CENTERLINE COMMUNICATIONS

38 Treeline Court
Fishkill, NY 12524
krevak@clinellc.com
845-242-6152

August 20, 2021

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

Re: Notice of Exempt Modifications – AT&T Site CT1255
AT&T Telecommunications Facility @ 8 Upper Meadow Lane, Granby, CT 06035

Dear Ms. Bachman,

New Cingular Wireless, PCS, LLC ("AT&T") is proposing a wireless telecommunications facility on an existing +/- 150 feet monopole tower at the above referenced address (Latitude = 41.9533, Longitude = - 71.82984) and within the existing fenced compound. Said monopole tower is owned and operated by American Tower Corporation.

AT&T desires to modify the existing telecommunications facility by: installing a WIC (Walk-In Cabinet) and a Generator on proposed concrete pads inside a 20' x 10' ground space within the existing compound and install (9) antennas, (9) RRUS Radios, (2) Squid and mounts/cabling on the existing tower at 134' as more particularly detailed and described on the enclosed Construction Drawings prepared by Dewberry Engineers Inc., dated August 4, 2021. The overall height of the existing tower is and will remain at 150 feet and no changes will be made to the compound dimensions.

Please accept this letter as notification pursuant to R.C.S.A §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A §16-50j-72(b)(2). In accordance with R.C.S.A §16-50j-73, a copy of this letter is being sent to the following individuals: American Tower Corporation as Tower Operator/Owner; Tower Meadow LLC as Property Owners; William Smith as Town Manager of the Town of Granby and Mark Lockwood as Planning & Zoning Chairman for the Town of Granby.

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

1. The proposed modifications will NOT result in an increase in the height of the existing structure.
2. The proposed modifications will NOT require an extension of the site boundary.

3. The proposed modifications will NOT increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will NOT increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. *Please see the RF emissions calculation for AT&T's modified facility enclosed herewith*.
5. The proposed modifications will NOT cause an ineligible change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading. Please see the structural analysis dated March 22, 2021 prepared by American Tower Corporation enclosed herewith.

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

If you have any questions, please feel free to contact me.

Sincerely,

Kimberly Revak

Kimberly Revak
Site Acquisition Consultant – Agent for AT&T
Centerline Communications, LLC
38 Treeline Court
Fishkill, NY 12524
Phone: (845) 242-6152
krevak@clinellc.com

Enclosures:
Exhibit 1 – Property Card and GIS
Exhibit 2 – Construction Drawings dated 07/02/21
Exhibit 3 – Structural Analysis Report
Exhibit 4 – Antenna Mount Analysis Report
Exhibit 5 – NIER Study Report
Exhibit 6 – Tower Approval
Exhibit 7 – (4) Notice Confirmations

Cc:
American Tower Corporation – Tower Operator/Owner
Tower Meadow LLC – Property Owner
William Smith – Tower Manager of the Town of Granby
Mark Lockwood – Planning & Zoning Chairman for the Town of Granby

Exhibit 1

Property Card and GIS

8 UPPER MEADOW

Location	8 UPPER MEADOW	**Mblu**	G-30/ 69/ 134/ /
Acct#	14750008	**Owner**	TOWER MEADOW LLC
Assessment	$221,550	**Appraisal**	$316,500
PID	101221	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$129,500	$187,000	$316,500
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$90,650	$130,900	$221,550

Owner of Record

Owner	TOWER MEADOW LLC	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	40 SIMSBURY RD WEST GRANBY, CT 06090	**Book & Page**	339/0689
		Sale Date	12/20/2006

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
TOWER MEADOW LLC	$0		339/0689	12/20/2006
TOWER MEADOW LLC	$0		334/0976	07/20/2006
GIRARD MEADOW LLC	$0		277/0120	01/09/2003
GIRARD ELAINE J	$0		161/ 935	06/19/1989

Building Information

Building 1 : Section 1

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

Replacement Cost
Less Depreciation: $0

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

Building Photo

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

Building Layout

Building Layout
(http://images.vgsi.com/photos2/GranbyCTPhotos//Sketches/101221_1013

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

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	4310
Description	TEL REL TW
Zone	R2A
Neighborhood	

Land Line Valuation

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

Alt Land Appr Category No

Appraised Value $187,000

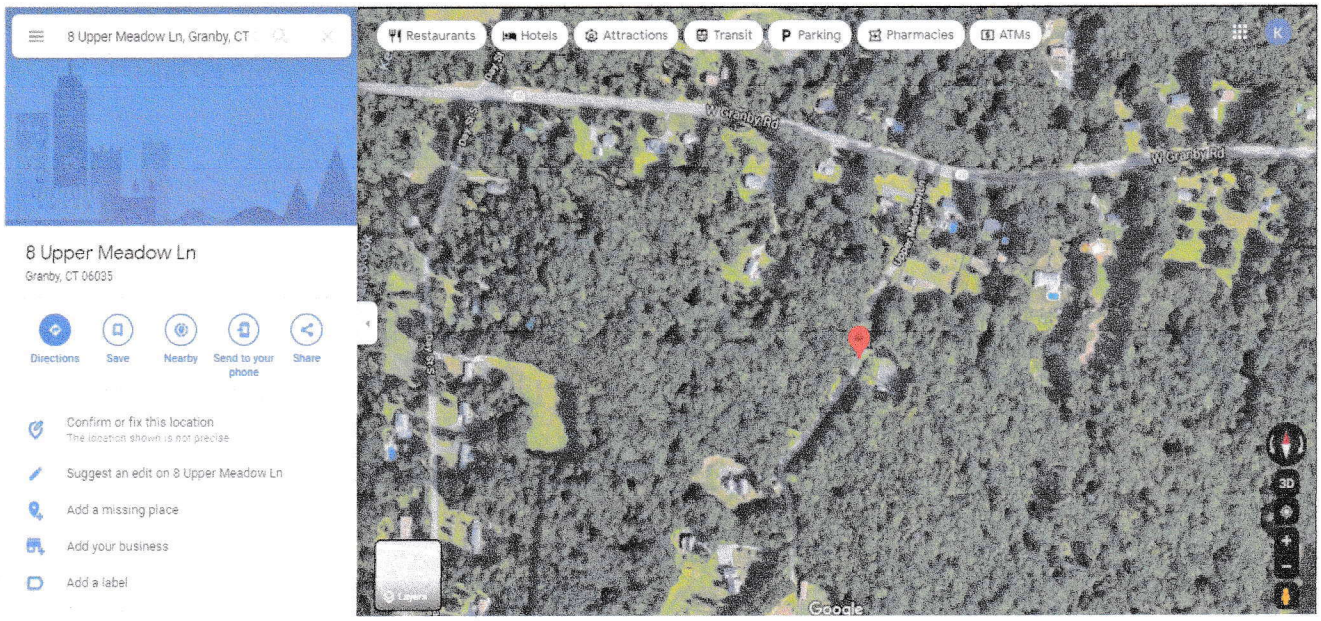
Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
CELL	CELL TOWER			1 UNITS	$112,500	1
FN4	FENCE-8' CHAIN			320 L.F.	$4,000	1
SHP5	W/IMPROV GOOD			432 S.F.	$13,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$129,500	$187,000	$316,500
2019	$129,500	$187,000	$316,500
2018	$129,500	$187,000	$316,500

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$90,650	$130,900	$221,550
2019	$90,650	$130,900	$221,550
2018	$90,650	$130,900	$221,550


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

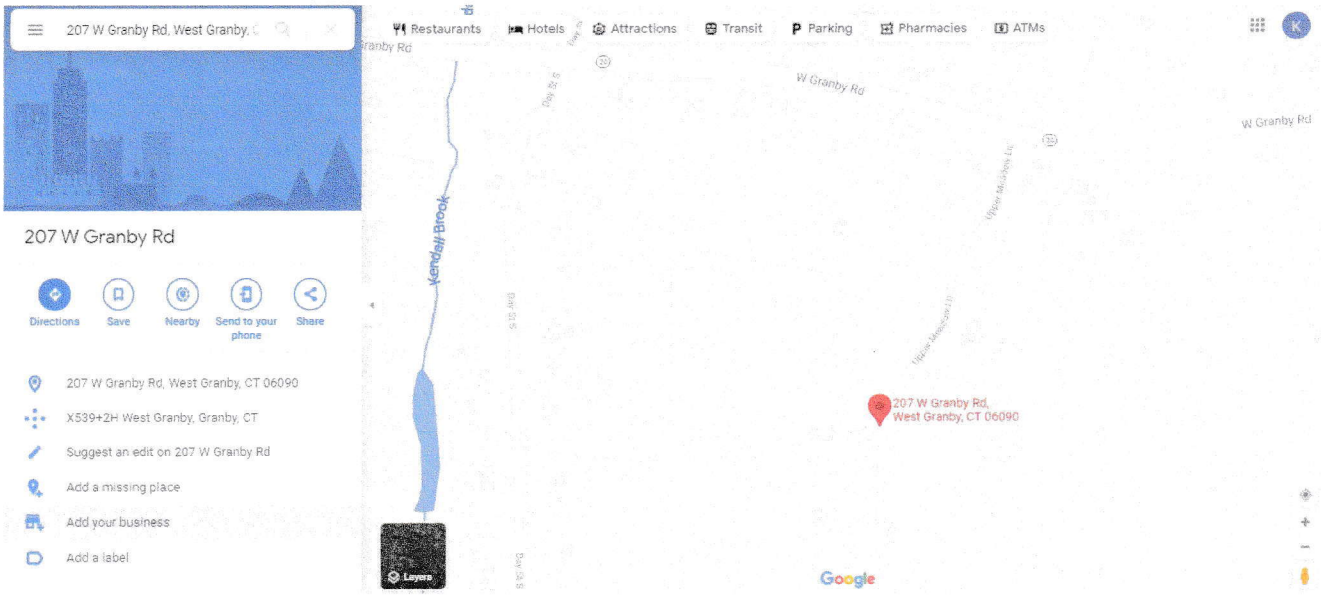
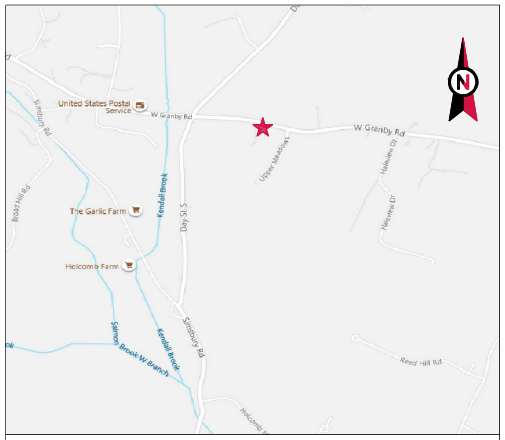

207 W Granby Rd, West Granby, C
207 W Granby Rd
Directions
Save
Nearby
Send to your phone
Share
207 W Granby Rd, West Granby, CT 06090
X539+2H West Granby, Granby, CT
Suggest an edit on 207 W Granby Rd
Add a missing place
Add your business
Add a label
Restaurants
Hotels
Attractions
Transit
Parking
Pharmacies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

Exhibit 2

Construction Drawings



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: WEST GRANBY, CT CT
ATC SITE NUMBER: 411186
AT&T PACE NUMBER: MCRTB050155
AT&T SITE ID: 300644
AT&T FA CODE: 15336478
AT&T SITE NAME: CT2393S
SITE ADDRESS: 207 WEST GRANBY RD. GRANBY, CT 06035

AT&T MOBILITY 13626835 COLOCATION PLAN
5G NR RADIO/5G NR 1DR-1 CONFIGURATION

LOCATION MAP

COMPLIANCE CODE

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

1. 2018 CONNECTICUT STATE BUILDING CODE-AMENDMENTS TO IBC 2015
2. INTERNATIONAL BUILDING CODE 2015, INTERNATIONAL CODE COUNCIL
3. TIA-222-G-4, STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS
4. ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, AMERICAN SOCIETY OF CIVIL ENGINEERS
5. STEEL CONSTRUCTION MANUAL 14TH EDITION, AMERICAN INSTITUTE OF STEEL CONSTRUCTION
6. CITY/COUNTY ORDINANCES

UTILITY COMPANIES

POWER COMPANY: UNKNOWN
PHONE: (XXX) XXX-XXXX

TELEPHONE COMPANY: UNKNOWN
PHONE: (XXX) XXX-XXXX

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

PROJECT SUMMARY

SITE ADDRESS:

207 WEST GRANBY RD.

GRANBY, CT 06035

COUNTY: HARTFORD

GEOGRAPHIC COORDINATES:

LATITUDE: 41.9533

LONGITUDE: -71.82984

GROUND ELEVATION: 462' AMSL

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

APPLICANT:

AT&T MOBILITY
550 COCHITUATE ROAD
SUITES 13 & 14
FRAMINGHAM, MA 01701

ENGINEER:

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

PROPERTY OWNER:

TOWER MEADOW LLC.
40 SIMSBURY RD.
WEST GRANBY, CT 06090

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES INSTALLING A WIC (WALK-IN CABINET) AND A GENERATOR ON PROPOSED CONCRETE PADS INSIDE A 20' 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

TAKE I-91 NORTH TO EXIT 40 HEAD TOWARDS BRADLEY AIRPORT THEN TAKE THE EXIT FOR RTE 20 WEST. FOLLOW RTE 20 WEST THRU GRANBY CENTER. AFTER THE RTE 20 AND RTE 189 SPLIT CONTINUE ON RTE 20 WEST APPROX. 1.9 MILES. TAKE A LEFT ONTO UPPER MEADOW RD. THE TOWER IS LOCATED ON THE LEFT ABOUT 100 YARDS.

SHEET INDEX

SHEET NO	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	2	08/04/21	WG
G-002	GENERAL NOTES	2	08/04/21	WG
C-001	OVERALL SITE PLAN	2	08/04/21	WG
C-101	DETAILED SITE PLAN	2	08/04/21	WG
C-201	TOWER ELEVATION	2	08/04/21	WG
C-401	ANTENNA INFORMATION & SCHEDULE	2	08/04/21	WG
C-501	MOUNT DETAILS	2	08/04/21	WG
C-502	CONSTRUCTION DETAILS	2	08/04/21	WG
C-503	CONSTRUCTION DETAILS	2	08/04/21	WG
S-501	CONSTRUCTION DETAILS	2	08/04/21	WG
E-101	GROUNDING DETAILS & ELECTRICAL SCHEMATIC	2	08/04/21	WG
E-501	GROUNDING DETAILS	2	08/04/21	WG
E-601	PANEL SCHEDULE	2	08/04/21	WG
R-601	SUPPLEMENTAL			
R-602	SUPPLEMENTAL			
R-603	SUPPLEMENTAL			

AMERICAN TOWER®

Dewberry®
Dewberry Engineers Inc.
99 SUMMER STREET
SUITE 700
BOSTON, MA 02110
PHONE: 617.531.0801
FAX: 617.695.3310

REV.	DESCRIPTION	BY	DATE
A	PRELIM	MR	05/04/21
B	PRELIM	MR	06/16/21
0	FINAL	WG	07/02/21
1	FINAL	WG	07/15/21
2	FINAL	WG	08/04/21

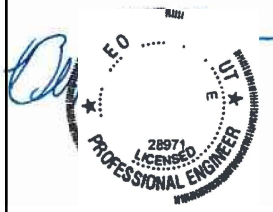
ATC SITE NUMBER:
411186

ATC SITE NAME:
WEST GRANBY, CT CT

AT&T MOBILITY SITE NAME:
MCRTB050155

SITE ADDRESS:
207 WEST GRANBY RD.
GRANBY, CT 06035

SEAL:



at&t Mobility

DATE DRAWN:	04/27/21
ATC JOB NO:	13626835
CUSTOMER ID:	MCRTB050155
CUSTOMER #:	300644

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	2

GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, AT&T MOBILITY "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 X-IT 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 AT&T MOBILITY 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 AT&T MOBILITY REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE AT&T MOBILITY REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE AT&T MOBILITY 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 AT&T MOBILITY 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 AT&T MOBILITY 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 AT&T MOBILITY 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 AT&T MOBILITY 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 AT&T MOBILITY REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY AT&T MOBILITY MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH AT&T MOBILITY SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO AT&T MOBILITY FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO AT&T MOBILITY 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 AT&T MOBILITY 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 AT&T MOBILITY REP. ANY WORK FOUND BY THE AT&T MOBILITY 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. AT&T MOBILITY FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE AT&T MOBILITY 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. AT&T MOBILITY 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 AT&T MOBILITY 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 AT&T MOBILITY 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 AT&T MOBILITY 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 #22213 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 AT&T MOBILITY REP PRIOR TO PLACING CONCRETE.
3. CONCRETE SHALL BE NORMAL WEIGHT, 6 % AIR ENTRAINED (+/- 1.5%) WITH A SLUMP RANGE OF 3-5" 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, EYBEDDED 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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REV.	DESCRIPTION	BY	DATE
A	PRELIM	MR	05/04/21
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0	FINAL	WG	07/02/21
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2	FINAL	WG	08/04/21

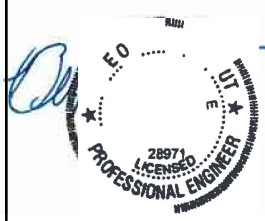
ATC SITE NUMBER:
411186

ATC SITE NAME:
WEST GRANBY, CT CT

AT&T MOBILITY SITE NAME:
MCRTB050155

SITE ADDRESS:
207 WEST GRANBY RD.
GRANBY, CT 06035

SEAL:



at&t Mobility

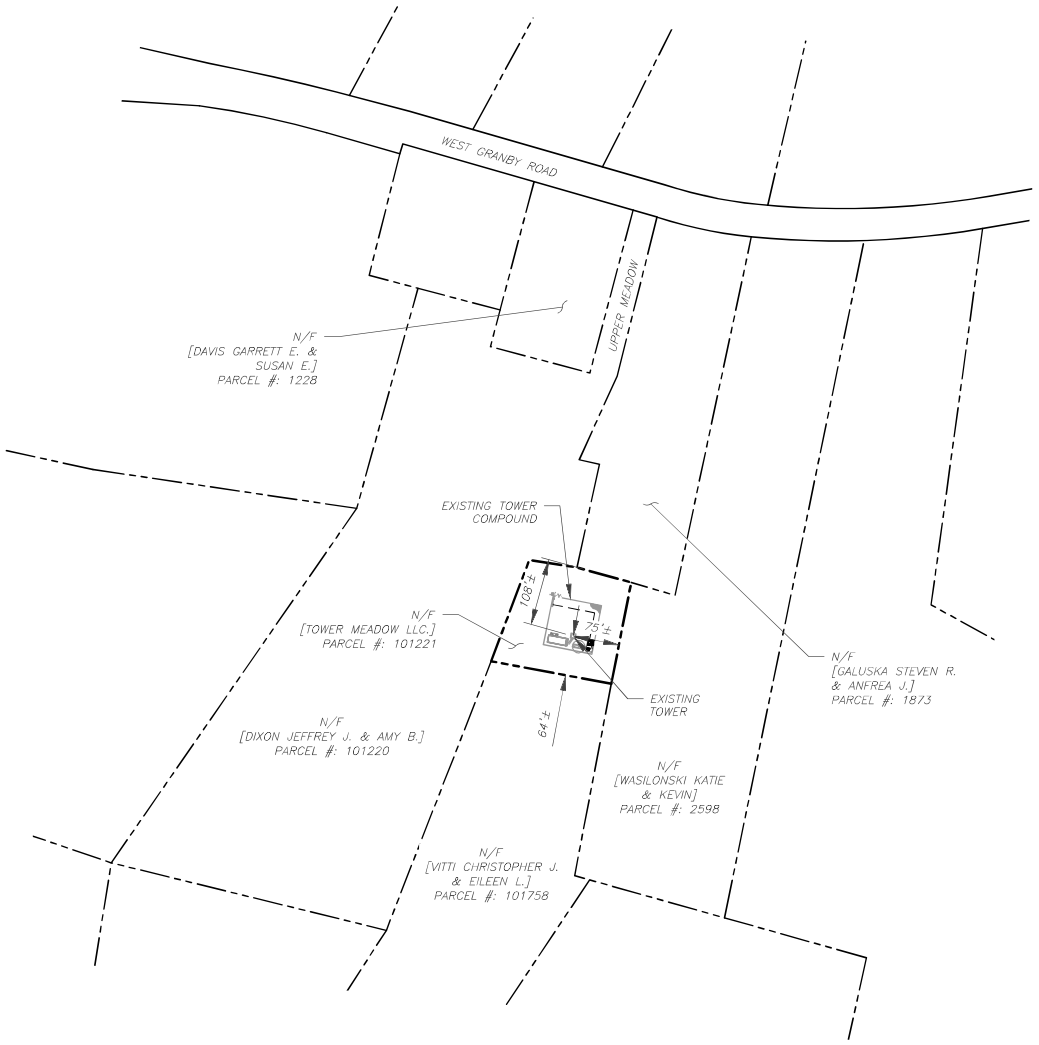
DATE DRAWN:	04/27/21
ATC JOB NO:	13626835
CUSTOMER ID:	MCRTB050155
CUSTOMER #:	300644

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	2

NOTES:

1. BOUNDARY LINES OBTAINED FROM GRANBY, CT ONLINE PARCEL VIEWER.



LEGEND

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

NOTES:

1. DEWBERRY WAS NOT CONTRACTED TO PERFORM ANY BOUNDARY AND TOPOGRAPHIC SURVEY ON THIS SITE.

1 OVERALL SITE PLAN

GRAPHIC SCALE

200 0 100 200

(IN FEET)
1 UNIT = 200 FEET

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SEAL:

28971 LICENSED PROFESSIONAL ENGINEER

at&t Mobility

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CUSTOMER #:	300644

OVERALL SITE PLAN

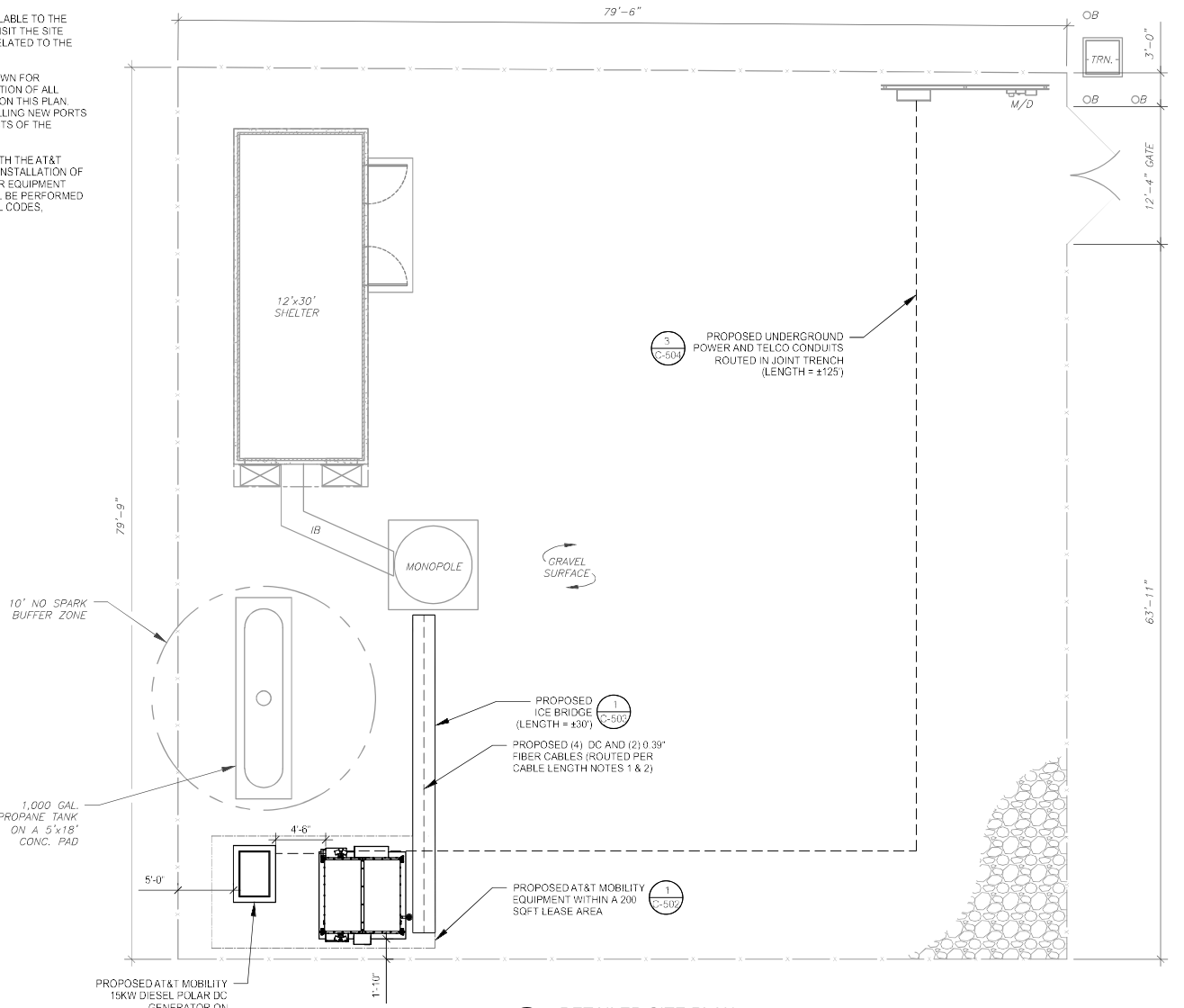
SHEET NUMBER:	REVISION:
C-001	2

SITE PLAN NOTES:

1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE AT&T MOBILITY 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

10 0 5 10

(IN FEET)
1 UNIT = 10 FEET

PROPOSED CABLE LENGTH:

1. ESTIMATED LENGTH OF PROPOSED CABLE 178'. 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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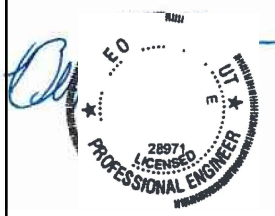

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DATE DRAWN:	04/27/21
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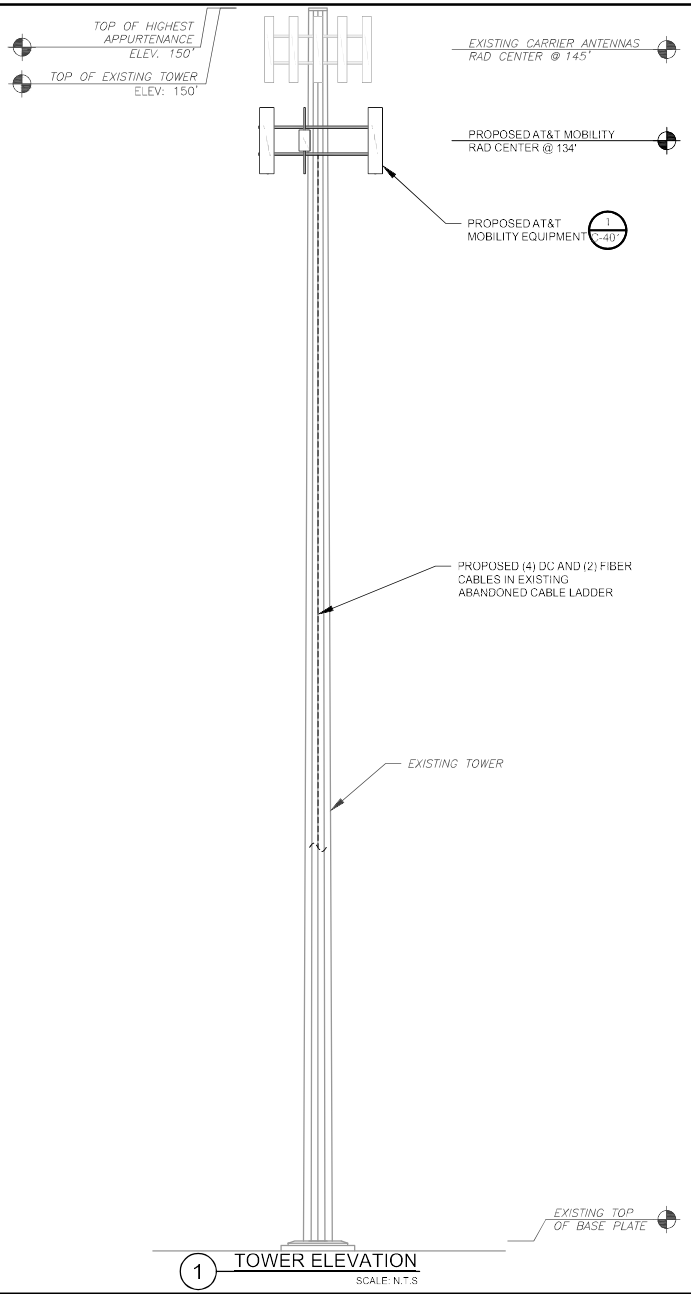
CUSTOMER #:	300644

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	2



1 TOWER ELEVATION
SCALE: N.T.S

ATC HAS NOT ANALYZED THE PROPOSED ANTENNA MOUNTS TO DETERMINE ADEQUATE STRUCTURAL CAPACITY FOR THE PROPOSED CARRIER LOADING AS SHOWN. CONSTRUCTION IS NOT TO PROCEED WITHOUT A PASSING MOUNT ANALYSIS REPORT.

TOWER NOTE:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
3. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
4. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.).
5. DEWBERRY HAS NOT BEEN CONTRACTED TO PERFORM A MOUNT ANALYSIS AT THIS SITE. CONSTRUCTION IS NOT TO PROCEED WITHOUT A PASSING MOUNT ANALYSIS REPORT FOR THE PROPOSED CARRIER LOADING SHOWN. .

