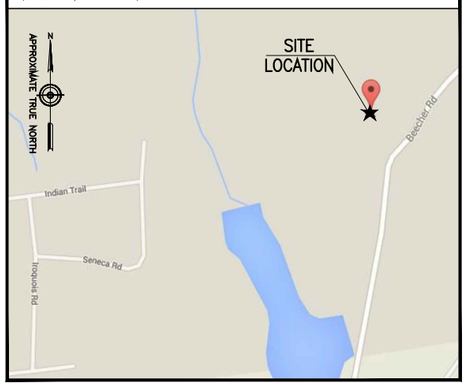
SITE #: CT11254B

SITE NAME: CDT NORWICH

SITE ADDRESS:
HINCKLEY HILL ROAD
NORWICH, CT 06360

WIRELESS BROADBAND FACILITY
CONSTRUCTION DRAWINGS
(794DB 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 OF A 150 FT SELF–SUPPORTING TOWER", JOB NUMBER 216–23095. PREPARED BY FRED A. NUDD CORPORATION. "T–MOBILE SITE ID CT11254B", DATED JULY 29, 2016.

SITE INFORMATION

SITE NUMBER:	CT11254B
SITE NAME:	CDT NORWICH
SITE ADDRESS:	HINCKLEY HILL ROAD NORWICH, CT 06360
LAT./LONG.:	N 41.6488 / W –72.9474
JURISDICTION:	CITY OF NORWICH , CT
PROPERTY OWNER:	MARK LEGAULT CORDLESS DATA TRANSFER, INC. (860) 729–9399 MLEGAULT1@AOL.COM CORDLESS DATA TRANSFER 600 OLD HARTFORD RD COLCHESTER, CT 064152417

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. 3210 MAIN CAMPUS DRIVE LEXINGTON, MA 02421 (617)–852–3611

SHEET INDEX

SHEET	DESCRIPTION
T–1	TITLE SHEET
N–1	GENERAL AND ELECTRICAL NOTES
A–1	KEY PLAN AND COMPOUND PLAN
A–2	ELEVATION
A–3	ANTENNA PLAN AND DETAILS
E–1	GROUNDING AND POWER ONE LINE DIAGRAM
E–2	GROUNDING DETAILS

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

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
05/10/16	ISSUED FOR REVIEW	A
05/20/16	FINAL CD	0
08/05/16	REVISION	1
08/08/16	REVISION	2
08/18/16	FINAL CD	3

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
CT11254B
SITE NAME
CDT NORWICH
SITE ADDRESS
HINCKLEY HILL ROAD
NORWICH, CT 06360

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.

RACEWAYS CONT'D

   L. PENETRATIONS OF WALLS, FLOORS AND ROOFS, FOR THE PASSAGE OF ELECTRICAL RACEWAYS, TO BE PROPERLY SEALED AFTER INSTALLATION OF RACEWAYS SO AS TO MAINTAIN THE STRUCTURAL OR WATERPROOF INTEGRITY OF THE WALL, FLOOR OR ROOF SYSTEM TO BE PENETRATED. SEAL ALL CONDUIT PENETRATIONS THROUGH FIRE OR SMOKE RATED WALLS, CEILINGS OR SMOKE TIGHT CORRIDOR PARTITIONS TO MAINTAIN PROPER RATING OF WALL OR CEILING.
   M. PROVIDE ALL CONDUIT ENDS WITH INSULATED METALLIC GROUNDING BUSHINGS.
   N. CONDUIT TO BE SUPPORTED AT MAXIMUM DISTANCE OF 8'-0", OR AS REQUIRED BY NEC, IN HORIZONTAL AND VERTICAL DIRECTIONS.
   O. PROVIDE STAINLESS STEEL BLANK COVER PLATES FOR ALL JUNCTION BOXES AND/OR OUTLET BOXES NOT USED IN EXPOSED AREAS. PROVIDE ALL OTHER UNUSED BOXES WITH STANDARD STEEL COVER PLATES.
   P. WHERE APPLICABLE, PROVIDE ROOFTOP CONDUIT SUPPORT SYSTEM, CONFORMING TO ROOFTOP WARRANTY REQUIREMENTS, PER BUILDING.

WIRES AND CABLES

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

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

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

WIRING DEVICES

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

DISCONNECT SWITCHES AND FUSES

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

INSTALLATION

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

GENERAL NOTES:

INTENT

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

CONFLICTS

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

CONTRACTS AND WARRANTIES

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

STORAGE

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

CLEANUP

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

CHANGE ORDER PROCEDURE:

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

RELATED DOCUMENTS AND COORDINATION

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

SHOP DRAWINGS

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

PRODUCTS AND SUBSTITUTIONS

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

QUALITY ASSURANCE

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

ADMINISTRATION

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

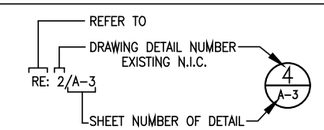
INSURANCE AND BONDS

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

ARCHITECTURAL SYMBOLS

STORAGE
38
3

DETAIL REFERENCE KEY



ABBREVIATIONS

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

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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
05/10/16	ISSUED FOR REVIEW	A
05/20/16	FINAL CD	0
08/05/16	REVISION	1
08/08/16	REVISION	2
08/18/16	FINAL CD	3

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

DRAWN BY: MB
CHECKED BY: KM

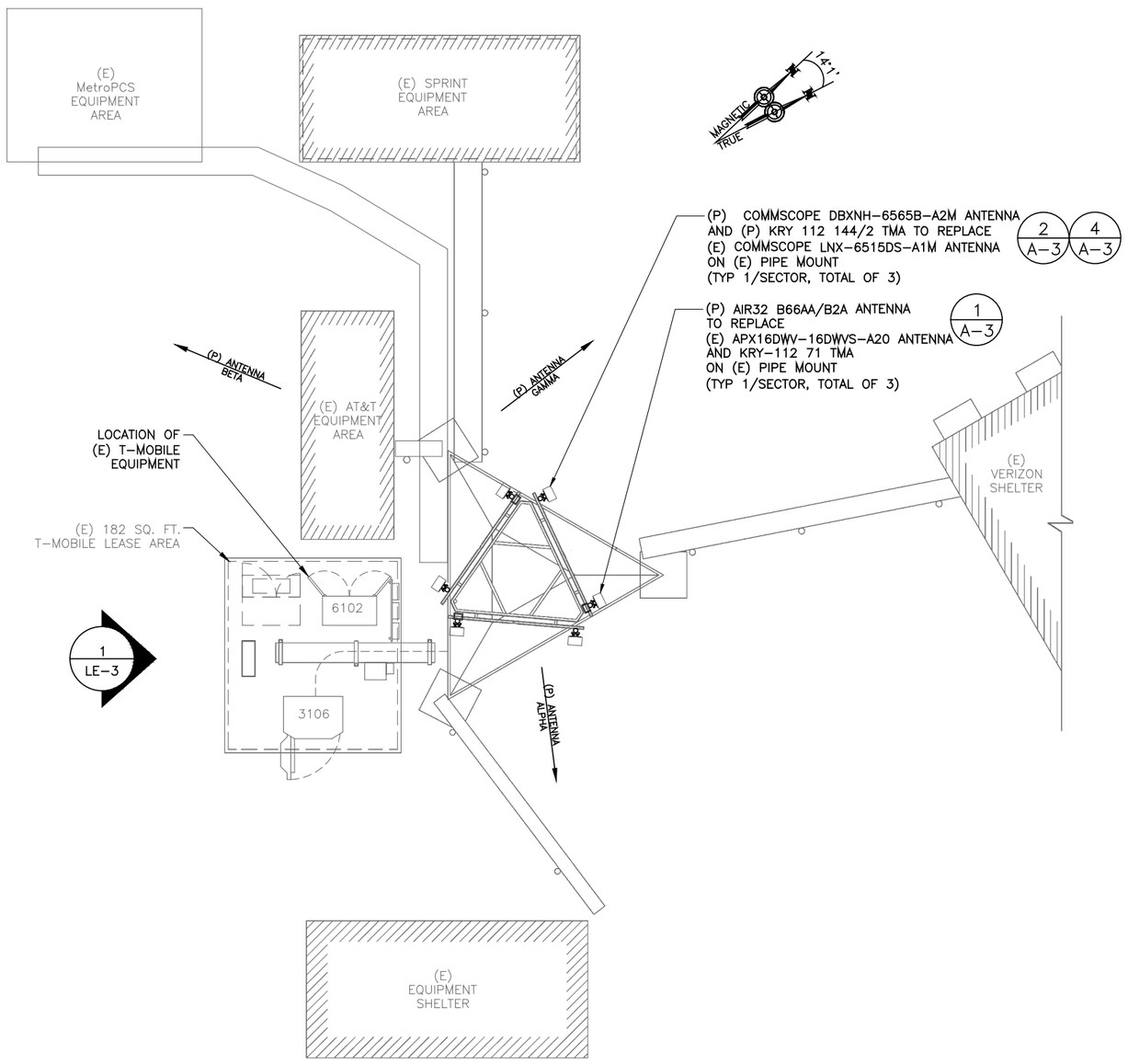
STATE OF CONNECTICUT
HOSSEIN VAHEDI
NO. ARI. 11162
LICENSED ARCHITECT
PROFESSIONAL SEAL

SITE NAME
CT11254B
SITE NAME
CDT NORWICH
SITE ADDRESS
HINCKLEY HILL ROAD
NORWICH, CT 06360

SHEET TITLE
GENERAL AND ELECTRICAL NOTES

SHEET NUMBER
N-1

REFER TO STRUCTURAL ANALYSIS DOCUMENT ENTITLED, "STRUCTURAL ANALYSIS OF A 150 FT SELF-SUPPORTING TOWER", JOB NUMBER 216-23095.
PREPARED BY FRED A. NUDD CORPORATION.
"T-MOBILE SITE ID CT11254B", DATED JULY 29, 2016.



COMPOUND PLAN 1 A-1
SCALE: 1" = 10'-0" (11x17)

0 10 20 30
SCALE 1"=10' (11x17)
1"=5' (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

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CHECKED BY:	KM

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COMPOUND PLAN AND ELEVATION

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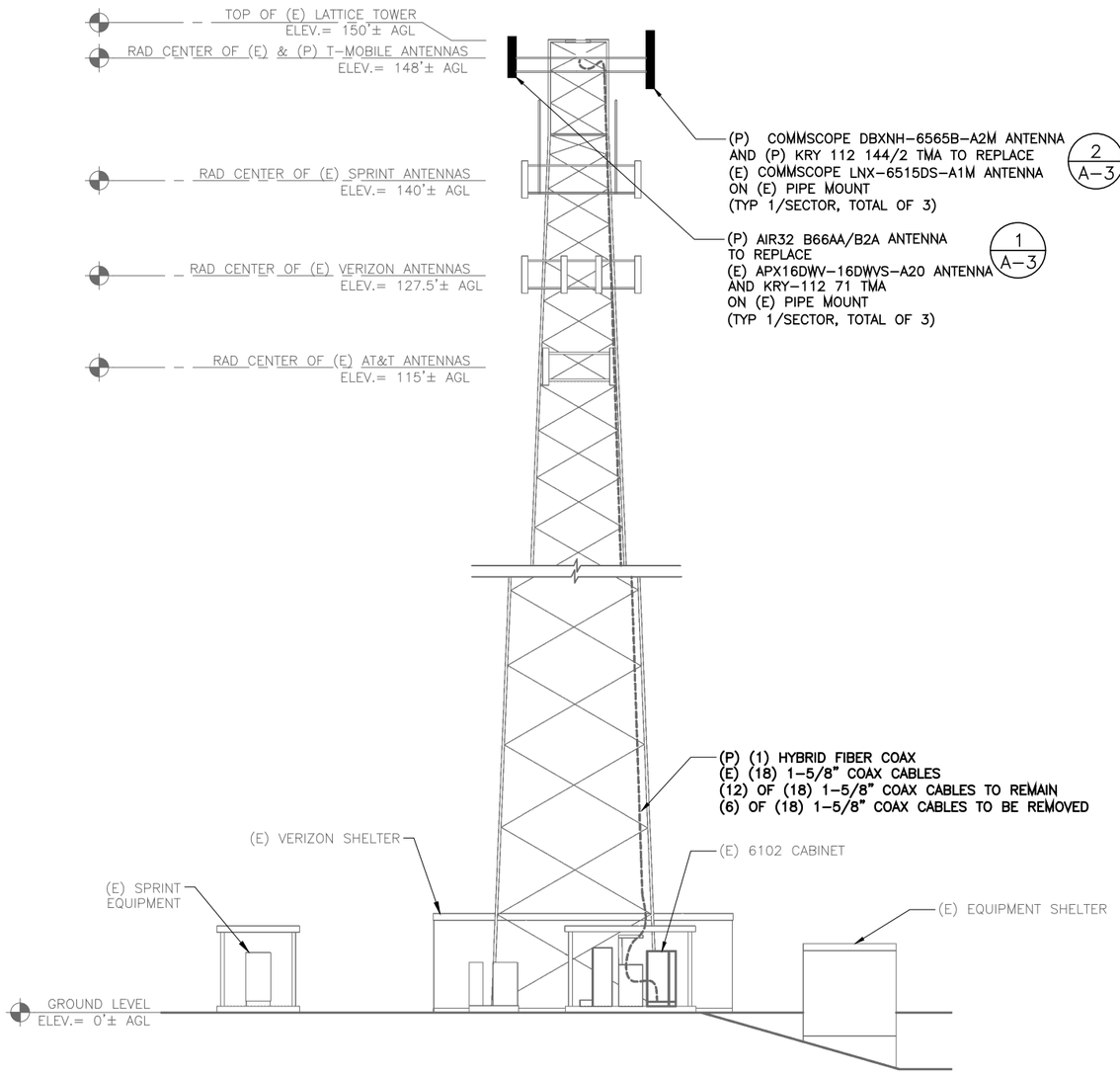

ELEVATION VIEW

1 A-2

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

0 16 32 48

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

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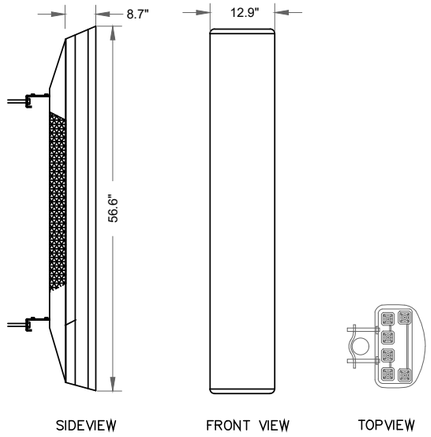
SHEET TITLE
ELEVATION

SHEET NUMBER
A-2

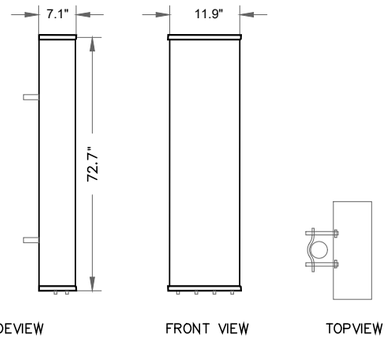


MANUFACTURER: ERICSSON
MODEL NO.:ERICSSON AIR32 AIR32 B66Aa/B2a
DIMENSIONS – HxWxD, (IN) 56.6"x12.9"x8.7"

ERICSSON AIR32 B66Aa/B2a ANTENNA DETAILS

1 / A-3

SCALE: N.T.S

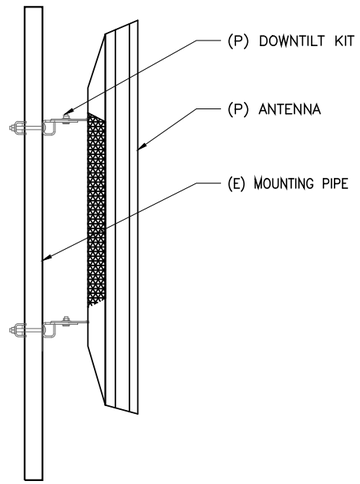


MANUFACTURE: COMMSCOPE
MODEL NO. DBXNH-6565B-VTM / DBXNH-6565B-A2M
DIMENSIONS – HxWxD, (IN) 72.7x11.9x7.1
WEIGHT – 33.5 LB

COMMSCOPE DBXNH-6565B-A2M ANTENNA DETAILS

2 / A-3

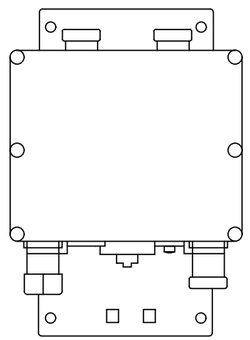
SCALE: N.T.S



ANTENNA MOUNT DETAILS

3 / A-3

SCALE: N.T.S



FRONT

MANUFACTURE: ERICSSON
MODEL NO. KRY 112 144/2
DIMENSIONS – HxWxD, (IN) 6.1"X6.9"X2.8"
WEIGHT – 11.02 LBS

KRY 112 144/2 TMA DETAILS

4 / A-3

SCALE: N.T.S

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Fax Number : 781-742-2247

SUBMITTALS		
DATE	DESCRIPTION	REVISION
05/10/16	ISSUED FOR REVIEW	A
05/20/16	FINAL CD	0
08/05/16	REVISION	1
08/08/16	REVISION	2
08/18/16	FINAL CD	3

