Northeast Site Solutions
Victoria Masse
420 Main St Unit 1 Box 2
Sturbridge, MA 01566
victoria@northeastsitesolutions.com

August 8, 2023

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

RE: Tower Share Application
8 Upper Meadow Road, Granby CT 06035
Latitude: 41.9533258 N
Longitude: -72.82983973 W
Site#: CTHA234A_NSD

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of T-Mobile. T-Mobile plans to install antennas and related equipment at the tower site located at 8 Upper Meadow Road, Granby, Connecticut.

T-Mobile proposes to install nine (9) 600/700/1900/2100/2500 5G MHz antenna, six (6) RRUs at the 115-foot level of the existing 151-foot monopole tower, three (3) hybrid cable will also be installed. T-Mobile equipment cabinets will be placed within 10x15 lease area. Included are plans by American Tower Corporation, dated August 7, 2023, Exhibit C. Also included is a structural analysis prepared by American Tower Corporation, dated July 21, 2023, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. This facility was approved by the Connecticut Siting Council, Docket No. 263 on December 22, 2003. Please see attached Exhibit A.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of T-Mobile intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Mark H. Fiorentino, First Selectman, Joel Skilton, Building Official / Zoning Enforcement, as well as the property owner and tower owner.

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

1. The proposed modifications will not result in an increase in the height of the existing structure. The top of the tower is 151-feet; T-Mobile proposed antennas will be located at a center line height of 115-feet.

2.The proposed modification will not result in the increase of the site boundary as depicted on the attached site plan.

3.The proposed modification will not increase the noise levels at the facility by six decibels or more, or to levels that exceed local and state criteria. The incremental effect of the proposed changes will be negligent.

4.The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total density of 15.96% as evidenced by Exhibit F.

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

A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting T-Mobile proposed loading. The structural analysis is included in Exhibit D.

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

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of T-Mobile equipment at the 115-foot level of the existing 151-foot tower would have an insignificant visual impact on the area around the monopole. T-Mobile ground equipment would be installed within the existing facility compound. T-Mobile shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

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

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

Sincerely,

Victoria Masse
Mobile: 860-306-2326
Fax: 413-521-0558
Office: 420 Main Street, Unit 1 Box 2, Sturbridge, MA 01566
Email: victoria@northeastsitesolutions.com

Attachments
Cc:
Mark H. Fiorentino, First Selectman
Granby Town Hall
15 North Granby Road
Granby, CT 06035

Joel Skilton, Building Official / Zoning Enforcement
Granby Town Hall
15 North Granby Road
Granby, CT 06035

Tower Meadow LLC – as the property owner
40 Simsbury Road
West Granby, CT 06090

American Tower – as the tower owner
10 Presidential Way
Woburn, MA 01801

Exhibit A

DOCKET NO. 263 – AT&T Wireless PCS, LLC d/b/a AT&T Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of two telecommunications facilities in the West Granby section of the Town of Granby, Connecticut.	}	Connecticut Siting Council

December 22, 2003

Decision and Order:
Granby Site CT-812

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the proposed Site A located at 8 Upper Meadow Road, Granby, Connecticut. The Council denies certification of proposed Site B located at 10 Day Street South, Granby, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of AT&T and other entities, both public and private, but such tower shall not exceed a height of 150 feet above ground level.

2. The tower and facility compound shall be moved in a southerly or southeasterly direction within the lease area to minimize the area of the adjacent property to the north that is encompassed within the tower's setback radius; and the tower shall be designed with a yield point to effectively reduce the radius of said setback area.

3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:
   a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment building, fencing without razor wire on top, access road, utility line, and landscaping (including a screen of evergreen plantings around the facility compound); and
   b) construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

4. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of electromagnetic radio frequency power density is submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

5. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

6. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

7. The Certificate Holder shall provide reasonable space on the tower for no compensation for any municipal antennas, provided such antennas are compatible with the structural integrity of the tower.

8. If the facility does not initially provide wireless services within one year of completion of construction or ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

9. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.

10. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The Hartford Courant.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Applicant	**Its Representative**
AT&T Wireless PCS, LLC d/b/a AT&T Wireless	Christopher B. Fisher, Esq. Cuddy & Feder LLP 90 Maple Avenue White Plains, New York 10601

Exhibit B

8 UPPER MEADOW

Location	8 UPPER MEADOW	**Mblu**	G-30/ 69/ 134/ /
Acct#	14750008	**Owner**	TOWER MEADOW LLC
Assessment	$223,440	**Appraisal**	$319,200
PID	101221	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$132,200	$187,000	$319,200
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$92,540	$130,900	$223,440

Owner of Record

Owner	TOWER MEADOW LLC	**Sale Price**	$0
Co-Owner	C/O AMERICAN TOWERS RENTAL UNIT	**Certificate**	
Address	10 PRESIDENTIAL WAY WOBURN, MA 01801	**Book & Page**	0339/0689
		Sale Date	12/20/2006

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
TOWER MEADOW LLC	$0		0339/0689	12/20/2006
TOWER MEADOW LLC	$0		0334/0976	07/20/2006
GIRARD MEADOW LLC	$0		0277/0120	01/09/2003
GIRARD ELAINE J	$0		0161/0935	06/19/1989

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: $0
Building Percent Good:

Replacement Cost
Less Depreciation: $0

Building Attributes	
Field	**Description**
Style:	Outbuildings
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Extra Kitchens	
Solar Panels	
Num Park	
Fireplaces	
Fndtn Cndtn	
Basement	

Building Photo

(https://images.vgsi.com/photos2/GranbyCTPhotos//\00\00\97\59.jpg)

Building Layout

Building Layout (ParcelSketch.ashx?pid=101221&bid=101398)

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

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	4310
Description	TEL REL TW
Zone	R2A
Neighborhood	
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	0.79
Frontage	
Depth	
Assessed Value	$130,900
Appraised Value	$187,000

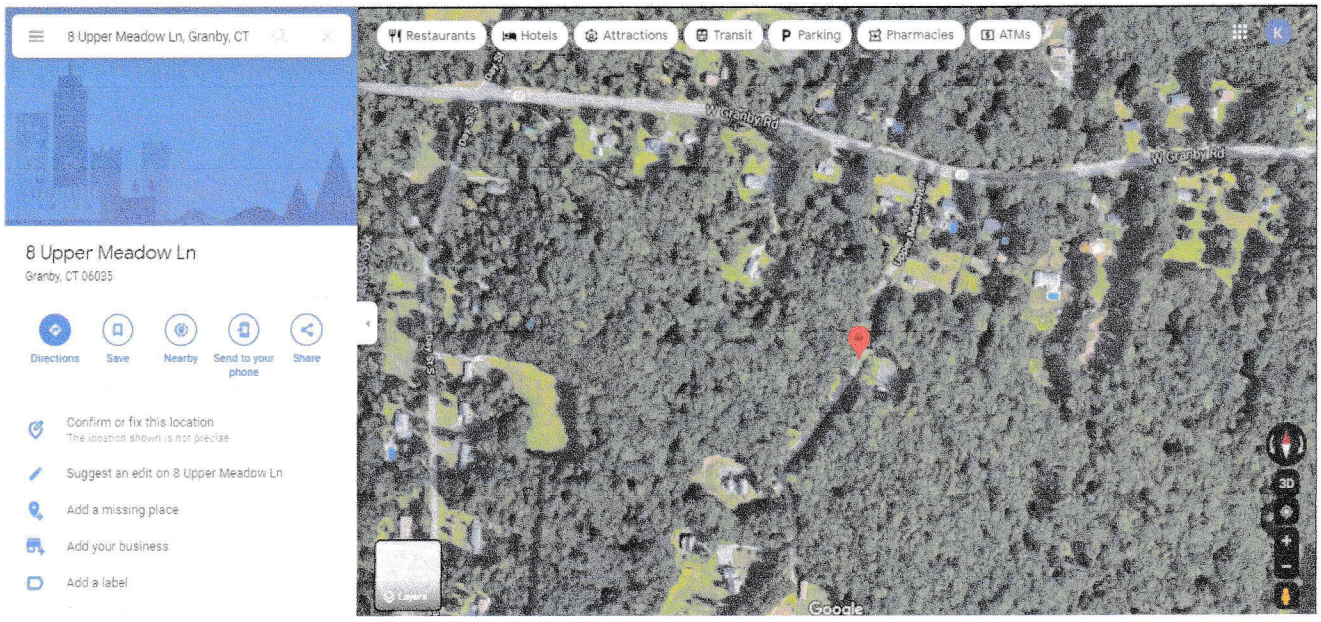
Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
CELL	CELL TOWER			1.00 UNITS	$112,500	1
FN4	FENCE-8' CHAIN			320.00 L.F.	$4,000	1
SHP5	W/IMPROV GOOD			432.00 S.F.	$11,700	1
GEN1	Generator			1.00 Units	$4,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$132,200	$187,000	$319,200
2021	$129,500	$187,000	$316,500
2020	$129,500	$187,000	$316,500

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$92,540	$130,900	$223,440
2021	$90,650	$130,900	$221,550
2020	$90,650	$130,900	$221,550


8 Upper Meadow Ln, Granby, CT
8 Upper Meadow Ln
Granby, CT 06035
Directions
Save
Nearby
Send to your phone
Share
Confirm or fix this location
The location shown is not precise
Suggest an edit on 8 Upper Meadow Ln
Add a missing place
Add your business
Add a label
Restaurants
Hotels
Attractions
Transit
Parking
Pharmacies
ATMs
W Granby Rd
Google

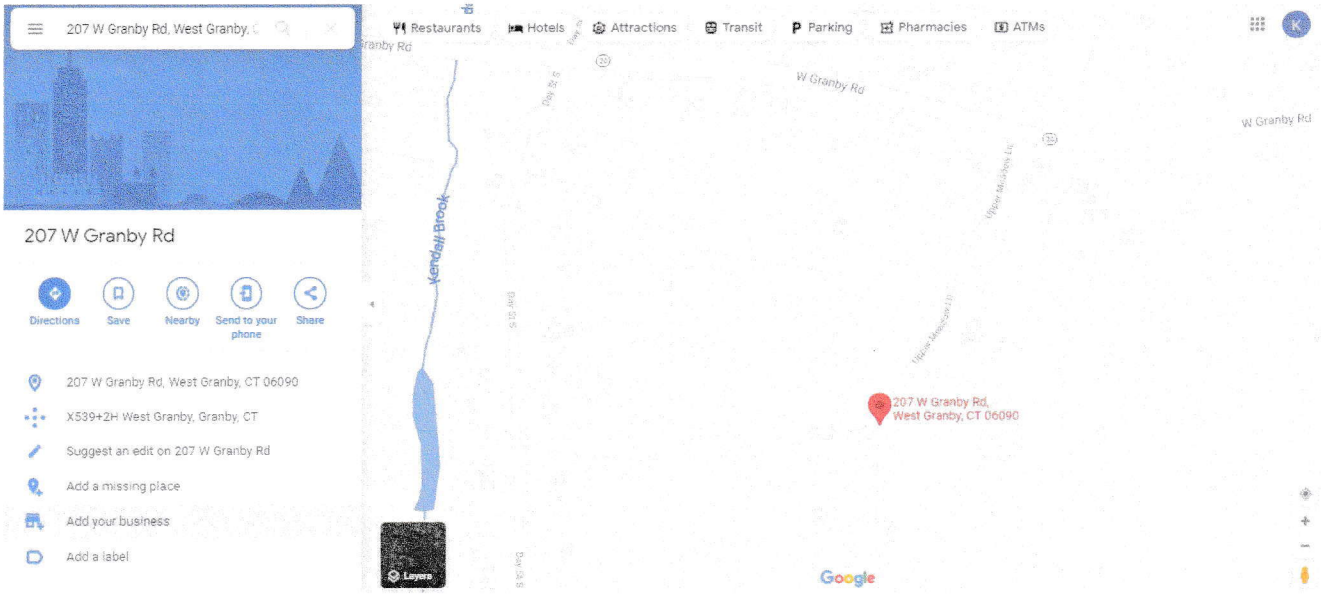
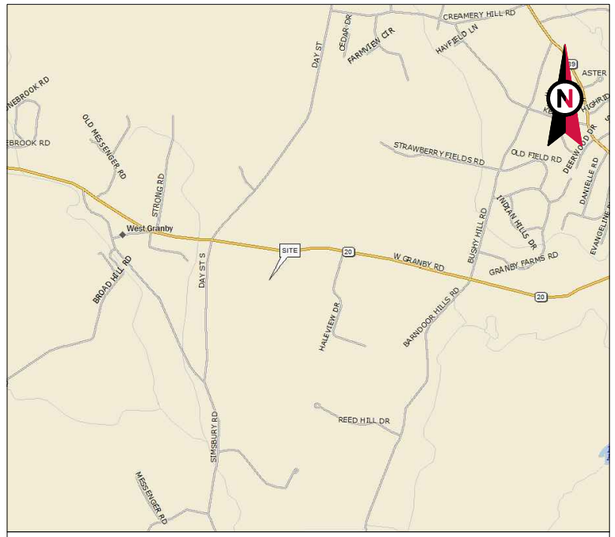

207 W Granby Rd, West Granby, C
207 W Granby Rd
Directions
Save
Nearby
Send to your phone
Share
207 W Granby Rd, West Granby, CT 06090
X539+2H West Granby, Granby, CT
Suggest an edit on 207 W Granby Rd
Add a missing place
Add your business
Add a label
Restaurants
Hotels
Attractions
Transit
Parking
Pharmacies
ATMs
W Granby Rd
Kendall Brook
207 W Granby Rd,
West Granby, CT 06090
Google

Exhibit C



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: WEST GRANBY, CT CT
ATC SITE NUMBER: 411186
T-MOBILE SITE NAME: UPPER MEADOW RD MONOPOLE
T-MOBILE SITE NUMBER: CTHA234A
SITE ADDRESS: 8 UPPER MEADOW ROAD
GRANBY, CT 06035
SITE CLASS: MONOPOLE

LOCATION MAP

T-MOBILE COVERAGE STRATEGY COLLOCATION PLAN
67E5A998E 6160 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. 2022 CONNECTICUT STATE BUILDING CODES (CSBC)
2. 2020 NATIONAL ELECTRIC CODE (NEC)
3. LOCAL BUILDING CODE
4. CITY/COUNTY ORDINANCES

UTILITY COMPANIES

POWER COMPANY: UNKNOWN
PHONE: UNKNOWN

TELEPHONE COMPANY: VERIZON
PHONE: (800) 919-0418

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

PROJECT SUMMARY

SITE ADDRESS:

8 UPPER MEADOW ROAD

GRANBY, CT 06035

COUNTY: HARTFORD

GEOGRAPHIC COORDINATES:

LATITUDE: 41.9533258

LONGITUDE: -72.82983973

GROUND ELEVATION: 462' AMSL

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

APPLICANT:

T-MOBILE
103 MONARCH DRIVE
LIVERPOOL, NY 13088

ENGINEER:

45 BEECHWOOD DRIVE, NORTH
ANDOVER, MA 01845
TEL: (978) 557-5553

PROPERTY OWNER:

TOWER MEADOW LLC
8 UPPER MEADOW ROAD
GRANBY, CT 06035

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES INSTALLING EQUIPMENT CABINETS ON A PROPOSED CONCRETE PAD INSIDE A 10' X 15' GROUND SPACE WITHIN THE EXISTING COMPOUND, AND INSTALLING NEW EQUIPMENT AND MOUNTS ON THE EXISTING TOWER.

TOWER SCOPE:
INSTALL (9) ANTENNA(S), (6) RRU(s), (3) 6/24 4 AWG TRUNK(S), AND (1) PLATFORM MOUNT WITH HANDRAIL KIT(S).

GROUND SCOPE:
INSTALL (1) 6160 CABINET(S), (1) B160 CABINET(S), (1) 6601(s), (2) BB 6648(s), (1) CSR IXRE V2(s), AND (2) PSU 4813 VR2A(s).

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

TAKE I91 NORTH TO EXIT 40 HEAD TOWARDS BRADLEY AIRPORT THEN TAKE THE EXIT FOR RTE 20 WEST. FOLLOW RTE 20 WEST THRU GRANBY CENTER. AFTER THE RTE 20 AND RTE 189 SPLIT CONTINUE ON RTE 20 WEST FOR APPROX. 1.9 MILES. TAKE A LEFT ONTO UPPER MEADOW RD. THE TOWER IS LOCATED ON THE LEFT ABOUT 100 YARDS. PLEASE NOTE: THIS IS A PRIVATE RD.

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	2	08/07/23	RMJ
G-002	GENERAL NOTES	2	08/07/23	RMJ
C-001	OVERALL SITE PLAN	2	08/07/23	RMJ
C-101	DETAILED SITE PLAN	2	08/07/23	RMJ
C-102	DETAILED EQUIPMENT PLAN	2	08/07/23	RMJ
C-201	TOWER ELEVATION	2	08/07/23	RMJ
C-401	ANTENNA INFORMATION & SCHEDULE	2	08/07/23	RMJ
C-501	MOUNT DETAILS	2	08/07/23	RMJ
C-502	CONSTRUCTION DETAILS	2	08/07/23	RMJ
E-101	GROUNDING DETAILS	2	08/07/23	RMJ
E-501	GROUNDING DETAILS	2	08/07/23	RMJ
E-601	PANEL SCHEDULE & ONE-LINE DIAGRAM	2	08/07/23	RMJ
R-601 - R-614	SUPPLEMENTAL			

AMERICAN TOWER®

TEP NORTHEAST
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

REV.	DESCRIPTION	BY	DATE
A	PRELIM	TR	08/11/22
0	CONSTRUCTION FINAL	DO	05/15/23
1	CONSTRUCTION FINAL	TR	05/23/23
2	CONSTRUCTION FINAL	RMJ	08/07/23

ATC SITE NUMBER:
411186
ATC SITE NAME:
WEST GRANBY, CT CT
T-MOBILE SITE NAME:
UPPER MEADOW RD MONOPOLE
SITE ADDRESS:
8 UPPER MEADOW ROAD
GRANBY, CT 06035

SEAL:

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

T-Mobile

ATC JOB NO:	14117160
CUSTOMER ID:	UPPER MEADOW RD MONOPOLE
CUSTOMER #:	CTHA234A

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	2

GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, T-MOBILE "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
   - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
   - B. AC/TELCO INTERFACE BOX (PPC)
   - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
   - D. TOWERS, MONOPOLES
   - E. TOWER LIGHTING
   - F. GENERATORS & LIQUID PROPANE TANK
   - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
   - H. ANTENNAS (INSTALLED BY OTHERS)
   - I. TRANSMISSION LINE
   - J. TRANSMISSION LINE JUMPERS
   - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
   - L. TRANSMISSION LINE GROUND KITS
   - M. HANGERS
   - N. HOISTING GRIPS
   - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF T-MOBILE TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH T-MOBILE AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27. CONTRACTOR SHALL NOTIFY T-MOBILE REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE REP. ANY WORK 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).

CONCRETE AND REINFORCING STEEL NOTES:

1. DESIGN AND CONSTRUCTION OF ALL CONCRETE ELEMENTS SHALL CONFORM TO THE LATEST EDITIONS OF ALL APPLICABLE CODES INCLUDING: ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 117 "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS", AND ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE."
2. MIX DESIGN SHALL BE APPROVED BY T-MOBILE REP PRIOR TO PLACING CONCRETE.
3. CONCRETE SHALL BE NORMAL WEIGHT, 6 % AIR ENTRAINED (+/- 1.5%) WITH A SLUMP RANGE OF 3-6" AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4500 PSI UNLESS OTHERWISE NOTED.
4. THE FOLLOWING MATERIALS SHALL BE USED:

PORTLAND CEMENT:	ASTM C150, TYPE 2
REINFORCEMENT:	ASTM A185, PLAIN STEEL WELDED WIRE FABRIC
REINFORCEMENT BARS:	ASTM A615, GRADE 60, DEFORMED
NORMAL WEIGHT AGGREGATE:	ASTM C33
WATER:	ASTM C 94/C 94M
WELDED WIRE FABRIC:	ASTM A185
ADMIXTURES:	
-WATER-REDUCING AGENT:	ASTM C 494/C 494M, TYPE A
-AIR-ENTERING AGENT:	ASTM C 260/C 260M
-SUPERPLASTICIZER:	ASTM C494, TYPE F OR TYPE G
-RETARDING:	ASTM C 494/C 494M, TYPE B

5. MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE NO LESS THAN 3".
6. A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE IN ACCORDANCE WITH ACI 301 SECTION 4.2.4, UNLESS NOTED OTHERWISE.
7. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL, OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR APPROVAL FROM AN ATC ENGINEER WHEN DRILLING HOLES IN CONCRETE.
8. ADMIXTURES SHALL CONFORM TO THE APPROPRIATE ASTM STANDARD AS REFERENCED IN "METHOD 1" OF ACI 301.
9. DO NOT WELD OR TACK WELD REINFORCING STEEL.
10. ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, GROUNDS AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.
11. REINFORCEMENT SHALL BE COLD BENT WHENEVER BENDING IS REQUIRED.
12. DO NOT PLACE CONCRETE IN WATER, ICE, OR ON FROZEN GROUND.
13. FOR COLD-WEATHER (ACI 306) AND HOT-WEATHER (ACI 301M) CONCRETE PLACEMENT, CONFORM TO APPLICABLE ACI CODES AND RECOMMENDATIONS. IN EITHER CASE, MATERIALS CONTAINING CHLORIDE, CALCIUM, SALTS, ETC. SHALL NOT BE USED. PROTECT FRESH CONCRETE FROM WEATHER FOR 7 DAYS, MINIMUM.
14. ALL CONCRETE SHALL HAVE A "SMOOTH FORM FINISH."
15. SPLICING OF REINFORCEMENT IS PERMITTED ONLY AT LOCATIONS SHOWN IN THE CONTRACT DRAWINGS OR AS ACCEPTED BY THE ENGINEER. UNLESS OTHERWISE SHOWN OR NOTED REINFORCING STEEL SHALL BE SPLICED TO DEVELOP ITS FULL TENSILE CAPACITY (CLASS A) IN ACCORDANCE WITH ACI 318.
16. DETAILING OF REINFORCING STEEL SHALL CONFORM TO "ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI 315).
17. ALL SLAB CONSTRUCTION SHALL BE CAST MONOLITHICALLY WITHOUT HORIZONTAL CONSTRUCTION JOINTS, UNLESS SHOWN IN THE CONTRACT DRAWINGS.
18. LOCATION OF ALL CONSTRUCTION JOINTS ARE SUBJECT TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, CONFORMANCE WITH ACI 318, AND ACCEPTANCE OF THE ENGINEER. DRAWINGS SHOWING LOCATION OF DETAILS OF THE PROPOSED CONSTRUCTION JOINTS SHALL BE SUBMITTED WITH REINFORCING STEEL PLACEMENT DRAWINGS.
19. SPLICES OF WWF, AT ALL SPLICED EDGES, SHALL BE SUCH THAT THE OVERLAP MEASURED BETWEEN OUTERMOST CROSS WIRES OF EACH FABRIC SHEET IS NOT LESS THAN THE SPACING OF THE CROSS WIRE PLUS 2 INCHES, NOR LESS THAN 6".
20. BAR SUPPORTS SHALL BE ALL-GALVANIZED METAL WITH PLASTIC TIPS.
21. ALL REINFORCEMENT SHALL BE SECURELY TIED IN PLACE TO PREVENT DISPLACEMENT BY CONSTRUCTION TRAFFIC OR CONCRETE. TIE WIRE SHALL BE OF SUFFICIENT STRENGTH FOR INTENDED PURPOSE, BUT NOT LESS THAN NO. 18 GAUGE.
22. SLAB ON GROUND: COMPACT STRUCTURAL FILL TO 95% DENSITY AND THEN PLACE 6" GRAVEL BENEATH SLAB.

ELECTRICAL NOTES:

1. ELECTRICAL WORK SHALL BE PERFORMED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL ENSURE THAT ALL WORK COMPLIES WITH ALL APPLICABLE LOCAL AND STATE CODES AND NATIONAL ELECTRICAL CODE.
2. ALL SUGGESTED ELECTRICAL ELEMENTS (SUCH AS BREAKER SIZES, WIRE SIZES, CONDUITS SIZES) ARE FOR ZONING PURPOSES ONLY. IT IS THE RESPONSIBILITY TO OF THE ELECTRICAL CONTRACTOR TO CONFIRM COMPLIANCE WITH LOCAL ELECTRICAL CODES AND PASS ALL APPLICABLE AND NECESSARY INSPECTIONS. IN SOME EVENTS, IT MAY BE NECESSARY TO PERFORM AN ELECTRICAL LOAD STUDY TO VERIFY THE CAPACITY OF THE EXISTING SERVICE. THIS IS NOT THE RESPONSIBILITY OF ATC. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
3. CONTRACTOR SHALL FIELD LOCATE ALL BELOW GRADE GROUNDING CABLES AND UTILITY LINES PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR RELOCATION OF ALL UTILITIES AND GROUNDING LINES THAT MAY BECOME DISTURBED OR CONFLICTING IN THE COURSE OF CONSTRUCTION.

ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO ATC ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH ATC ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM ATC ENGINEERING SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

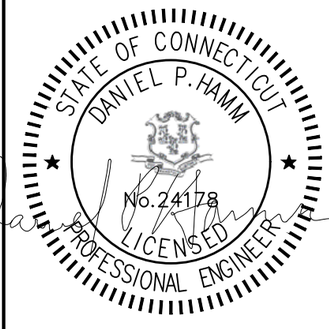
AMERICAN TOWER®

TEP NORTHEAST
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

REV.	DESCRIPTION	BY	DATE
A	PRELIM	TR	08/11/22
0	CONSTRUCTION FINAL	DO	05/15/23
1	CONSTRUCTION FINAL	TR	05/23/23
2	CONSTRUCTION FINAL	RMJ	08/07/23

ATC SITE NUMBER:
411186
ATC SITE NAME:
WEST GRANBY, CT CT
T-MOBILE SITE NAME:
UPPER MEADOW RD MONOPOLE
SITE ADDRESS:
8 UPPER MEADOW ROAD
GRANBY, CT 06035

SEAL:



T-Mobile

ATC JOB NO:	14117160
CUSTOMER ID:	UPPER MEADOW RD MONOPOLE
CUSTOMER #:	CTHA234A

GENERAL NOTES

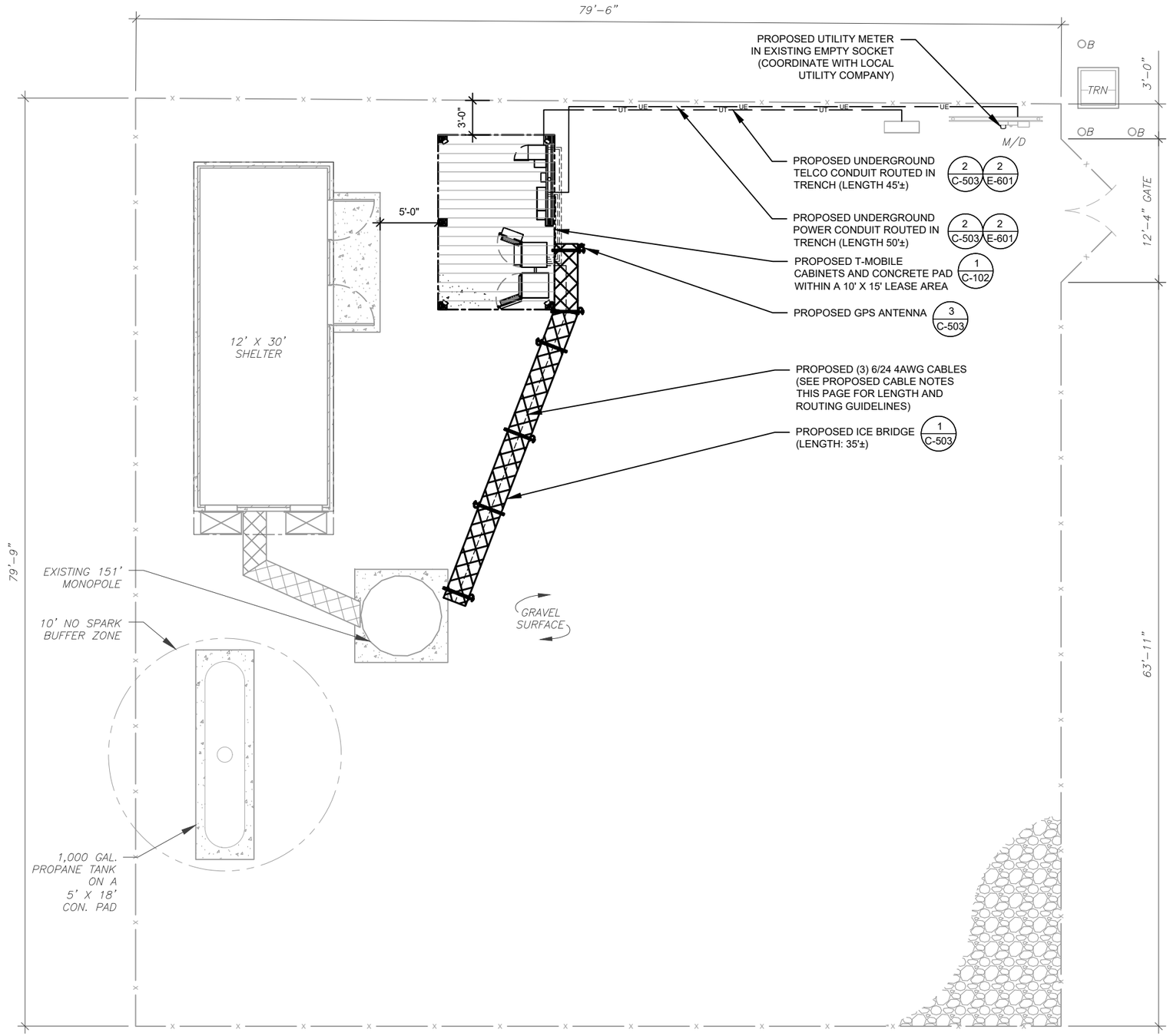
SHEET NUMBER: G-002
REVISION: 2

SITE PLAN NOTES:

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

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

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



1 DETAILED SITE PLAN
SCALE: 1" = 10'

0 10' 20'

SCALE: 1"=10' (11X17)
1"=5' (22X34)

LEGEND

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

PROPOSED CABLE NOTES:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **50m**. 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.

AMERICAN TOWER®

TEP NORTHEAST
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

REV.	DESCRIPTION	BY	DATE
A	PRELIM	TR	08/11/22
0	CONSTRUCTION FINAL	DO	05/15/23
1	CONSTRUCTION FINAL	TR	05/23/23
2	CONSTRUCTION FINAL	RMJ	08/07/23

ATC SITE NUMBER:
411186

ATC SITE NAME:
WEST GRANBY, CT CT

T-MOBILE SITE NAME:
UPPER MEADOW RD MONOPOLE

SITE ADDRESS:
8 UPPER MEADOW ROAD
GRANBY, CT 06035

SEAL:

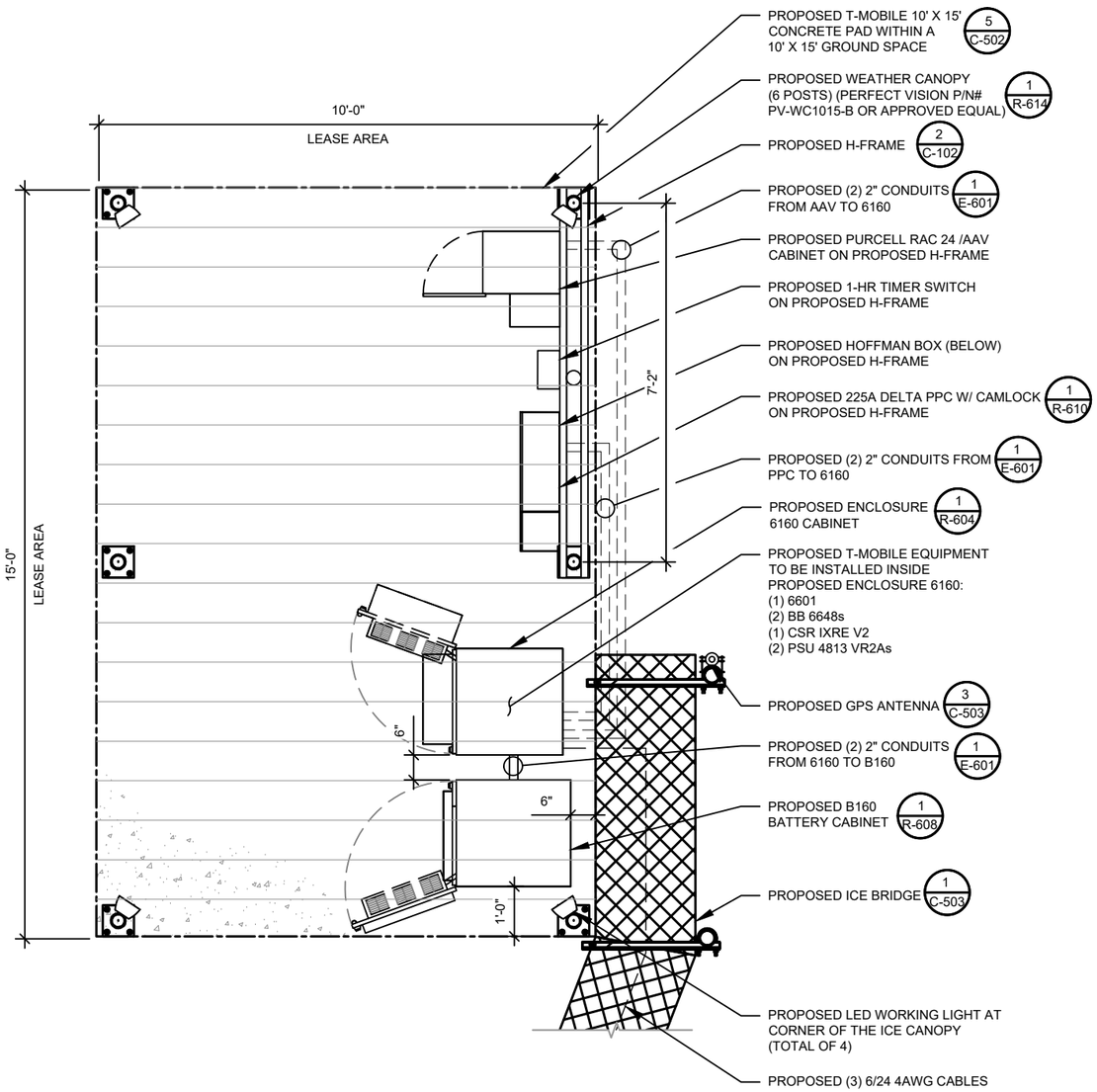
STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

T-Mobile

ATC JOB NO:	14117160
CUSTOMER ID:	UPPER MEADOW RD MONOPOLE
CUSTOMER #:	CTHA234A

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	2

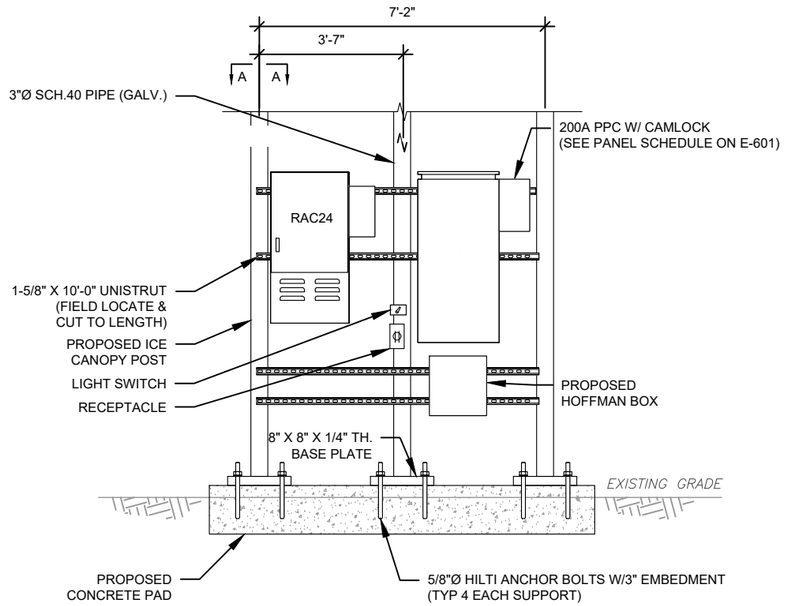


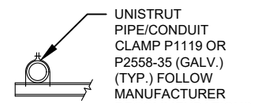
1 PROPOSED GROUND EQUIPMENT LAYOUT

SCALE: 1" = 3'

0 3' 6'

SCALE: 1"=3' (11X17)
1"=1.5' (22X34)





SECTION A-A

H-FRAME NOTES:

1. IF IT IS NECESSARY TO EXTEND THE H-FRAME, AN ADDITIONAL POST WILL ALWAYS BE REQUIRED.
2. PROPOSED UNISTRUTS TO BE FIELD CUT AND SHOULD NOT EXTEND MORE THAN 6 INCHES BEYOND THE LAST POST.
3. SPRAY ENDS OF UNISTRUT WITH COLD GALVANIZING SPRAY PAINT, ALLOW TO DRY, THEN COVER WITH RUBBER PROTECTIVE CAPS FOR SAFETY.
4. UNISTRUT TO BE CUT FLUSH WITH NO SHARP OR JAGGED EDGES.
5. ALL PROPOSED HARDWARE TO BE MOUNTED PER MANUFACTURERS SPECS.

