T-Mobile
Ryan Clark
Real Estate Consultant
750 W. Center St, Suite 301
W. Bridgewater, MA 02379
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rclark@clinellc.com

June 1, 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 199 Town Farm Road Farmington, CT 06032
T-Mobile site: CTHA367A

Dear Members of the Council:

T-Mobile proposes to share an existing telecommunications tower located at 199 Town Farm Road Farmington, CT 06032 (the facility). The subject parcel is identified by the Town of Farmington, CT as Map 017, Block 27 and lot 1. The property is owned by Town of Farmington and tower is owned by American Tower Corporation. The property is roughly 9.94± acres and accommodates an existing telecommunication compound with two shelters and two concrete pads with telecommunications carriers' cabinets as well as the monopine tower within the fenced compound. The facility is and will continue to be owned and operated by American Tower Corporation.

Pursuant to Connecticut General Statues 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 Farmington: avoiding the need for an additional tower in Farmington.

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 Hartford 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 111' monopine tower located at 199 Town Farm Road Farmington, T 06032. Site coordinates (NAD83) are 41.75777516 and -72.82993932 Currently there are three other major commercial wireless carriers located on this tower whereby T-Mobile now intends to use the vacant space on the lowest part of the tower, beneath Verizon, AT&T and DISH. The site plan of the facility is included in the proposed Modifications drawings and Construction drawings, prepared by American Tower Corporation dated May 24,2022 respectively, and enclosed herewith.

T-Mobile intends to install three (3) RFS- APXVAALL24_43-U-NA20, (3) AIR6419 B41, (3) VV-65A-R1 antennas, 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 75' mount level. T-Mobile will also install three (3) 6x24 hybrid fiber cables on the tower. T-Mobile will add a 10' x 15' leased area with one (1) concrete pad and one (1) ice bridge and one (1) 9' x 4' concrete pad for a 48kw generator. T-Mobile intends use its existing MLA agreement with ATC, at this tower height, in order to license the portion of space within the existing and proposed compound.

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 May 2, 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 Litchfield 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 Farmington 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 16.33563% 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 Coventry.

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 199 Town Farm Road Farmington, CT 06032.

Respectfully yours,

_____

Ryan Clark
Real Estate Consultant – Site Acquisition
c/o T-Mobile
Centerline Communications, LLC
750 West Center Street, Floor 3 / Suite 301
West Bridgewater, MA 02379
Mobile: (203) 300-7310
rclark@clinellc.com

cc: American Tower Corporation- tower owner
Town of Farmington- property owner
Kathleen A. Blonski, chief elected official, Town of Farmington
Shannon Rutherford, Town Planner, Town of Farmington.

Exhibit A

Letter of Authorization

AMERICAN TOWER®
CORPORATION

LETTER OF AUTHORIZATION

ATC SITE#/NAME/PROJECT: 411258 / Farmington North 2 CT / 14099860
SITE ADDRESS: 199 Town Farm Road, Farmington CT 06032-1554
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

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

Notary Public
My Commission Expires: March 14, 2025

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

Exhibit B

Original Facility Approval

DOCKET NO. 374 - Cellco Partnership d/b/a Verizon Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 199 Town Farm Road, Farmington, Connecticut.	}	Connecticut
	}	Siting
	}	Council

August 13, 2009

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Cellco Partnership d/b/a Verizon Wireless (Cellco), hereinafter referred to as the Certificate Holder, for a telecommunications facility at 199 Town Farm Road in Farmington, Connecticut.

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

1. The tower shall be constructed as a monopole, disguised as a pine tree (monopine), no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Cellco and other entities, both public and private, but such tower shall not exceed a height of 110 feet above ground level. The overall height of the monopine tower, with artificial tree limbs in place, shall not exceed 117 feet above ground level.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Towns of Farmington and Avon for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:

    a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line, and landscaping; and

    b) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

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

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

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

6. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of Farmington public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.

7. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.

8. Any request for extension of the time period referred to in Condition 7 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Farmington. Any proposed modifications to this Decision and Order shall likewise be so served.

9. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

10. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.

11. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction and the commencement of site operation.

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

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

The parties and intervenors to this proceeding are:

Applicant	**Its Representative**
Cellco Partnership d/b/a Verizon Wireless	Joey Lee Miranda, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103-3597 (860) 275-8200
Party	**Her Representative**
Susan Edelson	David Edelson, D.M.D. 11 Belgravia Terrace Farmington, CT 06032
Party	**His Representative**
Claude Brouillard	Claude Brouillard 152 Town Farm Road Farmington, CT 06032

Exhibit C

Property Card

Town of Farmington, CT

Property Listing Report

Map Block Lot	017 27	Building #	1	Unique Identifier	19200199

Property Information

Property Location	199 TOWN FARM RD
Mailing Address	199 TOWN FARM RD FARMINGTON CT 06032
Land Use	Residential
Zoning Code	R40
Neighborhood	10

Owner	FARMINGTON TOWN OF
Co-Owner	C/O RODGER PHILLIPS
Book / Page	0690/0666
Land Class	Residential
Census Tract	4602
Acreage	9.94

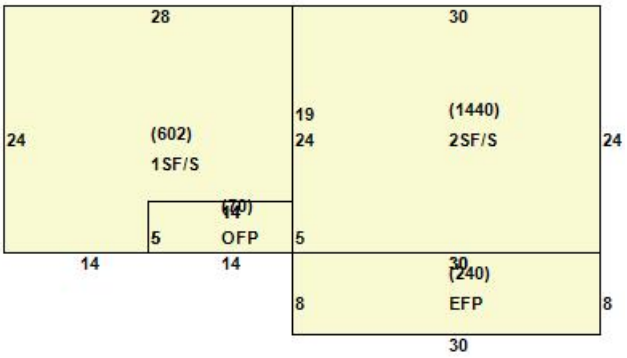
Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	144092	100860
Outbuildings	127364	89150
Land	218561	153000
Total	490017	343010

Utility Information

Electric	No
Gas	No
Sewer	No
Public Water	No
Well	No



Primary Construction Details

Year Built	1956
Building Desc.	Residential
Building Style	Colonial
Stories	2
Exterior Walls	Alum/Vinyl Siding
Exterior Walls 2	
Interior Walls	
Interior Walls 2	
Interior Floors 1	
Interior Floors 2	

Heating Fuel	Oil
Heating Type	Hot Water
AC Type	
Bedrooms	4
Full Bathrooms	3
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	9
Bath Style	NA
Kitchen Style	
Occupancy	1

Building Use	Single Family
Building Condition	Average
Frame Type	Wood Frame
Fireplaces	0
Bsmt Gar	0
Fin Bsmt Area	
Fin Bsmt Quality	
Building Grade	0
Roof Style	Gable
Roof Cover	Asphalt

Report Created On 2/2/2022

Town of Farmington, CT

Property Listing Report | Map Block Lot 017 27 | Building # 1 | Unique Identifier 19200199

Detached Outbuildings

Type	Description	Area (sq ft)	Condition	Year Built
Barn	Pole Frame Building	3150	Average	1980
Shed	Frame	120	Average	2001
Barn	Flat	2160	Good	1999
Shed	Frame	216	Average	2001
Barn	Dairy/Horse Barn	540	Good	1940
Shed	Frame	144	Average	2001
Barn	Pole Frame Building	6000	Average	1995
Barn	Dairy/Horse Barn	450	Good	1950
Barn	Flat	1944	Average	1991
Barn	Flat	4225	Average	2007

Attached Extra Features

Type	Description	Area (sq ft)	Condition	Year Built
Porch	Open Frame	70	Average	1956
Porch	Enclosed	240	Average	1956

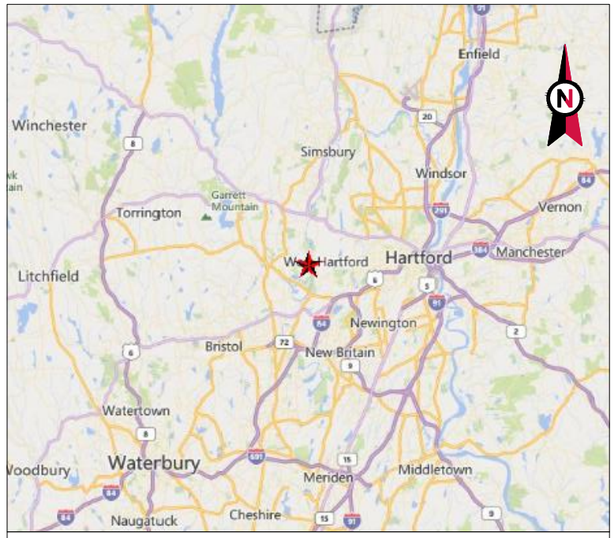
Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
FARMINGTON TOWN OF	0690_0666	2/20/2002	0
FISHER FAMILY PROPERTIES	0654_0589	5/22/2001	0
FISHER FAMILY PROPERTIES	0252_0008	1/3/1977	0
FISHER FAMILY PROPERTIES	0166_0545	1/1/1900	0

Report Created On 2/2/2022

Exhibit D

Construction Drawings

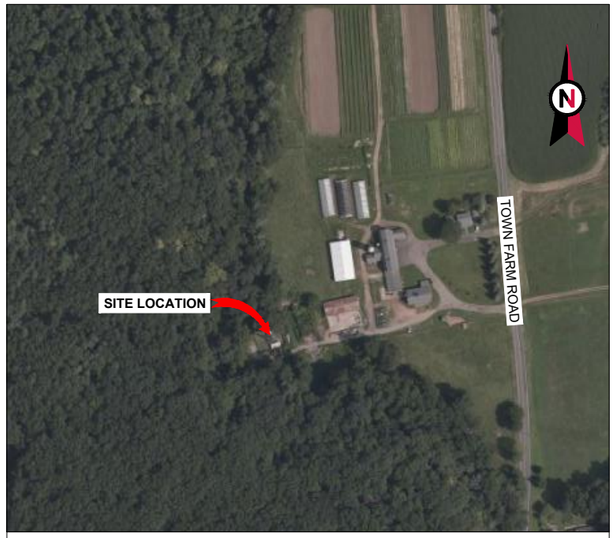


VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: FARMINGTON NORTH 2 CT
ATC SITE NUMBER: 411258
T-MOBILE SITE NAME: CTHA367_ATC_MONOPOLE_FARMINGTON
T-MOBILE SITE NUMBER:CTHA367A
SITE ADDRESS: 199 TOWN FARM ROAD FARMINGTON, CT 06032

T-MOBILE ANCHOR COLOCATION PLAN
67E5A998E 6160 CONFIGURATION



LOCATION MAP

COMPLIANCE CODE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. INTERNATIONAL BUILDING CODE (IBC)
2. NATIONAL ELECTRIC CODE (NEC)
3. LOCAL BUILDING CODE
4. CITY/COUNTY ORDINANCES

UTILITY COMPANIES

POWER COMPANY: EVERSOURCE
PHONE: (888) 783-6617

TELEPHONE COMPANY: AT&T
PHONE: (866) 593-1383

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

PROJECT SUMMARY

SITE ADDRESS:

199 TOWN FARM ROAD
FARMINGTON, CT 06032
COUNTY: HARTFORD

GEOGRAPHIC COORDINATES:

LATITUDE: 41.75777516
LONGITUDE: -72.82993932
GROUND ELEVATION: 183' AMSL

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

APPLICANT:

T-MOBILE

ENGINEER:

ATC TOWER SERVICES, LLC
3500 REGENCY PKWY STE 100
CARY, NC 27518

PROPERTY OWNER:

TOWN OF FARMINGTON CT
199 TOWN FARM ROAD
FARMINGTON, CT 06032

PROJECT DESCRIPTION

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

TOWER SCOPE:
INSTALL (1) PLATFORM MOUNT, (9) 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) ICE CANOPY, (1) GENERATOR, (1) H-FRAME, (1) ATS, (1) EMERSON CABINET, (1) PPC, (1) GPS ANTENNA, (1) ICE BRIDGE, AND (1) LED LUMINARE

PROJECT NOTES

1. THE FACILITY IS UNMANNED.
2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE.
3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE.
4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED.
5. HANDICAP ACCESS IS NOT REQUIRED.
6. THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. § 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION, REMOVAL, AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR § 1.61000 (B)(7).

PROJECT LOCATION DIRECTIONS

HEAD NORTHEAST ON I-84 E, USE THE LEFT LANE TO TAKE EXIT 39 TOWARD CT-4/FARMINGTON, CONTINUE ONTO STATE HWY 508, STATE HWY 508 TURNS SLIGHTLY RIGHT AND BECOMES CT-4 W, TURN RIGHT ONTO TOWN FARM RD, DESTINATION WILL BE ON THE LEFT

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	0	05/24/22	RK
G-002	GENERAL NOTES	0	05/24/22	RK
C-001	OVERALL SITE PLAN	0	05/24/22	RK
C-101	DETAILED SITE PLAN	0	05/24/22	RK
C-102	DETAILED EQUIPMENT PLAN	0	05/24/22	RK
C-201	TOWER ELEVATION	0	05/24/22	RK
C-401	ANTENNA INFORMATION & SCHEDULE	0	05/24/22	RK
C-501	MOUNT DETAILS	0	05/24/22	RK
C-502	CONSTRUCTION DETAILS	0	05/24/22	RK
C-503	GENERATOR CONSTRUCTION DETAILS	0	05/24/22	RK
C-504	CONSTRUCTION DETAILS	0	05/24/22	RK
E-101	GROUNDING DETAILS	0	05/24/22	RK
E-501	GROUNDING DETAILS	0	05/24/22	RK
E-601	PANEL SCHEDULE & ONE-LINE DIAGRAM	0	05/24/22	RK
R-601	SUPPLEMENTAL (13 PAGES)			

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	RK	05/24/22

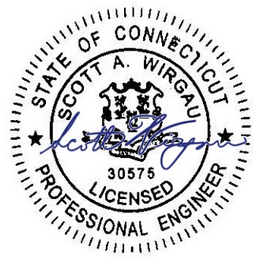
ATC SITE NUMBER:
411258

ATC SITE NAME:
FARMINGTON NORTH 2 CT

T-MOBILE SITE NAME:
CTHA367_ATC_MONOPOLE_FARMINGTON

SITE ADDRESS:
199 TOWN FARM ROAD
FARMINGTON, CT 06032

SEAL:



T-Mobile

DATE DRAWN:	05/24/22
ATC JOB NO:	14099648_G2
CUSTOMER ID:	CTHA367_ATC_MONOPOLE_FARMINGTON
CUSTOMER #:	CTHA367A

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	0

GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, T-MOBILE "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
   - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
   - B. AC/TELCO INTERFACE BOX (PPC)
   - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
   - D. TOWERS, MONOPOLES
   - E. TOWER LIGHTING
   - F. GENERATORS & LIQUID PROPANE TANK
   - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
   - H. ANTENNAS (INSTALLED BY OTHERS)
   - I. TRANSMISSION LINE
   - J. TRANSMISSION LINE JUMPERS
   - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
   - L. TRANSMISSION LINE GROUND KITS
   - M. HANGERS
   - N. HOISTING GRIPS
   - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF T-MOBILE TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH T-MOBILE AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27. CONTRACTOR SHALL NOTIFY T-MOBILE REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE REP. ANY WORK FOUND BY THE T-MOBILE REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
32. T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33. T-MOBILE OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO T-MOBILE OR THEIR ARCHITECT/ENGINEER.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
2. STRUCTURAL STEEL ROLLED SHAPES, PLATES AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:
   - A. ASTM A-572, GRADE 50 - ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE
   - B. ASTM A-36 - ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.
   - C. ASTM A-500, GRADE B - HSS SECTION (SQUARE, RECTANGULAR, AND ROUND)
   - D. ASTM A-325, TYPE SC OR N - ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS
   - E. ASTM F-1554 07 - ALL ANCHOR BOLTS, UNLESS NOTED OTHERWISE
3. ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.
4. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.
5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
6. CONNECTIONS:
   - A. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
   - B. ALL WELDS SHALL BE INSPECTED VISUALLY. 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.
   - C. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
   - D. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE BURNING/WELDING PERMITS AS REQUIRED BY LOCAL GOVERNING AUTHORITY AND IF REQUIRED SHALL HAVE FIRE DEPARTMENT DETAIL FOR ANY WELDING ACTIVITY.
   - E. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.
   - F. MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS, UNLESS NOTED OTHERWISE.
   - G. PRIOR TO FIELD WELDING GALVANIZING MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING ½" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.
   - H. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE REQUIRED DURING CONSTRUCTION UNTIL ALL CONNECTIONS ARE COMPLETE.
   - I. ANY FIELD CHANGES OR SUBSTITUTIONS SHALL HAVE PRIOR APPROVAL FROM THE ENGINEER, AND T-MOBILE PROJECT MANAGER IN WRITING

SPECIAL CONSTRUCTION ANTENNA INSTALLATION NOTES:

1. WORK INCLUDED:
   - A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY T-MOBILE UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL
   - B. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND T-MOBILE SPECIFICATIONS.
   - C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.
   - D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE AND PROVIDE PRINTOUT OF THAT TEST.
   - E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.
   - F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
   - G. ANTENNA AND COAXIAL CABLE GROUNDING:
2. ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.
3. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS).

CONCRETE AND REINFORCING STEEL NOTES:

1. DESIGN AND CONSTRUCTION OF ALL CONCRETE ELEMENTS SHALL CONFORM TO THE LATEST EDITIONS OF ALL APPLICABLE CODES INCLUDING: ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 117 "SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS", AND ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE."
2. MIX DESIGN SHALL BE APPROVED BY T-MOBILE REP PRIOR TO PLACING CONCRETE.
3. CONCRETE SHALL BE NORMAL WEIGHT, 6 % AIR ENTRAINED (+/- 1.5%) WITH A SLUMP RANGE OF 3-6" AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI UNLESS OTHERWISE NOTED.
4. THE FOLLOWING MATERIALS SHALL BE USED:

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

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

ELECTRICAL NOTES:

1. ELECTRICAL 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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	RK	05/24/22

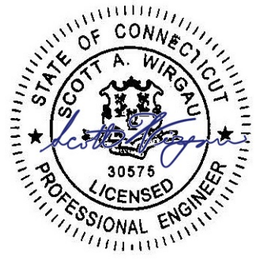
ATC SITE NUMBER:
411258

ATC SITE NAME:
FARMINGTON NORTH 2 CT

T-MOBILE SITE NAME:
CTHA367_ATC_MONOPOLE_FARMINGTON

SITE ADDRESS:
199 TOWN FARM ROAD
FARMINGTON, CT 06032

SEAL:



T-Mobile

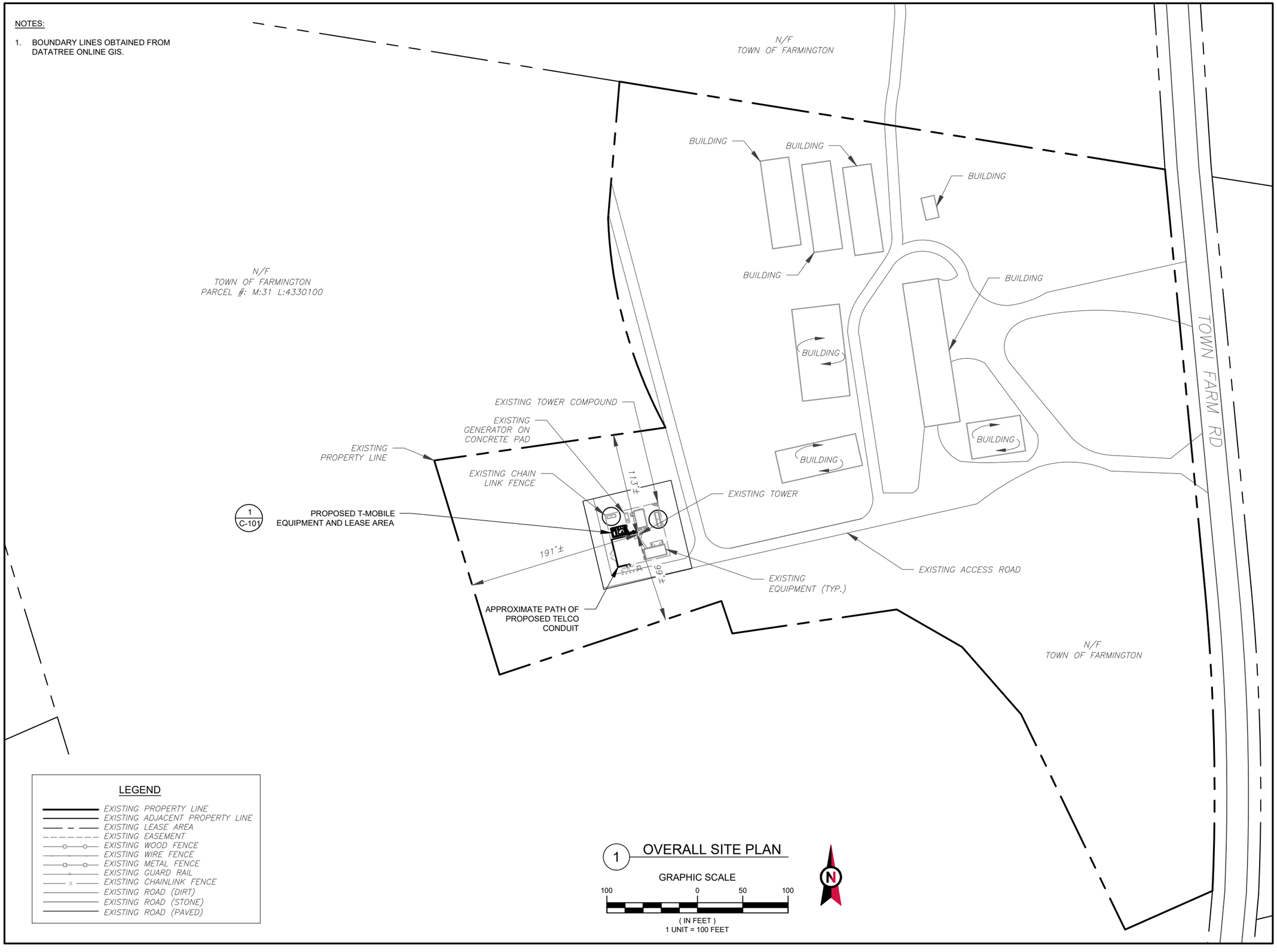
DATE DRAWN:	05/24/22
ATC JOB NO:	14099648_G2
CUSTOMER ID:	CTHA367_ATC_MONOPOLE_FARMINGTON
CUSTOMER #:	CTHA367A

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	0

NOTES:

1. BOUNDARY LINES OBTAINED FROM DATATREE ONLINE GIS.



LEGEND

- EXISTING PROPERTY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING LEASE AREA
- EXISTING EASEMENT
- EXISTING WOOD FENCE
- EXISTING WIRE FENCE
- EXISTING METAL FENCE
- EXISTING GUARD RAIL
- EXISTING CHAINLINK FENCE
- EXISTING ROAD (DIRT)
- EXISTING ROAD (STONE)
- EXISTING ROAD (PAVED)

1 OVERALL SITE PLAN

GRAPHIC SCALE

100 0 50 100

(IN FEET)
1 UNIT = 100 FEET

N

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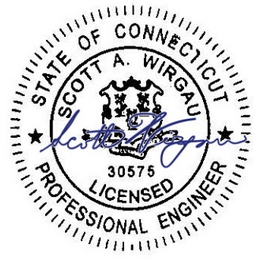

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ATC JOB NO:	14099648_G2
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CUSTOMER #:	CTHA367A

OVERALL SITE PLAN

SHEET NUMBER:	REVISION:
C-001	0

SITE PLAN NOTES:

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

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

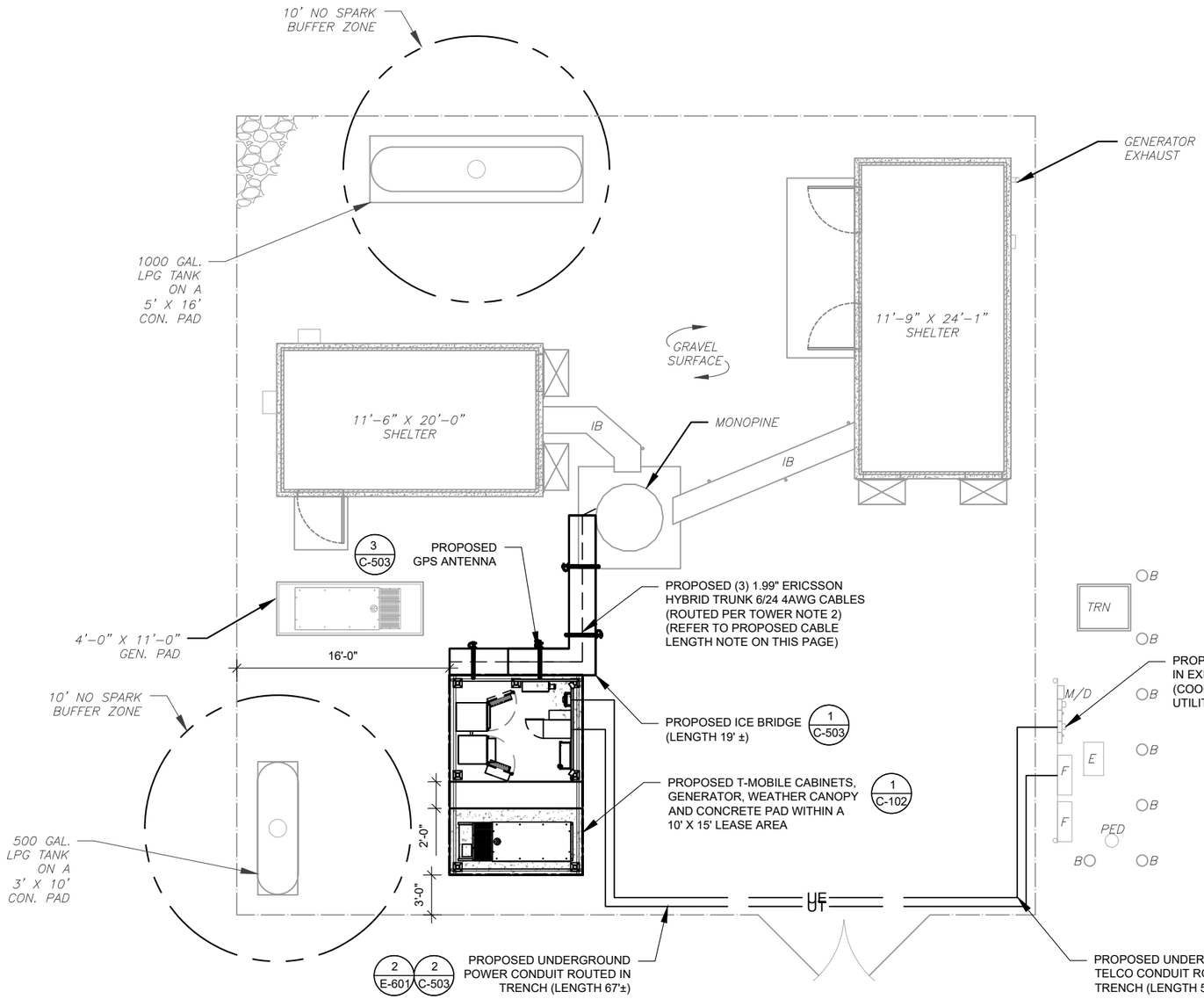
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH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

LEGEND

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

PROPOSED CABLE LENGTH:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **120'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES), CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.



1 DETAILED SITE PLAN

GRAPHIC SCALE

10 0 5 10

(IN FEET)
1 UNIT = 10 FEET

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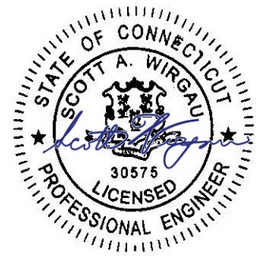

T-Mobile

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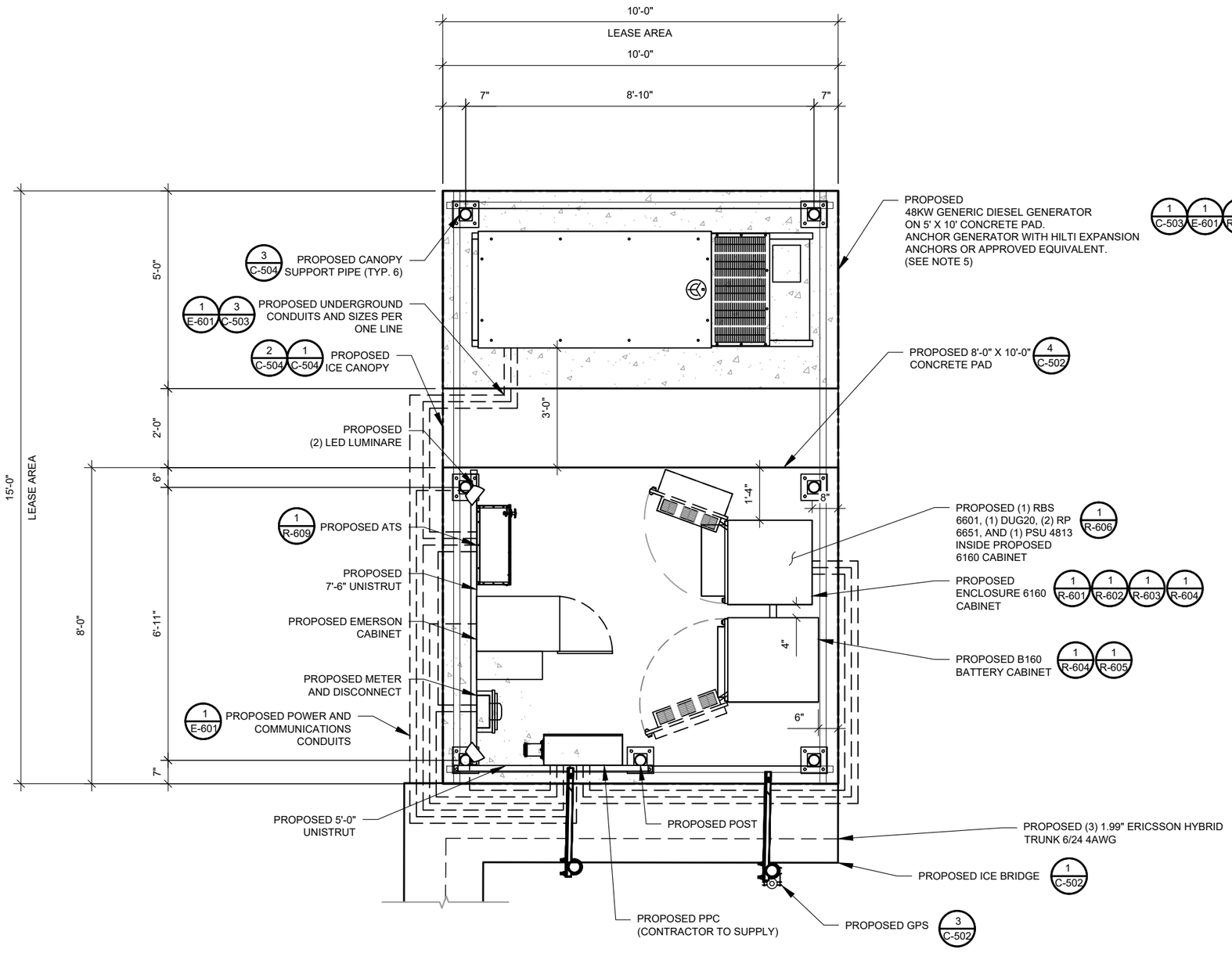
CUSTOMER #:	CTHA367A

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	0



1 PROPOSED GROUND EQUIPMENT LAYOUT

GRAPHIC SCALE

3 0 1.5' 3

(IN FEET)
1 UNIT = 3 FEET

N

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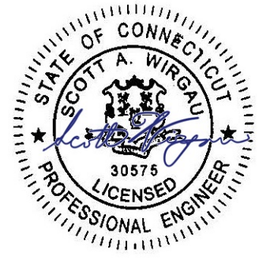


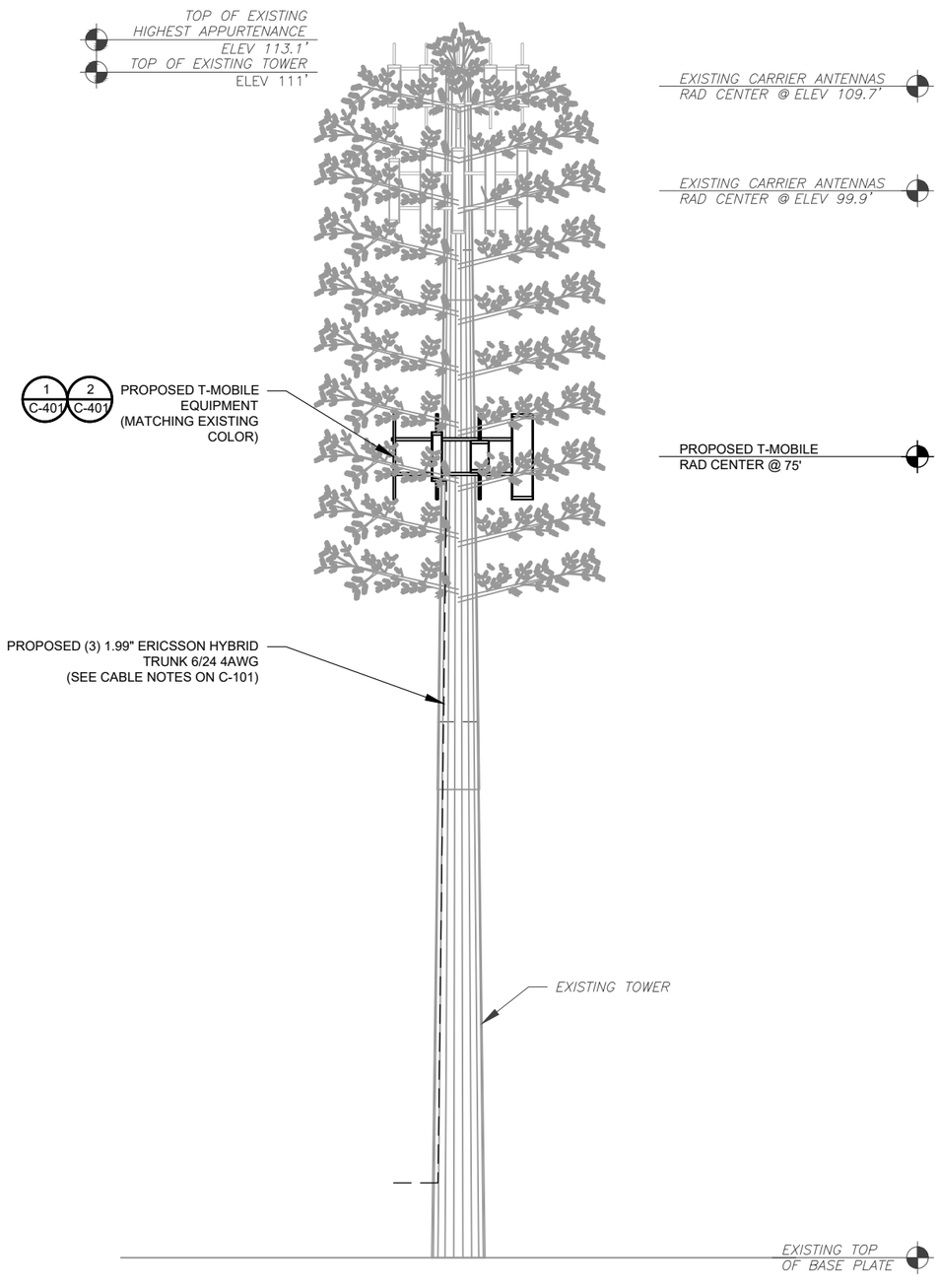
T-Mobile

DATE DRAWN:	05/24/22
ATC JOB NO:	14099648_G2
CUSTOMER ID:	CTHA367_ATC_MONOPOLE_FARMINGTON
CUSTOMER #:	CTHA367A

DETAILED EQUIPMENT PLAN

SHEET NUMBER:	REVISION:
C-102	0

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



1 TOWER ELEVATION
SCALE: N.T.S.

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

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	RK	05/24/22

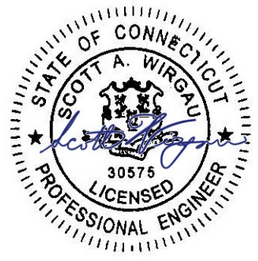
ATC SITE NUMBER:
411258

ATC SITE NAME:
FARMINGTON NORTH 2 CT

T-MOBILE SITE NAME:
CTHA367_ATC_MONOPOLE_FARMINGTON

SITE ADDRESS:
199 TOWN FARM ROAD
FARMINGTON, CT 06032

SEAL:



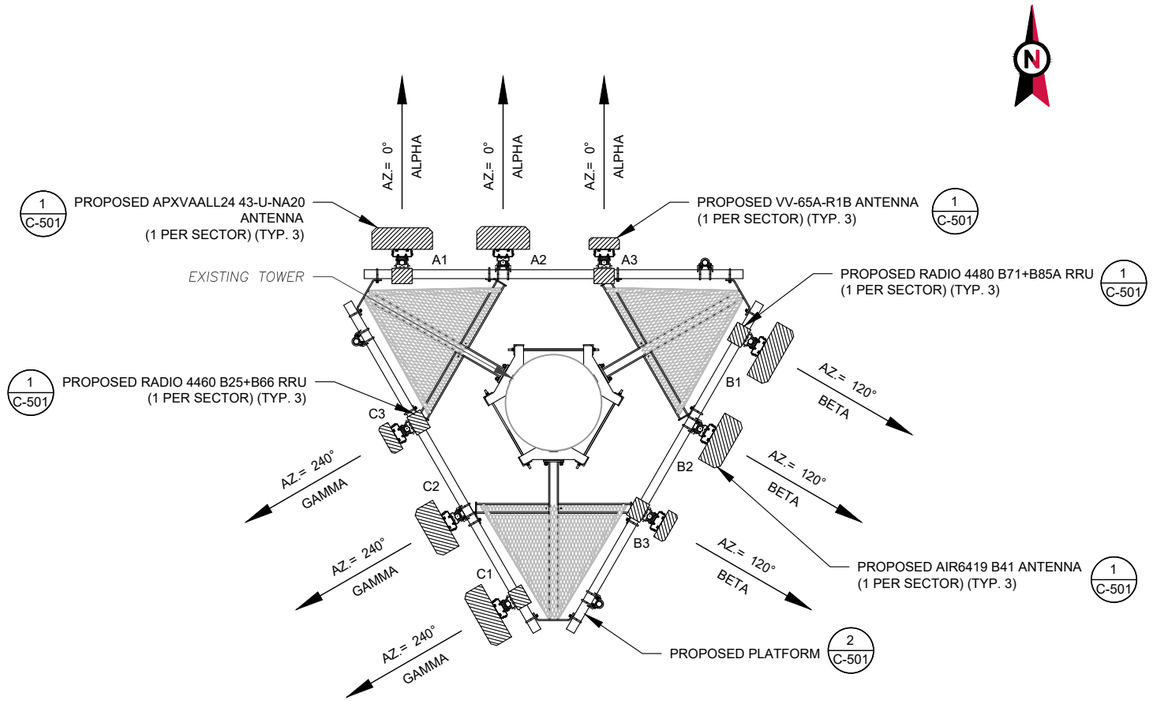
T-Mobile

DATE DRAWN:	05/24/22
ATC JOB NO:	14099648_G2
CUSTOMER ID:	CTHA367_ATC_MONOPOLE_FARMINGTON
CUSTOMER #:	CTHA367A

TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-201	0

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



1 FINAL ANTENNA PLAN

SCALE: N.T.S.

