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T-Mobile
Cullen Morgan
Site Acquisition Consultant
750 W Center Street
Suite 301
West Bridgewater, MA 02379
(941)549-7263
cmorgan@clinellc.com

November 8, 2022

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

**RE: Request for Tower Share
T-Mobile Northeast, LLC ("T-Mobile") Request for Approval of the Shared Use of an
Existing Tower at: 134 Kickapoo Road, Middlefield, CT 06455
T-Mobile Site: CTNH569A**

Dear Members of the Council:

T-Mobile proposes to share an existing telecommunications tower located at 134 Kickapoo Road, Middlefield, CT 06455 (the facility). The subject parcel is identified by the Town of Middlefield, CT as Map 10, Block 10.2 and lot 34-1. The property is owned by SBC Tower Holdings LLC and the tower is owned by American Tower Corporation. The property is roughly 0.15± acres and accommodates an existing telecommunication compound with one shelter and two concrete pads with telecommunications carriers' cabinets as well as the monopole tower within the fenced compound. The facility is and will continue to be owned and operated by American Tower Corporation.

Pursuant to Connecticut General Statutes Section 16-50aa (the Statute), T-Mobile requests a finding from the Connecticut Siting Council that the shared use of this facility is technically, legally, environmentally, and economically feasible, will meet safety concerns, will avoid the unnecessary proliferation of towers and is in the public interest. It further requests an order approving the shared use of this facility.

The purpose of this request is to use an existing tower to develop T-Mobile's wireless network to provide high speed wireless data and wireless service within the State of Connecticut and in this part of Middlefield: avoiding the need for an additional tower in Middlefield.

T-Mobile is licensed by the Federal Communications Commission ("FCC") to provide multiple technologies, including LTE, NR, 5G and GSM including (600,700,1900, 2100, 2500 MHz frequencies) in Middlesex County. T-Mobile is building and enhancing its network to take advantage of its licensed spectrum, and improve its broadband high speed wireless voice and data services.

Existing Facility & Proposed Modification

The existing facility is and will continue to be a 75' monopole tower located at 134 Kickapoo Road, Middlefield, CT 06455. Site coordinates (NAD83) are 41.51361111 and -72.7458. Currently there is one other major commercial wireless carrier located on this tower, whereby T-Mobile now intends to use the vacant space on the lowest part of the tower, beneath AT&T. The site plan of the facility is included in the proposed Modifications drawings and Construction drawings, prepared by American Tower Corporation dated September 22, 2022 respectively, and enclosed herewith.

T-Mobile intends to install three (3) AIR 6419 B41, three (3) RFS- APXVAALL24_43-U-NA20, three (3) 4460 B25+B66 and three (3) 4480 B71+B85 RRUs, as shown in the construction drawing, to be attached to the guyed tower at the 63' mount level. T-Mobile will also install three (3) 6x24 hybrid fiber cables on the tower. T-Mobile will add a 15' x 10' leased area with two (2) concrete pads and one (1) H-frame. T-Mobile intends to enter into a new agreement, at this tower height, in order to license the portion of space within the existing and proposed compound for the new 8' x 10' concrete pad with three (3) new cabinets and a 5' x 10' concrete pad for a (1) 48 KW diesel generator.

Consistent with the requirements of the Statute, it is feasible for T-Mobile to collocate at this facility. T-Mobile is proposing to collocate on the existing monopole tower that will continue to remain in the ownership of American Tower Corporation. Included with this application is a Structural Analysis Report from American Tower Corporation dated October 31, 2022 that shows that the existing tower can support T-Mobile's proposed equipment once modified.

The Proposal is Legally Feasible

The Council has authority, pursuant to statute, to issue an order approving of the shared use of this tower. By issuing an order approving T-Mobile's shared use of this tower, T-Mobile will be able to proceed with obtaining a building permit for the proposed installation. American Tower Corporation has executed a Letter of Authorization that approved T-Mobile's Request for Tower Share filing, which approval is included with this application. T-Mobile's proposal is legally feasible.

T-Mobile is a telecommunication provider licensed by the FCC to provide service in the State of Connecticut, including but not limited to Middlesex County. T-Mobile will enter into an agreement with the owner of this facility, American Tower Corporation, for the location of this proposed equipment on the existing tower so that it may provide telecommunications services to the surrounding community. Consequently, the proposal is legally feasible.

The Proposal is Environmentally Feasible

Pursuant to the Statute, the proposal will be environmentally feasible for the following reasons:

- The overall impact on the Middlesex area will be decreased with the sharing of a single tower versus the proliferation of multiple towers.
- There will be no material increase in the visibility of the tower with the addition of the antennas and associated equipment on the tower.
- There will be no increased impact on air quality because no air pollutants will be generated during normal operation of the facility.
- There will only be a brief, slight increase in noise pollution while the site is under construction.
- During construction, the proposed project will generate a small amount of traffic as construction takes place. Upon completion, traffic will be limited to an average of one trip per month for maintenance and inspections.
- There will be no adverse impact to the health and safety of the surrounding community or workers at the facility due to the addition of T-Mobile's new antennas to the tower. T-Mobile has performed an analysis of the radio frequency field emanating from the transmitting antennas on the tower to ensure compliance with the National Council on Radiation Protection and measurements (NCRP) standard for maximum permissible exposure (MPE) adopted by the FCC. The analysis indicates that T-Mobile and other antennas on the tower will cumulatively emit 20.95528% of the NCRP standard for maximum permissible exposure. The report indicates that maximum level of exposure will be well below the FCC's mandated radio frequency exposure limits. The report is enclosed herewith.
- T-Mobile expects to enhance safety in this portion of by improving wireless telecommunications for local residents and travelers. T-Mobile is currently developing its network to provide its customers with quality and reliable coverage to comply with their FCC license, the site is a necessary part of T-Mobile's network development.

- Specifically, this proposal is designed to provide reliable wireless coverage for this section of Middlesex.

Conclusions:

For the reasons stated above, the attachment of T-Mobile's antennas and associated equipment to the tower would meet all the requirements set forth in the Statute. The proposal is legally, technically, economically and environmentally feasible and meets all public safety concerns. Therefore, T-Mobile respectfully requests that the Council approve this request for the shared use of this tower located at 134 Kickapoo Road, Middlefield, CT 06455

Respectfully,



Cullen Morgan
Site Acquisition Consultant
c/o T-Mobile
Centerline Communications, LLC
750 W Center Street
Suite 301
West Bridgewater, MA 02379
Mobile: (941) 549-7263
cmorgan@clinellc.com

cc: American Tower Corporation- Tower Owner
SBC Tower Holdings, LLC - Property Owner
Robert Yamartino - First Selectman, Town of Middlefield
Jan Wojas - Chairman of the Planning and Zoning Commission, Town of Middlefield

EXHIBIT A

Letter of Authorization





AMERICAN TOWER®
CORPORATION

LETTER OF AUTHORIZATION

ATC SITE#/NAME/PROJECT: 302485 / Mdfd - Middlefield / 14099860

SITE ADDRESS: 134 Kikapoo Road, Middlefield CT 06455-1334

ARN:

LICENSEE: T-MOBILE NORTHEAST LLC DBA T-MOBILE

I, Margaret Robinson, Senior Counsel 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 DBA T-MOBILE, Centerline Communications** 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 Licensee's telecommunications' installation on the Tower Facility.

American Tower understands that this application may be denied, modified or 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
Senior Counsel
American Tower*

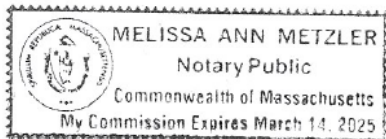
NOTARY BLOCK

Commonwealth of MASSACHUSETTS
County of Middlesex

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

WITNESS my hand and official seal, this 1st day of June 2022

NOTARY SEAL



Notary Public
My Commission Expires: March 14, 2025

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

EXHIBIT B

Original Facility Approval



AN APPLICATION SUBMITTED BY THE SOUTHERN : CONNECTICUT SITING
NEW ENGLAND TELEPHONE COMPANY FOR A
CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY :
AND PUBLIC NEED FOR THE CONSTRUCTION, : COUNCIL
MAINTENANCE, AND OPERATION OF FACILITIES
TO PROVIDE CELLULAR SERVICE IN THE HARTFORD :
AND MIDDLESEX COUNTIES. : May 15, 1984

D E C I S I O N A N D O R D E R

Pursuant to the foregoing opinion, the Council hereby directs that a certificate of environmental compatibility and public need as required by section 16-50k of the General Statutes of Connecticut, revisions of 1958, revised to 1983, as amended, be issued to Southern New England Telephone for the construction, operation, and maintenance of a telecommunications tower and associated equipment to provide cellular service at each of the following sites:

Shuttle Meadow Road, Southington, Connecticut;
Mountain Street, Hartford, Connecticut;
Prestige Park Road, East Hartford, Connecticut;
Beckley Road, Berlin, Connecticut;
Slicer tract, Niederwerfer Road, South Windsor, Connecticut; and
Kikapoo Road, Middlefield, Connecticut.

The facilities shall be constructed, operated, and maintained as specified in the Council's record on this matter, and subject to the following conditions.

1. The towers shall be no taller than necessary to provide the proposed service and in no event shall exceed
 - a) 150 feet at the Southington site,
 - b) 100 feet at the Hartford site,
 - c) 150 feet at the East Hartford site,
 - d) 150 feet at the Berlin site,
 - e) 75 feet at the South Windsor site, and
 - f) 75 feet at the Middlefield site.
2. A fence not lower than eight feet shall surround each tower and its associated equipment.

3. The applicant or its successor shall notify the Council if and when directional antennas or any other equipment is added to any of these facilities.
4. The applicant or its successor shall permit in accordance with representations made by it during the proceeding public or private entities to share space on the facilities, for due consideration received, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
5. Unless necessary to comply with condition number seven, below, no lights shall be installed on any of these towers.
6. The facility construction shall be conducted in accordance with all applicable federal, state, and municipal laws and regulations.
7. The applicant shall submit a development and management plan (D&M) for the South Windsor, Southington, and Berlin sites pursuant to sections 16-50j-85 through 16-50j-87 of the regulations of state agencies, except that irrelevant items in section 16-50j-86 need only be identified as such. The D&M plans shall include appropriate evergreen screening of the sites. The applicant shall comply with the reporting requirements of section 16-50j-87 for all sites. The applicant shall consult with Mrs. Claire Aubin and the Town of South Windsor in the preparation of the South Windsor site D&M.
8. Construction activities shall take place during daylight working hours.
9. This decision and order shall be void and the towers and associated equipment approved herein shall be dismantled and removed,

or reapplication for any new use shall be made to the Connecticut Siting Council before any such new use is made, if the towers do not provide or permanently cease to provide cellular service following completion of construction.

10. This decision and order shall be void if all construction authorized is not completed within three years of the issuance of this decision.

Pursuant to section 16-50p(c) of the General Statutes, we hereby direct that a copy of the opinion and decision and order be served on each person listed below. A notice of the issuance shall be published in the Hartford Courant, Journal Inquirer, and the Middletown Press.

The parties to this proceeding are

Southern New England
Telephone Company
Room 314
227 Church Street
New Haven, Connecticut 06506

(Applicant)

ATTN: Mr. Peter J. Tyrrell, Esquire

(its attorney)

Town of South Windsor
1540 Sullivan Avenue
South Windsor, Connecticut 06074

represented by:

Mr. Richard M. Rittenband
Town Attorney
1734 Ellington Road
South Windsor, Connecticut 06074

Frank Niederwerfer
260 Niederwerfer Road
South Windsor, Connecticut 06074

(service waived)

Claire Aubin
407 Niederwerfer Road
South Windsor, Connecticut 06074

(service waived)

Betty S. Kleiner
Chairman
Hartford Audubon Society, Inc.
5 Flintlock Ridge
Simsbury, Connecticut 06070

(service waived)

Roger Thorpe
2916 Ellington Road
South Windsor, Connecticut 06074

Intervenors in this proceeding are

Dwight A. Johnson
Murtha, Cullina, Richter
and Pinney
101 Pearl Street
P.O. Box 3197
Hartford, Connecticut 06103-0197

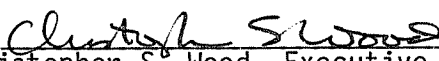
representing:

Metromedia TeleCommunications
Nutmeg Telecommunications, Inc.
CSI of New Haven
CSI of Stamford
Cellular Communications, Inc.
LIN Cellular Corp.
Cellular Mobile Services
Maxcell TeleCommunications, Inc.
Mobile Cellular Telephone, Inc.
Cellular Dynamics
Connecticut Corridor Cellular
Chase/Post Cellular

STATE OF CONNECTICUT)
 :
COUNTY OF HARTFORD) ss. New Britain, May 15, 1984

I hereby certify that the foregoing is a true and correct copy of the decision and order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:



Christopher S. Wood, Executive Director
Connecticut Siting Council

EXHIBIT C

Property Card



PALISADES DR

Location PALISADES DR

Mblu 10/ 10.2/ 34-1/ /

Acct# 02012010

Owner SBC TOWER HOLDINGS LLC

Assessment \$113,400

PID 142

Building Count 1

Current Value

Assessment			
Valuation Year	Improvements	Land	Total
2021	\$0	\$113,400	\$113,400

Owner of Record

Owner SBC TOWER HOLDINGS LLC
Co-Owner ATTN: PROPERTY TAX DEPT
Address PO BOX 723597
ATLANTA, GA 31139

Sale Price \$0
Certificate
Book & Page 0333/0901
Sale Date 12/11/2018
Instrument

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
SBC TOWER HOLDINGS LLC	\$0		0333/0901		12/11/2018
SBC TOWER HOLDINS LLC	\$0		0333/0899		12/11/2018
SBC TOWER HOLDINS LLC	\$0		0318/0808		09/30/2013
AMERICAN TOWER ASSET SUB II LLC	\$502,705		0318/0794		09/30/2013
VINCI REAL PROPERTY LLC	\$0		0185/0019		05/21/2003

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:	Vacant Land
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:	
Num Kitchens	
Whirlpool	
Num Park	
Fireplaces	
Interior	
Solar Panels:	
Fndtn Cndtn	
Basement	
Inserts:	

Building Photo



(<https://images.vgsi.com/photos/MiddlefieldCTPhotos//01\00\25\59.jpg>)

Building Layout

(https://images.vgsi.com/photos/MiddlefieldCTPhotos//Sketches/142_142.ji)

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

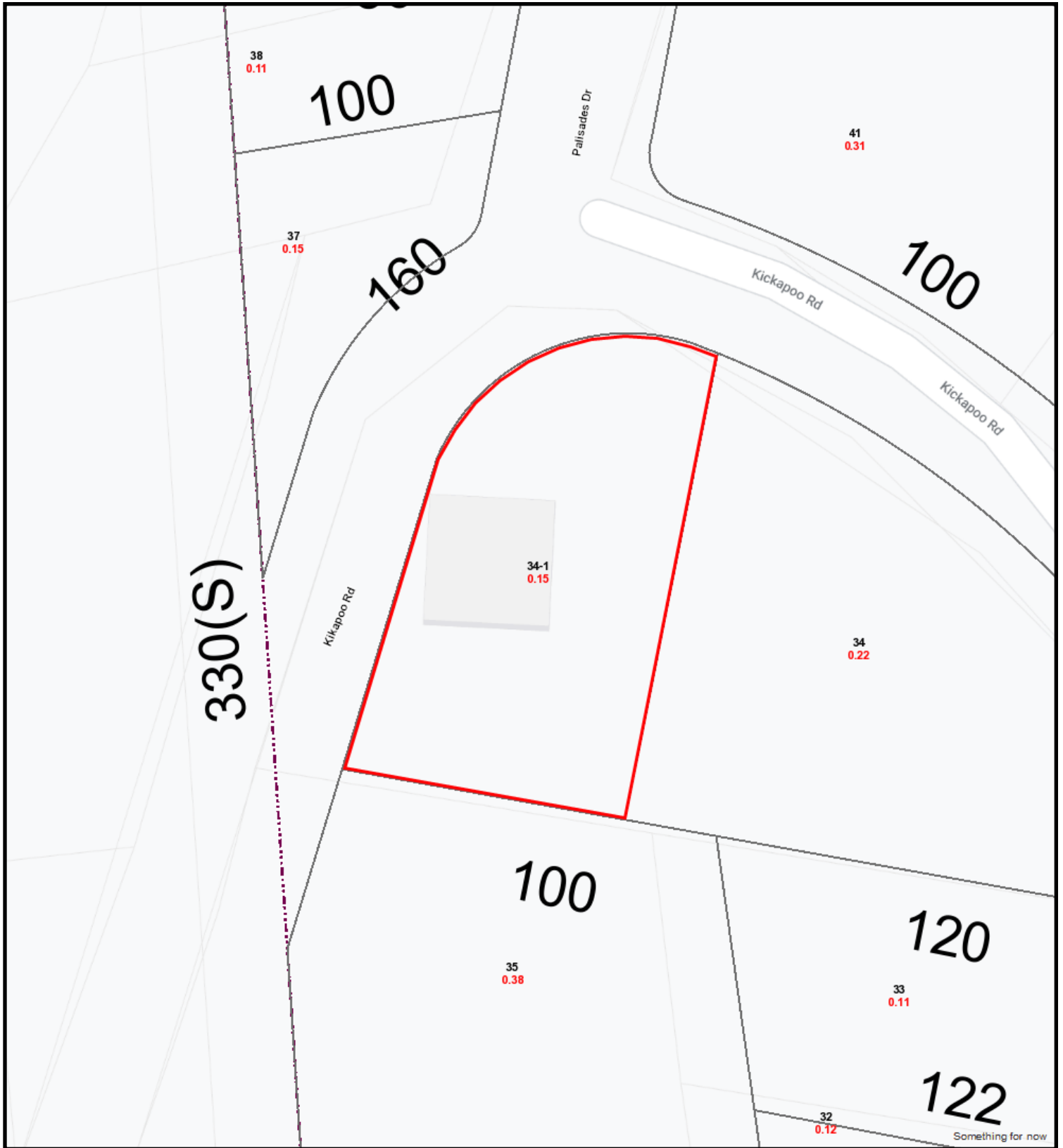
Use Code 431V
Description TEL REL TW MDL-00
Zone HD1
Neighborhood
Alt Land Appr Category No

Land Line Valuation

Size (Acres) 0.15
Frontage
Depth
Assessed Value \$113,400

Outbuildings

Outbuildings	<u>Legend</u>
No Data for Outbuildings	



13757806

9/27/2022 6:17:02 PM

Scale: 1"=31'

Scale is approximate

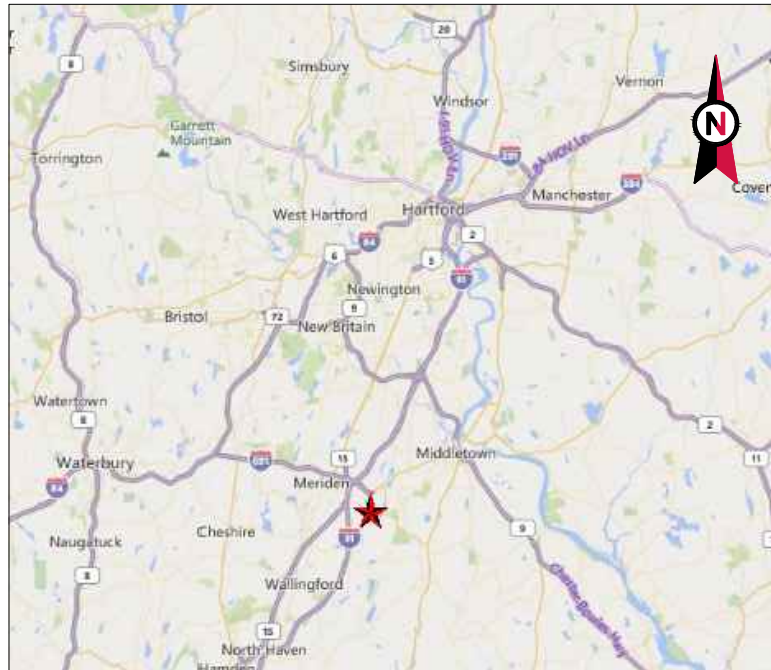
The information depicted on this map is for planning purposes only.
It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.



EXHIBIT D

Construction Drawings





VICINITY MAP



AMERICAN TOWER®

ATC SITE NAME: MDFD - MIDDLEFIELD

ATC SITE NUMBER: 302485

T-MOBILE SITE NAME: CTNH569_ AMERICAN
TOWER_MONOPOLE_
MIDDLEFIELD

T-MOBILE SITE NUMBER: CTNH569A

SITE ADDRESS: 134 KIKAPOO ROAD

MIDDLEFIELD, CT 06455

T-MOBILE ANCHOR COLOCATION PLAN
67E5D998E 6160 CONFIGURATION



LOCATION MAP



AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

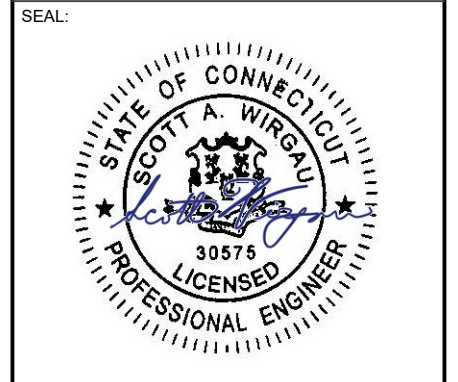
THE USE AND PUBLICATION OF THESE DRAWINGS SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO AMERICAN TOWER OR THE SPECIFIED CARRIER IS STRICTLY PROHIBITED. NEITHER THE ARCHITECT NOR THE ENGINEER WILL BE PROVIDING ON-SITE CONSTRUCTION REVIEW OF THIS PROJECT. CONTRACTOR(S) MUST VERIFY ALL DIMENSIONS AND ADVISE AMERICAN TOWER OR THE SPECIFIED CARRIER OF ANY DISCREPANCIES. ANY PRIOR ISSUANCE OF THIS DRAWING IS SUPERSEDED BY THE LATEST VERSION.

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	MC	05/27/22

ATC SITE NUMBER:
302485

ATC SITE NAME:
MDFD - MIDDLEFIELD

T-MOBILE SITE NAME:
CTNH569_ AMERICAN TOWER_MONOPOLE_
MIDDLEFIELD
SITE ADDRESS:
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455




DATE DRAWN:	05/27/22
ATC JOB NO:	14099860_G2
CUSTOMER ID:	CTNH569_ AMERICAN TOWER_MONOPOLE_ MIDDLEFIELD
CUSTOMER #:	CTNH569A

TITLE SHEET

SHEET NUMBER:
G-001

REVISION:
0

COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX				
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES. 1. INTERNATIONAL BUILDING CODE (IBC) 2. NATIONAL ELECTRIC CODE (NEC) 3. LOCAL BUILDING CODE 4. CITY/COUNTY ORDINANCES	<u>SITE ADDRESS:</u> 134 KIKAPOO ROAD MIDDLEFIELD, CT 06455 COUNTY: MIDDLESEX <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41.51361111 LONGITUDE: -72.7458 GROUND ELEVATION: 770' AMSL	THE PROPOSED PROJECT INCLUDES INSTALLING EQUIPMENT CABINETS AND A GENERATOR 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 (1) PLATFORM MOUNT, (6) ANTENNA(S), (6) RRU(S), AND (3) 1.99" ERICSSON HYBRID TRUNK 6/24 4AWG GROUND SCOPE: INSTALL (1) 6160 CABINET, (1) B160 BATTERY CABINET, (1) RBS 6601, (2) CONCRETE PAD(S), (1) GENERATOR, (1) ICE CANOPY, UNISTRUT, (1) ATS, (1) PPC, (1) GPS ANTENNA, (1) ICE BRIDGE, (1) METER, (1) DISCONNECT, AND (2) LED LUMINARE	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
	<u>PROJECT TEAM</u> <u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801 <u>ENGINEER:</u> ATC TOWER SERVICES, LLC 3500 REGENCY PKWY STE 100 CARY, NC 27518 <u>PROPERTY OWNER:</u> SBC TOWER HOLDINGS LLC 134 KIKAPOO ROAD MIDDLEFIELD, CT 06455	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).	G-001	TITLE SHEET	0	05/27/22	MC
<u>UTILITY COMPANIES</u> POWER COMPANY: EVERSOURCE PHONE: (877) 659-6326 TELEPHONE COMPANY: FRONYIER COMMUNICATIONS PHONE: (800) 376-6843	<u>PROJECT LOCATION DIRECTIONS</u> FROM HARTFORD TAKE I-91 SOUTH TO RT 66 EAST. ONCE ON RT 66 TAKE RIGHT AT FIRST LIGHT (RT 147). FOLLOW TO LAKE ROAD AND TAKE RIGHT. FOLLOW ROAD AROUND UNTIL YOU GET TO KIKAPOO ROAD AND TURN RIGHT. ACCESS GATE IS AT END OF ROAD ON TOP OF HILL	C-001	GENERAL NOTES	0	05/27/22	MC	
 Know what's below. Call before you dig.		C-101	EXISTING SURVEY				
		C-102	DETAILED SITE PLAN	0	05/27/22	MC	
		C-201	DETAILED EQUIPMENT PLAN	0	05/27/22	MC	
		C-201	TOWER ELEVATION	0	05/27/22	MC	
		C-401	ANTENNA INFORMATION & SCHEDULE	0	05/27/22	MC	
		C-501	MOUNT DETAILS	0	05/27/22	MC	
		C-502	CONSTRUCTION DETAILS	0	05/27/22	MC	
		C-503	CONSTRUCTION DETAILS	0	05/27/22	MC	
		C-504	GENERATOR CONSTRUCTION DETAILS	0	05/27/22	MC	
		C-505	CONSTRUCTION DETAILS	0	05/27/22	MC	
		E-101	GROUNDING DETAILS	0	05/27/22	MC	
		E-501	GROUNDING DETAILS	0	05/27/22	MC	
		E-601	PANEL SCHEDULE & ONE-LINE DIAGRAM	0	05/27/22	MC	
			SUPPLEMENTAL (12 PAGES)				

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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 ANSIEIA/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 NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLIGENCE 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 B665.
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 1/8" 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 4000 PSI UNLESS OTHERWISE NOTED.
4. THE FOLLOWING MATERIALS SHALL BE USED:

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

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

5. MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE NO LESS THAN 3".
6. A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE IN ACCORDANCE WITH ACI 301 SECTION 4.2.4, UNLESS NOTED OTHERWISE.
7. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL, OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR APPROVAL FROM AN ATC ENGINEER WHEN DRILLING HOLES IN CONCRETE.
8. ADMIXTURES SHALL CONFORM TO THE APPROPRIATE ASTM STANDARD AS REFERENCED IN "METHOD 1" OF ACI 301.
9. DO NOT WELD OR TACK WELD REINFORCING STEEL.
10. ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, GROUNDS AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.
11. REINFORCEMENT SHALL BE COLD BENT WHENEVER BENDING IS REQUIRED.
12. DO NOT PLACE CONCRETE IN WATER, ICE, OR ON FROZEN GROUND.
13. FOR COLD-WEATHER (ACI 306) AND HOT-WEATHER (ACI 301M) CONCRETE PLACEMENT, CONFORM TO APPLICABLE ACI CODES AND RECOMMENDATIONS. IN EITHER CASE, MATERIALS CONTAINING CHLORIDE, CALCIUM, SALTS, ETC. SHALL NOT BE USED. PROTECT FRESH CONCRETE FROM WEATHER FOR 7 DAYS, MINIMUM.
14. ALL CONCRETE SHALL HAVE A "SMOOTH FORM FINISH."
15. SPLICING OF REINFORCEMENT IS PERMITTED ONLY AT LOCATIONS SHOWN IN THE CONTRACT DRAWINGS OR AS ACCEPTED BY THE ENGINEER. UNLESS OTHERWISE SHOWN OR NOTED REINFORCING STEEL SHALL BE SPLICED TO DEVELOP ITS FULL TENSILE CAPACITY (CLASS A) IN ACCORDANCE WITH ACI 318.
16. DETAILING OF REINFORCING STEEL SHALL CONFORM TO "ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI 315).
17. ALL SLAB CONSTRUCTION SHALL BE CAST MONOLITHICALLY WITHOUT HORIZONTAL CONSTRUCTION JOINTS, UNLESS SHOWN IN THE CONTRACT DRAWINGS.
18. LOCATION OF ALL CONSTRUCTION JOINTS ARE SUBJECT TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, CONFORMANCE WITH ACI 318, AND ACCEPTANCE OF THE ENGINEER. DRAWINGS SHOWING LOCATION OF DETAILS OF THE PROPOSED CONSTRUCTION JOINTS SHALL BE SUBMITTED WITH REINFORCING STEEL PLACEMENT DRAWINGS.
19. SPLICES OF WWF, AT ALL SPLICED EDGES, SHALL BE SUCH THAT THE OVERLAP MEASURED BETWEEN OUTERMOST CROSS WIRES OF EACH FABRIC SHEET IS NOT LESS THAN THE SPACING OF THE CROSS WIRE PLUS 2 INCHES, NOR LESS THAN 6".
20. BAR SUPPORTS SHALL BE ALL-GALVANIZED METAL WITH PLASTIC TIPS.
21. ALL REINFORCEMENT SHALL BE SECURELY TIED IN PLACE TO PREVENT DISPLACEMENT BY CONSTRUCTION TRAFFIC OR CONCRETE. THE 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®
A.T. ENGINEERING SERVICE, PLLC
 3500 REGENCY PARKWAY
 SUITE 100
 CARY, NC 27518
 PHONE: (919) 468-0112
 COA: PEC.0001553

THE USE AND PUBLICATION OF THESE DRAWINGS SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO AMERICAN TOWER OR THE SPECIFIED CARRIER IS STRICTLY PROHIBITED. NEITHER THE ARCHITECT NOR THE ENGINEER WILL BE PROVIDING ON-SITE CONSTRUCTION REVIEW OF THIS PROJECT. CONTRACTOR(S) MUST VERIFY ALL DIMENSIONS AND ADVISE AMERICAN TOWER OR THE SPECIFIED CARRIER OF ANY DISCREPANCIES. ANY PRIOR ISSUANCE OF THIS DRAWING IS SUPERSEDED BY THE LATEST VERSION.

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	MC	05/27/22

ATC SITE NUMBER:
302485

ATC SITE NAME:
MDFD - MIDDLEFIELD

T-MOBILE SITE NAME:
CTNH569_ AMERICAN TOWER_MONOPOLE_ MIDDLEFIELD

SITE ADDRESS:
 134 KIKAPOO ROAD
 MIDDLEFIELD, CT 06455

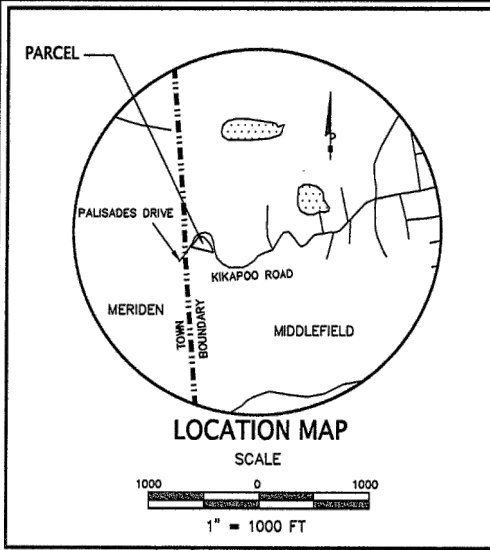


DATE DRAWN:	05/27/22
ATC JOB NO:	14099860_G2
CUSTOMER ID:	CTNH569_ AMERICAN TOWER_MONOPOLE_ MIDDLEFIELD
CUSTOMER #:	CTNH569A

GENERAL NOTES

SHEET NUMBER:
G-002

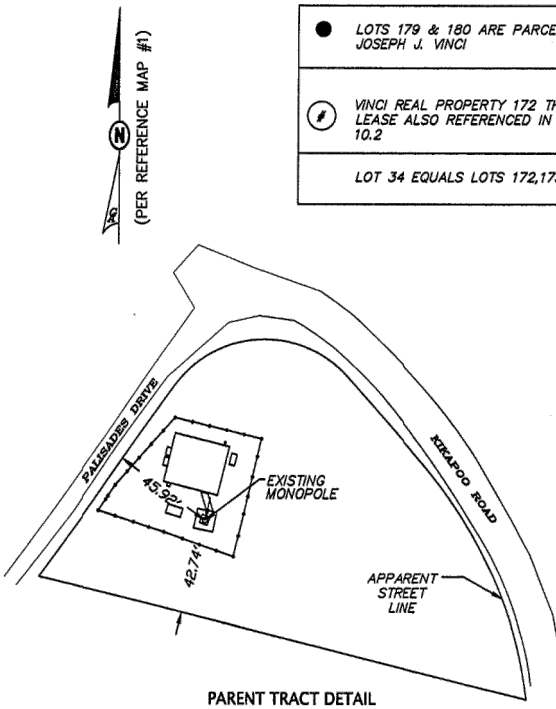
REVISION:
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● LOTS 179 & 180 ARE PARCEL NUMBER 2
JOSEPH J. VINCI

⊕ VINCI REAL PROPERTY 172 THRU 178 ALSO DESCRIBED IN
LEASE ALSO REFERENCED IN LEASE LOT 34 ASSESSORS MAP
10.2

LOT 34 EQUALS LOTS 172,173,174,175,176,177,178,179 AND 180



MIDDLEFIELD - #CT-0021

LEGEND

SYM.	DESCRIPTION	SYM.	DESCRIPTION
●	PROPERTY CORNER	NTS	NOT TO SCALE
⊕	BENCH MARK	⊕	SPOT ELEV
---	LEASE BOUNDARY	⊗	DECIDUOUS TREE
---	PROPERTY LINE	⊗	CONIFEROUS TREE
---	CONTOUR	---	TREELINE
---	INDEX CONTOUR	---	CHAIN LINK FENCE

LEASE PARCEL INFORMATION

LEASE OPTION	VOL 51/420
LESSOR	SOUTHERN NEW ENGLAND TELEPHONE CO.
AREA LEASE PARCEL	.4447 ACRES 19372.55 SQ. FT.

PARENT TRACT INFORMATION

OWNER	JOSEPH J. VINCI
PROPERTY ADDRESS	134 KIKAPOO DRIVE, MIDDLEFIELD, CT.
DEED	VOL 10/10.2
AREA	.4447 ACRES 19372.55 SQ. FT.

NOTES

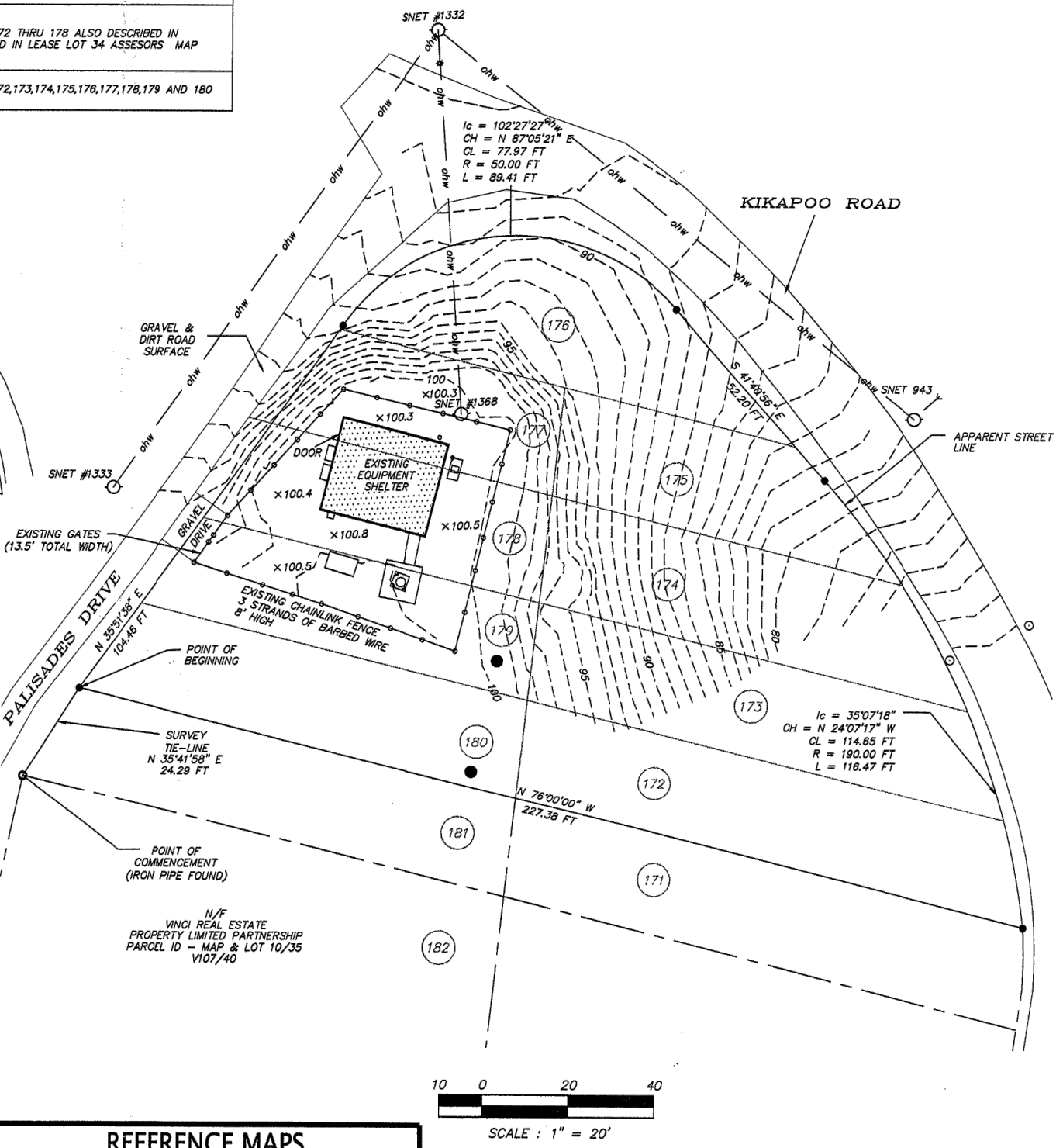
- THIS SURVEY AND MAP HAVE BEEN PREPARED IN ACCORDANCE WITH SECTIONS 20-300B-1 THRU 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES - "MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ENDORSED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC.
- THE TYPE OF SURVEY PERFORMED AND THE MAPPED FEATURES DEPICTED HEREON ARE IN ACCORDANCE WITH THE REQUIREMENTS OF A TOPOGRAPHIC SURVEY.
- WITH RESPECT TO THE PERIMETER THE PROPERTY THE BOUNDARY DETERMINATION/OPINION IS BASED UPON A RESURVEY OF REFERENCE MAP #1.
- THIS SURVEY CONFORMS TO A CLASS A-2 & T-2.
- BEARINGS AS DEPICTED ARE BASED UPON REFERENCE MAP #1.
- ELEVATIONS BASED ON AN ASSUMED DATUM
- BASE MAPPING PREPARED BY GESICK & ASSOCIATES P.C. FROM A 3/17/01 FIELD SURVEY.
- SUBJECT TO AN ACCURATE UP-TO-DATE ABSTRACT OF TITLE.
- PARCEL LOCATED WITHIN FLOOD ZONE C PER COMMUNITY PANEL #090067 0001B DATED MARCH 28, 1980
- LEASE AREA ABUTS A PUBLIC RIGHT OF WAY, ACCESS IS GAINED DIRECTLY FROM PALISADES DRIVE.

LEASE PARCEL LEGAL DESCRIPTION

Commencing at an iron pipe found on the east side of Palisades drive Thence N35°41'58"E a distance of 24.29 ft to the point of beginning of said lease parcel. Thence the following courses & distances:

N 35°51'38" E a distance of 104.46 ft to a point
Thence along a curve to the right having a delta of 102°27'27" a radius of 50.00 ft and an arc length of 89.41 ft to a point
S 41°40'56" E a distance of 52.50 ft to a point
Thence along a curve to the right having a delta angle of 35°07'18" a radius of 190.00 ft and an arc length of 116.47 ft to a point
N 76°00'00" W a distance of 227.38 ft to a point

Said lease parcel contains 19372.55 square ft or 0.4447 acres more or less.



Work Coordinated by:

ASC National LLC.
1264 Main St. Waltham, MA 02451
PH. (781) 893-8477 FAX (781) 893-7091

TOPOGRAPHIC SURVEY OF AS SURVEYED LEASE PARCEL
134 KIKAPOO DRIVE
MIDDLEFIELD, CT

Prepared For:

SPECTRASITE COMMUNICATIONS
100 REGENCY FOREST DRIVE, SUITE 400
CARY, NC. 27511

Project Location
Middlefield, CT.

Project Address
134 Kikapoo Drive
Middlefield, CT.

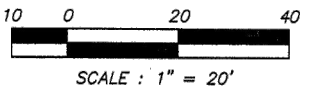
Site Name
MDFD - Middlefield

SpectraSite
CT-0021

Gesick & Associates P.C.
SURVEYORS & MAPPERS PLANNERS
19 Cedar Island Ave.
Clinton, CT 06413
(860) 669-7799
FAX (860) 669-5833
Surveyors www.gesicksurveyors.com

REFERENCE MAPS

- "SITE PLAN AND MAP OF SURVEY SHOWING LOTS 182 THROUGH 186 TO BE LEASED TO CONNECTICUT EDUCATION TELEVISION CORPORATION" PREPARED BY DAVID A. BASCOON LAND SURVEYOR #5850 DATED DECEMBER 19, 1975
- "MAP OF MOUNTAIN LAKE PARK SECTION D." PREPARED BY THE MOUNTAIN LAKE DEVELOPMENT CO., H E DAGGETT, CIVIL ENGINEER DATED MAY 1931 SCALE 1"=100'

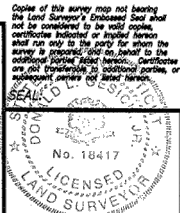


Donald L. Gesick Jr.
Registered Land Surveyor No. 18417
In the State of Connecticut

Date of Survey: March 17, 2001
Date of Last Revision

To the best of my knowledge and belief this map is substantially correct as noted herein.

Donald L. Gesick Jr., L.S. Reg. No. 18417



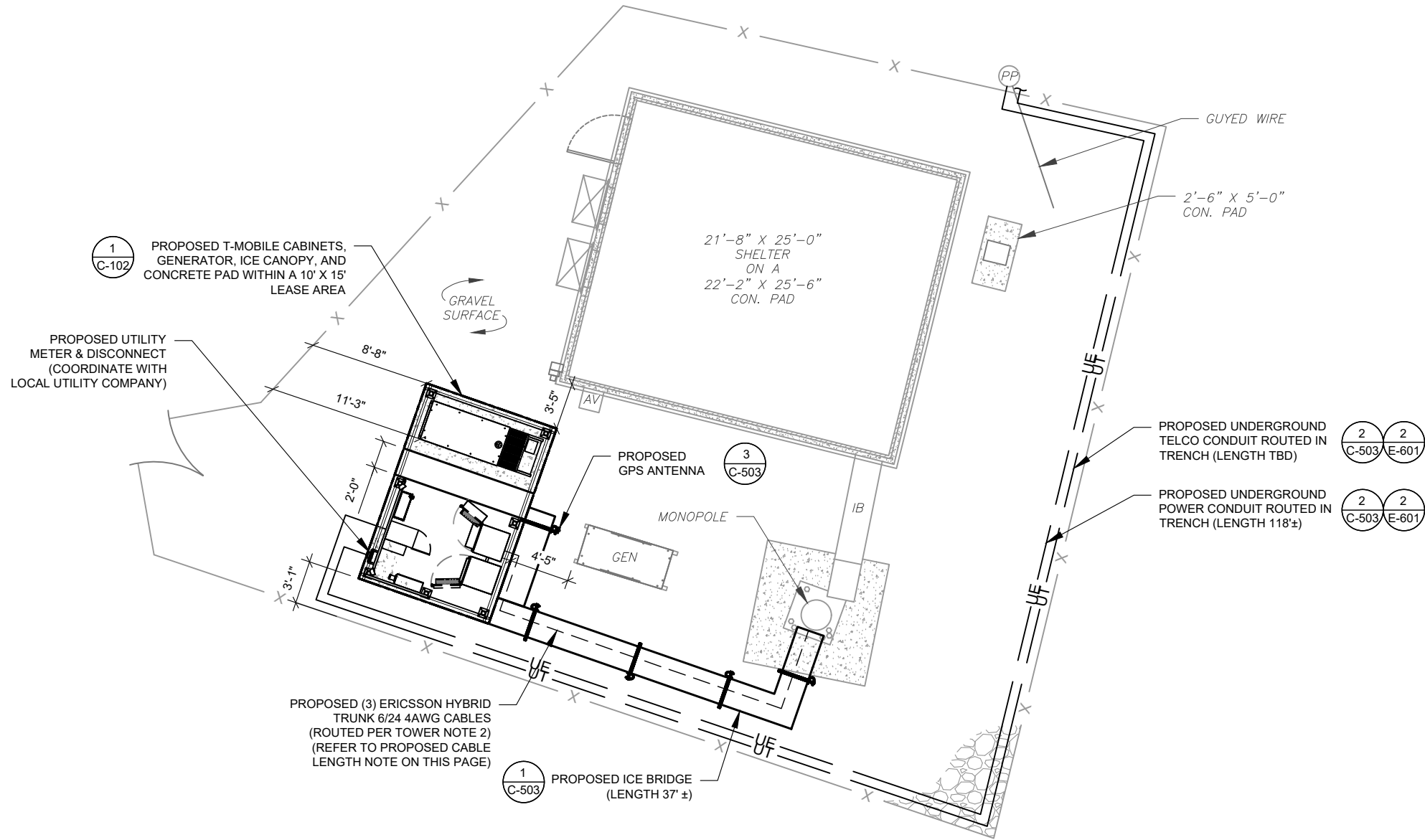
SITE PLAN NOTES:

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

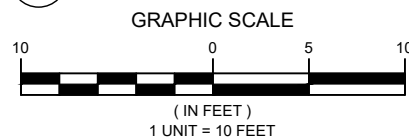
LEGEND	
⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACAL
HH, V	HAND HOLE, VAULT
IB	ICE BRIDGE
K	KENTROX BOX
LC	LIGHTING CONTROL
M	METER
PB	PULL BOX
PP	POWER POLE
T	TELCO
TRN	TRANSFORMER
—	CHAINLINK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

PROPOSED CABLE LENGTH:

- ESTIMATED LENGTH OF PROPOSED CABLE IS 117'. 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.
- 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.