2 TYPICAL H-FRAME DETAIL

SCALE: NOT TO SCALE

AMERICAN TOWER®

TEP NORTHEAST
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

REV.	DESCRIPTION	BY	DATE
A	PRELIM	TR	08/11/22
0	CONSTRUCTION FINAL	DO	05/15/23
1	CONSTRUCTION FINAL	TR	05/23/23
2	CONSTRUCTION FINAL	RMJ	08/07/23

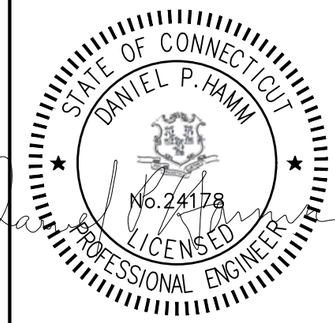
ATC SITE NUMBER:
411186

ATC SITE NAME:
WEST GRANBY, CT CT

T-MOBILE SITE NAME:
UPPER MEADOW RD MONOPOLE

SITE ADDRESS:
8 UPPER MEADOW ROAD
GRANBY, CT 06035

SEAL:



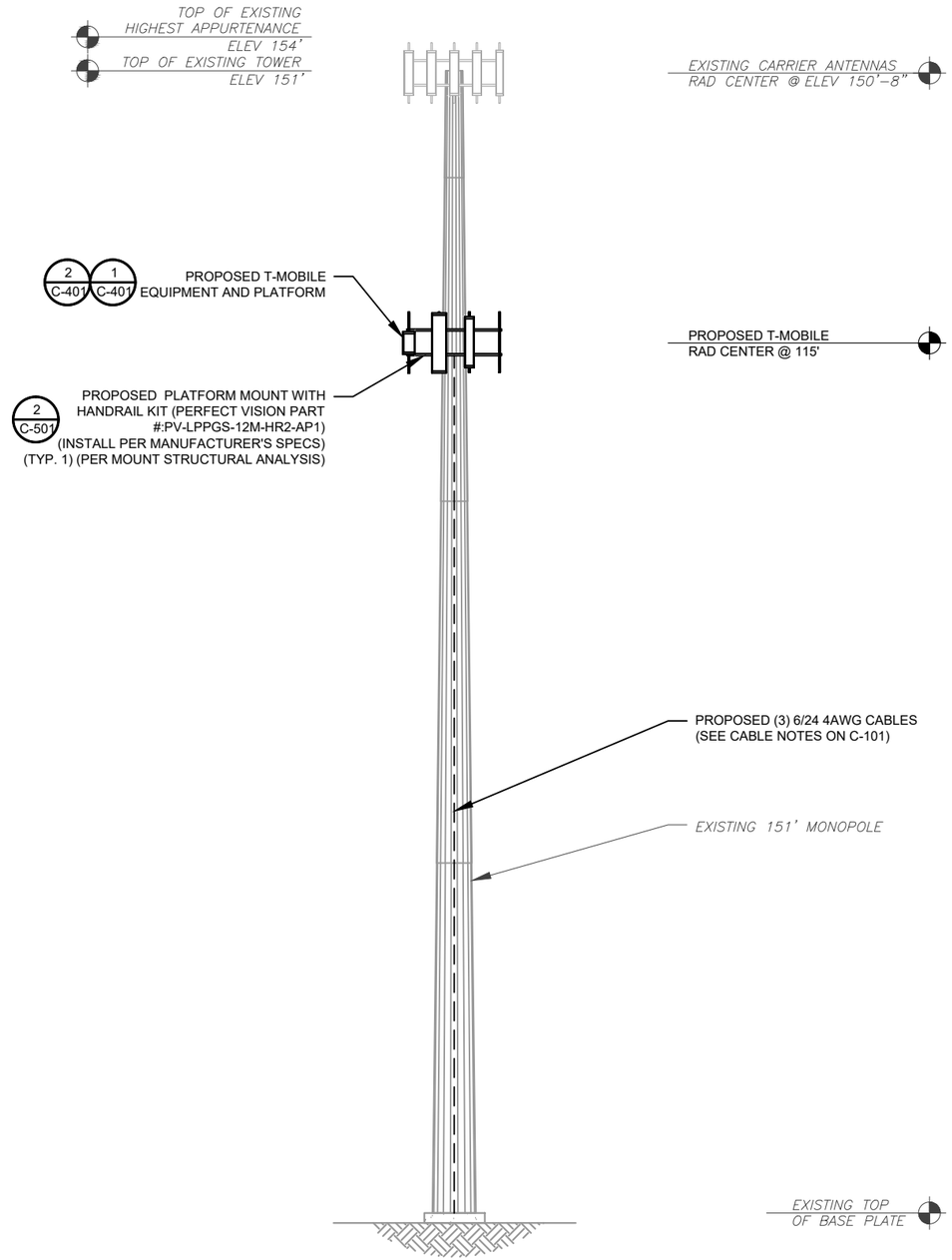
T··Mobile·

ATC JOB NO:	14117160
CUSTOMER ID:	UPPER MEADOW RD MONOPOLE
CUSTOMER #:	CTHA234A

DETAILED EQUIPMENT PLAN

SHEET NUMBER:	REVISION:
C-102	2

PER MOUNT ANALYSIS COMPLETED BY AMERICAN TOWER CORPORATION, DATED JULY 20, 2023, THE PROPOSED MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.



1 TOWER ELEVATION
SCALE: N.T.S.

TOWER NOTES:

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.

AMERICAN TOWER®

TEP NORTHEAST
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

REV.	DESCRIPTION	BY	DATE
A	PRELIM	TR	08/11/22
0	CONSTRUCTION FINAL	DO	05/15/23
1	CONSTRUCTION FINAL	TR	05/23/23
2	CONSTRUCTION FINAL	RMJ	08/07/23

ATC SITE NUMBER:
411186

ATC SITE NAME:
WEST GRANBY, CT CT

T-MOBILE SITE NAME:
UPPER MEADOW RD MONOPOLE

SITE ADDRESS:
8 UPPER MEADOW ROAD
GRANBY, CT 06035

SEAL:

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

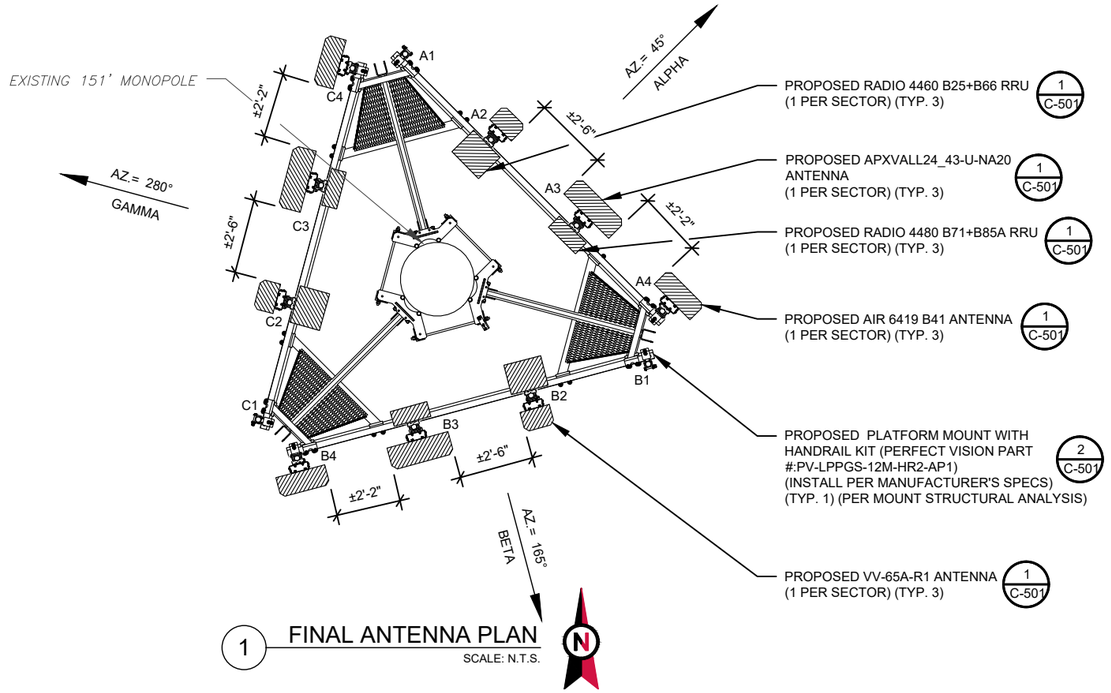
T-Mobile

ATC JOB NO:	14117160
CUSTOMER ID:	UPPER MEADOW RD MONOPOLE
CUSTOMER #:	CTHA234A

TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-201	2

PER MOUNT ANALYSIS COMPLETED BY AMERICAN TOWER CORPORATION, DATED JULY 20, 2023, THE PROPOSED MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.



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

FINAL ANTENNA/ COAX SCHEDULE

SECTOR	ANT.	MODEL #	RAD CENTER	AZIMUTH	ADDITIONAL TOWER MOUNTED EQUIPMENT	CABLE DESCRIPTION
ALPHA	A1	-	115'	45°	-	(3) 6/24 4AWG
ALPHA	A2	VV-65A-R1	115'	45°	4460 B25+B66	
ALPHA	A3	APXVALL24_43-U-NA20	115'	45°	4480 B71+B85	
ALPHA	A4	AIR 6419 B41	115'	45°	-	
BETA	B1	-	115'	165°	-	
BETA	B2	VV-65A-R1	115'	165°	4460 B25+B66	
BETA	B3	APXVALL24_43-U-NA20	115'	165°	4480 B71+B85	
BETA	B4	AIR 6419 B41	115'	165°	-	
GAMMA	C1	-	115'	280°	-	
GAMMA	C2	VV-65A-R1	115'	280°	4460 B25+B66	
GAMMA	C3	APXVALL24_43-U-NA20	115'	280°	4480 B71+B85	
GAMMA	C4	AIR 6419 B41	115'	280°	-	

1. CONFIRM WITH CARRIER REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS.

2. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS ON FILE WITH THE ATC CM.

3. SPACING OF PROPOSED EQUIPMENT SHALL BE CONFIRMED FOR TOWER CONFLICTS AND PROPOSED MOUNTS SHALL NOT IMPEDE TOWER CLIMBING PEGS.

2 ANTENNA SCHEDULE

RF JUMPER LENGTH
MONOPOLE = 15'± GUYED / SELF SUPPORT = FACE WIDTH + 15'
REFER TO FINAL RFDS FOR TYPE AND QUANTITY

AMERICAN TOWER®

TEP NORTHEAST
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

REV.	DESCRIPTION	BY	DATE
A	PRELIM	TR	08/11/22
0	CONSTRUCTION FINAL	DO	05/15/23
1	CONSTRUCTION FINAL	TR	05/23/23
2	CONSTRUCTION FINAL	RMJ	08/07/23

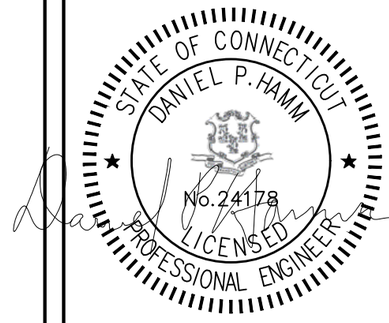
ATC SITE NUMBER:
411186

ATC SITE NAME:
WEST GRANBY, CT CT

T-MOBILE SITE NAME:
UPPER MEADOW RD MONOPOLE

SITE ADDRESS:
8 UPPER MEADOW ROAD
GRANBY, CT 06035

SEAL:

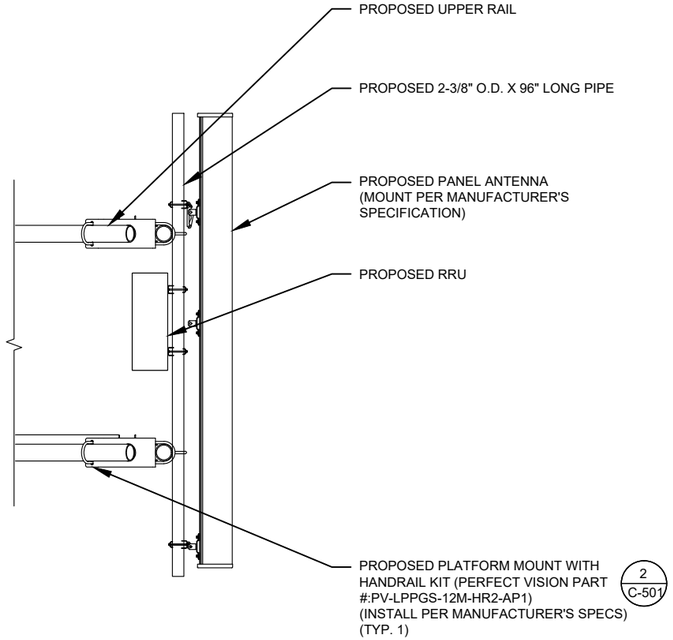


T-Mobile

ATC JOB NO:	14117160
CUSTOMER ID:	UPPER MEADOW RD MONOPOLE
CUSTOMER #:	CTHA234A

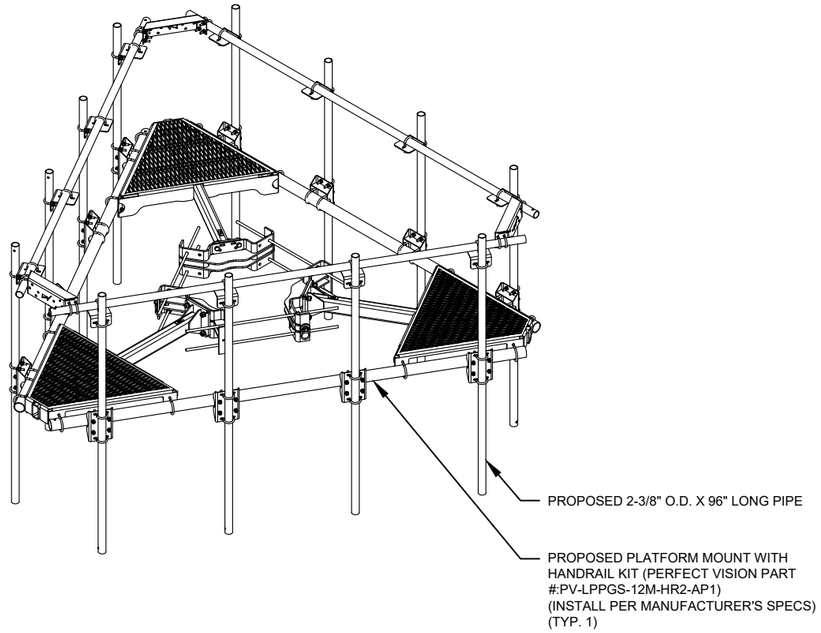
ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-401	2



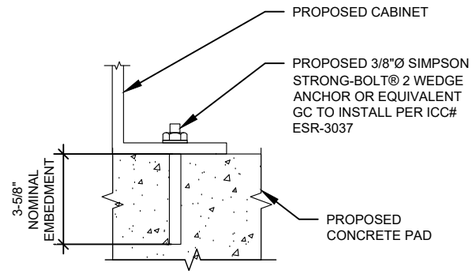
1 PROPOSED ANTENNA MOUNTING DETAIL (ELEVATION)

SCALE: N.T.S.



2 ISOMETRIC PLATFORM DETAIL

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.

3 CABINET ATTACHMENT DETAIL

SCALE: N.T.S.

AMERICAN TOWER®

TEP NORTHEAST
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

REV.	DESCRIPTION	BY	DATE
A	PRELIM	TR	08/11/22
0	CONSTRUCTION FINAL	DO	05/15/23
1	CONSTRUCTION FINAL	TR	05/23/23
2	CONSTRUCTION FINAL	RMJ	08/07/23

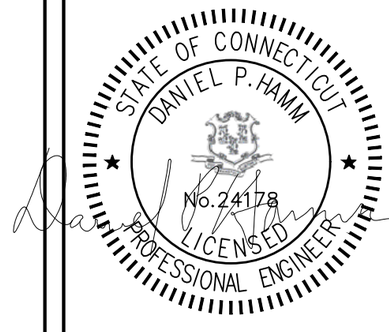
ATC SITE NUMBER:
411186

ATC SITE NAME:
WEST GRANBY, CT CT

T-MOBILE SITE NAME:
UPPER MEADOW RD MONOPOLE

SITE ADDRESS:
8 UPPER MEADOW ROAD
GRANBY, CT 06035

SEAL:

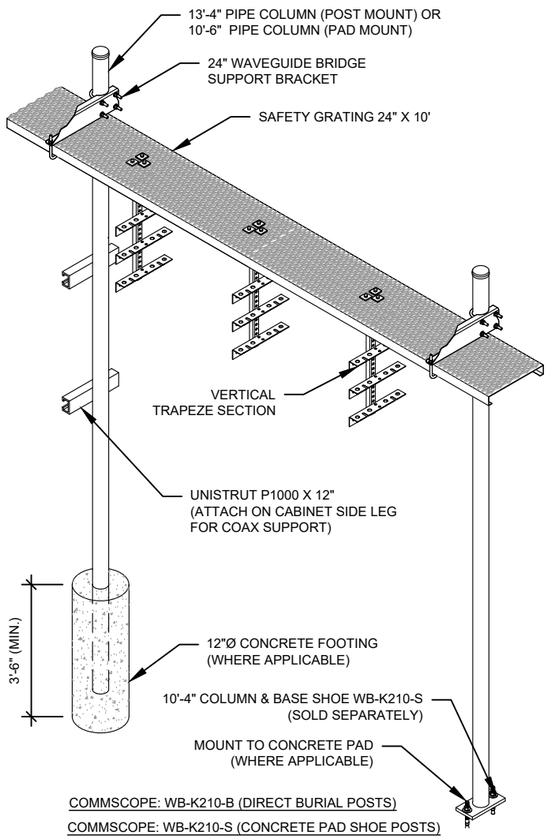


T-Mobile

ATC JOB NO:	14117160
CUSTOMER ID:	UPPER MEADOW RD MONOPOLE
CUSTOMER #:	CTHA234A

MOUNT DETAILS

SHEET NUMBER:	REVISION:
C-501	2

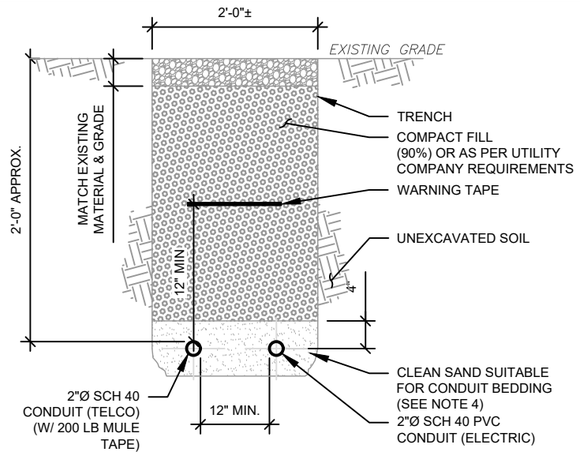


CONSTRUCTION NOTES:

1. INSTALL ICE BRIDGE TO ALLOW 7 FEET CLEARANCE ABOVE GRADE TO LOWEST APPURTENANCE.
2. INSTALL PER MANUFACTURES SPECIFICATION.

1 WAVEGUIDE BRIDGE KIT

SCALE: N.T.S.

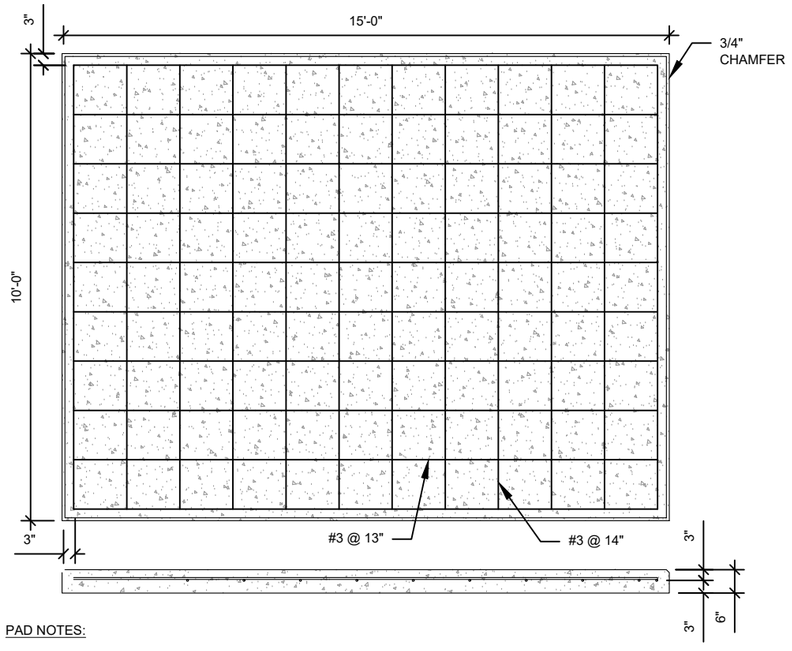


TRENCH NOTES:

1. IF FREE OF ORGANIC OR OTHER DELETERIOUS MATERIAL, EXCAVATED MATERIAL MAY BE USED FOR BACKFILL.
2. IF NOT, PROVIDE CLEAN, COMPACTIBLE MATERIAL. COMPACT IN 8" LIFTS. REMOVE ANY LARGE ROCKS PRIOR TO BACKFILLING. CONTRACTOR TO VERIFY LOCATION OF EXISTING U/G UTILITIES PRIOR TO DIGGING.
3. IF CURRENT AS-BUILT DRAWINGS ARE NOT AVAILABLE CONTRACTOR SHALL HAND DIG U/G TRENCHING.
4. CONCRETE ENCASE CONDUIT WHEN TRENCHING UNDER SITE ACCESS ROAD.

2 TELCO AND POWER CONDUIT JOINT TRENCH

SCALE: N.T.S.

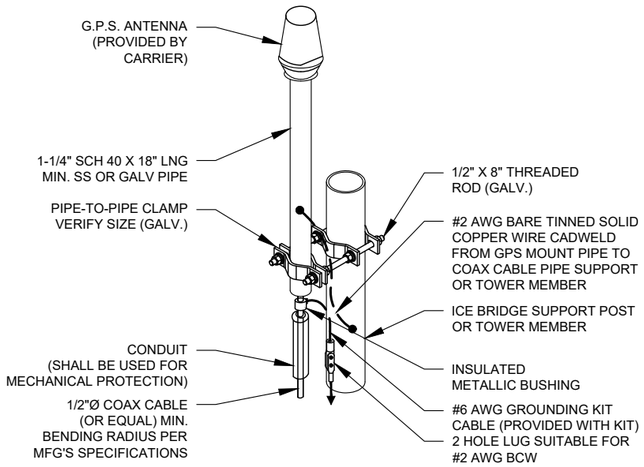


PAD NOTES:

1. PADS SHALL BE PRE-CAST MATCHING THIS DESIGN WHERE ALLOWED BY LOCAL JURISDICTION.
2. REFER TO CONCRETE & REINFORCED STEEL NOTES ON SHEET G-002 & ATC SPEC 033000 FOR CAST-IN-PLACE PADS.

4 REINFORCED PAD LAYOUT

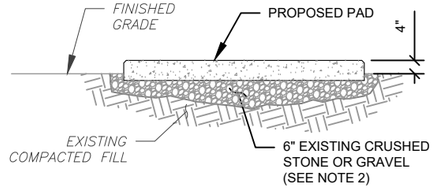
SCALE: N.T.S.



NOTES:
1. GPS SHALL BE PLACED WITH CLEAR SIGHT LINE TO THE SOUTHERN SKY.
2. CONTRACTOR TO SUPPLY COAX FOR GPS UNIT.

3 GPS ANTENNA ATTACHMENT DETAIL

SCALE: N.T.S.



PAD NOTES:

1. SUBGRADE AND FILL SHALL CONSIST OF CLEAN SOIL. DELETRIOUS MATERIAL AND ORGANICS SHALL BE REMOVED.
2. MECHANICALLY COMPACT FOOTPRINT OF PAD PLUS 2' PERIMETER.
3. USE GALVANIZED HILTI EXPANSION ANCHORS OR, APPROVED EQUAL, FOR EQUIPMENT ANCHORAGE.
4. FOR SIZE AND LOCATION OF ANCHORS AND OTHER REQUIREMENT, SEE EQUIPMENT VENDOR DRAWINGS.

5 GRAVEL PREPARATION

SCALE: N.T.S.

AMERICAN TOWER®

TEP NORTHEAST

45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

REV.	DESCRIPTION	BY	DATE
A	PRELIM	TR	08/11/22
0	CONSTRUCTION FINAL	DO	05/15/23
1	CONSTRUCTION FINAL	TR	05/23/23
2	CONSTRUCTION FINAL	RMJ	08/07/23

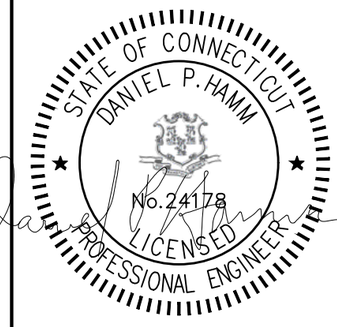
ATC SITE NUMBER:
411186

ATC SITE NAME:
WEST GRANBY, CT CT

T-MOBILE SITE NAME:
UPPER MEADOW RD
MONOPOLE

SITE ADDRESS:
8 UPPER MEADOW ROAD
GRANBY, CT 06035

SEAL:



T-Mobile

ATC JOB NO:	14117160
CUSTOMER ID:	UPPER MEADOW RD MONOPOLE
CUSTOMER #:	CTHA234A

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-502	2

GROUNDING NOTES:

1. ALL EQUIPMENT ENCLOSURES, DEVICES AND CONDUITS SHALL BE GROUNDED TO CONFORM WITH THE LATEST REQUIREMENTS OF THE NEC BY THE INSTALLATION OF A SEPARATE, GREEN, INSULATED GROUND CONDUCTOR FOR ALL FEEDER AND BRANCH CIRCUITS. GROUND CONDUCTORS SHALL BE OF THE SIZE INDICATED ON THE DRAWINGS. GROUND CONDUCTORS SHALL BE CONTINUOUS IN LENGTH AND SHALL BE BONDED TO EACH ENCLOSURE THEY PASS THROUGH. CONDUIT SHALL NOT BE USED AS A GROUNDING CONDUCTOR.

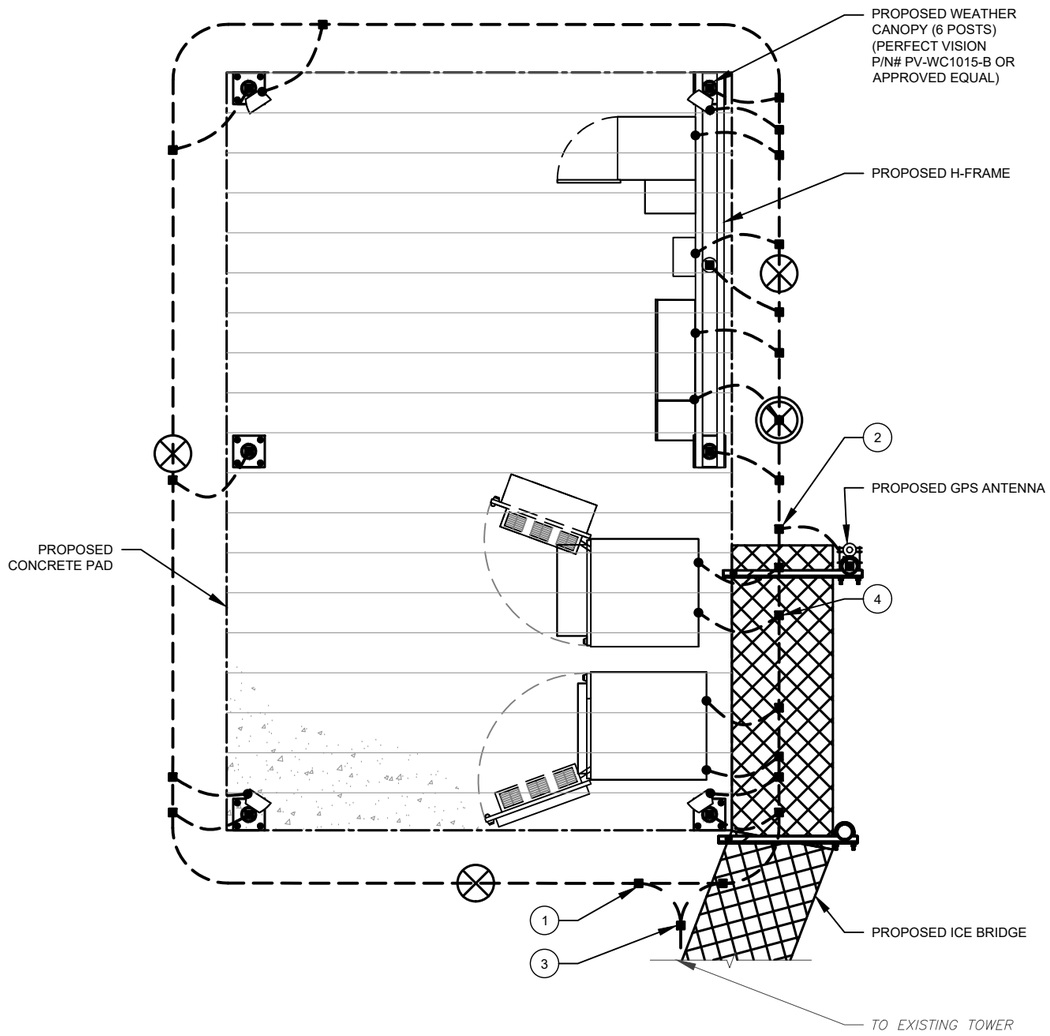
2. GROUNDING CONDUCTORS SHALL:
   - A. BE #2 AWG SOLID BARE TINNED COPPER (SBTC) FOR ALL GROUNDING SYSTEM WIRE UNLESS OTHERWISE NOTED, OR OTHERWISE REQUIRED BY CODE.
   - B. BE MINIMUM 12" BEND RADIUS. KEEP NUMBER OF BENDS TO A MINIMUM.
   - C. AVOID LONG BONDING CONNECTION RUNS. MAKE DIRECT AS POSSIBLE.
   - D. NOT HAVE ANY U-SHAPED RUNS.
   - E. BE IN NON-METALLIC CONDUIT ONLY, IF IN CONDUIT.
   - F. BE PLACED THROUGH NON-METALLIC SLEEVES IN FLOORS, WALLS, CEILINGS, ETC.
   - G. PROTECTED IN NON-METALLIC CONDUIT WHERE EXPOSED ABOVE GRADE.

2. INSTALL ALL GROUNDING RINGS AND RADIALS WITH CONDUCTIVE CEMENT, SANKOSHA AS DISTRIBUTED BY ELECTRIC MOTION COMPANY, INC., WINSTED, CT 06098, OR AS SPECIFICALLY INDICATED. INSTALL PER MANUFACTURER'S SPECIFICATIONS.

3. GROUND RINGS SHALL BE:
   - A. MINIMUM 30" BELOW GRADE, OR BELOW FROST LINE WHICHEVER IS DEEPER.
   - B. MINIMUM 2' FROM FOUNDATIONS, FOOTINGS, OTHER GROUNDING SYSTEMS AND ALL CONDUCTIVE OBJECTS.
   - C. WITH MINIMUM 12" BEND RADII.
   - D. WITH ALL CONNECTIONS IN CONTACT WITH EARTH, BONDED BY EXOTHERMIC WELDING.
   - E. BONDED TO A SINGLE POINT GROUND (SPG) WITH A SINGLE WIRE AS INDICATED ON DRAWINGS.

