

Derek Maheux Program Manager  
c/o Cellco Partnership d/b/a Verizon Wireless  
Centerline Communications, LLC  
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February 5, 2024

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

**RE: Notice of Exempt Modification // Site: BROOKFIELD CT (ATC: 283426)  
37 Carmen Hill Road, Brookfield, CT 06804  
N 41.49293226 // W -73.42731765**

Dear Ms. Bachman,

Cellco Partnership d/b/a Verizon Wireless currently maintains nine (9) antenna at the 77-ft level on the existing 80 ft Tower, located at 37 Carmen Hill Road, Brookfield, CT. The tower is owned by American Tower. Verizon Wireless proposed modification involves the installation of three (3) new sector frame mounts, swapping out (3) antennas, four (4) interference mitigation filters, one (1) OVP and two (2) hybrid cables on Verizon Wireless existing antenna platform and mounting assembly.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Brookfield's Chief Elected Official and Land Use Officer.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2). Enclosed to accommodate this filing are construction drawings dated January 22, 2024, by A.T Engineering Services, LLC, a structural analysis dated January 22, 2024, by American Tower Corp., and a structural mount analysis by Colliers Engineering and Design dated December 22, 2023, and Non-Ionizing Electromagnetic Radiation (NIER) Study dated December 1, 2023, by Tower Engineering Professionals.

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the 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 new antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading, as shown in the attached structural analysis and a structural mount analysis, pursuant to certain conditions defined therein. Design and engineering are fully illustrated within final construction drawings.

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

Sincerely,

*Derek Maheux*

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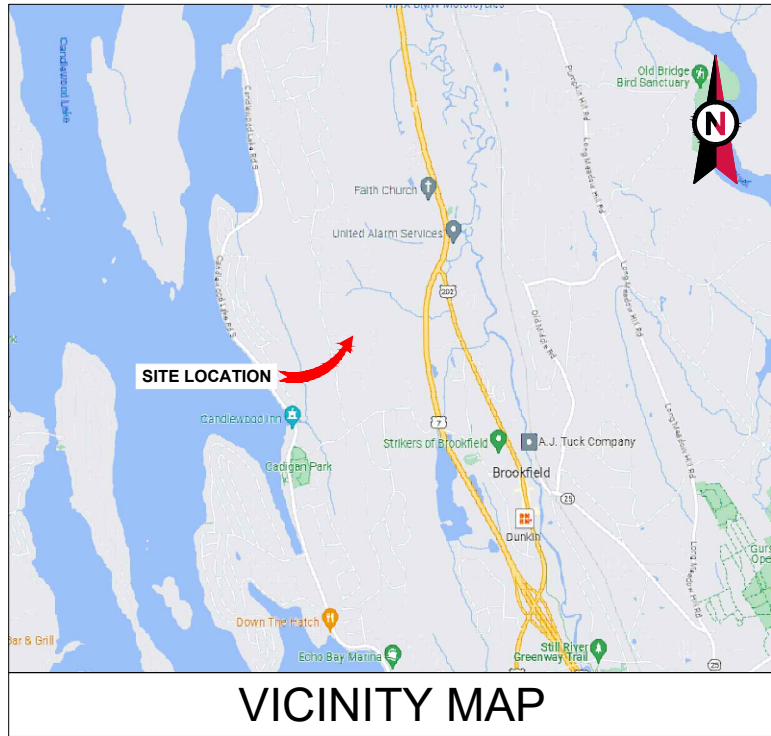
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Attachments: Exhibit 1 – Construction Drawings  
Exhibit 2 – Property Card and GIS  
Exhibit 3 – Structural Analysis  
Exhibit 4 – Mount Analysis  
Exhibit 5 – RF Emissions Analysis Report Evaluation  
Exhibit 6 – Available Original Tower Approval Records  
Exhibit 7 – Notice Deliver Confirmations

cc: Steven C. Dunn – First Selectman – Chief Elected Official  
Francis W. Lollie – Zoning Enforcement Officer - as P&Z official  
American Tower Corporation - as tower owner and ground owner

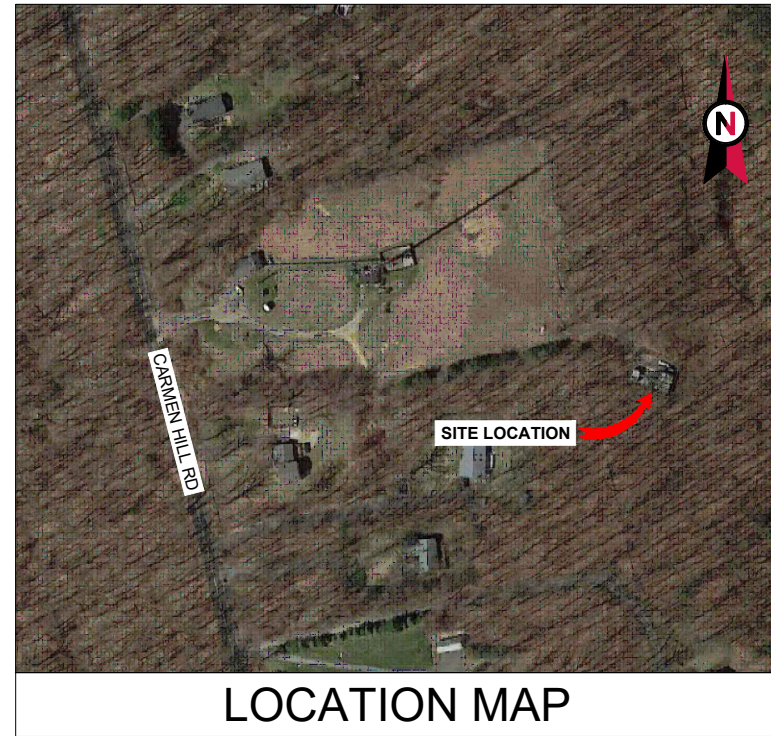
# EXHIBIT 1





**AMERICAN TOWER®**

ATC SITE NAME: BROOKFIELD CT  
 ATC SITE NUMBER: 283426  
 VERIZON SITE NAME: BROOKFIELD CT  
 VERIZON SITE NUMBER: 468123 (5000386525)  
 VERIZON FUZE PID: 16486743  
 SITE ADDRESS: 37 CARMEN HILL ROAD  
 BROOKFIELD, CT 06804-1004



**VERIZON 5G L-SUB6 - CARRIER ADD  
 AMENDMENT DRAWINGS**



**Dewberry®**  
 Dewberry Engineers Inc.  
 99 SUMMER STREET  
 SUITE 700  
 BOSTON, MA 02110  
 PHONE: 617.695.3400  
 FAX: 617.695.3310

REV.	DESCRIPTION	BY	DATE
A	PRELIM	VL	11/20/23
0	FINAL	VL	01/22/24

ATC SITE NUMBER:  
 283426  
 ATC SITE NAME:  
 BROOKFIELD CT  
 VERIZON SITE NAME:  
 BROOKFIELD CT  
 SITE ADDRESS:  
 37 CARMEN HILL ROAD  
 BROOKFIELD, CT 06804-1004



ATC JOB NO: 14527561\_G0  
 CUSTOMER ID: BROOKFIELD CT  
 CUSTOMER #: 468123 (5000386525)

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

COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX				
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.  2021 IBC NATIONAL ELECTRICAL CODE (NFPA 70, NEC 2020 W/ AMND) 2022 CONNECTICUT STATE BUILDING CODE, IMC PORTION (IMC 2021 W/ AMND) 2022 CONNECTICUT STATE BUILDING CODE, IPC PORTION (IPC 2021 W/ AMND) 2022 CONNECTICUT STATE BUILDING CODE, IECC PORTION (IECC 2021 W/ AMND) PART III OF THE 2022 CT STATE FIRE SAFETY CODE (IFC 2021 W/ AMND) 2022 CONNECTICUT STATE BUILDING CODE, IEBC PORTION (IEBC 2021 W/ AMND) 2022 CONNECTICUT STATE BUILDING CODE, IRC PORTION (IRC 2021 W/ AMND) CONNECTICUT STATE FUEL GAS CODE (IFGC 2021 W/ AMND)	<u>SITE ADDRESS:</u> 37 CARMEN HILL ROAD BROOKFIELD, CT 06804-1004 COUNTY: FAIRFIELD  <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41.49293226 LONGITUDE: -73.42731765 GROUND ELEVATION: 728' AMSL	THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:  <u>TOWER WORK:</u> REMOVE (3) ANTENNA(S), (1) OVP(S) AND (1) 6X12 HYBRID CABLE(S)  INSTALL (3) SECTOR FRAME MOUNT(S), (3) ANTENNA(S), (4) BAND-FILTER(S), (1) OVP(S) AND (2) 6X12 HYBRID CABLE(S)  EXISTING (6) ANTENNA(S), (6) RRRH(S) AND (3) DIPLEXER(S) TO REMAIN  <u>GROUND WORK:</u> INSTALL (29) KIT(S)	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
	<u>PROJECT TEAM</u>  <u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801  <u>ENGINEER:</u> DEWBERRY ENGINEERS INC. 99 SUMMER STREET SUITE 700 BOSTON, MA 02110 PHONE: 617.695.3400 FAX: 617.695.3310  <u>PROPERTY OWNER:</u> AMERICAN TOWERS LLC P.O. BOX 723597 ATLANTA, GA 31139	<u>PROJECT NOTES</u> 1. THE FACILITY IS UNMANNED. 2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE. 3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE. 4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED. 5. HANDICAP ACCESS IS NOT REQUIRED. 6. THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. § 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION, REMOVAL, AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR § 1.61000 (B)(7).	G-001	TITLE SHEET	0	01/22/24	VL
			G-002	GENERAL NOTES	0	01/22/24	VL
<u>UTILITY COMPANIES</u>  POWER COMPANY: N/A PHONE: UNKNOWN  TELEPHONE COMPANY: N/A PHONE: UNKNOWN		<u>PROJECT LOCATION DIRECTIONS</u>  FROM DANBURY CT START OUT GOING NORTHEAST ON FEDERAL RD TOWARD SWANSON AVE. TAKE THE 2ND RIGHT ONTO WHITE TURKEY RD. MERGE ONTO US-7 N. TAKE THE US-202 EXIT, EXIT 12, TOWARD BROOKFIELD. TURN RIGHT ONTO FEDERAL RD/US-202 E. TAKE THE 1ST LEFT ONTO LAUREL HILL RD. TAKE THE 2ND LEFT ONTO N MOUNTAIN RD. TAKE THE 1ST RIGHT ONTO CARMEN HILL RD.	C-101	DETAILED SITE PLAN	0	01/22/24	VL
			C-201	TOWER ELEVATION	0	01/22/24	VL
			C-401	ANTENNA INFORMATION & SCHEDULE	0	01/22/24	VL
			C-501	CONSTRUCTION DETAILS	0	01/22/24	VL
			E-501	GROUNDING DETAILS	0	01/22/24	VL
			R-601	SUPPLEMENTAL			
			<u>CONTRACTOR PMI REQUIREMENTS</u>  PMI ACCESSED AT: HTTPS://PMI.VZWSMART.COM SMART TOOL VENDOR PROJECT NUMBER: 10213114 VZW LOCATION CODE (PSLC): 468123 (5000386525) ***PMI AND REQUIREMENTS ALSO EMBEDDED IN MOUNT ANALYSIS REPORT  MOUNT MODIFICATION REQUIRED: YES (MOUNT REPLACEMENT) VZW APPROVED SMART KIT VENDORS: REFER TO MOUNT MODIFICATION DRAWINGS PAGES FOR VZW SMART KIT APPROVED VENDORS				

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**GENERAL CONSTRUCTION NOTES:**

1. OWNER FURNISHED MATERIALS, VERIZON "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 VERIZON 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 VERIZON REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE VERIZON REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE VERIZON 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 VERIZON 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 VERIZON 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 VERIZON 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 VERIZON 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 VERIZON REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY VERIZON MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH VERIZON SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO VERIZON FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO VERIZON 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 VERIZON 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. WHEN THE PROJECT SCOPE REQUIRES THE USE OF THE SAFETY CLIMB, THE GENERAL CONTRACTOR SHALL ENSURE THE SAFETY CLIMB IS FREE OF OBSTRUCTIONS, NOT RUBBING ON OR TRAPPED BY ANY INSTALLED CUSTOMER EQUIPMENT, IS VISUALLY TAUT, MEETS MANUFACTURER INSTALLATION SPECIFICATIONS, AND IS FIRMLY SECURED AT ALL CABLE GUIDE LOCATIONS UPON PROJECT COMPLETION.
29. COMPLETION OF PROJECT SHALL NOT OBSTRUCT, TRAP, LOOSEN, OR OTHERWISE CAUSE FAILURE TO MEET MANUFACTURER INSTALLATION REQUIREMENTS FOR THE SAFETY CLIMB.
30. 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.
31. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
32. 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 VERIZON REP. ANY WORK FOUND BY THE VERIZON REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
33. 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.
34. VERIZON FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE VERIZON 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.
35. VERIZON 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 VERIZON 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 1/2" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.
  - 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 VERIZON PROJECT MANAGER IN WRITING

**SPECIAL CONSTRUCTION**

**ANTENNA INSTALLATION NOTES:**

1. WORK INCLUDED:
  - A. ANTENNA AND COAXIAL/HYBRID CABLES ARE FURNISHED BY VERIZON 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 VERIZON 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. INSTALL COAXIAL/HYBRID 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/HYBRID CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
2. ANTENNA AND COAXIAL/HYBRID CABLE GROUNDING:
  - A. ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.
  - B. ALL COAXIAL/HYBRID CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL/HYBRID 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.**



**Dewberry**<sup>®</sup>  
 Dewberry Engineers Inc.  
 99 SUMMER STREET  
 SUITE 700  
 BOSTON, MA 02110  
 PHONE: 617.695.3400  
 FAX: 617.695.3310

REV.	DESCRIPTION	BY	DATE
A	PRELIM	VL	11/20/23
0	FINAL	VL	01/22/24

ATC SITE NUMBER:  
 283426  
 ATC SITE NAME:  
 BROOKFIELD CT  
 VERIZON SITE NAME:  
 BROOKFIELD CT  
 SITE ADDRESS:  
 37 CARMEN HILL ROAD  
 BROOKFIELD, CT 06804-1004