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

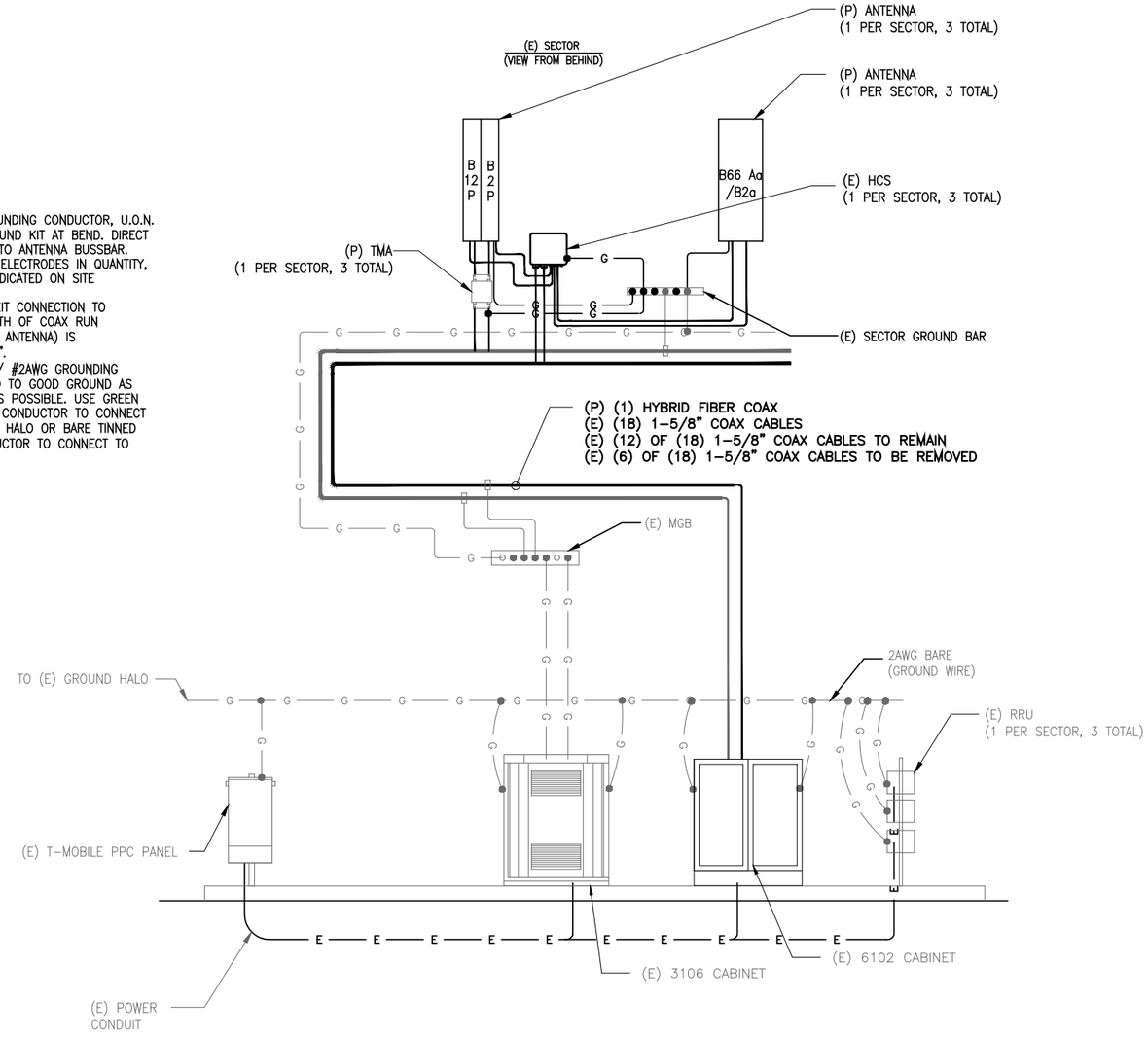
PROFESSIONAL SEAL

SITE NAME
CT11254B
SITE NAME
CDT NORWICH
SITE ADDRESS
HINCKLEY HILL ROAD
NORWICH, CT 06360

SHEET TITLE
ANTENNA PLAN AND DETAILS

SHEET NUMBER
A-3

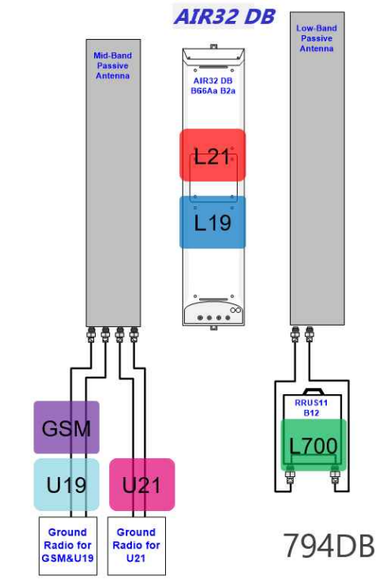
NOTES:
A. PROVIDE #2AWG GROUNDING CONDUCTOR, U.O.N.
B. DO NOT INSTALL GROUND KIT AT BEND. DIRECT GROUND WIRE DOWN TO ANTENNA BUSSBAR.
C. PROVIDE GROUNDING ELECTRODES IN QUANTITY, TYPE AND SIZE AS INDICATED ON SITE GROUNDING PLAN.
D. ADD COAX GROUND KIT CONNECTION TO BUSSBAR WHEN LENGTH OF COAX RUN (FROM 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 3/4" (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 3/4" (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

794DB CONFIGURATION
COAX/FIBER PLUMBING DIAGRAM

SCALE: N.T.S

2
E-1

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

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

DRAWN BY:	MB
CHECKED BY:	KM

STATE OF CONNECTICUT
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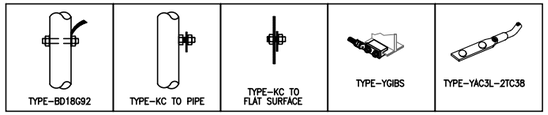
SITE NAME
CT11254B
SITE NAME
CDT NORWICH
SITE ADDRESS
HINCKLEY HILL ROAD
NORWICH, CT 06360

SHEET TITLE
GROUNDING AND POWER ONE LINE DIAGRAM

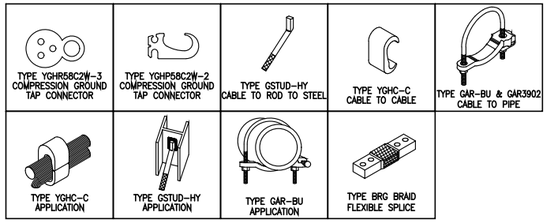
SHEET NUMBER
E-1



BURNDY GROUNDING DETAILS

1 E-2

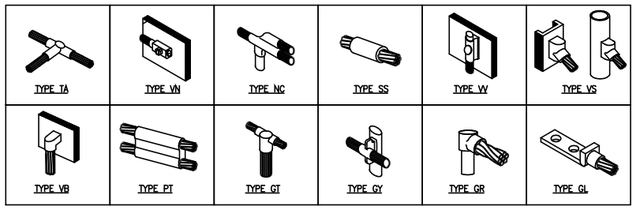
SCALE: N.T.S.



BURNDY GROUNDING PRODUCTS

2 E-2

SCALE: N.T.S.



CADWELD GROUNDING CONNECTION PRODUCTS

3 E-2

SCALE: N.T.S.

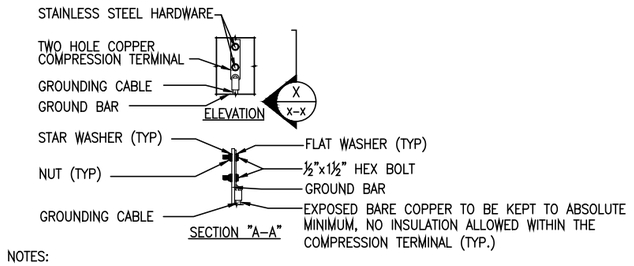
TERMINATION TYPES:
A. MECHANICAL COMPRESSION LUG
B. DOUBLE BARRELL COMPRESSION CONNECTOR
C. EXOTHERMIC TERMINATION
D. BEAM CLAMP

	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

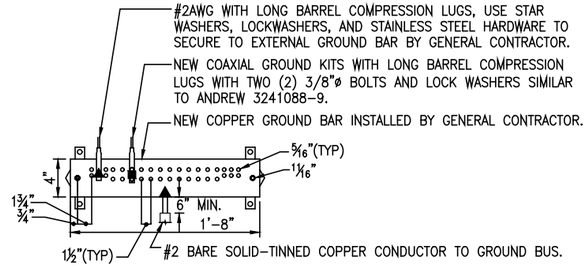
GROUNDING TERMINATION MARTIX

4 E-2

SCALE: N.T.S.



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

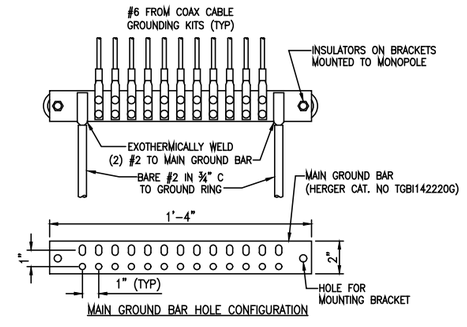


NOTES:
1. ALL HARDWARE STAINLESS STEEL COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
2. FOR GROUND BOND TO STEEL ONLY: INSERT A TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH KOPR-SHIELD.
3. ALL HOLES ARE COUNTERSUNK 1/16".

TYPICAL GROUND BAR CONNECTIONS DETAIL

5 E-2

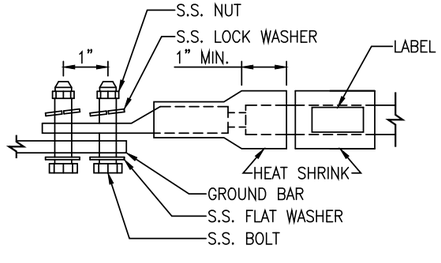
SCALE: N.T.S.



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.

T-MOBILE NORTHEAST, LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
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SITE AC.			

DRAWN BY:	MB
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STATE OF CONNECTICUT
HOSSEIN VAHEDI
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LICENSED ARCHITECT

PROFESSIONAL SEAL

SITE NAME
CT11254B
SITE NAME
CDT NORWICH
SITE ADDRESS
HINCKLEY HILL ROAD
NORWICH, CT 06360

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
E-2

Exhibit D

FRED A. NUDD CORPORATION

1743 ROUTE 104, BOX 577
ONTARIO, NY 14519
(315) 524-2531 FAX (315) 524-4249

www.nuddtowers.com

Mark LeGault
Cordless Data Transfer, Inc.
600 Old Hartford Road
Colchester, CT 06415
July 29, 2016

Fred A. Nudd Job Number: 216-23095

Location: 2 Hinkley Hill Road, Norwich, CT 06360, New London County (Lat. & Long: 41-30-53.45, -72-03-42.08)

Subject: Structural Analysis of a 150 ft Self-Supporting Tower

Fred A. Nudd Corporation has completed a three-dimensional, finite element model structural analysis of the above noted self-supporting tower. This tower was analyzed considered appurtenance loads noted in the appurtenance loading table on the following page. The design loading criteria and strength design are per the TIA/EIA-222-F standard, which is the recommended design standard per the 2003 International Building Code (Sec. 1609 & 3108), including 2005, 2009, 2011 & 2013 Connecticut Building Code Amendments. Additional standards used in this analysis include the AISC Manual for Steel Construction, Allowable Stress Design, 9th Ed. and ACI 318-05, Building Code Requirements for Structural Concrete and Commentary. Tower and foundation dimensions have been taken from original design drawings by Fred A. Nudd Corporation (Drawing Number 99-6864-1 & 99-6864-2R, dated July 22, 1999 & November 20, 1999). Onsite subsurface conditions were taken from a geotechnical report by Coneco (Project Number C104.0CDT, dated November 15, 1999). The tower is assumed to be in good, undamaged and equivalent to as new condition and has been maintained / inspected per criteria by TIA-222.

The purpose of this analysis is to determine the structure's ability to support new T-Mobile equipment installed at a rad center of 150 ft above ground level (AGL). The new equipment to be installed, which included antennas, coax, mounts and associated hardware are listed on the following page in the appurtenance loading table.

Results of the analysis indicate the tower will be able to the support the design loads noted in the appurtenance loading table on the following page. Specific section design loads, capacities and stress ratios are provided on the following pages. Maximum member usage was found to be 88%. Detailed calculation of the applied forces and member capacities are provided in the following pages.

The tower base foundation was analyzed using soil properties from the aforementioned geotechnical report. Based on this analysis, the foundation is capable of supporting the existing and proposed equipment. Factor of safety in excess of two was calculated regarding foundation resistance to applied axial and lateral loads. Detailed calculation of the applied forces and member capacities are provided in the following pages.

In conclusion, the tower superstructure and substructure can support the listed existing and proposed appurtenance loading.

We trust this report satisfies your needs. Please contact us with any questions or concerns regarding this report.

Best Regards,
Fred. A. Nudd Corporation

David Tan, P.E. (CT PE License #22092)

Code Design Criteria

TIA/EIA-222-F
Windspeed = 85 mph, fastest mile
Exposure = C
Radial Ice = 0.5 inch
Ice Windspeed = 74 mph, fastest mile

Appurtenance Loading – Existing and To Remain on Tower

Height (ft)	Carrier	Appurtenance	Mount	Coax (in)
150	T-Mobile	--	(3) 12 ft Boom / Frame	(12) 1-5/8
140	Sprint	(1) KMW ET-X-TU-42-15-37-18-IR-RA (1) RFS APXVSPP18-C-A20 (1) RFS APXV9ERR18-C-A20 (3) Alcatel Lucent 4X45 65 RRU (3) Alcatel Lucent 2X50W RRU (3) Alcatel Lucent 1900 MHz RRH, 65 MHz (3) RFS IBC1900BB-3	(3) 12 ft Boom / Frame	(3) 1-1/4 Hybriflex
127.5	Verizon	(4) RFS APL868013 (6) RFS FD9R6004/2C-3L (2) RFS APL866513 (1) RFS DB-T1-6Z-8AB-0Z (3) Commscope LNX-6514DS-1AM (3) Commscope HBXX-9014DS-VTM (3) Commscope HBXX-6517DS-A2M (3) Alcatel Lucent RH_2x60-AWS (3) Alcatel Lucent RH_2x60-70OU (3) Alcatel Lucent RH_2x60-PCS	(3) 12 ft Boom / Frame	(6) 1-5/8 (2) 1-5/8 Fiber Cable
115	AT&T Mobility	(3) Powerwave 7770.00 (6) Powerwave LGP21401 (1) Powerwavce P65-17-XLH-RR (1) KMW AM-X-CD-16-65-00T-RET (6) Ericsson RRUS11 (1) Raycap DC6-48-60-18-8F	(3) 10 ft Boom / Frame	(12) 1-1/4 (2) 0.65 DC (1) 1.34 Fiber

- *Height measurement taken as distance from top of base foundation to center of appurtenance.*

Appurtenance Loading – Additional Loading Configuration to be Installed on Tower for T-Mobile

Height (ft)	Carrier	Appurtenance	Mount	Coax (in)
150	T-Mobile	(3) Ericsson AIR32 B66A/B2A (3) Commscope DBXNH-6565B-A2M (3) Ericsson KRY 112 144/2	--	(1) 1-5/8 Fiber Cable

- *Height measurement taken as distance from top of base foundation to center of appurtenance.*
- *Additional coax to be installed alongside existing T-Mobile coax.*

Maximum Member Usage

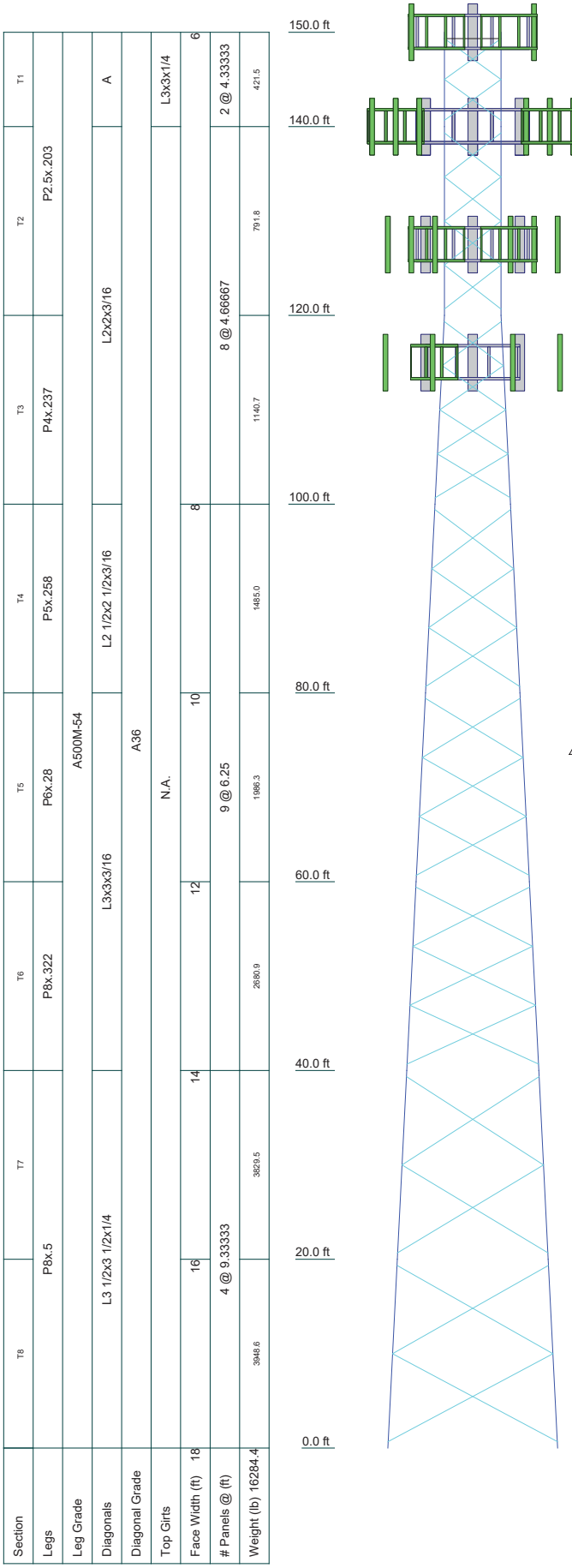
Member	Percentage
Leg	77
Diagonal	88
Horizontal	2
Splice/Connection Bolts	88