4. GROUND RODS SHALL BE:
   - A. MINIMUM 5/8" DIAMETER.
   - B. MINIMUM 10' LONG.
   - C. COPPER-CLAD GALVANIZED STEEL OR STAINLESS STEEL.
   - D. PLACED IN UNDISTURBED SOIL AND BELOW THE FROST LINE.
   - E. INSTALLED WITH MINIMUM SEPARATION DISTANCE OF TWICE THE DEPTH OF THE ROD(S), OR AS INDICATED ON DRAWINGS.
   - F. MINIMUM TWO (2) RODS ON THE TOWER RING OR ONE (1) PER LEG WHICHEVER IS LARGER, MINIMUM FOUR (4) RODS ON EVERY EQUIPMENT BUILDING RING WITH ONE AT EACH CORNER OR AS INDICATED, MINIMUM ONE (1) ROD FOR POWER SERVICE GROUNDING ELECTRODE, AND MINIMUM ONE (1) ROD AT END OF EACH RADIAL.

5. CONDUCTIVE OBJECTS, SUCH AS FENCES, SHALL BE BONDED TO THE GROUNDING SYSTEM IF WITHIN 20' OF THE TOWER GROUNDING SYSTEM, OR 5' OF ANY OTHER GROUNDED COMPONENT.



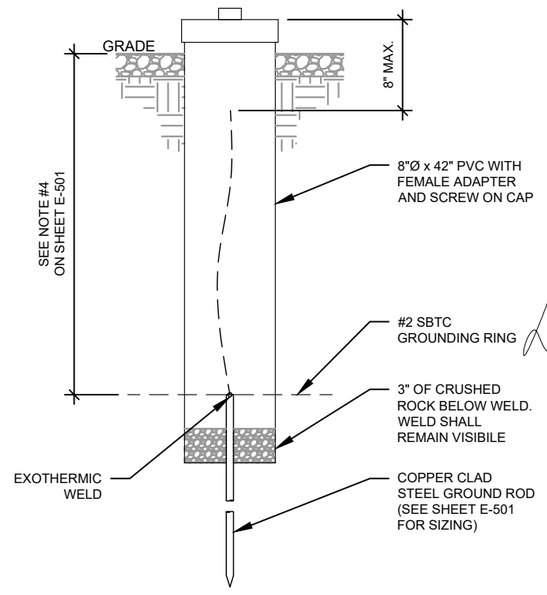
1 DETAILED GROUNDING PLAN
SCALE: N.T.S.

GROUNDING PLAN LEGEND:

- EXISTING GROUND WIRE
- GROUND WIRE
- EXOTHERMIC WELD
- MECHANICAL WELD
- COPPER GROUND ROD
- TEST WELL

GROUNDING KEYED NOTES:

1. BOND TO TOWER GROUND RING
2. #2 AWG BOND FROM VERTICAL H-FRAME AND ICE BRIDGE POST TO EXTERNAL GROUND RING (TYP. EVERY POST).
3. #2 AWG SBTC BOND FROM GROUND RING TO EQUIPMENT.
4. EQUIPMENT BOND TO GROUND RING (TYP.)
5. 5/8Ø" X 10 FT GROUND ROD.



2 TEST WELL DETAIL
SCALE: N.T.S.

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

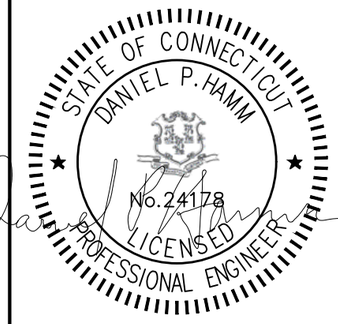
AMERICAN TOWER®

TEP NORTHEAST
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

REV.	DESCRIPTION	BY	DATE
A	PRELIM	TR	08/11/22
0	CONSTRUCTION FINAL	DO	05/15/23
1	CONSTRUCTION FINAL	TR	05/23/23
2	CONSTRUCTION FINAL	RMJ	08/07/23

ATC SITE NUMBER:
411186
ATC SITE NAME:
WEST GRANBY, CT CT
T-MOBILE SITE NAME:
UPPER MEADOW RD MONOPOLE
SITE ADDRESS:
8 UPPER MEADOW ROAD
GRANBY, CT 06035

SEAL:

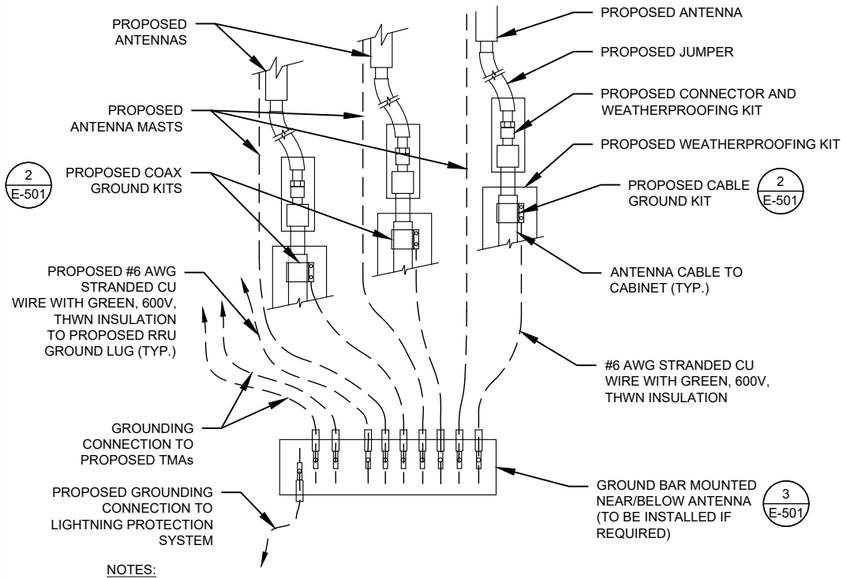


T-Mobile

ATC JOB NO:	14117160
CUSTOMER ID:	UPPER MEADOW RD MONOPOLE
CUSTOMER #:	CTHA234A

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-101	2

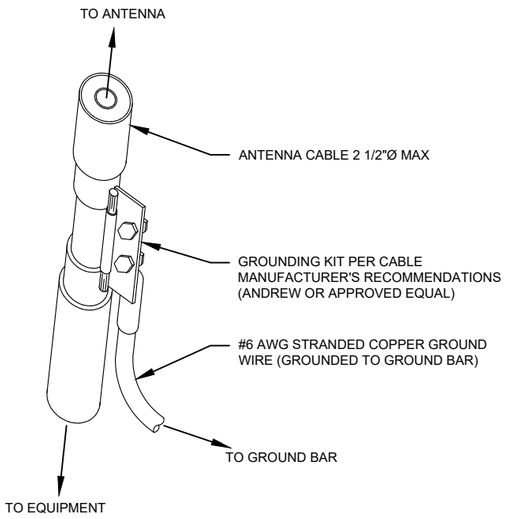


NOTES:

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

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: N.T.S.

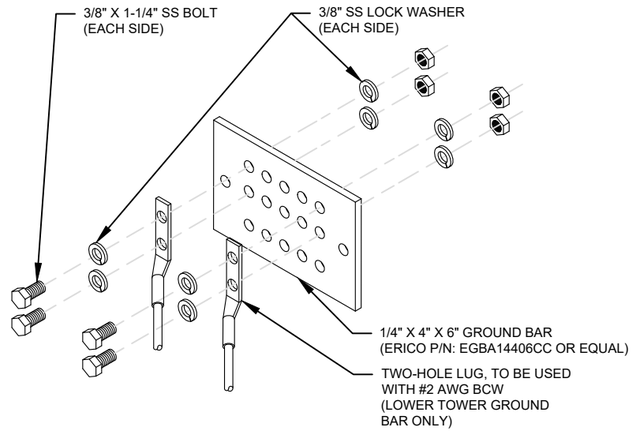


GROUND KIT NOTES:

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.

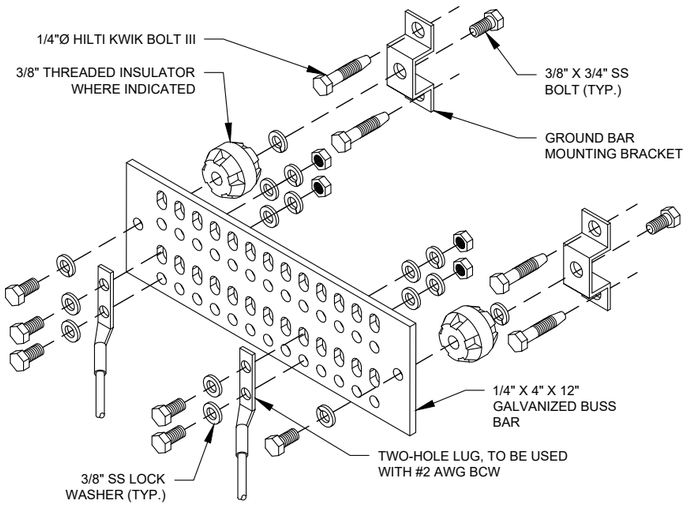


GROUND BAR NOTES:

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.

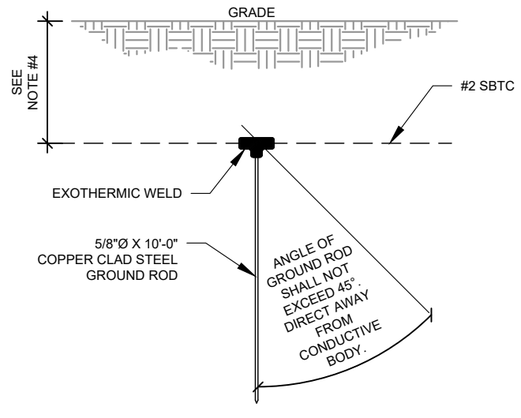


GROUND BAR NOTES:

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

4 MAIN GROUND BAR DETAIL

SCALE: N.T.S.

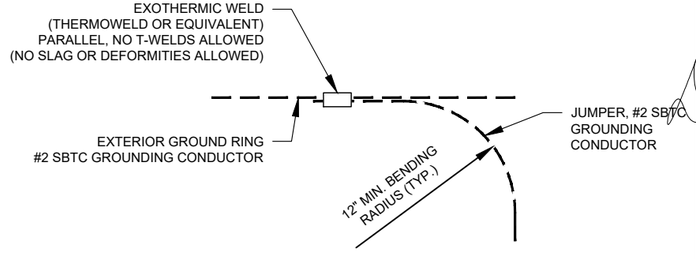


NOTES:

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

5 GROUND ROD DETAIL

SCALE: N.T.S.



6 TIE CONNECTION DETAIL

SCALE: N.T.S.

AMERICAN TOWER®

TEP NORTHEAST
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

REV.	DESCRIPTION	BY	DATE
A	PRELIM	TR	08/11/22
0	CONSTRUCTION FINAL	DO	05/15/23
1	CONSTRUCTION FINAL	TR	05/23/23
2	CONSTRUCTION FINAL	RMJ	08/07/23

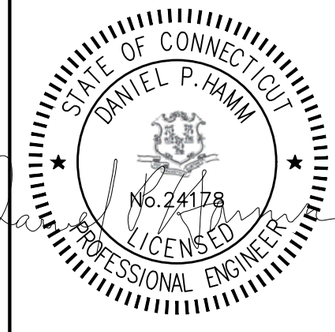
ATC SITE NUMBER:
411186

ATC SITE NAME:
WEST GRANBY, CT CT

T-MOBILE SITE NAME:
UPPER MEADOW RD MONOPOLE

SITE ADDRESS:
8 UPPER MEADOW ROAD
GRANBY, CT 06035

SEAL:



T-Mobile

ATC JOB NO:	14117160
CUSTOMER ID:	UPPER MEADOW RD MONOPOLE
CUSTOMER #:	CTHA234A

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	2

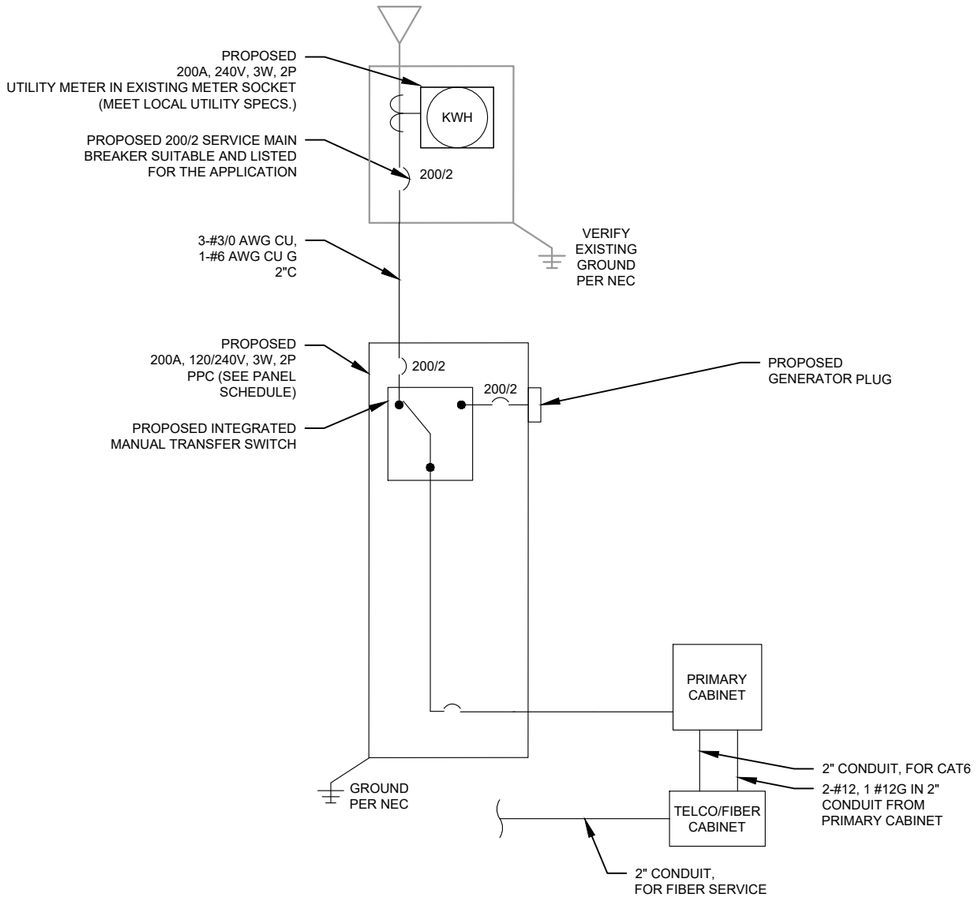
PANEL DESIGNATION:	***TMO***	TYPE:	LIGHTING & APPLIANCE	SYSTEM:	120/240V, 1Ø, 3W, 24 CKT
		MOUNTING:	SURFACE	MAIN BREAKER (MB):	200A
		ENCLOSURE:	NEMA 3R	MAIN BUS RATING:	200A
				MIN. A.I.C. RATING:	N/A

LOCATION:	TMO LEASE EQUIPMENT AREA
PANEL NOTES:	PROPOSED

CONNECTED LOAD (kVA)		BRIEF DESCRIPTION	FEEDER OR BRANCH CIRCUIT BREAKER AMPS	POLES	CIRCUIT WIRE	GND	COND.	POLE NO.	CIRC. NOTES		CIRC. NOTES	POLE NO.	CIRCUIT COND.	GND	WIRE	BREAKER POLES	AMPS	BRIEF DESCRIPTION	CONNECTED LOAD (kVA)	
A	B																		A	B
0.01		SURGE	60	2	3-#6	#10	1"	1				2	1/2"	#12	2-#12	1	20	GFI	0.18	
	0.01							3				4	1/2"	#12	2-#12	1	20	LIGHT		0.50
7.50		ENCLOSURE 6160	150	2	2-#3/0	#6	2"	5				6	1/2"	#12	2-#12	1	20	AAV GFI	0.15	
	7.50							7				8								0.00
0.18		6160 GFI	20	1	2-#12	#12		9				10							0.00	
	0.00							11				12								0.00
0.00								13				14							0.00	
	0.00							15				16								0.00
0.00								17				18							0.00	
	0.00							19				20								0.00
0.00								21				22							0.00	
	0.00							23				24								0.00
7.7	7.5								A	B	TOTAL								0.3	0.5
									8.0	8.0	16.0	CONNECTED LOAD (kVA)								
									8.0	8.0	16.0	DEMAND LOAD (kVA)								

DERATING FACTOR (80%)
DEMANDLOAD SIZING: *83 AMPS*

1 PANEL SCHEDULE



2 ONE-LINE DIAGRAM

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

3 CONDUIT USE TABLES

NOTES:
1. ALL EQUIPMENTS' SHORT-CIRCUIT CURRENT RATING SHALL EXCEED AVAILABLE FAULT CURRENT PER UTILITY
2. CONTRACTOR TO INSTALL HANDHOLES AT EVERY 3RD 90° TURN

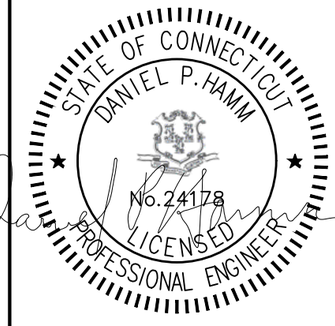
AMERICAN TOWER®

TEP NORTHEAST
45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845
TEL: (978) 557-5553

REV.	DESCRIPTION	BY	DATE
A	PRELIM	TR	08/11/22
0	CONSTRUCTION FINAL	DO	05/15/23
1	CONSTRUCTION FINAL	TR	05/23/23
2	CONSTRUCTION FINAL	RMJ	08/07/23

ATC SITE NUMBER:
411186
ATC SITE NAME:
WEST GRANBY, CT CT
T-MOBILE SITE NAME:
UPPER MEADOW RD MONOPOLE
SITE ADDRESS:
8 UPPER MEADOW ROAD
GRANBY, CT 06035

SEAL:



T-Mobile

ATC JOB NO:	14117160
CUSTOMER ID:	UPPER MEADOW RD MONOPOLE
CUSTOMER #:	CTHA234A

PANEL SCHEDULE & ONE-LINE DIAGRAM

SHEET NUMBER:	REVISION:
E-601	2

RAN Template:	A&L Template:
67E5A968E 6160	67E5998E_1xAIR+1OP+1QP

CTHA234A_Coverage Strategy_1

Print Name: Standard
PORs: Coverage Strategy_Regional Coverage

Section 1 - Site Information

Site ID: CTHA234A
Status: Final
Version: 1
Project Type: Coverage Strategy
Approved: 7/15/2022 11:24:12 AM
Approved By: Justin.Darrow@t-mobile.com
Last Modified: 7/15/2022 11:24:12 AM
Last Modified By: Justin.Darrow@t-mobile.com

Site Name: Upper Meadow Rd Monopole
Site Class: Monopole
Site Type: Structure Non Building
Plan Year: 2022
Market: CONNECTICUT CT
Vendor: Ericsson
Landlord: Not Specified

Latitude: 41.95330000
Longitude: -72.82984000
Address: 8 Upper Meadow Rd
City, State: Granby, CT
Region: NORTHEAST

RAN Template: 67E5A998E 6160 | **AL Template:** 67E5998E_1xAIR+1OP+1QP

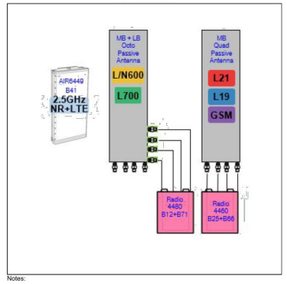
Sector Count:	Antenna Count:	Coax Line Count:	TMA Count:	RRU Count:
3	9	0	0	6

Section 2 - Existing Template Images

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

Section 3 - Proposed Template Images

67E5A998E_JPG



Notes:

Section 4 - Siteplan Images

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

RAN Template:	A&L Template:
67E5A968E 6160	67E5998E_1xAIR+1OP+1QP

CTHA234A_Coverage Strategy_1

Print Name: Standard
PORs: Coverage Strategy_Regional Coverage

Section 5 - RAN Equipment

Existing RAN Equipment

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

Proposed RAN Equipment

Template: 67E5A998E 6160

Enclosure	1	2	3
Enclosure Type	Enclosure 6160 AC V1	B160	RBS 6601
Baseband	BB 6648: L2500, N2500 / BB 6648: L700, L600, N600, L2100, L1900		
Hybrid Cable System	Hybrid Trunk 6/24 4AWG 50m (x 3) / PSU 4813 vR2A (Kit) (x 2)		
Transport System	CSR IXRe V2 (Gen2)		

RAN Scope of Work:

RAN Template:	A&L Template:
67E5A968E 6160	67E5998E_1xAIR+1OP+1QP

CTHA234A_Coverage Strategy_1

Print Name: Standard
PORs: Coverage Strategy_Regional Coverage

Section 6 - A&L Equipment

Existing Template: Custom
Proposed Template: 67E5998E_1xAIR+1OP+1QP

Sector 1 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	Commscope_VV-65A-R1 (Quad)		RFS - APXVAALL24_43-U-NA20 (Octo)				AIR 6419 B41 (Active Antenna - Massive MIMO)	
Azimuth	45		45				45	
M. Tilt								
Height	115		115				115	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L1900, L2100	L1900, L2100	L700, L600, N600	L700, L600, N600			L2500, N2500	L2500, N2500
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt								
Cables	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)				
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:

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

RAN Template:	A&L Template:
67E5A968E 6160	67E5998E_1xAIR+1OP+1QP

CTHA234A_Coverage Strategy_1

Print Name: Standard
PORs: Coverage Strategy_Regional Coverage

Sector 2 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	Commscope_VV-65A-R1 (Quad)		RFS - APXVAALL24_43-U-NA20 (Octo)				AIR 6419 B41 (Active Antenna - Massive MIMO)	
Azimuth	165		165				165	
M. Tilt								
Height	115		115				115	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L2100, L1900	L2100, L1900	L700, L600, N600	L700, L600, N600			L2500, N2500	L2500, N2500
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt								
Cables	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)				
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:

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

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-601	2

RAN Template:	A&L Template:
67E5A998E 6160	67E5998E_1xAIR+1OP+1QP

CTHA234A_Coverage Strategy_1

Print Name: Standard
PORs: Coverage Strategy_Regional Coverage

Sector 3 (Proposed) view from behind								
Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	Commscope_VV-65A-R1 (Quad)		RFS - APXVAALL24_43-U-NA20 (Octo)				AIR 6419 B41 (Active Antenna - Massive MIMO)	
Azimuth	280		280				280	
M. Tilt								
Height	115		115				115	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L1900 L2100	L1900 L2100	L700 L600 N600	L700 L600 N600			L2500 N2500	L2500 N2500
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt								
Cables	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**				
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:

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

RAN Template:	A&L Template:
67E5A998E 6160	67E5998E_1xAIR+1OP+1QP

CTHA234A_Coverage Strategy_1

Print Name: Standard
PORs: Coverage Strategy_Regional Coverage

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

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-602	2

NSB 190FT *Red Battery®*

Long float life at elevated temperatures

Red Star Technology® uses pure lead plates to deliver **exceptionally long float life even at elevated temperatures.**

- Pure lead AGM technology delivers long float life for telecom applications even at elevated temperatures
- 15 year float life at 20°C (68°F)
- EUROBAT design life definition: Long Life (12+ years)
- High energy density
- Operating temperature range: -40°C to +65°C (-40°F to 149°F)
- State-of-the-art automated manufacturing ensures consistency and reliability
- Advanced 3 stage terminal design to ensure leak-free operation - female M8 brass terminals provide maximum performance
- 2 year shelf life at 25°C (77°F)
- High modulus Polyphenylene Oxide (PPO) plastic materials designed to withstand extended elevated operating temperatures and maintain high battery compression essential for reliable operation
  - Non-halogenated, thermally sealed plastic casing
  - Flame retardant (UL 94 V0) and LOI of at least 28%
- Integral handles and front access terminals ensure ease of installation and maintenance
- Approved as non-hazardous cargo for ground, sea, and air transport - DOT 49CFR173.159(d), (i) and (ii)

Visit our website to find out more **www.northstarbattery.com**

NorthStar®

Form: SES-546-08-02 Issued: 11-11-13 ECO: 2383-S13

NSB 190FT *Red Battery®*

Nominal Technical Specifications

Electrical

	International Standard 20°C (68°F)	North American Standard 25°C (77°F)
8 hour capacity to 1.75 VPC	188 Ah	191 Ah
10 hour capacity to 1.80 VPC	190 Ah	192 Ah
Float Voltage	2.29 +/- 0.02 VPC	2.27 +/- 0.02 VPC
Nominal Voltage	12 V	
Impedance (1kHz)	2.2 mΩ @ 25°C (77°F)	
Conductance	2,400 S	
Short Circuit Current	6,000 A	

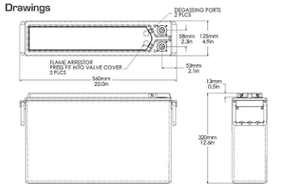
Dimensions

Height	320 mm (12.6 in)	Weight	60 kg (132 lbs)
Width	125 mm (4.9 in)	Terminal	Female M8 x 1.25
Depth	560 mm (22.0 in)	Terminal Torque	8.0 Nm (71 in-lbs)

Ah Capacity Ratings @ 25°C (77°F)

Capacity Discharge / hours	1	2	4	8	10
Capacity @ 25°C / Ah	150	167	181	191	192
End of Discharge / VPC	1.70	1.75	1.75	1.75	1.80

Drawings



All NorthStar batteries are compliant with: Telcordia SR4228, IEC 60896; Bellcore GR-63-Core, Issue 1; British, German, and Russian telecom standards; UL approved. NorthStar is registered to ISO 9001 and ISO 14001.

NorthStar Americas
NorthStar Battery Company LLC
4000 Continental Way
Springfield, MO, 65803,
United States of America
info@northstarbattery.com
Tel: +1 417 575 6200
Fax: +1 417 575 6250

NorthStar Europe
StaTel Sweden AB
Staffans Väg 6-8
SE-192 07 Sollentuna,
Stockholm, Sweden
europe@northstarbattery.com
Tel: +46 8 410 103 00
Fax: +46 8 830 06 00

NorthStar Middle East, Africa
StaTel Sweden AB JFL Branch
Office 702, Saba 1 Tower
Jumeirah Lake Towers, Dubai
United Arab Emirates
mea@northstarbattery.com
Tel: +971 4 423 6060
Fax: +971 4 423 6061

NorthStar Asia-Pacific
NS Asia Pacific Sdn. Bhd.
Level 20, Menara Standard Chartered
30 Jalan Sultan Ismail, 50250
Kuala Lumpur, Malaysia
asia@northstarsistebal.com
Tel: +60 3 2117 5354

www.northstarbattery.com

NorthStar®

Form: SES-546-08-02 Issued: 11-11-13 ECO: 2383-S13

BATTERY SCHEDULE					
MODEL	CURRENT CAPACITY	NOMINAL VOLTAGE	WEIGHT (LBS)	QUANTITY	**ELECTROLYTE (H2SO4/H2O)**
NORTHSTAR NSB 190FT	190A	12V	132	12	**269.28**

Industrial Lead Acid Battery Safety Data Sheet

3. *COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENTS (Chemical/Common Names):	CAS No.:	% by Wt:
Lead and Lead Compounds (inorganic)	7439-92-1	**50**
Electrolyte (H2SO4/H2O)	7664-93-9	**17**
Lead Oxide	1309-60-0	**20**
Tin	7440-31-5	**0.2**

4. *FIRST AID MEASURES*

INHALATION:
Sulfuric Acid: Remove to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician.
Lead: Remove from exposure, gargle, wash nose and lips; consult physician.

INGESTION:
Sulfuric Acid: Give large quantities of water; Do NOT induce vomiting or aspiration into the lungs may occur and can cause permanent injury or death. Consult a physician.
Lead: Consult a physician immediately.

SKIN:
Sulfuric Acid: Flush with large amounts of water for at least 15 minutes; remove contaminated clothing completely, including shoes. If symptoms persist, seek medical attention. Wash contaminated clothing before reuse. Discard contaminated shoes.
Lead: Wash immediately with soap and water.

EYES:
Sulfuric Acid and Lead: Flush immediately with large amounts of water for at least 15 minutes while lifting lids; Seek immediate medical attention if eyes have been exposed directly to acid.

5. *FIRE FIGHTING MEASURES*

Flash Point: Not Applicable
Flammable Limits: LEL = 4.1% (Hydrogen Gas in air); UEL = 74.2%
Extinguishing media: CO2; foam; dry chemical. Do not use carbon dioxide directly on cells. Avoid breathing vapors. Use appropriate media for surrounding fire.

Fire Fighting Procedures:
Use positive pressure, self-contained breathing apparatus. Beware of acid splatter during water application and wear acid-resistant clothing, gloves, face and eye protection. If batteries are on charge, shut off power to the charging equipment, but note that strings of series connected batteries may still pose risk of electric shock even when charging equipment is shut down.

Industrial Lead Acid Battery Safety Data Sheet

1. *IDENTIFICATION*

REVISION DATE: 01-31-18

Product Name: Lead Acid Battery, Non-Spillable Wet **Synonyms:** Industrial Battery, Traction Battery, Stationary Battery, Deep Cycle Battery	**Product Use:** Electric Storage Battery **Manufacturer/Supplier:** NorthStar Battery, Co., LLC **Address:** 4000 E. Continental Way, Springfield, MO 65803
General Information Number: 417.575.8200	**CAS Number:** Not Applicable CHEMTREC: 800-424-9300

2. *GHS HAZARDS IDENTIFICATION*

Health	Environmental	Physical
Acute Toxicity (Oral/Dermal/Inhalation) - Category 4 Skin Corrosion/Irritation - Category 1A Eye Damage - Category 1 Reproductive - Category 1A Carcinogenicity (lead) - Category 1B Carcinogenicity (arsenic) - Category 1A Carcinogenicity (acid mist) - Category 1A Specific Target Organ Toxicity (repeated exposure) - Category 2	Aquatic Chronic - 1 Aquatic Acute - 1	Explosive Chemical, Division 1.3

GHS Label:

Health	Environmental	Physical
		
Hazard Statements **DANGER!** Causes severe skin burns and eye damage. Causes serious eye damage. May damage fertility or the unborn child if ingested or inhaled. May cause cancer if ingested or inhaled. Causes damage to central nervous system, blood and kidneys through prolonged or repeated exposure. May form explosive air/gas mixture during charging. Extremely flammable gas (hydrogen). Explosive, fire, blast or projection hazard.	***Precautionary Statements*** Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing, eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Causes skin irritation, serious eye damage. Contact with internal components may cause irritation or severe burns. Avoid contact with internal acid. Irritating to eyes, respiratory system, and skin.	

1 BATTERY SPECIFICATIONS

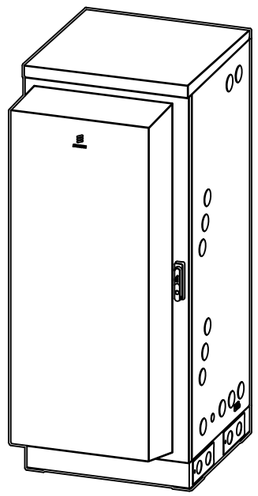
NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF CUSTOMER WITHOUT EDIT.

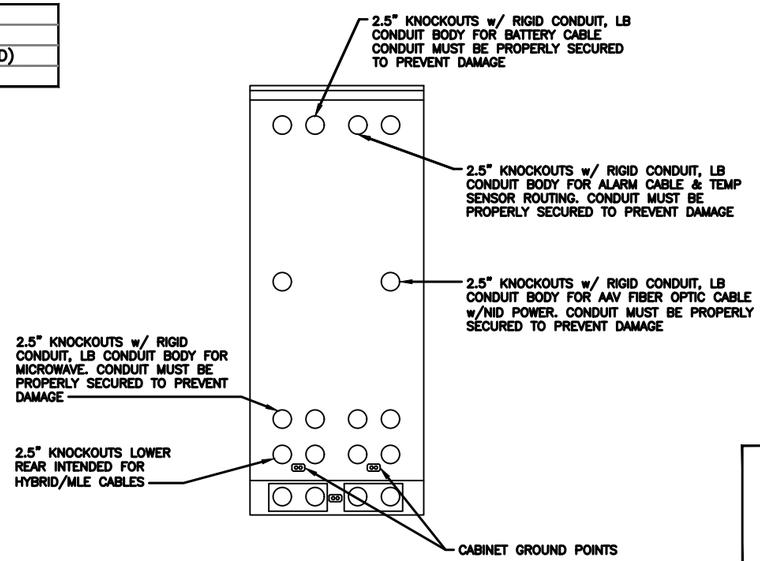
SUPPLEMENTAL

SHEET NUMBER: R-603

REVISION: 2

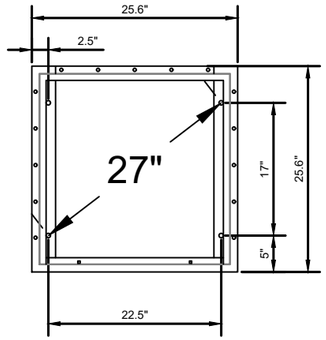
MANUFACTURER:	ERICSSON
MODEL:	6160 SITE SUPPORT CABINET
DIMENSIONS:	63" x 25.6" x 33.6" (H x W x D)
WEIGHT:	373 LBS





REAR VIEW

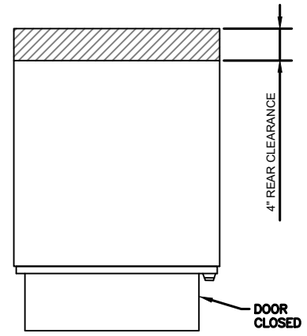
NOTE:
- CORRECT KNOCKOUT TOOL REQUIRED FOR PUNCHING KNOCKOUTS. DO NOT DRILL THROUGH KNOCKOUTS
- CONDUIT MUST BE PROPERLY SECURED TO PREVENT DAMAGE TO CABINETS AND OR CABLING

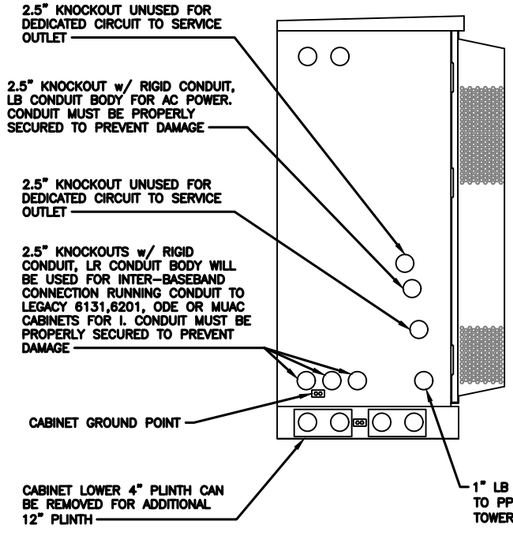


BOLT DOWN PATTERN

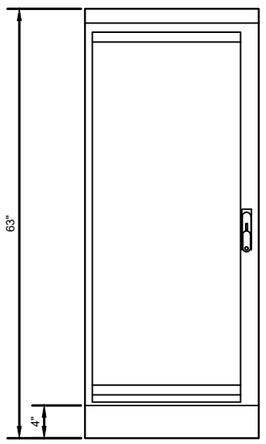
GROUNDING NOTE:

"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."

