

Centerline Communications
Ryan Clark
750 West Center Street, Floor 3
West Bridgewater, MA 02379
203-300-7310
rclark@clinellc.com

April 30, 2021

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

Notice of Exempt Modification
232 South Main Street East Windsor, CT 06088
Latitude: 41.771800
Longitude: -72.590300
T-Mobile Site#: CT11402A_Anchor

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 155-foot level of the existing 188-foot monopole tower at 232 South Main Street East Windsor, CT 06088. The 188-foot tower is owned by Balch Communications and property is owned by Balch Bridge Street Corp. T-Mobile now intends to add three (3) 2500MHz antennas. The new antennas would be installed at the 155-foot level of the tower. A mount stabilizer kit is to be installed as recommended in the attached Mount Analysis. The proposed modifications will make the site available for 5G at some point in the future.

Planned Modifications:

Install New:

- (3) Fiber Hybrid Line
- (3) AIR6449 B41
- (3) Radio 4424 B25
- (3) Radio 4415 B66

Remove:

- (6) TMA's
- (12) Coax

Existing to Remain:

- (2) Fiber Hybrid Line
- (3) RFS- APXVAARR24_43-U-NA20
- (3) RFS- APX16DWV- 16DWV-16DWV-S-E-A20

Ground:

- (2) Add Cabinets
- (1) Add Generator

This facility was approved by the Town of East Windsor on August 13, 1996. We used the information from the previous filing. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to First Selectman Jason E. Bowsza, Elected Official and Clark Chapin, Director of Planning for the Town of East Windsor, as well as the property owner and the tower owner.

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

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Ryan Clark

Mobile: 203-300-7310

Fax: 508-819-3017

Office: 750 West Center Street, Floor 3 West Bridgewater, MA 02379

Email: rclark@clinellc.com

Attachments

cc: First Selectman Jason E. Bowsza, Chief Elected Official Town of East Windsor
Clark Chapin, Director of Planning for the Town of East Windsor
Balch Communications, tower and property owner

Exhibit A

Original Facility Approval

**TOWN OF EAST WINDSOR - PLANNING & ZONING COMMISSION
AUGUST 13, 1996 - PUBLIC HEARING #1271**

CONDITIONS OF APPROVAL

**BALCH BRIDGE STREET CORPORATION
SPECIAL USE PERMIT - TELECOMMUNICATIONS TOWER
232 SOUTH MAIN STREET
EAST WINDSOR, CONNECTICUT**

Motion by: Ed Filipone

Seconded by: Susan Kiss

TO APPROVE the application of Balch Bridge Street Corporation for a Special Use Permit to allow the construction of a 200 foot tall telecommunications tower on property located at 232 South Main Street which is presently zoned B-2 and shown on Assessors Map 33, Block 5, Lot 84-1. This approval is subject to conformance with the reference plans and the following conditions:

Referenced plans:

- "Key Map, Balch Bridge Street Corporation, South Main Street - U.S. Route 5 East Windsor, Connecticut" Sheet 1 of 3, Scale 1"=200' BY J.R. Russo & Associates dated 7-2-96.
- "Balch Bridge Street Corporation, South Main Street - U.S. Route 5 East Windsor, Connecticut" Sheet 2 of 3, Scale 1"=100' BY J.R. Russo & Associates dated 7-2-96.
- "Site Plan, Balch Bridge Street Corporation, South Main Street - U.S. Route 5 East Windsor, Connecticut" Sheet 1 of 3, Scale 1"=200' BY J.R. Russo & Associates dated 7-2-96, revised to 7-30-96.

Conditions to be met prior to signing mylars:

1. The applicant shall submit an agreement for review and approval of the town attorney, to indemnify and hold harmless the Town of East Windsor against any claims that may be made should the proposed tower fall and cause damages to property or individuals. The hold harmless agreement shall be recorded on the land records of the subject property and of the property to the immediate south which is also under the applicant's control.
2. A copy of this approval Motion shall be recorded on the land records.

Conditions to be met prior to the issuance of a Zoning Permit:

3. Two sets of mylars shall be submitted for the signature of the Commission Chairman and Secretary. One set of mylars shall be filed on the land records and another shall be filed in the East Windsor Planning and Zoning Commission office.

Conditions to be met Prior to Certificate of Compliance:

4. All conditions of this approval motion shall be complied with.

BALCH BRIDGE STREET CORPORATION
SPECIAL USE PERMIT - TELECOMMUNICATIONS TOWER
232 SOUTH MAIN STREET
EAST WINDSOR, CONNECTICUT

General Conditions:

5. No work may begin until a Zoning and Building Permit have been issued.
6. Construction of improvements as approved by this special use/site plan approval must commence by August 13, 1997 and all improvements must be completed within 1 year from the start of construction, otherwise approval shall become null and void unless an extension is granted by the Commission.
7. This Special Use Permit approval is for the specific use identified in the application. Any changes in use or tenancy require a new zoning permit and may require additional Commission approvals.
8. No structures or buildings other than the tower shall be erected without further Site Plan Review by the Commission.
9. This project shall be constructed and maintained in accordance with the referenced plans. Minor modifications to the approved plans which result in lesser impacts may be allowed subject to staff review and approval.
10. By acceptance of this permit and conditions, the applicant and owner acknowledge the right of Town staff to periodically enter upon the subject property for the purpose of determining compliance with the terms of this approval.

VOTE: In Favor: Unanimous

Exhibit B

Property Card

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2017.



Information on the Property Records for the Municipality of East Windsor was last updated on 4/30/2021.

Parcel Information

Location:	232 SOUTH MAIN ST	Property Use:	Vacant Land	Primary Use:	Residential
Unique ID:	00647091	Map Block Lot:	012 05 084 -01	Acres:	41.35
490 Acres:	41.35	Zone:	M-1	Volume / Page:	0115/0840
Developers Map / Lot:	490-1992	Census:			

Value Information

	Appraised Value	Assessed Value
Land	84,218	26,990
Buildings	0	0
Detached Outbuildings	0	0
Total	84,218	26,990

Owner's Information

Owner's Data

BALCH BRIDGE STREET CORP
P O BOX 678
EAST WINDSOR, CT 06088-0678

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
BALCH BRIDGE STREET CORP	0115	0840	12/01/1979		No	\$0

Information Published With Permission From The Assessor



Exhibit C

Construction Drawings

SITE NAME:	EAST WINDSOR/RT-191_1
SITE NUMBER:	CT11402A
SITE ADDRESS:	232 SOUTH MAIN STREET EAST WINDSOR, CT 06088
COUNTY	HARTFORD COUNTY
MUNICIPALITY:	HARTFORD COUNTY
ZONING:	M-1
LATITUDE:	41.771800° (NAD 83)
LONGITUDE:	-72.590300° (NAD 83)
TYPE OF SITE:	LATTICE TOWER
STRUCTURE HEIGHT:	188'-0" AGL
ANTENNA CENTER:	159'-0" AGL
GROUND ELEVATION:	59.1' (NAVID 88)
STRUCTURE OWNER NAME:	BALCH COMMUNICATIONS, CSC
BUILDING OWNER ADDRESS:	248 SOUTH MAIN STREET EAST WINDSOR, CT 06088
APPLICANT:	T-MOBILE NORTHEAST, LLC. 15 COMMERCE WAY, SUITE B NORTON, MASSACHUSETTS 02766
APPLICANT PHONE:	(508) 286-2700
APPLICANT FAX:	(508) 286-2893

ENGINEERING FIRM:
CENTERLINE COMMUNICATIONS
750 WEST CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
DEREK CREASER (617) 306-3034

CARRIER:
T-MOBILE NORTHEAST, LLC.
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
PHONE: (508) 286-2700
FAX: (508) 286-2893

811[®]

**Know what's below.
Call before you dig.**



TECHNOLOGY: 67D5A998C HYBRID
MODIFICATION: ANCHOR_PHASE 3



1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSE OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. 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. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T-MOBILE REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

1. INSTALL THREE NEW T-MOBILE ANTENNAS
2. INSTALL SIX NEW TRUS
3. REMOVE THREE GENERIC & THREE COMMSCOPE TWIN STYLE TMAS
4. REMOVE ONE EXISTING RBS 3106 CABINET
5. INSTALL ONE NEW 6160 AC ENCLOSURE
6. INSTALL ONE NEW B160 BATTERY ENCLOSURE
7. INSTALL THREE NEW 6X24 HYBRID CABLES
8. INSTALL ONE 25KW DIESEL GENERATOR
9. REMOVE ALL UNUSED CABLES AND EQUIPMENT

NO.	DESCRIPTION
T-1	TITLE SHEET
GN-1	GENERAL NOTES, RF NOTES, CABLING NOTES
A-1	COMPOUND PLAN
A-2	EQUIPMENT LAYOUT & DETAILS
A-3	SOUTH ELEVATION
A-4	ANTENNA PLAN & SCHEDULE
A-5	GENERAL DETAILS
A-6	SECTOR FRAME REINFORCEMENT DETAIL
A-7	25KW GENERATOR DETAILS
A-8	25KW GENERATOR DETAILS
A-9	PPC DETAILS
A-10	AUTOMATIC TRANSFER SWITCH DETAILS
SN-1	STRUCTURAL NOTES & SPECIAL INSPECTIONS
E-1	ONE-LINE DIAGRAM & GROUNDING DETAILS
G-1	GENERATOR AND EQUIPMENT GROUNDING DETAIL

THESE DRAWINGS ARE FORMATTED TO BE FULL SIZE AT 22"x34". CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SHEET TITLE:	TITLE SHEET
DRAWING:	T-1

RF NOTES

ANTENNA CABLE & SCHEDULING NOTES

GENERAL NOTES

T - Mobile
NORTHEAST LLC

T-MOBILE NORTHEAST, LLC.
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
PHONE: (508) 286-2700
FAX: (508) 286-2893

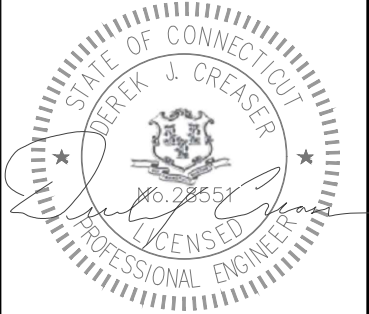


750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS

0	04/29/21	ISSUED FOR PERMIT	JIK
A	04/05/21	ISSUED FOR REVIEW	NMT
REV	DATE	DESCRIPTION	BY

DESIGNED BY: NMT	APPROVED BY: MK
---------------------	--------------------



DATE: 04/29/21

IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER TO ALTER THIS DOCUMENT. UNLESS EXPLICITLY AGREED TO BY THE ENGINEER IN WRITING, THE ENGINEER DISCLAIMS ALL LIABILITY ASSOCIATED WITH THE REUSE, ALTERATION OR MODIFICATION OF THE CONTENTS HEREIN.

SITE NAME:

EAST WINDSOR/RT-191 1

SITE ID:

CT11402A

SITE ADDRESS:

SHEET TITLE:

GENERAL NOTES, RF NOTES, CABLING NOTES

DRAWING:

GN-1

1. ACTUAL LENGTHS SHALL BE DETERMINED PER SITE CONDITION BY SUBCONTRACTOR
2. THE DESIGN IS BASED ON RF DATA SHEETS, SIGNED AND APPROVED.
3. RADIO SIGNAL CABLE AND RACEWAY SHALL COMPLY WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC, NFPA 70), CHAPTER 8.
4. ALL SPECIFIED MATERIAL FOR EACH LOCATION (E.G. OUT DOORS-OCCUPIED, INDOORS-UNOCCUPIED, PLENUMS, RISER SHAFTS, ETC.) SHALL BE APPROVED, LISTED, OR LABELED AS REQUIRED BY THE NEC.
5. RADIO SIGNAL CABLE SHALL BE SUPPORTED AT MINIMUM OF EVERY THREE (3) FEET EXCEPT INSIDE MONOPOLES OR MONOPOLES WHERE CABLE AND CONNECTOR MANUFACTURERS SUPPORT RECOMMENDATIONS SHALL BE FOLLOWED. MANUFACTURER RECOMMENDATION CABLES SUPPORT ACCESSORIES SHALL BE USED.
6. THE OUTDOOR CABLE SUPPORT SYSTEM SHALL BE PROVIDED WITH AN ICE SHIELD TO SUPPORT AND PROTECT ANTENNA CABLE RUNS.
7. DRIP LOOPS SHALL BE REQUIRED ON ALL OUTSIDE CABLES. CABLES SHALL BE SLOPED AWAY FROM BUILDING OR OUTDOOR BTS CABINETS TO PREVENT WATER FROM ENTERING THROUGH THE COAXIAL CABLE PORT.
8. ALL FEEDER LINE AND JUMPER CONNECTORS SHALL BE 7/16 DIN CABLE CONNECTORS THAT MEET IP68 STANDARDS.
9. 7/16 DIN CONNECTORS REQUIRE NO ADDITIONAL WEATHER PROOFING IN INDOOR APPLICATIONS IF INSTALLED AND TORQUED PROPERLY. IN OUTDOOR APPLICATIONS WEATHER PROOFING IS REQUIRED AND THE FOLLOWING PROCEDURE SHOULD BE FOLLOWED.
10. USING WEATHERPROOFING KIT APPROVED BY CABLE MANUFACTURER AND CONTRACTOR START TAPE APPROXIMATELY 5 INCHES FROM THE CONNECTOR, AND WRAP 2 INCHES TOWARD THE CONNECTOR, THEN REVERSE THE TAPE SO THAT THE STICKY SIDE IS UP. TAPE OVER THE CONNECTOR OR SURGE ARRESTOR UNTIL THREE (3) TO FOUR (4) INCHES BEYOND THE CONNECTOR AND REVERSE AGAIN WITH THE STICKY SIDE DOWN FOR ANOTHER INCH OR TWO. PASS THE BUTYL RUBBER AND FINISH WITH A FINAL LAYER OF TAPE.
11. ANTENNAS SHALL BE PAINTED, WHEN REQUIRED, BY THE LANDLORD OR AUTHORITY OF HAVING JURISDICTION IN ACCORDANCE WITH ANTENNA MANUFACTURERS' SURFACES PREPARATION AND PAINTING REQUIREMENTS.
12. CABLE SHIELDS AND TOWER CONDUITS SHALL BE GROUNDED AT THE TOP OF THE TOWER WITHIN 10 FEET OF THEIR CONNECTORS, AND AT THE BOTTOM OF THE TOWER ABOUT 6 INCHES BEFORE THEY TURN TOWARD THE FACILITY. THEY SHALL BE GROUNDED AT THE MIDPOINT OF THE TOWERS THAT ARE BETWEEN 60 FEET AND 200 FEET HIGH, AND AT INTERVALS OF 60 FEET OR LESS ON TOWERS THAT ARE HIGHER THAN 200 FEET.

1. SUBCONTRACTOR SHALL VERIFY THE ACTUAL LENGTH IN THE FIELD BEFORE INSTALLATION.
2. TAG AND COLOR CODE ALL MAIN CABLES AT LOCATIONS PER T-MOBILE ANTENNA CABLE MARKING STANDARD:
 - TOP OF TOWER END OF MAIN COAX
 - BOTTOM OF TOWER END OF MAIN COAX
 - DIRECTLY BEFORE AND AFTER RF EQUIPMENT
 - END OF JUMPERS AT BTS EQUIPMENT
3. ANTENNAS SHALL BE PROCURED AND INSTALLED WITH DOWN TILT MOUNTING BRACKETS SUPPLIED BY ANTENNA MANUFACTURER.
4. PRIOR APPROVAL IS REQUIRED BEFORE PERFORMING ANY WORK ON EXISTING CELL SITE EQUIPMENT.

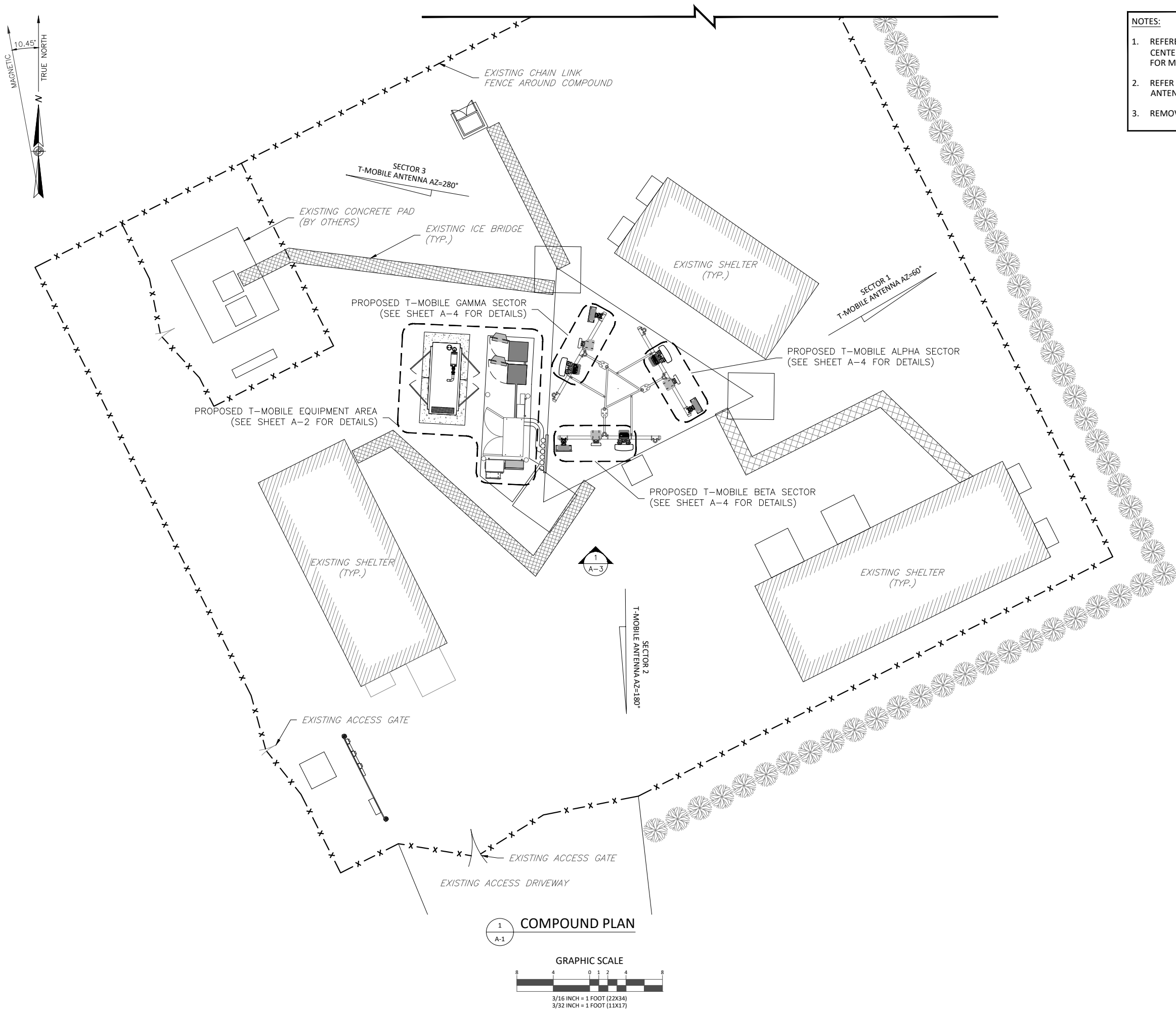
- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
- CONTRACTOR - CENTERLINE COMMUNICATIONS
SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
OWNER - T-MOBILE MOBILITY
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE 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.
3. 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.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. 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.
11. 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.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 ($F_y = 36$ ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E ($F_y = 36$ ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE MOBILITY SITES."
17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. APPLICABLE BUILDING CODES:
SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
- BUILDING CODE: IBC 2015 & CONNECTICUT STATE BUILDING CODE 2018
T ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
 LIGHTING CODE: NFPA 70-2017
- SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:
- AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
- MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;
- TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL
- ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

- FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

AGL	ABOVE GROUND LEVEL	GRC	GALVANIZED RIDGID CONDUIT	RF	RADIO FREQUENCY
AWG	AMERICAN WIRE GAGE	MGB	MASTER GROUND BUSS	R&R	REMOVE AND REPLACE
BCW	BARE COPPER WIRE	MIN	MINIMUM	TBR	TO BE REMOVED
BTS	BASE TRANSCEIVER STATION	NEC	NATIONAL ELEC. CODE	TYP	TYPICAL
EG	EQUIPMENT GROUND	NTS	NOT TO SCALE		
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		
G.C.	GENERAL CONTRACTOR	REQ	REQUIRED		



T - Mobile
NORTHEAST LLC

T-MOBILE NORTHEAST, LLC.
15 COMMERCE WAY, SUITE 8
NORTON, MA 02766
PHONE: (508) 286-2700
FAX: (508) 286-2893

CENTERLINE
COMMUNICATIONS

750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS			
REV	DATE	DESCRIPTION	BY
0	04/29/21	ISSUED FOR PERMIT	JK
A	04/05/21	ISSUED FOR REVIEW	NMT

DESIGNED BY:
NMT

APPROVED BY:
MK

DATE: 04/29/21

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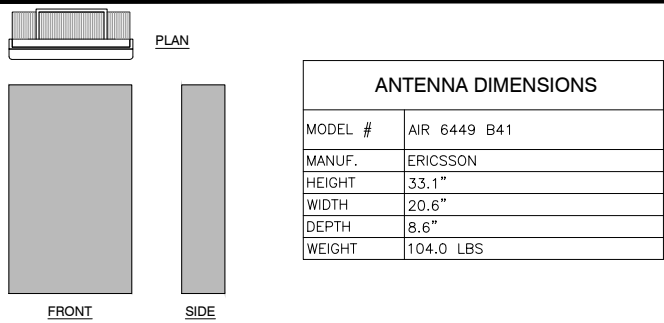
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EAST WINDSOR/RT-191_1

SITE ID:
CT11402A

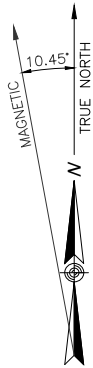
SITE ADDRESS:

SHEET TITLE:
COMPOUND PLAN

DRAWING:
A-1

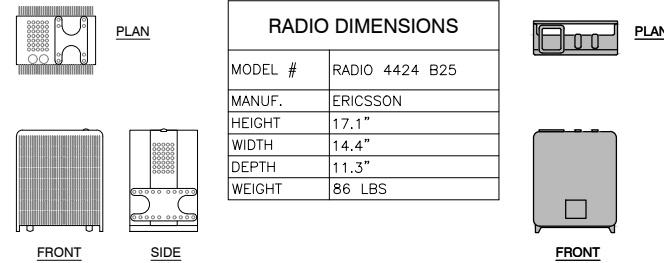


ANTENNA DIMENSIONS	
MODEL #	AIR 6449 B41
MANUF.	ERICSSON
HEIGHT	33.1"
WIDTH	20.6"
DEPTH	8.6"
WEIGHT	104.0 LBS



1 ANTENNA DETAILS

A-2 NOT TO SCALE



RADIO DIMENSIONS	
MODEL #	RADIO 4424 B25
MANUF.	ERICSSON
HEIGHT	17.1"
WIDTH	14.4"
DEPTH	11.3"
WEIGHT	86 LBS

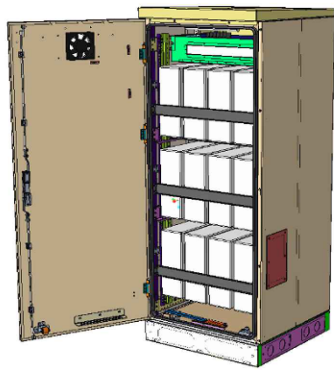
RADIO DIMENSIONS	
MODEL #	RADIO 4415 B25 & B66A
MANUF.	ERICSSON
HEIGHT	14.9"
WIDTH	13.2"
DEPTH	5.4"
WEIGHT	46.3 LBS

2 RADIO DETAILS

A-2 NOT TO SCALE



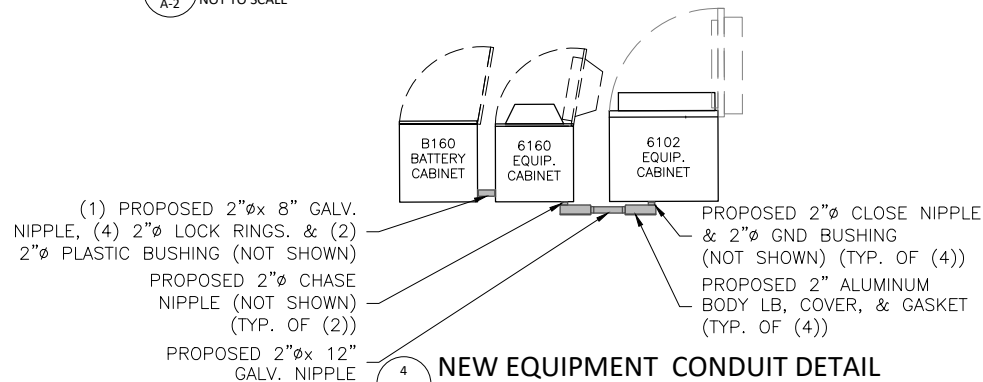
6160 AC ENCLOSURE	
CAPACITY	19U(19" RACK)
RACK SPACE USER EQUIP.	
HARDWARE CAPABILITIES	POWER AND CPRI SUPPORT FOR MULTI-STANDARD REMOTE RADIOS(RRU OR AIR) ERS BASEBAND AND TRANSPORT UNITS LI-ION BATTERIES 3PP EQUIPMENT ADDITIONAL POWER FEED OPTIONS AVAILABLE
MECHANICAL SPECIFICATIONS	
WEIGHT	320lbs (INCLUDING ACTIVE EQUIPMENT)
DIMENSIONS	63"x26"x26" (INCLUDING BASE FRAME)
BASE FRAME HEIGHT	6"
MOUNTING POSITION	GROUND ALUMINUM
ENCLOSURE MATERIAL	POWDER PAINT NCS 2002-B
COLOR	FRONT ACCESS
DOOR	19" (IEC 60297-3-100)
RACK TYPE	CYLINDER/PAD LOCK
LOCK TYPE	
POWER SYSTEM	
INPUT VOLTAGE	3P+N+PE 346/200-415/240 VAC 2P+N+PE 208/120-220/127 VAC 1P+N+PE 200-250 VAC



B160 BATTERY ENCLOSURE	
CAPACITY	
VRLA12V:	100Ah/150Ah/170Ah/190Ah/210Ah
LI-ION	24U 19"/23"
SODIUM-NICKEL	3xFIAMM
ELECTRICAL SPECIFICATIONS	
DC OUTPUT	-48VDC/200A
BATTERY BREAKERS	2x125/2p
ALARMS	DOOR OPEN, CLIMATE FAILURE, MCB CONNECTION
MECHANICAL SPECIFICATIONS	
WEIGHT	134kg/296lbs
DIMENSIONS	63"x26"x26" (INCLUDING BASE FRAME)
BASE FRAME HEIGHT	6"
MATERIAL	GALVANIZED STEEL (180g/m²)
COLOR	POWDER PAINT NCS 2002-B
LOCKING TYPE	CYLINDER/PAD LOCK

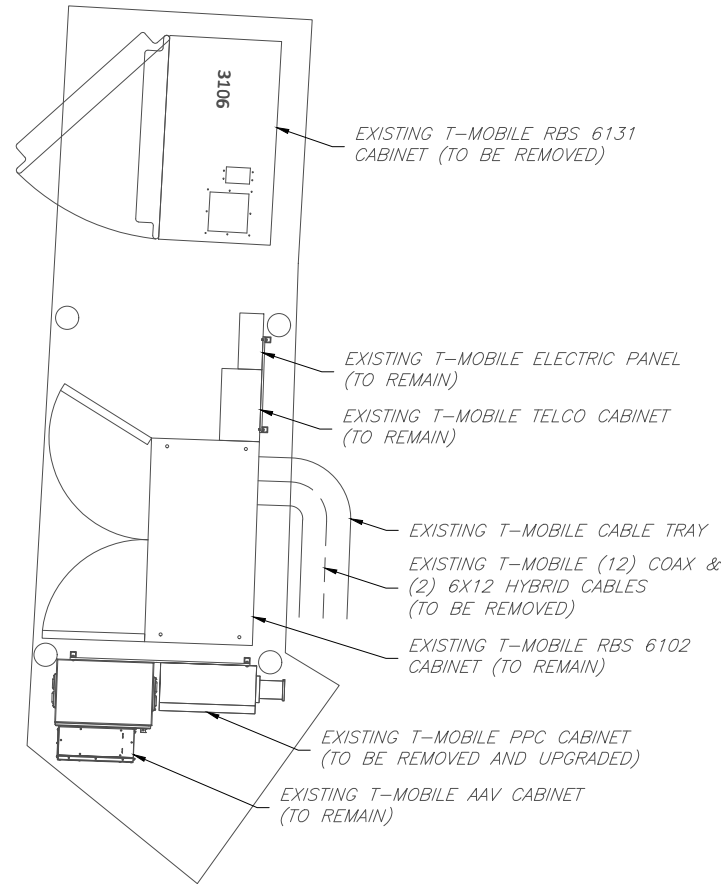
3 PROPOSED EQUIPMENT CABINETS SPECS.

