Transcend Wireless

10 Industrial Ave,
Suite 3
Mahwah NJ 07430

Phone: 201.684.0055
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July 25th, 2022

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

T-Mobile Northeast LLC – CTNL254A
Tower Share Application
45 Spaulding Road, Plainfield, CT 06374
Latitude- 41.67480556
Longitude- -71.8791

Dear Ms. Bachman,

This letter and attachments are submitted on behalf of T-Mobile Northeast LLC ("T-Mobile"). T-Mobile plans to install antennas and related equipment at the tower site located at 45 Spaulding Road, Plainfield, Connecticut.

T-Mobile will install nine (9) 600/700/1900/2100/2500/5G MHz antennas and six (6) RRUs at the 142' level of the existing 150' monopole tower. Three (3) Hybrid cables will also be installed. T-Mobile's equipment cabinets will be placed on an existing 10' x 15' concrete pad within the existing ground facility. Included are plans by American Tower, August 24, 2021, depicting the planned changes and attached as **Exhibit A**. Also included is a structural analysis prepared by American Tower, dated June 24, 2022, confirming that the existing tower is structurally capable of supporting the proposed equipment. This is attached and detailed in **Exhibit B**.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of T-Mobile's intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Kevin Cunningham, First Selectman of Plainfield, Mary Ann Chinatti, Town Planner, as well as the tower owner, American Tower, and the property owner, Robert and Nicole Sanchez. Please see the attached letter from American Tower authorizing the proposed shared use of this facility attached as **Exhibit C**.

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the monopole is at 150'; T-Mobile's proposed antennas will be located at a center line height of 142'.

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

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed local and state criteria. T-Mobile's plans include the installation of an emergency back-up generator; noise associated with this installation is exempt from State and local noise standards. The incremental effect of the proposed changes will be negligible.

4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 25.25%, as evidenced by **Exhibit D**.

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

A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting T-Mobile's proposed loading, with the tower modifications/reinforcements as detailed in the structural analysis. The structural analysis is included as **Exhibit B**.
B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this monopole in Plainfield. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit T-Mobile to obtain a building permit for the proposed installation. Further, a Letter of Authorization is included as **Exhibit C**, authorizing T-Mobile to file this application for shared use.
C. Environmental Feasibility. The proposed shared use of this facility would have minimal environmental impact. The installation of T-Mobile equipment at the 142' level of the existing 150' tower would have an insignificant visual impact on the area around the tower. T-Mobile's ground equipment would be installed within the existing facility compound. T-Mobile's shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by **Exhibit D**, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.
D. Economic Feasibility. T-Mobile will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Authorization has been provided by the owner to assist T-Mobile with this tower sharing application.
E. Public Safety Concerns. As discussed above, the monopole is structurally capable of supporting T-Mobile's proposed loading. T-Mobile is not aware of any public safety concerns relative to the proposed sharing of the existing monopole. T-Mobile's intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through Plainfield and nearby the facility.

Sincerely,

Eric Breun

Eric Breun
Transcend Wireless
1 International Blvd., Suite 400
Mahwah, New Jersey 07495
ebreun@transcendwireless.com
201-658-7728

CC: Kevin Cunningham – First Selectman
Mary Ann Chinatti – Town Planner
Robert & Nicole Sanchez - Property Owner
ATC – Tower Owner

VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: PLAINFIELD CT 6
ATC SITE NUMBER: 302498
T-MOBILE SITE NAME:CTNL254A
T-MOBILE SITE NUMBER:CTNL254A
SITE ADDRESS:45 SPAULDING ROAD
PLAINFIELD, CT 06374

LOCATION MAP

T-MOBILE COVERAGE STRATEGY COLOCATION PLAN
67E5A998E 6160 CONFIGURATION

COMPLIANCE CODE

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

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

UTILITY COMPANIES

POWER COMPANY: C. L.& P.
PHONE: (800) 286-2000

TELEPHONE COMPANY: AT&T
PHONE: (800) 288-2020

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

PROJECT SUMMARY

SITE ADDRESS:

45 SPAULDING ROAD

PLAINFIELD, CT 06374

COUNTY: WINDHAM

GEOGRAPHIC COORDINATES:

LATITUDE: 41.67480556

LONGITUDE: -71.8791

GROUND ELEVATION: 560' 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:

T6 UNISON SITE MANAGEMENT LLC
45 SPAULDING ROAD
- PLAINFIELD - CT - 06374

PLANNING / APPLICANT'S REPRESENTATIVE:

THE DERNA GROUP
22431 ANTONIO PARKWAY
SUITE B160-234
RANCHO SANTA MARGARITA, CA 92688
CONTACT: RACHEL BRUIN
PHONE: (805) 215-9444
EMAIL: RBRUIN@DERNAGRP.COM

PROJECT DESCRIPTION

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

PROJECT NOTES

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

PROJECT LOCATION DIRECTIONS

FROM BOSTON - I 90 WEST TO I 395 SOUTH TO EXIT 88 AND TURN LEFT ON TO RT 14A EAST. FOLLOW AND THEN TURN RIGHT ONTO SPAULDING RD . SITE WILL BE UP ON THE RIGHT.

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	1	05/03/2022	MT
G-002	GENERAL NOTES	0	08/24/2021	AM
C-001	OVERALL SITE PLAN	0	08/24/2021	AM
C-101	DETAILED SITE PLAN	0	08/24/2021	AM
C-201	TOWER ELEVATION	1	05/03/2022	MT
C-401	ANTENNA INFORMATION & SCHEDULE	1	05/03/2022	MT
C-501	MOUNT DETAILS	0	08/24/2021	AM
C-502	CONSTRUCTION DETAILS	1	05/03/2022	MT
C-503	CONSTRUCTION DETAILS	0	08/24/2021	AM
E-101	GROUNDING DETAILS & ELECTRICAL SCHEMATIC	1	05/03/2022	MT
E-501	GROUNDING DETAILS	0	08/24/2021	AM
E-601	PANEL SCHEDULE	0	08/24/2021	AM
R-601	SUPPLEMENTAL: RFDS	0	-	-
R-602	SUPPLEMENTAL: EQUIPMENT DETAILS	1	-	-
R-603	SUPPLEMENTAL: EQUIPMENT DETAILS	1	-	-
R-604	SUPPLEMENTAL: CABINET DETAILS	0	-	-
R-605	SUPPLEMENTAL: CABINET DETAILS	0	-	-
R-606	SUPPLEMENTAL: BATTERY DETAILS	0	-	-

AMERICAN TOWER®

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

REV.	DESCRIPTION	BY	DATE
0	CONSTRUCTION	AM	08/24/2021
1	CONSTRUCTION	MT	05/03/2022

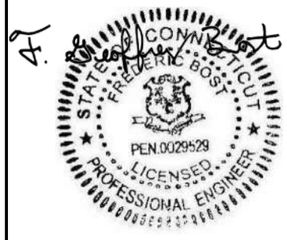
ATC SITE NUMBER:
302498

ATC SITE NAME:
PLAINFIELD CT 6

T-MOBILE SITE NAME:
CTNL254A

SITE ADDRESS:
45 SPAULDING ROAD
PLAINFIELD, CT 06374

SEAL:



05/03/22

T-Mobile

DATE DRAWN:	05/03/2022
ATC JOB NO:	13700697_D3
CUSTOMER ID:	CTNL254A
CUSTOMER #:	CTNL254A

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	1

GENERAL CONSTRUCTION NOTES:

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

STRUCTURAL STEEL NOTES:

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

SPECIAL CONSTRUCTION ANTENNA INSTALLATION NOTES:

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

CONCRETE AND REINFORCING STEEL NOTES:

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

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

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

ELECTRICAL NOTES:

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

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

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www.engineeredtowersolutions.com

REV.	DESCRIPTION	BY	DATE
0	CONSTRUCTION	AM	08/24/2021

ATC SITE NUMBER:
302498

ATC SITE NAME:
PLAINFIELD CT 6

T-MOBILE SITE NAME:
CTNL254A

SITE ADDRESS:
45 SPAULDING ROAD
PLAINFIELD, CT 06374

SEAL:

08/24/21

T-Mobile

DATE DRAWN:	08/24/2021
ATC JOB NO:	13700697_D3
CUSTOMER ID:	CTNL254A
CUSTOMER #:	CTNL254A

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	0

NOTES:

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

1 OVERALL SITE PLAN

GRAPHIC SCALE

40 0 20 40

(IN FEET)
1 UNIT = 40 FEET

N

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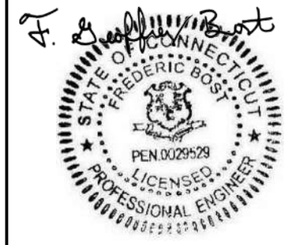
PLAINFIELD, CT 06374

SEAL:



08/24/21

T-Mobile

DATE DRAWN:	08/24/2021
ATC JOB NO:	13700697_D3
CUSTOMER ID:	CTNL254A
CUSTOMER #:	CTNL254A

OVERALL SITE PLAN

SHEET NUMBER:	REVISION:
C-001	0

SITE PLAN NOTES:

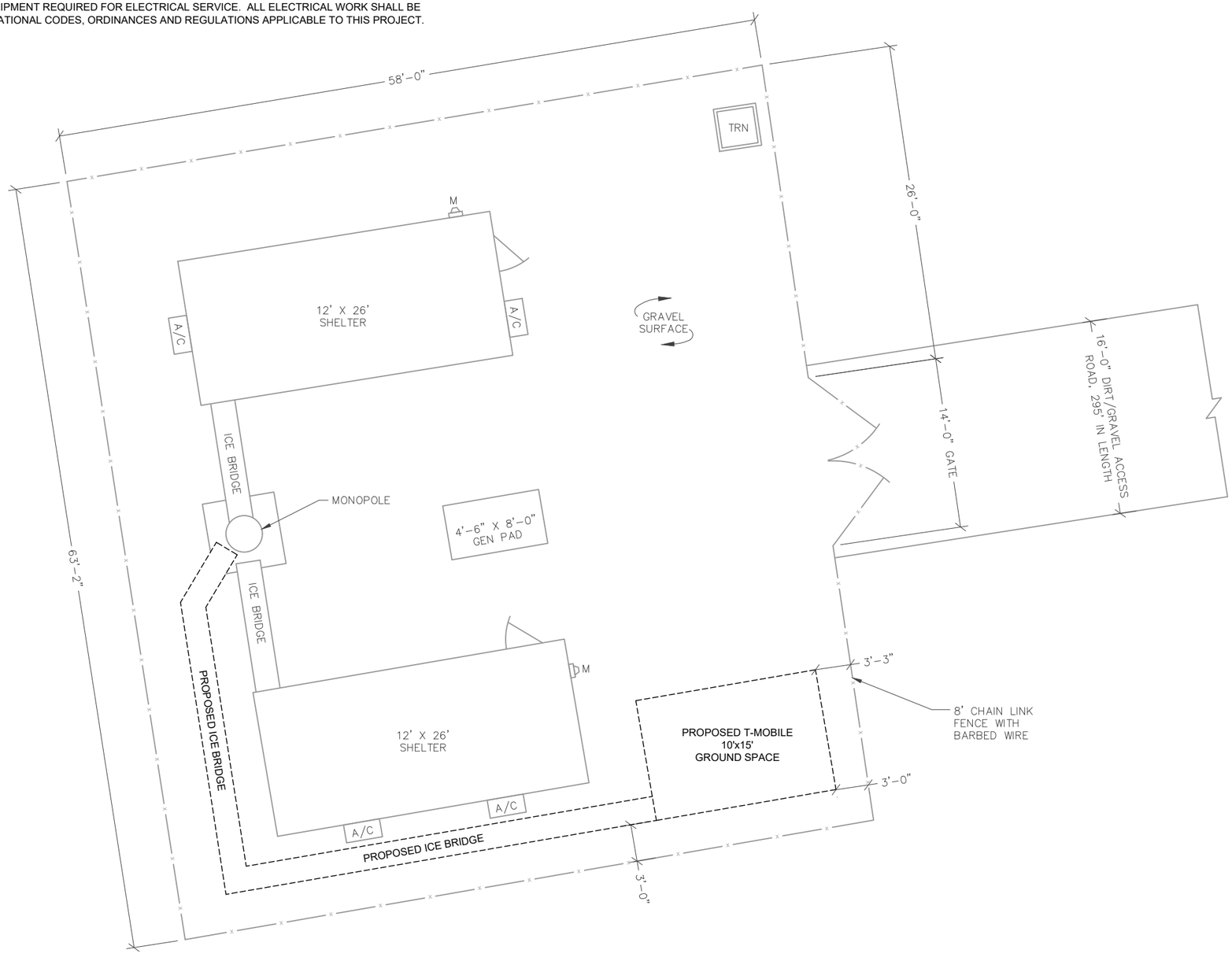
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.

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
——x——	CHAINLINK FENCE



1 DETAILED SITE PLAN

GRAPHIC SCALE

5 0 2 5

(IN FEET)
1 UNIT = 5 FEET

PROPOSED CABLE LENGTH:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **195'-0"**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES), CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.

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REV.	DESCRIPTION	BY	DATE
0	CONSTRUCTION	AM	08/24/2021

ATC SITE NUMBER:
302498

ATC SITE NAME:
PLAINFIELD CT 6

T-MOBILE SITE NAME:
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SITE ADDRESS:
45 SPAULDING ROAD
PLAINFIELD, CT 06374

SEAL:

08/24/21

T-Mobile

DATE DRAWN:	08/24/2021
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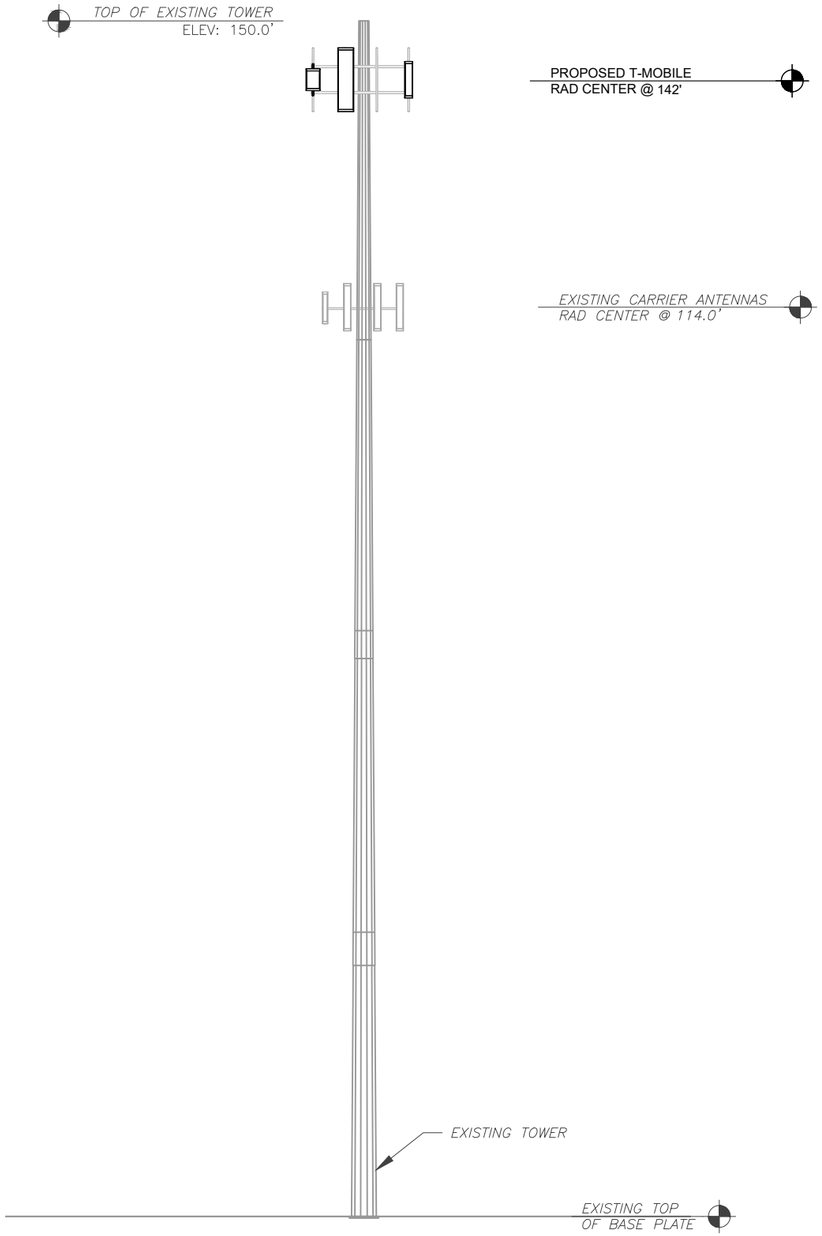
CUSTOMER ID:	CTNL254A
CUSTOMER #:	CTNL254A

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	0



1 TOWER ELEVATION
SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY CENTEK ENGINEERING, DATED 07/22/2021, THE PROPOSED MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.

TOWER NOTE:

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

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REV.	DESCRIPTION	BY	DATE
0	CONSTRUCTION	AM	08/24/2021
1	CONSTRUCTION	MT	05/03/2022

ATC SITE NUMBER:
302498

ATC SITE NAME:
PLAINFIELD CT 6

T-MOBILE SITE NAME:
CTNL254A

SITE ADDRESS:
45 SPAULDING ROAD
PLAINFIELD, CT 06374

SEAL:

05/03/22

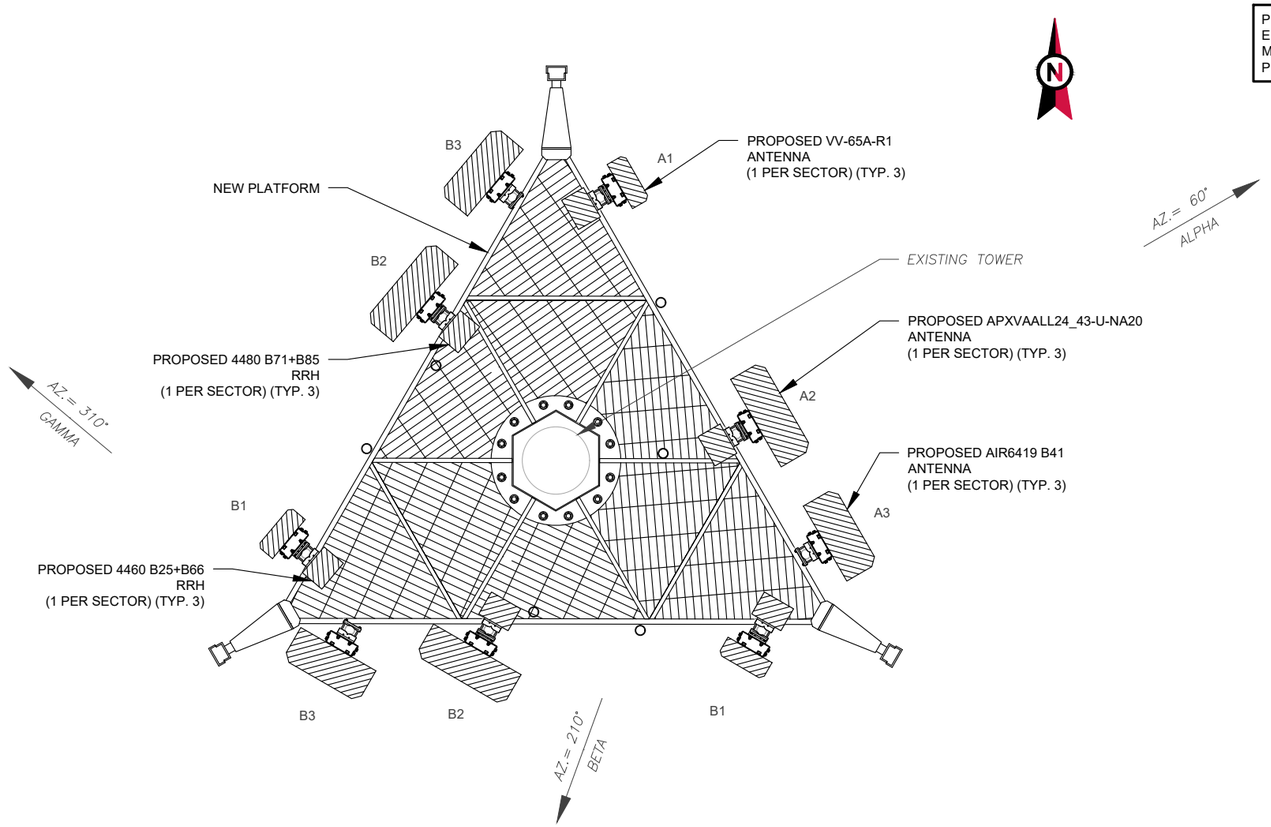
T-Mobile

DATE DRAWN:	05/03/2022
ATC JOB NO:	13700697_D3
CUSTOMER ID:	CTNL254A
CUSTOMER #:	CTNL254A

TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-201	1

PER MOUNT ANALYSIS COMPLETED BY CENTEK ENGINEERING, DATED 07/22/2021, THE PROPOSED MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.



1 FINAL ANTENNA PLAN

SCALE: N.T.S.

FINAL ANTENNA SCHEDULE								
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	ADDITIONAL TOWER MOUNTED EQUIPMENT	DISTRIBUTION BOX / CABLING
ALPHA	142'	60°	A1	VV-65A-R1	L2100/L1900	0/2	4460 B25+B66	(3) 1.99" HYBRID CABLE(S)
			A2	APXVAALL24_43-U-NA20	L600/L700	0/2	4480 B71+B85	
			A3	AIR6419 B41	L2500/N2500	0/2	-	
BETA	142'	210°	B1	VV-65A-R1	L2100/L1900	0/2	4460 B25+B66	
			B2	APXVAALL24_43-U-NA20	L600/L700	0/2	4480 B71+B85	
			B3	AIR6419 B41	L2500/N2500	0/2	-	
GAMMA	142'	310°	C1	VV-65A-R1	L2100/L1900	0/2	4460 B25+B66	
			C2	APXVAALL24_43-U-NA20	L600/L700	0/2	4480 B71+B85	
			C3	AIR6419 B41	L2500/N2500	0/2	-	
1. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS. 2. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.								

2 ANTENNA SCHEDULE

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

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0	CONSTRUCTION	AM	08/24/2021
1	CONSTRUCTION	MT	05/03/2022

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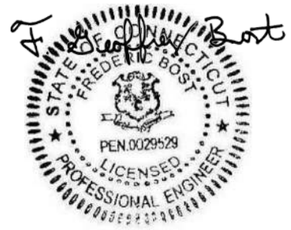
SITE ADDRESS:
45 SPAULDING ROAD
PLAINFIELD, CT 06374

SEAL:



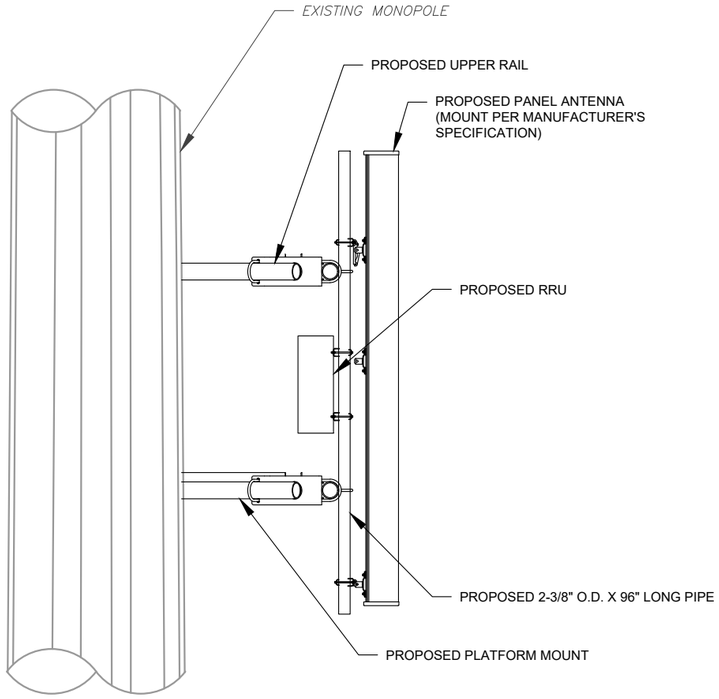
05/03/22

T-Mobile

DATE DRAWN:	05/03/2022
ATC JOB NO:	13700697_D3
CUSTOMER ID:	CTNL254A
CUSTOMER #:	CTNL254A

ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-401	1



1 PROPOSED ANTENNA MOUNTING DETAIL (ELEVATION)

SCALE: NOT TO SCALE

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302498

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SEAL:

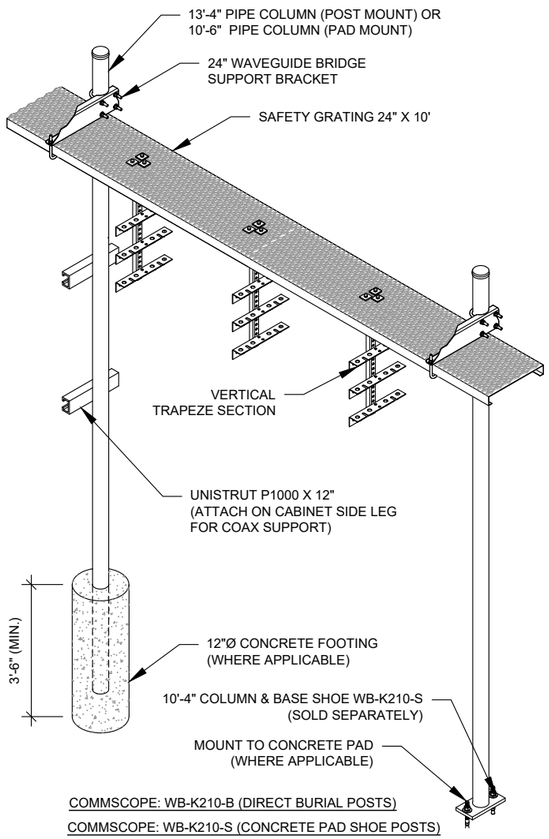
08/24/21

T-Mobile

DATE DRAWN:	08/24/2021
ATC JOB NO:	13700697_D3
CUSTOMER ID:	CTNL254A
CUSTOMER #:	CTNL254A

MOUNT DETAILS

SHEET NUMBER:	REVISION:
C-501	0

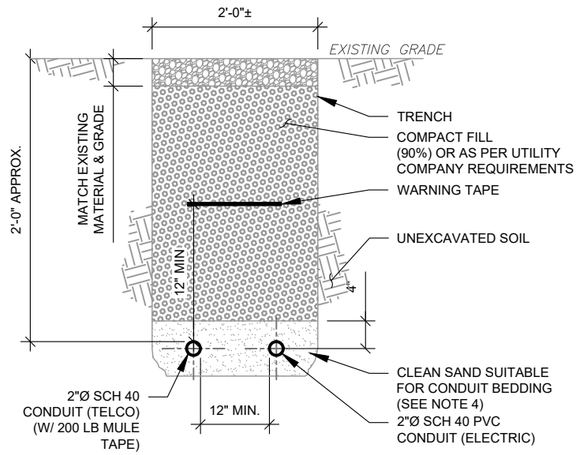


CONSTRUCTION NOTE:

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

1 WAVEGUIDE BRIDGE KIT

SCALE: NOT TO SCALE

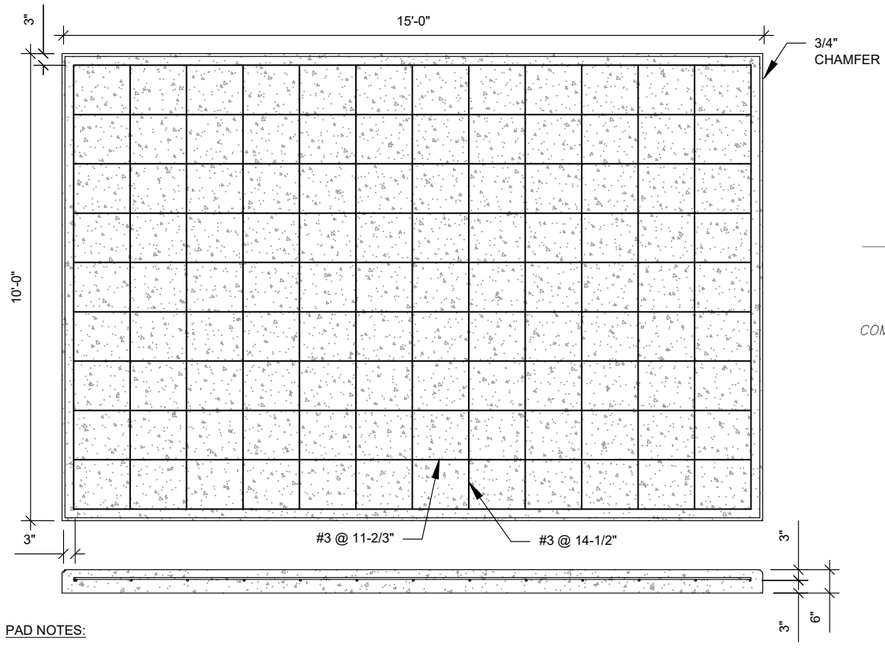


TRENCH NOTES:

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. CONCRETE ENCASE CONDUIT WHEN TRENCHING UNDER SITE ACCESS ROAD.

2 TELCO AND POWER CONDUIT JOINT TRENCH

SCALE: N.T.S.

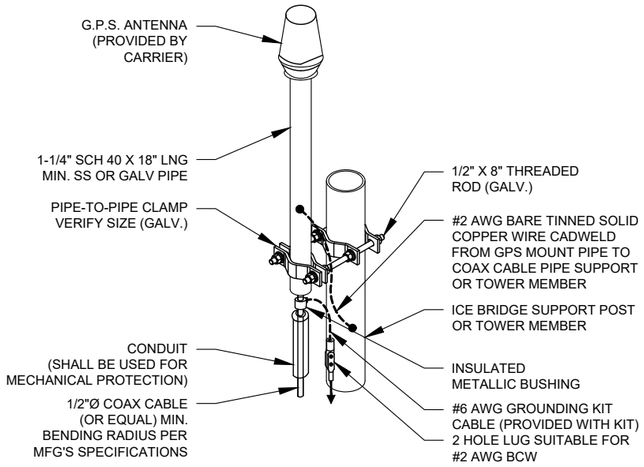


PAD NOTES:

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

4 REINFORCED PAD LAYOUT

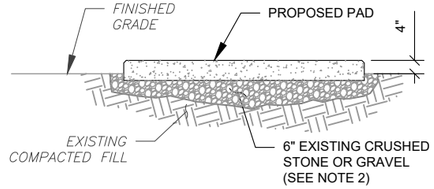
SCALE: NOT TO SCALE



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: NOT TO SCALE



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: NOT TO SCALE

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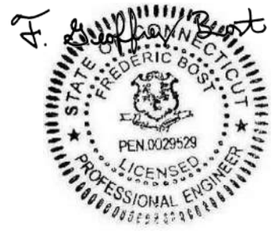


08/24/21

T-Mobile

DATE DRAWN:	08/24/2021
ATC JOB NO:	13700697_D3
CUSTOMER ID:	CTNL254A
CUSTOMER #:	CTNL254A

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-503	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.