1 DETAILED SITE PLAN




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 SUITE 100
 CARY, NC 27518
 PHONE: (919) 468-0112
 COA: PEC.0001553

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	MC	05/27/22

ATC SITE NUMBER:
302485

ATC SITE NAME:
MDFD - MIDDLEFIELD

T-MOBILE SITE NAME:
 CTNH569_ AMERICAN TOWER_MONOPOLE_ MIDDLEFIELD
 SITE ADDRESS:
 134 KIKAPOO ROAD
 MIDDLEFIELD, CT 06455



DATE DRAWN:	05/27/22
ATC JOB NO:	14099860_G2
CUSTOMER ID:	CTNH569_ AMERICAN TOWER_MONOPOLE_ MIDDLEFIELD
CUSTOMER #:	CTNH569A

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	0

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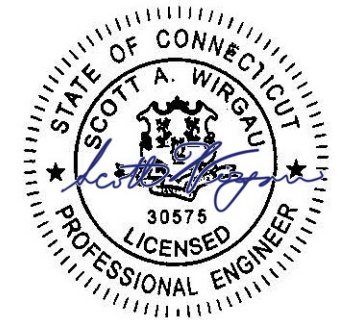
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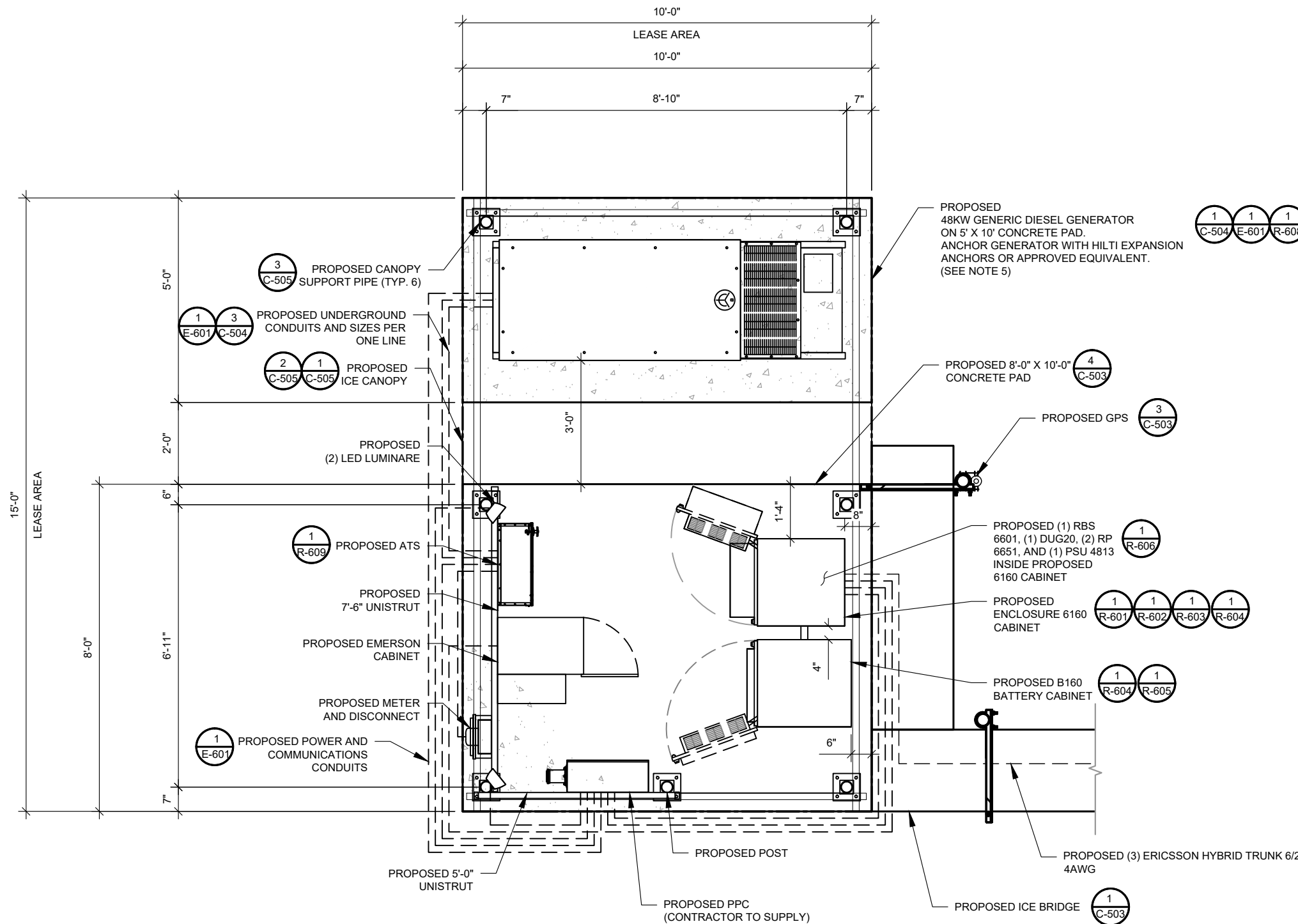
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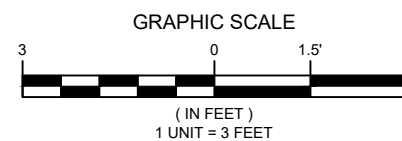
DATE DRAWN:	05/27/22
ATC JOB NO:	14099860_G2
CUSTOMER ID:	CTNH569_ AMERICAN TOWER_MONOPOLE_ MIDDLEFIELD
CUSTOMER #:	CTNH569A

DETAILED EQUIPMENT PLAN

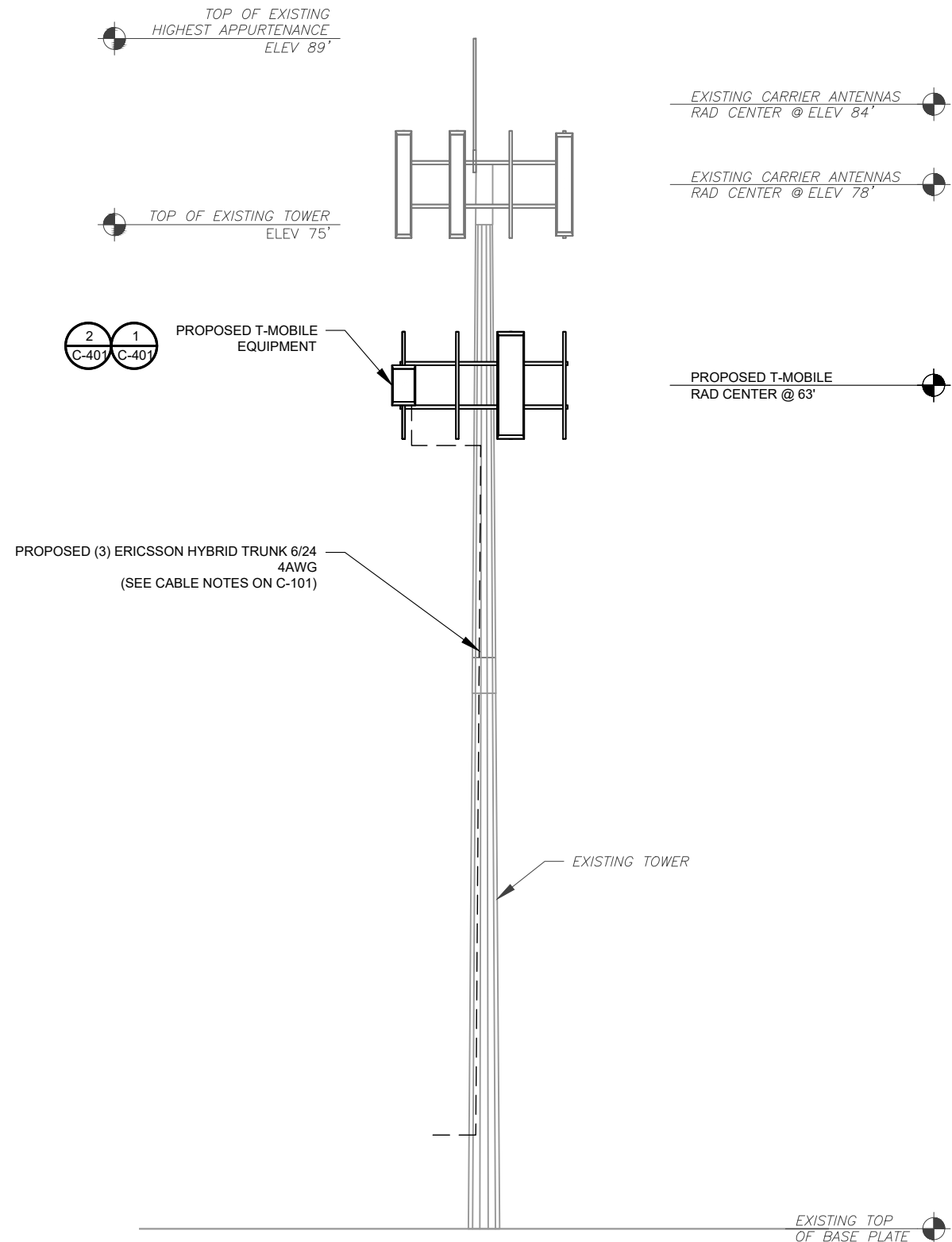
SHEET NUMBER:	REVISION:
C-102	0



1 PROPOSED GROUND EQUIPMENT LAYOUT



PER MOUNT ANALYSIS COMPLETED BY ATS, DATED 04/29/22, THE PROPOSED MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.



1 TOWER ELEVATION
SCALE: N.T.S.

- TOWER NOTE:**
- 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. 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.
 - 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.
 - TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)
 - TOWER ELEVATION DEPICTION MAY NOT REFLECT ALL EQUIPMENT INCLUDED IN STRUCTURAL ANALYSIS. REFER TO STRUCTURAL ANALYSIS FOR FULL TOWER LOADING.



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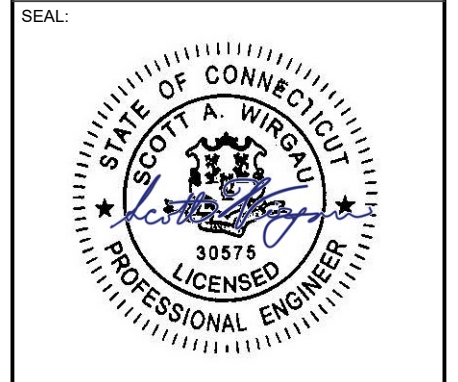
REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	MC	05/27/22

ATC SITE NUMBER:
302485

ATC SITE NAME:
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SITE ADDRESS:
134 KIKAPOO ROAD
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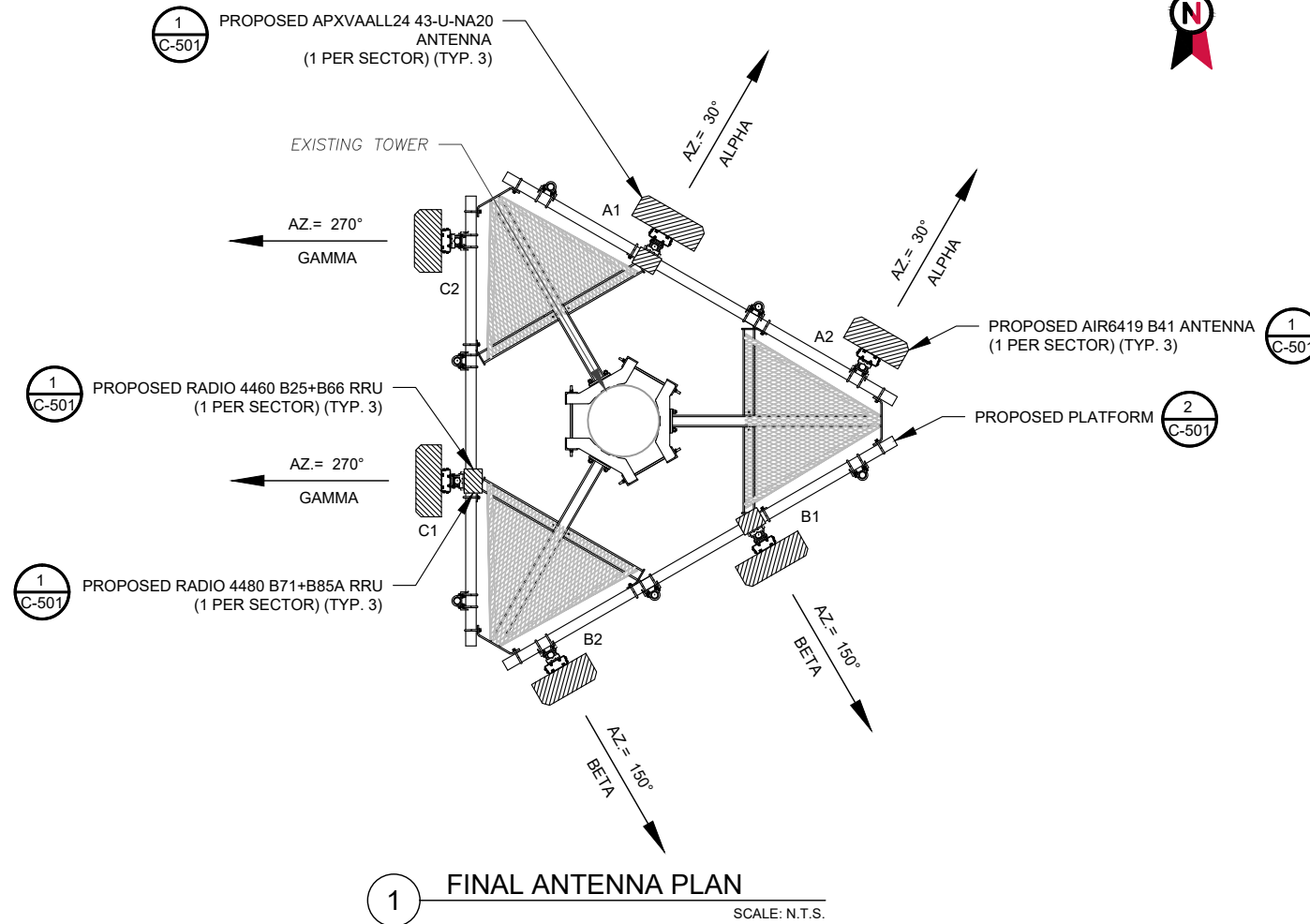
DATE DRAWN:	05/27/22
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CUSTOMER #:	CTNH569A

TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-201	0

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PER MOUNT ANALYSIS COMPLETED BY ATS, DATED 04/29/22, THE PROPOSED MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.



FINAL ANTENNA/ COAX SCHEDULE						
SECTOR	ANT.	MODEL #	RAD CENTER	AZIMUTH	ADDITIONAL TOWER MOUNTED EQUIPMENT	CABLE DESCRIPTION
ALPHA	A1	APXVAALL24_43-U-NA20	63'	30°	RADIO 4480 B71+B85 RADIO 4460 B25+B66	(3) ERICSSON HYBRID TRUNK 6/24 4AWG
ALPHA	A2	AIR 6419 B41	63'	30°	-	
BETA	B1	APXVAALL24_43-U-NA20	63'	150°	RADIO 4480 B71+B85 RADIO 4460 B25+B66	
BETA	B2	AIR 6419 B41	63'	150°	-	
GAMMA	C1	APXVAALL24_43-U-NA20	63'	270°	RADIO 4480 B71+B85 RADIO 4460 B25+B66	
GAMMA	C2	AIR 6419 B41	63'	270°	-	

- CONFIRM WITH CARRIER REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS.
- ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS ON FILE WITH THE ATC CM.
- 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



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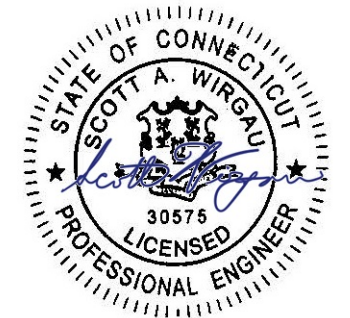
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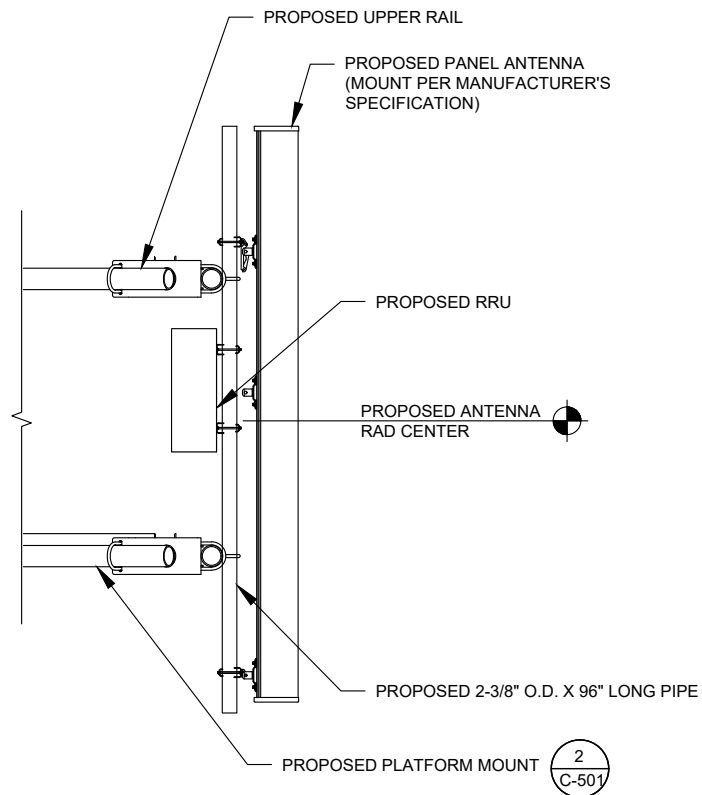
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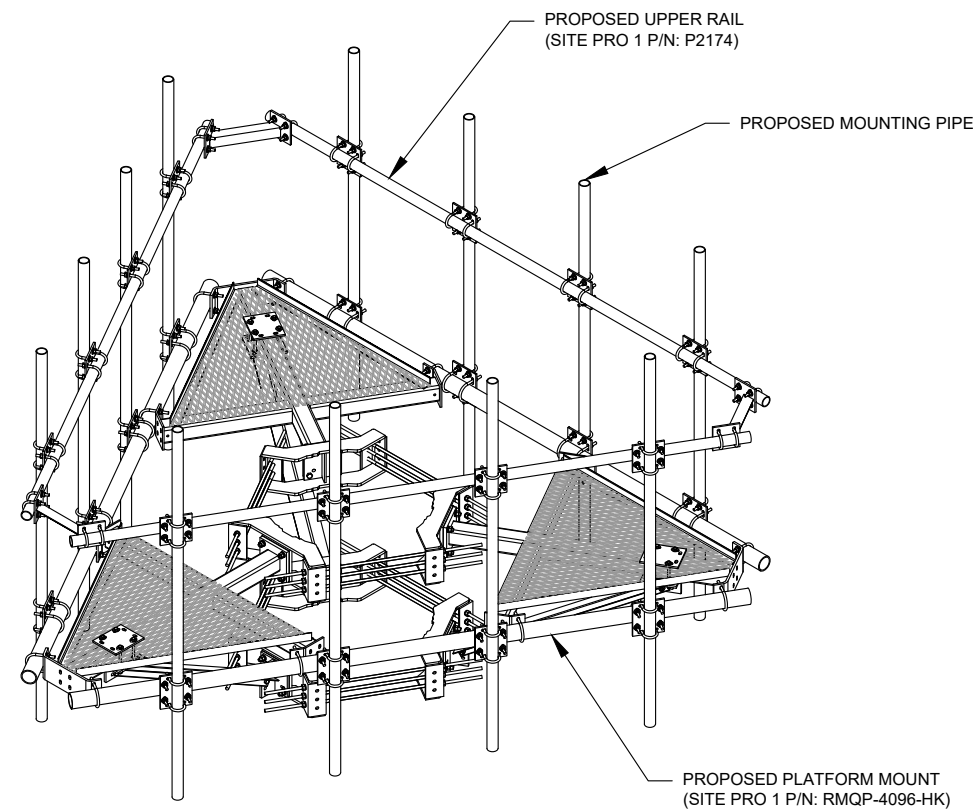
DATE DRAWN:	05/27/22
ATC JOB NO:	14099860_G2
CUSTOMER ID:	CTNH569_ AMERICAN TOWER_MONOPOLE_ MIDDLEFIELD
CUSTOMER #:	CTNH569A

ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-401	0



1 PROPOSED ANTENNA MOUNTING DETAIL (ELEVATION)
SCALE: N.T.S.



2 ISOMETRIC MOUNT DETAIL
SCALE: N.T.S.



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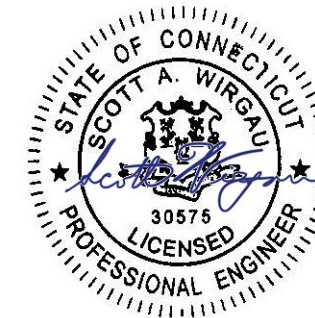
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SEAL:



T Mobile

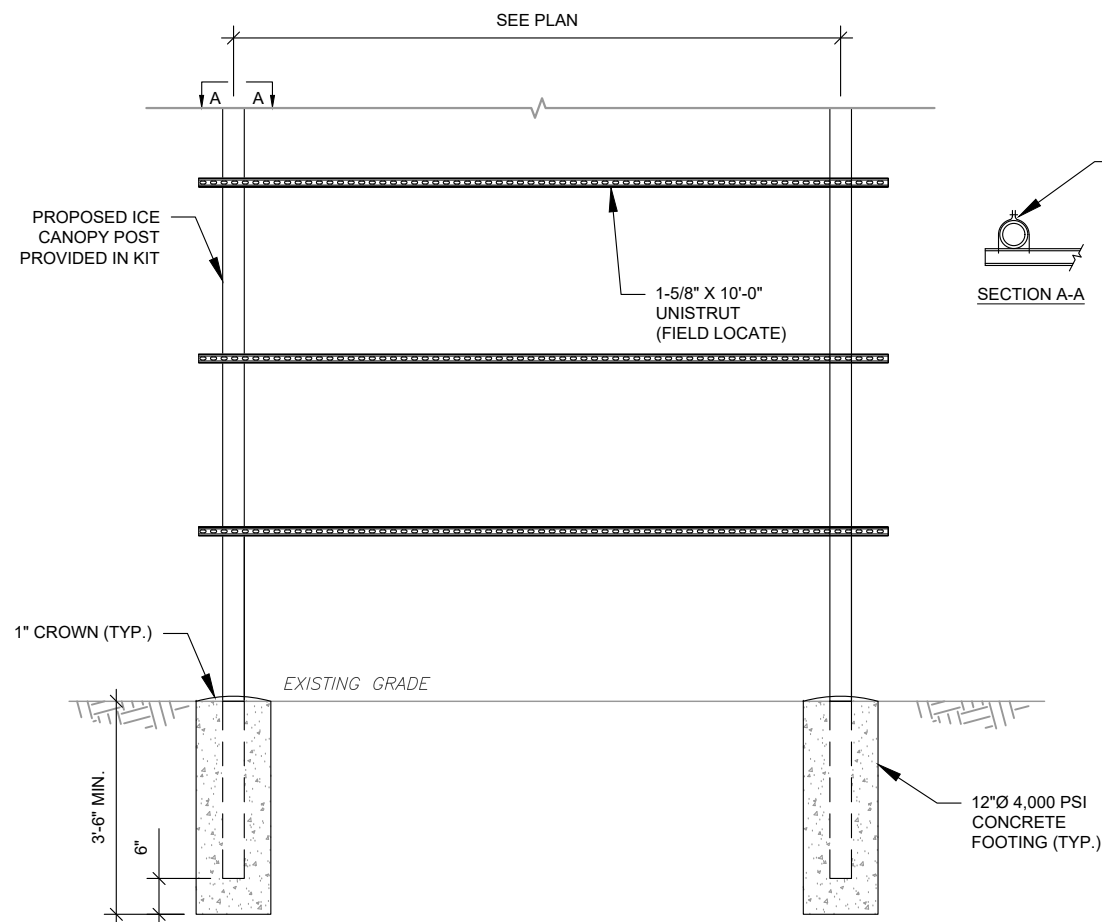
DATE DRAWN:	05/27/22
ATC JOB NO:	14099860_G2
CUSTOMER ID:	CTNH569_ AMERICAN TOWER_MONOPOLE_ MIDDLEFIELD
CUSTOMER #:	CTNH569A

MOUNT DETAILS

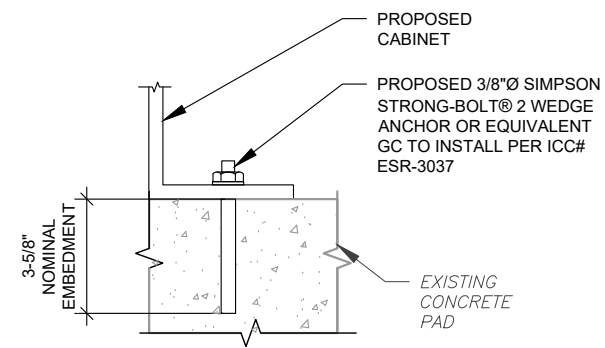
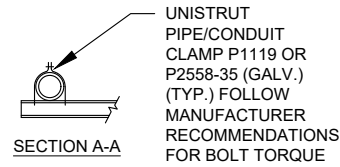
SHEET NUMBER:	REVISION:
C-501	0

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.



1 TYPICAL H-FRAME 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.

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



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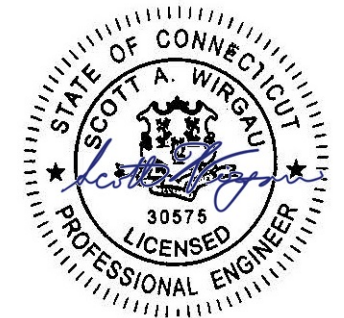
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SITE ADDRESS:
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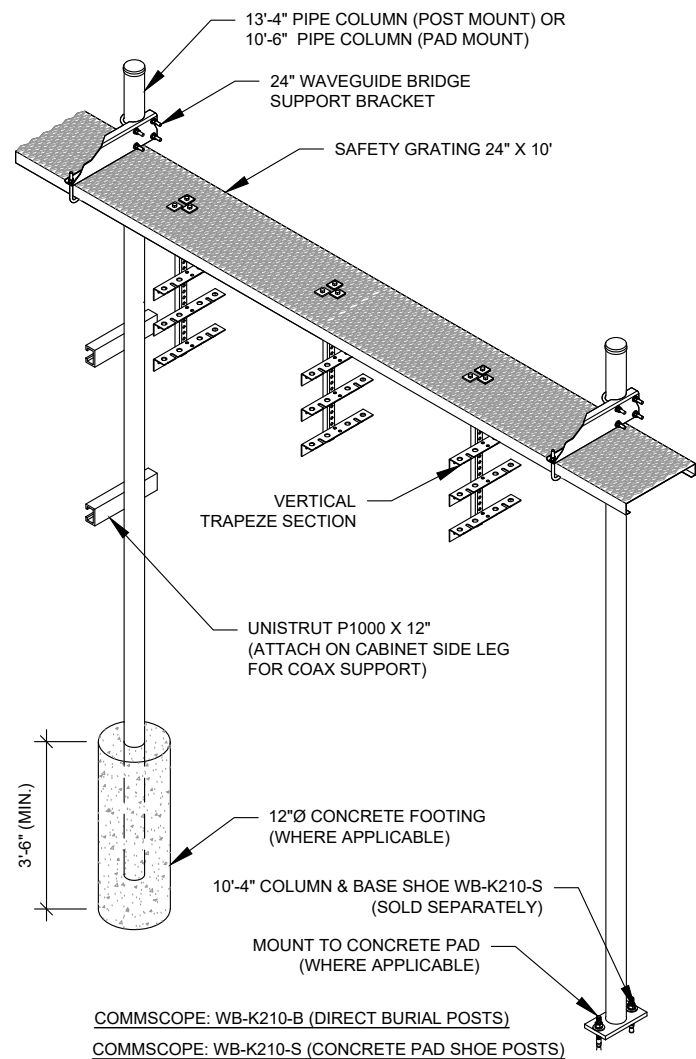


T Mobile

DATE DRAWN:	05/27/22
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CUSTOMER ID:	CTNH569_ AMERICAN TOWER_MONOPOLE_ MIDDLEFIELD
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**CONSTRUCTION
DETAILS**

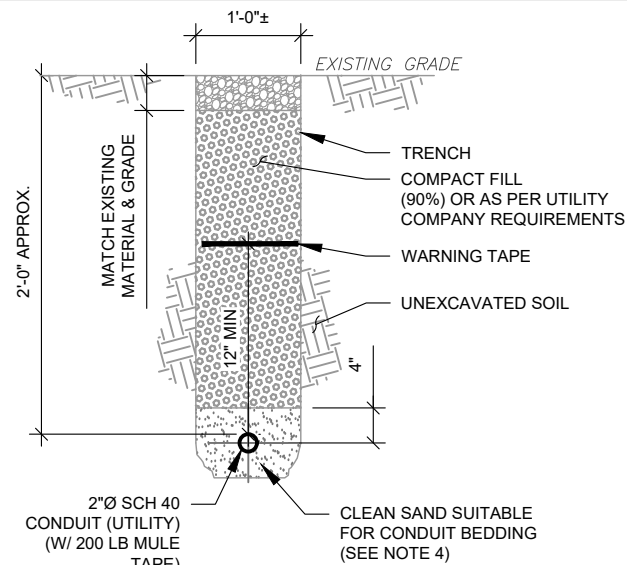
SHEET NUMBER:	REVISION:
C-502	0



CONSTRUCTION NOTE:

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

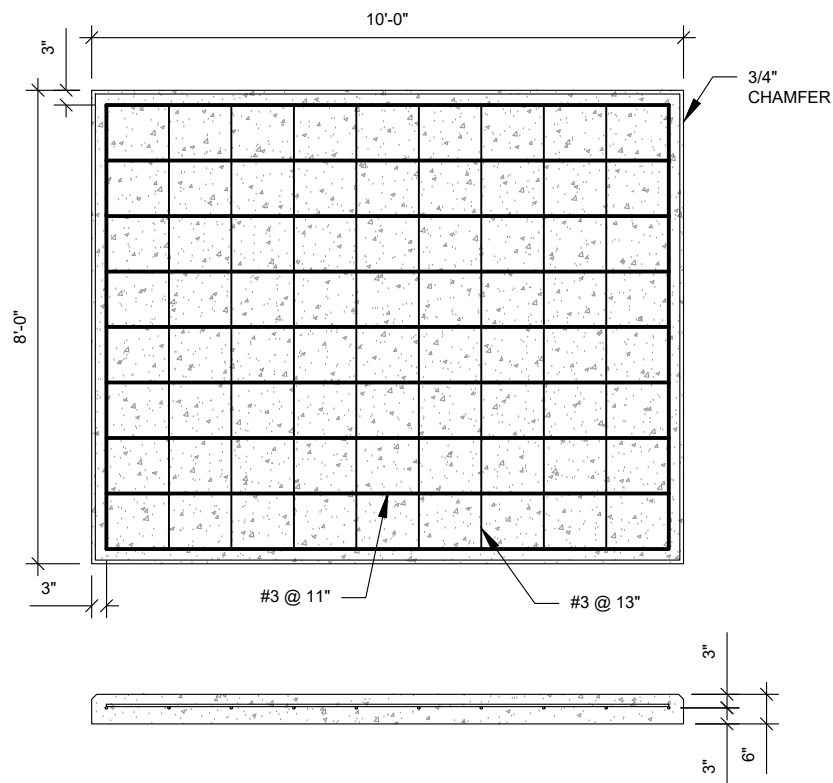
1 WAVEGUIDE BRIDGE KIT
SCALE: N.T.S.



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.

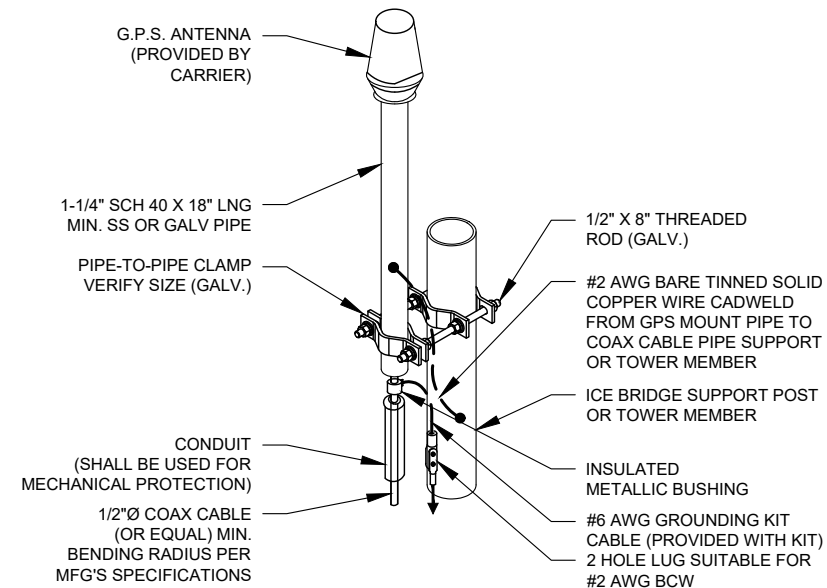
2 SINGLE CONDUIT TRENCH
SCALE: N.T.S.



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.

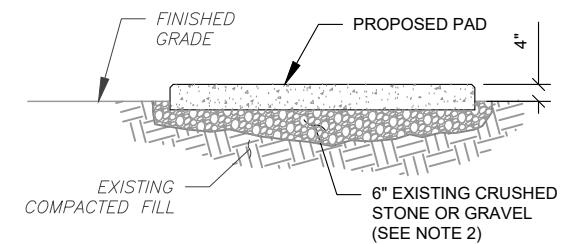
4 REINFORCED PAD LAYOUT
SCALE: N.T.S.



NOTE:

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. DELETERIOUS 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.

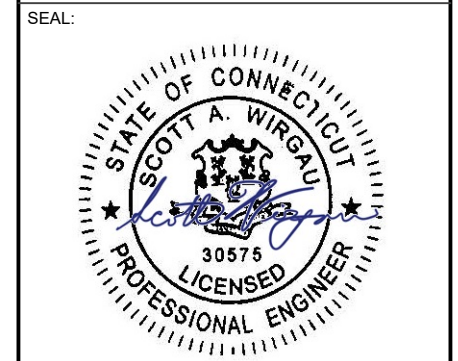
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2			
3			
4			

ATC SITE NUMBER:
302485

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MDFD - MIDDLEFIELD

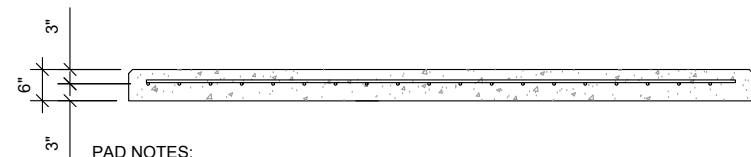
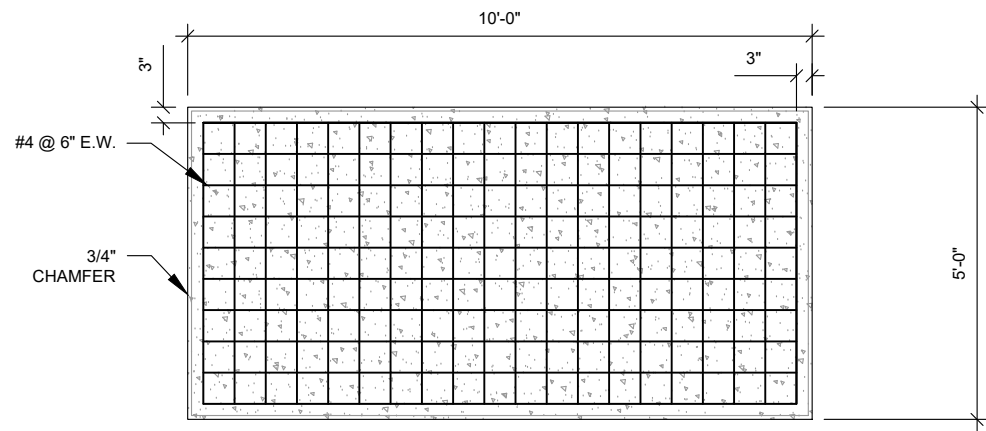
T-MOBILE SITE NAME:
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MIDDLEFIELD
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MIDDLEFIELD, CT 06455



DATE DRAWN:	05/27/22
ATC JOB NO:	14099860_G2
CUSTOMER ID:	CTNH569_ AMERICAN TOWER_MONOPOLE_ MIDDLEFIELD
CUSTOMER #:	CTNH569A

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-503	0

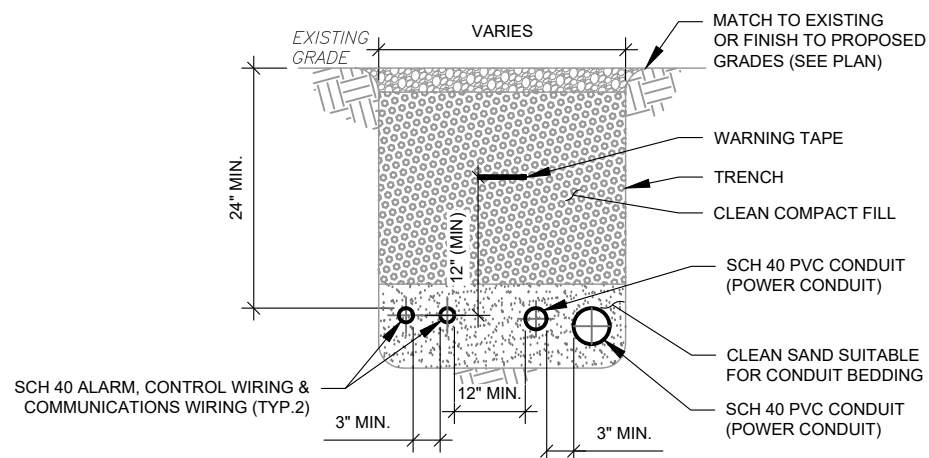


PAD NOTES:

1. SUBGRADE AND FILL SHALL CONSIST OF CLEAN SOIL. DELETERIOUS MATERIAL AND ORGANICS SHALL BE REMOVED.
2. COMPACT SUBGRADE TO 95%.
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. DETAIL FOR ILLUSTRATIVE PURPOSES ONLY, MODIFY PER GENERATOR MANUFACTURER SPECIFICATIONS TO ACCOMMODATE STUB UP.

1 CONCRETE PAD FOR GENERATOR

SCALE: NOT TO SCALE

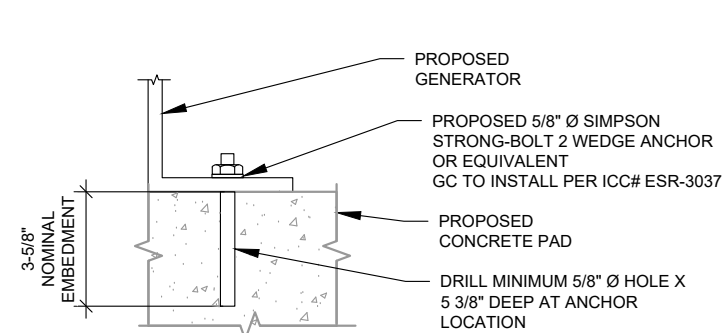


TRENCH NOTES:

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. CONFIRM SPACING AND DEPTH WITH NEC OR LOCAL CODE REQUIREMENTS
5. AC POWER CONDUITS MUST BE 3" MINIMUM FROM OTHER AC CONDUITS AND 12" MINIMUM FROM COMMUNICATIONS CONDUITS

2 GENERATOR SERVICE CONDUIT TRENCH

SCALE: NOT TO SCALE

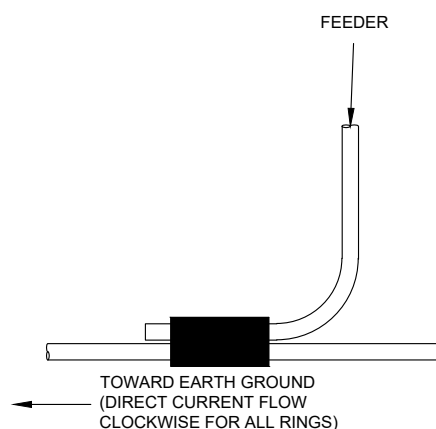


NOTE:

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

3 GENERATOR ATTACHMENT DETAIL

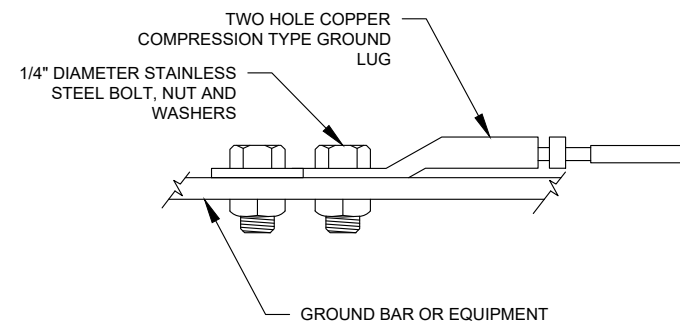
SCALE: NOT TO SCALE



TOWARD EARTH GROUND
(DIRECT CURRENT FLOW
CLOCKWISE FOR ALL RINGS)

4 GENERATOR CONDUCTOR CONNECTION

SCALE: NOT TO SCALE



NOTE:

ALL MECHANICAL EXTERNAL TERMINATION SURFACES SHALL BE TREATED WITH T&B KOPR-SHIELD CP8 ANIT-OXIDATION COMPOUND.

5 TWO HOLE LUG CONNECTION DETAIL

SCALE: NOT TO SCALE



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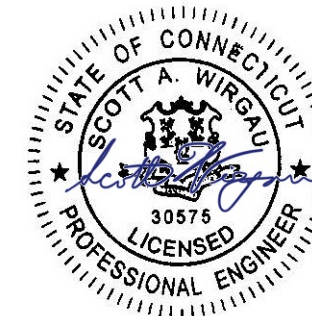
REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	MC	05/27/22

ATC SITE NUMBER:
302485

ATC SITE NAME:
MDFD - MIDDLEFIELD

T-MOBILE SITE NAME:
CTNH569_ AMERICAN TOWER_MONOPOLE_
MIDDLEFIELD
SITE ADDRESS:
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

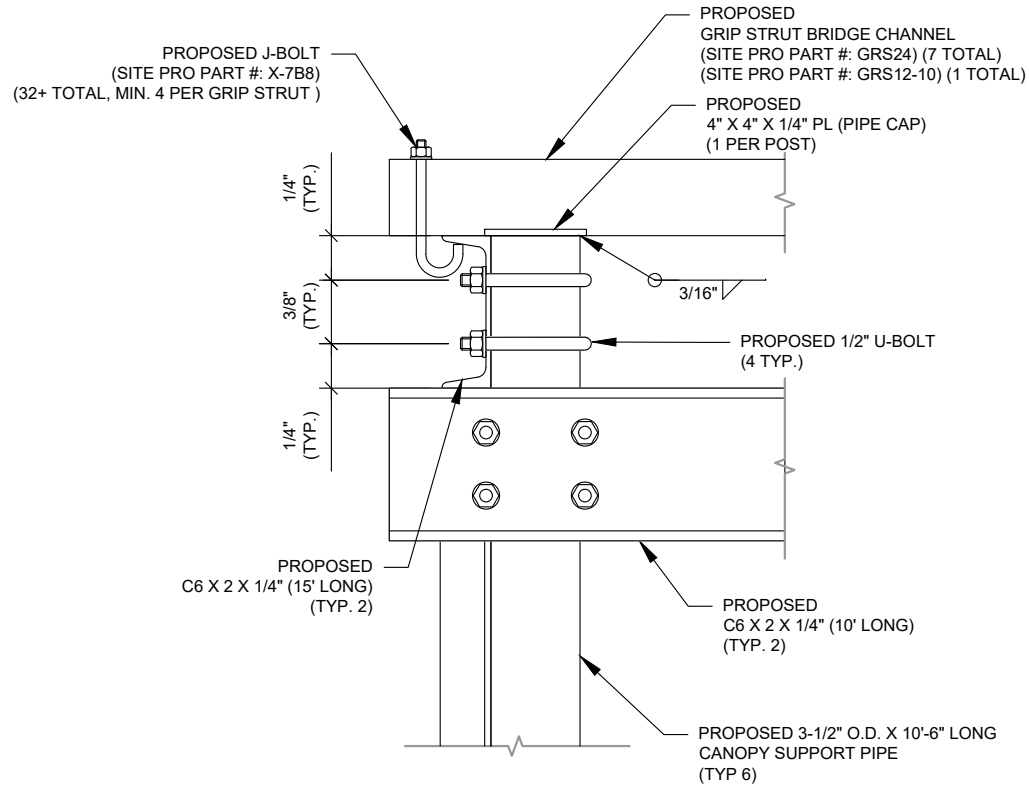
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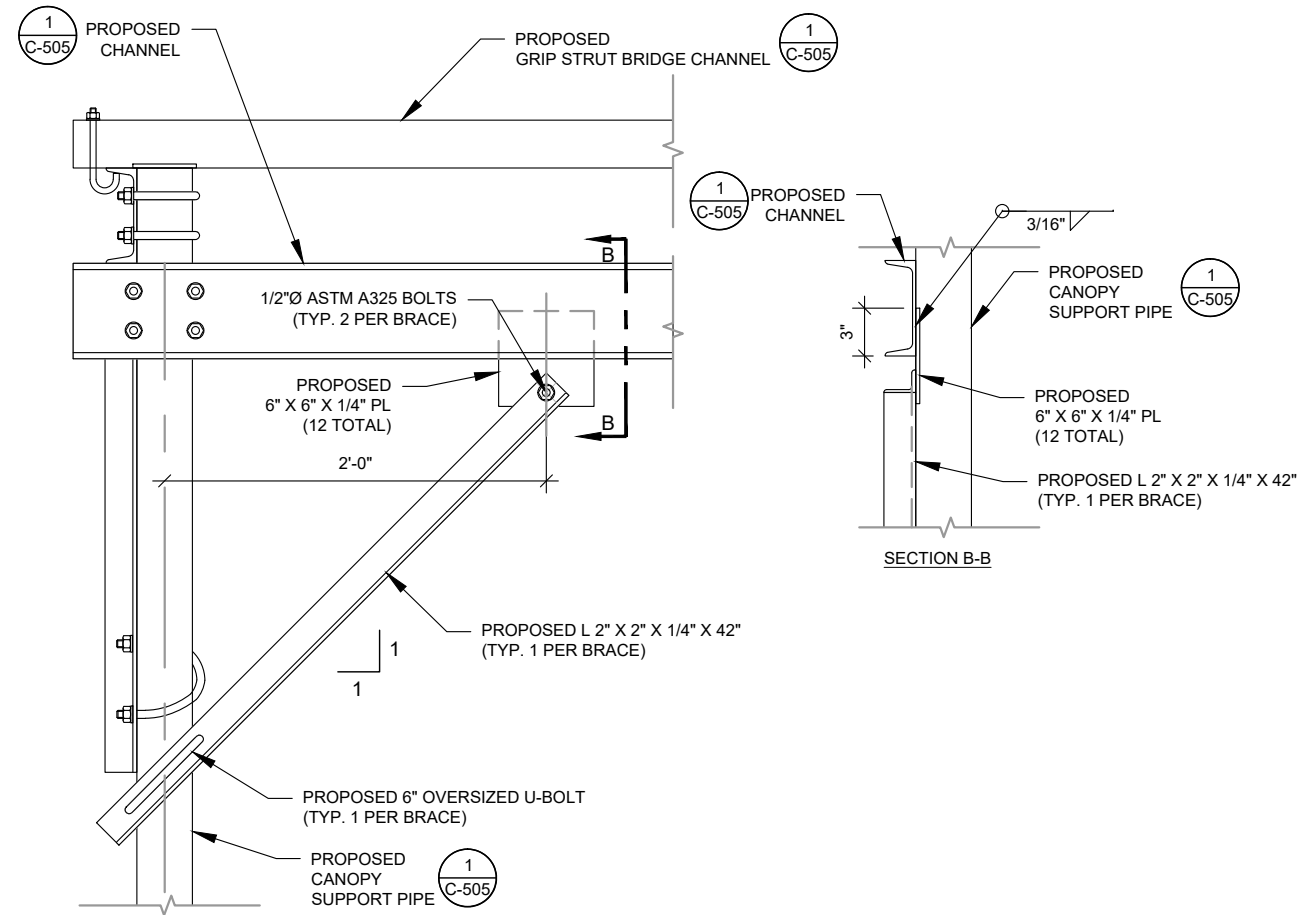
DATE DRAWN:	05/27/22
ATC JOB NO:	14099860_G2
CUSTOMER ID:	CTNH569_ AMERICAN TOWER_MONOPOLE_ MIDDLEFIELD
CUSTOMER #:	CTNH569A

**GENERATOR
CONSTRUCTION
DETAILS**

SHEET NUMBER:	REVISION:
C-504	0

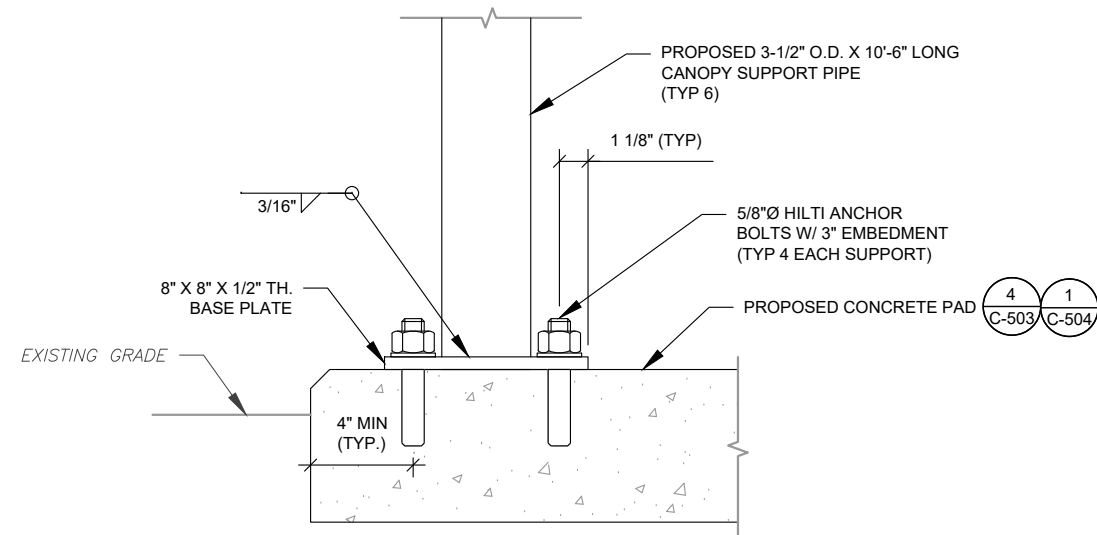


1 CANOPY SUPPORT DETIAL A-A
SCALE: N.T.S.



NOTE: EACH CANOPY POST SHALL HAVE (2) BRACES PER POST

2 CANOPY BRACING DETAIL
SCALE: N.T.S.



3 CANOPY SUPPORT/ANCHOR DETAIL
SCALE: N.T.S.

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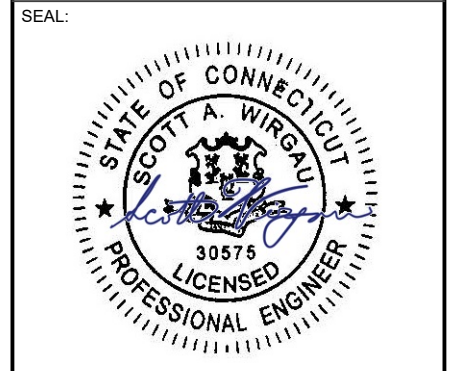
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 MIDDLEFIELD, CT 06455



DATE DRAWN:	05/27/22
ATC JOB NO:	14099860_G2
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CUSTOMER #:	CTNH569A

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-505	0

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GROUNDING NOTES:

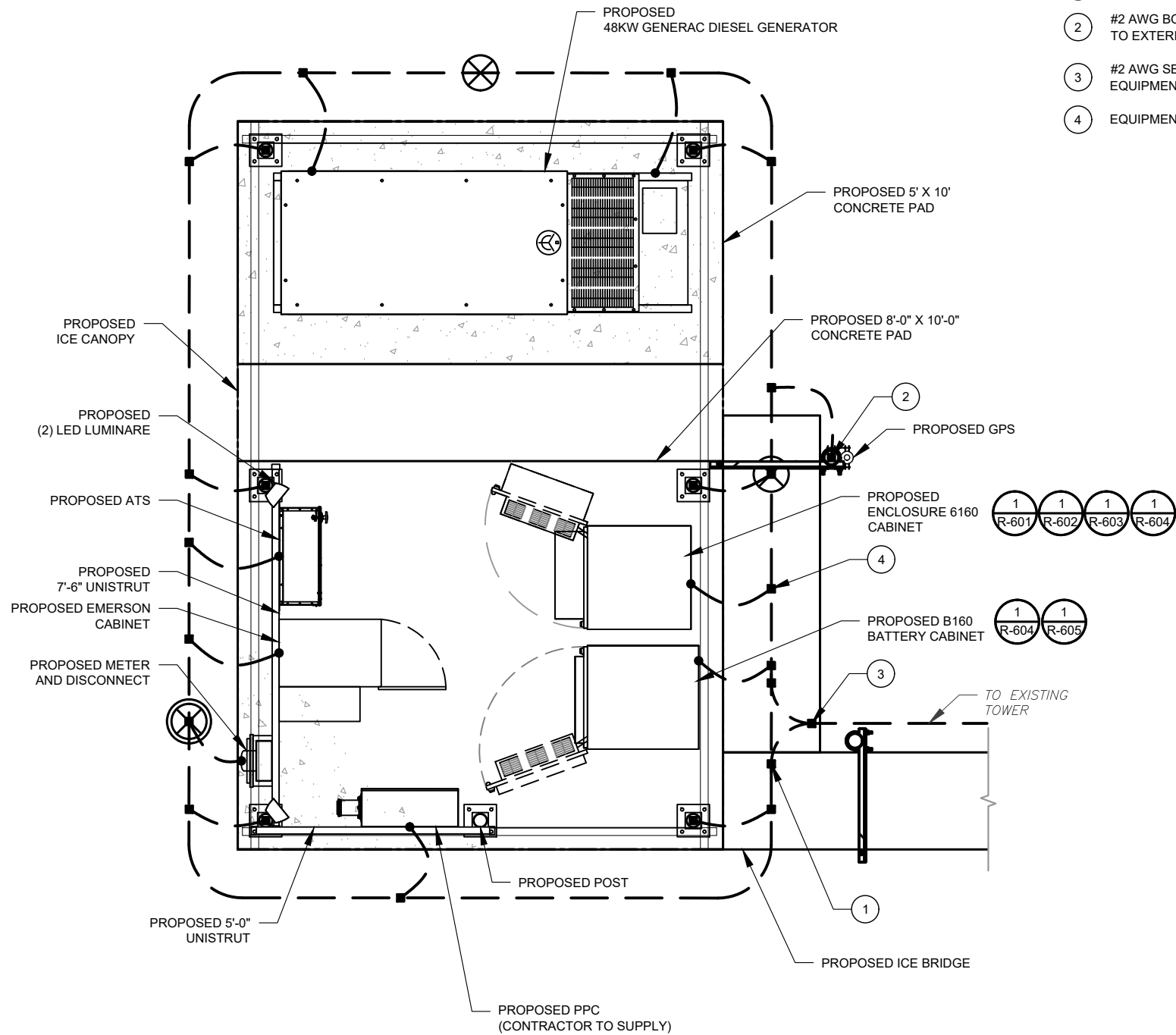
1. ALL EQUIPMENT ENCLOSURES, DEVICES AND CONDUITS SHALL BE GROUNDED TO CONFORM WITH THE LATEST REQUIREMENTS OF THE NEC BY THE INSTALLATION OF A SEPARATE, GREEN, INSULATED GROUND CONDUCTOR FOR ALL FEEDER AND BRANCH CIRCUITS. GROUND CONDUCTORS SHALL BE OF THE SIZE INDICATED ON THE DRAWINGS. GROUND CONDUCTORS 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.

