



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

August 10, 2017

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

RE: Tower Share Application
600 OLD HARTFORD ROAD, COLCHESTER, CT 06415
Latitude: 41.58671100
Longitude: -72.37817700
T-Mobile Site#: CTNL250A-NSD-CMP2

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of T-Mobile Northeast LLC ("T-Mobile"). T-Mobile plans to install antennas and related equipment at the tower site located at 600 Old Hartford Road in Colchester, Connecticut.

T-Mobile will install three (3) 700MHz antenna, three (3) 1900/2100 MHz antennas and nine (3) TMAs at the 150-foot level of the existing 180foot guyed tower Two (12) coax lines will also be installed. T-Mobile's equipment cabinets will be placed within T-Mobile's 150 sq ft lease area. Included are plans by Vertical Resource Group dated July 24, 2017. **Exhibit C**. Also included is a structural letter prepared by Fred A. Nudd Corporation, dated April 29, 2017, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as **Exhibit D**.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of T-Mobile's intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Art Shilosky, First Selectman and Randal Benson, Town Planner of the Town of Colchester, as well as the tower owner (CDT) and property owner (CDT).

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the support tower is 180-feet; T-Mobile's proposed antennas will be located at a center line height of 150-feet.
2. The proposed modifications will not result in the increase of the site boundary as depicted on the attached site plan.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed local and state criteria. The incremental effect of the proposed changes will be negligent.
4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 2.55% as evidenced by **Exhibit E**.



NSS NORTHEAST SITE SOLUTIONS

Turnkey Wireless Development

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

A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting T-Mobile's proposed loading. The structural analysis is included as **Exhibit D**.

B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this support tower in Colchester. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit T-Mobile to obtain a building permit for the proposed installation. Further, a Letter of Authorization is included as **Exhibit F**, authorizing T-Mobile to file this application for shared use.

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of T-Mobile equipment at the 150-foot level of the existing 180-foot tower would have an insignificant visual impact on the area around the tower. T-Mobile's ground equipment would be installed within the existing facility compound. T-Mobile's shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by **Exhibit E**, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

D. Economic Feasibility. T-Mobile will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Authorization has been provided by the owner to assist T-Mobile with this tower sharing application.

E. Public Safety Concerns. As discussed above, the guyed tower is structurally capable of supporting T-Mobile's proposed loading. T-Mobile is not aware of any public safety concerns relative to the proposed sharing of the existing guyed tower. T-Mobile's intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through Colchester.

Sincerely,

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

Attachments

cc: Art Shilosky, First Selectman, as elected official
Randal Benson, Zoning Enforcement Officer
Cordless Data Transfer - as tower owner and property owner

=====

UNIONVILLE

24 MILL ST

UNIONVILLE

CT

06085-9998

0883640185

08/15/2017 (800)275-8777 3:40 PM

=====

Product Description	Sale Qty	Final Price
PM 1-Day Flat Rate Env (Domestic) (COLCHESTER, CT 06415) (Flat Rate) (Expected Delivery Day) (Wednesday 08/16/2017) (USPS Tracking #) (9505 5119 1368 7227 1409 94)	1	\$6.65
Insurance (Up to \$50.00 included)	1	\$0.00
PM 1-Day Flat Rate Env (Domestic) (COLCHESTER, CT 06415) (Flat Rate) (Expected Delivery Day) (Wednesday 08/16/2017) (USPS Tracking #) (9505 5119 1368 7227 1410 07)	1	\$6.65
Insurance (Up to \$50.00 included)	1	\$0.00
PM 1-Day Flat Rate Env (Domestic) (COLCHESTER, CT 06415) (Flat Rate) (Expected Delivery Day) (Wednesday 08/16/2017) (USPS Tracking #) (9505 5119 1368 7227 1410 14)	1	\$6.65
Insurance (Up to \$50.00 included)	1	\$0.00

Total \$19.95

Credit Card Remitd \$19.95
 (Card Name:VISA)
 (Account #:XXXXXXXXXX0717)
 (Approval #:08755G)
 (Transaction #:871)

Includes up to \$50 insurance

 BRIGHTEN SOMEONE'S MAILBOX. Greeting cards available for purchase at select Post Offices.

Text your tracking number to 28777 (2USPS) to get the latest status. Standard Message and Data rates may apply. You may also visit USPS.com USPS Tracking or call 1-800-222-1811.

Save this receipt as evidence of insurance. For information on filing an insurance claim go to <https://www.usps.com/help/claims.htm>.

Order stamps at usps.com/shop or call 1-800-Stamp24. Go to usps.com/clicknship to print shipping labels with postage. For other

Exhibit A

TOWN OF COLCHESTER
ZONING & PLANNING COMMISSION
537-7280

ZONING PERMIT

TAX MAP SHEET # 6-10 LOT # 51 ZONE R-60

LOCATION (Street & No.) 600 Old Hartford Road

NAME OF PROPERTY OWNER MARK Logguit RES. PHONE 860-871-~~6665~~⁶²⁰⁴

OWNER'S ADDRESS 17 Carriage Drive, Tolland CT BUS. PHONE 860-871-6204

NAME OF APPLICANT Cordless Data Transfer, Inc PHONE 860-295-0445

APPLICANT'S ADDRESS 17 Ridgewood Drive, Marlborough, CT 06447

PROPOSED ACTIVITY:

NEW BUILDING ADDITION ALTERATION REPAIR OTHER Radio Tower

PROPERTY USE (Current):

SINGLE FAMILY TWO FAMILY MULTI FAMILY
COMMERCIAL INDUSTRIAL OTHER Antenna Mount Platform

PROPOSED:

LOT DIMENSIONS _____ AC/SQ.FT. _____ FRONTAGE _____

DOCUMENTATION REQUIRED:

- PLOT PLAN REQUIRED FOR ALL NEW CONSTRUCTION, ADDITIONS & ACCESSORY STRUCTURES.
- PLAN SHALL BE DRAWN IN ACCORDANCE WITH SECTION 12 OF THE COLCHESTER ZONING REGULATIONS.
- DISTANCES TO PROPERTY LINES FROM PROPOSED CONSTRUCTION MUST BE INCLUDED.

THE OWNER OF THE ABOVE PROPERTY GUARANTEES THAT ALL THE APPLICABLE REQUIREMENTS OF THE ZONING REGULATIONS WILL BE MET.

DATE 1/13/00 SIGNATURE (Property Owner or Agent) [Signature]

FOR OFFICE USE ONLY:

The above stated PROPOSAL is hereby certified to comply (*) , not comply (-) with the Colchester Zoning Regulations.

DATE 2/3/00 SIGNATURE (Zoning Enforcement Officer) [Signature]
1/18/00 (LR)

ZONING CERTIFICATE OF COMPLIANCE
Colchester, Connecticut

TOWN OF COLCHESTER
BUILDING PERMIT

OFFICE USE ONLY

Street 600 Old Hartford Rd
 Map 6-10 Lot 51
 Date 2/28/00
 PERMIT **№ 8308**

FEES PAID	Structural <u>300</u>	Plumbing _____	Misc. (<u>4/10</u>) <u>3</u>
	Septic _____	Heating _____	Misc. (<u>5/10</u>) <u>10</u>
	Electrical _____	Well _____	Total Fee Paid <u>3/5</u>

PERMISSION IS HEREBY GRANTED TO Cordless Data Trans Fer, Inc.
 to: erect , alter _____, enlarge _____, repair _____, move _____, demolish _____, a Survey Tower
 located at 600 Old Hartford Rd on land
 owned by MARK & GAIL

Said: erection , alteration _____, enlargement _____, repairs _____, removal _____, demolition _____, to be
 occupied as Communications tower

as described in Application No. _____ and to conform with plans and specifications filed with
 application, all provisions of the Connecticut Building Code and to comply with all other laws and rules relating to this
 subject. If no work is performed within six months from the time of issuance, this permit shall expire by limitation as
 provided by law.

REMARKS _____

Receipt No. 4621

Approved by Timothy E. York
 Building Inspector

Please refer to notice on reverse side of this permit
 WHITE: Applicant CANARY: Assessor PINK: Gen. File GOLDENROD: Street File

**TOWN OF COLCHESTER
APPLICATION FOR BUILDING PERMIT**

DATE OF APPLICATION 1/13/00 ASSESSOR'S TAX MAP & LOT # 6-10, 51
 Notice: Please refer to rules and requirements on reverse side.

The undersigned hereby applies for a permit to: ERECT , ALTER (), ENLARGE (), REPAIR (), REMOVE (), DEMOLISH (), a building or structure herein described and in accordance with plans and specifications submitted.

LOCATION (Street & No.) 600 Old Hartford Road PROPERTY OWNER Mark Lobauet

OWNER'S ADDRESS 17 Carver Lane Tolland, CT PHONE 860-871-6204

BUILDER CORDESS DATA TRANSFER, INC PHONE 860-295-0445

BUILDER'S ADDRESS 17 Ridgewood Drive, Meriden, CT 06460 LICENSE # _____

USE GROUP R-60 TYPE OF CONSTRUCTION RADIO TOWER SIZE OF BUILDING N/A X

GARAGE SIZE _____ x _____ ATTACHED _____ TOTAL FLOOR AREA _____ NUMBER OF STORIES _____

NUMBER OF BATHS _____ NUMBER OF BEDROOMS _____ JACUZZI/HOT-TUBS _____ GAL.

HEATING TYPE _____ SIDING _____ SEPTIC _____ WELL _____ CITY WATER _____

CITY SEWER _____ GARBAGE DISPOSAL _____ ACCESSORY BUILDING SIZE _____

IS PROPERTY WITHIN 100 YEAR FLOOD PLAIN? _____ EST. CONSTRUCTION VALUE \$ 30,000

The applicant agrees to comply with all the provisions of the building code and with the provisions of all other laws and rules governing building construction.

Signed (Owner or Agent) [Signature] Print Name ROBERT J FRANCIS

APPROVED (Building Official) [Signature]

DESCRIPTION OF PROPOSED WORK UNDER THIS APPLICATION:

Construct 150' Guyed Radio Tower per attached Plan.

SUBCONTRACTORS		OFFICIAL USE ONLY	
Electrician Name <u>Michael Angelo</u> Signature <u>[Signature]</u>	Address <u>60 Sunset Ridge</u> Lic.# <u>STAFFORD CT</u>	Electrical	_____
Plumber Name _____ Signature _____	Address _____ Lic.# _____	Plumbing	_____
Heating Contractor Name _____ Signature _____	Address _____ Lic.# _____	Heating	_____
Remodeler Name _____ Signature _____	Address _____ Lic.# _____	Sed/Erosion	_____
Sprinkler Contractor Name _____ Signature _____	Address _____ Lic.# _____	Septic	_____
		Well	_____
		Driveway	_____
		Building	<u>300</u>
		State Fee	<u>5</u> <u>10</u>
		Total Fee	<u>\$ 315</u>

Exhibit B

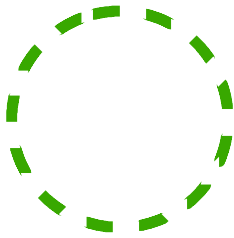


Town of Colchester, Connecticut - Assessment Parcel Map

Parcel: 06-10-051-000-TWR

Address: 600 OLD HARTFORD RD

51
34.77 AC
600



187.5'

103'

304.4'

264.4'

279.1'

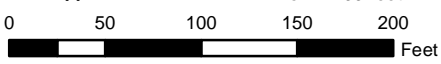
159.7'

240'

Old Hartford Rd

Prospect Hill Rd

Approximate Scale: 1 inch = 100 feet



Map Produced: July 2016 / Grand List: 2015

Disclaimer: This map is for informational purposes only All information is subject to verification by any user. The Town of Colchester and its mapping contractors assume no legal responsibility for the information contained herein.

Exhibit C



T-MOBILE NORTHEAST LLC

SITE NUMBER:
CTNL250-A

SITE NAME:
COLCHESTER

SITE ADDRESS:
**600 OLD HARTFORD ROAD
COLCHESTER, CT 06415**

(704G CONFIGURATION)



T-MOBILE NORTHEAST LLC

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
O: 860-692-7100
F: 860-692-7159



420 MAIN STREET
STURBRIDGE, MA 01566
O: 860-692-7100
F: 860-692-7159



VERTICAL RESOURCES GRP.

489 WASHINGTON STREET
AUBURN, MA 01501
TEL: 508-981-9590
FAX: 508-519-8939

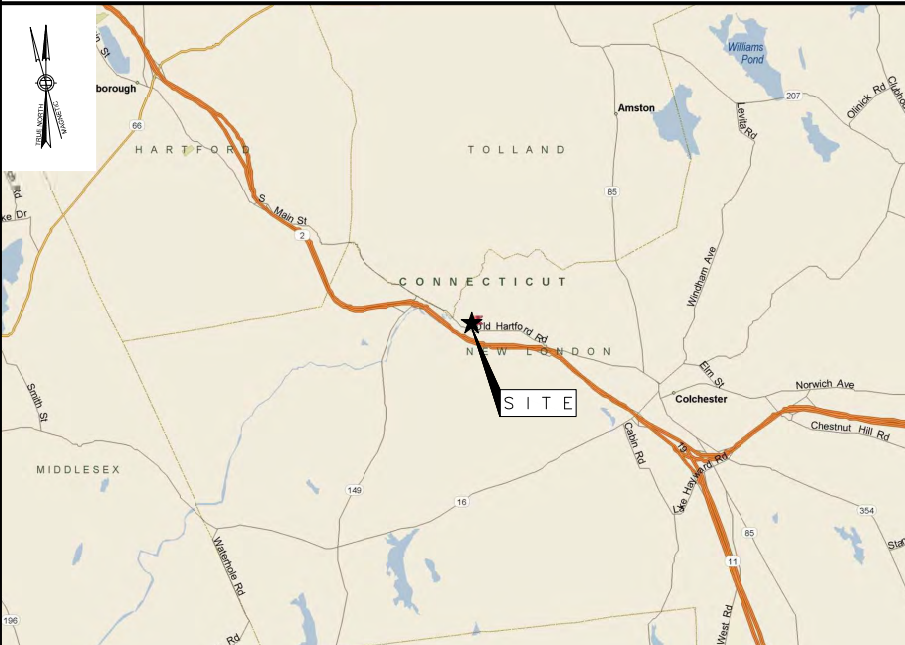
SITE INFORMATION

VICINITY MAP (NOT TO SCALE)

DRAWING INDEX

SITE NUMBER: CTNL250-A
SITE NAME: COLCHESTER
SITE ADDRESS: 600 OLD HARTFORD ROAD BRIDGEPORT, CT 06606
COUNTY: NEW LONDON
ZONING: SUBURBAN DISTRICT
PARCEL ID: 46/1406/16/A
FAA 2-C COORDINATES: N 41° 35' 12.1" W 72° 22' 41.7"
GROUND ELEV: 385'-0" ± AMSL
STRUCTURE TYPE: GUYED TOWER
STRUCTURE HEIGHT: 180'-0" ± AGL
ANTENNA RAD CENTER: 150'-0" ± AGL

PROPERTY OWNER: MARK LEGAULT
600 OLD HARTFORD ROAD
BRIDGEPORT, CT 06606
LOCAL POWER COMPANY: EVERSOURCE
1-800-286-2000
LOCAL TELCO COMPANY: LIGHTPATH
1-866-611-3434
APPLICANT: T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
P: (860) 648-1116
SITE ACQUISITION REPRESENTATIVE: NORTHEAST SITE SOLUTIONS
420 MAIN STREET
UNIT #2
STURBRIDGE, MA 01566
P: (860) 394-7021
ARCHITECT/ENGINEER: VERTICAL RESOURCES GROUP
489 WASHINGTON STREET
AUBURN, MA 01501
TEL: 508-981-9590
FAX: 508-519-8939



SHT #	SHEET DESCRIPTION
01	TITLE SHEET
02	GENERAL NOTES
03	SITE PLAN & ELEVATION
04	ANTENNA & CABLE DETAILS
05	EQUIPMENT DETAILS
05.1	ICE SHIELD DETAILS
06	GROUNDING & RF PLUMBING DIAGRAM
07	POWER SINGLE LINE DIAGRAM
08	GROUNDING & DETAILS I

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE COMMUNICATIONS. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

SUBMITTALS

NO	DATE	DESCRIPTION	BY
3	07/24/17	GENERAL REVISIONS	MN
2	06/05/17	GENERAL REVISIONS	MN
1	05/11/17	GENERAL REVISIONS	MN
0	04/24/17	ISSUED FOR REVIEW	MN

GENERAL NOTES

- THIS IS AN UNMANNED TELECOMMUNICATION FACILITY AND NOT FOR HUMAN HABITATION:
-HANDICAP ACCESS REQUIREMENTS ARE NOT REQUIRED.
-FACILITY HAS NO PLUMBING OR REFRIGERANTS.
-THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATOR REQUIREMENTS.
- CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE PROJECT OWNER'S REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
- DEVELOPMENT AND USE OF THIS SITE WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
BUILDING CODE: CONNECTICUT STATE BUILDING CODE
ELECTRICAL CODE: 2008 (OR LATEST) NATIONAL ELECTRICAL CODE
STRUCTURAL CODE: TIA/EIA-222-G OR LATEST EDITION

DIRECTIONS:
FROM BLOOMFIELD, CT PROCEED SOUTH ON I-91. TAKE EXIT FOR I-84 EAST. TAKE EXIT FOR RT-2 EAST. PROCEED EAST ON RT-2. TAKE RT-22 EAST EXIT 16. TURN LEFT ONTO RT-149 (WESTCHESTER RD). TURN RIGHT ONTO OLD HARTFORD RD. SITE WILL BE ON LEFT AT #600.



**CALL BEFORE YOU DIG
C BYD.COM**
CONNECTICUT LAW REQUIRES TWO WORKING DAYS NOTICE PRIOR TO ANY EARTH MOVING ACTIVITIES BY CALLING 800-922-4455 OR DIAL 811

APPROVALS

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND MAY IMPOSE CHANGES OR MODIFICATIONS.

CONSTRUCTION: _____ DATE: _____
SITE ACQUISITION: _____ DATE: _____
LEASING/
R.F. ENGINEER: _____ DATE: _____
LANDLORD/
PROPERTY OWNER: _____ DATE: _____

SITE NUMBER:
CTNL250-A
SITE NAME:
COLCHESTER
SITE ADDRESS:
**600 OLD HARTFORD RD
COLCHESTER, CT 06415**

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
01

GENERAL NOTES

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR – PRIME CONTRACTOR
 SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
 OWNER – AT&T WIRELESS
 OEM – ORIGINAL EQUIPMENT MANUFACTURER
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
- ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- DRAWINGS PROVIDED HERE ARE NOT TO SCALE UNLESS OTHERWISE NOTED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.
- SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. ROUTING OF CONDUIT FOR POWER AND TELCO SHALL BE APPROVED BY OWNER OF SITE.
- THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
- SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

SITE WORK GENERAL NOTES

- THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.
- ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
- IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES, TOP SOIL AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
- SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.
- THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE OWNER SPECIFICATION FOR SITE SIGNAGE.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE TRANSMISSION EQUIPMENT AND TOWER AREAS.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION, SEE DETAIL 303.
- THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.
- EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL JURISDICTION'S GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
- ALL EARTH WORK SHALL BE PERFORMED IN ACCORDANCE WITH TECHNICAL SPECIFICATION FOR CONSTRUCTION OF RADIO ACCESS NETWORK SITES.

CONCRETE AND REINFORCING STEEL NOTES:

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000 PSI) MAY BE USED.
- REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
 CONCRETE CAST AGAINST EARTH.....3 IN.
 CONCRETE EXPOSED TO EARTH OR WEATHER:
 #6 AND LARGER2 INCH
 #5 AND SMALLER & WWF.....1 1/2 INCH
 CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
 SLAB AND WALL3/4 INCH
 BEAMS AND COLUMNS.....1 1/2 INCH
- A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD HILTI OR APPROVED EQUAL.
- CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC 1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER:
 (A) RESULTS OF CONCRETE CYLINDER TESTS PERFORMED AT THE SUPPLIER'S PLANT,
 (B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
 FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
- AS AN ALTERNATIVE TO ITEM 7, TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
- EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.
- ALL CONCRETE SHALL BE SUPPLIED IN ACCORDANCE WITH TECHNICAL SPECIFICATION FOR CONSTRUCTION OF RADIO ACCESS NETWORK SITES.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

- EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL, EXPOSE UNDISTURBED NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.
- EQUIPMENT CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.
- AS AN ALTERNATIVE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.
- COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING 1" SIEVE.
- AS AN ALTERNATIVE TO ITEMS 2 AND 3 PROOF ROLL THE SUBGRADE SOILS WITH 5 PASSES OF A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). ANY SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL-GRADED GRANULAR FILL, AND COMPACTED AS STATED ABOVE.
- COMPACTION CRITERIA FOR OTHER FILL AREAS ON SITE SHALL MEET THE SAME REQUIREMENTS AS NOTED ABOVE.
- SOIL COMPACTION SHALL BE PERFORMED IN ACCORDANCE WITH TECHNICAL SPECIFICATION FOR CONSTRUCTION OF RADIO ACCESS NETWORK SITES.

COMPACTION EQUIPMENT:

HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

ELECTRICAL INSTALLATION NOTES

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
- CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
- WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.
- CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
- EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH PERMANENT LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S). NO HAND WRITTEN LABELS ALLOWED.
- PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED. NO HAND WRITTEN LABELS ALLOWED.
- ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (SIZE 6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
- ALL POWER AND POWER GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC, AND NEC.
- ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
- RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC, AND NEC.
- WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS

ELECTRICAL INSTALLATION NOTES (cont.)

- METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

STRUCTURAL STEEL NOTES:

- ALL STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 (HOT-DIP) UNLESS NOTED OTHERWISE. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
- ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.
- BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4"Ø) CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE. STEEL FASTENER HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 (HOT-DIP)
- NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD, HILTI OR APPROVED EQUAL.
- ALL STRUCTURAL STEEL SHALL BE SUPPLIED IN ACCORDANCE WITH TECHNICAL SPECIFICATION FOR CONSTRUCTION OF RADIO ACCESS NETWORK SITES.



T-MOBILE NORTHEAST LLC

35 GRIFFIN ROAD SOUTH
 BLOOMFIELD, CT 06002
 O: 860-692-7100
 F: 860-692-7159



420 MAIN STREET
 STURBRIDGE, MA 01566
 O: 860-692-7100
 F: 860-692-7159



VERTICAL RESOURCES GRP.

489 WASHINGTON STREET
 AUBURN, MA 01501
 TEL: 508-981-9590
 FAX: 508-519-8939

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE COMMUNICATIONS. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

SUBMITTALS

NO	DATE	DESCRIPTION	BY
3	07/24/17	GENERAL REVISIONS	MN
2	06/05/17	GENERAL REVISIONS	MN
1	05/11/17	GENERAL REVISIONS	MN
0	04/24/17	ISSUED FOR REVIEW	MN

SITE NUMBER:
CTNL250-A
 SITE NAME:
COLCHESTER
 SITE ADDRESS:
**600 OLD HARTFORD RD
 COLCHESTER, CT 06415**

SHEET TITLE:
GENERAL NOTES

SHEET NUMBER:

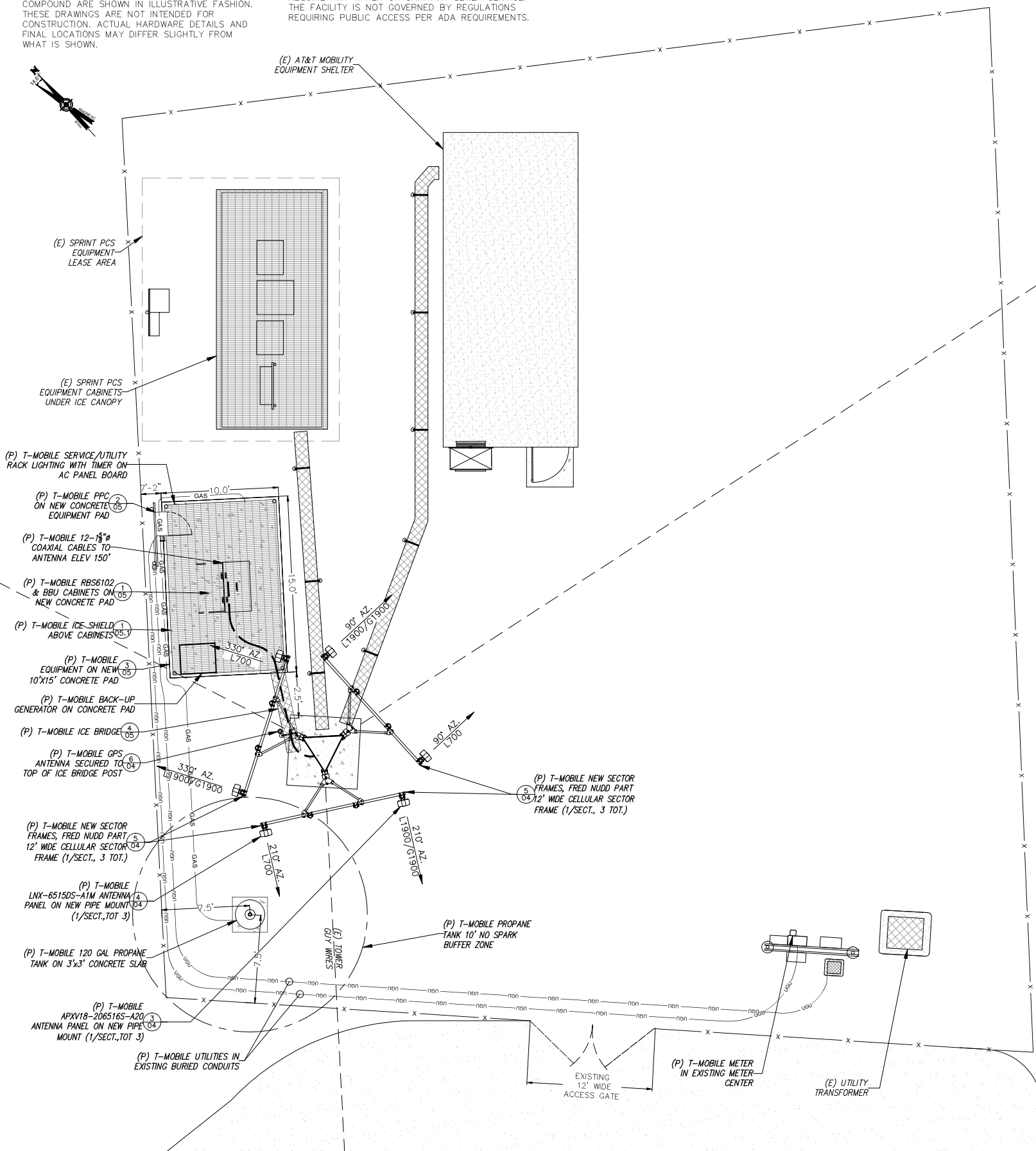
02

GENERAL NOTES

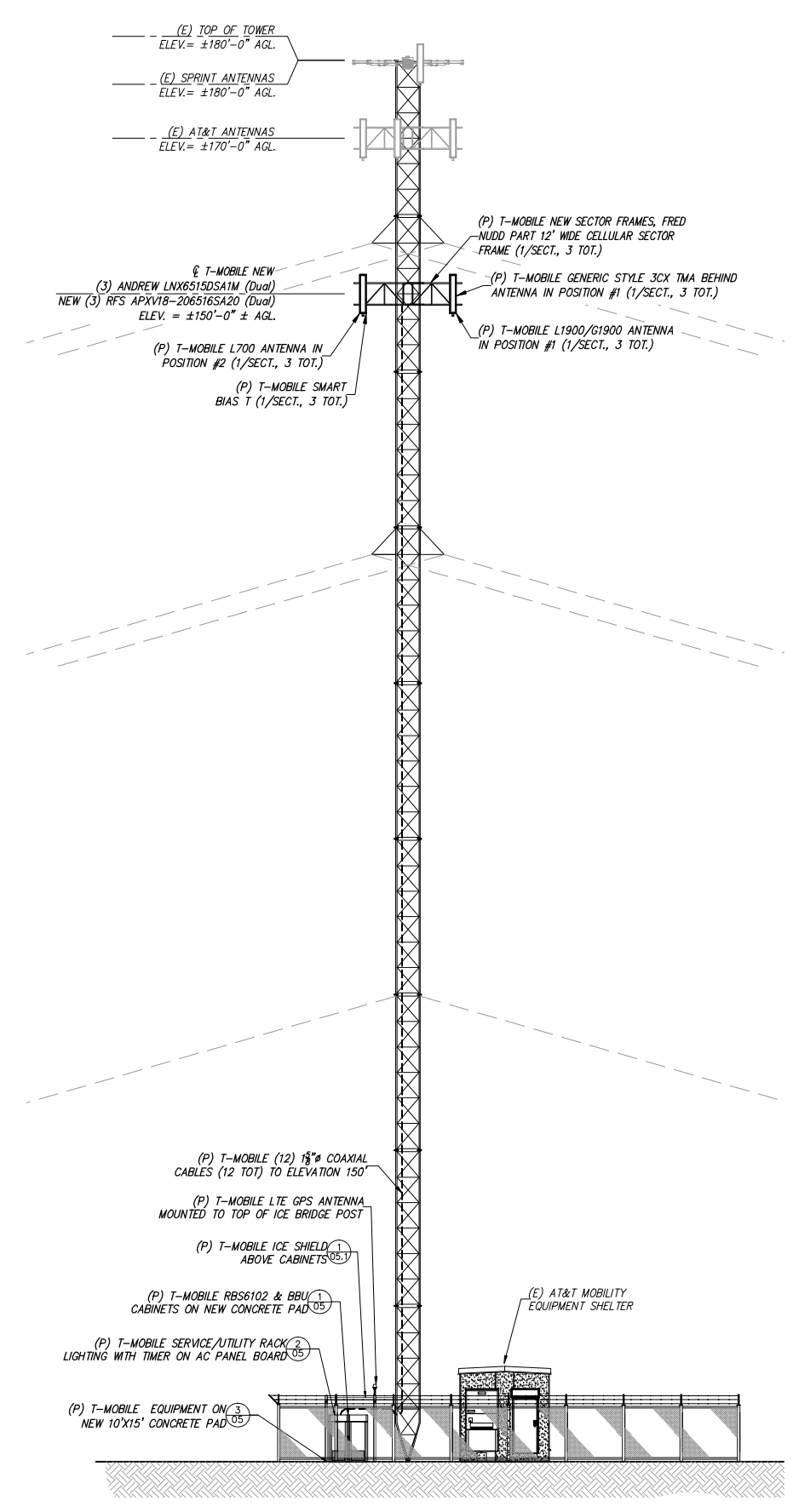
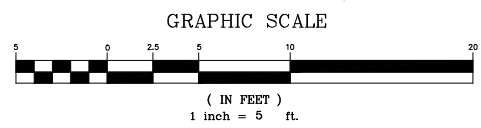
1. THE TYPE, DIMENSIONS, MOUNTING HARDWARE, AND THE POSITIONS OF ALL EQUIPMENT IN THE COMPOUND ARE SHOWN IN ILLUSTRATIVE FASHION. THESE DRAWINGS ARE NOT INTENDED FOR CONSTRUCTION. ACTUAL HARDWARE DETAILS AND FINAL LOCATIONS MAY DIFFER SLIGHTLY FROM WHAT IS SHOWN.

2. THE CELLULAR INSTALLATION IS AN UNMANNED PRIVATE AND SECURED COMPOUND. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.