A-2 NOT TO SCALE



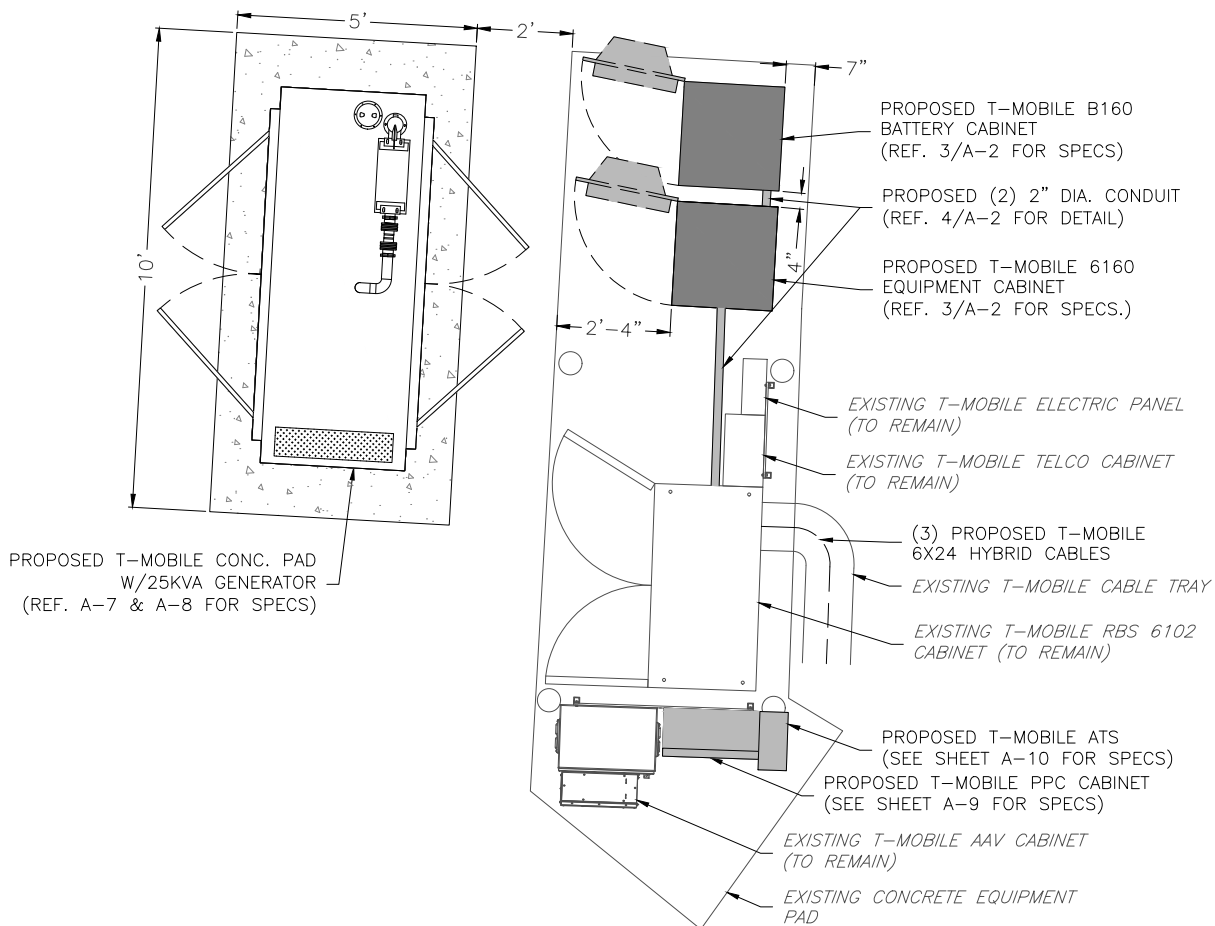
4 NEW EQUIPMENT CONDUIT DETAIL

A-2 NOT TO SCALE



5 EXISTING EQUIPMENT LAYOUT

A-2 NOT TO SCALE



6 PROPOSED EQUIPMENT LAYOUT

A-2 NOT TO SCALE

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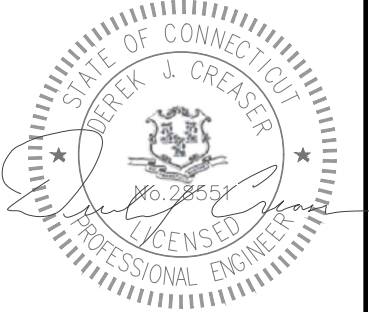


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EAST WINDSOR/RT-191_1

SITE ID:

CT11402A

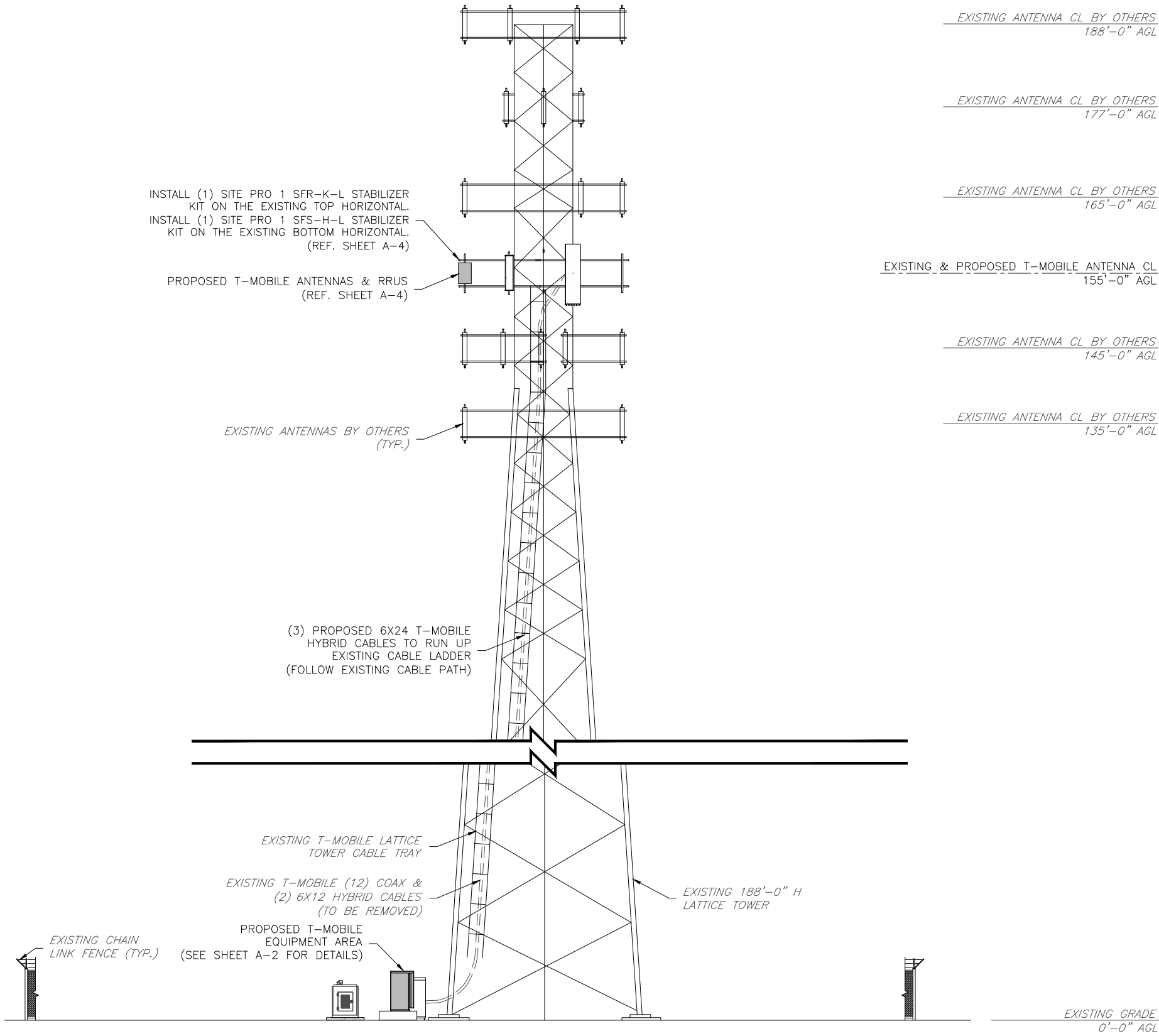
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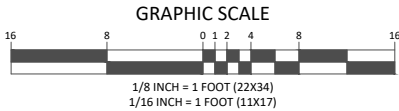
EQUIPMENT LAYOUT
& DETAILS

DRAWING:

A-2



1 SOUTH ELEVATION
A-1



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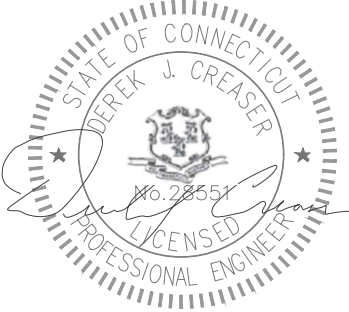


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SITE NAME:	EAST WINDSOR/RT-191_1
SITE ID:	CT11402A
SITE ADDRESS:	

SHEET TITLE:	SOUTH ELEVATION
DRAWING:	A-3

STRUCTURAL NOTES:

CONCLUSIONS:

THE RESULTS OF THE ANALYSIS CONCLUDED THAT THE EXISTING T-MOBILE MOUNTS ARE *ADEQUATE* TO SUPPORT THE EXISTING AND PROPOSED T-MOBILE EQUIPMENT LOADING UPON COMPLETION OF THE FOLLOWING MODIFICATIONS. CENTERLINE RECOMMENDS THE FOLLOWING:

ALPHA, BETA & GAMMA:

INSTALL (1) SITE PRO 1 SFR-K-L STABILIZER KIT ON THE EXISTING TOP HORIZONTAL.

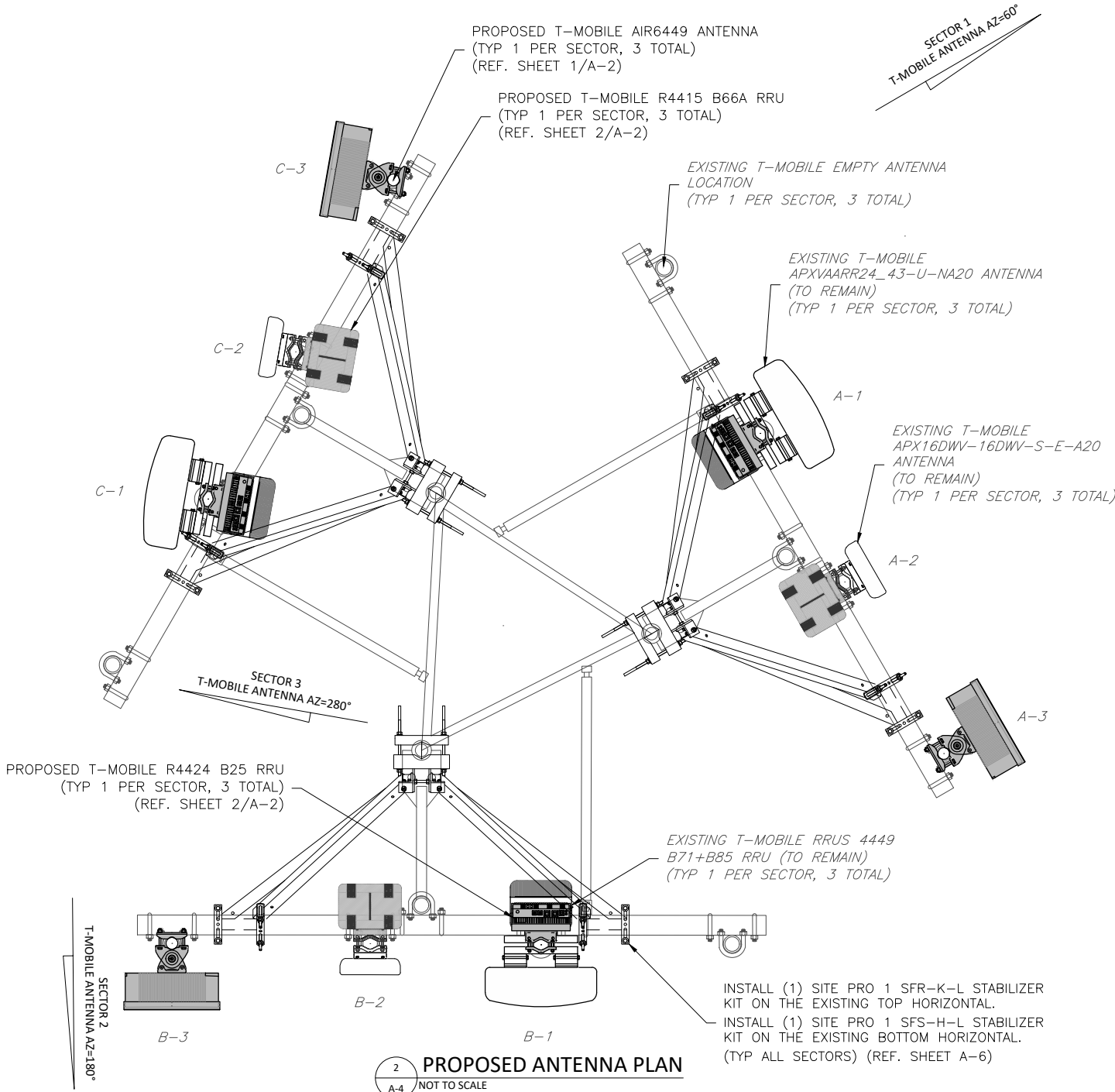
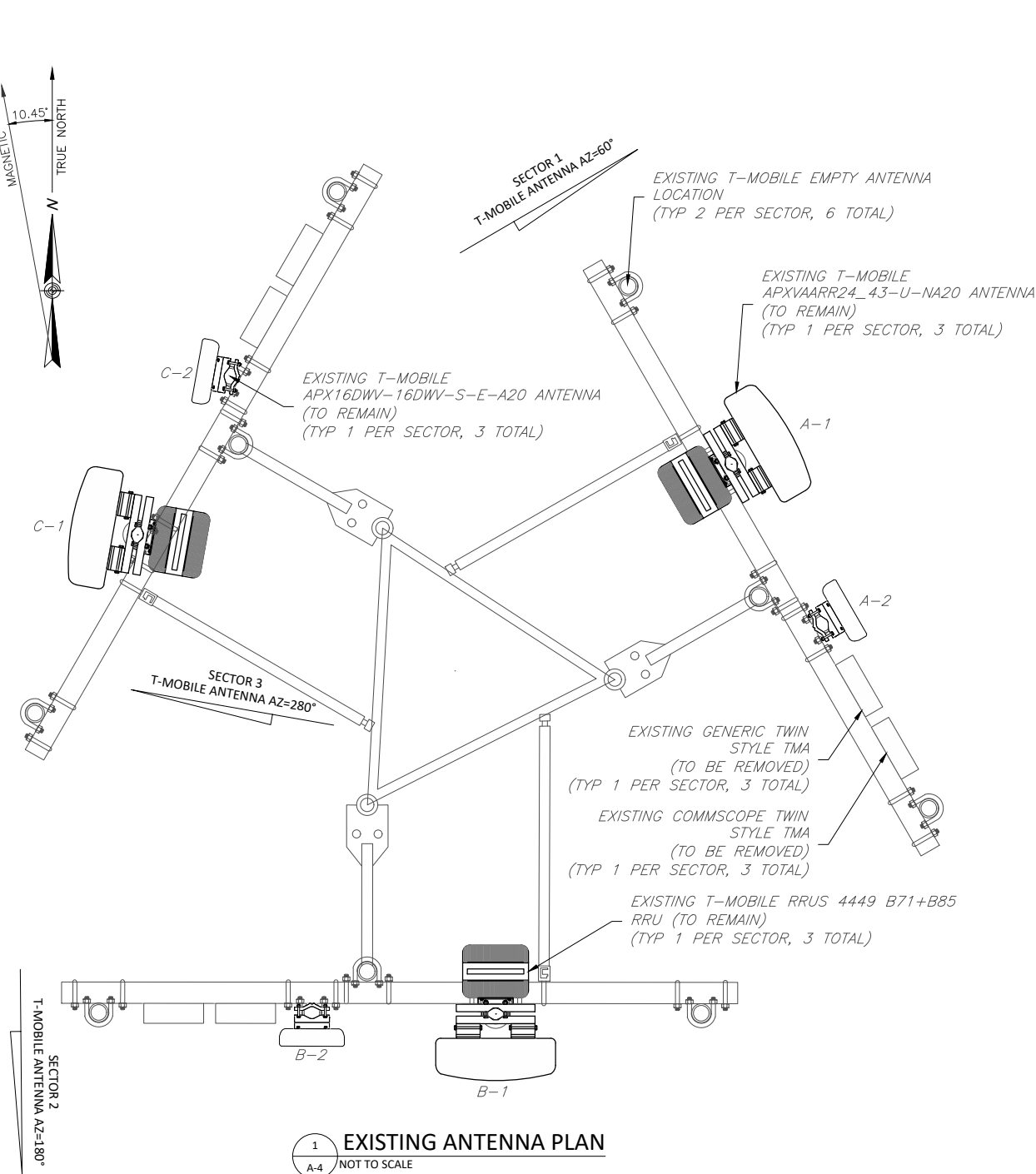
INSTALL (1) SITE PRO 1 SFS-H-L STABILIZER KIT ON THE EXISTING BOTTOM HORIZONTAL.

NOTES:

- REFERENCE LATEST STRUCTURAL ANALYSIS BY CENTERLINE COMMUNICATIONS DATED 04/28/2021 FOR MORE STRUCTURAL INFORMATION.
- REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.
- REMOVE ALL UNUSED CABLE, RRUS AND TMAS.

ANTENNA & CABLE SCHEDULE

LOCATION		AZIMUTH	RAD CENTER	STATUS	TECHNOLOGY	ANTENNA MODEL	MECH. DOWN-TILT	ELEC DOWN-TILT	CABLES	DIPLEXERS	TMA/RRU MODEL	CABLE SIZE	CABLE LENGTH
ALPHA	A-1	60°	155'-0"	EXISTING	L700, L600, N600, G1900 & L1900	APXVAALL24_43-U-NA20 (OCTO)	0°	4°/4°/4°/4°	(4) FIBER JUMPER (X2) (4) COAX JUMPER (X2)	N/A	RRU 4449 B71+B85 RRU 4424 B25	SHARED	0'
	A-2	60°	155'-0"	EXISTING	L2100	APX16DWV-16DWV-S-E-A20 (QUAD)	0°	4°/4°	(2) FIBER JUMPER (2) COAX JUMPER (X2)	N/A	RRU 4415 B66A	SHARED	0'
	A-3	60°	155'-0"	PROPOSED	L2500, N2500	AIR6449 B41	0°	4°/4°	(2) FIBER JUMPER (X2)	N/A	N/A	6X24	200'
BETA	B-1	180°	155'-0"	EXISTING	L700, L600, N600, G1900 & L1900	APXVAALL24_43-U-NA20 (OCTO)	0°	4°/4°/4°/4°	(4) FIBER JUMPER (X2) (4) COAX JUMPER (X2)	N/A	RRU 4449 B71+B85 RRU 4424 B25	SHARED	0'
	B-2	180°	155'-0"	EXISTING	L2100	APX16DWV-16DWV-S-E-A20 (QUAD)	0°	4°/4°	(2) FIBER JUMPER (2) COAX JUMPER (X2)	N/A	RRU 4415 B66A	SHARED	0'
	B-3	180°	155'-0"	PROPOSED	L2500, N2500	AIR6449 B41	0°	4°/4°	(2) FIBER JUMPER (X2)	N/A	N/A	6X24	200'
GAMMA	C-1	280°	155'-0"	EXISTING	L700, L600, N600, G1900 & L1900	APXVAALL24_43-U-NA20 (OCTO)	0°	4°/4°/4°/4°	(4) FIBER JUMPER (X2) (4) COAX JUMPER (X2)	N/A	RRU 4449 B71+B85 RRU 4424 B25	SHARED	0'
	C-2	280°	155'-0"	EXISTING	L2100	APX16DWV-16DWV-S-E-A20 (QUAD)	0°	4°/4°	(2) FIBER JUMPER (2) COAX JUMPER (X2)	N/A	RRU 4415 B66A	SHARED	0'
	C-3	280°	155'-0"	PROPOSED	L2500, N2500	AIR6449 B41	0°	4°/4°	(2) FIBER JUMPER (X2)	N/A	N/A	6X24	200'
NOTE: DARK TEXT IN TABLE ABOVE DENOTES PROPOSED EQUIPMENT											TOTAL 6x24 HYBRID CABLE		600'±



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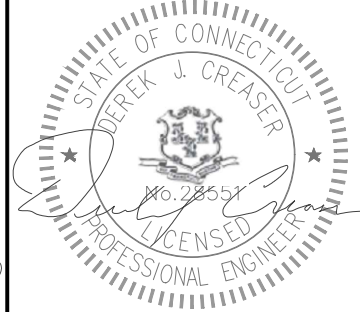


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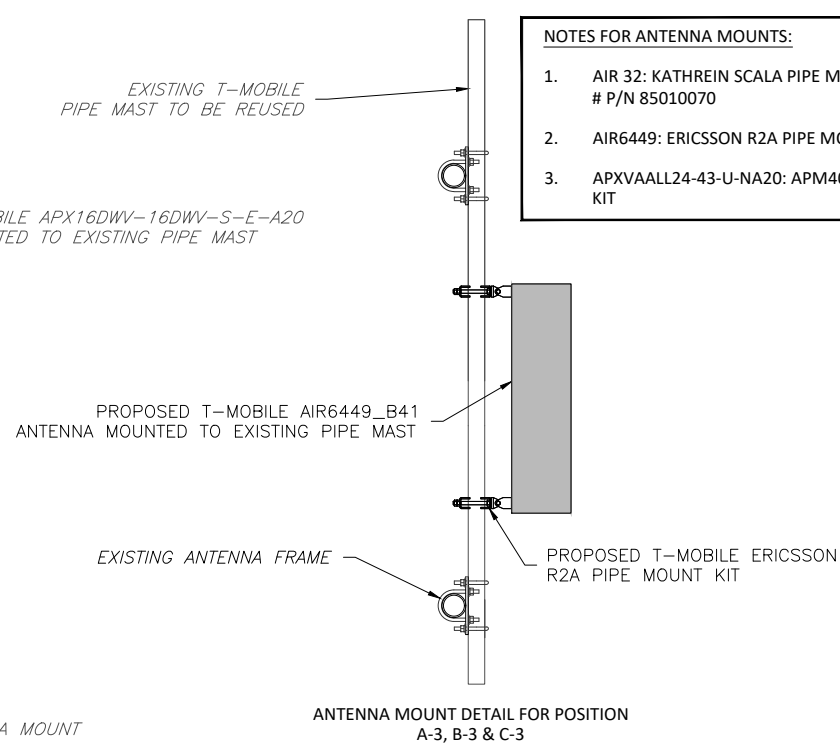
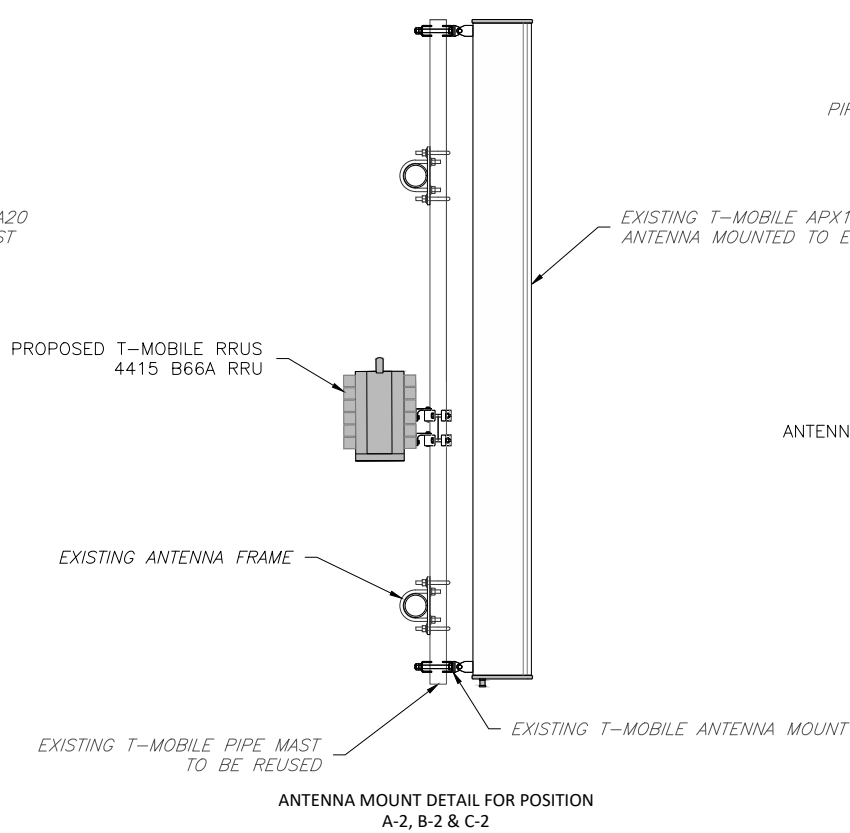
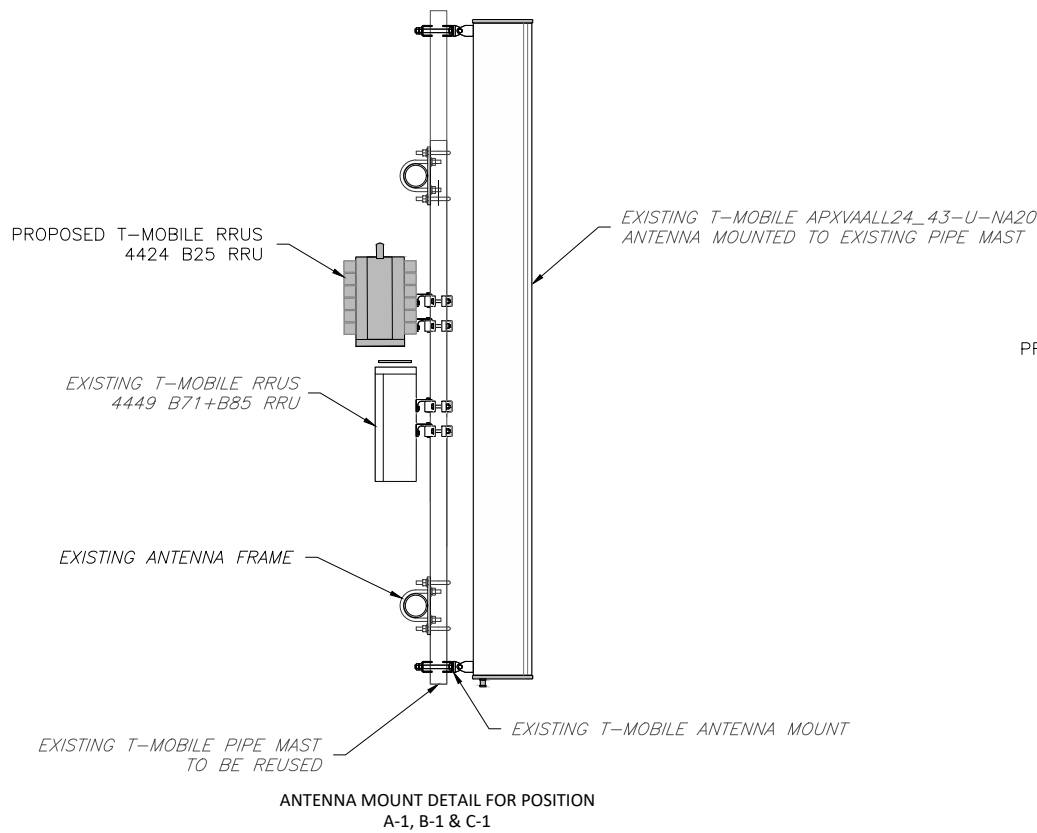


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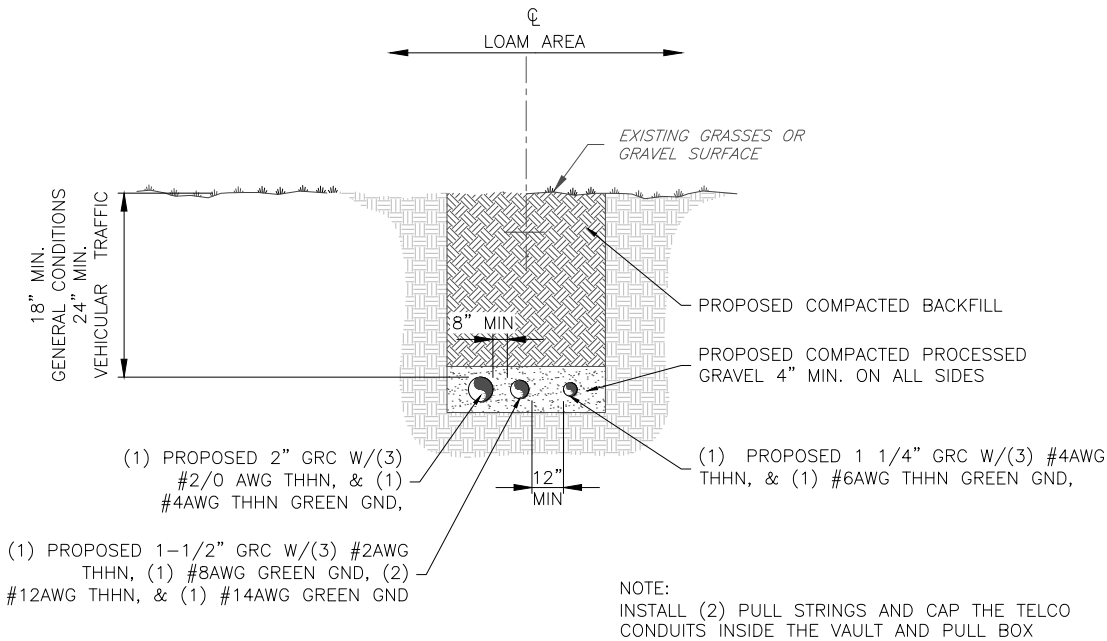
SITE NAME: EAST WINDSOR/RT-191_1
SITE ID: CT11402A
SITE ADDRESS:

SHEET TITLE: ANTENNA PLANS & SCHEDULE
DRAWING: A-4



- NOTES FOR ANTENNA MOUNTS:**
- AIR 32: KATHREIN SCALA PIPE MOUNT KIT # P/N 85010070
 - AIR6449: ERICSSON R2A PIPE MOUNT KIT
 - APXVAALL24-43-U-NA20: APM40-5E PIPE MOUNT KIT

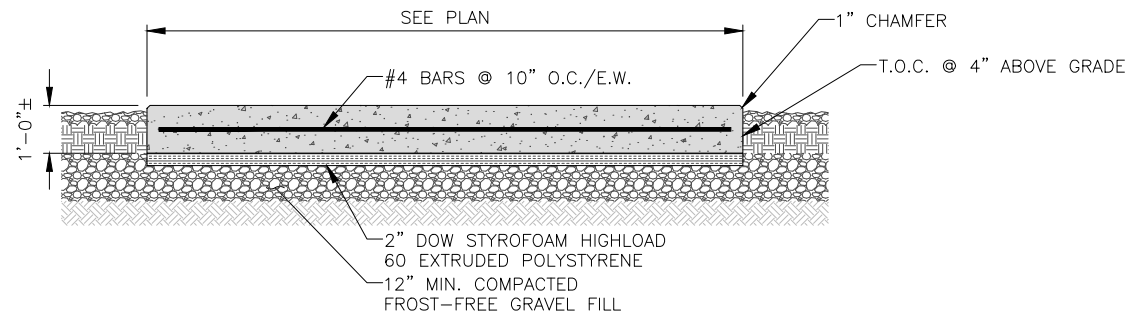
1 ANTENNA MOUNTING DETAILS
A-5 NOT TO SCALE



2 TELCO AND POWER JOINT TRENCH CONDUIT
A-5 NOT TO SCALE

FOUNDATION NOTES & CONCRETE SPECIFICATIONS:

- FOUNDATION AREA SHALL BE EXCAVATED TO THE DEPTH AND DIMENSIONS SHOWN ON THE PLANS. EXISTING LEDGE AND ALL OTHER EXISTING UNSUITABLE MATERIAL SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE. THE SUBGRADE SHALL BE ROLLED WITH A 1-TON, VIBRATORY, WALK-BEHIND ROLLER AT A SPEED OF LESS THAN 2 FPS, 6 PASSES MINIMUM, TO PROVIDE UNYIELDING SURFACE.
- UNDERCUT SOFT OR "WEAVING" AREAS A MINIMUM OF 12 INCHES DEEP. BACKFILL UNDERCUT AREA WITH FILL MEETING THE SPECIFICATIONS OF STRUCTURAL FILL.
- CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c)=4000 psi. CONCRETE TO BE AIR ENTRAINED, DESIRED AIR CONTENT TO BE 6% (PLUS OR MINUS 2%)
- REINFORCING BAR TO BE ASTM A615 GRADE 60.
- WELDED WIRE FABRIC TO CONFORM TO THE REQUIREMENTS OF ASTM A185. WIRES FOR FABRIC TO CONFORM TO THE REQUIREMENTS OF ASTM A82.
- ALL REINFORCING TO HAVE MINIMUM CONCRETE COVER PER ACI SPECIFICATIONS.
- ALL CONCRETE MATERIALS AND WORKMANSHIP SHALL CONFORM TO LATEST EDITION OF ACI 318 AND APPLICABLE STATE BUILDING CODE.
- LEASE AREA IS ON A SLOPE. GRADE LEASE AREA AS REQUIRED TO FACILITATE INSTALLATION OF LEVEL CONCRETE SLAB.
- SLOPE SLAB TO ALLOW FOR WATER DRAINAGE AWAY FROM SITE.