GROUNDING PLAN LEGEND:

- | | | | |
|---|----------------------|---|-------------------|
| — | EXISTING GROUND WIRE | ⊗ | COPPER GROUND ROD |
| — | GROUND WIRE | ⊗ | TEST WELL |
| ■ | EXOTHERMIC WELD | | |
| ● | MECHANICAL WELD | | |

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 TOWER GROUND RING TO EQUIPMENT.
- ④ EQUIPMENT BOND TO GROUND RING (TYP.)



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


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REV.	DESCRIPTION	BY	DATE
①	FOR CONSTRUCTION	MC	05/27/22

ATC SITE NUMBER:
302485

ATC SITE NAME:
MDFD - MIDDLEFIELD

T-MOBILE SITE NAME:
CTNH569_ AMERICAN TOWER_MONOPOLE_
MIDDLEFIELD
SITE ADDRESS:
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

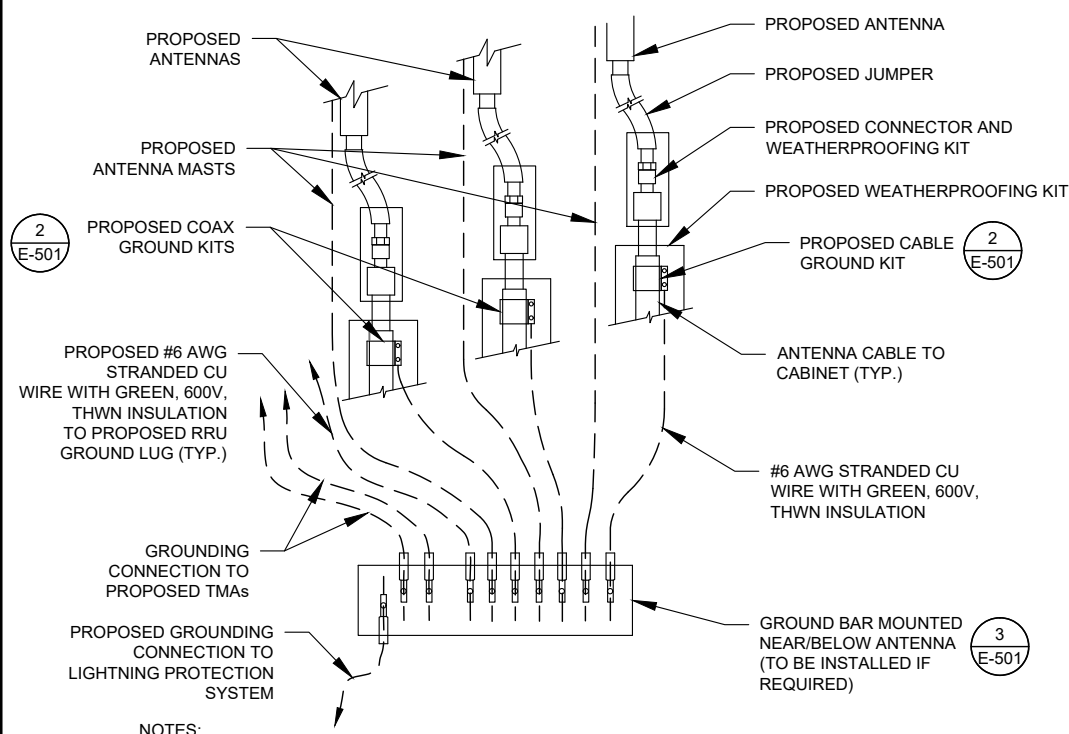


DATE DRAWN:	05/27/22
ATC JOB NO:	14099860_G2
CUSTOMER ID:	CTNH569_ AMERICAN TOWER_MONOPOLE_ MIDDLEFIELD
CUSTOMER #:	CTNH569A

GROUNDING DETAILS

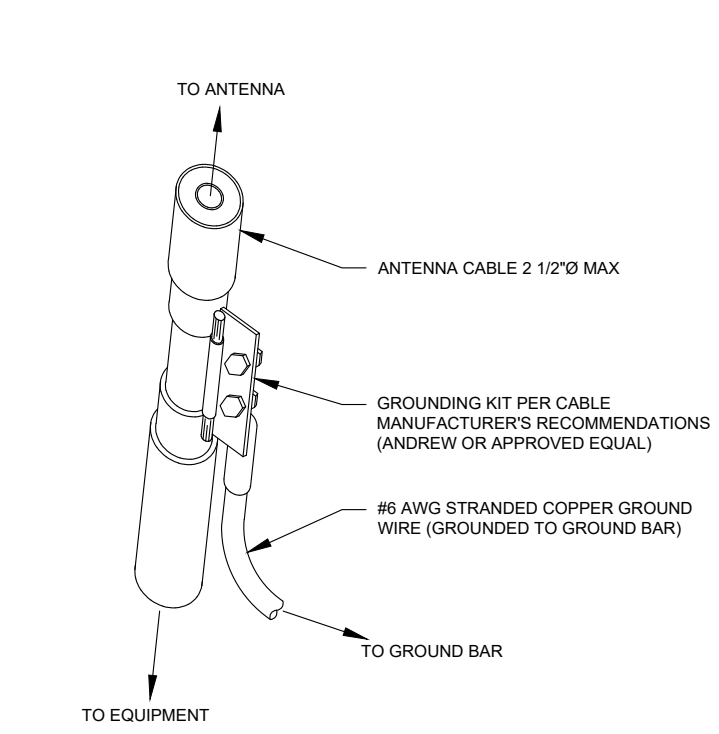
SHEET NUMBER:	REVISION:
E-101	0

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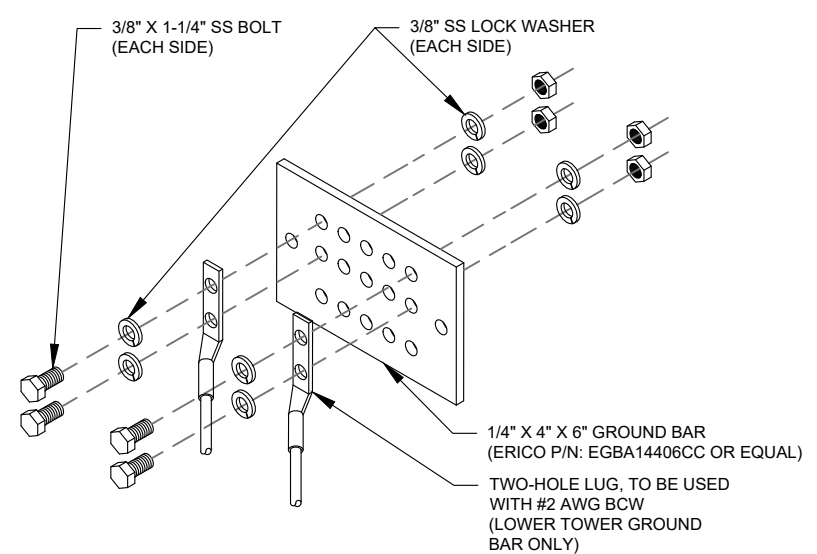
- NOTES:**
1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
 2. SITE GROUNDING SHALL COMPLY WITH T-MOBILE 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.



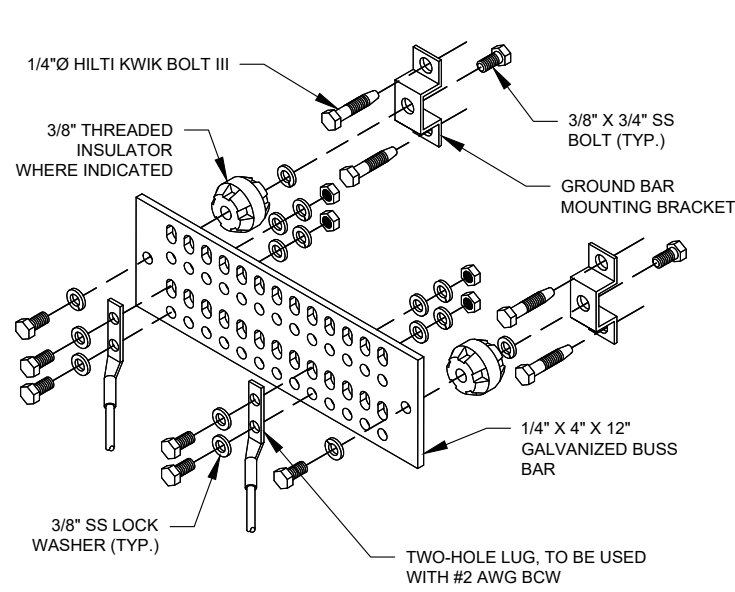
- GROUND KIT NOTES:**
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
 2. CONTRACTOR SHALL PROVIDE WEATHERPROOFING KIT (ANDREW PART NUMBER 221213) AND INSTALL/TAPE PER MANUFACTURER'S SPECIFICATIONS.

2 CABLE GROUND KIT CONNECTION DETAIL
SCALE: N.T.S.



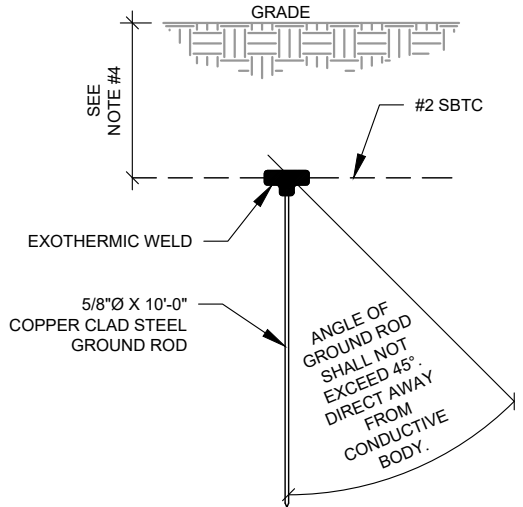
- GROUND BAR NOTES:**
1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
 2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

3 TOWER GROUND BAR DETAIL
SCALE: N.T.S.



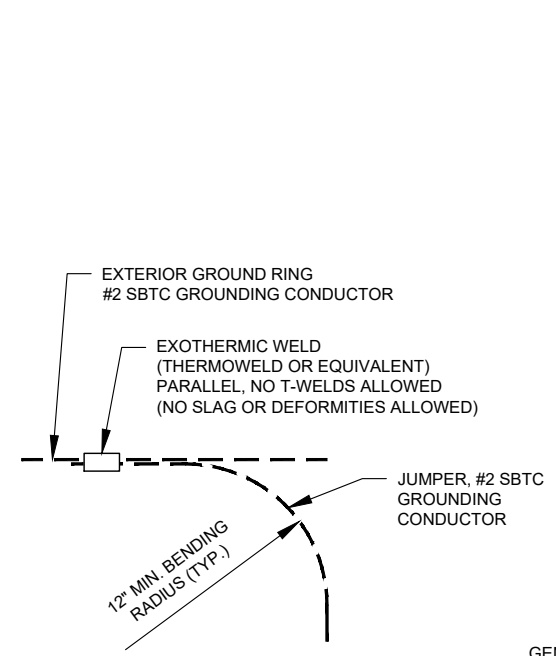
- GROUND BAR NOTES**
1. GROUND KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
 2. GROUND BAR SHALL BE BOLTED TO STRUCTURAL MEMBER OR ANCHORED TO CONCRETE SLAB W/ HILTI KWIK BOLT III.

4 MAIN GROUND BAR DETAIL
SCALE: N.T.S.

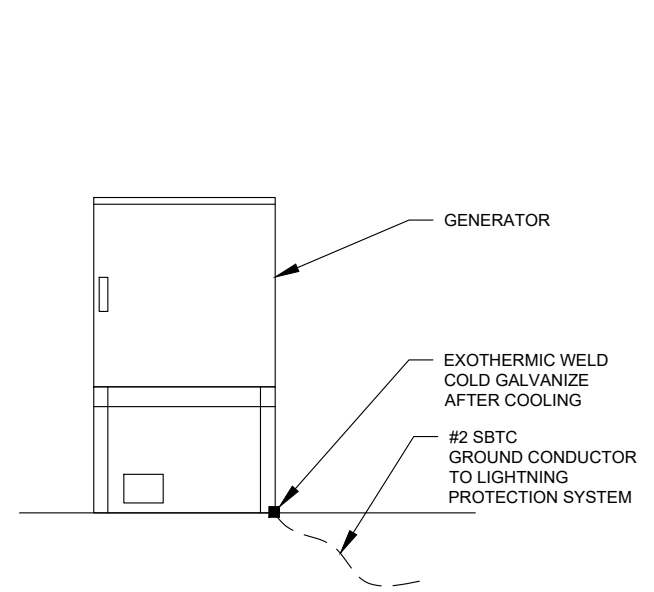


- NOTES:**
1. SEPARATION DIMENSION TO BE VERIFIED WITH LOCAL UTILITY COMPANY REQUIREMENTS.
 2. COORDINATE UTILITY, LOCATE BEFORE DIGGING.
 3. CONDUIT TRENCHING DEPTHS AT 36\"/>

5 GROUND ROD DETAIL
SCALE: N.T.S.



6 TIE CONNECTION DETAIL
SCALE: N.T.S.



- GENERATOR INSTALLATION NOTE:**
- INSTALL GENERATOR AND TRANSFER SWITCH WITH ALL SUPPLIED ACCESSORIES PER MANUFACTURER'S INSTALLATION INSTRUCTIONS AND SPECIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, ACCESSORIES FOR THE EXHAUST SYSTEM, FUEL SYSTEM, ENCLOSURE INTEGRITY (CAPS, PLUGS, COVERS, ETC.), ELECTRICAL CONNECTIONS, AND GROUNDING CONNECTIONS.

7 GENERATOR GROUNDING
SCALE: N.T.S.

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ATC SITE NUMBER:
302485

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T-MOBILE SITE NAME:
CTNH569_ AMERICAN TOWER_MONOPOLE_ MIDDLEFIELD
SITE ADDRESS:
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

SEAL:

T Mobile

DATE DRAWN:	05/27/22
ATC JOB NO:	14099860_G2
CUSTOMER ID:	CTNH569_ AMERICAN TOWER_MONOPOLE_ MIDDLEFIELD
CUSTOMER #:	CTNH569A

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0

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

CONNECTED LOAD (kVA)	BRIEF DESCRIPTION	FEEDER OR BRANCH CIRCUIT						CIRCUIT NOTES	FEEDER OR BRANCH CIRCUIT						BRIEF DESCRIPTION	CONNECTED LOAD (kVA)	
		BREAKER	CIRCUIT	POLE	CIRCUIT	POLE	CIRCUIT		BREAKER	CIRCUIT	POLE	CIRCUIT	POLE	CIRCUIT		A	B
A	B	AMPS	POLES	WIRE	GND	COND.	NO.	NO.	COND.	GND	WIRE	POLES	AMPS				
0.01							1										
	0.01						2										
		60	2	3-#6	#10	1"	3										
7.50							4										
	7.50						5										
		125	2	2-#3/0	#6	2"	6										
0.18							7										
	0.00						8										
		20	1	2-#12	#12		9										
0.00							10										
	0.00						11										
							12										
0.00							13										
	0.00						14										
							15										
0.00							16										
	0.00						17										
							18										
0.00							19										
	0.00						20										
							21										
							22										
							23										
							24										
7.7	7.5																
							A	B	TOTAL								
							8.5	9.5	18.0								
							8.5	9.5	18.0								

CONNECTED LOAD (kVA)	0.18	0.50	1.50	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.8	2.0
DERATING FACTOR (80%) DEMANDLOAD SIZING:	94 AMPS												

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



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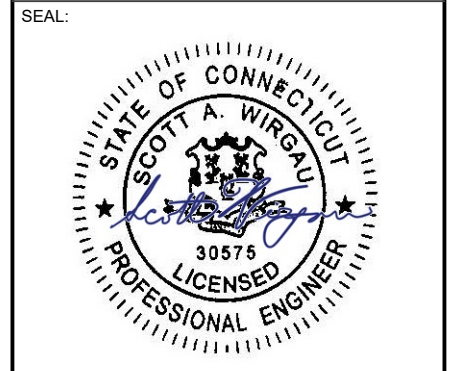
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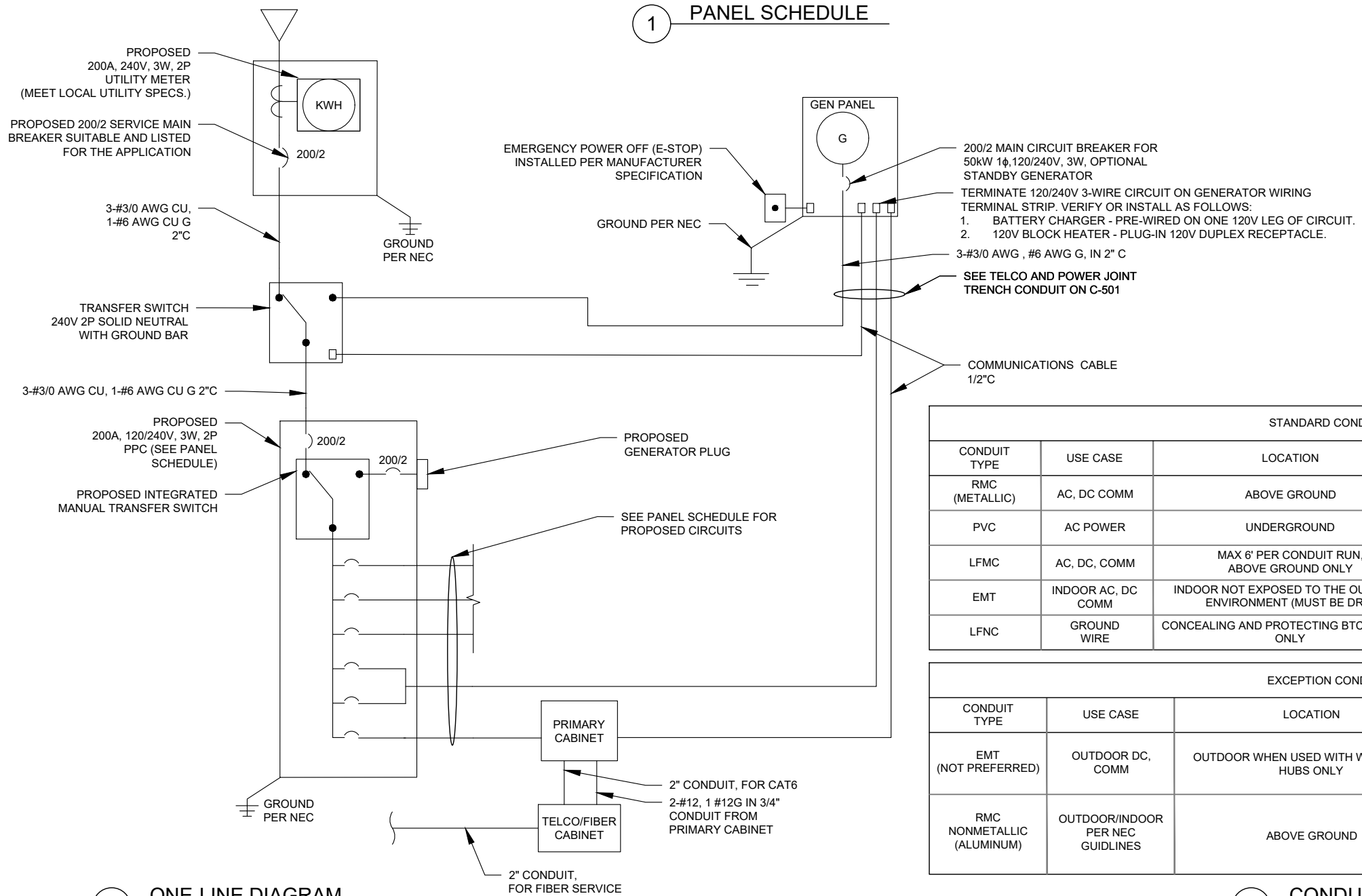


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CUSTOMER #:	CTNH569A

PANEL SCHEDULE & ONE-LINE DIAGRAM

SHEET NUMBER:	REVISION:
E-601	0

1 PANEL SCHEDULE



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

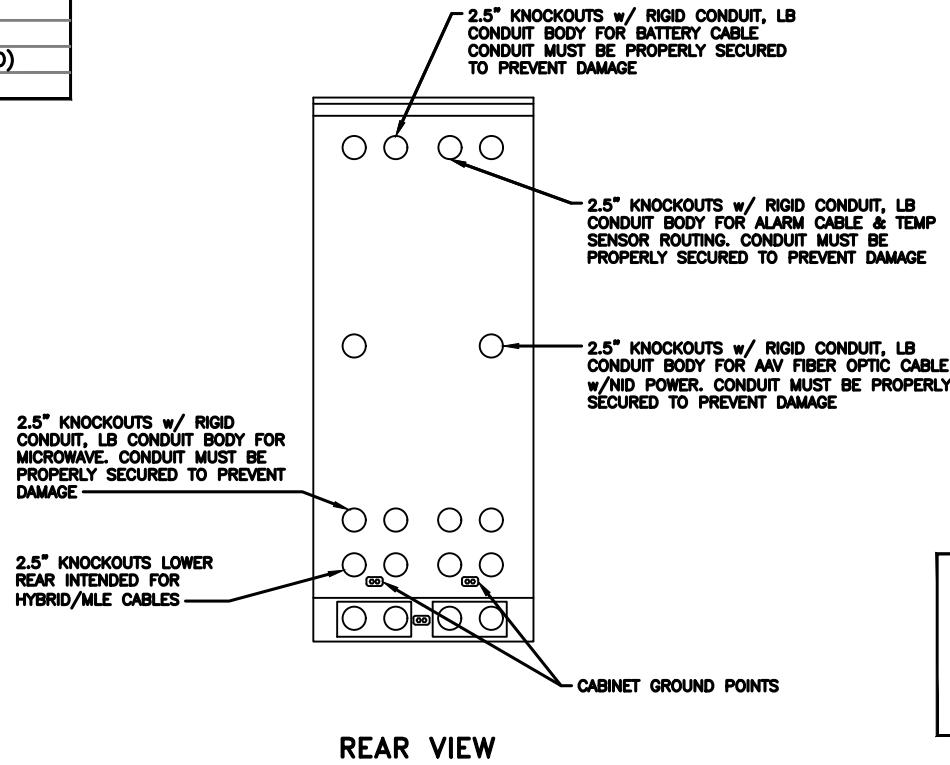
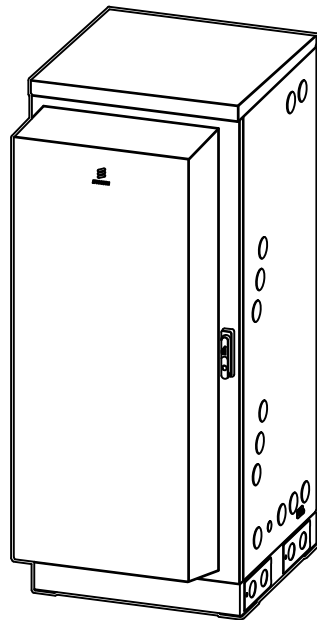
EXCEPTION CONDUIT USE TABLE			
CONDUIT TYPE	USE CASE	LOCATION	USE CASE EXAMPLE
EMT (NOT PREFERRED)	OUTDOOR DC, COMM	OUTDOOR WHEN USED WITH WATERTIGHT HUBS ONLY	BETWEEN EQUIPMENT AND BATTERY CABINET OR EQUIPMENT TO EQUIPMENT CABINETS FOR INTER CABINET CONNECTION
RMC NONMETALLIC (ALUMINUM)	OUTDOOR/INDOOR PER NEC GUIDELINES	ABOVE GROUND	MAY 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

2 ONE-LINE DIAGRAM

3 CONDUIT USE TABLES

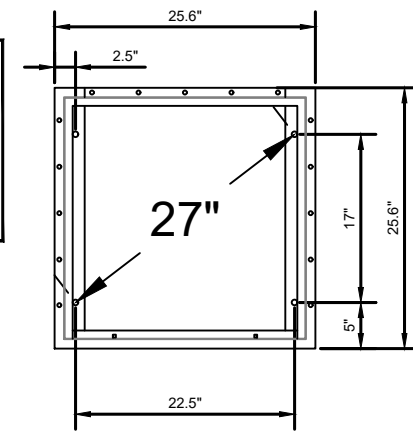
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MANUFACTURER:	ERICSSON
MODEL:	6160 SITE SUPPORT CABINET
DIMENSIONS:	63" x 25.6" x 33.6" (H x W x D)
WEIGHT:	373 LBS



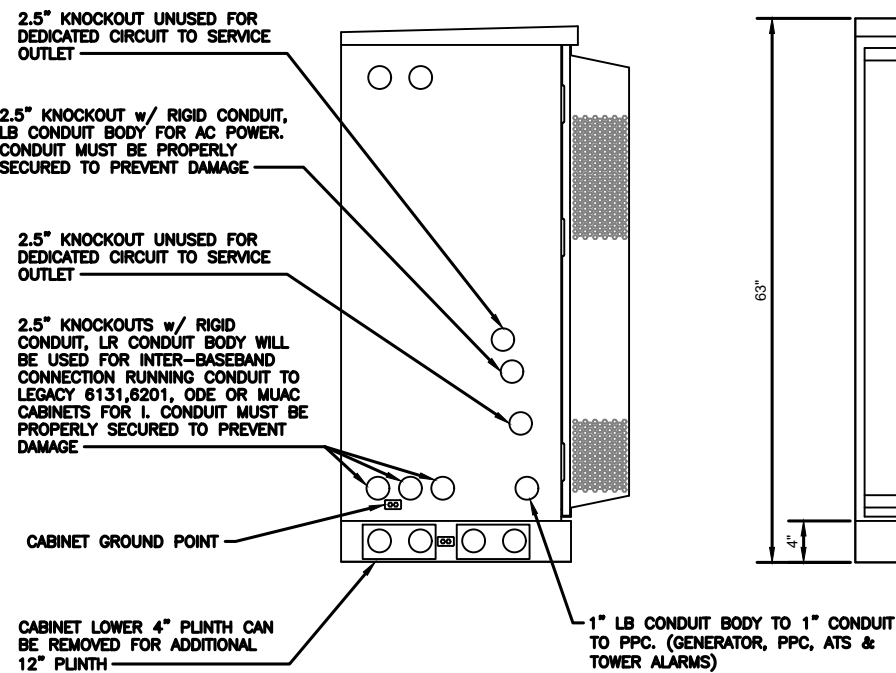
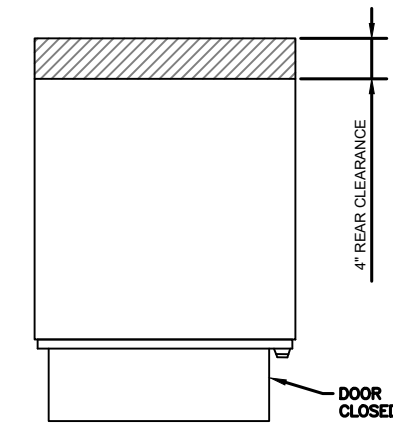
NOTE:

- 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

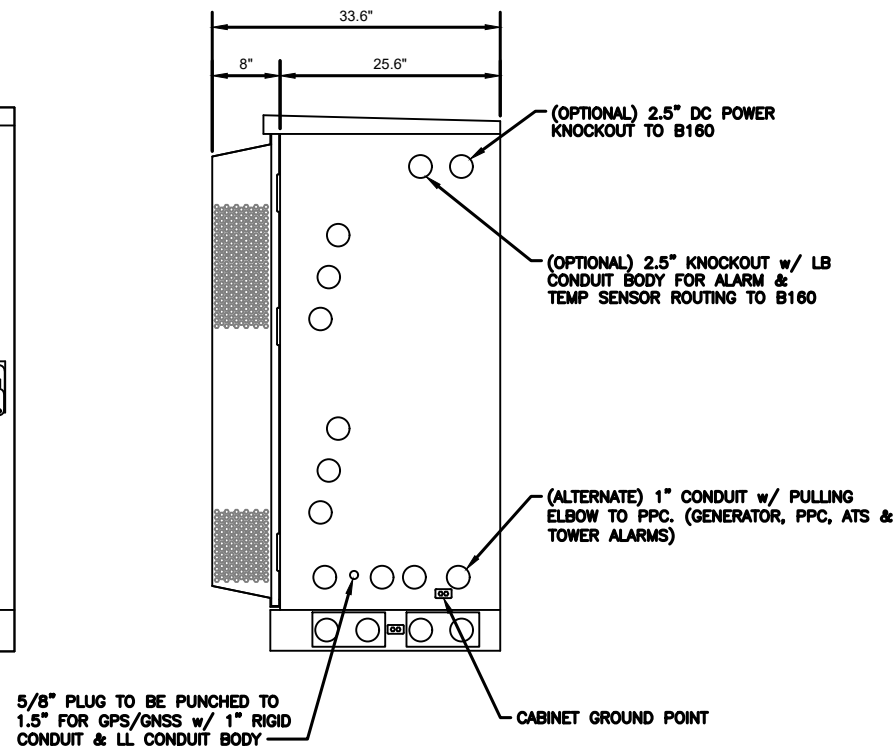
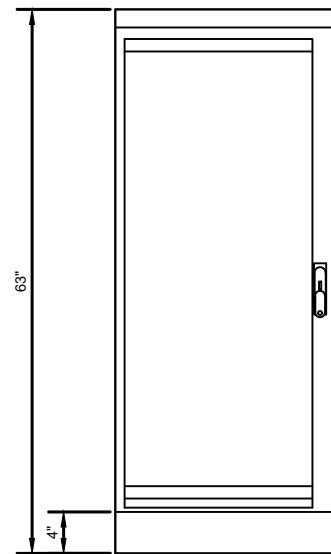


GROUNDING NOTE:

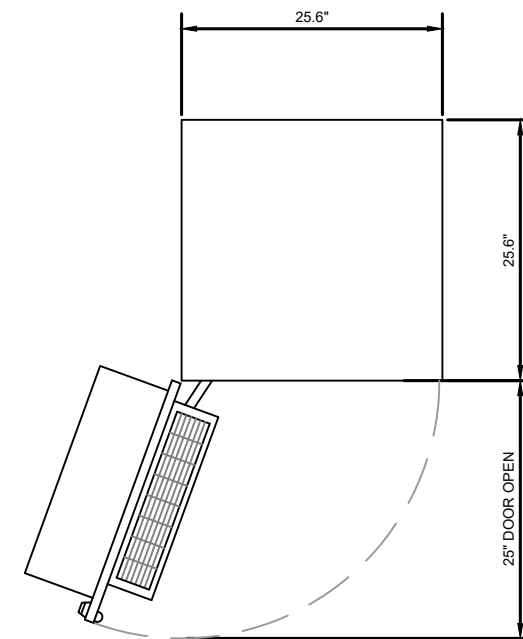
"CABINET GROUNDING TO USE A SINGLE, #2 BTCW CONDUCTOR, W/ 2-HOLE, 1" C-C, LONG BARREL, WINDOW LUG, IN 3/4" LFNC TO GROUND RING. PLINTH GROUNDING IS NOT REQUIRED."

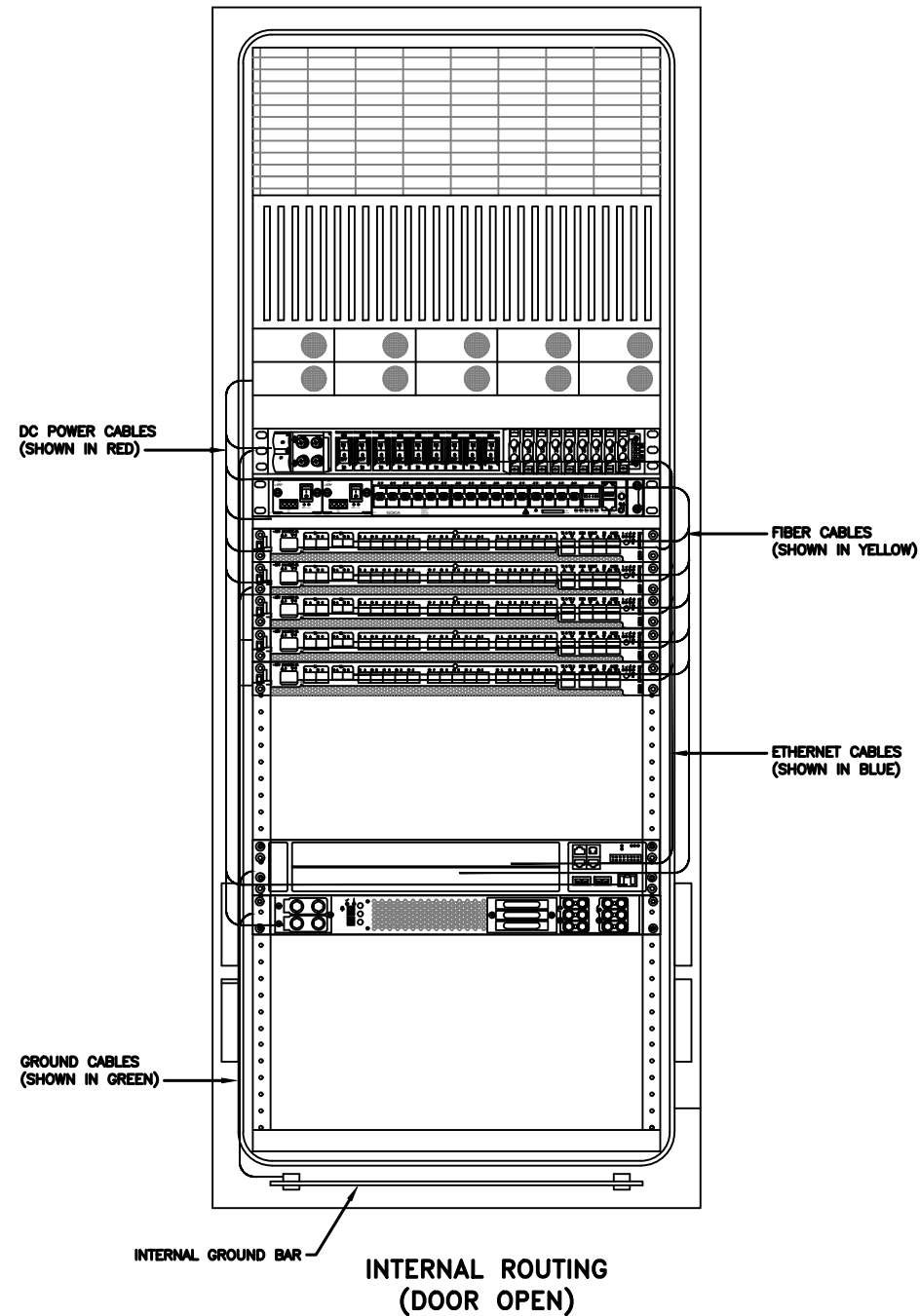


LEFT VIEW

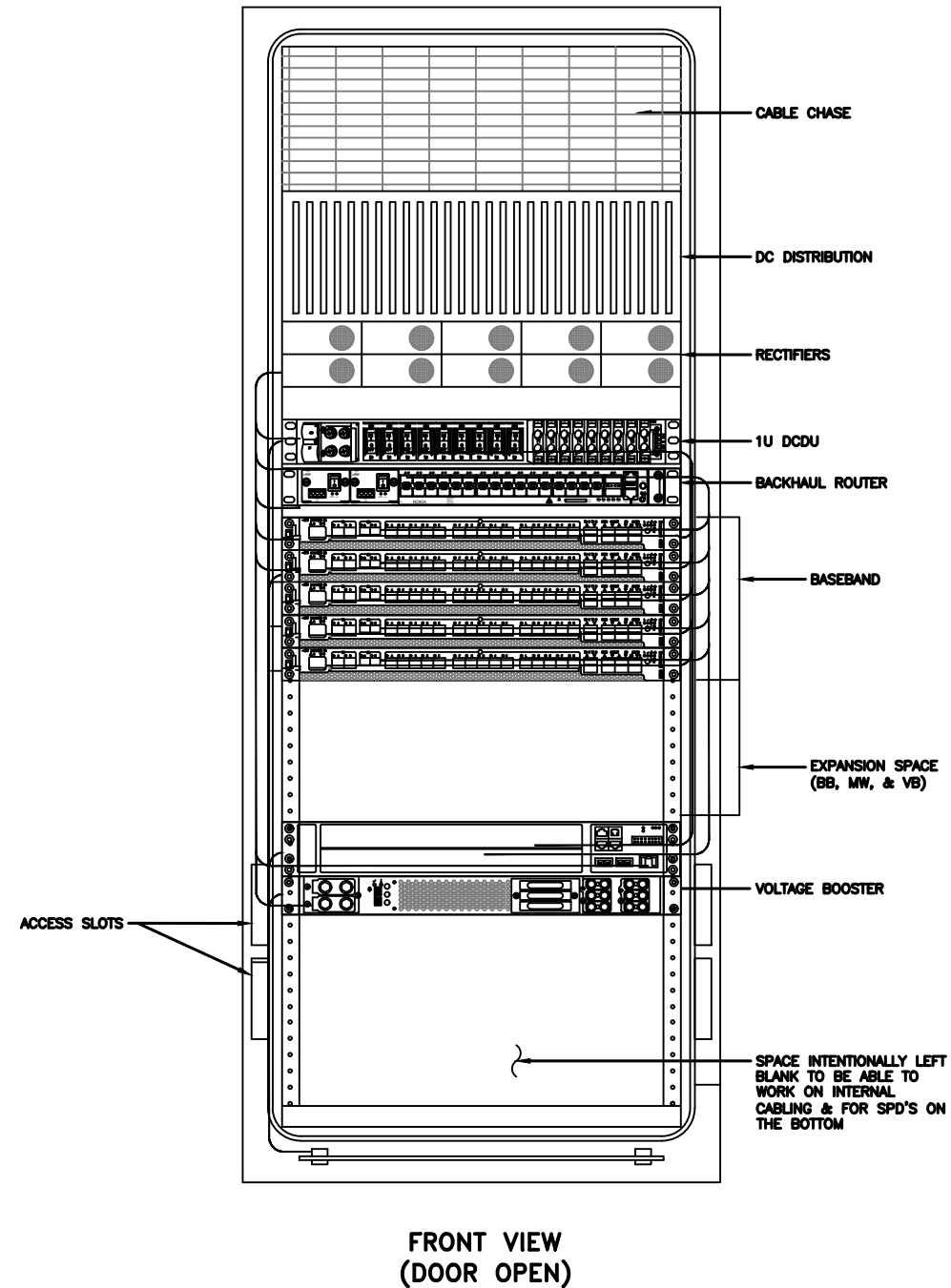


RIGHT VIEW





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	EXPANSION / LEGACY BASEBAND / VOLTAGE BOOSTER
20	
21	VOLTAGE BOOSTER
22	VOLTAGE BOOSTER
23	OPEN SPACE FOR SPD ACCESS
24	
25	



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

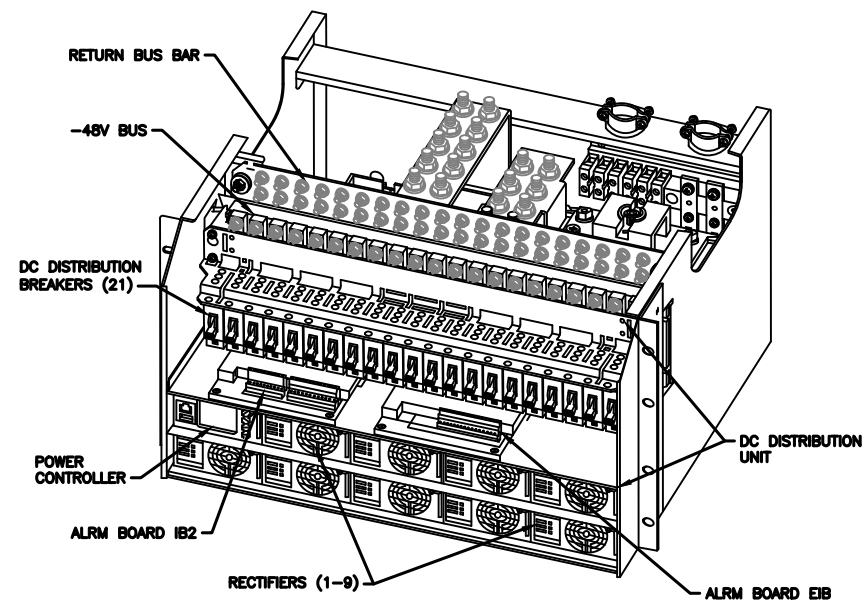
SUPPLEMENTAL

SHEET NUMBER: R-602	REVISION: 0
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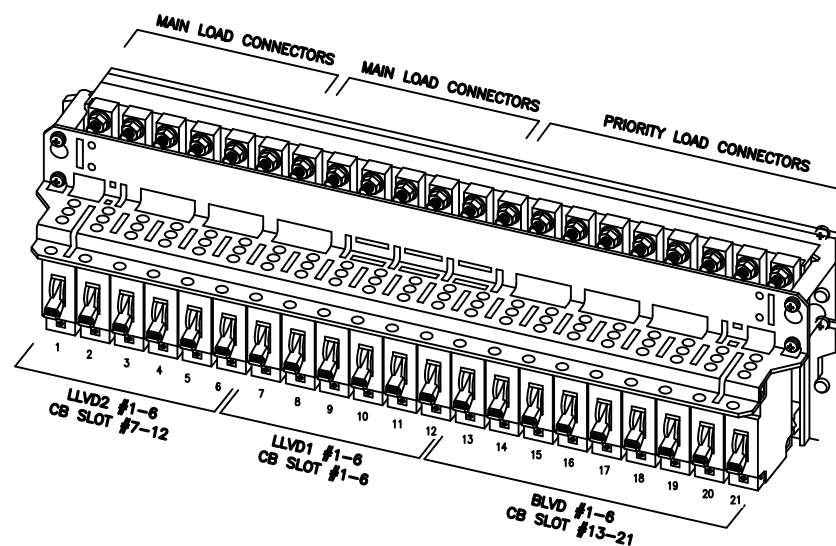
**NOTE:
THIS IS FOR REFERENCE ONLY, CHECK
FOR SPECIFIC DETAIL IN T-MOBILE
CABINET SPECIFIC INSTALLATION GUIDES**

Breaker Allocation for E6160				
CB SLOT	Ckt #	w/ DCU Prior to availability of the 4460 and 4480	w/ DCU Later Design Post-4460 and Post-4480	w/ DCU 4 and 6 Sector designs
1	1	Router PS-2*/Future		Radio 4460 B25/66 ζ-1
2	2	Future		Radio 4460 B25/66 ζ-2
3	LVD1	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	47.0V			
5	5	PSU 4813 feeding B41 α, β and γ (Air 6449s)		
6	6			
7	LVD2	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	45.1V	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	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