3. CONSTRUCTION, MAINTENANCE & OPERATION OF PROPOSED TOWER FACILITY WILL BE HELD IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE & FEDERAL REGULATIONS AND GUIDELINES.



SITE PLAN
SCALE: 1" = 5'



TOWER ELEVATION VIEW
SCALE: 1" = 8'

T-Mobile
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
O: 860-692-7100
F: 860-692-7159

NSS
NORTHEAST
SITE SOLUTIONS
Tisbury Wireless Development
420 MAIN STREET
STURBRIDGE, MA 01566
O: 860-692-7100
F: 860-692-7159

VRG
VERTICAL RESOURCES GRP.
489 WASHINGTON STREET
AUBURN, MA 01501
TEL: 508-981-9590
FAX: 508-519-8939

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE COMMUNICATIONS. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

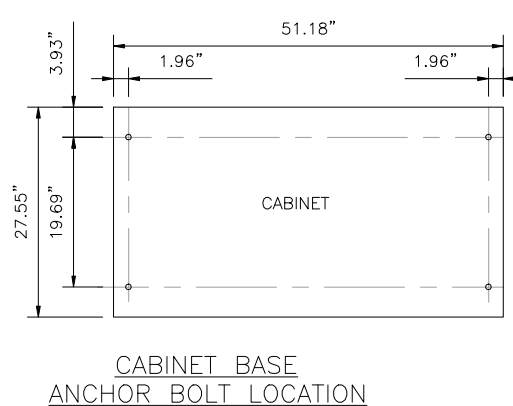
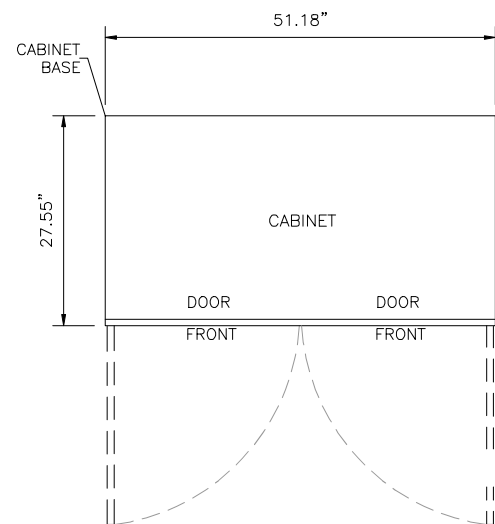
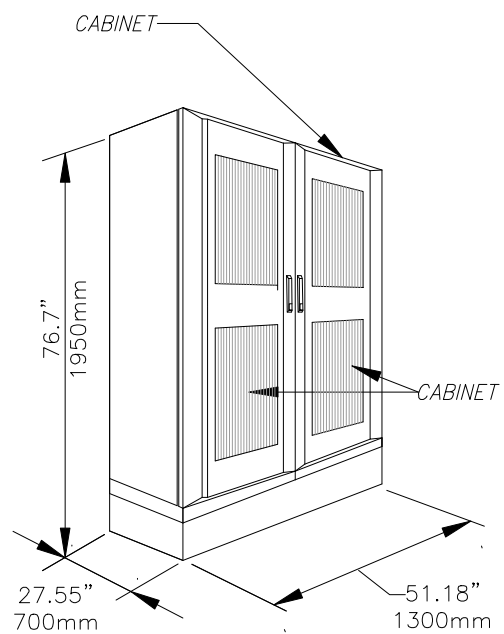
SUBMITTALS

NO	DATE	DESCRIPTION	BY
3	07/24/17	GENERAL REVISIONS	MN
2	06/05/17	GENERAL REVISIONS	MN
1	05/11/17	GENERAL REVISIONS	MN
0	04/24/17	ISSUED FOR REVIEW	MN

SITE NUMBER:
CTNL250-A
SITE NAME:
COLCHESTER
SITE ADDRESS:
**600 OLD HARTFORD RD
COLCHESTER, CT 06415**

SHEET TITLE:
**SITE PLAN &
ELEVATION**

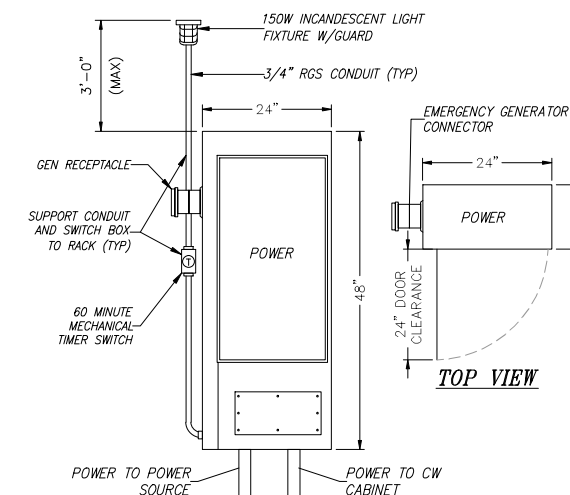
SHEET NUMBER:
03



- NOTES:**
- SEE PROJECT DESIGN CRITERIA FOR WEIGHT.
 - CABLE ENTRY IS LOCATED ON EITHER SIDE AND REAR OF CABINET BASE. CABLE ENTRY PLATES TO BE REMOVED FROM THE BASE WHEN INSTALLING THE BASES FLUSH.
 - MAINTAIN THE FOLLOWING MINIMUM CLEARANCES FROM CABINET (S):
 FRONT - 27.55"
 SIDE - 3.93"
 REAR - 7.87"
 - FOR MOUNTING TO CONCRETE USE THE ANCHORAGE BOLTS SUPPLIED WITH THE CABINET.

ERICSSON RBS 6102 EQUIPMENT CABINET
SCALE: N.T.S.

1
05

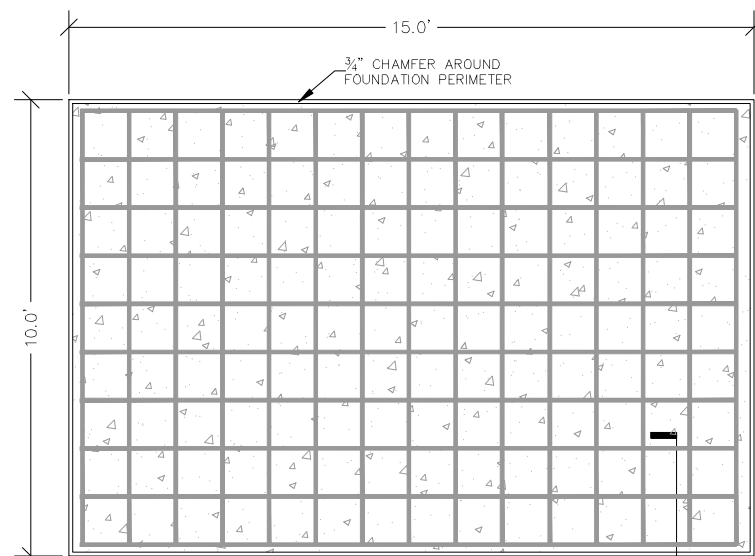


FRONT VIEW

TOP VIEW

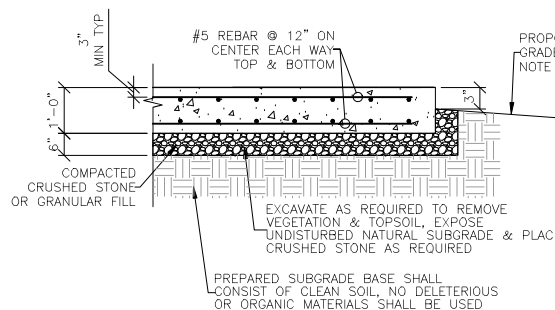
PPC
SCALE: N.T.S.

2
05



CAST IN PLACE CONCRETE PAD FOR RADIO & POWER CABINETS

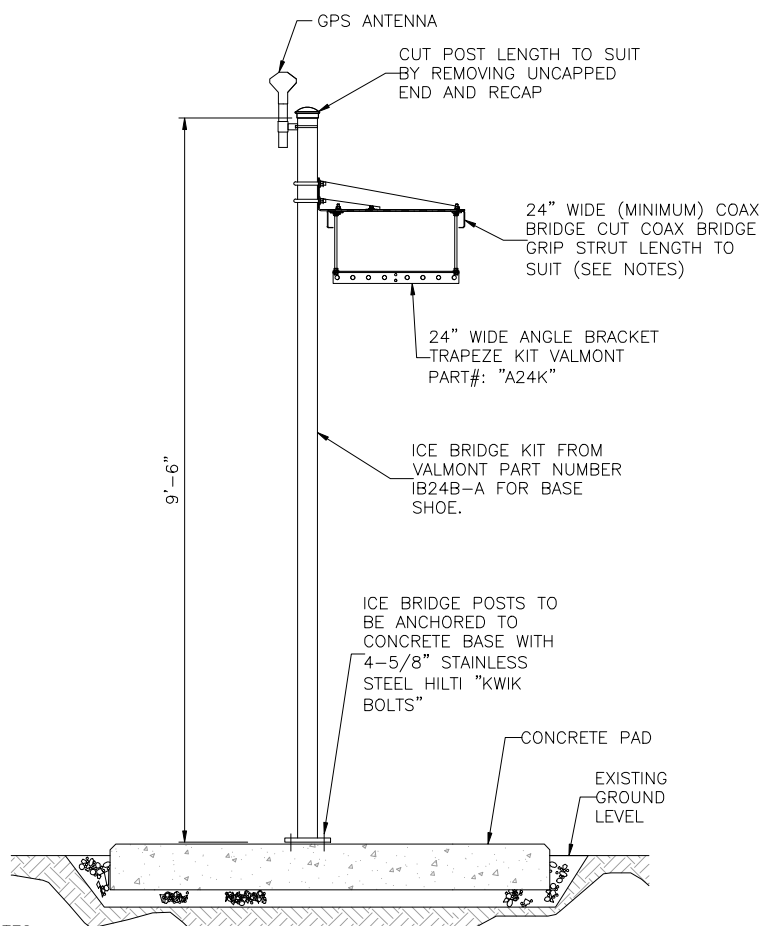
A
--



- NOTES:**
- FOUNDATION TO BEAR ON MEDIUM TO DENSE GRANULAR MATERIAL COMPACTED TO 95% M.P.
 - GRAVEL SHALL BE NATURAL OR CRUSHED STONE WITH 100 PERCENT PASSING 1 INCH SIEVE.
 - GRADE SHALL SLOPE AWAY FROM CONCRETE PAD TO ALLOW PROPER WATER RUN OFF.
 - CONTRACTOR TO VERIFY FINAL SHELTER DIMENSIONS PRIOR TO FOUNDATION CONSTRUCTION.

T-MOBILE EQUIPMENT CONCRETE FOUNDATION
SCALE: N.T.S.

3
05

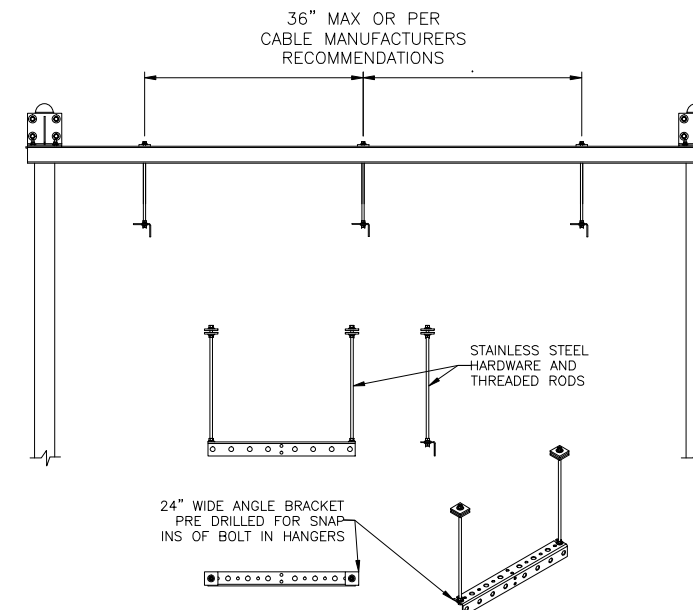


NOTES:

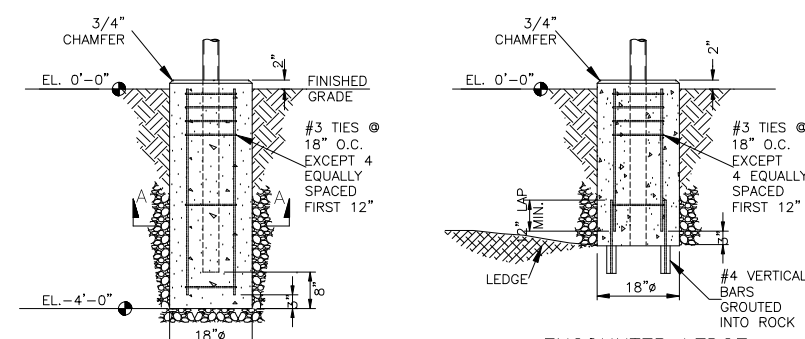
- WHEN USING COMPONENTS AS SHOWN IN STANDARD DETAILS, MAX ALLOWABLE SPAN BETWEEN SUPPORTS ON A CONTINUOUS SINGLE SECTION OF CABLE TRAY SHALL BE 9 FEET OR 10 FEET BRIDGE CHANNEL.
- WHEN USING COMPONENTS FOR SPLICING BRIDGE CHANNEL SECTIONS, THE SPLICE SHOULD BE PROVIDED AT THE SUPPORT, IF POSSIBLE, OR AT A MAXIMUM OF 2 FEET FROM THE SUPPORT.
- WHEN USING COMPONENTS, SUPPORT SHOULD BE PROVIDED AS CLOSE AS POSSIBLE TO THE ENDS OF ICE BRIDGES, WITH A MAXIMUM CANTILEVER DISTANCE OF 2 FEET FROM THE SUPPORT TO THE FREE END OF THE ICE BRIDGE.
- CUT BRIDGE CHANNEL SECTIONS SHALL HAVE RAW EDGES TREATED WITH A MATERIAL TO RESTORE THESE EDGES TO THE ORIGINAL CHANNEL, OR EQUIVALENT, FINISH.
- ICE BRIDGES MAY BE CONSTRUCTED WITH COMPONENTS FROM OTHER MANUFACTURERS, PROVIDED THE MANUFACTURER'S INSTALLATION GUIDELINES ARE FOLLOWED.
- DEVIATIONS FROM STANDARDS FOR COMPONENT INSTALLATIONS ARE PERMITTED WITH THE RESPECTIVE MANUFACTURER'S APPROVAL.
- DEVIATIONS FROM COAX BRIDGE FOUNDATIONS REQUIRE ENGINEERING APPROVAL.
- THIS DESIGN IS BASED ON 2-24" WIDE (48" WIDE TOTAL) COAX BRIDGE AND 2-24" WIDE CABLE TRAY AND MAX. POST SUPPORT SPACING OF 10'-0".

COAXIAL CABLE BRIDGE DETAIL
SCALE: N.T.S.

4
05



CABLE HANGERS



ENCOUNTER LEDGE

SECTION A-A

T-Mobile
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
O: 860-692-7100
F: 860-692-7159

NSS
NORTHEAST
SITE SOLUTIONS
Tursley Wireless Development

420 MAIN STREET
STURBRIDGE, MA 01566
O: 860-692-7100
F: 860-692-7159

VRG
VERTICAL RESOURCES GRP.

489 WASHINGTON STREET
AUBURN, MA 01501
TEL: 508-981-9590
FAX: 508-519-8939

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE COMMUNICATIONS. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

SUBMITTALS

NO	DATE	DESCRIPTION	BY
3	07/24/17	GENERAL REVISIONS	MN
2	06/05/17	GENERAL REVISIONS	MN
1	05/11/17	GENERAL REVISIONS	MN
0	04/24/17	ISSUED FOR REVIEW	MN

SITE NUMBER:
CTNL250-A
SITE NAME:
COLCHESTER
SITE ADDRESS:
**600 OLD HARTFORD RD
COLCHESTER, CT 06415**

SHEET TITLE:
EQUIPMENT DETAILS

SHEET NUMBER:
05

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE COMMUNICATIONS. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

SUBMITTALS

NO	DATE	DESCRIPTION	BY
3	07/24/17	GENERAL REVISIONS	MN
2	06/05/17	GENERAL REVISIONS	MN
1	05/11/17	GENERAL REVISIONS	MN
0	04/24/17	ISSUED FOR REVIEW	MN

SITE NUMBER:

CTNL250-A

SITE NAME:

COLCHESTER

SITE ADDRESS:

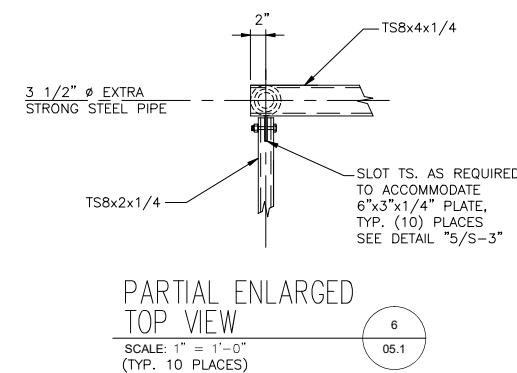
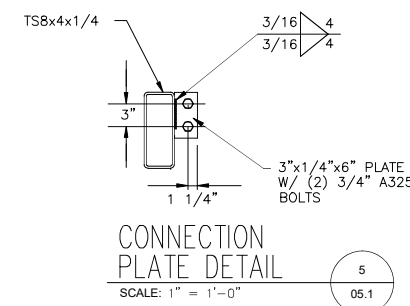
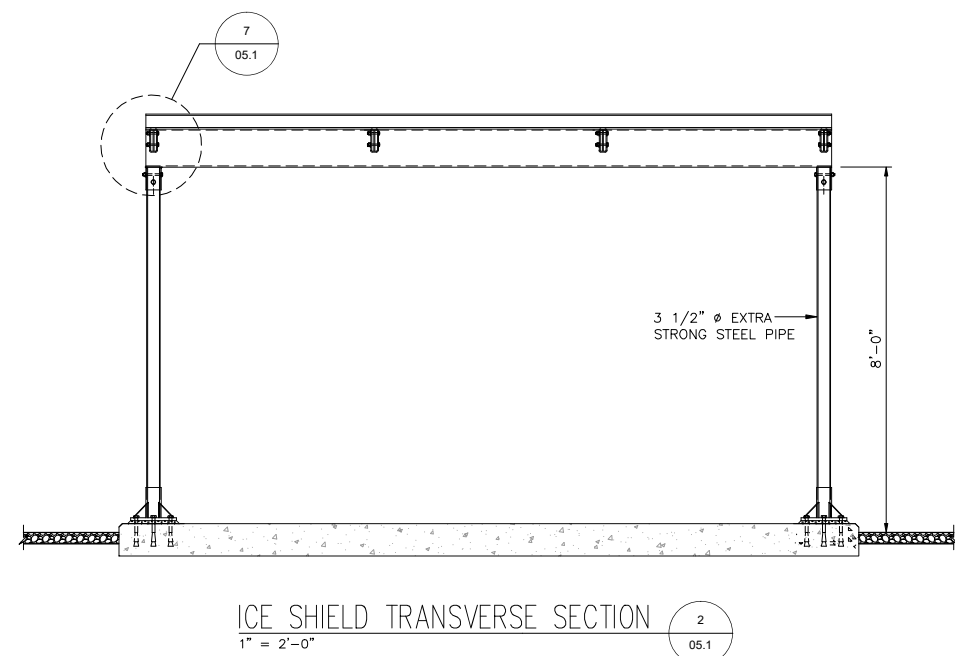
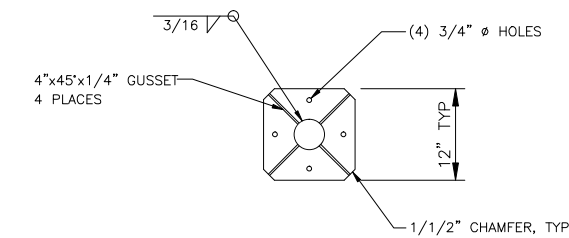
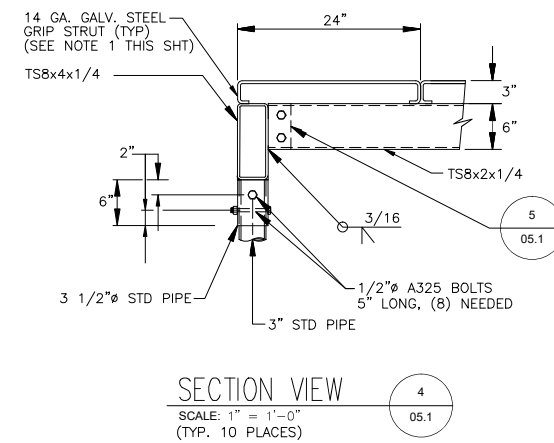
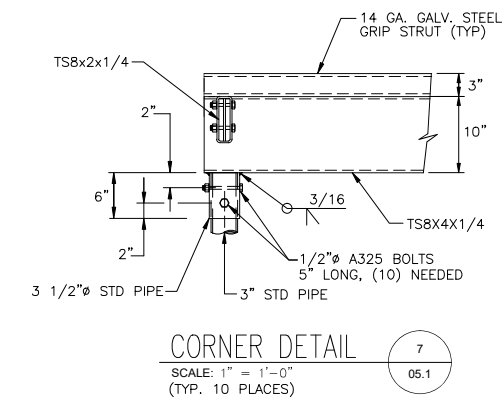
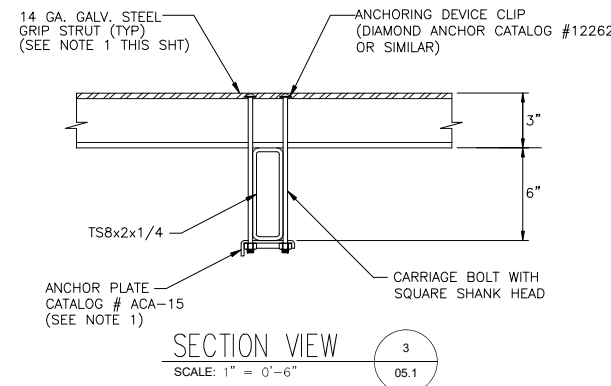
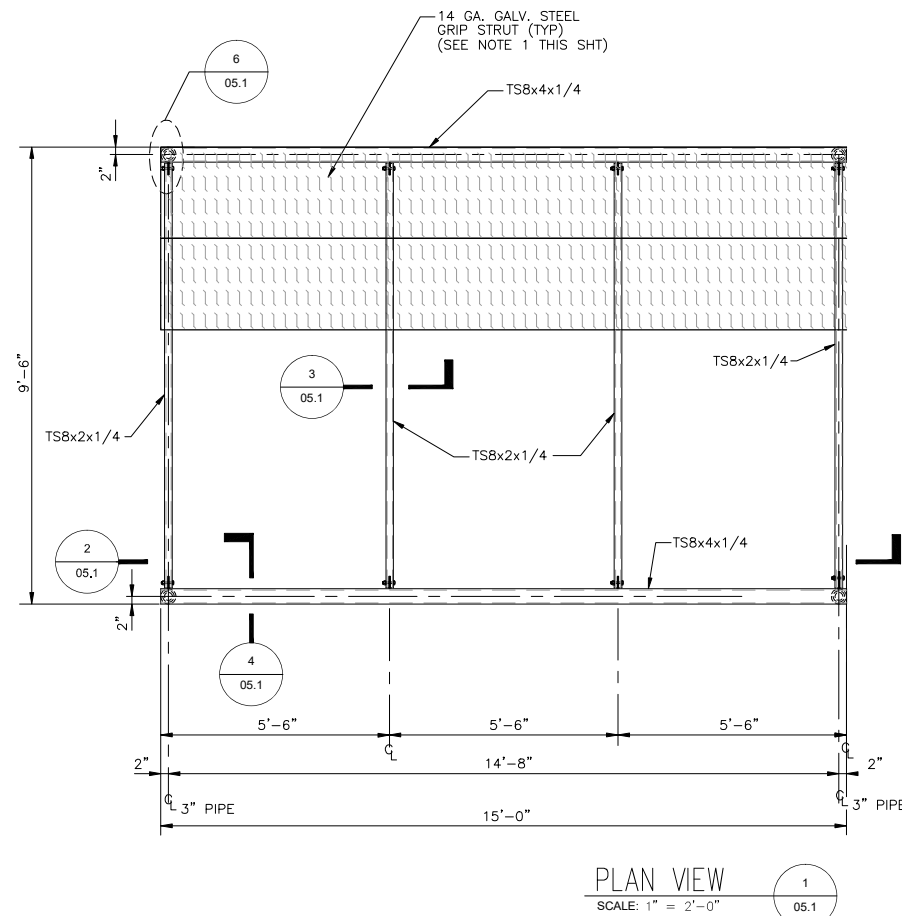
**600 OLD HARTFORD RD
COLCHESTER, CT 06415**

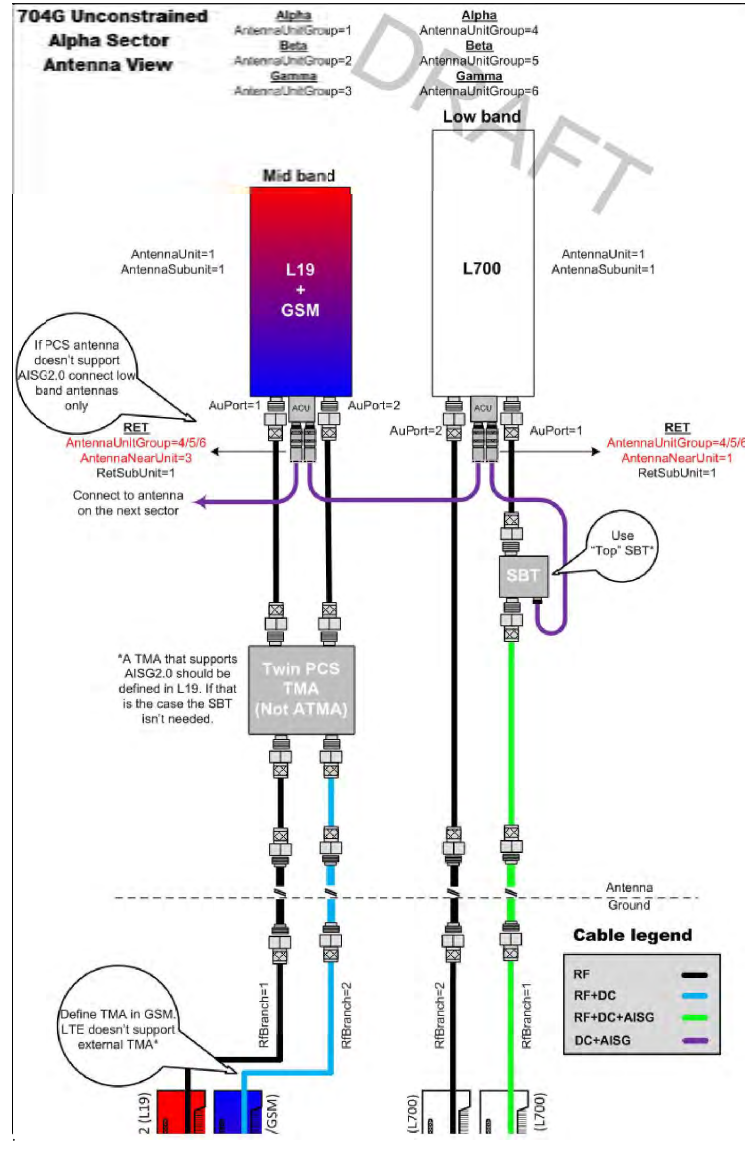
SHEET TITLE:

ICE SHIELD DETAILS

SHEET NUMBER:

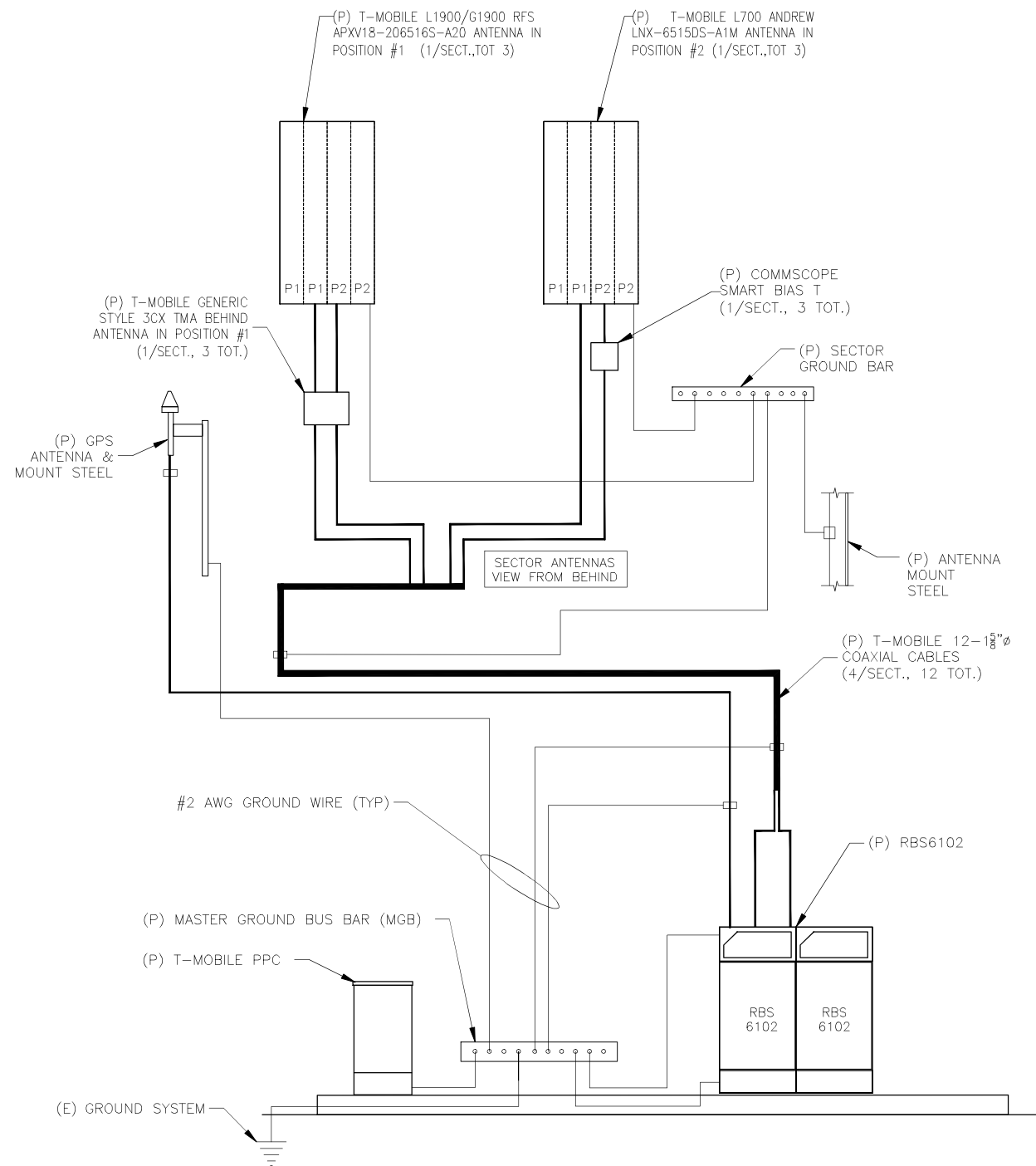
05.1





COAXIAL CABLE PLUMBING DIAGRAM

1
06



GROUNDING PLUMBING DIAGRAM

2
06

HYBRID FIBER/POWER JUMPER NOTES:

1. IN GENERAL THIS CABLE WILL HANDLE SIMILARLY TO A " COAXIAL CABLE. 38" 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 " (19MM) RADIUS, ELSE THERE IS A RISK OF BREAKING THE GLASS. 34" (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

TRUNK FIBER NOTES:

1. IN GENERAL THIS CABLE WILL HANDLE SIMILARLY TO " COAXIAL CABLE, AND SIMILAR INSTALLATION TECHNIQUES APPLY. ALL 78" 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 " (19MM) BEND RADIUS, ELSE THERE IS " 34" (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 CATCH 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).

