10 DUSTRIAL AVE,
St 3
M VAH NJ 07430

P E: 201.684.0055
F 201.684.0066

Transcend Wireless

September 23rd, 2022

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

RE: Notice of Exempt Modification
355 Route 85, Colchester, CT 06415
Latitude: 41.54481900
Longitude: -72.30489200
T-Mobile Site#: CTHA059E - Anchor / Sprint Consolidation

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 138-foot level of the existing 180-foot monopole tower at 355 Route 85, Colchester, CT. Sprint currently maintains nine (9) antennas at the 180-foot level of the tower. The 180-foot monopole tower is owned and operated by American Tower. The property is also owned by American Tower (AKA Spectrasite). T-Mobile now intends to remove all existing Sprint equipment from the 180-foot level and all existing T-Mobile equipment at the 138-foot level. T-Mobile will then install nine (9) antennas at the 180-foot level. These antennas will support 5G services.

Planned Modifications:
Tower:
Install New:
(3) Ericsson AIR 6419 B41 Antennas
(3) Commscope VV-65A-R1 Antennas
(3) RFS APXVAALL24 Antennas
(3) Radio 4460 B25 B66
(3) Radio 4480 B71 B85
(3) 1.99” Hybrid Cables

To Be Removed:
(9) Sprint Antennas
(3) Sprint RRUs
Other associated Sprint equipment

(6) T-Mobile antennas
(9) T-Mobile RRUs
Other associated T-Mobile equipment
Ground:
Install (1) 6160 Power Enclosure, and (1) B160 Battery Rack, (1) RP 6651, (2) PSU 4813, and (1) CSR IXRE.
Remove (1) DUW30 and all cabinet RRUs.

This facility was originally approved by the Town of Colchester on May 8, 1998. This modification will not break any of the conditions set forth in this approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to First Selectman Andreas Bisbikos, Elected Official, and Ariel Lago, Zoning Enforcement Officer, as well as the tower and property owner.

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

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

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

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

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

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

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

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

Sincerely,

Eric Breun
Transcend Wireless
Cell: 201-658-7728
Email: ebreun@transcendwireless.com

Attachments
cc: Andreas Bisbikos - First Selectman of Colchester
Ariel Lago - Zoning Enforcement Officer
American Tower - Property / Tower Owner

ERIC BREUN
2016587728
1 INTERNATIONAL BLVD.
MAHWAH NJ 07495

1 LBS **1 OF 1**

DWT: 18,12,1

SHIP TO:
FIRST SELECTMAN
ANDREAS BISBIKOS
127 NORWICH AVENUE
COLCHESTER CT 06415

CT 063 0-01

UPS GROUND
TRACKING #: 1Z V25 742 03 9457 1567

BILLING: P/P

Reference #1: CTHA059E

XOL 22.08.10 NV45 35.0A 08/2022*

ERIC BREUN
2016587728
1 INTERNATIONAL BLVD.
MAHWAH NJ 07495

1 LBS **1 OF 1**

DWT: 18,12,1

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

MA 018 9-04

UPS GROUND
TRACKING #: 1Z V25 742 03 9834 9265

BILLING: P/P

Reference #1: CTHA059E

XOL 22.08.10 NV45 35.0A 08/2022*


ERIC BREUN
2016587728
1 INTERNATIONAL BLVD.
MAHWAH NJ 07495
1 LBS
1 OF 1
DWT: 18,12,1
SHIP TO:
ZONING ENFORCEMENT OFFICER
ARIEL LAGO
127 NORWICH AVENUE
COLCHESTER CT 06415
CT 063 0-01
UPS GROUND
TRACKING #: 1Z V25 742 03 9689 9273
BILLING: P/P
Reference #1: CTHA059E
XOL 22.08.10
NV45 35.0A 08/2022*

Hello, your package has been delivered.

Delivery Date: Thursday, 08/25/2022

Delivery Time: 1:50 PM

Signed by: s clark

TRANSCEND WIRELESS

Tracking Number:	1ZV257420394571567
Ship To:	ANDREAS BISBIKOS 127 NORWICH AVENUE COLCHESTER, CT 06415 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTHA059E

Hello, your package has been delivered.

Delivery Date: Thursday, 08/25/2022

Delivery Time: 1:49 PM

Signed by: samansky

TRANSCEND WIRELESS

Tracking Number:	1ZV257420396899273
Ship To:	ARIEL LAGO 127 NORWICH AVENUE COLCHESTER, CT 06415 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTHA059E

Hello, your package has been delivered.

Delivery Date: Thursday, 08/25/2022

Delivery Time: 11:34 AM

Signed by: ANCRI

TRANSCEND WIRELESS

Tracking Number:	1ZV257420398349265
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:	CTHA059E

CT-0817

TOWN OF COLCHESTER
INCORPORATED
1698
CONNECTICUT

Code Administration

CERTIFIED

May 8, 1998

Seth M. Mandelbam
Snyder & Snyder
6 Avery Court
White Plains, NY 10604

RE: SDP #98-222 Nextel Communication - Site Development Plan prepared by Donald A. Benvie, Project #1170, C877 - Dated: April 23, 1998; revised through April 28, 1998.

Dear Mr. Mandelbam,

The above referenced site development plan was approved by the Zoning and Planning Commission at their regular meeting held May 6, 1998. Also, permission was granted for exception to the height limit pursuant to section 13.5 of the Zoning Regulations.

Per Section 12.10.1 of the Zoning Regulations, a bond in the amount of 25% of the total cost of site improvements must be posted prior to the endorsement of this plan and/or commencement of work. A bond estimate must be submitted to the Town Engineer for his review and approval.

If you have any questions, please call me at 537-7283.

Very truly yours,

Alicia Lathrop
Zoning Enforcement Officer

AL/am

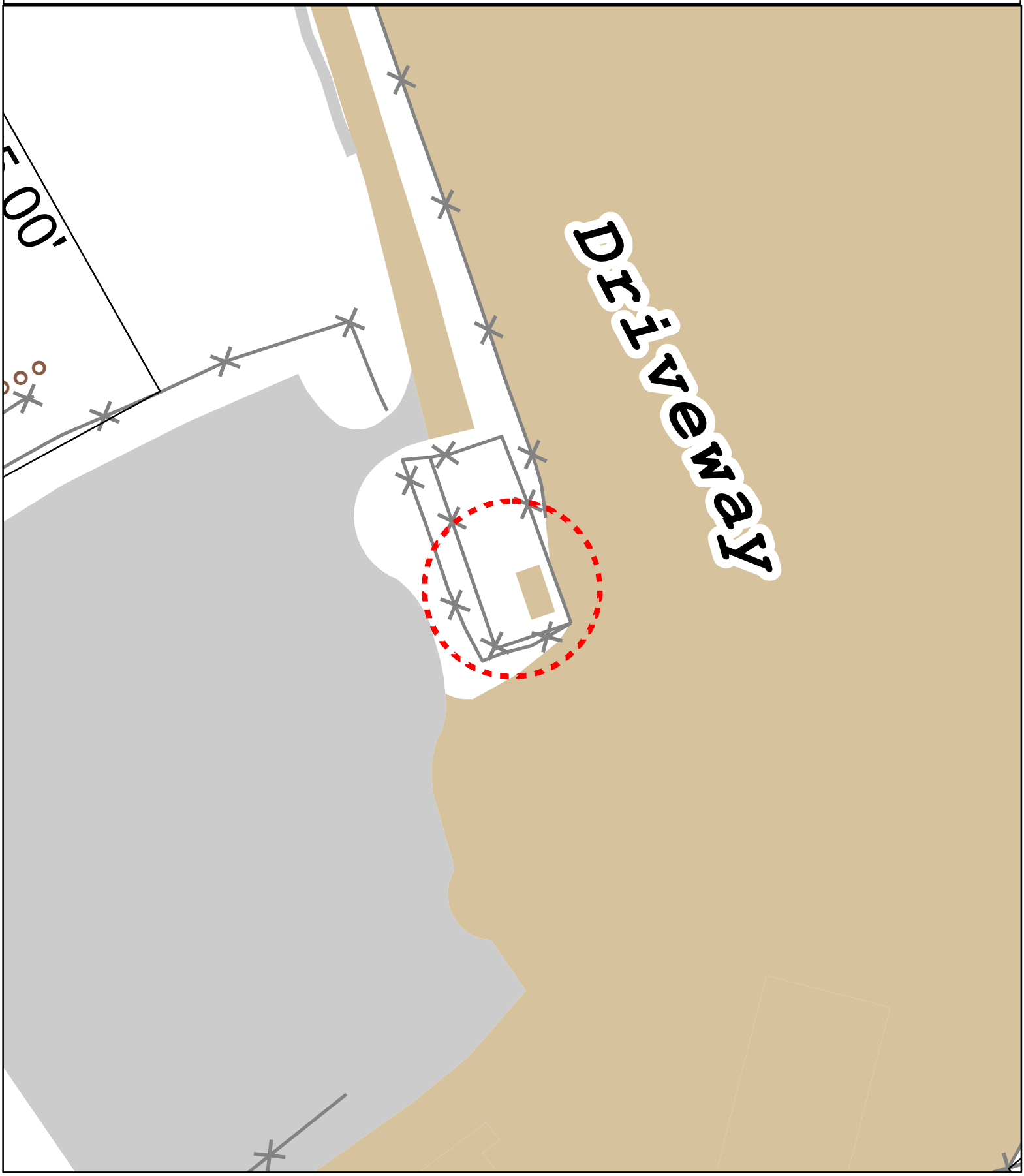
98-222

127 NORWICH AVENUE, COLCHESTER, CT 06415 203-537-7280 FAX#537-0547

Town of Colchester, Connecticut - Assessment Parcel Map

Parcel: 02-08-003-000-TWR

Address: 355 NEW LONDON RD



Approximate Scale: **1 inch = 50 feet**

0 25 50 75 100 Feet

Map Produced: April 2022 / Grand List: 2021

Town of Colchester, CT

Property Report | Map Block Lot 02-08/003-000/TWR | PID 105117 | Building # 1 | Section # 1 | Account 11AT0007

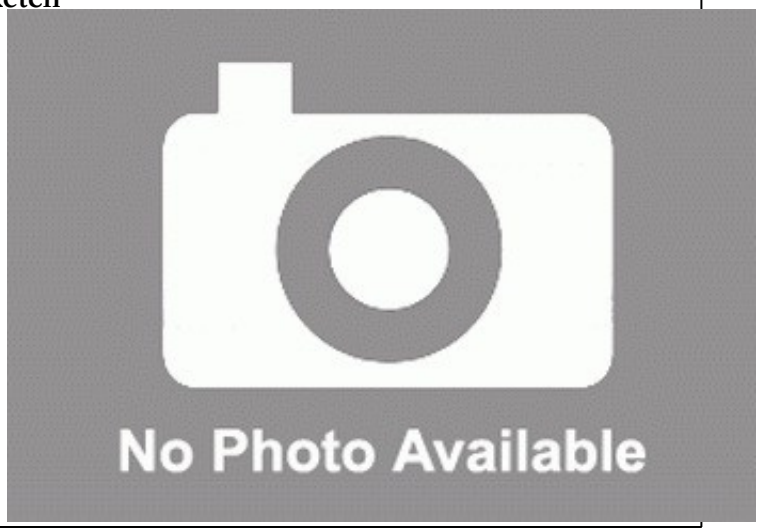
Property Information

Property Location	355 NEW LONDON RD
Owner	SPECTRASITE COMMUNICATIONS INC
Co-Owner	ATTN TAX MANAGER
Mailing Address	PO BOX 723597 ATLANTA GA 31139
Land Use	4310 Tel Rel Tw
Land Class	I
Zoning Code	R60
Census Tract	

Neighborhood	
Acreage	0
Utilities	UNKNOWN
Lot Setting/Desc	UNKNOWN UNKNOWN
Additional Info	

Photo

Sketch



Primary Construction Details

Year Built	0
Stories	
Building Style	UNKNOWN
Building Use	Vacant
Building Condition	
Interior Floors 1	
Interior Floors 2	NA
Total Rooms	0
Basement Garages	
Occupancy	
Building Grade	

Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Bath Style	
Kitchen Style	
Roof Style	
Roof Cover	
AC Type	
Fireplaces	0

Exterior Walls	
Exterior Walls 2	NA
Interior Walls	
Interior Walls 2	NA
Heating Type	
Heating Fuel	
Sq. Ft. Basement	
Fin BSMT Quality	
Extra Kitchens	

Report Created On 8/24/2022

Town of Colchester, CT

Property Report | Map Block Lot 02-08/003-000/TWR | PID 105117 | Building # 1 | Section # 1 | Account 11AT0007

Valuation Summary (Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	0	0
Extras	0	0
Improvements		
Outbuildings	1300000	910100
Land	0	0
Total	1300000	910100

Outbuilding and Extra Features

Type	Description
Cell Tower	4 SITES
Cell Shed	240 S.F.
Fence 8' Chain	275 L.F.
Cell Shed	300 S.F.

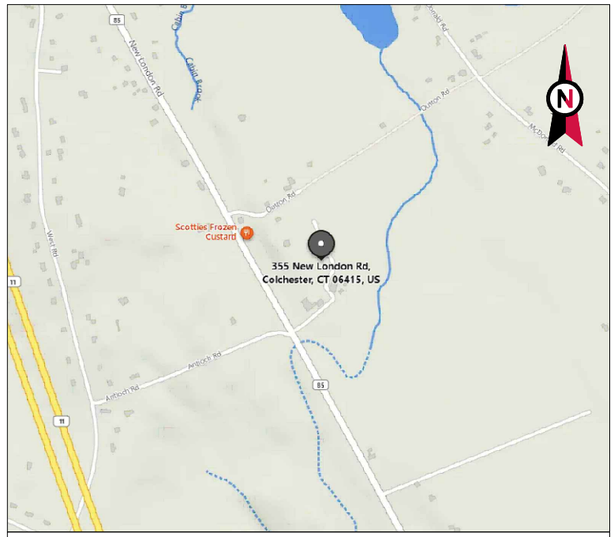
Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area		0

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
SPECTRASITE COMMUNICATIONS INC	0000/0000	10/1/2011	0

Report Created On 8/24/2022



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: COLCHESTER CT 6
ATC SITE NUMBER: 302465
T-MOBILE SITE NAME: CTHA059E
T-MOBILE SITE NUMBER: CTHA059E
SITE ADDRESS: 355 ROUTE 85
COLCHESTER, CT 06415-1825

LOCATION MAP

T-MOBILE
REPLACEMENT_COLO CONSOLIDATION AMENDMENT PLAN
67E5998E_1XAIR+1OP+1QP CONFIGURATION

COMPLIANCE CODE

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. 2018 CONNECTICUT STATE BUILDING CODE-AMENDMENTS TO IBC 2015
2. INTERNATIONAL BUILDING CODE 2015, INTERNATIONAL CODE COUNCIL
3. TIA-222-G-4, STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS
4. ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, AMERICAN SOCIETY OF CIVIL ENGINEERS
5. STEEL CONSTRUCTION MANUAL 14TH EDITION, AMERICAN INSTITUTE OF STEEL CONSTRUCTION
6. CITY/COUNTY ORDINANCES

UTILITY COMPANIES

POWER COMPANY: UNKNOWN
PHONE: N/A
TELEPHONE COMPANY: UNKNOWN
PHONE: N/A

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

PROJECT SUMMARY

SITE ADDRESS:

355 ROUTE 85
COLCHESTER, CT 06415-1825
COUNTY: NEW LONDON

GEOGRAPHIC COORDINATES:

LATITUDE: 41.54481900
LONGITUDE: -72.30489200
GROUND ELEVATION: 559' AMSL

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

APPLICANT:

T-MOBILE
103 MONARCH DRIVE
LIVERPOOL, NY 13088

ENGINEER:

DEWBERRY ENGINEERS INC.
99 SUMMER STREET
SUITE 700
BOSTON, MA 02110
PHONE: 617.695.3400
FAX: 617.695.3310

PROPERTY OWNER:

M & J AUTO RECYCLING INC
355 ROUTE 85
COLCHESTER, CT 06415-1825

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:

TOWER WORK:

REMOVE ALL EXISTING SPRINT EQUIPMENT AT 180' ELEVATION

REMOVE ALL EXISTING T-MOBILE EQUIPMENT AT 138' ELEVATION

INSTALL (1) PLATFORM WITH HANDRAILS, (9) ANTENNA(S), (6) RRU(S) AND (3) 6/24 4AWG HYBRID TRUNK CABLE(S)

GROUND WORK:

REMOVE ALL EXISTING CABINET RRUS, (1) DUW30 AND (2) 6X12 HCS

INSTALL (1) 6160 CABINET, (1) BATTERY B160 CABINET, (1) RP 6651, (2) PSU 4813 VR4A AND (1) CSR IXRE V2

EXISTING (1) RBS 6102 CABINET AND (1) PURCELL SFX17 2824 CABINET TO REMAIN

PROJECT NOTES

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).

PROJECT LOCATION DIRECTIONS

FROM NEW LONDON. TAKE I 395 NORTH TO RT 2 WEST. FOLLOW RT WEST TO RT 85 SOUTH. FOLLOW RT 2 SOUTH TO DUTTON RD. TURN ON TO DUTTON RD AND ROAD GATE ON RIGHT.

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	1	09/14/22	VL
G-002	GENERAL NOTES	1	09/14/22	VL
C-101	DETAILED SITE PLAN	1	09/14/22	VL
C-102	DETAILED GROUND PLAN	1	09/14/22	VL
C-201	TOWER ELEVATION	1	09/14/22	VL
C-401	ANTENNA INFORMATION & SCHEDULE	1	09/14/22	VL
C-501	CONSTRUCTION DETAILS	1	09/14/22	VL
E-501	GROUNDING DETAILS	1	09/14/22	VL
R-601	SUPPLEMENTAL			
R-602	SUPPLEMENTAL			
R-603	SUPPLEMENTAL			
R-604	SUPPLEMENTAL			
R-605	SUPPLEMENTAL			
R-606	SUPPLEMENTAL			
R-607	SUPPLEMENTAL			
R-608	SUPPLEMENTAL			
R-609	SUPPLEMENTAL			
R-610	SUPPLEMENTAL			
R-611	SUPPLEMENTAL			

AMERICAN TOWER®

Dewberry®
Dewberry Engineers Inc.
99 SUMMER STREET
SUITE 700
BOSTON, MA 02110
PHONE: 617.695.3400
FAX: 617.695.3310

REV.	DESCRIPTION	BY	DATE
A	PRELIM	JAP	06/30/22
0	FINAL	VL	07/20/22
1	FINAL	VL	09/14/22

ATC SITE NUMBER:
302465

ATC SITE NAME:
COLCHESTER CT 6

T-MOBILE SITE NAME:
CTHA059E

SITE ADDRESS:
355 ROUTE 85
COLCHESTER, CT 06415-1825

SEAL:

T-Mobile

ATC JOB NO:	14097391_G3
CUSTOMER ID:	CTHA059E
CUSTOMER #:	CTHA059E

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	1

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 FOUND 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 OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL.
   - B. INSTALL ANTENNAS AS INDICATED 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 GREEN 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).

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.

AMERICAN TOWER®

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REV.	DESCRIPTION	BY	DATE
A	PRELIM	JAP	06/30/22
0	FINAL	VL	07/20/22
1	FINAL	VL	09/14/22

ATC SITE NUMBER:
302465

ATC SITE NAME:
COLCHESTER CT 6

T-MOBILE SITE NAME:
CTHA059E

SITE ADDRESS:
355 ROUTE 85
COLCHESTER, CT 06415-1825

SEAL:

T-Mobile

ATC JOB NO:	14097391_G3
CUSTOMER ID:	CTHA059E
CUSTOMER #:	CTHA059E

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	1

SITE PLAN NOTES:

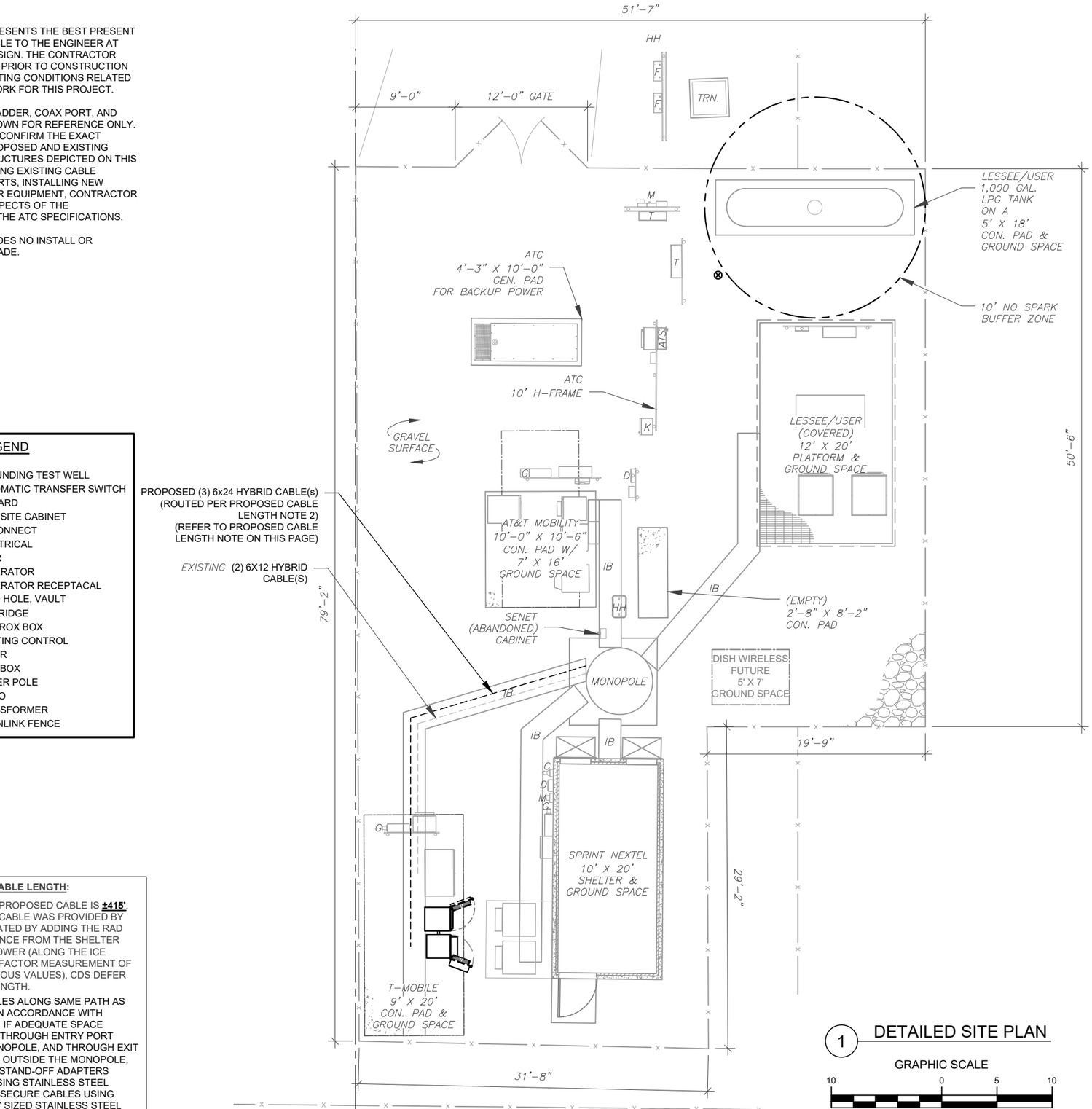
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.

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. THIS PROJECT INCLUDES NO INSTALL OR MODIFICATION AT GRADE.

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



1 DETAILED SITE PLAN

GRAPHIC SCALE

10 0 5 10

(IN FEET)
1 UNIT = 10 FEET

PROPOSED CABLE LENGTH:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **±415'**. 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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COLCHESTER, CT 06415-1825

SEAL:

T··Mobile··

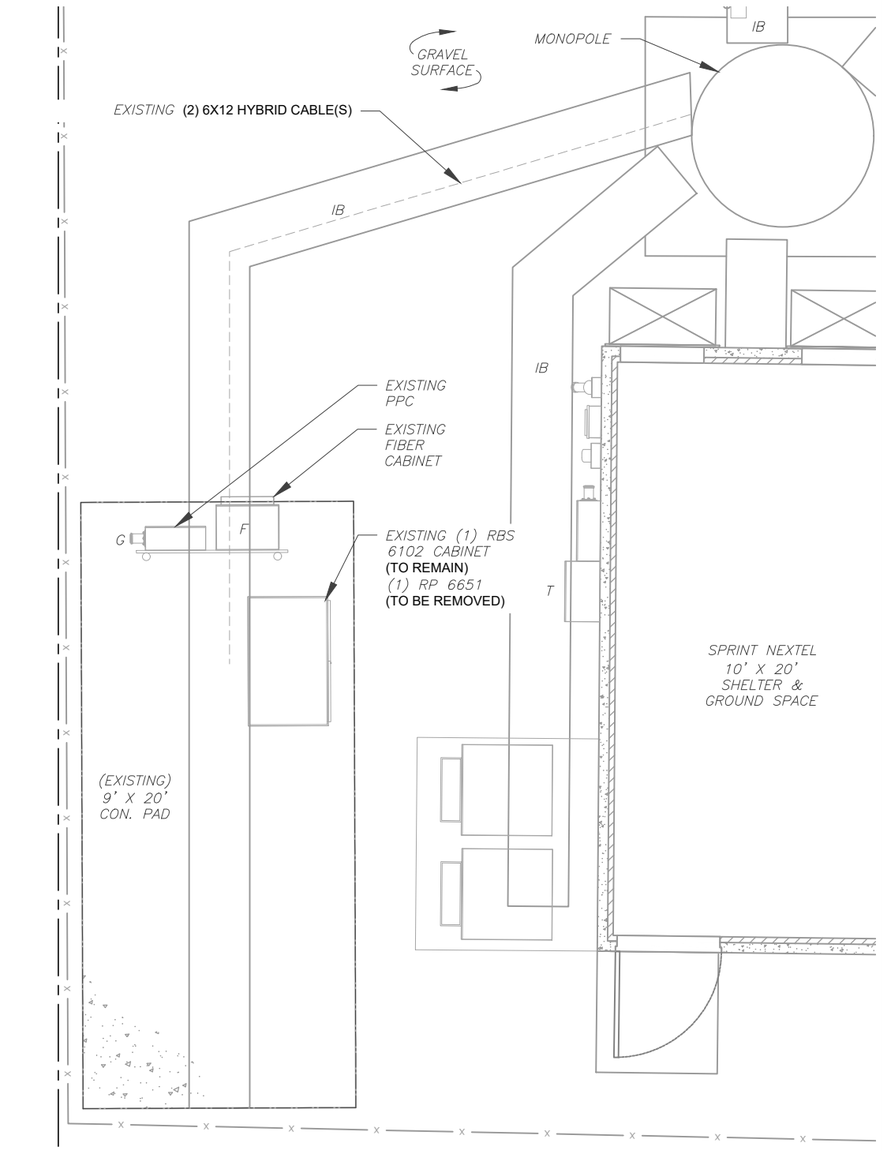
ATC JOB NO:	14097391_G3
CUSTOMER ID:	CTHA059E
CUSTOMER #:	CTHA059E

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	1

SITE PLAN NOTES:

1. CONTRACTOR TO VERIFY THERE IS NO LIVE AAV FIBER RUNNING THROUGH EXISTING DEAD EQUIPMENT. IF SO, THIS WILL NEED TO BE RERUN THROUGH CONDUIT PRIOR TO REMOVING DEAD 2G (6201 CABS) EQUIPMENT.
2. ALL OPEN PORTS NEED TO BE SEALED / WEATHERPROOFED PROPERLY
3. ALL UNNEEDED / EXCESS EQUIPMENT AND GARBAGE TO BE REMOVED FROM EQUIPMENT AREA. DISPOSE OF MATERIALS PROPERLY OFF SITE.



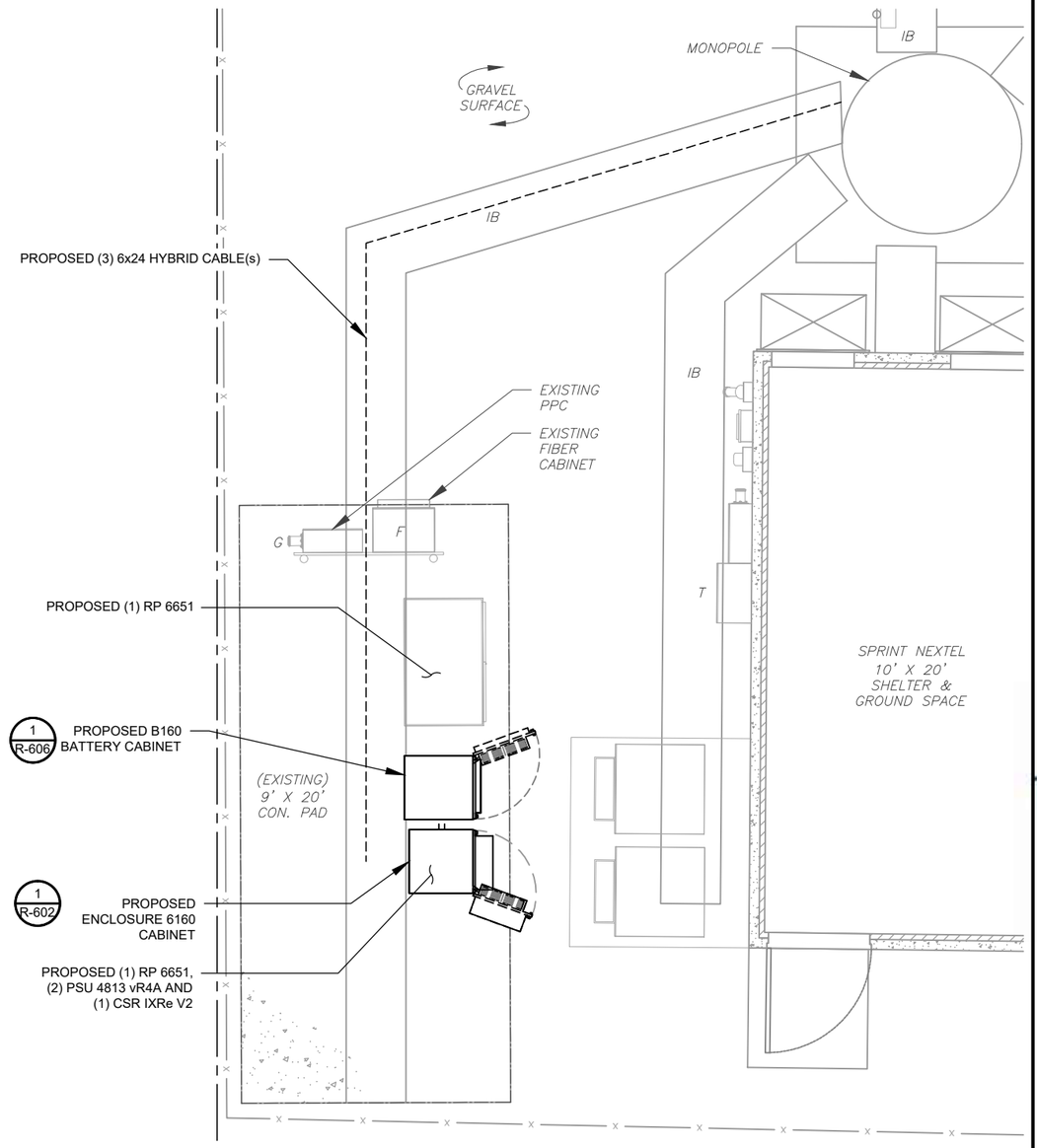
1 EXISTING GROUND EQUIPMENT LAYOUT

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)
1 UNIT = 5 FEET

T-MOBILE CM APPROVAL REQUIRED BEFORE INSTALLING CABINETS.



2 PROPOSED GROUND EQUIPMENT LAYOUT

GRAPHIC SCALE

5 0 2.5 5

(IN FEET)
1 UNIT = 5 FEET

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REV.	DESCRIPTION	BY	DATE
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0	FINAL	VL	07/20/22
1	FINAL	VL	09/14/22

ATC SITE NUMBER:
302465

ATC SITE NAME:
COLCHESTER CT 6

T-MOBILE SITE NAME:
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COLCHESTER, CT 06415-1825

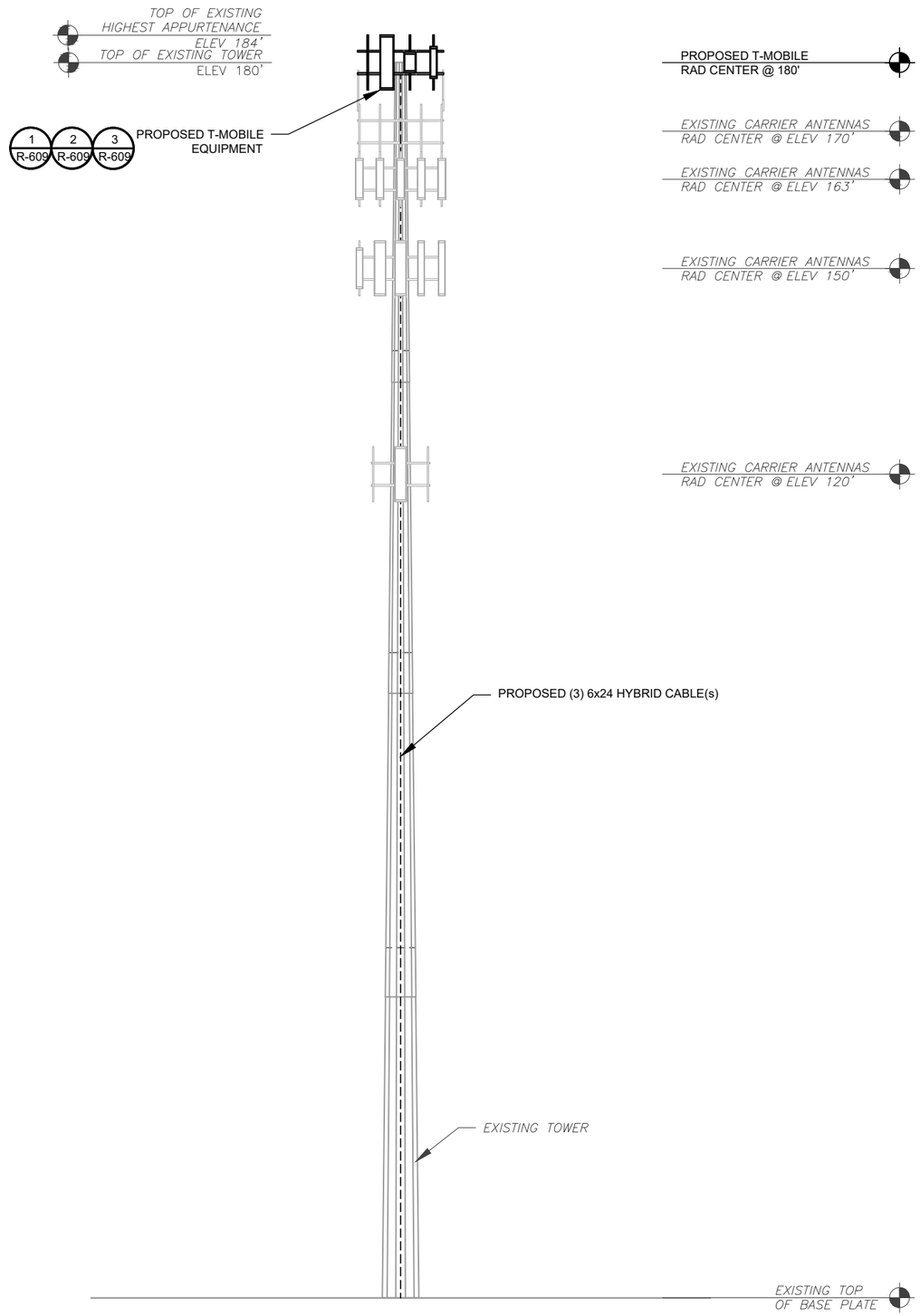
SEAL:

T-Mobile

ATC JOB NO:	14097391_G3
CUSTOMER ID:	CTHA059E
CUSTOMER #:	CTHA059E

DETAILED EQUIPMENT PLAN

SHEET NUMBER:	REVISION:
C-102	1



1 TOWER ELEVATION
SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY AMERICAN TOWER CORPORATION, DATED 06/29/22, 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.)
5. TOWER ELEVATION DEPICTION MAY NOT REFLECT ALL EQUIPMENT INCLUDED IN STRUCTURAL ANALYSIS. REFER TO STRUCTURAL ANALYSIS FOR FULL TOWER LOADING.

