



10 INDUSTRIAL AVE,
SUITE 3
MAHWAH NJ 07430

PHONE: 201.684.0055
FAX: 201.684.0066

October 22, 2021

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

T-Mobile Northeast LLC – CTFF836A
Tower Share Application
515 Morehouse Road, Easton, CT 06612
Latitude- 41.23559796
Longitude- -73.28536131

Dear Ms. Bachman,

This letter and attachments are submitted on behalf of T-Mobile Northeast LLC (“T-Mobile”). T-Mobile plans to install antennas and related equipment at the tower site located at 515 Morehouse Road, Easton, Connecticut.

T-Mobile will install six (6) 600/700/1900/2100/5G MHz antennas and six (6) RRUs at the 123’ level of the existing 149’ monopole tower. Two (2) hybrid cables will also be installed. T-Mobile’s equipment cabinets will be placed on a 10’ X 15’ concrete pad within the existing ground facility. Included are plans by American Tower (Colliers Engineering), dated September 17, 2021, depicting the planned changes and attached as **Exhibit A**. Also included is a structural analysis prepared by American Tower (CLS Engineering), dated August 5, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. This is attached and detailed in **Exhibit B**.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of T-Mobile’s intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to David Bindelglass, First Selectman of Easton, Mark DeLieto, Zoning Enforcement Officer, as well as the tower owner, American Tower Corporation. Please see the attached letter from American Tower Corporation authorizing the proposed shared use of this facility attached as **Exhibit C**.

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the monopole is 149’; T-Mobile’s proposed antennas will be located at a center line height of 123’.
2. The proposed modifications will not result in the increase of the site boundary as depicted on the attached site plan.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed local and state criteria. T-Mobile's plans include the installation of an emergency back-up generator; noise associated with this installation is exempt from State and local noise standards. The incremental effect of the proposed changes will be negligible.
4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total power density below FCC safety standards, as evidenced by **Exhibit D**.

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

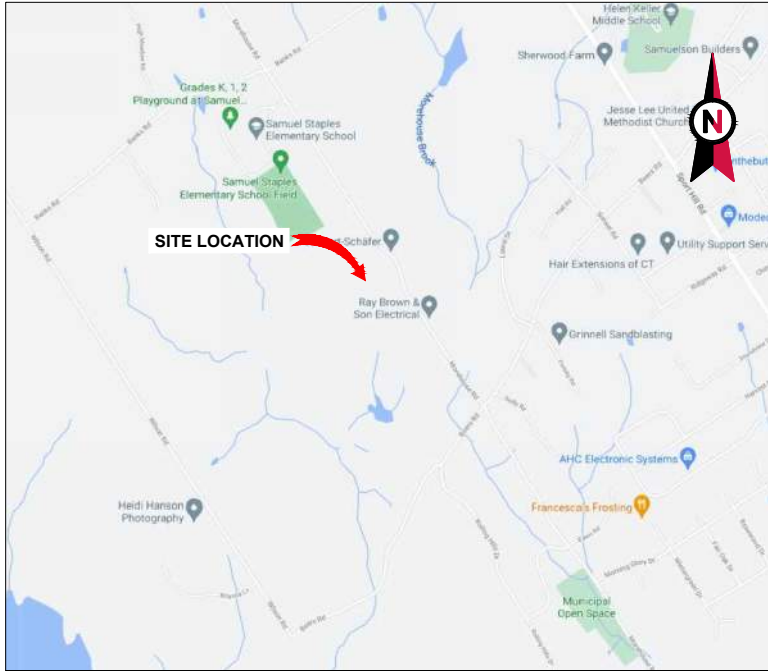
- A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting T-Mobile's proposed loading, with the tower modifications/reinforcements as detailed in the structural analysis. The structural analysis is included as **Exhibit B**.
- B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this monopole in Easton. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit T-Mobile to obtain a building permit for the proposed installation. Further, a Letter of Authorization is included as **Exhibit C**, authorizing T-Mobile to file this application for shared use.
- C. Environmental Feasibility. The proposed shared use of this facility would have minimal environmental impact. The installation of T-Mobile equipment at the 123' level of the existing 149' tower would have an insignificant visual impact on the area around the tower. T-Mobile's ground equipment would be installed within the existing facility compound. T-Mobile's shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by **Exhibit D**, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.
- D. Economic Feasibility. T-Mobile will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Authorization has been provided by the owner to assist T-Mobile with this tower sharing application.
- E. Public Safety Concerns. As discussed above, the monopole is structurally capable of supporting T-Mobile's proposed loading. T-Mobile is not aware of any public safety concerns relative to the proposed sharing of the existing monopole. T-Mobile's intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through Easton and nearby the facility.

Sincerely,

Eric Breun

Eric Breun
Transcend Wireless
10 Industrial Ave., Suite 3
Mahwah, New Jersey
ebreun@transcendwireless.com
201-658-7728

CC: David Bindelglass – First Selectman
Mark DeLieto – Zoning Enforcement Officer
American Tower Corporation

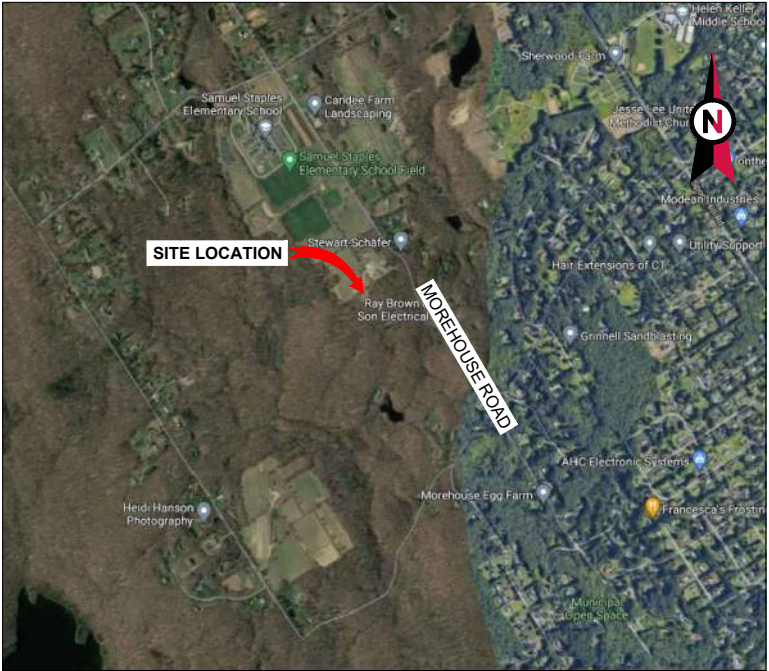


VICINITY MAP



AMERICAN TOWER®

ATC SITE NAME: EASTON
ATC SITE NUMBER: 207956
T-MOBILE SITE NAME: CTFF836A
T-MOBILE SITE NUMBER:CTFF836A
SITE ADDRESS: 515 MOREHOUSE ROAD
EASTON, CT 06612



LOCATION MAP

T-MOBILE ANCHOR COLOCATION PLAN
67E5998E_1XAIR+1OP CONFIGURATION

COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX															
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES. 1. INTERNATIONAL BUILDING CODE (IBC) 2. NATIONAL ELECTRIC CODE (NEC) 3. LOCAL BUILDING CODE 4. CITY/COUNTY ORDINANCES	<u>SITE ADDRESS:</u> 515 MOREHOUSE ROAD EASTON, CT 06612 COUNTY: FAIRFIELD <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41.23559796 LONGITUDE: -73.28536131 GROUND ELEVATION: 440' AMSL	THE PROPOSED PROJECT INCLUDES INSTALLING EQUIPMENT CABINETS AND A DIESEL GENERATOR ON A PROPOSED 10'-0" X 15'-0" CONCRETE PAD INSIDE A 10'-0" X 15'-0" GROUND SPACE WITHIN THE EXISTING COMPOUND, AND INSTALLING NEW EQUIPMENT AND MOUNTS ON THE EXISTING TOWER.	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:											
			G-001	TITLE SHEET	2	09/17/2021	AM											
			G-002	GENERAL NOTES	0	09/03/2021	AM											
			C-001	OVERALL SITE PLAN	0	09/03/2021	AM											
			C-101	DETAILED SITE PLAN	2	09/17/2021	AM											
			C-201	TOWER ELEVATION	2	09/17/2021	AM											
			C-401	ANTENNA INFORMATION & SCHEDULE	0	09/03/2021	AM											
			C-501	MOUNT DETAILS	0	09/03/2021	AM											
			C-502	CONSTRUCTION DETAILS	2	09/17/2021	AM											
			C-503	CONSTRUCTION DETAILS	0	09/03/2021	AM											
PROJECT TEAM <table><tr><td><u>TOWER OWNER:</u></td><td><u>APPLICANT:</u></td></tr><tr><td>AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801</td><td>T-MOBILE</td></tr><tr><td><u>ENGINEER:</u></td><td></td></tr><tr><td>ATC TOWER SERVICES, LLC 3500 REGENCY PKWY STE 100 CARY, NC 27518</td><td></td></tr><tr><td><u>PROPERTY OWNER:</u></td><td><u>PLANNING / APPLICANT'S REPRESENTATIVE:</u></td></tr><tr><td>AMERICAN TOWER 116 HUNTINGTON AVE BOSTON, MA 02116</td><td>THE DERNA GROUP 22431 ANTONIO PARKWAY SUITE B160-234 RANCHO SANTA MARGARITA, CA 92688 CONTACT: RACHEL BRUIN PHONE: (805) 215-9444 EMAIL: RBRUIN@DERNAGRP.COM</td></tr></table>	<u>TOWER OWNER:</u>	<u>APPLICANT:</u>	AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801	T-MOBILE	<u>ENGINEER:</u>		ATC TOWER SERVICES, LLC 3500 REGENCY PKWY STE 100 CARY, NC 27518		<u>PROPERTY OWNER:</u>	<u>PLANNING / APPLICANT'S REPRESENTATIVE:</u>	AMERICAN TOWER 116 HUNTINGTON AVE BOSTON, MA 02116	THE DERNA GROUP 22431 ANTONIO PARKWAY SUITE B160-234 RANCHO SANTA MARGARITA, CA 92688 CONTACT: RACHEL BRUIN PHONE: (805) 215-9444 EMAIL: RBRUIN@DERNAGRP.COM	1. THE FACILITY IS UNMANNED. 2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE. 3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE. 4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED. 5. HANDICAP ACCESS IS NOT REQUIRED. 6. THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. § 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION, REMOVAL, AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR § 1.61000 (B)(7).	E-101	GROUNDING DETAILS & ELECTRICAL SCHEMATIC	2	09/17/2021	AM
	<u>TOWER OWNER:</u>	<u>APPLICANT:</u>																
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	E-501	GROUNDING DETAIL	0	09/03/2021	AM													
	E-601	PANEL SCHEDULE	0	09/03/2021	AM													
	R-601	SUPPLEMENTAL: RFDS	-	-	-													
R-602	SUPPLEMENTAL: EQUIPMENT DETAILS	-	-	-														
R-603	SUPPLEMENTAL: MOUNT ANALYSIS	-	-	-														
R-604	SUPPLEMENTAL: BATTERY DETAILS	-	-	-														
R-605	SUPPLEMENTAL: CABINET DETAILS	-	-	-														
R-606	SUPPLEMENTAL: GENERATOR DETAILS	-	-	-														
UTILITY COMPANIES POWER COMPANY: THE UNITED ILLUMINATING COMPANY PHONE: (800) 722-5584 TELEPHONE COMPANY: AT&T PHONE: (855) 966-3640																		
 Know what's below. Call before you dig.																		
PROJECT LOCATION DIRECTIONS FROM HARTFORD, CT TAKE I-84 WEST. TAKE EXIST 19. HEAD LEFT OFF RAMP FOR CT-8 SOUTH TOWARD BRIDGEPORT. TAKE EXIT 10 GO RIGHT OFF RAMP FOLLOW SIGNS FOR CT-15 SOUTH. TAKE EXIT 46 AND HEAD RIGHT TOWARD EASTON TURNPIKE. TURN RIGHT ONTO CONGRESS ST. TURN LEFT ONTO CT-59. TURN LEFT ONTO BEERS RD. TURN RIGHT ONTO MOREHOUSE RD. BEAR LEFT. SITE IS ON THE RIGHT.																		



3227 WELLINGTON COURT
RALEIGH, NC 27615
o: 919-782-2710, f: 919-435-0631
www.engineeredtowersolutions.com

REV.	DESCRIPTION	BY	DATE
0	CONSTRUCTION	AM	09/03/21
1	REV. CONSTRUCTION	AM	09/08/21
2	REV. CONSTRUCTION	AM	09/17/21

ATC SITE NUMBER:
207956

ATC SITE NAME:
EASTON

T-MOBILE SITE NAME:
CTFF836A

SITE ADDRESS:
515 MOREHOUSE ROAD
EASTON, CT 06612



DATE DRAWN:	09/17/21
ATC JOB NO:	13701258_D3
CUSTOMER ID:	CTFF836A
CUSTOMER #:	CTFF836A

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	2

GENERAL CONSTRUCTION NOTES:

1.

OWNER FURNISHED MATERIALS, T-MOBILE "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
- A.

BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
- B.

AC/TELCO INTERFACE BOX (PPC)
- C.

ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
- D.

TOWERS, MONOPOLES
- E.

TOWER LIGHTING
- F.

GENERATORS & LIQUID PROPANE TANK
- G.

ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
- H.

ANTENNAS (INSTALLED BY OTHERS)
- I.

TRANSMISSION LINE
- J.

TRANSMISSION LINE JUMPERS
- K.

TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
- L.

TRANSMISSION LINE GROUND KITS
- M.

HANGERS
- N.

HOISTING GRIPS
- O.

BTS EQUIPMENT
2.

THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF T-MOBILE TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3.

ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4.

CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5.

CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6.

ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7.

DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8.

DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9.

THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10.

CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11.

CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12.

INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE REP PRIOR TO PROCEEDING.
13.

EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14.

CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE CONSTRUCTION MANAGER.
15.

ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16.

WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE REP AND ENGINEER OF RECORD IMMEDIATELY.
17.

CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18.

CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19.

CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20.

CONTRACTOR SHALL FURNISH T-MOBILE AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21.

PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.

22.

PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23.

CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE SPECIFICATIONS AND REQUIREMENTS.
24.

CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25.

ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26.

THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27.

CONTRACTOR SHALL NOTIFY T-MOBILE REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28.

CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29.

THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30.

ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE REP. ANY WORK FOUNY BY THE T-MOBILE REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
31.

IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
32.

T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33.

T-MOBILE OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO T-MOBILE OR THEIR ARCHITECT/ENGINEER.
- STRUCTURAL STEEL NOTES:
1.

STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."

2.

STRUCTURAL STEEL ROLLED SHAPES, PLATES AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:

A.

ASTM A-572, GRADE 50 - ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE

B.

ASTM A-36 - ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.

C.

ASTM A-500, GRADE B - HSS SECTION (SQUARE, RECTANGULAR, AND ROUND)

D.

ASTM A-325, TYPE SC OR N - ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS

E.

ASTM F-1554 07 - ALL ANCHOR BOLTS, UNLESS NOTED OTHERWISE

3.

ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.

4.

ALL FIELD CUT SURFACES, FIELD DRILLED HOLES AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

5.

DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.

6.

CONNECTIONS:

A.

ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
- B.

ALL WELDS SHALL BE INSPECTED VISUALLY. 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.

C.

INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.

D.

IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE BURNING/WELDING PERMITS AS REQUIRED BY LOCAL GOVERNING AUTHORITY AND IF REQUIRED SHALL HAVE FIRE DEPARTMENT DETAIL FOR ANY WELDING ACTIVITY.

E.

ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.

F.

MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS, UNLESS NOTED OTHERWISE.

G.

PRIOR TO FIELD WELDING GALVANIZING MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING ½" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.

H.

THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE REQUIRED DURING CONSTRUCTION UNTIL ALL CONNECTIONS ARE COMPLETE.

I.

ANY FIELD CHANGES OR SUBSTITUTIONS SHALL HAVE PRIOR APPROVAL FROM THE ENGINEER, AND T- MOBILE PROJECT MANAGER IN WRITING
- SPECIAL CONSTRUCTION
ANTENNA INSTALLATION NOTES:
1.

WORK INCLUDED:

A.

ANTENNA AND COAXIAL CABLES ARE FURNISHED BY T-MOBILE UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OD COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND

B.

INSTALL ANTENNA AS INDICATE ON DRAWINGS AND T-MOBILE SPECIFICATIONS.

C.

INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS

D.

INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE AND PROVIDE PRINTOUT OF THAT TEST.

E.

CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.

F.

INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.

G.

ANTENNA AND COAXIAL CABLE GROUNDING:

2.

ALL EXTERIOR #6 GREED GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.

3.

ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)
- CONCRETE AND REINFORCING STEEL NOTES:
1.

DESIGN AND CONSTRUCTION OF ALL CONCRETE ELEMENTS SHALL CONFORM TO THE LATEST EDITIONS OF ALL APPLICABLE CODES INCLUDING: ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 117 "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS", AND ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE."

2.

MIX DESIGN SHALL BE APPROVED BY T-MOBILE REP PRIOR TO PLACING CONCRETE.

3.

CONCRETE SHALL BE NORMAL WEIGHT, 6 % AIR ENTRAINED (+/- 1.5%) WITH A SLUMP RANGE OF 3-6" AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI UNLESS OTHERWISE NOTED.

4.

THE FOLLOWING MATERIALS SHALL BE USED:

PORTLAND CEMENT:

ASTM C150, TYPE 2

REINFORCEMENT:

ASTM A185, PLAIN STEEL WELDED WIRE FABRIC

REINFORCEMENT BARS:

ASTM A615, GRADE 60, DEFORMED

NORMAL WEIGHT AGGREGATE:

ASTM C33

WATER:

ASTM C 94/C 94M

WELDED WIRE FABRIC:

ASTM A185

ADMIXTURES:

-WATER-REDUCING AGENT: ASTM C 494/C 494M, TYPE A

-AIR-ENTERING AGENT: ASTM C 260/C 260M

-SUPERPLASTICIZER: ASTM C494, TYPE F OR TYPE G

-RETARDING: ASTM C 494/C 494M, TYPE B
5.

MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE NO LESS THAN 3".

6.

A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE IN ACCORDANCE WITH ACI 301 SECTION 4.2.4, UNLESS NOTED OTHERWISE.

7.

INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL, OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR APPROVAL FROM AN ATC ENGINEER WHEN DRILLING HOLES IN CONCRETE.

8.

ADMIXTURES SHALL CONFORM TO THE APPROPRIATE ASTM STANDARD AS REFERENCED IN "METHOD 1" OF ACI 301.

9.

DO NOT WELD OR TACK WELD REINFORCING STEEL.

10.

ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, GROUNDS AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.

11.

REINFORCEMENT SHALL BE COLD BENT WHENEVER BENDING IS REQUIRED.

12.

DO NOT PLACE CONCRETE IN WATER, ICE, OR ON FROZEN GROUND.

13.

FOR COLD-WEATHER (ACI 306) AND HOT-WEATHER (ACI 301M) CONCRETE PLACEMENT, CONFORM TO APPLICABLE ACI CODES AND RECOMMENDATIONS. IN EITHER CASE, MATERIALS CONTAINING CHLORIDE, CALCIUM, SALTS, ETC. SHALL NOT BE USED. PROTECT FRESH CONCRETE FROM WEATHER FOR 7 DAYS, MINIMUM.
14.

ALL CONCRETE SHALL HAVE A "SMOOTH FORM FINISH."

15.

SPLICING OF REINFORCEMENT IS PERMITTED ONLY AT LOCATIONS SHOWN IN THE CONTRACT DRAWINGS OR AS ACCEPTED BY THE ENGINEER. UNLESS OTHERWISE SHOWN OR NOTED REINFORCING STEEL SHALL BE SPLICED TO DEVELOP ITS FULL TENSILE CAPACITY (CLASS A) IN ACCORDANCE WITH ACI 318.

16.

DETAILING OF REINFORCING STEEL SHALL CONFORM TO "ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI 315).

17.

ALL SLAB CONSTRUCTION SHALL BE CAST MONOLITHICALLY WITHOUT HORIZONTAL CONSTRUCTION JOINTS, UNLESS SHOWN IN THE CONTRACT DRAWINGS.

18.

LOCATION OF ALL CONSTRUCTION JOINTS ARE SUBJECT TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, CONFORMANCE WITH ACI 318, AND ACCEPTANCE OF THE ENGINEER. DRAWINGS SHOWING LOCATION OF DETAILS OF THE PROPOSED CONSTRUCTION JOINTS SHALL BE SUBMITTED WITH REINFORCING STEEL PLACEMENT DRAWINGS.

19.

SPLICES OF WWF, AT ALL SPLICED EDGES, SHALL BE SUCH THAT THE OVERLAP MEASURED BETWEEN OUTERMOST CROSS WIRES OF EACH FABRIC SHEET IS NOT LESS THAN THE SPACING OF THE CROSS WIRE PLUS 2 INCHES, NOR LESS THAN 6".

20.

BAR SUPPORTS SHALL BE ALL-GALVANIZED METAL WITH PLASTIC TIPS.

21.

ALL REINFORCEMENT SHALL BE SECURELY TIED IN PLACE TO PREVENT DISPLACEMENT BY CONSTRUCTION TRAFFIC OR CONCRETE. TIE WIRE SHALL BE OF SUFFICIENT STRENGTH FOR INTENDED PURPOSE, BUT NOT LESS THAN NO. 18 GAUGE.

22.

SLAB ON GROUND: COMPACT STRUCTURAL FILL TO 95% DENSITY AND THEN PLACE 6" GRAVEL BENEATH SLAB.
- ELECTRICAL NOTES:
1.

ELECTRICAL DESIGN SHALL BE PERFORMED BY ELECTRICAL CONTRACTOR. STRUCTURAL DESIGN SHALL BE PERFORMED BY GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL ENSURE THAT ALL WORK COMPLIES WITH ALL APPLICABLE LOCAL AND STATE CODES AND NATIONAL ELECTRICAL CODE.

2.

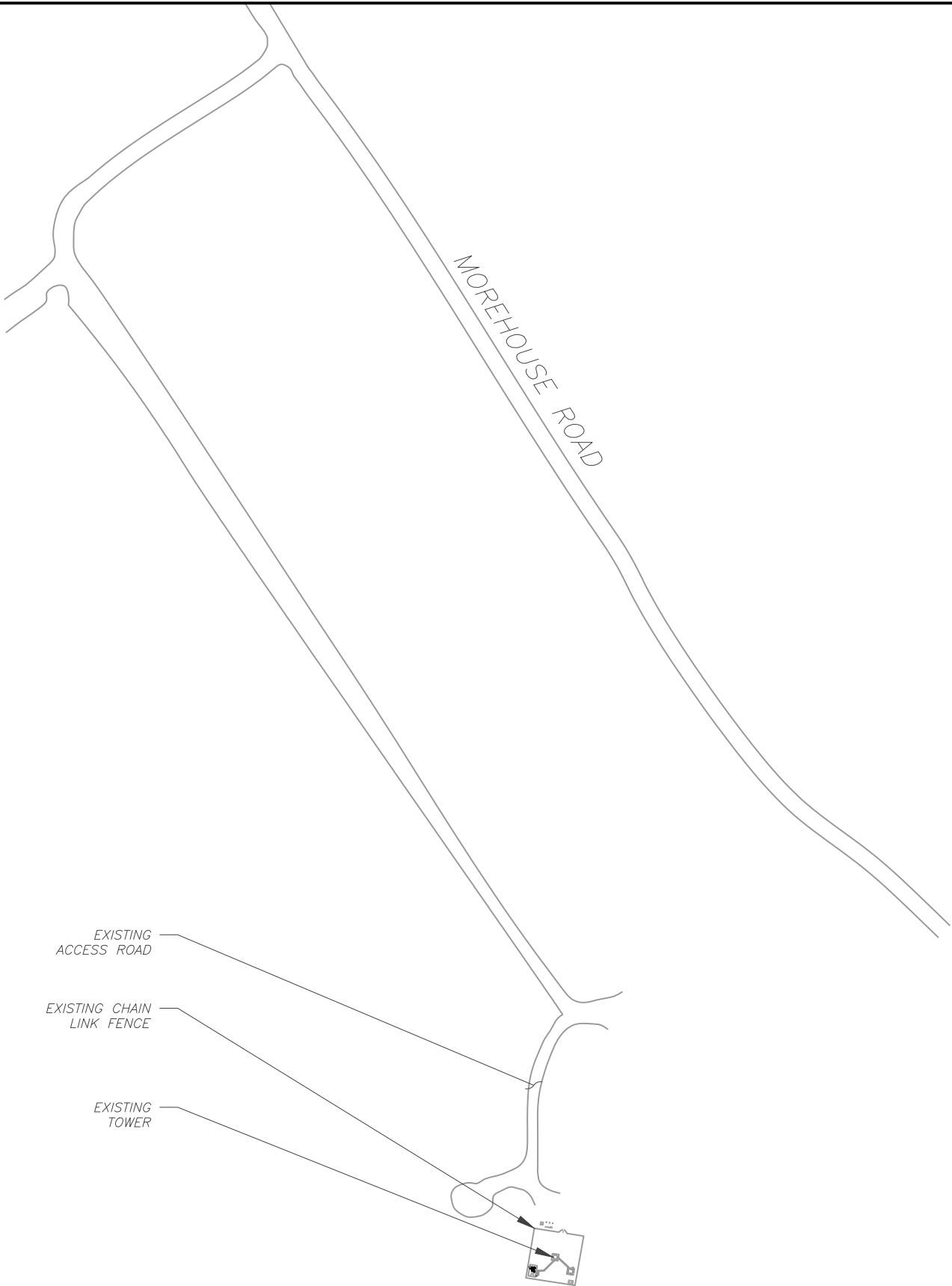
ALL SUGGESTED ELECTRICAL ELEMENTS (SUCH AS BREAKER SIZES, WIRE SIZES, CONDUITS SIZES ARE FOR ZONING PURPOSES ONLY. IT IS THE RESPONSIBILITY TO OF THE ELECTRICAL CONTRACTOR TO CONFIRM COMPLIANCE WITH LOCAL ELECTRICAL CODES AND PASS ALL APPLICABLE AND NECESSARY INSPECTIONS. IN SOME EVENTS, IT MAY BE NECESSARY TO PERFORM AN ELECTRICAL LOAD STUDY TO VERIFY THE CAPACITY OF THE EXISTING SERVICE. THIS IS NOT THE RESPONSIBILITY OF CONCORDIA. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

3.

CONTRACTOR SHALL FIELD LOCATE ALL BELOW GRADE GROUND LINES AND UTILITY LINES PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR RELOCATION OF ALL UTILITIES AND GROUND LINES THAT MAY BECOME DISTURBED OR CONFLICTING IN THE COURSE OF CONSTRUCTION.
- ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO ATC ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH ATC ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM ATC ENGINEERING SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
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|------|--------------|----|----------|
| △0 | CONSTRUCTION | AM | 09/03/21 |
| △1 | | | |
| △2 | | | |
| △3 | | | |
| △4 | | | |
- ATC SITE NUMBER:
207956
- ATC SITE NAME:
EASTON
- T-MOBILE SITE NAME:
CTFF836A
- SITE ADDRESS:
515 MOREHOUSE ROAD
EASTON, CT 06612
-
-
- | | |
|--------------|-------------|
| DATE DRAWN: | 09/03/21 |
| ATC JOB NO: | 13701258_D3 |
| CUSTOMER ID: | CTFF836A |
| CUSTOMER #: | CTFF836A |
- GENERAL NOTES
- SHEET NUMBER:
G-002
- REVISION:
0

NOTES:

1. BOUNDARY LINES OBTAINED FROM JURISDICTION COUNTY/CITY ONLINE GIS.
2. ZONING INFORMATION OBTAINED FROM ZONING ORDINANCE.



1 OVERALL SITE PLAN

0 200' 400'

SCALE: 1"=200' (11X17)
1"=100' (22X34)



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EASTON, CT 06612

SEAL:



DATE DRAWN:	09/03/21
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CUSTOMER #:	CTFF836A

OVERALL SITE PLAN

SHEET NUMBER:
C-001

REVISION:
0

SITE PLAN NOTES:

1.

THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2.

ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
3.

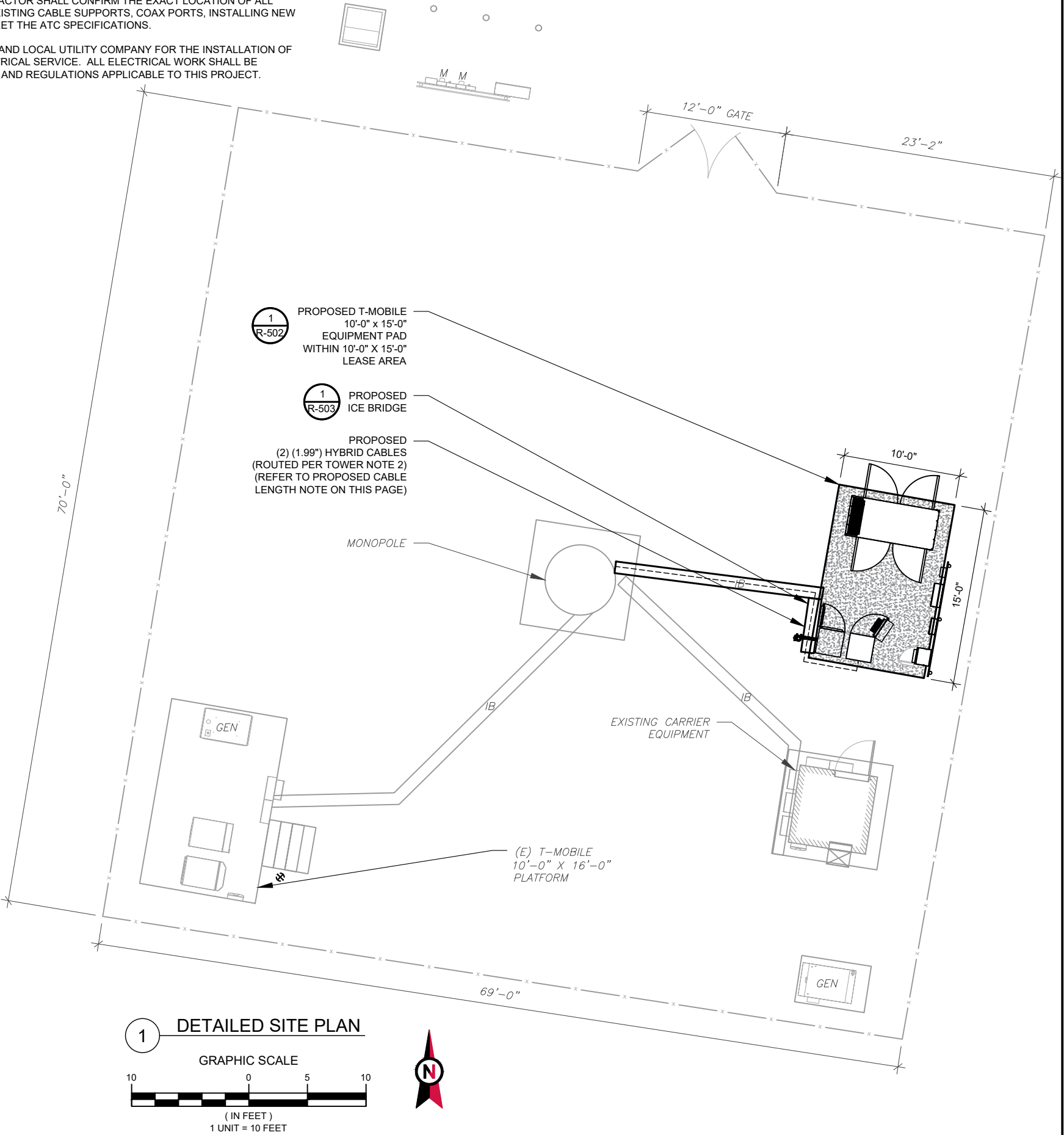
IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.

LEGEND	
⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACAL
HH, V	HAND HOLE, VAULT
IB	ICE BRIDGE
K	KENTROX BOX
LC	LIGHTING CONTROL
M	METER
PB	PULL BOX
PP	POWER POLE
T	TELCO
TRN	TRANSFORMER
— x —	CHAINLINK FENCE

- PROPOSED CABLE LENGTH:**
1.

ESTIMATED LENGTH OF PROPOSED CABLE IS 177'. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES), CDS DEFER TO GREATEST CABLE LENGTH.
2.

ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.



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1	REV. CONSTRUCTION	AM	09/08/21
2	REV. CONSTRUCTION	AM	09/17/21

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207956

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EASTON

T-MOBILE SITE NAME:
CTFF836A

SITE ADDRESS:
515 MOREHOUSE ROAD
EASTON, CT 06612

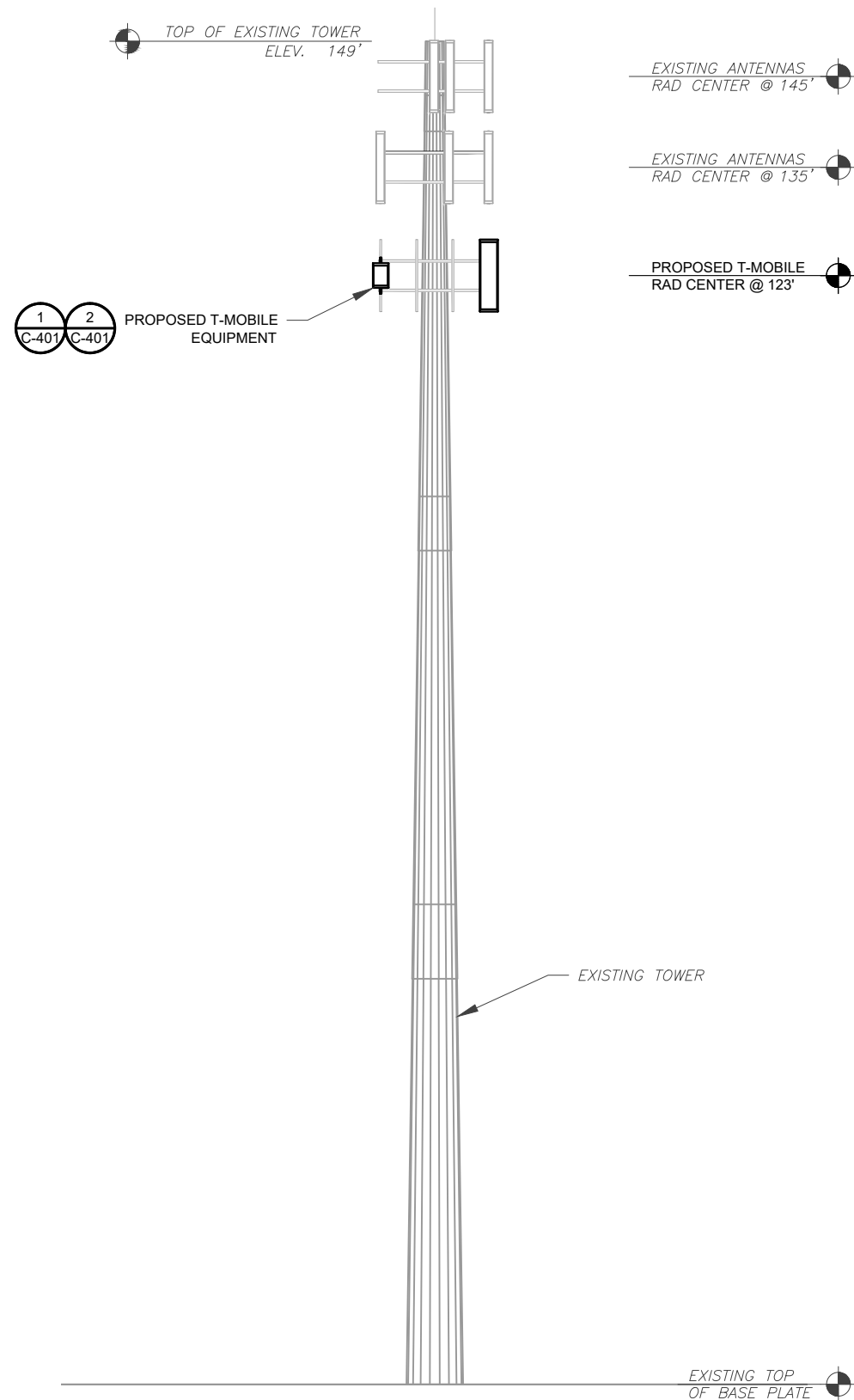


DATE DRAWN:	09/17/21
ATC JOB NO:	13701258_D3
CUSTOMER ID:	CTFF836A
CUSTOMER #:	CTFF836A

DETAILED SITE PLAN

SHEET NUMBER:
C-101

REVISION:
2



PER MOUNT ANALYSIS COMPLETED BY CENTEK ENGINEERING, DATED 07/21/21, THE PROPOSED MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.