FINAL ANTENNA/ COAX SCHEDULE						
SECTOR	ANT.	MODEL #	RAD CENTER	AZIMUTH	ADDITIONAL TOWER MOUNTED EQUIPMENT	CABLE DESCRIPTION
ALPHA	A1	APXVAALL24_43-U-NA20	75'	0°	RADIO 4480 B71+B85A	(3) 1.99" ERICSSON HYBRID TRUNK 6/24 4AWG
ALPHA	A2	AIR 6419 B41	75'	0°	-	
ALPHA	A3	VV-65A-R1	75'	0°	RADIO 4460 B25+B66	
BETA	B1	APXVAALL24_43-U-NA20	75'	120°	RADIO 4480 B71+B85A	
BETA	B2	AIR 6419 B41	75'	120°	-	
BETA	B3	VV-65A-R1	75'	120°	RADIO 4460 B25+B66	
GAMMA	C1	APXVAALL24_43-U-NA20	75'	240°	RADIO 4480 B71+B85A	
GAMMA	C2	AIR 6419 B41	75'	240°	-	
GAMMA	C3	VV-65A-R1	75'	240°	RADIO 4460 B25+B66	

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

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

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

2 ANTENNA SCHEDULE

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

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	RK	05/24/22

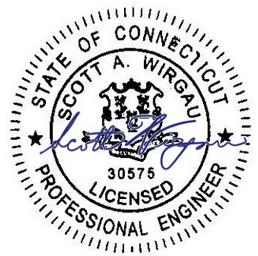
ATC SITE NUMBER:
411258

ATC SITE NAME:
FARMINGTON NORTH 2 CT

T-MOBILE SITE NAME:
CTHA367_ATC_MONOPOLE_FARMINGTON

SITE ADDRESS:
199 TOWN FARM ROAD
FARMINGTON, CT 06032

SEAL:

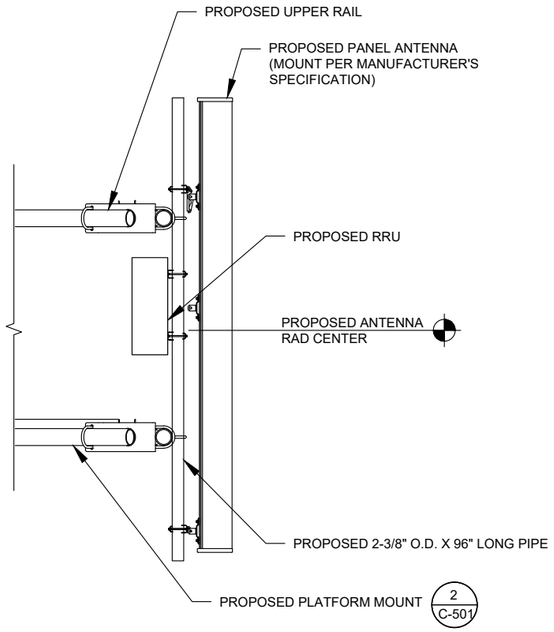


T-Mobile

DATE DRAWN:	05/24/22
ATC JOB NO:	14099648_G2
CUSTOMER ID:	CTHA367_ATC_MONOPOLE_FARMINGTON
CUSTOMER #:	CTHA367A

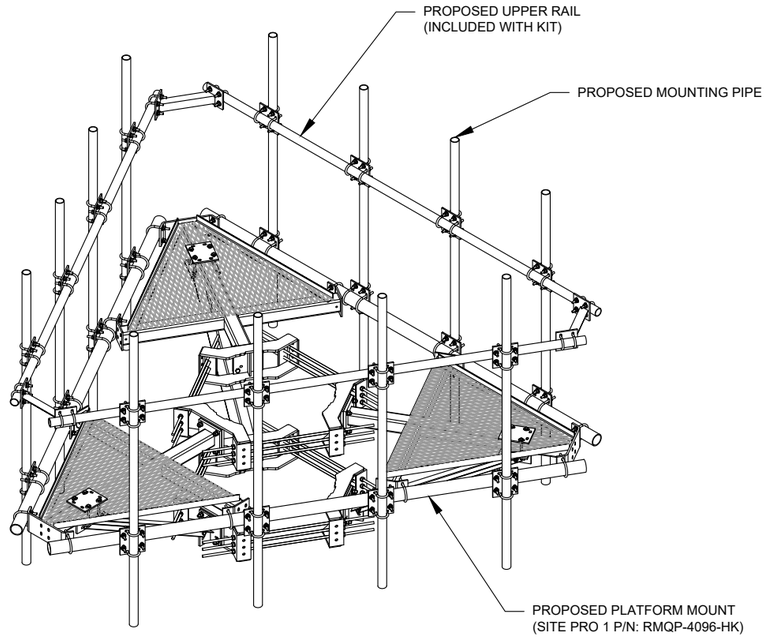
ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-401	0



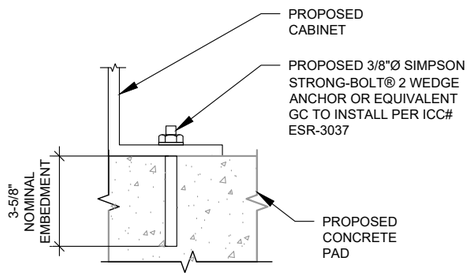
1 PROPOSED ANTENNA MOUNTING DETAIL (ELEVATION)

SCALE: N.T.S.



2 ISOMETRIC MOUNT DETAIL

SCALE: N.T.S.



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.

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	RK	05/24/22

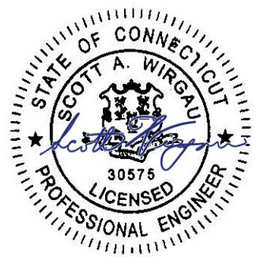
ATC SITE NUMBER:
411258

ATC SITE NAME:
FARMINGTON NORTH 2 CT

T-MOBILE SITE NAME:
CTHA367_ATC_MONOPOLE_FARMINGTON

SITE ADDRESS:
199 TOWN FARM ROAD
FARMINGTON, CT 06032

SEAL:

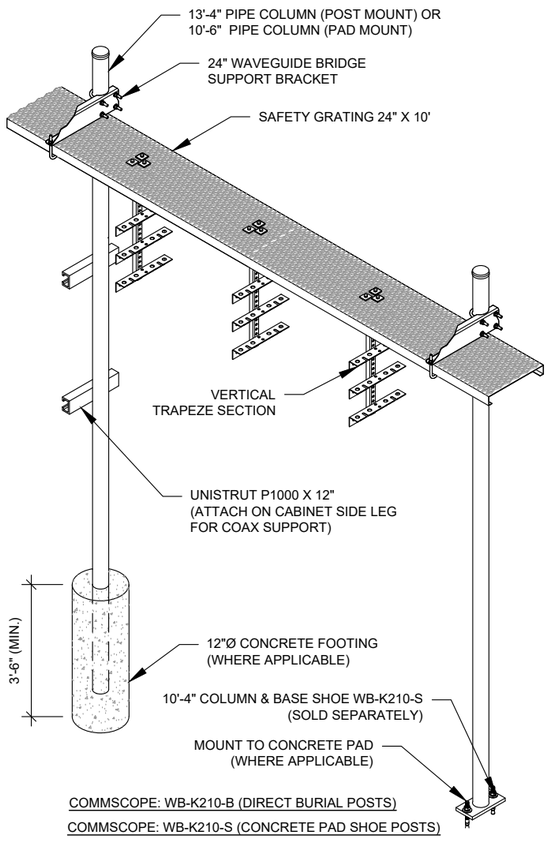


T-Mobile

DATE DRAWN:	05/24/22
ATC JOB NO:	14099648_G2
CUSTOMER ID:	CTHA367_ATC_MONOPOLE_FARMINGTON
CUSTOMER #:	CTHA367A

MOUNT DETAILS

SHEET NUMBER:	REVISION:
C-501	0



COMMSCOPE: WB-K210-B (DIRECT BURIAL POSTS)

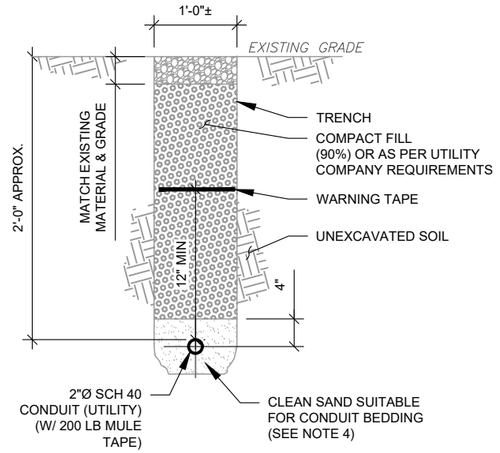
COMMSCOPE: WB-K210-S (CONCRETE PAD SHOE POSTS)

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.

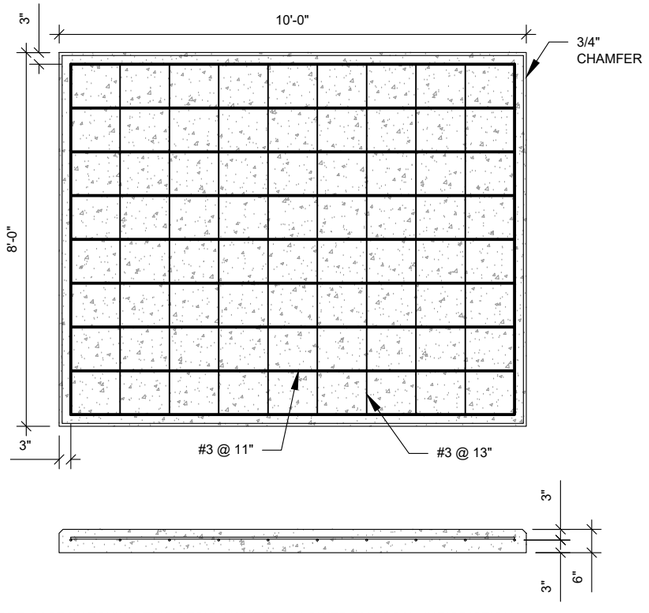


TRENCH NOTES:

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.

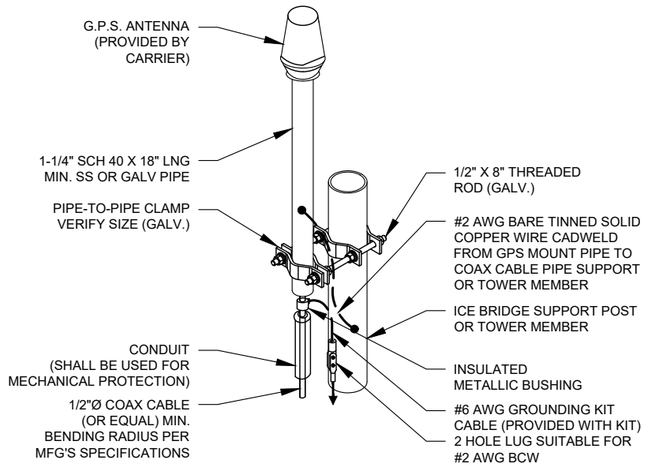


PAD NOTES:

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

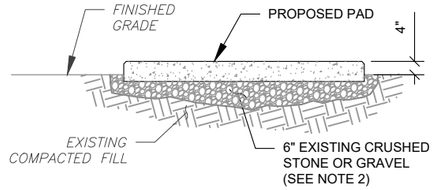
SCALE: N.T.S.



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

5 GRAVEL PREPARATION

SCALE: N.T.S.

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	RK	05/24/22

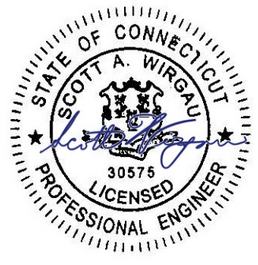
ATC SITE NUMBER:
411258

ATC SITE NAME:
FARMINGTON NORTH 2 CT

T-MOBILE SITE NAME:
CTHA367_ATC_MONOPOLE_FARMINGTON

SITE ADDRESS:
199 TOWN FARM ROAD
FARMINGTON, CT 06032

SEAL:

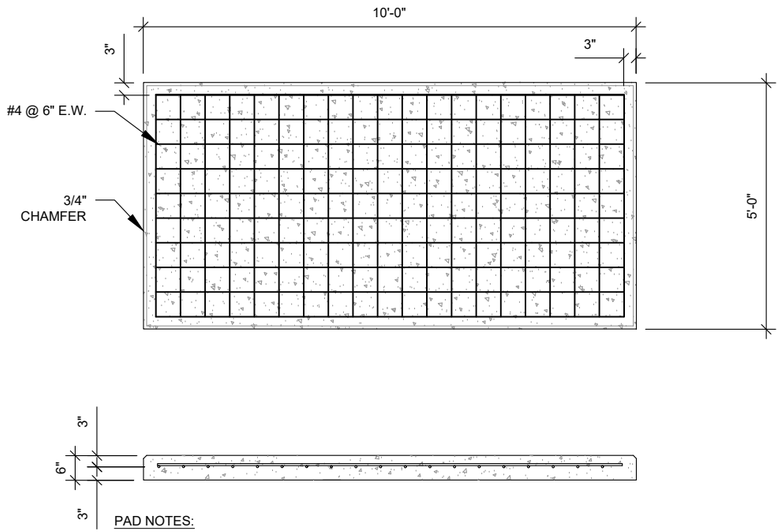


T-Mobile

DATE DRAWN:	05/24/22
ATC JOB NO:	14099648_G2
CUSTOMER ID:	CTHA367_ATC_MONOPOLE_FARMINGTON
CUSTOMER #:	CTHA367A

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-502	0

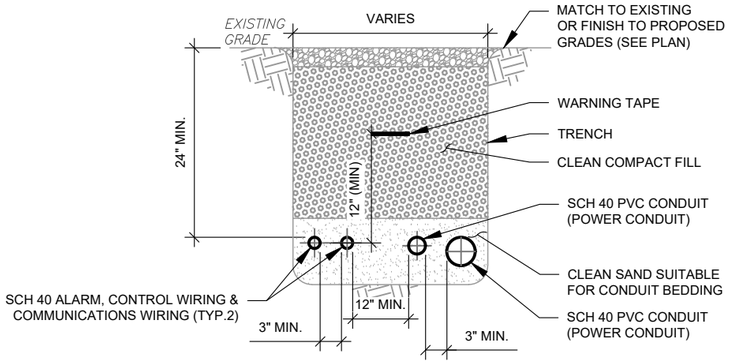


PAD NOTES:

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

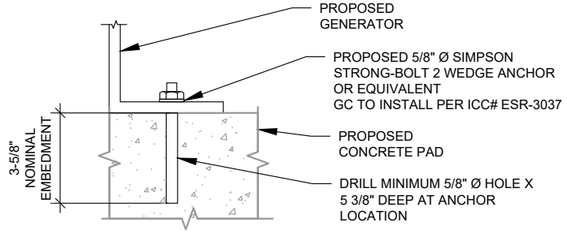


TRENCH NOTES:

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

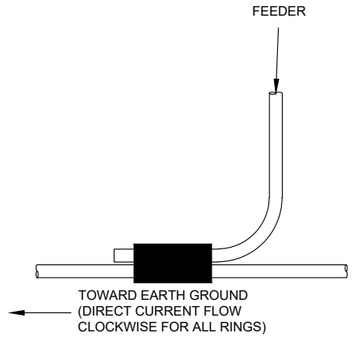


NOTE:

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.

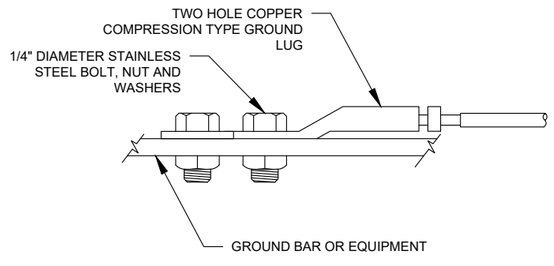
3 GENERATOR ATTACHMENT DETAIL

SCALE: NOT TO SCALE



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

AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	RK	05/24/22

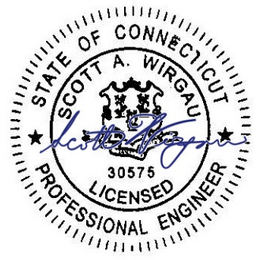
ATC SITE NUMBER:
411258

ATC SITE NAME:
FARMINGTON NORTH 2 CT

T-MOBILE SITE NAME:
CTHA367_ATC_MONOPOLE_FARMINGTON

SITE ADDRESS:
199 TOWN FARM ROAD
FARMINGTON, CT 06032

SEAL:

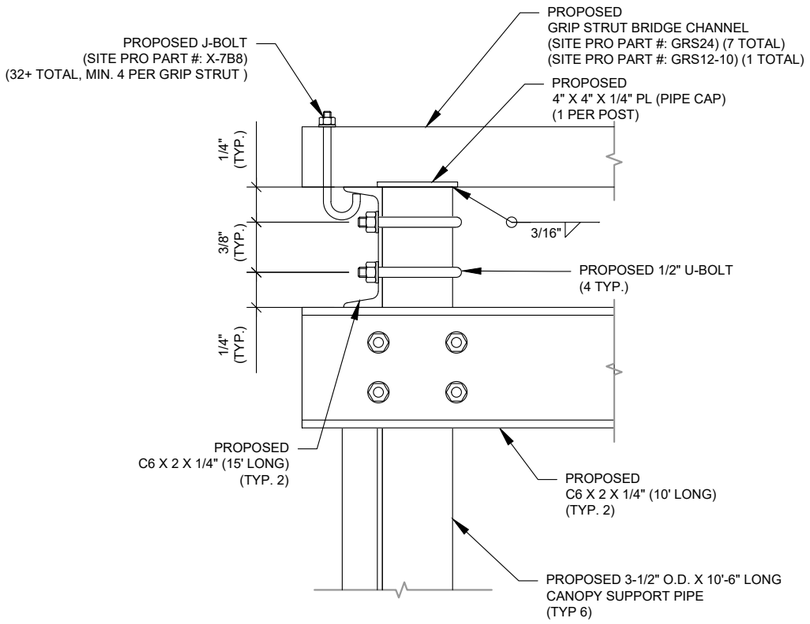


T-Mobile

DATE DRAWN:	05/24/22
ATC JOB NO:	14099648_G2
CUSTOMER ID:	CTHA367_ATC_MONOPOLE_FARMINGTON
CUSTOMER #:	CTHA367A

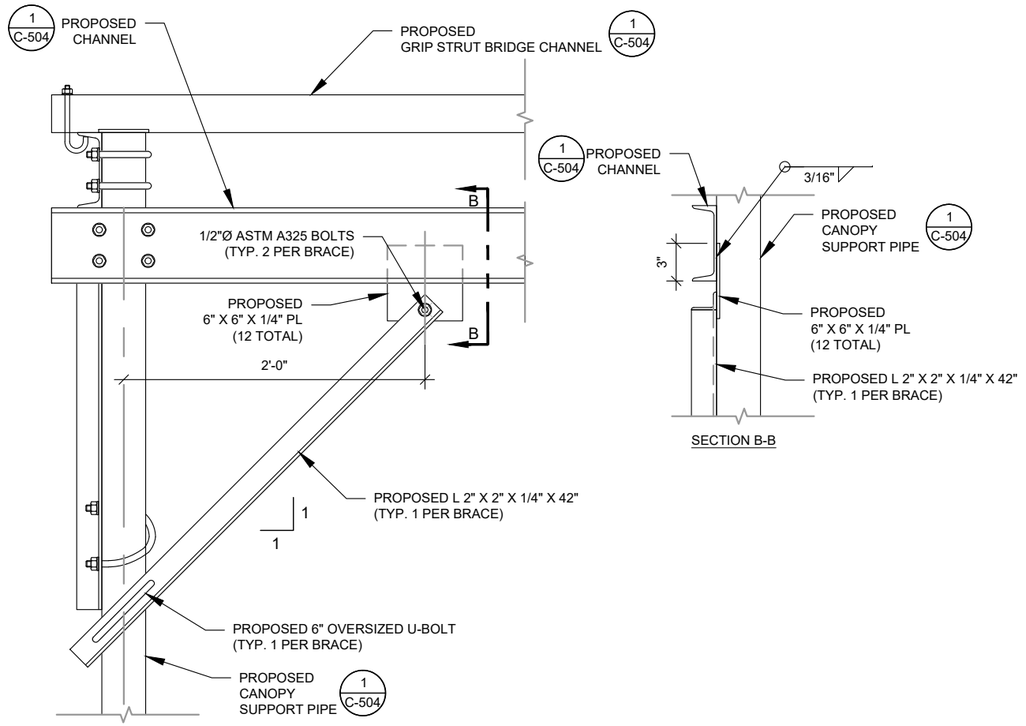
GENERATOR CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-503	0



1 CANOPY SUPPORT DETIAL A-A

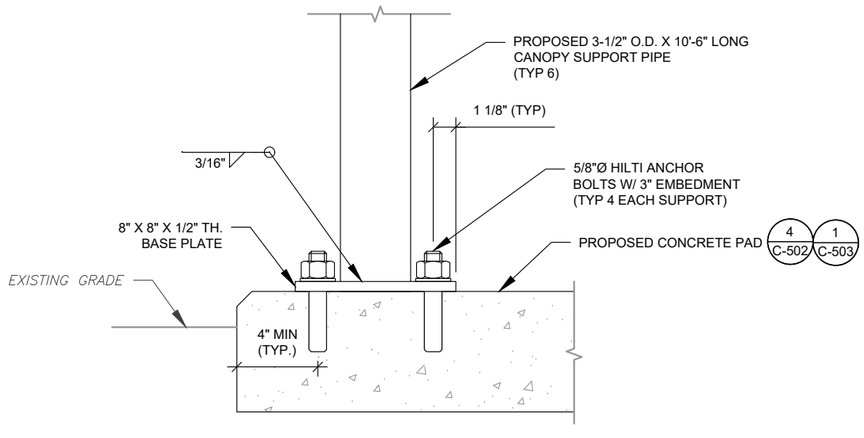
SCALE: N.T.S.



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.

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	RK	05/24/22

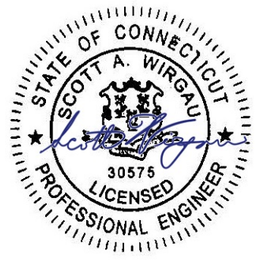
ATC SITE NUMBER:
411258

ATC SITE NAME:
FARMINGTON NORTH 2 CT

T-MOBILE SITE NAME:
CTHA367_ATC_MONOPOLE_FARMINGTON

SITE ADDRESS:
199 TOWN FARM ROAD
FARMINGTON, CT 06032

SEAL:



T-Mobile

DATE DRAWN:	05/24/22
ATC JOB NO:	14099648_G2
CUSTOMER ID:	CTHA367_ATC_MONOPOLE_FARMINGTON
CUSTOMER #:	CTHA367A

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-504	0

GROUNDING NOTES:

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

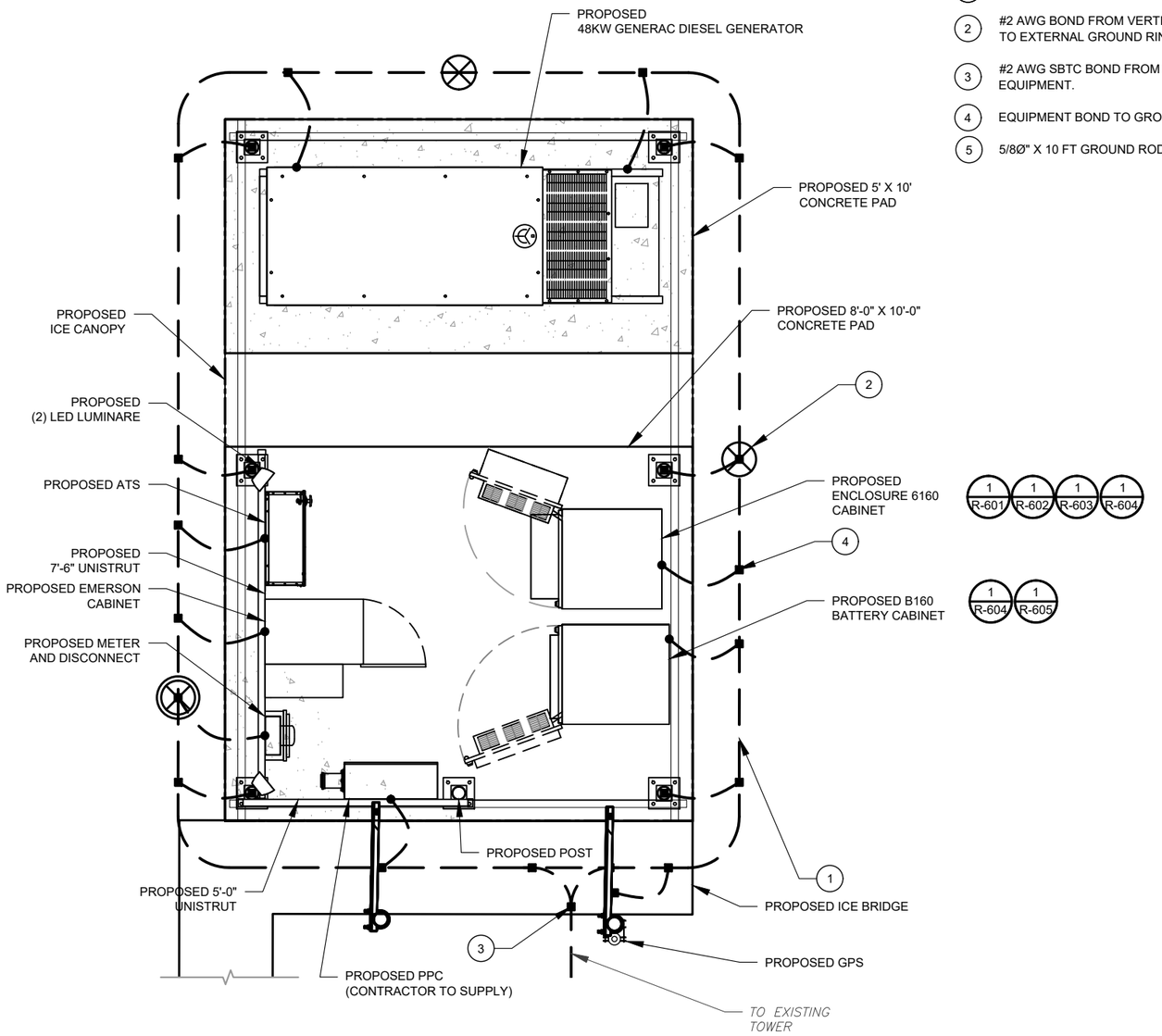
2. GROUNDING CONDUCTORS SHALL:
   - A. BE #2 AWG SOLID BARE TINNED COPPER (SBTC) FOR ALL GROUNDING SYSTEM WIRE UNLESS OTHERWISE NOTED, OR OTHERWISE REQUIRED BY CODE.
   - B. BE MINIMUM 12" BEND RADIUS. KEEP NUMBER OF BENDS TO A MINIMUM.
   - C. AVOID LONG BONDING CONNECTION RUNS. MAKE DIRECT AS POSSIBLE.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

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

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

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

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



1 DETAILED GROUNDING PLAN

SCALE: N.T.S.

GROUNDING PLAN LEGEND:

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

GROUNDING KEYED NOTES:

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

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	RK	05/24/22

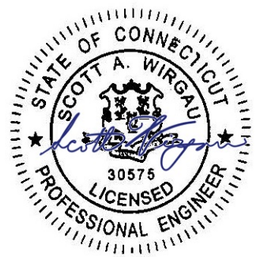
ATC SITE NUMBER:
411258

ATC SITE NAME:
FARMINGTON NORTH 2 CT

T-MOBILE SITE NAME:
CTHA367_ATC_MONOPOLE_FARMINGTON

SITE ADDRESS:
199 TOWN FARM ROAD
FARMINGTON, CT 06032

SEAL:

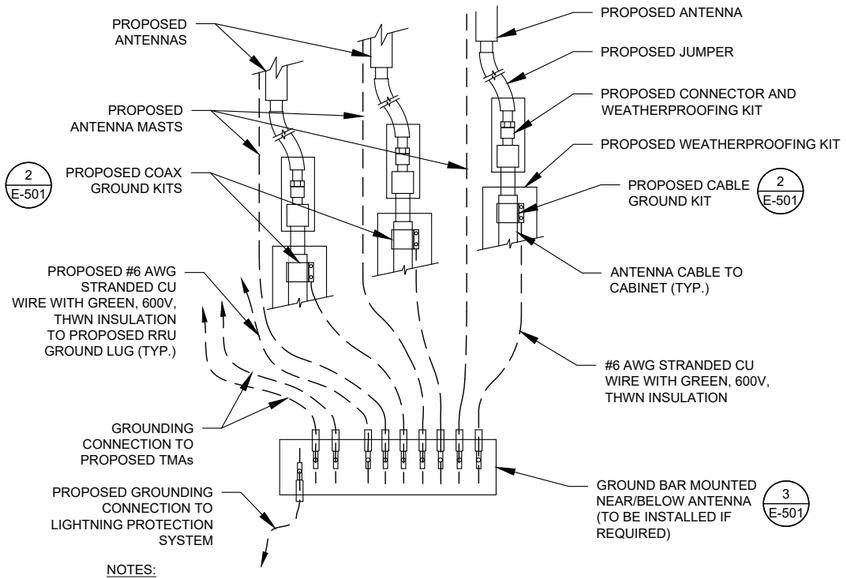


T-Mobile

DATE DRAWN:	05/24/22
ATC JOB NO:	14099648_G2
CUSTOMER ID:	CTHA367_ATC_MONOPOLE_FARMINGTON
CUSTOMER #:	CTHA367A

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-101	0

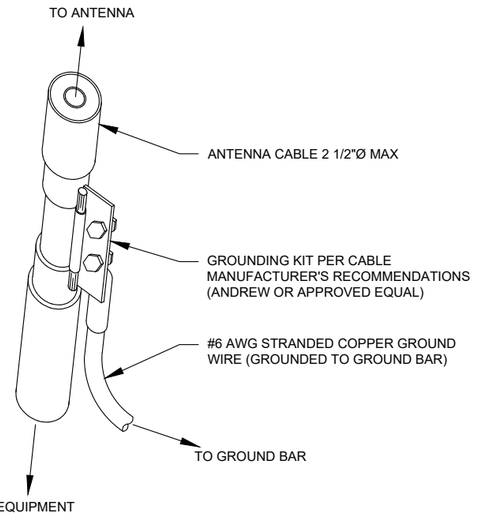


NOTES:

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

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: N.T.S.

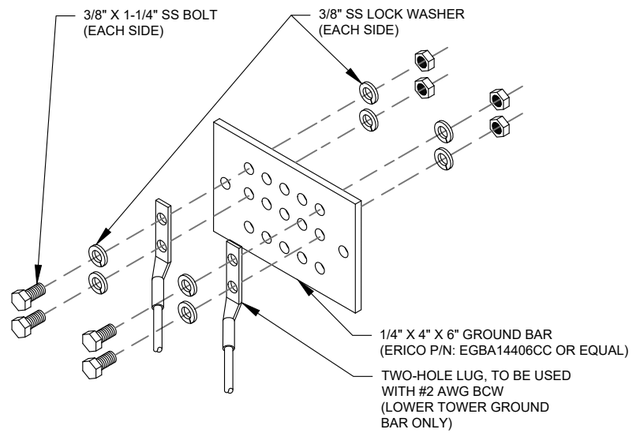


GROUND KIT NOTES:

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

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: N.T.S.

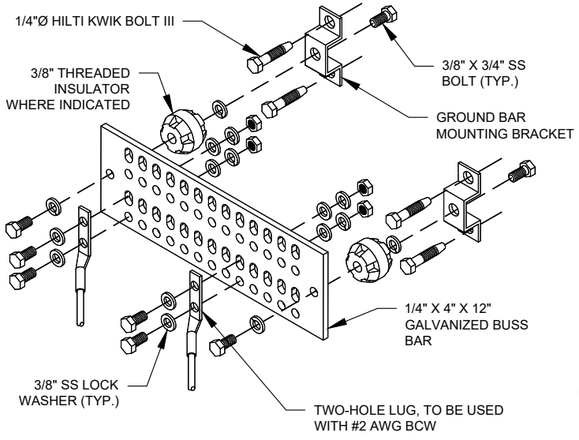


GROUND BAR NOTES:

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

3 TOWER GROUND BAR DETAIL

SCALE: N.T.S.

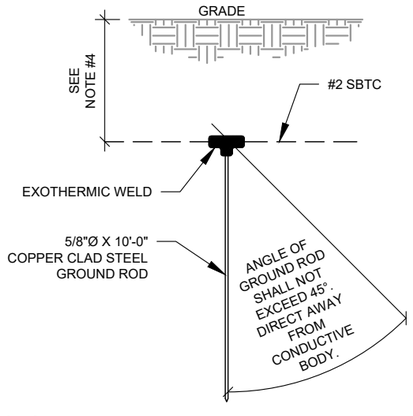


GROUND BAR NOTES

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

4 MAIN GROUND BAR DETAIL

SCALE: N.T.S.

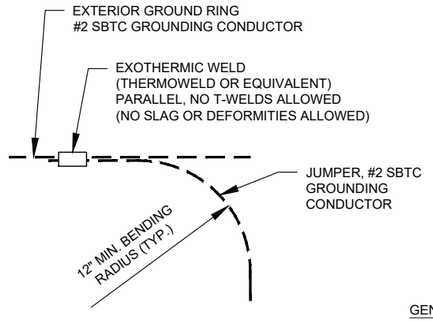


NOTES:

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

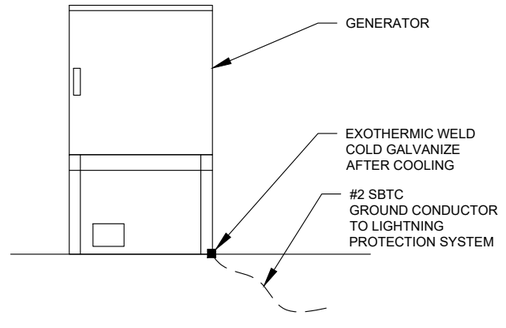
5 GROUND ROD DETAIL

SCALE: N.T.S.



6 TIE CONNECTION DETAIL

SCALE: N.T.S.



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.