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SITE ADDRESS:
355 ROUTE 85
COLCHESTER, CT 06415-1825

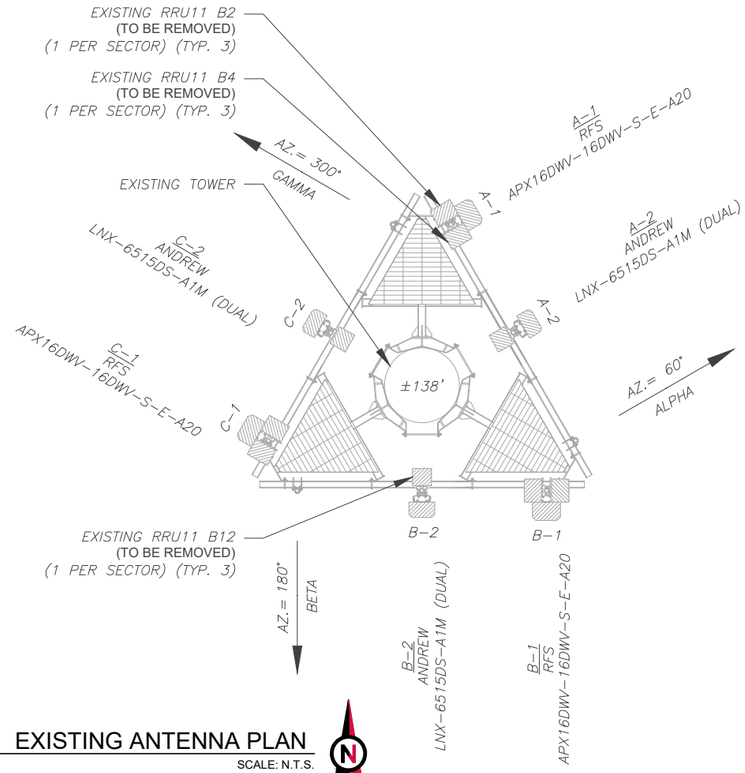
SEAL:

T-Mobile

ATC JOB NO:	14097391_G3
CUSTOMER ID:	CTHA059E
CUSTOMER #:	CTHA059E

TOWER ELEVATION

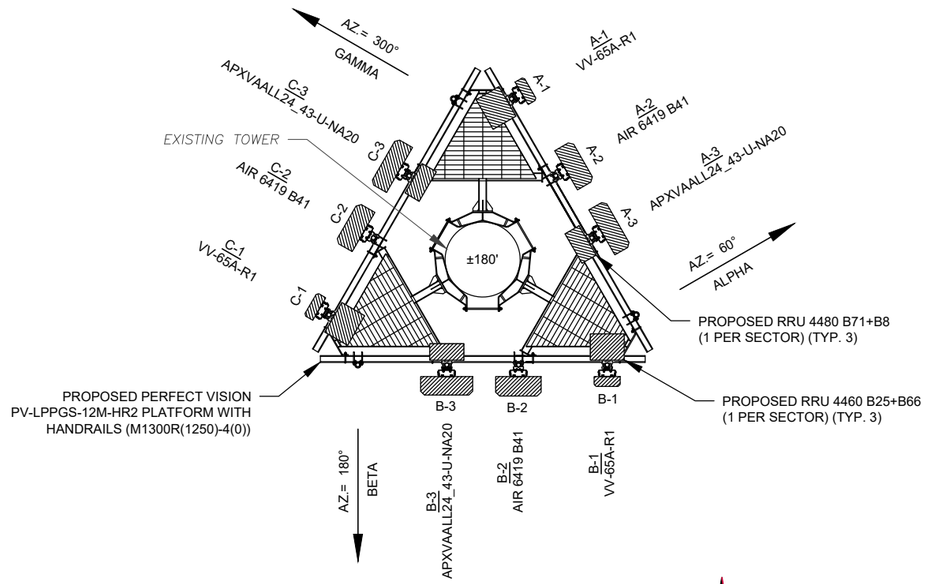
SHEET NUMBER:	REVISION:
C-201	1



1 EXISTING ANTENNA PLAN

SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY AMERICAN TOWER CORPORATION, DATED 06/29/22, THE PROPOSED MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.



2 FINAL ANTENNA PLAN

SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY						NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS		ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	138'	60°	A1	RFS APX16DWV-16DWV-S-E-A20	U1900 L2100	0/2,2	RMV		RRU11 B2 RRU11 B4	RMV
			A2	ANDREW LNX-6515DS-A1M	L700	0/2	RMV		RRU11 B12	RMV
			A3	–	–	–	–		–	–
BETA	138'	180°	B1	RFS APX16DWV-16DWV-S-E-A20	U1900 L2100	0/2,2	RMV		RRU11 B2 RRU11 B4	RMV
			B2	ANDREW LNX-6515DS-A1M	L700	0/2	RMV		RRU11 B12	RMV
			B3	–	–	–	–		–	–
GAMMA	138'	300°	C1	RFS APX16DWV-16DWV-S-E-A20	U1900 L2100	0/2,2	RMV		RRU11 B2 RRU11 B4	RMV
			C2	ANDREW LNX-6515DS-A1M	L700	0/2	RMV		RRU11 B12	RMV
			C3	–	–	–	–		–	–

NOTES

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.

STATUS ABBREVIATIONS

RMV: TO BE REMOVED
RMN: TO REMAIN
REL: TO BE RELOCATED
ADD: TO BE ADDED

CABLE LENGTHS FOR JUMPERS

JUNCTION BOX TO RRU: 15'
RRU TO ANTENNA: 10'

FINAL ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY					NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	180'	60°	A1	VV-65A-R1	L2100, L1900	0/2,2	ADD	RRU 4460 B25+B66	ADD
			A2	AIR 6419 B41	L2500, N2500	-	ADD	-	-
			A3	APXVAALL24_43-U-NA20	L700, L600, N600	0/2,2	ADD	RRU 4480 B71+B8	ADD
BETA	180'	180°	B1	VV-65A-R1	L2100, L1900	0/2,2	ADD	RRU 4460 B25+B66	ADD
			B2	AIR 6419 B41	L2500, N2500	-	ADD	-	-
			B3	APXVAALL24_43-U-NA20	L700, L600, N600	0/2,2	ADD	RRU 4480 B71+B8	ADD
GAMMA	180'	300°	C1	VV-65A-R1	L2100, L1900	0/2,2	ADD	RRU 4460 B25+B66	ADD
			C2	AIR 6419 B41	L2500, N2500	-	ADD	-	-
			C3	APXVAALL24_43-U-NA20	L700, L600, N600	0/2,2	ADD	RRU 4480 B71+B8	ADD

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
–	–	–	(2) 6X12	RMV
–	–	–	–	–

3 EQUIPMENT SCHEDULES

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY	
MODEL NUMBER	STATUS	CABLE QTY, SIZE, TYPE	STATUS
-	-	(3) 6X24	ADD
-	-	-	-

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CUSTOMER ID:	CTHA059E
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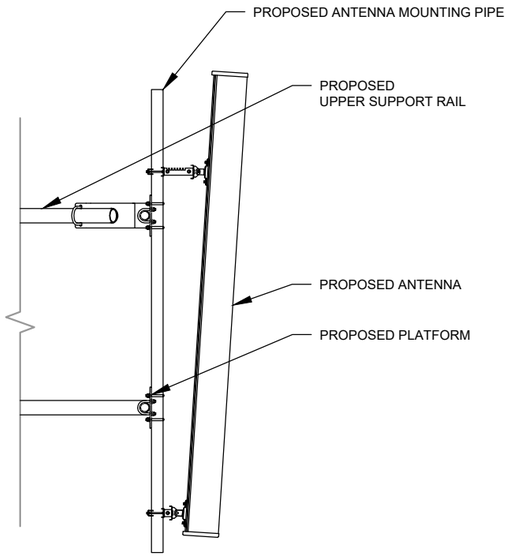
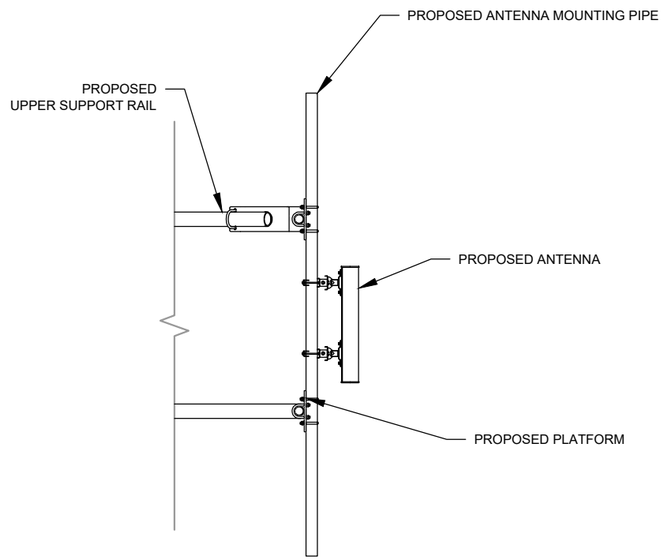
ANTENNA INFORMATION & SCHEDULE

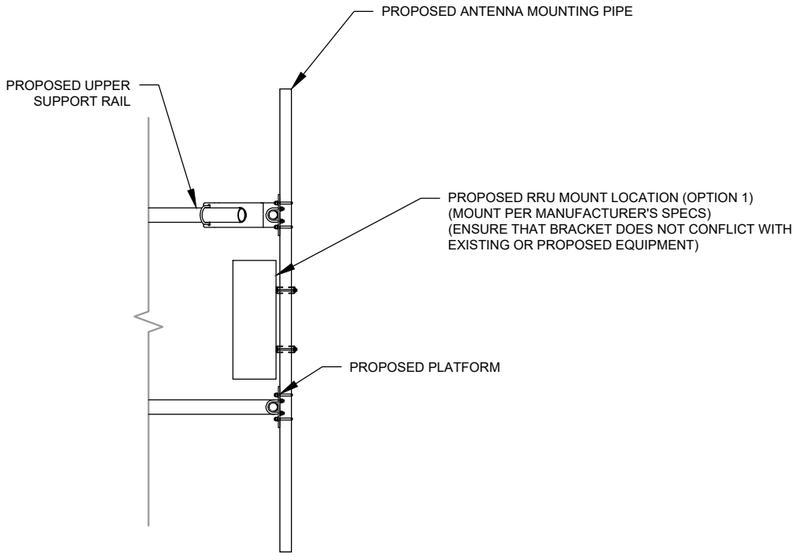
SHEET NUMBER:	REVISION:
C-401	1



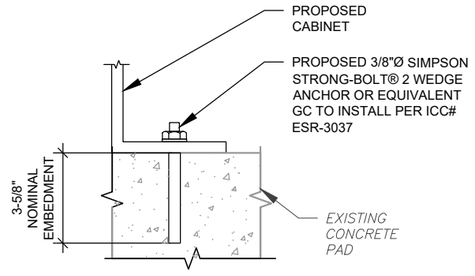
1 PROPOSED ANTENNA MOUNTING DETAIL - TYPICAL
SCALE: N.T.S.



2 PROPOSED 5G ANTENNA MOUNTING DETAIL - TYPICAL
SCALE: N.T.S.



3 PROPOSED RRU MOUNTING DETAIL - TYPICAL
SCALE: N.T.S.



NOTE:

INSTALL SIMPSON STRONG-TIE® STRONG-BOLT® 2 WEDGE ANCHOR(S) STRICTLY PER INSTALLATION INSTRUCTIONS INCLUDED WITH PRODUCT OR FOUND ONLINE AT WWW.STRONGTIE.COM. PROPER INSTALLATION IS CRITICAL FOR FULL PERFORMANCE.

4 CABINET ATTACHMENT DETAIL
SCALE: N.T.S.

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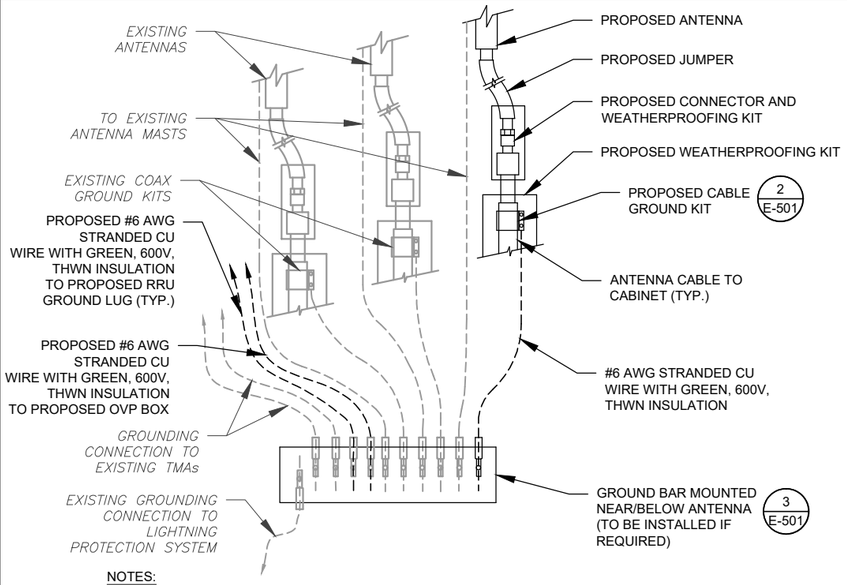
T-Mobile

ATC JOB NO:	14097391_G3
CUSTOMER ID:	CTHA059E
CUSTOMER #:	CTHA059E

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-501	1

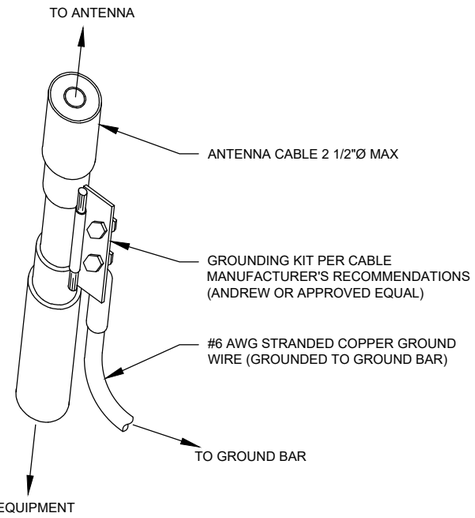


NOTES:

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.

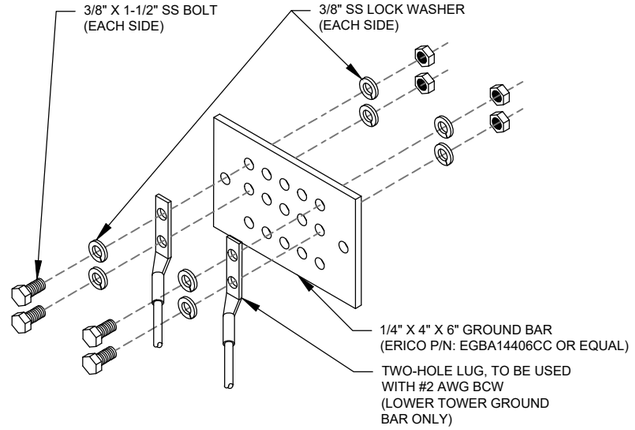


GROUND KIT NOTES:

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.



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.

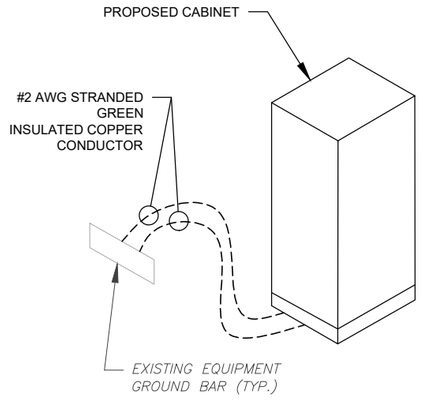
3 TOWER GROUND BAR DETAIL

SCALE: N.T.S.

STANDARD CONDUIT USE TABLE			
CONDUIT TYPE	USE CASE	LOCATION	USE CASE EXAMPLE
RMC (METALLIC)	AC, DC COMM	ABOVE GROUND	ABOVE GROUND PPC TO SSC
PVC	AC POWER	UNDERGROUND	UNDERGROUND PPC TO SSC OR BACKHAUL TRANSPORT HUB TO SSC
LFMC	AC, DC, COMM	MAX 6' PER CONDUIT RUN, ABOVE GROUND ONLY	TIGHT LOCATIONS BETWEEN HUB AND CONDUIT BUT NOT TO BE USED WHERE IT CAN BE STEPPED ON
EMT	INDOOR AC, DC COMM	INDOOR NOT EXPOSED TO THE OUTDOOR ENVIRONMENT (MUST BE DRY)	CIRCUIT PANEL TO JUNCTION BOX
LFNC	GROUND WIRE	CONCEALING AND PROTECTING BTCW RISERS ONLY	GROUND RING TO MGB OR SSC

EXCEPTION CONDUIT USE TABLE			
CONDUIT TYPE	USE CASE	LOCATION	USE CASE EXAMPLE
EMT (NOT PREFERRED)	OUTDOOR DC, COMM	OUTDOOR WHEN USED WITH WATERTIGHT HUBS ONLY	BETWEEN EQUIPMENT AND BATTERY CABINET OR EQUIPMENT TO EQUIPMENT CABINETS FOR INTER CABINET CONNECTION
RMC NONMETALLIC (ALUMINUM)	OUTDOOR/INDOOR PER NEC GUIDLINES	ABOVE GROUND	MAT BE USED AS A LOWER COST ALTERNATIVE TO METALLIC RMC, MUST MEET OR EXCEED FEDERAL SPEC: WW-C-540C, UL-6A, ANSI C80.5, NEC 344.10 (A) ALLOWS THE USE OF EITHER ALUMINUM OR GALVANIZED FITTINGS

4 CONDUIT USE TABLES



5 CABINET GROUNDING DETAIL

SCALE: N.T.S.

ELECTRICAL NOTES:

1. 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.
2. ATC HAS NOT VERIFIED ANY EXISTING T-MOBILE GROUND EQUIPMENT OR ELECTRICAL LOADING. PROPOSED WORK BASED ON INSTALLATION CONFIGURATION PROVIDED BY T-MOBILE. CONTRACTOR TO VERIFY EXISTING T-MOBILE PANEL HAS SUFFICIENT SPACE FOR PROPOSED BREAKER. PROPOSED CABLE AND CONDUIT SHALL BE MINIMUM SIZE PER BELOW IN CHART.
3. FOR SPECIFIC CABINET / ANCILLARY EQUIPMENT WIRING REQUIREMENTS, THE T-MOBILE CONTRACTOR SHOULD REFERENCE DESIGN DOCUMENTS PROVIDED BY T-MOBILE FOR THIS CURRENT PROJECT CONFIGURATION, IN ACCORDANCE WITH LOCAL JURISDICTION REQUIREMENTS & NEC STANDARDS & PRACTICES.

VOLTS	OCPD SIZE	WIRE SIZE	GROUND	CONDUIT
120/240V OR 120/208V	80A/2P	3-#3 AWG	#8 AWG	1-1/4"
	100/2P	3-#2 AWG	#8 AWG	1-1/4"
	125A/2P	3-#3/0 AWG	#6 AWG	2"
	150A/2P	3-#3/0 AWG	#6 AWG	2"
	200A/2P	3-#3/0 AWG	#6 AWG	2"
240V OR 208V	80A/2P	2-#3 AWG	#8 AWG	1-1/4"
	100/2P	2-#2 AWG	#8 AWG	1-1/4"
	125A/2P	2-#3/0 AWG	#6 AWG	2"
	150A/2P	2-#3/0 AWG	#6 AWG	2"
	200A/2P	2-#3/0 AWG	#6 AWG	2"

6 ELECTRICAL NOTES

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REV.	DESCRIPTION	BY	DATE
A	PRELIM	JAP	06/30/22
0	FINAL	VL	07/20/22
1	FINAL	VL	09/14/22

ATC SITE NUMBER:
302465

ATC SITE NAME:
COLCHESTER CT 6

T-MOBILE SITE NAME:
CTHA059E

SITE ADDRESS:
355 ROUTE 85
COLCHESTER, CT 06415-1825

SEAL:

T-Mobile

ATC JOB NO:	14097391_G3
CUSTOMER ID:	CTHA059E
CUSTOMER #:	CTHA059E

GROUNDING DETAILS

SHEET NUMBER: E-501

REVISION: 1

RAN Template:	A&L Template:
67E5D998E MUAC	67E5998E_1xAIR+1OP+1QP

CTHA059E_Anchor_4

Print Name: Preliminary (RFDS_For_Scoping)
PORs: Anchor_Phase 3
L600_L600 Coverage
Replacement_Colo Consolidation

Section 5 - RAN Equipment

Existing RAN Equipment

Template: 707C Tower

Enclosure	1	2
Enclosure Type	RBS 6102 MU AC	Purcell SFX17 2824
Baseband	DUW30 U1900; BB 6630 L2100, L700	
Hybrid Cable System	Ericsson 6x12 HCS *Select Length & AWG* (x 2)	

Proposed RAN Equipment

Template: 67E5D998E MUAC

Enclosure	1	2	3	4
Enclosure Type	RBS 6102 MU AC	Enclosure 6160 AC V1	B160	Purcell SFX17 2824
Baseband	RP 6651 L700, L600, N600; BB 6630 L2100, L1900	RP 6651 L2500, N2600		
Hybrid Cable System	Hybrid Trunk 6/24 4AWG 70m (x 2)	PSU 4813 vR4A (Kit) (x 2); Hybrid Trunk 6/24 4AWG 70m		
Transport System		CSR IXRe V2 (Gen2)		

RAN Scope of Work:

Remove and return all cabinet radios.

U1900 will be decom.

Keep existing cabinet 6102.

Breaker upgrade for 6160 at 125A.

Add 6160 and B160.

Add (1) RP 6651 for L2500/N2500 to 6160.

Add (1) RP 6651 for L600/L700/N600 in existing cabinet 6102.

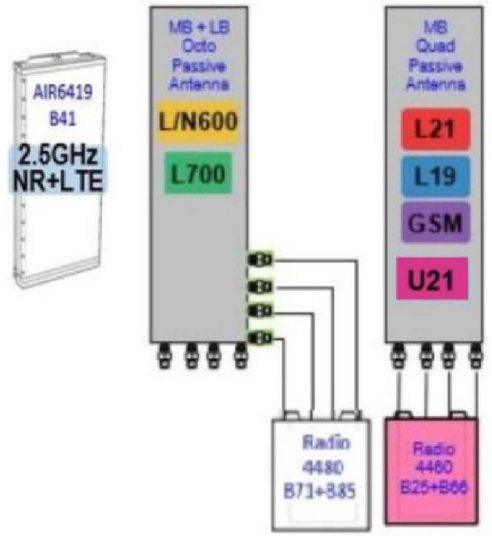
Add (1) IXRe router, and Add (2) PSU 4813 vR4A to 6160.

Add (3) 6x24 at 70m.

1 CABINET CONFIGURATION

Section 3 - Proposed Template Images

67E5D998E_1xAIR+1OP+1QP.JPG



Notes:

2 ANTENNA CONFIGURATION

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

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T-MOBILE SITE NAME:
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SITE ADDRESS:
355 ROUTE 85
COLCHESTER, CT 06415-1825

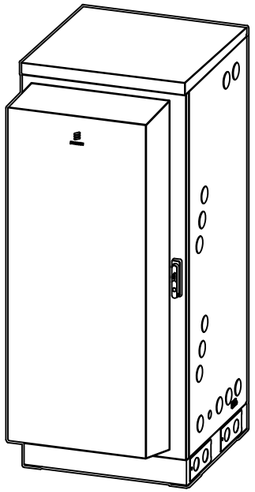
T-Mobile

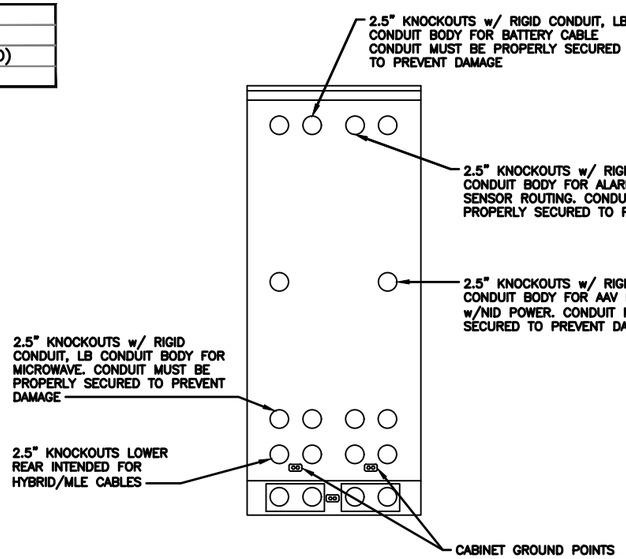
ATC JOB NO:	14097391_G3
CUSTOMER ID:	CTHA059E
CUSTOMER #:	CTHA059E

SUPPLEMENTAL

SHEET NUMBER:
R-601

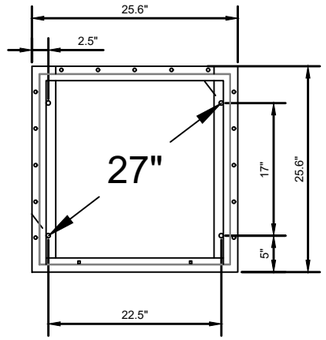
MANUFACTURER:	ERICSSON
MODEL:	6160 SITE SUPPORT CABINET
DIMENSIONS:	63" x 25.6" x 33.6" (H x W x D)
WEIGHT:	373 LBS





REAR VIEW

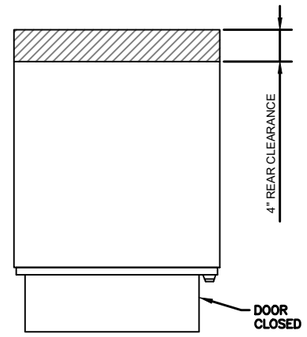
NOTE:
- CORRECT KNOCKOUT TOOL REQUIRED FOR PUNCHING KNOCKOUTS. DO NOT DRILL THROUGH KNOCKOUTS
- CONDUIT MUST BE PROPERLY SECURED TO PREVENT DAMAGE TO CABINETS AND OR CABLING

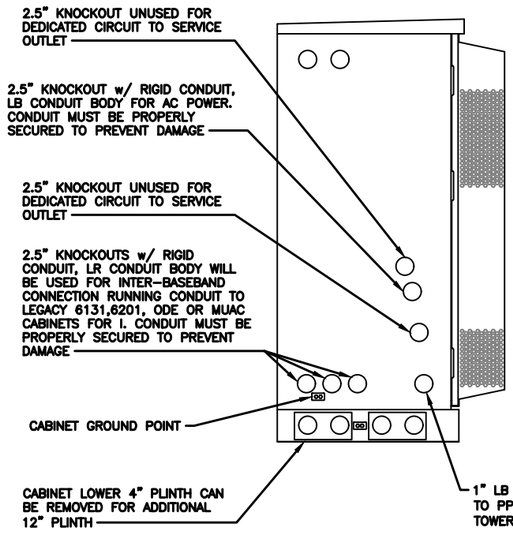


BOLT DOWN PATTERN

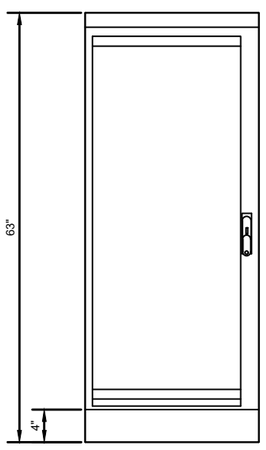
GROUNDING NOTE:

"CABINET GROUNDING TO USE A SINGLE, #2 BTCW CONDUCTOR, W/ 2-HOLE, 1" C-C, LONG BARREL, WINDOW LUG, IN 3/4" LFNC TO GROUND RING. PLINTH GROUNDING IS NOT REQUIRED."

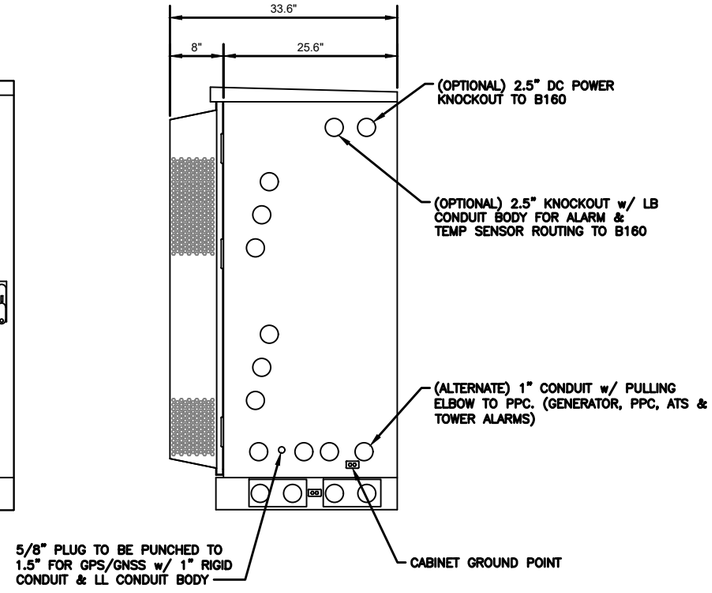




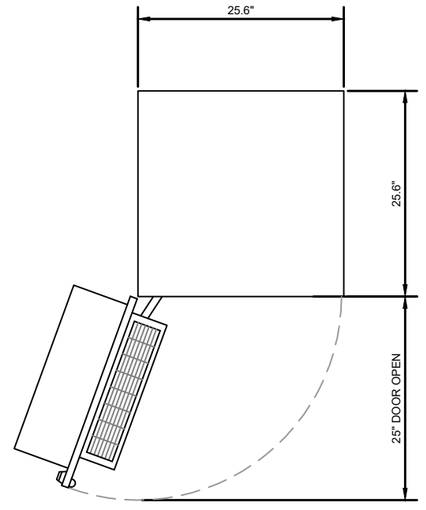
LEFT VIEW



FRONT VIEW



RIGHT VIEW



PLAN VIEW

1 ERICSSON 6160 SITE SUPPORT CABINET SPECIFICATIONS

SCALE: N.T.S.

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

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FAX: 617.695.3310

ATC SITE NUMBER:
302465

ATC SITE NAME:
COLCHESTER CT 6

T-MOBILE SITE NAME:
CTHA059E

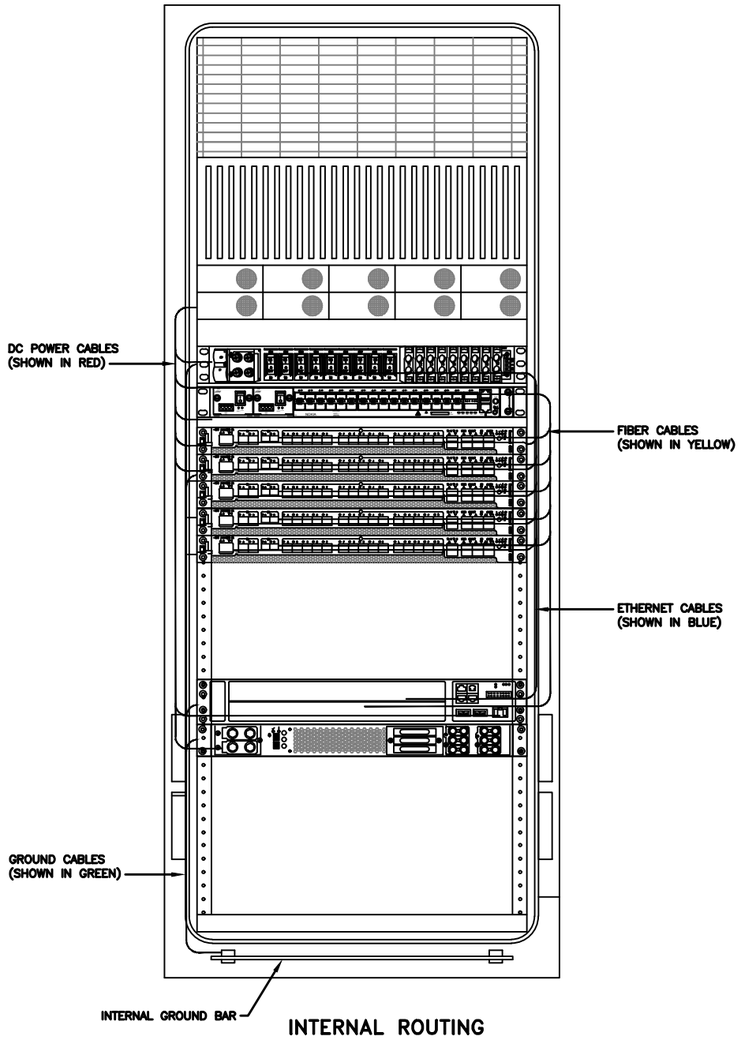
SITE ADDRESS:
355 ROUTE 85
COLCHESTER, CT 06415-1825

T-Mobile

ATC JOB NO:	14097391_G3
CUSTOMER ID:	CTHA059E
CUSTOMER #:	CTHA059E

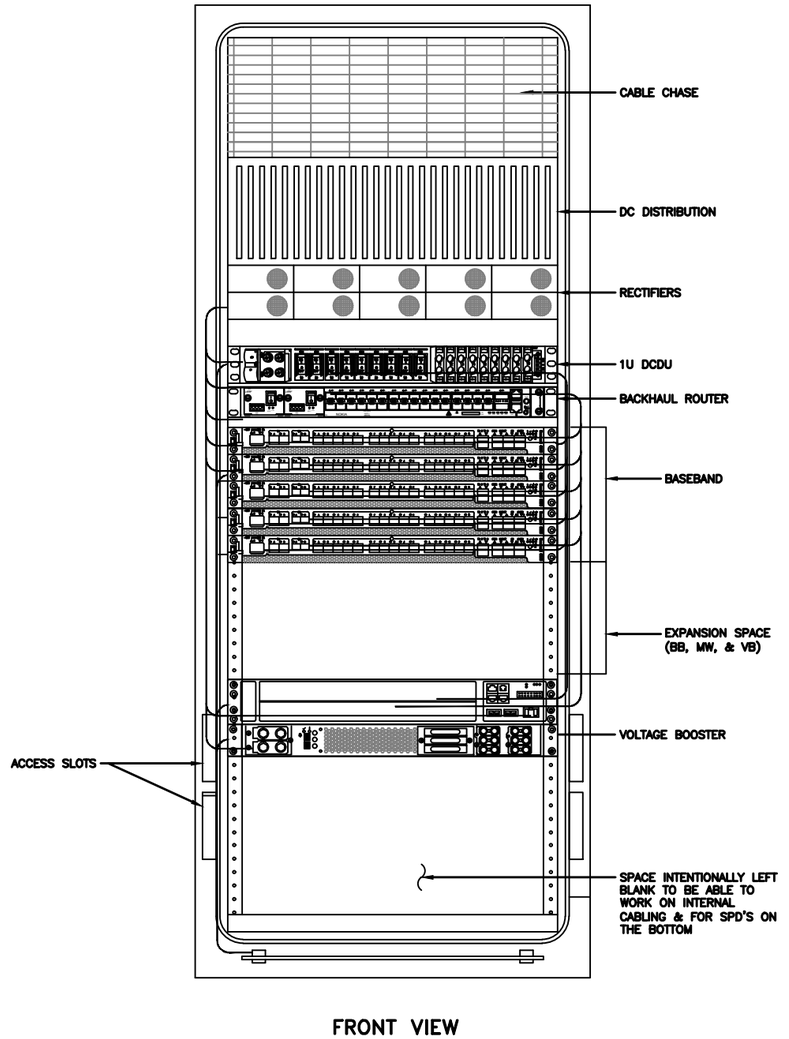
SUPPLEMENTAL

SHEET NUMBER:
R-602



INTERNAL ROUTING
(DOOR OPEN)

RACK ASSIGNMENTS	
RU SLOTS	DESCRIPTION
1	DC DISTRIBUTION
2	
3	
4	
5	RECTIFIER SHELF
6	
7	FIBER BOX
8	DCDU
9	BACKHAUL ROUTER
10	
11	1ST BASEBAND
12	2ND BASEBAND
13	3RD BASEBAND
14	4TH BASEBAND
15	5TH BASEBAND
16	EXPANSION
17	
18	
19	
20	EXPANSION / LEGACY BASEBAND / VOLTAGE BOOSTER
21	
22	VOLTAGE BOOSTER
23	OPEN SPACE FOR SPD ACCESS
24	
25	



FRONT VIEW
(DOOR OPEN)

1 ERICSSON 6160 CABINET DETAILS

SCALE: N.T.S.

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T-MOBILE SITE NAME:
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SITE ADDRESS:
355 ROUTE 85
COLCHESTER, CT 06415-1825

T-Mobile

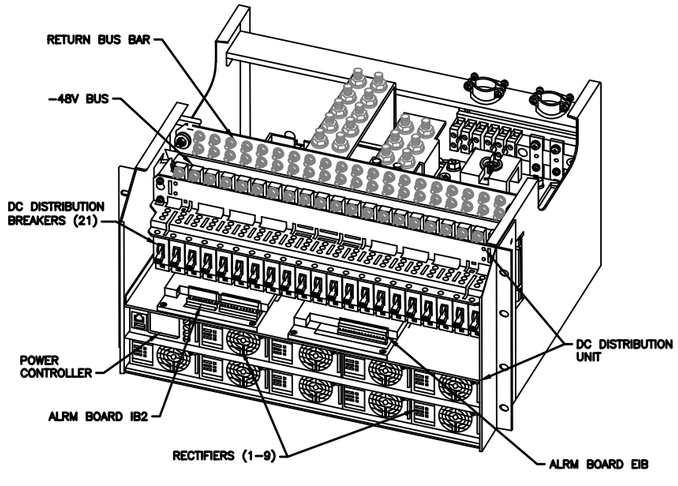
ATC JOB NO:	14097391_G3
CUSTOMER ID:	CTHA059E
CUSTOMER #:	CTHA059E

SUPPLEMENTAL

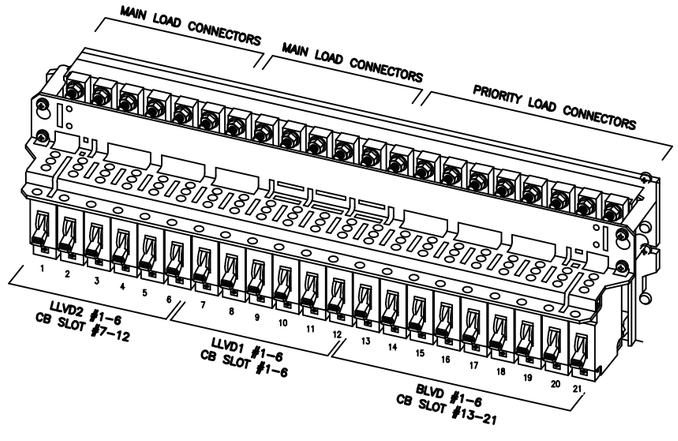
SHEET NUMBER:
R-603

NOTE:
THIS IS FOR REFERENCE ONLY, CHECK FOR SPECIFIC DETAIL IN T–MOBILE CABINET SPECIFIC INSTALLATION GUIDES

Breaker Allocation for E6160					
CB SLOT	Ckt #		w/ DCDU Prior to availability of the 4460 and 4480	w/ DCDU Later Design Post-4460 and Post-4480	w/ DCDU 4 and 6 Sector designs
1	LVD1 47.0V	1	Router PS-2*/Future		Radio 4460 B25/66 ζ-1
2		2	Future		Radio 4460 B25/66 ζ-2
3		3	PSU 4813 feeding B25/66 α, β and γ (AIR 1641s)		PSU 4813 feeding B41-δ & B71/12-δ (Air 6449s and Radio 4480s)
4		4			
5		5	PSU 4813 feeding B41 α, β and γ (Air 6449s)		
6		6			
7	LVD2 45.1V	1	PSU 4813 feeding B71/12 α, β and γ (Radio 4449s)	PSU 4813 feeding B71/12 α, β and γ (Radio 4480s)	
8		2			
9		3	Future		Radio 4460 B25/66 δ-1
10		4	Future		Radio 4460 B25/66 δ-2
11		5	Future		Radio 4460 B25/66 ε-1
12		6	Future		Radio 4460 B25/66 ε-2
13	BLVD 43.2V	1	Router PS-1		
14		2	Radio 4415 B25/66 α	Radio 4460 B25/66 α-1	
15		3	Radio 4415 B25/66 β	Radio 4460 B25/66 α-2	
16		4	Radio 4415 B25/66 γ	Radio 4460 B25/66 β-1	
17		5	PSU 4813 feeding B2/25 α, β and γ (Radio 4424s)	Radio 4460 B25/66 β-2	
18		6		Radio 4460 B25/66 γ-1	
19		7	Future	Radio 4460 B25/66 γ-2	
20		8	DCDU		
21		9	AAV		
Sector Identification α = Alpha, β = Beta, γ = Gamma, δ = Delta, ε = Epsilon, ζ = Zeta					



POWER SUBRACK



DC DISTRIBUTION

1 ERICSSON 6160 ELECTRICAL DETAILS

SCALE: N.T.S.