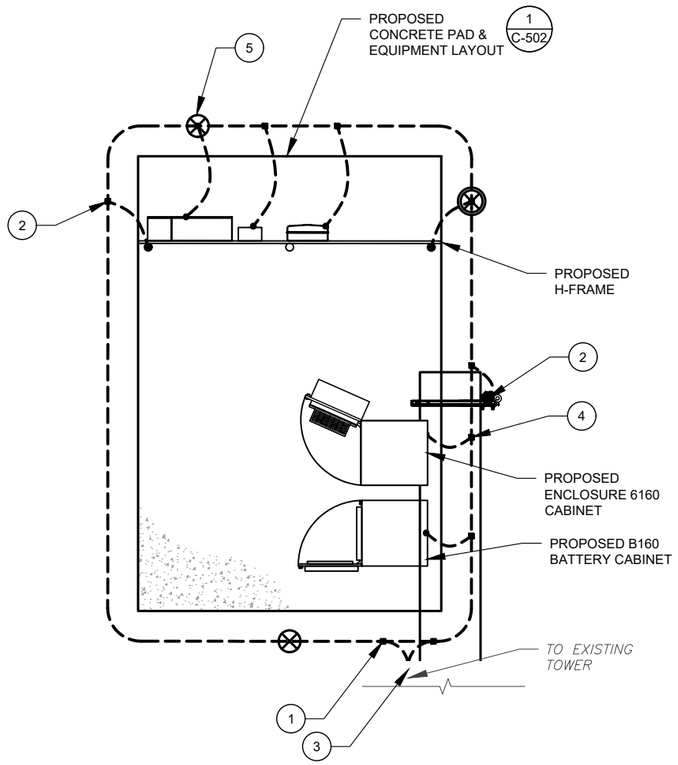
3. GROUND RINGS SHALL BE:
   - A. MINIMUM 30" BELOW GRADE, OR BELOW FROST LINE WHICHEVER IS DEEPER.
   - B. MINIMUM 2' FROM FOUNDATIONS, FOOTINGS, OTHER GROUNDING SYSTEMS AND ALL CONDUCTIVE OBJECTS.
   - C. WITH MINIMUM 12" BEND RADII.
   - D. WITH ALL CONNECTIONS IN CONTACT WITH EARTH, BONDED BY EXOTHERMIC 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.

EQUIPMENT POWER NOTES:

1. (3) #3/0 AWG CU, (1) #6 AWG CU GND IN 2" CONDUIT FROM UTILITY METER TO PPC
2. 2" CONDUIT W/ MULE TAPE FOR TELCO FEEDER SERVICE TO TELCO SOURCE PER UTILITY
3. (2) #12 CU, (1) #12 AWG CU GND IN 3/4" CONDUIT FROM ENCLOSURE 6160 TO AAV GFCI RECEPTACLE
4. (3) #3/0 AWG CU, (1) #6 AWG CU GND IN 2" CONDUIT FROM PPC TO ENCLOSURE 6160
5. 2" CONDUIT, FOR CAT6 FROM CIENA TO ENCLOSURE 6160
6. 2" CONDUIT FOR DC CABLING FROM ENCLOSURE 6160 TO B160 PER MANUFACTURER'S SPECIFICATIONS



1 DETAILED GROUNDING PLAN

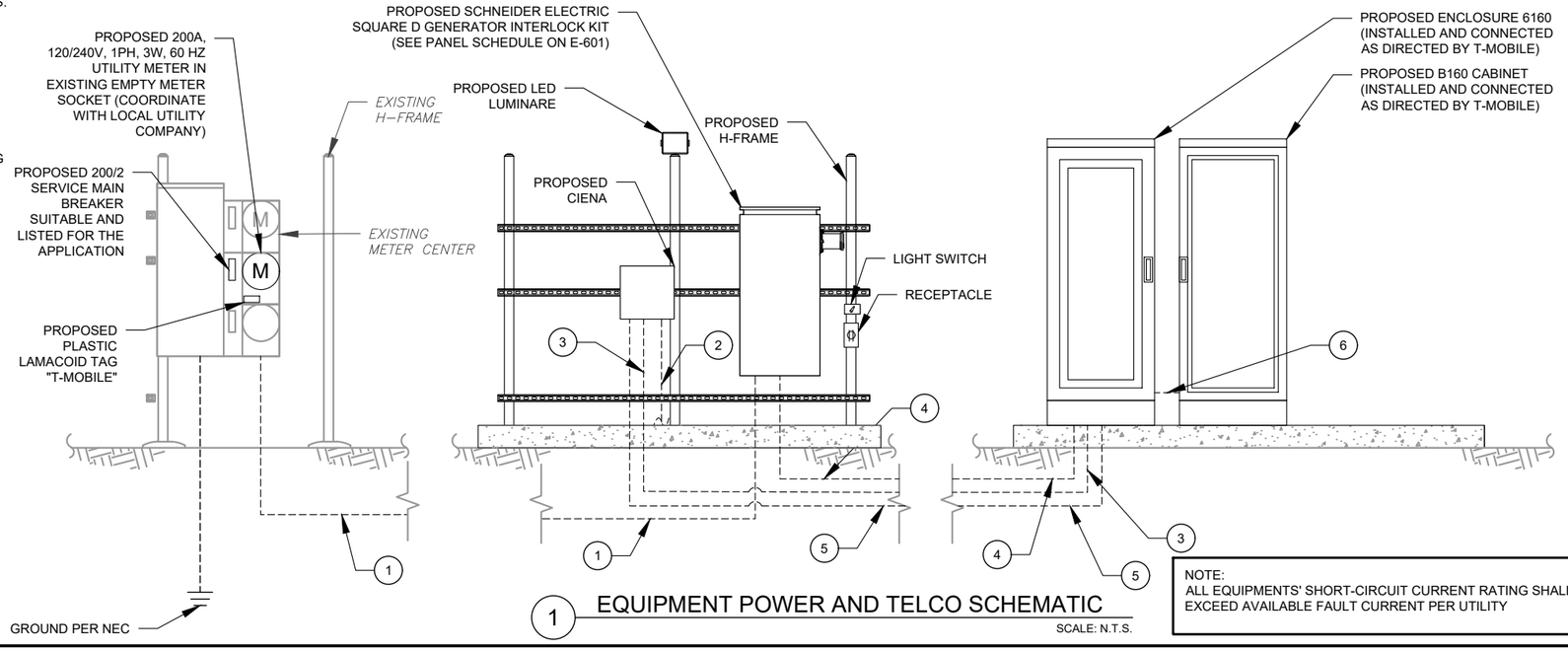
SCALE: NOT TO SCALE

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.



1 EQUIPMENT POWER AND TELCO SCHEMATIC

SCALE: N.T.S.

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

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REV.	DESCRIPTION	BY	DATE
0	CONSTRUCTION	AM	08/24/2021
1	CONSTRUCTION	MT	05/03/2022

ATC SITE NUMBER:
302498

ATC SITE NAME:
PLAINFIELD CT 6

T-MOBILE SITE NAME:
CTNL254A

SITE ADDRESS:
45 SPAULDING ROAD
PLAINFIELD, CT 06374

SEAL:

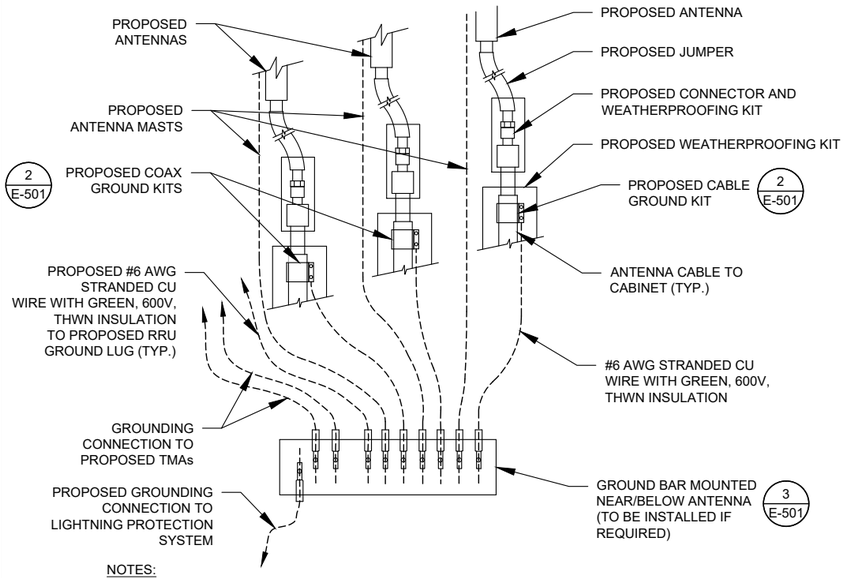
05/03/22

T-Mobile

DATE DRAWN:	05/03/2022
ATC JOB NO:	13700697_D3
CUSTOMER ID:	CTNL254A
CUSTOMER #:	CTNL254A

GROUNDING DETAILS & ELECTRICAL SCHEMATIC

SHEET NUMBER:	REVISION:
E-101	1

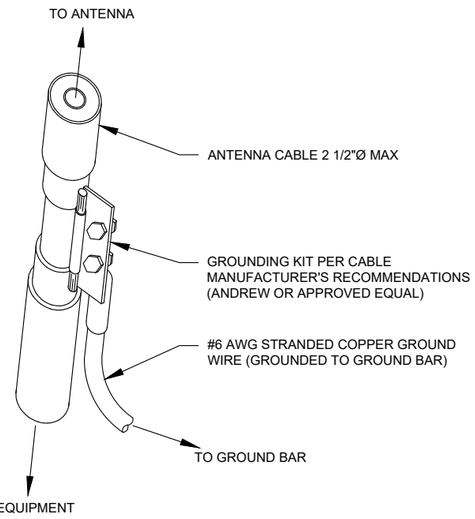


NOTES:

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

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: N.T.S.

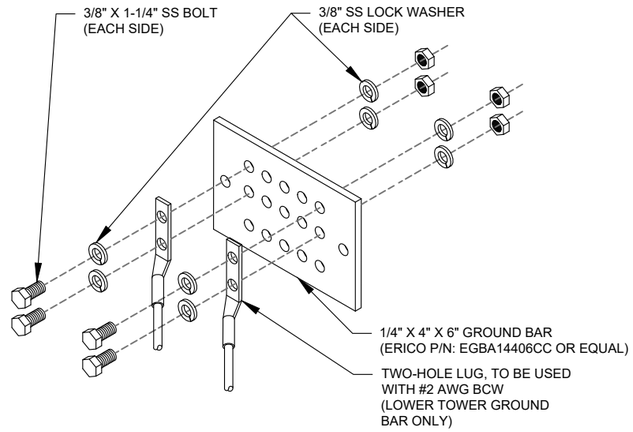


GROUND KIT NOTES:

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

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: N.T.S.

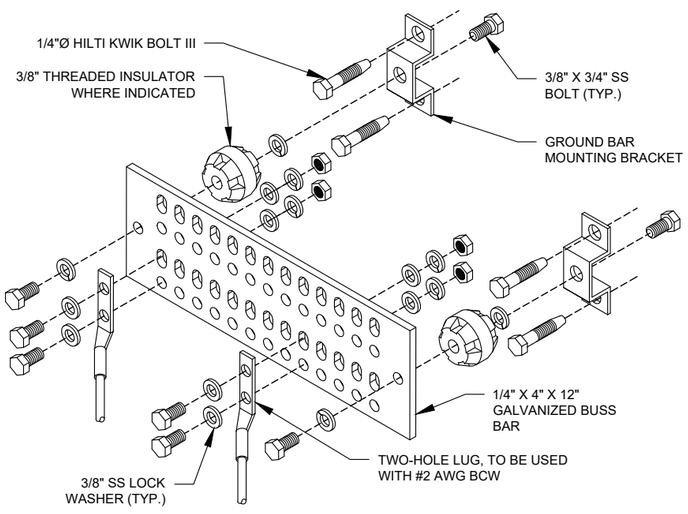


GROUND BAR NOTES:

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

3 TOWER GROUND BAR DETAIL

SCALE: N.T.S.

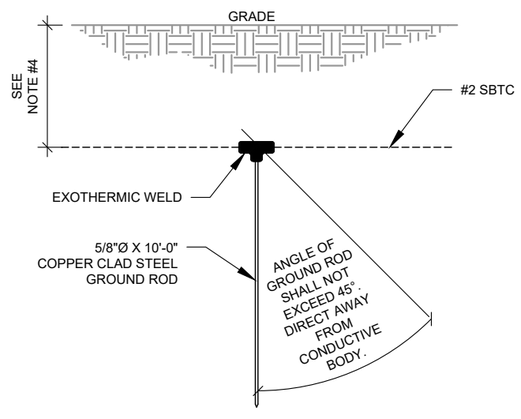


GROUND BAR NOTES

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.

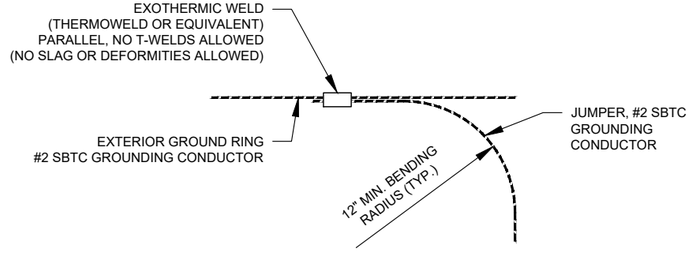


NOTES:

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.

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REV.	DESCRIPTION	BY	DATE
0	CONSTRUCTION	AM	08/24/2021

ATC SITE NUMBER:
302498

ATC SITE NAME:
PLAINFIELD CT 6

T-MOBILE SITE NAME:
CTNL254A

SITE ADDRESS:
45 SPAULDING ROAD
PLAINFIELD, CT 06374

SEAL:

08/24/21

T-Mobile

DATE DRAWN:	08/24/2021
ATC JOB NO:	13700697_D3
CUSTOMER ID:	CTNL254A
CUSTOMER #:	CTNL254A

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0

PANEL DESIGNATION:	***TMO***	TYPE:	LIGHTING & APPLIANCE	SYSTEM:	120/240V, 1Ø, 3W, 20 CKT	LOCATION:	TMO LEASE EQUIPMENT AREA
		MOUNTING:	SURFACE	MAIN BREAKER (MB):	200A		
		ENCLOSURE:	NEMA 3R	MAIN BUS RATING:	200A	PANEL NOTES:	PROPOSED
				MIN. A.I.C. RATING:	N/A		

CONNECTED LOAD (kVA)		BRIEF DESCRIPTION	FEEDER OR BRANCH CIRCUIT								FEEDER OR BRANCH CIRCUIT							BRIEF DESCRIPTION	CONNECTED LOAD (kVA)	
			BREAKER		CIRCUIT			POLE	CIRC.		CIRC.	POLE	CIRCUIT			BREAKER				
A	B		AMPS	POLES	WIRE	GND	COND.	NO.	NOTES		NOTES	NO.	COND.	GND	WIRE	POLES	AMPS		A	B
7.50		ENCLOSURE 6160	150	2	3-#1/0	#6	2"	1				2	1/2"	#12	2-#12	1	20	RECEPTACLE	0.18	
	7.50							3				4	1/2"	#12	2-#12	1	20	LIGHT		0.50
0.01		SURGE	60	2	3-#6	#10	1"	5				6	1/2"	#12	2-#12	1	20	AAV GFCI RECEPTACLE	0.18	
	0.01							7				8								0.00
0.00								9				10							0.00	
	0.00							11				12								0.00
0.00								13				14							0.00	
	0.00							15				16								0.00
0.00								17				18							0.00	
	0.00							19				20								0.00
7.5	7.5								**A**	**B**	**TOTAL**								0.4	0.5
									7.9	8.0	15.9	CONNECTED LOAD (kVA)								
									7.9	8.0	15.9	DEMAND LOAD (kVA)								

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

1 PANEL SCHEDULE

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REV.	DESCRIPTION	BY	DATE
0	CONSTRUCTION	AM	08/24/2021

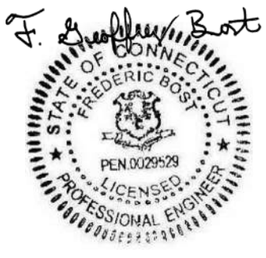
ATC SITE NUMBER:
302498

ATC SITE NAME:
PLAINFIELD CT 6

T-MOBILE SITE NAME:
CTNL254A

SITE ADDRESS:
45 SPAULDING ROAD
PLAINFIELD, CT 06374

SEAL:



08/24/21

T-Mobile

DATE DRAWN:	08/24/2021
ATC JOB NO:	13700697_D3
CUSTOMER ID:	CTNL254A
CUSTOMER #:	CTNL254A

PANEL SCHEDULE

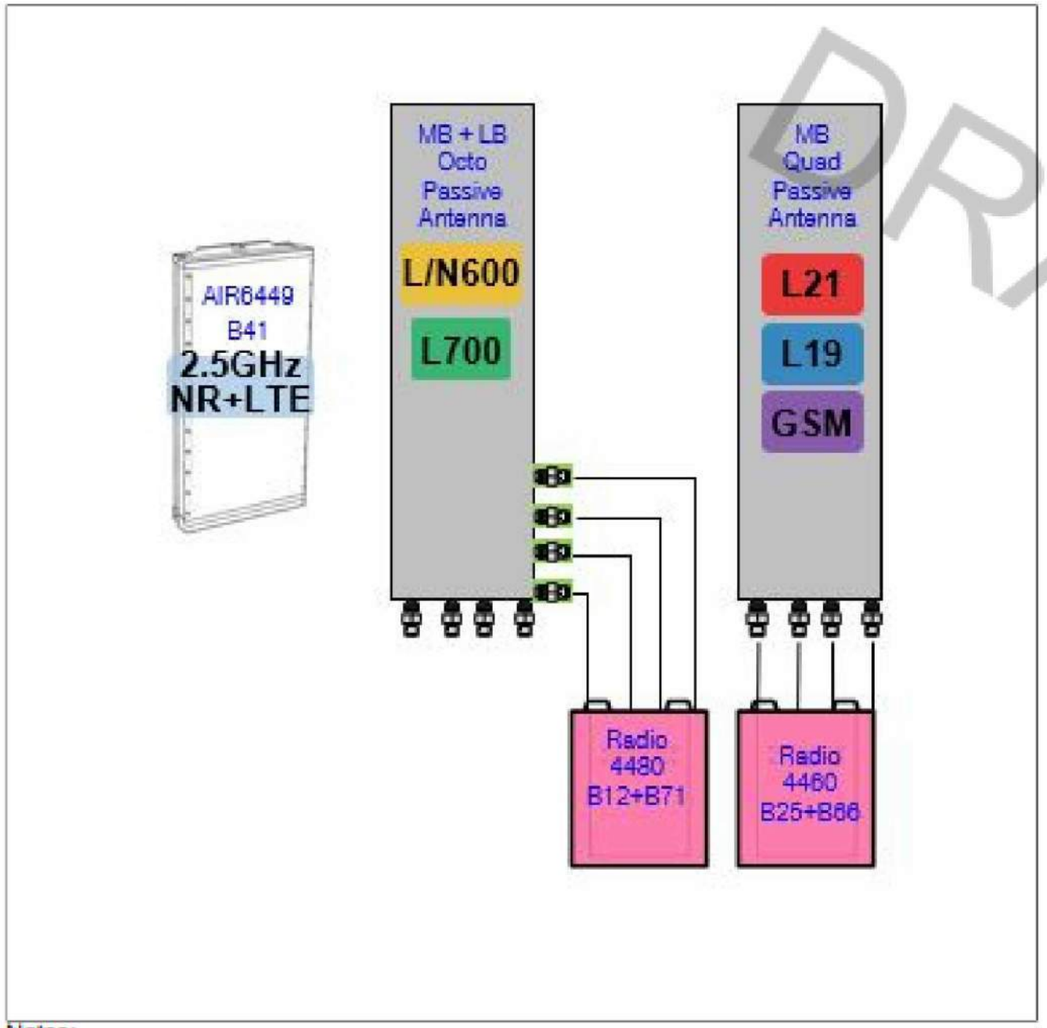
SHEET NUMBER:	REVISION:
E-601	0

Existing RAN Equipment
----- This section is intentionally blank. -----

Proposed RAN Equipment

Template: 67E5A968E 6160

Enclosure	1	2	3
Enclosure Type	Enclosure 6160	RBS 6601	B160
Baseband	BB 6648 (L700, L800, N600) BB 6648 (L2500, N2500) BB 6646 (L2100, L1900)	DUG20 (G1900)	
Transport System	CSR IXRe V2 (Gen2)		
Functionality Groups	Ericsson Hybrid Trunk 6/24 4AWG *Select Length* (x 3)		
RAN Scope of Work:			



Notes:

1 CABINET CONFIGURATION
SCALE: NOT TO SCALE

2 ANTENNA CONFIGURATION
SCALE: NOT TO SCALE

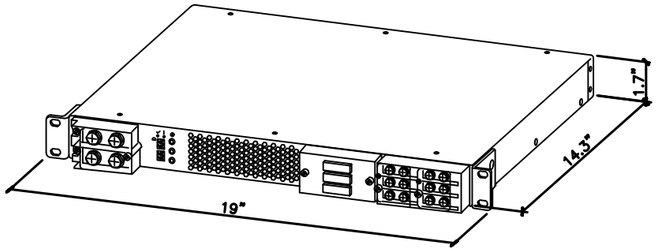
NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

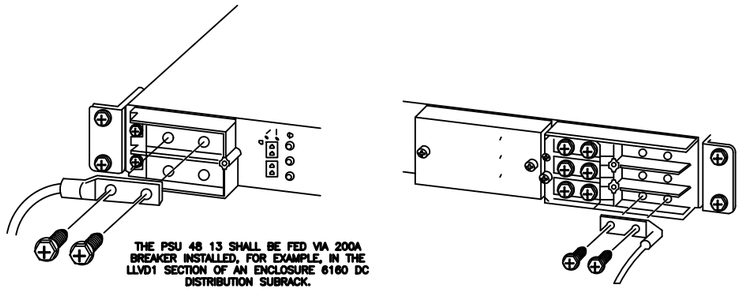
SUPPLEMENTAL: RFDS

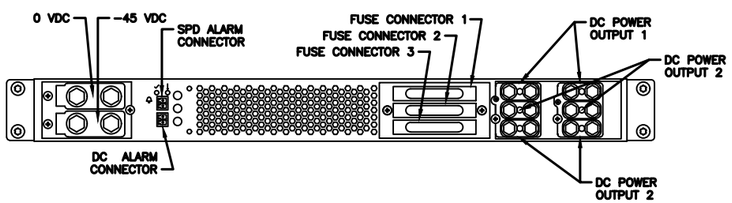
SHEET NUMBER:	REVISION:
R-601	0

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

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



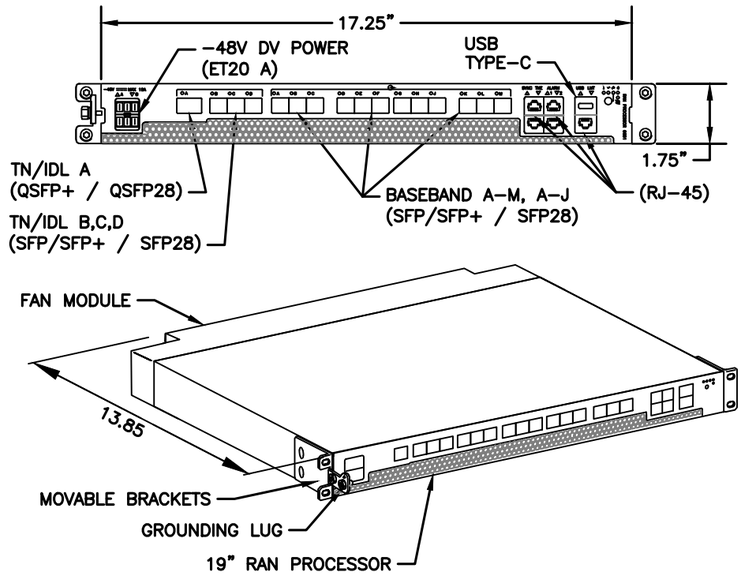




1 SKU# 34132 - PSU 48 13

SCALE: N.T.S.

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



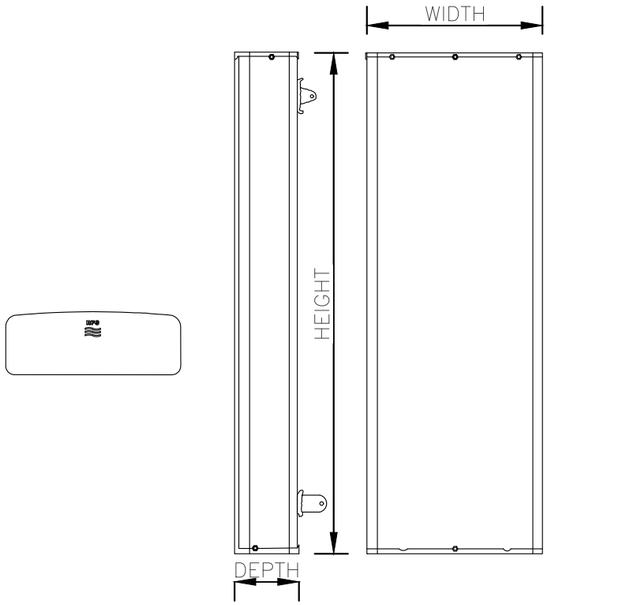
2 34553 - ERICSSON 6651 RAN PROCESSOR

SCALE: N.T.S.

SUPPLEMENTAL: EQUIPMENT DETAILS

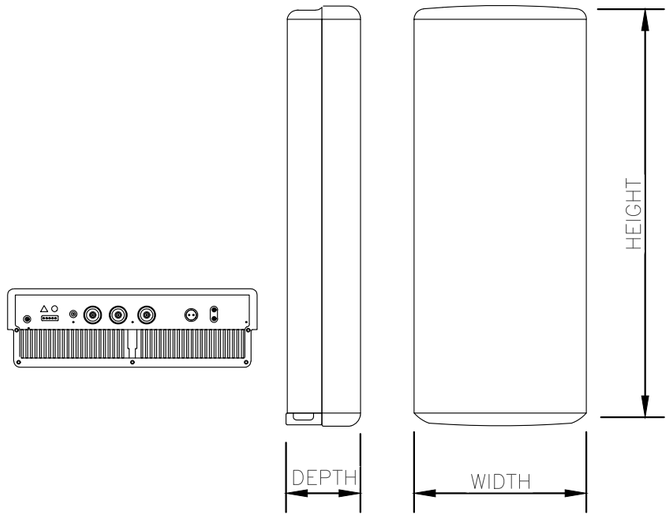
SHEET NUMBER:	REVISION:
R-602	1

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



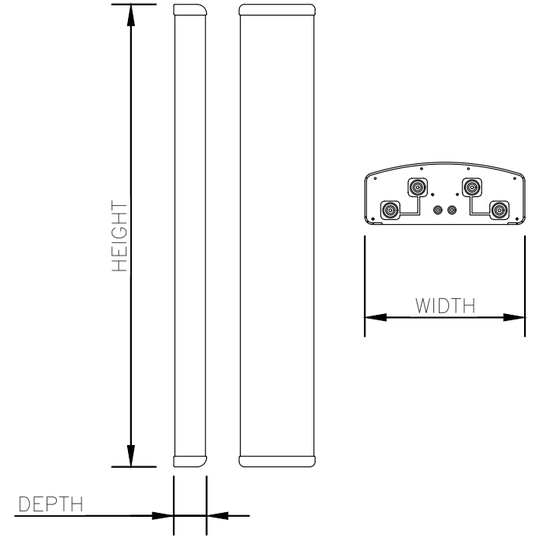
1 RFS - APXVALL24_43-U-NA20 ANTENNA DETAIL
SCALE: N.T.S.

HEIGHT	WIDTH	DEPTH	WEIGHT
33.11"	20.51"	8.54"	104.00 LBS



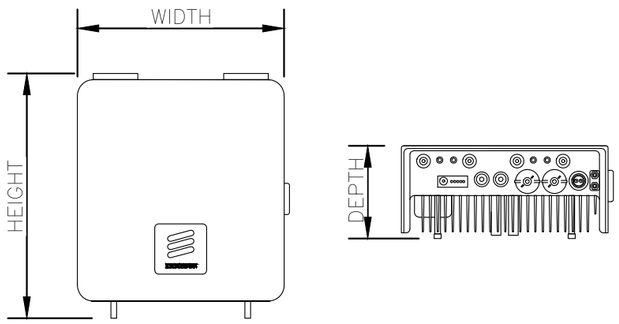
2 ERICSSON - AIR6419 B41 DETAIL
SCALE: N.T.S.

HEIGHT	WIDTH	DEPTH	WEIGHT
54.72"	12.09"	4.65"	41.89 LBS



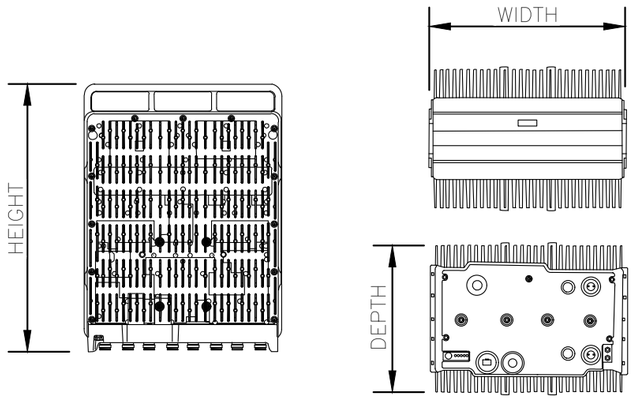
3 COMMSCOPE - VV-65A-R1 DETAIL
SCALE: N.T.S.