- TOWER NOTE:**
1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
 2. WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
 3. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
 4. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

1 TOWER ELEVATION
SCALE: N.T.S.



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207956

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CTFF836A

SITE ADDRESS:
515 MOREHOUSE ROAD
EASTON, CT 06612

SEAL:



DATE DRAWN:	09/17/21
ATC JOB NO:	13701258_D3
CUSTOMER ID:	CTFF836A
CUSTOMER #:	CTFF836A

TOWER ELEVATION

SHEET NUMBER:

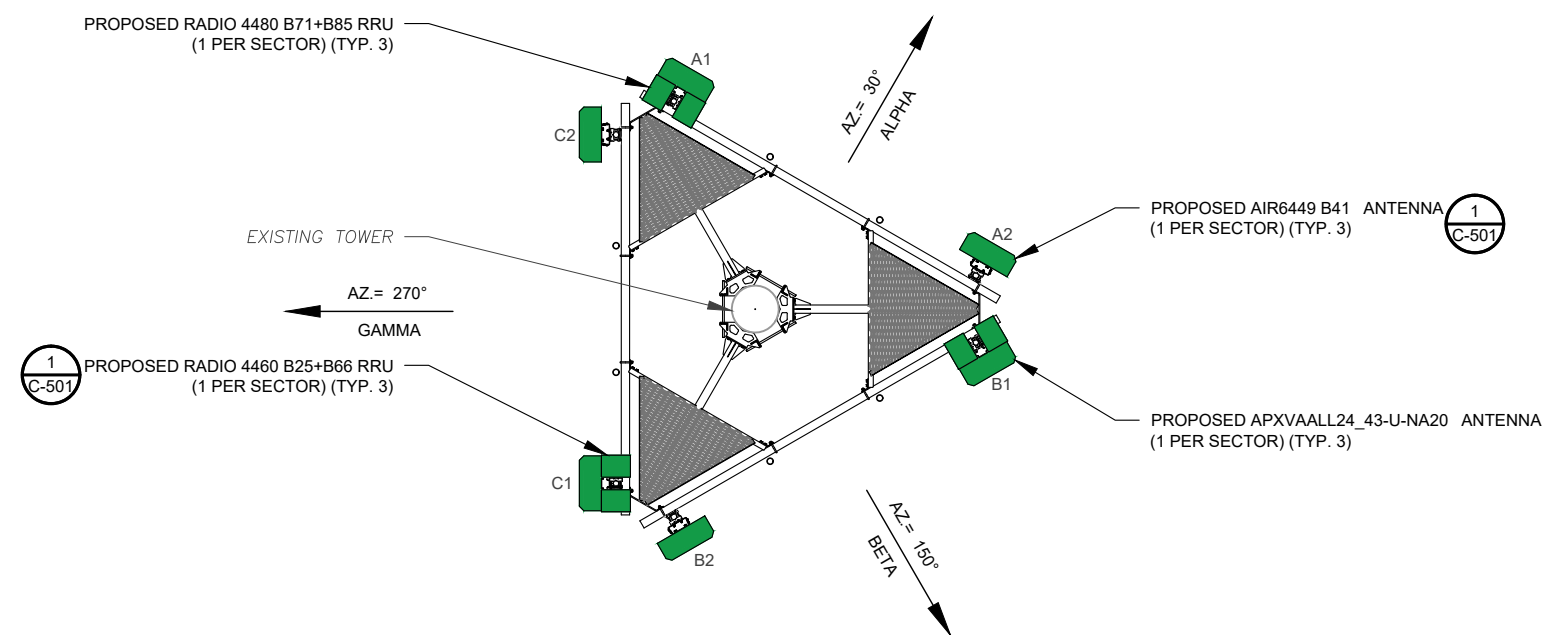
C-201

REVISION:

2



PER MOUNT ANALYSIS COMPLETED BY CENTEK ENGINEERING, DATED 07/21/21, THE PROPOSED MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.



1 FINAL ANTENNA PLAN
SCALE: N.T.S.

FINAL ANTENNA SCHEDULE								
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT	DISTRIBUTION BOX / CABLING
ALPHA	123'	30°	A1	APXVAALL24_43-U-NA20	L700/L600/L2100/L1900, G1900/U1900/U2100	-	RADIO 4480 B71+B85 RADIO 4460 B25+B66	(2) 1.99" HYBRID
			A2	AIR6449 B41	L2500	-	-	
BETA	123'	150°	B1	APXVAALL24_43-U-NA20	L700/L600/L2100/L1900, G1900/U1900/U2100	-	RADIO 4480 B71+B85 RADIO 4460 B25+B66	
			B2	AIR6449 B41	L2500	-	-	
GAMMA	123'	270°	C1	APXVAALL24_43-U-NA20	L700/L600/L2100/L1900, G1900/U1900/U2100	-	RADIO 4480 B71+B85 RADIO 4460 B25+B66	
			C2	AIR6449 B41	L2500	-	-	
1. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS. 2. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.								

2 ANTENNA SCHEDULE



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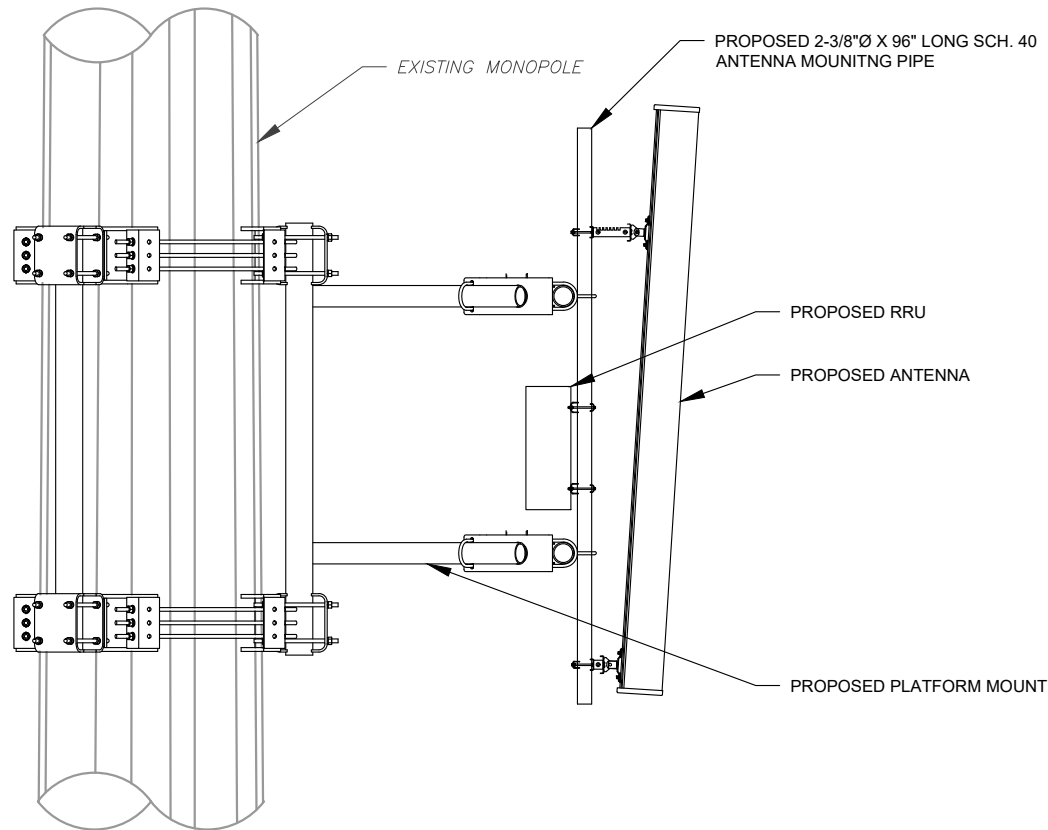
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DATE DRAWN:	09/03/21
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CUSTOMER ID:	CTFF836A
CUSTOMER #:	CTFF836A

ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-401	0



1 PROPOSED ANTENNA MOUNTING DETAIL (ELEVATION)
SCALE: NOT TO SCALE



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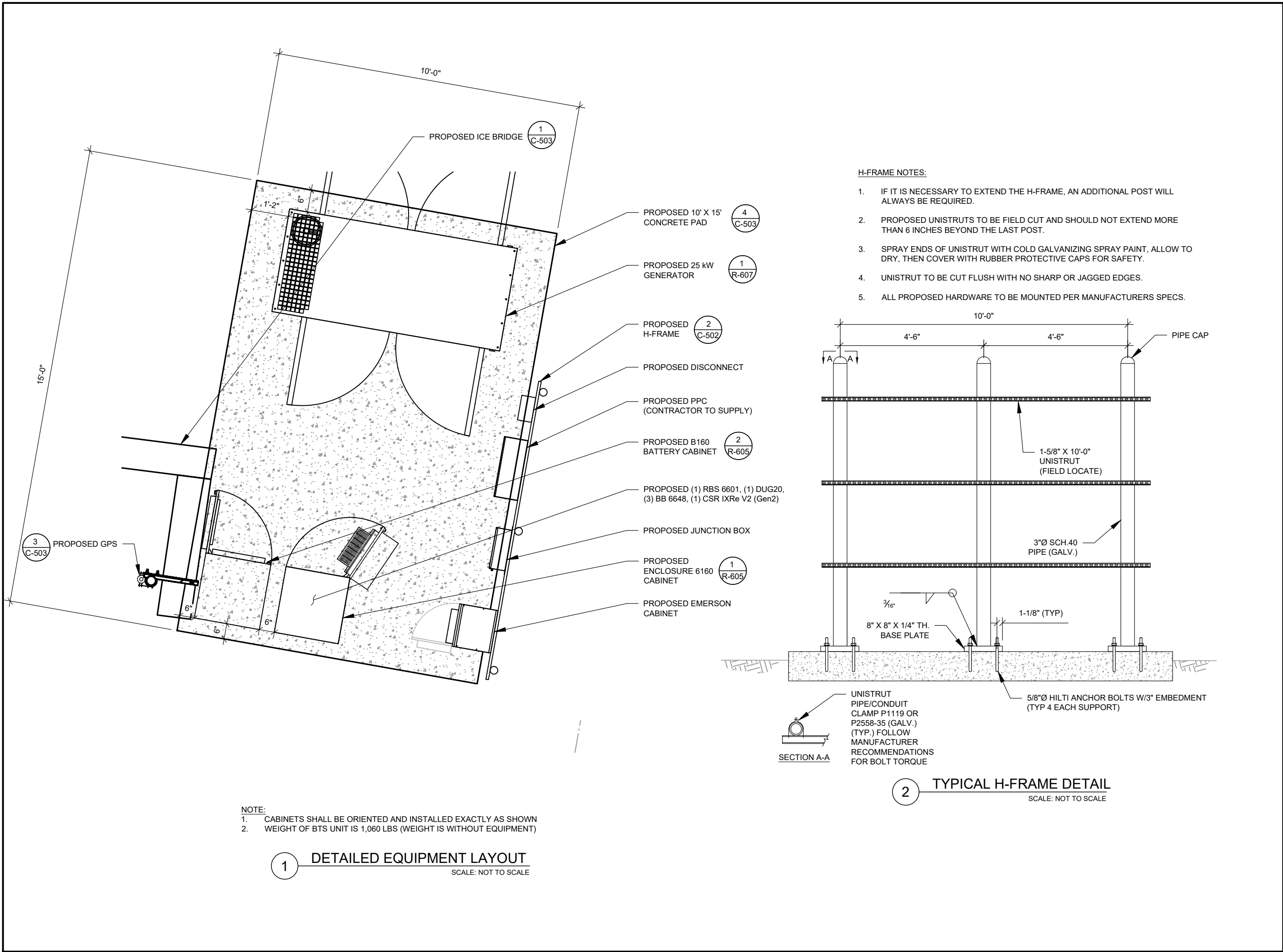
MOUNT DETAILS

SHEET NUMBER:

C-501

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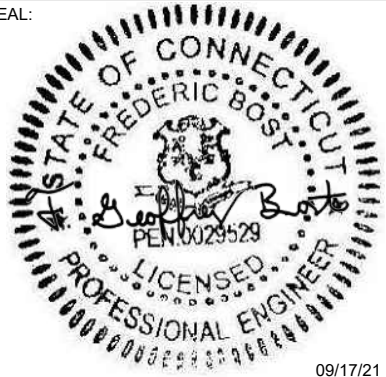
ATC SITE NUMBER:
207956

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CTFF836A

SITE ADDRESS:
515 MOREHOUSE ROAD
EASTON, CT 06612

SEAL:



DATE DRAWN:	09/17/21
ATC JOB NO:	13701258_D3
CUSTOMER ID:	CTFF836A
CUSTOMER #:	CTFF836A

CONSTRUCTION DETAILS

SHEET NUMBER:

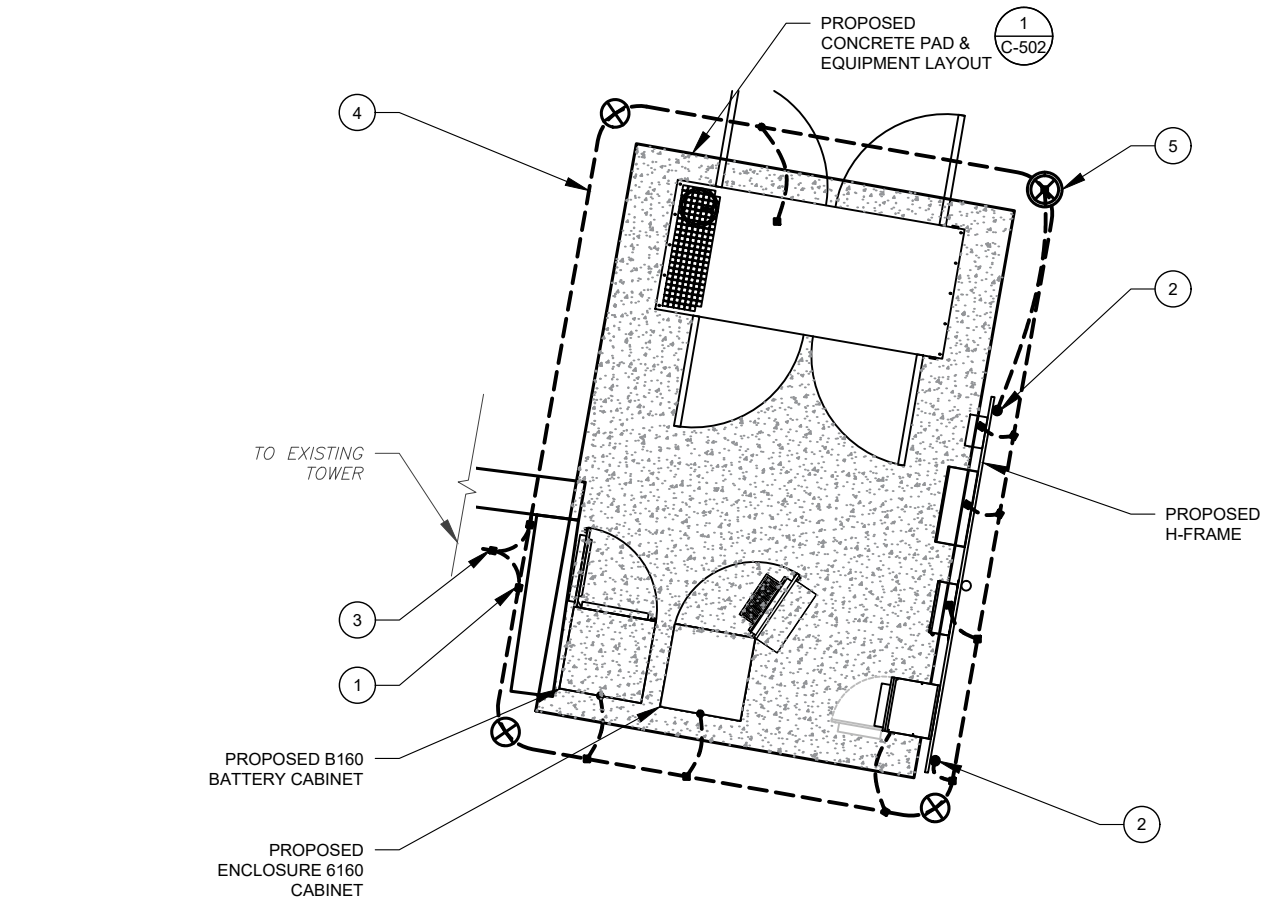
C-502

REVISION:

2

- GROUNDING NOTES:**
- ALL EQUIPMENT ENCLOSURES, DEVICES AND CONDUITS SHALL BE GROUNDED TO CONFORM WITH THE LATEST REQUIREMENTS OF THE NEC BY THE INSTALLATION OF A SEPARATE, GREEN, INSULATED GROUND CONDUCTOR FOR ALL FEEDER AND BRANCH CIRCUITS. GROUND CONDUCTORS SHALL BE OF THE SIZE INDICATED ON THE DRAWINGS. GROUND CONDUCTORS SHALL BE CONTINUOUS IN LENGTH AND SHALL BE BONDED TO EACH ENCLOSURE THEY PASS THROUGH. CONDUIT SHALL NOT BE USED AS A GROUNDING CONDUCTOR.
 - GROUNDING CONDUCTORS SHALL:
 - BE #2 AWG SOLID BARE TINNED COPPER (SBTC) FOR ALL GROUNDING SYSTEM WIRE UNLESS OTHERWISE NOTED, OR OTHERWISE REQUIRED BY CODE.
 - BE MINIMUM 12" BEND RADIUS. KEEP NUMBER OF BENDS TO A MINIMUM.
 - AVOID LONG BONDING CONNECTION RUNS. MAKE DIRECT AS POSSIBLE.
 - NOT HAVE ANY U-SHAPED RUNS.
 - BE IN NON-METALLIC CONDUIT ONLY, IF IN CONDUIT.
 - BE PLACED THROUGH NON-METALLIC SLEEVES IN FLOORS, WALLS, CEILINGS, ETC.
 - PROTECTED IN NON-METALLIC CONDUIT WHERE EXPOSED ABOVE GRADE.
 - INSTALL ALL GROUNDING RINGS AND RADIALS WITH CONDUCTIVE CEMENT, SANKOSHA AS DISTRIBUTED BY ELECTRIC MOTION COMPANY, INC., WINSTED, CT 06098, OR AS SPECIFICALLY INDICATED. INSTALL PER MANUFACTURER'S SPECIFICATIONS.
 - GROUND RINGS SHALL BE:
 - MINIMUM 30" BELOW GRADE, OR BELOW FROST LINE WHICHEVER IS DEEPER.
 - MINIMUM 2' FROM FOUNDATIONS, FOOTINGS, OTHER GROUNDING SYSTEMS AND ALL CONDUCTIVE OBJECTS.
 - WITH MINIMUM 12" BEND RADII.
 - WITH ALL CONNECTIONS IN CONTACT WITH EARTH, BONDED BY EXOTHERMIC WELDING.
 - BONDED TO A SINGLE POINT GROUND (SPG) WITH A SINGLE WIRE AS INDICATED ON DRAWINGS.
 - GROUND RODS SHALL BE:
 - MINIMUM 5/8" DIAMETER.
 - MINIMUM 10' LONG.
 - COPPER-CLAD GALVANIZED STEEL OR STAINLESS STEEL.
 - PLACED IN UNDISTURBED SOIL AND BELOW THE FROST LINE.
 - INSTALLED WITH MINIMUM SEPARATION DISTANCE OF TWICE THE DEPTH OF THE ROD(S), OR AS INDICATED ON DRAWINGS.
 - MINIMUM TWO (2) RODS ON THE TOWER RING OR ONE (1) PER LEG WHICHEVER IS LARGER, MINIMUM FOUR (4) RODS ON EVERY EQUIPMENT BUILDING RING WITH ONE AT EACH CORNER OR AS INDICATED, MINIMUM ONE (1) ROD FOR POWER SERVICE GROUNDING ELECTRODE, AND MINIMUM ONE (1) ROD AT END OF EACH RADIAL.
 - CONDUCTIVE OBJECTS, SUCH AS FENCES, SHALL BE BONDED TO THE GROUNDING SYSTEM IF WITHIN 20' OF THE TOWER GROUNDING SYSTEM, OR 5' OF ANY OTHER GROUNDED COMPONENT.

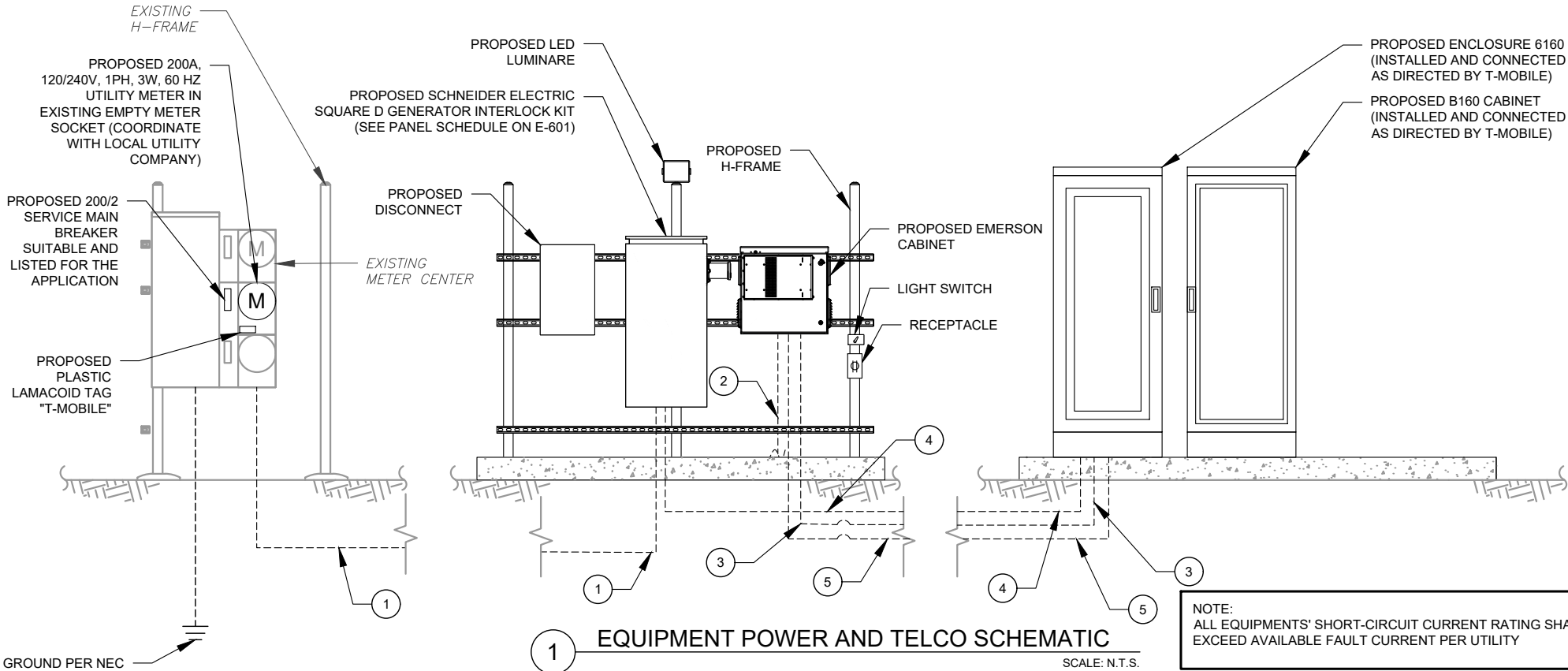
- EQUIPMENT POWER NOTES:**
- 2" CONDUIT W/ 3-#3/0 CU, (1) #6 AWG G, PPC POWER
 - 2" CONDUIT W/ MULE TAPE FOR TELCO FEEDER SERVICE TO TELCO SOURCE PER UTILITY
 - 2-#12, 1 #12G IN 3/4" CONDUIT FROM TELCO CAB TO 6160
 - 3-#1/0, 1-#6 IN 2" CONDUIT
 - 2" CONDUIT, FOR CAT6



GROUNDING PLAN LEGEND:			
---	EXISTING GROUND WIRE	⊗	COPPER GROUND ROD
---	GROUND WIRE	⊗	TEST WELL
■	EXOTHERMIC WELD		
●	MECHANICAL WELD		

- GROUNDING KEYED NOTES:**
- BOND TO TOWER GROUND RING
 - #2 AWG BOND FROM VERTICAL H-FRAME AND ICE BRIDGE POST TO EXTERNAL GROUND RING (TYP. EVERY POST).
 - #2 AWG SBTC BOND FROM TOWER GROUND RING TO EQUIPMENT.
 - EQUIPMENT BOND TO GROUND RING (TYP.)
 - 5/8Ø" X 10 FT GROUND ROD.

1 DETAILED GROUNDING PLAN
SCALE: NOT TO SCALE



1 EQUIPMENT POWER AND TELCO SCHEMATIC
SCALE: N.T.S.

NOTE:
ALL EQUIPMENTS' SHORT-CIRCUIT CURRENT RATING SHALL EXCEED AVAILABLE FAULT CURRENT PER UTILITY



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SEAL:



T-Mobile

DATE DRAWN:	09/17/21
ATC JOB NO:	13701258_D3
CUSTOMER ID:	CTFF836A
CUSTOMER #:	CTFF836A

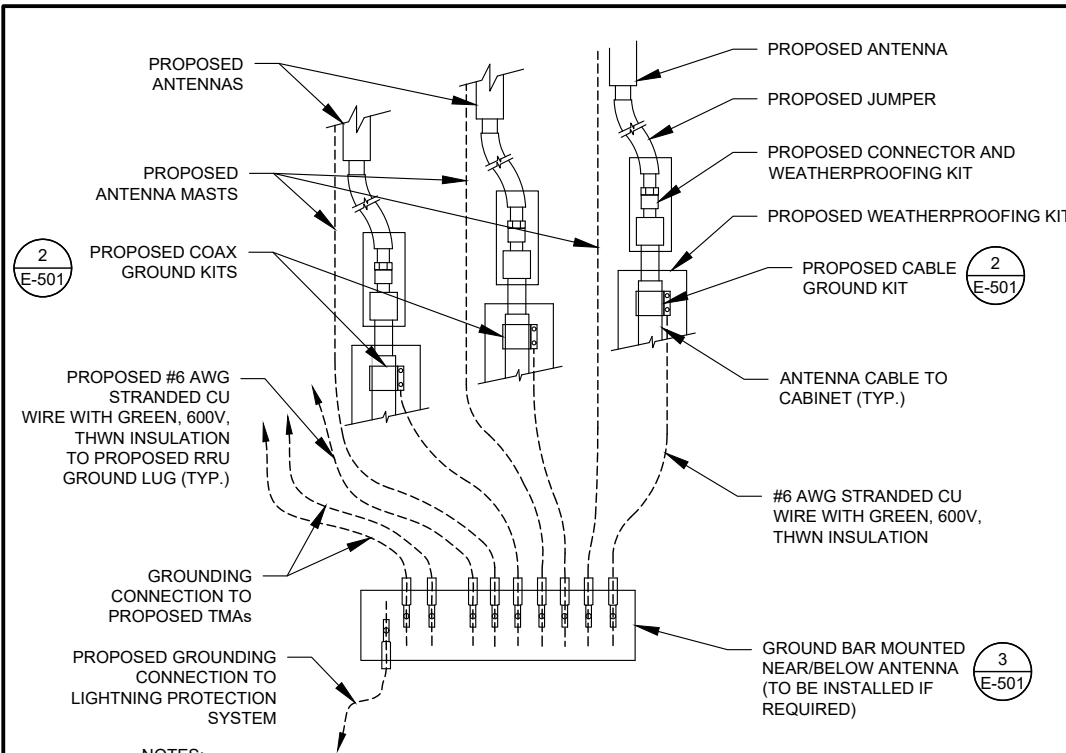
GROUNDING DETAILS & ELECTRICAL SCHEMATIC

SHEET NUMBER:

E-101

REVISION:

2

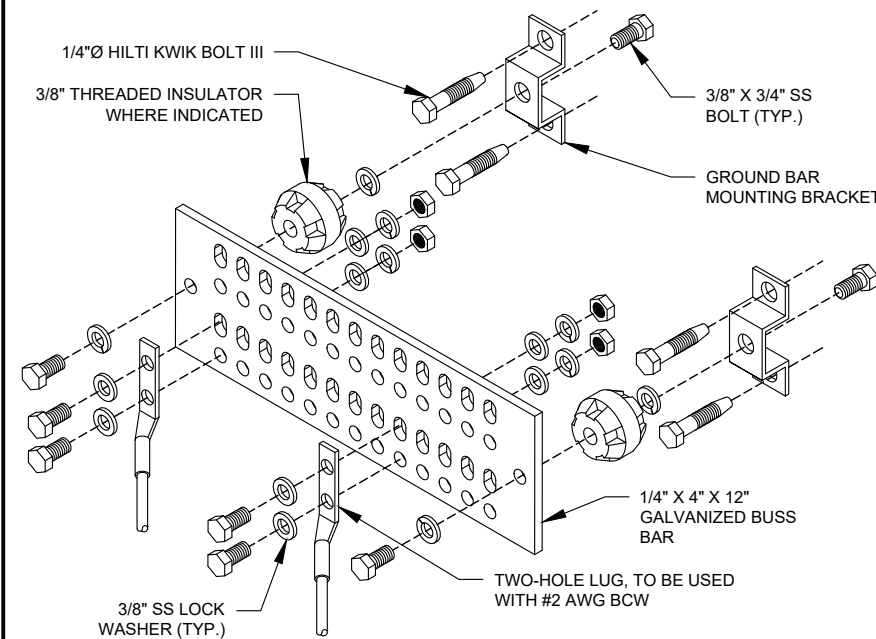


NOTES:

1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH T-MOBILE GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH T-MOBILE GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: N.T.S.

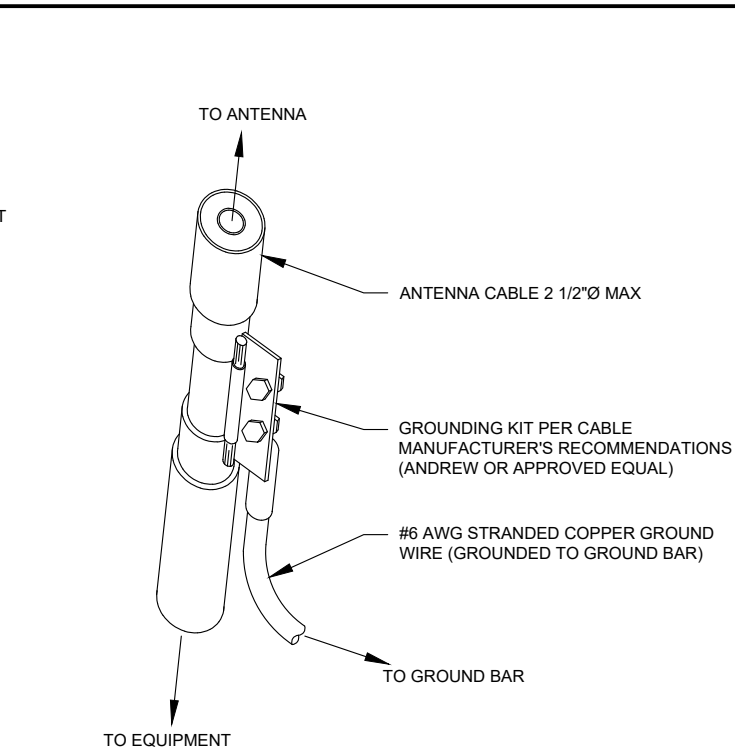


GROUND BAR NOTES

1. GROUND KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR SHALL BE BOLTED TO STRUCTURAL MEMBER OR ANCHORED TO CONCRETE SLAB W/ HILTI KWIK BOLT III.

4 MAIN GROUND BAR DETAIL

SCALE: N.T.S.

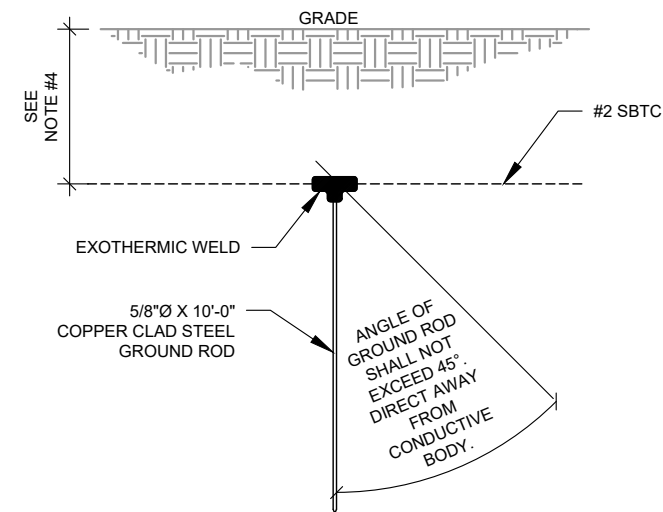


GROUND KIT NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. CONTRACTOR SHALL PROVIDE WEATHERPROOFING KIT (ANDREW PART NUMBER 221213) AND INSTALL/TAPE PER MANUFACTURER'S SPECIFICATIONS.

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: N.T.S.

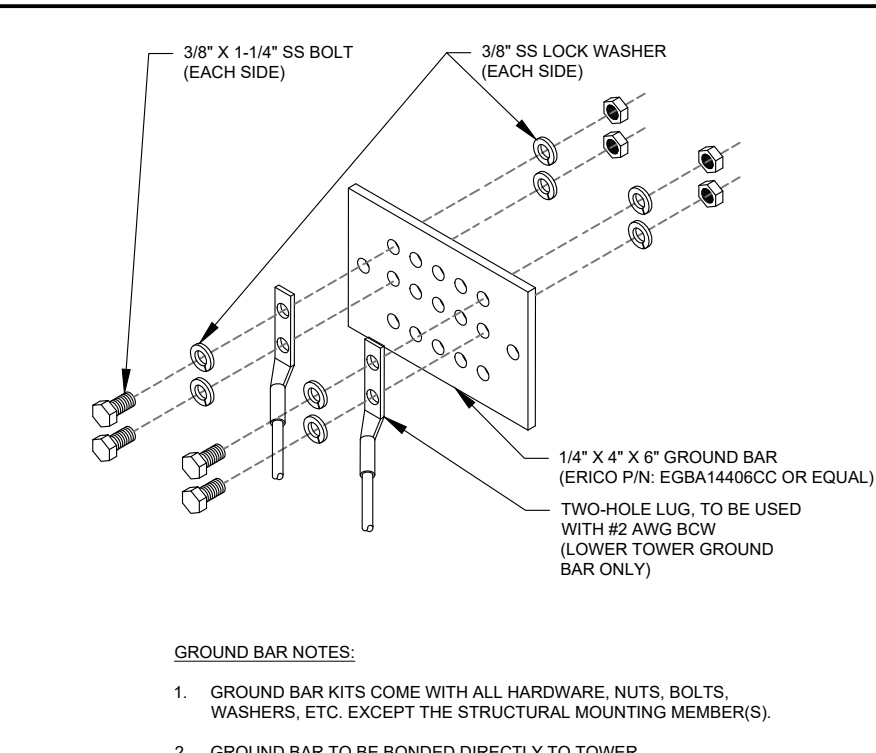


NOTES:

1. SEPARATION DIMENSION TO BE VERIFIED WITH LOCAL UTILITY COMPANY REQUIREMENTS.
2. COORDINATE UTILITY, LOCATE BEFORE DIGGING.
3. CONDUIT TRENCHING DEPTHS AT 36" OR 6" BELOW FROST LINE, WHICHEVER IS GREATER.
4. ALL RING AND RADIAL DEPTHS AT 30" OR 6" BELOW FROST LINE, WHICHEVER IS GREATER.

5 GROUND ROD DETAIL

SCALE: N.T.S.

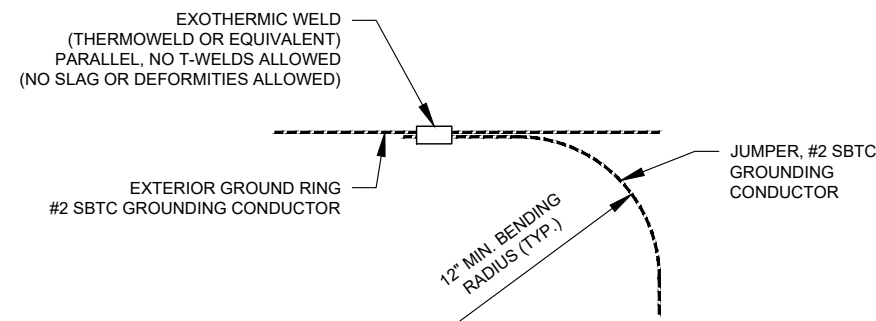


GROUND BAR NOTES:

1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

3 TOWER GROUND BAR DETAIL

SCALE: N.T.S.



6 TIE CONNECTION DETAIL

SCALE: N.T.S.