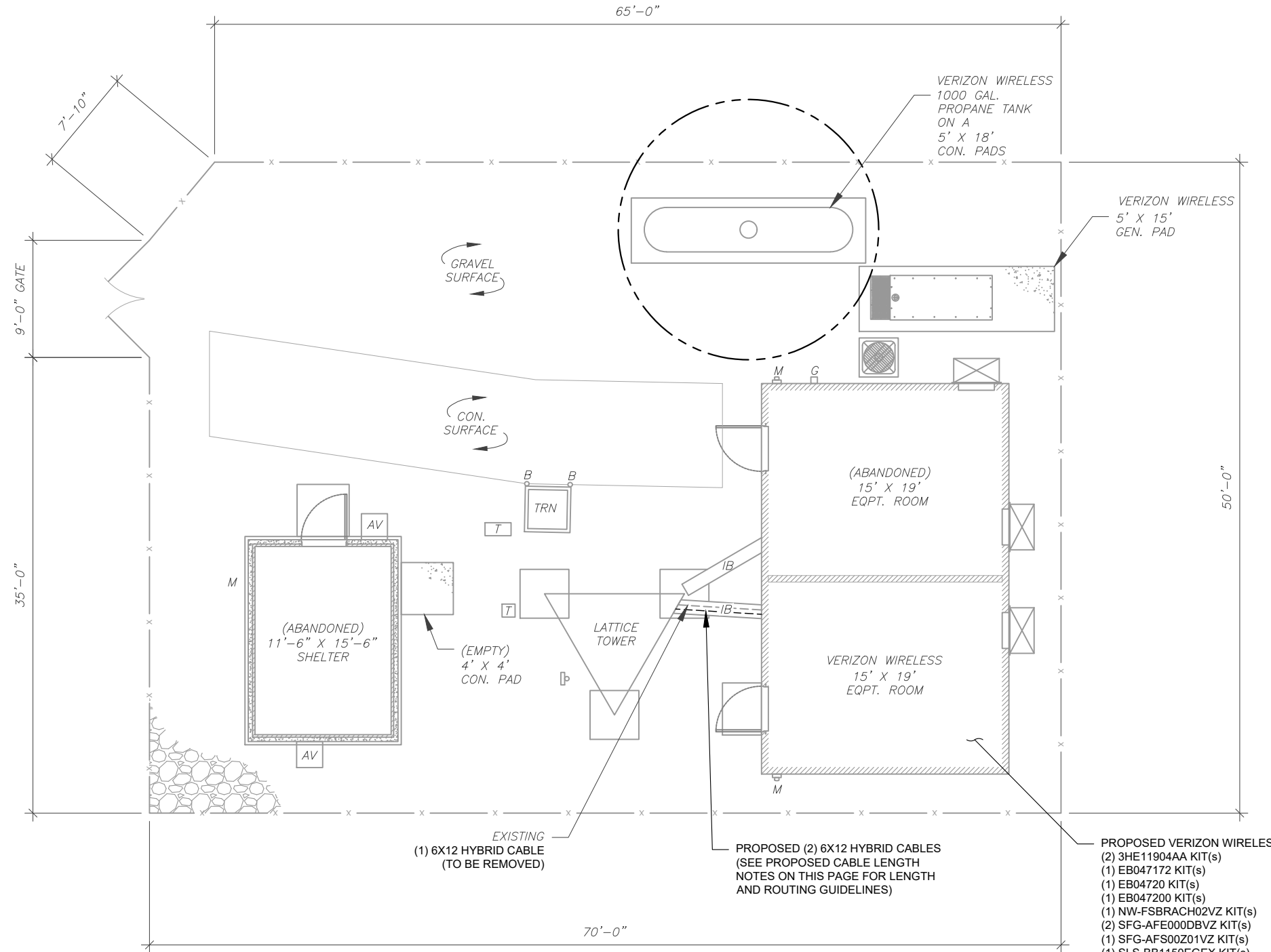
ATC JOB NO:	14527561_G0
CUSTOMER ID:	BROOKFIELD CT
CUSTOMER #:	468123 (5000386525)

<b>GENERAL NOTES</b>	
SHEET NUMBER: <b>G-002</b>	REVISION: <b>0</b>

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**SITE PLAN NOTES:**

- THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
- ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE VERIZON REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.



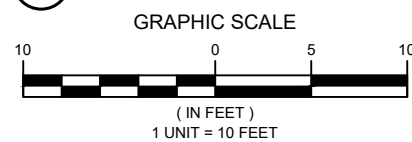
**LEGEND**

- ⊗ GROUNDING TEST WELL
- ATS AUTOMATIC TRANSFER SWITCH
- B BOLLARD
- CSC CELL SITE CABINET
- D DISCONNECT
- E ELECTRICAL
- F FIBER
- GEN GENERATOR
- G GENERATOR RECEPTACLE
- 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

**PROPOSED CABLE NOTES:**

- ESTIMATED LENGTH OF PROPOSED CABLE IS **120'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES), CDS DEFER TO GREATEST CABLE LENGTH.
- ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).

**1 DETAILED SITE PLAN**



**Dewberry**  
 Dewberry Engineers Inc.  
 99 SUMMER STREET  
 SUITE 700  
 BOSTON, MA 02110  
 PHONE: 617.695.3400  
 FAX: 617.695.3310

REV.	DESCRIPTION	BY	DATE
A	PRELIM	VL	11/20/23
0	FINAL	VL	01/22/24

ATC SITE NUMBER:  
 283426  
 ATC SITE NAME:  
 BROOKFIELD CT  
 VERIZON SITE NAME:  
 BROOKFIELD CT  
 SITE ADDRESS:  
 37 CARMEN HILL ROAD  
 BROOKFIELD, CT 06804-1004

SEAL:

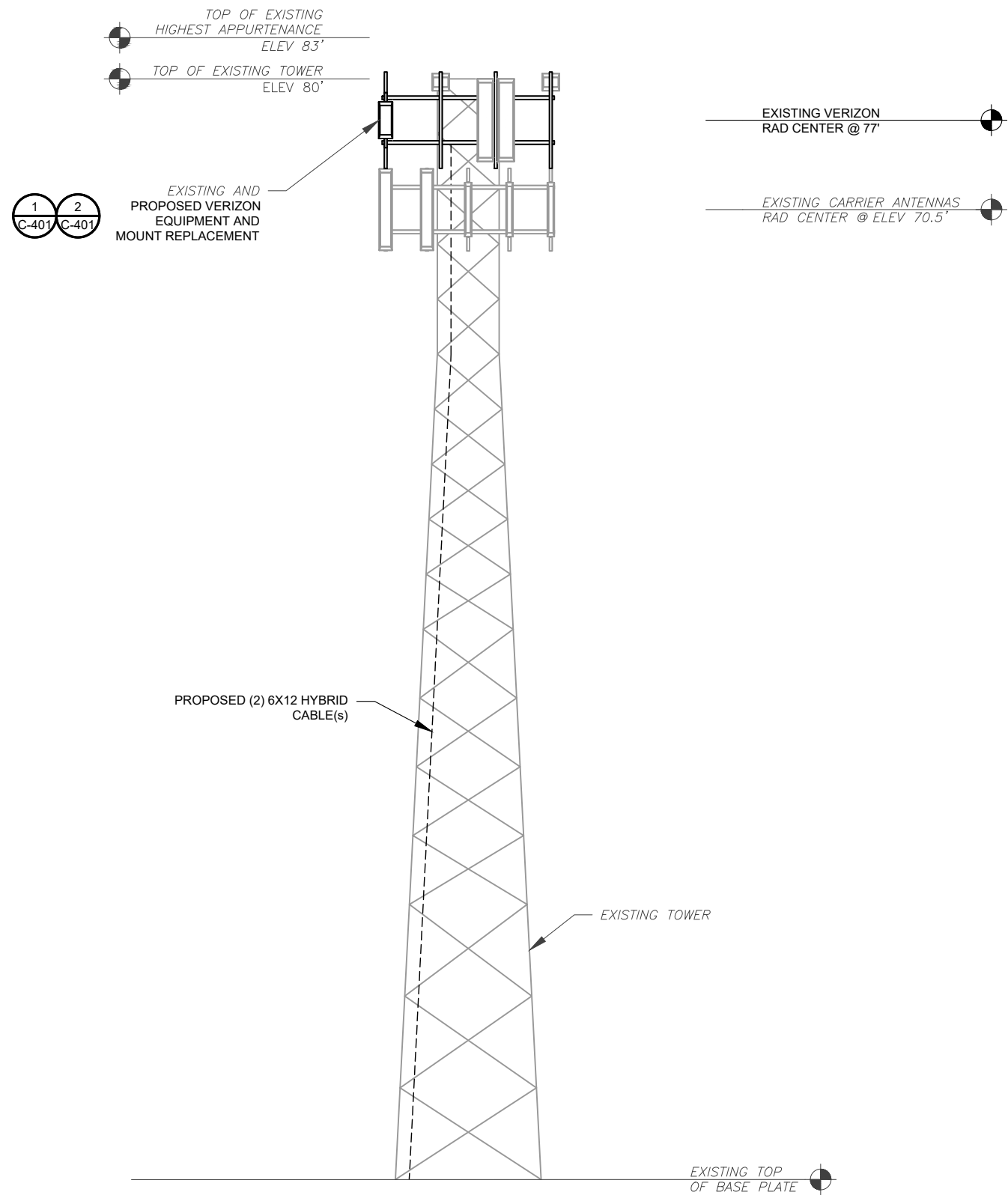


ATC JOB NO: 14527561\_GO  
 CUSTOMER ID: BROOKFIELD CT  
 CUSTOMER #: 468123 (5000386525)

**DETAILED SITE PLAN**

SHEET NUMBER:  
**C-101**  
 REVISION:  
**0**

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PER MOUNT ANALYSIS COMPLETED BY COLLIERS ENGINEERING & DESIGN, DATED 12/22/23, THE EXISTING MOUNT CAN NOT ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT REPLACEMENT 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.



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REV.	DESCRIPTION	BY	DATE
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 37 CARMEN HILL ROAD  
 BROOKFIELD, CT 06804-1004



- TOWER NOTE:**
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS. WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
  - ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).
  - TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)
  - TOWER ELEVATION DEPICTION MAY NOT REFLECT ALL EQUIPMENT INCLUDED IN STRUCTURAL ANALYSIS. REFER TO STRUCTURAL ANALYSIS FOR FULL TOWER LOADING.

**verizon** ✓  
 ATC JOB NO: 14527561\_G0  
 CUSTOMER ID: BROOKFIELD CT  
 CUSTOMER #: 468123 (5000386525)

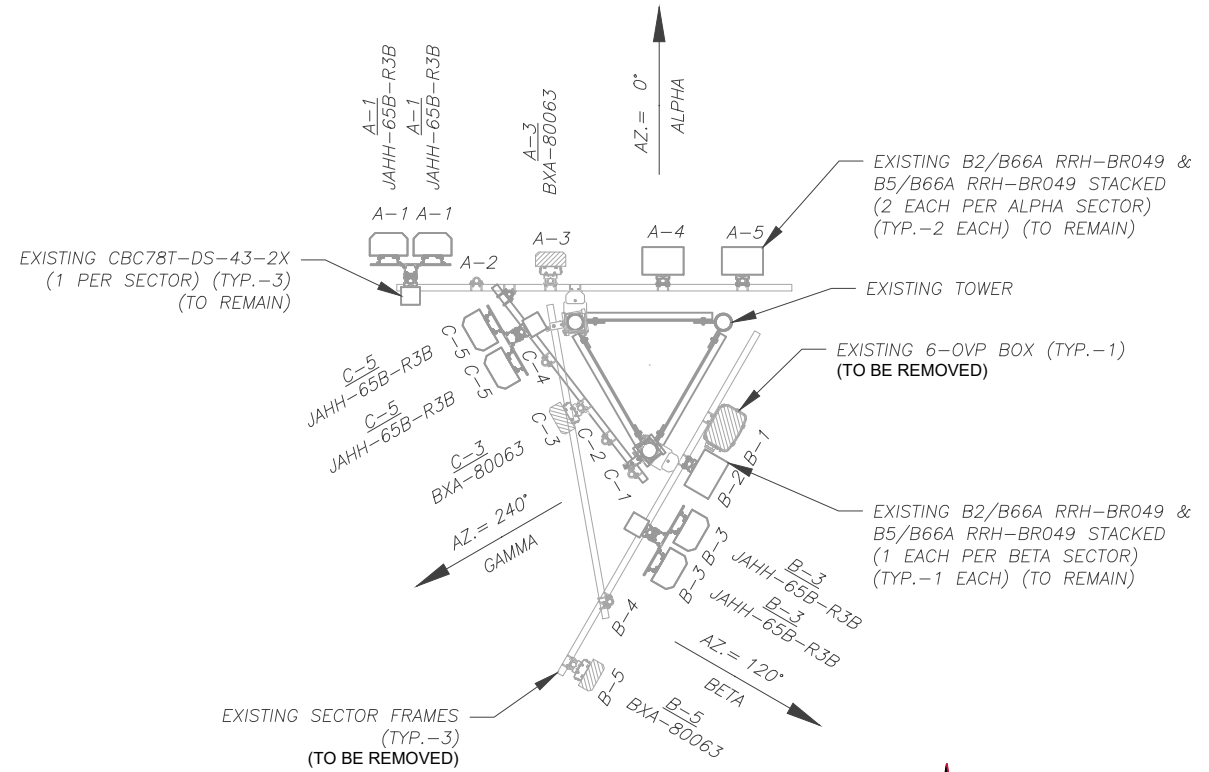
**TOWER ELEVATION**

SHEET NUMBER: <b>C-201</b>	REVISION: <b>0</b>
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**1 TOWER ELEVATION**  
 SCALE: N.T.S.