HEIGHT	WIDTH	DEPTH	WEIGHT
17.00"	15.10"	11.90"	109.00 LBS



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

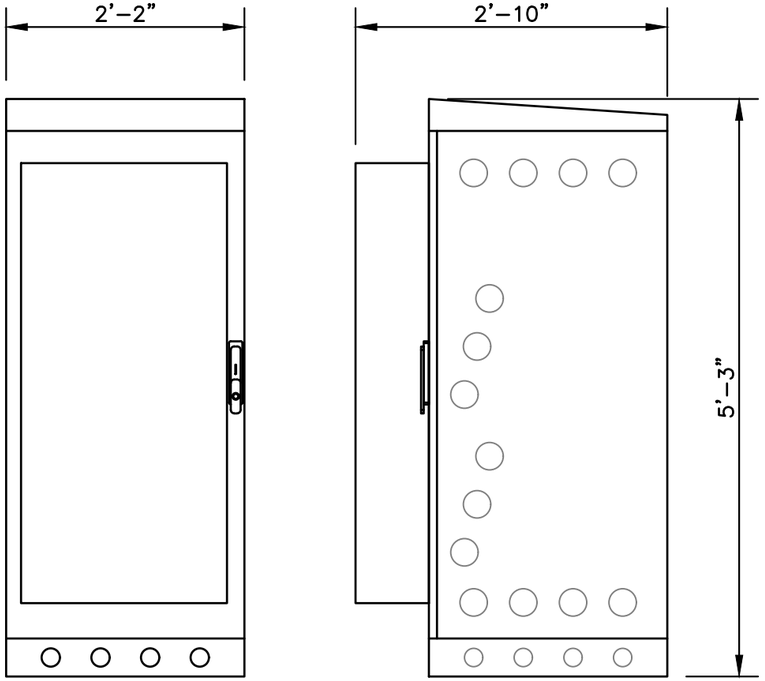
HEIGHT	WIDTH	DEPTH	WEIGHT
21.80	15.70"	07.50"	92.60 LBS

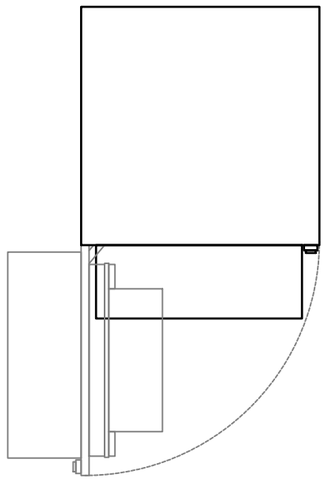


5 RADIO 4480 B71+B85 DETAIL
SCALE: N.T.S.

SUPPLEMENTAL:
EQUIPMENT DETAILS

SHEET NUMBER:	REVISION:
R-603	1





EQUIPMENT NOTES:

HEIGHTxWIDTHxDEPTH: 63.0” x 26.0” x 34.0”
(1600.0mm x 660.0mm x 864.0mm)

WEIGHT (EMPTY): 320 LBS (145 kg)

WEIGHT (FULLY LOADED): 1000 LBS (454 kg)

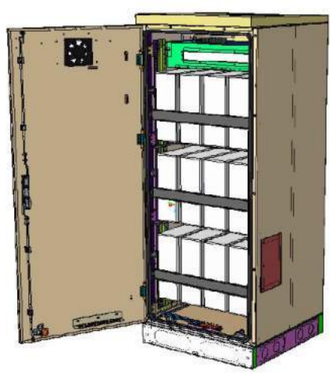
1 ERICSSON - 6160
SCALE: N.T.S.

SUPPLEMENTAL:
CABINET DETAILS

SHEET NUMBER: R-604

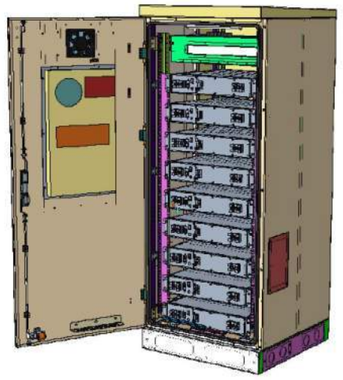
REVISION: 0

Enclosure B160



Enclosure B160
AirCon + VRLA

Enclosure B160
AirCon + Li-Ion



Enclosure B160
Convection Cooling
+ VRLA

Enclosure B160

Capacity
- VRLA 12V: 100Ah / 150Ah / 170Ah / 190Ah / 210Ah
- Li-Ion: 24U 19" / 23"
- Sodium-Nickel: 3x FIAMM

Electrical specification
- DC Output: -48VDC/200A
- Battery breakers: 2x 125/2p
- Alarms: Door open, Climate failure, MCB Connection

Mechanical specification
- Weight: 134kg
- Dimensions: 63 x 26 x 26 in. (incl. Base frame)
- Base frame height: 6 in.
- Material: Galvanized steel (180g/m^2)
- Color: Powder paint NCS 2002-B
- Door: Front access
- Locking type: Pad lock / cylinder

Environmental specification
- Ingress protection: VRLA/Sodium IP44
Li-Ion IP55
- Relative humidity: 15-100%

Climate system
- Air Conditioner
  - Fan type: DC
  - Cooling capacity: 500W @L35/L35
- Convection cooling
  - Emergency fan

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

SUPPLEMENTAL:
CABINET DETAILS

SHEET NUMBER:	REVISION:
R-605	0

From the World Leader in VRLA Battery Technology

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

"Designed in" Quality Manufacturing

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

High Performance MARATHON® M12V180FT Features

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

Applications

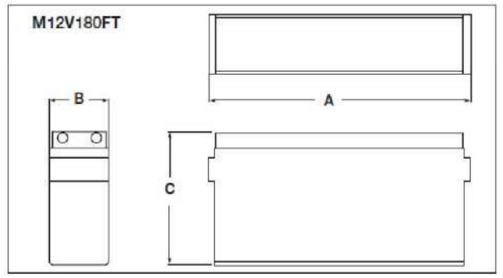
The **MARATHON**® M12V180FT Battery incorporates GNB Industrial Power's advanced VRLA technology designed for long life and high performance in:

Telecommunications
- Distributed Power
- PCS
- Cellular
- Broadband

Electric Utility
- Switchgear Control Power
- Communications

MARATHON®

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



Float Voltage & Charging

Constant Voltage charging is recommended

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

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

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

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

Marathon® M12V180FT Electrical Data

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

Marathon M12V180FT Performance Specifications

Amperes @ 25° (77°F)

End Voltage Per Cell	Time 24 hr	20 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 rh	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
1.94 Final Volts Per Cell	6.4	7.6	12.2	14.4	15.9	17.7	20.0	22.5	26.1	31.2	39.4	45.6	54.6	69.1	89.8	134.0
1.92 Final Volts Per Cell	6.8	8.0	12.9	15.3	16.9	18.9	21.1	23.8	27.6	33.1	41.9	48.6	58.3	73.1	96.1	144.5
1.90 Final Volts Per Cell	7.1	8.4	13.6	16.1	17.8	19.9	22.0	24.9	28.9	34.8	44.0	51.2	61.5	76.6	101.7	154.6
1.87 Final Volts Per Cell	7.5	8.9	14.3	16.9	18.6	20.8	23.5	26.5	30.6	36.5	45.8	52.8	63.0	79.0	108.7	167.9
1.85 Final Volts Per Cell	7.7	9.1	14.6	17.3	19.1	21.3	24.1	27.1	31.3	37.4	47.1	54.4	65.0	81.7	112.7	175.2
1.83 Final Volts Per Cell	7.9	9.3	14.9	17.6	19.5	21.7	24.5	27.6	31.9	38.2	48.0	55.6	66.5	83.8	115.9	181.5
1.81 Final Volts Per Cell	7.9	9.4	15.1	17.9	19.7	22.0	24.9	27.9	32.3	38.7	48.8	56.5	67.6	85.3	118.2	188.4
1.80 Final Volts Per Cell	8.0	9.4	15.2	18.0	19.8	22.1	25.0	28.0	32.5	38.9	49.1	56.8	68.0	85.8	119.1	188.5
1.78 Final Volts Per Cell	8.0	9.5	15.3	18.1	20.0	22.3	25.2	28.2	32.7	39.2	49.5	57.4	68.7	86.7	120.3	191.0
1.75 Final Volts Per Cell	8.1	9.6	15.4	18.3	20.2	22.5	25.5	28.4	33.0	39.5	49.9	57.9	69.4	87.6	121.7	194.5

1 M12V180FT BATTERY
SCALE: N.T.S.

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

SUPPLEMENTAL: BATTERY DETAILS

SHEET NUMBER: R-606

REVISION: 0

NSB 190FT *Red Battery*®

Long float life at elevated temperatures

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

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

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

NorthStar

Form: SES-046-08-02 Issued: 11-11-13 ECO: 2383-013

NSB 190FT *Red Battery*®

Nominal Technical Specifications

Electrical

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

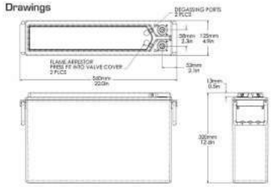
Dimensions

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

Ah Capacity Ratings @ 25°C (77°F)

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

Drawings



All NorthStar batteries are compliant with: Telcordia SR4228, IEC 60896; Bellcore GR63Core, Issue 1, British, German, and Russian telecom standards; UL approved. NorthStar is registered to ISO 9001 and ISO 14001.

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NorthStar

Form: SES-046-08-02 Issued: 11-11-13 ECO: 2383-013

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

NorthStar

Industrial Lead Acid Battery Safety Data Sheet

3. *COMPOSITION / INFORMATION ON INGREDIENTS

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

4. *FIRST AID MEASURES*

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

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

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

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

5. *FIRE FIGHTING MEASURES*

Flash Point: Not Applicable
Flammable Limits: LEL = 4.1% (Hydrogen Gas in air), UEL = 74.2%
Extinguishing media: CO_2; foam; dry chemical. Do not use carbon dioxide directly on cells. Avoid breathing vapors. Use appropriate media for surrounding fire.

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

NorthStar

Industrial Lead Acid Battery Safety Data Sheet

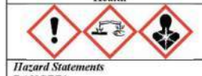
1. *IDENTIFICATION* — *REVISION DATE: 01-31-18*

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

2. *GHS HAZARDS IDENTIFICATION*

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

GHS Label:

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

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

SUPPLEMENTAL: CABINET DETAILS

SHEET NUMBER:	REVISION:
R-607	0

AMERICAN TOWER®
CORPORATION

Post Modification Structural Analysis Report

Structure	:	**150 ft Monopole**
ATC Site Name	:	**Plainfield CT 6,CT**
ATC Site Number	:	**302498**
Engineering Number	:	**13700697_C4_04**
Proposed Carrier	:	**T-MOBILE**
Carrier Site Name	:	**CTNL254A**
Carrier Site Number	:	**CTNL254A**
Site Location	:	**45 Spaulding Road** **Plainfield, CT 06374-1824** **41.6748, -71.8791**
County	:	**Windham**
Date	:	**June 24, 2022**
Max Usage	:	**78%**
Result	:	**Pass**

Prepared By:

Adam Pittman
Structural Engineer II

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32593
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
24 Jun 2022 03:07:21 cosign

COA : PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 150 ft Monopole to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower Drawings	ITT Meyer 'Type B' Specification, ATT Spec AT-8935, dated April 13, 1984
Foundation Drawing	SNET Job #3C234, dated April 24, 1990
Geotechnical Report	GEOServices Project #21-07254, dated April 20, 2009
Modifications	ATC Project #48651233, dated May 8, 2012 Mount Mods by Infinigy Job #1009-Z003-B, dated July 15, 2020 ATC Job #13700697_C6_08, dated June 1, 2022 (pending) ATC Job #13211930_C6_09, dated February 8, 2021
Inspection	Infinigy Project #1009-Z003-B, dated July 1, 2020

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:	120.9 mph (3-second gust)
Basic Wind Speed w/ Ice:	48.73 mph (3-second gust) w/ 0.85" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.19, S_1 = 0.05
Site Class:	D - Stiff Soil - Default

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

Conclusion

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

If 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
154.0	3	Ericsson RRUS 8843 B2, B66A	Platform with Handrails	(3) 0.39" (10mm) Fiber Trunk (6) 0.78" (19.7mm) 8 AWG 6 (6) 1 5/8" Coax (3) 2" conduit	AT&T MOBILITY
	2	Raycap DC6-48-60-18-8F (23.5" Height)			
	6	Powerwave Allgon LGP21401			
	6	Powerwave Allgon LGP21901			
	3	CCI OPA65R-BU8D			
	3	CCI HPA65R-BU8A			
	3	Ericsson RRUS 4415 B30			
	3	Ericsson RRUS 4449 B5, B12			
	3	Powerwave Allgon 7770.00			
	3	Ericsson RRUS 4478 B14			
	3	CCI DMP65R-BU8D			
114.0	6	Commscope JAHH-65B-R3B	T-Arm	(6) 1 5/8" Coax (2) 1 5/8" Hybriflex (9) 1 1/4" Coax	VERIZON WIRELESS
	3	Samsung MT6407-77A			
	3	Amphenol Antel BXA-70080-4CF-EDIN-X			
	3	Samsung B2/B66A RRH-BR049			
	3	Samsung B5/B13 RRH-BR04C			
	3	Commscope CBC1923Q-43			
	2	Raycap RRFDC-3315-PF-48			
113.8	3	Amphenol Antel BXA-70063-6CF-EDIN-X			

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
142.0	3	Ericsson Radio 4460 B25+B66	Triangular Platform with Handrails	(3) 1.99" (50.7mm) Hybrid	T-MOBILE
	3	Ericsson Radio 4480 B71+B85A			
	3	Commscope VV-65A-R1			
	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	76%	Pass
Shaft	64%	Pass
Base Plate	27%	Pass
Reinforcement	75%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	2908.8	78%
Shear (Kips)	27.2	27%
Axial (Kips)	54.2	32%

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

Deflection, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
142.0	Ericsson Radio 4460 B25+B66	T-MOBILE	1.890	1.470
	Ericsson Radio 4480 B71+B85A			
	RFS APXVAALL24 43-U-NA20			
	Ericsson AIR 6419 B41			
	Commscope VV-65A-R1			

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

Standard Conditions

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

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

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

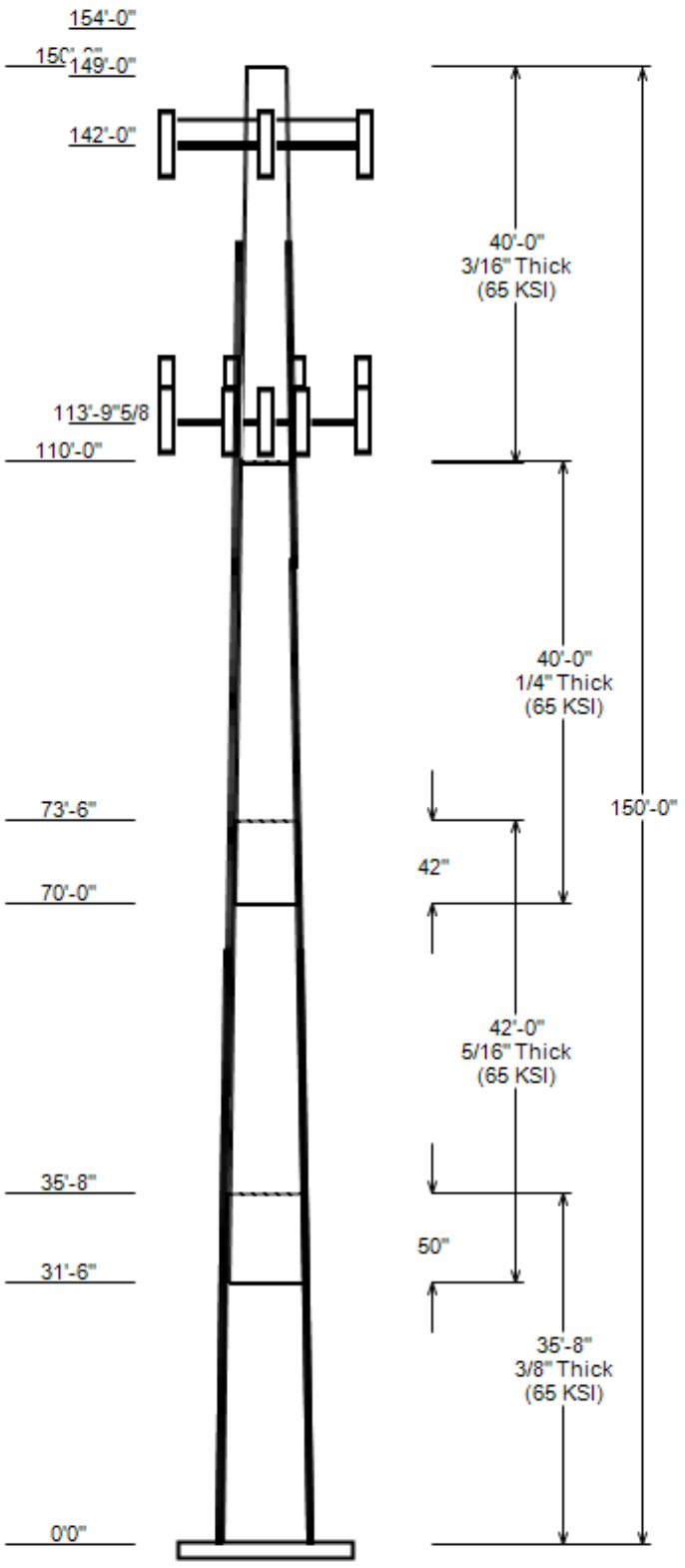
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

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

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

JOB INFORMATION

Asset :	302498, Plainfield CT 6	Height :	150 ft
Client :	T-MOBILE	Base Width :	37.38
Code :	ANSI/TIA-222-H	Shape :	12 Sides



SITE PARAMETERS

Nominal Wind: 117.84 mph wind with no ic **Topo Category:** 1

Ice Wind: 47.50 mph wind with 0.722" **Topo Method:** Method 1

Base Elev (ft): 0.00 **Taper :** 0.15700(In/ft) **Topo Feature:**

Structure Class: II **Exposure :** B **S_s :** 0.187 **S_1** : 0.054

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	35.667	31.79	37.38	0.375		0.000	12 Sides	65
2	42.000	26.49	33.07	0.312	Slip Joint	50.000	12 Sides	65
3	40.000	21.27	27.54	0.250	Slip Joint	42.000	12 Sides	65
4	40.000	15.00	21.27	0.188	Butt Joint	0.000	12 Sides	65

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
154.0	155.0	6	Powerwave Allgon LGP21901
154.0	155.0	6	Powerwave Allgon LGP21401
154.0	155.0	2	Raycap DC6-48-60-18-8F (23.5"
154.0	154.0	3	Ericsson RRUS 8843 B2, B66A
154.0	154.0	3	Ericsson RRUS 4415 B30
154.0	154.0	3	Ericsson RRUS 4478 B14
154.0	154.0	3	Ericsson RRUS 4449 B5, B12
154.0	155.0	3	Powerwave Allgon 7770.00
154.0	154.0	3	CCI HPA65R-BU8A
154.0	154.0	3	CCI DMP65R-BU8D
154.0	154.0	3	CCI OPA65R-BU8D
149.0	149.0	1	Platform w/ HRs w/ SitePro1 HR
142.0	142.0	3	Ericsson Radio 4460 B25+B66
142.0	142.0	3	Ericsson Radio 4480 B71+B85A
142.0	142.0	3	Commscope VV-65A-R1
142.0	142.0	3	Ericsson AIR 6419 B41
142.0	142.0	3	RFS APXVAALL24 43-U-NA20
142.0	142.0	1	Generic Flat Platform with Han
114.0	114.0	3	Commscope CBC1923Q-43
114.0	114.0	3	Samsung B2/B66A RRH-BR049
114.0	114.0	3	Samsung B5/B13 RRH-BR04C
114.0	114.0	2	Raycap RRFDC-3315-PF-48
114.0	117.0	3	Amphenol Antel BXA-70080-4CF-E
114.0	114.0	3	Samsung MT6407-77A
114.0	114.0	6	Commscope JAHH-65B-R3B
114.0	114.0	3	Generic Round T-Arm
113.8	113.8	3	Amphenol Antel BXA-70063-6CF-E

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
5.0	154.0	0.78" (19.7mm) 8 AWG 6	No
5.0	154.0	0.39" (10mm) Fiber Trunk	No
0.0	154.0	2" conduit	No
0.0	154.0	1 5/8" Coax	No
0.0	142.0	1.99" (50.7mm) Hybrid	No
92.0	137.0	W8 Brackets for #20	Yes
92.0	137.0	W8 Brackets for #20	Yes
92.0	137.0	W8 Brackets for #20	Yes
92.0	137.0	#20	Yes
92.0	137.0	#20	Yes
92.0	137.0	#20	Yes

JOB INFORMATION

Asset :	302498, Plainfield CT 6	Height :	150 ft
Client :	T-MOBILE	Base Width :	37.38
Code :	ANSI/TIA-222-H	Shape :	12 Sides

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
5.0	114.0	1 5/8" Coax	No
0.0	114.0	1 5/8" Hybriflex	No
0.0	113.7	1 1/4" Coax	No
0.0	106.0	#20 w/ Angle Brackets	Yes
0.0	106.0	#20 w/ Angle Brackets	Yes
0.0	106.0	#20 w/ Angle Brackets	Yes
0.0	106.0	#20 w/ Angle Brackets	Yes
0.0	67.5	#20 w/ Angle Brackets	Yes
0.0	67.5	#20 w/ Angle Brackets	Yes
0.0	67.5	#20 w/ Angle Brackets	Yes
0.0	67.5	#20 w/ Angle Brackets	Yes

LOAD CASES

1.2D + 1.0W Normal	117.84 mph wind with no ice
0.9D + 1.0W Normal	117.84 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Nor	47.50 mph wind with 0.722" radial
1.2D + 1.0Ev + 1.0Eh Nor	Seismic
0.9D - 1.0Ev + 1.0Eh Nor	Seismic (Reduced DL)
1.0D + 1.0W Service Norm	60 mph Wind with No Ice

REACTIONS

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W Normal	2908.83	27.16	54.19
0.9D + 1.0W Normal	2860.69	27.13	40.63
1.2D + 1.0Di + 1.0Wi Normal	643.32	5.45	65.14
1.2D + 1.0Ev + 1.0Eh Normal	174.90	1.36	53.87
0.9D - 1.0Ev + 1.0Eh Normal	171.26	1.36	37.37
1.0D + 1.0W Service Normal	668.31	6.29	45.20

DISH DEFLECTIONS

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

ANALYSIS PARAMETERS

Location:	Windham County,CT	**Height:**	150 ft
Type and Shape:	Taper, 12 Sides	**Base Diameter:**	37.38 in
Manufacturer:	ITT Meyer	**Top Diameter:**	15.00 in
K_d (non-service):	0.95	**Taper:**	0.1570 in/ft
K_e:	0.98	**Rotation:**	0.000°

ICE & WIND PARAMETERS

Exposure Category:	B	**Design Wind Speed w/o Ice:**	118 mph
Risk Category:	II	**Design Wind Speed w/Ice:**	48 mph
Topo Factor Procedure:	Method 1	**Operational Wind Speed:**	60 mph
Topographic Category:	1	**Design Ice Thickness:**	0.72 in
Crest Height:	0 ft	**HMSL:**	560.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil			**Period Based on Rayleigh Method (sec):**	2.81
T_L (sec):	6	**P:**	1	**C_s:**	0.030
S_s:	0.187	**S_1:**	0.054	**C_s Max:**	0.030
F_a:	1.600	**F_v:**	2.400	**C_s Min:**	0.030
S_{ds}:	0.199	**S_{d1}:**	0.086		

LOAD CASES

1.2D + 1.0W Normal	117.84 mph wind with no ice
0.9D + 1.0W Normal	117.84 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	47.50 mph wind with 0.722" radial ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL)
1.0D + 1.0W Service Normal	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 (in^2)	Bottom Ix (in^4)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (in)	Top Area (in^2)	Top Ix (in^4)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-12	35.67	0.3750	65		0.00	5,014	37.38	0.003	44.68	7,810.1	24.03	99.68	31.79	35.67	37.93	4,778.8	20.04	84.78	0.1567
2-12	42.00	0.3125	65	Slip	50.00	4,237	33.07	31.500	32.96	4,514.1	25.67	105.82	26.49	73.50	26.34	2,303.2	20.03	84.76	0.1567
3-12	40.00	0.2500	65	Slip	42.00	2,646	27.54	70.000	21.96	2,087.3	26.83	110.14	21.27	110.00	16.92	953.9	20.11	85.07	0.1567
								110.00								250.4			
4-12	40.00	0.1875	65	Butt	0.00	1,475	21.27	0	12.73	721.8	27.71	113.42	15.00	150.00	8.94		18.76	79.99	0.1567

Shaft Weight 13,372

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
154.00	Powerwave Allgon LGP21901	6	0.75	1.000	5.50	0.200	0.50	9.20	0.354	0.50
154.00	Ericsson RRUS 4415 B30	3	0.75	0.000	46.00	1.842	0.50	69.64	2.274	0.50
154.00	Ericsson RRUS 4478 B14	3	0.75	0.000	59.90	1.842	0.50	86.56	2.274	0.50
154.00	CCI OPA65R-BU8D	3	0.75	0.000	76.50	18.089	0.63	242.76	19.869	0.63
154.00	Ericsson RRUS 4449 B5, B12	3	0.75	0.000	71.00	1.969	0.50	102.08	2.419	0.50
154.00	Powerwave Allgon 7770.00	3	0.75	1.000	35.00	5.508	0.65	89.81	6.533	0.65
154.00	Ericsson RRUS 8843 B2, B66A	3	0.75	0.000	72.00	1.639	0.50	101.55	2.046	0.50
154.00	Raycap DC6-48-60-18-8F (23.5"	2	0.75	1.000	20.00	1.260	1.00	45.39	1.577	1.00
154.00	Powerwave Allgon LGP21401	6	0.75	1.000	14.10	1.104	0.50	26.13	1.448	0.50
154.00	CCI DMP65R-BU8D	3	0.75	0.000	95.70	17.871	0.63	259.58	19.648	0.63
154.00	CCI HPA65R-BU8A	3	0.75	0.000	54.00	11.230	0.71	166.01	12.784	0.71
149.00	Platform w/ HRs w/ SitePro1 HR	1	1.00	0.000	2500.00	44.500	1.00	3338.33	59.422	1.00
142.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	3351.55	52.453	1.00
142.00	Ericsson AIR 6419 B41	3	0.75	0.000	83.30	6.322	0.63	155.85	7.133	0.63
142.00	Commscope VV-65A-R1	3	0.75	0.000	23.80	5.928	0.63	80.09	6.944	0.63
142.00	Ericsson Radio 4480 B71+B85A	3	0.75	0.000	84.00	2.852	0.67	120.21	3.387	0.67
142.00	Ericsson Radio 4460 B25+B66	3	0.75	0.000	109.00	2.564	0.67	151.37	3.069	0.67
142.00	RFS APXVAALL24 43-U-NA20	3	0.75	0.000	122.80	20.243	0.63	309.51	22.021	0.63
114.00	Commscope JAHH-65B-R3B	6	0.80	0.000	60.60	9.113	0.69	155.53	10.415	0.69
114.00	Samsung MT6407-77A	3	0.80	0.000	81.60	4.709	0.61	129.43	5.422	0.61
114.00	Amphenol Antel BXA-70080-4CF-E	3	0.80	3.000	12.00	3.570	0.72	52.78	4.437	0.72
114.00	Raycap RRFDC-3315-PF-48	2	0.80	0.000	26.90	2.512	0.67	64.28	3.001	0.67
114.00	Generic Round T-Arm	3	0.75	0.000	312.50	9.700	0.67	435.08	13.568	0.67
114.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.875	0.50	97.14	2.299	0.50
114.00	Commscope CBC1923Q-43	3	0.80	0.000	7.30	0.318	0.50	12.49	0.507	0.50
114.00	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.875	0.50	114.33	2.299	0.50
113.80	Amphenol Antel BXA-70063-6CF-E	3	0.80	0.000	17.00	7.569	0.66	86.32	8.861	0.66
Totals	Num Loadings: 27	84			10,129.30			16,642.15		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg) : 45.00

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	154.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	AT&T MOBILITY
5.00	154.00	6	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
5.00	154.00	3	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	154.00	3	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	142.00	3	1.99" (50.7mm) Hybrid	1.99	1.9	N	0	0	0	0	0	N	T-MOBILE
92.00	137.00	1	W8 Brackets for #20	2.48	6.3	Y	1	0	0	330	2.9	Y	
92.00	137.00	1	W8 Brackets for #20	2.48	6.3	Y	1	0	0	180	2.9	Y	
92.00	137.00	1	W8 Brackets for #20	2.48	6.3	Y	1	0	0	90	2.9	Y	
92.00	137.00	1	#20	4	0	N	1	0	0	180	8.28	Y	
92.00	137.00	1	#20	4	0	N	1	0	0	330	8.28	Y	
92.00	137.00	1	#20	4	0	N	1	0	0	90	8.28	Y	
5.00	114.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIREL
0.00	114.00	2	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	VERIZON WIREL
0.00	113.70	9	1 1/4" Coax	1.55	0.63	N	0	0	0	0	0	N	VERIZON WIREL
0.00	106.00	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	225	0	Y	
0.00	106.00	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	135	0	Y	
0.00	106.00	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	315	0	Y	

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	106.00	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	45	0	Y	
0.00	67.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	75	0	Y	
0.00	67.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	165	0	Y	
0.00	67.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	345	0	Y	
0.00	67.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	255	0	Y	

ADDITIONAL STEEL

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Intermediate Connectors Description	Spacing (in)	Len (in)	Connectors	Continuation?
0.00	45.48	4	SOL #20 All Thread Bar	80	2.19	6" Angle Bracket	30.00	3.31	5/8" A36 U-Bolt	N
0.00	60.48	4	SOL #20 All Thread Bar	80	2.19	6" Angle Bracket	30.00	3.31	5/8" A36 U-Bolt	N
45.48	100.08	4	SOL #20 All Thread Bar	80	2.19	6" Angle Bracket	30.00	3.31	5/8" A36 U-Bolt	Y
99.02	132.44	3	SOL #20 All Thread Bar	80	8.19	6" T Bracket	30.00	3.31	5/8" A36 U-Bolt	N