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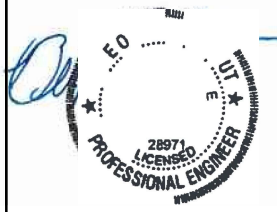

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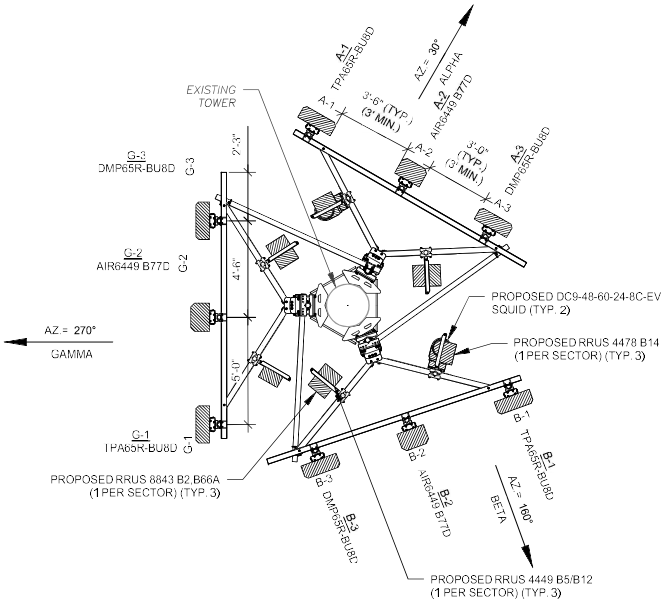
TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-201	2



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	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	134'	30°	A1	TPA-65R-BU8D	B14/AWS/WCS	0/2.2.2	ADD	RRUS 4478 B14	ADD
			A2	AIR 6449 B77D	5G 3.5GHZ	0/2	ADD	-	-
			A3	DMP65R-BU8D	700BC/850/PCS	0/2.2.2	ADD	RRUS 4449 B5/B12	ADD
								RRUS 8843 B2/B66A	ADD
BETA	134'	160°	B1	TPA-65R-BU8D	B14/AWS/WCS	0/2.2.2	ADD	RRUS 4478 B14	ADD
			B2	AIR 6449 B77D	5G 3.5GHZ	0/2	ADD	-	-
			B3	DMP65R-BU8D	700BC/850/PCS	0/2.2.2	ADD	RRUS 4449 B5/B12	ADD
								RRUS 8843 B2/B66A	ADD
GAMMA	134'	270°	C1	TPA-65R-BU8D	B14/AWS/WCS	0/2.2.2	ADD	RRUS 4478 B14	ADD
			C2	AIR 6449 B77D	5G 3.5GHZ	0/2	ADD	-	-
			C3	DMP65R-BU8D	700BC/850/PCS	0/2.2.2	ADD	RRUS 4449 B5/B12	ADD
								RRUS 8843 B2/B66A	ADD

1. CONFIRM WITH AT&T MOBILITY 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

CABLE LENGTHS FOR JUMPERS
FIBER DISTRIBUTION/OVP TO RRU: 15'
RRU TO ANTENNA: 10'

PROPOSED FIBER DISTRIBUTION/OVP BOX		PROPOSED CABLING SUMMARY		
MODEL NUMBER	STATUS	DC	FIBER	STATUS
(2) DC9-48-60-24-8C-EV	ADD	(1)	(1)	ADD

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SEAL:

28971 LICENSED PROFESSIONAL ENGINEER

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ANTENNA INFORMATION & SCHEDULE

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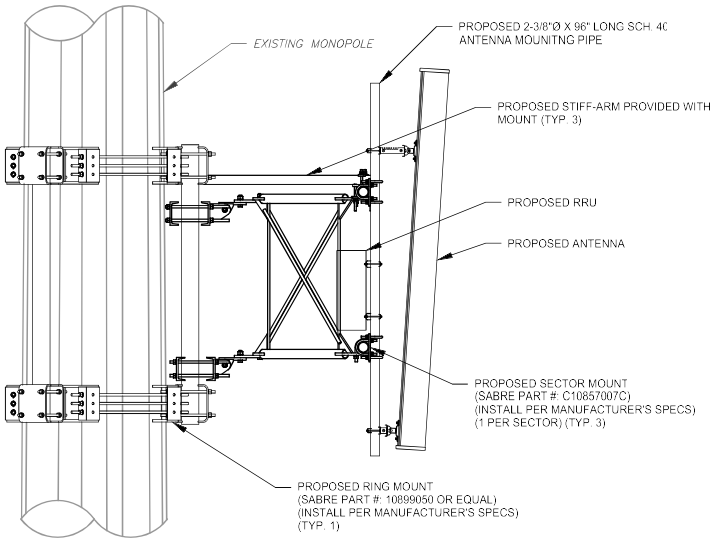
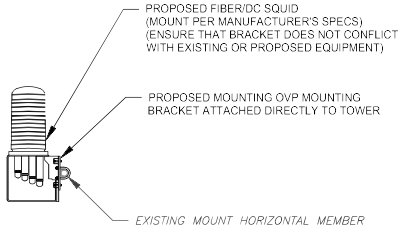
C-401	2



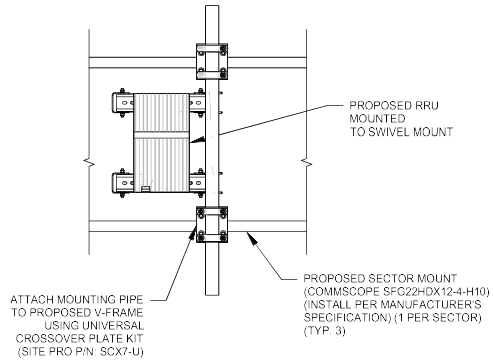
1 PROPOSED ANTENNA MOUNTING DETAIL (ELEVATION)

SCALE: NOT TO SCALE



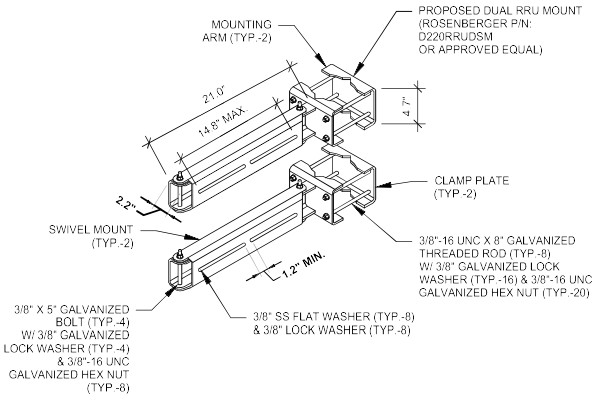
2 PROPOSED SQUID MOUNTING

SCALE: N.T.S.



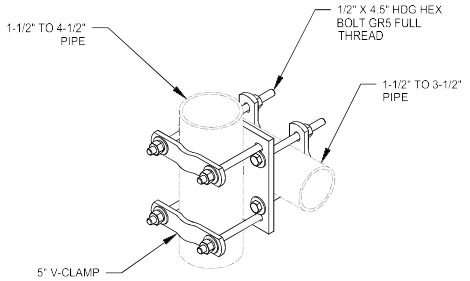
3 PROPOSED RRU/SQUID MOUNTING DETAIL

SCALE: NOT TO SCALE



4 PROPOSED SWIVEL MOUNT DETAIL

SCALE: N.T.S.



5 SITE PRO SCX7-U DETAIL

SCALE: N.T.S.

AMERICAN TOWER®

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PHONE: 617.531.0801
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REV.	DESCRIPTION	BY	DATE
A	PRELIM	MR	05/04/21
B	PRELIM	MR	06/16/21
0	FINAL	WG	07/02/21
1	FINAL	WG	07/15/21
2	FINAL	WG	08/04/21

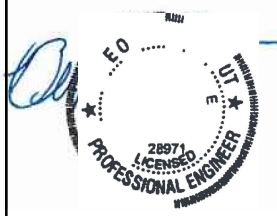
ATC SITE NUMBER:
411186

ATC SITE NAME:
WEST GRANBY, CT CT

AT&T MOBILITY SITE NAME:
MCRTB050155

SITE ADDRESS:
207 WEST GRANBY RD.
GRANBY, CT 06035

SEAL:

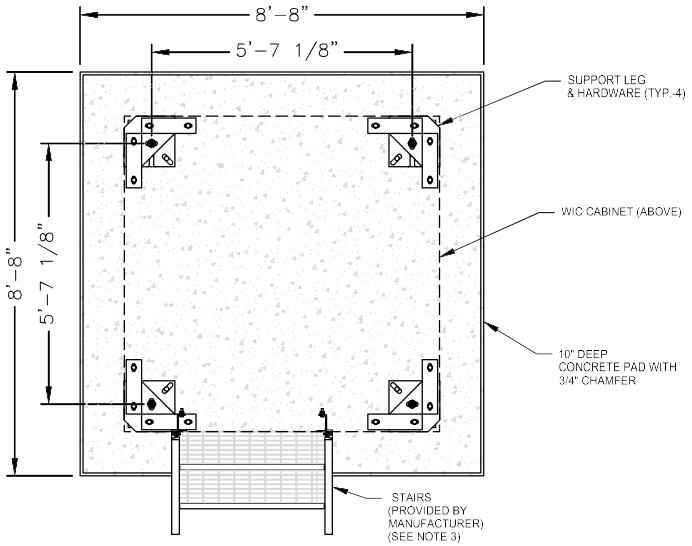


at&t Mobility

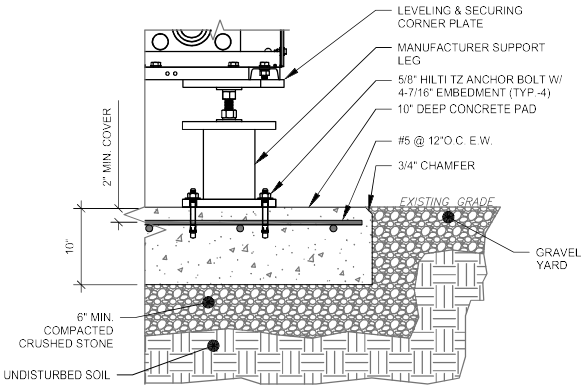
DATE DRAWN:	04/27/21
ATC JOB NO:	13626835
CUSTOMER ID:	MCRTB050155
CUSTOMER #:	300644

MOUNT DETAILS

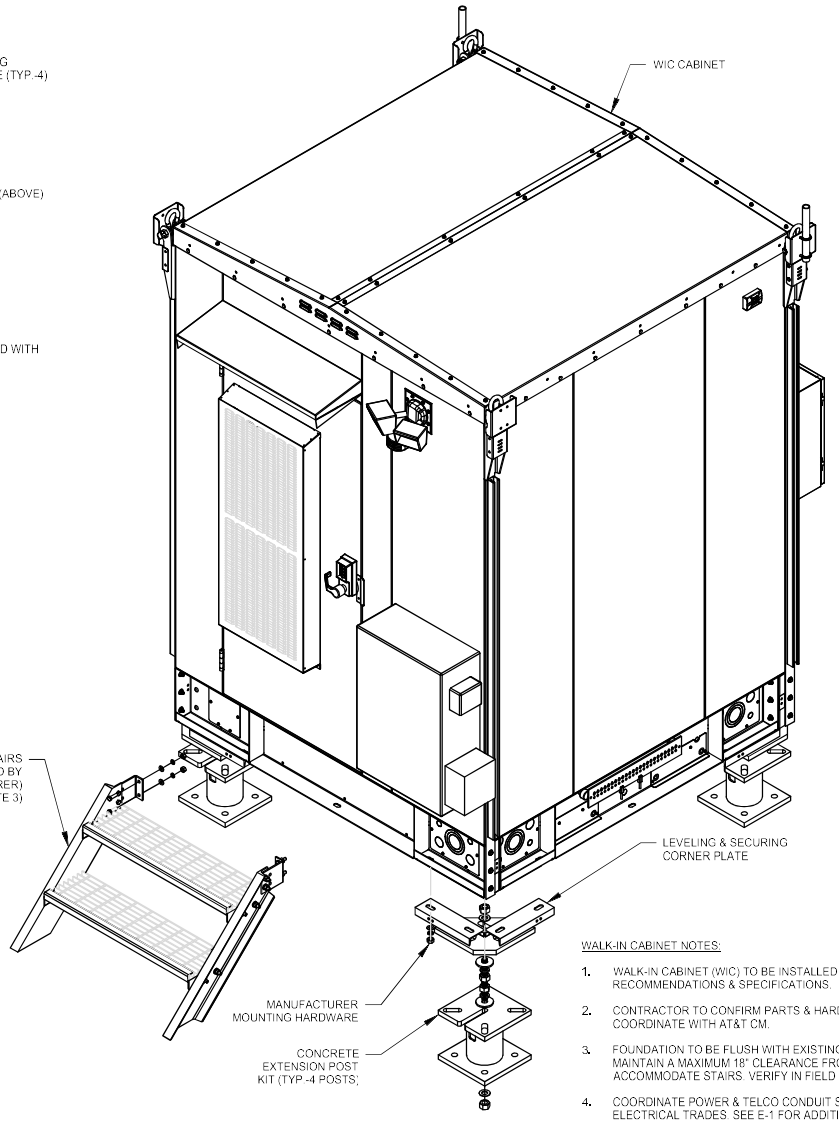
SHEET NUMBER:	REVISION:
C-501	2



1 WIC FOUNDATION DETAIL
SCALE: NOT TO SCALE



2 WIC BASE SECTION
SCALE: NOT TO SCALE



3 WIC ISOMETRIC
SCALE: NOT TO SCALE

WALK-IN CABINET NOTES:

1. WALK-IN CABINET (WIC) TO BE INSTALLED ACCORDING TO MANUFACTURER RECOMMENDATIONS & SPECIFICATIONS.
2. CONTRACTOR TO CONFIRM PARTS & HARDWARE PRIOR TO CONSTRUCTION & COORDINATE WITH AT&T CM.
3. FOUNDATION TO BE FLUSH WITH EXISTING GRADE. CONTRACTOR SHALL MAINTAIN A MAXIMUM 18" CLEARANCE FROM GRADE TO BOTTOM OF WIC TO ACCOMMODATE STAIRS. VERIFY IN FIELD PRIOR TO POST INSTALLATION.
4. COORDINATE POWER & TELCO CONDUIT STUBUP PLACEMENT WITH ELECTRICAL TRADES. SEE E-1 FOR ADDITIONAL INFORMATION.
5. PROVIDE WORKING HVAC AND ELECTRICAL WORKING SPACE CLEARANCES PER MANUFACTURER RECOMENDATIONS & CODE REQUIREMENTS.
6. WIC DIMENSIONS: 6'-8"W X 6'-8"L X 9'-6" TALL (NO BASE)
WIC WEIGHT: 5500 LBS (EMPTY) 7500 LBS (FULLY INTEGRATED)
7. CONTRACTOR TO PROVIDE AND INSTALL SPECIFIED CONCRETE ANCHORS.

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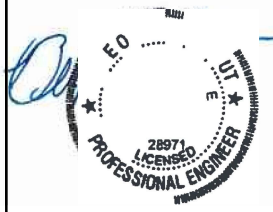

at&t Mobility

DATE DRAWN:	04/27/21
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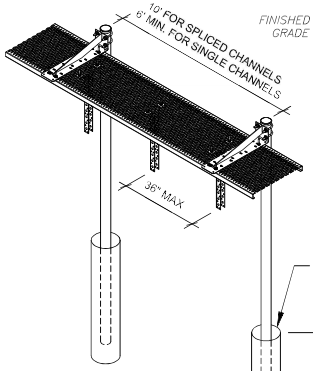
CUSTOMER #:	300644

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-502	2

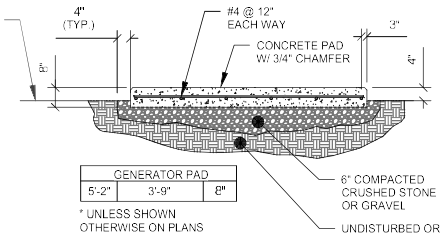


ICE BRIDGE NOTES:

1. INCLUDES (3) UNIVERSAL VERTICAL TRAPEZE KITS PER 10' SPAN.
2. ALL COMPONENTS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
3. CONTRACTOR SHALL DETERMINE REQUIRED QUANTITY OF ALL ICE BRIDGE COMPONENTS.
4. SNAP-IN HANGERS, SPLICE KITS, HINGE KITS, EXTENSION KITS, STIFFENERS, AND OTHER MISCELLANEOUS HARDWARE SHALL BE PROVIDED BY THE CONTRACTOR AS REQUIRED.
5. ICE BRIDGE SHALL BE ROUTED TO ACCOMMODATE THE MINIMUM BENDING RADIUS OF THE COAXIAL CABLE.
6. ICE BRIDGE COMPONENTS SHOWN ARE SCHEMATIC. CONSULT MANUFACTURER FOR EXACT AND CURRENT SPECIFICATIONS.
7. USE BASE SHOE FOR ANCHORING TO CONCRETE PAD.

1 2-POST ICE BRIDGE (SITE PRO P/N: IB24D-V)

SCALE: NOT TO SCALE



GENERATOR PAD		
5'-2"	3'-9"	8"

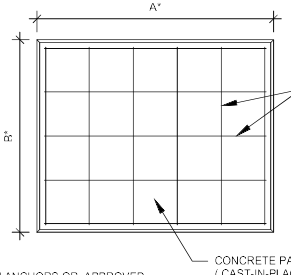
* UNLESS SHOWN OTHERWISE ON PLANS.

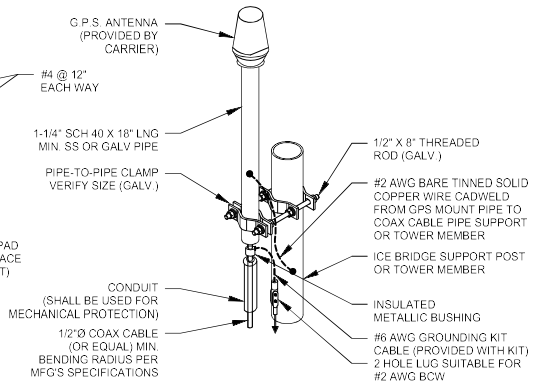
NOTES:

1. USE GALVANIZED HILTI EXPANSION ANCHORS OR, APPROVED EQUAL, FOR EQUIPMENT ANCHORAGE.
2. VERIFY THE SIZE OF THE GENERATOR WITH THE AT&T.
3. FOR SIZE AND LOCATION OF ANCHORS AND OTHER REQUIREMENT, SEE EQUIPMENT VENDOR DRAWINGS.

2 OUTDOOR PAD FOR MINOR EQUIPMENT

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.

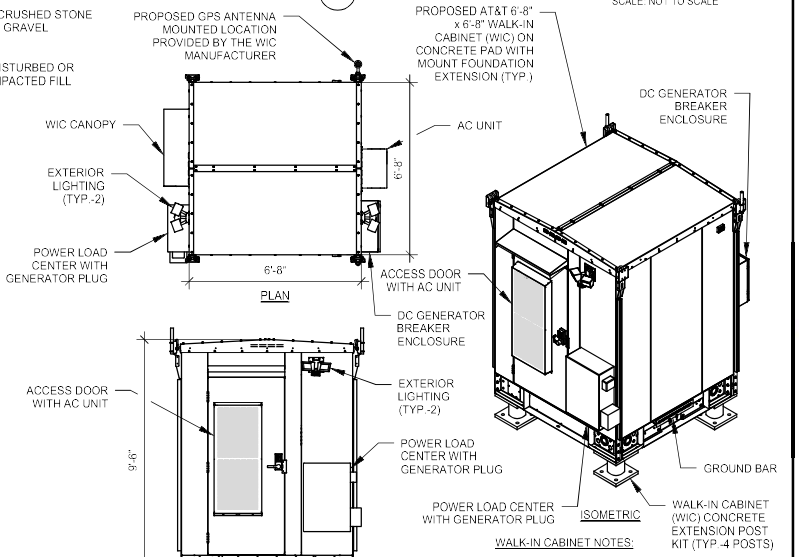
3 GPS ANTENNA ATTACHMENT DETAIL

SCALE: NOT TO SCALE

1. BEARING STRATA MEDIUM TO DENSE INSET GRANULAR MATERIAL OR COMPACTED GRAVEL FILL. 95% COMPACTION.
2. FILL SHALL CONSIST OF CLEAN SOIL. NO DELETERIOUS MATERIALS OR ORGANICS TO BE USED.

4 GRAVEL YARD DETAIL

SCALE: NOT TO SCALE

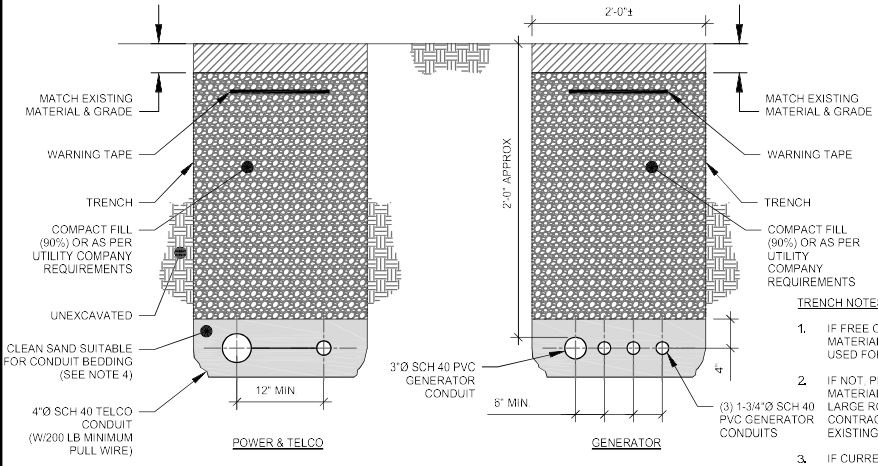


WALK-IN CABINET NOTES:

1. WALK-IN CABINET (WIC) TO BE INSTALLED ACCORDING TO MANUFACTURER RECOMMENDATIONS & SPECIFICATIONS.
2. WIC COMES FULLY ASSEMBLED. CONTRACTOR TO CONFIRM PARTS & HARDWARE PRIOR TO CONSTRUCTION & COORDINATE WITH AT&T CM.
3. CONTRACTOR SHALL MAINTAIN A MAXIMUM 18" CLEARANCE FROM GRADE TO BOTTOM OF WIC TO ACCOMMODATE STAIRS. VERIFY IN FIELD PRIOR TO POST INSTALLATION.

6 WIC DETAIL

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.

5 BURIED CONDUIT TRENCH DETAIL

SCALE: NOT TO SCALE

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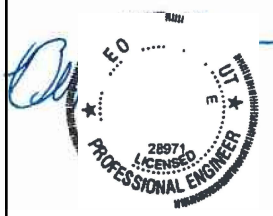

at&t Mobility

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ATC JOB NO:	13626835
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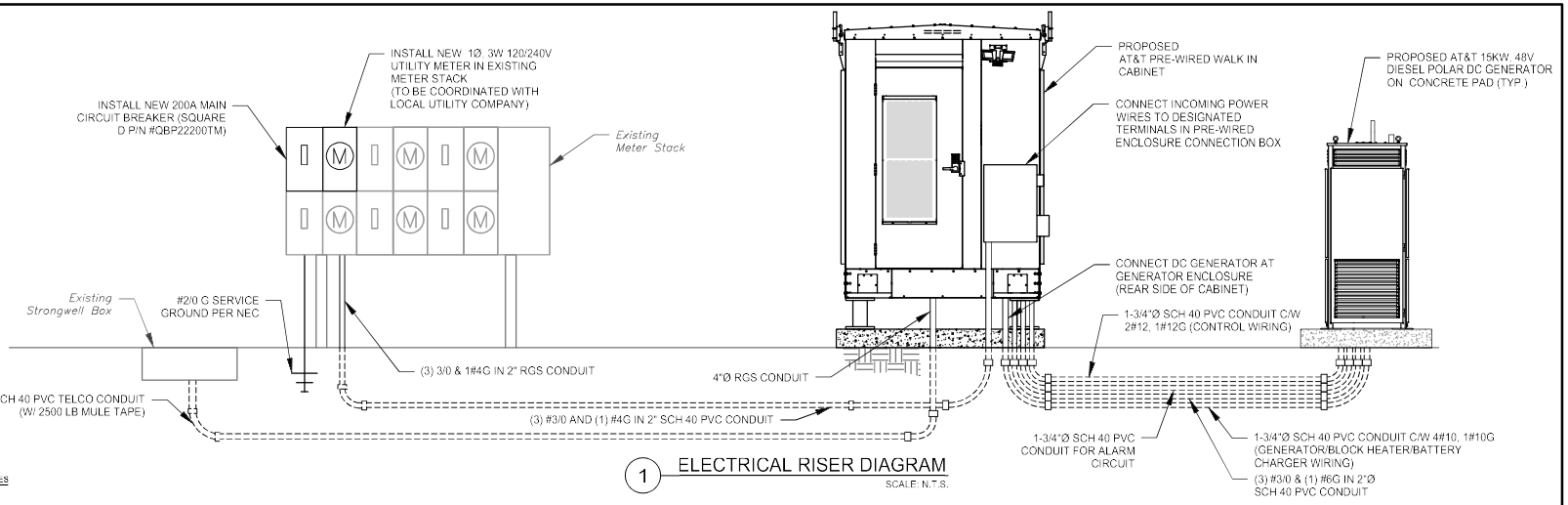
CUSTOMER #:	300644

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-503	2



1 ELECTRICAL RISER DIAGRAM

SCALE: N.T.S.

GENERAL ELECTRICAL NOTES

1. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH ALL GOVERNING STATE, COUNTY & LOCAL CODES, O.S.H.A., NEC, NFPA #70, AT&T MOBILITY SPECIFICATIONS, & THE SPECIFICATIONS DETAILED IN THESE PLANS.
2. SUBMITTAL OF BID INDICATES CONTRACTOR IS COGNIZANT OF ALL JOB SITE CONDITIONS & WORK TO BE PERFORMED UNDER THIS CONTRACT.
3. CONTRACTOR SHALL PERFORM ALL VERIFICATION, OBSERVATION, TESTS, & EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT & THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE PROJECT MANAGER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT, & DISCREPANCIES.
4. THESE PLANS ARE DIAGRAMMATIC ONLY, FOLLOW AS CLOSELY AS POSSIBLE. CONTRACTOR SHALL ENSURE THAT ACCESS TO EQUIPMENT IS MAINTAINED IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS & ALL APPLICABLE CODES.
5. EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANELBOARD, PULLBOX, J-BOX, SWITCH BOX, ETC., IN COMPLIANCE WITH OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA).
6. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR A COMPLETE & PROPERLY OPERATIVE SYSTEM, ENERGIZED THROUGHOUT & AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
7. ALL MATERIALS & EQUIPMENT SHALL BE NEW & IN PERFECT CONDITION WHEN INSTALLED & SHALL BE OF THE BEST GRADE & OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED & APPROVED BY UNDERWRITER'S LABORATORY & SHALL BEAR THE INSPECTION LABEL "U" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION. MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA, IEEE, & NFPA.
8. ALL CONDUIT INSTALLED MAY BE SURFACE MOUNTED UNLESS OTHERWISE NOTED.
9. COMPLETE JOB SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF JOB ACCEPTANCE BY OWNER. ANY WORK, MATERIAL OR EQUIPMENT FOUND TO BE FAULTY DURING THAT PERIOD SHALL BE CORRECTED AT ONCE, UPON WRITTEN NOTIFICATION, AT THE EXPENSE OF THE CONTRACTOR.
10. ALL "CONDUIT ONLY" (C.O.) INSTALLATIONS SHALL HAVE A 3/8" PULL WIRE OR ROPE.
11. CONTRACTOR SHALL PROVIDE AT&T MOBILITY MANAGER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS, & CIRCUITS.
12. ALL BROCHURES, OPERATING MANUALS, CATALOGS, SHOP DRAWINGS, ETC. SHALL BE TURNED OVER TO OWNER AT JOB COMPLETION.
13. POWER WIRE & CABLE CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM UNLESS SPECIFICALLY NOTED OTHERWISE ON DRAWINGS. CONDUCTORS #10 AWG & SMALLER SHALL BE SOLID.
14. ALL CONDUCTORS LARGER THAN #10 AWG SHALL BE STRANDED COPPER WITH N 600V INSULATION, UNLESS NOTED OTHERWISE.
15. ALL MATING SURFACES OF GROUND CONNECTIONS SHALL BE CLEANED SMOOTH & COATED WITH ANTIOXIDANT PRIOR TO ATTACHMENT.
16. ALL GROUND CONNECTIONS BELOW GRADE MUST BE EXOTHERMICALLY WELDED (CAD WELD OR APPROVED EQUAL)
17. ALL EXTERIOR GROUNDING CONDUCTORS SHALL BE #2 AWG SOLID TINNED BARE COPPER WIRE UNLESS NOTED OTHERWISE.
18. ALL CIRCUIT BREAKERS, FUSES & ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, & A MINIMUM OF 10,000 A.I.C. COORDINATE SHORT CIRCUIT REQUIREMENTS WITH LOCAL UTILITY COMPANY.
19. CONTRACTOR SHALL PATCH, REPAIR, & PAINT ANY AREA THAT HAS BEEN DAMAGED IN THE COURSE OF THE ELECTRICAL WORK.
20. IN DRILLING HOLES INTO CONCRETE WHETHER FOR FASTENING OR ANCHORING PURPOSES, OR PENETRATIONS THROUGH THE FLOOR FOR CONDUIT RUNS, M.P.IPE RUNS, ETC., IT MUST BE CLEARLY UNDERSTOOD THAT TENDONS AND/OR REINFORCING STEEL WILL NOT BE DRILLED INTO, CUT OR DAMAGED UNDER ANY CIRCUMSTANCES.
21. LOCATION OF TENDONS AND/OR REINFORCING STEEL ARE NOT DEFINITELY KNOWN &, THEREFORE, MUST BE SEARCHED FOR BY APPROPRIATE METHODS & EQUIPMENT VIA X-RAY OR OTHER DEVICES THAT CAN ACCURATELY LOCATE THE REINFORCING AND/OR STEEL TENDONS.
22. PENETRATIONS IN FIRE RATED WALLS SHALL BE SEALED IN ACCORDANCE WITH ALL APPLICABLE CODES.
23. ALL MATERIALS SHALL BE U.L. LISTED.
24. CONDUIT:
    a. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR & SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR. RIGID CONDUIT IN CONTACT WITH EARTH SHALL BE 1/2 LAPPED RAPPED WITH HUNTS WRAP PROCESS NO. 3.
    b. ELECTRICAL METALLIC TUBING SHALL HAVE U.L. LABEL. FITTINGS SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS.
    c. FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LISTED LABEL & MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE. SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT SHALL HAVE FULL SIZE GROUND WIRE.
    d. CONDUIT RUNS MAY BE SURFACE MOUNTED IN CEILINGS OR WALLS UNLESS INDICATED OTHERWISE. CONDUIT SHALL RUN PARALLEL OR AT RIGHT ANGLES TO CEILING, FLOOR OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH ENGINEER PRIOR TO INSTALLING.
25. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS.
26. CONTRACTOR SHALL COORDINATE THE ELECTRICAL SERVICE WITH AT&T MOBILITY & LOCAL UTILITY.
27. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY NEC & ALL APPLICABLE CODES.
28. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 5 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE OWNER FOR FURTHER INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE. CONTRACTOR SHALL SUBMIT TO THE PROJECT MANAGER ALL TEST REPORTS & ONE COMPLETE SET OF PRINTS SHOWING "INSTALLED WORK".
29. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, & FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO PROJECT MANAGER. CLEAN PREMISES OF ALL DEBRIS RESULTING FROM WORK & LEAVE WORK IN A COMPLETE & UNDAMAGED CONDITION.
30. ALL EXPOSED GROUND WIRES ROUTED ALONG THE SIDE OF EQUIPMENT SHELTERS OR ROUTED OVER CONCRETE FOUNDATIONS OR OTHER EXISTING STRUCTURES SHALL BE INSTALLED IN PROPERLY ANCHORED 3/4"Ø (MIN.) PVC CONDUIT.
31. CONTRACTOR SHALL NOT DISTURB EXISTING GROUNDING SYSTEM. ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY AT NO ADDITIONAL COST.
32. ALL ELEMENTS OF ICE BRIDGE & AT&T MOBILITY UTILITY BACKBOARD MUST BE BONDED & JUMPERED TO GROUNDED COMPONENTS OF THESE SYSTEMS.
33. ALL INTERIOR CABLES & WIRING SHALL BE NEATLY ROUTED IN OVERHEAD LADDER RACK & FASTENED TO LADDER RACK.
34. ALL GROUNDING CONDUCTORS SHALL BE ROUTED DOWNWARDS FROM POINT OF ORIGIN TO TERMINATION POINT (GROUND BAR, GROUND RING, ETC.)
35. GROUNDING CONDUCTORS SHALL NOT REVERSE DIRECTION (EXCEPT HALO & BURIED GROUND RINGS). OTHER EXCEPTIONS NEED TO BE APPROVED BY AT&T MOBILITY CONSTRUCTION MANAGER PRIOR TO INSTALLATION.
36. GROUNDING CONDUCTORS SHALL HAVE A MINIMUM BENDING RADIUS OF 8".
37. ALL CONNECTIONS TO GROUND PLATES SHALL BE CAD WELDED TO THE CENTER OF THE PLATE. ALL DETAILS SHOWING CONNECTIONS TO GROUND RODS ARE ALSO VALID FOR SIMILAR CONNECTIONS TO GROUND PLATES.
38. FOLLOWING COMPLETION OF WORK, PROVIDE OWNER WITH AS-BUILT DRAWINGS SHOWING TELEPHONE & ELECTRIC LOCATIONS.
39. WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE.
40. COORDINATE WITH UTILITY & LOCAL ELECTRICAL INSPECTOR FOR FINAL POWER CONNECTION.
41. UTILITY WILL SUPPLY METER. COORDINATE WITH UTILITY FOR METER TYPE & INTERCONNECTION.
42. ALL EXISTING UNDERGROUND LINES ON SITE TO BE LOCATED PRIOR TO CONSTRUCTION. CALL DIGSAFE 1-888-DIG-SAFE OR 811 PRIOR TO CONSTRUCTION.
43. SEAL ALL SERVICE ENTRANCES INTO SHELTER FOLLOWING INSTALLATION.
44. COORDINATE WITH LOCAL TELEPHONE COMPANY FOR ALL ROUTING & DESIGN.
45. CONTRACTOR TO VERIFY CONTROL WIRING SIZE WITH GENERATOR MANUFACTURER PRIOR TO CONSTRUCTION.