- *Percentage equal to or less than 100% denote member stress levels are satisfactory for loading.*
- *Percentage greater than 100% indicates member strengthening is required.*

Foundation Reaction Usage

Design Load	Capacity (kip)	Design Load (kip)	Percentage
Compression / Leg	288.6	240.0	83
Uplift / Leg	318.8	204.6	64
Shear / Leg	47.9	23.6	49

- *Percentage equal to or less than 100% denote foundation is satisfactory for loading.*
- *Percentage greater than 100% indicates foundation strengthening is required.*
- *Listed capacities include a factor of safety ≥ 2.0.*



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION
Nudd 12' boom	150
Nudd 12' boom	150
Nudd 12' boom	150
Ericsson AIR 32 B66AA/B2A (T-Mobile)	150
Ericsson AIR 32 B66AA/B2A (T-Mobile)	150
Ericsson AIR 32 B66AA/B2A (T-Mobile)	150
Commscope DBXHN-6565B-A2M (T-Mobile)	150
Commscope DBXHN-6565B-A2M (T-Mobile)	150
Commscope DBXHN-6565B-A2M (T-Mobile)	150
(2) Ericsson KRY112/2 (T-Mobile)	150
(2) Ericsson KRY112/2 (T-Mobile)	150
(2) Ericsson KRY112/2 (T-Mobile)	150
KMW ET-X-TU-42-15-37-18-IR-RA (Sprint)	140
RFS APXVSPP18-C (Sprint)	140
RFS APXV9ERR18-C-A20 (Sprint)	140
Alcatel Lucent 1900 MHz (Sprint)	140
Alcatel Lucent 800 MHz (Sprint)	140
Alcatel Lucent 1900 MHz (Sprint)	140
Alcatel Lucent 800 MHz (Sprint)	140
Alcatel Lucent 1900 MHz (Sprint)	140
Alcatel Lucent 800 MHz (Sprint)	140
Nudd 12' boom (Sprint)	140
Nudd 12' boom (Sprint)	140
Nudd 12' boom (Sprint)	140
Alcatel Lucent 1900 MHz RRH (Sprint)	140
Alcatel Lucent 1900 MHz RRH (Sprint)	140
Alcatel Lucent 1900 MHz RRH (Sprint)	140
RFS IBC1900BB-3 (Sprint)	140
RFS IBC1900BB-3 (Sprint)	140
RFS IBC1900BB-3 (Sprint)	140
Nudd 12' boom	127.5
Nudd 12' boom	127.5
Nudd 12' boom	127.5
(2) RFS APL868013 (Verizon)	127.5
(2) RFS APL868013 (Verizon)	127.5
(2) RFS APL866513 (Verizon)	127.5
(2) RFS FD9R6004/2C-3L (Verizon)	127.5
(2) RFS FD9R6004/2C-3L (Verizon)	127.5
(2) RFS FD9R6004/2C-3L (Verizon)	127.5
RFS DB-T1-6Z-8AB-0Z (Verizon)	127.5 - 12.75
Commscope LNX-6514DS-VTM (Verizon)	127.5
Commscope LNX-6514DS-VTM (Verizon)	127.5

TYPE	ELEVATION
Commscope LNX-6514DS-VTM (Verizon)	127.5
Commscope HBXX-9014DS-VTM (Verizon)	127.5
Commscope HBXX-9014DS-VTM (Verizon)	127.5
Commscope HBXX-9014DS-VTM (Verizon)	127.5
Commscope HBXX-6517DS-A2M (Verizon)	127.5
Commscope HBXX-6517DS-A2M (Verizon)	127.5
Commscope HBXX-6517DS-A2M (Verizon)	127.5
Alcatel Lucent RH_2x60-AWS (Verizon)	127.5
Alcatel Lucent RH_2x60-AWS (Verizon)	127.5
Alcatel Lucent RH_2x60-AWS (Verizon)	127.5
Alcatel Lucent RH_2x60-70OU (Verizon)	127.5
Alcatel Lucent RH_2x60-70OU (Verizon)	127.5
Alcatel Lucent RH_2x60-70OU (Verizon)	127.5
Alcatel Lucent RH_2x60-PCS (Verizon)	127.5
Alcatel Lucent RH_2x60-PCS (Verizon)	127.5
Alcatel Lucent RH_2x60-PCS (Verizon)	127.5
Powerwave 7770.00 (ATI)	115
Nudd 10' boom	115
Nudd 10' boom	115
Powerwave 7770.00 (ATI)	115
Powerwave 7770.00 (ATI)	115
Nudd 10' boom	115
Raycap DC6-48-60-18-8F (ATI)	115
(2) Powerwave LGP21401 (ATI)	115
(2) Powerwave LGP21401 (ATI)	115
(2) Powerwave LGP21401 (ATI)	115
Powerwave P65-17-XLH-RR (ATI)	115
KMW AM-X-CD-16-65-00T-RET (ATI)	115
Andrew SBNH-1D6565C (ATI)	115
(2) Ericsson RRUs11 (ATI)	115
(2) Ericsson RRUs11 (ATI)	115
(2) Ericsson RRUs11 (ATI)	115

MA

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L1 1/2x1 1/2x3/16		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A500M-54	54 ksi	70 ksi	A36	36 ksi	58 ksi

SHEAR
37894 lb
3491295 lb-ft

TORQUE 13494 lb-ft
74 mph WIND - 0.5000 in ICE
AXIAL
30604 lb

SHEAR
37640 lb
MOMENT
3412673 lb-ft

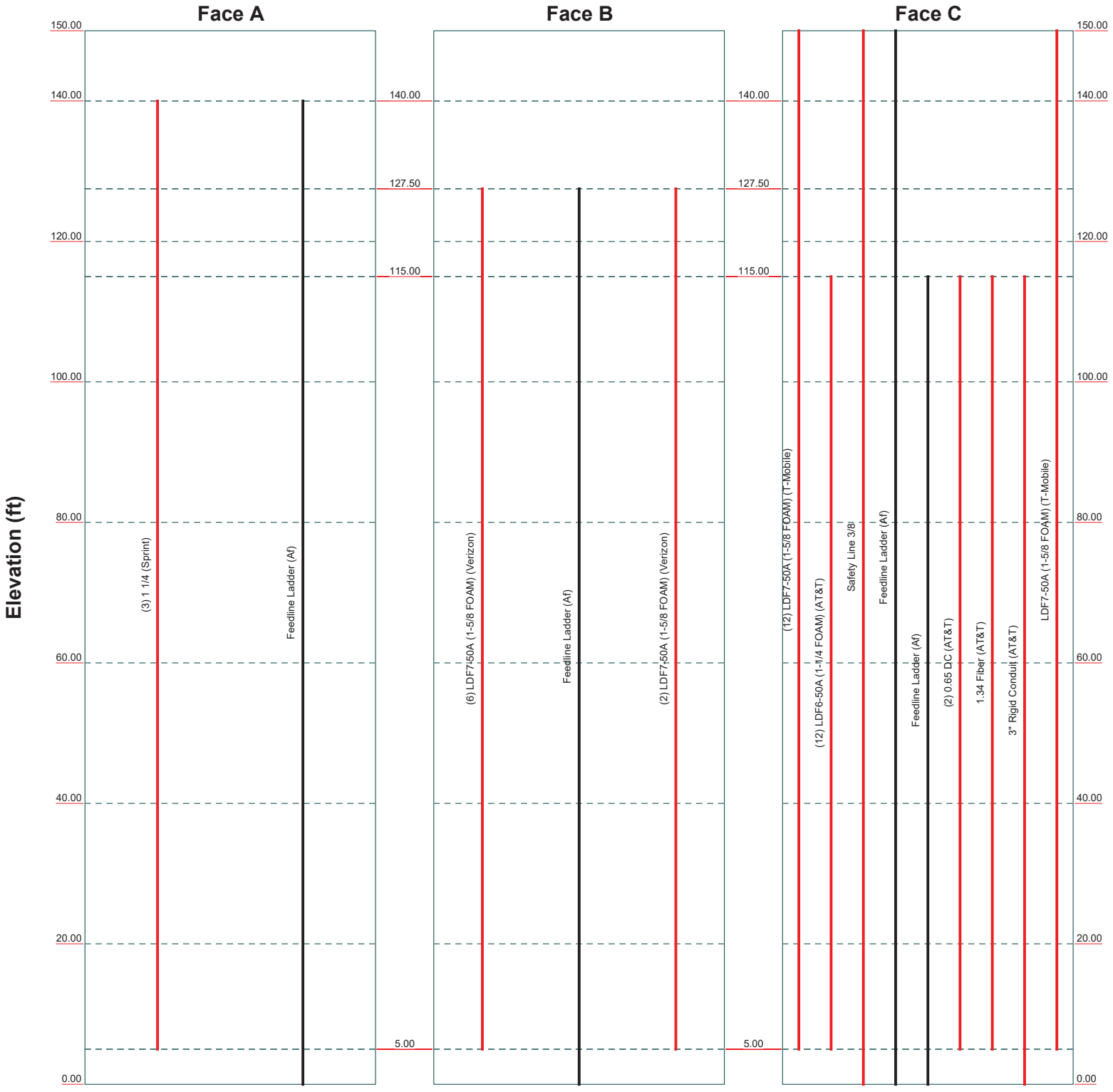
TORQUE 11955 lb-ft
REACTIONS - 85 mph WIND

Phone:
FAX:

Job: **150' SS Tower Norwich, CT. Analysi**
Project: **216-23095**
Client: CDT | Drawn by: FAN | App'd:
Code: TIA/EIA-222-F | Date: 07/29/16 | Scale: NTS
Path: | Dwg No. E-1

Feedline Distribution Chart
0' - 150'

Round | Flat | App In Face | App Out Face | Truss Leg



Phone: FAX:	Job: 150' SS Tower Norwich, CT. Analysi		
	Project: 216-23095		
	Client: CDT	Drawn by: FAN	App'd:
	Code: TIA/EIA-222-F	Date: 07/29/16	Scale: NTS
	Path:		Dwg No. E-7

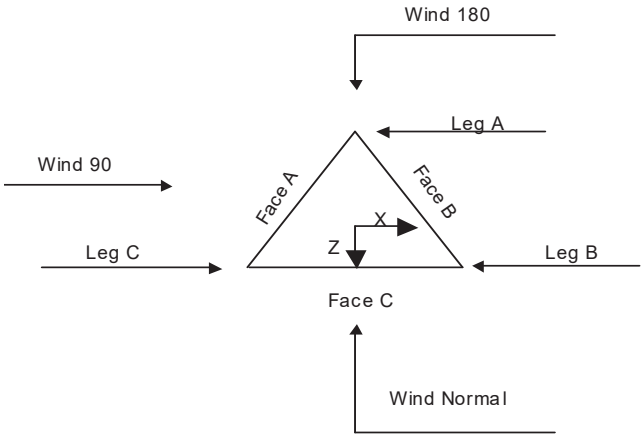
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 150.00 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 18.00 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Basic wind speed of 85 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56 pcf.
A wind speed of 74 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Weld together tower sections have flange connections..
Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications..
Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards..
Welds are fabricated with ER-70S-6 electrodes..
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.333.
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Options

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



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	150.00-140.00			6.00	1	10.00
T2	140.00-120.00			6.00	1	20.00
T3	120.00-100.00			6.00	1	20.00
T4	100.00-80.00			8.00	1	20.00
T5	80.00-60.00			10.00	1	20.00
T6	60.00-40.00			12.00	1	20.00
T7	40.00-20.00			14.00	1	20.00
T8	20.00-0.00			16.00	1	20.00

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	150.00-140.00	4.33	X Brace	No	No	8.0000	8.0000
T2	140.00-120.00	4.67	X Brace	No	No	8.0000	8.0000
T3	120.00-100.00	4.67	X Brace	No	No	8.0000	8.0000
T4	100.00-80.00	6.25	X Brace	No	No	7.5000	7.5000
T5	80.00-60.00	6.25	X Brace	No	No	7.5000	7.5000
T6	60.00-40.00	6.25	X Brace	No	No	7.5000	7.5000
T7	40.00-20.00	9.33	X Brace	No	No	8.0000	8.0000

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
T8	20.00-0.00	9.33	X Brace	No	No	8.0000	8.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 150.00-140.00	Pipe	P2.5x.203	A500M-54 (54 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T2 140.00-120.00	Pipe	P2.5x.203	A500M-54 (54 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T3 120.00-100.00	Pipe	P4x.237	A500M-54 (54 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T4 100.00-80.00	Pipe	P5x.258	A500M-54 (54 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T5 80.00-60.00	Pipe	P6x.28	A500M-54 (54 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T6 60.00-40.00	Pipe	P8x.322	A500M-54 (54 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T7 40.00-20.00	Pipe	P8x.5	A500M-54 (54 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T8 20.00-0.00	Pipe	P8x.5	A500M-54 (54 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T1 150.00-140.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T2 140.00-120.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T3 120.00-100.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T4 100.00-80.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T5 80.00-60.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T6 60.00-40.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T7 40.00-20.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 ksi)
T8 20.00-0.00	Solid Round		A572-50 (50 ksi)	Solid Round	9/16	A572-50 (50 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
T1 150.00-140.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T2 140.00-120.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T3 120.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T4 100.00-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T5 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T6 60.00-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T7 40.00-20.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T8 20.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	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	No	1	1	1	1	1	1	1	1
150.00-140.00				1	1	1	1	1	1	1
T2	Yes	No	1	1	1	1	1	1	1	1
140.00-120.00				1	1	1	1	1	1	1
T3	Yes	No	1	1	1	1	1	1	1	1
120.00-100.00				1	1	1	1	1	1	1
T4	Yes	No	1	1	1	1	1	1	1	1
100.00-80.00				1	1	1	1	1	1	1
T5	Yes	No	1	1	1	1	1	1	1	1
80.00-60.00				1	1	1	1	1	1	1
T6	Yes	No	1	1	1	1	1	1	1	1
60.00-40.00				1	1	1	1	1	1	1
T7	Yes	No	1	1	1	1	1	1	1	1
40.00-20.00				1	1	1	1	1	1	1
T8 20.00-0.00	Yes	No	1	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		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 150.00-140.00	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 140.00-120.00	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 120.00-100.00	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 100.00-80.00	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 80.00-60.00	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 60.00-40.00	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
T7 40.00-20.00	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
T8 20.00-0.00	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

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 150.00-140.00	Flange	0.7500 A325N	4	0.5000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 140.00-120.00	Flange	1.0000 A325N	4	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 120.00-100.00	Flange	1.0000 A325N	6	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 100.00-80.00	Flange	1.0000 A325N	8	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 80.00-60.00	Flange	1.2500 A325N	8	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 60.00-40.00	Flange	1.2500 A325N	8	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 40.00-20.00	Flange	1.2500 A325N	8	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T8 20.00-0.00	Flange	1.5000 F1554-36	8	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

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
LDF7-50A (1-5/8 FOAM) (T-Mobile)	C	Yes	Ar (CfAe)	150.00 - 5.00	0.0000	-0.25	12	9	1.9800	1.9800		0.82
1 1/4 (Sprint)	A	Yes	Ar (CfAe)	140.00 - 5.00	0.0000	-0.25	3	3	1.5500	1.5500		0.66
LDF7-50A	B	Yes	Ar (CfAe)	127.50 - 5.00	0.0000	-0.25	6	6	1.9800	1.9800		0.82