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ATC SITE NUMBER:
302465

ATC SITE NAME:
COLCHESTER CT 6

T-MOBILE SITE NAME:
CTHA059E

SITE ADDRESS:
355 ROUTE 85
COLCHESTER, CT 06415-1825

T-Mobile

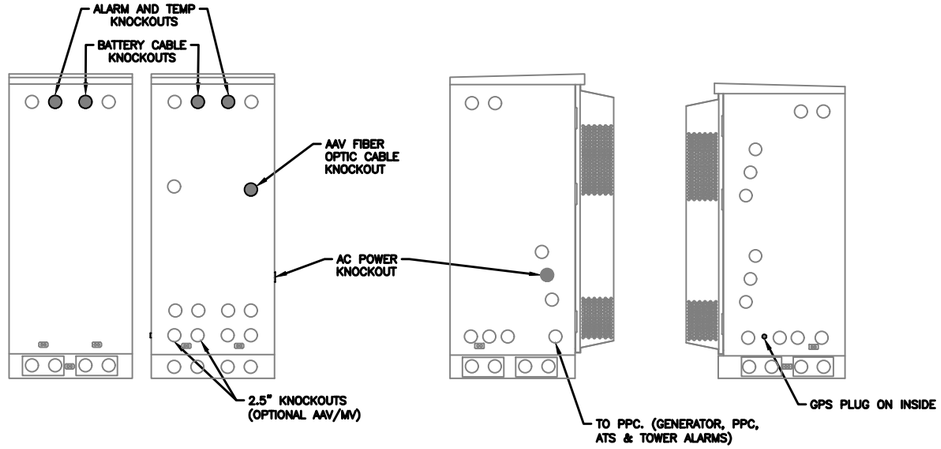
ATC JOB NO:	14097391_G3
CUSTOMER ID:	CTHA059E
CUSTOMER #:	CTHA059E

SUPPLEMENTAL

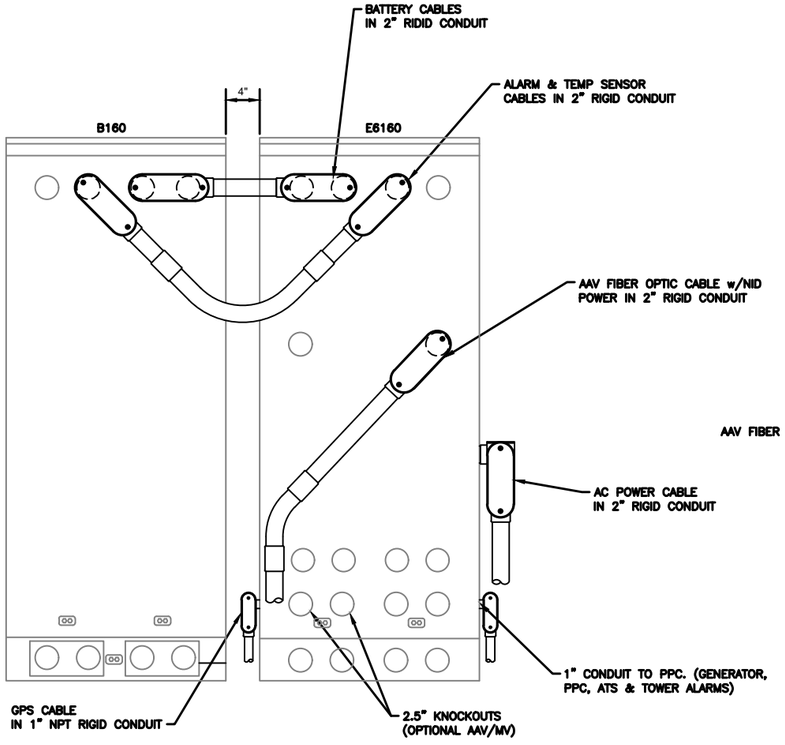
SHEET NUMBER:
R-604

NOTE:

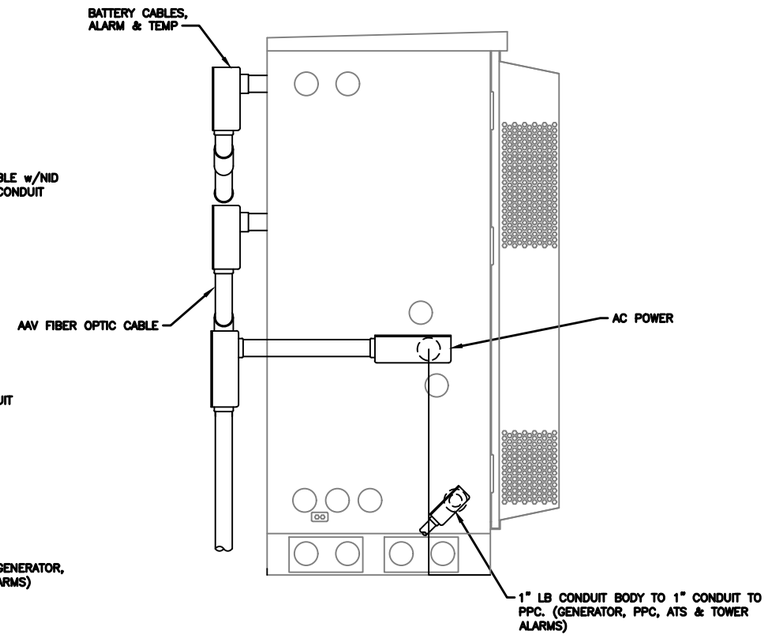
1. ALL CONDUIT AND FITTING ENTRANCES INTO CABINETS AND ENCLOSURES MUST UTILIZE MYERS OR EQUIVALENT HUBS OR SEALING WASHERS TO PREVENT WATER ENTRY/SEEPAGE INTO CABINETS AND ENCLOSURES.
2. (LIQUIDFLEX) FLEXIBLE METALLIC CONDUIT (LFMC) & ASSOCIATED FITTINGS CAN BE USED AS NEEDED BUT ONLY FOR TIGHT CONDUIT BENDS AND RUNS SUBJECT TO UL AND NEC LIMITATIONS. 6' MAX PER CONDUIT RUN.
3. POWER CONDUIT BODY ATTACHED WITH SHORT NIPPLE AND SEALING WASHER INSIDE & OUT. (FOR DOOR HOOD CLEARANCE)
4. PULLING ELBOWS MAY BE USED IN LIEU OF A CONDUIT BODIES WHEN CLEARANCE IS LIMITED.
5. ALL EXTERNAL ALARM CONDUITS ARE TOO TERMINATE AT THE PPC WITH A SINGLE 1" ALARM CONDUIT TO THE 6160.
6. (DO NOT USE CHASE NIPPLES) CONDUIT SHOULD HAVE SEALING WASHERS INSIDE AND OUT w/ LOCK NUT AND CAP.



CONDUIT LOCATIONS



REAR VIEW



SIDE VIEW

1 ERICSSON 6160/B160 CONDUIT ROUTING DETAILS

SCALE: N.T.S.

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T-MOBILE SITE NAME:
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SITE ADDRESS:
355 ROUTE 85
COLCHESTER, CT 06415-1825

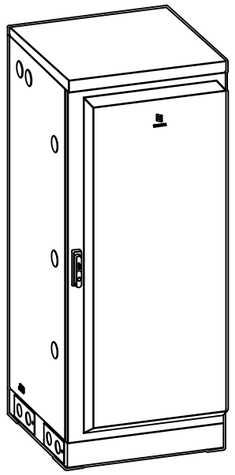
T-Mobile

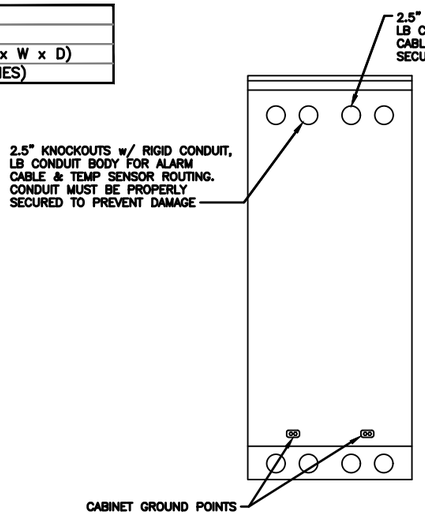
ATC JOB NO:	14097391_G3
CUSTOMER ID:	CTHA059E
CUSTOMER #:	CTHA059E

SUPPLEMENTAL

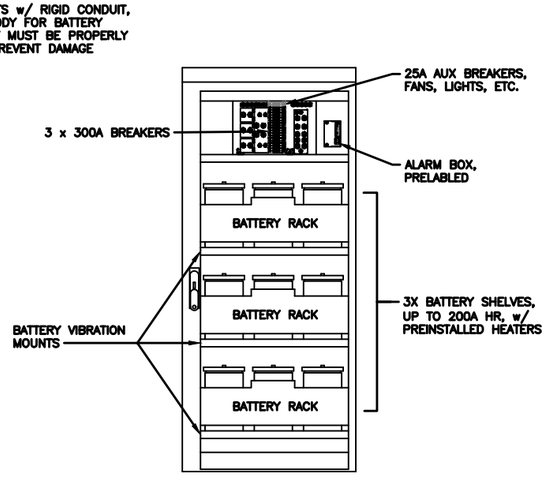
SHEET NUMBER:
R-605

MANUFACTURER:	ERICSSON
MODEL:	B160 BATTERY CABINET
DIMENSIONS:	63" x 25.6" x 29.5" (H x W x D)
WEIGHT:	295 LBS (WITHOUT BATTERIES)





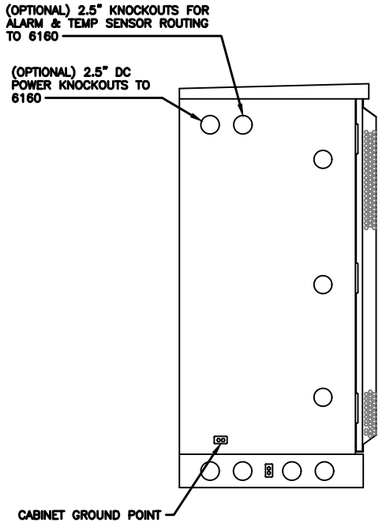
REAR VIEW



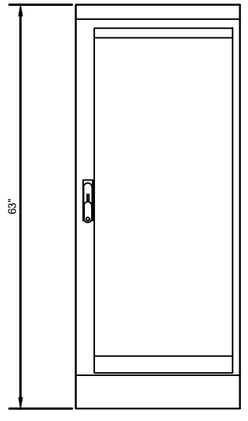
FRONT VIEW
(DOOR OPEN)

GROUNDING NOTE:

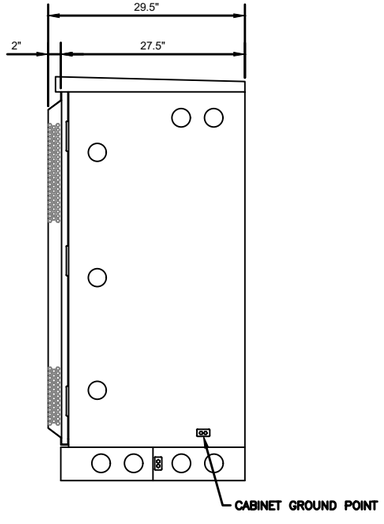
"CABINET GROUNDING TO USE A SINGLE, #2 BTCW CONDUCTOR, W/ 2-HOLE, 1" C-C, LONG BARREL, WINDOW LUG, IN 3/4" LFNC TO GROUND RING. PLINTH GROUNDING IS NOT REQUIRED."



LEFT VIEW

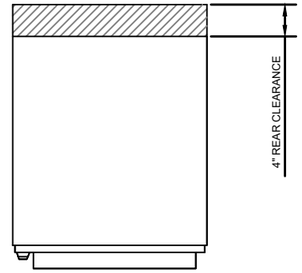


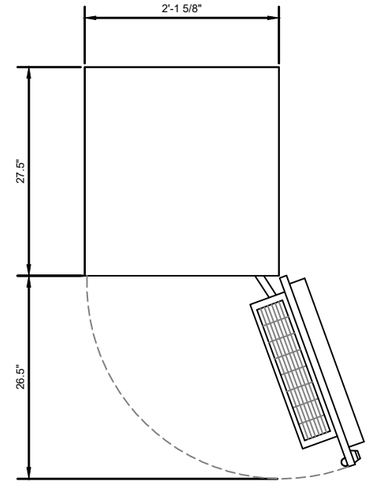
FRONT VIEW



RIGHT VIEW

NOTE:
- CORRECT KNOCKOUT TOOL REQUIRED FOR PUNCHING KNOCKOUTS. DO NOT DRILL THROUGH KNOCKOUTS
- CONDUIT MUST BE PROPERLY SECURED TO PREVENT DAMAGE TO CABINETS AND OR CABLING





PLAN VIEW

B160 ERICSSON SITE SUPPORT BATTERY CABINET

1 ERICSSON B160 BATTERY CABINET SPECIFICATIONS

SCALE: N.T.S.

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

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99 SUMMER STREET
SUITE 700
BOSTON, MA 02110
PHONE: 617.695.3400
FAX: 617.695.3310

ATC SITE NUMBER:
302465

ATC SITE NAME:
COLCHESTER CT 6

T-MOBILE SITE NAME:
CTHA059E

SITE ADDRESS:
355 ROUTE 85
COLCHESTER, CT 06415-1825

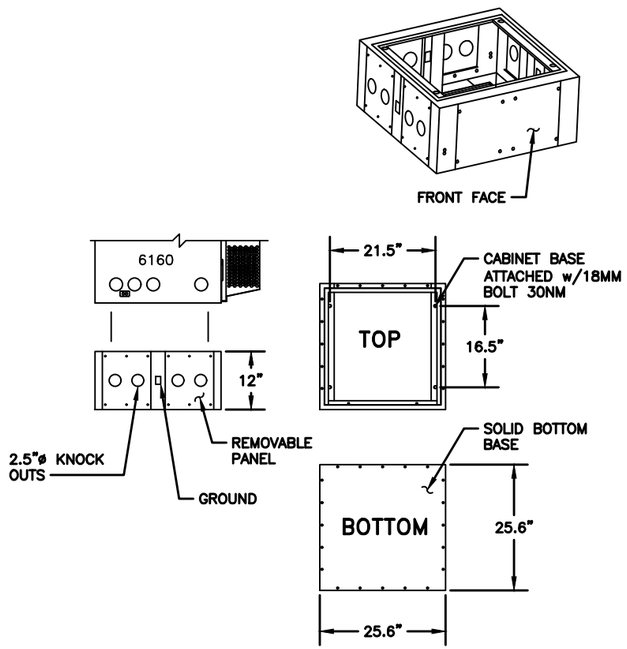
T-Mobile

ATC JOB NO:	14097391_G3
CUSTOMER ID:	CTHA059E
CUSTOMER #:	CTHA059E

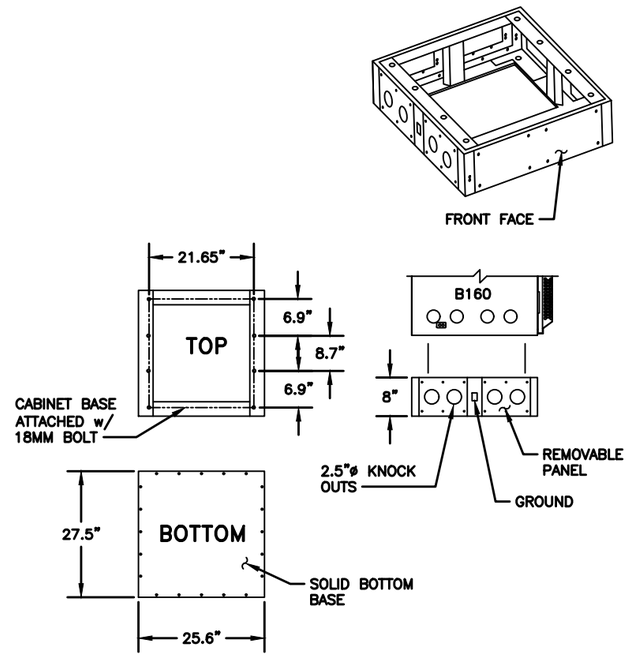
SUPPLEMENTAL

SHEET NUMBER:
R-606

MANUFACTURER:	ERICSSON
MODEL:	6160 12" BASE FRAME (SXK 125 5009/1)
DIMENSIONS:	12" x 25.6" x 25.6" (H x D x W)
WEIGHT:	73 LBS



MANUFACTURER:	ERICSSON
MODEL:	B160 8" BASE FRAME (SXK 125 5010/1)
DIMENSIONS:	8" x 27.5" x 25.6" (H x W x D)
WEIGHT:	60 LBS



1 34248 - UTHPM-TALL-BF-KIT (BASE FRAMES)

SCALE: N.T.S.

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COLCHESTER, CT 06415-1825

T-Mobile

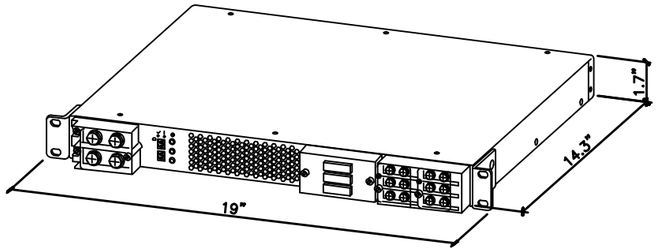
ATC JOB NO:	14097391_G3
CUSTOMER ID:	CTHA059E
CUSTOMER #:	CTHA059E

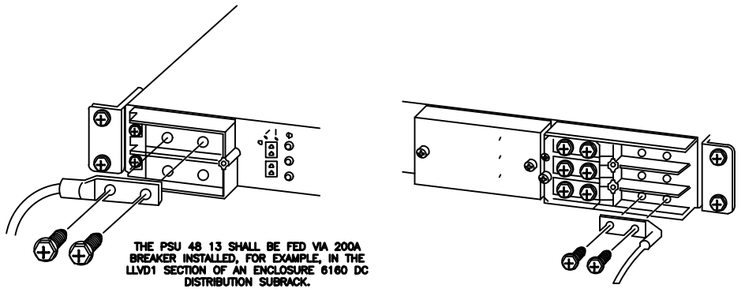
SUPPLEMENTAL

SHEET NUMBER:
R-607

MANUFACTURER:	ERICSSON
MODEL:	PSU 48 13
WEIGHT:	17.1 LBS
DIMENSIONS:	19"x 1.7"x 14.3"

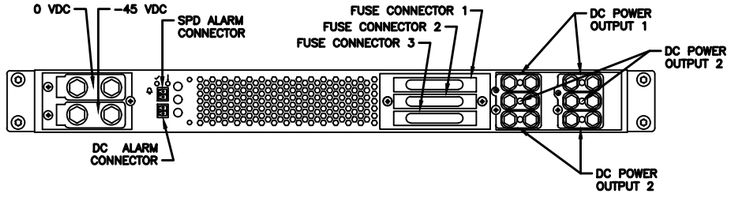
NEEDED INSTALL KIT (PICK 1)
34133 PSU4813 INSTALL KIT FOR RBS61XX
34134 PSU4813 INSTALL KIT FOR PBC6200
34135 PSU4813 INSTALL KIT FOR 6X60/RBS6230





THE PSU 48 13 SHALL BE FED VIA 200A BREAKER INSTALLED, FOR EXAMPLE, IN THE LLVD1 SECTION OF AN ENCLOSURE 6160 DC DISTRIBUTION SUBRACK.

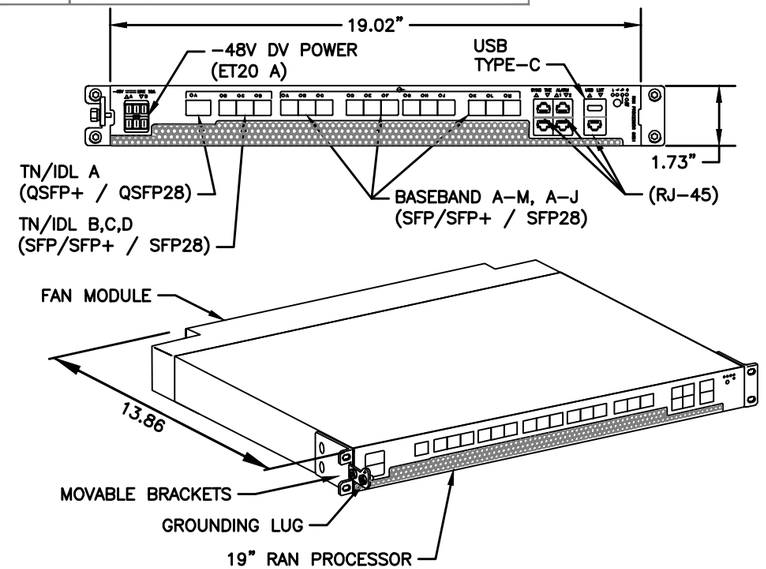
CONNECT –58 VDC DISTRIBUTION CABLE TO TERMINAL AT THE RIGHT, WHICH WILL BE FED TO RRU/AIR AT THE OTHER END.



1 SKU# 34132 - PSU 48 13

SCALE: N.T.S.

MANUFACTURER:	ERICSSON
MODEL:	6651 RAN PROCESSOR (KDU1370093/11)
DIMENSIONS:	1.73" X 19.02" X 13.86" (H" X W" X D")
WEIGHT:	16.98 LBS



2 34553 - ERICSSON 6651 RAN PROCESSOR

SCALE: N.T.S.

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T-MOBILE SITE NAME:
CTHA059E

SITE ADDRESS:
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COLCHESTER, CT 06415-1825

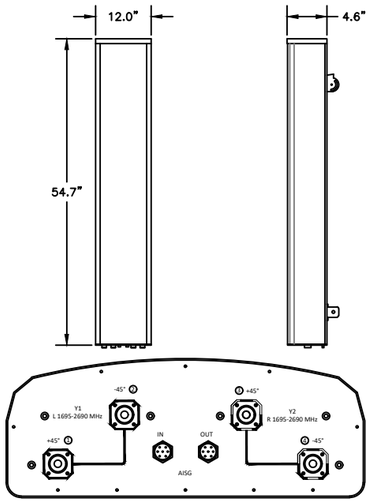
T-Mobile

ATC JOB NO:	14097391_G3
CUSTOMER ID:	CTHA059E
CUSTOMER #:	CTHA059E

SUPPLEMENTAL

SHEET NUMBER:
R-608

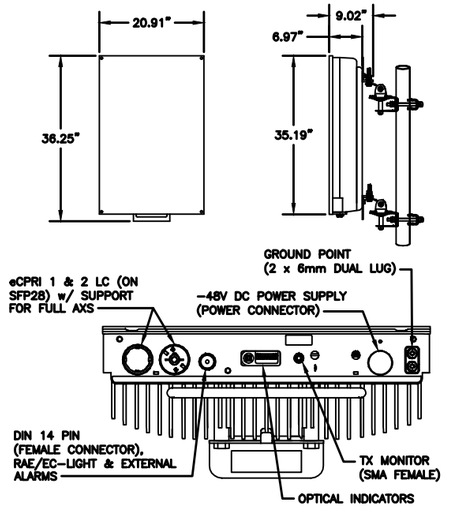
MANUFACTURER:	COMMSCOPE
MODEL:	VV-65A-R1
DIMENSIONS:	54.7" x 12.1" x 4.6" (H x W x D)
WEIGHT:	24.7 LB
INTERFACE:	4-PORT 4.3-10 FEMALE
MOUNTING KIT:	600899A-2 (INCLUDED) WEIGHT: 8.6 LB



1 34401 - COMMSCOPE VV-65A-R1

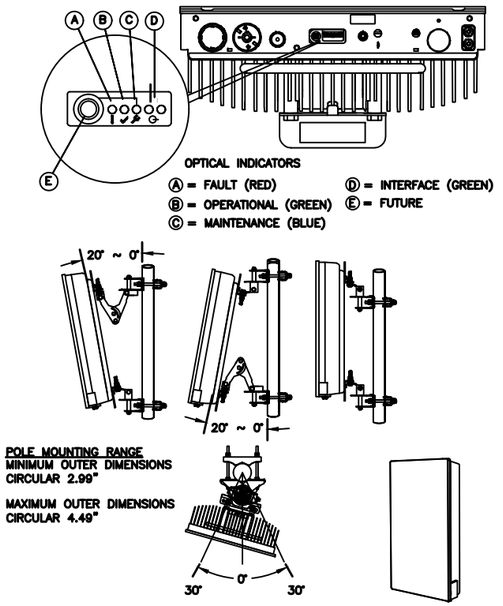
SCALE: N.T.S.

MANUFACTURER:	ERICSSON
MODEL:	AIR 6419 B41 (2.5GHz M-MIMO)
DIMENSIONS:	36.25" x 20.91" x 9.02" NOT TO EXCEED (H x W x D)
WEIGHT:	83 LBS (EXCLUDING MOUNTING KIT)
MOUNT WEIGHT:	13.5 LBS (SXK109 2016/1)

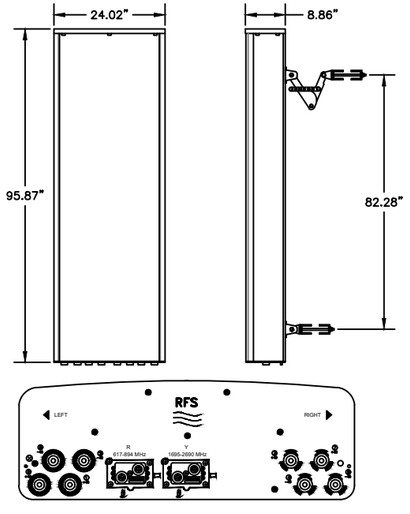


2 34552 - ERICSSON AIR 6419 BAND 41

SCALE: N.T.S.



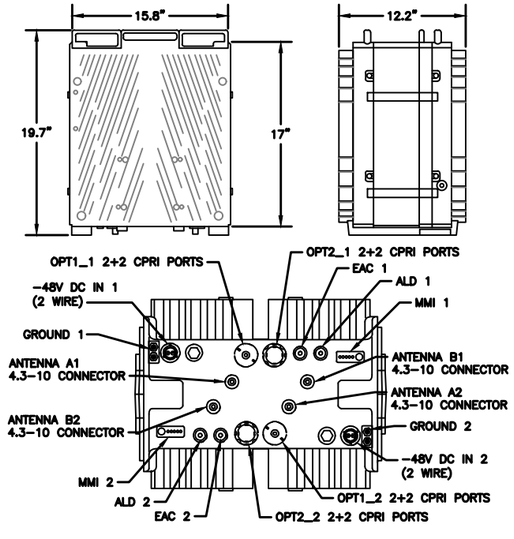
MANUFACTURER:	RFS
MODEL:	APXVAALL24_43-U-NA20
DIMENSIONS:	95.87" x 24.02" x 8.86"
WEIGHT:	119 LB
BAND:	QUAD BAND (8 PORT)
MOUNTING KIT & WEIGHT:	APM4O-10E BEAM TILT KIT (INCLUDED) (16.53 LBS)



3 34087 - RFS APXVAALL24_43-U-NA20

SCALE: N.T.S.

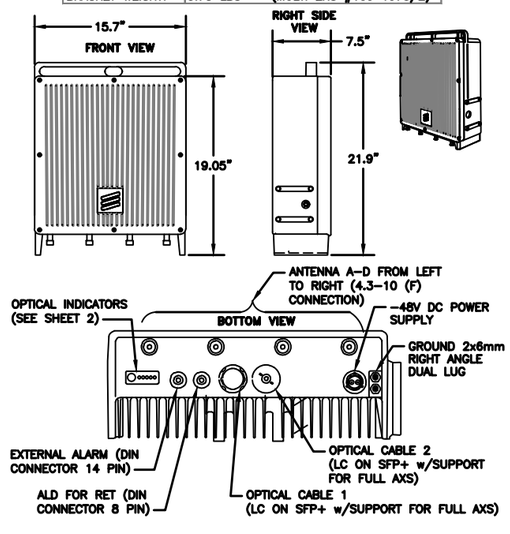
MANUFACTURER:	ERICSSON
MODEL:	4460 RADIO B2/25 B66 (KRC 161 912/3)
DIMENSIONS:	19.7" x 15.8" x 12.2" (H" x W" x D")
WEIGHT:	109 LBS
BRACKET WEIGHT:	4.8 LBS (ERS HEAVY #SXK1255993/1)



4 34373 - ERICSSON 4460 RADIO B2/25 B66

SCALE: N.T.S.

MANUFACTURER:	ERICSSON
MODEL:	4480 RADIO (KRC 161 922/1)
DIMENSIONS:	21.9" x 15.7" x 7.5" (H x W x D)
MODEL BAND:	B71, B85 FOR NR AND LTE
WEIGHT:	81 LBS
BRACKET WEIGHT:	3.75 LBS (MULTI ERS #109 1973/2)



5 34372 - ERICSSON 4480 RADIO

SCALE: N.T.S.

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ATC SITE NUMBER:
302465

ATC SITE NAME:
COLCHESTER CT 6

T-MOBILE SITE NAME:
CTHA059E

SITE ADDRESS:
355 ROUTE 85
COLCHESTER, CT 06415-1825

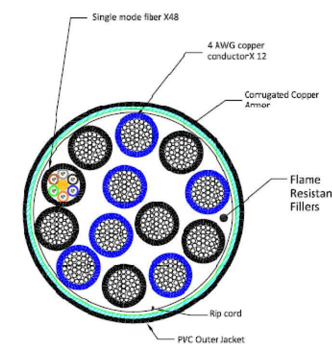
T-Mobile

ATC JOB NO:	14097391_G3
CUSTOMER ID:	CTHA059E
CUSTOMER #:	CTHA059E

SUPPLEMENTAL

SHEET NUMBER:
R-609

MECHANICAL	JACKET COLOR	BLACK
	OUTER DIAMETER (IN)	1.8
	MIN BENDING RADIUS(IN), MULTIPLE BENDS, LOADED	36
	MIN BENDING RADIUS(IN), MULTIPLE BENDS, UNLOADED	18
	MIN BENDING RADIUS(IN), SINGLE BEND, UNLOADED	12.6
	MIN BENDING RADIUS(IN), FURCATION	1.2
	ARMOR	CORRUGATED COPPER
	WEIGHT(lb/kft)	2480
	COMPRESSION(lb/IN)	250
	TENSILE LOAD, LONG TERM(lbf)	180
	TENSILE LOAD, SHORT TERM(lbf)	600
ELECTRICAL	CONDUCTOR MATERIAL	COPPER
	CONDUCTOR CONSTRUCTION	STRAND
	CONDUCTOR COLOR	BLUE/BLACK
	RESISTIVITY(nΩ @20°C)	16.78 nohm-M
	CONDUCTORS, QTY	12
	CONDUCTOR SIZE(AWG)	4
	EMI SHIELD	YES
	UL RATING	UL TC-OF-ER
OPTICAL	FIBER TYPE	SINGLE MODE (G.657.A2)
	FIBERS, QTY	48
	ATTENUATION(dB/km), MAX, 1550/1285-1330 nm	0.5
	DISPERSION, MAX, 1550/1285-1330 nm	18 ps/3.5 ps
	RETURN LOSS(dB)	>50
	INSERTION LOSS(dB), POST ENVIRONMENTAL	REDUCTION <0.65
	RETURN LOSS(dB), POST ENVIRONMENTAL	REDUCTION < 5
	CUTOFF WAVELENGTH(nm)	1260
	PIGTAIL TERMINATION	LC PAIR, STRAIGHT
ENVIRON	OPERATING TEMP(°F)	-40 TO +167
	STORAGE TEMP(°F)	-40 TO +167
	UV	IEC 60068-2-5
	THERMAL CYCLE	IEC 60068-2-14
	VIBRATION	IEC 60068-2-64
	IMPACT(ft lb)	4.4 NM PER ICEA696



NOTE: CABLE CROSS-SECTION NOT DRAWN TO SCALE

PROJ/WORK NO.		
PROJECT NAME:		
PROJECT LOCATION		
REV	DESCRIPTION	DATE
1	INIT. DWG	06/09/17

ALLIANCE™ CORPORATION
THE POWER OF BEING CONNECTED.

CUSTOMER:

T-MOBILE

SIGNATURE CYCLE	DATE
DRAWN: H.SHIN	20170602
CHECKED: D.O'BRIEN	20170602
APPROVED:	

ARMORED TRUNK HYBRID CABLE HIGH-CAPACITY w/ #4 AWG CONDUCTORS

SHEET NO: 3 OF 3

DWG NO:
AC-HTC05-24DLC-12C

HORIZONTAL SCALE: VERTICAL SCALE: N.T.S.

DISCLAIMER

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1 6X24 HCS 4AWG W/ PENDANT

SCALE: N.T.S.

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T-Mobile

ATC JOB NO:	14097391_G3
CUSTOMER ID:	CTHA059E
CUSTOMER #:	CTHA059E

SUPPLEMENTAL

AMERICAN TOWER®
CORPORATION

Mount Analysis Report

ATC Site Name	:	Colchester CT 6, CT
ATC Site Number	:	302465
Engineering Number	:	14097391_C8_01
Mount Elevation	:	181.75 ft
Carrier	:	T-Mobile
Carrier Site Name	:	CTHA059E
Carrier Site Number	:	CTHA059E
Site Location	:	355 Route 85 Colchester, CT 06415-1825 41.5448517 , -72.30489757
County	:	New London
Date	:	June 29, 2022
Max Usage	:	72%
Result	:	Pass

Prepared By:
Brittany Hucks
Structural Engineer I

Brittany Hucks

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32593
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
13 Jul 2022 04:55:23 cosign

COA: PEC.0001553

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CORPORATION

Introduction

The purpose of this report is to summarize results of the mount analysis performed for T-Mobile at 181.75 ft.

Supporting Documents

Specifications Sheet	Perfect Vision LPPGS-ENG-02-R0, dated July 14, 2020
Radio Frequency Data Sheet	RFDS ID #CTHA059E, dated April 20, 2022
Reference Photos	Site photos from 2020

Analysis

This mount was analyzed using American Tower Corporation's Mount Analysis Program and RISA-3D

Basic Wind Speed:	122 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.00" radial ice concurrent
Codes:	ANSI/TIA-222-H
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.205, S1 = 0.055
Site Class:	D - Stiff Soil - Default
Live Loads:	Lm = 500 lbs

*** Based on experience, it has been determined that the Lv load cases will not control over Lm load cases in platform mount analyses. Therefore, these load cases have been excluded from this analysis.**

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above. The mount can support the equipment as described in this report.

- Analysis based on new installation of Perfect Vision PV-LPPGS-12M-HR2 Platform w/ Handrails(s) (M1300R(1250)-4[0]).

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.

A.T. Engineering Service, PLLC - 3500 Regency Parkway, Suite 100 - Cary, NC 27518 - 919.468.0112 Office - 919.466.5414 Fax - www.americantower.com

1 MOUNT ANALYSIS

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. PLEASE REFERENCE THE MOUNT ANALYSIS REPORT FOR COMPLETE MOUNT ANALYSIS CALCULATIONS AND DETAILS. SUPPLEMENTAL PAGES INCLUDED IN THE CONSTRUCTION DRAWINGS ARE FOR REFERENCE ONLY. GENERAL CONTRACTOR IS TO VERYIFY THEY HAVE THE MOST RECENT MOUNT ANALYSIS PRIOR TO CONTRUCTION.

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T-Mobile

ATC JOB NO:	14097391_G3
CUSTOMER ID:	CTHA059E
CUSTOMER #:	CTHA059E

SUPPLEMENTAL

SHEET NUMBER:
R-611

AMERICAN TOWER®
CORPORATION

Mount Analysis Report

ATC Site Name	:	**Colchester CT 6, CT**
ATC Site Number	:	**302465**
Engineering Number	:	**14097391_C8_01**
Mount Elevation	:	**181.75 ft**
Carrier	:	**T-Mobile**
Carrier Site Name	:	**CTHA059E**
Carrier Site Number	:	**CTHA059E**
Site Location	:	**355 Route 85** **Colchester, CT 06415-1825** **41.5448517 , -72.30489757**
County	:	**New London**
Date	:	**June 29, 2022**
Max Usage	:	**72%**
Result	:	**Pass**

Prepared By:
Brittany Hucks
Structural Engineer I

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Reviewed By:

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This mount was analyzed using American Tower Corporation's Mount Analysis Program and RISA-3D

Basic Wind Speed:	122 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.00'' radial ice concurrent
Codes:	ANSI/TIA-222-H
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.205, S1 = 0.055
Site Class:	D - Stiff Soil - Default
Live Loads:	Lm = 500 lbs

*** Based on experience, it has been determined that the Lv load cases will not control over Lm load cases in platform mount analyses. Therefore, these load cases have been excluded from this analysis.**

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above. The mount can support the equipment as described in this report.

- Analysis based on new installation of Perfect Vision PV-LPPGS-12M-HR2 Platform w/ Handrails(s) (M1300R(1250)-4[0]).

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.

