July 5, 2022

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

Re: Exempt Modification Application – AT&T Site 13757800
AT&T Mobility Telecommunications Facility @ 123 Pine Orchard Road, Branford, CT

Dear Ms. Bachman,

New Cingular Wireless, PCS, LLC (dba AT&T) currently maintains antennas on a wireless telecommunications facility on an existing American Tower Corporation (ATC) telecommunications tower at the above referenced address. AT&T desires to modify its existing equipment as described in the attached Construction and Antenna Mount Modification Drawings:

- Remove six (6) antennas, one (1) squid, three (3) RRHs, three (3) TMAs, six (6) Diplexers, and a single twelve pair fiber trunk.;
- Install mount modifications, nine (9) antennas, three (3) RRHs, one (1) squid, six (6) Y cables, one (1) twenty four pair fiber trunk, one (1) 6 DC cable and one (1) conduit.
- Ground work includes installing a 6648 plus XCEDE Cable and three (3) rectifiers.

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), and as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of AT&T's intent to modify a telecommunications facility pursuant to R.C.S.A. 16-50j-88. 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; Malvasi Investments LLC, as Property Owner; the Honorable James Cosgrove, as First Selectman of the Town of Branford, and Town Planner Harry Smith.

The applicant's proposal falls squarely within those activities explicitly provided for in R.C.S.A. §16-50j-89. 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 enclosed herewith.

Jack Andrews, Zoning Manager 10130 Donleigh Drive, Columbia, MD 21046 (443) 677-0144
Centerline Communications • 750 W Center Street, Suite 301, W Bridgewater, MA 02379

For the foregoing reasons, AT&T respectfully requests that the Council approve this Exempt Modification request for this tower located at 123 Pine Orchard Road, Branford, CT. If you have any questions, please feel free to contact me.

Sincerely,

Jack Andrews
Zoning Manager, Centerline Communications
443-677-0144

Enclosures:
Exhibit 1 – Letter of Authorization from tower owner
Exhibit 2 – Property Card and GIS
Exhibit 3 – Construction and Mount Modification Drawings
Exhibit 4 – Structural Analysis Report
Exhibit 5 – Antenna Mount Analysis Report (failing)
Exhibit 6 – EME Study Report
Exhibit 7 – Four (4) Notice Confirmations

cc: American Tower Corporation - Tower Operator/Owner
Malvasi Investments LLC - Property Owner
James Cosgrove - First Selectman of the Town of Branford
Harry Smith – Branford own Planner

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CORPORATION

# LETTER OF AUTHORIZATION

CENTERLINE COMMUNICATIONS LLC/ AT&T MOBILITY

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

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

The above authorization does not permit AT&T MOBILITY, CENTERLINE COMMUNICATIONS LLC to modify or alter any existing permit(s) and/or zoning or land-use conditions or impose any additional conditions unrelated to American Tower's installation of telecommunications equipment without the prior written approval of American Tower.

*American Tower includes all affiliates and subsidiaries of American Tower Corporation.

| ATC Asset # | Site Name | Project Number | Site Address |
|---|---|---|---|
| 283420 | STONEYBROOK RD CT | 13682835 | 23 Stonybrook Road, Stratford, Connecticut |
| 243036 | WEST HAVEN & RT 162 CT | 13682841 | 668 Jones Hill Road, West Haven, Connecticut |
| 302479 | Rkhl - Rocky Hill | 13683394 | 699 West Street, Rocky Hill, Connecticut |
| 302537 | Middletown CT 3 | 13747862 | 47 Inwood Road, Rocky Hill, Connecticut |
| 302535 | Milford CT 2 | 13748383 | 185 Research Drive, Milford, Connecticut |
| 302473 | E H F R - Prestige Park | 13748397 | 310 Prestige Park Road, East Hartford, Connecticut |
| 302505 | Wshn - West Haven | 13748405 | 204 Burwell Street, West Haven, Connecticut |
| 302489 | Enfd - Enfield | 13753208 | 77 Town Farm Road, Enfield, Connecticut |
| 302524 | Beacon Falls | 13753210 | 664 Rimmon Hill Road, Seymour, Connecticut |
| 310968 | WSPT-WESTPORT REBUILD CT | 13753216 | 180A Bayberry Lane, Westport, Connecticut |
| 302526 | Naugatuck (telephone Pole) | 13753218 | 585 South Main St. (soc. Club), Naugatuck, Connecticut |
| 310972 | WATERFORD REBUILD CT | 13753547 | 15 Miner Lane, Waterford, Connecticut |
| 302538 | Parsonage Hill Aka Wallin | 13753549 | 922 Northrop Road, Wallingford, Connecticut |
| 370624 | Mankes Silo | 13754283 | 1338 Highland Ave, Cheshire, Connecticut |

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| | | | |
|---|---|---|---|
| 88017 | SHELTON-TRUMBULL | 13755484 | 14 OXFORD DRIVE/BOOTH HILL RD, Shelton, Connecticut |
| 414240 | Byram Park CT | 13755490 | 48 RITCH AVENUE WEST, Greenwich, Connecticut |
| 283423 | NAUGATUCK CT | 13755758 | 880 Andrew Mountain Road, Naugatuck, Connecticut |
| 302480 | Woodbridge CT 1 | 13756843 | 77 Pease Road, Woodbridge, Connecticut |
| 411183 | WATERFORD CT | 13756866 | 53 Dayton Rd. Waterford, Connecticut |
| 302540 | Madison CT 6 | 13757740 | 8 Old 79, Madison, Connecticut |
| 411259 | CT Collinsville CAC 802816 CT | 13757764 | 650 Albany Turnpike, Collinsville, Connecticut |
| 411256 | CANTON CT | 13757774 | 14 CANTON SPRINGS ROAD, Canton, Connecticut |
| 302493 | Nrwc - Norwich | 13757776 | 225 Rogers Road, Norwich, Connecticut |
| 302476 | Wtbr - Waterbury | 13757794 | 352 Garden Circle, Waterbury, Connecticut |
| 302475 | Sttn - Southington | 13757796 | 80 Shuttle Meadow Road, Southington, Connecticut |
| 302494 | Hddm - Haddam | 13757798 | 139 Morris Hubbard Rd, Higganum, Connecticut |
| 283419 | PINE ORCHARD BRANFORD CT | 13757800 | 123 Pine Orchard Road, Brrandford, Connecticut |
| 302482 | North Havent CT 1 | 13757802 | 15 Dewight Street, North Haven, Connecticut |
| 302485 | Mdfd - Middlefield | 13757806 | 134 Kikapoo Road, Middlefield, Connecticut |
| 302500 | Brst - Bristol | 13757810 | 790 Willis Street, Bristol, Connecticut |
| 302467 | Bilkays Express | 13757812 | 90 North Plains Industrial Rd. Wallingford, Connecticut |
| 302536 | Cherry Hill-branford | 13759895 | 4 Beaver Road, Brandford, Connecticut |
| 302482 | North Havent CT 1 | 14050356 | 15 Dewight Street, North Haven, Connecticut |
| 311305 | GLFD-GUILFORD REBUILD CT | 14050358 | 10 Tanner Marsh Road, Guilford, Connecticut |
| 411261 | CROMWELLSW CT | 14089799 | 99 Christian Hill Road, Cromwell, Connecticut |
| 302481 | Hrfr - South | 14090117 | 289 Mountain Street, Hartford, Connecticut |

Signature: 

Margaret Robinson, Vice President
US Tower Legal Division

**See attached Notary Block**

**LETTER OF AUTHORIZATION**
**CENTERLINE COMMUNICATIONS LLC/ AT&T MOBILITY**

**NOTARY BLOCK**

COMMONWEALTH OF MASSACHUSETTS
County of Middlesex

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

WITNESS my hand and official seal, this 30th day of June, 2022.

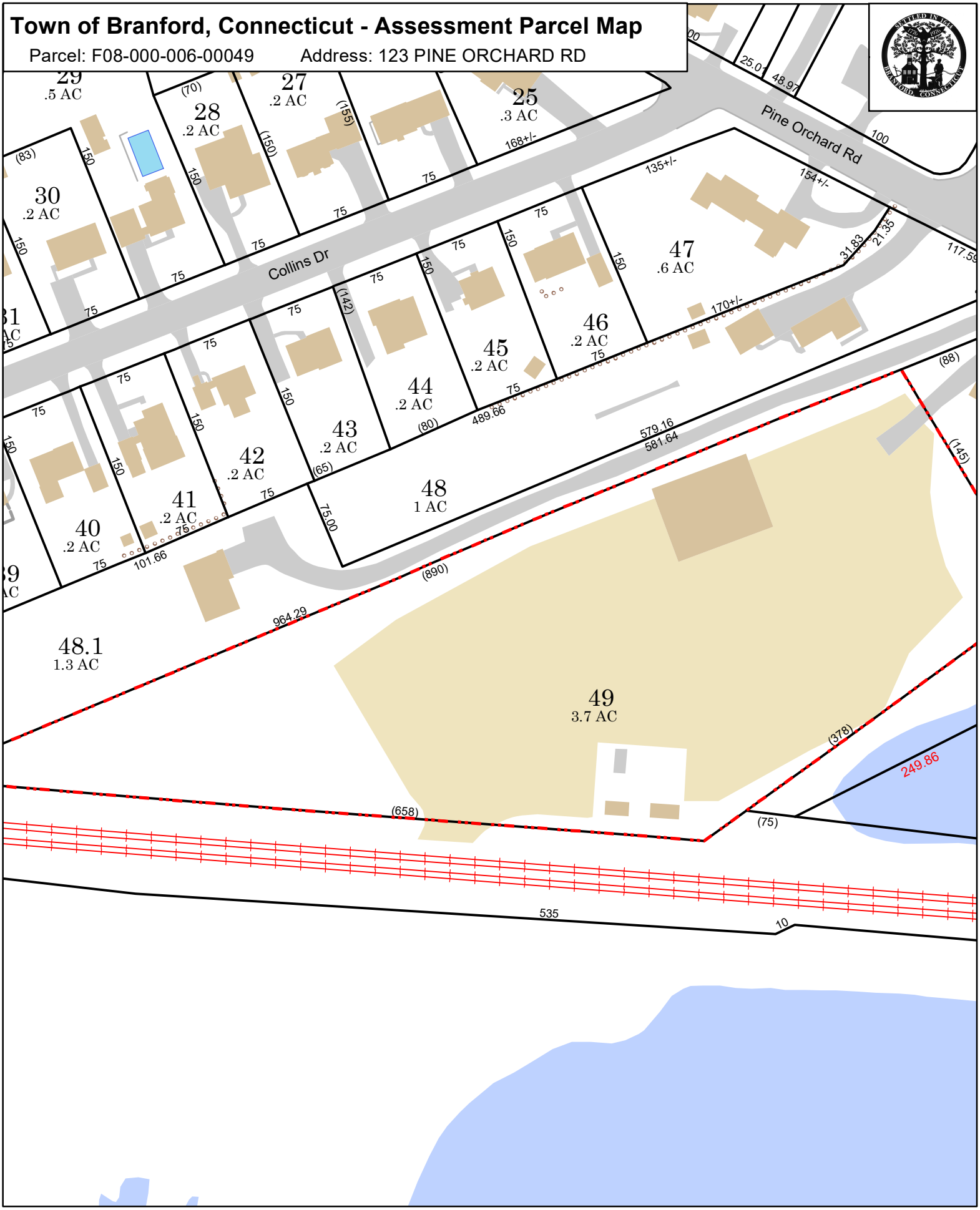
NOTARY SEAL

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

Notary Public
My Commission Expires: March 14, 2025

# Town of Branford, Connecticut - Assessment Parcel Map

Parcel: F08-000-006-00049 Address: 123 PINE ORCHARD RD




**Approximate Scale: 1 inch : 100 feet**

**Grand List Date June 2021**

# TOWN OF BRANFORD CONNECTICUT

**GIS & Real Property Information**

1019 Main Street
Branford, CT 06405
ph (203) 488-2039

## Property Search

**Name: ex. Smith**

**House No:**
123

**Street:**
PINE ORCHARD RD

**MBL:(ex.) E07-000-015-00001**

GO

## Information Updates

Parcels updated
Oct 1, annually

Property Info Data Updated
Nightly

Current Parcel Count
13,501+/- (including condos)

## Detailed Parcel Information

GIS ID
F08-000-006-00049

Parcel ID
F08/000/006/00049

Unique ID
1046

Owner
MALAVASI INVESTMENTS LLC

Location
123 PINE ORCHARD RD

MAILING ADDRESS
35 STONY CREEK RD
BRANFORD CT 06405

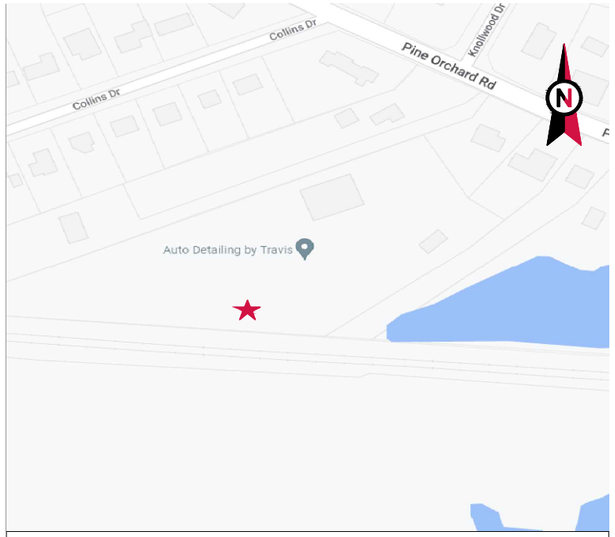

**Quick Links:** Quick Map | Property Card | Assessor Tax Map

Scroll Down For Complete Property Detail

## PARCEL VALUATIONS

| | Appraised Value | Assessed Value |
|---|---|---|
| Buildings | 163700 | 114600 |
| Land | 347800 | 243500 |

REPORT AN ISSUE




VICINITY MAP

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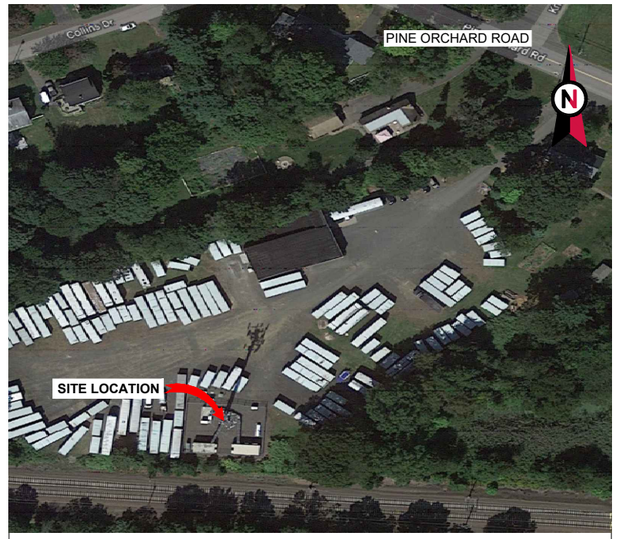
# ATC SITE NAME: PINE ORCHARD BRANFORD CT
ATC SITE NUMBER: 283419
AT&T PACE NUMBERS: MRCTB053987/ MRCTB054588/ MRCTB055809/ MRCTB056697
AT&T SITE ID: CTL01274
AT&T FA CODE:10133874
AT&T SITE NAME: BRANFORD PINE ORCHARD RD
SITE ADDRESS: 123 PINE ORCHARD ROAD BRANFORD,CT 06405-3939

## AT&T 5G NR 1SR CBAND AMENDMENT PLAN




LOCATION MAP

BIRD WATCH SITE:
PLEASE CONTACT BIRD.WATCH@AMERICANTOWER.COM OR AMERICAN TOWER NOC AT 877-518-6937 FOR ASSISTANCE

## COMPLIANCE CODE

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

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

## UTILITY COMPANIES

POWER COMPANY: UTILITY COMPANY DIRECT
PHONE: UNKNOWN

TELEPHONE COMPANY: UNKNOWN
PHONE: UNKNOWN

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

## PROJECT SUMMARY

SITE ADDRESS:

123 PINE ORCHARD ROAD
BRANFORD,CT 06405-3939
COUNTY: NEW HAVEN

GEOGRAPHIC COORDINATES:

LATITUDE: 41.27476815
LONGITUDE: -72.79317788
GROUND ELEVATION: 30' AMSL

## PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

APPLICANT:

AT&T MOBILITY

ENGINEER:

HUDSON DESIGN GROUP, LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845

PROPERTY OWNER:

MALAVASI INVESTMENTS LLC
123 PINE ORCHARD ROAD
BRANFORD,CT 06405-3939

## PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:

TOWER WORK:

REMOVE (6) ANTENNA(S), (1) DC-6 SQUID, (3) RRH(S), (3) TMA(S), (6) DIPLEXER(S), AND (1) 12 PAIR FIBER TRUNK

INSTALL MOUNT MODIFICATION(S), (9) ANTENNA(S), (3) RRH(S), (1) DC-9 SQUID, (6) Y-CABLE(S), (1) 24 PAIR FIBER TRUNK, (1) 6AWG 6 DC CABLE, AND (1) 2" CONDUIT

EXISTING (3) ANTENNA(S), (6) RRH(S), (1) DC-6 SQUID, (6) 1 5/8" COAX CABLE(S), (1) 18 PAIR FIBER TRUNK, (4) 8AWG 6DC CABLE(S) AND (1) 2" CONDUIT TO REMAIN

GROUND WORK:

REMOVE NONE

INSTALL (1) 6648 + XCEDE CABLE AND (3) RECTIFIER(S)

## PROJECT NOTES

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

## PROJECT LOCATION DIRECTIONS

FROM DOWNTOWN NEW HAVEN CT START OUT GOING NORTHEAST ON CHURCH ST TOWARD WALL ST. CHURCH ST BECOMES WHITNEY AVE TURN RIGHT ONTO TRUMBULL ST. TURN SLIGHT LEFT TO TAKE THE I-91 S/I-91 N RAMP. MERGE ONTO I-91 S TOWARD I-95/NEW LONDON/N.Y.CITY. MERGE ONTO I-95 N/GOVERNOR JOHN DAVIS LODGE TPKE N VIA THE EXIT ON THE LEFT TOWARD NEW LONDON. TAKE EXIT 54, TOWARD BRANFORD. TURN LEFT ONTO MAIN ST/CT-146. TURN SLIGHT RIGHT ONTO S MAIN ST/CT-146. TURN RIGHT ONTO MONTOWESE ST/CT-146. TAKE THE 3RD LEFT ONTO PINE ORCHARD RD.

TAKE THE 3RD RIGHT TO STAY ON PINE ORCHARD RD, SITE IS IN THE PROPERTY OF ACE TRANSPORTATION & STORAGE

## SHEET INDEX

| SHEET NO: | DESCRIPTION: | REV: | DATE: | BY: |
|---|---|---|---|---|
| G-001 | TITLE SHEET | 1 | 06/07/22 | TR |
| G-002 | GENERAL NOTES | 1 | 06/07/22 | TR |
| C-101 | DETAILED SITE PLAN | 1 | 06/07/22 | TR |
| C-102 | DETAILED SHELTER PLAN | 1 | 06/07/22 | TR |
| C-201 | TOWER ELEVATION | 1 | 06/07/22 | TR |
| E-501 | GROUNDING DETAILS | 1 | 06/07/22 | TR |
| R-601 | SUPPLEMENTAL | | | |
| R-602 | SUPPLEMENTAL | | | |
| R-603 | SUPPLEMENTAL | | | |
| R-604 | SUPPLEMENTAL | | | |
| | MOUNT MODIFICATIONS | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

AMERICAN TOWER®

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

| REV. | DESCRIPTION | BY | DATE |
|---|---|---|---|
| A | PRELIM | AB | 04/07/22 |
| 0 | FINALS | TR | 05/24/22 |
| 1 | FINALS REVISED | TR | 06/07/22 |
| | | | |
| | | | |

ATC SITE NUMBER:
283419

ATC SITE NAME:
PINE ORCHARD BRANFORD CT

AT&T SITE NAME:
BRANFORD PINE ORCHARD RD

SITE ADDRESS:
123 PINE ORCHARD ROAD
BRANFORD,CT 06405-3939

SEAL:


AT&T

| | |
|---|---|
| DATE DRAWN: | 04/07/22 |
| ATC JOB NO: | 13757800_G5 |
| CUSTOMER ID: | CTL01274 |
| CUSTOMER #: | 10133874 |

TITLE SHEET

| SHEET NUMBER: | REVISION: |
|---|---|
| G-001 | 1 |

## GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, AT&T "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
   - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
   - B. AC/TELCO INTERFACE BOX (PPC)
   - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
   - D. TOWERS, MONOPOLES
   - E. TOWER LIGHTING
   - F. GENERATORS & LIQUID PROPANE TANK
   - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
   - H. ANTENNAS (INSTALLED BY OTHERS)
   - I. TRANSMISSION LINE
   - J. TRANSMISSION LINE JUMPERS
   - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
   - L. TRANSMISSION LINE GROUND KITS
   - M. HANGERS
   - N. HOISTING GRIPS
   - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF AT&T 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 REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE AT&T REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE AT&T 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 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 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 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 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 REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY AT&T MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH AT&T SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO AT&T FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO AT&T 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 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 REP. ANY WORK FOUND BY THE AT&T 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 FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE AT&T 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 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 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 UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL.
   - B. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND AT&T SPECIFICATIONS.
   - C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.
   - D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE AND PROVIDE PRINTOUT OF THAT TEST.
   - E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.
   - F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
   - G. ANTENNA AND COAXIAL CABLE GROUNDING:
2. ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.
3. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS).

## 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.**

AMERICAN TOWER®

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FAX: (978) 336-5586

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| | | | |
| | | | |

ATC SITE NUMBER:
283419

ATC SITE NAME:
PINE ORCHARD BRANFORD CT

AT&T SITE NAME:
BRANFORD PINE ORCHARD RD

SITE ADDRESS:
123 PINE ORCHARD ROAD
BRANFORD,CT 06405-3939

SEAL:

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

AT&T

| | |
|---|---|
| DATE DRAWN: | 04/07/22 |
| ATC JOB NO: | 13757800_G5 |
| CUSTOMER ID: | CTL01274 |
| CUSTOMER #: | 10133874 |

GENERAL NOTES

| SHEET NUMBER: | REVISION: |
|---|---|
| G-002 | 1 |

SITE PLAN NOTES:

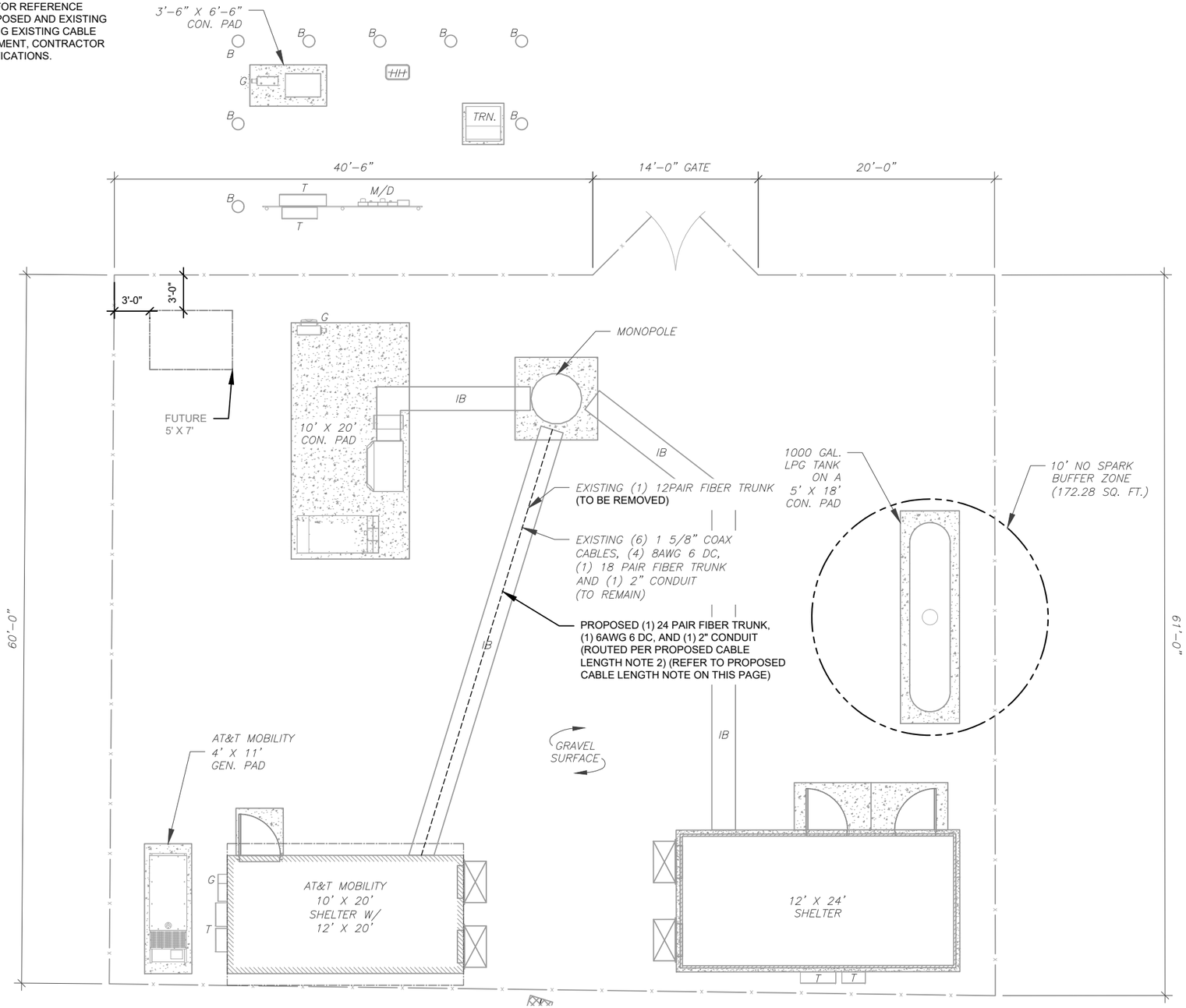
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.

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. NO ELECTRICAL SCOPE IS INCLUDED IN 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 IS 210'±. 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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BRANFORD,CT 06405-3939

SEAL:

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

AT&T

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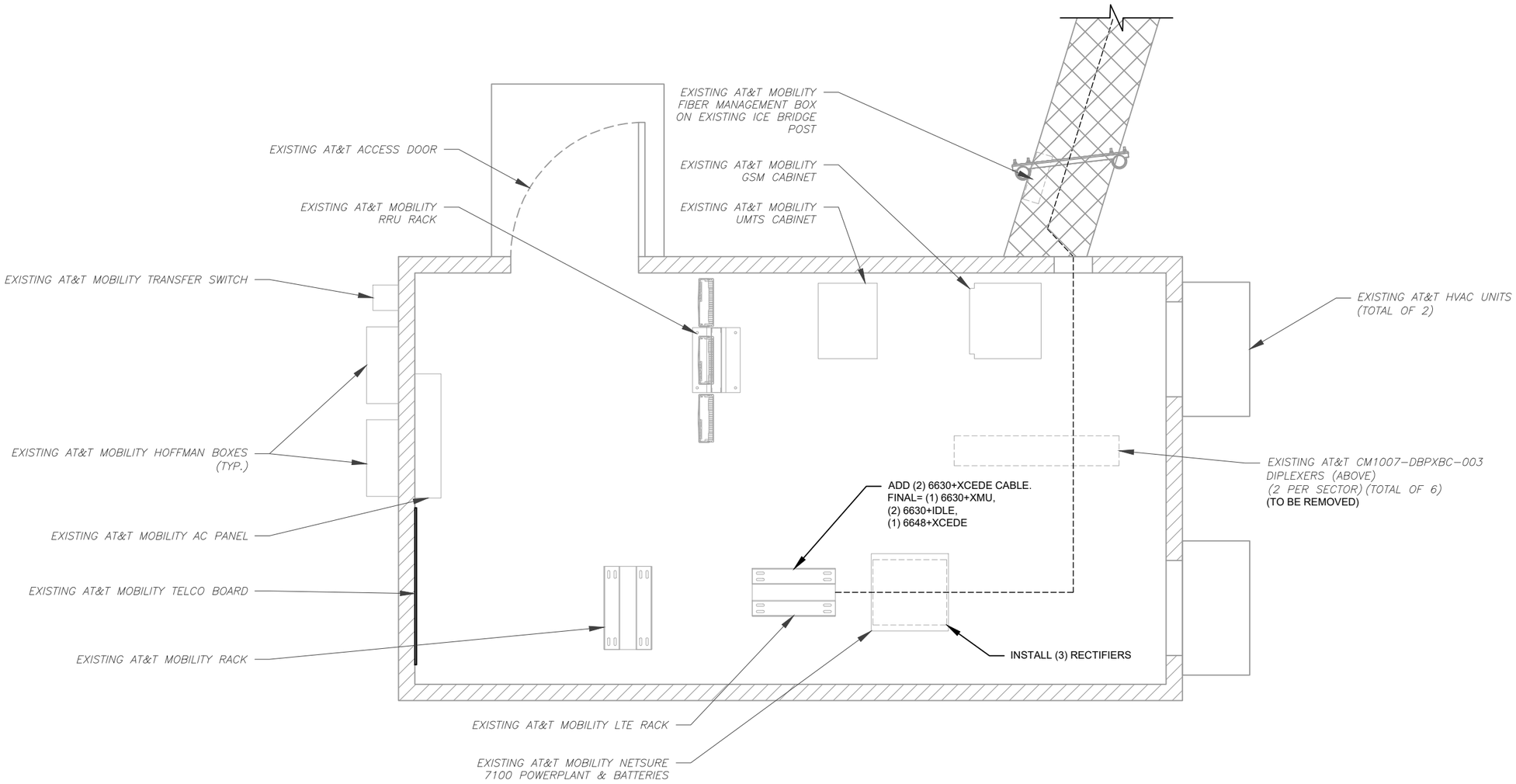
| CUSTOMER ID: | CTL01274 |
| CUSTOMER #: | 10133874 |

DETAILED SITE PLAN

| SHEET NUMBER: | REVISION: |
|---|---|
| C-101 | 1 |




1 DETAILED SHELTER PLAN

SCALE: 1"=3'

N



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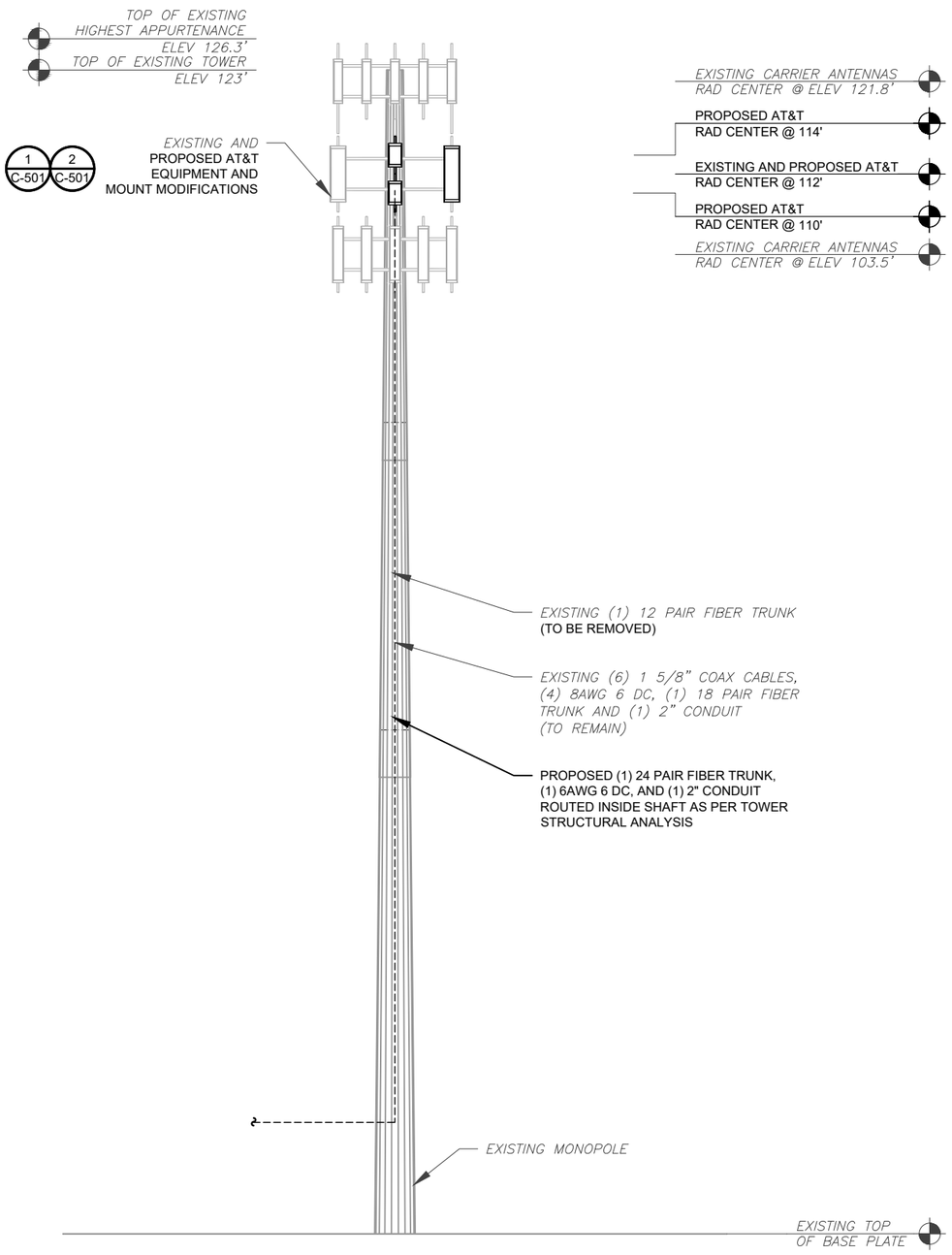
# DETAILED EQUIPMENT LAYOUT

| SHEET NUMBER: | REVISION: |
|---|---|
| C-102 | 1 |

PER MOUNT ANALYSIS COMPLETED BY ATC, DATED 02/22/22, THE EXISTING MOUNT MUST BE MODIFIED TO ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT.