3227 WELLINGTON COURT
RALEIGH, NC 27615
o: 919-782-2710, f: 919-435-0631
www.engineeredtowersolutions.com

REV.	DESCRIPTION	BY	DATE
0	CONSTRUCTION	AM	09/03/21

ATC SITE NUMBER:
207956

ATC SITE NAME:
EASTON

T-MOBILE SITE NAME:
CTFF836A

SITE ADDRESS:
515 MOREHOUSE ROAD
EASTON, CT 06612

SEAL:



T-Mobile

DATE DRAWN:	09/03/21
ATC JOB NO:	13701258_D3
CUSTOMER ID:	CTFF836A
CUSTOMER #:	CTFF836A

GROUNDING DETAILS

SHEET NUMBER:

E-501

REVISION:

0

PANEL DESIGNATION:

TMO

TYPE:

LIGHTING & APPLIANCE

SYSTEM:

120/240V, 1Ø, 3W, 20 CKT

LOCATION:

TMO LEASE EQUIPMENT AREA

MOUNTING:

SURFACE

MAIN BREAKER (MB):

200A

PANEL NOTES:

PROPOSED

ENCLOSURE:

NEMA 3R

MAIN BUS RATING:

200A

MIN. A.I.C. RATING:

N/A

CONNECTED LOAD (kVA)		BRIEF DESCRIPTION	FEEDER OR BRANCH CIRCUIT							CIRC. NOTES	FEEDER OR BRANCH CIRCUIT							CONNECTED LOAD (kVA)			
A	B		BREAKER		CIRCUIT			POLE NO.	CIRC. NOTES		CIRC. NOTES	POLE NO.	CIRCUIT			BREAKER		A	B		
			AMPS	POLES	WIRE	GND	COND.						COND.	GND	WIRE	POLES	AMPS				
7.50		ENCLOSURE 6160	150	2	3-#1/0	#6	2"	1			2	1/2"	#12	2-#12	1	20	RECEPTACLE	0.18			
	7.50							3			4	1/2"	#12	2-#12	1	20	LIGHT		0.50		
0.01								5			6	1/2"	#12	2-#12	1	20	AAV GFCI RECEPTACLE	0.18			
	0.01	SURGE	60	2	3-#6	#10	1"	7			8							0.00			
0.00								9			10									0.00	
	0.00							11			12									0.00	
0.00								13			14							0.00			
	0.00							15			16							0.00			
0.00								17			18							0.00			
	0.00							19			20							0.00			
7.5	7.5									A	B	TOTAL									
								7.9	8.0	15.9	CONNECTED LOAD (kVA)										
								7.9	8.0	15.9	DEMAND LOAD (kVA)					DERATING FACTOR (80%) DEMANDLOAD SIZING: 83 AMPS					

1

PANEL SCHEDULE



AMERICAN TOWER®



ETS
ENGINEERED TOWER
SOLUTIONS, PLLC

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www.engineeredtowersolutions.com

REV.	DESCRIPTION	BY	DATE
0	CONSTRUCTION	AM	09/03/21

ATC SITE NUMBER:
207956

ATC SITE NAME:
EASTON

T-MOBILE SITE NAME:
CTFF836A

SITE ADDRESS:
515 MOREHOUSE ROAD
EASTON, CT 06612

SEAL:



09/03/21



DATE DRAWN:	09/03/21
ATC JOB NO:	13701258_D3
CUSTOMER ID:	CTFF836A
CUSTOMER #:	CTFF836A

PANEL SCHEDULE

SHEET NUMBER:

E-601

REVISION:

0

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7/7/2021

CTFF836A_Coverage Strategy_1_draft_2021-07-07

RAN Template: 67E5A998E_6180

A&L Template: 67E5A998E_1_LAB+1CP

CTFF836A_Coverage Strategy_1_draft

Print Name: Standard

POB: Coverage Strategy_Regional Coverage

Section 5 - RAN Equipment

Existing RAN Equipment

This section is intentionally blank. ----

Proposed RAN Equipment

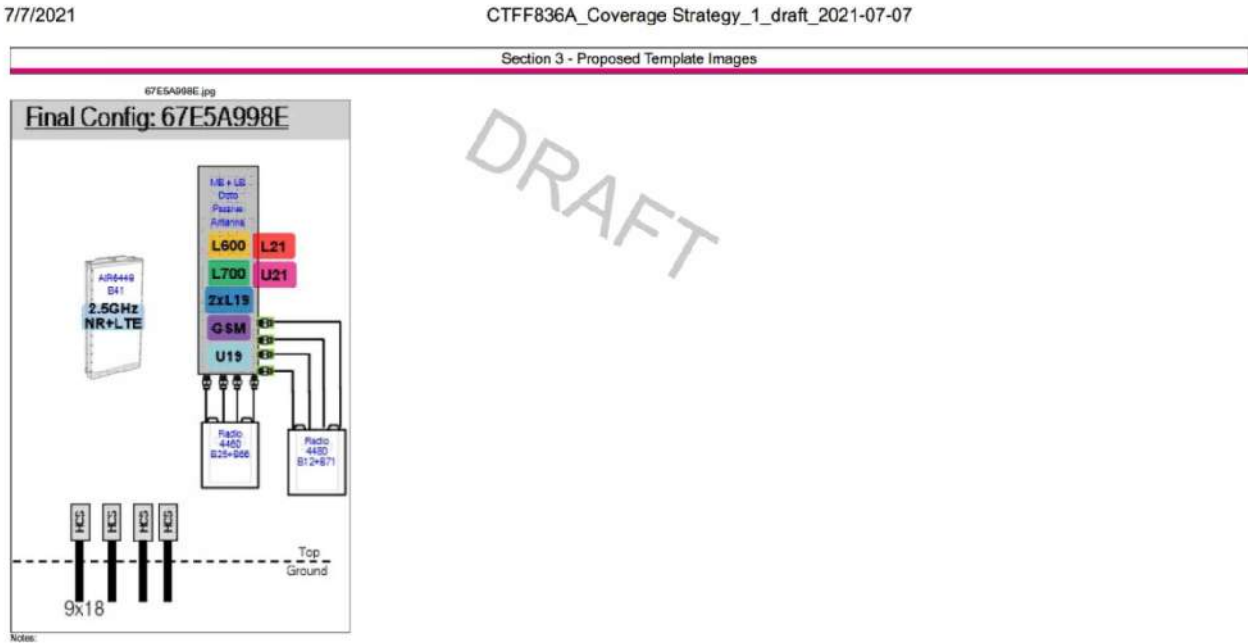
Template: 67E5A998E_6180

Enclosure	1	2	3
Enclosure Type	Enclosure 6180	POB 6001	6180
Baseband	BB 6648 CPH LSB MSB BB 6648 CPH LSB MSB BB 6648 CPH LSB MSB	DUG20 6180	
Hybrid Cable System	Ericsson Hybrid Trunk 624 64VDC 100m (x 2)		
Transport System	CSN 6176 V2 (Gen2)		
RAN Scope of Work:			

1

CABINET CONFIGURATION

SCALE: NOT TO SCALE



2

ANTENNA CONFIGURATION

SCALE: NOT TO SCALE

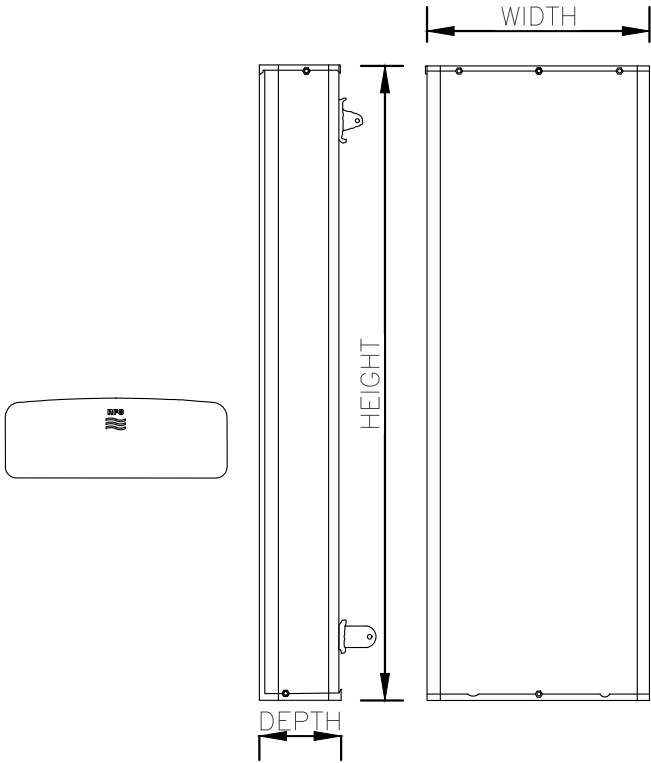
NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL : RFDS

SHEET NUMBER:
R-601

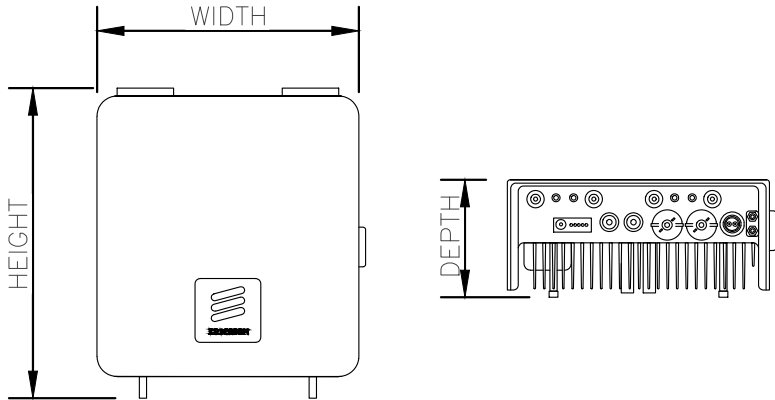
REVISION:
0

HEIGHT	WIDTH	DEPTH	WEIGHT
95.90"	24.00"	8.50"	149.90 LBS



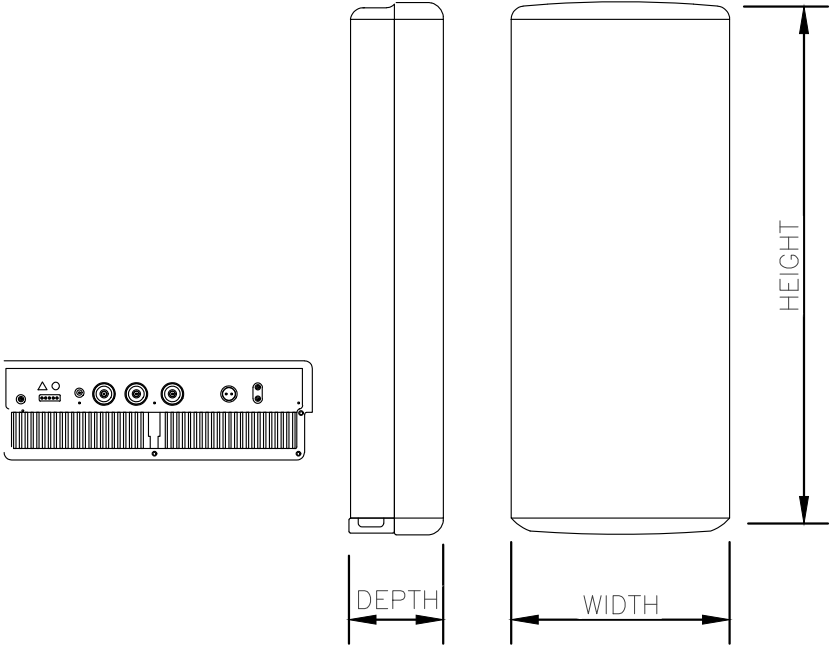
1 RFS - APXVALL24 43-U-NA20 ANTENNA DETAIL
SCALE: N.T.S.

HEIGHT	WIDTH	DEPTH	WEIGHT
19.60"	15.70"	12.10"	109.00 LBS



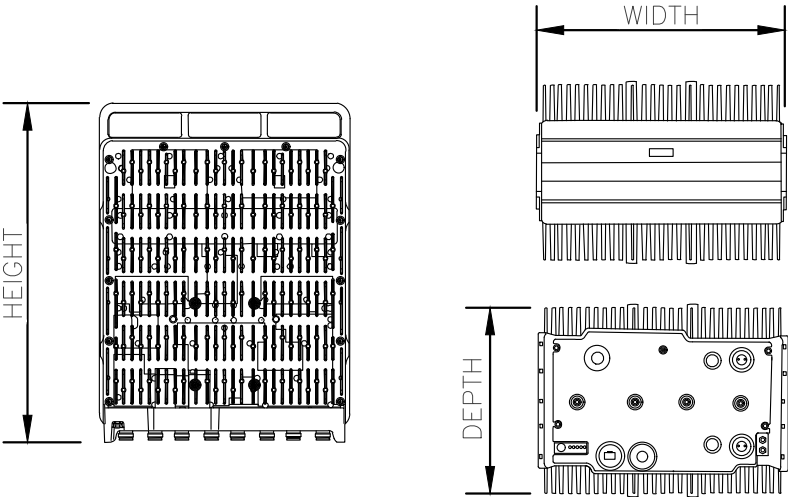
3 RADIO 4460 B25+B66 DETAIL
SCALE: N.T.S.

HEIGHT	WIDTH	DEPTH	WEIGHT
33.11"	20.51"	8.54"	114.63 LBS



2 ERICSSON - AIR6449 B41 DETAIL
SCALE: N.T.S.

HEIGHT	WIDTH	DEPTH	WEIGHT
21.80	15.70"	07.50"	92.60 LBS



4 RADIO 4480 B71+B85A DETAIL
SCALE: N.T.S.

SUPPLEMENTAL:
EQUIPMENT DETAILS

SHEET NUMBER:

R-602

REVISION:

0



Structural Analysis Report

Antenna Mount Analysis

Proposed T-Mobile Upgrade

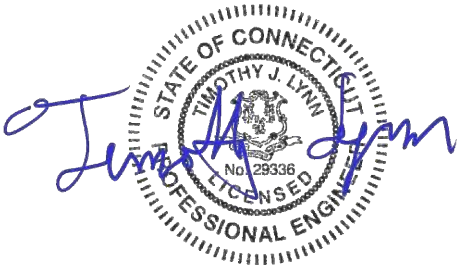
T-Mobile Site #: CTFF836A

515 Morehouse Road
Easton, CT

Centek Project No. 21085.01

Date: July 13, 2021
Rev 1: July 21, 2021

Max Stress Ratio = 83.8%



Prepared for:
T-Mobile USA
35 Griffin Road
Bloomfield, CT 06002



July 21, 2021

Mr. Dan Reid
Transcend Wireless
10 Industrial Ave
Mahwah, NJ 07430

Re: Structural Letter ~ Antenna Mount
T-Mobile – Site Ref: CTFF836A
515 Morehouse Road
Easton, CT 06612

Centek Project No. 21085.01

Dear Mr. Reid,

Centek Engineering, Inc. has reviewed the T-Mobile antenna installation at the above-referenced site. The purpose of the review is to determine the structural adequacy of the proposed 12'-6" low profile platform with handrail (SitePro P/N: RMQP-496-HK). The review considered the effects of wind load, dead load, and ice load in accordance with the 2015 International Building Code as modified by the 2018 Connecticut State Building Code (CTBC), including ASCE 7-10 and ANSI/TIA-222-G Structural Standards for Steel Antenna Towers and Supporting Structures.

The loads considered in this analysis consist of the following:

- T-Mobile:
Low Profile Platform: Three (3) RFS APXVAALL24_43-U-NA20 panel antennas, three (3) Ericsson AIR6449 b41 panel antennas, three (3) Ericsson 4480 B71+B85 remote radio heads and three (3) Ericsson 4460 B25+B66 remote radio heads on the proposed mount with a RAD center elevation of 123-ft +/- AGL.

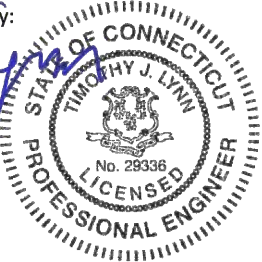
The antenna mount was analyzed per the requirements of the 2015 International Building Code as modified by the 2018 Connecticut State Building Code considering a nominal design wind speed of 93 mph for Easton as required in Appendix N of the 2018 Connecticut State Building Code.

Based on our review of the installation, it is our opinion that the subject antenna mount has sufficient capacity to support the aforementioned antenna configuration.

If there are any questions regarding this matter, please feel free to call.

Respectfully Submitted by:

Timothy J. Lynn, PE
Structural Engineer



Prepared by:

Fernando J. Palacios
Engineer

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SUPPLEMENTAL:
MOUNT ANALYSIS

SHEET NUMBER:

R-603

REVISION:

0

MARATHON

From the World Leader in
VRLA Battery Technology

Designed for durability in Telecommunications and Electric Utility applications, the GNB Industrial Power MARATHON® M12V180FT Battery provides high performance and reliability in long duration discharge applications. The location of the terminals on the front (vs. the top) of the battery greatly facilitates the installation and maintenance of the product when placed in a cabinet enclosure or on a standard relay rack tray. The MARATHON® M12V180FT Battery highlights another example of GNB Industrial Power's extensive experience and world wide leadership in VRLA technology.

“Designed in” Quality Manufacturing

Quality manufacturing processes for the MARATHON® M12V180FT Battery incorporates the industry's most advanced technologies including: an automated helium leak detection system, a computer controlled “fill by weight” acid filler, and a temperature controlled water bath formation process. Each and every unit is capacity tested.

High Performance MARATHON®
M12V180FT Features

- Patented “Diamond Side-Wall” Design maintains structural integrity in higher operating temperatures
- Durable Flame Retardant Polypropylene Container and Cover complies with UL94 V-0; 28% L.O.I.
- Carry Handles facilitates ease of installation
- High-Compression Absorbent Glass Mat (AGM) Technology ensures greater than 99% recombination efficiency
- Integrated Flash Arrestor ultrasonically welded into cover for secure and safe protection
- 10 Year Design Life in float applications @ 25°C (77°F); 12 year @ 20°C (68°F)
- Superior Lead-Tin-Calcium Positive Alloy helps to resist corrosion
- Higher Vent Opening Pressure minimizes unnecessary gassing; one-way self resealing device
- Front Accessible Copper Alloy, 6 mm, Female Terminals ensures low resistance, high integrity connections
- “Easy On/Easy Off” Terminal Post Protector provides added safety
- Wider Bushing allows access for larger probes
- Footprint Ready fits in all standard 23" Relay Rack Applications
- Compliance: Designed in accordance with IEC 60896-21/-22
- No Transport Restrictions: Complies with IATA/ICAO Special Provision A67; DOT-CFR Title 49; IMDG Amendment 34-08

Applications

The MARATHON® M12V180FT Battery incorporates GNB Industrial Power's advanced VRLA technology designed for long life and high performance in:

Telecommunications

- Distributed Power
- PCS
- Cellular
- Broadband

Electric Utility

- Switchgear Control Power
- Communications

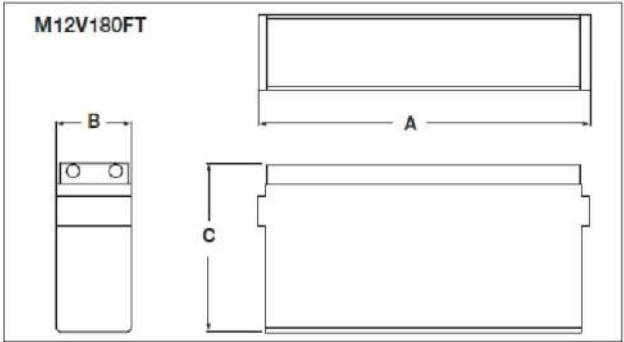


1 M12V180FT BATTERY

SCALE: N.T.S.

MARATHON

Model Number	Voltage	Capacity (AH)		Nominal Dimensions						Nominal Weight	
		8 hr to 1.75 VPC @ 25°C	10 hr to 1.80 VPC @ 20°C	Inches			Millimeters			lbs.	Kg
				A	B	C	A	B	C		
M12V180FT	12	180	175	22.00	4.90	12.50	559	124	318	133	60



Float Voltage & Charging

Constant Voltage charging is recommended

Recommended float voltage: 2.27 VPC @ 25°C (77°F)

Float Voltage Range: 2.25 to 2.30 VPC @ 25°C (77°F)

Equalize Voltage: 2.35 VPC for 24 Hours or 2.40 VPC for 12 Hours

NOTE: Design and/or specifications subject to change without notice. If questions arise, contact your local GNB Industrial Power sales representative for clarification

Marathon® M12V180FT Electrical Data

Model Number	Short Circuit Current Amps	Internal Resistance (mOhms)
M12V180FT	4147	3.0

Marathon M12V180FT Performance Specifications
Amperes @ 25° (77°F)

End Voltage Per Cell	Time																
	24 hr	20 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr	
1.94 Final Volts Per Cell	6.4	7.6	12.2	14.4	15.9	17.7	20.0	22.5	26.1	31.2	39.4	45.6	54.6	69.1	99.8	134.0	
1.92 Final Volts Per Cell	6.8	8.0	12.9	15.3	16.9	18.6	21.1	23.8	27.6	33.1	41.9	48.6	58.3	73.1	98.1	144.5	
1.90 Final Volts Per Cell	7.1	8.4	13.6	16.1	17.8	19.9	22.9	24.9	28.9	34.8	44.0	51.2	61.5	76.6	101.7	154.6	
1.87 Final Volts Per Cell	7.5	8.9	14.3	16.9	18.6	20.8	23.5	25.5	30.6	36.5	45.8	52.8	63.0	79.0	106.7	167.9	
1.86 Final Volts Per Cell	7.7	9.1	14.6	17.3	19.1	21.3	24.1	27.1	31.3	37.4	47.1	54.4	65.0	81.7	112.7	175.2	
1.83 Final Volts Per Cell	7.9	9.3	14.9	17.6	19.5	21.7	24.5	27.6	31.9	38.2	48.0	55.6	66.5	83.8	115.9	181.5	
1.81 Final Volts Per Cell	7.9	9.4	15.1	17.9	19.7	22.0	24.9	27.9	32.3	38.7	48.8	56.5	67.6	85.3	118.2	186.4	
1.80 Final Volts Per Cell	8.0	9.4	15.2	18.0	19.8	22.1	25.0	28.0	32.6	39.0	49.1	56.8	68.0	85.8	119.1	188.5	
1.78 Final Volts Per Cell	8.0	9.5	15.3	18.1	20.0	22.3	25.2	28.2	32.7	39.2	49.3	57.4	68.7	86.7	120.3	191.9	
1.75 Final Volts Per Cell	8.1	9.6	15.4	18.3	20.2	22.5	25.5	28.4	33.0	39.5	49.9	57.9	69.4	87.6	121.7	194.5	

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. GENERAL CONTRACTOR IS TO CHECK WITH THE T-MOBILE CM TO ENSURE THIS IS THE MOST RECENT VERSION OF THE RFDS.

SUPPLEMENTAL:
BATTERY DETAILS

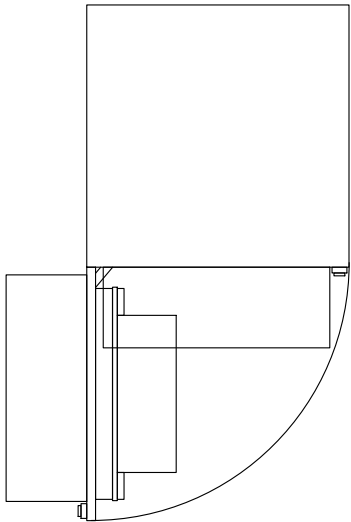
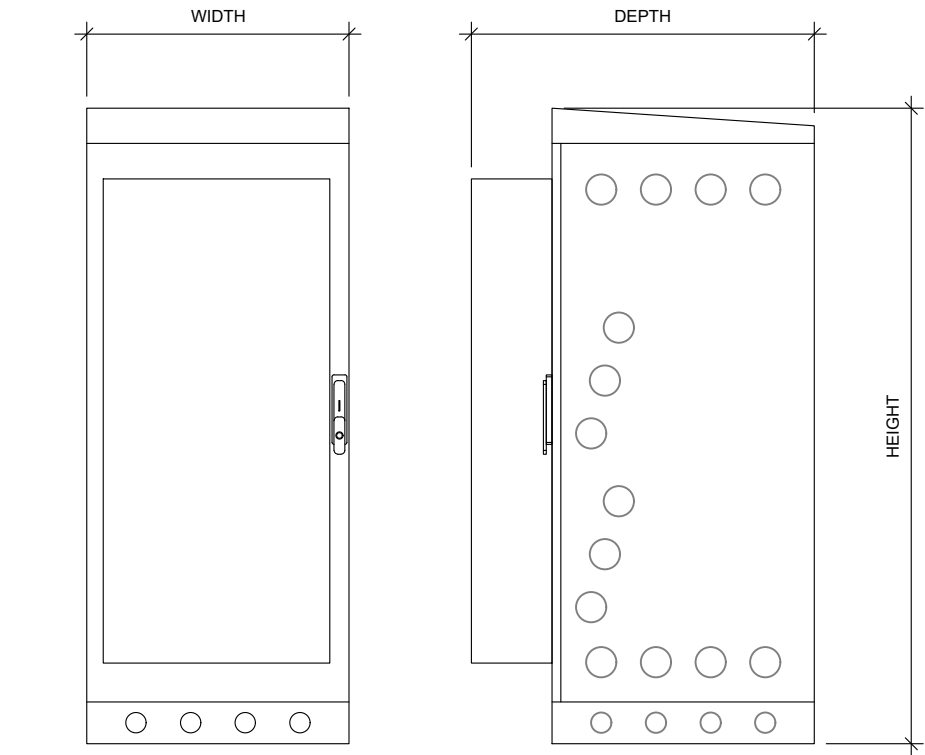
SHEET NUMBER:

R-604

REVISION:

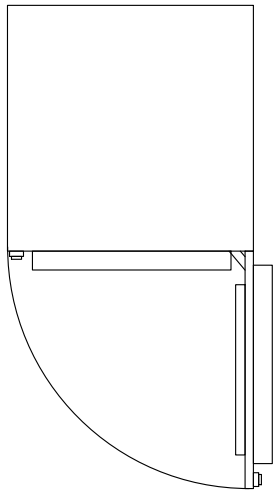
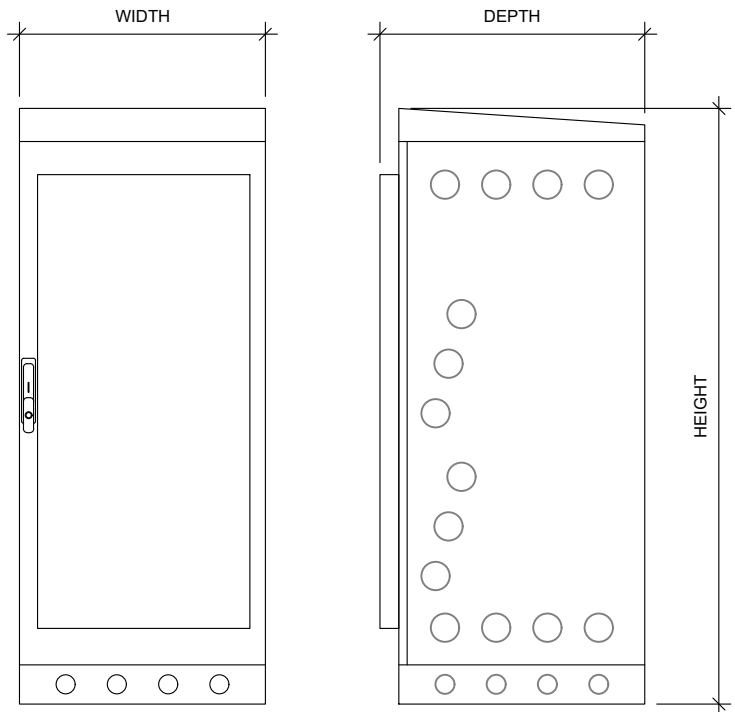
0

HEIGHT	WIDTH	LENGTH	WEIGHT
63.0"	26.0"	34.0"	1000 LBS



1 ERICSSON - 6160
SCALE: NOT TO SCALE

HEIGHT	WIDTH	LENGTH	WEIGHT
63.0"	26.0"	28.0"	2000 LBS



2 ERICSSON - B160
SCALE: NOT TO SCALE

SUPPLEMENTAL:
CABINET DETAILS

SHEET NUMBER:

R-605

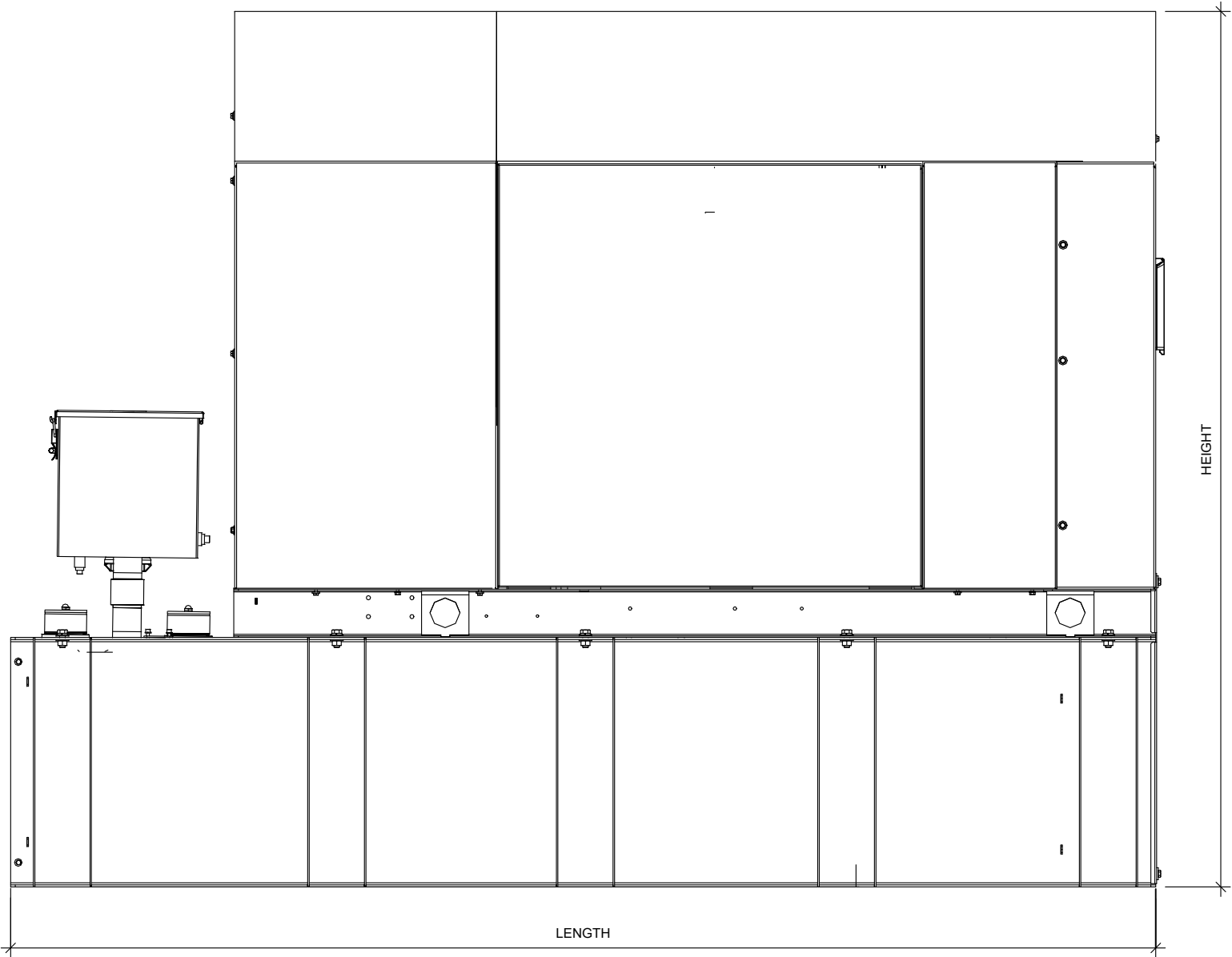
REVISION:

0

GENERAC - RD025

- DIESEL GENERATOR
- STANDARD ENCLOSURE

HEIGHT	WIDTH	LENGTH	WEIGHT
91.70"	35.00"	103.40"	2,984 LBS



2

GENERATOR DETAIL

SCALE: N.T.S.

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SUPPLEMENTAL:
GENERATOR DETAILS

SHEET NUMBER:

R-606

REVISION:

0



AMERICAN TOWER®
C O R P O R A T I O N

Structural Analysis Report

Structure : 149 ft Monopole
ATC Site Name : Easton, CT
ATC Asset Number : 207956
Engineering Number : 13701258_C3_03
Proposed Carrier : T-MOBILE
Carrier Site Name : CTFF836A
Carrier Site Number : CTFF836A
Site Location : 515 Morehouse Road
Easton, CT 06612
41.235600,-73.285400
County : Fairfield
Date : August 5, 2021
Max Usage : 28%
Result : Pass

Prepared By:
Sarah Nagy
Engineer Intern

Reviewed By:



Authorized by "EOR"
06 Aug 2021 03:38:58

COA: PEC.0001553



Table of Contents

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

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 149 ft monopole to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower Drawings	Sabre Job #172085B, dated October 19, 2017
Foundation Drawing	Sabre Job #172085B, dated October 19, 2017
Geotechnical Report	Terracon Project #J2175120, dated September 29, 2017
Mount Analysis	Centek Project #21085.01, dated July 21, 2021

Analysis

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

Basic Wind Speed:	118 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Spectral Response:	$S_s = 0.22$, $S_1 = 0.05$
Site Class:	D - Stiff Soil

Conclusion

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

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

Existing and Reserved Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
145.0	3	Alcatel-Lucent RRH2X60-AWS	Triangular Platform with Handrails	(2) 1 5/8" Hybriflex	VERIZON WIRELESS
	6	JMA Wireless X7C-FRO-660-VR0			
	6	Amphenol Antel WWX063X19G00			
	2	RFS DB-T1-6Z-8AB-OZ			
	3	Alcatel-Lucent RRH2x60			
	3	Alcatel-Lucent B13 RRH4x30-4R			
135.0	6	KMW EPBQ-654L8H8-L2	Sector Frame	(3) 2" Carflex Non-Metallic Conduit (2) 0.39" (10mm) Fiber Trunk (6) 0.76" (19.2mm) 8 AWG 6	AT&T MOBILITY
	3	CCI HPA65R-BU8A			
	3	Ericsson RRUS 32 (50.8 lbs)			
	2	Raycap DC6-48-60-18-8C			
	3	Ericsson RRUS 4478 B14			
	3	Ericsson RRUS 4449 B5, B12			
	1	Raycap DC6-48-60-0-8C-EV			
	3	Ericsson RRUS 4415 B25			

Equipment to be Removed

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
No loading was considered as removed as part of this analysis.					

Proposed Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
123.0	3	Ericsson Radio 4460 B25+B66	Triangular Platform with Handrails	(3) 1.99" (50.7mm) Hybrid	T-MOBILE
	3	Ericsson Radio 4480 B71+B85A			
	3	Ericsson Air6449 B41			
	3	RFS APXVAALL24 43-U-NA20			

¹ Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed lines inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	28%	Pass
Shaft	25%	Pass
Base Plate	16%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	3,254.3	20%
Axial (Kips)	66.4	7%
Shear (Kips)	32.5	26%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
123.0	Ericsson Radio 4460 B25+B66	T-MOBILE	0.360	0.351
	Ericsson Radio 4480 B71+B85A			
	Ericsson Air6449 B41			
	RFS APXVAALL24 43-U-NA20			

*Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-H



Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

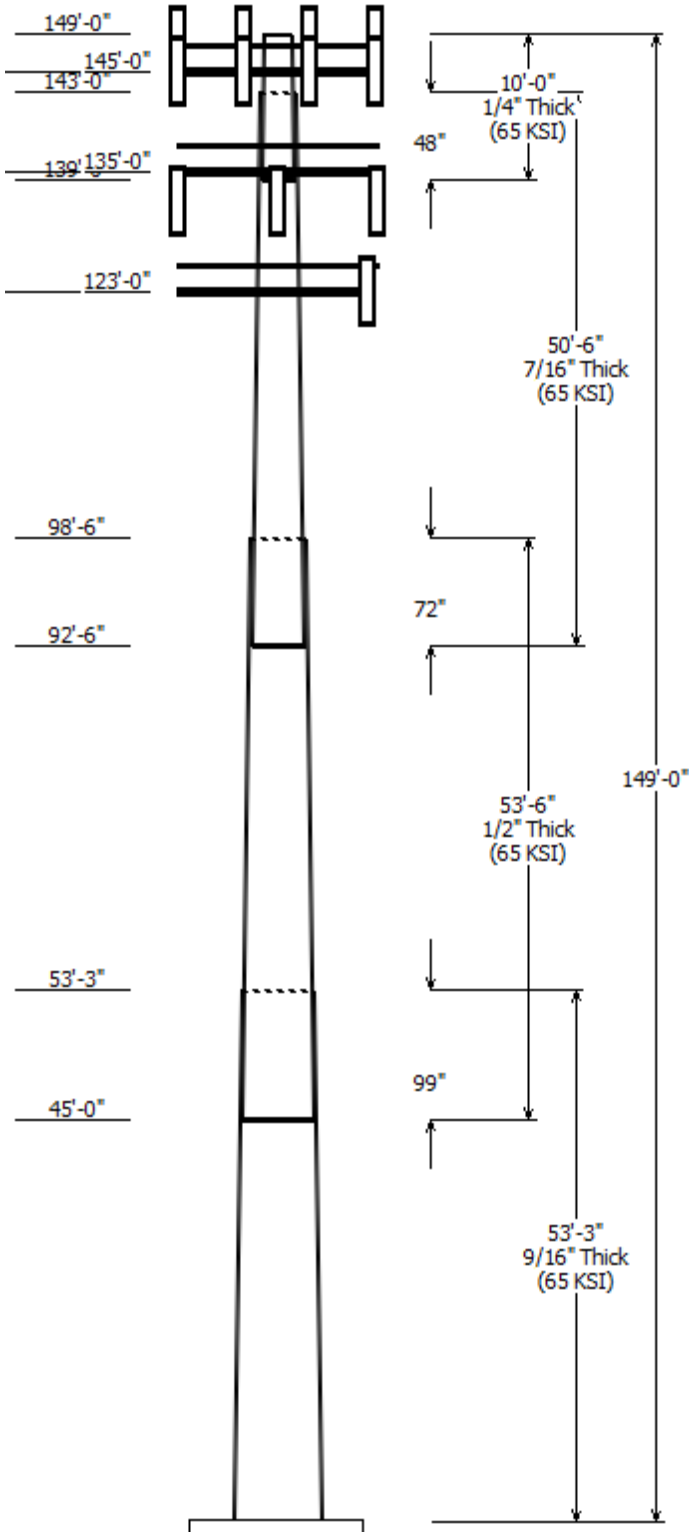
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates and subsidiaries (collectively “American Tower”) are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

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



Job Information

Client : T-MOBILE
 Pole : 207956
 Location : Easton, CT
 Description :
 Shape : 18 Sides
 Height : 149.00 (ft)
 Base Elev (ft): 0.00
 Taper: 0.353254in/ft

Code: ANSI/TIA-222-H
 Risk Category : II
 Exposure : C
 Topo Method : Method 1
 Topographic Category : 1

Sections Properties

Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Steel Grade
		Accross	Flats Bottom				
1	53.250	55.50	74.32	0.563		0.000	18 Sides 65
2	53.500	40.52	59.42	0.500	Slip Joint	99.000	18 Sides 65
3	50.500	25.68	43.51	0.438	Slip Joint	72.000	18 Sides 65
4	10.000	24.06	27.59	0.250	Slip Joint	48.000	18 Sides 65