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	RK	05/24/22

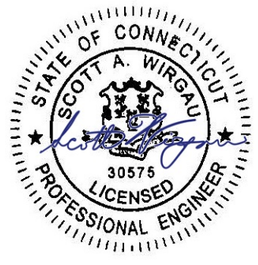
ATC SITE NUMBER:
411258

ATC SITE NAME:
FARMINGTON NORTH 2 CT

T-MOBILE SITE NAME:
CTHA367_ATC_MONOPOLE_FARMINGTON

SITE ADDRESS:
199 TOWN FARM ROAD
FARMINGTON, CT 06032

SEAL:



T-Mobile

DATE DRAWN:	05/24/22
ATC JOB NO:	14099648_G2
CUSTOMER ID:	CTHA367_ATC_MONOPOLE_FARMINGTON
CUSTOMER #:	CTHA367A

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0

PANEL DESIGNATION: ***TMO***

TYPE: LIGHTING & APPLIANCE
MOUNTING: SURFACE
ENCLOSURE: NEMA 3R

SYSTEM: 120/240V, 1Ø, 3W, 24 CKT
MAIN BREAKER (MB): 200A
MAIN BUS RATING: 200A
MIN. A.I.C. RATING: N/A

LOCATION: TMO LEASE EQUIPMENT AREA
PANEL NOTES: PROPOSED

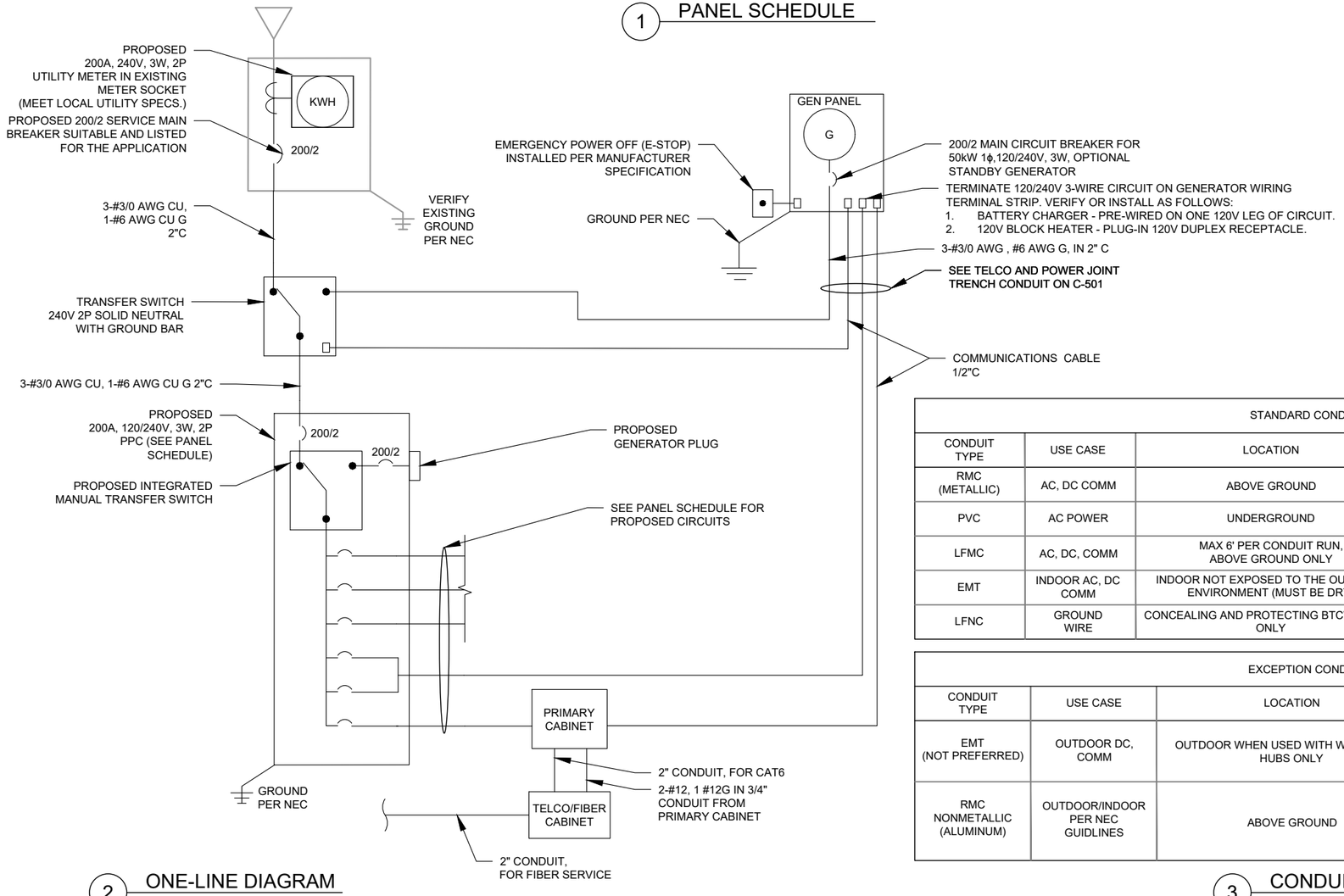
CONNECTED LOAD (kVA)		BRIEF DESCRIPTION	FEEDER OR BRANCH CIRCUIT						CIRC NOTES	FEEDER OR BRANCH CIRCUIT						BRIEF DESCRIPTION	CONNECTED LOAD (kVA)	
			BREAKER		CIRCUIT			POLE		POLE	CIRCUIT			BREAKER				
A	B		AMPS	POLES	WIRE	GND	COND.	NO.		NO.	COND.	GND	WIRE	POLES	AMPS		A	B
0.01		SURGE	60	2	3-#6	#10	1"	1		2	1/2"	#12	2-#12	1	20	GFI	0.18	
	0.01							3		4	1/2"	#12	2-#12	1	20	LIGHT		0.50
7.50		ENCLOSURE 6160	125	2	2-#3/0	#6	2"	5		6	1/2"	#12	2-#12	1	20	AAV GFI	0.15	
	7.50							7		8	1/2"	#12	2-#12	1	20	GEN BLOCK HEATER		1.50
0.18		6160 GFI	20	1	2-#12	#12		9		10	1/2"	#12	2-#12	1	20	GEN BATTERY CHARGER	0.50	
	0.00							11		12								0.00
0.00								13		14							0.00	
	0.00							15		16								0.00
0.00								17		18							0.00	
	0.00							19		20								0.00
0.00								21		22							0.00	
	0.00							23		24								0.00
7.7	7.5																0.8	2.0

A	B	TOTAL	
8.5	9.5	18.0	CONNECTED LOAD (kVA)
8.5	9.5	18.0	DEMAND LOAD (kVA)

DERATING FACTOR (80%)
DEMANDLOAD SIZING: *94 AMPS*

1 PANEL SCHEDULE

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



2 ONE-LINE DIAGRAM

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

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

3 CONDUIT USE TABLES

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A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
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REV.	DESCRIPTION	BY	DATE
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ATC SITE NUMBER:
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ATC SITE NAME:
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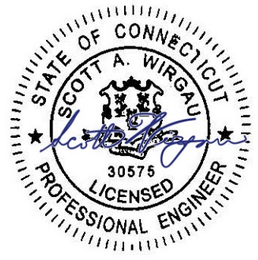
199 TOWN FARM ROAD
FARMINGTON, CT 06032

SEAL:



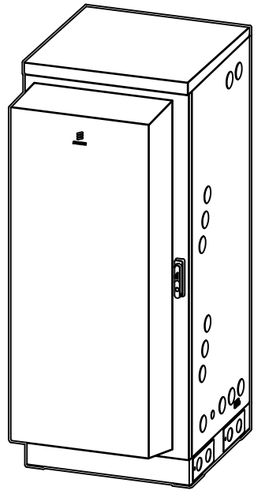
T-Mobile

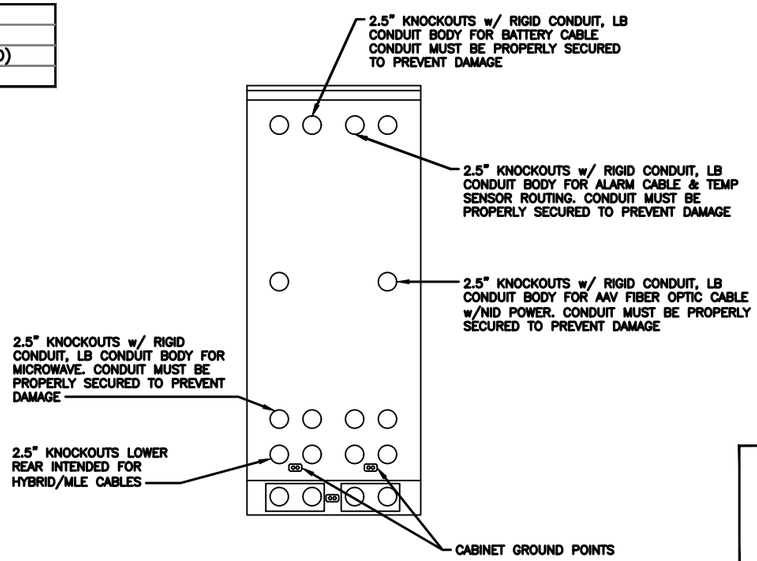
DATE DRAWN:	05/24/22
ATC JOB NO:	14099648_G2
CUSTOMER ID:	CTHA367_ATC_MONOPOLE_FARMINGTON
CUSTOMER #:	CTHA367A

PANEL SCHEDULE & ONE-LINE DIAGRAM

SHEET NUMBER:	REVISION:
E-601	0

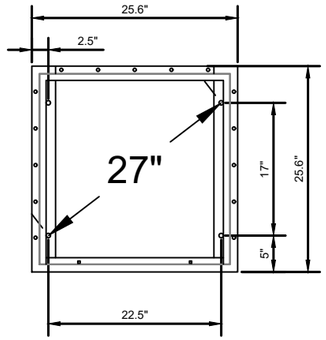
MANUFACTURER:	ERICSSON
MODEL:	6160 SITE SUPPORT CABINET
DIMENSIONS:	63" x 25.6" x 33.6" (H x W x D)
WEIGHT:	373 LBS





REAR VIEW

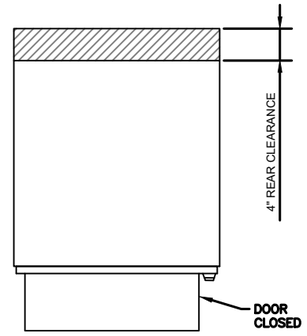
NOTE:
- CORRECT KNOCKOUT TOOL REQUIRED FOR PUNCHING KNOCKOUTS. DO NOT DRILL THROUGH KNOCKOUTS
- CONDUIT MUST BE PROPERLY SECURED TO PREVENT DAMAGE TO CABINETS AND OR CABLING

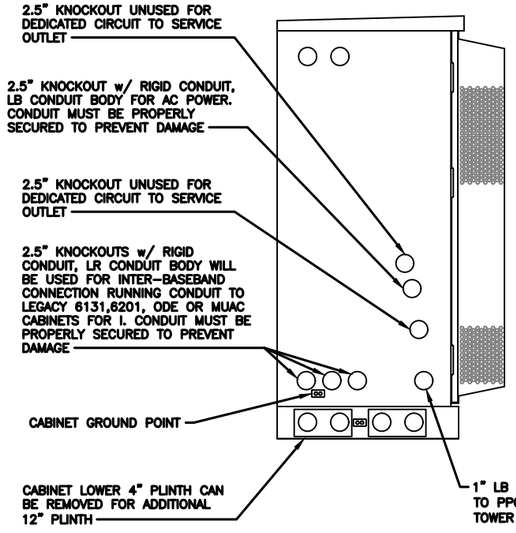


BOLT DOWN PATTERN

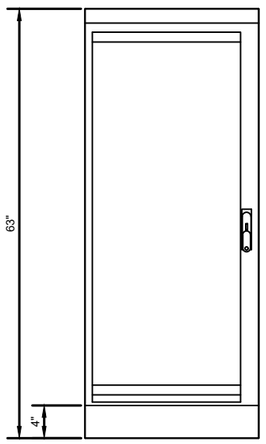
GROUNDING NOTE:

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

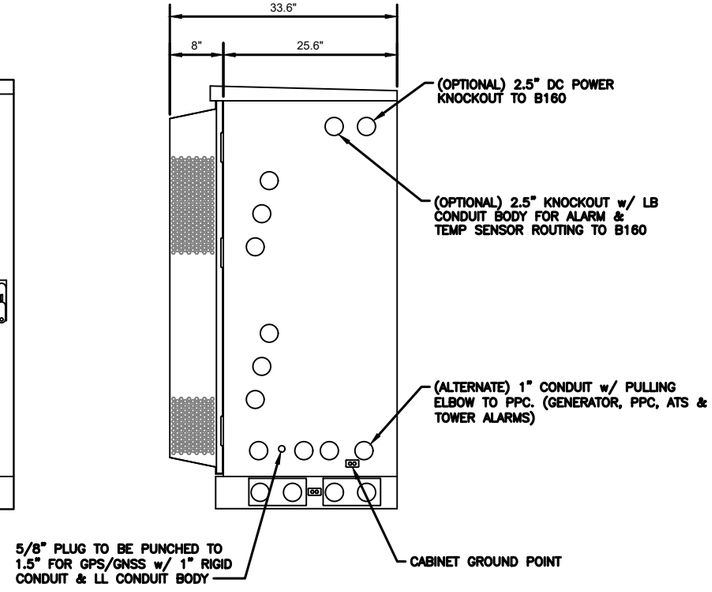




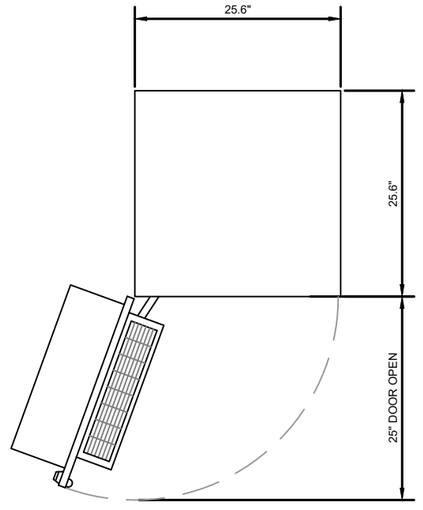
LEFT VIEW



FRONT VIEW



RIGHT VIEW



PLAN VIEW

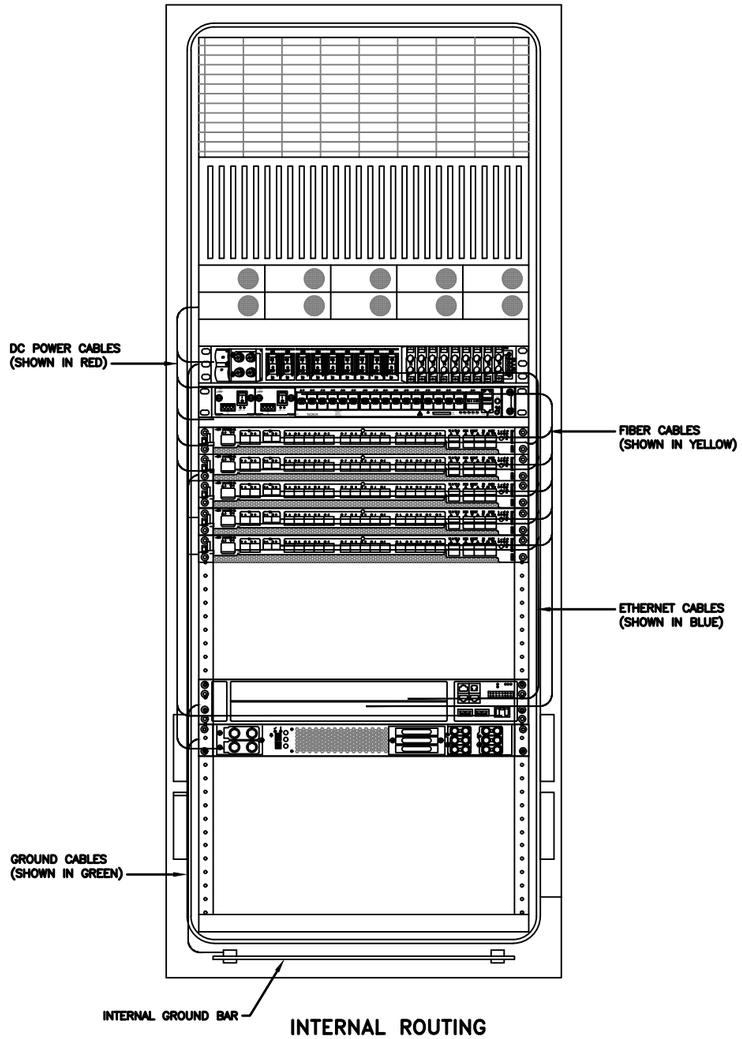
1 ERICSSON 6160 SITE SUPPORT CABINET SPECIFICATIONS

SCALE: N.T.S.

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

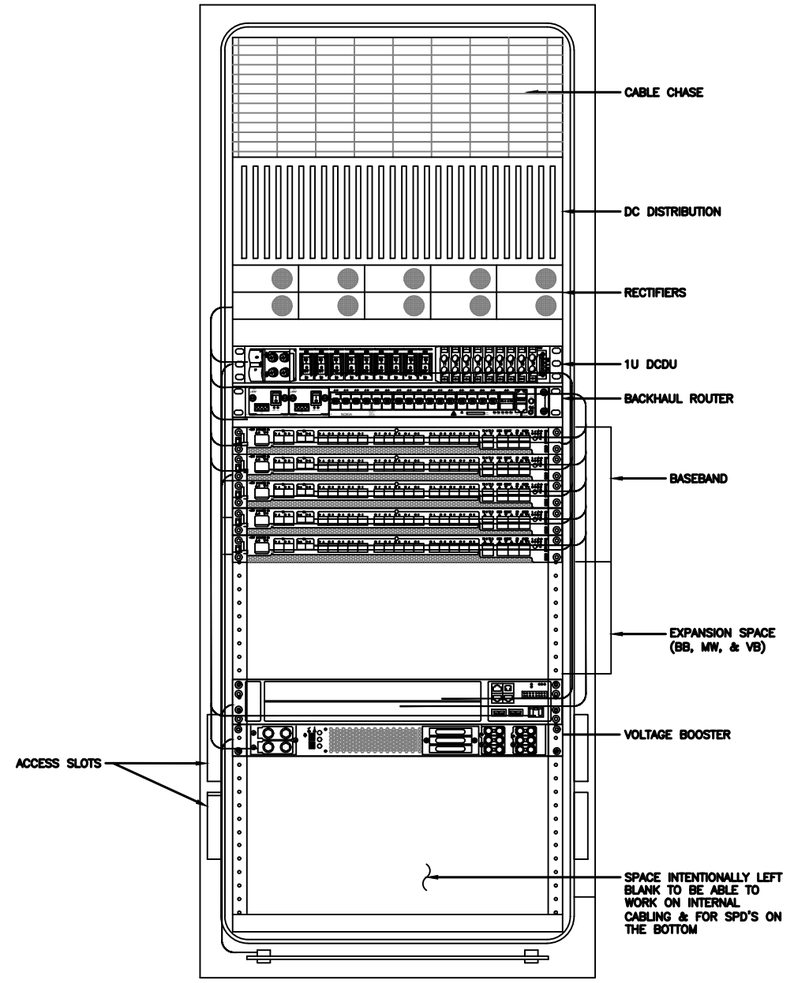
SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-601	0



INTERNAL ROUTING
(DOOR OPEN)

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



FRONT VIEW
(DOOR OPEN)

1 ERICSSON 6160 CABINET DETAILS

SCALE: N.T.S.

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

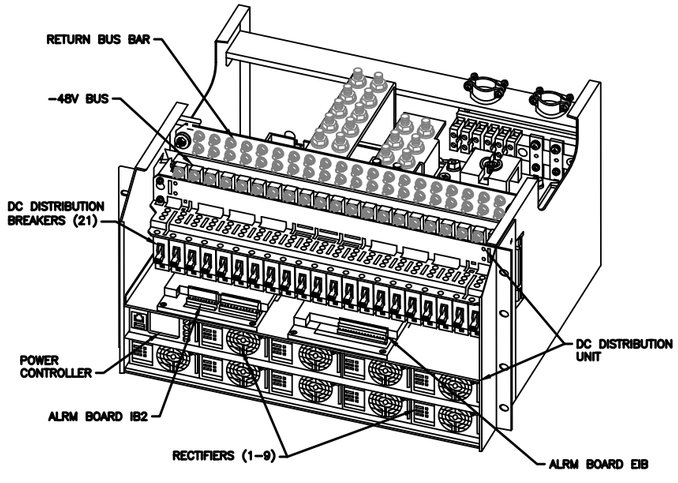
SUPPLEMENTAL

SHEET NUMBER: R-602

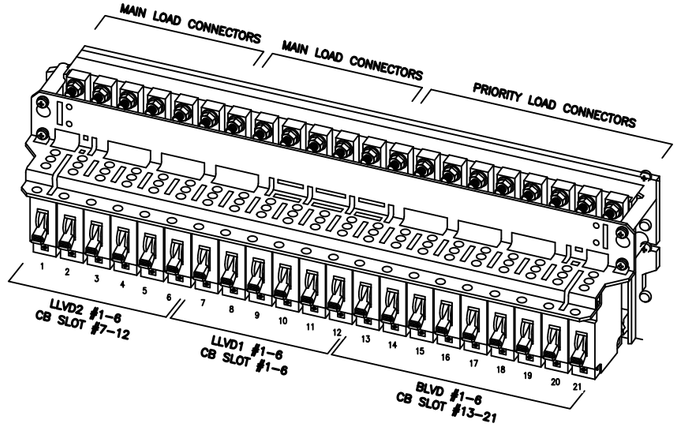
REVISION: 0

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

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



POWER SUBRACK



DC DISTRIBUTION

1 ERICSSON 6160 ELECTRICAL DETAILS

SCALE: N.T.S.

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

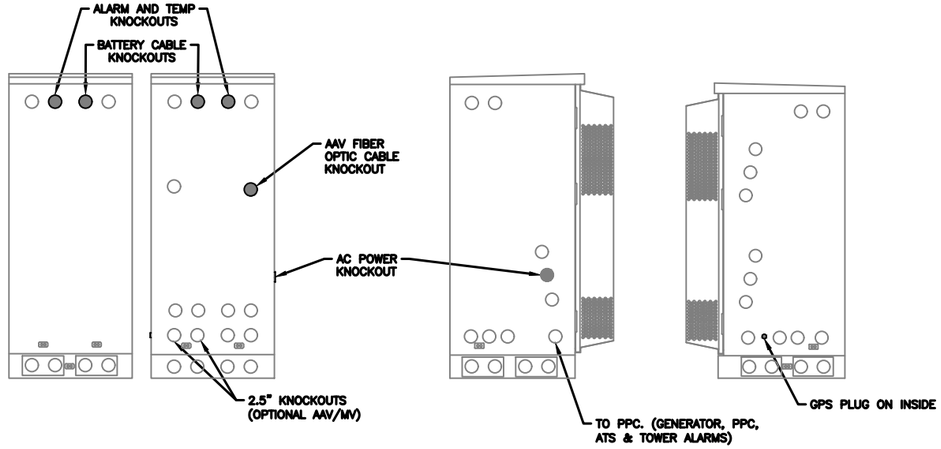
SUPPLEMENTAL

SHEET NUMBER: R-603

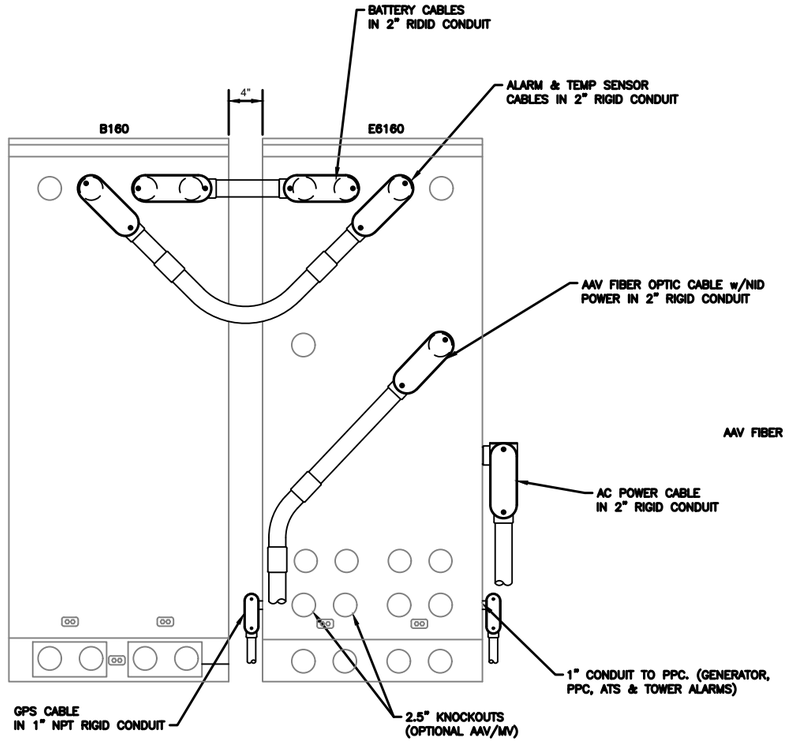
REVISION: 0

NOTE:

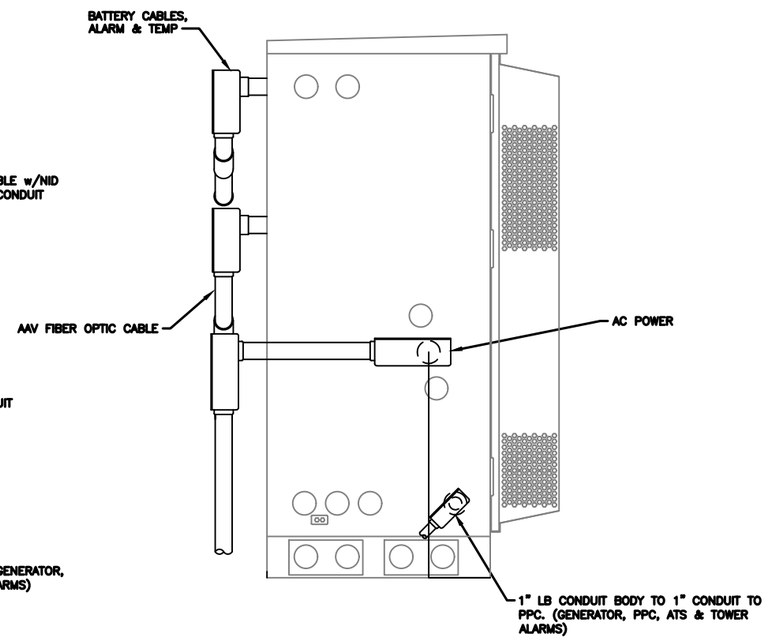
1. ALL CONDUIT AND FITTING ENTRANCES INTO CABINETS AND ENCLOSURES MUST UTILIZE MYERS OR EQUIVALENT HUBS OR SEALING WASHERS TO PREVENT WATER ENTRY/SEEPAGE INTO CABINETS AND ENCLOSURES.
2. (LIQUIDFLEX) FLEXIBLE METALLIC CONDUIT (LFMC) & ASSOCIATED FITTINGS CAN BE USED AS NEEDED BUT ONLY FOR TIGHT CONDUIT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



CONDUIT LOCATIONS



REAR VIEW



SIDE VIEW

1 ERICSSON 6160/B160 CONDUIT ROUTING DETAILS

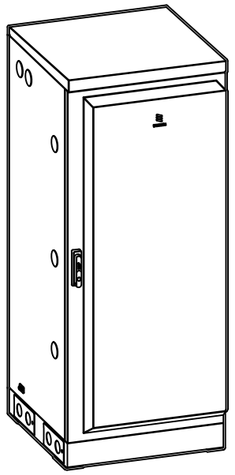
SCALE: N.T.S.

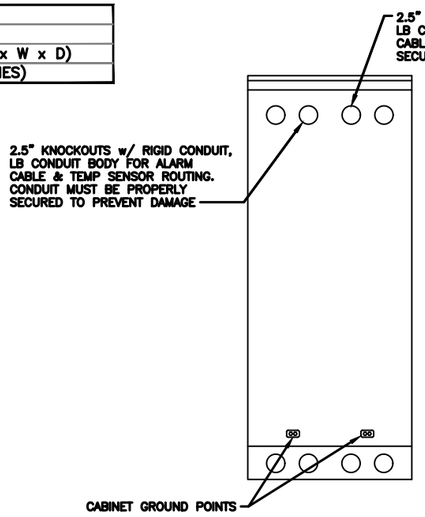
NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

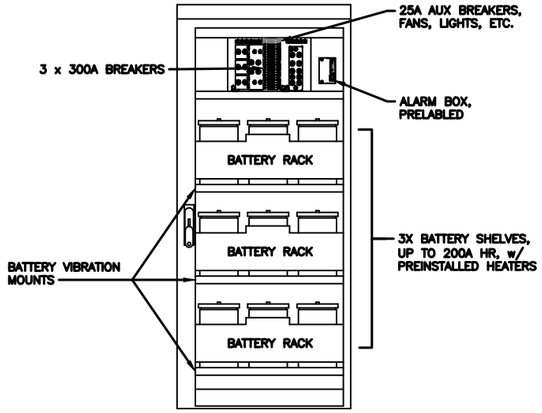
SHEET NUMBER:	REVISION:
R-604	0

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



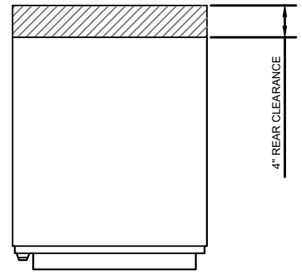


REAR VIEW



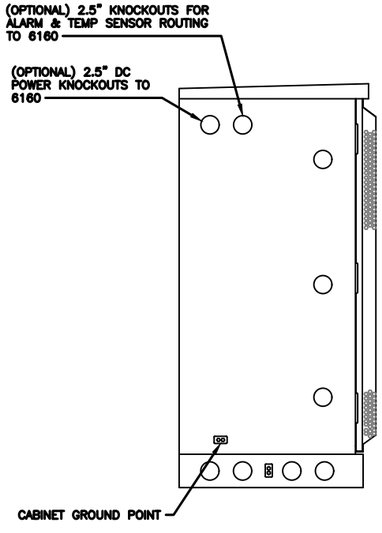
FRONT VIEW
(DOOR OPEN)

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

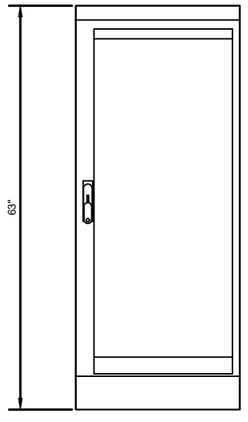


GROUNDING NOTE:

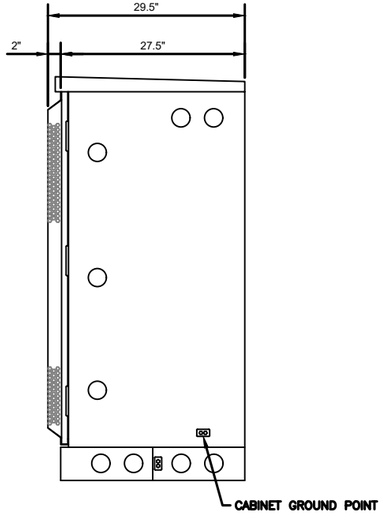
"CABINET GROUNDING TO USE A SINGLE, #2 BTCW CONDUCTOR, W/ 2-HOLE, 1" C-C, LONG BARREL, WINDOW LUG, IN 3/4" LFNC TO GROUND RING. PLINTH GROUNDING IS NOT REQUIRED."



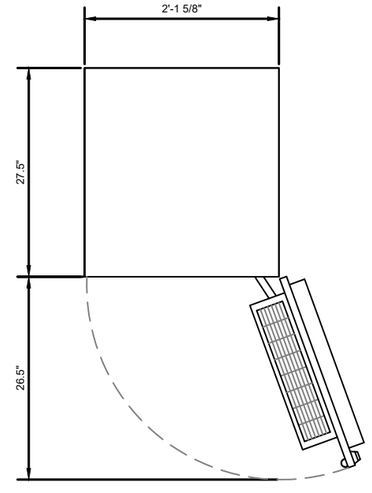
LEFT VIEW



FRONT VIEW



RIGHT VIEW



PLAN VIEW

B160 ERICSSON SITE SUPPORT BATTERY CABINET

1 ERICSSON B160 BATTERY CABINET SPECIFICATIONS

SCALE: N.T.S.

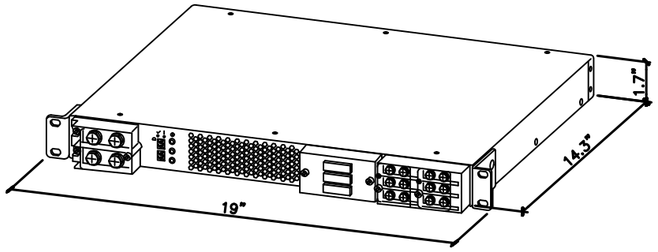
NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT.

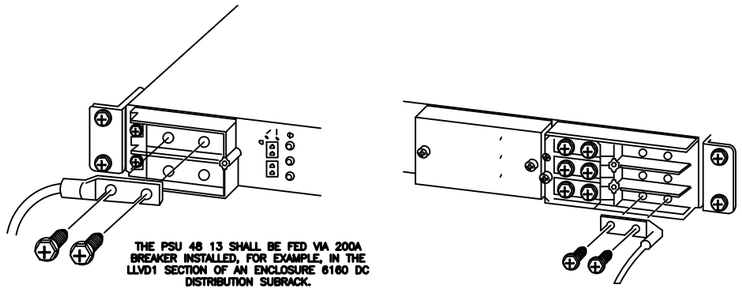
SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-605	0

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

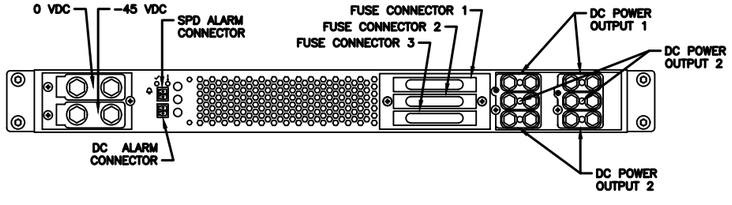
NEEDED INSTALL KIT (PICK 1)
34133 PSU4813 INSTALL KIT FOR RBS61XX
34134 PSU4813 INSTALL KIT FOR PBC6200
34135 PSU4813 INSTALL KIT FOR 6X60/RBS6230





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

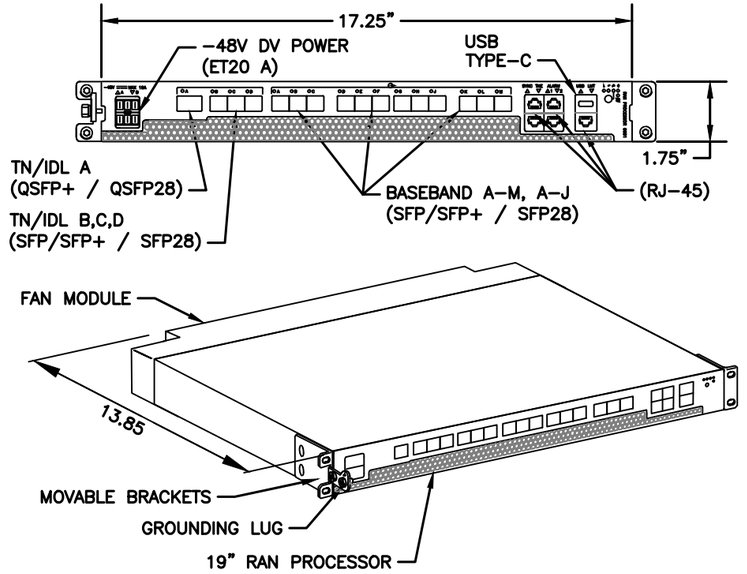
CONNECT –58 VDC DISTRIBUTION CABLE TO TERMINAL AT THE RIGHT, WHICH WILL BE FED TO RRU/AIR AT THE OTHER END.



1 SKU# 34132 - PSU 48 13

SCALE: N.T.S.

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



2 34553 - ERICSSON 6651 RAN PROCESSOR

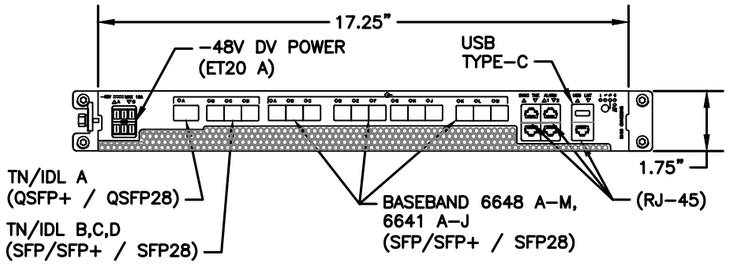
SCALE: N.T.S.

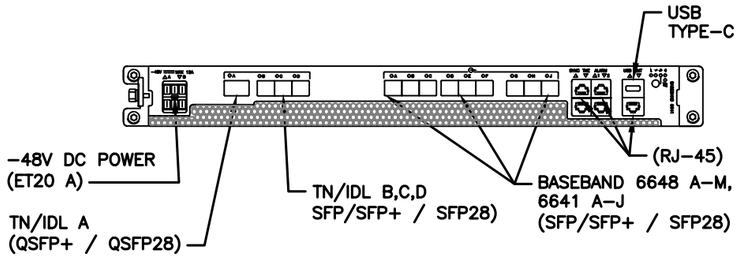
NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

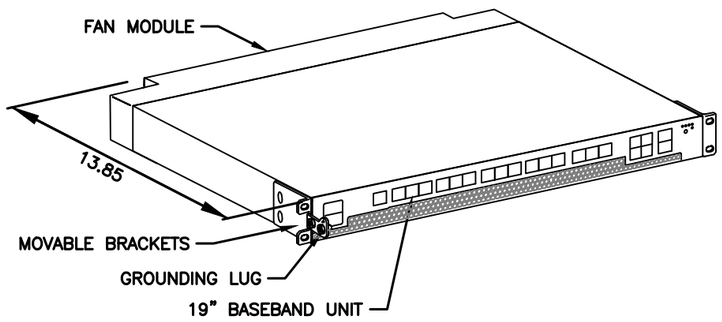
SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-606	0

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







1 34111 - ERICSSON BASEBAND 6648 (WITH FAN)

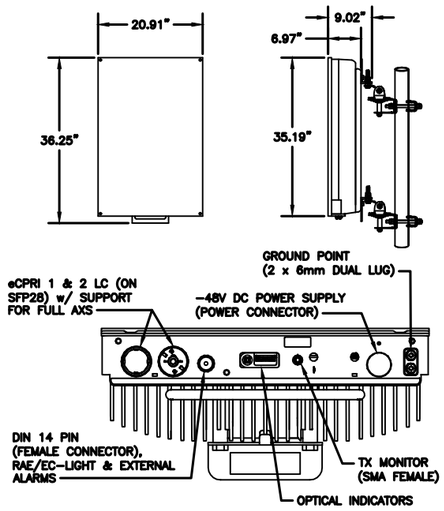
SCALE: N.T.S.