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
(1-5/8 FOAM) (Verizon)												
LDF6-50A (1-1/4 FOAM) (AT&T)	C	Yes	Ar (CfAe)	115.00 - 5.00	0.0000	0.25	12	6	1.5500	1.5500		0.66
Safety Line 3/8	C	No	Ar (Leg)	150.00 - 0.00	0.0000	0	1	1	0.3750	0.3750		0.22
Feedline Ladder (Af)	C	Yes	Af (CfAe)	150.00 - 0.00	0.0000	-0.25	1	1	3.0000	3.0000	12.0000	8.40
Feedline Ladder (Af)	C	Yes	Af (CfAe)	115.00 - 0.00	0.0000	0.25	1	1	3.0000	3.0000	12.0000	8.40
Feedline Ladder (Af)	B	Yes	Af (CfAe)	127.50 - 0.00	0.0000	-0.25	1	1	3.0000	3.0000	12.0000	8.40
Feedline Ladder (Af)	A	Yes	Af (CfAe)	140.00 - 0.00	0.0000	-0.25	1	1	3.0000	3.0000	12.0000	8.40
0.65 DC (AT&T)	C	Yes	Ar (CfAe)	115.00 - 5.00	0.0000	0.25	2	2	0.6300	0.0000		0.15
1.34 Fiber (AT&T)	C	Yes	Ar (CfAe)	115.00 - 5.00	0.0000	0.25	1	1	0.6300	0.0000		0.15
3" Rigid Conduit (AT&T)	C	Yes	Ar (CfAe)	115.00 - 0.00	0.0000	-0.25	1	1	2.0000	3.0000		2.80
LDF7-50A (1-5/8 FOAM) (Verizon)	B	Yes	Ar (CfAe)	127.50 - 5.00	0.0000	-0.25	2	2	1.9800	1.9800		0.82
LDF7-50A (1-5/8 FOAM) (T-Mobile)	C	Yes	Ar (CfAe)	150.00 - 5.00	0.0000	-0.25	1	1	1.9800	1.9800		0.82

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	150.00-140.00	A	0.313	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	16.813	2.500	0.000	0.000	192.80
T2	140.00-120.00	A	8.375	5.000	0.000	0.000	207.60
		B	9.900	1.875	0.000	0.000	112.20
		C	33.625	5.000	0.000	0.000	385.60
T3	120.00-100.00	A	8.375	5.000	0.000	0.000	207.60
		B	26.400	5.000	0.000	0.000	299.20
		C	49.000	8.750	0.000	0.000	679.15
T4	100.00-80.00	A	8.375	5.000	0.000	0.000	207.60
		B	26.400	5.000	0.000	0.000	299.20
		C	54.125	10.000	0.000	0.000	777.00
T5	80.00-60.00	A	8.375	5.000	0.000	0.000	207.60
		B	26.400	5.000	0.000	0.000	299.20
		C	54.125	10.000	0.000	0.000	777.00
T6	60.00-40.00	A	8.375	5.000	0.000	0.000	207.60
		B	26.400	5.000	0.000	0.000	299.20
		C	54.125	10.000	0.000	0.000	777.00
T7	40.00-20.00	A	8.375	5.000	0.000	0.000	207.60
		B	26.400	5.000	0.000	0.000	299.20
		C	54.125	10.000	0.000	0.000	777.00
T8	20.00-0.00	A	6.438	5.000	0.000	0.000	197.70

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	19.800	5.000	0.000	0.000	266.40
		C	42.000	10.000	0.000	0.000	681.85

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	150.00-140.00	A	0.500	1.146	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		25.979	3.056	0.000	0.000	422.10
T2	140.00-120.00	A	0.500	15.042	6.111	0.000	0.000	336.76
		B		14.900	2.292	0.000	0.000	223.36
		C		51.958	6.111	0.000	0.000	844.20
T3	120.00-100.00	A	0.500	15.042	6.111	0.000	0.000	336.76
		B		39.733	6.111	0.000	0.000	595.62
		C		78.583	11.482	0.000	0.000	1448.59
T4	100.00-80.00	A	0.500	15.042	6.111	0.000	0.000	336.76
		B		39.733	6.111	0.000	0.000	595.62
		C		87.458	13.272	0.000	0.000	1650.05
T5	80.00-60.00	A	0.500	15.042	6.111	0.000	0.000	336.76
		B		39.733	6.111	0.000	0.000	595.62
		C		87.458	13.272	0.000	0.000	1650.05
T6	60.00-40.00	A	0.500	15.042	6.111	0.000	0.000	336.76
		B		39.733	6.111	0.000	0.000	595.62
		C		87.458	13.272	0.000	0.000	1650.05
T7	40.00-20.00	A	0.500	15.042	6.111	0.000	0.000	336.76
		B		39.733	6.111	0.000	0.000	595.62
		C		87.458	13.272	0.000	0.000	1650.05
T8	20.00-0.00	A	0.500	11.854	6.111	0.000	0.000	308.08
		B		29.800	6.111	0.000	0.000	502.22
		C		67.833	13.010	0.000	0.000	1377.02

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	150.00-140.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	1.393	1.647	2.441
T2	140.00-120.00	A	0.000	0.820	1.077	1.640
		B	0.000	0.735	0.994	1.470
		C	0.000	2.379	3.209	4.758
T3	120.00-100.00	A	0.000	0.780	1.024	1.559
		B	0.000	1.863	2.522	3.726
		C	0.000	3.563	4.587	7.127
T4	100.00-80.00	A	0.000	0.592	0.971	1.479
		B	0.000	1.414	2.393	3.535
		C	0.000	3.034	4.838	7.585
T5	80.00-60.00	A	0.000	0.559	1.101	1.676
		B	0.000	1.335	2.710	4.005
		C	0.000	2.864	5.481	8.593
T6	60.00-40.00	A	0.000	0.539	1.061	1.616

Section	Elevation ft	Face	A_R ft^2	A_R Ice ft^2	A_F ft^2	A_F Ice ft^2
		B	0.000	1.288	2.614	3.863
		C	0.000	2.763	5.286	8.288
T7	40.00-20.00	A	0.000	0.381	0.876	1.334
		B	0.000	0.911	2.158	3.189
		C	0.000	1.955	4.364	6.842
T8	20.00-0.00	A	0.000	0.309	0.720	1.080
		B	0.000	0.693	1.651	2.427
		C	0.000	1.515	3.420	5.302

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	150.00-140.00	6.3616	8.7123	5.6571	8.4792
T2	140.00-120.00	3.3055	5.1130	2.8986	5.1834
T3	120.00-100.00	2.4806	3.5291	1.9257	3.9314
T4	100.00-80.00	2.3445	4.7415	1.6793	5.4198
T5	80.00-60.00	2.4985	4.9742	1.8306	5.8439
T6	60.00-40.00	2.6214	5.1554	1.9606	6.2006
T7	40.00-20.00	3.0771	5.9889	2.3338	7.3065
T8	20.00-0.00	2.6490	5.9303	1.9190	7.2492

Discrete Tower Loads

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
Powerwave 7770.00 (AT&T)	A	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice	5.88 6.25	2.93 3.29	35.00 67.60
Powerwave 7770.00 (AT&T)	B	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice	5.88 6.25	2.93 3.29	35.00 67.60
Powerwave 7770.00 (AT&T)	C	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice	5.88 6.25	2.93 3.29	35.00 67.60
(2) Powerwave LGP21401 (AT&T)	A	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice	1.95 2.11	0.53 0.63	31.00 42.00
(2) Powerwave LGP21401 (AT&T)	B	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice	1.95 2.11	0.53 0.63	31.00 42.00
(2) Powerwave LGP21401 (AT&T)	C	From Leg	4.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice	1.95 2.11	0.53 0.63	31.00 42.00
Powerwave P65-17-XLH-RR (AT&T)	A	From Leg	4.00 0.00	0.0000	115.00	No Ice 1/2" Ice	11.47 12.08	4.00 4.68	62.00 124.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00						
KMW	B	From Leg	4.00	0.0000	115.00	No Ice	8.26	4.64	48.50
AM-X-CD-16-65-00T-RET			0.00			1/2" Ice	8.73	5.12	95.00
(AT&T)			0.00						
Andrew SBNH-1D6565C	C	From Leg	4.00	0.0000	115.00	No Ice	11.41	7.70	60.90
(AT&T)			0.00			1/2" Ice	12.03	8.36	126.60
			0.00						
(2) Ericsson RRUs11	A	From Leg	4.00	0.0000	115.00	No Ice	2.99	0.36	50.00
(AT&T)			0.00			1/2" Ice	3.19	0.48	63.50
			0.00						
(2) Ericsson RRUs11	B	From Leg	4.00	0.0000	115.00	No Ice	2.99	0.36	50.00
(AT&T)			0.00			1/2" Ice	3.19	0.48	63.50
			0.00						
(2) Ericsson RRUs11	C	From Leg	4.00	0.0000	115.00	No Ice	2.99	0.36	50.00
(AT&T)			0.00			1/2" Ice	3.19	0.48	63.50
			0.00						
Raycap DC6-48-60-18-8F	A	From Leg	4.00	0.0000	115.00	No Ice	2.57	2.57	31.80
(AT&T)			0.00			1/2" Ice	2.77	2.77	54.40
			0.00						
KMW	A	From Leg	4.00	0.0000	140.00	No Ice	7.28	3.29	50.00
ET-X-TU-42-15-37-18-IR-R			0.00			1/2" Ice	7.61	3.59	95.80
A			0.00						
(Sprint)									
RFS APXVSPP18-C	B	From Leg	4.00	0.0000	140.00	No Ice	8.02	5.28	57.00
(Sprint)			0.00			1/2" Ice	8.48	5.75	106.50
			0.00						
RFS APXV9ERR18-C-A20	C	From Leg	4.00	0.0000	140.00	No Ice	8.02	5.81	62.00
(Sprint)			0.00			1/2" Ice	8.48	6.27	114.00
			0.00						
Alcatel Lucent 1900 MHz	A	From Leg	4.00	0.0000	140.00	No Ice	2.41	2.47	60.00
(Sprint)			0.00			1/2" Ice	2.59	2.66	84.70
			0.00						
Alcatel Lucent 800 MHz	A	From Leg	4.00	0.0000	140.00	No Ice	1.70	1.28	60.00
(Sprint)			0.00			1/2" Ice	1.85	1.41	77.00
			0.00						
Alcatel Lucent 1900 MHz	B	From Leg	4.00	0.0000	140.00	No Ice	2.41	2.47	60.00
(Sprint)			0.00			1/2" Ice	2.59	2.66	84.70
			0.00						
Alcatel Lucent 800 MHz	B	From Leg	4.00	0.0000	140.00	No Ice	1.70	1.28	60.00
(Sprint)			0.00			1/2" Ice	1.85	1.41	77.00
			0.00						
Alcatel Lucent 1900 MHz	C	From Leg	4.00	0.0000	140.00	No Ice	2.41	2.47	60.00
(Sprint)			0.00			1/2" Ice	2.59	2.66	84.70
			0.00						
Alcatel Lucent 800 MHz	C	From Leg	4.00	0.0000	140.00	No Ice	1.70	1.28	60.00
(Sprint)			0.00			1/2" Ice	1.85	1.41	77.00
			0.00						
Nudd 12' boom	C	From Leg	1.00	0.0000	150.00	No Ice	17.10	9.30	254.00
			0.00			1/2" Ice	21.40	21.40	376.00
			0.00						
Nudd 12' boom	A	From Leg	1.00	0.0000	150.00	No Ice	17.10	9.30	254.00
			0.00			1/2" Ice	21.40	21.40	376.00
			0.00						
Nudd 12' boom	B	From Leg	1.00	0.0000	150.00	No Ice	17.10	9.30	254.00
			0.00			1/2" Ice	21.40	21.40	376.00
			0.00						
Nudd 12' boom	C	From Leg	1.00	0.0000	127.50	No Ice	17.10	9.30	254.00

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
			0.00			1/2" Ice	21.40	21.40	376.00
			0.00						
Nudd 12' boom	A	From Leg	1.00	0.0000	127.50	No Ice	17.10	9.30	254.00
			0.00			1/2" Ice	21.40	21.40	376.00
			0.00						
Nudd 12' boom	B	From Leg	1.00	0.0000	127.50	No Ice	17.10	9.30	254.00
			0.00			1/2" Ice	21.40	21.40	376.00
			0.00						
Nudd 10' boom	C	From Leg	1.00	0.0000	115.00	No Ice	15.50	9.30	255.00
			0.00			1/2" Ice	19.60	19.60	367.00
			0.00						
Nudd 10' boom	C	From Leg	1.00	0.0000	115.00	No Ice	15.50	9.30	255.00
			0.00			1/2" Ice	19.60	19.60	367.00
			0.00						
Nudd 10' boom	A	From Leg	1.00	0.0000	115.00	No Ice	15.50	9.30	255.00
			0.00			1/2" Ice	19.60	19.60	367.00
			0.00						
Nudd 12' boom (Sprint)	A	From Leg	1.00	0.0000	140.00	No Ice	17.10	9.30	254.00
			0.00			1/2" Ice	21.40	21.40	376.00
			0.00						
Nudd 12' boom (Sprint)	B	From Leg	1.00	0.0000	140.00	No Ice	17.10	9.30	254.00
			0.00			1/2" Ice	21.40	21.40	376.00
			0.00						
Nudd 12' boom (Sprint)	C	From Leg	1.00	0.0000	140.00	No Ice	17.10	9.30	254.00
			0.00			1/2" Ice	21.40	21.40	376.00
			0.00						
Alcatel Lucent 1900 MHz RRH (Sprint)	A	From Leg	4.00	0.0000	140.00	No Ice	2.58	2.54	60.00
			0.00			1/2" Ice	2.77	2.73	86.50
			0.00						
Alcatel Lucent 1900 MHz RRH (Sprint)	B	From Leg	4.00	0.0000	140.00	No Ice	2.91	3.80	60.00
			0.00			1/2" Ice	3.11	4.03	86.50
			0.00						
Alcatel Lucent 1900 MHz RRH (Sprint)	C	From Leg	4.00	0.0000	140.00	No Ice	2.91	3.80	60.00
			0.00			1/2" Ice	3.11	4.03	68.50
			0.00						
RFS IBC1900BB-3 (Sprint)	A	From Leg	4.00	0.0000	140.00	No Ice	1.41	0.63	22.00
			0.00			1/2" Ice	1.55	0.74	31.00
			0.00						
RFS IBC1900BB-3 (Sprint)	B	From Leg	4.00	0.0000	140.00	No Ice	1.41	0.63	22.00
			0.00			1/2" Ice	1.55	0.74	31.00
			0.00						
RFS IBC1900BB-3 (Sprint)	C	From Leg	4.00	0.0000	140.00	No Ice	1.41	0.63	22.00
			0.00			1/2" Ice	1.55	0.74	31.00
			0.00						
(2) RFS APL868013 (Verizon)	C	From Leg	4.00	0.0000	127.50	No Ice	2.87	3.61	8.20
			0.00			1/2" Ice	3.17	3.92	33.60
			0.00						
(2) RFS APL868013 (Verizon)	A	From Leg	4.00	0.0000	127.50	No Ice	2.87	3.61	8.20
			0.00			1/2" Ice	3.17	3.92	33.60
			0.00						
(2) RFS APL866513 (Verizon)	B	From Leg	4.00	0.0000	127.50	No Ice	4.29	3.73	15.70
			0.00			1/2" Ice	4.62	4.05	47.00
			0.00						
(2) RFS FD9R6004/2C-3L (Verizon)	C	From Leg	4.00	0.0000	127.50	No Ice	0.31	0.08	3.10
			0.00			1/2" Ice	0.38	0.12	5.40
			0.00						
(2) RFS FD9R6004/2C-3L	A	From Leg	4.00	0.0000	127.50	No Ice	0.31	0.08	3.10