3 CONCRETE SLAB DETAIL
A-5 NOT TO SCALE

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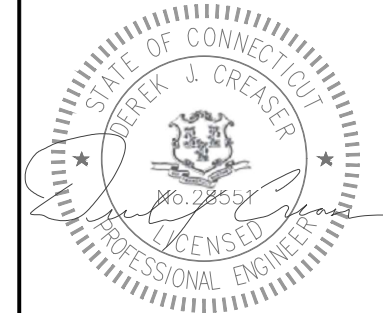


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PHONE: 781.713.4725

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SITE ID: CT11402A
SITE ADDRESS:

SHEET TITLE: GENERAL DETAILS
DRAWING: A-5

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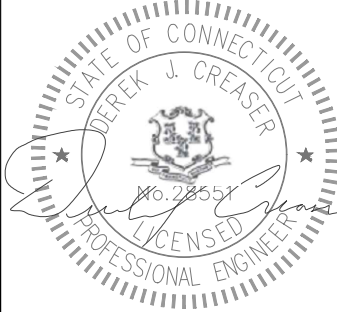


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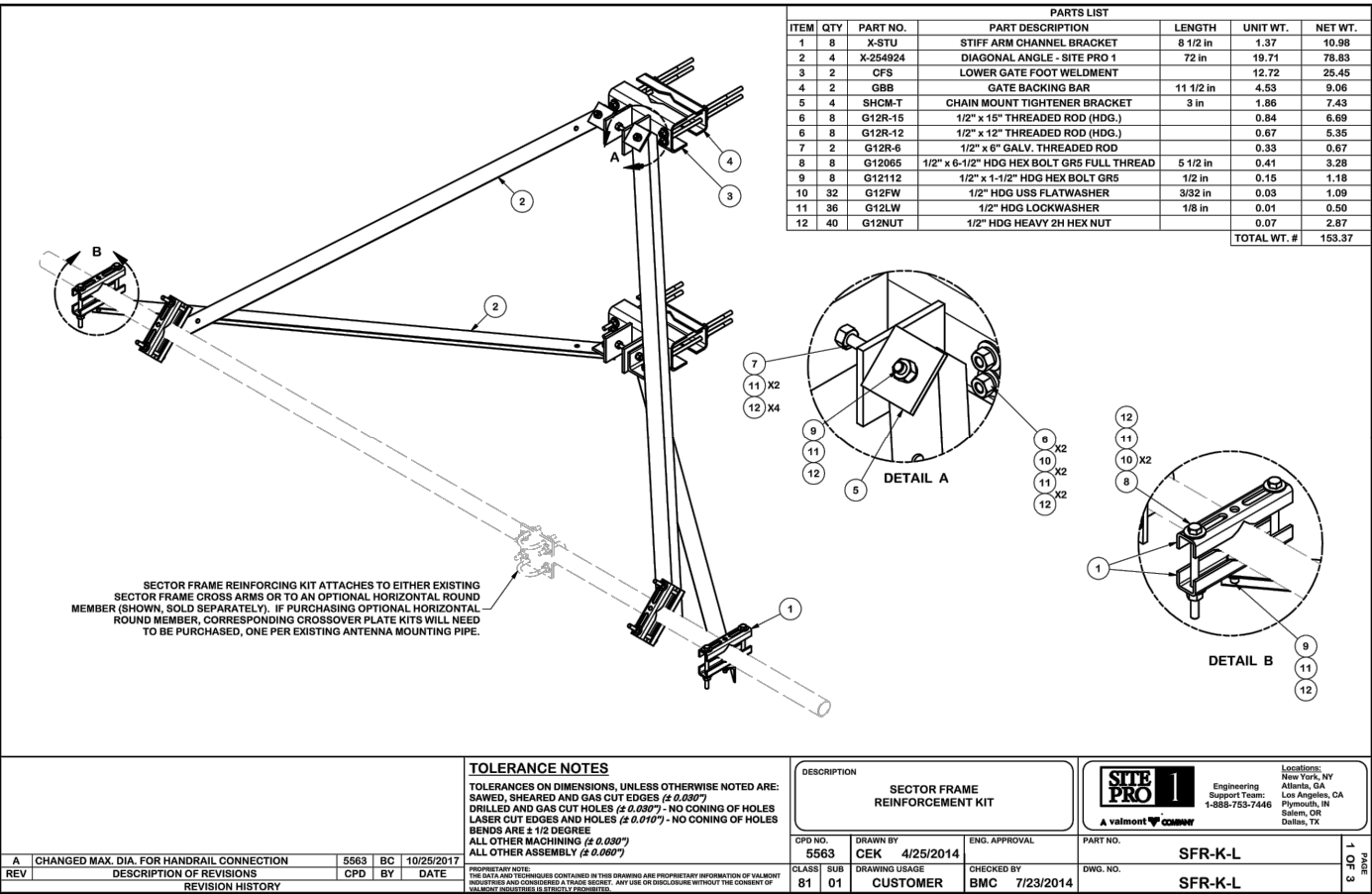
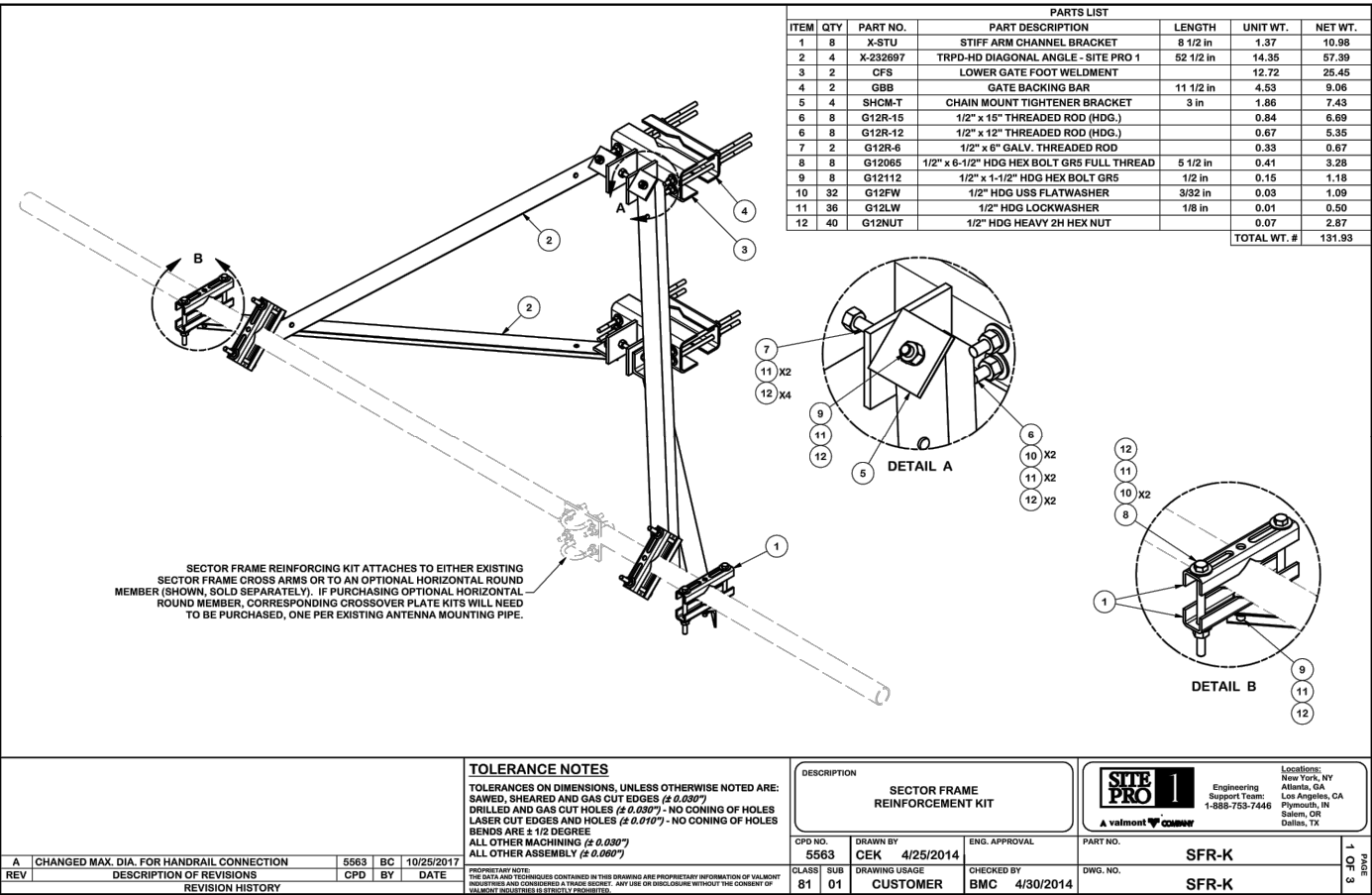


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SITE ID:	CT11402A
SITE ADDRESS:	

SHEET TITLE:	SECTOR FRAME REINFORCEMENT KIT
DRAWING:	A-6



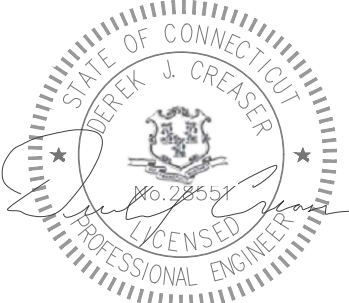


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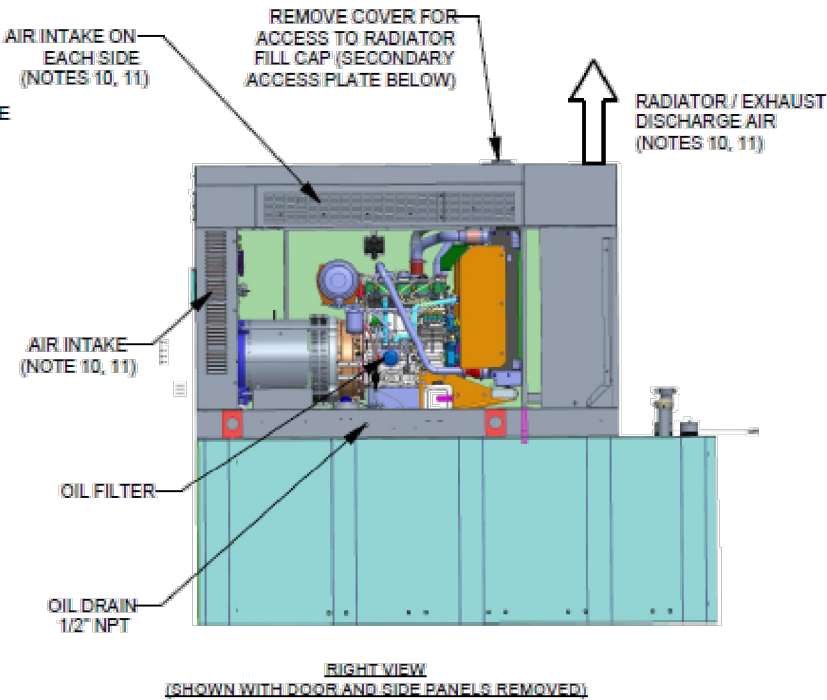
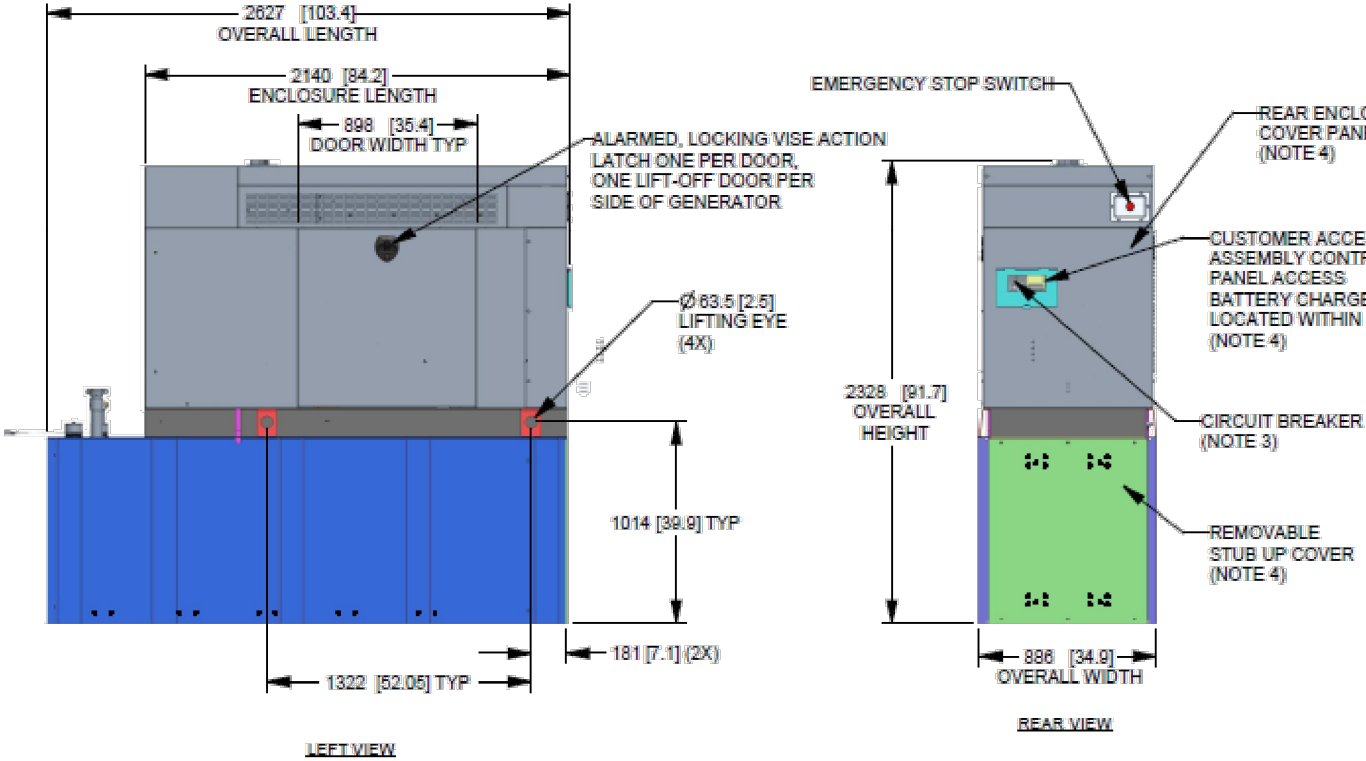
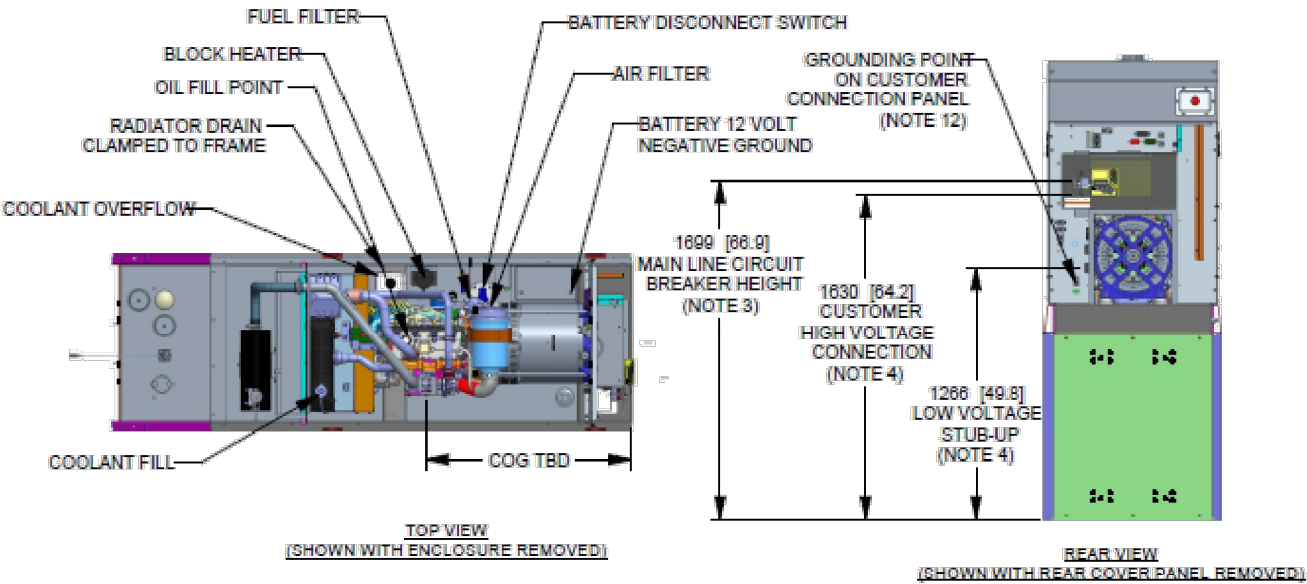
SITE ID:
CT11402A

SITE ADDRESS:

SHEET TITLE:
25KW GENERATOR
DETAILS

DRAWING:
A-7

- NOTES:
1. THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH CURRENT APPLICABLE NFPA 37 AND NFPA 70 STANDARDS AS WELL AS ANY OTHER FEDERAL, STATE, AND LOCAL CODES.
 2. BATTERY (12 VOLT NEGATIVE GROUND SYSTEM).
 3. CONTROL PANEL / CIRCUIT BREAKER INFORMATION:
 - MAIN LINE CIRCUIT BREAKER 125 AMPS
 - SEE SPECIFICATION SHEET OR OWNERS MANUAL
 - ACCESSIBLE THROUGH CUSTOMER ACCESS ASSEMBLY DOOR ON REAR OF GENERATOR.
 - CONTROL PANEL INCLUDES INTEGRATED BATTERY CHARGER
 4. REMOVE THE REAR STUB-UP AND REAR ENCLOSURE COVER PANEL TO ACCESS THE STUB-UP AREAS AS FOLLOWS:
 - HIGH VOLTAGE CONNECTION INCLUDING AC LOAD LEAD CONDUIT CONNECTION, NEUTRAL CONNECTION, AND BATTERY CHARGER 120 VOLT AC (0.5 AMP MAX) CONNECTION.
 - LOW VOLTAGE CONNECTION INCLUDING TRANSFER SWITCH CONTROL WIRES
 5. ENGINE SERVICE CONNECTIONS:
 - OIL DRAIN: 1/2" NPT
 - RADIATOR DRAIN: HOSE CLAMPED TO FRAME
 6. CENTER OF GRAVITY AND WEIGHT MAY CHANGE DUE TO UNIT OPTIONS.
 7. BOTTOM OF GENERATOR SET MUST BE ENCLOSED TO PREVENT PEST INTRUSION AND RECIRCULATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
 8. REFERENCE OWNERS MANUAL FOR LIFTING WARNINGS.
 9. MOUNTING BOLTS OR STUDS TO MOUNTING SURFACE SHALL BE 5/8-11 GRADE 5 (USE STANDARD SAE TORQUE SPECS)
 10. MUST ALLOW FREE FLOW OF INTAKE AIR, DISCHARGE AIR AND EXHAUST. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
 11. GENERATOR MUST BE INSTALLED SUCH THAT FRESH COOLING AIR IS AVAILABLE AND THAT DISCHARGE AIR FROM RADIATOR IS NOT RECIRCULATED. RECOMMENDED MINIMUM PERIMETER (3FT) AND VERTICAL OVER EXHAUST (5FT) CLEARANCE FOR SITE LOCATION.
 12. GENERATOR MUST BE GROUNDED.



WEIGHT DATA: (INCLUDES FUEL TANK)
GENERATOR: TBD
GENERATOR WITH SHIPPING SKID: TBD
WEIGHT: KG [LBS]
DIMENSIONS: MM [INCHES]

GENERAC

TITLE INSTALLATION D2.2L 25KW Y06 PD			
ISSUE DATE: 5/10/18			
SIZE B	CAGE NO N/A	DWG NO 10000036728	REV 1
SCALE 0.03:1	WT-KG	SEE ABOVE	SHEET 1 of 2

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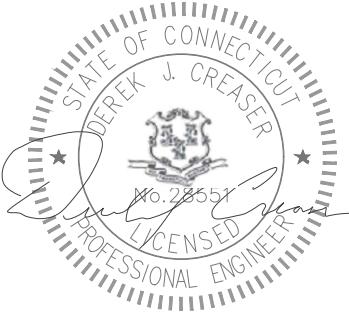


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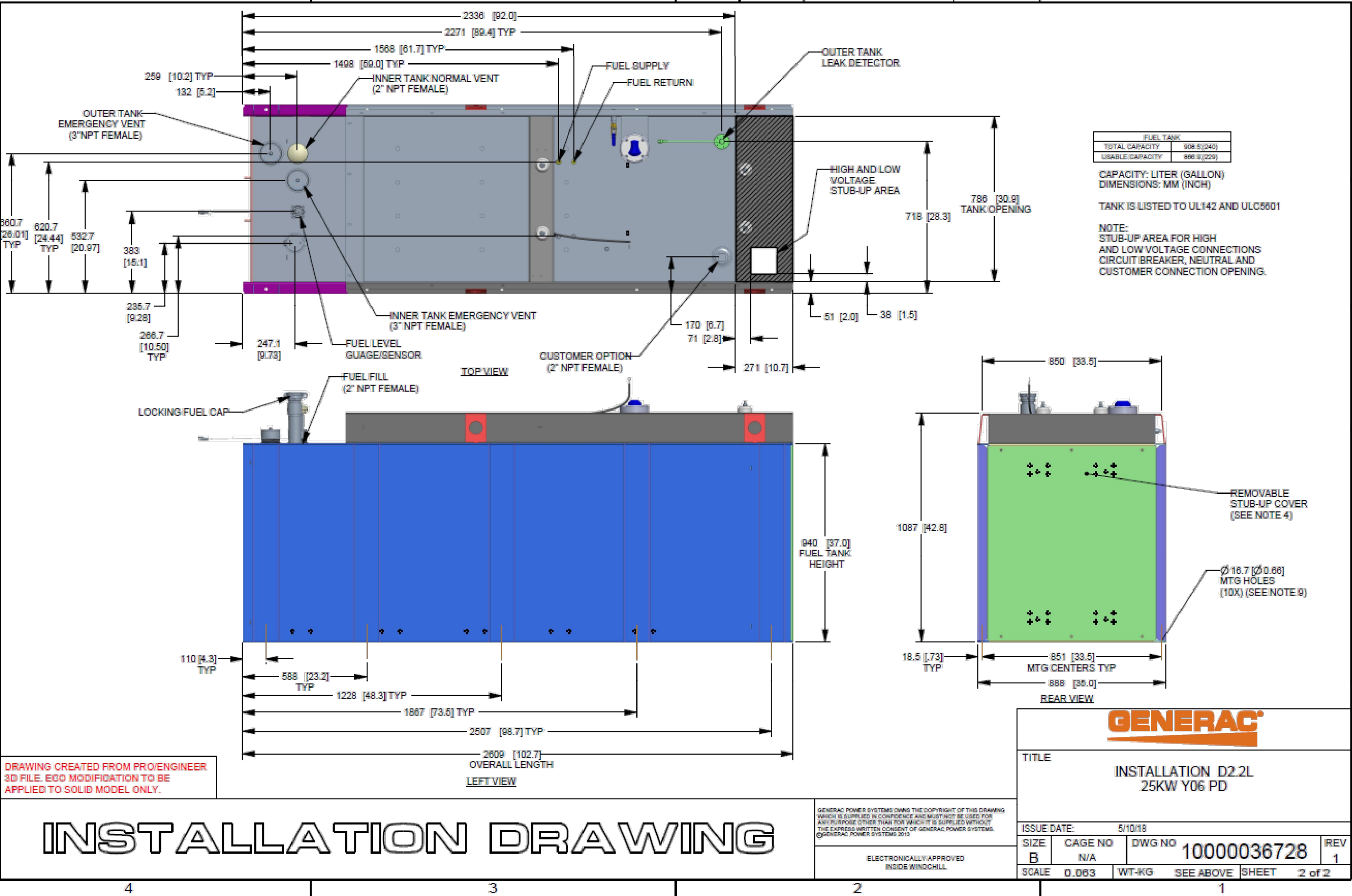


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SITE NAME:	EAST WINDSOR/RT-191_1
SITE ID:	CT11402A
SITE ADDRESS:	

SHEET TITLE:	25KW GENERATOR DETAILS
DRAWING:	A-8



INSTALLATION DRAWING

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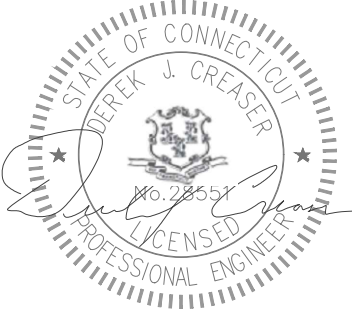


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DATE: 04/29/21

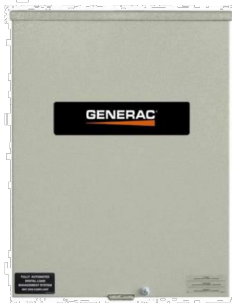
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SITE NAME:	EAST WINDSOR/RT-191_1
SITE ID:	CT11402A
SITE ADDRESS:	

SHEET TITLE:	PPC DETAILS
DRAWING:	A-9

SPECIFICATIONS FOR 200A PPC WITH IS NOT AVAILABLE AT
TIME OF ISSUANCE OF THESE CONSTRUCTION DRAWINGS

Automatic Transfer Switches



*CUL only applies to non-service rated switches

Description

Generac Automatic Transfer Switches are designed for use with single phase generators that utilize an Evolution™ or Nexus™ Controller. The 100, 200, and 400 amp open transition switches are available in single phase in both service equipment rated and non-service equipment rated configurations. The 150 and 300 amp open transition switches are only available in a service rated equipment configuration.

Standard Features

Service rated (RXSW) Generac Automatic Transfer Switches are housed in an aluminum NEMA/UL Type 3R enclosure*, with electrostatically applied and baked powder paint. The Heavy Duty Generac Contactor is a UL recognized device, designed for years of service. The controller at the generator handles all the timing, sensing, exercising functions, and transfer commands. All switches are covered by a 5 year limited warranty.

* Non-service rated (RXSC) switches are housed in a steel enclosure.

DPM Technology

Through the use of digital power technology (DPM), these switches have the capability to manage up to 4 individual HVAC (24 VAC controlled) loads with no additional hardware. When used in tandem with Smart Management Modules, up to 8 more loads can be managed as well, providing the most installation efficient power management options available.



100 - 400 Amps, Single Phase

1 of 2

2 of 2

100-400 Amps, Single Phase

Functions

All timing and sensing functions originate in the generator controller

Utility voltage drop-out.....	<65%
Timer to generator start.....	10 second factory set, adjustable between 2-1500 seconds by a qualified dealer*
Engine warm up delay.....	5 seconds
Standby voltage sensor.....	65% for 5 seconds
Utility voltage pickup.....	>80%
Re-transfer time delay.....	15 seconds
Engine cool-down timer.....	60 seconds
Exerciser.....	5 or 12 minutes adjustable weekly/Bi-weekly/Monthly**

The transfer switch can be operated manually without power applied.