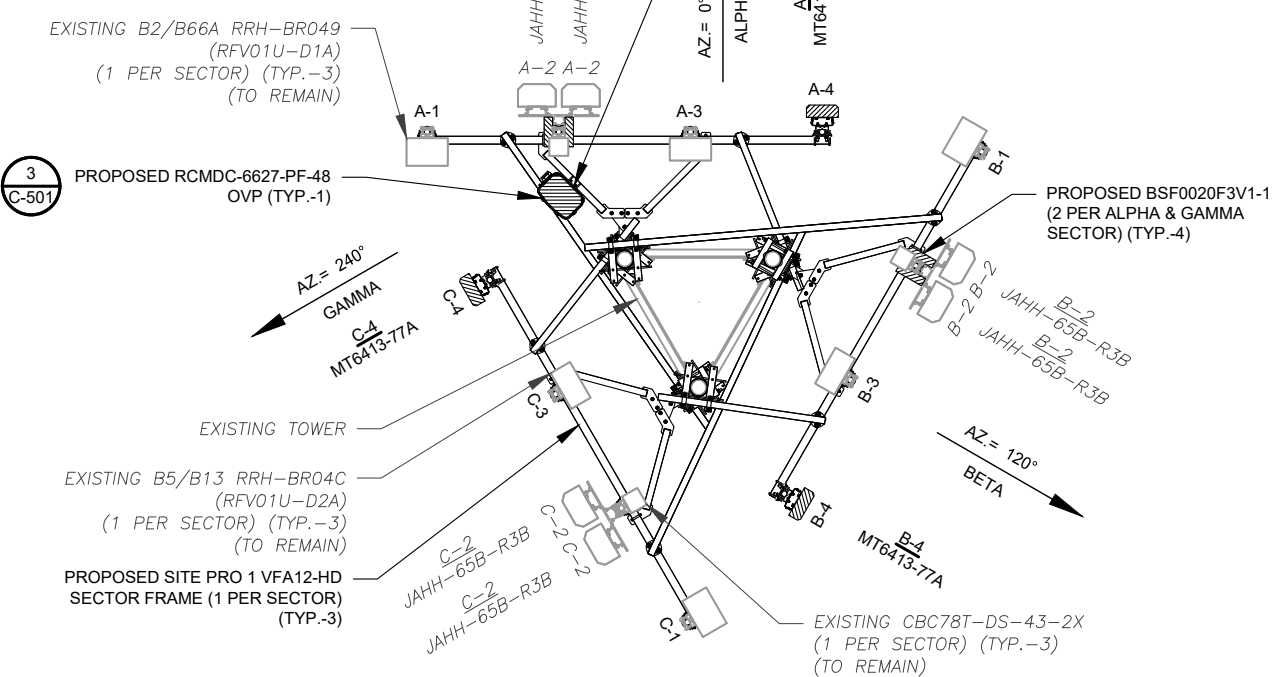
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**1** EXISTING ANTENNA PLAN  
SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY COLLIER'S ENGINEERING & DESIGN, DATED 12/22/23, THE EXISTING MOUNT CAN NOT ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT REPLACEMENT 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: N.T.S.

EXISTING ANTENNA SCHEDULE									
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY		
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS	
ALPHA	77'	0°	A1	JAHH-65B-R3B	LTE 700, LTE 850, 5G 850, LTE 1900, LTE AWS	RMN	CBC78T-DS-43-2X DIPLEXER	RMN	
				JAHH-65B-R3B	LTE 700, LTE 850, 5G 850, LTE 1900, LTE AWS	RMN			
			A2	-	-	-	-	-	
			A3	BXA-80063	CDMA 850	RMV	-	-	
			A4	-	-	-	B2/B66A RRH-BR049 B5/B66A RRH-BR049	RMN RMN	
BETA	77'	120°	B1	-	-	-	-		
			B2	-	-	-	B2/B66A RRH-BR049 B5/B66A RRH-BR049	RMN RMN	
			B3	JAHH-65B-R3B	LTE 700, LTE 850, 5G 850, LTE 1900, LTE AWS	RMN	CBC78T-DS-43-2X DIPLEXER	RMN	
				JAHH-65B-R3B	LTE 700, LTE 850, 5G 850, LTE 1900, LTE AWS	RMN			
			B4	-	-	-	-	-	
B5	BXA-80063	CDMA 850	RMV	-	-				
GAMMA	77'	240°	C2	-	-	-	-		
			C3	BXA-80063	CDMA 850	RMV	-	-	
			C4	-	-	-	-	-	
			C5	JAHH-65B-R3B	LTE 700, LTE 850, 5G 850, LTE 1900, LTE AWS	RMN	CBC78T-DS-43-2X DIPLEXER	RMN	
				JAHH-65B-R3B	LTE 700, LTE 850, 5G 850, LTE 1900, LTE AWS	RMN			

**NOTES**

- CONFIRM WITH VERIZON REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
- CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.

**STATUS ABBREVIATIONS**

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

**CABLE LENGTHS FOR JUMPERS**

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

FINAL ANTENNA SCHEDULE									
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY		
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS	
ALPHA	77'	0°	A1	-	-	-	B2/B66A RRH-BR049 (RFV01U-D1A)	RMN	
			A2	JAHH-65B-R3B	LTE 700, LTE 850, 5G 850, LTE 1900, LTE AWS	RMN	(1) CBC78T-DS-43-2X DIPLEXER	RMN	
				JAHH-65B-R3B	LTE 700, LTE 850, 5G 850, LTE 1900, LTE AWS	RMN			
			A4	MT6413-77A	5G L-SUB6	ADD	-	-	
BETA	77'	120°	B1	-	-	-	B5/B66A RRH-BR049 (RFV01U-D2A)	RMN	
			B2	JAHH-65B-R3B	LTE 700, LTE 850, 5G 850, LTE 1900, LTE AWS	RMN	(1) CBC78T-DS-43-2X DIPLEXER	RMN	
				JAHH-65B-R3B	LTE 700, LTE 850, 5G 850, LTE 1900, LTE AWS	RMN			
			B4	MT6413-77A	5G L-SUB6	ADD	-	-	
GAMMA	77'	240°	C1	-	-	-	B2/B66A RRH-BR049 (RFV01U-D1A)	RMN	
			C2	JAHH-65B-R3B	LTE 700, LTE 850, 5G 850, LTE 1900, LTE AWS	RMN	(1) CBC78T-DS-43-2X DIPLEXER	RMN	
				JAHH-65B-R3B	LTE 700, LTE 850, 5G 850, LTE 1900, LTE AWS	RMN			
			C4	MT6413-77A	5G L-SUB6	ADD	-	-	

EXISTING FIBER DISTRIBUTION / OVP BOX		EXISTING CABLING SUMMARY	
MODEL NUMBER	STATUS	CABLE QTY, SIZE, TYPE	STATUS
(1) 6-OVP	RMV	-	-
-	-	(1) 6X12 HYBRID	RMV

**3** EQUIPMENT SCHEDULES

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY	
MODEL NUMBER	STATUS	CABLE QTY, SIZE, TYPE	STATUS
(1) RCMD-6627-PF-48 OVP	ADD	(2) 6x12 HYBRID	ADD



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SUITE 700  
BOSTON, MA 02110  
PHONE: 617.695.3400  
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REV.	DESCRIPTION	BY	DATE
A	PRELIM	VL	11/20/23
0	FINAL	VL	01/22/24

ATC SITE NUMBER:  
283426  
ATC SITE NAME:  
BROOKFIELD CT  
VERIZON SITE NAME:  
BROOKFIELD CT  
SITE ADDRESS:  
37 CARMEN HILL ROAD  
BROOKFIELD, CT 06804-1004



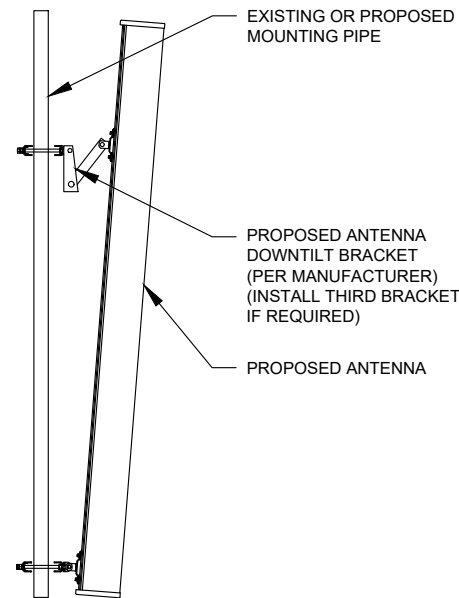
ATC JOB NO: 14527561\_G0  
CUSTOMER ID: BROOKFIELD CT  
CUSTOMER #: 468123 (5000386525)

**ANTENNA INFORMATION & SCHEDULE**

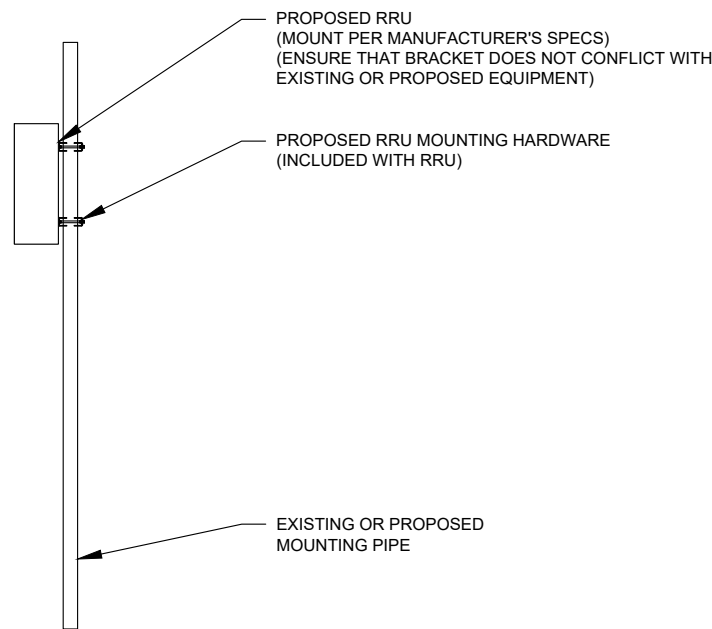
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**C-401**  
REVISION:  
**0**



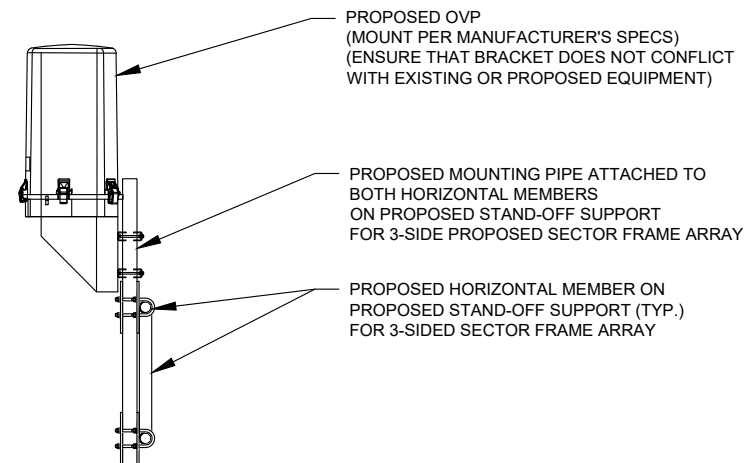
EXISTING/PROPOSED MOUNTS AND/OR MOUNT MODIFICATIONS NOT SHOWN FOR CLARITY. REFER TO ANTENNA PLANS, MOUNT ANALYSES AND/OR MOUNT MODIFICATION DOCUMENTS FOR ADDITIONAL DETAIL.



1 PROPOSED ANTENNA MOUNTING DETAIL - TYPICAL  
SCALE: N.T.S.



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



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



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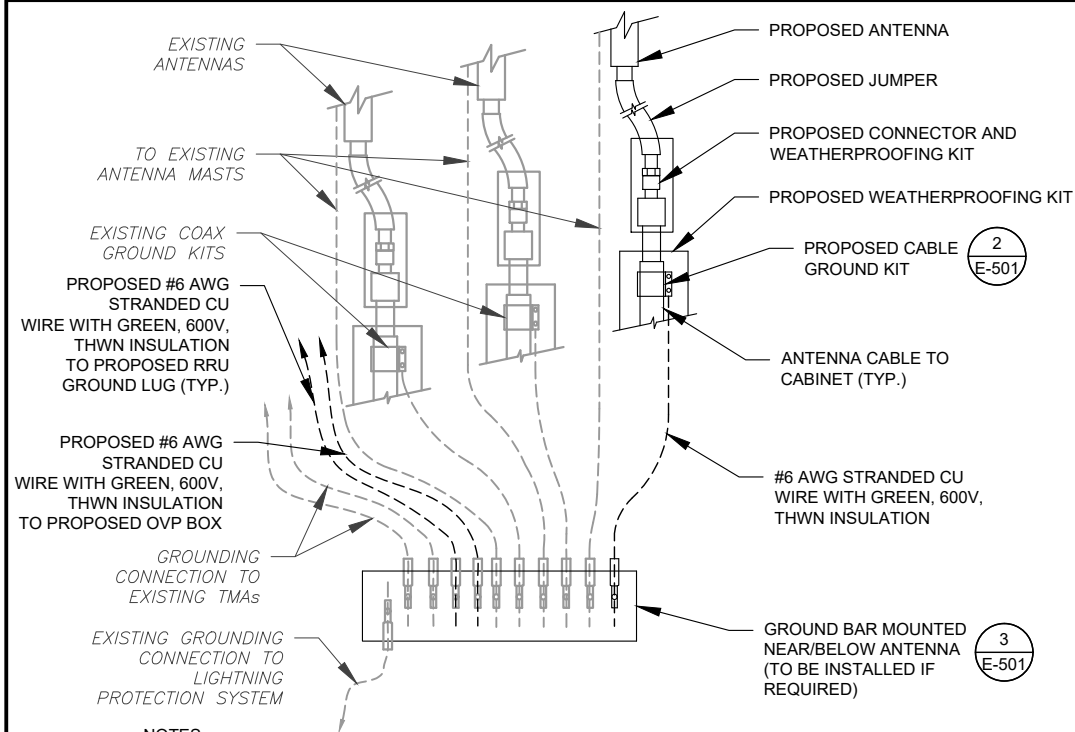
SEAL:



ATC JOB NO: 14527561\_G0  
CUSTOMER ID: BROOKFIELD CT  
CUSTOMER #: 468123 (5000386525)