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)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
0.00		0.3750	37.380	44.684	7,810.10	24.03	99.68	78.5	403.6	0.0	0.0	39.280	9,775.80	0.0
5.00		0.3750	36.596	43.737	7,324.40	23.47	97.59	79.1	386.6	0.0	752.2	39.280	9,429.80	668.0
10.00		0.3750	35.813	42.791	6,859.30	22.91	95.50	79.7	370.0	0.0	736.1	39.280	9,090.00	668.0
15.00		0.3750	35.029	41.845	6,414.30	22.35	93.41	80.3	353.7	0.0	720.0	39.280	8,756.50	668.0
20.00		0.3750	34.246	40.899	5,989.00	21.79	91.32	80.9	337.8	0.0	703.9	39.280	8,429.20	668.0
25.00		0.3750	33.462	39.953	5,582.90	21.23	89.23	81.6	322.3	0.0	687.8	39.280	8,108.20	668.0
30.00		0.3750	32.679	39.007	5,195.60	20.67	87.14	81.9	307.1	0.0	671.7	39.280	7,793.40	668.0
31.50	Bot - Section 2	0.3750	32.444	38.723	5,083.00	20.50	86.52	81.9	302.7	0.0	198.4	39.280	7,700.10	200.4
35.00		0.3750	31.895	38.061	4,826.60	20.11	85.05	81.9	292.3	0.0	846.5	39.280	7,730.40	467.6
35.67	Top - Section 1	0.3125	32.416	32.304	4,249.50	25.12	103.73	77.3	253.3	0.0	159.6	39.280	7,689.10	89.1
40.00		0.3125	31.737	31.621	3,985.50	24.53	101.56	78	242.6	0.0	471.3	39.280	7,423.20	578.9
45.00		0.3125	30.953	30.832	3,694.80	23.86	99.05	78.7	230.6	0.0	531.3	39.280	7,122.10	668.0
45.48	Reinf. Top Reinf Bottom	0.3125	30.878	30.757	3,667.60	23.80	98.81	78.8	229.5	0.0	50.3	39.280	7,093.50	64.1
50.00		0.3125	30.170	30.044	3,418.50	23.19	96.54	79.4	218.9	0.0	467.6	39.280	6,827.30	603.9
55.00		0.3125	29.386	29.255	3,156.40	22.52	94.04	80.2	207.5	0.0	504.5	39.280	6,538.80	668.0
60.00		0.3125	28.603	28.467	2,908.00	21.85	91.53	80.9	196.4	0.0	491.0	39.280	6,256.50	668.0
60.48	Reinf. Top	0.3125	28.527	28.391	2,884.90	21.78	91.29	81	195.4	0.0	46.4	39.280	6,229.70	64.1
65.00		0.3125	27.819	27.679	2,673.00	21.17	89.02	81.6	185.6	0.0	431.2	19.640	3,016.90	301.9
70.00	Bot - Section 3	0.3125	27.036	26.890	2,451.00	20.50	86.51	81.9	175.1	0.0	464.2	19.640	2,879.00	334.0
73.50	Top - Section 2	0.2500	26.987	21.523	1,963.90	26.25	107.95	76.1	140.6	0.0	575.9	19.640	2,870.60	233.8
75.00		0.2500	26.752	21.334	1,912.60	25.99	107.01	76.4	138.1	0.0	109.4	19.640	2,830.00	100.2
80.00		0.2500	25.968	20.703	1,747.90	25.15	103.87	77.3	130.0	0.0	357.6	19.640	2,696.50	334.0
85.00		0.2500	25.185	20.073	1,593.00	24.31	100.74	78.2	122.2	0.0	346.9	19.640	2,566.30	334.0
90.00		0.2500	24.401	19.442	1,447.50	23.47	97.61	79.1	114.6	0.0	336.1	19.640	2,439.40	334.0
95.00		0.2500	23.618	18.811	1,311.10	22.63	94.47	80	107.2	0.0	325.4	19.640	2,315.60	334.0
99.02	Reinf Bottom	0.2500	22.988	18.304	1,207.90	21.96	91.95	80.8	101.5	0.0	253.9	19.640	2,218.50	268.5
100.00		0.2500	22.834	18.180	1,183.60	21.79	91.34	80.9	100.1	0.0	60.8	34.370	5,404.80	114.6
100.08	Reinf. Top	0.2500	22.822	18.170	1,181.60	21.78	91.29	81	100.0	0.0	4.9	34.370	5,401.00	9.4
105.00		0.2500	22.051	17.550	1,064.60	20.95	88.20	81.9	93.3	0.0	299.0	14.730	3,090.50	246.5
110.00	Top - Section 3	0.2500	21.267	16.919	953.90	20.11	85.07	81.9	86.7	0.0	293.2	14.730	2,973.50	250.5
110.00	Bot - Section 4	0.1875	21.267	12.727	721.80	27.71	113.43	74.5	65.6	0.0		14.730	2,973.50	
113.80		0.1875	20.672	12.367	662.40	26.86	110.25	75.4	61.9	0.0	162.2	14.730	2,886.10	190.4
114.00		0.1875	20.640	12.348	659.30	26.82	110.08	75.5	61.7	0.0	8.4	14.730	2,881.50	10.0
115.00		0.1875	20.484	12.254	644.30	26.59	109.25	75.7	60.8	0.0	41.9	14.730	2,858.80	50.1
120.00		0.1875	19.700	11.781	572.50	25.47	105.07	76.9	56.1	0.0	204.5	14.730	2,746.30	250.5
125.00		0.1875	18.917	11.308	506.30	24.35	100.89	78.2	51.7	0.0	196.4	14.730	2,636.10	250.5
130.00		0.1875	18.133	10.835	445.40	23.23	96.71	79.4	47.4	0.0	188.4	14.730	2,528.20	250.5
132.44	Reinf. Top	0.1875	17.751	10.604	417.50	22.69	94.67	80	45.4	0.0	89.0	14.730	2,476.40	122.2
135.00		0.1875	17.350	10.362	389.50	22.11	92.53	80.6	43.4	0.0	91.3			
140.00		0.1875	16.566	9.889	338.60	20.99	88.35	81.8	39.5	0.0	172.3			
142.00		0.1875	16.253	9.699	319.50	20.55	86.68	81.9	38.0	0.0	66.7			
145.00		0.1875	15.783	9.416	292.30	19.87	84.17	81.9	35.8	0.0	97.6			
149.00		0.1875	15.156	9.037	258.40	18.98	80.83	81.9	32.9	0.0	125.6			
150.00		0.1875	14.999	8.942	250.40	18.76	79.99	81.9	32.3	0.0	30.6			
									Totals:		13,372.0			12,399.7

Load Case: 1.2D + 1.0W Normal 117.84 mph wind with no ice 26 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	-54.19	-27.16	0.00	-2,908.8	0.00	2,908.83	3,157.17	784.20	2,737.77	2,376.61	0	0	0.554
5.00	-51.98	-26.78	0.00	-2,773.0	0.00	2,773.05	3,114.35	767.59	2,623.10	2,294.24	0.12	-0.23	0.538
10.00	-49.74	-26.39	0.00	-2,639.2	0.00	2,639.17	3,070.50	750.99	2,510.88	2,212.51	0.49	-0.46	0.523
15.00	-47.52	-25.99	0.00	-2,507.2	0.00	2,507.23	3,025.61	734.38	2,401.12	2,131.45	1.09	-0.69	0.507
20.00	-45.32	-25.59	0.00	-2,377.3	0.00	2,377.27	2,979.67	717.78	2,293.81	2,051.12	1.94	-0.92	0.490
25.00	-43.15	-25.18	0.00	-2,249.3	0.00	2,249.31	2,932.70	701.17	2,188.95	1,971.58	3.02	-1.15	0.474
30.00	-41.03	-24.86	0.00	-2,123.4	0.00	2,123.40	2,875.20	684.57	2,086.54	1,886.63	4.35	-1.37	0.459
31.50	-40.37	-24.67	0.00	-2,086.1	0.00	2,086.12	2,854.27	679.59	2,056.30	1,859.12	4.79	-1.44	0.455
35.00	-38.44	-24.42	0.00	-1,999.8	0.00	1,999.77	2,805.46	667.97	1,986.59	1,795.71	5.91	-1.6	0.436
35.67	-38.05	-24.25	0.00	-1,983.5	0.00	1,983.49	2,248.06	566.93	1,717.05	1,468.68	6.13	-1.63	0.490
40.00	-36.32	-23.81	0.00	-1,878.4	0.00	1,878.41	2,218.58	554.94	1,645.20	1,418.47	7.7	-1.82	0.472
45.00	-34.39	-23.46	0.00	-1,759.4	0.00	1,759.35	2,183.59	541.11	1,564.21	1,360.95	9.73	-2.05	0.450
45.48	-34.17	-23.28	0.00	-1,748.1	0.00	1,748.09	2,180.18	539.78	1,556.54	1,355.45	9.94	-2.07	0.448
50.00	-32.41	-22.79	0.00	-1,642.9	0.00	1,642.87	2,147.57	527.27	1,485.26	1,303.92	12	-2.27	0.429
55.00	-30.49	-22.25	0.00	-1,528.9	0.00	1,528.91	2,110.50	513.43	1,408.36	1,247.44	14.5	-2.49	0.407
60.00	-28.62	-21.85	0.00	-1,417.7	0.00	1,417.66	2,072.40	499.59	1,333.50	1,191.56	17.23	-2.71	0.385
60.48	-28.41	-21.65	0.00	-1,407.2	0.00	1,407.18	2,068.68	498.27	1,326.42	1,186.23	17.51	-2.73	0.383
60.48	-28.41	-21.65	0.00	-1,407.2	0.00	1,407.18	2,068.68	498.27	1,326.42	1,186.23	17.51	-2.73	0.578
65.00	-27.06	-21.16	0.00	-1,309.3	0.00	1,309.30	2,033.25	485.76	1,260.68	1,136.32	20.19	-2.92	0.551
70.00	-25.63	-20.69	0.00	-1,203.5	0.00	1,203.50	1,982.07	471.92	1,189.91	1,075.81	23.42	-3.24	0.524
73.50	-24.39	-20.36	0.00	-1,131.1	0.00	1,131.10	1,473.95	377.73	952.77	802.29	25.87	-3.46	0.584
75.00	-23.98	-20.09	0.00	-1,100.6	0.00	1,100.55	1,466.27	374.41	936.10	791.03	26.97	-3.55	0.572
80.00	-22.74	-19.55	0.00	-1,000.1	0.00	1,000.10	1,439.98	363.34	881.58	753.67	30.85	-3.86	0.533
85.00	-21.53	-19.00	0.00	-902.4	0.00	902.35	1,412.66	352.27	828.70	716.63	35.06	-4.17	0.493
90.00	-20.34	-18.44	0.00	-807.4	0.00	807.35	1,384.30	341.21	777.46	679.95	39.58	-4.46	0.452
95.00	-19.10	-17.89	0.00	-715.2	0.00	715.16	1,354.89	330.14	727.85	643.70	44.4	-4.74	0.411
99.02	-18.10	-17.52	0.00	-643.2	0.00	643.23	1,330.50	321.24	689.15	614.89	48.48	-4.95	0.378
100.00	-17.80	-17.43	0.00	-626.1	0.00	626.06	1,324.45	319.07	679.87	607.91	49.5	-5	0.193
100.08	-17.78	-17.24	0.00	-624.7	0.00	624.67	1,323.95	318.89	679.12	607.34	49.58	-5.01	0.192
100.08	-17.78	-17.24	0.00	-624.7	0.00	624.67	1,323.95	318.89	679.12	607.34	49.58	-5.01	0.287
105.00	-16.68	-16.63	0.00	-539.9	0.00	539.86	1,292.97	308.00	633.54	572.65	54.8	-5.13	0.251
110.00	-15.67	-16.10	0.00	-456.7	0.00	456.71	1,247.09	296.93	588.83	532.25	60.26	-5.3	0.218
110.00	-15.67	-16.10	0.00	-456.7	0.00	456.71	853.22	223.36	444.16	366.32	60.26	-5.3	0.257
113.80	-14.97	-15.45	0.00	-395.5	0.00	395.52	839.45	217.05	419.43	350.14	64.53	-5.42	0.224
114.00	-12.63	-12.74	0.00	-391.7	0.00	391.73	838.71	216.72	418.15	349.29	64.75	-5.42	0.219
115.00	-12.47	-12.55	0.00	-379.0	0.00	378.99	834.98	215.06	411.77	345.05	65.89	-5.46	0.212
120.00	-11.66	-12.16	0.00	-316.2	0.00	316.25	815.69	206.75	380.60	323.94	71.68	-5.6	0.178
125.00	-10.88	-11.77	0.00	-255.4	0.00	255.45	795.37	198.45	350.66	303.07	77.6	-5.72	0.145
130.00	-10.10	-11.45	0.00	-196.6	0.00	196.61	774.00	190.15	321.94	282.47	83.63	-5.82	0.113
132.44	-9.73	-11.26	0.00	-168.7	0.00	168.67	763.20	186.10	308.37	272.53	86.62	-5.86	0.098
132.44	-9.73	-11.26	0.00	-168.7	0.00	168.67	763.20	186.10	308.37	272.53	86.62	-5.86	0.635
135.00	-9.46	-11.04	0.00	-139.9	0.00	139.86	751.60	181.85	294.45	262.19	89.77	-5.9	0.550
140.00	-9.03	-10.83	0.00	-84.6	0.00	84.65	728.15	173.54	268.19	242.29	96.17	-6.31	0.366
142.00	-4.83	-6.38	0.00	-63.0	0.00	62.98	714.94	170.22	258.03	233.29	98.84	-6.44	0.278
145.00	-4.64	-6.19	0.00	-43.8	0.00	43.84	694.02	165.24	243.15	219.76	102.93	-6.58	0.208
149.00	-1.64	-3.91	0.00	-19.1	0.00	19.09	666.12	158.60	224.01	202.35	108.49	-6.7	0.097
150.00	0.00	-3.69	0.00	-15.2	0.00	15.18	659.15	156.94	219.34	198.11	109.89	-6.72	0.077

Load Case: 0.9D + 1.0W Normal 117.84 mph wind with no ice 26 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	-40.63	-27.13	0.00	-2,860.7	0.00	2,860.69	3,157.17	784.20	2,737.77	2,376.61	0	0	0.543
5.00	-38.95	-26.69	0.00	-2,725.1	0.00	2,725.06	3,114.35	767.59	2,623.10	2,294.24	0.12	-0.23	0.527
10.00	-37.24	-26.26	0.00	-2,591.6	0.00	2,591.59	3,070.50	750.99	2,510.88	2,212.51	0.48	-0.45	0.511
15.00	-35.55	-25.82	0.00	-2,460.3	0.00	2,460.31	3,025.61	734.38	2,401.12	2,131.45	1.07	-0.68	0.495
20.00	-33.89	-25.37	0.00	-2,331.2	0.00	2,331.23	2,979.67	717.78	2,293.81	2,051.12	1.9	-0.9	0.479
25.00	-32.24	-24.93	0.00	-2,204.4	0.00	2,204.37	2,932.70	701.17	2,188.95	1,971.58	2.97	-1.13	0.463
30.00	-30.64	-24.59	0.00	-2,079.7	0.00	2,079.73	2,875.20	684.57	2,086.54	1,886.63	4.27	-1.35	0.448
31.50	-30.13	-24.38	0.00	-2,042.8	0.00	2,042.84	2,854.27	679.59	2,056.30	1,859.12	4.7	-1.42	0.443
35.00	-28.68	-24.13	0.00	-1,957.5	0.00	1,957.50	2,805.46	667.97	1,986.59	1,795.71	5.8	-1.57	0.425
35.67	-28.37	-23.94	0.00	-1,941.4	0.00	1,941.41	2,248.06	566.93	1,717.05	1,468.68	6.02	-1.6	0.478
40.00	-27.06	-23.48	0.00	-1,837.7	0.00	1,837.68	2,218.58	554.94	1,645.20	1,418.47	7.56	-1.79	0.460
45.00	-25.61	-23.12	0.00	-1,720.3	0.00	1,720.28	2,183.59	541.11	1,564.21	1,360.95	9.55	-2.01	0.439
45.48	-25.44	-22.93	0.00	-1,709.2	0.00	1,709.18	2,180.18	539.78	1,556.54	1,355.45	9.76	-2.03	0.437
50.00	-24.10	-22.42	0.00	-1,605.5	0.00	1,605.54	2,147.57	527.27	1,485.26	1,303.92	11.78	-2.23	0.418
55.00	-22.65	-21.87	0.00	-1,493.4	0.00	1,493.42	2,110.50	513.43	1,408.36	1,247.44	14.23	-2.44	0.396
60.00	-21.24	-21.48	0.00	-1,384.1	0.00	1,384.07	2,072.40	499.59	1,333.50	1,191.56	16.9	-2.66	0.375
60.48	-21.08	-21.27	0.00	-1,373.8	0.00	1,373.76	2,068.68	498.27	1,326.42	1,186.23	17.17	-2.68	0.373
60.48	-21.08	-21.27	0.00	-1,373.8	0.00	1,373.76	2,068.68	498.27	1,326.42	1,186.23	17.17	-2.68	0.562
65.00	-20.05	-20.76	0.00	-1,277.6	0.00	1,277.63	2,033.25	485.76	1,260.68	1,136.32	19.79	-2.86	0.536
70.00	-18.97	-20.27	0.00	-1,173.8	0.00	1,173.83	1,982.07	471.92	1,189.91	1,075.81	22.96	-3.17	0.509
73.50	-18.03	-19.95	0.00	-1,102.9	0.00	1,102.88	1,473.95	377.73	952.77	802.29	25.36	-3.38	0.568
75.00	-17.71	-19.66	0.00	-1,073.0	0.00	1,072.96	1,466.27	374.41	936.10	791.03	26.44	-3.47	0.556
80.00	-16.77	-19.10	0.00	-974.7	0.00	974.67	1,439.98	363.34	881.58	753.67	30.24	-3.78	0.517
85.00	-15.85	-18.54	0.00	-879.2	0.00	879.15	1,412.66	352.27	828.70	716.63	34.35	-4.08	0.478
90.00	-14.95	-17.97	0.00	-786.4	0.00	786.43	1,384.30	341.21	777.46	679.95	38.77	-4.36	0.439
95.00	-14.02	-17.43	0.00	-696.6	0.00	696.56	1,354.89	330.14	727.85	643.70	43.48	-4.63	0.399
99.02	-13.26	-17.07	0.00	-626.5	0.00	626.49	1,330.50	321.24	689.15	614.89	47.47	-4.84	0.367
100.00	-13.04	-16.99	0.00	-609.8	0.00	609.76	1,324.45	319.07	679.87	607.91	48.47	-4.89	0.186
100.08	-13.02	-16.79	0.00	-608.4	0.00	608.40	1,323.95	318.89	679.12	607.34	48.55	-4.89	0.186
100.08	-13.02	-16.79	0.00	-608.4	0.00	608.40	1,323.95	318.89	679.12	607.34	48.55	-4.89	0.278
105.00	-12.20	-16.19	0.00	-525.8	0.00	525.81	1,292.97	308.00	633.54	572.65	53.65	-5.01	0.243
110.00	-11.45	-15.68	0.00	-444.8	0.00	444.85	1,247.09	296.93	588.83	532.25	58.99	-5.18	0.211
110.00	-11.45	-15.68	0.00	-444.8	0.00	444.85	853.22	223.36	444.16	366.32	58.99	-5.18	0.248
113.80	-10.93	-15.04	0.00	-385.3	0.00	385.27	839.45	217.05	419.43	350.14	63.16	-5.29	0.216
114.00	-9.23	-12.39	0.00	-381.6	0.00	381.57	838.71	216.72	418.15	349.29	63.38	-5.3	0.212
115.00	-9.10	-12.20	0.00	-369.2	0.00	369.18	834.98	215.06	411.77	345.05	64.49	-5.33	0.205
120.00	-8.50	-11.82	0.00	-308.2	0.00	308.17	815.69	206.75	380.60	323.94	70.14	-5.47	0.172
125.00	-7.92	-11.45	0.00	-249.0	0.00	249.05	795.37	198.45	350.66	303.07	75.93	-5.59	0.140
130.00	-7.34	-11.15	0.00	-191.8	0.00	191.81	774.00	190.15	321.94	282.47	81.83	-5.69	0.109
132.44	-7.06	-10.96	0.00	-164.6	0.00	164.61	763.20	186.10	308.37	272.53	84.74	-5.73	0.094
132.44	-7.06	-10.96	0.00	-164.6	0.00	164.61	763.20	186.10	308.37	272.53	84.74	-5.73	0.617
135.00	-6.86	-10.74	0.00	-136.6	0.00	136.55	751.60	181.85	294.45	262.19	87.82	-5.77	0.533
140.00	-6.53	-10.54	0.00	-82.8	0.00	82.83	728.15	173.54	268.19	242.29	94.08	-6.17	0.355
142.00	-3.47	-6.21	0.00	-61.8	0.00	61.76	714.94	170.22	258.03	233.29	96.68	-6.29	0.271
145.00	-3.34	-6.03	0.00	-43.1	0.00	43.13	694.02	165.24	243.15	219.76	100.68	-6.43	0.202
149.00	-1.13	-3.84	0.00	-19.0	0.00	19.02	666.12	158.60	224.01	202.35	106.11	-6.55	0.096
150.00	0.00	-3.69	0.00	-15.2	0.00	15.18	659.15	156.94	219.34	198.11	107.48	-6.57	0.077

Load Case: 1.2D + 1.0Di + 1.0Wi Normal		47.50 mph wind with 0.722" radial ice			25 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	-65.14	-5.45	0.00	-643.3	0.00	643.32	3,157.17	784.20	2,737.77	2,376.61	0	0	0.131
5.00	-62.84	-5.43	0.00	-616.0	0.00	616.05	3,114.35	767.59	2,623.10	2,294.24	0.03	-0.05	0.128
10.00	-60.48	-5.40	0.00	-588.9	0.00	588.92	3,070.50	750.99	2,510.88	2,212.51	0.11	-0.1	0.125
15.00	-58.13	-5.37	0.00	-561.9	0.00	561.93	3,025.61	734.38	2,401.12	2,131.45	0.24	-0.15	0.121
20.00	-55.80	-5.33	0.00	-535.1	0.00	535.10	2,979.67	717.78	2,293.81	2,051.12	0.43	-0.2	0.118
25.00	-53.49	-5.29	0.00	-508.4	0.00	508.45	2,932.70	701.17	2,188.95	1,971.58	0.67	-0.26	0.114
30.00	-51.19	-5.26	0.00	-482.0	0.00	482.00	2,875.20	684.57	2,086.54	1,886.63	0.97	-0.31	0.111
31.50	-50.51	-5.24	0.00	-474.1	0.00	474.11	2,854.27	679.59	2,056.30	1,859.12	1.07	-0.32	0.110
35.00	-48.45	-5.21	0.00	-455.8	0.00	455.76	2,805.46	667.97	1,986.59	1,795.71	1.32	-0.36	0.106
35.67	-48.05	-5.19	0.00	-452.3	0.00	452.29	2,248.06	566.93	1,717.05	1,468.68	1.37	-0.37	0.119
40.00	-46.19	-5.14	0.00	-429.8	0.00	429.79	2,218.58	554.94	1,645.20	1,418.47	1.72	-0.41	0.115
45.00	-44.07	-5.10	0.00	-404.1	0.00	404.07	2,183.59	541.11	1,564.21	1,360.95	2.18	-0.46	0.110
45.48	-43.86	-5.08	0.00	-401.6	0.00	401.62	2,180.18	539.78	1,556.54	1,355.45	2.23	-0.47	0.110
50.00	-41.95	-5.02	0.00	-378.6	0.00	378.65	2,147.57	527.27	1,485.26	1,303.92	2.69	-0.51	0.105
55.00	-39.86	-4.95	0.00	-353.5	0.00	353.54	2,110.50	513.43	1,408.36	1,247.44	3.26	-0.56	0.100
60.00	-37.78	-4.90	0.00	-328.8	0.00	328.77	2,072.40	499.59	1,333.50	1,191.56	3.88	-0.61	0.095
60.48	-37.58	-4.88	0.00	-326.4	0.00	326.41	2,068.68	498.27	1,326.42	1,186.23	3.94	-0.62	0.095
60.48	-37.58	-4.88	0.00	-326.4	0.00	326.41	2,068.68	498.27	1,326.42	1,186.23	3.94	-0.62	0.143
65.00	-36.08	-4.82	0.00	-304.4	0.00	304.37	2,033.25	485.76	1,260.68	1,136.32	4.55	-0.66	0.136
70.00	-34.52	-4.76	0.00	-280.3	0.00	280.29	1,982.07	471.92	1,189.91	1,075.81	5.28	-0.74	0.130
73.50	-33.18	-4.72	0.00	-263.6	0.00	263.62	1,473.95	377.73	952.77	802.29	5.84	-0.79	0.145
75.00	-32.77	-4.69	0.00	-256.5	0.00	256.54	1,466.27	374.41	936.10	791.03	6.09	-0.81	0.143
80.00	-31.41	-4.62	0.00	-233.1	0.00	233.10	1,439.98	363.34	881.58	753.67	6.98	-0.88	0.133
85.00	-30.07	-4.55	0.00	-210.0	0.00	209.99	1,412.66	352.27	828.70	716.63	7.94	-0.95	0.123
90.00	-28.75	-4.48	0.00	-187.2	0.00	187.23	1,384.30	341.21	777.46	679.95	8.98	-1.02	0.113
95.00	-27.30	-4.36	0.00	-164.8	0.00	164.85	1,354.89	330.14	727.85	643.70	10.09	-1.09	0.103
99.02	-26.08	-4.24	0.00	-147.3	0.00	147.33	1,330.50	321.24	689.15	614.89	11.02	-1.14	0.094
100.00	-25.72	-4.21	0.00	-143.2	0.00	143.17	1,324.45	319.07	679.87	607.91	11.26	-1.15	0.049
100.08	-25.69	-4.18	0.00	-142.8	0.00	142.84	1,323.95	318.89	679.12	607.34	11.28	-1.15	0.049
100.08	-25.69	-4.18	0.00	-142.8	0.00	142.84	1,323.95	318.89	679.12	607.34	11.28	-1.15	0.074
105.00	-24.31	-3.99	0.00	-122.3	0.00	122.29	1,292.97	308.00	633.54	572.65	12.47	-1.18	0.065
110.00	-23.05	-3.83	0.00	-102.3	0.00	102.33	1,247.09	296.93	588.83	532.25	13.73	-1.21	0.057
110.00	-23.05	-3.83	0.00	-102.3	0.00	102.33	853.22	223.36	444.16	366.32	13.73	-1.21	0.067
113.80	-21.98	-3.64	0.00	-87.8	0.00	87.78	839.45	217.05	419.43	350.14	14.7	-1.24	0.059
114.00	-18.39	-3.06	0.00	-86.9	0.00	86.92	838.71	216.72	418.15	349.29	14.76	-1.24	0.057
115.00	-18.18	-3.01	0.00	-83.8	0.00	83.85	834.98	215.06	411.77	345.05	15.02	-1.25	0.055
120.00	-17.14	-2.84	0.00	-68.8	0.00	68.83	815.69	206.75	380.60	323.94	16.34	-1.28	0.046
125.00	-16.11	-2.67	0.00	-54.6	0.00	54.62	795.37	198.45	350.66	303.07	17.7	-1.31	0.038
130.00	-15.10	-2.51	0.00	-41.3	0.00	41.27	774.00	190.15	321.94	282.47	19.08	-1.33	0.030
132.44	-14.61	-2.42	0.00	-35.2	0.00	35.15	763.20	186.10	308.37	272.53	19.76	-1.34	0.027
132.44	-14.61	-2.42	0.00	-35.2	0.00	35.15	763.20	186.10	308.37	272.53	19.76	-1.34	0.148
135.00	-14.25	-2.33	0.00	-29.0	0.00	28.95	751.60	181.85	294.45	262.19	20.48	-1.34	0.130
140.00	-13.70	-2.25	0.00	-17.3	0.00	17.29	728.15	173.54	268.19	242.29	21.94	-1.43	0.090
142.00	-7.60	-1.34	0.00	-12.8	0.00	12.79	714.94	170.22	258.03	233.29	22.54	-1.45	0.066
145.00	-7.36	-1.29	0.00	-8.8	0.00	8.77	694.02	165.24	243.15	219.76	23.47	-1.48	0.051
149.00	-3.47	-0.78	0.00	-3.6	0.00	3.59	666.12	158.60	224.01	202.35	24.72	-1.51	0.023
150.00	0.00	-0.68	0.00	-2.8	0.00	2.82	659.15	156.94	219.34	198.11	25.04	-1.51	0.014

Load Case: 1.0D + 1.0W Service Normal 60 mph Wind with No Ice 24 Iterations
Gust Response Factor: 1.10
Dead load Factor: 1.00
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-45.20	-6.29	0.00	-668.3	0.00	668.31	3,157.17	784.20	2,737.77	2,376.61	0	0	0.133
5.00	-43.44	-6.20	0.00	-636.8	0.00	636.84	3,114.35	767.59	2,623.10	2,294.24	0.03	-0.05	0.129
10.00	-41.65	-6.10	0.00	-605.8	0.00	605.85	3,070.50	750.99	2,510.88	2,212.51	0.11	-0.11	0.125
15.00	-39.88	-6.00	0.00	-575.4	0.00	575.35	3,025.61	734.38	2,401.12	2,131.45	0.25	-0.16	0.121
20.00	-38.12	-5.90	0.00	-545.3	0.00	545.34	2,979.67	717.78	2,293.81	2,051.12	0.45	-0.21	0.117
25.00	-36.38	-5.80	0.00	-515.8	0.00	515.83	2,932.70	701.17	2,188.95	1,971.58	0.69	-0.26	0.113
30.00	-34.66	-5.73	0.00	-486.8	0.00	486.81	2,875.20	684.57	2,086.54	1,886.63	1	-0.32	0.109
31.50	-34.15	-5.68	0.00	-478.2	0.00	478.23	2,854.27	679.59	2,056.30	1,859.12	1.1	-0.33	0.108
35.00	-32.56	-5.62	0.00	-458.4	0.00	458.35	2,805.46	667.97	1,986.59	1,795.71	1.36	-0.37	0.104
35.67	-32.26	-5.58	0.00	-454.6	0.00	454.60	2,248.06	566.93	1,717.05	1,468.68	1.41	-0.37	0.117
40.00	-30.88	-5.47	0.00	-430.4	0.00	430.43	2,218.58	554.94	1,645.20	1,418.47	1.77	-0.42	0.112
45.00	-29.30	-5.39	0.00	-403.1	0.00	403.06	2,183.59	541.11	1,564.21	1,360.95	2.23	-0.47	0.107
45.48	-29.15	-5.35	0.00	-400.5	0.00	400.47	2,180.18	539.78	1,556.54	1,355.45	2.28	-0.48	0.107
50.00	-27.73	-5.23	0.00	-376.3	0.00	376.29	2,147.57	527.27	1,485.26	1,303.92	2.75	-0.52	0.102
55.00	-26.17	-5.11	0.00	-350.1	0.00	350.13	2,110.50	513.43	1,408.36	1,247.44	3.33	-0.57	0.097
60.00	-24.63	-5.02	0.00	-324.6	0.00	324.59	2,072.40	499.59	1,333.50	1,191.56	3.95	-0.62	0.092
60.48	-24.48	-4.97	0.00	-322.2	0.00	322.18	2,068.68	498.27	1,326.42	1,186.23	4.02	-0.63	0.091
60.48	-24.48	-4.97	0.00	-322.2	0.00	322.18	2,068.68	498.27	1,326.42	1,186.23	4.02	-0.63	0.137
65.00	-23.40	-4.85	0.00	-299.7	0.00	299.73	2,033.25	485.76	1,260.68	1,136.32	4.63	-0.67	0.131
70.00	-22.27	-4.74	0.00	-275.5	0.00	275.47	1,982.07	471.92	1,189.91	1,075.81	5.37	-0.74	0.124
73.50	-21.26	-4.67	0.00	-258.9	0.00	258.87	1,473.95	377.73	952.77	802.29	5.94	-0.79	0.139
75.00	-20.96	-4.60	0.00	-251.9	0.00	251.87	1,466.27	374.41	936.10	791.03	6.19	-0.81	0.136
80.00	-19.98	-4.48	0.00	-228.9	0.00	228.87	1,439.98	363.34	881.58	753.67	7.08	-0.89	0.127
85.00	-19.01	-4.35	0.00	-206.5	0.00	206.49	1,412.66	352.27	828.70	716.63	8.04	-0.95	0.117
90.00	-18.05	-4.22	0.00	-184.8	0.00	184.75	1,384.30	341.21	777.46	679.95	9.08	-1.02	0.108
95.00	-17.05	-4.09	0.00	-163.7	0.00	163.67	1,354.89	330.14	727.85	643.70	10.18	-1.09	0.098
99.02	-16.22	-4.01	0.00	-147.2	0.00	147.22	1,330.50	321.24	689.15	614.89	11.12	-1.13	0.090
100.00	-15.97	-3.99	0.00	-143.3	0.00	143.29	1,324.45	319.07	679.87	607.91	11.35	-1.15	0.047
100.08	-15.95	-3.94	0.00	-143.0	0.00	142.97	1,323.95	318.89	679.12	607.34	11.37	-1.15	0.047
100.08	-15.95	-3.94	0.00	-143.0	0.00	142.97	1,323.95	318.89	679.12	607.34	11.37	-1.15	0.070
105.00	-15.03	-3.80	0.00	-123.6	0.00	123.58	1,292.97	308.00	633.54	572.65	12.57	-1.18	0.062
110.00	-14.18	-3.68	0.00	-104.6	0.00	104.56	1,247.09	296.93	588.83	532.25	13.82	-1.21	0.054
110.00	-14.18	-3.68	0.00	-104.6	0.00	104.56	853.22	223.36	444.16	366.32	13.82	-1.21	0.064
113.80	-13.56	-3.53	0.00	-90.6	0.00	90.56	839.45	217.05	419.43	350.14	14.8	-1.24	0.056
114.00	-11.42	-2.91	0.00	-89.7	0.00	89.69	838.71	216.72	418.15	349.29	14.85	-1.24	0.054
115.00	-11.29	-2.87	0.00	-86.8	0.00	86.78	834.98	215.06	411.77	345.05	15.12	-1.25	0.053
120.00	-10.61	-2.78	0.00	-72.4	0.00	72.44	815.69	206.75	380.60	323.94	16.44	-1.28	0.045
125.00	-9.94	-2.69	0.00	-58.5	0.00	58.53	795.37	198.45	350.66	303.07	17.8	-1.31	0.037
130.00	-9.29	-2.62	0.00	-45.1	0.00	45.07	774.00	190.15	321.94	282.47	19.19	-1.33	0.029
132.44	-8.97	-2.58	0.00	-38.7	0.00	38.68	763.20	186.10	308.37	272.53	19.87	-1.34	0.026
132.44	-8.97	-2.58	0.00	-38.7	0.00	38.68	763.20	186.10	308.37	272.53	19.87	-1.34	0.154
135.00	-8.76	-2.53	0.00	-32.1	0.00	32.08	751.60	181.85	294.45	262.19	20.59	-1.35	0.134
140.00	-8.42	-2.48	0.00	-19.4	0.00	19.44	728.15	173.54	268.19	242.29	22.06	-1.45	0.092
142.00	-4.56	-1.46	0.00	-14.5	0.00	14.48	714.94	170.22	258.03	233.29	22.68	-1.47	0.069
145.00	-4.41	-1.42	0.00	-10.1	0.00	10.10	694.02	165.24	243.15	219.76	23.61	-1.51	0.052
149.00	-1.71	-0.90	0.00	-4.4	0.00	4.42	666.12	158.60	224.01	202.35	24.89	-1.54	0.024
150.00	0.00	-0.86	0.00	-3.5	0.00	3.52	659.15	156.94	219.34	198.11	25.21	-1.54	0.018