1 TOWER ELEVATION
SCALE: N.T.S.

TOWER NOTE:

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

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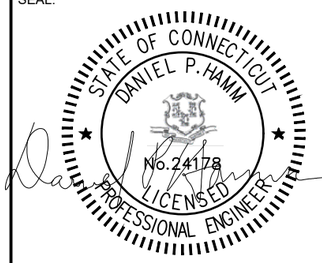


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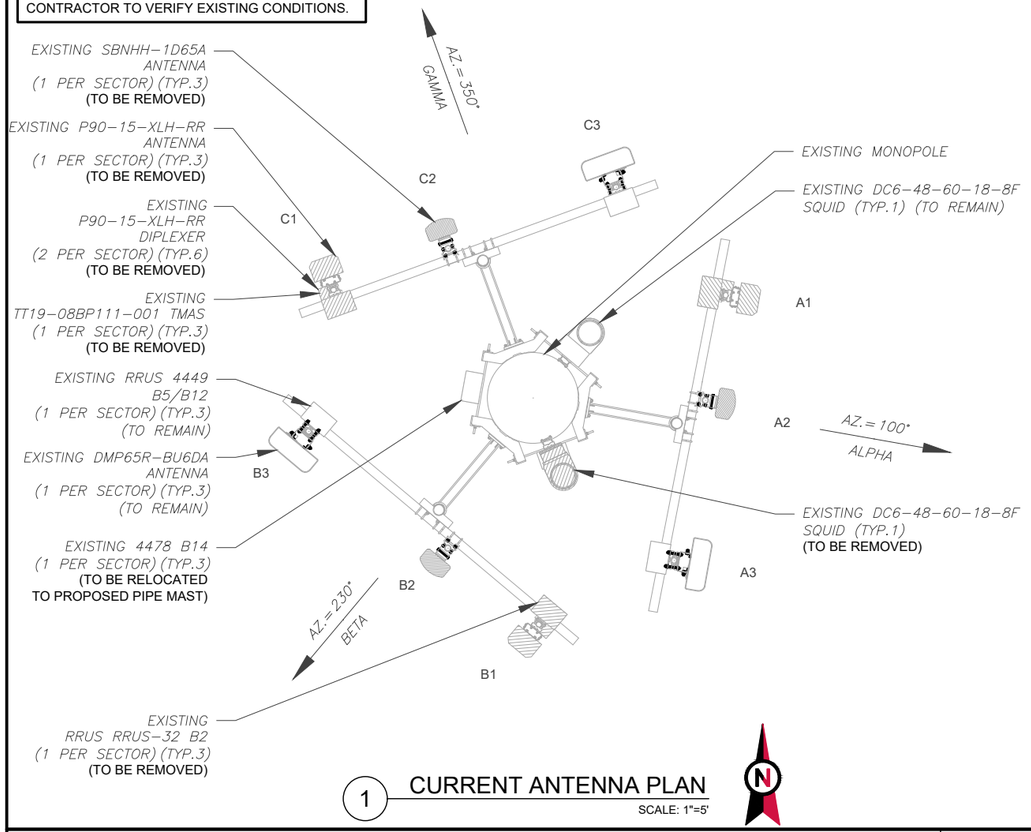
| CUSTOMER #: | 10133874 |

TOWER ELEVATION

| SHEET NUMBER: | REVISION: |
|---|---|
| C-201 | 0 |

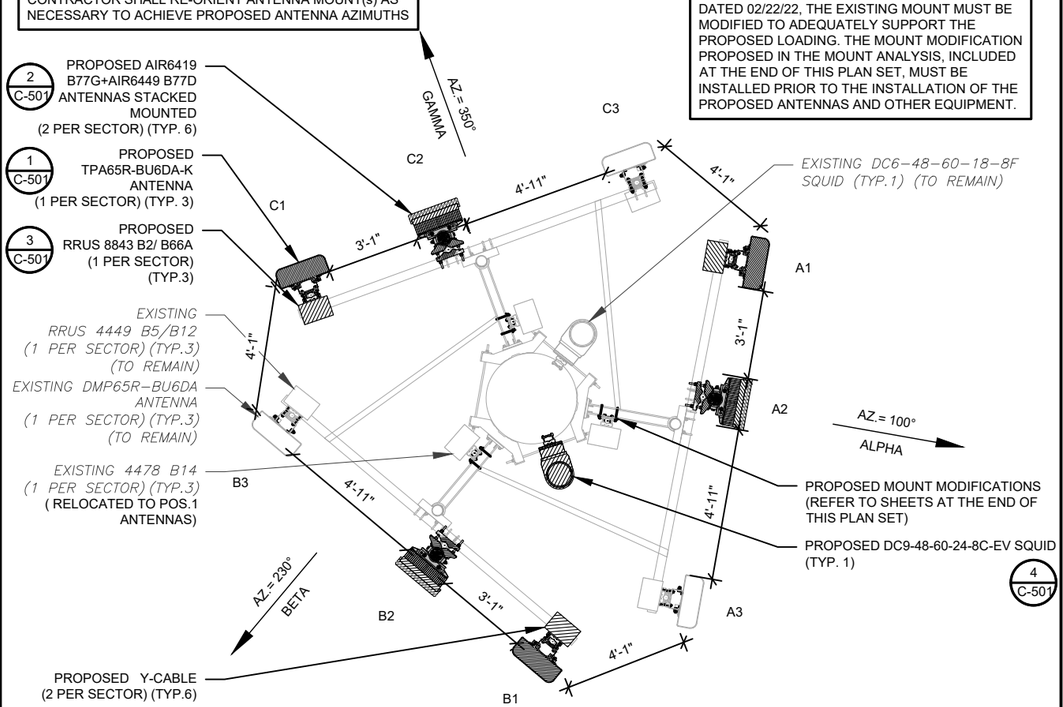
EXISTING CONFIGURATIONS ARE BASED ON RFDS.
CONTRACTOR TO VERIFY EXISTING CONDITIONS.




1 CURRENT ANTENNA PLAN
SCALE: 1"=5'

CONTRACTOR SHALL RE-ORIENT ANTENNA MOUNT(s) AS NECESSARY TO ACHIEVE PROPOSED ANTENNA AZIMUTHS

PER MOUNT ANALYSIS COMPLETED BY ATC, DATED 02/22/22, THE EXISTING MOUNT MUST BE MODIFIED TO ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT.




2 FINAL ANTENNA PLAN
SCALE: 1" =5'

PROPOSED RRUs MUST BE INSTALLED A MINIMUM OF 8" AWAY FROM ALL ANTENNAS

EXISTING ANTENNA SCHEDULE

| LOCATION | | | ANTENNA SUMMARY | | | | NON ANTENNA SUMMARY | |
|---|---|---|---|---|---|---|---|---|
| SECTOR | RAD | AZ | POS | ANTENNA | BAND | STATUS | ADDITIONAL TOWER MOUNTED EQUIPMENT | STATUS |
| ALPHA | 112' | 100° | A1 | P90-15-XLH-RR | – | RMV | P90-15-XLH-RR<br>(2) TT19-08BP111-001 | RMV<br>RMV |
| | | | A2 | SBNHH-1D65A | 700, 1900 | RMV | RRUS 4478 B14<br>RRUS-32 B2 | REL<br>RMV |
| | | | A3 | FINALS REVISED | 700 | RMN | RRUS 4449 B5/B12 | RMN |
| BETA | 112' | 230° | B1 | P90-15-XLH-RR | – | RMV | P90-15-XLH-RR<br>(2) TT19-08BP111-001 | RMV<br>RMV |
| | | | B2 | SBNHH-1D65A | 700, 1900 | RMV | RRUS 4478 B14<br>RRUS-32 B2 | REL<br>RMV |
| | | | B3 | DMP65R-BU6DA | 700 | RMN | RRUS 4449 B5/B12 | RMN |
| GAMMA | 112' | 350° | C1 | P90-15-XLH-RR | – | RMV | P90-15-XLH-RR<br>(2) TT19-08BP111-001 | RMV<br>RMV |
| | | | C2 | SBNHH-1D65A | 700, 1900 | RMV | RRUS 4478 B14<br>RRUS-32 B2 | REL<br>RMV |
| | | | C3 | DMP65R-BU6DA | 700 | RMN | RRUS 4449 B5/B12 | RMN |

NOTES

1. CONFIRM WITH AT&T 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.
3. THE ANTENNA ORIENTATION PLAN IS A SCHEMATIC. ATC DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, ANTENNA AZIMUTHS, MOUNT CONFIGURATIONS AND TOWER ORIENTATION. SCALES SHOWN ARE FOR REFERENCE ONLY AND EXISTING DIMENSIONS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO INSTALLATION AND NOTIFY ATC OF ANY DISCREPANCIES.
4. CONTRACTOR TO ENSURE PROPER SEPARATION IN ACCORDANCE WITH AT&T'S FIRSTNET REQUIREMENTS (SEE SHEET R-602)

CABLE LENGTHS FOR JUMPERS

JUNCTION BOX TO RRU: 15'
RRU TO ANTENNA: 10'

STATUS ABBREVIATIONS

RMV: TO BE REMOVED
*RMN*: TO REMAIN
REL: TO BE RELOCATED
ADD: TO BE ADDED

FINAL ANTENNA SCHEDULE

| LOCATION | | | ANTENNA SUMMARY | | | | NON ANTENNA SUMMARY | |
|---|---|---|---|---|---|---|---|---|
| SECTOR | RAD | AZ | POS | ANTENNA | BAND | STATUS | ADDITIONAL TOWER MOUNTED EQUIPMENT | STATUS |
| | 112' | 100° | A1 | DMP65R-BU6DA-K | LTE 700 B14 / PCS /AWS | ADD | RRUS 8843 B2/B66A<br>RRUS 4478 B14 | ADD<br>REL |
| | 110'<br>114' | | A2UP<br>A2DN | AIR6419 B77G<br>AIR6449 B77D | DOD<br>C-BAND | ADD | - | - |
| | 112' | | A3 | DMP65R-BU6DA | LTE 700 BC / 850 | RMN | RRUS 4449 B5/B12 | RMN |
| | 112' | 230° | B1 | DMP65R-BU6DA-K | LTE 700 B14 / PCS /AWS | ADD | RRUS 8843 B2/B66A<br>RRUS 4478 B14 | ADD<br>REL |
| | 110'<br>114' | | B2UP<br>B2DN | AIR6419 B77G<br>AIR6449 B77D | DOD<br>C-BAND | ADD | - | - |
| | 112' | | B3 | DMP65R-BU6DA | LTE 700 BC / 850 | RMN | RRUS 4449 B5/B12 | RMN |
| | 112' | 350° | C1 | DMP65R-BU6DA-K | LTE 700 B14 / PCS /AWS | ADD | RRUS 8843 B2/B66A<br>RRUS 4478 B14 | ADD<br>REL |
| | 110'<br>114' | | C2UP<br>C2DN | AIR6419 B77G<br>AIR6449 B77D | DOD<br>C-BAND | ADD | - | - |
| | 112' | | C3 | DMP65R-BU6DA | LTE 700 BC / 850 | RMN | RRUS 4449 B5/B12 | RMN |

THIS PAGE CONTAINS CONFIDENTIAL, PROPRIETARY OR TRADE SECRET INFORMATION EXEMPT FROM DISCLOSURE UNDER APPLICABLE LAW.

EXISTING FIBER DISTRIBUTION/SQUID

| MODEL NUMBER | STATUS |
|---|---|
| (1) DC6-48-60-18-8F | RMN |
| (1) DC6-48-60-18-8F | RMV |

EXISTING CABLING SUMMARY

| COAX | CONDUIT | DC | FIBER | STATUS |
|---|---|---|---|---|
| (6) 1 5/8" | (1) 2" | (4) 8AWG 6 | (1) 18 PAIR | RMN |
| – | | – | (1) 12 PAIR | RMV |

FINAL FIBER DISTRIBUTION/SQUID

| MODEL NUMBER | STATUS |
|---|---|
| (1) DC6-48-60-18-8F | RMN |
| (1) DC9-48-60-24-8C-EV | ADD |

FINAL CABLING SUMMARY

| COAX | CONDUIT | DC | FIBER | STATUS |
|---|---|---|---|---|
| (6) 1 5/8" | (1) 2" | (4) 6AWG 6 | (1) 18 PAIR | RMN |
| - | (1) 2" | (1) 6AWG 6 | (1) 24 PAIR | ADD |

3 EQUIPMENT SCHEDULES

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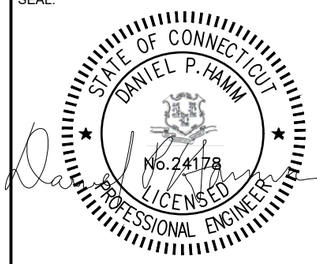
BRANFORD,CT 06405-3939

SEAL:

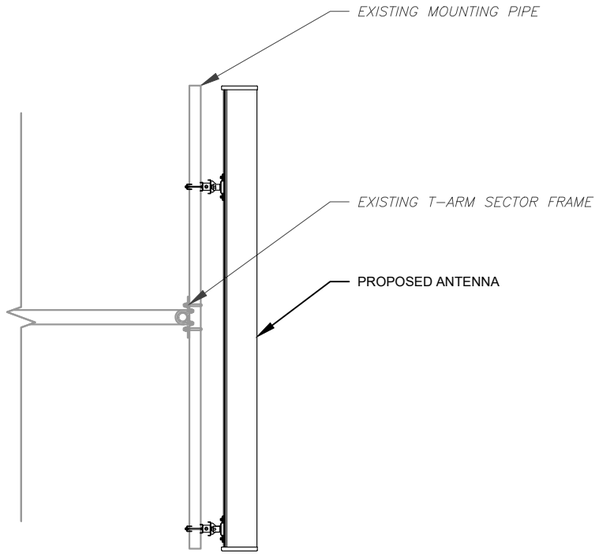



AT&T

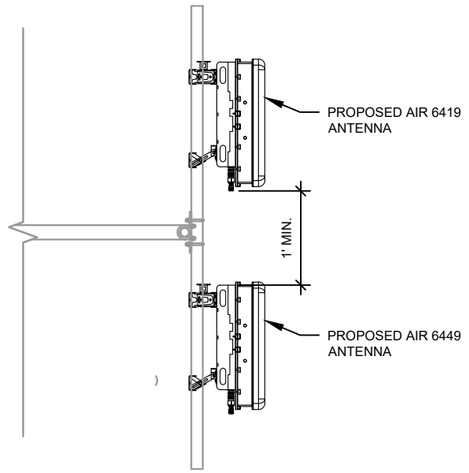
| | |
|---|---|
| DATE DRAWN: | 04/07/22 |
| ATC JOB NO: | 13757800_G5 |
| CUSTOMER ID: | CTL01274 |
| CUSTOMER #: | 10133874 |

RF SCHEDULE AND ANTENNA INSTALLATION

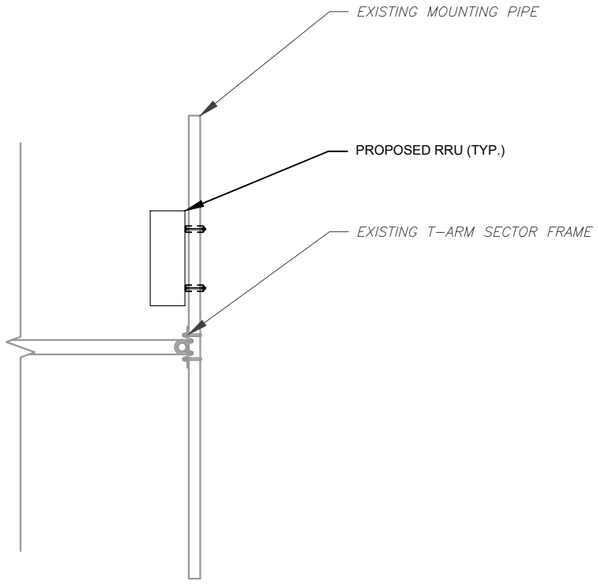
| SHEET NUMBER: | REVISION: |
|---|---|
| C-401 | 1 |



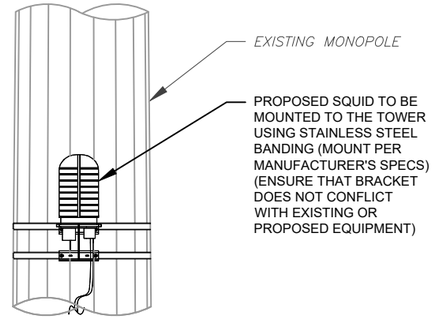

1 ANTENNA DETAIL
SCALE: N.T.S.




2 PROPOSED 5G ANTENNA MOUNTING DETAIL - TYPICAL
SCALE: N.T.S.




3 PROPOSED RRU MOUNTING DETAIL - TYPICAL
SCALE: N.T.S.




4 PROPOSED SQUID MOUNTING
SCALE: N.T.S.



AMERICAN TOWER®

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

| REV. | DESCRIPTION | BY | DATE |
|---|---|---|---|
| A | PRELIM | AB | 04/07/22 |
| 0 | FINALS | TR | 05/24/22 |
| 1 | FINALS REVISED | TR | 06/07/22 |
| | | | |
| | | | |

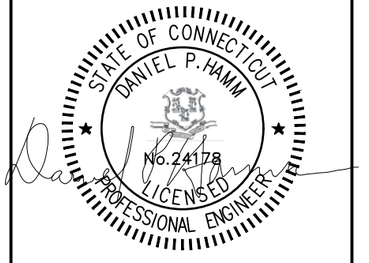
ATC SITE NUMBER:
283419

ATC SITE NAME:
PINE ORCHARD BRANFORD CT

AT&T SITE NAME:
BRANFORD PINE ORCHARD RD

SITE ADDRESS:
123 PINE ORCHARD ROAD
BRANFORD,CT 06405-3939

SEAL:

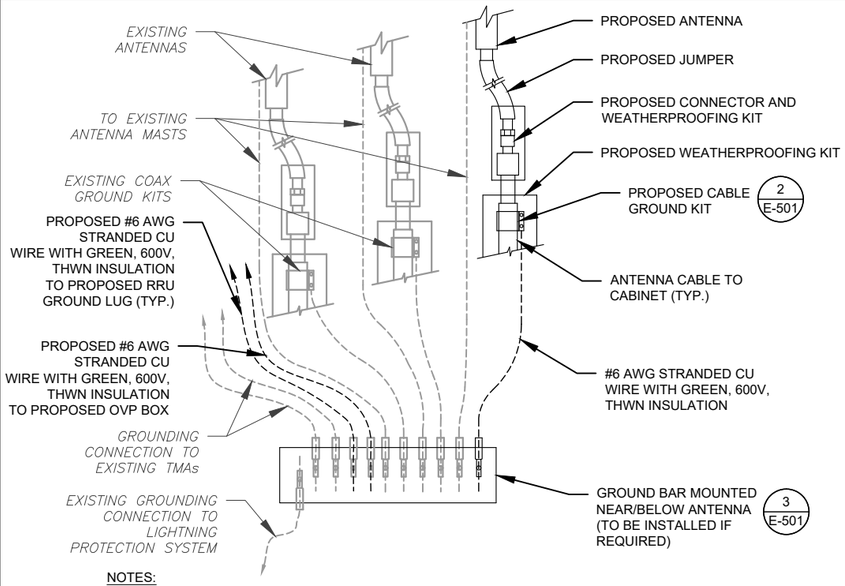



AT&T

| | |
|---|---|
| DATE DRAWN: | 04/07/22 |
| ATC JOB NO: | 13757800_G5 |
| CUSTOMER ID: | CTL01274 |
| CUSTOMER #: | 10133874 |

CONSTRUCTION DETAILS

| SHEET NUMBER: | REVISION: |
|---|---|
| C-501 | 1 |

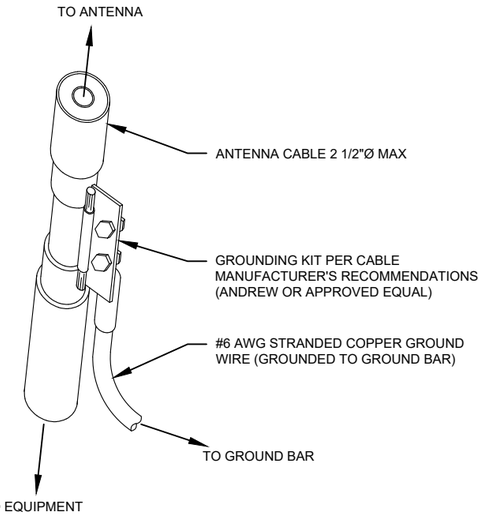



NOTES:

1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH AT&T GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH AT&T 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.

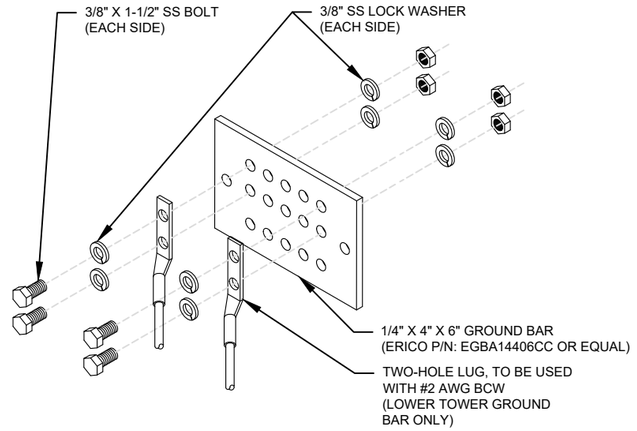



GROUND KIT NOTES:

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.

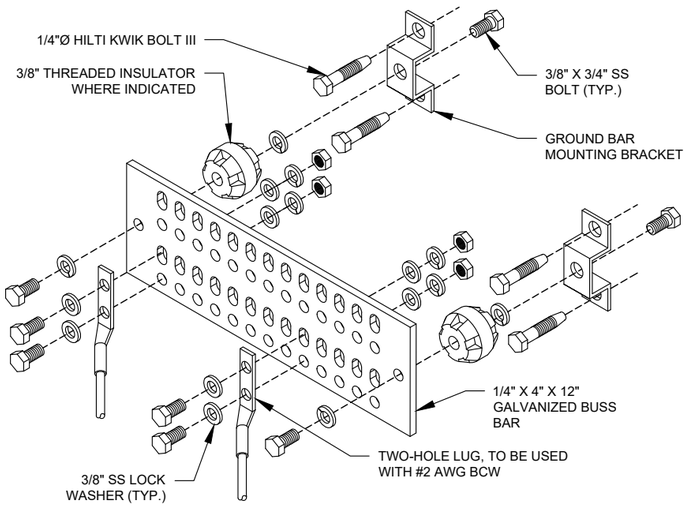



GROUND BAR NOTES:

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.

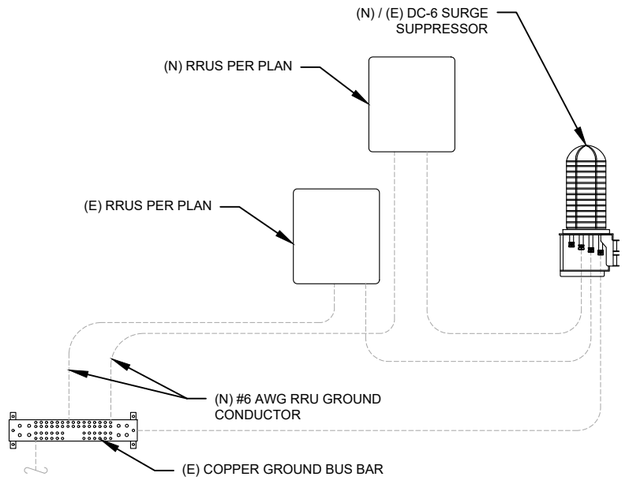



GROUND BAR NOTES

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.

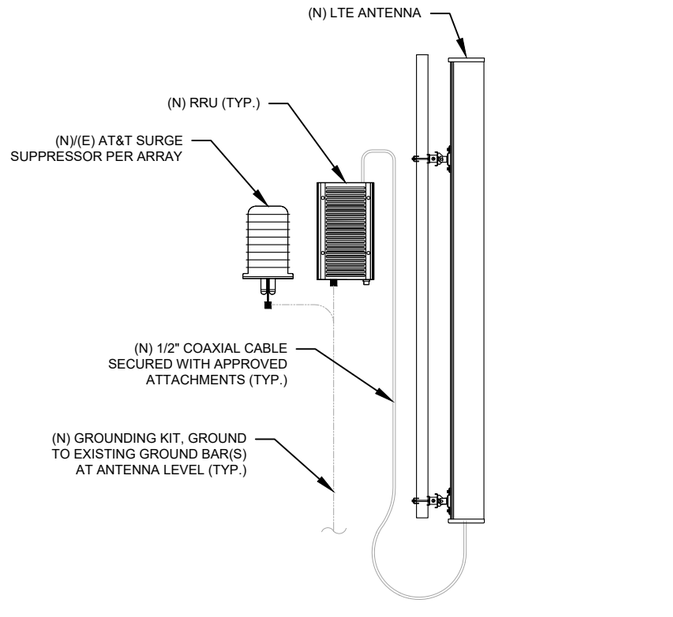
## 4 MAIN GROUND BAR DETAIL

SCALE: N.T.S.




## 5 RRU GROUNDING

SCALE: N.T.S.




## 6 ANTENNA/RRU GROUNDING

SCALE: N.T.S.

AMERICAN TOWER®

HUDSON Design Group LLC

45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

| REV. | DESCRIPTION | BY | DATE |
|---|---|---|---|
| A | PRELIM | AB | 04/07/22 |
| 0 | FINALS | TR | 05/24/22 |
| 1 | FINALS REVISED | TR | 06/07/22 |
| | | | |
| | | | |

ATC SITE NUMBER:
283419

ATC SITE NAME:
PINE ORCHARD BRANFORD CT

AT&T SITE NAME:
BRANFORD PINE ORCHARD RD

SITE ADDRESS:
123 PINE ORCHARD ROAD
BRANFORD,CT 06405-3939

SEAL:

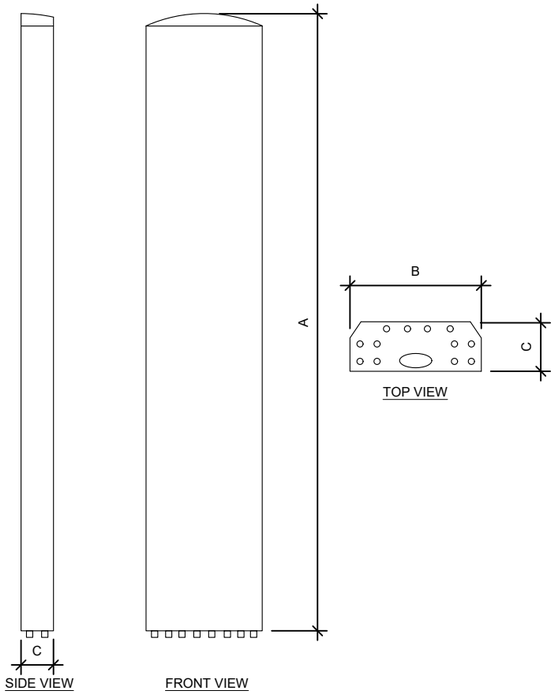
STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

| | |
|---|---|
| DATE DRAWN: | 04/07/22 |
| ATC JOB NO: | 13757800_G5 |
| CUSTOMER ID: | CTL01274 |
| CUSTOMER #: | 10133874 |

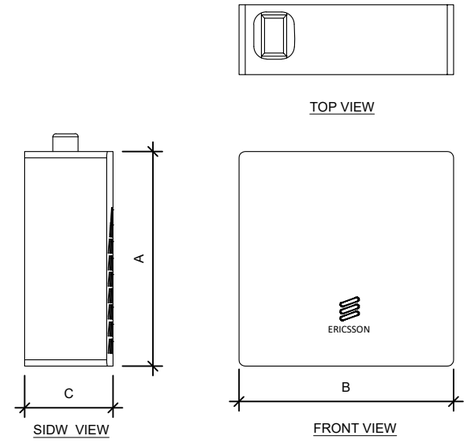
GROUNDING DETAILS

| SHEET NUMBER: | REVISION: |
|---|---|
| E-501 | 1 |

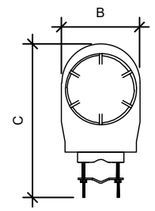



SIDE VIEW FRONT VIEW TOP VIEW

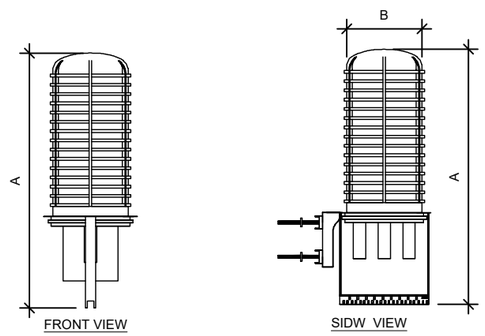
| ANTENNA SPECIFICATIONS | | | | |
|---|---|---|---|---|
| ANTENNA MODEL | A | B | C | WEIGHT (LBS) |
| TPA65R-BU6D | 71.2" | 20.7" | 7.7" | 69 |
| Air 6449 B77D | 30.4" | 15.9" | 8.1" | 81.6 |
| AIR 6419 B77G | 28.3" | 16.1" | 7.9" | 66.1 |




| RRU SPECIFICATIONS | | | | |
|---|---|---|---|---|
| RRU MODEL | A | B | C | WEIGHT (LBS) |
| 8843 B2, B66A | 14.9" | 13.2" | 10.9" | 72.0 |




PLAN VIEW




| RAYCAP SPECIFICATIONS | | | | |
|---|---|---|---|---|
| RAYCAP MODEL | A | B | C | WEIGHT (LBS) |
| DC9-48-60-24-8C-EV | 31.4" | 18.3" | 10.2" | 16.0 |

1 EQUIPMENT SPECIFICATIONS

SCALE: N.T.S.



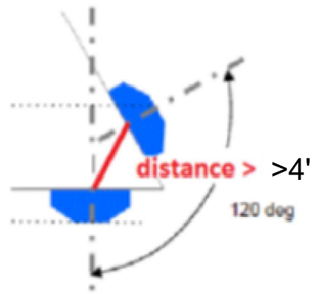
SUPPLEMENTAL

SHEET NUMBER: R-601

REVISION: 1

# RF REQUIREMENTS FOR 700 B14 FIRSTNET, 700 B12, 700D B29 ANTENNA SEPARATION

- ❑ Horizontal separation (side to side of antenna): >= 3’
- ❑ Vertical separation (between the tips of the antennas): > 3’
- ❑ Inter-sector separation: >4' between the center of the antenna backplanes.