Discrete Appurtenance

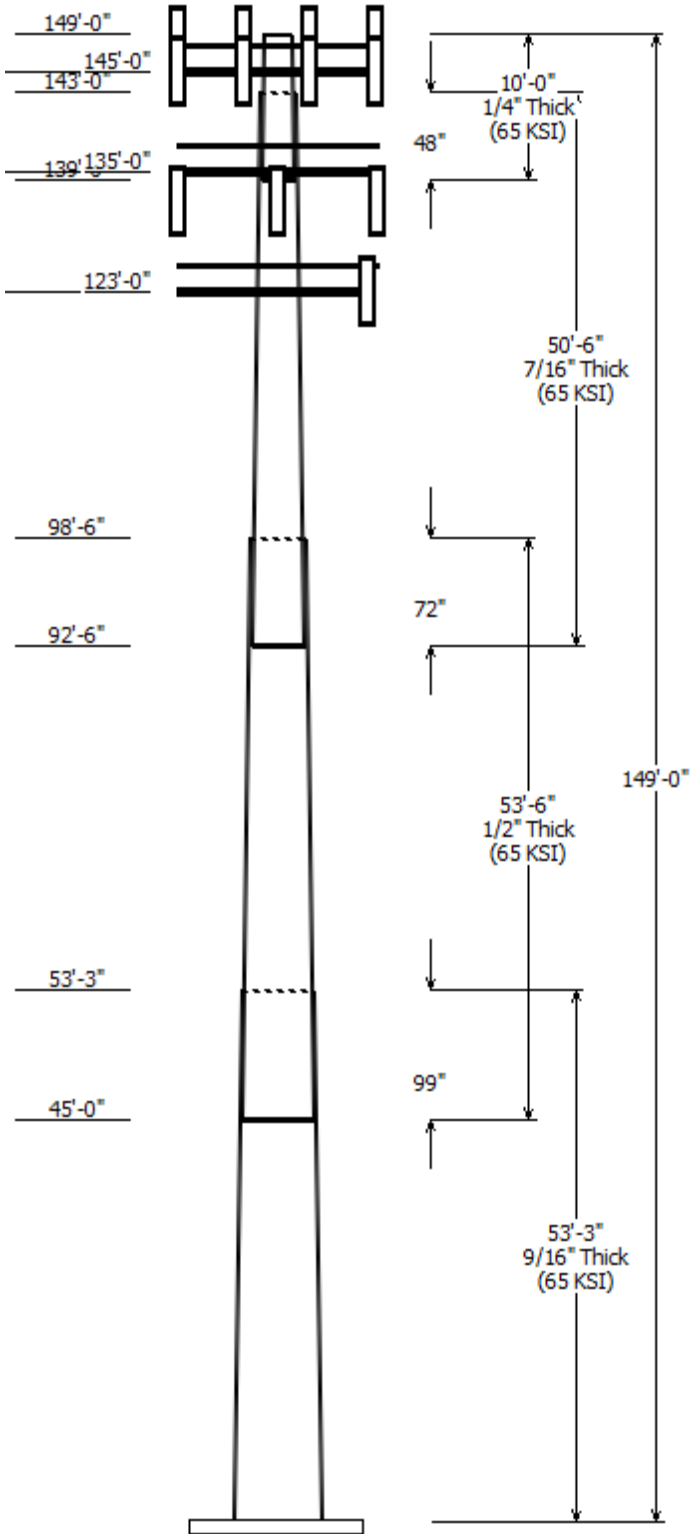
Attach Elev (ft)	Force Elev (ft)	Qty	Description
145.000	145.000	1	Generic Round Platform with
145.000	145.000	6	JMA Wireless X7C-FRO-660-
145.000	145.700	6	Amphenol Antel
145.000	145.000	2	RFS DB-T1-6Z-8AB-0Z
145.000	145.000	3	Alcatel-Lucent RRH2x60
145.000	147.600	3	Alcatel-Lucent B13 RRH4x30-4R
145.000	145.000	3	Alcatel-Lucent RRH2X60-AWS
135.000	135.000	3	Generic Round Sector Frame
135.000	134.500	6	KMW EPBQ-654L8H8-L2
135.000	134.500	3	CCI HPA65R-BU8A
135.000	134.200	3	Ericsson RRUS 32 (50.8 lbs)
135.000	136.200	2	Raycap DC6-48-60-18-8C
135.000	136.300	3	Ericsson RRUS 4478 B14
135.000	134.700	3	Ericsson RRUS 4449 B5, B12
135.000	136.400	3	Ericsson RRUS 4415 B25
135.000	136.300	1	Raycap DC6-48-60-0-8C-EV
123.000	123.000	1	Generic Flat Platform with Han
123.000	123.000	3	RFS APXVAALL24 43-U-NA20
123.000	123.000	3	Ericsson Air6449 B41
123.000	123.000	3	Ericsson Radio 4480 B71+B85A
123.000	123.000	3	Ericsson Radio 4460 B25+B66

Linear Appurtenance

Elev (ft)		Description	Exposed To Wind
From	To		
0.000	123.0	1.99" (50.7mm)	No
0.000	135.0	0.39" (10mm)	No
0.000	135.0	0.76" (19.2mm) 8	No
0.000	136.0	2" Carflex Non-	No
0.000	145.0	1 5/8" Hybriflex	No

Load Cases

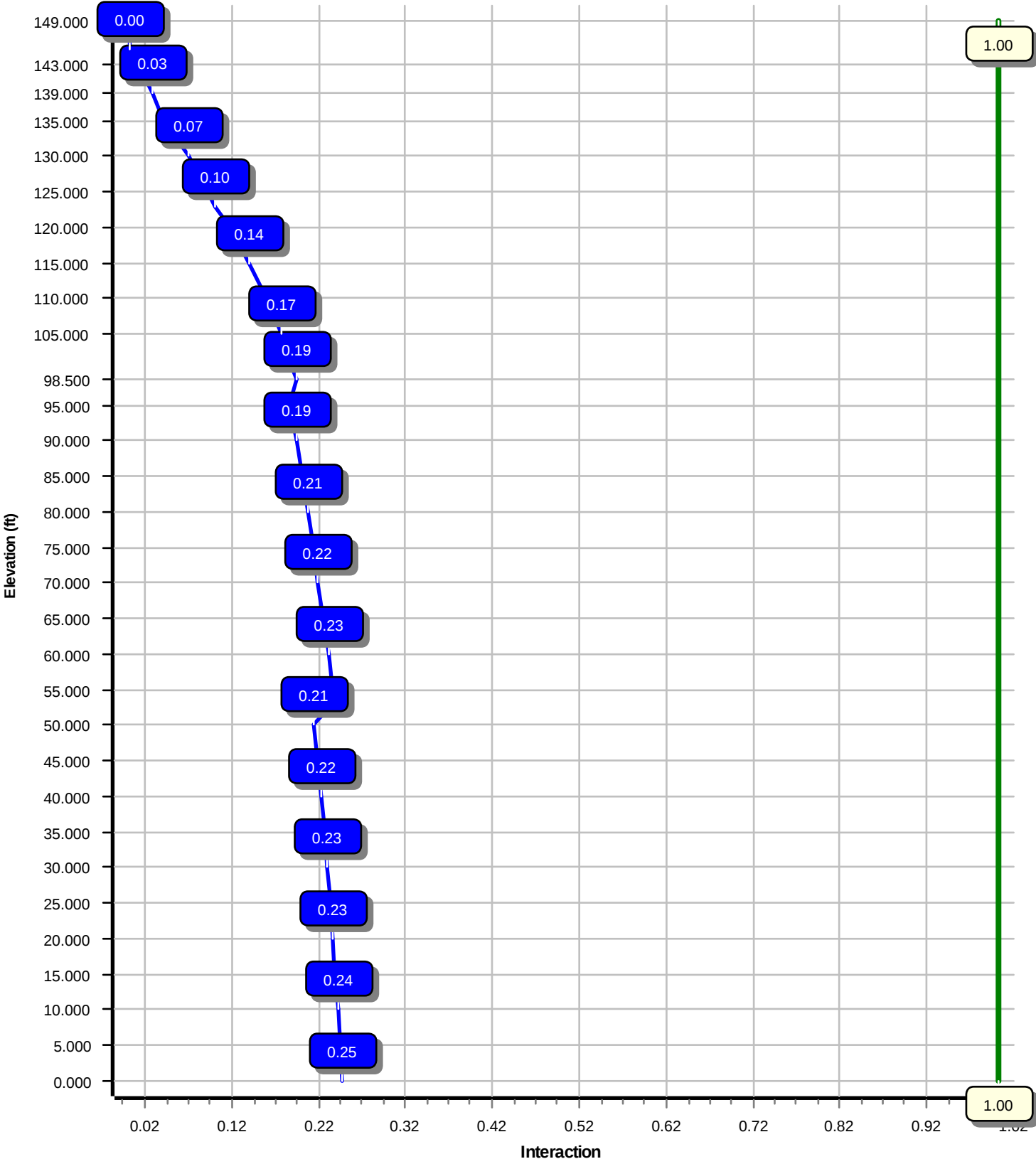
1.2D + 1.0W	118 mph with No Ice
0.9D + 1.0W	118 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	Serviceability 60 mph



Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.0W	3254.27	32.49	66.35
0.9D + 1.0W	3241.59	32.48	49.76
1.2D + 1.0Di + 1.0Wi	859.19	8.90	82.76
1.2D + 1.0Ev + 1.0Eh	257.70	2.38	66.11
0.9D - 1.0Ev + 1.0Eh	256.47	2.38	45.25
1.0D + 1.0W	750.84	7.51	55.31

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

Load Case : 1.2D + 1.0W
Max Ratio 24.54% at 0.0 ft



Site Number: 207956

Code: ANSI/TIA-222-H

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Site Name: Easton, CT

Engineering Number:13701258_C3_03

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Customer: T-MOBILE

Analysis Parameters

Location :	Fairfield County, CT	Height (ft) :	149
Code :	ANSI/TIA-222-H	Base Diameter (in) :	74.32
Shape :	18 Sides	Top Diameter (in) :	24.06
Pole Type :	Taper	Taper (in/ft) :	0.353
Pole Manufacturer :	Sabre	Rotation (deg) :	0.00
Kd (non-service) :	0.95	Ke :	0.98

Ice & Wind Parameters

Exposure Category:	C	Design Wind Speed Without Ice:	118 mph
Risk Category:	II	Design Wind Speed With Ice:	50 mph
Topographic Factor Procedure:	Method 1	Operational Wind Speed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.00 in
Crest Height:	0 ft	HMSL:	440.00 ft

Seismic Parameters

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	1.36		
T_L (sec):	6	p :	1
S_s :	0.219	S_1 :	0.055
F_a :	1.600	F_v :	2.400
S_{ds} :	0.234	S_{d1} :	0.088
		C_s :	0.043
		C_s Max:	0.043
		C_s Min:	0.030

Load Cases

1.2D + 1.0W	118 mph with No Ice
0.9D + 1.0W	118 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	Serviceability 60 mph

Site Number: 207956

Code: ANSI/TIA-222-H

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Site Name: Easton, CT

Engineering Number:13701258_C3_03

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Customer: T-MOBILE

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Slip		Weight (lb)	Bottom				Top				W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
				Joint Type	Joint Len (in)		Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)							
1-18	53.250	0.5625	65		0.00	20,818	74.32	0.00	131.68	90507.7	21.53	132.12	55.50	53.25	98.10	37418.9	15.64	98.68	0.353255				
2-18	53.500	0.5000	65	Slip	99.00	14,293	59.42	45.00	93.51	41018.6	19.19	118.85	40.52	98.50	63.52	12855.5	12.53	81.05	0.353255				
3-18	50.500	0.4375	65	Slip	72.00	8,151	43.51	92.50	59.82	14027.9	15.78	99.47	25.68	143.00	35.05	2821.6	8.59	58.70	0.353255				
4-18	10.000	0.2500	65	Slip	48.00	691	27.59	139.00	21.70	2049.3	17.70	110.37	24.06	149.00	18.89	1353.2	15.21	96.24	0.353255				
Shaft Weight						43,953																	

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	Weight (lb)	No Ice EPAA (sf)	Orientation Factor	Weight (lb)	Ice EPAA (sf)	Orientation Factor
145.00	Alcatel-Lucent RRH2X60-AWS	3	0.75	0.000	44.00	1.876	0.50	81.77	2.499	0.50
145.00	Alcatel-Lucent B13 RRH4x30-4R	3	0.75	2.600	57.80	2.140	0.67	103.69	2.805	0.67
145.00	Alcatel-Lucent RRH2x60	3	0.75	0.000	60.00	3.500	0.65	112.64	4.477	0.65
145.00	RFS DB-T1-6Z-8AB-0Z	2	0.75	0.000	44.00	4.800	0.72	127.74	5.746	0.72
145.00	Amphenol Antel WWX063X19G00	6	0.75	0.700	32.70	8.598	0.69	153.78	10.531	0.69
145.00	JMA Wireless X7C-FRO-660-VR0	6	0.75	0.000	36.20	9.549	0.68	174.35	11.395	0.68
145.00	Generic Round Platform with	1	1.00	0.000	2,500.00	27.200	1.00	3,577.63	43.463	1.00
135.00	Raycap DC6-48-60-0-8C-EV	1	0.80	1.300	16.00	1.020	1.00	45.88	1.393	1.00
135.00	Ericsson RRUS 4415 B25	3	0.80	1.400	46.00	1.842	0.50	78.35	2.434	0.50
135.00	Ericsson RRUS 4449 B5, B12	3	0.80	-0.300	71.00	1.969	0.50	113.52	2.584	0.50
135.00	Ericsson RRUS 4478 B14	3	0.80	1.300	59.40	2.021	0.67	99.89	2.643	0.67
135.00	Raycap DC6-48-60-18-8C	2	0.80	1.200	16.00	2.030	0.70	54.41	2.531	0.70
135.00	Ericsson RRUS 32 (50.8 lbs)	3	0.80	-0.800	50.80	2.692	0.67	97.99	3.454	0.67
135.00	CCI HPA65R-BU8A	3	0.80	-0.500	54.00	11.230	0.71	207.27	13.357	0.71
135.00	Generic Round Sector Frame	3	0.75	0.000	300.00	14.400	0.67	542.70	25.321	0.67
135.00	KMW EPBQ-654L8H8-L2	6	0.80	-0.500	86.00	18.089	0.61	300.29	20.525	0.61
123.00	Ericsson Radio 4460 B25+B66	3	0.75	0.000	109.00	2.564	0.67	166.82	3.253	0.67
123.00	Ericsson Radio 4480 B71+B85A	3	0.75	0.000	84.00	2.852	0.67	133.42	3.582	0.67
123.00	Ericsson Air6449 B41	3	0.75	0.000	104.00	5.682	0.63	193.14	6.720	0.63
123.00	RFS APXVAALL24 43-U-NA20	3	0.75	0.000	122.80	20.243	0.63	377.58	22.669	0.63
123.00	Generic Flat Platform with	1	1.00	0.000	2,500.00	42.400	1.00	3,662.00	56.118	1.00
Totals	Num Loadings:21	64			9,553.80			18,346.74		

Linear Appurtenance Properties

Load Case Azimuth (deg) : 0

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Max Coax / Flat Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind Carrier
0.00	145.00	2	1 5/8" Hybriflex	1.98	1.30	N	0	0.00	0.00	0	VERIZON WIRELESS
0.00	136.00	3	2" Carflex Non-	2.36	0.68	N	0	0.00	0.00	0	AT&T MOBILITY
0.00	135.00	2	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	AT&T MOBILITY
0.00	135.00	6	0.76" (19.2mm) 8 AWG	0.76	0.53	N	0	0.00	0.00	0	AT&T MOBILITY
0.00	123.00	3	1.99" (50.7mm) Hybrid	1.99	1.90	N	0	0.00	0.00	0	T-MOBILE

Site Number: 207956

Code: ANSI/TIA-222-H

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Site Name: Easton, CT

Engineering Number:13701258_C3_03

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Customer: T-MOBILE

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.5625	74.320	131.680	90,507.7	21.53	132.12	76.1	2398.	0.0	0.0
5.00		0.5625	72.554	128.527	84,160.0	20.98	128.98	76.7	2284.	0.0	2,213.6
10.00		0.5625	70.787	125.373	78,116.2	20.43	125.84	77.4	2173.	0.0	2,159.9
15.00		0.5625	69.021	122.220	72,369.0	19.87	122.70	78.0	2065.	0.0	2,106.3
20.00		0.5625	67.255	119.067	66,910.8	19.32	119.56	78.7	1959.	0.0	2,052.6
25.00		0.5625	65.489	115.913	61,734.1	18.77	116.42	79.3	1856.	0.0	1,999.0
30.00		0.5625	63.722	112.760	56,831.6	18.21	113.28	80.0	1756.	0.0	1,945.3
35.00		0.5625	61.956	109.607	52,195.8	17.66	110.14	80.6	1659.	0.0	1,891.7
40.00		0.5625	60.190	106.453	47,819.2	17.10	107.00	81.3	1564.	0.0	1,838.0
45.00	Bot - Section 2	0.5625	58.424	103.300	43,694.3	16.55	103.86	81.9	1473.	0.0	1,784.4
50.00		0.5625	56.657	100.147	39,813.8	16.00	100.72	82.6	1384.	0.0	3,297.8
53.25	Top - Section 1	0.5000	56.509	88.883	35,228.3	18.16	113.02	80.0	1227.	0.0	2,089.2
55.00		0.5000	55.891	87.902	34,074.6	17.95	111.78	80.3	1200.	0.0	526.4
60.00		0.5000	54.125	85.099	30,917.8	17.32	108.25	81.0	1125.	0.0	1,471.7
65.00		0.5000	52.358	82.296	27,962.3	16.70	104.72	81.8	1051.	0.0	1,424.0
70.00		0.5000	50.592	79.493	25,201.3	16.08	101.18	82.5	981.1	0.0	1,376.3
75.00		0.5000	48.826	76.690	22,628.4	15.46	97.65	82.6	912.8	0.0	1,328.6
80.00		0.5000	47.060	73.887	20,236.8	14.83	94.12	82.6	847.0	0.0	1,281.0
85.00		0.5000	45.293	71.084	18,020.0	14.21	90.59	82.6	783.6	0.0	1,233.3
90.00		0.5000	43.527	68.281	15,971.3	13.59	87.05	82.6	722.7	0.0	1,185.6
92.50	Bot - Section 3	0.5000	42.644	66.880	15,007.9	13.28	85.29	82.6	693.2	0.0	574.9
95.00		0.5000	41.761	65.478	14,084.0	12.96	83.52	82.6	664.3	0.0	1,066.7
98.50	Top - Section 2	0.4375	41.399	56.879	12,057.6	14.92	94.63	82.6	573.7	0.0	1,455.8
100.0		0.4375	40.869	56.143	11,595.7	14.71	93.42	82.6	558.8	0.0	288.4
105.0		0.4375	39.103	53.690	10,141.5	14.00	89.38	82.6	510.8	0.0	934.3
110.0		0.4375	37.337	51.238	8,814.2	13.28	85.34	82.6	465.0	0.0	892.6
115.0		0.4375	35.571	48.785	7,608.1	12.57	81.30	82.6	421.3	0.0	850.9
120.0		0.4375	33.804	46.332	6,517.3	11.86	77.27	82.6	379.7	0.0	809.2
123.0		0.4375	32.745	44.861	5,915.9	11.43	74.84	82.6	355.8	0.0	465.5
125.0		0.4375	32.038	43.880	5,536.2	11.15	73.23	82.6	340.3	0.0	302.0
130.0		0.4375	30.272	41.427	4,658.8	10.44	69.19	82.6	303.1	0.0	725.7
135.0		0.4375	28.506	38.975	3,879.4	9.73	65.16	82.6	268.0	0.0	684.0
139.0	Bot - Section 4	0.4375	27.093	37.013	3,322.5	9.16	61.93	82.6	241.5	0.0	517.1
140.0		0.4375	26.739	36.522	3,192.1	9.01	61.12	82.6	235.1	0.0	198.5
143.0	Top - Section 3	0.2500	26.180	20.574	1,747.7	16.70	104.72	81.8	131.5	0.0	579.6
145.0		0.2500	25.473	20.014	1,608.7	16.20	101.89	82.3	124.4	0.0	138.1
149.0		0.2500	24.060	18.893	1,353.2	15.21	96.24	82.6	110.8	0.0	264.8
											43,952.6

Site Number: 207956

Code: ANSI/TIA-222-H

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Site Name: Easton, CT

Engineering Number:13701258_C3_03

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Customer: T-MOBILE

Load Case: 1.2D + 1.0W

118 mph with No Ice

18 Iterations

Gust Response Factor :1.10

Dead Load Factor :1.20

Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
Seg			Dead		Torsion	Moment	Dead		Dead		Torsion	Moment	
Elev		Wind FX	Load	Wind FX	MY	MZ	Load	Wind FX	Load	Wind FX	Load	MY	MZ
(ft)	Description	(lb)	(lb)	(lb)	(lb-ft)	(lb-ft)	(lb)	(lb)	(lb)	(lb)	(lb)	(lb-ft)	(lb)
0.00		353.4	0.0					0.0	0.0	353.4	0.0	0.0	0.0
5.00		698.3	2,656.3					0.0	81.8	698.3	2,738.1	0.0	0.0
10.00		681.3	2,591.9					0.0	81.8	681.3	2,673.7	0.0	0.0
15.00		674.7	2,527.5					0.0	81.8	674.7	2,609.4	0.0	0.0
20.00		685.7	2,463.1					0.0	81.8	685.7	2,545.0	0.0	0.0
25.00		700.2	2,398.8					0.0	81.8	700.2	2,480.6	0.0	0.0
30.00		708.1	2,334.4					0.0	81.8	708.1	2,416.2	0.0	0.0
35.00		711.4	2,270.0					0.0	81.8	711.4	2,351.8	0.0	0.0
40.00		710.9	2,205.6					0.0	81.8	710.9	2,287.5	0.0	0.0
45.00	Bot - Section 2	713.5	2,141.2					0.0	81.8	713.5	2,223.1	0.0	0.0
50.00		589.9	3,957.4					0.0	81.8	589.9	4,039.2	0.0	0.0
53.25	Top - Section 1	355.2	2,507.1					0.0	53.2	355.2	2,560.3	0.0	0.0
55.00		474.7	631.6					0.0	28.6	474.7	660.3	0.0	0.0
60.00		696.4	1,766.1					0.0	81.8	696.4	1,847.9	0.0	0.0
65.00		685.1	1,708.8					0.0	81.8	685.1	1,790.7	0.0	0.0
70.00		672.4	1,651.6					0.0	81.8	672.4	1,733.4	0.0	0.0
75.00		658.4	1,594.4					0.0	81.8	658.4	1,676.2	0.0	0.0
80.00		643.3	1,537.1					0.0	81.8	643.3	1,619.0	0.0	0.0
85.00		627.1	1,479.9					0.0	81.8	627.1	1,561.8	0.0	0.0
90.00		460.8	1,422.7					0.0	81.8	460.8	1,504.5	0.0	0.0
92.50	Bot - Section 3	303.7	689.9					0.0	40.9	303.7	730.8	0.0	0.0
95.00		361.5	1,280.0					0.0	40.9	361.5	1,320.9	0.0	0.0
98.50	Top - Section 2	297.6	1,746.9					0.0	57.3	297.6	1,804.2	0.0	0.0
100.00		376.3	346.1					0.0	24.6	376.3	370.7	0.0	0.0
105.00		566.1	1,121.2					0.0	81.8	566.1	1,203.1	0.0	0.0
110.00		545.8	1,071.1					0.0	81.8	545.8	1,153.0	0.0	0.0
115.00		524.9	1,021.1					0.0	81.8	524.9	1,102.9	0.0	0.0
120.00		406.2	971.0					0.0	81.8	406.2	1,052.8	0.0	0.0
123.00	Appurtenance(s)	246.2	558.6	4,231.7	0.0	0.0	4,511.3	0.0	49.1	4,477.9	5,118.9	0.0	0.0
125.00		332.1	362.4					0.0	19.1	332.1	381.4	0.0	0.0
130.00		458.4	870.8					0.0	47.6	458.4	918.5	0.0	0.0
135.00	Appurtenance(s)	393.7	820.8	5,387.5	0.0	-1,436.2	2,769.1	0.0	47.6	5,781.2	3,637.5	0.0	0.0
139.00	Bot - Section 4	212.4	620.6					0.0	14.9	212.4	635.5	0.0	0.0
140.00		165.7	238.2					0.0	3.1	165.7	241.3	0.0	0.0
143.00	Top - Section 3	203.5	695.6					0.0	9.4	203.5	704.9	0.0	0.0
145.00	Appurtenance(s)	212.8	165.7	4,956.9	0.0	1,361.0	4,184.2	0.0	6.2	5,169.7	4,356.1	0.0	0.0
149.00		132.9	317.7					0.0	0.0	132.9	317.7	0.0	0.0
Totals:										32,816.4	66,368.9	0.00	0.00

Site Number: 207956

Code: ANSI/TIA-222-H

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Site Name: Easton, CT

Engineering Number:13701258_C3_03

8/5/2021 12:13:12 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.0W

118 mph with No Ice

18 Iterations

Gust Response Factor :1.10

Dead Load Factor :1.20

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-66.35	-32.49	0.00	-3,254.27	0.00	3,254.27	9,015.57	2,310.98	15,395.6	13,685.2	0.00	0.00	0.245
5.00	-63.59	-31.85	0.00	-3,091.81	0.00	3,091.81	8,875.00	2,255.64	14,667.1	13,146.8	0.03	-0.05	0.243
10.00	-60.89	-31.22	0.00	-2,932.57	0.00	2,932.57	8,730.74	2,200.30	13,956.3	12,613.3	0.11	-0.10	0.240
15.00	-58.25	-30.59	0.00	-2,776.48	0.00	2,776.48	8,582.78	2,144.96	13,263.2	12,085.2	0.24	-0.15	0.237
20.00	-55.68	-29.95	0.00	-2,623.53	0.00	2,623.53	8,431.12	2,089.62	12,587.7	11,562.9	0.43	-0.21	0.234
25.00	-53.18	-29.29	0.00	-2,473.78	0.00	2,473.78	8,275.76	2,034.28	11,929.9	11,046.7	0.68	-0.26	0.231
30.00	-50.73	-28.62	0.00	-2,327.33	0.00	2,327.33	8,116.71	1,978.94	11,289.7	10,537.1	0.98	-0.32	0.227
35.00	-48.36	-27.94	0.00	-2,184.23	0.00	2,184.23	7,953.97	1,923.60	10,667.2	10,034.5	1.34	-0.37	0.224
40.00	-46.05	-27.26	0.00	-2,044.52	0.00	2,044.52	7,787.52	1,868.25	10,062.3	9,539.38	1.76	-0.43	0.220
45.00	-43.80	-26.58	0.00	-1,908.21	0.00	1,908.21	7,617.38	1,812.91	9,475.11	9,051.98	2.24	-0.49	0.217
50.00	-39.75	-25.98	0.00	-1,775.33	0.00	1,775.33	7,440.39	1,757.57	8,905.54	8,569.15	2.79	-0.55	0.213
53.25	-37.18	-25.62	0.00	-1,690.88	0.00	1,690.88	6,402.43	1,559.90	7,891.64	7,370.51	3.17	-0.59	0.235
55.00	-36.50	-25.17	0.00	-1,646.04	0.00	1,646.04	6,352.05	1,542.69	7,718.42	7,231.09	3.39	-0.61	0.234
60.00	-34.63	-24.49	0.00	-1,520.19	0.00	1,520.19	6,205.61	1,493.49	7,234.09	6,837.10	4.07	-0.68	0.228
65.00	-32.82	-23.83	0.00	-1,397.72	0.00	1,397.72	6,055.47	1,444.30	6,765.45	6,449.91	4.82	-0.74	0.222
70.00	-31.07	-23.17	0.00	-1,278.59	0.00	1,278.59	5,901.64	1,395.11	6,312.51	6,069.91	5.63	-0.81	0.216
75.00	-29.38	-22.52	0.00	-1,162.76	0.00	1,162.76	5,697.71	1,345.92	5,875.26	5,651.49	6.52	-0.88	0.211
80.00	-27.74	-21.88	0.00	-1,050.16	0.00	1,050.16	5,489.47	1,296.72	5,453.70	5,243.89	7.48	-0.95	0.206
85.00	-26.17	-21.26	0.00	-940.74	0.00	940.74	5,281.22	1,247.53	5,047.83	4,851.54	8.51	-1.02	0.199
90.00	-24.65	-20.80	0.00	-834.43	0.00	834.43	5,072.97	1,198.34	4,657.66	4,474.45	9.62	-1.09	0.192
92.50	-23.91	-20.49	0.00	-782.44	0.00	782.44	4,968.85	1,173.74	4,468.45	4,291.62	10.20	-1.13	0.187
95.00	-22.59	-20.12	0.00	-731.21	0.00	731.21	4,864.72	1,149.15	4,283.17	4,112.61	10.80	-1.16	0.183
98.50	-20.78	-19.80	0.00	-660.78	0.00	660.78	4,225.80	998.22	3,693.52	3,551.63	11.67	-1.21	0.191
100.00	-20.40	-19.43	0.00	-631.08	0.00	631.08	4,171.13	985.31	3,598.59	3,459.86	12.06	-1.23	0.188
105.00	-19.18	-18.86	0.00	-533.92	0.00	533.92	3,988.92	942.26	3,291.10	3,162.63	13.39	-1.30	0.174
110.00	-18.02	-18.31	0.00	-439.60	0.00	439.60	3,806.70	899.22	2,997.34	2,878.74	14.79	-1.37	0.158
115.00	-16.92	-17.78	0.00	-348.04	0.00	348.04	3,624.48	856.18	2,717.30	2,608.21	16.27	-1.44	0.139
120.00	-15.86	-17.36	0.00	-259.15	0.00	259.15	3,442.27	813.13	2,451.00	2,351.02	17.80	-1.49	0.115
123.00	-10.86	-12.75	0.00	-207.08	0.00	207.08	3,332.94	787.31	2,297.81	2,203.12	18.75	-1.52	0.098
125.00	-10.48	-12.41	0.00	-181.57	0.00	181.57	3,260.05	770.09	2,198.43	2,107.18	19.39	-1.54	0.090
130.00	-9.56	-11.94	0.00	-119.51	0.00	119.51	3,077.84	727.05	1,959.59	1,876.69	21.03	-1.58	0.067
135.00	-6.09	-6.06	0.00	-59.82	0.00	59.82	2,895.62	684.00	1,734.48	1,659.55	22.70	-1.61	0.038
139.00	-5.46	-5.83	0.00	-35.59	0.00	35.59	2,749.85	649.57	1,564.28	1,495.45	24.06	-1.62	0.026
140.00	-5.22	-5.66	0.00	-29.76	0.00	29.76	2,713.40	640.96	1,523.10	1,455.76	24.40	-1.63	0.022
143.00	-4.52	-5.43	0.00	-12.80	0.00	12.80	1,513.88	361.08	845.70	806.26	25.42	-1.63	0.019
145.00	-0.31	-0.14	0.00	-0.57	0.00	0.57	1,483.19	351.24	800.25	768.18	26.10	-1.63	0.001
149.00	0.00	-0.13	0.00	0.00	0.00	0.00	1,403.62	331.56	713.11	685.85	27.47	-1.63	0.000

Site Number: 207956

Code: ANSI/TIA-222-H

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Site Name: Easton, CT

Engineering Number:13701258_C3_03

8/5/2021 12:13:12 PM

Customer: T-MOBILE

Load Case: 0.9D + 1.0W

118 mph with No Ice (Reduced DL)

18 Iterations

Gust Response Factor :1.10

Dead Load Factor :0.90

Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
Seg			Dead	Torsion		Moment	Dead			Dead	Torsion	Moment	
Elev		Wind FX	Load	Wind FX	MY	MZ	Load	Wind FX	Load	Wind FX	Load	MY	MZ
(ft)	Description	(lb)	(lb)	(lb)	(lb-ft)	(lb-ft)	(lb)	(lb)	(lb)	(lb)	(lb)	(lb-ft)	(lb)
0.00		353.4	0.0					0.0	0.0	353.4	0.0	0.0	0.0
5.00		698.3	1,992.2					0.0	61.4	698.3	2,053.6	0.0	0.0
10.00		681.3	1,943.9					0.0	61.4	681.3	2,005.3	0.0	0.0
15.00		674.7	1,895.6					0.0	61.4	674.7	1,957.0	0.0	0.0
20.00		685.7	1,847.4					0.0	61.4	685.7	1,908.7	0.0	0.0
25.00		700.2	1,799.1					0.0	61.4	700.2	1,860.4	0.0	0.0
30.00		708.1	1,750.8					0.0	61.4	708.1	1,812.2	0.0	0.0
35.00		711.4	1,702.5					0.0	61.4	711.4	1,763.9	0.0	0.0
40.00		710.9	1,654.2					0.0	61.4	710.9	1,715.6	0.0	0.0
45.00	Bot - Section 2	713.5	1,605.9					0.0	61.4	713.5	1,667.3	0.0	0.0
50.00		589.9	2,968.0					0.0	61.4	589.9	3,029.4	0.0	0.0
53.25	Top - Section 1	355.2	1,880.3					0.0	39.9	355.2	1,920.2	0.0	0.0
55.00		474.7	473.7					0.0	21.5	474.7	495.2	0.0	0.0
60.00		696.4	1,324.5					0.0	61.4	696.4	1,385.9	0.0	0.0
65.00		685.1	1,281.6					0.0	61.4	685.1	1,343.0	0.0	0.0
70.00		672.4	1,238.7					0.0	61.4	672.4	1,300.1	0.0	0.0
75.00		658.4	1,195.8					0.0	61.4	658.4	1,257.2	0.0	0.0
80.00		643.3	1,152.9					0.0	61.4	643.3	1,214.2	0.0	0.0
85.00		627.1	1,109.9					0.0	61.4	627.1	1,171.3	0.0	0.0
90.00		460.8	1,067.0					0.0	61.4	460.8	1,128.4	0.0	0.0
92.50	Bot - Section 3	303.7	517.4					0.0	30.7	303.7	548.1	0.0	0.0
95.00		361.5	960.0					0.0	30.7	361.5	990.7	0.0	0.0
98.50	Top - Section 2	297.6	1,310.2					0.0	43.0	297.6	1,353.2	0.0	0.0
100.00		376.3	259.6					0.0	18.4	376.3	278.0	0.0	0.0
105.00		566.1	840.9					0.0	61.4	566.1	902.3	0.0	0.0
110.00		545.8	803.4					0.0	61.4	545.8	864.7	0.0	0.0
115.00		524.9	765.8					0.0	61.4	524.9	827.2	0.0	0.0
120.00		406.2	728.2					0.0	61.4	406.2	789.6	0.0	0.0
123.00	Appurtenance(s)	246.2	418.9	4,231.7	0.0	0.0	3,383.5	0.0	36.8	4,477.9	3,839.2	0.0	0.0
125.00		332.1	271.8					0.0	14.3	332.1	286.1	0.0	0.0
130.00		458.4	653.1					0.0	35.7	458.4	688.9	0.0	0.0
135.00	Appurtenance(s)	393.7	615.6	5,387.5	0.0	-1,436.2	2,076.8	0.0	35.7	5,781.2	2,728.1	0.0	0.0
139.00	Bot - Section 4	212.4	465.4					0.0	11.2	212.4	476.6	0.0	0.0
140.00		165.7	178.6					0.0	2.3	165.7	181.0	0.0	0.0
143.00	Top - Section 3	203.5	521.7					0.0	7.0	203.5	528.7	0.0	0.0
145.00	Appurtenance(s)	212.8	124.3	4,956.9	0.0	1,361.0	3,138.1	0.0	4.7	5,169.7	3,267.1	0.0	0.0
149.00		132.9	238.3					0.0	0.0	132.9	238.3	0.0	0.0
Totals:										32,816.4	49,776.7	0.00	0.00

Site Number: 207956

Code: ANSI/TIA-222-H

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Site Name: Easton, CT

Engineering Number:13701258_C3_03

8/5/2021 12:13:13 PM

Customer: T-MOBILE

Load Case: 0.9D + 1.0W

118 mph with No Ice (Reduced DL)

18 Iterations

Gust Response Factor :1.10

Dead Load Factor :0.90

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-49.76	-32.48	0.00	-3,241.59	0.00	3,241.59	9,015.57	2,310.98	15,395.6	13,685.2	0.00	0.00	0.243
5.00	-47.68	-31.83	0.00	-3,079.17	0.00	3,079.17	8,875.00	2,255.64	14,667.1	13,146.8	0.03	-0.05	0.240
10.00	-45.65	-31.18	0.00	-2,920.03	0.00	2,920.03	8,730.74	2,200.30	13,956.3	12,613.3	0.11	-0.10	0.237
15.00	-43.67	-30.55	0.00	-2,764.11	0.00	2,764.11	8,582.78	2,144.96	13,263.2	12,085.2	0.24	-0.15	0.234
20.00	-41.73	-29.89	0.00	-2,611.39	0.00	2,611.39	8,431.12	2,089.62	12,587.7	11,562.9	0.43	-0.20	0.231
25.00	-39.85	-29.22	0.00	-2,461.93	0.00	2,461.93	8,275.76	2,034.28	11,929.9	11,046.7	0.67	-0.26	0.228
30.00	-38.01	-28.54	0.00	-2,315.82	0.00	2,315.82	8,116.71	1,978.94	11,289.7	10,537.1	0.97	-0.31	0.225
35.00	-36.22	-27.86	0.00	-2,173.11	0.00	2,173.11	7,953.97	1,923.60	10,667.2	10,034.5	1.33	-0.37	0.221
40.00	-34.48	-27.17	0.00	-2,033.83	0.00	2,033.83	7,787.52	1,868.25	10,062.3	9,539.38	1.75	-0.43	0.218
45.00	-32.80	-26.48	0.00	-1,897.99	0.00	1,897.99	7,617.38	1,812.91	9,475.11	9,051.98	2.23	-0.49	0.214
50.00	-29.75	-25.88	0.00	-1,765.62	0.00	1,765.62	7,440.39	1,757.57	8,905.54	8,569.15	2.77	-0.55	0.210
53.25	-27.82	-25.52	0.00	-1,681.50	0.00	1,681.50	6,402.43	1,559.90	7,891.64	7,370.51	3.16	-0.59	0.233
55.00	-27.31	-25.07	0.00	-1,636.83	0.00	1,636.83	6,352.05	1,542.69	7,718.42	7,231.09	3.38	-0.61	0.231
60.00	-25.90	-24.38	0.00	-1,511.50	0.00	1,511.50	6,205.61	1,493.49	7,234.09	6,837.10	4.05	-0.67	0.226
65.00	-24.54	-23.71	0.00	-1,389.58	0.00	1,389.58	6,055.47	1,444.30	6,765.45	6,449.91	4.79	-0.74	0.220
70.00	-23.22	-23.05	0.00	-1,271.02	0.00	1,271.02	5,901.64	1,395.11	6,312.51	6,069.91	5.61	-0.81	0.214
75.00	-21.95	-22.40	0.00	-1,155.78	0.00	1,155.78	5,697.71	1,345.92	5,875.26	5,651.49	6.49	-0.88	0.209
80.00	-20.72	-21.76	0.00	-1,043.79	0.00	1,043.79	5,489.47	1,296.72	5,453.70	5,243.89	7.44	-0.95	0.203
85.00	-19.53	-21.14	0.00	-934.98	0.00	934.98	5,281.22	1,247.53	5,047.83	4,851.54	8.47	-1.01	0.197
90.00	-18.39	-20.67	0.00	-829.30	0.00	829.30	5,072.97	1,198.34	4,657.66	4,474.45	9.57	-1.08	0.189
92.50	-17.84	-20.37	0.00	-777.61	0.00	777.61	4,968.85	1,173.74	4,468.45	4,291.62	10.15	-1.12	0.185
95.00	-16.84	-20.00	0.00	-726.69	0.00	726.69	4,864.72	1,149.15	4,283.17	4,112.61	10.75	-1.16	0.180
98.50	-15.48	-19.69	0.00	-656.68	0.00	656.68	4,225.80	998.22	3,693.52	3,551.63	11.61	-1.20	0.189
100.00	-15.20	-19.32	0.00	-627.16	0.00	627.16	4,171.13	985.31	3,598.59	3,459.86	12.00	-1.23	0.185
105.00	-14.28	-18.75	0.00	-530.58	0.00	530.58	3,988.92	942.26	3,291.10	3,162.63	13.32	-1.30	0.172
110.00	-13.41	-18.20	0.00	-436.84	0.00	436.84	3,806.70	899.22	2,997.34	2,878.74	14.72	-1.37	0.156
115.00	-12.58	-17.67	0.00	-345.86	0.00	345.86	3,624.48	856.18	2,717.30	2,608.21	16.18	-1.43	0.136
120.00	-11.79	-17.25	0.00	-257.53	0.00	257.53	3,442.27	813.13	2,451.00	2,351.02	17.71	-1.48	0.113
123.00	-8.06	-12.67	0.00	-205.79	0.00	205.79	3,332.94	787.31	2,297.81	2,203.12	18.65	-1.52	0.096
125.00	-7.78	-12.34	0.00	-180.44	0.00	180.44	3,260.05	770.09	2,198.43	2,107.18	19.29	-1.53	0.088
130.00	-7.09	-11.87	0.00	-118.74	0.00	118.74	3,077.84	727.05	1,959.59	1,876.69	20.92	-1.57	0.066
135.00	-4.52	-6.01	0.00	-59.41	0.00	59.41	2,895.62	684.00	1,734.48	1,659.55	22.58	-1.60	0.037
139.00	-4.05	-5.79	0.00	-35.36	0.00	35.36	2,749.85	649.57	1,564.28	1,495.45	23.93	-1.61	0.025
140.00	-3.88	-5.62	0.00	-29.57	0.00	29.57	2,713.40	640.96	1,523.10	1,455.76	24.27	-1.62	0.022
143.00	-3.35	-5.40	0.00	-12.72	0.00	12.72	1,513.88	361.08	845.70	806.26	25.29	-1.62	0.018
145.00	-0.23	-0.14	0.00	-0.56	0.00	0.56	1,483.19	351.24	800.25	768.18	25.97	-1.62	0.001
149.00	0.00	-0.13	0.00	0.00	0.00	0.00	1,403.62	331.56	713.11	685.85	27.33	-1.62	0.000