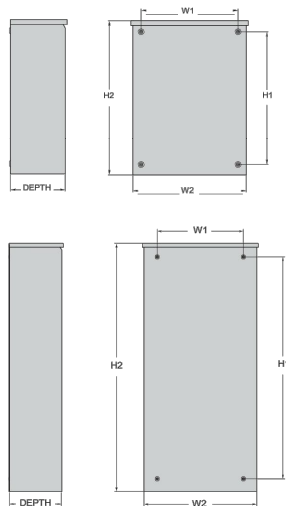
*When used in conjunction with units utilizing Evolution™ controls **Adjustable via the controller

Specifications

Model	RXSC100A3		RXSC200A3
Amps	100		200
Voltage	120/240, 1Ø		120/240, 1Ø
Load Transition Type (Automatic)	Open Transition		Open Transition
Enclosure Type	NEMA/UL 3R		NEMA/UL 3R
UL Rating	UL/CUL		UL/CUL
Withstand Rating (Amps)	10,000		10,000
Lug Range	1/0 - #14		250 MCM - #6

Dimensions

Model		RXSC100A3	RXSC200A3
Height (in./mm)	H1	17.24/437.9	17.24/437.9
	H2	20/508	20/508
Width (in./mm)	W1	12.5/317.5	12.5/317.5
	W2	14.6/370.8	14.6/370.8
Depth (in./mm)		7.09/180.1	7.09/180.1
Weight (lbs./kilos)		20/9.07	20/9.07



Generac Power Systems, Inc. • 545 W 29290 HWY. 59, Waukesha, WI 53189 • generac.com
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1 AUTOMATIC TRANSFER SWITCH DETAIL
A-10 NOT TO SCALE

T - Mobile
NORTHEAST LLC

T-MOBILE NORTHEAST, LLC.
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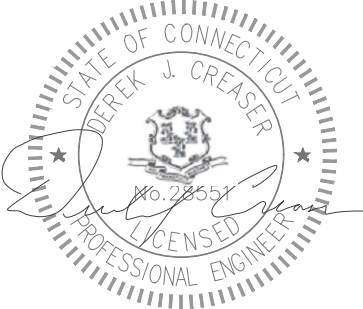


750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS

0	04/29/21	ISSUED FOR PERMIT	JIK
A	04/05/21	ISSUED FOR REVIEW	NMT
REV	DATE	DESCRIPTION	BY

DESIGNED BY: NMT	APPROVED BY: MK
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DATE: 04/29/21

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SITE NAME:
EAST WINDSOR/RT-191_1

SITE ID: CT11402A

SITE ADDRESS:	

SHEET TITLE:
**AUTOMATIC TRANSFER
 SWITCH DETAIL**

DRAWING: **A-10**

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
16. WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
17. ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
18. NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
19. SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

SPECIAL INSPECTION CHECKLIST	
BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS ¹
N/A	MATERIAL SPECIFICATIONS REPORT ²
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS ³
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS ⁴
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION ⁵
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS ⁶
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

NOTES:

1. REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
2. PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
3. PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
4. HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
5. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
6. AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

NOTES:

1. ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4"Ø A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
2. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
3. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
4. VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
5. CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
6. EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

T - Mobile
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T-MOBILE NORTHEAST, LLC.
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NORTON, MA 02766
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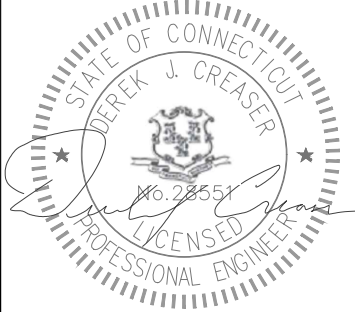


750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS

0	04/29/21	ISSUED FOR PERMIT	JIK
A	04/05/21	ISSUED FOR REVIEW	NMT
REV	DATE	DESCRIPTION	BY

DESIGNED BY: NMT	APPROVED BY: MK
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DATE: 04/29/21

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EAST WINDSOR/RT-191_1

SITE ID:

CT11402A

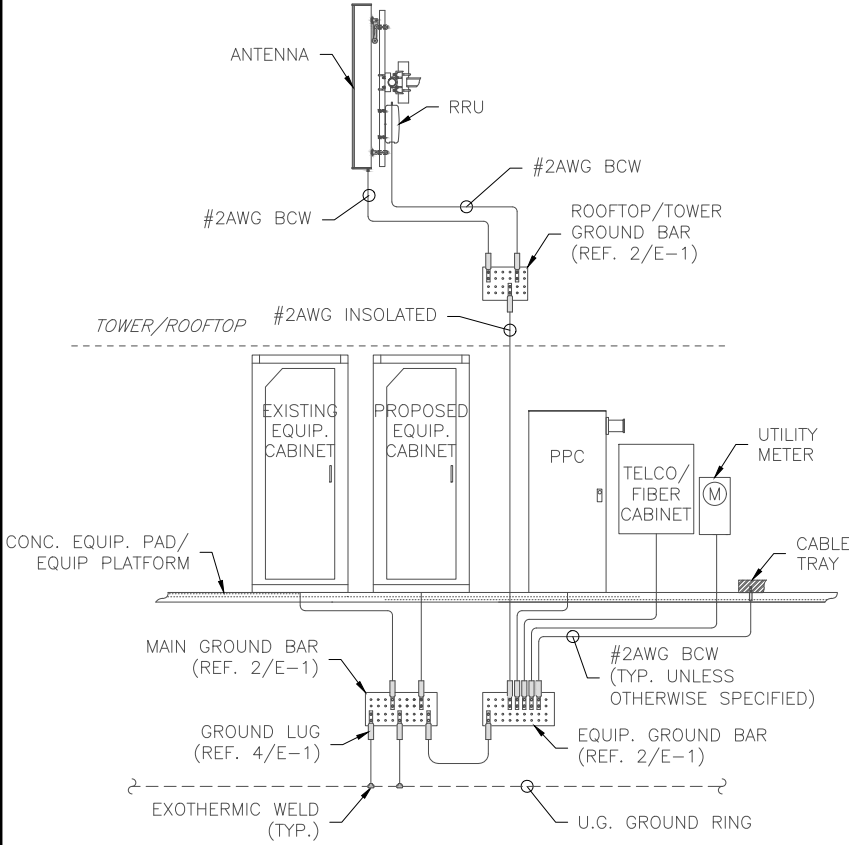
SITE ADDRESS:

SHEET TITLE:

STRUCTURAL NOTES &
SPECIAL INSPECTIONS

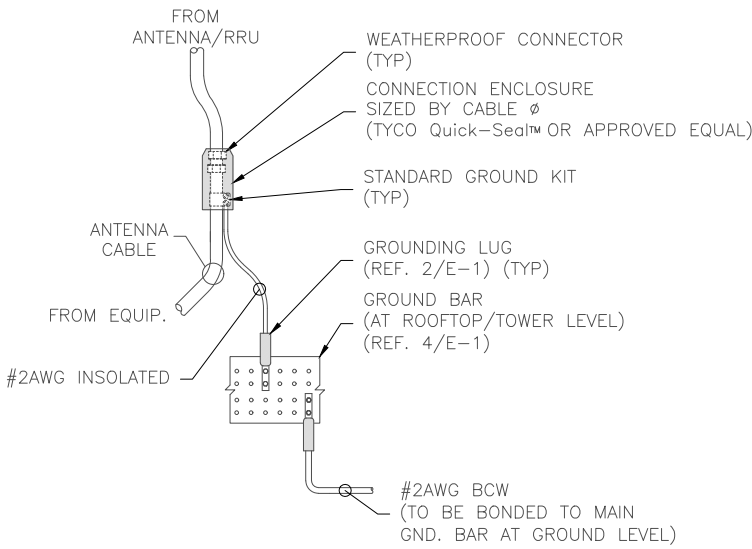
DRAWING:

SN-1



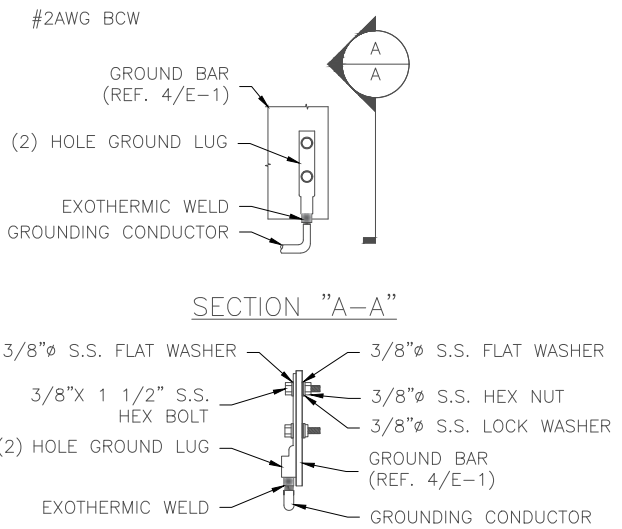
GROUNDING RISER NOTE:
UNLESS OTHERWISE SPECIFIED ALL GROUNDING CONDUCTORS ARE TO BE #2AWG BCW

1
E-1
GROUNDING RISER DIAGRAM
NOT TO SCALE



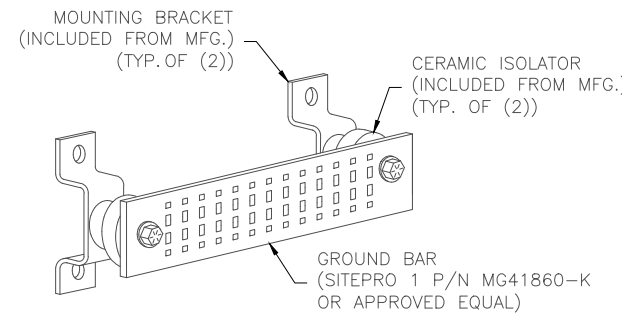
NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT BEND IN CABLE.
2. GROUND CABLES DIRECTLY TO CIGBE
3. JUMPER REQUIRED ONLY WHEN CABLE IS 1 1/4" OR LARGER

3
E-1
ANTENNA/RRU GROUNDING DETAIL
NOT TO SCALE



GROUNDING LUG NOTES:
1. DO NOT DOUBLE UP OR STACK LUGS.
2. OXIDE INHIBITING COMPOUND TO BE APPLIED TO ALL LUGS.
3. ALL LUGS ARE TO BE EXOTHERMIC WELDED TO GROUNDING CONDUCTORS.
4. FOR INSOLATED GROUNDING CONDUCTORS, EXPOSED BARE COPPER TO BE KEPT TO ABSOLUTE MINIMUM.
5. NO INSULATION IS ALLOWED WITHIN THE BARREL OF THE COMPRESSION TERMINAL.

2
E-1
GROUND LUG DETAIL
NOT TO SCALE



4
E-1
GROUND BAR DETAIL
NOT TO SCALE

EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

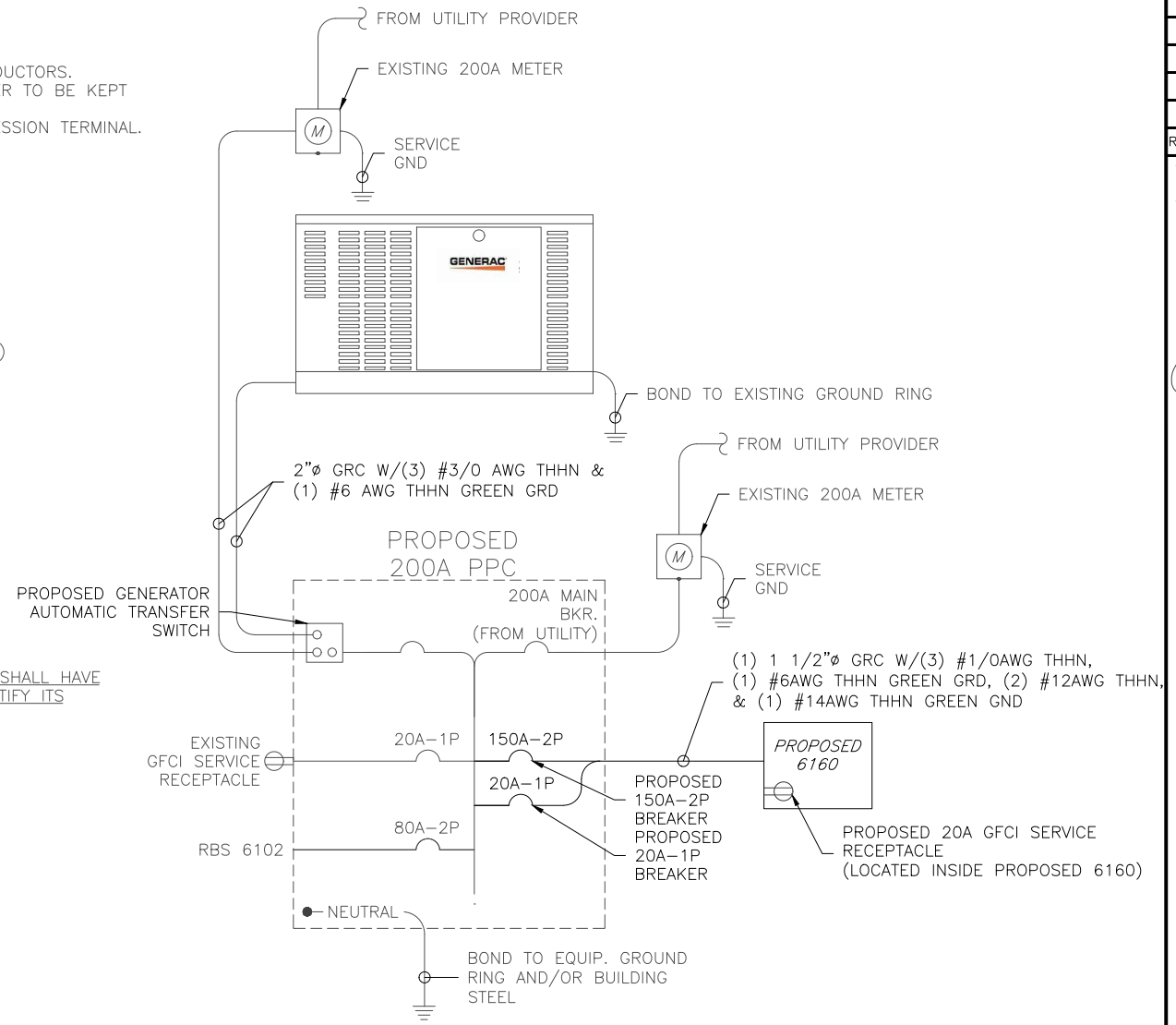
SECTION "P" - SURGE PRODUCERS

CABLE ENTRY PORTS (HATCH PLATES) (#2)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
TELCO GROUND BAR
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
+24V POWER SUPPLY RETURN BAR (#2)
-48V POWER SUPPLY RETURN BAR (#2)
RECTIFIER FRAMES.

SECTION "A" - SURGE ABSORBERS

INTERIOR GROUND RING (#2)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
BUILDING STEEL (IF AVAILABLE) (#2)

5
E-1
GROUND WIRE SCHEDULE
NOT TO SCALE



6
E-1
ONE LINE DIAGRAM
NOT TO SCALE

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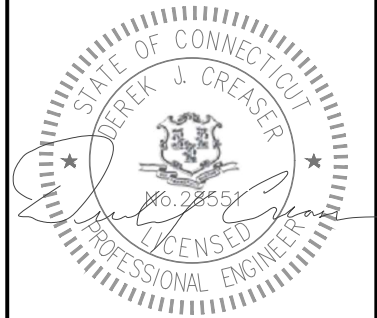


750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS

REV	DATE	DESCRIPTION	BY
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A	04/05/21	ISSUED FOR REVIEW	NMT

DESIGNED BY: NMT	APPROVED BY: MK
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SITE NAME: EAST WINDSOR/RT-191_1
SITE ID: CT11402A
SITE ADDRESS:
SHEET TITLE: ONE-LINE DIAGRAM & GROUNDING DETAILS
DRAWING: E-1

T - Mobile
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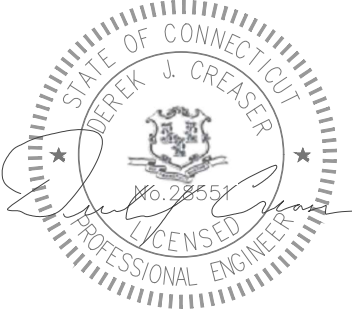


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DESIGNED BY: NMT	APPROVED BY: MK
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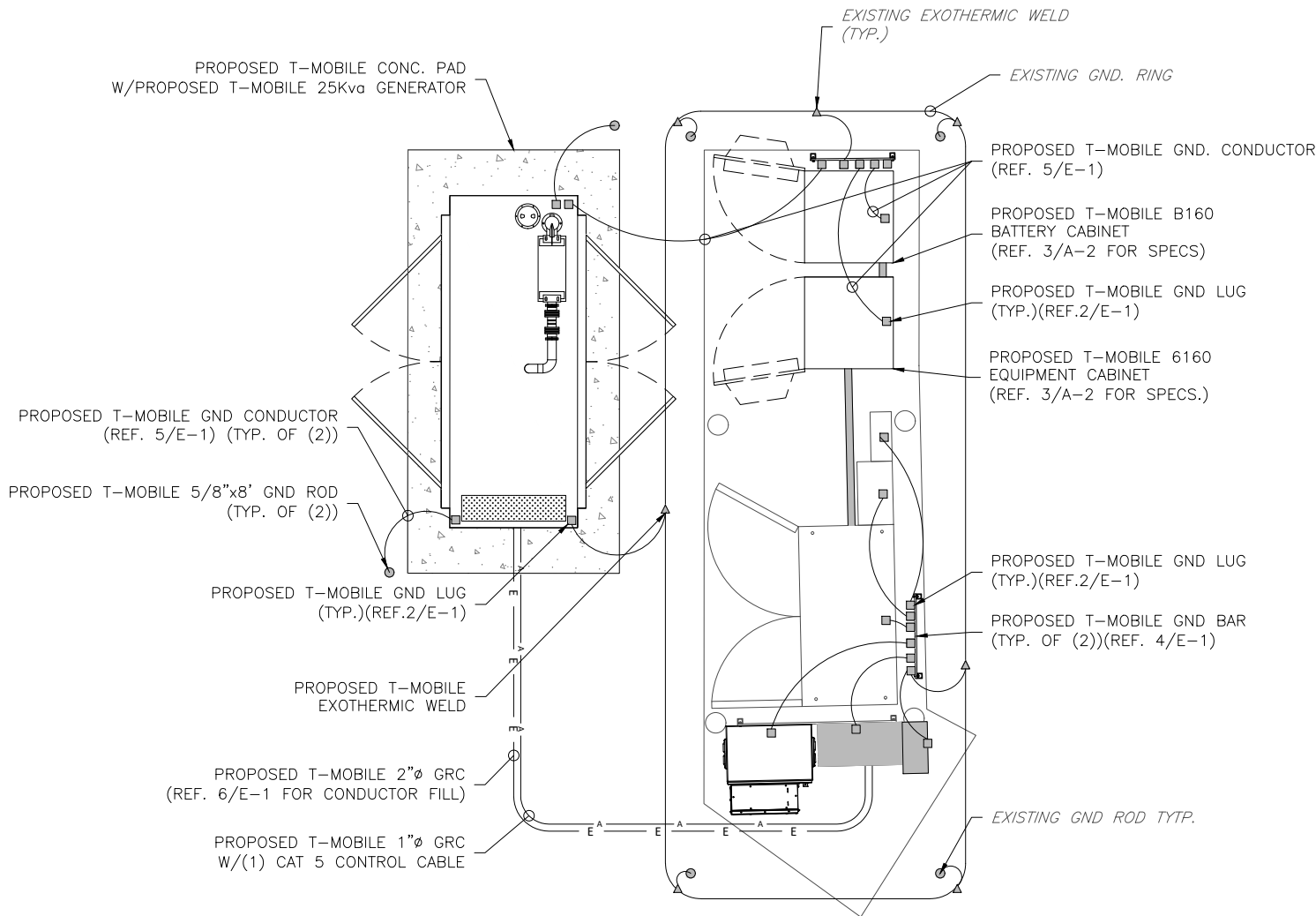


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SITE NAME:	EAST WINDSOR/RT-191_1
SITE ID:	CT11402A
SITE ADDRESS:	

SHEET TITLE:	GENERATOR & EQUIP GROUNDING PLAN
DRAWING:	G-1



1 GENERATOR AND EQUIPMENT GROUNDING DETAIL
G-1 NOT TO SCALE

Exhibit D

Structural Analysis Report

Structural Analysis Report

Site ID: CT11402A

Site Name: East Windsor/RT-191_1

Project Name: ANCHOR

Address: 232 South Main St
East Windsor, CT 06088

Client:



NORTHEAST, LLC

**15 Commerce Way, Suite B
Norton, MA 02766**

Date: 4/28/2021

Scope of Work:

Centerline Communications was authorized by T-Mobile Northeast LLC to perform an analysis of the existing structure to determine its capacity to support the proposed and existing T-Mobile equipment/appurtenances listed in this report.

Existing & Proposed Equipment:

Carrier	Mounting Level (ft)	Center Line Elevation (ft)	Number of Appurtenances	Antenna Manufacturer	Appurtenance Model	Feed Lines (in)
-	188.0	202.5	1	-	BCD-87010	(1) 1-1/4
-	186.0	188.0	1	Rohn	14' Platform	-
-	172.0	172.0	6	-	AM-X-CD-16-65-00T-RET	(12) 1-1/4 (2) 5/8 (1) 3/8
			3	-	800 10121	
			3	-	RRUS 11	
			3	-	RRUS 12	
			3	-	TT19-08BP111-001	
			3	-	DTMABP7819VG12A	
			1	-	DC6-48-60-18-8F	
			3	-	Sector Mount	
T-Mobile	155.0	155.0	3	RFS	APX16DWV-16DWV-S-E-A20	(2) 6x24 Hybrid (3) 6x24 Hybrid
			3	RFS	APXVAARR24_43-U-NA20	
			3	Ericsson	AIR 6449 B41	
			3	Ericsson	4415 B66A RRH	
			3	Ericsson	Radio 4449 B71+B85 RRH	
			3	Ericsson	4424 B25 RRH	
			3	-	Sector Mount	
			3	-	Sector Frame Reinforcements	
-	145.5	145.5	9	-	SBNHH-1D85B	(17) 1-5/8
			3	-	BXA-70063-6CF-EDIN-6	
			3	-	B66A RRH4x45	
			3	-	B25 RRH4x30-4R	
			3	-	RRH2x60-1900	
			2	-	DB-B1-6C-12AB-0Z	
			3	Site Pro 1	VFA10-RRU Sector Mount	

-	123.0	123.0	3	-	APXVSP18-C-A20	(3) 1-1/4 (1) Hybrid
			3	-	DT465B-2XR	
			3	-	RRH2x50-800	
			3	-	RRH4x45-1900	
			3	-	TD-RRH8x20-25	
			3	-	RRH2x50-800	
			3	-	Sector Mount	

Note: Proposed equipment shown in **bold**.

Design Criteria:

Design Codes:

2018 Connecticut State Building Code
 2015 International Building Code
 ASCE 7-10
 TIA-222-G Standards

Ultimate Design Wind Speed (V_{ult})	125 mph
Wind Speed with Ice	50 mph
Ice Thickness	1.00 in.
Exposure Category	C
Topographic Category	1
Risk Category	II
Site Soil Class (Assumed)	D – Stiff Soil
Seismic Design Category	B
Spectral Response Acceleration Parameter at a Short Periods, S_s	0.177 g
Spectral Response Acceleration Parameter at a Period of 1 Second, S_1	0.064 g
Short Period Site Coefficient, F_a	1.60
Long Period Site Coefficient, F_v	2.40

*Refer to calculations for additional design criteria.

Conclusion:

Section Capacity (Summary)

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	188 - 180	Leg	P3x.216	2	-3798.38	88548.60	4.3	Pass
T2	180 - 160	Leg	P3x.216	21	-20740.70	82502.90	25.1	Pass
T3	160 - 140	Leg	ROHN 3 EH	60	-53602.60	94349.80	56.8	Pass
T4	140 - 120	Leg	ROHN 4 EH	81	-97329.20	159905.00	60.9	Pass
T5	120 - 100	Leg	ROHN 5 EH	102	-	239326.00	59.4	Pass
					142068.00			
T6	100 - 80	Leg	ROHN 6 EHS	123	-	244126.00	76.2	Pass
					185956.00			
T7	80 - 60	Leg	ROHN 6 EH	138	-	303759.00	77.1	Pass
					234234.00			
T8	60 - 40	Leg	ROHN 8 EHS	153	-	386368.00	72.1	Pass
					278728.00			
T9	40 - 20	Leg	ROHN 8 EH	168	-	505544.00	63.8	Pass
					322774.00		65.7 (b)	
T10	20 - 0	Leg	ROHN 8 EH	183	-	505565.00	72.6	Pass
					366963.00			
T1	188 - 180	Diagonal	L1 3/4x1 3/4x3/16	10	-1128.41	8824.45	12.8	Pass
							18.3 (b)	
T2	180 - 160	Diagonal	L1 3/4x1 3/4x3/16	38	-3322.51	5512.95	60.3	Pass
T3	160 - 140	Diagonal	L2 1/2x2 1/2x1/4	65	-7143.41	12209.80	58.5	Pass
							67.9 (b)	
T4	140 - 120	Diagonal	L3x3x1/4	86	-8448.30	16593.20	50.9	Pass
							57.1 (b)	
T5	120 - 100	Diagonal	L3x3x1/4	107	-8517.09	12404.00	68.7	Pass
T6	100 - 80	Diagonal	L3 1/2x3 1/2x1/4	127	-12629.80	14408.10	87.7	Pass
T7	80 - 60	Diagonal	L4x4x5/16	142	-12290.10	22316.40	55.1	Pass
							68.7 (b)	
T8	60 - 40	Diagonal	L4x4x5/16	157	-12347.10	18939.00	65.2	Pass
							69.0 (b)	
T9	40 - 20	Diagonal	L4x4x5/16	172	-13774.50	16141.50	85.3	Pass
T10	20 - 0	Diagonal	L4x4x3/8	187	-15387.70	16543.30	93.0	Pass
T2	180 - 160	Horizontal	L2x2x1/8	32	-359.74	2031.49	17.7	Pass
T1	188 - 180	Top Girt	L3x3x1/4	4	-96.65	20868.70	0.6	Pass
							0.8 (b)	
							Summary	
							Leg (T7)	Pass
							Diagonal (T10)	Pass
							Horizontal (T2)	Pass
							Top Girt (T1)	Pass
							Bolt Checks	Pass
							Anchor Rods	Pass
							RATING =	Pass
							93.0	

Structure Rating (max from all components) = 93.0%

Note) Foundation information was not available at the time of analysis and has been excluded from the results.

Recommendations:

The existing tower has sufficient capacity to support the existing and proposed loading for the final loading configuration. Modifications to the tower structure are not required.

Reference Documents:

- T-Mobile RFDS CT11402A_Anchor_5, dated February 23, 2021
- Construction Drawings by ForeSite LLC, dated August 1, 2018
- Structural Analysis by Destek Engineering, dated August 14, 2018
- Mount Analysis by Destek Engineering, dated June 1, 2018
- Construction Drawings by Atlantis Group, dated April 23, 2009
- Structural Assessment by Velocitel, dated April 17, 2009
- Construction Drawings by Arcnet Architects, dated August 14, 1997

Assumptions and Limitations:

- The tower and structures were built and maintained with the manufacturer's specifications.
- The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in this report and the referenced drawings.

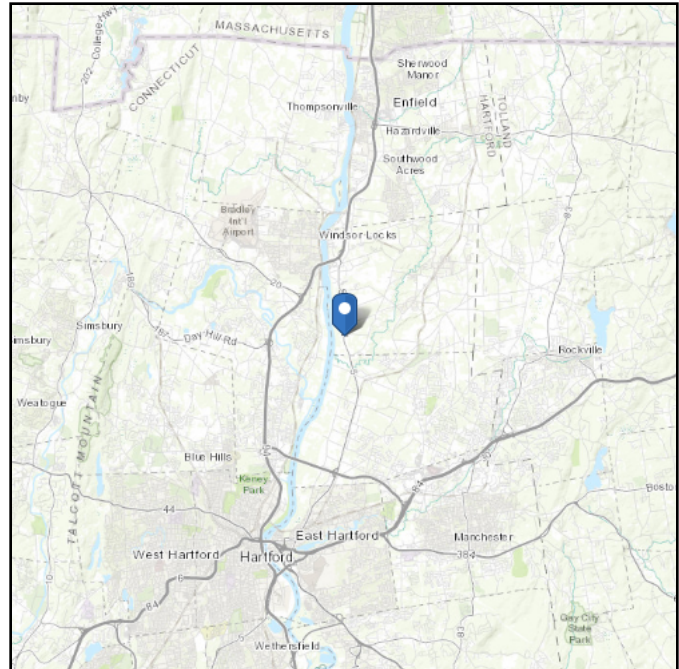
Design Calculations



ASCE 7 Hazards Report

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 51.35 ft (NAVD 88)
Latitude: 41.877936
Longitude: -72.6094



Wind

Results:

Wind Speed:	122 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	92 Vmph
100-year MRI	99 Vmph

Data Sources: ASCE/SEI 6-10, Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

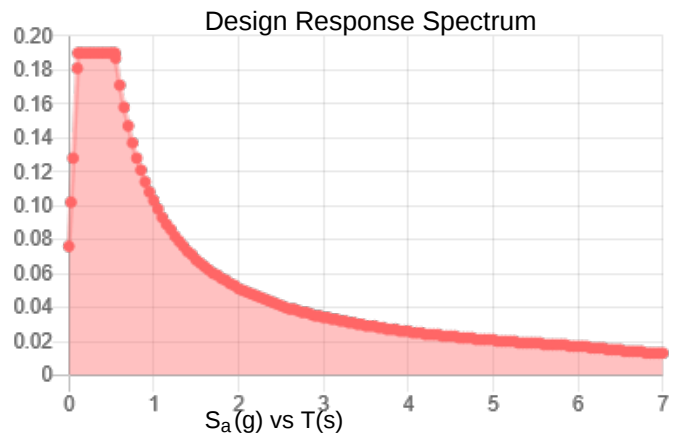
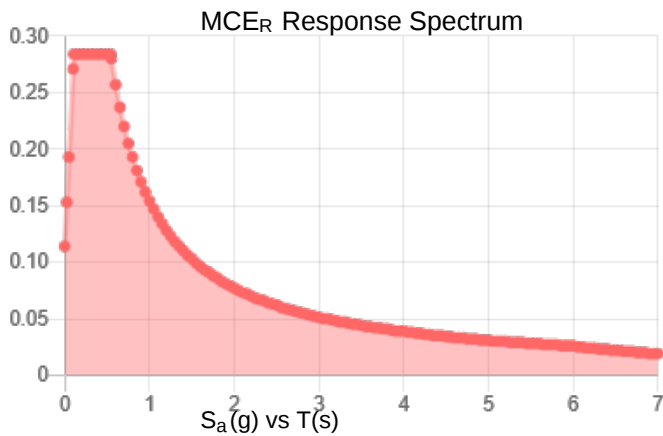
Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class: D - Stiff Soil

Results:

S_S :	0.178	S_{DS} :	0.19
S_1 :	0.064	S_{D1} :	0.103
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.088
S_{MS} :	0.284	PGA_M :	0.141
S_{M1} :	0.154	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B



Data Accessed:

Tue Apr 06 2021

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness: 1.00 in.
Concurrent Temperature: 5 F
Gust Speed: 50 mph

Data Source: Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8

Date Accessed: Tue Apr 06 2021

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Snow

Results:

Ground Snow Load, p_g : 30 lb/ft²
Elevation: 51.4 ft

Data Source: ASCE/SEI 7-10, Fig. 7-1.