- ❑ Please note additional horizontal separation may be required if B14 antennas azimuth are different from others or antennas are severely angled with respect to the mount.
- ❑ Typical 3' horizontal separation can tolerate skew angle up to 6°.

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

SUPPLEMENTAL

SHEET NUMBER: R-602

REVISION: 1

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Diagram - Sector | A | Diagram File Name - CT1274_ABC_CBAND_DOD_R1.vsd | | | | | |
| Atoll Site Name - | CTL01274 | Location Name - | BRANFORD PINE ORCHARD RD | Market - | CONNECTICUT | Market Cluster - | NEW ENGLAND |
| Comments: 2690901 | | | | | | | |

Antenna 1
Empty

Antenna 2
LTE 700 B14 / PCS /AWS

Broadband DoDec Low 700/850 +45/-45 | Broadband DoDec Low 700/850 +45/-45 | Broadband DoDec AWS/WCS/PCS 4Tx/4Rx +45/-45 | Broadband DoDec AWS/WCS/PCS 4Tx/4Rx +45/-45 | Broadband DoDec AWS/WCS/PCS 4Tx/4Rx +45/-45 | Broadband DoDec AWS/WCS/PCS 4Tx/4Rx +45/-45

RET | RET | RET | RET | RET | RET

LTE RRUS-4478 700 B-14

LTE RRUS-8843 AWS

Antenna 3
DoD + C band

AIR DoD +45/-45

AIR C-BAND +45/-45

Antenna 4
LTE 700 BC / 850

Broadband Octo Low 700/850 +45/-45 | Broadband Octo Low 700/850 +45/-45 | Broadband Octo High 4Tx/4Rx +45/-45 | Broadband Octo High 4Tx/4Rx +45/-45

RET | RET | RET | RET

LTE RRUS-4449 850/700 BC

Fiber/DC-1
Demarcation Box (Squid)

24/9 -- Fiber/DC
Demarcation Box (Squid)

DC Plant

- 3 Feet Minimum Separation between ALL Antennas
- 6 Feet Minimum Separation between 700BC & 700 DE
- 12" Vertical Separation between DoD and C Band Antenna.
- Use "Y Cable" for Dual band RRHs

6630 | XMU

6630

6648

IDLe

Xcede

1 RFDS PLUMBING DIAGRAM

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

SUPPLEMENTAL

| SHEET NUMBER: | REVISION: |
|---|---|
| R-603 | 1 |

AMERICAN TOWER®
CORPORATION

# Mount Analysis Report

| | | |
|---|---|---|
| ATC Site Name | : | PINE ORCHARD BRANFORD CT, CT |
| ATC Site Number | : | 283419 |
| Engineering Number | : | 13757800_C8_01 |
| Mount Elevation | : | 111 ft |
| Carrier | : | AT&T Mobility |
| Carrier Site Name | : | MRCTB055809 |
| Carrier Site Number | : | CT1274 |
| Site Location | : | 123 Pine Orchard Road<br>Branford, CT 06405-3939<br>41.27476815 , -72.79317788 |
| County | : | New Haven |
| Date | : | February 22, 2022 |
| Max Usage | : | 98% |
| Result | : | Contingent Pass |

Prepared By:
Max Carter
Structural Engineer I

Max Carter

Reviewed By:

ESHA KAUSHAL MODI
STATE OF CONNECTICUT
32593
LICENSED PROFESSIONAL ENGINEER

Authorized by "EOR"
22 Feb 2022 05:03:15

COA: PEC.0001553

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



## Introduction

The purpose of this report is to summarize results of the mount analysis performed for AT&T Mobility at 111 ft.

## Supporting Documents

| | |
|---|---|
| **Previous Analysis** | HDG Project #2101A0PQWB, dated September 25, 2019 |
| **Radio Frequency Data Sheet** | RFDS ID #10133874, dated February 2, 2022 |
| **Reference Photos** | Site photos from 2022 |

## Analysis

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

| | |
|---|---|
| **Basic Wind Speed:** | 122 mph (3-Second Gust) |
| **Basic Wind Speed w/ Ice:** | 50 mph (3-Second Gust) w/ 1" radial ice concurrent |
| **Codes:** | ANSI/TIA-222-H |
| **Exposure Category:** | C |
| **Risk Category:** | II |
| **Topographic Factor Procedure:** | Method 2 |
| **Feature:** | Flat |
| **Crest Height (H):** | 0 ft |
| **Crest Length (L):** | 0 ft |
| **Spectral Response:** | Ss = 0.201, S1 = 0.053 |
| **Site Class:** | D - Stiff Soil |
| **Live Loads:** | Lm = 400 lbs, Lv = 250 lbs |

* Live load(s) have been reduced on the existing structure per ANSI/TIA-222-H Section 16.9

## Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above provided the modifications listed below are completed:

- Install P2 (2.375" x 60") antenna mounting pipe (Mount Pipe J, K and L) with Site Pro 1 SCX7-U (ANT.16985) (or approved equivalent) crossover plate kits.
- No structural failures were addressed with the noted contingencies. Contingencies address Carrier's antenna spacing requirements.

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

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

1 MOUNT ANALYSIS

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

SUPPLEMENTAL

| SHEET NUMBER: | REVISION: |
|---|---|
| R-604 | 1 |

# Radio Frequency Exposure Analysis Report

**June 27, 2022**

**American Tower on behalf of AT&T**
**Centerline Communications Project Number: 950035-005**

**AT&T Site Name: PINE ORCHARD BRANFORD CT**
**Site Number: CTL01274**
**FA#: 10133874**
**USID: 105006**

**Site Address: 123 PINE ORCHARD ROAD, BRANFORD, CT 06405**

## Site Compliance Summary

| | |
|---|---|
| **AT&T Compliance Status:** | Compliant |
| **Cumulative Calculated Power Density (Ground Level):** | 25.73253 µW/cm$^2$ |
| **Cumulative General Population % MPE (Ground Level):** | 2.5734300000000001% |

June 27, 2022

Centerline
Attn: Jennifer Iliades, Project Manager
750 W Center St, Suite 301
West Bridgewater, MA 02379

RF Exposure Analysis for Site: **PINE ORCHARD BRANFORD CT**

Centerline Communications, LLC ("Centerline") was contracted to analyze the proposed AT&T facility at **123 PINE ORCHARD ROAD, BRANFORD, CT 06405** for the purpose of determining whether the predictive exposure from the proposed facility is within specified federal limits.

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

All results were compared to the FCC radio frequency exposure rules as detailed in 47 CFR § 1.1307(b) to determine compliance with the MPE limits for General Population/Uncontrolled environments as defined below.

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

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/ controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits, as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. Additional details can be found in FCC OET 65.

## Calculation Methodology

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

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

## Data & Results

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

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

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

## Maximum Calculated Cumulative Power Density (Location: approximately 248' northeast of site)

| Antenna ID | Make / Model | Frequency Band (MHz) | Antenna Gain (dBd) | Antenna Centerline (ft) | Channel Count | TX Power/ Channel (watts) | ERP (watts) | Calculated Power Density ($\mu W/cm^2$) | General Population MPE Limit ($\mu W/cm^2$) | General Population % MPE |
|---|---|---|---|---|---|---|---|---|---|---|
| AT&T A 1 | CCI TPA65R-BU6D | 700 | 11.35 | 112.00 | 4.00 | 30.00 | 1637.50 | 0.00017 | 466.67 | 0.00004 |
| AT&T A 1 | CCI TPA65R-BU6D | 1900 | 15.45 | 112.00 | 4.00 | 30.00 | 4209.02 | 0.00009 | 1000.00 | 0.00001 |
| AT&T A 1 | CCI TPA65R-BU6D | 2100 | 15.95 | 112.00 | 4.00 | 30.00 | 4722.60 | 0.00007 | 1000.00 | 0.00001 |
| AT&T A 2 | Ericsson SON_AIR6449 | 3700 | 23.45 | 114.00 | 1.00 | 108.40 | 23989.95 | 0.00111 | 1000.00 | 0.00011 |
| AT&T A 3 | Ericsson SON_AIR6419 | 3450 | 23.45 | 110.00 | 1.00 | 108.40 | 23989.95 | 0.00128 | 1000.00 | 0.00013 |
| AT&T A 4 | CCI DMP65R-BU6D | 700 | 11.25 | 112.00 | 4.00 | 30.00 | 1600.23 | 0.00022 | 466.67 | 0.00005 |
| AT&T A 4 | CCI DMP65R-BU6D | 850 | 11.35 | 112.00 | 4.00 | 30.00 | 1637.50 | 0.00018 | 566.67 | 0.00003 |
| AT&T B 5 | CCI TPA65R-BU6D | 700 | 11.35 | 112.00 | 4.00 | 30.00 | 1637.50 | 0.00000 | 466.67 | 0.00000 |
| AT&T B 5 | CCI TPA65R-BU6D | 1900 | 15.45 | 112.00 | 4.00 | 30.00 | 4209.02 | 0.00000 | 1000.00 | 0.00000 |
| AT&T B 5 | CCI TPA65R-BU6D | 2100 | 15.95 | 112.00 | 4.00 | 30.00 | 4722.60 | 0.00000 | 1000.00 | 0.00000 |
| AT&T B 6 | Ericsson SON_AIR6449 | 3700 | 23.45 | 114.00 | 1.00 | 108.40 | 23989.95 | 0.00000 | 1000.00 | 0.00000 |
| AT&T B 7 | Ericsson SON_AIR6419 | 3450 | 23.45 | 110.00 | 1.00 | 108.40 | 23989.95 | 0.00000 | 1000.00 | 0.00000 |
| AT&T B 8 | CCI DMP65R-BU6D | 700 | 11.25 | 112.00 | 4.00 | 30.00 | 1600.23 | 0.00000 | 466.67 | 0.00000 |
| AT&T B 8 | CCI DMP65R-BU6D | 850 | 11.35 | 112.00 | 4.00 | 30.00 | 1637.50 | 0.00000 | 566.67 | 0.00000 |
| AT&T C 9 | CCI TPA65R-BU6D | 700 | 11.35 | 112.00 | 4.00 | 30.00 | 1637.50 | 0.00018 | 466.67 | 0.00004 |
| AT&T C 9 | CCI TPA65R-BU6D | 1900 | 15.45 | 112.00 | 4.00 | 30.00 | 4209.02 | 0.00008 | 1000.00 | 0.00001 |
| AT&T C 9 | CCI TPA65R-BU6D | 2100 | 15.95 | 112.00 | 4.00 | 30.00 | 4722.60 | 0.00007 | 1000.00 | 0.00001 |
| AT&T C 10 | Ericsson SON_AIR6449 | 3700 | 23.45 | 114.00 | 1.00 | 108.40 | 23989.95 | 0.00111 | 1000.00 | 0.00011 |
| AT&T C 11 | Ericsson SON_AIR6419 | 3450 | 23.45 | 110.00 | 1.00 | 108.40 | 23989.95 | 0.00128 | 1000.00 | 0.00013 |
| AT&T C 12 | CCI DMP65R-BU6D | 700 | 11.25 | 112.00 | 4.00 | 30.00 | 1600.23 | 0.00021 | 466.67 | 0.00005 |
| AT&T C 12 | CCI DMP65R-BU6D | 850 | 11.35 | 112.00 | 4.00 | 30.00 | 1637.50 | 0.00006 | 566.67 | 0.00001 |
| Verizon A 13 | GENERIC PANEL 6FT | 700 | 12.33 | 121.80 | 4.00 | 40.00 | 2736.02 | 0.00007 | 466.67 | 0.00002 |
| Verizon A 14 | GENERIC PANEL 6FT | 850 | 12.62 | 121.80 | 4.00 | 40.00 | 2924.96 | 0.00005 | 566.67 | 0.00001 |
| Verizon A 15 | GENERIC PANEL 6FT | 1900 | 15.84 | 121.80 | 4.00 | 40.00 | 6139.32 | 0.00005 | 1000.00 | 0.00000 |
| Verizon A 16 | GENERIC PANEL 6FT | 2100 | 16.39 | 121.80 | 4.00 | 40.00 | 6968.19 | 0.00006 | 1000.00 | 0.00001 |
| Verizon B 17 | GENERIC PANEL 6FT | 700 | 12.33 | 121.80 | 4.00 | 40.00 | 2736.02 | 0.00000 | 466.67 | 0.00000 |
| Verizon B 18 | GENERIC PANEL 6FT | 850 | 12.62 | 121.80 | 4.00 | 40.00 | 2924.96 | 0.00000 | 566.67 | 0.00000 |
| Verizon B 19 | GENERIC PANEL 6FT | 1900 | 15.84 | 121.80 | 4.00 | 40.00 | 6139.32 | 0.00000 | 1000.00 | 0.00000 |
| Verizon B 20 | GENERIC PANEL 6FT | 2100 | 16.39 | 121.80 | 4.00 | 40.00 | 6968.19 | 0.00000 | 1000.00 | 0.00000 |
| Verizon C 21 | GENERIC PANEL 6FT | 700 | 12.33 | 121.80 | 4.00 | 40.00 | 2736.02 | 0.00008 | 466.67 | 0.00002 |
| Verizon C 22 | GENERIC PANEL 6FT | 850 | 12.62 | 121.80 | 4.00 | 40.00 | 2924.96 | 0.00007 | 566.67 | 0.00001 |
| Verizon C 23 | GENERIC PANEL 6FT | 1900 | 15.84 | 121.80 | 4.00 | 40.00 | 6139.32 | 0.00005 | 1000.00 | 0.00001 |
| Verizon C 24 | GENERIC PANEL 6FT | 2100 | 16.39 | 121.80 | 4.00 | 40.00 | 6968.19 | 0.00004 | 1000.00 | 0.00000 |
| T-Mobile A 25 | GENERIC PANEL 6FT | 1900 | 15.84 | 103.50 | 2.00 | 60.00 | 4604.49 | 0.00005 | 1000.00 | 0.00001 |
| T-Mobile A 25 | GENERIC PANEL 6FT | 2100 | 16.39 | 103.50 | 2.00 | 60.00 | 5226.14 | 0.00006 | 1000.00 | 0.00001 |

| Antenna ID | Make / Model | Frequency Band (MHz) | Antenna Gain (dBd) | Antenna Centerline (ft) | Channel Count | TX Power/ Channel (watts) | ERP (watts) | Calculated Power Density (µW/cm²) | General Population MPE Limit (µW/cm²) | General Population % MPE |
|---|---|---|---|---|---|---|---|---|---|---|
| T-Mobile A 26 | GENERIC PANEL 6FT | 600 | 0.00 | 103.50 | 2.00 | 60.00 | 120.00 | 0.00008 | 400.00 | 0.00002 |
| T-Mobile A 26 | GENERIC PANEL 6FT | 700 | 12.33 | 103.50 | 2.00 | 60.00 | 2052.02 | 0.00008 | 466.67 | 0.00002 |
| T-Mobile B 27 | GENERIC PANEL 6FT | 1900 | 15.84 | 103.50 | 2.00 | 60.00 | 4604.49 | 0.00000 | 1000.00 | 0.00000 |
| T-Mobile B 27 | GENERIC PANEL 6FT | 2100 | 16.39 | 103.50 | 2.00 | 60.00 | 5226.14 | 0.00000 | 1000.00 | 0.00000 |
| T-Mobile B 28 | GENERIC PANEL 6FT | 600 | 0.00 | 103.50 | 2.00 | 60.00 | 120.00 | 0.00000 | 400.00 | 0.00000 |
| T-Mobile B 28 | GENERIC PANEL 6FT | 700 | 12.33 | 103.50 | 2.00 | 60.00 | 2052.02 | 0.00000 | 466.67 | 0.00000 |
| T-Mobile C 29 | GENERIC PANEL 6FT | 1900 | 15.84 | 103.50 | 2.00 | 60.00 | 4604.49 | 0.00005 | 1000.00 | 0.00001 |
| T-Mobile C 29 | GENERIC PANEL 6FT | 2100 | 16.39 | 103.50 | 2.00 | 60.00 | 5226.14 | 0.00005 | 1000.00 | 0.00001 |
| T-Mobile C 30 | GENERIC PANEL 6FT | 600 | 0.00 | 103.50 | 2.00 | 60.00 | 120.00 | 0.00008 | 400.00 | 0.00002 |
| T-Mobile C 30 | GENERIC PANEL 6FT | 700 | 12.33 | 103.50 | 2.00 | 60.00 | 2052.02 | 0.00008 | 466.67 | 0.00002 |
| | | | | | | | **Cumulative Power Density:** | **25.73253 µW/cm²** | **Cumulative % MPE:** | **2.57343%** |

## Summary

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

Matt Schulzinger
RF EME Technical Writer
Centerline Communications, LLC

Matt Schulzinger

AMERICAN TOWER®
CORPORATION

# Structural Analysis Report

| | | |
|---|---|---|
| **Structure** | : | **123 ft Monopole** |
| **ATC Site Name** | : | **PINE ORCHARD BRANFORD CT,CT** |
| **ATC Site Number** | : | **283419** |
| **Engineering Number** | : | **13757800_C3_03** |
| **Proposed Carrier** | : | **AT&T MOBILITY** |
| **Carrier Site Name** | : | **MRCTB055809** |
| **Carrier Site Number** | : | **CT1274** |
| **Site Location** | : | **123 Pine Orchard Road**<br>**Branford, CT 06405-3939**<br>**41.2748, -72.7932** |
| **County** | : | **New Haven** |
| **Date** | : | **February 16, 2022** |
| **Max Usage** | : | **57%** |
| **Result** | : | **Pass** |


Prepared By:

Madelyn Rhodes
Structural Engineer

Reviewed By:

**COA : PEC.0001553**

## Table of Contents

## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 123 ft Monopole to reflect the change in loading by AT&T MOBILITY.

## Supporting Documents

| | |
|---|---|
| **Tower Drawings** | Sabre Job #11-05276, dated June 2, 2010 |
| **Foundation Drawing** | Sabre Job #11-05276, dated June 2, 2010 |
| **Geotechnical Report** | Terracon Project #J2105131, dated April 2, 2010 |

## 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:** | 122 mph (3-second gust) |
| **Basic Wind Speed w/ Ice:** | 50 mph (3-second gust) w/ 1.00" radial ice concurrent |
| **Code:** | ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code |
| **Exposure Category:** | C |
| **Risk Category:** | II |
| **Topographic Factor Procedure:** | Method 1 |
| **Topographic Category:** | 1 |
| **Crest Height (H):** | 0 ft |
| **Crest Length (L):** | 0 ft |
| **Spectral Response:** | Ss = 0.20, $S_1$ = 0.05 |
| **Site Class:** | D - Stiff Soil - Default |

## Conclusion

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

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

## Existing and Reserved Equipment

| Elev.[1] (ft) | Qty | Equipment | Mount Type | Lines | Carrier |
|---|---|---|---|---|---|
| 122.0 | 3 | Ericsson AIR 21, 1.3 M, B2A B4P | T-Arm | (4) 1 5/8" (1.63"-41.3mm) Fiber<br>(8) 1 5/8" Coax | T-MOBILE |
| | 3 | Ericsson AIR 21, 1.3M, B4A B2P | | | |
| 120.0 | 3 | RFS APXVAARR24_43-U-NA20 | | | |
| | 3 | Ericsson Radio 4449 B12,B71 | | | |
| | 3 | Ericsson KRY 112 144/1 | | | |
| 112.0 | 1 | Raycap DC6-48-60-18-8C | T-Arm | (4) 0.78" (19.7mm) 8 AWG 6 | AT&T MOBILITY |
| | 3 | Ericsson RRUS 4449 B5, B12 | | | |
| | 1 | Raycap DC6-48-60-18-8F | | (6) 1 5/8" Coax<br>(1) 2" conduit | |
| | 3 | Ericsson RRUS 4478 B14 | | | |
| | 3 | CCI DMP65R-BU6DA | | | |
| 102.0 | 3 | Samsung MT6407-77A | T-Arm | (12) 1 5/8" Coax<br>(2) 1 5/8" (1.63"-41.3mm) Fiber | VERIZON WIRELESS |
| | 4 | Antel LPA-80063/6CF | | | |
| | 6 | Commscope JAHH-65B-R3B | | | |
| | 2 | Swedcom SC-E 6016 REV2 | | | |
| | 3 | Commscope CBC78T-DS-43-2X | | | |
| | 3 | Samsung B2/B66A RRH-BR049 | | | |
| | 3 | Samsung B5/B13 RRH-BR04C | | | |
| | 1 | Raycap RCMDC-6627-PF-48 | | | |
| 80.0 | 3 | JMA Wireless MX08FRO665-21 | Triangular Platform with Handrails | (1) 1.60" (40.6mm) Hybrid | DISH WIRELESS L.L.C. |
| | 3 | Fujitsu TA08025-B605 | | | |
| | 3 | Fujitsu TA08025-B604 | | | |
| | 1 | Commscope RDIDC-9181-PF-48 | | | |

## Equipment to be Removed

| Elev.[1] (ft) | Qty | Equipment | Mount Type | Lines | Carrier |
|---|---|---|---|---|---|
| 112.0 | 3 | Ericsson RRUS 32 B2 | - | (2) 0.40" (10.3mm) Fiber | AT&T MOBILITY |
| | 3 | Powerwave Allgon P90-15-XLH-RR | | | |
| | 3 | Powerwave Allgon TT19-08BP111-001 | | | |
| | 3 | Commscope SBNHH-1D65A | | | |

## Proposed Equipment

| Elev.[1] (ft) | Qty | Equipment | Mount Type | Lines | Carrier |
|---|---|---|---|---|---|
| 112.0 | 3 | Ericsson RRUS 8843 B2, B66A | T-Arm | (1) 0.39" (10mm) Fiber Trunk<br>(3) 0.41" (10.3mm) Fiber<br>(2) 0.92" (23.4mm) Cable<br>(1) 2" conduit | AT&T MOBILITY |
| | 3 | Ericsson AIR 6419 B77G | | | |
| | 3 | Ericsson Air 6449 B77D | | | |
| | 3 | CCI TPA-65R-BU6DA-K | | | |

[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 | 50% | Pass |
| Shaft | 57% | Pass |
| Base Plate | 21% | Pass |

## Foundations

| Reaction Component | Original Design Reactions | Factored Design Reactions* | Analysis Reactions | % of Design |
|---|---|---|---|---|
| Moment (Kips-Ft) | 3210.8 | 4334.6 | 2365.2 | 55% |
| Shear (Kips) | 36.1 | 48.7 | 27.0 | 55% |
| * The design reactions are factored by 1.35 per ANSI/TIA-222-H, Sec. 15.6.2 | | | | |

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) (°) |
|---|---|---|---|---|
| 112.0 | Ericsson RRUS 8843 B2, B66A | AT&T MOBILITY | 0.857 | 0.840 |
| | CCI TPA-65R-BU6DA-K | | | |
| | Ericsson Air 6449 B77D | | | |
| | Ericsson AIR 6419 B77G | | | |

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

**Standard Conditions**

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

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

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

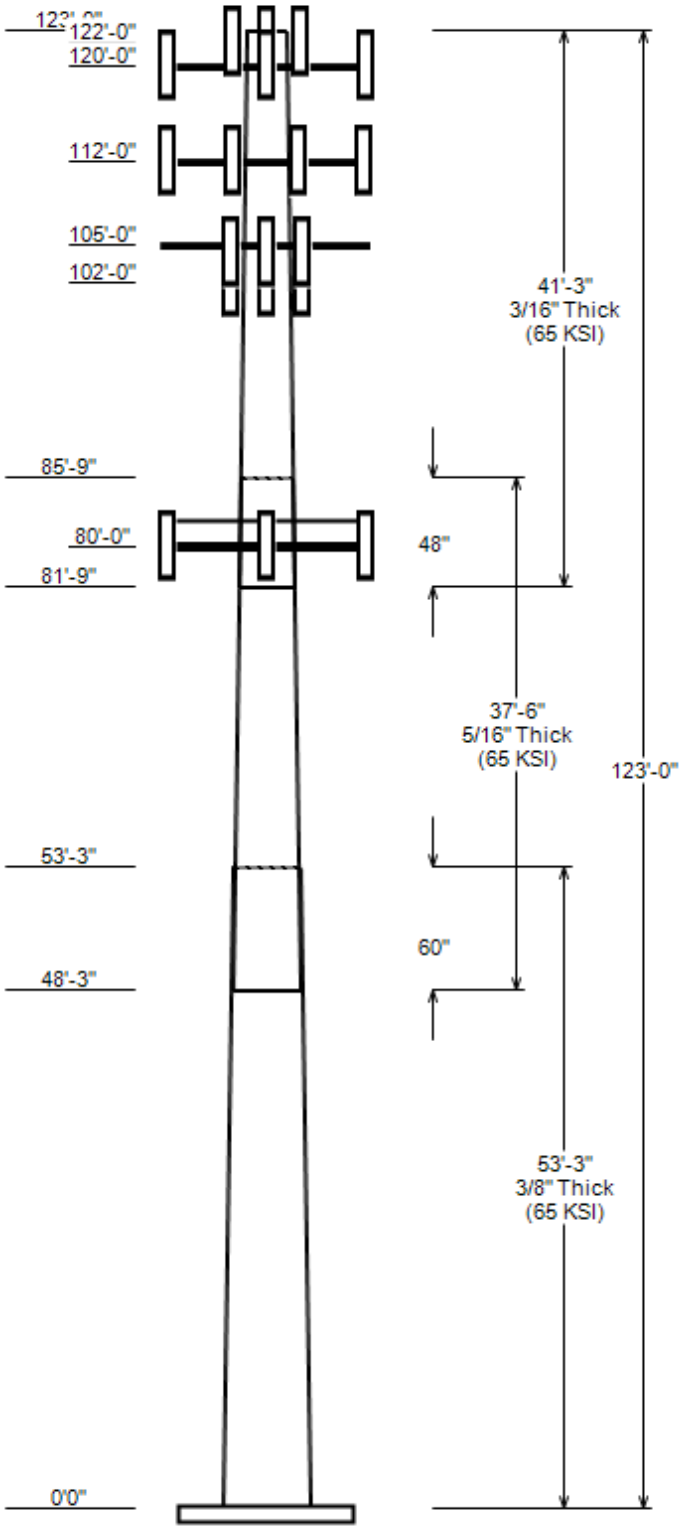
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

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

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

## JOB INFORMATION

| | | | |
|---|---|---|---|
| Asset : | 283419, PINE ORCHARD BRANFORD CT | Height : | 123 ft |
| Client : | AT&T MOBILITY | Base Width : | 50.75 |
| Code : | ANSI/TIA-222-H | Shape : | 18 Sides |




## SITE PARAMETERS

**Nominal Wind:** 122 mph wind with no ice **Topo Category:** 1

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

**Base Elev (ft):** 0.00 **Taper :** 0.25000(In/ft) **Topo Feature:**

**Structure Class:** II **Exposure :** C **$S_s$ :** 0.201 **$S_1$** : 0.053

## SECTION PROPERTIES

| Shaft Section | Length (ft) | Diameter (in) Across Flats Top | Diameter (in) Across Flats Bottom | Thick (in) | Joint Type | Overlap Length (in) | Shape | Steel Grade (ksi) |
|---|---|---|---|---|---|---|---|---|
| 1 | 53.250 | 37.44 | 50.75 | 0.375 | | 0.000 | 18 Sides | 65 |
| 2 | 37.500 | 29.94 | 39.31 | 0.312 | Slip Joint | 60.000 | 18 Sides | 65 |
| 3 | 41.250 | 21.00 | 31.31 | 0.188 | Slip Joint | 48.000 | 18 Sides | 65 |

## DISCRETE APPURTENANCE

| Attach Elev (ft) | Force Elev (ft) | Qty | Description |
|---|---|---|---|
| 122.0 | 122.0 | 3 | Ericsson AIR 21, 1.3 M, B2A B4 |
| 122.0 | 122.0 | 3 | Ericsson AIR 21, 1.3M, B4A B2P |
| 120.0 | 120.0 | 3 | Ericsson KRY 112 144/1 |
| 120.0 | 120.0 | 3 | Ericsson Radio 4449 B12,B71 |
| 120.0 | 120.0 | 3 | Generic Round T-Arm |
| 120.0 | 120.0 | 3 | RFS APXVAARR24_43-U-NA20 |
| 112.0 | 114.0 | 1 | Raycap DC6-48-60-18-8F |
| 112.0 | 112.0 | 3 | Ericsson RRUS 8843 B2, B66A |
| 112.0 | 112.0 | 3 | Ericsson RRUS 4449 B5, B12 |
| 112.0 | 112.0 | 3 | Ericsson RRUS 4478 B14 |
| 112.0 | 112.0 | 1 | Raycap DC6-48-60-18-8C |
| 112.0 | 112.0 | 3 | Ericsson AIR 6419 B77G |
| 112.0 | 112.0 | 3 | Ericsson Air 6449 B77D |
| 112.0 | 112.0 | 3 | Round T-Arm |
| 112.0 | 112.0 | 3 | CCI DMP65R-BU6DA |
| 112.0 | 112.0 | 3 | CCI TPA-65R-BU6DA-K |
| 105.0 | 105.0 | 3 | Round T-Arm |
| 102.0 | 102.0 | 3 | Commscope CBC78T-DS-43-2X |
| 102.0 | 102.0 | 3 | Samsung B2/B66A RRH-BR049 |
| 102.0 | 102.0 | 3 | Samsung B5/B13 RRH-BR04C |
| 102.0 | 102.0 | 1 | Raycap RCMDC-6627-PF-48 |
| 102.0 | 102.0 | 3 | Samsung MT6407-77A |
| 102.0 | 103.0 | 2 | Swedcom SC-E 6016 REV2 |
| 102.0 | 102.0 | 6 | Commscope JAHH-65B-R3B |
| 102.0 | 103.0 | 4 | Antel LPA-80063/6CF |
| 80.0 | 80.0 | 1 | Commscope RDIDC-9181-PF-48 |
| 80.0 | 80.0 | 3 | Fujitsu TA08025-B604 |
| 80.0 | 80.0 | 3 | Fujitsu TA08025-B605 |
| 80.0 | 80.0 | 3 | JMA Wireless MX08FRO665-21 |
| 80.0 | 80.0 | 1 | Generic Flat Platform with Han |

## LINEAR APPURTENANCE

| Elev From (ft) | Elev To (ft) | Description | Exp To Wind |
|---|---|---|---|
| 0.0 | 122.0 | 1 5/8" Coax | No |
| 0.0 | 122.0 | 1 5/8" (1.63"-41.3mm) Fiber | No |
| 0.0 | 120.0 | 1 5/8" (1.63"-41.3mm) Fiber | No |
| 0.0 | 119.0 | 0.78" (19.7mm) 8 AWG 6 | No |
| 0.0 | 112.0 | 2" conduit | No |
| 0.0 | 112.0 | 2" conduit | No |
| 0.0 | 112.0 | 1 5/8" Coax | No |
| 0.0 | 112.0 | 0.92" (23.4mm) Cable | No |
| 0.0 | 112.0 | 0.41" (10.3mm) Fiber | No |

| JOB INFORMATION | | | |
|---|---|---|---|
| Asset : | 283419, PINE ORCHARD BRANFORD CT | Height : | 123 ft |
| Client : | AT&T MOBILITY | Base Width : | 50.75 |
| Code : | ANSI/TIA-222-H | Shape : | 18 Sides |

**LINEAR APPURTENANCE**

| Elev From (ft) | Elev To (ft) | Description | Exp To Wind |
|---|---|---|---|
| 0.0 | 112.0 | 0.39" (10mm) Fiber Trunk | No |
| 0.0 | 103.0 | 1 5/8" Coax | No |
| 0.0 | 102.0 | 1 5/8" Coax | No |
| 0.0 | 102.0 | 1 5/8" (1.63"-41.3mm) Fiber | No |
| 0.0 | 80.0 | 1.60" (40.6mm) Hybrid | No |

**LOAD CASES**

| | |
|---|---|
| 1.2D + 1.0W Normal | 122 mph wind with no ice |
| 0.9D + 1.0W Normal | 122 mph wind with no ice |
| 1.2D + 1.0Di + 1.0Wi Nor | 50 mph wind with 1" radial ice |
| 1.2D + 1.0Ev + 1.0Eh Nor | Seismic |
| 0.9D - 1.0Ev + 1.0Eh Nor | Seismic (Reduced DL) |
| 1.0D + 1.0W Service Norm | 60 mph Wind with No Ice |