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

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

Spectral Response Acceleration for Short Period (S_S):	0.187
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.054
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}):	0.199
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.086
Seismic Response Coefficient (C_s):	0.030
Upper Limit C_S:	0.030
Lower Limit C_S:	0.030
Period based on Rayleigh Method (sec):	2.810
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	2.000
Total Unfactored Dead Load:	45.210 k
Seismic Base Shear (E):	1.360 k

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

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
42	149.5	50	1,122	0.003	4	62
41	147	204	4,407	0.012	17	253
40	143.5	156	3,219	0.009	12	194
39	141	117	2,331	0.006	9	145
38	137.5	337	6,362	0.018	24	417
37	133.72	204	3,656	0.010	14	253
36	131.22	319	5,494	0.015	21	396
35	127.5	660	10,726	0.030	40	818
34	122.5	668	10,022	0.028	38	828
33	117.5	676	9,332	0.026	35	838
32	114.5	136	1,785	0.005	7	169
31	113.9	29	373	0.001	1	36
30	111.9	570	7,138	0.020	27	707
29	107.5	849	9,815	0.027	37	1,053
28	102.54	920	9,672	0.027	36	1,141
27	100.04	20	204	0.001	1	25
26	99.51	250	2,475	0.007	9	310
25	97.01	828	7,795	0.022	29	1,027
24	92.5	1,002	8,574	0.024	32	1,243
23	87.5	956	7,320	0.020	27	1,186
22	82.5	967	6,581	0.018	25	1,199
21	77.5	978	5,872	0.016	22	1,212
20	74.25	295	1,628	0.004	6	366
19	71.75	1,010	5,199	0.014	19	1,252
18	67.5	1,131	5,153	0.014	19	1,402
17	62.74	1,076	4,237	0.012	16	1,334
16	60.24	147	533	0.002	2	182
15	57.5	1,539	5,087	0.014	19	1,908
14	52.5	1,552	4,278	0.012	16	1,924
13	47.74	1,415	3,224	0.009	12	1,754
12	45.24	151	309	0.001	1	187
11	42.5	1,579	2,852	0.008	11	1,958
10	37.8334	1,379	1,974	0.006	7	1,710
9	35.3334	299	374	0.001	1	371

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
8	33.25	1,580	1,747	0.005	7	1,959
7	30.75	513	485	0.001	2	636
6	27.5	1,719	1,300	0.004	5	2,132
5	22.5	1,735	879	0.002	3	2,152
4	17.5	1,751	536	0.002	2	2,172
3	12.5	1,768	276	0.001	1	2,192
2	7.5	1,784	100	0.000	0	2,212
1	2.5	1,757	11	0.000	0	2,178
Powerwave Allgon LGP21901	150	33	742	0.002	3	41
Powerwave Allgon LGP21401	150	85	1,904	0.005	7	105
Raycap DC6-48-60-18-8F (23.5" Height)	150	40	900	0.002	3	50
Ericsson RRUS 8843 B2, B66A	150	216	4,860	0.013	18	268
Ericsson RRUS 4415 B30	150	138	3,105	0.009	12	171
Ericsson RRUS 4478 B14	150	180	4,043	0.011	15	223
Ericsson RRUS 4449 B5, B12	150	213	4,792	0.013	18	264
Powerwave Allgon 7770.00	150	105	2,362	0.006	9	130
CCI HPA65R-BU8A	150	162	3,645	0.010	14	201
CCI DMP65R-BU8D	150	287	6,460	0.018	24	356
CCI OPA65R-BU8D	150	230	5,164	0.014	19	285
Platform w/ HRs w/ SitePro1 HRK	149	2,500	55,502	0.153	208	3,100
Ericsson Radio 4460 B25+B66	142	327	6,594	0.018	25	405
Ericsson Radio 4480 B71+B85A	142	252	5,081	0.014	19	312
Commscope VV-65A-R1	142	71	1,440	0.004	5	89
Ericsson AIR 6419 B41	142	250	5,039	0.014	19	310
RFS APXVAALL24 43-U-NA20	142	368	7,428	0.020	28	457
Generic Flat Platform with Handrails	142	2,500	50,410	0.139	189	3,100
Commscope CBC1923Q-43	114	22	285	0.001	1	27
Samsung B5/B13 RRH-BR04C	114	211	2,741	0.008	10	261
Samsung B2/B66A RRH-BR049	114	253	3,291	0.009	12	314
Raycap RRFDC-3315-PF-48	114	54	699	0.002	3	67
Amphenol Antel BXA-70080-4CF-EDIN-X	114	36	468	0.001	2	45
Samsung MT6407-77A	114	245	3,181	0.009	12	304
Commscope JAHH-65B-R3B	114	364	4,725	0.013	18	451
Generic Round T-Arm	114	938	12,184	0.034	46	1,162
Amphenol Antel BXA-70063-6CF-EDIN-X	113.8	51	660	0.002	2	63
		45,206	362,165	1.000	1,356	56,051

0.9D - 1.0Ev + 1.0Eh Normal **Seismic (Reduced DL)**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
42	149.5	50	1,122	0.003	4	43
41	147	204	4,407	0.012	17	175
40	143.5	156	3,219	0.009	12	134
39	141	117	2,331	0.006	9	101
38	137.5	337	6,362	0.018	24	289
37	133.72	204	3,656	0.010	14	176
36	131.22	319	5,494	0.015	21	274
35	127.5	660	10,726	0.030	40	568
34	122.5	668	10,022	0.028	38	574
33	117.5	676	9,332	0.026	35	581
32	114.5	136	1,785	0.005	7	117
31	113.9	29	373	0.001	1	25
30	111.9	570	7,138	0.020	27	490
29	107.5	849	9,815	0.027	37	731
28	102.54	920	9,672	0.027	36	791
27	100.04	20	204	0.001	1	18
26	99.51	250	2,475	0.007	9	215
25	97.01	828	7,795	0.022	29	712
24	92.5	1,002	8,574	0.024	32	862
23	87.5	956	7,320	0.020	27	822
22	82.5	967	6,581	0.018	25	832
21	77.5	978	5,872	0.016	22	841

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
20	74.25	295	1,628	0.004	6	254
19	71.75	1,010	5,199	0.014	19	869
18	67.5	1,131	5,153	0.014	19	973
17	62.74	1,076	4,237	0.012	16	926
16	60.24	147	533	0.002	2	126
15	57.5	1,539	5,087	0.014	19	1,323
14	52.5	1,552	4,278	0.012	16	1,335
13	47.74	1,415	3,224	0.009	12	1,217
12	45.24	151	309	0.001	1	130
11	42.5	1,579	2,852	0.008	11	1,358
10	37.8334	1,379	1,974	0.006	7	1,186
9	35.3334	299	374	0.001	1	257
8	33.25	1,580	1,747	0.005	7	1,359
7	30.75	513	485	0.001	2	441
6	27.5	1,719	1,300	0.004	5	1,479
5	22.5	1,735	879	0.002	3	1,493
4	17.5	1,751	536	0.002	2	1,506
3	12.5	1,768	276	0.001	1	1,520
2	7.5	1,784	100	0.000	0	1,534
1	2.5	1,757	11	0.000	0	1,511
Powerwave Allgon LGP21901	150	33	742	0.002	3	28
Powerwave Allgon LGP21401	150	85	1,904	0.005	7	73
Raycap DC6-48-60-18-8F (23.5" Height)	150	40	900	0.002	3	34
Ericsson RRUS 8843 B2, B66A	150	216	4,860	0.013	18	186
Ericsson RRUS 4415 B30	150	138	3,105	0.009	12	119
Ericsson RRUS 4478 B14	150	180	4,043	0.011	15	155
Ericsson RRUS 4449 B5, B12	150	213	4,792	0.013	18	183
Powerwave Allgon 7770.00	150	105	2,362	0.006	9	90
CCI HPA65R-BU8A	150	162	3,645	0.010	14	139
CCI DMP65R-BU8D	150	287	6,460	0.018	24	247
CCI OPA65R-BU8D	150	230	5,164	0.014	19	197
Platform w/ HRs w/ SitePro1 HRK	149	2,500	55,502	0.153	208	2,150
Ericsson Radio 4460 B25+B66	142	327	6,594	0.018	25	281
Ericsson Radio 4480 B71+B85A	142	252	5,081	0.014	19	217
Commscope VV-65A-R1	142	71	1,440	0.004	5	61
Ericsson AIR 6419 B41	142	250	5,039	0.014	19	215
RFS APXVAALL24 43-U-NA20	142	368	7,428	0.020	28	317
Generic Flat Platform with Handrails	142	2,500	50,410	0.139	189	2,150
Commscope CBC1923Q-43	114	22	285	0.001	1	19
Samsung B5/B13 RRH-BR04C	114	211	2,741	0.008	10	181
Samsung B2/B66A RRH-BR049	114	253	3,291	0.009	12	218
Raycap RRFDC-3315-PF-48	114	54	699	0.002	3	46
Amphenol Antel BXA-70080-4CF-EDIN-X	114	36	468	0.001	2	31
Samsung MT6407-77A	114	245	3,181	0.009	12	211
Commscope JAHH-65B-R3B	114	364	4,725	0.013	18	313
Generic Round T-Arm	114	938	12,184	0.034	46	806
Amphenol Antel BXA-70063-6CF-EDIN-X	113.8	51	660	0.002	2	44
		45,206	362,165	1.000	1,356	38,882

1.2D + 1.0Ev + 1.0Eh Normal **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	-53.87	-1.36	0.00	-174.90	0.00	174.90	3,157.17	784.20	2,738	2,376.61	0.00	0.00	0.04
5.00	-51.66	-1.37	0.00	-168.09	0.00	168.09	3,114.35	767.59	2,623	2,294.24	0.01	-0.01	0.04
10.00	-49.47	-1.38	0.00	-161.23	0.00	161.23	3,070.50	750.99	2,511	2,212.51	0.03	-0.03	0.04
15.00	-47.30	-1.39	0.00	-154.31	0.00	154.31	3,025.61	734.38	2,401	2,131.45	0.07	-0.04	0.04
20.00	-45.14	-1.40	0.00	-147.35	0.00	147.35	2,979.67	717.78	2,294	2,051.12	0.12	-0.06	0.04
25.00	-43.01	-1.40	0.00	-140.36	0.00	140.36	2,932.70	701.17	2,189	1,971.58	0.18	-0.07	0.04
30.00	-42.38	-1.41	0.00	-133.35	0.00	133.35	2,875.20	684.57	2,087	1,886.63	0.27	-0.08	0.04
31.50	-40.42	-1.40	0.00	-131.24	0.00	131.24	2,854.27	679.59	2,056	1,859.12	0.29	-0.09	0.04
35.00	-40.05	-1.40	0.00	-126.34	0.00	126.34	2,805.46	667.97	1,987	1,795.71	0.36	-0.10	0.03
35.67	-38.34	-1.40	0.00	-125.40	0.00	125.40	2,248.06	566.93	1,717	1,468.68	0.38	-0.10	0.04

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
40.00	-36.38	-1.39	0.00	-119.34	0.00	119.34	2,218.58	554.94	1,645	1,418.47	0.47	-0.11	0.04
45.00	-36.19	-1.40	0.00	-112.38	0.00	112.38	2,183.59	541.11	1,564	1,360.95	0.60	-0.13	0.04
45.48	-34.44	-1.38	0.00	-111.71	0.00	111.71	2,180.18	539.78	1,557	1,355.45	0.61	-0.13	0.04
45.48	-34.44	-1.38	0.00	-111.71	0.00	111.71	2,180.18	539.78	1,557	1,355.45	0.61	-0.13	0.04
50.00	-32.51	-1.37	0.00	-105.46	0.00	105.46	2,147.57	527.27	1,485	1,303.92	0.74	-0.14	0.03
55.00	-30.60	-1.35	0.00	-98.60	0.00	98.60	2,110.50	513.43	1,408	1,247.44	0.90	-0.16	0.03
60.00	-30.42	-1.36	0.00	-91.83	0.00	91.83	2,072.40	499.59	1,334	1,191.56	1.07	-0.17	0.03
60.48	-29.09	-1.34	0.00	-91.18	0.00	91.18	2,068.68	498.27	1,326	1,186.23	1.08	-0.17	0.03
60.48	-29.09	-1.34	0.00	-91.18	0.00	91.18	2,068.68	498.27	1,326	1,186.23	1.08	-0.17	0.05
65.00	-27.68	-1.32	0.00	-85.13	0.00	85.13	2,033.25	485.76	1,261	1,136.32	1.25	-0.18	0.04
70.00	-26.43	-1.31	0.00	-78.51	0.00	78.51	1,982.07	471.92	1,190	1,075.81	1.46	-0.20	0.04
73.50	-26.07	-1.31	0.00	-73.93	0.00	73.93	1,473.95	377.73	953	802.29	1.61	-0.22	0.05
75.00	-24.85	-1.28	0.00	-71.97	0.00	71.97	1,466.27	374.41	936	791.03	1.68	-0.22	0.05
80.00	-23.65	-1.26	0.00	-65.55	0.00	65.55	1,439.98	363.34	882	753.67	1.93	-0.24	0.04
85.00	-22.47	-1.24	0.00	-59.23	0.00	59.23	1,412.66	352.27	829	716.63	2.19	-0.26	0.04
90.00	-21.23	-1.21	0.00	-53.04	0.00	53.04	1,384.30	341.21	777	679.95	2.48	-0.28	0.04
95.00	-20.20	-1.18	0.00	-47.00	0.00	47.00	1,354.89	330.14	728	643.70	2.79	-0.30	0.03
99.02	-19.89	-1.17	0.00	-42.26	0.00	42.26	1,330.50	321.24	689	614.89	3.05	-0.32	0.03
100.00	-19.86	-1.17	0.00	-41.11	0.00	41.11	1,324.45	319.07	680	607.91	3.12	-0.32	0.02
100.08	-18.72	-1.13	0.00	-41.02	0.00	41.02	1,323.95	318.89	679	607.34	3.12	-0.32	0.02
100.08	-18.72	-1.13	0.00	-41.02	0.00	41.02	1,323.95	318.89	679	607.34	3.12	-0.32	0.03
105.00	-17.67	-1.09	0.00	-35.46	0.00	35.46	1,292.97	308.00	634	572.65	3.45	-0.33	0.02
110.00	-16.96	-1.06	0.00	-30.01	0.00	30.01	1,247.09	296.93	589	532.25	3.80	-0.34	0.02
110.00	-16.96	-1.06	0.00	-30.01	0.00	30.01	853.22	223.36	444	366.32	3.80	-0.34	0.03
113.80	-16.86	-1.06	0.00	-25.98	0.00	25.98	839.45	217.05	419	350.14	4.08	-0.35	0.02
114.00	-14.06	-0.93	0.00	-25.77	0.00	25.77	838.71	216.72	418	349.29	4.09	-0.35	0.02
115.00	-13.23	-0.89	0.00	-24.84	0.00	24.84	834.98	215.06	412	345.05	4.17	-0.35	0.02
120.00	-12.40	-0.85	0.00	-20.37	0.00	20.37	815.69	206.75	381	323.94	4.54	-0.36	0.02
125.00	-11.58	-0.81	0.00	-16.11	0.00	16.11	795.37	198.45	351	303.07	4.92	-0.37	0.02
130.00	-11.19	-0.79	0.00	-12.07	0.00	12.07	774.00	190.15	322	282.47	5.30	-0.37	0.01
132.44	-10.93	-0.77	0.00	-10.15	0.00	10.15	763.20	186.10	308	272.53	5.50	-0.38	0.01
132.44	-10.93	-0.77	0.00	-10.15	0.00	10.15	763.20	186.10	308	272.53	5.50	-0.38	0.05
135.00	-10.51	-0.75	0.00	-8.17	0.00	8.17	751.60	181.85	294	262.19	5.70	-0.38	0.05
140.00	-10.37	-0.74	0.00	-4.44	0.00	4.44	728.15	173.54	268	242.29	6.11	-0.40	0.03
142.00	-5.50	-0.41	0.00	-2.96	0.00	2.96	714.94	170.22	258	233.29	6.28	-0.41	0.02
145.00	-5.25	-0.39	0.00	-1.73	0.00	1.73	694.02	165.24	243	219.76	6.53	-0.41	0.02
149.00	-2.09	-0.16	0.00	-0.16	0.00	0.16	666.12	158.60	224	202.35	6.88	-0.42	0.00
150.00	0.00	-0.14	0.00	0.00	0.00	0.00	659.15	156.94	219	198.11	6.97	-0.42	0.00

0.9D - 1.0Ev + 1.0Eh Normal **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	-37.37	-1.36	0.00	-171.26	0.00	171.26	3,157.17	784.20	2,738	2,376.61	0.00	0.00	0.04
5.00	-35.84	-1.37	0.00	-164.46	0.00	164.46	3,114.35	767.59	2,623	2,294.24	0.01	-0.01	0.04
10.00	-34.32	-1.37	0.00	-157.62	0.00	157.62	3,070.50	750.99	2,511	2,212.51	0.03	-0.03	0.04
15.00	-32.81	-1.38	0.00	-150.75	0.00	150.75	3,025.61	734.38	2,401	2,131.45	0.06	-0.04	0.04
20.00	-31.32	-1.38	0.00	-143.85	0.00	143.85	2,979.67	717.78	2,294	2,051.12	0.12	-0.05	0.03
25.00	-29.84	-1.38	0.00	-136.94	0.00	136.94	2,932.70	701.17	2,189	1,971.58	0.18	-0.07	0.03
30.00	-29.40	-1.39	0.00	-130.03	0.00	130.03	2,875.20	684.57	2,087	1,886.63	0.26	-0.08	0.03
31.50	-28.04	-1.38	0.00	-127.95	0.00	127.95	2,854.27	679.59	2,056	1,859.12	0.29	-0.09	0.03
35.00	-27.78	-1.38	0.00	-123.12	0.00	123.12	2,805.46	667.97	1,987	1,795.71	0.35	-0.10	0.03
35.67	-26.59	-1.37	0.00	-122.20	0.00	122.20	2,248.06	566.93	1,717	1,468.68	0.37	-0.10	0.04
40.00	-25.23	-1.37	0.00	-116.24	0.00	116.24	2,218.58	554.94	1,645	1,418.47	0.46	-0.11	0.03
45.00	-25.10	-1.37	0.00	-109.40	0.00	109.40	2,183.59	541.11	1,564	1,360.95	0.58	-0.12	0.03
45.48	-23.89	-1.36	0.00	-108.75	0.00	108.75	2,180.18	539.78	1,557	1,355.45	0.60	-0.13	0.03
45.48	-23.89	-1.36	0.00	-108.75	0.00	108.75	2,180.18	539.78	1,557	1,355.45	0.60	-0.13	0.03
50.00	-22.55	-1.34	0.00	-102.61	0.00	102.61	2,147.57	527.27	1,485	1,303.92	0.72	-0.14	0.03
55.00	-21.23	-1.33	0.00	-95.89	0.00	95.89	2,110.50	513.43	1,408	1,247.44	0.87	-0.15	0.03
60.00	-21.10	-1.33	0.00	-89.26	0.00	89.26	2,072.40	499.59	1,334	1,191.56	1.04	-0.17	0.03
60.48	-20.18	-1.31	0.00	-88.62	0.00	88.62	2,068.68	498.27	1,326	1,186.23	1.06	-0.17	0.03
60.48	-20.18	-1.31	0.00	-88.62	0.00	88.62	2,068.68	498.27	1,326	1,186.23	1.06	-0.17	0.04
65.00	-19.20	-1.29	0.00	-82.70	0.00	82.70	2,033.25	485.76	1,261	1,136.32	1.22	-0.18	0.04
70.00	-18.33	-1.28	0.00	-76.23	0.00	76.23	1,982.07	471.92	1,190	1,075.81	1.42	-0.20	0.04
73.50	-18.08	-1.27	0.00	-71.76	0.00	71.76	1,473.95	377.73	953	802.29	1.57	-0.21	0.04
75.00	-17.24	-1.25	0.00	-69.85	0.00	69.85	1,466.27	374.41	936	791.03	1.64	-0.22	0.04
80.00	-16.41	-1.23	0.00	-63.59	0.00	63.59	1,439.98	363.34	882	753.67	1.88	-0.24	0.04

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
85.00	-15.58	-1.20	0.00	-57.44	0.00	57.44	1,412.66	352.27	829	716.63	2.14	-0.26	0.04
90.00	-14.72	-1.17	0.00	-51.43	0.00	51.43	1,384.30	341.21	777	679.95	2.42	-0.28	0.03
95.00	-14.01	-1.14	0.00	-45.57	0.00	45.57	1,354.89	330.14	728	643.70	2.72	-0.29	0.03
99.02	-13.79	-1.13	0.00	-40.97	0.00	40.97	1,330.50	321.24	689	614.89	2.97	-0.31	0.03
100.00	-13.78	-1.13	0.00	-39.86	0.00	39.86	1,324.45	319.07	680	607.91	3.04	-0.31	0.02
100.08	-12.99	-1.09	0.00	-39.77	0.00	39.77	1,323.95	318.89	679	607.34	3.04	-0.31	0.02
100.08	-12.99	-1.09	0.00	-39.77	0.00	39.77	1,323.95	318.89	679	607.34	3.04	-0.31	0.02
105.00	-12.26	-1.06	0.00	-34.38	0.00	34.38	1,292.97	308.00	634	572.65	3.37	-0.32	0.02
110.00	-11.77	-1.03	0.00	-29.10	0.00	29.10	1,247.09	296.93	589	532.25	3.71	-0.33	0.02
110.00	-11.77	-1.03	0.00	-29.10	0.00	29.10	853.22	223.36	444	366.32	3.71	-0.33	0.02
113.80	-11.70	-1.03	0.00	-25.19	0.00	25.19	839.45	217.05	419	350.14	3.97	-0.34	0.02
114.00	-9.76	-0.90	0.00	-24.98	0.00	24.98	838.71	216.72	418	349.29	3.99	-0.34	0.02
115.00	-9.17	-0.87	0.00	-24.08	0.00	24.08	834.98	215.06	412	345.05	4.06	-0.34	0.02
120.00	-8.60	-0.83	0.00	-19.75	0.00	19.75	815.69	206.75	381	323.94	4.42	-0.35	0.02
125.00	-8.03	-0.78	0.00	-15.61	0.00	15.61	795.37	198.45	351	303.07	4.79	-0.36	0.01
130.00	-7.76	-0.76	0.00	-11.69	0.00	11.69	774.00	190.15	322	282.47	5.17	-0.36	0.01
132.44	-7.58	-0.75	0.00	-9.83	0.00	9.83	763.20	186.10	308	272.53	5.35	-0.37	0.01
132.44	-7.58	-0.75	0.00	-9.83	0.00	9.83	763.20	186.10	308	272.53	5.35	-0.37	0.05
135.00	-7.29	-0.72	0.00	-7.92	0.00	7.92	751.60	181.85	294	262.19	5.55	-0.37	0.04
140.00	-7.19	-0.72	0.00	-4.30	0.00	4.30	728.15	173.54	268	242.29	5.95	-0.39	0.03
142.00	-3.82	-0.40	0.00	-2.86	0.00	2.86	714.94	170.22	258	233.29	6.11	-0.40	0.02
145.00	-3.64	-0.38	0.00	-1.67	0.00	1.67	694.02	165.24	243	219.76	6.36	-0.40	0.01
149.00	-1.45	-0.15	0.00	-0.15	0.00	0.15	666.12	158.60	224	202.35	6.70	-0.41	0.00
150.00	0.00	-0.14	0.00	0.00	0.00	0.00	659.15	156.94	219	198.11	6.79	-0.41	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 Normal	27.16	0.00	54.19	0.00	0.00	2908.83	132.44	0.64
0.9D + 1.0W Normal	27.13	0.00	40.63	0.00	0.00	2860.69	132.44	0.62
1.2D + 1.0Di + 1.0Wi Normal	5.45	0.00	65.14	0.00	0.00	643.32	132.44	0.15
1.2D + 1.0Ev + 1.0Eh Normal	1.41	0.00	53.87	0.00	0.00	174.90	132.44	0.05
0.9D - 1.0Ev + 1.0Eh Normal	1.39	0.00	37.37	0.00	0.00	171.26	132.44	0.05
1.0D + 1.0W Service Normal	6.29	0.00	45.20	0.00	0.00	668.31	132.44	0.15

ADDITIONAL STEEL SUMMARY

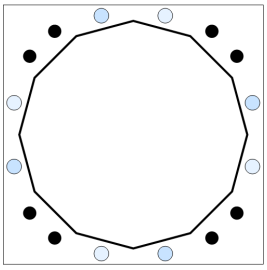
			Intermediate Connectors				Max member		
Elev From (ft)	Elev To (ft)	Member	VQ/I	Shear Applied (kips)	Shear (phiVn) (kips)	Ratio	Pu (kip)	PhiPn (kip)	Ratio
0.00	45.48	SOL #20 All Thread Bar	203.7	6.1	16.8	0.3635	222.0	330.5	0.6718
0.00	60.48	SOL #20 All Thread Bar	207.7	6.2	16.8	0.3706	218.8	330.5	0.6622
45.48	100.08	SOL #20 All Thread Bar	376.7	11.3	16.8	0.6724	248.7	330.5	0.7525
99.02	132.44	SOL #20 All Thread Bar	422.8	12.7	16.8	0.7546	177.5	330.5	0.5371

			Upper Termination Connectors					Lower Termination Connectors				
Elev From (ft)	Elev To (ft)	Member	MQ/I	phiVn (kips)	Num Reqd	Num Actual	Ratio	MQ/I (kips)	phiVn (kip)	Num Reqd	Num Actual	Ratio
0.00	45.48	SOL #20 All Thread Bar	0	12	0	20	0.0000	0	12	0	0	0.0000
0.00	60.48	SOL #20 All Thread Bar	161.0417	12	14	20	0.6710	0	12	0	0	0.0000
45.48	100.08	SOL #20 All Thread Bar	83.4135	12	7	16	0.4344	0	12	0	0	0.0000
99.02	132.44	SOL #20 All Thread Bar	62.8992	12	6	12	0.4368	119.1309	12	10	20	0.4964

BASE PLATE ANALYSIS @ 0 FT

PLATE PARAMETERS (ID# 19550)

Width:	44	in
Shape:	Square	
Thickness:	2.5	in
Grade:	A633 Gr. E	
Yield Strength:	60	ksi
Tensile Strength:	80	ksi
Clip Length:		in
Rod Detail Type:	c	
Clear Distance	-	in
Base Weld Size:	0.25	in
Orientation Offset:	-	°
Analysis Type:	Elastic	
Neutral Axis:	38	°



ANCHOR ROD PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	Fy (ksi)	Fu (ksi)	Spacing (in)	Offset (°)
Original [ID# 20055]	Cluster	8	2.25	44	A615-75	75	100	6	-

DYWIDAG BAR PARAMETERS

Quantity	Bar Size	Bar Diameter (in)	Fy (ksi)	Fu (ksi)	Bracket Type	Bracket Offset (in)	Circle (in)	Offset (°)
4 [ID# 1507]	#20	2.5	80	100	Angle	2.19	44.26	75
4 [ID# 1509]	#20	2.5	80	100	Angle	2.19	44.26	15

ANCHOR ROD GEOMETRY AND APPLIED LOADS --- ORIGINAL (8) 2.25"ø [ID 20055]

Position	Radians	X (in)	Y (in)	Moment Arm (in)	Inertia (in^4)	Axial Load (k)	Shear Load (k)
1	0.649	17.53	13.30	-0.294	1.119	0.34	6.07
2	0.922	13.30	17.53	5.289	91.692	49.67	5.87
3	2.220	-13.30	17.53	20.685	1390.482	185.69	0.09
4	2.493	-17.53	13.30	20.000	1299.909	179.63	1.55
5	3.791	-17.53	-13.30	0.294	1.119	5.53	6.07
6	4.063	-13.30	-17.53	-5.289	91.692	-43.79	5.87
7	5.361	13.30	-17.53	-20.685	1390.482	-179.81	0.09
8	5.634	17.53	-13.30	-20.000	1299.909	-173.76	1.55

DYWIDAG BAR GEOMETRY AND APPLIED LOADS --- (4) #20 [ID 1507]

Position	Radians	X (in)	Y (in)	Moment Arm (in)	Inertia (in^4)	Axial Load (k)
1	2.880	-21.38	5.73	17.674	1535.227	181.86
2	4.451	-5.73	-21.38	-13.318	872.598	-130.32
3	6.021	21.38	-5.73	-17.674	1535.227	-174.19
4	1.309	5.73	21.38	13.318	872.598	137.99

DYWIDAG BAR GEOMETRY AND APPLIED LOADS --- (4) #20 [ID 1509]

Position	Radians	X (in)	Y (in)	Moment Arm (in)	Inertia (in^4)	Axial Load (k)
1	1.833	-5.73	21.38	20.371	2038.889	209.02
2	3.403	-21.38	-5.73	8.647	368.937	90.93
3	4.974	5.73	-21.38	-20.371	2038.889	-201.35
4	0.262	21.38	5.73	-8.647	368.937	-83.26