ELECTRICAL & TELEPHONE CONTACTS
POWER COMPANY: UNKNOWN PHONE NUMBER: UNKNOWN TELEPHONE COMPANY: PENDING AT&T ASSIGNMENT PHONE NUMBER: TBD

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

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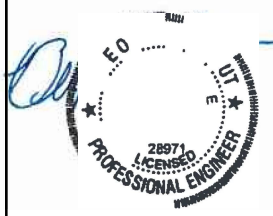

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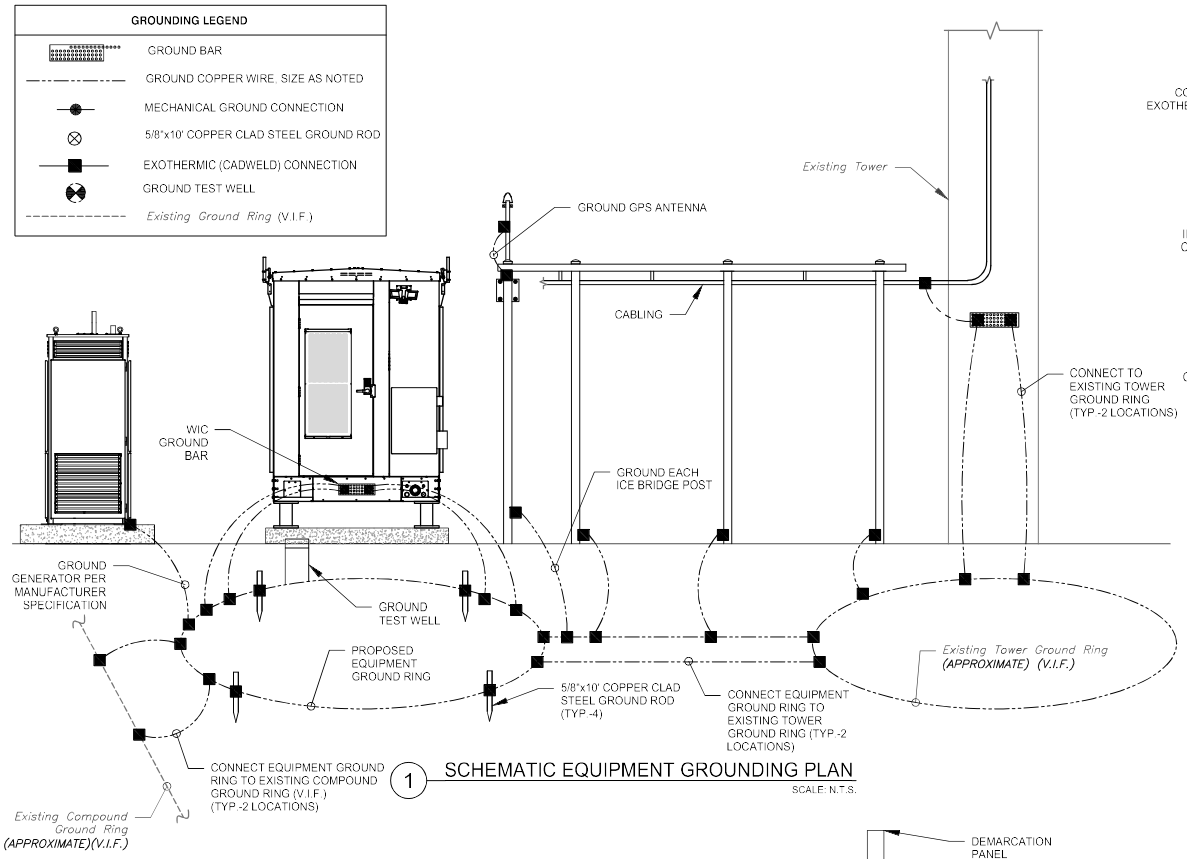
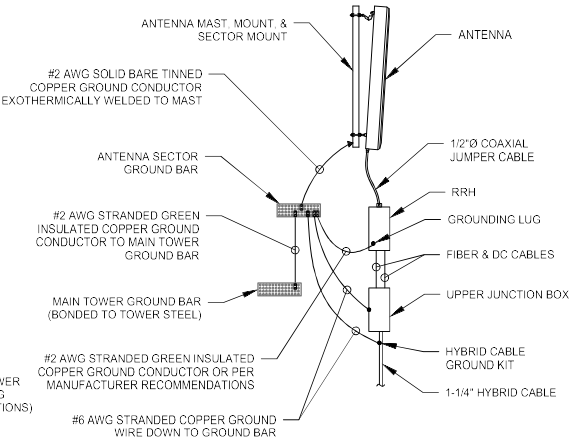
GROUNDING DETAILS & ELECTRICAL SCHEMATIC

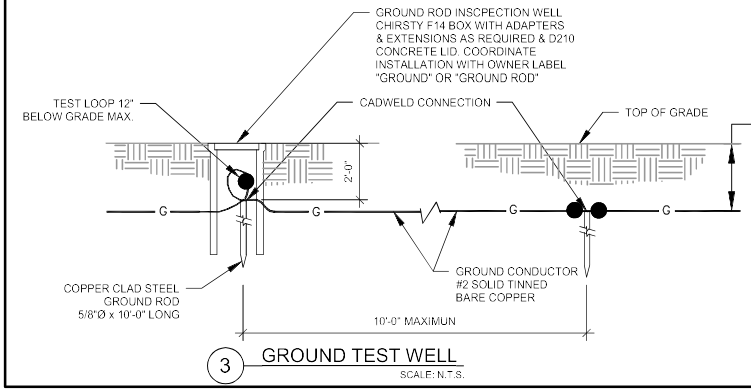
SHEET NUMBER:	REVISION:
E-101	2



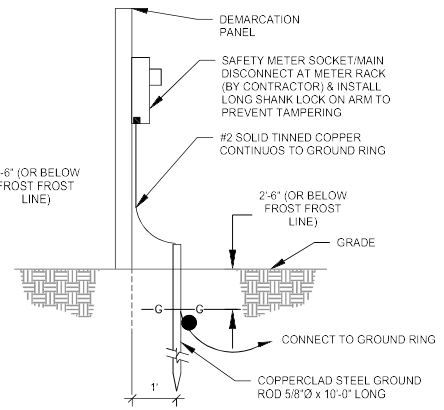
1 SCHEMATIC EQUIPMENT GROUNDING PLAN
SCALE: N.T.S.



2 TYPICAL ANTENNA & RRH GROUNDING DETAIL
SCALE: N.T.S.



3 GROUND TEST WELL
SCALE: N.T.S.



4 METER SOCKET GROUNDING
SCALE: N.T.S.

GROUNDING GENERAL NOTES

1. ALL DOWN CONDUCTORS & THE GROUNDING RING CONDUCTOR SHALL BE #2 AWG, SOLID, BARE, TINNED COPPER, UNLESS OTHERWISE NOTED. ALL CONNECTIONS TO GROUNDING RING SHALL BE EXOTHERMICALLY WELDED. CONDUCTOR SHALL BE AT A MINIMUM DEPTH BELOW GRADE OF 30" OR TO LEDGE. MINIMUM BEND RADIUS SHALL BE 8 INCHES. CONDUCTOR SHALL BE AT LEAST 24 INCHES FROM ANY FOUNDATION, UNLESS OTHERWISE NOTED.
2. GROUND RODS SHALL BE 5/8" DIAMETER COPPER CLAD, HARGER, T&B, ERICO, OR EQUIVALENT. TOP OF ROD SHALL BE A MINIMUM OF 30" BELOW GRADE. IF LEDGE IS ENCOUNTERED, INSTALL GROUND ROD AT AN ANGLE. ELECTRICAL METER GROUND ROD EXCEPTED.
3. WHERE MECHANICAL CONNECTIONS ARE SPECIFIED, BOLTED, COMPRESSION-TYPE, CLAMPS OR SPLIT-BOLT TYPE CONNECTORS SHALL BE USED.
4. GRIND OFF GALVANIZING IN AFFECTED AREA. EXOTHERMICALLY WELD #2 CONDUCTOR AT 6" ABOVE GRADE OR FOUNDATION, WHICHEVER IS HIGHER. COLD-GALV AFTER EXOTHERMICALLY WELD OTHER END TO GROUND RING.
5. INSTALL GROUNDING KITS AT ANTENNA CENTER LINE, & TOWER EXIT POINTS. GROUND HYBRID/COAX LINES. EXOTHERMICALLY WELD #2 DOWN CONDUCTOR TO PLATES, RUN DOWN TOWER, & TIE INTO GROUNDING SYSTEM.
6. ALL GROUNDING WORK SHALL COMPLY WITH U.S. CELLULAR STANDARDS. FOLLOWING COMPLETION OF WORK, GROUND SYSTEM MUST BE TESTED & SHALL HAVE A RESISTANCE OF 5 OHMS OR LESS SUBMIT AN INDEPENDENT "FALL POTENTIAL" TESTING REPORT.
7. CONTRACTOR SHALL HAND-DIG IN AREAS AROUND EXISTING UTILITIES.
8. NOTIFY CONSTRUCTION ENGINEER IF THERE ARE ANY DIFFICULTIES INSTALLING GROUNDING SYSTEM DUE TO SITE SOIL CONDITIONS.
9. GROUNDING RING IS SHOWN AS SCHEMATIC ONLY. IT IS DESIGNED WITHOUT BENEFIT OF RESISTIVITY TESTING & DOES NOT NECESSARILY REPRESENT A GROUNDING SYSTEM TO MEET ANY SPECIFIC GROUND RESISTANCE.
10. PRIOR TO POURING CONCRETE, ALL REBAR LOCATED NEAR THE BOTTOM OF THE FOUNDATION SHALL BE BONDED TOGETHER TO FORM A SINGLE GROUNDING ELECTRODE, BY STEEL TIES OR OTHER EFFECTIVE MEANS APPROVED BY N.E.C. & STRUCTURAL ENGINEER, & BONDED TO THE GROUND RING AS DETAILED IN THESE PLANS (INSPECTION MAY BE REQUIRED PRIOR TO POURING CONCRETE & MUST BE COORDINATED BY CONTRACTOR).
11. IN ACCORDANCE WITH N.E.C. REQUIREMENTS, ALL GROUNDING ELECTRODES PRESENT ON SITE SHALL BE BONDED TOGETHER (REFERENCE N.E.C. ARTICLE 250.50).

AMERICAN TOWER®

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FAX: 617.695.3310

REV.	DESCRIPTION	BY	DATE
A	PRELIM	MR	05/04/21
B	PRELIM	MR	06/16/21
0	FINAL	WG	07/02/21
1	FINAL	WG	07/15/21
2	FINAL	WG	08/04/21

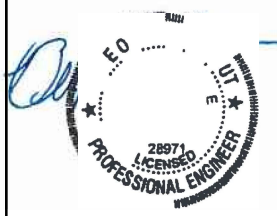
ATC SITE NUMBER:
411186

ATC SITE NAME:
WEST GRANBY, CT CT

AT&T MOBILITY SITE NAME:
MCRTB050155

SITE ADDRESS:
207 WEST GRANBY RD.
GRANBY, CT 06035

SEAL:

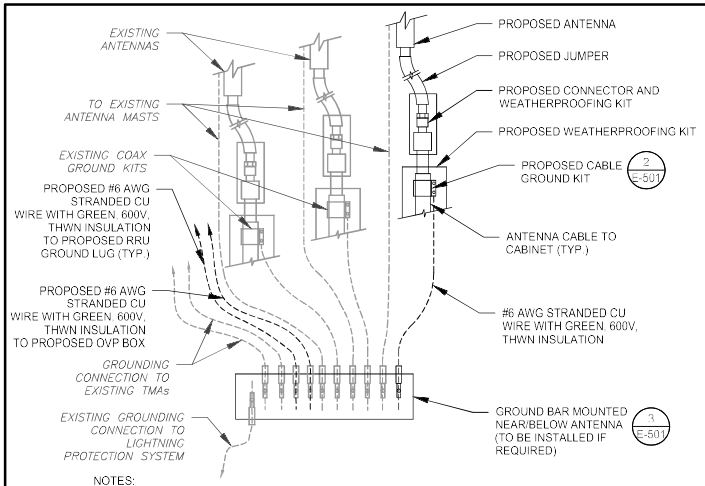


at&t Mobility

DATE DRAWN:	04/27/21
ATC JOB NO:	13626835
CUSTOMER ID:	MCRTB050155
CUSTOMER #:	300644

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	2

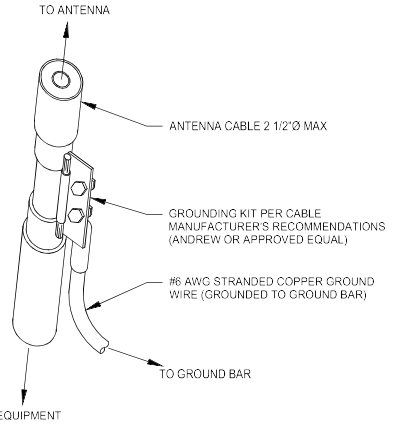


NOTES:

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

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: N.T.S.

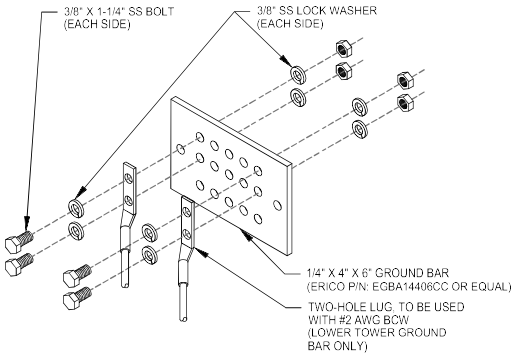


GROUND KIT NOTES:

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

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: N.T.S.

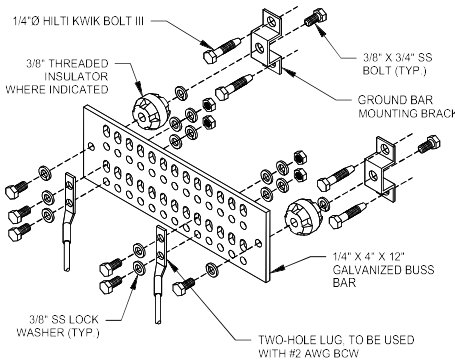


GROUND BAR NOTES:

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

3 TOWER GROUND BAR DETAIL

SCALE: N.T.S.

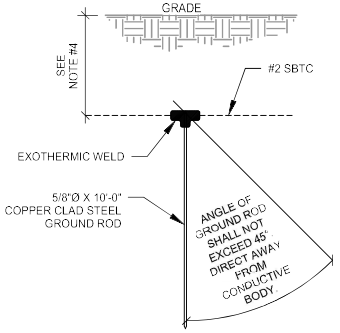


GROUND BAR NOTES

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

4 MAIN GROUND BAR DETAIL

SCALE: N.T.S.

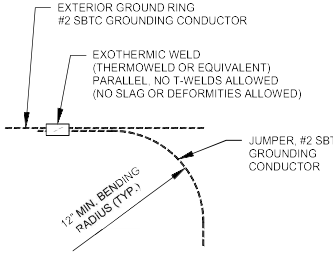


NOTES:

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

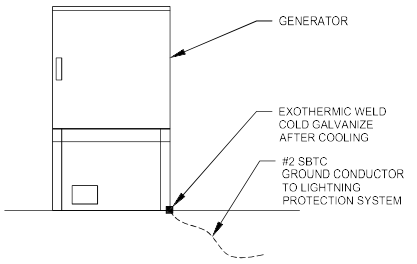
5 GROUND ROD DETAIL

SCALE: N.T.S.



6 TIE CONNECTION DETAIL

SCALE: N.T.S.



GENERATOR INSTALLATION NOTE:

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

7 GENERATOR GROUNDING

SCALE: N.T.S.

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AT&T MOBILITY SITE NAME:
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SITE ADDRESS:
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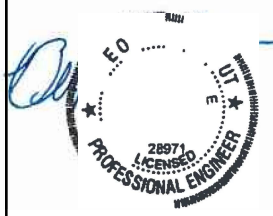
SEAL:



at&t Mobility

DATE DRAWN:	04/27/21
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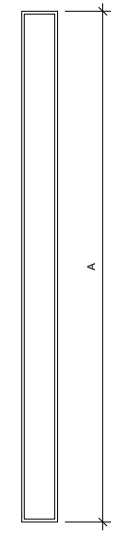
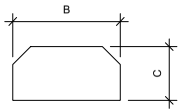
CUSTOMER ID:	MCRTB050155
CUSTOMER #:	300644

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-502	2



FRONT VIEW

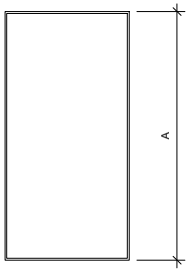


TOP VIEW

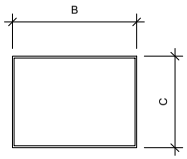
1 ANTENNA SPECIFICATIONS

FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
AIR 6449 B77D	30.4"	15.9"	10.6"	81.6
TPA65R-BU8D	96.0"	21.0"	7.8"	82.5
DMP65R-BU8D	96.0"	20.7"	7.7"	95.7



FRONT VIEW



TOP VIEW

2 RRU SPECIFICATIONS

FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
RRUS8843 B2,B66A	14.9"	13.2"	10.9"	72
RRUS 4478 B14	16.5"	13.4"	7.7"	59.9
RRUS 4449 B5,B12	17.9"	13.2"	9.4"	71

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

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DATE DRAWN:	04/27/21
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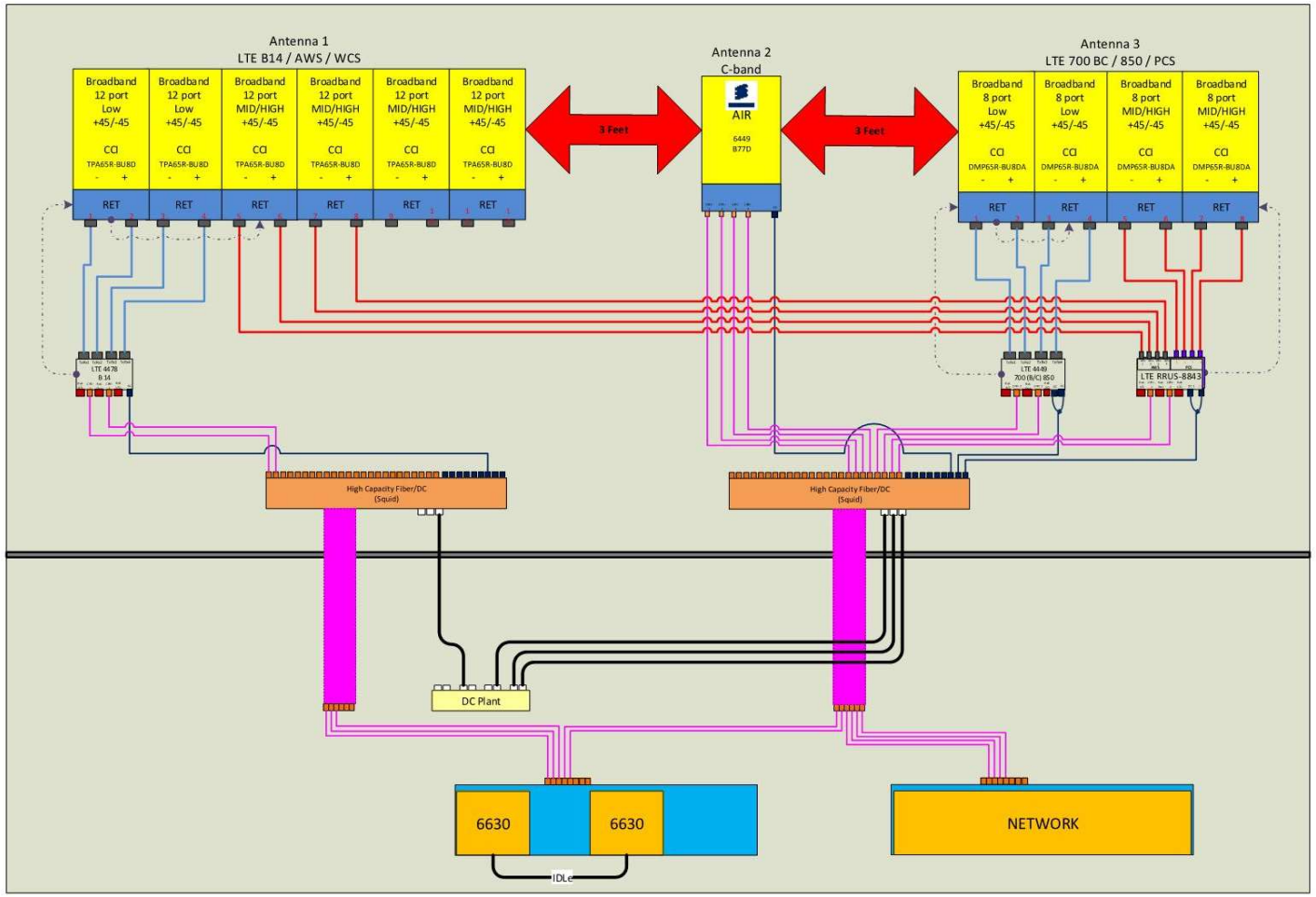
CUSTOMER ID:	MCRTB050155
CUSTOMER #:	300644

SUPPLEMENTAL

SHEET NUMBER:
R-601

Diagram - Sector	A	Diagram File Name - CT2393 3ANT 5C plus C-band_v2.vsd					
Atoll Site Name -	CT2393	Location Name -	CT2393S	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments:							



1 PLUMBING DIAGRAM

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

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CUSTOMER #:	300644

SUPPLEMENTAL

SHEET NUMBER:
R-602

8220-603 series

Reliability through Simplicity

POLAR POWER INC.

Back-up Diesel DC Generator Set

8220-603 series
1 of 6

Founded in 1979 Polar Power specialized in solar photovoltaic systems, solar air conditioning and refrigeration. We developed and provided photovoltaic charging controls for telecommunications in the 1980s along with DC generators for the military. In 1994 we were first to provide DC generators with remote control and monitoring to the telecommunications industry.

Polar's success is based on engineering generators to meet the very specific needs of each application. Telecom site optimization is best met with the DC generator technology as the loads and batteries are DC. It makes no sense to install an AC generator and convert the output to DC. The AC generators are designed for a wide range of applications and they are not specifically produced for telecom applications so there are issues with reliability, space, and fuel efficiency.

Polar can save you considerable time and cost in permitting, installing, purchasing, and maintaining a backup generator. We reduce CAPEX and OPEX costs while improving backup reliability.

8220-603-D-15-03 Diesel 15 kW -48 VDC

Intertek 4003706

Conforms to UL STD 2200

Certified to CSA STD C22.2 No. 100

Fuel tank is UL 142 Listed

Meets EPA Emission Regulations

CA/MA Emissions Compliant

Made in USA

2 year standard warranty, extended 5-10 year warranty available

THE CONCEPTS AND FEATURES BEHIND POLAR'S BACKUP GENERATOR FOR TELECOMMUNICATIONS INCLUDE:

SMALL FOOTPRINT. Polar's DC generator is considerably smaller in size than an AC generator. You can now backup sites that could not accommodate an AC generator. Smaller also means less cost for space leasing.

LONG RESERVE. 48 to 72 hour reserve. Polar's DC generator can provide long reserve times because of very low fuel consumption. This generator should be the first choice for sites exposed to natural disasters requiring backup for weeks or months at a time (fuel consumption 1.02 gallon per hour).

LOW ACOUSTIC NOISE. <66 dBA @ 7 meters, and low vibration so as not to disturb the local residents or building landlords. Quieter than other generators with lower noise ratings.

LIGHTWEIGHT. Up to 1/3 the weight of a comparable AC generator. Facilitates roof top installations.

CORROSION RESISTANT. All-aluminum enclosure with stainless hardware for low maintenance, and long service life.

RODENT RESISTANT. Small animals can quickly destroy a generator set by gnawing on wires, fuel lines, radiator hoses, etc. Cooling air inlets and outlets have perforated aluminum screens to keep small rodents and large insects out. Stainless steel wire braid is placed over fuel and radiator lines for increased reliability and safety.

SUPERCAPACITOR STARTER. Failure to start is the number one problem plaguing generator reliability. Polar's unique design has replaced the starting battery with a Super Capacitor. Capacitors are more reliable and last longer than batteries (10-15 year life).

LONG LIFE. Controls and wire harnesses are designed to exceed a 20 year life. Higher grade, longer life electrical wire (UL 3173), weather tight connectors, gold plated connector pins on signal circuits. Controls and wire harness are easily replaceable.

ADVANCED MONITORING. Remote diagnostics, control, and monitoring. Ethernet and RS232 standard, with optional SNMP.

SIMPLICITY. Transfer switch, rectifier, and starting battery are not required.

249 E. Gardena Blvd, Gardena CA, 90248 | 310.830.9153 | www.polarpower.com | info@polarpowerinc.com

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

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CUSTOMER ID:	MCRTB050155
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SUPPLEMENTAL

SHEET NUMBER:
R-603

Exhibit 3

Structural Analysis Report

AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by

TOWER ENGINEERING PROFESSIONALS

Structural Analysis Report

Structure	:	**151 ft Monopole**
ATC Site Name	:	**West Granby, CT CT, CT**
ATC Asset Number	:	**411186**
Engineering Number	:	**13626835_C3_03**
Proposed Carrier	:	**AT&T MOBILITY**
Carrier Site Name	:	**MRCTB050155**
Carrier Site Number	:	**CT2393S**
Site Location	:	**49 Upper Meadow** **Granby, CT 06035** **41.953300,-72.829800**
County	:	**Hartford**
Date	:	**March 22, 2021**
Max Usage	:	**37%**
Result	:	**Pass**

Prepared By:
Austin Wilson
TEP

Austin Wilson

Reviewed By:

STATE OF CONNECTICUT
AARON THOMAS RUCKER
32608
LICENSED
PROFESSIONAL ENGINEER

3/22/2021

COA: PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 151 ft monopole to reflect the change in loading by AT&T MOBILITY.