**REACTIONS**

| Load Case | Moment (kip-ft) | Shear (Kip) | Axial (Kip) |
|---|---|---|---|
| 1.2D + 1.0W Normal | 2363.78 | 26.96 | 36.58 |
| 0.9D + 1.0W Normal | 2346.66 | 26.94 | 27.42 |
| 1.2D + 1.0Di + 1.0Wi Normal | 562.82 | 6.60 | 49.40 |
| 1.2D + 1.0Ev + 1.0Eh Normal | 97.03 | 1.03 | 36.40 |
| 0.9D - 1.0Ev + 1.0Eh Normal | 96.16 | 1.03 | 25.10 |
| 1.0D + 1.0W Service Normal | 509.30 | 5.83 | 30.51 |

**DISH DEFLECTIONS**

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

## ANALYSIS PARAMETERS

| | | | |
|---|---|---|---|
| **Location:** | New Haven County,CT | **Height:** | 123 ft |
| **Type and Shape:** | Taper, 18 Sides | **Base Diameter:** | 50.75 in |
| **Manufacturer:** | Sabre | **Top Diameter:** | 21.00 in |
| **$K_d$ (non-service):** | 0.95 | **Taper:** | 0.2500 in/ft |
| **$K_e$:** | 1.00 | **Rotation:** | 0.000° |

## ICE & WIND PARAMETERS

| | | | |
|---|---|---|---|
| **Exposure Category:** | C | **Design Wind Speed w/o Ice:** | 122 mph |
| **Risk Category:** | II | **Design Wind Speed w/Ice:** | 50 mph |
| **Topo Factor Procedure:** | Method 1 | **Operational Wind Speed:** | 60 mph |
| **Topographic Category:** | 1 | **Design Ice Thickness:** | 1.00 in |
| **Crest Height:** | 0 ft | **HMSL:** | 30.00 ft |

## SEISMIC PARAMETERS

| | | | | | |
|---|---|---|---|---|---|
| **Analysis Method:** | Equivalent Lateral Force Method | | | | |
| **Site Class:** | D - Stiff Soil | | | **Period Based on Rayleigh Method (sec):** | 1.68 |
| **$T_L$ (sec):** | 6 | **P:** | 1 | **$C_{s:}$** | 0.034 |
| **$S_{s:}$** | 0.201 | **$S_{1:}$** | 0.053 | **$C_s$ Max:** | 0.034 |
| **$F_{a:}$** | 1.600 | **$F_{v:}$** | 2.400 | **$C_s$ Min:** | 0.030 |
| **$S_{ds:}$** | 0.214 | **$S_{d1:}$** | 0.085 | | |

## LOAD CASES

| | |
|---|---|
| 1.2D + 1.0W Normal | 122 mph wind with no ice |
| 0.9D + 1.0W Normal | 122 mph wind with no ice |
| 1.2D + 1.0Di + 1.0Wi Normal | 50 mph wind with 1" radial ice |
| 1.2D + 1.0Ev + 1.0Eh Normal | Seismic |
| 0.9D - 1.0Ev + 1.0Eh Normal | Seismic (Reduced DL) |
| 1.0D + 1.0W Service Normal | 60 mph Wind with No Ice |

## SHAFT SECTION PROPERTIES

| Sect Info | Length (ft) | Thick (in) | Fy (ksi) | Joint Type | Slip Joint len (in) | Weight (lb) | Bottom Dia (in) | Bottom Elev (ft) | Bottom Area ($in^2$) | Bottom Ix ($in^4$) | Bottom W/t Ratio | Bottom D/t Ratio | Top Dia (in) | Top Elev (in) | Top Area ($in^2$) | Top Ix ($in^4$) | Top W/t Ratio | Top D/t Ratio | Taper (in/ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-18 | 53.25 | 0.3750 | 65 | | 0.00 | 9,429 | 50.75 | 0.000 | 59.96 | 19,223.0 | 22.10 | 135.33 | 37.44 | 53.25 | 44.11 | 7,655.6 | 15.84 | 99.83 | 0.2500 |
| 2-18 | 37.50 | 0.3125 | 65 | Slip | 60.00 | 4,343 | 39.31 | 48.250 | 38.68 | 7,433.4 | 20.42 | 125.80 | 29.94 | 85.75 | 29.38 | 3,258.1 | 15.13 | 95.80 | 0.2500 |
| 3-18 | 41.25 | 0.1875 | 65 | Slip | 48.00 | 2,169 | 31.31 | 81.750 | 18.52 | 2,267.1 | 27.68 | 167.00 | 21.00 | 123.00 | 12.39 | 677.8 | 17.99 | 112.00 | 0.2500 |
| | | | | Shaft Weight | | 15,941 | | | | | | | | | | | | | |

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 122.00 | Ericsson AIR 21, 1.3M, B4A B2P | 3 | 0.80 | 0.000 | 81.50 | 6.092 | 0.70 | 176.57 | 7.507 | 0.70 |
| 122.00 | Ericsson AIR 21, 1.3 M, B2A B4 | 3 | 0.80 | 0.000 | 83.00 | 6.049 | 0.71 | 178.42 | 7.462 | 0.71 |
| 120.00 | RFS APXVAARR24_43-U-NA20 | 3 | 0.80 | 0.000 | 127.90 | 20.243 | 0.63 | 383.83 | 22.661 | 0.63 |
| 120.00 | Generic Round T-Arm | 3 | 0.75 | 0.000 | 312.50 | 9.700 | 0.67 | 482.81 | 15.075 | 0.67 |
| 120.00 | Ericsson Radio 4449 B12,B71 | 3 | 0.80 | 0.000 | 74.00 | 1.639 | 0.50 | 110.50 | 2.189 | 0.50 |
| 120.00 | Ericsson KRY 112 144/1 | 3 | 0.80 | 0.000 | 11.00 | 0.351 | 0.50 | 18.01 | 0.616 | 0.50 |
| 112.00 | CCI DMP65R-BU6DA | 3 | 0.80 | 0.000 | 79.40 | 12.709 | 0.63 | 246.38 | 14.517 | 0.63 |
| 112.00 | CCI TPA-65R-BU6DA-K | 3 | 0.80 | 0.000 | 79.60 | 15.270 | 0.60 | 273.67 | 17.125 | 0.60 |
| 112.00 | Ericsson Air 6449 B77D | 3 | 0.80 | 0.000 | 81.60 | 4.028 | 0.65 | 148.26 | 4.919 | 0.65 |
| 112.00 | Raycap DC6-48-60-18-8F | 1 | 0.80 | 2.000 | 20.00 | 1.260 | 1.00 | 54.13 | 1.687 | 1.00 |
| 112.00 | Ericsson RRUS 8843 B2, B66A | 3 | 0.80 | 0.000 | 72.00 | 1.639 | 0.50 | 111.73 | 2.187 | 0.50 |
| 112.00 | Ericsson RRUS 4449 B5, B12 | 3 | 0.80 | 0.000 | 71.00 | 1.969 | 0.50 | 112.78 | 2.574 | 0.50 |
| 112.00 | Ericsson RRUS 4478 B14 | 3 | 0.80 | 0.000 | 59.40 | 2.021 | 0.67 | 99.18 | 2.632 | 0.67 |
| 112.00 | Raycap DC6-48-60-18-8C | 1 | 0.80 | 0.000 | 16.00 | 2.030 | 1.00 | 53.74 | 2.522 | 1.00 |
| 112.00 | Ericsson AIR 6419 B77G | 3 | 0.80 | 0.000 | 66.10 | 3.797 | 0.65 | 128.99 | 4.651 | 0.65 |
| 112.00 | Round T-Arm | 3 | 0.75 | 0.000 | 250.00 | 9.700 | 0.67 | 385.48 | 15.044 | 0.67 |
| 105.00 | Round T-Arm | 3 | 0.75 | 0.000 | 250.00 | 9.700 | 0.67 | 384.53 | 15.007 | 0.67 |
| 102.00 | Antel LPA-80063/6CF | 4 | 0.80 | 1.000 | 27.00 | 9.593 | 0.76 | 202.07 | 10.446 | 0.76 |
| 102.00 | Commscope JAHH-65B-R3B | 6 | 0.80 | 0.000 | 60.60 | 9.113 | 0.69 | 190.51 | 10.894 | 0.69 |
| 102.00 | Swedcom SC-E 6016 REV2 | 2 | 0.80 | 1.000 | 25.00 | 7.630 | 0.83 | 149.77 | 8.556 | 0.83 |
| 102.00 | Samsung MT6407-77A | 3 | 0.80 | 0.000 | 81.60 | 4.709 | 0.61 | 147.05 | 5.684 | 0.61 |
| 102.00 | Raycap RCMDC-6627-PF-48 | 1 | 0.80 | 0.000 | 32.00 | 4.056 | 1.00 | 113.61 | 4.932 | 1.00 |
| 102.00 | Samsung B5/B13 RRH-BR04C | 3 | 0.80 | 0.000 | 70.30 | 1.875 | 0.50 | 107.03 | 2.455 | 0.50 |
| 102.00 | Commscope CBC78T-DS-43-2X | 3 | 0.80 | 0.000 | 20.70 | 0.552 | 0.50 | 34.89 | 0.878 | 0.50 |
| 102.00 | Samsung B2/B66A RRH-BR049 | 3 | 0.80 | 0.000 | 84.40 | 1.875 | 0.50 | 125.36 | 2.455 | 0.50 |
| 80.00 | Commscope RDIDC-9181-PF-48 | 1 | 0.75 | 0.000 | 21.90 | 1.867 | 1.00 | 57.49 | 2.430 | 1.00 |
| 80.00 | Fujitsu TA08025-B604 | 3 | 0.75 | 0.000 | 63.90 | 1.962 | 0.50 | 100.37 | 2.537 | 0.50 |
| 80.00 | Fujitsu TA08025-B605 | 3 | 0.75 | 0.000 | 75.00 | 1.962 | 0.50 | 114.18 | 2.537 | 0.50 |
| 80.00 | JMA Wireless MX08FRO665-21 | 3 | 0.75 | 0.000 | 64.50 | 12.489 | 0.64 | 225.23 | 14.246 | 0.64 |
| 80.00 | Generic Flat Platform with Han | 1 | 1.00 | 0.000 | 2500.00 | 42.400 | 1.00 | 3610.91 | 55.515 | 1.00 |
| Totals | Num Loadings: 30 | 83 | | | 9,589.70 | | | 18,426.51 | | |

## 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 | 122.00 | 8 | 1 5/8" Coax | 1.98 | 0.82 | N | 0 | 0 | 0 | 0 | 0 | N | T-MOBILE |
| 0.00 | 122.00 | 1 | 1 5/8" (1.63"-41.3mm) | 1.63 | 1.61 | N | 0 | 0 | 0 | 0 | 0 | N | T-MOBILE |
| 0.00 | 120.00 | 3 | 1 5/8" (1.63"-41.3mm) | 1.63 | 1.61 | N | 0 | 0 | 0 | 0 | 0 | N | T-MOBILE |
| 0.00 | 119.00 | 4 | 0.78" (19.7mm) 8 AWG | 0.78 | 0.59 | N | 0 | 0 | 0 | 0 | 0 | N | AT&T MOBILITY |
| 0.00 | 112.00 | 6 | 1 5/8" Coax | 1.98 | 0.82 | N | 0 | 0 | 0 | 0 | 0 | N | AT&T MOBILITY |
| 0.00 | 112.00 | 3 | 0.41" (10.3mm) Fiber | 0.41 | 0.09 | N | 0 | 0 | 0 | 0 | 0 | N | AT&T MOBILITY |
| 0.00 | 112.00 | 2 | 0.92" (23.4mm) Cable | 0.92 | 0.89 | N | 0 | 0 | 0 | 0 | 0 | N | AT&T MOBILITY |
| 0.00 | 112.00 | 1 | 2" conduit | 2.38 | 3.65 | N | 0 | 0 | 0 | 0 | 0 | N | AT&T MOBILITY |
| 0.00 | 112.00 | 1 | 2" conduit | 2.38 | 3.65 | N | 0 | 0 | 0 | 0 | 0 | N | AT&T MOBILITY |
| 0.00 | 112.00 | 1 | 0.39" (10mm) Fiber Tr | 0.39 | 0.06 | N | 0 | 0 | 0 | 0 | 0 | N | AT&T MOBILITY |
| 0.00 | 103.00 | 6 | 1 5/8" Coax | 1.98 | 0.82 | N | 0 | 0 | 0 | 0 | 0 | N | VERIZON WIREL |
| 0.00 | 102.00 | 6 | 1 5/8" Coax | 1.98 | 0.82 | N | 0 | 0 | 0 | 0 | 0 | N | VERIZON WIREL |
| 0.00 | 102.00 | 2 | 1 5/8" (1.63"-41.3mm) | 1.63 | 1.61 | N | 0 | 0 | 0 | 0 | 0 | N | VERIZON WIREL |
| 0.00 | 80.00 | 1 | 1.60" (40.6mm) Hybrid | 1.6 | 2.34 | N | 0 | 0 | 0 | 0 | 0 | N | DISH WIRELESS |

## 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 | | 0.3750 | 50.750 | 59.957 | 19,223.00 | 22.10 | 135.33 | 75.4 | 746.0 | 0.0 | 0.0 |
| 5.00 | | 0.3750 | 49.500 | 58.469 | 17,827.20 | 21.51 | 132.00 | 76.1 | 709.3 | 0.0 | 1,007.4 |
| 10.00 | | 0.3750 | 48.250 | 56.981 | 16,500.70 | 20.92 | 128.67 | 76.8 | 673.6 | 0.0 | 982.1 |
| 15.00 | | 0.3750 | 47.000 | 55.493 | 15,241.70 | 20.34 | 125.33 | 77.5 | 638.7 | 0.0 | 956.8 |
| 20.00 | | 0.3750 | 45.750 | 54.006 | 14,048.40 | 19.75 | 122.00 | 78.2 | 604.8 | 0.0 | 931.5 |
| 25.00 | | 0.3750 | 44.500 | 52.518 | 12,919.00 | 19.16 | 118.67 | 78.9 | 571.8 | 0.0 | 906.2 |
| 30.00 | | 0.3750 | 43.250 | 51.030 | 11,851.90 | 18.57 | 115.33 | 79.6 | 539.7 | 0.0 | 880.9 |
| 35.00 | | 0.3750 | 42.000 | 49.542 | 10,845.20 | 17.99 | 112.00 | 80.2 | 508.6 | 0.0 | 855.6 |
| 40.00 | | 0.3750 | 40.750 | 48.055 | 9,897.20 | 17.40 | 108.67 | 80.9 | 478.4 | 0.0 | 830.3 |
| 45.00 | | 0.3750 | 39.500 | 46.567 | 9,006.10 | 16.81 | 105.33 | 81.6 | 449.1 | 0.0 | 804.9 |
| 48.25 | Bot - Section 2 | 0.3750 | 38.688 | 45.600 | 8,456.60 | 16.43 | 103.17 | 82.1 | 430.5 | 0.0 | 509.6 |
| 50.00 | | 0.3750 | 38.250 | 45.079 | 8,170.20 | 16.22 | 102.00 | 82.3 | 420.7 | 0.0 | 499.0 |
| 53.25 | Top - Section 1 | 0.3125 | 38.063 | 37.442 | 6,741.30 | 19.71 | 121.80 | 78.2 | 348.8 | 0.0 | 911.7 |
| 55.00 | | 0.3125 | 37.625 | 37.008 | 6,509.60 | 19.47 | 120.40 | 78.5 | 340.8 | 0.0 | 221.7 |
| 60.00 | | 0.3125 | 36.375 | 35.768 | 5,877.10 | 18.76 | 116.40 | 79.3 | 318.2 | 0.0 | 619.1 |
| 65.00 | | 0.3125 | 35.125 | 34.528 | 5,286.90 | 18.06 | 112.40 | 80.2 | 296.5 | 0.0 | 598.0 |
| 70.00 | | 0.3125 | 33.875 | 33.289 | 4,737.60 | 17.35 | 108.40 | 81 | 275.5 | 0.0 | 576.9 |
| 75.00 | | 0.3125 | 32.625 | 32.049 | 4,227.70 | 16.65 | 104.40 | 81.8 | 255.2 | 0.0 | 555.8 |
| 80.00 | | 0.3125 | 31.375 | 30.809 | 3,755.80 | 15.94 | 100.40 | 82.6 | 235.8 | 0.0 | 534.7 |
| 81.75 | Bot - Section 3 | 0.3125 | 30.938 | 30.375 | 3,599.30 | 15.69 | 99.00 | 82.6 | 229.1 | 0.0 | 182.2 |
| 85.00 | | 0.3125 | 30.125 | 29.569 | 3,320.40 | 15.23 | 96.40 | 82.6 | 217.1 | 0.0 | 533.6 |
| 85.75 | Top - Section 2 | 0.1875 | 30.313 | 17.927 | 2,055.50 | 26.74 | 161.67 | 69.9 | 133.6 | 0.0 | 121.1 |
| 90.00 | | 0.1875 | 29.250 | 17.295 | 1,845.60 | 25.74 | 156.00 | 71.1 | 124.3 | 0.0 | 254.7 |
| 95.00 | | 0.1875 | 28.000 | 16.551 | 1,617.60 | 24.57 | 149.33 | 72.5 | 113.8 | 0.0 | 287.9 |
| 100.00 | | 0.1875 | 26.750 | 15.807 | 1,409.10 | 23.39 | 142.67 | 73.9 | 103.8 | 0.0 | 275.3 |
| 102.00 | | 0.1875 | 26.250 | 15.510 | 1,331.00 | 22.92 | 140.00 | 74.4 | 99.9 | 0.0 | 106.6 |
| 105.00 | | 0.1875 | 25.500 | 15.064 | 1,219.40 | 22.22 | 136.00 | 75.3 | 94.2 | 0.0 | 156.1 |
| 110.00 | | 0.1875 | 24.250 | 14.320 | 1,047.50 | 21.04 | 129.33 | 76.7 | 85.1 | 0.0 | 250.0 |
| 112.00 | | 0.1875 | 23.750 | 14.022 | 983.60 | 20.57 | 126.67 | 77.2 | 81.6 | 0.0 | 96.4 |
| 115.00 | | 0.1875 | 23.000 | 13.576 | 892.60 | 19.87 | 122.67 | 78 | 76.4 | 0.0 | 140.9 |
| 120.00 | | 0.1875 | 21.750 | 12.832 | 753.80 | 18.69 | 116.00 | 79.4 | 68.3 | 0.0 | 224.6 |
| 122.00 | | 0.1875 | 21.250 | 12.534 | 702.50 | 18.22 | 113.33 | 80 | 65.1 | 0.0 | 86.3 |
| 123.00 | | 0.1875 | 21.000 | 12.386 | 677.80 | 17.99 | 112.00 | 80.2 | 63.6 | 0.0 | 42.4 |
| | | | | | | | | | Totals: | | 15,940.3 |

Load Case: 1.2D + 1.0W Normal 122 mph wind with no ice 22 Iterations
Gust Response Factor: 1.10
Dead load Factor: 1.20
Wind Load Factor: 1.00

**CALCULATED FORCES**

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | Phi Pn (kips) | Phi Vn (kips) | Phi Tn (ft-kips) | Phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | -36.58 | -26.96 | 0.00 | -2,363.8 | 0.00 | 2,363.78 | 4,069.07 | 1,052.24 | 4,787.63 | 4,219.32 | 0 | 0 | 0.570 |
| 5.00 | -35.02 | -26.54 | 0.00 | -2,229.0 | 0.00 | 2,228.99 | 4,004.48 | 1,026.13 | 4,553.01 | 4,048.54 | 0.09 | -0.17 | 0.560 |
| 10.00 | -33.49 | -26.14 | 0.00 | -2,096.3 | 0.00 | 2,096.27 | 3,938.03 | 1,000.02 | 4,324.28 | 3,879.30 | 0.36 | -0.34 | 0.550 |
| 15.00 | -32.00 | -25.73 | 0.00 | -1,965.6 | 0.00 | 1,965.59 | 3,869.74 | 973.91 | 4,101.44 | 3,711.72 | 0.82 | -0.52 | 0.539 |
| 20.00 | -30.54 | -25.30 | 0.00 | -1,837.0 | 0.00 | 1,836.97 | 3,799.59 | 947.80 | 3,884.50 | 3,545.95 | 1.45 | -0.7 | 0.527 |
| 25.00 | -29.11 | -24.86 | 0.00 | -1,710.5 | 0.00 | 1,710.47 | 3,727.59 | 921.69 | 3,673.45 | 3,382.14 | 2.28 | -0.87 | 0.514 |
| 30.00 | -27.71 | -24.40 | 0.00 | -1,586.2 | 0.00 | 1,586.19 | 3,653.75 | 895.58 | 3,468.30 | 3,220.43 | 3.29 | -1.06 | 0.501 |
| 35.00 | -26.35 | -23.94 | 0.00 | -1,464.2 | 0.00 | 1,464.18 | 3,578.05 | 869.47 | 3,269.04 | 3,060.96 | 4.5 | -1.24 | 0.486 |
| 40.00 | -25.02 | -23.47 | 0.00 | -1,344.5 | 0.00 | 1,344.50 | 3,500.49 | 843.36 | 3,075.67 | 2,903.89 | 5.9 | -1.42 | 0.471 |
| 45.00 | -23.74 | -23.07 | 0.00 | -1,227.2 | 0.00 | 1,227.17 | 3,421.09 | 817.25 | 2,888.20 | 2,749.35 | 7.49 | -1.61 | 0.454 |
| 48.25 | -22.92 | -22.82 | 0.00 | -1,152.2 | 0.00 | 1,152.20 | 3,368.49 | 800.28 | 2,769.51 | 2,650.32 | 8.62 | -1.73 | 0.442 |
| 50.00 | -22.20 | -22.58 | 0.00 | -1,112.2 | 0.00 | 1,112.25 | 3,339.84 | 791.14 | 2,706.63 | 2,597.48 | 9.27 | -1.8 | 0.436 |
| 53.25 | -20.90 | -22.31 | 0.00 | -1,038.9 | 0.00 | 1,038.88 | 2,635.64 | 657.11 | 2,240.55 | 2,046.33 | 10.54 | -1.92 | 0.517 |
| 55.00 | -20.50 | -22.00 | 0.00 | -999.8 | 0.00 | 999.83 | 2,614.77 | 649.49 | 2,188.92 | 2,006.40 | 11.25 | -1.99 | 0.507 |
| 60.00 | -19.43 | -21.53 | 0.00 | -889.8 | 0.00 | 889.82 | 2,553.87 | 627.73 | 2,044.74 | 1,893.48 | 13.44 | -2.19 | 0.479 |
| 65.00 | -18.39 | -21.05 | 0.00 | -782.2 | 0.00 | 782.18 | 2,491.13 | 605.97 | 1,905.46 | 1,782.39 | 15.85 | -2.39 | 0.447 |
| 70.00 | -17.38 | -20.58 | 0.00 | -676.9 | 0.00 | 676.92 | 2,426.53 | 584.22 | 1,771.10 | 1,673.28 | 18.46 | -2.59 | 0.413 |
| 75.00 | -16.40 | -20.11 | 0.00 | -574.0 | 0.00 | 574.01 | 2,360.09 | 562.46 | 1,641.65 | 1,566.29 | 21.28 | -2.78 | 0.375 |
| 80.00 | -11.87 | -16.41 | 0.00 | -473.4 | 0.00 | 473.44 | 2,288.96 | 540.70 | 1,517.11 | 1,459.75 | 24.28 | -2.95 | 0.330 |
| 81.75 | -11.55 | -16.18 | 0.00 | -444.7 | 0.00 | 444.72 | 2,256.72 | 533.08 | 1,474.68 | 1,418.72 | 25.38 | -3.02 | 0.320 |
| 85.00 | -10.74 | -15.97 | 0.00 | -392.1 | 0.00 | 392.12 | 2,196.84 | 518.94 | 1,397.48 | 1,344.07 | 27.47 | -3.12 | 0.298 |
| 85.75 | -10.55 | -15.75 | 0.00 | -380.2 | 0.00 | 380.15 | 1,128.57 | 314.63 | 856.05 | 700.67 | 27.96 | -3.15 | 0.554 |
| 90.00 | -10.00 | -15.34 | 0.00 | -313.2 | 0.00 | 313.23 | 1,107.06 | 303.53 | 796.73 | 662.92 | 30.82 | -3.28 | 0.484 |
| 95.00 | -9.38 | -14.90 | 0.00 | -236.6 | 0.00 | 236.55 | 1,080.04 | 290.48 | 729.68 | 618.75 | 34.37 | -3.49 | 0.394 |
| 100.00 | -8.78 | -14.59 | 0.00 | -162.0 | 0.00 | 162.03 | 1,051.16 | 277.42 | 665.57 | 574.96 | 38.12 | -3.66 | 0.293 |
| 102.00 | -7.22 | -10.29 | 0.00 | -131.2 | 0.00 | 131.15 | 1,039.10 | 272.20 | 640.75 | 557.59 | 39.67 | -3.72 | 0.244 |
| 105.00 | -6.08 | -9.16 | 0.00 | -100.3 | 0.00 | 100.28 | 1,020.44 | 264.37 | 604.41 | 531.71 | 42.03 | -3.8 | 0.196 |
| 110.00 | -5.61 | -8.86 | 0.00 | -54.5 | 0.00 | 54.46 | 987.87 | 251.31 | 546.19 | 489.13 | 46.06 | -3.89 | 0.118 |
| 112.00 | -2.94 | -4.45 | 0.00 | -36.6 | 0.00 | 36.63 | 974.32 | 246.09 | 523.73 | 472.32 | 47.69 | -3.91 | 0.081 |
| 115.00 | -2.74 | -4.15 | 0.00 | -23.3 | 0.00 | 23.28 | 953.44 | 238.26 | 490.93 | 447.37 | 50.16 | -3.94 | 0.055 |
| 120.00 | -0.68 | -1.26 | 0.00 | -2.6 | 0.00 | 2.55 | 917.17 | 225.20 | 438.61 | 406.57 | 54.29 | -3.96 | 0.007 |
| 122.00 | -0.05 | -0.03 | 0.00 | -0.0 | 0.00 | 0.03 | 902.14 | 219.98 | 418.50 | 390.56 | 55.95 | -3.96 | 0.000 |
| 123.00 | 0.00 | -0.03 | 0.00 | 0.0 | 0.00 | 0.00 | 894.51 | 217.37 | 408.63 | 382.62 | 56.78 | -3.96 | 0.000 |

Load Case: 0.9D + 1.0W Normal 122 mph wind with no ice 22 Iterations
Gust Response Factor: 1.10
Dead load Factor: 0.90
Wind Load Factor: 1.00

**CALCULATED FORCES**

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | Phi Pn (kips) | Phi Vn (kips) | Phi Tn (ft-kips) | Phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | -27.42 | -26.94 | 0.00 | -2,346.7 | 0.00 | 2,346.66 | 4,069.07 | 1,052.24 | 4,787.63 | 4,219.32 | 0 | 0 | 0.564 |
| 5.00 | -26.24 | -26.50 | 0.00 | -2,211.9 | 0.00 | 2,211.94 | 4,004.48 | 1,026.13 | 4,553.01 | 4,048.54 | 0.09 | -0.17 | 0.554 |
| 10.00 | -25.07 | -26.07 | 0.00 | -2,079.4 | 0.00 | 2,079.42 | 3,938.03 | 1,000.02 | 4,324.28 | 3,879.30 | 0.36 | -0.34 | 0.543 |
| 15.00 | -23.94 | -25.64 | 0.00 | -1,949.1 | 0.00 | 1,949.07 | 3,869.74 | 973.91 | 4,101.44 | 3,711.72 | 0.81 | -0.51 | 0.532 |
| 20.00 | -22.82 | -25.19 | 0.00 | -1,820.9 | 0.00 | 1,820.88 | 3,799.59 | 947.80 | 3,884.50 | 3,545.95 | 1.44 | -0.69 | 0.520 |
| 25.00 | -21.73 | -24.73 | 0.00 | -1,694.9 | 0.00 | 1,694.93 | 3,727.59 | 921.69 | 3,673.45 | 3,382.14 | 2.26 | -0.87 | 0.508 |
| 30.00 | -20.67 | -24.26 | 0.00 | -1,571.3 | 0.00 | 1,571.28 | 3,653.75 | 895.58 | 3,468.30 | 3,220.43 | 3.27 | -1.05 | 0.494 |
| 35.00 | -19.63 | -23.78 | 0.00 | -1,450.0 | 0.00 | 1,450.00 | 3,578.05 | 869.47 | 3,269.04 | 3,060.96 | 4.46 | -1.23 | 0.480 |
| 40.00 | -18.62 | -23.29 | 0.00 | -1,331.1 | 0.00 | 1,331.12 | 3,500.49 | 843.36 | 3,075.67 | 2,903.89 | 5.85 | -1.41 | 0.464 |
| 45.00 | -17.64 | -22.89 | 0.00 | -1,214.7 | 0.00 | 1,214.66 | 3,421.09 | 817.25 | 2,888.20 | 2,749.35 | 7.42 | -1.59 | 0.448 |
| 48.25 | -17.02 | -22.64 | 0.00 | -1,140.3 | 0.00 | 1,140.28 | 3,368.49 | 800.28 | 2,769.51 | 2,650.32 | 8.55 | -1.71 | 0.436 |
| 50.00 | -16.48 | -22.39 | 0.00 | -1,100.7 | 0.00 | 1,100.67 | 3,339.84 | 791.14 | 2,706.63 | 2,597.48 | 9.19 | -1.78 | 0.429 |
| 53.25 | -15.50 | -22.12 | 0.00 | -1,027.9 | 0.00 | 1,027.91 | 2,635.64 | 657.11 | 2,240.55 | 2,046.33 | 10.45 | -1.9 | 0.509 |
| 55.00 | -15.19 | -21.80 | 0.00 | -989.2 | 0.00 | 989.19 | 2,614.77 | 649.49 | 2,188.92 | 2,006.40 | 11.16 | -1.97 | 0.500 |
| 60.00 | -14.37 | -21.32 | 0.00 | -880.2 | 0.00 | 880.18 | 2,553.87 | 627.73 | 2,044.74 | 1,893.48 | 13.33 | -2.17 | 0.472 |
| 65.00 | -13.58 | -20.84 | 0.00 | -773.6 | 0.00 | 773.59 | 2,491.13 | 605.97 | 1,905.46 | 1,782.39 | 15.71 | -2.37 | 0.441 |
| 70.00 | -12.81 | -20.36 | 0.00 | -669.4 | 0.00 | 669.40 | 2,426.53 | 584.22 | 1,771.10 | 1,673.28 | 18.3 | -2.57 | 0.407 |
| 75.00 | -12.07 | -19.89 | 0.00 | -567.6 | 0.00 | 567.59 | 2,360.09 | 562.46 | 1,641.65 | 1,566.29 | 21.09 | -2.75 | 0.369 |
| 80.00 | -8.71 | -16.24 | 0.00 | -468.1 | 0.00 | 468.14 | 2,288.96 | 540.70 | 1,517.11 | 1,459.75 | 24.06 | -2.93 | 0.325 |
| 81.75 | -8.47 | -16.01 | 0.00 | -439.7 | 0.00 | 439.71 | 2,256.72 | 533.08 | 1,474.68 | 1,418.72 | 25.15 | -2.99 | 0.315 |
| 85.00 | -7.85 | -15.80 | 0.00 | -387.7 | 0.00 | 387.68 | 2,196.84 | 518.94 | 1,397.48 | 1,344.07 | 27.22 | -3.09 | 0.293 |
| 85.75 | -7.71 | -15.58 | 0.00 | -375.8 | 0.00 | 375.82 | 1,128.57 | 314.63 | 856.05 | 700.67 | 27.7 | -3.12 | 0.546 |
| 90.00 | -7.29 | -15.17 | 0.00 | -309.6 | 0.00 | 309.60 | 1,107.06 | 303.53 | 796.73 | 662.92 | 30.54 | -3.24 | 0.476 |
| 95.00 | -6.82 | -14.74 | 0.00 | -233.7 | 0.00 | 233.74 | 1,080.04 | 290.48 | 729.68 | 618.75 | 34.05 | -3.45 | 0.387 |
| 100.00 | -6.37 | -14.43 | 0.00 | -160.0 | 0.00 | 160.05 | 1,051.16 | 277.42 | 665.57 | 574.96 | 37.76 | -3.63 | 0.287 |
| 102.00 | -5.26 | -10.16 | 0.00 | -129.5 | 0.00 | 129.50 | 1,039.10 | 272.20 | 640.75 | 557.59 | 39.29 | -3.68 | 0.239 |
| 105.00 | -4.42 | -9.05 | 0.00 | -99.0 | 0.00 | 99.02 | 1,020.44 | 264.37 | 604.41 | 531.71 | 41.63 | -3.76 | 0.192 |
| 110.00 | -4.07 | -8.76 | 0.00 | -53.8 | 0.00 | 53.78 | 987.87 | 251.31 | 546.19 | 489.13 | 45.62 | -3.85 | 0.115 |
| 112.00 | -2.14 | -4.39 | 0.00 | -36.2 | 0.00 | 36.16 | 974.32 | 246.09 | 523.73 | 472.32 | 47.24 | -3.87 | 0.079 |
| 115.00 | -1.99 | -4.09 | 0.00 | -23.0 | 0.00 | 22.98 | 953.44 | 238.26 | 490.93 | 447.37 | 49.68 | -3.9 | 0.054 |
| 120.00 | -0.49 | -1.24 | 0.00 | -2.5 | 0.00 | 2.52 | 917.17 | 225.20 | 438.61 | 406.57 | 53.77 | -3.92 | 0.007 |
| 122.00 | -0.04 | -0.03 | 0.00 | -0.0 | 0.00 | 0.03 | 902.14 | 219.98 | 418.50 | 390.56 | 55.41 | -3.92 | 0.000 |
| 123.00 | 0.00 | -0.03 | 0.00 | 0.0 | 0.00 | 0.00 | 894.51 | 217.37 | 408.63 | 382.62 | 56.23 | -3.92 | 0.000 |

| | | | | | |
|---|---|---|---|---|---|
| Load Case: 1.2D + 1.0Di + 1.0Wi Normal | | 50 mph wind with 1" radial ice | | | 21 Iterations |
| Gust Response Factor: | 1.10 | Ice Dead Load Factor | 1.00 | | |
| Dead load Factor: | 1.20 | | | Ice Importance Factor | 1.00 |
| Wind Load Factor: | 1.00 | | | | |