Site Number: 207956

Code: ANSI/TIA-222-H

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Site Name: Easton, CT

Engineering Number:13701258_C3_03

8/5/2021 12:13:13 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 1.00 in Radial Ice

17 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor 1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
Seg			Dead		Torsion	Moment	Dead		Dead		Torsion	Moment	
Elev		Wind FX	Load	Wind FX	MY	MZ	Load	Wind FX	Load	Wind FX	Load	MY	MZ
(ft)	Description	(lb)	(lb)	(lb)	(lb-ft)	(lb-ft)	(lb)	(lb)	(lb)	(lb)	(lb)	(lb-ft)	(lb)
0.00		106.5	0.0					0.0	0.0	106.5	0.0	0.0	0.0
5.00		210.7	3,011.2					0.0	81.8	210.7	3,093.1	0.0	0.0
10.00		206.0	2,979.0					0.0	81.8	206.0	3,060.8	0.0	0.0
15.00		204.4	2,925.1					0.0	81.8	204.4	3,007.0	0.0	0.0
20.00		208.0	2,864.1					0.0	81.8	208.0	2,946.0	0.0	0.0
25.00		212.7	2,799.4					0.0	81.8	212.7	2,881.3	0.0	0.0
30.00		215.4	2,732.4					0.0	81.8	215.4	2,814.3	0.0	0.0
35.00		216.7	2,663.8					0.0	81.8	216.7	2,745.6	0.0	0.0
40.00		216.8	2,594.0					0.0	81.8	216.8	2,675.8	0.0	0.0
45.00	Bot - Section 2	217.9	2,523.2					0.0	81.8	217.9	2,605.1	0.0	0.0
50.00		180.3	4,338.7					0.0	81.8	180.3	4,420.6	0.0	0.0
53.25	Top - Section 1	108.6	2,752.2					0.0	53.2	108.6	2,805.4	0.0	0.0
55.00		145.4	762.8					0.0	28.6	145.4	791.5	0.0	0.0
60.00		213.5	2,131.5					0.0	81.8	213.5	2,213.3	0.0	0.0
65.00		210.3	2,065.6					0.0	81.8	210.3	2,147.4	0.0	0.0
70.00		206.8	1,999.3					0.0	81.8	206.8	2,081.1	0.0	0.0
75.00		202.8	1,932.6					0.0	81.8	202.8	2,014.5	0.0	0.0
80.00		198.6	1,865.7					0.0	81.8	198.6	1,947.5	0.0	0.0
85.00		193.9	1,798.4					0.0	81.8	193.9	1,880.2	0.0	0.0
90.00		142.7	1,730.9					0.0	81.8	142.7	1,812.7	0.0	0.0
92.50	Bot - Section 3	94.2	841.6					0.0	40.9	94.2	882.5	0.0	0.0
95.00		112.2	1,432.1					0.0	40.9	112.2	1,473.0	0.0	0.0
98.50	Top - Section 2	92.4	1,954.5					0.0	57.3	92.4	2,011.8	0.0	0.0
100.00		117.1	434.2					0.0	24.6	117.1	458.8	0.0	0.0
105.00		176.5	1,403.4					0.0	81.8	176.5	1,485.2	0.0	0.0
110.00		170.7	1,342.3					0.0	81.8	170.7	1,424.1	0.0	0.0
115.00		164.6	1,280.9					0.0	81.8	164.6	1,362.8	0.0	0.0
120.00		127.7	1,219.5					0.0	81.8	127.7	1,301.3	0.0	0.0
123.00	Appurtenance(s)	77.6	703.6	940.5	0.0	0.0	6,474.7	0.0	49.1	1,018.1	7,227.5	0.0	0.0
125.00		105.0	457.3					0.0	19.1	105.0	476.3	0.0	0.0
130.00		145.4	1,096.1					0.0	47.6	145.4	1,143.7	0.0	0.0
135.00	Appurtenance(s)	125.4	1,034.2	1,249.1	0.0	-286.4	5,169.7	0.0	47.6	1,374.4	6,251.5	0.0	0.0
139.00	Bot - Section 4	67.8	783.7					0.0	14.9	67.8	798.7	0.0	0.0
140.00		53.0	279.2					0.0	3.1	53.0	282.4	0.0	0.0
143.00	Top - Section 3	65.2	814.4					0.0	9.4	65.2	823.7	0.0	0.0
145.00	Appurtenance(s)	71.2	243.0	1,178.9	0.0	305.8	6,701.2	0.0	6.2	1,250.1	6,950.4	0.0	0.0
149.00		45.5	464.4					0.0	0.0	45.5	464.4	0.0	0.0
Totals:										8,998.17	82,761.3	0.00	0.00

Site Number: 207956

Code: ANSI/TIA-222-H

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Site Name: Easton, CT

Engineering Number:13701258_C3_03

8/5/2021 12:13:14 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 1.00 in Radial Ice

17 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor 1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-82.76	-8.90	0.00	-859.19	0.00	859.19	9,015.57	2,310.98	15,395.6	13,685.2	0.00	0.00	0.072
5.00	-79.67	-8.71	0.00	-814.69	0.00	814.69	8,875.00	2,255.64	14,667.1	13,146.8	0.01	-0.01	0.071
10.00	-76.60	-8.52	0.00	-771.15	0.00	771.15	8,730.74	2,200.30	13,956.3	12,613.3	0.03	-0.03	0.070
15.00	-73.59	-8.33	0.00	-728.56	0.00	728.56	8,582.78	2,144.96	13,263.2	12,085.2	0.06	-0.04	0.069
20.00	-70.65	-8.14	0.00	-686.91	0.00	686.91	8,431.12	2,089.62	12,587.7	11,562.9	0.11	-0.05	0.068
25.00	-67.76	-7.94	0.00	-646.22	0.00	646.22	8,275.76	2,034.28	11,929.9	11,046.7	0.18	-0.07	0.067
30.00	-64.95	-7.74	0.00	-606.53	0.00	606.53	8,116.71	1,978.94	11,289.7	10,537.1	0.26	-0.08	0.066
35.00	-62.20	-7.53	0.00	-567.85	0.00	567.85	7,953.97	1,923.60	10,667.2	10,034.5	0.35	-0.10	0.064
40.00	-59.52	-7.32	0.00	-530.20	0.00	530.20	7,787.52	1,868.25	10,062.3	9,539.38	0.46	-0.11	0.063
45.00	-56.92	-7.12	0.00	-493.58	0.00	493.58	7,617.38	1,812.91	9,475.11	9,051.98	0.59	-0.13	0.062
50.00	-52.49	-6.94	0.00	-457.99	0.00	457.99	7,440.39	1,757.57	8,905.54	8,569.15	0.73	-0.14	0.061
53.25	-49.69	-6.83	0.00	-435.44	0.00	435.44	6,402.43	1,559.90	7,891.64	7,370.51	0.83	-0.15	0.067
55.00	-48.90	-6.69	0.00	-423.49	0.00	423.49	6,352.05	1,542.69	7,718.42	7,231.09	0.89	-0.16	0.066
60.00	-46.68	-6.49	0.00	-390.04	0.00	390.04	6,205.61	1,493.49	7,234.09	6,837.10	1.07	-0.18	0.065
65.00	-44.53	-6.28	0.00	-357.61	0.00	357.61	6,055.47	1,444.30	6,765.45	6,449.91	1.26	-0.19	0.063
70.00	-42.45	-6.08	0.00	-326.21	0.00	326.21	5,901.64	1,395.11	6,312.51	6,069.91	1.47	-0.21	0.061
75.00	-40.43	-5.88	0.00	-295.81	0.00	295.81	5,697.71	1,345.92	5,875.26	5,651.49	1.70	-0.23	0.059
80.00	-38.49	-5.69	0.00	-266.40	0.00	266.40	5,489.47	1,296.72	5,453.70	5,243.89	1.95	-0.25	0.058
85.00	-36.61	-5.50	0.00	-237.96	0.00	237.96	5,281.22	1,247.53	5,047.83	4,851.54	2.22	-0.26	0.056
90.00	-34.79	-5.35	0.00	-210.48	0.00	210.48	5,072.97	1,198.34	4,657.66	4,474.45	2.50	-0.28	0.054
92.50	-33.91	-5.26	0.00	-197.10	0.00	197.10	4,968.85	1,173.74	4,468.45	4,291.62	2.65	-0.29	0.053
95.00	-32.44	-5.15	0.00	-183.95	0.00	183.95	4,864.72	1,149.15	4,283.17	4,112.61	2.81	-0.30	0.051
98.50	-30.42	-5.05	0.00	-165.93	0.00	165.93	4,225.80	998.22	3,693.52	3,551.63	3.03	-0.31	0.054
100.00	-29.96	-4.93	0.00	-158.36	0.00	158.36	4,171.13	985.31	3,598.59	3,459.86	3.13	-0.32	0.053
105.00	-28.48	-4.76	0.00	-133.69	0.00	133.69	3,988.92	942.26	3,291.10	3,162.63	3.47	-0.34	0.049
110.00	-27.05	-4.59	0.00	-109.90	0.00	109.90	3,806.70	899.22	2,997.34	2,878.74	3.83	-0.35	0.045
115.00	-25.69	-4.42	0.00	-86.97	0.00	86.97	3,624.48	856.18	2,717.30	2,608.21	4.21	-0.37	0.040
120.00	-24.39	-4.29	0.00	-64.87	0.00	64.87	3,442.27	813.13	2,451.00	2,351.02	4.61	-0.38	0.035
123.00	-17.17	-3.22	0.00	-52.00	0.00	52.00	3,332.94	787.31	2,297.81	2,203.12	4.85	-0.39	0.029
125.00	-16.69	-3.12	0.00	-45.55	0.00	45.55	3,260.05	770.09	2,198.43	2,107.18	5.01	-0.39	0.027
130.00	-15.55	-2.97	0.00	-29.96	0.00	29.96	3,077.84	727.05	1,959.59	1,876.69	5.43	-0.40	0.021
135.00	-9.31	-1.55	0.00	-15.13	0.00	15.13	2,895.62	684.00	1,734.48	1,659.55	5.86	-0.41	0.012
139.00	-8.51	-1.48	0.00	-8.94	0.00	8.94	2,749.85	649.57	1,564.28	1,495.45	6.21	-0.41	0.009
140.00	-8.23	-1.42	0.00	-7.46	0.00	7.46	2,713.40	640.96	1,523.10	1,455.76	6.29	-0.42	0.008
143.00	-7.41	-1.35	0.00	-3.20	0.00	3.20	1,513.88	361.08	845.70	806.26	6.56	-0.42	0.009
145.00	-0.46	-0.05	0.00	-0.20	0.00	0.20	1,483.19	351.24	800.25	768.18	6.73	-0.42	0.001
149.00	0.00	-0.05	0.00	0.00	0.00	0.00	1,403.62	331.56	713.11	685.85	7.08	-0.42	0.000

Site Number: 207956

Code: ANSI/TIA-222-H

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Site Name: Easton, CT

Engineering Number:13701258_C3_03

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Customer: T-MOBILE

Load Case: 1.0D + 1.0W

Serviceability 60 mph

17 Iterations

Gust Response Factor :1.10

Dead Load Factor :1.00

Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
Seg			Dead		Torsion	Moment	Dead		Dead		Torsion	Moment	
Elev		Wind FX	Load	Wind FX	MY	MZ	Load	Wind FX	Load	Wind FX	Load	MY	MZ
(ft)	Description	(lb)	(lb)	(lb)	(lb-ft)	(lb-ft)	(lb)	(lb)	(lb)	(lb)	(lb)	(lb-ft)	(lb)
0.00		81.8	0.0					0.0	0.0	81.8	0.0	0.0	0.0
5.00		161.5	2,213.6					0.0	68.2	161.5	2,281.8	0.0	0.0
10.00		157.6	2,159.9					0.0	68.2	157.6	2,228.1	0.0	0.0
15.00		156.1	2,106.3					0.0	68.2	156.1	2,174.5	0.0	0.0
20.00		158.6	2,052.6					0.0	68.2	158.6	2,120.8	0.0	0.0
25.00		162.0	1,999.0					0.0	68.2	162.0	2,067.2	0.0	0.0
30.00		163.8	1,945.3					0.0	68.2	163.8	2,013.5	0.0	0.0
35.00		164.6	1,891.7					0.0	68.2	164.6	1,959.9	0.0	0.0
40.00		164.4	1,838.0					0.0	68.2	164.4	1,906.2	0.0	0.0
45.00	Bot - Section 2	165.1	1,784.4					0.0	68.2	165.1	1,852.6	0.0	0.0
50.00		136.5	3,297.8					0.0	68.2	136.5	3,366.0	0.0	0.0
53.25	Top - Section 1	82.2	2,089.2					0.0	44.3	82.2	2,133.6	0.0	0.0
55.00		109.8	526.4					0.0	23.9	109.8	550.2	0.0	0.0
60.00		161.1	1,471.7					0.0	68.2	161.1	1,539.9	0.0	0.0
65.00		158.5	1,424.0					0.0	68.2	158.5	1,492.2	0.0	0.0
70.00		155.5	1,376.3					0.0	68.2	155.5	1,444.5	0.0	0.0
75.00		152.3	1,328.6					0.0	68.2	152.3	1,396.8	0.0	0.0
80.00		148.8	1,281.0					0.0	68.2	148.8	1,349.2	0.0	0.0
85.00		145.1	1,233.3					0.0	68.2	145.1	1,301.5	0.0	0.0
90.00		106.6	1,185.6					0.0	68.2	106.6	1,253.8	0.0	0.0
92.50	Bot - Section 3	70.2	574.9					0.0	34.1	70.2	609.0	0.0	0.0
95.00		83.6	1,066.7					0.0	34.1	83.6	1,100.8	0.0	0.0
98.50	Top - Section 2	68.8	1,455.8					0.0	47.7	68.8	1,503.5	0.0	0.0
100.00		87.0	288.4					0.0	20.5	87.0	308.9	0.0	0.0
105.00		130.9	934.3					0.0	68.2	130.9	1,002.5	0.0	0.0
110.00		126.3	892.6					0.0	68.2	126.3	960.8	0.0	0.0
115.00		121.4	850.9					0.0	68.2	121.4	919.1	0.0	0.0
120.00		94.0	809.2					0.0	68.2	94.0	877.4	0.0	0.0
123.00	Appurtenance(s)	56.9	465.5	978.9	0.0	0.0	3,759.4	0.0	40.9	1,035.9	4,265.8	0.0	0.0
125.00		76.8	302.0					0.0	15.9	76.8	317.8	0.0	0.0
130.00		106.0	725.7					0.0	39.7	106.0	765.4	0.0	0.0
135.00	Appurtenance(s)	91.1	684.0	1,246.3	0.0	-332.2	2,307.6	0.0	39.7	1,337.4	3,031.3	0.0	0.0
139.00	Bot - Section 4	49.1	517.1					0.0	12.4	49.1	529.6	0.0	0.0
140.00		38.3	198.5					0.0	2.6	38.3	201.1	0.0	0.0
143.00	Top - Section 3	47.1	579.6					0.0	7.8	47.1	587.4	0.0	0.0
145.00	Appurtenance(s)	49.2	138.1	1,146.7	0.0	314.8	3,486.8	0.0	5.2	1,195.9	3,630.1	0.0	0.0
149.00		30.7	264.8					0.0	0.0	30.7	264.8	0.0	0.0
Totals:										7,591.46	55,307.4	0.00	0.00

Site Number: 207956

Code: ANSI/TIA-222-H

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Site Name: Easton, CT

Engineering Number:13701258_C3_03

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Customer: T-MOBILE

Load Case: 1.0D + 1.0W

Serviceability 60 mph

17 Iterations

Gust Response Factor :1.10

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-55.31	-7.51	0.00	-750.84	0.00	750.84	9,015.57	2,310.98	15,395.6	13,685.2	0.00	0.00	0.061
5.00	-53.02	-7.36	0.00	-713.27	0.00	713.27	8,875.00	2,255.64	14,667.1	13,146.8	0.01	-0.01	0.060
10.00	-50.79	-7.22	0.00	-676.45	0.00	676.45	8,730.74	2,200.30	13,956.3	12,613.3	0.02	-0.02	0.059
15.00	-48.62	-7.07	0.00	-640.37	0.00	640.37	8,582.78	2,144.96	13,263.2	12,085.2	0.06	-0.04	0.059
20.00	-46.50	-6.92	0.00	-605.03	0.00	605.03	8,431.12	2,089.62	12,587.7	11,562.9	0.10	-0.05	0.058
25.00	-44.43	-6.76	0.00	-570.43	0.00	570.43	8,275.76	2,034.28	11,929.9	11,046.7	0.16	-0.06	0.057
30.00	-42.41	-6.61	0.00	-536.61	0.00	536.61	8,116.71	1,978.94	11,289.7	10,537.1	0.23	-0.07	0.056
35.00	-40.45	-6.45	0.00	-503.57	0.00	503.57	7,953.97	1,923.60	10,667.2	10,034.5	0.31	-0.09	0.055
40.00	-38.54	-6.29	0.00	-471.32	0.00	471.32	7,787.52	1,868.25	10,062.3	9,539.38	0.41	-0.10	0.054
45.00	-36.69	-6.13	0.00	-439.87	0.00	439.87	7,617.38	1,812.91	9,475.11	9,051.98	0.52	-0.11	0.053
50.00	-33.32	-5.99	0.00	-409.21	0.00	409.21	7,440.39	1,757.57	8,905.54	8,569.15	0.64	-0.13	0.052
53.25	-31.19	-5.91	0.00	-389.72	0.00	389.72	6,402.43	1,559.90	7,891.64	7,370.51	0.73	-0.14	0.058
55.00	-30.64	-5.81	0.00	-379.38	0.00	379.38	6,352.05	1,542.69	7,718.42	7,231.09	0.78	-0.14	0.057
60.00	-29.10	-5.65	0.00	-350.35	0.00	350.35	6,205.61	1,493.49	7,234.09	6,837.10	0.94	-0.16	0.056
65.00	-27.60	-5.49	0.00	-322.10	0.00	322.10	6,055.47	1,444.30	6,765.45	6,449.91	1.11	-0.17	0.055
70.00	-26.16	-5.34	0.00	-294.64	0.00	294.64	5,901.64	1,395.11	6,312.51	6,069.91	1.30	-0.19	0.053
75.00	-24.76	-5.19	0.00	-267.93	0.00	267.93	5,697.71	1,345.92	5,875.26	5,651.49	1.50	-0.20	0.052
80.00	-23.41	-5.04	0.00	-241.98	0.00	241.98	5,489.47	1,296.72	5,453.70	5,243.89	1.72	-0.22	0.050
85.00	-22.11	-4.90	0.00	-216.76	0.00	216.76	5,281.22	1,247.53	5,047.83	4,851.54	1.96	-0.24	0.049
90.00	-20.85	-4.79	0.00	-192.26	0.00	192.26	5,072.97	1,198.34	4,657.66	4,474.45	2.22	-0.25	0.047
92.50	-20.24	-4.72	0.00	-180.28	0.00	180.28	4,968.85	1,173.74	4,468.45	4,291.62	2.35	-0.26	0.046
95.00	-19.14	-4.64	0.00	-168.48	0.00	168.48	4,864.72	1,149.15	4,283.17	4,112.61	2.49	-0.27	0.045
98.50	-17.64	-4.56	0.00	-152.25	0.00	152.25	4,225.80	998.22	3,693.52	3,551.63	2.69	-0.28	0.047
100.00	-17.33	-4.48	0.00	-145.41	0.00	145.41	4,171.13	985.31	3,598.59	3,459.86	2.78	-0.28	0.046
105.00	-16.33	-4.35	0.00	-123.02	0.00	123.02	3,988.92	942.26	3,291.10	3,162.63	3.09	-0.30	0.043
110.00	-15.37	-4.22	0.00	-101.29	0.00	101.29	3,806.70	899.22	2,997.34	2,878.74	3.41	-0.32	0.039
115.00	-14.45	-4.10	0.00	-80.19	0.00	80.19	3,624.48	856.18	2,717.30	2,608.21	3.75	-0.33	0.035
120.00	-13.57	-4.00	0.00	-59.71	0.00	59.71	3,442.27	813.13	2,451.00	2,351.02	4.10	-0.34	0.029
123.00	-9.31	-2.94	0.00	-47.71	0.00	47.71	3,332.94	787.31	2,297.81	2,203.12	4.32	-0.35	0.024
125.00	-8.99	-2.86	0.00	-41.84	0.00	41.84	3,260.05	770.09	2,198.43	2,107.18	4.47	-0.36	0.023
130.00	-8.23	-2.75	0.00	-27.53	0.00	27.53	3,077.84	727.05	1,959.59	1,876.69	4.85	-0.36	0.017
135.00	-5.20	-1.39	0.00	-13.78	0.00	13.78	2,895.62	684.00	1,734.48	1,659.55	5.23	-0.37	0.010
139.00	-4.67	-1.34	0.00	-8.20	0.00	8.20	2,749.85	649.57	1,564.28	1,495.45	5.55	-0.37	0.007
140.00	-4.47	-1.30	0.00	-6.86	0.00	6.86	2,713.40	640.96	1,523.10	1,455.76	5.62	-0.37	0.006
143.00	-3.89	-1.25	0.00	-2.95	0.00	2.95	1,513.88	361.08	845.70	806.26	5.86	-0.38	0.006
145.00	-0.26	-0.03	0.00	-0.13	0.00	0.13	1,483.19	351.24	800.25	768.18	6.02	-0.38	0.000
149.00	0.00	-0.03	0.00	0.00	0.00	0.00	1,403.62	331.56	713.11	685.85	6.33	-0.38	0.000

Site Number: 207956

Code: ANSI/TIA-222-H

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Site Name: Easton, CT

Engineering Number:13701258_C3_03

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Customer: T-MOBILE

Equivalent Lateral Forces Method Analysis

Spectral Response Acceleration for Short Period (S_s):	0.22
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.05
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.23
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.09
Seismic Response Coefficient (C_s):	0.04
Upper Limit C_s	0.04
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	1.36
Redundancy Factor (p):	1.00
Seismic Force Distribution Exponent (k):	1.43
Total Unfactored Dead Load:	55.31 k
Seismic Base Shear (E):	2.38 k

Load Case 1.2D + 1.0Ev + 1.0Eh**Seismic**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
36	147.00	265	335	0.012	28	330
35	144.00	143	176	0.006	15	179
34	141.50	587	704	0.025	59	732
33	139.50	201	236	0.008	20	251
32	137.00	530	606	0.021	51	660
31	132.50	724	789	0.028	66	902
30	127.50	765	790	0.028	66	954
29	124.00	318	315	0.011	26	396
28	121.50	506	488	0.017	41	631
27	117.50	877	805	0.028	68	1,094
26	112.50	919	793	0.028	67	1,146
25	107.50	961	777	0.027	65	1,198
24	102.50	1,003	757	0.027	64	1,250
23	99.25	309	223	0.008	19	385
22	96.75	1,504	1,045	0.037	88	1,874
21	93.75	1,101	731	0.026	62	1,372
20	91.25	609	389	0.014	33	759
19	87.50	1,254	755	0.027	63	1,563
18	82.50	1,301	720	0.025	61	1,623
17	77.50	1,349	683	0.024	57	1,682
16	72.50	1,397	642	0.023	54	1,741
15	67.50	1,445	600	0.021	50	1,801
14	62.50	1,492	555	0.020	47	1,860
13	57.50	1,540	508	0.018	43	1,920
12	54.13	550	167	0.006	14	686

Site Number: 207956

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Site Name: Easton, CT

Engineering Number:13701258_C3_03

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Customer: T-MOBILE

11	51.63	2,134	604	0.021	51	2,660
10	47.50	3,366	845	0.030	71	4,196
9	42.50	1,853	397	0.014	33	2,310
8	37.50	1,906	341	0.012	29	2,377
7	32.50	1,960	286	0.010	24	2,443
6	27.50	2,014	231	0.008	19	2,510
5	22.50	2,067	178	0.006	15	2,577
4	17.50	2,121	128	0.005	11	2,644
3	12.50	2,174	81	0.003	7	2,711
2	7.50	2,228	40	0.001	3	2,778
1	2.50	2,282	8	0.000	1	2,845
Alcatel-Lucent RRH2X	145.00	132	164	0.006	14	165
Alcatel-Lucent B13 R	145.00	173	215	0.008	18	216
Alcatel-Lucent RRH2x	145.00	180	223	0.008	19	224
RFS DB-T1-6Z-8AB-0Z	145.00	88	109	0.004	9	110
Amphenol Antel WWX06	145.00	196	243	0.009	20	245
JMA Wireless X7C-FRO	145.00	217	269	0.010	23	271
Generic Round Platfo	145.00	2,500	3,101	0.109	261	3,117
Raycap DC6-48-60-0-8	135.00	16	18	0.001	2	20
Ericsson RRUS 4415 B	135.00	138	155	0.005	13	172
Ericsson RRUS 4449 B	135.00	213	239	0.008	20	266
Ericsson RRUS 4478 B	135.00	178	200	0.007	17	222
Raycap DC6-48-60-18-	135.00	32	36	0.001	3	40
Ericsson RRUS 32 (50	135.00	152	171	0.006	14	190
CCI HPA65R-BU8A	135.00	162	181	0.006	15	202
Generic Round Sector	135.00	900	1,008	0.036	85	1,122
KMW EPBQ-654L8H8-L2	135.00	516	578	0.020	49	643
Ericsson Radio 4460	123.00	327	321	0.011	27	408
Ericsson Radio 4480	123.00	252	247	0.009	21	314
Ericsson Air6449 B41	123.00	312	306	0.011	26	389
RFS APXVAALL24 43-U-	123.00	368	361	0.013	30	459
Generic Flat Platfor	123.00	2,500	2,450	0.087	206	3,117
		55,307	28,322	1.000	2,381	68,953

Load Case 0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
36	147.00	265	335	0.012	28	226
35	144.00	143	176	0.006	15	122
34	141.50	587	704	0.025	59	501
33	139.50	201	236	0.008	20	172
32	137.00	530	606	0.021	51	452
31	132.50	724	789	0.028	66	617
30	127.50	765	790	0.028	66	653
29	124.00	318	315	0.011	26	271
28	121.50	506	488	0.017	41	432
27	117.50	877	805	0.028	68	749
26	112.50	919	793	0.028	67	784
25	107.50	961	777	0.027	65	820
24	102.50	1,003	757	0.027	64	855
23	99.25	309	223	0.008	19	264
22	96.75	1,504	1,045	0.037	88	1,283
21	93.75	1,101	731	0.026	62	939
20	91.25	609	389	0.014	33	520
19	87.50	1,254	755	0.027	63	1,070
18	82.50	1,301	720	0.025	61	1,111
17	77.50	1,349	683	0.024	57	1,151
16	72.50	1,397	642	0.023	54	1,192
15	67.50	1,445	600	0.021	50	1,233
14	62.50	1,492	555	0.020	47	1,273

Site Number: 207956

Code: ANSI/TIA-222-H

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Site Name: Easton, CT

Engineering Number:13701258_C3_03

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Customer: T-MOBILE

13	57.50	1,540	508	0.018	43	1,314
12	54.13	550	167	0.006	14	470
11	51.63	2,134	604	0.021	51	1,821
10	47.50	3,366	845	0.030	71	2,872
9	42.50	1,853	397	0.014	33	1,581
8	37.50	1,906	341	0.012	29	1,627
7	32.50	1,960	286	0.010	24	1,672
6	27.50	2,014	231	0.008	19	1,718
5	22.50	2,067	178	0.006	15	1,764
4	17.50	2,121	128	0.005	11	1,810
3	12.50	2,174	81	0.003	7	1,855
2	7.50	2,228	40	0.001	3	1,901
1	2.50	2,282	8	0.000	1	1,947
Alcatel-Lucent RRH2X	145.00	132	164	0.006	14	113
Alcatel-Lucent B13 R	145.00	173	215	0.008	18	148
Alcatel-Lucent RRH2x	145.00	180	223	0.008	19	154
RFS DB-T1-6Z-8AB-0Z	145.00	88	109	0.004	9	75
Amphenol Antel WWX06	145.00	196	243	0.009	20	167
JMA Wireless X7C-FRO	145.00	217	269	0.010	23	185
Generic Round Platfo	145.00	2,500	3,101	0.109	261	2,133
Raycap DC6-48-60-0-8	135.00	16	18	0.001	2	14
Ericsson RRUS 4415 B	135.00	138	155	0.005	13	118
Ericsson RRUS 4449 B	135.00	213	239	0.008	20	182
Ericsson RRUS 4478 B	135.00	178	200	0.007	17	152
Raycap DC6-48-60-18-	135.00	32	36	0.001	3	27
Ericsson RRUS 32 (50	135.00	152	171	0.006	14	130
CCI HPA65R-BU8A	135.00	162	181	0.006	15	138
Generic Round Sector	135.00	900	1,008	0.036	85	768
KMW EPBQ-654L8H8-L2	135.00	516	578	0.020	49	440
Ericsson Radio 4460	123.00	327	321	0.011	27	279
Ericsson Radio 4480	123.00	252	247	0.009	21	215
Ericsson Air6449 B41	123.00	312	306	0.011	26	266
RFS APXVAALL24 43-U-	123.00	368	361	0.013	30	314
Generic Flat Platfor	123.00	2,500	2,450	0.087	206	2,133
		55,307	28,322	1.000	2,381	47,193

Site Number: 207956

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Site Name: Easton, CT

Engineering Number:13701258_C3_03

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Customer: T-MOBILE

Load Case 1.2D + 1.0Ev + 1.0Eh

Seismic

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-66.11	-2.38	0.00	-257.70	0.00	257.70	9,015.57	2,310.98	15,395.6	13,685.2	0.00	0.00	0.026
5.00	-63.33	-2.38	0.00	-245.79	0.00	245.79	8,875.00	2,255.64	14,667.1	13,146.8	0.00	0.00	0.026
10.00	-60.62	-2.38	0.00	-233.87	0.00	233.87	8,730.74	2,200.30	13,956.3	12,613.3	0.01	-0.01	0.025
15.00	-57.97	-2.37	0.00	-221.97	0.00	221.97	8,582.78	2,144.96	13,263.2	12,085.2	0.02	-0.01	0.025
20.00	-55.40	-2.36	0.00	-210.10	0.00	210.10	8,431.12	2,089.62	12,587.7	11,562.9	0.03	-0.02	0.025
25.00	-52.89	-2.35	0.00	-198.29	0.00	198.29	8,275.76	2,034.28	11,929.9	11,046.7	0.05	-0.02	0.024
30.00	-50.44	-2.33	0.00	-186.56	0.00	186.56	8,116.71	1,978.94	11,289.7	10,537.1	0.08	-0.03	0.024
35.00	-48.07	-2.30	0.00	-174.93	0.00	174.93	7,953.97	1,923.60	10,667.2	10,034.5	0.11	-0.03	0.023
40.00	-45.76	-2.27	0.00	-163.44	0.00	163.44	7,787.52	1,868.25	10,062.3	9,539.38	0.14	-0.03	0.023
45.00	-41.56	-2.20	0.00	-152.09	0.00	152.09	7,617.38	1,812.91	9,475.11	9,051.98	0.18	-0.04	0.022
50.00	-38.90	-2.15	0.00	-141.11	0.00	141.11	7,440.39	1,757.57	8,905.54	8,569.15	0.22	-0.04	0.022
53.25	-38.21	-2.13	0.00	-134.13	0.00	134.13	6,402.43	1,559.90	7,891.64	7,370.51	0.25	-0.05	0.024
55.00	-36.29	-2.09	0.00	-130.39	0.00	130.39	6,352.05	1,542.69	7,718.42	7,231.09	0.27	-0.05	0.024
60.00	-34.43	-2.05	0.00	-119.93	0.00	119.93	6,205.61	1,493.49	7,234.09	6,837.10	0.32	-0.05	0.023
65.00	-32.63	-2.00	0.00	-109.69	0.00	109.69	6,055.47	1,444.30	6,765.45	6,449.91	0.38	-0.06	0.022
70.00	-30.89	-1.95	0.00	-99.69	0.00	99.69	5,901.64	1,395.11	6,312.51	6,069.91	0.45	-0.06	0.022
75.00	-29.21	-1.89	0.00	-89.97	0.00	89.97	5,697.71	1,345.92	5,875.26	5,651.49	0.52	-0.07	0.021
80.00	-27.59	-1.83	0.00	-80.52	0.00	80.52	5,489.47	1,296.72	5,453.70	5,243.89	0.60	-0.08	0.020
85.00	-26.02	-1.77	0.00	-71.38	0.00	71.38	5,281.22	1,247.53	5,047.83	4,851.54	0.68	-0.08	0.020
90.00	-25.26	-1.73	0.00	-62.55	0.00	62.55	5,072.97	1,198.34	4,657.66	4,474.45	0.77	-0.09	0.019
92.50	-23.89	-1.67	0.00	-58.22	0.00	58.22	4,968.85	1,173.74	4,468.45	4,291.62	0.81	-0.09	0.018
95.00	-22.02	-1.58	0.00	-54.04	0.00	54.04	4,864.72	1,149.15	4,283.17	4,112.61	0.86	-0.09	0.018
98.50	-21.63	-1.56	0.00	-48.50	0.00	48.50	4,225.80	998.22	3,693.52	3,551.63	0.93	-0.09	0.019
100.00	-20.38	-1.50	0.00	-46.16	0.00	46.16	4,171.13	985.31	3,598.59	3,459.86	0.96	-0.10	0.018
105.00	-19.18	-1.43	0.00	-38.67	0.00	38.67	3,988.92	942.26	3,291.10	3,162.63	1.06	-0.10	0.017
110.00	-18.04	-1.37	0.00	-31.50	0.00	31.50	3,806.70	899.22	2,997.34	2,878.74	1.17	-0.11	0.016
115.00	-16.94	-1.30	0.00	-24.67	0.00	24.67	3,624.48	856.18	2,717.30	2,608.21	1.28	-0.11	0.014
120.00	-16.31	-1.26	0.00	-18.19	0.00	18.19	3,442.27	813.13	2,451.00	2,351.02	1.40	-0.12	0.012
123.00	-11.23	-0.91	0.00	-14.42	0.00	14.42	3,332.94	787.31	2,297.81	2,203.12	1.48	-0.12	0.010
125.00	-10.28	-0.84	0.00	-12.60	0.00	12.60	3,260.05	770.09	2,198.43	2,107.18	1.52	-0.12	0.009
130.00	-9.37	-0.77	0.00	-8.39	0.00	8.39	3,077.84	727.05	1,959.59	1,876.69	1.65	-0.12	0.008
135.00	-5.84	-0.50	0.00	-4.53	0.00	4.53	2,895.62	684.00	1,734.48	1,659.55	1.78	-0.12	0.005
139.00	-5.59	-0.48	0.00	-2.53	0.00	2.53	2,749.85	649.57	1,564.28	1,495.45	1.88	-0.12	0.004
140.00	-4.85	-0.42	0.00	-2.06	0.00	2.06	2,713.40	640.96	1,523.10	1,455.76	1.91	-0.12	0.003
143.00	-4.68	-0.40	0.00	-0.80	0.00	0.80	1,513.88	361.08	845.70	806.26	1.99	-0.12	0.004
145.00	0.00	0.00	0.00	0.00	0.00	0.00	1,483.19	351.24	800.25	768.18	2.04	-0.12	0.000
149.00	0.00	0.00	0.00	0.00	0.00	0.00	1,403.62	331.56	713.11	685.85	2.14	-0.12	0.000