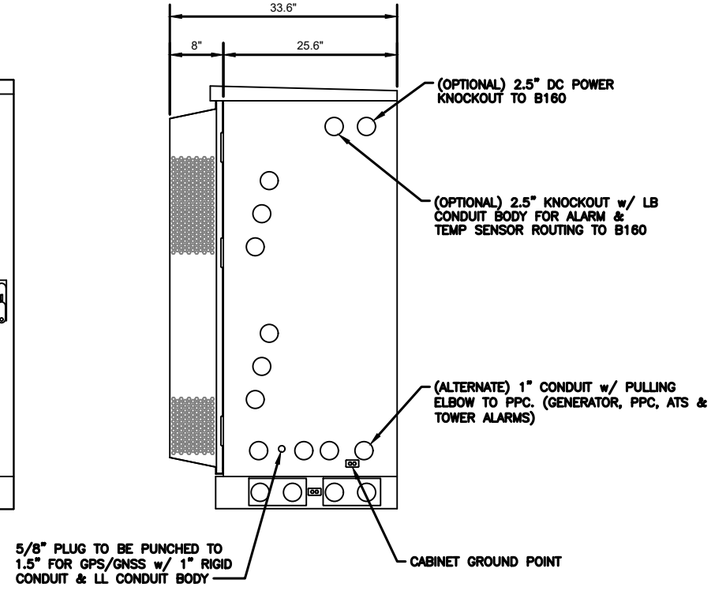




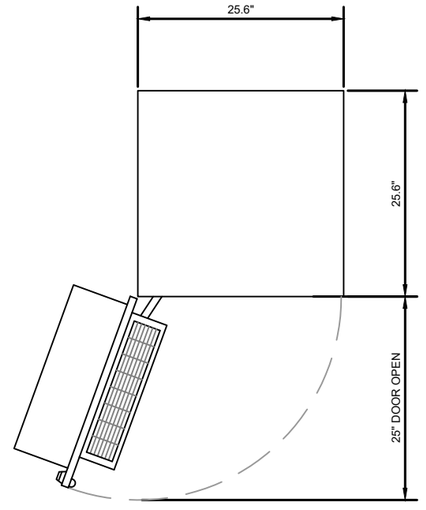
LEFT VIEW



FRONT VIEW



RIGHT VIEW



PLAN VIEW

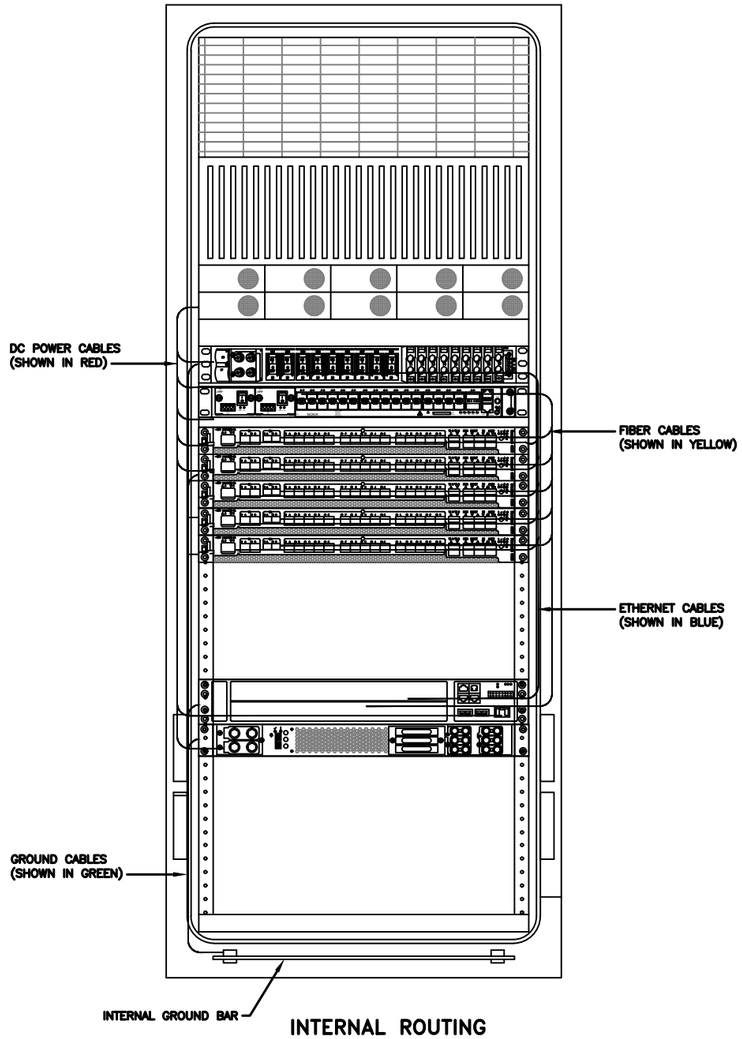
1 ERICSSON 6160 SITE SUPPORT CABINET SPECIFICATIONS

SCALE: N.T.S.

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

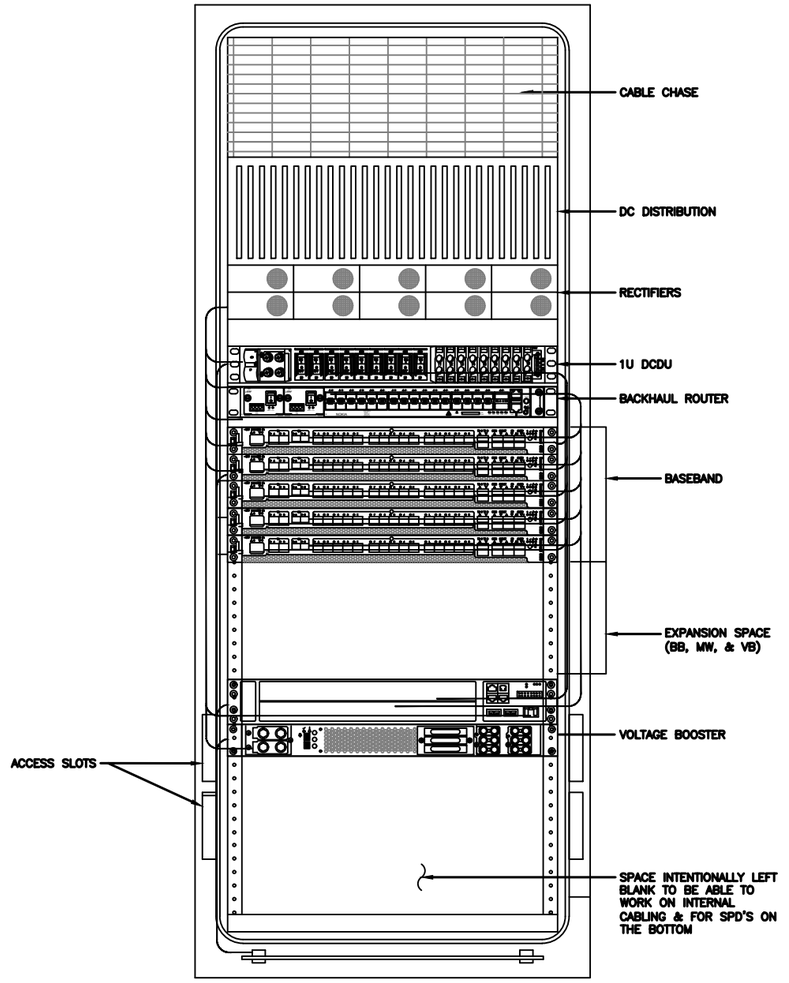
SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-604	2



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.

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

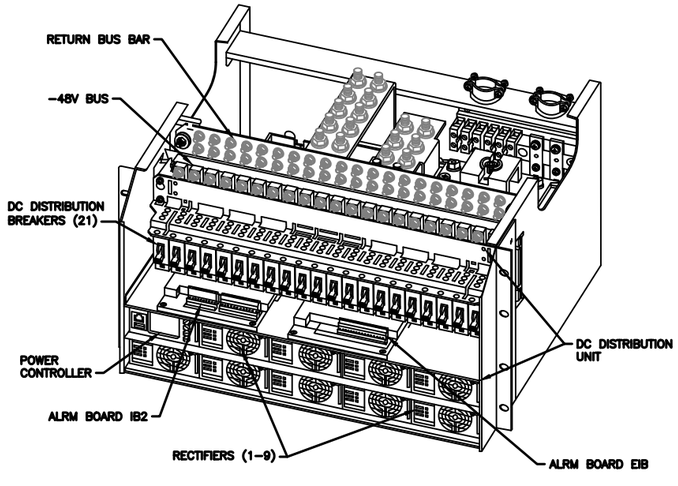
SUPPLEMENTAL

SHEET NUMBER: R-605

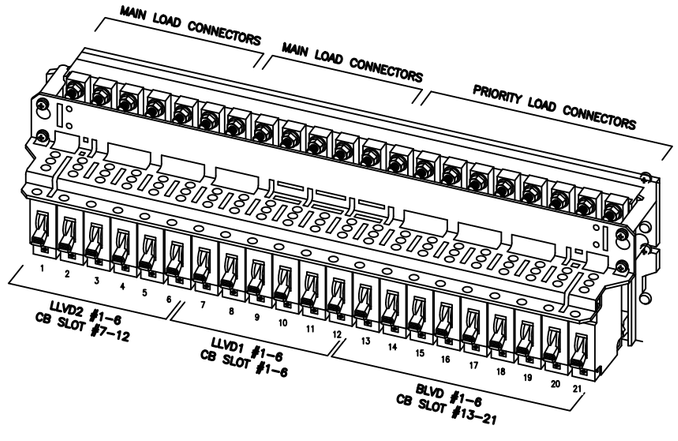
REVISION: 2

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.

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

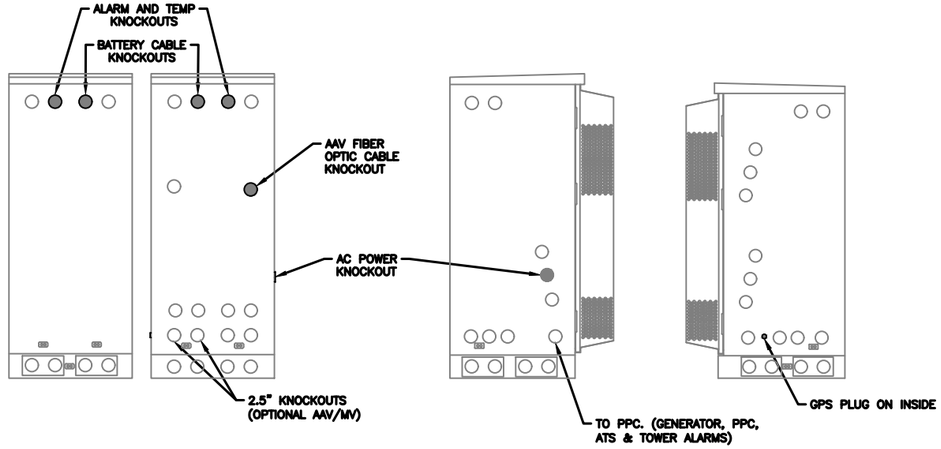
SUPPLEMENTAL

SHEET NUMBER: R-606

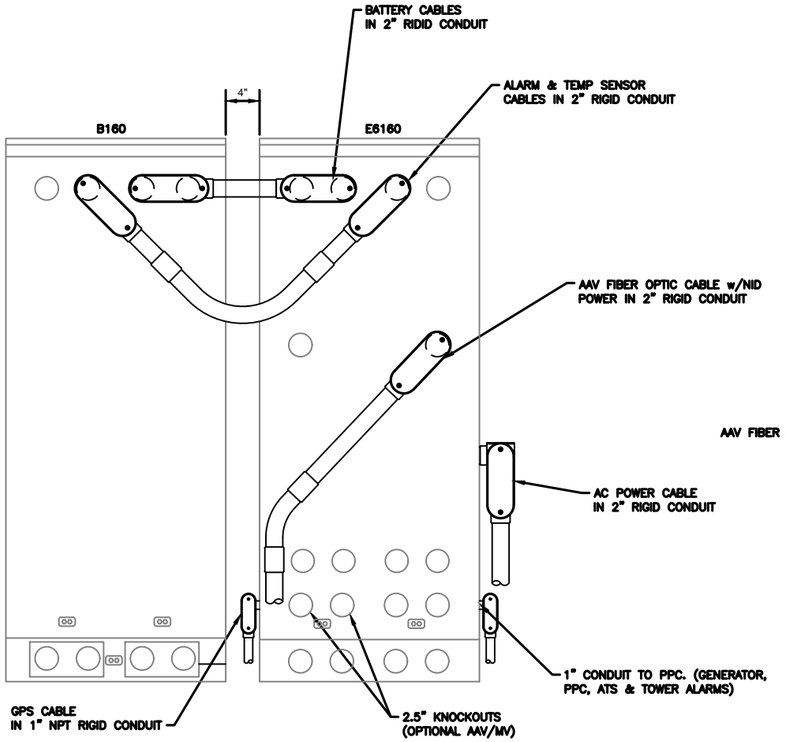
REVISION: 2

NOTE:

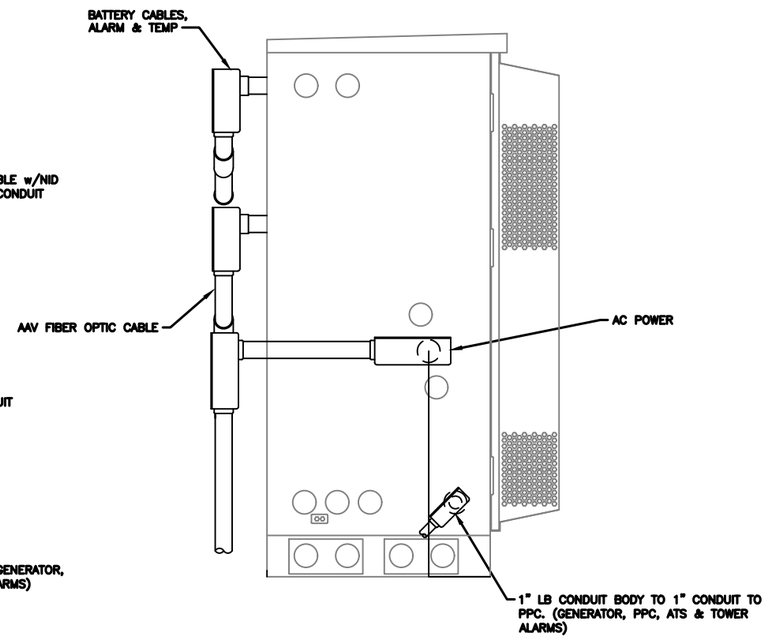
1. ALL CONDUIT AND FITTING ENTRANCES INTO CABINETS AND ENCLOSURES MUST UTILIZE MYERS OR EQUIVALENT HUBS OR SEALING WASHERS TO PREVENT WATER ENTRY/SEEPAGE INTO CABINETS AND ENCLOSURES.
2. (LIQUIDFLEX) FLEXIBLE METALLIC CONDUIT (LFMC) & ASSOCIATED FITTINGS CAN BE USED AS NEEDED BUT ONLY FOR TIGHT CONDUIT 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

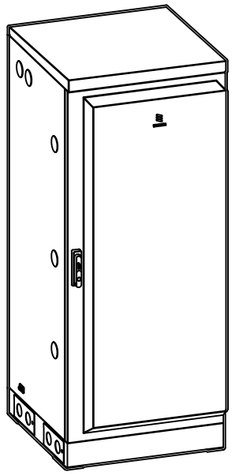
SCALE: N.T.S.

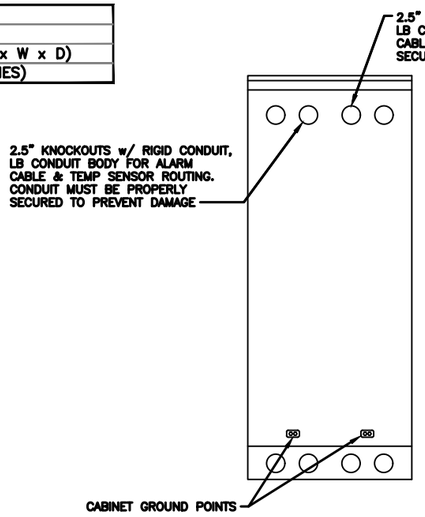
NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

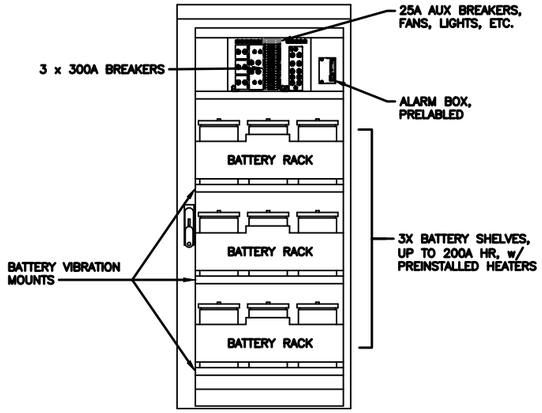
SHEET NUMBER:	REVISION:
R-607	2

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



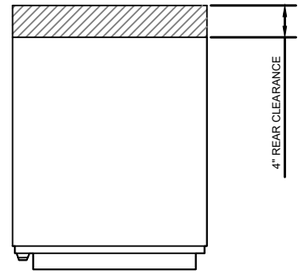


REAR VIEW



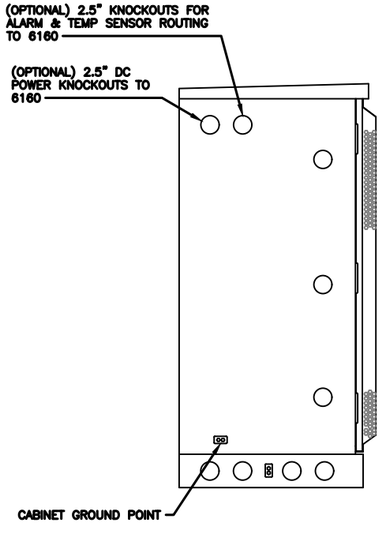
FRONT VIEW
(DOOR OPEN)

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

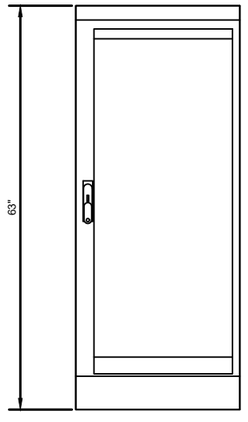


GROUNDING NOTE:

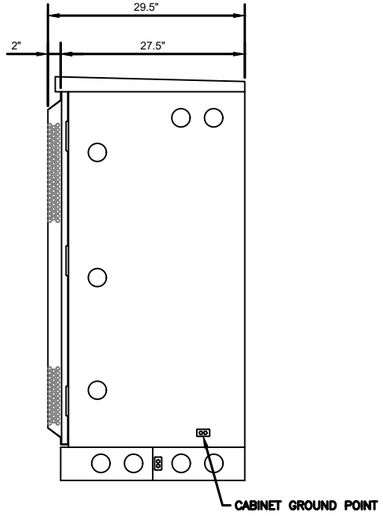
"CABINET GROUNDING TO USE A SINGLE, #2 BTCW CONDUCTOR, W/ 2-HOLE, 1" C-C, LONG BARREL, WINDOW LUG, IN 3/4" LFNC TO GROUND RING. PLINTH GROUNDING IS NOT REQUIRED."



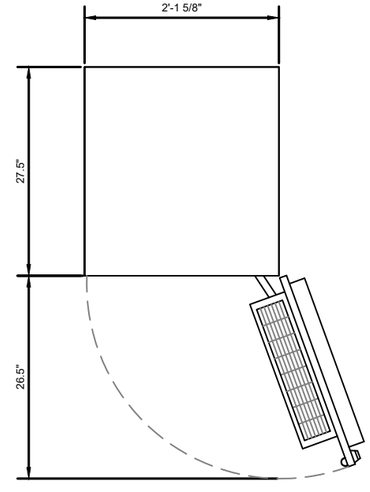
LEFT VIEW



FRONT VIEW



RIGHT VIEW



PLAN VIEW

B160 ERICSSON SITE SUPPORT BATTERY CABINET

1 ERICSSON B160 BATTERY CABINET SPECIFICATIONS

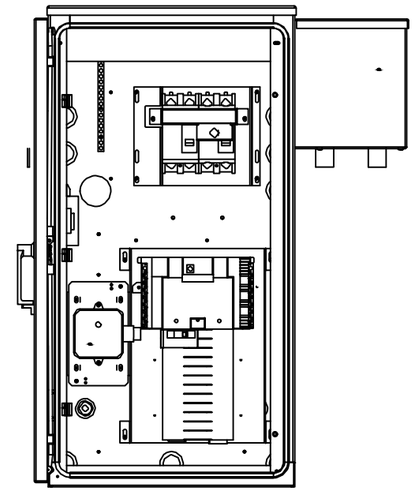
SCALE: N.T.S.

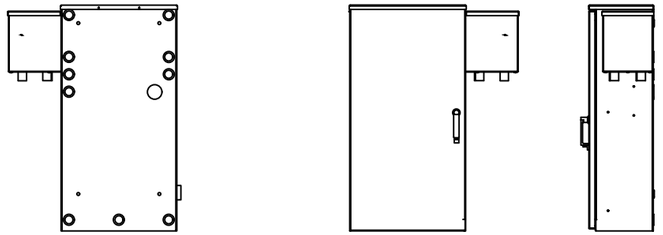
NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT.

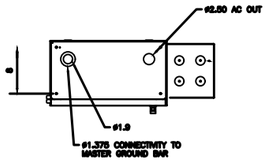
SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-608	2

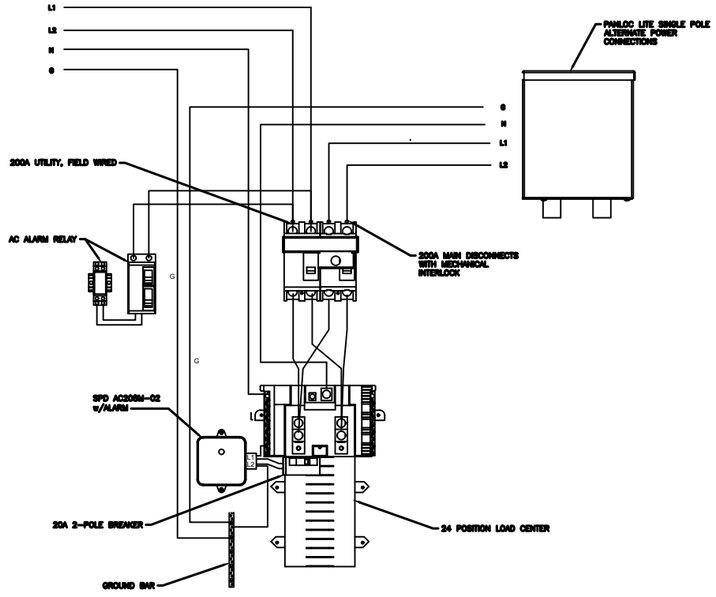
MANUFACTURER:	DELTA
MODEL:	4910163600 225AMP MINI PPC CAMLOCK w/ALARM
DIMENSIONS:	29.7" x 39" x 11.2" (W x H x D)
WEIGHT:	71 LBS







BOTTOM VIEW



FRONT FACE DOOR OPEN

1 4910163600 - DELTA 225A MINI PPC HR CAMLOCK w/ALARMS

SCALE: N.T.S.

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-609	2

Mount Analysis Report

ATC Asset Name	:	West Granby, CT CT
ATC Asset Number	:	411186
Engineering Number	:	14117160_C8_05
Mount Elevation	:	115 ft
Proposed Carrier	:	T-Mobile
Carrier Site Name	:	Upper Meadow Rd Monopole
Carrier Site Number	:	CTHA234A
Site Location	:	8 Upper Meadow Road Granby, CT 6035 41.953316, -72.829845
County	:	Hartford
Date	:	July 20, 2023
Max Usage	:	42%
Analysis Result	:	Contingent Pass

Prepared By:
Molly Li
Structural Engineer I

Reviewed By:

STATE OF CONNECTICUT · ESHA KAUSHAL MODI · 32593 · LICENSED PROFESSIONAL ENGINEER

Esha Modi

Digitally signed by Esha Modi
Date: 2023.07.20 16:16:27 -04'00'

COA: PEC.0001553

Introduction

The purpose of this report is to summarize results of the mount analysis performed for T-Mobile at 115 ft.

Supporting Documents

Specifications Sheet:	Perfect Vision PV-LPPGS-12M-HR2-AP1, dated November 1, 2019
Radio Frequency Data Sheet:	RFDS ID #CTHA234A, dated July 15, 2022
Reference Photos:	Site photos from 2018

Analysis

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

Basic Wind Speed:	115 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.50'' radial ice concurrent
Codes:	ANSI/TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
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 = 0.176, S1 = 0.065
Site Class:	D - Stiff Soil
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 provided the modifications listed below are completed:

- Analysis based on new installation of Perfect Vision PV-LPPGS-12M-HR2-AP1 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

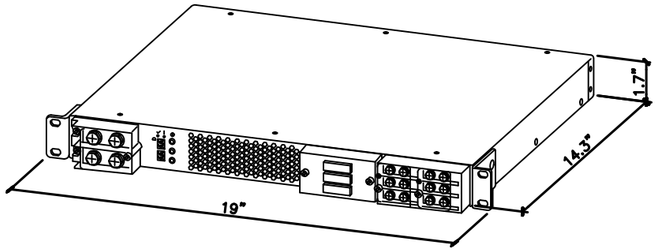
NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. PLEASE REFERENCE THE MOUNT ANALYSIS REPORT FOR COMPLETE MOUNT ANALYSIS CALCULATIONS AND DETAILS. SUPPLEMENTAL PAGES INCLUDED IN THE CONSTRUCTION DRAWINGS ARE FOR REFERENCE ONLY. GENERAL CONTRACTOR IS TO VERIFY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

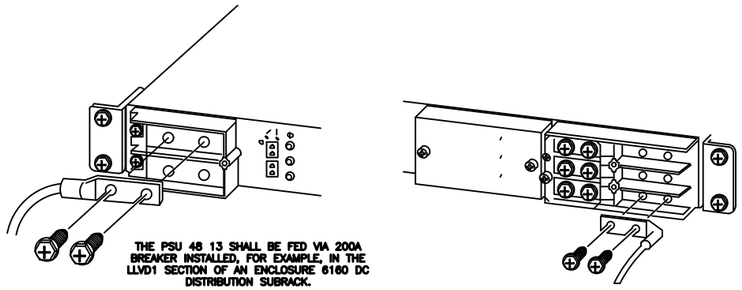
SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-610	2

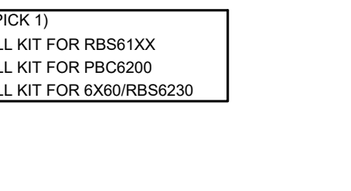
MANUFACTURER:	ERICSSON
MODEL:	PSU 48 13
WEIGHT:	17.1 LBS
DIMENSIONS:	19"x 1.7"x 14.3"

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

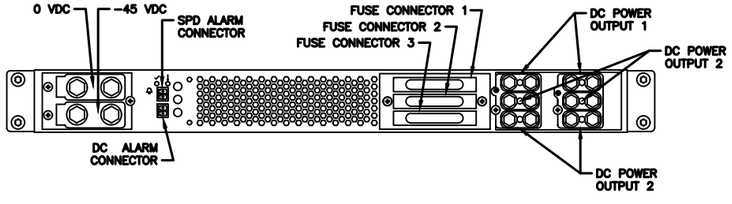




THE PSU 48 13 SHALL BE FED VIA 200A BREAKER INSTALLED, FOR EXAMPLE, IN THE LLVD1 SECTION OF AN ENCLOSURE 6160 DC DISTRIBUTION SUBRACK.



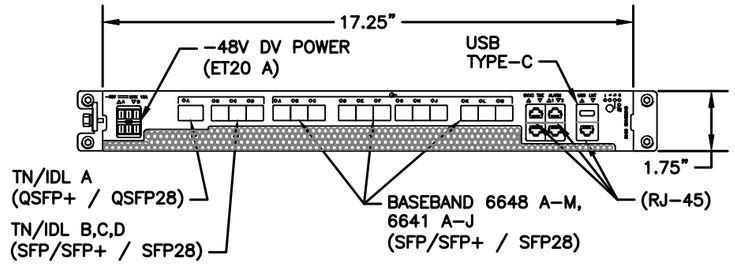
CONNECT –58 VDC DISTRIBUTION CABLE TO TERMINAL AT THE RIGHT, WHICH WILL BE FED TO RRU/AIR AT THE OTHER END.

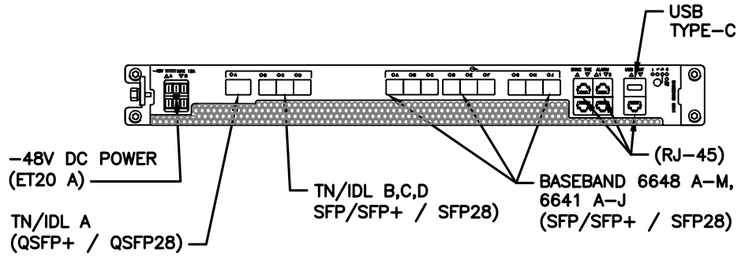


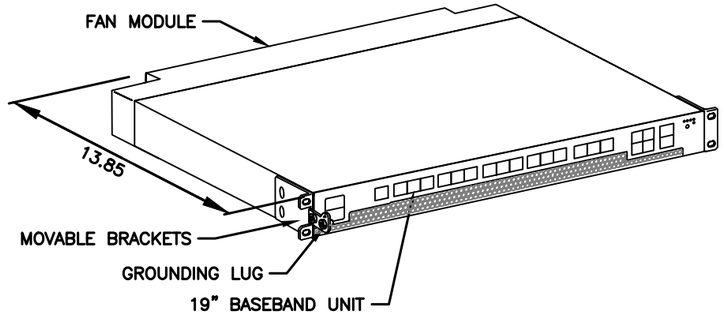
1 SKU# 34132 - PSU 48 13

SCALE: N.T.S.

MANUFACTURER:	ERICSSON
MODEL:	BASEBAND 6648
DIMENSIONS:	1.75" x 17.25" x 13.85" (H" x W" x D")
WEIGHT:	16.54 LBS







2 34111 - ERICSSON BASEBAND 6648 (WITH FAN)

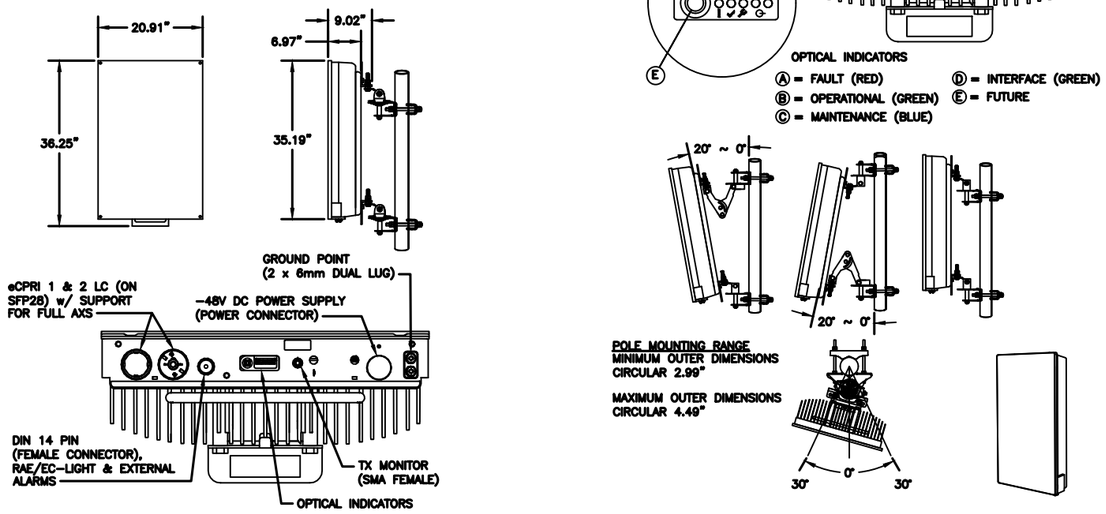
SCALE: N.T.S.

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-611	2

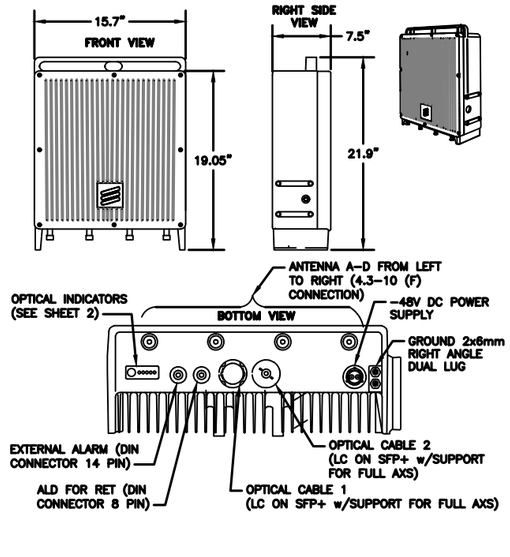
MANUFACTURER:	ERICSSON
MODEL:	AIR 6419 B41 (2.5GHz M-MIMO)
DIMENSIONS:	36.25" x 20.91" x 9.02" NOT TO EXCEED (H x W x D)
WEIGHT:	83 LBS (EXCLUDING MOUNTING KIT)
MOUNT WEIGHT:	13.5 LBS (SXK109 2016/1)



1 34552 - ERICSSON AIR 6419 BAND 41

SCALE: N.T.S.