REACTION DISTRIBUTION

Component	ID	Moment Mu (k-ft)	Axial Load Pu (k)	Shear Vu (k)	Moment Factor
Pole	37.38"ø x 0.375" (12 Sides)	1261.9	54.19	27.16	0.434
Bolt Group	Original (8) 2.25"ø	1261.9	-	27.16	0.434
Dywidag Group	(4) #20	823.5	-	-	0.283
Dywidag Group	(4) #20	823.5	-	-	0.283
	TOTALS	**2908.83**	**54.19**	**27.16**	

COMPONENT PROPERTIES

Component	ID	Gross Area (in^2)	Net Area (in^2)	Individual Inertia (in^4)	Moment of Inertia (in^4)	Threads/in
Pole	37.38"ø x 0.375" (12 Sides)	43.0992	-	-	7379.37	-
Bolt Group	Original (8) 2.25"ø	3.9761	3.2477	0.8393	5566.40	4.5
Dywidag Group	(4) #20	4.9087	4.9087	1.9175	4815.65	-
Dywidag Group	(4) #20	4.9087	4.9087	1.9175	4815.65	-

EXTERNAL BASE PLATE BEND LINE ANALYSIS @ 0 FT

POLE PROPERTIES

Flat-to-Flat Diameter:	37.63	in
Point-to-Point Diameter:	38.96	in
Flat Width:	10.083	in
Flat Radians:	0.524	rad

PLATE PROPERTIES

Neutral Axis:	38	°
Bend Line Lower Limit:		rad
Bend Line Upper Limit:	-0.179	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	24.595	0.00	38.430	560.2	2075.2	0.270
Corner	23.268	0.00	36.356	317.7	1963.2	0.162

ELASTIC ANCHOR ROD ANALYSIS

Class	Group Quantity	Rod Diameter (in)	Applied Axial Load Pu (k)	Applied Shear Load Vu (k)	Compressive Capacity ϕPn (k)	Ratio	Interaction
Original	8	2.25	185.7	0.1	243.6	0.762	0.762

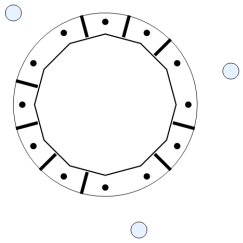
DYWIDAG BAR ANALYSIS

Group Quantity	Bar Size	Bar Circle (in)	Applied Axial Load Pu (k)	Compressive Capacity ϕPn (k)	Ratio
4	#20	44.26	181.9	368.2	0.494
4	#20	44.26	209.0	368.2	0.568

UPPER FLANGE PLATE ANALYSIS @ 110 FT

PLATE PARAMETERS (ID# 19549)

Diameter:	28.5	in
Shape:	Round	
Thickness:	1	in
Grade:	A572-60	
Yield Strength:	60	ksi
Tensile Strength:	75	ksi
Pole Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Elastic	
Neutral Axis:	308	°



FLANGE BOLT PARAMETERS

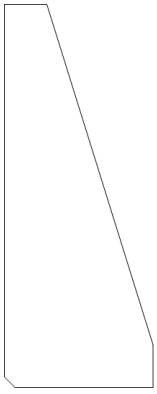
Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	Fy (ksi)	Fu (ksi)	Spacing (in)	Offset (°)
Original [ID# 20054]	Radial	12	1	25.75	A325	92	120	-	-

DYWIDAG BAR PARAMETERS

Quantity	Bar Size	Bar Diameter (in)	Fy (ksi)	Fu (ksi)	Bracket Type	Bracket Offset (in)	Circle (in)	Offset (°)
3 [ID# 1508]	#20	2.5	80	100	W8x21	8.28	40.33	15

STIFFENER PARAMETERS

Arrangement:	Radial	
Quantity:	9	
Height:	9	in
Width:	3.5	in
Thickness:	0.625	in
Notch:	0.25	in
Grade:	A572-50	
Yield Strength:	50	ksi
Tensile Strength:	65	ksi
Horizontal Weld Type:	Fillet	
Horizontal Weld Fillet Size:	0.25	in
Vertical Weld Fillet Size:	0.25	in
Weld Strength:	70	ksi
Orientation Offset:	-	°



FLANGE BOLT GEOMETRY AND APPLIED LOADS --- ORIGINAL (12) 1"ø [ID 20054]

Position	Radians	X (in)	Y (in)	Moment Arm (in)	Inertia (in^4)	Axial Load (k)	Shear Load (k)
1	0.524	11.15	6.44	12.131	89.168	18.88	0.29
2	1.047	6.44	11.15	11.358	78.173	17.70	0.79
3	1.571	0.00	12.88	7.542	34.484	11.86	1.65
4	2.094	-6.44	11.15	1.705	1.790	2.94	2.08
5	2.618	-11.15	6.44	-4.589	12.785	-6.69	1.95
6	3.142	-12.88	0.00	-9.653	56.474	-14.43	1.29
7	3.665	-11.15	-6.44	-12.131	89.168	-18.22	0.29
8	4.189	-6.44	-11.15	-11.358	78.173	-17.04	0.79
9	4.712	0.00	-12.88	-7.542	34.484	-11.20	1.65
10	5.236	6.44	-11.15	-1.705	1.790	-2.28	2.08
11	5.760	11.15	-6.44	4.589	12.785	7.34	1.95
12	6.283	12.88	0.00	9.653	56.474	15.09	1.29

DYWIDAG BAR GEOMETRY AND APPLIED LOADS --- (3) #20 [ID 1508]

Position	Radians	X (in)	Y (in)	Moment Arm (in)	Inertia (in^4)	Axial Load (k)
1	0.262	19.48	5.22	18.561	1692.983	187.95
2	2.356	-14.26	14.26	-2.457	31.559	-20.46
3	4.974	5.22	-19.48	-7.879	306.612	-74.21

STIFFENER GEOMETRY AND APPLIED LOADS

Position	Radians	Moment Arm (in)	Inertia (in^4)	Axial Load (k)	Shear Load (k)
1	0.785	12.291	276.291	15.11	0.21
2	1.309	9.890	179.668	12.22	1.05
3	1.833	4.839	44.705	6.13	1.60
4	2.880	-7.453	102.988	-8.69	1.39
5	3.403	-11.399	237.951	-13.45	0.68
6	3.927	-12.291	276.291	-14.52	0.21
7	4.451	-9.890	179.668	-11.63	1.05
8	5.498	1.509	6.365	2.11	1.73
9	6.021	7.453	102.988	9.28	1.39

REACTION DISTRIBUTION

Component	ID	Moment Mu (k-ft)	Axial Load Pu (k)	Shear Vu (k)	Moment Factor
Pole	21.2673"ø x 0.1875" (12 Sides)	114.8	15.67	16.10	0.251
Bolt Group	Original (12) 1"ø	114.8	-	16.10	0.251
Dywidag Group	(3) #20	341.9	-	-	0.749
Stiffeners	(9) 9"H x 3.5"W x 0.625"T	77.3	-	10.84	0.169
	TOTALS	**456.71**	**15.67**	**16.1**	

COMPONENT PROPERTIES

Component	ID	Gross Area (in^2)	Net Area (in^2)	Individual Inertia (in^4)	Moment of Inertia (in^4)	Threads/in
Pole	21.2673"ø x 0.1875" (12 Sides)	12.2757	-	-	681.99	-
Bolt Group	Original (12) 1"ø	0.7854	0.6057	0.0292	545.75	8.0
Dywidag Group	(3) #20	4.9087	4.9087	1.9175	2031.15	-
Stiffeners	(9) 9"H x 3.5"W x 0.625"T	2.0313	1.8281	8.9323	1406.92	-

EXTERNAL UPPER FLANGE PLATE BEND LINE ANALYSIS @ 110 FT

POLE PROPERTIES

Flat-to-Flat Diameter:	21.39	in
Point-to-Point Diameter:	22.15	in
Flat Width:	5.732	in
Flat Radians:	0.524	rad

PLATE PROPERTIES

Neutral Axis:	308	°
Bend Line Lower Limit:	0.214	rad
Bend Line Upper Limit:	1.357	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	17.001	3.82	5.204	38.8	281.0	0.138
Corner	16.005	3.06	4.767	25.0	257.4	0.097
Circumferential	21.079	8.25	7.332	43.0	395.9	0.109

ELASTIC FLANGE BOLT ANALYSIS

Class	Group Quantity	Bolt Diameter (in)	Applied Axial Load Pu (k)	Applied Shear Load Vu (k)	Compressive Capacity ϕPn (k)	Ratio	Interaction
Original	12	1	18.9	0.3	54.5	0.346	0.346

DYWIDAG BAR ANALYSIS

Group Quantity	Bar Size	Bar Circle (in)	Applied Axial Load Pu (k)	Compressive Capacity ϕPn (k)	Ratio
3	#20	40.33	188.0	368.2	0.511

UPPER FLANGE PLATE STIFFENER ANALYSIS

Quantity:	9	
Height:	9	in
Width:	3.5	in
Effective Width:	3.500	in
Thickness:	0.625	in
Notch:	0.25	in
Grade:	A572-50	
Yield Strength:	50	ksi
Tensile Strength:	65	ksi
Horizontal Weld Type:	Fillet	
Horizontal Weld Fillet Size:	0.25	in
Horizontal Weld Bevel Size:		in
Vertical Weld Fillet Size:	0.25	in
Weld Strength:	70	ksi
Electrode Coefficient:	1.000	

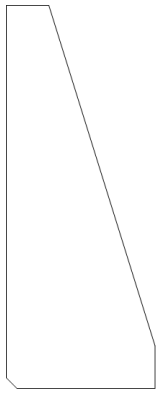


PLATE COMPRESSION

Radius of Gyration:	0.180	in^3
kl/r:	29.93	
4.71 √(E/Fy):	113.43	
Buckling Stress, Fe:	319.51	ksi
Crit. Buckling Stress, Fcr:	280.21	ksi
Applied Compression, Pu:	15.11	k
Compressive Capacity, ϕPn:	512.26	k
Pu/ϕPn:	**0.015**	

PLATE TENSION

Gross Cross Section:	2.0313	in^2
Net Cross Section:	1.8281	in^2
Applied Tension, Tu:	14.52	k
Tensile Capacity, ϕTn:	89.12	k
Tu/ϕTn:	**0.081**	

VERTICAL WELD TO POLE

Vertical Eccentricity Ratio, $a=e_x/l$:	0.130	
Spacing Ratio, k:	0.069	
Weld Coefficient, C:	3.720	
Applied Compression, Pu:	15.11	k
Compressive Capacity, ϕPn:	100.44	k
Horizontal Eccentricity Ratio, $a=e_x/l$:	0.333	
Weld Coefficient, C:	2.940	
Applied Shear, Vu	0.21	k
Shear Capacity, ϕVn:	79.38	k
Pu/ϕPn + Vu/ϕVn:	**0.153**	

HORIZONTAL WELD TO PLATE

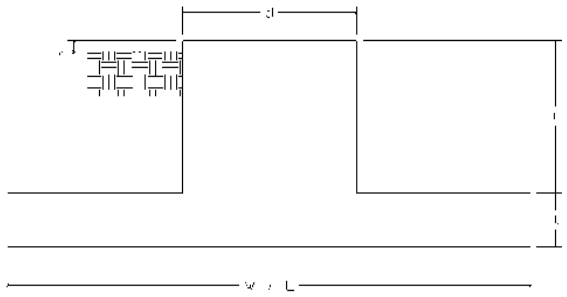
Horizontal Eccentricity Ratio, $a=e_x/l$:	0.167	
Spacing Ratio, k:	0.179	
Weld Coefficient, C:	3.940	
Effective Fillet Size:	0.250	in
Applied Compression, Pu:	15.11	k
Compressive Capacity, ϕPn:	41.37	k
Vertical Eccentricity Ratio, $a=e_x/l$:	0.429	
Weld Coefficient, C:	2.670	
Applied Shear, Vu	0.21	k
Shear Capacity, ϕVn:	28.04	k
Pu/ϕPn + Vu/ϕVn:	**0.373**	

Site Name: Plainfield CT 6, CT
Site Number: 302498
Tower Type: MP
Design Loads (Factored) - Analysis per TIA-222-H Standards

Monolithic Mat & Pier Foundation Analysis

Foundation Analysis Parameters		
Design / Analysis / Mapping:	Analysis	-
Compression/Leg:	54.2	k
Uplift/Leg:	0.0	k
Total Shear:	27.2	k
Moment:	2,908.8	k-ft
Tower + Appurtenance Weight:	54.2	k
Depth to Base of Foundation (l + t - h):	8	ft
Diameter of Pier (d):	6	ft
Length of Pier (l):	5.5	ft
Height of Pier above Ground (h):	0.5	ft
Width of Pad (W):	18	ft
Length of Pad (L):	26	ft
Thickness of Pad (t):	3	ft
Tower Leg Center to Center:	0	ft
Number of Tower Legs:	1	-
Tower Center from Mat Center:	0	ft
Depth Below Ground Surface to Water Table:	3.5	ft
Unit Weight of Concrete:	150	pcf
Unit Weight of Soil Above Water Table:	136	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Below Water Table:	73.6	pcf
Friction Angle of Uplift:	15	°
Coefficient of Shear Friction:	0.30	-
Ultimate Compressive Bearing Pressure:	15,000	psf
Ultimate Passive Pressure on Pad Face:	1,000	psf
$f_{Soil\ and\ Concrete\ Weight}$:	0.9	-
f_{Soil}:	0.75	-

Foundation Steel Parameters		
Shear/Leg (Compression):	27.2	k
Shear/Leg (Uplift):	27.2	k
Concrete Strength (f'_c):	3,000	psi
Pad Tension Steel Depth:	32.38	in
Dead Load Factor:	0.9	-
f_{Shear}:	0.75	-
$f_{Flexure\ /\ Tension}$:	0.9	-
$f_{Compression:}$	0.65	-
b:	0.85	-
Bottom Pad Rebar Size #:	10	-
# of Bottom Pad Rebar:	36	-
Pad Bottom Steel Area:	45.72	in^2
Pad Steel F_y:	60,000	psi
Top Pad Rebar Size #:	5	-
# of Top Pad Rebar:	36	-
Pad Top Steel Area:	11.16	in^2
Pier Rebar Size #:	11	-
Pier Steel Area (Single Bar):	1.56	in^2
# of Pier Rebar:	52	-
Pier Steel F_y:	60,000	psi
Pier Cage Diameter:	63.6	in
Rebar Strain Limit:	0.008	-
Steel Elastic Modulus:	29,000	ksi
Tie Rebar Size #:	4	-
Tie Steel Area (Single Bar):	0.20	in^2
Tie Spacing:	12	in
Tie Steel F_y:	60,000	psi
Clear Cover:	3	in



Overturning Moment Usage		
Design OTM:	3139.7	k-ft
Weight of Soil and Concrete OTM Resistance:	401.5	k
OTM Resistance from Soil and Concrete:	3613.7	k-ft
OTM Resistance from Tower:	365.8	k-ft
OTM Resistance from Soil Facture:	485.0	k-ft
OTM Resistance from Passive Pressure on Pad Face:	87.8	k-ft
OTM Resistance:	4011.1	k-ft
Design OTM / OTM Resistance:	78%	Pass

Soil Bearing Pressure Usage		
Net Bearing Pressure:	3564	psf
Factored Nominal Bearing Pressure:	11250	psf
Factored Nominal (Net) Bearing Pressure:	32%	Pass
Load Direction Controling Design Bearing Pressure:	*Diagonal to Pad Edge*	

Sliding Factor of Safety		
Ultimate Friction Resistance:	134.0	k
Ultimate Passive Pressure Resistance:	58.5	k
Total Factored Sliding Resistance:	144.4	k
Sliding Design / Sliding Resistance:	19%	Pass

Pad Strength Capacity			
One Way Shear, Flexual Capacity, and Punching Shear			
Factored One Way Shear (V_u):	162.8	k	
One Way Shear Capacity (fV_c):	829.9	k	*ACI 318-14 25.5.5.1*
V_u / fV_c:	20%	Pass	
Load Direction Controling Shear Capacity:	*Parallel to Pad Edge*		
Lower Steel Pad Factored Moment (M_u):	862.9	k-ft	
Lower Steel Pad Moment Capacity (fM_n):	6359.3	k-ft	*ACI 318-14 22.3.1.1*
M_u / fM_n:	14%	Pass	
Load Direction Controling Flexural Capacity:	*Parallel to Pad Edge*		
Upper Steel Pad Factored Moment (M_u):	397.4	k-ft	
Upper Steel Pad Moment Capacity (fM_n):	1607.9	k-ft	
M_u / fM_n:	25%	Pass	
Lower Pad Flexural Reinforcement Ratio:	0.0045		*OK - ACI 318-14 7.6.1.1 & 8.6.1.1*
Upper Pad Flexural Reinforcement Ratio:	0.0011		*OK - ACI 318-14 7.6.1.1 & 8.6.1.1*
Lower Pad Reinforcement Spacing:	8.7	in	*OK - ACI 318-14 7.7.2.3, 8.7.2.2, & 24.4.3.3*
Upper Pad Reinforcement Spacing:	8.7	in	*OK - ACI 318-14 7.7.2.3, 8.7.2.2, & 24.4.3.3*
Ultimate Punching Shear Stress, v_u:	44.40	psi	*ACI 318-14 R8.4.4.2.3*
Nominal Punching Shear Capacity (f_cv_c):	164.3	psi	*ACI 318-14 22.6.5.2*
v_u / f_cv_c:	27%	Pass	
Pier Moment Pad Flexure Transfer Ratio, γ_f:	0.60		*TIA-222-H 9.4.2*
Moment Transfer Effective Flexural Width, B_{eff}:	15.00	ft	*TIA-222-H 9.4.2*
Moment Transfer Through Pad Flexure:	22019.11	k-in	*TIA-222-H 9.4.2*
Moment Transfer Flexural Capacity ($fM_{sc,f}$):	45761.53	k-in	
g_fM_{sc} / $fM_{sc,f}$:	0%	Pass	

Pier Strength Capacity			
Factored Moment in Pier (M_u):	3058.2	k-ft	
Pier Moment Capacity (fM_n):	11356.3	k-ft	
M_u / fM_n:	27%	Pass	
Factored Shear in Pier (V_u):	27.2	k	
Pier Shear Capacity (fV_n):	423.1	k	*ACI 318-14 22.5.1.1*
V_u / fV_c:	6%	Pass	
Pier Shear Reinforcement Ratio:	0.0005		*OK - No Ties Necessary for Shear - ACI11.5.6.1*
Factored Tension in Pier (T_u):	0.0	k	
Pier Tension Capacity (fT_n):	4380.5	k	
T_u / fT_n:	0%	Pass	
Factored Compression in Pier (P_u):	54.2	k	
Pier Compression Capacity (fP_n):	5339.9	k	*ACI 318-14 22.4.2.1*
P_u / fP_n:	1%	Pass	
Minimum Depth to Develop Vertical Rebar:	63	in	*ACI 318-14 25.4.2.3*
Minimum Hook Development Length:	31	in	*ACI 318-14 25.4.3.1*
Minimum Mat Thickness / Edge Distance from Pier:	34.0	in	
Minimum Foundation Depth:	8.35	ft	
$M_u/f_BM_n + T_u/f_TT_n$:	27%	Pass	

AMERICAN TOWER®
CORPORATION

LETTER OF AUTHORIZATION

SITE NO/PROJECT NO: 302498/ 13700697 **SITE NAME: Plainfield CT 6**

ADDRESS: 45 SPAULDING RD
PLAINFIELD, CT 06374

APN: PLAI-000025-000036-000027A

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

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

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

Signature: _____

Margaret Robinson, Senior Counsel
US Tower Division

NOTARY BLOCK

COMMONWEALTH OF MASSACHUSETTS
County of Middlesex

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

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

NOTARY SEAL

Catrine Galhana Vaz
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
February 24, 2028

Notary Public _____
My Commission Expires: February 24, 2028

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

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CTNL254A

45 Spaulding Road
Plainfield, Connecticut 06374

July 12, 2022

EBI Project Number: 6222004429

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**25.25%**

July 12, 2022

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

Emissions Analysis for Site: CTNL254A

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **45 Spaulding Road** in **Plainfield, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 45 Spaulding Road in Plainfield, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

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

2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.

3) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts per Channel.

4) 1 GSM channel (PCS Band - 1900 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 10 Watts per Channel.

5) 1 LTE channel (PCS Band - 1900 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 160 Watts per Channel.

6) 1 LTE channel (AWS Band – 2100 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 160 Watts per Channel.

7) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.

8) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.

9) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

10) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.

11) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

12) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

13) The antennas used in this modeling are the Commscope VV-65A-R1 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector A, the Commscope VV-65A-R1 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector B, the Commscope VV-65A-R1 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all

calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

14) The antenna mounting height centerline of the proposed antennas is 142 feet above ground level (AGL).

15) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Commscope VV-65A-R1	Make / Model:	Commscope VV-65A-R1	Make / Model:	Commscope VV-65A-R1
Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz
Gain:	15.55 dBd / 15.55 dBd / 16.05 dBd	Gain:	15.55 dBd / 15.55 dBd / 16.05 dBd	Gain:	15.55 dBd / 15.55 dBd / 16.05 dBd
Height (AGL):	142 feet	Height (AGL):	142 feet	Height (AGL):	142 feet
Channel Count:	3	Channel Count:	3	Channel Count:	3
Total TX Power (W):	330.00 Watts	Total TX Power (W):	330.00 Watts	Total TX Power (W):	330.00 Watts
ERP (W):	12,545.15	ERP (W):	12,545.15	ERP (W):	12,545.15
Antenna A1 MPE %:	**2.44%**	Antenna B1 MPE %:	**2.44%**	Antenna C1 MPE %:	**2.44%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd
Height (AGL):	142 feet	Height (AGL):	142 feet	Height (AGL):	142 feet
Channel Count:	3	Channel Count:	3	Channel Count:	3
Total TX Power (W):	160.00 Watts	Total TX Power (W):	160.00 Watts	Total TX Power (W):	160.00 Watts
ERP (W):	3,293.87	ERP (W):	3,293.87	ERP (W):	3,293.87
Antenna A2 MPE %:	**1.54%**	Antenna B2 MPE %:	**1.54%**	Antenna C2 MPE %:	**1.54%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd	Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd	Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd
Height (AGL):	142 feet	Height (AGL):	142 feet	Height (AGL):	142 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240.00 Watts	Total TX Power (W):	240.00 Watts	Total TX Power (W):	240.00 Watts
ERP (W):	31,011.95	ERP (W):	31,011.95	ERP (W):	31,011.95
Antenna A3 MPE %:	**6.03%**	Antenna B3 MPE %:	**6.03%**	Antenna C3 MPE %:	**6.03%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	10.00%
AT&T	1.08%
Verizon	14.17%
Site Total MPE % :	25.25%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	10.00%
T-Mobile Sector B Total:	10.00%
T-Mobile Sector C Total:	10.00%
Site Total MPE % :	25.25%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 1900 MHz GSM	1	358.92	142.0	0.70	1900 MHz GSM	1000	0.07%
T-Mobile 1900 MHz LTE	1	5742.75	142.0	11.16	1900 MHz LTE	1000	1.12%
T-Mobile 2100 MHz LTE	1	6443.47	142.0	12.52	2100 MHz LTE	1000	1.25%
T-Mobile 600 MHz LTE	1	788.97	142.0	1.53	600 MHz LTE	400	0.38%
T-Mobile 600 MHz NR	1	1577.94	142.0	3.07	600 MHz NR	400	0.77%
T-Mobile 700 MHz LTE	1	926.96	142.0	1.80	700 MHz LTE	467	0.39%
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	9619.47	142.0	18.70	2500 MHz LTE 1C & 2C Traffic	1000	1.87%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	717.84	142.0	1.40	2500 MHz LTE 1C & 2C Broadcast	1000	0.14%
T-Mobile 2500 MHz NR Traffic	1	19238.94	142.0	37.40	2500 MHz NR Traffic	1000	3.74%
T-Mobile 2500 MHz NR Broadcast	1	1435.69	142.0	2.79	2500 MHz NR Broadcast	1000	0.28%
						Total:	**10.00%**

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

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	10.00%
Sector B:	10.00%
Sector C:	10.00%
T-Mobile Maximum MPE % (Sector A):	10.00%
Site Total:	25.25%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **25.25%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

CENTEK engineering
Centered on Solutions℠

Structural Analysis Report

Antenna Mount Analysis

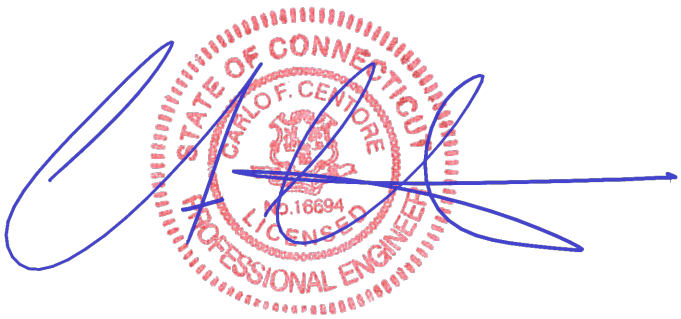
Proposed T-Mobile Antenna Upgrade

Site Reference #: CTNL254A

45 Spaulding Road
Plainfield, CT

Centek Project No. 21085.05

~~Date: July 22, 2021~~
Rev 1: May 11, 2022



Prepared for:

T-Mobile USA
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Table of Contents

Introduction

This structural analysis report (SAR) was prepared to address the structural viability of installing T-Mobile's proposed antenna configuration attached to the proposed 12'6" low profile platform with a handrail (Sitepro P/N: RMQP-496-HK). The antenna mount platform is attached to a 150-ft host monopole located at 45 Spaulding Road, Plainfield, Connecticut.

The antenna mount assembly consists of four (4) pipe masts per sector, the low profile platform assembly and the handrail kit. Each pipe masts is supported at the top by the handrail and at the bottom by the platform.

Proposed antenna and appurtenance information was taken from an RF data sheet dated 03/23/2022 provided by T-Mobile.

Primary Assumptions Used in the Analysis

- The host structure's theoretical capacity not including any assessment of the condition of the host structure.
- The existing elevated steel antenna frames carry the horizontal and vertical loads due to the weight of equipment, and wind and transfers into host structure.
- Structure is in plumb condition.
- Loading for equipment and enclosure as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All members are assumed to be as observed during roof framing mapping.
- All members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- All member protective coatings are in good condition.

Antenna and Equipment Summary

Location	Appurtenance / Equipment	Rad Center Elevation (AGL)	Mount Type
Per Sector	**(1) Ericsson Air 6419 B41 Antenna** **(1) Commscope VV-65A-R1 Antenna** **(1) RFS APXVAALL24_43-U_NA20 Antenna** **(1) Ericsson 4460 B25+B66 RRU** **(1) 4480 B71+B85 RRU**	142-ft	Low Profile Platform on Monopole

Equipment – Indicates proposed equipment to be installed.

Analysis

The antenna frames were analyzed using a comprehensive computer program titled Risa3D. The program examines the antenna mounts considering the worst-case code prescribed loading condition. The structures were considered to be loaded by concentric forces, and the model assumes that the members are subjected to bending, axial, and shear forces.

Design Loading

Loading was determined per the requirements of the 2006 ANSI TIA-222-G, 2015 International Building Code amended by the 2018 CSBC and ASCE 7-10 “Minimum Design Loads for Buildings and Other Structures”.

Basic Wind Speed:	V_{asd} = 105 mph	*Appendix N of the 2018 CT State Building Code*
Basic Wind Speed w/ Ice:	V_i = 50 mph	*Annex B of TIA-222-G*
Risk Category:	II	*2015 IBC; Table 1604.05*
Exposure Category:	Surface Roughness B	*ASCE 7-10; Section 26.7.2*
Dead Load	Equipment and framing self-weight	*Identified within SAR design calculations*

Reference Standards

2015 International Building Code:

1. AISC 360-10, *Specification for Structural Steel Buildings*
2. ANSI/TIA-222-G *Ammended 2012, Structural Standard for Antenna Supporting Structures*

Results

Member stresses and design reactions were calculated utilizing the structural analysis software RISA 3D.

The antenna mounting assembly was found to be structurally acceptable as presented in the following table:

Sector	Component	Stress Ratio (percentage of capacity)	Result
All Sectors	Pipe 2.0 STD (Proposed Antenna Mast)	82%	**PASS**
	Pipe 3.0 STD (Proposed Low Profile Platform Horizontal)	49%	**PASS**
	Pipe 2.0 STD (Proposed Handrail Horizontal)	51%	**PASS**

Conclusion

This analysis shows that the proposed subject antenna mount assembly is **STRUCTURALLY ADEQUETE** to support the proposed T-Mobile modified antenna configuration.