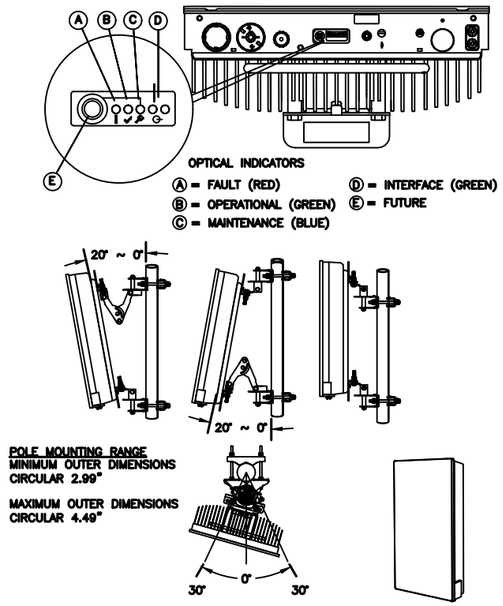
NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-607	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 (SXK109 2016/1)

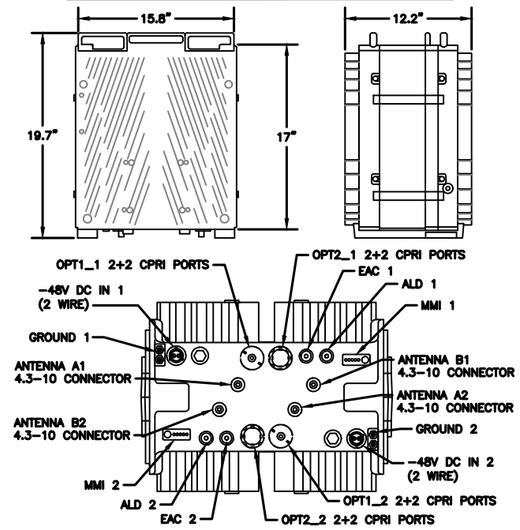




1 34552 - ERICSSON AIR 6419 BAND 41

SCALE: N.T.S.

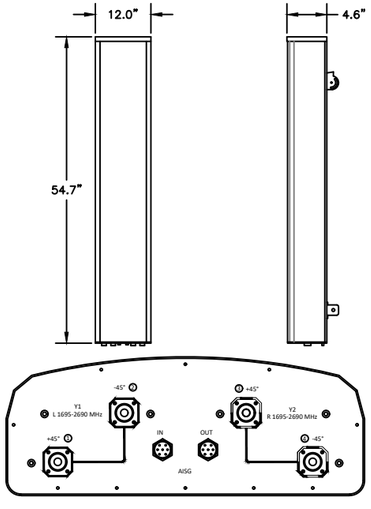
MANUFACTURER:	ERICSSON
MODEL:	4460 RADIO B2/25 B66 (KRC 161 912/3)
DIMENSIONS:	19.7" x 15.8" x 12.2" (H" x W" x D")
WEIGHT:	109 LBS
BRACKET WEIGHT:	4.8 LBS (ERS HEAVY #SXK1255993/1)



2 34373 - ERICSSON 4460 RADIO B2/25 B66

SCALE: N.T.S.

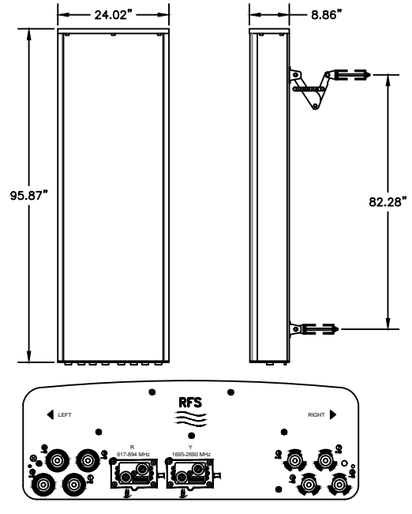
MANUFACTURER:	COMMSCOPE
MODEL:	VV-65A-R1
DIMENSIONS:	54.7" x 12.1" x 4.6" (H x W x D)
WEIGHT:	24.7 LB
INTERFACE:	4-PORT 4.3-10 FEMALE
MOUNTING KIT:	600899A-2 (INCLUDED) WEIGHT: 8.6 LB



3 34401 - COMMSCOPE VV-65A-R1

SCALE: N.T.S.

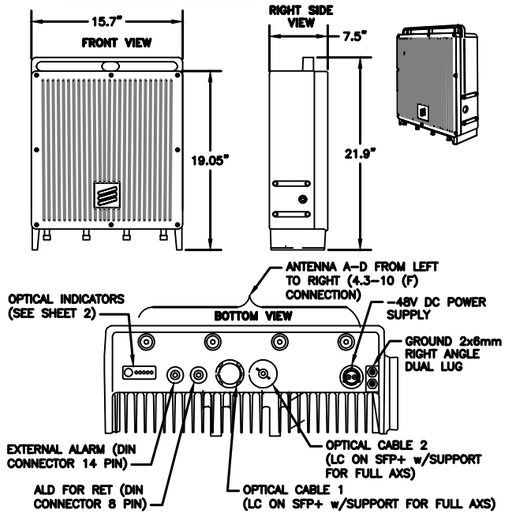
MANUFACTURER:	RFS
MODEL:	APXVAALL24_43-U-NA20
DIMENSIONS:	95.87" x 24.02" x 8.86"
WEIGHT:	119 LB
BAND:	QUAD BAND (8 PORT)
MOUNTING KIT & WEIGHT:	APM40-10E BEAM TILT KIT (INCLUDED) (16.53 LBS)



4 34087 - RFS APXVAALL24_43-U-NA20

SCALE: N.T.S.

MANUFACTURER:	ERICSSON
MODEL:	4480 RADIO (KRC 161 922/1)
DIMENSIONS:	21.9" x 15.7" x 7.5" (H x W x D)
MODEL BAND:	871, 885 FOR NR AND LTE
WEIGHT:	81 LBS
BRACKET WEIGHT:	3.75 LBS (MULTI ERS #109 1973/2)



5 34372 - ERICSSON 4480 RADIO

SCALE: N.T.S.

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-608	0

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

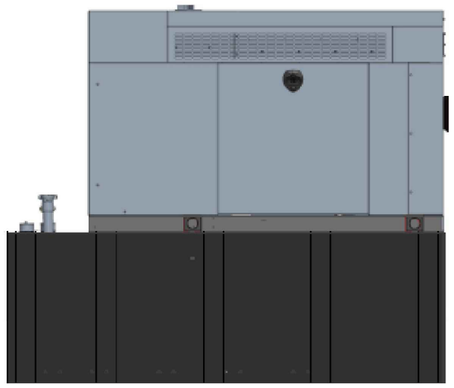


Image used for illustration purposes only

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.

SPEC SHEET

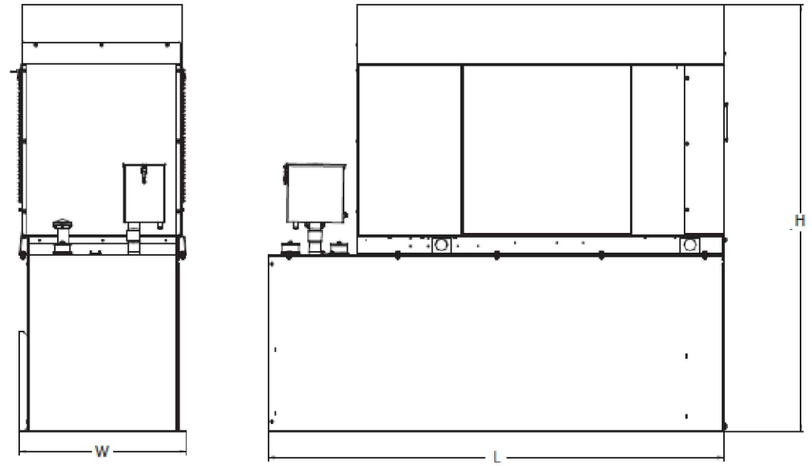
1 OF 8

RD048 | 3.4L | 48kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

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

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

* All measurements are approximate and for estimation purposes only.

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

SPEC SHEET

8 OF 8

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) 544-4811 ©2018Generac Power Systems, Inc. All rights reserved. All specifications are subject to change without notice.

Part No. 1000052700
Rev. 5 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:	REVISION:
R-609	0

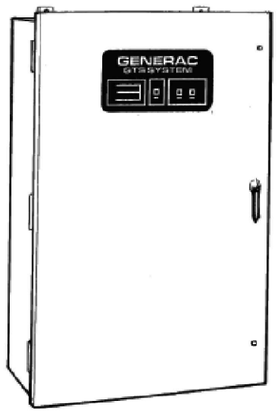
100 - 400 Amps, 600 VAC

GENERAC | INDUSTRIAL POWER

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

GENERAC | INDUSTRIAL POWER

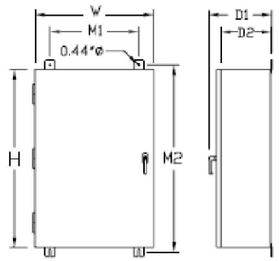
GTS Control Systems

	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 H	Enclosure Width W	Wall Mount Bolt Pattern M1	Wall Mount Bolt Pattern M2	Enclsoure Depth D1	Enclsoure Depth D2	Weight (lbs.)
100	All	36	24	18	37.5	12.7	10	180
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	NEUTRAL BAR* # LUGS	NEUTRAL BAR* LUG WIRE RANGE	GROUND LUG (1 PROVIDED) 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 or 2 – [250MCM – 1/0 AWG]	4	600MCM – 4 AWG [250MCM – 1/0 AWG]**	350MCM – 6 AWG
400	600MCM – 4 AWG or 2 – [250MCM – 1/0 AWG]	4	600MCM – 4 AWG [250MCM – 1/0 AWG]**	350MCM – 6 AWG

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

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1 PROPOSED ATS
SCALE: NOT TO SCALE

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

SUPPLEMENTAL

SHEET NUMBER: R-610

REVISION: 0

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 BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-611	0

1 REQUIRED SIGNS

SCALE: N.T.S.

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-612	0

AMERICAN TOWER®
CORPORATION

Mount Analysis Report

ATC Site Name	:	**Farmington North 2 CT, CT**
ATC Site Number	:	**411258**
Engineering Number	:	**14099648_C8_01**
Mount Elevation	:	**75 ft**
Carrier	:	**T-Mobile**
Carrier Site Name	:	**CTHA367_ATC_Monopole_Farmington**
Carrier Site Number	:	**CTHA367A**
Site Location	:	**199 Town Farm Road** **Farmington, CT 06032-1554** **41.75777516 , -72.82993932**
County	:	**Hartford**
Date	:	**April 27, 2022**
Max Usage	:	**79%**
Result	:	**Pass**

Prepared By:
Rohith Koduru
Structural Engineer I

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32593
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
29 Apr 2022 03:57:25 cosign

COA: PEC.0001553

Introduction

The purpose of this report is to summarize results of the mount analysis performed for T-Mobile at 75 ft.

Supporting Documents

Specifications Sheet	Site Pro 1 RMQP-4096-HK, dated September 20, 2018
Radio Frequency Data Sheet	RFDS ID #CTHA367A, dated March 11, 2022

Analysis

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

Basic Wind Speed:	117 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.50'' radial ice concurrent
Codes:	ANSI/TIA-222-H
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.185, 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.

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

1 MOUNT ANALYSIS

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

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-613	0

Exhibit E

Structural Analysis Report

AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by

telamon
Tower Engineering PLLC

Structural Analysis Report

Structure	:	**111 ft Monopine**
ATC Site Name	:	**Farmington North 2 CT,CT**
ATC Site Number	:	**411258**
Engineering Number	:	**14099648_C3_03**
Proposed Carrier	:	**T-MOBILE**
Carrier Site Name	:	**CTHA367_ATC_Monopole_Farmington**
Carrier Site Number	:	**CTHA367A**
Site Location	:	**199 Town Farm Road** **Farmington, CT 06032-1554** **41.7578, -72.8299**
County	:	**Hartford**
Date	:	**May 2, 2022**
Max Usage	:	**74%**
Result	:	**Pass**

Prepared By:

Ravi Siddharth Raja
CLS

Reviewed By:

STATE OF CONNECTICUT
WILLIAM HOLT
PEN.35568
LICENSED
PROFESSIONAL ENGINEER

William Holt, PE
Director of Engineering
License No. 35568 Expires: 01/31/2023

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 111 ft Monopine to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower Drawings	EEI Project #16046 Rev. 3, dated February 8, 2011
Foundation Drawing	EEI Project #16046 Rev. 2, dated December 14, 2010
Geotechnical Report	Clarence Welti Associates, Inc. Project Name Verizon Wireless Cell Tower, dated September 11, 2009
Mount Analysis	ATC Project #14099648_C8_01, dated April 27, 2022

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:	117 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.50" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.18, S_1 = 0.06
Site Class:	D - Stiff Soil - Default

Conclusion

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

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

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
111.3	3	Generic RRU (Model TBD)	T-Arm	(2) 1 1/4" Hybriflex Cable (12) 1 5/8" Coax	VERIZON WIRELESS
	3	Alcatel-Lucent B66A RRH4x45-4R w/ Solar Shield			
109.9	3	Alcatel-Lucent B13 RRH4x30-4R			
109.0	3	Samsung B5/B13 RRH-BR04C			
	3	Samsung B2/B66A RRH-BR049			
	1	VZW Unused Reserve (13207.33 sqin)			
	3	Samsung MT6407-77A			
	6	Antel LPA-80063/4CF			
	6	Commscope SBNHH-1D65B			
	2	Raycap RC2DC-3315-PF-48			
102.0	3	Ericsson AIR 6449 B77D/ C-Band	T-Arm	(3) 0.40" (10.3mm) Fiber (6) 0.82" (20.8mm) 8 AWG 6 (6) 1 5/8" Coax (3) 2" conduit	AT&T MOBILITY
100.0	3	CCI TPA65R-BU8D			
	3	CCI DMP65R-BU8D			
	1	Raycap DC6-48-60-18-8C-EV			
	3	Ericsson RRUS 4449 B5, B12			
	3	Ericsson RRUS 4478 B14			
	3	Ericsson RRUS 8843 B2, B66A			
	1	Raycap DC6-48-60-18-8F(32.8 lbs)			
	1	Raycap DC6-48-60-18-8F ("Squid")			
98.0	3	Ericsson AIR 6419 B77G			
90.0	1	Commscope RDIDC-9181-PF-48	Sector Frame	(1) 1.60" (40.6mm) Hybrid	DISH WIRELESS L.L.C.
	3	Fujitsu TA08025-B604			
	3	Fujitsu TA08025-B605			
	3	JMA Wireless MX08FRO665-21			

Equipment to be Removed

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

Proposed Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
75.0	3	Ericsson 4460 BAND 2/25	Triangular Platform with Handrails	(3) 1.99" (50.7mm) Hybrid	T-MOBILE
	3	Ericsson 4480 BAND 71			
	3	Commscope VV-65A-R1B			
	3	Ericsson AIR 6419 B41			
	3	RFS APXVAALL24 43-U-NA20			

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

Install proposed lines inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	55%	Pass
Shaft	55%	Pass
Base Plate	22%	Pass

Foundations

Reaction Component	Original Design Reactions	Analysis Reactions	% of Design
Moment (Kips-Ft)	6395.5	4304.3	67%
Shear (Kips)	68.9	51.2	74%

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
75.0	Ericsson 4460 BAND 2/25	T-MOBILE	0.353	0.530
	Ericsson 4480 BAND 71			
	RFS APXVAALL24 43-U-NA20			
	Ericsson AIR 6419 B41			
	Commscope VV-65A-R1B			

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

Standard Conditions

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

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

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

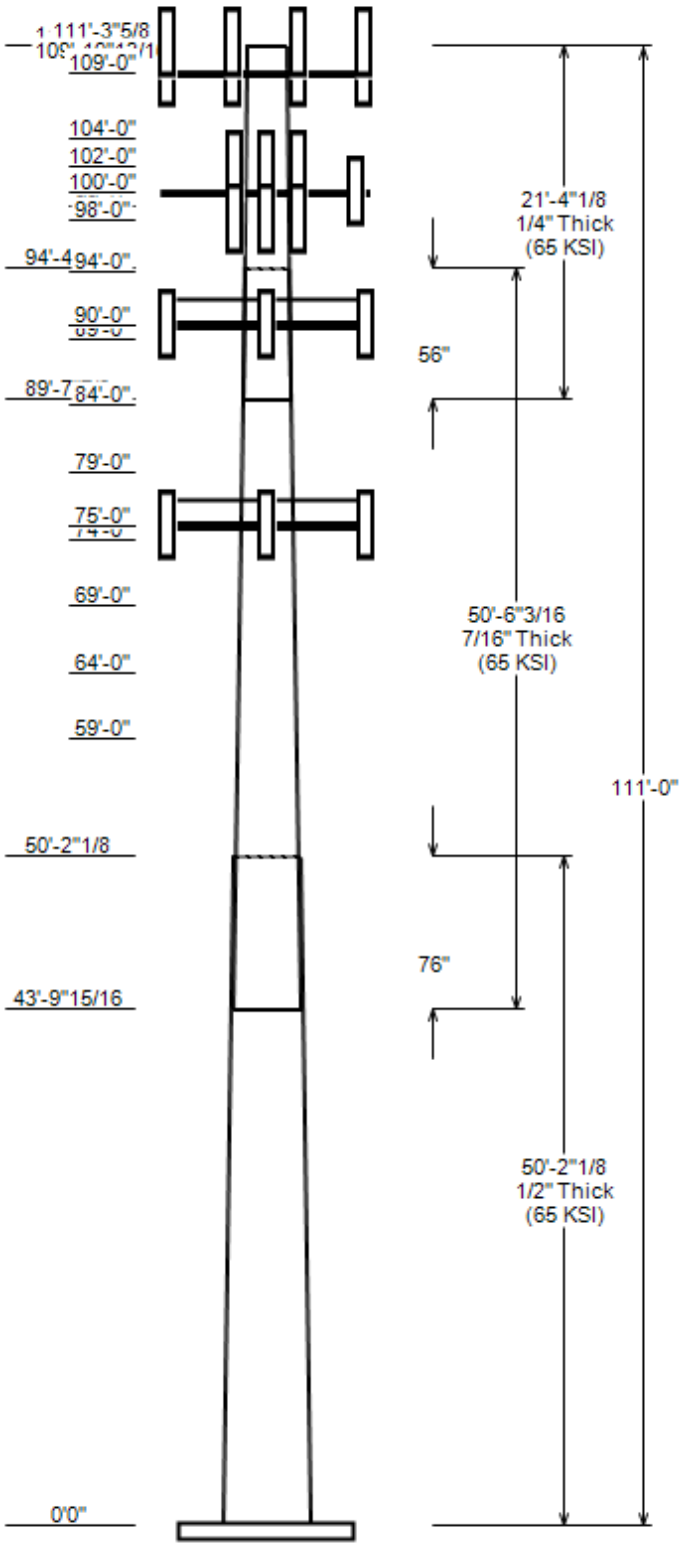
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

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

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

JOB INFORMATION

Asset :	411258, Farmington North 2 CT	Height :	111 ft
Client :	T-MOBILE	Base Width :	59
Code :	ANSI/TIA-222-H	Shape :	18 Sides



SITE PARAMETERS

Nominal Wind: 117 mph wind with no ice **Topo Category:** 1

Ice Wind: 50 mph wind with 1.5" radi **Topo Method:** Method 1

Base Elev (ft): 0.00 **Taper :** 0.30000(In/ft) **Topo Feature:**

Structure Class: II **Exposure :** C **S_s :** 0.185 **S_1** : 0.055

SECTION PROPERTIES

Shaft Section	Length (ft)	Diameter (in) Across Flats Top	Diameter (in) Across Flats Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	50.175	43.94	59.00	0.500		0.000	18 Sides	65
2	50.518	31.55	46.72	0.438	Slip Joint	76.160	18 Sides	65
3	21.341	27.05	33.46	0.250	Slip Joint	56.250	18 Sides	65

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
111.3	111.3	3	Alcatel-Lucent B66A RRH4x45-4R
111.3	111.3	3	Generic RRU (Model TBD)
109.9	109.9	3	Alcatel-Lucent B13 RRH4x30-4R
109.0	109.0	3	Samsung B5/B13 RRH-BR04C
109.0	109.0	3	Samsung B2/B66A RRH-BR049
109.0	109.0	2	Raycap RC2DC-3315-PF-48
109.0	109.0	3	Samsung MT6407-77A
109.0	111.0	6	Antel LPA-80063/4CF
109.0	111.0	6	Commscope SBNHH-1D65B
109.0	109.0	3	Generic Flat T-Arm
109.0	109.0	1	Pine Branch
109.0	109.0	1	VZW Unused Reserve (13207.33 s
104.0	104.0	1	Pine Branch
102.0	102.0	3	Ericsson AIR 6449 B77D/ C-Band
100.0	100.0	1	Raycap DC6-48-60-18-8F(32.8 lb
100.0	100.0	1	Raycap DC6-48-60-18-8F ("Squid
100.0	100.0	3	Ericsson RRUS 8843 B2, B66A
100.0	100.0	3	Ericsson RRUS 4478 B14
100.0	100.0	3	Ericsson RRUS 4449 B5, B12
100.0	100.0	1	Raycap DC6-48-60-18-8C-EV
100.0	100.0	3	Generic Flat T-Arm
100.0	100.0	3	CCI DMP65R-BU8D
100.0	100.0	3	CCI TPA65R-BU8D
99.0	99.0	1	Pine Branch
98.0	98.0	3	Ericsson AIR 6419 B77G
94.0	94.0	1	Pine Branch
90.0	90.0	1	Commscope RDIDC-9181-PF-48
90.0	90.0	3	Fujitsu TA08025-B604
90.0	90.0	3	Fujitsu TA08025-B605
90.0	90.0	3	JMA Wireless MX08FRO665-21
90.0	90.0	3	Generic Flat Light Sector Fram
89.0	89.0	1	Pine Branch
84.0	84.0	1	Pine Branch
79.0	79.0	1	Pine Branch
75.0	75.0	3	Ericsson 4460 BAND 2/25
75.0	75.0	3	Ericsson 4480 BAND 71
75.0	75.0	3	Commscope VV-65A-R1B
75.0	75.0	3	Ericsson AIR 6419 B41
75.0	75.0	1	Generic Mount Reinforcement
75.0	75.0	3	RFS APXVAALL24 43-U-NA20
75.0	75.0	1	Generic Round Platform with Ha
74.0	74.0	1	Pine Branch
69.0	69.0	1	Pine Branch
64.0	64.0	1	Pine Branch

JOB INFORMATION			
Asset :	411258, Farmington North 2 CT	Height :	111 ft
Client :	T-MOBILE	Base Width :	59
Code :	ANSI/TIA-222-H	Shape :	18 Sides

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
59.0	59.0	1	Pine Branch

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	109.0	1 5/8" Coax	No
0.0	109.0	1 1/4" Hybriflex Cable	No
0.0	100.0	2" conduit	No
0.0	100.0	1 5/8" Coax	No
0.0	100.0	0.82" (20.8mm) 8 AWG 6	No
0.0	100.0	0.40" (10.3mm) Fiber	No
0.0	90.0	1.60" (40.6mm) Hybrid	No
0.0	75.0	1.99" (50.7mm) Hybrid	No

LOAD CASES

1.2D + 1.0W	117 mph wind with no ice
0.9D + 1.0W	117 mph wind with no ice
1.2D + 1.0Di + 1.0Wi	50 mph wind with 1.5" radial ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	60 mph Wind with No Ice

REACTIONS

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W	4304.29	51.25	56.48
0.9D + 1.0W	4284.96	51.23	42.34
1.2D + 1.0Di + 1.0Wi	1265.75	15.07	82.55
1.2D + 1.0Ev + 1.0Eh	184.74	2.20	56.23
0.9D - 1.0Ev + 1.0Eh	183.74	2.20	39.04
1.0D + 1.0W	1010.07	12.05	47.12

DISH DEFLECTIONS

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

ANALYSIS PARAMETERS

Location:	Hartford County,CT	**Height:**	111 ft
Type and Shape:	Taper, 18 Sides	**Base Diameter:**	59.00 in
Manufacturer:	Undetermined	**Top Diameter:**	27.05 in
K_d (non-service):	0.95	**Taper:**	0.3000 in/ft
K_e:	0.99	**Rotation:**	0.000°

ICE & WIND PARAMETERS

Exposure Category:	C	**Design Wind Speed w/o Ice:**	117 mph
Risk Category:	II	**Design Wind Speed w/Ice:**	50 mph
Topo Factor Procedure:	Method 1	**Operational Wind Speed:**	60 mph
Topographic Category:	1	**Design Ice Thickness:**	1.50 in
Crest Height:	0 ft	**HMSL:**	183.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil			**Period Based on Rayleigh Method (sec):**	1.26
T_L (sec):	6	**P:**	1	**C_s:**	0.047
S_s:	0.185	**S_1:**	0.055	**C_s Max:**	0.047
F_a:	1.600	**F_v:**	2.400	**C_s Min:**	0.030
S_{ds}:	0.197	**S_{d1}:**	0.088		

LOAD CASES

1.2D + 1.0W	117 mph wind with no ice
0.9D + 1.0W	117 mph wind with no ice
1.2D + 1.0Di + 1.0Wi	50 mph wind with 1.5" radial ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	60 mph Wind with No Ice

SHAFT SECTION PROPERTIES

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (in)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	50.18	0.5000	65		0.00	13,809	59.00	-0.005	92.84	40,140.4	19.40	118.00	43.94	50.17	68.93	16,431.1	14.08	87.87	0.3002
2-18	50.52	0.4375	65	Slip	76.16	9,237	46.72	43.832	64.26	17,388.9	17.42	106.78	31.55	94.35	43.20	5,283.3	11.30	72.11	0.3002
3-18	21.34	0.2500	65	Slip	56.25	1,729	33.46	89.659	26.35	3,670.8	22.19	133.83	27.05	111.00	21.26	1,929.6	17.67	108.20	0.3002
				Shaft Weight		24,775													

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
111.30	Generic RRU (Model TBD)	3	0.80	0.000	55.00	4.563	0.50	159.19	5.913	0.50
111.30	Alcatel-Lucent B66A RRH4x45-4R	3	0.80	0.000	56.80	2.537	0.50	124.91	3.626	0.50
109.90	Alcatel-Lucent B13 RRH4x30-4R	3	0.80	0.000	57.80	2.140	0.50	124.77	3.110	0.50
109.00	Commscope SBNHH-1D65B	6	0.80	2.000	50.70	8.173	0.69	220.73	10.914	0.69
109.00	Raycap RC2DC-3315-PF-48	2	0.80	0.000	32.00	3.781	0.50	138.19	5.062	0.50
109.00	Samsung MT6407-77A	3	0.80	0.000	81.60	4.709	0.61	180.34	6.180	0.61
109.00	Generic Flat T-Arm	3	0.75	0.000	312.50	12.900	0.67	565.59	20.823	0.67
109.00	Pine Branch	1	1.00	0.000	600.00	45.000	1.00	1004.94	75.370	1.00
109.00	VZW Unused Reserve (13207.33 s	1	0.80	0.000	794.10	91.718	0.90	1330.04	153.618	0.90
109.00	Antel LPA-80063/4CF	6	0.80	2.000	20.00	6.142	0.76	218.37	7.146	0.76
109.00	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.875	0.50	146.20	2.749	0.50
109.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.875	0.50	125.72	2.749	0.50
104.00	Pine Branch	1	1.00	0.000	600.00	45.000	1.00	1003.40	75.255	1.00
102.00	Ericsson AIR 6449 B77D/ C-Band	3	0.80	0.000	81.60	4.028	0.70	193.79	5.350	0.70
100.00	CCI TPA65R-BU8D	3	0.80	0.000	82.50	18.089	0.63	414.10	21.640	0.63
100.00	CCI DMP65R-BU8D	3	0.80	0.000	95.70	17.871	0.63	422.58	21.415	0.63
100.00	Generic Flat T-Arm	3	0.75	0.000	312.50	12.900	0.67	563.75	20.765	0.67
100.00	Raycap DC6-48-60-18-8C-EV	1	0.80	0.000	16.00	4.788	0.50	140.19	6.203	0.50
100.00	Ericsson RRUS 4449 B5, B12	3	0.80	0.000	71.00	1.969	0.50	132.98	2.866	0.50
100.00	Ericsson RRUS 4478 B14	3	0.80	0.000	59.90	1.842	0.50	113.08	2.705	0.50
100.00	Ericsson RRUS 8843 B2, B66A	3	0.80	0.000	72.00	1.639	0.50	130.95	2.452	0.50
100.00	Raycap DC6-48-60-18-8F(32.8 lb	1	0.80	0.000	32.80	1.470	0.50	92.14	2.142	0.50
100.00	Raycap DC6-48-60-18-8F ("Squid	1	0.80	0.000	31.80	1.470	0.50	91.14	2.142	0.50
99.00	Pine Branch	1	1.00	0.000	600.00	45.000	1.00	1001.60	75.120	1.00
98.00	Ericsson AIR 6419 B77G	3	0.90	0.000	66.10	3.797	0.65	159.13	5.060	0.65
94.00	Pine Branch	1	1.00	0.000	600.00	45.000	1.00	998.87	74.915	1.00
90.00	Fujitsu TA08025-B604	3	0.80	0.000	63.90	1.962	0.50	119.42	2.838	0.50
90.00	Fujitsu TA08025-B605	3	0.80	0.000	75.00	1.962	0.50	134.64	2.838	0.50
90.00	Generic Flat Light Sector Fram	3	0.75	0.000	400.00	17.900	0.75	686.50	32.264	0.75
90.00	JMA Wireless MX08FRO665-21	3	0.80	0.000	64.50	12.489	0.64	309.18	15.164	0.64
90.00	Commscope RDIDC-9181-PF-48	1	0.80	0.000	21.90	1.867	0.50	76.07	2.724	0.50
89.00	Pine Branch	1	1.00	0.000	600.00	45.000	1.00	996.65	74.748	1.00
84.00	Pine Branch	1	1.00	0.000	600.00	45.000	1.00	994.31	74.573	1.00
79.00	Pine Branch	1	1.00	0.000	600.00	45.000	1.00	991.83	74.387	1.00
75.00	RFS APXVAALL24 43-U-NA20	3	0.75	0.000	122.80	20.243	0.63	486.72	23.708	0.63
75.00	Generic Mount Reinforcement	1	1.00	0.000	200.00	7.500	1.00	380.82	14.496	1.00
75.00	Ericsson AIR 6419 B41	3	0.75	0.000	83.30	6.322	0.63	224.71	7.902	0.63
75.00	Commscope VV-65A-R1B	3	0.75	0.000	24.70	5.887	0.63	133.91	7.864	0.63
75.00	Ericsson 4480 BAND 71	3	0.75	0.000	81.00	2.878	0.50	152.12	3.927	0.50
75.00	Ericsson 4460 BAND 2/25	3	0.75	0.000	109.00	2.564	0.50	191.58	3.549	0.50
75.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	4013.35	50.039	1.00
74.00	Pine Branch	1	1.00	0.000	600.00	45.000	1.00	989.21	74.191	1.00
69.00	Pine Branch	1	1.00	0.000	600.00	45.000	1.00	986.42	73.981	1.00
64.00	Pine Branch	1	1.00	0.000	600.00	45.000	1.00	983.43	73.758	1.00
59.00	Pine Branch	1	1.00	0.000	600.00	45.000	1.00	980.22	73.517	1.00
Totals	Num Loadings: 45	104			18,436.50			37,953.19		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg) : 0.00

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	109.00	12	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIREL

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	109.00	2	1 1/4" Hybriflex Cabl	1.54	1	N	0	0	0	0	0	N	VERIZON WIREL
0.00	100.00	6	0.82" (20.8mm) 8 AWG	0.82	0.62	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	100.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	100.00	3	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	100.00	3	0.40" (10.3mm) Fiber	0.4	0.09	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	90.00	1	1.60" (40.6mm) Hybrid	1.6	2.34	N	0	0	0	0	0	N	DISH WIRELESS
0.00	75.00	3	1.99" (50.7mm) Hybrid	1.99	1.9	N	0	0	0	0	0	N	T-MOBILE

SEGMENT PROPERTIES

(Max Len: 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.5000	59.000	92.836	40,140.40	19.40	118.00	78.6	1340.0	0.0	0.0
5.00		0.5000	57.499	90.454	37,128.90	18.87	115.00	79.2	1271.8	0.0	1,559.2
10.00		0.5000	55.998	88.072	34,272.00	18.34	112.00	79.8	1205.5	0.0	1,518.7
15.00		0.5000	54.497	85.689	31,565.50	17.81	108.99	80.5	1140.8	0.0	1,478.2
20.00		0.5000	52.995	83.307	29,005.40	17.28	105.99	81.1	1078.0	0.0	1,437.6
25.00		0.5000	51.494	80.925	26,587.50	16.75	102.99	81.7	1017.0	0.0	1,397.1
30.00		0.5000	49.993	78.543	24,308.00	16.22	99.99	82.3	957.7	0.0	1,356.6
35.00		0.5000	48.492	76.160	22,162.50	15.69	96.98	82.6	900.2	0.0	1,316.1
40.00		0.5000	46.991	73.778	20,147.20	15.16	93.98	82.6	844.5	0.0	1,275.5
43.83	Bot - Section 2	0.5000	45.841	71.954	18,689.60	14.76	91.68	82.6	803.0	0.0	949.2
45.00		0.5000	45.490	71.396	18,258.00	14.63	90.98	82.6	790.5	0.0	541.0
50.00		0.5000	43.989	69.014	16,490.60	14.10	87.98	82.6	738.4	0.0	2,261.8
50.17	Top - Section 1	0.4375	44.811	61.616	15,328.30	16.65	102.43	81.8	673.7	0.0	77.7
55.00		0.4375	43.362	59.604	13,875.50	16.07	99.11	82.5	630.3	0.0	995.2
59.00		0.4375	42.161	57.937	12,743.20	15.58	96.37	82.6	595.3	0.0	799.9
60.00		0.4375	41.861	57.520	12,470.10	15.46	95.68	82.6	586.7	0.0	196.4
64.00		0.4375	40.660	55.852	11,416.60	14.98	92.94	82.6	553.0	0.0	771.6
65.00		0.4375	40.360	55.435	11,162.90	14.86	92.25	82.6	544.8	0.0	189.3
69.00		0.4375	39.159	53.768	10,185.50	14.37	89.51	82.6	512.3	0.0	743.2
70.00		0.4375	38.859	53.351	9,950.40	14.25	88.82	82.6	504.4	0.0	182.3
74.00		0.4375	37.658	51.683	9,046.20	13.77	86.08	82.6	473.1	0.0	714.8
75.00		0.4375	37.358	51.267	8,829.10	13.65	85.39	82.6	465.5	0.0	175.2
79.00		0.4375	36.157	49.599	7,995.30	13.16	82.64	82.6	435.5	0.0	686.4
80.00		0.4375	35.857	49.182	7,795.30	13.04	81.96	82.6	428.2	0.0	168.1
84.00		0.4375	34.656	47.515	7,029.00	12.56	79.21	82.6	399.5	0.0	658.1
85.00		0.4375	34.355	47.098	6,845.60	12.44	78.53	82.6	392.5	0.0	161.0
89.00		0.4375	33.155	45.430	6,143.90	11.95	75.78	82.6	365.0	0.0	629.7
89.66	Bot - Section 3	0.4375	32.957	45.155	6,033.10	11.87	75.33	82.6	360.6	0.0	101.5
90.00		0.4375	32.854	45.013	5,976.30	11.83	75.10	82.6	358.3	0.0	82.9
94.00		0.4375	31.653	43.346	5,336.40	11.35	72.35	82.6	332.1	0.0	952.4
94.35	Top - Section 2	0.2500	32.049	25.232	3,223.60	21.19	128.20	76.5	198.1	0.0	80.8
95.00		0.2500	31.853	25.076	3,164.30	21.06	127.41	76.6	195.7	0.0	55.9
98.00		0.2500	30.952	24.362	2,901.40	20.42	123.81	77.4	184.6	0.0	252.3
99.00		0.2500	30.652	24.123	2,817.10	20.21	122.61	77.6	181.0	0.0	82.5
100.00		0.2500	30.352	23.885	2,734.50	20.00	121.41	77.9	177.4	0.0	81.7
102.00		0.2500	29.752	23.409	2,574.10	19.57	119.01	78.4	170.4	0.0	160.9
104.00		0.2500	29.151	22.932	2,420.10	19.15	116.60	78.9	163.5	0.0	157.7
105.00		0.2500	28.851	22.694	2,345.40	18.94	115.40	79.1	160.1	0.0	77.6
109.00		0.2500	27.650	21.741	2,062.20	18.09	110.60	80.1	146.9	0.0	302.4
109.90		0.2500	27.380	21.527	2,001.80	17.90	109.52	80.3	144.0	0.0	66.3
110.00		0.2500	27.350	21.503	1,995.20	17.88	109.40	80.4	143.7	0.0	7.3
111.00		0.2500	27.049	21.265	1,929.60	17.67	108.20	80.6	140.5	0.0	72.8
									Totals:		24,774.9