T-Mobile

T-MOBILE NORTHEAST LLC

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
O: 860-692-7100
F: 860-692-7159

NSS
NORTHEAST
SITE SOLUTIONS
Tursley Wireless Development

420 MAIN STREET
STURBRIDGE, MA 01566
O: 860-692-7100
F: 860-692-7159

VRG
VERTICAL RESOURCES GRP.

489 WASHINGTON STREET
AUBURN, MA 01501
TEL: 508-981-9590
FAX: 508-519-8939

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE COMMUNICATIONS. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

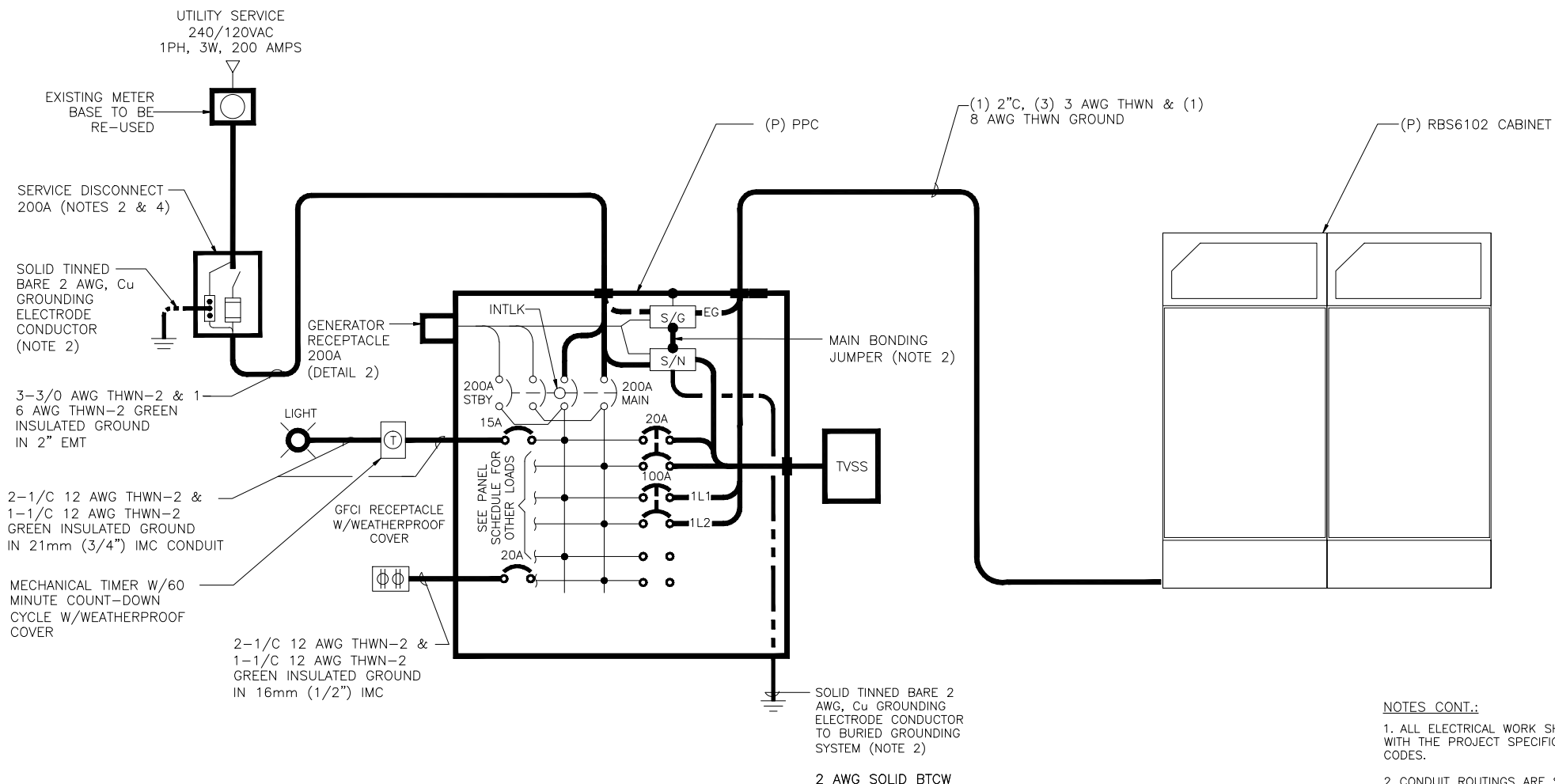
SUBMITTALS

NO	DATE	DESCRIPTION	BY
3	07/24/17	GENERAL REVISIONS	MN
2	06/05/17	GENERAL REVISIONS	MN
1	05/11/17	GENERAL REVISIONS	MN
0	04/24/17	ISSUED FOR REVIEW	MN

SITE NUMBER:
CTNL250-A
SITE NAME:
COLCHESTER
SITE ADDRESS:
600 OLD HARTFORD RD
COLCHESTER, CT 06415

SHEET TITLE:
GROUNDING & RF
PLUMBING DIAGRAM

SHEET NUMBER:
06



AC PANEL SCHEDULE

PPC - AC POWER PANELBOARD 120/240 VOLTS, 1-PHASE, 3-WIRE, 200A W/200A MAIN BRKR						
DESCRIPTION	BKR	POSN	L1	L2	POSN	BKR DESCRIPTION
6102 CABINET	100	1			2	SPARE
		3			4	SPARE
SPARE		5			6	SPARE
		7			8	SPARE
SPARE		9			10	SPARE
		11			12	SPARE
SPARE		13			14	SPARE
		15			16	SPARE
SPARE		17			18	SPARE
		19			20	15 LIGHT
TVSS	20	21			22	20 TELCO FAN (IF REQUIRED)
		23			24	20 RECEPTACLE

NOTE:

A1. THE PANELBOARD IS A UL-LISTED MODULAR UNIT FOR SERVICE ENTRANCE WITH MANUAL TRANSFER MAIN AND STAND-BY BREAKERS.

NOTES:

- INSTALL CONDUIT WITH ADEQUATE FLEX FOR INSTALLATION TO CABINET ENTRY POINT. TURN OFF AND TAG BREAKERS. TERMINATE CABLE AT DISTRIBUTION PANEL. TAPE ENDS AND COIL AN EXTRA 10 FEET OF CABLES AT CABINET LOCATION FOR TERMINATION BY OTHERS. LABEL OR USE DIFFERENT COLOR TAPE AT BOTH ENDS OF EACH CONDUCTOR TO IDENTIFY CIRCUIT AND PHASE.
- WHERE PERMITTED, THE PANEL BOARD SERVES AS THE SERVICE ENTRANCE EQUIPMENT. A MANUAL DISCONNECT SWITCH MAY BE OMITTED AS PERMITTED BY LOCAL CODE OR SITE CONDITIONS. BOND THE NEUTRAL AND GROUND BARS TOGETHER IN THE PANEL BOARD AND CONNECT TO THE SITE GROUNDING SYSTEM.
- INSTALL GROUND CABLE WITH ENOUGH LENGTH TO REACH CABINET(S) AND COIL AN EXTRA 10 FEET FOR TERMINATION BY OTHERS.
- BREAKER DISCONNECT MAY BE USED IN PLACE OF FUSED DISCONNECT WHEN CONDITIONS FAVOR USE OF BREAKER (EX. SIZE, COST, ETC.).
- INTER CABINET WIRING BY OTHERS.

NOTES CONT.:

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND ALL APPLICABLE LOCAL CODES.
- CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
- SERVICE TO EQUIP. SHALL BE 120/240 VAC, 200 AMP, 1, 60 Hz.
- THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
- COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC (CADWELD) CONNECTIONS.
- ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (CADWELD).
- ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR & EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS. ALL EXOTHERMIC CONNECTIONS TO THE GROUND RODS SHALL START AT THE TOP & HAVE A VERTICAL SEPARATION OF 6" FOR EVERY ADDITIONAL CONNECTION.
- ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
- ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
- GROUND RODS SHALL BE COPPER CLAD STEEL, 5/8" 10-FT. LONG, AND SHALL BE DRIVEN VERTICALLY WITH THEIR TOPS 48" BELOW FINAL GRADE.
- CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
- USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
- MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS. TESTING SHALL BE PERFORMED IN ACCORDANCE WITH PROJECT SPECIFICATION FOR FACILITY GROUNDING, USING FALL OF POTENTIAL METHOD.
- ANTENNA GROUND KITS SHALL BE FURNISHED BY T-MOBILE AND INSTALLED BY CONTRACTOR.

SINGLE LINE DIAGRAM & PANEL SCHEDULE

SCALE: N.T.S.

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE COMMUNICATIONS. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

SUBMITTALS

NO	DATE	DESCRIPTION	BY
3	07/24/17	GENERAL REVISIONS	MN
2	06/05/17	GENERAL REVISIONS	MN
1	05/11/17	GENERAL REVISIONS	MN
0	04/24/17	ISSUED FOR REVIEW	MN

SITE NUMBER:

CTNL250-A

SITE NAME:

COLCHESTER

SITE ADDRESS:

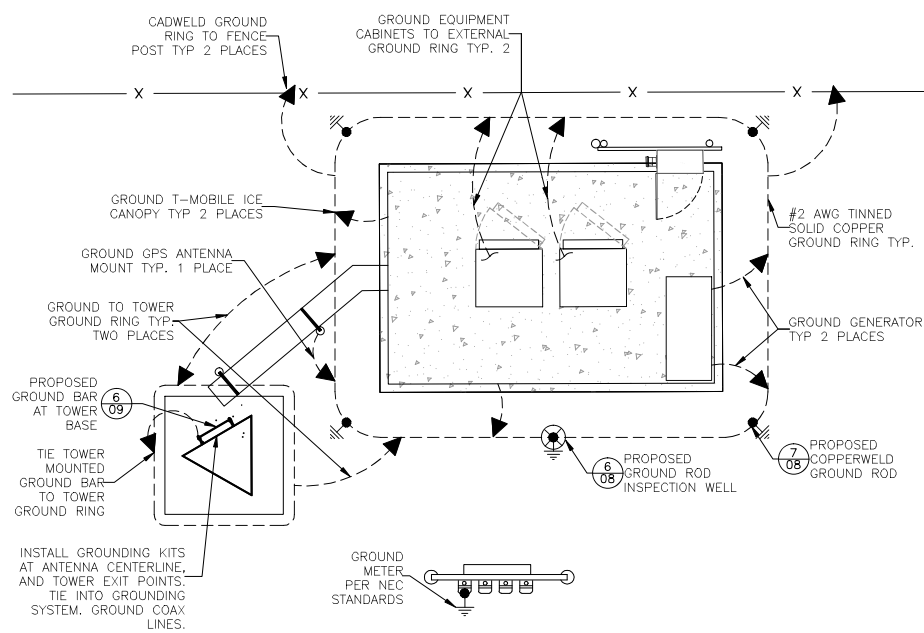
**600 OLD HARTFORD RD
COLCHESTER, CT 06415**

SHEET TITLE:

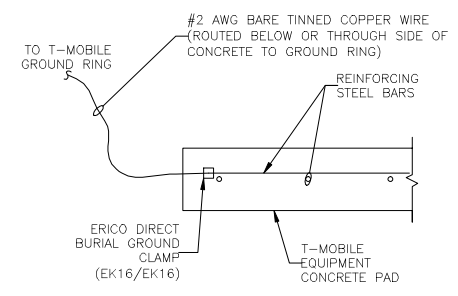
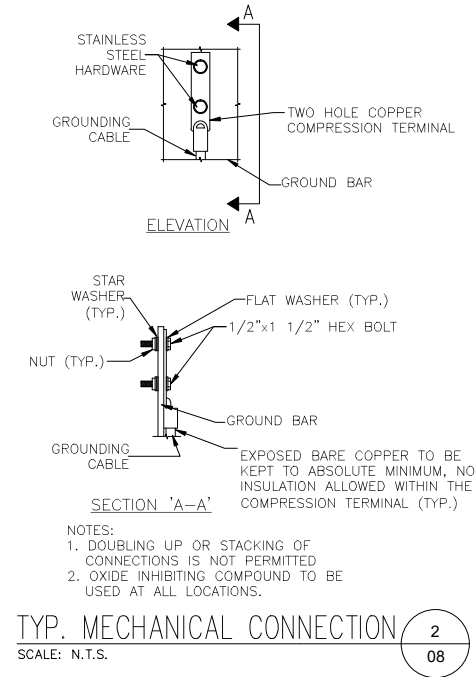
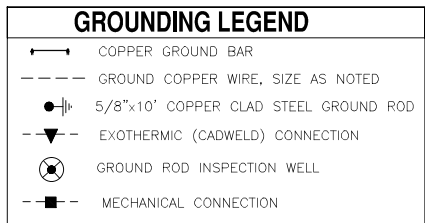
**POWER SINGLE LINE
DIAGRAM**

SHEET NUMBER:

07



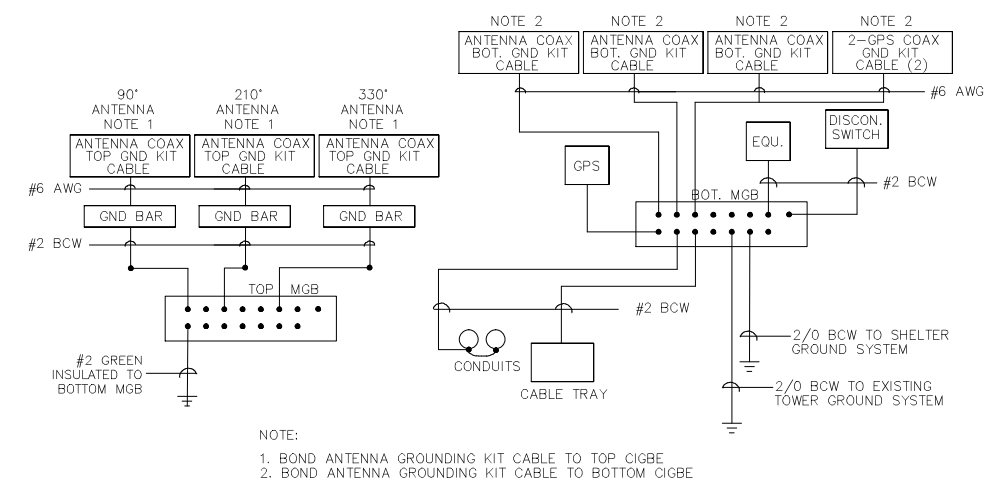
- ### GROUNDING GENERAL NOTES
- GRIND OFF GALVANIZING IN AFFECTED AREA. EXOTHERMICALLY WELD #2 CONDUCTOR AT 6" ABOVE GRADE OR FOUNDATION, WHICHEVER IS HIGHER. COLD-GALV AFTER. EXOTHERMICALLY WELD OTHER END TO GROUND RING.
 - INSTALL GROUNDING KITS AT ANTENNA CENTERLINE, AND TOWER EXIT POINTS. GROUND COAX LINES. GROUND ANTENNA MOUNTING PIPES TO TOWER STEEL.
 - ALL GROUNDING WORK SHALL COMPLY WITH T-MOBILE STANDARDS. FOLLOWING COMPLETION OF WORK, GROUND SYSTEM MUST BE TESTED AND SHALL HAVE A RESISTANCE OF 5 OHMS OR LESS SUBMIT AN INDEPENDENT TESTING REPORT.
 - ALL GROUNDING CONDUCTORS ON EXTERIOR CABINET WALL SHALL BE INSTALLED IN 3/4" SCH 40 PVC CONDUIT TO 12" BELOW GRADE. ATTACH PVC WITH GALVANIZED "C" CLAMPS.
 - CONTRACTOR SHALL HAND-DIG IN AREAS AROUND EXISTING UTILITIES.
 - NOTIFY CONSTRUCTION ENGINEER IF THERE ARE ANY DIFFICULTIES INSTALLING GROUNDING SYSTEM DUE TO SITE SOIL CONDITIONS.



SITE COMPOUND GROUNDING

SCALE: N.T.S.

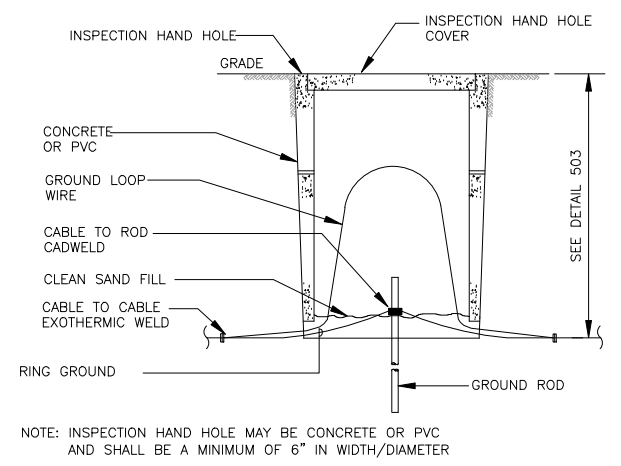
1 08



GROUNDING ONE-LINE DIAGRAM

SCALE: N.T.S.

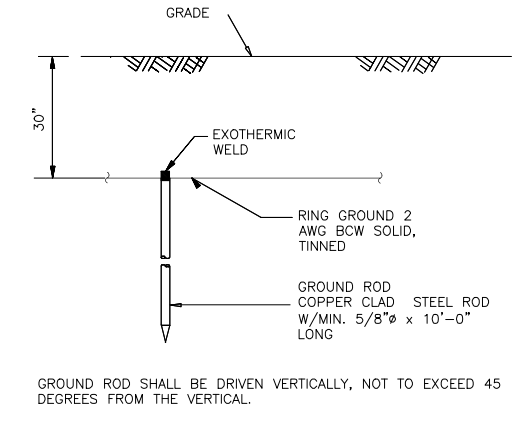
4 08



GROUND ROD INSPECTION WELL

SCALE: N.T.S.

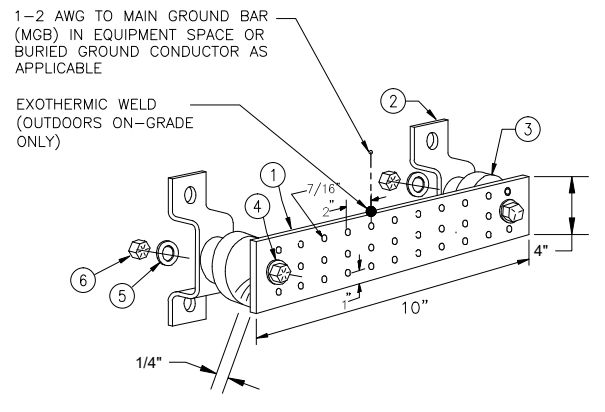
6 08



GROUND ROD DETAIL

SCALE: N.T.S.

7 08

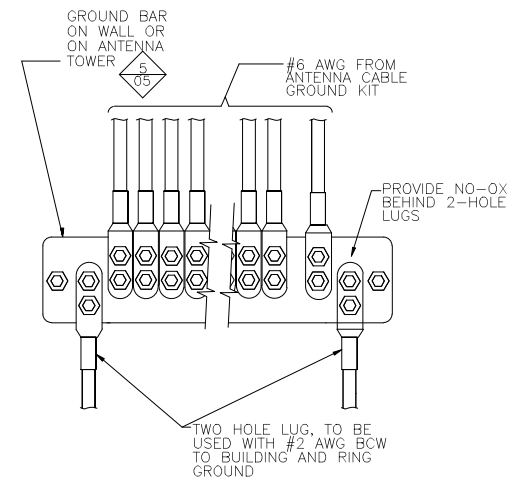


GROUND BAR DETAIL

SCALE: N.T.S.

5 08

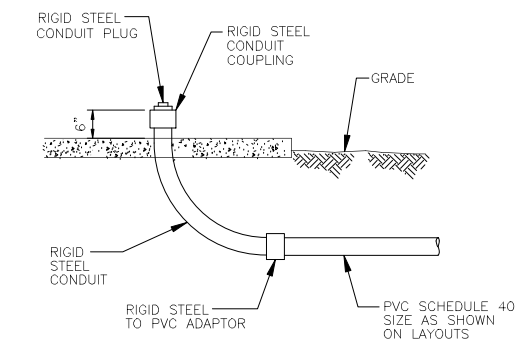
NEWTON INSTRUMENT COMPANY, INC. BUTNER, N.C. OR APPROVED EQUAL			
ITEM	REQ.	PART NO.	DESCRIPTION
①	1	1/4"x4"x12"	PRE DRILLED GND. BAR
②	2	A-6056	WALL MTG. BRKT.
③	2	3061-4	INSULATORS
④	2	3012-13	5/8"-11x4" H.H.C.S.
⑤	4	3015-8	5/8" LOCKWASHER
⑥	2	3014-8	5/8"-11 HEX NUT



INSTALLATION OF GROUND WIRE TO GROUND BAR

SCALE: N.T.S.

8 08



UNDERGROUND CONDUIT STUB-UP

SCALE: N.T.S.

9 08

T-Mobile

T-MOBILE NORTHEAST LLC

35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
O: 860-692-7100
F: 860-692-7159

NSS

NORTHEAST SITE SOLUTIONS

Tuesday Wireless Development

420 MAIN STREET
STURBRIDGE, MA 01566
O: 860-692-7100
F: 860-692-7159

VRG

VERTICAL RESOURCES GRP.

489 WASHINGTON STREET
AUBURN, MA 01501
TEL: 508-981-9590
FAX: 508-519-8939

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE COMMUNICATIONS. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

SUBMITTALS			
NO	DATE	DESCRIPTION	BY
3	07/24/17	GENERAL REVISIONS	MN
2	06/05/17	GENERAL REVISIONS	MN
1	05/11/17	GENERAL REVISIONS	MN
0	04/24/17	ISSUED FOR REVIEW	MN

SITE NUMBER:
CTNL250-A

SITE NAME:
COLCHESTER

SITE ADDRESS:
**600 OLD HARTFORD RD
COLCHESTER, CT 06415**

SHEET TITLE:
**GROUNDING
DETAILS I**

SHEET NUMBER:
08

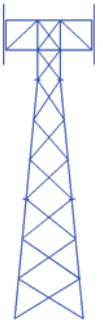
Exhibit D



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
April 29, 2017

Nudd Job Number: 117-23046

Site Location: 600 Old Hartford Road, Colchester, CT 06415, New London County (Latitude and Longitude: 41-35-12, -72-22-40)

Subject: Structural Analysis of an existing 180 ft Guyed Tower

Fred A. Nudd Corporation has completed a three-dimensional, finite element model structural analysis of the above noted guyed tower. This tower was analyzed considering 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-G standard, which is the recommended design standard per the 2012 International Building Code and is the basis of the 2016 Connecticut State Building Code. Tower and foundation dimensions have been taken from original design drawings by Fred A. Nudd Corporation (Drawing Number 00-7265-1 & 00-7265-2, March 10, 2000). Onsite soil conditions were taken from a geotechnical report by Coneco Engineers (dated March 15, 2000). 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's equipment installed at a rad center of 150 ft above ground level (AGL). The new equipment to be installed, which includes antennas, 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 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 90%.

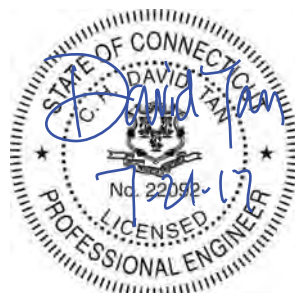
The tower base foundation and anchors were analyzed considering onsite soil information from the aforementioned geotechnical report. Based on this analysis, the foundation and anchors will be able support the proposed appurtenance loading, in addition to the existing wireless equipment and tower superstructure. Specific design loads, capacities and stress ratios are provided on 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



Code Design Criteria

TIA/EIA-222-G

Windspeed = 99 mph, V_{asd} / 128 mph, V_{ult} , 3-Second Gust

Radial Ice = 0.75 inch

Ice Windspeed = 50 mph, V_{asd} , 3-Second Gust

Exposure = B

Topographic Category = 1

Structure Class = II

Seismic Accelerations are less than 1.0g, thus seismic loading can be ignored

Appurtenance Loading – Existing / Remaining

Height (ft)	Carrier	Appurtenance	Mount	Coax (in)
180.5	Sprint	(3) RFS APXV9ERR18-C-A20 (3) Alcatel Lucent 2x50W RRH, 800 MHz (3) Alcatel Lucent 2x50W RRH, 1900 MHz	(3) 12 ft Boom / Frame	(3) 1-1/4 Hybriflex
172	AT&T Mobility	(6) Powerwave 7770.00 (6) Powerwave LGP21401 (6) Diplexors (1) Powerwave P65-17-XLH-RR (1) KMW AM-X-CD-16-65-00T-RET (1) Andrew SBNH-1D6565C (1) Raycap DC6-48-60-18-8F (6) Ericsson RRU-11	(3) 12 ft Boom / Frame	(12) 1-1/4 (1) 1.34 Fiber (2) 0.65 DC

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

Appurtenance Loading – Final Configuration for T-Mobile

Height (ft)	Carrier	Appurtenance	Mount	Coax (in)
150	T-Mobile	(3) RFS APXV18-206516S-C-A20 (3) Commscope LNX-6515DS-A1M (3) TMA	(3) 12 ft Boom / Frame	(12) 1-5/8

- Height measurement taken as distance from top of base foundation to center of appurtenance.
- T-Mobile's proposed coax may be installed on any of the two open tower faces, but must be stacked 6 over 6.

Maximum Member Usage

Member	Percentage
Leg	88
Diagonal	68
Horizontal	71
Bolts	36
Guys	53
Anchor Rod	59

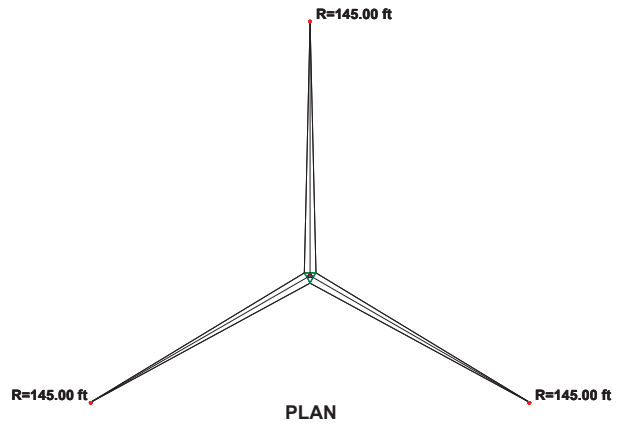
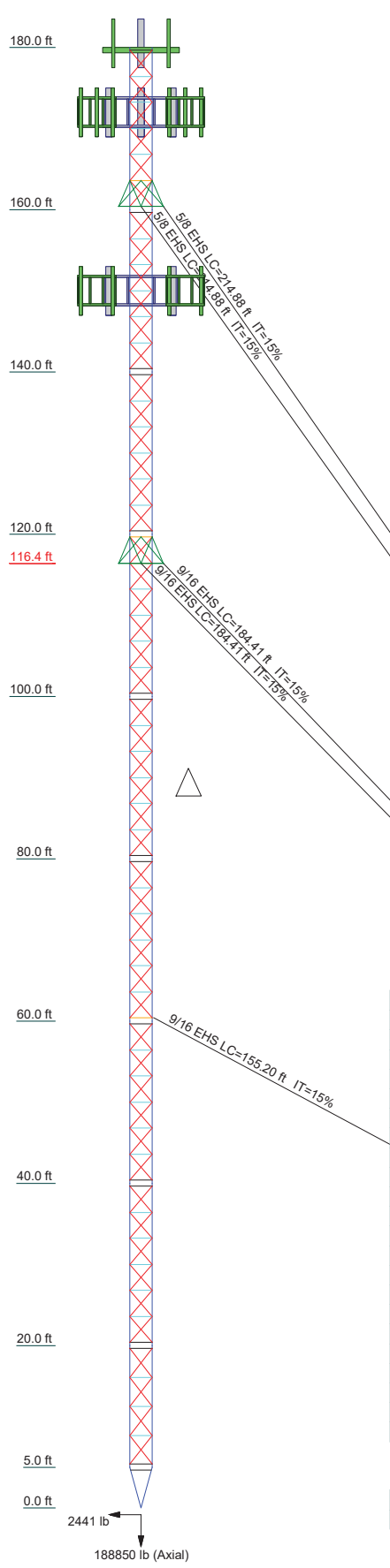
- Percentage less than 100% denote member stress levels are satisfactory for loading
- Percentage greater than 100% indicates member strengthening is required

Foundation Usage

Design Load	Capacity (kips)	Analysis (kips)	Percentage
Base Axial	216	194.3	90
Anchor Uplift	80.3	34.6	43
Anchor Shear	78.1	41.2	53

- Percentage less than 100% denote foundation is satisfactory for loading
- Percentage greater than 100% indicates foundation analysis is required

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10
Legs					P2.5x.203					
Leg Grade					A500M-63					
Diagonals					SR 5/8					
Diagonal Grade					A36					
Top Girts										
Bottom Girts										
Horizontals										
Top Guy Pull-Offs										
Bot Guy Pull-Offs										
Face Width (ft)										
# Panels @ (ft)										
Weight (lb)										
	889.4	698.2	698.2	872.6	698.2	698.2	698.2	480.3	111.2	
					48 @ 3.20833					
										3.5



TYPE	ELEVATION	TYPE	ELEVATION
RFS APXV9ERR18-C-A20 (Sprint)	180.5	(2) Powerwave LGP21401 (ATI)	172
Alcatel Lucent 1900 RRH (Sprint)	180.5	12 ft Boom / Sector Mount (ATI)	170
Alcatel Lucent 800 RRH (Sprint)	180.5	12 ft Boom / Sector Mount (ATI)	170
RFS APXV9ERR18-C-A20 (Sprint)	180.5	12 ft Boom / Sector Mount (ATI)	170
Alcatel Lucent 1900 RRH (Sprint)	180.5	12 ft Boom / Sector Mount (ATI)	150
Alcatel Lucent 800 RRH (Sprint)	180.5	12 ft Boom / Sector Mount (ATI)	150
RFS APXV9ERR18-C-A20 (Sprint)	180.5	12 ft Boom / Sector Mount (ATI)	150
Alcatel Lucent 1900 RRH (Sprint)	180.5	RFS APXV18-206516S-C-A20 (T-Mobile)	150
Alcatel Lucent 800 RRH (Sprint)	180.5	RFS APXV18-206516S-C-A20 (T-Mobile)	150
Low Profile Platform (Sprint)	180	RFS APXV18-206516S-C-A20 (T-Mobile)	150
Powerwave P65-17-XLH-RR (ATI)	172	RFS APXV18-206516S-C-A20 (T-Mobile)	150
KMW AM-X-CD-16-65-00T-RET (ATI)	172	(2) Ericsson RRUS11 (ATI)	172
Andrew SBNH-1D6565C (ATI)	172	(2) Ericsson RRUS11 (ATI)	172
(2) Ericsson RRUS11 (ATI)	172	(2) Ericsson RRUS11 (ATI)	172
(2) Ericsson RRUS11 (ATI)	172	Raycap DC6-48-60-18-8F (ATI)	172
Raycap DC6-48-60-18-8F (ATI)	172	(2) Powerwave LGP21401 (ATI)	172
(2) Powerwave LGP21401 (ATI)	172	(2) Powerwave 7770.00 (ATI)	172
(2) Powerwave 7770.00 (ATI)	172	(2) Powerwave 7770.00 (ATI)	172
(2) Powerwave 7770.00 (ATI)	172	(2) Powerwave 7770.00 (ATI)	172
(2) Powerwave LGP21401 (ATI)	172	(2) Powerwave LGP21401 (ATI)	172