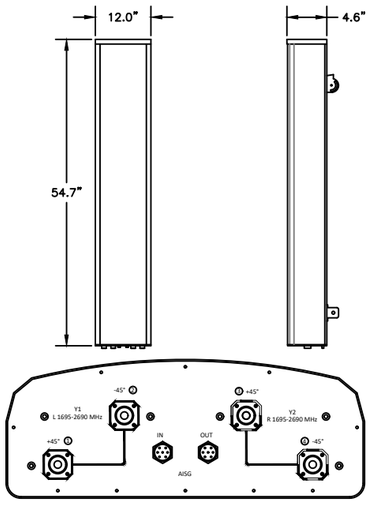
MANUFACTURER:	ERICSSON
MODEL:	4480 RADIO (KRC 161 922/1)
DIMENSIONS:	21.9" x 15.7" x 7.5" (H x W x D)
MODEL BAND:	B71, B85 FOR NR AND LTE
WEIGHT:	81 LBS
BRACKET WEIGHT:	3.75 LBS (MULTI ERS #109 1973/2)



2 34372 - ERICSSON 4480 RADIO

SCALE: N.T.S.

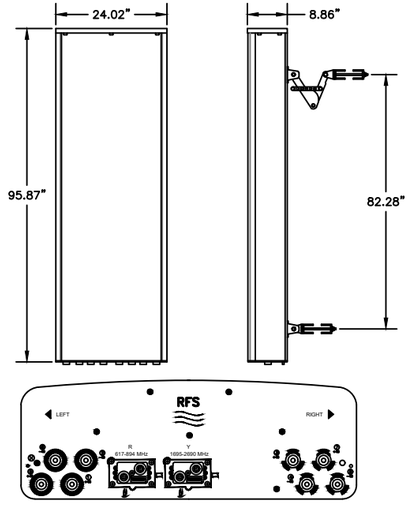
MANUFACTURER:	COMMSCOPE
MODEL:	VV-65A-R1
DIMENSIONS:	54.7" x 12.1" x 4.6" (H x W x D)
WEIGHT:	24.7 LB
INTERFACE:	4-PORT 4.3-10 FEMALE
MOUNTING KIT:	600899A-2 (INCLUDED) WEIGHT: 8.6 LB



3 34401 - COMMSCOPE VV-65A-R1

SCALE: N.T.S.

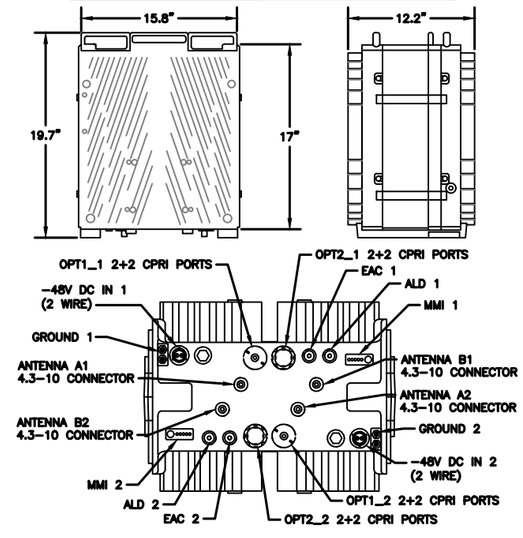
MANUFACTURER:	RFS
MODEL:	APXVAALL24_43-U-NA20
DIMENSIONS:	95.87" x 24.02" x 8.86"
WEIGHT:	119 LB
BAND:	QUAD BAND (8 PORT)
MOUNTING KIT & WEIGHT:	APM40-10E BEAM TILT KIT (INCLUDED) (16.53 LBS)



4 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)



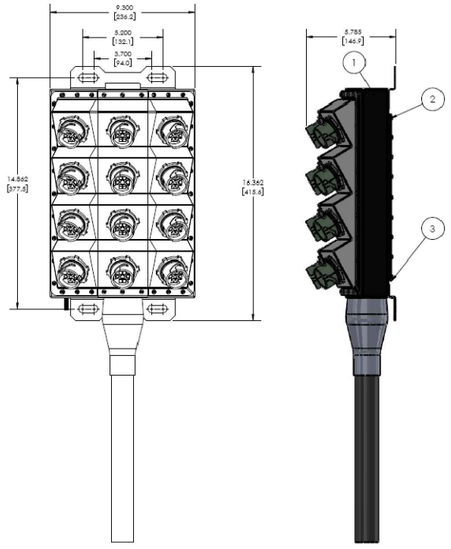
5 34373 - ERICSSON 4460 RADIO B2/25 B66

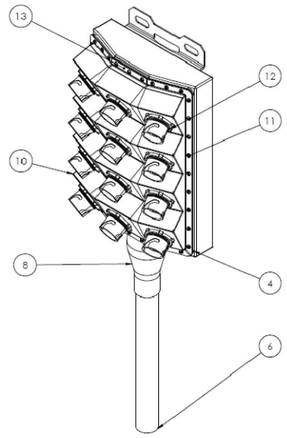
SCALE: N.T.S.

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-612	2





ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	AC-BMBX05-HICAP-SAP-CRS	BASED BOX SUB-ASY	1
2	AC-GSX05-HICAP-BP	EPDM GASKET FOR BACK PLATE	1
3	AC-HBX05-HICAP-SAP-BDR-CRS	BACKING PLATE CLOSURE CRS	1
4	AC-GSX05-HICAP-MG-SHT REV-1	EPDM GASKET MDI	1
5	3505mbtaiu	CABLE GLAND-TRUNK	1
6	Trunk Cable	HYBRID TRUNK CABLE	A/R
7	240_6	LOCK NUT-CABLE GLAND	1
8	HEAT SHRINK-AC-FB05-HICAP-FULLASY-CRS	HEAT SHRINK TUBE	1
10	AC-FB05-HICAP-HEXSHELL-SB-NK	POLYCARBONATE HEX SHELL-UV STABILIZED-SB-NO CUTOUT	1
11	3GHRB5060B	TAMPERED PROOF #6-32 LOCKDR	64
12	RP25-LC4-AS-D	U-HYBRID 25, 4 X LC & 2 X 8AWG ADAPTER ASSEMBLY	12
13	AC-STR05-HICAP-HH-GALV	GALV-O-RING HEX	1
14	WASHER	WASHER	A/R

CUSTOMER APPROVAL

NAME: _____

SIGNATURE: _____

DATE: _____

REV.	DESCRIPTION	DATE
1	RELEASED FOR PRODUCTION.	20180530

REVISIONS

ALLIANCE™ CORPORATION
THE POWER OF BEING CONNECTED.

SIGNATURE CYCLE		DATE
DRAWN:	MLE	20180525
CHECKED:	DOB	20180529
APPROVED:	DOB	20180530

DIM: ALL DIMENSIONS ARE IN INCHES, UNLESS OTHERWISE SPECIFIED.

DESCRIPTION:
HICAP HYBRID BREAKOUT CRS BOX (FULL ASSEMBLY)

MATERIAL: CR STEEL A1008 CS

WEIGHT 8.76

FINISH: POWDER COATED

COLOUR: BLACK

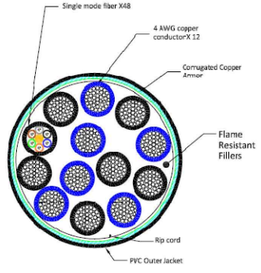
SHEET NO: 1 OF 1

DWG NO:
AC-FB05-HICAP-FULLASY-CRS

SCALE:

TOLERANCE: X.X ± 0.020" X.XX ± 0.010" X.XXX ± 0.005"

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

PROJWORK NO.
PROJECT NAME:
PROJECT LOCATION

REV	DESCRIPTION	DATE
1	REV. 10/20	DRAWN BY

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: N.T.S.
VERTICAL SCALE:

1 6X24 HCS 4AWG W/ PENDANT

SCALE: N.T.S.

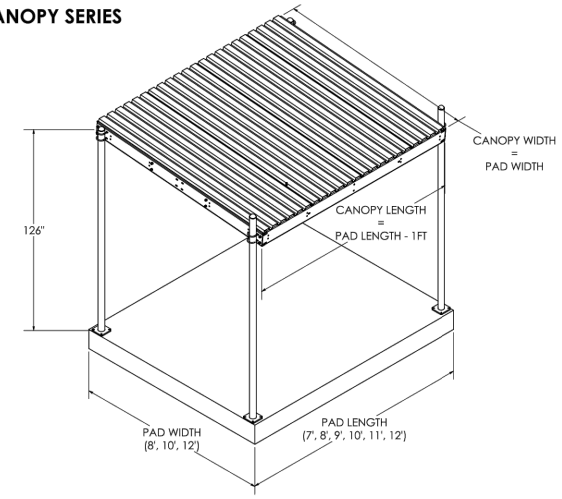
NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

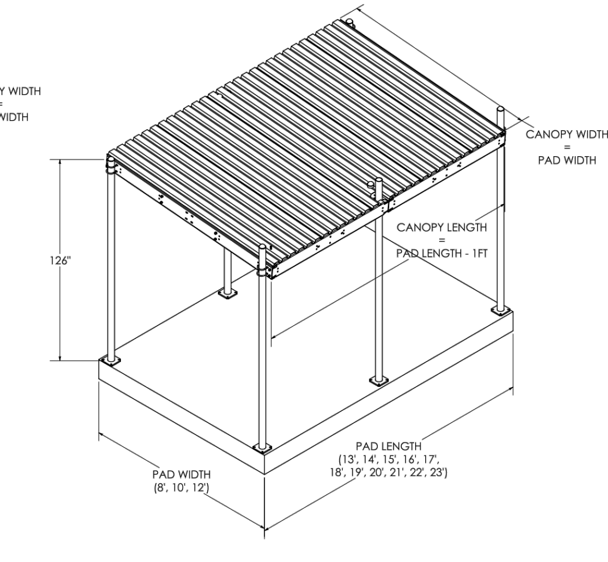
SHEET NUMBER:	REVISION:
R-613	2

WEATHER CANOPY SERIES

SERIES OVERVIEW



4 POST WEATHER CANOPY



6 POST WEATHER CANOPY

Weather Canopy Size Options

Pad Length	Pad Width (Roof Slope Direction) 8'		10'		12'	
7'	PV-WC0807-B	655 lbs	PV-WC1007-B	830 lbs	PV-WC1207-B	1005 lbs
8'	PV-WC0808-B	735 lbs	PV-WC1008-B	930 lbs	PV-WC1208-B	1125 lbs
9'	PV-WC0809-B	815 lbs	PV-WC1009-B	1035 lbs	PV-WC1209-B	1255 lbs
10'	PV-WC0810-B	895 lbs	PV-WC1010-B	1135 lbs	PV-WC1210-B	1375 lbs
11'	PV-WC0811-B	975 lbs	PV-WC1011-B	1235 lbs	PV-WC1211-B	1495 lbs
12'	PV-WC0812-B	1055 lbs	PV-WC1012-B	1340 lbs	PV-WC1212-B	1625 lbs
13'	PV-WC0813-B	1221 lbs	PV-WC1013-B	1549 lbs	PV-WC1213-B	1878 lbs
14'	PV-WC0814-B	1229 lbs	PV-WC1014-B	1649 lbs	PV-WC1214-B	1999 lbs
15'	PV-WC0815-B	1382 lbs	PV-WC1015-B	1755 lbs	PV-WC1215-B	2128 lbs
16'	PV-WC0816-B	1460 lbs	PV-WC1016-B	1854 lbs	PV-WC1216-B	2249 lbs
17'	PV-WC0817-B	1538 lbs	PV-WC1017-B	1954 lbs	PV-WC1217-B	2370 lbs
18'	PV-WC0818-B	1620 lbs	PV-WC1018-B	2059 lbs	PV-WC1218-B	2499 lbs
19'	PV-WC0819-B	1698 lbs	PV-WC1019-B	2159 lbs	PV-WC1219-B	2619 lbs
20'	PV-WC0820-B	1776 lbs	PV-WC1020-B	2258 lbs	PV-WC1220-B	2741 lbs
21'	PV-WC0821-B	1859 lbs	PV-WC1021-B	2364 lbs	PV-WC1221-B	2869 lbs
22'	PV-WC0822-B	1937 lbs	PV-WC1022-B	2464 lbs	PV-WC1222-B	2991 lbs
23'	PV-WC0823-B	2016 lbs	PV-WC1023-B	2564 lbs	PV-WC1223-B	3113 lbs

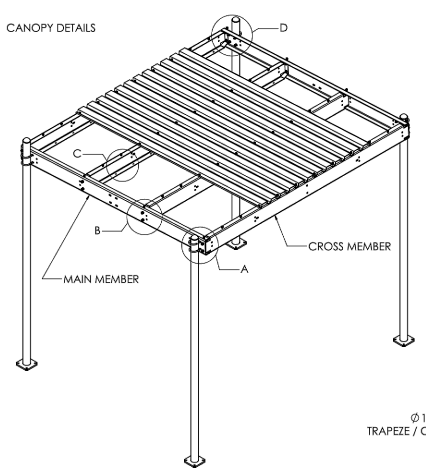
C:\PVMSteel\Catalog\SW Working Files\Engineering Details\

SHEET 1 OF 12	THIRD ANGLE PROJECTION	CATEGORY 07_Equipment Platforms & Canopies	6	ADDED DECK HEIGHT RANGE TABLE INFO	11/18/19	PERFECTVISION
5/5/2021	SCALE 1:40	SERIES 01_Equipment Platforms & Canopies	5	UPDATED MEMBER LAYOUT, ADDED PLATFORM SIZES, ADDED JACK LEG	2/15/18	
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE±1/4°, BEND±2° ALL OTHERS: ±1/16"		TYPE PV-WC / PV-EQ Series	4	EQ USABLE AREA TABLE	2/02/17	EQUIPMENT PLATFORM AND CANOPY
		BY DJN	3	ADDED PV-EQ-STEP	1/25/17	DOCUMENT NUMBER WCEQ-ENG-01-R6
		CHECKED SJS	2	UPDATED PV-WC-BRACE	9/19/16	REV 6
		STATUS APPROVED	REV	DESCRIPTION	DATE	

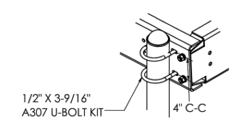
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF PERFECTVISION MFG. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF PERFECTVISION MFG IS PROHIBITED.

WEATHER CANOPY SERIES

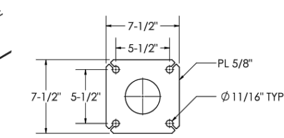
CANOPY DETAILS



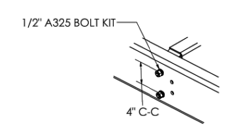
WEATHER CANOPY
ROOF DECKING HIDDEN



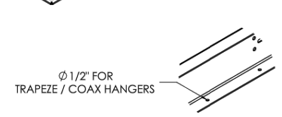
DETAIL A
SCALE 1 : 12



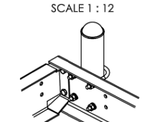
BASEPLATE DETAILS
SCALE 1 : 8



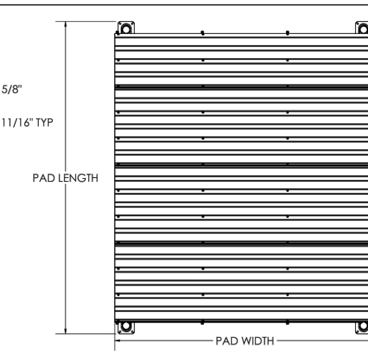
DETAIL B
SCALE 1 : 12



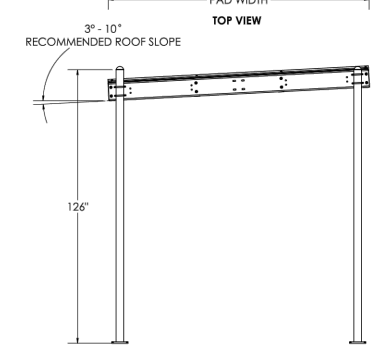
DETAIL C
SCALE 1 : 12



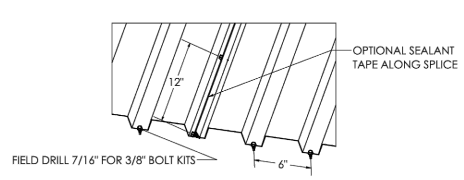
DETAIL D
SCALE 1 : 12



TOP VIEW



ELEVATION VIEW



- 6" C-C MAX SPACING ALONG ALL CROSS MEMBERS
- 12" C-C MAX SPACING ALONG EXTERIOR MAIN MEMBERS
- 12" C-C MAX SPACING ALONG SPLICES

ROOF DECKING DETAIL
SCALE 1 : 8

C:\PVMSteel\Catalog\SW Working Files\Engineering Details\

SHEET 2 OF 12	THIRD ANGLE PROJECTION	CATEGORY 07_Equipment Platforms & Canopies	6	ADDED DECK HEIGHT RANGE TABLE INFO	11/18/19	PERFECTVISION
5/5/2021	SCALE 1:36	SERIES 01_Equipment Platforms & Canopies	5	UPDATED MEMBER LAYOUT, ADDED PLATFORM SIZES, ADDED JACK LEG	2/15/18	
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE±1/4°, BEND±2° ALL OTHERS: ±1/16"		TYPE PV-WC / PV-EQ Series	4	EQ USABLE AREA TABLE	2/02/17	EQUIPMENT PLATFORM AND CANOPY
		BY DJN	3	ADDED PV-EQ-STEP	1/25/17	DOCUMENT NUMBER WCEQ-ENG-01-R6
		CHECKED SJS	2	UPDATED PV-WC-BRACE	9/19/16	REV 6
		STATUS APPROVED	REV	DESCRIPTION	DATE	

PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF PERFECTVISION MFG. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF PERFECTVISION MFG IS PROHIBITED.

1 PROPOSED ICE CANOPY DETAIL

SCALE: NOT TO SCALE

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-614	2

Exhibit D

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	151 ft Monopole
ATC Asset Name	:	West Granby, CT CT
ATC Asset Number	:	411186
Engineering Number	:	14117160_C3_06
Proposed Carrier	:	T-MOBILE
Carrier Site Name	:	Upper Meadow Rd Monopole
Carrier Site Number	:	CTHA234A
Site Location	:	8 Upper Meadow Road Granby, CT 06035 41.9533° N, 72.8298° W
County	:	Hartford
Date	:	July 21, 2023
Max Usage	:	36%
Analysis Result	:	Pass

Created By:

William Meyer
Structural Engineer I

COA: PEC.0001553

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 151 ft Monopole tower to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower:	EEI Job #14945, dated June 22, 2007
Foundation:	EEI Job #14945, dated June 22, 2007
Geotechnical:	JGI Project #04109G, dated January 27, 2004
Mount Analysis:	ATC Project #14417160_C8_05, dated July 20, 2023

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:	115 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.50" radial ice concurrent
Code(s):	ANSI/TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Spectral Response:	Ss = 0.18, 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 Engineering via email at **Engineering@americantower.com.** Please include the American Tower asset name, asset number, and engineering number in the subject line for any questions.

Structure Usages

Structural Component	Usage	Control	Result
Pole Shaft	31.6%	1.2D + 1.0W	Pass
Base Plate @ 0.0 ft	22.0%	Rods	Pass
Mat & Pier	36.2%	Flexure [Steel (Pier)]	Pass

Maximum Reactions

Foundation	Moment (k-ft)	Axial (k)	Shear (k)
Monopole Base	3,068.0	69.4	28.0

Reactions shown reflect the results from the Load Case with maximum Moment

Structure base reactions were analyzed using available geotechnical and foundation information.

T-MOBILE Final Loading

Elev (ft)	Qty	Equipment	Lines
115.0	1	Platform with Handrails	(3) 1.99" (50.7mm) Hybrid
	3	Commscope VV-65A-R1B	
	3	Ericsson 4460 BAND 2/25	
	3	Ericsson 4480 BAND 71	
	3	Ericsson AIR 6419 B41	
	3	RFS APXVAALL24 43-U-NA20	

Install proposed lines inside the pole shaft.

Other Existing/Reserved Loading

Elev (ft)	Qty	Equipment	Lines	Carrier
150.0	1	VZW Unused Reserve (14860.23 sqin)	(16) 1 5/8" Coax (2) 1 5/8" Hybriflex	VERIZON WIRELESS
	2	Antel LPA-80080/6CF ___		
	2	Raycap RHSDC-3315-PF-48		
	3	Samsung MT6407-77A		
	3	Samsung RF4439d-25A		
	3	Samsung RF4440d-13A		
	4	Antel LPA-80063/6CF		
	6	Commscope NHH-65B-R2B		
148.0	1	Low Profile Platform	-	VERIZON WIRELESS
134.0	2	Raycap DC9-48-60-24-8C-EV	(2) 0.39" (10mm) Fiber Trunk (4) 0.92" (23.4mm) Cable (2) 2 1/2" conduit	AT&T MOBILITY
	3	CCI DMP65R-BU8D		
	3	CCI TPA65R-BU8D		
	3	Ericsson AIR 6449 B77D/ C-Band		
	3	Ericsson RRUS 4449 B5, B12		
	3	Ericsson RRUS 4478 B14		
	3	Ericsson RRUS 8843 B2, B66A		
	3	Sector Frame		
125.0	1	Commscope RDIDC-9181-PF-48	(1) 1.60" (40.6mm) Hybrid	DISH WIRELESS L.L.C.
	1	Platform with Handrails		
	3	Fujitsu TA08025-B604		
	3	Fujitsu TA08025-B605		
	3	JMA Wireless MX08FRO665-21		

(If table breaks across pages, please see previous page for data in merged cells)

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.

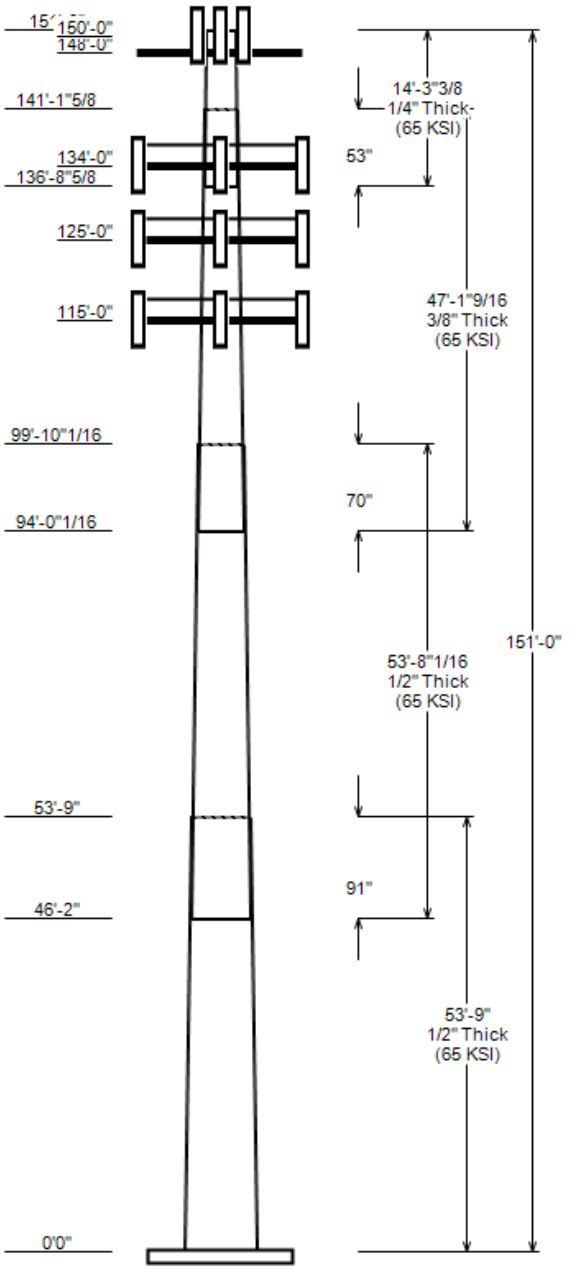
ASSET:	411186, West Granby, CT CT	CODE:	ANSI/TIA-222-H
CUSTOMER:	T-MOBILE	PROJECT:	14117160

ANALYSIS PARAMETERS

Nominal Wind:	115 mph	**Ice Wind:**	50 mph w/ 1.5" ice	**Service Wind:**	60 mph
Risk Category:	II	**Exposure:**	B	**S_s:** 0.176	**S_1:** 0.065
Topo Category:	1	**Topo Factor:**	Method 1	**Topo Feature:**	
Structure Height:	151 ft	**Base Elevation:**	0.00 ft	**Structure Type:**	Taper
Base Diameter:	68 in	**Base Rotation:**	0°	**Taper:**	0.2880 (in/ft)

POLE SECTION PROPERTIES

Section	Length (ft)	Flat Diameter (in) Top	Flat Diameter (in) Bottom	Thick (in)	Joint Type	Joint Length (in)	Pole Shape	Yield Strength (ksi)
1	53.750	52.51	68.00	0.500		0.000	18 Sides	65
2	53.670	40.23	55.69	0.500	Slip Joint	91.000	18 Sides	65
3	47.130	29.07	42.66	0.375	Slip Joint	70.000	18 Sides	65
4	14.283	26.73	30.85	0.250	Slip Joint	53.000	18 Sides	65



DISCRETE APPURTENANCE

Elev (ft)	Description
150.0	(3) Samsung RF4440d-13A
150.0	(3) Samsung RF4439d-25A
150.0	(2) Raycap RHSDC-3315-PF-48
150.0	(3) Samsung MT6407-77A
150.0	(6) Commscope NHH-65B-R2B
150.0	(2) Antel LPA-80080/6CF ___
150.0	(4) Antel LPA-80063/6CF
150.0	(1) VZW Unused Reserve (14860.23 s
148.0	(1) Generic Flat Low Profile Platf
134.0	(3) Ericsson RRUS 8843 B2, B66A
134.0	(3) Ericsson RRUS 4478 B14
134.0	(3) Ericsson RRUS 4449 B5, B12
134.0	(3) Ericsson AIR 6449 B77D/ C-Band
134.0	(2) Raycap DC9-48-60-24-8C-EV
134.0	(3) Generic Round Sector Frame
134.0	(3) CCI DMP65R-BU8D
134.0	(3) CCI TPA65R-BU8D
125.0	(1) Commscope RDIDC-9181-PF-48
125.0	(3) Fujitsu TA08025-B604
125.0	(3) Fujitsu TA08025-B605
125.0	(3) JMA Wireless MX08FRO665-21
125.0	(1) Generic Round Platform with Ha
115.0	(3) Ericsson 4460 BAND 2/25
115.0	(3) Ericsson 4480 BAND 71
115.0	(3) Ericsson AIR 6419 B41
115.0	(3) Commscope VV-65A-R1B
115.0	(3) RFS APXVAALL24 43-U-NA20
115.0	(1) Generic Round Platform with Ha

LINEAR APPURTENANCE

Elev To (ft)	Description
150.0	(2) 1 5/8" Hybriflex
150.0	(16) 1 5/8" Coax
134.0	(2) 2 1/2" conduit
134.0	(4) 0.92" (23.4mm) Cable
134.0	(2) 0.39" (10mm) Fiber Trunk
125.0	(1) 1.60" (40.6mm) Hybrid
115.0	(3) 1.99" (50.7mm) Hybrid

GLOBAL BASE REACTIONS

Load Case	Moment (kip-ft)	Axial (kip)	Shear (kip)
1.2D + 1.0W	3067.96	69.43	28.03
0.9D + 1.0W	3048.36	52.07	28.02
1.2D + 1.0Di + 1.0Wi	930.86	97.66	8.56
1.2D + 1.0Ev + 1.0Eh	268.30	69.14	2.33
0.9D - 1.0Ev + 1.0Eh	266.31	48.19	2.32
1.0D + 1.0W	744.09	57.87	6.82

ANALYSIS PARAMETERS

Location:	Hartford County,CT	**Height:**	151 ft
Type and Shape:	Taper, 18 Sides	**Base Diameter:**	68.00 in
Manufacturer:	EEI	**Top Diameter:**	26.73 in
K_d (non-service):	0.95	**Taper:**	0.2880 in/ft
K_e:	0.98	**Rotation:**	0.000º

ICE & WIND PARAMETERS

Risk Category:	II	**Design Wind Speed:**	115 mph
Exposure Category:	B	**Design Wind Speed w/ Ice:**	50 mph
Topo Factor Procedure:	Method 1	**Design Ice Thickness:**	1.50 in
Topographic Category:	1	**Service Wind Speed:**	60 mph
Crest Height:	0 ft	**HMSL:**	462.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil		**Period Based on Rayleigh Method (sec):**		1.73
T_L (sec):	6	**P:**	1	**$C_{s:}$**	0.040
$S_{s:}$	0.176	**$S_{1:}$**	0.065	**C_s Max:**	0.040
$F_{a:}$	1.600	**$F_{v:}$**	2.400	**C_s Min:**	0.030
$S_{ds:}$	0.188	**$S_{d1:}$**	0.104		

LOAD CASES

1.2D + 1.0W	115 mph Wind with No Ice
0.9D + 1.0W	115 mph Wind with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph Wind with 1.5" 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

							Bottom						Top						
Section	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Dia (in)	Elev (ft)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	53.75	0.5000	65		0.00	17,344	68.00	0.000	107.12	61,663.1	22.57	136.00	52.51	53.75	82.53	28,206.	17.11	105.02	0.2882
2-18	53.67	0.5000	65	Slip	91.00	13,755	55.69	46.170	87.59	33,713.0	18.23	111.39	40.23	99.84	63.04	12,570.	12.78	80.45	0.2882
3-18	47.13	0.3750	65	Slip	70.00	6,774	42.66	94.000	50.32	11,367.1	18.65	113.75	29.07	141.13	34.16	3,554.5	12.26	77.53	0.2882
4-18	14.28	0.2500	65	Slip	53.00	1,101	30.85	136.717	24.28	2,871.5	20.35	123.39	26.73	151.00	21.01	1,861.5	17.44	106.92	0.2882
			Total Shaft Weight			**38,974**													

DISCRETE APPURTENANCE PROPERTIES

					No Ice			Ice		
Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	Weight (lb)	EPAa (sf)	Orientation Factor	Weight (lb)	EPAa (sf)	Orientation Factor
150.00	Antel LPA-80063/6CF	4	0.80	0.000	27.00	9.593	0.76	314.83	10.952	0.76
150.00	Antel LPA-80080/6CF ___	2	0.80	0.000	21.00	8.628	0.71	215.78	5.509	0.71
150.00	Commscope NHH-65B-R2B	6	0.80	0.000	43.70	8.079	0.69	218.29	10.869	0.69
150.00	Samsung MT6407-77A	3	0.80	0.000	81.60	4.709	0.61	183.67	6.230	0.61
150.00	VZW Unused Reserve (14860.23 s	1	0.80	0.000	1344.00	103.196	0.90	2281.60	175.188	0.90
150.00	Samsung RF4439d-25A	3	0.80	0.000	74.70	2.500	0.67	154.74	3.548	0.67
150.00	Samsung RF4440d-13A	3	0.80	0.000	70.30	1.875	0.50	130.72	2.779	0.50
150.00	Raycap RHSDC-3315-PF-48	2	0.80	0.000	32.00	2.512	0.67	111.76	3.555	0.67
148.00	Generic Flat Low Profile Platf	1	1.00	0.000	1875.00	26.100	1.00	2684.61	45.186	1.00
134.00	Ericsson RRUS 4449 B5, B12	3	0.80	0.000	71.00	1.969	0.50	134.76	2.892	0.50
134.00	CCI TPA65R-BU8D	3	0.80	0.000	82.50	18.089	0.63	423.61	21.742	0.63
134.00	CCI DMP65R-BU8D	3	0.80	0.000	95.70	17.871	0.63	431.96	21.517	0.63
134.00	Generic Round Sector Frame	3	0.75	0.000	300.00	14.400	0.67	663.91	30.776	0.67
134.00	Raycap DC9-48-60-24-8C-EV	2	0.80	0.000	16.00	4.788	0.67	143.72	6.243	0.67
134.00	Ericsson AIR 6449 B77D/ C-Band	3	0.80	0.000	81.60	4.028	0.70	196.84	5.386	0.70
134.00	Ericsson RRUS 4478 B14	3	0.80	0.000	59.90	1.842	0.50	114.60	2.729	0.50
134.00	Ericsson RRUS 8843 B2, B66A	3	0.80	0.000	72.00	1.639	0.50	132.64	2.475	0.50
125.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	4090.51	51.203	1.00
125.00	Commscope RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	0.50	77.78	2.751	0.50
125.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	136.52	2.865	0.50
125.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	121.16	2.865	0.50
125.00	JMA Wireless MX08FRO665-21	3	0.75	0.000	64.50	12.489	0.64	316.89	15.249	0.64
115.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	4077.02	51.000	1.00
115.00	Commscope VV-65A-R1B	3	0.75	0.000	24.70	5.887	0.63	138.51	7.947	0.63
115.00	Ericsson AIR 6419 B41	3	0.75	0.000	68.50	5.600	0.63	186.14	7.142	0.63
115.00	Ericsson 4460 BAND 2/25	3	0.75	0.000	109.00	2.564	0.67	195.06	3.590	0.67
115.00	Ericsson 4480 BAND 71	3	0.75	0.000	81.00	2.878	0.67	155.12	3.971	0.67
115.00	RFS APXVAALL24 43-U-NA20	3	0.75	0.000	122.80	20.243	0.63	502.04	23.854	0.63
Totals	**Row Count: 28**	**75**			**13,545.20**			**29,679.77**		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg): 0.00

Elev From (ft)	Elev To (ft)	Qty	Description	Diameter (in)	Weight (lb/ft)	Flat	Max/ Row	Distance Between Rows(in)	Distance Between Cols(in)	Azimuth (deg)	Distance From Face (in)	Exposed To Wind	Carrier
0.00	150.00	16	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIRELESS
0.00	150.00	2	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	VERIZON WIRELESS
0.00	134.00	4	0.92" (23.4mm) Cable	0.92	0.89	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	134.00	2	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	134.00	2	2 1/2" conduit	2.88	5.79	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	125.00	1	1.60" (40.6mm) Hybrid	1.6	2.34	N	0	0	0	0	0	N	DISH WIRELESS L.L.C.
0.00	115.00	3	1.99" (50.7mm) Hybrid	1.99	1.9	N	0	0	0	0	0	N	T-MOBILE