The analysis is based, in part, on the information provided to this office by T-Mobile. If the existing conditions are different than the information in this report, Centek Engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:

Carlo F. Centore, PE
Principle ~ Structural Engineer

Prepared by:

Pablo Perez-Gomez
Engineer

Standard Conditions for Furnishing of Professional Engineering Services on Existing Structures

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessarily limited to:

- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from the field and/or drawings in the possession of Centek Engineering, Inc. or generated by field inspections or measurements of the structure.
- It is the responsibility of the client to ensure that the information provided to Centek Engineering, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the “as new” condition.
- All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222
- All services performed, results obtained, and recommendations made are in accordance with generally accepted engineering principles and practices. Centek Engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

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Subject: Loads on Equipment

Location: Plainfield,CT

Rev. 1: 05/11/2022

Prepared by: PPG Checked by: CFC
Job No. 21085.04

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

Wind Speeds

Basic Wind Speed	$V := 105$	mph	(User Input - 2018 CSBC Appendix N)
Basic Wind Speed with Ice	$V_i := 50$	mph	(User Input per Annex B of TIA-222-G)

Input

Structure Type =	$Structure\_Type := Pole$		(User Input)
Structure Category =	$SC := II$		(User Input)
Exposure Category =	$Exp := B$		(User Input)
Structure Height =	$h := 150$	ft	(User Input)
Height to Center of Antennas =	$z := 142$	ft	(User Input)
Radial Ice Thickness =	$t_i := 1.00$	in	(User Input per Annex B of TIA-222-G)
Radial Ice Density =	$Id := 56.00$	pcf	(User Input)
Topographic Factor =	$K_{zt} := 1.0$		(User Input)
	$K_a := 1.0$		(User Input)
Gust Response Factor =	$G_H = 1.1$		(User Input)

Output

Wind Direction Probability Factor =

$$K_d := \left\| \begin{array}{l} \text{if } Structure\_Type = Pole \\ \quad 0.95 \\ \text{if } Structure\_Type = Lattice \\ \quad 0.85 \end{array} \right| = 0.95$$

(Per Table 2-2 of TIA-222-G)

(Per Table 2-3 of TIA-222-G)

Importance Factors =

$$I_{Wind} := \left\| \begin{array}{l} \text{if } SC = 1 \\ \quad 0.87 \\ \text{if } SC = 2 \\ \quad 1.00 \\ \text{if } SC = 3 \\ \quad 1.15 \end{array} \right| = 1$$

$$I_{Wind\_w\_Ice} := \left\| \begin{array}{l} \text{if } SC = 1 \\ \quad 0 \\ \text{if } SC = 2 \\ \quad 1.00 \\ \text{if } SC = 3 \\ \quad 1.00 \end{array} \right| = 1$$

$$I_{ice} := \left\| \begin{array}{l} \text{if } SC = 1 \\ \quad 0 \\ \text{if } SC = 2 \\ \quad 1.00 \\ \text{if } SC = 3 \\ \quad 1.25 \end{array} \right| = 1$$

$$K_{iz} := \left(\frac{z}{33}\right)^{0.1} = 1.157$$

Velocity Pressure Coefficient Antennas =

$$t_{iz} := 2.0 \cdot t_i \cdot I_{ice} \cdot K_{iz} \cdot K_{zt}^{0.35} = 2.314$$

$$Kz := 2.01 \cdot \left(\left(\frac{z}{zg}\right)\right)^{\overline{\alpha}} = 1.092$$

Velocity Pressure w/o Ice Antennas = $qz := 0.00256 \cdot K_d \cdot Kz \cdot V^2 \cdot I_{Wind} = 29$ psf

Velocity Pressure with Ice Antennas = $qz_{ice} := 0.00256 \cdot K_d \cdot Kz \cdot V_i^{\,2} \cdot I_{Wind} = 7$ psf

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Development of Wind & Ice Load on Antennas

Antenna Data:

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

Wind Load (without ice)

Surface Area for One Antenna =	$SA_{antF} := \frac{L_{ant} \cdot W_{ant}}{144} = 16$	sf
Total Antenna Wind Force Front =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antF} = 652$	lbs
Surface Area for One Antenna =	$SA_{antS} := \frac{L_{ant} \cdot T_{ant}}{144} = 5.7$	sf
Total Antenna Wind Force Side =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antS} = 231$	lbs

Wind Load (with ice)

Surface Area for One Antenna w/ Ice =	$SA_{ICEantF} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz})}{144} = 20$	sf
Total Antenna Wind Force w/ Ice Front =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantF} = 185$	lbs
Surface Area for One Antenna w/ Ice =	$SA_{ICEantS} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz})}{144} = 9.2$	sf
Total Antenna Wind Force w/ Ice Side =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantS} = 85$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 150$	lbs

Gravity Loads (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 2 \cdot 10^4$	cu in
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz}) - V_{ant} = 2 \cdot 10^4$	cu in
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 590$	lbs
Weight of Ice on All Antennas =	$W_{ICEant} \cdot N_{ant} = 590$	lbs

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Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Commscope VV-65A-R1		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 54.7$	in	(User Input)
Antenna Width =	$W_{ant} := 12.1$	in	(User Input)
Antenna Thickness =	$T_{ant} := 4.7$	in	(User Input)
Antenna Weight =	$WT_{ant} := 41.8$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)
Antenna Aspect Ratio =	$Ar_{ant} := \frac{L_{ant}}{W_{ant}} = 4.5$		
Antenna Force Coefficient =	$Ca_{ant} = 1.27$		

Wind Load (without ice)

Surface Area for One Antenna =	$SA_{antF} := \frac{L_{ant} \cdot W_{ant}}{144} = 4.6$	sf
Total Antenna Wind Force Front =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antF} = 191$	lbs
Surface Area for One Antenna =	$SA_{antS} := \frac{L_{ant} \cdot T_{ant}}{144} = 1.8$	sf
Total Antenna Wind Force Side =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antS} = 74$	lbs

Wind Load (with ice)

Surface Area for One Antenna w/ Ice =	$SA_{ICEantF} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz})}{144} = 6.9$	sf
Total Antenna Wind Force w/ Ice Front =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantF} = 65$	lbs
Surface Area for One Antenna w/ Ice =	$SA_{ICEantS} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz})}{144} = 3.8$	sf
Total Antenna Wind Force w/ Ice Side =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantS} = 36$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 42$	lbs

Gravity Loads (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 3111$	cu in
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz}) - V_{ant} = 6147$	cu in
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 199$	lbs
Weight of Ice on All Antennas =	$W_{ICEant} \cdot N_{ant} = 199$	lbs

Development of Wind & Ice Load on Antennas

Antenna Data:

Antenna Model =	Ericsson - AIR6419 B41		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 36.3$	in	(User Input)
Antenna Width =	$W_{ant} := 20.9$	in	(User Input)
Antenna Thickness =	$T_{ant} := 9.0$	in	(User Input)
Antenna Weight =	$WT_{ant} := 83$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)
Antenna Aspect Ratio =	$Ar_{ant} := \frac{L_{ant}}{W_{ant}} = 1.7$		
Antenna Force Coefficient =	$Ca_{ant} = 1.2$		

Wind Load (without ice)

Surface Area for One Antenna =	$SA_{antF} := \frac{L_{ant} \cdot W_{ant}}{144} = 5.3$	sf
Total Antenna Wind Force Front =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antF} = 204$	lbs
Surface Area for One Antenna =	$SA_{antS} := \frac{L_{ant} \cdot T_{ant}}{144} = 2.3$	sf
Total Antenna Wind Force Side =	$F_{ant} := qz \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{antS} = 88$	lbs

Wind Load (with ice)

Surface Area for One Antenna w/ Ice =	$SA_{ICEantF} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz})}{144} = 7.3$	sf
Total Antenna Wind Force w/ Ice Front =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantF} = 64$	lbs
Surface Area for One Antenna w/ Ice =	$SA_{ICEantS} := \frac{(L_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz})}{144} = 3.9$	sf
Total Antenna Wind Force w/ Ice Side =	$Fi_{ant} := qz_{ice} \cdot G_H \cdot Ca_{ant} \cdot K_a \cdot SA_{ICEantS} = 34$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 83$	lbs

Gravity Loads (ice only)

Volume of Each Antenna =	$V_{ant} := L_{ant} \cdot W_{ant} \cdot T_{ant} = 6828$	cu in
Volume of Ice on Each Antenna =	$V_{ice} := (L_{ant} + 2 \cdot t_{iz}) \cdot (W_{ant} + 2 \cdot t_{iz}) \cdot (T_{ant} + 2 \cdot t_{iz}) - V_{ant} = 7412$	cu in
Weight of Ice on Each Antenna =	$W_{ICEant} := \frac{V_{ice}}{1728} \cdot Id = 240$	lbs
Weight of Ice on All Antennas =	$W_{ICEant} \cdot N_{ant} = 240$	lbs

Development of Wind & Ice Load on RRUS's

RRUS Data:

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

Wind Load (without ice)

Surface Area for One RRUS =	$SA_{RRUSF} := \frac{L_{RRUS} \cdot W_{RRUS}}{144} = 2.4$	sf
Total RRUS Wind Force =	$F_{RRUS} := qz \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSF} = 92$	lbs
Surface Area for One RRUS =	$SA_{RRUSS} := \frac{L_{RRUS} \cdot T_{RRUS}}{144} = 1.1$	sf
Total RRUS Wind Force =	$F_{RRUS} := qz \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSS} = 44$	lbs

Wind Load (with ice)

Surface Area for One RRUS w/ Ice =	$SA_{ICERRUSF} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (W_{RRUS} + 2 \cdot t_{iz})}{144} = 3.7$	sf
Total RRUS Wind Force w/ Ice =	$Fi_{RRUS} := qz_{ice} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSF} = 33$	lbs
Surface Area for One RRUS w/ Ice =	$SA_{ICERRUSS} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz})}{144} = 2.2$	sf
Total RRUS Wind Force w/ Ice =	$Fi_{RRUS} := qz_{ice} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSS} = 20$	lbs

Gravity Load (without ice)

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

Gravity Loads (ice only)

Volume of Each RRUS =	$V_{RRUS} := L_{RRUS} \cdot W_{RRUS} \cdot T_{RRUS} = 2567$	cu in
Volume of Ice on Each RRUS =	$V_{ice} := (L_{RRUS} + 2 \cdot t_{iz}) \cdot (W_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz}) - V_{RRUS} = 3949$	cu in
Weight of Ice on Each RRUS =	$W_{ICERRUS} := \frac{V_{ice}}{1728} \cdot Id = 128$	lbs
Weight of Ice on All RRUSs =	$W_{ICERRUS} \cdot N_{RRUS} = 128$	lbs

Development of Wind & Ice Load on RRUS's

RRUS Data:

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

Wind Load (without ice)

Surface Area for One RRUS =	$SA_{RRUSF} := \frac{L_{RRUS} \cdot W_{RRUS}}{144} = 2.1$	sf
Total RRUS Wind Force =	$F_{RRUS} := qz \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSF} = 83$	lbs
Surface Area for One RRUS =	$SA_{RRUSS} := \frac{L_{RRUS} \cdot T_{RRUS}}{144} = 1.6$	sf
Total RRUS Wind Force =	$F_{RRUS} := qz \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{RRUSS} = 64$	lbs

Wind Load (with ice)

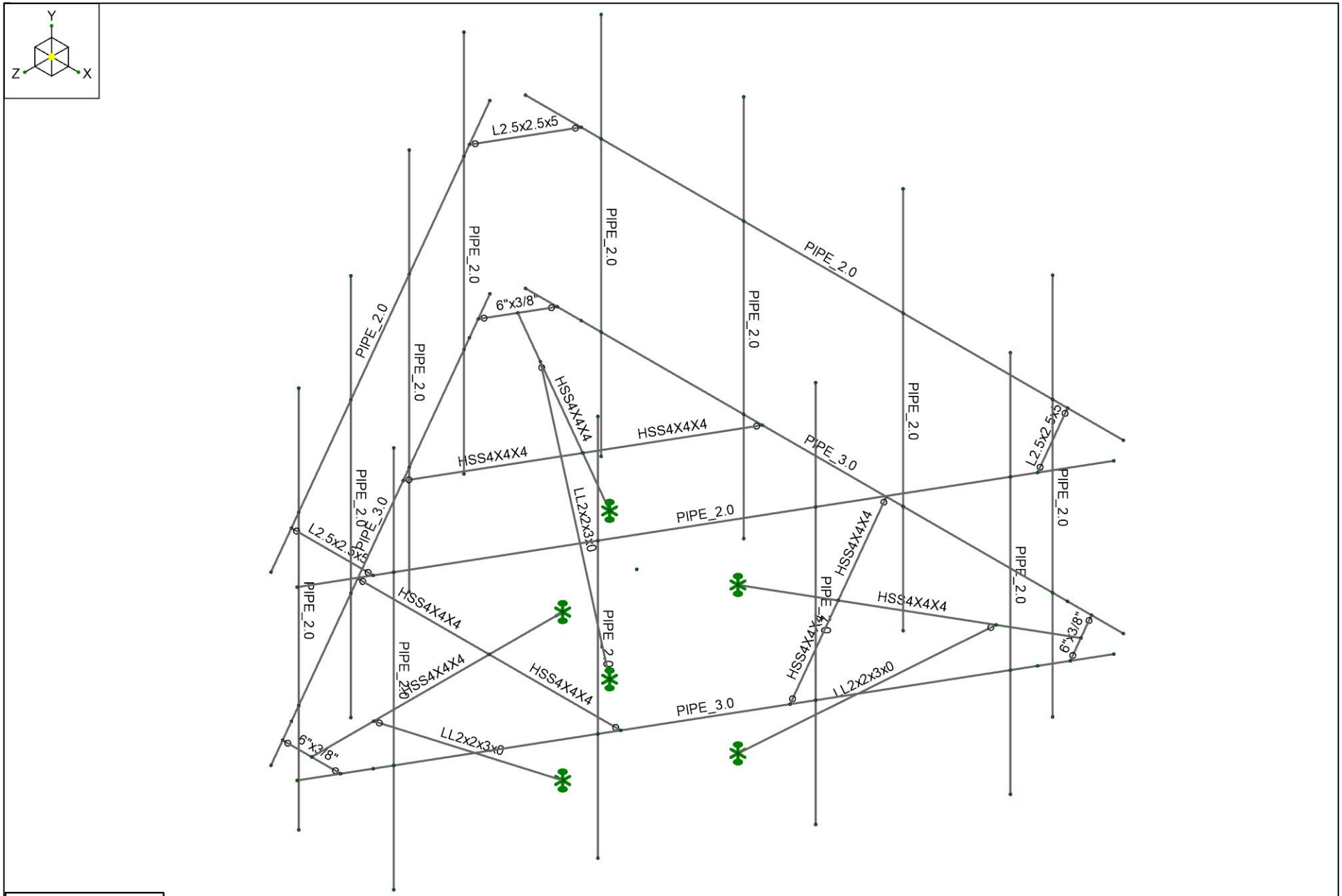
Surface Area for One RRUS w/ Ice =	$SA_{ICERRUSF} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (W_{RRUS} + 2 \cdot t_{iz})}{144} = 3.4$	sf
Total RRUS Wind Force w/ Ice =	$Fi_{RRUS} := qz_{ice} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSF} = 30$	lbs
Surface Area for One RRUS w/ Ice =	$SA_{ICERRUSS} := \frac{(L_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz})}{144} = 2.8$	sf
Total RRUS Wind Force w/ Ice =	$Fi_{RRUS} := qz_{ice} \cdot G_H \cdot Ca_{RRUS} \cdot K_a \cdot SA_{ICERRUSS} = 25$	lbs

Gravity Load (without ice)

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

Gravity Loads (ice only)

Volume of Each RRUS =	$V_{RRUS} := L_{RRUS} \cdot W_{RRUS} \cdot T_{RRUS} = 3723$	cu in
Volume of Ice on Each RRUS =	$V_{ice} := (L_{RRUS} + 2 \cdot t_{iz}) \cdot (W_{RRUS} + 2 \cdot t_{iz}) \cdot (T_{RRUS} + 2 \cdot t_{iz}) - V_{RRUS} = 4516$	cu in
Weight of Ice on Each RRUS =	$W_{ICERRUS} := \frac{V_{ice}}{1728} \cdot Id = 146$	lbs
Weight of Ice on All RRUSs =	$W_{ICERRUS} \cdot N_{RRUS} = 146$	lbs



Envelope Only Solution

Centek Engineering	CTNL254A - Mount	SK-2
PPG		May 11, 2022
21085.05 Rev 1		CTNL254A_AMA Rev1.R3D

Nodes

	Label	X [in]	Y [in]	Z [in]	Temp [deg F]	Detach From Dia…
1	N1	-0.	0	18.586		
2	N2	-0.	0	81.563069		
3	N3	-0.	0	37		
4	N4	33	0	37		
5	N5	-33	0	37		
6	N6	-0.	0	0.		
7	N7	16.095948	0	-9.293		
8	N8	70.655549	0	-40.793		
9	N9	32.04294	0	-18.5		
10	N10	15.54294	0	-47.078838		
11	N11	48.54294	0	10.078838		
12	N12	-16.095948	0	-9.293		
13	N13	-70.63569	0	-40.781535		
14	N14	-32.04294	0	-18.5		
15	N15	-48.54294	0	10.078838		
16	N16	-15.54294	0	-47.078838		
17	N17	78.27144	0	-41.412434		
18	N18	3.2715	0	88.491272		
19	N19	-74.99994	0	-47.078838		
20	N20	74.99994	0	-47.078838		
21	N21	-3.2715	0	88.491272		
22	N22	-78.27144	0	-41.412434		
23	N23	66.99994	0	-47.078838		
24	N24	-66.99994	0	-47.078838		
25	N25	-74.27144	0	-34.484231		
26	N26	-7.2715	0	81.563069		
27	N27	7.2715	0	81.563069		
28	N28	74.27144	0	-34.484231		
29	N29	78.27144	42	-41.412434		
30	N30	3.2715	42	88.491272		
31	N31	-74.99994	42	-47.078838		
32	N32	74.99994	42	-47.078838		
33	N33	-3.2715	42	88.491272		
34	N34	-78.27144	42	-41.412434		
35	N35	-55.99994	0	-47.078838		
36	N36	-55.99994	42	-47.078838		
37	N37	-20.24994	0	-47.078838		
38	N38	-20.24994	42	-47.078838		
39	N39	19.75006	0	-47.078838		
40	N40	19.75006	42	-47.078838		
41	N41	57.25006	0	-47.078838		
42	N42	57.25006	42	-47.078838		
43	N43	57.25006	69	-47.078838		
44	N44	57.25006	-27	-47.078838		
45	N45	19.75006	69	-47.078838		
46	N46	19.75006	-27	-47.078838		
47	N47	-20.24994	69	-47.078838		
48	N48	-20.24994	-27	-47.078838		
49	N49	-55.99994	69	-47.078838		
50	N50	-55.99994	-27	-47.078838		
51	N51	-69.3965	69	-26.040587		
52	N52	-69.3965	-27	-26.040587		
53	N53	-50.6465	69	6.435365		
54	N54	-50.6465	-27	6.435365		
55	N55	-30.6465	69	41.076382		
56	N56	-30.6465	-27	41.076382		
57	N57	-12.7715	69	72.03679		
58	N58	-12.7715	-27	72.03679		

Nodes (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [deg F]	Detach From Dia…
59	N59	12.14644	69	73.119426		
60	N60	12.14644	-27	73.119426		
61	N61	30.89644	69	40.643473		
62	N62	30.89644	-27	40.643473		
63	N63	50.89644	69	6.002457		
64	N64	50.89644	-27	6.002457		
65	N65	68.77144	69	-24.957951		
66	N66	68.77144	-27	-24.957951		
67	N67	12.14644	0	73.119426		
68	N68	30.89644	0	40.643473		
69	N69	50.89644	0	6.002457		
70	N70	68.77144	0	-24.957951		
71	N71	-69.3965	0	-26.040587		
72	N72	-50.6465	0	6.435365		
73	N73	-30.6465	0	41.076382		
74	N74	-12.7715	0	72.03679		
75	N75	12.14644	42	73.119426		
76	N76	30.89644	42	40.643473		
77	N77	50.89644	42	6.002457		
78	N78	68.77144	42	-24.957951		
79	N79	-69.3965	42	-26.040587		
80	N80	-50.6465	42	6.435365		
81	N81	-30.6465	42	41.076382		
82	N82	-12.7715	42	72.03679		
83	N83	-60.99994	0	-47.078838		
84	N84	60.99994	0	-47.078838		
85	N85	-10.2715	0	76.366917		
86	N86	-71.27144	0	-29.288078		
87	N87	71.27144	0	-29.288078		
88	N88	10.2715	0	76.366917		
89	N89	-60.99994	42	-47.078838		
90	N90	60.99994	42	-47.078838		
91	N91	-10.2715	42	76.366917		
92	N92	-71.27144	42	-29.288078		
93	N93	71.27144	42	-29.288078		
94	N94	10.2715	42	76.366917		
95	N95	-57.160448	0	-33.0016		
96	N96	-0.	0	66.0032		
97	N97	57.160448	0	-33.0016		
98	N98	-0.	-36.5913	18.586		
99	N99	16.095948	-36.5913	-9.293		
100	N100	-16.095948	-36.5913	-9.293		

Boundary Conditions

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

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. C…	Density [k…	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	58	1.2
3	A992	29000	11154	0.3	0.65	0.49	50	1.1	58	1.2
4	A500 Gr.42	29000	11154	0.3	0.65	0.49	42	1.3	58	1.1
5	A500 Gr.46	29000	11154	0.3	0.65	0.49	46	1.2	58	1.1
6	A53 Grad…	29000	11154	0.3	0.65	0.49	35	1.5	58	1.2

General Section Sets

	Label	Shape	Type	Material	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	GEN1A	RE4X4	Beam	gen_Conc3NW	16	21.333	21.333	31.573
2	RIGID		None	RIGID	1e+06	1e+06	1e+06	1e+06

Hot Rolled Member Properties

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp t…	Lcomp…	L-Torqu…	K y-y	K z-z	Cb	Function
1	M1	Outrigg…	62.977			Lbyy						Lateral
2	M2	Plat. Ho…	33			Lbyy						Lateral
3	M3	Plat. Ho…	33			Lbyy						Lateral
4	M4	Outrigg…	63			Lbyy						Lateral
5	M5	Plat. Ho…	33			Lbyy						Lateral
6	M6	Plat. Ho…	33			Lbyy						Lateral
7	M7	Outrigg…	62.977			Lbyy						Lateral
8	M8	Plat. Ho…	33			Lbyy						Lateral
9	M9	Plat. Ho…	33			Lbyy						Lateral
10	M10	Face Tu…	150			Lbyy						Lateral
11	M13	Face Tu…	150			Lbyy						Lateral
12	M14	Face Tu…	150			Lbyy						Lateral
13	M13A	PL 3/8"…	14.543			Lbyy						Lateral
14	M14A	PL 3/8"…	14.543			Lbyy						Lateral
15	M15	PL 3/8"…	14.543			Lbyy						Lateral
16	M16	Handrai…	150			Lbyy						Lateral
17	M17	Handrai…	150			Lbyy						Lateral
18	M18	Handrai…	150			Lbyy						Lateral
19	PSA.1	Antenn…	96			Lbyy						Lateral
20	PSA.2	Antenn…	96			Lbyy						Lateral
21	PSA.3	Antenn…	96			Lbyy						Lateral
22	PSA.4	Antenn…	96			Lbyy						Lateral
23	PSB.1	Antenn…	96			Lbyy						Lateral
24	PSB.2	Antenn…	96			Lbyy						Lateral
25	PSB.3	Antenn…	96			Lbyy						Lateral
26	PSB.4	Antenn…	96			Lbyy						Lateral
27	PSC.1	Antenn…	96			Lbyy						Lateral
28	PSC.2	Antenn…	96			Lbyy						Lateral
29	PSC.3	Antenn…	96			Lbyy						Lateral
30	PSC.4	Antenn…	96			Lbyy						Lateral
31	M31	Side rail…	20.543			Lbyy						Lateral
32	M32	Side rail…	20.543			Lbyy						Lateral
33	M33	Side rail…	20.543			Lbyy						Lateral
34	M34	Mount…	59.894			Lbyy						Lateral
35	M35	Mount…	59.894			Lbyy						Lateral
36	M36	Mount…	59.894			Lbyy						Lateral

Member Point Loads (BLC 2 : Equipment Weight)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(in, %)]	Inactive [(k, k-ft), (in,…
1	PSA.2	Y	-0.075	13	Active
2	PSA.2	Y	-0.075	71	Active
3	PSA.4	Y	-0.021	12	Active
4	PSA.4	Y	-0.021	43	Active

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(in, %)]	Inactive [(k, k-ft), (in,…
5	PSA.1	Y	-0.042	12	Active
6	PSA.1	Y	-0.042	36	Active
7	PSA.2	Y	-0.084	12	Active
8	PSA.2	Y	-0.109	84	Active
9	PSB.2	Y	-0.075	13	Active
10	PSB.2	Y	-0.075	71	Active
11	PSB.4	Y	-0.021	12	Active
12	PSB.4	Y	-0.021	43	Active
13	PSB.1	Y	-0.042	12	Active
14	PSB.1	Y	-0.042	36	Active
15	PSB.2	Y	-0.084	12	Active
16	PSB.2	Y	-0.109	84	Active
17	PSC.2	Y	-0.075	13	Active
18	PSC.2	Y	-0.075	71	Active
19	PSC.4	Y	-0.021	12	Active
20	PSC.4	Y	-0.021	43	Active
21	PSC.1	Y	-0.042	12	Active
22	PSC.1	Y	-0.042	36	Active
23	PSC.2	Y	-0.084	12	Active
24	PSC.2	Y	-0.109	84	Active

Member Point Loads (BLC 3 : Ice Weight)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(in, %)]	Inactive [(k, k-ft), (in,…
1	PSA.2	Y	-0.295	13	Active
2	PSA.2	Y	-0.295	71	Active
3	PSA.4	Y	-0.1	12	Active
4	PSA.4	Y	-0.1	43	Active
5	PSA.1	Y	-0.12	12	Active
6	PSA.1	Y	-0.12	36	Active
7	PSA.2	Y	-0.128	12	Active
8	PSA.2	Y	-0.146	84	Active
9	PSB.2	Y	-0.295	13	Active
10	PSB.2	Y	-0.295	71	Active
11	PSB.4	Y	-0.1	12	Active
12	PSB.4	Y	-0.1	43	Active
13	PSB.1	Y	-0.12	12	Active
14	PSB.1	Y	-0.12	36	Active
15	PSB.2	Y	-0.128	12	Active
16	PSB.2	Y	-0.146	84	Active
17	PSC.2	Y	-0.295	13	Active
18	PSC.2	Y	-0.295	71	Active
19	PSC.4	Y	-0.1	12	Active
20	PSC.4	Y	-0.1	43	Active
21	PSC.1	Y	-0.12	12	Active
22	PSC.1	Y	-0.12	36	Active
23	PSC.2	Y	-0.128	12	Active
24	PSC.2	Y	-0.146	84	Active

Member Point Loads (BLC 4 : Wind w/ Ice X (7 psf))

	Member Label	Direction	Magnitude [k, k-ft]	Location [(in, %)]	Inactive [(k, k-ft), (in,…
1	PSA.2	X	0.043	13	Active
2	PSA.2	X	0.043	71	Active
3	PSA.4	X	0.018	12	Active
4	PSA.4	X	0.018	43	Active
5	PSA.1	X	0.017	12	Active
6	PSA.1	X	0.017	36	Active
7	PSA.2	X	0.02	12	Active

Member Point Loads (BLC 4 : Wind w/ Ice X (7 psf)) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(in, %)]	Inactive [(k, k-ft), (in,…
8	PSA.2	X	0.025	84	Active
9	PSB.2	X	0.093	13	Active
10	PSB.2	X	0.093	71	Active
11	PSB.4	X	0.033	12	Active
12	PSB.4	X	0.033	43	Active
13	PSB.1	X	0.032	12	Active
14	PSB.1	X	0.032	36	Active
15	PSB.2	X	0.033	12	Active
16	PSB.2	X	0.03	84	Active
17	PSC.2	X	0.093	13	Active
18	PSC.2	X	0.093	71	Active
19	PSC.4	X	0.033	12	Active
20	PSC.4	X	0.033	43	Active
21	PSC.1	X	0.032	12	Active
22	PSC.1	X	0.032	36	Active
23	PSC.2	X	0.033	12	Active
24	PSC.2	X	0.03	84	Active

Member Point Loads (BLC 5 : Wind X(25 psf))

	Member Label	Direction	Magnitude [k, k-ft]	Location [(in, %)]	Inactive [(k, k-ft), (in,…
1	PSA.2	X	0.116	13	Active
2	PSA.2	X	0.116	71	Active
3	PSA.4	X	0.037	12	Active
4	PSA.4	X	0.037	43	Active
5	PSA.1	X	0.044	12	Active
6	PSA.1	X	0.044	36	Active
7	PSA.2	X	0.044	12	Active
8	PSA.2	X	0.064	84	Active
9	PSB.2	X	0.326	13	Active
10	PSB.2	X	0.326	71	Active
11	PSB.4	X	0.096	12	Active
12	PSB.4	X	0.096	43	Active
13	PSB.1	X	0.102	12	Active
14	PSB.1	X	0.102	36	Active
15	PSB.2	X	0.092	12	Active
16	PSB.2	X	0.083	84	Active
17	PSC.2	X	0.326	13	Active
18	PSC.2	X	0.326	71	Active
19	PSC.4	X	0.096	12	Active
20	PSC.4	X	0.096	43	Active
21	PSC.1	X	0.102	12	Active
22	PSC.1	X	0.102	36	Active
23	PSC.2	X	0.092	12	Active
24	PSC.2	X	0.083	84	Active

Member Point Loads (BLC 6 : Wind w/ Ice Z(7 psf))

	Member Label	Direction	Magnitude [k, k-ft]	Location [(in, %)]	Inactive [(k, k-ft), (in,…
1	PSA.2	Z	0.093	13	Active
2	PSA.2	Z	0.093	71	Active
3	PSA.4	Z	0.033	12	Active
4	PSA.4	Z	0.033	43	Active
5	PSA.1	Z	0.032	12	Active
6	PSA.1	Z	0.032	36	Active
7	PSA.2	Z	0.033	12	Active
8	PSA.2	Z	0.03	84	Active
9	PSB.2	Z	0.043	13	Active
10	PSB.2	Z	0.043	71	Active

Member Point Loads (BLC 6 : Wind w/ Ice Z(7 psf)) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(in, %)]	Inactive [(k, k-ft), (in,…
11	PSB.4	Z	0.018	12	Active
12	PSB.4	Z	0.018	43	Active
13	PSB.1	Z	0.017	12	Active
14	PSB.1	Z	0.017	36	Active
15	PSB.2	Z	0.02	12	Active
16	PSB.2	Z	0.025	84	Active
17	PSC.2	Z	0.043	13	Active
18	PSC.2	Z	0.043	71	Active
19	PSC.4	Z	0.018	12	Active
20	PSC.4	Z	0.018	43	Active
21	PSC.1	Z	0.017	12	Active
22	PSC.1	Z	0.017	36	Active
23	PSC.2	Z	0.02	12	Active
24	PSC.2	Z	0.025	84	Active

Member Point Loads (BLC 7 : Wind Z (25 psf))

	Member Label	Direction	Magnitude [k, k-ft]	Location [(in, %)]	Inactive [(k, k-ft), (in,…
1	PSA.2	Z	0.326	13	Active
2	PSA.2	Z	0.326	71	Active
3	PSA.4	Z	0.096	12	Active
4	PSA.4	Z	0.096	43	Active
5	PSA.1	Z	0.102	12	Active
6	PSA.1	Z	0.102	36	Active
7	PSA.2	Z	0.092	12	Active
8	PSA.2	Z	0.083	84	Active
9	PSB.2	Z	0.116	13	Active
10	PSB.2	Z	0.116	71	Active
11	PSB.4	Z	0.037	12	Active
12	PSB.4	Z	0.037	43	Active
13	PSB.1	Z	0.044	12	Active
14	PSB.1	Z	0.044	36	Active
15	PSB.2	Z	0.044	12	Active
16	PSB.2	Z	0.064	84	Active
17	PSC.2	Z	0.116	13	Active
18	PSC.2	Z	0.116	71	Active
19	PSC.4	Z	0.037	12	Active
20	PSC.4	Z	0.037	43	Active
21	PSC.1	Z	0.044	12	Active
22	PSC.1	Z	0.044	36	Active
23	PSC.2	Z	0.044	12	Active
24	PSC.2	Z	0.064	84	Active

Member Distributed Loads (BLC 4 : Wind w/ Ice X (7 psf))

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […]	End Location [(…	Inactive [(k, k-f…
1	M34	X	0.001	0.001	0	%100	Active
2	M35	X	0.001	0.001	0	%100	Active
3	M36	X	0.001	0.001	0	%100	Active
4	PSA.2	X	0.001	0.001	0	%100	Active
5	PSA.3	X	0.001	0.001	0	%100	Active
6	PSB.2	X	0.001	0.001	0	%100	Active
7	PSB.3	X	0.001	0.001	0	%100	Active
8	PSC.2	X	0.001	0.001	0	%100	Active
9	PSC.3	X	0.001	0.001	0	%100	Active
10	M16	X	0.001	0.001	0	%100	Active
11	M18	X	0.001	0.001	0	%100	Active
12	M10	X	0.002	0.002	0	%100	Active
13	M14	X	0.002	0.002	0	%100	Active

Member Distributed Loads (BLC 4 : Wind w/ Ice X (7 psf)) (Continued)

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […]	End Location [(…	Inactive [(k, k-f…
14	PSB.4	X	0.001	0.001	55	%100	Active
15	PSC.4	X	0.001	0.001	55	%100	Active
16	PSA.4	X	0.001	0.001	0	%100	Active
17	PSA.1	X	0.001	0.001	0	%100	Active
18	PSC.1	X	0.001	0.001	36	%100	Active
19	PSB.1	X	0.001	0.001	36	%100	Active

Member Distributed Loads (BLC 5 : Wind X(25 psf))