Load Case: 1.2D + 1.0W 117 mph wind with no ice 19 Iterations
Gust Response Factor: 1.10
Dead load Factor: 1.20
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-56.48	-51.25	0.00	-4,304.3	0.00	4,304.29	6,566.18	1,629.27	8,609.06	7,898.16	0	0	0.555
5.00	-54.24	-50.84	0.00	-4,048.0	0.00	4,048.05	6,448.38	1,587.47	8,172.95	7,555.74	0.08	-0.15	0.545
10.00	-52.05	-50.43	0.00	-3,793.9	0.00	3,793.87	6,327.90	1,545.66	7,748.19	7,217.60	0.32	-0.3	0.535
15.00	-49.91	-50.02	0.00	-3,541.7	0.00	3,541.72	6,204.76	1,503.85	7,334.75	6,884.01	0.71	-0.45	0.524
20.00	-47.81	-49.60	0.00	-3,291.6	0.00	3,291.61	6,078.95	1,462.04	6,932.65	6,555.20	1.27	-0.6	0.511
25.00	-45.77	-49.15	0.00	-3,043.6	0.00	3,043.62	5,950.46	1,420.23	6,541.89	6,231.43	1.99	-0.76	0.497
30.00	-43.78	-48.70	0.00	-2,797.8	0.00	2,797.85	5,819.31	1,378.42	6,162.46	5,912.94	2.87	-0.92	0.482
35.00	-41.84	-48.23	0.00	-2,554.4	0.00	2,554.38	5,658.34	1,336.62	5,794.36	5,573.27	3.91	-1.07	0.467
40.00	-39.97	-47.80	0.00	-2,313.3	0.00	2,313.26	5,481.35	1,294.81	5,437.60	5,228.32	5.12	-1.23	0.451
43.83	-38.59	-47.55	0.00	-2,130.3	0.00	2,130.26	5,345.84	1,262.80	5,172.10	4,971.66	6.16	-1.35	0.437
45.00	-37.81	-47.25	0.00	-2,074.6	0.00	2,074.56	5,304.37	1,253.00	5,092.17	4,894.40	6.49	-1.39	0.432
50.00	-34.81	-46.94	0.00	-1,838.3	0.00	1,838.30	5,127.38	1,211.19	4,758.08	4,571.50	8.03	-1.54	0.410
50.17	-34.65	-46.71	0.00	-1,830.1	0.00	1,830.10	4,537.14	1,081.36	4,334.29	4,134.27	8.09	-1.54	0.452
55.00	-33.13	-46.26	0.00	-1,604.7	0.00	1,604.74	4,425.85	1,046.06	4,055.94	3,899.91	9.72	-1.69	0.421
59.00	-31.27	-44.12	0.00	-1,419.7	0.00	1,419.69	4,304.41	1,016.79	3,832.20	3,685.72	11.19	-1.81	0.394
60.00	-30.93	-43.89	0.00	-1,375.6	0.00	1,375.57	4,273.44	1,009.47	3,777.26	3,632.60	11.58	-1.84	0.388
64.00	-29.12	-41.72	0.00	-1,200.0	0.00	1,200.01	4,149.55	980.21	3,561.45	3,423.96	13.17	-1.96	0.359
65.00	-28.80	-41.48	0.00	-1,158.3	0.00	1,158.29	4,118.58	972.89	3,508.49	3,372.76	13.59	-1.99	0.352
69.00	-27.03	-39.28	0.00	-992.4	0.00	992.36	3,994.69	943.63	3,300.62	3,171.83	15.3	-2.1	0.321
70.00	-26.73	-39.04	0.00	-953.1	0.00	953.09	3,963.71	936.31	3,249.64	3,122.56	15.75	-2.13	0.314
74.00	-25.01	-36.81	0.00	-796.9	0.00	796.92	3,839.82	907.04	3,049.71	2,929.35	17.57	-2.23	0.280
75.00	-20.12	-32.62	0.00	-760.1	0.00	760.12	3,808.85	899.73	3,000.72	2,882.01	18.04	-2.25	0.270
79.00	-18.48	-30.35	0.00	-629.6	0.00	629.63	3,684.96	870.46	2,808.71	2,696.51	19.97	-2.34	0.240
80.00	-18.22	-30.12	0.00	-599.3	0.00	599.28	3,653.98	863.15	2,761.70	2,651.10	20.46	-2.36	0.232
84.00	-16.62	-27.83	0.00	-478.8	0.00	478.80	3,530.09	833.88	2,577.64	2,473.31	22.48	-2.44	0.199
85.00	-16.37	-27.60	0.00	-451.0	0.00	450.97	3,499.12	826.56	2,532.61	2,429.83	22.99	-2.46	0.191
89.00	-14.82	-25.30	0.00	-340.6	0.00	340.58	3,375.23	797.30	2,356.48	2,259.75	25.08	-2.53	0.156
89.66	-14.67	-25.25	0.00	-323.9	0.00	323.91	3,354.82	792.48	2,328.08	2,232.33	25.43	-2.54	0.150
90.00	-12.46	-22.49	0.00	-315.3	0.00	315.30	3,344.25	789.98	2,313.44	2,218.20	25.61	-2.54	0.147
94.00	-10.54	-20.16	0.00	-225.4	0.00	225.35	3,220.36	760.72	2,145.24	2,055.84	27.77	-2.59	0.114
94.35	-10.43	-20.11	0.00	-218.4	0.00	218.37	1,736.60	442.82	1,271.87	1,136.24	27.95	-2.6	0.200
95.00	-10.34	-19.95	0.00	-205.2	0.00	205.23	1,729.55	440.09	1,256.22	1,124.59	28.31	-2.6	0.191
98.00	-9.69	-19.44	0.00	-145.4	0.00	145.38	1,696.64	427.54	1,185.65	1,071.51	29.96	-2.65	0.143
99.00	-8.94	-17.25	0.00	-125.9	0.00	125.93	1,685.46	423.36	1,162.57	1,053.95	30.52	-2.67	0.126
100.00	-6.39	-13.16	0.00	-108.7	0.00	108.68	1,674.17	419.18	1,139.73	1,036.47	31.08	-2.68	0.110
102.00	-5.89	-12.66	0.00	-82.4	0.00	82.36	1,651.27	410.82	1,094.72	1,001.73	32.21	-2.7	0.087
104.00	-5.06	-10.40	0.00	-57.0	0.00	57.05	1,627.94	402.46	1,050.61	967.31	33.34	-2.71	0.063
105.00	-4.96	-10.19	0.00	-46.6	0.00	46.65	1,616.11	398.28	1,028.90	950.22	33.91	-2.72	0.053
109.00	-0.76	-0.66	0.00	-1.2	0.00	1.23	1,567.75	381.56	944.32	882.74	36.19	-2.73	0.002
109.90	-0.48	-0.50	0.00	-0.6	0.00	0.63	1,556.63	377.79	925.79	867.76	36.71	-2.73	0.001
110.00	-0.47	-0.46	0.00	-0.6	0.00	0.58	1,555.39	377.37	923.74	866.10	36.77	-2.73	0.001
111.00	0.00	-0.44	0.00	-0.1	0.00	0.12	1,542.92	373.19	903.39	849.55	37.34	-2.73	0.000

Load Case: 0.9D + 1.0W 117 mph wind with no ice 19 Iterations
Gust Response Factor: 1.10
Dead load Factor: 0.90
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-42.34	-51.23	0.00	-4,285.0	0.00	4,284.96	6,566.18	1,629.27	8,609.06	7,898.16	0	0	0.550
5.00	-40.63	-50.78	0.00	-4,028.8	0.00	4,028.82	6,448.38	1,587.47	8,172.95	7,555.74	0.08	-0.15	0.541
10.00	-38.96	-50.34	0.00	-3,774.9	0.00	3,774.91	6,327.90	1,545.66	7,748.19	7,217.60	0.32	-0.3	0.530
15.00	-37.32	-49.91	0.00	-3,523.2	0.00	3,523.20	6,204.76	1,503.85	7,334.75	6,884.01	0.71	-0.45	0.519
20.00	-35.72	-49.45	0.00	-3,273.7	0.00	3,273.67	6,078.95	1,462.04	6,932.65	6,555.20	1.26	-0.6	0.506
25.00	-34.16	-48.98	0.00	-3,026.4	0.00	3,026.42	5,950.46	1,420.23	6,541.89	6,231.43	1.98	-0.76	0.493
30.00	-32.63	-48.50	0.00	-2,781.5	0.00	2,781.52	5,819.31	1,378.42	6,162.46	5,912.94	2.85	-0.91	0.477
35.00	-31.15	-48.01	0.00	-2,539.0	0.00	2,539.03	5,658.34	1,336.62	5,794.36	5,573.27	3.89	-1.07	0.462
40.00	-29.72	-47.57	0.00	-2,299.0	0.00	2,299.00	5,481.35	1,294.81	5,437.60	5,228.32	5.1	-1.22	0.446
43.83	-28.67	-47.31	0.00	-2,116.9	0.00	2,116.91	5,345.84	1,262.80	5,172.10	4,971.66	6.13	-1.34	0.433
45.00	-28.07	-47.00	0.00	-2,061.5	0.00	2,061.48	5,304.37	1,253.00	5,092.17	4,894.40	6.46	-1.38	0.428
50.00	-25.80	-46.69	0.00	-1,826.5	0.00	1,826.49	5,127.38	1,211.19	4,758.08	4,571.50	7.99	-1.53	0.406
50.17	-25.67	-46.45	0.00	-1,818.3	0.00	1,818.34	4,537.14	1,081.36	4,334.29	4,134.27	8.04	-1.54	0.447
55.00	-24.51	-45.99	0.00	-1,594.2	0.00	1,594.22	4,425.85	1,046.06	4,055.94	3,899.91	9.67	-1.68	0.416
59.00	-23.11	-43.86	0.00	-1,410.2	0.00	1,410.24	4,304.41	1,016.79	3,832.20	3,685.72	11.13	-1.8	0.390
60.00	-22.85	-43.62	0.00	-1,366.4	0.00	1,366.38	4,273.44	1,009.47	3,777.26	3,632.60	11.51	-1.83	0.383
64.00	-21.50	-41.45	0.00	-1,191.9	0.00	1,191.92	4,149.55	980.21	3,561.45	3,423.96	13.1	-1.95	0.355
65.00	-21.25	-41.21	0.00	-1,150.5	0.00	1,150.47	4,118.58	972.89	3,508.49	3,372.76	13.51	-1.98	0.348
69.00	-19.93	-39.01	0.00	-985.6	0.00	985.64	3,994.69	943.63	3,300.62	3,171.83	15.22	-2.09	0.317
70.00	-19.70	-38.77	0.00	-946.6	0.00	946.63	3,963.71	936.31	3,249.64	3,122.56	15.66	-2.11	0.310
74.00	-18.41	-36.54	0.00	-791.6	0.00	791.56	3,839.82	907.04	3,049.71	2,929.35	17.48	-2.21	0.277
75.00	-14.78	-32.40	0.00	-755.0	0.00	755.01	3,808.85	899.73	3,000.72	2,882.01	17.94	-2.24	0.267
79.00	-13.56	-30.15	0.00	-625.4	0.00	625.40	3,684.96	870.46	2,808.71	2,696.51	19.86	-2.33	0.237
80.00	-13.36	-29.91	0.00	-595.2	0.00	595.25	3,653.98	863.15	2,761.70	2,651.10	20.35	-2.35	0.229
84.00	-12.18	-27.64	0.00	-475.6	0.00	475.60	3,530.09	833.88	2,577.64	2,473.31	22.35	-2.43	0.197
85.00	-11.99	-27.40	0.00	-448.0	0.00	447.97	3,499.12	826.56	2,532.61	2,429.83	22.86	-2.45	0.189
89.00	-10.85	-25.12	0.00	-338.4	0.00	338.36	3,375.23	797.30	2,356.48	2,259.75	24.94	-2.51	0.154
89.66	-10.73	-25.07	0.00	-321.8	0.00	321.81	3,354.82	792.48	2,328.08	2,232.33	25.29	-2.52	0.148
90.00	-9.11	-22.33	0.00	-313.2	0.00	313.25	3,344.25	789.98	2,313.44	2,218.20	25.47	-2.53	0.145
94.00	-7.69	-20.03	0.00	-223.9	0.00	223.92	3,220.36	760.72	2,145.24	2,055.84	27.61	-2.58	0.112
94.35	-7.61	-19.98	0.00	-217.0	0.00	216.99	1,736.60	442.82	1,271.87	1,136.24	27.79	-2.58	0.197
95.00	-7.53	-19.82	0.00	-203.9	0.00	203.93	1,729.55	440.09	1,256.22	1,124.59	28.15	-2.59	0.188
98.00	-7.06	-19.32	0.00	-144.5	0.00	144.47	1,696.64	427.54	1,185.65	1,071.51	29.79	-2.64	0.141
99.00	-6.51	-17.14	0.00	-125.2	0.00	125.15	1,685.46	423.36	1,162.57	1,053.95	30.35	-2.65	0.124
100.00	-4.65	-13.08	0.00	-108.0	0.00	108.01	1,674.17	419.18	1,139.73	1,036.47	30.9	-2.66	0.108
102.00	-4.28	-12.58	0.00	-81.9	0.00	81.86	1,651.27	410.82	1,094.72	1,001.73	32.02	-2.68	0.085
104.00	-3.68	-10.33	0.00	-56.7	0.00	56.70	1,627.94	402.46	1,050.61	967.31	33.15	-2.7	0.062
105.00	-3.61	-10.13	0.00	-46.4	0.00	46.37	1,616.11	398.28	1,028.90	950.22	33.71	-2.7	0.052
109.00	-0.56	-0.65	0.00	-1.2	0.00	1.21	1,567.75	381.56	944.32	882.74	35.99	-2.71	0.002
109.90	-0.35	-0.49	0.00	-0.6	0.00	0.62	1,556.63	377.79	925.79	867.76	36.5	-2.71	0.001
110.00	-0.35	-0.45	0.00	-0.6	0.00	0.57	1,555.39	377.37	923.74	866.10	36.55	-2.71	0.001
111.00	0.00	-0.44	0.00	-0.1	0.00	0.12	1,542.92	373.19	903.39	849.55	37.12	-2.71	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi		50 mph wind with 1.5" radial ice			18 Iterations
Gust Response Factor:	1.10	Ice Dead Load Factor	1.00		
Dead load Factor:	1.20			Ice Importance Factor	1.00
Wind Load Factor:	1.00				

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-82.55	-15.07	0.00	-1,265.8	0.00	1,265.75	6,566.18	1,629.27	8,609.06	7,898.16	0	0	0.173
5.00	-80.01	-14.96	0.00	-1,190.4	0.00	1,190.39	6,448.38	1,587.47	8,172.95	7,555.74	0.02	-0.04	0.170
10.00	-77.47	-14.85	0.00	-1,115.6	0.00	1,115.58	6,327.90	1,545.66	7,748.19	7,217.60	0.09	-0.09	0.167
15.00	-74.97	-14.74	0.00	-1,041.3	0.00	1,041.32	6,204.76	1,503.85	7,334.75	6,884.01	0.21	-0.13	0.163
20.00	-72.52	-14.62	0.00	-967.6	0.00	967.63	6,078.95	1,462.04	6,932.65	6,555.20	0.37	-0.18	0.160
25.00	-70.11	-14.50	0.00	-894.5	0.00	894.53	5,950.46	1,420.23	6,541.89	6,231.43	0.58	-0.22	0.155
30.00	-67.76	-14.36	0.00	-822.1	0.00	822.06	5,819.31	1,378.42	6,162.46	5,912.94	0.84	-0.27	0.151
35.00	-65.46	-14.23	0.00	-750.2	0.00	750.24	5,658.34	1,336.62	5,794.36	5,573.27	1.15	-0.32	0.146
40.00	-63.22	-14.11	0.00	-679.1	0.00	679.10	5,481.35	1,294.81	5,437.60	5,228.32	1.51	-0.36	0.142
43.83	-61.55	-14.03	0.00	-625.1	0.00	625.10	5,345.84	1,262.80	5,172.10	4,971.66	1.81	-0.4	0.137
45.00	-60.73	-13.94	0.00	-608.7	0.00	608.66	5,304.37	1,253.00	5,092.17	4,894.40	1.91	-0.41	0.136
50.00	-57.32	-13.85	0.00	-538.9	0.00	538.94	5,127.38	1,211.19	4,758.08	4,571.50	2.36	-0.45	0.129
50.17	-57.20	-13.78	0.00	-536.5	0.00	536.52	4,537.14	1,081.36	4,334.29	4,134.27	2.38	-0.45	0.143
55.00	-55.34	-13.65	0.00	-470.0	0.00	470.01	4,425.85	1,046.06	4,055.94	3,899.91	2.86	-0.5	0.133
59.00	-52.80	-13.01	0.00	-415.4	0.00	415.41	4,304.41	1,016.79	3,832.20	3,685.72	3.29	-0.53	0.125
60.00	-52.42	-12.94	0.00	-402.4	0.00	402.40	4,273.44	1,009.47	3,777.26	3,632.60	3.4	-0.54	0.123
64.00	-49.93	-12.28	0.00	-350.6	0.00	350.64	4,149.55	980.21	3,561.45	3,423.96	3.87	-0.58	0.115
65.00	-49.57	-12.21	0.00	-338.4	0.00	338.36	4,118.58	972.89	3,508.49	3,372.76	3.99	-0.58	0.113
69.00	-47.11	-11.54	0.00	-289.5	0.00	289.50	3,994.69	943.63	3,300.62	3,171.83	4.5	-0.62	0.103
70.00	-46.76	-11.47	0.00	-278.0	0.00	277.96	3,963.71	936.31	3,249.64	3,122.56	4.63	-0.62	0.101
74.00	-44.35	-10.79	0.00	-232.1	0.00	232.06	3,839.82	907.04	3,049.71	2,929.35	5.16	-0.65	0.091
75.00	-35.88	-9.61	0.00	-221.3	0.00	221.27	3,808.85	899.73	3,000.72	2,882.01	5.3	-0.66	0.086
79.00	-33.54	-8.91	0.00	-182.8	0.00	182.85	3,684.96	870.46	2,808.71	2,696.51	5.87	-0.69	0.077
80.00	-33.22	-8.84	0.00	-173.9	0.00	173.94	3,653.98	863.15	2,761.70	2,651.10	6.01	-0.69	0.075
84.00	-30.92	-8.13	0.00	-138.6	0.00	138.60	3,530.09	833.88	2,577.64	2,473.31	6.6	-0.72	0.065
85.00	-30.61	-8.06	0.00	-130.5	0.00	130.46	3,499.12	826.56	2,532.61	2,429.83	6.75	-0.72	0.063
89.00	-28.35	-7.35	0.00	-98.2	0.00	98.23	3,375.23	797.30	2,356.48	2,259.75	7.36	-0.74	0.052
89.66	-28.16	-7.33	0.00	-93.4	0.00	93.39	3,354.82	792.48	2,328.08	2,232.33	7.47	-0.74	0.050
90.00	-24.14	-6.52	0.00	-90.9	0.00	90.88	3,344.25	789.98	2,313.44	2,218.20	7.52	-0.74	0.048
94.00	-21.51	-5.80	0.00	-64.8	0.00	64.82	3,220.36	760.72	2,145.24	2,055.84	8.15	-0.76	0.038
94.35	-21.37	-5.78	0.00	-62.8	0.00	62.82	1,736.60	442.82	1,271.87	1,136.24	8.21	-0.76	0.068
95.00	-21.24	-5.73	0.00	-59.0	0.00	59.04	1,729.55	440.09	1,256.22	1,124.59	8.31	-0.76	0.065
98.00	-20.14	-5.58	0.00	-41.9	0.00	41.86	1,696.64	427.54	1,185.65	1,071.51	8.79	-0.78	0.051
99.00	-18.88	-4.91	0.00	-36.3	0.00	36.27	1,685.46	423.36	1,162.57	1,053.95	8.96	-0.78	0.046
100.00	-13.13	-3.86	0.00	-31.4	0.00	31.36	1,674.17	419.18	1,139.73	1,036.47	9.12	-0.78	0.038
102.00	-12.20	-3.72	0.00	-23.6	0.00	23.64	1,651.27	410.82	1,094.72	1,001.73	9.45	-0.79	0.031
104.00	-10.79	-3.02	0.00	-16.2	0.00	16.21	1,627.94	402.46	1,050.61	967.31	9.78	-0.79	0.023
105.00	-10.62	-2.95	0.00	-13.2	0.00	13.19	1,616.11	398.28	1,028.90	950.22	9.95	-0.8	0.021
109.00	-1.52	-0.19	0.00	-0.3	0.00	0.34	1,567.75	381.56	944.32	882.74	10.62	-0.8	0.001
109.90	-1.00	-0.14	0.00	-0.2	0.00	0.17	1,556.63	377.79	925.79	867.76	10.77	-0.8	0.001
110.00	-0.99	-0.12	0.00	-0.2	0.00	0.15	1,555.39	377.37	923.74	866.10	10.79	-0.8	0.001
111.00	0.00	-0.11	0.00	-0.0	0.00	0.03	1,542.92	373.19	903.39	849.55	10.95	-0.8	0.000

Load Case: 1.0D + 1.0W 60 mph Wind with No Ice 18 Iterations
Gust Response Factor: 1.10
Dead load Factor: 1.00
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-47.12	-12.05	0.00	-1,010.1	0.00	1,010.07	6,566.18	1,629.27	8,609.06	7,898.16	0	0	0.135
5.00	-45.36	-11.95	0.00	-949.8	0.00	949.79	6,448.38	1,587.47	8,172.95	7,555.74	0.02	-0.03	0.133
10.00	-43.63	-11.85	0.00	-890.0	0.00	890.03	6,327.90	1,545.66	7,748.19	7,217.60	0.07	-0.07	0.130
15.00	-41.95	-11.75	0.00	-830.8	0.00	830.77	6,204.76	1,503.85	7,334.75	6,884.01	0.17	-0.11	0.128
20.00	-40.30	-11.65	0.00	-772.0	0.00	772.01	6,078.95	1,462.04	6,932.65	6,555.20	0.3	-0.14	0.124
25.00	-38.70	-11.54	0.00	-713.8	0.00	713.77	5,950.46	1,420.23	6,541.89	6,231.43	0.47	-0.18	0.121
30.00	-37.14	-11.43	0.00	-656.1	0.00	656.07	5,819.31	1,378.42	6,162.46	5,912.94	0.67	-0.21	0.117
35.00	-35.62	-11.31	0.00	-598.9	0.00	598.93	5,658.34	1,336.62	5,794.36	5,573.27	0.92	-0.25	0.114
40.00	-34.14	-11.21	0.00	-542.4	0.00	542.36	5,481.35	1,294.81	5,437.60	5,228.32	1.2	-0.29	0.110
43.83	-33.03	-11.15	0.00	-499.4	0.00	499.44	5,345.84	1,262.80	5,172.10	4,971.66	1.44	-0.32	0.107
45.00	-32.44	-11.08	0.00	-486.4	0.00	486.37	5,304.37	1,253.00	5,092.17	4,894.40	1.52	-0.33	0.106
50.00	-29.98	-11.01	0.00	-431.0	0.00	430.96	5,127.38	1,211.19	4,758.08	4,571.50	1.88	-0.36	0.100
50.17	-29.89	-10.95	0.00	-429.0	0.00	429.04	4,537.14	1,081.36	4,334.29	4,134.27	1.9	-0.36	0.110
55.00	-28.70	-10.85	0.00	-376.2	0.00	376.19	4,425.85	1,046.06	4,055.94	3,899.91	2.28	-0.4	0.103
59.00	-27.14	-10.35	0.00	-332.8	0.00	332.80	4,304.41	1,016.79	3,832.20	3,685.72	2.63	-0.42	0.097
60.00	-26.90	-10.29	0.00	-322.4	0.00	322.45	4,273.44	1,009.47	3,777.26	3,632.60	2.72	-0.43	0.095
64.00	-25.37	-9.78	0.00	-281.3	0.00	281.30	4,149.55	980.21	3,561.45	3,423.96	3.09	-0.46	0.088
65.00	-25.14	-9.72	0.00	-271.5	0.00	271.52	4,118.58	972.89	3,508.49	3,372.76	3.19	-0.47	0.087
69.00	-23.64	-9.21	0.00	-232.6	0.00	232.63	3,994.69	943.63	3,300.62	3,171.83	3.59	-0.49	0.079
70.00	-23.42	-9.15	0.00	-223.4	0.00	223.42	3,963.71	936.31	3,249.64	3,122.56	3.69	-0.5	0.078
74.00	-21.95	-8.62	0.00	-186.8	0.00	186.83	3,839.82	907.04	3,049.71	2,929.35	4.12	-0.52	0.070
75.00	-17.78	-7.65	0.00	-178.2	0.00	178.20	3,808.85	899.73	3,000.72	2,882.01	4.23	-0.53	0.067
79.00	-16.36	-7.12	0.00	-147.6	0.00	147.61	3,684.96	870.46	2,808.71	2,696.51	4.68	-0.55	0.059
80.00	-16.15	-7.06	0.00	-140.5	0.00	140.50	3,653.98	863.15	2,761.70	2,651.10	4.8	-0.55	0.057
84.00	-14.76	-6.52	0.00	-112.3	0.00	112.26	3,530.09	833.88	2,577.64	2,473.31	5.27	-0.57	0.050
85.00	-14.57	-6.47	0.00	-105.7	0.00	105.74	3,499.12	826.56	2,532.61	2,429.83	5.39	-0.58	0.048
89.00	-13.21	-5.93	0.00	-79.9	0.00	79.86	3,375.23	797.30	2,356.48	2,259.75	5.88	-0.59	0.039
89.66	-13.08	-5.92	0.00	-76.0	0.00	75.96	3,354.82	792.48	2,328.08	2,232.33	5.97	-0.59	0.038
90.00	-11.16	-5.27	0.00	-73.9	0.00	73.94	3,344.25	789.98	2,313.44	2,218.20	6.01	-0.6	0.037
94.00	-9.49	-4.73	0.00	-52.8	0.00	52.85	3,220.36	760.72	2,145.24	2,055.84	6.51	-0.61	0.029
94.35	-9.40	-4.72	0.00	-51.2	0.00	51.21	1,736.60	442.82	1,271.87	1,136.24	6.56	-0.61	0.051
95.00	-9.32	-4.68	0.00	-48.1	0.00	48.13	1,729.55	440.09	1,256.22	1,124.59	6.64	-0.61	0.048
98.00	-8.77	-4.56	0.00	-34.1	0.00	34.10	1,696.64	427.54	1,185.65	1,071.51	7.03	-0.62	0.037
99.00	-8.06	-4.05	0.00	-29.5	0.00	29.54	1,685.46	423.36	1,162.57	1,053.95	7.16	-0.62	0.033
100.00	-5.80	-3.09	0.00	-25.5	0.00	25.49	1,674.17	419.18	1,139.73	1,036.47	7.29	-0.63	0.028
102.00	-5.37	-2.97	0.00	-19.3	0.00	19.32	1,651.27	410.82	1,094.72	1,001.73	7.55	-0.63	0.023
104.00	-4.60	-2.44	0.00	-13.4	0.00	13.38	1,627.94	402.46	1,050.61	967.31	7.82	-0.64	0.017
105.00	-4.51	-2.39	0.00	-10.9	0.00	10.94	1,616.11	398.28	1,028.90	950.22	7.95	-0.64	0.014
109.00	-0.65	-0.15	0.00	-0.3	0.00	0.29	1,567.75	381.56	944.32	882.74	8.49	-0.64	0.001
109.90	-0.41	-0.12	0.00	-0.2	0.00	0.15	1,556.63	377.79	925.79	867.76	8.61	-0.64	0.000
110.00	-0.41	-0.11	0.00	-0.1	0.00	0.14	1,555.39	377.37	923.74	866.10	8.62	-0.64	0.000
111.00	0.00	-0.10	0.00	-0.0	0.00	0.03	1,542.92	373.19	903.39	849.55	8.76	-0.64	0.000

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

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

Spectral Response Acceleration for Short Period (S_S):	0.185
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}):	0.197
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.088
Seismic Response Coefficient (C_s):	0.047
Upper Limit C_S:	0.047
Lower Limit C_S:	0.030
Period based on Rayleigh Method (sec):	1.260
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	1.380
Total Unfactored Dead Load:	47.130 k
Seismic Base Shear (E):	2.200 k

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

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
41	110.5	73	48	0.003	7	90
40	109.95	7	5	0.000	1	9
39	109.45	66	43	0.003	6	82
38	107	350	220	0.014	31	434
37	104.5	89	54	0.004	8	111
36	103	181	108	0.007	15	225
35	101	185	107	0.007	15	229
34	99.5	113	64	0.004	9	141
33	98.5	114	64	0.004	9	142
32	96.5	347	189	0.012	27	431
31	94.6732	77	41	0.003	6	95
30	94.1732	92	48	0.003	7	114
29	92	1,079	551	0.036	79	1,338
28	89.8294	94	47	0.003	7	117
27	89.3294	124	61	0.004	9	154
26	87	766	362	0.024	52	949
25	84.5	195	89	0.006	13	242
24	82	794	346	0.022	49	984
23	79.5	202	84	0.006	12	251
22	77	823	329	0.021	47	1,020
21	74.5	215	82	0.005	12	266
20	72	874	318	0.021	45	1,083
19	69.5	222	77	0.005	11	275
18	67	902	297	0.019	42	1,118
17	64.5	229	72	0.005	10	284
16	62	931	276	0.018	39	1,153
15	59.5	236	66	0.004	9	293
14	57	959	253	0.016	36	1,189
13	52.5874	1,187	280	0.018	40	1,471
12	50.0874	85	19	0.001	3	105
11	47.5	2,460	505	0.033	72	3,050
10	44.4142	588	110	0.007	16	728
9	41.9142	1,101	190	0.012	27	1,365
8	37.5	1,474	218	0.014	31	1,827

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
7	32.5	1,515	184	0.012	26	1,877
6	27.5	1,555	150	0.010	21	1,928
5	22.5	1,596	117	0.008	17	1,978
4	17.5	1,636	85	0.006	12	2,028
3	12.5	1,677	55	0.004	8	2,078
2	7.5	1,717	28	0.002	4	2,129
1	2.5	1,758	6	0.000	1	2,179
Alcatel-Lucent B66A RRH4x45-4R w/ Solar Shield	111	170	113	0.007	16	211
Generic RRU (Model TBD)	111	165	109	0.007	16	205
Alcatel-Lucent B13 RRH4x30-4R	109.9	173	113	0.007	16	215
Samsung B5/B13 RRH-BR04C	109	211	136	0.009	19	261
Samsung B2/B66A RRH-BR049	109	253	163	0.011	23	314
Raycap RC2DC-3315-PF-48	109	64	41	0.003	6	79
Samsung MT6407-77A	109	245	158	0.010	23	303
Antel LPA-80063/4CF	109	120	77	0.005	11	149
Commscope SBNHH-1D65B	109	304	196	0.013	28	377
Generic Flat T-Arm	109	938	605	0.039	86	1,162
Generic Flat T-Arm	100	938	537	0.035	77	1,162
Pine Branch	109	600	387	0.025	55	744
Pine Branch	104	600	363	0.024	52	744
Pine Branch	99	600	339	0.022	48	744
Pine Branch	94	600	316	0.020	45	744
Pine Branch	89	600	293	0.019	42	744
Pine Branch	84	600	270	0.018	39	744
Pine Branch	79	600	248	0.016	35	744
Pine Branch	74	600	227	0.015	32	744
Pine Branch	69	600	206	0.013	29	744
Pine Branch	64	600	186	0.012	27	744
Pine Branch	59	600	166	0.011	24	744
VZW Unused Reserve (13207.33 sqin)	109	794	512	0.033	73	984
Ericsson AIR 6449 B77D/ C-Band	102	245	144	0.009	21	303
Raycap DC6-48-60-18-8F(32.8 lbs)	100	33	19	0.001	3	41
Raycap DC6-48-60-18-8F ("Squid")	100	32	18	0.001	3	39
Ericsson RRUS 8843 B2, B66A	100	216	124	0.008	18	268
Ericsson RRUS 4478 B14	100	180	103	0.007	15	223
Ericsson RRUS 4449 B5, B12	100	213	122	0.008	17	264
Raycap DC6-48-60-18-8C-EV	100	16	9	0.001	1	20
CCI DMP65R-BU8D	100	287	164	0.011	23	356
CCI TPA65R-BU8D	100	248	142	0.009	20	307
Ericsson AIR 6419 B77G	98	198	110	0.007	16	246
Commscope RDIDC-9181-PF-48	90	22	11	0.001	2	27
Fujitsu TA08025-B604	90	192	95	0.006	14	238
Fujitsu TA08025-B605	90	225	111	0.007	16	279
JMA Wireless MX08FRO665-21	90	194	96	0.006	14	240
Generic Flat Light Sector Frame	90	1,200	594	0.039	85	1,487
Ericsson 4460 BAND 2/25	75	327	126	0.008	18	405
Ericsson 4480 BAND 71	75	243	94	0.006	13	301
Commscope VV-65A-R1B	75	74	29	0.002	4	92
Ericsson AIR 6419 B41	75	250	96	0.006	14	310
Generic Mount Reinforcement	75	200	77	0.005	11	248
RFS APXVAALL24 43-U-NA20	75	368	142	0.009	20	457
Generic Round Platform with Handrails	75	2,500	963	0.062	137	3,099
		47,126	15,397	1.000	2,198	58,411

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)
41	110.5	73	48	0.003	7	63
40	109.95	7	5	0.000	1	6
39	109.45	66	43	0.003	6	57
38	107	350	220	0.014	31	301
37	104.5	89	54	0.004	8	77

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
36	103	181	108	0.007	15	156
35	101	185	107	0.007	15	159
34	99.5	113	64	0.004	9	98
33	98.5	114	64	0.004	9	98
32	96.5	347	189	0.012	27	299
31	94.6732	77	41	0.003	6	66
30	94.1732	92	48	0.003	7	79
29	92	1,079	551	0.036	79	929
28	89.8294	94	47	0.003	7	81
27	89.3294	124	61	0.004	9	107
26	87	766	362	0.024	52	659
25	84.5	195	89	0.006	13	168
24	82	794	346	0.022	49	683
23	79.5	202	84	0.006	12	174
22	77	823	329	0.021	47	708
21	74.5	215	82	0.005	12	185
20	72	874	318	0.021	45	752
19	69.5	222	77	0.005	11	191
18	67	902	297	0.019	42	776
17	64.5	229	72	0.005	10	197
16	62	931	276	0.018	39	801
15	59.5	236	66	0.004	9	203
14	57	959	253	0.016	36	825
13	52.5874	1,187	280	0.018	40	1,021
12	50.0874	85	19	0.001	3	73
11	47.5	2,460	505	0.033	72	2,117
10	44.4142	588	110	0.007	16	506
9	41.9142	1,101	190	0.012	27	948
8	37.5	1,474	218	0.014	31	1,269
7	32.5	1,515	184	0.012	26	1,303
6	27.5	1,555	150	0.010	21	1,338
5	22.5	1,596	117	0.008	17	1,373
4	17.5	1,636	85	0.006	12	1,408
3	12.5	1,677	55	0.004	8	1,443
2	7.5	1,717	28	0.002	4	1,478
1	2.5	1,758	6	0.000	1	1,513
Alcatel-Lucent B66A RRH4x45-4R w/ Solar Shield	111	170	113	0.007	16	147
Generic RRU (Model TBD)	111	165	109	0.007	16	142
Alcatel-Lucent B13 RRH4x30-4R	109.9	173	113	0.007	16	149
Samsung B5/B13 RRH-BR04C	109	211	136	0.009	19	181
Samsung B2/B66A RRH-BR049	109	253	163	0.011	23	218
Raycap RC2DC-3315-PF-48	109	64	41	0.003	6	55
Samsung MT6407-77A	109	245	158	0.010	23	211
Antel LPA-80063/4CF	109	120	77	0.005	11	103
Commscope SBNHH-1D65B	109	304	196	0.013	28	262
Generic Flat T-Arm	109	938	605	0.039	86	807
Generic Flat T-Arm	100	938	537	0.035	77	807
Pine Branch	109	600	387	0.025	55	516
Pine Branch	104	600	363	0.024	52	516
Pine Branch	99	600	339	0.022	48	516
Pine Branch	94	600	316	0.020	45	516
Pine Branch	89	600	293	0.019	42	516
Pine Branch	84	600	270	0.018	39	516
Pine Branch	79	600	248	0.016	35	516
Pine Branch	74	600	227	0.015	32	516
Pine Branch	69	600	206	0.013	29	516
Pine Branch	64	600	186	0.012	27	516
Pine Branch	59	600	166	0.011	24	516
VZW Unused Reserve (13207.33 sqin)	109	794	512	0.033	73	683
Ericsson AIR 6449 B77D/ C-Band	102	245	144	0.009	21	211
Raycap DC6-48-60-18-8F(32.8 lbs)	100	33	19	0.001	3	28
Raycap DC6-48-60-18-8F ("Squid")	100	32	18	0.001	3	27
Ericsson RRUS 8843 B2, B66A	100	216	124	0.008	18	186
Ericsson RRUS 4478 B14	100	180	103	0.007	15	155
Ericsson RRUS 4449 B5, B12	100	213	122	0.008	17	183
Raycap DC6-48-60-18-8C-EV	100	16	9	0.001	1	14
CCI DMP65R-BU8D	100	287	164	0.011	23	247
CCI TPA65R-BU8D	100	248	142	0.009	20	213
Ericsson AIR 6419 B77G	98	198	110	0.007	16	171
Commscope RDIDC-9181-PF-48	90	22	11	0.001	2	19

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
Fujitsu TA08025-B604	90	192	95	0.006	14	165
Fujitsu TA08025-B605	90	225	111	0.007	16	194
JMA Wireless MX08FRO665-21	90	194	96	0.006	14	167
Generic Flat Light Sector Frame	90	1,200	594	0.039	85	1,033
Ericsson 4460 BAND 2/25	75	327	126	0.008	18	281
Ericsson 4480 BAND 71	75	243	94	0.006	13	209
Commscope VV-65A-R1B	75	74	29	0.002	4	64
Ericsson AIR 6419 B41	75	250	96	0.006	14	215
Generic Mount Reinforcement	75	200	77	0.005	11	172
RFS APXVAALL24 43-U-NA20	75	368	142	0.009	20	317
Generic Round Platform with Handrails	75	2,500	963	0.062	137	2,151
		47,126	15,397	1.000	2,198	40,553