SEGMENT PROPERTIES

Seg Top Elev (ft)	Description *(Max Length: 5 ft)*	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		0.5000	68.000	107.119	61,663.10	22.57	136.00	74.9	1786.1	0.0	0.0

SEGMENT PROPERTIES

Seg Top Elev (ft)	Description	(Max Length: 5 ft)	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)
5.00			0.5000	66.559	104.832	57,797.50	22.06	133.12	75.5	1710.3	0.0	1,803.1
10.00			0.5000	65.118	102.545	54,097.00	21.55	130.24	76	1636.3	0.0	1,764.1
15.00			0.5000	63.677	100.258	50,557.80	21.05	127.35	76.6	1563.8	0.0	1,725.2
20.00			0.5000	62.236	97.971	47,176.50	20.54	124.47	77.2	1493.0	0.0	1,686.3
25.00			0.5000	60.795	95.684	43,949.40	20.03	121.59	77.8	1423.9	0.0	1,647.4
30.00			0.5000	59.354	93.397	40,872.90	19.52	118.71	78.4	1356.3	0.0	1,608.5
35.00			0.5000	57.913	91.111	37,943.50	19.01	115.83	79	1290.5	0.0	1,569.6
40.00			0.5000	56.472	88.824	35,157.50	18.50	112.94	79.6	1226.2	0.0	1,530.7
45.00			0.5000	55.031	86.537	32,511.30	18.00	110.06	80.2	1163.6	0.0	1,491.8
46.17	Bot - Section 2		0.5000	54.694	86.003	31,913.60	17.88	109.39	80.4	1149.3	0.0	342.5
50.00			0.5000	53.590	84.250	30,001.30	17.49	107.18	80.8	1102.7	0.0	2,241.5
53.75	Top - Section 1		0.5000	53.509	84.122	29,864.60	17.46	107.02	80.9	1099.3	0.0	2,148.5
55.00			0.5000	53.148	83.550	29,259.80	17.33	106.30	81	1084.3	0.0	356.6
60.00			0.5000	51.707	81.263	26,922.30	16.82	103.41	81.6	1025.5	0.0	1,402.1
65.00			0.5000	50.266	78.976	24,712.80	16.32	100.53	82.2	968.3	0.0	1,363.1
70.00			0.5000	48.825	76.689	22,627.60	15.81	97.65	82.6	912.8	0.0	1,324.2
75.00			0.5000	47.384	74.403	20,663.10	15.30	94.77	82.6	858.9	0.0	1,285.3
80.00			0.5000	45.943	72.116	18,815.70	14.79	91.89	82.6	806.6	0.0	1,246.4
85.00			0.5000	44.502	69.829	17,081.90	14.28	89.00	82.6	756.0	0.0	1,207.5
90.00			0.5000	43.061	67.542	15,458.00	13.78	86.12	82.6	707.0	0.0	1,168.6
94.00	Bot - Section 3		0.5000	41.907	65.711	14,234.60	13.37	83.81	82.6	669.0	0.0	907.6
95.00			0.5000	41.620	65.255	13,940.40	13.27	83.24	82.6	659.7	0.0	392.2
99.84	Top - Section 2		0.3750	40.976	48.324	10,064.40	17.86	109.27	80.4	483.8	0.0	1,864.7
100.00			0.3750	40.929	48.268	10,029.40	17.83	109.14	80.4	482.6	0.0	26.8
105.00			0.3750	39.488	46.553	8,997.80	17.16	105.30	81.2	448.8	0.0	806.6
110.00			0.3750	38.047	44.837	8,039.50	16.48	101.46	82	416.2	0.0	777.4
115.00			0.3750	36.606	43.122	7,151.70	15.80	97.62	82.6	384.8	0.0	748.3
120.00			0.3750	35.165	41.407	6,331.90	15.12	93.77	82.6	354.7	0.0	719.1
125.00			0.3750	33.724	39.692	5,577.20	14.45	89.93	82.6	325.7	0.0	689.9
130.00			0.3750	32.283	37.977	4,885.00	13.77	86.09	82.6	298.0	0.0	660.7
134.00			0.3750	31.130	36.605	4,374.40	13.23	83.01	82.6	276.8	0.0	507.6
135.00			0.3750	30.842	36.262	4,252.60	13.09	82.24	82.6	271.6	0.0	124.0
136.72	Bot - Section 4		0.3750	30.347	35.673	4,048.70	12.86	80.93	82.6	262.8	0.0	210.1
140.00			0.3750	29.401	34.546	3,677.20	12.41	78.40	82.6	246.3	0.0	659.3
141.13	Top - Section 3		0.2500	29.574	23.268	2,527.90	19.45	118.30	78.5	168.4	0.0	222.7
145.00			0.2500	28.460	22.383	2,250.50	18.66	113.84	79.5	155.7	0.0	300.3
148.00			0.2500	27.595	21.697	2,049.80	18.05	110.38	80.2	146.3	0.0	225.0
150.00			0.2500	27.019	21.240	1,922.90	17.65	108.07	80.6	140.2	0.0	146.1
151.00			0.2500	26.730	21.011	1,861.50	17.44	106.92	80.9	137.2	0.0	71.9
											Total:	**38,973.3**

CALCULATED FORCES

Load Case: 1.2D + 1.0W — 115 mph Wind with No Ice — 20 Iterations

Gust Response Factor: 1.10
Dead load Factor: 1.20
Wind Load Factor: 1.00

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	-69.43	-28.03	0.00	-3,068.0	0.00	3,067.96	7,216.48	1,879.93	11,461.37	10,027.15	0	0	0.316
5.00	-66.99	-27.61	0.00	-2,927.8	0.00	2,927.81	7,118.81	1,839.80	10,977.27	9,678.72	0.04	-0.07	0.312
10.00	-64.61	-27.20	0.00	-2,789.8	0.00	2,789.75	7,018.68	1,799.66	10,503.62	9,332.85	0.15	-0.14	0.308
15.00	-62.27	-26.79	0.00	-2,653.8	0.00	2,653.77	6,916.09	1,759.53	10,040.41	8,989.76	0.33	-0.21	0.304
20.00	-59.99	-26.39	0.00	-2,519.8	0.00	2,519.83	6,811.04	1,719.39	9,587.65	8,649.69	0.59	-0.28	0.300
25.00	-57.74	-25.99	0.00	-2,387.9	0.00	2,387.89	6,703.53	1,679.26	9,145.33	8,312.84	0.93	-0.36	0.296
30.00	-55.55	-25.60	0.00	-2,257.9	0.00	2,257.92	6,593.55	1,639.13	8,713.46	7,979.44	1.35	-0.43	0.292
35.00	-53.40	-25.20	0.00	-2,129.9	0.00	2,129.92	6,481.12	1,598.99	8,292.04	7,649.71	1.84	-0.51	0.287
40.00	-51.30	-24.79	0.00	-2,003.9	0.00	2,003.93	6,366.23	1,558.86	7,881.06	7,323.87	2.42	-0.59	0.282
45.00	-49.26	-24.52	0.00	-1,880.0	0.00	1,879.99	6,248.87	1,518.72	7,480.52	7,002.14	3.07	-0.67	0.277
46.17	-48.78	-24.31	0.00	-1,851.4	0.00	1,851.38	6,221.13	1,509.36	7,388.57	6,927.68	3.24	-0.68	0.275
50.00	-45.89	-23.97	0.00	-1,758.2	0.00	1,758.18	6,129.06	1,478.59	7,090.43	6,684.74	3.82	-0.75	0.271
53.75	-43.12	-23.72	0.00	-1,668.3	0.00	1,668.30	6,122.27	1,476.34	7,068.87	6,667.08	4.43	-0.81	0.258

CALCULATED FORCES

55.00	-42.62	-23.46	0.00	-1,638.6	0.00	1,638.65	6,091.89	1,466.30	6,973.13	6,588.50	4.64	-0.83	0.256
60.00	-40.68	-23.01	0.00	-1,521.4	0.00	1,521.38	5,968.87	1,426.17	6,596.68	6,277.08	5.55	-0.9	0.249
65.00	-38.79	-22.56	0.00	-1,406.4	0.00	1,406.35	5,843.38	1,386.03	6,230.68	5,970.51	6.54	-0.98	0.242
70.00	-36.94	-22.11	0.00	-1,293.6	0.00	1,293.57	5,697.65	1,345.90	5,875.12	5,651.36	7.61	-1.06	0.236
75.00	-35.15	-21.66	0.00	-1,183.0	0.00	1,183.04	5,527.74	1,305.77	5,530.01	5,317.67	8.76	-1.14	0.229
80.00	-33.40	-21.21	0.00	-1,074.8	0.00	1,074.76	5,357.84	1,265.63	5,195.34	4,994.13	10	-1.22	0.222
85.00	-31.70	-20.76	0.00	-968.7	0.00	968.72	5,187.94	1,225.50	4,871.12	4,680.74	11.31	-1.29	0.213
90.00	-30.04	-20.36	0.00	-864.9	0.00	864.90	5,018.04	1,185.36	4,557.34	4,377.51	12.71	-1.37	0.204
94.00	-28.76	-20.13	0.00	-783.4	0.00	783.39	4,882.00	1,153.23	4,313.64	4,142.05	13.88	-1.43	0.195
95.00	-28.23	-19.88	0.00	-763.3	0.00	763.33	4,848.13	1,145.23	4,254.01	4,084.44	14.18	-1.45	0.193
99.84	-25.77	-19.61	0.00	-667.2	0.00	667.18	3,496.62	848.08	3,110.21	2,917.07	15.68	-1.52	0.237
100.00	-25.72	-19.41	0.00	-664.0	0.00	663.98	3,493.69	847.10	3,103.00	2,911.22	15.73	-1.52	0.236
105.00	-24.50	-18.99	0.00	-566.9	0.00	566.93	3,402.94	817.00	2,886.42	2,733.91	17.37	-1.61	0.215
110.00	-23.32	-18.57	0.00	-472.0	0.00	471.98	3,309.72	786.90	2,677.68	2,560.12	19.1	-1.69	0.192
115.00	-17.81	-15.15	0.00	-379.1	0.00	379.12	3,203.77	756.79	2,476.77	2,382.43	20.91	-1.76	0.165
120.00	-16.74	-14.74	0.00	-303.4	0.00	303.39	3,076.34	726.69	2,283.70	2,195.75	22.79	-1.83	0.144
125.00	-12.02	-12.37	0.00	-229.7	0.00	229.69	2,948.91	696.59	2,098.46	2,016.69	24.74	-1.89	0.118
130.00	-11.04	-12.01	0.00	-167.8	0.00	167.84	2,821.48	666.49	1,921.05	1,845.24	26.75	-1.94	0.095
134.00	-7.63	-8.18	0.00	-119.8	0.00	119.78	2,719.54	642.41	1,784.76	1,713.56	28.4	-1.97	0.073
135.00	-7.46	-8.08	0.00	-111.6	0.00	111.60	2,694.06	636.39	1,751.48	1,681.40	28.81	-1.98	0.069
136.72	-7.18	-7.90	0.00	-97.7	0.00	97.73	2,650.31	626.06	1,695.06	1,626.91	29.52	-1.99	0.063
140.00	-6.33	-7.71	0.00	-71.8	0.00	71.81	2,566.63	606.29	1,589.74	1,525.19	30.9	-2.01	0.050
141.13	-6.05	-7.53	0.00	-63.1	0.00	63.07	1,644.41	408.35	1,081.58	991.52	31.38	-2.02	0.068
145.00	-5.62	-7.29	0.00	-33.9	0.00	33.94	1,600.54	392.83	1,000.95	928.08	33.03	-2.03	0.040
148.00	-3.09	-6.03	0.00	-12.1	0.00	12.08	1,565.49	380.79	940.54	879.69	34.31	-2.04	0.016
150.00	-0.09	-0.03	0.00	-0.0	0.00	0.03	1,541.63	372.76	901.31	847.85	35.16	-2.05	0.000
151.00	0.00	-0.03	0.00	0.0	0.00	0.00	1,529.55	368.75	882.01	832.07	35.59	-2.05	0.000

CALCULATED FORCES

Load Case: 0.9D + 1.0W — 115 mph Wind with No Ice (Reduced DL) — 20 Iterations

Gust Response Factor: 1.10
Dead load Factor: 0.90
Wind Load Factor: 1.00

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	-52.07	-28.02	0.00	-3,048.4	0.00	3,048.36	7,216.48	1,879.93	11,461.37	10,027.15	0	0	0.311
5.00	-50.23	-27.58	0.00	-2,908.3	0.00	2,908.26	7,118.81	1,839.80	10,977.27	9,678.72	0.04	-0.07	0.308
10.00	-48.44	-27.15	0.00	-2,770.4	0.00	2,770.36	7,018.68	1,799.66	10,503.62	9,332.85	0.15	-0.14	0.304
15.00	-46.68	-26.72	0.00	-2,634.6	0.00	2,634.63	6,916.09	1,759.53	10,040.41	8,989.76	0.33	-0.21	0.300
20.00	-44.95	-26.30	0.00	-2,501.0	0.00	2,501.03	6,811.04	1,719.39	9,587.65	8,649.69	0.59	-0.28	0.296
25.00	-43.26	-25.89	0.00	-2,369.5	0.00	2,369.53	6,703.53	1,679.26	9,145.33	8,312.84	0.92	-0.36	0.292
30.00	-41.61	-25.48	0.00	-2,240.1	0.00	2,240.07	6,593.55	1,639.13	8,713.46	7,979.44	1.34	-0.43	0.287
35.00	-39.99	-25.07	0.00	-2,112.7	0.00	2,112.66	6,481.12	1,598.99	8,292.04	7,649.71	1.83	-0.51	0.283
40.00	-38.41	-24.64	0.00	-1,987.3	0.00	1,987.32	6,366.23	1,558.86	7,881.06	7,323.87	2.4	-0.58	0.278
45.00	-36.88	-24.37	0.00	-1,864.1	0.00	1,864.10	6,248.87	1,518.72	7,480.52	7,002.14	3.05	-0.66	0.272
46.17	-36.51	-24.16	0.00	-1,835.7	0.00	1,835.67	6,221.13	1,509.36	7,388.57	6,927.68	3.22	-0.68	0.271
50.00	-34.34	-23.81	0.00	-1,743.1	0.00	1,743.06	6,129.06	1,478.59	7,090.43	6,684.74	3.79	-0.74	0.267
53.75	-32.26	-23.56	0.00	-1,653.8	0.00	1,653.79	6,122.27	1,476.34	7,068.87	6,667.08	4.39	-0.8	0.254
55.00	-31.88	-23.29	0.00	-1,624.3	0.00	1,624.34	6,091.89	1,466.30	6,973.13	6,588.50	4.61	-0.82	0.252
60.00	-30.42	-22.83	0.00	-1,507.9	0.00	1,507.90	5,968.87	1,426.17	6,596.68	6,277.08	5.51	-0.9	0.246
65.00	-29.00	-22.38	0.00	-1,393.7	0.00	1,393.73	5,843.38	1,386.03	6,230.68	5,970.51	6.49	-0.97	0.239
70.00	-27.61	-21.92	0.00	-1,281.8	0.00	1,281.84	5,697.65	1,345.90	5,875.12	5,651.36	7.55	-1.05	0.232
75.00	-26.25	-21.47	0.00	-1,172.2	0.00	1,172.23	5,527.74	1,305.77	5,530.01	5,317.67	8.7	-1.13	0.225
80.00	-24.94	-21.02	0.00	-1,064.9	0.00	1,064.89	5,357.84	1,265.63	5,195.34	4,994.13	9.92	-1.21	0.218
85.00	-23.66	-20.57	0.00	-959.8	0.00	959.80	5,187.94	1,225.50	4,871.12	4,680.74	11.22	-1.28	0.210
90.00	-22.42	-20.17	0.00	-856.9	0.00	856.94	5,018.04	1,185.36	4,557.34	4,377.51	12.61	-1.36	0.201
94.00	-21.45	-19.94	0.00	-776.2	0.00	776.20	4,882.00	1,153.23	4,313.64	4,142.05	13.77	-1.42	0.192
95.00	-21.06	-19.69	0.00	-756.3	0.00	756.32	4,848.13	1,145.23	4,254.01	4,084.44	14.07	-1.43	0.190
99.84	-19.20	-19.43	0.00	-661.1	0.00	661.09	3,496.62	848.08	3,110.21	2,917.07	15.56	-1.5	0.233
100.00	-19.16	-19.23	0.00	-657.9	0.00	657.92	3,493.69	847.10	3,103.00	2,911.22	15.61	-1.51	0.232
105.00	-18.25	-18.80	0.00	-561.8	0.00	561.78	3,402.94	817.00	2,886.42	2,733.91	17.24	-1.59	0.211
110.00	-17.36	-18.39	0.00	-467.8	0.00	467.76	3,309.72	786.90	2,677.68	2,560.12	18.95	-1.67	0.189
115.00	-13.24	-15.00	0.00	-375.8	0.00	375.82	3,203.77	756.79	2,476.77	2,382.43	20.74	-1.75	0.162
120.00	-12.44	-14.60	0.00	-300.8	0.00	300.82	3,076.34	726.69	2,283.70	2,195.75	22.61	-1.82	0.141
125.00	-8.92	-12.26	0.00	-227.8	0.00	227.84	2,948.91	696.59	2,098.46	2,016.69	24.54	-1.87	0.116
130.00	-8.18	-11.91	0.00	-166.5	0.00	166.52	2,821.48	666.49	1,921.05	1,845.24	26.54	-1.92	0.093
134.00	-5.65	-8.11	0.00	-118.9	0.00	118.87	2,719.54	642.41	1,784.76	1,713.56	28.16	-1.96	0.072
135.00	-5.53	-8.01	0.00	-110.8	0.00	110.75	2,694.06	636.39	1,751.48	1,681.40	28.58	-1.97	0.068
136.72	-5.32	-7.83	0.00	-97.0	0.00	97.00	2,650.31	626.06	1,695.06	1,626.91	29.28	-1.98	0.062
140.00	-4.68	-7.65	0.00	-71.3	0.00	71.30	2,566.63	606.29	1,589.74	1,525.19	30.65	-2	0.049
141.13	-4.47	-7.47	0.00	-62.6	0.00	62.62	1,644.41	408.35	1,081.58	991.52	31.13	-2	0.066
145.00	-4.15	-7.23	0.00	-33.7	0.00	33.72	1,600.54	392.83	1,000.95	928.08	32.76	-2.02	0.039
148.00	-2.26	-6.00	0.00	-12.0	0.00	12.02	1,565.49	380.79	940.54	879.69	34.03	-2.03	0.015
150.00	-0.06	-0.03	0.00	-0.0	0.00	0.03	1,541.63	372.76	901.31	847.85	34.88	-2.03	0.000
151.00	0.00	-0.03	0.00	0.0	0.00	0.00	1,529.55	368.75	882.01	832.07	35.3	-2.03	0.000

CALCULATED FORCES

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph Wind with 1.5" Radial Ice — 19 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

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	-97.66	-8.56	0.00	-930.9	0.00	930.86	7,216.48	1,879.93	11,461.37	10,027.15	0	0	0.106
5.00	-94.76	-8.43	0.00	-888.1	0.00	888.06	7,118.81	1,839.80	10,977.27	9,678.72	0.01	-0.02	0.105
10.00	-91.87	-8.31	0.00	-845.9	0.00	845.90	7,018.68	1,799.66	10,503.62	9,332.85	0.04	-0.04	0.104
15.00	-89.01	-8.18	0.00	-804.4	0.00	804.37	6,916.09	1,759.53	10,040.41	8,989.76	0.1	-0.06	0.102
20.00	-86.19	-8.06	0.00	-763.5	0.00	763.46	6,811.04	1,719.39	9,587.65	8,649.69	0.18	-0.09	0.101
25.00	-83.41	-7.94	0.00	-723.2	0.00	723.16	6,703.53	1,679.26	9,145.33	8,312.84	0.28	-0.11	0.099
30.00	-80.68	-7.82	0.00	-683.5	0.00	683.46	6,593.55	1,639.13	8,713.46	7,979.44	0.41	-0.13	0.098
35.00	-78.00	-7.70	0.00	-644.4	0.00	644.37	6,481.12	1,598.99	8,292.04	7,649.71	0.56	-0.15	0.096
40.00	-75.38	-7.57	0.00	-605.9	0.00	605.89	6,366.23	1,558.86	7,881.06	7,323.87	0.73	-0.18	0.095
45.00	-72.81	-7.48	0.00	-568.0	0.00	568.05	6,248.87	1,518.72	7,480.52	7,002.14	0.93	-0.2	0.093
46.17	-72.21	-7.42	0.00	-559.3	0.00	559.32	6,221.13	1,509.36	7,388.57	6,927.68	0.98	-0.21	0.092
50.00	-68.92	-7.31	0.00	-530.9	0.00	530.88	6,129.06	1,478.59	7,090.43	6,684.74	1.16	-0.23	0.091
53.75	-65.76	-7.23	0.00	-503.5	0.00	503.46	6,122.27	1,476.34	7,068.87	6,667.08	1.34	-0.24	0.086
55.00	-65.14	-7.15	0.00	-494.4	0.00	494.42	6,091.89	1,466.30	6,973.13	6,588.50	1.41	-0.25	0.086
60.00	-62.69	-7.01	0.00	-458.7	0.00	458.67	5,968.87	1,426.17	6,596.68	6,277.08	1.68	-0.27	0.084
65.00	-60.30	-6.87	0.00	-423.6	0.00	423.63	5,843.38	1,386.03	6,230.68	5,970.51	1.98	-0.3	0.081
70.00	-57.96	-6.72	0.00	-389.3	0.00	389.30	5,697.65	1,345.90	5,875.12	5,651.36	2.3	-0.32	0.079
75.00	-55.69	-6.58	0.00	-355.7	0.00	355.69	5,527.74	1,305.77	5,530.01	5,317.67	2.65	-0.34	0.077
80.00	-53.47	-6.43	0.00	-322.8	0.00	322.81	5,357.84	1,265.63	5,195.34	4,994.13	3.03	-0.37	0.075
85.00	-51.31	-6.29	0.00	-290.6	0.00	290.64	5,187.94	1,225.50	4,871.12	4,680.74	3.42	-0.39	0.072
90.00	-49.21	-6.16	0.00	-259.2	0.00	259.20	5,018.04	1,185.36	4,557.34	4,377.51	3.84	-0.41	0.069
94.00	-47.57	-6.08	0.00	-234.6	0.00	234.55	4,882.00	1,153.23	4,313.64	4,142.05	4.2	-0.43	0.066
95.00	-46.96	-6.00	0.00	-228.5	0.00	228.48	4,848.13	1,145.23	4,254.01	4,084.44	4.29	-0.44	0.066
99.84	-44.06	-5.91	0.00	-199.5	0.00	199.46	3,496.62	848.08	3,110.21	2,917.07	4.74	-0.46	0.081
100.00	-44.01	-5.85	0.00	-198.5	0.00	198.49	3,493.69	847.10	3,103.00	2,911.22	4.76	-0.46	0.081
105.00	-42.37	-5.71	0.00	-169.2	0.00	169.24	3,402.94	817.00	2,886.42	2,733.91	5.25	-0.48	0.074
110.00	-40.78	-5.57	0.00	-140.7	0.00	140.69	3,309.72	786.90	2,677.68	2,560.12	5.77	-0.51	0.067
115.00	-31.47	-4.57	0.00	-112.8	0.00	112.82	3,203.77	756.79	2,476.77	2,382.43	6.32	-0.53	0.057
120.00	-30.02	-4.43	0.00	-90.0	0.00	89.98	3,076.34	726.69	2,283.70	2,195.75	6.89	-0.55	0.051
125.00	-22.50	-3.67	0.00	-67.8	0.00	67.82	2,948.91	696.59	2,098.46	2,016.69	7.47	-0.57	0.041
130.00	-21.16	-3.55	0.00	-49.4	0.00	49.45	2,821.48	666.49	1,921.05	1,845.24	8.08	-0.58	0.034
134.00	-13.70	-2.44	0.00	-35.2	0.00	35.24	2,719.54	642.41	1,784.76	1,713.56	8.57	-0.59	0.026
135.00	-13.46	-2.41	0.00	-32.8	0.00	32.80	2,694.06	636.39	1,751.48	1,681.40	8.7	-0.6	0.025
136.72	-13.06	-2.34	0.00	-28.7	0.00	28.67	2,650.31	626.06	1,695.06	1,626.91	8.91	-0.6	0.023
140.00	-11.98	-2.28	0.00	-21.0	0.00	20.97	2,566.63	606.29	1,589.74	1,525.19	9.33	-0.61	0.018
141.13	-11.61	-2.22	0.00	-18.4	0.00	18.39	1,644.41	408.35	1,081.58	991.52	9.47	-0.61	0.026
145.00	-10.93	-2.13	0.00	-9.8	0.00	9.82	1,600.54	392.83	1,000.95	928.08	9.96	-0.61	0.017
148.00	-7.47	-1.71	0.00	-3.4	0.00	3.43	1,565.49	380.79	940.54	879.69	10.35	-0.61	0.009
150.00	-0.15	-0.01	0.00	-0.0	0.00	0.01	1,541.63	372.76	901.31	847.85	10.61	-0.61	0.000
151.00	0.00	-0.01	0.00	0.0	0.00	0.00	1,529.55	368.75	882.01	832.07	10.73	-0.61	0.000

CALCULATED FORCES

Load Case: 1.0D + 1.0W — 60 mph Wind with No Ice — 19 Iterations

Gust Response Factor: 1.10
Dead load Factor: 1.00
Wind Load Factor: 1.00

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	-57.87	-6.82	0.00	-744.1	0.00	744.09	7,216.48	1,879.93	11,461.37	10,027.15	0	0	0.082
5.00	-55.87	-6.72	0.00	-710.0	0.00	709.97	7,118.81	1,839.80	10,977.27	9,678.72	0.01	-0.02	0.081
10.00	-53.91	-6.62	0.00	-676.4	0.00	676.37	7,018.68	1,799.66	10,503.62	9,332.85	0.04	-0.03	0.080
15.00	-51.99	-6.51	0.00	-643.3	0.00	643.30	6,916.09	1,759.53	10,040.41	8,989.76	0.08	-0.05	0.079
20.00	-50.10	-6.41	0.00	-610.7	0.00	610.73	6,811.04	1,719.39	9,587.65	8,649.69	0.14	-0.07	0.078
25.00	-48.26	-6.31	0.00	-578.7	0.00	578.67	6,703.53	1,679.26	9,145.33	8,312.84	0.23	-0.09	0.077
30.00	-46.45	-6.22	0.00	-547.1	0.00	547.10	6,593.55	1,639.13	8,713.46	7,979.44	0.33	-0.1	0.076
35.00	-44.69	-6.12	0.00	-516.0	0.00	516.02	6,481.12	1,598.99	8,292.04	7,649.71	0.45	-0.12	0.074
40.00	-42.96	-6.01	0.00	-485.4	0.00	485.45	6,366.23	1,558.86	7,881.06	7,323.87	0.59	-0.14	0.073
45.00	-41.27	-5.95	0.00	-455.4	0.00	455.38	6,248.87	1,518.72	7,480.52	7,002.14	0.75	-0.16	0.072
46.17	-40.88	-5.90	0.00	-448.4	0.00	448.44	6,221.13	1,509.36	7,388.57	6,927.68	0.79	-0.17	0.071
50.00	-38.49	-5.81	0.00	-425.8	0.00	425.84	6,129.06	1,478.59	7,090.43	6,684.74	0.92	-0.18	0.070
53.75	-36.19	-5.75	0.00	-404.0	0.00	404.05	6,122.27	1,476.34	7,068.87	6,667.08	1.07	-0.2	0.067
55.00	-35.79	-5.69	0.00	-396.9	0.00	396.86	6,091.89	1,466.30	6,973.13	6,588.50	1.12	-0.2	0.066
60.00	-34.19	-5.58	0.00	-368.4	0.00	368.43	5,968.87	1,426.17	6,596.68	6,277.08	1.35	-0.22	0.064
65.00	-32.63	-5.46	0.00	-340.6	0.00	340.55	5,843.38	1,386.03	6,230.68	5,970.51	1.58	-0.24	0.063
70.00	-31.11	-5.35	0.00	-313.2	0.00	313.23	5,697.65	1,345.90	5,875.12	5,651.36	1.84	-0.26	0.061
75.00	-29.63	-5.24	0.00	-286.5	0.00	286.46	5,527.74	1,305.77	5,530.01	5,317.67	2.12	-0.28	0.059
80.00	-28.18	-5.14	0.00	-260.2	0.00	260.23	5,357.84	1,265.63	5,195.34	4,994.13	2.42	-0.29	0.057
85.00	-26.78	-5.03	0.00	-234.6	0.00	234.56	5,187.94	1,225.50	4,871.12	4,680.74	2.74	-0.31	0.055
90.00	-25.42	-4.93	0.00	-209.4	0.00	209.42	5,018.04	1,185.36	4,557.34	4,377.51	3.08	-0.33	0.053
94.00	-24.35	-4.87	0.00	-189.7	0.00	189.69	4,882.00	1,153.23	4,313.64	4,142.05	3.36	-0.35	0.051
95.00	-23.92	-4.81	0.00	-184.8	0.00	184.84	4,848.13	1,145.23	4,254.01	4,084.44	3.44	-0.35	0.050
99.84	-21.87	-4.75	0.00	-161.6	0.00	161.56	3,496.62	848.08	3,110.21	2,917.07	3.8	-0.37	0.062
100.00	-21.83	-4.70	0.00	-160.8	0.00	160.79	3,493.69	847.10	3,103.00	2,911.22	3.81	-0.37	0.062
105.00	-20.83	-4.60	0.00	-137.3	0.00	137.29	3,402.94	817.00	2,886.42	2,733.91	4.21	-0.39	0.056
110.00	-19.86	-4.50	0.00	-114.3	0.00	114.31	3,309.72	786.90	2,677.68	2,560.12	4.63	-0.41	0.051
115.00	-15.20	-3.67	0.00	-91.8	0.00	91.84	3,203.77	756.79	2,476.77	2,382.43	5.07	-0.43	0.043
120.00	-14.31	-3.57	0.00	-73.5	0.00	73.51	3,076.34	726.69	2,283.70	2,195.75	5.52	-0.44	0.038
125.00	-10.33	-3.00	0.00	-55.7	0.00	55.67	2,948.91	696.59	2,098.46	2,016.69	6	-0.46	0.031
130.00	-9.51	-2.91	0.00	-40.7	0.00	40.68	2,821.48	666.49	1,921.05	1,845.24	6.48	-0.47	0.025
134.00	-6.57	-1.98	0.00	-29.0	0.00	29.04	2,719.54	642.41	1,784.76	1,713.56	6.88	-0.48	0.019
135.00	-6.43	-1.96	0.00	-27.1	0.00	27.06	2,694.06	636.39	1,751.48	1,681.40	6.98	-0.48	0.018
136.72	-6.19	-1.91	0.00	-23.7	0.00	23.70	2,650.31	626.06	1,695.06	1,626.91	7.15	-0.48	0.017
140.00	-5.48	-1.87	0.00	-17.4	0.00	17.41	2,566.63	606.29	1,589.74	1,525.19	7.49	-0.49	0.014
141.13	-5.24	-1.83	0.00	-15.3	0.00	15.30	1,644.41	408.35	1,081.58	991.52	7.6	-0.49	0.019
145.00	-4.88	-1.77	0.00	-8.2	0.00	8.24	1,600.54	392.83	1,000.95	928.08	8	-0.49	0.012
148.00	-2.74	-1.46	0.00	-2.9	0.00	2.93	1,565.49	380.79	940.54	879.69	8.31	-0.5	0.005
150.00	-0.07	-0.01	0.00	-0.0	0.00	0.01	1,541.63	372.76	901.31	847.85	8.52	-0.5	0.000
151.00	0.00	-0.01	0.00	0.0	0.00	0.00	1,529.55	368.75	882.01	832.07	8.62	-0.5	0.000

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

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

Spectral Response Acceleration for Short Period (S_S):	0.176
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.065
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}):	0.188
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.104
Seismic Response Coefficient (C_s):	0.040
Upper Limit C_S:	0.040
Lower Limit C_S:	0.030
Period based on Rayleigh Method (sec):	1.730
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	1.610
Total Unfactored Dead Load:	57.870 k
Seismic Base Shear (E):	2.320 k

SEISMIC FORCES

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)
39	150.5	72	234	0.003	7	89
38	149	178	570	0.007	17	220
37	146.5	272	850	0.011	26	337
36	143.0667	361	1,085	0.014	33	447
35	140.5667	241	703	0.009	21	298
34	138.3583	711	2,025	0.026	61	880
33	135.8583	237	656	0.008	20	293
32	134.5	140	380	0.005	11	173
31	132	631	1,667	0.022	50	781
30	127.5	816	2,036	0.026	61	1,009
29	122.5	857	2,004	0.026	60	1,060
28	117.5	886	1,938	0.025	58	1,096
27	112.5	943	1,924	0.025	58	1,167
26	107.5	973	1,843	0.024	55	1,204
25	102.5	1,002	1,758	0.023	53	1,240
24	99.9183	33	56	0.001	2	41
23	97.4183	2,053	3,320	0.043	100	2,541
22	94.5017	431	664	0.009	20	533
21	92.0017	1,064	1,568	0.020	47	1,317
20	87.5	1,364	1,854	0.024	56	1,688
19	82.5	1,403	1,734	0.022	52	1,736
18	77.5	1,442	1,612	0.021	48	1,784
17	72.5	1,480	1,486	0.019	45	1,832
16	67.5	1,519	1,359	0.018	41	1,880
15	62.5	1,558	1,231	0.016	37	1,928
14	57.5	1,597	1,103	0.014	33	1,977
13	54.375	405	256	0.003	8	502
12	51.875	2,295	1,342	0.017	40	2,840
11	48.0833	2,391	1,237	0.016	37	2,959
10	45.5833	388	184	0.002	6	480
9	42.5	1,687	715	0.009	22	2,088
8	37.5	1,726	598	0.008	18	2,136
7	32.5	1,765	485	0.006	15	2,184
6	27.5	1,804	379	0.005	11	2,232
5	22.5	1,843	280	0.004	8	2,280
4	17.5	1,881	191	0.002	6	2,328
3	12.5	1,920	113	0.002	3	2,377
2	7.5	1,959	51	0.001	2	2,425