Date Accessed: Tue Apr 06 2021

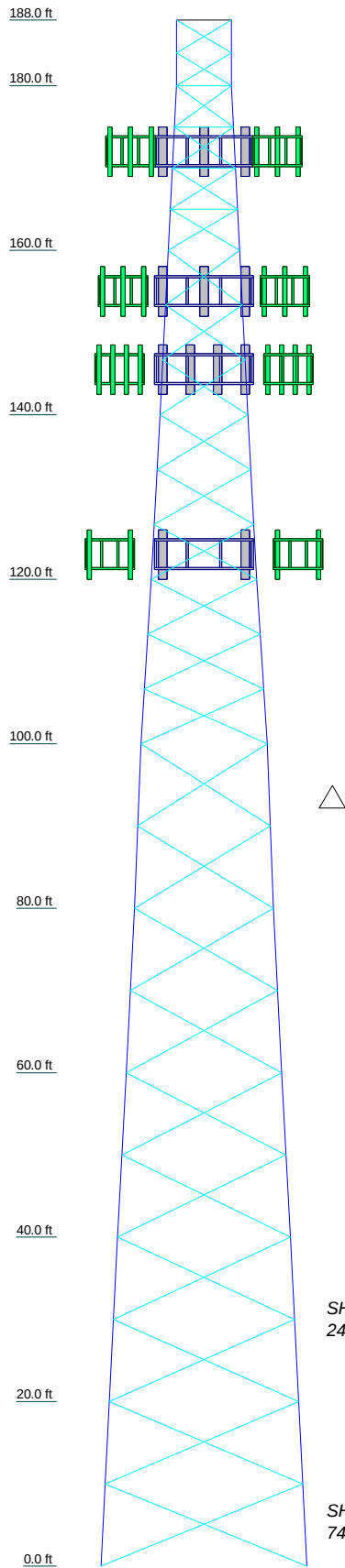
Values provided are ground snow loads. In areas designated "case study required," extreme local variations in ground snow loads preclude mapping at this scale. Site-specific case studies are required to establish ground snow loads at elevations not covered.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10
Legs		P3x.216	ROHN 3 EH	ROHN 4 EH	ROHN 5 EH	ROHN 6 EHS	ROHN 6 EH	ROHN 8 EHS	ROHN 8 EH	
Leg Grade						A572-50				
Diagonals						L3 1/2x3 1/2x1/4		L4x4x5/16	L4x4x3/8	
Diagonal Grade							A572-50			
Top Girts										
Horizontals										
Face Width (ft)										
# Panels @ (ft)										
Weight (lb) 30390.5										



MATERIAL STRENGTH					
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

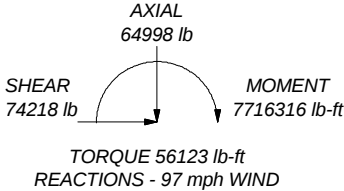
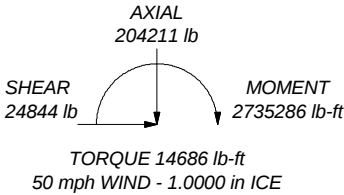
1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 93%

ALL REACTIONS
ARE FACTORED

MAX. CORNER REACTIONS AT BASE:

DOWN: 378067 lb
SHEAR: 45003 lb

UPLIFT: -324924 lb
SHEAR: 39832 lb



Centerline Communications 750 West Center Street, Suite 301 West Bridgewater, MA 02379 Phone: 781-713-4725 FAX:				Job: CT11402A Project: Anchor Client: T-Mobile Code: TIA-222-G Path:	Drawn by: Arielle Novak Date: 04/28/21 Scale: NTS Dwg No. E-1
--	--	--	--	--	--

Section	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	ROHN 8 EH		ROHN 8 EHS	ROHN 6 EH	ROHN 6 EHS	ROHN 5 EH	ROHN 4 EH	ROHN 3 EH	P3x216	
Leg Grade					A572-50					
Diagonals	L4x4x3/8		L4x4x5/16		L3 1/2x3 1/2x1/4		L3x3x1/4	L2 1/2x2 1/2x1/4	L1 3/4x1 3/4x3/16	
Diagonal Grade					A572-50				A36	
Top Girts										L3x3x1/4
Horizontals					N.A.				L2x2x1/8	N.A.
Face Width (ft)	23.05	21	18.83	16.88	15.29	12.79	10.71	8.75		6.63
# Panels @ (ft)			10 @ 10				9 @ 6.66667	4 @ 5		2 @ 4
Weight (lb) 30390.5	5931.6	5230.1	4381.1	3610.8	2813.2	2793.5	2198.1	1560.7	1121.7	496.6

188.0 ft

180.0 ft

160.0 ft

140.0 ft

120.0 ft

100.0 ft

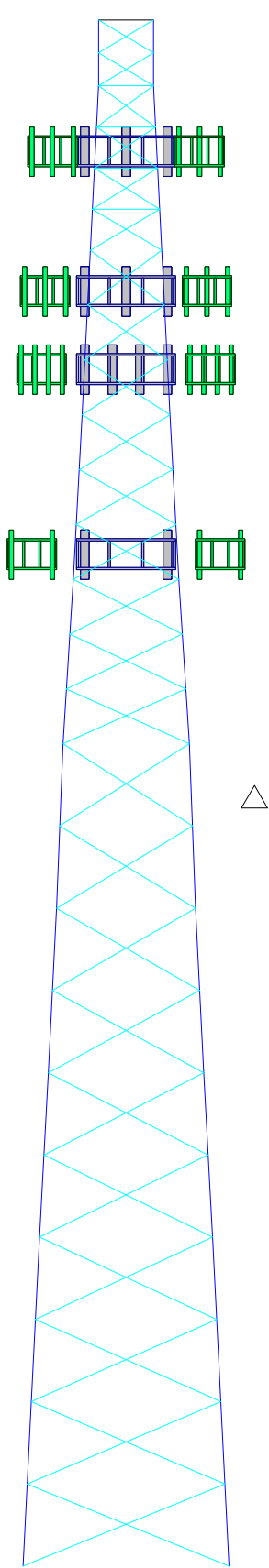
80.0 ft

60.0 ft

40.0 ft

20.0 ft

0.0 ft



DESIGNED APPURTENANCE LOADING			
TYPE	ELEVATION	TYPE	ELEVATION
BCD-87010	195	4415 B66A (TMO)	155
Rohn 14' Platform	186	4415 B66A (TMO)	155
(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe	172	4415 B66A (TMO)	155
(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe	172	Reinforced Sector Mount (TMO)	155
(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe	172	Reinforced Sector Mount (TMO)	155
(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe	172	Reinforced Sector Mount (TMO)	155
800 10121 w/ Mount Pipe	172	RRH2X60-1900	145.5
800 10121 w/ Mount Pipe	172	RRH2X60-1900	145.5
800 10121 w/ Mount Pipe	172	RRH2X60-1900	145.5
RRUS 11	172	RRH2X60-1900	145.5
RRUS 11	172	RRH2X60-1900	145.5
RRUS 11	172	DB-B1-6C-12AB-0Z	145.5
RRUS 12	172	DB-B1-6C-12AB-0Z	145.5
RRUS 12	172	DB-B1-6C-12AB-0Z	145.5
RRUS 12	172	SitePro VFA10-RRU	145.5
RRUS 12	172	SitePro VFA10-RRU	145.5
TT19-08BP111-001	172	SitePro VFA10-RRU	145.5
TT19-08BP111-001	172	(3) SBNHH-1D85B w/ Mount Pipe	145.5
TT19-08BP111-001	172	(3) SBNHH-1D85B w/ Mount Pipe	145.5
DTMABP7819VG12A	172	(3) SBNHH-1D85B w/ Mount Pipe	145.5
DTMABP7819VG12A	172	BXA-70063-6CF-EDIN-6 w/ Mount Pipe	145.5
DTMABP7819VG12A	172	BXA-70063-6CF-EDIN-6 w/ Mount Pipe	145.5
DC6-48-60-18-8F	172	BXA-70063-6CF-EDIN-6 w/ Mount Pipe	145.5
6' x 2" Mount Pipe	172	BXA-70063-6CF-EDIN-6 w/ Mount Pipe	145.5
6' x 2" Mount Pipe	172	B66A RRH4X45	145.5
6' x 2" Mount Pipe	172	B66A RRH4X45	145.5
Sector Mount [SM 503-3]	172	B66A RRH4X45	145.5
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe (TMO)	155	B25 RRH4x30-4R	145.5
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe (TMO)	155	B25 RRH4x30-4R	145.5
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe (TMO)	155	B25 RRH4x30-4R	145.5
APXVAARR24_43-U-NA20 w/ Mount Pipe (TMO)	155	B25 RRH4x30-4R	145.5
APXVAARR24_43-U-NA20 w/ Mount Pipe (TMO)	155	B25 RRH4x30-4R	145.5
APXVAARR24_43-U-NA20 w/ Mount Pipe (TMO)	155	TD-RRH8x20-25	123
RADIO 4449 (TMO)	155	TD-RRH8x20-25	123
RADIO 4449 (TMO)	155	TD-RRH8x20-25	123
RADIO 4449 (TMO)	155	RRH2x50-800	123
AIR 6449 B41 W/ MOUNT PIPE (TMO)	155	RRH2x50-800	123
AIR 6449 B41 W/ MOUNT PIPE (TMO)	155	RRH2x50-800	123
AIR 6449 B41 W/ MOUNT PIPE (TMO)	155	RRH2x50-800	123
4424 B25 (TMO)	155	RRH2x50-800	123
4424 B25 (TMO)	155	RRH4x45-19	123
4424 B25 (TMO)	155	RRH4x45-19	123
		RRH4x45-19	123

Centerline Communications

750 West Center Street, Suite 301

West Bridgewater, MA 02379

Phone: 781-713-4725

FAX:

Job: **CT11402A**

Project: **Anchor**

Client: T-Mobile

Code: TIA-222-G

Path:

Drawn by: Arielle Novak

Date: 04/28/21

Dwg No. E-1

App'd:

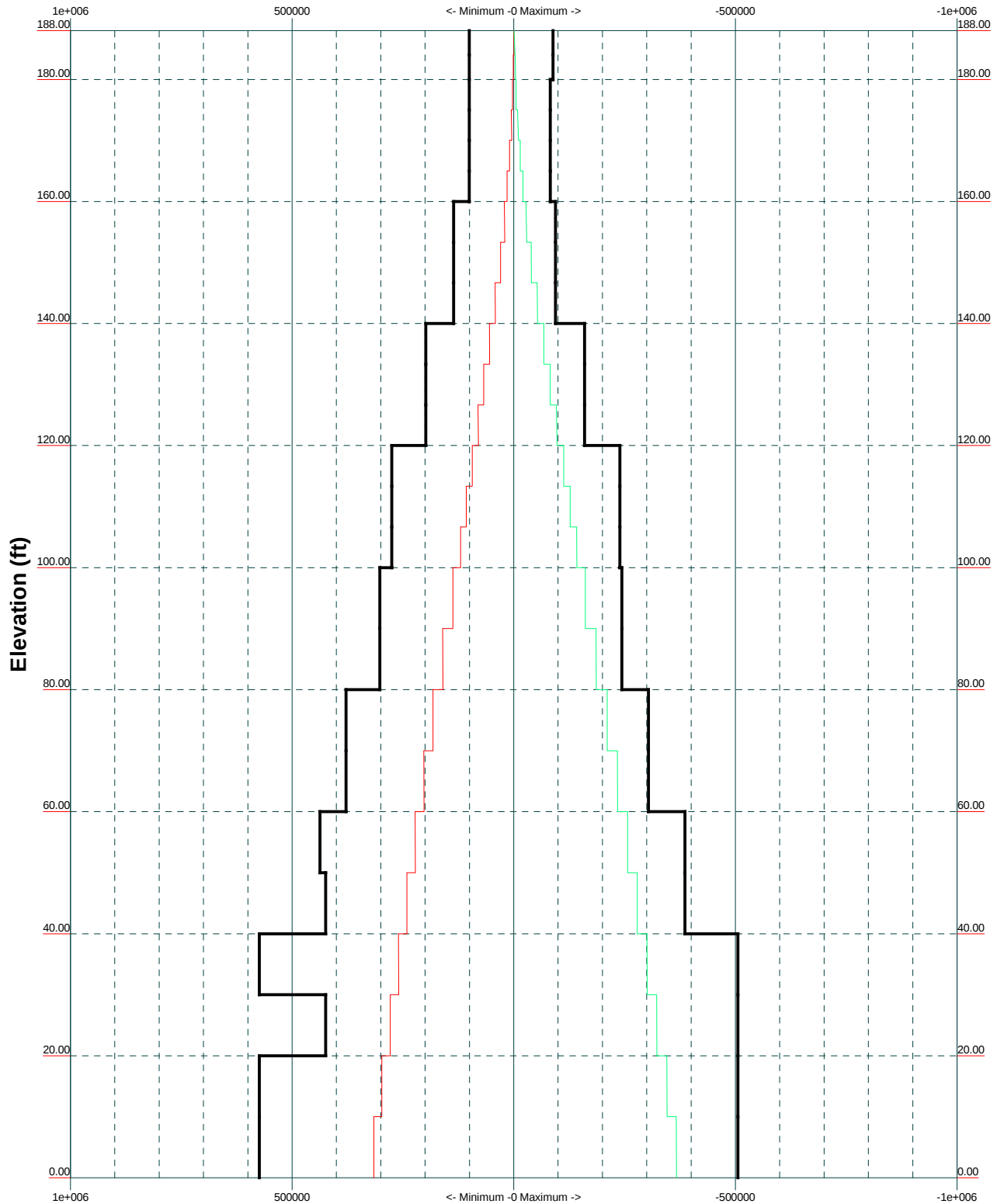
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TIA-222-G - 97 mph/50 mph 1.0000 in Ice Exposure C

Leg Capacity ———

Leg Compression (lb)



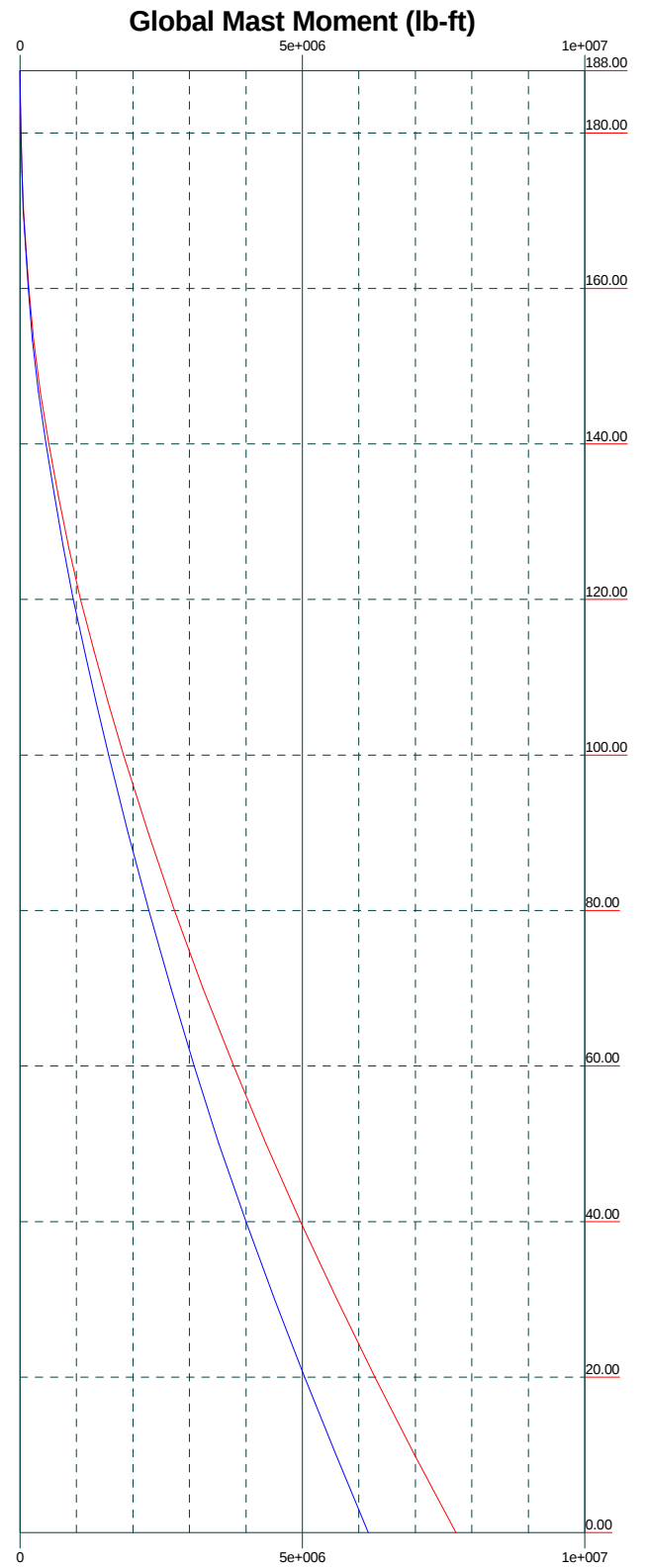
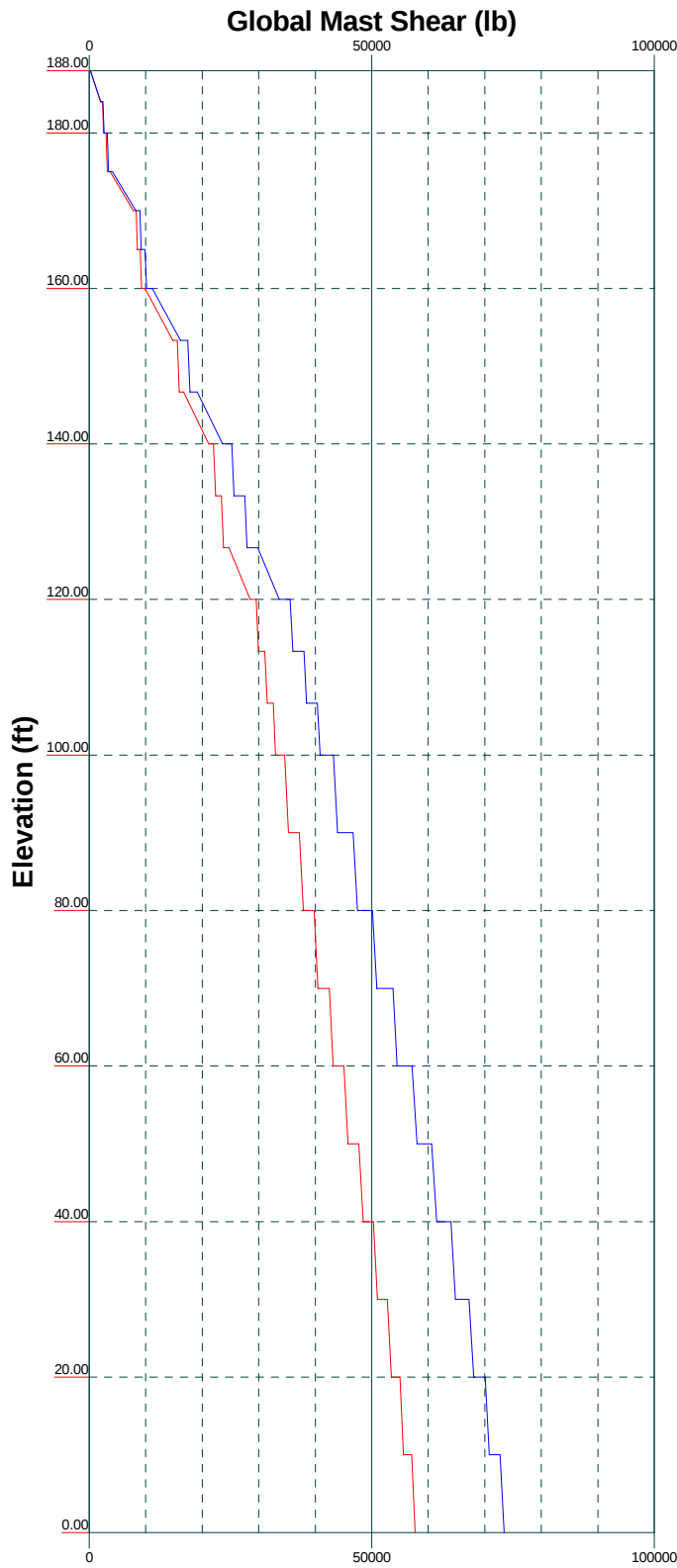
Centerline Communications
 750 West Center Street, Suite 301
 West Bridgewater, MA 02379
 Phone: 781-713-4725
 FAX:

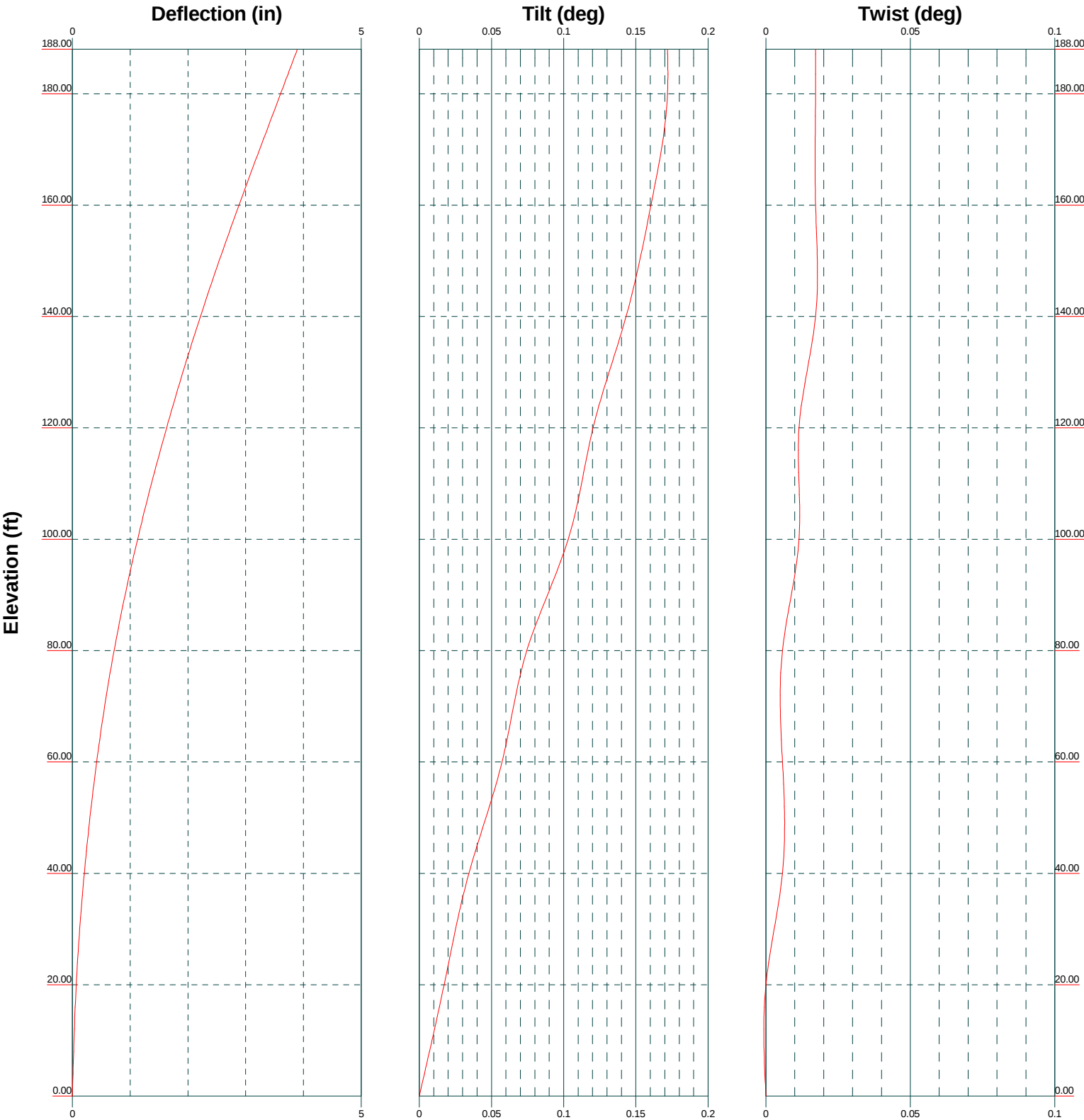
Job: CT11402A		
Project: Anchor		
Client: T-Mobile	Drawn by: Arielle Novak	App'd:
Code: TIA-222-G	Date: 04/28/21	Scale: NTS
Path:	Dwg No. E-3	

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Vx Vz

Mx Mz





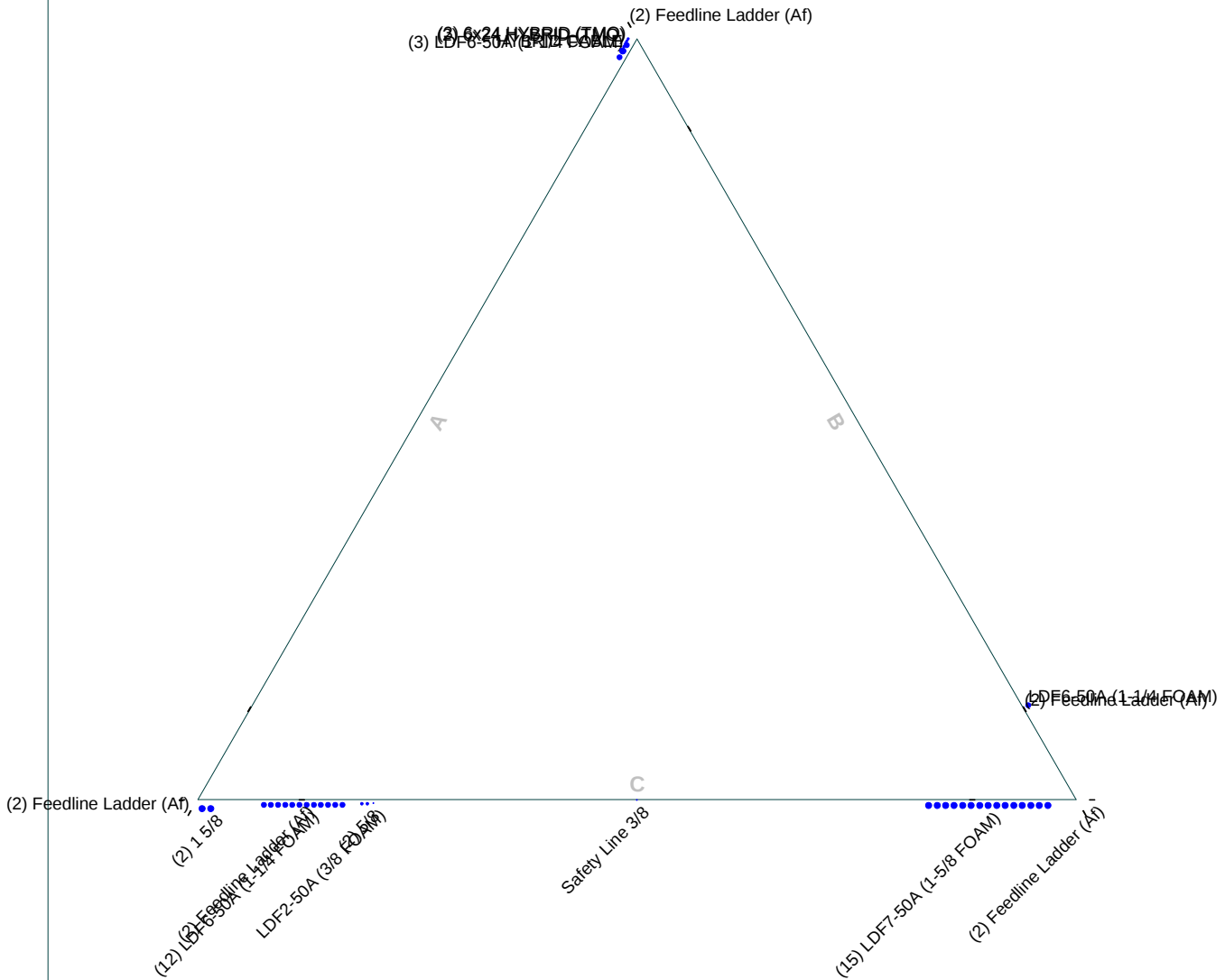
Centerline Communications				Job: CT11402A	
750 West Center Street, Suite 301				Project: Anchor	
West Bridgewater, MA 02379				Client: T-Mobile	Drawn by: Arielle Novak
Phone: 781-713-4725				Code: TIA-222-G	Date: 04/28/21
FAX:				Path:	Scale: NTS
				Dwg No. E-5	

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Feed Line Plan
20'

Round Flat App In Face App Out Face

Section @ 20'



Centerline Communications
750 West Center Street, Suite 301
West Bridgewater, MA 02379
Phone: 781-713-4725
FAX:

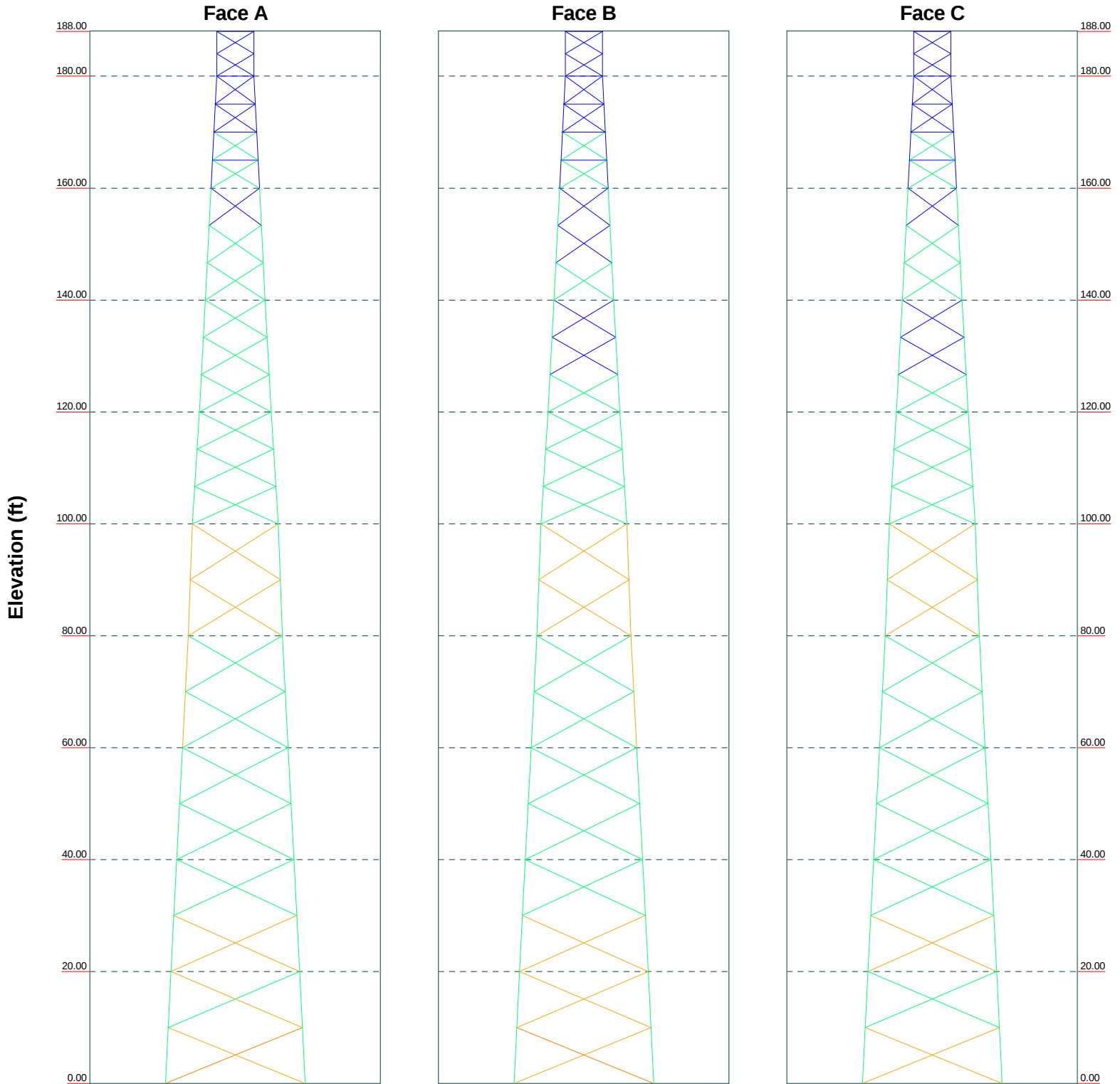
Job: CT11402A		
Project: Anchor		
Client: T-Mobile	Drawn by: Arielle Novak	App'd:
Code: TIA-222-G	Date: 04/28/21	Scale: NTS
Path:	Dwg No. E-7	

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Stress Distribution Chart

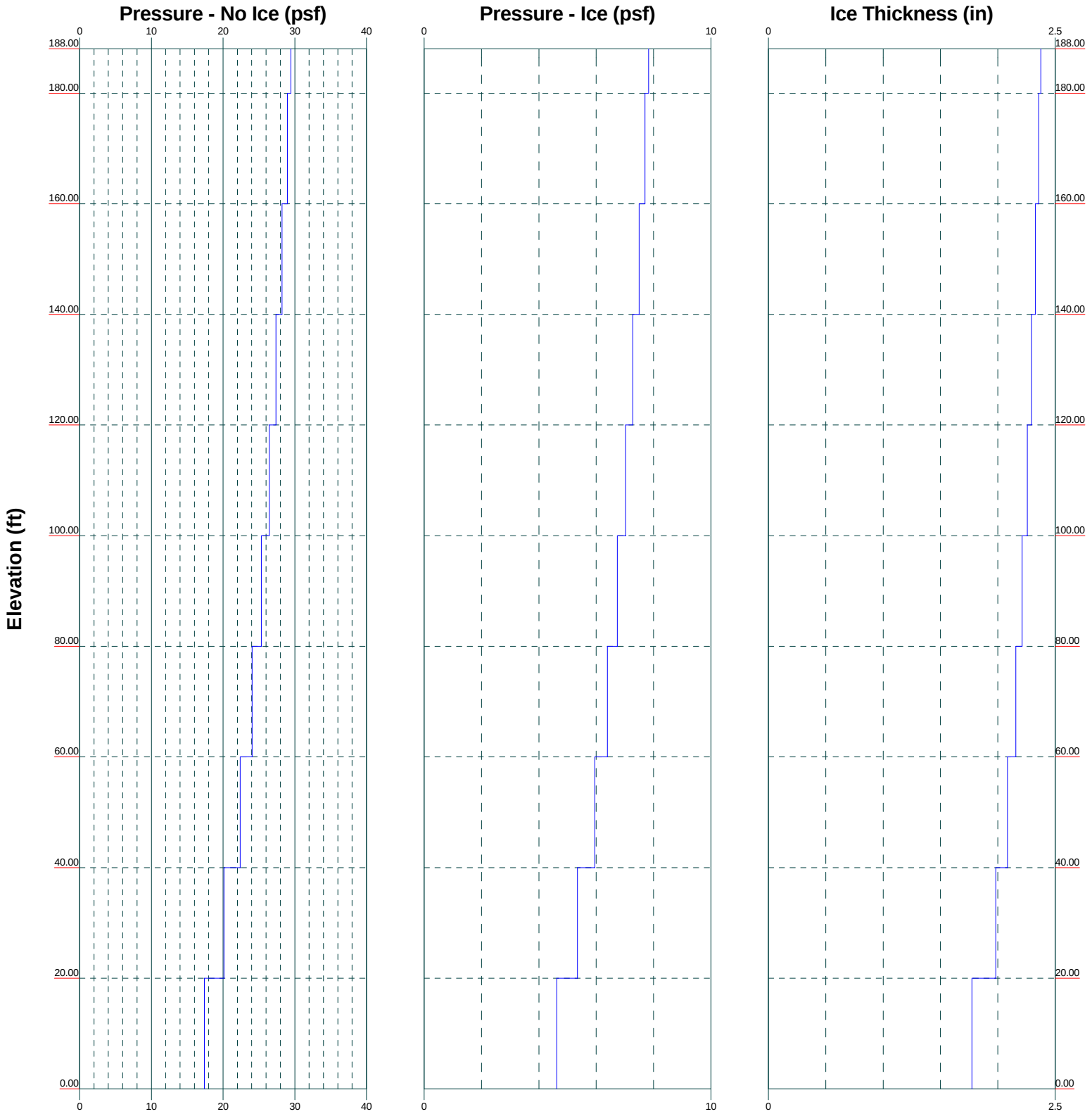
0' - 188'

> 100% 90%-100% 75%-90% 50%-75% < 50% Overstress



Centerline Communications 750 West Center Street, Suite 301 West Bridgewater, MA 02379 Phone: 781-713-4725 FAX:			Job: CT11402A Project: Anchor		
Client: T-Mobile		Drawn by: Arielle Novak		App'd:	
Code: TIA-222-G		Date: 04/28/21		Scale: NTS	
Path:				Dwg No. E-8	

Wind Pressures and Ice Thickness
TIA-222-G - 97 mph/50 mph 1.0000 in Ice Exposure C



Centerline Communications		Job: CT11402A	
750 West Center Street, Suite 301		Project: Anchor	
West Bridgewater, MA 02379		Client: T-Mobile	Drawn by: Arielle Novak
Phone: 781-713-4725		Code: TIA-222-G	Date: 04/28/21
FAX:		App'd: NTS	
		Path:	Dwg No. E-9
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tnxTower Centerline Communications 750 West Center Street, Suite 301 West Bridgewater, MA 02379 Phone: 781-713-4725 FAX:	Job	CT11402A	Page	1 of 28
	Project	Anchor	Date	09:55:14 04/28/21
	Client	T-Mobile	Designed by	Arielle Novak

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 188.00 ft above the ground line.

The base of the tower is set at an elevation of 0.00 ft above the ground line.

The face width of the tower is 6.63 ft at the top and 25.00 ft at the base.

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

The following design criteria apply:

Tower is located in Hartford County, Connecticut.

ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).

Basic wind speed of 97 mph.

Structure Class II.

Exposure Category C.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 1.0000 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.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

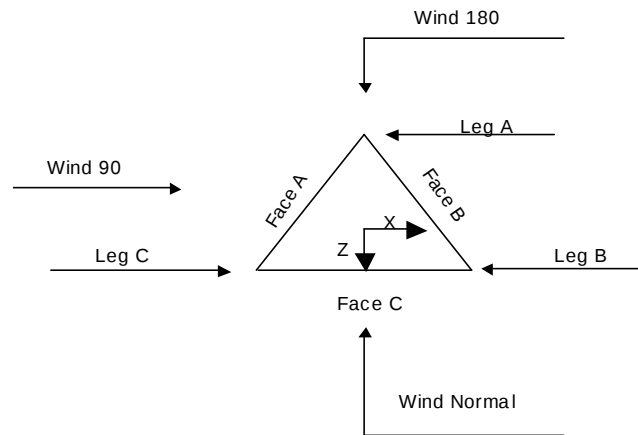
Stress ratio used in tower member design is 1.

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

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	√ Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	√ SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	√ Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	√ Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-G Bracing Resist. Exemption
√ Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Use TIA-222-G Tension Splice Exemption
Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Poles
√ Secondary Horizontal Braces Leg	√ Sort Capacity Reports By Component	Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
√ SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
SR Members Are Concentric	Ignore KL/ry For 60 Deg. Angle Legs	Pole Without Linear Attachments
		Pole With Shroud Or No Appurtenances
		Outside and Inside Corner Radii Are
		Known

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Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	188.00-180.00			6.63	1	8.00
T2	180.00-160.00			6.63	1	20.00
T3	160.00-140.00			8.75	1	20.00
T4	140.00-120.00			10.71	1	20.00
T5	120.00-100.00			12.79	1	20.00
T6	100.00-80.00			15.29	1	20.00
T7	80.00-60.00			16.88	1	20.00
T8	60.00-40.00			18.83	1	20.00
T9	40.00-20.00			21.00	1	20.00
T10	20.00-0.00			23.05	1	20.00

Tower Section Geometry (cont'd)

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	188.00-180.00	4.00	X Brace	No	No	0.0000	0.0000
T2	180.00-160.00	5.00	X Brace	No	Yes	0.0000	0.0000
T3	160.00-140.00	6.67	X Brace	No	No	0.0000	0.0000
T4	140.00-120.00	6.67	X Brace	No	No	0.0000	0.0000
T5	120.00-100.00	6.67	X Brace	No	No	0.0000	0.0000

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Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T6	100.00-80.00	10.00	X Brace	No	No	0.0000	0.0000
T7	80.00-60.00	10.00	X Brace	No	No	0.0000	0.0000
T8	60.00-40.00	10.00	X Brace	No	No	0.0000	0.0000
T9	40.00-20.00	10.00	X Brace	No	No	0.0000	0.0000
T10	20.00-0.00	10.00	X Brace	No	No	0.0000	0.0000

Tower Section Geometry (cont'd)

Tower Elevation	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
ft						
T1 188.00-180.00	Pipe	P3x.216	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T2 180.00-160.00	Pipe	P3x.216	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T3 160.00-140.00	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T4 140.00-120.00	Pipe	ROHN 4 EH	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A572-50 (50 ksi)
T5 120.00-100.00	Pipe	ROHN 5 EH	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A572-50 (50 ksi)
T6 100.00-80.00	Pipe	ROHN 6 EHS	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A572-50 (50 ksi)
T7 80.00-60.00	Pipe	ROHN 6 EH	A572-50 (50 ksi)	Equal Angle	L4x4x5/16	A572-50 (50 ksi)
T8 60.00-40.00	Pipe	ROHN 8 EHS	A572-50 (50 ksi)	Equal Angle	L4x4x5/16	A572-50 (50 ksi)
T9 40.00-20.00	Pipe	ROHN 8 EH	A572-50 (50 ksi)	Equal Angle	L4x4x5/16	A572-50 (50 ksi)
T10 20.00-0.00	Pipe	ROHN 8 EH	A572-50 (50 ksi)	Equal Angle	L4x4x3/8	A572-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
ft						
T1 188.00-180.00	Equal Angle	L3x3x1/4	A36 (36 ksi)	Pipe		A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
ft							
T2 180.00-160.00	None	Flat Bar		A36	Equal Angle	L2x2x1/8	A36

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Tower Elevation	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
ft							
				(36 ksi)			
							(36 ksi)

Tower Section Geometry (cont'd)

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	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in					in	in	in
T1 188.00-180.00	0.00	0.0000	A36 (36 ksi)	1.03	1	1.05	36.0000	36.0000	36.0000
T2 180.00-160.00	0.00	0.0000	A36 (36 ksi)	1.03	1	1.05	36.0000	36.0000	36.0000
T3 160.00-140.00	0.00	0.0000	A36 (36 ksi)	1.03	1	1.05	36.0000	36.0000	36.0000
T4 140.00-120.00	0.00	0.0000	A36 (36 ksi)	1.03	1	1.05	36.0000	36.0000	36.0000
T5 120.00-100.00	0.00	0.0000	A36 (36 ksi)	1.03	1	1.05	36.0000	36.0000	36.0000
T6 100.00-80.00	0.00	0.0000	A36 (36 ksi)	1.03	1	1.05	36.0000	36.0000	36.0000
T7 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1.03	1	1.05	36.0000	36.0000	36.0000
T8 60.00-40.00	0.00	0.0000	A36 (36 ksi)	1.03	1	1.05	36.0000	36.0000	36.0000
T9 40.00-20.00	0.00	0.0000	A36 (36 ksi)	1.03	1	1.05	36.0000	36.0000	36.0000
T10 20.00-0.00	0.00	0.0000	A36 (36 ksi)	1.03	1	1.05	36.0000	36.0000	36.0000

Tower Section Geometry (cont'd)

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	K Factors ¹							
			Legs	X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace
				X Y	X Y	X Y	X Y	X Y	X Y	X Y
T1 188.00-180.00	Yes	No	1	1	1	1	1	1	1	1
T2 180.00-160.00	Yes	No	1	1	1	1	1	1	1	1
T3 160.00-140.00	Yes	No	1	1	1	1	1	1	1	1
T4 140.00-120.00	Yes	No	1	1	1	1	1	1	1	1
T5 120.00-100.00	Yes	No	1	1	1	1	1	1	1	1
T6 100.00-80.00	Yes	No	1	1	1	1	1	1	1	1
T7	Yes	No	1	1	1	1	1	1	1	1

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Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	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
T5 120.00-100.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 100.00-80.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 80.00-60.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 60.00-40.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 40.00-20.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 20.00-0.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 188.00-180.00	Flange	0.8750	4	0.6250	1	0.6250	1	0.5000	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T2 180.00-160.00	Flange	0.8750	4	0.6250	1	0.5000	0	0.5000	0	0.6250	0	0.6250	1	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T3 160.00-140.00	Flange	0.8750	4	0.6250	1	0.5000	0	0.5000	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T4 140.00-120.00	Flange	1.0000	4	0.7500	1	0.5000	0	0.5000	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T5 120.00-100.00	Flange	1.0000	6	0.7500	1	0.5000	0	0.5000	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T6 100.00-80.00	Flange	1.0000	6	0.7500	1	0.5000	0	0.5000	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T7 80.00-60.00	Flange	1.0000	8	0.7500	1	0.5000	0	0.5000	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T8 60.00-40.00	Flange	1.0000	8	0.7500	1	0.5000	0	0.5000	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T9 40.00-20.00	Flange	1.0000	8	0.7500	1	0.5000	0	0.5000	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T10 20.00-0.00	Flange	0.7500	0	0.7500	1	0.5000	0	0.5000	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
Safety Line 3/8 ***	C	No	No	Ar (CaAa)	188.00 - 0.00	0.0000	0	1	1	0.3750	0.3750		0.22
LDF6-50A (1-1/4 FOAM)	B	No	No	Ar (CaAa)	188.00 - 8.00	1.0000	0.38	1	1	1.5500	1.5500		0.66

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Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	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)	C	No	No	Ar (CaAa)	172.00 - 8.00	1.0000	0.38	12	12	0.7000	1.5500		0.66
5/8	C	No	No	Ar (CaAa)	172.00 - 8.00	1.0000	0.31	2	2	0.8800	0.8800		0.40
LDF2-50A (3/8 FOAM)	C	No	No	Ar (CaAa)	172.00 - 8.00	1.0000	0.3	1	1	0.4400	0.4400		0.08

LDF7-50A (1-5/8 FOAM)	C	No	No	Ar (CaAa)	145.50 - 8.00	1.0000	-0.4	15	15	0.7000	1.9800		0.82
1 5/8	C	No	No	Ar (CaAa)	145.50 - 8.00	2.0000	0.49	2	2	0.7000	1.9800		1.04

LDF6-50A (1-1/4 FOAM)	A	No	No	Ar (CaAa)	123.00 - 8.00	1.0000	0.48	3	3	0.7000	1.5500		0.66
HYBRID CABLE	A	No	No	Ar (CaAa)	123.00 - 8.00	1.0000	0.48	1	1	0.7000	1.9800		1.04

Feedline Ladder (Af)	A	No	No	Af (CaAa)	157.00 - 0.00	0.0000	-0.45	2	2	36.0000	1.7500		3.00
Feedline Ladder (Af)	B	No	No	Af (CaAa)	188.00 - 0.00	0.0000	0.45	2	2	36.0000	1.7500		3.00
Feedline Ladder (Af)	B	No	No	Af (CaAa)	188.00 - 0.00	0.0000	-0.45	2	2	36.0000	1.7500		3.00
Feedline Ladder (Af)	C	No	No	Af (CaAa)	172.00 - 0.00	0.0000	0.45	2	2	36.0000	1.7500		3.00
Feedline Ladder (Af)	C	No	No	Af (CaAa)	145.00 - 0.00	0.0000	-0.45	2	2	36.0000	1.7500		3.00

6x24 HYBRID (TMO)	A	No	No	Ar (CaAa)	155.00 - 8.00	2.0000	0.49	3	3	1.5500	0.7000		1.04
6x24 HYBRID (TMO)	A	No	No	Ar (CaAa)	155.00 - 8.00	2.0000	0.49	2	2	1.5500	0.7000		1.04

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C _A A _A ft ² /ft	Weight plf

Feed Line/Linear Appurtenances Section Areas

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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	188.00-180.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	10.573	0.000	101.28
		C	0.000	0.000	0.300	0.000	1.76
T2	180.00-160.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	26.433	0.000	253.20
		C	0.000	0.000	32.710	0.000	182.00
T3	160.00-140.00	A	0.000	0.000	15.167	0.000	180.00
		B	0.000	0.000	26.433	0.000	253.20
		C	0.000	0.000	75.446	0.000	409.49
T4	140.00-120.00	A	0.000	0.000	20.656	0.000	233.06
		B	0.000	0.000	26.433	0.000	253.20
		C	0.000	0.000	133.003	0.000	708.00
T5	120.00-100.00	A	0.000	0.000	31.927	0.000	284.40
		B	0.000	0.000	26.433	0.000	253.20
		C	0.000	0.000	133.003	0.000	708.00
T6	100.00-80.00	A	0.000	0.000	31.927	0.000	284.40
		B	0.000	0.000	26.433	0.000	253.20
		C	0.000	0.000	133.003	0.000	708.00
T7	80.00-60.00	A	0.000	0.000	31.927	0.000	284.40
		B	0.000	0.000	26.433	0.000	253.20
		C	0.000	0.000	133.003	0.000	708.00
T8	60.00-40.00	A	0.000	0.000	31.927	0.000	284.40
		B	0.000	0.000	26.433	0.000	253.20
		C	0.000	0.000	133.003	0.000	708.00
T9	40.00-20.00	A	0.000	0.000	31.927	0.000	284.40
		B	0.000	0.000	26.433	0.000	253.20
		C	0.000	0.000	133.003	0.000	708.00
T10	20.00-0.00	A	0.000	0.000	23.823	0.000	218.64
		B	0.000	0.000	25.193	0.000	247.92
		C	0.000	0.000	89.435	0.000	522.56

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 _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight lb
T1	188.00-180.00	A	2.375	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	29.573	0.000	576.32
		C		0.000	0.000	4.100	0.000	65.59
T2	180.00-160.00	A	2.356	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	73.559	0.000	1425.17
		C		0.000	0.000	95.983	0.000	1636.26
T3	160.00-140.00	A	2.327	0.000	0.000	60.189	0.000	956.68
		B		0.000	0.000	72.972	0.000	1400.89
		C		0.000	0.000	198.469	0.000	3412.90
T4	140.00-120.00	A	2.294	0.000	0.000	82.065	0.000	1281.08
		B		0.000	0.000	72.311	0.000	1373.80
		C		0.000	0.000	321.196	0.000	5572.94
T5	120.00-100.00	A	2.256	0.000	0.000	118.083	0.000	1837.66
		B		0.000	0.000	71.551	0.000	1343.05
		C		0.000	0.000	319.314	0.000	5476.37
T6	100.00-80.00	A	2.211	0.000	0.000	116.615	0.000	1792.05
		B		0.000	0.000	70.655	0.000	1307.30
		C		0.000	0.000	317.095	0.000	5363.47
T7	80.00-60.00	A	2.156	0.000	0.000	114.818	0.000	1737.06
		B		0.000	0.000	69.557	0.000	1264.32
		C		0.000	0.000	314.379	0.000	5226.68
T8	60.00-40.00	A	2.085	0.000	0.000	112.483	0.000	1666.98

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Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	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
T9	40.00-20.00	B	1.981	0.000	0.000	68.130	0.000	1209.71
		C		0.000	0.000	310.851	0.000	5051.21
		A		0.000	0.000	109.087	0.000	1567.85
		B		0.000	0.000	66.054	0.000	1132.83
		C		0.000	0.000	305.720	0.000	4800.67
T10	20.00-0.00	A	1.775	0.000	0.000	71.760	0.000	995.01
		B		0.000	0.000	57.852	0.000	926.33
		C		0.000	0.000	201.164	0.000	2963.93

Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
T1	188.00-180.00	4.7449	-1.8635	5.2316	-0.9472
T2	180.00-160.00	-3.4095	-0.8913	-2.7869	1.7359
T3	160.00-140.00	-5.9687	-0.0231	-7.3178	2.1614
T4	140.00-120.00	2.7062	0.3728	0.0939	2.9281
T5	120.00-100.00	2.8809	-4.6711	0.0242	-2.7706
T6	100.00-80.00	3.3140	-5.3516	0.0880	-3.2423
T7	80.00-60.00	3.4281	-5.3909	0.1631	-3.5030
T8	60.00-40.00	3.6381	-5.5895	0.2672	-3.7923
T9	40.00-20.00	3.8890	-5.9083	0.4274	-4.1960
T10	20.00-0.00	2.8731	-3.8469	0.6448	-1.4783

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _o No Ice	K _o Ice
T1	1	Safety Line 3/8	180.00 - 188.00	0.6000	0.4652
T1	3	LDF6-50A (1-1/4 FOAM)	180.00 - 188.00	0.6000	0.4652
T1	19	Feedline Ladder (Af)	180.00 - 188.00	0.6000	0.4652
T1	20	Feedline Ladder (Af)	180.00 - 188.00	0.6000	0.4652
T2	1	Safety Line 3/8	160.00 - 180.00	0.6000	0.5112
T2	3	LDF6-50A (1-1/4 FOAM)	160.00 - 180.00	0.6000	0.5112
T2	5	LDF6-50A (1-1/4 FOAM)	160.00 - 172.00	0.6000	0.5112
T2	6	5/8	160.00 - 172.00	0.6000	0.5112
T2	7	LDF2-50A (3/8 FOAM)	160.00 - 172.00	0.6000	0.5112
T2	19	Feedline Ladder (Af)	160.00 - 180.00	0.6000	0.5112
T2	20	Feedline Ladder (Af)	160.00 - 180.00	0.6000	0.5112

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<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>
T2	21	Feedline Ladder (Af)	160.00 - 172.00	0.6000	0.5112
T3	1	Safety Line 3/8	140.00 - 160.00	0.6000	0.6000
T3	3	LDF6-50A (1-1/4 FOAM)	140.00 - 160.00	0.6000	0.6000
T3	5	LDF6-50A (1-1/4 FOAM)	140.00 - 160.00	0.6000	0.6000
T3	6	5/8	140.00 - 160.00	0.6000	0.6000
T3	7	LDF2-50A (3/8 FOAM)	140.00 - 160.00	0.6000	0.6000
T3	12	LDF7-50A (1-5/8 FOAM)	140.00 - 145.50	0.6000	0.6000
T3	13	1 5/8	140.00 - 145.50	0.6000	0.6000
T3	18	Feedline Ladder (Af)	140.00 - 157.00	0.6000	0.6000
T3	19	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T3	20	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T3	21	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T3	22	Feedline Ladder (Af)	140.00 - 145.00	0.6000	0.6000
T3	24	6x24 HYBRID	140.00 - 155.00	0.6000	0.6000
T3	25	6x24 HYBRID	140.00 - 155.00	0.6000	0.6000
T4	1	Safety Line 3/8	120.00 - 140.00	0.6000	0.6000
T4	3	LDF6-50A (1-1/4 FOAM)	120.00 - 140.00	0.6000	0.6000
T4	5	LDF6-50A (1-1/4 FOAM)	120.00 - 140.00	0.6000	0.6000
T4	6	5/8	120.00 - 140.00	0.6000	0.6000
T4	7	LDF2-50A (3/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T4	12	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T4	13	1 5/8	120.00 - 140.00	0.6000	0.6000
T4	15	LDF6-50A (1-1/4 FOAM)	120.00 - 123.00	0.6000	0.6000
T4	16	HYBRID CABLE	120.00 - 123.00	0.6000	0.6000
T4	18	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	19	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	20	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	21	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	22	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	24	6x24 HYBRID	120.00 - 140.00	0.6000	0.6000
T4	25	6x24 HYBRID	120.00 - 140.00	0.6000	0.6000

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<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>
T5	1	Safety Line 3/8	100.00 - 120.00	0.6000	0.6000
T5	3	LDF6-50A (1-1/4 FOAM)	100.00 - 120.00	0.6000	0.6000
T5	5	LDF6-50A (1-1/4 FOAM)	100.00 - 120.00	0.6000	0.6000
T5	6	5/8	100.00 - 120.00	0.6000	0.6000
T5	7	LDF2-50A (3/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T5	12	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T5	13	1 5/8	100.00 - 120.00	0.6000	0.6000
T5	15	LDF6-50A (1-1/4 FOAM)	100.00 - 120.00	0.6000	0.6000
T5	16	HYBRID CABLE	100.00 - 120.00	0.6000	0.6000
T5	18	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	19	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	20	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	21	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	22	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	24	6x24 HYBRID	100.00 - 120.00	0.6000	0.6000
T5	25	6x24 HYBRID	100.00 - 120.00	0.6000	0.6000
T6	1	Safety Line 3/8	80.00 - 100.00	0.6000	0.6000
T6	3	LDF6-50A (1-1/4 FOAM)	80.00 - 100.00	0.6000	0.6000
T6	5	LDF6-50A (1-1/4 FOAM)	80.00 - 100.00	0.6000	0.6000
T6	6	5/8	80.00 - 100.00	0.6000	0.6000
T6	7	LDF2-50A (3/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T6	12	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T6	13	1 5/8	80.00 - 100.00	0.6000	0.6000
T6	15	LDF6-50A (1-1/4 FOAM)	80.00 - 100.00	0.6000	0.6000
T6	16	HYBRID CABLE	80.00 - 100.00	0.6000	0.6000
T6	18	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	19	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	20	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	21	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	22	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	24	6x24 HYBRID	80.00 - 100.00	0.6000	0.6000
T6	25	6x24 HYBRID	80.00 - 100.00	0.6000	0.6000
T7	1	Safety Line 3/8	60.00 - 80.00	0.6000	0.6000
T7	3	LDF6-50A (1-1/4 FOAM)	60.00 - 80.00	0.6000	0.6000
T7	5	LDF6-50A (1-1/4 FOAM)	60.00 - 80.00	0.6000	0.6000
T7	6	5/8	60.00 - 80.00	0.6000	0.6000
T7	7	LDF2-50A (3/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T7	12	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T7	13	1 5/8	60.00 - 80.00	0.6000	0.6000
T7	15	LDF6-50A (1-1/4 FOAM)	60.00 - 80.00	0.6000	0.6000
T7	16	HYBRID CABLE	60.00 - 80.00	0.6000	0.6000
T7	18	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	19	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	20	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	21	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	22	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000