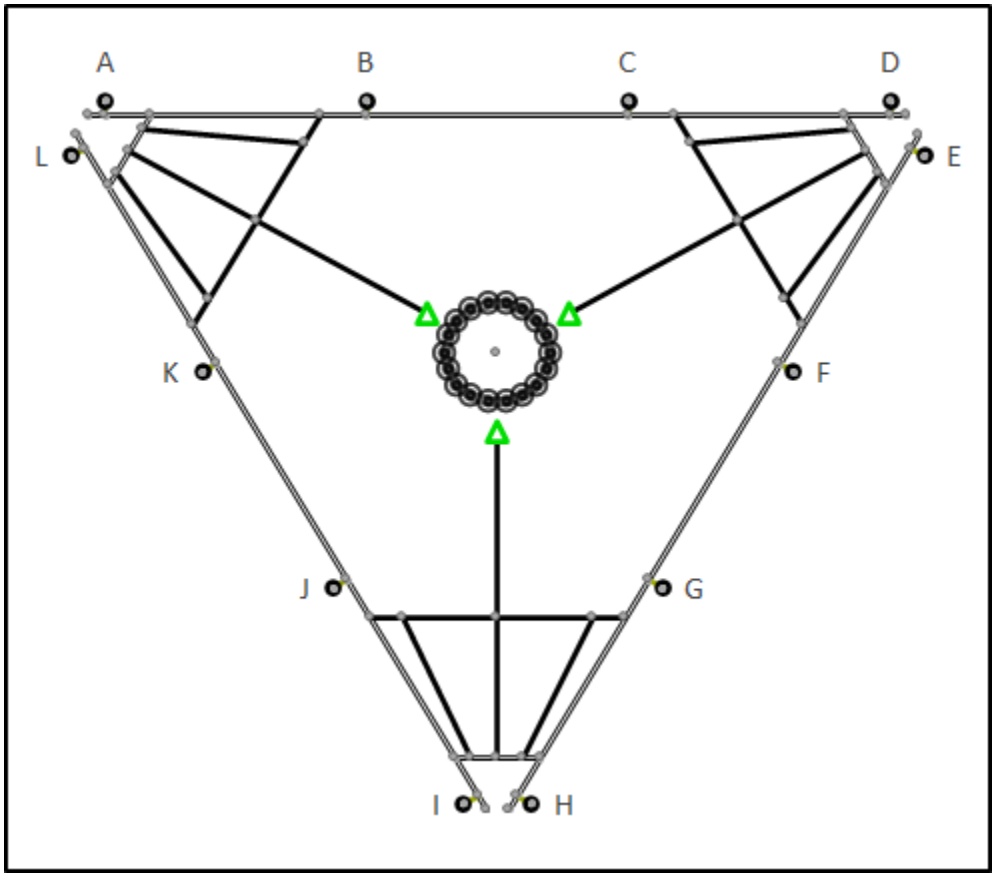
Application Loading

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
181.8	180.0	3	RFS APXVAALL24 43-U-NA20
		3	Ericsson AIR 6419 B41
		3	Commscope VV-65A-R1B
		3	Ericsson 4480 BAND 71
		3	Ericsson 4460 BAND 2/25

Structure Usages

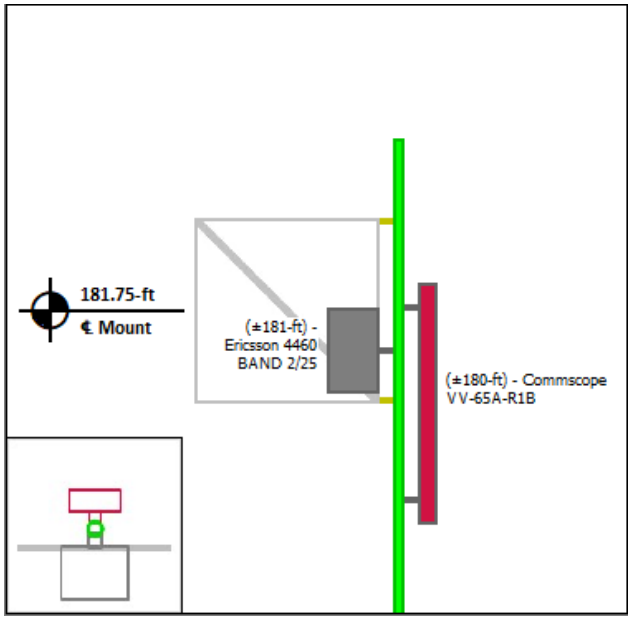
Structural Component	Controlling Usage	Pass/Fail
Horizontals	31%	Pass
Mount Pipes	72%	Pass
Connection Check	18%	Pass

Mount Layout

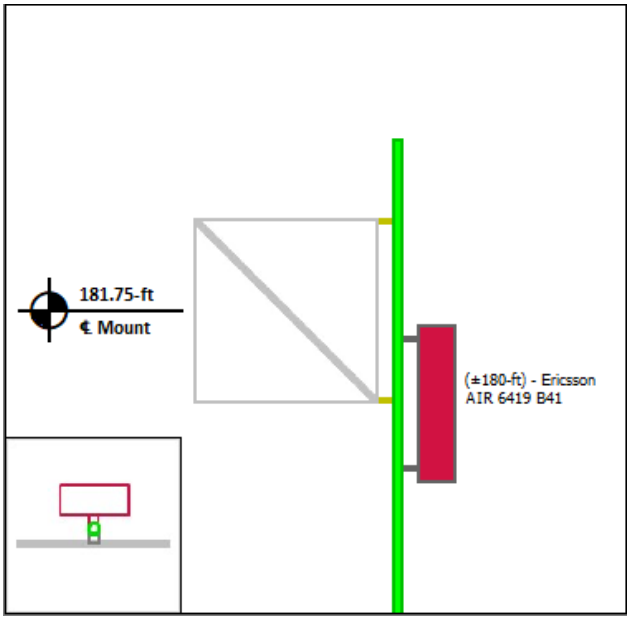


Equipment Layout

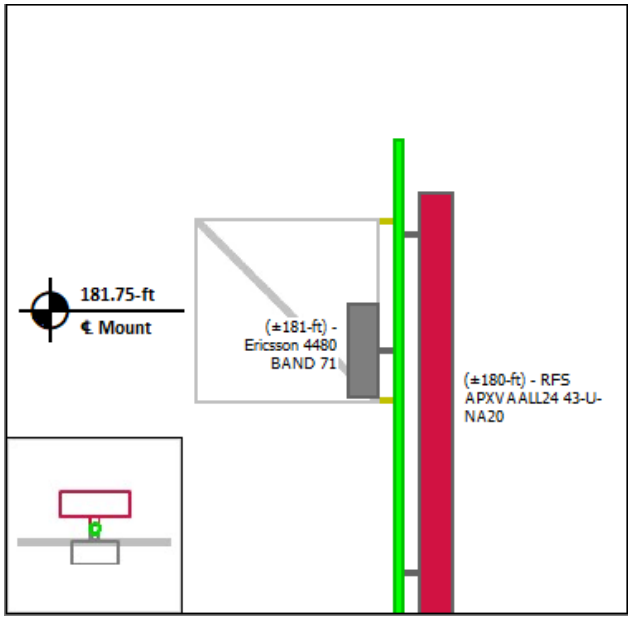
Mount Pipe A



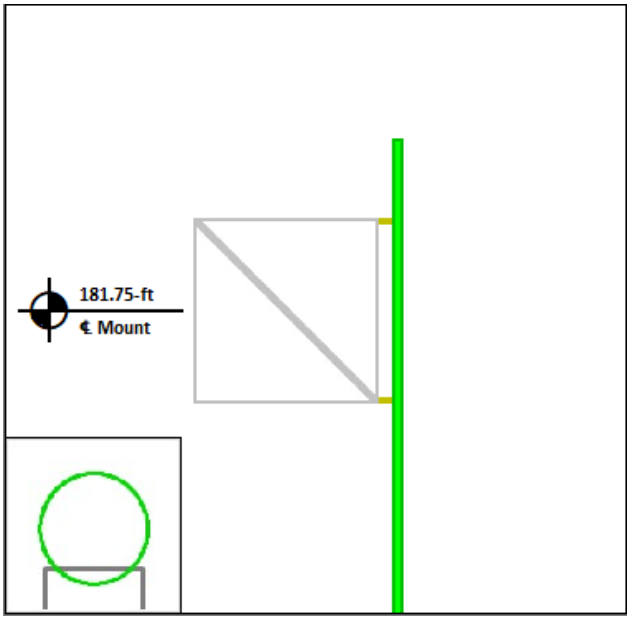
Mount Pipe B



Mount Pipe C

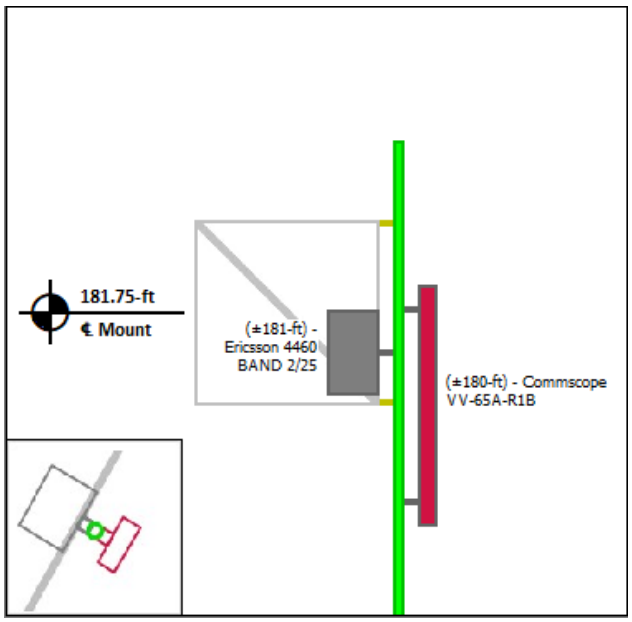


Mount Pipe D

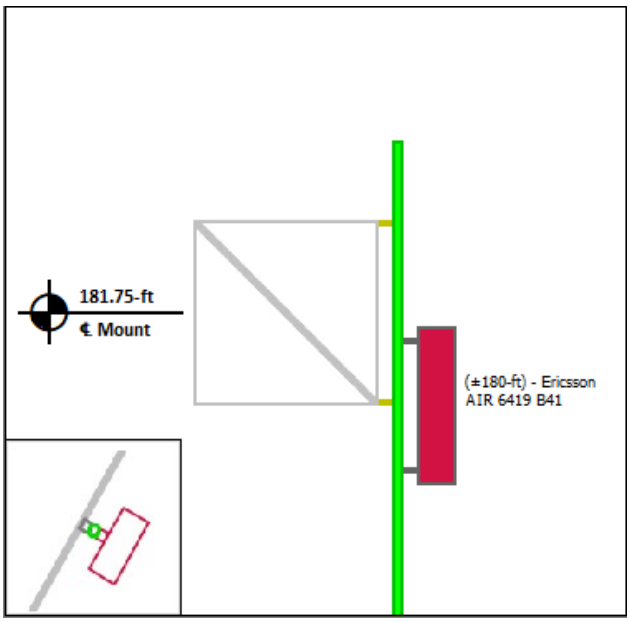


Equipment Layout Cont'd.

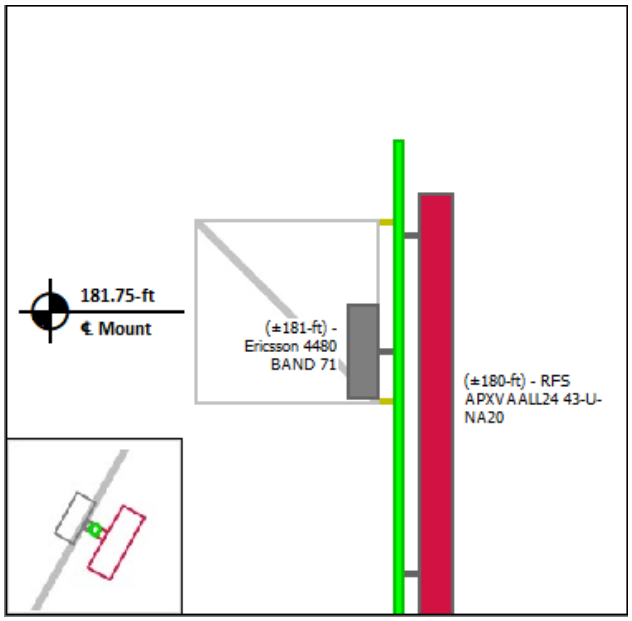
Mount Pipe E



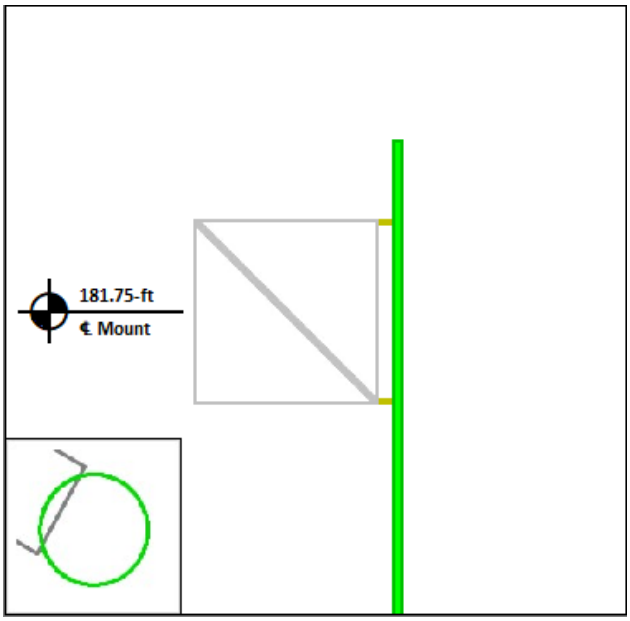
Mount Pipe F



Mount Pipe G

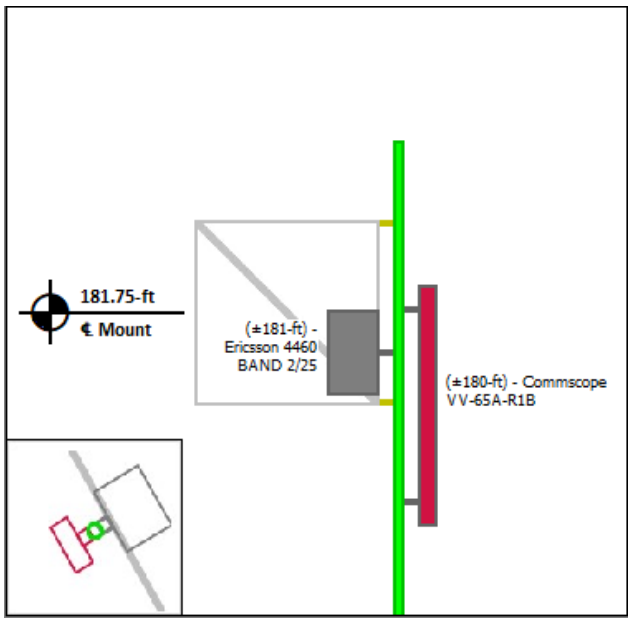


Mount Pipe H

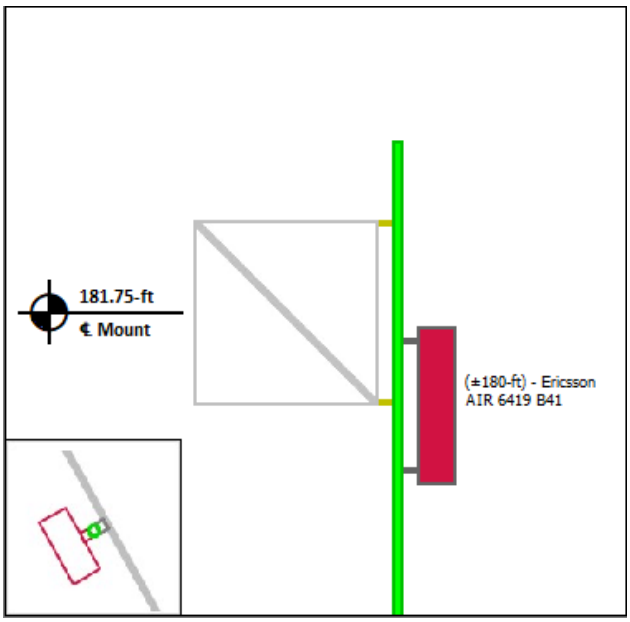


Equipment Layout Cont'd.

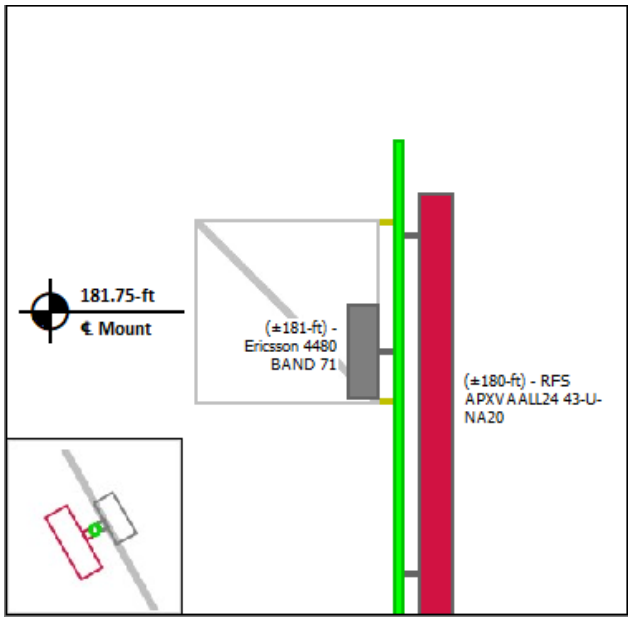
Mount Pipe I



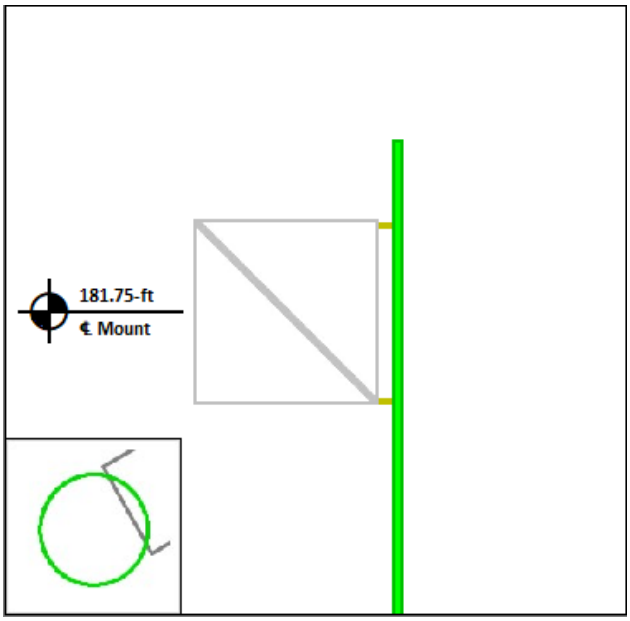
Mount Pipe J



Mount Pipe K



Mount Pipe L



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 equipment, 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.

American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

All connections are to be verified for condition and tightness by the installation contractor preceding any changes to the appurtenance mounting system and/or equipment attached to it.

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.

Installation of all equipment and steel should be confirmed not to cause tower conflicts nor impede the tower climbing pegs.

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.

AMERICAN TOWER®
CORPORATION

Site Number:	*302465*
Project Number:	*14097391_C8_01*
Carrier:	*T-Mobile*
Mount Elevation:	*181.75 ft*
Date:	6/29/2022

Mount Analysis Force Calculations

Wind & Ice Load Calculations			
Velocity Pressure Coefficient	K_z	1.17	
Topographic Factor	K_{zt}	1.00	
Rooftop Wind Speed-up Factor	K_s	1.00	
Shielding Factor	K_a	0.90	
Ground Elevation Factor	K_e	0.98	
Wind Direction Probability Factor	K_d	0.95	
Basic Wind Speed	V	122	mph
Velocity Pressure	q_z	41.6	psf
Height Escalation Factor	K_{iz}	1.19	
Thickness of Radial Glaze Ice	T_{iz}	1.19	in

Seismic Load Calculations			
Short Period DSRAP	S_{DS}	0.164	
1 Second DSRAP	S_{D1}	0.088	
Importance Factor	I	1.0	
Response Modification Coefficient	R	2.0	
Seismic Response Coefficient	C_S	0.082	
Amplification Factor	A	1.0	
Total Weight	W	2663.6	lbs
Total Shear Force	V_S	218.4	lbs
Horizontal Seismic Load	Eh	218.4	lbs
Vertical Seismic Load	Ev	87.4	lbs

Antenna Calculations (Elevations per Application/RFDS)*

Equipment	Height	Width	Depth	Weight	EPA_N	EPA_T	EPA_{Ni}	EPA_{Ti}
Model #	in	in	in	lbs	sqft	sqft	sqft	sqft
RFS APXVAALL24 43-U-NA20	95.9	24.0	8.5	122.8	20.24	3.40	22.79	4.45
Ericsson AIR 6419 B41	36.3	20.9	9.0	83.3	6.32	1.82	7.50	2.45
Commscope VV-65A-R1B	54.7	12.0	4.6	24.7	5.89	1.36	7.36	2.15
Ericsson 4480 BAND 71	22.0	15.7	7.5	81.0	2.88	1.40	3.67	2.04
Ericsson 4460 BAND 2/25	19.6	15.7	12.1	109.0	2.56	1.98	3.31	2.65

**** Equipment with EPA values N/A were not considered in the mount analysis***

AMERICAN TOWER®
CORPORATION

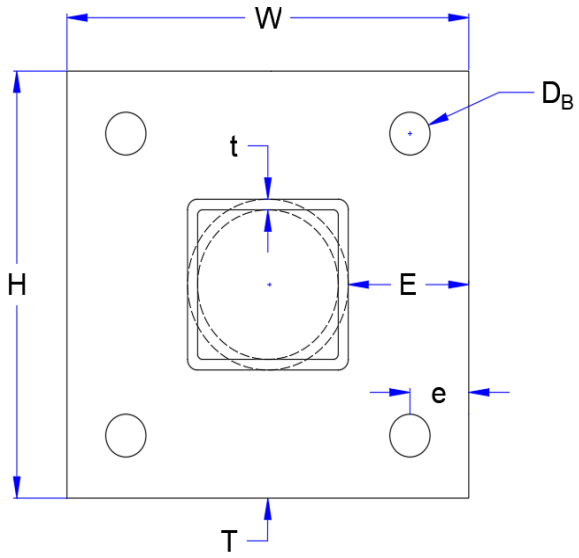
Site Number:	*302465*
Project Number:	*14097391_C8_01*
Carrier:	*T-Mobile*
Mount Elevation:	*181.75 ft*
Date:	6/29/2022

Mount-to-Tower Connection Analysis

Applied Loads from RISA 3D			
Controlling Load Combination		161	
Node Label		N002	
Force in X	Fx	88.8	lbs
Force in Y	Fy	1896.0	lbs
Force in Z	Fz	-94.2	lbs
Moment about X	Mx	6497.2	lb-ft
Moment about Y	My	-157.8	lb-ft
Moment about Z	Mz	88.2	lb-ft

Bolt Shear and Tensile Capacity			
Bolt Quantity	n	4	
Bolt Diameter	D_B	3/4	in
Bolt Edge Distance	e	1	in
Bolt Grade		A325	
Bolt Fy	Fy_B	92	ksi
Bolt Fu	Fu_B	120	ksi
Applied Shear	Vu	0.48	k
Applied Tension	Tu	3.99	k
Tensile Strength	ϕTn	30.1	k
Interaction Capacity	(Tu+Vu)/ϕTn	15%	Pass

Plate Flexural Capacity			
Plate Height	H	10	in
Plate Width	W	12	in
Plate Thickness	T	1	in
Plate Grade		A36	
Plate Fy	Fy_P	36	ksi
Plate Fu	Fu_P	58	ksi
Shear Capacity	ϕVn	108.0	k
Applied Moment	Mu	20.0	k-in
Flexural Strength	ϕMn	130.5	k-in
Flexural Capacity	Mu/ϕMn	15%	Pass

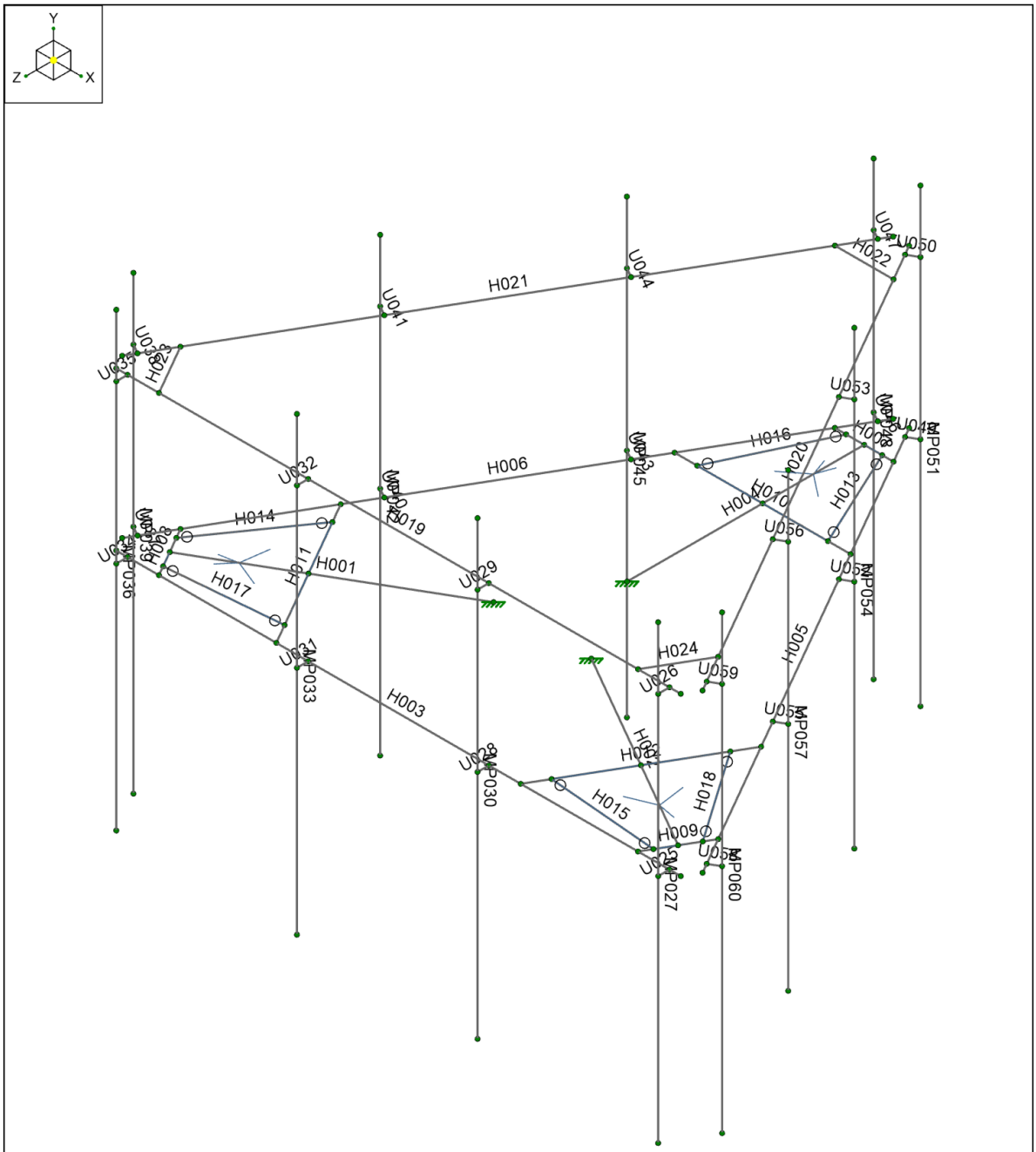


Weld and Base Metal Capacity			
Standoff Type		Tube	
Standoff Member		HSS5x3x5	
Member Edge Distance	E	4.5	in
Member Width	w	3	in
Member Thickness	t	0.313	in
Member Grade		A500 Gr. B	
Member Fy	Fy_M	42	ksi
Member Fu	Fu_M	58	ksi
Weld Size	a	1/4	in
Weld Length	l	16.0	in
Applied Load	Pu	8.0	k
Weld Strength	ϕRn	44.5	k
Weld Capacity	Pu/ϕRn	18%	Pass

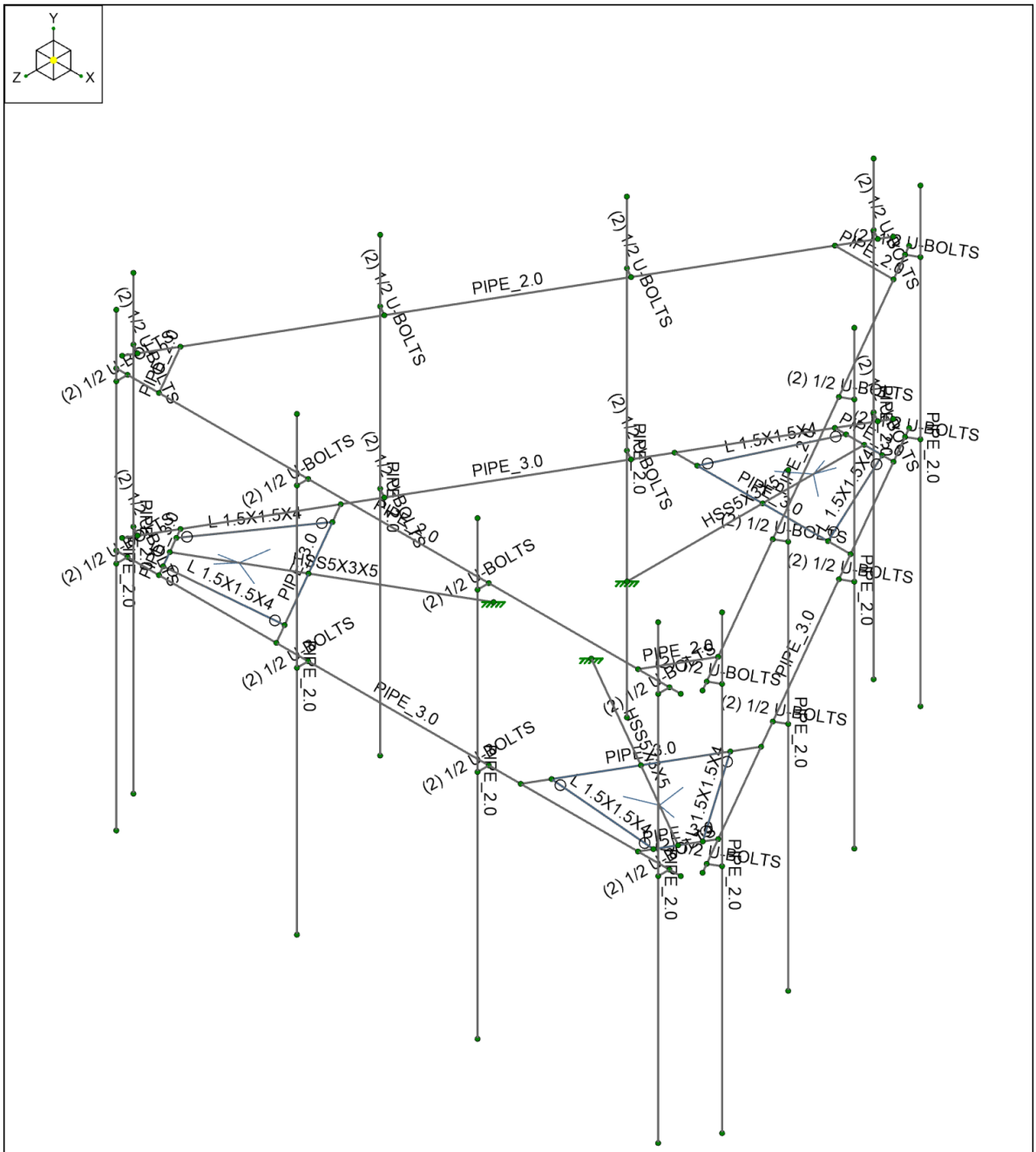
Minimum Base Metal Thickness	0.213	in
Controlling Base Metal Thickness	0.313	in
Base Metal Result	Acceptable	

Prying Action Considerations							
Moment Arm	b	2.50	in	Minimum Thickness	t_{min}	0.27	in
Effective Moment Arm	b'	2.13	in	No Prying Thickness	t_{np}	0.36	in
Tributary Length	p	5.00	in	Min Bolt Strength Thickness	t_c	0.99	k-in
Effective Edge Distance	a'	1.38	in	Prying Action Bolt Tension	T_{up}	0.00	k

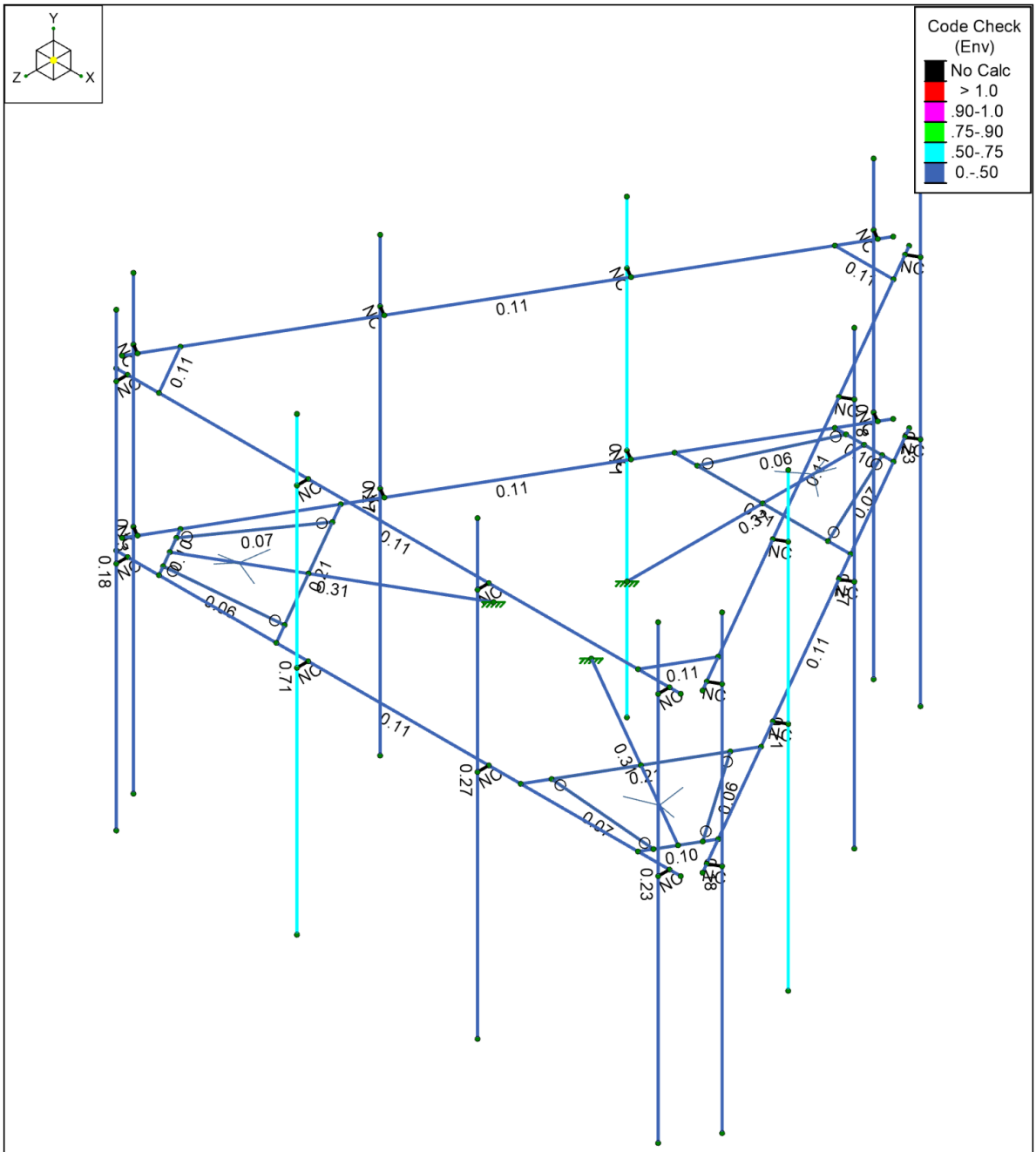
American Tower Corp.	302465, Colchester CT 6	SK-1
Brittany.Hucks		Jun 29, 2022
14097391_C8_01		R3D. T-MOBILE @ 302465, Colch…



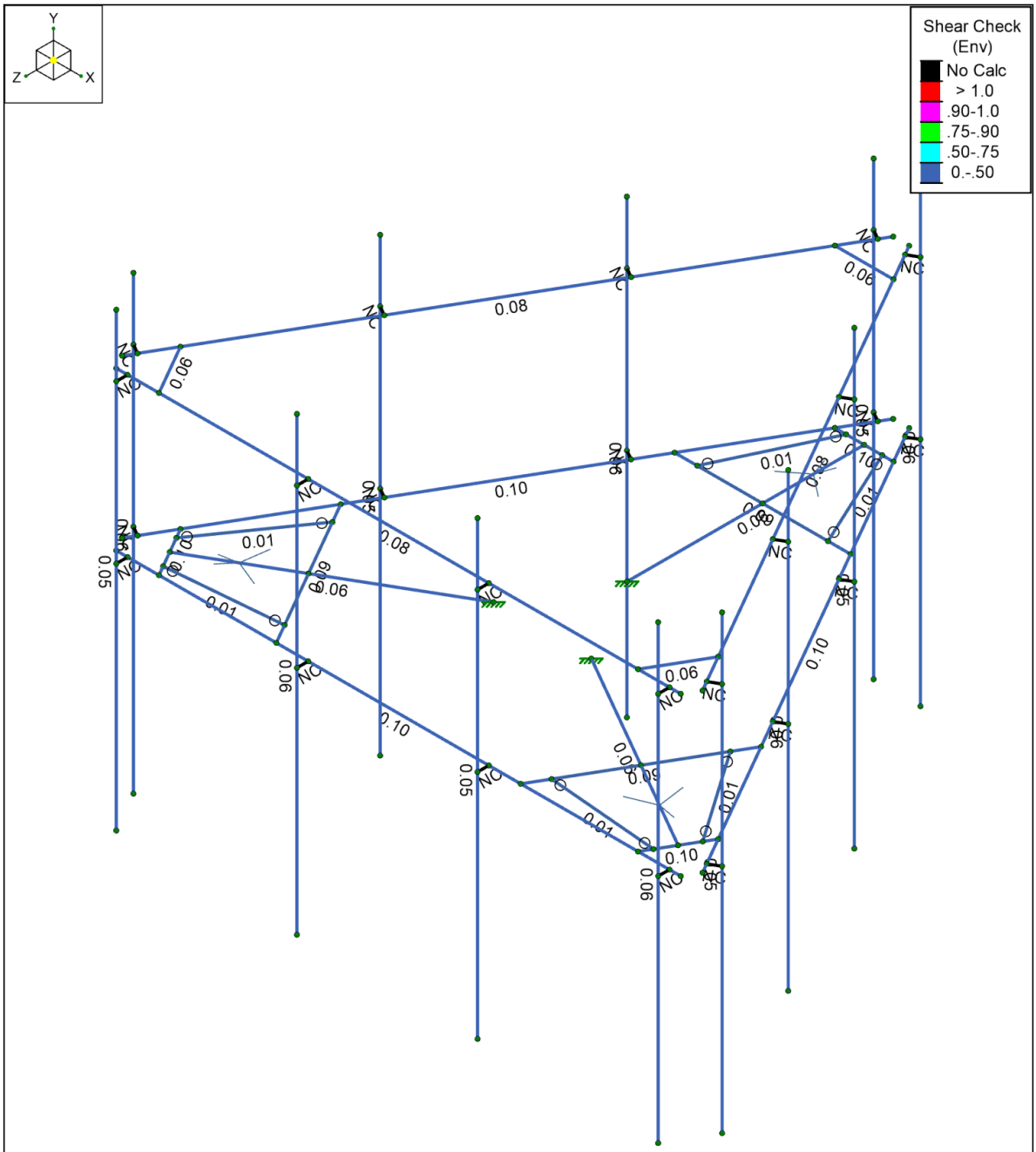
American Tower Corp.	302465, Colchester CT 6	SK-2
Brittany.Hucks		Jun 29, 2022
14097391_C8_01		R3D. T-MOBILE @ 302465, Colch…