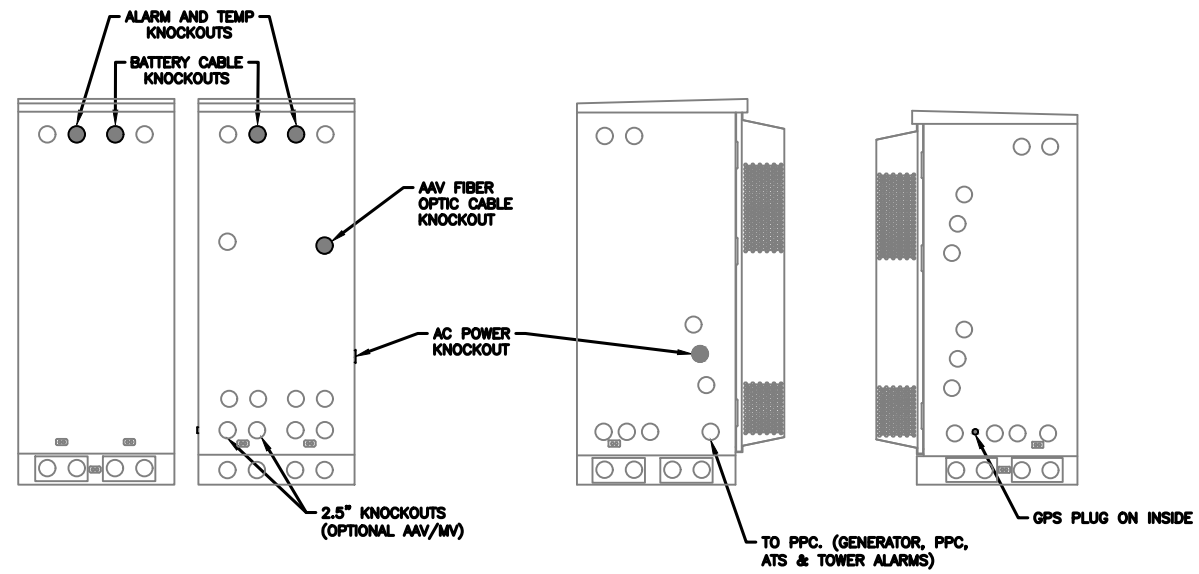
POWER SUBRACK



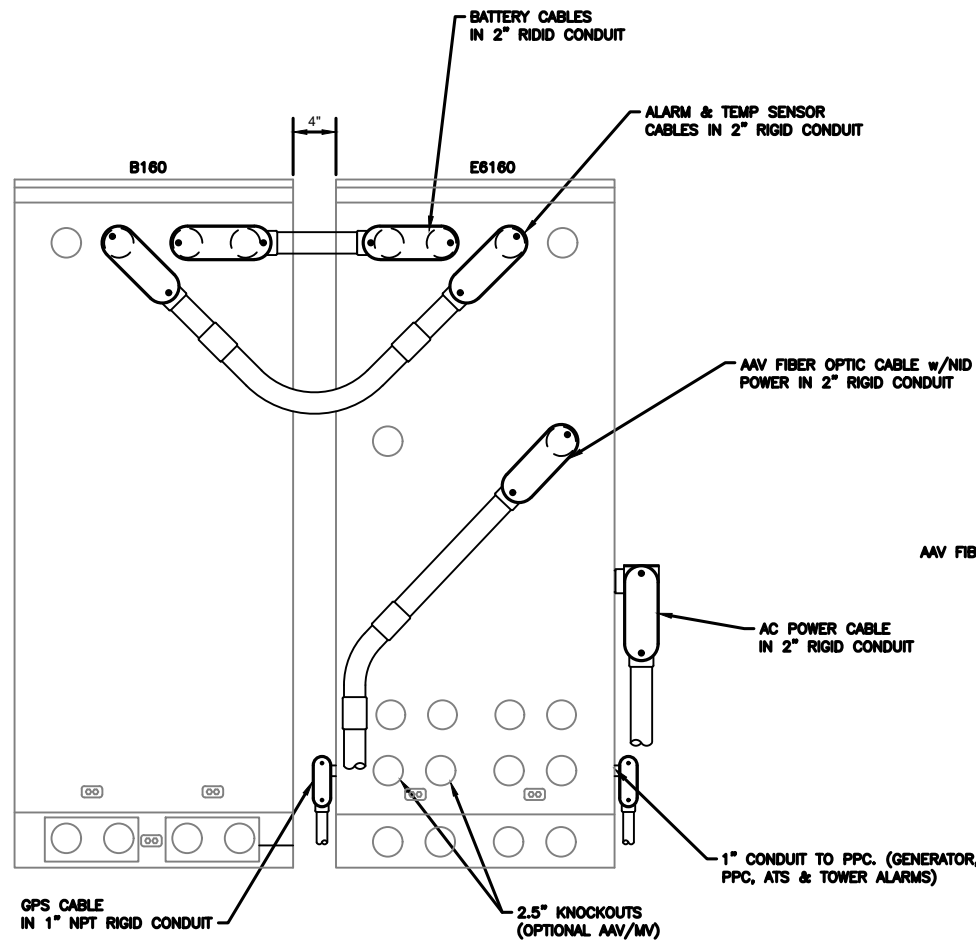
DC DISTRIBUTION

NOTE:

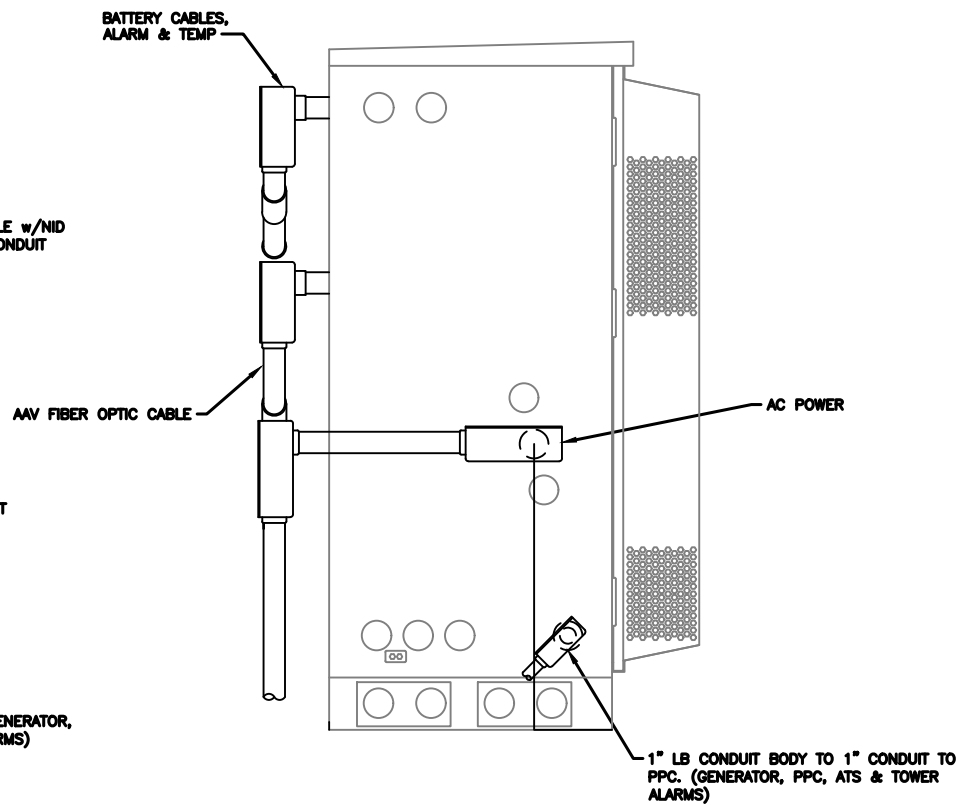
1. ALL CONDUIT AND FITTING ENTRANCES INTO CABINETS AND ENCLOSURES MUST UTILIZE MYERS OR EQUIVALENT HUBS OR SEALING WASHERS TO PREVENT WATER ENTRY/SEEPAGE INTO CABINETS AND ENCLOSURES.
2. (LIQUIDFLEX) FLEXIBLE METALLIC CONDUIT (LFMC) & ASSOCIATED FITTINGS CAN BE USED AS NEEDED BUT ONLY FOR TIGHT CONDUIT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

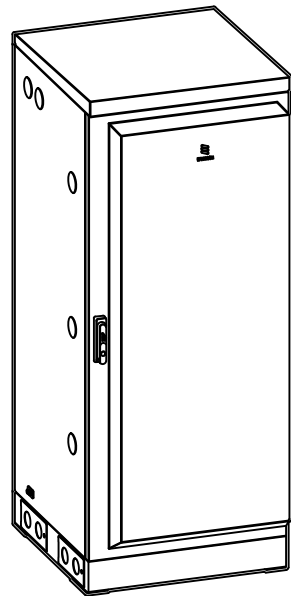


REAR VIEW



SIDE VIEW

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



2.5" KNOCKOUTS w/ RIGID CONDUIT, LB CONDUIT BODY FOR ALARM CABLE & TEMP SENSOR ROUTING. CONDUIT MUST BE PROPERLY SECURED TO PREVENT DAMAGE

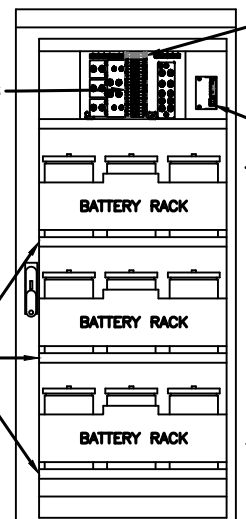
CABINET GROUND POINTS

REAR VIEW

2.5" KNOCKOUTS w/ RIGID CONDUIT, LB CONDUIT BODY FOR BATTERY CABLE CONDUIT MUST BE PROPERLY SECURED TO PREVENT DAMAGE

3 x 300A BREAKERS

BATTERY VIBRATION MOUNTS



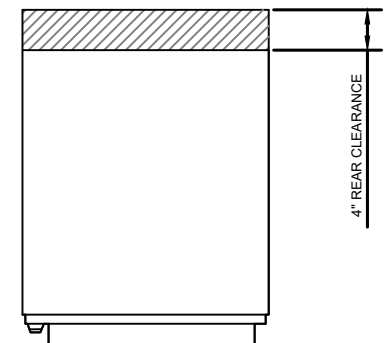
25A AUX BREAKERS, FANS, LIGHTS, ETC.

ALARM BOX, PRELABELLED

3X BATTERY SHELVES, UP TO 200A HR, w/ PREINSTALLED HEATERS

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

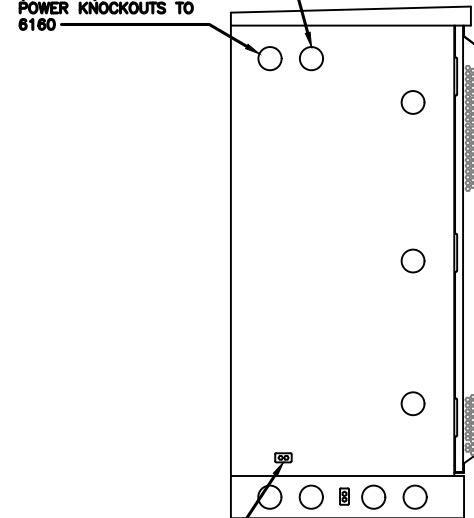


4" REAR CLEARANCE

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."

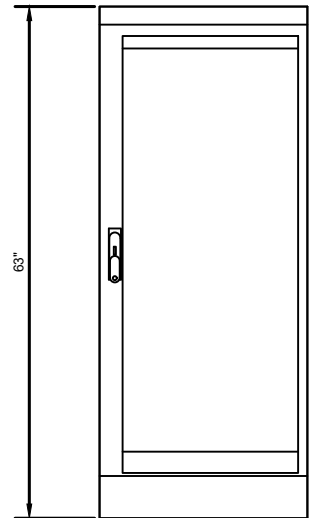
(OPTIONAL) 2.5" KNOCKOUTS FOR ALARM & TEMP SENSOR ROUTING TO 6160

(OPTIONAL) 2.5" DC POWER KNOCKOUTS TO 6160

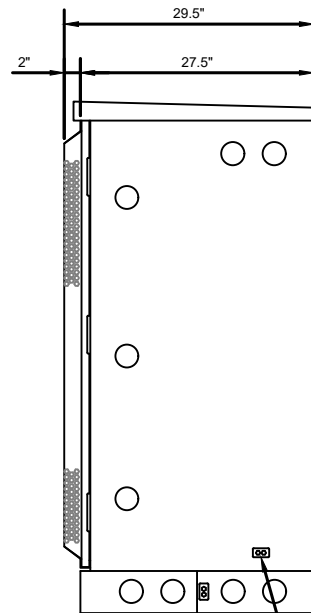


CABINET GROUND POINT

LEFT VIEW

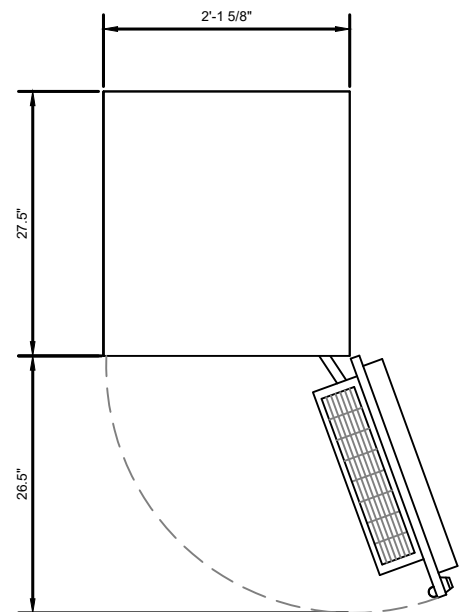


FRONT VIEW



RIGHT VIEW

CABINET GROUND POINT



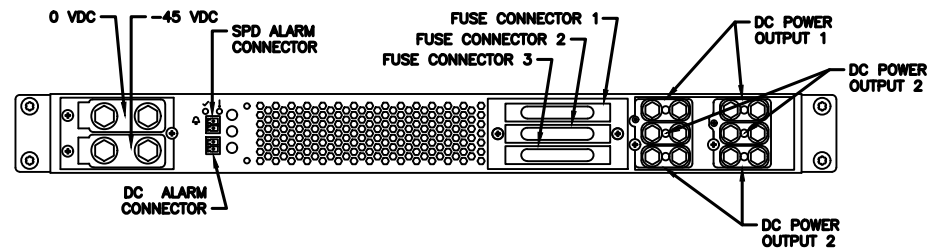
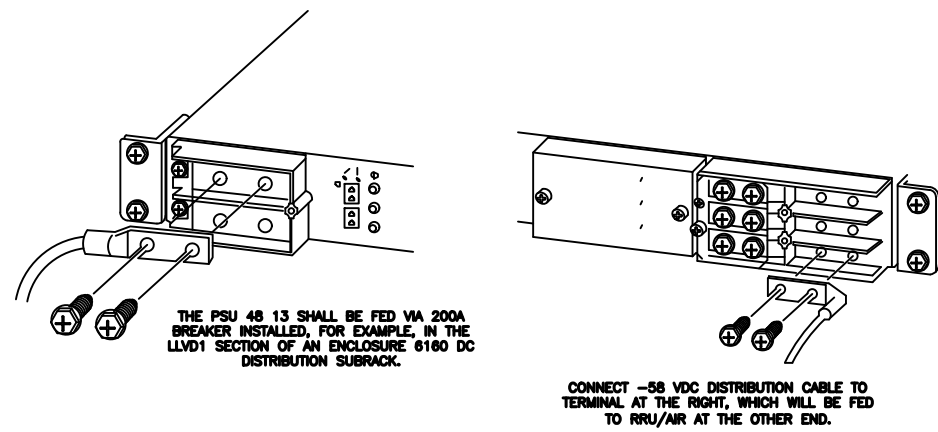
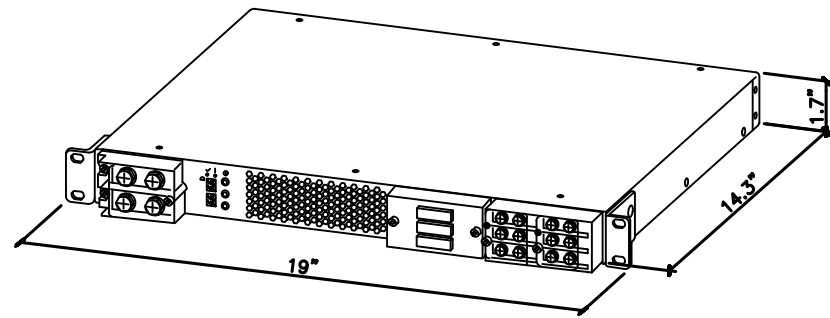
PLAN VIEW

B160 ERICSSON SITE SUPPORT BATTERY CABINET

SUPPLEMENTAL	
SHEET NUMBER: R-605	REVISION: 0

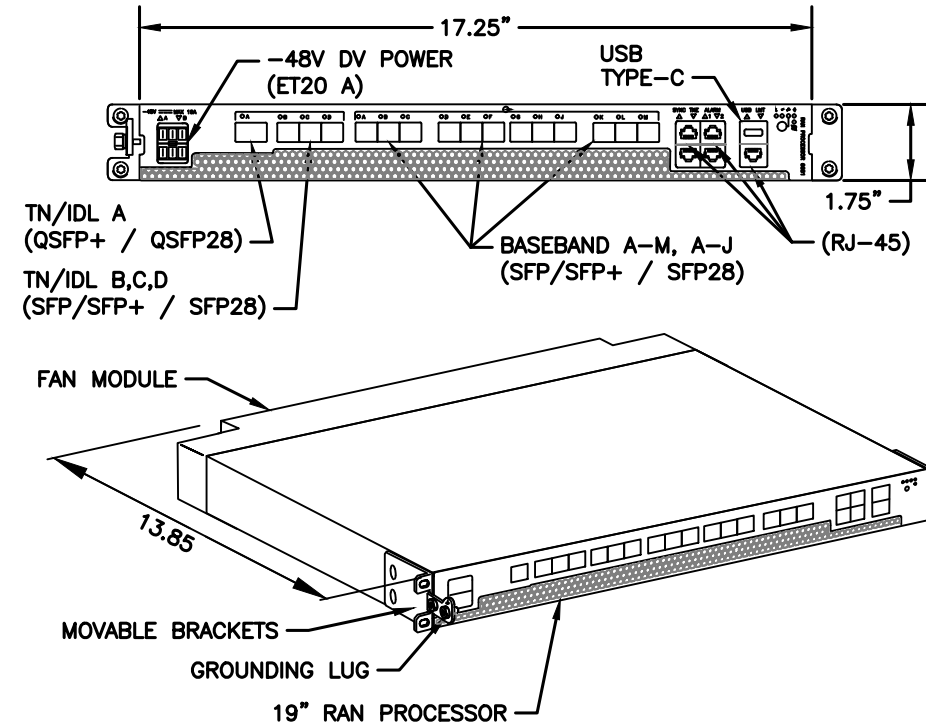
MANUFACTURER: ERICSSON
 MODEL: PSU 48 13
 WEIGHT: 17.1 LBS
 DIMENSIONS: 19"x 1.7"x 14.3"

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



1 SKU# 34132 - PSU 48 13
 SCALE: N.T.S.

MANUFACTURER: ERICSSON
 MODEL: 6651 RAN PROCESSOR (KDU1370093/11)
 DIMENSIONS: 1.75" x 17.25" x 13.85" (H" x W" x D")
 WEIGHT: 16.53 LBS



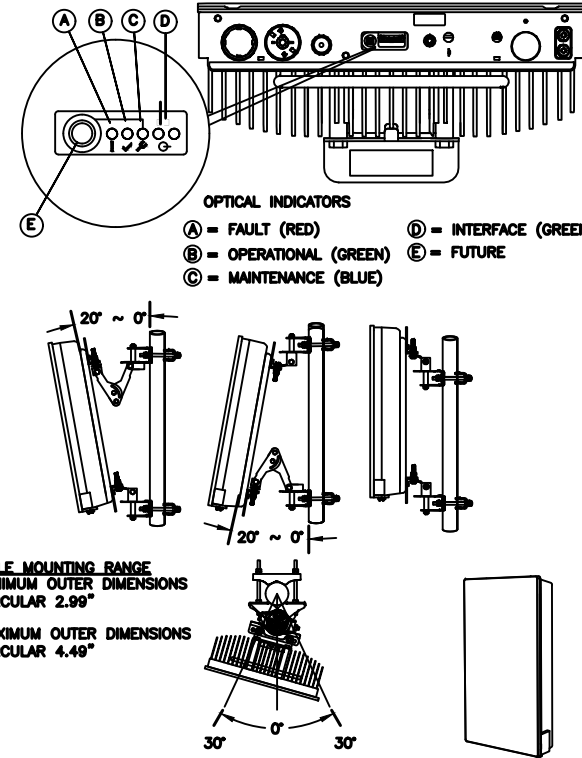
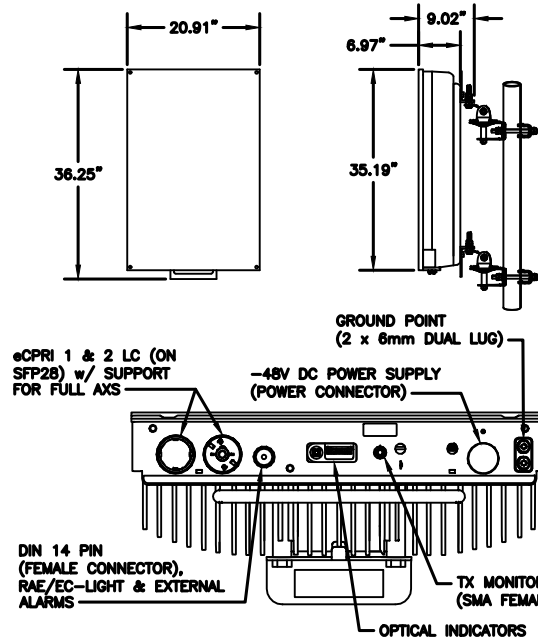
2 34553 - ERICSSON 6651 RAN PROCESSOR
 SCALE: N.T.S.

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

SUPPLEMENTAL

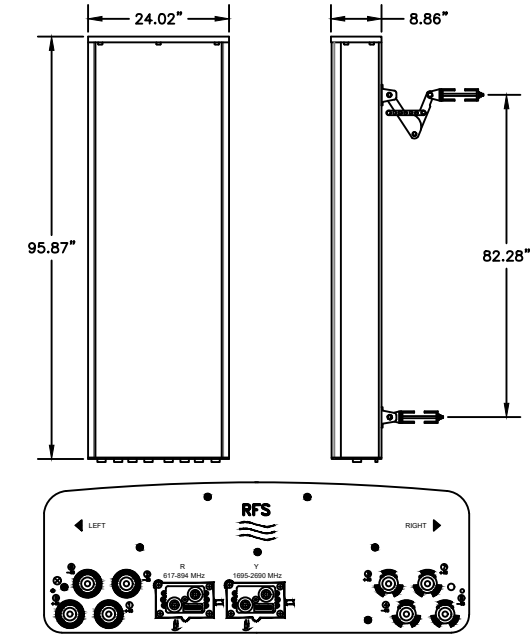
SHEET NUMBER: R-606
 REVISION: 0

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 (SXX109 2016/1)



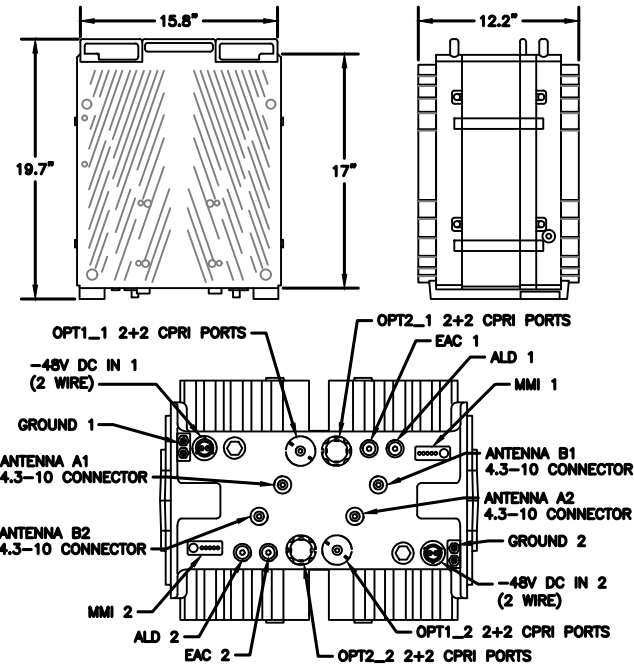
1 34552 - ERICSSON AIR 6419 BAND 41
SCALE: N.T.S.

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

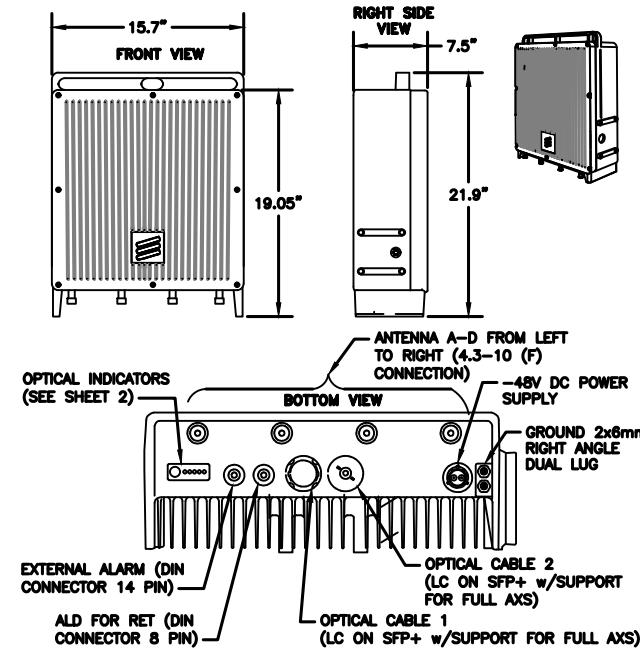


2 34087 - RFS APXVAALL24_43-U-NA20
SCALE: N.T.S.

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 #SXX1255993/1)



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)



4 34372 - ERICSSON 4480 RADIO
SCALE: N.T.S.

3 34373 - ERICSSON 4460 RADIO B2/25 B66
SCALE: N.T.S.

SUPPLEMENTAL

SHEET NUMBER: REVISION:

R-607

0

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RD048 | 3.4L | 48kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

Model Number
48kW: G0071940

Standby Power Rating
48 kW, 60 Hz

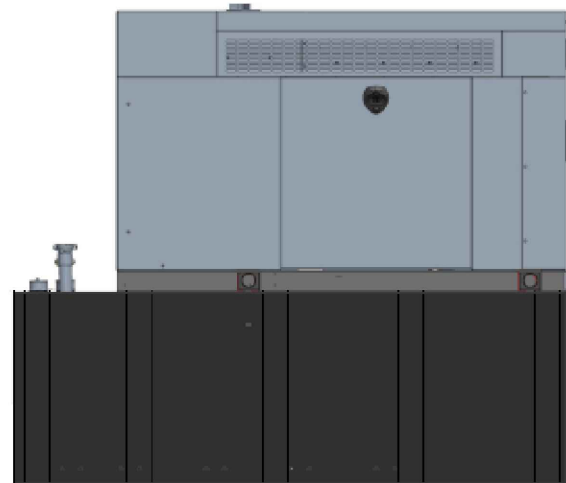


Image used for illustration purposes only



CODES AND STANDARDS

Not all codes and standards apply to all configurations. Contact factory for details.

- UL2200, UL508, UL489, UL142
- CSA C22.2
- BS5514 and DIN 6271
- SAE J1349
- NFPA 37, 70, 99
- ISO 3046, 8528, 9001
- NEMA ICS1, ICS10, MG1, 250, ICS6, AB1
- ANSI/IEEE C62.41

POWERING AHEAD

For over 50 years, Generac has led the industry with innovative design and superior manufacturing. Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac's gensets utilize a wide variety of options, configurations and arrangements, allowing us to meet the standby power needs of practically every application. Generac searched globally to ensure the most reliable engines power our generators. We choose only engines that have already been proven in heavy-duty industrial application under adverse conditions.

Generac is committed to ensuring our customers' service support continues after their generator purchase.

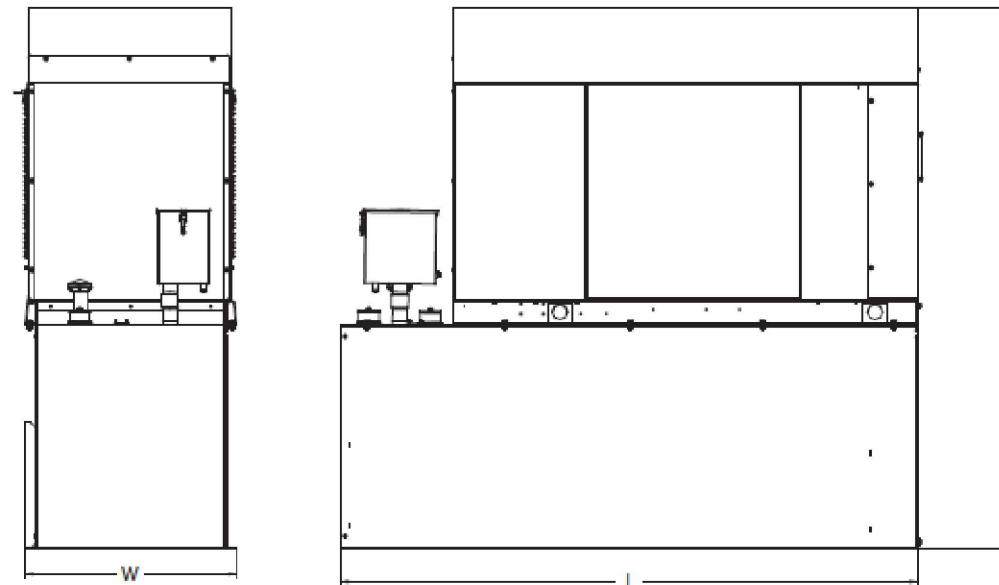
RD048 | 3.4L | 48kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

DIMENSIONS AND WEIGHTS*



Weights and Dimensions

Unit Weight - lbs	Unit Weight with Skid - lbs	Dimensions (L x W x H) - in
2,915	2,954	103.4 (2,625) x 35.0 (888) x 90.0 (2,286)

48kW Fuel Consumption

Fuel Tank Gross Total Capacity	240
Fuel Tank Gross Usable Capacity	229
Fuel Tank Net Usable Capacity (Run Hours Based on Net Usable Capacity)	206
Run Hours 100% Load	52
Run Hours 75% Load	67
Run Hours 50% Load	96

* All measurements are approximate and for estimation purposes only.

Sound Emission Data

Rated Load Sound Output at 23ft - dB(A)	65
---	----

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

SPEC SHEET 1 OF 4

SPEC SHEET 2 OF 4

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.

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P: (262) 344-4811 ©2018 Generac Power Systems, Inc. All rights reserved. All specifications are subject to change without notice.

Part No. 1000042700
Rev. 3 08/30/18

1 PROPOSED GENERATOR

SCALE: NOT TO SCALE

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

SUPPLEMENTAL

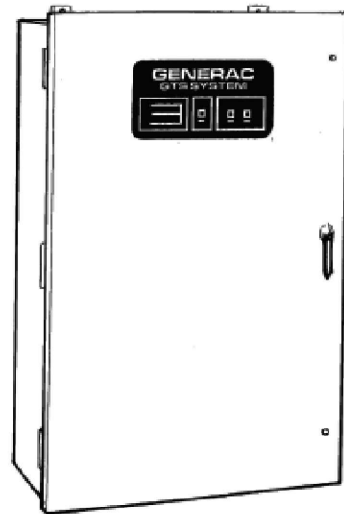
SHEET NUMBER:
R-608

REVISION:
0

100 - 400 Amps,
600 VAC

Automatic Transfer Switches

100 - 400 Amps, 600 VAC
1 of 2
100 - 400 Amps, 600 VAC
2 of 2



- Standard time delay neutral will reduce switchover problems.
- Logic control with inphase monitor regulates switch functions and allows adjustable switch settings with LED indicators.
- Control switches located on the front of the door for ease of operation.
- All switches are UL 1008 listed and CSA certified.
- Electrically-operated, mechanically-held and interlocked main contacts with break before make design for fast, positive connections.
- Rated for all classes of load, 100% equipment rated, both inductive and resistive with no derations.
- 2, 3, and 4 Pole 600 VAC contactors.
- 160 millisecond transfer time.

Standard Features

- Single coil design, electrically operated and mechanically held
- Programmable exerciser
- Main contacts are silver alloy to resist welding and sticking
- Conformal coating protects all printed circuit boards
- Indicating LED's for switch position—Normal, Emergency, and Standby Operating
- NEMA 1 enclosure with hinged door and key-locking handle
- Three-position switch—Fast Test, Auto, Normal Test
- Arc chutes on main contacts

Optional Accessories

- NEMA 12 enclosure
- NEMA 3R enclosure
- NEMA 4 & 4X enclosure
- Exterior AC meter package
- Controls accessible through door in door design on NEMA type 3R and 4 enclosures – key lock provided on access door
- 4-pole design for neutral isolation
- Single or double sets of auxiliary contacts
- Preferred source selector switch
- Manual 3 position selector switch
- Remote automatic control circuit
- Signal before transfer contacts
- Return to normal timer bypass

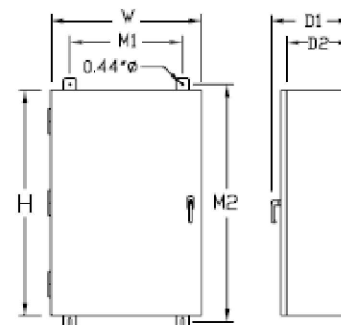
GTS Control Systems

LOGIC CONTROL w / Inphase Monitor	
Utility Voltage	
Dropout	75-95% (Adj.)
Pickup	85-95% (Adj.)
Line Interrupt	0.1-10 Sec. (Adj.)
Engine Minimum Run	5-30 Min. (Adj.)
Engine Warmup	5 Sec.-3 Min. (Adj.)
Return to Utility	1-30 Min. (Adj.)
Engine Cooldown	1-30 Min. (Adj.)
Standby Voltage	85-95% (Adj.)
Standby Frequency	80-90% (Adj.)
Time Delay Neutral	0.1-10 Sec. (Adj.)
Transfer on Exercise	On/Off Switch
Warmup Timer Bypass	On/Off Switch
Time Delay Neutral Bypass	On/Off Switch
Inphase Monitor	On/Off Switch

Withstand Current - 600 Volt GTS Series

GTS Rated Amps	100	150	200	300	400
FUSE PROTECTED					
Maximum RMS Symmetrical Fault Current – Amps	200,000	200,000	200,000	200,000	200,000
Maximum Fuse Size – Amps	200	400	400	600	600
Fuse Class	J,T	J,T	J,T	J,T	J,T
CIRCUIT BREAKER PROTECTED (See separate sheet for specific circuit breakers)					
Maximum RMS Symmetrical Fault Current – Amps	14,000	25,000	25,000	35,000	35,000
Protective Device Continuous Rating (Max) – Amps	150	300	300	600	600

• Tested in accordance with the withstand and closing requirements of UL 1008 and CSA Standards
• Current ratings are listed @ 480 VAC



Unit Dimensions

GTS Rated Amps	Voltage	Enclosure Height	Enclosure Width	Wall Mount Bolt Pattern		Enclosure Depth		Weight (lbs.)
		H	W	M1	M2	D1	D2	
100	All	36	24	18	37.5	12.7	10	160
150-200	120/240	36	24	18	37.5	12.7	10	185
150-200	120/208	36	24	18	37.5	12.7	10	185
150-200	277/480	48*	30*	24	49.5	14.8	12	265
150-200	600	48*	30*	24	49.5	14.8	12	265
300-400	120/240	36	24	18	37.5	12.7	10	245
300-400	120/208	36	24	18	37.5	12.7	10	245
300-400	277/480	48*	30*	24	49.5	14.8	12	325
300-400	600	48*	30*	24	49.5	14.8	12	325

* Note: On NEMA 1 enclosures only, door overlaps enclosure – door dimensions are 48.8 H X 30.8 W. All dimensions in inches.

Terminal Lug Wire Ranges

GTS RATED AMPS	CONTACTOR TERMINALS (1 LUG PER POLE) LUG WIRE RANGE	# LUGS	NEUTRAL BAR*	GROUND LUG (1 PROVIDED)
			LUG WIRE RANGE	LUG WIRE RANGE
100	2/0 – 14 AWG	4	2/0 – 14 AWG	2/0 – 14 AWG
150	400MCM – 4 AWG	4	350MCM – 6 AWG	350MCM – 6 AWG
200	400MCM – 4 AWG	4	350MCM – 6 AWG	350MCM – 6 AWG
300	600MCM – 4 AWG	4	600MCM – 4 AWG	350MCM – 6 AWG
	or 2 – [250MCM – 1/0 AWG]		[250MCM – 1/0 AWG]**	350MCM – 6 AWG
400	600MCM – 4 AWG	4	600MCM – 4 AWG	350MCM – 6 AWG
	or 2 – [250MCM – 1/0 AWG]		[250MCM – 1/0 AWG]**	

* Not included in GTS with switched neutral. ** Allowable wire range in brackets is for 2 wires per lug.

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NOTICE

DISCONNECT FOR
UTILITY POWER TO
GENERATOR IS LOCATED
INSIDE THIS ENCLOSURE

CAUTION: TWO
SOURCES OF SUPPLY.
STANDBY
GENERATOR
LOCATED OUTDOOR.

WARNING

SHOCK HAZARD EXISTS IF
GROUNDING ELECTRODE CONDUCTOR
OR BONDING JUMPER CONNECTION IN
THIS EQUIPMENT IS REMOVED WHILE
ALTERNATE SOURCE(S) IS ENERGIZED

① REQUIRED SIGNS
SCALE: N.T.S.

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED
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SUPPLEMENTAL

SHEET NUMBER: R-610
REVISION: 0

 **WARNING** 

**THIS UNIT MAY START
AUTOMATICALLY. FOLLOW
OPERATING PROCEDURES TO
DISABLE AUTO-START FUNCTION ON
ALL AVAILABLE A.T.S. BEFORE
SERVICING**

**ACCESS
BY AUTHORIZED
PERSONNEL ONLY**

① **REQUIRED SIGNS**
SCALE: N.T.S.

SUPPLEMENTAL

SHEET NUMBER: R-611	REVISION: 0
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Eng. Number 14099860_C8_01
 April 27, 2022
 Page 1

Mount Analysis Report

ATC Site Name : Mdfd - Middlefield, CT
ATC Site Number : 302485
Engineering Number : 14099860_C8_01
Mount Elevation : 63 ft
Carrier : T-Mobile
Carrier Site Name : "CTNH569_American Tower_Monopole_Middlefield"
Carrier Site Number : CTNH569A
Site Location : 134 Kikapoo Road
 Middlefield, CT 06455-1334
 41.51361111 , -72.7458
County : Middlesex
Date : April 27, 2022
Max Usage : 84%
Result : Pass

Prepared By:
 Rohith Koduru
 Structural Engineer I

Reviewed By:



Authorized by "EOR"
 29 Apr 2022 03:54:24 cosign

COA: PEC.0001553

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Introduction

The purpose of this report is to summarize results of the mount analysis performed for T-Mobile at 63 ft.

Supporting Documents

Specifications Sheet	Site Pro 1 RMQP-4096-HK, dated May 23, 2021
Radio Frequency Data Sheet	RFDS ID #CTNH569A, dated March 15, 2022

Analysis

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

Basic Wind Speed:	119 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.00" radial ice concurrent
Codes:	ANSI/TIA-222-H
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat Topped Ridge
Crest Height (H):	309 ft
Crest Length (L):	422 ft
Spectral Response:	Ss = 0.207, S1 = 0.055
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. The mount can support the equipment as described in this report.

- Analysis based on new installation of Site Pro 1 RMQP-4096-HK Platform w/ Handrails(s) (M2050R(2500)-4[6]).

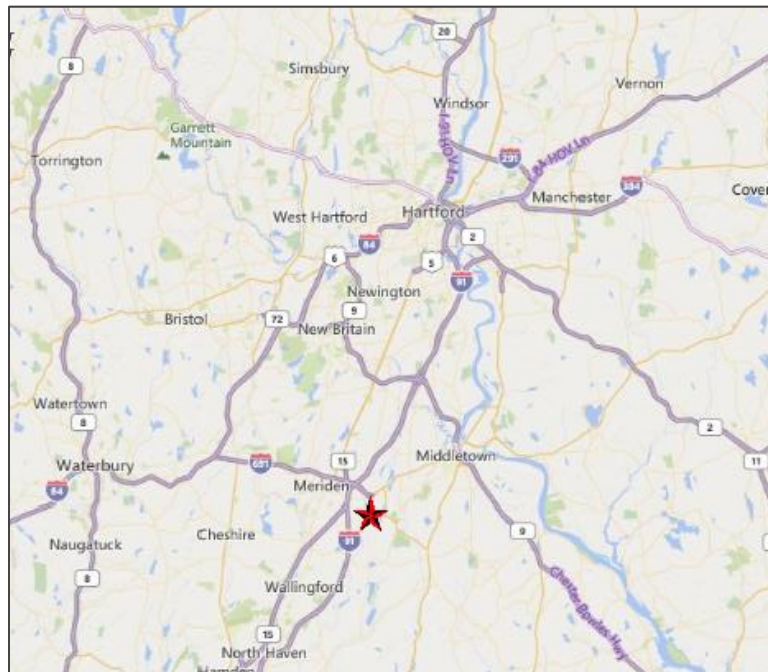
If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

SUPPLEMENTAL

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.

SHEET NUMBER: R-612	REVISION: 0
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VICINITY MAP



AMERICAN TOWER®

SITE NAME: MFD - MIDDLEFIELD
 SITE NUMBER: 302485
 ATC PROJECT NUMBER: 14099860_C6_07
 SITE ADDRESS: 134 KIKAPOO ROAD
 MIDDLEFIELD, CT 06455



LOCATION MAP

75 FT MONOPOLE MODIFICATIONS

PROJECT TEAM	PROJECT DESCRIPTION	SHEET	SHEET TITLE	REV.	
<p>TOWER OWNER AMERICAN TOWER 10 PRESIDENTAL WAY WOBURN, MA 01801</p> <p>ENGINEERED BY ATC TOWER SERVICES 3500 REGENCY PARKWAY, SUITE 100 CARY, NC 27518</p> <p>CARRIER INFORMATION CARRIER: T-MOBILE CARRIER SITE NAME: "CTNH569_AMERICAN TOWER_MONOPOLE_MIDDLEFIELD" CARRIER SITE NUMBER: CTNH569A</p>	<p>THE PROJECT DEPICTED IN THESE PLANS ARE BASED ON THE RECOMMENDATIONS OUTLINED IN THE STRUCTURAL ANALYSIS COMPLETED UNDER ENGINEERING PROJECT NUMBER 14099860_C3_04 DATED 05/04/22. SATISFACTORY COMPLETION OF THE WORK INDICATED IN THESE PLANS WILL RESULT IN THE STRUCTURE MEETING THE REQUIREMENTS OF THE SPECIFICATIONS UNDER WHICH THE STRUCTURAL WAS COMPLETED.</p> <p>PROJECT NOTE</p> <p>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 § 1.6100 (B)(7).</p> <p>COMPLIANCE CODE</p> <p>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.</p> <p>1. ANSI/TIA/EIA: STRUCTURAL STANDARDS (222-H EDITION) 2. INTERNATIONAL BUILDING CODE (2015 IBC) 3. CONNECTICUT STATE BUILDING CODE (2018)</p> <p>PROJECT LOCATION GEOGRAPHIC COORDINATES LATITUDE: 41.51361111 LONGITUDE: -72.7458</p>	G-002	IBC GENERAL NOTES	0	
		G-003	SPECIAL INSPECTION CHECKLIST	0	
		G-004	BILL OF MATERIALS	0	
		C-101	DETAILED SITE PLAN	0	
		S-201	MODIFICATION PROFILE	0	
		S-501	REINFORCEMENT INSTALLATION DETAILS	0	
		S-502	REINFORCEMENT INSTALLATION DETAILS (CONT'D)	0	
		S-503	#20 STEP BOLT BRACKET INSTALLATION DETAILS	0	



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 COA: PEC.0001553

THESE DRAWINGS AND/OR THE ACCOMPANYING SPECIFICATION AS INSTRUMENTS OR SERVICE ARE THE EXCLUSIVE PROPERTY OF AMERICAN TOWER. THEIR USE AND PUBLICATION SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO AMERICAN TOWER OR THE SPECIFIED CARRIER IS STRICTLY PROHIBITED. TITLE TO THESE DOCUMENTS SHALL REMAIN THE PROPERTY OF AMERICAN TOWER WHETHER OR NOT THE PROJECT IS EXECUTED. NEITHER THE ARCHITECT NOR THE ENGINEER WILL BE PROVIDING ON-SITE CONSTRUCTION REVIEW OF THIS PROJECT. CONTRACTOR(S) MUST VERIFY ALL DIMENSIONS AND ADVISE AMERICAN TOWER OF ANY DISCREPANCIES. ANY PRIOR ISSUANCE OF THIS DRAWING IS SUPERSEDED BY THE LATEST VERSION ON FILE WITH AMERICAN TOWER.

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	KPJ	09/22/22

ATC SITE NUMBER:
 302485

ATC SITE NAME:
 MFD - MIDDLEFIELD
 CONNECTICUT

SITE ADDRESS:
 134 KIKAPOO ROAD
 MIDDLEFIELD, CT 06455



DRAWN BY:	KPJ
APPROVED BY:	MER
DATE DRAWN:	09/22/22
ATC JOB NO:	14099860_C6_07

COVER

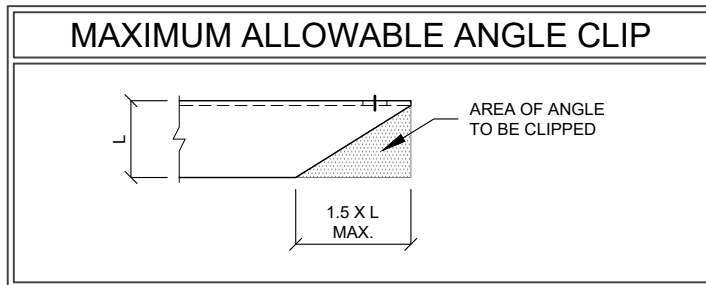
SHEET NUMBER: **G-001** REVISION: **0**

GENERAL

- ALL WORK TO BE COMPLETED PER APPLICABLE LOCAL, STATE, FEDERAL CODES AND ORDINANCES AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS FOR WIRELESS TOWER SITES. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND ABIDING BY ALL REQUIRED PERMITS.
- ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TOWER AND FOUNDATION CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY OF ANY INSTALLATION INTERFERENCES. ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS. DETAILS NOT SPECIFICALLY SHOWN ON THE DRAWINGS SHALL FOLLOW SIMILAR DETAILS FOR THIS JOB.
- ANY SUBSTITUTIONS SHALL CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
- ANY MANUFACTURED DESIGN ELEMENTS SHALL CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS AND SHOULD BE SIMILAR TO THOSE SHOWN. THESE DESIGN ELEMENTS MUST BE STAMPED BY AN ENGINEER PROFESSIONALLY REGISTERED IN THE STATE OF THE PROJECT, AND SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL CODES AND OSHA SAFETY REGULATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY, PER ANSI/TIA-322 AND ANSI/ASSE A10.48, TO PROVIDE A COMPLETE AND STABLE STRUCTURE AS SHOWN ON THESE DRAWINGS.
- CONTRACTOR'S PROPOSED INSTALLATION SHALL NOT INTERFERE, NOR DENY ACCESS TO, ANY EXISTING OPERATIONAL AND SAFETY EQUIPMENT.

STRUCTURAL STEEL

- ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATIONS, LATEST EDITION.
- 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.
- ALL U-BOLTS SHALL BE ASTM A36 OR EQUIVALENT, WITH LOCKING DEVICE, UNLESS NOTED OTHERWISE.
- FIELD CUT EDGES, EXCEPT DRILLED HOLES, SHALL BE GROUND SMOOTH.
- ALL FIELD CUT SURFACES, FIELD DRILLED HOLES & 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 MANUFACTURERS RECOMMENDATIONS.
- ALL STRUCTURAL STEEL EMBEDDED IN THE CONCRETE SHALL BE APPLIED WITH (2) BRUSHED COATS OF POLYGUARD CA-9 MASTIC OR EQUIVALENT. REFER TO THE MANUFACTURER SPECIFICATIONS FOR SURFACE PREPARATION AND APPLICATION. APPLICATION OF POLYGUARD 400 WRAP IS NOT ESSENTIAL.
- CONTRACTOR SHALL PERFORM WORK ON ONLY ONE (1) TOWER FACE AND REPLACE/REINFORCE ONE (1) BOLT/MEMBER AT A TIME.
- ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.



PAINT

- AS REQUIRED, CLEAN AND PAINT PROPOSED STEEL ACCORDING TO FAA ADVISORY CIRCULAR AC 70/7460-1L.

WELDING

- ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
- ALL WELDS SHALL BE INSPECTED VISUALLY. IF DIRECTED BY ENGINEER OF RECORD, 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE (100% IF REJECTABLE DEFECTS ARE FOUND) TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.
- INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
- ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER AND/OR BASE METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.
- IN CASES WHERE BASE METAL GRADE IS UNKNOWN, ALL WELDING ON LATTICE TOWERS SHALL BE DONE WITH E70XX ELECTRODES; ALL WELDING ON POLE STRUCTURES SHALL BE DONE WITH E80XX ELECTRODES, UNLESS NOTED OTHERWISE.
- PRIOR TO FIELD WELDING GALVANIZED MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING 1/2" 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.