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	1 @ 4.625		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A500M-63	63 ksi	80 ksi	A500M-60	60 ksi	75 ksi
A36	36 ksi	58 ksi			

TOWER DESIGN NOTES

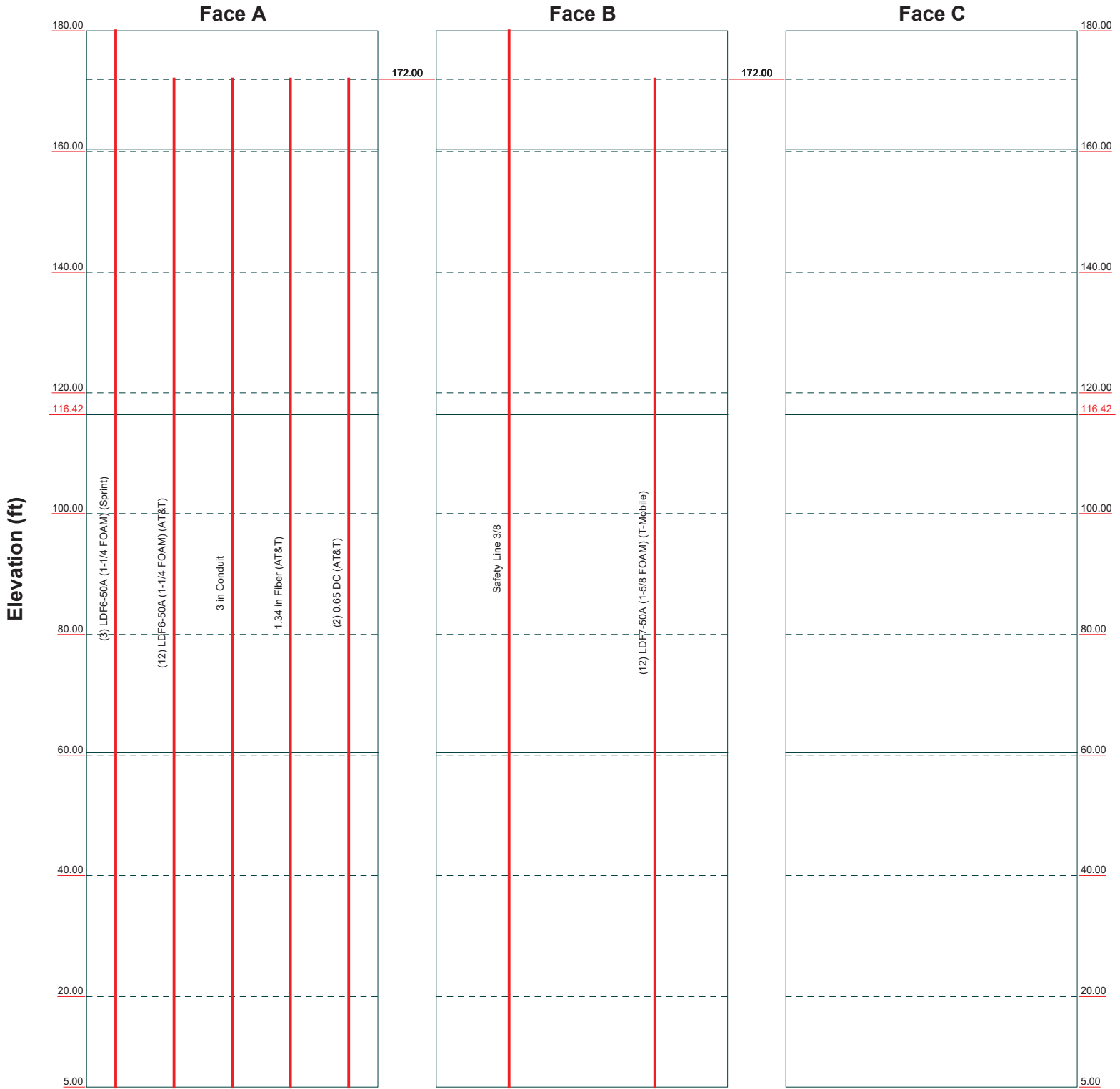
1. Towers located in New London County, Connecticut.

Phone: FAX:	Job: 117-23046 Project: Colchester, CT Client: CDT Code: TIA-222-G Path:	Drawn by: FAN Date: 04/29/17	App'd: Scale: NTS Dwg No. E-1
----------------	--	---------------------------------	-------------------------------------

Feedline Distribution Chart

5' - 180'

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



Phone: FAX:	Job: 117-23046		
	Project: Colchester, CT		
	Client: CDT	Drawn by: FAN	App'd:
	Code: TIA-222-G	Date: 04/29/17	Scale: NTS
	Path:		Dwg No. E-7

<i>RISATower</i> Phone: FAX:	Job 117-23046	Page 1 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Tower Input Data

The main tower is a 3x guyed tower with an overall height of 180.00 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 3.50 ft at the top and tapered at the base.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

Tower is located in New London County, Connecticut.

Basic wind speed of 99 mph.

Structure Class II.

Exposure Category B.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 0.7500 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 50 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..

Tension only take-up is 0.0313 in.

Pressures are calculated at each section.

Safety factor used in guy design is 1.

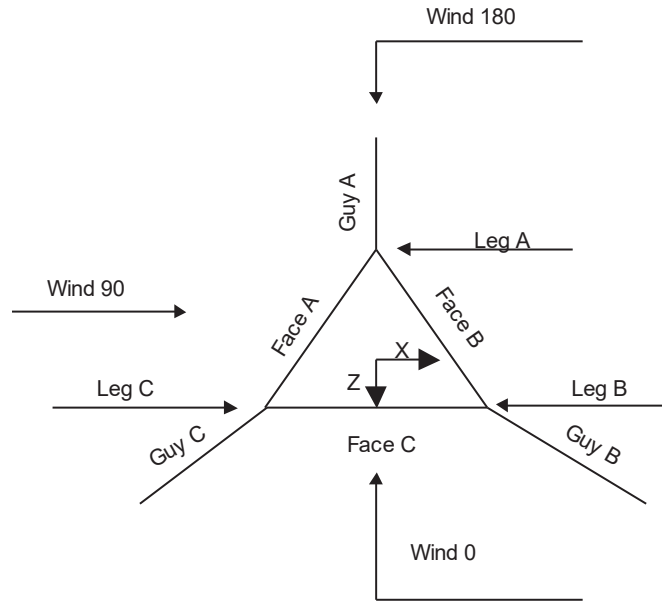
Stress ratio used in tower member design is 1.

Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Options

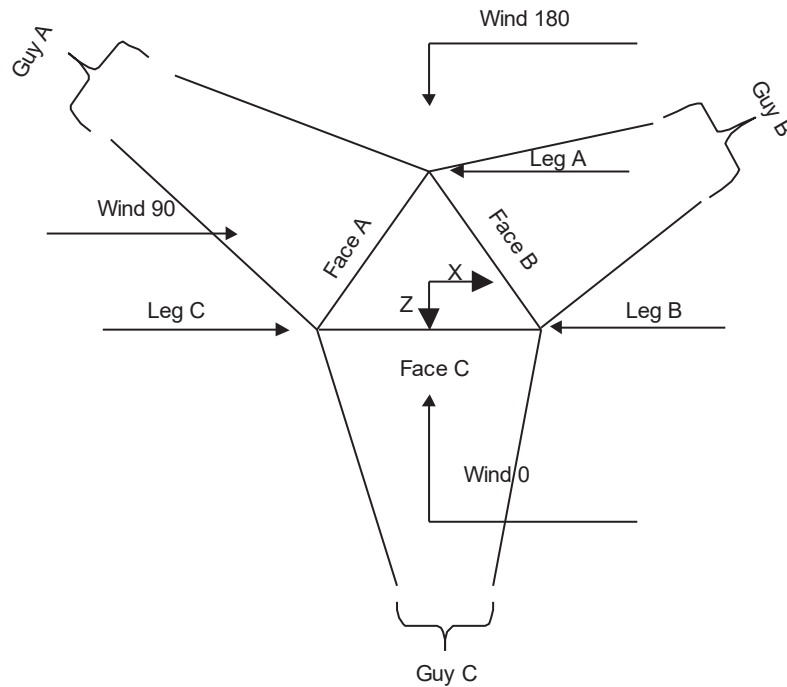
- | | | |
|--|--|---|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile √ Include Bolts In Member Capacity √ Leg Bolts Are At Top Of Section √ Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) Add IBC .6D+W Combination | <ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area √ Use Clear Spans For KL/r √ Retension Guys To Initial Tension Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. √ Autocalc Torque Arm Areas SR Members Have Cut Ends Sort Capacity Reports By Component √ Triangulate Diamond Inner Bracing | <ul style="list-style-type: none"> Treat Feedline Bundles As Cylinder Use ASCE 10 X-Brace Ly Rules √ Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression √ All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feedline Torque Include Angle Block Shear Check <li style="text-align: center;">Poles Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets |
|--|--|---|

Job	117-23046	Page	2 of 50
Project	Colchester, CT	Date	21:44:52 04/29/17
Client	CDT	Designed by	FAN



Corner & Starmount Guyed Tower

Job	117-23046	Page	3 of 50
Project	Colchester, CT	Date	21:44:52 04/29/17
Client	CDT	Designed by	FAN



Face Guyed

Tower Section Geometry

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Assembly Database</i>	<i>Description</i>	<i>Section Width</i>	<i>Number of Sections</i>	<i>Section Length</i>
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T1	180.00-160.00			3.50	1	20.00
T2	160.00-140.00			3.50	1	20.00
T3	140.00-120.00			3.50	1	20.00
T4	120.00-100.00			3.50	1	20.00
T5	100.00-80.00			3.50	1	20.00
T6	80.00-60.00			3.50	1	20.00
T7	60.00-40.00			3.50	1	20.00
T8	40.00-20.00			3.50	1	20.00
T9	20.00-5.00			3.50	1	15.00
T10	5.00-0.00			3.50	1	5.00

Tower Section Geometry (cont'd)

<i>RISATower</i> Phone: FAX:	Job	117-23046	Page	4 of 50
	Project	Colchester, CT	Date	21:44:52 04/29/17
	Client	CDT	Designed by	FAN

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Diagonal Spacing</i>	<i>Bracing Type</i>	<i>Has K Brace End Panels</i>	<i>Has Horizontals</i>	<i>Top Girt Offset</i>	<i>Bottom Girt Offset</i>
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T1	180.00-160.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T2	160.00-140.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T3	140.00-120.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T4	120.00-100.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T5	100.00-80.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T6	80.00-60.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T7	60.00-40.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T8	40.00-20.00	3.21	TX Brace	No	Yes	4.5000	4.5000
T9	20.00-5.00	3.56	TX Brace	No	Yes	4.5000	4.5000
T10	5.00-0.00	4.63	TX Brace	No	Yes	4.5000	0.0000

Tower Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>Leg Type</i>	<i>Leg Size</i>	<i>Leg Grade</i>	<i>Diagonal Type</i>	<i>Diagonal Size</i>	<i>Diagonal Grade</i>
<i>ft</i>						
T1 180.00-160.00	Pipe	P2.5x.203	A500M-63 (63 ksi)	Solid Round	5/8	A36 (36 ksi)
T2 160.00-140.00	Pipe	P2.5x.203	A500M-63 (63 ksi)	Solid Round	5/8	A36 (36 ksi)
T3 140.00-120.00	Pipe	P2.5x.203	A500M-60 (60 ksi)	Solid Round	5/8	A36 (36 ksi)
T4 120.00-100.00	Pipe	P2.5x.203	A500M-60 (60 ksi)	Solid Round	5/8	A36 (36 ksi)
T5 100.00-80.00	Pipe	P2.5x.203	A500M-63 (63 ksi)	Solid Round	5/8	A36 (36 ksi)
T6 80.00-60.00	Pipe	P2.5x.203	A500M-63 (63 ksi)	Solid Round	5/8	A36 (36 ksi)
T7 60.00-40.00	Pipe	P2.5x.203	A500M-60 (60 ksi)	Solid Round	5/8	A36 (36 ksi)
T8 40.00-20.00	Pipe	P2.5x.203	A500M-63 (63 ksi)	Solid Round	5/8	A36 (36 ksi)
T9 20.00-5.00	Pipe	P2.5x.203	A500M-63 (63 ksi)	Solid Round	5/8	A36 (36 ksi)
T10 5.00-0.00	Pipe	P2.5x.203	A500M-63 (63 ksi)	Solid Round	5/8	A36 (36 ksi)

Tower Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>Top Girt Type</i>	<i>Top Girt Size</i>	<i>Top Girt Grade</i>	<i>Bottom Girt Type</i>	<i>Bottom Girt Size</i>	<i>Bottom Girt Grade</i>
<i>ft</i>						
T1 180.00-160.00	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T2 160.00-140.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T3 140.00-120.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T4 120.00-100.00	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T5 100.00-80.00	Equal Angle	L1 1/2x1 1/2x3/16	A36	Equal Angle	L1 1/2x1 1/2x3/16	A36

<i>RISATower</i> Phone: FAX:	Job	117-23046	Page	5 of 50
	Project	Colchester, CT	Date	21:44:52 04/29/17
	Client	CDT	Designed by	FAN

<i>Tower Elevation</i> <i>ft</i>	<i>Top Girt Type</i>	<i>Top Girt Size</i>	<i>Top Girt Grade</i>	<i>Bottom Girt Type</i>	<i>Bottom Girt Size</i>	<i>Bottom Girt Grade</i>
T6 80.00-60.00	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36
T7 60.00-40.00	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36
T8 40.00-20.00	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36
T9 20.00-5.00	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36
T10 5.00-0.00	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36	Equal Angle	L1 1/2x1 1/2x3/16	(36 ksi) A36

Tower Section Geometry (cont'd)

<i>Tower Elevation</i> <i>ft</i>	<i>No. of Mid Girts</i>	<i>Mid Girt Type</i>	<i>Mid Girt Size</i>	<i>Mid Girt Grade</i>	<i>Horizontal Type</i>	<i>Horizontal Size</i>	<i>Horizontal Grade</i>
T1 180.00-160.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T2 160.00-140.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T3 140.00-120.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T4 120.00-100.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T5 100.00-80.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T6 80.00-60.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T7 60.00-40.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T8 40.00-20.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T9 20.00-5.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)
T10 5.00-0.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/2x1 1/2x3/16	A36 (36 ksi)

Tower Section Geometry (cont'd)

<i>Tower Elevation</i> <i>ft</i>	<i>Gusset Area</i> <i>(per face)</i> <i>ft²</i>	<i>Gusset Thickness</i> <i>in</i>	<i>Gusset Grade</i>	<i>Adjust. Factor</i> <i>A_f</i>	<i>Adjust. Factor</i> <i>A_r</i>	<i>Weight Mult.</i>	<i>Double Angle</i> <i>Stitch Bolt</i> <i>Spacing</i> <i>Diagonals</i> <i>in</i>	<i>Double Angle</i> <i>Stitch Bolt</i> <i>Spacing</i> <i>Horizontals</i> <i>in</i>
T1 180.00-160.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T2 160.00-140.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T3	0.00	0.0000	A36	1	1	1	36.0000	36.0000

<i>RISATower</i> Phone: FAX:	Job 117-23046	Page 6 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Tower Elevation	Gusset Area (per face)	Gusset Thickness	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
ft	ft ²	in						
140.00-120.00			(36 ksi)					
T4	0.00	0.0000	A36	1	1	1	36.0000	36.0000
120.00-100.00			(36 ksi)					
T5	0.00	0.0000	A36	1	1	1	36.0000	36.0000
100.00-80.00			(36 ksi)					
T6 80.00-60.00	0.00	0.0000	A36	1	1	1	36.0000	36.0000
60.00-40.00			(36 ksi)					
T7	0.00	0.0000	A36	1	1	1	36.0000	36.0000
40.00-20.00			(36 ksi)					
T8	0.00	0.0000	A36	1	1	1	36.0000	36.0000
20.00-5.00			(36 ksi)					
T9	0.00	0.0000	A36	1	1	1	36.0000	36.0000
5.00-0.00			(36 ksi)					
T10	0.00	0.0000	A36	1	1	1	36.0000	36.0000

Tower Section Geometry (cont'd)

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	Legs	K Factors ¹							
				X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace	
											X
ft				Y	Y	Y	Y	Y	Y	Y	
T1	Yes	Yes	1	1	1	1	1	1	1	1	1
180.00-160.00				1	1	1	1	1	1	1	1
T2	Yes	Yes	1	1	1	1	1	1	1	1	1
160.00-140.00				1	1	1	1	1	1	1	1
T3	Yes	Yes	1	1	1	1	1	1	1	1	1
140.00-120.00				1	1	1	1	1	1	1	1
T4	Yes	Yes	1	1	1	1	1	1	1	1	1
120.00-100.00				1	1	1	1	1	1	1	1
T5	Yes	Yes	1	1	1	1	1	1	1	1	1
100.00-80.00				1	1	1	1	1	1	1	1
T6	Yes	Yes	1	1	1	1	1	1	1	1	1
80.00-60.00				1	1	1	1	1	1	1	1
T7	Yes	Yes	1	1	1	1	1	1	1	1	1
60.00-40.00				1	1	1	1	1	1	1	1
T8	Yes	Yes	1	1	1	1	1	1	1	1	1
40.00-20.00				1	1	1	1	1	1	1	1
T9 20.00-5.00	Yes	Yes	1	1	1	1	1	1	1	1	1
5.00-0.00				1	1	1	1	1	1	1	1
T10	Yes	Yes	0.33	1	1	1	1	1	1	1	1

¹Note: 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)

<i>RISATower</i> Phone: FAX:	Job	117-23046	Page	7 of 50	
	Project	Colchester, CT		Date	21:44:52 04/29/17
	Client	CDT		Designed by	FAN

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 180.00-160.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T2 160.00-140.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T3 140.00-120.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T4 120.00-100.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T5 100.00-80.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T6 80.00-60.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T7 60.00-40.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T8 40.00-20.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T9 20.00-5.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T10 5.00-0.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	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 180.00-160.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T2 160.00-140.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T3 140.00-120.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T4 120.00-100.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T5 100.00-80.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T6 80.00-60.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T7 60.00-40.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T8 40.00-20.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T9 20.00-5.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T10 5.00-0.00	Flange	0.7500	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0

Guy Data

RISATower Phone: FAX:	Job 117-23046	Page 8 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Guy Elevation	Guy Grade	Guy Size	Initial Tension	%	Guy Modulus	Guy Weight	L_u	Anchor Radius	Anchor Azimuth Adj.	Anchor Elevation	End Fitting Efficiency	
ft			lb		ksi	plf	ft	ft	°	ft	%	
160.375	EHS	A	5/8	6360.00	15%	21000	0.813	214.61	145.00	0.0000	0.00	100%
		B	5/8	6360.00	15%	21000	0.813	214.61	145.00	0.0000	0.00	100%
		C	5/8	6360.00	15%	21000	0.813	214.61	145.00	0.0000	0.00	100%
116.417	EHS	A	9/16	5250.00	15%	21000	0.671	184.18	145.00	0.0000	0.00	100%
		B	9/16	5250.00	15%	21000	0.671	184.18	145.00	0.0000	0.00	100%
		C	9/16	5250.00	15%	21000	0.671	184.18	145.00	0.0000	0.00	100%
60.375	EHS	A	9/16	5250.00	15%	21000	0.671	155.01	145.00	0.0000	0.00	100%
		B	9/16	5250.00	15%	21000	0.671	155.01	145.00	0.0000	0.00	100%
		C	9/16	5250.00	15%	21000	0.671	155.01	145.00	0.0000	0.00	100%

Guy Data (cont'd)

Guy Elevation	Mount Type	Torque-Arm Spread	Torque-Arm Leg Angle	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
ft		ft	°				
160.375	Torque Arm	7.00	30.0000	Dog Ear	A36 (36 ksi)	Single Angle	L2x2x5/16 L3x3x1/4
116.417	Torque Arm	7.00	30.0000	Dog Ear	A36 (36 ksi)	Single Angle	L2x2x5/16 L3x3x1/4
60.375	Corner						

Guy Data (cont'd)

Guy Elevation	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
ft								
160.38	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16
116.42	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16
60.38	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Equal Angle	L1 1/2x1 1/2x3/16

Guy Data (cont'd)

Guy Elevation	Cable Weight A	Cable Weight B	Cable Weight C	Cable Weight D	Tower Intercept A	Tower Intercept B	Tower Intercept C	Tower Intercept D
ft	lb	lb	lb	lb	ft	ft	ft	ft
160.375	174.48	174.48	174.48		2.92	2.92	2.92	
116.417	123.58	123.58	123.58		2.9 sec/pulse	2.9 sec/pulse	2.9 sec/pulse	
					2.15	2.15	2.15	
60.375	104.01	104.01	104.01		2.5 sec/pulse	2.5 sec/pulse	2.5 sec/pulse	
					1.53	1.53	1.53	
					2.1 sec/pulse	2.1 sec/pulse	2.1 sec/pulse	

<i>RISATower</i> Phone: FAX:	Job 117-23046	Page 9 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Guy Data (cont'd)

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm		Pull Off		Diagonal	
			K _x	K _y	K _x	K _y	K _x	K _y
160.375	No	No	1	1	0.65	0.65	1	1
116.417	No	No	1	1	0.65	0.65	1	1
60.375	No	No			0.65	0.65	1	1

Guy Data (cont'd)

Guy Elevation ft	Torque-Arm				Pull Off				Diagonal			
	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U
160.375	0.7500 A325N	2	0.0000	1	0.6250 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	1
116.417	0.7500 A325N	2	0.0000	1	0.6250 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	1
60.375	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	1

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q _z psf	q _z Ice psf	Ice Thickness in
160.375	A	80.19	20	5	1.6393
	B	80.19	20	5	1.6393
	C	80.19	20	5	1.6393
116.417	A	58.21	18	5	1.5876
	B	58.21	18	5	1.5876
	C	58.21	18	5	1.5876
60.375	A	30.19	15	4	1.4867
	B	30.19	15	4	1.4867
	C	30.19	15	4	1.4867

Guy-Mast Forces (Excluding Wind) - No Ice

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top Bottom lb	F _x lb	F _y lb	F _z lb	M _x lb-ft	M _y lb-ft	M _z lb-ft
160.375	A	48.2735	6490.22	-104.64	4882.39	-4274.84	-9865.97	15173.38	-17088.36
			6360.00						
	A	48.2735	6490.22	104.64	4882.39	-4274.84	-9865.97	-15173.38	17088.36

<i>RISATower</i> Phone: FAX:	Job	117-23046	Page	10 of 50
	Project	Colchester, CT	Date	21:44:52 04/29/17
	Client	CDT	Designed by	FAN

<i>Guy Elevation</i>	<i>Guy Location</i>	<i>Chord Angle</i>	<i>Guy Tension Top Bottom lb</i>	F_x	F_y	F_z	M_x	M_y	M_z	
<i>ft</i>		$^\circ$		<i>lb</i>	<i>lb</i>	<i>lb</i>	<i>lb-ft</i>	<i>lb-ft</i>	<i>lb-ft</i>	
116.417	B	48.2735	6360.00 6490.22	3754.44	4882.39	2046.79	19731.94	15173.38	0.00	
	B	48.2735	6360.00 6490.22	3649.79	4882.39	2228.04	-9865.97	-15173.38	-17088.36	
	C	48.2735	6360.00 6490.22	-3649.79	4882.39	2228.04	-9865.97	15173.38	17088.36	
	C	48.2735	6360.00 6490.22	-3754.44	4882.39	2046.79	19731.94	-15173.38	0.00	
				Sum:	0.00	29294.33	0.00	-0.00	0.00	0.00
	A	39.1448	5328.01 5250.00	-100.37	3400.60	-4100.44	-6871.68	14554.35	-11902.11	
	A	39.1448	5328.01 5250.00	100.37	3400.60	-4100.44	-6871.68	-14554.35	11902.11	
	B	39.1448	5328.01 5250.00	3601.27	3400.60	1963.29	13743.37	14554.35	0.00	
	B	39.1448	5328.01 5250.00	3500.89	3400.60	2137.14	-6871.68	-14554.35	-11902.11	
	C	39.1448	5328.01 5250.00	-3500.89	3400.60	2137.14	-6871.68	14554.35	11902.11	
60.375	C	39.1448	5328.01 5250.00	-3601.27	3400.60	1963.29	13743.37	-14554.35	0.00	
			Sum:	0.00	20403.61	0.00	-0.00	0.00	0.00	
	A	22.8926	5290.46 5250.00	0.00	2102.12	-4854.90	-4247.81	0.00	0.00	
	B	22.8926	5290.46 5250.00	4204.47	2102.12	2427.45	2123.90	0.00	-3678.71	
	C	22.8926	5290.46 5250.00	-4204.47	2102.12	2427.45	2123.90	-0.00	3678.71	
			Sum:	0.00	6306.36	0.00	0.00	0.00	0.00	

Guy-Mast Forces (Excluding Wind) - Ice

<i>Guy Elevation</i>	<i>Guy Location</i>	<i>Chord Angle</i>	<i>Guy Tension Top Bottom lb</i>	F_x	F_y	F_z	M_x	M_y	M_z
<i>ft</i>		$^\circ$		<i>lb</i>	<i>lb</i>	<i>lb</i>	<i>lb-ft</i>	<i>lb-ft</i>	<i>lb-ft</i>
160.375	A	48.2735	9780.14 8923.84	-152.09	7551.53	-6213.09	-15259.56	22053.13	-26430.34
	A	48.2735	9780.14 8923.84	152.09	7551.53	-6213.09	-15259.56	-22053.13	26430.34
	B	48.2735	9780.14 8923.84	5456.74	7551.53	2974.83	30519.13	22053.13	0.00
	B	48.2735	9780.14 8923.84	5304.65	7551.53	3238.26	-15259.56	-22053.13	-26430.34
	C	48.2735	9780.14 8923.84	-5304.65	7551.53	3238.26	-15259.56	22053.13	26430.34
	C	48.2735	9780.14 8923.84	-5456.74	7551.53	2974.83	30519.13	-22053.13	0.00
			Sum:	0.00	45309.15	0.00	-0.00	0.00	0.00
116.417	A	39.1448	8161.99 7599.28	-149.36	5419.13	-6101.54	-10950.57	21657.20	-18966.95
	A	39.1448	8161.99	149.36	5419.13	-6101.54	-10950.57	-21657.20	18966.95

<i>RISATower</i> Phone: FAX:	Job	117-23046	Page	11 of 50
	Project	Colchester, CT	Date	21:44:52 04/29/17
	Client	CDT	Designed by	FAN

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom lb	F _x	F _y	F _z	M _x	M _y	M _z	
ft		°		lb	lb	lb	lb-ft	lb-ft	lb-ft	
60.375	B	39.1448	7599.28	5358.77	5419.13	2921.42	21901.14	21657.20	0.00	
			8161.99							
	B	39.1448	7599.28	5209.41	5419.13	3180.12	-10950.57	-21657.20	-18966.95	
			8161.99							
	C	39.1448	7599.28	-5209.41	5419.13	3180.12	-10950.57	21657.20	18966.95	
			8161.99							
	C	39.1448	7599.28	-5358.77	5419.13	2921.42	21901.14	-21657.20	0.00	
			8161.99							
	A	22.8926	Sum:	0.00	0.00	32514.76	0.00	-0.00	0.00	0.00
			7815.32							
B	22.8926	7550.50	6123.81	3328.32	3535.58	3362.82	0.00	0.00	-5824.57	
		7815.32								
C	22.8926	7550.50	-6123.81	3328.32	3535.58	3362.82	-0.00	0.00	5824.57	
		7815.32								
		Sum:	0.00	9984.97	0.00	0.00	0.00	0.00	0.00	

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom lb	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		lb	lb	lb	lb-ft	lb-ft	lb-ft
160.375	A	48.2735	6490.22	-104.64	4882.39	-4274.84	-9865.97	15173.38	-17088.36
			6360.00						
	A	48.2735	6490.22	104.64	4882.39	-4274.84	-9865.97	-15173.38	17088.36
			6360.00						
	B	48.2735	6490.22	3754.44	4882.39	2046.79	19731.94	15173.38	0.00
			6360.00						
	B	48.2735	6490.22	3649.79	4882.39	2228.04	-9865.97	-15173.38	-17088.36
			6360.00						
	C	48.2735	6490.22	-3649.79	4882.39	2228.04	-9865.97	15173.38	17088.36
			6360.00						
	C	48.2735	6490.22	-3754.44	4882.39	2046.79	19731.94	-15173.38	0.00
			6360.00						
A	39.1448	Sum:	0.00	29294.33	0.00	-0.00	0.00	0.00	
		5328.01							
A	39.1448	5250.00	-100.37	3400.60	-4100.44	-6871.68	14554.35	-11902.11	
		5328.01							
B	39.1448	5250.00	100.37	3400.60	-4100.44	-6871.68	-14554.35	11902.11	
		5328.01							
B	39.1448	5250.00	3601.27	3400.60	1963.29	13743.37	14554.35	0.00	
		5328.01							
B	39.1448	5250.00	3500.89	3400.60	2137.14	-6871.68	-14554.35	-11902.11	
		5328.01							
C	39.1448	5250.00	-3500.89	3400.60	2137.14	-6871.68	14554.35	11902.11	
		5328.01							
C	39.1448	5250.00	-3601.27	3400.60	1963.29	13743.37	-14554.35	0.00	
		5328.01							
A	22.8926	Sum:	0.00	20403.61	0.00	-0.00	0.00	0.00	
		5290.46							
B	22.8926	5250.00	0.00	2102.12	-4854.90	-4247.81	0.00	0.00	
		5290.46							
			4204.47	2102.12	2427.45	2123.90	0.00	-3678.71	

RISATower Phone: FAX:	Job	117-23046	Page	12 of 50
	Project	Colchester, CT	Date	21:44:52 04/29/17
	Client	CDT	Designed by	FAN

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom lb	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		lb	lb	lb	lb-ft	lb-ft	lb-ft
	C	22.8926	5250.00 5290.46 5250.00	-4204.47	2102.12	2427.45	2123.90	-0.00	3678.71
			Sum:	0.00	6306.36	0.00	0.00	0.00	0.00