American Tower Corp.	302465, Colchester CT 6	SK-3
Brittany.Hucks		Jun 29, 2022
14097391_C8_01		R3D. T-MOBILE @ 302465, Colch…



American Tower Corp.	302465, Colchester CT 6	SK-4
Brittany.Hucks		Jun 29, 2022
14097391_C8_01		R3D. T-MOBILE @ 302465, Colch…



American Tower Corp.	302465, Colchester CT 6	SK-5
Brittany.Hucks		Jun 29, 2022
14097391_C8_01		R3D. T-MOBILE @ 302465, Colch…

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Surface(Plate/Wall)
1	D	DL	-1		24		
2	Di	IL			24	36	3
3	W 0	WL			24	60	
4	W 30	WL			48	120	
5	W 60	WL			48	120	
6	W 90	WL			24	63	
7	W 120	WL			48	120	
8	W 150	WL			48	120	
9	W 180	WL			24	60	
10	W 210	WL			48	120	
11	W 240	WL			48	120	
12	W 270	WL			24	63	
13	W 300	WL			48	120	
14	W 330	WL			48	120	
15	Wi 0	WL			24	60	
16	Wi 30	WL			48	120	
17	Wi 60	WL			48	120	
18	Wi 90	WL			24	63	
19	Wi 120	WL			48	120	
20	Wi 150	WL			48	120	
21	Wi 180	WL			24	60	
22	Wi 210	WL			48	120	
23	Wi 240	WL			48	120	
24	Wi 270	WL			24	63	
25	Wi 300	WL			48	120	
26	Wi 330	WL			48	120	
27	Ws 0	WL			24	60	
28	Ws 30	WL			48	120	
29	Ws 60	WL			48	120	
30	Ws 90	WL			24	63	
31	Ws 120	WL			48	120	
32	Ws 150	WL			48	120	
33	Ws 180	WL			24	60	
34	Ws 210	WL			48	120	
35	Ws 240	WL			48	120	
36	Ws 270	WL			24	63	
37	Ws 300	WL			48	120	
38	Ws 330	WL			48	120	
39	Ev -Y	ELY				36	
40	Eh -Z	ELZ				36	
41	Eh -X	ELX				36	
42	Lm (1)	LL		1			
43	Lm (2)	LL		1			
44	Lm (3)	LL		1			
45	Lm (4)	LL		1			
46	Lm (5)	LL		1			
47	Lm (6)	LL		1			
48	Lm (7)	LL		1			
49	Lm (8)	LL		1			
50	Lm (9)	LL		1			
51	Lm (10)	LL		1			
52	Lm (11)	LL		1			
53	Lm (12)	LL		1			

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4D	Yes	Y	DL	1.4						
2	1.2D + 1.0W [0°]	Yes	Y	DL	1.2	3	1				
3	1.2D + 1.0W [30°]	Yes	Y	DL	1.2	4	1				
4	1.2D + 1.0W [60°]	Yes	Y	DL	1.2	5	1				
5	1.2D + 1.0W [90°]	Yes	Y	DL	1.2	6	1				
6	1.2D + 1.0W [120°]	Yes	Y	DL	1.2	7	1				
7	1.2D + 1.0W [150°]	Yes	Y	DL	1.2	8	1				
8	1.2D + 1.0W [180°]	Yes	Y	DL	1.2	9	1				
9	1.2D + 1.0W [210°]	Yes	Y	DL	1.2	10	1				
10	1.2D + 1.0W [240°]	Yes	Y	DL	1.2	11	1				
11	1.2D + 1.0W [270°]	Yes	Y	DL	1.2	12	1				
12	1.2D + 1.0W [300°]	Yes	Y	DL	1.2	13	1				
13	1.2D + 1.0W [330°]	Yes	Y	DL	1.2	14	1				
14	0.9D + 1.0W [0°]	Yes	Y	DL	0.9	3	1				
15	0.9D + 1.0W [30°]	Yes	Y	DL	0.9	4	1				
16	0.9D + 1.0W [60°]	Yes	Y	DL	0.9	5	1				
17	0.9D + 1.0W [90°]	Yes	Y	DL	0.9	6	1				
18	0.9D + 1.0W [120°]	Yes	Y	DL	0.9	7	1				
19	0.9D + 1.0W [150°]	Yes	Y	DL	0.9	8	1				
20	0.9D + 1.0W [180°]	Yes	Y	DL	0.9	9	1				
21	0.9D + 1.0W [210°]	Yes	Y	DL	0.9	10	1				
22	0.9D + 1.0W [240°]	Yes	Y	DL	0.9	11	1				
23	0.9D + 1.0W [270°]	Yes	Y	DL	0.9	12	1				
24	0.9D + 1.0W [300°]	Yes	Y	DL	0.9	13	1				
25	0.9D + 1.0W [330°]	Yes	Y	DL	0.9	14	1				
26	1.2D + 1.0Di + 1.0Wi [0°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	15	1		
27	1.2D + 1.0Di + 1.0Wi [30°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	16	1		
28	1.2D + 1.0Di + 1.0Wi [60°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	17	1		
29	1.2D + 1.0Di + 1.0Wi [90°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	18	1		
30	1.2D + 1.0Di + 1.0Wi [120°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	19	1		
31	1.2D + 1.0Di + 1.0Wi [150°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	20	1		
32	1.2D + 1.0Di + 1.0Wi [180°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	21	1		
33	1.2D + 1.0Di + 1.0Wi [210°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	22	1		
34	1.2D + 1.0Di + 1.0Wi [240°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	23	1		
35	1.2D + 1.0Di + 1.0Wi [270°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	24	1		
36	1.2D + 1.0Di + 1.0Wi [300°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	25	1		
37	1.2D + 1.0Di + 1.0Wi [330°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	26	1		
38	1.2D + 1.0Ev + 1.0Eh [0°]	Yes	Y	DL	1.2	ELY	1	ELZ	1	ELX	0.001
39	1.2D + 1.0Ev + 1.0Eh [30°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.866	ELX	0.5
40	1.2D + 1.0Ev + 1.0Eh [60°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.5	ELX	0.866
41	1.2D + 1.0Ev + 1.0Eh [90°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.001	ELX	1
42	1.2D + 1.0Ev + 1.0Eh [120°]	Yes	Y	DL	1.2	ELY	1	ELZ	-0.5	ELX	0.866
43	1.2D + 1.0Ev + 1.0Eh [150°]	Yes	Y	DL	1.2	ELY	1	ELZ	-0.866	ELX	0.5
44	1.2D + 1.0Ev + 1.0Eh [180°]	Yes	Y	DL	1.2	ELY	1	ELZ	-1	ELX	0.001
45	1.2D + 1.0Ev + 1.0Eh [210°]	Yes	Y	DL	1.2	ELY	1	ELZ	-0.866	ELX	-0.5
46	1.2D + 1.0Ev + 1.0Eh [240°]	Yes	Y	DL	1.2	ELY	1	ELZ	-0.5	ELX	-0.866
47	1.2D + 1.0Ev + 1.0Eh [270°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.001	ELX	-1
48	1.2D + 1.0Ev + 1.0Eh [300°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.5	ELX	-0.866
49	1.2D + 1.0Ev + 1.0Eh [330°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.866	ELX	-0.5
50	0.9D + 1.0Ev + 1.0Eh [0°]	Yes	Y	DL	0.9	ELY	1	ELZ	1	ELX	0.001
51	0.9D + 1.0Ev + 1.0Eh [30°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.866	ELX	0.5
52	0.9D + 1.0Ev + 1.0Eh [60°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.5	ELX	0.866
53	0.9D + 1.0Ev + 1.0Eh [90°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.001	ELX	1
54	0.9D + 1.0Ev + 1.0Eh [120°]	Yes	Y	DL	0.9	ELY	1	ELZ	-0.5	ELX	0.866
55	0.9D + 1.0Ev + 1.0Eh [150°]	Yes	Y	DL	0.9	ELY	1	ELZ	-0.866	ELX	0.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
56	0.9D + 1.0Ev + 1.0Eh [180°]	Yes	Y	DL	0.9	ELY	1	ELZ	-1	ELX	0.001
57	0.9D + 1.0Ev + 1.0Eh [210°]	Yes	Y	DL	0.9	ELY	1	ELZ	-0.866	ELX	-0.5
58	0.9D + 1.0Ev + 1.0Eh [240°]	Yes	Y	DL	0.9	ELY	1	ELZ	-0.5	ELX	-0.866
59	0.9D + 1.0Ev + 1.0Eh [270°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.001	ELX	-1
60	0.9D + 1.0Ev + 1.0Eh [300°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.5	ELX	-0.866
61	0.9D + 1.0Ev + 1.0Eh [330°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.866	ELX	-0.5
62	1.2D + 1.5Lm(1) + 1.0Wm [0°]	Yes	Y	DL	1.2	42	1.5	27	1		
63	1.2D + 1.5Lm(1) + 1.0Wm [30°]	Yes	Y	DL	1.2	42	1.5	28	1		
64	1.2D + 1.5Lm(1) + 1.0Wm [60°]	Yes	Y	DL	1.2	42	1.5	29	1		
65	1.2D + 1.5Lm(1) + 1.0Wm [90°]	Yes	Y	DL	1.2	42	1.5	30	1		
66	1.2D + 1.5Lm(1) + 1.0Wm [120°]	Yes	Y	DL	1.2	42	1.5	31	1		
67	1.2D + 1.5Lm(1) + 1.0Wm [150°]	Yes	Y	DL	1.2	42	1.5	32	1		
68	1.2D + 1.5Lm(1) + 1.0Wm [180°]	Yes	Y	DL	1.2	42	1.5	33	1		
69	1.2D + 1.5Lm(1) + 1.0Wm [210°]	Yes	Y	DL	1.2	42	1.5	34	1		
70	1.2D + 1.5Lm(1) + 1.0Wm [240°]	Yes	Y	DL	1.2	42	1.5	35	1		
71	1.2D + 1.5Lm(1) + 1.0Wm [270°]	Yes	Y	DL	1.2	42	1.5	36	1		
72	1.2D + 1.5Lm(1) + 1.0Wm [300°]	Yes	Y	DL	1.2	42	1.5	37	1		
73	1.2D + 1.5Lm(1) + 1.0Wm [330°]	Yes	Y	DL	1.2	42	1.5	38	1		
74	1.2D + 1.5Lm(2) + 1.0Wm [0°]	Yes	Y	DL	1.2	43	1.5	27	1		
75	1.2D + 1.5Lm(2) + 1.0Wm [30°]	Yes	Y	DL	1.2	43	1.5	28	1		
76	1.2D + 1.5Lm(2) + 1.0Wm [60°]	Yes	Y	DL	1.2	43	1.5	29	1		
77	1.2D + 1.5Lm(2) + 1.0Wm [90°]	Yes	Y	DL	1.2	43	1.5	30	1		
78	1.2D + 1.5Lm(2) + 1.0Wm [120°]	Yes	Y	DL	1.2	43	1.5	31	1		
79	1.2D + 1.5Lm(2) + 1.0Wm [150°]	Yes	Y	DL	1.2	43	1.5	32	1		
80	1.2D + 1.5Lm(2) + 1.0Wm [180°]	Yes	Y	DL	1.2	43	1.5	33	1		
81	1.2D + 1.5Lm(2) + 1.0Wm [210°]	Yes	Y	DL	1.2	43	1.5	34	1		
82	1.2D + 1.5Lm(2) + 1.0Wm [240°]	Yes	Y	DL	1.2	43	1.5	35	1		
83	1.2D + 1.5Lm(2) + 1.0Wm [270°]	Yes	Y	DL	1.2	43	1.5	36	1		
84	1.2D + 1.5Lm(2) + 1.0Wm [300°]	Yes	Y	DL	1.2	43	1.5	37	1		
85	1.2D + 1.5Lm(2) + 1.0Wm [330°]	Yes	Y	DL	1.2	43	1.5	38	1		
86	1.2D + 1.5Lm(3) + 1.0Wm [0°]	Yes	Y	DL	1.2	44	1.5	27	1		
87	1.2D + 1.5Lm(3) + 1.0Wm [30°]	Yes	Y	DL	1.2	44	1.5	28	1		
88	1.2D + 1.5Lm(3) + 1.0Wm [60°]	Yes	Y	DL	1.2	44	1.5	29	1		
89	1.2D + 1.5Lm(3) + 1.0Wm [90°]	Yes	Y	DL	1.2	44	1.5	30	1		
90	1.2D + 1.5Lm(3) + 1.0Wm [120°]	Yes	Y	DL	1.2	44	1.5	31	1		
91	1.2D + 1.5Lm(3) + 1.0Wm [150°]	Yes	Y	DL	1.2	44	1.5	32	1		
92	1.2D + 1.5Lm(3) + 1.0Wm [180°]	Yes	Y	DL	1.2	44	1.5	33	1		
93	1.2D + 1.5Lm(3) + 1.0Wm [210°]	Yes	Y	DL	1.2	44	1.5	34	1		
94	1.2D + 1.5Lm(3) + 1.0Wm [240°]	Yes	Y	DL	1.2	44	1.5	35	1		
95	1.2D + 1.5Lm(3) + 1.0Wm [270°]	Yes	Y	DL	1.2	44	1.5	36	1		
96	1.2D + 1.5Lm(3) + 1.0Wm [300°]	Yes	Y	DL	1.2	44	1.5	37	1		
97	1.2D + 1.5Lm(3) + 1.0Wm [330°]	Yes	Y	DL	1.2	44	1.5	38	1		
98	1.2D + 1.5Lm(4) + 1.0Wm [0°]	Yes	Y	DL	1.2	45	1.5	27	1		
99	1.2D + 1.5Lm(4) + 1.0Wm [30°]	Yes	Y	DL	1.2	45	1.5	28	1		
100	1.2D + 1.5Lm(4) + 1.0Wm [60°]	Yes	Y	DL	1.2	45	1.5	29	1		
101	1.2D + 1.5Lm(4) + 1.0Wm [90°]	Yes	Y	DL	1.2	45	1.5	30	1		
102	1.2D + 1.5Lm(4) + 1.0Wm [120°]	Yes	Y	DL	1.2	45	1.5	31	1		
103	1.2D + 1.5Lm(4) + 1.0Wm [150°]	Yes	Y	DL	1.2	45	1.5	32	1		
104	1.2D + 1.5Lm(4) + 1.0Wm [180°]	Yes	Y	DL	1.2	45	1.5	33	1		
105	1.2D + 1.5Lm(4) + 1.0Wm [210°]	Yes	Y	DL	1.2	45	1.5	34	1		
106	1.2D + 1.5Lm(4) + 1.0Wm [240°]	Yes	Y	DL	1.2	45	1.5	35	1		
107	1.2D + 1.5Lm(4) + 1.0Wm [270°]	Yes	Y	DL	1.2	45	1.5	36	1		
108	1.2D + 1.5Lm(4) + 1.0Wm [300°]	Yes	Y	DL	1.2	45	1.5	37	1		
109	1.2D + 1.5Lm(4) + 1.0Wm [330°]	Yes	Y	DL	1.2	45	1.5	38	1		
110	1.2D + 1.5Lm(5) + 1.0Wm [0°]	Yes	Y	DL	1.2	46	1.5	27	1		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
111	1.2D + 1.5Lm(5) + 1.0Wm [30°]	Yes	Y	DL	1.2	46	1.5	28	1		
112	1.2D + 1.5Lm(5) + 1.0Wm [60°]	Yes	Y	DL	1.2	46	1.5	29	1		
113	1.2D + 1.5Lm(5) + 1.0Wm [90°]	Yes	Y	DL	1.2	46	1.5	30	1		
114	1.2D + 1.5Lm(5) + 1.0Wm [120°]	Yes	Y	DL	1.2	46	1.5	31	1		
115	1.2D + 1.5Lm(5) + 1.0Wm [150°]	Yes	Y	DL	1.2	46	1.5	32	1		
116	1.2D + 1.5Lm(5) + 1.0Wm [180°]	Yes	Y	DL	1.2	46	1.5	33	1		
117	1.2D + 1.5Lm(5) + 1.0Wm [210°]	Yes	Y	DL	1.2	46	1.5	34	1		
118	1.2D + 1.5Lm(5) + 1.0Wm [240°]	Yes	Y	DL	1.2	46	1.5	35	1		
119	1.2D + 1.5Lm(5) + 1.0Wm [270°]	Yes	Y	DL	1.2	46	1.5	36	1		
120	1.2D + 1.5Lm(5) + 1.0Wm [300°]	Yes	Y	DL	1.2	46	1.5	37	1		
121	1.2D + 1.5Lm(5) + 1.0Wm [330°]	Yes	Y	DL	1.2	46	1.5	38	1		
122	1.2D + 1.5Lm(6) + 1.0Wm [0°]	Yes	Y	DL	1.2	47	1.5	27	1		
123	1.2D + 1.5Lm(6) + 1.0Wm [30°]	Yes	Y	DL	1.2	47	1.5	28	1		
124	1.2D + 1.5Lm(6) + 1.0Wm [60°]	Yes	Y	DL	1.2	47	1.5	29	1		
125	1.2D + 1.5Lm(6) + 1.0Wm [90°]	Yes	Y	DL	1.2	47	1.5	30	1		
126	1.2D + 1.5Lm(6) + 1.0Wm [120°]	Yes	Y	DL	1.2	47	1.5	31	1		
127	1.2D + 1.5Lm(6) + 1.0Wm [150°]	Yes	Y	DL	1.2	47	1.5	32	1		
128	1.2D + 1.5Lm(6) + 1.0Wm [180°]	Yes	Y	DL	1.2	47	1.5	33	1		
129	1.2D + 1.5Lm(6) + 1.0Wm [210°]	Yes	Y	DL	1.2	47	1.5	34	1		
130	1.2D + 1.5Lm(6) + 1.0Wm [240°]	Yes	Y	DL	1.2	47	1.5	35	1		
131	1.2D + 1.5Lm(6) + 1.0Wm [270°]	Yes	Y	DL	1.2	47	1.5	36	1		
132	1.2D + 1.5Lm(6) + 1.0Wm [300°]	Yes	Y	DL	1.2	47	1.5	37	1		
133	1.2D + 1.5Lm(6) + 1.0Wm [330°]	Yes	Y	DL	1.2	47	1.5	38	1		
134	1.2D + 1.5Lm(7) + 1.0Wm [0°]	Yes	Y	DL	1.2	48	1.5	27	1		
135	1.2D + 1.5Lm(7) + 1.0Wm [30°]	Yes	Y	DL	1.2	48	1.5	28	1		
136	1.2D + 1.5Lm(7) + 1.0Wm [60°]	Yes	Y	DL	1.2	48	1.5	29	1		
137	1.2D + 1.5Lm(7) + 1.0Wm [90°]	Yes	Y	DL	1.2	48	1.5	30	1		
138	1.2D + 1.5Lm(7) + 1.0Wm [120°]	Yes	Y	DL	1.2	48	1.5	31	1		
139	1.2D + 1.5Lm(7) + 1.0Wm [150°]	Yes	Y	DL	1.2	48	1.5	32	1		
140	1.2D + 1.5Lm(7) + 1.0Wm [180°]	Yes	Y	DL	1.2	48	1.5	33	1		
141	1.2D + 1.5Lm(7) + 1.0Wm [210°]	Yes	Y	DL	1.2	48	1.5	34	1		
142	1.2D + 1.5Lm(7) + 1.0Wm [240°]	Yes	Y	DL	1.2	48	1.5	35	1		
143	1.2D + 1.5Lm(7) + 1.0Wm [270°]	Yes	Y	DL	1.2	48	1.5	36	1		
144	1.2D + 1.5Lm(7) + 1.0Wm [300°]	Yes	Y	DL	1.2	48	1.5	37	1		
145	1.2D + 1.5Lm(7) + 1.0Wm [330°]	Yes	Y	DL	1.2	48	1.5	38	1		
146	1.2D + 1.5Lm(8) + 1.0Wm [0°]	Yes	Y	DL	1.2	49	1.5	27	1		
147	1.2D + 1.5Lm(8) + 1.0Wm [30°]	Yes	Y	DL	1.2	49	1.5	28	1		
148	1.2D + 1.5Lm(8) + 1.0Wm [60°]	Yes	Y	DL	1.2	49	1.5	29	1		
149	1.2D + 1.5Lm(8) + 1.0Wm [90°]	Yes	Y	DL	1.2	49	1.5	30	1		
150	1.2D + 1.5Lm(8) + 1.0Wm [120°]	Yes	Y	DL	1.2	49	1.5	31	1		
151	1.2D + 1.5Lm(8) + 1.0Wm [150°]	Yes	Y	DL	1.2	49	1.5	32	1		
152	1.2D + 1.5Lm(8) + 1.0Wm [180°]	Yes	Y	DL	1.2	49	1.5	33	1		
153	1.2D + 1.5Lm(8) + 1.0Wm [210°]	Yes	Y	DL	1.2	49	1.5	34	1		
154	1.2D + 1.5Lm(8) + 1.0Wm [240°]	Yes	Y	DL	1.2	49	1.5	35	1		
155	1.2D + 1.5Lm(8) + 1.0Wm [270°]	Yes	Y	DL	1.2	49	1.5	36	1		
156	1.2D + 1.5Lm(8) + 1.0Wm [300°]	Yes	Y	DL	1.2	49	1.5	37	1		
157	1.2D + 1.5Lm(8) + 1.0Wm [330°]	Yes	Y	DL	1.2	49	1.5	38	1		
158	1.2D + 1.5Lm(9) + 1.0Wm [0°]	Yes	Y	DL	1.2	50	1.5	27	1		
159	1.2D + 1.5Lm(9) + 1.0Wm [30°]	Yes	Y	DL	1.2	50	1.5	28	1		
160	1.2D + 1.5Lm(9) + 1.0Wm [60°]	Yes	Y	DL	1.2	50	1.5	29	1		
161	1.2D + 1.5Lm(9) + 1.0Wm [90°]	Yes	Y	DL	1.2	50	1.5	30	1		
162	1.2D + 1.5Lm(9) + 1.0Wm [120°]	Yes	Y	DL	1.2	50	1.5	31	1		
163	1.2D + 1.5Lm(9) + 1.0Wm [150°]	Yes	Y	DL	1.2	50	1.5	32	1		
164	1.2D + 1.5Lm(9) + 1.0Wm [180°]	Yes	Y	DL	1.2	50	1.5	33	1		
165	1.2D + 1.5Lm(9) + 1.0Wm [210°]	Yes	Y	DL	1.2	50	1.5	34	1		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
166	1.2D + 1.5Lm(9) + 1.0Wm [240°]	Yes	Y	DL	1.2	50	1.5	35	1		
167	1.2D + 1.5Lm(9) + 1.0Wm [270°]	Yes	Y	DL	1.2	50	1.5	36	1		
168	1.2D + 1.5Lm(9) + 1.0Wm [300°]	Yes	Y	DL	1.2	50	1.5	37	1		
169	1.2D + 1.5Lm(9) + 1.0Wm [330°]	Yes	Y	DL	1.2	50	1.5	38	1		
170	1.2D + 1.5Lm(10) + 1.0Wm [0°]	Yes	Y	DL	1.2	51	1.5	27	1		
171	1.2D + 1.5Lm(10) + 1.0Wm [30°]	Yes	Y	DL	1.2	51	1.5	28	1		
172	1.2D + 1.5Lm(10) + 1.0Wm [60°]	Yes	Y	DL	1.2	51	1.5	29	1		
173	1.2D + 1.5Lm(10) + 1.0Wm [90°]	Yes	Y	DL	1.2	51	1.5	30	1		
174	1.2D + 1.5Lm(10) + 1.0Wm [120°]	Yes	Y	DL	1.2	51	1.5	31	1		
175	1.2D + 1.5Lm(10) + 1.0Wm [150°]	Yes	Y	DL	1.2	51	1.5	32	1		
176	1.2D + 1.5Lm(10) + 1.0Wm [180°]	Yes	Y	DL	1.2	51	1.5	33	1		
177	1.2D + 1.5Lm(10) + 1.0Wm [210°]	Yes	Y	DL	1.2	51	1.5	34	1		
178	1.2D + 1.5Lm(10) + 1.0Wm [240°]	Yes	Y	DL	1.2	51	1.5	35	1		
179	1.2D + 1.5Lm(10) + 1.0Wm [270°]	Yes	Y	DL	1.2	51	1.5	36	1		
180	1.2D + 1.5Lm(10) + 1.0Wm [300°]	Yes	Y	DL	1.2	51	1.5	37	1		
181	1.2D + 1.5Lm(10) + 1.0Wm [330°]	Yes	Y	DL	1.2	51	1.5	38	1		
182	1.2D + 1.5Lm(11) + 1.0Wm [0°]	Yes	Y	DL	1.2	52	1.5	27	1		
183	1.2D + 1.5Lm(11) + 1.0Wm [30°]	Yes	Y	DL	1.2	52	1.5	28	1		
184	1.2D + 1.5Lm(11) + 1.0Wm [60°]	Yes	Y	DL	1.2	52	1.5	29	1		
185	1.2D + 1.5Lm(11) + 1.0Wm [90°]	Yes	Y	DL	1.2	52	1.5	30	1		
186	1.2D + 1.5Lm(11) + 1.0Wm [120°]	Yes	Y	DL	1.2	52	1.5	31	1		
187	1.2D + 1.5Lm(11) + 1.0Wm [150°]	Yes	Y	DL	1.2	52	1.5	32	1		
188	1.2D + 1.5Lm(11) + 1.0Wm [180°]	Yes	Y	DL	1.2	52	1.5	33	1		
189	1.2D + 1.5Lm(11) + 1.0Wm [210°]	Yes	Y	DL	1.2	52	1.5	34	1		
190	1.2D + 1.5Lm(11) + 1.0Wm [240°]	Yes	Y	DL	1.2	52	1.5	35	1		
191	1.2D + 1.5Lm(11) + 1.0Wm [270°]	Yes	Y	DL	1.2	52	1.5	36	1		
192	1.2D + 1.5Lm(11) + 1.0Wm [300°]	Yes	Y	DL	1.2	52	1.5	37	1		
193	1.2D + 1.5Lm(11) + 1.0Wm [330°]	Yes	Y	DL	1.2	52	1.5	38	1		
194	1.2D + 1.5Lm(12) + 1.0Wm [0°]	Yes	Y	DL	1.2	53	1.5	27	1		
195	1.2D + 1.5Lm(12) + 1.0Wm [30°]	Yes	Y	DL	1.2	53	1.5	28	1		
196	1.2D + 1.5Lm(12) + 1.0Wm [60°]	Yes	Y	DL	1.2	53	1.5	29	1		
197	1.2D + 1.5Lm(12) + 1.0Wm [90°]	Yes	Y	DL	1.2	53	1.5	30	1		
198	1.2D + 1.5Lm(12) + 1.0Wm [120°]	Yes	Y	DL	1.2	53	1.5	31	1		
199	1.2D + 1.5Lm(12) + 1.0Wm [150°]	Yes	Y	DL	1.2	53	1.5	32	1		
200	1.2D + 1.5Lm(12) + 1.0Wm [180°]	Yes	Y	DL	1.2	53	1.5	33	1		
201	1.2D + 1.5Lm(12) + 1.0Wm [210°]	Yes	Y	DL	1.2	53	1.5	34	1		
202	1.2D + 1.5Lm(12) + 1.0Wm [240°]	Yes	Y	DL	1.2	53	1.5	35	1		
203	1.2D + 1.5Lm(12) + 1.0Wm [270°]	Yes	Y	DL	1.2	53	1.5	36	1		
204	1.2D + 1.5Lm(12) + 1.0Wm [300°]	Yes	Y	DL	1.2	53	1.5	37	1		
205	1.2D + 1.5Lm(12) + 1.0Wm [330°]	Yes	Y	DL	1.2	53	1.5	38	1		

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	H001	N003	N005		HSS5X3X5	Beam	None	A500 Gr. B [SQR]	Typical
2	H002	N004	N006		HSS5X3X5	Beam	None	A500 Gr. B [SQR]	Typical
3	H003	N009	N010		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
4	H004	N002	N015		HSS5X3X5	Beam	None	A500 Gr. B [SQR]	Typical
5	H005	N011	N013		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
6	H006	N012	N014		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
7	H007	N019	N017		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
8	H008	N021	N023		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
9	H009	N022	N024		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
10	H010	N018	N020		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
11	H011	N025	N027		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical
12	H012	N026	N028		PIPE_3.0	Beam	None	A500 Gr. B [RND]	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
13	H013	N037	N029	270	L 1.5X1.5X4	Beam	None	A36	Typical
14	H014	N038	N030	270	L 1.5X1.5X4	Beam	None	A36	Typical
15	H015	N039	N040	270	L 1.5X1.5X4	Beam	None	A36	Typical
16	H016	N034	N031		L 1.5X1.5X4	Beam	None	A36	Typical
17	H017	N035	N032		L 1.5X1.5X4	Beam	None	A36	Typical
18	H018	N036	N033		L 1.5X1.5X4	Beam	None	A36	Typical
19	H019	N041	N042		PIPE_2.0	Beam	None	A500 Gr. B [RND]	Typical
20	H020	N043	N045		PIPE_2.0	Beam	None	A500 Gr. B [RND]	Typical
21	H021	N044	N046		PIPE_2.0	Beam	None	A500 Gr. B [RND]	Typical
22	H022	N048	N047		PIPE_2.0	Beam	None	A500 Gr. B [RND]	Typical
23	H023	N049	N051		PIPE_2.0	Beam	None	A500 Gr. B [RND]	Typical
24	H024	N050	N052		PIPE_2.0	Beam	None	A500 Gr. B [RND]	Typical
25	U025	N053	N054		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
26	U026	N055	N056		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
27	MP027	N057	N058		PIPE_2.0	Column	None	A53 Gr. B	Typical
28	U028	N059	N070		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
29	U029	N071	N072		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
30	MP030	N073	N074		PIPE_2.0	Column	None	A53 Gr. B	Typical
31	U031	N060	N075		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
32	U032	N076	N077		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
33	MP033	N078	N079		PIPE_2.0	Column	None	A53 Gr. B	Typical
34	U034	N061	N080		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
35	U035	N081	N082		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
36	MP036	N083	N084		PIPE_2.0	Column	None	A53 Gr. B	Typical
37	U037	N063	N085		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
38	U038	N086	N087		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
39	MP039	N088	N089		PIPE_2.0	Column	None	A53 Gr. B	Typical
40	U040	N065	N090		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
41	U041	N091	N092		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
42	MP042	N093	N094		PIPE_2.0	Column	None	A53 Gr. B	Typical
43	U043	N067	N095		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
44	U044	N096	N097		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
45	MP045	N098	N099		PIPE_2.0	Column	None	A53 Gr. B	Typical
46	U046	N069	N100		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
47	U047	N101	N102		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
48	MP048	N103	N104		PIPE_2.0	Column	None	A53 Gr. B	Typical
49	U049	N062	N105		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
50	U050	N106	N107		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
51	MP051	N108	N109		PIPE_2.0	Column	None	A53 Gr. B	Typical
52	U052	N064	N110		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
53	U053	N111	N112		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
54	MP054	N113	N114		PIPE_2.0	Column	None	A53 Gr. B	Typical
55	U055	N066	N115		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
56	U056	N116	N117		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
57	MP057	N118	N119		PIPE_2.0	Column	None	A53 Gr. B	Typical
58	U058	N068	N120		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
59	U059	N121	N122		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
60	MP060	N123	N124		PIPE_2.0	Column	None	A53 Gr. B	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
1	H001	HSS5X3X5	63			Lbyy		1	1	Lateral
2	H002	HSS5X3X5	63			Lbyy		1	1	Lateral
3	H003	PIPE_3.0	150.004			Lbyy		1	1	Lateral
4	H004	HSS5X3X5	63			Lbyy		1	1	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
5	H005	PIPE_3.0	150.004			Lbyy		1	1	Lateral
6	H006	PIPE_3.0	150.004			Lbyy		1	1	Lateral
7	H007	PIPE_3.0	15.588			Lbyy		0.65	0.65	Lateral
8	H008	PIPE_3.0	15.588			Lbyy		0.65	0.65	Lateral
9	H009	PIPE_3.0	15.588			Lbyy		0.65	0.65	Lateral
10	H010	PIPE_3.0	46.765			Lbyy		0.65	0.65	Lateral
11	H011	PIPE_3.0	46.765			Lbyy		0.65	0.65	Lateral
12	H012	PIPE_3.0	46.765			Lbyy		0.65	0.65	Lateral
13	H013	L 1.5X1.5X4	29.79			Lbyy		1	1	Lateral
14	H014	L 1.5X1.5X4	29.79			Lbyy		1	1	Lateral
15	H015	L 1.5X1.5X4	29.79			Lbyy		1	1	Lateral
16	H016	L 1.5X1.5X4	29.79			Lbyy		1	1	Lateral
17	H017	L 1.5X1.5X4	29.79			Lbyy		1	1	Lateral
18	H018	L 1.5X1.5X4	29.79			Lbyy		1	1	Lateral
19	H019	PIPE_2.0	150.004			Lbyy		1	1	Lateral
20	H020	PIPE_2.0	150.004			Lbyy		1	1	Lateral
21	H021	PIPE_2.0	150.004			Lbyy		1	1	Lateral
22	H022	PIPE_2.0	15.588			Lbyy		0.65	0.65	Lateral
23	H023	PIPE_2.0	15.588			Lbyy		0.65	0.65	Lateral
24	H024	PIPE_2.0	15.588			Lbyy		0.65	0.65	Lateral
25	U025	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
26	U026	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
27	MP027	PIPE_2.0	120	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
28	U028	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
29	U029	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
30	MP030	PIPE_2.0	120	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
31	U031	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
32	U032	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
33	MP033	PIPE_2.0	120	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
34	U034	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
35	U035	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
36	MP036	PIPE_2.0	120	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
37	U037	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
38	U038	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
39	MP039	PIPE_2.0	120	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
40	U040	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
41	U041	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
42	MP042	PIPE_2.0	120	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
43	U043	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
44	U044	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
45	MP045	PIPE_2.0	120	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
46	U046	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
47	U047	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
48	MP048	PIPE_2.0	120	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
49	U049	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
50	U050	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
51	MP051	PIPE_2.0	120	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
52	U052	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
53	U053	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
54	MP054	PIPE_2.0	120	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
55	U055	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
56	U056	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
57	MP057	PIPE_2.0	120	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
58	U058	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
59	U059	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
60	MP060	PIPE_2.0	120	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral

Node Boundary Conditions

	Node Label	X [lb/in]	Y [lb/in]	Z [lb/in]	X Rot [k-in/rad]	Y Rot [k-in/rad]	Z Rot [k-in/rad]
1	N002	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N003	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N004	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
1	H001			Yes	N/A		None
2	H002			Yes	N/A		None
3	H003			Yes	N/A		None
4	H004			Yes	N/A		None
5	H005			Yes	N/A		None
6	H006			Yes	N/A		None
7	H007			Yes	N/A		None
8	H008			Yes	N/A		None
9	H009			Yes	N/A		None
10	H010			Yes	N/A		None
11	H011			Yes	N/A		None
12	H012			Yes	N/A		None
13	H013	BenPIN	BenPIN	Yes	N/A		None
14	H014	BenPIN	BenPIN	Yes	N/A		None
15	H015	BenPIN	BenPIN	Yes	N/A		None
16	H016	BenPIN	BenPIN	Yes	N/A		None
17	H017	BenPIN	BenPIN	Yes	N/A		None
18	H018	BenPIN	BenPIN	Yes	N/A		None
19	H019			Yes	N/A		None
20	H020			Yes	N/A		None
21	H021			Yes	N/A		None
22	H022			Yes	N/A		None
23	H023			Yes	N/A		None
24	H024			Yes	N/A		None
25	U025			Yes	N/A	Exclude	None
26	U026			Yes	N/A	Exclude	None
27	MP027			Yes	** NA **		None
28	U028			Yes	N/A	Exclude	None
29	U029			Yes	N/A	Exclude	None
30	MP030			Yes	** NA **		None
31	U031			Yes	N/A	Exclude	None
32	U032			Yes	N/A	Exclude	None
33	MP033			Yes	** NA **		None
34	U034			Yes	N/A	Exclude	None
35	U035			Yes	N/A	Exclude	None
36	MP036			Yes	** NA **		None
37	U037			Yes	N/A	Exclude	None
38	U038			Yes	N/A	Exclude	None
39	MP039			Yes	** NA **		None
40	U040			Yes	N/A	Exclude	None
41	U041			Yes	N/A	Exclude	None
42	MP042			Yes	** NA **		None
43	U043			Yes	N/A	Exclude	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
44	U044			Yes	N/A	Exclude	None
45	MP045			Yes	** NA **		None
46	U046			Yes	N/A	Exclude	None
47	U047			Yes	N/A	Exclude	None
48	MP048			Yes	** NA **		None
49	U049			Yes	N/A	Exclude	None
50	U050			Yes	N/A	Exclude	None
51	MP051			Yes	** NA **		None
52	U052			Yes	N/A	Exclude	None
53	U053			Yes	N/A	Exclude	None
54	MP054			Yes	** NA **		None
55	U055			Yes	N/A	Exclude	None
56	U056			Yes	N/A	Exclude	None
57	MP057			Yes	** NA **		None
58	U058			Yes	N/A	Exclude	None
59	U059			Yes	N/A	Exclude	None
60	MP060			Yes	** NA **		None