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […]	End Location [(…	Inactive [(k, k-f…
1	M34	X	0.005	0.005	0	%100	Active
2	M35	X	0.005	0.005	0	%100	Active
3	M36	X	0.005	0.005	0	%100	Active
4	PSA.2	X	0.006	0.006	0	%100	Active
5	PSA.3	X	0.006	0.006	0	%100	Active
6	PSB.2	X	0.006	0.006	0	%100	Active
7	PSB.3	X	0.006	0.006	0	%100	Active
8	PSC.2	X	0.006	0.006	0	%100	Active
9	PSC.3	X	0.006	0.006	0	%100	Active
10	M16	X	0.006	0.006	0	%100	Active
11	M18	X	0.006	0.006	0	%100	Active
12	M10	X	0.009	0.009	0	%100	Active
13	M14	X	0.009	0.009	0	%100	Active
14	PSC.4	X	0.006	0.006	55	%100	Active
15	PSB.4	X	0.006	0.006	55	%100	Active
16	PSA.4	X	0.006	0.006	0	%100	Active
17	PSA.1	X	0.006	0.006	0	%100	Active
18	PSC.1	X	0.006	0.006	36	%100	Active
19	PSB.1	X	0.006	0.006	36	%100	Active

Member Distributed Loads (BLC 6 : Wind w/ Ice Z(7 psf))

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […]	End Location [(…	Inactive [(k, k-f…
1	M34	Z	0.001	0.001	0	%100	Active
2	M35	Z	0.001	0.001	0	%100	Active
3	PSA.2	Z	0.001	0.001	0	%100	Active
4	PSA.3	Z	0.001	0.001	0	%100	Active
5	PSB.2	Z	0.001	0.001	0	%100	Active
6	PSB.3	Z	0.001	0.001	0	%100	Active
7	PSC.2	Z	0.001	0.001	0	%100	Active
8	PSC.3	Z	0.001	0.001	0	%100	Active
9	M13	Z	0.001	0.001	0	%100	Active
10	M17	Z	0.002	0.002	0	%100	Active
11	PSC.4	Z	0.001	0.001	0	%100	Active
12	PSB.4	Z	0.001	0.001	0	%100	Active
13	PSA.4	Z	0.001	0.001	55	%100	Active
14	PSA.1	Z	0.001	0.001	36	%100	Active
15	PSC.1	Z	0.001	0.001	0	%100	Active
16	PSB.1	Z	0.001	0.001	0	%100	Active

Member Distributed Loads (BLC 7 : Wind Z (25 psf))

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […]	End Location [(…	Inactive [(k, k-f…
1	M13	Z	0.009	0.009	0	%100	Active
2	PSC.3	Z	0.006	0.006	0	%100	Active
3	PSC.2	Z	0.006	0.006	0	%100	Active
4	PSB.3	Z	0.006	0.006	0	%100	Active
5	PSB.2	Z	0.006	0.006	0	%100	Active
6	PSA.3	Z	0.006	0.006	0	%100	Active
7	PSA.2	Z	0.006	0.006	0	%100	Active

Member Distributed Loads (BLC 7 : Wind Z (25 psf)) (Continued)

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […]	End Location [(…	Inactive [(k, k-f…
8	M17	Z	0.006	0.006	0	%100	Active
9	M34	Z	0.005	0.005	0	%100	Active
10	M35	Z	0.005	0.005	0	%100	Active
11	PSC.4	Z	0.006	0.006	0	%100	Active
12	PSB.4	Z	0.006	0.006	0	%100	Active
13	PSA.4	Z	0.006	0.006	55	%100	Active
14	PSA.1	Z	0.006	0.006	36	%100	Active
15	PSC.1	Z	0.006	0.006	0	%100	Active
16	PSB.1	Z	0.006	0.006	0	%100	Active

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

	Member Label	Direction	Start Magnitud…	End Magnitude…	Start Location […]	End Location [(…	Inactive [(k, k-f…
1	M1	Y	-0.015	-0.007	25.191	37.786	Active
2	M1	Y	-0.007	-0.004	37.786	50.382	Active
3	M1	Y	-0.004	-0.005	50.382	62.977	Active
4	M2	Y	-0.004	-0.004	2.025	32.453	Active
5	M3	Y	-0.004	-0.004	2.024	32.452	Active
6	M10	Y	-0.00071	-0.003	90	110	Active
7	M10	Y	-0.003	-0.003	110	130	Active
8	M10	Y	-0.003	-0.0004574	130	150	Active
9	M14	Y	-0.0004575	-0.003	0	20	Active
10	M14	Y	-0.003	-0.003	20	40	Active
11	M14	Y	-0.003	-0.0007098	40	60	Active
12	M15	Y	-0.0008711	-0.0008711	0	14.543	Active
13	M7	Y	-0.015	-0.007	25.191	37.786	Active
14	M7	Y	-0.007	-0.004	37.786	50.382	Active
15	M7	Y	-0.004	-0.005	50.382	62.977	Active
16	M8	Y	-0.004	-0.004	2.025	32.453	Active
17	M9	Y	-0.004	-0.004	2.024	32.452	Active
18	M13	Y	-0.0004575	-0.003	0	20	Active
19	M13	Y	-0.003	-0.003	20	40	Active
20	M13	Y	-0.003	-0.0007098	40	60	Active
21	M14	Y	-0.00071	-0.003	90	110	Active
22	M14	Y	-0.003	-0.003	110	130	Active
23	M14	Y	-0.003	-0.0004574	130	150	Active
24	M14A	Y	-0.0008711	-0.0008711	0	14.543	Active
25	M4	Y	-0.015	-0.007	25.2	37.8	Active
26	M4	Y	-0.007	-0.004	37.8	50.4	Active
27	M4	Y	-0.004	-0.005	50.4	63	Active
28	M5	Y	-0.004	-0.004	2.025	32.453	Active
29	M6	Y	-0.004	-0.004	2.024	32.452	Active
30	M10	Y	-0.0004575	-0.003	0	20	Active
31	M10	Y	-0.003	-0.003	20	40	Active
32	M10	Y	-0.003	-0.0007098	40	60	Active
33	M13	Y	-0.00071	-0.003	90	110	Active
34	M13	Y	-0.003	-0.003	110	130	Active
35	M13	Y	-0.003	-0.0004574	130	150	Active
36	M13A	Y	-0.0008711	-0.0008711	0	14.543	Active

Member Area Loads (BLC 2 : Equipment Weight)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]	Inactive [(k,…
1	N26	N27	N4	N5	Y	Two Way	-0.005	Active
2	N15	N16	N24	N25	Y	Two Way	-0.005	Active
3	N10	N11	N28	N23	Y	Two Way	-0.005	Active

Basic Load Cases

	BLC Desc…	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Me…	Surface(P…
1	Self Weight	None		-1						
2	Equipmen…	None					24		3	
3	Ice Weight	None					24			
4	Wind w/ I…	None					24	19		
5	Wind X(2…	None					24	19		
6	Wind w/ I…	None					24	16		
7	Wind Z (2…	None					24	16		
8	BLC 2 Tra…	None						36		

Load Combinations

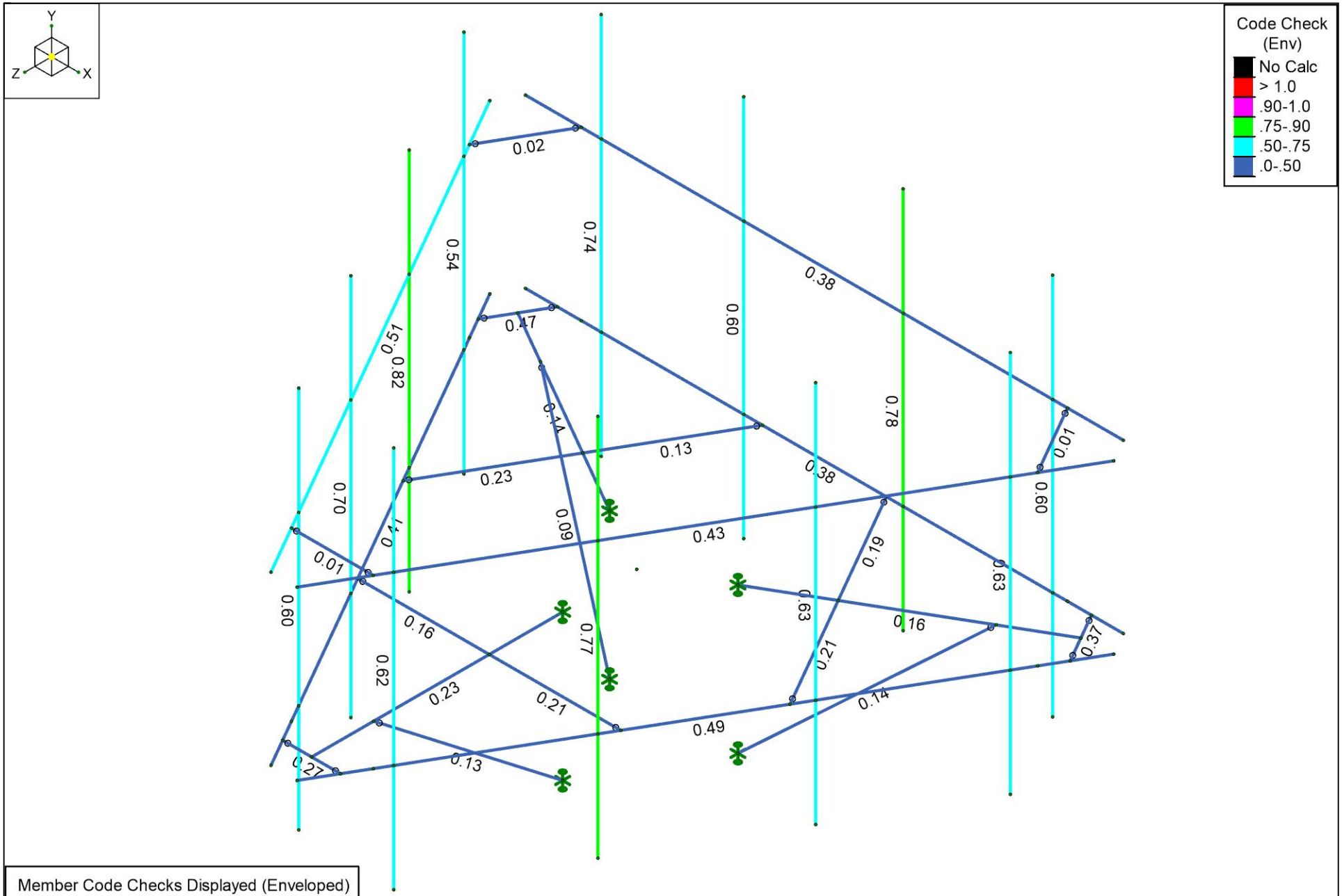
	De…	So…	PD…	SR…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…	BLC	Fa…
1	1.2…	Yes	Y		1	1.2	2	1.2	5	1.6														
2	0.9…	Yes	Y		1	0.9	2	0.9	5	1.6														
3	1.2…	Yes	Y		1	1.2	2	1.2	3	1	4	1												
4	1.2…	Yes	Y		1	1.2	2	1.2	7	1.6														
5	0.9…	Yes	Y		1	0.9	2	0.9	7	1.6														
6	1.2…	Yes	Y		1	1.2	2	1.2	3	1	6	1												

Node Reactions

	Node…		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N1	max	-0.035	6	0.643	3	-1.181	2	0	6	-0.014	6	0	6
2		min	-2.938	1	-0.155	5	-4.046	4	0	1	-3.699	1	0	1
3	N7	max	-0.064	5	0.692	6	1.925	1	0	6	2.168	4	0	6
4		min	-3.947	1	-0.252	2	-2.298	5	0	1	0.061	3	0	1
5	N12	max	1.858	6	0.788	1	0.939	3	0	6	0.654	1	0	6
6		min	-3.099	2	0.478	5	-1.428	5	0	1	-1.62	4	0	1
7	N98	max	0	6	2.226	4	2.867	4	0	6	0	6	0	6
8		min	-0.018	2	0.615	2	0.783	2	0	1	-0.002	2	0	1
9	N99	max	2.718	1	2.452	1	0.08	5	0	6	0.001	4	0	6
10		min	-0.172	5	-0.142	5	-1.58	1	0	1	0	2	0	1
11	N100	max	1.133	2	1.63	6	0.666	2	0	6	0	3	0	6
12		min	-1.814	6	-1.016	2	-1.049	6	0	1	0	5	0	1
13	Totals:	max	0	5	7.294	3	0	3						
14		min	-6.153	2	2.536	5	-4.75	4						

Material Take-Off

	Material	Size	Pieces	Length [in]	Weight [k]
1	Hot Rolled Steel				
2	A36 Gr.36	6"x3/8"	3	43.6	0.028
3	A36 Gr.36	L2.5x2.5x5	3	61.6	0.026
4	A36 Gr.36	LL2x2x3x0	3	179.7	0.073
5	A500 Gr.46	HSS4X4X4	9	387	0.37
6	A53 Grade B	PIPE_2.0	15	1602	0.463
7	A53 Grade B	PIPE_3.0	3	450	0.264
8	Total HR Steel		36	2723.9	1.224



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Centek Engineering	CTNL254A - Mount	SK-1
PPG		May 11, 2022
21085.05 Rev 1		CTNL254A_AMA Rev1.R3D

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

CTNL254A_Coverage Strategy_1

Print Name: Standard
PORs: Coverage Strategy_Regional Coverage

Section 1 - Site Information

Site ID: CTNL254A
Status: Final
Version: 1
Project Type: Coverage Strategy
Approved: 7/12/2022 9:58:51 AM
Approved By: Richard.Kane@t-mobile.com
Last Modified: 7/12/2022 9:58:51 AM
Last Modified By: Richard.Kane@t-mobile.com

Site Name: CTNL254A
Site Class: Monopole
Site Type: Structure Non Building
Plan Year: 2021
Market: CONNECTICUT CT
Vendor: Ericsson
Landlord: Not Specified

Latitude: 41.67454000
Longitude: -71.87868000
Address: 45 Spaulding Rd
City, State: Plainfield, CT
Region: NORTHEAST

RAN Template: 67E5A998E 6160			AL Template: 67E5998E_1xAIR+1OP+1QP	
Sector Count: 3	**Antenna Count:** 9	**Coax Line Count:** 0	**TMA Count:** 0	**RRU Count:** 6

Section 2 - Existing Template Images

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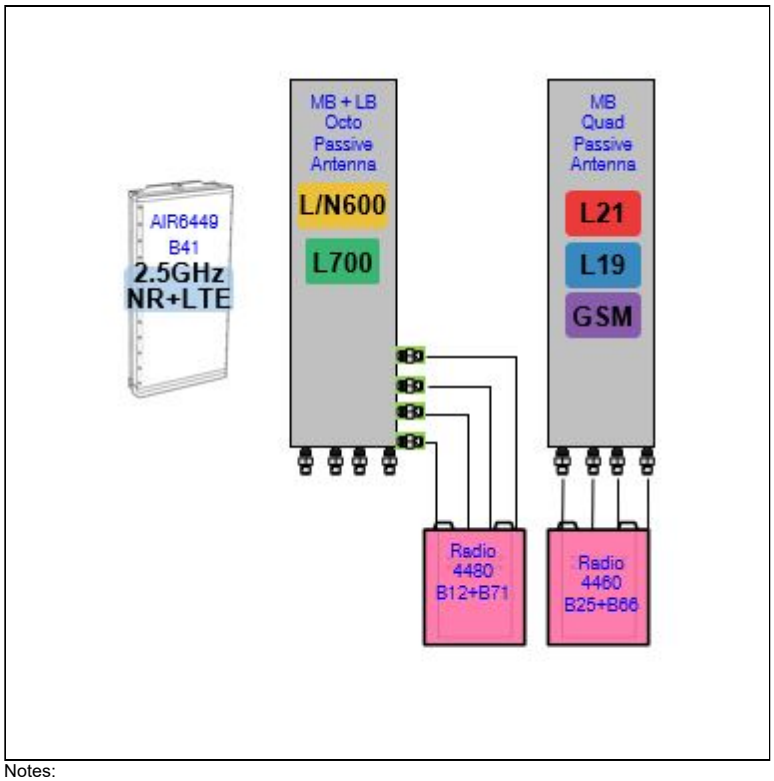
Section 3 - Proposed Template Images

67E5A998E.JPG



Notes:

Section 4 - Siteplan Images

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

CTNL254A_Coverage Strategy_1

Print Name: Standard
PORs: Coverage Strategy_Regional Coverage

Section 5 - RAN Equipment

Existing RAN Equipment
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Proposed RAN Equipment		
Template: 67E5A998E 6160		
Enclosure	**1**	**2**
Enclosure Type	Enclosure 6160 AC V1	B160
Baseband	RP 6651: L700, L600, N600, L2100, L1900 RP 6651: L2500, N2500	
Hybrid Cable System	Hybrid Trunk 6/24 4AWG 80m **(x 3)** PSU 4813 vR4A (Kit) **(x 2)**	
Transport System	CSR IXRe V2 (Gen2)	
RAN Scope of Work:		

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

CTNL254A_Coverage Strategy_1

Print Name: Standard
PORs: Coverage Strategy_Regional Coverage

Section 6 - A&L Equipment

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

Sector 1 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	Commscope_VV-65A-R1 (Quad)		RFS - APXVAALL24_43-U-NA20 (Octo)				AIR 6419 B41 (Active Antenna - Massive MIMO)	
Azimuth	60		60				60	
M. Tilt	0		0				0	
Height	142		142				142	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L2100 L1900	L2100 L1900	L700 L600 N600	L700 L600 N600			L2500 N2500	L2500 N2500
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2	2	2	2	2	2	2	2
Cables	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**				
TMAs								
Diplexers / Combiners								
Radio	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)	Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)				
Sector Equipment								

Unconnected Equipment:

Scope of Work:

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

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

CTNL254A_Coverage Strategy_1

Print Name: Standard
PORs: Coverage Strategy_Regional Coverage

Sector 2 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	Commscope_VV-65A-R1 (Quad)		RFS - APXVAALL24_43-U-NA20 (Octo)				AIR 6419 B41 (Active Antenna - Massive MIMO)	
Azimuth	210		210				210	
M. Tilt	0		0				0	
Height	142		142				142	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L2100 L1900	L2100 L1900	L700 L600 N600	L700 L600 N600			L2500 N2500	L2500 N2500
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2	2	2	2	2	2	2	2
Cables	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**				
TMAs								
Diplexers / Combiners								
Radio	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)	Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)				
Sector Equipment								

Unconnected Equipment:

Scope of Work:

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

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

CTNL254A_Coverage Strategy_1

Print Name: Standard
PORs: Coverage Strategy_Regional Coverage

Sector 3 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1		2				3	
Antenna Model	Commscope_VV-65A-R1 (Quad)		RFS - APXVAALL24_43-U-NA20 (Octo)				AIR 6419 B41 (Active Antenna - Massive MIMO)	
Azimuth	310		310				310	
M. Tilt	0		0				0	
Height	142		142				142	
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	L2100 L1900	L2100 L1900	L700 L600 N600	L700 L600 N600			L2500 N2500	L2500 N2500
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt	2	2	2	2	2	2	2	2
Cables	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**				
TMAs								
Diplexers / Combiners								
Radio	Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)	Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)				
Sector Equipment								

Unconnected Equipment:

Scope of Work:

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

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

CTNL254A_Coverage Strategy_1

Print Name: Standard
PORs: Coverage Strategy_Regional Coverage

Section 7 - Power Systems Equipment

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

DOCKET NO. 136 - An application of SNET Cellular, Inc., for a Certificate of Environmental Compatibility and Public Need for the construction, operation, and maintenance of a cellular telephone tower and associated equipment in the Town of Plainfield, Connecticut.

Connecticut Siting Council

ORIGINAL

September 26, 1990

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council finds that the effects associated with the construction, operation, and maintenance of a cellular telecommunications tower and equipment building at the proposed Plainfield, Connecticut, site 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 significant either alone or cumulatively with other effects, 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 Compatability and Public Need, as provided by section 16-50k of the Connecticut General Statutes (CGS), be issued to SNET Cellular, Inc., for the construction, operation, and maintenance of a cellular telecommunications tower, associated equipment, and building at the proposed site in Plainfield, 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 facility shall be constructed in accordance with the State of Connecticut Basic Building Code.

2. The self-supporting monopole tower shall be no taller than necessary to provide the proposed communication service and in no event shall the tower exceed a total height of 167 feet above ground level, with antennas and appurtenances.

3. The tower shall be moved further southwest to reduce visibility to nearby landowners, provided the tower's fall zone does not extend beyond the lessor's property line. This change shall be made and subject to approval by the Council in a Development and Management (D&M) Plan.

4. The Certificate holder shall prepare a D&M Plan for this site in compliance with sections 16-50j-75 through 16-50j-77 of the Regulations of State Agencies. The D&M plan shall include detailed plans of the tower, tower foundation, tower pedestal, equipment building, access road, and security fence. In addition, the D&M plan shall include detailed plans for erosion and sedimentation control.

5. The Certificate Holder shall comply with any existing and future radio frequency (RF) standard promulgated by State or federal regulatory agencies. Upon the establishment of any new governmental RF standards, the facility granted in this Decision and Order shall be brought into compliance with such standards.

6. The Certificate Holder shall provide the Council a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels originally calculated and provided in the application.

7. 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.

8. If the facility does not initially provide, or permanently ceases to provide, cellular service following completion of construction, this Decision and Order shall be void, and the tower and all associated equipment shall be dismantled and removed or reapplication for any new use shall be made to the Council before any such new use is made.

9. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed within three years of the effective date of this Decision and Order or within three years after all appeals to this Decision and Order have been resolved.

Pursuant to Section 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Norwich Bulletin.

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 State Agencies.

The party to this proceeding is:

(PARTY)	(ITS REPRESENTATIVES)
SNET Cellular, Inc. 227 Church Street New Haven, CT 06506	Peter J. Tyrrell Senior Attorney SNET Cellular, Inc. 227 Church Street Room 1021 New Haven, CT 06506 (203) 771-7381

CERTIFICATION

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case in Docket No. 136 or read the record thereof, and that we voted as follows:

Dated at New Britain, Connecticut the 26th day of September, 1990.

Council Members	Vote Cast
Gloria Dibble Pond Chairperson	Yes
Commissioner Peter Boucher Designee: Mark Marcus	Yes
Commissioner Leslie Carothers Designee: Brian Emerick	Yes
Harry E. Covey	Yes
Mortimer A. Gelston	Yes
Daniel P. Lynch, Jr.	Yes
Paulann H. Sheets	Yes
William H. Smith	Yes
Colin C. Tait	Absent

Your shipment from

TRANSCEND WIRELESS

Estimated delivery

Tomorrow, July 21 between 9:45 A.M. - 11:45 A.M.

- Label Created
- On the Way
- Out for Delivery
- Delivery

Ship To

AMERICAN TOWER CORPORATION
CONTACTS MANAGEMENT
10 PRESIDENTIAL WAY
WOBURN, MA 01801 US

ERIC BREUN
2016587728
1 INTERNATIONAL BLVD.
MAHWAH NJ 07495

1 LBS

1 OF 1

SHIP TO:
KEVIN CUNNINGHAM
8 COMMUNITY AVENUE
PLAINFIELD VILLAGE CT 06374

CT 063 0-04

UPS GROUND
TRACKING #: 1Z V25 742 03 9530 9045

BILLING: P/P

Reference #1: CTNL254A

XOL 22.07.07 NV45 30.0A 07/2022*

ERIC BREUN
2016587728
1 INTERNATIONAL BLVD.
MAHWAH NJ 07495

1 LBS

1 OF 1

SHIP TO:
MARY ANN CHINATTI
8 COMMUNITY AVENUE
PLAINFIELD VILLAGE CT 06374

CT 063 0-04

UPS GROUND
TRACKING #: 1Z V25 742 03 9336 1376

BILLING: P/P

Reference #1: CTNL254A

XOL 22.07.07 NV45 30.0A 07/2022*

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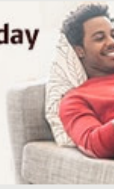


Set Delivery Instructions | Manage Preferences

TRANSCEND WIRELESS

Tracking Number:	1ZV257420397219031
Ship To:	ROBERT AND NICOLE SANCHEZ 161 PICKETT ROAD PLAINFIELD, CT 06374 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTNL254A

Hello, your package has been delivered.

Delivery Date: Thursday, 07/21/2022

Delivery Time: 12:43 PM

Signed by: Karin

TRANSCEND WIRELESS

Tracking Number:	1ZV257420395309045
Ship To:	KEVIN CUNNINGHAM 8 COMMUNITY AVENUE PLAINFIELD VILLAGE, CT 06374 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTNL254A

Hello, your package has been delivered.

Delivery Date: Thursday, 07/21/2022

Delivery Time: 12:43 PM

Signed by: Karin

TRANSCEND WIRELESS

Tracking Number:	1ZV257420393361376
Ship To:	MARY ANN CHINATTI 8 COMMUNITY AVENUE PLAINFIELD VILLAGE, CT 06374 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTNL254A

Hello, your package has been delivered.

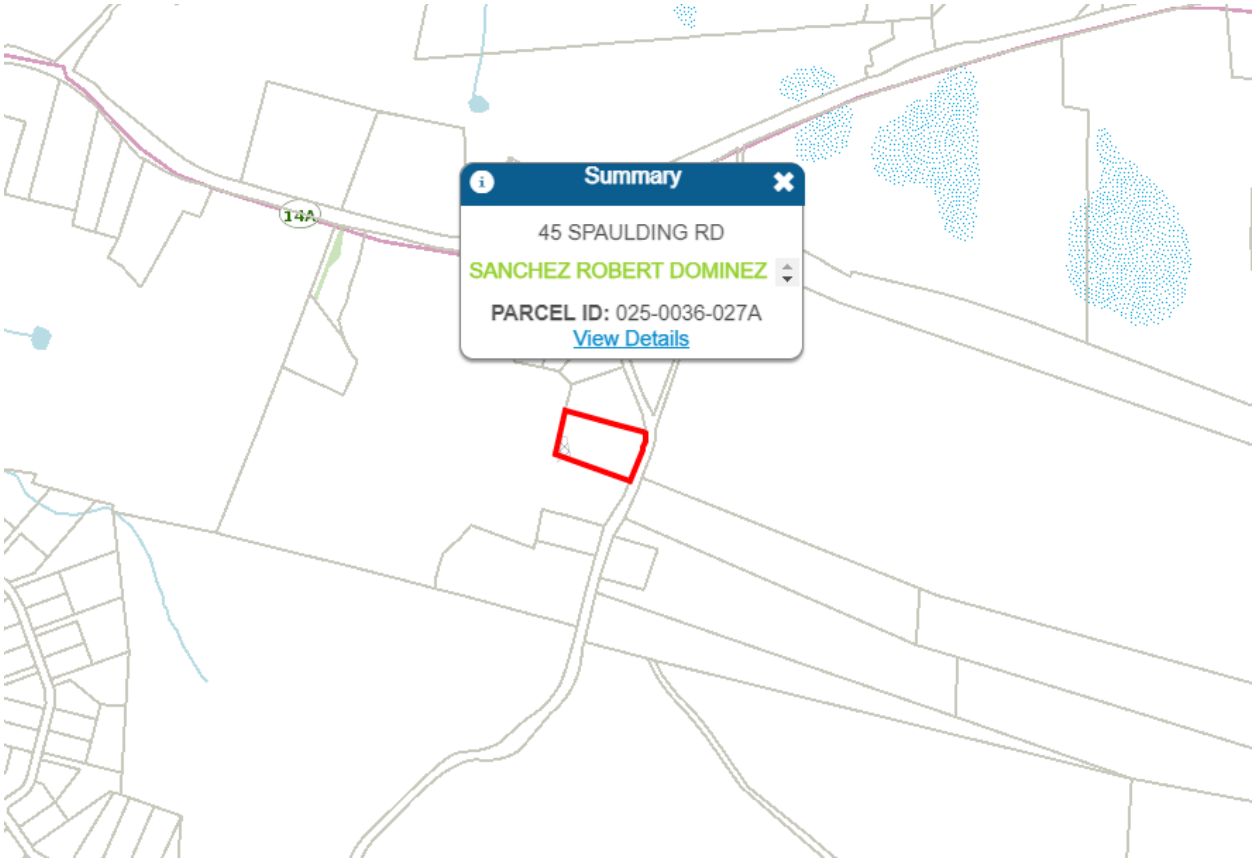
Delivery Date: Thursday, 07/21/2022

Delivery Time: 11:34 AM

Signed by: LONG

TRANSCEND WIRELESS

Tracking Number:	1ZV257420399149023
Ship To:	AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN, MA 01801 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CTNL254A


Summary
45 SPAULDING RD
SANCHEZ ROBERT DOMINEZ
PARCEL ID: 025-0036-027A
View Details
14A

45 SPAULDING RD

Sales | Print | Map It

Location	45 SPAULDING RD	**Mblu**	025/ 0036/ 027A/ /
Acct#	00325300	**Owner**	SANCHEZ ROBERT DOMINEZ & NICOLE (JT)
Assessment	$117,920	**Appraisal**	$168,450
PID	3562	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$128,360	$40,090	$168,450
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$89,860	$28,060	$117,920

Owner of Record

Owner	SANCHEZ ROBERT DOMINEZ & NICOLE (JT)	**Sale Price**	$39,000
Co-Owner		**Certificate**	
Address	161 PICKETT RD PLAINFIELD , CT 06374	**Book & Page**	0560/0654
		Sale Date	11/16/2020
		Instrument	00

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
SANCHEZ ROBERT DOMINEZ & NICOLE (JT)	$39,000		0560/0654	00	11/16/2020
ROYS SCOTT	$10,000		0548/0710	25	01/28/2020
THEROUX BEATRICE L - C/O SPECTRASITE COM	$0		0253/0587		09/01/1998
CREDIE MARGARET M + FLORINDA L	$0		0161/0916		03/04/1986

Building Information

Building 1 : Section 1

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

Building Attributes	
Field	**Description**
Style:	Outbuildings
Model	
Grade:	
Stories:	
Occupancy:	
Exterior Wall 1:	
Exterior Wall 2:	
Roof Structure:	
Roof Cover:	
Interior Wall 1:	
Interior Wall 2:	
Interior Flr 1:	
Interior Flr 2:	
Heat Fuel:	
Heat Type:	
AC Type:	
Total Bedrooms:	
Full Baths:	
Half Baths:	
Extra Fixtures:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Fireplaces:	
Xtra Openings:	
Gas Fireplaces:	
Woodstove/Pellet	
Bsmt Gar:	
Num Park	
Fireplaces	
Color	
Basement:	
Fndtn Cndtn	
Basement	

Building Photo

Building Layout

Building Layout

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

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	5040
Description	PUB UTIL
Zone	RA60
Neighborhood	1000
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	2.79
Frontage	
Depth	
Assessed Value	$28,060
Appraised Value	$40,090

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
RS5	Cell Tower Building			312.00 UNITS	$23,400	1
TT4	Cell Tower			150.00 HEIGHT	$101,250	1
FN4	Fence 8' Chain			256.00 L.F.	$3,710	1

Outbuildings

Outbuildings						Legend
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Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$128,360	$40,090	$168,450
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Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$89,860	$28,060	$117,920
2020	$89,860	$28,060	$117,920