Supporting Documents

Tower Drawings	EEI Job #14945, dated June 22, 2007
Foundation Drawing	EEI Job #14945, dated June 22, 2007
Geotechnical Report	JGI Project #04109G, dated January 27, 2004

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:	93 mph (3-second Gust, V_{ASD}) / 120 mph (3-second Gust, V_{ULT})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.18, S_1 = 0.06
Site Class:	D - Stiff Soil

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	Antenna	Mount Type	Lines	Carrier
150.0	1	VZW Unused Reserve (3171.74 sqin)	Low Profile Platform	(18) 1 5/8" Coax (2) 1 1/4" Hybriflex Cable (1) 1/2" Coax	VERIZON WIRELESS
	6	48" x 4" Panel			
	2	48" x 6" Panel			
	3	48" x 12" Panel			
	4	48" x 12" x 7" Panel			
146.0	2	SSB (27lb)			
	3	RRU			
	9	96" x 12" Panel			
	2	Amphenol Antel LPA-70080/8CF			
	4	Amphenol Antel LPA-80063-8CF-EDIN-X			

Equipment to be Removed

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

Proposed Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
135.0	3	Ericsson RRUS 8843 B2, B66A	Sector Frames	(2) 0.39" (10mm) Fiber Trunk (4) 0.92" (23.4mm) Cable (2) 2 1/2" conduit	AT&T MOBILITY
	3	Ericsson RRUS 4478 B14			
	3	Ericsson RRUS 4449 B5, B12			
	3	Ericsson AIR 6449 B77D			
	2	Raycap DC9-48-60-24-8C-EV			
	3	CCI DMP65R-BU8D			
	3	CCI TPA65R-BU8D			

[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	21%	Pass
Shaft	27%	Pass
Base Plate	10%	Pass

Foundations

Reaction Component	Original Design Reactions	Analysis Reactions	% of Design
Moment (Kips-Ft)	8,029.8	2,621.7	33%
Shear (Kips)	64.3	24.0	37%

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
135.0	Ericsson RRUS 8843 B2, B66A	AT&T MOBILITY	0.484	0.412
	Ericsson RRUS 4478 B14			
	Ericsson RRUS 4449 B5, B12			
	Ericsson AIR 6449 B77D			
	Raycap DC9-48-60-24-8C-EV			
	CCI DMP65R-BU8D			
	CCI TPA65R-BU8D			

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

Standard Conditions

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

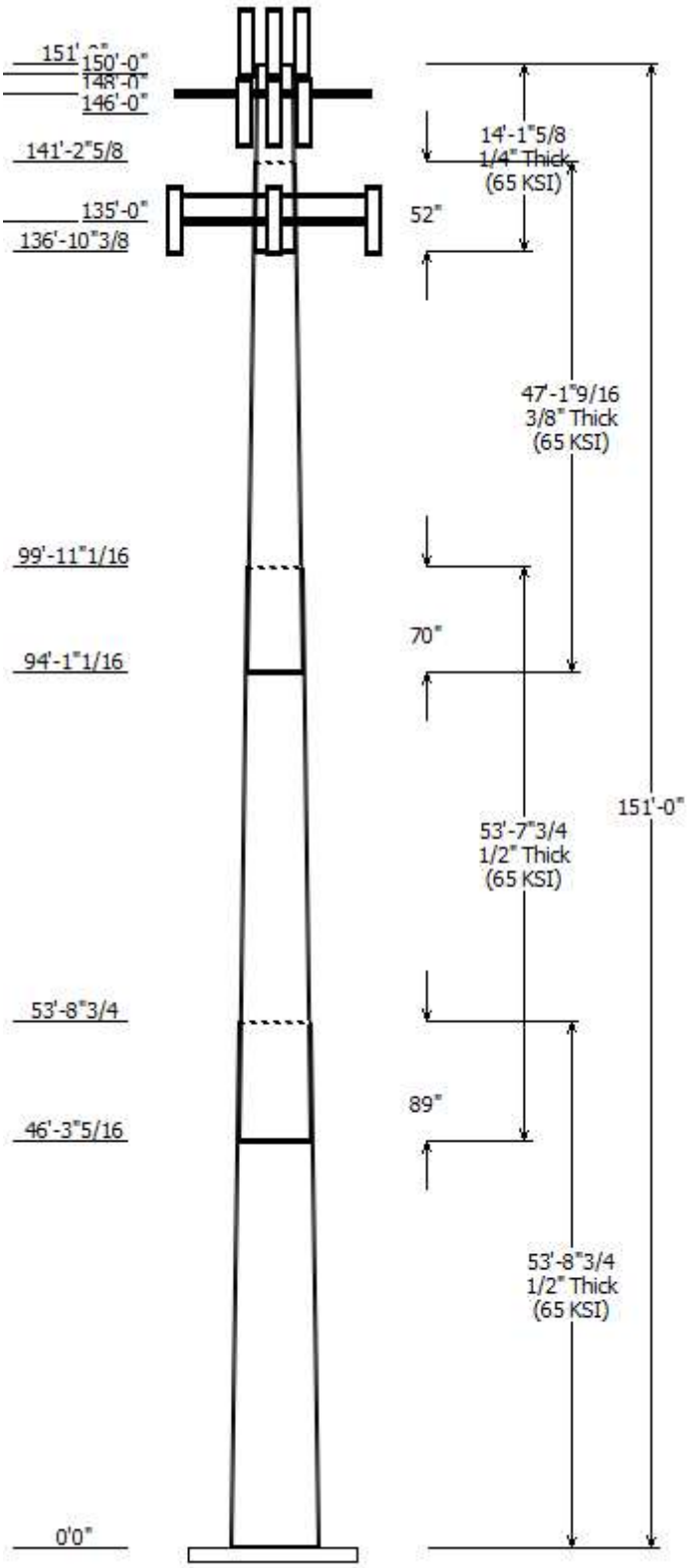
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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

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

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

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



Job Information

Client :	AT&T MOBILITY		
Pole :	411186	Code:	ANSI/TIA-222-G
Location :	West Granby, CT CT, CT		
Description :	151 ft Monopole	Struct Class :	II
Shape :	18 Sides	Exposure :	B
Height :	151.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.288193 (in/ft)		

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	53.732	52.51	67.99	0.500		0.000	18 Sides	65
2	53.648	40.20	55.66	0.500	Slip Joint	89.466	18 Sides	65
3	47.130	29.04	42.63	0.375	Slip Joint	70.000	18 Sides	65
4	14.133	26.73	30.80	0.250	Slip Joint	52.250	18 Sides	65

Discrete Appurtenance

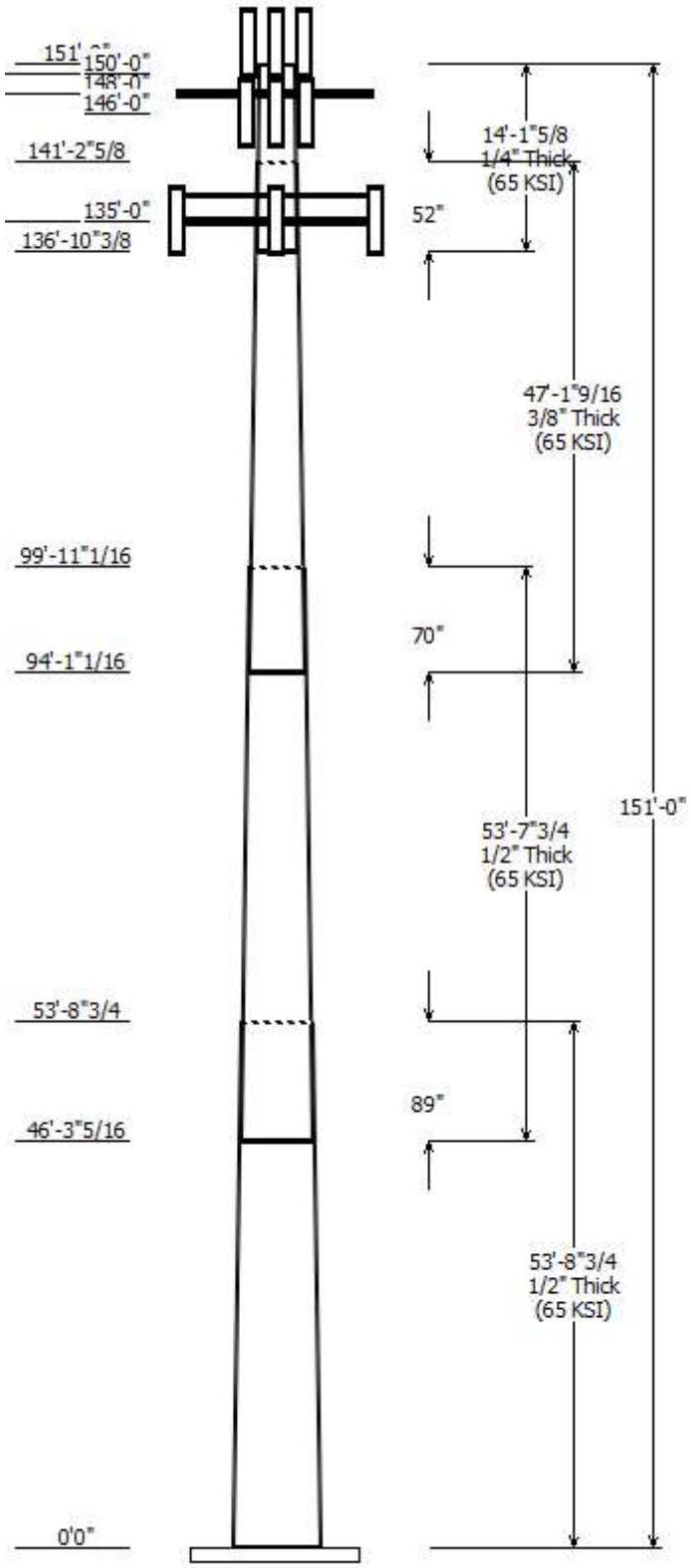
Attach Elev (ft)	Force Elev (ft)	Qty	Description
150.000	152.000	4	Generic 48" x 12" x 7" Panel
150.000	152.000	3	Generic 48" x 12" Panel
150.000	152.000	2	Generic 48" x 6" Panel
150.000	152.000	6	Generic 48" x 4" Panel
150.000	150.000	1	VZW Unused Reserve (3171.74
148.000	148.000	1	Round Low Profile Platform
146.000	146.000	4	Amphenol Antel LPA-80063-
146.000	146.000	2	Amphenol Antel LPA-
146.000	146.000	9	Generic 96" x 12" Panel
146.000	146.000	3	Generic RRU
146.000	146.000	2	Generic SSB (27lb)
135.000	135.000	3	CCI TPA65R-BU8D
135.000	135.000	3	CCI DMP65R-BU8D
135.000	135.000	2	Raycap DC9-48-60-24-8C-EV
135.000	135.000	3	Ericsson AIR 6449 B77D
135.000	135.000	3	Ericsson RRUS 4449 B5, B12
135.000	135.000	3	Ericsson RRUS 4478 B14
135.000	135.000	3	Ericsson RRUS 8843 B2, B66A
135.000	135.000	3	Generic Flat Light Sector Fram

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	135.0	0.39" (10mm)	No
0.000	135.0	0.92" (23.4mm)	No
0.000	135.0	2 1/2" conduit	No
0.000	146.0	1 1/4" Hybriflex	No
0.000	146.0	1/2" Coax	No
0.000	150.0	1 5/8" Coax	No

Load Cases

1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

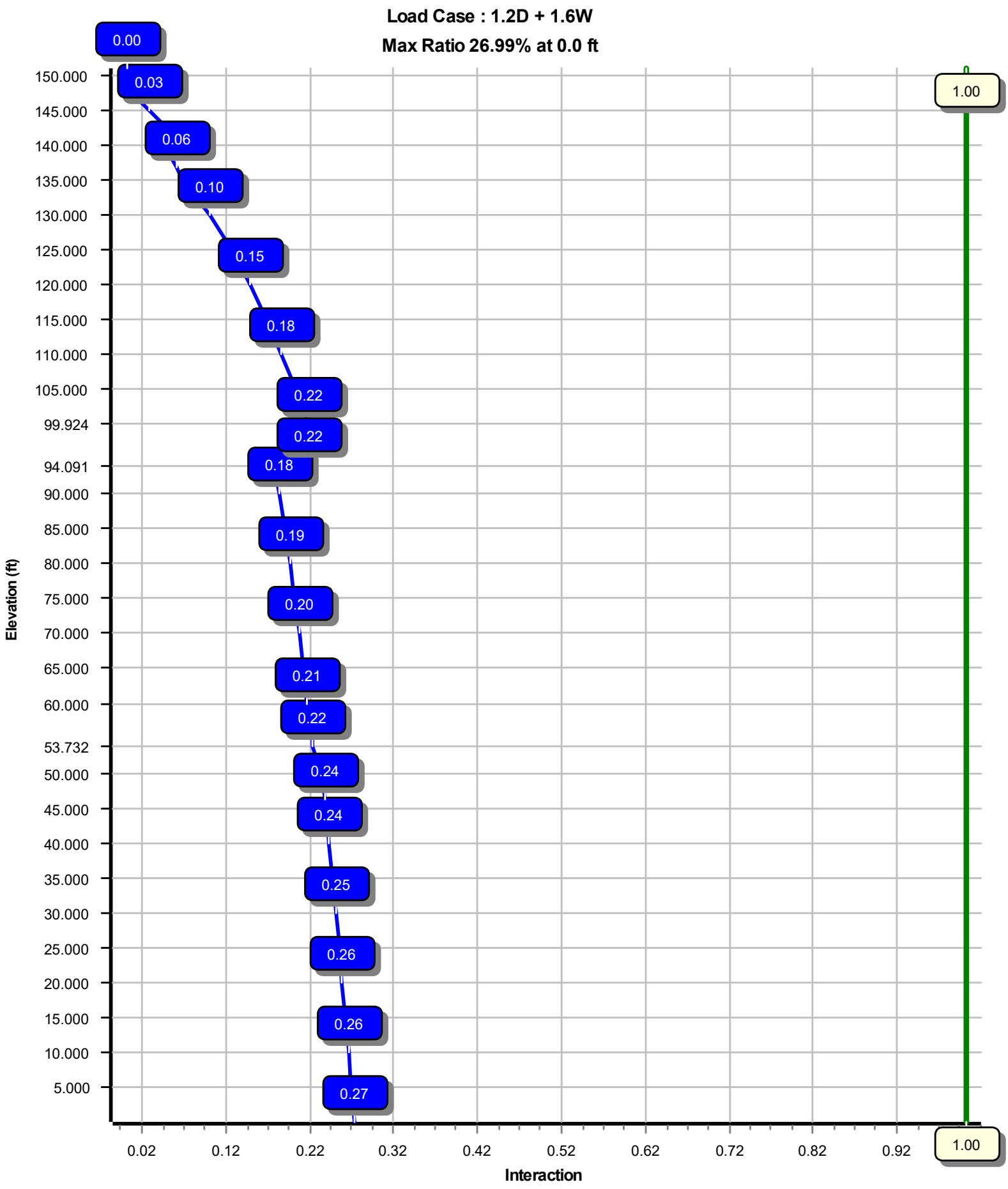


Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2621.68	24.02	60.16
0.9D + 1.6W	2608.42	24.01	45.12
1.2D + 1.0Di + 1.0Wi	836.42	7.80	92.48
(1.2 + 0.2Sds) * DL + E ELFM	329.63	2.96	59.64
(1.2 + 0.2Sds) * DL + E EMAM	358.43	3.09	59.64
(0.9 - 0.2Sds) * DL + E ELFM	327.76	2.96	41.54
(0.9 - 0.2Sds) * DL + E EMAM	356.23	3.09	41.54
1.0D + 1.0W	608.18	5.59	50.14

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000


Load Case : 1.2D + 1.6W
Max Ratio 26.99% at 0.0 ft
0.00
0.03
0.06
0.10
0.15
0.18
0.22
0.22
0.18
0.19
0.20
0.21
0.22
0.24
0.24
0.25
0.26
0.26
0.27
1.00
1.00
150.000
145.000
140.000
135.000
130.000
125.000
120.000
115.000
110.000
105.000
99.924
94.091
90.000
85.000
80.000
75.000
70.000
65.000
60.000
53.732
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number: 411186 Code: ANSI/TIA-222-G

Site Name: West Granby, CT CT, CT Engineering Number:13626835_C3_03 3/22/2021 7:18:46 PM

Customer: AT&T MOBILITY

Analysis Parameters

Location :	Hartford County, CT	Height (ft) :	151
Code :	ANSI/TIA-222-G	Base Diameter (in) :	68.00
Shape :	18 Sides	Top Diameter (in) :	26.73
Pole Type :	Taper	Taper (in/ft) :	0.288
Pole Manfacturer :		Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	93 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	1.00 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	1.53				
T_L (sec):	6	p:	1.3	C_s:	0.045
S_s:	0.177	S_1:	0.065	C_s Max:	0.045
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.189	S_{d1}:	0.104		

Load Cases

1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 411186 Code: ANSI/TIA-222-G

Site Name: West Granby, CT CT, CT Engineering Number:13626835_C3_03 3/22/2021 7:18:46 PM

Customer: AT&T MOBILITY

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	53.732	0.5000	65		0.00	17,338	67.99	0.00	107.11	61655.2	22.57	135.99	52.51	53.73	82.54	28211.5	17.11	105.02	0.288193
2-18	53.648	0.5000	65	Slip	89.47	13,741	55.66	46.28	87.54	33651.3	18.22	111.32	40.20	99.92	63.00	12545.1	12.77	80.40	0.288193
3-18	47.130	0.3750	65	Slip	70.00	6,769	42.63	94.09	50.29	11345.8	18.63	113.68	29.04	141.22	34.13	3544.9	12.25	77.46	0.288193
4-18	14.133	0.2500	65	Slip	52.25	1,088	30.80	136.87	24.24	2859.2	20.32	123.21	26.73	151.00	21.01	1861.4	17.44	106.92	0.288193
				Shaft Weight		38,936													

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
150.00	Generic 48" x 4" Panel	6	0.80	2.000	20.00	2.080	0.81	72.91	4.173	0.81
150.00	Generic 48" x 6" Panel	2	0.80	2.000	20.00	2.867	0.80	96.57	5.043	0.80
150.00	Generic 48" x 12" Panel	3	0.80	2.000	30.00	5.067	0.78	181.16	7.565	0.78
150.00	Generic 48" x 12" x 7" Panel	4	0.80	2.000	35.00	5.067	0.82	195.37	7.565	0.82
150.00	VZW Unused Reserve (3171.74	1	0.80	0.000	1,226.00	22.026	0.90	2,366.38	42.514	0.90
148.00	Round Low Profile Platform	1	1.00	0.000	1,500.00	21.700	1.00	2,363.88	47.300	1.00
146.00	Generic SSB (27lb)	2	0.80	0.000	27.00	3.200	0.79	164.88	4.786	0.79
146.00	Generic RRU	3	0.80	0.000	75.00	4.193	0.67	233.68	5.998	0.67
146.00	Generic 96" x 12" Panel	9	0.80	0.000	45.00	11.467	0.67	332.96	15.777	0.67
146.00	Amphenol Antel LPA-70080/8CF	2	0.80	0.000	24.00	12.832	0.71	331.47	17.726	0.71
146.00	Amphenol Antel LPA-80063-8CF-	4	0.80	0.000	38.00	13.653	0.75	489.57	18.531	0.75
135.00	Ericsson RRUS 8843 B2, B66A	3	0.80	0.000	72.00	1.639	0.50	152.88	2.754	0.50
135.00	Ericsson RRUS 4478 B14	3	0.80	0.000	59.90	1.842	0.50	132.86	3.026	0.50
135.00	Ericsson RRUS 4449 B5, B12	3	0.80	0.000	71.00	1.969	0.50	156.05	3.200	0.50
135.00	Ericsson AIR 6449 B77D	3	0.80	0.000	81.60	4.028	0.70	235.31	5.839	0.70
135.00	Raycap DC9-48-60-24-8C-EV	2	0.80	0.000	16.00	4.788	0.75	186.36	6.729	0.75
135.00	CCI DMP65R-BU8D	3	0.80	0.000	95.70	17.871	0.63	544.21	22.734	0.63
135.00	Generic Flat Light Sector Frame	3	0.75	0.000	400.00	17.900	0.75	797.14	37.811	0.75
135.00	CCI TPA65R-BU8D	3	0.80	0.000	82.50	18.089	0.63	537.48	22.961	0.63
Totals	Num Loadings:19	60			6,620.10			21,374.96		

Linear Appurtenance Properties

Load Case Azimuth (deg) :

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax / Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	150.00	18	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	146.00	2	1 1/4" Hybriflex Cable	1.54	1.00	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	146.00	1	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	135.00	2	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	135.00	4	0.92" (23.4mm) Cable	0.92	0.89	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	135.00	2	2 1/2" conduit	2.88	5.79	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.5000	67.997	107.114	61,655.2	22.57	135.99	74.9	1785.	0.0	0.0
5.00		0.5000	66.556	104.827	57,790.2	22.06	133.11	75.5	1710.	0.0	1,803.0
10.00		0.5000	65.115	102.541	54,090.2	21.55	130.23	76.1	1636.	0.0	1,764.1
15.00		0.5000	63.674	100.254	50,551.5	21.04	127.35	76.6	1563.	0.0	1,725.2
20.00		0.5000	62.233	97.967	47,170.7	20.54	124.47	77.2	1492.	0.0	1,686.3
25.00		0.5000	60.792	95.680	43,944.0	20.03	121.58	77.8	1423.	0.0	1,647.3
30.00		0.5000	59.351	93.394	40,868.0	19.52	118.70	78.4	1356.	0.0	1,608.4
35.00		0.5000	57.910	91.107	37,939.0	19.01	115.82	79.0	1290.	0.0	1,569.5
40.00		0.5000	56.469	88.820	35,153.3	18.50	112.94	79.6	1226.	0.0	1,530.6
45.00		0.5000	55.028	86.534	32,507.5	18.00	110.06	80.2	1163.	0.0	1,491.7
46.28	Bot - Section 2	0.5000	54.661	85.950	31,854.1	17.87	109.32	80.4	1147.	0.0	374.5
50.00		0.5000	53.587	84.247	29,997.9	17.49	107.17	80.8	1102.	0.0	2,176.7
53.73	Top - Section 1	0.5000	53.512	84.127	29,870.2	17.46	107.02	80.9	1099.	0.0	2,138.0
55.00		0.5000	53.147	83.547	29,256.5	17.33	106.29	81.0	1084.	0.0	361.8
60.00		0.5000	51.706	81.260	26,919.4	16.82	103.41	81.6	1025.	0.0	1,402.0
65.00		0.5000	50.265	78.974	24,710.2	16.32	100.53	82.2	968.3	0.0	1,363.1
70.00		0.5000	48.824	76.687	22,625.2	15.81	97.65	82.6	912.7	0.0	1,324.2
75.00		0.5000	47.383	74.400	20,661.0	15.30	94.77	82.6	858.8	0.0	1,285.3
80.00		0.5000	45.942	72.113	18,813.9	14.79	91.88	82.6	806.6	0.0	1,246.4
85.00		0.5000	44.501	69.827	17,080.2	14.28	89.00	82.6	756.0	0.0	1,207.5
90.00		0.5000	43.060	67.540	15,456.5	13.77	86.12	82.6	707.0	0.0	1,168.6
94.09	Bot - Section 3	0.5000	41.881	65.669	14,207.3	13.36	83.76	82.6	668.2	0.0	927.2
95.00		0.5000	41.619	65.253	13,939.1	13.27	83.24	82.6	659.7	0.0	357.6
99.92	Top - Section 2	0.3750	40.950	48.292	10,044.8	17.84	109.20	80.4	483.1	0.0	1,897.8
100.0		0.3750	40.928	48.266	10,028.6	17.83	109.14	80.4	482.6	0.0	12.5
105.0		0.3750	39.487	46.551	8,997.1	17.16	105.30	81.2	448.8	0.0	806.6
110.0		0.3750	38.046	44.836	8,038.8	16.48	101.46	82.0	416.2	0.0	777.4
115.0		0.3750	36.605	43.121	7,151.2	15.80	97.61	82.6	384.8	0.0	748.2
120.0		0.3750	35.164	41.406	6,331.4	15.12	93.77	82.6	354.6	0.0	719.1
125.0		0.3750	33.723	39.691	5,576.8	14.45	89.93	82.6	325.7	0.0	689.9
130.0		0.3750	32.282	37.976	4,884.7	13.77	86.09	82.6	298.0	0.0	660.7
135.0		0.3750	30.841	36.261	4,252.3	13.09	82.24	82.6	271.6	0.0	631.5
136.8	Bot - Section 4	0.3750	30.303	35.621	4,031.0	12.84	80.81	82.6	262.0	0.0	228.3
140.0		0.3750	29.400	34.546	3,677.0	12.41	78.40	82.6	246.3	0.0	628.7
141.2	Top - Section 3	0.2500	29.548	23.247	2,521.2	19.43	118.19	78.5	168.1	0.0	239.8
145.0		0.2500	28.459	22.383	2,250.4	18.66	113.84	79.5	155.7	0.0	293.4
146.0		0.2500	28.171	22.154	2,182.1	18.46	112.68	79.7	152.6	0.0	75.8
148.0		0.2500	27.595	21.697	2,049.7	18.05	110.38	80.2	146.3	0.0	149.2
150.0		0.2500	27.018	21.240	1,922.8	17.65	108.07	80.6	140.2	0.0	146.1
151.0		0.2500	26.730	21.011	1,861.4	17.44	106.92	80.9	137.2	0.0	71.9
											38,936.0

Load Case: 1.2D + 1.6W — 93 mph with No Ice — 20 Iterations

Gust Response Factor :1.10 — Wind Importance Factor :1.00
Dead Load Factor :1.20
Wind Load Factor :1.60

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		239.7	0.0					0.0	0.0	239.7	0.0	0.0	0.0
5.00		474.3	2,163.6					0.0	193.0	474.3	2,356.6	0.0	0.0
10.00		464.1	2,116.9					0.0	193.0	464.1	2,309.9	0.0	0.0
15.00		453.8	2,070.2					0.0	193.0	453.8	2,263.2	0.0	0.0
20.00		443.5	2,023.5					0.0	193.0	443.5	2,216.5	0.0	0.0
25.00		433.3	1,976.8					0.0	193.0	433.3	2,169.8	0.0	0.0
30.00		428.0	1,930.1					0.0	193.0	428.0	2,123.2	0.0	0.0
35.00		431.3	1,883.4					0.0	193.0	431.3	2,076.5	0.0	0.0
40.00		437.0	1,836.8					0.0	193.0	437.0	2,029.8	0.0	0.0
45.00		275.9	1,790.1					0.0	193.0	275.9	1,983.1	0.0	0.0
46.28	Bot - Section 2	223.9	449.4					0.0	49.3	223.9	498.7	0.0	0.0
50.00		335.8	2,612.1					0.0	143.8	335.8	2,755.8	0.0	0.0
53.73	Top - Section 1	225.4	2,565.6					0.0	144.1	225.4	2,709.7	0.0	0.0
55.00		282.3	434.2					0.0	49.0	282.3	483.1	0.0	0.0
60.00		449.4	1,682.4					0.0	193.0	449.4	1,875.4	0.0	0.0
65.00		447.0	1,635.7					0.0	193.0	447.0	1,828.7	0.0	0.0
70.00		443.5	1,589.0					0.0	193.0	443.5	1,782.1	0.0	0.0
75.00		439.0	1,542.3					0.0	193.0	439.0	1,735.4	0.0	0.0
80.00		433.6	1,495.7					0.0	193.0	433.6	1,688.7	0.0	0.0
85.00		427.3	1,449.0					0.0	193.0	427.3	1,642.0	0.0	0.0
90.00		382.7	1,402.3					0.0	193.0	382.7	1,595.3	0.0	0.0
94.09	Bot - Section 3	209.0	1,112.6					0.0	157.9	209.0	1,270.5	0.0	0.0
95.00		243.1	429.1					0.0	35.1	243.1	464.2	0.0	0.0
99.92	Top - Section 2	208.0	2,277.4					0.0	190.1	208.0	2,467.5	0.0	0.0
100.00		206.8	14.9					0.0	2.9	206.8	17.9	0.0	0.0
105.00		402.8	967.9					0.0	193.0	402.8	1,160.9	0.0	0.0
110.00		393.3	932.9					0.0	193.0	393.3	1,125.9	0.0	0.0
115.00		383.2	897.9					0.0	193.0	383.2	1,090.9	0.0	0.0
120.00		372.6	862.9					0.0	193.0	372.6	1,055.9	0.0	0.0
125.00		361.6	827.9					0.0	193.0	361.6	1,020.9	0.0	0.0
130.00		350.0	792.9					0.0	193.0	350.0	985.9	0.0	0.0
135.00	Appurtenance(s)	234.7	757.8	4,130.7	0.0	0.0	3,144.1	0.0	193.0	4,365.5	4,095.0	0.0	0.0
136.87	Bot - Section 4	167.7	274.0					0.0	37.9	167.7	311.8	0.0	0.0
140.00		145.2	754.5					0.0	63.6	145.2	818.0	0.0	0.0
141.22	Top - Section 3	162.4	287.8					0.0	24.8	162.4	312.5	0.0	0.0
145.00		153.9	352.1					0.0	76.7	153.9	428.8	0.0	0.0
146.00	Appurtenance(s)	94.3	90.9	4,624.4	0.0	0.0	1,060.8	0.0	20.3	4,718.8	1,172.0	0.0	0.0
148.00	Appurtenance(s)	124.2	179.1	888.0	0.0	0.0	1,800.0	0.0	35.4	1,012.2	2,014.5	0.0	0.0
150.00	Appurtenance(s)	92.0	175.3	2,075.6	0.0	2,848.3	1,939.2	0.0	35.4	2,167.6	2,149.9	0.0	0.0
151.00		30.4	86.3					0.0	0.0	30.4	86.3	0.0	0.0
								Totals:		24,225.0	60,172.8	0.00	0.00

Site Number: 411186 Code: ANSI/TIA-222-G

Site Name: West Granby, CT CT, CT Engineering Number:13626835_C3_03 3/22/2021 7:18:49 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.6W 93 mph with No Ice 20 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