Hot Rolled Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [lb/ft³]	Yield [psi]	Ry	Fu [psi]	Rt
1	A500 Gr. B [SQR]	2.9e+07	1.115e+07	0.3	0.65	490	46000	1.4	58000	1.3
2	A500 Gr. B [RND]	2.9e+07	1.115e+07	0.3	0.65	490	42000	1.4	58000	1.3
3	A36	2.9e+07	1.115e+07	0.3	0.65	490	36000	1.5	58000	1.2
4	A53 Gr. B	2.9e+07	1.115e+07	0.3	0.65	490	35000	1.6	60000	1.2

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N002	max	1550.835	17	2106.361	26	2633.584	14	6524.769	158	2745.547	23	514.025	179
2		min	-1551.114	11	642.707	20	-2737.419	8	1694.743	20	-2745.82	5	-566.798	137
3	N003	max	2233.722	18	2106.346	30	1622.901	2	-853.024	24	2745.47	15	-1464.634	24
4		min	-2323.494	12	642.723	24	-1570.584	20	-3394.126	102	-2745.742	9	-5699.599	114
5	N004	max	2417.723	4	2106.342	34	1394.471	2	-826.802	14	2745.493	19	5726.633	202
6		min	-2327.647	22	642.744	16	-1343.091	20	-3348.332	68	-2745.765	13	1470.941	16
7	Totals:	max	5299.322	5	6220.421	30	5636.184	14						
8		min	-5299.322	23	2249.225	24	-5636.184	8						

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
1	H001	HSS5X3X5	0.309	0	3	0.065	0	y	93	139602.037	169740	15456	22149	2.565	H1-1b
2	H002	HSS5X3X5	0.309	0	7	0.065	0	y	193	139602.037	169740	15456	22149	2.565	H1-1b
3	H003	PIPE_3.0	0.107	43.751	11	0.1	106.253		8	28614.088	78246	6898.5	6898.5	1.805	H1-1b
4	H004	HSS5X3X5	0.309	0	11	0.065	0	y	137	139602.037	169740	15456	22149	2.565	H1-1b
5	H005	PIPE_3.0	0.107	43.751	3	0.1	106.253		12	28614.088	78246	6898.5	6898.5	1.805	H1-1b
6	H006	PIPE_3.0	0.107	43.751	7	0.099	106.253		4	28614.088	78246	6898.5	6898.5	1.805	H1-1b
7	H007	PIPE_3.0	0.096	7.794	2	0.102	12.666		10	77888.459	78246	6898.5	6898.5	1.17	H1-1b
8	H008	PIPE_3.0	0.096	7.794	6	0.102	12.666		2	77888.459	78246	6898.5	6898.5	1.17	H1-1b
9	H009	PIPE_3.0	0.096	7.794	10	0.102	12.666		6	77888.459	78246	6898.5	6898.5	1.17	H1-1b
10	H010	PIPE_3.0	0.209	23.383	26	0.088	23.383		29	75086.325	78246	6898.5	6898.5	1.387	H1-1b
11	H011	PIPE_3.0	0.209	23.383	30	0.088	23.383		33	75086.325	78246	6898.5	6898.5	1.387	H1-1b
12	H012	PIPE_3.0	0.209	23.383	34	0.088	23.383		37	75086.325	78246	6898.5	6898.5	1.387	H1-1b
13	H013	L 1.5X1.5X4	0.073	15.206	17	0.008	29.79	z	29	8987.293	22469.4	217.337	862.417	1.136	H2-1
14	H014	L 1.5X1.5X4	0.073	15.206	21	0.008	29.79	z	33	8987.293	22469.4	217.337	862.417	1.136	H2-1

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
15	H015	L 1.5X1.5X4	0.073	15.206	25	0.008	29.79	z	37	8987.293	22469.4	217.337	862.417	1.136	H2-1
16	H016	L 1.5X1.5X4	0.062	15.206	23	0.009	29.79	y	35	8987.293	22469.4	217.337	862.417	1.136	H2-1
17	H017	L 1.5X1.5X4	0.062	15.206	15	0.009	29.79	y	27	8987.293	22469.4	217.337	862.417	1.136	H2-1
18	H018	L 1.5X1.5X4	0.062	15.206	19	0.009	29.79	y	31	8987.293	22469.4	217.337	862.417	1.136	H2-1
19	H019	PIPE_2.0	0.111	100.003	8	0.075	146.879		2	6295.099	38556	2245.95	2245.95	2.378	H1-1b
20	H020	PIPE_2.0	0.111	100.003	12	0.075	146.879		6	6295.099	38556	2245.95	2245.95	2.378	H1-1b
21	H021	PIPE_2.0	0.111	100.003	4	0.075	146.879		10	6295.099	38556	2245.95	2245.95	2.377	H1-1b
22	H022	PIPE_2.0	0.113	15.588	10	0.055	0		11	38162.512	38556	2245.95	2245.95	1.818	H1-1b
23	H023	PIPE_2.0	0.113	15.588	2	0.055	0		3	38162.512	38556	2245.95	2245.95	1.818	H1-1b
24	H024	PIPE_2.0	0.113	15.588	6	0.055	0		7	38162.512	38556	2245.95	2245.95	1.818	H1-1b
25	MP027	PIPE_2.0	0.233	57.5	2	0.057	57.5		13	16811.605	32130	1871.625	1871.625	2.24	H1-1b
26	MP030	PIPE_2.0	0.273	57.5	2	0.049	57.5		8	16811.605	32130	1871.625	1871.625	2.213	H1-1b
27	MP033	PIPE_2.0	0.715	58.75	20	0.059	57.5		7	8492.168	32130	1871.625	1871.625	1	H1-1b
28	MP036	PIPE_2.0	0.181	57.5	98	0.046	57.5		2	16811.605	32130	1871.625	1871.625	3	H1-1b
29	MP039	PIPE_2.0	0.233	57.5	10	0.057	57.5		9	16811.605	32130	1871.625	1871.625	2.214	H1-1b
30	MP042	PIPE_2.0	0.273	57.5	10	0.049	57.5		4	16811.605	32130	1871.625	1871.625	2.501	H1-1b
31	MP045	PIPE_2.0	0.714	58.75	16	0.059	57.5		3	8492.168	32130	1871.625	1871.625	2.378	H1-1b
32	MP048	PIPE_2.0	0.181	57.5	154	0.046	57.5		10	16811.605	32130	1871.625	1871.625	3	H1-1b
33	MP051	PIPE_2.0	0.233	57.5	6	0.057	57.5		5	16811.605	32130	1871.625	1871.625	3	H1-1b
34	MP054	PIPE_2.0	0.273	57.5	6	0.049	57.5		12	16811.605	32130	1871.625	1871.625	2.189	H1-1b
35	MP057	PIPE_2.0	0.714	58.75	24	0.059	57.5		11	8492.168	32130	1871.625	1871.625	1.791	H1-1b
36	MP060	PIPE_2.0	0.181	57.5	198	0.046	57.5		6	16811.605	32130	1871.625	1871.625	2.184	H1-1b

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**180 ft Monopole**
ATC Site Name	:	**Colchester CT 6,CT**
ATC Site Number	:	**302465**
Engineering Number	:	**14097391_C3_03**
Proposed Carrier	:	**T-MOBILE**
Carrier Site Name	:	**CTHA059E**
Carrier Site Number	:	**CTHA059E**
Site Location	:	**355 Route 85** **Colchester, CT 06415-1825** **41.5449, -72.3049**
County	:	**New London**
Date	:	**June 30, 2022**
Max Usage	:	**64%**
Result	:	**Pass**

Prepared By:

Sarah Kramer
Structural Engineer

Sarah D. Kramer

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32593
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
01 Jul 2022 03:37:28 cosign

COA : PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 180 ft Monopole to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower Drawings	Valmont order #17494-98, dated June 8, 1998
Foundation Drawing	Valmont drawing #17494-S-01, dated July 10, 1998
Geotechnical Report	Tectonic Engineering Consultants Project #1170.C877, dated June 5, 1998
Modifications	ATC Project #13711921_C8_03, dated August 19, 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:	122 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.00" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.20, S_1 = 0.06
Site Class:	D - Stiff Soil - Default

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
170.0	2	Generic 6' Omni	Side Arm	(2) 0.405" (10.3mm) Coax	SENET, INC.
163.0	6	Commscope JAHH-65B-R3B	Triangular Platform with Handrails	(2) 1 5/8" Hybriflex	VERIZON WIRELESS
	2	RFS DB-B1-6C-12AB-0Z			
	3	Samsung B2/B66A RRH-BR049			
	3	Samsung B5/B13 RRH-BR04C			
150.0	6	LGP Allgon LGP21903	Triangular Platform with Handrails	(4) 0.78" (19.7mm) 8 AWG 6 (1) 2" Carflex Non-Metallic Conduit (1) 3" conduit (2) 0.39" (10mm) Fiber Trunk (2) 0.65" (16.4mm) 8 AWG 2C (12) 1 1/4" Coax	AT&T MOBILITY
	3	Ericsson Radio 8843 - B2 + B66A			
	3	Ericsson RRUS 4449 B5, B12			
	3	Powerwave Allgon 7770.00			
	1	CCI HPA65R-BU6A			
	2	CCI HPA65R-BU8A			
	1	Kathrein Scala 80010965			
	2	Kathrein Scala 80010966			
	6	Powerwave Allgon LGP21401			
	2	Raycap DC6-48-60-18-8F (23.5" Height)			
120.0	3	Fujitsu TA08025-B605	Triangular Platform with Handrails	(1) 1.60" (40.6mm) Hybrid	DISH WIRELESS L.L.C.
	3	JMA Wireless MX08FRO665-21			
	3	Fujitsu TA08025-B604			
	1	Commscope RDIDC-9181-PF-48			

Equipment to be Removed

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
180.0	3	Ericsson Radio 4460 B25+B66	Triangular Platform with Handrails	(3) 1.99" (50.7mm) Hybrid (6) 1 5/8" Coax	SPRINT NEXTEL
	3	Ericsson Radio 4480 B71+B85A			
	3	Ericsson Air6449 B41			
	3	Commscope VV-65A-R1			
	3	RFS APXVAALL24 43-U-NA20			
175.0	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	T-Arm	(2) 1 1/4" Hybriflex Cable	
	3	Alcatel-Lucent RRH2x50-08			
138.0	3	Ericsson RRUS 11 B4	Triangular Platform with Handrails	(1) 1 5/8" (1.63"-41.3mm) Fiber	T-MOBILE
	3	Ericsson RRUS 11 B2			
	3	Commscope LNX-6515DS-A1M (96.6" Height)			
	3	RFS APX16DWV-16DWVS-E-A20			
	3	Ericsson RRUS 11 B12			

Proposed Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
180.0	3	Ericsson 4460 BAND 2/25	Triangular Platform with Handrails	(3) 1.99" (50.7mm) Hybrid	T-MOBILE
	3	Ericsson 4480 BAND 71			
	3	Commscope VV-65A-R1B			
	3	Ericsson AIR 6419 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	48%	Pass
Shaft	64%	Pass
Base Plate	23%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	4079.1	55%
Axial (Kips)	61.5	27%
Shear (Kips)	34.7	15%

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) (°)
180.0	Ericsson 4460 BAND 2/25	T-MOBILE	1.898	1.200
	Ericsson 4480 BAND 71			
	RFS APXVAALL24 43-U-NA20			
	Ericsson AIR 6419 B41			
	Commscope VV-65A-R1B			

***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 Services LLC 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 Services LLC

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

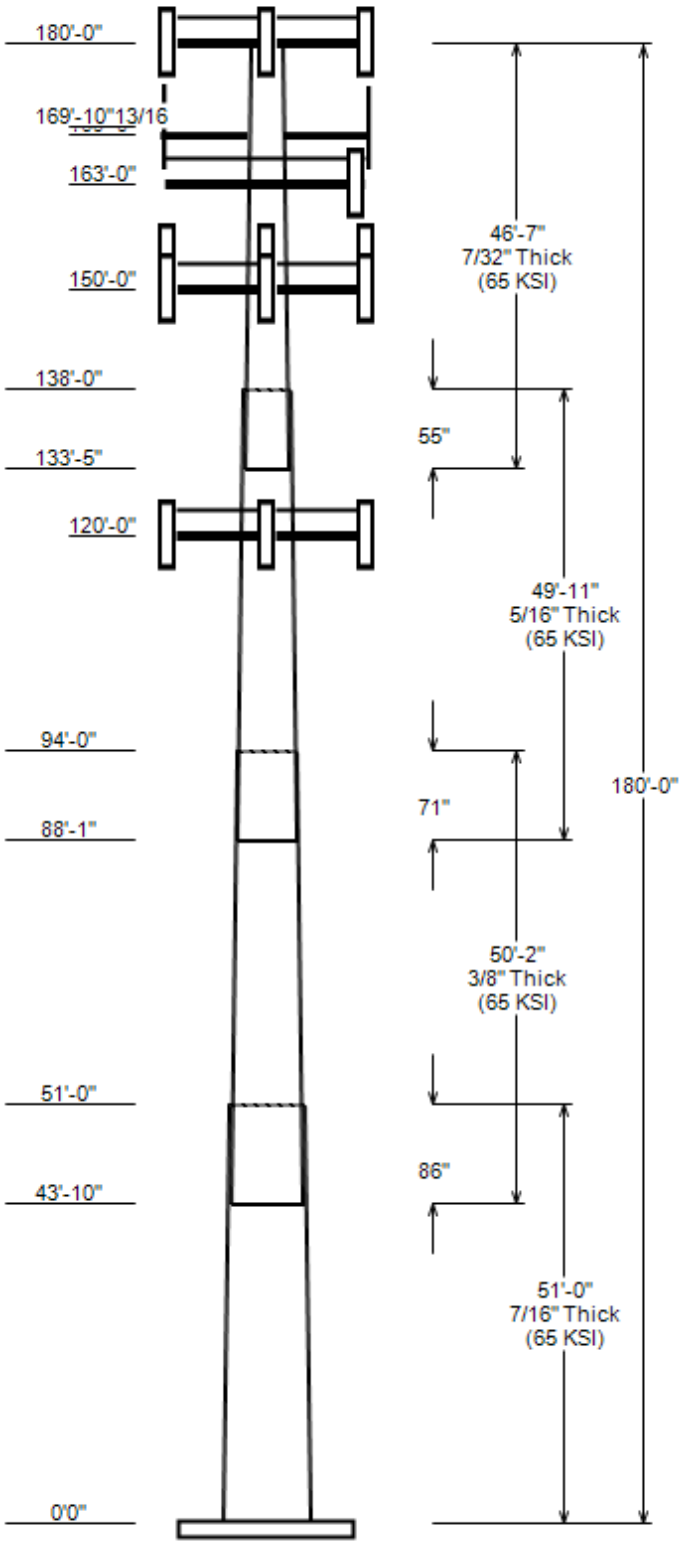
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

Unless explicitly agreed by both the client and A.T. Engineering Services LLC, 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 Services LLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

JOB INFORMATION

Asset :	302465, Colchester CT 6	Height :	180 ft
Client :	T-MOBILE	Base Width :	64
Code :	ANSI/TIA-222-H	Shape :	12 Sides



SITE PARAMETERS

Nominal Wind: 122 mph wind with no ice **Topo Category:** 1

Ice Wind: 50 mph wind with 1" radial **Topo Method:** Method 1

Base Elev (ft): 0.00 **Taper :** 0.26100(In/ft) **Topo Feature:**

Structure Class: II **Exposure :** B **S_s :** 0.205 **S_1** : 0.055

SECTION PROPERTIES

Shaft Section	Length (ft)	Diameter (in) Across Flats Top	Diameter (in) Across Flats Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	51.000	50.70	64.00	0.438		0.000	12 Sides	65
2	50.167	40.24	53.32	0.375	Slip Joint	86.000	12 Sides	65
3	49.917	29.39	42.40	0.312	Slip Joint	71.000	12 Sides	65
4	46.583	18.87	31.02	0.219	Slip Joint	55.000	12 Sides	65

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
180.0	180.0	3	Ericsson 4460 BAND 2/25
180.0	180.0	3	Ericsson 4480 BAND 71
180.0	180.0	3	Commscope VV-65A-R1B
180.0	180.0	3	Ericsson AIR 6419 B41
180.0	180.0	3	RFS APXVAALL24 43-U-NA20
180.0	180.0	1	Generic Round Platform with Ha
169.9	169.9	2	Generic 6' Omni
169.0	169.0	2	Generic Round Side Arm
163.0	163.0	3	Samsung B5/B13 RRH-BR04C
163.0	163.0	3	Samsung B2/B66A RRH-BR049
163.0	163.0	2	RFS DB-B1-6C-12AB-0Z
163.0	163.0	6	Commscope JAHH-65B-R3B
163.0	163.0	1	Generic Round Platform with Ha
150.0	152.0	6	LGP Allgon LGP21903
150.0	153.0	6	Powerwave Allgon LGP21401
150.0	153.0	2	Raycap DC6-48-60-18-8F (23.5"
150.0	150.0	3	Ericsson Radio 8843 - B2 + B66
150.0	150.0	3	Ericsson RRUS 4449 B5, B12
150.0	153.0	3	Powerwave Allgon 7770.00
150.0	150.0	1	CCI HPA65R-BU6A
150.0	150.0	2	CCI HPA65R-BU8A
150.0	150.0	1	Kathrein Scala 80010965
150.0	150.0	2	Kathrein Scala 80010966
150.0	150.0	1	Generic Round Platform with Ha
120.0	120.0	1	Commscope RDIDC-9181-PF-48
120.0	120.0	3	Fujitsu TA08025-B604
120.0	120.0	3	Fujitsu TA08025-B605
120.0	120.0	3	JMA Wireless MX08FRO665-21
120.0	120.0	1	Generic Flat Platform with Han

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	180.0	1.99" (50.7mm) Hybrid	No
0.0	170.0	0.405" (10.3mm) Coax	No
0.0	163.0	1 5/8" Hybriflex	No
0.0	153.0	3" conduit	No
0.0	153.0	2" Carflex Non-Metallic Conduit	No
0.0	153.0	0.78" (19.7mm) 8 AWG 6	No
0.0	150.0	1 1/4" Coax	No
0.0	150.0	0.78" (19.7mm) 8 AWG 6	No
0.0	150.0	0.65" (16.4mm) 8 AWG 2C	No

JOB INFORMATION

Asset :	302465, Colchester CT 6	Height :	180 ft
Client :	T-MOBILE	Base Width :	64
Code :	ANSI/TIA-222-H	Shape :	12 Sides

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	150.0	0.39" (10mm) Fiber Trunk	No
0.0	120.0	1.60" (40.6mm) Hybrid	No

LOAD CASES

1.2D + 1.0W	122 mph wind with no ice
0.9D + 1.0W	122 mph wind with no ice
1.2D + 1.0Di + 1.0Wi	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	60 mph Wind with No Ice

REACTIONS

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W	4079.09	34.70	61.54
0.9D + 1.0W	4029.35	34.68	46.14
1.2D + 1.0Di + 1.0Wi	937.61	7.76	79.69
1.2D + 1.0Ev + 1.0Eh	229.58	1.54	61.76
0.9D - 1.0Ev + 1.0Eh	225.77	1.54	42.52
1.0D + 1.0W	876.36	7.51	51.31

DISH DEFLECTIONS

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)

ANALYSIS PARAMETERS

Location:	New London County,CT	**Height:**	180 ft
Type and Shape:	Taper, 12 Sides	**Base Diameter:**	64.00 in
Manufacturer:	Valmont	**Top Diameter:**	18.87 in
K_d (non-service):	0.95	**Taper:**	0.2610 in/ft
K_e:	0.98	**Rotation:**	0.000°

ICE & WIND PARAMETERS

Exposure Category:	B	**Design Wind Speed w/o Ice:**	122 mph
Risk Category:	II	**Design Wind Speed w/Ice:**	50 mph
Topo Factor Procedure:	Method 1	**Operational Wind Speed:**	60 mph
Topographic Category:	1	**Design Ice Thickness:**	1.00 in
Crest Height:	0 ft	**HMSL:**	559.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil			**Period Based on Rayleigh Method (sec):**	2.71
T_L (sec):	6	**P:**	1	**C_s:**	0.030
S_s:	0.205	**S_1:**	0.055	**C_s Max:**	0.030
F_a:	1.600	**F_v:**	2.400	**C_s Min:**	0.030
S_{ds}:	0.219	**S_{d1}:**	0.088		

LOAD CASES

1.2D + 1.0W	122 mph wind with no ice
0.9D + 1.0W	122 mph wind with no ice
1.2D + 1.0Di + 1.0Wi	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	60 mph Wind with No Ice

SHAFT SECTION PROPERTIES

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (in)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-12	51.00	0.4375	65		0.00	13,914	64.00	0.000	89.54	46,176.7	36.52	146.29	50.70	51.00	70.81	22,831.9	28.37	115.89	0.2608
2-12	50.17	0.3750	65	Slip	86.00	9,565	53.32	43.833	63.93	22,872.5	35.42	142.18	40.24	94.00	48.13	9,761.2	26.07	107.30	0.2608
3-12	49.92	0.3125	65	Slip	71.00	6,082	42.40	88.083	42.35	9,577.7	33.68	135.69	29.39	138.00	29.25	3,156.3	22.52	94.04	0.2608
								133.41								583.5			
4-12	46.58	0.2188	65	Slip	55.00	2,761	31.02	7	21.70	2,627.4	35.31	141.77	18.87	180.00	13.14		20.43	86.24	0.2608

Shaft Weight 32,322

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
180.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3600.40	43.807	1.00
180.00	RFS APXVAALL24 43-U-NA20	3	0.75	0.000	122.80	20.243	0.63	387.42	22.763	0.63
180.00	Ericsson AIR 6419 B41	3	0.75	0.000	83.30	6.322	0.63	186.12	7.471	0.63
180.00	Commscope VV-65A-R1B	3	0.75	0.000	24.70	5.887	0.63	104.11	7.325	0.63
180.00	Ericsson 4480 BAND 71	3	0.75	0.000	81.00	2.878	0.67	132.72	3.641	0.67
180.00	Ericsson 4460 BAND 2/25	3	0.75	0.000	109.00	2.564	0.67	169.05	3.280	0.67
169.90	Generic 6' Omni	2	1.00	0.000	25.00	1.760	1.00	56.18	2.611	1.00
169.00	Generic Round Side Arm	2	1.00	0.000	187.50	5.200	1.00	249.24	7.035	1.00
163.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3590.06	43.651	1.00
163.00	Samsung B5/B13 RRH-BR04C	3	0.75	0.000	70.30	1.875	0.50	108.80	2.482	0.50
163.00	Samsung B2/B66A RRH-BR049	3	0.75	0.000	84.40	1.875	0.50	127.33	2.482	0.50
163.00	RFS DB-B1-6C-12AB-0Z	2	0.75	0.000	21.40	2.512	0.67	75.12	3.213	0.67
163.00	Commscope JAHH-65B-R3B	6	0.75	0.000	60.60	9.113	0.69	196.75	10.980	0.69
150.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3580.22	43.502	1.00
150.00	Kathrein Scala 80010966	2	0.75	0.000	114.60	17.363	0.72	328.75	19.823	0.72
150.00	Kathrein Scala 80010965	1	0.75	0.000	97.60	13.814	1.00	275.40	15.849	1.00
150.00	CCI HPA65R-BU8A	2	0.75	0.000	54.00	11.230	0.78	208.92	13.380	0.78
150.00	CCI HPA65R-BU6A	1	0.75	0.000	41.90	7.864	1.00	158.78	9.705	1.00
150.00	Powerwave Allgon 7770.00	3	0.75	3.000	35.00	5.508	0.65	110.81	6.926	0.65
150.00	Ericsson RRUS 4449 B5, B12	3	0.75	0.000	71.00	1.969	0.50	113.98	2.591	0.50
150.00	Powerwave Allgon LGP21401	6	0.75	3.000	14.10	1.104	0.50	30.74	1.580	0.50
150.00	Raycap DC6-48-60-18-8F (23.5"	2	0.75	3.000	20.00	1.260	1.00	55.12	1.699	1.00
150.00	Ericsson Radio 8843 - B2 + B66	3	0.75	0.000	71.90	1.650	0.50	112.99	2.215	0.50
150.00	LGP Allgon LGP21903	6	0.75	2.000	5.50	0.231	0.50	11.11	0.457	0.50
120.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	115.84	2.562	0.50
120.00	JMA Wireless MX08FRO665-21	3	0.75	0.000	64.50	12.489	0.64	232.06	14.321	0.64
120.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	3658.12	56.072	1.00
120.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	101.92	2.562	0.50
120.00	Commscope RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	1.00	59.00	2.454	1.00
Totals	Num Loadings: 29	76			14,358.00			24,309.69		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg) : _

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	180.00	3	1.99" (50.7mm) Hybrid	1.99	1.9	N	0	0	0	0	0	N	T-MOBILE
0.00	170.00	2	0.405" (10.3mm) Coax	0.41	0.11	N	0	0	0	0	0	N	SENET, INC.
0.00	163.00	2	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	VERIZON WIREL
0.00	153.00	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	153.00	1	2" Carflex Non-Metall	2.36	0.68	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	153.00	1	3" conduit	3.5	7.58	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	150.00	12	1 1/4" Coax	1.55	0.63	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	150.00	2	0.65" (16.4mm) 8 AWG	0.65	0.31	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	150.00	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	150.00	2	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	120.00	1	1.60" (40.6mm) Hybrid	1.6	2.34	N	0	0	0	0	0	N	DISH WIRELESS

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		0.4375	64.000	89.544	46,176.70	36.52	146.29	64.9	1393.9	0.0	0.0
5.00		0.4375	62.696	87.707	43,392.70	35.72	143.31	65.8	1337.1	0.0	1,507.9
10.00		0.4375	61.392	85.870	40,722.90	34.92	140.32	66.6	1281.4	0.0	1,476.6
15.00		0.4375	60.088	84.033	38,165.00	34.12	137.34	67.5	1227.0	0.0	1,445.4
20.00		0.4375	58.784	82.196	35,716.40	33.32	134.36	68.4	1173.8	0.0	1,414.1
25.00		0.4375	57.480	80.359	33,374.90	32.52	131.38	69.2	1121.7	0.0	1,382.8
30.00		0.4375	56.176	78.522	31,138.10	31.73	128.40	70.1	1070.8	0.0	1,351.6
35.00		0.4375	54.872	76.685	29,003.40	30.93	125.42	71	1021.1	0.0	1,320.3
40.00		0.4375	53.568	74.848	26,968.70	30.13	122.44	71.9	972.6	0.0	1,289.1
43.83	Bot - Section 2	0.4375	52.569	73.440	25,474.80	29.52	120.16	72.5	936.2	0.0	967.1
45.00		0.4375	52.264	73.011	25,031.40	29.33	119.46	72.7	925.2	0.0	543.8
50.00		0.4375	50.960	71.174	23,189.20	28.53	116.48	73.6	879.1	0.0	2,294.6
51.00	Top - Section 1	0.3750	51.450	61.673	20,534.70	34.08	137.20	67.5	771.0	0.0	452.0
55.00		0.3750	50.406	60.413	19,302.00	33.34	134.42	68.4	739.8	0.0	830.9
60.00		0.3750	49.103	58.838	17,831.80	32.41	130.94	69.4	701.6	0.0	1,014.5
65.00		0.3750	47.799	57.264	16,438.20	31.47	127.46	70.4	664.4	0.0	987.7
70.00		0.3750	46.495	55.689	15,119.20	30.54	123.99	71.4	628.2	0.0	960.9
75.00		0.3750	45.191	54.115	13,872.70	29.61	120.51	72.4	593.0	0.0	934.1
80.00		0.3750	43.887	52.540	12,696.70	28.68	117.03	73.4	558.9	0.0	907.3
85.00		0.3750	42.583	50.966	11,589.10	27.75	113.55	74.5	525.8	0.0	880.5
88.08	Bot - Section 3	0.3750	41.779	49.995	10,939.20	27.17	111.41	75.1	505.8	0.0	529.6
90.00		0.3750	41.279	49.391	10,547.80	26.82	110.08	75.5	493.6	0.0	598.7
94.00	Top - Section 2	0.3125	40.861	40.802	8,562.50	32.36	130.75	69.4	404.8	0.0	1,226.2
95.00		0.3125	40.600	40.539	8,398.40	32.13	129.92	69.7	399.6	0.0	138.4
100.00		0.3125	39.296	39.227	7,609.00	31.01	125.75	70.9	374.1	0.0	678.6
105.00		0.3125	37.992	37.915	6,870.70	29.90	121.57	72.1	349.4	0.0	656.2
110.00		0.3125	36.688	36.603	6,181.80	28.78	117.40	73.3	325.5	0.0	633.9
115.00		0.3125	35.384	35.291	5,540.60	27.66	113.23	74.5	302.5	0.0	611.6
120.00		0.3125	34.080	33.979	4,945.30	26.54	109.06	75.8	280.3	0.0	589.3
125.00		0.3125	32.776	32.666	4,394.20	25.42	104.88	77	259.0	0.0	566.9
130.00		0.3125	31.472	31.354	3,885.70	24.31	100.71	78.2	238.5	0.0	544.6
133.42	Bot - Section 4	0.3125	30.581	30.458	3,561.80	23.54	97.86	79	225.0	0.0	359.3
135.00		0.3125	30.168	30.042	3,418.00	23.19	96.54	79.4	218.9	0.0	279.1
138.00	Top - Section 3	0.2188	29.823	20.857	2,333.30	33.84	136.30	67.8	151.1	0.0	518.4
140.00		0.2188	29.302	20.490	2,212.10	33.20	133.92	68.5	145.8	0.0	140.7
145.00		0.2188	27.998	19.571	1,927.70	31.61	127.96	70.2	133.0	0.0	340.8
150.00		0.2188	26.694	18.653	1,668.80	30.01	122.00	72	120.8	0.0	325.2
155.00		0.2188	25.390	17.734	1,434.20	28.41	116.04	73.7	109.1	0.0	309.5
160.00		0.2188	24.086	16.815	1,222.60	26.82	110.08	75.5	98.1	0.0	293.9
163.00		0.2188	23.304	16.264	1,106.30	25.86	106.51	76.5	91.7	0.0	168.8
165.00		0.2188	22.782	15.897	1,033.00	25.22	104.12	77.2	87.6	0.0	109.4
169.00		0.2188	21.739	15.162	896.20	23.94	99.35	78.6	79.6	0.0	211.4
169.90		0.2188	21.504	14.996	867.20	23.66	98.28	78.9	77.9	0.0	46.2
170.00		0.2188	21.478	14.978	864.00	23.62	98.16	79	77.7	0.0	5.1
175.00		0.2188	20.174	14.059	714.60	22.03	92.20	80.7	68.4	0.0	247.0
180.00		0.2188	18.870	13.141	583.50	20.43	86.24	81.9	59.7	0.0	231.4
									Totals:		32,321.4

Load Case: 1.2D + 1.0W 122 mph wind with no ice 25 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	-61.54	-34.70	0.00	-4,079.1	0.00	4,079.09	5,229.17	1,571.49	9,421.69	6,783.18	0	0	0.614
5.00	-59.48	-34.12	0.00	-3,905.6	0.00	3,905.62	5,190.65	1,539.25	9,039.18	6,594.14	0.07	-0.12	0.604
10.00	-57.45	-33.55	0.00	-3,735.0	0.00	3,735.02	5,149.25	1,507.01	8,664.60	6,403.58	0.26	-0.25	0.595
15.00	-55.47	-33.00	0.00	-3,567.2	0.00	3,567.25	5,104.97	1,474.78	8,297.94	6,211.74	0.59	-0.38	0.586
20.00	-53.53	-32.45	0.00	-3,402.3	0.00	3,402.27	5,057.81	1,442.54	7,939.21	6,018.84	1.06	-0.51	0.576
25.00	-51.62	-31.90	0.00	-3,240.0	0.00	3,240.05	5,007.77	1,410.30	7,588.41	5,825.12	1.66	-0.64	0.567
30.00	-49.75	-31.36	0.00	-3,080.5	0.00	3,080.53	4,954.85	1,378.06	7,245.53	5,630.81	2.4	-0.77	0.558
35.00	-47.93	-30.81	0.00	-2,923.7	0.00	2,923.71	4,899.05	1,345.82	6,910.58	5,436.14	3.28	-0.91	0.548
40.00	-46.15	-30.31	0.00	-2,769.6	0.00	2,769.65	4,840.37	1,313.58	6,583.55	5,241.34	4.31	-1.05	0.538
43.83	-44.82	-30.01	0.00	-2,653.5	0.00	2,653.47	4,793.44	1,288.87	6,338.20	5,092.06	5.2	-1.16	0.531
45.00	-44.08	-29.65	0.00	-2,618.4	0.00	2,618.45	4,778.81	1,281.35	6,264.45	5,046.65	5.48	-1.19	0.529
50.00	-41.12	-29.25	0.00	-2,470.2	0.00	2,470.18	4,714.38	1,249.11	5,953.28	4,852.29	6.81	-1.34	0.518
51.00	-40.51	-28.95	0.00	-2,440.9	0.00	2,440.93	3,748.95	1,082.35	5,214.40	3,905.86	7.1	-1.37	0.636
55.00	-39.31	-28.42	0.00	-2,325.1	0.00	2,325.12	3,716.58	1,060.25	5,003.62	3,792.47	8.29	-1.49	0.624
60.00	-37.86	-27.82	0.00	-2,183.0	0.00	2,183.02	3,673.53	1,032.61	4,746.27	3,650.12	9.94	-1.65	0.609
65.00	-36.43	-27.22	0.00	-2,043.9	0.00	2,043.91	3,627.60	1,004.98	4,495.71	3,507.29	11.76	-1.82	0.594
70.00	-35.04	-26.62	0.00	-1,907.8	0.00	1,907.81	3,578.79	977.35	4,251.95	3,364.21	13.76	-1.99	0.578
75.00	-33.69	-26.02	0.00	-1,774.7	0.00	1,774.71	3,527.09	949.72	4,014.98	3,221.11	15.94	-2.17	0.561
80.00	-32.37	-25.42	0.00	-1,644.6	0.00	1,644.62	3,472.52	922.08	3,784.80	3,078.24	18.3	-2.34	0.544
85.00	-31.10	-24.92	0.00	-1,517.5	0.00	1,517.53	3,415.07	894.45	3,561.42	2,935.81	20.85	-2.52	0.527
88.08	-30.33	-24.62	0.00	-1,440.7	0.00	1,440.68	3,378.20	877.41	3,427.05	2,848.30	22.51	-2.63	0.516
90.00	-29.51	-24.26	0.00	-1,393.5	0.00	1,393.50	3,354.74	866.82	3,344.83	2,794.06	23.58	-2.7	0.508
94.00	-27.88	-23.91	0.00	-1,296.5	0.00	1,296.47	2,549.41	716.07	2,738.82	2,107.92	25.91	-2.85	0.627
95.00	-27.64	-23.58	0.00	-1,272.6	0.00	1,272.56	2,541.91	711.46	2,703.72	2,088.10	26.51	-2.88	0.621
100.00	-26.60	-23.00	0.00	-1,154.7	0.00	1,154.66	2,502.69	688.43	2,531.57	1,988.82	29.64	-3.09	0.592
105.00	-25.59	-22.43	0.00	-1,039.6	0.00	1,039.65	2,460.58	665.41	2,365.09	1,889.44	32.98	-3.29	0.562
110.00	-24.61	-21.87	0.00	-927.5	0.00	927.48	2,415.60	642.38	2,204.27	1,790.18	36.54	-3.5	0.529
115.00	-23.66	-21.31	0.00	-818.1	0.00	818.14	2,367.74	619.35	2,049.12	1,691.27	40.31	-3.7	0.495
120.00	-19.19	-17.82	0.00	-711.6	0.00	711.57	2,317.00	596.32	1,899.62	1,592.95	44.29	-3.89	0.456
125.00	-18.32	-17.27	0.00	-622.5	0.00	622.46	2,263.38	573.30	1,755.79	1,495.45	48.47	-4.09	0.425
130.00	-17.50	-16.81	0.00	-536.1	0.00	536.09	2,206.88	550.27	1,617.62	1,398.99	52.85	-4.27	0.392
133.42	-16.95	-16.53	0.00	-478.6	0.00	478.65	2,166.61	534.53	1,526.45	1,333.80	55.95	-4.4	0.368
135.00	-16.56	-16.29	0.00	-452.5	0.00	452.48	2,147.49	527.24	1,485.11	1,303.81	57.42	-4.46	0.356
138.00	-15.83	-16.00	0.00	-403.6	0.00	403.62	1,272.79	366.05	1,022.18	768.59	60.26	-4.57	0.539
140.00	-15.59	-15.66	0.00	-371.6	0.00	371.63	1,263.21	359.60	986.49	749.27	62.18	-4.64	0.510
145.00	-15.00	-15.18	0.00	-293.3	0.00	293.31	1,237.26	343.48	900.03	700.72	67.15	-4.85	0.433
150.00	-10.42	-10.32	0.00	-215.8	0.00	215.75	1,208.42	327.35	817.54	652.01	72.33	-5.04	0.341
155.00	-9.98	-9.86	0.00	-164.1	0.00	164.13	1,176.70	311.23	739.02	603.37	77.69	-5.2	0.282
160.00	-9.59	-9.49	0.00	-114.8	0.00	114.85	1,142.10	295.11	664.45	555.03	83.21	-5.34	0.216
163.00	-5.61	-6.13	0.00	-86.4	0.00	86.39	1,119.95	285.43	621.62	526.27	86.58	-5.41	0.170
165.00	-5.48	-5.88	0.00	-74.1	0.00	74.12	1,104.62	278.98	593.85	507.22	88.86	-5.45	0.152
169.00	-4.81	-5.15	0.00	-50.6	0.00	50.61	1,072.56	266.09	540.23	469.51	93.45	-5.52	0.113
169.90	-4.71	-4.94	0.00	-46.0	0.00	45.98	1,065.09	263.18	528.51	461.11	94.49	-5.53	0.104
170.00	-4.72	-4.75	0.00	-45.5	0.00	45.48	1,064.26	262.86	527.22	460.18	94.6	-5.53	0.104
175.00	-4.42	-4.35	0.00	-21.7	0.00	21.74	1,021.02	246.74	464.55	414.13	100.42	-5.59	0.057
180.00	0.00	-3.89	0.00	0.0	0.00	0.00	968.59	230.62	405.84	366.91	106.29	-5.61	0.000