**CALCULATED FORCES**

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | Phi Pn (kips) | Phi Vn (kips) | Phi Tn (ft-kips) | Phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | -49.40 | -6.60 | 0.00 | -562.8 | 0.00 | 562.82 | 4,069.07 | 1,052.24 | 4,787.63 | 4,219.32 | 0 | 0 | 0.146 |
| 5.00 | -47.67 | -6.48 | 0.00 | -529.8 | 0.00 | 529.83 | 4,004.48 | 1,026.13 | 4,553.01 | 4,048.54 | 0.02 | -0.04 | 0.143 |
| 10.00 | -45.95 | -6.37 | 0.00 | -497.4 | 0.00 | 497.41 | 3,938.03 | 1,000.02 | 4,324.28 | 3,879.30 | 0.09 | -0.08 | 0.140 |
| 15.00 | -44.26 | -6.26 | 0.00 | -465.6 | 0.00 | 465.55 | 3,869.74 | 973.91 | 4,101.44 | 3,711.72 | 0.19 | -0.12 | 0.137 |
| 20.00 | -42.59 | -6.14 | 0.00 | -434.3 | 0.00 | 434.27 | 3,799.59 | 947.80 | 3,884.50 | 3,545.95 | 0.35 | -0.16 | 0.134 |
| 25.00 | -40.96 | -6.02 | 0.00 | -403.6 | 0.00 | 403.57 | 3,727.59 | 921.69 | 3,673.45 | 3,382.14 | 0.54 | -0.21 | 0.130 |
| 30.00 | -39.35 | -5.89 | 0.00 | -373.5 | 0.00 | 373.49 | 3,653.75 | 895.58 | 3,468.30 | 3,220.43 | 0.78 | -0.25 | 0.127 |
| 35.00 | -37.78 | -5.76 | 0.00 | -344.0 | 0.00 | 344.05 | 3,578.05 | 869.47 | 3,269.04 | 3,060.96 | 1.07 | -0.29 | 0.123 |
| 40.00 | -36.25 | -5.63 | 0.00 | -315.3 | 0.00 | 315.26 | 3,500.49 | 843.36 | 3,075.67 | 2,903.89 | 1.4 | -0.34 | 0.119 |
| 45.00 | -34.75 | -5.51 | 0.00 | -287.1 | 0.00 | 287.13 | 3,421.09 | 817.25 | 2,888.20 | 2,749.35 | 1.77 | -0.38 | 0.115 |
| 48.25 | -33.79 | -5.44 | 0.00 | -269.2 | 0.00 | 269.21 | 3,368.49 | 800.28 | 2,769.51 | 2,650.32 | 2.04 | -0.41 | 0.112 |
| 50.00 | -33.01 | -5.38 | 0.00 | -259.7 | 0.00 | 259.68 | 3,339.84 | 791.14 | 2,706.63 | 2,597.48 | 2.19 | -0.42 | 0.110 |
| 53.25 | -31.57 | -5.30 | 0.00 | -242.2 | 0.00 | 242.20 | 2,635.64 | 657.11 | 2,240.55 | 2,046.33 | 2.49 | -0.45 | 0.130 |
| 55.00 | -31.12 | -5.21 | 0.00 | -232.9 | 0.00 | 232.93 | 2,614.77 | 649.49 | 2,188.92 | 2,006.40 | 2.66 | -0.47 | 0.128 |
| 60.00 | -29.85 | -5.08 | 0.00 | -206.9 | 0.00 | 206.86 | 2,553.87 | 627.73 | 2,044.74 | 1,893.48 | 3.18 | -0.52 | 0.121 |
| 65.00 | -28.62 | -4.95 | 0.00 | -181.4 | 0.00 | 181.45 | 2,491.13 | 605.97 | 1,905.46 | 1,782.39 | 3.74 | -0.56 | 0.113 |
| 70.00 | -27.42 | -4.81 | 0.00 | -156.7 | 0.00 | 156.73 | 2,426.53 | 584.22 | 1,771.10 | 1,673.28 | 4.36 | -0.61 | 0.105 |
| 75.00 | -26.25 | -4.68 | 0.00 | -132.7 | 0.00 | 132.67 | 2,360.09 | 562.46 | 1,641.65 | 1,566.29 | 5.02 | -0.65 | 0.096 |
| 80.00 | -19.94 | -3.85 | 0.00 | -109.3 | 0.00 | 109.28 | 2,288.96 | 540.70 | 1,517.11 | 1,459.75 | 5.72 | -0.69 | 0.084 |
| 81.75 | -19.55 | -3.78 | 0.00 | -102.6 | 0.00 | 102.55 | 2,256.72 | 533.08 | 1,474.68 | 1,418.72 | 5.98 | -0.71 | 0.081 |
| 85.00 | -18.60 | -3.72 | 0.00 | -90.3 | 0.00 | 90.27 | 2,196.84 | 518.94 | 1,397.48 | 1,344.07 | 6.47 | -0.73 | 0.076 |
| 85.75 | -18.39 | -3.65 | 0.00 | -87.5 | 0.00 | 87.48 | 1,128.57 | 314.63 | 856.05 | 700.67 | 6.58 | -0.74 | 0.141 |
| 90.00 | -17.68 | -3.53 | 0.00 | -72.0 | 0.00 | 71.96 | 1,107.06 | 303.53 | 796.73 | 662.92 | 7.25 | -0.77 | 0.125 |
| 95.00 | -16.88 | -3.41 | 0.00 | -54.3 | 0.00 | 54.28 | 1,080.04 | 290.48 | 729.68 | 618.75 | 8.08 | -0.82 | 0.103 |
| 100.00 | -16.10 | -3.32 | 0.00 | -37.2 | 0.00 | 37.24 | 1,051.16 | 277.42 | 665.57 | 574.96 | 8.96 | -0.86 | 0.080 |
| 102.00 | -12.23 | -2.42 | 0.00 | -30.3 | 0.00 | 30.29 | 1,039.10 | 272.20 | 640.75 | 557.59 | 9.32 | -0.87 | 0.066 |
| 105.00 | -10.61 | -2.11 | 0.00 | -23.0 | 0.00 | 23.04 | 1,020.44 | 264.37 | 604.41 | 531.71 | 9.88 | -0.89 | 0.054 |
| 110.00 | -9.95 | -2.02 | 0.00 | -12.5 | 0.00 | 12.50 | 987.87 | 251.31 | 546.19 | 489.13 | 10.82 | -0.91 | 0.036 |
| 112.00 | -5.13 | -1.04 | 0.00 | -8.4 | 0.00 | 8.44 | 974.32 | 246.09 | 523.73 | 472.32 | 11.2 | -0.91 | 0.023 |
| 115.00 | -4.81 | -0.95 | 0.00 | -5.3 | 0.00 | 5.32 | 953.44 | 238.26 | 490.93 | 447.37 | 11.77 | -0.92 | 0.017 |
| 120.00 | -1.30 | -0.28 | 0.00 | -0.6 | 0.00 | 0.58 | 917.17 | 225.20 | 438.61 | 406.57 | 12.74 | -0.92 | 0.003 |
| 122.00 | -0.08 | -0.01 | 0.00 | -0.0 | 0.00 | 0.01 | 902.14 | 219.98 | 418.50 | 390.56 | 13.12 | -0.92 | 0.000 |
| 123.00 | 0.00 | -0.01 | 0.00 | 0.0 | 0.00 | 0.00 | 894.51 | 217.37 | 408.63 | 382.62 | 13.32 | -0.92 | 0.000 |

Load Case: 1.0D + 1.0W Service Normal 60 mph Wind with No Ice 20 Iterations
Gust Response Factor: 1.10
Dead load Factor: 1.00
Wind Load Factor: 1.00

**CALCULATED FORCES**

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (ft-kips) | Mu MX (ft-kips) | Resultant Moment (ft-kips) | Phi Pn (kips) | Phi Vn (kips) | Phi Tn (ft-kips) | Phi Mn (ft-kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | -30.51 | -5.83 | 0.00 | -509.3 | 0.00 | 509.30 | 4,069.07 | 1,052.24 | 4,787.63 | 4,219.32 | 0 | 0 | 0.128 |
| 5.00 | -29.28 | -5.74 | 0.00 | -480.1 | 0.00 | 480.14 | 4,004.48 | 1,026.13 | 4,553.01 | 4,048.54 | 0.02 | -0.04 | 0.126 |
| 10.00 | -28.07 | -5.65 | 0.00 | -451.4 | 0.00 | 451.45 | 3,938.03 | 1,000.02 | 4,324.28 | 3,879.30 | 0.08 | -0.07 | 0.124 |
| 15.00 | -26.88 | -5.55 | 0.00 | -423.2 | 0.00 | 423.23 | 3,869.74 | 973.91 | 4,101.44 | 3,711.72 | 0.18 | -0.11 | 0.121 |
| 20.00 | -25.72 | -5.46 | 0.00 | -395.5 | 0.00 | 395.46 | 3,799.59 | 947.80 | 3,884.50 | 3,545.95 | 0.31 | -0.15 | 0.118 |
| 25.00 | -24.59 | -5.36 | 0.00 | -368.2 | 0.00 | 368.16 | 3,727.59 | 921.69 | 3,673.45 | 3,382.14 | 0.49 | -0.19 | 0.115 |
| 30.00 | -23.48 | -5.26 | 0.00 | -341.4 | 0.00 | 341.36 | 3,653.75 | 895.58 | 3,468.30 | 3,220.43 | 0.71 | -0.23 | 0.112 |
| 35.00 | -22.39 | -5.16 | 0.00 | -315.1 | 0.00 | 315.06 | 3,578.05 | 869.47 | 3,269.04 | 3,060.96 | 0.97 | -0.27 | 0.109 |
| 40.00 | -21.33 | -5.05 | 0.00 | -289.3 | 0.00 | 289.28 | 3,500.49 | 843.36 | 3,075.67 | 2,903.89 | 1.27 | -0.31 | 0.106 |
| 45.00 | -20.30 | -4.97 | 0.00 | -264.0 | 0.00 | 264.01 | 3,421.09 | 817.25 | 2,888.20 | 2,749.35 | 1.61 | -0.35 | 0.102 |
| 48.25 | -19.64 | -4.91 | 0.00 | -247.9 | 0.00 | 247.86 | 3,368.49 | 800.28 | 2,769.51 | 2,650.32 | 1.86 | -0.37 | 0.099 |
| 50.00 | -19.06 | -4.86 | 0.00 | -239.3 | 0.00 | 239.27 | 3,339.84 | 791.14 | 2,706.63 | 2,597.48 | 2 | -0.39 | 0.098 |
| 53.25 | -18.00 | -4.80 | 0.00 | -223.5 | 0.00 | 223.47 | 2,635.64 | 657.11 | 2,240.55 | 2,046.33 | 2.27 | -0.41 | 0.116 |
| 55.00 | -17.70 | -4.73 | 0.00 | -215.1 | 0.00 | 215.07 | 2,614.77 | 649.49 | 2,188.92 | 2,006.40 | 2.42 | -0.43 | 0.114 |
| 60.00 | -16.85 | -4.63 | 0.00 | -191.4 | 0.00 | 191.39 | 2,553.87 | 627.73 | 2,044.74 | 1,893.48 | 2.89 | -0.47 | 0.108 |
| 65.00 | -16.03 | -4.53 | 0.00 | -168.2 | 0.00 | 168.24 | 2,491.13 | 605.97 | 1,905.46 | 1,782.39 | 3.41 | -0.52 | 0.101 |
| 70.00 | -15.22 | -4.43 | 0.00 | -145.6 | 0.00 | 145.60 | 2,426.53 | 584.22 | 1,771.10 | 1,673.28 | 3.98 | -0.56 | 0.093 |
| 75.00 | -14.44 | -4.32 | 0.00 | -123.5 | 0.00 | 123.47 | 2,360.09 | 562.46 | 1,641.65 | 1,566.29 | 4.58 | -0.6 | 0.085 |
| 80.00 | -10.56 | -3.53 | 0.00 | -101.8 | 0.00 | 101.84 | 2,288.96 | 540.70 | 1,517.11 | 1,459.75 | 5.23 | -0.64 | 0.074 |
| 81.75 | -10.30 | -3.48 | 0.00 | -95.7 | 0.00 | 95.66 | 2,256.72 | 533.08 | 1,474.68 | 1,418.72 | 5.46 | -0.65 | 0.072 |
| 85.00 | -9.63 | -3.44 | 0.00 | -84.4 | 0.00 | 84.35 | 2,196.84 | 518.94 | 1,397.48 | 1,344.07 | 5.91 | -0.67 | 0.067 |
| 85.75 | -9.47 | -3.39 | 0.00 | -81.8 | 0.00 | 81.77 | 1,128.57 | 314.63 | 856.05 | 700.67 | 6.02 | -0.68 | 0.125 |
| 90.00 | -9.03 | -3.30 | 0.00 | -67.4 | 0.00 | 67.37 | 1,107.06 | 303.53 | 796.73 | 662.92 | 6.64 | -0.7 | 0.110 |
| 95.00 | -8.53 | -3.21 | 0.00 | -50.9 | 0.00 | 50.87 | 1,080.04 | 290.48 | 729.68 | 618.75 | 7.4 | -0.75 | 0.090 |
| 100.00 | -8.04 | -3.14 | 0.00 | -34.8 | 0.00 | 34.84 | 1,051.16 | 277.42 | 665.57 | 574.96 | 8.21 | -0.79 | 0.068 |
| 102.00 | -6.54 | -2.21 | 0.00 | -28.2 | 0.00 | 28.20 | 1,039.10 | 272.20 | 640.75 | 557.59 | 8.54 | -0.8 | 0.057 |
| 105.00 | -5.54 | -1.97 | 0.00 | -21.6 | 0.00 | 21.56 | 1,020.44 | 264.37 | 604.41 | 531.71 | 9.05 | -0.82 | 0.046 |
| 110.00 | -5.14 | -1.91 | 0.00 | -11.7 | 0.00 | 11.71 | 987.87 | 251.31 | 546.19 | 489.13 | 9.92 | -0.84 | 0.029 |
| 112.00 | -2.69 | -0.96 | 0.00 | -7.9 | 0.00 | 7.87 | 974.32 | 246.09 | 523.73 | 472.32 | 10.27 | -0.84 | 0.019 |
| 115.00 | -2.50 | -0.89 | 0.00 | -5.0 | 0.00 | 5.00 | 953.44 | 238.26 | 490.93 | 447.37 | 10.8 | -0.85 | 0.014 |
| 120.00 | -0.63 | -0.27 | 0.00 | -0.6 | 0.00 | 0.55 | 917.17 | 225.20 | 438.61 | 406.57 | 11.69 | -0.85 | 0.002 |
| 122.00 | -0.04 | -0.01 | 0.00 | -0.0 | 0.00 | 0.01 | 902.14 | 219.98 | 418.50 | 390.56 | 12.05 | -0.85 | 0.000 |
| 123.00 | 0.00 | -0.01 | 0.00 | 0.0 | 0.00 | 0.00 | 894.51 | 217.37 | 408.63 | 382.62 | 12.22 | -0.85 | 0.000 |

## EQUIVALENT LATERAL FORCES METHOD ANALYSIS

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

| | |
|---|---|
| Spectral Response Acceleration for Short Period ($S_S$): | 0.201 |
| Spectral Response Acceleration at 1.0 Second Period ($S_1$): | 0.053 |
| Long-Period Transition Period ($T_L$ – Seconds): | 6 |
| Importance Factor ($I_e$): | 1.000 |
| Site Coefficient $F_a$: | 1.600 |
| Site Coefficient $F_v$: | 2.400 |
| Response Modification Coefficient (R): | 1.500 |
| Design Spectral Response Acceleration at Short Period ($S_{ds}$): | 0.214 |
| Design Spectral Response Acceleration at 1.0 Second Period ($S_{d1}$): | 0.085 |
| Seismic Response Coefficient ($C_s$): | 0.034 |
| Upper Limit $C_S$: | 0.034 |
| Lower Limit $C_S$: | 0.030 |
| Period based on Rayleigh Method (sec): | 1.680 |
| Redundancy Factor (p): | 1.000 |
| Seismic Force Distribution Exponent (k): | 1.590 |
| Total Unfactored Dead Load: | 30.520 k |
| Seismic Base Shear (E): | 1.030 k |

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

| Segment | Height Above Base (ft) | Weight (lb) | $W_z$ (lb-ft) | $C_{vx}$ | Horizontal Force (lb) | Vertical Force (lb) |
|---|---|---|---|---|---|---|
| 32 | 122.5 | 42 | 88 | 0.003 | 3 | 53 |
| 31 | 121 | 103 | 209 | 0.008 | 8 | 128 |
| 30 | 117.5 | 299 | 581 | 0.022 | 22 | 372 |
| 29 | 113.5 | 187 | 344 | 0.013 | 13 | 232 |
| 28 | 111 | 156 | 277 | 0.010 | 11 | 194 |
| 27 | 107.5 | 398 | 672 | 0.025 | 26 | 495 |
| 26 | 103.5 | 250 | 397 | 0.015 | 15 | 311 |
| 25 | 101 | 192 | 294 | 0.011 | 11 | 239 |
| 24 | 97.5 | 489 | 707 | 0.026 | 27 | 608 |
| 23 | 92.5 | 502 | 667 | 0.025 | 25 | 624 |
| 22 | 87.875 | 436 | 535 | 0.020 | 20 | 542 |
| 21 | 85.375 | 153 | 179 | 0.007 | 7 | 190 |
| 20 | 83.375 | 673 | 758 | 0.028 | 29 | 836 |
| 19 | 80.875 | 257 | 276 | 0.010 | 10 | 319 |
| 18 | 77.5 | 760 | 763 | 0.028 | 29 | 945 |
| 17 | 72.5 | 781 | 705 | 0.026 | 27 | 971 |
| 16 | 67.5 | 802 | 646 | 0.024 | 25 | 997 |
| 15 | 62.5 | 823 | 587 | 0.022 | 22 | 1,023 |
| 14 | 57.5 | 845 | 527 | 0.020 | 20 | 1,050 |
| 13 | 54.125 | 301 | 171 | 0.006 | 6 | 374 |
| 12 | 51.625 | 1,058 | 557 | 0.021 | 21 | 1,315 |
| 11 | 49.125 | 578 | 281 | 0.010 | 11 | 718 |
| 10 | 46.625 | 656 | 294 | 0.011 | 11 | 816 |
| 9 | 42.5 | 1,030 | 398 | 0.015 | 15 | 1,281 |
| 8 | 37.5 | 1,056 | 334 | 0.012 | 13 | 1,312 |
| 7 | 32.5 | 1,081 | 273 | 0.010 | 10 | 1,344 |
| 6 | 27.5 | 1,106 | 214 | 0.008 | 8 | 1,375 |
| 5 | 22.5 | 1,132 | 159 | 0.006 | 6 | 1,406 |
| 4 | 17.5 | 1,157 | 109 | 0.004 | 4 | 1,438 |
| 3 | 12.5 | 1,182 | 65 | 0.002 | 2 | 1,469 |
| 2 | 7.5 | 1,208 | 30 | 0.001 | 1 | 1,501 |
| 1 | 2.5 | 1,233 | 5 | 0.000 | 0 | 1,532 |
| Ericsson AIR 21, 1.3 M, B2A B4P | 122 | 249 | 514 | 0.019 | 20 | 309 |
| Ericsson AIR 21, 1.3M, B4A B2P | 122 | 244 | 504 | 0.019 | 19 | 304 |

| Segment | Height Above Base (ft) | Weight (lb) | $W_z$ (lb-ft) | $C_{vx}$ | Horizontal Force (lb) | Vertical Force (lb) |
|---|---|---|---|---|---|---|
| Ericsson KRY 112 144/1 | 120 | 33 | 66 | 0.002 | 3 | 41 |
| Ericsson Radio 4449 B12,B71 | 120 | 222 | 446 | 0.016 | 17 | 276 |
| Generic Round T-Arm | 120 | 938 | 1,884 | 0.070 | 72 | 1,165 |
| RFS APXVAARR24_43-U-NA20 | 120 | 384 | 771 | 0.028 | 29 | 477 |
| Raycap DC6-48-60-18-8F | 112 | 20 | 36 | 0.001 | 1 | 25 |
| Ericsson RRUS 8843 B2, B66A | 112 | 216 | 389 | 0.014 | 15 | 268 |
| Ericsson RRUS 4449 B5, B12 | 112 | 213 | 384 | 0.014 | 15 | 265 |
| Ericsson RRUS 4478 B14 | 112 | 178 | 321 | 0.012 | 12 | 221 |
| Raycap DC6-48-60-18-8C | 112 | 16 | 29 | 0.001 | 1 | 20 |
| Ericsson AIR 6419 B77G | 112 | 198 | 357 | 0.013 | 14 | 246 |
| Ericsson Air 6449 B77D | 112 | 245 | 441 | 0.016 | 17 | 304 |
| Round T-Arm | 112 | 750 | 1,351 | 0.050 | 51 | 932 |
| Round T-Arm | 105 | 750 | 1,219 | 0.045 | 46 | 932 |
| CCI DMP65R-BU6DA | 112 | 238 | 429 | 0.016 | 16 | 296 |
| CCI TPA-65R-BU6DA-K | 112 | 239 | 430 | 0.016 | 16 | 297 |
| Commscope CBC78T-DS-43-2X | 102 | 62 | 96 | 0.004 | 4 | 77 |
| Samsung B2/B66A RRH-BR049 | 102 | 253 | 393 | 0.014 | 15 | 315 |
| Samsung B5/B13 RRH-BR04C | 102 | 211 | 327 | 0.012 | 12 | 262 |
| Raycap RCMDC-6627-PF-48 | 102 | 32 | 50 | 0.002 | 2 | 40 |
| Samsung MT6407-77A | 102 | 245 | 380 | 0.014 | 14 | 304 |
| Swedcom SC-E 6016 REV2 | 102 | 50 | 78 | 0.003 | 3 | 62 |
| Commscope JAHH-65B-R3B | 102 | 364 | 564 | 0.021 | 21 | 452 |
| Antel LPA-80063/6CF | 102 | 108 | 168 | 0.006 | 6 | 134 |
| Commscope RDIDC-9181-PF-48 | 80 | 22 | 23 | 0.001 | 1 | 27 |
| Fujitsu TA08025-B604 | 80 | 192 | 202 | 0.008 | 8 | 238 |
| Fujitsu TA08025-B605 | 80 | 225 | 237 | 0.009 | 9 | 280 |
| JMA Wireless MX08FRO665-21 | 80 | 194 | 204 | 0.008 | 8 | 240 |
| Generic Flat Platform with Handrails | 80 | 2,500 | 2,638 | 0.098 | 100 | 3,107 |
| | | 30,516 | 27,037 | 1.000 | 1,029 | 37,928 |

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

| Segment | Height Above Base (ft) | Weight (lb) | $W_z$ (lb-ft) | $C_{vx}$ | Horizontal Force (lb) | Vertical Force (lb) |
|---|---|---|---|---|---|---|
| 32 | 122.5 | 42 | 88 | 0.003 | 3 | 36 |
| 31 | 121 | 103 | 209 | 0.008 | 8 | 88 |
| 30 | 117.5 | 299 | 581 | 0.022 | 22 | 256 |
| 29 | 113.5 | 187 | 344 | 0.013 | 13 | 160 |
| 28 | 111 | 156 | 277 | 0.010 | 11 | 134 |
| 27 | 107.5 | 398 | 672 | 0.025 | 26 | 341 |
| 26 | 103.5 | 250 | 397 | 0.015 | 15 | 214 |
| 25 | 101 | 192 | 294 | 0.011 | 11 | 165 |
| 24 | 97.5 | 489 | 707 | 0.026 | 27 | 419 |
| 23 | 92.5 | 502 | 667 | 0.025 | 25 | 430 |
| 22 | 87.875 | 436 | 535 | 0.020 | 20 | 374 |
| 21 | 85.375 | 153 | 179 | 0.007 | 7 | 131 |
| 20 | 83.375 | 673 | 758 | 0.028 | 29 | 576 |
| 19 | 80.875 | 257 | 276 | 0.010 | 10 | 220 |
| 18 | 77.5 | 760 | 763 | 0.028 | 29 | 652 |
| 17 | 72.5 | 781 | 705 | 0.026 | 27 | 670 |
| 16 | 67.5 | 802 | 646 | 0.024 | 25 | 688 |
| 15 | 62.5 | 823 | 587 | 0.022 | 22 | 706 |
| 14 | 57.5 | 845 | 527 | 0.020 | 20 | 724 |
| 13 | 54.125 | 301 | 171 | 0.006 | 6 | 258 |
| 12 | 51.625 | 1,058 | 557 | 0.021 | 21 | 907 |
| 11 | 49.125 | 578 | 281 | 0.010 | 11 | 495 |
| 10 | 46.625 | 656 | 294 | 0.011 | 11 | 562 |
| 9 | 42.5 | 1,030 | 398 | 0.015 | 15 | 883 |
| 8 | 37.5 | 1,056 | 334 | 0.012 | 13 | 905 |
| 7 | 32.5 | 1,081 | 273 | 0.010 | 10 | 927 |
| 6 | 27.5 | 1,106 | 214 | 0.008 | 8 | 948 |
| 5 | 22.5 | 1,132 | 159 | 0.006 | 6 | 970 |
| 4 | 17.5 | 1,157 | 109 | 0.004 | 4 | 992 |

| Segment | Height Above Base (ft) | Weight (lb) | $W_z$ (lb-ft) | $C_{vx}$ | Horizontal Force (lb) | Vertical Force (lb) |
|---|---|---|---|---|---|---|
| 3 | 12.5 | 1,182 | 65 | 0.002 | 2 | 1,013 |
| 2 | 7.5 | 1,208 | 30 | 0.001 | 1 | 1,035 |
| 1 | 2.5 | 1,233 | 5 | 0.000 | 0 | 1,057 |
| Ericsson AIR 21, 1.3 M, B2A B4P | 122 | 249 | 514 | 0.019 | 20 | 213 |
| Ericsson AIR 21, 1.3M, B4A B2P | 122 | 244 | 504 | 0.019 | 19 | 210 |
| Ericsson KRY 112 144/1 | 120 | 33 | 66 | 0.002 | 3 | 28 |
| Ericsson Radio 4449 B12,B71 | 120 | 222 | 446 | 0.016 | 17 | 190 |
| Generic Round T-Arm | 120 | 938 | 1,884 | 0.070 | 72 | 804 |
| RFS APXVAARR24_43-U-NA20 | 120 | 384 | 771 | 0.028 | 29 | 329 |
| Raycap DC6-48-60-18-8F | 112 | 20 | 36 | 0.001 | 1 | 17 |
| Ericsson RRUS 8843 B2, B66A | 112 | 216 | 389 | 0.014 | 15 | 185 |
| Ericsson RRUS 4449 B5, B12 | 112 | 213 | 384 | 0.014 | 15 | 183 |
| Ericsson RRUS 4478 B14 | 112 | 178 | 321 | 0.012 | 12 | 153 |
| Raycap DC6-48-60-18-8C | 112 | 16 | 29 | 0.001 | 1 | 14 |
| Ericsson AIR 6419 B77G | 112 | 198 | 357 | 0.013 | 14 | 170 |
| Ericsson Air 6449 B77D | 112 | 245 | 441 | 0.016 | 17 | 210 |
| Round T-Arm | 112 | 750 | 1,351 | 0.050 | 51 | 643 |
| Round T-Arm | 105 | 750 | 1,219 | 0.045 | 46 | 643 |
| CCI DMP65R-BU6DA | 112 | 238 | 429 | 0.016 | 16 | 204 |
| CCI TPA-65R-BU6DA-K | 112 | 239 | 430 | 0.016 | 16 | 205 |
| Commscope CBC78T-DS-43-2X | 102 | 62 | 96 | 0.004 | 4 | 53 |
| Samsung B2/B66A RRH-BR049 | 102 | 253 | 393 | 0.014 | 15 | 217 |
| Samsung B5/B13 RRH-BR04C | 102 | 211 | 327 | 0.012 | 12 | 181 |
| Raycap RCMDC-6627-PF-48 | 102 | 32 | 50 | 0.002 | 2 | 27 |
| Samsung MT6407-77A | 102 | 245 | 380 | 0.014 | 14 | 210 |
| Swedcom SC-E 6016 REV2 | 102 | 50 | 78 | 0.003 | 3 | 43 |
| Commscope JAHH-65B-R3B | 102 | 364 | 564 | 0.021 | 21 | 312 |
| Antel LPA-80063/6CF | 102 | 108 | 168 | 0.006 | 6 | 93 |
| Commscope RDIDC-9181-PF-48 | 80 | 22 | 23 | 0.001 | 1 | 19 |
| Fujitsu TA08025-B604 | 80 | 192 | 202 | 0.008 | 8 | 164 |
| Fujitsu TA08025-B605 | 80 | 225 | 237 | 0.009 | 9 | 193 |
| JMA Wireless MX08FRO665-21 | 80 | 194 | 204 | 0.008 | 8 | 166 |
| Generic Flat Platform with Handrails | 80 | 2,500 | 2,638 | 0.098 | 100 | 2,143 |
| | | 30,516 | 27,037 | 1.000 | 1,029 | 26,156 |