CONSTRUCTION  
DETAILS

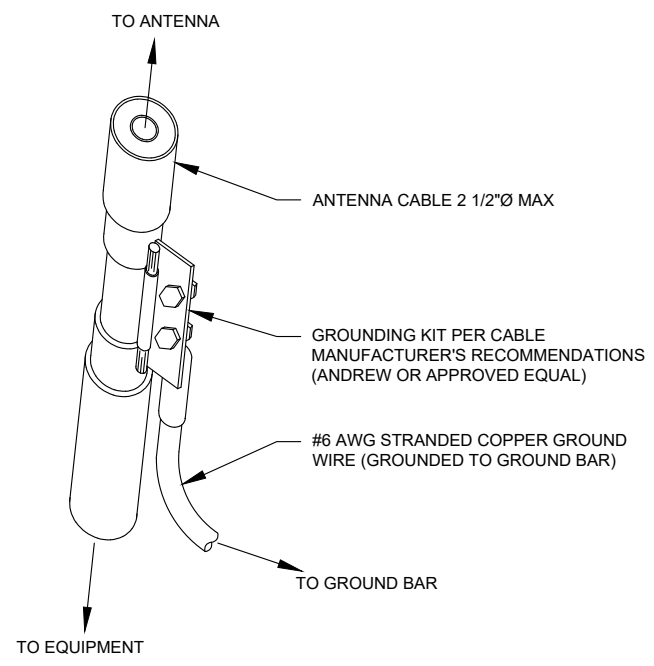
SHEET NUMBER: C-501  
REVISION: 0



**NOTES:**

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

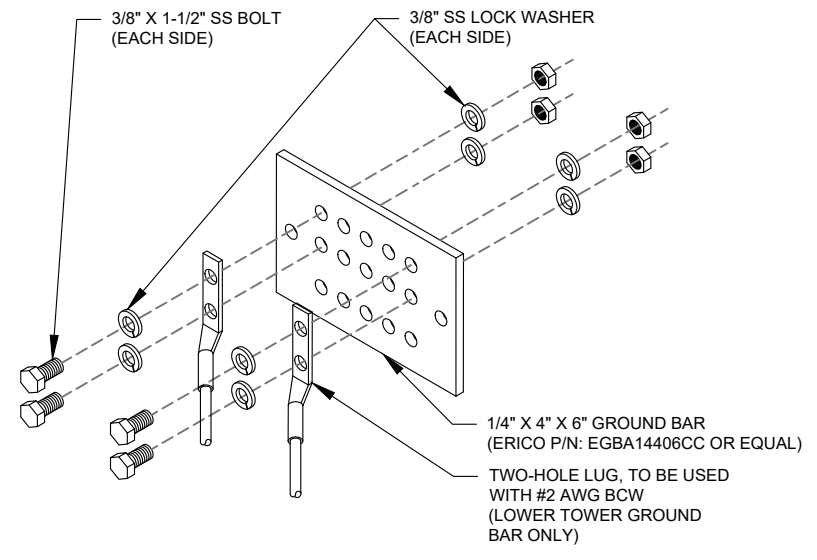
**1** TYPICAL ANTENNA GROUNDING DIAGRAM  
SCALE: N.T.S.



**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.



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SITE ADDRESS:  
37 CARMEN HILL ROAD  
BROOKFIELD, CT 06804-1004

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CUSTOMER ID: BROOKFIELD CT  
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**GROUNDING DETAILS**

SHEET NUMBER: <b>E-501</b>	REVISION: <b>0</b>
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Colliers Engineering & Design,  
Architecture, Landscape Architecture, Surveying, CT P.C.  
1055 Washington Blvd  
Stamford, CT 06901  
203.324.0800  
peter.albano@collierseng.com



MDG #: 5000386525  
Site Name: **Brookfield CT**  
Fuze ID #: **16486743**  
Colliers Engineering & Design Project #: **23777242 (Rev. 1)**

**PMI INSTRUCTIONS:**

1. Contractor shall remove existing mount and associated hardware. Contractor shall restore any degradation in galvanization on tower due to removed mount and protect with two (2) coats of cold galvanization (Zinga or Zinc Kote).
2. Contractor shall install the proposed Site Pro 1, VFA12-HD mounts in accordance with manufacturer specifications and the Mount Replacement Sketch. Contact EOR if these documents are not available.
3. Attach tiebacks to adjacent tower legs. Proposed tiebacks shall extend no more than 12" beyond the plane of the tower face. Contractor shall trim as require and protect cut end with two (2) coats of cold galvanization (Zinga or Zinc Kote).
4. Contractor shall install (4) 96" long PIPE 2 SCH40 mount pipes per sector. Refer to placement diagrams and Mount Replacement Sketch. Contact EOR if these documents are not available.
5. Contractor shall install OVP on a new 48" long PIPE 2 SCH 40 pipe connected to the welded tabs of the alpha sector standoff.
6. Contractor shall install the proposed filter units on new Site Pro 1 Dual Swivel Mount Kit (Part #: RRUDSM or EOR approved equivalent) in the location shown in the placement diagrams.
7. Contractor shall inspect climbing facilities and safety climb and ensure they are in good condition. Contractor shall install safety climb wire rope guides in locations where wire rope is rubbing against the mount or mount-to-tower connection steel. Wire brush clean any observed corrosion and protect with two (2) coats of cold galvanization (Zinga or Zinc Kote). Contractor shall provide photos of wire rope guide installation as part of PMI documents. Contact EOR if additional guidance is required.

**New/Replacement Antenna Mount Analysis Report and PMI Requirements**

Mount ReAnalysis-VZW

SMART Tool Project #: 10216609  
Colliers Engineering & Design Project #: 23777242 (Rev. 1)

December 22, 2023

**Site Information**

Site ID: 5000386525-VZW / BROOKFIELD CT  
Site Name: BROOKFIELD CT  
Carrier Name: Verizon Wireless  
Address: 37 Carmen Hill Rd.  
Brookfield, Connecticut 06804  
Fairfield County  
Latitude: 41.49293889°  
Longitude: -73.42733056°

**Structure Information**

Tower Type: 80-Ft Self Support  
Mount Type: 12.50-Ft Sector Mount

FUZE ID # 16486743

**Analysis Results**

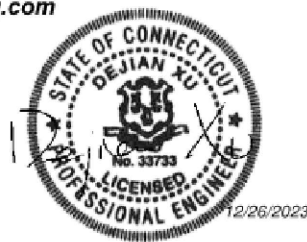
Sector Mount: 41.0% **Pass w/ Mount Replacement\***  
**((3) Site Pro 1 VFA12-HD)**

**\*Antennas and equipment to be installed in compliance with PMI Requirements of this mount analysis.**

**\*\*\*Contractor PMI Requirements:**

Included at the end of this MA report  
Available & Submitted via portal at <https://pmi.vzwsmart.com>  
For additional questions and support, please reach out to:  
[pmisupport@colliersengineering.com](mailto:pmisupport@colliersengineering.com)

Report Prepared By: Prasanna Dhakal



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



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**SUPPLEMENTAL**

SHEET NUMBER:  
**R-601**

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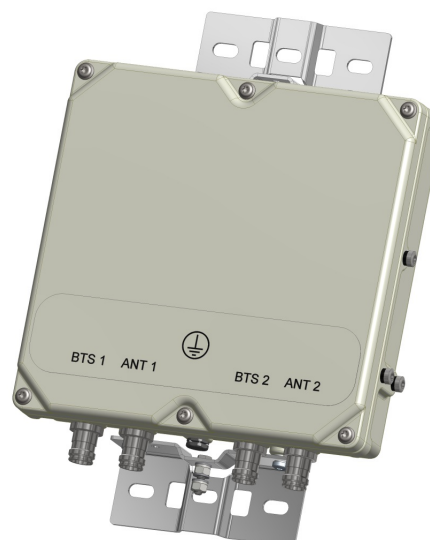
# KA-6030

## TWIN BANDSTOP 900MHZ INTERFERENCE MITIGATION FILTER

The KA-6030 is ideal for co-located 700, 850 and 900 networks. Utilising a 2.6MHz guardband the KA-6030 provides rejection of the 900 UL band while passing 700/850 UL and DL bands. Capable of being used in an outdoor environment the KA-6030 contains two identical bandstop filters, suitable for 2x2 MIMO configuration, offering excellent insertion loss, group delay and rejection.

### FEATURES

- Passes full 700 and 850 bands
- Low insertion loss
- Rejection of 900MHz uplink
- DC/AISG pass
- Twin unit
- Dual twin mounting available



### TECHNICAL SPECIFICATIONS

BAND NAME	700 PATH / 850 UPLINK PATH	850 DOWNLINK PATH
Passband	698 - 849MHz	869 - 891.5MHz
Insertion loss	0.1dB typical / 0.3dB maximum	0.5dB typical, 1.45dB maximum
Return loss	24dB typical, 18dB minimum	
Maximum input power (Per Port)	100W average	200W average and 66W per 5MHz
Rejection	53dB minimum @ 894.1 - 896.5MHz	

#### ELECTRICAL

Impedance	50Ohms
Intermodulation products	-160dBc maximum in UL Band (assuming 20MHz Signal), with 2 x 43dBm carriers -153dBc maximum with 2 x 43dBm

#### DC / AISG

Passband	0 - 13MHz
Insertion loss	0.3dB maximum
Return loss	15dB minimum
Input voltage range	± 33V
DC current rating	2A continuous, 4A peak
Compliance	3GPP TS 25.461

#### ENVIRONMENTAL

For further details of environmental compliance, please contact Kaelus.

Temperature range	-20°C to +60°C   -4°F to +140°F
Ingress protection	IP67
Altitude	2600m   8530ft
Lightning protection	RF port: ±5kA maximum (8/20us), IEC 61000-4-5 – Unit must be terminated with some lightning protection circuits.
MTBF	>1,000,000 hours
Compliance	ETSI EN 300 019 class 4.1H, RoHS, NEBS GR-487-CORE

#### MECHANICAL

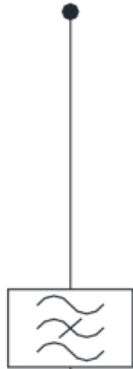
Dimensions H x D x W	269 x 277 x 80mm   10.60 x 10.90 x 3.15in (Excluding brackets and connectors)
Weight	8.0 kg   17.6 lbs (no bracket)
Finish	Powder coated, light grey (RAL7035)
Connectors	RF: 4.3-10 (F) x 4
Mounting	Optional pole/wall bracket supplied with two metal clamps 45-178mm diameter poles or custom bracket. See ordering information.

## ORDERING INFORMATION

PART NUMBER	CONFIGURATION	OPTIONAL FEATURES	CONNECTORS
KA-6030-2032	TWIN, 2 in / 2 out	DC/AISG PASS	4.3-10 (F)

ELECTRICAL BLOCK DIAGRAM

ANT1



BTS1

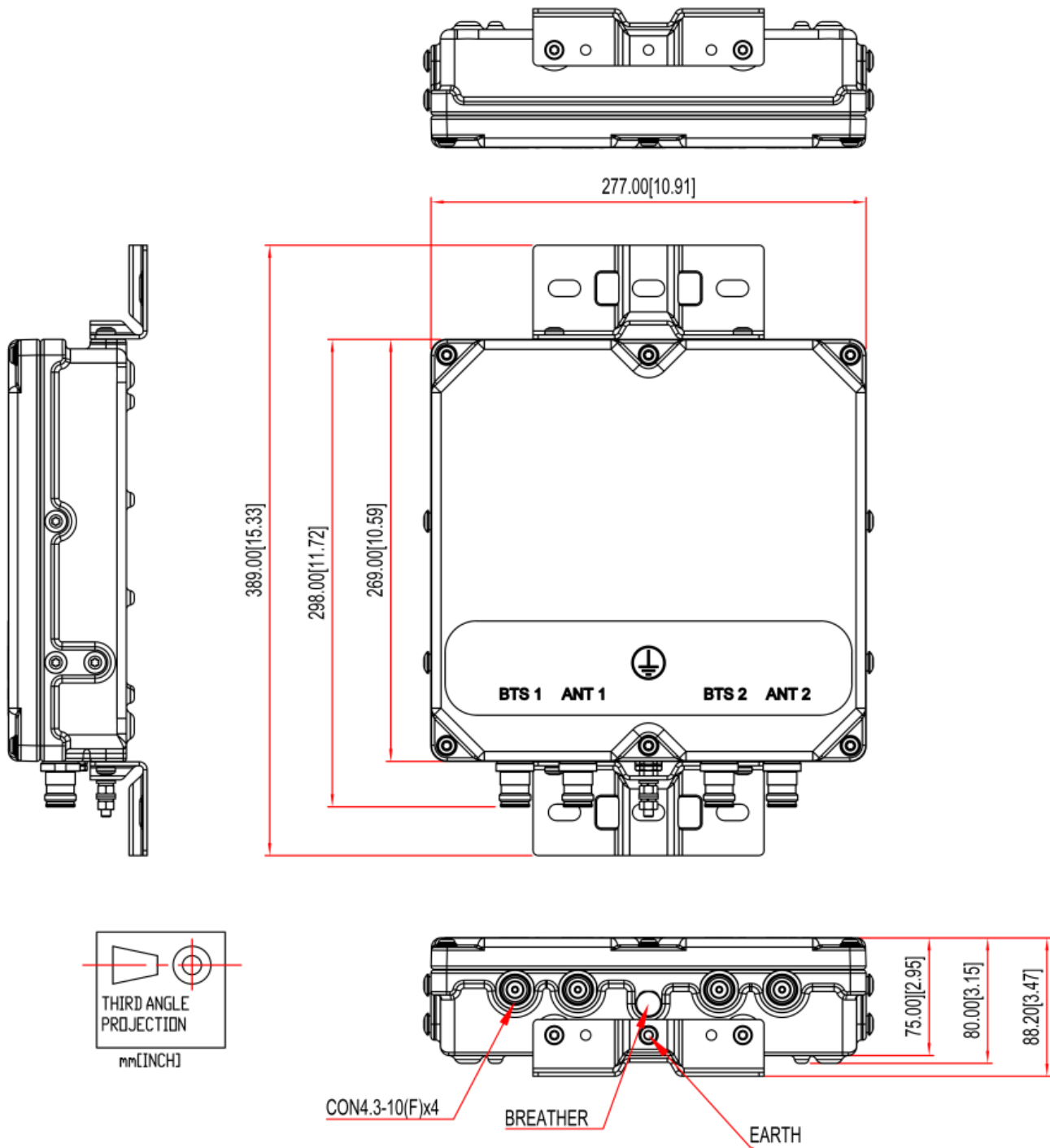
ANT2



BTS2



MECHANICAL BLOCK DIAGRAM



# EXHIBIT 2



# 37 CARMEN HILL RD

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**Location** 37 CARMEN HILL RD

**Mblu** B05 / / 010 / /

**Acct#** 02704000

**Owner** AMERICAN TOWERS LLC

**Assessment** \$364,730

**Appraisal** \$521,030

**PID** 814

**Building Count** 1

## Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2022	\$33,020	\$488,010	\$521,030