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	-60.16	-24.02	0.00	-2,621.68	0.00	2,621.68	7,216.29	3,608.15	20,023.1	10,026.4	0.00	0.00	0.270
5.00	-57.78	-23.60	0.00	-2,501.60	0.00	2,501.60	7,118.62	3,559.31	19,327.3	9,678.04	0.03	-0.06	0.267
10.00	-55.45	-23.19	0.00	-2,383.60	0.00	2,383.60	7,018.49	3,509.25	18,636.6	9,332.20	0.13	-0.12	0.263
15.00	-53.16	-22.79	0.00	-2,267.64	0.00	2,267.64	6,915.90	3,457.95	17,951.6	8,989.14	0.28	-0.18	0.260
20.00	-50.92	-22.39	0.00	-2,153.69	0.00	2,153.69	6,810.85	3,405.43	17,272.5	8,649.09	0.51	-0.24	0.257
25.00	-48.73	-22.00	0.00	-2,041.73	0.00	2,041.73	6,703.34	3,351.67	16,599.8	8,312.27	0.80	-0.31	0.253
30.00	-46.58	-21.62	0.00	-1,931.70	0.00	1,931.70	6,593.37	3,296.69	15,934.1	7,978.90	1.15	-0.37	0.249
35.00	-44.48	-21.22	0.00	-1,823.62	0.00	1,823.62	6,480.94	3,240.47	15,275.6	7,649.19	1.57	-0.44	0.245
40.00	-42.43	-20.82	0.00	-1,717.52	0.00	1,717.52	6,366.05	3,183.02	14,625.0	7,323.38	2.07	-0.50	0.241
45.00	-40.44	-20.55	0.00	-1,613.43	0.00	1,613.43	6,248.70	3,124.35	13,982.5	7,001.67	2.63	-0.57	0.237
46.28	-39.93	-20.35	0.00	-1,587.20	0.00	1,587.20	6,218.35	3,109.18	13,819.9	6,920.25	2.78	-0.59	0.236
50.00	-37.16	-20.02	0.00	-1,511.43	0.00	1,511.43	6,128.89	3,064.44	13,348.7	6,684.30	3.26	-0.64	0.232
53.73	-34.44	-19.78	0.00	-1,436.73	0.00	1,436.73	6,122.55	3,061.27	13,315.8	6,667.80	3.78	-0.69	0.221
55.00	-33.95	-19.52	0.00	-1,411.64	0.00	1,411.64	6,091.73	3,045.87	13,156.5	6,588.07	3.97	-0.71	0.220
60.00	-32.05	-19.08	0.00	-1,314.05	0.00	1,314.05	5,968.71	2,984.35	12,534.7	6,276.69	4.75	-0.78	0.215
65.00	-30.21	-18.64	0.00	-1,218.65	0.00	1,218.65	5,843.22	2,921.61	11,922.5	5,970.14	5.60	-0.84	0.209
70.00	-28.41	-18.21	0.00	-1,125.43	0.00	1,125.43	5,697.45	2,848.72	11,285.1	5,650.96	6.51	-0.91	0.204
75.00	-26.67	-17.77	0.00	-1,034.39	0.00	1,034.39	5,527.55	2,763.78	10,618.8	5,317.30	7.50	-0.98	0.199
80.00	-24.96	-17.34	0.00	-945.53	0.00	945.53	5,357.66	2,678.83	9,972.76	4,993.79	8.57	-1.05	0.194
85.00	-23.31	-16.91	0.00	-858.85	0.00	858.85	5,187.77	2,593.89	9,346.98	4,680.44	9.70	-1.11	0.188
90.00	-21.71	-16.52	0.00	-774.31	0.00	774.31	5,017.88	2,508.94	8,741.48	4,377.24	10.90	-1.18	0.181
94.09	-20.43	-16.29	0.00	-706.75	0.00	706.75	4,878.88	2,439.44	8,261.16	4,136.72	11.94	-1.24	0.175
95.00	-19.96	-16.05	0.00	-691.94	0.00	691.94	4,847.98	2,423.99	8,156.25	4,084.19	12.18	-1.25	0.174
99.92	-17.49	-15.80	0.00	-612.89	0.00	612.89	3,494.98	1,747.49	5,818.92	2,913.79	13.50	-1.32	0.215
100.00	-17.46	-15.61	0.00	-611.69	0.00	611.69	3,493.62	1,746.81	5,813.50	2,911.07	13.52	-1.32	0.215
105.00	-16.29	-15.20	0.00	-533.66	0.00	533.66	3,402.87	1,701.43	5,459.44	2,733.78	14.95	-1.40	0.200
110.00	-15.16	-14.80	0.00	-457.68	0.00	457.68	3,309.66	1,654.83	5,112.41	2,560.00	16.45	-1.48	0.183
115.00	-14.06	-14.40	0.00	-383.69	0.00	383.69	3,203.68	1,601.84	4,757.55	2,382.31	18.04	-1.55	0.166
120.00	-13.00	-14.02	0.00	-311.68	0.00	311.68	3,076.27	1,538.13	4,384.77	2,195.65	19.70	-1.62	0.146
125.00	-11.97	-13.64	0.00	-241.60	0.00	241.60	2,948.85	1,474.42	4,027.21	2,016.60	21.44	-1.68	0.124
130.00	-10.99	-13.27	0.00	-173.42	0.00	173.42	2,821.43	1,410.71	3,684.84	1,845.16	23.23	-1.74	0.098
135.00	-7.02	-8.78	0.00	-107.09	0.00	107.09	2,694.01	1,347.00	3,357.69	1,681.34	25.07	-1.78	0.066
136.87	-6.72	-8.61	0.00	-90.69	0.00	90.69	2,646.44	1,323.22	3,239.45	1,622.13	25.77	-1.79	0.058
140.00	-5.90	-8.44	0.00	-63.73	0.00	63.73	2,566.59	1,283.29	3,045.74	1,525.14	26.95	-1.81	0.044
141.22	-5.59	-8.26	0.00	-53.43	0.00	53.43	1,643.42	821.71	1,977.14	990.04	27.41	-1.81	0.057
145.00	-5.17	-8.10	0.00	-22.20	0.00	22.20	1,600.53	800.26	1,853.36	928.06	28.85	-1.82	0.027
146.00	-4.15	-3.34	0.00	-14.11	0.00	14.11	1,588.94	794.47	1,820.98	911.84	29.23	-1.83	0.018
148.00	-2.16	-2.27	0.00	-7.42	0.00	7.42	1,565.48	782.74	1,756.72	879.67	30.00	-1.83	0.010
150.00	-0.09	-0.03	0.00	-0.03	0.00	0.03	1,541.62	770.81	1,693.16	847.84	30.76	-1.83	0.000
151.00	0.00	-0.03	0.00	0.00	0.00	0.00	1,529.54	764.77	1,661.64	832.05	31.15	-1.83	0.000

Load Case: 0.9D + 1.6W — 93 mph with No Ice (Reduced DL) — 20 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.60

Wind Importance Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		239.7	0.0					0.0	0.0	239.7	0.0	0.0	0.0
5.00		474.3	1,622.7					0.0	144.8	474.3	1,767.4	0.0	0.0
10.00		464.1	1,587.7					0.0	144.8	464.1	1,732.4	0.0	0.0
15.00		453.8	1,552.6					0.0	144.8	453.8	1,697.4	0.0	0.0
20.00		443.5	1,517.6					0.0	144.8	443.5	1,662.4	0.0	0.0
25.00		433.3	1,482.6					0.0	144.8	433.3	1,627.4	0.0	0.0
30.00		428.0	1,447.6					0.0	144.8	428.0	1,592.4	0.0	0.0
35.00		431.3	1,412.6					0.0	144.8	431.3	1,557.3	0.0	0.0
40.00		437.0	1,377.6					0.0	144.8	437.0	1,522.3	0.0	0.0
45.00		275.9	1,342.6					0.0	144.8	275.9	1,487.3	0.0	0.0
46.28	Bot - Section 2	223.9	337.1					0.0	36.9	223.9	374.0	0.0	0.0
50.00		335.8	1,959.0					0.0	107.8	335.8	2,066.9	0.0	0.0
53.73	Top - Section 1	225.4	1,924.2					0.0	108.0	225.4	2,032.3	0.0	0.0
55.00		282.3	325.6					0.0	36.7	282.3	362.4	0.0	0.0
60.00		449.4	1,261.8					0.0	144.8	449.4	1,406.6	0.0	0.0
65.00		447.0	1,226.8					0.0	144.8	447.0	1,371.6	0.0	0.0
70.00		443.5	1,191.8					0.0	144.8	443.5	1,336.5	0.0	0.0
75.00		439.0	1,156.8					0.0	144.8	439.0	1,301.5	0.0	0.0
80.00		433.6	1,121.7					0.0	144.8	433.6	1,266.5	0.0	0.0
85.00		427.3	1,086.7					0.0	144.8	427.3	1,231.5	0.0	0.0
90.00		382.7	1,051.7					0.0	144.8	382.7	1,196.5	0.0	0.0
94.09	Bot - Section 3	209.0	834.4					0.0	118.4	209.0	952.9	0.0	0.0
95.00		243.1	321.9					0.0	26.3	243.1	348.2	0.0	0.0
99.92	Top - Section 2	208.0	1,708.1					0.0	142.6	208.0	1,850.6	0.0	0.0
100.00		206.8	11.2					0.0	2.2	206.8	13.4	0.0	0.0
105.00		402.8	725.9					0.0	144.8	402.8	870.7	0.0	0.0
110.00		393.3	699.7					0.0	144.8	393.3	844.4	0.0	0.0
115.00		383.2	673.4					0.0	144.8	383.2	818.2	0.0	0.0
120.00		372.6	647.2					0.0	144.8	372.6	791.9	0.0	0.0
125.00		361.6	620.9					0.0	144.8	361.6	765.7	0.0	0.0
130.00		350.0	594.6					0.0	144.8	350.0	739.4	0.0	0.0
135.00	Appurtenance(s)	234.7	568.4	4,130.7	0.0	0.0	2,358.1	0.0	144.8	4,365.5	3,071.2	0.0	0.0
136.87	Bot - Section 4	167.7	205.5					0.0	28.4	167.7	233.9	0.0	0.0
140.00		145.2	565.8					0.0	47.7	145.2	613.5	0.0	0.0
141.22	Top - Section 3	162.4	215.8					0.0	18.6	162.4	234.4	0.0	0.0
145.00		153.9	264.1					0.0	57.5	153.9	321.6	0.0	0.0
146.00	Appurtenance(s)	94.3	68.2	4,624.4	0.0	0.0	795.6	0.0	15.2	4,718.8	879.0	0.0	0.0
148.00	Appurtenance(s)	124.2	134.3	888.0	0.0	0.0	1,350.0	0.0	26.6	1,012.2	1,510.9	0.0	0.0
150.00	Appurtenance(s)	92.0	131.5	2,075.6	0.0	2,848.3	1,454.4	0.0	26.6	2,167.6	1,612.5	0.0	0.0
151.00		30.4	64.7					0.0	0.0	30.4	64.7	0.0	0.0
								Totals:		24,225.0	45,129.6	0.00	0.00

Load Case: 0.9D + 1.6W — 93 mph with No Ice (Reduced DL) — 20 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.60
Wind Importance 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	-45.12	-24.01	0.00	-2,608.42	0.00	2,608.42	7,216.29	3,608.15	20,023.1	10,026.4	0.00	0.00	0.266
5.00	-43.33	-23.58	0.00	-2,488.38	0.00	2,488.38	7,118.62	3,559.31	19,327.3	9,678.04	0.03	-0.06	0.263
10.00	-41.57	-23.16	0.00	-2,370.49	0.00	2,370.49	7,018.49	3,509.25	18,636.6	9,332.20	0.13	-0.12	0.260
15.00	-39.85	-22.74	0.00	-2,254.72	0.00	2,254.72	6,915.90	3,457.95	17,951.6	8,989.14	0.28	-0.18	0.257
20.00	-38.16	-22.33	0.00	-2,141.02	0.00	2,141.02	6,810.85	3,405.43	17,272.5	8,649.09	0.50	-0.24	0.253
25.00	-36.51	-21.93	0.00	-2,029.36	0.00	2,029.36	6,703.34	3,351.67	16,599.8	8,312.27	0.79	-0.30	0.250
30.00	-34.90	-21.53	0.00	-1,919.71	0.00	1,919.71	6,593.37	3,296.69	15,934.1	7,978.90	1.14	-0.37	0.246
35.00	-33.32	-21.13	0.00	-1,812.05	0.00	1,812.05	6,480.94	3,240.47	15,275.6	7,649.19	1.57	-0.43	0.242
40.00	-31.78	-20.72	0.00	-1,706.41	0.00	1,706.41	6,366.05	3,183.02	14,625.0	7,323.38	2.05	-0.50	0.238
45.00	-30.28	-20.45	0.00	-1,602.83	0.00	1,602.83	6,248.70	3,124.35	13,982.5	7,001.67	2.61	-0.57	0.234
46.28	-29.90	-20.24	0.00	-1,576.73	0.00	1,576.73	6,218.35	3,109.18	13,819.9	6,920.25	2.77	-0.58	0.233
50.00	-27.81	-19.91	0.00	-1,501.36	0.00	1,501.36	6,128.89	3,064.44	13,348.7	6,684.30	3.24	-0.63	0.229
53.73	-25.77	-19.67	0.00	-1,427.08	0.00	1,427.08	6,122.55	3,061.27	13,315.8	6,667.80	3.76	-0.69	0.218
55.00	-25.40	-19.41	0.00	-1,402.13	0.00	1,402.13	6,091.73	3,045.87	13,156.5	6,588.07	3.95	-0.70	0.217
60.00	-23.98	-18.97	0.00	-1,305.10	0.00	1,305.10	5,968.71	2,984.35	12,534.7	6,276.69	4.72	-0.77	0.212
65.00	-22.59	-18.53	0.00	-1,210.28	0.00	1,210.28	5,843.22	2,921.61	11,922.5	5,970.14	5.56	-0.84	0.207
70.00	-21.24	-18.09	0.00	-1,117.65	0.00	1,117.65	5,697.45	2,848.72	11,285.1	5,650.96	6.48	-0.90	0.202
75.00	-19.92	-17.65	0.00	-1,027.22	0.00	1,027.22	5,527.55	2,763.78	10,618.8	5,317.30	7.46	-0.97	0.197
80.00	-18.65	-17.22	0.00	-938.97	0.00	938.97	5,357.66	2,678.83	9,972.76	4,993.79	8.51	-1.04	0.192
85.00	-17.40	-16.79	0.00	-852.89	0.00	852.89	5,187.77	2,593.89	9,346.98	4,680.44	9.64	-1.11	0.186
90.00	-16.20	-16.40	0.00	-768.96	0.00	768.96	5,017.88	2,508.94	8,741.48	4,377.24	10.83	-1.17	0.179
94.09	-15.24	-16.18	0.00	-701.88	0.00	701.88	4,878.88	2,439.44	8,261.16	4,136.72	11.87	-1.23	0.173
95.00	-14.88	-15.94	0.00	-687.17	0.00	687.17	4,847.98	2,423.99	8,156.25	4,084.19	12.10	-1.24	0.171
99.92	-13.03	-15.70	0.00	-608.70	0.00	608.70	3,494.98	1,747.49	5,818.92	2,913.79	13.42	-1.31	0.213
100.00	-13.01	-15.50	0.00	-607.51	0.00	607.51	3,493.62	1,746.81	5,813.50	2,911.07	13.44	-1.31	0.212
105.00	-12.13	-15.09	0.00	-530.02	0.00	530.02	3,402.87	1,701.43	5,459.44	2,733.78	14.85	-1.39	0.198
110.00	-11.27	-14.69	0.00	-454.56	0.00	454.56	3,309.66	1,654.83	5,112.41	2,560.00	16.35	-1.47	0.181
115.00	-10.45	-14.30	0.00	-381.10	0.00	381.10	3,203.68	1,601.84	4,757.55	2,382.31	17.93	-1.54	0.163
120.00	-9.65	-13.92	0.00	-309.60	0.00	309.60	3,076.27	1,538.13	4,384.77	2,195.65	19.58	-1.61	0.144
125.00	-8.88	-13.54	0.00	-240.02	0.00	240.02	2,948.85	1,474.42	4,027.21	2,016.60	21.30	-1.67	0.122
130.00	-8.14	-13.18	0.00	-172.30	0.00	172.30	2,821.43	1,410.71	3,684.84	1,845.16	23.08	-1.72	0.096
135.00	-5.20	-8.72	0.00	-106.41	0.00	106.41	2,694.01	1,347.00	3,357.69	1,681.34	24.91	-1.76	0.065
136.87	-4.97	-8.55	0.00	-90.13	0.00	90.13	2,646.44	1,323.22	3,239.45	1,622.13	25.60	-1.78	0.057
140.00	-4.36	-8.39	0.00	-63.34	0.00	63.34	2,566.59	1,283.29	3,045.74	1,525.14	26.78	-1.79	0.043
141.22	-4.13	-8.22	0.00	-53.11	0.00	53.11	1,643.42	821.71	1,977.14	990.04	27.24	-1.80	0.056
145.00	-3.81	-8.05	0.00	-22.05	0.00	22.05	1,600.53	800.26	1,853.36	928.06	28.67	-1.81	0.026
146.00	-3.08	-3.31	0.00	-14.00	0.00	14.00	1,588.94	794.47	1,820.98	911.84	29.05	-1.81	0.017
148.00	-1.61	-2.25	0.00	-7.38	0.00	7.38	1,565.48	782.74	1,756.72	879.67	29.81	-1.82	0.009
150.00	-0.06	-0.03	0.00	-0.03	0.00	0.03	1,541.62	770.81	1,693.16	847.84	30.57	-1.82	0.000
151.00	0.00	-0.03	0.00	0.00	0.00	0.00	1,529.54	764.77	1,661.64	832.05	30.95	-1.82	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 1.00 in Radial Ice — 19 Iterations

Gust Response Factor :1.10 | Ice Dead Load Factor :1.00 | Wind Importance Factor :1.00
Dead Load Factor :1.20 | Ice Importance Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		83.6	0.0					0.0	0.0	83.6	0.0	0.0	0.0
5.00		165.9	2,822.8					0.0	193.0	165.9	3,015.8	0.0	0.0
10.00		163.1	2,839.0					0.0	193.0	163.1	3,032.0	0.0	0.0
15.00		160.0	2,814.7					0.0	193.0	160.0	3,007.8	0.0	0.0
20.00		156.8	2,777.3					0.0	193.0	156.8	2,970.3	0.0	0.0
25.00		153.6	2,733.0					0.0	193.0	153.6	2,926.0	0.0	0.0
30.00		152.1	2,684.4					0.0	193.0	152.1	2,877.4	0.0	0.0
35.00		153.7	2,632.8					0.0	193.0	153.7	2,825.8	0.0	0.0
40.00		156.1	2,578.9					0.0	193.0	156.1	2,772.0	0.0	0.0
45.00		98.7	2,523.4					0.0	193.0	98.7	2,716.4	0.0	0.0
46.28	Bot - Section 2	80.2	636.8					0.0	49.3	80.2	686.0	0.0	0.0
50.00		120.4	3,161.0					0.0	143.8	120.4	3,304.8	0.0	0.0
53.73	Top - Section 1	80.9	3,109.5					0.0	144.1	80.9	3,253.6	0.0	0.0
55.00		101.6	618.7					0.0	49.0	101.6	667.7	0.0	0.0
60.00		162.0	2,395.0					0.0	193.0	162.0	2,588.1	0.0	0.0
65.00		161.6	2,335.3					0.0	193.0	161.6	2,528.3	0.0	0.0
70.00		160.8	2,274.8					0.0	193.0	160.8	2,467.9	0.0	0.0
75.00		159.6	2,213.7					0.0	193.0	159.6	2,406.8	0.0	0.0
80.00		158.2	2,152.1					0.0	193.0	158.2	2,345.1	0.0	0.0
85.00		156.4	2,089.9					0.0	193.0	156.4	2,282.9	0.0	0.0
90.00		140.5	2,027.2					0.0	193.0	140.5	2,220.3	0.0	0.0
94.09	Bot - Section 3	76.9	1,613.2					0.0	157.9	76.9	1,771.2	0.0	0.0
95.00		89.6	541.9					0.0	35.1	89.6	577.0	0.0	0.0
99.92	Top - Section 2	76.7	2,870.9					0.0	190.1	76.7	3,061.0	0.0	0.0
100.00		76.5	24.1					0.0	2.9	76.5	27.0	0.0	0.0
105.00		149.4	1,553.2					0.0	193.0	149.4	1,746.2	0.0	0.0
110.00		146.5	1,500.8					0.0	193.0	146.5	1,693.8	0.0	0.0
115.00		143.4	1,448.1					0.0	193.0	143.4	1,641.1	0.0	0.0
120.00		140.1	1,395.1					0.0	193.0	140.1	1,588.1	0.0	0.0
125.00		136.7	1,341.9					0.0	193.0	136.7	1,534.9	0.0	0.0
130.00		133.1	1,288.4					0.0	193.0	133.1	1,481.4	0.0	0.0
135.00	Appurtenance(s)	89.6	1,234.6	1,163.4	0.0	0.0	7,974.9	0.0	193.0	1,253.0	9,402.6	0.0	0.0
136.87	Bot - Section 4	64.3	449.5					0.0	37.9	64.3	487.4	0.0	0.0
140.00		55.7	1,046.1					0.0	63.6	55.7	1,109.7	0.0	0.0
141.22	Top - Section 3	62.6	400.4					0.0	24.8	62.6	425.1	0.0	0.0
145.00		59.4	689.3					0.0	76.7	59.4	766.0	0.0	0.0
146.00	Appurtenance(s)	36.6	179.5	1,151.8	0.0	0.0	6,204.2	0.0	20.3	1,188.4	6,404.0	0.0	0.0
148.00	Appurtenance(s)	48.3	353.0	349.7	0.0	0.0	2,570.9	0.0	35.4	398.0	2,959.3	0.0	0.0
150.00	Appurtenance(s)	35.8	346.2	649.5	0.0	844.6	4,354.2	0.0	35.4	685.3	4,735.8	0.0	0.0
151.00		11.9	170.9					0.0	0.0	11.9	170.9	0.0	0.0
								Totals:		7,873.37	92,477.1	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 1.00 in Radial Ice — 19 Iterations

Gust Response Factor :1.10 | Ice Dead Load Factor :1.00 | Wind Importance 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	-92.48	-7.80	0.00	-836.42	0.00	836.42	7,216.29	3,608.15	20,023.1	10,026.4	0.00	0.00	0.096
5.00	-89.46	-7.67	0.00	-797.40	0.00	797.40	7,118.62	3,559.31	19,327.3	9,678.04	0.01	-0.02	0.095
10.00	-86.42	-7.53	0.00	-759.06	0.00	759.06	7,018.49	3,509.25	18,636.6	9,332.20	0.04	-0.04	0.094
15.00	-83.41	-7.40	0.00	-721.40	0.00	721.40	6,915.90	3,457.95	17,951.6	8,989.14	0.09	-0.06	0.092
20.00	-80.44	-7.27	0.00	-684.41	0.00	684.41	6,810.85	3,405.43	17,272.5	8,649.09	0.16	-0.08	0.091
25.00	-77.51	-7.14	0.00	-648.08	0.00	648.08	6,703.34	3,351.67	16,599.8	8,312.27	0.25	-0.10	0.090
30.00	-74.63	-7.00	0.00	-612.41	0.00	612.41	6,593.37	3,296.69	15,934.1	7,978.90	0.37	-0.12	0.088
35.00	-71.80	-6.87	0.00	-577.39	0.00	577.39	6,480.94	3,240.47	15,275.6	7,649.19	0.50	-0.14	0.087
40.00	-69.03	-6.73	0.00	-543.03	0.00	543.03	6,366.05	3,183.02	14,625.0	7,323.38	0.66	-0.16	0.085
45.00	-66.31	-6.64	0.00	-509.37	0.00	509.37	6,248.70	3,124.35	13,982.5	7,001.67	0.84	-0.18	0.083
46.28	-65.63	-6.57	0.00	-500.89	0.00	500.89	6,218.35	3,109.18	13,819.9	6,920.25	0.89	-0.19	0.083
50.00	-62.32	-6.46	0.00	-476.42	0.00	476.42	6,128.89	3,064.44	13,348.7	6,684.30	1.04	-0.20	0.081
53.73	-59.07	-6.38	0.00	-452.32	0.00	452.32	6,122.55	3,061.27	13,315.8	6,667.80	1.20	-0.22	0.077
55.00	-58.40	-6.29	0.00	-444.24	0.00	444.24	6,091.73	3,045.87	13,156.5	6,588.07	1.26	-0.22	0.077
60.00	-55.81	-6.13	0.00	-412.81	0.00	412.81	5,968.71	2,984.35	12,534.7	6,276.69	1.51	-0.25	0.075
65.00	-53.28	-5.98	0.00	-382.14	0.00	382.14	5,843.22	2,921.61	11,922.5	5,970.14	1.78	-0.27	0.073
70.00	-50.81	-5.83	0.00	-352.24	0.00	352.24	5,697.45	2,848.72	11,285.1	5,650.96	2.07	-0.29	0.071
75.00	-48.40	-5.67	0.00	-323.11	0.00	323.11	5,527.55	2,763.78	10,618.8	5,317.30	2.38	-0.31	0.070
80.00	-46.05	-5.52	0.00	-294.75	0.00	294.75	5,357.66	2,678.83	9,972.76	4,993.79	2.72	-0.33	0.068
85.00	-43.77	-5.36	0.00	-267.16	0.00	267.16	5,187.77	2,593.89	9,346.98	4,680.44	3.07	-0.35	0.066
90.00	-41.55	-5.22	0.00	-240.34	0.00	240.34	5,017.88	2,508.94	8,741.48	4,377.24	3.45	-0.37	0.063
94.09	-39.78	-5.14	0.00	-218.98	0.00	218.98	4,878.88	2,439.44	8,261.16	4,136.72	3.78	-0.39	0.061
95.00	-39.20	-5.06	0.00	-214.30	0.00	214.30	4,847.98	2,423.99	8,156.25	4,084.19	3.85	-0.39	0.061
99.92	-36.14	-4.97	0.00	-189.40	0.00	189.40	3,494.98	1,747.49	5,818.92	2,913.79	4.27	-0.41	0.075
100.00	-36.11	-4.90	0.00	-189.02	0.00	189.02	3,493.62	1,746.81	5,813.50	2,911.07	4.28	-0.41	0.075
105.00	-34.36	-4.75	0.00	-164.54	0.00	164.54	3,402.87	1,701.43	5,459.44	2,733.78	4.73	-0.44	0.070
110.00	-32.67	-4.60	0.00	-140.79	0.00	140.79	3,309.66	1,654.83	5,112.41	2,560.00	5.20	-0.46	0.065
115.00	-31.03	-4.46	0.00	-117.78	0.00	117.78	3,203.68	1,601.84	4,757.55	2,382.31	5.70	-0.49	0.059
120.00	-29.44	-4.31	0.00	-95.49	0.00	95.49	3,076.27	1,538.13	4,384.77	2,195.65	6.22	-0.51	0.053
125.00	-27.90	-4.17	0.00	-73.92	0.00	73.92	2,948.85	1,474.42	4,027.21	2,016.60	6.76	-0.53	0.046
130.00	-26.42	-4.03	0.00	-53.06	0.00	53.06	2,821.43	1,410.71	3,684.84	1,845.16	7.32	-0.54	0.038
135.00	-17.03	-2.69	0.00	-32.90	0.00	32.90	2,694.01	1,347.00	3,357.69	1,681.34	7.90	-0.56	0.026
136.87	-16.55	-2.62	0.00	-27.88	0.00	27.88	2,646.44	1,323.22	3,239.45	1,622.13	8.12	-0.56	0.023
140.00	-15.44	-2.56	0.00	-19.66	0.00	19.66	2,566.59	1,283.29	3,045.74	1,525.14	8.49	-0.56	0.019
141.22	-15.01	-2.49	0.00	-16.54	0.00	16.54	1,643.42	821.71	1,977.14	990.04	8.63	-0.57	0.026
145.00	-14.25	-2.43	0.00	-7.12	0.00	7.12	1,600.53	800.26	1,853.36	928.06	9.08	-0.57	0.017
146.00	-7.85	-1.17	0.00	-4.70	0.00	4.70	1,588.94	794.47	1,820.98	911.84	9.20	-0.57	0.010
148.00	-4.90	-0.75	0.00	-2.35	0.00	2.35	1,565.48	782.74	1,756.72	879.67	9.44	-0.57	0.006
150.00	-0.17	-0.01	0.00	-0.01	0.00	0.01	1,541.62	770.81	1,693.16	847.84	9.68	-0.57	0.000
151.00	0.00	-0.01	0.00	0.00	0.00	0.00	1,529.54	764.77	1,661.64	832.05	9.80	-0.57	0.000