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

## CALCULATED FORCES

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (fr-kips) | Mu Mx (ft-kips) | Resultant Moment (ft-kips) | Phi Pn (kips) | Phi Vn (kips) | Phi Tn (kips) | Phi Mn (kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | -36.40 | -1.03 | 0.00 | -97.03 | 0.00 | 97.03 | 4,069.07 | 1,052.24 | 4,788 | 4,219.32 | 0.00 | 0.00 | 0.03 |
| 5.00 | -34.89 | -1.03 | 0.00 | -91.88 | 0.00 | 91.88 | 4,004.48 | 1,026.13 | 4,553 | 4,048.54 | 0.00 | -0.01 | 0.03 |
| 10.00 | -33.43 | -1.03 | 0.00 | -86.71 | 0.00 | 86.71 | 3,938.03 | 1,000.02 | 4,324 | 3,879.30 | 0.01 | -0.01 | 0.03 |
| 15.00 | -31.99 | -1.03 | 0.00 | -81.54 | 0.00 | 81.54 | 3,869.74 | 973.91 | 4,101 | 3,711.72 | 0.03 | -0.02 | 0.03 |
| 20.00 | -30.58 | -1.03 | 0.00 | -76.37 | 0.00 | 76.37 | 3,799.59 | 947.80 | 3,884 | 3,545.95 | 0.06 | -0.03 | 0.03 |
| 25.00 | -29.21 | -1.03 | 0.00 | -71.22 | 0.00 | 71.22 | 3,727.59 | 921.69 | 3,673 | 3,382.14 | 0.09 | -0.04 | 0.03 |
| 30.00 | -27.86 | -1.02 | 0.00 | -66.09 | 0.00 | 66.09 | 3,653.75 | 895.58 | 3,468 | 3,220.43 | 0.14 | -0.04 | 0.03 |
| 35.00 | -26.55 | -1.01 | 0.00 | -60.99 | 0.00 | 60.99 | 3,578.05 | 869.47 | 3,269 | 3,060.96 | 0.19 | -0.05 | 0.03 |
| 40.00 | -25.27 | -1.00 | 0.00 | -55.95 | 0.00 | 55.95 | 3,500.49 | 843.36 | 3,076 | 2,903.89 | 0.24 | -0.06 | 0.03 |
| 45.00 | -24.45 | -0.99 | 0.00 | -50.98 | 0.00 | 50.98 | 3,421.09 | 817.25 | 2,888 | 2,749.35 | 0.31 | -0.07 | 0.03 |
| 48.25 | -23.73 | -0.98 | 0.00 | -47.77 | 0.00 | 47.77 | 3,368.49 | 800.28 | 2,770 | 2,650.32 | 0.36 | -0.07 | 0.03 |
| 50.00 | -22.42 | -0.95 | 0.00 | -46.07 | 0.00 | 46.07 | 3,339.84 | 791.14 | 2,707 | 2,597.48 | 0.38 | -0.07 | 0.02 |
| 53.25 | -22.05 | -0.95 | 0.00 | -42.96 | 0.00 | 42.96 | 2,635.64 | 657.11 | 2,241 | 2,046.33 | 0.44 | -0.08 | 0.03 |
| 55.00 | -21.00 | -0.93 | 0.00 | -41.30 | 0.00 | 41.30 | 2,614.77 | 649.49 | 2,189 | 2,006.40 | 0.47 | -0.08 | 0.03 |
| 60.00 | -19.97 | -0.91 | 0.00 | -36.66 | 0.00 | 36.66 | 2,553.87 | 627.73 | 2,045 | 1,893.48 | 0.56 | -0.09 | 0.03 |
| 65.00 | -18.98 | -0.89 | 0.00 | -32.11 | 0.00 | 32.11 | 2,491.13 | 605.97 | 1,905 | 1,782.39 | 0.66 | -0.10 | 0.03 |
| 70.00 | -18.00 | -0.86 | 0.00 | -27.69 | 0.00 | 27.69 | 2,426.53 | 584.22 | 1,771 | 1,673.28 | 0.77 | -0.11 | 0.02 |
| 75.00 | -17.06 | -0.83 | 0.00 | -23.39 | 0.00 | 23.39 | 2,360.09 | 562.46 | 1,642 | 1,566.29 | 0.88 | -0.11 | 0.02 |
| 80.00 | -12.85 | -0.69 | 0.00 | -19.24 | 0.00 | 19.24 | 2,288.96 | 540.70 | 1,517 | 1,459.75 | 1.01 | -0.12 | 0.02 |
| 81.75 | -12.01 | -0.66 | 0.00 | -18.04 | 0.00 | 18.04 | 2,256.72 | 533.08 | 1,475 | 1,418.72 | 1.05 | -0.12 | 0.02 |
| 85.00 | -11.82 | -0.65 | 0.00 | -15.90 | 0.00 | 15.90 | 2,196.84 | 518.94 | 1,397 | 1,344.07 | 1.14 | -0.13 | 0.02 |
| 85.75 | -11.28 | -0.63 | 0.00 | -15.42 | 0.00 | 15.42 | 1,128.57 | 314.63 | 856 | 700.67 | 1.16 | -0.13 | 0.03 |
| 90.00 | -10.66 | -0.60 | 0.00 | -12.74 | 0.00 | 12.74 | 1,107.06 | 303.53 | 797 | 662.92 | 1.28 | -0.14 | 0.03 |
| 95.00 | -10.05 | -0.58 | 0.00 | -9.72 | 0.00 | 9.72 | 1,080.04 | 290.48 | 730 | 618.75 | 1.42 | -0.14 | 0.03 |

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (fr-kips) | Mu Mx (ft-kips) | Resultant Moment (ft-kips) | Phi Pn (kips) | Phi Vn (kips) | Phi Tn (kips) | Phi Mn (kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100.00 | -9.81 | -0.57 | 0.00 | -6.84 | 0.00 | 6.84 | 1,051.16 | 277.42 | 666 | 574.96 | 1.58 | -0.15 | 0.02 |
| 102.00 | -7.85 | -0.47 | 0.00 | -5.71 | 0.00 | 5.71 | 1,039.10 | 272.20 | 641 | 557.59 | 1.64 | -0.15 | 0.02 |
| 105.00 | -6.42 | -0.39 | 0.00 | -4.31 | 0.00 | 4.31 | 1,020.44 | 264.37 | 604 | 531.71 | 1.74 | -0.16 | 0.01 |
| 110.00 | -6.23 | -0.38 | 0.00 | -2.35 | 0.00 | 2.35 | 987.87 | 251.31 | 546 | 489.13 | 1.91 | -0.16 | 0.01 |
| 112.00 | -3.12 | -0.20 | 0.00 | -1.58 | 0.00 | 1.58 | 974.32 | 246.09 | 524 | 472.32 | 1.97 | -0.16 | 0.01 |
| 115.00 | -2.75 | -0.18 | 0.00 | -0.98 | 0.00 | 0.98 | 953.44 | 238.26 | 491 | 447.37 | 2.08 | -0.16 | 0.01 |
| 120.00 | -0.67 | -0.04 | 0.00 | -0.09 | 0.00 | 0.09 | 917.17 | 225.20 | 439 | 406.57 | 2.25 | -0.16 | 0.00 |
| 122.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 902.14 | 219.98 | 418 | 390.56 | 2.32 | -0.16 | 0.00 |
| 123.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 894.51 | 217.37 | 409 | 382.62 | 2.35 | -0.16 | 0.00 |

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

## CALCULATED FORCES

| Seg Elev (ft) | Pu FY (-) (kips) | Vu FX (-) (kips) | Tu MY (ft-kips) | Mu MZ (fr-kips) | Mu Mx (ft-kips) | Resultant Moment (ft-kips) | Phi Pn (kips) | Phi Vn (kips) | Phi Tn (kips) | Phi Mn (kips) | Total Deflect (in) | Rotation (deg) | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | -25.10 | -1.03 | 0.00 | -96.16 | 0.00 | 96.16 | 4,069.07 | 1,052.24 | 4,788 | 4,219.32 | 0.00 | 0.00 | 0.03 |
| 5.00 | -24.06 | -1.03 | 0.00 | -91.02 | 0.00 | 91.02 | 4,004.48 | 1,026.13 | 4,553 | 4,048.54 | 0.00 | -0.01 | 0.03 |
| 10.00 | -23.05 | -1.03 | 0.00 | -85.86 | 0.00 | 85.86 | 3,938.03 | 1,000.02 | 4,324 | 3,879.30 | 0.01 | -0.01 | 0.03 |
| 15.00 | -22.06 | -1.03 | 0.00 | -80.71 | 0.00 | 80.71 | 3,869.74 | 973.91 | 4,101 | 3,711.72 | 0.03 | -0.02 | 0.03 |
| 20.00 | -21.09 | -1.03 | 0.00 | -75.56 | 0.00 | 75.56 | 3,799.59 | 947.80 | 3,884 | 3,545.95 | 0.06 | -0.03 | 0.03 |
| 25.00 | -20.14 | -1.02 | 0.00 | -70.43 | 0.00 | 70.43 | 3,727.59 | 921.69 | 3,673 | 3,382.14 | 0.09 | -0.04 | 0.03 |
| 30.00 | -19.21 | -1.01 | 0.00 | -65.34 | 0.00 | 65.34 | 3,653.75 | 895.58 | 3,468 | 3,220.43 | 0.13 | -0.04 | 0.03 |
| 35.00 | -18.31 | -1.00 | 0.00 | -60.28 | 0.00 | 60.28 | 3,578.05 | 869.47 | 3,269 | 3,060.96 | 0.18 | -0.05 | 0.03 |
| 40.00 | -17.43 | -0.99 | 0.00 | -55.28 | 0.00 | 55.28 | 3,500.49 | 843.36 | 3,076 | 2,903.89 | 0.24 | -0.06 | 0.02 |
| 45.00 | -16.86 | -0.98 | 0.00 | -50.35 | 0.00 | 50.35 | 3,421.09 | 817.25 | 2,888 | 2,749.35 | 0.31 | -0.07 | 0.02 |
| 48.25 | -16.37 | -0.97 | 0.00 | -47.18 | 0.00 | 47.18 | 3,368.49 | 800.28 | 2,770 | 2,650.32 | 0.35 | -0.07 | 0.02 |
| 50.00 | -15.46 | -0.94 | 0.00 | -45.48 | 0.00 | 45.48 | 3,339.84 | 791.14 | 2,707 | 2,597.48 | 0.38 | -0.07 | 0.02 |
| 53.25 | -15.20 | -0.94 | 0.00 | -42.41 | 0.00 | 42.41 | 2,635.64 | 657.11 | 2,241 | 2,046.33 | 0.43 | -0.08 | 0.03 |
| 55.00 | -14.48 | -0.92 | 0.00 | -40.77 | 0.00 | 40.77 | 2,614.77 | 649.49 | 2,189 | 2,006.40 | 0.46 | -0.08 | 0.03 |
| 60.00 | -13.77 | -0.90 | 0.00 | -36.17 | 0.00 | 36.17 | 2,553.87 | 627.73 | 2,045 | 1,893.48 | 0.55 | -0.09 | 0.02 |
| 65.00 | -13.09 | -0.87 | 0.00 | -31.68 | 0.00 | 31.68 | 2,491.13 | 605.97 | 1,905 | 1,782.39 | 0.65 | -0.10 | 0.02 |
| 70.00 | -12.42 | -0.85 | 0.00 | -27.31 | 0.00 | 27.31 | 2,426.53 | 584.22 | 1,771 | 1,673.28 | 0.76 | -0.11 | 0.02 |
| 75.00 | -11.76 | -0.82 | 0.00 | -23.07 | 0.00 | 23.07 | 2,360.09 | 562.46 | 1,642 | 1,566.29 | 0.87 | -0.11 | 0.02 |
| 80.00 | -8.86 | -0.68 | 0.00 | -18.97 | 0.00 | 18.97 | 2,288.96 | 540.70 | 1,517 | 1,459.75 | 1.00 | -0.12 | 0.02 |
| 81.75 | -8.28 | -0.65 | 0.00 | -17.79 | 0.00 | 17.79 | 2,256.72 | 533.08 | 1,475 | 1,418.72 | 1.04 | -0.12 | 0.02 |
| 85.00 | -8.15 | -0.64 | 0.00 | -15.68 | 0.00 | 15.68 | 2,196.84 | 518.94 | 1,397 | 1,344.07 | 1.13 | -0.13 | 0.02 |
| 85.75 | -7.78 | -0.62 | 0.00 | -15.20 | 0.00 | 15.20 | 1,128.57 | 314.63 | 856 | 700.67 | 1.15 | -0.13 | 0.03 |
| 90.00 | -7.35 | -0.60 | 0.00 | -12.56 | 0.00 | 12.56 | 1,107.06 | 303.53 | 797 | 662.92 | 1.26 | -0.13 | 0.03 |
| 95.00 | -6.93 | -0.57 | 0.00 | -9.59 | 0.00 | 9.59 | 1,080.04 | 290.48 | 730 | 618.75 | 1.41 | -0.14 | 0.02 |
| 100.00 | -6.76 | -0.56 | 0.00 | -6.74 | 0.00 | 6.74 | 1,051.16 | 277.42 | 666 | 574.96 | 1.56 | -0.15 | 0.02 |
| 102.00 | -5.41 | -0.46 | 0.00 | -5.63 | 0.00 | 5.63 | 1,039.10 | 272.20 | 641 | 557.59 | 1.62 | -0.15 | 0.02 |
| 105.00 | -4.43 | -0.39 | 0.00 | -4.25 | 0.00 | 4.25 | 1,020.44 | 264.37 | 604 | 531.71 | 1.72 | -0.15 | 0.01 |
| 110.00 | -4.30 | -0.38 | 0.00 | -2.31 | 0.00 | 2.31 | 987.87 | 251.31 | 546 | 489.13 | 1.88 | -0.16 | 0.01 |
| 112.00 | -2.15 | -0.20 | 0.00 | -1.56 | 0.00 | 1.56 | 974.32 | 246.09 | 524 | 472.32 | 1.95 | -0.16 | 0.01 |
| 115.00 | -1.90 | -0.18 | 0.00 | -0.97 | 0.00 | 0.97 | 953.44 | 238.26 | 491 | 447.37 | 2.05 | -0.16 | 0.00 |
| 120.00 | -0.46 | -0.04 | 0.00 | -0.09 | 0.00 | 0.09 | 917.17 | 225.20 | 439 | 406.57 | 2.22 | -0.16 | 0.00 |
| 122.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 902.14 | 219.98 | 418 | 390.56 | 2.29 | -0.16 | 0.00 |
| 123.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 894.51 | 217.37 | 409 | 382.62 | 2.32 | -0.16 | 0.00 |

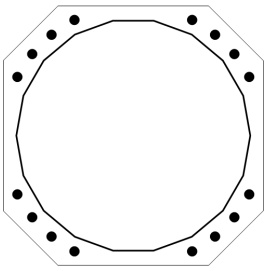
## ANALYSIS SUMMARY

| | Reactions | | | | | | Max Usage | |
|---|---|---|---|---|---|---|---|---|
| Load Case | Shear FX (kips) | Shear FZ (kips) | Axial FY (kips) | Moment MX (ft-kips) | Moment MY (ft-kips) | Moment MZ (ft-kips) | Elev (ft) | Interaction Ratio |
| 1.2D + 1.0W Normal | 26.96 | 0.00 | 36.58 | 0.00 | 0.00 | 2363.78 | 0.00 | 0.57 |
| 0.9D + 1.0W Normal | 26.94 | 0.00 | 27.42 | 0.00 | 0.00 | 2346.66 | 0.00 | 0.56 |
| 1.2D + 1.0Di + 1.0Wi Normal | 6.60 | 0.00 | 49.40 | 0.00 | 0.00 | 562.82 | 0.00 | 0.15 |
| 1.2D + 1.0Ev + 1.0Eh Normal | 1.03 | 0.00 | 36.40 | 0.00 | 0.00 | 97.03 | 85.75 | 0.03 |
| 0.9D - 1.0Ev + 1.0Eh Normal | 1.03 | 0.00 | 25.10 | 0.00 | 0.00 | 96.16 | 0.00 | 0.03 |
| 1.0D + 1.0W Service Normal | 5.83 | 0.00 | 30.51 | 0.00 | 0.00 | 509.30 | 0.00 | 0.13 |

# BASE PLATE ANALYSIS @ 0 FT

## PLATE PARAMETERS (ID# 8663)

| | | |
|---|---|---|
| Width: | 57 | in |
| Shape: | Square | |
| Thickness: | 2.75 | in |
| Grade: | A572-50 | |
| Yield Strength: | 50 | ksi |
| Tensile Strength: | 65 | ksi |
| Clip Length: | 12 | in |
| Rod Detail Type: | d | |
| Clear Distance | 3 | in |
| Base Weld Size: | 0.125 | in |
| Orientation Offset: | - | ° |
| Analysis Type: | Plastic | |
| Neutral Axis: | 218 | ° |



## ANCHOR ROD PARAMETERS

| Class | Arrangement | Quantity | Diameter (in) | Circle (in) | Grade | Fy (ksi) | Fu (ksi) | Spacing (in) | Offset (°) |
|---|---|---|---|---|---|---|---|---|---|
| Original [ID# 2233] | Cluster | 16 | 2.25 | 57 | A615-75 | 75 | 100 | 6 | - |

## ANCHOR ROD GEOMETRY AND APPLIED LOADS --- ORIGINAL (16) 2.25"ø [ID 2233]

| Position | Radians | X (in) | Y (in) | Moment Arm (in) | Inertia ($in^4$) | Axial Load (k) | Shear Load (k) |
|---|---|---|---|---|---|---|---|
| 1 | 0.470 | 25.42 | 12.90 | 5.231 | 89.711 | 115.10 | 2.80 |
| 2 | 0.680 | 22.16 | 17.92 | -0.460 | 1.526 | -105.95 | 2.86 |
| 3 | 0.891 | 17.92 | 22.16 | -6.130 | 122.887 | -105.95 | 2.78 |
| 4 | 1.101 | 12.90 | 25.42 | -11.530 | 432.597 | -105.95 | 2.59 |
| 5 | 2.040 | -12.90 | 25.42 | -26.680 | 2312.530 | -105.95 | 0.55 |
| 6 | 2.251 | -17.92 | 22.16 | -27.184 | 2400.716 | -105.95 | 0.05 |
| 7 | 2.461 | -22.16 | 17.92 | -26.487 | 2279.354 | -105.95 | 0.64 |
| 8 | 2.672 | -25.42 | 12.90 | -24.621 | 1969.645 | -105.95 | 1.21 |
| 9 | 3.611 | -25.42 | -12.90 | -5.231 | 89.711 | -105.95 | 2.80 |
| 10 | 3.822 | -22.16 | -17.92 | 0.460 | 1.526 | 115.10 | 2.86 |
| 11 | 4.032 | -17.92 | -22.16 | 6.130 | 122.887 | 115.10 | 2.78 |
| 12 | 4.243 | -12.90 | -25.42 | 11.530 | 432.596 | 115.10 | 2.59 |
| 13 | 5.182 | 12.90 | -25.42 | 26.680 | 2312.531 | 115.10 | 0.55 |
| 14 | 5.393 | 17.92 | -22.16 | 27.184 | 2400.716 | 115.10 | 0.05 |
| 15 | 5.603 | 22.16 | -17.92 | 26.487 | 2279.354 | 115.10 | 0.64 |
| 16 | 5.814 | 25.42 | -12.90 | 24.621 | 1969.644 | 115.10 | 1.21 |

## REACTION DISTRIBUTION

| Component | ID | Moment Mu (k-ft) | Axial Load Pu (k) | Shear Vu (k) | Moment Factor |
|---|---|---|---|---|---|
| Pole | 50.75"ø x 0.375" (18 Sides) | 2363.8 | 36.58 | 26.96 | 1.000 |
| Bolt Group | Original (16) 2.25"ø | 2363.8 | - | 26.96 | 1.000 |
| | **TOTALS** | **2363.78** | **36.58** | **26.96** | |

## COMPONENT PROPERTIES

| Component | ID | Gross Area ($in^2$) | Net Area ($in^2$) | Individual Inertia ($in^4$) | Moment of Inertia ($in^4$) | Threads/in |
|---|---|---|---|---|---|---|
| Pole | 50.75"ø x 0.375" (18 Sides) | 59.0458 | - | - | 18732.41 | - |
| Bolt Group | Original (16) 2.25"ø | 3.9761 | 3.2477 | 0.8393 | 19217.93 | 4.5 |

## EXTERNAL BASE PLATE BEND LINE ANALYSIS @ 0 FT

**POLE PROPERTIES**

| | | |
|---|---|---|
| Flat-to-Flat Diameter: | 50.88 | in |
| Point-to-Point Diameter: | 51.66 | in |
| Flat Width: | 8.971 | in |
| Flat Radians: | 0.349 | rad |

**PLATE PROPERTIES**

| | | |
|---|---|---|
| Neutral Axis: | 218 | ° |
| Bend Line Lower Limit: | | rad |
| Bend Line Upper Limit: | -0.124 | rad |

| Bend Line | Chord Length (in) | Additional Length (in) | Section Modulus ($in^3$) | Applied Moment Mu (k-in) | Moment Capacity ϕMn (k-in) | Ratio |
|---|---|---|---|---|---|---|
| Flat | 29.735 | 0.00 | 56.218 | 528.9 | 2529.8 | 0.209 |
| Corner | 28.950 | 0.00 | 54.734 | 375.1 | 2463.0 | 0.152 |

## PLASTIC ANCHOR ROD ANALYSIS

| Class | Group Quantity | Rod Diameter (in) | Applied Axial Load Pu (k) | Applied Shear Load Vu (k) | Compressive Capacity ϕPn (k) | Ratio |
|---|---|---|---|---|---|---|
| Original | 16 | 2.25 | 115.2 | 2.9 | 243.6 | 0.496 |

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# Mount Analysis Report

| | | |
|---|---|---|
| **ATC Site Name** | : | **PINE ORCHARD BRANFORD CT, CT** |
| **ATC Site Number** | : | **283419** |
| **Engineering Number** | : | **13757800_C8_01** |
| **Mount Elevation** | : | **111 ft** |
| **Carrier** | : | **AT&T Mobility** |
| **Carrier Site Name** | : | **MRCTB055809** |
| **Carrier Site Number** | : | **CT1274** |
| **Site Location** | : | **123 Pine Orchard Road**<br>**Branford, CT 06405-3939**<br>**41.27476815 , -72.79317788** |
| **County** | : | **New Haven** |
| **Date** | : | **February 22, 2022** |
| **Max Usage** | : | **98%** |
| **Result** | : | **Contingent Pass** |


Prepared By:
Max Carter
Structural Engineer I

Max Carter

Reviewed By:

**COA: PEC.0001553**

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**Table of Contents**

## Introduction

The purpose of this report is to summarize results of the mount analysis performed for AT&T Mobility at 111 ft.

## Supporting Documents

| | |
|---|---|
| **Previous Analysis** | HDG Project #2101A0PQWB, dated September 25, 2019 |
| **Radio Frequency Data Sheet** | RFDS ID #10133874, dated February 2, 2022 |
| **Reference Photos** | Site photos from 2022 |

## Analysis

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

| | |
|---|---|
| **Basic Wind Speed:** | 122 mph (3-Second Gust) |
| **Basic Wind Speed w/ Ice:** | 50 mph (3-Second Gust) w/ 1'' radial ice concurrent |
| **Codes:** | ANSI/TIA-222-H |
| **Exposure Category:** | C |
| **Risk Category:** | II |
| **Topographic Factor Procedure:** | Method 2 |
| **Feature:** | Flat |
| **Crest Height (H):** | 0 ft |
| **Crest Length (L):** | 0 ft |
| **Spectral Response:** | Ss = 0.201, S1 = 0.053 |
| **Site Class:** | D - Stiff Soil |
| **Live Loads:** | Lm = 400 lbs, Lv = 250 lbs |

*** Live load(s) have been reduced on the existing structure per ANSI/TIA-222-H Section 16.9**

## Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above provided the modifications listed below are completed:

- Install P2 (2.375" x 60") antenna mounting pipe (Mount Pipe J, K and L) with Site Pro 1 SCX7-U (ANT.16985) (or approved equivalent) crossover plate kits.
- No structural failures were addressed with the noted contingencies. Contingencies address Carrier's antenna spacing requirements.

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

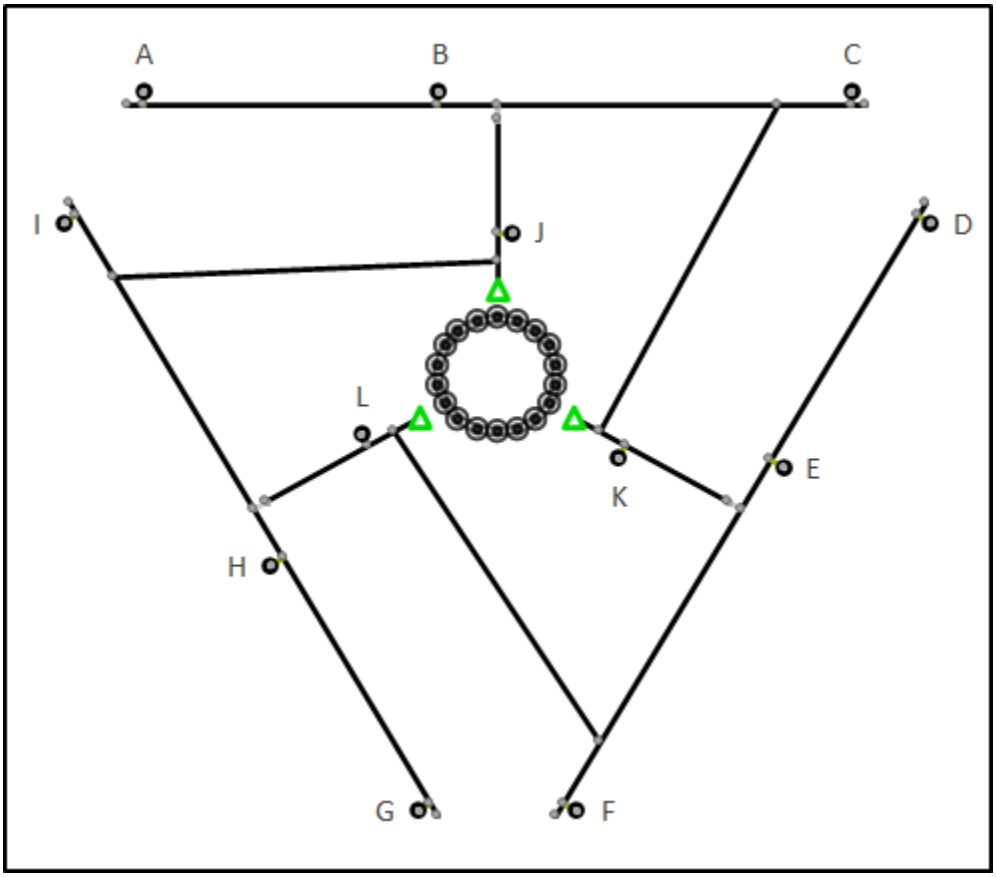
## Application Loading

| Mount Centerline (ft) | Equipment Centerline (ft) | Qty | Equipment Manufacturer & Model |
|---|---|---|---|
| 111.0 | 112.0 | 3 | Ericsson Air 6449 B77D |
| | | 3 | CCI TPA-65R-BU6DA-K |
| | | 3 | Ericsson AIR 6419 B77G |
| | | 3 | CCI DMP65R-BU6DA |
| | | 1 | Raycap DC6-48-60-18-8C |
| | | 1 | Raycap DC6-48-60-18-8F |
| | | 3 | Ericsson RRUS 8843 B2, B66A |
| | | 3 | Ericsson RRUS 4449 B5, B12 |
| | | 3 | Ericsson RRUS 4478 B14 |

## Structure Usages

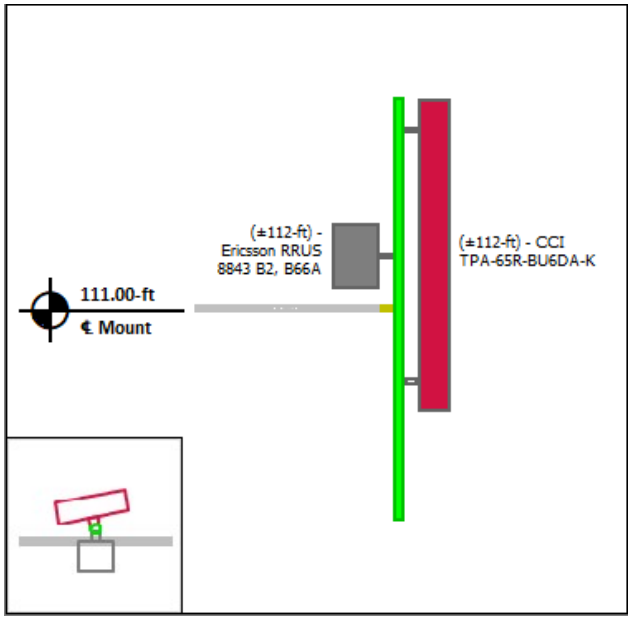
| Structural Component | Controlling Usage | Pass/Fail |
|---|---|---|
| Horizontals | 98% | Pass |
| Verticals | 29% | Pass |
| Mount Pipes | 65% | Pass |
| Serviceability | N/A | Pass |