Assessment			
Valuation Year	Improvements	Land	Total
2022	\$23,120	\$341,610	\$364,730

## Owner of Record

**Owner** AMERICAN TOWERS LLC  
**Co-Owner** C/O PROPERTY TAX DEPT  
**Address** PO BOX 723597  
ATLANTA, GA 31139

**Sale Price** \$352,340  
**Certificate**  
**Book & Page** 692 / 597



Sale Date 11/20/2014

Instrument 25

### Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
AMERICAN TOWERS LLC	\$352,340		692/ 597	25	11/20/2014
FLORIDA TOWER PARTNERS LLC	\$525,000		683/ 643	UNKQ	04/10/2014
CHARTER COMMUNICATIONS ENTERTAINMENT 1LP	\$37,800		313/ 836		11/01/1996

### Building Information

#### Building 1 : Section 1

Year Built:

Living Area: 0

Building Attributes	
Field	Description
Style:	Vacant Land
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	

#### Building Photo



([https://images.vgsi.com/photos/BrookfieldCTPhotos///0030/P1010182\\_30t](https://images.vgsi.com/photos/BrookfieldCTPhotos///0030/P1010182_30t))

Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bathrooms	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Kitchens	
Whirlpool Tub	
Hot Tubs	
Fireplaces	
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Garages	
Fireplace	
Fndtn Cndtn	
Basement	

## Building Layout

(ParcelSketch.ashx?pid=814&bid=814)

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

## Extra Features

### Extra Features

No Data for Extra Features

## Land

### Land Use

**Use Code** 435  
**Description** Cell Site Vac Lnd  
**Zone** R-100

### Land Line Valuation

**Size (Acres)** 4.00  
**Depth**  
**Assessed Value** \$341,610  
**Appraised Value** \$488,010

## Outbuildings

### Outbuildings

Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
SHD3	Comm Shed	FR		240.00 S.F.	\$8,640	1
SHD3	Comm Shed	CB		500.00 S.F.	\$24,380	1
GEN	Generator			1.00 Units	\$0	1
CT1	Cell Tower			1.00 Units	\$0	1

## Valuation History

### Appraisal

Valuation Year	Improvements	Land	Total
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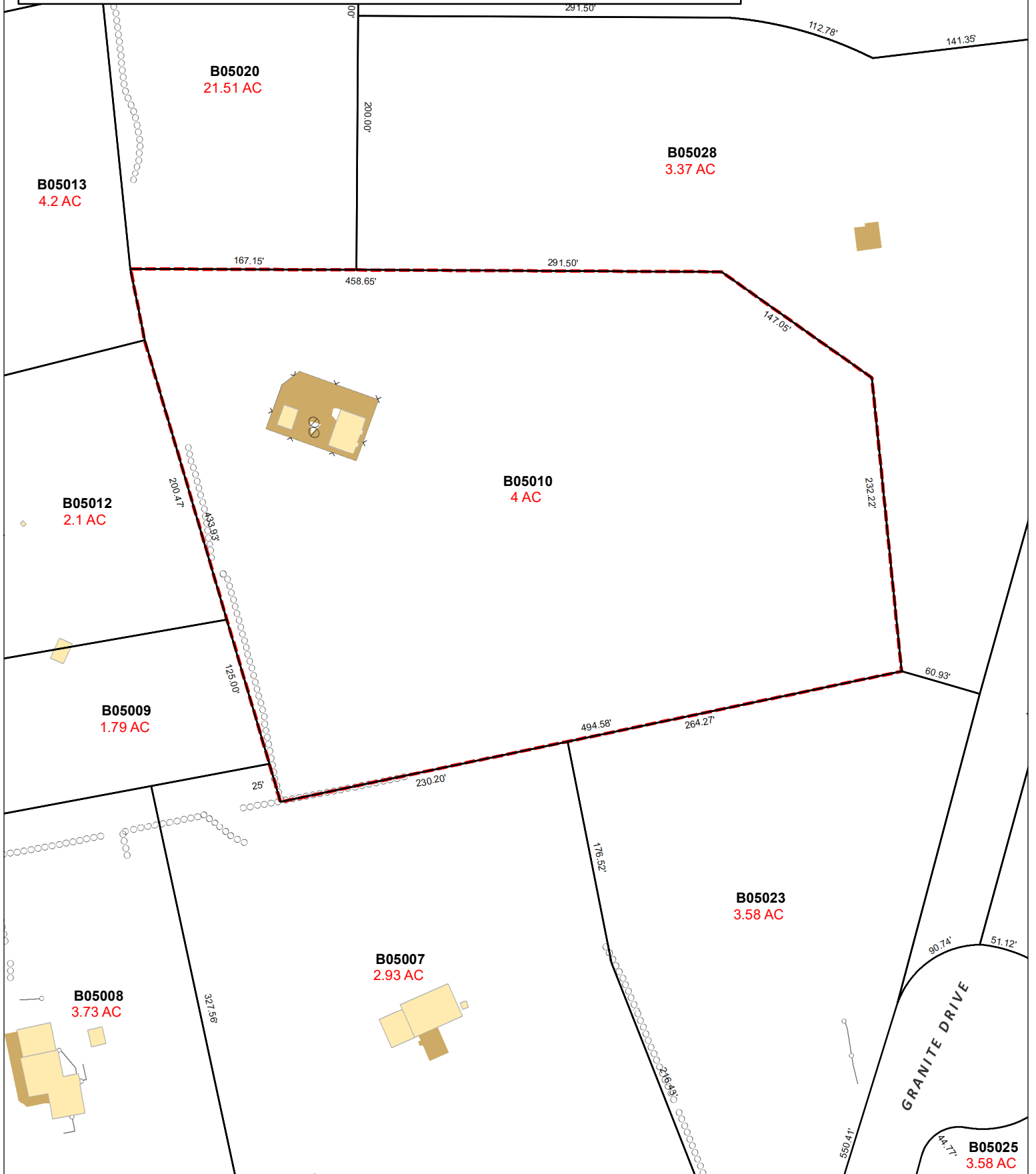
2022	\$33,020	\$488,010	\$521,030
2021	\$33,020	\$488,010	\$521,030
2020	\$16,030	\$490,010	\$506,040
2019	\$16,030	\$490,010	\$506,040

<b>Assessment</b>			
<b>Valuation Year</b>	<b>Improvements</b>	<b>Land</b>	<b>Total</b>
2022	\$23,120	\$341,610	\$364,730
2021	\$23,120	\$341,610	\$364,730
2020	\$11,220	\$343,010	\$354,230
2019	\$11,220	\$343,010	\$354,230

# Town of Brookfield, Connecticut - Assessment Parcel Map

Parcel: **B05010**

Address: 37 CARMEN HILL RD



Approximate Scale:  
1 inch = 100 feet

Disclaimer: This map is for informational purposes only. All information is subject to verification by any user. The Town of Brookfield and its mapping contractors assume no legal responsibility for the information contained herein.

Map Produced December 2023

# EXHIBIT 3





**AMERICAN TOWER®**  
CORPORATION

## Structural Analysis Report

**Structure** : 80 ft Self Support Tower  
**ATC Asset Name** : BROOKFIELD CT  
**ATC Asset Number** : 283426  
**Engineering Number** : 14527561\_C3\_05  
**Proposed Carrier** : VERIZON WIRELESS  
**Carrier Site Name** : BROOKFIELD CT  
**Carrier Site Number** : 5000386525  
**Site Location** : 37 Carmen Hill Road  
Brookfield, CT 06804-1004  
41.4929° N, 73.4273° W  
**County** : Fairfield  
**Date** : January 22, 2024  
**Max Usage** : 66%  
**Analysis Result** : Pass

Created By:

Faisal Wakid  
Structural Engineer I

*Faisal Wakid*



COA: PEC.0001553



## Table of Contents

Introduction .....	3
Supporting Documents.....	3
Analysis .....	3
Conclusion .....	3
Structure Usages .....	4
Maximum Reactions .....	4
Tower Loading .....	5
Standard Conditions.....	Attached
Calculations.....	Attached

## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 80 ft Self Support tower to reflect the change in loading by VERIZON WIRELESS.

## Supporting Documents

<b>Tower:</b>	HTS Mapping Site #KGI11464, dated February 21, 2008
<b>Foundation:</b>	ETS Mapping Job #173310, dated November 30, 2017
<b>Geotechnical:</b>	FDH Project #17QQWL1600, dated November 30, 2017

## 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.

<b>Basic Wind Speed:</b>	115 mph (3-second gust)
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-second gust) w/ 1.00" radial ice concurrent
<b>Code(s):</b>	ANSI/TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
<b>Exposure Category:</b>	B
<b>Risk Category:</b>	II
<b>Topographic Factor Procedure:</b>	Method 2
<b>Feature:</b>	Ridge
<b>Crest Height (H):</b>	315 ft
<b>Crest Length (L):</b>	2764 ft
<b>Spectral Response:</b>	$S_s = 0.21$ , $S_i = 0.06$
<b>Site Class:</b>	D - Stiff Soil - Default

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

## Conclusion

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

If you have any questions or require additional information, please reach out to your American Tower contact. If you do not have an American Tower contact and have an Engineering question, please contact [Engineering@americantower.com](mailto:Engineering@americantower.com). Please include the American Tower asset name, asset number, and engineering number in the subject line for any questions.



### Structure Usages

Structural Component	Usage	Control	Location	Result
Leg	66.0%	Member X	Section 2	Pass
Diagonal	49.0%	Member Z	Section 1	Pass
Horizontal	1.0%	Member Z	Section 4	Pass
Bolt	40.1%	-	Section 2	Pass
Serviceability Usage	4.3%	Deflection	Elevation 80 ft	Pass

### Maximum Reactions

Foundation	Moment (k-ft)	Axial (k)	Uplift (k)	Shear (k)
Self Support Base (Global)	413.4	9.6	-	7.8
Self Support Base (Local)	-	48.3	40.1	4.8

*\*Reactions shown are maximum overall and not limited by Load Case*

Structure base reactions were analyzed using available geotechnical and foundation information.



**VERIZON WIRELESS Final Loading**

Elev (ft)	Qty	Equipment	Lines
79.0	1	Raycap RCMD-6627-PF-48	(2) 1 5/8" Hybriflex
	3	Commscope CBC78T-DS-43-2X	
	3	Samsung B2/B66A RRH-BR049	
	6	Commscope JAHH-65B-R3B	
77.0	3	Mount Reinforcement	-
	3	Samsung B5/B13 RRH-BR04C	
	3	Samsung MT6413-77A	
	3	Site Pro 1 VFA12-HD	
	4	Kaelus BSF0020F3V1-1	

Install proposed lines in the place of the existing VERIZON WIRELESS lines.

**Other Existing/Reserved Loading**

*No loading was considered in addition to the VERIZON WIRELESS Final Loading.*



## **Standard Conditions**

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

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

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

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

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

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

**ANALYSIS PARAMETERS**

<b>Nominal Wind:</b> 112 mph	<b>Ice Wind:</b> 49 mph w/ 0.85" ice	<b>Service Wind:</b> 60 mph
<b>Risk Category:</b> II	<b>Exposure:</b> B	<b>S<sub>s</sub>:</b> 0.210 <b>S<sub>t</sub>:</b> 0.055
<b>Topo Category:</b> 4	<b>Topo Factor:</b> Method 2	<b>Topo Feature:</b> Ridge
<b>Structure Height:</b> 80 ft	<b>Base Elevation:</b> 0 ft	<b>Shape:</b> Triangle
<b>Base Width:</b> 10.58 ft	<b>Top Width:</b> 4.5 ft	

**TOWER SECTION PROPERTIES**

Section	Leg Members	Diagonal Members	Horizontal Members
1	PXX 50 ksi 2-1/2" DIA	SAE 36 ksi 1.75X1.75X0.125	
2	PST 50 ksi 2-1/2" DIA	SAE 36 ksi 1.5X1.5X0.1563	
3	PX 50 ksi 2" DIA PIPE	SAE 36 ksi 1.5X1.5X0.1563	
4	PSP 50 ksi 2.375" x .	SAE 36 ksi 1.5X1.5X0.1563	SAE 36 ksi 1.5X1.5X0.25

**SECONDARY BRACING MEMBERS**

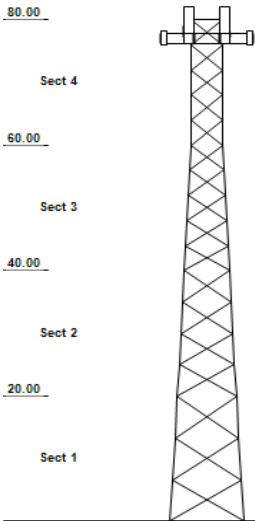
**DISCRETE APPURTENANCE**

**LINEAR APPURTENANCE**

Elev (ft)	Description	Elev To (ft)	Description
79.0	(6) Commscope JAHH-65B-R3B	79.0	(2) 1 5/8" Hybriflex
79.0	(3) Samsung B2/B66A RRH-BR049	79.0	(1) Waveguide
79.0	(3) Commscope CBC78T-DS-43-2X		
79.0	(1) Raycap RCMD-6627-PF-48		
77.0	(4) Kaelus BSF0020F3V1-1		
77.0	(3) Site Pro 1 VFA12-HD		
77.0	(3) Samsung MT6413-77A		
77.0	(3) Samsung B5/B13 RRH-BR04C		
77.0	(3) Generic Mount Reinforcement		

**Tower Elevation View**

Quadrant 1



**GLOBAL BASE REACTIONS**

	DL+WL	DL+WL+IL
<b>Moment (k-ft):</b>	413.36	120.13
<b>Axial (k):</b>	9.62	17.70
<b>Shear (k):</b>	7.76	2.28

**INDIVIDUAL BASE REACTIONS**

<b>Comp (k):</b>	48.31
<b>Uplift (k):</b>	40.07
<b>Shear (k):</b>	4.77

ASSET: 283426, BROOKFIELD CT  
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H  
PROJECT: 14527561\_C3\_05

ANALYSIS PARAMETERS

<b>Location:</b>	Fairfield County, CT	<b>Height:</b>	80 ft
<b>Type and Shape:</b>	Self Support, Triangle	<b>Base Elevation:</b>	0.00 ft
<b>Manufacturer:</b>	Undetermined	<b>Bottom Face Width:</b>	10.58 ft
<b>Kd</b>	0.85	<b>Top Face Width:</b>	4.50 ft
<b>Ke:</b>	0.97	<b>Anchor Bolt Detail Type:</b>	c