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
LDF6-50A (1-1/4 FOAM) (Sprint)	A	No	Ar (CaAa)	180.00 - 0.00	0.0000	0.25	3	3	0.5000	1.5500		0.66
Safety Line 3/8	B	No	Ar (CaAa)	180.00 - 0.00	0.0000	0.25	1	1	0.5000	0.3750		0.22
LDF6-50A (1-1/4 FOAM) (AT&T)	A	No	Ar (CaAa)	172.00 - 0.00	0.0000	-0.25	12	6	0.5000	1.5500		0.66
3 in Conduit	A	No	Ar (CaAa)	172.00 - 0.00	0.0000	-0.25	1	1	0.5000	3.0000		0.22
1.34 in Fiber (AT&T)	A	No	Ar (CaAa)	172.00 - 0.00	0.0000	-0.25	1	1	0.5000	0.0000		0.15
0.65 DC (AT&T)	A	No	Ar (CaAa)	172.00 - 0.00	0.0000	-0.25	2	2	0.5000	0.0000		0.10
LDF7-50A (1-5/8 FOAM) (T-Mobile)	B	No	Ar (CaAa)	172.00 - 0.00	0.0000	0	12	6	0.5000	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 _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight lb
T1	180.00-160.00	A	0.000	0.000	35.220	0.000	141.48
		B	0.000	0.000	29.262	0.000	122.48
		C	0.000	0.000	0.000	0.000	0.00
T2	160.00-140.00	A	0.000	0.000	52.500	0.000	209.40
		B	0.000	0.000	48.270	0.000	201.20
		C	0.000	0.000	0.000	0.000	0.00
T3	140.00-120.00	A	0.000	0.000	52.500	0.000	209.40
		B	0.000	0.000	48.270	0.000	201.20
		C	0.000	0.000	0.000	0.000	0.00
T4	120.00-100.00	A	0.000	0.000	52.500	0.000	209.40
		B	0.000	0.000	48.270	0.000	201.20
		C	0.000	0.000	0.000	0.000	0.00
T5	100.00-80.00	A	0.000	0.000	52.500	0.000	209.40
		B	0.000	0.000	48.270	0.000	201.20
		C	0.000	0.000	0.000	0.000	0.00
T6	80.00-60.00	A	0.000	0.000	52.500	0.000	209.40
		B	0.000	0.000	48.270	0.000	201.20
		C	0.000	0.000	0.000	0.000	0.00

RISATower Phone: FAX:	Job 117-23046	Page 13 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight lb
T7	60.00-40.00	A	0.000	0.000	52.500	0.000	209.40
		B	0.000	0.000	48.270	0.000	201.20
		C	0.000	0.000	0.000	0.000	0.00
T8	40.00-20.00	A	0.000	0.000	52.500	0.000	209.40
		B	0.000	0.000	48.270	0.000	201.20
		C	0.000	0.000	0.000	0.000	0.00
T9	20.00-5.00	A	0.000	0.000	39.375	0.000	157.05
		B	0.000	0.000	36.203	0.000	150.90
		C	0.000	0.000	0.000	0.000	0.00
T10	5.00-0.00	A	0.000	0.000	13.125	0.000	52.35
		B	0.000	0.000	12.068	0.000	50.30
		C	0.000	0.000	0.000	0.000	0.00

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} In Face ft ²	C _{AA} Out Face ft ²	Weight lb
T1	180.00-160.00	A	1.767	0.000	0.000	71.742	0.000	1019.81
		B		0.000	0.000	37.245	0.000	680.44
		C		0.000	0.000	0.000	0.000	0.00
T2	160.00-140.00	A	1.745	0.000	0.000	101.447	0.000	1470.79
		B		0.000	0.000	56.629	0.000	1059.33
		C		0.000	0.000	0.000	0.000	0.00
T3	140.00-120.00	A	1.720	0.000	0.000	100.741	0.000	1450.08
		B		0.000	0.000	56.366	0.000	1047.97
		C		0.000	0.000	0.000	0.000	0.00
T4	120.00-100.00	A	1.692	0.000	0.000	99.929	0.000	1426.45
		B		0.000	0.000	56.064	0.000	1034.98
		C		0.000	0.000	0.000	0.000	0.00
T5	100.00-80.00	A	1.658	0.000	0.000	98.972	0.000	1398.85
		B		0.000	0.000	55.708	0.000	1019.76
		C		0.000	0.000	0.000	0.000	0.00
T6	80.00-60.00	A	1.617	0.000	0.000	97.801	0.000	1365.42
		B		0.000	0.000	55.272	0.000	1001.28
		C		0.000	0.000	0.000	0.000	0.00
T7	60.00-40.00	A	1.564	0.000	0.000	96.279	0.000	1322.59
		B		0.000	0.000	54.706	0.000	977.49
		C		0.000	0.000	0.000	0.000	0.00
T8	40.00-20.00	A	1.486	0.000	0.000	94.067	0.000	1261.50
		B		0.000	0.000	53.883	0.000	943.38
		C		0.000	0.000	0.000	0.000	0.00
T9	20.00-5.00	A	1.361	0.000	0.000	67.900	0.000	875.16
		B		0.000	0.000	39.426	0.000	667.55
		C		0.000	0.000	0.000	0.000	0.00
T10	5.00-0.00	A	1.159	0.000	0.000	21.201	0.000	255.30
		B		0.000	0.000	12.609	0.000	201.66
		C		0.000	0.000	0.000	0.000	0.00

Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in

<i>RISATower</i> Phone: FAX:	Job	117-23046	Page	14 of 50
	Project	Colchester, CT	Date	21:44:52 04/29/17
	Client	CDT	Designed by	FAN

Section	Elevation	CP _x	CP _z	CP _x	CP _z
	ft	in	in	Ice in	Ice in
T1	180.00-160.00	-0.5495	-0.9702	-0.3368	-0.3768
T2	160.00-140.00	-0.5591	-0.8698	-0.4800	-0.3494
T3	140.00-120.00	-0.5591	-0.8698	-0.4807	-0.3527
T4	120.00-100.00	-0.5591	-0.8698	-0.4816	-0.3567
T5	100.00-80.00	-0.5591	-0.8698	-0.4826	-0.3614
T6	80.00-60.00	-0.5591	-0.8698	-0.4840	-0.3673
T7	60.00-40.00	-0.5591	-0.8698	-0.4857	-0.3751
T8	40.00-20.00	-0.5591	-0.8698	-0.4883	-0.3869
T9	20.00-5.00	-0.5606	-0.8720	-0.4958	-0.4095
T10	5.00-0.00	-0.3884	-1.2349	-0.4161	-0.7789

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T1	1	LDF6-50A (1-1/4 FOAM)	160.00 - 180.00	1.0000	1.0000
T1	2	Safety Line 3/8	160.00 - 180.00	1.0000	1.0000
T1	3	LDF6-50A (1-1/4 FOAM)	160.00 - 172.00	1.0000	1.0000
T1	4	3 in Conduit	160.00 - 172.00	1.0000	1.0000
T1	5	1.34 in Fiber	160.00 - 172.00	1.0000	1.0000
T1	6	0.65 DC	160.00 - 172.00	1.0000	1.0000
T1	7	LDF7-50A (1-5/8 FOAM)	160.00 - 172.00	1.0000	1.0000
T2	1	LDF6-50A (1-1/4 FOAM)	140.00 - 160.00	1.0000	1.0000
T2	2	Safety Line 3/8	140.00 - 160.00	1.0000	1.0000
T2	3	LDF6-50A (1-1/4 FOAM)	140.00 - 160.00	1.0000	1.0000
T2	4	3 in Conduit	140.00 - 160.00	1.0000	1.0000
T2	5	1.34 in Fiber	140.00 - 160.00	1.0000	1.0000
T2	6	0.65 DC	140.00 - 160.00	1.0000	1.0000
T2	7	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	1.0000	1.0000
T3	1	LDF6-50A (1-1/4 FOAM)	120.00 - 140.00	1.0000	1.0000
T3	2	Safety Line 3/8	120.00 - 140.00	1.0000	1.0000
T3	3	LDF6-50A (1-1/4 FOAM)	120.00 - 140.00	1.0000	1.0000
T3	4	3 in Conduit	120.00 - 140.00	1.0000	1.0000
T3	5	1.34 in Fiber	120.00 - 140.00	1.0000	1.0000
T3	6	0.65 DC	120.00 - 140.00	1.0000	1.0000

RISATower

Phone: FAX:	Job	117-23046	Page	15 of 50
	Project	Colchester, CT	Date	21:44:52 04/29/17
	Client	CDT	Designed by	FAN

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T3	7	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	1.0000	1.0000
T4	1	LDF6-50A (1-1/4 FOAM)	100.00 - 120.00	1.0000	1.0000
T4	2	Safety Line 3/8	100.00 - 120.00	1.0000	1.0000
T4	3	LDF6-50A (1-1/4 FOAM)	100.00 - 120.00	1.0000	1.0000
T4	4	3 in Conduit	100.00 - 120.00	1.0000	1.0000
T4	5	1.34 in Fiber	100.00 - 120.00	1.0000	1.0000
T4	6	0.65 DC	100.00 - 120.00	1.0000	1.0000
T4	7	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	1.0000	1.0000
T5	1	LDF6-50A (1-1/4 FOAM)	80.00 - 100.00	1.0000	1.0000
T5	2	Safety Line 3/8	80.00 - 100.00	1.0000	1.0000
T5	3	LDF6-50A (1-1/4 FOAM)	80.00 - 100.00	1.0000	1.0000
T5	4	3 in Conduit	80.00 - 100.00	1.0000	1.0000
T5	5	1.34 in Fiber	80.00 - 100.00	1.0000	1.0000
T5	6	0.65 DC	80.00 - 100.00	1.0000	1.0000
T5	7	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	1.0000	1.0000
T6	1	LDF6-50A (1-1/4 FOAM)	60.00 - 80.00	1.0000	1.0000
T6	2	Safety Line 3/8	60.00 - 80.00	1.0000	1.0000
T6	3	LDF6-50A (1-1/4 FOAM)	60.00 - 80.00	1.0000	1.0000
T6	4	3 in Conduit	60.00 - 80.00	1.0000	1.0000
T6	5	1.34 in Fiber	60.00 - 80.00	1.0000	1.0000
T6	6	0.65 DC	60.00 - 80.00	1.0000	1.0000
T6	7	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	1.0000	1.0000
T7	1	LDF6-50A (1-1/4 FOAM)	40.00 - 60.00	1.0000	1.0000
T7	2	Safety Line 3/8	40.00 - 60.00	1.0000	1.0000
T7	3	LDF6-50A (1-1/4 FOAM)	40.00 - 60.00	1.0000	1.0000
T7	4	3 in Conduit	40.00 - 60.00	1.0000	1.0000
T7	5	1.34 in Fiber	40.00 - 60.00	1.0000	1.0000
T7	6	0.65 DC	40.00 - 60.00	1.0000	1.0000
T7	7	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	1.0000	1.0000
T8	1	LDF6-50A (1-1/4 FOAM)	20.00 - 40.00	1.0000	1.0000
T8	2	Safety Line 3/8	20.00 - 40.00	1.0000	1.0000
T8	3	LDF6-50A (1-1/4 FOAM)	20.00 - 40.00	1.0000	1.0000
T8	4	3 in Conduit	20.00 - 40.00	1.0000	1.0000
T8	5	1.34 in Fiber	20.00 - 40.00	1.0000	1.0000
T8	6	0.65 DC	20.00 - 40.00	1.0000	1.0000
T8	7	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	1.0000	1.0000
T9	1	LDF6-50A (1-1/4 FOAM)	5.00 - 20.00	1.0000	1.0000
T9	2	Safety Line 3/8	5.00 - 20.00	1.0000	1.0000
T9	3	LDF6-50A (1-1/4 FOAM)	5.00 - 20.00	1.0000	1.0000
T9	4	3 in Conduit	5.00 - 20.00	1.0000	1.0000
T9	5	1.34 in Fiber	5.00 - 20.00	1.0000	1.0000
T9	6	0.65 DC	5.00 - 20.00	1.0000	1.0000
T9	7	LDF7-50A (1-5/8 FOAM)	5.00 - 20.00	1.0000	1.0000
T10	1	LDF6-50A (1-1/4 FOAM)	0.00 - 5.00	1.0000	1.0000
T10	2	Safety Line 3/8	0.00 - 5.00	1.0000	1.0000
T10	3	LDF6-50A (1-1/4 FOAM)	0.00 - 5.00	1.0000	1.0000
T10	4	3 in Conduit	0.00 - 5.00	1.0000	1.0000
T10	5	1.34 in Fiber	0.00 - 5.00	1.0000	1.0000
T10	6	0.65 DC	0.00 - 5.00	1.0000	1.0000
T10	7	LDF7-50A (1-5/8 FOAM)	0.00 - 5.00	1.0000	1.0000

RISATower Phone: FAX:	Job 117-23046	Page 16 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A _A Front	C _A A _A Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	lb
Low Profile Platform (Sprint)	A	None			0.0000	180.00	No Ice 26.30 1/2" Ice 35.60 1" Ice 44.90	26.30 35.60 44.90	1950.00 2340.00 2730.00
12 ft Boom / Sector Mount (AT&T)	A	From Leg	0.00 0.00 0.00		0.0000	170.00	No Ice 17.50 1/2" Ice 22.50 1" Ice 28.00	8.50 11.00 14.00	450.00 700.00 900.00
12 ft Boom / Sector Mount (AT&T)	B	From Leg	0.00 0.00 0.00		0.0000	170.00	No Ice 17.50 1/2" Ice 22.50 1" Ice 28.00	8.50 11.00 14.00	450.00 700.00 900.00
12 ft Boom / Sector Mount (AT&T)	C	From Leg	0.00 0.00 0.00		0.0000	170.00	No Ice 17.50 1/2" Ice 22.50 1" Ice 28.00	8.50 11.00 14.00	450.00 700.00 900.00
(2) Powerwave 7770.00 (AT&T)	A	From Leg	3.00 0.00 0.00		0.0000	172.00	No Ice 5.88 1/2" Ice 6.25 1" Ice 6.64	2.93 3.29 3.64	35.00 67.60 105.10
(2) Powerwave 7770.00 (AT&T)	B	From Leg	3.00 0.00 0.00		0.0000	172.00	No Ice 5.88 1/2" Ice 6.25 1" Ice 6.64	2.93 3.29 3.64	35.00 67.60 105.10
(2) Powerwave 7770.00 (AT&T)	C	From Leg	3.00 0.00 0.00		0.0000	172.00	No Ice 5.88 1/2" Ice 6.25 1" Ice 6.64	2.93 3.29 3.64	35.00 67.60 105.10
(2) Powerwave LGP21401 (AT&T)	A	From Leg	3.00 0.00 0.00		0.0000	172.00	No Ice 1.95 1/2" Ice 2.11 1" Ice 2.28	0.53 0.63 0.75	31.00 42.00 55.30
(2) Powerwave LGP21401 (AT&T)	B	From Leg	3.00 0.00 0.00		0.0000	172.00	No Ice 1.95 1/2" Ice 2.11 1" Ice 2.28	0.53 0.63 0.75	31.00 42.00 55.30
(2) Powerwave LGP21401 (AT&T)	C	From Leg	3.00 0.00 0.00		0.0000	172.00	No Ice 1.95 1/2" Ice 2.11 1" Ice 2.28	0.53 0.63 0.75	31.00 42.00 55.30
Powerwave P65-17-XLH-RR (AT&T)	A	From Leg	3.00 0.00 0.00		0.0000	172.00	No Ice 11.47 1/2" Ice 12.08 1" Ice 12.69	4.00 4.68 5.32	62.00 124.10 193.70
KMW AM-X-CD-16-65-00T-RET (AT&T)	B	From Leg	3.00 0.00 0.00		0.0000	172.00	No Ice 8.26 1/2" Ice 8.73 1" Ice 9.21	4.64 5.12 5.59	48.50 95.00 147.50
Andrew SBNH-1D6565C (AT&T)	C	From Leg	3.00 0.00 0.00		0.0000	172.00	No Ice 11.41 1/2" Ice 12.03 1" Ice 12.64	7.70 8.36 9.00	60.90 126.60 199.90
(2) Ericsson RRUS11 (AT&T)	A	From Leg	3.00 0.00 0.00		0.0000	172.00	No Ice 2.99 1/2" Ice 3.19 1" Ice 3.41	1.25 1.39 1.55	55.00 74.60 97.10
(2) Ericsson RRUS11 (AT&T)	B	From Leg	3.00 0.00 0.00		0.0000	172.00	No Ice 2.99 1/2" Ice 3.19 1" Ice 3.41	1.25 1.39 1.55	55.00 74.60 97.10
(2) Ericsson RRUS11 (AT&T)	C	From Leg	3.00 0.00 0.00		0.0000	172.00	No Ice 2.99 1/2" Ice 3.19 1" Ice 3.41	1.25 1.39 1.55	55.00 74.60 97.10
Raycap DC6-48-60-18-8F (AT&T)	A	From Leg	3.00 0.00 0.00		0.0000	172.00	No Ice 1.47 1/2" Ice 1.67 1" Ice 1.88	1.47 1.67 1.88	31.80 54.40 80.10

<i>RISATower</i> Phone: FAX:	Job 117-23046						Page 17 of 50		
	Project Colchester, CT						Date 21:44:52 04/29/17		
	Client CDT						Designed by FAN		

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
RFS APXV9ERR18-C-A20 (Sprint)	A	From Leg	3.00	0.0000	180.50	No Ice	8.02	5.81	62.00
			0.00			1/2" Ice	8.93	6.73	172.10
			0.00			1" Ice	9.86	7.64	307.60
Alcatel Lucent 1900 RRH (Sprint)	A	From Leg	3.00	0.0000	180.50	No Ice	2.58	2.54	60.00
			0.00			1/2" Ice	2.97	2.92	116.40
			0.00			1" Ice	3.39	3.34	187.10
Alcatel Lucent 800 RRH (Sprint)	A	From Leg	3.00	0.0000	180.50	No Ice	1.71	1.32	53.00
			0.00			1/2" Ice	2.01	1.59	90.30
			0.00			1" Ice	2.35	1.90	139.20
RFS APXV9ERR18-C-A20 (Sprint)	B	From Leg	3.00	0.0000	180.50	No Ice	8.02	5.81	62.00
			0.00			1/2" Ice	8.93	6.73	172.10
			0.00			1" Ice	9.86	7.64	307.60
Alcatel Lucent 1900 RRH (Sprint)	B	From Leg	3.00	0.0000	180.50	No Ice	2.58	2.54	60.00
			0.00			1/2" Ice	2.97	2.92	116.40
			0.00			1" Ice	3.39	3.34	187.10
Alcatel Lucent 800 RRH (Sprint)	B	From Leg	3.00	0.0000	180.50	No Ice	1.71	1.32	53.00
			0.00			1/2" Ice	2.01	1.59	90.30
			0.00			1" Ice	2.35	1.90	139.20
RFS APXV9ERR18-C-A20 (Sprint)	C	From Leg	3.00	0.0000	180.50	No Ice	8.02	5.81	62.00
			0.00			1/2" Ice	8.93	6.73	172.10
			0.00			1" Ice	9.86	7.64	307.60
Alcatel Lucent 1900 RRH (Sprint)	C	From Leg	3.00	0.0000	180.50	No Ice	2.58	2.54	60.00
			0.00			1/2" Ice	2.97	2.92	116.40
			0.00			1" Ice	3.39	3.34	187.10
Alcatel Lucent 800 RRH (Sprint)	C	From Leg	3.00	0.0000	180.50	No Ice	1.71	1.32	53.00
			0.00			1/2" Ice	2.01	1.59	90.30
			0.00			1" Ice	2.35	1.90	139.20
12 ft Boom / Sector Mount (AT&T)	A	From Leg	0.00	0.0000	150.00	No Ice	17.50	8.50	450.00
			0.00			1/2" Ice	22.50	11.00	700.00
			0.00			1" Ice	28.00	14.00	900.00
12 ft Boom / Sector Mount (AT&T)	B	From Leg	0.00	0.0000	150.00	No Ice	17.50	8.50	450.00
			0.00			1/2" Ice	22.50	11.00	700.00
			0.00			1" Ice	28.00	14.00	900.00
12 ft Boom / Sector Mount (AT&T)	C	From Leg	0.00	0.0000	150.00	No Ice	17.50	8.50	450.00
			0.00			1/2" Ice	22.50	11.00	700.00
			0.00			1" Ice	28.00	14.00	900.00
RFS APXV18-206516S-C-A20 (T-Mobile)	A	From Leg	3.00	0.0000	150.00	No Ice	3.62	2.01	18.70
			0.00			1/2" Ice	4.29	2.72	63.10
			0.00			1" Ice	4.97	3.38	125.50
RFS APXV18-206516S-C-A20 (T-Mobile)	B	From Leg	3.00	0.0000	150.00	No Ice	3.62	2.01	18.70
			0.00			1/2" Ice	4.29	2.72	63.10
			0.00			1" Ice	4.97	3.38	125.50
RFS APXV18-206516S-C-A20 (T-Mobile)	C	From Leg	3.00	0.0000	150.00	No Ice	3.62	2.01	18.70
			0.00			1/2" Ice	4.29	2.72	63.10
			0.00			1" Ice	4.97	3.38	125.50
Commscope LNX-6515DS-A1M (T-Mobile)	A	From Leg	3.00	0.0000	150.00	No Ice	11.45	7.70	50.30
			0.00			1/2" Ice	12.67	8.99	189.70
			0.00			1" Ice	13.89	10.22	360.60
Commscope LNX-6515DS-A1M (T-Mobile)	B	From Leg	3.00	0.0000	150.00	No Ice	11.45	7.70	50.30
			0.00			1/2" Ice	12.67	8.99	189.70
			0.00			1" Ice	13.89	10.22	360.60
Commscope LNX-6515DS-A1M (T-Mobile)	C	From Leg	3.00	0.0000	150.00	No Ice	11.45	7.70	50.30
			0.00			1/2" Ice	12.67	8.99	189.70
			0.00			1" Ice	13.89	10.22	360.60
TMA (T-Mobile)	A	From Leg	3.00	0.0000	150.00	No Ice	2.06	0.50	22.00
			0.00			1/2" Ice	2.39	0.72	49.80
			0.00			1" Ice	2.75	0.97	88.20

<i>RISATower</i> Phone: FAX:	Job	117-23046	Page	18 of 50
	Project	Colchester, CT	Date	21:44:52 04/29/17
	Client	CDT	Designed by	FAN

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight lb
TMA (T-Mobile)	B	From Leg	3.00 0.00 0.00	0.0000	150.00	No Ice 2.06 1/2" Ice 2.39 1" Ice 2.75	0.50 0.72 0.97	22.00 49.80 88.20
TMA (T-Mobile)	C	From Leg	3.00 0.00 0.00	0.0000	150.00	No Ice 2.06 1/2" Ice 2.39 1" Ice 2.75	0.50 0.72 0.97	22.00 49.80 88.20

Tower Pressures - No Ice

$G_H = 0.850$

Section Elevation ft	z ft	K _Z	q _z psf	A _G ft ²	F a c e e ft ²	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	
T1 180.00-160.00	170.00	1.15	25	74.792	A	3.192	12.348	9.583	61.67	35.220	0.000	
					B	3.192	12.348					29.262
					C	3.192	12.348					0.000
T2 160.00-140.00	150.00	1.11	24	74.792	A	2.853	12.348	9.583	63.05	52.500	0.000	
					B	2.853	12.348					48.270
					C	2.853	12.348					0.000
T3 140.00-120.00	130.00	1.065	23	74.792	A	2.853	12.348	9.583	63.05	52.500	0.000	
					B	2.853	12.348					48.270
					C	2.853	12.348					0.000
T4 120.00-100.00	110.00	1.016	22	74.792	A	2.853	12.348	9.583	63.05	52.500	0.000	
					B	2.853	12.348					48.270
					C	2.853	12.348					0.000
T5 100.00-80.00	90.00	0.959	20	74.792	A	2.853	12.348	9.583	63.05	52.500	0.000	
					B	2.853	12.348					48.270
					C	2.853	12.348					0.000
T6 80.00-60.00	70.00	0.892	19	74.792	A	2.853	12.348	9.583	63.05	52.500	0.000	
					B	2.853	12.348					48.270
					C	2.853	12.348					0.000
T7 60.00-40.00	50.00	0.811	17	74.792	A	2.853	12.348	9.583	63.05	52.500	0.000	
					B	2.853	12.348					48.270
					C	2.853	12.348					0.000
T8 40.00-20.00	30.00	0.701	15	74.792	A	2.853	12.348	9.583	63.05	52.500	0.000	
					B	2.853	12.348					48.270
					C	2.853	12.348					0.000
T9 20.00-5.00	12.50	0.7	15	56.094	A	2.038	9.126	7.188	64.38	39.375	0.000	
					B	2.038	9.126					36.203
					C	2.038	9.126					0.000
T10 5.00-0.00	2.50	0.7	15	10.019	A	0.375	2.584	2.584	87.33	13.125	0.000	
					B	0.375	2.584					12.068
					C	0.375	2.584					0.000

Tower Pressure - With Ice

RISATower Phone: FAX:	Job 117-23046	Page 19 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

$$G_H = 0.850$$

Section Elevation ft	z ft	K _Z	q _z psf	t _z in	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _{AA} In Face ft ²	C _{AA} Out Face ft ²
T1 180.00-160.00	170.00	1.15	6	1.7672	80.682	A	3.192	46.484	21.365	43.01	71.742	0.000
						B	3.192	46.484			37.245	0.000
						C	3.192	46.484			0.000	0.000
T2 160.00-140.00	150.00	1.11	6	1.7452	80.609	A	2.853	46.059	21.218	43.38	101.447	0.000
						B	2.853	46.059			56.629	0.000
						C	2.853	46.059			0.000	0.000
T3 140.00-120.00	130.00	1.065	6	1.7204	80.526	A	2.853	45.580	21.053	43.47	100.741	0.000
						B	2.853	45.580			56.366	0.000
						C	2.853	45.580			0.000	0.000
T4 120.00-100.00	110.00	1.016	6	1.6919	80.431	A	2.853	45.030	20.863	43.57	99.929	0.000
						B	2.853	45.030			56.064	0.000
						C	2.853	45.030			0.000	0.000
T5 100.00-80.00	90.00	0.959	5	1.6583	80.319	A	2.853	44.380	20.639	43.70	98.972	0.000
						B	2.853	44.380			55.708	0.000
						C	2.853	44.380			0.000	0.000
T6 80.00-60.00	70.00	0.892	5	1.6171	80.182	A	2.853	43.585	20.364	43.85	97.801	0.000
						B	2.853	43.585			55.272	0.000
						C	2.853	43.585			0.000	0.000
T7 60.00-40.00	50.00	0.811	4	1.5636	80.004	A	2.853	42.552	20.008	44.07	96.279	0.000
						B	2.853	42.552			54.706	0.000
						C	2.853	42.552			0.000	0.000
T8 40.00-20.00	30.00	0.701	4	1.4858	79.744	A	2.853	41.048	19.488	44.39	94.067	0.000
						B	2.853	41.048			53.883	0.000
						C	2.853	41.048			0.000	0.000
T9 20.00-5.00	12.50	0.7	4	1.3612	59.497	A	2.038	28.074	13.994	46.47	67.900	0.000
						B	2.038	28.074			39.426	0.000
						C	2.038	28.074			0.000	0.000
T10 5.00-0.00	2.50	0.7	4	1.1589	11.042	A	0.375	5.246	4.667	83.03	21.201	0.000
						B	0.375	5.246			12.609	0.000
						C	0.375	5.246			0.000	0.000

Tower Pressure - Service

$$G_H = 0.850$$

Section Elevation ft	z ft	K _Z	q _z psf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _{AA} In Face ft ²	C _{AA} Out Face ft ²
T1 180.00-160.00	170.00	1.15	9	74.792	A	3.192	12.348	9.583	61.67	35.220	0.000
					B	3.192	12.348			29.262	0.000
					C	3.192	12.348			0.000	0.000
T2 160.00-140.00	150.00	1.11	9	74.792	A	2.853	12.348	9.583	63.05	52.500	0.000
					B	2.853	12.348			48.270	0.000
					C	2.853	12.348			0.000	0.000
T3 140.00-120.00	130.00	1.065	8	74.792	A	2.853	12.348	9.583	63.05	52.500	0.000
					B	2.853	12.348			48.270	0.000
					C	2.853	12.348			0.000	0.000
T4 120.00-100.00	110.00	1.016	8	74.792	A	2.853	12.348	9.583	63.05	52.500	0.000
					B	2.853	12.348			48.270	0.000
					C	2.853	12.348			0.000	0.000
T5 100.00-80.00	90.00	0.959	8	74.792	A	2.853	12.348	9.583	63.05	52.500	0.000
					B	2.853	12.348			48.270	0.000

RISATower Phone: FAX:	Job 117-23046	Page 20 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Section Elevation ft	z ft	K _Z	q _z psf	A _G ft ²	F _a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _{AA} In Face ft ²	C _{AA} Out Face ft ²
T6 80.00-60.00	70.00	0.892	7	74.792	C	2.853	12.348	9.583	63.05	0.000	0.000
					A	2.853	12.348			52.500	0.000
					B	2.853	12.348			48.270	0.000
T7 60.00-40.00	50.00	0.811	6	74.792	C	2.853	12.348	9.583	63.05	0.000	0.000
					A	2.853	12.348			52.500	0.000
					B	2.853	12.348			48.270	0.000
T8 40.00-20.00	30.00	0.701	5	74.792	C	2.853	12.348	9.583	63.05	0.000	0.000
					A	2.853	12.348			52.500	0.000
					B	2.853	12.348			48.270	0.000
T9 20.00-5.00	12.50	0.7	5	56.094	C	2.853	12.348	7.188	64.38	0.000	0.000
					A	2.038	9.126			39.375	0.000
					B	2.038	9.126			36.203	0.000
T10 5.00-0.00	2.50	0.7	5	10.019	C	2.853	12.348	2.584	87.33	0.000	0.000
					A	0.375	2.584			13.125	0.000
					B	0.375	2.584			12.068	0.000
					C	0.375	2.584		87.33	0.000	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	F _a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
T1 180.00-160.00	263.96	674.99 TA 214.38	A	0.208	2.57	25	1	1	10.303	1422.66	71.13	A
			B	0.208	2.57	1	1	10.303				
			C	0.208	2.57	1	1	10.303				
T2 160.00-140.00	410.60	658.24	A	0.203	2.585	24	1	1	9.953	1790.12	89.51	B
			B	0.203	2.585	1	1	9.953				
			C	0.203	2.585	1	1	9.953				
T3 140.00-120.00	410.60	658.24	A	0.203	2.585	23	1	1	9.953	1718.40	85.92	B
			B	0.203	2.585	1	1	9.953				
			C	0.203	2.585	1	1	9.953				
T4 120.00-100.00	410.60	658.24 TA 214.38	A	0.203	2.585	22	1	1	9.953	1638.31	81.92	B
			B	0.203	2.585	1	1	9.953				
			C	0.203	2.585	1	1	9.953				
T5 100.00-80.00	410.60	658.24	A	0.203	2.585	20	1	1	9.953	1547.02	77.35	B
			B	0.203	2.585	1	1	9.953				
			C	0.203	2.585	1	1	9.953				
T6 80.00-60.00	410.60	658.24	A	0.203	2.585	19	1	1	9.953	1439.83	71.99	B
			B	0.203	2.585	1	1	9.953				
			C	0.203	2.585	1	1	9.953				
T7 60.00-40.00	410.60	658.24	A	0.203	2.585	17	1	1	9.953	1307.86	65.39	B
			B	0.203	2.585	1	1	9.953				
			C	0.203	2.585	1	1	9.953				
T8 40.00-20.00	410.60	658.24	A	0.203	2.585	15	1	1	9.953	1130.25	56.51	B
			B	0.203	2.585	1	1	9.953				
			C	0.203	2.585	1	1	9.953				
T9 20.00-5.00	307.95	480.27	A	0.199	2.599	15	1	1	7.279	842.16	56.14	B
			B	0.199	2.599	1	1	7.279				
			C	0.199	2.599	1	1	7.279				
T10 5.00-0.00	102.65	111.24	A	0.295	2.309	15	1	1	1.919	256.90	51.38	B
			B	0.295	2.309	1	1	1.919				
			C	0.295	2.309	1	1	1.919				
Sum Weight:	3548.76	6302.97								13093.51		