Site Number: 207956

Code: ANSI/TIA-222-H

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Site Name: Easton, CT

Engineering Number:13701258_C3_03

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Customer: T-MOBILE

Load Case 0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-45.25	-2.38	0.00	-256.47	0.00	256.47	9,015.57	2,310.98	15,395.6	13,685.2	0.00	0.00	0.024
5.00	-43.34	-2.38	0.00	-244.56	0.00	244.56	8,875.00	2,255.64	14,667.1	13,146.8	0.00	0.00	0.023
10.00	-41.49	-2.38	0.00	-232.65	0.00	232.65	8,730.74	2,200.30	13,956.3	12,613.3	0.01	-0.01	0.023
15.00	-39.68	-2.37	0.00	-220.77	0.00	220.77	8,582.78	2,144.96	13,263.2	12,085.2	0.02	-0.01	0.023
20.00	-37.91	-2.36	0.00	-208.92	0.00	208.92	8,431.12	2,089.62	12,587.7	11,562.9	0.03	-0.02	0.023
25.00	-36.20	-2.34	0.00	-197.14	0.00	197.14	8,275.76	2,034.28	11,929.9	11,046.7	0.05	-0.02	0.022
30.00	-34.52	-2.32	0.00	-185.44	0.00	185.44	8,116.71	1,978.94	11,289.7	10,537.1	0.08	-0.03	0.022
35.00	-32.90	-2.29	0.00	-173.85	0.00	173.85	7,953.97	1,923.60	10,667.2	10,034.5	0.11	-0.03	0.021
40.00	-31.32	-2.26	0.00	-162.40	0.00	162.40	7,787.52	1,868.25	10,062.3	9,539.38	0.14	-0.03	0.021
45.00	-28.44	-2.19	0.00	-151.11	0.00	151.11	7,617.38	1,812.91	9,475.11	9,051.98	0.18	-0.04	0.020
50.00	-26.62	-2.14	0.00	-140.17	0.00	140.17	7,440.39	1,757.57	8,905.54	8,569.15	0.22	-0.04	0.020
53.25	-26.15	-2.12	0.00	-133.22	0.00	133.22	6,402.43	1,559.90	7,891.64	7,370.51	0.25	-0.05	0.022
55.00	-24.84	-2.08	0.00	-129.50	0.00	129.50	6,352.05	1,542.69	7,718.42	7,231.09	0.27	-0.05	0.022
60.00	-23.57	-2.04	0.00	-119.09	0.00	119.09	6,205.61	1,493.49	7,234.09	6,837.10	0.32	-0.05	0.021
65.00	-22.33	-1.99	0.00	-108.90	0.00	108.90	6,055.47	1,444.30	6,765.45	6,449.91	0.38	-0.06	0.021
70.00	-21.14	-1.93	0.00	-98.97	0.00	98.97	5,901.64	1,395.11	6,312.51	6,069.91	0.45	-0.06	0.020
75.00	-19.99	-1.88	0.00	-89.30	0.00	89.30	5,697.71	1,345.92	5,875.26	5,651.49	0.52	-0.07	0.019
80.00	-18.88	-1.82	0.00	-79.91	0.00	79.91	5,489.47	1,296.72	5,453.70	5,243.89	0.59	-0.07	0.019
85.00	-17.81	-1.75	0.00	-70.83	0.00	70.83	5,281.22	1,247.53	5,047.83	4,851.54	0.67	-0.08	0.018
90.00	-17.29	-1.72	0.00	-62.06	0.00	62.06	5,072.97	1,198.34	4,657.66	4,474.45	0.76	-0.09	0.017
92.50	-16.35	-1.66	0.00	-57.76	0.00	57.76	4,968.85	1,173.74	4,468.45	4,291.62	0.81	-0.09	0.017
95.00	-15.07	-1.57	0.00	-53.61	0.00	53.61	4,864.72	1,149.15	4,283.17	4,112.61	0.85	-0.09	0.016
98.50	-14.80	-1.55	0.00	-48.12	0.00	48.12	4,225.80	998.22	3,693.52	3,551.63	0.92	-0.09	0.017
100.00	-13.95	-1.49	0.00	-45.79	0.00	45.79	4,171.13	985.31	3,598.59	3,459.86	0.95	-0.10	0.017
105.00	-13.13	-1.42	0.00	-38.35	0.00	38.35	3,988.92	942.26	3,291.10	3,162.63	1.05	-0.10	0.015
110.00	-12.34	-1.35	0.00	-31.24	0.00	31.24	3,806.70	899.22	2,997.34	2,878.74	1.16	-0.11	0.014
115.00	-11.60	-1.29	0.00	-24.47	0.00	24.47	3,624.48	856.18	2,717.30	2,608.21	1.28	-0.11	0.013
120.00	-11.16	-1.25	0.00	-18.04	0.00	18.04	3,442.27	813.13	2,451.00	2,351.02	1.39	-0.11	0.011
123.00	-7.69	-0.90	0.00	-14.30	0.00	14.30	3,332.94	787.31	2,297.81	2,203.12	1.47	-0.12	0.009
125.00	-7.03	-0.83	0.00	-12.50	0.00	12.50	3,260.05	770.09	2,198.43	2,107.18	1.52	-0.12	0.008
130.00	-6.42	-0.77	0.00	-8.33	0.00	8.33	3,077.84	727.05	1,959.59	1,876.69	1.64	-0.12	0.007
135.00	-4.00	-0.49	0.00	-4.49	0.00	4.49	2,895.62	684.00	1,734.48	1,659.55	1.77	-0.12	0.004
139.00	-3.82	-0.47	0.00	-2.51	0.00	2.51	2,749.85	649.57	1,564.28	1,495.45	1.87	-0.12	0.003
140.00	-3.32	-0.41	0.00	-2.04	0.00	2.04	2,713.40	640.96	1,523.10	1,455.76	1.90	-0.12	0.003
143.00	-3.20	-0.40	0.00	-0.80	0.00	0.80	1,513.88	361.08	845.70	806.26	1.97	-0.12	0.003
145.00	0.00	0.00	0.00	0.00	0.00	0.00	1,483.19	351.24	800.25	768.18	2.03	-0.12	0.000
149.00	0.00	0.00	0.00	0.00	0.00	0.00	1,403.62	331.56	713.11	685.85	2.13	-0.12	0.000

Site Number: 207956

Code: ANSI/TIA-222-H

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Site Name: Easton, CT

Engineering Number:13701258_C3_03

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Customer: T-MOBILE

Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W	32.49	0.00	66.35	0.00	0.00	3254.27	0.00	0.25
0.9D + 1.0W	32.48	0.00	49.76	0.00	0.00	3241.59	0.00	0.24
1.2D + 1.0Di + 1.0Wi	8.90	0.00	82.76	0.00	0.00	859.19	0.00	0.07
1.2D + 1.0Ev + 1.0Eh	2.38	0.00	66.11	0.00	0.00	257.70	0.00	0.03
0.9D - 1.0Ev + 1.0Eh	2.38	0.00	45.25	0.00	0.00	256.47	0.00	0.02
1.0D + 1.0W	7.51	0.00	55.31	0.00	0.00	750.84	0.00	0.06

Site Name: Easton, CT
Site Number: 207956
Tower Type: MP
Design Loads (Factored) - Analysis per TIA-222-H Standards

Monolithic Mat & Pier Foundation Analysis

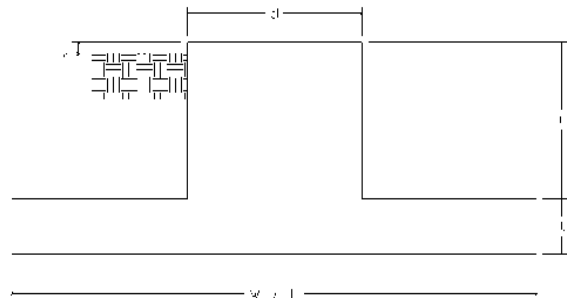
Foundation Analysis Parameters		
Design / Analysis / Mapping:	Analysis	-
Compression/Leg:	66.4	k
Uplift/Leg:	0.0	k
Total Shear:	32.5	k
Moment:	3,254.3	k-ft
Tower + Appurtenance Weight:	66.4	k
Depth to Base of Foundation (l + t - h):	6	ft
Diameter of Pier (d):	9	ft
Length of Pier (l):	4.25	ft
Height of Pier above Ground (h):	0.5	ft
Width of Pad (W):	33.5	ft
Length of Pad (L):	33.5	ft
Thickness of Pad (t):	2.25	ft
Tower Leg Center to Center:	0	ft
Number of Tower Legs:	1	-
Tower Center from Mat Center:	0	ft
Depth Below Ground Surface to Water Table:	99	ft
Unit Weight of Concrete:	150	pcf
Unit Weight of Soil Above Water Table:	165	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Below Water Table:	102.6	pcf
Friction Angle of Uplift:	15	°
Coefficient of Shear Friction:	0.7	-
Ultimate Compressive Bearing Pressure:	24,000	psf
Ultimate Passive Pressure on Pad Face:	0	psf
$f_{\text{Soil and Concrete Weight}}$:	0.9	-
f_{Soil} :	0.75	-

Overturning Moment Usage		
Design OTM:	3465.5	k-ft
OTM Resistance:	17626.4	k-ft
Design OTM / OTM Resistance:	20%	Pass

Soil Bearing Pressure Usage		
Net Bearing Pressure:	1233	psf
Factored Nominal Bearing Pressure:	18000	psf
Factored Nominal (Net) Bearing Pressure:	7%	Pass
Load Direction Controlling Design Bearing Pressure:	Diagonal to Pad Edge	

Sliding Factor of Safety		
Ultimate Friction Resistance:	790.7	k
Ultimate Passive Pressure Resistance:	0.0	k
Total Factored Sliding Resistance:	593.1	k
Sliding Design / Sliding Resistance:	5%	Pass

Foundation Steel Parameters		
Shear/Leg (Compression):	21.7	k
Shear/Leg (Uplift):	17.9	k
Concrete Strength (f'_c):	4,500	psi
Pad Tension Steel Depth:	23.44	in
Dead Load Factor:	0.9	-
f_{Shear} :	0.75	-
$f_{\text{Flexure / Tension}}$:	0.9	-
$f_{\text{Compression}}$:	0.65	-
b:	0.83	-
Bottom Pad Rebar Size #:	9	-
# of Bottom Pad Rebar:	79	-
Pad Bottom Steel Area:	79.00	in ²
Pad Steel F_y :	60,000	psi
Top Pad Rebar Size #:	9	-
# of Top Pad Rebar:	79	-
Pad Top Steel Area:	79.00	in ²
Pier Rebar Size #:	9	-
Pier Steel Area (Single Bar):	1.00	in ²
# of Pier Rebar:	60	-
Pier Steel F_y :	60,000	psi
Pier Cage Diameter:	99.6	in
Rebar Strain Limit:	0.008	-
Steel Elastic Modulus:	29,000	ksi
Tie Rebar Size #:	5	-
Tie Steel Area (Single Bar):	0.31	in ²
Tie Spacing:	12	in
Tie Steel F_y :	60,000	psi
Clear Cover:	3	in



Pad Strength Capacity			
Factored One Way Shear (V_u):	248.3	k	ACI 318-14 25.5.5.1
One Way Shear Capacity (fV_c):	948.1	k	
V_u / fV_c :	26%	Pass	
Load Direction Controlling Shear Capacity:	Parallel to Pad Edge		
Lower Steel Pad Factored Moment (M_u):	1925.3	k-ft	ACI 318-14 22.3.1.1
Lower Steel Pad Moment Capacity (fM_n):	7866.3	k-ft	
M_u / fM_n :	24%	Pass	
Load Direction Controlling Flexural Capacity:	Parallel to Pad Edge		
Upper Steel Pad Factored Moment (M_u):	745.0	k-ft	
Upper Steel Pad Moment Capacity (fM_n):	7866.3	k-ft	
M_u / fM_n :	9%	Pass	
Lower Pad Flexural Reinforcement Ratio:	0.0084		
Upper Pad Flexural Reinforcement Ratio:	0.0084		OK - ACI 318-14 7.6.1.1 & 8.6.1.1
Pad Shrinkage Reinforcement Ratio:	0.0168		OK - ACI 318-14 24.4.3.2
Lower Pad Reinforcement Spacing:	5.1	in	OK - ACI 318-14 7.7.2.3, 8.7.2.2, & 24.4.3.3
Upper Pad Reinforcement Spacing:	5.1	in	OK - ACI 318-14 7.7.2.3, 8.7.2.2, & 24.4.3.3
Ultimate Punching Shear Stress, v_u :	43.36	psi	ACI 318-14 R8.4.4.2.3
Nominal Punching Shear Capacity ($f_c v_c$):	201.2	psi	ACI 318-14 22.6.5.2
$v_u / f_c v_c$:	22%	Pass	
Pier Moment Pad Flexure Transfer Ratio, γ_f :	0.60		TIA-222-H 9.4.2
Moment Transfer Effective Flexural Width, B_{eff} :	15.75	ft	TIA-222-H 9.4.2
Moment Transfer Through Pad Flexure:	24424.94	k-in	TIA-222-H 9.4.2
Moment Transfer Flexural Capacity ($fM_{sc,f}$):	45657.22	k-in	
$g_f M_{sc} / fM_{sc,f}$:	0%	Pass	

Pier Strength Capacity			
Factored Moment in Pier (M_u):	3392.4	k-ft	ACI 318-14 22.5.1.1
Pier Moment Capacity (fM_n):	13151.8	k-ft	
M_u / fM_n :	26%	Pass	
Factored Shear in Pier (V_u):	32.5	k	OK - No Ties Necessary for Shear - ACI11.5.6.1
Pier Shear Capacity (fV_n):	1126.0	k	
V_u / fV_c :	3%	Pass	
Pier Shear Reinforcement Ratio:	0.0004		
Factored Tension in Pier (T_u):	0.0	k	ACI 318-14 25.4.2.3
Pier Tension Capacity (fT_n):	3240.0	k	
T_u / fT_n :	0%	Pass	
Factored Compression in Pier (P_u):	66.4	k	ACI 318-14 22.4.2.1
Pier Compression Capacity (fP_n):	18132.9	k	
P_u / fP_n :	0%	Pass	
Pier Compression Reinforcement Ratio:	0.007		OK - TIA-222-H 9.4.1
Minimum Depth to Develop Vertical Rebar:	34	in	ACI 318-14 25.4.2.3
Minimum Hook Development Length:	21	in	ACI 318-14 25.4.3.1
Minimum Mat Thickness / Edge Distance from Pier:	24.0	in	
Minimum Foundation Depth:	5.10	ft	
$M_u / f_b M_n + T_u / f_T T_n$:	26%	Pass	

Base Plate & Anchor Rod Analysis

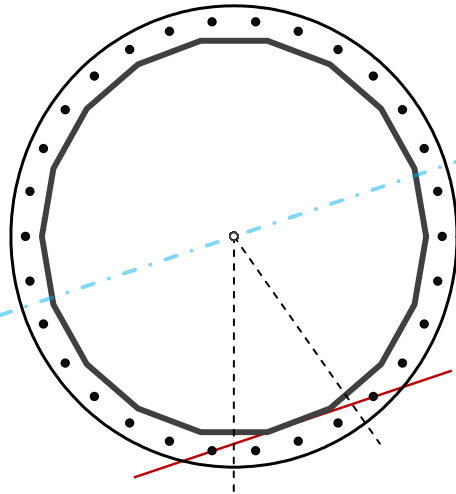
Pole Dimensions		
Number of Sides	18	-
Diameter	74.32	in
Thickness	9/16	in
Orientation Offset		°

Base Reactions		
Moment, Mu	3,254.3	k-ft
Axial, Pu	66.4	k
Shear, Vu	32.5	k
Neutral Axis	198	°

Report Capacities		
Component	Capacity	Result
Base Plate	16%	Pass
Anchor Rods	28%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, ϕ	87.75	in
Thickness	2 3/4	in
Grade	A572-50	
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	N/A	in
Orientation Offset		°
Anchor Rod Detail	d	$\eta=0.5$
Clear Distance	4	in
Applied Moment, Mu	402.6	k
Bending Stress, ϕM_n	2478.8	k

Original Anchor Rods		
Arrangement	Radial	-
Quantity	30	-
Diameter, ϕ	2 1/4	in
Bolt Circle	82	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	8.6	in
Orientation Offset		°
Applied Force, Pu	67.6	k
Anchor Rods, ϕP_n	243.6	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution				Geometric Properties					
Reaction	Shear Vu	Moment Mu	Factor	Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	k	k-ft	-	-	in ²	in ²	in ⁴	#	in ⁴
Base Forces	32.5	3254.3	1.00	Pole	129.6795	7.2044	0.7627		88198.55
Anchor Rod Forces	32.5	3254.3	1.00	Bolt	3.9761	3.2477	0.8393	4.5	77240.71
Additional Bolt (Grp1) Forces	0.0	0.0	0.00	Bolt1	0.0000	0.0000	0.0000	0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00	Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag Forces	0.0	0.0	0.00	Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener Forces	0.0	0.0	0.00	Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate			Anchor Rods		
Shape	Round	-	Anchor Rod Quantity, N	30	-
Diameter, D	87.75	in	Rod Diameter, d	2.25	in
Thickness, t	2.75	in	Bolt Circle, BC	82	in
Yield Strength, Fy	50	ksi	Yield Strength, Fy	75	ksi
Tensile Strength, Fu	65	ksi	Tensile Strength, Fu	100	ksi
Base Plate Chord	46.654	in	Applied Axial, Pu	67.6	k
Detail Type	d	-	Applied Shear, Vu	0.2	k
Detail Factor	0.50	-	Compressive Capacity, φPn	243.6	k
Clear Distance	4	-	Tensile Capacity, φRnt	0.277	OK
			Interaction Capacity	0.279	OK

External Base Plate		
Chord Length AA	39.977	in
Additional AA	5.500	in
Section Modulus, Z	85.981	in ³
Applied Moment, Mu	402.6	k-ft
Bending Capacity, φMn	3869.1	k-ft
Capacity, Mu/φMn	0.104	OK

Chord Length AB	37.761	in
Additional AB	5.500	in
Section Modulus, Z	81.790	in ³
Applied Moment, Mu	287.8	k-ft
Bending Capacity, φMn	3680.6	k-ft
Capacity, Mu/φMn	0.078	OK

Bend Line Length	29.136	in
Additional Bend Line	0.000	in
Section Modulus, Z	55.085	in ³
Applied Moment, Mu	402.6	k-ft
Bending Capacity, φMn	2478.8	k-ft
Capacity, Mu/φMn	0.162	OK

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in ³
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, φMn	0.0	k-ft
Capacity, Mu/φMn		

AMERICAN TOWER®
CORPORATION
LETTER OF AUTHORIZATION

SITE NO/PROJECT NO: 207956 / 13701258

SITE NAME: Easton

ADDRESS: 515 Morehouse Road
Easton, CT 06612

I, Margaret Robinson, Senior Counsel, US Tower Division on behalf of American Tower*, owner of the tower facility located at the address identified above (the "Tower Facility"), do hereby authorize **Transcend Wireless** its successors and assigns, to act as American Tower's non-exclusive agent for the purpose of filing and securing any zoning, land-use, building permit and/or electrical permit application(s) and approvals of the applicable jurisdiction for and to conduct the construction of the installation of antennas and related telecommunications equipment on the Tower Facility located at the above address. This installation shall not affect adjoining lands and will occur only within the area leased by American Tower.

American Tower understands that the application may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by American Tower of conditions related to American Tower's installation. Any such conditions of approval or modifications will not be effective unless approved in writing by American Tower.

The above authorization does not permit **Transcend Wireless** to modify or alter any existing permit(s) and/or zoning or land-use conditions or impose any additional conditions unrelated to American Tower's installation of telecommunications equipment without the prior written approval of American Tower.

Signature: _____



Margaret Robinson, Senior Counsel
US Tower Division

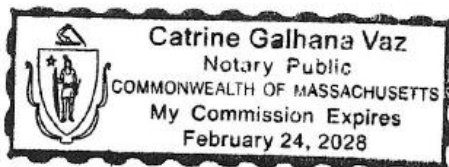
NOTARY BLOCK

COMMONWEALTH OF MASSACHUSETTS
County of Middlesex

This instrument was acknowledged before me by Margaret Robinson, Senior Counsel of American Tower (Tower Facility owner and/or operator), personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same.

WITNESS my hand and official seal, this 5th day of October 2021.

NOTARY SEAL



Notary Public _____



My Commission Expires: February 24, 2028

* American Tower as used herein is defined as American Tower Corporation and any of its affiliates or subsidiaries.



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

T-Mobile Existing Facility

Site ID: CTFF836A

515 Morehouse Road
Easton, Connecticut 06612

October 19, 2021

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	24.57%



October 19, 2021

T-Mobile

Attn: Jason Overbey, RF Manager

35 Griffin Road South

Bloomfield, Connecticut 06002

Emissions Analysis for Site: CTFF836A

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **515 Morehouse Road in Easton, 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 515 Morehouse Road in Easton, 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 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.



- 6) 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.
- 7) 2 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 8) 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.
- 9) 1 LTE Traffic channel (LTE IC and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.
- 10) 1 LTE Broadcast channel (LTE IC and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.
- 11) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 12) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.
- 13) 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.
- 14) 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.
- 15) The antennas used in this modeling are the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector A, the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector B, the RFS



APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 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.

- 16) The antenna mounting height centerline of the proposed antennas is 123 feet above ground level (AGL).
- 17) 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.
- 18) 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 APXVAALL24_43- U-NA20	Make / Model:	RFS APXVAALL24_43- U-NA20	Make / Model:	RFS APXVAALL24_43- U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 1900 MHz / 2100 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd / 16.45 dBd
Height (AGL):	123 feet	Height (AGL):	123 feet	Height (AGL):	123 feet
Channel Count:	17	Channel Count:	17	Channel Count:	17
Total TX Power (W):	680 Watts	Total TX Power (W):	680 Watts	Total TX Power (W):	680 Watts
ERP (W):	22,622.65	ERP (W):	22,622.65	ERP (W):	22,622.65
Antenna AI MPE %:	7.45%	Antenna BI MPE %:	7.45%	Antenna CI MPE %:	7.45%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd
Height (AGL):	123 feet	Height (AGL):	123 feet	Height (AGL):	123 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	36,356.09	ERP (W):	36,356.09	ERP (W):	36,356.09
Antenna A2 MPE %:	9.55%	Antenna B2 MPE %:	9.55%	Antenna C2 MPE %:	9.55%



Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	16.99%
AT&T	6.47%
Town	1.11%
Verizon	0%
Site Total MPE % :	24.57%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	16.99%
T-Mobile Sector B Total:	16.99%
T-Mobile Sector C Total:	16.99%
Site Total MPE % :	24.57%

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	123.0	3.11	600 MHz LTE	400	0.78%
T-Mobile 600 MHz NR	1	1577.94	123.0	4.14	600 MHz NR	400	1.04%
T-Mobile 700 MHz LTE	2	695.22	123.0	3.65	700 MHz LTE	467	0.78%
T-Mobile 1900 MHz GSM	4	1052.26	123.0	11.05	1900 MHz GSM	1000	1.11%
T-Mobile 1900 MHz UMTS	2	1052.26	123.0	5.53	1900 MHz UMTS	1000	0.55%
T-Mobile 1900 MHz LTE	2	2104.51	123.0	11.05	1900 MHz LTE	1000	1.11%
T-Mobile 2100 MHz UMTS	2	1324.71	123.0	6.96	2100 MHz UMTS	1000	0.70%
T-Mobile 2100 MHz LTE	2	2649.42	123.0	13.92	2100 MHz LTE	1000	1.39%
T-Mobile 2500 MHz LTE IC & 2C Traffic	1	11044.63	123.0	29.01	2500 MHz LTE IC & 2C Traffic	1000	2.90%
T-Mobile 2500 MHz LTE IC & 2C Broadcast	1	1074.06	123.0	2.82	2500 MHz LTE IC & 2C Broadcast	1000	0.28%
T-Mobile 2500 MHz NR Traffic	1	22089.26	123.0	58.01	2500 MHz NR Traffic	1000	5.80%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	123.0	5.64	2500 MHz NR Broadcast	1000	0.56%
						Total:	16.99%

• 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:	16.99%
Sector B:	16.99%
Sector C:	16.99%
T-Mobile Maximum MPE % (Sector A):	16.99%
Site Total:	24.57%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **24.57%** 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.

Structural Analysis Report

Antenna Mount Analysis

*Proposed T-Mobile
Upgrade*

T-Mobile Site #: CTFF836A

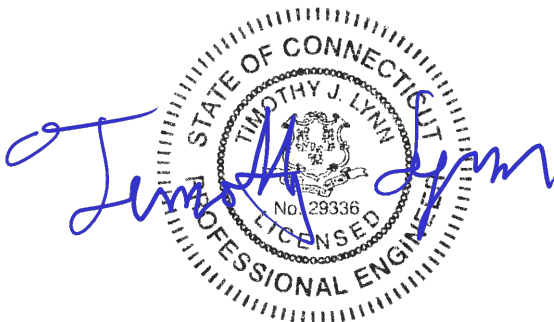
*515 Morehouse Road
Easton, CT*

Centek Project No. 21085.01

~~*Date: July 13, 2021*~~

Rev 1: July 21, 2021

Max Stress Ratio = 83.8 %



Prepared for:

**T-Mobile USA
35 Griffin Road
Bloomfield, CT 06002**

Table of Contents

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- ANTENNA AND APPURTENANCE SUMMARY
- STRUCTURE LOADING
- CONCLUSION

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- WIND LOAD ON APPURTENANCES
- RISA3D OUTPUT REPORT

SECTION 3 – REFERENCE MATERIALS (NOT INCLUDED WITHIN REPORT)

- RF DATA SHEET, DATED 07/07/2021

July 21, 2021

Mr. Dan Reid
Transcend Wireless
10 Industrial Ave
Mahwah, NJ 07430

Re: *Structural Letter ~ Antenna Mount*
T-Mobile – Site Ref: CTFF836A
515 Morehouse Road
Easton, CT 06612

Centek Project No. 21085.01

Dear Mr. Reid,

Centek Engineering, Inc. has reviewed the T-Mobile antenna installation at the above-referenced site. The purpose of the review is to determine the structural adequacy of the proposed 12'-6" low profile platform with handrail (SitePro P/N: RMQP-496-HK). The review considered the effects of wind load, dead load, and ice load in accordance with the 2015 International Building Code as modified by the 2018 Connecticut State Building Code (CTBC), including ASCE 7-10 and ANSI/TIA-222-G *Structural Standards for Steel Antenna Towers and Supporting Structures*.

The loads considered in this analysis consist of the following:

- T-Mobile:
Low Profile Platform: Three (3) RFS APXVAALL24_43-U-NA20 panel antennas, three (3) Ericsson AIR6449 b41 panel antennas, three (3) Ericsson 4480 B71+B85 remote radio heads and three (3) Ericsson 4460 B25+B66 remote radio heads on the proposed mount with a RAD center elevation of 123-ft +/- AGL.

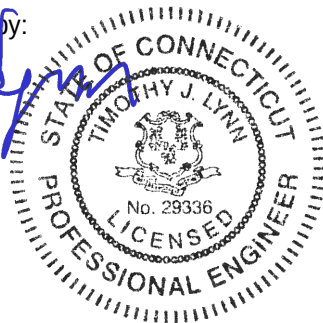
The antenna mount was analyzed per the requirements of the 2015 International Building Code as modified by the 2018 Connecticut State Building Code considering a nominal design wind speed of 93 mph for Easton as required in Appendix N of the 2018 Connecticut State Building Code.

Based on our review of the installation, it is our opinion that the subject antenna mount has sufficient capacity to support the aforementioned antenna configuration.

If there are any questions regarding this matter, please feel free to call.

Respectfully Submitted by:


Timothy J. Lynn, PE
Structural Engineer



Prepared by:


Fernando J. Palacios
Engineer

CEN TEK Engineering, Inc.
Structural Analysis – Mount Analysis
T-Mobile Antenna Upgrade – CTFF836A
Easton, CT
Rev1 ~ July 21, 2021

Section 2 - Calculations

**Development of Design Heights, Exposure Coefficients,
and Velocity Pressures Per TIA-222-G**

Wind Speeds

Basic Wind Speed	$V := 93$	mph	(User Input - 2018 CSBC Appendix N)
Basic Wind Speed with Ice	$V_i := 50$	mph	(User Input per Annex B of TIA-222-G)

Input

Structure Type =	Structure_Type := Pole	(User Input)
Structure Category =	SC := II	(User Input)
Exposure Category =	Exp := C	(User Input)
Structure Height =	$h := 149$	ft (User Input)
Height to Center of Antennas =	$z := 123$	ft (User Input)
Radial Ice Thickness =	$t_i := .75$	in (User Input per Annex B of TIA-222-G)
Radial Ice Density =	$I_d := 56.00$	pcf (User Input)
Topographic Factor =	$K_{zt} := 1.0$	(User Input)
	$K_a := 1.0$	(User Input)
Gust Response Factor =	$G_H = 1.1$	(User Input)

Output

Wind Direction Probability Factor =	$K_d := \begin{cases} \text{if Structure_Type = Pole} \\ 0.95 \\ \text{if Structure_Type = Lattice} \\ 0.85 \end{cases} = 0.95$	(Per Table 2-2 of TIA-222-G)
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Importance Factors =

$$I_{Wind} := \begin{cases} \text{if SC = 1} \\ 0.87 \\ \text{if SC = 2} \\ 1.00 \\ \text{if SC = 3} \\ 1.15 \end{cases} = 1$$

$$I_{Wind_w_Ice} := \begin{cases} \text{if SC = 1} \\ 0 \\ \text{if SC = 2} \\ 1.00 \\ \text{if SC = 3} \\ 1.00 \end{cases} = 1$$

$$K_{iz} := \left(\frac{z}{33} \right)^{0.1} = 1.141$$

$$I_{ice} := \begin{cases} \text{if SC = 1} \\ 0 \\ \text{if SC = 2} \\ 1.00 \\ \text{if SC = 3} \\ 1.25 \end{cases} = 1$$

Velocity Pressure Coefficient Antennas = $t_{iz} := 2.0 \cdot t_i \cdot I_{ice} \cdot K_{iz} \cdot K_{zt}^{0.35} = 1.711$

$$K_z := 2.01 \cdot \left(\left(\frac{z}{zg} \right) \right)^{\alpha} = 1.322$$

Velocity Pressure w/o Ice Antennas = $q_z := 0.00256 \cdot K_d \cdot K_z \cdot V^2 \cdot I_{Wind} = 28$ psf

Velocity Pressure with Ice Antennas = $q_{z_{ice}} := 0.00256 \cdot K_d \cdot K_z \cdot V_i^2 \cdot I_{Wind} = 8$ psf

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	RFS APXVAALL24_43-U-NA20	
Antenna Shape =	Flat	(User Input)
Antenna Height =	$L_{ant} := 95.9$	in (User Input)
Antenna Width =	$W_{ant} := 24.0$	in (User Input)
Antenna Thickness =	$T_{ant} := 8.5$	in (User Input)
Antenna Weight =	$WT_{ant} := 150$	lbs (User Input)
Number of Antennas =	$N_{ant} := 1$	(User Input)
Antenna Aspect Ratio =	$Ar_{ant} := \frac{L_{ant}}{W_{ant}} = 4.0$	
Antenna Force Coefficient =	$Ca_{ant} = 1.27$	

Wind Load (without ice)

Surface Area for One Antenna =	$SA_{antF} := \frac{L_{ant} \cdot W_{ant}}{144} = 16$	sf
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Total Antenna Wind Force Front =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antF} = 619$	lbs
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Surface Area for One Antenna =	$SA_{antS} := \frac{L_{ant} \cdot T_{ant}}{144} = 5.7$	sf
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Total Antenna Wind Force Side =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antS} = 219$	lbs
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Wind Load (with ice)

Surface Area for One Antenna w/ Ice =	$SA_{ICEantF} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz})}{144} = 18.9$	sf
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Total Antenna Wind Force w/ Ice Front =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantF} = 212$	lbs
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Surface Area for One Antenna w/ Ice =	$SA_{ICEantS} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz})}{144} = 8.2$	sf
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Total Antenna Wind Force w/ Ice Side =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantS} = 92$	lbs
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Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 150$	lbs
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Gravity Loads (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 2 \cdot 10^4$	cu in
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Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz}) - V_{ant} = 1 \cdot 10^4$	
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Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 418$	lbs
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Weight of Ice on All Antennas =	$W_{ICEant} \cdot N_{ant} = 418$	lbs
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Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Ericsson - AIR6449 B41	
Antenna Shape =	Flat	(User Input)
Antenna Height =	$L_{ant} := 33.1$	in (User Input)
Antenna Width =	$W_{ant} := 20.5$	in (User Input)
Antenna Thickness =	$T_{ant} := 8.3$	in (User Input)
Antenna Weight =	$WT_{ant} := 103$	lbs (User Input)
Number of Antennas =	$N_{ant} := 1$	(User Input)
Antenna Aspect Ratio =	$Ar_{ant} := \frac{L_{ant}}{W_{ant}} = 1.6$	
Antenna Force Coefficient =	$Ca_{ant} = 1.2$	

Wind Load (without ice)

Surface Area for One Antenna = $SA_{antF} := \frac{L_{ant} \cdot W_{ant}}{144} = 4.7$ sf

Total Antenna Wind Force Front = $F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antF} = 173$ lbs

Surface Area for One Antenna = $SA_{antS} := \frac{L_{ant} \cdot T_{ant}}{144} = 1.9$ sf

Total Antenna Wind Force Side = $F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antS} = 70$ lbs

Wind Load (with ice)

Surface Area for One Antenna w/ Ice = $SA_{ICEantF} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz})}{144} = 6.1$ sf

Total Antenna Wind Force w/ Ice Front = $Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantF} = 64$ lbs

Surface Area for One Antenna w/ Ice = $SA_{ICEantS} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz})}{144} = 3$ sf

Total Antenna Wind Force w/ Ice Side = $Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantS} = 32$ lbs

Gravity Load (without ice)

Weight of All Antennas = $WT_{ant} \cdot N_{ant} = 103$ lbs

Gravity Loads (ice only)

Volume of Each Antenna = $V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 5632$ cu in

Volume of Ice on Each Antenna = $V_{ice} := (L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz}) - V_{ant} = 4609$

Weight of Ice on Each Antenna = $W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 149$ lbs

Weight of Ice on All Antennas = $W_{ICEant} \cdot N_{ant} = 149$ lbs

Development of Wind & Ice Load on RRUS's

RRUS Data:

RRUS Model =	Ericsson 4480 B71+B85	
RRUS Shape =	Flat	(User Input)
RRUS Height =	$L_{RRUS} := 21.8$	in (User Input)
RRUS Width =	$W_{RRUS} := 15.7$	in (User Input)
RRUS Thickness =	$T_{RRUS} := 7.5$	in (User Input)
RRUS Weight =	$WT_{RRUS} := 84$	lbs (User Input)
Number of RRUS's =	$N_{RRUS} := 1$	
RRUS Aspect Ratio =	$Ar_{RRUS} := \frac{L_{RRUS}}{W_{RRUS}} = 1.4$	
RRUS Force Coefficient =	$Ca_{RRUS} = 1.2$	

Wind Load (without ice)

Surface Area for One RRUS = $SA_{RRUSF} := \frac{L_{RRUS} \cdot W_{RRUS}}{144} = 2.4$ sf

Total RRUS Wind Force = $F_{RRUS} := qZ \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSF} = 87$ lbs

Surface Area for One RRUS = $SA_{RRUS} := \frac{L_{RRUS} \cdot T_{RRUS}}{144} = 1.1$ sf

Total RRUS Wind Force = $F_{RRUS} := qZ \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUS} = 42$ lbs

Wind Load (with ice)

Surface Area for One RRUS w/ Ice = $SA_{ICERRUSF} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (W_{RRUS} + 2 \cdot t_{iz})}{144} = 3.3$ sf

Total RRUS Wind Force w/ Ice = $F_{IRRUS} := qZ_{ice} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSF} = 36$ lbs

Surface Area for One RRUS w/ Ice = $SA_{ICERRUS} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz})}{144} = 1.9$ sf

Total RRUS Wind Force w/ Ice = $F_{IRRUS} := qZ_{ice} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUS} = 20$ lbs

Gravity Load (without ice)

Weight of All RRUSs = $WT_{RRUS} \cdot N_{RRUS} = 84$ lbs

Gravity Loads (ice only)

Volume of Each RRUS = $V_{RRUS} := L_{RRUS} \cdot W_{RRUS} \cdot T_{RRUS} = 2567$ cu in

Volume of Ice on Each RRUS = $V_{ice} := (L_{RRUS} + 2 \cdot t_{iz}) \cdot (W_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz}) - V_{RRUS} = 2701$ cu in

Weight of Ice on Each RRUS = $W_{ICERRUS} := \frac{V_{ice}}{1728} \cdot Id = 88$ lbs

Weight of Ice on All RRUSs = $W_{ICERRUS} \cdot N_{RRUS} = 88$ lbs

Development of Wind & Ice Load on RRUS's

RRUS Data:

RRUS Model =	Ericsson 4460 B25+B66
RRUS Shape =	Flat (User Input)
RRUS Height =	$L_{RRUS} := 19.6$ in (User Input)
RRUS Width =	$W_{RRUS} := 15.7$ in (User Input)
RRUS Thickness =	$T_{RRUS} := 12.1$ in (User Input)
RRUS Weight =	$WT_{RRUS} := 109$ lbs (User Input)
Number of RRUS's =	$N_{RRUS} := 1$
RRUS Aspect Ratio =	$Ar_{RRUS} := \frac{L_{RRUS}}{W_{RRUS}} = 1.2$
RRUS Force Coefficient =	$Ca_{RRUS} = 1.2$

Wind Load (without ice)

Surface Area for One RRUS = $SA_{RRUSF} := \frac{L_{RRUS} \cdot W_{RRUS}}{144} = 2.1$ sf

Total RRUS Wind Force = $F_{RRUS} := qz \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSF} = 78$ lbs

Surface Area for One RRUS = $SA_{RRUSS} := \frac{L_{RRUS} \cdot T_{RRUS}}{144} = 1.6$ sf

Total RRUS Wind Force = $F_{RRUS} := qz \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSS} = 60$ lbs

Wind Load (with ice)

Surface Area for One RRUS w/ Ice = $SA_{ICERRUSF} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (W_{RRUS} + 2 \cdot t_{iz})}{144} = 3.1$ sf

Total RRUS Wind Force w/ Ice = $F_{IRRUS} := qz_{ice} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSF} = 32$ lbs

Surface Area for One RRUS w/ Ice = $SA_{ICERRUSS} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz})}{144} = 2.5$ sf