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
(Verizon)			0.00			1/2" Ice	0.38	0.12	5.40
			0.00						
(2) RFS FD9R6004/2C-3L	B	From Leg	4.00	0.0000	127.50	No Ice	0.31	0.08	3.10
(Verizon)			0.00			1/2" Ice	0.38	0.12	5.40
			0.00						
RFS DB-T1-6Z-8AB-0Z	C	From Leg	4.00	0.0000	12.75 - 127.50	No Ice	4.80	2.00	10.00
(Verizon)			0.00			1/2" Ice	5.04	2.17	46.10
			0.00						
Commscope	A	From Leg	4.00	0.0000	127.50	No Ice	8.17	5.41	38.80
LNX-6514DS-VTM			0.00			1/2" Ice	8.63	5.88	89.30
(Verizon)			0.00						
Commscope	B	From Leg	4.00	0.0000	127.50	No Ice	8.17	5.41	38.80
LNX-6514DS-VTM			0.00			1/2" Ice	8.63	5.88	89.30
(Verizon)			0.00						
Commscope	C	From Leg	4.00	0.0000	127.50	No Ice	8.17	5.41	38.80
LNX-6514DS-VTM			0.00			1/2" Ice	8.63	5.88	89.30
(Verizon)			0.00						
Commscope	A	From Leg	4.00	0.0000	127.50	No Ice	5.42	3.28	29.80
HBXX-9014DS-VTM			0.00			1/2" Ice	5.74	3.60	65.10
(Verizon)			0.00						
Commscope	B	From Leg	4.00	0.0000	127.50	No Ice	5.42	3.28	29.80
HBXX-9014DS-VTM			0.00			1/2" Ice	5.74	3.60	65.10
(Verizon)			0.00						
Commscope	C	From Leg	4.00	0.0000	127.50	No Ice	5.42	3.28	29.80
HBXX-9014DS-VTM			0.00			1/2" Ice	5.74	3.60	65.10
(Verizon)			0.00						
Commscope	A	From Leg	4.00	0.0000	127.50	No Ice	8.53	5.24	43.00
HBXX-6517DS-A2M			0.00			1/2" Ice	9.00	5.74	93.50
(Verizon)			0.00						
Commscope	B	From Leg	4.00	0.0000	127.50	No Ice	8.53	5.24	43.00
HBXX-6517DS-A2M			0.00			1/2" Ice	9.00	5.74	93.50
(Verizon)			0.00						
Commscope	C	From Leg	4.00	0.0000	127.50	No Ice	8.53	5.24	43.00
HBXX-6517DS-A2M			0.00			1/2" Ice	9.00	5.74	93.50
(Verizon)			0.00						
Alcatel Lucent	A	From Leg	4.00	0.0000	127.50	No Ice	1.88	1.24	44.00
RH_2x60-AWS			0.00			1/2" Ice	2.03	1.37	60.00
(Verizon)			0.00						
Alcatel Lucent	B	From Leg	4.00	0.0000	127.50	No Ice	1.88	1.24	44.00
RH_2x60-AWS			0.00			1/2" Ice	2.03	1.37	60.00
(Verizon)			0.00						
Alcatel Lucent	C	From Leg	4.00	0.0000	127.50	No Ice	1.88	1.24	44.00
RH_2x60-AWS			0.00			1/2" Ice	2.03	1.37	60.00
(Verizon)			0.00						
Alcatel Lucent	A	From Leg	4.00	0.0000	127.50	No Ice	2.16	1.62	44.00
RH_2x60-70OU			0.00			1/2" Ice	2.33	1.77	63.60
(Verizon)			0.00						
Alcatel Lucent	B	From Leg	4.00	0.0000	127.50	No Ice	2.16	1.62	44.00
RH_2x60-70OU			0.00			1/2" Ice	2.33	1.77	63.60
(Verizon)			0.00						
Alcatel Lucent	C	From Leg	4.00	0.0000	127.50	No Ice	2.16	1.62	44.00
RH_2x60-70OU			0.00			1/2" Ice	2.33	1.77	63.60
(Verizon)			0.00						
Alcatel Lucent	A	From Leg	4.00	0.0000	127.50	No Ice	1.84	1.34	46.00
RH_2x60-PCS			0.00			1/2" Ice	2.00	1.48	62.60
(Verizon)			0.00						
Alcatel Lucent	B	From Leg	4.00	0.0000	127.50	No Ice	1.84	1.34	46.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
RH_2x60-PCS			0.00			1/2" Ice	2.00	1.48	62.60
(Verizon)			0.00						
Alcatel Lucent	C	From Leg	4.00	0.0000	127.50	No Ice	1.84	1.34	46.00
RH_2x60-PCS			0.00			1/2" Ice	2.00	1.48	62.60
(Verizon)			0.00						
Ericsson AIR 32	A	From Leg	4.00	0.0000	150.00	No Ice	6.51	4.71	100.00
B66AA/B2A			0.00			1/2" Ice	6.87	5.07	145.80
(T-Mobile)			0.00						
Ericsson AIR 32	B	From Leg	4.00	0.0000	150.00	No Ice	6.51	4.71	100.00
B66AA/B2A			0.00			1/2" Ice	6.87	5.07	145.80
(T-Mobile)			0.00						
Ericsson AIR 32	C	From Leg	4.00	0.0000	150.00	No Ice	6.51	4.71	100.00
B66AA/B2A			0.00			1/2" Ice	6.87	5.07	145.80
(T-Mobile)			0.00						
Commscope	A	From Leg	4.00	0.0000	150.00	No Ice	8.17	3.13	46.30
DBXHN-6565B-A2M			0.00			1/2" Ice	8.63	3.60	96.80
(T-Mobile)			0.00						
Commscope	B	From Leg	4.00	0.0000	150.00	No Ice	8.17	3.13	46.30
DBXHN-6565B-A2M			0.00			1/2" Ice	8.63	3.60	96.80
(T-Mobile)			0.00						
Commscope	C	From Leg	4.00	0.0000	150.00	No Ice	8.17	3.13	46.30
DBXHN-6565B-A2M			0.00			1/2" Ice	8.63	3.60	96.80
(T-Mobile)			0.00						
(2) Ericsson KRY112/2	A	From Leg	4.00	0.0000	150.00	No Ice	0.35	0.16	11.00
(T-Mobile)			0.00			1/2" Ice	0.42	0.21	14.10
			0.00						
(2) Ericsson KRY112/2	B	From Leg	4.00	0.0000	150.00	No Ice	0.35	0.16	11.00
(T-Mobile)			0.00			1/2" Ice	0.42	0.21	14.10
			0.00						
(2) Ericsson KRY112/2	C	From Leg	4.00	0.0000	150.00	No Ice	0.35	0.16	11.00
(T-Mobile)			0.00			1/2" Ice	0.42	0.21	14.10
			0.00						

Tower Pressures - No Ice

$G_H = 1.133$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
T1	145.00	1.526	28	62.396	A	4.993	5.104	4.792	47.46	0.000	0.000
150.00-140.00					B	4.993	4.792		48.97	0.000	0.000
					C	5.846	21.604		17.46	0.000	0.000
T2	130.00	1.48	27	124.792	A	13.653	17.958	9.583	30.32	0.000	0.000
140.00-120.00					B	10.611	19.483		31.84	0.000	0.000
					C	11.521	43.208		17.51	0.000	0.000
T3	110.00	1.411	26	147.509	A	14.599	23.400	15.025	39.54	0.000	0.000
120.00-100.00					B	13.102	41.425		27.56	0.000	0.000
					C	14.786	64.025		19.06	0.000	0.000

Section Elevation	z	K_Z	q_z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		psf	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
T4	90.00	1.332	25	189.283	A	17.025	26.949	18.574	42.24	0.000	0.000
100.00-80.00					B	15.604	44.974		30.66	0.000	0.000
					C	18.159	72.699		20.44	0.000	0.000
T5 80.00-60.00	70.00	1.24	23	231.055	A	21.929	30.495	22.120	42.19	0.000	0.000
					B	20.319	48.520		32.13	0.000	0.000
					C	22.549	76.245		22.39	0.000	0.000
T6 60.00-40.00	50.00	1.126	21	274.393	A	24.383	37.173	28.798	46.78	0.000	0.000
					B	22.830	55.198		36.91	0.000	0.000
					C	25.158	82.923		26.64	0.000	0.000
T7 40.00-20.00	30.00	1	18	314.393	A	23.751	37.173	28.798	47.27	0.000	0.000
					B	22.470	55.198		37.08	0.000	0.000
					C	25.263	82.923		26.62	0.000	0.000
T8 20.00-0.00	10.00	1	18	354.393	A	25.953	35.235	28.798	47.06	0.000	0.000
					B	25.022	48.598		39.12	0.000	0.000
					C	28.253	70.798		29.07	0.000	0.000

Tower Pressure - With Ice

G_H = 1.133

Section Elevation	z	K_Z	q_z	t_Z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		psf	in	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
T1	145.00	1.526	21	0.5000	63.229	A	4.993	10.453	6.458	41.81	0.000	0.000
150.00-140.00						B	4.993	9.307		45.16	0.000	0.000
						C	5.607	33.893		16.35	0.000	0.000
T2	130.00	1.48	21	0.5000	126.458	A	14.201	32.003	12.917	27.96	0.000	0.000
140.00-120.00						B	10.552	31.947		30.39	0.000	0.000
						C	11.084	67.361		16.47	0.000	0.000
T3	110.00	1.411	20	0.5000	149.178	A	15.175	37.937	18.364	34.58	0.000	0.000
120.00-100.00						B	13.008	61.546		24.63	0.000	0.000
						C	14.978	98.695		16.15	0.000	0.000
T4 100.00-80.00	90.00	1.332	18	0.5000	190.952	A	17.629	41.562	21.913	37.02	0.000	0.000
						B	15.573	65.431		27.05	0.000	0.000
						C	18.684	111.536		16.83	0.000	0.000
T5 80.00-60.00	70.00	1.24	17	0.5000	232.724	A	22.465	45.952	25.459	37.21	0.000	0.000
						B	20.136	69.867		28.29	0.000	0.000
						C	22.709	116.063		18.35	0.000	0.000
T6 60.00-40.00	50.00	1.126	16	0.5000	276.062	A	24.939	53.454	32.137	40.99	0.000	0.000
						B	22.692	77.397		32.11	0.000	0.000
						C	25.429	123.647		21.56	0.000	0.000
T7 40.00-20.00	30.00	1	14	0.5000	316.062	A	24.404	52.405	32.137	41.84	0.000	0.000
						B	22.550	76.567		32.42	0.000	0.000
						C	26.058	123.248		21.52	0.000	0.000
T8 20.00-0.00	10.00	1	14	0.5000	356.062	A	26.704	49.875	32.137	41.97	0.000	0.000
						B	25.357	67.435		34.63	0.000	0.000
						C	29.380	104.647		23.98	0.000	0.000

Tower Pressure - Service

G_H = 1.133

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1 150.00-140.00	145.00	1.526	14	62.396	A	4.993	5.104	4.792	47.46	0.000	0.000
					B	4.993	4.792		48.97	0.000	0.000
					C	5.846	21.604		17.46	0.000	0.000
T2 140.00-120.00	130.00	1.48	14	124.792	A	13.653	17.958	9.583	30.32	0.000	0.000
					B	10.611	19.483		31.84	0.000	0.000
					C	11.521	43.208		17.51	0.000	0.000
T3 120.00-100.00	110.00	1.411	13	147.509	A	14.599	23.400	15.025	39.54	0.000	0.000
					B	13.102	41.425		27.56	0.000	0.000
					C	14.786	64.025		19.06	0.000	0.000
T4 100.00-80.00	90.00	1.332	12	189.283	A	17.025	26.949	18.574	42.24	0.000	0.000
					B	15.604	44.974		30.66	0.000	0.000
					C	18.159	72.699		20.44	0.000	0.000
T5 80.00-60.00	70.00	1.24	11	231.055	A	21.929	30.495	22.120	42.19	0.000	0.000
					B	20.319	48.520		32.13	0.000	0.000
					C	22.549	76.245		22.39	0.000	0.000
T6 60.00-40.00	50.00	1.126	10	274.393	A	24.383	37.173	28.798	46.78	0.000	0.000
					B	22.830	55.198		36.91	0.000	0.000
					C	25.158	82.923		26.64	0.000	0.000
T7 40.00-20.00	30.00	1	9	314.393	A	23.751	37.173	28.798	47.27	0.000	0.000
					B	22.470	55.198		37.08	0.000	0.000
					C	25.263	82.923		26.62	0.000	0.000
T8 20.00-0.00	10.00	1	9	354.393	A	25.953	35.235	28.798	47.06	0.000	0.000
					B	25.022	48.598		39.12	0.000	0.000
					C	28.253	70.798		29.07	0.000	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 150.00-140.00	192.80	421.53	A	0.162	2.728	0.583	1	1	7.970	1292.31	129.23	C
			B	0.157	2.747	0.583	1	1	7.784			
			C	0.44	1.99	0.669	1	1	20.293			
T2 140.00-120.00	705.40	791.76	A	0.253	2.428	0.603	1	1	24.477	2495.96	124.80	C
			B	0.241	2.464	0.6	1	1	22.294			
			C	0.439	1.993	0.668	1	1	40.388			
T3 120.00-100.00	1185.95	1140.72	A	0.258	2.415	0.604	1	1	28.729	3331.75	166.59	C
			B	0.37	2.127	0.64	1	1	39.600			
			C	0.534	1.859	0.716	1	1	60.601			
T4 100.00-80.00	1283.80	1485.02	A	0.232	2.492	0.598	1	1	33.128	3666.70	183.34	C
			B	0.32	2.244	0.622	1	1	43.589			
			C	0.48	1.927	0.688	1	1	68.140			
T5 80.00-60.00	1283.80	1986.33	A	0.227	2.509	0.596	1	1	40.112	3822.74	191.14	C
			B	0.298	2.302	0.615	1	1	50.172			
			C	0.428	2.012	0.663	1	1	73.117			
T6 60.00-40.00	1283.80	2680.91	A	0.224	2.517	0.596	1	1	46.525	3870.78	193.54	C
			B	0.284	2.338	0.611	1	1	56.569			
			C	0.394	2.076	0.649	1	1	78.985			
T7 40.00-20.00	1283.80	3829.48	A	0.194	2.617	0.589	1	1	45.652	3551.71	177.59	C
			B	0.247	2.446	0.601	1	1	55.650			
			C	0.344	2.185	0.63	1	1	77.537			
T8 20.00-0.00	1145.95	3948.61	A	0.173	2.69	0.585	1	1	46.573	3521.48	176.07	C
			B	0.208	2.57	0.592	1	1	53.792			
			C	0.279	2.352	0.61	1	1	71.429			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
Sum Weight:	8365.30	16284.35						OTM	1811253.14 lb-ft	25553.44		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	192.80	421.53	A	0.162	2.728	0.583	0.8	1	6.972	1217.85	121.79	C
150.00-140.00			B	0.157	2.747	0.583	0.8	1	6.786			
			C	0.44	1.99	0.669	0.8	1	19.124			
T2	705.40	791.76	A	0.253	2.428	0.603	0.8	1	21.747	2353.56	117.68	C
140.00-120.00			B	0.241	2.464	0.6	0.8	1	20.172			
			C	0.439	1.993	0.668	0.8	1	38.084			
T3	1185.95	1140.72	A	0.258	2.415	0.604	0.8	1	25.809	3169.17	158.46	C
120.00-100.00			B	0.37	2.127	0.64	0.8	1	36.980			
			C	0.534	1.859	0.716	0.8	1	57.643			
T4	1283.80	1485.02	A	0.232	2.492	0.598	0.8	1	29.723	3471.27	173.56	C
100.00-80.00			B	0.32	2.244	0.622	0.8	1	40.468			
			C	0.48	1.927	0.688	0.8	1	64.508			
T5	1283.80	1986.33	A	0.227	2.509	0.596	0.8	1	35.726	3586.97	179.35	C
80.00-60.00			B	0.298	2.302	0.615	0.8	1	46.109			
			C	0.428	2.012	0.663	0.8	1	68.608			
T6	1283.80	2680.91	A	0.224	2.517	0.596	0.8	1	41.649	3624.21	181.21	C
60.00-40.00			B	0.284	2.338	0.611	0.8	1	52.003			
			C	0.394	2.076	0.649	0.8	1	73.954			
T7	1283.80	3829.48	A	0.194	2.617	0.589	0.8	1	40.902	3320.27	166.01	C
40.00-20.00			B	0.247	2.446	0.601	0.8	1	51.156			
			C	0.344	2.185	0.63	0.8	1	72.485			
T8 20.00-0.00	1145.95	3948.61	A	0.173	2.69	0.585	0.8	1	41.382	3242.90	162.14	C
			B	0.208	2.57	0.592	0.8	1	48.788			
			C	0.279	2.352	0.61	0.8	1	65.778			
Sum Weight:	8365.30	16284.35						OTM	1707910.25 lb-ft	23986.20		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	192.80	421.53	A	0.162	2.728	0.583	0.85	1	7.222	1236.47	123.65	C
150.00-140.00			B	0.157	2.747	0.583	0.85	1	7.035			
			C	0.44	1.99	0.669	0.85	1	19.416			
T2	705.40	791.76	A	0.253	2.428	0.603	0.85	1	22.429	2389.16	119.46	C
140.00-120.00			B	0.241	2.464	0.6	0.85	1	20.702			
			C	0.439	1.993	0.668	0.85	1	38.660			
T3	1185.95	1140.72	A	0.258	2.415	0.604	0.85	1	26.539	3209.82	160.49	C
120.00-100.00			B	0.37	2.127	0.64	0.85	1	37.635			
			C	0.534	1.859	0.716	0.85	1	58.383			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T4	1283.80	1485.02	A	0.232	2.492	0.598	0.85	1	30.574	3520.13	176.01	C
100.00-80.00			B	0.32	2.244	0.622	0.85	1	41.248			
			C	0.48	1.927	0.688	0.85	1	65.416			
T5	1283.80	1986.33	A	0.227	2.509	0.596	0.85	1	36.823	3645.91	182.30	C
80.00-60.00			B	0.298	2.302	0.615	0.85	1	47.125			
			C	0.428	2.012	0.663	0.85	1	69.735			
T6	1283.80	2680.91	A	0.224	2.517	0.596	0.85	1	42.868	3685.85	184.29	C
60.00-40.00			B	0.284	2.338	0.611	0.85	1	53.145			
			C	0.394	2.076	0.649	0.85	1	75.211			
T7	1283.80	3829.48	A	0.194	2.617	0.589	0.85	1	42.089	3378.13	168.91	C
40.00-20.00			B	0.247	2.446	0.601	0.85	1	52.280			
			C	0.344	2.185	0.63	0.85	1	73.748			
T8 20.00-0.00	1145.95	3948.61	A	0.173	2.69	0.585	0.85	1	42.680	3312.54	165.63	C
			B	0.208	2.57	0.592	0.85	1	50.039			
			C	0.279	2.352	0.61	0.85	1	67.191			
Sum Weight:	8365.30	16284.35						OTM	1733745.97 lb-ft	24378.01		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	422.10	669.78	A	0.244	2.455	0.6	1	1	11.269	1361.04	136.10	C
150.00-140.00			B	0.226	2.511	0.596	1	1	10.541			
			C	0.625	1.791	0.769	1	1	31.672			
T2	1404.32	1268.88	A	0.365	2.137	0.638	1	1	34.622	2614.55	130.73	C
140.00-120.00			B	0.336	2.204	0.628	1	1	30.602			
			C	0.62	1.793	0.766	1	1	62.699			
T3	2380.97	1715.74	A	0.356	2.158	0.635	1	1	39.252	3993.96	199.70	C
120.00-100.00			B	0.5	1.9	0.697	1	1	55.929			
			C	0.762	1.793	0.866	1	1	100.461			
T4	2582.44	2166.64	A	0.31	2.27	0.619	1	1	43.355	4043.05	202.15	C
100.00-80.00			B	0.424	2.018	0.662	1	1	58.873			
			C	0.682	1.776	0.807	1	1	108.714			
T5	2582.44	2866.41	A	0.294	2.312	0.614	1	1	50.683	3869.33	193.47	C
80.00-60.00			B	0.387	2.091	0.646	1	1	65.289			
			C	0.596	1.806	0.751	1	1	109.911			
T6	2582.44	3721.00	A	0.284	2.34	0.611	1	1	57.606	3750.17	187.51	C
60.00-40.00			B	0.363	2.143	0.637	1	1	71.998			
			C	0.54	1.853	0.719	1	1	114.297			
T7	2582.44	4822.68	A	0.243	2.459	0.6	1	1	55.854	3362.50	168.12	C
40.00-20.00			B	0.314	2.26	0.62	1	1	70.033			
			C	0.472	1.938	0.684	1	1	110.337			
T8 20.00-0.00	2187.32	5006.11	A	0.215	2.546	0.594	1	1	56.309	3207.99	160.40	C
			B	0.261	2.406	0.605	1	1	66.131			
			C	0.376	2.113	0.642	1	1	96.591			
Sum Weight:	16724.46	22237.23						OTM	1931768.82 lb-ft	26202.59		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F lb	w plf	Ctrl. Face
T1	422.10	669.78	A	0.244	2.455	0.6	0.8	1	10.271	1312.85	131.28	C
150.00-140.00			B	0.226	2.511	0.596	0.8	1	9.542			
			C	0.625	1.791	0.769	0.8	1	30.551			
T2	1404.32	1268.88	A	0.365	2.137	0.638	0.8	1	31.782	2522.12	126.11	C
140.00-120.00			B	0.336	2.204	0.628	0.8	1	28.492			
			C	0.62	1.793	0.766	0.8	1	60.482			
T3	2380.97	1715.74	A	0.356	2.158	0.635	0.8	1	36.217	3874.86	193.74	C
120.00-100.00			B	0.5	1.9	0.697	0.8	1	53.327			
			C	0.762	1.793	0.866	0.8	1	97.465			
T4	2582.44	2166.64	A	0.31	2.27	0.619	0.8	1	39.830	3904.08	195.20	C
100.00-80.00			B	0.424	2.018	0.662	0.8	1	55.759			
			C	0.682	1.776	0.807	0.8	1	104.977			
T5	2582.44	2866.41	A	0.294	2.312	0.614	0.8	1	46.190	3709.44	185.47	C
80.00-60.00			B	0.387	2.091	0.646	0.8	1	61.262			
			C	0.596	1.806	0.751	0.8	1	105.370			
T6	2582.44	3721.00	A	0.284	2.34	0.611	0.8	1	52.618	3583.30	179.17	C
60.00-40.00			B	0.363	2.143	0.637	0.8	1	67.459			
			C	0.54	1.853	0.719	0.8	1	109.211			
T7	2582.44	4822.68	A	0.243	2.459	0.6	0.8	1	50.973	3203.67	160.18	C
40.00-20.00			B	0.314	2.26	0.62	0.8	1	65.523			
			C	0.472	1.938	0.684	0.8	1	105.125			
T8 20.00-0.00	2187.32	5006.11	A	0.215	2.546	0.594	0.8	1	50.968	3012.84	150.64	C
			B	0.261	2.406	0.605	0.8	1	61.059			
			C	0.376	2.113	0.642	0.8	1	90.715			
Sum Weight:	16724.46	22237.23						OTM	1860904.53 lb-ft	25123.16		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F lb	w plf	Ctrl. Face
T1	422.10	669.78	A	0.244	2.455	0.6	0.85	1	10.520	1324.89	132.49	C
150.00-140.00			B	0.226	2.511	0.596	0.85	1	9.792			
			C	0.625	1.791	0.769	0.85	1	30.831			
T2	1404.32	1268.88	A	0.365	2.137	0.638	0.85	1	32.492	2545.23	127.26	C
140.00-120.00			B	0.336	2.204	0.628	0.85	1	29.019			
			C	0.62	1.793	0.766	0.85	1	61.036			
T3	2380.97	1715.74	A	0.356	2.158	0.635	0.85	1	36.976	3904.64	195.23	C
120.00-100.00			B	0.5	1.9	0.697	0.85	1	53.977			
			C	0.762	1.793	0.866	0.85	1	98.214			
T4	2582.44	2166.64	A	0.31	2.27	0.619	0.85	1	40.711	3938.82	196.94	C
100.00-80.00			B	0.424	2.018	0.662	0.85	1	56.537			
			C	0.682	1.776	0.807	0.85	1	105.911			
T5	2582.44	2866.41	A	0.294	2.312	0.614	0.85	1	47.313	3749.41	187.47	C
80.00-60.00			B	0.387	2.091	0.646	0.85	1	62.269			
			C	0.596	1.806	0.751	0.85	1	106.505			
T6	2582.44	3721.00	A	0.284	2.34	0.611	0.85	1	53.865	3625.02	181.25	C
60.00-40.00			B	0.363	2.143	0.637	0.85	1	68.594			
			C	0.54	1.853	0.719	0.85	1	110.482			
T7	2582.44	4822.68	A	0.243	2.459	0.6	0.85	1	52.193	3243.38	162.17	C
40.00-20.00			B	0.314	2.26	0.62	0.85	1	66.651			
			C	0.472	1.938	0.684	0.85	1	106.428			
T8 20.00-0.00	2187.32	5006.11	A	0.215	2.546	0.594	0.85	1	52.303	3061.63	153.08	C