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<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>
T7	24	6x24 HYBRID	60.00 - 80.00	0.6000	0.6000
T7	25	6x24 HYBRID	60.00 - 80.00	0.6000	0.6000
T8	1	Safety Line 3/8	40.00 - 60.00	0.6000	0.6000
T8	3	LDF6-50A (1-1/4 FOAM)	40.00 - 60.00	0.6000	0.6000
T8	5	LDF6-50A (1-1/4 FOAM)	40.00 - 60.00	0.6000	0.6000
T8	6	5/8	40.00 - 60.00	0.6000	0.6000
T8	7	LDF2-50A (3/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T8	12	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T8	13	1 5/8	40.00 - 60.00	0.6000	0.6000
T8	15	LDF6-50A (1-1/4 FOAM)	40.00 - 60.00	0.6000	0.6000
T8	16	HYBRID CABLE	40.00 - 60.00	0.6000	0.6000
T8	18	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	19	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	20	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	21	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	22	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	24	6x24 HYBRID	40.00 - 60.00	0.6000	0.6000
T8	25	6x24 HYBRID	40.00 - 60.00	0.6000	0.6000
T9	1	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T9	3	LDF6-50A (1-1/4 FOAM)	20.00 - 40.00	0.6000	0.6000
T9	5	LDF6-50A (1-1/4 FOAM)	20.00 - 40.00	0.6000	0.6000
T9	6	5/8	20.00 - 40.00	0.6000	0.6000
T9	7	LDF2-50A (3/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T9	12	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T9	13	1 5/8	20.00 - 40.00	0.6000	0.6000
T9	15	LDF6-50A (1-1/4 FOAM)	20.00 - 40.00	0.6000	0.6000
T9	16	HYBRID CABLE	20.00 - 40.00	0.6000	0.6000
T9	18	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	19	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	20	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	21	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	22	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	24	6x24 HYBRID	20.00 - 40.00	0.6000	0.6000
T9	25	6x24 HYBRID	20.00 - 40.00	0.6000	0.6000
T10	1	Safety Line 3/8	0.00 - 20.00	0.6000	0.6000
T10	3	LDF6-50A (1-1/4 FOAM)	8.00 - 20.00	0.6000	0.6000
T10	5	LDF6-50A (1-1/4 FOAM)	8.00 - 20.00	0.6000	0.6000
T10	6	5/8	8.00 - 20.00	0.6000	0.6000
T10	7	LDF2-50A (3/8 FOAM)	8.00 - 20.00	0.6000	0.6000
T10	12	LDF7-50A (1-5/8 FOAM)	8.00 - 20.00	0.6000	0.6000
T10	13	1 5/8	8.00 - 20.00	0.6000	0.6000
T10	15	LDF6-50A (1-1/4 FOAM)	8.00 - 20.00	0.6000	0.6000
T10	16	HYBRID CABLE	8.00 - 20.00	0.6000	0.6000
T10	18	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	19	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	20	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	21	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	22	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	24	6x24 HYBRID	8.00 - 20.00	0.6000	0.6000
T10	25	6x24 HYBRID	8.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

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	T-Mobile		Arielle Novak	

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight lb
BCD-87010	B	From Leg	0.00 0.00 7.50	0.0000	195.00	No Ice 1/2" Ice 1" Ice	2.90 4.05 5.21	2.90 4.05 5.21	30.00 50.00 80.00

Rohn 14' Platform	C	None		0.0000	186.00	No Ice 1/2" Ice 1" Ice	41.00 56.00 71.00	41.00 56.00 71.00	2500.00 3000.00 3500.00

(2)	A	From Leg	4.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice	8.26 8.82 9.35	6.30 7.48 8.37	70.00 140.00 210.00
AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice	8.26 8.82 9.35	6.30 7.48 8.37	70.00 140.00 210.00
(2)	C	From Leg	4.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice	8.26 8.82 9.35	6.30 7.48 8.37	70.00 140.00 210.00
AM-X-CD-16-65-00T-RET w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice	5.39 5.81 6.23	4.60 5.35 6.05	70.00 110.00 170.00
(2)	B	From Leg	4.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice	5.39 5.81 6.23	4.60 5.35 6.05	70.00 110.00 170.00
AM-X-CD-16-65-00T-RET w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice	5.39 5.81 6.23	4.60 5.35 6.05	70.00 110.00 170.00
800 10121 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice	2.78 2.99 3.21	1.19 1.33 1.49	50.00 70.00 100.00
800 10121 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice	2.78 2.99 3.21	1.19 1.33 1.49	50.00 70.00 100.00
800 10121 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice	2.78 2.99 3.21	1.19 1.33 1.49	50.00 70.00 100.00
RRUS 11	A	From Leg	4.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice	2.78 2.99 3.21	1.19 1.33 1.49	50.00 70.00 100.00
RRUS 11	B	From Leg	4.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice	2.78 2.99 3.21	1.19 1.33 1.49	50.00 70.00 100.00
RRUS 11	C	From Leg	4.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice	2.78 2.99 3.21	1.19 1.33 1.49	50.00 70.00 100.00
RRUS 12	A	From Leg	4.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice	3.15 3.36 3.59	1.29 1.44 1.60	60.00 80.00 110.00
RRUS 12	B	From Leg	4.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice	3.15 3.36 3.59	1.29 1.44 1.60	60.00 80.00 110.00
RRUS 12	C	From Leg	4.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice	3.15 3.36 3.59	1.29 1.44 1.60	60.00 80.00 110.00
TT19-08BP111-001	A	From Leg	4.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice	0.55 0.65 0.75	0.45 0.53 0.63	20.00 20.00 30.00
TT19-08BP111-001	B	From Leg	4.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice	0.55 0.65 0.75	0.45 0.53 0.63	20.00 20.00 30.00
TT19-08BP111-001	C	From Leg	4.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice	0.55 0.65 0.75	0.45 0.53 0.63	20.00 20.00 30.00
DTMABP7819VG12A	A	From Leg	4.00 0.00 0.00	0.0000	172.00	No Ice 1/2" Ice 1" Ice	0.98 1.10 1.23	0.34 0.42 0.51	20.00 30.00 40.00
DTMABP7819VG12A	B	From Leg	4.00	0.0000	172.00	No Ice	0.98	0.34	20.00

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight lb
			0.00			1/2" Ice	1.10	0.42	30.00
			0.00			1" Ice	1.23	0.51	40.00
DTMABP7819VG12A	C	From Leg	4.00	0.0000	172.00	No Ice	0.98	0.34	20.00
			0.00			1/2" Ice	1.10	0.42	30.00
			0.00			1" Ice	1.23	0.51	40.00
DC6-48-60-18-8F	C	From Leg	4.00	0.0000	172.00	No Ice	0.79	0.79	20.00
			0.00			1/2" Ice	1.27	1.27	30.00
			0.00			1" Ice	1.45	1.45	50.00
6' x 2" Mount Pipe	A	From Leg	4.00	0.0000	172.00	No Ice	1.43	1.43	20.00
			0.00			1/2" Ice	1.92	1.92	30.00
			0.00			1" Ice	2.29	2.29	50.00
6' x 2" Mount Pipe	B	From Leg	4.00	0.0000	172.00	No Ice	1.43	1.43	20.00
			0.00			1/2" Ice	1.92	1.92	30.00
			0.00			1" Ice	2.29	2.29	50.00
6' x 2" Mount Pipe	C	From Leg	4.00	0.0000	172.00	No Ice	1.43	1.43	20.00
			0.00			1/2" Ice	1.92	1.92	30.00
			0.00			1" Ice	2.29	2.29	50.00
Sector Mount [SM 503-3]	C	None		0.0000	172.00	No Ice	33.64	33.64	1690.00
						1/2" Ice	48.17	48.17	2260.00
						1" Ice	62.70	62.70	2820.00

APX16DWV-16DWV-S-E-A	A	From Leg	4.00	0.0000	155.00	No Ice	6.82	3.49	60.00
20 w/ Mount Pipe			0.00			1/2" Ice	7.28	4.26	110.00
(TMO)			0.00			1" Ice	7.72	4.96	160.00
APX16DWV-16DWV-S-E-A	B	From Leg	4.00	0.0000	155.00	No Ice	6.82	3.49	60.00
20 w/ Mount Pipe			0.00			1/2" Ice	7.28	4.26	110.00
(TMO)			0.00			1" Ice	7.72	4.96	160.00
APX16DWV-16DWV-S-E-A	C	From Leg	4.00	0.0000	155.00	No Ice	6.82	3.49	60.00
20 w/ Mount Pipe			0.00			1/2" Ice	7.28	4.26	110.00
(TMO)			0.00			1" Ice	7.72	4.96	160.00
APXVAARR24_43-U-NA20	A	From Leg	4.00	0.0000	155.00	No Ice	20.48	11.02	160.00
w/ Mount Pipe			0.00			1/2" Ice	21.23	12.55	300.00
(TMO)			0.00			1" Ice	21.99	14.10	440.00
APXVAARR24_43-U-NA20	B	From Leg	4.00	0.0000	155.00	No Ice	20.48	11.02	160.00
w/ Mount Pipe			0.00			1/2" Ice	21.23	12.55	300.00
(TMO)			0.00			1" Ice	21.99	14.10	440.00
APXVAARR24_43-U-NA20	C	From Leg	4.00	0.0000	155.00	No Ice	20.48	11.02	160.00
w/ Mount Pipe			0.00			1/2" Ice	21.23	12.55	300.00
(TMO)			0.00			1" Ice	21.99	14.10	440.00
RADIO 4449	A	From Leg	4.00	0.0000	155.00	No Ice	3.50	2.36	90.00
(TMO)			0.00			1/2" Ice	3.74	2.57	110.00
			0.00			1" Ice	3.99	2.78	150.00
RADIO 4449	B	From Leg	4.00	0.0000	155.00	No Ice	3.50	2.36	90.00
(TMO)			0.00			1/2" Ice	3.74	2.57	110.00
			0.00			1" Ice	3.99	2.78	150.00
RADIO 4449	C	From Leg	4.00	0.0000	155.00	No Ice	3.50	2.36	90.00
(TMO)			0.00			1/2" Ice	3.74	2.57	110.00
			0.00			1" Ice	3.99	2.78	150.00

(3) SBNHH-1D85B w/	A	From Leg	4.00	0.0000	145.50	No Ice	8.32	7.00	70.00
Mount Pipe			0.00			1/2" Ice	8.88	8.19	140.00
			0.00			1" Ice	9.40	9.08	210.00
(3) SBNHH-1D85B w/	B	From Leg	4.00	0.0000	145.50	No Ice	8.32	7.00	70.00
Mount Pipe			0.00			1/2" Ice	8.88	8.19	140.00
			0.00			1" Ice	9.40	9.08	210.00
(3) SBNHH-1D85B w/	C	From Leg	4.00	0.0000	145.50	No Ice	8.32	7.00	70.00
Mount Pipe			0.00			1/2" Ice	8.88	8.19	140.00

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight lb
BXA-70063-6CF-EDIN-6 w/ Mount Pipe	A	From Leg	0.00 4.00 0.00 0.00	0.0000	145.50	1" Ice No Ice 1/2" Ice 1" Ice	9.40 7.81 8.36 8.87	9.08 5.80 6.95 7.82	210.00 40.00 100.00 170.00
BXA-70063-6CF-EDIN-6 w/ Mount Pipe	B	From Leg	0.00 4.00 0.00 0.00	0.0000	145.50	No Ice 1/2" Ice 1" Ice No Ice	7.81 8.36 8.87 7.81	5.80 6.95 7.82 5.80	40.00 100.00 170.00 40.00
BXA-70063-6CF-EDIN-6 w/ Mount Pipe	C	From Leg	0.00 4.00 0.00 0.00	0.0000	145.50	1/2" Ice 1" Ice No Ice 1/2" Ice	8.36 8.87 7.81 8.36	6.95 7.82 5.80 6.95	100.00 170.00 40.00 100.00
B66A RRH4X45	A	From Leg	0.00 4.00 0.00 0.00	0.0000	145.50	1" Ice No Ice 1/2" Ice 1" Ice	8.87 2.58 2.79 3.01	7.82 1.63 1.81 2.00	170.00 60.00 80.00 100.00
B66A RRH4X45	B	From Leg	0.00 4.00 0.00 0.00	0.0000	145.50	No Ice 1/2" Ice 1" Ice No Ice	2.58 2.79 3.01 2.58	1.63 1.81 2.00 1.63	60.00 80.00 100.00 60.00
B66A RRH4X45	C	From Leg	0.00 4.00 0.00 0.00	0.0000	145.50	1" Ice No Ice 1/2" Ice 1" Ice	3.01 2.58 2.79 3.01	2.00 1.63 1.81 2.00	100.00 60.00 80.00 100.00
B25 RRH4x30-4R	A	From Leg	0.00 4.00 0.00 0.00	0.0000	145.50	No Ice 1/2" Ice 1" Ice No Ice	2.14 2.33 2.53 2.14	1.31 1.46 1.63 1.31	50.00 70.00 90.00 50.00
B25 RRH4x30-4R	B	From Leg	0.00 4.00 0.00 0.00	0.0000	145.50	1/2" Ice 1" Ice No Ice 1/2" Ice	2.33 2.53 2.14 2.33	1.46 1.63 1.31 1.46	70.00 90.00 50.00 70.00
B25 RRH4x30-4R	C	From Leg	0.00 4.00 0.00 0.00	0.0000	145.50	1" Ice No Ice 1/2" Ice 1" Ice	2.53 2.14 2.33 2.53	1.63 1.31 1.46 1.63	90.00 50.00 70.00 90.00
RRH2X60-1900	A	From Leg	0.00 4.00 0.00 0.00	0.0000	145.50	No Ice 1/2" Ice 1" Ice No Ice	1.87 2.05 2.24 1.87	1.22 1.37 1.52 1.22	40.00 60.00 80.00 40.00
RRH2X60-1900	B	From Leg	0.00 4.00 0.00 0.00	0.0000	145.50	1/2" Ice 1" Ice No Ice 1/2" Ice	2.05 2.24 1.87 2.05	1.37 1.52 1.22 1.37	60.00 80.00 40.00 60.00
RRH2X60-1900	C	From Leg	0.00 4.00 0.00 0.00	0.0000	145.50	1" Ice No Ice 1/2" Ice 1" Ice	2.24 1.87 2.05 2.24	1.52 1.22 1.37 1.52	80.00 40.00 60.00 80.00
DB-B1-6C-12AB-0Z	A	From Leg	0.00 4.00 0.00 0.00	0.0000	145.50	No Ice 1/2" Ice 1" Ice No Ice	3.36 3.60 3.84 3.36	2.19 2.39 2.61 2.19	20.00 50.00 80.00 20.00
DB-B1-6C-12AB-0Z	C	From Leg	0.00 4.00 0.00 0.00	0.0000	145.50	1/2" Ice 1" Ice No Ice 1/2" Ice	3.60 3.84 3.36 3.60	2.39 2.61 2.19 2.39	50.00 80.00 20.00 50.00
SitePro VFA10-RRU	A	None	0.00 0.00 0.00 0.00	0.0000	145.50	1" Ice No Ice 1/2" Ice 1" Ice	3.84 7.53 10.77 14.01	2.61 3.80 5.38 6.96	80.00 310.00 370.00 430.00
SitePro VFA10-RRU	B	None	0.00 0.00 0.00 0.00	0.0000	145.50	No Ice 1/2" Ice 1" Ice No Ice	7.53 10.77 14.01 7.53	3.80 5.38 6.96 3.80	310.00 370.00 430.00 310.00
SitePro VFA10-RRU	C	None	0.00 0.00 0.00 0.00	0.0000	145.50	1/2" Ice 1" Ice No Ice 1/2" Ice	10.77 14.01 7.53 10.77	5.38 6.96 3.80 5.38	370.00 430.00 310.00 370.00
***						1" Ice	14.01	6.96	430.00
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	0.00 4.00 0.00 0.00	0.0000	123.00	No Ice 1/2" Ice 1" Ice No Ice	8.26 8.82 9.35 8.26	6.95 8.13 9.02 6.95	80.00 150.00 230.00 80.00
APXVSPP18-C-A20 w/	B	From Leg	0.00 4.00 0.00 0.00	0.0000	123.00	No Ice	8.26	6.95	80.00

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	T-Mobile		Arielle Novak	

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight lb
Mount Pipe			0.00			1/2" Ice	8.82	8.13	150.00
			0.00			1" Ice	9.35	9.02	230.00
APXVSP18-C-A20 w/ Mount Pipe	C	From Leg	4.00	0.0000	123.00	No Ice	8.26	6.95	80.00
			0.00			1/2" Ice	8.82	8.13	150.00
			0.00			1" Ice	9.35	9.02	230.00
DT465V-2XR w/ Mount Pipe	A	From Leg	4.00	0.0000	123.00	No Ice	9.34	7.63	80.00
			0.00			1/2" Ice	9.91	8.82	160.00
			0.00			1" Ice	10.44	9.72	240.00
DT465V-2XR w/ Mount Pipe	B	From Leg	4.00	0.0000	123.00	No Ice	9.34	7.63	80.00
			0.00			1/2" Ice	9.91	8.82	160.00
			0.00			1" Ice	10.44	9.72	240.00
DT465V-2XR w/ Mount Pipe	C	From Leg	4.00	0.0000	123.00	No Ice	9.34	7.63	80.00
			0.00			1/2" Ice	9.91	8.82	160.00
			0.00			1" Ice	10.44	9.72	240.00
RRH2x50-800	A	From Leg	4.00	0.0000	123.00	No Ice	1.70	1.28	50.00
			0.00			1/2" Ice	1.86	1.43	70.00
			0.00			1" Ice	2.03	1.58	90.00
RRH2x50-800	B	From Leg	4.00	0.0000	123.00	No Ice	1.70	1.28	50.00
			0.00			1/2" Ice	1.86	1.43	70.00
			0.00			1" Ice	2.03	1.58	90.00
RRH2x50-800	C	From Leg	4.00	0.0000	123.00	No Ice	1.70	1.28	50.00
			0.00			1/2" Ice	1.86	1.43	70.00
			0.00			1" Ice	2.03	1.58	90.00
RRH4x45-19	A	From Leg	4.00	0.0000	123.00	No Ice	2.31	2.38	60.00
			0.00			1/2" Ice	2.52	2.58	80.00
			0.00			1" Ice	2.73	2.79	110.00
RRH4x45-19	B	From Leg	4.00	0.0000	123.00	No Ice	2.31	2.38	60.00
			0.00			1/2" Ice	2.52	2.58	80.00
			0.00			1" Ice	2.73	2.79	110.00
RRH4x45-19	C	From Leg	4.00	0.0000	123.00	No Ice	2.31	2.38	60.00
			0.00			1/2" Ice	2.52	2.58	80.00
			0.00			1" Ice	2.73	2.79	110.00
TD-RRH8x20-25	A	From Leg	4.00	0.0000	123.00	No Ice	4.05	1.53	70.00
			0.00			1/2" Ice	4.30	1.71	100.00
			0.00			1" Ice	4.56	1.90	130.00
TD-RRH8x20-25	B	From Leg	4.00	0.0000	123.00	No Ice	4.05	1.53	70.00
			0.00			1/2" Ice	4.30	1.71	100.00
			0.00			1" Ice	4.56	1.90	130.00
TD-RRH8x20-25	C	From Leg	4.00	0.0000	123.00	No Ice	4.05	1.53	70.00
			0.00			1/2" Ice	4.30	1.71	100.00
			0.00			1" Ice	4.56	1.90	130.00
RRH2x50-800	A	From Leg	4.00	0.0000	123.00	No Ice	1.70	1.28	50.00
			0.00			1/2" Ice	1.86	1.43	70.00
			0.00			1" Ice	2.03	1.58	90.00
RRH2x50-800	B	From Leg	4.00	0.0000	123.00	No Ice	1.70	1.28	50.00
			0.00			1/2" Ice	1.86	1.43	70.00
			0.00			1" Ice	2.03	1.58	90.00
RRH2x50-800	C	From Leg	4.00	0.0000	123.00	No Ice	1.70	1.28	50.00
			0.00			1/2" Ice	1.86	1.43	70.00
			0.00			1" Ice	2.03	1.58	90.00
Sector Mount [SM 503-3]	C	None		0.0000	123.00	No Ice	33.64	33.64	1690.00
						1/2" Ice	48.17	48.17	2260.00
						1" Ice	62.70	62.70	2820.00

AIR 6449 B41 W/ MOUNT PIPE (TMO)	A	From Leg	4.00	0.0000	155.00	No Ice	5.95	3.36	118.60
			0.00			1/2" Ice	6.33	3.83	168.39
			0.00			1" Ice	6.72	4.32	223.69

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight lb
AIR 6449 B41 W/ MOUNT PIPE (TMO)	B	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice	5.95 6.33 6.72	3.36 3.83 4.32	118.60 168.39 223.69
AIR 6449 B41 W/ MOUNT PIPE (TMO)	C	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice	5.95 6.33 6.72	3.36 3.83 4.32	118.60 168.39 223.69
4424 B25 (TMO)	A	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice	2.05 2.23 2.42	1.61 1.77 1.94	86.00 106.93 130.84
4424 B25 (TMO)	B	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice	2.05 2.23 2.42	1.61 1.77 1.94	86.00 106.93 130.84
4424 B25 (TMO)	C	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice	2.05 2.23 2.42	1.61 1.77 1.94	86.00 106.93 130.84
4415 B66A (TMO)	A	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	0.82 0.94 1.07	46.00 60.07 76.66
4415 B66A (TMO)	B	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	0.82 0.94 1.07	46.00 60.07 76.66
4415 B66A (TMO)	C	From Leg	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	0.82 0.94 1.07	46.00 60.07 76.66
Reinforced Sector Mount (TMO)	A	None		0.0000	155.00	No Ice 1/2" Ice 1" Ice	17.90 23.30 28.60	12.70 16.60 20.50	630.00 870.00 1110.00
Reinforced Sector Mount (TMO)	B	None		0.0000	155.00	No Ice 1/2" Ice 1" Ice	17.90 23.30 28.60	12.70 16.60 20.50	630.00 870.00 1110.00
Reinforced Sector Mount (TMO)	C	None		0.0000	155.00	No Ice 1/2" Ice 1" Ice	17.90 23.30 28.60	12.70 16.60 20.50	630.00 870.00 1110.00

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice

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<i>Comb. No.</i>	<i>Description</i>
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Reactions

<i>Location</i>	<i>Condition</i>	<i>Gov. Load Comb.</i>	<i>Vertical lb</i>	<i>Horizontal, X lb</i>	<i>Horizontal, Z lb</i>
Leg C	Max. Vert	18	349550.52	35796.67	-19789.10
	Max. H _x	18	349550.52	35796.67	-19789.10
	Max. H _z	5	-274084.38	-28343.67	18137.60
	Min. Vert	7	-294389.97	-31230.85	17149.80
	Min. H _x	7	-294389.97	-31230.85	17149.80
	Min. H _z	18	349550.52	35796.67	-19789.10
Leg B	Max. Vert	10	350931.55	-35940.82	-19966.65
	Max. H _x	23	-295525.87	31373.92	17326.93
	Max. H _z	25	-265828.95	27559.38	17954.68
	Min. Vert	23	-295525.87	31373.92	17326.93
	Min. H _x	10	350931.55	-35940.82	-19966.65
	Min. H _z	10	350931.55	-35940.82	-19966.65
Leg A	Max. Vert	2	378067.20	210.16	45002.50
	Max. H _x	21	15528.32	4520.04	1318.64
	Max. H _z	2	378067.20	210.16	45002.50

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Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
	Min. Vert	15	-324924.46	-215.61	-39831.76
	Min. H _x	9	15736.73	-4517.86	1337.75
	Min. H _z	15	-324924.46	-215.61	-39831.76

Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _z lb-ft	Torque lb-ft
Dead Only	54164.65	-0.00	0.00	14821.37	-1453.24	-0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	64997.58	15.46	-74217.77	-7716315.28	-4017.24	9247.87
0.9 Dead+1.6 Wind 0 deg - No Ice	48748.19	15.46	-74218.00	-7713182.64	-3578.02	9247.20
1.2 Dead+1.6 Wind 30 deg - No Ice	64997.58	34402.24	-59586.51	-6279720.43	-3637804.15	56122.73
0.9 Dead+1.6 Wind 30 deg - No Ice	48747.26	34401.43	-59586.88	-6277944.74	-3633763.62	56085.11
1.2 Dead+1.6 Wind 60 deg - No Ice	64997.58	54425.02	-31440.15	-3352959.99	-5835809.90	32988.11
0.9 Dead+1.6 Wind 60 deg - No Ice	48748.19	54425.20	-31440.25	-3354054.82	-5829519.58	32969.68
1.2 Dead+1.6 Wind 90 deg - No Ice	64997.58	54760.89	-15.43	15579.22	-6018811.13	-11370.00
0.9 Dead+1.6 Wind 90 deg - No Ice	48748.19	54761.08	-15.43	11099.46	-6012225.95	-11381.51
1.2 Dead+1.6 Wind 120 deg - No Ice	64997.58	58288.28	33652.75	3577114.13	-6166394.39	29424.42
0.9 Dead+1.6 Wind 120 deg - No Ice	48748.19	58288.46	33652.86	3569089.17	-6159830.61	29414.26
1.2 Dead+1.6 Wind 150 deg - No Ice	64997.58	33674.60	58356.95	6141154.54	-3534300.86	44474.06
0.9 Dead+1.6 Wind 150 deg - No Ice	48749.59	33674.27	58358.31	6130634.20	-3530375.78	44450.34
1.2 Dead+1.6 Wind 180 deg - No Ice	64997.58	-15.46	70148.87	7398397.49	503.23	-9246.15
0.9 Dead+1.6 Wind 180 deg - No Ice	48748.19	-15.46	70149.09	7386630.66	936.80	-9245.96
1.2 Dead+1.6 Wind 210 deg - No Ice	64997.58	-34402.31	59586.47	6315550.94	3634098.79	-56122.73
0.9 Dead+1.6 Wind 210 deg - No Ice	48747.27	-34403.04	59585.95	6304829.65	3630919.29	-56085.12
1.2 Dead+1.6 Wind 240 deg - No Ice	64997.58	-57948.78	33474.59	3565633.55	6138497.02	-32991.78
0.9 Dead+1.6 Wind 240 deg - No Ice	48748.19	-57948.97	33474.70	3557615.15	6132822.80	-32981.50
1.2 Dead+1.6 Wind 270 deg - No Ice	64997.58	-54760.89	15.49	20096.29	6015320.76	11370.21
0.9 Dead+1.6 Wind 270 deg - No Ice	48748.19	-54761.08	15.49	15611.72	6009608.64	11381.73
1.2 Dead+1.6 Wind 300 deg - No Ice	64997.58	-54764.52	-31618.31	-3364444.26	5856724.24	-29421.19
0.9 Dead+1.6 Wind 300 deg - No Ice	48748.19	-54764.69	-31618.41	-3365532.45	5851290.52	-29403.22
1.2 Dead+1.6 Wind 330 deg - No Ice	64997.58	-33674.53	-58356.99	-6105330.70	3531013.86	-44474.28
0.9 Dead+1.6 Wind 330 deg - No Ice	48749.59	-33675.87	-58357.39	-6103763.42	3527960.97	-44450.58

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<i>Load Combination</i>	<i>Vertical lb</i>	<i>Shear_x lb</i>	<i>Shear_z lb</i>	<i>Overturning Moment, M_x lb-ft</i>	<i>Overturning Moment, M_z lb-ft</i>	<i>Torque lb-ft</i>
No Ice						
1.2 Dead+1.0 Ice+1.0 Temp	204210.78	0.08	-0.80	119446.07	-1876.85	0.07
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	204210.78	2.82	-24843.51	-2543116.53	-2269.73	-1026.49
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	204210.78	11429.24	-19796.04	-2036866.23	-1247074.27	10983.74
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	204210.78	18412.75	-10633.87	-1054166.95	-2034538.46	7022.41
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	204210.78	19729.65	-2.83	119437.76	-2210474.66	-1492.44
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	204210.78	19194.59	11081.99	1330608.50	-2098945.60	7054.04
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	204210.78	11279.53	19542.33	2238109.30	-1224357.30	14685.64
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	204210.78	-2.81	24278.58	2735285.80	-1444.04	1026.09
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	204210.78	-11429.24	19796.01	2276588.77	1243333.10	-10983.73
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	204210.78	-18901.97	10916.29	1317678.60	2072003.35	-7026.09
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	204210.78	-19729.65	2.80	120268.05	2206755.05	1492.46
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	204210.78	-18705.36	-10799.56	-1067096.03	2054043.67	-7050.06
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	204210.78	-11279.53	-19542.36	-1998381.67	1220667.90	-14685.70
Dead+Wind 0 deg - Service	54164.65	3.70	-18084.23	-1854725.24	-1994.64	2211.19
Dead+Wind 30 deg - Service	54164.65	8394.87	-14540.36	-1508553.80	-881013.38	13417.70
Dead+Wind 60 deg - Service	54164.65	13306.08	-7686.54	-801327.60	-1414077.29	7885.69
Dead+Wind 90 deg - Service	54164.65	13431.45	-3.70	14326.33	-1460646.32	-2720.12
Dead+Wind 120 deg - Service	54164.65	14229.90	8215.64	876076.98	-1493103.18	7034.06
Dead+Wind 150 deg - Service	54164.65	8220.86	14246.33	1496626.65	-856317.76	10632.65
Dead+Wind 180 deg - Service	54164.65	-3.70	17111.23	1799943.70	-914.66	-2211.05
Dead+Wind 210 deg - Service	54164.65	-8394.88	14540.35	1538299.01	878091.82	-13417.67
Dead+Wind 240 deg - Service	54164.65	-14148.72	8173.03	873332.21	1484361.15	-7887.01
Dead+Wind 270 deg - Service	54164.65	-13431.45	3.70	15405.75	1457738.05	2720.14
Dead+Wind 300 deg - Service	54164.65	-13387.27	-7729.14	-804072.49	1417002.72	-7032.82
Dead+Wind 330 deg - Service	54164.65	-8220.85	-14246.34	-1466881.85	853422.06	-10632.69