BOLT TIGHTENING PROCEDURE

- STRUCTURAL CONNECTIONS TO BE ASSEMBLED AND INSPECTED IN ACCORDANCE WITH RCSC SPECIFICATIONS.
- FLANGE BOLTS SHALL BE INSTALLED AND TIGHTENED USING DIRECT TENSION INDICATING (DTI) SQUIRTER WASHERS. DTI SQUIRTER WASHERS ARE TO BE INSTALLED AND ORIENTED / TIGHTENED PER MANUFACTURER SPECIFICATIONS TO ACHIEVE DESIRED LEVEL OF BOLT PRE-TENSION.
- IN LIEU OF USING DTI SQUIRTER WASHERS, FLANGE BOLTS MAY BE TIGHTENED USING AISC / RCSC "TURN-OF-THE-NUT" METHOD, PENDING APPROVAL BY THE ENGINEER OF RECORD (EOR). TIGHTEN FLANGE BOLTS USING THE CHART BELOW:

BOLT LENGTHS UP TO AND INCLUDING FOUR DIAMETERS

1/2"	BOLTS UP TO AND INCLUDING 2.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
5/8"	BOLTS UP TO AND INCLUDING 2.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
3/4"	BOLTS UP TO AND INCLUDING 3.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
7/8"	BOLTS UP TO AND INCLUDING 3.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1"	BOLTS UP TO AND INCLUDING 4.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-1/8"	BOLTS UP TO AND INCLUDING 4.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-1/4"	BOLTS UP TO AND INCLUDING 5.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-3/8"	BOLTS UP TO AND INCLUDING 5.5 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-1/2"	BOLTS UP TO AND INCLUDING 6.0 INCH LENGTH	+1/3 TURN BEYOND SNUG TIGHT

BOLT LENGTHS OVER FOUR DIAMETERS BUT NOT EXCEEDING EIGHT DIAMETERS

1/2"	BOLTS 2.25 TO 4.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
5/8"	BOLTS 2.75 TO 5.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
3/4"	BOLTS 3.25 TO 6.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
7/8"	BOLTS 3.75 TO 7.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1"	BOLTS 4.25 TO 8.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/8"	BOLTS 4.75 TO 9.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/4"	BOLTS 5.25 TO 10.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-3/8"	BOLTS 5.75 TO 11.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/2"	BOLTS 6.25 TO 12.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT

- SPLICE BOLTS SUBJECT TO DIRECT TENSION SHALL BE INSTALLED AND TIGHTENED AS PER SECTION 8.2.1 OF THE AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS", LOCATED IN THE AISC MANUAL OF STEEL CONSTRUCTION. THE INSTALLATION PROCEDURE IS PARAPHRASED AS FOLLOWS:

FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES AND TIGHTENED BY ONE OF THE METHODS DESCRIBED IN SUBSECTION 8.2.1 THROUGH 8.2.4.

8.2.1 TURN-OF-NUT PRETENSIONING

BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE CONNECTION AND BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1, UNTIL ALL THE BOLTS ARE SIMULTANEOUSLY SNUG TIGHT AND THE CONNECTION IS FULLY COMPACTED. FOLLOWING THIS INITIAL OPERATION ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED FURTHER BY THE APPLICABLE AMOUNT OF ROTATION SPECIFIED ABOVE. DURING THE TIGHTENING OPERATION THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING SHALL PROGRESS SYSTEMATICALLY.

- ALL OTHER BOLTED CONNECTIONS SHALL BE BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8.1 OF THE SPECIFICATION.

ALL BOLT HOLES SHALL BE ALIGNED TO PERMIT INSERTION OF THE BOLTS WITHOUT UNDUE DAMAGE TO THE THREADS. BOLTS SHALL BE PLACED IN ALL HOLES WITH WASHERS POSITIONED AS REQUIRED AND NUTS THREADED TO COMPLETE THE ASSEMBLY. COMPACTING THE JOINT TO THE SNUG-TIGHT CONDITION SHALL PROGRESS SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT. THE SNUG-TIGHTENED CONDITION IS THE TIGHTNESS THAT IS ATTAINED WITH A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRONWORKER USING AN ORDINARY SPUD WRENCH TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.

APPLICABLE CODES AND STANDARDS

- ANSI/TIA: STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES, 222-H EDITION.
- 2018 CONNECTICUT STATE BUILDING CODE.
- 2015 INTERNATIONAL BUILDING CODE.
- ACI 318: AMERICAN CONCRETE INSTITUTE, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE. REFERENCE LATEST APPROPRIATE EDITION TO MATCH LOCAL AND/OR INTERNATIONAL BUILDING CODE(S) LISTED ABOVE.
- CRSI: CONCRETE REINFORCING STEEL INSTITUTE, MANUAL OF STANDARD PRACTICE, LATEST EDITION.
- AISC: AMERICAN INSTITUTE OF STEEL CONSTRUCTION, MANUAL OF STEEL CONSTRUCTION, LATEST EDITION.
- AWS: AMERICAN WELDING SOCIETY D1.1, STRUCTURAL WELDING CODE, LATEST EDITION.

SPECIAL INSPECTION

- A QUALIFIED INDEPENDENT TESTING LABORATORY, EMPLOYED BY THE OWNER, SHALL PERFORM INSPECTION AND TESTING IN ACCORDANCE WITH IBC 2015, SECTION 1704 AS REQUIRED BY PROJECT SPECIFICATIONS FOR THE FOLLOWING CONSTRUCTION WORK:
 - STRUCTURAL WELDING (CONTINUOUS INSPECTION OF FIELD WELD ONLY)
 - HIGH STRENGTH BOLTS (PERIODIC INSPECTION OF A325 EXTENSION FLANGE BOLTS TO BE TIGHTENED PER "TURN-OF-THE-NUT" METHOD)
- THE INSPECTION AGENCY SHALL SUBMIT INSPECTION AND TEST REPORTS TO THE BUILDING DEPARTMENT, THE ENGINEER OF RECORD, AND THE OWNER IN ACCORDANCE WITH IBC 2015, SECTION 1704, UNLESS THE FABRICATOR IS APPROVED BY THE BUILDING OFFICIAL TO PERFORM SUCH WORK WITHOUT THE SPECIAL INSPECTIONS.



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REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	KPJ	09/22/22

ATC SITE NUMBER:
302485

ATC SITE NAME:
**MDFD - MIDDLEFIELD
CONNECTICUT**

SITE ADDRESS:
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455



DRAWN BY:	KPJ
APPROVED BY:	MER
DATE DRAWN:	09/22/22
ATC JOB NO:	14099860_C6_07

IBC GENERAL NOTES	
SHEET NUMBER: G-002	REVISION: 0

MODIFICATION INSPECTION NOTES

THE SPECIAL INSPECTION (SI) PROCEDURE IS INTENDED TO CONFIRM THAT CONSTRUCTION AND INSTALLATION MEETS ENGINEERING DESIGN, ATC PROCEDURES AND ATC STANDARD SPECIFICATIONS FOR WIRELESS TOWER SITES.

TO ENSURE THAT THE REQUIREMENTS OF THE SI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR AND THE INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PO IS RECEIVED FROM AMERICAN TOWER CORPORATION (ATC). IT IS EXPECTED THAT EACH PARTY WILL PROACTIVELY REACH OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT YOUR AMERICAN TOWER POINT OF CONTACT.

SPECIAL INSPECTOR

THE SPECIAL INSPECTOR IS REQUIRED TO CONTACT THE GENERAL CONTRACTOR AS SOON AS RECEIVING A PO FROM ATC. UPON RECEIVING A PO FROM ATC THE SPECIAL INSPECTOR AT A MINIMUM MUST:

- REVIEW THE REQUIREMENTS OF THE SI CHECKLIST.
- WORK WITH THE GENERAL CONTRACTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS.
- ANY CONCERNS WITH THE SCOPE OF WORK OR PROJECT COMMITMENT MUST BE RELAYED TO THE ATC POINT OF CONTACT IMMEDIATELY.

THE SPECIAL INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR INSPECTION AND TEST REPORTS, REVIEWING THESE DOCUMENTS FOR ADHERENCE TO CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS, AND SUBMITTING THE SI REPORT TO AMERICAN TOWER CORPORATION.

GENERAL CONTRACTOR

THE GENERAL CONTRACTOR IS REQUIRED TO CONTACT THE SI INSPECTOR AS SOON AS RECEIVING A PO FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE SI CHECKLIST.
- WORK WITH THE SI TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS.
- BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS.

THE GENERAL CONTRACTOR SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE SI CHECKLIST.

SPECIAL INSPECTION CHECKLIST

INSPECTION DOCUMENT	DESCRIPTION	INSPECTION TESTING REQUIRED	RESPONSIBILITY	SI REVIEW REQUIRED			INSPECTION FREQUENCY	
				PRE CX	DURING CX	POST CX	PERIODIC	CONTINUOUS
SPECIAL INSPECTION FIELD WORK & REPORT	DOCUMENTATION AND SITE VISIT CONDUCTED BY AN ATC APPROVED SPECIAL INSPECTOR AS REQUIRED BY ATC AND OTHER AUTHORITIES HAVING JURISDICTION. INSPECTION PARAMETERS TO FOLLOW ATC'S STANDARD SPECIFICATION FOR WIRELESS TOWER SITES.	✓	SI			✓		
ENGINEERING ASSEMBLY DRAWINGS	GC SHALL SUBMIT DRAWINGS TO SI FOR INCLUSION IN SI REPORT	✓	GC	✓				
FABRICATED MATERIAL VERIFICATION & INSPECTION	MTR AND OR MILL CERTIFICATIONS FOR SUPPLIED MATERIALS GC SHALL SUPPLY SI WITH REPORTS TO BE INCLUDED IN SI REPORT WHEN REQUIRED BY ATC	✓	SI	✓				
CERTIFIED WELD INSPECTION	INSPECTION AND REPORT OF STRUCTURAL WELDING PERFORMED DURING PROJECT COMPLETED BY A CWI AND INCLUDED WITHIN SI REPORT		GC / TA					
FOUNDATION INSPECTION & VERIFICATION	VISUAL OBSERVATION AND APPROVAL OF FOUNDATION EXCAVATION, REBAR PLACEMENT, CASING/SHORING/FORMING PLACEMENT, AND ANCHOR TEMPLATE AND ANCHOR PLACEMENT - TO BE SI APPROVED PRIOR TO CONCRETE POUR AND DOCUMENTED IN THE SI REPORT		SI					
ANCHOR, ROCK ANCHOR OR HELICAL PULL-OUT TEST	PULL TESTING OF INSTALLED ANCHORS TO BE COMPLETED AND DOCUMENTED IN SI REPORT		GC / TA					
CONCRETE INSPECTION & VERIFICATION	CONCRETE MIX DESIGN, SLUMP TEST, COMPRESSIVE TESTING, AND SAMPLE GATHERING TECHNIQUES ARE TO BE PROVIDED FOR INCLUSION IN THE SI REPORT. SI SHALL VERIFY CONCRETE PLACEMENT AS REQUIRED BY THE DESIGN DOCUMENTS (INSPECTION FREQUENCY IS MARKED CONTINUOUS)		GC / TA					
DYWIDAG PLACEMENT/ANCHOR BOLT EMBEDMENT - EPOXY/GROUT INSTALL	ANCHOR/BAR EMBEDMENT, HOLE SIZE, EPOXY/GROUT TYPE, INSTALLATION TEMPERATURE AND INSTALLATION SHALL BE VERIFIED BY THE SI AND INCLUDED IN THE SI REPORT		GC / SI					
BASE PLATE GROUT INSPECTION & VERIFICATION	BASE PLATE GROUTING TYPE AND PLACEMENT SHALL BE CONFIRMED BY THE SI AND INCLUDED IN THE SI REPORT		GC / SI					
EARTHWORK INSPECTION & VERIFICATION	EXCAVATION, FILL, SLOPE, GRADE AND OTHER EARTHWORK REQUIREMENTS PER PLANS SHALL BE VERIFIED BY THE SI AND INCLUDED IN THE SI REPORT		GC / TA					
COMPACTION VERIFICATION	CONTRACTOR SHALL PROVIDE AN INDEPENDENT THIRD PARTY CERTIFIED INSPECTION WHICH PROVIDES TEST RESULTS FOR COMPACTION TEST OF SOILS IN PLACE TO ASTM STANDARDS.		GC / TA					
GROUND TESTING & VERIFICATION	GC SHALL PROVIDE DOCUMENTATION SHOWING THAT THE GROUNDING SYSTEM SHALL HAVE A MEASURED RESISTANCE TO THE GROUND OF NOT MORE THAN THE RECOMMENDED 10 OHMS. PER THE ATC CONSTRUCTION SPECIFICATION UNDER SECTION 2.15 THIS DOCUMENTATION MUST BE AN INDEPENDENT CERTIFICATION.		GC					
STEEL CONSTRUCTION INSPECTION & VERIFICATION	VISUAL OBSERVATION AND APPROVAL OF STEEL CONSTRUCTION TO BE PERFORMED BY THE SI. INSPECTION TO INCLUDE VERIFICATION OF NEW CONSTRUCTION OR MODIFICATION OF EXISTING CONSTRUCTION PER ENGINEERED PLANS. DETAILED VERIFICATION SHALL BE INCLUDED IN SI REPORT.	✓	SI			✓	✓	
ON-SITE COLD GALVANIZING VERIFICATION	SI SHALL VERIFY WITH GC ALL COLD GALVANIZATION TYPE AND APPLICATION AND INCLUDE SUMMARY IN SI REPORT	✓	GC			✓	✓	
GUY WIRE TENSIONING & TOWER ALIGNMENT REPORT	GC SHALL PROVIDE SI EVIDENCE OF PROPER GUY TENSIONING AND TOWER PLUMB PER PLANS. SI SHALL VERIFY AND INCLUDE PLUMB AND TENSION REPORTING IN SI REPORT.		GC					
GC AS-BUILT DRAWINGS WITH CONSTRUCTION RED-LINES	GC SHALL SUBMIT "AS-BUILT" DRAWINGS INDICATING ANY APPROVED CHANGES TO ENGINEERED PLANS TO SI FOR APPROVAL/REVIEW AND INCLUSION IN SI REPORT	✓	GC			✓		
SI AS-BUILT DRAWINGS WITH INSPECTION RED-LINES (AS REQUIRED)	SI SHALL SUBMIT "AS-BUILT" DRAWINGS INDICATING ANY APPROVED CHANGES TO ENGINEERED PLANS WITHIN SI REPORT	✓	SI			✓		
TIA INSPECTION	SI SHALL COMPLETE TIA INSPECTION AND PROVIDE SEPARATE TIA INSPECTION DOCUMENTATION TO ATC CM		SI					
PHOTOGRAPHS	PHOTOGRAPHIC EVIDENCE OF SPECIAL INSPECTION, ON SITE REMEDIATION, AND ITEMS FAILING INSPECTION & REQUIRING FOLLOW UP TO BE INCLUDED WITHIN THE SI REPORT. COMPLETE PHOTO LOG IS TO BE SUBMITTED WITHIN SI REPORT.	✓	GC / SI			✓		

NOTE: SPECIAL INSPECTIONS ARE INTENDED TO BE A COLLABORATIVE EFFORT BETWEEN GC AND SI. WHENEVER POSSIBLE GC IS TO PROVIDE SI WITH PHOTOGRAPHIC OR OTHER ACCEPTABLE EVIDENCE OF PROPER INSTALLATION IF PERIODIC INSPECTION FREQUENCY IS ACCEPTABLE. THE GC AND SI SHALL WORK TO COMPILE EVIDENCE OF PROPER CONSTRUCTION AND LIMIT THE NUMBER OF SI SITE VISITS REQUIRED.

TABLE KEY:
 SI - ATC APPROVED SPECIAL INSPECTOR
 GC - GENERAL CONTRACTOR
 TA - 3RD PARTY TESTING AGENCY
 CX - CONSTRUCTION
 CM - CONSTRUCTION MANAGER
 ATC - AMERICAN TOWER CORPORATION



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302485

ATC SITE NAME:

**MDFD - MIDDLEFIELD
 CONNECTICUT**

SITE ADDRESS:

134 KIKAPOO ROAD
 MIDDLEFIELD, CT 06455



DRAWN BY:	KPJ
APPROVED BY:	MER
DATE DRAWN:	09/22/22
ATC JOB NO:	14099860_C6_07

SPECIAL INSPECTION CHECKLIST

SHEET NUMBER:

G-003

REVISION:

0

BILL OF MATERIALS

QUANTITY REQUIRED	QUANTITY PROVIDED	PART NUMBER	DESCRIPTION	LENGTH	SHEET LIST	PART WEIGHT	WEIGHT (lb)	NOTES	
#20 DYWIDAG REINFORCEMENT MATERIAL & HARDWARE									
4	4	DYD-20-ATR-PF	#20 ALL THREAD ROD (PER FT)	15'-0"	S-501	250.5	1002	GALVANIZED	
4	4	DYD-20-COUP-00	#20 COUPLING HDG	----	----	----	----	GALVANIZED	
8	8	DYD-20-HN-00	#20 HEX NUT HDG	----	----	----	----	GALVANIZED	
16	16	BR-20C	L 6" X 3 1/2" X 3/8"	1'-0"	S-501	12.3	0	CONCENTRIC	
4	4	TB-20C-12	L 6" X 3 1/2" X 3/8"	3'-6 3/4"	S-501	43.8	0	CONCENTRIC	
92	97	UB-580-3125	U-BOLT ASSEMBLIES FOR #20 ROD	----	----	----	----	GALVANIZED	
60	63	NG-0625-0875-A490	NEXGEN2 BLIND BOLT ASSEMB., M20 W/ SPRING SLEEVE, A490	----	----	----	----	ALLFASTENERS - 2NG2060	
12	17	#20SB	STEP BOLT WELDMENT	0'-7 1/4"	S-504	2.5	43		
1	1	----	STUD MOUNT CABLE GUIDE - 1/2"Ø	----	----	----	----	ALLFASTENERS - 14AFTRIM12	
1	1	----	ROUND LEG INTERMEDIATE BRACKET	----	----	----	----	ALLFASTENERS - 14AFRHC12	
TOTAL WEIGHT (lb)							1,045	PAGE 1 OF 1	

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APPROVED BY:	MER
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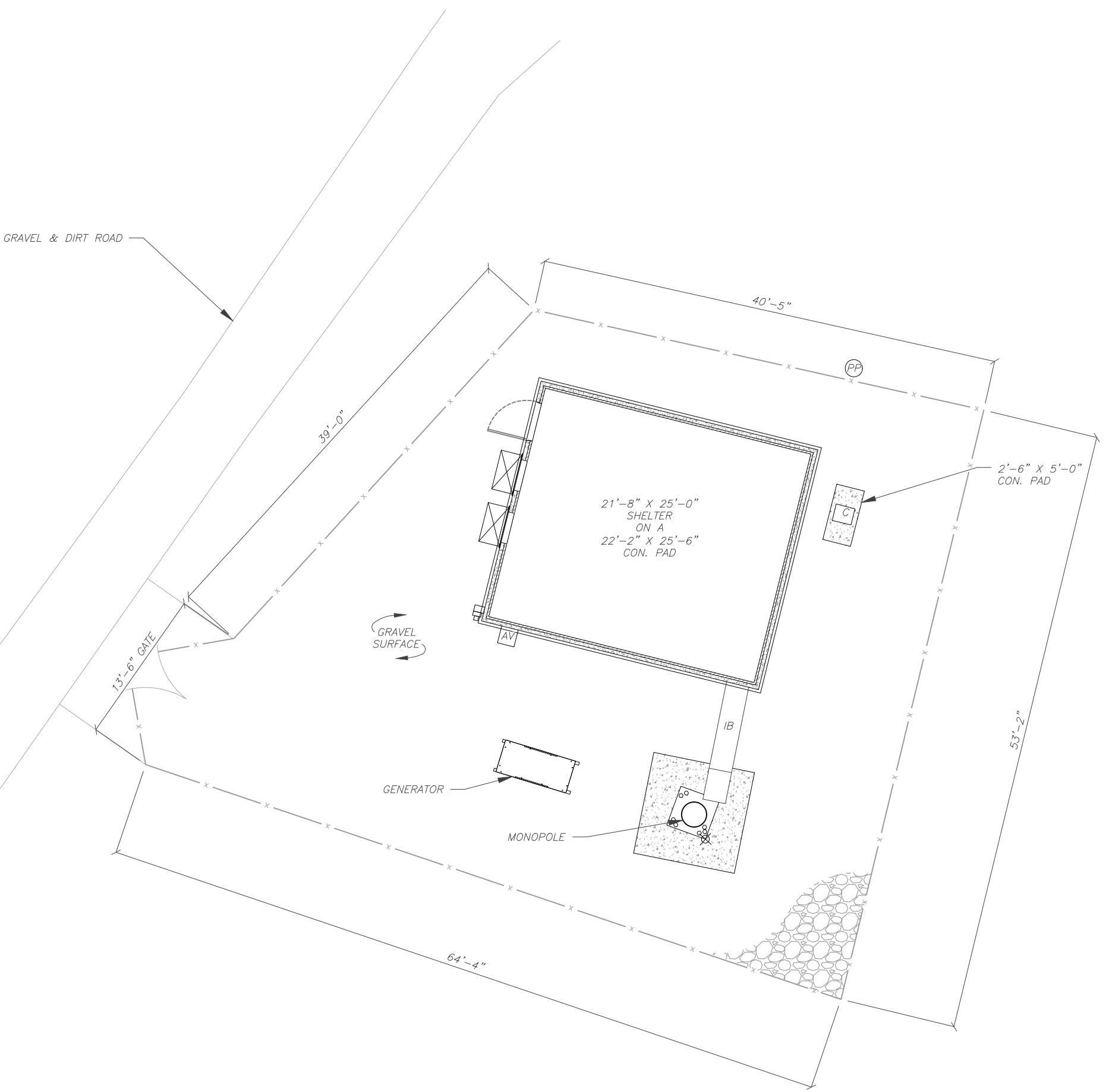
BILL OF MATERIALS

SHEET NUMBER: G-004	REVISION: 0
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LEGEND

⊗	GROUNDING TEST WELL
AV, A/V	AIR VENT
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
C	CABINET
CS	COAX SHROUD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACLE
HH, V	HAND HOLE, VAULT
HFC	HYDROGEN FUEL CELL
HSM	HYDROGEN STORAGE MATERIAL
IB	ICE BRIDGE
K	KENTROX BOX
LC	LIGHTING CONTROL
LPG	LIQUID PROPANE GAS
M	METER
OHW	OVERHEAD WIRE
P	POWER
PB	PULL BOX
PP	POWER POLE
T	TELCO
TRN	TRANSFORMER
---	PROPERTY LINE
- - -	ADJACENT PROPERTY LINE
- · - · -	LEASE AREA
- · - · -	EASEMENT
○ ○ ○	WOOD FENCE
— — —	WIRE FENCE
□ □ □	METAL FENCE
— — —	GUARD RAIL
x x x	CHAINLINK FENCE
— — —	ROAD (DIRT)
— — —	ROAD (STONE)
— — —	ROAD (PAVED)



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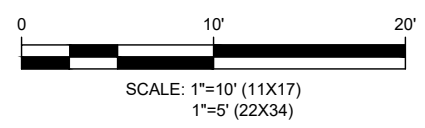
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DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	0



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MODIFICATION PROFILE

SHEET NUMBER:	REVISION:
S-201	0

T-MOBILE
 EL: 63.0' [PROPOSED]

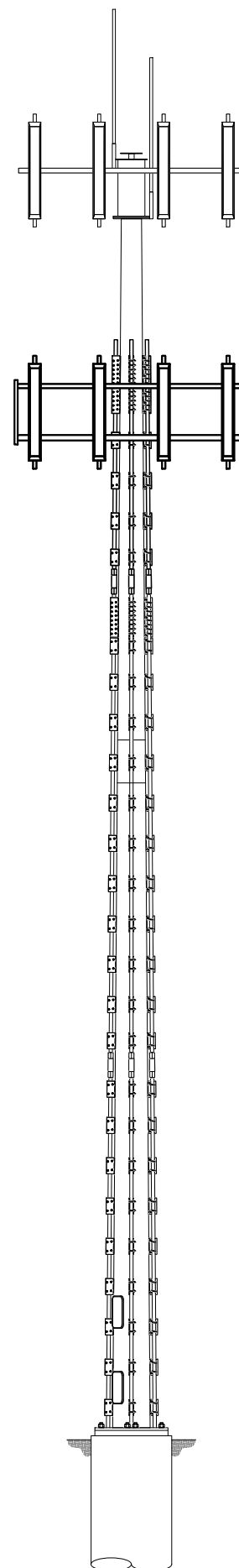
EL: 75.0'
[TOP OF STRUCTURE]

SECTION 2

EL: 42.7'

SECTION 1

EL: 0.0'
[BOTTOM OF STRUCTURE]



INSTALL (4) DYWIDAG
 #20 ALL THREAD RODS
 FROM EL: 52.5' TO 67.5'.
 SEE SHEETS S-501 TO S-503
 FOR INSTALLATION DETAILS.

- NOTES:**
1. PROPOSED #20 DYWIDAG REINFORCEMENT TO BE COUPLED WITH EXISTING #20 DYWIDAG REINFORCEMENT AT EL: 52'-6"±. CONTRACTOR TO VERIFY IN FIELD ORIENTATION WITH BASE PLATE AND EXISTING #20 DYWIDAG REINFORCEMENT.
 2. PROPOSED T-MOBILE COAX TO BE INSTALLED INSIDE MONOPOLE.
 3. CONTACT AMERICAN TOWER FIELD OPERATIONS WHEN EXISTING EQUIPMENT INTERFERES WITH INSTALLATION OF MODIFICATIONS. ONCE APPROVED, EXISTING EQUIPMENT MAY BE TEMPORARILY MOVED DURING INSTALLATION & REINSTALLED TO THE ORIGINAL HEIGHT & LOCATION BY CONTRACTOR POST COMPLETION OF MODIFICATIONS.

TOWER ELEVATION VIEW



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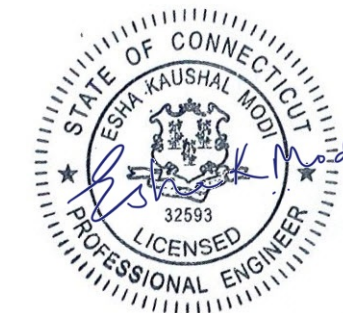
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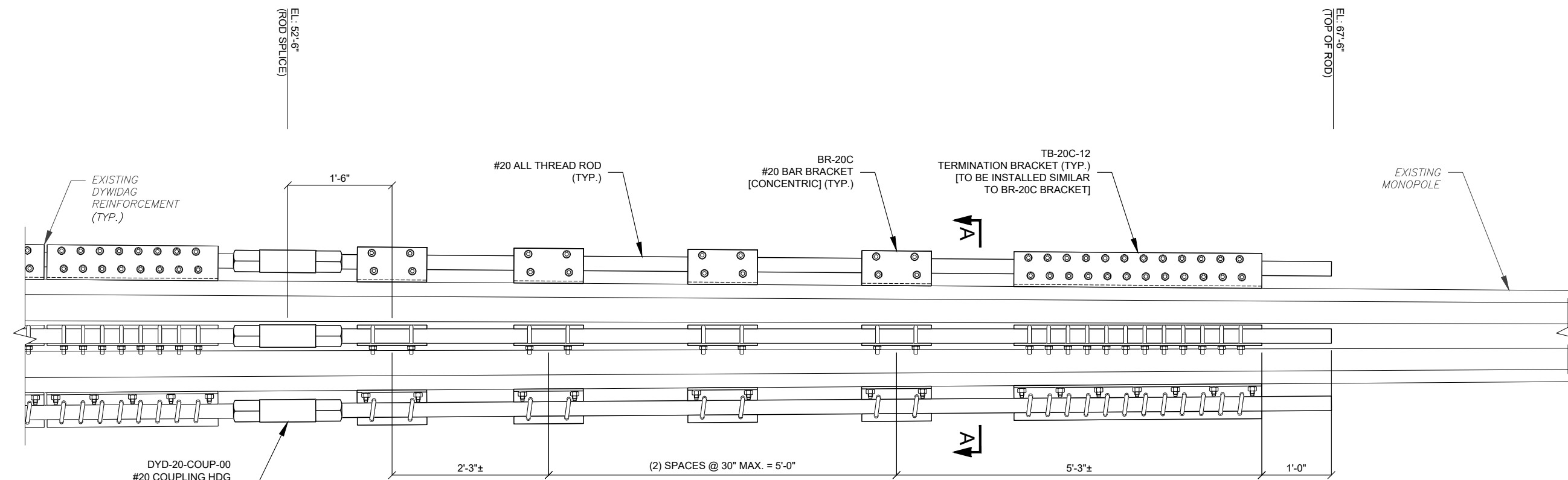
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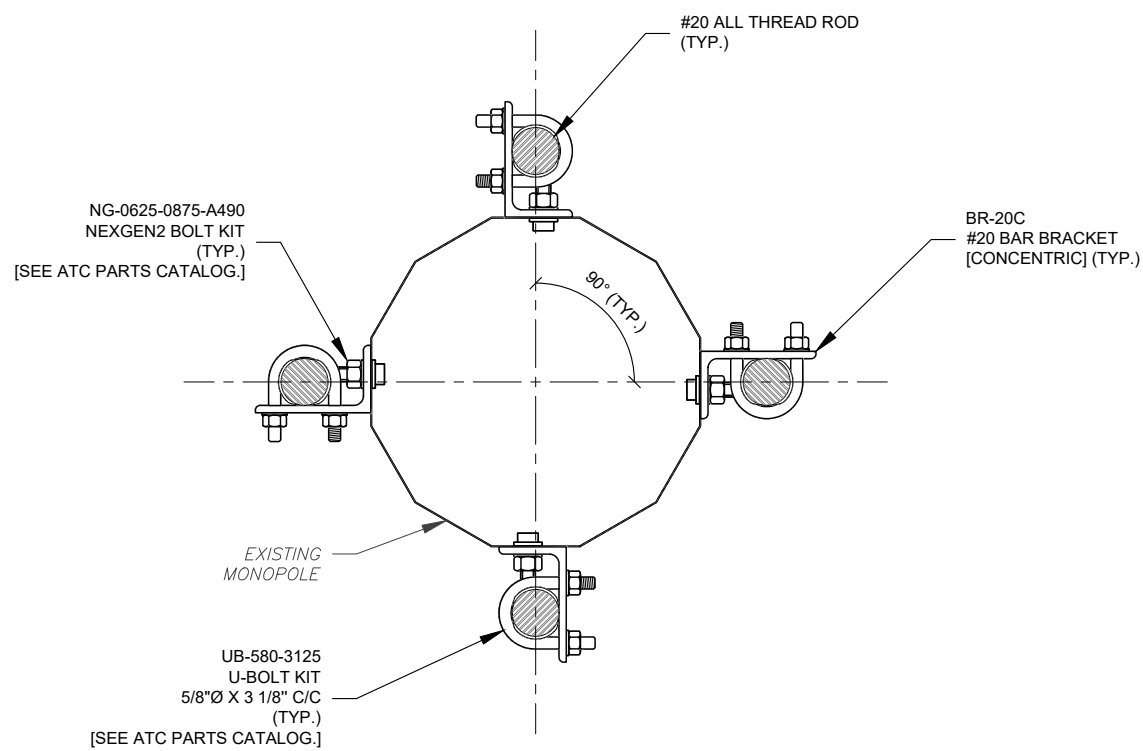
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**REINFORCEMENT
INSTALLATION DETAILS**

SHEET NUMBER:	REVISION:
S-501	0



**ELEVATION VIEW
#20 BAR BRACKET SPACING DETAIL**



**SECTION "A-A"
TYPICAL DETAIL**

- NOTES:**
- REPLACE ANY EXISTING STEP BOLTS THAT INTERFERE WITH THE NEW #20 ALL THREAD ROD REINFORCEMENTS. THE NEW STEP BOLTS SHALL BE ATTACHED TO THE #20 ALL THREAD RODS IN THE SAME APPROXIMATE LOCATION. SEE SHEET S-503 FOR INSTALLATION DETAILS.
 - SEE SHEET S-502 FOR #20 ALL THREAD ROD BRACKET INSTALLATION DETAILS.

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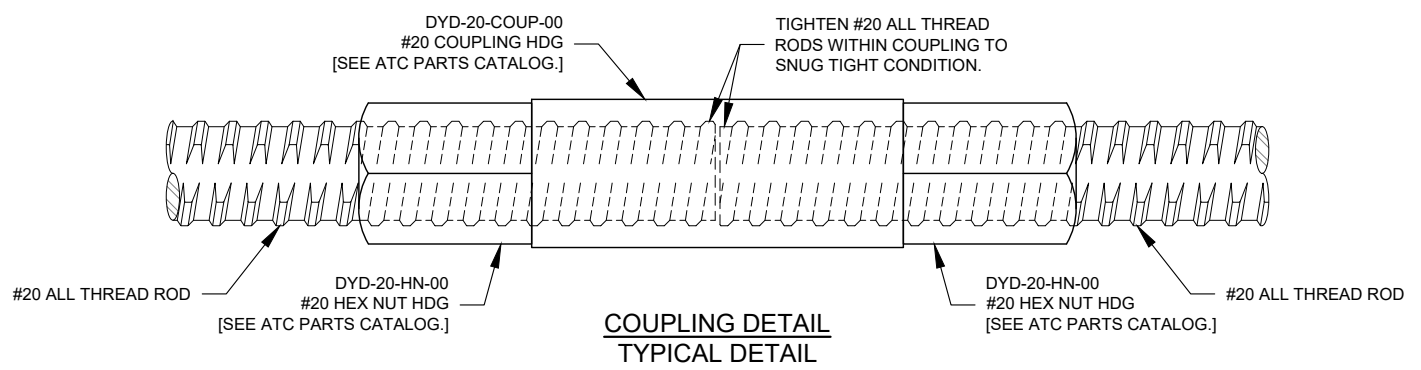
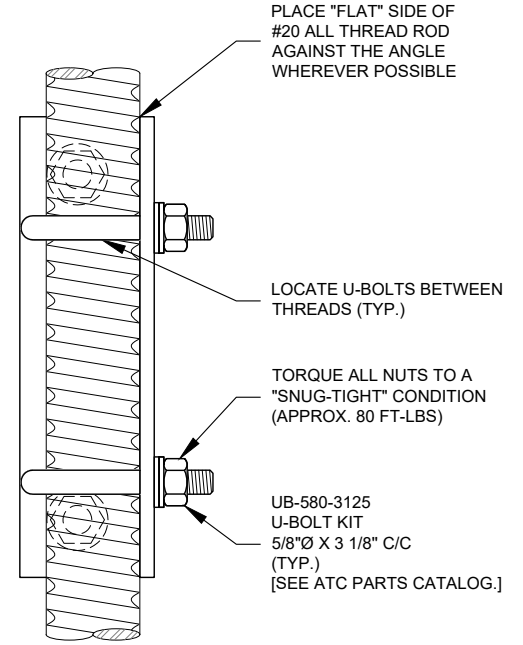
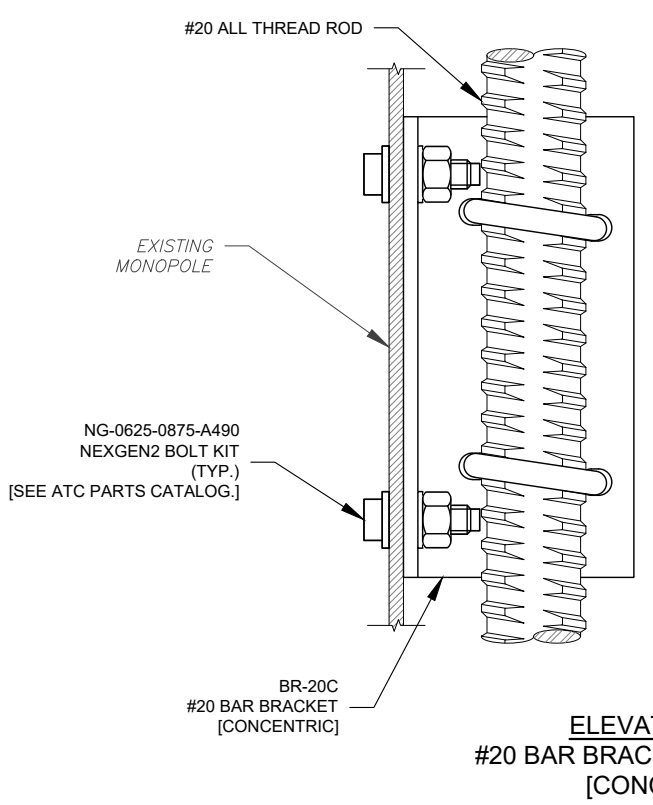
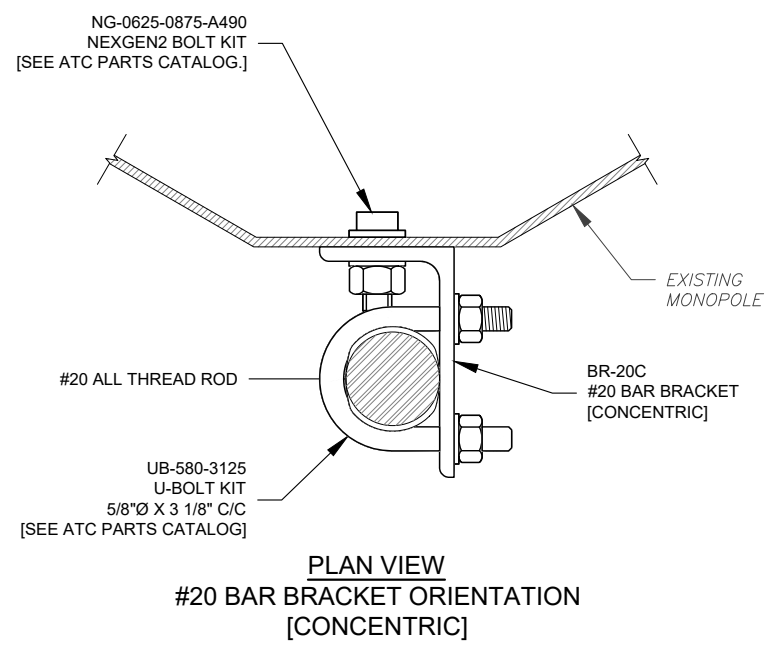
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**REINFORCEMENT
 INSTALLATION DETAILS
 (CONT'D)**

SHEET NUMBER:	REVISION:
S-502	0



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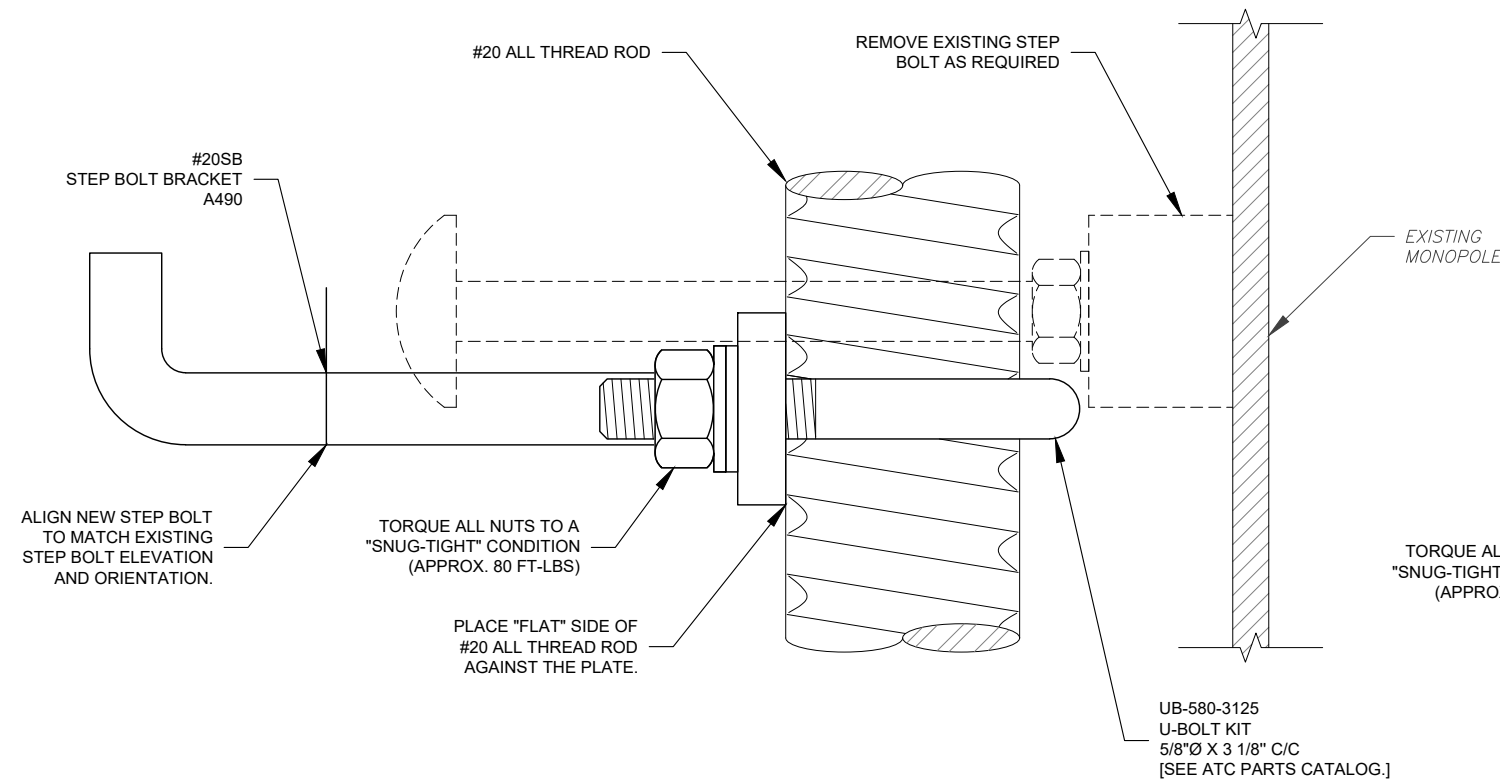
**#20 STEP BOLT BRACKET
 INSTALLATION DETAILS**

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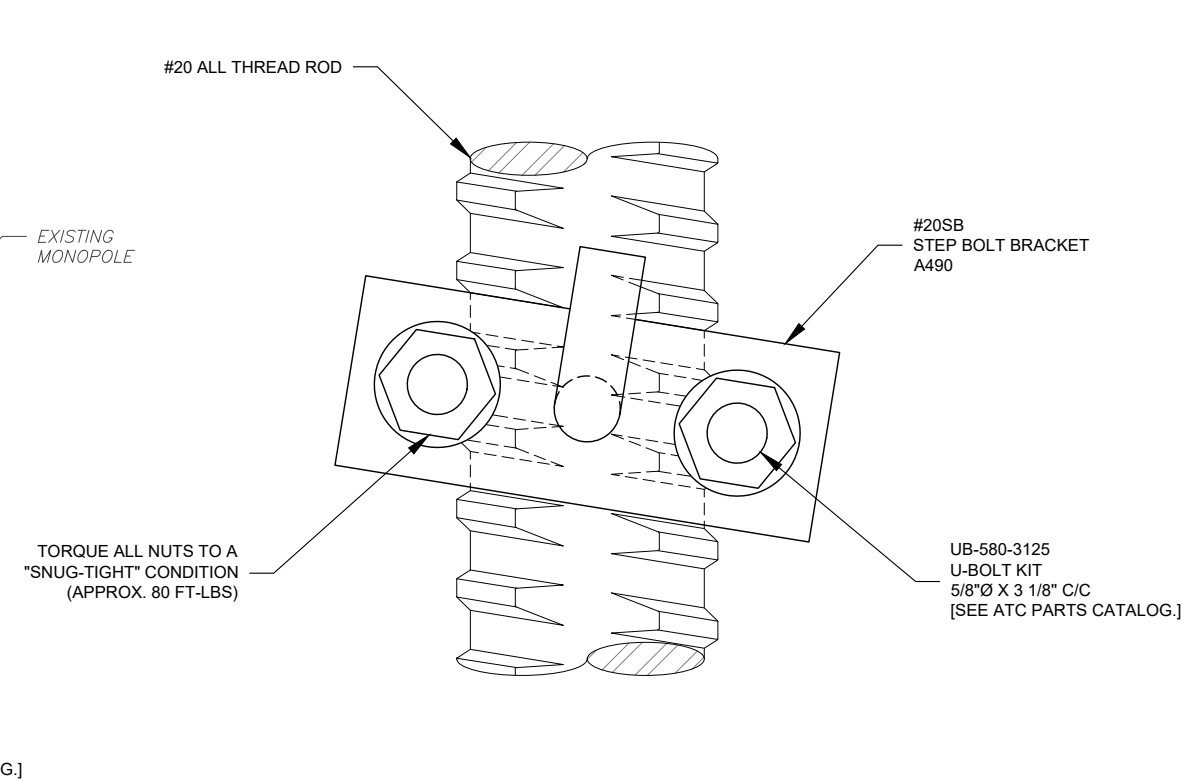
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REVISION:

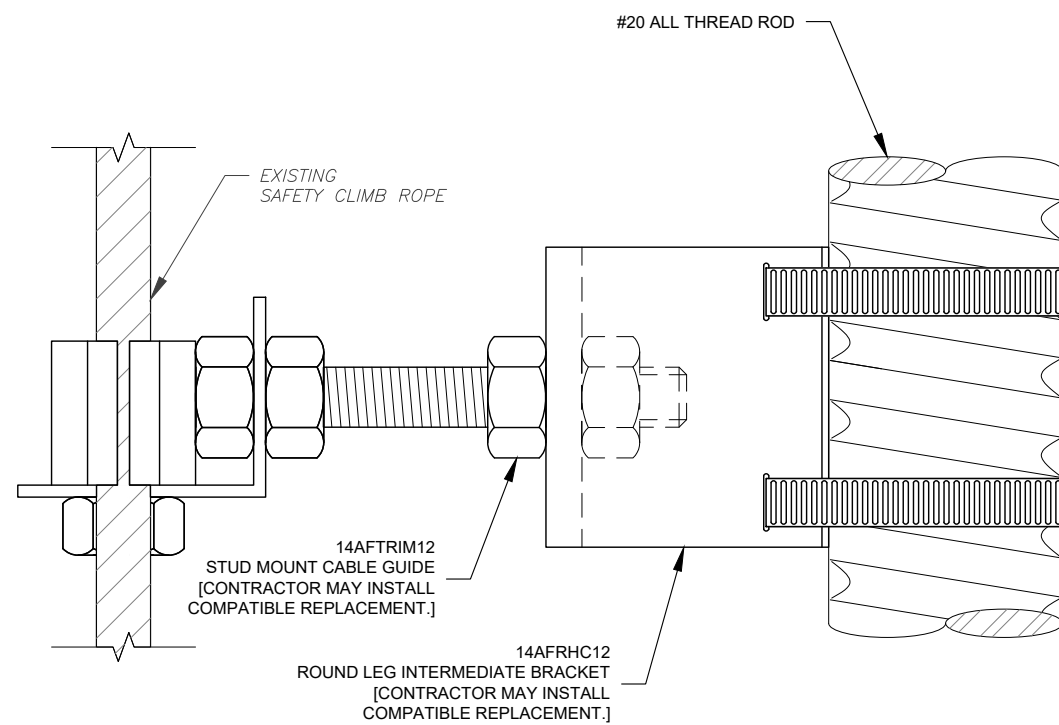
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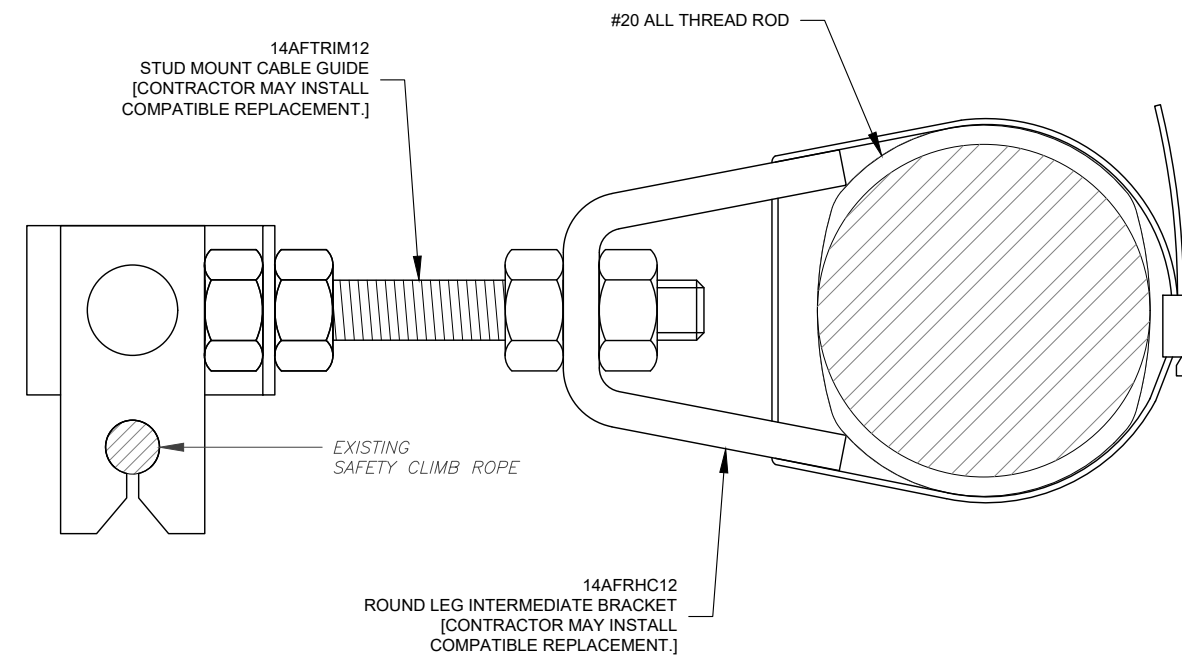
**#20SB INSTALLATION DETAILS
 SIDE VIEW**



**#20SB INSTALLATION DETAILS
 FRONT VIEW**



**SAFETY CLIMB CABLE GUIDE INSTALLATION
 SIDE VIEW**



**SAFETY CLIMB CABLE GUIDE INSTALLATION
 TOP VIEW**

- NOTES**
- STEP PEG SPACING IS NOT TO EXCEED 15" MAX. STAGGERED OR 30" MAX. ON ANY SINGLE SIDE OF THE DYWIDAG BAR.
 - SAFETY CLIMB CABLE GUIDE SPACING IS NOT TO EXCEED 20' MAX.