Load Case: 0.9D + 1.0W 122 mph wind with no ice 25 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	-46.14	-34.68	0.00	-4,029.4	0.00	4,029.35	5,229.17	1,571.49	9,421.69	6,783.18	0	0	0.603
5.00	-44.58	-34.07	0.00	-3,856.0	0.00	3,855.96	5,190.65	1,539.25	9,039.18	6,594.14	0.07	-0.12	0.594
10.00	-43.05	-33.47	0.00	-3,685.6	0.00	3,685.61	5,149.25	1,507.01	8,664.60	6,403.58	0.26	-0.25	0.584
15.00	-41.54	-32.88	0.00	-3,518.2	0.00	3,518.25	5,104.97	1,474.78	8,297.94	6,211.74	0.58	-0.37	0.575
20.00	-40.07	-32.31	0.00	-3,353.8	0.00	3,353.84	5,057.81	1,442.54	7,939.21	6,018.84	1.04	-0.5	0.566
25.00	-38.62	-31.74	0.00	-3,192.3	0.00	3,192.31	5,007.77	1,410.30	7,588.41	5,825.12	1.63	-0.63	0.556
30.00	-37.21	-31.17	0.00	-3,033.6	0.00	3,033.62	4,954.85	1,378.06	7,245.53	5,630.81	2.37	-0.76	0.547
35.00	-35.82	-30.60	0.00	-2,877.8	0.00	2,877.76	4,899.05	1,345.82	6,910.58	5,436.14	3.24	-0.9	0.537
40.00	-34.48	-30.07	0.00	-2,724.8	0.00	2,724.78	4,840.37	1,313.58	6,583.55	5,241.34	4.25	-1.03	0.528
43.83	-33.47	-29.77	0.00	-2,609.5	0.00	2,609.50	4,793.44	1,288.87	6,338.20	5,092.06	5.13	-1.14	0.520
45.00	-32.91	-29.40	0.00	-2,574.8	0.00	2,574.77	4,778.81	1,281.35	6,264.45	5,046.65	5.41	-1.18	0.518
50.00	-30.68	-28.99	0.00	-2,427.8	0.00	2,427.79	4,714.38	1,249.11	5,953.28	4,852.29	6.72	-1.32	0.507
51.00	-30.22	-28.69	0.00	-2,398.8	0.00	2,398.80	3,748.95	1,082.35	5,214.40	3,905.86	7	-1.35	0.623
55.00	-29.31	-28.13	0.00	-2,284.1	0.00	2,284.06	3,716.58	1,060.25	5,003.62	3,792.47	8.18	-1.46	0.611
60.00	-28.20	-27.52	0.00	-2,143.4	0.00	2,143.39	3,673.53	1,032.61	4,746.27	3,650.12	9.8	-1.63	0.596
65.00	-27.12	-26.90	0.00	-2,005.8	0.00	2,005.82	3,627.60	1,004.98	4,495.71	3,507.29	11.59	-1.79	0.580
70.00	-26.07	-26.28	0.00	-1,871.3	0.00	1,871.34	3,578.79	977.35	4,251.95	3,364.21	13.56	-1.96	0.564
75.00	-25.04	-25.66	0.00	-1,740.0	0.00	1,739.95	3,527.09	949.72	4,014.98	3,221.11	15.7	-2.13	0.548
80.00	-24.04	-25.05	0.00	-1,611.6	0.00	1,611.64	3,472.52	922.08	3,784.80	3,078.24	18.03	-2.3	0.531
85.00	-23.08	-24.54	0.00	-1,486.4	0.00	1,486.41	3,415.07	894.45	3,561.42	2,935.81	20.53	-2.48	0.514
88.08	-22.49	-24.23	0.00	-1,410.7	0.00	1,410.73	3,378.20	877.41	3,427.05	2,848.30	22.17	-2.59	0.503
90.00	-21.88	-23.87	0.00	-1,364.3	0.00	1,364.29	3,354.74	866.82	3,344.83	2,794.06	23.22	-2.66	0.496
94.00	-20.65	-23.53	0.00	-1,268.8	0.00	1,268.81	2,549.41	716.07	2,738.82	2,107.92	25.51	-2.8	0.611
95.00	-20.47	-23.19	0.00	-1,245.3	0.00	1,245.28	2,541.91	711.46	2,703.72	2,088.10	26.1	-2.83	0.605
100.00	-19.68	-22.60	0.00	-1,129.4	0.00	1,129.36	2,502.69	688.43	2,531.57	1,988.82	29.17	-3.03	0.577
105.00	-18.91	-22.01	0.00	-1,016.4	0.00	1,016.38	2,460.58	665.41	2,365.09	1,889.44	32.46	-3.24	0.547
110.00	-18.17	-21.44	0.00	-906.3	0.00	906.31	2,415.60	642.38	2,204.27	1,790.18	35.95	-3.43	0.515
115.00	-17.45	-20.88	0.00	-799.1	0.00	799.10	2,367.74	619.35	2,049.12	1,691.27	39.65	-3.63	0.481
120.00	-14.13	-17.45	0.00	-694.7	0.00	694.71	2,317.00	596.32	1,899.62	1,592.95	43.56	-3.82	0.443
125.00	-13.48	-16.90	0.00	-607.5	0.00	607.46	2,263.38	573.30	1,755.79	1,495.45	47.66	-4.01	0.413
130.00	-12.85	-16.44	0.00	-523.0	0.00	522.97	2,206.88	550.27	1,617.62	1,398.99	51.95	-4.19	0.381
133.42	-12.44	-16.16	0.00	-466.8	0.00	466.81	2,166.61	534.53	1,526.45	1,333.80	55	-4.32	0.357
135.00	-12.15	-15.92	0.00	-441.2	0.00	441.22	2,147.49	527.24	1,485.11	1,303.81	56.44	-4.37	0.345
138.00	-11.61	-15.63	0.00	-393.5	0.00	393.47	1,272.79	366.05	1,022.18	768.59	59.22	-4.48	0.523
140.00	-11.42	-15.30	0.00	-362.2	0.00	362.20	1,263.21	359.60	986.49	749.27	61.11	-4.55	0.494
145.00	-10.98	-14.81	0.00	-285.7	0.00	285.72	1,237.26	343.48	900.03	700.72	65.98	-4.75	0.418
150.00	-7.63	-10.06	0.00	-210.0	0.00	210.00	1,208.42	327.35	817.54	652.01	71.06	-4.94	0.329
155.00	-7.30	-9.59	0.00	-159.7	0.00	159.71	1,176.70	311.23	739.02	603.37	76.31	-5.1	0.272
160.00	-7.01	-9.23	0.00	-111.7	0.00	111.74	1,142.10	295.11	664.45	555.03	81.72	-5.23	0.208
163.00	-4.09	-5.98	0.00	-84.1	0.00	84.06	1,119.95	285.43	621.62	526.27	85.02	-5.3	0.164
165.00	-3.99	-5.73	0.00	-72.1	0.00	72.10	1,104.62	278.98	593.85	507.22	87.25	-5.34	0.146
169.00	-3.51	-5.02	0.00	-49.2	0.00	49.19	1,072.56	266.09	540.23	469.51	91.74	-5.41	0.108
169.90	-3.43	-4.81	0.00	-44.7	0.00	44.68	1,065.09	263.18	528.51	461.11	92.76	-5.42	0.100
170.00	-3.44	-4.62	0.00	-44.2	0.00	44.20	1,064.26	262.86	527.22	460.18	92.88	-5.42	0.100
175.00	-3.23	-4.22	0.00	-21.1	0.00	21.12	1,021.02	246.74	464.55	414.13	98.58	-5.47	0.054
180.00	0.00	-3.89	0.00	0.0	0.00	0.00	968.59	230.62	405.84	366.91	104.32	-5.5	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi		50 mph wind with 1" radial ice			24 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	-79.69	-7.76	0.00	-937.6	0.00	937.61	5,229.17	1,571.49	9,421.69	6,783.18	0	0	0.153
5.00	-77.38	-7.64	0.00	-898.8	0.00	898.81	5,190.65	1,539.25	9,039.18	6,594.14	0.02	-0.03	0.151
10.00	-75.07	-7.53	0.00	-860.6	0.00	860.59	5,149.25	1,507.01	8,664.60	6,403.58	0.06	-0.06	0.149
15.00	-72.80	-7.42	0.00	-822.9	0.00	822.94	5,104.97	1,474.78	8,297.94	6,211.74	0.14	-0.09	0.147
20.00	-70.56	-7.31	0.00	-785.8	0.00	785.84	5,057.81	1,442.54	7,939.21	6,018.84	0.24	-0.12	0.145
25.00	-68.35	-7.20	0.00	-749.3	0.00	749.30	5,007.77	1,410.30	7,588.41	5,825.12	0.38	-0.15	0.142
30.00	-66.18	-7.09	0.00	-713.3	0.00	713.30	4,954.85	1,378.06	7,245.53	5,630.81	0.55	-0.18	0.140
35.00	-64.06	-6.98	0.00	-677.8	0.00	677.85	4,899.05	1,345.82	6,910.58	5,436.14	0.76	-0.21	0.138
40.00	-61.97	-6.87	0.00	-643.0	0.00	642.96	4,840.37	1,313.58	6,583.55	5,241.34	0.99	-0.24	0.136
43.83	-60.40	-6.81	0.00	-616.6	0.00	616.61	4,793.44	1,288.87	6,338.20	5,092.06	1.2	-0.27	0.134
45.00	-59.62	-6.74	0.00	-608.7	0.00	608.66	4,778.81	1,281.35	6,264.45	5,046.65	1.27	-0.28	0.133
50.00	-56.33	-6.65	0.00	-575.0	0.00	574.96	4,714.38	1,249.11	5,953.28	4,852.29	1.57	-0.31	0.130
51.00	-55.68	-6.59	0.00	-568.3	0.00	568.31	3,748.95	1,082.35	5,214.40	3,905.86	1.64	-0.32	0.160
55.00	-54.26	-6.48	0.00	-541.9	0.00	541.93	3,716.58	1,060.25	5,003.62	3,792.47	1.92	-0.34	0.158
60.00	-52.51	-6.36	0.00	-509.5	0.00	509.51	3,673.53	1,032.61	4,746.27	3,650.12	2.3	-0.38	0.154
65.00	-50.81	-6.24	0.00	-477.7	0.00	477.71	3,627.60	1,004.98	4,495.71	3,507.29	2.72	-0.42	0.150
70.00	-49.14	-6.11	0.00	-446.5	0.00	446.53	3,578.79	977.35	4,251.95	3,364.21	3.18	-0.46	0.147
75.00	-47.52	-5.99	0.00	-416.0	0.00	415.98	3,527.09	949.72	4,014.98	3,221.11	3.69	-0.5	0.143
80.00	-45.93	-5.86	0.00	-386.0	0.00	386.05	3,472.52	922.08	3,784.80	3,078.24	4.24	-0.54	0.139
85.00	-44.38	-5.75	0.00	-356.8	0.00	356.76	3,415.07	894.45	3,561.42	2,935.81	4.83	-0.59	0.135
88.08	-43.44	-5.69	0.00	-339.0	0.00	339.02	3,378.20	877.41	3,427.05	2,848.30	5.22	-0.61	0.132
90.00	-42.54	-5.61	0.00	-328.1	0.00	328.11	3,354.74	866.82	3,344.83	2,794.06	5.47	-0.63	0.130
94.00	-40.68	-5.54	0.00	-305.7	0.00	305.66	2,549.41	716.07	2,738.82	2,107.92	6.01	-0.66	0.161
95.00	-40.42	-5.47	0.00	-300.1	0.00	300.12	2,541.91	711.46	2,703.72	2,088.10	6.15	-0.67	0.160
100.00	-39.13	-5.35	0.00	-272.8	0.00	272.77	2,502.69	688.43	2,531.57	1,988.82	6.88	-0.72	0.153
105.00	-37.88	-5.23	0.00	-246.0	0.00	246.03	2,460.58	665.41	2,365.09	1,889.44	7.66	-0.77	0.146
110.00	-36.66	-5.11	0.00	-219.9	0.00	219.89	2,415.60	642.38	2,204.27	1,790.18	8.49	-0.82	0.138
115.00	-35.48	-4.99	0.00	-194.4	0.00	194.35	2,367.74	619.35	2,049.12	1,691.27	9.37	-0.86	0.130
120.00	-29.08	-4.21	0.00	-169.4	0.00	169.41	2,317.00	596.32	1,899.62	1,592.95	10.3	-0.91	0.119
125.00	-27.98	-4.09	0.00	-148.4	0.00	148.36	2,263.38	573.30	1,755.79	1,495.45	11.28	-0.96	0.112
130.00	-26.92	-3.99	0.00	-127.9	0.00	127.92	2,206.88	550.27	1,617.62	1,398.99	12.31	-1	0.104
133.42	-26.21	-3.92	0.00	-114.3	0.00	114.30	2,166.61	534.53	1,526.45	1,333.80	13.03	-1.03	0.098
135.00	-25.75	-3.87	0.00	-108.1	0.00	108.09	2,147.49	527.24	1,485.11	1,303.81	13.38	-1.05	0.095
138.00	-24.89	-3.80	0.00	-96.5	0.00	96.48	1,272.79	366.05	1,022.18	768.59	14.04	-1.07	0.145
140.00	-24.57	-3.73	0.00	-88.9	0.00	88.88	1,263.21	359.60	986.49	749.27	14.5	-1.09	0.138
145.00	-23.77	-3.62	0.00	-70.2	0.00	70.22	1,237.26	343.48	900.03	700.72	15.66	-1.14	0.120
150.00	-16.43	-2.49	0.00	-51.7	0.00	51.74	1,208.42	327.35	817.54	652.01	16.88	-1.18	0.093
155.00	-15.78	-2.38	0.00	-39.3	0.00	39.31	1,176.70	311.23	739.02	603.37	18.15	-1.22	0.079
160.00	-15.18	-2.29	0.00	-27.4	0.00	27.42	1,142.10	295.11	664.45	555.03	19.45	-1.26	0.063
163.00	-9.03	-1.46	0.00	-20.6	0.00	20.55	1,119.95	285.43	621.62	526.27	20.24	-1.27	0.047
165.00	-8.82	-1.40	0.00	-17.6	0.00	17.63	1,104.62	278.98	593.85	507.22	20.78	-1.28	0.043
169.00	-7.85	-1.23	0.00	-12.0	0.00	12.03	1,072.56	266.09	540.23	469.51	21.86	-1.3	0.033
169.90	-7.65	-1.18	0.00	-10.9	0.00	10.92	1,065.09	263.18	528.51	461.11	22.1	-1.3	0.031
170.00	-7.64	-1.13	0.00	-10.8	0.00	10.81	1,064.26	262.86	527.22	460.18	22.13	-1.3	0.031
175.00	-7.15	-1.03	0.00	-5.2	0.00	5.16	1,021.02	246.74	464.55	414.13	23.5	-1.32	0.019
180.00	0.00	-0.87	0.00	0.0	0.00	0.00	968.59	230.62	405.84	366.91	24.89	-1.32	0.000

Load Case: 1.0D + 1.0W 60 mph Wind with No Ice 24 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	-51.31	-7.51	0.00	-876.4	0.00	876.36	5,229.17	1,571.49	9,421.69	6,783.18	0	0	0.139
5.00	-49.65	-7.38	0.00	-838.8	0.00	838.83	5,190.65	1,539.25	9,039.18	6,594.14	0.01	-0.03	0.137
10.00	-48.02	-7.25	0.00	-802.0	0.00	801.95	5,149.25	1,507.01	8,664.60	6,403.58	0.06	-0.05	0.135
15.00	-46.43	-7.12	0.00	-765.7	0.00	765.71	5,104.97	1,474.78	8,297.94	6,211.74	0.13	-0.08	0.132
20.00	-44.86	-7.00	0.00	-730.1	0.00	730.08	5,057.81	1,442.54	7,939.21	6,018.84	0.23	-0.11	0.130
25.00	-43.32	-6.88	0.00	-695.1	0.00	695.08	5,007.77	1,410.30	7,588.41	5,825.12	0.36	-0.14	0.128
30.00	-41.82	-6.76	0.00	-660.7	0.00	660.68	4,954.85	1,378.06	7,245.53	5,630.81	0.51	-0.17	0.126
35.00	-40.35	-6.64	0.00	-626.9	0.00	626.88	4,899.05	1,345.82	6,910.58	5,436.14	0.7	-0.2	0.124
40.00	-38.91	-6.53	0.00	-593.7	0.00	593.69	4,840.37	1,313.58	6,583.55	5,241.34	0.92	-0.23	0.121
43.83	-37.83	-6.46	0.00	-568.7	0.00	568.68	4,793.44	1,288.87	6,338.20	5,092.06	1.12	-0.25	0.120
45.00	-37.25	-6.38	0.00	-561.1	0.00	561.14	4,778.81	1,281.35	6,264.45	5,046.65	1.18	-0.26	0.119
50.00	-34.80	-6.29	0.00	-529.2	0.00	529.23	4,714.38	1,249.11	5,953.28	4,852.29	1.46	-0.29	0.116
51.00	-34.32	-6.23	0.00	-522.9	0.00	522.94	3,748.95	1,082.35	5,214.40	3,905.86	1.52	-0.29	0.143
55.00	-33.36	-6.11	0.00	-498.0	0.00	498.02	3,716.58	1,060.25	5,003.62	3,792.47	1.78	-0.32	0.140
60.00	-32.20	-5.98	0.00	-467.5	0.00	467.47	3,673.53	1,032.61	4,746.27	3,650.12	2.13	-0.35	0.137
65.00	-31.06	-5.85	0.00	-437.6	0.00	437.58	3,627.60	1,004.98	4,495.71	3,507.29	2.52	-0.39	0.133
70.00	-29.95	-5.71	0.00	-408.3	0.00	408.34	3,578.79	977.35	4,251.95	3,364.21	2.95	-0.43	0.130
75.00	-28.86	-5.58	0.00	-379.8	0.00	379.77	3,527.09	949.72	4,014.98	3,221.11	3.42	-0.46	0.126
80.00	-27.80	-5.45	0.00	-351.9	0.00	351.86	3,472.52	922.08	3,784.80	3,078.24	3.93	-0.5	0.122
85.00	-26.77	-5.34	0.00	-324.6	0.00	324.60	3,415.07	894.45	3,561.42	2,935.81	4.47	-0.54	0.118
88.08	-26.15	-5.28	0.00	-308.1	0.00	308.13	3,378.20	877.41	3,427.05	2,848.30	4.83	-0.56	0.116
90.00	-25.49	-5.20	0.00	-298.0	0.00	298.01	3,354.74	866.82	3,344.83	2,794.06	5.06	-0.58	0.114
94.00	-24.15	-5.12	0.00	-277.2	0.00	277.22	2,549.41	716.07	2,738.82	2,107.92	5.56	-0.61	0.141
95.00	-23.98	-5.05	0.00	-272.1	0.00	272.09	2,541.91	711.46	2,703.72	2,088.10	5.69	-0.62	0.140
100.00	-23.15	-4.93	0.00	-246.8	0.00	246.84	2,502.69	688.43	2,531.57	1,988.82	6.36	-0.66	0.133
105.00	-22.34	-4.80	0.00	-222.2	0.00	222.21	2,460.58	665.41	2,365.09	1,889.44	7.07	-0.71	0.127
110.00	-21.55	-4.68	0.00	-198.2	0.00	198.20	2,415.60	642.38	2,204.27	1,790.18	7.84	-0.75	0.120
115.00	-20.79	-4.56	0.00	-174.8	0.00	174.80	2,367.74	619.35	2,049.12	1,691.27	8.64	-0.79	0.112
120.00	-16.93	-3.81	0.00	-152.0	0.00	152.01	2,317.00	596.32	1,899.62	1,592.95	9.5	-0.83	0.103
125.00	-16.22	-3.69	0.00	-133.0	0.00	132.96	2,263.38	573.30	1,755.79	1,495.45	10.39	-0.87	0.096
130.00	-15.54	-3.59	0.00	-114.5	0.00	114.49	2,206.88	550.27	1,617.62	1,398.99	11.33	-0.92	0.089
133.42	-15.09	-3.53	0.00	-102.2	0.00	102.22	2,166.61	534.53	1,526.45	1,333.80	11.99	-0.94	0.084
135.00	-14.77	-3.48	0.00	-96.6	0.00	96.62	2,147.49	527.24	1,485.11	1,303.81	12.31	-0.95	0.081
138.00	-14.17	-3.42	0.00	-86.2	0.00	86.18	1,272.79	366.05	1,022.18	768.59	12.92	-0.98	0.123
140.00	-13.97	-3.35	0.00	-79.3	0.00	79.34	1,263.21	359.60	986.49	749.27	13.33	-0.99	0.117
145.00	-13.49	-3.24	0.00	-62.6	0.00	62.61	1,237.26	343.48	900.03	700.72	14.39	-1.04	0.100
150.00	-9.38	-2.20	0.00	-46.0	0.00	46.04	1,208.42	327.35	817.54	652.01	15.5	-1.08	0.078
155.00	-9.00	-2.10	0.00	-35.0	0.00	35.02	1,176.70	311.23	739.02	603.37	16.65	-1.11	0.066
160.00	-8.66	-2.02	0.00	-24.5	0.00	24.50	1,142.10	295.11	664.45	555.03	17.83	-1.14	0.052
163.00	-5.11	-1.31	0.00	-18.4	0.00	18.43	1,119.95	285.43	621.62	526.27	18.56	-1.16	0.040
165.00	-4.99	-1.26	0.00	-15.8	0.00	15.81	1,104.62	278.98	593.85	507.22	19.04	-1.17	0.036
169.00	-4.38	-1.10	0.00	-10.8	0.00	10.79	1,072.56	266.09	540.23	469.51	20.03	-1.18	0.027
169.90	-4.28	-1.05	0.00	-9.8	0.00	9.80	1,065.09	263.18	528.51	461.11	20.25	-1.18	0.025
170.00	-4.28	-1.01	0.00	-9.7	0.00	9.70	1,064.26	262.86	527.22	460.18	20.28	-1.18	0.025
175.00	-4.00	-0.93	0.00	-4.6	0.00	4.63	1,021.02	246.74	464.55	414.13	21.52	-1.2	0.015
180.00	0.00	-0.84	0.00	0.0	0.00	0.00	968.59	230.62	405.84	366.91	22.78	-1.2	0.000

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

(Based on ASCE7-16 Chapters 11, 12 and 15)

Spectral Response Acceleration for Short Period (S_S):	0.205
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.055
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_e):	1.000
Site Coefficient F_a:	1.600
Site Coefficient F_v:	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.219
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.088
Seismic Response Coefficient (C_s):	0.030
Upper Limit C_S:	0.030
Lower Limit C_S:	0.030
Period based on Rayleigh Method (sec):	2.710
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	2.000
Total Unfactored Dead Load:	51.310 k
Seismic Base Shear (E):	1.540 k

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)
45	177.5	260	8,188	0.014	21	323
44	172.5	276	8,198	0.014	21	343
43	169.95	6	164	0.000	0	7
42	169.45	52	1,479	0.002	4	64
41	167	235	6,555	0.011	17	292
40	164	121	3,262	0.006	9	151
39	161.5	194	5,070	0.009	13	242
38	157.5	337	8,348	0.014	22	419
37	152.5	380	8,848	0.015	23	473
36	147.5	462	10,059	0.017	26	575
35	142.5	478	9,706	0.016	25	595
34	139	196	3,779	0.006	10	243
33	136.5	601	11,193	0.019	29	747
32	134.2084	323	5,810	0.010	15	401
31	131.7084	453	7,860	0.013	20	564
30	127.5	682	11,084	0.019	29	848
29	122.5	704	10,567	0.018	28	876
28	117.5	738	10,191	0.017	27	918
27	112.5	760	9,625	0.016	25	946
26	107.5	783	9,046	0.015	24	974
25	102.5	805	8,459	0.014	22	1,001
24	97.5	827	7,866	0.013	21	1,029
23	94.5	168	1,502	0.002	4	209
22	92	1,345	11,387	0.019	30	1,673
21	89.0417	656	5,199	0.009	14	816
20	86.5417	621	4,654	0.008	12	773
19	82.5	1,029	7,006	0.012	18	1,280
18	77.5	1,056	6,344	0.011	17	1,314
17	72.5	1,083	5,693	0.010	15	1,347
16	67.5	1,110	5,056	0.009	13	1,380
15	62.5	1,137	4,440	0.008	12	1,414
14	57.5	1,163	3,846	0.006	10	1,447
13	53	950	2,668	0.004	7	1,182
12	50.5	482	1,229	0.002	3	599

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
11	47.5	2,444	5,513	0.009	14	3,039
10	44.4167	579	1,141	0.002	3	720
9	41.9167	1,081	1,900	0.003	5	1,345
8	37.5	1,438	2,022	0.003	5	1,788
7	32.5	1,469	1,552	0.003	4	1,827
6	27.5	1,500	1,135	0.002	3	1,866
5	22.5	1,532	775	0.001	2	1,905
4	17.5	1,563	479	0.001	1	1,944
3	12.5	1,594	249	0.000	1	1,983
2	7.5	1,626	91	0.000	0	2,022
1	2.5	1,657	10	0.000	0	2,061
Ericsson 4460 BAND 2/25	180	327	10,595	0.018	28	407
Ericsson 4480 BAND 71	180	243	7,873	0.013	21	302
Commscope VV-65A-R1B	180	74	2,401	0.004	6	92
Ericsson AIR 6419 B41	180	250	8,097	0.014	21	311
RFS APXVAALL24 43-U-NA20	180	368	11,936	0.020	31	458
Generic Round Platform with Handrails	180	2,500	81,000	0.137	211	3,109
Generic Round Platform with Handrails	163	2,500	66,422	0.112	173	3,109
Generic Round Platform with Handrails	150	2,500	56,250	0.095	147	3,109
Generic 6' Omni	169.9	50	1,443	0.002	4	62
Generic Round Side Arm	169	375	10,710	0.018	28	466
Samsung B5/B13 RRH-BR04C	163	211	5,603	0.010	15	262
Samsung B2/B66A RRH-BR049	163	253	6,727	0.011	18	315
RFS DB-B1-6C-12AB-0Z	163	43	1,137	0.002	3	53
Commscope JAHH-65B-R3B	163	364	9,660	0.016	25	452
LGP Allgon LGP21903	150	33	742	0.001	2	41
Powerwave Allgon LGP21401	150	85	1,904	0.003	5	105
Raycap DC6-48-60-18-8F (23.5" Height)	150	40	900	0.002	2	50
Ericsson Radio 8843 - B2 + B66A	150	216	4,853	0.008	13	268
Ericsson RRUS 4449 B5, B12	150	213	4,792	0.008	12	265
Powerwave Allgon 7770.00	150	105	2,362	0.004	6	131
CCI HPA65R-BU6A	150	42	943	0.002	2	52
CCI HPA65R-BU8A	150	108	2,430	0.004	6	134
Kathrein Scala 80010965	150	98	2,196	0.004	6	121
Kathrein Scala 80010966	150	229	5,157	0.009	13	285
Commscope RDIDC-9181-PF-48	120	22	315	0.000	1	27
Fujitsu TA08025-B604	120	192	2,760	0.005	7	238
Fujitsu TA08025-B605	120	225	3,240	0.006	8	280
JMA Wireless MX08FRO665-21	120	194	2,786	0.005	7	241
Generic Flat Platform with Handrails	120	2,500	36,000	0.061	94	3,109
		51,314	590,489	1.000	1,539	63,821

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)
45	177.5	260	8,188	0.014	21	223
44	172.5	276	8,198	0.014	21	236
43	169.95	6	164	0.000	0	5
42	169.45	52	1,479	0.002	4	44
41	167	235	6,555	0.011	17	201
40	164	121	3,262	0.006	9	104
39	161.5	194	5,070	0.009	13	166
38	157.5	337	8,348	0.014	22	288
37	152.5	380	8,848	0.015	23	326
36	147.5	462	10,059	0.017	26	396
35	142.5	478	9,706	0.016	25	409
34	139	196	3,779	0.006	10	167
33	136.5	601	11,193	0.019	29	514
32	134.2084	323	5,810	0.010	15	276
31	131.7084	453	7,860	0.013	20	388
30	127.5	682	11,084	0.019	29	584
29	122.5	704	10,567	0.018	28	603

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
28	117.5	738	10,191	0.017	27	632
27	112.5	760	9,625	0.016	25	651
26	107.5	783	9,046	0.015	24	670
25	102.5	805	8,459	0.014	22	689
24	97.5	827	7,866	0.013	21	709
23	94.5	168	1,502	0.002	4	144
22	92	1,345	11,387	0.019	30	1,152
21	89.0417	656	5,199	0.009	14	562
20	86.5417	621	4,654	0.008	12	532
19	82.5	1,029	7,006	0.012	18	881
18	77.5	1,056	6,344	0.011	17	904
17	72.5	1,083	5,693	0.010	15	927
16	67.5	1,110	5,056	0.009	13	950
15	62.5	1,137	4,440	0.008	12	973
14	57.5	1,163	3,846	0.006	10	996
13	53	950	2,668	0.004	7	813
12	50.5	482	1,229	0.002	3	412
11	47.5	2,444	5,513	0.009	14	2,092
10	44.4167	579	1,141	0.002	3	495
9	41.9167	1,081	1,900	0.003	5	926
8	37.5	1,438	2,022	0.003	5	1,231
7	32.5	1,469	1,552	0.003	4	1,258
6	27.5	1,500	1,135	0.002	3	1,285
5	22.5	1,532	775	0.001	2	1,312
4	17.5	1,563	479	0.001	1	1,338
3	12.5	1,594	249	0.000	1	1,365
2	7.5	1,626	91	0.000	0	1,392
1	2.5	1,657	10	0.000	0	1,419
Ericsson 4460 BAND 2/25	180	327	10,595	0.018	28	280
Ericsson 4480 BAND 71	180	243	7,873	0.013	21	208
Commscope VV-65A-R1B	180	74	2,401	0.004	6	63
Ericsson AIR 6419 B41	180	250	8,097	0.014	21	214
RFS APXVAALL24 43-U-NA20	180	368	11,936	0.020	31	315
Generic Round Platform with Handrails	180	2,500	81,000	0.137	211	2,141
Generic Round Platform with Handrails	163	2,500	66,422	0.112	173	2,141
Generic Round Platform with Handrails	150	2,500	56,250	0.095	147	2,141
Generic 6' Omni	169.9	50	1,443	0.002	4	43
Generic Round Side Arm	169	375	10,710	0.018	28	321
Samsung B5/B13 RRH-BR04C	163	211	5,603	0.010	15	181
Samsung B2/B66A RRH-BR049	163	253	6,727	0.011	18	217
RFS DB-B1-6C-12AB-0Z	163	43	1,137	0.002	3	37
Commscope JAHH-65B-R3B	163	364	9,660	0.016	25	311
LGP Allgon LGP21903	150	33	742	0.001	2	28
Powerwave Allgon LGP21401	150	85	1,904	0.003	5	72
Raycap DC6-48-60-18-8F (23.5" Height)	150	40	900	0.002	2	34
Ericsson Radio 8843 - B2 + B66A	150	216	4,853	0.008	13	185
Ericsson RRUS 4449 B5, B12	150	213	4,792	0.008	12	182
Powerwave Allgon 7770.00	150	105	2,362	0.004	6	90
CCI HPA65R-BU6A	150	42	943	0.002	2	36
CCI HPA65R-BU8A	150	108	2,430	0.004	6	92
Kathrein Scala 80010965	150	98	2,196	0.004	6	84
Kathrein Scala 80010966	150	229	5,157	0.009	13	196
Commscope RDIDC-9181-PF-48	120	22	315	0.000	1	19
Fujitsu TA08025-B604	120	192	2,760	0.005	7	164
Fujitsu TA08025-B605	120	225	3,240	0.006	8	193
JMA Wireless MX08FRO665-21	120	194	2,786	0.005	7	166
Generic Flat Platform with Handrails	120	2,500	36,000	0.061	94	2,141
		51,314	590,489	1.000	1,539	43,938

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

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-61.76	-1.54	0.00	-229.58	0.00	229.58	5,229.17	1,571.49	9,422	6,783.18	0.00	0.00	0.05
5.00	-59.74	-1.55	0.00	-221.87	0.00	221.87	5,190.65	1,539.25	9,039	6,594.14	0.00	-0.01	0.05
10.00	-57.75	-1.56	0.00	-214.12	0.00	214.12	5,149.25	1,507.01	8,665	6,403.58	0.01	-0.01	0.05
15.00	-55.81	-1.56	0.00	-206.34	0.00	206.34	5,104.97	1,474.78	8,298	6,211.74	0.03	-0.02	0.04
20.00	-53.91	-1.57	0.00	-198.54	0.00	198.54	5,057.81	1,442.54	7,939	6,018.84	0.06	-0.03	0.04
25.00	-52.04	-1.57	0.00	-190.71	0.00	190.71	5,007.77	1,410.30	7,588	5,825.12	0.09	-0.04	0.04
30.00	-50.21	-1.57	0.00	-182.87	0.00	182.87	4,954.85	1,378.06	7,246	5,630.81	0.14	-0.04	0.04
35.00	-48.42	-1.57	0.00	-175.02	0.00	175.02	4,899.05	1,345.82	6,911	5,436.14	0.19	-0.05	0.04
40.00	-47.08	-1.57	0.00	-167.16	0.00	167.16	4,840.37	1,313.58	6,584	5,241.34	0.25	-0.06	0.04
43.83	-46.36	-1.57	0.00	-161.14	0.00	161.14	4,793.44	1,288.87	6,338	5,092.06	0.30	-0.07	0.04
45.00	-43.32	-1.56	0.00	-159.31	0.00	159.31	4,778.81	1,281.35	6,264	5,046.65	0.32	-0.07	0.04
50.00	-42.72	-1.56	0.00	-151.53	0.00	151.53	4,714.38	1,249.11	5,953	4,852.29	0.40	-0.08	0.04
51.00	-41.54	-1.55	0.00	-149.97	0.00	149.97	3,748.95	1,082.35	5,214	3,905.86	0.41	-0.08	0.05
55.00	-40.09	-1.55	0.00	-143.77	0.00	143.77	3,716.58	1,060.25	5,004	3,792.47	0.48	-0.09	0.05
60.00	-38.68	-1.54	0.00	-136.05	0.00	136.05	3,673.53	1,032.61	4,746	3,650.12	0.58	-0.10	0.05
65.00	-37.30	-1.53	0.00	-128.36	0.00	128.36	3,627.60	1,004.98	4,496	3,507.29	0.69	-0.11	0.05
70.00	-35.95	-1.52	0.00	-120.71	0.00	120.71	3,578.79	977.35	4,252	3,364.21	0.81	-0.12	0.05
75.00	-34.64	-1.51	0.00	-113.11	0.00	113.11	3,527.09	949.72	4,015	3,221.11	0.94	-0.13	0.05
80.00	-33.35	-1.49	0.00	-105.58	0.00	105.58	3,472.52	922.08	3,785	3,078.24	1.08	-0.14	0.04
85.00	-32.58	-1.48	0.00	-98.13	0.00	98.13	3,415.07	894.45	3,561	2,935.81	1.24	-0.15	0.04
88.08	-31.77	-1.47	0.00	-93.56	0.00	93.56	3,378.20	877.41	3,427	2,848.30	1.34	-0.16	0.04
90.00	-30.09	-1.44	0.00	-90.74	0.00	90.74	3,354.74	866.82	3,345	2,794.06	1.40	-0.17	0.04
94.00	-29.88	-1.44	0.00	-84.98	0.00	84.98	2,549.41	716.07	2,739	2,107.92	1.55	-0.17	0.05
95.00	-28.85	-1.42	0.00	-83.54	0.00	83.54	2,541.91	711.46	2,704	2,088.10	1.58	-0.18	0.05
100.00	-27.85	-1.40	0.00	-76.45	0.00	76.45	2,502.69	688.43	2,532	1,988.82	1.78	-0.19	0.05
105.00	-26.88	-1.38	0.00	-69.45	0.00	69.45	2,460.58	665.41	2,365	1,889.44	1.98	-0.20	0.05
110.00	-25.93	-1.36	0.00	-62.56	0.00	62.56	2,415.60	642.38	2,204	1,790.18	2.20	-0.22	0.05
115.00	-25.01	-1.33	0.00	-55.77	0.00	55.77	2,367.74	619.35	2,049	1,691.27	2.44	-0.23	0.04
120.00	-20.24	-1.17	0.00	-49.11	0.00	49.11	2,317.00	596.32	1,900	1,592.95	2.69	-0.24	0.04
125.00	-19.40	-1.14	0.00	-43.25	0.00	43.25	2,263.38	573.30	1,756	1,495.45	2.95	-0.26	0.04
130.00	-18.83	-1.12	0.00	-37.53	0.00	37.53	2,206.88	550.27	1,618	1,398.99	3.23	-0.27	0.04
133.42	-18.43	-1.11	0.00	-33.69	0.00	33.69	2,166.61	534.53	1,526	1,333.80	3.43	-0.28	0.03
135.00	-17.68	-1.08	0.00	-31.93	0.00	31.93	2,147.49	527.24	1,485	1,303.81	3.52	-0.28	0.03
138.00	-17.44	-1.07	0.00	-28.69	0.00	28.69	1,272.79	366.05	1,022	768.59	3.70	-0.29	0.05
140.00	-16.85	-1.04	0.00	-26.55	0.00	26.55	1,263.21	359.60	986	749.27	3.83	-0.30	0.05
145.00	-16.27	-1.02	0.00	-21.33	0.00	21.33	1,237.26	343.48	900	700.72	4.15	-0.31	0.04
150.00	-11.24	-0.76	0.00	-16.24	0.00	16.24	1,208.42	327.35	818	652.01	4.48	-0.33	0.03
155.00	-10.82	-0.73	0.00	-12.46	0.00	12.46	1,176.70	311.23	739	603.37	4.83	-0.34	0.03
160.00	-10.58	-0.72	0.00	-8.79	0.00	8.79	1,142.10	295.11	664	555.03	5.19	-0.35	0.03
163.00	-6.23	-0.45	0.00	-6.63	0.00	6.63	1,119.95	285.43	622	526.27	5.41	-0.35	0.02
165.00	-5.94	-0.43	0.00	-5.73	0.00	5.73	1,104.62	278.98	594	507.22	5.56	-0.36	0.02
169.00	-5.41	-0.40	0.00	-3.99	0.00	3.99	1,072.56	266.09	540	469.51	5.86	-0.36	0.01
169.90	-5.34	-0.39	0.00	-3.63	0.00	3.63	1,065.09	263.18	529	461.11	5.93	-0.36	0.01
170.00	-5.00	-0.37	0.00	-3.60	0.00	3.60	1,064.26	262.86	527	460.18	5.94	-0.36	0.01
175.00	-4.68	-0.35	0.00	-1.74	0.00	1.74	1,021.02	246.74	465	414.13	6.32	-0.37	0.01
180.00	0.00	-0.32	0.00	0.00	0.00	0.00	968.59	230.62	406	366.91	6.71	-0.37	0.00