Total RRUS Wind Force w/ Ice = $F_{IRRUS} := qz_{ice} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSS} = 26$ lbs

Gravity Load (without ice)

Weight of All RRUSs = $WT_{RRUS} \cdot N_{RRUS} = 109$ lbs

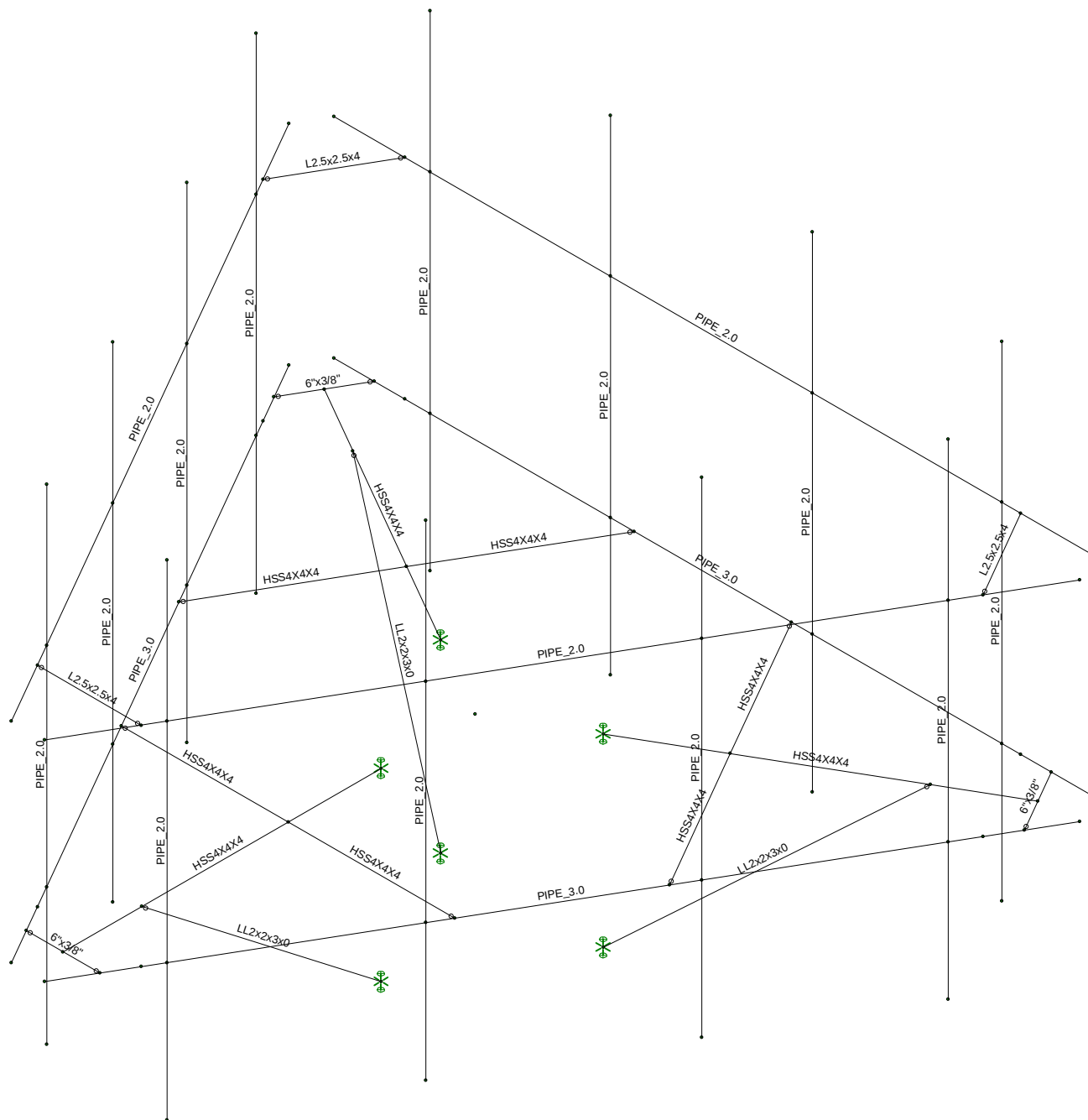
Gravity Loads (ice only)

Volume of Each RRUS = $V_{RRUS} := L_{RRUS} \cdot W_{RRUS} \cdot T_{RRUS} = 3723$ cu in

Volume of Ice on Each RRUS = $V_{ice} := (L_{RRUS} + 2 \cdot t_{iz}) \cdot (W_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz}) - V_{RRUS} = 3110$ cu in

Weight of Ice on Each RRUS = $W_{ICERRUS} := \frac{V_{ice}}{1728} \cdot Id = 101$ lbs

Weight of Ice on All RRUSs = $W_{ICERRUS} \cdot N_{RRUS} = 101$ lbs



Envelope Only Solution

Centek Engineering	CTFF836A - Mount Member Framing	
FJP		July 21, 2021 at 12:16 PM
21085.01		CTFF836A_AMA.R3D

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	Yes(Iterative)
RISACONNECTION CODE	AISC 14th(360-10): ASD
Cold Formed Steel Code	AISI S100-10: ASD
Wood Code	AWC NDS-12: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-11
Masonry Code	ACI 530-11: ASD
Aluminum Code	AA ADM1-10: ASD - Building
Stainless Steel Code	AISC 14th(360-10): ASD
Adjust Stiffness?	Yes(Iterative)

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parame Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	1
Cd X	1
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1...	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	58	1.2
3	A992	29000	11154	.3	.65	.49	50	1.1	58	1.2
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.3	58	1.1
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.2	58	1.1
6	A53 Grade B	29000	11154	.3	.65	.49	35	1.5	58	1.2

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[...Lcomp bot[...L-torq...	Kyy	Kzz	Cb	Functi...
1	M1	Outrigger_...	5.25			Lbyy				Lateral
2	M2	Plat. Horz_...	2.75			Lbyy				Lateral
3	M3	Plat. Horz_...	2.75			Lbyy				Lateral
4	M4	Outrigger_...	5.25			Lbyy				Lateral
5	M5	Plat. Horz_...	2.75			Lbyy				Lateral
6	M6	Plat. Horz_...	2.75			Lbyy				Lateral
7	M7	Outrigger_...	5.25			Lbyy				Lateral
8	M8	Plat. Horz_...	2.75			Lbyy				Lateral
9	M9	Plat. Horz_...	2.75			Lbyy				Lateral
10	M10	Face Tube...	12.5			Lbyy				Lateral
11	M13	Face Tube...	12.5			Lbyy				Lateral
12	M14	Face Tube...	12.5			Lbyy				Lateral
13	M13A	PL 3/8"x6 "	1.212			Lbyy				Lateral
14	M14A	PL 3/8"x6 "	1.212			Lbyy				Lateral
15	M15	PL 3/8"x6 "	1.212			Lbyy				Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[...Lcomp bot[...L-torq...	Kyy	Kzz	Cb	Functi...
16	M16	Handrails _...	12.5			Lbyy				Lateral
17	M17	Handrails _...	12.5			Lbyy				Lateral
18	M18	Handrails _...	12.5			Lbyy				Lateral
19	PSA.1	Antenna M...	8			Lbyy				Lateral
20	PSA.2	Antenna M...	8			Lbyy				Lateral
21	PSA.3	Antenna M...	8			Lbyy				Lateral
22	PSA.4	Antenna M...	8			Lbyy				Lateral
23	PSB.1	Antenna M...	8			Lbyy				Lateral
24	PSB.2	Antenna M...	8			Lbyy				Lateral
25	PSB.3	Antenna M...	8			Lbyy				Lateral
26	PSB.4	Antenna M...	8			Lbyy				Lateral
27	PSC.1	Antenna M...	8			Lbyy				Lateral
28	PSC.2	Antenna M...	8			Lbyy				Lateral
29	PSC.3	Antenna M...	8			Lbyy				Lateral
30	PSC.4	Antenna M...	8			Lbyy				Lateral
31	M31	Side railings	1.712			Lbyy				Lateral
32	M32	Side railings	1.712			Lbyy				Lateral
33	M33	Side railings	1.712			Lbyy				Lateral
34	M34	Mount Rein...	4.991			Lbyy				Lateral
35	M35	Mount Rein...	4.991			Lbyy				Lateral
36	M36	Mount Rein...	4.991			Lbyy				Lateral

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Ru...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Outrigger HSS4X4	HSS4X4X4	Beam	HSS Pipe	A500 Gr.46	Typical	3.37	7.8	7.8	12.8
2	Face Tube Pipe 3.0 STD	PIPE 3.0	Beam	Pipe	A53 Grad...	Typical	2.07	2.85	2.85	5.69
3	Handrails Pipe 2.0 STD	PIPE 2.0	Beam	Pipe	A53 Grad...	Typical	1.02	.627	.627	1.25
4	Antenna Mast_Pipe 2.0 STD	PIPE 2.0	Column	Pipe	A53 Grad...	Typical	1.02	.627	.627	1.25
5	Plat. Horz HSS4X4	HSS4X4X4	Beam	HSS Pipe	A500 Gr.46	Typical	3.37	7.8	7.8	12.8
6	PL 3/8"x6 "	6"x3/8"	Beam	RECT	A36 Gr.36	Typical	2.25	.026	6.75	.101
7	Side railings	L2.5x2.5x4	Beam	RECT	A36 Gr.36	Typical	1.19	.692	.692	.026
8	Mount Reinforcement	LL2x2x3x0	Beam	RECT	A36 Gr.36	Typical	1.44	.994	.542	.018

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design ...
1	M1	N1	N2			Outrigger HSS4X4	Beam	HSS Pipe	A500 ...	Typical
2	M2	N4	N3		180	Plat. Horz HSS4X4	Beam	HSS Pipe	A500 ...	Typical
3	M3	N5	N3			Plat. Horz HSS4X4	Beam	HSS Pipe	A500 ...	Typical
4	M4	N7	N8			Outrigger HSS4X4	Beam	HSS Pipe	A500 ...	Typical
5	M5	N10	N9		180	Plat. Horz HSS4X4	Beam	HSS Pipe	A500 ...	Typical
6	M6	N11	N9			Plat. Horz HSS4X4	Beam	HSS Pipe	A500 ...	Typical
7	M7	N12	N13			Outrigger HSS4X4	Beam	HSS Pipe	A500 ...	Typical
8	M8	N15	N14		180	Plat. Horz HSS4X4	Beam	HSS Pipe	A500 ...	Typical
9	M9	N16	N14			Plat. Horz HSS4X4	Beam	HSS Pipe	A500 ...	Typical
10	M10	N17	N18			Face Tube Pipe 3.0 STD	Beam	Pipe	A53 Gr...	Typical
11	M13	N19	N20			Face Tube Pipe 3.0 STD	Beam	Pipe	A53 Gr...	Typical
12	M14	N21	N22			Face Tube Pipe 3.0 STD	Beam	Pipe	A53 Gr...	Typical
13	M13A	N28	N23			PL 3/8"x6 "	Beam	RECT	A36 Gr...	Typical
14	M14A	N24	N25			PL 3/8"x6 "	Beam	RECT	A36 Gr...	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...)	Section/Shape	Type	Design List	Material	Design ...
15	M15	N27	N26			PL 3/8"x6 "	Beam	RECT	A36 Gr...	Typical
16	M16	N29	N30			Handrails Pipe 2.0 STD	Beam	Pipe	A53 Gr...	Typical
17	M17	N31	N32			Handrails Pipe 2.0 STD	Beam	Pipe	A53 Gr...	Typical
18	M18	N33	N34			Handrails Pipe 2.0 STD	Beam	Pipe	A53 Gr...	Typical
19	PSA.1	N43	N44			Antenna Mast Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
20	PSA.2	N45	N46			Antenna Mast Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
21	PSA.3	N47	N48			Antenna Mast Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
22	PSA.4	N49	N50			Antenna Mast Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
23	PSB.1	N51	N52			Antenna Mast Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
24	PSB.2	N53	N54			Antenna Mast Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
25	PSB.3	N55	N56			Antenna Mast Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
26	PSB.4	N57	N58			Antenna Mast Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
27	PSC.1	N59	N60			Antenna Mast Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
28	PSC.2	N61	N62			Antenna Mast Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
29	PSC.3	N63	N64			Antenna Mast Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
30	PSC.4	N65	N66			Antenna Mast Pipe 2.0 STD	Colu...	Pipe	A53 Gr...	Typical
31	M31	N91	N94		180	Side railings	Beam	RECT	A36 Gr...	Typical
32	M32	N93	N90		180	Side railings	Beam	RECT	A36 Gr...	Typical
33	M33	N89	N92		180	Side railings	Beam	RECT	A36 Gr...	Typical
34	M34	N97	N99			Mount Reinforcement	Beam	RECT	A36 Gr...	Typical
35	M35	N95	N100			Mount Reinforcement	Beam	RECT	A36 Gr...	Typical
36	M36	N96	N98			Mount Reinforcement	Beam	RECT	A36 Gr...	Typical

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
1	N1	-0.	0	1.548833	0	
2	N2	-0.	0	6.798833	0	
3	N3	-0.	0	3.083333	0	
4	N4	2.75	0	3.083333	0	
5	N5	-2.75	0	3.083333	0	
6	N6	-0.	0	0.	0	
7	N7	1.341329	0	-0.774417	0	
8	N8	5.887962	0	-3.399417	0	
9	N9	2.670245	0	-1.541667	0	
10	N10	1.295245	0	-3.923237	0	
11	N11	4.045245	0	0.839903	0	
12	N12	-1.341329	0	-0.774417	0	
13	N13	-5.887962	0	-3.399417	0	
14	N14	-2.670245	0	-1.541667	0	
15	N15	-4.045245	0	0.839903	0	
16	N16	-1.295245	0	-3.923237	0	
17	N17	6.52262	0	-3.451036	0	
18	N18	0.272625	0	7.374273	0	
19	N19	-6.249995	0	-3.923237	0	
20	N20	6.249995	0	-3.923237	0	
21	N21	-0.272625	0	7.374273	0	
22	N22	-6.52262	0	-3.451036	0	
23	N23	5.583328	0	-3.923237	0	
24	N24	-5.583328	0	-3.923237	0	
25	N25	-6.189287	0	-2.873686	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
26	N26	-0.605958	0	6.796922	0	
27	N27	0.605958	0	6.796922	0	
28	N28	6.189287	0	-2.873686	0	
29	N29	6.52262	3.45	-3.451036	0	
30	N30	0.272625	3.45	7.374273	0	
31	N31	-6.249995	3.45	-3.923237	0	
32	N32	6.249995	3.45	-3.923237	0	
33	N33	-0.272625	3.45	7.374273	0	
34	N34	-6.52262	3.45	-3.451036	0	
35	N35	-4.666662	0	-3.923237	0	
36	N36	-4.666662	3.45	-3.923237	0	
37	N37	-1.687495	0	-3.923237	0	
38	N38	-1.687495	3.45	-3.923237	0	
39	N39	1.645838	0	-3.923237	0	
40	N40	1.645838	3.45	-3.923237	0	
41	N41	4.770838	0	-3.923237	0	
42	N42	4.770838	3.45	-3.923237	0	
43	N43	4.770838	5.75	-3.923237	0	
44	N44	4.770838	-2.25	-3.923237	0	
45	N45	1.645838	5.75	-3.923237	0	
46	N46	1.645838	-2.25	-3.923237	0	
47	N47	-1.687495	5.75	-3.923237	0	
48	N48	-1.687495	-2.25	-3.923237	0	
49	N49	-4.666662	5.75	-3.923237	0	
50	N50	-4.666662	-2.25	-3.923237	0	
51	N51	-5.783042	5.75	-2.170049	0	
52	N52	-5.783042	-2.25	-2.170049	0	
53	N53	-4.220542	5.75	0.53628	0	
54	N54	-4.220542	-2.25	0.53628	0	
55	N55	-2.553875	5.75	3.423032	0	
56	N56	-2.553875	-2.25	3.423032	0	
57	N57	-1.064292	5.75	6.003066	0	
58	N58	-1.064292	-2.25	6.003066	0	
59	N59	1.012203	5.75	6.093285	0	
60	N60	1.012203	-2.25	6.093285	0	
61	N61	2.574703	5.75	3.386956	0	
62	N62	2.574703	-2.25	3.386956	0	
63	N63	4.24137	5.75	0.500205	0	
64	N64	4.24137	-2.25	0.500205	0	
65	N65	5.730953	5.75	-2.079829	0	
66	N66	5.730953	-2.25	-2.079829	0	
67	N67	1.012203	0	6.093285	0	
68	N68	2.574703	0	3.386956	0	
69	N69	4.24137	0	0.500205	0	
70	N70	5.730953	0	-2.079829	0	
71	N71	-5.783042	0	-2.170049	0	
72	N72	-4.220542	0	0.53628	0	
73	N73	-2.553875	0	3.423032	0	
74	N74	-1.064292	0	6.003066	0	
75	N75	1.012203	3.45	6.093285	0	
76	N76	2.574703	3.45	3.386956	0	
77	N77	4.24137	3.45	0.500205	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
78	N78	5.730953	3.45	-2.079829	0	
79	N79	-5.783042	3.45	-2.170049	0	
80	N80	-4.220542	3.45	0.53628	0	
81	N81	-2.553875	3.45	3.423032	0	
82	N82	-1.064292	3.45	6.003066	0	
83	N83	-5.083328	0	-3.923237	0	
84	N84	5.083328	0	-3.923237	0	
85	N85	-0.855958	0	6.36391	0	
86	N86	-5.939287	0	-2.440673	0	
87	N87	5.939287	0	-2.440673	0	
88	N88	0.855958	0	6.36391	0	
89	N89	-5.083328	3.45	-3.923237	0	
90	N90	5.083328	3.45	-3.923237	0	
91	N91	-0.855958	3.45	6.36391	0	
92	N92	-5.939287	3.45	-2.440673	0	
93	N93	5.939287	3.45	-2.440673	0	
94	N94	0.855958	3.45	6.36391	0	
95	N95	-4.763371	0	-2.750133	0	
96	N96	-0.	0	5.500267	0	
97	N97	4.763371	0	-2.750133	0	
98	N98	-0.	-3.049275	1.548833	0	
99	N99	1.341329	-3.049275	-0.774417	0	
100	N100	-1.341329	-3.049275	-0.774417	0	

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N1	Reaction	Reaction	Reaction		Reaction	
2	N7	Reaction	Reaction	Reaction		Reaction	
3	N12	Reaction	Reaction	Reaction		Reaction	
4	N95						
5	N96						
6	N97						
7	N98	Reaction	Reaction	Reaction		Reaction	
8	N99	Reaction	Reaction	Reaction		Reaction	
9	N100	Reaction	Reaction	Reaction		Reaction	

Member Point Loads (BLC 2 : Equipment Weight)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	PSA.1	Y	-.075	1.083
2	PSA.1	Y	-.075	5.917
3	PSA.4	Y	-.052	1.667
4	PSA.4	Y	-.052	4.417
5	PSA.1	Y	-.084	1
6	PSA.1	Y	-.109	7
7	PSC.1	Y	-.075	1.083
8	PSC.1	Y	-.075	5.917
9	PSC.4	Y	-.052	1.667
10	PSC.4	Y	-.052	4.417
11	PSC.1	Y	-.084	1

Member Point Loads (BLC 2 : Equipment Weight) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
12	PSC.1	Y	-.109	7
13	PSB.1	Y	-.075	1.083
14	PSB.1	Y	-.075	5.917
15	PSB.4	Y	-.052	1.667
16	PSB.4	Y	-.052	4.417
17	PSB.1	Y	-.084	1
18	PSB.1	Y	-.109	7

Member Point Loads (BLC 3 : Ice Weight)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	PSA.1	Y	-.209	1.083
2	PSA.1	Y	-.209	5.917
3	PSA.4	Y	-.075	1.667
4	PSA.4	Y	-.075	4.417
5	PSA.1	Y	-.088	1
6	PSA.1	Y	-.101	7
7	PSC.1	Y	-.209	1.083
8	PSC.1	Y	-.209	5.917
9	PSC.4	Y	-.075	1.667
10	PSC.4	Y	-.075	4.417
11	PSC.1	Y	-.088	1
12	PSC.1	Y	-.101	7
13	PSB.1	Y	-.209	1.083
14	PSB.1	Y	-.209	5.917
15	PSB.4	Y	-.075	1.667
16	PSB.4	Y	-.075	4.417
17	PSB.1	Y	-.088	1
18	PSB.1	Y	-.101	7

Member Point Loads (BLC 4 : Wind w/ Ice X (5 psf))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	PSA.1	X	.046	1.083
2	PSA.1	X	.046	5.917
3	PSA.4	X	.016	1.667
4	PSA.4	X	.016	4.417
5	PSA.1	X	.02	1
6	PSA.1	X	.026	7
7	PSC.1	X	.106	1.083
8	PSC.1	X	.106	5.917
9	PSC.4	X	.032	1.667
10	PSC.4	X	.032	4.417
11	PSC.1	X	.036	1
12	PSC.1	X	.063	7
13	PSB.1	X	.106	1.083
14	PSB.1	X	.106	5.917
15	PSB.4	X	.032	1.667
16	PSB.4	X	.032	4.417
17	PSB.1	X	.036	1
18	PSB.1	X	.063	7

Member Point Loads (BLC 5 : Wind X(27 psf))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	PSA.1	X	.11	1.083
2	PSA.1	X	.11	5.917
3	PSA.4	X	.035	1.667
4	PSA.4	X	.035	4.417
5	PSA.1	X	.042	1
6	PSA.1	X	.06	7
7	PSC.1	X	.31	1.083
8	PSC.1	X	.31	5.917
9	PSC.4	X	.087	1.667
10	PSC.4	X	.087	4.417
11	PSC.1	X	.087	1
12	PSC.1	X	.078	7
13	PSB.1	X	.31	1.083
14	PSB.1	X	.31	5.917
15	PSB.4	X	.087	1.667
16	PSB.4	X	.087	4.417
17	PSB.1	X	.087	1
18	PSB.1	X	.078	7

Member Point Loads (BLC 6 : Wind w/ Ice Z(5 psf))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	PSA.1	Z	.106	1.083
2	PSA.1	Z	.106	5.917
3	PSA.4	Z	.032	1.667
4	PSA.4	Z	.032	4.417
5	PSA.1	Z	.036	1
6	PSA.1	Z	.063	7
7	PSC.1	Z	.046	1.083
8	PSC.1	Z	.046	5.917
9	PSC.4	Z	.016	1.667
10	PSC.4	Z	.016	4.417
11	PSC.1	Z	.02	1
12	PSC.1	Z	.026	7
13	PSB.1	Z	.046	1.083
14	PSB.1	Z	.046	5.917
15	PSB.4	Z	.016	1.667
16	PSB.4	Z	.016	4.417
17	PSB.1	Z	.02	1
18	PSB.1	Z	.026	7

Member Point Loads (BLC 7 : Wind Z (27 psf))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	PSA.1	Z	.31	1.083
2	PSA.1	Z	.31	5.917
3	PSA.4	Z	.087	1.667
4	PSA.4	Z	.087	4.417
5	PSA.1	Z	.087	1
6	PSA.1	Z	.078	7
7	PSC.1	Z	.11	1.083
8	PSC.1	Z	.11	5.917
9	PSC.4	Z	.035	1.667

Member Point Loads (BLC 7 : Wind Z (27 psf)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
10	PSC.4	Z	.035	4.417
11	PSC.1	Z	.042	1
12	PSC.1	Z	.06	7
13	PSB.1	Z	.11	1.083
14	PSB.1	Z	.11	5.917
15	PSB.4	Z	.035	1.667
16	PSB.4	Z	.035	4.417
17	PSB.1	Z	.042	1
18	PSB.1	Z	.06	7

Joint Loads and Enforced Displacements

Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s...
No Data to Print ...			

Member Distributed Loads (BLC 4 : Wind w/ Ice X (5 psf))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,%]	End Location[ft,%]
1	PSA.2	X	.002	.002	0	0
2	PSA.3	X	.002	.002	0	0
3	PSB.2	X	.002	.002	0	0
4	PSB.3	X	.002	.002	0	0
5	PSC.2	X	.002	.002	0	0
6	PSC.3	X	.002	.002	0	0
7	M16	X	.002	.002	0	0
8	M18	X	.002	.002	0	0
9	M10	X	.002	.002	0	0
10	M14	X	.002	.002	0	0
11	M34	X	.001	.001	0	0
12	M35	X	.001	.001	0	0
13	M36	X	.001	.001	0	0

Member Distributed Loads (BLC 5 : Wind X(27 psf))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,%]	End Location[ft,%]
1	PSA.2	X	.006	.006	0	0
2	PSA.3	X	.006	.006	0	0
3	PSB.2	X	.006	.006	0	0
4	PSB.3	X	.006	.006	0	0
5	PSC.2	X	.006	.006	0	0
6	PSC.3	X	.006	.006	0	0
7	M16	X	.006	.006	0	0
8	M18	X	.006	.006	0	0
9	M10	X	.008	.008	0	0
10	M14	X	.008	.008	0	0
11	M34	X	.005	.005	0	0
12	M35	X	.005	.005	0	0
13	M36	X	.005	.005	0	0

Member Distributed Loads (BLC 6 : Wind w/ Ice Z(5 psf))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,%]	End Location[ft,%]
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Member Distributed Loads (BLC 6 : Wind w/ Ice Z(5 psf)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,kSF]	End Magnitude[k/ft,F,kSF]	Start Location[ft,%]	End Location[ft,%]
1	PSA.2	Z	.002	.002	0	0
2	PSA.3	Z	.002	.002	0	0
3	PSB.2	Z	.002	.002	0	0
4	PSB.3	Z	.002	.002	0	0
5	PSC.2	Z	.002	.002	0	0
6	PSC.3	Z	.002	.002	0	0
7	M13	Z	.002	.002	0	0
8	M17	Z	.002	.002	0	0
9	M34	Z	.001	.001	0	0
10	M35	Z	.001	.001	0	0

Member Distributed Loads (BLC 7 : Wind Z (27 psf))

	Member Label	Direction	Start Magnitude[k/ft,F,kSF]	End Magnitude[k/ft,F,kSF]	Start Location[ft,%]	End Location[ft,%]
1	PSC.3	Z	.006	.006	0	0
2	PSC.2	Z	.006	.006	0	0
3	PSB.3	Z	.006	.006	0	0
4	PSB.2	Z	.006	.006	0	0
5	PSA.3	Z	.006	.006	0	0
6	PSA.2	Z	.006	.006	0	0
7	M17	Z	.006	.006	0	0
8	M13	Z	.008	.008	0	0
9	M34	Z	.005	.005	0	0
10	M35	Z	.005	.005	0	0

Member Distributed Loads (BLC 8 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,F,kSF]	End Magnitude[k/ft,F,kSF]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-.015	-.007	2.1	3.15
2	M1	Y	-.007	-.004	3.15	4.2
3	M1	Y	-.004	-.005	4.2	5.25
4	M2	Y	-.004	-.004	.169	2.704
5	M3	Y	-.004	-.004	.169	2.704
6	M10	Y	-.00071	-.003	7.5	9.167
7	M10	Y	-.003	-.003	9.167	10.833
8	M10	Y	-.003	-.0004574	10.833	12.5
9	M14	Y	-.0004575	-.003	0	1.667
10	M14	Y	-.003	-.003	1.667	3.333
11	M14	Y	-.003	-.0007098	3.333	5
12	M15	Y	-.0008711	-.0008711	0	1.212
13	M7	Y	-.015	-.007	2.1	3.15
14	M7	Y	-.007	-.004	3.15	4.2
15	M7	Y	-.004	-.005	4.2	5.25
16	M8	Y	-.004	-.004	.169	2.704
17	M9	Y	-.004	-.004	.169	2.704
18	M13	Y	-.0004575	-.003	0	1.667
19	M13	Y	-.003	-.003	1.667	3.333
20	M13	Y	-.003	-.0007098	3.333	5
21	M14	Y	-.00071	-.003	7.5	9.167
22	M14	Y	-.003	-.003	9.167	10.833
23	M14	Y	-.003	-.0004574	10.833	12.5
24	M14A	Y	-.0008711	-.0008711	0	1.212
25	M4	Y	-.015	-.007	2.1	3.15

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Envelope Joint Reactions (Continued)

Joint	X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
14	min	-4.779	1	2.473	2	-3.56	4					

Envelope Joint Displacements

Joint	X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [...]	LC	Y Rotation [...]	LC	Z Rotation [...]	LC
1	N1	max	0	6	0	6	3.987e-4	4	0	6	-6.148e-4	3
2		min	0	1	0	1	-1.29e-4	2	0	1	-8.646e-4	4
3	N2	max	.149	2	-.021	2	.002	4	1.847e-3	6	3.108e-3	2
4		min	0	5	-.038	6	0	2	1.113e-3	2	3.677e-5	6
5	N3	max	.023	1	.003	2	0	4	3.159e-4	4	1.632e-3	1
6		min	-.002	5	-.007	4	0	2	-2.057e-4	2	-2.416e-4	5
7	N4	max	.024	1	-.031	2	.042	5	4.97e-3	1	1.353e-3	2
8		min	-.003	5	-.06	4	-.023	1	7.365e-4	6	1.955e-4	6
9	N5	max	.024	1	.029	2	.043	2	1.087e-3	4	7.178e-4	2
10		min	-.002	5	-.012	6	.003	6	-6.763e-3	1	-2.964e-4	5
11	N6	max	0	6	0	6	0	6	0	6	0	6
12		min	0	1	0	1	0	1	0	1	0	1
13	N7	max	0	6	0	6	0	6	1.62e-3	5	0	6
14		min	0	1	0	1	0	1	-4.132e-4	1	0	1
15	N8	max	.034	4	-.002	5	.059	5	3.808e-3	5	-6.117e-5	3
16		min	.002	2	-.038	3	0	1	-1.96e-3	3	-1.213e-3	5
17	N9	max	.007	4	-.002	5	.012	5	1.752e-3	5	1.453e-4	1
18		min	0	2	-.009	1	-.001	1	-5.067e-4	1	-9.075e-4	4
19	N10	max	.014	1	.046	5	.009	5	8.346e-3	4	3.658e-4	2
20		min	.003	6	-.038	1	-.009	1	-4.392e-3	1	-1.076e-3	4
21	N11	max	.03	1	-.024	3	.03	5	6.023e-3	2	1.992e-5	5
22		min	-.023	5	-.072	4	-.019	1	4.872e-4	6	-5.933e-4	2
23	N12	max	0	6	0	6	0	6	7.52e-4	4	0	6
24		min	0	1	0	1	0	1	-6.822e-4	2	0	1
25	N13	max	.033	2	.006	2	.038	5	8.193e-4	3	1.014e-3	5
26		min	-.022	4	-.035	6	-.055	1	2.528e-4	5	-1.683e-3	1
27	N14	max	.002	2	.003	5	.004	5	7.591e-4	4	2.559e-4	5
28		min	-.002	4	-.001	3	-.003	1	-4.87e-4	2	-6.163e-5	1
29	N15	max	.052	1	.027	2	.027	1	2.878e-3	5	2.657e-4	4
30		min	.002	6	-.033	6	.002	6	-1.15e-2	1	-2.003e-3	2
31	N16	max	.014	1	.031	5	.012	4	9.529e-3	4	8.641e-4	4
32		min	.003	6	-.031	1	.001	3	-8.217e-3	1	-3.91e-4	1
33	N17	max	.042	4	-.016	2	.068	5	4.833e-3	4	1.71e-4	2
34		min	.009	3	-.028	6	-.018	1	9.201e-4	3	-1.671e-3	4
35	N18	max	.168	1	-.017	2	.06	2	9.898e-3	2	2.64e-3	1
36		min	-.003	5	-.044	6	.01	6	-8.524e-4	6	-4.24e-4	5
37	N19	max	.014	1	.013	2	.062	5	1.21e-2	4	6.272e-4	5
38		min	.003	6	-.021	6	-.078	2	-1.499e-2	1	-1.49e-3	2
39	N20	max	.014	1	.035	5	.07	5	5.696e-3	5	1.786e-4	4
40		min	.003	6	-.038	3	-.005	1	-1.47e-3	1	-1.985e-4	2
41	N21	max	.173	2	-.015	5	.012	5	9.7e-4	5	3.457e-3	1
42		min	0	5	-.03	1	-.042	2	-1.233e-2	1	4.923e-5	6
43	N22	max	.116	1	.008	2	.035	5	4.496e-3	4	8.673e-4	4
44		min	-.039	5	-.041	6	-.01	1	-9.667e-3	2	-3.89e-4	1
45	N23	max	.014	1	.032	5	.071	4	5.696e-3	5	1.8e-4	4
46		min	.003	6	-.047	3	-.007	2	-1.47e-3	1	-1.985e-4	2

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [...]	LC	Y Rotation [...]	LC	Z Rotation [...]	LC
47	N24	max	.014	1	.008	2	.057	5	1.21e-2	4	6.257e-4	5	1.821e-4	5
48		min	.003	6	-.021	6	-.066	1	-1.499e-2	1	-1.49e-3	2	-6.521e-4	1
49	N25	max	.114	1	.004	2	.032	5	4.497e-3	4	8.673e-4	4	7.07e-3	5
50		min	-.033	5	-.049	6	-.009	1	-9.667e-3	2	-3.878e-4	1	-1.78e-2	1
51	N26	max	.149	2	-.014	5	.012	5	9.693e-4	5	3.456e-3	1	1.313e-3	4
52		min	0	5	-.029	1	-.029	2	-1.233e-2	1	4.923e-5	6	-2.154e-2	1
53	N27	max	.149	2	-.016	2	.049	2	9.897e-3	2	2.638e-3	1	-1.079e-3	6
54		min	0	5	-.055	6	.01	6	-8.532e-4	6	-4.24e-4	5	-1.719e-2	1
55	N28	max	.032	1	-.017	2	.061	5	4.834e-3	4	1.722e-4	2	-9.76e-4	6
56		min	.009	6	-.038	4	-.017	1	9.21e-4	3	-1.671e-3	4	-6.26e-3	2
57	N29	max	.38	4	-.029	5	.415	4	6.412e-3	5	9.345e-3	1	-1.444e-3	3
58		min	.019	3	-.046	1	-.071	1	7.495e-5	3	-4.347e-3	4	-8.93e-3	4
59	N30	max	1.544	1	.045	2	.764	1	1.81e-2	1	1.211e-2	1	-4.603e-4	6
60		min	.009	6	-.11	4	.054	6	1.827e-3	6	-1.849e-3	5	-3.801e-2	1
61	N31	max	.177	1	.058	2	.712	4	1.769e-2	4	9.008e-4	4	5.888e-4	4
62		min	.006	6	-.028	6	-1.289	1	-2.491e-2	1	-1.391e-2	1	-2.998e-3	2
63	N32	max	.178	1	.076	5	.432	4	1.579e-2	5	9.334e-3	5	2.683e-3	5
64		min	.006	6	-.108	1	.008	3	-1.078e-3	3	-1.288e-3	1	-3.488e-3	1
65	N33	max	1.493	1	-.032	6	.038	5	1.406e-3	4	7.942e-3	2	-2.048e-4	6
66		min	.024	6	-.093	1	-.635	1	-1.509e-2	1	9.43e-4	6	-3.293e-2	1
67	N34	max	1.257	1	.055	2	.441	4	1.035e-2	5	6.22e-3	4	1.301e-2	4
68		min	-.582	4	-.059	6	-.498	1	-1.635e-2	1	-1.921e-3	1	-3.442e-2	1
69	N35	max	.014	1	.001	2	.05	5	1.219e-2	4	7.357e-4	5	1.674e-4	5
70		min	.003	6	-.021	6	-.049	1	-1.508e-2	1	-1.763e-3	1	-7.472e-4	1
71	N36	max	.177	1	.001	2	.696	4	1.773e-2	4	9.388e-4	4	4.969e-4	4
72		min	.006	6	-.022	6	-1.025	1	-2.499e-2	1	-1.348e-2	1	-2.888e-3	2
73	N37	max	.014	1	.023	5	.017	4	1.019e-2	4	9.466e-4	4	1.534e-3	4
74		min	.003	6	-.025	1	0	3	-9.295e-3	1	-8.454e-4	1	-1.401e-3	2
75	N38	max	.177	1	.023	5	.657	4	1.824e-2	4	6.004e-4	4	2.677e-4	5
76		min	.006	6	-.025	1	-.556	1	-1.563e-2	1	-1.061e-2	1	-1.461e-3	1
77	N39	max	.014	1	.042	5	.015	5	8.618e-3	4	1.511e-4	2	-1.798e-4	2
78		min	.003	6	-.038	1	-.01	2	-4.08e-3	1	-1.424e-3	4	-1.038e-3	4
79	N40	max	.177	1	.041	5	.669	4	1.896e-2	5	-1.301e-4	6	-1.527e-4	5
80		min	.006	6	-.038	1	-.191	1	-5.693e-3	1	-6.767e-3	1	-1.277e-3	1
81	N41	max	.014	1	.03	5	.071	4	6.552e-3	5	-7.191e-5	3	5.14e-4	3
82		min	.003	6	-.057	3	-.008	2	-1.588e-3	1	-3.524e-4	5	4.272e-5	2
83	N42	max	.178	1	.03	5	.594	4	1.769e-2	5	7.346e-3	5	1.52e-3	5
84		min	.006	6	-.058	3	-.007	3	-8.181e-4	3	-2.16e-3	1	-3.644e-3	1
85	N43	max	.321	1	.03	5	1.194	5	2.253e-2	5	7.346e-3	5	1.523e-3	5
86		min	-.024	5	-.058	3	-.03	3	-8.234e-4	3	-2.16e-3	1	-5.509e-3	1
87	N44	max	.034	1	.03	5	.034	1	5.506e-3	5	-7.191e-5	3	8.863e-4	1
88		min	.014	5	-.057	3	-.082	5	-1.583e-3	1	-3.524e-4	5	6.02e-5	5
89	N45	max	.216	1	.041	5	1.196	5	1.914e-2	5	-1.301e-4	6	-1.527e-4	5
90		min	.017	6	-.038	1	-.348	1	-5.694e-3	1	-6.767e-3	1	-1.454e-3	1
91	N46	max	.012	2	.042	5	.1	1	8.452e-3	4	1.511e-4	2	-1.442e-5	2
92		min	-.024	6	-.038	1	-.215	4	-4.079e-3	1	-1.424e-3	4	-1.038e-3	4
93	N47	max	.221	1	.023	5	1.165	4	1.842e-2	4	6.004e-4	4	2.678e-4	5
94		min	.007	6	-.025	1	-.987	1	-1.563e-2	1	-1.061e-2	1	-1.638e-3	1
95	N48	max	.054	4	.023	5	.252	1	1.002e-2	4	9.466e-4	4	1.534e-3	4
96		min	-.021	2	-.025	1	-.255	4	-9.294e-3	1	-8.454e-4	1	-1.235e-3	2
97	N49	max	.259	2	.001	2	1.192	4	1.802e-2	4	9.388e-4	4	4.974e-4	4
98		min	-.003	6	-.022	6	-1.715	1	-2.502e-2	1	-1.348e-2	1	-3.001e-3	2