ICE & WIND PARAMETERS

<b>Exposure Category:</b>	B	<b>Design Wind Speed Without Ice:</b>	112 mph
<b>Risk Category:</b>	II	<b>Design Wind Speed with Ice:</b>	49 mph
<b>Topographic Factor Procedure:</b>	Method 2	<b>Operational Windspeed:</b>	60 mph
		<b>Design Ice Thickness:</b>	0.85 in
		<b>HMSL:</b>	728 ft
<b>Crest Height(H):</b>	315 ft		
<b>Crest Length(L):</b>	2764 ft	<b>Distance from Apex (x):</b>	0
<b>Feature:</b>	Ridge	<b>Upwind/Downwind:</b>	Upwind

SEISMIC PARAMETERS

<b>Analysis Method:</b>	Equivalent Lateral Force Method		
<b>Site Class:</b>	D - Stiff Soil	<b>Period Based on Rayleigh Method (sec):</b>	0.67
<b>T<sub>L</sub> (sec):</b>	6	<b>P:</b>	1.3
<b>S<sub>s</sub>:</b>	0.210	<b>S<sub>1</sub>:</b>	0.055
<b>F<sub>a</sub>:</b>	1.600	<b>F<sub>v</sub>:</b>	2.400
<b>S<sub>ds</sub>:</b>	0.224	<b>S<sub>d1</sub>:</b>	0.088
		<b>C<sub>s</sub>:</b>	0.043
		<b>C<sub>s, Max</sub>:</b>	0.043
		<b>C<sub>s, Min</sub>:</b>	0.030

LOAD CASES

1.2D + 1.0W Normal	1.2D + 1.0W Normal - 112.09 mph Wind with No Ice
1.2D + 1.0W 60°	1.2D + 1.0W 60° - 112.09 mph Wind with No Ice
1.2D + 1.0W 90°	1.2D + 1.0W 90° - 112.09 mph Wind with No Ice
0.9D + 1.0W Normal	0.9D + 1.0W Normal - 112.09 mph Wind with No Ice (Reduced DL)
0.9D + 1.0W 60°	0.9D + 1.0W 60° - 112.09 mph Wind with No Ice (Reduced DL)
0.9D + 1.0W 90°	0.9D + 1.0W 90° - 112.09 mph Wind with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi Normal	1.2D + 1.0Di + 1.0Wi Normal - 48.73 mph Wind with 0.85" Radial Ice
1.2D + 1.0Di + 1.0Wi 60°	1.2D + 1.0Di + 1.0Wi 60° - 48.73 mph Wind with 0.85" Radial Ice
1.2D + 1.0Di + 1.0Wi 90°	1.2D + 1.0Di + 1.0Wi 90° - 48.73 mph Wind with 0.85" Radial Ice
1.2D + 1.0Ev + 1.0Eh Normal	1.2D + 1.0Ev + 1.0Eh Normal - Seismic
1.2D + 1.0Ev + 1.0Eh 60°	1.2D + 1.0Ev + 1.0Eh 60° - Seismic
1.2D + 1.0Ev + 1.0Eh 90°	1.2D + 1.0Ev + 1.0Eh 90° - Seismic
0.9D - 1.0Ev + 1.0Eh Normal	0.9D - 1.0Ev + 1.0Eh Normal - Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 60°	0.9D - 1.0Ev + 1.0Eh 60° - Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 90°	0.9D - 1.0Ev + 1.0Eh 90° - Seismic (Reduced DL)
1.0D + 1.0W Service Normal	1.0D + 1.0W Service Normal - 60 mph Wind with No Ice
1.0D + 1.0W Service 60°	1.0D + 1.0W Service 60° - 60 mph Wind with No Ice
1.0D + 1.0W Service 90°	1.0D + 1.0W Service 90° - 60 mph Wind with No Ice

TOWER LOADING – DISCRETE APPURTENANCE

Discrete Appurtenance Properties for LC: 1.2D + 1.0W

Elev (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient. Factor	Vert. Ecc. (ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
79.0	Commscope CBC78T-DS-43-2X	3	21	0.6	0.8	6.9	6.4	0.80	0.50	0.0	0.00	38.42	22	75
79.0	Samsung B2/B66A RRH-BR049	3	84	1.9	1.3	15.0	10.0	0.80	0.50	0.0	0.00	38.42	73	304
79.0	Raycap RCMDC-6627-PF-48	1	32	4.1	2.5	16.5	12.6	0.80	1.00	0.0	0.00	38.42	106	38
79.0	Commscope JAHH-65B-R3B	6	61	9.1	6.0	13.8	8.2	0.80	0.69	0.0	0.00	38.42	986	436
77.0	Kaelus BSF0020F3V1-1	4	15	1.1	1.0	10.7	3.0	0.80	0.50	0.0	0.00	38.20	57	74
77.0	Samsung B5/B13 RRH-BR04C	3	70	1.9	1.3	15.0	8.1	0.80	0.50	0.0	0.00	38.20	73	253
77.0	Samsung MT6413-77A	3	57	3.8	2.4	15.8	5.5	0.80	0.61	0.0	0.00	38.20	181	206
77.0	Generic Mount Reinforcement	3	200	5.0	0.0	0.0	0.0	0.75	0.67	0.0	0.00	38.20	244	720
77.0	Site Pro 1 VFA12-HD	3	690	13.3	0.0	0.0	0.0	0.75	0.75	0.0	0.00	38.20	731	2484
<b>Totals</b>		<b>29</b>	<b>3,825</b>	<b>142.4</b>									<b>2,472</b>	<b>4,590</b>

Discrete Appurtenance Properties for LC: 0.9D + 1.0W

Elev (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient. Factor	Vert. Ecc. (ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
79.0	Commscope CBC78T-DS-43-2X	3	21	0.6	0.8	6.9	6.4	0.80	0.50	0.0	0.00	38.42	22	56
79.0	Samsung B2/B66A RRH-BR049	3	84	1.9	1.3	15.0	10.0	0.80	0.50	0.0	0.00	38.42	73	228
79.0	Raycap RCMDC-6627-PF-48	1	32	4.1	2.5	16.5	12.6	0.80	1.00	0.0	0.00	38.42	106	29
79.0	Commscope JAHH-65B-R3B	6	61	9.1	6.0	13.8	8.2	0.80	0.69	0.0	0.00	38.42	986	327
77.0	Kaelus BSF0020F3V1-1	4	15	1.1	1.0	10.7	3.0	0.80	0.50	0.0	0.00	38.20	57	55
77.0	Samsung B5/B13 RRH-BR04C	3	70	1.9	1.3	15.0	8.1	0.80	0.50	0.0	0.00	38.20	73	190
77.0	Samsung MT6413-77A	3	57	3.8	2.4	15.8	5.5	0.80	0.61	0.0	0.00	38.20	181	155
77.0	Generic Mount Reinforcement	3	200	5.0	0.0	0.0	0.0	0.75	0.67	0.0	0.00	38.20	244	540
77.0	Site Pro 1 VFA12-HD	3	690	13.3	0.0	0.0	0.0	0.75	0.75	0.0	0.00	38.20	731	1863
<b>Totals</b>		<b>29</b>	<b>3,825</b>	<b>142.4</b>									<b>2,472</b>	<b>3,443</b>

Discrete Appurtenance Properties for LC: 1.2D + 1.0Di + 1.0Wi

Elev (ft)	Description	Qty	Ice Wt (lb)	Ice EPA (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient. Factor	Vert. Ecc. (ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
79.0	Commscope CBC78T-DS-43-2X	3	34	0.9	0.8	6.9	6.4	0.80	0.50	0.0	0.00	7.26	6	116
79.0	Samsung B2/B66A RRH-BR049	3	124	2.4	1.3	15.0	10.0	0.80	0.50	0.0	0.00	7.26	18	423
79.0	Raycap RCMDC-6627-PF-48	1	111	4.9	2.5	16.5	12.6	0.80	1.00	0.0	0.00	7.26	24	117
79.0	Commscope JAHH-65B-R3B	6	186	10.8	6.0	13.8	8.2	0.80	0.69	0.0	0.00	7.26	221	1190
77.0	Kaelus BSF0020F3V1-1	4	31	1.5	1.0	10.7	3.0	0.80	0.50	0.0	0.00	7.22	15	137
77.0	Samsung B5/B13 RRH-BR04C	3	106	2.4	1.3	15.0	8.1	0.80	0.50	0.0	0.00	7.22	18	360
77.0	Samsung MT6413-77A	3	110	4.6	2.4	15.8	5.5	0.80	0.61	0.0	0.00	7.22	42	364
77.0	Generic Mount Reinforcement	3	320	8.1	0.0	0.0	0.0	0.75	0.67	0.0	0.00	7.22	75	1080
77.0	Site Pro 1 VFA12-HD	3	1311	21.8	0.0	0.0	0.0	0.75	0.75	0.0	0.00	7.22	226	4346
<b>Totals</b>		<b>29</b>	<b>7,368</b>	<b>196.7</b>									<b>645</b>	<b>8,133</b>

Discrete Appurtenance Properties for LC: 1.0D + 1.0W Service

Elev (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient. Factor	Vert. Ecc. (ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
79.0	Commscope CBC78T-DS-43-2X	3	21	0.6	0.8	6.9	6.4	0.80	0.50	0.0	0.00	11.01	6	62
79.0	Samsung B2/B66A RRH-BR049	3	84	1.9	1.3	15.0	10.0	0.80	0.50	0.0	0.00	11.01	21	253
79.0	Raycap RCMDC-6627-PF-48	1	32	4.1	2.5	16.5	12.6	0.80	1.00	0.0	0.00	11.01	30	32
79.0	Commscope JAHH-65B-R3B	6	61	9.1	6.0	13.8	8.2	0.80	0.69	0.0	0.00	11.01	282	364
77.0	Kaelus BSF0020F3V1-1	4	15	1.1	1.0	10.7	3.0	0.80	0.50	0.0	0.00	10.95	16	62
77.0	Samsung B5/B13 RRH-BR04C	3	70	1.9	1.3	15.0	8.1	0.80	0.50	0.0	0.00	10.95	21	211
77.0	Samsung MT6413-77A	3	57	3.8	2.4	15.8	5.5	0.80	0.61	0.0	0.00	10.95	52	172
77.0	Generic Mount Reinforcement	3	200	5.0	0.0	0.0	0.0	0.75	0.67	0.0	0.00	10.95	70	600
77.0	Site Pro 1 VFA12-HD	3	690	13.3	0.0	0.0	0.0	0.75	0.75	0.0	0.00	10.95	209	2070
<b>Totals</b>		<b>29</b>	<b>3,825</b>	<b>142.4</b>									<b>708</b>	<b>3,825</b>



ASSET: 283426, BROOKFIELD CT

CODE: ANSI/TIA-222-H

CUSTOMER: VERIZON WIRELESS

PROJECT: 14527561\_C3\_05

TOWER LOADING – LINEAR APPURTENANCE

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	% In Wind	Spread On Faces	Bundling	Cluster Dia (in)	Out of Zone	Spacing (in)	Orient. Factor	K <sub>a</sub> Override
10.0	79.0	1 5/8" Hybriflex	2	1.98	1.30	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	79.0	Waveguide	1	2.00	6.00	100	2	Individual	0.00	N	1.00	1.00	0.00

SECTION FORCES

1.2D + 1.0W Normal  
112.09 mph Wind with No Ice

Gust Response Factor (Gh): 0.85  
Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)				
4	70	37.40	7.817	7.917	0.00	0.167	2.71	1.00	1.00	0.0	12.33	33.38	0.00	1543	0	1061	264	1326				
3	50	34.59	8.274	7.930	0.00	0.142	2.80	1.00	1.00	0.0	12.77	35.78	0.00	942	0	1052	257	1309				
2	30	30.45	8.816	9.600	0.00	0.118	2.89	1.00	1.00	0.0	14.24	41.18	0.00	1020	0	1066	227	1292				
1	10	31.02	10.000	9.600	0.00	0.100	2.96	1.00	1.00	0.0	15.42	45.70	0.00	1526	0	1205	168	1373				
														<b>Totals</b>	<b>5,030</b>	<b>0</b>						<b>5,300</b>

1.2D + 1.0W 60°  
112.09 mph Wind with No Ice

Gust Response Factor (Gh): 0.85  
Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)				
4	70	37.40	7.817	7.917	0.00	0.167	2.71	0.80	1.00	0.0	10.76	29.15	0.00	1543	0	927	264	1191				
3	50	34.59	8.274	7.930	0.00	0.142	2.80	0.80	1.00	0.0	11.11	31.14	0.00	942	0	916	257	1173				
2	30	30.45	8.816	9.600	0.00	0.118	2.89	0.80	1.00	0.0	12.48	36.08	0.00	1020	0	934	227	1160				
1	10	31.02	10.000	9.600	0.00	0.100	2.96	0.80	1.00	0.0	13.42	39.78	0.00	1526	0	1049	168	1217				
														<b>Totals</b>	<b>5,030</b>	<b>0</b>						<b>4,741</b>

1.2D + 1.0W 90°  
112.09 mph Wind with No Ice

Gust Response Factor (Gh): 0.85  
Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)				
4	70	37.40	7.817	7.917	0.00	0.167	2.71	0.85	1.00	0.0	11.15	30.21	0.00	1543	0	960	264	1225				
3	50	34.59	8.274	7.930	0.00	0.142	2.80	0.85	1.00	0.0	11.53	32.30	0.00	942	0	950	257	1207				
2	30	30.45	8.816	9.600	0.00	0.118	2.89	0.85	1.00	0.0	12.92	37.35	0.00	1020	0	967	227	1193				
1	10	31.02	10.000	9.600	0.00	0.100	2.96	0.85	1.00	0.0	13.92	41.26	0.00	1526	0	1088	168	1256				
														<b>Totals</b>	<b>5,030</b>	<b>0</b>						<b>4,881</b>

0.9D + 1.0W Normal  
112.09 mph Wind with No Ice (Reduced DL)