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	-56.23	-2.20	0.00	-184.74	0.00	184.74	6,566.18	1,629.27	8,609	7,898.16	0.00	0.00	0.03
5.00	-54.10	-2.20	0.00	-173.74	0.00	173.74	6,448.38	1,587.47	8,173	7,555.74	0.00	-0.01	0.03
10.00	-52.02	-2.20	0.00	-162.73	0.00	162.73	6,327.90	1,545.66	7,748	7,217.60	0.01	-0.01	0.03
15.00	-50.00	-2.19	0.00	-151.74	0.00	151.74	6,204.76	1,503.85	7,335	6,884.01	0.03	-0.02	0.03
20.00	-48.02	-2.18	0.00	-140.78	0.00	140.78	6,078.95	1,462.04	6,933	6,555.20	0.05	-0.03	0.03
25.00	-46.09	-2.16	0.00	-129.88	0.00	129.88	5,950.46	1,420.23	6,542	6,231.43	0.09	-0.03	0.03
30.00	-44.21	-2.14	0.00	-119.06	0.00	119.06	5,819.31	1,378.42	6,162	5,912.94	0.12	-0.04	0.03
35.00	-42.38	-2.11	0.00	-108.36	0.00	108.36	5,658.34	1,336.62	5,794	5,573.27	0.17	-0.05	0.03
40.00	-41.02	-2.09	0.00	-97.79	0.00	97.79	5,481.35	1,294.81	5,438	5,228.32	0.22	-0.05	0.03
43.83	-40.29	-2.08	0.00	-89.79	0.00	89.79	5,345.84	1,262.80	5,172	4,971.66	0.26	-0.06	0.03
45.00	-37.24	-2.00	0.00	-87.36	0.00	87.36	5,304.37	1,253.00	5,092	4,894.40	0.28	-0.06	0.03
50.00	-37.14	-2.00	0.00	-77.35	0.00	77.35	5,127.38	1,211.19	4,758	4,571.50	0.34	-0.07	0.02
50.17	-35.67	-1.96	0.00	-77.00	0.00	77.00	4,537.14	1,081.36	4,334	4,134.27	0.35	-0.07	0.03
55.00	-34.48	-1.93	0.00	-67.53	0.00	67.53	4,425.85	1,046.06	4,056	3,899.91	0.42	-0.07	0.03
59.00	-33.44	-1.90	0.00	-59.82	0.00	59.82	4,304.41	1,016.79	3,832	3,685.72	0.48	-0.08	0.02
60.00	-32.29	-1.86	0.00	-57.92	0.00	57.92	4,273.44	1,009.47	3,777	3,632.60	0.49	-0.08	0.02
64.00	-31.26	-1.82	0.00	-50.50	0.00	50.50	4,149.55	980.21	3,561	3,423.96	0.56	-0.08	0.02
65.00	-30.14	-1.78	0.00	-48.68	0.00	48.68	4,118.58	972.89	3,508	3,372.76	0.58	-0.08	0.02
69.00	-29.12	-1.74	0.00	-41.57	0.00	41.57	3,994.69	943.63	3,301	3,171.83	0.65	-0.09	0.02
70.00	-28.04	-1.69	0.00	-39.83	0.00	39.83	3,963.71	936.31	3,250	3,122.56	0.67	-0.09	0.02
74.00	-27.03	-1.65	0.00	-33.07	0.00	33.07	3,839.82	907.04	3,050	2,929.35	0.75	-0.09	0.02
75.00	-21.10	-1.37	0.00	-31.42	0.00	31.42	3,808.85	899.73	3,001	2,882.01	0.77	-0.10	0.02
79.00	-20.10	-1.32	0.00	-25.93	0.00	25.93	3,684.96	870.46	2,809	2,696.51	0.85	-0.10	0.02
80.00	-19.12	-1.27	0.00	-24.60	0.00	24.60	3,653.98	863.15	2,762	2,651.10	0.87	-0.10	0.02
84.00	-18.13	-1.22	0.00	-19.51	0.00	19.51	3,530.09	833.88	2,578	2,473.31	0.96	-0.10	0.01
85.00	-17.19	-1.17	0.00	-18.28	0.00	18.28	3,499.12	826.56	2,533	2,429.83	0.98	-0.10	0.01
89.00	-16.29	-1.12	0.00	-13.61	0.00	13.61	3,375.23	797.30	2,356	2,259.75	1.07	-0.11	0.01
89.66	-16.17	-1.11	0.00	-12.87	0.00	12.87	3,354.82	792.48	2,328	2,232.33	1.08	-0.11	0.01
90.00	-12.56	-0.90	0.00	-12.49	0.00	12.49	3,344.25	789.98	2,313	2,218.20	1.09	-0.11	0.01
94.00	-11.71	-0.84	0.00	-8.91	0.00	8.91	3,220.36	760.72	2,145	2,055.84	1.18	-0.11	0.01
94.35	-11.61	-0.84	0.00	-8.62	0.00	8.62	1,736.60	442.82	1,272	1,136.24	1.19	-0.11	0.01
95.00	-11.18	-0.81	0.00	-8.07	0.00	8.07	1,729.55	440.09	1,256	1,124.59	1.20	-0.11	0.01
98.00	-10.79	-0.78	0.00	-5.64	0.00	5.64	1,696.64	427.54	1,186	1,071.51	1.27	-0.11	0.01
99.00	-9.91	-0.72	0.00	-4.86	0.00	4.86	1,685.46	423.36	1,163	1,053.95	1.30	-0.11	0.01
100.00	-7.00	-0.53	0.00	-4.14	0.00	4.14	1,674.17	419.18	1,140	1,036.47	1.32	-0.11	0.01
102.00	-6.47	-0.49	0.00	-3.08	0.00	3.08	1,651.27	410.82	1,095	1,001.73	1.37	-0.11	0.01
104.00	-5.62	-0.43	0.00	-2.10	0.00	2.10	1,627.94	402.46	1,051	967.31	1.41	-0.11	0.01
105.00	-5.18	-0.40	0.00	-1.67	0.00	1.67	1,616.11	398.28	1,029	950.22	1.44	-0.11	0.01
109.00	-0.73	-0.06	0.00	-0.09	0.00	0.09	1,567.75	381.56	944	882.74	1.53	-0.11	0.00
109.90	-0.51	-0.04	0.00	-0.04	0.00	0.04	1,556.63	377.79	926	867.76	1.56	-0.11	0.00
110.00	-0.42	-0.03	0.00	-0.03	0.00	0.03	1,555.39	377.37	924	866.10	1.56	-0.11	0.00
111.00	0.00	-0.03	0.00	0.00	0.00	0.00	1,542.92	373.19	903	849.55	1.58	-0.11	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	-39.04	-2.20	0.00	-183.74	0.00	183.74	6,566.18	1,629.27	8,609	7,898.16	0.00	0.00	0.03
5.00	-37.56	-2.20	0.00	-172.75	0.00	172.75	6,448.38	1,587.47	8,173	7,555.74	0.00	-0.01	0.03
10.00	-36.12	-2.19	0.00	-161.76	0.00	161.76	6,327.90	1,545.66	7,748	7,217.60	0.01	-0.01	0.03
15.00	-34.71	-2.19	0.00	-150.79	0.00	150.79	6,204.76	1,503.85	7,335	6,884.01	0.03	-0.02	0.03
20.00	-33.34	-2.17	0.00	-139.86	0.00	139.86	6,078.95	1,462.04	6,933	6,555.20	0.05	-0.03	0.03
25.00	-32.00	-2.15	0.00	-128.99	0.00	128.99	5,950.46	1,420.23	6,542	6,231.43	0.08	-0.03	0.03
30.00	-30.69	-2.13	0.00	-118.22	0.00	118.22	5,819.31	1,378.42	6,162	5,912.94	0.12	-0.04	0.03
35.00	-29.43	-2.10	0.00	-107.57	0.00	107.57	5,658.34	1,336.62	5,794	5,573.27	0.17	-0.05	0.03
40.00	-28.48	-2.08	0.00	-97.06	0.00	97.06	5,481.35	1,294.81	5,438	5,228.32	0.22	-0.05	0.02
43.83	-27.97	-2.06	0.00	-89.11	0.00	89.11	5,345.84	1,262.80	5,172	4,971.66	0.26	-0.06	0.02
45.00	-25.86	-1.99	0.00	-86.69	0.00	86.69	5,304.37	1,253.00	5,092	4,894.40	0.28	-0.06	0.02
50.00	-25.78	-1.99	0.00	-76.74	0.00	76.74	5,127.38	1,211.19	4,758	4,571.50	0.34	-0.07	0.02
50.17	-24.76	-1.95	0.00	-76.39	0.00	76.39	4,537.14	1,081.36	4,334	4,134.27	0.34	-0.07	0.02
55.00	-23.94	-1.91	0.00	-66.99	0.00	66.99	4,425.85	1,046.06	4,056	3,899.91	0.41	-0.07	0.02
59.00	-23.22	-1.88	0.00	-59.33	0.00	59.33	4,304.41	1,016.79	3,832	3,685.72	0.47	-0.08	0.02
60.00	-22.42	-1.84	0.00	-57.45	0.00	57.45	4,273.44	1,009.47	3,777	3,632.60	0.49	-0.08	0.02
64.00	-21.70	-1.81	0.00	-50.08	0.00	50.08	4,149.55	980.21	3,561	3,423.96	0.56	-0.08	0.02
65.00	-20.93	-1.76	0.00	-48.28	0.00	48.28	4,118.58	972.89	3,508	3,372.76	0.58	-0.08	0.02
69.00	-20.22	-1.72	0.00	-41.22	0.00	41.22	3,994.69	943.63	3,301	3,171.83	0.65	-0.09	0.02
70.00	-19.47	-1.68	0.00	-39.50	0.00	39.50	3,963.71	936.31	3,250	3,122.56	0.67	-0.09	0.02
74.00	-18.76	-1.63	0.00	-32.79	0.00	32.79	3,839.82	907.04	3,050	2,929.35	0.74	-0.09	0.02
75.00	-14.65	-1.36	0.00	-31.16	0.00	31.16	3,808.85	899.73	3,001	2,882.01	0.76	-0.09	0.02
79.00	-13.96	-1.31	0.00	-25.71	0.00	25.71	3,684.96	870.46	2,809	2,696.51	0.84	-0.10	0.01
80.00	-13.27	-1.26	0.00	-24.40	0.00	24.40	3,653.98	863.15	2,762	2,651.10	0.87	-0.10	0.01
84.00	-12.59	-1.21	0.00	-19.34	0.00	19.34	3,530.09	833.88	2,578	2,473.31	0.95	-0.10	0.01
85.00	-11.93	-1.16	0.00	-18.13	0.00	18.13	3,499.12	826.56	2,533	2,429.83	0.97	-0.10	0.01
89.00	-11.31	-1.11	0.00	-13.50	0.00	13.50	3,375.23	797.30	2,356	2,259.75	1.06	-0.11	0.01
89.66	-11.23	-1.10	0.00	-12.77	0.00	12.77	3,354.82	792.48	2,328	2,232.33	1.07	-0.11	0.01
90.00	-8.72	-0.89	0.00	-12.39	0.00	12.39	3,344.25	789.98	2,313	2,218.20	1.08	-0.11	0.01
94.00	-8.13	-0.84	0.00	-8.84	0.00	8.84	3,220.36	760.72	2,145	2,055.84	1.17	-0.11	0.01
94.35	-8.06	-0.83	0.00	-8.55	0.00	8.55	1,736.60	442.82	1,272	1,136.24	1.18	-0.11	0.01
95.00	-7.76	-0.80	0.00	-8.00	0.00	8.00	1,729.55	440.09	1,256	1,124.59	1.19	-0.11	0.01
98.00	-7.49	-0.78	0.00	-5.60	0.00	5.60	1,696.64	427.54	1,186	1,071.51	1.26	-0.11	0.01
99.00	-6.88	-0.72	0.00	-4.82	0.00	4.82	1,685.46	423.36	1,163	1,053.95	1.29	-0.11	0.01
100.00	-4.86	-0.52	0.00	-4.10	0.00	4.10	1,674.17	419.18	1,140	1,036.47	1.31	-0.11	0.01
102.00	-4.49	-0.49	0.00	-3.06	0.00	3.06	1,651.27	410.82	1,095	1,001.73	1.36	-0.11	0.01
104.00	-3.90	-0.43	0.00	-2.09	0.00	2.09	1,627.94	402.46	1,051	967.31	1.40	-0.11	0.01
105.00	-3.60	-0.39	0.00	-1.66	0.00	1.66	1,616.11	398.28	1,029	950.22	1.43	-0.11	0.00
109.00	-0.51	-0.06	0.00	-0.09	0.00	0.09	1,567.75	381.56	944	882.74	1.52	-0.11	0.00
109.90	-0.35	-0.04	0.00	-0.04	0.00	0.04	1,556.63	377.79	926	867.76	1.55	-0.11	0.00
110.00	-0.29	-0.03	0.00	-0.03	0.00	0.03	1,555.39	377.37	924	866.10	1.55	-0.11	0.00
111.00	0.00	-0.03	0.00	0.00	0.00	0.00	1,542.92	373.19	903	849.55	1.57	-0.11	0.00

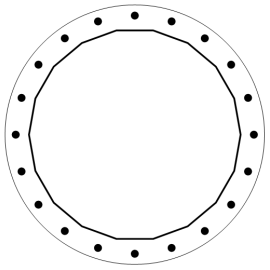
ANALYSIS SUMMARY

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W	51.25	0.00	56.48	0.00	0.00	4304.29	0.00	0.55
0.9D + 1.0W	51.23	0.00	42.34	0.00	0.00	4284.96	0.00	0.55
1.2D + 1.0Di + 1.0Wi	15.07	0.00	82.55	0.00	0.00	1265.75	0.00	0.17
1.2D + 1.0Ev + 1.0Eh	2.20	0.00	56.23	0.00	0.00	184.74	0.00	0.03
0.9D - 1.0Ev + 1.0Eh	2.20	0.00	39.04	0.00	0.00	183.74	0.00	0.03
1.0D + 1.0W	12.05	0.00	47.12	0.00	0.00	1010.07	0.00	0.14

BASE PLATE ANALYSIS @ 0 FT

PLATE PARAMETERS (ID# 16361)

Diameter:	73	in
Shape:	Round	
Thickness:	3	in
Grade:	A572-50	
Yield Strength:	50	ksi
Tensile Strength:	65	ksi
Rod Detail Type:	d	
Clear Distance	5.25	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Plastic	
Neutral Axis:	18	°



ANCHOR ROD PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	Fy (ksi)	Fu (ksi)	Spacing (in)	Offset (°)
Original [ID# 16747]	Radial	20	2.25	67	A615-75	75	100	-	-

ANCHOR ROD GEOMETRY AND APPLIED LOADS --- ORIGINAL (20) 2.25"ø [ID 16747]

Position	Radians	X (in)	Y (in)	Moment Arm (in)	Inertia (in^4)	Axial Load (k)	Shear Load (k)
1	0.314	31.86	10.35	0.000	0.839	-121.43	4.06
2	0.628	27.10	19.69	9.946	322.142	132.73	3.86
3	0.942	19.69	27.10	18.919	1163.322	132.73	3.28
4	1.257	10.35	31.86	26.040	2203.078	132.73	2.39
5	1.571	0.00	33.50	30.612	3044.258	132.73	1.25
6	1.885	-10.35	31.86	32.188	3365.560	132.73	0.00
7	2.199	-19.69	27.10	30.612	3044.258	132.73	1.25
8	2.513	-27.10	19.69	26.040	2203.078	132.73	2.39
9	2.827	-31.86	10.35	18.919	1163.322	132.73	3.28
10	3.142	-33.50	0.00	9.946	322.142	132.73	3.86
11	3.456	-31.86	-10.35	0.000	0.839	132.73	4.06
12	3.770	-27.10	-19.69	-9.946	322.142	-121.43	3.86
13	4.084	-19.69	-27.10	-18.919	1163.322	-121.43	3.28
14	4.398	-10.35	-31.86	-26.040	2203.078	-121.43	2.39
15	4.712	0.00	-33.50	-30.612	3044.258	-121.43	1.25
16	5.027	10.35	-31.86	-32.188	3365.560	-121.43	0.00
17	5.341	19.69	-27.10	-30.612	3044.258	-121.43	1.25
18	5.655	27.10	-19.69	-26.040	2203.078	-121.43	2.39
19	5.969	31.86	-10.35	-18.919	1163.322	-121.43	3.28
20	6.283	33.50	0.00	-9.946	322.142	-121.43	3.86

REACTION DISTRIBUTION

Component	ID	Moment Mu (k-ft)	Axial Load Pu (k)	Shear Vu (k)	Moment Factor
Pole	59"ø x 0.5" (18 Sides)	4304.3	56.48	51.25	1.000
Bolt Group	Original (20) 2.25"ø	4304.3	-	51.25	1.000
	TOTALS	**4304.29**	**56.48**	**51.25**	

COMPONENT PROPERTIES

Component	ID	Gross Area (in^2)	Net Area (in^2)	Individual Inertia (in^4)	Moment of Inertia (in^4)	Threads/in
Pole	59"ø x 0.5" (18 Sides)	91.4258	-	-	39117.88	-
Bolt Group	Original (20) 2.25"ø	3.9761	3.2477	0.8393	33663.99	4.5

EXTERNAL BASE PLATE BEND LINE ANALYSIS @ 0 FT

POLE PROPERTIES

Flat-to-Flat Diameter:	59.12	in
Point-to-Point Diameter:	60.04	in
Flat Width:	10.425	in
Flat Radians:	0.349	rad

PLATE PROPERTIES

Neutral Axis:	18	°
Bend Line Lower Limit:	1.393	rad
Bend Line Upper Limit:	2.377	rad

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in^3)	Applied Moment Mu (k-in)	Moment Capacity ϕMn (k-in)	Ratio
Flat	38.197	0.00	85.943	754.6	3867.4	0.195
Corner	36.746	0.00	82.679	538.4	3720.6	0.145
Circumferential	45.490	0.00	102.352	1028.0	4605.9	0.223

PLASTIC ANCHOR ROD ANALYSIS

Class	Group Quantity	Rod Diameter (in)	Applied Axial Load Pu (k)	Applied Shear Load Vu (k)	Compressive Capacity ϕPn (k)	Ratio
Original	20	2.25	132.8	4.1	243.6	0.545

Exhibit F

Mount Analysis Report

AMERICAN TOWER®
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Mount Analysis Report

ATC Site Name	:	**Farmington North 2 CT, CT**
ATC Site Number	:	**411258**
Engineering Number	:	**14099648_C8_01**
Mount Elevation	:	**75 ft**
Carrier	:	**T-Mobile**
Carrier Site Name	:	**CTHA367_ATC_Monopole_Farmington**
Carrier Site Number	:	**CTHA367A**
Site Location	:	**199 Town Farm Road** **Farmington, CT 06032-1554** **41.75777516 , -72.82993932**
County	:	**Hartford**
Date	:	**April 27, 2022**
Max Usage	:	**79%**
Result	:	**Pass**

Prepared By:
Rohith Koduru
Structural Engineer I

Reviewed By:

COA: PEC.0001553

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Table of Contents

Introduction

The purpose of this report is to summarize results of the mount analysis performed for T-Mobile at 75 ft.

Supporting Documents

Specifications Sheet	Site Pro 1 RMQP-4096-HK, dated September 20, 2018
Radio Frequency Data Sheet	RFDS ID #CTHA367A, dated March 11, 2022

Analysis

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

Basic Wind Speed:	117 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.50'' radial ice concurrent
Codes:	ANSI/TIA-222-H
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.185, 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.

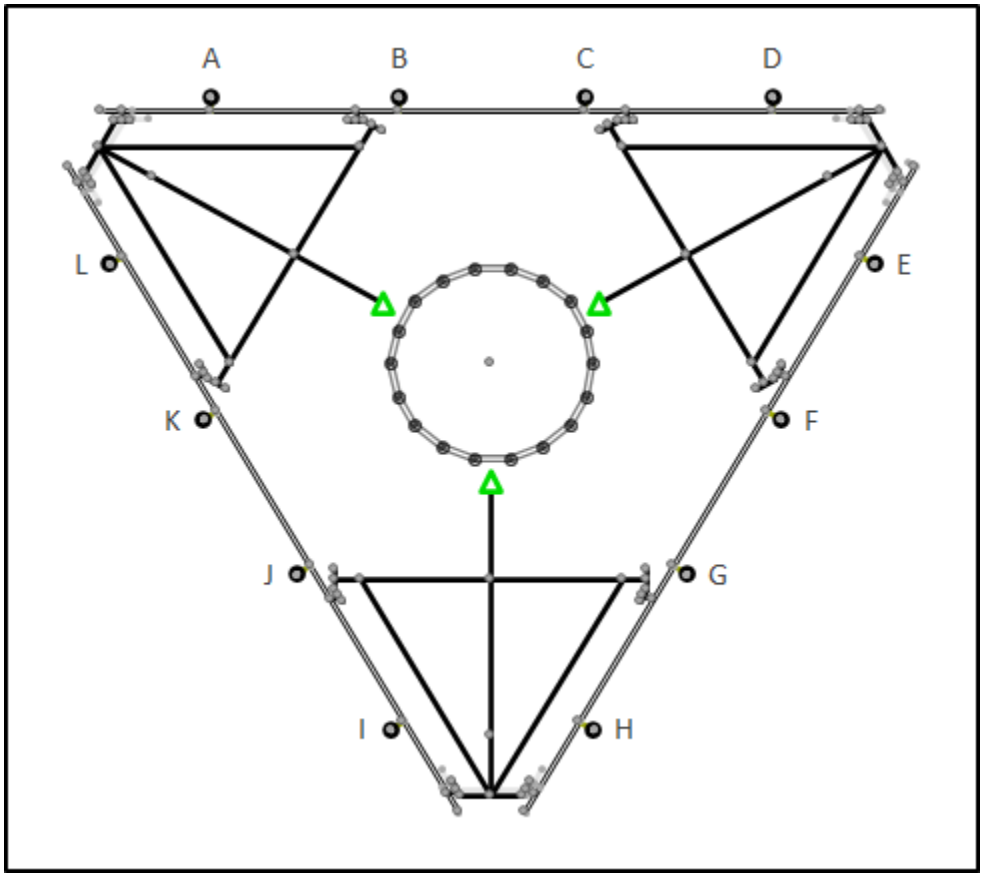
Application Loading

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
75.0	75.0	3	Commscope VV-65A-R1B
		3	RFS APXVAALL24 43-U-NA20
		3	Ericsson AIR 6419 B41
		3	Ericsson 4460 BAND 2/25
		3	Ericsson 4480 BAND 71

Structure Usages

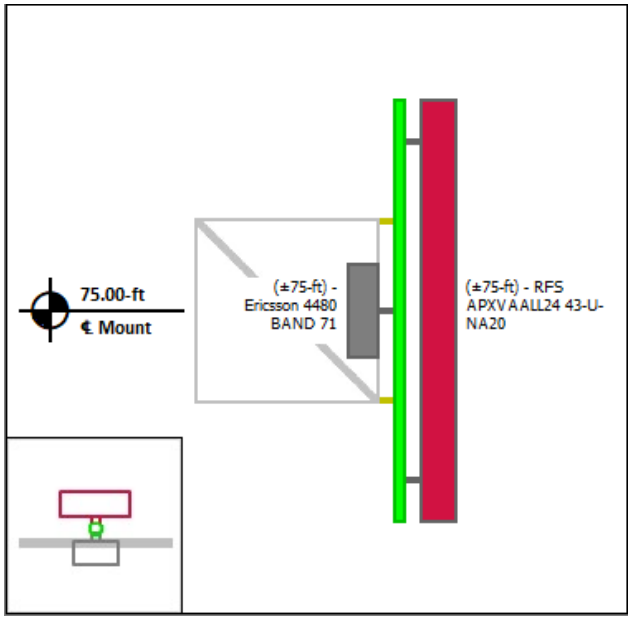
Structural Component	Controlling Usage	Pass/Fail
Horizontals	79%	Pass
Tie-Backs	15%	Pass
Mount Pipes	24%	Pass

Mount Layout

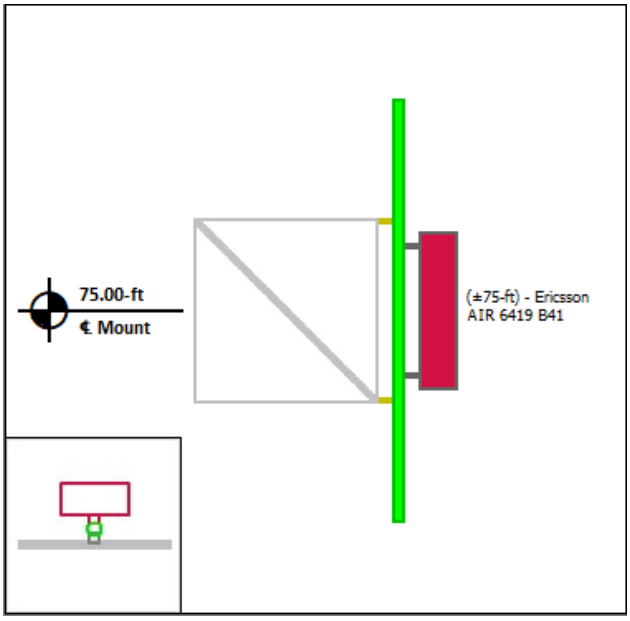


Equipment Layout

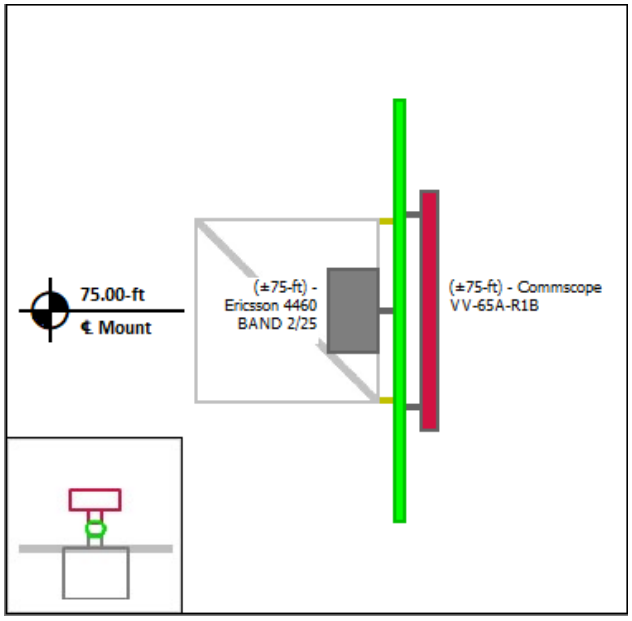
Mount Pipe A



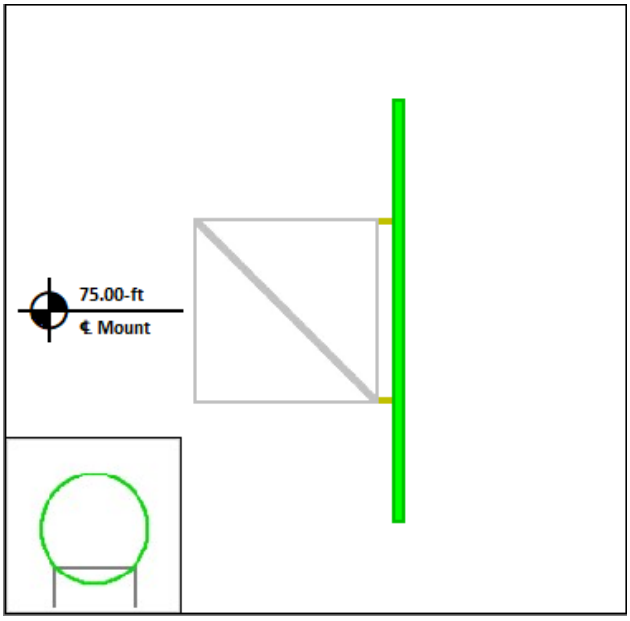
Mount Pipe B



Mount Pipe C

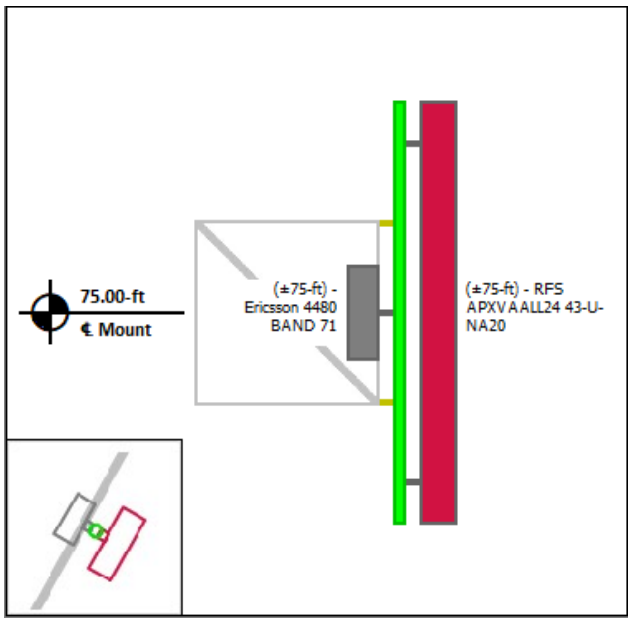


Mount Pipe D

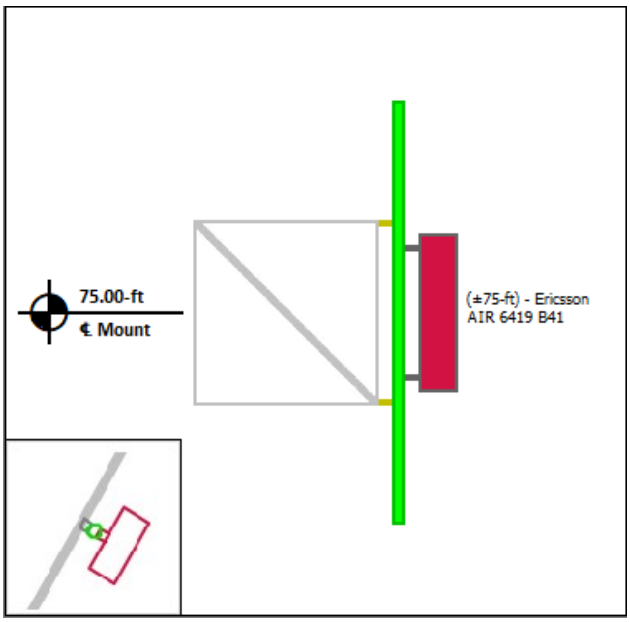


Equipment Layout Cont'd.

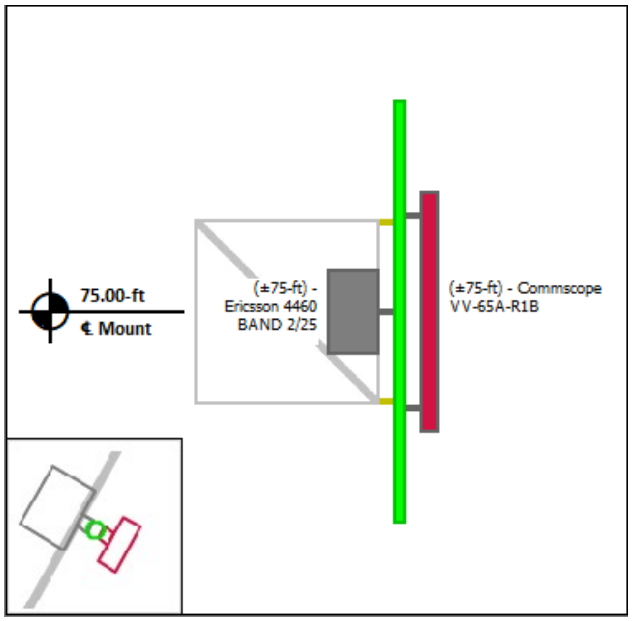
Mount Pipe E



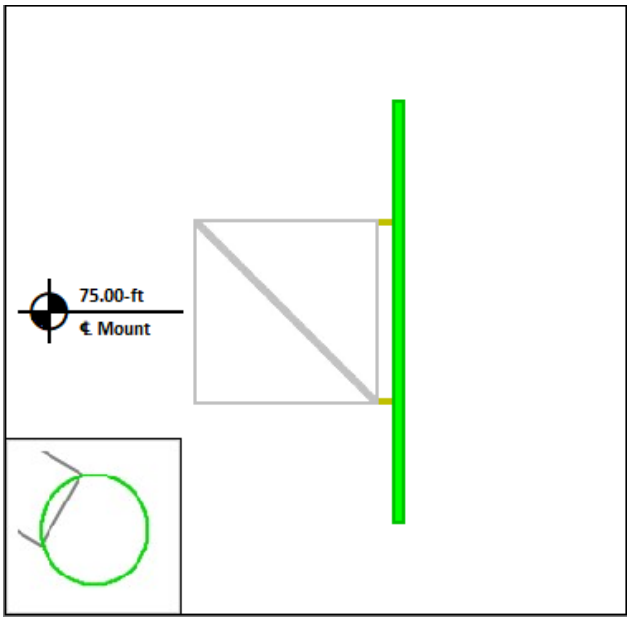
Mount Pipe F



Mount Pipe G

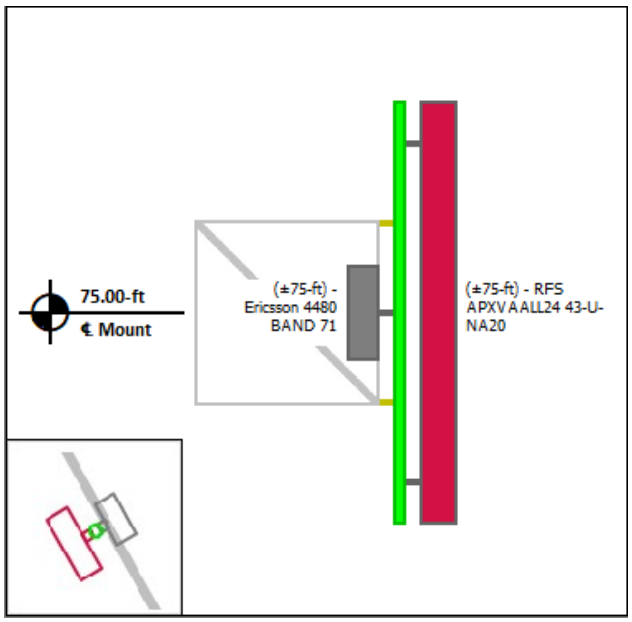


Mount Pipe H

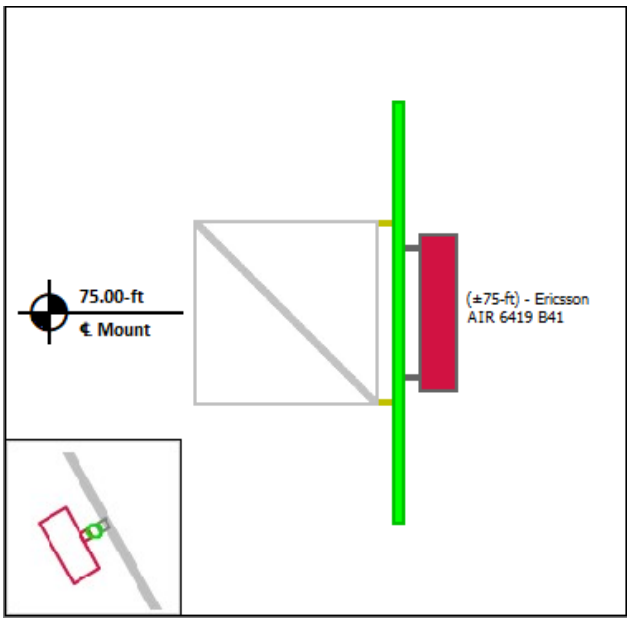


Equipment Layout Cont'd.

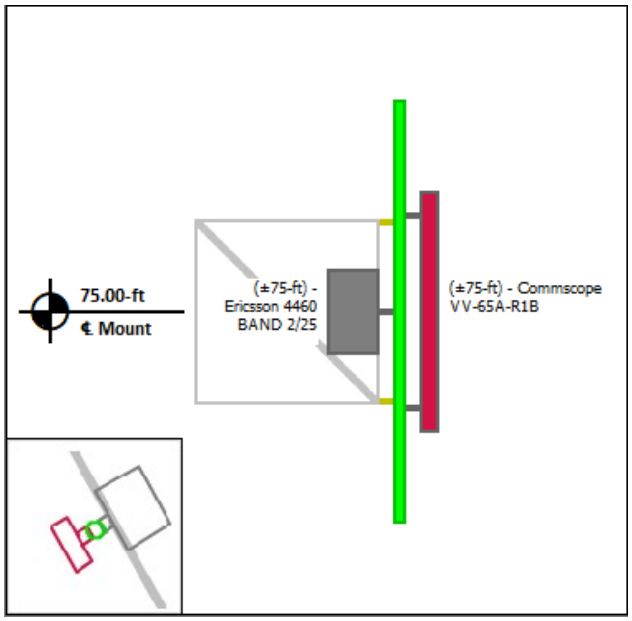
Mount Pipe I



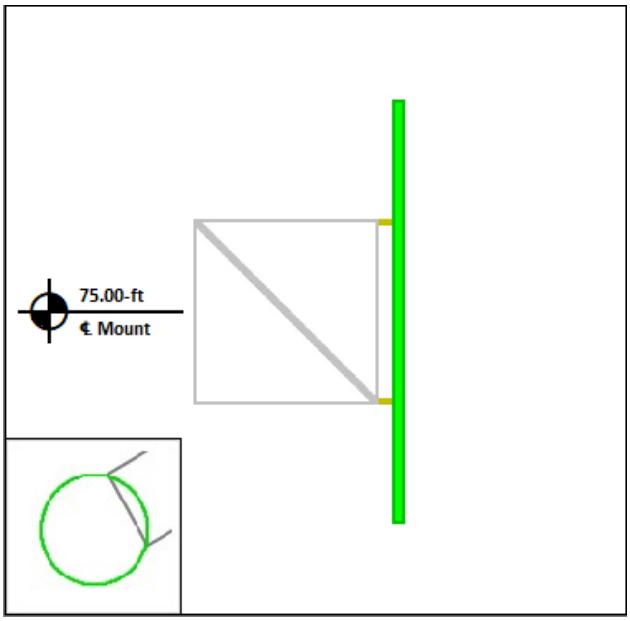
Mount Pipe J



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.