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EXHIBIT E

Structural Analysis Report





AMERICAN TOWER®
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Post Modification Structural Analysis Report

Structure : 75 ft Monopole
ATC Asset Name : Mdfd - Middlefield
ATC Asset Number : 302485
Engineering Number : 14099860_C4_06
Proposed Carrier : T-MOBILE
Carrier Site Name : "CTNH569_American Tower_Monopole_Middlefield"
Carrier Site Number : CTNH569A
Site Location : 134 Kikapoo Road
Middlefield, CT 06455-1334
41.5136, -72.7458
County : Middlesex
Date : October 31, 2022
Max Usage : 87%
Analysis Result : Pass

Prepared By:

Matthew Reeves, CWI
Structural Engineer III

Reviewed



COA: PEC.0001553



Table of Contents

Introduction.....0

Supporting Documents.....0

Analysis.....0

Conclusion0

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Proposed Carrier Final Loading.....0

Structure Usages.....0

Foundation Reactions & Usages0

Antenna Deflection, Twist, and Sway0

Standard Conditions0

Calculations.....Attached

Introduction

The purpose of this report is to summarize results of a post-modification structural analysis performed on the 75 ft Monopole tower to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower Drawing:	Meyer Industries Job #AT&T Technologies Mapping by HTS Project #HTS071108, dated July 10, 2008
Foundation Drawing:	Southern New England Telephone Job #38920, dated October 28, 1983
Geotechnical Report:	S&ME Job #1261-08-261M, dated July 30, 2008
Modification:	ATC Project #13193668_C6_08, dated August 27, 2020 ATC Project #14099860_C6_07, dated October 22, 2022 (Pending)

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:	119 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.00" radial ice concurrent
Code(s):	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Crest Height (H):	309 ft
Crest Length (L):	422 ft
Spectral Response:	$S_s = 0.21$, $S_i = 0.06$
Site Class:	D - Stiff Soil - Default

**Wind load and Ice thickness have been reduced by applicable existing structure load modification factors in accordance with TIA-222-H, ANNEX-S*

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 the pending modifications cited in the Supporting Documents table are not completed, the results of this analysis are no longer valid, and T-MOBILE should contact American Tower's Site Manager for further direction on how to proceed.

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

Existing/Reserved Loading

Elev.*	Qty	Equipment	Lines	Carrier
83.0'	1	10' Omni	(1) 1 5/8" Coax	SPOK HOLDINGS, INC.
	1	10' Omni	(1) 7/8" Coax	OTHER
80.0'	3	Ericsson Air 6449 B77D	-	AT&T MOBILITY
78.0'	1	Matsing MBA-3.2-H4-L4	(3) 0.41" (10.3mm) Fiber (8) 0.82" (20.8mm) 8 AWG 6 (2) 2" conduit (8) 7/8" Coax	AT&T MOBILITY
	1	Raycap DC6-48-60-18-8C-EV		
	1	Raycap DC9-48-60-24-8C-EV		
	2	CCI DMP65R-BU8D		
	2	Ericsson RRUS 32 B2		
	2	Raycap DC6-48-60-18-8F (23.5" Height)		
	3	CCI HPA-65R-BUU-H8		
	3	Ericsson RRUS 32 B30		
	3	Ericsson RRUS 4478 B14		
	3	Quintel QD8616-7		
	4	Ericsson RRUS 4449 B5, B12		
	5	Ericsson RRUS 8843 B2, B66A		
6	Kaelus DBC0051F3V51-2			
76.0'	3	Ericsson AIR 6419 B77G	-	AT&T MOBILITY
75.0'	1	Mount Reinforcement	-	-
	1	Platform with Handrails		
10.0'	1	Channel Master Type 120	(1) 0.28" (7mm) RG-6	SPOK HOLDINGS, INC.

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

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

Proposed Carrier Final Loading

Elev.*	Qty	Equipment	Lines	Carrier
63.0'	1	Platform with Handrails	(3) 1.99" (50.7mm) Hybrid	T-MOBILE
	3	Ericsson 4460 BAND 2/25		
	3	Ericsson 4480 BAND 71		
	3	Ericsson AIR 6419 B41		
	3	RFS APXVAALL24 43-U-NA20		

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

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

Install proposed lines inside the pole shaft.

Structure Usages

Structural Component	Usage	Pass/Fail
Anchor Rods	11%	Pass
Base Plate	56%	Pass
Shaft	70%	Pass
Reinforcement	84%	Pass

Foundation Reactions & Usages

Reaction Component	Analysis Reactions	Usage
Moment (k-ft)	1331.8	87%
Axial (k)	24.7	2%
Shear (k)	24.1	6%

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

Antenna Deflection, Twist, and Sway

Elev.	Antenna	Carrier	Deflection	Twist	Sway [Rotation]
63.0'	Ericsson 4460 BAND 2/25	T-MOBILE	0.507'	N/A	0.800°
	Ericsson 4480 BAND 71				
	Ericsson AIR 6419 B41				
	RFS APXVAALL24 43-U-NA20				
10.0'	Channel Master Type 120	SPOK HOLDINGS, INC.	0.015'	N/A	0.170°

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

Standard Conditions

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

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

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

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

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

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

ANALYSIS PARAMETERS

Nominal Wind: 116 mph	Ice Wind: 49 mph w/ 0.85" ice	Service Wind: 60 mph
Risk Category: II	Exposure: B	S ₀ : 0.207 S ₁ : 0.055
Topo Category: 0	Topo Factor: Method 2	Topo Feature: Flat Topped Ridge
Structure Height: 75 ft	Base Elevation: 0.00 ft	Structure Type: Taper
Base Diameter: 27.97 in	Base Rotation: 0°	Taper: 0.1780 (in/ft)

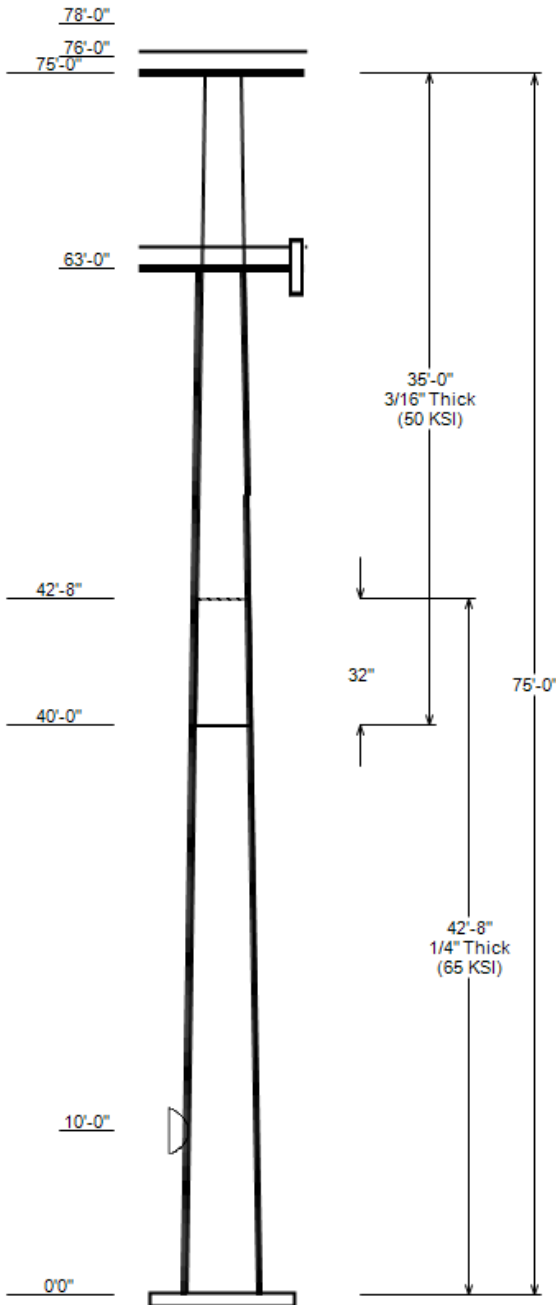
POLE SECTION PROPERTIES

Section	Length (ft)	Flat Diameter (in)		Thick (in)	Joint Type	Joint Length (in)	Pole Shape	Yield Strength (ksi)
		Top	Bottom					
1	42.667	20.38	27.97	0.250		0.000	12 Sides	65
2	35.000	15.00	21.23	0.188	Slip Joint	32.000	12 Sides	50

DISCRETE APPURTENANCE

LINEAR APPURTENANCE

Elev (ft)	Description	Elev To (ft)	Description
83.0	(1) Generic 10' Omni	83.0	(1) 7/8" Coax
83.0	(1) Generic 10' Omni	83.0	(1) 1 5/8" Coax
80.0	(3) Ericsson Air 6449 B77D	78.0	(8) 7/8" Coax
78.0	(6) Kaelus DBC0051F3V51-2	78.0	(2) 2" conduit
78.0	(2) Raycap DC6-48-60-18-8F (23.5")	78.0	(8) 0.82" (20.8mm) 8 AWG 6
78.0	(5) Ericsson RRUS 8843 B2, B66A	78.0	(3) 0.41" (10.3mm) Fiber
78.0	(4) Ericsson RRUS 4449 B5, B12	67.5	(1) #20 w/ Angle Brackets
78.0	(3) Ericsson RRUS 4478 B14	67.5	(1) #20 w/ Angle Brackets
78.0	(3) Ericsson RRUS 32 B30	67.5	(1) #20 w/ Angle Brackets
78.0	(2) Ericsson RRUS 32 B2	67.5	(1) #20 w/ Angle Brackets
78.0	(1) Raycap DC9-48-60-24-8C-EV	63.0	(3) 1.99" (50.7mm) Hybrid
78.0	(1) Raycap DC6-48-60-18-8C-EV	52.5	(1) #20 w/ Angle Brackets
78.0	(3) CCI HPA-65R-BUU-H8	52.5	(1) #20 w/ Angle Brackets
78.0	(1) Matsing MBA-3.2-H4-L4	52.5	(1) #20 w/ Angle Brackets
78.0	(2) CCI DMP65R-BU8D	52.5	(1) #20 w/ Angle Brackets
78.0	(3) Quintel QD8616-7	10.0	(1) 0.28" (7mm) RG-6
76.0	(3) Ericsson AIR 6419 B77G		
75.0	(1) Generic Mount Reinforcement		
75.0	(1) Generic Round Platform with Ha		
63.0	(3) Ericsson 4460 BAND 2/25		
63.0	(3) Ericsson 4480 BAND 71		
63.0	(3) Ericsson AIR 6419 B41		
63.0	(3) RFS APXVAALL24 43-U-NA20		
63.0	(1) Generic Round Platform with Ha		
10.0	(1) Channel Master Type 120		



DISH SERVICEABILITY

Load Case	Elevation (ft)	Deflection (in)	Rotation (°)
1.0D + 1.0W	10.00	0.179	0.166

LOAD CASE KEY

1.2D + 1.0W	115.99 mph Wind with No Ice
0.9D + 1.0W	115.99 mph Wind with No Ice (Reduc)
1.2D + 1.0Di + 1.0Wi	48.73 mph Wind with 0.85" Radial I
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

GLOBAL BASE REACTIONS

Load Case	Moment (kip-ft)	Axial (kip)	Shear (kip)
1.2D + 1.0W	1331.78	24.37	24.10
0.9D + 1.0W	1321.57	18.26	24.08
1.2D + 1.0Di + 1.0Wi	309.07	33.06	5.28
1.2D + 1.0Ev + 1.0Eh	54.27	24.21	0.84
0.9D - 1.0Ev + 1.0Eh	53.75	16.66	0.84
1.0D + 1.0W	322.00	20.37	5.88

ANALYSIS PARAMETERS

Location:	Middlesex County,CT	Height:	75 ft
Type and Shape:	Taper, 12 Sides	Base Diameter:	27.97 in
Manufacturer:	ITT Meyer	Top Diameter:	15.00 in
K_d (non-service):	0.95	Taper:	0.1780 in/ft
K_e:	0.97	Rotation:	0.000°

ICE & WIND PARAMETERS

Risk Category:	II	Design Wind Speed:	116 mph
Exposure Category:	B	Design Wind Speed w/ Ice:	49 mph
Topo Factor Procedure:	Method 2	Design Ice Thickness:	0.85 in
		Service Wind Speed:	60 mph
		HMSL:	770.00 ft
Crest Height(H):	309 ft	Distance from Apex (x):	164 ft
Crest Length(L):	422 ft	Upwind/Downwind:	Upwind
Feature:	Flat Topped Ridge		

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil	Period Based on Rayleigh Method (sec):	1.43
T_L (sec):	6	P:	1
S_s:	0.207	S₁:	0.055
F_a:	1.600	F_v:	2.400
S_{ds}:	0.221	S_{d1}:	0.088
		C_s:	0.041
		C_s Max:	0.041
		C_s Min:	0.030

LOAD CASES

1.2D + 1.0W	115.99 mph Wind with No Ice
0.9D + 1.0W	115.99 mph Wind with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	48.73 mph Wind with 0.85" 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

Section	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Bottom						Top								
						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)	
1-12	42.67	0.2500	65		0.00	2,796	27.97	0.003	22.31	2,188.6	27.30	111.88	20.38	42.67	16.20	837.9	19.16	81.51	0.1779	
2-12	35.00	0.1875	50	Slip	32.00	1,289	21.23	40.000	12.70	717.8	27.66	113.22	15.00	75.00	8.94	250.5	18.76	80.00	0.1779	
Total Shaft Weight						4,085														

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice			Ice				
					Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor		
83.00	Generic 10' Omni	1	1.00	0.000	25.00	3.000	1.00	74.08	5.327	1.00		
83.00	Generic 10' Omni	1	1.00	1.000	25.00	3.000	1.00	74.08	5.327	1.00		
80.00	Ericsson Air 6449 B77D	3	0.75	0.000	81.60	4.028	0.65	148.10	4.917	0.65		
78.00	Ericsson RRUS 4449 B5, B12	4	0.75	0.000	71.00	1.969	0.50	112.67	2.572	0.50		
78.00	Quintel QD8616-7	3	0.75	0.000	150.00	18.815	0.65	396.23	21.205	0.65		
78.00	CCI DMP65R-BU8D	2	0.75	0.000	95.70	17.871	0.63	315.48	20.254	0.63		
78.00	Matsing MBA-3.2-H4-L4	1	0.75	0.000	130.00	15.211	1.00	440.20	17.075	1.00		
78.00	CCI HPA-65R-BUU-H8	3	0.75	0.000	68.00	12.976	0.67	234.15	15.291	0.67		
78.00	Raycap DC6-48-60-18-8C-EV	1	0.75	0.000	16.00	4.788	0.50	99.50	5.739	0.50		
78.00	Raycap DC9-48-60-24-8C-EV	1	0.75	0.000	16.00	4.788	0.50	99.48	5.739	0.50		
78.00	Ericsson RRUS 32 B30	3	0.75	0.000	60.00	2.743	0.50	107.57	3.499	0.50		
78.00	Ericsson RRUS 32 B2	2	0.75	0.000	53.00	2.743	0.50	100.56	3.499	0.50		
78.00	Kaelus DBC0051F3V51-2	6	0.75	0.000	12.40	0.413	0.50	22.01	0.698	0.50		
78.00	Raycap DC6-48-60-18-8F (23.5"	2	0.75	0.000	20.00	1.260	0.50	54.05	1.686	0.50		
78.00	Ericsson RRUS 8843 B2, B66A	5	0.75	0.000	72.00	1.639	0.50	111.63	2.185	0.50		
78.00	Ericsson RRUS 4478 B14	3	0.75	0.000	59.40	2.021	0.50	99.08	2.631	0.50		
76.00	Ericsson AIR 6419 B77G	3	0.75	0.000	66.10	3.797	0.65	128.84	4.649	0.65		
75.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3547.35	43.006	1.00		
75.00	Generic Mount Reinforcement	1	1.00	0.000	200.00	7.500	1.00	325.14	12.341	1.00		
63.00	Ericsson 4460 BAND 2/25	3	0.75	0.000	109.00	2.564	0.67	165.82	3.242	0.67		
63.00	Ericsson AIR 6419 B41	3	0.75	0.000	83.30	6.322	0.63	180.60	7.409	0.63		
63.00	RFS APXVAALL24 43-U-NA20	3	0.75	0.000	122.80	20.243	0.63	373.21	22.627	0.63		
63.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3541.29	42.915	1.00		
63.00	Ericsson 4480 BAND 71	3	0.75	0.000	81.00	2.878	0.67	129.94	3.600	0.67		
10.00	Channel Master Type 120	1	1.00	0.000	126.00	20.190	0.93	238.82	21.841	0.93		
Totals	Row Count: 25	60				9,237.40				16,411.63		

LINEAR APPURTENANCE PROPERTIES

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	83.00	1	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	OTHER
0.00	83.00	1	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	SPOK HOLDINGS, INC.
0.00	78.00	8	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	78.00	8	0.82" (20.8mm) 8 AWG	0.82	0.62	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	78.00	3	0.41" (10.3mm) Fiber	0.41	0.09	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	78.00	2	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
52.50	67.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	270	0	Y	
52.50	67.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	90	0	Y	
52.50	67.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	0	0	Y	
52.50	67.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	180	0	Y	
0.00	63.00	3	1.99" (50.7mm) Hybrid	1.99	1.9	N	0	0	0	0	0	N	T-MOBILE
0.00	52.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	270	0	Y	
0.00	52.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	0	0	Y	
0.00	52.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	180	0	Y	
0.00	52.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	90	0	Y	
0.00	10.00	1	0.28" (7mm) RG-6	0.28	0.03	N	0	0	0	0	0	N	SPOK HOLDINGS, INC.

ADDITIONAL STEEL

Elev	Elev	Qty	Description	Fy	Intermediate Connectors			Spacing	Length	Connectors	Continuation?
					Offset	Bracket Type					

From (ft)	To (ft)			(ksi)	(in)		(in)	(in)	
0.00	49.04	4	SOL #20 All Thread Bar	80	2.19	6" Angle Bracket	30.00	3.13	5/8" A36 U-Bolt N
49.04	62.94	4	SOL #20 All Thread Bar	80	2.19	6" Angle Bracket	30.00	3.31	5/8" A36 U-Bolt Y

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)	Additional Reinforcing			
													Area (in ²)	Ix (in ⁴)	Weight (lb)	
0.00			0.2500	27.970	22.315	2,188.60	27.30	111.88	74.9	151.2	0.0	0.0	19.640	2,989.30	0.0	
5.00			0.2500	27.080	21.598	1,984.50	26.35	108.32	76	141.6	0.0	373.6	19.640	2,839.00	334.0	
10.00			0.2500	26.191	20.882	1,793.60	25.39	104.76	77	132.3	0.0	361.4	19.640	2,692.60	334.0	
15.00			0.2500	25.301	20.166	1,615.30	24.44	101.20	78.1	123.3	0.0	349.2	19.640	2,550.10	334.0	
20.00			0.2500	24.411	19.450	1,449.30	23.48	97.65	79.1	114.7	0.0	337.0	19.640	2,411.50	334.0	
25.00			0.2500	23.522	18.734	1,295.00	22.53	94.09	80.1	106.4	0.0	324.8	19.640	2,276.70	334.0	
30.00			0.2500	22.632	18.018	1,152.10	21.58	90.53	81.2	98.3	0.0	312.6	19.640	2,145.90	334.0	
35.00			0.2500	21.742	17.301	1,020.10	20.62	86.97	81.9	90.6	0.0	300.5	19.640	2,018.90	334.0	
40.00	Bot - Section 2		0.2500	20.853	16.585	898.60	19.67	83.41	81.9	83.2	0.0	288.3	19.640	1,895.80	334.0	
42.67	Top - Section 1		0.1875	20.753	12.417	670.30	26.98	110.68	60.7	62.4	0.0	262.7	19.640	1,882.30	178.1	
45.00			0.1875	20.338	12.166	630.50	26.38	108.47	61.1	59.9	0.0	97.6	19.640	1,826.40	155.9	
49.04	Reinf. Top Reinf Bottom		0.1875	19.619	11.732	565.40	25.36	104.64	61.9	55.7	0.0	164.3	19.640	1,731.60	269.9	
50.00			0.1875	19.449	11.629	550.70	25.11	103.73	62.1	54.7	0.0	38.2	19.640	1,709.50	64.1	
55.00			0.1875	18.559	11.092	477.80	23.84	98.98	63	49.7	0.0	193.3	19.640	1,596.40	334.0	
60.00			0.1875	17.669	10.555	411.70	22.57	94.24	63	45.0	0.0	184.1	19.640	1,487.20	334.0	
62.94	Reinf. Top		0.1875	17.146	10.239	375.80	21.82	91.45	63	42.3	0.0	104.0	19.640	1,424.80	196.4	
63.00			0.1875	17.135	10.232	375.10	21.81	91.39	63	42.3	0.0	2.1				
65.00			0.1875	16.780	10.017	352.00	21.30	89.49	63	40.5	0.0	68.9				
70.00			0.1875	15.890	9.480	298.40	20.03	84.75	63	36.3	0.0	165.9				
75.00			0.1875	15.000	8.943	250.50	18.76	80.00	63	32.3	0.0	156.7				
Totals:												4,085.2	4,204.4			

CALCULATED FORCES

Load Case: 1.2D + 1.0W			115.99 mph Wind with No Ice										18 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	-24.37	-24.10	0.00	-1,331.8	0.00	1,331.78	1,505.06	391.62	1,024.09	849.62	0	0	0.675	
5.00	-23.14	-23.32	0.00	-1,211.3	0.00	1,211.27	1,476.97	379.05	959.43	806.77	0.19	-0.35	0.630	
10.00	-21.80	-21.59	0.00	-1,094.6	0.00	1,094.65	1,447.54	366.48	896.88	764.23	0.74	-0.69	0.584	
15.00	-20.63	-20.85	0.00	-986.7	0.00	986.71	1,416.77	353.91	836.44	722.09	1.64	-1.02	0.541	
20.00	-19.49	-20.12	0.00	-882.5	0.00	882.47	1,384.66	341.35	778.10	680.42	2.89	-1.34	0.497	
25.00	-18.38	-19.42	0.00	-781.8	0.00	781.85	1,351.21	328.78	721.87	639.28	4.45	-1.65	0.454	
30.00	-17.29	-18.72	0.00	-684.8	0.00	684.75	1,316.42	316.21	667.76	598.76	6.34	-1.94	0.409	
35.00	-16.22	-18.03	0.00	-591.1	0.00	591.14	1,275.29	303.64	615.75	556.74	8.52	-2.21	0.366	
40.00	-15.20	-17.43	0.00	-501.0	0.00	501.01	1,222.50	291.07	565.84	511.35	10.98	-2.47	0.324	
42.67	-14.52	-17.06	0.00	-454.5	0.00	454.53	678.31	167.62	325.21	284.06	12.39	-2.6	0.439	
45.00	-14.08	-16.64	0.00	-414.7	0.00	414.73	669.39	164.24	312.22	274.62	13.69	-2.7	0.406	
49.04	-13.36	-16.21	0.00	-347.5	0.00	347.50	653.49	158.38	290.35	258.44	16.06	-2.88	0.349	
50.00	-13.17	-15.88	0.00	-331.9	0.00	331.93	649.63	156.99	285.27	254.63	16.64	-2.92	0.335	
55.00	-12.29	-15.17	0.00	-252.5	0.00	252.53	628.90	149.74	259.53	235.01	19.81	-3.11	0.265	
60.00	-11.43	-14.56	0.00	-176.7	0.00	176.67	598.44	142.49	235.01	212.69	23.15	-3.25	0.197	
62.94	-10.93	-14.29	0.00	-133.8	0.00	133.85	580.54	138.22	221.16	200.09	25.17	-3.32	0.157	
62.94	-10.93	-14.29	0.00	-133.8	0.00	133.85	580.54	138.22	221.16	200.09	25.17	-3.32	0.698	
63.00	-6.73	-9.90	0.00	-133.0	0.00	132.99	580.17	138.14	220.88	199.84	25.22	-3.32	0.682	
65.00	-6.54	-9.52	0.00	-113.2	0.00	113.19	567.99	135.24	211.71	191.49	26.65	-3.51	0.608	
70.00	-6.19	-8.93	0.00	-65.6	0.00	65.61	537.53	127.98	189.62	171.39	30.53	-3.87	0.399	
75.00	0.00	-8.48	0.00	-21.0	0.00	20.95	507.08	120.73	168.75	152.41	34.71	-4.08	0.142	

CALCULATED FORCES

Load Case: 0.9D + 1.0W 115.99 mph Wind with No Ice (Reduced DL) 18 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	-18.26	-24.08	0.00	-1,321.6	0.00	1,321.57	1,505.06	391.62	1,024.09	849.62	0	0	0.668
5.00	-17.30	-23.27	0.00	-1,201.2	0.00	1,201.16	1,476.97	379.05	959.43	806.77	0.19	-0.35	0.622
10.00	-16.27	-21.50	0.00	-1,084.8	0.00	1,084.81	1,447.54	366.48	896.88	764.23	0.74	-0.68	0.577
15.00	-15.37	-20.74	0.00	-977.3	0.00	977.29	1,416.77	353.91	836.44	722.09	1.63	-1.01	0.534
20.00	-14.49	-19.99	0.00	-873.6	0.00	873.61	1,384.66	341.35	778.10	680.42	2.86	-1.33	0.491
25.00	-13.64	-19.27	0.00	-773.7	0.00	773.66	1,351.21	328.78	721.87	639.28	4.42	-1.63	0.447
30.00	-12.81	-18.56	0.00	-677.3	0.00	677.33	1,316.42	316.21	667.76	598.76	6.28	-1.92	0.403
35.00	-12.00	-17.85	0.00	-584.6	0.00	584.55	1,275.29	303.64	615.75	556.74	8.44	-2.19	0.360
40.00	-11.22	-17.25	0.00	-495.3	0.00	495.32	1,222.50	291.07	565.84	511.35	10.88	-2.44	0.319
42.67	-10.71	-16.88	0.00	-449.3	0.00	449.32	678.31	167.62	325.21	284.06	12.28	-2.57	0.432
45.00	-10.38	-16.45	0.00	-409.9	0.00	409.94	669.39	164.24	312.22	274.62	13.56	-2.68	0.399
49.04	-9.83	-16.03	0.00	-343.5	0.00	343.47	653.49	158.38	290.35	258.44	15.91	-2.85	0.343
50.00	-9.69	-15.69	0.00	-328.1	0.00	328.08	649.63	156.99	285.27	254.63	16.49	-2.89	0.329
55.00	-9.03	-14.98	0.00	-249.6	0.00	249.62	628.90	149.74	259.53	235.01	19.62	-3.07	0.260
60.00	-8.38	-14.38	0.00	-174.7	0.00	174.70	598.44	142.49	235.01	212.69	22.92	-3.22	0.193
62.94	-8.01	-14.11	0.00	-132.4	0.00	132.41	580.54	138.22	221.16	200.09	24.93	-3.29	0.153
62.94	-8.01	-14.11	0.00	-132.4	0.00	132.41	580.54	138.22	221.16	200.09	24.93	-3.29	0.686
63.00	-4.92	-9.79	0.00	-131.6	0.00	131.57	580.17	138.14	220.88	199.84	24.97	-3.29	0.672
65.00	-4.77	-9.40	0.00	-112.0	0.00	111.99	567.99	135.24	211.71	191.49	26.39	-3.47	0.598
70.00	-4.50	-8.81	0.00	-65.0	0.00	65.00	537.53	127.98	189.62	171.39	30.23	-3.83	0.392
75.00	0.00	-8.48	0.00	-21.0	0.00	20.95	507.08	120.73	168.75	152.41	34.37	-4.04	0.142

CALCULATED FORCES

Load Case: 1.2D + 1.0Di + 1.0Wi													48.73 mph Wind with 0.85" Radial Ice		17 Iterations
Gust Response Factor:		1.10	Ice Dead Load Factor			1.00							Ice Importance Factor	1.00	
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	-33.06	-5.28	0.00	-309.1	0.00	309.07	1,505.06	391.62	1,024.09	849.62	0	0	0.166		
5.00	-31.76	-5.18	0.00	-282.7	0.00	282.66	1,476.97	379.05	959.43	806.77	0.04	-0.08	0.156		
10.00	-30.22	-4.88	0.00	-256.8	0.00	256.78	1,447.54	366.48	896.88	764.23	0.17	-0.16	0.145		
15.00	-28.93	-4.78	0.00	-232.4	0.00	232.37	1,416.77	353.91	836.44	722.09	0.38	-0.24	0.135		
20.00	-27.65	-4.67	0.00	-208.5	0.00	208.49	1,384.66	341.35	778.10	680.42	0.67	-0.31	0.125		
25.00	-26.38	-4.55	0.00	-185.1	0.00	185.14	1,351.21	328.78	721.87	639.28	1.04	-0.39	0.115		
30.00	-25.13	-4.42	0.00	-162.4	0.00	162.39	1,316.42	316.21	667.76	598.76	1.48	-0.46	0.104		
35.00	-23.91	-4.28	0.00	-140.3	0.00	140.30	1,275.29	303.64	615.75	556.74	2	-0.52	0.094		
40.00	-22.70	-4.15	0.00	-118.9	0.00	118.93	1,222.50	291.07	565.84	511.35	2.58	-0.58	0.083		
42.67	-21.92	-4.06	0.00	-107.9	0.00	107.87	678.31	167.62	325.21	284.06	2.91	-0.61	0.113		
45.00	-21.40	-3.97	0.00	-98.4	0.00	98.39	669.39	164.24	312.22	274.62	3.22	-0.64	0.105		
49.04	-20.51	-3.87	0.00	-82.4	0.00	82.36	653.49	158.38	290.35	258.44	3.77	-0.68	0.091		
50.00	-20.30	-3.79	0.00	-78.6	0.00	78.65	649.63	156.99	285.27	254.63	3.91	-0.69	0.087		
55.00	-19.22	-3.62	0.00	-59.7	0.00	59.70	628.90	149.74	259.53	235.01	4.66	-0.73	0.070		
60.00	-18.16	-3.46	0.00	-41.6	0.00	41.62	598.44	142.49	235.01	212.69	5.45	-0.77	0.054		
62.94	-17.54	-3.39	0.00	-31.4	0.00	31.44	580.54	138.22	221.16	200.09	5.93	-0.78	0.044		
62.94	-17.54	-3.39	0.00	-31.4	0.00	31.44	580.54	138.22	221.16	200.09	5.93	-0.78	0.188		
63.00	-11.26	-2.34	0.00	-31.2	0.00	31.24	580.17	138.14	220.88	199.84	5.94	-0.78	0.176		
65.00	-11.01	-2.25	0.00	-26.6	0.00	26.55	567.99	135.24	211.71	191.49	6.27	-0.83	0.158		
70.00	-10.50	-2.13	0.00	-15.3	0.00	15.29	537.53	127.98	189.62	171.39	7.19	-0.91	0.109		
75.00	0.00	-1.95	0.00	-4.7	0.00	4.66	507.08	120.73	168.75	152.41	8.18	-0.96	0.031		

CALCULATED FORCES

Load Case: 1.0D + 1.0W

60 mph Wind with No Ice

17 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	-20.37	-5.88	0.00	-322.0	0.00	322.00	1,505.06	391.62	1,024.09	849.62	0	0	0.168
5.00	-19.45	-5.68	0.00	-292.6	0.00	292.59	1,476.97	379.05	959.43	806.77	0.05	-0.08	0.156
10.00	-18.42	-5.25	0.00	-264.2	0.00	264.18	1,447.54	366.48	896.88	764.23	0.18	-0.17	0.145
15.00	-17.53	-5.07	0.00	-237.9	0.00	237.91	1,416.77	353.91	836.44	722.09	0.4	-0.25	0.134
20.00	-16.65	-4.88	0.00	-212.6	0.00	212.58	1,384.66	341.35	778.10	680.42	0.7	-0.32	0.123
25.00	-15.78	-4.70	0.00	-188.2	0.00	188.17	1,351.21	328.78	721.87	639.28	1.08	-0.4	0.113
30.00	-14.92	-4.53	0.00	-164.6	0.00	164.65	1,316.42	316.21	667.76	598.76	1.53	-0.47	0.102
35.00	-14.08	-4.35	0.00	-142.0	0.00	142.00	1,275.29	303.64	615.75	556.74	2.06	-0.53	0.091
40.00	-13.25	-4.20	0.00	-120.2	0.00	120.22	1,222.50	291.07	565.84	511.35	2.65	-0.59	0.081
42.67	-12.70	-4.11	0.00	-109.0	0.00	109.01	678.31	167.62	325.21	284.06	2.99	-0.63	0.109
45.00	-12.35	-4.01	0.00	-99.4	0.00	99.42	669.39	164.24	312.22	274.62	3.3	-0.65	0.101
49.04	-11.76	-3.90	0.00	-83.2	0.00	83.23	653.49	158.38	290.35	258.44	3.87	-0.69	0.087
50.00	-11.61	-3.82	0.00	-79.5	0.00	79.48	649.63	156.99	285.27	254.63	4.01	-0.7	0.083
55.00	-10.88	-3.64	0.00	-60.4	0.00	60.40	628.90	149.74	259.53	235.01	4.78	-0.75	0.066
60.00	-10.16	-3.48	0.00	-42.2	0.00	42.20	598.44	142.49	235.01	212.69	5.58	-0.78	0.050
62.94	-9.74	-3.41	0.00	-32.0	0.00	31.96	580.54	138.22	221.16	200.09	6.07	-0.8	0.040
62.94	-9.74	-3.41	0.00	-32.0	0.00	31.96	580.54	138.22	221.16	200.09	6.07	-0.8	0.177
63.00	-6.06	-2.37	0.00	-31.8	0.00	31.76	580.17	138.14	220.88	199.84	6.08	-0.8	0.170
65.00	-5.92	-2.28	0.00	-27.0	0.00	27.01	567.99	135.24	211.71	191.49	6.42	-0.84	0.152
70.00	-5.63	-2.12	0.00	-15.6	0.00	15.64	537.53	127.98	189.62	171.39	7.36	-0.93	0.102
75.00	0.00	-2.03	0.00	-5.0	0.00	5.02	507.08	120.73	168.75	152.41	8.36	-0.98	0.033

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

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

Spectral Response Acceleration for Short Period (S_S):	0.207
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.055
Long-Period Transition Period (T_L - Seconds):	6
Importance Factor (I_e):	1.000
Site Coefficient F_a :	1.600
Site Coefficient F_v :	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.221
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.088
Seismic Response Coefficient (C_s):	0.041
Upper Limit C_s :	0.041
Lower Limit C_s :	0.030
Period based on Rayleigh Method (sec):	1.430
Redundancy Factor (ρ):	1.000
Seismic Force Distribution Exponent (k):	1.470
Total Unfactored Dead Load:	20.370 k
Seismic Base Shear (E):	0.840 k

SEISMIC FORCES

Segment	Seismic	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
19		72.5	238	127	0.019	16	297
18		67.5	294	141	0.021	18	366
17		64	139	62	0.009	8	173
16		62.97	5	2	0.000	0	6
15		61.47	420	176	0.026	22	523
14		57.5	722	274	0.041	34	898
13		52.5	731	243	0.036	30	909
12		49.52	141	43	0.006	5	176
11		47.02	599	169	0.025	21	745
10		43.8333	349	89	0.013	11	434
9		41.3333	550	128	0.019	16	684
8		37.5	826	167	0.025	21	1,028
7		32.5	838	138	0.020	17	1,043
6		27.5	850	109	0.016	14	1,058
5		22.5	863	83	0.012	10	1,073
4		17.5	875	58	0.009	7	1,088
3		12.5	887	36	0.005	4	1,103
2		7.5	899	17	0.003	2	1,119
1		2.5	911	3	0.000	0	1,134
Generic 10' Omni		75	25	14	0.002	2	31
Generic 10' Omni		75	25	14	0.002	2	31
Ericsson Air 6449 B77D		75	245	137	0.020	17	305
Kaelus DBC0051F3V51-2		75	74	42	0.006	5	93
Raycap DC6-48-60-18-8F (23.5" Height)		75	40	22	0.003	3	50
Ericsson RRUS 8843 B2, B66A		75	360	201	0.030	25	448
Ericsson RRUS 4449 B5, B12		75	284	159	0.024	20	353
Ericsson RRUS 4478 B14		75	178	100	0.015	12	222
Ericsson RRUS 32 B2		75	106	59	0.009	7	132
Ericsson RRUS 32 B30		75	180	101	0.015	13	224
Raycap DC9-48-60-24-8C-EV		75	16	9	0.001	1	20
Raycap DC6-48-60-18-8C-EV		75	16	9	0.001	1	20
CCI HPA-65R-BUU-H8		75	204	114	0.017	14	254
Matsing MBA-3.2-H4-L4		75	130	73	0.011	9	162
CCI DMP65R-BU8D		75	191	107	0.016	13	238
Quintel QD8616-7		75	450	252	0.038	31	560
Ericsson AIR 6419 B77G		75	198	111	0.017	14	247
Generic Mount Reinforcement		75	200	112	0.017	14	249
Generic Round Platform with Handrails		75	2,500	1,399	0.209	174	3,110

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)
Generic Round Platform with Handrails	63	2,500	1,084	0.162	135	3,110
Ericsson 4460 BAND 2/25	63	327	142	0.021	18	407
Ericsson 4480 BAND 71	63	243	105	0.016	13	302
Ericsson AIR 6419 B41	63	250	108	0.016	13	311
RFS APXVAALL24 43-U-NA20	63	368	160	0.024	20	458
Channel Master Type 120	10	126	4	0.000	0	157
Totals:		20,374	6,703	1.000	835	25,348

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)
19	72.5	238	127	0.019	16	204
18	67.5	294	141	0.021	18	252
17	64	139	62	0.009	8	119
16	62.97	5	2	0.000	0	4
15	61.47	420	176	0.026	22	360
14	57.5	722	274	0.041	34	618
13	52.5	731	243	0.036	30	626
12	49.52	141	43	0.006	5	121
11	47.02	599	169	0.025	21	512
10	43.8333	349	89	0.013	11	298
9	41.3333	550	128	0.019	16	470
8	37.5	826	167	0.025	21	707
7	32.5	838	138	0.020	17	717
6	27.5	850	109	0.016	14	728
5	22.5	863	83	0.012	10	738
4	17.5	875	58	0.009	7	749
3	12.5	887	36	0.005	4	759
2	7.5	899	17	0.003	2	770
1	2.5	911	3	0.000	0	780
Generic 10' Omni	75	25	14	0.002	2	21
Generic 10' Omni	75	25	14	0.002	2	21
Ericsson Air 6449 B77D	75	245	137	0.020	17	210
Kaelus DBC0051F3V51-2	75	74	42	0.006	5	64
Raycap DC6-48-60-18-8F (23.5" Height)	75	40	22	0.003	3	34
Ericsson RRUS 8843 B2, B66A	75	360	201	0.030	25	308
Ericsson RRUS 4449 B5, B12	75	284	159	0.024	20	243
Ericsson RRUS 4478 B14	75	178	100	0.015	12	153
Ericsson RRUS 32 B2	75	106	59	0.009	7	91
Ericsson RRUS 32 B30	75	180	101	0.015	13	154
Raycap DC9-48-60-24-8C-EV	75	16	9	0.001	1	14
Raycap DC6-48-60-18-8C-EV	75	16	9	0.001	1	14
CCI HPA-65R-BUU-H8	75	204	114	0.017	14	175
Matsing MBA-3.2-H4-L4	75	130	73	0.011	9	111
CCI DMP65R-BU8D	75	191	107	0.016	13	164
Quintel QD8616-7	75	450	252	0.038	31	385
Ericsson AIR 6419 B77G	75	198	111	0.017	14	170
Generic Mount Reinforcement	75	200	112	0.017	14	171
Generic Round Platform with Handrails	75	2,500	1,399	0.209	174	2,140
Generic Round Platform with Handrails	63	2,500	1,084	0.162	135	2,140
Ericsson 4460 BAND 2/25	63	327	142	0.021	18	280
Ericsson 4480 BAND 71	63	243	105	0.016	13	208
Ericsson AIR 6419 B41	63	250	108	0.016	13	214
RFS APXVAALL24 43-U-NA20	63	368	160	0.024	20	315
Channel Master Type 120	10	126	4	0.000	0	108
Totals:		20,374	6,703	1.000	835	17,437

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	-24.21	-0.84	0.00	-54.27	0.00	54.27	1,505.06	391.62	1,024	849.62	0.00	0.00	0.04
5.00	-23.10	-0.84	0.00	-50.09	0.00	50.09	1,476.97	379.05	959	806.77	0.01	-0.01	0.03
10.00	-21.83	-0.84	0.00	-45.88	0.00	45.88	1,447.54	366.48	897	764.23	0.03	-0.03	0.03
15.00	-20.75	-0.84	0.00	-41.68	0.00	41.68	1,416.77	353.91	836	722.09	0.07	-0.04	0.03
20.00	-19.67	-0.83	0.00	-37.49	0.00	37.49	1,384.66	341.35	778	680.42	0.12	-0.06	0.03
25.00	-18.62	-0.82	0.00	-33.33	0.00	33.33	1,351.21	328.78	722	639.28	0.19	-0.07	0.03
30.00	-17.57	-0.81	0.00	-29.23	0.00	29.23	1,316.42	316.21	668	598.76	0.26	-0.08	0.02
35.00	-16.54	-0.79	0.00	-25.20	0.00	25.20	1,275.29	303.64	616	556.74	0.36	-0.09	0.02
40.00	-15.86	-0.77	0.00	-21.26	0.00	21.26	1,222.50	291.07	566	511.35	0.46	-0.10	0.02
42.67	-15.43	-0.76	0.00	-19.20	0.00	19.20	678.31	167.62	325	284.06	0.52	-0.11	0.03
45.00	-14.68	-0.74	0.00	-17.43	0.00	17.43	669.39	164.24	312	274.62	0.57	-0.11	0.03
49.04	-14.51	-0.74	0.00	-14.44	0.00	14.44	653.49	158.38	290	258.44	0.67	-0.12	0.02
49.04	-14.51	-0.74	0.00	-14.44	0.00	14.44	653.49	158.38	290	258.44	0.67	-0.12	0.02
50.00	-13.60	-0.70	0.00	-13.73	0.00	13.73	649.63	156.99	285	254.63	0.70	-0.12	0.02
55.00	-12.70	-0.67	0.00	-10.20	0.00	10.20	628.90	149.74	260	235.01	0.83	-0.13	0.02
60.00	-12.18	-0.65	0.00	-6.85	0.00	6.85	598.44	142.49	235	212.69	0.97	-0.14	0.01
62.94	-12.17	-0.65	0.00	-4.95	0.00	4.95	580.54	138.22	221	200.09	1.06	-0.14	0.05
62.94	-12.17	-0.65	0.00	-4.95	0.00	4.95	580.54	138.22	221	200.09	1.06	-0.14	0.01
63.00	-7.41	-0.43	0.00	-4.91	0.00	4.91	580.17	138.14	221	199.84	1.06	-0.14	0.04
65.00	-7.04	-0.41	0.00	-4.05	0.00	4.05	567.99	135.24	212	191.49	1.12	-0.15	0.03
70.00	-6.75	-0.40	0.00	-1.99	0.00	1.99	537.53	127.98	190	171.39	1.28	-0.16	0.02
75.00	0.00	-0.38	0.00	0.00	0.00	0.00	507.08	120.73	169	152.41	1.45	-0.16	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	-16.66	-0.84	0.00	-53.75	0.00	53.75	1,505.06	391.62	1,024	849.62	0.00	0.00	0.03
5.00	-15.89	-0.84	0.00	-49.57	0.00	49.57	1,476.97	379.05	959	806.77	0.01	-0.01	0.03
10.00	-15.02	-0.84	0.00	-45.38	0.00	45.38	1,447.54	366.48	897	764.23	0.03	-0.03	0.03
15.00	-14.27	-0.83	0.00	-41.19	0.00	41.19	1,416.77	353.91	836	722.09	0.07	-0.04	0.03
20.00	-13.53	-0.82	0.00	-37.03	0.00	37.03	1,384.66	341.35	778	680.42	0.12	-0.06	0.03
25.00	-12.80	-0.81	0.00	-32.91	0.00	32.91	1,351.21	328.78	722	639.28	0.18	-0.07	0.02
30.00	-12.09	-0.80	0.00	-28.84	0.00	28.84	1,316.42	316.21	668	598.76	0.26	-0.08	0.02
35.00	-11.38	-0.78	0.00	-24.86	0.00	24.86	1,275.29	303.64	616	556.74	0.35	-0.09	0.02
40.00	-10.91	-0.76	0.00	-20.97	0.00	20.97	1,222.50	291.07	566	511.35	0.45	-0.10	0.02
42.67	-10.61	-0.75	0.00	-18.94	0.00	18.94	678.31	167.62	325	284.06	0.51	-0.11	0.02
45.00	-10.10	-0.73	0.00	-17.18	0.00	17.18	669.39	164.24	312	274.62	0.57	-0.11	0.02
49.04	-9.98	-0.73	0.00	-14.23	0.00	14.23	653.49	158.38	290	258.44	0.67	-0.12	0.02
49.04	-9.98	-0.73	0.00	-14.23	0.00	14.23	653.49	158.38	290	258.44	0.67	-0.12	0.02
50.00	-9.35	-0.70	0.00	-13.53	0.00	13.53	649.63	156.99	285	254.63	0.69	-0.12	0.02
55.00	-8.73	-0.66	0.00	-10.06	0.00	10.06	628.90	149.74	260	235.01	0.82	-0.13	0.02
60.00	-8.38	-0.64	0.00	-6.75	0.00	6.75	598.44	142.49	235	212.69	0.96	-0.13	0.01
62.94	-8.37	-0.64	0.00	-4.88	0.00	4.88	580.54	138.22	221	200.09	1.04	-0.14	0.04
62.94	-8.37	-0.64	0.00	-4.88	0.00	4.88	580.54	138.22	221	200.09	1.04	-0.14	0.01
63.00	-5.10	-0.42	0.00	-4.84	0.00	4.84	580.17	138.14	221	199.84	1.05	-0.14	0.03
65.00	-4.84	-0.41	0.00	-3.99	0.00	3.99	567.99	135.24	212	191.49	1.11	-0.14	0.03
70.00	-4.64	-0.39	0.00	-1.96	0.00	1.96	537.53	127.98	190	171.39	1.26	-0.16	0.02
75.00	0.00	-0.38	0.00	0.00	0.00	0.00	507.08	120.73	169	152.41	1.43	-0.16	0.00

ANALYSIS SUMMARY

Load Case	Base Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W	24.10	0.00	24.37	0.00	0.00	1331.78	62.94	0.7
0.9D + 1.0W	24.08	0.00	18.26	0.00	0.00	1321.57	62.94	0.69
1.2D + 1.0Di + 1.0Wi	5.28	0.00	33.06	0.00	0.00	309.07	62.94	0.19
1.2D + 1.0Ev + 1.0Eh	0.84	0.00	24.21	0.00	0.00	54.27	62.94	0.05
0.9D - 1.0Ev + 1.0Eh	0.84	0.00	16.66	0.00	0.00	53.75	62.94	0.04
1.0D + 1.0W	5.88	0.00	20.37	0.00	0.00	322.00	62.94	0.18