SEISMIC FORCES

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)
1	2.5	1,998	9	0.000	0	2,473
Samsung RF4440d-13A	150	211	684	0.009	21	261
Samsung RF4439d-25A	150	224	727	0.009	22	277
Raycap RHSDC-3315-PF-48	150	64	208	0.003	6	79
Samsung MT6407-77A	150	245	794	0.010	24	303
Commscope NHH-65B-R2B	150	262	851	0.011	26	324
Antel LPA-80080/6CF ___	150	42	136	0.002	4	52
Antel LPA-80063/6CF	150	108	350	0.004	11	134
VZW Unused Reserve (14860.23 sqin)	150	1,344	4,361	0.056	131	1,663
Generic Flat Low Profile Platform	148	1,875	5,953	0.077	179	2,320
Ericsson RRUS 8843 B2, B66A	134	216	584	0.008	18	267
Ericsson RRUS 4478 B14	134	180	486	0.006	15	222
Ericsson RRUS 4449 B5, B12	134	213	576	0.008	17	264
Ericsson AIR 6449 B77D/ C-Band	134	245	662	0.009	20	303
Raycap DC9-48-60-24-8C-EV	134	32	87	0.001	3	40
Generic Round Sector Frame	134	900	2,434	0.032	73	1,114
CCI DMP65R-BU8D	134	287	777	0.010	23	355
CCI TPA65R-BU8D	134	248	669	0.009	20	306
Commscope RDIDC-9181-PF-48	125	22	53	0.001	2	27
Fujitsu TA08025-B605	125	225	544	0.007	16	278
Fujitsu TA08025-B604	125	192	463	0.006	14	237
JMA Wireless MX08FRO665-21	125	194	468	0.006	14	239
Generic Round Platform with Handrails	125	2,500	6,044	0.078	182	3,094
Generic Round Platform with Handrails	115	2,500	5,283	0.068	159	3,094
Ericsson 4460 BAND 2/25	115	327	691	0.009	21	405
Ericsson 4480 BAND 71	115	243	514	0.007	15	301
Ericsson AIR 6419 B41	115	206	434	0.006	13	254
Commscope VV-65A-R1B	115	74	157	0.002	5	92
RFS APXVAALL24 43-U-NA20	115	368	779	0.010	23	456
	Totals:	**57,870**	**77,272**	**1.000**	**2,323**	**71,616**

SEISMIC FORCES

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)
39	150.5	72	234	0.003	7	62
38	149	178	570	0.007	17	153
37	146.5	272	850	0.011	26	235
36	143.0667	361	1,085	0.014	33	311
35	140.5667	241	703	0.009	21	207
34	138.3583	711	2,025	0.026	61	613
33	135.8583	237	656	0.008	20	204
32	134.5	140	380	0.005	11	120
31	132	631	1,667	0.022	50	545
30	127.5	816	2,036	0.026	61	703
29	122.5	857	2,004	0.026	60	739
28	117.5	886	1,938	0.025	58	764
27	112.5	943	1,924	0.025	58	814
26	107.5	973	1,843	0.024	55	839
25	102.5	1,002	1,758	0.023	53	864
24	99.9183	33	56	0.001	2	29
23	97.4183	2,053	3,320	0.043	100	1,771
22	94.5017	431	664	0.009	20	372
21	92.0017	1,064	1,568	0.020	47	918
20	87.5	1,364	1,854	0.024	56	1,176
19	82.5	1,403	1,734	0.022	52	1,210
18	77.5	1,442	1,612	0.021	48	1,243
17	72.5	1,480	1,486	0.019	45	1,277
16	67.5	1,519	1,359	0.018	41	1,310
15	62.5	1,558	1,231	0.016	37	1,344
14	57.5	1,597	1,103	0.014	33	1,377

SEISMIC FORCES

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)
13	54.375	405	256	0.003	8	350
12	51.875	2,295	1,342	0.017	40	1,979
11	48.0833	2,391	1,237	0.016	37	2,062
10	45.5833	388	184	0.002	6	335
9	42.5	1,687	715	0.009	22	1,455
8	37.5	1,726	598	0.008	18	1,488
7	32.5	1,765	485	0.006	15	1,522
6	27.5	1,804	379	0.005	11	1,556
5	22.5	1,843	280	0.004	8	1,589
4	17.5	1,881	191	0.002	6	1,623
3	12.5	1,920	113	0.002	3	1,656
2	7.5	1,959	51	0.001	2	1,690
1	2.5	1,998	9	0.000	0	1,723
Samsung RF4440d-13A	150	211	684	0.009	21	182
Samsung RF4439d-25A	150	224	727	0.009	22	193
Raycap RHSDC-3315-PF-48	150	64	208	0.003	6	55
Samsung MT6407-77A	150	245	794	0.010	24	211
Commscope NHH-65B-R2B	150	262	851	0.011	26	226
Antel LPA-80080/6CF ___	150	42	136	0.002	4	36
Antel LPA-80063/6CF	150	108	350	0.004	11	93
VZW Unused Reserve (14860.23 sqin)	150	1,344	4,361	0.056	131	1,159
Generic Flat Low Profile Platform	148	1,875	5,953	0.077	179	1,617
Ericsson RRUS 8843 B2, B66A	134	216	584	0.008	18	186
Ericsson RRUS 4478 B14	134	180	486	0.006	15	155
Ericsson RRUS 4449 B5, B12	134	213	576	0.008	17	184
Ericsson AIR 6449 B77D/ C-Band	134	245	662	0.009	20	211
Raycap DC9-48-60-24-8C-EV	134	32	87	0.001	3	28
Generic Round Sector Frame	134	900	2,434	0.032	73	776
CCI DMP65R-BU8D	134	287	777	0.010	23	248
CCI TPA65R-BU8D	134	248	669	0.009	20	213
Commscope RDIDC-9181-PF-48	125	22	53	0.001	2	19
Fujitsu TA08025-B605	125	225	544	0.007	16	194
Fujitsu TA08025-B604	125	192	463	0.006	14	165
JMA Wireless MX08FRO665-21	125	194	468	0.006	14	167
Generic Round Platform with Handrails	125	2,500	6,044	0.078	182	2,156
Generic Round Platform with Handrails	115	2,500	5,283	0.068	159	2,156
Ericsson 4460 BAND 2/25	115	327	691	0.009	21	282
Ericsson 4480 BAND 71	115	243	514	0.007	15	210
Ericsson AIR 6419 B41	115	206	434	0.006	13	177
Commscope VV-65A-R1B	115	74	157	0.002	5	64
RFS APXVAALL24 43-U-NA20	115	368	779	0.010	23	318
	Totals:	**57,870**	**77,272**	**1.000**	**2,323**	**49,910**

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
0.00	-69.14	-2.33	0.00	-268.30	0.00	268.30	7,216.48	1,879.93	11,461	10,027.15	0.00	0.00	0.04
5.00	-66.72	-2.33	0.00	-256.68	0.00	256.68	7,118.81	1,839.80	10,977	9,678.72	0.00	-0.01	0.04
10.00	-64.34	-2.33	0.00	-245.02	0.00	245.02	7,018.68	1,799.66	10,504	9,332.85	0.01	-0.01	0.04
15.00	-62.01	-2.33	0.00	-233.35	0.00	233.35	6,916.09	1,759.53	10,040	8,989.76	0.03	-0.02	0.04
20.00	-59.73	-2.33	0.00	-221.68	0.00	221.68	6,811.04	1,719.39	9,588	8,649.69	0.05	-0.02	0.03
25.00	-57.50	-2.33	0.00	-210.02	0.00	210.02	6,703.53	1,679.26	9,145	8,312.84	0.08	-0.03	0.03
30.00	-55.32	-2.32	0.00	-198.38	0.00	198.38	6,593.55	1,639.13	8,713	7,979.44	0.12	-0.04	0.03
35.00	-53.18	-2.30	0.00	-186.80	0.00	186.80	6,481.12	1,598.99	8,292	7,649.71	0.16	-0.04	0.03
40.00	-51.09	-2.29	0.00	-175.28	0.00	175.28	6,366.23	1,558.86	7,881	7,323.87	0.21	-0.05	0.03
45.00	-50.61	-2.28	0.00	-163.85	0.00	163.85	6,248.87	1,518.72	7,481	7,002.14	0.27	-0.06	0.03
46.17	-47.65	-2.25	0.00	-161.19	0.00	161.19	6,221.13	1,509.36	7,389	6,927.68	0.28	-0.06	0.03
50.00	-44.81	-2.21	0.00	-152.57	0.00	152.57	6,129.06	1,478.59	7,090	6,684.74	0.33	-0.07	0.03

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
53.75	-44.31	-2.20	0.00	-144.30	0.00	144.30	6,122.27	1,476.34	7,069	6,667.08	0.39	-0.07	0.03
55.00	-42.33	-2.17	0.00	-141.54	0.00	141.54	6,091.89	1,466.30	6,973	6,588.50	0.41	-0.07	0.03
60.00	-40.41	-2.13	0.00	-130.70	0.00	130.70	5,968.87	1,426.17	6,597	6,277.08	0.49	-0.08	0.03
65.00	-38.53	-2.10	0.00	-120.02	0.00	120.02	5,843.38	1,386.03	6,231	5,970.51	0.57	-0.09	0.03
70.00	-36.69	-2.05	0.00	-109.55	0.00	109.55	5,697.65	1,345.90	5,875	5,651.36	0.67	-0.09	0.03
75.00	-34.91	-2.00	0.00	-99.29	0.00	99.29	5,527.74	1,305.77	5,530	5,317.67	0.77	-0.10	0.03
80.00	-33.17	-1.95	0.00	-89.26	0.00	89.26	5,357.84	1,265.63	5,195	4,994.13	0.87	-0.11	0.02
85.00	-31.49	-1.90	0.00	-79.50	0.00	79.50	5,187.94	1,225.50	4,871	4,680.74	0.99	-0.11	0.02
90.00	-30.17	-1.85	0.00	-70.01	0.00	70.01	5,018.04	1,185.36	4,557	4,377.51	1.11	-0.12	0.02
94.00	-29.64	-1.83	0.00	-62.60	0.00	62.60	4,882.00	1,153.23	4,314	4,142.05	1.21	-0.12	0.02
95.00	-27.09	-1.73	0.00	-60.77	0.00	60.77	4,848.13	1,145.23	4,254	4,084.44	1.24	-0.12	0.02
99.84	-27.05	-1.73	0.00	-52.42	0.00	52.42	3,496.62	848.08	3,110	2,917.07	1.36	-0.13	0.03
100.00	-25.81	-1.67	0.00	-52.13	0.00	52.13	3,493.69	847.10	3,103	2,911.22	1.37	-0.13	0.03
105.00	-24.61	-1.62	0.00	-43.77	0.00	43.77	3,402.94	817.00	2,886	2,733.91	1.51	-0.14	0.02
110.00	-23.44	-1.56	0.00	-35.68	0.00	35.68	3,309.72	786.90	2,678	2,560.12	1.65	-0.14	0.02
115.00	-17.75	-1.25	0.00	-27.88	0.00	27.88	3,203.77	756.79	2,477	2,382.43	1.81	-0.15	0.02
120.00	-16.69	-1.19	0.00	-21.62	0.00	21.62	3,076.34	726.69	2,284	2,195.75	1.97	-0.15	0.02
125.00	-11.80	-0.89	0.00	-15.66	0.00	15.66	2,948.91	696.59	2,098	2,016.69	2.13	-0.16	0.01
130.00	-11.02	-0.84	0.00	-11.22	0.00	11.22	2,821.48	666.49	1,921	1,845.24	2.30	-0.16	0.01
134.00	-7.98	-0.63	0.00	-7.86	0.00	7.86	2,719.54	642.41	1,785	1,713.56	2.43	-0.16	0.01
135.00	-7.68	-0.61	0.00	-7.24	0.00	7.24	2,694.06	636.39	1,751	1,681.40	2.47	-0.16	0.01
136.72	-6.80	-0.55	0.00	-6.19	0.00	6.19	2,650.31	626.06	1,695	1,626.91	2.53	-0.16	0.01
140.00	-6.51	-0.52	0.00	-4.40	0.00	4.40	2,566.63	606.29	1,590	1,525.19	2.64	-0.17	0.01
141.13	-6.06	-0.49	0.00	-3.81	0.00	3.81	1,644.41	408.35	1,082	991.52	2.68	-0.17	0.01
145.00	-5.72	-0.46	0.00	-1.91	0.00	1.91	1,600.54	392.83	1,001	928.08	2.81	-0.17	0.01
148.00	-3.18	-0.26	0.00	-0.52	0.00	0.52	1,565.49	380.79	941	879.69	2.92	-0.17	0.00
150.00	0.00	0.00	0.00	0.00	0.00	0.00	1,541.63	372.76	901	847.85	2.99	-0.17	0.00
151.00	0.00	0.00	0.00	0.00	0.00	0.00	1,529.55	368.75	882	832.07	3.02	-0.17	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	-48.19	-2.32	0.00	-266.31	0.00	266.31	7,216.48	1,879.93	11,461	10,027.15	0.00	0.00	0.03
5.00	-46.50	-2.33	0.00	-254.69	0.00	254.69	7,118.81	1,839.80	10,977	9,678.72	0.00	-0.01	0.03
10.00	-44.84	-2.33	0.00	-243.05	0.00	243.05	7,018.68	1,799.66	10,504	9,332.85	0.01	-0.01	0.03
15.00	-43.22	-2.33	0.00	-231.40	0.00	231.40	6,916.09	1,759.53	10,040	8,989.76	0.03	-0.02	0.03
20.00	-41.63	-2.32	0.00	-219.76	0.00	219.76	6,811.04	1,719.39	9,588	8,649.69	0.05	-0.02	0.03
25.00	-40.07	-2.32	0.00	-208.15	0.00	208.15	6,703.53	1,679.26	9,145	8,312.84	0.08	-0.03	0.03
30.00	-38.55	-2.30	0.00	-196.57	0.00	196.57	6,593.55	1,639.13	8,713	7,979.44	0.12	-0.04	0.03
35.00	-37.06	-2.29	0.00	-185.05	0.00	185.05	6,481.12	1,598.99	8,292	7,649.71	0.16	-0.04	0.03
40.00	-35.61	-2.27	0.00	-173.60	0.00	173.60	6,366.23	1,558.86	7,881	7,323.87	0.21	-0.05	0.03
45.00	-35.27	-2.27	0.00	-162.24	0.00	162.24	6,248.87	1,518.72	7,481	7,002.14	0.27	-0.06	0.03
46.17	-33.21	-2.23	0.00	-159.60	0.00	159.60	6,221.13	1,509.36	7,389	6,927.68	0.28	-0.06	0.03
50.00	-31.23	-2.19	0.00	-151.05	0.00	151.05	6,129.06	1,478.59	7,090	6,684.74	0.33	-0.06	0.03
53.75	-30.88	-2.18	0.00	-142.83	0.00	142.83	6,122.27	1,476.34	7,069	6,667.08	0.39	-0.07	0.03
55.00	-29.50	-2.15	0.00	-140.10	0.00	140.10	6,091.89	1,466.30	6,973	6,588.50	0.40	-0.07	0.03
60.00	-28.16	-2.12	0.00	-129.34	0.00	129.34	5,968.87	1,426.17	6,597	6,277.08	0.48	-0.08	0.03
65.00	-26.85	-2.08	0.00	-118.76	0.00	118.76	5,843.38	1,386.03	6,231	5,970.51	0.57	-0.08	0.02
70.00	-25.57	-2.03	0.00	-108.37	0.00	108.37	5,697.65	1,345.90	5,875	5,651.36	0.66	-0.09	0.02
75.00	-24.33	-1.99	0.00	-98.20	0.00	98.20	5,527.74	1,305.77	5,530	5,317.67	0.76	-0.10	0.02
80.00	-23.12	-1.93	0.00	-88.28	0.00	88.28	5,357.84	1,265.63	5,195	4,994.13	0.87	-0.10	0.02
85.00	-21.94	-1.88	0.00	-78.61	0.00	78.61	5,187.94	1,225.50	4,871	4,680.74	0.98	-0.11	0.02
90.00	-21.02	-1.83	0.00	-69.22	0.00	69.22	5,018.04	1,185.36	4,557	4,377.51	1.10	-0.12	0.02
94.00	-20.65	-1.81	0.00	-61.89	0.00	61.89	4,882.00	1,153.23	4,314	4,142.05	1.20	-0.12	0.02
95.00	-18.88	-1.71	0.00	-60.08	0.00	60.08	4,848.13	1,145.23	4,254	4,084.44	1.22	-0.12	0.02
99.84	-18.85	-1.71	0.00	-51.81	0.00	51.81	3,496.62	848.08	3,110	2,917.07	1.35	-0.13	0.02
100.00	-17.99	-1.65	0.00	-51.53	0.00	51.53	3,493.69	847.10	3,103	2,911.22	1.36	-0.13	0.02
105.00	-17.15	-1.60	0.00	-43.26	0.00	43.26	3,402.94	817.00	2,886	2,733.91	1.49	-0.14	0.02

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
110.00	-16.34	-1.54	0.00	-35.26	0.00	35.26	3,309.72	786.90	2,678	2,560.12	1.64	-0.14	0.02
115.00	-12.37	-1.24	0.00	-27.56	0.00	27.56	3,203.77	756.79	2,477	2,382.43	1.79	-0.15	0.02
120.00	-11.63	-1.18	0.00	-21.37	0.00	21.37	3,076.34	726.69	2,284	2,195.75	1.95	-0.15	0.01
125.00	-8.22	-0.88	0.00	-15.48	0.00	15.48	2,948.91	696.59	2,098	2,016.69	2.11	-0.16	0.01
130.00	-7.68	-0.83	0.00	-11.09	0.00	11.09	2,821.48	666.49	1,921	1,845.24	2.27	-0.16	0.01
134.00	-5.56	-0.62	0.00	-7.78	0.00	7.78	2,719.54	642.41	1,785	1,713.56	2.41	-0.16	0.01
135.00	-5.35	-0.60	0.00	-7.15	0.00	7.15	2,694.06	636.39	1,751	1,681.40	2.44	-0.16	0.01
136.72	-4.74	-0.54	0.00	-6.12	0.00	6.12	2,650.31	626.06	1,695	1,626.91	2.50	-0.16	0.01
140.00	-4.53	-0.52	0.00	-4.35	0.00	4.35	2,566.63	606.29	1,590	1,525.19	2.61	-0.16	0.01
141.13	-4.22	-0.48	0.00	-3.76	0.00	3.76	1,644.41	408.35	1,082	991.52	2.65	-0.16	0.01
145.00	-3.99	-0.46	0.00	-1.89	0.00	1.89	1,600.54	392.83	1,001	928.08	2.79	-0.17	0.01
148.00	-2.22	-0.26	0.00	-0.51	0.00	0.51	1,565.49	380.79	941	879.69	2.89	-0.17	0.00
150.00	0.00	0.00	0.00	0.00	0.00	0.00	1,541.63	372.76	901	847.85	2.96	-0.17	0.00
151.00	0.00	0.00	0.00	0.00	0.00	0.00	1,529.55	368.75	882	832.07	3.00	-0.17	0.00

ANALYSIS SUMMARY

	Base 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	28.03	0.00	69.43	0.00	0.00	3067.96	0.00	0.32
0.9D + 1.0W	28.02	0.00	52.07	0.00	0.00	3048.36	0.00	0.31
1.2D + 1.0Di + 1.0Wi	8.56	0.00	97.66	0.00	0.00	930.86	0.00	0.11
1.2D + 1.0Ev + 1.0Eh	2.33	0.00	69.14	0.00	0.00	268.30	0.00	0.04
0.9D - 1.0Ev + 1.0Eh	2.33	0.00	48.19	0.00	0.00	266.31	0.00	0.03
1.0D + 1.0W	6.82	0.00	57.87	0.00	0.00	744.09	0.00	0.08

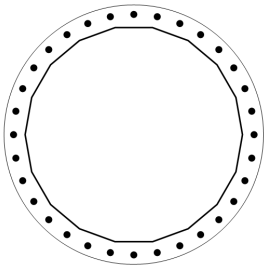
BASE PLATE ANALYSIS @ 0 FT

APPLIED REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
3067.96	69.43	28.03

PLATE PARAMETERS (ID# 26194)

Width:	82	in
Shape:	Round	
Thickness:	3.25	in
Grade:	A572-60	
Yield Strength:	60	ksi
Tensile Strength:	75	ksi
Rod Detail Type:	d	
Clear Distance	4.75	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Plastic	
Neutral Axis:	28	°



ANCHOR ROD PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	F_y (ksi)	F_u (ksi)	Spacing (in)	Offset (°)
Original [ID#26882]	Radial	32	2.25	76	A615-75	75	100	-	-

COMPONENT PROPERTIES

Component	ID	Gross Area (in^2)	Net Area (in^2)	Individual Inertia (in^4)	Moment of Inertia (in^4)	Threads/in
Pole	68"ø x 0.5" (18 Sides)	105.4913	-	-	60089.40	-
Bolt Group	Original (32) 2.25"ø	3.9761	3.2477	0.8393	69967.68	4.5

REACTION DISTRIBUTION

Component	ID	Moment M_u (k-ft)	Axial Load P_u (k)	Shear V_u (k)	Moment Factor
Pole	68"ø x 0.5" (18 Sides)	3068.0	69.43	28.03	1.000
Bolt Group	Original (32) 2.25"ø	3068.0	-	28.03	1.000

BASE PLATE BEND LINE ANALYSIS @ 0 FT

POLE PROPERTIES

Flat-to-Flat Diameter:	68.12	in	Flat Width:	12.012	in	Neutral Axis:	28	°
Point-to-Point Diameter:	69.18	in	Flat Radians:	0.349	rad	Bend Line Limits:	1.689 to 2.434	rad
Orientation Offset:	-	°						

PLATE PROPERTIES

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in^3)	Applied Moment M_u (k-in)	Moment Capacity ΦM_n (k-in)	Flexure Result $M_u/\Phi M_n$
Flats	40.765	0.00	107.644	446.1	5812.8	7.7%
Corners	38.955	0.00	102.865	312.9	5554.7	5.6%
Circumferential	41.758	0.00	110.267	532.1	5954.4	8.9%

PLASTIC ANCHOR ROD ANALYSIS

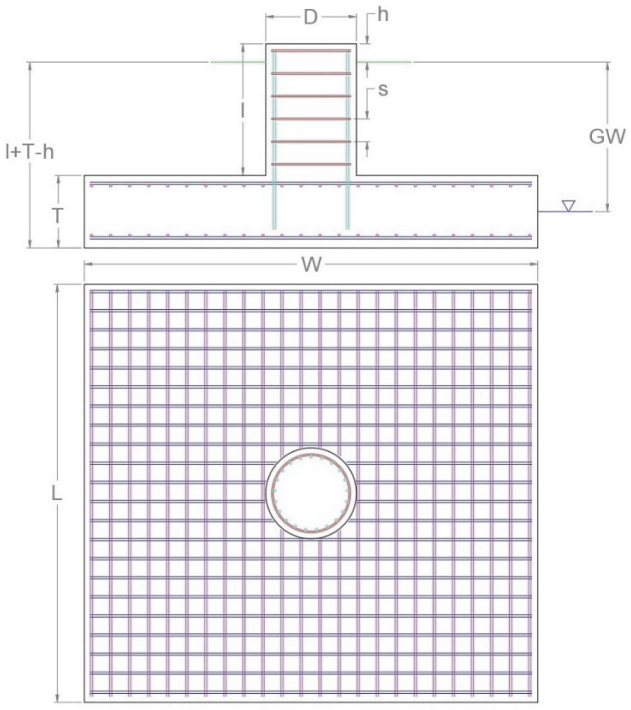
Class	Group Quantity	Rod Diameter (in)	Applied Axial Load P_u (k)	Applied Shear Load V_u (k)	Compressive Capacity ΦP_n (k)	Plastic Result
Original	32	2.25	53.6	1.4	243.6	22.0%

APPLIED GLOBAL REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
3,067.96	69.43	28.03

FOUNDATION PARAMETERS

Mat Length:	L	28	ft
Mat Width:	W	28	ft
Mat Thickness:	T	3	ft
Base Depth:	L+T-h	11	ft
Pier Shape:		Round	
Pier Diameter:	D	8	ft
Pier Height above Grade:	h	1	ft
Concrete Compressive Strength:		4,000	psi
Mat Top Rebar:		(80) #8 bars [60 ksi]	
Mat Bottom Rebar:		(80) #8 bars [60 ksi]	
Pier Vertical Rebar:		(60) #8 bars [60 ksi]	
Pier Rebar Ties:	s	#4 bars @ 6.0" c/c [60 ksi]	
Rebar Clear Cover:		3.0	in
Tower Eccentricity:	ecc	0	ft
Tower Leg Count		1	



SOIL PARAMETERS

Water Table Depth [BGL]:	GW	2	ft
Soil Unit Weight:		120	pcf
Ultimate Skin Friction:		0	psf
Ultimate Bearing Pressure:		16,000	psf
Bearing Pressure Type:		Net	
Coefficient of Shear Friction:		0.45	

SOIL STRENGTH ANALYSIS

Soil Strength Reduction Factor, Φ_s	Uplift Strength Reduction Factor, Φ_s	Asset Dead Load Factor	Dead Load Factor
0.75	0.75	0.9	1.2

SOIL OVERTURNING ANALYSIS

Design Moment, $M_{u,Design}$ (k-ft)	Nominal Overturning Capacity, $\Phi_m M_n$ (k-ft)	Soil Overturning Usage, $M_{u,Design} / \Phi_m M_n$	
3,404.32	14,373.93	**23.7%**	✓

SOIL BEARING ANALYSIS

Net Bearing Pressure, $P_{u,Net}$ (psf)	Nominal Bearing Capacity, $\Phi_b P_n$ (k-ft)	Bearing Pressure Controlling Load Direction	Soil Bearing Usage, $P_{u,net} / \Phi_b P_n$	
1,563.00	12,990.00	Parallel to Pad Edge	**12.0%**	✓

SOIL SLIDING SHEAR ANALYSIS

Applied Shear Force, V_u (k)	Friction Resistance (k)	Passive Pressure (psf)	Passive Pressure Resistance (k)	Nominal Shear Capacity, $\Phi_s V_n$ (k)	Soil Sliding Shear Usage, $V_u / \Phi_s V_n$	
28.03	0.00	672.0	56.45	393.98	**7.0%**	✓

MAT REINFORCING STEEL STRENGTH ANALYSIS

Steel Elastic Modulus, E (ksi)	Strength Bending/Tension Reduction Factor, Φ_b	Strength Shear Reduction Factor, Φ_v	Strength Compression Reduction Factor, Φ_c
29,000	0.9	0.75	0.65

MAT REINFORCING ONE WAY SHEAR ANALYSIS

One Way Design Shear, V_u (k)	Nominal One Way Shear Capacity, $\Phi_c V_n$ (k)	One Way Shear Controlling Load Direction	Mat One Way Shear Usage, $V_u / \Phi_c V_n$	
146.77	1,020.02	Parallel to Pad Edge	**14.4%**	✓

MAT REINFORCING PUNCHING SHEAR ANALYSIS

Punching Shear Design Stress, v_u (psi)	Nominal Punching Shear Capacity, $\Phi_c v_n$ (psi)	Mat Punching Shear Usage, $v_u / \Phi_c v_n$	
35.1	189.7	**18.5%**	✓

MAT REINFORCING MOMENT TRANSFER ANALYSIS

Moment Transfer Effective Flexural Width, w_f (in)	Neutral Axis Depth (in)	Pier Moment at Joint, M_{ut} (k-in)	Nominal Moment Transfer Capacity, $\Phi M_{sc,f}$ (k-in)	Mat Moment Transfer Usage, $0.6\ M_{ut} / \Phi M_{sc,f}$	
17.00	3.41	0.00	65,047.3	**0.0%**	✓

MAT REINFORCING FLEXURE ANALYSIS – UPPER STEEL

Factored Moment, M_u (k-ft)	Nominal Flexural Capacity, ΦM_n (k-ft)	Flexural Steel Controlling Load Direction	Mat Upper Rebar Flexure Usage, $M_u / \Phi M_n$	
737.06	8,699.59	Parallel to Pad Edge	**8.5%**	✓

MAT REINFORCING FLEXURE ANALYSIS – LOWER STEEL

Factored Moment, M_u (k-ft)	Nominal Flexural Capacity, ΦM_n (k-ft)	Flexural Steel Controlling Load Direction	Mat Lower Rebar Flexure Usage, $M_u / \Phi M_n$	
2,188.50	8,699.59	Parallel to Pad Edge	**25.2%**	✓

PIER REINFORCING STEEL STRENGTH ANALYSIS

Rebar Cage Diameter (in)	Steel Elastic Modulus, E (ksi)	Strength Bending/Tension Reduction Factor, Φ_b	Strength Shear Reduction Factor, Φ_v	Strength Compression Reduction Factor, Φ_c
88.00	29,000	0.9	0.75	0.65

PIER REINFORCING MOMENT ANALYSIS

Design Moment, M_u (k-ft)	Nominal Moment Capacity, $\Phi_b M_n$ (k-ft)	Bending Reinforcement Ratio	Pier Rebar Flexure Usage, $M_u/\Phi_b M_n$	
3,320.23	9,177.57	0.007	**36.2%**	✓

PIER REINFORCING COMPRESSION ANALYSIS

Design Compression, P_u (k)	Nominal Compressive Capacity, $\Phi_p P_n$ (k)	Pier Rebar Compressive Usage, $P_u / \Phi_p P_n$	
69.43	12,738.03	**0.5%**	✓

PIER REINFORCING SHEAR ANALYSIS

Design Shear, V_u (k)	Nominal Shear Capacity, $\Phi_v V_n$ (k)	Pier Rebar Shear Usage, $V_u / \Phi_v V_n$	
28.03	920.37	**3.0%**	✓

Exhibit E

AMERICAN TOWER®
CORPORATION

Mount Analysis Report

ATC Asset Name	:	West Granby, CT CT
ATC Asset Number	:	411186
Engineering Number	:	14117160_C8_05
Mount Elevation	:	115 ft
Proposed Carrier	:	T-Mobile
Carrier Site Name	:	Upper Meadow Rd Monopole
Carrier Site Number	:	CTHA234A
Site Location	:	8 Upper Meadow Road Granby, CT 6035 41.953316, -72.829845
County	:	Hartford
Date	:	July 20, 2023
Max Usage	:	42%
Analysis Result	:	Contingent Pass

Prepared By:
Molly Li
Structural Engineer I

Molly Li

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32593
LICENSED
PROFESSIONAL ENGINEER

COA: PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of the mount analysis performed for T-Mobile at 115 ft.

Supporting Documents

Specifications Sheet:	Perfect Vision PV-LPPGS-12M-HR2-AP1, dated November 1, 2019
Radio Frequency Data Sheet:	RFDS ID #CTHA234A, dated July 15, 2022
Reference Photos:	Site photos from 2018

Analysis

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

Basic Wind Speed:	115 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.50'' radial ice concurrent
Codes:	ANSI/TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
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 = 0.176, S1 = 0.065
Site Class:	D - Stiff Soil
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 provided the modifications listed below are completed:

- Analysis based on new installation of Perfect Vision PV-LPPGS-12M-HR2-AP1 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.

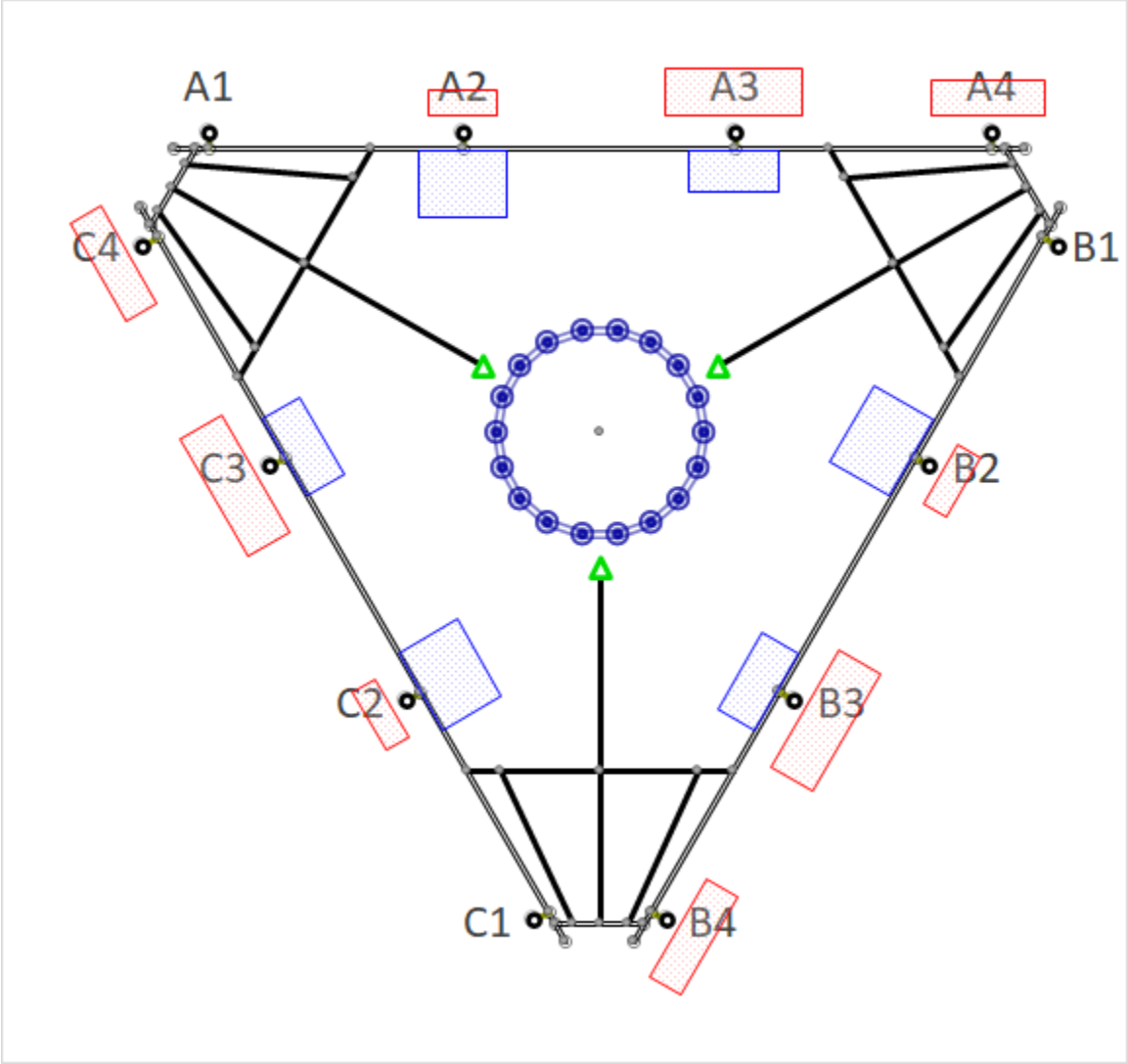
Application Loading

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
115.0	115.0	3	RFS APXVAALL24 43-U-NA20
		3	Commscope VV-65A-R1B
		3	Ericsson AIR 6419 B41
		3	Ericsson 4460 BAND 2/25
		3	Ericsson 4480 BAND 71

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Horizontals	35%	Pass
Mount Pipes	42%	Pass

Mount Layout



Equipment Position Table

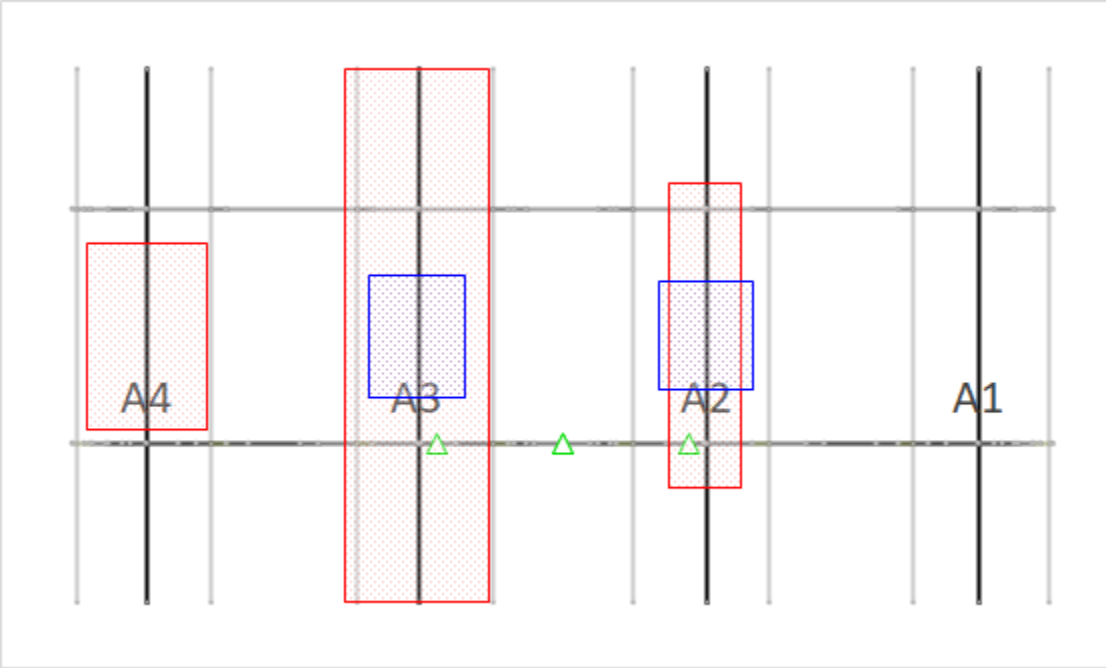
MP	RAD Center (ft)	Qty.	Antenna Model
A1	-	-	Empty
A2	115.0	1	Commscope VV-65A-R1B
	115.0	1	Ericsson 4460 BAND 2/25
A3	115.0	1	RFS APXVAALL24 43-U-NA20
	115.0	1	Ericsson 4480 BAND 71
A4	115.0	1	Ericsson AIR 6419 B41
B1	-	-	Empty
B2	115.0	1	Commscope VV-65A-R1B
	115.0	1	Ericsson 4460 BAND 2/25

Equipment Position Table Cont.