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Site Number:	*411258*
Project Number:	*14099648_C8_01*
Carrier:	*T-Mobile*
Mount Elevation:	*75 ft*
Date:	4/27/2022

Mount Analysis Force Calculations

Wind & Ice Load Calculations			
Velocity Pressure Coefficient	K_z	1.19	
Topographic Factor	K_{zt}	1.00	
Rooftop Wind Speed-up Factor	K_s	1.00	
Shielding Factor	K_a	0.90	
Ground Elevation Factor	K_e	0.99	
Wind Direction Probability Factor	K_d	0.95	
Basic Wind Speed	V	117	mph
Velocity Pressure	q_z	39.4	psf
Height Escalation Factor	K_{iz}	1.09	
Thickness of Radial Glaze Ice	T_{iz}	1.63	in

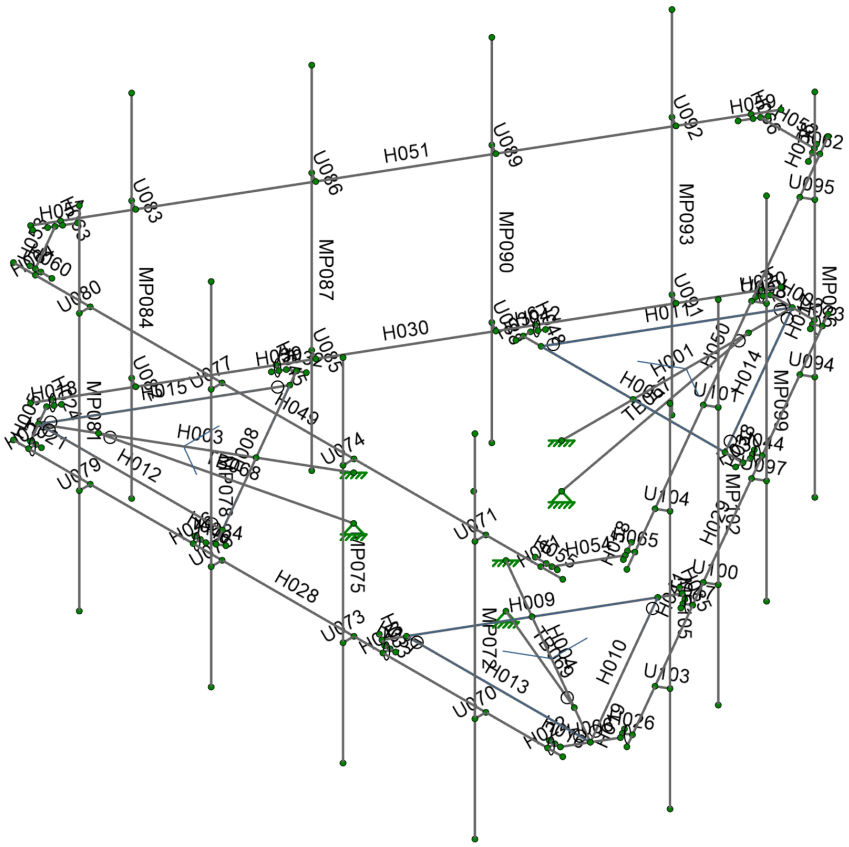
Seismic Load Calculations			
Short Period DSRAP	S_{DS}	0.197	
1 Second DSRAP	S_{D1}	0.088	
Importance Factor	I	1.0	
Response Modification Coefficient	R	2.0	
Seismic Response Coefficient	C_S	0.099	
Amplification Factor	A	1.0	
Total Weight	W	2911.1	lbs
Total Shear Force	V_S	287.2	lbs
Horizontal Seismic Load	Eh	287.2	lbs
Vertical Seismic Load	Ev	114.9	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
Commscope VV-65A-R1B	54.7	12.0	4.6	24.7	5.89	1.38	7.93	2.50
RFS APXVAALL24 43-U-NA20	95.9	24.0	8.5	122.8	20.24	3.40	23.77	4.86
Ericsson AIR 6419 B41	36.3	20.9	9.0	83.3	6.32	1.82	7.96	2.70
Ericsson 4460 BAND 2/25	19.6	15.7	12.1	109.0	2.56	1.98	3.61	2.93
Ericsson 4480 BAND 71	22.0	15.7	7.5	81.0	2.88	1.40	3.99	2.30

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

American Tower Corp.	411258, Farmington North 2 CT	SK-1
Rohith.Koduru		Apr 27, 2022
14099648_C8_01		R3D. T-MOBILE @ 411258, Farmi…



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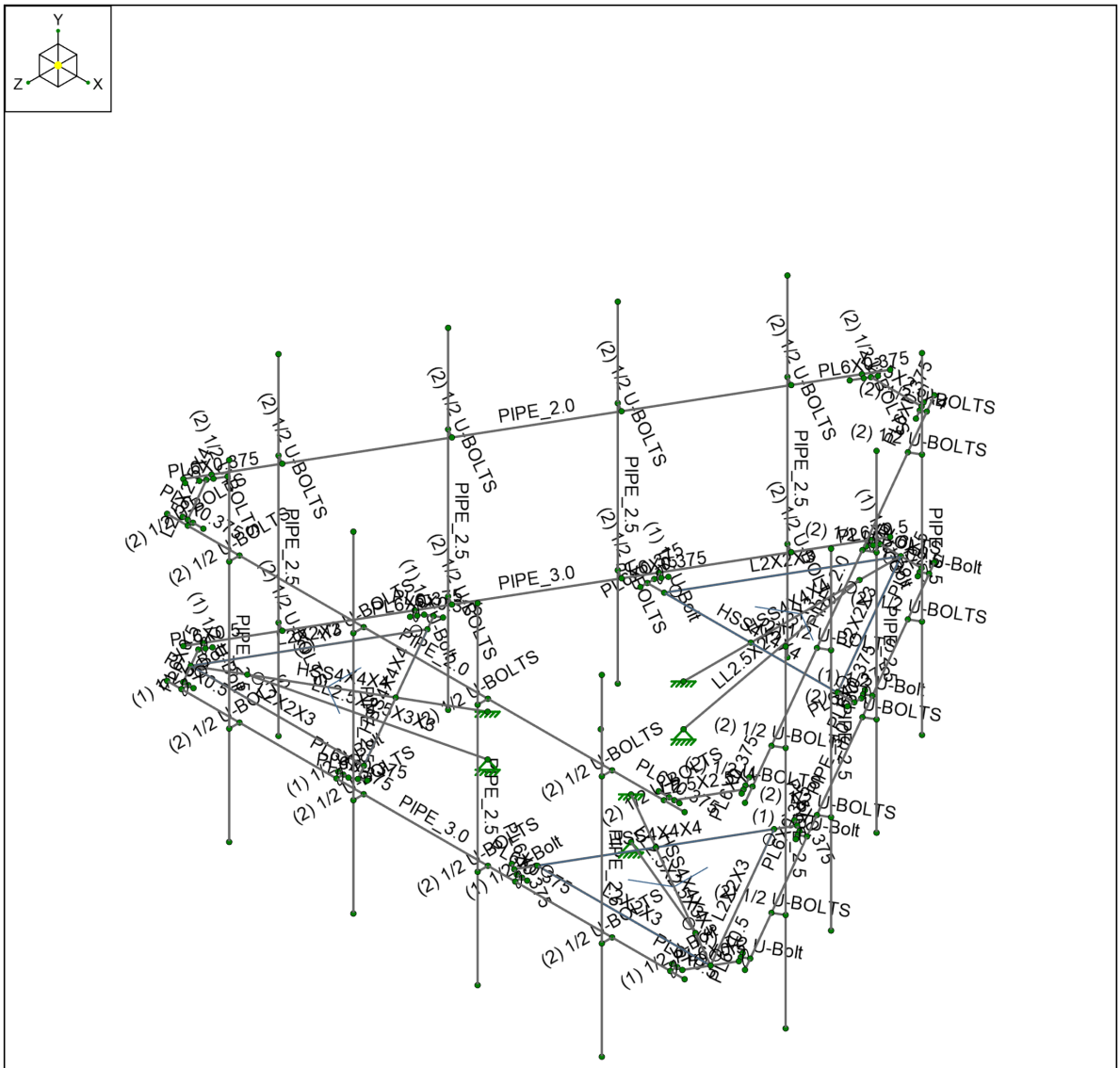

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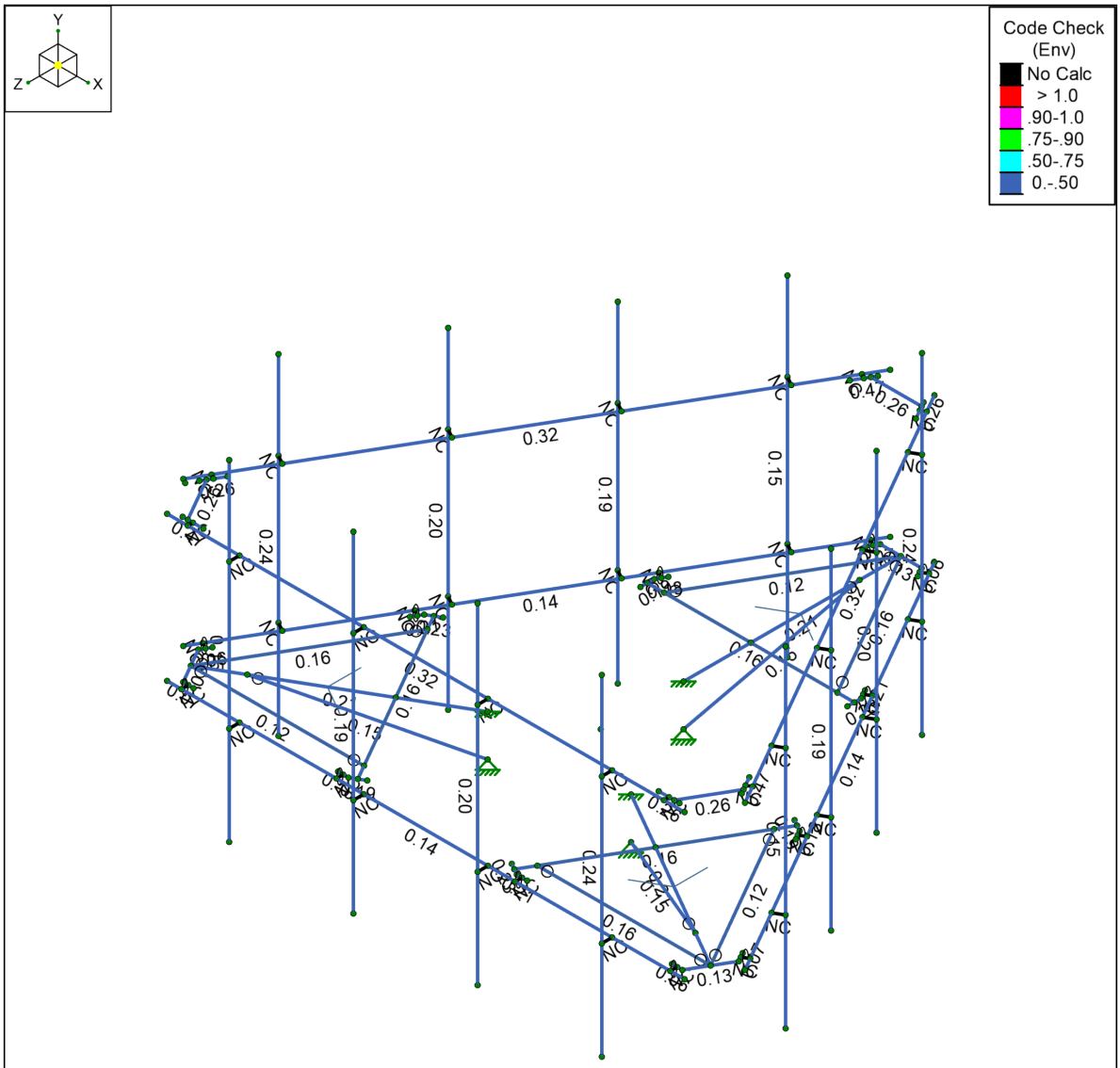
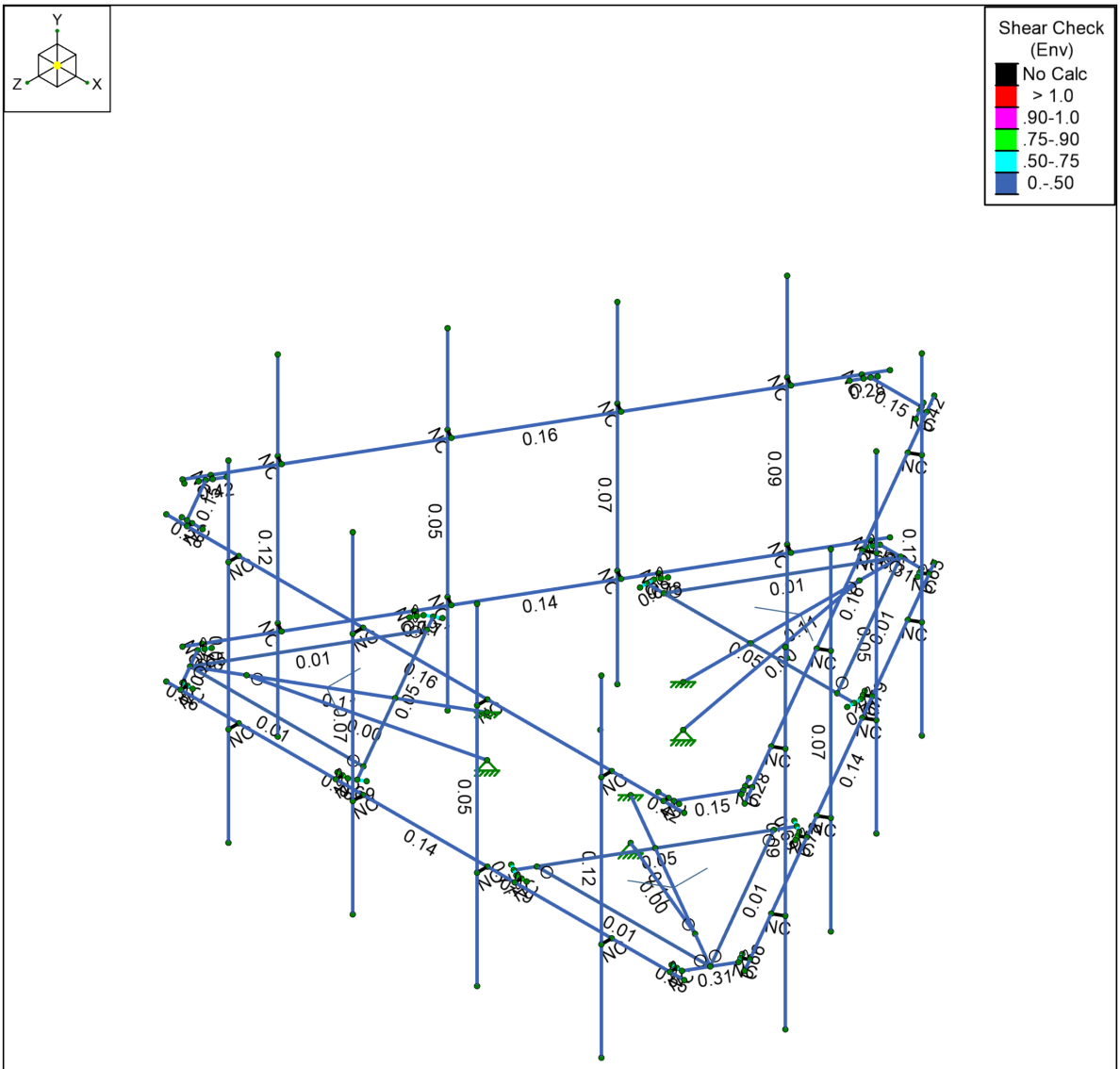


Member Code Checks Displayed (Enveloped)

American Tower Corp.	411258, Farmington North 2 CT	SK-4
Rohith.Koduru		Apr 27, 2022
14099648_C8_01		R3D. T-MOBILE @ 411258, Farmi…



Member Shear Checks Displayed (Enveloped)

American Tower Corp.	411258, Farmington North 2 CT	SK-5
Rohith.Koduru		Apr 27, 2022
14099648_C8_01		R3D. T-MOBILE @ 411258, Farmi…

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Surface(Plate/Wall)
1	D	DL	-1		24		
2	Di	IL			24	63	3
3	W 0	WL			24	105	
4	W 30	WL			48	210	
5	W 60	WL			48	210	
6	W 90	WL			24	108	
7	W 120	WL			48	210	
8	W 150	WL			48	210	
9	W 180	WL			24	105	
10	W 210	WL			48	210	
11	W 240	WL			48	210	
12	W 270	WL			24	108	
13	W 300	WL			48	210	
14	W 330	WL			48	210	
15	Wi 0	WL			24	105	
16	Wi 30	WL			48	210	
17	Wi 60	WL			48	210	
18	Wi 90	WL			24	108	
19	Wi 120	WL			48	210	
20	Wi 150	WL			48	210	
21	Wi 180	WL			24	105	
22	Wi 210	WL			48	210	
23	Wi 240	WL			48	210	
24	Wi 270	WL			24	108	
25	Wi 300	WL			48	210	
26	Wi 330	WL			48	210	
27	Ws 0	WL			24	105	
28	Ws 30	WL			48	210	
29	Ws 60	WL			48	210	
30	Ws 90	WL			24	108	
31	Ws 120	WL			48	210	
32	Ws 150	WL			48	210	
33	Ws 180	WL			24	105	
34	Ws 210	WL			48	210	
35	Ws 240	WL			48	210	
36	Ws 270	WL			24	108	
37	Ws 300	WL			48	210	
38	Ws 330	WL			48	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	N120	Reaction	Reaction	Reaction			
5	N121	Reaction	Reaction	Reaction			
6	N122	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	N094	N095	90	L2.5X2.5X4	Beam	None	A36	Typical
53	H053	N091	N092	90	L2.5X2.5X4	Beam	None	A36	Typical
54	H054	N090	N093	90	L2.5X2.5X4	Beam	None	A36	Typical
55	H055	N096	N099		PL6X0.375	Beam	None	A36	Typical
56	H056	N097	N100		PL6X0.375	Beam	None	A36	Typical
57	H057	N098	N101		PL6X0.375	Beam	None	A36	Typical
58	H058	N103	N106		PL6X0.375	Beam	None	A36	Typical
59	H059	N104	N107		PL6X0.375	Beam	None	A36	Typical
60	H060	N102	N105		PL6X0.375	Beam	None	A36	Typical
61	H061	N108	N114		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
62	H062	N109	N115		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
63	H063	N110	N116		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
64	H064	N111	N117		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
65	H065	N112	N118		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
66	H066	N113	N119		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
67	TB067	N120	N123		LL2.5X2.5X3X3	Column	None	A36	Typical
68	TB068	N121	N124		LL2.5X2.5X3X3	Column	None	A36	Typical
69	TB069	N122	N125		LL2.5X2.5X3X3	Column	None	A36	Typical
70	U070	N135	N138		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
71	U071	N139	N140		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
72	MP072	N141	N142		PIPE_2.5	Column	None	A53 Gr. B	Typical
73	U073	N126	N143		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
74	U074	N144	N145		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
75	MP075	N146	N147		PIPE_2.5	Column	None	A53 Gr. B	Typical
76	U076	N129	N148		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
77	U077	N149	N150		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
78	MP078	N151	N152		PIPE_2.5	Column	None	A53 Gr. B	Typical
79	U079	N132	N153		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
80	U080	N154	N155		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
81	MP081	N156	N157		PIPE_2.5	Column	None	A53 Gr. B	Typical
82	U082	N137	N158		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
83	U083	N159	N160		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
84	MP084	N161	N162		PIPE_2.5	Column	None	A53 Gr. B	Typical
85	U085	N128	N163		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
86	U086	N164	N165		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
87	MP087	N166	N167		PIPE_2.5	Column	None	A53 Gr. B	Typical
88	U088	N131	N168		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
89	U089	N169	N170		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
90	MP090	N171	N172		PIPE_2.5	Column	None	A53 Gr. B	Typical
91	U091	N134	N173		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
92	U092	N174	N175		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
93	MP093	N176	N177		PIPE_2.5	Column	None	A53 Gr. B	Typical
94	U094	N136	N178		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
95	U095	N179	N180		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
96	MP096	N181	N182		PIPE_2.5	Column	None	A53 Gr. B	Typical
97	U097	N127	N183		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
98	U098	N184	N185		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
99	MP099	N186	N187		PIPE_2.5	Column	None	A53 Gr. B	Typical
100	U100	N130	N188		(2) 1/2 U-BOLTS	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
101	U101	N189	N190		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
102	MP102	N191	N192		PIPE_2.5	Column	None	A53 Gr. B	Typical
103	U103	N133	N193		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
104	U104	N194	N195		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
105	MP105	N196	N197		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	52.393			Lbyy		1	1	Lateral
68	TB068	LL2.5X2.5X3X3	52.393			Lbyy		1	1	Lateral
69	TB069	LL2.5X2.5X3X3	52.393			Lbyy		1	1	Lateral
70	U070	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
71	U071	(2) 1/2 U-BOLTS	3			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	3			Lbyy		0.5	0.5	Lateral
74	U074	(2) 1/2 U-BOLTS	3			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	3			Lbyy		0.5	0.5	Lateral
77	U077	(2) 1/2 U-BOLTS	3			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	3			Lbyy		0.5	0.5	Lateral
80	U080	(2) 1/2 U-BOLTS	3			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	3			Lbyy		0.5	0.5	Lateral
83	U083	(2) 1/2 U-BOLTS	3			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	3			Lbyy		0.5	0.5	Lateral
86	U086	(2) 1/2 U-BOLTS	3			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	3			Lbyy		0.5	0.5	Lateral
89	U089	(2) 1/2 U-BOLTS	3			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	3			Lbyy		0.5	0.5	Lateral
92	U092	(2) 1/2 U-BOLTS	3			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	3			Lbyy		0.5	0.5	Lateral
95	U095	(2) 1/2 U-BOLTS	3			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	3			Lbyy		0.5	0.5	Lateral
98	U098	(2) 1/2 U-BOLTS	3			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	3			Lbyy		0.5	0.5	Lateral
101	U101	(2) 1/2 U-BOLTS	3			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	3			Lbyy		0.5	0.5	Lateral
104	U104	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
105	MP105	PIPE_2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral

Hot Rolled Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [lb/ft³]	Yield [psi]	Ry	Fu [psi]	Rt
1	A500 Gr. B [SQR]	2.9e+07	1.115e+07	0.3	0.65	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	1862.674	5	1479.703	26	7122.066	2	2218.375	26	2348.596	11	928.154	179
2		min	-1863.122	11	299.029	20	-3638.586	20	110.863	20	-2341.46	17	-746.789	137
3	N006	max	6212.139	6	1479.713	30	1746.398	24	435.344	15	2348.563	3	29.453	23
4		min	-3195.888	24	298.991	24	-3489.034	6	-1344.745	93	-2341.427	21	-2106.96	29
5	N007	max	3108.192	16	1479.714	34	1922.662	14	390.091	14	2348.55	7	1799.635	36
6		min	-6125.464	10	298.991	16	-3664.023	8	-1506.185	80	-2341.414	25	-16.695	18
7	N120	max	30.637	17	1611.315	26	932.342	20	0	205	0	205	0	205
8		min	-30.435	23	-209.375	20	-6683.542	26	0	1	0	1	0	1
9	N121	max	806.314	24	1611.302	30	3340.853	30	0	205	0	205	0	205
10		min	-5787.797	30	-209.327	24	-462.296	24	0	1	0	1	0	1
11	N122	max	5787.843	34	1611.302	34	3340.781	34	0	205	0	205	0	205
12		min	-806.225	16	-209.328	16	-462.455	16	0	1	0	1	0	1
13	Totals:	max	5498.579	17	8641.488	33	5880.608	14						
14		min	-5498.579	11	2603.683	15	-5880.608	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	0.206	0	11	0.114	0	z	11	124317.885	139518	16180.5	16180.5	3	H1-1b
2	H002	PL6X0.5	0.13	6	8	0.309	6	y	4	83348.625	97200	1012.5	12140.068	1.054	H1-1b
3	H003	HSS4X4X4	0.206	0	3	0.114	0	z	3	124317.885	139518	16180.5	16180.5	3	H1-1b
4	H004	HSS4X4X4	0.206	0	7	0.114	0	z	7	124317.885	139518	16180.5	16180.5	3	H1-1b
5	H005	PL6X0.5	0.13	6	12	0.309	6	y	8	83348.625	97200	1012.5	12140.161	1.054	H1-1b
6	H006	PL6X0.5	0.13	6	4	0.309	6	y	12	83348.625	97200	1012.5	12139.941	1.054	H1-1b
7	H007	HSS4X4X4	0.162	30	37	0.047	30	y	28	133484.923	139518	16180.5	16180.5	1.334	H1-1b
8	H008	HSS4X4X4	0.162	30	29	0.047	30	y	32	133484.923	139518	16180.5	16180.5	1.334	H1-1b
9	H009	HSS4X4X4	0.162	30	33	0.047	30	y	36	133484.923	139518	16180.5	16180.5	1.334	H1-1b
10	H010	L2X2X3	0.12	25.638	23	0.009	50.229	y	31	9724.796	23392.8	557.717	1072.365	1.136	H2-1
11	H011	L2X2X3	0.12	25.638	15	0.009	50.229	y	35	9724.796	23392.8	557.717	1072.365	1.136	H2-1
12	H012	L2X2X3	0.12	25.638	19	0.009	50.229	y	27	9724.796	23392.8	557.717	1072.365	1.136	H2-1
13	H013	L2X2X3	0.162	25.638	21	0.008	50.229	y	2	9724.796	23392.8	557.717	1072.365	1.136	H2-1
14	H014	L2X2X3	0.162	25.638	25	0.008	50.229	y	6	9724.796	23392.8	557.717	1072.365	1.136	H2-1
15	H015	L2X2X3	0.162	25.638	17	0.008	50.229	y	10	9724.796	23392.8	557.717	1072.365	1.136	H2-1
16	H016	PL6X0.5	0.059	0	5	0.647	0	y	8	95014.386	97200	1012.5	12150	3	H1-1b
17	H017	PL6X0.5	0.059	0	9	0.647	0	y	12	95014.386	97200	1012.5	12150	3	H1-1b
18	H018	PL6X0.5	0.059	0	13	0.647	0	y	4	95014.386	97200	1012.5	12150	3	H1-1b
19	H019	PL6X0.5	0.07	0	4	0.663	0	y	12	95014.386	97200	1012.5	12150	3	H1-1b
20	H020	PL6X0.5	0.07	0	8	0.663	0	y	4	95014.386	97200	1012.5	12150	3	H1-1b
21	H021	PL6X0.5	0.07	0	12	0.663	0	y	8	95014.386	97200	1012.5	12150	3	H1-1b
22	H028	PIPE_3.0	0.144	20.312	69	0.144	50		2	28250.554	65205	5748.75	5748.75	3	H1-1b
23	H029	PIPE_3.0	0.144	20.312	169	0.144	50		6	28250.554	65205	5748.75	5748.75	3	H1-1b
24	H030	PIPE_3.0	0.144	20.312	113	0.144	50		10	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	0.229	2	11	0.708	2	y	6	70719.442	72900	569.531	9112.5	1.355	H1-1b
26	H032	PL6X0.375	0.229	2	3	0.708	2	y	10	70719.442	72900	569.531	9112.5	1.355	H1-1b
27	H033	PL6X0.375	0.229	2	7	0.708	2	y	2	70719.442	72900	569.531	9112.5	1.355	H1-1b
28	H034	PL6X0.375	0.192	2	9	0.688	2	y	2	70719.442	72900	569.531	9112.5	1.354	H1-1b
29	H035	PL6X0.375	0.192	2	13	0.688	2	y	6	70719.442	72900	569.531	9112.5	1.354	H1-1b
30	H036	PL6X0.375	0.192	2	5	0.688	2	y	10	70719.442	72900	569.531	9112.5	1.354	H1-1b
31	H037	PL6X0.375	0.214	1.5	7	0.786	0	y	8	70011.374	72900	569.531	9112.5	3	H1-1b
32	H038	PL6X0.375	0.214	1.5	11	0.786	0	y	12	70011.374	72900	569.531	9112.5	3	H1-1b
33	H039	PL6X0.375	0.214	1.5	3	0.786	0	y	4	70011.374	72900	569.531	9112.5	3	H1-1b
34	H040	PL6X0.375	0.183	1.5	9	0.781	0	y	8	70011.374	72900	569.531	9112.5	3	H1-1b
35	H041	PL6X0.375	0.183	1.5	13	0.781	0	y	12	70011.374	72900	569.531	9112.5	3	H1-1b
36	H042	PL6X0.375	0.183	1.5	5	0.781	0	y	4	70011.374	72900	569.531	9112.5	3	H1-1b
37	H049	PIPE_2.0	0.323	20.312	8	0.158	6.25		2	14559.939	32130	1871.625	1871.625	2.705	H1-1b
38	H050	PIPE_2.0	0.323	20.312	12	0.158	6.25		6	14559.939	32130	1871.625	1871.625	2.705	H1-1b
39	H051	PIPE_2.0	0.323	20.312	4	0.158	6.25		10	14559.939	32130	1871.625	1871.625	2.705	H1-1b
40	H052	L2.5X2.5X4	0.261	14.71	13	0.153	14.71	z	5	37765.457	38556	1113.554	2537.388	1.5	H2-1
41	H053	L2.5X2.5X4	0.261	14.71	5	0.153	14.71	z	9	37765.457	38556	1113.554	2537.388	1.5	H2-1
42	H054	L2.5X2.5X4	0.261	14.71	9	0.153	14.71	z	13	37765.457	38556	1113.554	2537.388	1.5	H2-1
43	H055	PL6X0.375	0.256	3	13	0.423	1.5	y	2	68085.235	72900	569.531	9112.5	1.459	H1-1b
44	H056	PL6X0.375	0.256	3	5	0.423	1.5	y	6	68085.235	72900	569.531	9112.5	1.459	H1-1b
45	H057	PL6X0.375	0.256	3	9	0.423	1.5	y	10	68085.235	72900	569.531	9112.5	1.459	H1-1b
46	H058	PL6X0.375	0.47	1.5	9	0.276	3	y	12	68085.235	72900	569.531	9112.5	1.502	H1-1b
47	H059	PL6X0.375	0.47	1.5	13	0.276	3	y	4	68085.235	72900	569.531	9112.5	1.502	H1-1b
48	H060	PL6X0.375	0.47	1.5	5	0.276	3	y	8	68085.235	72900	569.531	9112.5	1.502	H1-1b
49	TB067	LL2.5X2.5X3X3	0.154	0	26	0.002	52.393	y	36	44498.405	58320	3954.307	2549.586	1	H1-1b*
50	TB068	LL2.5X2.5X3X3	0.154	0	30	0.002	52.393	y	31	44498.405	58320	3954.307	2549.586	1.136	H1-1b*
51	TB069	LL2.5X2.5X3X3	0.154	0	34	0.002	52.393	y	32	44498.405	58320	3954.307	2549.586	1.136	H1-1b*
52	MP072	PIPE_2.5	0.24	67	13	0.12	67		9	32594.036	50715	3596.25	3596.25	1.848	H1-1b
53	MP075	PIPE_2.5	0.204	67	2	0.045	67		13	32594.036	50715	3596.25	3596.25	1.853	H1-1b
54	MP078	PIPE_2.5	0.191	67	3	0.074	67		7	32594.036	50715	3596.25	3596.25	2.416	H1-1b
55	MP081	PIPE_2.5	0.154	67	4	0.092	67		7	32594.036	50715	3596.25	3596.25	2.372	H1-1b
56	MP084	PIPE_2.5	0.24	67	9	0.12	67		5	32594.036	50715	3596.25	3596.25	1.568	H1-1b
57	MP087	PIPE_2.5	0.204	67	10	0.045	67		9	32594.036	50715	3596.25	3596.25	2.876	H1-1b
58	MP090	PIPE_2.5	0.191	67	11	0.074	67		3	32594.036	50715	3596.25	3596.25	3	H1-1b
59	MP093	PIPE_2.5	0.154	67	12	0.092	67		3	32594.036	50715	3596.25	3596.25	3	H1-1b
60	MP096	PIPE_2.5	0.24	67	5	0.12	67		13	32594.036	50715	3596.25	3596.25	1.753	H1-1b
61	MP099	PIPE_2.5	0.204	67	6	0.045	67		5	32594.036	50715	3596.25	3596.25	1.905	H1-1b
62	MP102	PIPE_2.5	0.191	67	7	0.074	67		11	32594.036	50715	3596.25	3596.25	1.611	H1-1b
63	MP105	PIPE_2.5	0.154	67	8	0.092	67		11	32594.036	50715	3596.25	3596.25	1.157	H1-1b

Exhibit G

Power Density/RF Emissions Report

Radio Frequency Exposure Analysis Report

May 24, 2022

T-Mobile on behalf of T-Mobile

T-Mobile Site Name: CTHA367_ATC_Monopole_Farmington
Site Number: CTHA367A
FA#: CTHA367A

Site Address: 199 Town Farm Road., Farmington, CT 06032

Site Compliance Summary

T-Mobile Compliance Status:	Compliant
Cumulative Calculated Power Density (Ground Level):	163.34279 µW/cm^2
Cumulative General Population % MPE (Ground Level):	16.33563%

750 West Center Street | Suite 301 | West Bridgewater | MA | 02379

May 24, 2022

Centerline
Attn: Ryan Clark, Site Acquisition Consultant
750 W Center St, Suite 301
West Bridgewater, MA 02379

RF Exposure Analysis for Site: **CTHA367_ATC_Monopole_Farmington**

Centerline Communications, LLC ("Centerline") was contracted to analyze the proposed T-Mobile facility at **199** Town **Farm Road., Farmington, CT 06032** 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 ($\mu W/cm^2$). 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 ($f_{MHz}/1500$). Frequencies between 1500 and 100,000 MHz have a General Population/Uncontrolled MPE limit of 1 mW/cm^2 (1000 $\mu W/cm^2$). 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 0'.