## Mount Layout

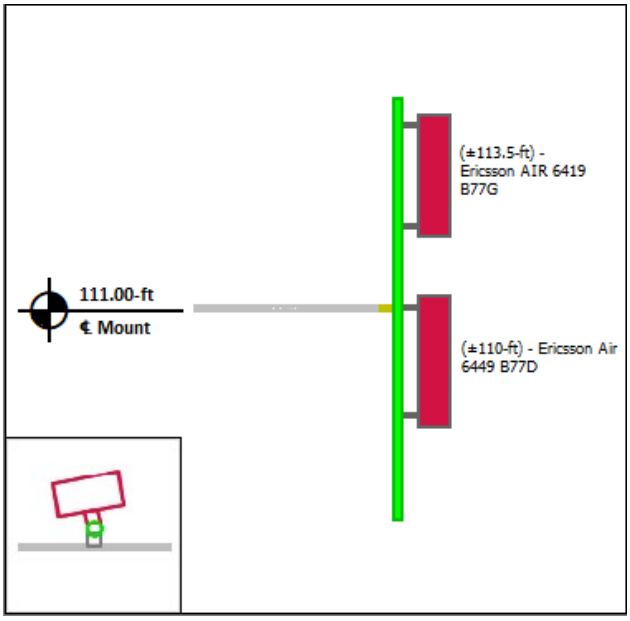


## Equipment Layout

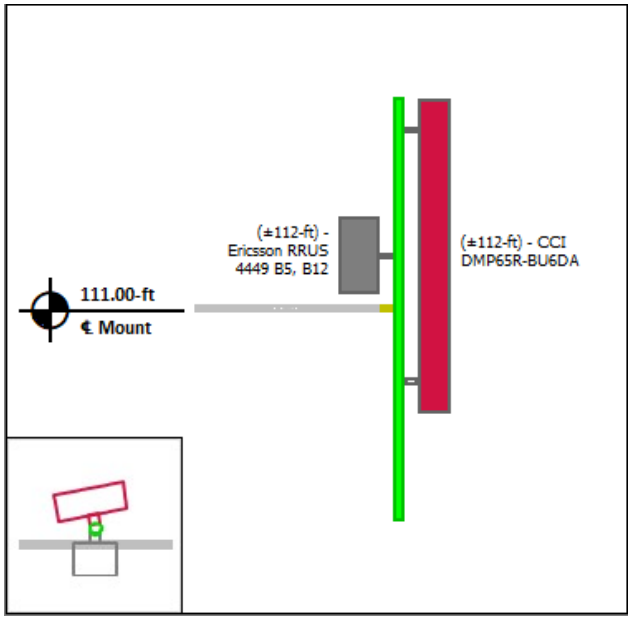
**Mount Pipe A**



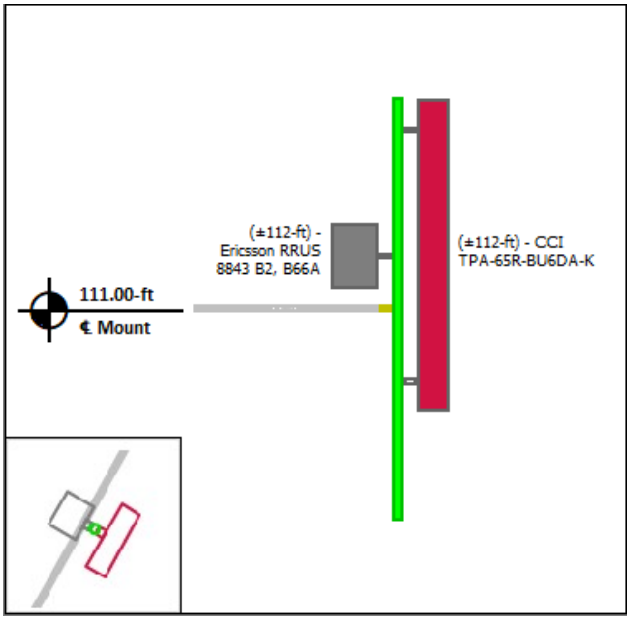

**Mount Pipe B**




**Mount Pipe C**

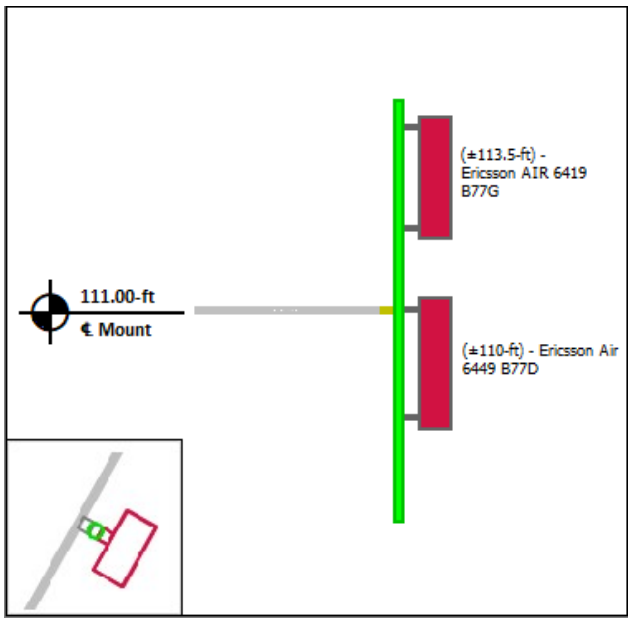



**Mount Pipe D**

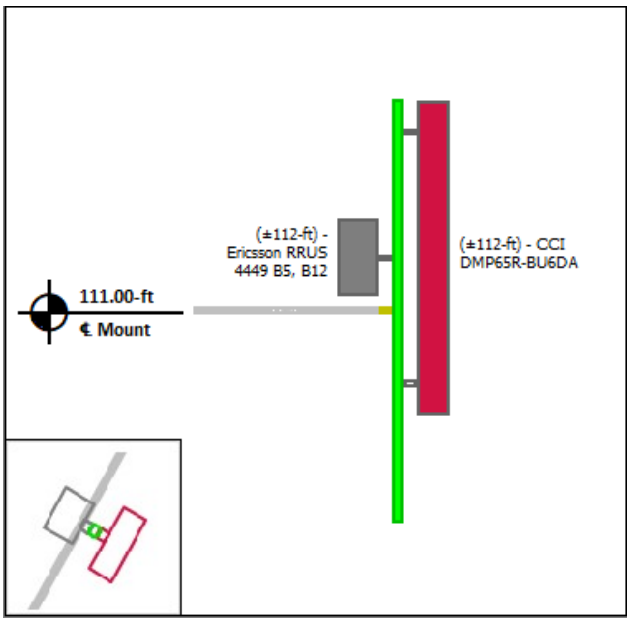


## Equipment Layout Cont'd.

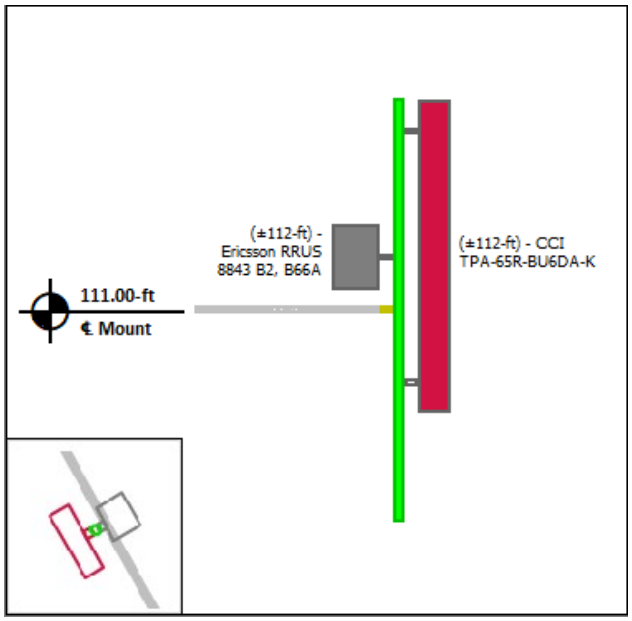
**Mount Pipe E**



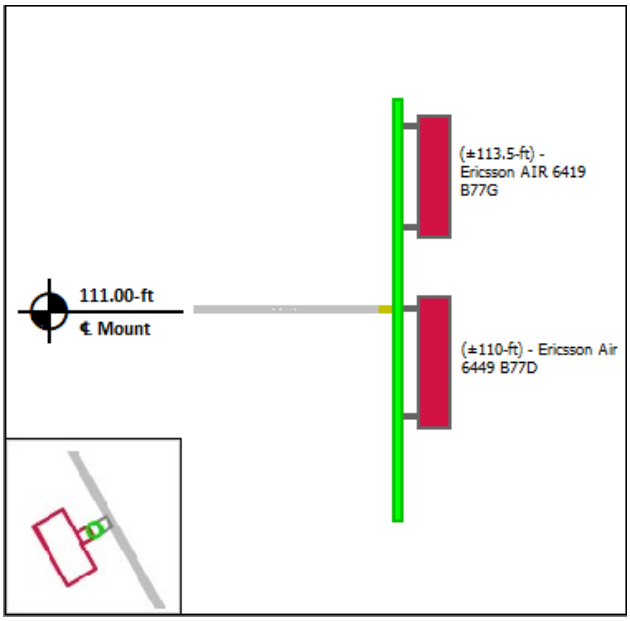

**Mount Pipe F**




**Mount Pipe G**

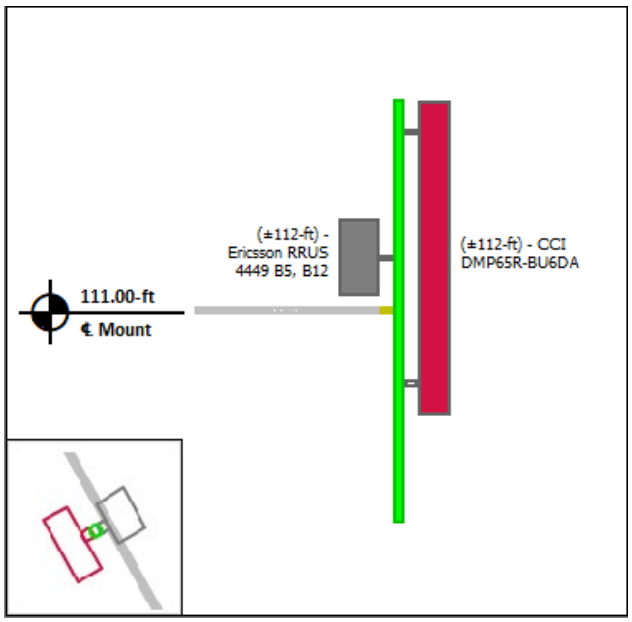



**Mount Pipe H**

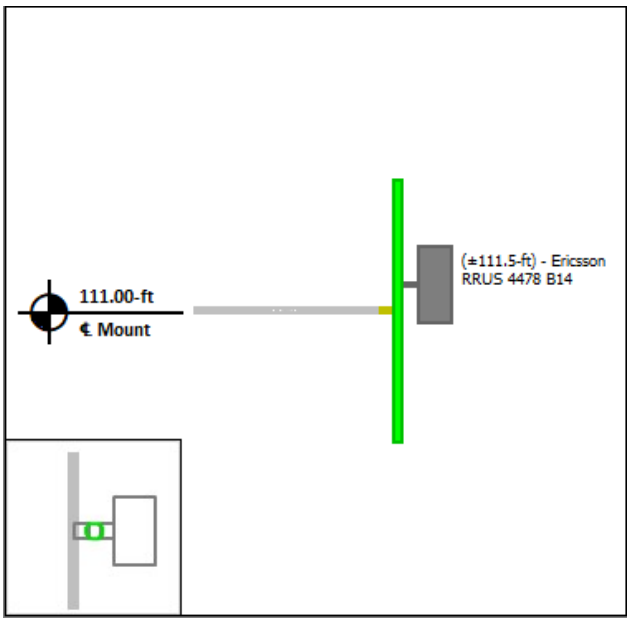


## Equipment Layout Cont'd.

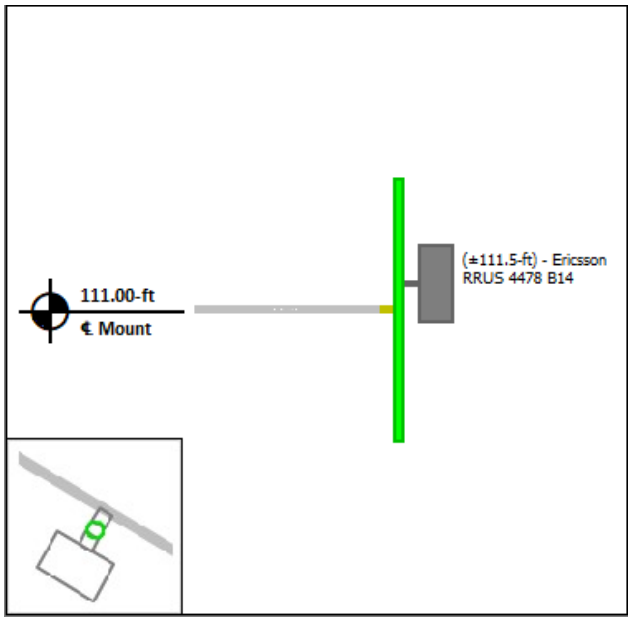
**Mount Pipe I**



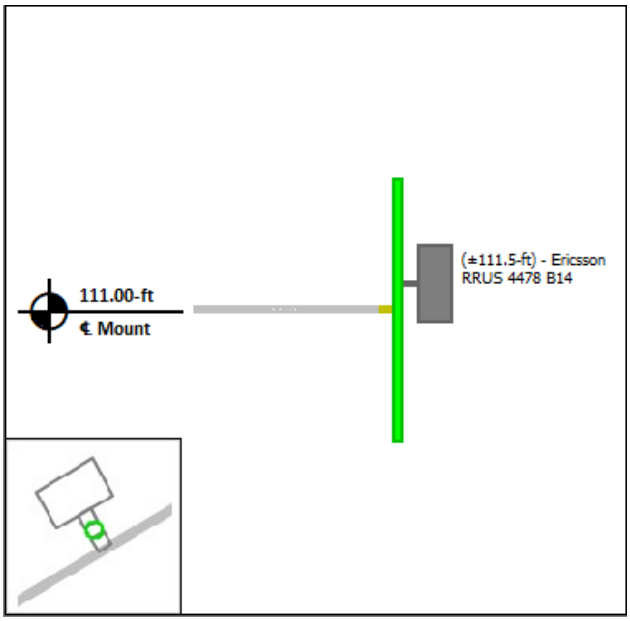

**Mount Pipe J**




**Mount Pipe K**




**Mount Pipe L**



**Standard Conditions**

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

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

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

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

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

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

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

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

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| | |
|---|---|
| **Site Number:** | *283419* |
| **Project Number:** | *13757800_C8_01* |
| **Carrier:** | *AT&T Mobility* |
| **Mount Elevation:** | *111 ft* |
| **Date:** | 2/22/2022 |

# Mount Analysis Force Calculations

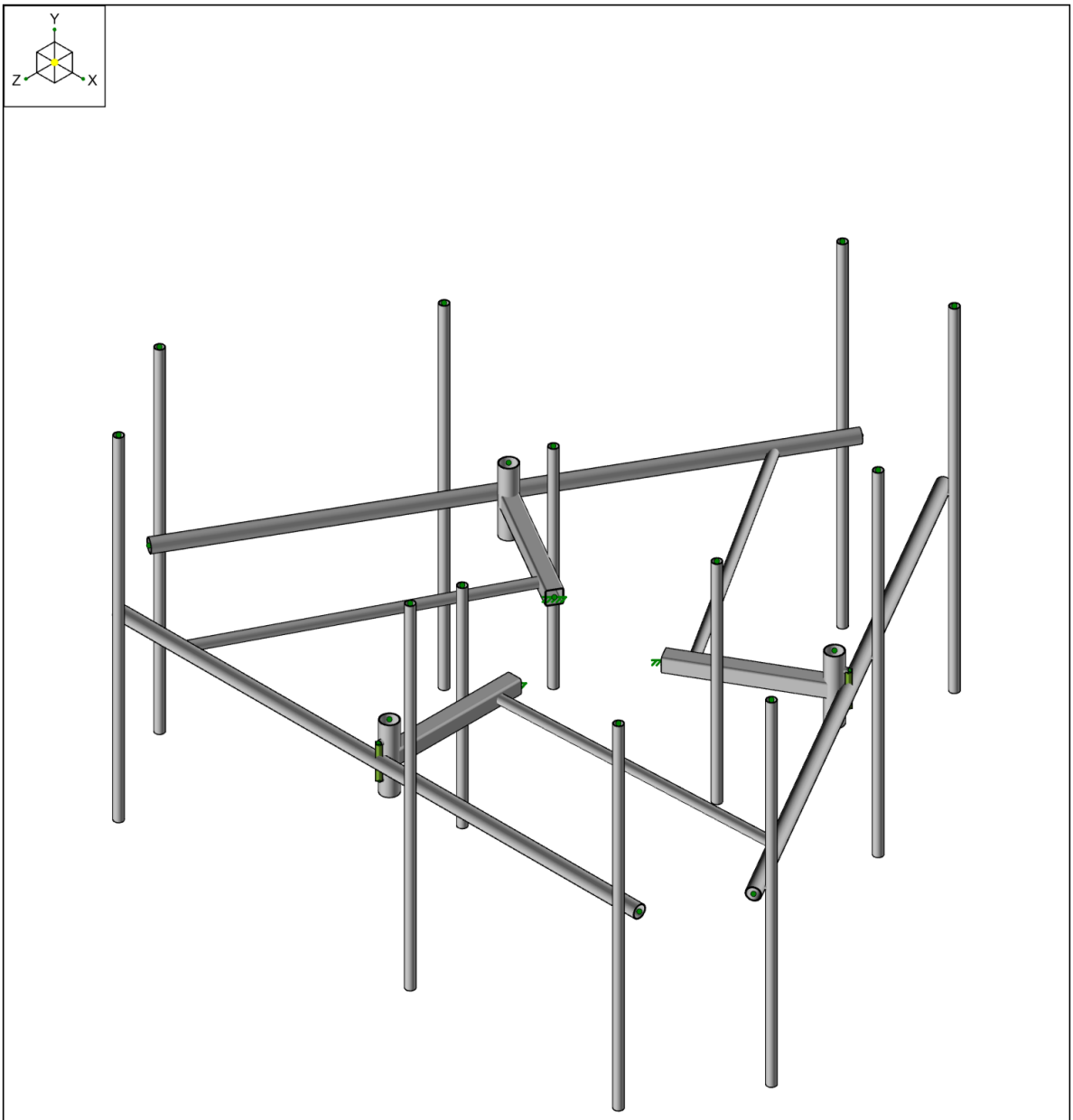
| Wind & Ice Load Calculations | | | |
|---|---|---|---|
| Velocity Pressure Coefficient | $K_z$ | 1.29 | |
| Topographic Factor | $K_{zt}$ | 1.00 | |
| Rooftop Wind Speed-up Factor | $K_s$ | 1.00 | |
| Shielding Factor | $K_a$ | 0.90 | |
| Ground Elevation Factor | $K_e$ | 1.00 | |
| Wind Direction Probability Factor | $K_d$ | 0.95 | |
| Basic Wind Speed | V | 122 | mph |
| Velocity Pressure | $q_z$ | 46.8 | psf |
| Height Escalation Factor | $K_{iz}$ | 1.13 | |
| Thickness of Radial Glaze Ice | $T_{iz}$ | 1.13 | in |

| Seismic Load Calculations | | | |
|---|---|---|---|
| Short Period DSRAP | $S_{DS}$ | 0.214 | |
| 1 Second DSRAP | $S_{D1}$ | 0.085 | |
| Importance Factor | I | 1.0 | |
| Response Modification Coefficient | R | 2.0 | |
| Seismic Response Coefficient | $C_S$ | 0.107 | |
| Amplification Factor | A | 1.0 | |
| Total Weight | W | 2456.8 | lbs |
| Total Shear Force | $V_S$ | 263.4 | lbs |
| Horizontal Seismic Load | Eh | 263.4 | lbs |
| Vertical Seismic Load | Ev | 105.3 | lbs |

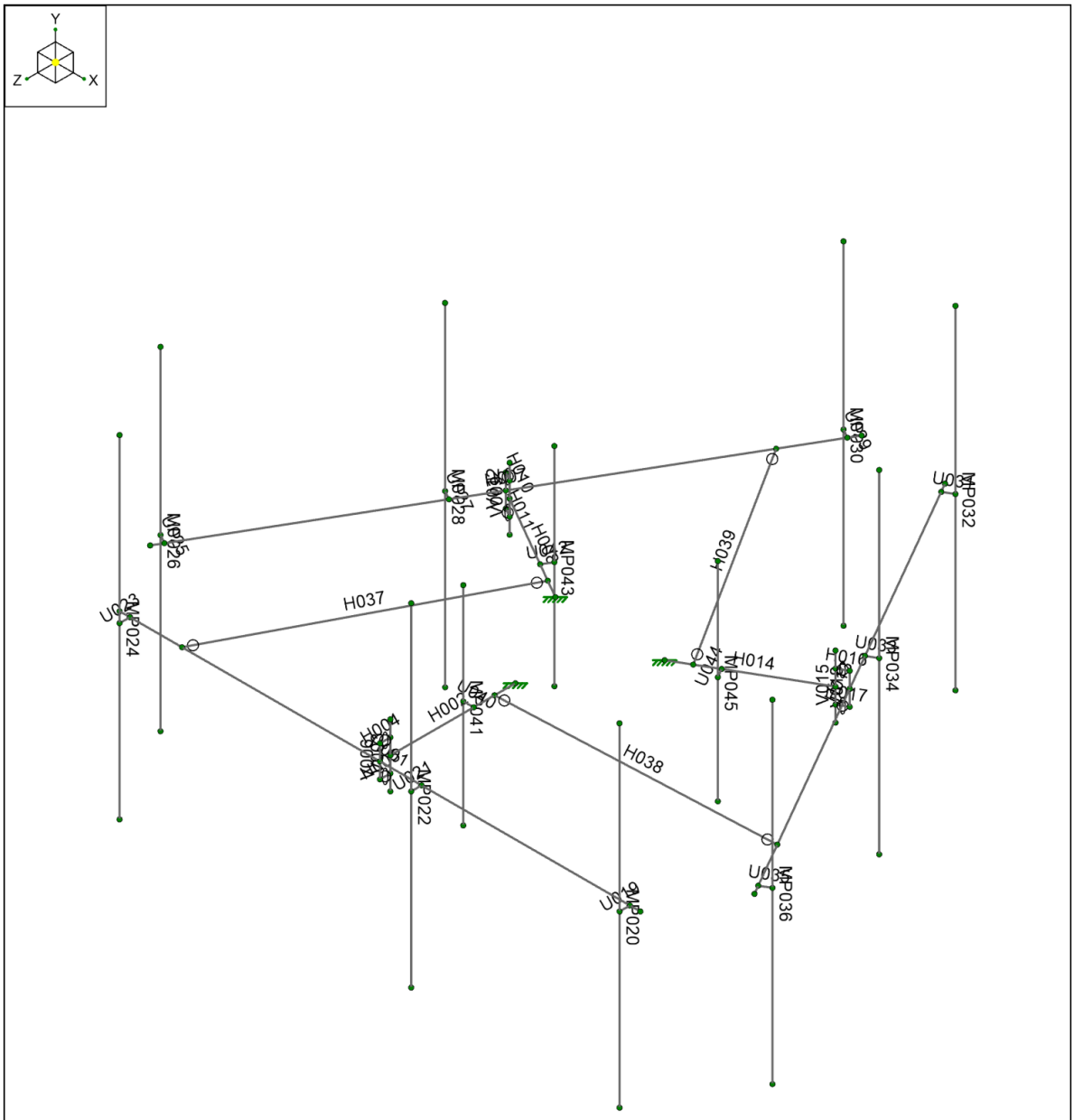
**Antenna Calculations (Elevations per Application/RFDS)***

| Equipment | Height | Width | Depth | Weight | $EPA_N$ | $EPA_T$ | $EPA_{Ni}$ | $EPA_{Ti}$ |
|---|---|---|---|---|---|---|---|---|
| Model # | in | in | in | lbs | sqft | sqft | sqft | sqft |
| Ericsson Air 6449 B77D | 30.4 | 15.9 | 8.1 | 81.6 | 4.03 | 1.34 | 4.94 | 1.84 |
| CCI TPA-65R-BU6DA-K | 71.1 | 25.5 | 7.6 | 79.6 | 15.27 | 2.25 | 17.15 | 3.01 |
| Ericsson AIR 6419 B77G | 28.3 | 16.1 | 7.9 | 66.1 | 3.80 | 1.20 | 4.67 | 1.66 |
| CCI DMP65R-BU6DA | 71.2 | 20.7 | 7.7 | 79.4 | 12.71 | 2.28 | 14.54 | 3.05 |
| Raycap DC6-48-60-18-8C | 20.1 | 18.2 | 6.4 | 16.0 | N/A | N/A | N/A | N/A |
| Raycap DC6-48-60-18-8F | 23.5 | 9.7 | 9.7 | 20.0 | N/A | N/A | N/A | N/A |
| Ericsson RRUS 8843 B2, B66A | 14.9 | 13.2 | 10.9 | 72.0 | 1.64 | 1.35 | 2.21 | 1.88 |
| Ericsson RRUS 4449 B5, B12 | 17.9 | 13.2 | 9.4 | 71.0 | 1.97 | 1.40 | 2.60 | 1.96 |
| Ericsson RRUS 4478 B14 | 18.1 | 13.4 | 8.3 | 59.4 | 2.02 | 1.25 | 2.66 | 1.79 |

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




| | | |
|---|---|---|
| American Tower Corp. | 283419, PINE ORCHARD BRANFORD CT | SK-1 |
| Max.Carter | | Feb 22, 2022 |
| 13757800_C8_01 | | R3D. AT&T MOBILITY @ 283419, … |




| | | |
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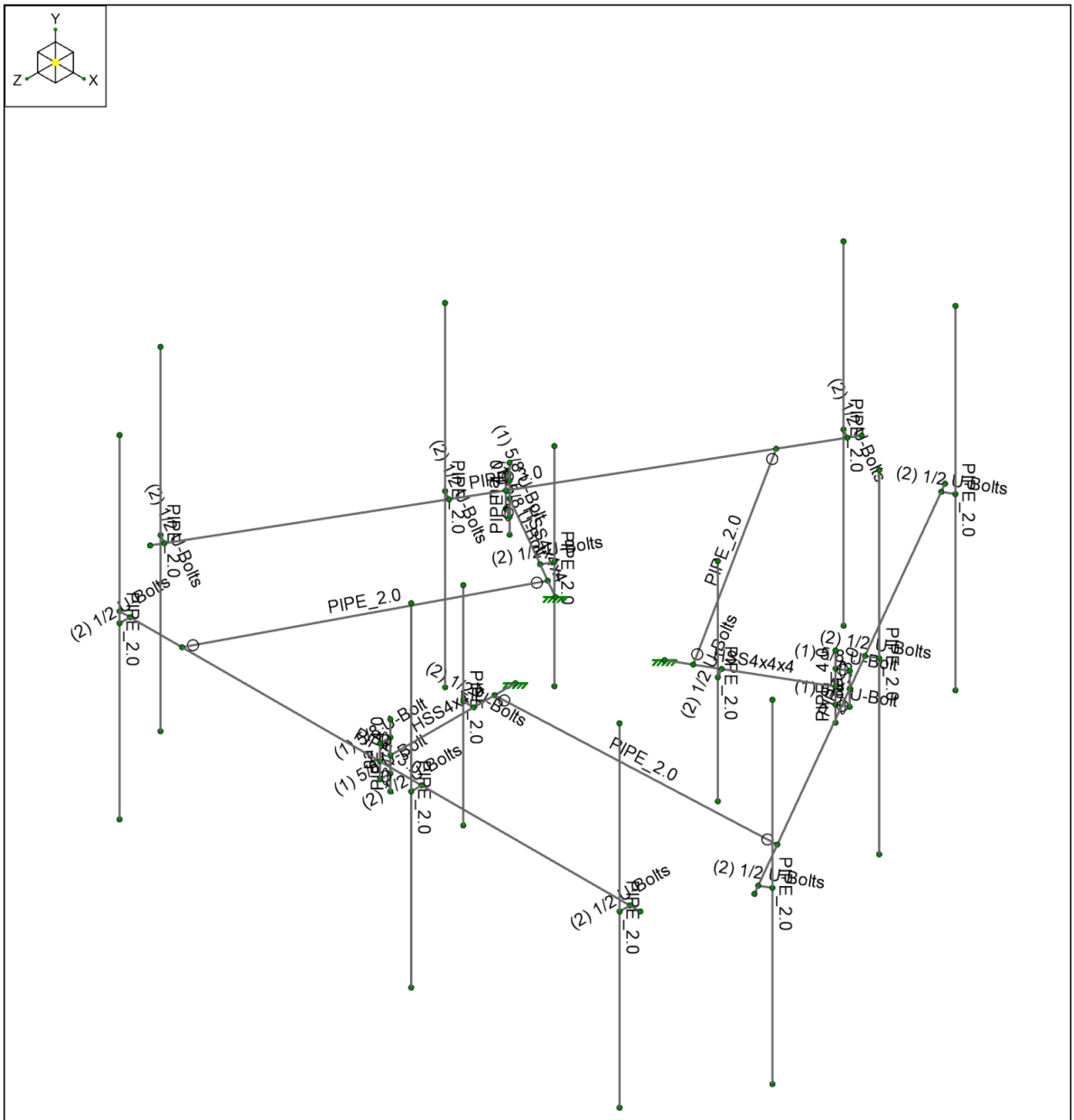


| | | |
|---|---|---|
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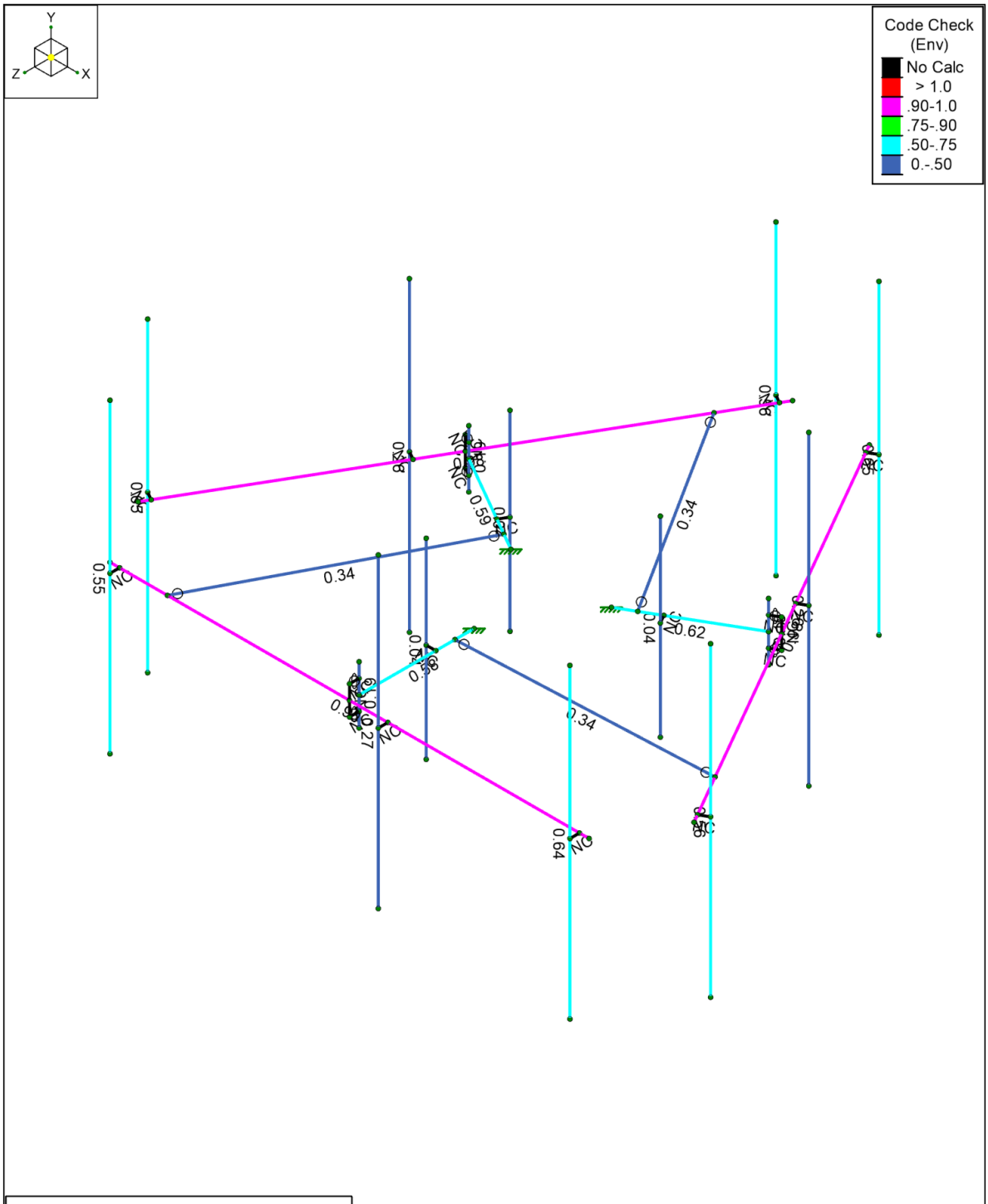


| | | |
|---|---|---|
| American Tower Corp. | 283419, PINE ORCHARD BRANFORD CT | SK-4 |
| Max.Carter | | Feb 22, 2022 |
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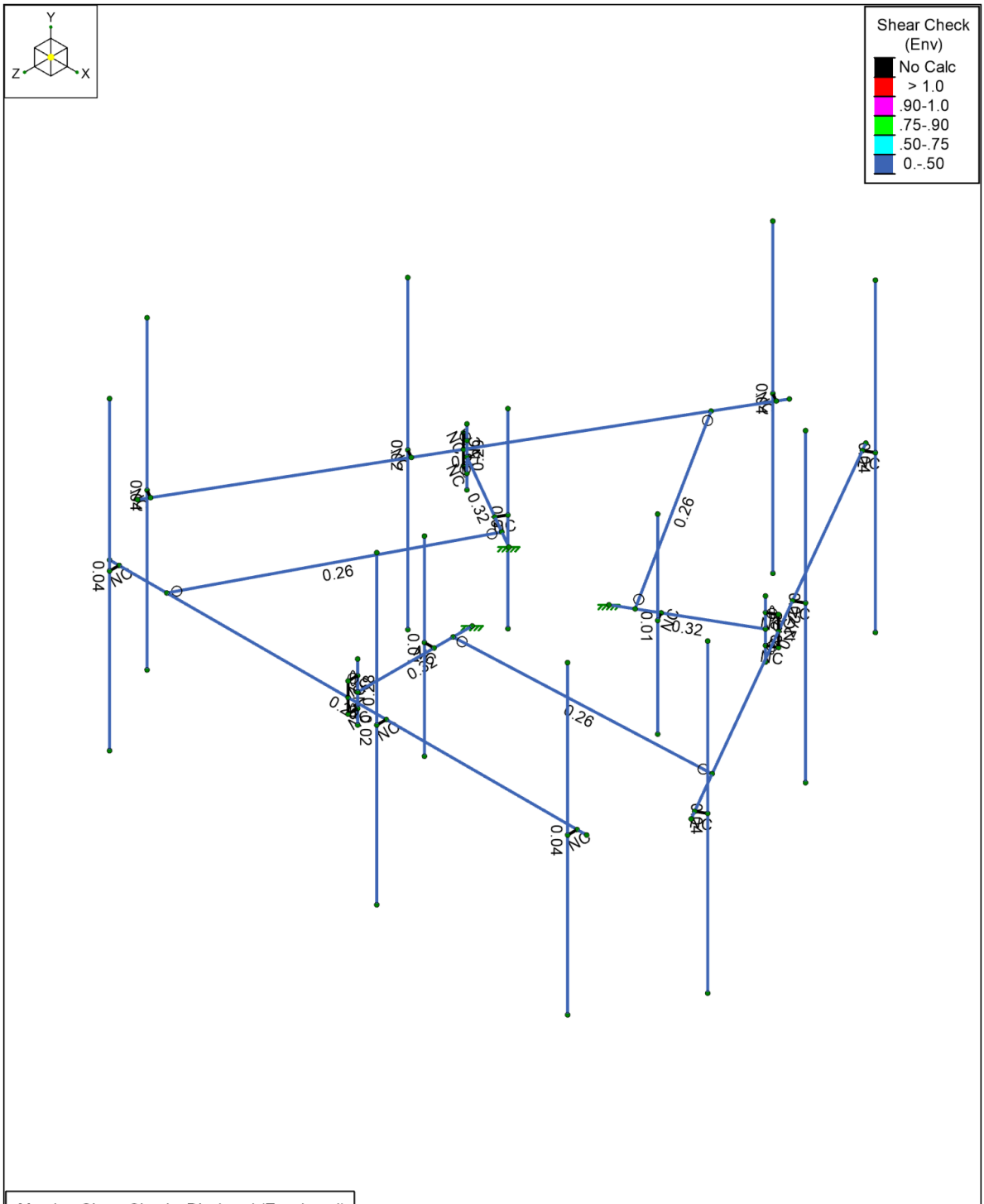


| | | |
|---|---|---|
| American Tower Corp. | 283419, PINE ORCHARD BRANFORD CT | SK-5 |
| Max.Carter | | Feb 22, 2022 |
| 13757800_C8_01 | | R3D. AT&T MOBILITY @ 283419, … |