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
			B	0.261	2.406	0.605	0.85	1	62.327			
			C	0.376	2.113	0.642	0.85	1	92.184			
Sum Weight:	16724.46	22237.23						OTM	1878620.6 0 lb-ft	25393.02		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	192.80	421.53	A	0.162	2.728	0.583	1	1	7.970	643.92	64.39	C
150.00-140.00			B	0.157	2.747	0.583	1	1	7.784			
			C	0.44	1.99	0.669	1	1	20.293			
T2	705.40	791.76	A	0.253	2.428	0.603	1	1	24.477	1243.66	62.18	C
140.00-120.00			B	0.241	2.464	0.6	1	1	22.294			
			C	0.439	1.993	0.668	1	1	40.388			
T3	1185.95	1140.72	A	0.258	2.415	0.604	1	1	28.729	1660.11	83.01	C
120.00-100.00			B	0.37	2.127	0.64	1	1	39.600			
			C	0.534	1.859	0.716	1	1	60.601			
T4	1283.80	1485.02	A	0.232	2.492	0.598	1	1	33.128	1827.01	91.35	C
100.00-80.00			B	0.32	2.244	0.622	1	1	43.589			
			C	0.48	1.927	0.688	1	1	68.140			
T5	1283.80	1986.33	A	0.227	2.509	0.596	1	1	40.112	1904.76	95.24	C
80.00-60.00			B	0.298	2.302	0.615	1	1	50.172			
			C	0.428	2.012	0.663	1	1	73.117			
T6	1283.80	2680.91	A	0.224	2.517	0.596	1	1	46.525	1928.70	96.43	C
60.00-40.00			B	0.284	2.338	0.611	1	1	56.569			
			C	0.394	2.076	0.649	1	1	78.985			
T7	1283.80	3829.48	A	0.194	2.617	0.589	1	1	45.652	1769.71	88.49	C
40.00-20.00			B	0.247	2.446	0.601	1	1	55.650			
			C	0.344	2.185	0.63	1	1	77.537			
T8 20.00-0.00	1145.95	3948.61	A	0.173	2.69	0.585	1	1	46.573	1754.65	87.73	C
			B	0.208	2.57	0.592	1	1	53.792			
			C	0.279	2.352	0.61	1	1	71.429			
Sum Weight:	8365.30	16284.35						OTM	902492.91 lb-ft	12732.51		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1	192.80	421.53	A	0.162	2.728	0.583	0.8	1	6.972	606.82	60.68	C
150.00-140.00			B	0.157	2.747	0.583	0.8	1	6.786			
			C	0.44	1.99	0.669	0.8	1	19.124			
T2	705.40	791.76	A	0.253	2.428	0.603	0.8	1	21.747	1172.71	58.64	C
140.00-120.00			B	0.241	2.464	0.6	0.8	1	20.172			
			C	0.439	1.993	0.668	0.8	1	38.084			
T3	1185.95	1140.72	A	0.258	2.415	0.604	0.8	1	25.809	1579.10	78.96	C

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F lb	w plf	Ctrl. Face
120.00-100.00			B	0.37	2.127	0.64	0.8	1	36.980			
			C	0.534	1.859	0.716	0.8	1	57.643			
T4	1283.80	1485.02	A	0.232	2.492	0.598	0.8	1	29.723	1729.63	86.48	C
100.00-80.00			B	0.32	2.244	0.622	0.8	1	40.468			
			C	0.48	1.927	0.688	0.8	1	64.508			
T5	1283.80	1986.33	A	0.227	2.509	0.596	0.8	1	35.726	1787.28	89.36	C
80.00-60.00			B	0.298	2.302	0.615	0.8	1	46.109			
			C	0.428	2.012	0.663	0.8	1	68.608			
T6	1283.80	2680.91	A	0.224	2.517	0.596	0.8	1	41.649	1805.83	90.29	C
60.00-40.00			B	0.284	2.338	0.611	0.8	1	52.003			
			C	0.394	2.076	0.649	0.8	1	73.954			
T7	1283.80	3829.48	A	0.194	2.617	0.589	0.8	1	40.902	1654.39	82.72	C
40.00-20.00			B	0.247	2.446	0.601	0.8	1	51.156			
			C	0.344	2.185	0.63	0.8	1	72.485			
T8 20.00-0.00	1145.95	3948.61	A	0.173	2.69	0.585	0.8	1	41.382	1615.84	80.79	C
			B	0.208	2.57	0.592	0.8	1	48.788			
			C	0.279	2.352	0.61	0.8	1	65.778			
Sum Weight:	8365.30	16284.35						OTM	851000.26 lb-ft	11951.60		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F lb	w plf	Ctrl. Face
T1	192.80	421.53	A	0.162	2.728	0.583	0.85	1	7.222	616.09	61.61	C
150.00-140.00			B	0.157	2.747	0.583	0.85	1	7.035			
			C	0.44	1.99	0.669	0.85	1	19.416			
T2	705.40	791.76	A	0.253	2.428	0.603	0.85	1	22.429	1190.45	59.52	C
140.00-120.00			B	0.241	2.464	0.6	0.85	1	20.702			
			C	0.439	1.993	0.668	0.85	1	38.660			
T3	1185.95	1140.72	A	0.258	2.415	0.604	0.85	1	26.539	1599.36	79.97	C
120.00-100.00			B	0.37	2.127	0.64	0.85	1	37.635			
			C	0.534	1.859	0.716	0.85	1	58.383			
T4	1283.80	1485.02	A	0.232	2.492	0.598	0.85	1	30.574	1753.98	87.70	C
100.00-80.00			B	0.32	2.244	0.622	0.85	1	41.248			
			C	0.48	1.927	0.688	0.85	1	65.416			
T5	1283.80	1986.33	A	0.227	2.509	0.596	0.85	1	36.823	1816.65	90.83	C
80.00-60.00			B	0.298	2.302	0.615	0.85	1	47.125			
			C	0.428	2.012	0.663	0.85	1	69.735			
T6	1283.80	2680.91	A	0.224	2.517	0.596	0.85	1	42.868	1836.55	91.83	C
60.00-40.00			B	0.284	2.338	0.611	0.85	1	53.145			
			C	0.394	2.076	0.649	0.85	1	75.211			
T7	1283.80	3829.48	A	0.194	2.617	0.589	0.85	1	42.089	1683.22	84.16	C
40.00-20.00			B	0.247	2.446	0.601	0.85	1	52.280			
			C	0.344	2.185	0.63	0.85	1	73.748			
T8 20.00-0.00	1145.95	3948.61	A	0.173	2.69	0.585	0.85	1	42.680	1650.54	82.53	C
			B	0.208	2.57	0.592	0.85	1	50.039			
			C	0.279	2.352	0.61	0.85	1	67.191			
Sum Weight:	8365.30	16284.35						OTM	863873.43 lb-ft	12146.83		

Force Totals

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x lb-ft	Sum of Overturning Moments, M_z lb-ft	Sum of Torques lb-ft
Leg Weight	10129.62					
Bracing Weight	6154.73					
Total Member Self-Weight	16284.35			10380.59	2908.39	
Total Weight	30604.35			10380.59	2908.39	
Wind 0 deg - No Ice		151.48	-37594.79	-3383769.81	-12482.01	2672.45
Wind 30 deg - No Ice		18283.42	-31615.83	-2869611.91	-1660600.77	7923.02
Wind 60 deg - No Ice		31177.00	-18144.96	-1648351.65	-2840609.19	11133.73
Wind 90 deg - No Ice		36304.46	-151.48	-5009.81	-3297452.96	11703.44
Wind 120 deg - No Ice		32382.79	18666.21	1694127.31	-2914716.36	9251.71
Wind 150 deg - No Ice		18021.04	31464.34	2874982.69	-1633943.81	3780.42
Wind 180 deg - No Ice		-151.48	36027.54	3301188.10	18298.79	-2298.16
Wind 210 deg - No Ice		-18283.42	31615.83	2890373.09	1666417.54	-7923.02
Wind 240 deg - No Ice		-32534.28	18928.58	1720784.26	2935923.53	-11924.16
Wind 270 deg - No Ice		-36304.46	151.48	25770.99	3303269.74	-11703.44
Wind 300 deg - No Ice		-31025.52	-17882.58	-1621694.69	2831035.57	-8835.57
Wind 330 deg - No Ice		-18021.04	-31464.34	-2854221.51	1639760.58	-3780.42
Member Ice	5952.88					
Total Weight Ice	48240.09			22736.31	2308.42	
Wind 0 deg - Ice		-6.98	-37894.84	-3451125.00	4662.34	316.98
Wind 30 deg - Ice		18493.81	-32113.30	-2938511.17	-1699907.30	6843.70
Wind 60 deg - Ice		31805.49	-18401.66	-1676723.65	-2933027.04	11539.96
Wind 90 deg - Ice		36999.70	6.98	25090.23	-3406200.12	13394.75
Wind 120 deg - Ice		32747.28	18953.46	1761705.52	-2996751.23	11801.82
Wind 150 deg - Ice		18505.89	32120.27	2986337.71	-1703984.40	6551.05
Wind 180 deg - Ice		6.98	36815.41	3425733.34	-45.49	-119.62
Wind 210 deg - Ice		-18493.81	32113.30	2983983.79	1704524.14	-6843.70
Wind 240 deg - Ice		-32740.31	18941.38	1757628.41	2999014.16	-12118.81
Wind 270 deg - Ice		-36999.70	-6.98	20382.39	3410816.97	-13394.75
Wind 300 deg - Ice		-31812.47	-18413.75	-1680800.75	2939997.80	-11420.34
Wind 330 deg - Ice		-18505.89	-32120.27	-2940865.09	1708601.25	-6551.05
Total Weight	30604.35			10380.59	2908.39	
Wind 0 deg - Service		75.48	-18732.35	-1691327.42	-5461.09	1331.60
Wind 30 deg - Service		9110.08	-15753.22	-1435138.02	-826669.05	3947.80
Wind 60 deg - Service		15534.56	-9041.09	-826620.79	-1414631.72	5547.60
Wind 90 deg - Service		18089.42	-75.48	-7793.03	-1642263.22	5831.47
Wind 120 deg - Service		16135.37	9300.81	838835.85	-1451557.09	4609.85
Wind 150 deg - Service		8979.34	15677.74	1427220.54	-813386.69	1883.67
Wind 180 deg - Service		-75.48	17951.44	1639585.87	9876.06	-1145.10
Wind 210 deg - Service		-9110.08	15753.22	1434889.11	831084.02	-3947.80
Wind 240 deg - Service		-16210.85	9431.54	852118.21	1463640.64	-5941.45
Wind 270 deg - Service		-18089.42	75.48	7544.12	1646678.20	-5831.47
Wind 300 deg - Service		-15459.08	-8910.35	-813338.44	1411378.12	-4402.50
Wind 330 deg - Service		-8979.34	-15677.74	-1427469.45	817801.66	-1883.67

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice

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

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Leg C	Max. Vert	23	240034.45	18328.99	-10116.35
	Max. H_x	10	229119.80	20044.21	-11134.99
	Max. H_z	17	-201591.19	-20549.81	11453.49
	Min. Vert	17	-201591.19	-20549.81	11453.49
	Min. H_x	17	-201591.19	-20549.81	11453.49
	Min. H_z	10	229119.80	20044.21	-11134.99
Leg B	Max. Vert	19	240039.80	-18331.64	-10123.52
	Max. H_x	25	-202112.54	20561.17	11465.20
	Max. H_z	25	-202112.54	20561.17	11465.20
	Min. Vert	25	-202112.54	20561.17	11465.20
	Min. H_x	6	227081.18	-19867.49	-11114.74
	Min. H_z	6	227081.18	-19867.49	-11114.74
Leg A	Max. Vert	15	238430.22	4.88	20935.73
	Max. H_x	11	8541.80	2279.16	611.06
	Max. H_z	2	227884.72	70.89	22882.19
	Min. Vert	21	-204638.32	-4.49	-23615.29
	Min. H_x	5	10521.22	-2285.38	794.86
	Min. H_z	21	-204638.32	-4.49	-23615.29