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 205' N 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 (μW/cm²)	General Population MPE Limit (μW/cm²)	General Population % MPE
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	700	13.65	75.80	2.00	40.00	1853.92	0.00000	466.67	0.00000
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	600	12.95	75.80	4.00	60.00	4733.81	0.00002	400.00	0.00001
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	600	12.95	75.80	2.00	40.00	1577.94	0.00001	400.00	0.00000
T-Mobile A 2	ERICSSON SON_AIR6419	2500	22.05	75.80	1.00	90.00	14429.21	0.65185	1000.00	0.06519
T-Mobile A 2	ERICSSON SON_AIR6419	2500	22.05	75.80	1.00	90.00	14429.21	0.65185	1000.00	0.06519
T-Mobile A 2	ERICSSON SON_AIR6419	2500	15.55	75.80	1.00	60.00	2153.53	0.00001	1000.00	0.00000
T-Mobile A 2	ERICSSON SON_AIR6419	2500	15.55	75.80	1.00	60.00	2153.53	0.00001	1000.00	0.00000
T-Mobile A 3	COMMSCOPE VV-65A-R1B	1900	15.15	75.80	2.00	140.00	9165.54	0.00001	1000.00	0.00000
T-Mobile A 3	COMMSCOPE VV-65A-R1B	1900	15.15	75.80	1.00	15.00	491.01	0.00000	1000.00	0.00000
T-Mobile A 3	COMMSCOPE VV-65A-R1B	2100	15.80	75.80	2.00	140.00	10645.30	0.00000	1000.00	0.00000
T-Mobile B 4	RFS APXVAALL24 43-U-NA20	700	13.65	75.80	2.00	40.00	1853.92	0.00001	466.67	0.00000
T-Mobile B 4	RFS APXVAALL24 43-U-NA20	600	12.95	75.80	4.00	60.00	4733.81	0.00001	400.00	0.00000
T-Mobile B 4	RFS APXVAALL24 43-U-NA20	600	12.95	75.80	2.00	40.00	1577.94	0.00000	400.00	0.00000
T-Mobile B 5	ERICSSON SON_AIR6419	2500	22.05	75.80	1.00	90.00	14429.21	0.28917	1000.00	0.02892
T-Mobile B 5	ERICSSON SON_AIR6419	2500	22.05	75.80	1.00	90.00	14429.21	0.28917	1000.00	0.02892
T-Mobile B 5	ERICSSON SON_AIR6419	2500	15.55	75.80	1.00	60.00	2153.53	0.00001	1000.00	0.00000
T-Mobile B 5	ERICSSON SON_AIR6419	2500	15.55	75.80	1.00	60.00	2153.53	0.00001	1000.00	0.00000
T-Mobile B 6	COMMSCOPE VV-65A-R1B	1900	15.15	75.80	2.00	140.00	9165.54	0.00001	1000.00	0.00000
T-Mobile B 6	COMMSCOPE VV-65A-R1B	1900	15.15	75.80	1.00	15.00	491.01	0.00000	1000.00	0.00000
T-Mobile B 6	COMMSCOPE VV-65A-R1B	2100	15.80	75.80	2.00	140.00	10645.30	0.00000	1000.00	0.00000
T-Mobile C 7	RFS APXVAALL24 43-U-NA20	700	13.65	75.80	2.00	40.00	1853.92	0.00078	466.67	0.00017
T-Mobile C 7	RFS APXVAALL24 43-U-NA20	600	12.95	75.80	4.00	60.00	4733.81	0.00198	400.00	0.00049
T-Mobile C 7	RFS APXVAALL24 43-U-NA20	600	12.95	75.80	2.00	40.00	1577.94	0.00066	400.00	0.00017
T-Mobile C 8	ERICSSON SON_AIR6419	2500	22.05	75.80	1.00	90.00	14429.21	38.03210	1000.00	3.80321
T-Mobile C 8	ERICSSON SON_AIR6419	2500	22.05	75.80	1.00	90.00	14429.21	38.03210	1000.00	3.80321
T-Mobile C 8	ERICSSON SON_AIR6419	2500	15.55	75.80	1.00	60.00	2153.53	0.00290	1000.00	0.00029
T-Mobile C 8	ERICSSON SON_AIR6419	2500	15.55	75.80	1.00	60.00	2153.53	0.00290	1000.00	0.00029
T-Mobile C 9	COMMSCOPE VV-65A-R1B	1900	15.15	75.80	2.00	140.00	9165.54	0.00233	1000.00	0.00023
T-Mobile C 9	COMMSCOPE VV-65A-R1B	1900	15.15	75.80	1.00	15.00	491.01	0.00013	1000.00	0.00001
T-Mobile C 9	COMMSCOPE VV-65A-R1B	2100	15.80	75.80	2.00	140.00	10645.30	0.00221	1000.00	0.00022
Verizon A 10	AMPHENOL BXA-80063-4CF-EDIN-0	850	13.00	108.50	4.00	20.00	1596.21	0.00000	566.67	0.00000
Verizon A 11	COMMSCOPE SBNHH-1D65B	700	12.38	108.50	4.00	40.00	2767.71	0.00000	466.67	0.00000
Verizon A 11	COMMSCOPE SBNHH-1D65B	1900	15.89	108.50	4.00	40.00	6210.41	0.00000	1000.00	0.00000
Verizon A 11	COMMSCOPE SBNHH-1D65B	850	12.67	108.50	4.00	40.00	2958.83	0.00000	566.67	0.00000
Verizon A 11	COMMSCOPE SBNHH-1D65B	2100	16.44	108.50	4.00	40.00	7048.88	0.00000	1000.00	0.00000
Verizon A 12	AMPHENOL BXA-80063-4CF-EDIN-0	850	13.00	108.50	4.00	20.00	1596.21	0.00000	566.67	0.00000
Verizon A 13	SAMSUNG SON_MT6407	3700	23.34	108.50	4.00	50.00	43154.89	0.00021	1000.00	0.00002
Verizon B 14	AMPHENOL BXA-80063-4CF-EDIN-0	850	13.00	108.50	4.00	20.00	1596.21	0.00000	566.67	0.00000
Verizon B 15	COMMSCOPE SBNHH-1D65B	700	12.38	108.50	4.00	40.00	2767.71	0.00000	466.67	0.00000
Verizon B 15	COMMSCOPE SBNHH-1D65B	1900	15.89	108.50	4.00	40.00	6210.41	0.00000	1000.00	0.00000
Verizon B 15	COMMSCOPE SBNHH-1D65B	850	12.67	108.50	4.00	40.00	2958.83	0.00000	566.67	0.00000
Verizon B 15	COMMSCOPE SBNHH-1D65B	2100	16.44	108.50	4.00	40.00	7048.88	0.00000	1000.00	0.00000
Verizon B 16	AMPHENOL BXA-80063-4CF-EDIN-0	850	13.00	108.50	4.00	20.00	1596.21	0.00000	566.67	0.00000
Verizon B 17	SAMSUNG SON_MT6407	3700	23.34	108.50	4.00	50.00	43154.89	0.00029	1000.00	0.00003
Verizon C 18	AMPHENOL BXA-80063-4CF-EDIN-0	850	13.00	108.50	4.00	20.00	1596.21	0.00035	566.67	0.00006
Verizon C 19	COMMSCOPE SBNHH-1D65B	700	12.38	108.50	4.00	40.00	2767.71	0.00067	466.67	0.00014
Verizon C 19	COMMSCOPE SBNHH-1D65B	1900	15.89	108.50	4.00	40.00	6210.41	0.00069	1000.00	0.00007
Verizon C 19	COMMSCOPE SBNHH-1D65B	850	12.67	108.50	4.00	40.00	2958.83	0.00067	566.67	0.00012
Verizon C 19	COMMSCOPE SBNHH-1D65B	2100	16.44	108.50	4.00	40.00	7048.88	0.00069	1000.00	0.00007
Verizon C 20	AMPHENOL BXA-80063-4CF-EDIN-0	850	13.00	108.50	4.00	20.00	1596.21	0.00035	566.67	0.00006
Verizon C 21	SAMSUNG SON_MT6407	3700	23.34	108.50	4.00	50.00	43154.89	0.01068	1000.00	0.00107
AT&T A 22	CCI TPA65R-BU8D	700	13.05	98.20	4.00	40.00	3229.39	0.00001	466.67	0.00000
AT&T A 22	CCI TPA65R-BU8D	1900	14.35	98.20	4.00	40.00	4356.32	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 (µW/cm²)	General Population MPE Limit (µW/cm²)	General Population % MPE
AT&T A 22	CCI TPA65R-BU8D	2100	15.25	98.20	4.00	40.00	5359.45	0.00000	1000.00	0.00000
AT&T A 23	CCI DMP65R-BU8D	700	12.25	98.20	4.00	40.00	2686.09	0.00000	466.67	0.00000
AT&T A 23	CCI DMP65R-BU8D	850	12.55	98.20	4.00	40.00	2878.19	0.00000	566.67	0.00000
AT&T A 23	CCI DMP65R-BU8D	2300	14.25	98.20	4.00	25.00	2660.73	0.00000	1000.00	0.00000
AT&T A 24	Ericsson SON_AIR6449	3700	23.45	101.80	2.00	160.00	70819.03	0.00015	1000.00	0.00002
AT&T A 25	Ericsson SON_AIR6419	3500	23.45	98.20	2.00	160.00	70819.03	0.00018	1000.00	0.00002
AT&T B 26	CCI TPA65R-BU8D	700	13.05	98.20	4.00	40.00	3229.39	0.00000	466.67	0.00000
AT&T B 26	CCI TPA65R-BU8D	1900	14.35	98.20	4.00	40.00	4356.32	0.00000	1000.00	0.00000
AT&T B 26	CCI TPA65R-BU8D	2100	15.25	98.20	4.00	40.00	5359.45	0.00000	1000.00	0.00000
AT&T B 27	CCI DMP65R-BU8D	700	12.25	98.20	4.00	40.00	2686.09	0.00000	466.67	0.00000
AT&T B 27	CCI DMP65R-BU8D	850	12.55	98.20	4.00	40.00	2878.19	0.00000	566.67	0.00000
AT&T B 27	CCI DMP65R-BU8D	2300	14.25	98.20	4.00	25.00	2660.73	0.00000	1000.00	0.00000
AT&T B 28	Ericsson SON_AIR6449	3700	23.45	101.80	2.00	160.00	70819.03	0.00008	1000.00	0.00001
AT&T B 29	Ericsson SON_AIR6419	3500	23.45	98.20	2.00	160.00	70819.03	0.00009	1000.00	0.00001
AT&T C 30	CCI TPA65R-BU8D	700	13.05	98.20	4.00	40.00	3229.39	0.00102	466.67	0.00022
AT&T C 30	CCI TPA65R-BU8D	1900	14.35	98.20	4.00	40.00	4356.32	0.00086	1000.00	0.00009
AT&T C 30	CCI TPA65R-BU8D	2100	15.25	98.20	4.00	40.00	5359.45	0.00089	1000.00	0.00009
AT&T C 31	CCI DMP65R-BU8D	700	12.25	98.20	4.00	40.00	2686.09	0.00101	466.67	0.00022
AT&T C 31	CCI DMP65R-BU8D	850	12.55	98.20	4.00	40.00	2878.19	0.00000	566.67	0.00016
AT&T C 31	CCI DMP65R-BU8D	2300	14.25	98.20	4.00	25.00	2660.73	0.00061	1000.00	0.00006
AT&T C 31	Ericsson SON_AIR6449	3700	23.45	101.80	2.00	160.00	70819.03	0.01422	1000.00	0.00142
AT&T C 31	Ericsson SON_AIR6419	3500	23.45	98.20	2.00	160.00	70819.03	0.01273	1000.00	0.00127
Dish A 34	JMA MX08FRO665-21	600	11.35	88.50	4.00	40.00	2183.33	0.00001	400.00	0.00000
Dish A 34	JMA MX08FRO665-21	700	12.05	88.50	4.00	40.00	2565.19	0.00001	466.67	0.00000
Dish A 34	JMA MX08FRO665-21	1900	15.75	88.50	4.00	40.00	6013.40	0.00000	1000.00	0.00000
Dish A 34	JMA MX08FRO665-21	2100	16.75	88.50	4.00	40.00	7570.42	0.00000	1000.00	0.00000
Dish B 35	JMA MX08FRO665-21	600	11.35	88.50	4.00	40.00	2183.33	0.00000	400.00	0.00000
Dish B 35	JMA MX08FRO665-21	700	12.05	88.50	4.00	40.00	2565.19	0.00000	466.67	0.00000
Dish B 35	JMA MX08FRO665-21	1900	15.75	88.50	4.00	40.00	6013.40	0.00000	1000.00	0.00000
Dish B 35	JMA MX08FRO665-21	2100	16.75	88.50	4.00	40.00	7570.42	0.00000	1000.00	0.00000
Dish C 36	JMA MX08FRO665-21	600	11.35	88.50	4.00	40.00	2183.33	0.00132	400.00	0.00033
Dish C 36	JMA MX08FRO665-21	700	12.05	88.50	4.00	40.00	2565.19	0.00151	466.67	0.00032
Dish C 36	JMA MX08FRO665-21	1900	15.75	88.50	4.00	40.00	6013.40	0.00134	1000.00	0.00013
Dish C 36	JMA MX08FRO665-21	2100	16.75	88.50	4.00	40.00	7570.42	0.00110	1000.00	0.00011
							Cumulative Power Density:	**163.34279 µW/cm²**	**Cumulative % MPE:**	**16.33563%**

Maximum Calculated Cumulative Power Density at 24’ Rooftop (Location: approximately 150' E 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 (μW/cm²)	General Population MPE Limit (μW/cm²)	General Population % MPE
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	700	13.65	75.80	2.00	40.00	1853.92	0.00004	466.67	0.00001
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	600	12.95	75.80	4.00	60.00	4733.81	0.00003	400.00	0.00001
T-Mobile A 1	RFS APXVAALL24 43-U-NA20	600	12.95	75.80	2.00	40.00	1577.94	0.00001	400.00	0.00000
T-Mobile A 2	ERICSSON SON_AIR6419	2500	22.05	75.80	1.00	90.00	14429.21	0.64937	1000.00	0.06494
T-Mobile A 2	ERICSSON SON_AIR6419	2500	22.05	75.80	1.00	90.00	14429.21	0.64937	1000.00	0.06494
T-Mobile A 2	ERICSSON SON_AIR6419	2500	15.55	75.80	1.00	60.00	2153.53	0.00003	1000.00	0.00000
T-Mobile A 2	ERICSSON SON_AIR6419	2500	15.55	75.80	1.00	60.00	2153.53	0.00003	1000.00	0.00000
T-Mobile A 3	COMMSCOPE VV-65A-R1B	1900	15.15	75.80	2.00	140.00	9165.54	0.00003	1000.00	0.00000
T-Mobile A 3	COMMSCOPE VV-65A-R1B	1900	15.15	75.80	1.00	15.00	491.01	0.00000	1000.00	0.00000
T-Mobile A 3	COMMSCOPE VV-65A-R1B	2100	15.80	75.80	2.00	140.00	10645.30	0.00002	1000.00	0.00000
T-Mobile B 4	RFS APXVAALL24 43-U-NA20	700	13.65	75.80	2.00	40.00	1853.92	0.00418	466.67	0.00090
T-Mobile B 4	RFS APXVAALL24 43-U-NA20	600	12.95	75.80	4.00	60.00	4733.81	0.01053	400.00	0.00263
T-Mobile B 4	RFS APXVAALL24 43-U-NA20	600	12.95	75.80	2.00	40.00	1577.94	0.00351	400.00	0.00088
T-Mobile B 5	ERICSSON SON_AIR6419	2500	22.05	75.80	1.00	90.00	14429.21	85.40645	1000.00	8.54064
T-Mobile B 5	ERICSSON SON_AIR6419	2500	22.05	75.80	1.00	90.00	14429.21	85.40645	1000.00	8.54064
T-Mobile B 5	ERICSSON SON_AIR6419	2500	15.55	75.80	1.00	60.00	2153.53	0.01511	1000.00	0.00151
T-Mobile B 5	ERICSSON SON_AIR6419	2500	15.55	75.80	1.00	60.00	2153.53	0.01511	1000.00	0.00151
T-Mobile B 6	COMMSCOPE VV-65A-R1B	1900	15.15	75.80	2.00	140.00	9165.54	0.01210	1000.00	0.00121
T-Mobile B 6	COMMSCOPE VV-65A-R1B	1900	15.15	75.80	1.00	15.00	491.01	0.00065	1000.00	0.00007
T-Mobile B 6	COMMSCOPE VV-65A-R1B	2100	15.80	75.80	2.00	140.00	10645.30	0.01150	1000.00	0.00115
T-Mobile C 7	RFS APXVAALL24 43-U-NA20	700	13.65	75.80	2.00	40.00	1853.92	0.00000	466.67	0.00000
T-Mobile C 7	RFS APXVAALL24 43-U-NA20	600	12.95	75.80	4.00	60.00	4733.81	0.00010	400.00	0.00002
T-Mobile C 7	RFS APXVAALL24 43-U-NA20	600	12.95	75.80	2.00	40.00	1577.94	0.00003	400.00	0.00001
T-Mobile C 8	ERICSSON SON_AIR6419	2500	22.05	75.80	1.00	90.00	14429.21	1.37877	1000.00	0.13788
T-Mobile C 8	ERICSSON SON_AIR6419	2500	22.05	75.80	1.00	90.00	14429.21	1.37877	1000.00	0.13788
T-Mobile C 8	ERICSSON SON_AIR6419	2500	15.55	75.80	1.00	60.00	2153.53	0.00004	1000.00	0.00000
T-Mobile C 8	ERICSSON SON_AIR6419	2500	15.55	75.80	1.00	60.00	2153.53	0.00004	1000.00	0.00000
T-Mobile C 9	COMMSCOPE VV-65A-R1B	1900	15.15	75.80	2.00	140.00	9165.54	0.00003	1000.00	0.00000
T-Mobile C 9	COMMSCOPE VV-65A-R1B	1900	15.15	75.80	1.00	15.00	491.01	0.00000	1000.00	0.00000
T-Mobile C 9	COMMSCOPE VV-65A-R1B	2100	15.80	75.80	2.00	140.00	10645.30	0.00002	1000.00	0.00000
Verizon A 10	AMPHENOL BXA-80063-4CF-EDIN-0	850	13.00	108.50	4.00	20.00	1596.21	0.00000	566.67	0.00000
Verizon A 11	COMMSCOPE SBNHH-1D65B	700	12.38	108.50	4.00	40.00	2767.71	0.00000	466.67	0.00000
Verizon A 11	COMMSCOPE SBNHH-1D65B	1900	15.89	108.50	4.00	40.00	6210.41	0.00000	1000.00	0.00000
Verizon A 11	COMMSCOPE SBNHH-1D65B	850	12.67	108.50	4.00	40.00	2958.83	0.00001	566.67	0.00000
Verizon A 11	COMMSCOPE SBNHH-1D65B	2100	16.44	108.50	4.00	40.00	7048.88	0.00000	1000.00	0.00000
Verizon A 12	AMPHENOL BXA-80063-4CF-EDIN-0	850	13.00	108.50	4.00	20.00	1596.21	0.00000	566.67	0.00000
Verizon A 13	SAMSUNG SON_MT6407	3700	23.34	108.50	4.00	50.00	43154.89	0.00094	1000.00	0.00009
Verizon B 14	AMPHENOL BXA-80063-4CF-EDIN-0	850	13.00	108.50	4.00	20.00	1596.21	0.00131	566.67	0.00023
Verizon B 15	COMMSCOPE SBNHH-1D65B	700	12.38	108.50	4.00	40.00	2767.71	0.00256	466.67	0.00055
Verizon B 15	COMMSCOPE SBNHH-1D65B	1900	15.89	108.50	4.00	40.00	6210.41	0.00263	1000.00	0.00026
Verizon B 15	COMMSCOPE SBNHH-1D65B	850	12.67	108.50	4.00	40.00	2958.83	0.00257	566.67	0.00045
Verizon B 15	COMMSCOPE SBNHH-1D65B	2100	16.44	108.50	4.00	40.00	7048.88	0.00263	1000.00	0.00026
Verizon B 16	AMPHENOL BXA-80063-4CF-EDIN-0	850	13.00	108.50	4.00	20.00	1596.21	0.00131	566.67	0.00023
Verizon B 17	SAMSUNG SON_MT6407	3700	23.34	108.50	4.00	50.00	43154.89	0.03503	1000.00	0.00350
Verizon C 18	AMPHENOL BXA-80063-4CF-EDIN-0	850	13.00	108.50	4.00	20.00	1596.21	0.00000	566.67	0.00000
Verizon C 19	COMMSCOPE SBNHH-1D65B	700	12.38	108.50	4.00	40.00	2767.71	0.00001	466.67	0.00000
Verizon C 19	COMMSCOPE SBNHH-1D65B	1900	15.89	108.50	4.00	40.00	6210.41	0.00000	1000.00	0.00000
Verizon C 19	COMMSCOPE SBNHH-1D65B	850	12.67	108.50	4.00	40.00	2958.83	0.00000	566.67	0.00000
Verizon C 19	COMMSCOPE SBNHH-1D65B	2100	16.44	108.50	4.00	40.00	7048.88	0.00000	1000.00	0.00000
Verizon C 20	AMPHENOL BXA-80063-4CF-EDIN-0	850	13.00	108.50	4.00	20.00	1596.21	0.00000	566.67	0.00000
Verizon C 21	SAMSUNG SON_MT6407	3700	23.34	108.50	4.00	50.00	43154.89	0.00073	1000.00	0.00007
AT&T A 22	CCI TPA65R-BU8D	700	13.05	98.20	4.00	40.00	3229.39	0.00001	466.67	0.00000
AT&T A 22	CCI TPA65R-BU8D	1900	14.35	98.20	4.00	40.00	4356.32	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 (μW/cm²)	General Population MPE Limit (μW/cm²)	General Population % MPE
AT&T A 22	CCI TPA65R-BU8D	2100	15.25	98.20	4.00	40.00	5359.45	0.00000	1000.00	0.00000
AT&T A 23	CCI DMP65R-BU8D	700	12.25	98.20	4.00	40.00	2686.09	0.00000	466.67	0.00000
AT&T A 23	CCI DMP65R-BU8D	850	12.55	98.20	4.00	40.00	2878.19	0.00000	566.67	0.00000
AT&T A 23	CCI DMP65R-BU8D	2300	14.25	98.20	4.00	25.00	2660.73	0.00000	1000.00	0.00000
AT&T A 24	Ericsson SON_AIR6449	3700	23.45	101.80	2.00	160.00	70819.03	0.00029	1000.00	0.00003
AT&T A 25	Ericsson SON_AIR6419	3500	23.45	98.20	2.00	160.00	70819.03	0.00035	1000.00	0.00004
AT&T B 26	CCI TPA65R-BU8D	700	13.05	98.20	4.00	40.00	3229.39	0.00421	466.67	0.00090
AT&T B 26	CCI TPA65R-BU8D	1900	14.35	98.20	4.00	40.00	4356.32	0.00364	1000.00	0.00036
AT&T B 26	CCI TPA65R-BU8D	2100	15.25	98.20	4.00	40.00	5359.45	0.00375	1000.00	0.00038
AT&T B 27	CCI DMP65R-BU8D	700	12.25	98.20	4.00	40.00	2686.09	0.00416	466.67	0.00089
AT&T B 27	CCI DMP65R-BU8D	850	12.55	98.20	4.00	40.00	2878.19	0.00375	566.67	0.00066
AT&T B 27	CCI DMP65R-BU8D	2300	14.25	98.20	4.00	25.00	2660.73	0.00255	1000.00	0.00026
AT&T B 28	Ericsson SON_AIR6449	3700	23.45	101.80	2.00	160.00	70819.03	0.05347	1000.00	0.00535
AT&T B 29	Ericsson SON_AIR6419	3500	23.45	98.20	2.00	160.00	70819.03	0.05002	1000.00	0.00500
AT&T C 30	CCI TPA65R-BU8D	700	13.05	98.20	4.00	40.00	3229.39	0.00002	466.67	0.00000
AT&T C 30	CCI TPA65R-BU8D	1900	14.35	98.20	4.00	40.00	4356.32	0.00001	1000.00	0.00000
AT&T C 30	CCI TPA65R-BU8D	2100	15.25	98.20	4.00	40.00	5359.45	0.00001	1000.00	0.00000
AT&T C 31	CCI DMP65R-BU8D	700	12.25	98.20	4.00	40.00	2686.09	0.00001	466.67	0.00000
AT&T C 31	CCI DMP65R-BU8D	850	12.55	98.20	4.00	40.00	2878.19	0.00000	566.67	0.00000
AT&T C 31	CCI DMP65R-BU8D	2300	14.25	98.20	4.00	25.00	2660.73	0.00000	1000.00	0.00000
AT&T C 32	Ericsson SON_AIR6449	3700	23.45	101.80	2.00	160.00	70819.03	0.00052	1000.00	0.00005
AT&T C 33	Ericsson SON_AIR6419	3500	23.45	98.20	2.00	160.00	70819.03	0.00067	1000.00	0.00007
Dish A 34	JMA MX08FRO665-21	600	11.35	88.50	4.00	40.00	2183.33	0.00000	400.00	0.00000
Dish A 34	JMA MX08FRO665-21	700	12.05	88.50	4.00	40.00	2565.19	0.00001	466.67	0.00000
Dish A 34	JMA MX08FRO665-21	1900	15.75	88.50	4.00	40.00	6013.40	0.00000	1000.00	0.00000
Dish A 34	JMA MX08FRO665-21	2100	16.75	88.50	4.00	40.00	7570.42	0.00000	1000.00	0.00000
Dish B 35	JMA MX08FRO665-21	600	11.35	88.50	4.00	40.00	2183.33	0.00579	400.00	0.00145
Dish B 35	JMA MX08FRO665-21	700	12.05	88.50	4.00	40.00	2565.19	0.00660	466.67	0.00141
Dish B 35	JMA MX08FRO665-21	1900	15.75	88.50	4.00	40.00	6013.40	0.00589	1000.00	0.00059
Dish B 35	JMA MX08FRO665-21	2100	16.75	88.50	4.00	40.00	7570.42	0.00481	1000.00	0.00048
Dish C 36	JMA MX08FRO665-21	600	11.35	88.50	4.00	40.00	2183.33	0.00003	400.00	0.00001
Dish C 36	JMA MX08FRO665-21	700	12.05	88.50	4.00	40.00	2565.19	0.00003	466.67	0.00001
Dish C 36	JMA MX08FRO665-21	1900	15.75	88.50	4.00	40.00	6013.40	0.00001	1000.00	0.00000
Dish C 36	JMA MX08FRO665-21	2100	16.75	88.50	4.00	40.00	7570.42	0.00000	1000.00	0.00000
							Cumulative Power Density:	**319.911349 μW/cm²**	**Cumulative % MPE:**	**31.997319%**

*NOTE: The MPE levels in this table are located at a 24' level on the nearest adjacent rooftop.

Summary

The theoretical calculations performed for this analysis yielded cumulative power density totals in all areas at 0' and 24’ that are within the allowable federal limits for public exposure to RF energy. Therefore, the site is **Compliant** with FCC rules and regulations.

Samuel Cosgrove
RF EME Technical Writer
Centerline Communications, LLC

Exhibit H

Mailing Receipts/Proof of Notice

UPS CampusShip: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. **GETTING YOUR SHIPMENT TO UPS**
   Customers with a Daily Pickup
   Your driver will pickup your shipment(s) as usual.

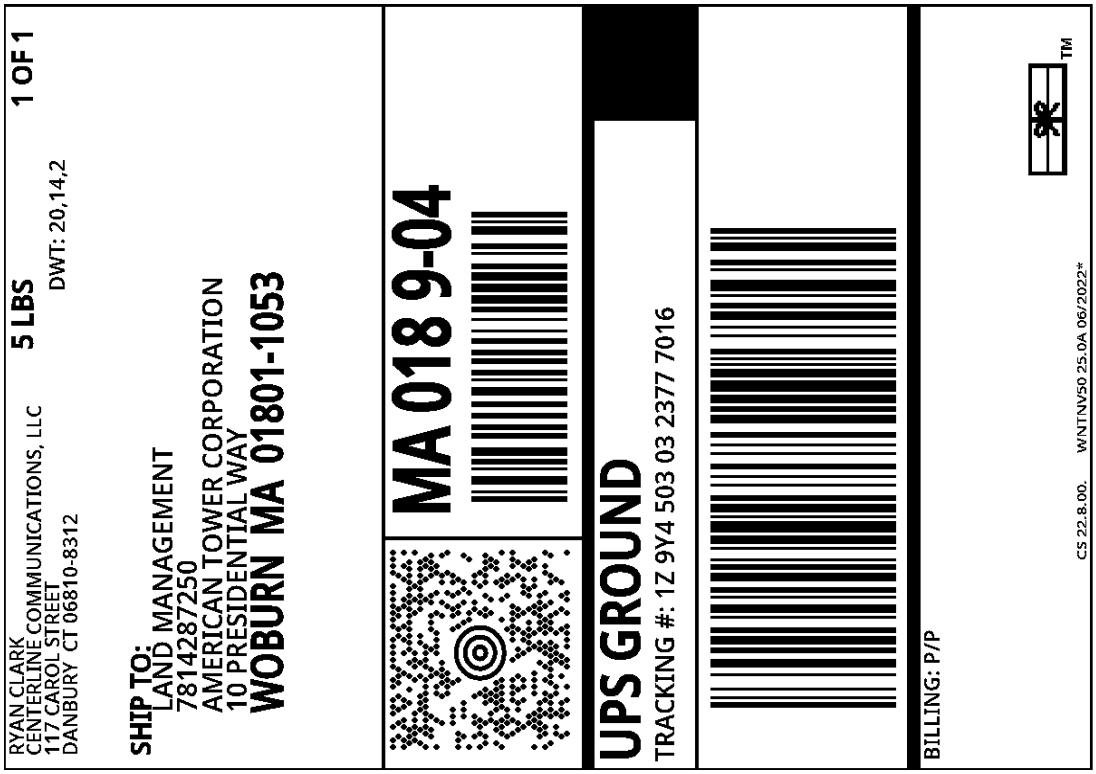
   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To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

UPS Access Point™
CVS STORE # 629
146 SOUTH ST
DANBURY ,CT 06810

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

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

FOLD HERE



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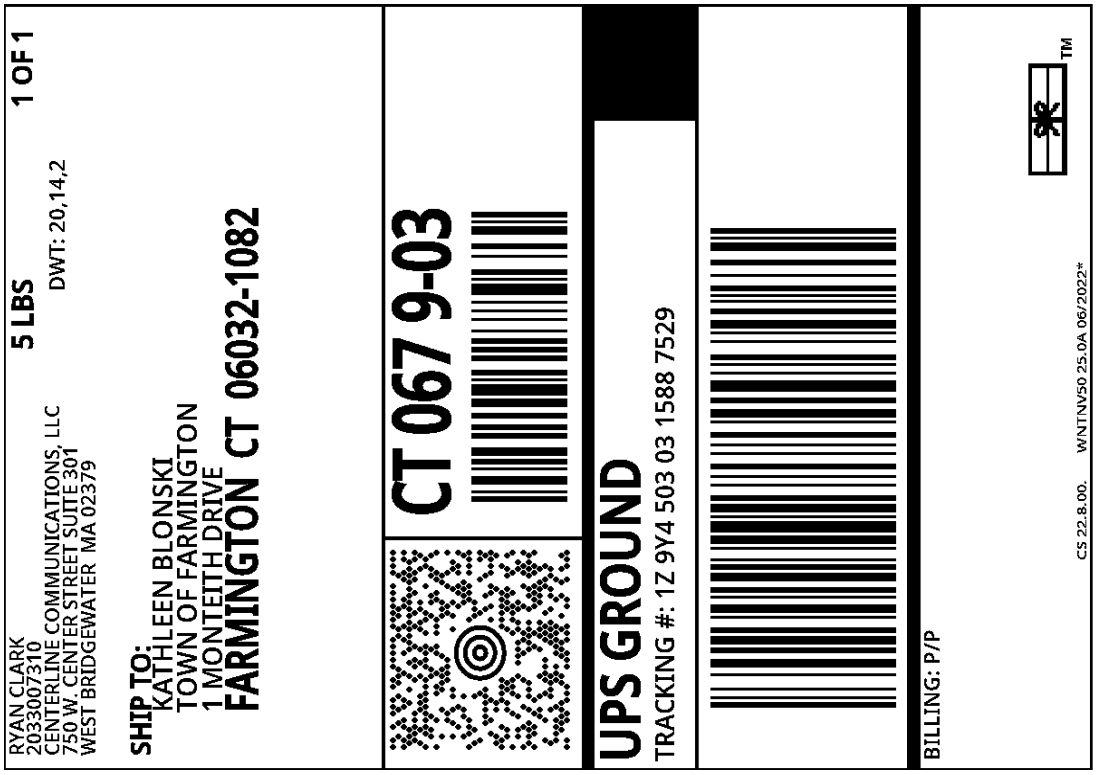
UPS Access Point™
CVS STORE # 972
555 WASHINGTON ST
SOUTH EASTON ,MA 02375

UPS Access Point™
CVS STORE # 7232
689 DEPOT ST
NORTH EASTON ,MA 02356

UPS Access Point™
TOWNLINE GENERAL STORE
450 E CENTER ST
WEST BRIDGEWATER ,MA 02379

FOLD HERE



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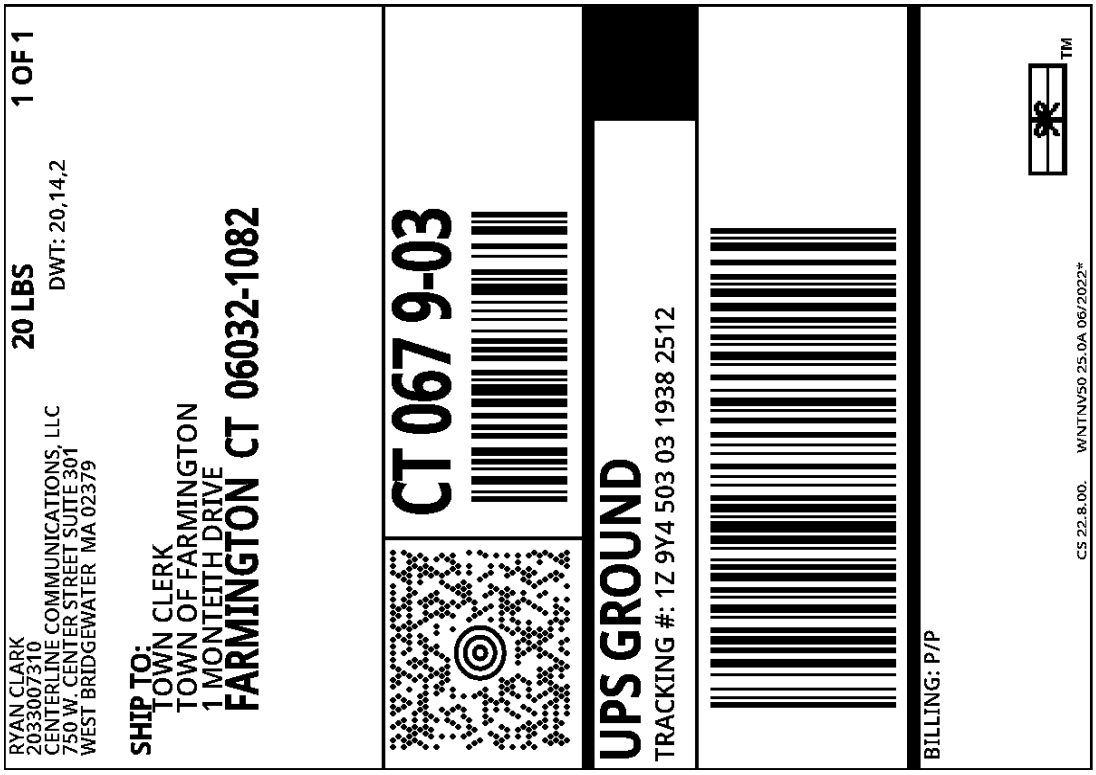

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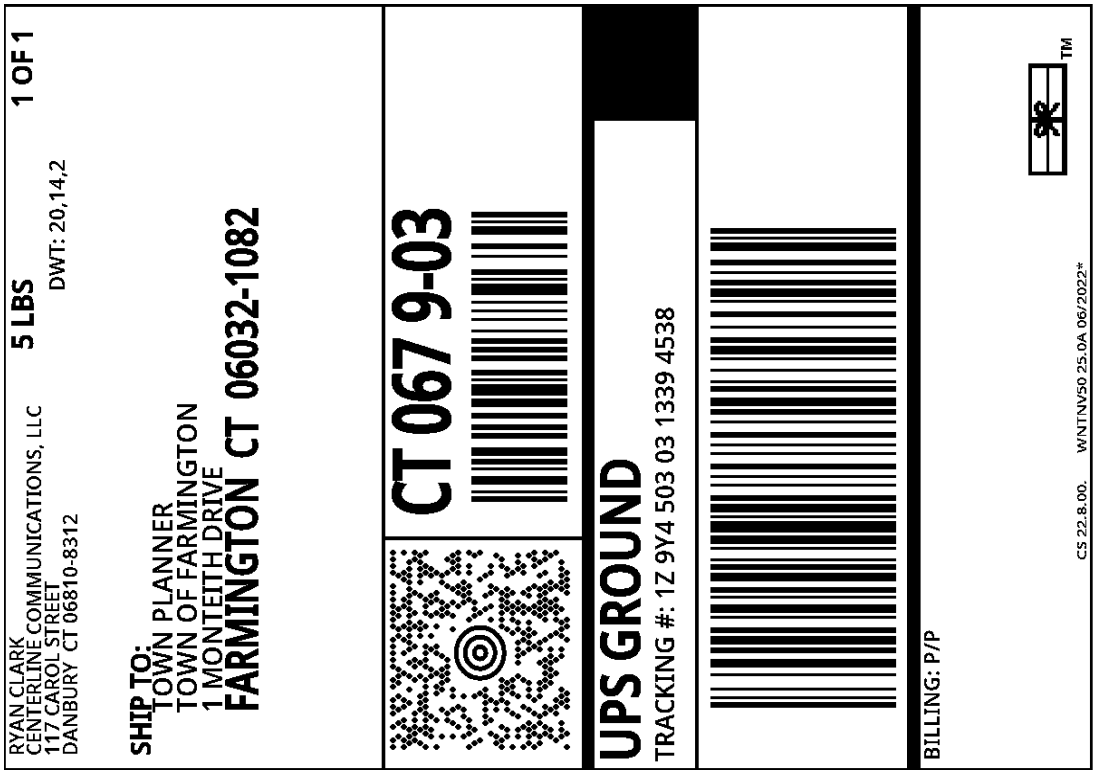
FOLD HERE



〈 Back to Shipping History

Your shipment from
CENTERLINE SITE ACQUISITION

Estimated delivery
The delivery date will be provided as soon as possible.

Label Created

On the Way

Out for Delivery

Delivery

Ship To
AMERICAN TOWER CORPORATION
LAND MANAGEMENT
10 PRESIDENTIAL WAY
WOBURN, MA 018011053 US

Get Updates ›

Change My Delivery

View Details

〈 Back to Shipping History

☆

Your shipment from
CENTERLINE SITE ACQUISITION

Estimated delivery
The delivery date will be provided as soon as possible.

Label Created

On the Way

Out for Delivery

Delivery

Ship To
TOWN OF FARMINGTON
KATHLEEN BLONSKI
1 MONTEITH DRIVE
FARMINGTON, CT 060321082 US

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View Details

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Your shipment from
CENTERLINE SITE ACQUISITION

Estimated delivery
The delivery date will be provided as soon as possible.

Label Created

On the Way

Out for Delivery

Delivery

Ship To
TOWN OF FARMINGTON
TOWN CLERK
1 MONTEITH DRIVE
FARMINGTON, CT 060321082 US

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Ask UPS

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Your shipment from
CENTERLINE SITE ACQUISITION

Estimated delivery
The delivery date will be provided as soon as possible.

Label Created

On the Way

Out for Delivery

Delivery

Ship To
TOWN OF FARMINGTON
TOWN PLANNER
1 MONTEITH DRIVE
FARMINGTON, CT 060321082 US

Get Updates ›

Change My Delivery

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