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [...]	LC	Y Rotation [...]	LC	Z Rotation [...]	LC
99	N50	max	.017	5	.001	2	.358	1	1.219e-2	4	7.357e-4	5	1.674e-4	5
100		min	-.006	1	-.021	6	-.279	4	-1.508e-2	1	-1.763e-3	1	-7.471e-4	1
101	N51	max	2.293	1	0	2	.714	5	1.222e-2	5	6.164e-3	4	1.308e-2	4
102		min	-.847	4	-.06	6	-.931	1	-1.631e-2	1	-2.105e-3	1	-3.943e-2	1
103	N52	max	.168	5	-.001	2	.253	2	3.581e-3	4	1.027e-3	4	7.149e-3	5
104		min	-.35	1	-.059	6	-.073	4	-9.604e-3	2	-7.151e-4	1	-1.686e-2	1
105	N53	max	1.945	1	.017	2	.419	5	5.695e-3	5	5.518e-3	4	9.151e-3	4
106		min	-.527	4	-.036	6	-.862	1	-1.59e-2	1	-2.297e-3	1	-2.974e-2	1
107	N54	max	.127	4	.018	2	.321	1	2.959e-3	5	5.336e-4	5	4.533e-3	4
108		min	-.349	1	-.036	6	-.071	5	-1.107e-2	1	-2.023e-3	2	-1.509e-2	1
109	N55	max	1.986	1	.015	2	.245	5	3.028e-3	5	4.232e-3	5	3.694e-3	4
110		min	-.202	4	-.012	6	-.882	1	-1.609e-2	1	8.26e-4	3	-3.029e-2	1
111	N56	max	.069	5	.015	2	.252	1	1.205e-3	4	1.41e-3	2	2.657e-3	5
112		min	-.485	1	-.012	6	-.02	4	-7.821e-3	1	-1.396e-4	5	-1.897e-2	1
113	N57	max	2.279	1	-.011	5	.121	4	1.472e-3	4	7.77e-3	2	-1.898e-4	6
114		min	.013	6	-.029	1	-.982	1	-1.53e-2	1	9.088e-4	6	-3.322e-2	1
115	N58	max	.031	4	-.011	5	.32	1	1.138e-3	5	3.545e-3	1	1.198e-3	4
116		min	-.473	1	-.028	1	-.017	5	-1.221e-2	1	6.274e-5	6	-2.182e-2	1
117	N59	max	2.519	1	-.015	2	1.16	1	1.825e-2	1	1.214e-2	1	-4.756e-4	6
118		min	.026	6	-.067	6	.118	6	2.33e-3	6	-1.762e-3	5	-4.293e-2	1
119	N60	max	-.019	6	-.015	2	.038	4	1.005e-2	2	3.039e-3	1	-7.532e-4	6
120		min	-.313	1	-.066	6	-.236	2	-5.663e-4	6	-3.559e-4	5	-1.61e-2	1
121	N61	max	1.599	1	-.024	2	.792	1	1.42e-2	1	1.205e-2	1	-9.785e-4	6
122		min	.046	6	-.059	4	.088	6	1.07e-3	6	-1.306e-3	4	-2.491e-2	1
123	N62	max	0	6	-.024	2	.001	5	5.951e-3	1	2.025e-3	2	5.731e-6	6
124		min	-.323	2	-.059	4	-.18	1	8.791e-4	6	1.582e-4	6	-1.302e-2	2
125	N63	max	.923	1	-.021	2	.459	4	7.191e-3	1	8.784e-3	1	-1.395e-3	6
126		min	.072	6	-.07	4	.078	3	1.305e-3	6	-2.84e-3	4	-1.401e-2	1
127	N64	max	-.028	6	-.022	2	-.004	6	5.467e-3	2	-1.055e-4	3	-8.339e-4	6
128		min	-.176	1	-.07	4	-.165	2	4.046e-4	6	-3.711e-4	4	-7.657e-3	1
129	N65	max	.551	4	-.017	2	.561	5	6.805e-3	5	9.019e-3	1	-1.47e-3	3
130		min	.091	3	-.055	4	.006	3	1.432e-4	3	-4.25e-3	4	-8.816e-3	4
131	N66	max	-.024	6	-.016	2	-.015	6	4.657e-3	4	2.903e-4	2	-1.06e-3	6
132		min	-.139	2	-.054	4	-.111	1	7.202e-4	3	-1.688e-3	4	-6.428e-3	2
133	N67	max	.126	2	-.015	2	.045	5	1.007e-2	2	3.039e-3	1	-7.583e-4	6
134		min	.001	6	-.066	6	.009	3	-3.625e-4	6	-3.559e-4	5	-1.718e-2	1
135	N68	max	.03	1	-.024	2	.043	5	5.951e-3	1	2.025e-3	2	5.732e-6	6
136		min	0	5	-.059	4	-.019	1	9.093e-4	6	1.582e-4	6	-1.319e-2	2
137	N69	max	.032	1	-.022	2	.03	5	5.467e-3	2	-1.055e-4	3	-8.34e-4	6
138		min	-.023	5	-.07	4	-.018	1	4.347e-4	6	-3.711e-4	4	-7.824e-3	1
139	N70	max	.034	1	-.016	2	.052	5	4.658e-3	4	2.903e-4	2	-1.06e-3	6
140		min	.005	6	-.054	4	-.016	1	7.202e-4	3	-1.688e-3	4	-6.428e-3	2
141	N71	max	.11	2	-.001	2	.027	5	4.358e-3	4	1.027e-3	4	7.165e-3	5
142		min	-.025	5	-.058	6	-.006	2	-9.625e-3	2	-7.151e-4	1	-1.794e-2	1
143	N72	max	.06	1	.018	2	.022	1	3.124e-3	5	5.336e-4	5	4.534e-3	4
144		min	.001	6	-.036	6	.002	6	-1.107e-2	1	-2.023e-3	2	-1.526e-2	1
145	N73	max	.028	1	.015	2	.041	1	1.371e-3	4	1.41e-3	2	2.657e-3	5
146		min	-.003	5	-.012	6	.004	6	-7.822e-3	1	-1.396e-4	5	-1.914e-2	1
147	N74	max	.116	2	-.011	5	.013	5	1.138e-3	5	3.545e-3	1	1.199e-3	4
148		min	-.002	5	-.028	1	-.01	2	-1.221e-2	1	6.274e-5	6	-2.183e-2	1
149	N75	max	1.358	1	-.015	2	.656	1	1.82e-2	1	1.214e-2	1	-4.725e-4	6
150		min	.013	6	-.067	6	.056	6	1.811e-3	6	-1.762e-3	5	-3.802e-2	1

Envelope Joint Displacements (Continued)

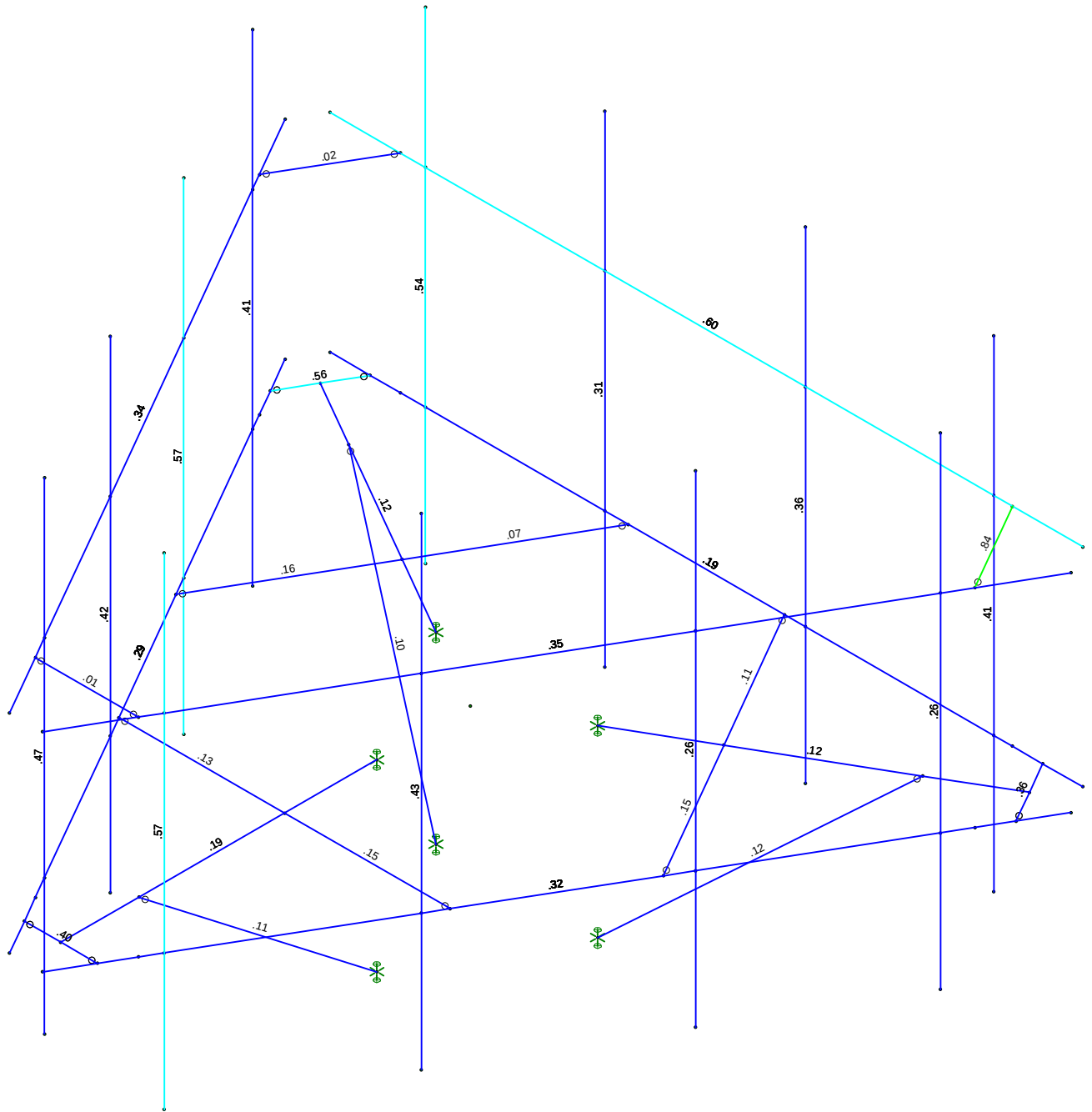
	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [...]	LC	Y Rotation [...]	LC	Z Rotation [...]	LC
151	N76	max	.913	1	-.024	2	.4	1	1.42e-2	1	1.205e-2	1	-9.784e-4	6
152		min	.019	6	-.059	4	.059	6	1.038e-3	6	-1.306e-3	4	-2.473e-2	1
153	N77	max	.537	1	-.021	2	.303	4	7.19e-3	1	8.784e-3	1	-1.395e-3	6
154		min	.034	6	-.07	4	.036	3	1.273e-3	6	-2.84e-3	4	-1.383e-2	1
155	N78	max	.308	4	-.017	2	.373	4	6.689e-3	5	9.019e-3	1	-1.404e-3	3
156		min	.05	3	-.055	4	.002	3	1.429e-4	3	-4.25e-3	4	-8.807e-3	4
157	N79	max	1.228	1	0	2	.385	5	1.034e-2	5	6.164e-3	4	1.305e-2	4
158		min	-.486	4	-.059	6	-.481	1	-1.627e-2	1	-2.105e-3	1	-3.453e-2	1
159	N80	max	1.126	1	.017	2	.263	5	5.518e-3	5	5.518e-3	4	9.15e-3	4
160		min	-.274	4	-.036	6	-.423	1	-1.59e-2	1	-2.297e-3	1	-2.956e-2	1
161	N81	max	1.151	1	.015	2	.163	5	2.851e-3	5	4.232e-3	5	3.693e-3	4
162		min	-.1	4	-.012	6	-.438	1	-1.608e-2	1	8.26e-4	3	-3.011e-2	1
163	N82	max	1.362	1	-.011	5	.081	5	1.359e-3	4	7.77e-3	2	-1.895e-4	6
164		min	.008	6	-.029	1	-.56	1	-1.528e-2	1	9.088e-4	6	-3.292e-2	1
165	N83	max	.014	1	.004	2	.054	5	1.215e-2	4	6.575e-4	5	1.416e-4	5
166		min	.003	6	-.021	6	-.057	1	-1.504e-2	1	-1.571e-3	2	-6.425e-4	1
167	N84	max	.014	1	.03	5	.072	4	6.223e-3	5	-3.089e-6	6	8.908e-4	3
168		min	.003	6	-.054	3	-.008	2	-1.543e-3	1	-1.576e-4	2	1.723e-4	5
169	N85	max	.131	2	-.013	5	.013	5	1.018e-3	5	3.482e-3	1	1.279e-3	4
170		min	-.001	5	-.029	1	-.018	2	-1.238e-2	1	5.325e-5	6	-2.163e-2	1
171	N86	max	.112	2	.001	2	.029	5	4.437e-3	4	9.277e-4	4	7.122e-3	5
172		min	-.028	5	-.056	6	-.008	2	-9.623e-3	2	-5.11e-4	1	-1.791e-2	1
173	N87	max	.033	1	-.017	2	.056	5	4.776e-3	4	2.082e-4	2	-9.93e-4	6
174		min	.007	6	-.047	4	-.017	1	8.659e-4	3	-1.676e-3	4	-6.324e-3	2
175	N88	max	.136	2	-.016	2	.044	5	1.001e-2	2	2.789e-3	1	-9.575e-4	6
176		min	0	6	-.062	6	.01	3	-6.827e-4	6	-3.982e-4	5	-1.719e-2	1
177	N89	max	.177	1	.016	2	.7	4	1.769e-2	4	8.778e-4	4	5.779e-4	4
178		min	.006	6	-.023	6	-1.094	1	-2.491e-2	1	-1.391e-2	1	-3.006e-3	2
179	N90	max	.178	1	.039	5	.563	4	1.579e-2	5	9.357e-3	5	2.691e-3	5
180		min	.006	6	-.062	3	-.004	3	-1.078e-3	3	-1.288e-3	1	-3.477e-3	1
181	N91	max	1.397	1	-.018	5	.07	5	1.397e-3	4	7.923e-3	2	-1.993e-4	6
182		min	.012	6	-.045	1	-.58	1	-1.51e-2	1	9.43e-4	6	-3.292e-2	1
183	N92	max	1.234	1	.011	2	.397	5	1.036e-2	5	6.22e-3	4	1.301e-2	4
184		min	-.506	4	-.059	6	-.485	1	-1.634e-2	1	-1.901e-3	1	-3.442e-2	1
185	N93	max	.327	4	-.023	2	.384	4	6.419e-3	5	9.365e-3	1	-1.439e-3	3
186		min	.042	3	-.049	4	-.006	1	8.44e-5	3	-4.347e-3	4	-8.925e-3	4
187	N94	max	1.397	1	-.003	2	.679	1	1.809e-2	1	1.209e-2	1	-4.658e-4	6
188		min	.012	6	-.072	6	.055	6	1.817e-3	6	-1.849e-3	5	-3.801e-2	1
189	N95	max	.019	2	.003	2	.023	5	6.873e-4	6	1.055e-3	5	1.688e-3	6
190		min	-.014	4	-.01	6	-.031	1	-6.646e-5	2	-1.758e-3	1	-1.41e-4	2
191	N96	max	.099	1	-.004	2	.002	4	1.171e-3	3	3.171e-3	2	1.3e-4	2
192		min	-.003	5	-.012	6	0	2	5.837e-4	5	4.179e-5	6	-1.632e-3	6
193	N97	max	.024	4	0	5	.042	5	3.092e-3	5	-6.225e-5	3	2.817e-5	2
194		min	.001	2	-.013	1	-.002	1	-1.295e-3	3	-1.305e-3	4	-1.882e-3	4
195	N98	max	0	6	0	6	0	6	4.455e-4	6	0	6	6.35e-5	5
196		min	0	1	0	1	0	1	2.721e-4	2	0	1	-3.081e-3	1
197	N99	max	0	6	0	6	0	6	1.403e-3	5	0	6	-4.52e-4	3
198		min	0	1	0	1	0	1	-2.028e-4	1	0	1	-9.777e-4	4
199	N100	max	0	6	0	6	0	6	8.867e-4	5	0	6	6.95e-4	4
200		min	0	1	0	1	0	1	-1.025e-3	1	0	1	-6.541e-4	2

Envelope AISC 15th(360-16): LRFD Steel Code Checks

	Me...	Sha...	Code C...	Lo...	LC	Shea...	Loc...	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y...	phi*Mn...	Cb	Eqn
1	M1	HS...	.190	0	1	.060	3.9...	y	6	124.318	139.518	16.181	16.181	1.448	H1-1b
2	M2	HS...	.147	2.75	4	.148	0	z	1	135.171	139.518	16.181	16.181	1.7	H1-1b
3	M3	HS...	.131	2.75	4	.177	0	z	1	135.171	139.518	16.181	16.181	1.693	H1-1b
4	M4	HS...	.116	0	5	.053	3.9...	y	4	124.318	139.518	16.181	16.181	1.98	H1-1b
5	M5	HS...	.113	2.75	4	.090	0	z	5	135.171	139.518	16.181	16.181	1.708	H1-1b
6	M6	HS...	.151	2.75	1	.090	2.75	y	1	135.171	139.518	16.181	16.181	1.694	H1-1b
7	M7	HS...	.125	1.5...	2	.056	3.9...	y	3	124.318	139.518	16.181	16.181	1.754	H1-1b
8	M8	HS...	.155	2.75	2	.187	0	z	2	135.171	139.518	16.181	16.181	1.341	H1-1b
9	M9	HS...	.071	2.75	5	.088	0	z	4	135.171	139.518	16.181	16.181	1.496	H1-1b
10	M10	PIP...	.321	7.5...	1	.334	7.5...		1	28.251	65.205	5.749	5.749	2.002	H3-6
11	M13	PIP...	.186	4.9...	1	.260	4.9...		1	28.251	65.205	5.749	5.749	2.514	H3-6
12	M14	PIP...	.286	5.0...	1	.298	4.9...		2	28.251	65.205	5.749	5.749	1.695	H1-1b
13	M1...	6"x...	.362	.606	5	.108	.606	y	6	28.164	72.9	.57	9.113	1.294	H1-1b
14	M1...	6"x...	.559	.606	2	.322	.606	y	1	28.164	72.9	.57	9.113	1.441	H1-1b
15	M15	6"x...	.403	.606	1	.425	.606	y	1	28.164	72.9	.57	9.113	1.534	H1-1b
16	M16	PIP...	.349	10...	1	.280	7.9...		1	6.295	32.13	1.872	1.872	3.583	H3-6
17	M17	PIP...	.598	11...	4	.419	11...		4	6.295	32.13	1.872	1.872	4.164	H3-6
18	M18	PIP...	.340	10...	1	.127	7.9...		4	6.295	32.13	1.872	1.872	4.032	H1-1b
19	PS...	PIP...	.411	2.25	4	.194	5.75		5	14.916	32.13	1.872	1.872	3.743	H1-1b
20	PS...	PIP...	.363	5.75	4	.152	5.75		2	14.916	32.13	1.872	1.872	3.672	H1-1b
21	PS...	PIP...	.309	5.75	1	.194	5.75		1	14.916	32.13	1.872	1.872	4.445	H1-1b
22	PS...	PIP...	.541	5.75	1	.243	4.5		1	14.916	32.13	1.872	1.872	4.171	H1-1b
23	PS...	PIP...	.414	2.25	1	.115	5.75		4	14.916	32.13	1.872	1.872	1.578	H1-1b
24	PS...	PIP...	.573	5.75	1	.105	5.75		4	14.916	32.13	1.872	1.872	2.96	H1-1b
25	PS...	PIP...	.416	5.75	1	.093	5.75		5	14.916	32.13	1.872	1.872	2.921	H1-1b
26	PS...	PIP...	.474	5.75	1	.110	4.5		2	14.916	32.13	1.872	1.872	3.144	H1-1b
27	PS...	PIP...	.568	5.75	1	.218	5.75		1	14.916	32.13	1.872	1.872	1.735	H1-1b
28	PS...	PIP...	.431	5.75	1	.195	5.75		1	14.916	32.13	1.872	1.872	2.856	H1-1b
29	PS...	PIP...	.262	5.75	4	.176	5.75		1	14.916	32.13	1.872	1.872	2.791	H1-1b
30	PS...	PIP...	.261	5.75	4	.174	2.3...		1	14.916	32.13	1.872	1.872	1.959	H1-1b
31	M31	L2...	.007	.856	4	.193	1.7...	y	1	35.04	38.556	1.114	2.537	1.136	H2-1
32	M32	L2...	.838	1.7...	4	.119	0	y	4	35.04	38.556	1.114	2.537	1.631	H2-1
33	M33	L2...	.018	.856	1	.184	1.7...	y	1	35.04	38.556	1.114	2.537	1.136	H2-1
34	M34	LL2...	.121	0	1	.003	0	y	1	28.249	46.656	2.147	1.607	1.139	H1-1b*
35	M35	LL2...	.097	4.9...	6	.004	4.9...	z	1	28.249	46.656	2.147	1.607	1.131	H1-1b*
36	M36	LL2...	.114	4.9...	6	.008	4.9...	z	2	28.249	46.656	2.147	1.607	1.667	H1-1b*



Code Check (Env)	
■	No Calc
■	> 1.0
■	90-1.0
■	75-90
■	50-75
■	0-50

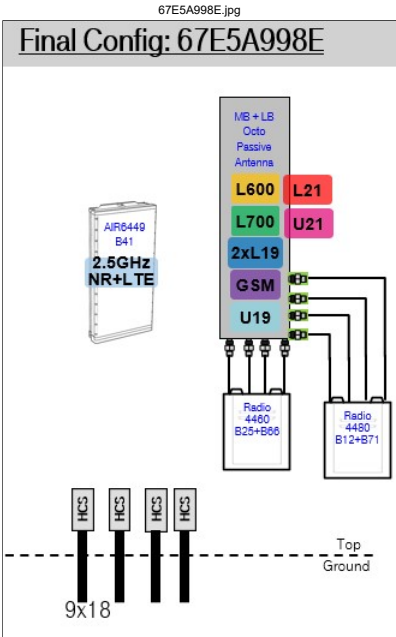


Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Centek Engineering	CTFF836A - Mount Member Unity Check	
FJP		July 21, 2021 at 12:16 PM
21085.01		CTFF836A_AMA.R3D

Section 1 - Site Information				
Site ID: CTFF836A Status: Draft Version: 1 Project Type: Coverage Strategy Approved: Not Approved Approved By: Not Approved Last Modified: 7/7/2021 4:15:30 PM Last Modified By: Mohamed.Seddik@T-Mobile.com Site Name: CTFF836A Site Class: Monopole Site Type: Structure Non Building Plan Year: 2021 Market: CONNECTICUT CT Vendor: Ericsson Landlord: Not Specified Latitude: 41.23568000 Longitude: -73.28370000 Address: 515 Morehouse Rd City, State: Easton, CT Region: NORTHEAST				
RAN Template: 67E5A998E 6160		AL Template: 67E5998E_1xAIR+1OP		
Sector Count: 3	Antenna Count: 6	Coax Line Count: 0	TMA Count: 0	RRU Count: 6

Section 2 - Existing Template Images				
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Notes:

DRAFT

Section 4 - Siteplan Images

----- This section is intentionally blank. -----

DRAFT

Section 5 - RAN Equipment

Existing RAN Equipment

----- This section is intentionally blank. -----

Proposed RAN Equipment

Template: 67E5A998E 6160

Enclosure	1	2	3
Enclosure Type	Enclosure 6160	RBS 6601	B160
Baseband	BB 6648 L700 L600 N600 BB 6648 L2500 N2500 BB 6648 L2100 L1900	DUG20 G1900	
Hybrid Cable System	Ericsson Hybrid Trunk 6/24 4AWG 100m (x 2)		
Transport System	CSR IXRe V2 (Gen2)		

RAN Scope of Work:

Section 6 - A&L Equipment

Existing Template: Custom

Proposed Template: 67E5998E_1xAIR+1OP

Sector 1 (Proposed) view from behind

Coverage Type	A - Outdoor Macro																	
Antenna	1						2											
Antenna Model	RFS - APXVALL24_43-U-NA20 (Octo)						Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)											
Azimuth	30						30											
M. Tilt																		
Height	123						123											
Ports	P1			P2			P3			P4			P5			P6		
Active Tech.	L700 L600 N600			L700 L600 N600			U2100 L2100 L1900 G1900 U1900			U2100 L2100 L1900 G1900 U1900			L2500 N2500			L2500 N2500		
Dark Tech.																		
Restricted Tech.																		
Decomm. Tech.																		
E. Tilt																		
Cables	Coax Jumper (x2)			Coax Jumper (x2)			Coax Jumper (x2)			Coax Jumper (x2)								
TMA's																		
Diplexers / Combiners																		
Radio	Radio 4480 B71+B85 (At Antenna)			SHARED Radio 4480 B71+B85 (At Antenna)			Radio 4460 B25+B66 (At Antenna)			SHARED Radio 4460 B25+B66 (At Antenna)								
Sector Equipment																		
Unconnected Equipment:																		
Scope of Work:																		

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

Sector 2 (Proposed) view from behind						
Coverage Type	A - Outdoor Macro					
Antenna	1			2		
Antenna Model	RFS - APXVALL24_43-U-NA20 (Octo)			Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)		
Azimuth	150			150		
M. Tilt						
Height	123			123		
Ports	P1	P2	P3	P4	P5	P6
Active Tech.	L700 L600 N600	L700 L600 N600	U2100 L2100 G1900 U1900 L1900	U2100 L2100 G1900 U1900 L1900	L2500 N2500	L2500 N2500
Dark Tech.						
Restricted Tech.						
Decomm. Tech.						
E. Tilt						
Cables	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)		
TMA's						
Diplexers / Combiners						
Radio	Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)		
Sector Equipment						
Unconnected Equipment:						
Scope of Work:						
*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.						

Sector 3 (Proposed) view from behind							
Coverage Type	A - Outdoor Macro						
Antenna	1				2		
Antenna Model	RFS - APXVALL24_43-U-NA20 (Octo)				Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)		
Azimuth	270				270		
M. Tilt							
Height	123				123		
Ports	P1	P2	P3	P4	P5		P6
Active Tech.	L700 L600 N600	L700 L600 N600	U2100 L2100 G1900 U1900 L1900	U2100 L2100 G1900 U1900 L1900	L2500 N2500		L2500 N2500
Dark Tech.							
Restricted Tech.							
Decomm. Tech.							
E. Tilt							
Cables	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)			
TMA's							
Diplexers / Combiners							
Radio	Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)			
Sector Equipment							
Unconnected Equipment:							
Scope of Work:							
*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.							

7/7/2021

CTFF836A_Coverage Strategy_1_draft_2021-07-07

RAN Template:
67E5A998E 6160

A&L Template:
67E5998E_1xAIR+1OP

CTFF836A_Coverage Strategy_1_draft

Print Name: Standard

PORs: Coverage Strategy_Regional Coverage

Section 7 - Power Systems Equipment

Existing Power Systems Equipment

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Proposed Power Systems Equipment

Enclosure

Enclosure Type

1

Enclosure 6160

<https://rfd-prod-web-core-secure.geo.cf.t-mobile.com/DataSheet/Printout/79a325d8-0446-4468-b3a2-30bde48c5f51?layoutId=398bb657-5215-4...>

8/8

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

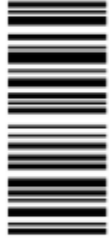
1 LBS

1 OF 1

SHIP TO:
MARK DELIETO
225 CENTER ROAD
EASTON CT 06612

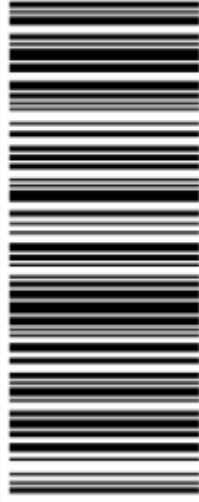


CT 068 0-06



UPS GROUND

TRACKING #: 1Z V25 742 03 9730 6142



BILLING: P/P

Reference #1: CTFF836A

XOL 21.10.03 NV49-43.0A 10/2021*



TM

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
FIRST SELECTMAN
DAVID BINDELGLASS
225 CENTER ROAD
EASTON CT 06612



CT 068 0-06



UPS GROUND

TRACKING #: 1Z V25 742 03 9501 6138



BILLING: P/P

Reference #1: CTFF836A

XOL 21.10.03 NV49-43.0A 10/2021*



TM

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN MA 01801



MA 018 9-04



UPS GROUND

TRACKING #: 1Z V25 742 03 9961 6152



BILLING: P/P

Reference #1: CTF836A

XOL 21.10.03 NV45-43.5A 10/2021*



Hello, your package has been delivered.

Delivery Date: Thursday, 10/21/2021

Delivery Time: 11:43 AM

Left At: FRONT DESK

Signed by: ANCRI

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Be in total control of how, when and where your packages are delivered.

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[Set Delivery Instructions](#)

[Manage Preferences](#)

[View](#)

TRANSCEND WIRELESS

Tracking Number:	1ZV257420399616152
Ship To:	AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN, MA 01801 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTFF836A

Hello, your package has been delivered.

Delivery Date: Thursday, 10/21/2021

Delivery Time: 11:32 AM

Left At: FRONT DESK

Signed by: SOPHIA

TRANSCEND WIRELESS

Tracking Number:	<u>1ZV257420395016138</u>
Ship To:	DAVID BINDELGLASS 225 CENTER ROAD EASTON, CT 06612 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTFF836A

Hello, your package has been delivered.

Delivery Date: Thursday, 10/21/2021

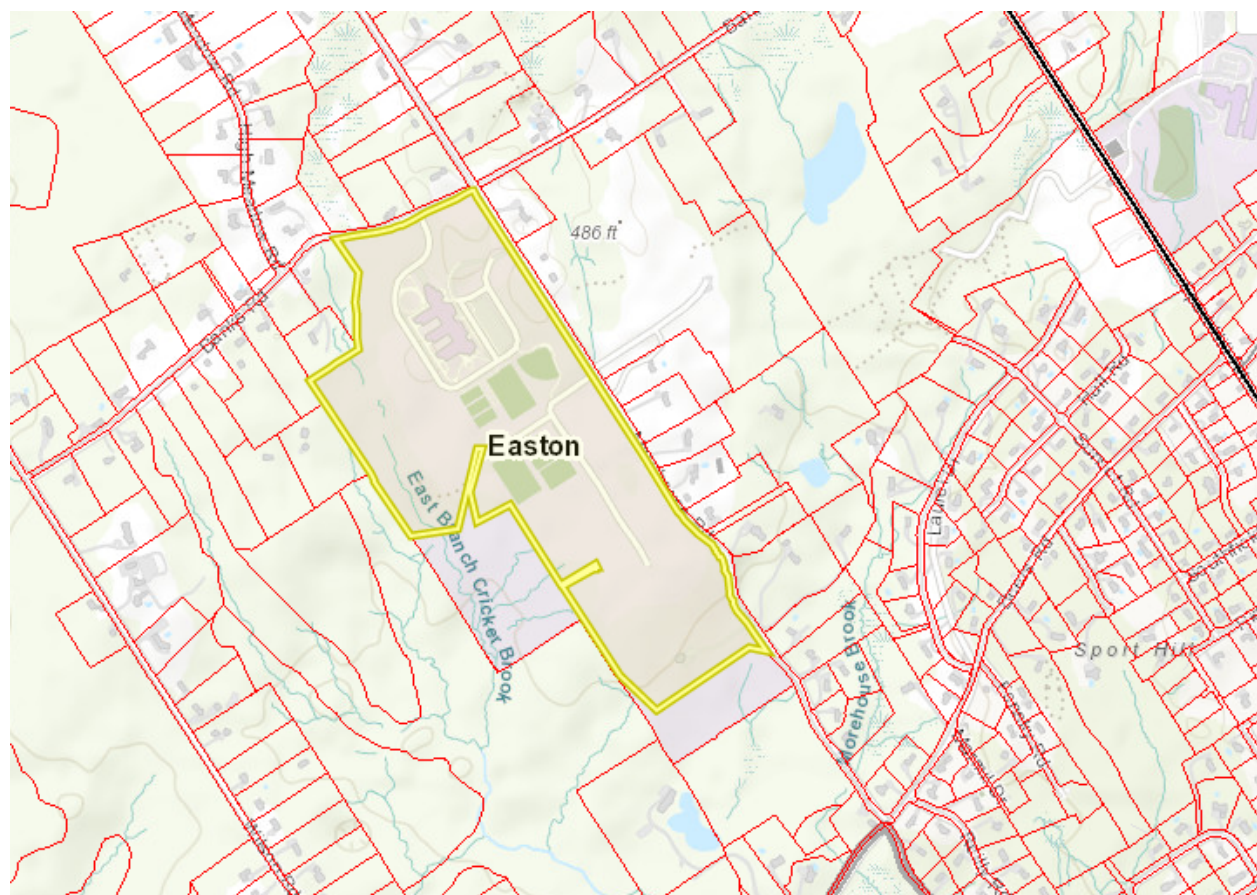
Delivery Time: 11:32 AM

Left At: FRONT DESK

Signed by: SOPHIA

TRANSCEND WIRELESS

Tracking Number:	<u>1ZV257420397306142</u>
Ship To:	MARK DELIETO 225 CENTER ROAD EASTON, CT 06612 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTFF836A



Parcel Information

Location:	515 MOREHOUSE ROAD	Property Use:	School	Primary Use:	Elementary School
Unique ID:	00094600	Map Block Lot:	3777A,B 4	Acres:	104.41
490 Acres:	0.00	Zone:	R3	Volume / Page:	0343/0023
Developers Map / Lot:	1824/1722 1497	Census:	1051		

Value Information

	Appraised Value	Assessed Value
Land	1,809,002	1,266,300
Buildings	28,181,732	19,727,210
Detached Outbuildings	555,650	388,960
Total	30,546,384	21,382,470

Owner's Information

Owner's Data
EASTON TOWN OF STAPLES (NEW SCHOOL) 225 CENTER ROAD EASTON, CT 06612

Building 1



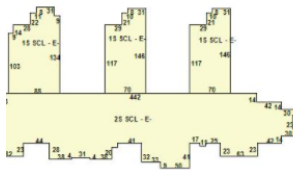
Category:	School	Use:	Elementary School	GLA:	136,118
Stories:	2.00	Construction:	Reinforced Concrete	Year Built:	2004
Heating:	FHA	Fuel:	Oil	Cooling Percent:	100
Siding:	B. V. Solid/Concrete Block	Roof Material:	Wood	Beds/Units:	0

Special Features

Commercial Elevator	1
Wet Sprinklers	135711

Attached Components

Type:	Year Built:	Area:
Covered Loading Dock	2004	253



Building 2



Category:	Public Use	Use:	Dog Pound	GLA:	2,186
Stories:	1.40	Construction:	Masonry and Wood Frame	Year Built:	2010
Heating:	FHA	Fuel:	Gas	Cooling Percent:	100
Siding:	Wood Shingles	Roof Material:	Arch Shingles	Beds/Units:	0

Special Features

--

Attached Components

Type:	Year Built:	Area:
Attached Frame Garage	2009	312

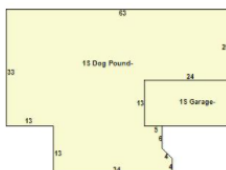


Photo Not Available

Sketch Not Available

Building 3

Category:	Public Use	Use:	Community Service Building	GLA:	264
Stories:	1.00	Construction:	Wood Frame	Year Built:	2019
Heating:		Fuel:		Cooling Percent:	0
Siding:	Texture 1-11	Roof Material:	Asphalt	Beds/Units:	0

Special Features

Attached Components

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Bleachers	2004	0.00	0.00	270
10ft Chain Link Fencing	2004	0.00	0.00	144
4ft Chain Link Fencing	2004	0.00	0.00	1,268
4ft Chain Link Fencing	2004	0.00	0.00	300
6ft Chain Link Fencing	2004	0.00	0.00	139
8ft Chain Link Fencing	2004	0.00	0.00	149
Comm Conc Pad Patio	2004	0.00	0.00	930
Concrete/Masonry Patio	2004	0.00	0.00	4,270
Paving	2004	0.00	0.00	190,322
Paving	2004	0.00	0.00	4,951
Light Pole 1 each	2004	0.00	0.00	34
Open Porch	2015	0.00	0.00	800
Masonry Shed	2005	30.00	20.00	600

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Sale Price
EASTON TOWN OF	0343	0023	05/24/2001	Warranty Deed	\$8,500,000
MOREHOUSE ESTATES LLC	0338	0013	04/09/2001		\$0
FAIRFIELD INVESTORS(75%)&MAIN ST	0315	0148	04/10/2000		\$0
FAIRFIELD INVESTORS	0053	0506	12/31/1970		\$450,000

Building Permits

Permit Number	Permit Type	Date Opened	Reason
16256	Outbuilding/Yard Item	08/15/2019	PRE-FAB MULTI USER RESTROOM BUILDING
15980	Cell Tower	11/07/2018	ADD AT&T ANTENNAS TO EXISTING CELL TOWER
15760	Solar	05/01/2018	PHASE 2 SOLAR ARRAY 302KW
15757	Cell Tower	04/27/2018	12 VERIZON ANTENNAS ON CELL TOWER
15581	Cell Tower	10/27/2017	150' CELL TOWER (70 X 70') FENCED AREA
14907	Outbuilding/Yard Item	10/13/2015	PAVILION
14796	Solar	07/24/2015	INSTALL 301 KW GROUND MOUNTED SOLAR
12375	Carport	07/01/2009	ANIMAL SHELTER
10331	New Construction	04/03/2004	NEW ELEMENTARY SCHOOL \$420,000,000.00