***Basic Load Cases***

| | BLC Description | Category | Y Gravity | Nodal | Point | Distributed |
|---|---|---|---|---|---|---|
| 1 | D | DL | -1 | | 33 | |
| 2 | Di | IL | | | 33 | 24 |
| 3 | W 0 | WL | | | 33 | 51 |
| 4 | W 30 | WL | | | 66 | 93 |
| 5 | W 60 | WL | | | 66 | 93 |
| 6 | W 90 | WL | | | 33 | 42 |
| 7 | W 120 | WL | | | 66 | 93 |
| 8 | W 150 | WL | | | 66 | 93 |
| 9 | W 180 | WL | | | 33 | 51 |
| 10 | W 210 | WL | | | 66 | 93 |
| 11 | W 240 | WL | | | 66 | 93 |
| 12 | W 270 | WL | | | 33 | 42 |
| 13 | W 300 | WL | | | 66 | 93 |
| 14 | W 330 | WL | | | 66 | 93 |
| 15 | Wi 0 | WL | | | 33 | 51 |
| 16 | Wi 30 | WL | | | 66 | 93 |
| 17 | Wi 60 | WL | | | 66 | 93 |
| 18 | Wi 90 | WL | | | 33 | 42 |
| 19 | Wi 120 | WL | | | 66 | 93 |
| 20 | Wi 150 | WL | | | 66 | 93 |
| 21 | Wi 180 | WL | | | 33 | 51 |
| 22 | Wi 210 | WL | | | 66 | 93 |
| 23 | Wi 240 | WL | | | 66 | 93 |
| 24 | Wi 270 | WL | | | 33 | 42 |
| 25 | Wi 300 | WL | | | 66 | 93 |
| 26 | Wi 330 | WL | | | 66 | 93 |
| 27 | Ws 0 | WL | | | 33 | 51 |
| 28 | Ws 30 | WL | | | 66 | 93 |
| 29 | Ws 60 | WL | | | 66 | 93 |
| 30 | Ws 90 | WL | | | 33 | 42 |
| 31 | Ws 120 | WL | | | 66 | 93 |
| 32 | Ws 150 | WL | | | 66 | 93 |
| 33 | Ws 180 | WL | | | 33 | 51 |
| 34 | Ws 210 | WL | | | 66 | 93 |
| 35 | Ws 240 | WL | | | 66 | 93 |
| 36 | Ws 270 | WL | | | 33 | 42 |
| 37 | Ws 300 | WL | | | 66 | 93 |
| 38 | Ws 330 | WL | | | 66 | 93 |
| 39 | Ev -Y | ELY | | | | 24 |
| 40 | Eh -Z | ELZ | | | | 24 |
| 41 | Eh -X | ELX | | | | 24 |
| 42 | Lv (1) | LL | | | 1 | |
| 43 | Lv (2) | LL | | | 1 | |
| 44 | Lv (3) | LL | | | 1 | |
| 45 | Lv (4) | LL | | | 1 | |
| 46 | Lv (5) | LL | | | 1 | |
| 47 | Lv (6) | LL | | | 1 | |
| 48 | Lv (7) | LL | | | 1 | |
| 49 | Lv (8) | LL | | | 1 | |
| 50 | Lv (9) | LL | | | 1 | |
| 51 | Lm (1) | LL | | 1 | | |
| 52 | Lm (2) | LL | | 1 | | |
| 53 | Lm (3) | LL | | 1 | | |
| 54 | Lm (4) | LL | | 1 | | |
| 55 | Lm (5) | LL | | 1 | | |

### *Basic Load Cases (Continued)*

| | BLC Description | Category | Y Gravity | Nodal | Point | Distributed |
|---|---|---|---|---|---|---|
| 56 | Lm (6) | LL | | 1 | | |
| 57 | Lm (7) | LL | | 1 | | |
| 58 | Lm (8) | LL | | 1 | | |
| 59 | Lm (9) | LL | | 1 | | |
| 60 | Lm (10) | LL | | 1 | | |
| 61 | Lm (11) | LL | | 1 | | |
| 62 | Lm (12) | LL | | 1 | | |

### *Node Boundary Conditions*

| | Node Label | X [lb/in] | Y [lb/in] | Z [lb/in] | X Rot [k-in/rad] | Y Rot [k-in/rad] | Z Rot [k-in/rad] |
|---|---|---|---|---|---|---|---|
| 1 | N001 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 2 | N012 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |
| 3 | N013 | Reaction | Reaction | Reaction | Reaction | Reaction | Reaction |

### *Member Primary Data*

| | Label | I Node | J Node | Section/Shape | Type | Design List | Material | Design Rule |
|---|---|---|---|---|---|---|---|---|
| 1 | H001 | N003 | N004 | PIPE_3.0 | Beam | None | A53 Gr. B | Typical |
| 2 | H002 | N001 | N002 | HSS4x4x4 | Beam | None | A500 Gr. B [SQR] | Typical |
| 3 | V003 | N006 | N005 | PIPE_4.0 | Column | None | A53 Gr. B | Typical |
| 4 | H004 | N007 | N008 | (1) 5/8 U-Bolt | Beam | None | SAE J429 Gr. 2 | Typical |
| 5 | H005 | N009 | N010 | (1) 5/8 U-Bolt | Beam | None | SAE J429 Gr. 2 | Typical |
| 6 | V006 | N010 | N008 | RIGID | None | None | RIGID | Typical |
| 7 | H007 | N018 | N019 | PIPE_3.0 | Beam | None | A53 Gr. B | Typical |
| 8 | H008 | N013 | N017 | HSS4x4x4 | Beam | None | A500 Gr. B [SQR] | Typical |
| 9 | V009 | N021 | N020 | PIPE_4.0 | Column | None | A53 Gr. B | Typical |
| 10 | H010 | N022 | N023 | (1) 5/8 U-Bolt | Beam | None | SAE J429 Gr. 2 | Typical |
| 11 | H011 | N024 | N025 | (1) 5/8 U-Bolt | Beam | None | SAE J429 Gr. 2 | Typical |
| 12 | V012 | N025 | N023 | RIGID | None | None | RIGID | Typical |
| 13 | H013 | N031 | N032 | PIPE_3.0 | Beam | None | A53 Gr. B | Typical |
| 14 | H014 | N012 | N030 | HSS4x4x4 | Beam | None | A500 Gr. B [SQR] | Typical |
| 15 | V015 | N034 | N033 | PIPE_4.0 | Column | None | A53 Gr. B | Typical |
| 16 | H016 | N035 | N036 | (1) 5/8 U-Bolt | Beam | None | SAE J429 Gr. 2 | Typical |
| 17 | H017 | N037 | N038 | (1) 5/8 U-Bolt | Beam | None | SAE J429 Gr. 2 | Typical |
| 18 | V018 | N038 | N036 | RIGID | None | None | RIGID | Typical |
| 19 | U019 | N014 | N043 | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 20 | MP020 | N044 | N045 | PIPE_2.0 | Column | None | A53 Gr. B | Typical |
| 21 | U021 | N015 | N046 | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 22 | MP022 | N047 | N048 | PIPE_2.0 | Column | None | A53 Gr. B | Typical |
| 23 | U023 | N016 | N049 | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 24 | MP024 | N050 | N051 | PIPE_2.0 | Column | None | A53 Gr. B | Typical |
| 25 | U025 | N027 | N052 | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 26 | MP026 | N053 | N054 | PIPE_2.0 | Column | None | A53 Gr. B | Typical |
| 27 | U027 | N028 | N055 | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 28 | MP028 | N056 | N057 | PIPE_2.0 | Column | None | A53 Gr. B | Typical |
| 29 | U029 | N029 | N058 | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 30 | MP030 | N059 | N060 | PIPE_2.0 | Column | None | A53 Gr. B | Typical |
| 31 | U031 | N040 | N061 | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 32 | MP032 | N062 | N063 | PIPE_2.0 | Column | None | A53 Gr. B | Typical |
| 33 | U033 | N041 | N064 | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 34 | MP034 | N065 | N066 | PIPE_2.0 | Column | None | A53 Gr. B | Typical |
| 35 | U035 | N042 | N067 | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 36 | MP036 | N068 | N069 | PIPE_2.0 | Column | None | A53 Gr. B | Typical |
| 37 | H037 | N070 | N075 | PIPE_2.0 | Beam | None | A53 Gr. B | Typical |

***Member Primary Data (Continued)***

| | Label | I Node | J Node | Section/Shape | Type | Design List | Material | Design Rule |
|---|---|---|---|---|---|---|---|---|
| 38 | H038 | N071 | N073 | PIPE_2.0 | Beam | None | A53 Gr. B | Typical |
| 39 | H039 | N072 | N074 | PIPE_2.0 | Beam | None | A53 Gr. B | Typical |
| 40 | U040 | N076 | N079 | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 41 | MP041 | N080 | N081 | PIPE_2.0 | Column | None | A53 Gr. B | Typical |
| 42 | U042 | N078 | N082 | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 43 | MP043 | N083 | N084 | PIPE_2.0 | Column | None | A53 Gr. B | Typical |
| 44 | U044 | N077 | N085 | (2) 1/2 U-Bolts | Beam | None | A36 | Typical |
| 45 | MP045 | N086 | N087 | PIPE_2.0 | Column | None | A53 Gr. B | Typical |

***Member Advanced Data***

| | Label | I Release | J Release | Physical | Deflection Ratio Options | Activation | Seismic DR |
|---|---|---|---|---|---|---|---|
| 1 | H001 | | | Yes | N/A | | None |
| 2 | H002 | | | Yes | N/A | | None |
| 3 | V003 | | | Yes | ** NA ** | | None |
| 4 | H004 | OOOXOX | | Yes | N/A | Exclude | None |
| 5 | H005 | OOOXOX | | Yes | N/A | Exclude | None |
| 6 | V006 | | | Yes | ** NA ** | | None |
| 7 | H007 | | | Yes | N/A | | None |
| 8 | H008 | | | Yes | N/A | | None |
| 9 | V009 | | | Yes | ** NA ** | | None |
| 10 | H010 | OOOXOX | | Yes | N/A | Exclude | None |
| 11 | H011 | OOOXOX | | Yes | N/A | Exclude | None |
| 12 | V012 | | | Yes | ** NA ** | | None |
| 13 | H013 | | | Yes | N/A | | None |
| 14 | H014 | | | Yes | N/A | | None |
| 15 | V015 | | | Yes | ** NA ** | | None |
| 16 | H016 | OOOXOX | | Yes | N/A | Exclude | None |
| 17 | H017 | OOOXOX | | Yes | N/A | Exclude | None |
| 18 | V018 | | | Yes | ** NA ** | | None |
| 19 | U019 | | | Yes | N/A | Exclude | None |
| 20 | MP020 | | | Yes | ** NA ** | | None |
| 21 | U021 | | | Yes | N/A | Exclude | None |
| 22 | MP022 | | | Yes | ** NA ** | | None |
| 23 | U023 | | | Yes | N/A | Exclude | None |
| 24 | MP024 | | | Yes | ** NA ** | | None |
| 25 | U025 | | | Yes | N/A | Exclude | None |
| 26 | MP026 | | | Yes | ** NA ** | | None |
| 27 | U027 | | | Yes | N/A | Exclude | None |
| 28 | MP028 | | | Yes | ** NA ** | | None |
| 29 | U029 | | | Yes | N/A | Exclude | None |
| 30 | MP030 | | | Yes | ** NA ** | | None |
| 31 | U031 | | | Yes | N/A | Exclude | None |
| 32 | MP032 | | | Yes | ** NA ** | | None |
| 33 | U033 | | | Yes | N/A | Exclude | None |
| 34 | MP034 | | | Yes | ** NA ** | | None |
| 35 | U035 | | | Yes | N/A | Exclude | None |
| 36 | MP036 | | | Yes | ** NA ** | | None |
| 37 | H037 | BenPIN | BenPIN | Yes | N/A | | None |
| 38 | H038 | BenPIN | BenPIN | Yes | N/A | | None |
| 39 | H039 | BenPIN | BenPIN | Yes | N/A | | None |
| 40 | U040 | | | Yes | N/A | Exclude | None |
| 41 | MP041 | | | Yes | ** NA ** | | None |
| 42 | U042 | | | Yes | N/A | Exclude | None |
| 43 | MP043 | | | Yes | ** NA ** | | None |
| 44 | U044 | | | Yes | N/A | Exclude | None |

### *Member Advanced Data (Continued)*

| | Label | I Release | J Release | Physical | Deflection Ratio Options | Activation | Seismic DR |
|---|---|---|---|---|---|---|---|
| 45 | MP045 | | | Yes | ** NA ** | | None |

### *Hot Rolled Steel Design Parameters*

| | Label | Shape | Length [in] | Lb y-y [in] | Lb z-z [in] | Lcomp top [in] | L-Torque [in] | K y-y | K z-z | Function |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | H001 | PIPE_3.0 | 150 | | | Lbyy | | 1 | 1 | Lateral |
| 2 | H002 | HSS4x4x4 | 36 | | | Lbyy | | 1 | 1 | Lateral |
| 3 | V003 | PIPE_4.0 | 18 | | | Lbyy | | 1 | 1 | Lateral |
| 4 | H004 | (1) 5/8 U-Bolt | 3 | | | Lbyy | | 0.65 | 0.65 | Lateral |
| 5 | H005 | (1) 5/8 U-Bolt | 3 | | | Lbyy | | 0.65 | 0.65 | Lateral |
| 6 | H007 | PIPE_3.0 | 150 | | | Lbyy | | 1 | 1 | Lateral |
| 7 | H008 | HSS4x4x4 | 36 | | | Lbyy | | 1 | 1 | Lateral |
| 8 | V009 | PIPE_4.0 | 18 | | | Lbyy | | 1 | 1 | Lateral |
| 9 | H010 | (1) 5/8 U-Bolt | 3 | | | Lbyy | | 0.65 | 0.65 | Lateral |
| 10 | H011 | (1) 5/8 U-Bolt | 3 | | | Lbyy | | 0.65 | 0.65 | Lateral |
| 11 | H013 | PIPE_3.0 | 150 | | | Lbyy | | 1 | 1 | Lateral |
| 12 | H014 | HSS4x4x4 | 36 | | | Lbyy | | 1 | 1 | Lateral |
| 13 | V015 | PIPE_4.0 | 18 | | | Lbyy | | 1 | 1 | Lateral |
| 14 | H016 | (1) 5/8 U-Bolt | 3 | | | Lbyy | | 0.65 | 0.65 | Lateral |
| 15 | H017 | (1) 5/8 U-Bolt | 3 | | | Lbyy | | 0.65 | 0.65 | Lateral |
| 16 | U019 | (2) 1/2 U-Bolts | 3 | | | Lbyy | | 0.5 | 0.5 | Lateral |
| 17 | MP020 | PIPE_2.0 | 96 | Segment | Segment | Lbyy | Segment | 2.1 | 2.1 | Lateral |
| 18 | U021 | (2) 1/2 U-Bolts | 3 | | | Lbyy | | 0.5 | 0.5 | Lateral |
| 19 | MP022 | PIPE_2.0 | 96 | Segment | Segment | Lbyy | Segment | 2.1 | 2.1 | Lateral |
| 20 | U023 | (2) 1/2 U-Bolts | 3 | | | Lbyy | | 0.5 | 0.5 | Lateral |
| 21 | MP024 | PIPE_2.0 | 96 | Segment | Segment | Lbyy | Segment | 2.1 | 2.1 | Lateral |
| 22 | U025 | (2) 1/2 U-Bolts | 3 | | | Lbyy | | 0.5 | 0.5 | Lateral |
| 23 | MP026 | PIPE_2.0 | 96 | Segment | Segment | Lbyy | Segment | 2.1 | 2.1 | Lateral |
| 24 | U027 | (2) 1/2 U-Bolts | 3 | | | Lbyy | | 0.5 | 0.5 | Lateral |
| 25 | MP028 | PIPE_2.0 | 96 | Segment | Segment | Lbyy | Segment | 2.1 | 2.1 | Lateral |
| 26 | U029 | (2) 1/2 U-Bolts | 3 | | | Lbyy | | 0.5 | 0.5 | Lateral |
| 27 | MP030 | PIPE_2.0 | 96 | Segment | Segment | Lbyy | Segment | 2.1 | 2.1 | Lateral |
| 28 | U031 | (2) 1/2 U-Bolts | 3 | | | Lbyy | | 0.5 | 0.5 | Lateral |
| 29 | MP032 | PIPE_2.0 | 96 | Segment | Segment | Lbyy | Segment | 2.1 | 2.1 | Lateral |
| 30 | U033 | (2) 1/2 U-Bolts | 3 | | | Lbyy | | 0.5 | 0.5 | Lateral |
| 31 | MP034 | PIPE_2.0 | 96 | Segment | Segment | Lbyy | Segment | 2.1 | 2.1 | Lateral |
| 32 | U035 | (2) 1/2 U-Bolts | 3 | | | Lbyy | | 0.5 | 0.5 | Lateral |
| 33 | MP036 | PIPE_2.0 | 96 | Segment | Segment | Lbyy | Segment | 2.1 | 2.1 | Lateral |
| 34 | H037 | PIPE_2.0 | 78.098 | | | Lbyy | | 1 | 1 | Lateral |
| 35 | H038 | PIPE_2.0 | 78.098 | | | Lbyy | | 1 | 1 | Lateral |
| 36 | H039 | PIPE_2.0 | 78.098 | | | Lbyy | | 1 | 1 | Lateral |
| 37 | U040 | (2) 1/2 U-Bolts | 3 | | | Lbyy | | 0.5 | 0.5 | Lateral |
| 38 | MP041 | PIPE_2.0 | 60 | Segment | Segment | Lbyy | Segment | 2.1 | 2.1 | Lateral |
| 39 | U042 | (2) 1/2 U-Bolts | 3 | | | Lbyy | | 0.5 | 0.5 | Lateral |
| 40 | MP043 | PIPE_2.0 | 60 | Segment | Segment | Lbyy | Segment | 2.1 | 2.1 | Lateral |
| 41 | U044 | (2) 1/2 U-Bolts | 3 | | | Lbyy | | 0.5 | 0.5 | Lateral |
| 42 | MP045 | PIPE_2.0 | 60 | Segment | Segment | Lbyy | Segment | 2.1 | 2.1 | Lateral |

### *Hot Rolled Steel Properties*

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

### *Envelope Node Reactions*

| | Node Label | | X [lb] | LC | Y [lb] | LC | Z [lb] | LC | MX [lb-ft] | LC | MY [lb-ft] | LC | MZ [lb-ft] | LC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | N001 | max | 1977.147 | 16 | 1878.857 | 26 | 1704.958 | 2 | -670.766 | 14 | 5152.332 | 7 | 3828.666 | 79 |
| 2 | | min | -1969.689 | 22 | 693.548 | 20 | -1701.067 | 8 | -6298.781 | 32 | -5124.038 | 25 | -3258.028 | 97 |
| 3 | N012 | max | 2356.668 | 17 | 1879.05 | 30 | 1729.399 | 13 | 5826.329 | 154 | 5630.58 | 11 | 6222.046 | 176 |
| 4 | | min | -2360.663 | 23 | 693.007 | 24 | -1729.978 | 7 | -219.349 | 172 | -5598.277 | 17 | 227.261 | 17 |
| 5 | N013 | max | 1859.75 | 5 | 1879.127 | 34 | 2177.464 | 15 | 5460.341 | 132 | 5201.268 | 3 | -509.757 | 23 |
| 6 | | min | -1869.353 | 11 | 692.611 | 16 | -2183.745 | 21 | -846.519 | 114 | -5177.963 | 21 | -6288.343 | 110 |
| 7 | Totals: | max | 5797.828 | 17 | 5631.1 | 30 | 5502.807 | 14 | | | | | | |
| 8 | | min | -5797.828 | 11 | 2095.682 | 24 | -5502.807 | 8 | | | | | | |

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

| | Member | Shape | Code Check | Loc[in] | LC | Shear Check | Loc[in] | Dir | LC | phi*Pnc [lb] | phi*Pnt [lb] | phi*Mn y-y [lb-ft] | phi*Mn z-z [lb-ft] | Cb | Eqn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | H001 | PIPE_3.0 | 0.945 | 75 | 79 | 0.264 | 75 | | 8 | 28250.554 | 65205 | 5748.75 | 5748.75 | 1.503 | H1-1b |
| 2 | H002 | HSS4x4x4 | 0.583 | 0 | 7 | 0.32 | 12 | y | 79 | 134360.669 | 139518 | 16180.5 | 16180.5 | 1.393 | H1-1b |
| 3 | V003 | PIPE_4.0 | 0.189 | 9 | 79 | 0.28 | 9 | | 9 | 92571.332 | 93240 | 10631.25 | 10631.25 | 1.923 | H1-1b |
| 4 | H007 | PIPE_3.0 | 0.98 | 75 | 10 | 0.267 | 75 | | 4 | 28250.554 | 65205 | 5748.75 | 5748.75 | 1.43 | H1-1b |
| 5 | H008 | HSS4x4x4 | 0.594 | 0 | 3 | 0.32 | 12 | y | 113 | 134360.669 | 139518 | 16180.5 | 16180.5 | 1.38 | H1-1b |
| 6 | V009 | PIPE_4.0 | 0.189 | 9 | 111 | 0.287 | 9 | | 4 | 92571.332 | 93240 | 10631.25 | 10631.25 | 1.923 | H1-1b |
| 7 | H013 | PIPE_3.0 | 0.982 | 75 | 6 | 0.267 | 75 | | 12 | 28250.554 | 65205 | 5748.75 | 5748.75 | 1.433 | H1-1b |
| 8 | H014 | HSS4x4x4 | 0.623 | 0 | 11 | 0.32 | 12 | y | 145 | 134360.669 | 139518 | 16180.5 | 16180.5 | 1.375 | H1-1b |
| 9 | V015 | PIPE_4.0 | 0.189 | 9 | 154 | 0.285 | 9 | | 12 | 92571.332 | 93240 | 10631.25 | 10631.25 | 1.923 | H1-1b |
| 10 | MP020 | PIPE_2.0 | 0.64 | 47 | 9 | 0.044 | 47 | | 9 | 14277.295 | 32130 | 1871.625 | 1871.625 | 2.345 | H1-1b |
| 11 | MP022 | PIPE_2.0 | 0.267 | 47 | 9 | 0.021 | 47 | | 9 | 14277.295 | 32130 | 1871.625 | 1871.625 | 2.231 | H1-1b |
| 12 | MP024 | PIPE_2.0 | 0.554 | 47 | 3 | 0.04 | 47 | | 3 | 14277.295 | 32130 | 1871.625 | 1871.625 | 2.052 | H1-1b |
| 13 | MP026 | PIPE_2.0 | 0.654 | 47 | 4 | 0.045 | 47 | | 5 | 14277.295 | 32130 | 1871.625 | 1871.625 | 2.003 | H1-1b |
| 14 | MP028 | PIPE_2.0 | 0.262 | 47 | 5 | 0.022 | 47 | | 5 | 14277.295 | 32130 | 1871.625 | 1871.625 | 2.216 | H1-1b |
| 15 | MP030 | PIPE_2.0 | 0.564 | 47 | 4 | 0.041 | 47 | | 5 | 14277.295 | 32130 | 1871.625 | 1871.625 | 2.035 | H1-1b |
| 16 | MP032 | PIPE_2.0 | 0.654 | 47 | 12 | 0.045 | 47 | | 5 | 14277.295 | 32130 | 1871.625 | 1871.625 | 2.329 | H1-1b |
| 17 | MP034 | PIPE_2.0 | 0.262 | 47 | 13 | 0.022 | 47 | | 11 | 14277.295 | 32130 | 1871.625 | 1871.625 | 2.233 | H1-1b |
| 18 | MP036 | PIPE_2.0 | 0.564 | 47 | 12 | 0.041 | 47 | | 11 | 14277.295 | 32130 | 1871.625 | 1871.625 | 2.341 | H1-1b |
| 19 | H037 | PIPE_2.0 | 0.338 | 39.049 | 68 | 0.259 | 78.098 | | 96 | 19335.454 | 32130 | 1871.625 | 1871.625 | 1.309 | H1-1b |
| 20 | H038 | PIPE_2.0 | 0.338 | 39.049 | 69 | 0.258 | 78.098 | | 172 | 19335.454 | 32130 | 1871.625 | 1871.625 | 1.309 | H1-1b |
| 21 | H039 | PIPE_2.0 | 0.338 | 39.049 | 70 | 0.259 | 78.098 | | 140 | 19335.454 | 32130 | 1871.625 | 1871.625 | 1.309 | H1-1b |
| 22 | MP041 | PIPE_2.0 | 0.042 | 28.75 | 10 | 0.013 | 28.75 | | 10 | 23593.813 | 32130 | 1871.625 | 1871.625 | 2.603 | H1-1b |
| 23 | MP043 | PIPE_2.0 | 0.042 | 28.75 | 6 | 0.013 | 28.75 | | 6 | 23593.813 | 32130 | 1871.625 | 1871.625 | 3 | H1-1b |
| 24 | MP045 | PIPE_2.0 | 0.042 | 28.75 | 2 | 0.013 | 28.75 | | 2 | 23593.813 | 32130 | 1871.625 | 1871.625 | 2.591 | H1-1b |

July 5, 2022

Town Planner Harry Smith
Branford Town Hall
1019 Main Street
Branford, CT 06405

Re: Exempt Modification Application – AT&T Site 13757800
AT&T Mobility Telecommunications Facility @ 123 Pine Orchard Road, Branford, CT

Dear Mr. Smith:

New Cingular Wireless, PCS, LLC (dba AT&T) currently maintains antennas on a wireless telecommunications facility on an existing American Tower Corporation (ATC) telecommunications tower at the above referenced address. AT&T desires to modify its existing equipment as described in the attached Construction and Antenna Mount Modification Drawings:

- Remove six (6) antennas, one (1) squid, three (3) RRHs, three (3) TMAs, six (6) Diplexers, and a single twelve pair fiber trunk.;
- Install mount modifications, nine (9) antennas, three (3) RRHs, one (1) squid, six (6) Y cables, one (1) twenty four pair fiber trunk, one (1) 6 DC cable and one (1) conduit.
- Ground work includes installing a 6648 plus XCEDE Cable and three (3) rectifiers.

This letter is intended to serve as the required notice to the municipal planning agency. As required by Regulations of Connecticut State Agencies ("RCSA") 16-50j-73 the Connecticut Siting Council ("CSC") has been notified of this proposal and will review this application. Please accept this letter as notification pursuant to RSCA 16-50j-73.

The enclosed letter and attachments to the CSC fully describe the proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

Jack Andrews
Zoning Manager, Centerline Communications
10130 Donleigh Drive
Columbia, MD 21046

enclosures

July 5, 2022

Malavasi Investments LLC
35 Stony Creek Rd
Branford, CT 06405

Re: Exempt Modification Application – AT&T Site 13757800
AT&T Mobility Telecommunications Facility @ 123 Pine Orchard Road, Branford, CT

Dear Property Owner:

New Cingular Wireless, PCS, LLC (dba AT&T) currently maintains antennas on a wireless telecommunications facility on an existing American Tower Corporation (ATC) telecommunications tower at the above referenced address. AT&T desires to modify its existing equipment as described in the attached Construction and Antenna Mount Modification Drawings:

- Remove six (6) antennas, one (1) squid, three (3) RRHs, three (3) TMAs, six (6) Diplexers, and a single twelve pair fiber trunk.;
- Install mount modifications, nine (9) antennas, three (3) RRHs, one (1) squid, six (6) Y cables, one (1) twenty four pair fiber trunk, one (1) 6 DC cable and one (1) conduit.
- Ground work includes installing a 6648 plus XCEDE Cable and three (3) rectifiers.

This letter is intended to serve as the required notice to the property owner. As required by Regulations of Connecticut State Agencies ("RCSA") 16-50j-73 the Connecticut Siting Council ("CSC") has been notified of this proposal and will review this application. Please accept this letter as notification pursuant to RSCA 16-50j-73.

The enclosed letter and attachments to the CSC fully describe AT&T's proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Acting Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

Jack Andrews
Zoning Manager, Centerline Communications
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144

Enclosures

July 5, 2022

Jacqueline Hall
Project Manager, Site Development
American Tower Corporation
10 Presidential Way
Woburn, MA 01801

Re: Exempt Modification Application – AT&T Site 13757800
AT&T Mobility Telecommunications Facility @ 123 Pine Orchard Road, Branford, CT

Dear Ms. Hall:

New Cingular Wireless, PCS, LLC (dba AT&T) currently maintains antennas on a wireless telecommunications facility on an existing American Tower Corporation (ATC) telecommunications tower at the above referenced address. AT&T desires to modify its existing equipment as described in the attached Construction and Antenna Mount Modification Drawings:

- Remove six (6) antennas, one (1) squid, three (3) RRHs, three (3) TMAs, six (6) Diplexers, and a single twelve pair fiber trunk.;
- Install mount modifications, nine (9) antennas, three (3) RRHs, one (1) squid, six (6) Y cables, one (1) twenty four pair fiber trunk, one (1) 6 DC cable and one (1) conduit.
- Ground work includes installing a 6648 plus XCEDE Cable and three (3) rectifiers.

This letter is intended to serve as the required notice to the tower owner. As required by Regulations of Connecticut State Agencies ("RCSA") 16-50j-73 the Connecticut Siting Council ("CSC") has been notified of this proposal and will review this application. Please accept this letter as notification pursuant to RSCA 16-50j-73.

The enclosed letter and attachments to the CSC fully describe AT&T's proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Acting Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

Jack Andrews
Zoning Manager, Centerline Communications
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144

Enclosures

July 5, 2022

The Honorable James Cosgrove
Branford Town Hall
1019 Main Street
Branford, CT 06405

Re: Exempt Modification Application – AT&T Site 13757800
AT&T Mobility Telecommunications Facility @ 123 Pine Orchard Road, Branford, CT

Dear First Selectman Cosgrove:

New Cingular Wireless, PCS, LLC (dba AT&T) currently maintains antennas on a wireless telecommunications facility on an existing American Tower Corporation (ATC) telecommunications tower at the above referenced address. AT&T desires to modify its existing equipment as described in the attached Construction and Antenna Mount Modification Drawings:

- Remove six (6) antennas, one (1) squid, three (3) RRHs, three (3) TMAs, six (6) Diplexers, and a single twelve pair fiber trunk.;
- Install mount modifications, nine (9) antennas, three (3) RRHs, one (1) squid, six (6) Y cables, one (1) twenty four pair fiber trunk, one (1) 6 DC cable and one (1) conduit.
- Ground work includes installing a 6648 plus XCEDE Cable and three (3) rectifiers.

This letter is intended to serve as the required notice to the municipality's chief elected official. As required by Regulations of Connecticut State Agencies ("RCSA") 16-50j-73 the Connecticut Siting Council ("CSC") has been notified of this proposal and will review this application. Please accept this letter as notification pursuant to RSCA 16-50j-73.

The enclosed letter and attachments to the CSC fully describe the proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

Jack Andrews
Zoning Manager, Centerline Communications
10130 Donleigh Drive
Columbia, MD 21046

enclosures

# USPS Tracking®

FAQs >

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**Tracking Number:** 9505510391962187637799

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Your item was delivered in or at the mailbox at 9:45 am on July 8, 2022 in BRANFORD, CT 06405.

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## Delivered, In/At Mailbox

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Your item was delivered in or at the mailbox at 10:47 am on July 9, 2022 in WOBURN, MA 01801.

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**Tracking Number:** 9505510391962187637829

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Your item was delivered at the front door or porch at 12:56 pm on July 8, 2022 in BRANFORD, CT 06405.

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## Delivered, Front Door/Porch

July 8, 2022 at 12:56 pm
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