Gust Response Factor (Gh): 0.85  
Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)				
4	70	37.40	7.817	7.917	0.00	0.167	2.71	1.00	1.00	0.0	12.33	33.38	0.00	1157	0	1061	264	1326				
3	50	34.59	8.274	7.930	0.00	0.142	2.80	1.00	1.00	0.0	12.77	35.78	0.00	706	0	1052	257	1309				
2	30	30.45	8.816	9.600	0.00	0.118	2.89	1.00	1.00	0.0	14.24	41.18	0.00	765	0	1066	227	1292				
1	10	31.02	10.000	9.600	0.00	0.100	2.96	1.00	1.00	0.0	15.42	45.70	0.00	1144	0	1205	168	1373				
														<b>Totals</b>	<b>3,773</b>	<b>0</b>						<b>5,300</b>

0.9D + 1.0W 60°  
112.09 mph Wind with No Ice (Reduced DL)

Gust Response Factor (Gh): 0.85  
Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)				
4	70	37.40	7.817	7.917	0.00	0.167	2.71	0.80	1.00	0.0	10.76	29.15	0.00	1157	0	927	264	1191				
3	50	34.59	8.274	7.930	0.00	0.142	2.80	0.80	1.00	0.0	11.11	31.14	0.00	706	0	916	257	1173				
2	30	30.45	8.816	9.600	0.00	0.118	2.89	0.80	1.00	0.0	12.48	36.08	0.00	765	0	934	227	1160				
1	10	31.02	10.000	9.600	0.00	0.100	2.96	0.80	1.00	0.0	13.42	39.78	0.00	1144	0	1049	168	1217				
														<b>Totals</b>	<b>3,773</b>	<b>0</b>						<b>4,741</b>

0.9D + 1.0W 90°  
112.09 mph Wind with No Ice (Reduced DL)

Gust Response Factor (Gh): 0.85  
Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)				
4	70	37.40	7.817	7.917	0.00	0.167	2.71	0.85	1.00	0.0	11.15	30.21	0.00	1157	0	960	264	1225				
3	50	34.59	8.274	7.930	0.00	0.142	2.80	0.85	1.00	0.0	11.53	32.30	0.00	706	0	950	257	1207				
2	30	30.45	8.816	9.600	0.00	0.118	2.89	0.85	1.00	0.0	12.92	37.35	0.00	765	0	967	227	1193				
1	10	31.02	10.000	9.600	0.00	0.100	2.96	0.85	1.00	0.0	13.92	41.26	0.00	1144	0	1088	168	1256				
														<b>Totals</b>	<b>3,773</b>	<b>0</b>						<b>4,881</b>

1.2D + 1.0Di + 1.0Wi Normal  
48.73 mph Wind with 0.85" Radial Ice

Gust Response Factor (Gh): 0.85  
Wind Importance Factor (Iw): 1.00

Ice Importance Factor: 1.00  
Ice Dead Load Factor: 1.00

Section #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)				
4	70	7.07	7.817	26.779	18.86	0.355	2.16	1.00	1.00	1.1	24.36	52.64	18.86	2713	1171	316	109	425				
3	50	6.54	8.274	26.913	18.98	0.299	2.30	1.00	1.00	1.1	24.38	56.06	18.98	2119	1177	312	109	421				
2	30	5.76	8.816	28.468	18.87	0.234	2.48	1.00	1.00	1.0	25.37	63.03	18.87	2209	1189	308	99	407				
1	10	5.86	10.000	25.785	16.19	0.180	2.67	1.00	1.00	0.9	24.73	65.91	16.19	2524	999	328	68	397				
														<b>Totals</b>	<b>9,566</b>	<b>4,536</b>						<b>1,650</b>

1.2D + 1.0Di + 1.0Wi 60°  
48.73 mph Wind with 0.85" Radial Ice

Gust Response Factor (Gh): 0.85  
Wind Importance Factor (Iw): 1.00

Ice Importance Factor: 1.00  
Ice Dead Load Factor: 1.00

Section #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)				
4	70	7.07	7.817	26.779	18.86	0.355	2.16	1.00	1.00	1.1	24.36	52.64	18.86	2713	1171	316	109	425				
3	50	6.54	8.274	26.913	18.98	0.299	2.30	1.00	1.00	1.1	24.38	56.06	18.98	2119	1177	312	109	421				
2	30	5.76	8.816	28.468	18.87	0.234	2.48	1.00	1.00	1.0	25.37	63.03	18.87	2209	1189	308	99	407				
1	10	5.86	10.000	25.785	16.19	0.180	2.67	1.00	1.00	0.9	24.73	65.91	16.19	2524	999	328	68	397				
														<b>Totals</b>	<b>9,566</b>	<b>4,536</b>						<b>1,650</b>

SECTION FORCES

1.2D + 1.0Di + 1.0Wi 60°  
 48.73 mph Wind with 0.85" Radial Ice

Gust Response Factor (Gh): 0.85  
 Wind Importance Factor (Iw): 1.00  
 Ice Importance Factor: 1.00  
 Ice Dead Load Factor: 1.00

Section #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
4	70	7.07	7.817	26.779	18.86	0.355	2.16	0.80	1.00	1.1	22.80	49.26	18.86	2713	1171	296	109	405
3	50	6.54	8.274	26.913	18.98	0.299	2.30	0.80	1.00	1.1	22.73	52.26	18.98	2119	1177	290	109	400
2	30	5.76	8.816	28.468	18.87	0.234	2.48	0.80	1.00	1.0	23.60	58.65	18.87	2209	1189	287	99	386
1	10	5.86	10.000	25.785	16.19	0.180	2.67	0.80	1.00	0.9	22.73	60.58	16.19	2524	999	302	68	370
<b>Totals</b>														<b>9,566</b>	<b>4,536</b>			<b>1,560</b>

1.2D + 1.0Di + 1.0Wi 90°  
 48.73 mph Wind with 0.85" Radial Ice

Gust Response Factor (Gh): 0.85  
 Wind Importance Factor (Iw): 1.00  
 Ice Importance Factor: 1.00  
 Ice Dead Load Factor: 1.00

Section #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
4	70	7.07	7.817	26.779	18.86	0.355	2.16	0.85	1.00	1.1	23.19	50.11	18.86	2713	1171	301	109	410
3	50	6.54	8.274	26.913	18.98	0.299	2.30	0.85	1.00	1.1	23.14	53.21	18.98	2119	1177	296	109	405
2	30	5.76	8.816	28.468	18.87	0.234	2.48	0.85	1.00	1.0	24.04	59.74	18.87	2209	1189	292	99	391
1	10	5.86	10.000	25.785	16.19	0.180	2.67	0.85	1.00	0.9	23.23	61.91	16.19	2524	999	308	68	377
<b>Totals</b>														<b>9,566</b>	<b>4,536</b>			<b>1,582</b>

1.0D + 1.0W Service Normal  
 60 mph Wind with No Ice

Gust Response Factor (Gh): 0.85  
 Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
4	70	10.72	7.817	7.917	0.00	0.167	2.71	1.00	1.00	0.0	12.33	33.38	0.00	1286	0	304	76	380
3	50	9.91	8.274	7.930	0.00	0.142	2.80	1.00	1.00	0.0	12.77	35.78	0.00	785	0	301	74	375
2	30	8.73	8.816	9.600	0.00	0.118	2.89	1.00	1.00	0.0	14.24	41.18	0.00	850	0	305	65	370
1	10	8.89	10.000	9.600	0.00	0.100	2.96	1.00	1.00	0.0	15.42	45.70	0.00	1271	0	345	48	393
<b>Totals</b>														<b>4,192</b>	<b>0</b>			<b>1,519</b>

1.0D + 1.0W Service 60°  
 60 mph Wind with No Ice

Gust Response Factor (Gh): 0.85  
 Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
4	70	10.72	7.817	7.917	0.00	0.167	2.71	0.80	1.00	0.0	10.76	29.15	0.00	1286	0	266	76	341
3	50	9.91	8.274	7.930	0.00	0.142	2.80	0.80	1.00	0.0	11.11	31.14	0.00	785	0	262	74	336
2	30	8.73	8.816	9.600	0.00	0.118	2.89	0.80	1.00	0.0	12.48	36.08	0.00	850	0	268	65	332
1	10	8.89	10.000	9.600	0.00	0.100	2.96	0.80	1.00	0.0	13.42	39.78	0.00	1271	0	300	48	349
<b>Totals</b>														<b>4,192</b>	<b>0</b>			<b>1,358</b>

1.0D + 1.0W Service 90°  
 60 mph Wind with No Ice

Gust Response Factor (Gh): 0.85  
 Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
4	70	10.72	7.817	7.917	0.00	0.167	2.71	0.85	1.00	0.0	11.15	30.21	0.00	1286	0	275	76	351
3	50	9.91	8.274	7.930	0.00	0.142	2.80	0.85	1.00	0.0	11.53	32.30	0.00	785	0	272	74	346
2	30	8.73	8.816	9.600	0.00	0.118	2.89	0.85	1.00	0.0	12.92	37.35	0.00	850	0	277	65	342
1	10	8.89	10.000	9.600	0.00	0.100	2.96	0.85	1.00	0.0	13.92	41.26	0.00	1271	0	312	48	360
<b>Totals</b>														<b>4,192</b>	<b>0</b>			<b>1,399</b>

EQUIVALENT LATERAL FORCE METHOD

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.21
Spectral Response Acceleration at 1.0 Second Period ( $S_1$ ):	0.06
Long-Period Transition Period ( $T_L$ – Seconds):	6
Importance Factor ( $I_e$ ):	1.00
Site Coefficient $F_a$ :	1.60
Site Coefficient $F_v$ :	2.40
Response Modification Coefficient (R):	3.00
Design Spectral Response Acceleration at Short Period ( $S_{ds}$ ):	0.22
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.09
Seismic Response Coefficient ( $C_s$ ):	0.04
Upper Limit $C_s$ :	0.04
Lower Limit $C_s$ :	0.03
Period based on Rayleigh Method (sec):	0.67
Redundancy Factor ( $\rho$ ):	1.30
Seismic Force Distribution Exponent (k):	1.09
Total Unfactored Dead Load:	8.02 k
Seismic Base Shear (E):	0.45 k

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh

Section/Appurtenance	Height Above Base (ft)	Weight (lb)	$W_2$ (lb-ft)	$C_{vx}$	Horizontal Force (lb)	Vertical Force (lb)
4	70.00	1,286	130,474	0.195	88	1,099
3	50.00	785	55,243	0.083	37	671
2	30.00	850	34,345	0.051	23	727
1	10.00	1,271	15,548	0.023	11	1,087
Commscope CBC78T-DS-43-2X	79.00	62	7,189	0.011	5	53
Samsung B2/B66A RRH-BR049	79.00	253	29,310	0.044	20	217
Raycap RCMD-6627-PF-48	79.00	32	3,704	0.006	3	27
Commscope JAHH-65B-R3B	79.00	364	42,090	0.063	29	311
Kaelus BSF0020F3V1-1	77.00	62	6,935	0.010	5	53
Samsung B5/B13 RRH-BR04C	77.00	211	23,742	0.036	16	180
Samsung MT6413-77A	77.00	172	19,352	0.029	13	147
Generic Mount Reinforcement	77.00	600	67,545	0.101	46	513
Site Pro 1 VFA12-HD	77.00	2,070	233,031	0.349	158	1,770
<b>Totals</b>		<b>8,017</b>	<b>668,507</b>	<b>1.000</b>	<b>453</b>	<b>6,856</b>

1.2D + 1.0Ev + 1.0Eh

Section/Appurtenance	Height Above Base (ft)	Weight (lb)	$W_2$ (lb-ft)	$C_{vx}$	Horizontal Force (lb)	Vertical Force (lb)
4	70.00	1,286	130,474	0.195	88	1,600
3	50.00	785	55,243	0.083	37	977
2	30.00	850	34,345	0.051	23	1,058
1	10.00	1,271	15,548	0.023	11	1,582
Commscope CBC78T-DS-43-2X	79.00	62	7,189	0.011	5	77
Samsung B2/B66A RRH-BR049	79.00	253	29,310	0.044	20	315
Raycap RCMD-6627-PF-48	79.00	32	3,704	0.006	3	40
Commscope JAHH-65B-R3B	79.00	364	42,090	0.063	29	453
Kaelus BSF0020F3V1-1	77.00	62	6,935	0.010	5	77
Samsung B5/B13 RRH-BR04C	77.00	211	23,742	0.036	16	263
Samsung MT6413-77A	77.00	172	19,352	0.029	13	214
Generic Mount Reinforcement	77.00	600	67,545	0.101	46	747
Site Pro 1 VFA12-HD	77.00	2,070	233,031	0.349	158	2,577
<b>Totals</b>		<b>8,017</b>	<b>668,507</b>	<b>1.000</b>	<b>453</b>	<b>9,980</b>

ASSET: 283426, BROOKFIELD CT

CODE: ANSI/TIA-222-H

CUSTOMER: VERIZON WIRELESS

PROJECT: 14527561\_C3\_05

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FORCE/STRESS SUMMARY

Section 1 – 0.0' to 20.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F <sub>y</sub> (ksi)	Φ <sub>c</sub> P <sub>n</sub> (kip)	Shear		# Bolt	# Hole	Use %	Controls	
				X	Y	Z			Φ <sub>R<sub>nv</sub></sub> (kip)	Bear Φ <sub>R<sub>n</sub></sub> (kip)					
L PXX - 2-1/2" DIA PIPE	-46.84	1.2D + 1.0W N	6.678	100	100	100	94.95	50.00	93.81	0.00	0.00	0	0	49	Member X
D SAE - 1.75X1.75X0.125	-1.33	1.2D + 1.0W 90°	12.225	50	50	50	211.38	36.00	2.69	8.84	6.96	1	1	49	Member Z

Member Tension	Pu (kip)	Load Case	F <sub>y</sub> (ksi)	F <sub>u</sub> (ksi)	Φ <sub>c</sub> P <sub>n</sub> (kip)	Shear Φ <sub>R<sub>nv</sub></sub> (kip)	Bear Φ <sub>R<sub>n</sub></sub> (kip)	Blk Shear Φ <sub>t</sub> P <sub>n</sub> (kip)	# Bolt	# Hole	Use %	Controls
D SAE - 1.75X1.75X0.125	1.30	1.2D + 1.0W 90°	36.0	58	11.41	8.84	4.13	3.81	1	1	34	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	Φ <sub>R<sub>nt</sub></sub> (kip)	Use %	Num Bolts	Bolt Type
Bot Tension	40.33	0.9D + 1.0W 60°	81.36	25	4	5/8 A325
Bot Compression	48.37	1.2D + 1.0W N	83.17	1	0	