Load Case: 1.0D + 1.0W Serviceability 60 mph 19 Iterations

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

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		55.8	0.0					0.0	0.0	55.8	0.0	0.0	0.0
5.00		110.4	1,803.0					0.0	160.9	110.4	1,963.8	0.0	0.0
10.00		108.0	1,764.1					0.0	160.9	108.0	1,924.9	0.0	0.0
15.00		105.6	1,725.2					0.0	160.9	105.6	1,886.0	0.0	0.0
20.00		103.2	1,686.3					0.0	160.9	103.2	1,847.1	0.0	0.0
25.00		100.8	1,647.3					0.0	160.9	100.8	1,808.2	0.0	0.0
30.00		99.6	1,608.4					0.0	160.9	99.6	1,769.3	0.0	0.0
35.00		100.4	1,569.5					0.0	160.9	100.4	1,730.4	0.0	0.0
40.00		101.7	1,530.6					0.0	160.9	101.7	1,691.5	0.0	0.0
45.00		64.2	1,491.7					0.0	160.9	64.2	1,652.6	0.0	0.0
46.28	Bot - Section 2	52.1	374.5					0.0	41.1	52.1	415.6	0.0	0.0
50.00		78.2	2,176.7					0.0	119.8	78.2	2,296.5	0.0	0.0
53.73	Top - Section 1	52.5	2,138.0					0.0	120.0	52.5	2,258.1	0.0	0.0
55.00		65.7	361.8					0.0	40.8	65.7	402.6	0.0	0.0
60.00		104.6	1,402.0					0.0	160.9	104.6	1,562.9	0.0	0.0
65.00		104.0	1,363.1					0.0	160.9	104.0	1,524.0	0.0	0.0
70.00		103.2	1,324.2					0.0	160.9	103.2	1,485.0	0.0	0.0
75.00		102.2	1,285.3					0.0	160.9	102.2	1,446.1	0.0	0.0
80.00		100.9	1,246.4					0.0	160.9	100.9	1,407.2	0.0	0.0
85.00		99.5	1,207.5					0.0	160.9	99.5	1,368.3	0.0	0.0
90.00		89.1	1,168.6					0.0	160.9	89.1	1,329.4	0.0	0.0
94.09	Bot - Section 3	48.6	927.2					0.0	131.6	48.6	1,058.8	0.0	0.0
95.00		56.6	357.6					0.0	29.2	56.6	386.9	0.0	0.0
99.92	Top - Section 2	48.4	1,897.8					0.0	158.4	48.4	2,056.3	0.0	0.0
100.00		48.1	12.5					0.0	2.4	48.1	14.9	0.0	0.0
105.00		93.8	806.6					0.0	160.9	93.8	967.5	0.0	0.0
110.00		91.5	777.4					0.0	160.9	91.5	938.3	0.0	0.0
115.00		89.2	748.2					0.0	160.9	89.2	909.1	0.0	0.0
120.00		86.7	719.1					0.0	160.9	86.7	879.9	0.0	0.0
125.00		84.2	689.9					0.0	160.9	84.2	850.7	0.0	0.0
130.00		81.5	660.7					0.0	160.9	81.5	821.6	0.0	0.0
135.00	Appurtenance(s)	54.6	631.5	961.5	0.0	0.0	2,620.1	0.0	160.9	1,016.1	3,412.5	0.0	0.0
136.87	Bot - Section 4	39.0	228.3					0.0	31.6	39.0	259.9	0.0	0.0
140.00		33.8	628.7					0.0	53.0	33.8	681.7	0.0	0.0
141.22	Top - Section 3	37.8	239.8					0.0	20.6	37.8	260.4	0.0	0.0
145.00		35.8	293.4					0.0	63.9	35.8	357.3	0.0	0.0
146.00	Appurtenance(s)	22.0	75.8	1,076.4	0.0	0.0	884.0	0.0	16.9	1,098.3	976.7	0.0	0.0
148.00	Appurtenance(s)	28.9	149.2	206.7	0.0	0.0	1,500.0	0.0	29.5	235.6	1,678.7	0.0	0.0
150.00	Appurtenance(s)	21.4	146.1	483.1	0.0	663.0	1,616.0	0.0	29.5	504.5	1,791.6	0.0	0.0
151.00		7.1	71.9					0.0	0.0	7.1	71.9	0.0	0.0
								Totals:		5,638.66	50,144.0	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 19 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00
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	-50.14	-5.59	0.00	-608.18	0.00	608.18	7,216.29	3,608.15	20,023.1	10,026.4	0.00	0.00	0.068
5.00	-48.18	-5.49	0.00	-580.24	0.00	580.24	7,118.62	3,559.31	19,327.3	9,678.04	0.01	-0.01	0.067
10.00	-46.25	-5.39	0.00	-552.79	0.00	552.79	7,018.49	3,509.25	18,636.6	9,332.20	0.03	-0.03	0.066
15.00	-44.36	-5.30	0.00	-525.84	0.00	525.84	6,915.90	3,457.95	17,951.6	8,989.14	0.07	-0.04	0.065
20.00	-42.52	-5.20	0.00	-499.35	0.00	499.35	6,810.85	3,405.43	17,272.5	8,649.09	0.12	-0.06	0.064
25.00	-40.71	-5.11	0.00	-473.34	0.00	473.34	6,703.34	3,351.67	16,599.8	8,312.27	0.18	-0.07	0.063
30.00	-38.94	-5.02	0.00	-447.79	0.00	447.79	6,593.37	3,296.69	15,934.1	7,978.90	0.27	-0.09	0.062
35.00	-37.21	-4.92	0.00	-422.70	0.00	422.70	6,480.94	3,240.47	15,275.6	7,649.19	0.37	-0.10	0.061
40.00	-35.51	-4.83	0.00	-398.08	0.00	398.08	6,366.05	3,183.02	14,625.0	7,323.38	0.48	-0.12	0.060
45.00	-33.86	-4.77	0.00	-373.93	0.00	373.93	6,248.70	3,124.35	13,982.5	7,001.67	0.61	-0.13	0.059
46.28	-33.44	-4.72	0.00	-367.85	0.00	367.85	6,218.35	3,109.18	13,819.9	6,920.25	0.65	-0.14	0.059
50.00	-31.15	-4.64	0.00	-350.28	0.00	350.28	6,128.89	3,064.44	13,348.7	6,684.30	0.76	-0.15	0.057
53.73	-28.89	-4.59	0.00	-332.96	0.00	332.96	6,122.55	3,061.27	13,315.8	6,667.80	0.88	-0.16	0.055
55.00	-28.48	-4.53	0.00	-327.14	0.00	327.14	6,091.73	3,045.87	13,156.5	6,588.07	0.92	-0.16	0.054
60.00	-26.92	-4.42	0.00	-304.51	0.00	304.51	5,968.71	2,984.35	12,534.7	6,276.69	1.10	-0.18	0.053
65.00	-25.40	-4.32	0.00	-282.40	0.00	282.40	5,843.22	2,921.61	11,922.5	5,970.14	1.30	-0.20	0.052
70.00	-23.91	-4.22	0.00	-260.79	0.00	260.79	5,697.45	2,848.72	11,285.1	5,650.96	1.51	-0.21	0.050
75.00	-22.46	-4.12	0.00	-239.69	0.00	239.69	5,527.55	2,763.78	10,618.8	5,317.30	1.74	-0.23	0.049
80.00	-21.05	-4.02	0.00	-219.11	0.00	219.11	5,357.66	2,678.83	9,972.76	4,993.79	1.99	-0.24	0.048
85.00	-19.69	-3.92	0.00	-199.02	0.00	199.02	5,187.77	2,593.89	9,346.98	4,680.44	2.25	-0.26	0.046
90.00	-18.36	-3.83	0.00	-179.44	0.00	179.44	5,017.88	2,508.94	8,741.48	4,377.24	2.53	-0.27	0.045
94.09	-17.30	-3.77	0.00	-163.79	0.00	163.79	4,878.88	2,439.44	8,261.16	4,136.72	2.77	-0.29	0.043
95.00	-16.91	-3.72	0.00	-160.36	0.00	160.36	4,847.98	2,423.99	8,156.25	4,084.19	2.82	-0.29	0.043
99.92	-14.85	-3.66	0.00	-142.04	0.00	142.04	3,494.98	1,747.49	5,818.92	2,913.79	3.13	-0.31	0.053
100.00	-14.84	-3.62	0.00	-141.77	0.00	141.77	3,493.62	1,746.81	5,813.50	2,911.07	3.13	-0.31	0.053
105.00	-13.87	-3.52	0.00	-123.68	0.00	123.68	3,402.87	1,701.43	5,459.44	2,733.78	3.47	-0.32	0.049
110.00	-12.93	-3.43	0.00	-106.08	0.00	106.08	3,309.66	1,654.83	5,112.41	2,560.00	3.81	-0.34	0.045
115.00	-12.02	-3.34	0.00	-88.93	0.00	88.93	3,203.68	1,601.84	4,757.55	2,382.31	4.18	-0.36	0.041
120.00	-11.14	-3.25	0.00	-72.25	0.00	72.25	3,076.27	1,538.13	4,384.77	2,195.65	4.57	-0.38	0.037
125.00	-10.29	-3.16	0.00	-56.01	0.00	56.01	2,948.85	1,474.42	4,027.21	2,016.60	4.97	-0.39	0.031
130.00	-9.47	-3.08	0.00	-40.21	0.00	40.21	2,821.43	1,410.71	3,684.84	1,845.16	5.39	-0.40	0.025
135.00	-6.06	-2.04	0.00	-24.83	0.00	24.83	2,694.01	1,347.00	3,357.69	1,681.34	5.81	-0.41	0.017
136.87	-5.80	-1.99	0.00	-21.03	0.00	21.03	2,646.44	1,323.22	3,239.45	1,622.13	5.97	-0.41	0.015
140.00	-5.12	-1.96	0.00	-14.78	0.00	14.78	2,566.59	1,283.29	3,045.74	1,525.14	6.25	-0.42	0.012
141.22	-4.86	-1.92	0.00	-12.39	0.00	12.39	1,643.42	821.71	1,977.14	990.04	6.35	-0.42	0.015
145.00	-4.51	-1.88	0.00	-5.15	0.00	5.15	1,600.53	800.26	1,853.36	928.06	6.69	-0.42	0.008
146.00	-3.54	-0.77	0.00	-3.27	0.00	3.27	1,588.94	794.47	1,820.98	911.84	6.78	-0.42	0.006
148.00	-1.86	-0.53	0.00	-1.72	0.00	1.72	1,565.48	782.74	1,756.72	879.67	6.95	-0.42	0.003
150.00	-0.07	-0.01	0.00	-0.01	0.00	0.01	1,541.62	770.81	1,693.16	847.84	7.13	-0.42	0.000
151.00	0.00	-0.01	0.00	0.00	0.00	0.00	1,529.54	764.77	1,661.64	832.05	7.22	-0.42	0.000

Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period (S_s):	0.18	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06	
Long-Period Transition Period (T_L):	6	
Importance Factor (I_E):	1.00	
Site Coefficient F_a:	1.60	
Site Coeffiecient F_v:	2.40	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10	
Seismic Response Coefficient (C_s):	0.05	
Upper Limit C_s	0.05	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	1.53	
Redundancy Factor (p):	1.30	
Seismic Force Distribution Exponent (k):	1.51	
Total Unfactored Dead Load:	50.14	k
Seismic Base Shear (E):	2.96	k

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
39	150.50	72	142	0.004	11	89
38	149.00	176	341	0.009	26	217
37	147.00	179	340	0.009	26	221
36	145.50	93	174	0.005	13	115
35	143.11	357	653	0.017	51	442
34	140.61	260	463	0.012	36	322
33	138.43	682	1,185	0.031	92	844
32	135.93	260	439	0.012	34	322
31	132.50	792	1,289	0.034	100	981
30	127.50	822	1,261	0.033	98	1,017
29	122.50	851	1,229	0.032	95	1,053
28	117.50	880	1,193	0.031	93	1,089
27	112.50	909	1,154	0.030	90	1,125
26	107.50	938	1,112	0.029	86	1,161
25	102.50	967	1,067	0.028	83	1,197
24	99.96	15	16	0.000	1	18
23	97.46	2,056	2,101	0.055	163	2,545
22	94.55	387	378	0.010	29	479
21	92.05	1,059	992	0.026	77	1,310
20	87.50	1,329	1,154	0.030	89	1,646
19	82.50	1,368	1,087	0.028	84	1,694
18	77.50	1,407	1,017	0.027	79	1,742
17	72.50	1,446	944	0.025	73	1,790

16	67.50	1,485	870	0.023	68	1,838
15	62.50	1,524	795	0.021	62	1,886
14	57.50	1,563	719	0.019	56	1,934
13	54.37	403	170	0.004	13	498
12	51.87	2,258	888	0.023	69	2,795
11	48.14	2,297	807	0.021	63	2,843
10	45.64	416	135	0.004	10	514
9	42.50	1,653	481	0.013	37	2,045
8	37.50	1,691	407	0.011	32	2,094
7	32.50	1,730	336	0.009	26	2,142
6	27.50	1,769	267	0.007	21	2,190
5	22.50	1,808	201	0.005	16	2,238
4	17.50	1,847	140	0.004	11	2,286
3	12.50	1,886	86	0.002	7	2,334
2	7.50	1,925	41	0.001	3	2,383
1	2.50	1,964	8	0.000	1	2,431
Generic 48" x 4" Pan	150.00	120	235	0.006	18	149
Generic 48" x 6" Pan	150.00	40	78	0.002	6	50
Generic 48" x 12" Pa	150.00	90	177	0.005	14	111
Generic 48" x 12" x	150.00	140	275	0.007	21	173
VZW Unused Reserve (	150.00	1,226	2,406	0.063	187	1,517
Round Low Profile Pl	148.00	1,500	2,884	0.076	224	1,857
Generic SSB (27lb)	146.00	54	102	0.003	8	67
Generic RRU	146.00	225	424	0.011	33	278
Generic 96" x 12" Pa	146.00	405	763	0.020	59	501
Amphenol Antel LPA-7	146.00	48	90	0.002	7	59
Amphenol Antel LPA-8	146.00	152	286	0.007	22	188
Ericsson RRUS 8843 B	135.00	216	361	0.009	28	267
Ericsson RRUS 4478 B	135.00	180	301	0.008	23	222
Ericsson RRUS 4449 B	135.00	213	356	0.009	28	264
Ericsson AIR 6449 B7	135.00	245	410	0.011	32	303
Raycap DC9-48-60-24-	135.00	32	54	0.001	4	40
CCI DMP65R-BU8D	135.00	287	480	0.013	37	355
Generic Flat Light S	135.00	1,200	2,008	0.053	156	1,485
CCI TPA65R-BU8D	135.00	248	414	0.011	32	306
		50,144	38,184	1.000	2,961	62,066

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
39	150.50	72	142	0.004	11	62
38	149.00	176	341	0.009	26	151
37	147.00	179	340	0.009	26	154
36	145.50	93	174	0.005	13	80
35	143.11	357	653	0.017	51	308
34	140.61	260	463	0.012	36	225
33	138.43	682	1,185	0.031	92	588
32	135.93	260	439	0.012	34	224
31	132.50	792	1,289	0.034	100	683
30	127.50	822	1,261	0.033	98	708
29	122.50	851	1,229	0.032	95	734
28	117.50	880	1,193	0.031	93	759
27	112.50	909	1,154	0.030	90	784
26	107.50	938	1,112	0.029	86	809
25	102.50	967	1,067	0.028	83	834
24	99.96	15	16	0.000	1	13
23	97.46	2,056	2,101	0.055	163	1,773
22	94.55	387	378	0.010	29	334
21	92.05	1,059	992	0.026	77	913

20	87.50	1,329	1,154	0.030	89	1,146
19	82.50	1,368	1,087	0.028	84	1,180
18	77.50	1,407	1,017	0.027	79	1,213
17	72.50	1,446	944	0.025	73	1,247
16	67.50	1,485	870	0.023	68	1,280
15	62.50	1,524	795	0.021	62	1,314
14	57.50	1,563	719	0.019	56	1,348
13	54.37	403	170	0.004	13	347
12	51.87	2,258	888	0.023	69	1,947
11	48.14	2,297	807	0.021	63	1,980
10	45.64	416	135	0.004	10	358
9	42.50	1,653	481	0.013	37	1,425
8	37.50	1,691	407	0.011	32	1,458
7	32.50	1,730	336	0.009	26	1,492
6	27.50	1,769	267	0.007	21	1,526
5	22.50	1,808	201	0.005	16	1,559
4	17.50	1,847	140	0.004	11	1,593
3	12.50	1,886	86	0.002	7	1,626
2	7.50	1,925	41	0.001	3	1,660
1	2.50	1,964	8	0.000	1	1,693
Generic 48" x 4" Pan	150.00	120	235	0.006	18	103
Generic 48" x 6" Pan	150.00	40	78	0.002	6	34
Generic 48" x 12" Pa	150.00	90	177	0.005	14	78
Generic 48" x 12" x	150.00	140	275	0.007	21	121
VZW Unused Reserve (	150.00	1,226	2,406	0.063	187	1,057
Round Low Profile Pl	148.00	1,500	2,884	0.076	224	1,293
Generic SSB (27lb)	146.00	54	102	0.003	8	47
Generic RRU	146.00	225	424	0.011	33	194
Generic 96" x 12" Pa	146.00	405	763	0.020	59	349
Amphenol Antel LPA-7	146.00	48	90	0.002	7	41
Amphenol Antel LPA-8	146.00	152	286	0.007	22	131
Ericsson RRUS 8843 B	135.00	216	361	0.009	28	186
Ericsson RRUS 4478 B	135.00	180	301	0.008	23	155
Ericsson RRUS 4449 B	135.00	213	356	0.009	28	184
Ericsson AIR 6449 B7	135.00	245	410	0.011	32	211
Raycap DC9-48-60-24-	135.00	32	54	0.001	4	28
CCI DMP65R-BU8D	135.00	287	480	0.013	37	248
Generic Flat Light S	135.00	1,200	2,008	0.053	156	1,035
CCI TPA65R-BU8D	135.00	248	414	0.011	32	213
		50,144	38,184	1.000	2,961	43,236

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

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	-59.64	-2.96	0.00	-329.63	0.00	329.63	7,216.29	3,608.15	20,023.1	10,026.4	0.00	0.00	0.041
5.00	-57.25	-2.97	0.00	-314.82	0.00	314.82	7,118.62	3,559.31	19,327.3	9,678.04	0.00	-0.01	0.041
10.00	-54.92	-2.97	0.00	-299.98	0.00	299.98	7,018.49	3,509.25	18,636.6	9,332.20	0.02	-0.02	0.040
15.00	-52.63	-2.96	0.00	-285.14	0.00	285.14	6,915.90	3,457.95	17,951.6	8,989.14	0.04	-0.02	0.039
20.00	-50.39	-2.95	0.00	-270.33	0.00	270.33	6,810.85	3,405.43	17,272.5	8,649.09	0.06	-0.03	0.039
25.00	-48.20	-2.94	0.00	-255.56	0.00	255.56	6,703.34	3,351.67	16,599.8	8,312.27	0.10	-0.04	0.038
30.00	-46.06	-2.92	0.00	-240.87	0.00	240.87	6,593.37	3,296.69	15,934.1	7,978.90	0.14	-0.05	0.037
35.00	-43.97	-2.89	0.00	-226.29	0.00	226.29	6,480.94	3,240.47	15,275.6	7,649.19	0.20	-0.05	0.036
40.00	-41.92	-2.86	0.00	-211.84	0.00	211.84	6,366.05	3,183.02	14,625.0	7,323.38	0.26	-0.06	0.036
45.00	-41.41	-2.85	0.00	-197.56	0.00	197.56	6,248.70	3,124.35	13,982.5	7,001.67	0.33	-0.07	0.035
46.28	-38.56	-2.79	0.00	-193.92	0.00	193.92	6,218.35	3,109.18	13,819.9	6,920.25	0.35	-0.07	0.034
50.00	-35.77	-2.72	0.00	-183.55	0.00	183.55	6,128.89	3,064.44	13,348.7	6,684.30	0.41	-0.08	0.033
53.73	-35.27	-2.71	0.00	-173.41	0.00	173.41	6,122.55	3,061.27	13,315.8	6,667.80	0.47	-0.09	0.032
55.00	-33.33	-2.65	0.00	-169.98	0.00	169.98	6,091.73	3,045.87	13,156.5	6,588.07	0.50	-0.09	0.031
60.00	-31.45	-2.59	0.00	-156.73	0.00	156.73	5,968.71	2,984.35	12,534.7	6,276.69	0.59	-0.10	0.030
65.00	-29.61	-2.52	0.00	-143.78	0.00	143.78	5,843.22	2,921.61	11,922.5	5,970.14	0.70	-0.10	0.029
70.00	-27.82	-2.45	0.00	-131.17	0.00	131.17	5,697.45	2,848.72	11,285.1	5,650.96	0.81	-0.11	0.028
75.00	-26.08	-2.37	0.00	-118.91	0.00	118.91	5,527.55	2,763.78	10,618.8	5,317.30	0.93	-0.12	0.027
80.00	-24.38	-2.29	0.00	-107.06	0.00	107.06	5,357.66	2,678.83	9,972.76	4,993.79	1.06	-0.13	0.026
85.00	-22.74	-2.20	0.00	-95.62	0.00	95.62	5,187.77	2,593.89	9,346.98	4,680.44	1.20	-0.14	0.025
90.00	-21.43	-2.12	0.00	-84.64	0.00	84.64	5,017.88	2,508.94	8,741.48	4,377.24	1.35	-0.14	0.024
94.09	-20.95	-2.09	0.00	-75.97	0.00	75.97	4,878.88	2,439.44	8,261.16	4,136.72	1.47	-0.15	0.023
95.00	-18.40	-1.92	0.00	-74.07	0.00	74.07	4,847.98	2,423.99	8,156.25	4,084.19	1.50	-0.15	0.022
99.92	-18.39	-1.92	0.00	-64.60	0.00	64.60	3,494.98	1,747.49	5,818.92	2,913.79	1.66	-0.16	0.027
100.00	-17.19	-1.84	0.00	-64.46	0.00	64.46	3,493.62	1,746.81	5,813.50	2,911.07	1.66	-0.16	0.027
105.00	-16.03	-1.75	0.00	-55.27	0.00	55.27	3,402.87	1,701.43	5,459.44	2,733.78	1.83	-0.17	0.025
110.00	-14.90	-1.66	0.00	-46.52	0.00	46.52	3,309.66	1,654.83	5,112.41	2,560.00	2.01	-0.17	0.023
115.00	-13.81	-1.57	0.00	-38.23	0.00	38.23	3,203.68	1,601.84	4,757.55	2,382.31	2.19	-0.18	0.020
120.00	-12.76	-1.47	0.00	-30.40	0.00	30.40	3,076.27	1,538.13	4,384.77	2,195.65	2.39	-0.19	0.018
125.00	-11.74	-1.37	0.00	-23.06	0.00	23.06	2,948.85	1,474.42	4,027.21	2,016.60	2.59	-0.19	0.015
130.00	-10.76	-1.27	0.00	-16.22	0.00	16.22	2,821.43	1,410.71	3,684.84	1,845.16	2.79	-0.20	0.013
135.00	-7.20	-0.88	0.00	-9.90	0.00	9.90	2,694.01	1,347.00	3,357.69	1,681.34	3.00	-0.20	0.009
136.87	-6.36	-0.78	0.00	-8.25	0.00	8.25	2,646.44	1,323.22	3,239.45	1,622.13	3.08	-0.20	0.007
140.00	-6.03	-0.75	0.00	-5.80	0.00	5.80	2,566.59	1,283.29	3,045.74	1,525.14	3.22	-0.21	0.006
141.22	-5.59	-0.70	0.00	-4.88	0.00	4.88	1,643.42	821.71	1,977.14	990.04	3.27	-0.21	0.008
145.00	-5.48	-0.68	0.00	-2.25	0.00	2.25	1,600.53	800.26	1,853.36	928.06	3.44	-0.21	0.006
146.00	-4.16	-0.52	0.00	-1.57	0.00	1.57	1,588.94	794.47	1,820.98	911.84	3.48	-0.21	0.004
148.00	-2.09	-0.26	0.00	-0.53	0.00	0.53	1,565.48	782.74	1,756.72	879.67	3.57	-0.21	0.002
150.00	0.00	0.00	0.00	0.00	0.00	0.00	1,541.62	770.81	1,693.16	847.84	3.65	-0.21	0.000
151.00	0.00	0.00	0.00	0.00	0.00	0.00	1,529.54	764.77	1,661.64	832.05	3.70	-0.21	0.000

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

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	-41.54	-2.96	0.00	-327.76	0.00	327.76	7,216.29	3,608.15	20,023.1	10,026.4	0.00	0.00	0.038
5.00	-39.88	-2.96	0.00	-312.95	0.00	312.95	7,118.62	3,559.31	19,327.3	9,678.04	0.00	-0.01	0.038
10.00	-38.26	-2.96	0.00	-298.13	0.00	298.13	7,018.49	3,509.25	18,636.6	9,332.20	0.02	-0.01	0.037
15.00	-36.66	-2.96	0.00	-283.32	0.00	283.32	6,915.90	3,457.95	17,951.6	8,989.14	0.04	-0.02	0.037
20.00	-35.10	-2.94	0.00	-268.54	0.00	268.54	6,810.85	3,405.43	17,272.5	8,649.09	0.06	-0.03	0.036
25.00	-33.58	-2.93	0.00	-253.82	0.00	253.82	6,703.34	3,351.67	16,599.8	8,312.27	0.10	-0.04	0.036
30.00	-32.09	-2.90	0.00	-239.19	0.00	239.19	6,593.37	3,296.69	15,934.1	7,978.90	0.14	-0.05	0.035
35.00	-30.63	-2.88	0.00	-224.67	0.00	224.67	6,480.94	3,240.47	15,275.6	7,649.19	0.20	-0.05	0.034
40.00	-29.20	-2.84	0.00	-210.29	0.00	210.29	6,366.05	3,183.02	14,625.0	7,323.38	0.26	-0.06	0.033
45.00	-28.84	-2.83	0.00	-196.08	0.00	196.08	6,248.70	3,124.35	13,982.5	7,001.67	0.33	-0.07	0.033
46.28	-26.86	-2.77	0.00	-192.47	0.00	192.47	6,218.35	3,109.18	13,819.9	6,920.25	0.35	-0.07	0.032
50.00	-24.91	-2.70	0.00	-182.15	0.00	182.15	6,128.89	3,064.44	13,348.7	6,684.30	0.41	-0.08	0.031
53.73	-24.57	-2.69	0.00	-172.07	0.00	172.07	6,122.55	3,061.27	13,315.8	6,667.80	0.47	-0.09	0.030
55.00	-23.22	-2.63	0.00	-168.66	0.00	168.66	6,091.73	3,045.87	13,156.5	6,588.07	0.49	-0.09	0.029
60.00	-21.91	-2.57	0.00	-155.49	0.00	155.49	5,968.71	2,984.35	12,534.7	6,276.69	0.59	-0.10	0.028
65.00	-20.62	-2.51	0.00	-142.63	0.00	142.63	5,843.22	2,921.61	11,922.5	5,970.14	0.69	-0.10	0.027
70.00	-19.38	-2.43	0.00	-130.10	0.00	130.10	5,697.45	2,848.72	11,285.1	5,650.96	0.81	-0.11	0.026
75.00	-18.16	-2.35	0.00	-117.93	0.00	117.93	5,527.55	2,763.78	10,618.8	5,317.30	0.93	-0.12	0.025
80.00	-16.98	-2.27	0.00	-106.16	0.00	106.16	5,357.66	2,678.83	9,972.76	4,993.79	1.06	-0.13	0.024
85.00	-15.84	-2.18	0.00	-94.81	0.00	94.81	5,187.77	2,593.89	9,346.98	4,680.44	1.19	-0.13	0.023
90.00	-14.93	-2.10	0.00	-83.92	0.00	83.92	5,017.88	2,508.94	8,741.48	4,377.24	1.34	-0.14	0.022
94.09	-14.59	-2.07	0.00	-75.31	0.00	75.31	4,878.88	2,439.44	8,261.16	4,136.72	1.46	-0.15	0.021
95.00	-12.82	-1.91	0.00	-73.43	0.00	73.43	4,847.98	2,423.99	8,156.25	4,084.19	1.49	-0.15	0.021
99.92	-12.81	-1.91	0.00	-64.04	0.00	64.04	3,494.98	1,747.49	5,818.92	2,913.79	1.65	-0.16	0.026
100.00	-11.97	-1.82	0.00	-63.90	0.00	63.90	3,493.62	1,746.81	5,813.50	2,911.07	1.65	-0.16	0.025
105.00	-11.16	-1.74	0.00	-54.79	0.00	54.79	3,402.87	1,701.43	5,459.44	2,733.78	1.82	-0.16	0.023
110.00	-10.38	-1.64	0.00	-46.11	0.00	46.11	3,309.66	1,654.83	5,112.41	2,560.00	1.99	-0.17	0.021
115.00	-9.62	-1.55	0.00	-37.88	0.00	37.88	3,203.68	1,601.84	4,757.55	2,382.31	2.18	-0.18	0.019
120.00	-8.89	-1.45	0.00	-30.13	0.00	30.13	3,076.27	1,538.13	4,384.77	2,195.65	2.37	-0.19	0.017
125.00	-8.18	-1.36	0.00	-22.85	0.00	22.85	2,948.85	1,474.42	4,027.21	2,016.60	2.57	-0.19	0.014
130.00	-7.50	-1.25	0.00	-16.08	0.00	16.08	2,821.43	1,410.71	3,684.84	1,845.16	2.77	-0.20	0.011
135.00	-5.01	-0.87	0.00	-9.81	0.00	9.81	2,694.01	1,347.00	3,357.69	1,681.34	2.98	-0.20	0.008
136.87	-4.43	-0.78	0.00	-8.18	0.00	8.18	2,646.44	1,323.22	3,239.45	1,622.13	3.06	-0.20	0.007
140.00	-4.20	-0.74	0.00	-5.74	0.00	5.74	2,566.59	1,283.29	3,045.74	1,525.14	3.20	-0.20	0.005
141.22	-3.89	-0.69	0.00	-4.84	0.00	4.84	1,643.42	821.71	1,977.14	990.04	3.25	-0.20	0.007
145.00	-3.81	-0.68	0.00	-2.23	0.00	2.23	1,600.53	800.26	1,853.36	928.06	3.41	-0.21	0.005
146.00	-2.90	-0.52	0.00	-1.56	0.00	1.56	1,588.94	794.47	1,820.98	911.84	3.45	-0.21	0.004
148.00	-1.45	-0.26	0.00	-0.52	0.00	0.52	1,565.48	782.74	1,756.72	879.67	3.54	-0.21	0.002
150.00	0.00	0.00	0.00	0.00	0.00	0.00	1,541.62	770.81	1,693.16	847.84	3.63	-0.21	0.000
151.00	0.00	0.00	0.00	0.00	0.00	0.00	1,529.54	764.77	1,661.64	832.05	3.67	-0.21	0.000

Equivalent Modal Analysis Method

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	1.53
Redundancy Factor (p):	1.30

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
39	150.50	72	1.878	1.915	1.116	0.365	23	89
38	149.00	176	1.840	1.728	1.048	0.342	52	217
37	147.00	179	1.791	1.499	0.962	0.313	48	221
36	145.50	93	1.755	1.341	0.901	0.292	23	115
35	143.11	357	1.698	1.113	0.811	0.260	80	442
34	140.61	260	1.639	0.904	0.724	0.228	52	322
33	138.43	682	1.589	0.743	0.655	0.203	120	844
32	135.93	260	1.532	0.582	0.581	0.175	39	322
31	132.50	792	1.455	0.397	0.491	0.140	96	981
30	127.50	822	1.347	0.192	0.380	0.097	69	1,017
29	122.50	851	1.244	0.050	0.289	0.062	46	1,053
28	117.50	880	1.144	-0.041	0.215	0.035	26	1,089
27	112.50	909	1.049	-0.094	0.157	0.015	12	1,125
26	107.50	938	0.958	-0.118	0.111	0.003	2	1,161
25	102.50	967	0.871	-0.121	0.077	-0.003	-3	1,197
24	99.96	15	0.828	-0.117	0.062	-0.004	0	18
23	97.46	2,056	0.787	-0.109	0.050	-0.003	-5	2,545
22	94.55	387	0.741	-0.099	0.039	-0.001	0	479
21	92.05	1,059	0.702	-0.088	0.030	0.002	2	1,310
20	87.50	1,329	0.635	-0.065	0.019	0.008	10	1,646
19	82.50	1,368	0.564	-0.040	0.011	0.017	20	1,694
18	77.50	1,407	0.498	-0.015	0.007	0.025	31	1,742
17	72.50	1,446	0.436	0.006	0.006	0.032	41	1,790
16	67.50	1,485	0.378	0.025	0.007	0.038	49	1,838
15	62.50	1,524	0.324	0.040	0.010	0.041	54	1,886
14	57.50	1,563	0.274	0.051	0.015	0.043	58	1,934
13	54.37	403	0.245	0.056	0.018	0.043	15	498
12	51.87	2,258	0.223	0.060	0.020	0.043	84	2,795
11	48.14	2,297	0.192	0.064	0.024	0.043	85	2,843
10	45.64	416	0.173	0.066	0.027	0.042	15	514
9	42.50	1,653	0.150	0.068	0.030	0.041	59	2,045
8	37.50	1,691	0.117	0.070	0.035	0.040	58	2,094
7	32.50	1,730	0.088	0.071	0.039	0.038	57	2,142
6	27.50	1,769	0.063	0.072	0.041	0.036	56	2,190