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 (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-42.52	-1.54	0.00	-225.77	0.00	225.77	5,229.17	1,571.49	9,422	6,783.18	0.00	0.00	0.04
5.00	-41.13	-1.55	0.00	-218.07	0.00	218.07	5,190.65	1,539.25	9,039	6,594.14	0.00	-0.01	0.04
10.00	-39.76	-1.55	0.00	-210.34	0.00	210.34	5,149.25	1,507.01	8,665	6,403.58	0.01	-0.01	0.04
15.00	-38.42	-1.55	0.00	-202.59	0.00	202.59	5,104.97	1,474.78	8,298	6,211.74	0.03	-0.02	0.04
20.00	-37.11	-1.56	0.00	-194.82	0.00	194.82	5,057.81	1,442.54	7,939	6,018.84	0.06	-0.03	0.04
25.00	-35.83	-1.56	0.00	-187.04	0.00	187.04	5,007.77	1,410.30	7,588	5,825.12	0.09	-0.04	0.04
30.00	-34.57	-1.56	0.00	-179.26	0.00	179.26	4,954.85	1,378.06	7,246	5,630.81	0.13	-0.04	0.04
35.00	-33.34	-1.55	0.00	-171.48	0.00	171.48	4,899.05	1,345.82	6,911	5,436.14	0.19	-0.05	0.04
40.00	-32.41	-1.55	0.00	-163.70	0.00	163.70	4,840.37	1,313.58	6,584	5,241.34	0.24	-0.06	0.04
43.83	-31.92	-1.55	0.00	-157.75	0.00	157.75	4,793.44	1,288.87	6,338	5,092.06	0.29	-0.07	0.04
45.00	-29.82	-1.54	0.00	-155.94	0.00	155.94	4,778.81	1,281.35	6,264	5,046.65	0.31	-0.07	0.04
50.00	-29.41	-1.54	0.00	-148.25	0.00	148.25	4,714.38	1,249.11	5,953	4,852.29	0.39	-0.08	0.04
51.00	-28.60	-1.53	0.00	-146.71	0.00	146.71	3,748.95	1,082.35	5,214	3,905.86	0.40	-0.08	0.05
55.00	-27.60	-1.52	0.00	-140.58	0.00	140.58	3,716.58	1,060.25	5,004	3,792.47	0.47	-0.09	0.04
60.00	-26.63	-1.52	0.00	-132.96	0.00	132.96	3,673.53	1,032.61	4,746	3,650.12	0.57	-0.10	0.04
65.00	-25.68	-1.51	0.00	-125.39	0.00	125.39	3,627.60	1,004.98	4,496	3,507.29	0.68	-0.11	0.04

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
70.00	-24.75	-1.49	0.00	-117.86	0.00	117.86	3,578.79	977.35	4,252	3,364.21	0.79	-0.12	0.04
75.00	-23.84	-1.48	0.00	-110.39	0.00	110.39	3,527.09	949.72	4,015	3,221.11	0.92	-0.13	0.04
80.00	-22.96	-1.46	0.00	-103.00	0.00	103.00	3,472.52	922.08	3,785	3,078.24	1.06	-0.14	0.04
85.00	-22.43	-1.45	0.00	-95.68	0.00	95.68	3,415.07	894.45	3,561	2,935.81	1.21	-0.15	0.04
88.08	-21.87	-1.44	0.00	-91.20	0.00	91.20	3,378.20	877.41	3,427	2,848.30	1.31	-0.16	0.04
90.00	-20.72	-1.41	0.00	-88.44	0.00	88.44	3,354.74	866.82	3,345	2,794.06	1.38	-0.16	0.04
94.00	-20.57	-1.41	0.00	-82.80	0.00	82.80	2,549.41	716.07	2,739	2,107.92	1.52	-0.17	0.05
95.00	-19.86	-1.39	0.00	-81.39	0.00	81.39	2,541.91	711.46	2,704	2,088.10	1.55	-0.17	0.05
100.00	-19.17	-1.37	0.00	-74.45	0.00	74.45	2,502.69	688.43	2,532	1,988.82	1.74	-0.19	0.05
105.00	-18.50	-1.35	0.00	-67.61	0.00	67.61	2,460.58	665.41	2,365	1,889.44	1.94	-0.20	0.04
110.00	-17.85	-1.32	0.00	-60.87	0.00	60.87	2,415.60	642.38	2,204	1,790.18	2.16	-0.21	0.04
115.00	-17.22	-1.30	0.00	-54.26	0.00	54.26	2,367.74	619.35	2,049	1,691.27	2.39	-0.23	0.04
120.00	-13.94	-1.14	0.00	-47.76	0.00	47.76	2,317.00	596.32	1,900	1,592.95	2.63	-0.24	0.04
125.00	-13.35	-1.11	0.00	-42.05	0.00	42.05	2,263.38	573.30	1,756	1,495.45	2.89	-0.25	0.03
130.00	-12.96	-1.10	0.00	-36.47	0.00	36.47	2,206.88	550.27	1,618	1,398.99	3.16	-0.26	0.03
133.42	-12.69	-1.08	0.00	-32.73	0.00	32.73	2,166.61	534.53	1,526	1,333.80	3.35	-0.27	0.03
135.00	-12.17	-1.05	0.00	-31.02	0.00	31.02	2,147.49	527.24	1,485	1,303.81	3.45	-0.28	0.03
138.00	-12.01	-1.04	0.00	-27.87	0.00	27.87	1,272.79	366.05	1,022	768.59	3.62	-0.28	0.05
140.00	-11.60	-1.01	0.00	-25.79	0.00	25.79	1,263.21	359.60	986	749.27	3.74	-0.29	0.04
145.00	-11.20	-0.99	0.00	-20.72	0.00	20.72	1,237.26	343.48	900	700.72	4.06	-0.30	0.04
150.00	-7.73	-0.73	0.00	-15.77	0.00	15.77	1,208.42	327.35	818	652.01	4.38	-0.32	0.03
155.00	-7.45	-0.71	0.00	-12.10	0.00	12.10	1,176.70	311.23	739	603.37	4.72	-0.33	0.03
160.00	-7.28	-0.70	0.00	-8.54	0.00	8.54	1,142.10	295.11	664	555.03	5.07	-0.34	0.02
163.00	-4.29	-0.44	0.00	-6.44	0.00	6.44	1,119.95	285.43	622	526.27	5.29	-0.35	0.02
165.00	-4.09	-0.42	0.00	-5.57	0.00	5.57	1,104.62	278.98	594	507.22	5.43	-0.35	0.02
169.00	-3.73	-0.39	0.00	-3.88	0.00	3.88	1,072.56	266.09	540	469.51	5.73	-0.35	0.01
169.90	-3.68	-0.38	0.00	-3.53	0.00	3.53	1,065.09	263.18	529	461.11	5.80	-0.35	0.01
170.00	-3.44	-0.36	0.00	-3.49	0.00	3.49	1,064.26	262.86	527	460.18	5.80	-0.36	0.01
175.00	-3.22	-0.34	0.00	-1.69	0.00	1.69	1,021.02	246.74	465	414.13	6.18	-0.36	0.01
180.00	0.00	-0.32	0.00	0.00	0.00	0.00	968.59	230.62	406	366.91	6.56	-0.36	0.00

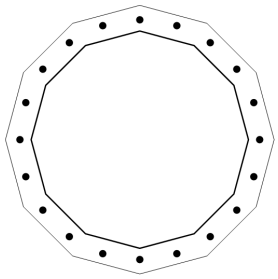
ANALYSIS SUMMARY

	Reactions						Max Usage	
Load Case	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	34.70	0.00	61.54	0.00	0.00	4079.09	51.00	0.64
0.9D + 1.0W	34.68	0.00	46.14	0.00	0.00	4029.35	51.00	0.62
1.2D + 1.0Di + 1.0Wi	7.76	0.00	79.69	0.00	0.00	937.61	94.00	0.16
1.2D + 1.0Ev + 1.0Eh	1.57	0.00	61.76	0.00	0.00	229.58	94.00	0.05
0.9D - 1.0Ev + 1.0Eh	1.56	0.00	42.52	0.00	0.00	225.77	94.00	0.05
1.0D + 1.0W	7.51	0.00	51.31	0.00	0.00	876.36	51.00	0.14

BASE PLATE ANALYSIS @ 0 FT

PLATE PARAMETERS (ID# 723)

Diameter:	78.76	in
Shape:	12	
Thickness:	2.5	in
Grade:	A871-60	
Yield Strength:	60	ksi
Tensile Strength:	75	ksi
Rod Detail Type:	d	
Clear Distance	6	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Plastic	
Neutral Axis:	342	°



ANCHOR ROD PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	Fy (ksi)	Fu (ksi)	Spacing (in)	Offset (°)
Original [ID# 3215]	Radial	20	2.25	72.76	A615-75	75	100	-	-

ANCHOR ROD GEOMETRY AND APPLIED LOADS --- ORIGINAL (20) 2.25"ø [ID 3215]

Position	Radians	X (in)	Y (in)	Moment Arm (in)	Inertia (in^4)	Axial Load (k)	Shear Load (k)
1	0.314	34.60	11.24	20.612	1380.655	116.70	2.22
2	0.628	29.43	21.38	28.370	2614.804	116.70	1.62
3	0.942	21.38	29.43	33.351	3613.248	116.70	0.85
4	1.257	11.24	34.60	35.068	3994.619	116.70	0.00
5	1.571	0.00	36.38	33.351	3613.248	116.70	0.85
6	1.885	-11.24	34.60	28.370	2614.801	116.70	1.62
7	2.199	-21.38	29.43	20.612	1380.656	116.70	2.22
8	2.513	-29.43	21.38	10.836	382.212	116.70	2.61
9	2.827	-34.60	11.24	0.000	0.839	116.70	2.75
10	3.142	-36.38	0.00	-10.836	382.212	-104.39	2.61
11	3.456	-34.60	-11.24	-20.612	1380.657	-104.39	2.22
12	3.770	-29.43	-21.38	-28.370	2614.801	-104.39	1.62
13	4.084	-21.38	-29.43	-33.351	3613.246	-104.39	0.85
14	4.398	-11.24	-34.60	-35.068	3994.619	-104.39	0.00
15	4.712	0.00	-36.38	-33.351	3613.247	-104.39	0.85
16	5.027	11.24	-34.60	-28.370	2614.803	-104.39	1.62
17	5.341	21.38	-29.43	-20.612	1380.654	-104.39	2.22
18	5.655	29.43	-21.38	-10.836	382.211	-104.39	2.61
19	5.969	34.60	-11.24	0.000	0.839	-104.39	2.75
20	6.283	36.38	0.00	10.836	382.211	116.70	2.61

REACTION DISTRIBUTION

Component	ID	Moment Mu (k-ft)	Axial Load Pu (k)	Shear Vu (k)	Moment Factor
Pole	64"ø x 0.4375" (12 Sides)	4079.1	61.54	34.70	1.000
Bolt Group	Original (20) 2.25"ø	4079.1	-	34.70	1.000
	TOTALS	**4079.09**	**61.54**	**34.7**	

COMPONENT PROPERTIES

Component	ID	Gross Area (in^2)	Net Area (in^2)	Individual Inertia (in^4)	Moment of Inertia (in^4)	Threads/in
Pole	64"ø x 0.4375" (12 Sides)	86.3687	-	-	43623.80	-
Bolt Group	Original (20) 2.25"ø	3.9761	3.2477	0.8393	39954.58	4.5

EXTERNAL BASE PLATE BEND LINE ANALYSIS @ 0 FT

POLE PROPERTIES

Flat-to-Flat Diameter:	64.12	in
Point-to-Point Diameter:	66.39	in
Flat Width:	17.182	in
Flat Radians:	0.524	rad

PLATE PROPERTIES

Neutral Axis:	342	°
Bend Line Lower Limit:	0.766	rad
Bend Line Upper Limit:	1.747	rad

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in^3)	Applied Moment Mu (k-in)	Moment Capacity ϕMn (k-in)	Ratio
Flat	41.071	0.00	64.173	778.5	3465.3	0.225
Corner	37.304	0.00	58.287	310.0	3147.5	0.099
Circumferential	49.380	0.00	77.157	776.1	4166.5	0.186

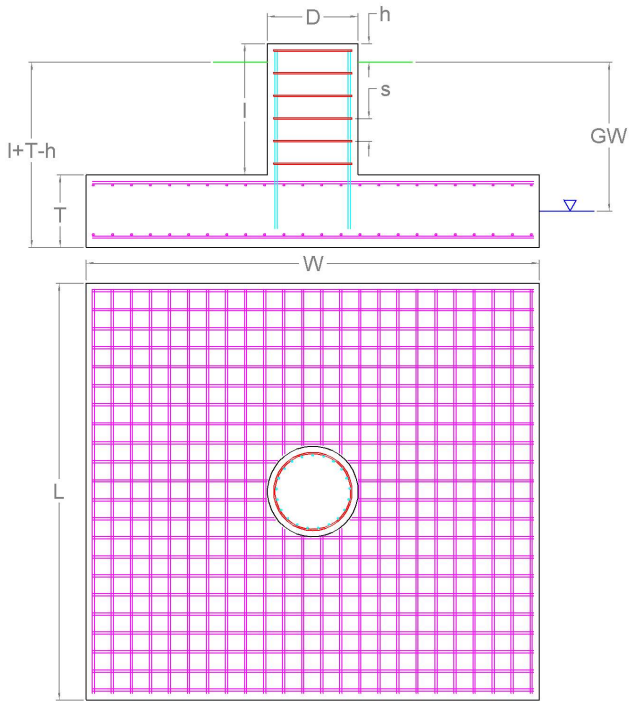
PLASTIC ANCHOR ROD ANALYSIS

Class	Group Quantity	Rod Diameter (in)	Applied Axial Load Pu (k)	Applied Shear Load Vu (k)	Compressive Capacity ϕPn (k)	Ratio
Original	20	2.25	116.7	2.7	243.6	0.479

Monolithic Mat Foundation Analysis (ANSI/TIA-222-H)

Foundation & Tower Parameters			
Ignore Mat Rebar?		N	
Ignore Pier Rebar?		N	
Foundation has Pier(s)?		Y	
Pier Shape		Round	
Pier Diameter	*D*	7	ft
Pier Height Above Ground	*h*	0.5	ft
Pier Length	*l*	5.5	ft
Mat Base Depth	*l+T-h*	8.5	ft
Mat Length	*L*	25	ft
Mat Width	*W*	25	ft
Mat Thickness	*T*	3.5	ft
Unit Weight of Concrete		150	pcf
Tower Eccentricity	ecc	0	ft
Tower Face Width	FW	5.3	ft
Tower Leg Count		1	

Reactions		
Moment, M_u	4,079.09	k-ft
Shear, V_u	34.7	k
Axial, P_u	61.54	k
Uplift, T_u	0	k
Tower Weight	61.54	k
Tower Dead Load Factor	0.9	



Soil Parameters			
Water Table Depth [BGL]	*GW*	10	ft
Unit Weight of Soil		125	pcf
Unit Weight of Soil [Submerged]		62.6	pcf
Shear Friction Coefficient		0.3	
Ultimate Bearing Pressure		10,000	psf
Bearing Pressure Type		Net	
Conical Failure Angle		30	°
Capacity Increase (Transient Loads)		1.00	
Soil Strength Reduction Factor, ϕ_s		0.75	
Dead Load Factor		1.2	

Soil Capacities		
Design Moment, M_u	4,391.39	k-ft
Nominal Moment Capacity, $\phi_m M_n$	9,430.76	k-ft
$M_u / \phi_s M_n$	46.6%	
Net Bearing Pressure	2,219	k
Nominal Bearing Capacity, $\phi_b P_n$	8,296	k
Bearing Pressure Controlling Load Direction	Diagonal to Pad Edge	
$P_u / \phi_s P_n$	26.7%	
Ultimate Friction Resistance	233.32	k
Ultimate Passive Pressure Resistance	73.83	k
Nominal Shear Capacity, $\phi_s V_n$	230.36	k
$V_u / \phi_s V_n$	15.0%	

Mat Reinforcement Parameters		
Concrete Compressive Strength, f'_c	4,000	psi
Mat Rebar Quantity [Lower]	30	
Mat Rebar Size # [Lower]	11	
Mat Single Rebar Area [Lower]	1.56	in^2
Mat Rebar Quantity [Upper]	30	
Mat Rebar Size # [Upper]	11	
Mat Single Rebar Area [Upper]	1.56	in^2
Mat Rebar Yield Strength, F_y	60	ksi
Mat Clear Cover	3	in
Bending Reduction Factor, ϕ_B	0.9	
Shear Reduction Factor, ϕ_V	0.75	
Compression Reduction Factor, ϕ_C	0.65	
Steel Elastic Modulus	29,000	ksi

Mat Reinforcement Capacities		
Compression Zone Factor, β_1	0.85	
Lower Reinforcement Spacing	10.11	in
Upper Reinforcement Spacing	10.11	in
One Way Design Shear, V_u	140.98	k
One Way Shear Capacity, ϕV_c	945.95	k
One Way Shear Controlling Load Direction	Diagonal to Pad Edge	
$V_u / \phi V_c$	**14.9%**	
Punching Design Shear Stress, v_u	37.9	psi
Punching Shear Capacity, $\phi_c V_n$	189.74	psi
$v_u / \phi_c V_n$	**20.0%**	
Moment Transfer Effective Flexural Width, $_f$	17.5	in
Neutral Axis Depth	2.85	In
Moment Transfer Flexural Capacity, $\phi M_{sc,f}$	66,755.09	k-in
$\gamma_f M_{sc} / \phi M_{sc,f}$	**0.0%**	
Flexure Due to Soil Pressure, M_u	1,612.4	k-ft
Lower Steel Mat Moment Capacity, ϕM_n	7,677.42	k-ft
Flexural Steel Controlling Load Direction	Parallel to Pad Edge	
$M_u / \phi M_n$	**21.0%**	
Flexure Due to Uplift, M_u	1,164.38	k-ft
Upper Steel Mat Moment Capacity, ϕM_n	7,677.42	k-ft
$M_u / \phi M_n$	**15.2%**	

Pier Reinforcement Parameters			
Concrete Compressive Strength (f'_c)		4,000	psi
Pier Rebar Quantity		30	
Pier Rebar Size #		11	
Pier Single Rebar Area		1.56	in^2
Pier Rebar Yield Strength (F_y)		60	ksi
Tie Rebar Size #		5	
Tie Rebar Area (Single)		0.31	in^2
Tie Rebar Spacing	*s*	12	in
Tie Rebar Yield Strength (F_y)		60	ksi
Rebar Cage Diameter		75.38	in

Pier Reinforcement Capacities		
Design Moment (M_u)	4,269.94	k-ft
Nominal Moment Capacity ($\phi_B M_n$)	7,768.29	k-ft
$M_u / \phi_B M_n$	**55.0%**	
Design Shear (V_u)	34.7	k
Nominal Shear Capacity ($\phi_V V_n$)	684.9	k
$V_u / \phi_V V_n$	**5.1%**	
Design Compression (P_u)	61.54	k
Nominal Compression Capacity ($\phi_P P_n$)	9,763.78	k
$P_u / \phi_P P_n$	**0.6%**	
Pier Reinforcement Ratio	0.001	-
$M_u / \phi_B M_n + T_u / \phi_T T_n$	**55.0%**	

RAN Template:	A&L Template:
67E5D998E MUAC	67E5998E_1xAIR+1OP+1QP

CTHA059E_Anchor_4

Print Name: Preliminary (RFDS_For_Scoping)
PORs: Anchor_Phase 3
L600_L600 Coverage
Replacement_Colo Consolidation

Section 1 - Site Information

Site ID: CTHA059E
Status: Final
Version: 4
Project Type: Anchor
Approved: 4/20/2022 2:59:49 PM
Approved By: Pratik.Patil30@T-Mobile.com
Last Modified: 4/20/2022 2:59:49 PM
Last Modified By: Pratik.Patil30@T-Mobile.com

Site Name: CTHA059E
Site Class: Monopole
Site Type: Structure Non Building
Plan Year: 2022
Market: CONNECTICUT CT
Vendor: Ericsson
Landlord: American Tower

Latitude: 41.54481900
Longitude: -72.30489200
Address: 355 Rte 85 aka- New London Rd.
City, State: Colchester, CT
Region: NORTHEAST

RAN Template: 67E5D998E MUAC			AL Template: 67E5998E_1xAIR+1OP+1QP	
Sector Count: 3	**Antenna Count:** 9	**Coax Line Count:** 0	**TMA Count:** 0	**RRU Count:** 6

Section 2 - Existing Template Images

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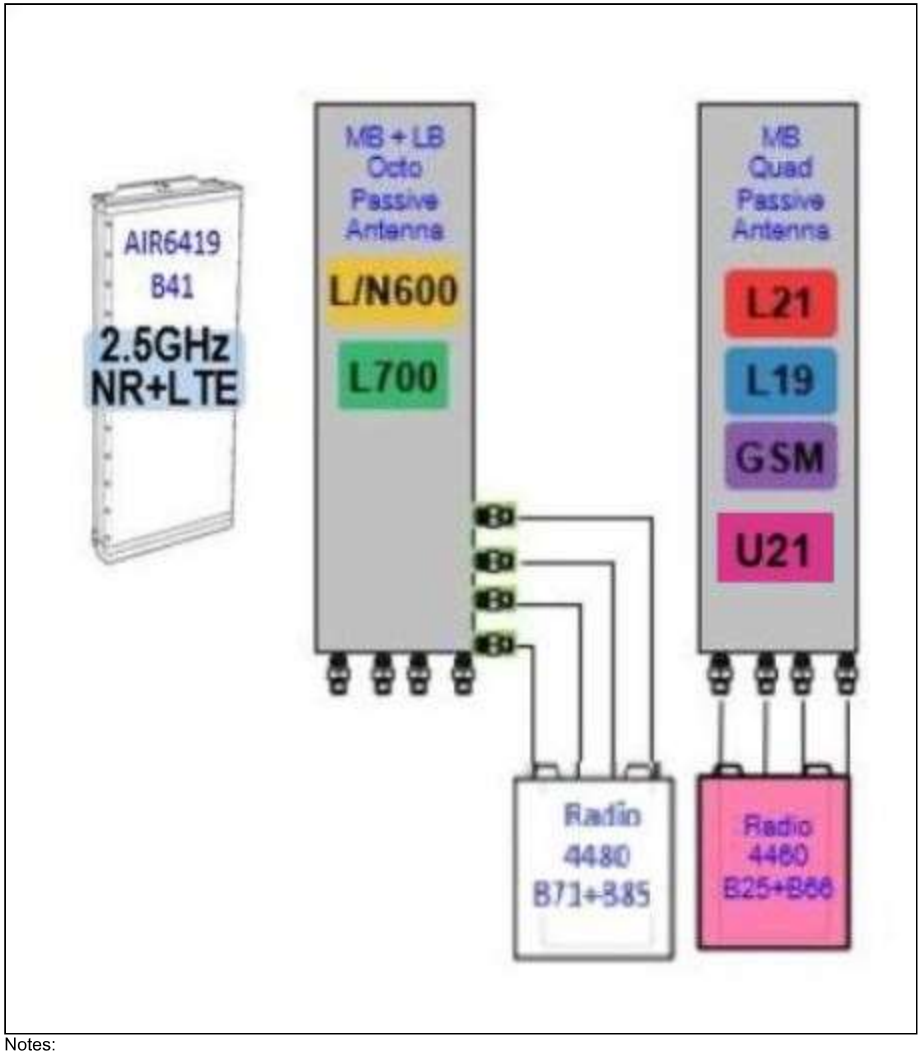
Section 3 - Proposed Template Images

67E5D998E_1xAIR+1OP+1QP.JPG



Notes:

Section 4 - Siteplan Images

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RAN Template:	A&L Template:
67E5D998E MUAC	67E5998E_1xAIR+1OP+1QP

CTHA059E_Anchor_4

Print Name: Preliminary (RFDS_For_Scoping)
PORs: Anchor_Phase 3
L600_L600 Coverage
Replacement_Colo Consolidation

Section 5 - RAN Equipment

Existing RAN Equipment

Template: 707C Tower

Enclosure	1	2
Enclosure Type	RBS 6102 MU AC	Purcell SFX17 2824
Baseband	DUW30: U1900; BB 6630: L2100, L700	
Hybrid Cable System	Ericsson 6x12 HCS *Select Length & AWG* **(x 2)**	

Proposed RAN Equipment

Template: 67E5D998E MUAC

Enclosure	1	2	3	4
Enclosure Type	RBS 6102 MU AC	Enclosure 6160 AC V1	B160	Purcell SFX17 2824
Baseband	RP 6651: L700, L600, N600; BB 6630: L2100, L1900	RP 6651: L2500, N2500		
Hybrid Cable System	Hybrid Trunk 6/24 4AWG 70m **(x 2)**	PSU 4813 vR4A (Kit) **(x 2)** Hybrid Trunk 6/24 4AWG 70m		
Transport System		CSR IXRe V2 (Gen2)		

RAN Scope of Work:

Remove and return all cabinet radios.

U1900 will be decom.

Keep existing cabinet 6102.

Breaker upgrade for 6160 at 125A.

Add 6160 and B160,

Add (1) RP 6651 for L2500/N2500 to 6160.

Add (1) RP 6651 for L600/L700/N600 in existing cabinet 6102.

Add (1) IXRe router, and Add (2) PSU 4813 vR4A to 6160.

Add (3) 6x24 at 70m.

RAN Template:	A&L Template:
67E5D998E MUAC	67E5998E_1xAIR+1OP+1QP

CTHA059E_Anchor_4

Print Name: Preliminary (RFDS_For_Scoping)
PORs: Anchor_Phase 3
L600_L600 Coverage
Replacement_Colo Consolidation

Section 6 - A&L Equipment

Existing Template: 707C_Tower_1QP_1DP
Proposed Template: 67E5998E_1xAIR+1OP+1QP

Sector 1 (Existing) view from behind			
Coverage Type	A - Outdoor Macro		
Antenna	1		2
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)		Andrew - LNX-6515DS-A1M (Dual)
Azimuth	60		60
M. Tilt	0		0
Height	138		138
Ports	P1	P2	P3
Active Tech.	U1900	L2100	L700
Dark Tech.			
Restricted Tech.			
Decomm. Tech.			
E. Tilt	2	2	2
Cables			
TMAs			
Diplexers / Combiners			
Radio	RRUS11 B2 (At Antenna)	RRUS11 B4 (At Antenna)	RRUS11 B12 (At Antenna)
Sector Equipment			

Unconnected Equipment:

Scope of Work:

Add a B4 Dual pole antenna and a passive L700 antenna. Add RRU's at antenna.Add RET cables from RRU's to antenna for RET capability.

RAN Template:	A&L Template:
67E5D998E MUAC	67E5998E_1xAIR+1OP+1QP

CTHA059E_Anchor_4

Print Name: Preliminary (RFDS_For_Scoping)
PORs: Anchor_Phase 3
L600_L600 Coverage
Replacement_Colo Consolidation

Sector 1 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2		3			
Antenna Model	Commscope_VV-65A-R1 (Quad)		AIR 6419 B41 (Active Antenna - Massive MIMO)		RFS - APXVAALL24_43-U-NA20 (Octo)			
Azimuth	60		60		60			
M. Tilt	0		0		0			
Height	180		180		180			
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L2100 L1900	L2100 L1900	L2500 N2500	L2500 N2500	L700 L600 N600	L700 L600 N600		
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2	2			2	2		
Cables	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper	Fiber Jumper **(x2)**	Fiber Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper		
TMAs								
Diplexers / Combiners								
Radio	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)			Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)		
Sector Equipment								

Unconnected Equipment:

Scope of Work:

There will be three antennae per sector.

Remove all existing equipment.

Add (1) Comm-scope VV-65A-R1 in Position 1.

Add (1) Radio 4460 B25+B66 for L2100, L1900 (Both Carriers) and U1900 at Position 1.

Install (1) AIR6419 B41 for L2500 and N2500 in Position 2.

Install (1) Low-Band/Mid-Band Octo in Position 3.

Add (1) Radio 4480 B71+B85 for L600, L700, and N600 in Position 3 at antenna, and connect its ports to the Low-Band ports of the Octo Antenna.

Ensure RET control is enabled for all technology layers according to the Design Documents.

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

RAN Template:	A&L Template:
67E5D998E MUAC	67E5998E_1xAIR+1OP+1QP

CTHA059E_Anchor_4

Print Name: Preliminary (RFDS_For_Scoping)
PORs: Anchor_Phase 3
L600_L600 Coverage
Replacement_Colo Consolidation

Sector 2 (Existing) view from behind			
Coverage Type	A - Outdoor Macro		
Antenna	1		2
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)		Andrew - LNX-6515DS-A1M (Dual)
Azimuth	180		180
M. Tilt	0		0
Height	138		138
Ports	P1	P2	P3
Active Tech.	U1900	L2100	L700
Dark Tech.			
Restricted Tech.			
Decomm. Tech.			
E. Tilt	2	2	2
Cables			
TMAs			
Diplexers / Combiners			
Radio	RRUS11 B2 (At Antenna)	RRUS11 B4 (At Antenna)	RRUS11 B12 (At Antenna)
Sector Equipment			

Unconnected Equipment:

Scope of Work:

Add a B4 Dual pole antenna and a passive L700 antenna. Add RRU's at antenna.Add RET cables from RRU's to antenna for RET capability.

RAN Template:	A&L Template:
67E5D998E MUAC	67E5998E_1xAIR+1OP+1QP

CTHA059E_Anchor_4

Print Name: Preliminary (RFDS_For_Scoping)
PORs: Anchor_Phase 3
L600_L600 Coverage
Replacement_Colo Consolidation

Sector 2 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2		3			
Antenna Model	Commscope_VV-65A-R1 (Quad)		AIR 6419 B41 (Active Antenna - Massive MIMO)		RFS - APXVAALL24_43-U-NA20 (Octo)			
Azimuth	180		180		180			
M. Tilt	0		0		0			
Height	180		180		180			
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L2100 L1900	L2100 L1900	L2500 N2500	L2500 N2500	L700 L600 N600	L700 L600 N600		
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2	2			2	2		
Cables	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper	Fiber Jumper **(x2)**	Fiber Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper		
TMAs								
Diplexers / Combiners								
Radio	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)			Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)		
Sector Equipment								

Unconnected Equipment:

Scope of Work:

There will be three antennae per sector.

Remove all existing equipment.

Add (1) Comm-scope VV-65A-R1 in Position 1.

Add (1) Radio 4460 B25+B66 for L2100, L1900 (Both Carriers) and U1900 at Position 1.

Install (1) AIR6419 B41 for L2500 and N2500 in Position 2.

Install (1) Low-Band/Mid-Band Octo in Position 3.

Add (1) Radio 4480 B71+B85 for L600, L700, and N600 in Position 3 at antenna, and connect its ports to the Low-Band ports of the Octo Antenna.

Ensure RET control is enabled for all technology layers according to the Design Documents.

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

RAN Template:	A&L Template:
67E5D998E MUAC	67E5998E_1xAIR+1OP+1QP

CTHA059E_Anchor_4

Print Name: Preliminary (RFDS_For_Scoping)
PORs: Anchor_Phase 3
L600_L600 Coverage
Replacement_Colo Consolidation

Sector 3 (Existing) view from behind			
Coverage Type	A - Outdoor Macro		
Antenna	1		2
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)		Andrew - LNX-6515DS-A1M (Dual)
Azimuth	300		300
M. Tilt	0		0
Height	138		138
Ports	P1	P2	P3
Active Tech.	U1900	L2100	L700
Dark Tech.			
Restricted Tech.			
Decomm. Tech.			
E. Tilt	2	2	2
Cables			
TMAs			
Diplexers / Combiners			
Radio	RRUS11 B2 (At Antenna)	RRUS11 B4 (At Antenna)	RRUS11 B12 (At Antenna)
Sector Equipment			

Unconnected Equipment:

Scope of Work:

Add a B4 Dual pole antenna and a passive L700 antenna. Add RRU's at antenna.Add RET cables from RRU's to antenna for RET capability.

RAN Template:	A&L Template:
67E5D998E MUAC	67E5998E_1xAIR+1OP+1QP

CTHA059E_Anchor_4

Print Name: Preliminary (RFDS_For_Scoping)
PORs: Anchor_Phase 3
L600_L600 Coverage
Replacement_Colo Consolidation

Sector 3 (Proposed) view from behind								
Coverage Type	A - Outdoor Macro							
Antenna	1		2		3			
Antenna Model	Commscope_VV-65A-R1 (Quad)		AIR 6419 B41 (Active Antenna - Massive MIMO)		RFS - APXVAALL24_43-U-NA20 (Octo)			
Azimuth	300		300		300			
M. Tilt	0		0		0			
Height	180		180		180			
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L2100 L1900	L2100 L1900	L2500 N2500	L2500 N2500	L700 L600 N600	L700 L600 N600		
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2	2			2	2		
Cables	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper	Fiber Jumper **(x2)**	Fiber Jumper **(x2)**	Coax Jumper **(x2)** Fiber Jumper	Coax Jumper **(x2)** Fiber Jumper		
TMAs								
Diplexers / Combiners								
Radio	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)			Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)		
Sector Equipment								

Unconnected Equipment:

Scope of Work:

There will be three antennae per sector.

Remove all existing equipment.

Add (1) Comm-scope VV-65A-R1 in Position 1.

Add (1) Radio 4460 B25+B66 for L2100, L1900 (Both Carriers) and U1900 at Position 1.

Install (1) AIR6419 B41 for L2500 and N2500 in Position 2.

Install (1) Low-Band/Mid-Band Octo in Position 3.

Add (1) Radio 4480 B71+B85 for L600, L700, and N600 in Position 3 at antenna, and connect its ports to the Low-Band ports of the Octo Antenna.

Ensure RET control is enabled for all technology layers according to the Design Documents.

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

RAN Template:	A&L Template:
67E5D998E MUAC	67E5998E_1xAIR+1OP+1QP

Section 7 - Power Systems Equipment

Existing Power Systems Equipment
----- This section is intentionally blank. -----

	Proposed Power Systems Equipment
Enclosure	**1**
Enclosure Type	Enclosure 6160 AC V1

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CTHA059E

355 Route 85
Colchester, Connecticut 06415

August 12, 2022

EBI Project Number: 6222005069

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**19.49%**

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

August 12, 2022

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

Emissions Analysis for Site: CTHA059E

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **355 Route 85** in **Colchester, 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

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

General population/uncontrolled exposure limits apply to situations in which the general 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 ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 355 Route 85 in Colchester, 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 all calculations, all equipment was calculated using the following assumptions:

1) 1 LTE channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.

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) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts per Channel.

4) 1 LTE channel (PCS Band - 1900 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 160 Watts per Channel.

5) 1 LTE channel (AWS Band – 2100 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 160 Watts per Channel.

6) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 45 Watts.

7) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 15 Watts.

8) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 90 Watts.

9) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 30 Watts.

10) 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.

11) 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.

12) The antennas used in this modeling are the Commscope VV-65A-R1B for the 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s) in Sector A, the Commscope VV-65A-R1B for the 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s) in Sector B, the Commscope VV-65A-R1B for the 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 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.

13) The antenna mounting height centerline of the proposed antennas is 180 feet above ground level (AGL).

14) 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.

15) 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 #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Commscope VV-65A-R1B	Make / Model:	Commscope VV-65A-R1B	Make / Model:	Commscope VV-65A-R1B
Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz
Gain:	15.15 dBd / 15.8 dBd	Gain:	15.15 dBd / 15.8 dBd	Gain:	15.15 dBd / 15.8 dBd
Height (AGL):	180 feet	Height (AGL):	180 feet	Height (AGL):	180 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	320.00 Watts	Total TX Power (W):	320.00 Watts	Total TX Power (W):	320.00 Watts
ERP (W):	11,320.48	ERP (W):	11,320.48	ERP (W):	11,320.48
Antenna A1 MPE %:	**1.34%**	Antenna B1 MPE %:	**1.34%**	Antenna C1 MPE %:	**1.34%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd	Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd	Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd
Height (AGL):	180 feet	Height (AGL):	180 feet	Height (AGL):	180 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	180.00 Watts	Total TX Power (W):	180.00 Watts	Total TX Power (W):	180.00 Watts
ERP (W):	23,258.96	ERP (W):	23,258.96	ERP (W):	23,258.96
Antenna A2 MPE %:	**2.76%**	Antenna B2 MPE %:	**2.76%**	Antenna C2 MPE %:	**2.76%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
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	Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd
Height (AGL):	180 feet	Height (AGL):	180 feet	Height (AGL):	180 feet
Channel Count:	3	Channel Count:	3	Channel Count:	3
Total TX Power (W):	160.00 Watts	Total TX Power (W):	160.00 Watts	Total TX Power (W):	160.00 Watts
ERP (W):	3,293.87	ERP (W):	3,293.87	ERP (W):	3,293.87
Antenna A3 MPE %:	**0.94%**	Antenna B3 MPE %:	**0.94%**	Antenna C3 MPE %:	**0.94%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	5.04%
Dish	1.82%
T-Mobile (Existing)	1.97%
Verizon	7.16%
AT&T	3.5%
Site Total MPE % :	19.49%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	5.04%
T-Mobile Sector B Total:	5.04%
T-Mobile Sector C Total:	5.04%
Site Total MPE % :	19.49%

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 (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 1900 MHz LTE	1	5237.45	180.0	6.22	1900 MHz LTE	1000	0.62%
T-Mobile 2100 MHz LTE	1	6083.03	180.0	7.22	2100 MHz LTE	1000	0.72%
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	7214.60	180.0	8.57	2500 MHz LTE 1C & 2C Traffic	1000	0.86%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	538.38	180.0	0.64	2500 MHz LTE 1C & 2C Broadcast	1000	0.06%
T-Mobile 2500 MHz NR Traffic	1	14429.21	180.0	17.13	2500 MHz NR Traffic	1000	1.71%
T-Mobile 2500 MHz NR Broadcast	1	1076.77	180.0	1.28	2500 MHz NR Broadcast	1000	0.13%
T-Mobile 600 MHz LTE	1	788.97	180.0	0.94	600 MHz LTE	400	0.23%
T-Mobile 600 MHz NR	1	1577.94	180.0	1.87	600 MHz NR	400	0.47%
T-Mobile 700 MHz LTE	1	926.96	180.0	1.10	700 MHz LTE	467	0.24%
						Total:	**5.04%**

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

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	5.04%
Sector B:	5.04%
Sector C:	5.04%
T-Mobile Maximum MPE % (Sector A):	5.04%
Site Total:	19.49%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **19.49%** 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.