Tower Mast Reaction Summary

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 Only	30604.35	-0.00	0.00	10380.70	2907.54	-0.00
Dead+Wind 0 deg - No Ice	30604.35	151.48	-37594.41	-3393346.28	-12512.08	2652.67
Dead+Wind 30 deg - No Ice	30604.35	18283.21	-31615.50	-2877766.90	-1665334.16	7931.72
Dead+Wind 60 deg - No Ice	30604.35	31176.65	-18144.76	-1653019.93	-2848712.93	11163.29
Dead+Wind 90 deg - No Ice	30604.35	36304.07	-151.47	-4984.69	-3306830.64	11746.45
Dead+Wind 120 deg - No Ice	30604.35	32382.47	18666.02	1698952.15	-2922944.57	9302.49
Dead+Wind 150 deg - No Ice	30604.35	18020.86	31464.00	2883172.01	-1638577.02	3823.56
Dead+Wind 180 deg - No Ice	30604.35	-151.48	36027.14	3310592.06	18349.56	-2278.17
Dead+Wind 210 deg - No Ice	30604.35	-18283.24	31615.48	2898599.43	1671140.65	-7931.58
Dead+Wind 240 deg - No Ice	30604.35	-32533.95	18928.39	1725674.59	2944211.66	-11955.12
Dead+Wind 270 deg - No Ice	30604.35	-36304.07	151.50	25871.36	3312668.87	-11747.16
Dead+Wind 300 deg - No Ice	30604.35	-31025.17	-17882.38	-1626298.19	2839121.97	-8885.09
Dead+Wind 330 deg - No Ice	30604.35	-18020.83	-31464.02	-2862339.89	1644446.99	-3822.92
Dead+Ice+Temp	48240.09	0.00	-0.00	22751.91	2308.80	-0.06
Dead+Wind 0 deg+Ice+Temp	48240.09	-6.97	-37894.23	-3466096.45	4700.71	300.88
Dead+Wind 30 deg+Ice+Temp	48240.09	18493.47	-32112.76	-2951295.33	-1707308.25	6883.92
Dead+Wind 60 deg+Ice+Temp	48240.09	31804.92	-18401.34	-1684008.80	-2945818.97	11617.84
Dead+Wind 90 deg+Ice+Temp	48240.09	36999.07	7.00	25236.78	-3421020.17	13493.52
Dead+Wind 120 deg+Ice+Temp	48240.09	32746.75	18953.15	1769375.86	-3009726.30	11899.01
Dead+Wind 150 deg+Ice+Temp	48240.09	18505.60	32119.70	2999338.53	-1711376.54	6618.69
Dead+Wind 180 deg+Ice+Temp	48240.09	6.98	36814.76	3440658.54	-39.47	-104.21
Dead+Wind 210 deg+Ice+Temp	48240.09	-18493.52	32112.72	2996960.77	1711928.16	-6884.13
Dead+Wind 240 deg+Ice+Temp	48240.09	-32739.77	18941.07	1765263.10	3012004.37	-12200.00
Dead+Wind 270 deg+Ice+Temp	48240.09	-36999.07	-6.95	20496.20	3425664.03	-13493.50
Dead+Wind 300 deg+Ice+Temp	48240.09	-31811.89	-18413.42	-1688106.35	2952837.54	-11513.86
Dead+Wind 330 deg+Ice+Temp	48240.09	-18505.55	-32119.74	-2953657.68	1716070.91	-6618.53
Dead+Wind 0 deg - Service	30604.35	75.48	-18732.16	-1685613.09	-4769.32	1321.71
Dead+Wind 30 deg - Service	30604.35	9109.97	-15753.05	-1428709.11	-828332.19	3948.47
Dead+Wind 60 deg - Service	30604.35	15534.39	-9040.99	-818446.84	-1417979.73	5562.32
Dead+Wind 90 deg - Service	30604.35	18089.22	-75.48	2727.75	-1646257.11	5857.80
Dead+Wind 120 deg - Service	30604.35	16135.20	9300.71	851767.41	-1454982.47	4635.46
Dead+Wind 150 deg - Service	30604.35	8979.25	15677.56	1441842.38	-815005.64	1901.25
Dead+Wind 180 deg - Service	30604.35	-75.48	17951.24	1654814.36	10607.87	-1135.20
Dead+Wind 210 deg - Service	30604.35	-9109.98	15753.04	1449529.77	834161.21	-3948.48
Dead+Wind 240 deg - Service	30604.35	-16210.68	9431.44	865082.42	1468509.62	-5957.19
Dead+Wind 270 deg - Service	30604.35	-18089.22	75.48	18102.58	1652095.93	-5857.91
Dead+Wind 300 deg - Service	30604.35	-15458.91	-8910.25	-805132.01	1416130.27	-4427.12
Dead+Wind 330 deg - Service	30604.35	-8979.24	-15677.57	-1421021.87	820854.18	-1901.10

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	lb	lb	lb	lb	lb	lb	
1	-0.00	-30604.35	-0.00	0.00	30604.35	-0.00	0.000%
2	151.48	-30604.35	-37594.79	-151.48	30604.35	37594.41	0.001%
3	18283.42	-30604.35	-31615.83	-18283.21	30604.35	31615.50	0.001%
4	31177.00	-30604.35	-18144.96	-31176.65	30604.35	18144.76	0.001%
5	36304.46	-30604.35	-151.48	-36304.07	30604.35	151.47	0.001%
6	32382.79	-30604.35	18666.21	-32382.47	30604.35	-18666.02	0.001%
7	18021.04	-30604.35	31464.34	-18020.86	30604.35	-31464.00	0.001%
8	-151.48	-30604.35	36027.54	151.48	30604.35	-36027.14	0.001%

Load Comb.	Sum of Applied Forces PX lb	PY lb	PZ lb	Sum of Reactions PX lb	PY lb	PZ lb	% Error
9	-18283.42	-30604.35	31615.83	18283.24	30604.35	-31615.48	0.001%
10	-32534.28	-30604.35	18928.58	32533.95	30604.35	-18928.39	0.001%
11	-36304.46	-30604.35	151.48	36304.07	30604.35	-151.50	0.001%
12	-31025.52	-30604.35	-17882.58	31025.17	30604.35	17882.38	0.001%
13	-18021.04	-30604.35	-31464.34	18020.83	30604.35	31464.02	0.001%
14	-0.00	-48240.09	-0.00	-0.00	48240.09	0.00	0.000%
15	-6.98	-48240.09	-37894.84	6.97	48240.09	37894.23	0.001%
16	18493.81	-48240.09	-32113.30	-18493.47	48240.09	32112.76	0.001%
17	31805.49	-48240.09	-18401.66	-31804.92	48240.09	18401.34	0.001%
18	36999.70	-48240.09	6.98	-36999.07	48240.09	-7.00	0.001%
19	32747.28	-48240.09	18953.46	-32746.75	48240.09	-18953.15	0.001%
20	18505.89	-48240.09	32120.27	-18505.60	48240.09	-32119.70	0.001%
21	6.98	-48240.09	36815.41	-6.98	48240.09	-36814.76	0.001%
22	-18493.81	-48240.09	32113.30	18493.52	48240.09	-32112.72	0.001%
23	-32740.31	-48240.09	18941.38	32739.77	48240.09	-18941.07	0.001%
24	-36999.70	-48240.09	-6.98	36999.07	48240.09	6.95	0.001%
25	-31812.47	-48240.09	-18413.75	31811.89	48240.09	18413.42	0.001%
26	-18505.89	-48240.09	-32120.27	18505.55	48240.09	32119.74	0.001%
27	75.48	-30604.35	-18732.35	-75.48	30604.35	18732.16	0.001%
28	9110.08	-30604.35	-15753.22	-9109.97	30604.35	15753.05	0.001%
29	15534.56	-30604.35	-9041.09	-15534.39	30604.35	9040.99	0.001%
30	18089.42	-30604.35	-75.48	-18089.22	30604.35	75.48	0.001%
31	16135.37	-30604.35	9300.81	-16135.20	30604.35	-9300.71	0.001%
32	8979.34	-30604.35	15677.74	-8979.25	30604.35	-15677.56	0.001%
33	-75.48	-30604.35	17951.44	75.48	30604.35	-17951.24	0.001%
34	-9110.08	-30604.35	15753.22	9109.98	30604.35	-15753.04	0.001%
35	-16210.85	-30604.35	9431.54	16210.68	30604.35	-9431.44	0.001%
36	-18089.42	-30604.35	75.48	18089.22	30604.35	-75.48	0.001%
37	-15459.08	-30604.35	-8910.35	15458.91	30604.35	8910.25	0.001%
38	-8979.34	-30604.35	-15677.74	8979.24	30604.35	15677.57	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00008635
3	Yes	4	0.00000001	0.00008948
4	Yes	4	0.00000001	0.00009246
5	Yes	4	0.00000001	0.00008971
6	Yes	4	0.00000001	0.00008647
7	Yes	4	0.00000001	0.00008973
8	Yes	4	0.00000001	0.00009251
9	Yes	4	0.00000001	0.00008946
10	Yes	4	0.00000001	0.00008626
11	Yes	4	0.00000001	0.00008961
12	Yes	4	0.00000001	0.00009259
13	Yes	4	0.00000001	0.00008966
14	Yes	4	0.00000001	0.00000001
15	Yes	4	0.00000001	0.00014625
16	Yes	4	0.00000001	0.00014974
17	Yes	4	0.00000001	0.00015306
18	Yes	4	0.00000001	0.00014985
19	Yes	4	0.00000001	0.00014629
20	Yes	4	0.00000001	0.00014985
21	Yes	4	0.00000001	0.00015340

22	Yes	4	0.00000001	0.00014975
23	Yes	4	0.00000001	0.00014622
24	Yes	4	0.00000001	0.00014986
25	Yes	4	0.00000001	0.00015313
26	Yes	4	0.00000001	0.00014986
27	Yes	4	0.00000001	0.00008914
28	Yes	4	0.00000001	0.00009071
29	Yes	4	0.00000001	0.00009219
30	Yes	4	0.00000001	0.00009080
31	Yes	4	0.00000001	0.00008920
32	Yes	4	0.00000001	0.00009091
33	Yes	4	0.00000001	0.00009230
34	Yes	4	0.00000001	0.00009075
35	Yes	4	0.00000001	0.00008909
36	Yes	4	0.00000001	0.00009081
37	Yes	4	0.00000001	0.00009237
38	Yes	4	0.00000001	0.00009089

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	150 - 140	6.433	35	0.4180	0.0539
T2	140 - 120	5.511	35	0.4133	0.0500
T3	120 - 100	3.785	35	0.3442	0.0362
T4	100 - 80	2.415	35	0.2585	0.0235
T5	80 - 60	1.430	35	0.1771	0.0161
T6	60 - 40	0.774	35	0.1087	0.0106
T7	40 - 20	0.353	35	0.0623	0.0056
T8	20 - 0	0.113	35	0.0312	0.0027

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	Nudd 12' boom	35	6.433	0.4180	0.0539	98503
140.00	KMW ET-X-TU-42-15-37-18-IR-RA	35	5.511	0.4133	0.0500	46739
127.50	Nudd 12' boom	35	4.401	0.3763	0.0419	16114
122.28	RFS DB-T1-6Z-8AB-0Z	35	3.967	0.3542	0.0379	12661
117.07	RFS DB-T1-6Z-8AB-0Z	35	3.559	0.3314	0.0340	11662
115.00	Powerwave 7770.00	35	3.405	0.3225	0.0326	11743
111.85	RFS DB-T1-6Z-8AB-0Z	35	3.179	0.3089	0.0304	11902
106.64	RFS DB-T1-6Z-8AB-0Z	35	2.826	0.2866	0.0271	12099
101.42	RFS DB-T1-6Z-8AB-0Z	35	2.500	0.2645	0.0242	12314
96.20	RFS DB-T1-6Z-8AB-0Z	35	2.200	0.2426	0.0217	12659
90.99	RFS DB-T1-6Z-8AB-0Z	35	1.926	0.2209	0.0196	13094
85.77	RFS DB-T1-6Z-8AB-0Z	35	1.678	0.1997	0.0178	13560
80.56	RFS DB-T1-6Z-8AB-0Z	35	1.453	0.1792	0.0162	14143
75.34	RFS DB-T1-6Z-8AB-0Z	35	1.251	0.1595	0.0147	15341
70.13	RFS DB-T1-6Z-8AB-0Z	35	1.071	0.1409	0.0133	16992
64.91	RFS DB-T1-6Z-8AB-0Z	35	0.910	0.1236	0.0119	19041
59.69	RFS DB-T1-6Z-8AB-0Z	35	0.766	0.1078	0.0105	21306
54.48	RFS DB-T1-6Z-8AB-0Z	35	0.637	0.0937	0.0091	22721

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
49.26	RFS DB-T1-6Z-8AB-0Z	35	0.523	0.0811	0.0077	24036
44.05	RFS DB-T1-6Z-8AB-0Z	35	0.422	0.0700	0.0065	25511
38.83	RFS DB-T1-6Z-8AB-0Z	35	0.334	0.0602	0.0054	27045
33.61	RFS DB-T1-6Z-8AB-0Z	35	0.258	0.0515	0.0045	28455
28.40	RFS DB-T1-6Z-8AB-0Z	35	0.194	0.0436	0.0038	29981
23.18	RFS DB-T1-6Z-8AB-0Z	35	0.140	0.0359	0.0031	31727
17.97	RFS DB-T1-6Z-8AB-0Z	35	0.097	0.0282	0.0025	36805
12.75	RFS DB-T1-6Z-8AB-0Z	35	0.063	0.0202	0.0018	51472

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	150 - 140	13.189	19	0.8581	0.1141
T2	140 - 120	11.297	19	0.8480	0.1064
T3	120 - 100	7.765	23	0.7038	0.0800
T4	100 - 80	4.964	19	0.5299	0.0535
T5	80 - 60	2.940	19	0.3639	0.0370
T6	60 - 40	1.588	19	0.2236	0.0246
T7	40 - 20	0.721	19	0.1282	0.0130
T8	20 - 0	0.228	19	0.0642	0.0063

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	Nudd 12' boom	19	13.189	0.8581	0.1141	45102
140.00	KMW ET-X-TU-42-15-37-18-IR-RA	19	11.297	0.8480	0.1064	21631
127.50	Nudd 12' boom	23	9.024	0.7700	0.0907	7809
122.28	RFS DB-T1-6Z-8AB-0Z	23	8.137	0.7243	0.0829	6173
117.07	RFS DB-T1-6Z-8AB-0Z	23	7.303	0.6777	0.0763	5702
115.00	Powerwave 7770.00	23	6.988	0.6595	0.0736	5745
111.85	RFS DB-T1-6Z-8AB-0Z	23	6.525	0.6319	0.0693	5835
106.64	RFS DB-T1-6Z-8AB-0Z	23	5.803	0.5868	0.0621	5985
101.42	RFS DB-T1-6Z-8AB-0Z	19	5.136	0.5420	0.0552	6121
96.20	RFS DB-T1-6Z-8AB-0Z	19	4.523	0.4975	0.0496	6282
90.99	RFS DB-T1-6Z-8AB-0Z	19	3.961	0.4534	0.0450	6463
85.77	RFS DB-T1-6Z-8AB-0Z	19	3.449	0.4102	0.0410	6655
80.56	RFS DB-T1-6Z-8AB-0Z	19	2.987	0.3683	0.0374	6898
75.34	RFS DB-T1-6Z-8AB-0Z	19	2.571	0.3280	0.0340	7464
70.13	RFS DB-T1-6Z-8AB-0Z	19	2.200	0.2898	0.0308	8259
64.91	RFS DB-T1-6Z-8AB-0Z	19	1.868	0.2543	0.0276	9243
59.69	RFS DB-T1-6Z-8AB-0Z	19	1.571	0.2218	0.0244	10324
54.48	RFS DB-T1-6Z-8AB-0Z	19	1.306	0.1928	0.0211	11006
49.26	RFS DB-T1-6Z-8AB-0Z	19	1.071	0.1669	0.0179	11640
44.05	RFS DB-T1-6Z-8AB-0Z	19	0.863	0.1441	0.0150	12349
38.83	RFS DB-T1-6Z-8AB-0Z	19	0.682	0.1239	0.0125	13082
33.61	RFS DB-T1-6Z-8AB-0Z	19	0.527	0.1060	0.0104	13752
28.40	RFS DB-T1-6Z-8AB-0Z	19	0.394	0.0896	0.0087	14474

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
23.18	RFS DB-T1-6Z-8AB-0Z	19	0.285	0.0738	0.0072	15300
17.97	RFS DB-T1-6Z-8AB-0Z	15	0.196	0.0579	0.0057	17735
12.75	RFS DB-T1-6Z-8AB-0Z	15	0.127	0.0415	0.0041	24802