5	22.50	1,808	0.042	0.070	0.042	0.035	54	2,238
4	17.50	1,847	0.025	0.067	0.040	0.032	51	2,286
3	12.50	1,886	0.013	0.059	0.034	0.028	46	2,334
2	7.50	1,925	0.005	0.044	0.025	0.021	35	2,383
1	2.50	1,964	0.001	0.018	0.010	0.009	16	2,431
Generic 48" x 4" Pan	150.00	120	1.865	1.851	1.093	0.357	37	149
Generic 48" x 6" Pan	150.00	40	1.865	1.851	1.093	0.357	12	50
Generic 48" x 12" Pa	150.00	90	1.865	1.851	1.093	0.357	28	111
Generic 48" x 12" x	150.00	140	1.865	1.851	1.093	0.357	43	173
VZW Unused Reserve (	150.00	1,226	1.865	1.851	1.093	0.357	380	1,517
Round Low Profile Pl	148.00	1,500	1.816	1.611	1.004	0.327	426	1,857
Generic SSB (27lb)	146.00	54	1.767	1.392	0.921	0.299	14	67
Generic RRU	146.00	225	1.767	1.392	0.921	0.299	58	278
Generic 96" x 12" Pa	146.00	405	1.767	1.392	0.921	0.299	105	501
Amphenol Antel LPA-7	146.00	48	1.767	1.392	0.921	0.299	12	59
Amphenol Antel LPA-8	146.00	152	1.767	1.392	0.921	0.299	39	188
Ericsson RRUS 8843 B	135.00	216	1.511	0.528	0.556	0.165	31	267
Ericsson RRUS 4478 B	135.00	180	1.511	0.528	0.556	0.165	26	222
Ericsson RRUS 4449 B	135.00	213	1.511	0.528	0.556	0.165	30	264
Ericsson AIR 6449 B7	135.00	245	1.511	0.528	0.556	0.165	35	303
Raycap DC9-48-60-24-	135.00	32	1.511	0.528	0.556	0.165	5	40
CCI DMP65R-BU8D	135.00	287	1.511	0.528	0.556	0.165	41	355
Generic Flat Light S	135.00	1,200	1.511	0.528	0.556	0.165	172	1,485
CCI TPA65R-BU8D	135.00	248	1.511	0.528	0.556	0.165	35	306
		50,144	61.352	32.512	24.682	8.105	3,106	62,066

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
39	150.50	72	1.878	1.915	1.116	0.365	23	62
38	149.00	176	1.840	1.728	1.048	0.342	52	151
37	147.00	179	1.791	1.499	0.962	0.313	48	154
36	145.50	93	1.755	1.341	0.901	0.292	23	80
35	143.11	357	1.698	1.113	0.811	0.260	80	308
34	140.61	260	1.639	0.904	0.724	0.228	52	225
33	138.43	682	1.589	0.743	0.655	0.203	120	588
32	135.93	260	1.532	0.582	0.581	0.175	39	224
31	132.50	792	1.455	0.397	0.491	0.140	96	683
30	127.50	822	1.347	0.192	0.380	0.097	69	708
29	122.50	851	1.244	0.050	0.289	0.062	46	734
28	117.50	880	1.144	-0.041	0.215	0.035	26	759
27	112.50	909	1.049	-0.094	0.157	0.015	12	784
26	107.50	938	0.958	-0.118	0.111	0.003	2	809
25	102.50	967	0.871	-0.121	0.077	-0.003	-3	834
24	99.96	15	0.828	-0.117	0.062	-0.004	0	13
23	97.46	2,056	0.787	-0.109	0.050	-0.003	-5	1,773
22	94.55	387	0.741	-0.099	0.039	-0.001	0	334
21	92.05	1,059	0.702	-0.088	0.030	0.002	2	913
20	87.50	1,329	0.635	-0.065	0.019	0.008	10	1,146
19	82.50	1,368	0.564	-0.040	0.011	0.017	20	1,180
18	77.50	1,407	0.498	-0.015	0.007	0.025	31	1,213
17	72.50	1,446	0.436	0.006	0.006	0.032	41	1,247
16	67.50	1,485	0.378	0.025	0.007	0.038	49	1,280
15	62.50	1,524	0.324	0.040	0.010	0.041	54	1,314
14	57.50	1,563	0.274	0.051	0.015	0.043	58	1,348
13	54.37	403	0.245	0.056	0.018	0.043	15	347
12	51.87	2,258	0.223	0.060	0.020	0.043	84	1,947
11	48.14	2,297	0.192	0.064	0.024	0.043	85	1,980

10	45.64	416	0.173	0.066	0.027	0.042	15	358
9	42.50	1,653	0.150	0.068	0.030	0.041	59	1,425
8	37.50	1,691	0.117	0.070	0.035	0.040	58	1,458
7	32.50	1,730	0.088	0.071	0.039	0.038	57	1,492
6	27.50	1,769	0.063	0.072	0.041	0.036	56	1,526
5	22.50	1,808	0.042	0.070	0.042	0.035	54	1,559
4	17.50	1,847	0.025	0.067	0.040	0.032	51	1,593
3	12.50	1,886	0.013	0.059	0.034	0.028	46	1,626
2	7.50	1,925	0.005	0.044	0.025	0.021	35	1,660
1	2.50	1,964	0.001	0.018	0.010	0.009	16	1,693
Generic 48" x 4" Pan	150.00	120	1.865	1.851	1.093	0.357	37	103
Generic 48" x 6" Pan	150.00	40	1.865	1.851	1.093	0.357	12	34
Generic 48" x 12" Pa	150.00	90	1.865	1.851	1.093	0.357	28	78
Generic 48" x 12" x	150.00	140	1.865	1.851	1.093	0.357	43	121
VZW Unused Reserve (	150.00	1,226	1.865	1.851	1.093	0.357	380	1,057
Round Low Profile Pl	148.00	1,500	1.816	1.611	1.004	0.327	426	1,293
Generic SSB (27lb)	146.00	54	1.767	1.392	0.921	0.299	14	47
Generic RRU	146.00	225	1.767	1.392	0.921	0.299	58	194
Generic 96" x 12" Pa	146.00	405	1.767	1.392	0.921	0.299	105	349
Amphenol Antel LPA-7	146.00	48	1.767	1.392	0.921	0.299	12	41
Amphenol Antel LPA-8	146.00	152	1.767	1.392	0.921	0.299	39	131
Ericsson RRUS 8843 B	135.00	216	1.511	0.528	0.556	0.165	31	186
Ericsson RRUS 4478 B	135.00	180	1.511	0.528	0.556	0.165	26	155
Ericsson RRUS 4449 B	135.00	213	1.511	0.528	0.556	0.165	30	184
Ericsson AIR 6449 B7	135.00	245	1.511	0.528	0.556	0.165	35	211
Raycap DC9-48-60-24-	135.00	32	1.511	0.528	0.556	0.165	5	28
CCI DMP65R-BU8D	135.00	287	1.511	0.528	0.556	0.165	41	248
Generic Flat Light S	135.00	1,200	1.511	0.528	0.556	0.165	172	1,035
CCI TPA65R-BU8D	135.00	248	1.511	0.528	0.556	0.165	35	213
		50,144	61.352	32.512	24.682	8.105	3,106	43,236

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

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	-59.64	-3.09	0.00	-358.43	0.00	358.43	7,216.29	3,608.15	20,023.14	10,026.4	0.00	0.00	0.044
5.00	-57.25	-3.07	0.00	-342.96	0.00	342.96	7,118.62	3,559.31	19,327.35	9,678.04	0.00	-0.01	0.043
10.00	-54.92	-3.03	0.00	-327.62	0.00	327.62	7,018.49	3,509.25	18,636.69	9,332.20	0.02	-0.02	0.043
15.00	-52.63	-2.98	0.00	-312.48	0.00	312.48	6,915.90	3,457.95	17,951.60	8,989.14	0.04	-0.02	0.042
20.00	-50.39	-2.94	0.00	-297.55	0.00	297.55	6,810.85	3,405.43	17,272.51	8,649.09	0.07	-0.03	0.042
25.00	-48.20	-2.89	0.00	-282.87	0.00	282.87	6,703.34	3,351.67	16,599.86	8,312.27	0.11	-0.04	0.041
30.00	-46.06	-2.84	0.00	-268.43	0.00	268.43	6,593.37	3,296.69	15,934.11	7,978.90	0.16	-0.05	0.041
35.00	-43.97	-2.78	0.00	-254.25	0.00	254.25	6,480.94	3,240.47	15,275.68	7,649.19	0.22	-0.06	0.040
40.00	-41.92	-2.73	0.00	-240.34	0.00	240.34	6,366.05	3,183.02	14,625.01	7,323.38	0.28	-0.07	0.039
45.00	-41.41	-2.72	0.00	-226.70	0.00	226.70	6,248.70	3,124.35	13,982.56	7,001.67	0.36	-0.08	0.039
46.28	-38.56	-2.63	0.00	-223.23	0.00	223.23	6,218.35	3,109.18	13,819.95	6,920.25	0.38	-0.08	0.038
50.00	-35.77	-2.55	0.00	-213.43	0.00	213.43	6,128.89	3,064.44	13,348.75	6,684.30	0.45	-0.09	0.038
53.73	-35.27	-2.53	0.00	-203.93	0.00	203.93	6,122.55	3,061.27	13,315.81	6,667.80	0.52	-0.10	0.036
55.00	-33.33	-2.48	0.00	-200.72	0.00	200.72	6,091.73	3,045.87	13,156.59	6,588.07	0.55	-0.10	0.036
60.00	-31.45	-2.42	0.00	-188.33	0.00	188.33	5,968.71	2,984.35	12,534.74	6,276.69	0.66	-0.11	0.035
65.00	-29.61	-2.38	0.00	-176.21	0.00	176.21	5,843.22	2,921.61	11,922.56	5,970.14	0.78	-0.12	0.035
70.00	-27.82	-2.34	0.00	-164.33	0.00	164.33	5,697.45	2,848.72	11,285.15	5,650.96	0.90	-0.13	0.034
75.00	-26.08	-2.31	0.00	-152.65	0.00	152.65	5,527.55	2,763.78	10,618.82	5,317.30	1.04	-0.14	0.033
80.00	-24.38	-2.29	0.00	-141.11	0.00	141.11	5,357.66	2,678.83	9,972.76	4,993.79	1.19	-0.15	0.033
85.00	-22.74	-2.28	0.00	-129.68	0.00	129.68	5,187.77	2,593.89	9,346.98	4,680.44	1.35	-0.16	0.032
90.00	-21.43	-2.28	0.00	-118.29	0.00	118.29	5,017.88	2,508.94	8,741.48	4,377.24	1.52	-0.17	0.031
94.09	-20.95	-2.28	0.00	-108.99	0.00	108.99	4,878.88	2,439.44	8,261.16	4,136.72	1.67	-0.18	0.031
95.00	-18.40	-2.28	0.00	-106.92	0.00	106.92	4,847.98	2,423.99	8,156.25	4,084.19	1.70	-0.18	0.030
99.92	-18.38	-2.28	0.00	-95.71	0.00	95.71	3,494.98	1,747.49	5,818.92	2,913.79	1.89	-0.19	0.038
100.00	-17.19	-2.28	0.00	-95.54	0.00	95.54	3,493.62	1,746.81	5,813.50	2,911.07	1.90	-0.19	0.038
105.00	-16.02	-2.28	0.00	-84.15	0.00	84.15	3,402.87	1,701.43	5,459.44	2,733.78	2.10	-0.20	0.035
110.00	-14.90	-2.26	0.00	-72.78	0.00	72.78	3,309.66	1,654.83	5,112.41	2,560.00	2.32	-0.21	0.033
115.00	-13.81	-2.23	0.00	-61.47	0.00	61.47	3,203.68	1,601.84	4,757.55	2,382.31	2.55	-0.23	0.030
120.00	-12.75	-2.19	0.00	-50.29	0.00	50.29	3,076.27	1,538.13	4,384.77	2,195.65	2.79	-0.24	0.027
125.00	-11.74	-2.12	0.00	-39.36	0.00	39.36	2,948.85	1,474.42	4,027.21	2,016.60	3.05	-0.25	0.023
130.00	-10.76	-2.02	0.00	-28.78	0.00	28.78	2,821.43	1,410.71	3,684.84	1,845.16	3.31	-0.26	0.019
135.00	-7.19	-1.59	0.00	-18.70	0.00	18.70	2,694.01	1,347.00	3,357.69	1,681.34	3.58	-0.26	0.014
136.87	-6.35	-1.46	0.00	-15.74	0.00	15.74	2,646.44	1,323.22	3,239.45	1,622.13	3.69	-0.26	0.012
140.00	-6.03	-1.41	0.00	-11.15	0.00	11.15	2,566.59	1,283.29	3,045.74	1,525.14	3.86	-0.27	0.010
141.22	-5.59	-1.33	0.00	-9.43	0.00	9.43	1,643.42	821.71	1,977.14	990.04	3.93	-0.27	0.013
145.00	-5.47	-1.30	0.00	-4.41	0.00	4.41	1,600.53	800.26	1,853.36	928.06	4.14	-0.27	0.008
146.00	-4.16	-1.02	0.00	-3.11	0.00	3.11	1,588.94	794.47	1,820.98	911.84	4.20	-0.27	0.006
148.00	-2.09	-0.53	0.00	-1.07	0.00	1.07	1,565.48	782.74	1,756.72	879.67	4.32	-0.27	0.003
150.00	0.00	0.00	0.00	0.00	0.00	0.00	1,541.62	770.81	1,693.16	847.84	4.43	-0.27	0.000
151.00	0.00	0.00	0.00	0.00	0.00	0.00	1,529.54	764.77	1,661.64	832.05	4.49	-0.27	0.000

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

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	-41.54	-3.09	0.00	-356.23	0.00	356.23	7,216.29	3,608.15	20,023.14	10,026.4	0.00	0.00	0.041
5.00	-39.88	-3.06	0.00	-340.77	0.00	340.77	7,118.62	3,559.31	19,327.35	9,678.04	0.00	-0.01	0.041
10.00	-38.26	-3.02	0.00	-325.45	0.00	325.45	7,018.49	3,509.25	18,636.69	9,332.20	0.02	-0.02	0.040
15.00	-36.66	-2.98	0.00	-310.33	0.00	310.33	6,915.90	3,457.95	17,951.60	8,989.14	0.04	-0.02	0.040
20.00	-35.10	-2.93	0.00	-295.45	0.00	295.45	6,810.85	3,405.43	17,272.51	8,649.09	0.07	-0.03	0.039
25.00	-33.58	-2.88	0.00	-280.82	0.00	280.82	6,703.34	3,351.67	16,599.86	8,312.27	0.11	-0.04	0.039
30.00	-32.08	-2.82	0.00	-266.44	0.00	266.44	6,593.37	3,296.69	15,934.11	7,978.90	0.16	-0.05	0.038
35.00	-30.63	-2.77	0.00	-252.33	0.00	252.33	6,480.94	3,240.47	15,275.68	7,649.19	0.22	-0.06	0.038
40.00	-29.20	-2.71	0.00	-238.49	0.00	238.49	6,366.05	3,183.02	14,625.01	7,323.38	0.28	-0.07	0.037
45.00	-28.84	-2.70	0.00	-224.94	0.00	224.94	6,248.70	3,124.35	13,982.56	7,001.67	0.36	-0.08	0.037
46.28	-26.86	-2.61	0.00	-221.49	0.00	221.49	6,218.35	3,109.18	13,819.95	6,920.25	0.38	-0.08	0.036
50.00	-24.91	-2.53	0.00	-211.76	0.00	211.76	6,128.89	3,064.44	13,348.75	6,684.30	0.45	-0.09	0.036
53.73	-24.57	-2.52	0.00	-202.32	0.00	202.32	6,122.55	3,061.27	13,315.81	6,667.80	0.52	-0.10	0.034
55.00	-23.22	-2.46	0.00	-199.13	0.00	199.13	6,091.73	3,045.87	13,156.59	6,588.07	0.54	-0.10	0.034
60.00	-21.91	-2.40	0.00	-186.84	0.00	186.84	5,968.71	2,984.35	12,534.74	6,276.69	0.65	-0.11	0.033
65.00	-20.62	-2.36	0.00	-174.82	0.00	174.82	5,843.22	2,921.61	11,922.56	5,970.14	0.77	-0.12	0.033
70.00	-19.38	-2.32	0.00	-163.03	0.00	163.03	5,697.45	2,848.72	11,285.15	5,650.96	0.90	-0.13	0.032
75.00	-18.16	-2.29	0.00	-151.45	0.00	151.45	5,527.55	2,763.78	10,618.82	5,317.30	1.04	-0.14	0.032
80.00	-16.98	-2.27	0.00	-140.01	0.00	140.01	5,357.66	2,678.83	9,972.76	4,993.79	1.18	-0.15	0.031
85.00	-15.84	-2.26	0.00	-128.68	0.00	128.68	5,187.77	2,593.89	9,346.98	4,680.44	1.34	-0.16	0.031
90.00	-14.92	-2.26	0.00	-117.39	0.00	117.39	5,017.88	2,508.94	8,741.48	4,377.24	1.51	-0.17	0.030
94.09	-14.59	-2.26	0.00	-108.17	0.00	108.17	4,878.88	2,439.44	8,261.16	4,136.72	1.66	-0.18	0.029
95.00	-12.82	-2.26	0.00	-106.12	0.00	106.12	4,847.98	2,423.99	8,156.25	4,084.19	1.69	-0.18	0.029
99.92	-12.80	-2.26	0.00	-95.00	0.00	95.00	3,494.98	1,747.49	5,818.92	2,913.79	1.88	-0.19	0.036
100.00	-11.97	-2.26	0.00	-94.83	0.00	94.83	3,493.62	1,746.81	5,813.50	2,911.07	1.88	-0.19	0.036
105.00	-11.16	-2.26	0.00	-83.53	0.00	83.53	3,402.87	1,701.43	5,459.44	2,733.78	2.09	-0.20	0.034
110.00	-10.38	-2.24	0.00	-72.25	0.00	72.25	3,309.66	1,654.83	5,112.41	2,560.00	2.30	-0.21	0.031
115.00	-9.62	-2.22	0.00	-61.03	0.00	61.03	3,203.68	1,601.84	4,757.55	2,382.31	2.53	-0.22	0.029
120.00	-8.88	-2.17	0.00	-49.94	0.00	49.94	3,076.27	1,538.13	4,384.77	2,195.65	2.77	-0.24	0.026
125.00	-8.17	-2.10	0.00	-39.09	0.00	39.09	2,948.85	1,474.42	4,027.21	2,016.60	3.03	-0.25	0.022
130.00	-7.49	-2.00	0.00	-28.59	0.00	28.59	2,821.43	1,410.71	3,684.84	1,845.16	3.29	-0.25	0.018
135.00	-5.01	-1.58	0.00	-18.58	0.00	18.58	2,694.01	1,347.00	3,357.69	1,681.34	3.56	-0.26	0.013
136.87	-4.42	-1.45	0.00	-15.64	0.00	15.64	2,646.44	1,323.22	3,239.45	1,622.13	3.66	-0.26	0.011
140.00	-4.20	-1.40	0.00	-11.08	0.00	11.08	2,566.59	1,283.29	3,045.74	1,525.14	3.83	-0.27	0.009
141.22	-3.89	-1.32	0.00	-9.37	0.00	9.37	1,643.42	821.71	1,977.14	990.04	3.90	-0.27	0.012
145.00	-3.81	-1.30	0.00	-4.39	0.00	4.39	1,600.53	800.26	1,853.36	928.06	4.11	-0.27	0.007
146.00	-2.90	-1.01	0.00	-3.09	0.00	3.09	1,588.94	794.47	1,820.98	911.84	4.17	-0.27	0.005
148.00	-1.45	-0.53	0.00	-1.06	0.00	1.06	1,565.48	782.74	1,756.72	879.67	4.28	-0.27	0.002
150.00	0.00	0.00	0.00	0.00	0.00	0.00	1,541.62	770.81	1,693.16	847.84	4.40	-0.27	0.000
151.00	0.00	0.00	0.00	0.00	0.00	0.00	1,529.54	764.77	1,661.64	832.05	4.45	-0.27	0.000

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 + 1.6W	24.02	0.00	60.16	0.00	0.00	2621.68	0.00	0.27
0.9D + 1.6W	24.01	0.00	45.12	0.00	0.00	2608.42	0.00	0.27
1.2D + 1.0Di + 1.0Wi	7.80	0.00	92.48	0.00	0.00	836.42	0.00	0.10
(1.2 + 0.2Sds) * DL + E ELFM	2.96	0.00	59.64	0.00	0.00	329.63	0.00	0.04
(1.2 + 0.2Sds) * DL + E EMAM	3.09	0.00	59.64	0.00	0.00	358.43	0.00	0.04
(0.9 - 0.2Sds) * DL + E ELFM	2.96	0.00	41.54	0.00	0.00	327.76	0.00	0.04
(0.9 - 0.2Sds) * DL + E EMAM	3.09	0.00	41.54	0.00	0.00	356.23	0.00	0.04
1.0D + 1.0W	5.59	0.00	50.14	0.00	0.00	608.18	0.00	0.07

Base Plate & Anchor Rod Analysis

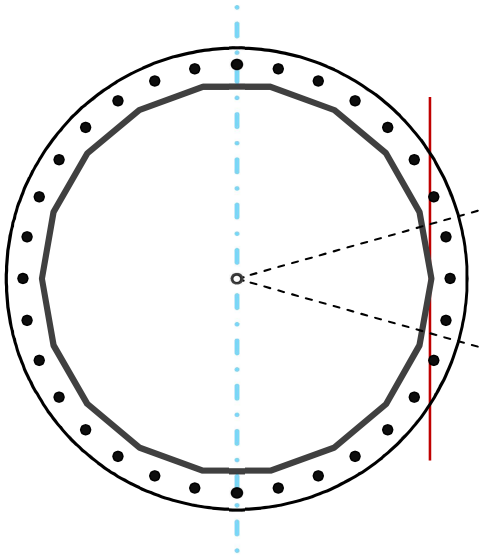
Pole Dimensions		
Number of Sides	18	-
Diameter	68	in
Thickness	1/2	in
Orientation Offset		°

Base Reactions		
Moment, Mu	2,621.7	k-ft
Axial, Pu	60.2	k
Shear, Vu	24.0	k
Neutral Axis	270	°

Report Capacities		
Component	Capacity	Result
Base Plate	10%	Pass
Anchor Rods	21%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, ø	82	in
Thickness	3 1/4	in
Grade	A572-60	
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	N/A	in
Orientation Offset		°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	363.4	k
Bending Stress, ϕMn	3505.7	k

Original Anchor Rods		
Arrangement	Radial	-
Quantity	32	-
Diameter, ø	2 1/4	in
Bolt Circle	76	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	7.5	in
Orientation Offset		°
Applied Force, Pu	55.3	k
Anchor Rods, ϕPn	259.8	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	24.0	2621.7	1.00
Anchor Rod Forces	24.0	2621.7	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	105.4913	5.8606	0.4902		60089.40
Bolt	3.9761	3.2477	0.8393	4.5	70445.09
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Round	-
Diameter, D	82	in
Thickness, t	3.25	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Base Plate Chord	45.826	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	32	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	76	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	55.3	k
Applied Shear, Vu	0.2	k
Compressive Capacity, ϕPn	259.8	k
Tensile Capacity, ϕRnt	0.213	OK
Interaction Capacity	0.215	OK

External Base Plate		
Chord Length AA	38.784	in
Additional AA	6.000	in
Section Modulus, Z	118.257	in^3
Applied Moment, Mu	363.4	k-ft
Bending Capacity, ϕMn	6385.9	k-ft
Capacity, Mu/ϕMn	0.057	OK
Chord Length AB	36.870	in
Additional AB	6.000	in
Section Modulus, Z	113.202	in^3
Applied Moment, Mu	277.2	k-ft
Bending Capacity, ϕMn	6112.9	k-ft
Capacity, Mu/ϕMn	0.045	OK
Bend Line Length	24.585	in
Additional Bend Line	0.000	in
Section Modulus, Z	64.921	in^3
Applied Moment, Mu	363.4	k-ft
Bending Capacity, ϕMn	3505.7	k-ft
Capacity, Mu/ϕMn	0.104	OK

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in^3
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

Exhibit 4

Antenna Mount Analysis Report

AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by

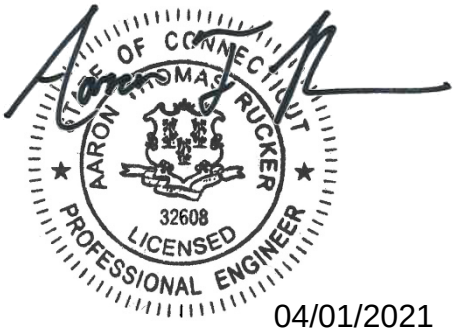
TOWER ENGINEERING PROFESSIONALS

Antenna Mount Analysis Report

ATC Site Name	:	**411186**
ATC Site Number	:	**West Granby, CT**
Engineering Number	:	**13626835_C8_01**
Mount Elevation	:	**135 ft**
Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**MRCTB050155**
Carrier Site Number	:	**CT2393S**
Site Location	:	**49 Upper Meadow** **Granby, CT 06035** **41.953300, -72.929800**
County	:	**Hartford**
Date	:	**April 1, 2021**
Max Usage	:	**46%**
Result	:	**Pass**

Prepared By:
Pedro Lopez
TEP No. 68991.516108

Reviewed By:



04/01/2021

Table of Contents

Introduction

The purpose of this report is to summarize results of the antenna mount analysis performed for AT&T Mobility at 257 ft.

Supporting Documents

Spec. Sheet	Spec Sheet for Sabre C10857801C
RFDS	RFDS dated March 5, 2021
Photos	Site photos from 2018

Analysis

This antenna mount was analyzed using RISA-3D v17 analysis software

Basic Wind Speed:	115 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.5-inch radial ice
Codes:	ANSI/TIA-222-H/ 2018 IBC
Risk Category:	II
Exposure Category:	B
Topographic Category:	Method 2
Kzt:	1.000
Spectral Response:	Ss = , S_1 = [s_1]
Site Class:	D – Stiff Soil
Live Loads:	Lm = 500 lbs, Lv = 250 lbs

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above. The mount can support the equipment as described in this report. If the load differs from that described in this report or the provisions of this analysis are found to be invalid, another structural analysis should be performed.