RISATower Phone: FAX:	Job 117-23046	Page 21 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
T1 180.00-160.00	263.96	674.99 TA 214.38	A	0.208	2.57	25	0.8	1	9.665	1388.45	69.42	C
			B	0.208	2.57		0.8	1	9.665			
			C	0.208	2.57		0.8	1	9.665			
T2 160.00-140.00	410.60	658.24	A	0.203	2.585	24	0.8	1	9.383	1760.45	88.02	A
			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T3 140.00-120.00	410.60	658.24	A	0.203	2.585	23	0.8	1	9.383	1689.92	84.50	A
			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T4 120.00-100.00	410.60	658.24 TA 214.38	A	0.203	2.585	22	0.8	1	9.383	1611.15	80.56	A
			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T5 100.00-80.00	410.60	658.24	A	0.203	2.585	20	0.8	1	9.383	1521.38	76.07	A
			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T6 80.00-60.00	410.60	658.24	A	0.203	2.585	19	0.8	1	9.383	1415.97	70.80	A
			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T7 60.00-40.00	410.60	658.24	A	0.203	2.585	17	0.8	1	9.383	1286.18	64.31	A
			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T8 40.00-20.00	410.60	658.24	A	0.203	2.585	15	0.8	1	9.383	1111.52	55.58	A
			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T9 20.00-5.00	307.95	480.27	A	0.199	2.599	15	0.8	1	6.871	828.72	55.25	A
			B	0.199	2.599		0.8	1	6.871			
			C	0.199	2.599		0.8	1	6.871			
T10 5.00-0.00	102.65	111.24	A	0.295	2.309	15	0.8	1	1.844	254.70	50.94	A
			B	0.295	2.309		0.8	1	1.844			
			C	0.295	2.309		0.8	1	1.844			
Sum Weight:	3548.76	6302.97								12868.44		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
T1 180.00-160.00	263.96	674.99 TA 214.38	A	0.208	2.57	25	0.85	1	9.824	1488.00	74.40	C
			B	0.208	2.57		0.85	1	9.824			
			C	0.208	2.57		0.85	1	9.824			
T2 160.00-140.00	410.60	658.24	A	0.203	2.585	24	0.85	1	9.526	1906.91	95.35	C
			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T3 140.00-120.00	410.60	658.24	A	0.203	2.585	23	0.85	1	9.526	1830.51	91.53	C
			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T4 120.00-100.00	410.60	658.24 TA 214.38	A	0.203	2.585	22	0.85	1	9.526	1745.20	87.26	C
			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			

<i>RISATower</i> Phone: FAX:	Job 117-23046	Page 22 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
T5 100.00-80.00	410.60	658.24	C	0.203	2.585	20	0.85	1	9.526	1647.95	82.40	C
			A	0.203	2.585		0.85	1	9.526			
			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T6 80.00-60.00	410.60	658.24	A	0.203	2.585	19	0.85	1	9.526	1533.77	76.69	C
			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T7 60.00-40.00	410.60	658.24	A	0.203	2.585	17	0.85	1	9.526	1393.19	69.66	C
			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T8 40.00-20.00	410.60	658.24	A	0.203	2.585	15	0.85	1	9.526	1203.99	60.20	C
			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T9 20.00-5.00	307.95	480.27	A	0.199	2.599	15	0.85	1	6.973	897.87	59.86	C
			B	0.199	2.599		0.85	1	6.973			
			C	0.199	2.599		0.85	1	6.973			
T10 5.00-0.00	102.65	111.24	A	0.295	2.309	15	0.85	1	1.862	266.99*	53.40	C
			B	0.295	2.309		0.85	1	1.862			
			C	0.295	2.309		0.85	1	1.862			
Sum Weight:	3548.76	6302.97			2.1A _g limit					13914.38		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
T1 180.00-160.00	1700.25	2816.31 TA 769.52	A	0.616	1.795	6	1	1	38.232	841.52	42.08	A
			B	0.616	1.795		1	1	38.232			
			C	0.616	1.795		1	1	38.232			
T2 160.00-140.00	2530.12	2719.08	A	0.607	1.8	6	1	1	37.308	868.54*	43.43	C
			B	0.607	1.8		1	1	37.308			
			C	0.607	1.8		1	1	37.308			
T3 140.00-120.00	2498.04	2673.93	A	0.601	1.803	6	1	1	36.795	832.89*	41.64	C
			B	0.601	1.803		1	1	36.795			
			C	0.601	1.803		1	1	36.795			
T4 120.00-100.00	2461.43	2622.61 TA 738.18	A	0.595	1.807	6	1	1	36.211	793.14*	39.66	B
			B	0.595	1.807		1	1	36.211			
			C	0.595	1.807		1	1	36.211			
T5 100.00-80.00	2418.61	2562.85	A	0.588	1.812	5	1	1	35.529	747.90*	37.39	B
			B	0.588	1.812		1	1	35.529			
			C	0.588	1.812		1	1	35.529			
T6 80.00-60.00	2366.70	2490.82	A	0.579	1.818	5	1	1	34.703	694.89*	34.74	B
			B	0.579	1.818		1	1	34.703			
			C	0.579	1.818		1	1	34.703			
T7 60.00-40.00	2300.08	2399.07	A	0.568	1.828	4	1	1	33.646	629.79*	31.49	B
			B	0.568	1.828		1	1	33.646			
			C	0.568	1.828		1	1	33.646			
T8 40.00-20.00	2204.89	2269.35	A	0.551	1.843	4	1	1	32.141	542.50*	27.13	B
			B	0.551	1.843		1	1	32.141			
			C	0.551	1.843		1	1	32.141			
T9 20.00-5.00	1542.70	1497.28	A	0.506	1.892	4	1	1	21.362	404.42*	26.96	A
			B	0.506	1.892		1	1	21.362			

<i>RISATower</i> Phone: FAX:	Job 117-23046	Page 23 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
T10 5.00-0.00	456.97	248.75	C	0.506	1.892	4	1	1	21.362	75.06*	15.01	C
			A	0.509	1.889		1	1	3.994			
			B	0.509	1.889		1	1	3.994			
			C	0.509	1.889		1	1	3.994			
Sum Weight:	20479.79	23807.75			*2.1A _g limit					6430.65		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
T1 180.00-160.00	1700.25	2816.31 TA 769.52	A	0.616	1.795	6	0.8	1	37.593	835.43	41.77	C
			B	0.616	1.795		0.8	1	37.593			
			C	0.616	1.795		0.8	1	37.593			
T2 160.00-140.00	2530.12	2719.08	A	0.607	1.8	6	0.8	1	36.738	868.54*	43.43	C
			B	0.607	1.8		0.8	1	36.738			
			C	0.607	1.8		0.8	1	36.738			
T3 140.00-120.00	2498.04	2673.93	A	0.601	1.803	6	0.8	1	36.225	832.89*	41.64	C
			B	0.601	1.803		0.8	1	36.225			
			C	0.601	1.803		0.8	1	36.225			
T4 120.00-100.00	2461.43	2622.61 TA 738.18	A	0.595	1.807	6	0.8	1	35.641	793.14*	39.66	C
			B	0.595	1.807		0.8	1	35.641			
			C	0.595	1.807		0.8	1	35.641			
T5 100.00-80.00	2418.61	2562.85	A	0.588	1.812	5	0.8	1	34.958	747.90*	37.39	C
			B	0.588	1.812		0.8	1	34.958			
			C	0.588	1.812		0.8	1	34.958			
T6 80.00-60.00	2366.70	2490.82	A	0.579	1.818	5	0.8	1	34.133	694.89*	34.74	C
			B	0.579	1.818		0.8	1	34.133			
			C	0.579	1.818		0.8	1	34.133			
T7 60.00-40.00	2300.08	2399.07	A	0.568	1.828	4	0.8	1	33.076	629.79*	31.49	C
			B	0.568	1.828		0.8	1	33.076			
			C	0.568	1.828		0.8	1	33.076			
T8 40.00-20.00	2204.89	2269.35	A	0.551	1.843	4	0.8	1	31.571	542.50*	27.13	C
			B	0.551	1.843		0.8	1	31.571			
			C	0.551	1.843		0.8	1	31.571			
T9 20.00-5.00	1542.70	1497.28	A	0.506	1.892	4	0.8	1	20.954	404.42*	26.96	C
			B	0.506	1.892		0.8	1	20.954			
			C	0.506	1.892		0.8	1	20.954			
T10 5.00-0.00	456.97	248.75	A	0.509	1.889	4	0.8	1	3.919	75.06*	15.01	C
			B	0.509	1.889		0.8	1	3.919			
			C	0.509	1.889		0.8	1	3.919			
Sum Weight:	20479.79	23807.75			*2.1A _g limit					6424.56		

Tower Forces - With Ice - Wind 90 To Face

<i>RISATower</i> Phone: FAX:	Job 117-23046	Page 24 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
T1 180.00-160.00	1700.25	2816.31 TA 769.52	A	0.616	1.795	6	0.85	1	37.753	846.54	42.33	C
			B	0.616	1.795		0.85	1	37.753			
			C	0.616	1.795		0.85	1	37.753			
T2 160.00-140.00	2530.12	2719.08	A	0.607	1.8	6	0.85	1	36.880	868.54*	43.43	C
			B	0.607	1.8		0.85	1	36.880			
			C	0.607	1.8		0.85	1	36.880			
T3 140.00-120.00	2498.04	2673.93	A	0.601	1.803	6	0.85	1	36.368	832.89*	41.64	C
			B	0.601	1.803		0.85	1	36.368			
			C	0.601	1.803		0.85	1	36.368			
T4 120.00-100.00	2461.43	2622.61 TA 738.18	A	0.595	1.807	6	0.85	1	35.783	793.14*	39.66	C
			B	0.595	1.807		0.85	1	35.783			
			C	0.595	1.807		0.85	1	35.783			
T5 100.00-80.00	2418.61	2562.85	A	0.588	1.812	5	0.85	1	35.101	747.90*	37.39	C
			B	0.588	1.812		0.85	1	35.101			
			C	0.588	1.812		0.85	1	35.101			
T6 80.00-60.00	2366.70	2490.82	A	0.579	1.818	5	0.85	1	34.275	694.89*	34.74	C
			B	0.579	1.818		0.85	1	34.275			
			C	0.579	1.818		0.85	1	34.275			
T7 60.00-40.00	2300.08	2399.07	A	0.568	1.828	4	0.85	1	33.218	629.79*	31.49	C
			B	0.568	1.828		0.85	1	33.218			
			C	0.568	1.828		0.85	1	33.218			
T8 40.00-20.00	2204.89	2269.35	A	0.551	1.843	4	0.85	1	31.713	542.50*	27.13	C
			B	0.551	1.843		0.85	1	31.713			
			C	0.551	1.843		0.85	1	31.713			
T9 20.00-5.00	1542.70	1497.28	A	0.506	1.892	4	0.85	1	21.056	404.42*	26.96	C
			B	0.506	1.892		0.85	1	21.056			
			C	0.506	1.892		0.85	1	21.056			
T10 5.00-0.00	456.97	248.75	A	0.509	1.889	4	0.85	1	3.938	75.06*	15.01	C
			B	0.509	1.889		0.85	1	3.938			
			C	0.509	1.889		0.85	1	3.938			
Sum Weight:	20479.79	23807.75			2.1A _g limit					6435.66		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
T1 180.00-160.00	263.96	674.99 TA 214.38	A	0.208	2.57	9	1	1	10.303	522.56	26.13	A
			B	0.208	2.57		1	1	10.303			
			C	0.208	2.57		1	1	10.303			
T2 160.00-140.00	410.60	658.24	A	0.203	2.585	9	1	1	9.953	657.53	32.88	B
			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T3 140.00-120.00	410.60	658.24	A	0.203	2.585	8	1	1	9.953	631.19	31.56	B
			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T4 120.00-100.00	410.60	658.24 TA 214.38	A	0.203	2.585	8	1	1	9.953	601.77	30.09	B
			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T5 100.00-80.00	410.60	658.24	A	0.203	2.585	8	1	1	9.953	568.23	28.41	B
			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			

<i>RISATower</i> Phone: FAX:	Job 117-23046	Page 25 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
T6 80.00-60.00	410.60	658.24	A	0.203	2.585	7	1	1	9.953	528.86	26.44	B
			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T7 60.00-40.00	410.60	658.24	A	0.203	2.585	6	1	1	9.953	480.39	24.02	B
			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T8 40.00-20.00	410.60	658.24	A	0.203	2.585	5	1	1	9.953	415.15	20.76	B
			B	0.203	2.585		1	1	9.953			
			C	0.203	2.585		1	1	9.953			
T9 20.00-5.00	307.95	480.27	A	0.199	2.599	5	1	1	7.279	309.33	20.62	B
			B	0.199	2.599		1	1	7.279			
			C	0.199	2.599		1	1	7.279			
T10 5.00-0.00	102.65	111.24	A	0.295	2.309	5	1	1	1.919	94.36	18.87	B
			B	0.295	2.309		1	1	1.919			
			C	0.295	2.309		1	1	1.919			
Sum Weight:	3548.76	6302.97								4809.37		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
T1 180.00-160.00	263.96	674.99	A	0.208	2.57	9	0.8	1	9.665	509.99	25.50	C
		TA 214.38	B	0.208	2.57		0.8	1	9.665			
			C	0.208	2.57		0.8	1	9.665			
T2 160.00-140.00	410.60	658.24	A	0.203	2.585	9	0.8	1	9.383	646.63	32.33	A
			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T3 140.00-120.00	410.60	658.24	A	0.203	2.585	8	0.8	1	9.383	620.72	31.04	A
			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T4 120.00-100.00	410.60	658.24	A	0.203	2.585	8	0.8	1	9.383	591.79	29.59	A
		TA 214.38	B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T5 100.00-80.00	410.60	658.24	A	0.203	2.585	8	0.8	1	9.383	558.82	27.94	A
			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T6 80.00-60.00	410.60	658.24	A	0.203	2.585	7	0.8	1	9.383	520.10	26.00	A
			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T7 60.00-40.00	410.60	658.24	A	0.203	2.585	6	0.8	1	9.383	472.43	23.62	A
			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T8 40.00-20.00	410.60	658.24	A	0.203	2.585	5	0.8	1	9.383	408.27	20.41	A
			B	0.203	2.585		0.8	1	9.383			
			C	0.203	2.585		0.8	1	9.383			
T9 20.00-5.00	307.95	480.27	A	0.199	2.599	5	0.8	1	6.871	304.40	20.29	A
			B	0.199	2.599		0.8	1	6.871			
			C	0.199	2.599		0.8	1	6.871			
T10 5.00-0.00	102.65	111.24	A	0.295	2.309	5	0.8	1	1.844	93.56	18.71	A
			B	0.295	2.309		0.8	1	1.844			
			C	0.295	2.309		0.8	1	1.844			
Sum Weight:	3548.76	6302.97								4726.70		

<i>RISATower</i> Phone: FAX:	Job 117-23046	Page 26 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
T1 180.00-160.00	263.96	674.99 TA 214.38	A	0.208	2.57	9	0.85	1	9.824	546.56	27.33	C
			B	0.208	2.57		0.85	1	9.824			
			C	0.208	2.57		0.85	1	9.824			
T2 160.00-140.00	410.60	658.24	A	0.203	2.585	9	0.85	1	9.526	700.43	35.02	C
			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T3 140.00-120.00	410.60	658.24	A	0.203	2.585	8	0.85	1	9.526	672.37	33.62	C
			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T4 120.00-100.00	410.60	658.24 TA 214.38	A	0.203	2.585	8	0.85	1	9.526	641.03	32.05	C
			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T5 100.00-80.00	410.60	658.24	A	0.203	2.585	8	0.85	1	9.526	605.31	30.27	C
			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T6 80.00-60.00	410.60	658.24	A	0.203	2.585	7	0.85	1	9.526	563.37	28.17	C
			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T7 60.00-40.00	410.60	658.24	A	0.203	2.585	6	0.85	1	9.526	511.73	25.59	C
			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T8 40.00-20.00	410.60	658.24	A	0.203	2.585	5	0.85	1	9.526	442.24	22.11	C
			B	0.203	2.585		0.85	1	9.526			
			C	0.203	2.585		0.85	1	9.526			
T9 20.00-5.00	307.95	480.27	A	0.199	2.599	5	0.85	1	6.973	329.80	21.99	C
			B	0.199	2.599		0.85	1	6.973			
			C	0.199	2.599		0.85	1	6.973			
T10 5.00-0.00	102.65	111.24	A	0.295	2.309	5	0.85	1	1.862	98.07*	19.61	C
			B	0.295	2.309		0.85	1	1.862			
			C	0.295	2.309		0.85	1	1.862			
Sum Weight:	3548.76	6302.97								5110.88		

Force Totals (Does not include forces on guys)

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Torques lb-ft
Leg Weight	3138.04			
Bracing Weight	3164.93			
Total Member Self-Weight	6302.97			
Guy Weight	2100.38			
Total Weight	18329.32			
Wind 0 deg - No Ice		4.71	-15137.33	-718.88
Wind 30 deg - No Ice		7787.44	-13534.61	-1010.93

<i>RISATower</i> Phone: FAX:	Job 117-23046	Page 27 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Torques lb-ft
Wind 60 deg - No Ice		15379.98	-8911.85	-1200.45
Wind 90 deg - No Ice		18596.75	-4.71	-961.58
Wind 120 deg - No Ice		15350.74	8889.52	-356.78
Wind 150 deg - No Ice		7960.29	13843.41	274.22
Wind 180 deg - No Ice		-4.71	15137.33	718.88
Wind 210 deg - No Ice		-7787.44	13534.61	1010.93
Wind 240 deg - No Ice		-15379.98	8911.85	1200.45
Wind 270 deg - No Ice		-18596.75	4.71	961.58
Wind 300 deg - No Ice		-15350.74	-8889.52	356.78
Wind 330 deg - No Ice		-7960.29	-13843.41	-274.22
Member Ice	17504.78			
Guy Ice	12178.48			
Total Weight Ice	122404.48			
Wind 0 deg - Ice		0.01	-11695.67	-254.58
Wind 30 deg - Ice		5878.62	-10188.75	-392.55
Wind 60 deg - Ice		10297.15	-5948.93	-428.67
Wind 90 deg - Ice		11930.90	-0.01	-344.97
Wind 120 deg - Ice		10328.12	5966.80	-167.05
Wind 150 deg - Ice		5914.91	10251.63	54.23
Wind 180 deg - Ice		-0.01	11695.67	254.58
Wind 210 deg - Ice		-5878.62	10188.75	392.55
Wind 240 deg - Ice		-10297.15	5948.93	428.67
Wind 270 deg - Ice		-11930.90	0.01	344.97
Wind 300 deg - Ice		-10328.12	-5966.80	167.05
Wind 330 deg - Ice		-5914.91	-10251.63	-54.23
Total Weight	18329.32			
Wind 0 deg - Service		1.73	-5560.08	-264.05
Wind 30 deg - Service		2860.40	-4971.39	-371.33
Wind 60 deg - Service		5649.21	-3273.41	-440.94
Wind 90 deg - Service		6830.76	-1.73	-353.20
Wind 120 deg - Service		5638.47	3265.20	-131.05
Wind 150 deg - Service		2923.89	5084.82	100.72
Wind 180 deg - Service		-1.73	5560.08	264.05
Wind 210 deg - Service		-2860.40	4971.39	371.33
Wind 240 deg - Service		-5649.21	3273.41	440.94
Wind 270 deg - Service		-6830.76	1.73	353.20
Wind 300 deg - Service		-5638.47	-3265.20	131.05
Wind 330 deg - Service		-2923.89	-5084.82	-100.72

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice+1.0 Guy
3	1.2 Dead+1.6 Wind 30 deg - No Ice+1.0 Guy
4	1.2 Dead+1.6 Wind 60 deg - No Ice+1.0 Guy
5	1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy
6	1.2 Dead+1.6 Wind 120 deg - No Ice+1.0 Guy
7	1.2 Dead+1.6 Wind 150 deg - No Ice+1.0 Guy
8	1.2 Dead+1.6 Wind 180 deg - No Ice+1.0 Guy
9	1.2 Dead+1.6 Wind 210 deg - No Ice+1.0 Guy
10	1.2 Dead+1.6 Wind 240 deg - No Ice+1.0 Guy
11	1.2 Dead+1.6 Wind 270 deg - No Ice+1.0 Guy

<i>RISATower</i> Phone: FAX:	Job	117-23046	Page	28 of 50
	Project	Colchester, CT	Date	21:44:52 04/29/17
	Client	CDT	Designed by	FAN

<i>Comb. No.</i>	<i>Description</i>
12	1.2 Dead+1.6 Wind 300 deg - No Ice+1.0 Guy
13	1.2 Dead+1.6 Wind 330 deg - No Ice+1.0 Guy
14	1.2 Dead+1.0 Ice+1.0 Temp+Guy
15	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy
16	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy
17	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy
18	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy
19	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy
20	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy
21	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy
22	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy
23	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy
24	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy
25	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy
26	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy
27	Dead+Wind 0 deg - Service+Guy
28	Dead+Wind 30 deg - Service+Guy
29	Dead+Wind 60 deg - Service+Guy
30	Dead+Wind 90 deg - Service+Guy
31	Dead+Wind 120 deg - Service+Guy
32	Dead+Wind 150 deg - Service+Guy
33	Dead+Wind 180 deg - Service+Guy
34	Dead+Wind 210 deg - Service+Guy
35	Dead+Wind 240 deg - Service+Guy
36	Dead+Wind 270 deg - Service+Guy
37	Dead+Wind 300 deg - Service+Guy
38	Dead+Wind 330 deg - Service+Guy

Maximum Member Forces

<i>Section No.</i>	<i>Elevation ft</i>	<i>Component Type</i>	<i>Condition</i>	<i>Gov. Load Comb.</i>	<i>Axial lb</i>	<i>Major Axis Moment lb-ft</i>	<i>Minor Axis Moment lb-ft</i>	
T1	180 - 160	Leg	Max Tension	12	11629.62	49.76	32.95	
			Max. Compression	15	-56509.51	1.87	287.34	
			Max. Mx	11	-17845.46	677.72	-14.87	
			Max. My	8	6076.78	5.69	-681.43	
			Max. Vy	11	1507.85	677.50	-15.19	
			Max. Vx	8	-1424.47	-30.58	-631.61	
		Diagonal	Max Tension	3	6744.21	0.00	0.00	
			Horizontal	Max Tension	15	978.77	0.00	0.00
				Max. Compression	2	-6019.55	0.00	0.00
				Max. Mx	14	583.03	-17.91	0.00
			Max. My	24	907.41	0.00	0.00	
			Max. Vy	14	20.47	0.00	0.00	
		Top Girt	Max. Vx	24	-0.00	0.00	0.00	
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	8	-3420.71	0.00	0.00	
			Max. Mx	14	-2577.39	-17.91	0.00	
			Max. My	24	-2572.33	0.00	0.00	
			Max. Vy	14	20.47	0.00	0.00	
		Guy A	Max. Vx	24	-0.00	0.00	0.00	
			Bottom Tension	8	13265.16			
Top Tension	8		13394.79					
Top Cable Vert	8		10086.60					
Top Cable Norm	8		8813.67					
Top Cable Tan	8		2.72					
Bot Cable Vert	8	-9778.40						
Bot Cable Norm	8	8963.68						

<i>RISATower</i> Phone: FAX:	Job 117-23046	Page 29 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
		Guy B	Bot Cable Tan	8	3.88		
			Bottom Tension	12	13193.26		
			Top Tension	12	13322.89		
			Top Cable Vert	12	10033.15		
			Top Cable Norm	12	8765.58		
			Top Cable Tan	12	2.75		
			Bot Cable Vert	12	-9724.94		
			Bot Cable Norm	12	8915.58		
		Guy C	Bot Cable Tan	12	3.84		
			Bottom Tension	4	13243.36		
			Top Tension	4	13372.98		
			Top Cable Vert	4	10070.37		
			Top Cable Norm	4	8799.11		
			Top Cable Tan	4	2.89		
			Bot Cable Vert	4	-9762.16		
			Bot Cable Norm	4	8949.11		
		Top Guy Pull-Off	Bot Cable Tan	4	3.70		
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	2	-8805.37	0.00	0.00
			Max. Mx	14	-3770.59	-16.15	0.00
			Max. My	24	-3748.82	0.00	0.00
		Bottom Guy Pull-Off	Max. Vy	14	-18.46	0.00	0.00
			Max. Vx	24	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	2	-4249.51	0.00	0.00
			Max. Mx	14	-1689.69	-16.15	0.00
		Torque Arm Top	Max. My	24	-1740.59	0.00	0.00
			Max. Vy	14	-18.46	0.00	0.00
			Max. Vx	24	0.00	0.00	0.00
			Max Tension	15	12717.92	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
		Torque Arm Bottom	Max. Mx	26	11776.70	-30.66	0.00
			Max. My	15	7614.59	0.00	0.23
			Max. Vy	26	25.83	0.00	0.00
			Max. Vx	15	0.19	0.00	0.00
			Max Tension	13	3319.28	0.00	0.00
		Leg	Max. Compression	3	-9902.40	0.00	0.00
			Max. Mx	17	-8678.36	-28.87	0.00
			Max. My	23	-7442.63	0.00	-0.00
			Max. Vy	17	33.00	0.00	0.00
			Max. Vx	23	0.00	0.00	0.00
			Max Tension	8	6073.68	0.95	-160.39
			Max. Compression	15	-57837.38	3.91	32.24
			Max. Mx	11	-17926.70	-452.27	-39.52
			Max. My	8	-25807.02	-3.62	435.70
			Max. Vy	11	1507.02	112.37	-27.68
		Diagonal Horizontal	Max. Vx	8	-1425.03	-17.19	-98.07
			Max Tension	9	5412.39	0.00	0.00
			Max Tension	15	1001.77	0.00	0.00
			Max. Compression	2	-5023.51	0.00	0.00
			Max. Mx	14	705.11	-15.92	0.00
		Top Girt	Max. My	24	940.93	0.00	0.00
			Max. Vy	14	18.20	0.00	0.00
			Max. Vx	24	-0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	2	-3602.31	0.00	0.00
		Top Girt	Max. Mx	14	-1698.66	-15.92	0.00
			Max. My	24	-1698.09	0.00	0.00
			Max. Vy	14	18.20	0.00	0.00
			Max. Vx	24	-0.00	0.00	0.00

<i>RISATower</i> Phone: FAX:	Job	117-23046	Page	30 of 50
	Project	Colchester, CT	Date	21:44:52 04/29/17
	Client	CDT	Designed by	FAN

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft	
T3	140 - 120	Bottom Girt	Max Tension	1	0.00	0.00	0.00	
			Max. Compression	2	-2670.04	0.00	0.00	
			Max. Mx	14	-1408.57	-15.92	0.00	
			Max. My	24	-1366.34	0.00	0.00	
			Max. Vy	14	18.20	0.00	0.00	
			Max. Vx	24	-0.00	0.00	0.00	
		Leg	Max Tension	8	5179.13	-8.34	279.32	
			Max. Compression	15	-61390.47	6.64	-4.73	
			Max. Mx	5	-13457.98	366.11	-4.55	
			Max. My	2	-37601.96	11.20	-336.23	
			Max. Vy	5	1241.81	-98.88	-28.93	
			Max. Vx	2	-1207.70	-29.54	118.69	
			Diagonal Horizontal	Max Tension	9	4912.56	0.00	0.00
				Max Tension	15	1063.31	0.00	0.00
				Max. Compression	2	-5129.37	0.00	0.00
				Max. Mx	14	728.59	-15.66	0.00
				Max. My	24	999.14	0.00	0.00
				Max. Vy	14	17.90	0.00	0.00
		Top Girt	Max. Vx	24	-0.00	0.00	0.00	
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	2	-2447.76	0.00	0.00	
			Max. Mx	14	-1395.11	-15.66	0.00	
			Max. My	24	-1402.05	0.00	0.00	
			Max. Vy	14	17.90	0.00	0.00	
Bottom Girt	Max. Vx	24	-0.00	0.00	0.00			
	Max Tension	1	0.00	0.00	0.00			
	Max. Compression	2	-3494.14	0.00	0.00			
	Max. Mx	14	-1313.23	-15.66	0.00			
	Max. My	24	-1242.95	0.00	0.00			
	Max. Vy	14	17.90	0.00	0.00			
T4	120 - 100	Leg	Max. Vx	24	-0.00	0.00	0.00	
			Max Tension	8	5175.34	1.59	-133.08	
			Max. Compression	15	-69755.85	0.58	79.99	
			Max. Mx	5	3565.65	-588.77	20.82	
			Max. My	2	-3102.55	-34.17	571.89	
			Max. Vy	5	1243.21	-564.09	-53.54	
		Diagonal Horizontal	Max. Vx	2	-1210.20	-34.17	571.89	
			Max Tension	3	4635.28	0.00	0.00	
			Max Tension	15	1208.21	0.00	0.00	
			Max. Compression	2	-4314.85	0.00	0.00	
			Max. Mx	14	908.35	-15.37	0.00	
			Max. My	24	1146.55	0.00	0.00	
		Bottom Girt	Max. Vy	14	17.56	0.00	0.00	
			Max. Vx	24	-0.00	0.00	0.00	
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	12	-2332.10	0.00	0.00	
			Max. Mx	14	-856.91	-15.37	0.00	
			Max. My	24	-818.30	0.00	0.00	
		Guy A	Max. Vy	14	17.56	0.00	0.00	
			Max. Vx	24	-0.00	0.00	0.00	
			Bottom Tension	8	9198.76			
			Top Tension	8	9276.55			
			Top Cable Vert	8	5924.87			
			Top Cable Norm	8	7137.94			
Top Cable Tan	8		1.72					
Bot Cable Vert	8		-5722.69					
Bot Cable Norm	8		7201.94					
Bot Cable Tan	8		2.21					
Guy B	Bottom Tension		12	9184.15				
	Top Tension		12	9261.94				
	Top Cable Vert	12	5915.68					

<i>RISATower</i> Phone: FAX:	Job	117-23046	Page	31 of 50
	Project	Colchester, CT	Date	21:44:52 04/29/17
	Client	CDT	Designed by	FAN