ADDITIONAL STEEL SUMMARY

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors				Max Member		
			VQ/I (k/in)	Shear Applied (kips)	phiVn (kips)	Ratio	Pu (kip)	phiPn (kip)	Ratio
0.00	49.04	SOL #20 All Thread Bar	459.2	13.8	16.8	0.8196	266.9	330.5	0.8077
49.04	62.94	SOL #20 All Thread Bar	468.0	14.0	16.8	0.8352	120.2	330.5	0.3637

Elev From (ft)	Elev To (ft)	Member	Upper Termination Connectors				Lower Termination Connectors					
			MQ/I (kips)	phiVn (kips)	Number Required	Number Actual	Ratio	MQ/I (kips)	phiVn (kip)	Number Required	Number Actual	Ratio
0.00	49.04	SOL #20 All Thread Bar	0	12	0	8	0.0000	0	12	0	0	0.0000
49.04	62.94	SOL #20 All Thread Bar	52.6135	12	5	12	0.3654	0	12	0	0	0.0000

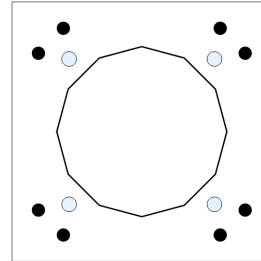
BASE PLATE ANALYSIS @ 0 FT

APPLIED REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
1331.78	24.37	24.1

PLATE PARAMETERS (ID# 22141)

Width:	44	in
Shape:	Square	
Thickness:	2	in
Grade:	A572-60	
Yield Strength:	60	ksi
Tensile Strength:	75	ksi
Clip Length:	0	in
Rod Detail Type:	d	
Clear Distance:	4.5	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Elastic	
Neutral Axis:	135	°



ANCHOR ROD PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	F _y (ksi)	F _u (ksi)	Spacing (in)	Offset (°)
Original [ID#22725]	Cluster	8	2.25	44	A615-75	75	100	6	-

DYWIDAG BAR PARAMETERS

Quantity	Bar Size	Bar Diameter (in)	F _y (ksi)	F _u (ksi)	Bracket Type	Bracket Offset (in)	Circle (in)	Offset (°)
4 [ID# 1891]	#20	2.5	80	100	Angle	2.19	34.85	45

COMPONENT PROPERTIES

Component	ID	Gross Area (in ²)	Net Area (in ²)	Individual Inertia (in ⁴)	Moment of Inertia (in ⁴)	Threads/in
Pole	27.97"ø x 0.25" (12 Sides)	21.5234	-	-	2067.77	-
Bolt Group	Original (8) 2.25"ø	3.9761	3.2477	0.8393	5566.40	4.5
Dywidag Group	(4) #20	4.9087	4.9087	1.9175	2988.56	-

REACTION DISTRIBUTION

Component	ID	Moment M _u (k-ft)	Axial Load P _u (k)	Shear V _u (k)	Moment Factor
Pole	27.97"ø x 0.25" (12 Sides)	544.6	24.37	24.10	0.409
Bolt Group	Original (8) 2.25"ø	544.6	-	24.10	0.409
Dywidag Group	(4) #20	787.2	-	-	0.591

BASE PLATE BEND LINE ANALYSIS @ 0 FT

POLE PROPERTIES

Flat-to-Flat Diameter:	28.10	in	Flat Width:	7.528	in
Point-to-Point Diameter:	29.09	in	Flat Radians:	0.524	rad
Orientation Offset:	-	°			

PLATE PROPERTIES


Neutral Axis: 135 °

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 /ΦM _n
Flats	34.130	0.00	34.130	1023.9	1843.0	55.6%
Corners	33.139	0.00	33.139	945.2	1789.5	52.8%


ASSET: 302485, Mdfd - Middlefield
CUSTOMER: T-MOBILE

CODE: ANSI/TIA-222-H
PROJECT: 14099860

ELASTIC 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)	Compressive Result	Interaction Result
Original	8	2.25	79.4	0.7	243.6	0.326	11.4% 

DYWIDAG BAR ANALYSIS

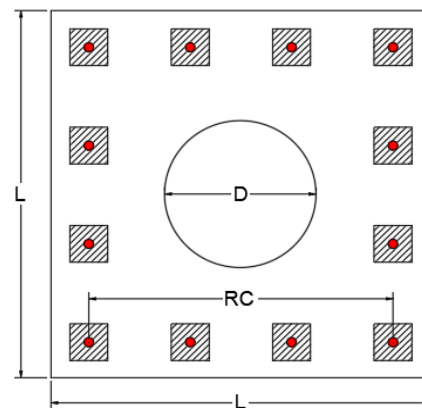
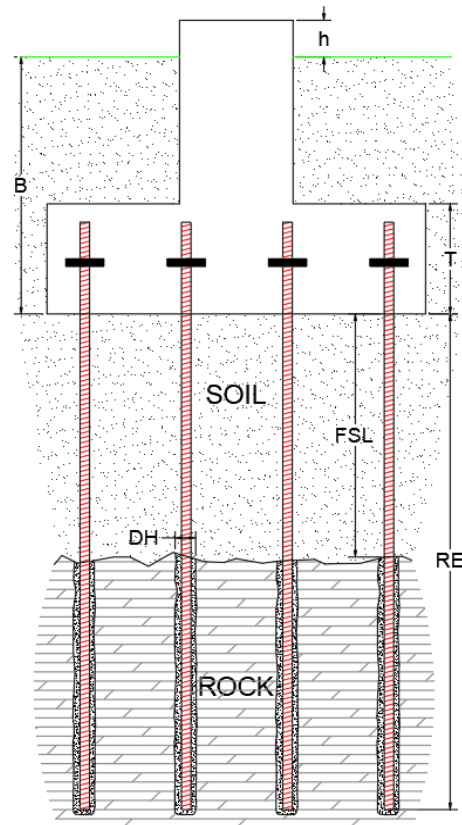
Group Quantity	Bar Size	Bar Circle (in)	Applied Axial Load P_u (k)	Compressive Capacity ΦP_n (k)	Compressive Result $P_u / \Phi P_n$
4	#20	34.85	273.9	368.2	74.4% 

Site Name: MDFD - Middlefield, CT
 Site Number: 302485
 Tower Type: MP

Design Base Loads (Factored) - Analysis per TIA-222-H Standards

Rock Anchor Group Foundation Analysis

Foundation Parameters		
Include Rebar Analysis?	N	
Include Bearing Plate Analysis?	N	
Moment (Overturning) (M_u):	1331.8	k-ft
Shear/Leg (V_u):	24.1	k
Compression/Leg (P_u):	24.7	k
Uplift/Leg (T_u):	0.0	k
Mat/Pier Height Above Ground [h]:	0.50	ft
Pier Diameter [D]:		ft
Length / Width of Mat [L]:	9.0	ft
Mat Thickness [T]:	5.00	ft
Base Depth of Mat [B]:	5.00	ft
Water Table Depth (BGL):	99.0	ft
Unit Weight of Concrete:	150	pcf
Unit Weight of Soil at Mat/Pier:	120	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Below Water Table:	57.6	pcf
Ultimate Compressive Bearing Pressure:	45,000	psf
Shear Friction Coefficient:	0.50	
Capacity Increase (Due to Transient Loads):	1.000	
Pullout Angle:	45	°
Rod Diameter:	1.00	in
Rod Ultimate Strength:	100	ksi
Rod Net Area:	0.79	in ²
Number of Rods:	12	
Rod Arrangement:	Square	
If Square: If Square, Grid or Border?	Border	
Number of Rows:	4	
Number of Columns:	4	
Rod Group Width [RC]:	90.0	in
Diameter of Cored Hole [DH]:	2.000	in
Overall Rod Embedment Length [RE]:	121.7	in
Free Stress Length [FSL]	12.0	in
Ultimate Rod-to-Grout Interface Bond Strength:	300	psi
Ultimate Grout-to-Rock Anchor Interface Bond Strength:	630	psi
Lock Off Load:	0	k
Rock Anchor Design Plastic or Elastic:	Elastic	
Ignore Pullout Weight Resistance (Y/N):	N	



Capacities & Results		
Soil Strength Reduction Factor (ϕ_s):	0.75	
Bearing Strength Reduction Factor (ϕ_b):	0.75	
Factored Nominal Moment Capacity per Leg ($\phi_s M_n$):	1677.2	k
Factored Nominal Uplift Capacity per Leg ($\phi_s T_n$):	498.9	k
Applied Moment, M_u :	1464.3	k-ft
Applied Uplift, T_u :	0.0	k
$T_u / \phi_s T_n + M_u / \phi_s M_n$:	87%	Pass
Applied Axial, P_u :	37.8	k
Factored Nominal Compressive Capacity per Leg ($\phi_b P_n$):	2147.1	k
$P_u / \phi_b P_n$:	2%	Pass
Applied Shear, V_u :	24.1	k
Factored Nominal Shear Capacity per Leg ($\phi_s V_n$):	424.1	k
$V_u / \phi_s V_n$:	6%	Pass

Governing Strengths		
Total Pullout Weight:	579.7	k
Total Grout-to-Rock Bond Strength:	2,482.5	k
Total Rod-to-Grout Bond Strength:	2,606.6	k
Total Rod Mechanical Strength:	942.5	k
Pullout Weight per Rod:	48.3	k
Rock-to-Grout Bond Strength per Rod:	206.9	k
Rod-to-Grout Bond Strength per Rod:	217.2	k
Rod Mechanical Strength per Rod:	78.5	k

EXHIBIT F

Mount Analysis Report





AMERICAN TOWER®
CORPORATION

Mount Analysis Report

ATC Site Name : Mdfd - Middlefield, CT
ATC Site Number : 302485
Engineering Number : 14099860_C8_01
Mount Elevation : 63 ft
Carrier : T-Mobile
Carrier Site Name : "CTNH569_American
Tower_Monopole_Middlefield"
Carrier Site Number : CTNH569A
Site Location : 134 Kikapoo Road
Middlefield, CT 06455-1334
41.51361111 , -72.7458
County : Middlesex
Date : April 27, 2022
Max Usage : 84%
Result : Pass



Prepared By:
Rohith Koduru
Structural Engineer I

Reviewed By:

COA: PEC.0001553



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Mount Layout 3

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Calculations Attached



Introduction

The purpose of this report is to summarize results of the mount analysis performed for T-Mobile at 63 ft.

Supporting Documents

Specifications Sheet	Site Pro 1 RMQP-4096-HK, dated May 23, 2021
Radio Frequency Data Sheet	RFDS ID #CTNH569A, dated March 15, 2022

Analysis

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

Basic Wind Speed:	119 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.00" radial ice concurrent
Codes:	ANSI/TIA-222-H
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat Topped Ridge
Crest Height (H):	309 ft
Crest Length (L):	422 ft
Spectral Response:	Ss = 0.207, S1 = 0.055
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. The mount can support the equipment as described in this report.

- Analysis based on new installation of Site Pro 1 RMQP-4096-HK Platform w/ Handrails(s) (M2050R(2500)-4[6]).

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.



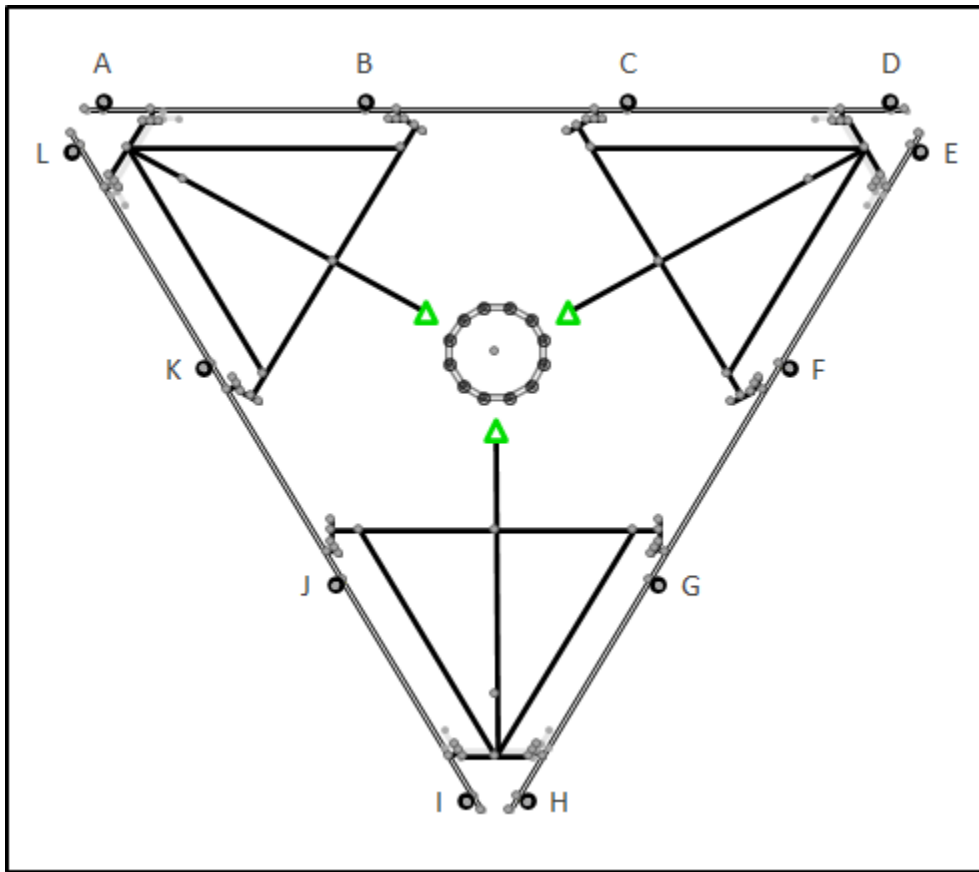
Application Loading

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
63.0	63.0	3	Ericsson AIR 6419 B41
		3	RFS APXVAALL24 43-U-NA20
		3	Ericsson 4460 BAND 2/25
		3	Ericsson 4480 BAND 71

Structure Usages

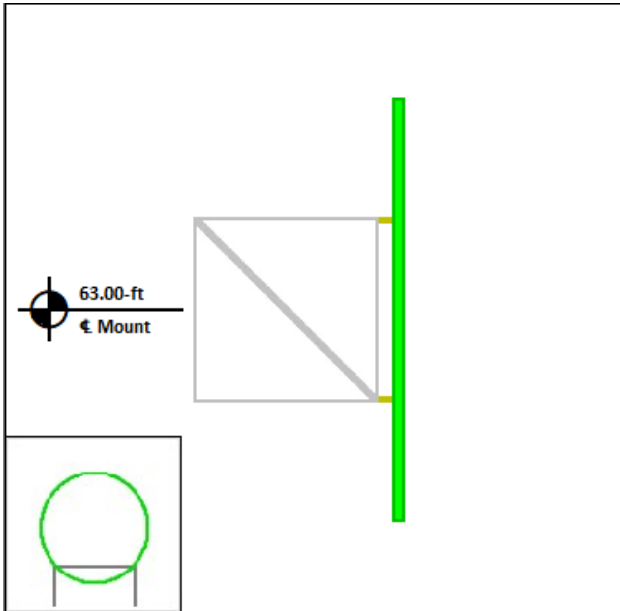
Structural Component	Controlling Usage	Pass/Fail
Horizontals	84%	Pass
Tie-Backs	9%	Pass
Mount Pipes	41%	Pass

Mount Layout

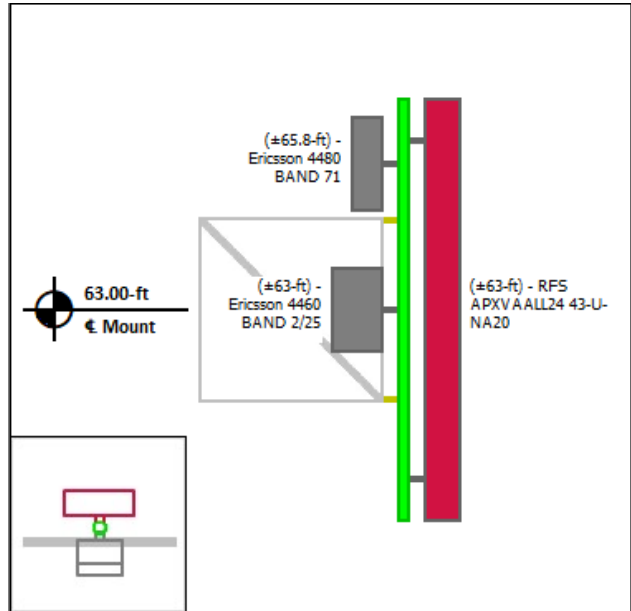


Equipment Layout

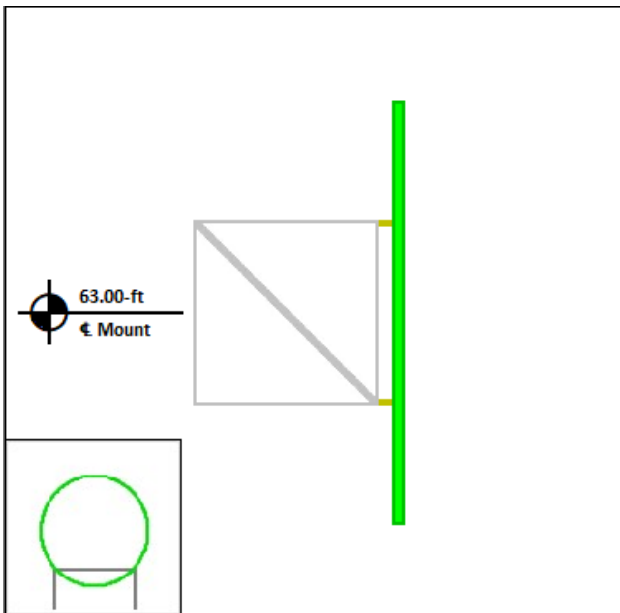
Mount Pipe A



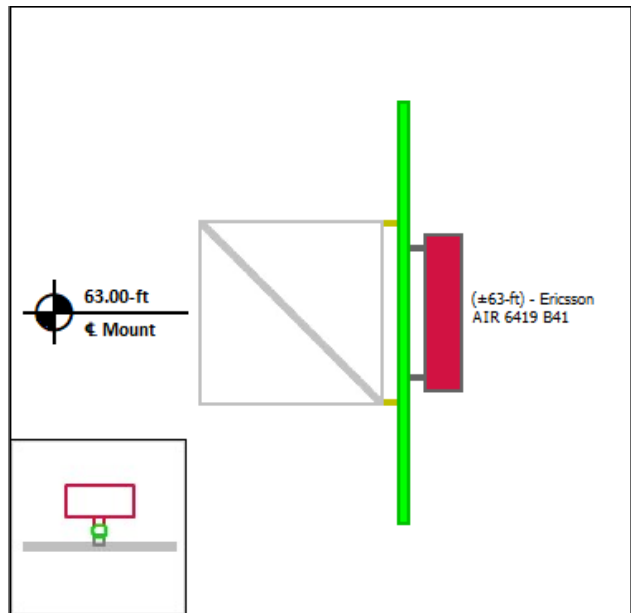
Mount Pipe B



Mount Pipe C

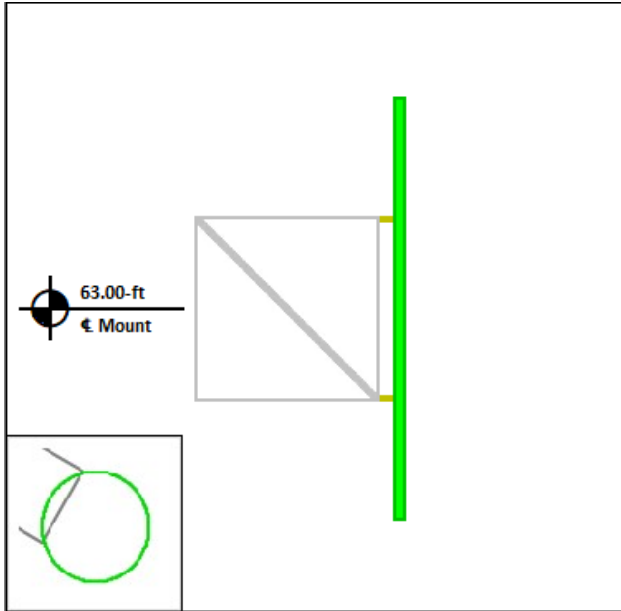


Mount Pipe D

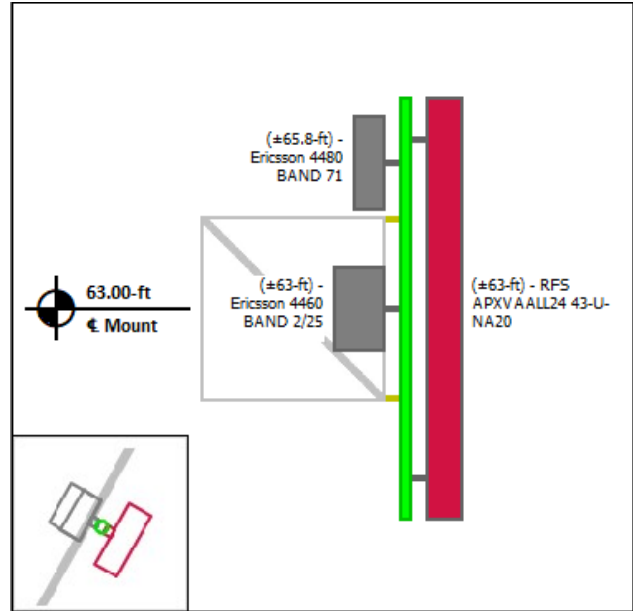


Equipment Layout Cont'd.

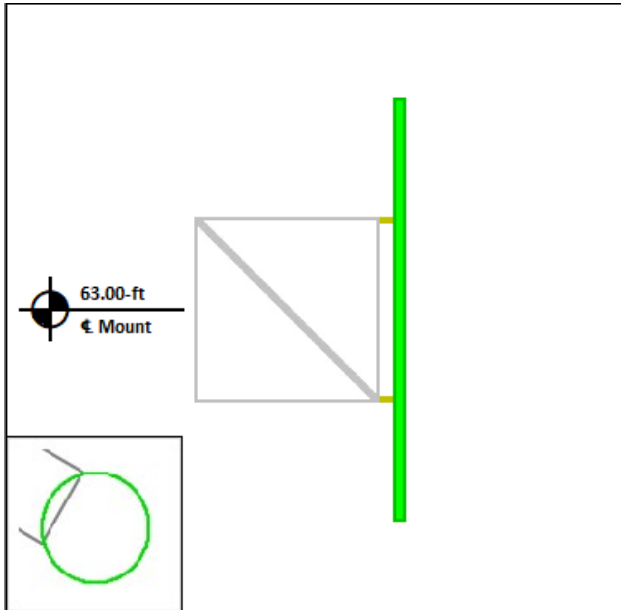
Mount Pipe E



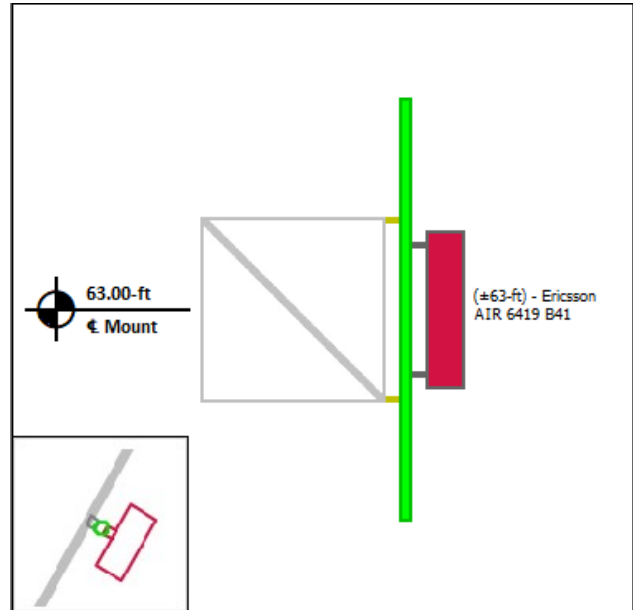
Mount Pipe F



Mount Pipe G

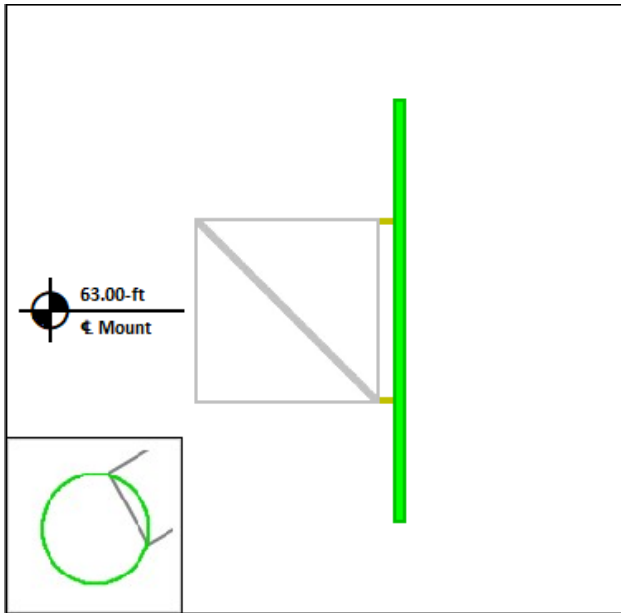


Mount Pipe H

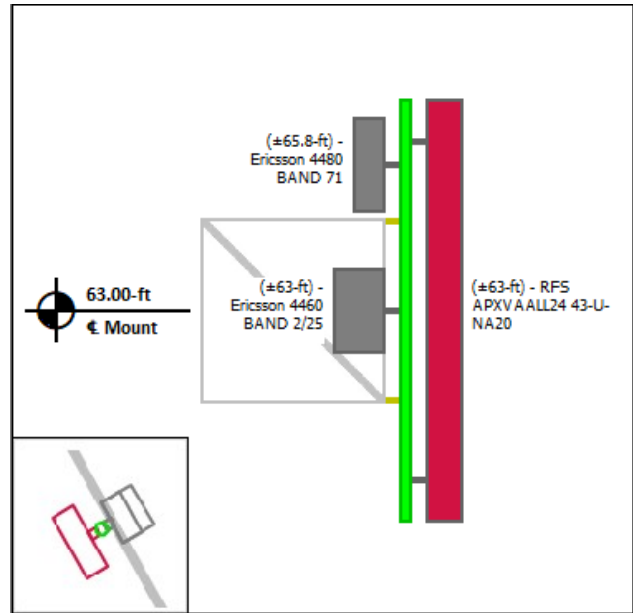


Equipment Layout Cont'd.

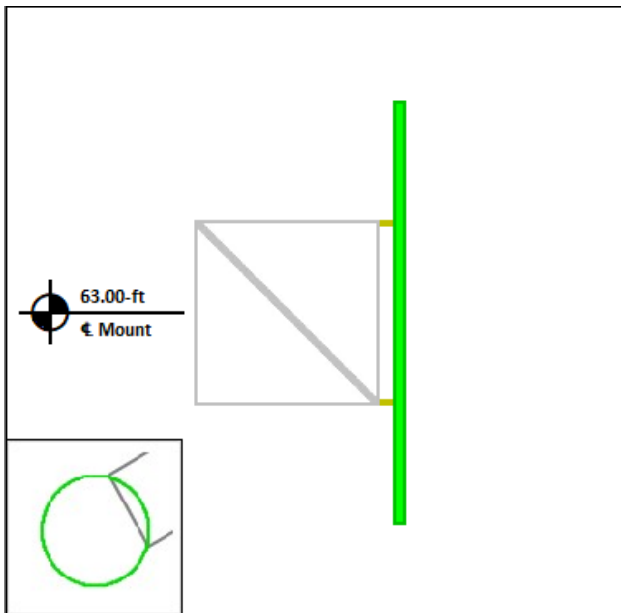
Mount Pipe I



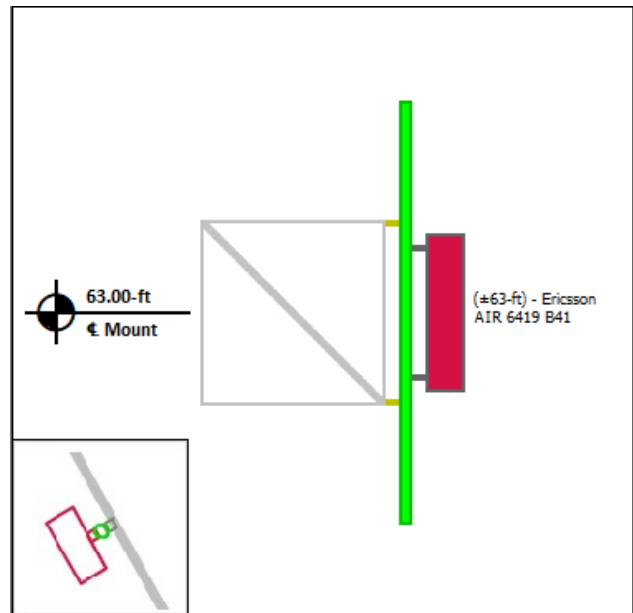
Mount Pipe J



Mount Pipe K



Mount Pipe L





Standard Conditions

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

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

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

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

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

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

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

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



Site Number: 302485
 Project Number: 14099860_C8_01
 Carrier: T-Mobile
 Mount Elevation: 63 ft
 Date: 4/27/2022

Mount Analysis Force Calculations

Wind & Ice Load Calculations			
Velocity Pressure Coefficient	K_z	0.87	
Topographic Factor	K_{zt}	1.83	
Rooftop Wind Speed-up Factor	K_s	1.00	
Shielding Factor	K_a	0.90	
Ground Elevation Factor	K_e	0.97	
Wind Direction Probability Factor	K_d	0.95	
Basic Wind Speed	V	119	mph
Velocity Pressure	q_z	53.0	psf
Height Escalation Factor	K_{iz}	1.07	
Thickness of Radial Glaze Ice	T_{iz}	1.32	in

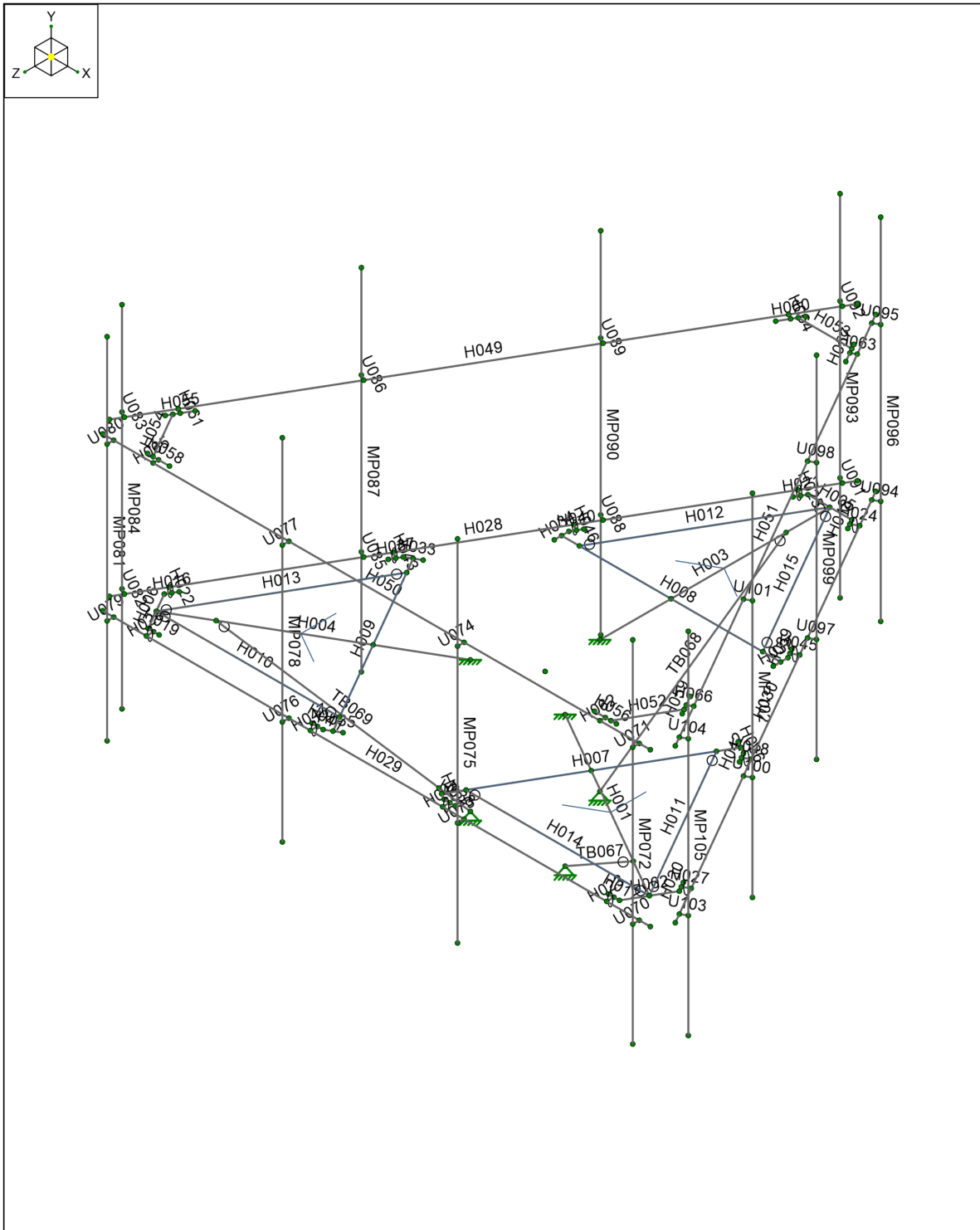
Seismic Load Calculations			
Short Period DSRAP	S_{D5}	0.221	
1 Second DSRAP	S_{D1}	0.088	
Importance Factor	I	1.0	
Response Modification Coefficient	R	2.0	
Seismic Response Coefficient	C_s	0.110	
Amplification Factor	A	1.0	
Total Weight	W	2844.7	lbs
Total Shear Force	V_s	314.1	lbs
Horizontal Seismic Load	E_h	314.1	lbs
Vertical Seismic Load	E_v	125.6	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
Ericsson AIR 6419 B41	36.3	20.9	9.0	83.3	6.32	1.82	7.64	2.52
RFS APXVAALL24 43-U-NA20	95.9	24.0	8.5	122.8	20.24	3.40	23.08	4.57
Ericsson 4460 BAND 2/25	19.6	15.7	12.1	109.0	2.56	1.98	3.40	2.73
Ericsson 4480 BAND 71	22.0	15.7	7.5	81.0	2.88	1.40	3.76	2.11

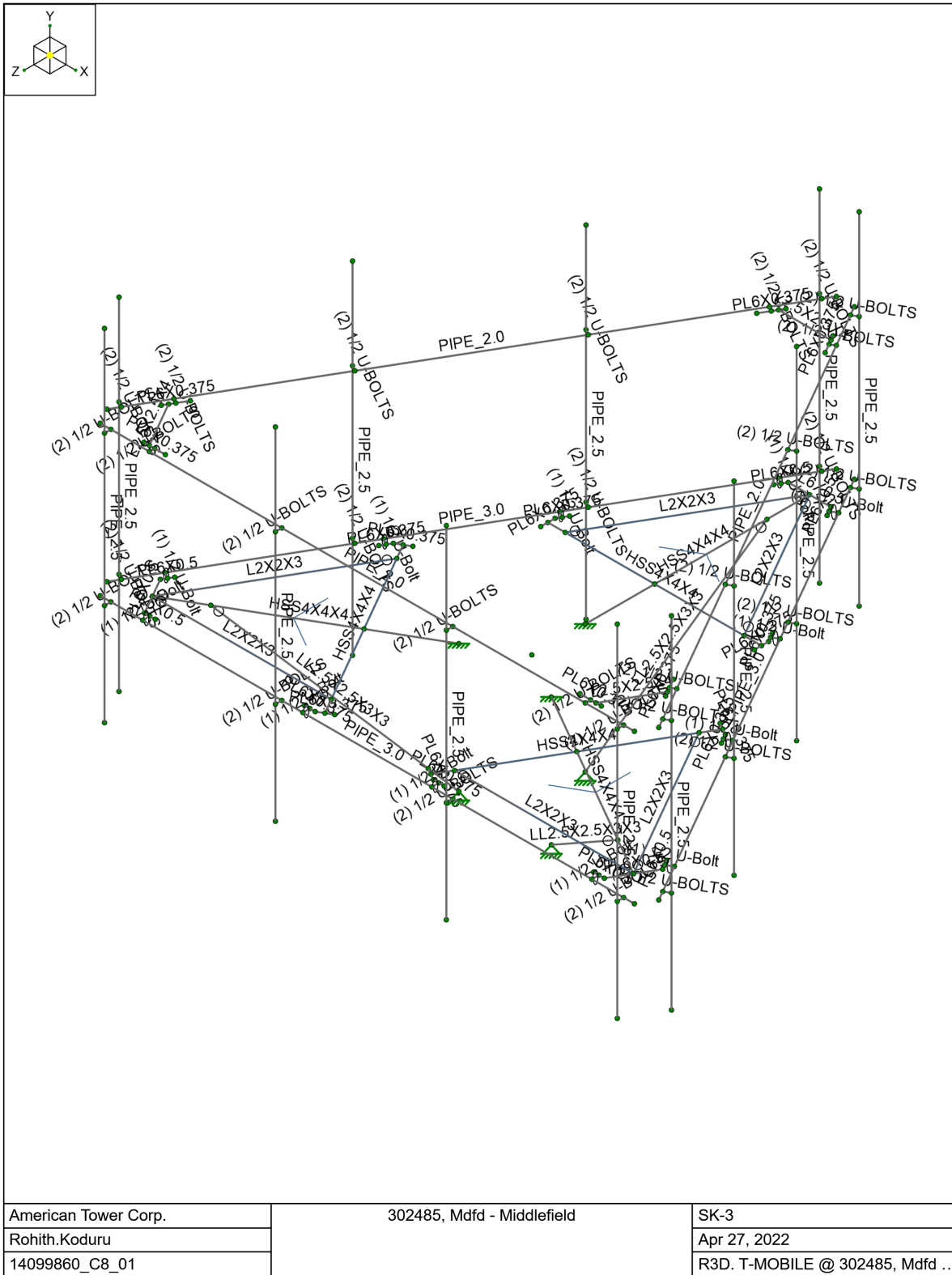
* Equipment with EPA values N/A were not considered in the mount analysis

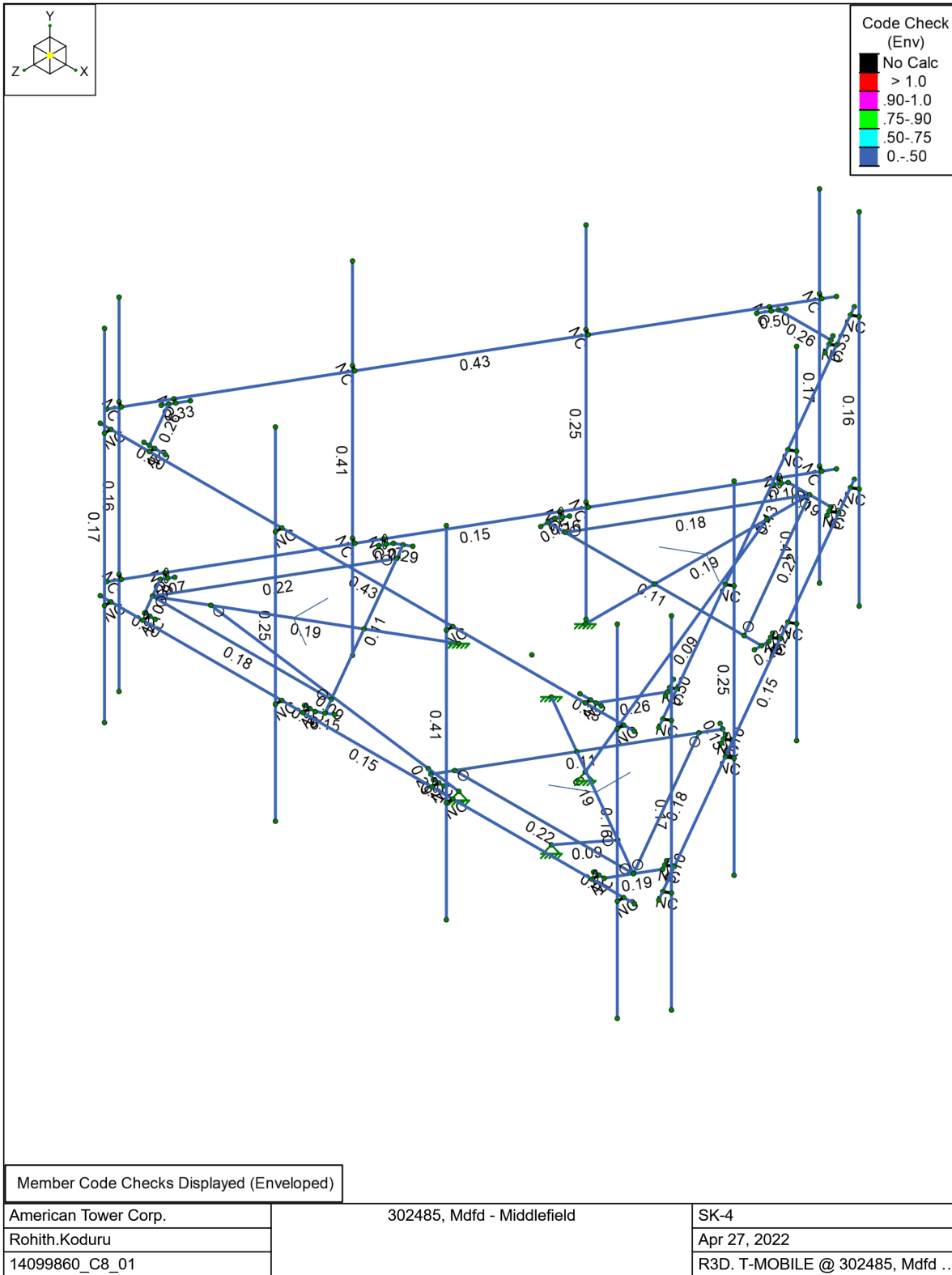


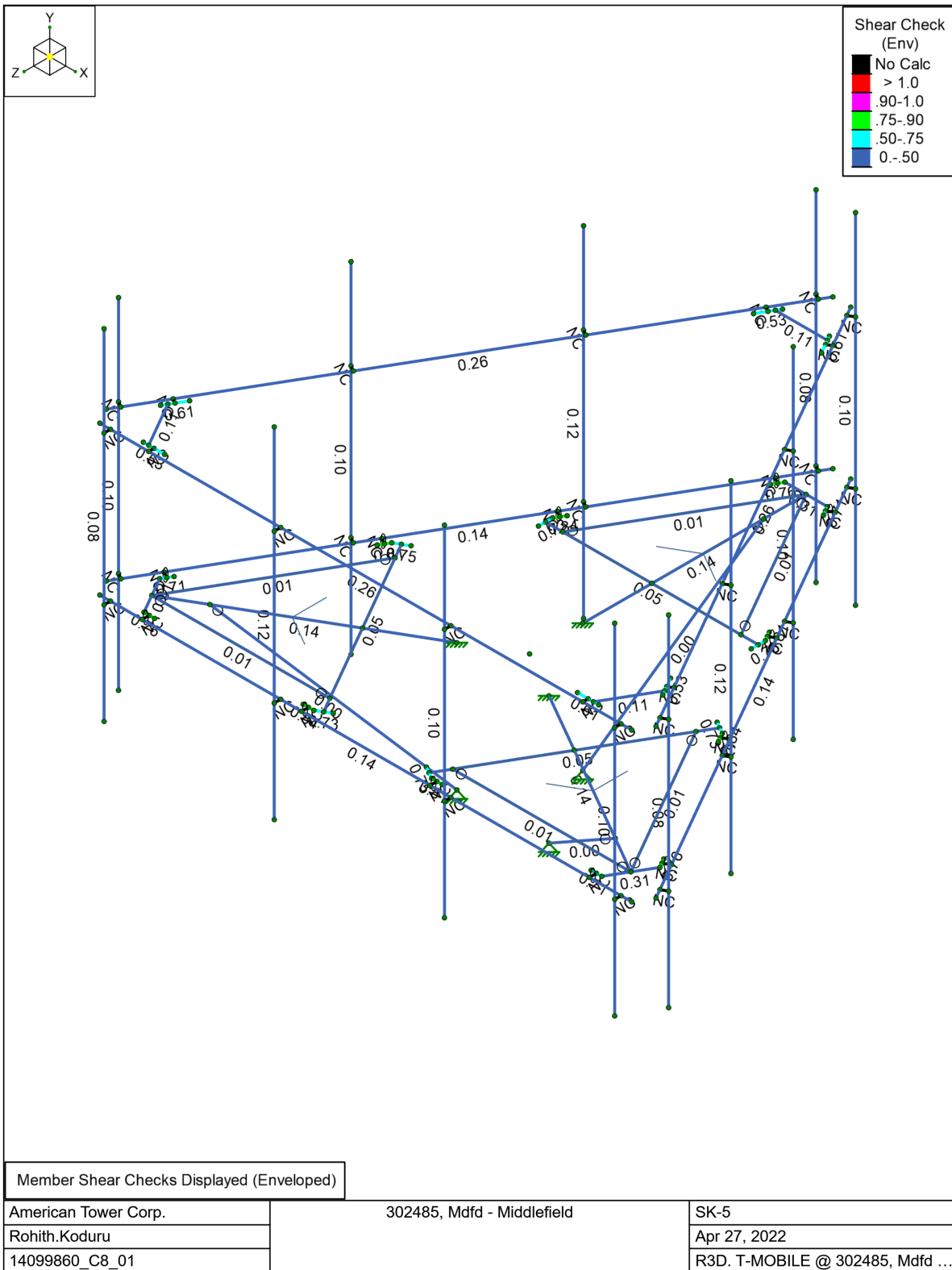
American Tower Corp.	302485, Mdfd - Middlefield	SK-1
Rohith.Koduru		Apr 27, 2022
14099860_C8_01		R3D. T-MOBILE @ 302485, Mdfd ...



American Tower Corp.	302485, Mdfd - Middlefield	SK-2
Rohith.Koduru		Apr 27, 2022
14099860_C8_01		R3D. T-MOBILE @ 302485, Mdfd ...







Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Surface(Plate/Wall)
1	D	DL	-1		18		
2	Di	IL			18	63	3
3	W 0	WL			18	105	
4	W 30	WL			36	210	
5	W 60	WL			36	210	
6	W 90	WL			18	111	
7	W 120	WL			36	210	
8	W 150	WL			36	210	
9	W 180	WL			18	105	
10	W 210	WL			36	210	
11	W 240	WL			36	210	
12	W 270	WL			18	111	
13	W 300	WL			36	210	
14	W 330	WL			36	210	
15	Wi 0	WL			18	105	
16	Wi 30	WL			36	210	
17	Wi 60	WL			36	210	
18	Wi 90	WL			18	111	
19	Wi 120	WL			36	210	
20	Wi 150	WL			36	210	
21	Wi 180	WL			18	105	
22	Wi 210	WL			36	210	
23	Wi 240	WL			36	210	
24	Wi 270	WL			18	111	
25	Wi 300	WL			36	210	
26	Wi 330	WL			36	210	
27	Ws 0	WL			18	105	
28	Ws 30	WL			36	210	
29	Ws 60	WL			36	210	
30	Ws 90	WL			18	111	
31	Ws 120	WL			36	210	
32	Ws 150	WL			36	210	
33	Ws 180	WL			18	105	
34	Ws 210	WL			36	210	
35	Ws 240	WL			36	210	
36	Ws 270	WL			18	111	
37	Ws 300	WL			36	210	
38	Ws 330	WL			36	210	
39	Ev -Y	ELY				63	
40	Eh -Z	ELZ				63	
41	Eh -X	ELX				63	
42	Lm (1)	LL		1			
43	Lm (2)	LL		1			
44	Lm (3)	LL		1			
45	Lm (4)	LL		1			
46	Lm (5)	LL		1			
47	Lm (6)	LL		1			
48	Lm (7)	LL		1			
49	Lm (8)	LL		1			
50	Lm (9)	LL		1			
51	Lm (10)	LL		1			
52	Lm (11)	LL		1			
53	Lm (12)	LL		1			

Node Boundary Conditions

Node Label	X [lb/in]	Y [lb/in]	Z [lb/in]	X Rot [k-in/rad]	Y Rot [k-in/rad]	Z Rot [k-in/rad]
1 N002	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2 N006	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3 N007	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4 N119	Reaction	Reaction	Reaction			
5 N120	Reaction	Reaction	Reaction			
6 N121	Reaction	Reaction	Reaction			

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	H001	N002	N003		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
2	H002	N004	N005		PL6X0.5	Beam	None	A36	Typical
3	H003	N006	N012		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
4	H004	N007	N013		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
5	H005	N008	N010		PL6X0.5	Beam	None	A36	Typical
6	H006	N009	N011		PL6X0.5	Beam	None	A36	Typical
7	H007	N015	N016		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
8	H008	N021	N023		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
9	H009	N022	N024		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
10	H010	N033	N013		L2X2X3	Beam	None	A36	Typical
11	H011	N034	N003		L2X2X3	Beam	None	A36	Typical
12	H012	N029	N012		L2X2X3	Beam	None	A36	Typical
13	H013	N030	N013	270	L2X2X3	Beam	None	A36	Typical
14	H014	N031	N003	270	L2X2X3	Beam	None	A36	Typical
15	H015	N032	N012	270	L2X2X3	Beam	None	A36	Typical
16	H016	N009	N036		PL6X0.5	Beam	None	A36	Typical
17	H017	N004	N042		PL6X0.5	Beam	None	A36	Typical
18	H018	N008	N043		PL6X0.5	Beam	None	A36	Typical
19	H019	N011	N048		PL6X0.5	Beam	None	A36	Typical
20	H020	N005	N049		PL6X0.5	Beam	None	A36	Typical
21	H021	N010	N037		PL6X0.5	Beam	None	A36	Typical
22	H022	N038	N040		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
23	H023	N044	N050		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
24	H024	N045	N051		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
25	H025	N039	N041		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
26	H026	N046	N052		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
27	H027	N047	N053		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
28	H028	N017	N018		PIPE 3.0	Beam	None	A53 Gr. B	Typical
29	H029	N025	N027		PIPE 3.0	Beam	None	A53 Gr. B	Typical
30	H030	N026	N028		PIPE 3.0	Beam	None	A53 Gr. B	Typical
31	H031	N054	N055		PL6X0.375	Beam	None	A36	Typical
32	H032	N056	N058		PL6X0.375	Beam	None	A36	Typical
33	H033	N057	N059		PL6X0.375	Beam	None	A36	Typical
34	H034	N060	N062		PL6X0.375	Beam	None	A36	Typical
35	H035	N061	N063		PL6X0.375	Beam	None	A36	Typical
36	H036	N064	N035		PL6X0.375	Beam	None	A36	Typical
37	H037	N059	N065		PL6X0.375	Beam	None	A36	Typical
38	H038	N055	N071		PL6X0.375	Beam	None	A36	Typical
39	H039	N058	N072		PL6X0.375	Beam	None	A36	Typical
40	H040	N062	N066		PL6X0.375	Beam	None	A36	Typical
41	H041	N063	N073		PL6X0.375	Beam	None	A36	Typical
42	H042	N035	N074		PL6X0.375	Beam	None	A36	Typical
43	H043	N067	N069		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
44	H044	N075	N079		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
45	H045	N076	N080		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
46	H046	N068	N070		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
47	H047	N077	N081		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
48	H048	N078	N082		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
49	H049	N083	N084		PIPE 2.0	Beam	None	A53 Gr. B	Typical
50	H050	N085	N087		PIPE 2.0	Beam	None	A53 Gr. B	Typical
51	H051	N086	N088		PIPE 2.0	Beam	None	A53 Gr. B	Typical
52	H052	N093	N094	90	L2.5X2.5X4	Beam	None	A36	Typical
53	H053	N090	N091	90	L2.5X2.5X4	Beam	None	A36	Typical
54	H054	N089	N092	90	L2.5X2.5X4	Beam	None	A36	Typical
55	H055	N095	N098		PL6X0.375	Beam	None	A36	Typical
56	H056	N096	N099		PL6X0.375	Beam	None	A36	Typical
57	H057	N097	N100		PL6X0.375	Beam	None	A36	Typical
58	H058	N102	N105		PL6X0.375	Beam	None	A36	Typical
59	H059	N103	N106		PL6X0.375	Beam	None	A36	Typical
60	H060	N101	N104		PL6X0.375	Beam	None	A36	Typical
61	H061	N107	N113		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
62	H062	N108	N114		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
63	H063	N109	N115		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
64	H064	N110	N116		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
65	H065	N111	N117		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
66	H066	N112	N118		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
67	TB067	N119	N122		LL2.5X2.5X3X3	Column	None	A36	Typical
68	TB068	N120	N123		LL2.5X2.5X3X3	Column	None	A36	Typical
69	TB069	N121	N124		LL2.5X2.5X3X3	Column	None	A36	Typical
70	U070	N125	N137		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
71	U071	N138	N139		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
72	MP072	N140	N141		PIPE 2.5	Column	None	A53 Gr. B	Typical
73	U073	N126	N142		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
74	U074	N143	N144		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
75	MP075	N145	N146		PIPE 2.5	Column	None	A53 Gr. B	Typical
76	U076	N127	N147		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
77	U077	N148	N149		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
78	MP078	N150	N151		PIPE 2.5	Column	None	A53 Gr. B	Typical
79	U079	N128	N152		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
80	U080	N153	N154		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
81	MP081	N155	N156		PIPE 2.5	Column	None	A53 Gr. B	Typical
82	U082	N130	N157		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
83	U083	N158	N159		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
84	MP084	N160	N161		PIPE 2.5	Column	None	A53 Gr. B	Typical
85	U085	N132	N162		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
86	U086	N163	N164		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
87	MP087	N165	N166		PIPE 2.5	Column	None	A53 Gr. B	Typical
88	U088	N134	N167		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
89	U089	N168	N169		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
90	MP090	N170	N171		PIPE 2.5	Column	None	A53 Gr. B	Typical
91	U091	N136	N172		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
92	U092	N173	N174		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
93	MP093	N175	N176		PIPE 2.5	Column	None	A53 Gr. B	Typical
94	U094	N129	N177		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
95	U095	N178	N179		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
96	MP096	N180	N181		PIPE 2.5	Column	None	A53 Gr. B	Typical
97	U097	N131	N182		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
98	U098	N183	N184		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
99	MP099	N185	N186		PIPE 2.5	Column	None	A53 Gr. B	Typical
100	U100	N133	N187		(2) 1/2 U-BOLTS	Beam	None	A36	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
101	U101	N188	N189		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
102	MP102	N190	N191		PIPE 2.5	Column	None	A53 Gr. B	Typical
103	U103	N135	N192		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
104	U104	N193	N194		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
105	MP105	N195	N196		PIPE 2.5	Column	None	A53 Gr. B	Typical

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
1	H001			Yes	N/A		None
2	H002			Yes	N/A		None
3	H003			Yes	N/A		None
4	H004			Yes	N/A		None
5	H005			Yes	N/A		None
6	H006			Yes	N/A		None
7	H007			Yes	N/A		None
8	H008			Yes	N/A		None
9	H009			Yes	N/A		None
10	H010	BenPIN	BenPIN	Yes	N/A		None
11	H011	BenPIN	BenPIN	Yes	N/A		None
12	H012	BenPIN	BenPIN	Yes	N/A		None
13	H013	BenPIN	BenPIN	Yes	N/A		None
14	H014	BenPIN	BenPIN	Yes	N/A		None
15	H015	BenPIN	BenPIN	Yes	N/A		None
16	H016			Yes	N/A		None
17	H017			Yes	N/A		None
18	H018			Yes	N/A		None
19	H019			Yes	N/A		None
20	H020			Yes	N/A		None
21	H021			Yes	N/A		None
22	H022	OOOXOO		Yes	Default	Exclude	None
23	H023	OOOXOO		Yes	Default	Exclude	None
24	H024	OOOXOO		Yes	Default	Exclude	None
25	H025	OOOXOO		Yes	Default	Exclude	None
26	H026	OOOXOO		Yes	Default	Exclude	None
27	H027	OOOXOO		Yes	Default	Exclude	None
28	H028			Yes	N/A		None
29	H029			Yes	N/A		None
30	H030			Yes	N/A		None
31	H031			Yes	N/A		None
32	H032			Yes	N/A		None
33	H033			Yes	N/A		None
34	H034			Yes	N/A		None
35	H035			Yes	N/A		None
36	H036			Yes	N/A		None
37	H037			Yes	N/A		None
38	H038			Yes	N/A		None
39	H039			Yes	N/A		None
40	H040			Yes	N/A		None
41	H041			Yes	N/A		None
42	H042			Yes	N/A		None
43	H043	OOOXOO		Yes	Default	Exclude	None
44	H044	OOOXOO		Yes	Default	Exclude	None
45	H045	OOOXOO		Yes	Default	Exclude	None
46	H046	OOOXOO		Yes	Default	Exclude	None
47	H047	OOOXOO		Yes	Default	Exclude	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
48	H048	OOOXOO		Yes	Default	Exclude	None
49	H049			Yes	N/A		None
50	H050			Yes	N/A		None
51	H051			Yes	N/A		None
52	H052			Yes	N/A		None
53	H053			Yes	N/A		None
54	H054			Yes	N/A		None
55	H055			Yes	N/A		None
56	H056			Yes	N/A		None
57	H057			Yes	N/A		None
58	H058			Yes	N/A		None
59	H059			Yes	N/A		None
60	H060			Yes	N/A		None
61	H061			Yes	N/A	Exclude	None
62	H062			Yes	N/A	Exclude	None
63	H063			Yes	N/A	Exclude	None
64	H064			Yes	N/A	Exclude	None
65	H065			Yes	N/A	Exclude	None
66	H066			Yes	N/A	Exclude	None
67	TB067		BenPIN	Yes	** NA **		None
68	TB068		BenPIN	Yes	** NA **		None
69	TB069		BenPIN	Yes	** NA **		None
70	U070			Yes	N/A	Exclude	None
71	U071			Yes	N/A	Exclude	None
72	MP072			Yes	** NA **		None
73	U073			Yes	N/A	Exclude	None
74	U074			Yes	N/A	Exclude	None
75	MP075			Yes	** NA **		None
76	U076			Yes	N/A	Exclude	None
77	U077			Yes	N/A	Exclude	None
78	MP078			Yes	** NA **		None
79	U079			Yes	N/A	Exclude	None
80	U080			Yes	N/A	Exclude	None
81	MP081			Yes	** NA **		None
82	U082			Yes	N/A	Exclude	None
83	U083			Yes	N/A	Exclude	None
84	MP084			Yes	** NA **		None
85	U085			Yes	N/A	Exclude	None
86	U086			Yes	N/A	Exclude	None
87	MP087			Yes	** NA **		None
88	U088			Yes	N/A	Exclude	None
89	U089			Yes	N/A	Exclude	None
90	MP090			Yes	** NA **		None
91	U091			Yes	N/A	Exclude	None
92	U092			Yes	N/A	Exclude	None
93	MP093			Yes	** NA **		None
94	U094			Yes	N/A	Exclude	None
95	U095			Yes	N/A	Exclude	None
96	MP096			Yes	** NA **		None
97	U097			Yes	N/A	Exclude	None
98	U098			Yes	N/A	Exclude	None
99	MP099			Yes	** NA **		None
100	U100			Yes	N/A	Exclude	None
101	U101			Yes	N/A	Exclude	None
102	MP102			Yes	** NA **		None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
103	U103			Yes	N/A	Exclude	None
104	U104			Yes	N/A	Exclude	None
105	MP105			Yes	** NA **		None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
1	H001	HSS4X4X4	63			Lbyy		1	1	Lateral
2	H002	PL6X0.5	12			Lbyy		0.65	0.65	Lateral
3	H003	HSS4X4X4	63			Lbyy		1	1	Lateral
4	H004	HSS4X4X4	63			Lbyy		1	1	Lateral
5	H005	PL6X0.5	12			Lbyy		0.65	0.65	Lateral
6	H006	PL6X0.5	12			Lbyy		0.65	0.65	Lateral
7	H007	HSS4X4X4	60			Lbyy		0.65	0.65	Lateral
8	H008	HSS4X4X4	60			Lbyy		0.65	0.65	Lateral
9	H009	HSS4X4X4	60			Lbyy		0.65	0.65	Lateral
10	H010	L2X2X3	50.229			Lbyy		1	1	Lateral
11	H011	L2X2X3	50.229			Lbyy		1	1	Lateral
12	H012	L2X2X3	50.229			Lbyy		1	1	Lateral
13	H013	L2X2X3	50.229			Lbyy		1	1	Lateral
14	H014	L2X2X3	50.229			Lbyy		1	1	Lateral
15	H015	L2X2X3	50.229			Lbyy		1	1	Lateral
16	H016	PL6X0.5	3			Lbyy		1	1	Lateral
17	H017	PL6X0.5	3			Lbyy		1	1	Lateral
18	H018	PL6X0.5	3			Lbyy		1	1	Lateral
19	H019	PL6X0.5	3			Lbyy		1	1	Lateral
20	H020	PL6X0.5	3			Lbyy		1	1	Lateral
21	H021	PL6X0.5	3			Lbyy		1	1	Lateral
22	H022	(1) 1/2 U-Bolt	2			Lbyy		0.65	0.65	Lateral
23	H023	(1) 1/2 U-Bolt	2			Lbyy		0.65	0.65	Lateral
24	H024	(1) 1/2 U-Bolt	2			Lbyy		0.65	0.65	Lateral
25	H025	(1) 1/2 U-Bolt	2			Lbyy		0.65	0.65	Lateral
26	H026	(1) 1/2 U-Bolt	2			Lbyy		0.65	0.65	Lateral
27	H027	(1) 1/2 U-Bolt	2			Lbyy		0.65	0.65	Lateral
28	H028	PIPE 3.0	150			Lbyy		1	1	Lateral
29	H029	PIPE 3.0	150			Lbyy		1	1	Lateral
30	H030	PIPE 3.0	150			Lbyy		1	1	Lateral
31	H031	PL6X0.375	4			Lbyy		0.65	0.65	Lateral
32	H032	PL6X0.375	4			Lbyy		0.65	0.65	Lateral
33	H033	PL6X0.375	4			Lbyy		0.65	0.65	Lateral
34	H034	PL6X0.375	4			Lbyy		0.65	0.65	Lateral
35	H035	PL6X0.375	4			Lbyy		0.65	0.65	Lateral
36	H036	PL6X0.375	4			Lbyy		0.65	0.65	Lateral
37	H037	PL6X0.375	3			Lbyy		1	1	Lateral
38	H038	PL6X0.375	3			Lbyy		1	1	Lateral
39	H039	PL6X0.375	3			Lbyy		1	1	Lateral
40	H040	PL6X0.375	3			Lbyy		1	1	Lateral
41	H041	PL6X0.375	3			Lbyy		1	1	Lateral
42	H042	PL6X0.375	3			Lbyy		1	1	Lateral
43	H043	(1) 1/2 U-Bolt	1.965			Lbyy		0.65	0.65	Lateral
44	H044	(1) 1/2 U-Bolt	1.965			Lbyy		0.65	0.65	Lateral
45	H045	(1) 1/2 U-Bolt	1.965			Lbyy		0.65	0.65	Lateral
46	H046	(1) 1/2 U-Bolt	1.965			Lbyy		0.65	0.65	Lateral
47	H047	(1) 1/2 U-Bolt	1.965			Lbyy		0.65	0.65	Lateral
48	H048	(1) 1/2 U-Bolt	1.965			Lbyy		0.65	0.65	Lateral
49	H049	PIPE 2.0	150			Lbyy		0.65	0.65	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
50	H050	PIPE 2.0	150			Lbyy		0.65	0.65	Lateral
51	H051	PIPE 2.0	150			Lbyy		0.65	0.65	Lateral
52	H052	L2.5X2.5X4	14.71			Lbyy		0.65	0.65	Lateral
53	H053	L2.5X2.5X4	14.71			Lbyy		0.65	0.65	Lateral
54	H054	L2.5X2.5X4	14.71			Lbyy		0.65	0.65	Lateral
55	H055	PL6X0.375	6			Lbyy		0.65	0.65	Lateral
56	H056	PL6X0.375	6			Lbyy		0.65	0.65	Lateral
57	H057	PL6X0.375	6			Lbyy		0.65	0.65	Lateral
58	H058	PL6X0.375	6			Lbyy		0.65	0.65	Lateral
59	H059	PL6X0.375	6			Lbyy		0.65	0.65	Lateral
60	H060	PL6X0.375	6			Lbyy		0.65	0.65	Lateral
61	H061	(2) 1/2 U-BOLTS	1.5			Lbyy		0.65	0.65	Lateral
62	H062	(2) 1/2 U-BOLTS	1.5			Lbyy		0.65	0.65	Lateral
63	H063	(2) 1/2 U-BOLTS	1.5			Lbyy		0.65	0.65	Lateral
64	H064	(2) 1/2 U-BOLTS	1.5			Lbyy		0.65	0.65	Lateral
65	H065	(2) 1/2 U-BOLTS	1.5			Lbyy		0.65	0.65	Lateral
66	H066	(2) 1/2 U-BOLTS	1.5			Lbyy		0.65	0.65	Lateral
67	TB067	LL2.5X2.5X3X3	62.426			Lbyy		1	1	Lateral
68	TB068	LL2.5X2.5X3X3	62.426			Lbyy		1	1	Lateral
69	TB069	LL2.5X2.5X3X3	62.426			Lbyy		1	1	Lateral
70	U070	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
71	U071	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
72	MP072	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
73	U073	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
74	U074	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
75	MP075	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
76	U076	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
77	U077	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
78	MP078	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
79	U079	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
80	U080	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
81	MP081	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
82	U082	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
83	U083	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
84	MP084	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
85	U085	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
86	U086	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
87	MP087	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
88	U088	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
89	U089	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
90	MP090	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
91	U091	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
92	U092	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
93	MP093	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
94	U094	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
95	U095	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
96	MP096	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
97	U097	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
98	U098	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
99	MP099	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
100	U100	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
101	U101	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
102	MP102	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
103	U103	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral
104	U104	(2) 1/2 U-BOLTS	1.804			Lbyy		0.5	0.5	Lateral

Hot Rolled Steel Design Parameters (Continued)

Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
105 MP105	PIPE 2.5	96	Segment	Segment	Lbby	Segment	2.1	2.1	Lateral

Hot Rolled Steel Properties

Label	E [psi]	G [psi]	Nu	Therm. Coeff. [1e ⁵ F ⁻¹]	Density [lb/ft ³]	Yield [psi]	Ry	Fu [psi]	Rt
1 A500 Gr. B [SQR]	2.9e+07	1.115e+07	0.3	0.65	527	46000	1.4	58000	1.3
2 A36	2.9e+07	1.115e+07	0.3	0.65	490	36000	1.5	58000	1.2
3 SAE J429 Gr. 2	2.9e+07	1.115e+07	0.3	0.65	490	57000	1.1	74000	1.1
4 A53 Gr. B	2.9e+07	1.115e+07	0.3	0.65	490	35000	1.6	60000	1.2

Envelope Node Reactions

Node Label	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1 N002	max 3575.745	16	732.149	28	2402.59	14	649.536	25	2726.377	7	891.236	182
2	min -5001.638	10	-8.242	22	-3223.657	8	-1170.724	7	-2720.433	25	-351.773	20
3 N006	max 2174.674	5	732.166	32	5928.242	2	781.982	32	2726.422	11	1148.477	11
4	min -2174.125	23	-8.323	14	-4282.434	20	69.66	14	-2720.479	17	-909.234	17
5 N007	max 5274.306	6	732.15	36	1917.416	24	832.194	15	2726.381	3	215.812	21
6	min -3849.644	24	-8.246	18	-2741.441	6	-941.763	9	-2720.437	21	-1025.6	123
7 N119	max 2481.812	10	2065.317	10	1420.373	10	0	205	0	205	0	205
8	min -799.778	16	-661.988	16	-449.144	16	0	1	0	1	0	1
9 N120	max 50.734	17	2065.407	2	928.22	20	0	205	0	205	0	205
10	min -50.67	23	-662.07	20	-2870.528	2	0	1	0	1	0	1
11 N121	max 799.769	24	2065.318	6	1420.29	6	0	205	0	205	0	205
12	min -2481.862	6	-661.987	24	-449.157	24	0	1	0	1	0	1
13 Totals:	max 6798.298	5	7115.08	36	7290.548	2						
14	min -6798.298	11	2545.121	18	-7290.548	8						

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

Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
1 H001	HSS4X4X4	0.195	0	7	0.141	0	z	7	124317.885	139518	16180.5	16180.5	2.304	H1-1b
2 H002	PL6X0.5	0.192	6	10	0.31	12	y	6	83348.625	97200	1012.5	12150	1.162	H1-1b
3 H003	HSS4X4X4	0.195	0	11	0.141	0	z	11	124317.885	139518	16180.5	16180.5	2.304	H1-1b
4 H004	HSS4X4X4	0.195	0	3	0.141	0	z	3	124317.885	139518	16180.5	16180.5	2.304	H1-1b
5 H005	PL6X0.5	0.192	6	2	0.31	12	y	10	83348.625	97200	1012.5	12150	1.162	H1-1b
6 H006	PL6X0.5	0.193	6	6	0.31	12	y	2	83348.625	97200	1012.5	12150	1.162	H1-1b
7 H007	HSS4X4X4	0.108	30	33	0.052	4.375	z	9	133484.923	139518	16180.5	16180.5	1.368	H1-1b
8 H008	HSS4X4X4	0.108	30	37	0.052	4.375	z	13	133484.923	139518	16180.5	16180.5	1.368	H1-1b
9 H009	HSS4X4X4	0.108	30	29	0.052	4.375	z	5	133484.923	139518	16180.5	16180.5	1.368	H1-1b
10 H010	L2X2X3	0.181	25.638	19	0.01	50.229	z	2	9724.796	23392.8	557.717	1072.365	1.136	H2-1
11 H011	L2X2X3	0.181	25.638	23	0.01	50.229	z	6	9724.796	23392.8	557.717	1072.365	1.136	H2-1
12 H012	L2X2X3	0.181	25.638	15	0.01	50.229	z	10	9724.796	23392.8	557.717	1072.365	1.136	H2-1
13 H013	L2X2X3	0.22	25.115	16	0.01	50.229	y	10	9724.796	23392.8	557.717	1072.365	1.136	H2-1
14 H014	L2X2X3	0.22	25.115	20	0.01	50.229	y	2	9724.796	23392.8	557.717	1072.365	1.136	H2-1
15 H015	L2X2X3	0.22	25.115	24	0.01	50.229	y	6	9724.796	23392.8	557.717	1072.365	1.136	H2-1
16 H016	PL6X0.5	0.069	0	12	0.713	0	y	4	95014.386	97200	1012.5	12150	3	H1-1b
17 H017	PL6X0.5	0.07	0	4	0.713	0	y	8	95014.386	97200	1012.5	12150	3	H1-1b
18 H018	PL6X0.5	0.069	0	8	0.713	0	y	12	95014.386	97200	1012.5	12150	3	H1-1b
19 H019	PL6X0.5	0.098	1.5	2	0.755	0	y	8	95014.386	97200	1012.5	12150	3	H1-1b
20 H020	PL6X0.5	0.098	1.5	6	0.755	0	y	12	95014.386	97200	1012.5	12150	3	H1-1b
21 H021	PL6X0.5	0.098	1.5	10	0.755	0	y	4	95014.386	97200	1012.5	12150	3	H1-1b
22 H028	PIPE 3.0	0.15	51.563	13	0.144	56.25	z	9	28250.554	65205	5748.75	5748.75	3	H1-1b
23 H029	PIPE 3.0	0.15	51.562	5	0.144	56.25	z	13	28250.554	65205	5748.75	5748.75	3	H1-1b
24 H030	PIPE 3.0	0.15	51.563	9	0.144	56.25	z	5	28250.554	65205	5748.75	5748.75	3	H1-1b

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

Member	Shape	Code	Check	Loc[in]	LC	Shear	Check	Loc[in]	Dir	LC	phi*	Pnc [lb]	phi*	Pnt [lb]	phi*	Mn y-y [lb-ft]	phi*	Mn z-z [lb-ft]	Cb	Eqn
25	H031	PL6X0.375	0.291	2	7	0.753	2	y	2	7	0.753	2910	72900	569.531	9112.5	1.341	H1-1b			
26	H032	PL6X0.375	0.291	2	11	0.753	2	y	6	7	0.753	2910	72900	569.531	9112.5	1.341	H1-1b			
27	H033	PL6X0.375	0.291	2	3	0.753	2	y	10	7	0.753	2910	72900	569.531	9112.5	1.341	H1-1b			
28	H034	PL6X0.375	0.152	2	5	0.734	2	y	10	7	0.734	1520	72900	569.531	9112.5	1.332	H1-1b			
29	H035	PL6X0.375	0.152	2	9	0.734	2	y	2	7	0.734	1520	72900	569.531	9112.5	1.332	H1-1b			
30	H036	PL6X0.375	0.152	2	13	0.734	2	y	6	7	0.734	1520	72900	569.531	9112.5	1.332	H1-1b			
31	H037	PL6X0.375	0.274	1.5	21	0.813	0	y	10	7	0.813	2740	72900	569.531	9112.5	3	H1-1b			
32	H038	PL6X0.375	0.274	1.5	25	0.813	0	y	2	7	0.813	2740	72900	569.531	9112.5	3	H1-1b			
33	H039	PL6X0.375	0.274	1.5	17	0.813	0	y	6	7	0.813	2740	72900	569.531	9112.5	3	H1-1b			
34	H040	PL6X0.375	0.159	1.5	5	0.838	0	y	4	7	0.838	1590	72900	569.531	9112.5	3	H1-1b			
35	H041	PL6X0.375	0.159	1.5	9	0.838	0	y	8	7	0.838	1590	72900	569.531	9112.5	3	H1-1b			
36	H042	PL6X0.375	0.159	1.5	13	0.838	0	y	12	7	0.838	1590	72900	569.531	9112.5	3	H1-1b			
37	H049	PIPE 2.0	0.432	50	5	0.261	14.063	4	14559.939	32130	1871.625	1871.625	3	H3-6						
38	H050	PIPE 2.0	0.432	50	9	0.261	14.062	8	14559.939	32130	1871.625	1871.625	3	H3-6						
39	H051	PIPE 2.0	0.432	50	13	0.261	14.063	12	14559.939	32130	1871.625	1871.625	3	H3-6						
40	H052	L2.5X2.5X4	0.257	14.71	9	0.113	14.71	z	13	37765.457	38556	1113.554	2537.388	1.5	H2-1					
41	H053	L2.5X2.5X4	0.257	14.71	13	0.113	14.71	z	5	37765.457	38556	1113.554	2537.388	1.5	H2-1					
42	H054	L2.5X2.5X4	0.257	14.71	5	0.113	14.71	z	9	37765.457	38556	1113.554	2537.388	1.5	H2-1					
43	H055	PL6X0.375	0.332	1.5	7	0.612	3	y	4	68085.235	72900	569.531	9112.5	2.122	H1-1b					
44	H056	PL6X0.375	0.332	1.5	11	0.612	3	y	8	68085.235	72900	569.531	9112.5	2.122	H1-1b					
45	H057	PL6X0.375	0.332	1.5	3	0.612	3	y	12	68085.235	72900	569.531	9112.5	2.122	H1-1b					
46	H058	PL6X0.375	0.502	1.5	4	0.532	1.5	y	3	68085.235	72900	569.531	9112.5	1.509	H1-1b					
47	H059	PL6X0.375	0.502	1.5	8	0.532	1.5	y	7	68085.235	72900	569.531	9112.5	1.509	H1-1b					
48	H060	PL6X0.375	0.502	1.5	12	0.532	1.5	y	11	68085.235	72900	569.531	9112.5	1.509	H1-1b					
49	TB067	LL2.5X2.5X3X3	0.086	62.426	10	0.003	62.426	z	19	41298.407	58320	3954.307	2543.464	1.136	H1-1b*					
50	TB068	LL2.5X2.5X3X3	0.086	62.426	2	0.003	62.426	z	11	41298.407	58320	3954.307	2543.464	1	H1-1b*					
51	TB069	LL2.5X2.5X3X3	0.086	62.426	6	0.003	62.426	z	21	41298.407	58320	3954.307	2543.464	1.136	H1-1b*					
52	MP072	PIPE 2.5	0.164	67	12	0.104	67	13	32594.036	50715	3596.25	3596.25	3	H1-1b						
53	MP075	PIPE 2.5	0.412	67	13	0.103	67	9	32594.036	50715	3596.25	3596.25	1.802	H1-1b						
54	MP078	PIPE 2.5	0.252	67	3	0.12	67	7	32594.036	50715	3596.25	3596.25	2.334	H1-1b						
55	MP081	PIPE 2.5	0.171	67	10	0.077	67	9	32594.036	50715	3596.25	3596.25	3	H1-1b						
56	MP084	PIPE 2.5	0.164	67	8	0.104	67	9	32594.036	50715	3596.25	3596.25	2.167	H1-1b						
57	MP087	PIPE 2.5	0.412	67	9	0.103	67	5	32594.036	50715	3596.25	3596.25	1.754	H1-1b						
58	MP090	PIPE 2.5	0.252	67	11	0.12	67	3	32594.036	50715	3596.25	3596.25	3	H1-1b						
59	MP093	PIPE 2.5	0.171	67	6	0.077	67	5	32594.036	50715	3596.25	3596.25	2.488	H1-1b						
60	MP096	PIPE 2.5	0.164	67	4	0.104	67	5	32594.036	50715	3596.25	3596.25	2.266	H1-1b						
61	MP099	PIPE 2.5	0.412	67	5	0.103	67	13	32594.036	50715	3596.25	3596.25	1.754	H1-1b						
62	MP102	PIPE 2.5	0.252	67	7	0.12	67	11	32594.036	50715	3596.25	3596.25	1.377	H1-1b						
63	MP105	PIPE 2.5	0.171	67	2	0.077	67	13	32594.036	50715	3596.25	3596.25	2.209	H1-1b						

EXHIBIT G

Power Density/RF Emissions Report



Radio Frequency Exposure Analysis Report

October 4, 2022

Centerline on behalf of T-Mobile
Centerline Communications Project Number: N/A

T-Mobile Site Name: CTNH569_American
Tower_Monopole_Middlefield
Site Number: CTNH569A

Site Address: 134 Kickapoo Road, Middlefield, CT 06455-1334

Site Compliance Summary

T-Mobile Compliance Status:	Compliant
Cumulative Calculated Power Density (Ground Level):	209.53148 $\mu\text{W}/\text{cm}^2$
Cumulative General Population % MPE (Ground Level):	20.955279999999998%



October 4, 2022

Centerline
Attn: Jessica Meyer, Project Coordinator
750 W Center St, Suite 301
West Bridgewater, MA 02379

RF Exposure Analysis for Site: **CTNH569_American Tower_Monopole_Middlefield**

Centerline Communications, LLC ("Centerline") was contracted to analyze the proposed T-Mobile facility at **134 Kickapoo Road, Middlefield, CT 06455-1334** for the purpose of determining whether the predictive exposure from the proposed facility is within specified federal limits.

All information used in this report was analyzed as a percentage of the Maximum Permissible Exposure (% MPE) limits as detailed in 47 CFR § 1.1310 as well as Federal Communications Commission (FCC) OET Bulletin 65 Edition 97-01. The FCC MPE limits are typically expressed in units of milliwatts per square centimeter (mW/cm^2) or microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The exposure limits vary depending upon the frequencies being utilized. The General Population/Uncontrolled MPE limit (in mW/cm^2) for frequencies between 300 and 1500 is defined as frequency (in MHz) divided by 1500 ($f_{\text{MHz}}/1500$). Frequencies between 1500 and 100,000 MHz have a General Population/Uncontrolled MPE limit of $1 \text{ mW}/\text{cm}^2$ ($1000 \mu\text{W}/\text{cm}^2$). The calculated power density at each sample point divided by the limit at each calculated frequency provides a result in % MPE. Summing the calculated % MPE from all contributors provides a cumulative % MPE at a particular sample point. Wireless carriers use different frequency bands with varying MPE limits; therefore, it is useful to report results in terms of % MPE as opposed to power density.

All results were compared to the FCC radio frequency exposure rules as detailed in 47 CFR § 1.1307(b) to determine compliance with the 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.

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, 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.



Calculation Methodology

Centerline Communications, LLC has performed theoretical modeling of the site using a software tool, RoofMaster®, which incorporates calculation methodologies detailed in FCC OET 65. RoofMaster® uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations, the power decreases inversely with the square of the distance. The modeling is based on worst-case assumptions in terms of transmitter power and duty cycle. No losses were included in the power calculations unless they were specifically provided for the project.

In OET 65, a far field model is presented to calculate the spatial peak power density. The RoofMaster® implementation of this model incorporates antenna manufacturer's horizontal and vertical pattern data to determine the power density in all directions. This model yields the power density at a single point in space. In order to determine the spatial power density for comparison to the FCC limits, the average of several points calculated within the human profile (0-6') must be conducted. RoofMaster® calculates seven power density values between 0-6' above the specified study plane and performs a linear spatial average.



Data & Results

The following table details the antennas and operating parameters for the T-Mobile antenna system as well as any other antenna systems at the site. This is based on antenna information provided by the client and data compiled from other sources where necessary. The data below was input into Roofmaster® to perform the theoretical exposure calculations at the ground level.

The theoretical calculations performed in Roofmaster® determine the cumulative exposure at all sample points at ground level (0-6' spatial average). The results from highest cumulative sample point at ground level surrounding the site are displayed in the table below. The contribution from directional antennas to the maximum cumulative totals varies greatly depending on location; therefore, the contribution from one antenna sector at the highest calculated exposure point may be greater or less than other sectors since sectorized directional antennas are pointed in different directions and there is not much overlapping exposure.

The contribution to the cumulative power density and % MPE for each antenna/frequency band is listed in the table. The cumulative power density and cumulative % MPE are displayed at the bottom of the table.



Maximum Calculated Cumulative Power Density (Location: approximately 172' west of site)

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/Channel (watts)	ERP (watts)	Calculated Power Density ($\mu\text{W}/\text{cm}^2$)	General Population MPE Limit ($\mu\text{W}/\text{cm}^2$)	General Population % MPE
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	700	13.65	63.00	2.00	40.00	1853.92	0.00000	466.67	0.00000
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	600	12.95	63.00	4.00	60.00	4733.81	0.00005	400.00	0.00001
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	600	12.95	63.00	2.00	40.00	1577.94	0.00002	400.00	0.00000
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	1900	15.45	63.00	2.00	140.00	9821.05	0.00002	1000.00	0.00000
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	1900	15.45	63.00	1.00	15.00	526.13	0.00000	1000.00	0.00000
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	2100	16.45	63.00	2.00	140.00	12363.97	0.00003	1000.00	0.00000
T-Mobile A 2	ERICSSON AIR6419	2500	22.05	63.00	2.00	80.00	25651.93	2.20175	1000.00	0.22018
T-Mobile A 2	ERICSSON AIR6419	2500	22.05	63.00	2.00	80.00	25651.93	2.20175	1000.00	0.22018
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	700	13.65	63.00	2.00	40.00	1853.92	0.00001	466.67	0.00000
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	600	12.95	63.00	4.00	60.00	4733.81	0.00001	400.00	0.00000
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	600	12.95	63.00	2.00	40.00	1577.94	0.00000	400.00	0.00000
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	1900	15.45	63.00	2.00	140.00	9821.05	0.00000	1000.00	0.00000
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	1900	15.45	63.00	1.00	15.00	526.13	0.00000	1000.00	0.00000
T-Mobile B 3	RFS APXVAALL24 43-U-NA20	2100	16.45	63.00	2.00	140.00	12363.97	0.00001	1000.00	0.00000
T-Mobile B 4	ERICSSON AIR6419	2500	22.05	63.00	2.00	80.00	25651.93	0.48727	1000.00	0.04873
T-Mobile B 4	ERICSSON AIR6419	2500	22.05	63.00	2.00	80.00	25651.93	0.48727	1000.00	0.04873
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	700	13.65	63.00	2.00	40.00	1853.92	0.00173	466.67	0.00037
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	600	12.95	63.00	4.00	60.00	4733.81	0.00417	400.00	0.00104
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	600	12.95	63.00	2.00	40.00	1577.94	0.00139	400.00	0.00035
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	1900	15.45	63.00	2.00	140.00	9821.05	0.00627	1000.00	0.00063
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	1900	15.45	63.00	1.00	15.00	526.13	0.00034	1000.00	0.00003
T-Mobile C 5	RFS APXVAALL24 43-U-NA20	2100	16.45	63.00	2.00	140.00	12363.97	0.00552	1000.00	0.00055
T-Mobile C 6	ERICSSON AIR6419	2500	22.05	63.00	2.00	80.00	25651.93	102.03957	1000.00	10.20396
T-Mobile C 6	ERICSSON AIR6419	2500	22.05	63.00	2.00	80.00	25651.93	102.03957	1000.00	10.20396
Other 7	GENERIC OMNI 9.5FT	450	5.96	83.00	1.00	25.00	98.61	0.00005	300.00	0.00002
Spok Holdings 8	GENERIC OMNI 9.5FT	450	5.96	83.00	1.00	25.00	98.61	0.00005	300.00	0.00002
AT&T A 9	QUINTEL QD8616-7 V1	1900	15.08	78.00	4.00	40.00	5154.42	0.00001	1000.00	0.00000
AT&T A 9	QUINTEL QD8616-7 V1	2100	15.17	78.00	4.00	40.00	5258.23	0.00000	1000.00	0.00000
AT&T A 10	ERICSSON AIR6449	3700	23.55	80.00	1.00	108.40	24548.74	0.00017	1000.00	0.00002
AT&T A 11	ERICSSON AIR6419	3450	23.55	76.00	1.00	108.40	24548.74	0.00019	1000.00	0.00002
AT&T A 12	CCI HPA-65R-BUU-H8	700	13.35	78.00	4.00	40.00	3460.35	0.00002	466.67	0.00000
AT&T A 12	CCI HPA-65R-BUU-H8	850	14.35	78.00	4.00	40.00	4356.32	0.00002	566.67	0.00000
AT&T A 12	CCI HPA-65R-BUU-H8-	2300	15.15	78.00	4.00	25.00	3273.41	0.00000	1000.00	0.00000
AT&T A 13	CCI DMP65R-BU8D	700	12.25	78.00	2.00	40.00	1343.04	0.00001	466.67	0.00000
AT&T B 14	QUINTEL QD8616-7 V1	1900	15.08	78.00	4.00	40.00	5154.42	0.00000	1000.00	0.00000



Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density ($\mu\text{W}/\text{cm}^2$)	General Population MPE Limit ($\mu\text{W}/\text{cm}^2$)	General Population % MPE
AT&T B 14	QUINTEL QD8616-7 V1	2100	15.17	78.00	4.00	40.00	5258.23	0.00000	1000.00	0.00000
AT&T B 15	ERICSSON AIR6449	3700	23.55	80.00	1.00	108.40	24548.74	0.00005	1000.00	0.00001
AT&T B 16	ERICSSON AIR6419	3450	23.55	76.00	1.00	108.40	24548.74	0.00005	1000.00	0.00001
AT&T B 17	CCI HPA-65R-BUU-H8	700	13.35	78.00	4.00	40.00	3460.35	0.00000	466.67	0.00000
AT&T B 17	CCI HPA-65R-BUU-H8	850	14.35	78.00	4.00	40.00	4356.32	0.00001	566.67	0.00000
AT&T B 17	CCI HPA-65R-BUU-H8-	2300	15.15	78.00	4.00	25.00	3273.41	0.00000	1000.00	0.00000
AT&T B 18	CCI DMP65R-BU8D	700	12.25	78.00	2.00	40.00	1343.04	0.00000	466.67	0.00000
AT&T C 19	QUINTEL QD8616-7 V1	1900	15.08	78.00	4.00	40.00	5154.42	0.00221	1000.00	0.00022
AT&T C 19	QUINTEL QD8616-7 V1	2100	15.17	78.00	4.00	40.00	5258.23	0.00219	1000.00	0.00022
AT&T C 20	ERICSSON AIR6449	3700	23.55	80.00	1.00	108.40	24548.74	0.01155	1000.00	0.00116
AT&T C 21	ERICSSON AIR6419	3450	23.55	76.00	1.00	108.40	24548.74	0.01224	1000.00	0.00122
AT&T C 22	CCI HPA-65R-BUU-H8	700	13.35	78.00	4.00	40.00	3460.35	0.00251	466.67	0.00054
AT&T C 22	CCI HPA-65R-BUU-H8	850	14.35	78.00	4.00	40.00	4356.32	0.00247	566.67	0.00044
AT&T C 22	CCI HPA-65R-BUU-H8-	2300	15.15	78.00	4.00	25.00	3273.41	0.00152	1000.00	0.00015
AT&T C 23	MATSING MS-MBA-3.2-H4-L4 AZ+30	700	10.00	78.00	4.00	40.00	1600.00	0.00306	466.67	0.00066
AT&T C 23	MATSING MS-MBA-3.2-H4-L4 AZ-30	700	10.11	78.00	4.00	40.00	1641.04	0.00014	466.67	0.00003
AT&T C 23	MATSING MS-MBA-3.2-H4-L4 AZ+30	850	12.31	78.00	4.00	40.00	2723.45	0.00283	566.67	0.00050
AT&T C 23	MATSING MS-MBA-3.2-H4-L4 AZ-30	850	12.80	78.00	4.00	40.00	3048.74	0.00002	566.67	0.00000
AT&T C 23	MATSING MS-MBA-3.2-H4-L4 AZ-40	1900	15.76	78.00	4.00	40.00	6027.26	0.00008	1000.00	0.00001
AT&T C 23	MATSING MS-MBA-3.2-H4-L4 AZ0	1900	15.13	78.00	4.00	40.00	5213.39	0.00656	1000.00	0.00066
AT&T C 23	MATSING MS-MBA-3.2-H4-L4 AZ0	1900	15.13	78.00	4.00	40.00	5213.39	0.00656	1000.00	0.00066
AT&T C 23	MATSING MS-MBA-3.2-H4-L4 AZ-40	2100	16.26	78.00	4.00	40.00	6762.70	0.00006	1000.00	0.00001
AT&T C 24	MATSING MS-MBA-3.2-H4-L4 AZ-40	2100	16.26	78.00	4.00	40.00	6762.70	0.00006	1000.00	0.00001
AT&T C 24	MATSING MS-MBA-3.2-H4-L4 AZ-40	2100	16.26	78.00	4.00	40.00	6762.70	0.00006	1000.00	0.00001
							Cumulative Power Density:	209.53148 $\mu\text{W}/\text{cm}^2$	Cumulative % MPE:	20.95528%



Summary

The theoretical calculations performed for this analysis yielded cumulative power density totals in all areas at ground level that are within the allowable federal limits for public exposure to RF energy. Therefore, the site is **Compliant** with FCC rules and regulations.

A handwritten signature in black ink, appearing to read "Katrina Styx", with a long, sweeping horizontal stroke extending to the right.

Katrina Styx
RF EME Technical Writer
Centerline Communications, LLC

EXHIBIT H

Mailing Receipts/Proof of Notice

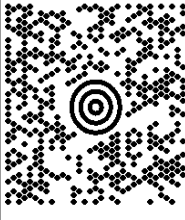


C/O CULLEN MORGAN
(941) 549-7263
CENTERLINE COMMUNICATIONS, LLC
12579 SAGEWOOD DRIVE
VENICE FL 34293

1 LBS

1 OF 1

SHIP TO:
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN MA 01801-1053

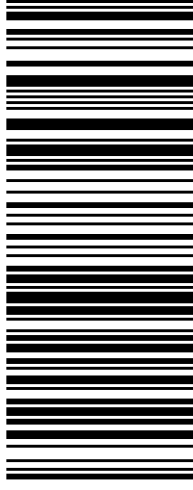


MA 018 9-04



UPS GROUND

TRACKING #: 1Z 9Y4 503 03 3595 6292



BILLING: P/P

Reference # 1: CTNH569A

CS 23.6.00. MACNV50.46.0A 11/2022*



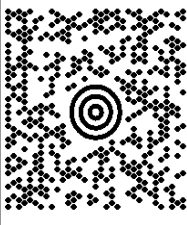
TM

C/O CULLEN MORGAN
(941) 549-7263
CENTERLINE COMMUNICATIONS, LLC
12579 SAGEWOOD DRIVE
VENICE FL 34293

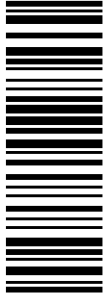
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SBC TOWER HOLDINGS LLC
3RD FLOOR
1025 LENOX PARK BOULEVARD NE
BROOKHAVEN GA 30319-5309

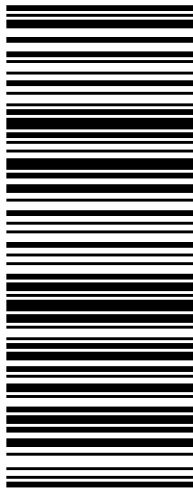


GA 300 9-02



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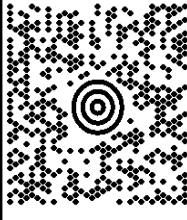
TM

C/O CULLEN MORGAN
(941) 549-7263
CENTERLINE COMMUNICATIONS, LLC
12579 SAGEWOOD DRIVE
VENICE FL 34293

1 LBS

1 OF 1

SHIP TO:
ATTN: ROBERT YAMARTINO, 1ST SLCTM
TOWN OF MIDDLEFIELD
393 JACKSON HILL ROAD
MIDDLEFIELD CT 06455-1240

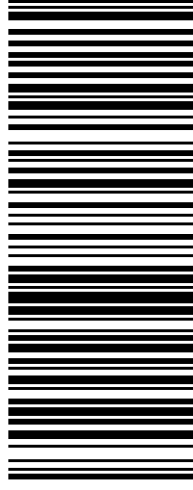


CT 061 9-01



UPS GROUND

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BILLING: P/P

Reference # 1: CTNH569A

CS 23.6.00. MACNV50.46.0A 11/2022*



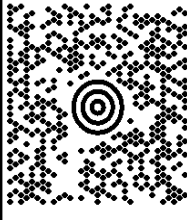
TM

C/O CULLEN MORGAN
(941) 549-7263
CENTERLINE COMMUNICATIONS, LLC
12579 SAGEWOOD DRIVE
VENICE FL 34293

1 LBS

1 OF 1

SHIP TO:
JAN WOJAS, CHAIR OF PLANNING/ZONING
TOWN OF MIDDLEFIELD
393 JACKSON HILL ROAD
MIDDLEFIELD CT 06455-1240

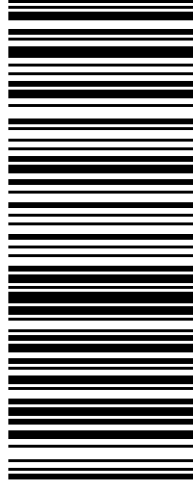


CT 061 9-01



UPS GROUND

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BILLING: P/P

Reference # 1: CTNH569A

CS 23.6.00. MACNV50.46.0A 11/2022*



TM

< 1 of 3 >



Service Impacted by Hurricane Nicole [...More \(/us/en/service-alerts.page?id=alert1\)](/us/en/service-alerts.page?id=alert1)



< Back to Tracking Home

1 - 4 of 4



> **CENTERLINE SITE ACQUISITION**

1Z9Y45030335956292 (https://www.ups.com/track?loc=en_US&tracknum=1Z9Y45030335956292&requester=ST)
On the Way
Estimated delivery: Today, November 14 by 7:00 P.M.

Feedback

CENTERLINE SITE ACQUISITION

1Z9Y45030317889005 (https://www.ups.com/track?loc=en_US&tracknum=1Z9Y45030317889005&requester=ST)
Delivered
Delivered On: Friday, November 11 at 11:21 A.M. at Mail Room

> **CENTERLINE SITE ACQUISITION**

1Z9Y45030315692015 (https://www.ups.com/track?loc=en_US&tracknum=1Z9Y45030315692015&requester=ST)
Preparing for Delivery
Estimated delivery: Today, November 14 between 8:45 A.M. - 10:45 A.M.

> **CENTERLINE SITE ACQUISITION**

1Z9Y45030314097027 (https://www.ups.com/track?loc=en_US&tracknum=1Z9Y45030314097027&requester=ST)
Loaded on Delivery Vehicle
Estimated delivery: Today, November 14 between 8:45 A.M. - 10:45 A.M.

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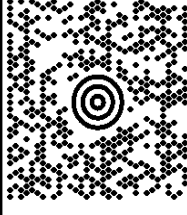
Feedback

C/O CULLEN MORGAN
(941) 549-7263
CENTERLINE COMMUNICATIONS, LLC
12579 SAGEWOOD DRIVE
VENICE FL 34293

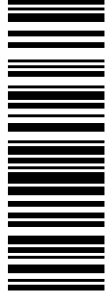
4 LBS

1 OF 1

SHIP TO:
CONNECTICUT SITING COUNCIL
10 FRANKLIN SQUARE
NEW BRITAIN CT 06051-2655

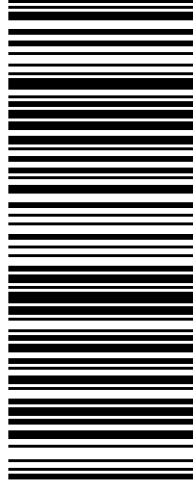


CT 067 9-06



UPS GROUND

TRACKING #: 1Z 9Y4 503 03 2519 4884



BILLING: P/P

Reference # 1: TMO #CTNH569A

CS 23.6.00. MACNV50.47.0A 11/2022*



TM