Solution Summary

<i>Load Comb.</i>	<i>Sum of Applied Forces</i>			<i>Sum of Reactions</i>			<i>% Error</i>
	<i>PX lb</i>	<i>PY lb</i>	<i>PZ lb</i>	<i>PX lb</i>	<i>PY lb</i>	<i>PZ lb</i>	
1	0.00	-54164.65	0.00	0.00	54164.65	-0.00	0.000%
2	15.46	-64997.59	-74218.60	-15.46	64997.58	74217.77	0.001%
3	15.46	-48748.19	-74218.60	-15.46	48748.19	74218.00	0.001%
4	34402.69	-64997.59	-59587.21	-34402.24	64997.58	59586.51	0.001%
5	34402.69	-48748.19	-59587.21	-34401.43	48747.26	59586.88	0.002%
6	54425.74	-64997.59	-31440.56	-54425.02	64997.58	31440.15	0.001%
7	54425.74	-48748.19	-31440.56	-54425.20	48748.19	31440.25	0.001%
8	54761.62	-64997.59	-15.46	-54760.89	64997.58	15.43	0.001%
9	54761.62	-48748.19	-15.46	-54761.08	48748.19	15.43	0.001%
10	58288.95	-64997.59	33653.14	-58288.28	64997.58	-33652.75	0.001%
11	58288.95	-48748.19	33653.14	-58288.46	48748.19	-33652.86	0.001%
12	33674.97	-64997.59	58357.67	-33674.60	64997.58	-58356.95	0.001%
13	33674.97	-48748.19	58357.67	-33674.27	48749.59	-58358.31	0.002%
14	-15.46	-64997.59	70149.76	15.46	64997.58	-70148.87	0.001%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
15	-15.46	-48748.19	70149.76	15.46	48748.19	-70149.09	0.001%
16	-34402.69	-64997.59	59587.21	34402.31	64997.58	-59586.47	0.001%
17	-34402.69	-48748.19	59587.21	34403.04	48747.27	-59585.95	0.002%
18	-57949.46	-64997.59	33474.98	57948.78	64997.58	-33474.59	0.001%
19	-57949.46	-48748.19	33474.98	57948.97	48748.19	-33474.70	0.001%
20	-54761.62	-64997.59	15.46	54760.89	64997.58	-15.49	0.001%
21	-54761.62	-48748.19	15.46	54761.08	48748.19	-15.49	0.001%
22	-54765.23	-64997.59	-31618.72	54764.52	64997.58	31618.31	0.001%
23	-54765.23	-48748.19	-31618.72	54764.69	48748.19	31618.41	0.001%
24	-33674.97	-64997.59	-58357.67	33674.53	64997.58	58356.99	0.001%
25	-33674.97	-48748.19	-58357.67	33675.87	48749.59	58357.39	0.002%
26	-0.00	-204210.78	0.00	-0.08	204210.78	0.80	0.000%
27	2.81	-204210.78	-24843.73	-2.82	204210.78	24843.51	0.000%
28	11429.35	-204210.78	-19796.22	-11429.24	204210.78	19796.04	0.000%
29	18412.93	-204210.78	-10633.96	-18412.75	204210.78	10633.87	0.000%
30	19729.86	-204210.78	-2.81	-19729.65	204210.78	2.83	0.000%
31	19194.78	-204210.78	11082.11	-19194.59	204210.78	-11081.99	0.000%
32	11279.64	-204210.78	19542.53	-11279.53	204210.78	-19542.33	0.000%
33	-2.81	-204210.78	24278.82	2.81	204210.78	-24278.58	0.000%
34	-11429.35	-204210.78	19796.22	11429.24	204210.78	-19796.01	0.000%
35	-18902.16	-204210.78	10916.41	18901.97	204210.78	-10916.29	0.000%
36	-19729.86	-204210.78	2.81	19729.65	204210.78	-2.80	0.000%
37	-18705.55	-204210.78	-10799.66	18705.36	204210.78	10799.56	0.000%
38	-11279.64	-204210.78	-19542.53	11279.53	204210.78	19542.36	0.000%
39	3.70	-54164.65	-18084.40	-3.70	54164.65	18084.23	0.000%
40	8394.96	-54164.65	-14540.50	-8394.87	54164.65	14540.36	0.000%
41	13306.22	-54164.65	-7686.62	-13306.08	54164.65	7686.54	0.000%
42	13431.60	-54164.65	-3.70	-13431.45	54164.65	3.70	0.000%
43	14230.04	-54164.65	8215.72	-14229.90	54164.65	-8215.64	0.000%
44	8220.94	-54164.65	14246.47	-8220.86	54164.65	-14246.33	0.000%
45	-3.70	-54164.65	17111.40	3.70	54164.65	-17111.23	0.000%
46	-8394.96	-54164.65	14540.50	8394.88	54164.65	-14540.35	0.000%
47	-14148.86	-54164.65	8173.11	14148.72	54164.65	-8173.03	0.000%
48	-13431.60	-54164.65	3.70	13431.45	54164.65	-3.70	0.000%
49	-13387.40	-54164.65	-7729.22	13387.27	54164.65	7729.14	0.000%
50	-8220.94	-54164.65	-14246.47	8220.85	54164.65	14246.34	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	9	0.00000001	0.00006761
3	Yes	9	0.00000001	0.00004934
4	Yes	9	0.00000001	0.00007208
5	Yes	9	0.00000001	0.00005369
6	Yes	9	0.00000001	0.00007604
7	Yes	9	0.00000001	0.00005744
8	Yes	9	0.00000001	0.00007314
9	Yes	9	0.00000001	0.00005450
10	Yes	9	0.00000001	0.00006835
11	Yes	9	0.00000001	0.00004996
12	Yes	9	0.00000001	0.00007180
13	Yes	9	0.00000001	0.00005352
14	Yes	9	0.00000001	0.00007570
15	Yes	9	0.00000001	0.00005721

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16	Yes	9	0.00000001	0.00007210
17	Yes	9	0.00000001	0.00005370
18	Yes	9	0.00000001	0.00006842
19	Yes	9	0.00000001	0.00005000
20	Yes	9	0.00000001	0.00007315
21	Yes	9	0.00000001	0.00005450
22	Yes	9	0.00000001	0.00007602
23	Yes	9	0.00000001	0.00005741
24	Yes	9	0.00000001	0.00007179
25	Yes	9	0.00000001	0.00005351
26	Yes	7	0.00000001	0.00012554
27	Yes	10	0.00000001	0.00004794
28	Yes	10	0.00000001	0.00004736
29	Yes	10	0.00000001	0.00004719
30	Yes	10	0.00000001	0.00004657
31	Yes	10	0.00000001	0.00004838
32	Yes	10	0.00000001	0.00004912
33	Yes	10	0.00000001	0.00005085
34	Yes	10	0.00000001	0.00004983
35	Yes	10	0.00000001	0.00004859
36	Yes	10	0.00000001	0.00004699
37	Yes	10	0.00000001	0.00004770
38	Yes	10	0.00000001	0.00004697
39	Yes	9	0.00000001	0.00005591
40	Yes	9	0.00000001	0.00005679
41	Yes	9	0.00000001	0.00005756
42	Yes	9	0.00000001	0.00005671
43	Yes	9	0.00000001	0.00005607
44	Yes	9	0.00000001	0.00005649
45	Yes	9	0.00000001	0.00005769
46	Yes	9	0.00000001	0.00005691
47	Yes	9	0.00000001	0.00005613
48	Yes	9	0.00000001	0.00005676
49	Yes	9	0.00000001	0.00005759
50	Yes	9	0.00000001	0.00005640

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	188 - 180	3.894	39	0.1715	0.0185
T2	180 - 160	3.604	39	0.1710	0.0188
T3	160 - 140	2.884	39	0.1627	0.0174
T4	140 - 120	2.216	39	0.1441	0.0150
T5	120 - 100	1.631	39	0.1216	0.0122
T6	100 - 80	1.129	39	0.1006	0.0101
T7	80 - 60	0.722	39	0.0769	0.0079
T8	60 - 40	0.420	39	0.0546	0.0061
T9	40 - 20	0.207	39	0.0339	0.0040
T10	20 - 0	0.067	39	0.0174	0.0019

Critical Deflections and Radius of Curvature - Service Wind

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Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
195.00	BCD-87010	39	3.894	0.1715	0.0185	503679
186.00	Rohn 14' Platform	39	3.821	0.1715	0.0186	503679
172.00	(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe	39	3.314	0.1690	0.0185	308940
155.00	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	39	2.710	0.1589	0.0168	71039
145.50	(3) SBNHH-1D85B w/ Mount Pipe	39	2.392	0.1500	0.0157	58492
123.00	APXVSPP18-C-A20 w/ Mount Pipe	39	1.713	0.1249	0.0126	59671

Maximum Tower Deflections - Design Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
T1	188 - 180	16.290	2	0.7196	0.0776
T2	180 - 160	15.077	2	0.7173	0.0785
T3	160 - 140	12.055	2	0.6825	0.0728
T4	140 - 120	9.253	2	0.6042	0.0629
T5	120 - 100	6.803	2	0.5095	0.0513
T6	100 - 80	4.704	2	0.4209	0.0423
T7	80 - 60	3.002	2	0.3212	0.0331
T8	60 - 40	1.744	2	0.2281	0.0254
T9	40 - 20	0.855	2	0.1414	0.0169
T10	20 - 0	0.275	2	0.0726	0.0078

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
195.00	BCD-87010	2	16.290	0.7196	0.0776	121866
186.00	Rohn 14' Platform	2	15.987	0.7193	0.0779	121866
172.00	(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe	2	13.858	0.7090	0.0774	75853
155.00	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	2	11.326	0.6663	0.0705	16909
145.50	(3) SBNHH-1D85B w/ Mount Pipe	2	9.991	0.6288	0.0658	13901
123.00	APXVSPP18-C-A20 w/ Mount Pipe	2	7.148	0.5234	0.0529	14098

Bolt Design Data

Section No.	Elevation	Component Type	Bolt Grade	Bolt Size	Number Of Bolts	Maximum Load per Bolt	Allowable Load per Bolt	Ratio Load Allowable	Allowable Ratio	Criteria
	ft			in		lb	lb			
T1	188	Leg	A325N	0.8750	4	316.53	40589.10	0.008	✓	Bolt Tension
		Diagonal	A325N	0.6250	1	1062.57	5811.33	0.183	✓	Member Block Shear

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Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load Allowable	Allowable Ratio	Criteria
T2	180	Top Girt	A325N	0.6250	1	96.90	12425.20	0.008 ✓	1	Bolt Shear
		Leg	A325N	0.8750	4	3738.87	40589.10	0.092 ✓	1	Bolt Tension
		Diagonal	A325N	0.6250	1	3119.31	5811.33	0.537 ✓	1	Member Block Shear
		Horizontal	A325N	0.6250	1	457.13	4553.91	0.100 ✓	1	Member Block Shear
T3	160	Leg	A325N	0.8750	4	10475.00	40589.10	0.258 ✓	1	Bolt Tension
		Diagonal	A325N	0.6250	1	7088.58	10440.00	0.679 ✓	1	Member Bearing
T4	140	Leg	A325N	1.0000	4	20131.20	53014.40	0.380 ✓	1	Bolt Tension
		Diagonal	A325N	0.7500	1	8070.78	14137.50	0.571 ✓	1	Member Bearing
T5	120	Leg	A325N	1.0000	6	20012.40	53014.40	0.377 ✓	1	Bolt Tension
		Diagonal	A325N	0.7500	1	8534.66	14137.50	0.604 ✓	1	Member Bearing
T6	100	Leg	A325N	1.0000	6	26677.60	53014.40	0.503 ✓	1	Bolt Tension
		Diagonal	A325N	0.7500	1	11831.70	14137.50	0.837 ✓	1	Member Bearing
T7	80	Leg	A325N	1.0000	8	25336.50	53014.40	0.478 ✓	1	Bolt Tension
		Diagonal	A325N	0.7500	1	12290.10	17892.40	0.687 ✓	1	Bolt Shear
T8	60	Leg	A325N	1.0000	8	30149.80	53014.40	0.569 ✓	1	Bolt Tension
		Diagonal	A325N	0.7500	1	12347.10	17892.40	0.690 ✓	1	Bolt Shear
T9	40	Leg	A325N	1.0000	8	34840.90	53014.40	0.657 ✓	1	Bolt Tension
		Diagonal	A325N	0.7500	1	13774.50	17892.40	0.770 ✓	1	Bolt Shear
T10	20	Diagonal	A325N	0.7500	1	15387.70	17892.40	0.860 ✓	1	Bolt Shear

Compression Checks

Leg 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	188 - 180	P3x.216	8.00	4.00	41.3 K=1.00	2.2285	-3798.38	88548.60	0.043 ¹ ✓
T2	180 - 160	P3x.216	20.04	5.01	51.7 K=1.00	2.2285	-20740.70	82502.90	0.251 ¹ ✓
T3	160 - 140	ROHN 3 EH	20.03	6.68	70.5 K=1.00	3.0159	-53602.60	94349.80	0.568 ¹ ✓
T4	140 - 120	ROHN 4 EH	20.04	6.68	54.3 K=1.00	4.4074	-97329.20	159905.00	0.609 ¹ ✓
T5	120 - 100	ROHN 5 EH	20.05	6.68	43.6 K=1.00	6.1120	-142068.00	239326.00	0.594 ¹ ✓
T6	100 - 80	ROHN 6 EHS	20.02	10.01	54.0 K=1.00	6.7133	-185956.00	244126.00	0.762 ¹ ✓
T7	80 - 60	ROHN 6 EH	20.03	10.02	54.8	8.4049	-234234.00	303759.00	0.771 ¹ ✓

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T8	60 - 40	ROHN 8 EHS	20.04	10.02	K=1.00 41.2	9.7193	-278728.00	386368.00	0.721 ¹ ✓
T9	40 - 20	ROHN 8 EH	20.03	10.02	K=1.00 41.8	12.7627	-322774.00	505544.00	0.638 ¹ ✓
T10	20 - 0	ROHN 8 EH	20.03	10.02	K=1.00 41.8	12.7627	-366963.00	505565.00	0.726 ¹ ✓

¹ P_u / φP_n controls

Diagonal 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	188 - 180	L1 3/4x1 3/4x3/16	7.74	3.58	K=1.00 125.1	0.6211	-1128.41	8824.45	0.128 ¹ ✓
T2	180 - 160	L1 3/4x1 3/4x3/16	9.40	4.57	K=1.00 159.5	0.6211	-3322.51	5512.95	0.603 ¹ ✓
T3	160 - 140	L2 1/2x2 1/2x1/4	12.34	6.07	K=1.00 148.4	1.1900	-7143.41	12209.80	0.585 ¹ ✓
T4	140 - 120	L3x3x1/4	14.12	6.91	K=1.00 140.0	1.4400	-8448.30	16593.20	0.509 ¹ ✓
T5	120 - 100	L3x3x1/4	16.30	7.99	K=1.00 161.9	1.4400	-8517.09	12404.00	0.687 ¹ ✓
T6	100 - 80	L3 1/2x3 1/2x1/4	19.28	9.41	K=1.00 162.8	1.6900	-12629.80	14408.10	0.877 ¹ ✓
T7	80 - 60	L4x4x5/16	20.89	10.27	K=1.00 155.9	2.4000	-12290.10	22316.40	0.551 ¹ ✓
T8	60 - 40	L4x4x5/16	22.77	11.15	K=1.00 169.2	2.4000	-12347.10	18939.00	0.652 ¹ ✓
T9	40 - 20	L4x4x5/16	24.66	12.08	K=1.00 183.3	2.4000	-13774.50	16141.50	0.853 ¹ ✓
T10	20 - 0	L4x4x3/8	26.48	12.98	K=1.00 197.6	2.8600	-15387.70	16543.30	0.930 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 $\frac{P_u}{\phi P_n}$
T2	180 - 160	L2x2x1/8	8.22	7.69	K=1.00 232.1	0.4844	-359.74	2031.49	0.177 ¹ ✓

KL/R > 200 (C) - 32

tnxTower Centerline Communications 750 West Center Street, Suite 301 West Bridgewater, MA 02379 Phone: 781-713-4725 FAX:	Job	CT11402A	Page	26 of 28
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	Client	T-Mobile	Designed by	Arielle Novak

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

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	188 - 180	L3x3x1/4	6.63	6.10	123.6 K=1.00	1.4400	-96.90	20868.70	0.005 ¹ 

¹ P_u / φP_n controls

Tension Checks

Leg 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	188 - 180	P3x.216	8.00	4.00	41.3	2.2285	977.65	100281.00	0.010 ¹ 
T2	180 - 160	P3x.216	20.04	5.01	51.7	2.2285	14955.50	100281.00	0.149 ¹ 
T3	160 - 140	ROHN 3 EH	20.03	6.68	70.5	3.0159	41900.10	135717.00	0.309 ¹ 
T4	140 - 120	ROHN 4 EH	20.04	6.68	54.3	4.4074	80524.70	198335.00	0.406 ¹ 
T5	120 - 100	ROHN 5 EH	20.05	6.68	43.6	6.1120	120074.00	275039.00	0.437 ¹ 
T6	100 - 80	ROHN 6 EHS	20.02	10.01	54.0	6.7133	160066.00	302097.00	0.530 ¹ 
T7	80 - 60	ROHN 6 EH	20.03	10.02	54.8	8.4049	202692.00	378222.00	0.536 ¹ 
T8	60 - 40	ROHN 8 EHS	20.04	10.02	41.2	9.7193	241199.00	437369.00	0.551 ¹ 
T9	40 - 20	ROHN 8 EH	20.03	10.02	41.8	12.7627	278727.00	574322.00	0.485 ¹ 
T10	20 - 0	ROHN 8 EH	20.03	10.02	41.8	12.7627	315847.00	574322.00	0.550 ¹ 

¹ P_u / φP_n controls

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	Client	T-Mobile	Designed by	Arielle Novak

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	188 - 180	L1 3/4x1 3/4x3/16	7.74	3.58	82.7	0.3604	1062.57	15675.30	0.068 ¹
T2	180 - 160	L1 3/4x1 3/4x3/16	9.40	4.57	104.7	0.3604	3119.31	15675.30	0.199 ¹
T3	160 - 140	L2 1/2x2 1/2x1/4	12.34	6.07	96.6	0.7519	7088.58	32706.60	0.217 ¹
T4	140 - 120	L3x3x1/4	14.12	6.91	90.9	0.9159	8070.78	44652.00	0.181 ¹
T5	120 - 100	L3x3x1/4	16.30	7.99	104.8	0.9159	8534.66	44652.00	0.191 ¹
T6	100 - 80	L3 1/2x3 1/2x1/4	19.28	9.41	105.1	1.1034	11831.70	53792.60	0.220 ¹
T7	80 - 60	L4x4x5/16	20.89	10.27	100.7	1.5949	11590.60	77752.40	0.149 ¹
T8	60 - 40	L4x4x5/16	22.77	11.15	109.2	1.5949	11832.40	77752.40	0.152 ¹
T9	40 - 20	L4x4x5/16	23.73	11.62	113.7	1.5949	12845.80	77752.40	0.165 ¹
T10	20 - 0	L4x4x3/8	25.58	12.53	123.6	1.8989	14211.10	92571.70	0.154 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 $\frac{P_u}{\phi P_n}$
T2	180 - 160	L2x2x1/8	8.22	7.69	151.9	0.2930	457.13	12744.10	0.036 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 $\frac{P_u}{\phi P_n}$
T1	188 - 180	L3x3x1/4	6.63	6.10	81.8	0.9394	10.85	40862.80	0.000 ¹

¹ P_u / φP_n controls

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	Client	T-Mobile	Designed by	Arielle Novak

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	188 - 180	Leg	P3x.216	2	-3798.38	88548.60	4.3	Pass
T2	180 - 160	Leg	P3x.216	21	-20740.70	82502.90	25.1	Pass
T3	160 - 140	Leg	ROHN 3 EH	60	-53602.60	94349.80	56.8	Pass
T4	140 - 120	Leg	ROHN 4 EH	81	-97329.20	159905.00	60.9	Pass
T5	120 - 100	Leg	ROHN 5 EH	102	-142068.00	239326.00	59.4	Pass
T6	100 - 80	Leg	ROHN 6 EHS	123	-185956.00	244126.00	76.2	Pass
T7	80 - 60	Leg	ROHN 6 EH	138	-234234.00	303759.00	77.1	Pass
T8	60 - 40	Leg	ROHN 8 EHS	153	-278728.00	386368.00	72.1	Pass
T9	40 - 20	Leg	ROHN 8 EH	168	-322774.00	505544.00	63.8	Pass
							65.7 (b)	
T10	20 - 0	Leg	ROHN 8 EH	183	-366963.00	505565.00	72.6	Pass
T1	188 - 180	Diagonal	L1 3/4x1 3/4x3/16	10	-1128.41	8824.45	12.8	Pass
							18.3 (b)	
T2	180 - 160	Diagonal	L1 3/4x1 3/4x3/16	38	-3322.51	5512.95	60.3	Pass
T3	160 - 140	Diagonal	L2 1/2x2 1/2x1/4	65	-7143.41	12209.80	58.5	Pass
							67.9 (b)	
T4	140 - 120	Diagonal	L3x3x1/4	86	-8448.30	16593.20	50.9	Pass
							57.1 (b)	
T5	120 - 100	Diagonal	L3x3x1/4	107	-8517.09	12404.00	68.7	Pass
T6	100 - 80	Diagonal	L3 1/2x3 1/2x1/4	127	-12629.80	14408.10	87.7	Pass
T7	80 - 60	Diagonal	L4x4x5/16	142	-12290.10	22316.40	55.1	Pass
							68.7 (b)	
T8	60 - 40	Diagonal	L4x4x5/16	157	-12347.10	18939.00	65.2	Pass
							69.0 (b)	
T9	40 - 20	Diagonal	L4x4x5/16	172	-13774.50	16141.50	85.3	Pass
T10	20 - 0	Diagonal	L4x4x3/8	187	-15387.70	16543.30	93.0	Pass
T2	180 - 160	Horizontal	L2x2x1/8	32	-359.74	2031.49	17.7	Pass
T1	188 - 180	Top Girt	L3x3x1/4	4	-96.65	20868.70	0.6	Pass
							0.8 (b)	
							Summary	
							Leg (T7)	Pass
							Diagonal (T10)	Pass
							Horizontal (T2)	Pass
							Top Girt (T1)	Pass
							Bolt Checks	Pass
							RATING =	93.0

Project Information

BU #	
Site Name	CT11402A
Order #	

Tower Information

Tower Type	Self Support
TIA-222 Rev	G

☒ Load Z Normalization

Applied Loads

	Comp.	Uplift
Axial (k)	378.07	324.92
Shear (k)	45.00	39.83

Anchor Rod Data

Quantity:	10
Diameter (in):	1
Material Grade:	A354-BC
Grout Considered:	No
l_{ar} (in):	0
Eta Factor, η :	0.5
Thread Type:	N-Included
Configuration:	Symmetrical

Fy=109 ksi Fu=125 ksi

Anchor Rod Results

Axial, Pu_c (kips)	37.81
Shear, Vu (kips)	4.50
Moment, Mu (kip-in)	-
Axial Cap., ϕPn_t (kips)	60.60
Shear Cap., ϕVn (kips)	-
Moment Cap., ϕMn (kip-in)	-
Stress Rating	73.6%

Pass

Exhibit E

Mount Analysis

Exhibit F

Power Density/RF Emissions Report



EBI Consulting

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

T-Mobile Existing Facility

Site ID: CT11402A

East Windsor/RT-191_I
232 South Main Street
Windsor, Connecticut 06088

April 29, 2021

EBI Project Number: 6221002085

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	16.98%



April 29, 2021

T-Mobile

Attn: Jason Overbey, RF Manager

35 Griffin Road South

Bloomfield, Connecticut 06002

Emissions Analysis for Site: CT11402A - East Windsor/RT-191_I

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **232 South Main Street** in **Windsor, Connecticut** 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 population 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 population 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 limits for the 600 MHz and 700 MHz frequency bands are approximately $400 \mu\text{W}/\text{cm}^2$ and $467 \mu\text{W}/\text{cm}^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency 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 232 South Main Street in Windsor, Connecticut 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 manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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 power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

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

- 1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.
- 3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 4 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.
- 5) 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.



- 6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 7) 1 LTE channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 8) 1 NR channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 9) 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.
- 10) 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 manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.
- 11) The antennas used in this modeling are the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the RFS APXI6DWV-I6DWV-S-E-A20 for the 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector A, the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the RFS APXI6DWV-I6DWV-S-E-A20 for the 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector B, the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the RFS APXI6DWV-I6DWV-S-E-A20 for the 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.



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- 12) The antenna mounting height centerline of the proposed antennas is 155 feet above ground level (AGL).
- 13) 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.
- 14) All calculations were done with respect to uncontrolled / general population threshold limits.



T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	I	Antenna #:	I	Antenna #:	I
Make / Model:	RFS APXVAARR24_43- U-NA20	Make / Model:	RFS APXVAARR24_43- U-NA20	Make / Model:	RFS APXVAARR24_43- U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd
Height (AGL):	155 feet	Height (AGL):	155 feet	Height (AGL):	155 feet
Channel Count:	11	Channel Count:	11	Channel Count:	11
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	12,873.80	ERP (W):	12,873.80	ERP (W):	12,873.80
Antenna A1 MPE %:	3.00%	Antenna B1 MPE %:	3.00%	Antenna C1 MPE %:	3.00%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APX16DWV- 16DWV-S-E-A20	Make / Model:	RFS APX16DWV- 16DWV-S-E-A20	Make / Model:	RFS APX16DWV- 16DWV-S-E-A20
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	155 feet	Height (AGL):	155 feet	Height (AGL):	155 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A2 MPE %:	0.76%	Antenna B2 MPE %:	0.76%	Antenna C2 MPE %:	0.76%
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz
Gain:	17.3 dBd / 17.3 dBd	Gain:	17.3 dBd / 17.3 dBd	Gain:	17.3 dBd / 17.3 dBd
Height (AGL):	155 feet	Height (AGL):	155 feet	Height (AGL):	155 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	12,888.76	ERP (W):	12,888.76	ERP (W):	12,888.76
Antenna A3 MPE %:	2.09%	Antenna B3 MPE %:	2.09%	Antenna C3 MPE %:	2.09%



Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	5.84%
AT&T	1.82%
Metro PCS	0.42%
Town	0.18%
Nextel	0.24%
Sprint	3.59%
Verizon	4.89%
Site Total MPE % :	16.98%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	5.84%
T-Mobile Sector B Total:	5.84%
T-Mobile Sector C Total:	5.84%
Site Total MPE % :	16.98%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# 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 600 MHz LTE	2	591.73	155.0	1.92	600 MHz LTE	400	0.48%
T-Mobile 600 MHz NR	1	1577.94	155.0	2.56	600 MHz NR	400	0.64%
T-Mobile 700 MHz LTE	2	648.82	155.0	2.10	700 MHz LTE	467	0.45%
T-Mobile 1900 MHz GSM	4	1101.85	155.0	7.14	1900 MHz GSM	1000	0.71%
T-Mobile 1900 MHz LTE	2	2203.69	155.0	7.14	1900 MHz LTE	1000	0.71%
T-Mobile 2100 MHz LTE	2	2334.27	155.0	7.56	2100 MHz LTE	1000	0.76%
T-Mobile 2500 MHz LTE	1	6444.38	155.0	10.44	2500 MHz LTE	1000	1.04%
T-Mobile 2500 MHz NR	1	6444.38	155.0	10.44	2500 MHz NR	1000	1.04%
Total:							5.84%

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population 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 population exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector A:	5.84%
Sector B:	5.84%
Sector C:	5.84%
T-Mobile Maximum MPE % (Sector A):	5.84%
Site Total:	16.98%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **16.98%** of the allowable FCC established general population 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 G

Mailing Receipts/Proof of Notice

UPS CampusShip: View/Print Label

- 1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.
- 2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.
- 3. **GETTING YOUR SHIPMENT TO UPS**
Customers with a Daily Pickup
Your driver will pickup your shipment(s) as usual.

Customers without a Daily Pickup
Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.
Hand the package to any UPS driver in your area.

UPS Access Point™
TIENDA ECUADOR
72 LAKE AVE
DANBURY ,CT 06810

UPS Access Point™
THE UPS STORE
42 LAKE AVENUE EXT
DANBURY ,CT 06811

UPS Access Point™
CVS STORE # 1109
7 DURANT AVE
BETHEL ,CT 06801

FOLD HERE

1 OF 1

1 LBS

DWT: 12.9,1

CENTERLINE COMMUNICATIONS
2033007310
117 CAROL STREET
DANBURY CT 06810

SHIP TO:

FIRST SELECTMAN
TOWN OF EAST WINDSOR
11 RYE STREET
BROAD BROOK CT 06016-9553

CT 060 9-01

UPS GROUND

TRACKING #: 1Z 9Y4 503 03 1763 4753

BILLING: P/P

CS 22.0.13. WNTNV50 45.0A 04/2021*

UPS CampusShip: View/Print Label

- 1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.
- 2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.
- 3. **GETTING YOUR SHIPMENT TO UPS**
Customers with a Daily Pickup
Your driver will pickup your shipment(s) as usual.

Customers without a Daily Pickup
Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
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UPS Access Point™
CVS STORE # 1109
7 DURANT AVE
BETHEL ,CT 06801

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1 OF 1

1 LBS

DWT: 12.9,1

CENTERLINE COMMUNICATIONS

5082655599

CENTERLINE CORPORATE

95 RYAN DR.

RAYNHAM MA 02767

SHIP TO:

DIRECTOR OF PLANNING

TOWN OF EAST WINDSOR

11 RYE STREET

BROAD BROOK CT 06016-9553

CT 060 9-01

UPS GROUND

TRACKING #: 1Z 9Y4 503 03 0214 2777

BILLING: P/P

CS 22.0.13. WNTNV50 45.0A 04/2021*

UPS CampusShip: View/Print Label

- 1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.
- 2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.
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CVS STORE # 1109
7 DURANT AVE
BETHEL ,CT 06801

FOLD HERE

1 OF 1

1 LBS

DWT: 12.9,1

CENTERLINE COMMUNICATIONS

2033007310

117 CAROL STREET

DANBURY CT 06810

SHIP TO:

BALCH COMMUNICATIONS

250 SOUTH MAIN STREET

EAST WINDSOR CT 06088-9752

CT 060 9-01

UPS GROUND

TRACKING #: 1Z 9Y4 503 03 1069 9787

BILLING: P/P

CS 22.0.13. WNTNV50 45.0A 04/2021*