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Top Cable Norm	12	7126.59		
			Top Cable Tan	12	1.71		
			Bot Cable Vert	12	-5713.49		
			Bot Cable Norm	12	7190.59		
			Bot Cable Tan	12	2.22		
		Guy C	Bottom Tension	4	9232.83		
			Top Tension	4	9310.62		
			Top Cable Vert	4	5946.29		
			Top Cable Norm	4	7164.44		
			Top Cable Tan	4	1.78		
			Bot Cable Vert	4	-5744.11		
			Bot Cable Norm	4	7228.44		
			Bot Cable Tan	4	2.15		
		Top Guy Pull-Off	Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-3618.98	0.00	0.00
			Max. Mx	14	-949.16	-15.37	0.00
			Max. My	24	-890.88	0.00	0.00
			Max. Vy	14	17.56	0.00	0.00
			Max. Vx	24	-0.00	0.00	0.00
		Bottom Guy Pull-Off	Max Tension	1	0.00	0.00	0.00
			Max. Compression	2	-7000.59	0.00	0.00
			Max. Mx	14	-1735.21	-15.37	0.00
			Max. My	24	-1628.47	0.00	0.00
			Max. Vy	14	17.56	0.00	0.00
			Max. Vx	24	-0.00	0.00	0.00
		Torque Arm Top	Max Tension	24	8104.53	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	26	7308.74	-29.25	0.00
			Max. My	23	6039.38	0.00	-0.07
			Max. Vy	26	-24.64	0.00	0.00
			Max. Vx	23	0.06	0.00	0.00
		Torque Arm Bottom	Max Tension	3	3041.03	0.00	0.00
			Max. Compression	3	-6026.43	0.00	0.00
			Max. Mx	20	-551.25	-27.79	0.00
			Max. My	23	-3776.43	0.00	-0.00
			Max. Vy	24	31.76	0.00	0.00
			Max. Vx	23	0.00	0.00	0.00
T5	100 - 80	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	15	-62796.74	-0.45	89.33
			Max. Mx	11	-27373.24	-311.43	94.18
			Max. My	2	-28299.35	20.33	-358.44
			Max. Vy	11	831.69	8.75	-26.23
			Max. Vx	2	930.78	-0.35	-9.91
		Diagonal	Max Tension	3	4017.25	0.00	0.00
		Horizontal	Max Tension	15	1087.67	0.00	0.00
			Max. Compression	12	-4119.30	0.00	0.00
			Max. Mx	14	934.54	-15.02	0.00
			Max. My	11	521.23	0.00	0.00
			Max. Vy	14	17.17	0.00	0.00
			Max. Vx	11	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	2	-2449.86	0.00	0.00
			Max. Mx	14	-847.81	-15.02	0.00
			Max. My	24	-801.49	0.00	0.00
			Max. Vy	14	17.17	0.00	0.00
			Max. Vx	24	-0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	12	-2110.92	0.00	0.00
			Max. Mx	14	-784.34	-15.02	0.00
			Max. My	5	-2043.93	0.00	0.00

<i>RISATower</i> Phone: FAX:	Job 117-23046	Page 32 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft	
T6	80 - 60	Leg	Max. Vy	14	17.17	0.00	0.00	
			Max. Vx	5	-0.00	0.00	0.00	
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	15	-58524.75	28.40	26.98	
			Max. Mx	11	-23514.09	727.56	221.27	
			Max. My	8	-23038.82	15.72	-774.09	
			Max. Vy	11	1620.57	727.54	221.27	
			Max. Vx	8	-1732.11	15.72	-774.09	
			Diagonal	Max Tension	5	4079.56	0.00	0.00
				Max Tension	15	1013.68	0.00	0.00
				Max. Compression	6	-4277.47	0.00	0.00
			Horizontal	Max. Mx	14	996.08	-14.61	0.00
				Max. My	5	528.74	0.00	0.00
				Max. Vy	14	16.69	0.00	0.00
			Top Girt	Max. Vx	5	-0.00	0.00	0.00
		Max Tension		1	0.00	0.00	0.00	
		Max. Compression		4	-2200.13	0.00	0.00	
		Guy A	Max. Mx	14	-776.23	-14.61	0.00	
			Max. My	5	-2021.00	0.00	0.00	
			Max. Vy	14	16.69	0.00	0.00	
			Max. Vx	5	-0.00	0.00	0.00	
			Bottom Tension	8	9713.33			
			Top Tension	8	9753.70			
			Top Cable Vert	8	3844.71			
			Top Cable Norm	8	8963.98			
			Top Cable Tan	8	0.19			
			Bot Cable Vert	8	-3715.97			
			Bot Cable Norm	8	8974.42			
			Bot Cable Tan	8	0.19			
		Guy B	Bottom Tension	12	9717.73			
			Top Tension	12	9758.11			
			Top Cable Vert	12	3846.42			
			Top Cable Norm	12	8968.04			
			Top Cable Tan	12	0.17			
			Bot Cable Vert	12	-3717.68			
			Bot Cable Norm	12	8978.48			
			Bot Cable Tan	12	0.17			
		Guy C	Bottom Tension	4	9717.99			
			Top Tension	4	9758.37			
			Top Cable Vert	4	3846.52			
			Top Cable Norm	4	8968.28			
			Top Cable Tan	4	0.41			
			Bot Cable Vert	4	-3717.78			
Bot Cable Norm	4		8978.73					
Bot Cable Tan	4		0.41					
Top Guy Pull-Off	Max Tension	15	2962.84	0.00	0.00			
	Max. Compression	12	-961.26	0.00	0.00			
	Max. Mx	14	2507.06	-14.61	0.00			
	Max. My	5	406.09	0.00	0.00			
	Max. Vy	14	16.69	0.00	0.00			
	Max. Vx	5	-0.00	0.00	0.00			
	Max Tension	1	0.00	0.00	0.00			
	Max. Compression	17	-65056.46	-35.56	30.54			
	Max. Mx	11	-27381.15	-487.58	-159.51			
	Max. My	8	-27027.38	-13.29	524.67			
T7	60 - 40	Leg	Max. Vy	11	1621.77	120.21	30.95	
			Max. Vx	8	-1733.60	1.18	-125.01	
			Max Tension	3	4445.79	0.00	0.00	
			Max Tension	17	1126.81	0.00	0.00	
			Max. Compression	4	-4056.20	0.00	0.00	
		Diagonal	Max. Mx	14	1037.79	-14.08	0.00	
			Horizontal	Max. Vy	11	1621.77	120.21	30.95
				Max. Vx	8	-1733.60	1.18	-125.01
				Max Tension	3	4445.79	0.00	0.00
				Max Tension	17	1126.81	0.00	0.00
Max. Compression	4	-4056.20		0.00	0.00			

<i>RISATower</i> Phone: FAX:	Job 117-23046	Page 33 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
T8	40 - 20	Top Girt	Max. My	5	669.50	0.00	0.00
			Max. Vy	14	-16.09	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	2	-2065.96	0.00	0.00
			Max. Mx	14	-314.04	-14.08	0.00
		Bottom Girt	Max. My	5	-1733.65	0.00	0.00
			Max. Vy	14	-16.09	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	12	-2343.16	0.00	0.00
			Max. Mx	14	-513.67	-14.08	0.00
		Leg	Max. My	5	-1910.67	0.00	0.00
			Max. Vy	14	-16.09	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	17	-66884.92	-4.82	0.90
			Max. Mx	11	-18232.76	-213.11	44.88
			Max. My	2	-13459.15	7.17	-221.73
			Max. Vy	11	422.66	-18.21	8.67
			Max. Vx	8	-438.99	0.11	12.50
			Max Tension	10	3295.31	0.00	0.00
			Max. Compression	17	1158.48	0.00	0.00
			Max. Mx	14	1062.69	-13.32	0.00
			Max. My	5	715.45	0.00	0.00
			Max. Vy	14	15.23	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-2029.95	0.00	0.00
			Diagonal Horizontal	Max. Mx	14	-505.82	-13.32
Max. My	5	-1922.91		0.00	0.00		
Max. Vy	14	15.23		0.00	0.00		
Max. Vx	5	-0.00		0.00	0.00		
Max Tension	1	0.00		0.00	0.00		
Max. Compression	12	-2056.77		0.00	0.00		
Top Girt	Max. Mx	14	-426.63	-13.32	0.00		
	Max. My	5	-1884.23	0.00	0.00		
	Max. Vy	14	15.23	0.00	0.00		
	Max. Vx	5	-0.00	0.00	0.00		
	Max Tension	1	0.00	0.00	0.00		
	Max. Compression	12	-2056.77	0.00	0.00		
	Bottom Girt	Max. Mx	14	-426.63	-13.32	0.00	
		Max. My	5	-1884.23	0.00	0.00	
		Max. Vy	14	15.23	0.00	0.00	
		Max. Vx	5	-0.00	0.00	0.00	
		Max Tension	1	0.00	0.00	0.00	
		Max. Compression	12	-2056.77	0.00	0.00	
T9	20 - 5	Leg	Max. Mx	14	-426.63	-13.32	0.00
			Max. My	5	-1884.23	0.00	0.00
			Max. Vy	14	15.23	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	17	-66280.98	16.03	-8.19
		Diagonal Horizontal	Max. Mx	26	-63825.50	3820.26	2204.55
			Max. My	22	-63773.91	-1.00	-4385.76
			Max. Vy	18	11572.15	-3811.06	2205.62
			Max. Vx	21	13332.66	1.14	-4385.65
			Max Tension	5	3753.86	0.00	0.00
			Max. Compression	17	1148.02	0.00	0.00
			Max. Mx	14	1084.97	-12.17	0.00
			Max. My	5	687.14	0.00	0.00
			Max. Vy	14	13.90	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
			Max Tension	19	64.49	0.00	0.00
			Max. Compression	8	-2016.96	0.00	0.00
		Top Girt	Max. Mx	14	-34.72	-12.17	0.00
			Max. My	5	-1585.08	0.00	0.00
			Max. Vy	14	13.90	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
			Max Tension	15	7152.81	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
		Bottom Girt	Max. Mx	14	-34.72	-12.17	0.00
			Max. My	5	-1585.08	0.00	0.00
			Max. Vy	14	13.90	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
			Max Tension	15	7152.81	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00

<i>RISATower</i> Phone: FAX:	Job	117-23046	Page	34 of 50
	Project	Colchester, CT	Date	21:44:52 04/29/17
	Client	CDT	Designed by	FAN

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft	
T10	5 - 0	Leg	Max. Mx	14	6894.08	-12.17	0.00	
			Max. My	5	1444.86	0.00	0.00	
			Max. Vy	14	13.90	0.00	0.00	
			Max. Vx	5	-0.00	0.00	0.00	
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	21	-69203.05	46.85	-3.84	
		Top Girt		Max. Mx	26	-64190.62	4410.78	-0.82
					7	-26549.06	-122.23	141.86
				Max. My	26	11842.78	4410.78	-0.82
					9	359.33	-120.89	-141.18
				Max. Vy	19	7524.38	0.00	0.00
					1	0.00	0.00	0.00
				Max. Vx	25	7139.43	-8.73	0.00
					23	7276.54	0.00	-1.76
				Max. Compression	25	10.79	0.00	0.00
					23	2.18	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb	
Mast	Max. Vert	15	188849.93	-23.68	622.68	
	Max. H _x	11	79338.20	2428.94	-20.32	
	Max. H _z	2	78616.22	-2.59	2326.72	
	Max. M _x	1	0.00	-2.45	-6.77	
	Max. M _z	1	0.00	-2.45	-6.77	
	Max. Torsion	1	0.00	-2.45	-6.77	
	Min. Vert	1	72228.80	-2.45	-6.77	
	Min. H _x	5	79326.37	-2434.93	-20.23	
	Min. H _z	8	79092.22	-2.46	-2244.44	
	Min. M _x	1	0.00	-2.45	-6.77	
	Min. M _z	1	0.00	-2.45	-6.77	
	Min. Torsion	1	0.00	-2.45	-6.77	
	Guy C @ 145 ft Elev 0 ft Azimuth 240 deg	Max. Vert	10	-3389.23	-3623.73	2088.50
		Max. H _x	10	-3389.23	-3623.73	2088.50
Max. H _z		4	-34560.70	-35625.31	20574.91	
Min. Vert		4	-34560.70	-35625.31	20574.91	
Min. H _x		4	-34560.70	-35625.31	20574.91	
Min. H _z		10	-3389.23	-3623.73	2088.50	
Guy B @ 145 ft Elev 0 ft Azimuth 120 deg		Max. Vert	6	-3395.78	3626.82	2092.71
		Max. H _x	12	-34554.24	35621.64	20568.19
		Max. H _z	12	-34554.24	35621.64	20568.19
		Min. Vert	12	-34554.24	35621.64	20568.19
	Min. H _x	6	-3395.78	3626.82	2092.71	
	Min. H _z	6	-3395.78	3626.82	2092.71	
Guy A @ 145 ft Elev 0 ft Azimuth 0 deg	Max. Vert	2	-3362.01	-1.74	-4161.11	
	Max. H _x	11	-19220.03	751.39	-22887.33	
	Max. H _z	2	-3362.01	-1.74	-4161.11	
	Min. Vert	8	-34606.88	3.41	-41179.64	
	Min. H _x	5	-19204.48	-751.34	-22874.28	

<i>RISATower</i> Phone: FAX:	Job	117-23046	Page	35 of 50
	Project	Colchester, CT	Date	21:44:52 04/29/17
	Client	CDT	Designed by	FAN

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
	Min. H _z	8	-34606.88	3.41	-41179.64

Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturing Moment, M _x lb-ft	Overturing Moment, M _z lb-ft	Torque lb-ft
Dead Only	72228.80	2.45	6.77	0.00	0.00	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice+1.0 Guy	78616.22	2.59	-2326.72	0.00	0.00	0.00
1.2 Dead+1.6 Wind 30 deg - No Ice+1.0 Guy	79428.86	1207.30	-2105.84	0.00	0.00	0.00
1.2 Dead+1.6 Wind 60 deg - No Ice+1.0 Guy	79078.07	1938.33	-1110.84	0.00	0.00	0.00
1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy	79326.37	2434.93	20.23	0.00	0.00	0.00
1.2 Dead+1.6 Wind 120 deg - No Ice+1.0 Guy	78501.16	2024.70	1175.60	0.00	0.00	0.00
1.2 Dead+1.6 Wind 150 deg - No Ice+1.0 Guy	79357.42	1229.92	2108.71	0.00	0.00	0.00
1.2 Dead+1.6 Wind 180 deg - No Ice+1.0 Guy	79092.22	2.46	2244.44	0.00	0.00	0.00
1.2 Dead+1.6 Wind 210 deg - No Ice+1.0 Guy	79373.29	-1224.81	2108.20	0.00	0.00	0.00
1.2 Dead+1.6 Wind 240 deg - No Ice+1.0 Guy	78525.12	-2018.96	1175.21	0.00	0.00	0.00
1.2 Dead+1.6 Wind 270 deg - No Ice+1.0 Guy	79338.20	-2428.94	20.32	0.00	0.00	0.00
1.2 Dead+1.6 Wind 300 deg - No Ice+1.0 Guy	79074.49	-1932.67	-1110.29	0.00	0.00	0.00
1.2 Dead+1.6 Wind 330 deg - No Ice+1.0 Guy	79424.56	-1202.13	-2105.39	0.00	0.00	0.00
1.2 Dead+1.0 Ice+1.0 Temp+Guy	185953.81	24.70	30.71	0.00	0.00	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy	188849.93	23.68	-622.68	0.00	0.00	0.00
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy	188134.53	325.54	-533.79	0.00	0.00	0.00
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy	187489.64	562.40	-282.00	0.00	0.00	0.00
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy	188048.31	662.33	49.60	0.00	0.00	0.00
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy	188729.34	589.23	353.71	0.00	0.00	0.00
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy	188039.21	361.55	571.29	0.00	0.00	0.00
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy	187460.73	24.68	650.52	0.00	0.00	0.00
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy	188071.53	-311.95	571.30	0.00	0.00	0.00
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy	188778.92	-539.50	353.74	0.00	0.00	0.00
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy	188089.91	-612.54	49.71	0.00	0.00	0.00
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy	187513.19	-512.62	-281.86	0.00	0.00	0.00
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy	188143.79	-275.74	-533.68	0.00	0.00	0.00

RISATower Phone: FAX:	Job 117-23046	Page 36 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _z lb-ft	Torque lb-ft
deg+1.0 Ice+1.0 Temp+1.0 Guy						
Dead+Wind 0 deg - Service+Guy	72348.46	2.47	-523.25	0.00	0.00	0.00
Dead+Wind 30 deg - Service+Guy	72312.88	282.32	-479.83	0.00	0.00	0.00
Dead+Wind 60 deg - Service+Guy	72280.69	453.18	-253.60	0.00	0.00	0.00
Dead+Wind 90 deg - Service+Guy	72313.22	563.61	7.57	0.00	0.00	0.00
Dead+Wind 120 deg - Service+Guy	72348.86	461.27	271.77	0.00	0.00	0.00
Dead+Wind 150 deg - Service+Guy	72313.15	283.77	492.57	0.00	0.00	0.00
Dead+Wind 180 deg - Service+Guy	72280.70	2.44	527.47	0.00	0.00	0.00
Dead+Wind 210 deg - Service+Guy	72313.09	-278.85	492.54	0.00	0.00	0.00
Dead+Wind 240 deg - Service+Guy	72348.78	-456.36	271.78	0.00	0.00	0.00
Dead+Wind 270 deg - Service+Guy	72313.15	-558.68	7.59	0.00	0.00	0.00
Dead+Wind 300 deg - Service+Guy	72280.67	-448.25	-253.56	0.00	0.00	0.00
Dead+Wind 330 deg - Service+Guy	72312.88	-277.41	-479.85	0.00	0.00	0.00

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-18328.86	0.00	-0.60	18328.86	-1.85	0.011%
2	7.54	-21748.82	-31229.67	-7.49	21745.54	31142.53	0.229%
3	16227.49	-21574.65	-28181.02	-16219.42	21571.80	28082.00	0.255%
4	26655.86	-21400.47	-15441.31	-26497.12	21397.84	15348.38	0.490%
5	32441.92	-21574.65	-7.54	-32331.69	21571.37	57.38	0.311%
6	26960.19	-21748.82	15608.30	-26887.99	21745.80	-15566.62	0.220%
7	16214.43	-21574.65	28173.48	-16115.16	21571.29	-28102.35	0.313%
8	-7.54	-21400.47	30869.55	7.55	21397.82	-30685.33	0.491%
9	-16227.49	-21574.65	28181.02	16127.65	21571.24	-28109.39	0.315%
10	-26967.73	-21748.82	15621.37	26894.92	21745.75	-15579.27	0.221%
11	-32441.92	-21574.65	7.54	32331.25	21571.33	42.57	0.312%
12	-26648.32	-21400.47	-15428.24	26489.69	21397.84	15335.30	0.490%
13	-16214.43	-21574.65	-28173.48	16206.49	21571.81	28074.66	0.254%
14	0.00	-125647.16	0.00	-6.95	125647.19	-11.34	0.011%
15	0.01	-125825.39	-14676.42	0.16	125823.81	14640.73	0.028%
16	7333.40	-125647.16	-12708.51	-7333.46	125645.90	12672.11	0.029%
17	12698.18	-125468.94	-7335.17	-12642.97	125467.38	7301.09	0.051%
18	14666.79	-125647.16	-0.01	-14629.32	125645.82	20.88	0.034%
19	12703.45	-125825.39	7338.20	-12674.47	125823.98	-7321.23	0.027%
20	7333.39	-125647.16	12708.50	-7296.68	125645.80	-12685.92	0.034%
21	-0.01	-125468.94	14670.32	-0.83	125467.42	-14604.88	0.052%
22	-7333.40	-125647.16	12708.51	7295.77	125645.73	-12685.30	0.035%
23	-12703.46	-125825.39	7338.22	12673.79	125823.91	-7320.67	0.027%
24	-14666.79	-125647.16	0.01	14628.62	125645.75	21.62	0.035%
25	-12698.17	-125468.94	-7335.15	12642.83	125467.35	7301.97	0.051%
26	-7333.39	-125647.16	-12708.50	7333.78	125645.91	12672.19	0.029%
27	1.73	-18368.85	-7169.35	-1.72	18368.80	7117.67	0.262%

RISATower Phone: FAX:	Job 117-23046	Page 37 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
28	3725.32	-18328.86	-6469.47	-3697.54	18328.79	6422.38	0.276%
29	6119.34	-18288.87	-3544.84	-6074.75	18288.80	3519.05	0.263%
30	7447.64	-18328.86	-1.73	-7393.02	18328.79	1.19	0.276%
31	6189.21	-18368.85	3583.17	-6144.52	18368.80	-3557.35	0.262%
32	3722.32	-18328.86	6467.74	-3695.49	18328.79	-6420.14	0.276%
33	-1.73	-18288.87	7086.67	1.73	18288.80	-7035.13	0.263%
34	-3725.32	-18328.86	6469.47	3698.47	18328.79	-6421.85	0.276%
35	-6190.94	-18368.85	3586.17	6146.25	18368.80	-3560.34	0.262%
36	-7447.64	-18328.86	1.73	7393.02	18328.79	-2.27	0.276%
37	-6117.61	-18288.87	-3541.84	6073.02	18288.80	3516.06	0.263%
38	-3722.32	-18328.86	-6467.74	3694.56	18328.79	6420.67	0.276%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	50	0.00000001	0.00001278
2	Yes	76	0.00148551	0.00057653
3	Yes	75	0.00127085	0.00042328
4	Yes	69	0.00146617	0.00047584
5	Yes	74	0.00144623	0.00046883
6	Yes	76	0.00139831	0.00053836
7	Yes	74	0.00146797	0.00047856
8	Yes	69	0.00146634	0.00047628
9	Yes	74	0.00148453	0.00048560
10	Yes	76	0.00141566	0.00054596
11	Yes	74	0.00145657	0.00047304
12	Yes	69	0.00146564	0.00047556
13	Yes	75	0.00126516	0.00042070
14	Yes	50	0.00056141	0.00008312
15	Yes	81	0.00137680	0.00023627
16	Yes	79	0.00131442	0.00021460
17	Yes	73	0.00136838	0.00021095
18	Yes	78	0.00143081	0.00022605
19	Yes	81	0.00130059	0.00021827
20	Yes	78	0.00144678	0.00022815
21	Yes	73	0.00135421	0.00020519
22	Yes	78	0.00149283	0.00023715
23	Yes	81	0.00133140	0.00022539
24	Yes	78	0.00146695	0.00023385
25	Yes	73	0.00137167	0.00021361
26	Yes	79	0.00130612	0.00021359
27	Yes	67	0.00135583	0.00015532
28	Yes	67	0.00139552	0.00016551
29	Yes	67	0.00135398	0.00015277
30	Yes	67	0.00139854	0.00016607
31	Yes	67	0.00135954	0.00015601
32	Yes	67	0.00139790	0.00016486
33	Yes	67	0.00135465	0.00015283
34	Yes	67	0.00139762	0.00016589
35	Yes	67	0.00135843	0.00015583
36	Yes	67	0.00139744	0.00016585
37	Yes	67	0.00135342	0.00015262
38	Yes	67	0.00139521	0.00016411

<i>RISATower</i> Phone: FAX:	Job	117-23046	Page	38 of 50
	Project	Colchester, CT	Date	21:44:52 04/29/17
	Client	CDT	Designed by	FAN

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	180 - 160	1.546	38	0.1114	0.0125
T2	160 - 140	1.101	38	0.0837	0.0113
T3	140 - 120	0.834	28	0.0583	0.0148
T4	120 - 100	0.633	32	0.0290	0.0148
T5	100 - 80	0.609	32	0.0019	0.0252
T6	80 - 60	0.601	30	0.0093	0.0357
T7	60 - 40	0.541	30	0.0113	0.0433
T8	40 - 20	0.494	30	0.0253	0.0494
T9	20 - 5	0.316	30	0.0603	0.0529
T10	5 - 0	0.086	30	0.0782	0.0543

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180.50	RFS APXV9ERR18-C-A20	38	1.546	0.1114	0.0125	69610
180.00	Low Profile Platform	38	1.546	0.1114	0.0125	69610
172.00	(2) Powerwave 7770.00	38	1.353	0.1002	0.0114	43506
170.00	12 ft Boom / Sector Mount	38	1.306	0.0974	0.0112	34805
160.38	Guy	38	1.108	0.0842	0.0112	19117
150.00	12 ft Boom / Sector Mount	38	0.953	0.0709	0.0132	39897
116.42	Guy	32	0.617	0.0229	0.0159	21058
60.38	Guy	30	0.542	0.0113	0.0432	69626

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	180 - 160	7.932	3	0.7914	0.0857
T2	160 - 140	5.669	3	0.6437	0.0852
T3	140 - 120	4.177	3	0.4339	0.0947
T4	120 - 100	3.033	3	0.2288	0.0903
T5	100 - 80	2.792	5	0.0606	0.1335
T6	80 - 60	2.706	5	0.0496	0.1783
T7	60 - 40	2.433	5	0.0523	0.2111
T8	40 - 20	2.214	5	0.1150	0.2354
T9	20 - 5	1.415	5	0.2704	0.2498
T10	5 - 0	0.384	5	0.3496	0.2553

Critical Deflections and Radius of Curvature - Design Wind

<h1 style="color: red; margin: 0;">RISATower</h1> <p style="font-size: small; margin-top: 10px;">Phone: FAX:</p>	Job 117-23046	Page 39 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180.50	RFS APXV9ERR18-C-A20	3	7.932	0.7914	0.0857	14418
180.00	Low Profile Platform	3	7.932	0.7914	0.0857	14418
172.00	(2) Powerwave 7770.00	3	6.961	0.7379	0.0839	9011
170.00	12 ft Boom / Sector Mount	3	6.727	0.7238	0.0837	7209
160.38	Guy	3	5.705	0.6471	0.0850	3875
150.00	12 ft Boom / Sector Mount	3	4.856	0.5433	0.0913	4925
116.42	Guy	3	2.928	0.1938	0.0946	4108
60.38	Guy	5	2.437	0.0521	0.2106	16340

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	180	Leg	A325N	0.7500	4	997.31	29820.60	0.033 ✓	1	Bolt Tension
		Torque Arm Top@160.375	A325N	0.7500	2	6358.96	17892.40	0.355 ✓	1	Bolt Shear
		Torque Arm Bottom@160.375	A325N	0.7500	2	4951.20	17892.40	0.277 ✓	1	Bolt Shear
T2	160	Leg	A325N	0.7500	4	4536.48	29820.60	0.152 ✓	1	Bolt Tension
T3	140	Leg	A325N	0.7500	4	4654.55	29820.60	0.156 ✓	1	Bolt Tension
T4	120	Leg	A325N	0.7500	4	4987.42	29820.60	0.167 ✓	1	Bolt Tension
		Torque Arm Top@116.417	A325N	0.7500	2	4052.26	17892.40	0.226 ✓	1	Bolt Shear
		Torque Arm Bottom@116.417	A325N	0.7500	2	3013.21	17892.40	0.168 ✓	1	Bolt Shear
T5	100	Leg	A325N	0.7500	4	5174.32	29820.60	0.174 ✓	1	Bolt Tension
T6	80	Leg	A325N	0.7500	4	4734.93	29820.60	0.159 ✓	1	Bolt Tension
T7	60	Leg	A325N	0.7500	4	4877.09	29820.60	0.164 ✓	1	Bolt Tension
T8	40	Leg	A325N	0.7500	4	5386.81	29820.60	0.181 ✓	1	Bolt Tension
T9	20	Leg	A325N	0.7500	4	5509.03	29820.60	0.185 ✓	1	Bolt Tension
T10	5	Leg	A325N	0.7500	4	5353.32	29820.60	0.180 ✓	1	Bolt Tension

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension lb	Breaking Load lb	Actual T_u lb	Allowable ϕT_n lb	Required S.F.	Actual S.F.
T1	160.38 (A) (541)	5/8 EHS	6360.00	42399.99	13311.10	25440.00	1.000	1.911 ✓
	160.38 (A) (542)	5/8 EHS	6360.00	42399.99	13394.80	25440.00	1.000	1.899 ✓

<i>RISATower</i> Phone: FAX:	Job	117-23046	Page	40 of 50
	Project	Colchester, CT	Date	21:44:52 04/29/17
	Client	CDT	Designed by	FAN

Section No.	Elevation ft	Size	Initial Tension lb	Breaking Load lb	Actual T_u lb	Allowable ϕT_n lb	Required S.F.	Actual S.F.	
T4	160.38 (B) (535)	5/8 EHS	6360.00	42399.99	13315.80	25440.00	1.000	1.911	✓
	160.38 (B) (536)	5/8 EHS	6360.00	42399.99	13322.90	25440.00	1.000	1.909	✓
	160.38 (C) (529)	5/8 EHS	6360.00	42399.99	13373.00	25440.00	1.000	1.902	✓
	160.38 (C) (530)	5/8 EHS	6360.00	42399.99	13272.00	25440.00	1.000	1.917	✓
	116.42 (A) (559)	9/16 EHS	5250.00	35000.04	9198.50	21000.00	1.000	2.283	✓
	116.42 (A) (560)	9/16 EHS	5250.00	35000.04	9276.55	21000.00	1.000	2.264	✓
	116.42 (B) (553)	9/16 EHS	5250.00	35000.04	9206.15	21000.00	1.000	2.281	✓
	116.42 (B) (554)	9/16 EHS	5250.00	35000.04	9261.94	21000.00	1.000	2.267	✓
	116.42 (C) (547)	9/16 EHS	5250.00	35000.04	9310.62	21000.00	1.000	2.255	✓
	116.42 (C) (548)	9/16 EHS	5250.00	35000.04	9160.16	21000.00	1.000	2.293	✓
T6	60.38 (A) (567)	9/16 EHS	5250.00	35000.04	9753.70	21000.00	1.000	2.153	✓
	60.38 (B) (566)	9/16 EHS	5250.00	35000.04	9758.11	21000.00	1.000	2.152	✓
	60.38 (C) (565)	9/16 EHS	5250.00	35000.04	9758.37	21000.00	1.000	2.152	✓

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in ²	Mast Stability Index	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	P2.5x.203	20.00	3.21	40.6 K=1.00	1.7040	1.00	-56509.50	82983.90	0.681 ¹
T2	160 - 140	P2.5x.203	20.00	3.21	40.6 K=1.00	1.7040	1.00	-57837.40	82983.90	0.697 ¹
T3	140 - 120	P2.5x.203	20.00	3.21	40.6 K=1.00	1.7040	1.00	-61390.50	79606.90	0.771 ¹
T4	120 - 100	P2.5x.203	20.00	3.21	40.6 K=1.00	1.7040	1.00	-69755.90	79606.90	0.876 ¹
T5	100 - 80	P2.5x.203	20.00	3.21	40.6 K=1.00	1.7040	1.00	-62796.70	82983.90	0.757 ¹
T6	80 - 60	P2.5x.203	20.00	3.21	40.6 K=1.00	1.7040	1.00	-58524.80	82983.90	0.705 ¹
T7	60 - 40	P2.5x.203	20.00	3.21	40.6 K=1.00	1.7040	0.98	-65056.50	78188.00	0.832 ¹
T8	40 - 20	P2.5x.203	20.00	3.21	40.6 K=1.00	1.7040	0.98	-66884.90	81444.80	0.821 ¹
T9	20 - 5	P2.5x.203	15.00	3.56	45.1	1.7040	1.00	-66281.00	80094.30	0.828 ¹

RISATower Phone: FAX:	Job 117-23046	Page 41 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	Mast Stability Index	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T10	5 - 0	P2.5x.203	5.39	4.99	K=1.00 20.9 K=0.33	1.7040	0.88	-69203.00	81634.80	0.848 ¹ ✓ ✓

¹ P_u / φP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	L1 3/4x1 3/4x3/16	3.50	3.26	117.0 K=1.03	0.6211	-6019.55	9793.71	0.615 ¹ ✓
T2	160 - 140	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-5023.51	7190.10	0.699 ¹ ✓
T3	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-5129.37	7190.10	0.713 ¹ ✓
T4	120 - 100	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-4314.85	7190.10	0.600 ¹ ✓
T5	100 - 80	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-4119.30	7190.10	0.573 ¹ ✓
T6	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-4277.47	7190.10	0.595 ¹ ✓
T7	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-4056.20	7190.10	0.564 ¹ ✓
T8	40 - 20	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-4222.51	7190.10	0.587 ¹ ✓
T9	20 - 5	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-3646.81	7190.10	0.507 ¹ ✓