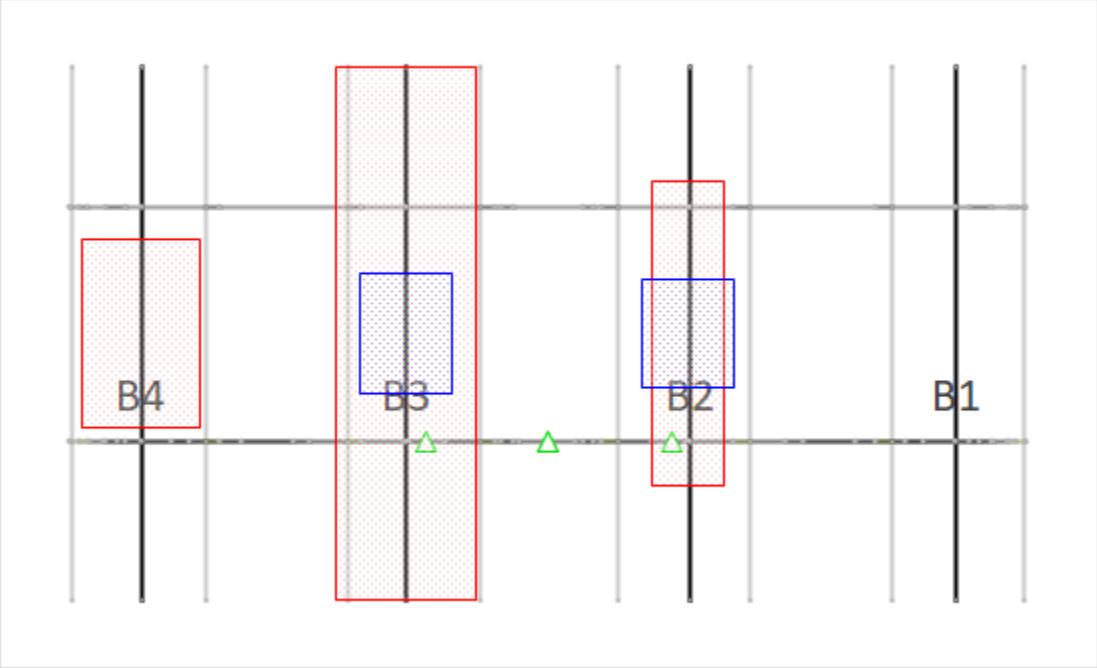
MP	RAD Center (ft)	Qty.	Antenna Model
B3	115.0	1	RFS APXVAALL24 43-U-NA20
	115.0	1	Ericsson 4480 BAND 71
B4	115.0	1	Ericsson AIR 6419 B41
C1	-	-	Empty
C2	115.0	1	Commscope VV-65A-R1B
	115.0	1	Ericsson 4460 BAND 2/25
C3	115.0	1	RFS APXVAALL24 43-U-NA20
	115.0	1	Ericsson 4480 BAND 71
C4	115.0	1	Ericsson AIR 6419 B41

Equipment Layout

Front View - Alpha

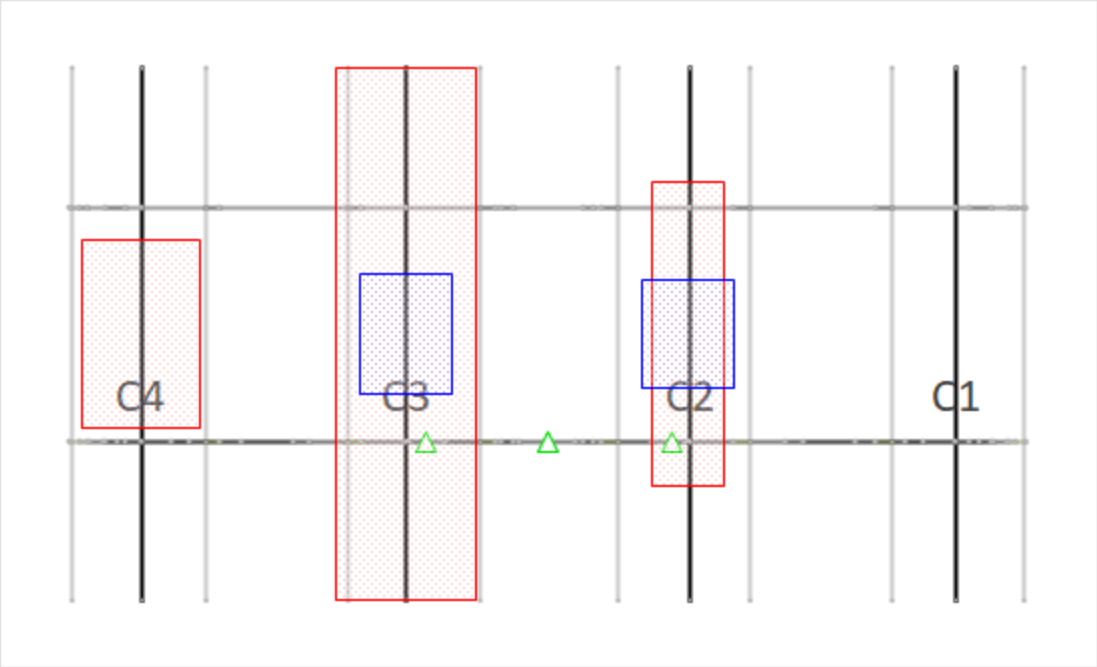


Front View - Beta



Equipment Layout Cont.

Front View - Gamma



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:	*411186*
Project Number:	*14117160_C8_05*
Carrier:	*T-Mobile*
Mount Elevation:	*115 ft*
Date:	7/20/2023

Mount Analysis Force Calculations

Wind & Ice Load Calculations			
Velocity Pressure Coefficient	K_z	1.03	
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	115	mph
Velocity Pressure	q_z	32.5	psf
Height Escalation Factor	K_{iz}	1.13	
Thickness of Radial Glaze Ice	T_{iz}	1.70	in

Seismic Load Calculations			
Short Period DSRAP	S_{DS}	0.188	
1 Second DSRAP	S_{D1}	0.104	
Importance Factor	I	1.0	
Response Modification Coefficient	R	2.0	
Seismic Response Coefficient	C_S	0.094	
Amplification Factor	A	1.0	
Total Weight	W	2436.5	lbs
Total Shear Force	V_S	228.7	lbs
Horizontal Seismic Load	Eh	228.7	lbs
Vertical Seismic Load	Ev	91.5	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	23.93	4.92
Commscope VV-65A-R1B	54.7	12.0	4.6	24.7	5.89	1.47	8.02	2.71
Ericsson AIR 6419 B41	33.6	20.0	6.3	68.5	5.60	0.92	7.21	1.57
Ericsson 4460 BAND 2/25	19.6	15.7	12.1	109.0	2.56	0.82	3.66	1.24
Ericsson 4480 BAND 71	22.0	15.7	7.5	81.0	2.88	1.40	4.04	2.34

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

Exhibit F

FOX HILL TELECOM

Radio Frequency Emissions Analysis Report

T-Mobile

Site ID: CTHA234A

Upper Meadow Rd Monopole
8 Upper Meadow Road
Granby, CT 06035

August 10, 2023

Fox Hill Telecom Project Number: 230581

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	15.96 %

Fox Hill Telecom, Inc Worcester MA 01609

FOX HILL TELECOM

August 10, 2023

T-MOBILE
Attn: RF Manager
35 Griffin Road South
Bloomfield, CT 06009

Emissions Analysis for Site: **CTHA234A – Upper Meadow Rd Monopole**

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed upgrades to the T-MOBILE facility located at **8 Upper Meadow Road, Granby, CT**, for the purpose of determining whether the emissions from the Proposed T-MOBILE Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

General population/uncontrolled exposure limits apply to situations in which the general 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.

General population 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 & 700 MHz 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 2500 MHz (BRS) 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 the percentage 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 performed for the proposed upgrades to the T-MOBILE antenna facility located at **8 Upper Meadow Road, Granby, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65 for far field modeling calculations.

In OET-65, plane wave power densities in the Far Field of an antenna are calculated by considering antenna gain and reflective waves that would contribute to exposure.

Since the radiation pattern of an antenna has developed in the **Far Field** region the power gain in specific directions needs to be considered in exposure predictions to yield an Effective Radiated Power (ERP) in each specific direction from the antenna. Also, since the vertical radiation pattern of the antenna is considered, the exposure calculations would most likely be reduced significantly at ground level, resulting in a more realistic estimate of the actual exposure levels. To determine a worst-case scenario at each point along the calculation radials, each point was calculated using the antenna gain value at each angle of incident and compared against the result using an isotropic radiator at the antenna height with the greater of the two used to yield the more pessimistic far field value for each point along the calculation radial.

Additionally, to model a truly "worst case" prediction of exposure levels at or near a surface, such as at ground-level or on a rooftop, reflection off the surface of antenna radiation power can be assumed, resulting in a potential 1.6 times increase in power density in calculating far field power density values.

With these factors Considered, the worst case **Far Field prediction model** utilized in this analysis is determined by the following equation:

Equation 9 per FCC OET65 for Far Field Modeling

$$S = \frac{33.4\ ERP}{R^2}$$

S = Power Density (in μw/cm^2)
ERP = Effective Radiated Power from antenna (watts)
R = Distance from the antenna (meters)

Predicted far field power density values for all carriers identified in this report were calculated 6 feet above the ground level and are displayed as a percentage of the applicable FCC standards. All emissions values for other carriers were calculated using the same Far Field model outlined above, using industry standard radio configurations and frequency band selection based upon available licenses in this geographic area for emissions contribution estimates.

For each T-Mobile sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
LTE / 5G NR	600 MHz	2	40
LTE	700 MHz	2	20
LTE	1900 MHz (PCS)	4	40
GSM	1900 MHz (PCS)	1	15
LTE	2100 MHz (AWS)	4	40
LTE / 5G NR	2500 MHz (BRS)	8	20

Table 1: Channel Data Table

The following T-Mobile antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz, 700 MHz, 1900 MHz (PCS), 2100 MHz (AWS) and 2500 MHz (BRS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	RFS APXVAALL24_43-U-NA20	115
A	2	Commscope VV-65A-R1	115
A	3	Ericsson AIR6419 B41	115
B	1	RFS APXVAALL24_43-U-NA20	115
B	2	Commscope VV-65A-R1	115
B	3	Ericsson AIR6419 B41	115
C	1	RFS APXVAALL24_43-U-NA20	115
C	2	Commscope VV-65A-R1	115
C	3	Ericsson AIR6419 B41	115

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.

RESULTS

Per the calculations completed for the proposed T-MOBILE configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	0.87
Antenna A2	Commscope VV-65A-R1	1900 MHz (PCS) / 2100 MHz (AWS)	15.55 / 16.05	9	335	12,724.61	1.01
Antenna A3	Ericsson AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	1.93
						Sector A Composite MPE%	**3.81**
Antenna B1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	0.87
Antenna B2	Commscope VV-65A-R1	1900 MHz (PCS) / 2100 MHz (AWS)	15.55 / 16.05	9	335	12,724.61	1.01
Antenna B3	Ericsson AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	1.93
						Sector B Composite MPE%	**3.81**
Antenna C1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	0.87
Antenna C2	Commscope VV-65A-R1	1900 MHz (PCS) / 2100 MHz (AWS)	15.55 / 16.05	9	335	12,724.61	1.01
Antenna C3	Ericsson AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	1.93
						Sector C Composite MPE%	**3.81**

Table 3: T-MOBILE Emissions Levels

The Following table (*table 4*) shows all additional identified carriers on site and their emissions contribution estimates, along with the newly calculated maximum T-MOBILE MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three T-Mobile sectors have the same configuration yielding the same results for all three sectors. *Table 5* below shows a summary for each T-MOBILE Sector as well as the composite estimated MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
T-MOBILE – Max Per Sector Value	**3.81 %**
Verizon Wireless	3.71 %
AT&T	6.04 %
Dish Wireless	2.40 %
Site Total MPE %:	**15.96 %**

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	3.81 %
T-MOBILE Sector B Total:	3.81 %
T-MOBILE Sector C Total:	3.81 %
Site Total:	15.96 %

Table 5: Site MPE Summary

Table 6 below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated T-MOBILE sector(s). For this site, all three T-Mobile sectors have the same configuration yielding the same results for all three sectors.

T-MOBILE _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile 600 MHz LTE / 5G NR	2	926.96	115	2.44	600 MHz	400	0.61%
T-Mobile 700 MHz LTE	2	485.32	115	1.21	700 MHz	467	0.26%
T-Mobile 1900 MHz (PCS) LTE	4	1,435.69	115	4.80	1900 MHz (PCS)	1000	0.48%
T-Mobile 1900 MHz (PCS) GSM	1	538.38	115	0.50	1900 MHz (PCS)	1000	0.05%
T-Mobile 2100 MHz (AWS) LTE	4	1,610.87	115	4.80	2100 MHz (AWS)	1000	0.48%
T-Mobile 2500 MHz (BRS) LTE / 5G NR	8	2,825.08	115	19.30	2500 MHz (BRS)	1000	1.93%
						Total:	**3.81 %**

Table 6: T-MOBILE Maximum Sector MPE Power Values

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 estimates 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:	3.81 %
Sector B:	3.81 %
Sector C:	3.81 %
T-MOBILE Maximum Total (per sector):	3.81 %
Site Total:	15.96 %
Site Compliance Status:	**COMPLIANT**

The estimated composite MPE value for this site assuming all carriers present is **15.96 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon the far field calculations performed for all carriers identified in this report.

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 estimated values calculated were well within the allowable 100% threshold standard per the federal government.

Scott Heffernan
Principal RF Engineer
Fox Hill Telecom, Inc
Worcester, MA 01609
(978)660-3998

Exhibit G

AMERICAN TOWER®
CORPORATION

LETTER OF AUTHORIZATION FOR PERMITTING

Licensee Name: T-MOBILE NORTHEAST LLC
@ ATC Site Name: WEST GRANBY CT, CT ATC Site #: 411186 Project # 14117160
Site Address: 8 UPPER MEADOW, GRANBY, CT 06035
APN: 14750008
Site Acquisition Vendor (Applicant Representative): Northeast Site Solutions LLC

I, Margaret Robinson, Vice President, UST Legal for American Tower*, owner/operator of the tower facility located at the address identified above (the "Tower Facility"), do hereby authorize **T-MOBILE NORTHEAST LLC, Northeast Site Solutions LLC**, their successors and assigns, and/or their agent, (collectively, the "Licensee") to act as American Tower's non-exclusive agent for the sole purpose of filing and consummating any land-use, building, or electrical permit application(s) as may be required by the applicable permitting authorities for **T-MOBILE NORTHEAST LLC**'s telecommunications' installation on the Tower Facility.

I understand that these applications may be approved with conditions. The above authorization is limited to the acceptance by Licensee only of conditions related to Licensee's installation and any such conditions of approval or modifications will be Licensee's sole responsibility.

Signature:

Print Name: Margaret Robinson
Vice President, UST Legal
American Tower*

NOTARY BLOCK

Commonwealth of MASSACHUSETTS
County of Middlesex

This instrument was acknowledged before me by Margaret Robinson, Vice President, UST Legal for American Tower*, personally known to me (or proved to me based on satisfactory evidence of identification) to be the person whose name is signed on the preceding or attached document and acknowledged to me that they signed it voluntarily for its stated purpose.

WITNESS my hand and official seal, this 11th day of July 2023

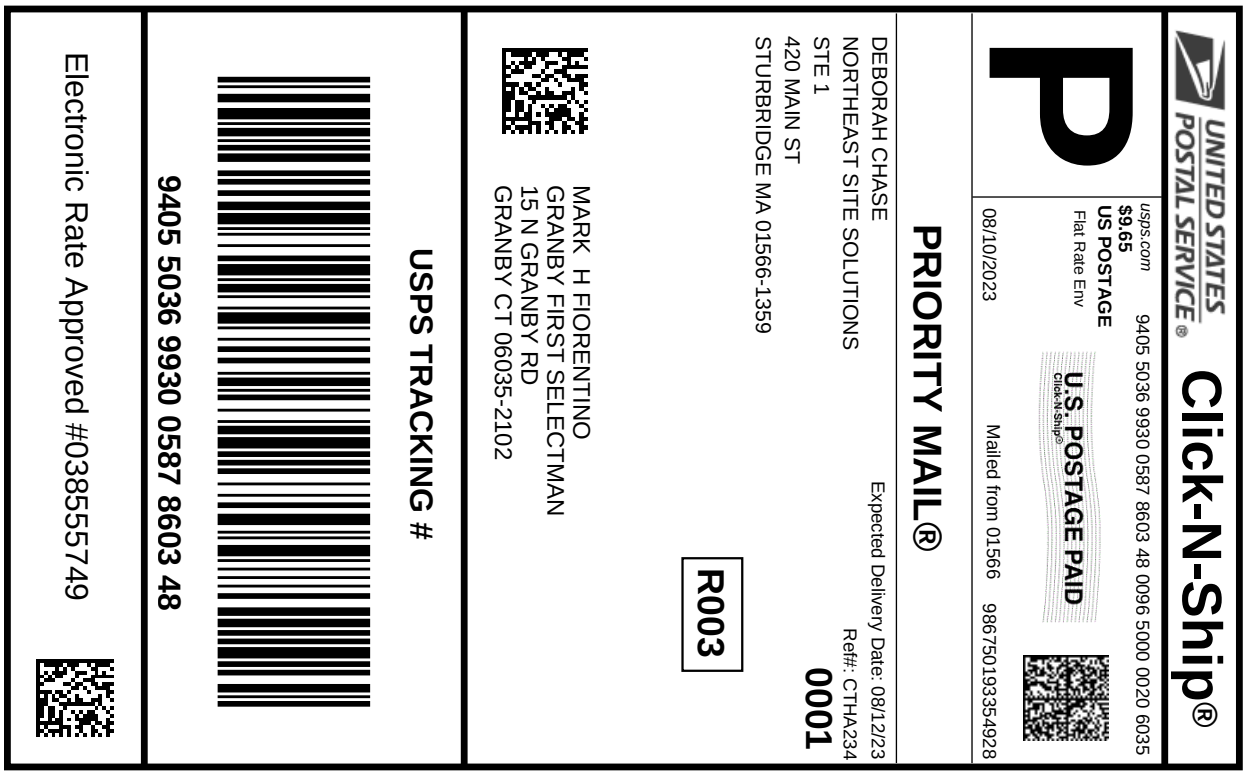
NOTARY SEAL

MELISSA ANN METZLER
Notary Public
Commonwealth of Massachusetts
My Commission Expires March 14, 2025

Notary Public
My Commission Expires: March 14, 2025

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

Exhibit H



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0587 8603 48

Trans. #:	593174478
Print Date:	08/10/2023
Ship Date:	08/10/2023
Expected Delivery Date:	08/12/2023

Priority Mail® Postage:	**$9.65**
Total:	**$9.65**

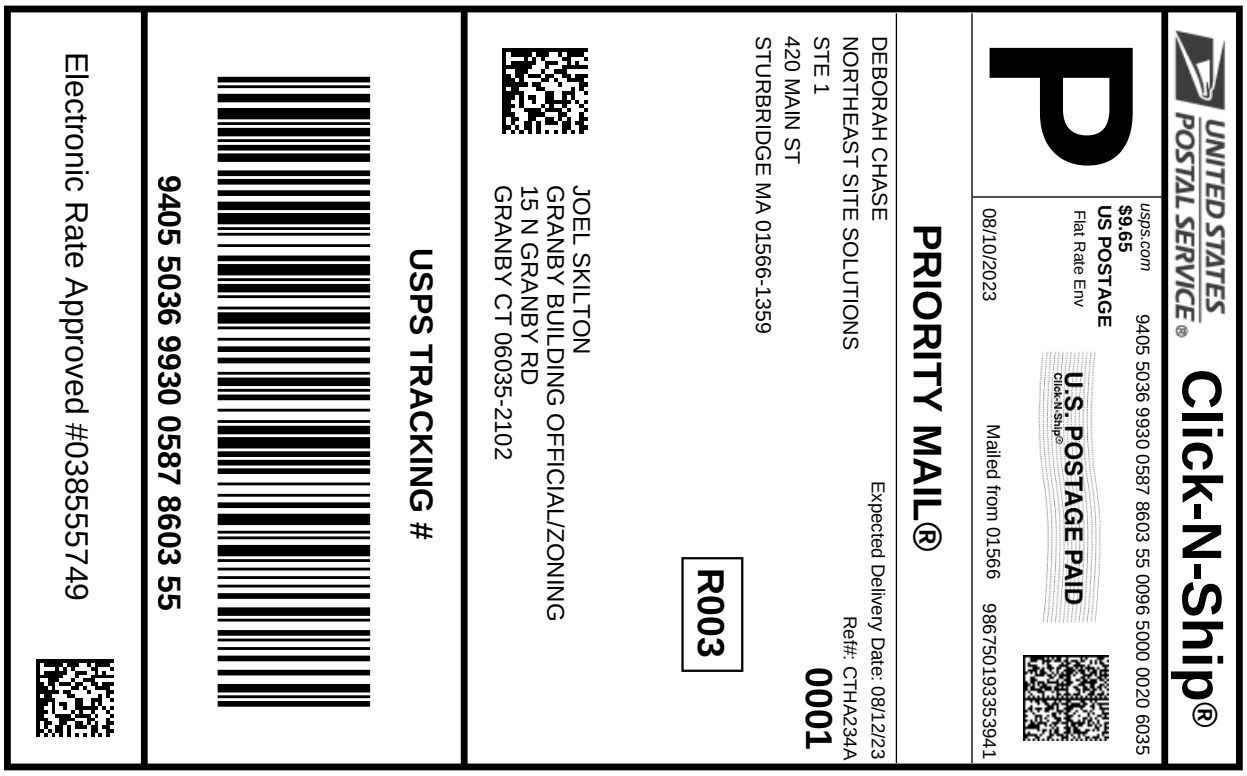
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
STE 1
420 MAIN ST
STURBRIDGE MA 01566-1359

Ref#: CTHA234

To: MARK H FIORENTINO
GRANBY FIRST SELECTMAN
15 N GRANBY RD
GRANBY CT 06035-2102

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0587 8603 55

Trans. #:	593174478
Print Date:	08/10/2023
Ship Date:	08/10/2023
Expected Delivery Date:	08/12/2023

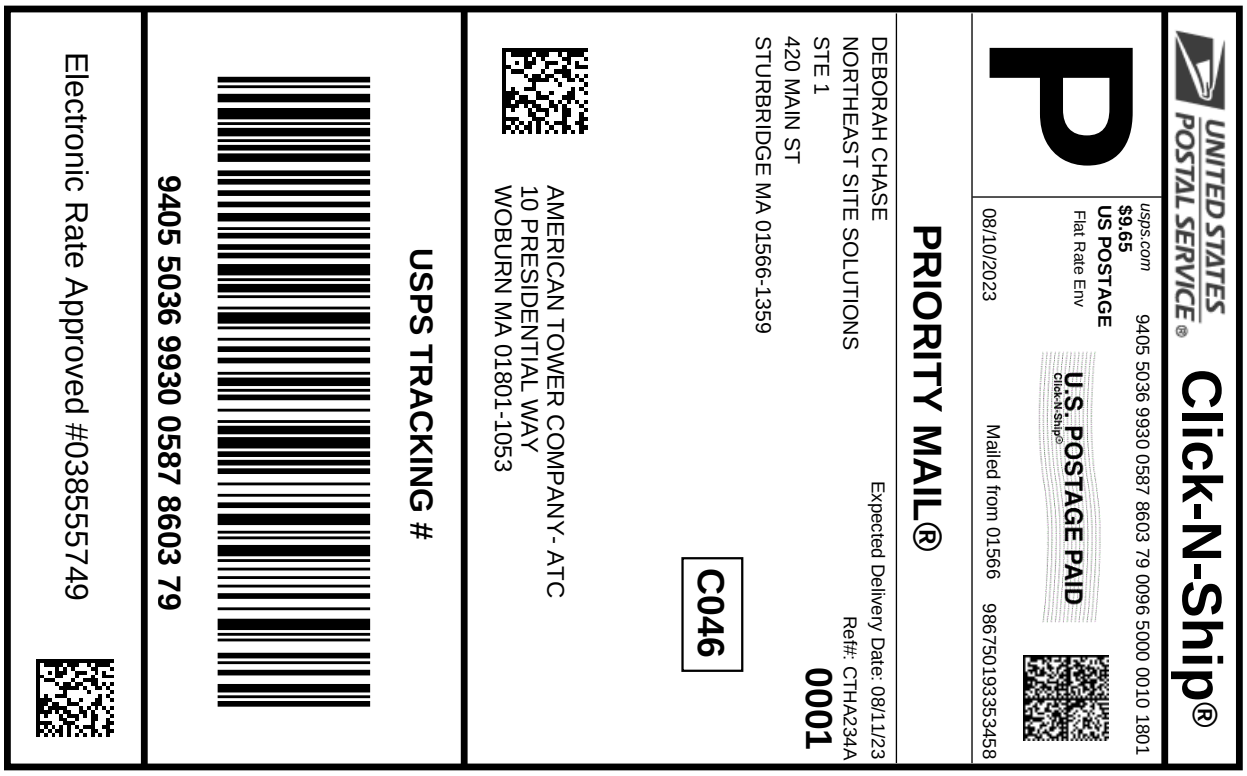
Priority Mail® Postage:	**$9.65**
Total:	**$9.65**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
STE 1
420 MAIN ST
STURBRIDGE MA 01566-1359
Ref#: CTHA234A

To: JOEL SKILTON
GRANBY BUILDING OFFICIAL/ZONING ENFORCEMENT
15 N GRANBY RD
GRANBY CT 06035-2102

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0587 8603 79

Trans. #:	593174478
Print Date:	08/10/2023
Ship Date:	08/10/2023
Expected Delivery Date:	08/11/2023

Priority Mail® Postage:	**$9.65**
Total:	**$9.65**

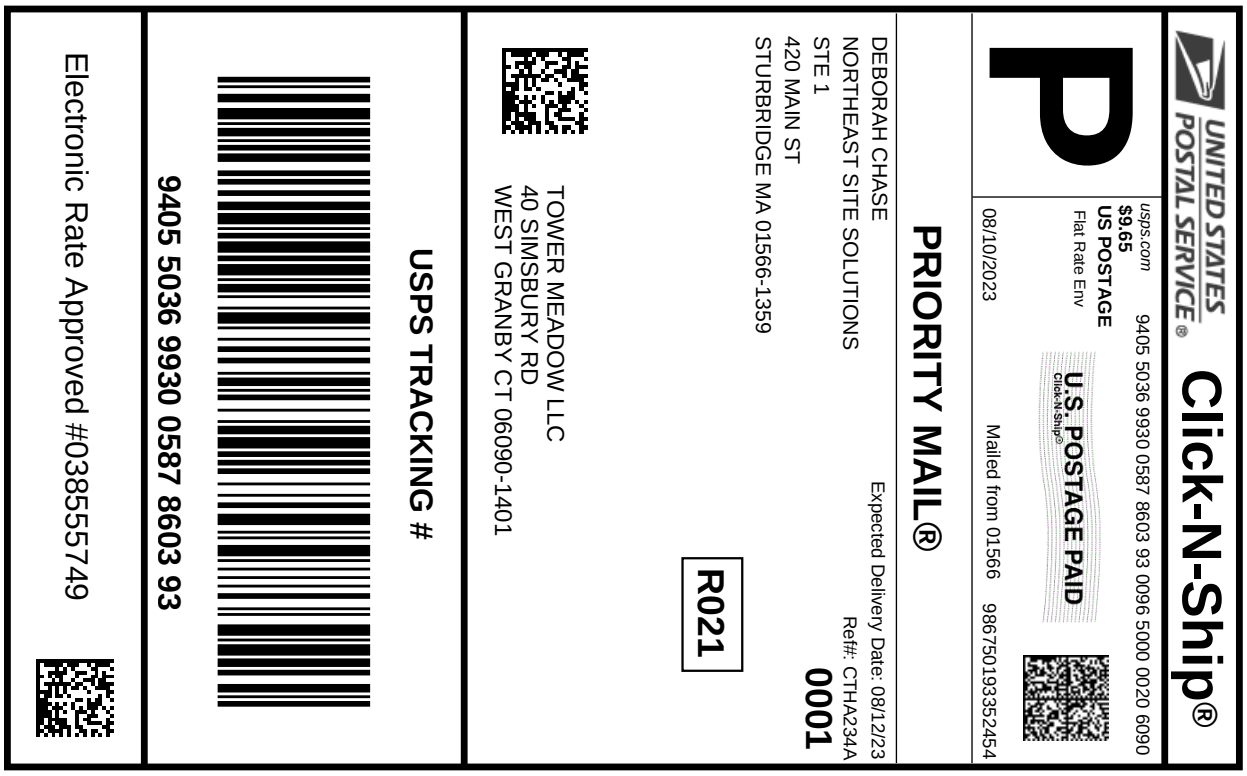
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
STE 1
420 MAIN ST
STURBRIDGE MA 01566-1359

Ref#: CTHA234A

To: AMERICAN TOWER COMPANY- ATC
10 PRESIDENTIAL WAY
WOBURN MA 01801-1053

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0587 8603 93

Trans. #:	593174478
Print Date:	08/10/2023
Ship Date:	08/10/2023
Expected Delivery Date:	08/12/2023

Priority Mail® Postage:	**$9.65**
Total:	**$9.65**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
STE 1
420 MAIN ST
STURBRIDGE MA 01566-1359

Ref#: CTHA234A

To: TOWER MEADOW LLC
40 SIMSBURY RD
WEST GRANBY CT 06090-1401

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com

UNITED STATES POSTAL SERVICE.

FISKDALE
458 MAIN ST
FISKDALE, MA 01518-9998
(800)275-8777

08/10/2023 11:40 AM

Product	Qty	Unit Price	Price
Prepaid Mail West Granby, CT 06090 Weight: 0 lb 15.90 oz Acceptance Date: Thu 08/10/2023 Tracking #: 9405 5036 9930 0587 8603 93	1		$0.00
Prepaid Mail Woburn, MA 01801 Weight: 1 lb 0.00 oz Acceptance Date: Thu 08/10/2023 Tracking #: 9405 5036 9930 0587 8603 79	1		$0.00
Prepaid Mail Granby, CT 06035 Weight: 0 lb 15.80 oz Acceptance Date: Thu 08/10/2023 Tracking #: 9405 5036 9930 0587 8603 55	1		$0.00
Prepaid Mail Granby, CT 06035 Weight: 1 lb 0.00 oz Acceptance Date: Thu 08/10/2023 Tracking #: 9405 5036 9930 0587 8603 48	1		$0.00
Grand Total:			$0.00

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

Preview your Mail
Track your Packages
Sign up for FREE @
https://informeddelivery.usps.com

All sales final on stamps and postage.
Refunds for guaranteed services only.
Thank you for your business.

Tell us about your experience.
Go to: https://postalexperience.com/Pos
or scan this code with your mobile device,

or call 1-800-410-7420.

UFN: 242703-0518
Receipt #: 840-50180227-2-3246813-1
Clerk: 5