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	150	Leg	A325N	0.7500	4	1372.68	19417.40	0.071 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.5000	1	1957.90	4123.34	0.475 ✔	1.333	Bolt Shear
T2	140	Leg	A325N	1.0000	4	9474.10	34419.20	0.275 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.6250	1	6237.23	6117.19	1.020 ✔	1.333	Member Bearing
T3	120	Leg	A325N	1.0000	6	12510.90	34502.70	0.363 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.6250	1	5934.12	6117.19	0.970 ✔	1.333	Member Bearing
T4	100	Leg	A325N	1.0000	8	13402.30	34515.80	0.388 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.6250	1	6432.75	6117.19	1.052 ✔	1.333	Member Bearing
T5	80	Leg	A325N	1.2500	8	16908.30	53964.60	0.313 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.6250	1	6598.16	6117.19	1.079 ✔	1.333	Member Bearing
T6	60	Leg	A325N	1.2500	8	20098.20	53956.50	0.372 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.6250	1	7157.27	6117.19	1.170 ✔	1.333	Member Bearing
T7	40	Leg	A325N	1.2500	8	23008.00	53940.70	0.427 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.7500	1	8376.87	9062.50	0.924 ✔	1.333	Member Bearing
T8	20	Leg	F1554-36	1.5000	8	25713.70	33823.20	0.760 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.7500	1	9607.45	9062.50	1.060 ✔	1.333	Member Bearing

Compression Checks

Leg 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	150 - 140	P2.5x.203	10.00	0.67	8.4 K=1.00	31.707	1.7040	-7455.12	54030.80	0.138 ✔
T2	140 - 120	P2.5x.203	20.00	4.67	59.1 K=1.00	24.270	1.7040	-38790.90	41357.70	0.938 ✔
T3	120 - 100	P4x.237	20.03	4.67	37.2 K=1.00	28.107	3.1741	-81243.10	89211.40	0.911 ✔

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	100 - 80	P5x.258	20.03	6.26	40.0 K=1.00	27.658	4.2999	-122370.00	118925.00	1.029 ✔
T5	80 - 60	P6x.28	20.03	6.26	33.5 K=1.00	28.667	5.5813	-154585.00	160002.00	0.966 ✔
T6	60 - 40	P8x.322	20.03	6.26	25.6 K=1.00	29.771	8.3993	-184906.00	250055.00	0.739 ✔
T7	40 - 20	P8x.5	20.03	9.35	39.0 K=1.00	27.821	12.7627	-207205.00	355075.00	0.584 ✔
T8	20 - 0	P8x.5	20.03	9.35	39.0 K=1.00	27.821	12.7627	-235095.00	355075.00	0.662 ✔

Diagonal 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	150 - 140	L1 1/2x1 1/2x3/16	7.40	3.42	139.8 K=1.00	7.641	0.5273	-1892.93	4029.59	0.470 ✔
T2	140 - 120	L2x2x3/16	7.60	3.51	110.3 K=1.03	11.637	0.7150	-6219.35	8320.76	0.747 ✔
T3	120 - 100	L2x2x3/16	9.00	4.28	130.5 K=1.00	8.771	0.7150	-5885.60	6271.25	0.939 ✔
T4	100 - 80	L2 1/2x2 1/2x3/16	11.48	5.51	133.7 K=1.00	8.359	0.9020	-6362.04	7540.03	0.844 ✔
T5	80 - 60	L3x3x3/16	13.20	6.33	127.4 K=1.00	9.196	1.0900	-6553.26	10023.70	0.654 ✔
T6	60 - 40	L3x3x3/16	14.99	7.14	143.7 K=1.00	7.232	1.0900	-6803.76	7883.35	0.863 ✔
T7	40 - 20	L3 1/2x3 1/2x1/4	17.27	8.35	144.4 K=1.00	7.165	1.6900	-8179.08	12109.70	0.675 ✔
T8	20 - 0	L3 1/2x3 1/2x1/4	18.99	9.21	159.2 K=1.00	5.890	1.6900	-9053.64	9954.30	0.910 ✔

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	150 - 140	L3x3x1/4	6.00	5.76	118.4 K=1.01	10.513	1.4400	-440.81	15138.80	0.029 ✔

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 $\frac{P}{P_a}$
T1	150 - 140	P2.5x.203	10.00	0.67	8.4	32.400	1.7040	5490.71	55211.20	0.099 ✔
T2	140 - 120	P2.5x.203	20.00	0.67	8.4	32.400	1.7040	37896.40	55211.20	0.686 ✔
T3	120 - 100	P4x.237	20.03	0.67	5.3	32.400	3.1741	75065.50	102839.00	0.730 ✔
T4	100 - 80	P5x.258	20.03	0.63	4.0	32.400	4.2999	107218.00	139316.00	0.770 ✔
T5	80 - 60	P6x.28	20.03	0.63	3.3	32.400	5.5813	135267.00	180836.00	0.748 ✔
T6	60 - 40	P8x.322	20.03	0.63	2.6	32.400	8.3993	160786.00	272136.00	0.591 ✔
T7	40 - 20	P8x.5	20.03	0.67	2.8	32.400	12.7627	184064.00	413512.00	0.445 ✔
T8	20 - 0	P8x.5	20.03	0.67	2.8	32.400	12.7627	205710.00	413512.00	0.497 ✔

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	150 - 140	L1 1/2x1 1/2x3/16	7.40	3.42	93.4	29.000	0.3076	1957.90	8920.90	0.219 ✔
T2	140 - 120	L2x2x3/16	7.60	3.51	71.0	29.000	0.4308	6237.23	12492.70	0.499 ✔
T3	120 - 100	L2x2x3/16	9.00	4.28	86.0	29.000	0.4308	5934.12	12492.70	0.475 ✔
T4	100 - 80	L2 1/2x2 1/2x3/16	10.45	5.01	79.3	29.000	0.5710	6432.75	16559.90	0.388 ✔
T5	80 - 60	L3x3x3/16	12.11	5.79	75.7	29.000	0.7120	6598.16	20648.90	0.320 ✔
T6	60 - 40	L3x3x3/16	14.99	7.14	92.9	29.000	0.7120	7157.27	20648.90	0.347 ✔
T7	40 - 20	L3 1/2x3 1/2x1/4	18.07	8.74	97.8	29.000	1.1034	8376.87	31999.70	0.262 ✔
T8	20 - 0	L3 1/2x3 1/2x1/4	19.81	9.61	107.4	29.000	1.1034	9607.45	31999.70	0.300 ✔

Top 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 $\frac{P}{P_a}$
T1	150 - 140	L3x3x1/4	6.00	5.76	74.3	21.600	1.4400	406.48	31104.00	0.013

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 $\frac{P}{P_a}$
										✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P_{allow} lb	% Capacity	Pass Fail
T1	150 - 140	Leg	P2.5x.203	2	-7455.12	72023.05	10.4	Pass
		Diagonal	L1 1/2x1 1/2x3/16	7	-1892.93	5371.44	35.2	Pass
							35.6 (b)	
		Top Girt	L3x3x1/4	4	-440.81	20180.02	2.2	Pass
T2	140 - 120	Leg	P2.5x.203	20	-38790.90	55129.81	70.4	Pass
		Diagonal	L2x2x3/16	22	-6219.35	11091.57	56.1	Pass
							76.5 (b)	
T3	120 - 100	Leg	P4x.237	46	-81243.10	118918.79	68.3	Pass
		Diagonal	L2x2x3/16	50	-5885.60	8359.58	70.4	Pass
							72.8 (b)	
T4	100 - 80	Leg	P5x.258	73	-122370.00	158527.02	77.2	Pass
		Diagonal	L2 1/2x2 1/2x3/16	77	-6362.04	10050.86	63.3	Pass
							78.9 (b)	
T5	80 - 60	Leg	P6x.28	94	-154585.00	213282.66	72.5	Pass
		Diagonal	L3x3x3/16	98	-6553.26	13361.59	49.0	Pass
							80.9 (b)	
T6	60 - 40	Leg	P8x.322	116	-184906.00	333323.30	55.5	Pass
		Diagonal	L3x3x3/16	119	-6803.76	10508.51	64.7	Pass
							87.8 (b)	
T7	40 - 20	Leg	P8x.5	137	-207205.00	473314.96	43.8	Pass
		Diagonal	L3 1/2x3 1/2x1/4	146	-8179.08	16142.23	50.7	Pass
							69.3 (b)	
T8	20 - 0	Leg	P8x.5	152	-235095.00	473314.96	49.7	Pass
							57.0 (b)	
		Diagonal	L3 1/2x3 1/2x1/4	161	-9053.64	13269.08	68.2	Pass
							79.5 (b)	
							Summary	
						Leg (T4)	77.2	Pass
						Diagonal (T6)	87.8	Pass
						Top Girt (T1)	2.2	Pass
						Bolt Checks	87.8	Pass
						RATING =	**87.8**	**Pass**

Site Name:	**Norwich, CT**
Client:	**CDT**
Project Number:	**216-23095**
Date:	**7/29/2016**

Design Base Loads (Unfactored)

Moment (Overturning) (M_u):	0.0	k-ft
Shear/Leg (V_u):	23.6	k
Compression/Leg (P_u):	240.0	k
Uplift/Leg (T_u):	204.6	k
Tower Type (GT / SST / MP):	SST	

Diameter of Caisson (d):	3.5	ft
Length of Caisson (l):	4.3	ft
Caisson Height Above Ground (h):	0.5	ft
Depth Below Ground Surface to Water Table (w):	100.0	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Soil:	135.0	pcf
Unit Weight of Water:	62.4	pcf
Ultimate Compressive Bearing Pressure:	60000	psf
Capacity Increase (Due to Transient Loads):	1.00	
Pullout Angle:	30.0	degrees
Rod Diameter:	1.00	in
Rod Ultimate Strength:	150	ksi
Rod Net Area:	0.85	in^2
Number of Rods:	5	
Diameter of Cored Hole:	3.00	in
Ultimate Grout / Rock Interface Bond Strength:	250	psi
Rod Embedment Length:	78	in
Rod Exposure Above Lock Off Nut in Foundation:	60	in
Rod Embedment Circle:	26	in
Free Stress Length:	150	in
Lock Off Load:	89	k
Volume of Concrete:	41.7	ft^3
Weight of Concrete (Buoyancy Effect Considered):	6.3	k
Compressive Bearing Resistance:	577.3	k
Pullout Weight:	711.9	k
Rod Bond Strength:	918.9	k
Williams Rod Strength:	637.5	k
Maximum Lock Off Load:	95.6	k > Design Lock Off Load, OK
Nominal Uplift Capacity per Leg (Factor of Safety ≥ 2.0):	318.8	k
Nominal Compressive Capacity per Leg (Factor of Safety ≥ 2.0):	288.6	k
T_u:	204.6	k
P_u:	240.7	k
$T_u/T_{Allowable}$:	0.64	Result: OK
$P_u/P_{Allowable}$:	0.83	Result: OK

Lateral Capacity

Depth (ft) Top	Depth (ft) Bottom	Ultimate Lateral Bearing Pressure (psf)	Increment (psf/ft)	γ_{Soil} (pcf)	Cohesion (psf)	ϕ (degree)
0.0	0.5	0.0	100.0	100	0	0
0.5	1.0	47.9	100.0	100	0	0
1.0	1.5	100.0	100.0	100	0	0
1.5	2.5	41636.6	567.5	135	10000	38
2.5	3.0	42204.1	567.5	135	10000	38
3.0	3.5	42274.6	567.5	135	10000	38
3.5	3.9	42327.6	567.5	135	10000	38
3.9	3.8	42389.4	567.5	135	10000	38

Total Lateral Resistance:	461.1	k	
Inflection Point (Below Ground Surface):	3.8	ft	
Design Overturning Moment At Inflection Point (M_{uip}):	102.3	k-ft	
Nominal Moment Capacity per Leg (Factor of Safety ≥ 2.0):	206.9	k-ft	
$M_{uip}/M_{Allowable}$:	0.49	Result:	OK

Caisson Strength Capacity

Concrete Compressive Strength (f'_c):	3000	psi	
Vertical Steel Rebar Size #:	6		
# of Vertical Steel Rebars:	23		
Vertical Steel Rebar Yield Strength (F_y):	60	ksi	
Horizontal Tie / Stirrup Size #:	4		
Horizontal Tie / Stirrup Spacing:	12.0	in	
Horizontal Tie / Stirrup Steel Yield Strength (F_y):	40	ksi	
Load Factor:	1.30		
Design Moment (M_u):	132.9	k-ft	
Nominal Moment Capacity ($\phi_B M_n$):	692.9	k-ft	
$M_u/\phi_B M_n$:	0.19	Result:	OK
Design Shear (V_u):	30.7	k	
Nominal Shear Capacity ($\phi_V V_n$):	158.6	k	
$V_u/\phi_V V_n$:	0.19	Result:	OK
Design Tension (T_u):	266.0	k	
Nominal Tension Capacity ($\phi_T T_n$):	546.5	k	
$T_u/\phi_T T_n$:	0.49	Result:	OK
Design Compression (P_u):	312.0	k	
Nominal Compression Capacity ($\phi_P P_n$):	2145.5	k	
$P_u/\phi_P P_n$:	0.15	Result:	OK

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: CT11254B

CDT Norwich
Hinckley Hill Road
Norwich, CT 06360

August 19, 2016

EBI Project Number: 6216003647

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	9.79 %

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

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August 19, 2016

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

Emissions Analysis for Site: **CT11254B – CDT Norwich**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **Hinckley Hill Road, Norwich, 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 1900 MHz (PCS) and 2100 MHz (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 **Hinckley Hill Road, Norwich, 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 (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

5) 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

6) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

7) Since some of the radios are ground mounted there are additional cabling losses accounted for. For each ground mounted RF path the following losses were calculated. 0.98 dB of additional cable loss for all ground mounted 700 MHz Channels, 1.80 dB of additional cable loss for all ground mounted 1900 MHz channels and 1.85 dB of additional cable loss for all ground mounted 2100 MHz channels. This is based on manufacturers Specifications for 150 feet of 1-5/8" coax cable on each path. All ground mounted radios are feeding the Commscope DBXNH-6565B-A2M Antenna on each sector.

8) 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.

9) 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.

10) The antennas used in this modeling are the **Ericsson AIR32 B66Aa/B2A** & **Commscope DBXNH-6565B-A2M** for 700 MHz, 1900 MHz (PCS) and 2100 MHz (AWS) channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR32 B66Aa/B2A** has a maximum gain of **15.9 dBd** at its main lobe at 1900 MHz and 2100 MHz. The **Commscope DBXNH-6565B-A2M** has a maximum gain of **17 dBd** at its main lobe at 1900 MHz and 2100 MHz and **13.1 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.

11) The antenna mounting height centerline of the proposed antennas is **150 feet** above ground level (AGL).

12) 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.

13) 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 AIR32 B66Aa/B2A	Make / Model:	Ericsson AIR32 B66Aa/B2A	Make / Model:	Ericsson AIR32 B66Aa/B2A
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	150	Height (AGL):	150	Height (AGL):	150
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240
ERP (W):	9,337.08	ERP (W):	9,337.08	ERP (W):	9,337.08
Antenna A1 MPE%	1.62	Antenna B1 MPE%	1.62	Antenna C1 MPE%	1.62
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Commscope DBXNH-6565B-A2M	Make / Model:	Commscope DBXNH-6565B-A2M	Make / Model:	Commscope DBXNH-6565B-A2M
Gain:	17 dBd / 13.1 dBd	Gain:	17 dBd / 13.1 dBd	Gain:	17 dBd / 13.1 dBd
Height (AGL):	150	Height (AGL):	150	Height (AGL):	150
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS) / 700 MHz	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS) / 700 MHz	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS) / 700 MHz
Channel Count	7	Channel Count	7	Channel Count	7
Total TX Power(W):	210	Total TX Power(W):	210	Total TX Power(W):	210
ERP (W):	6,426.45	ERP (W):	5,937.62	ERP (W):	5,937.62
Antenna A2 MPE%	1.21	Antenna B2 MPE%	1.21	Antenna C2 MPE%	1.21

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**2.83 %**
Sprint	0.28 %
Verizon	3.41 %
AT&T	2.89 %
TSR Paging	0.20 %
Aquis Paging	0.18 %
Site Total MPE %:	**9.79 %**

T-Mobile Sector A Total:	2.83 %
T-Mobile Sector B Total:	2.83 %
T-Mobile Sector C Total:	2.83 %
Site Total:	9.79 %

T-Mobile _per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile AWS - 2100 MHz LTE	2	2,334.27	150	8.09	AWS - 2100 MHz	1000	0.81%
T-Mobile PCS - 1900 MHz LTE	2	2,334.27	150	8.09	PCS - 1900 MHz	1000	0.81%
T-Mobile AWS - 2100 MHz UMTS	2	982.02	150	3.41	AWS - 2100 MHz	1000	0.34%
T-Mobile PCS - 1950 MHz UMTS	2	993.39	150	3.44	PCS - 1950 MHz	1000	0.34%
T-Mobile PCS - 1950 MHz GSM	2	993.39	150	3.44	PCS - 1950 MHz	1000	0.34%
T-Mobile 700 MHz LTE	1	488.79	150	0.85	700 MHz	467	0.18%
						Total:	**2.83%**

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	2.83 %
Sector B:	2.83 %
Sector C:	2.83 %
T-Mobile Per Sector Maximum:	2.83 %
Site Total:	9.79 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **9.79%** 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.