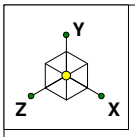
If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Antenna Loading

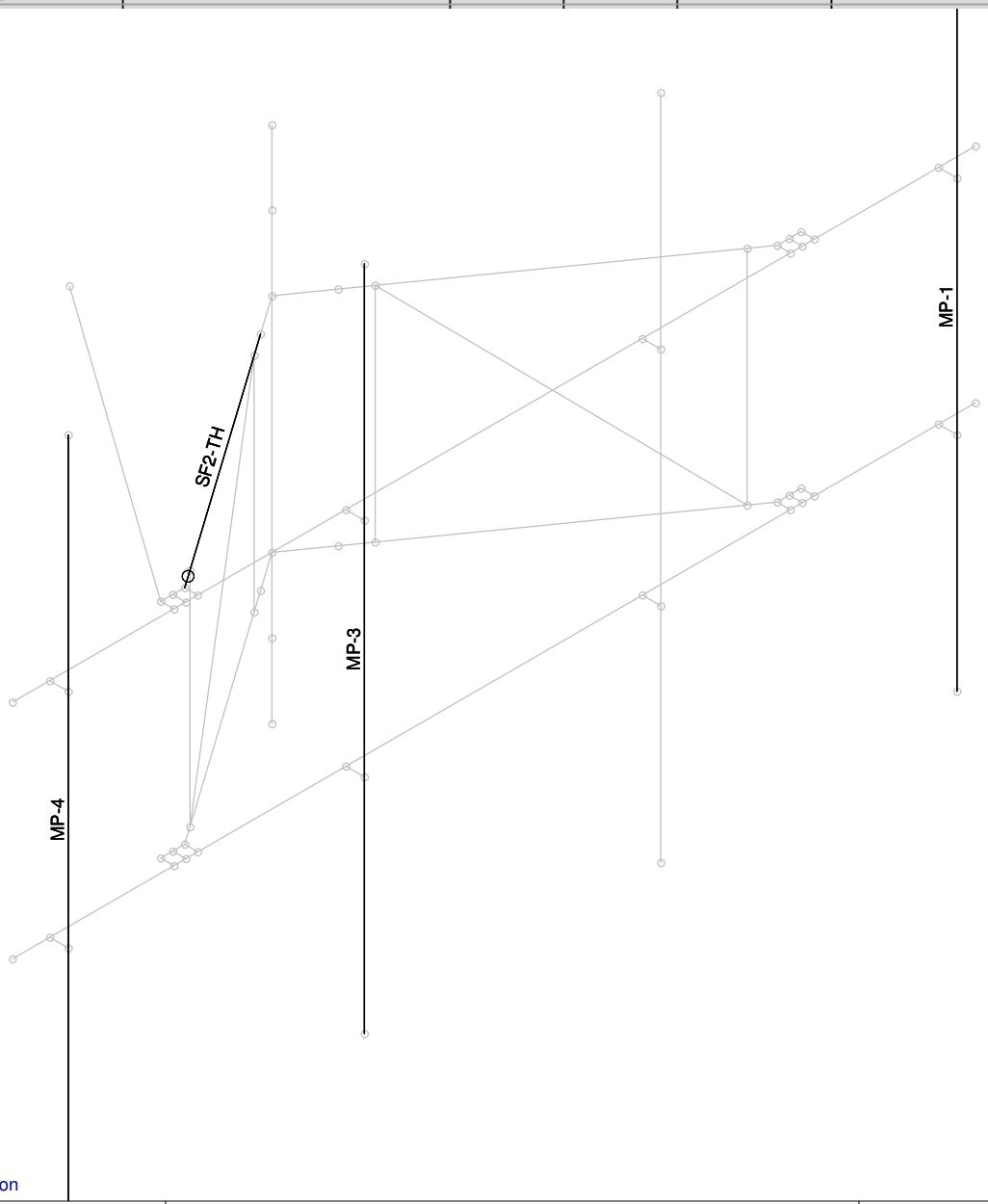
Mount Centerline (ft)	Antenna Centerline (ft)	Qty	Antenna Model
135.0	135.0	3	CCI TPA65R-BU8D
		3	CCI DMP65R-BU8D
		3	Ericsson AIR 6449 B77D
		3	Ericsson RRUS 4449 B5/B12
		3	Ericsson RRUS 4478 B14
		3	Ericsson RRUS 8843 B2/B66A
		2	Raycap DC9-48-60-24-8C-EV

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Horizontals	23%	Pass
Verticals	24%	Pass
Diagonals	14%	Pass
Tie-Backs	7%	Pass
Mount Pipes	46%	Pass



MFR	Model	Qty	Shape	Member Label	Location #1 (ft,%)	Location #2 (ft,%)
CCI ANTENNAS	TPA65R-BU8D	1	Flat	MP-1	0.50	7.50
Ericsson	RRUS 4478 B14	1	Flat	MP-1	2.00	
Ericsson	AIR 6449 B77D	1	Flat	MP-3	2.00	4.50
CCI ANTENNAS	DMP65R-BU8D	1	Flat	MP-4	0.50	7.50
Ericsson	RRUS 4449 B5/B12	1	Flat	MP-4	2.00	
Ericsson	RRUS 8843 B2/B66A	1	Flat	MP-4	2.00	
Raycap	DC9-48-60-24-8C-EV	1	Flat	SF2-TH	1.00	



Envelope Only Solution

Tower Engineering Profes...	411186 - West Granby, CT	SK - 3
PAL		Apr 1, 2021 at 3:44 PM
TEP No. 68991.516108		Mount Rev H.r3d

Standard Conditions

All engineering services performed by TEP 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 TEP

It is the responsibility of the client to ensure that the information provided to TEP and used in the performance of our engineering services is correct and complete.

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

TEP assumes that the mount has been maintained in accordance with the manufacturer's specification.

TEP assumes that all mount components are in sufficient condition to carry their full design capacity for this analysis.

Serviceability with respect to antenna twist, tilt, roll, or lateral translation, is not checked and is left to the carrier or tower owner to ensure conformance.

All material grades used for this analysis, unless verified by mount manufacturer design, were assumed per AISC Table 2-4, 15th Edition. See RISA 3-D output for confirmation on grades used in this analysis.

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

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

Exhibit 5

NIER Study Report

NIER Study Report

SITE NAME:

411186 West Granby CT

LOCATION:

Granby, Connecticut

COMPANY:

American Tower
Woburn, Massachusetts

April 8th, 2021

Contents

Disclaimer Notice

This work is based upon our best interpretation of available information. However, these data and their interpretation are constantly changing. Therefore, we do not warrant that any undertaking based on this report will be successful, or that others will not require further research or actions in support of this proposal or future undertaking. In the event of errors, our liability is strictly limited to replacement of this document with a corrected one. Liability for consequential damages is specifically disclaimed. Any use of this document constitutes an agreement to hold Tower Engineering Professionals and its employees harmless and indemnify it for all liability, claims, demands, and litigation expenses and attorney's fees arising out of such use.

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NIER STUDY REPORT

411186 West Granby CT

Granby, Connecticut

INTRODUCTION

Tower Engineering Professionals (TEP) has been retained by American Tower (ATC) of Woburn, Massachusetts to evaluate the RF emissions of an existing tower at this location.

SITE AND FACILITY CONSIDERATIONS

Site West Granby CT is located at 49 Upper Meadow in Granby, CT at coordinates 41.953300, -72.829842. The support structure is a 150' monopole. The installation consists of two antenna levels with radiation centers of 150' &135' above ground level. All antennae will have a radiation center as described above. All data used in this study was provided by one or more of the following sources:

1. ATC furnished data
2. Compiled from carrier and manufacturer standard configurations
3. Empirical data collected by TEP

A topographic map of the study area is located in Appendix 1. A satellite view of the study area is located in Appendix 2.

POWER DENSITY CALCULATIONS

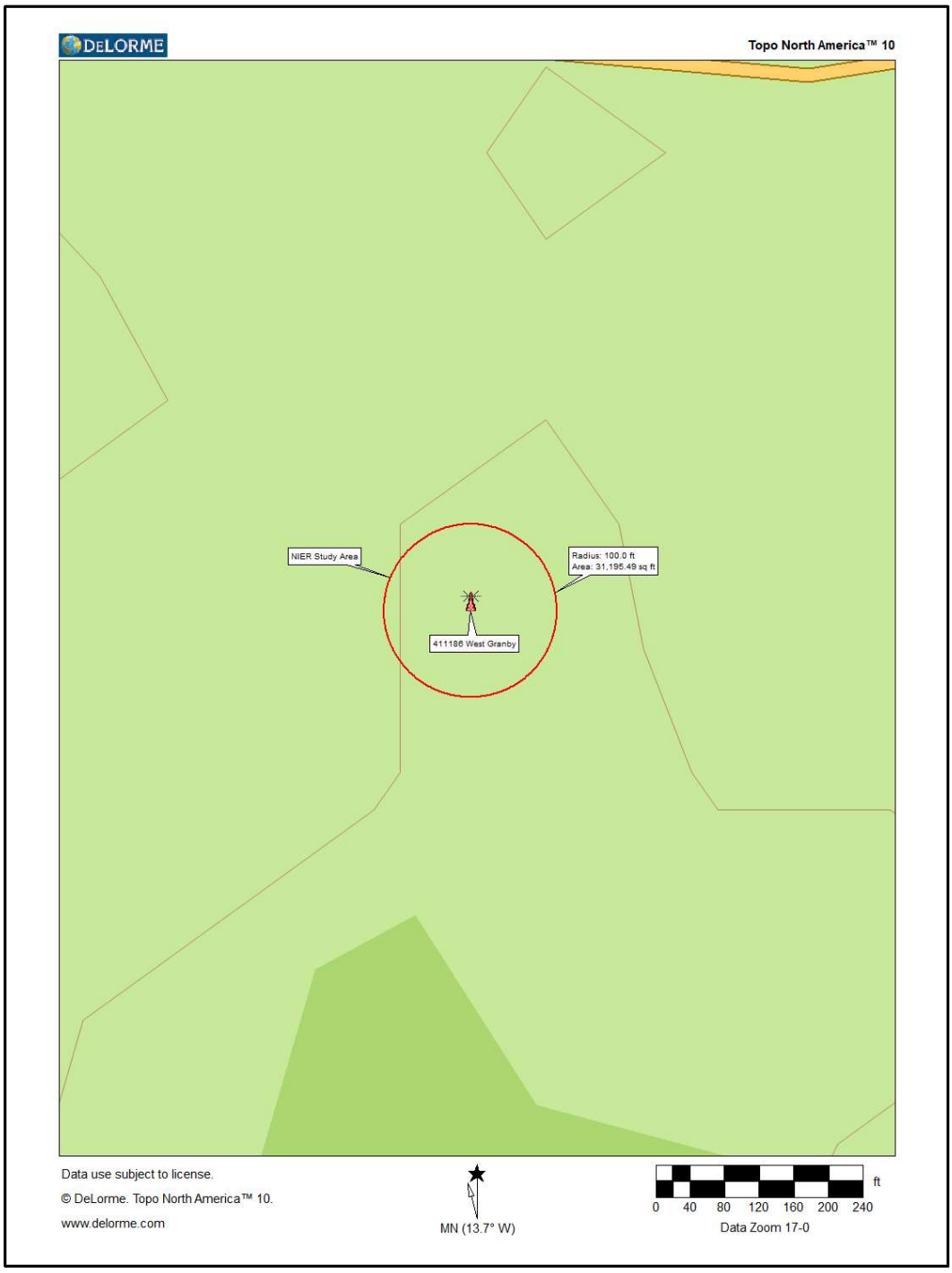
Graphs of the power density at different distances from the transmitter, compared to FCC MPE general population and occupational limits, may be seen in Appendix 3. These limits are based upon the Information Relating to MPE Standards found in Appendix 5. Study methodology may be seen in Appendix 6, which describes the Non-Ionizing Radiation Prediction Models. Approximate radiation patterns may be found in Appendix 4. This site ***IS*** in compliance with FCC OET-65 MPE limits.

April 8th, 2021

Michael W. Hayden NCE CPBE CBNT AMD CPI
Director, RF Design & Services
Tower Engineering Professionals

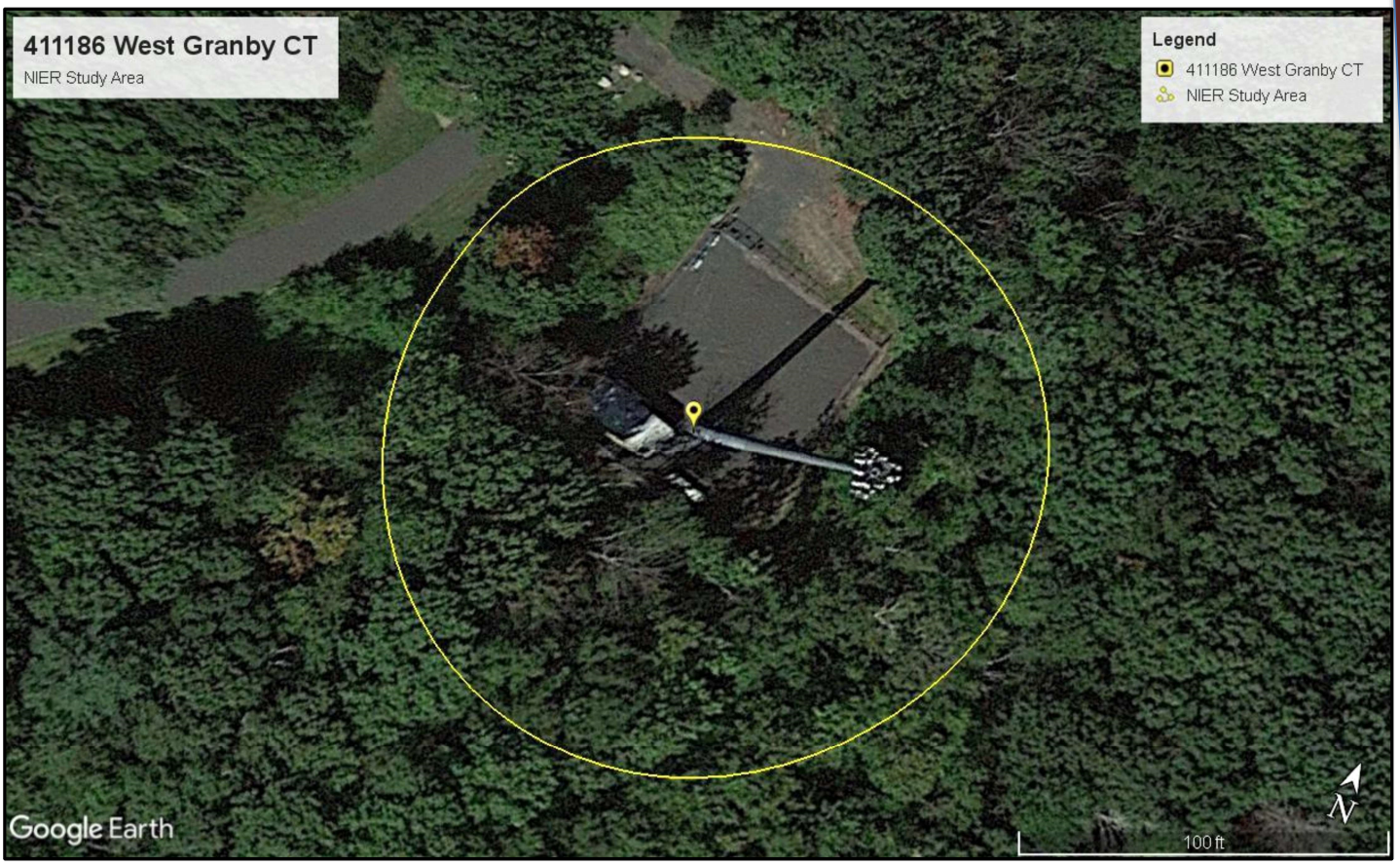
TOWER ENGINEERING PROFESSIONALS

APPENDIX 1 Topographic Map

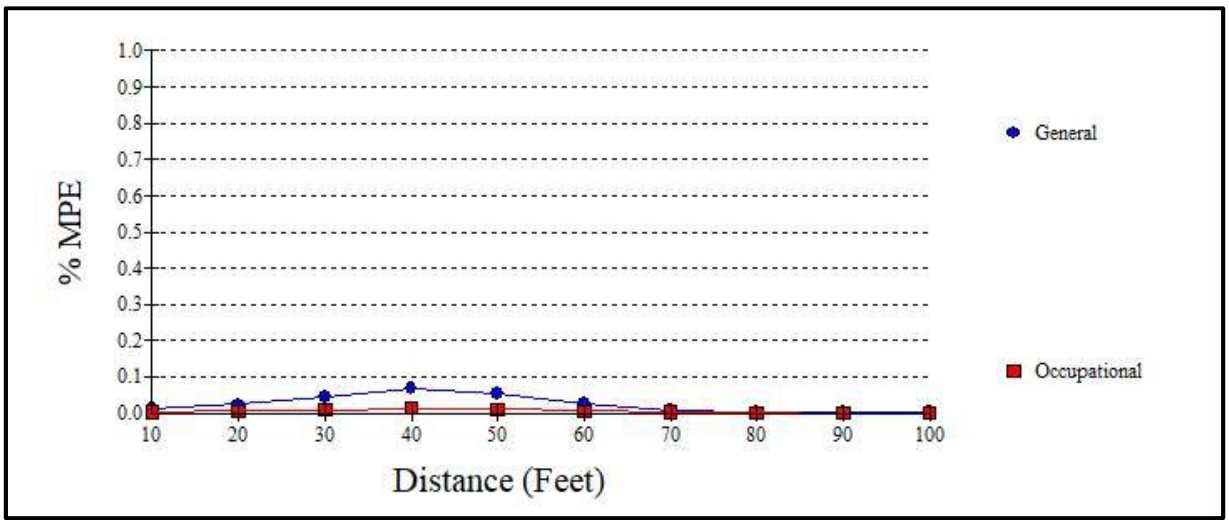


TOWER ENGINEERING PROFESSIONALS

APPENDIX 2 Satellite Photo

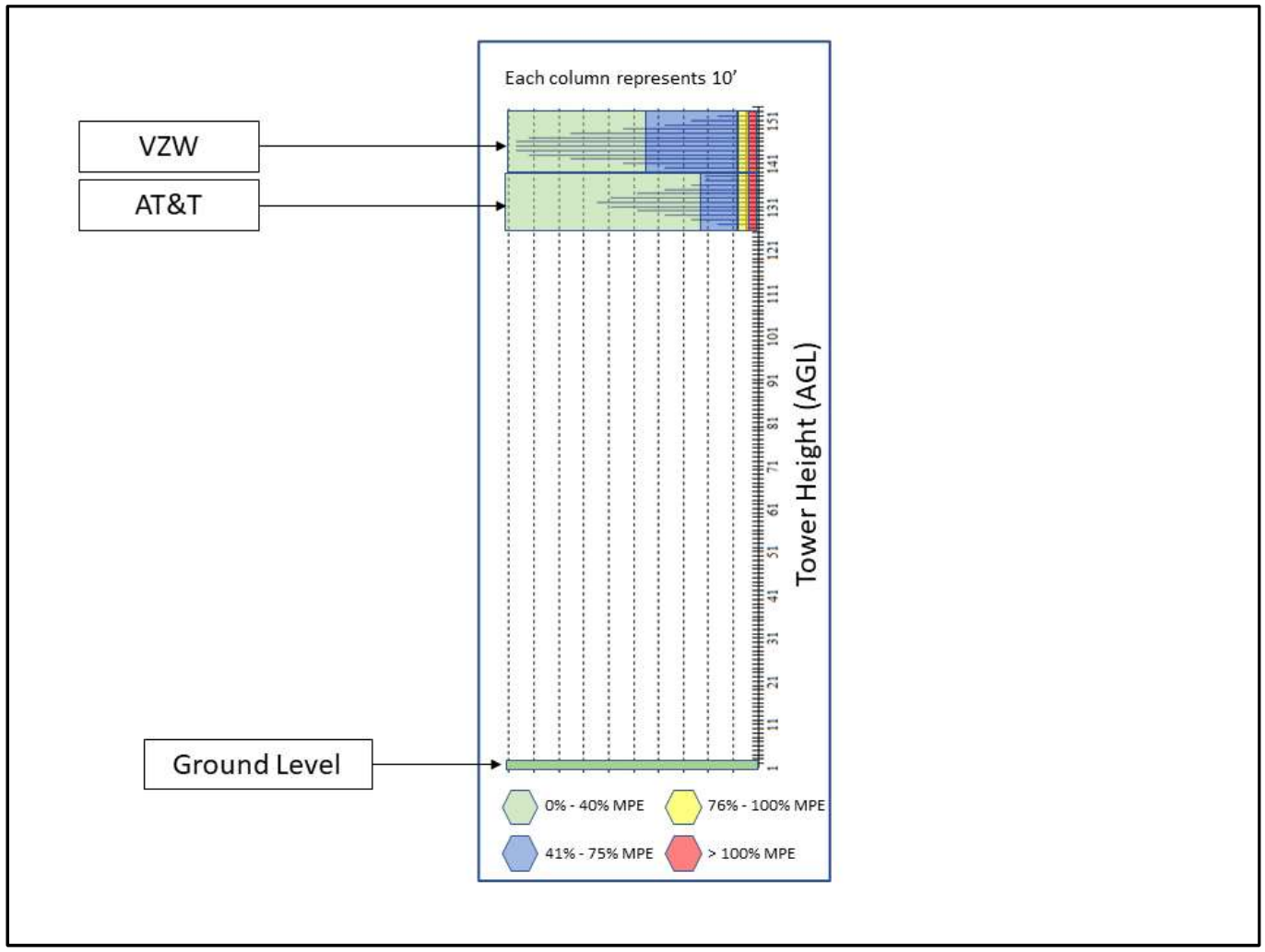


APPENDIX 3 FCC OET-65 MPE Limit Study



Maximum Power Density (@40'):	0.0007 mW/cm²
General Population MPE (@40'):	0.07%
Occupational MPE (@40'):	0.01%

APPENDIX 4 Tower Radiation Patterns



APPENDIX 5 Information Pertaining to MPE Studies

In 1985, the FCC first adopted guidelines to be used for evaluating human exposure to RF emissions. The FCC revised and updated these guidelines on August 1, 1996, as a result of a rule-making proceeding initiated in 1993. The new guidelines incorporate limits for Maximum Permissible Exposure (MPE) in terms of electric and magnetic field strength and power density for transmitters operating at frequencies between 300 kHz and 100 GHz.

The FCC's MPE limits are based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP) and, over a wide range of frequencies, the exposure limits were developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI) to replace the 1982 ANSI guidelines. Limits for localized absorption are based on recommendations of both ANSI/IEEE and NCRP.

The FCC's limits, and the NCRP and ANSI/IEEE limits on which they are based, are derived from exposure criteria quantified in terms of specific absorption rate (SAR). The basis for these limits is a whole-body averaged SAR threshold level of 4 watts per kilogram (4 W/kg), as averaged over the entire mass of the body, above which expert organizations have determined that potentially hazardous exposures may occur. The MPE limits are derived by incorporating safety factors that lead, in some cases, to limits that are more conservative than the limits originally adopted by the FCC in 1985. Where more conservative limits exist, they do not arise from a fundamental change in the RF safety criteria for whole-body averaged SAR, but from a precautionary desire to protect subgroups of the general population who, potentially, may be more at risk.

The FCC exposure limits are also based on data showing that the human body absorbs RF energy at some frequencies more efficiently than at others. The most restrictive limits occur in the frequency range of 30-300 MHz where whole-body absorption of RF energy by human beings is most efficient. At other frequencies, whole-body absorption is less efficient, and consequently, the MPE limits are less restrictive.

MPE limits are defined in terms of power density (units of milliwatts per centimeter squared: mW/cm^2), electric field strength (units of volts per meter: V/m) and magnetic field strength (units of amperes per meter: A/m). The far-field of a transmitting antenna is where the electric field vector (E), the magnetic field vector (H), and the direction of propagation can be considered to be all mutually orthogonal ("plane-wave" conditions).

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.

General population/uncontrolled exposure limits apply to situations in which the general public 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 public 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. Additional details can be found in FCC OET 65.

APPENDIX 6 MPE Standards Methodology

This study predicts RF field strength and power density levels that emanate from communications system antennae. It considers all transmitter power levels (less filter and line losses) delivered to each active transmitting antenna at the communications site. Calculations are performed to determine power density and MPE levels for each antenna as well as composite levels from all antennas. The calculated levels are based on where a human (Observer) would be standing at various locations at the site. The point of interest where the MPE level is predicted is based on the height of the Observer.

Compliance with the FCC limits on RF emissions are determined by spatially averaging a person's exposure over the projected area of an adult human body, that is approximately six-feet or two-meters, as defined in the ANSI/IEEE C95.1 standard. The MPE limits are specified as time-averaged exposure limits. This means that exposure is averaged over an identifiable time interval. It is 30 minutes for the general population/uncontrolled RF environment and 6 minutes for the occupational/controlled RF environment. However, in the case of the general public, time averaging should not be applied because the general public is typically not aware of RF exposure and they do not have control of their exposure time. Therefore, it should be assumed that any RF exposure to the general public will be continuous.

The FCC's limits for exposure at different frequencies are shown in the following Tables.

Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)**
0.3 - 3.0	614	1.63	100*	6
3.0 - 30	1842/f	4.89/f	$900/F^2$	6
30 - 300	61.4	0.163	1.0	6
300 - 1500	--	--	f/300	6
1500 - 100,000	--	--	5	6

f = frequency

* = Plane-wave equivalent power density

Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)**
0.3 - 1.34	614	1.63	100*	30
1.34 - 30	824/f	2.19/f	$180/F^2$	30
30 -300	27.5	0.073	0.2	30
300 -1500	--	--	f/1500	30
1500 -100,000	--	--	1.0	30

f = frequency
* = Plane-wave equivalent power density

General population/uncontrolled exposures apply in situations in which the general public may be exposed or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

It is important to understand that these limits apply cumulatively to all sources of RF emissions affecting a given area. For example, if several different communications system antennas occupy a shared facility such as a tower or rooftop, then the total exposure from all systems at the facility must be within compliance of the FCC guidelines.

The field strength emanating from an antenna can be estimated based on the characteristics of an antenna radiating in free space. There are basically two field areas associated with a radiating antenna. When close to the antenna, the region is known as the Near Field. Within this region, the characteristics of the RF fields are very complex and the wave front is extremely curved. As you move further from the antenna, the wave front has less curvature and becomes planar. The wave front still has a curvature but it appears to occupy a flat plane in space (plane-wave radiation). This region is known as the Far Field.

Two models are utilized to predict Near and Far field power densities. They are based on the formulae in FCC OET 65. As this study is concerned only with Near Field calculations, we will only describe the model used for this study. For additional details, refer to FCC OET Bulletin 65.

Cylindrical Model (Near Field Predictions)

Spatially averaged plane-wave equivalent power densities parallel to the antenna may be estimated by dividing the antenna input power by the surface area of an imaginary cylinder surrounding the length of the radiating antenna. While the actual power density will vary along the height of the antenna, the average value along its length will closely follow the relation given by the following equation:

$$S = P \div 2\pi RL$$

Where:
S = Power Density
P = Total Power into antenna
R = Distance from the antenna
L = Antenna aperture length

For directional-type antennas, power densities can be estimated by dividing the input power by that portion of a cylindrical surface area corresponding to the angular beam width of the antenna. For example, for the case of a 120-degree azimuthal beam width, the surface area should correspond to 1/3 that of a full cylinder. This would increase the power density near the antenna by a factor of three over that for a purely omni-directional antenna. Mathematically, this can be represented by the following formula:

$$S = (180 / \theta_{BW}) P \div \pi RL$$

Where:
S = Power Density
θ_{BW} = Beam width of antenna in degrees (3 dB half-power point)
P = Total Power into antenna
R = Distance from the antenna
L = Antenna aperture length

If the antenna is a 360-degree omni-directional antenna, this formula would be equivalent to the previous formula.

Spherical Model (Far Field Predictions)

Spatially averaged plane-wave power densities in the Far Field of an antenna may be estimated by considering the additional factors of antenna gain and reflective waves that would contribute to exposure.

The radiation pattern of an antenna has developed in the Far Field region and the power gain needs to be considered in exposure predictions. Also, if the vertical radiation pattern of the antenna is considered, the exposure predictions would most likely be reduced significantly at ground level, resulting in a more realistic estimate of the actual exposure levels.

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

These additional factors are considered and the Far Field prediction model is determined by the following equation:

$$S = EIRP \times Rc \div 4\pi R^2$$

Where:
S = Power Density
EIRP = Effective Radiated Power from antenna
Rc = Reflection Coefficient (2.56)
R = Distance from the antenna

The EIRP includes the antenna gain. If the antenna pattern is considered, the antenna gain is relative based on the horizontal and vertical pattern gain values at that particular location in space, on a rooftop or on the ground. However, it is recommended that the antenna radiation pattern characteristics not be considered to provide a conservative "worst case" prediction. This is the equation is utilized for the Far Field exposure predictions herein.

Exhibit 6

Original Facility Approval

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

December 22, 2003

Decision and Order:
Granby Site CT-812

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The parties and intervenors to this proceeding are:

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

Exhibit 7

(4) Notice Confirmations

Drop-Off Package Receipt: 1 of 1

THIS IS NOT A SHIPPING LABEL. PLEASE SAVE FOR YOUR RECORDS.

DROP-OFF LOCATION:
The UPS Store #4839
982 MAIN ST
STE 4

(845) 897-0097

DROP-OFF DATE/TIME:
Fri 3 Sep 2021 3:53 PM

ESTIMATED PICKUP DATE:
UPS Fri 3 Sep 2021 4pkgs

TOTAL PACKAGES: 4pkgs

TRACKING NUMBER	CARRIER & SERVICE	WEIGHT
1Z9Y45030335286195	UPS Ground	0.75 lb
1Z9Y45030305448272	UPS Ground	0.75 lb
1Z9Y45030328912584	UPS Ground	0.75 lb
1Z9Y45030337331971	UPS Ground	0.75 lb

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Kimberly Revak

From: UPS <pkginfo@ups.com>
Sent: Saturday, September 4, 2021 1:35 PM
To: Kimberly Revak
Subject: *UPS Delivery Notification, Tracking Number 1Z9Y45030335286195*

Hello, your package has been delivered.

Delivery Date: Saturday, 09/04/2021
Delivery Time: 1:27 PM
Left At: FRONT DOOR

Experience UPS My Choice® Premium Today

Be in total control of how, when and where your packages are delivered.

Upgrade to Premium Now

Set Delivery Instructions | Manage Preferences | View My Packages

CENTERLINE SITE ACQUISITION

Tracking Number:	1Z9Y45030335286195
Ship To:	TOWER MEADOW LLC 40 SIMSBURY ROAD WEST GRANBY, CT 060901401 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	GRANBY - LL

Download the UPS mobile app

Kimberly Revak

From: UPS <pkginfo@ups.com>
Sent: Friday, September 3, 2021 10:38 PM
To: Kimberly Revak
Subject: *UPS Schedule Delivery Update, Tracking Number 1Z9Y45030305448272*

Your scheduled delivery date has changed.

Scheduled Delivery Date: Wednesday, 09/08/2021

Important Delivery Information

From:	CENTERLINE SITE ACQUISITION
Tracking Number:	1Z9Y45030305448272

Shipment Details

Ship To:	Gary Waitt - Site Development American Tower Corporation 10 Presidential Way WOBURN, MA 018011053 US
Number of Packages:	1
Weight:	1.0 LBS
Reference Number 1:	Granby - ATC

It's the thought that counts — Create a Return

Download the UPS mobile app

Kimberly Revak

From: UPS <pkginfo@ups.com>
Sent: Friday, September 3, 2021 10:38 PM
To: Kimberly Revak
Subject: *UPS Schedule Delivery Update, Tracking Number 1Z9Y45030328912584*

Your scheduled delivery date has changed.

Scheduled Delivery Date: Tuesday, 09/07/2021

Important Delivery Information

From:	CENTERLINE SITE ACQUISITION
Tracking Number:	1Z9Y45030328912584

Shipment Details

Ship To:	Mark Lockwood - Planning & Zoning Town of Granby Town Hall 15 North Granby Road GRANBY, CT 060352102 US
Number of Packages:	1
Weight:	1.0 LBS
Reference Number 1:	Granby - Planning


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Kimberly Revak

From: UPS <pkginfo@ups.com>
Sent: Friday, September 3, 2021 10:38 PM
To: Kimberly Revak
Subject: *UPS Schedule Delivery Update, Tracking Number 1Z9Y45030337331971*

Your scheduled delivery date has changed.
Scheduled Delivery Date: Tuesday, 09/07/2021

Important Delivery Information

From:	CENTERLINE SITE ACQUISITION
Tracking Number:	1Z9Y45030337331971

Shipment Details

Ship To:	William Smith - Town Manager Town of Granby Town Hall 15 North Granby Road GRANBY, CT 060352102 US
Number of Packages:	1
Weight:	1.0 LBS
Reference Number 1:	Granby - Town


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