¹ P_u / φP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	L1 3/4x1 3/4x3/16	3.50	3.26	117.0 K=1.03	0.6211	-3420.71	9793.71	0.349 ¹ ✓
T2	160 - 140	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-3602.31	7190.10	0.501 ¹ ✓
T3	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-2447.76	7190.10	0.340 ¹ ✓
T5	100 - 80	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-2449.85	7190.10	0.341 ¹ ✓
T6	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-2200.13	7190.10	0.306 ¹ ✓

RISATower Phone: FAX:	Job 117-23046	Page 42 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T7	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-2065.96	7190.10	0.287 ¹ ✓
T8	40 - 20	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-2029.95	7190.10	0.282 ¹ ✓
T9	20 - 5	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-2016.96	7190.10	0.281 ¹ ✓

¹ P_u / φP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T2	160 - 140	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-2670.04	7190.10	0.371 ¹ ✓
T3	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-3494.14	7190.10	0.486 ¹ ✓
T4	120 - 100	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-2332.10	7190.10	0.324 ¹ ✓
T5	100 - 80	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-2110.92	7190.10	0.294 ¹ ✓
T7	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-2343.16	7190.10	0.326 ¹ ✓
T8	40 - 20	L1 1/2x1 1/2x3/16	3.50	3.26	128.2 K=0.96	0.5273	-2056.77	7190.10	0.286 ¹ ✓

¹ P_u / φP_n controls

Top Guy Pull-Off Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-8805.37	11503.00	0.765 ¹ ✓
T4	120 - 100	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-3618.98	11503.00	0.315 ¹ ✓
T6	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	86.7 K=0.65	0.5273	-961.26	11503.00	0.084 ¹ ✓

¹ P_u / φP_n controls

RISATower Phone: FAX:	Job	117-23046	Page	43 of 50
	Project	Colchester, CT	Date	21:44:52 04/29/17
	Client	CDT	Designed by	FAN

Top Guy Pull-Off Bending Design Data

Section No.	Elevation ft	Size	M_{ux}	ϕM_{nx}	Ratio	M_{uy}	ϕM_{ny}	Ratio
			lb-ft	lb-ft	$\frac{M_{ux}}{\phi M_{nx}}$	lb-ft	lb-ft	$\frac{M_{uy}}{\phi M_{ny}}$
T1	180 - 160	L1 1/2x1 1/2x3/16	-2.33	711.05	0.003	-2.33	368.03	0.006
T4	120 - 100	L1 1/2x1 1/2x3/16	0.00	711.05	0.000	0.00	368.03	0.000
T6	80 - 60	L1 1/2x1 1/2x3/16	-2.33	711.05	0.003	-2.33	368.03	0.006

Top Guy Pull-Off Interaction Design Data

Section No.	Elevation ft	Size	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
			$\frac{P_u}{\phi P_n}$	$\frac{M_{ux}}{\phi M_{nx}}$	$\frac{M_{uy}}{\phi M_{ny}}$			
T1	180 - 160	L1 1/2x1 1/2x3/16	0.765	0.003	0.006	0.765 ¹	1.000	4.9-3 ✓
T4	120 - 100	L1 1/2x1 1/2x3/16	0.315	0.000	0.000	0.315 ¹	1.000	4.9-3 ✓
T6	80 - 60	L1 1/2x1 1/2x3/16	0.084	0.003	0.006	0.084 ¹	1.000	4.9-4 ✓

¹ $P_u / \phi P_n$ controls

Bottom Guy Pull-Off Design Data (Compression)

Section No.	Elevation ft	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio
			ft	ft		in ²	lb	lb	$\frac{P_u}{\phi P_n}$
T1	180 - 160	L1 1/2x1 1/2x3/16	3.50	3.26	86.7	0.5273	-4249.51	11503.00	0.369 ¹
T4	120 - 100	L1 1/2x1 1/2x3/16	3.50	3.26	86.7	0.5273	-7000.59	11503.00	0.609 ¹

¹ $P_u / \phi P_n$ controls

Bottom Guy Pull-Off Bending Design Data

Section No.	Elevation ft	Size	M_{ux}	ϕM_{nx}	Ratio	M_{uy}	ϕM_{ny}	Ratio
			lb-ft	lb-ft	$\frac{M_{ux}}{\phi M_{nx}}$	lb-ft	lb-ft	$\frac{M_{uy}}{\phi M_{ny}}$
T1	180 - 160	L1 1/2x1 1/2x3/16	0.00	711.05	0.000	0.00	368.03	0.000
T4	120 - 100	L1 1/2x1 1/2x3/16	-2.33	711.05	0.003	-2.33	368.03	0.006

Bottom Guy Pull-Off Interaction Design Data

RISATower Phone: FAX:	Job 117-23046	Page 44 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Section No.	Elevation ft	Size	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
			$\frac{P_u}{\phi P_n}$	$\frac{M_{ux}}{\phi M_{nx}}$	$\frac{M_{uy}}{\phi M_{ny}}$			
T1	180 - 160	L1 1/2x1 1/2x3/16	0.369	0.000	0.000	0.369 ¹	1.000	4.9-3 ✓
T4	120 - 100	L1 1/2x1 1/2x3/16	0.609	0.003	0.006	0.609 ¹	1.000	4.9-3 ✓

¹ $P_u / \phi P_n$ controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio
									$\frac{P_u}{\phi P_n}$
T1	180 - 160 (533)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-9902.40	36439.50	0.272 ¹ ✓
T1	180 - 160 (534)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-9888.39	36439.50	0.271 ¹ ✓
T1	180 - 160 (539)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-9775.00	36439.50	0.268 ¹ ✓
T1	180 - 160 (540)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-9781.78	36439.50	0.268 ¹ ✓
T1	180 - 160 (545)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-9874.14	36439.50	0.271 ¹ ✓
T1	180 - 160 (546)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-9853.49	36439.50	0.270 ¹ ✓
T4	120 - 100 (551)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-6026.43	36439.50	0.165 ¹ ✓
T4	120 - 100 (552)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-6016.69	36439.50	0.165 ¹ ✓
T4	120 - 100 (557)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-5864.42	36439.50	0.161 ¹ ✓
T4	120 - 100 (558)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-5861.66	36439.50	0.161 ¹ ✓
T4	120 - 100 (563)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-5958.20	36439.50	0.164 ¹ ✓
T4	120 - 100 (564)	L3x3x1/4	3.50	3.38	68.5 K=1.00	1.4400	-5945.77	36439.50	0.163 ¹ ✓

¹ $P_u / \phi P_n$ controls

Tension Checks

Leg Design Data (Tension)

RISATower Phone: FAX:	Job 117-23046	Page 45 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	P2.5x.203	20.00	3.21	40.6	1.7040	11629.60	96619.60	0.120 ¹
T2	160 - 140	P2.5x.203	20.00	3.21	40.6	1.7040	6073.68	96619.60	0.063 ¹
T3	140 - 120	P2.5x.203	20.00	3.21	40.6	1.7040	5179.13	92018.70	0.056 ¹
T4	120 - 100	P2.5x.203	20.00	3.21	40.6	1.7040	5175.34	92018.70	0.056 ¹

¹ P_u / φP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	5/8	4.75	4.42	339.7	0.3068	6744.21	9940.20	0.678 ¹
T2	160 - 140	5/8	4.75	4.42	339.7	0.3068	5412.39	9940.20	0.544 ¹
T3	140 - 120	5/8	4.75	4.42	339.7	0.3068	4912.56	9940.20	0.494 ¹
T4	120 - 100	5/8	4.75	4.42	339.7	0.3068	4635.28	9940.20	0.466 ¹
T5	100 - 80	5/8	4.75	4.42	339.7	0.3068	4017.25	9940.20	0.404 ¹
T6	80 - 60	5/8	4.75	4.42	339.7	0.3068	4079.56	9940.20	0.410 ¹
T7	60 - 40	5/8	4.75	4.42	339.7	0.3068	4445.79	9940.20	0.447 ¹
T8	40 - 20	5/8	4.75	4.42	339.7	0.3068	3295.31	9940.20	0.332 ¹
T9	20 - 5	5/8	4.99	4.65	357.3	0.3068	3753.86	9940.20	0.378 ¹

¹ P_u / φP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160	L1 3/4x1 3/4x3/16	3.50	3.26	72.9	0.6211	978.77	20123.40	0.049 ¹
T2	160 - 140	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	1001.77	17085.90	0.059 ¹
T3	140 - 120	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	1063.31	17085.90	0.062 ¹

RISATower Phone: FAX:	Job 117-23046	Page 46 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T4	120 - 100	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	1208.21	17085.90	0.071 ¹ ✓
T5	100 - 80	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	1087.67	17085.90	0.064 ¹ ✓
T6	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	1013.68	17085.90	0.059 ¹ ✓
T7	60 - 40	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	1126.81	17085.90	0.066 ¹ ✓
T8	40 - 20	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	1158.48	17085.90	0.068 ¹ ✓
T9	20 - 5	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	1148.02	17085.90	0.067 ¹ ✓

¹ P_u / φP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T9	20 - 5	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	64.49	17085.90	0.004 ¹ ✓
T10	5 - 0	L1 1/2x1 1/2x3/16	3.24	3.00	78.8	0.5273	7524.38	17085.90	0.440 ¹ ✓

¹ P_u / φP_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T9	20 - 5	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	7152.81	17085.90	0.419 ¹ ✓

¹ P_u / φP_n controls

Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
-------------	-----------------	------	---------	----------------------	------	----------------------	----------------------	-----------------------	---------------------------------

RISATower Phone: FAX:	Job	117-23046	Page	47 of 50
	Project	Colchester, CT	Date	21:44:52 04/29/17
	Client	CDT	Designed by	FAN

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T6	80 - 60	L1 1/2x1 1/2x3/16	3.50	3.26	85.7	0.5273	2962.84	17085.90	0.173 ¹

¹ P_u / φP_n controls

Top Guy Pull-Off Bending Design Data

Section No.	Elevation ft	Size	M _{ux} lb-ft	φM _{ux} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M _{uy} lb-ft	φM _{uy} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
T6	80 - 60	L1 1/2x1 1/2x3/16	0.00	711.05	0.000	0.00	368.03	0.000

Top Guy Pull-Off Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	Ratio $\frac{M_{uy}}{\phi M_{uy}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T6	80 - 60	L1 1/2x1 1/2x3/16	0.173	0.000	0.000	0.173 ¹	1.000	4.9-4 ✓

¹ P_u / φP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160 (531)	L2x2x5/16	4.75	4.59	91.6	1.1500	12625.00	37260.00	0.339 ¹ ✓
T1	180 - 160 (532)	L2x2x5/16	4.75	4.59	91.6	1.1500	12579.60	37260.00	0.338 ¹ ✓
T1	180 - 160 (537)	L2x2x5/16	4.75	4.59	91.6	1.1500	12717.90	37260.00	0.341 ¹ ✓
T1	180 - 160 (538)	L2x2x5/16	4.75	4.59	91.6	1.1500	12701.40	37260.00	0.341 ¹ ✓
T1	180 - 160 (543)	L2x2x5/16	4.75	4.59	91.6	1.1500	12673.60	37260.00	0.340 ¹ ✓
T1	180 - 160 (544)	L2x2x5/16	4.75	4.59	91.6	1.1500	12612.00	37260.00	0.338 ¹ ✓
T4	120 - 100 (549)	L2x2x5/16	4.75	4.59	91.6	1.1500	8084.55	37260.00	0.217 ¹ ✓
T4	120 - 100 (550)	L2x2x5/16	4.75	4.59	91.6	1.1500	8039.49	37260.00	0.216 ¹ ✓
T4	120 - 100 (555)	L2x2x5/16	4.75	4.59	91.6	1.1500	8044.18	37260.00	0.216 ¹ ✓

RISATower Phone: FAX:	Job 117-23046	Page 48 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T4	120 - 100 (556)	L2x2x5/16	4.75	4.59	91.6	1.1500	8078.57	37260.00	0.217 ¹
T4	120 - 100 (561)	L2x2x5/16	4.75	4.59	91.6	1.1500	8104.53	37260.00	0.218 ¹
T4	120 - 100 (562)	L2x2x5/16	4.75	4.59	91.6	1.1500	8025.08	37260.00	0.215 ¹

¹ P_u / φP_n controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 160 (533)	L3x3x1/4	3.50	3.38	43.6	1.4400	3286.20	46656.00	0.070 ¹
T1	180 - 160 (534)	L3x3x1/4	3.50	3.38	43.6	1.4400	3313.28	46656.00	0.071 ¹
T1	180 - 160 (539)	L3x3x1/4	3.50	3.38	43.6	1.4400	3233.27	46656.00	0.069 ¹
T1	180 - 160 (540)	L3x3x1/4	3.50	3.38	43.6	1.4400	3224.65	46656.00	0.069 ¹
T1	180 - 160 (545)	L3x3x1/4	3.50	3.38	43.6	1.4400	3283.37	46656.00	0.070 ¹
T1	180 - 160 (546)	L3x3x1/4	3.50	3.38	43.6	1.4400	3319.28	46656.00	0.071 ¹
T4	120 - 100 (551)	L3x3x1/4	3.50	3.38	43.6	1.4400	3029.18	46656.00	0.065 ¹
T4	120 - 100 (552)	L3x3x1/4	3.50	3.38	43.6	1.4400	3041.03	46656.00	0.065 ¹
T4	120 - 100 (557)	L3x3x1/4	3.50	3.38	43.6	1.4400	2895.16	46656.00	0.062 ¹
T4	120 - 100 (558)	L3x3x1/4	3.50	3.38	43.6	1.4400	2898.41	46656.00	0.062 ¹
T4	120 - 100 (563)	L3x3x1/4	3.50	3.38	43.6	1.4400	2970.22	46656.00	0.064 ¹
T4	120 - 100 (564)	L3x3x1/4	3.50	3.38	43.6	1.4400	2985.31	46656.00	0.064 ¹

¹ P_u / φP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	φP _{allow} lb	% Capacity	Pass Fail
T1	180 - 160	Leg	P2.5x.203	3	-56509.50	82983.90	68.1	Pass
		Diagonal	5/8	24	6744.21	9940.20	67.8	Pass

<i>RISATower</i> Phone: FAX:	Job 117-23046	Page 49 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
		Horizontal	L1 3/4x1 3/4x3/16	52	-6019.55	9793.71	61.5	Pass
		Top Girt	L1 3/4x1 3/4x3/16	4	-3420.71	9793.71	34.9	Pass
		Guy A@160.375	5/8	542	13394.80	25440.00	52.7	Pass
		Guy B@160.375	5/8	536	13322.90	25440.00	52.4	Pass
		Guy C@160.375	5/8	529	13373.00	25440.00	52.6	Pass
		Top Guy	L1 1/2x1 1/2x3/16	16	-8805.37	11503.00	76.5	Pass
		Pull-Off@160.375						
		Bottom Guy	L1 1/2x1 1/2x3/16	7	-4249.51	11503.00	36.9	Pass
		Pull-Off@160.375						
		Torque Arm	L2x2x5/16	537	12717.90	37260.00	34.1	Pass
		Top@160.375					35.5 (b)	
		Torque Arm	L3x3x1/4	533	-9902.40	36439.50	27.2	Pass
		Bottom@160.375					27.7 (b)	
T2	160 - 140	Leg	P2.5x.203	63	-57837.40	82983.90	69.7	Pass
		Diagonal	5/8	120	5412.39	9940.20	54.4	Pass
		Horizontal	L1 1/2x1 1/2x3/16	112	-5023.51	7190.10	69.9	Pass
		Top Girt	L1 1/2x1 1/2x3/16	64	-3602.31	7190.10	50.1	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	67	-2670.04	7190.10	37.1	Pass
T3	140 - 120	Leg	P2.5x.203	123	-61390.50	79606.90	77.1	Pass
		Diagonal	5/8	134	4912.56	9940.20	49.4	Pass
		Horizontal	L1 1/2x1 1/2x3/16	136	-5129.37	7190.10	71.3	Pass
		Top Girt	L1 1/2x1 1/2x3/16	124	-2447.76	7190.10	34.0	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	127	-3494.14	7190.10	48.6	Pass
T4	120 - 100	Leg	P2.5x.203	183	-69755.90	79606.90	87.6	Pass
		Diagonal	5/8	230	4635.28	9940.20	46.6	Pass
		Horizontal	L1 1/2x1 1/2x3/16	214	-4314.85	7190.10	60.0	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	189	-2332.10	7190.10	32.4	Pass
		Guy A@116.417	9/16	560	9276.55	21000.00	44.2	Pass
		Guy B@116.417	9/16	554	9261.94	21000.00	44.1	Pass
		Guy C@116.417	9/16	547	9310.62	21000.00	44.3	Pass
		Top Guy	L1 1/2x1 1/2x3/16	186	-3618.98	11503.00	31.5	Pass
		Pull-Off@116.417						
		Bottom Guy	L1 1/2x1 1/2x3/16	232	-7000.59	11503.00	60.9	Pass
		Pull-Off@116.417						
		Torque Arm	L2x2x5/16	561	8104.53	37260.00	21.8	Pass
		Top@116.417					22.6 (b)	
		Torque Arm	L3x3x1/4	551	-6026.43	36439.50	16.5	Pass
		Bottom@116.417					16.8 (b)	
T5	100 - 80	Leg	P2.5x.203	243	-62796.70	82983.90	75.7	Pass
		Diagonal	5/8	299	4017.25	9940.20	40.4	Pass
		Horizontal	L1 1/2x1 1/2x3/16	258	-4119.30	7190.10	57.3	Pass
		Top Girt	L1 1/2x1 1/2x3/16	244	-2449.85	7190.10	34.1	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	249	-2110.92	7190.10	29.4	Pass
T6	80 - 60	Leg	P2.5x.203	302	-58524.80	82983.90	70.5	Pass
		Diagonal	5/8	310	4079.56	9940.20	41.0	Pass
		Horizontal	L1 1/2x1 1/2x3/16	318	-4277.47	7190.10	59.5	Pass
		Top Girt	L1 1/2x1 1/2x3/16	305	-2200.13	7190.10	30.6	Pass
		Guy A@60.375	9/16	567	9753.70	21000.00	46.4	Pass
		Guy B@60.375	9/16	566	9758.11	21000.00	46.5	Pass
		Guy C@60.375	9/16	565	9758.37	21000.00	46.5	Pass
		Top Guy	L1 1/2x1 1/2x3/16	307	2962.84	17085.90	17.3	Pass
		Pull-Off@60.375						
T7	60 - 40	Leg	P2.5x.203	361	-65056.50	78188.00	83.2	Pass
		Diagonal	5/8	419	4445.79	9940.20	44.7	Pass
		Horizontal	L1 1/2x1 1/2x3/16	377	-4056.20	7190.10	56.4	Pass
		Top Girt	L1 1/2x1 1/2x3/16	364	-2065.96	7190.10	28.7	Pass
		Bottom Girt	L1 1/2x1 1/2x3/16	369	-2343.16	7190.10	32.6	Pass
T8	40 - 20	Leg	P2.5x.203	421	-66884.90	81444.80	82.1	Pass
		Diagonal	5/8	480	3295.31	9940.20	33.2	Pass
		Horizontal	L1 1/2x1 1/2x3/16	474	-4222.51	7190.10	58.7	Pass
		Top Girt	L1 1/2x1 1/2x3/16	424	-2029.95	7190.10	28.2	Pass

<i>RISATower</i> Phone: FAX:	Job 117-23046	Page 50 of 50
	Project Colchester, CT	Date 21:44:52 04/29/17
	Client CDT	Designed by FAN

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T9	20 - 5	Bottom Girt	L1 1/2x1 1/2x3/16	429	-2056.77	7190.10	28.6	Pass
		Leg	P2.5x.203	481	-66281.00	80094.30	82.8	Pass
		Diagonal	5/8	490	3753.86	9940.20	37.8	Pass
		Horizontal	L1 1/2x1 1/2x3/16	496	-3646.81	7190.10	50.7	Pass
		Top Girt	L1 1/2x1 1/2x3/16	484	-2016.96	7190.10	28.1	Pass
T10	5 - 0	Bottom Girt	L1 1/2x1 1/2x3/16	487	7152.81	17085.90	41.9	Pass
		Leg	P2.5x.203	525	-69203.00	81634.80	84.8	Pass
		Top Girt	L1 1/2x1 1/2x3/16	528	7524.38	17085.90	44.0	Pass
Summary								
						Leg (T4)	87.6	Pass
						Diagonal (T1)	67.8	Pass
						Horizontal (T3)	71.3	Pass
						Top Girt (T2)	50.1	Pass
						Bottom Girt (T3)	48.6	Pass
						Guy A (T1)	52.7	Pass
						Guy B (T1)	52.4	Pass
						Guy C (T1)	52.6	Pass
						Top Guy Pull-Off (T1)	76.5	Pass
						Bottom Guy Pull-Off (T4)	60.9	Pass
						Torque Arm Top (T1)	35.5	Pass
						Torque Arm Bottom (T1)	27.7	Pass
						Bolt Checks	35.5	Pass
						RATING =	87.6	Pass

Site Name:	Colchester
Client:	CDT
Job Number:	117-23046
Date:	4/29/2017

Design Base Loads (Factored) per TIA-222-G

Moment (M_u):	0.0 k-ft	Concrete Compressive Strength (f'_c):	3000.0 psi
Shear/Leg (V_u):	2.4 k	Bending/Tension Reduction Factor (ϕ_B):	0.90
Compression/Leg (P_u):	188.9 k	Shear Reduction Factor (ϕ_V):	0.75
Uplift/Leg (T_u):	0.0 k	Compression Reduction Factor (ϕ_C):	0.65
Diameter of Prismatic Portion of Pier (d):	1.0 ft	Steel Elastic Modulus:	29000 ksi
Depth to Base of Foundation:	2.0 ft	Pad Steel Rebar Size #:	4
Pier Height Above Ground (h):	2.0 ft	Pad Steel Rebar Area:	0.20 in ²
Length / Width of Pad (w):	6.0 ft	Pad Steel Rebar Yield Strength (F_y):	60 ksi
Thickness of Pad (t):	4.0 ft	# of Rebar in Top of Pad:	6
Depth Below Ground Surface to Water Table (w):	20.0 ft	# of Rebar in Base of Pad:	2
Unit Weight of Concrete:	150.0 pcf	Pad Clear Cover:	3 in
Unit Weight of Water:	62.4 pcf		
Unit Weight of Soil Above Water Table:	120.0 pcf		
Unit Weight of Soil Below Water Table:	65.0 pcf		
Friction Angle of Uplift from Top of Pad:	30 Degrees		
Friction Angle of Uplift from Base of Pad:	30 Degrees		
Uplift Angle Started at Top or Base of Pad (T/B):	T		
Ultimate Skin Friction:	0 psf		
Ultimate Compressive Bearing Pressure:	10000 psf		
Capacity Increase (Due to Transient Loads):	1.00		
Bearing Strength Reduction Factor (ϕ_s):	0.60		
Uplift Strength Reduction Factor (ϕ_s):	0.75		

Axial Capacities

Nominal Uplift Capacity per Leg ($\phi_s T_n$):	12.0 k
Nominal Compressive Capacity per Leg ($\phi_s P_n$):	216.0 k
P_u :	194.3 k
$T_u / \phi_s T_n$:	0.00 Result: OK
$P_u / \phi_s P_n$:	0.90 Result: OK

Site Name:	Colchester
Client:	CDT
Job Number:	117-23046
Date:	4/29/2017

Design Standard per TIA-222-G

Anchor Radius:	145.0	ft
Uplift (Factored - P_u):	34.6	k
Shear (Factored - V_u):	41.2	k
Anchor Base Depth (d):	7.5	ft
Width of Anchor (W):	5.5	ft
Length of Anchor (L):	11.5	ft
Thickness of Anchor (t):	2.0	ft
Depth Below Ground Surface to Water Table (w):	20.0	ft
Soil Uplift at Base / Top of Anchor (B/T):	T	
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Soil Above Water Table:	120.0	pcf
Unit Weight of Water:	62.4	pcf
Submerged Soil Unit Weight:	65.0	pcf
Internal Angle of Friction:	30	Degrees
Cohesion:	500	psf
Ultimate Skin Friction of Pad Sides to Soil:	0	psf
Ultimate Coefficient of Shear Friction:	0.30	
Maximum Top Conical Failure Angle:	30	Degrees
Maximum Base Conical Failure Angle:	30	Degrees
Allowable Capacity Increase:	1.00	(Due to Transient Loads)
Uplift Strength Reduction Factor (ϕ_u):	0.75	
Shear Strength Reduction Factor (ϕ_v):	0.75	
Concrete Uplift Strength Reduction Factor (ϕ_{uc}):	0.90	

Uplift

Weight of Concrete (Buoyancy Effect Considered):	19.0	k
Weight of Soil (Buoyancy Effect Considered):	84.3	k
Ultimate Uplift Resistance from Skin Friction:	0.0	k
Nominal Factored Uplift Resistance ($\phi_u P_n$):	80.3	k
$P_u / \phi_u P_n$:	0.43	Result: OK

Shear

Ultimate Shear Friction Resistance Due to Normal Force - Uplift:	10.4	k
Passive Pressure:	4072	psf
Ultimate Passive Pressure Resistance:	93.7	k
Nominal Shear Resistance ($\phi_v V_n$):	78.1	k
$V_u / \phi_v V_n$:	0.53	Result: OK

Anchor Rod Capacity

# of Anchor Rods:	1	Rod F_y :	47	ksi	
Anchor Rod Gross Area:	2.41	in ²	Rod F_u :	62	ksi
Anchor Rod Net Area:	2.41	in ²	ϕ_y :	0.80	
Resultant Tensile Load (T_u):	53.8	k	ϕ_t :	0.65	
Anchor Rod Tensile Resistance (ϕT_n):	90.4	k			
$T_u / \phi T_n$:	0.59	Result: OK			

Strength Analysis of Reinforced Concrete

Concrete Compressive Strength (f'_c):	3000 psi
Longitudinal Rebar Yield Strength:	60000 psi
# Longitudinal Rebar (Top):	9
# Longitudinal Rebar (1 Side):	3
Rebar Size:	4
Strength Reduction Factor for Shear (ϕ_v):	0.75
Strength Reduction Factor for Flexure (ϕ_b):	0.9
Compression Zone Factor (β_1):	0.85
Area of Single Rebar:	0.20 in ²
One Way Shear due to Shear Load (V_u):	11.3 k
Nominal One Way Shear Capacity for Shear Load ($\phi_c V_n$):	122.3 k
$V_u/\phi_v V_n$:	0.09 Result: OK
One Way Shear due to Uplift (V_u):	14.8 k
Nominal One Way Shear Capacity for Uplift ($\phi_c V_n$):	108.4 k
$V_u/\phi_v V_n$:	0.14 Result: OK
Pad Flexure due to Shear Load (M_u):	59.2 k-ft
Nominal Flexural Capacity for Shear Load ($\phi_b M_n$):	167.4 k-ft
Pad Flexure due to Uplift (M_u):	49.7 k-ft
Nominal Flexural Capacity for Uplift ($\phi_b M_n$):	161.9 k-ft
$M_u/\phi_b M_n$ (Max.):	0.35 Result: OK

Exhibit E

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

T-Mobile Existing Facility

Site ID: CTNL250A

**Colchester
600 Old Hartford Road
Colchester, CT 06415**

May 11, 2017

EBI Project Number: 6217002019

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	2.55 %

May 11, 2017

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

Emissions Analysis for Site: **CTNL250A – Colchester**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **600 Old Hartford Road, Colchester, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the 700 MHz Band is approximately 467 $\mu\text{W}/\text{cm}^2$, and the general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS) bands is 1000 $\mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **600 Old Hartford Road, Colchester, 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 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 3) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.
- 4) Since all radios are ground mounted there are additional cabling losses accounted for. For each ground mounted RF path the following losses were calculated. 0.98 dB of additional cable loss for all ground mounted 700 MHz Channels and 1.80 dB of additional cable loss for all ground mounted 2100 MHz channels were factored into the calculations used for this analysis. This is based on manufacturers Specifications for 175 feet of 1-5/8" coax cable on each path.

- 5) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 6) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 7) The antennas used in this modeling are the **RFS APXV18-206516S-A20** for 1900 MHz (PCS) channels and the **Commscope LNX-6515DS-A1M** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **RFS APXV18-206516S-A20** has a maximum gain of **16.3 dBd** at its main lobe at 1900 MHz. The **Commscope LNX-6515DS-A1M** has a maximum gain of **14.6 dBd** at its main lobe at 700 MHz. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antenna mounting height centerline of the proposed antennas is **150 feet** above ground level (AGL).
- 9) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 10) All calculations were done with respect to uncontrolled / general public threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APXV18-206516S-A20	Make / Model:	RFS APXV18-206516S-A20	Make / Model:	RFS APXV18-206516S-A20
Gain:	16.3 dBd	Gain:	16.3 dBd	Gain:	16.3 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):	180	Total TX Power(W):	180	Total TX Power(W):	180
ERP (W):	5,073.09	ERP (W):	5,073.09	ERP (W):	5,073.09
Antenna A1 MPE%	0.88	Antenna B1 MPE%	0.88	Antenna C1 MPE%	0.88
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Commscope LNX-6515DS-A1M	Make / Model:	Commscope LNX-6515DS-A1M	Make / Model:	Commscope LNX-6515DS-A1M
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	150	Height (AGL):	150	Height (AGL):	150
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power(W):	30	Total TX Power(W):	30	Total TX Power(W):	30
ERP (W):	690.43	ERP (W):	690.43	ERP (W):	690.43
Antenna A2 MPE%	0.26	Antenna B2 MPE%	0.26	Antenna C2 MPE%	0.26

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	1.14 %
AT&T	1.28 %
Sprint	0.13 %
Site Total MPE %:	2.55 %

T-Mobile Sector A Total:	1.14 %
T-Mobile Sector B Total:	1.14 %
T-Mobile Sector C Total:	1.14 %
Site Total:	2.55 %

T-Mobile_per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile PCS - 1900 MHz LTE	2	1,691.03	150	5.86	PCS - 1900 MHz	1000	0.59%
T-Mobile PCS - 1900 MHz GSM	2	845.51	150	2.93	PCS - 1900 MHz	1000	0.29%
T-Mobile 700 MHz LTE	1	690.43	150	1.20	700 MHz	467	0.26%
						Total:	1.14%

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	1.14 %
Sector B:	1.14 %
Sector C:	1.14 %
T-Mobile Per Sector Maximum:	1.14 %
Site Total:	2.55 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **2.55%** 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.

Exhibit F

LETTER OF AUTHORIZATION

DATE: 5/9/2017

T-MOBILE SITE ID: CT-NL250

SITE ADDRESS: 600 Old Hartford Road, Colchester, CT 06415

RE: APPLICATION FOR ZONING AND BUILDING PERMIT

To Whom It May Concern:

This letter authorizes T-Mobile Northeast LLC ("T-Mobile") and its authorized agents to file for all necessary administrative approvals, zoning approvals and building permits (local, state and federal) for the purposes of installing, operating and maintaining a telecommunications facility at the site/property referenced above on behalf of T-Mobile.

By: _____

Mark LeGault

Name: Cordless Data Transfer, Inc.

Title: President

Date: 5/9/2017