Section 2 – 20.0' to 40.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F <sub>y</sub> (ksi)	Φ <sub>c</sub> P <sub>n</sub> (kip)	Shear		# Bolt	# Hole	Use %	Controls	
				X	Y	Z			Φ <sub>R<sub>nv</sub></sub> (kip)	Bear Φ <sub>R<sub>n</sub></sub> (kip)					
L PST - 2-1/2" DIA PIPE	-38.27	1.2D + 1.0W N	5.009	100	100	100	63.47	50.00	57.12	0.00	0.00	0	0	66	Member X
D SAE - 1.5X1.5X0.1563	-1.20	1.2D + 1.0W 90°	9.693	50	50	50	197.14	36.00	3.24	8.84	8.70	1	1	36	Member Z

Member Tension	Pu (kip)	Load Case	F <sub>y</sub> (ksi)	F <sub>u</sub> (ksi)	Φ <sub>c</sub> P <sub>n</sub> (kip)	Shear Φ <sub>R<sub>nv</sub></sub> (kip)	Bear Φ <sub>R<sub>n</sub></sub> (kip)	Blk Shear Φ <sub>t</sub> P <sub>n</sub> (kip)	# Bolt	# Hole	Use %	Controls
D SAE - 1.5X1.5X0.1563	1.17	1.2D + 1.0W 90°	36.0	58	11.49	8.84	5.17	3.91	1	1	29	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	Φ <sub>R<sub>nt</sub></sub> (kip)	Use %	Num Bolts	Bolt Type
Bot Tension	32.62	0.9D + 1.0W 60°	81.36	40	4	5/8 A325

Section 3 – 40.0' to 60.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F <sub>y</sub> (ksi)	Φ <sub>c</sub> P <sub>n</sub> (kip)	Shear		# Bolt	# Hole	Use %	Controls	
				X	Y	Z			Φ <sub>R<sub>nv</sub></sub> (kip)	Bear Φ <sub>R<sub>n</sub></sub> (kip)					
L PX - 2" DIA PIPE	-28.43	1.2D + 1.0W N	4.007	100	100	100	62.77	50.00	49.93	0.00	0.00	0	0	56	Member X
D SAE - 1.5X1.5X0.1563	-1.05	1.2D + 1.0W 90°	7.485	50	50	50	152.23	36.00	5.43	8.84	8.70	1	1	19	Member Z

Member Tension	Pu (kip)	Load Case	F <sub>y</sub> (ksi)	F <sub>u</sub> (ksi)	Φ <sub>c</sub> P <sub>n</sub> (kip)	Shear Φ <sub>R<sub>nv</sub></sub> (kip)	Bear Φ <sub>R<sub>n</sub></sub> (kip)	Blk Shear Φ <sub>t</sub> P <sub>n</sub> (kip)	# Bolt	# Hole	Use %	Controls
D SAE - 1.5X1.5X0.1563	1.07	1.2D + 1.0W 90°	36.0	58	11.49	8.84	5.17	3.91	1	1	27	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	Φ <sub>R<sub>nt</sub></sub> (kip)	Use %	Num Bolts	Bolt Type
Bot Tension	24.05	0.9D + 1.0W 60°	81.36	30	4	5/8 A325

Section 4 – 60.0' to 80.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F <sub>y</sub> (ksi)	Φ <sub>c</sub> P <sub>n</sub> (kip)	Shear		# Bolt	# Hole	Use %	Controls	
				X	Y	Z			Φ <sub>R<sub>nv</sub></sub> (kip)	Bear Φ <sub>R<sub>n</sub></sub> (kip)					
L PSP - 2.375" x .188"	-15.55	1.2D + 1.0W N	4	100	100	100	61.46	50.00	50.53	0.00	0.00	0	0	30	Member X
H SAE - 1.5X1.5X0.25	-0.06	1.2D + 1.0W 60°	4.501	100	100	100	184.95	36.00	5.77	8.84	13.92	1	1	1	Member Z
D SAE - 1.5X1.5X0.1563	-1.60	1.2D + 1.0W N	6.021	50	50	50	122.47	36.00	8.37	8.84	8.70	1	1	19	Member Z

Member Tension	Pu (kip)	Load Case	F <sub>y</sub> (ksi)	F <sub>u</sub> (ksi)	Φ <sub>c</sub> P <sub>n</sub> (kip)	Shear Φ <sub>R<sub>nv</sub></sub> (kip)	Bear Φ <sub>R<sub>n</sub></sub> (kip)	Blk Shear Φ <sub>t</sub> P <sub>n</sub> (kip)	# Bolt	# Hole	Use %	Controls
H SAE - 1.5X1.5X0.25	0.08	1.2D + 1.0W 60°	36.0	58	17.92	8.84	8.26	6.25	1	1	1	Blk Shear
D SAE - 1.5X1.5X0.1563	1.59	1.2D + 1.0W 90°	36.0	58	11.49	8.84	5.17	3.91	1	1	40	Blk Shear



ASSET: 283426, BROOKFIELD CT

CODE: ANSI/TIA-222-H

CUSTOMER: VERIZON WIRELESS

PROJECT: 14527561\_C3\_05

FORCE/STRESS SUMMARY

	Pu (kip)	Load Case	$\Phi R_{nt}$ (kip)	Use %	Num Bolts	Bolt Type
Max Splice Forces						
Bot Tension	13.52	0.9D + 1.0W 60°	81.36	17	4	5/8 A325

ASSET: 283426, BROOKFIELD CT  
 CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H  
 PROJECT: 14527561\_C3\_05

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	76.00	0.0896	-0.0031	0.1378	0.1378
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	80.00	0.099	-0.0030	0.1348	0.1348
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	76.00	0.0887	0.0027	0.1354	0.1354
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	80.00	0.098	0.0026	0.1342	0.1342
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	76.00	0.0925	0.0028	0.1420	0.142
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	80.00	0.1022	0.0027	0.1402	0.1402
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	76.00	0.0249	-0.0005	0.0376	0.0376
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	80.00	0.0275	-0.0004	0.0369	0.0369
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	76.00	0.0249	0.0004	0.0376	0.0376
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	80.00	0.0275	0.0004	0.0367	0.0367
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	76.00	0.0249	0.0004	0.0374	0.0374
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	80.00	0.0275	0.0004	0.0370	0.037
1.2D + 1.0Ev + 1.0Eh 90° Seismic	76.00	0.025	-0.0005	0.0380	0.038
1.2D + 1.0Ev + 1.0Eh 90° Seismic	80.00	0.0275	-0.0004	0.0370	0.037
1.2D + 1.0Ev + 1.0Eh 60° Seismic	76.00	0.025	0.0004	0.0381	0.0381
1.2D + 1.0Ev + 1.0Eh 60° Seismic	80.00	0.0275	0.0004	0.0368	0.0368
1.2D + 1.0Ev + 1.0Eh Normal Seismic	76.00	0.025	0.0004	0.0377	0.0377
1.2D + 1.0Ev + 1.0Eh Normal Seismic	80.00	0.0275	0.0004	0.0371	0.0371
1.2D + 1.0Di + 1.0Wi 90° 48.73 mph Wind with 0.85" Radial Ice	76.00	0.0912	-0.0032	0.1385	0.1385
1.2D + 1.0Di + 1.0Wi 90° 48.73 mph Wind with 0.85" Radial Ice	80.00	0.1007	-0.0031	0.1350	0.135
1.2D + 1.0Di + 1.0Wi 60° 48.73 mph Wind with 0.85" Radial Ice	76.00	0.0911	0.0028	0.1385	0.1385
1.2D + 1.0Di + 1.0Wi 60° 48.73 mph Wind with 0.85" Radial Ice	80.00	0.1006	0.0027	0.1357	0.1357
1.2D + 1.0Di + 1.0Wi Normal 48.73 mph Wind with 0.85" Radial Ice	76.00	0.0934	0.0028	0.1425	0.1425
1.2D + 1.0Di + 1.0Wi Normal 48.73 mph Wind with 0.85" Radial Ice	80.00	0.1031	0.0027	0.1398	0.1398
0.9D + 1.0W 90° 112.09 mph Wind with No Ice (Reduced DL)	76.00	0.3147	-0.0146	0.4836	0.4838
0.9D + 1.0W 90° 112.09 mph Wind with No Ice (Reduced DL)	80.00	0.3476	-0.0143	0.4726	0.4727
0.9D + 1.0W 60° 112.09 mph Wind with No Ice (Reduced DL)	76.00	0.3104	0.0113	0.4753	0.4754
0.9D + 1.0W 60° 112.09 mph Wind with No Ice (Reduced DL)	80.00	0.343	0.0111	0.4703	0.4703
0.9D + 1.0W Normal 112.09 mph Wind with No Ice (Reduced DL)	76.00	0.3245	0.0130	0.4951	0.4953
0.9D + 1.0W Normal 112.09 mph Wind with No Ice (Reduced DL)	80.00	0.3584	0.0126	0.4902	0.4902
1.2D + 1.0W 90° 112.09 mph Wind with No Ice	76.00	0.3154	-0.0147	0.4848	0.4851
1.2D + 1.0W 90° 112.09 mph Wind with No Ice	80.00	0.3483	-0.0144	0.4739	0.4739
1.2D + 1.0W 60° 112.09 mph Wind with No Ice	76.00	0.3111	0.0114	0.4763	0.4765
1.2D + 1.0W 60° 112.09 mph Wind with No Ice	80.00	0.3438	0.0111	0.4715	0.4715
1.2D + 1.0W Normal 112.09 mph Wind with No Ice	76.00	0.3253	0.0130	0.4967	0.4969
1.2D + 1.0W Normal 112.09 mph Wind with No Ice	80.00	0.3593	0.0127	0.4917	0.4917

DETAILED REACTIONS

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	*(-) Uplift and (+) Down		
					FX* (kip)	FY* (kip)	FZ* (kip)
1.2D + 1.0W Normal	6.11	0.00	0	1	0.00	48.31	-4.77
	6.11	0.00	120	1a	1.56	-19.34	-1.50
	6.11	0.00	240	1b	-1.56	-19.34	-1.50
1.2D + 1.0W 60°	6.11	0.00	0	1	-0.48	24.48	-2.32
	6.11	0.00	120	1a	-2.23	24.46	0.76
	6.11	0.00	240	1b	-3.52	-39.32	-2.05
1.2D + 1.0W 90°	6.11	0.00	0	1	-0.57	3.22	-0.19
	6.11	0.00	120	1a	-3.55	40.64	1.75
	6.11	0.00	240	1b	-3.23	-34.24	-1.56
0.9D + 1.0W Normal	6.11	0.00	0	1	0.00	47.45	-4.72
	6.11	0.00	120	1a	1.60	-20.12	-1.52
	6.11	0.00	240	1b	-1.60	-20.12	-1.52
0.9D + 1.0W 60°	6.11	0.00	0	1	-0.48	23.65	-2.27
	6.11	0.00	120	1a	-2.19	23.64	0.74
	6.11	0.00	240	1b	-3.56	-40.07	-2.07
0.9D + 1.0W 90°	6.11	0.00	0	1	-0.57	2.41	-0.14
	6.11	0.00	120	1a	-3.51	39.79	1.72
	6.11	0.00	240	1b	-3.27	-34.99	-1.58
1.2D + 1.0Di + 1.0Wi Normal	6.11	0.00	0	1	0.00	19.01	-1.43
	6.11	0.00	120	1a	0.43	-0.65	-0.42
	6.11	0.00	240	1b	-0.43	-0.65	-0.42
1.2D + 1.0Di + 1.0Wi 60°	6.11	0.00	0	1	-0.15	12.28	-0.74
	6.11	0.00	120	1a	-0.71	12.23	0.25
	6.11	0.00	240	1b	-1.04	-6.81	-0.60
1.2D + 1.0Di + 1.0Wi 90°	6.11	0.00	0	1	-0.17	5.93	-0.09
	6.11	0.00	120	1a	-1.10	16.96	0.54
	6.11	0.00	240	1b	-0.94	-5.19	-0.45
1.2D + 1.0Ev + 1.0Eh Normal	6.11	0.00	0	1	0.00	6.39	-0.47
	6.11	0.00	120	1a	-0.07	1.60	0.02
	6.11	0.00	240	1b	0.07	1.60	0.02
1.2D + 1.0Ev + 1.0Eh 60°	6.11	0.00	0	1	-0.02	4.79	-0.34
	6.11	0.00	120	1a	-0.30	4.79	0.15
	6.11	0.00	240	1b	-0.06	0.00	-0.03
1.2D + 1.0Ev + 1.0Eh 90°	6.11	0.00	0	1	-0.02	3.19	-0.20
	6.11	0.00	120	1a	-0.38	5.96	0.21
	6.11	0.00	240	1b	-0.03	0.43	-0.01
0.9D - 1.0Ev + 1.0Eh Normal	6.11	0.00	0	1	0.00	5.39	-0.41
	6.11	0.00	120	1a	-0.01	0.60	-0.01
	6.11	0.00	240	1b	0.01	0.60	-0.01
0.9D - 1.0Ev + 1.0Eh 60°	6.11	0.00	0	1	-0.02	3.79	-0.27
	6.11	0.00	120	1a	-0.25	3.79	0.12
	6.11	0.00	240	1b	-0.11	-1.00	-0.06
0.9D - 1.0Ev + 1.0Eh 90°	6.11	0.00	0	1	-0.02	2.19	-0.14
	6.11	0.00	120	1a	-0.33	4.96	0.18
	6.11	0.00	240	1b	-0.09	-0.57	-0.04
1.0D + 1.0W Service Normal	6.11	0.00	0	1	0.00	15.50	-1.47
	6.11	0.00	120	1a	0.35	-3.74	-0.37
	6.11	0.00	240	1b	-0.35	-3.74	-0.37
1.0D + 1.0W Service 60°	6.11	0.00	0	1	-0.14	8.74	-0.77
	6.11	0.00	120	1a	-0.73	8.73	0.27
	6.11	0.00	240	1b	-0.91	-9.45	-0.53
1.0D + 1.0W Service 90°	6.11	0.00	0	1	-0.16	2.68	-0.16
	6.11	0.00	120	1a	-1.11	13.31	0.55
	6.11	0.00	240	1b	-0.82	-7.98	-0.39

ASSET: 283426, BROOKFIELD CT  
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H  
PROJECT: 14527561\_C3\_05

MAXIMUM REACTIONS SUMMARY

	<u>Individual</u>		<u>Global (DL+WL+IL)</u>		<u>Global (DL+WL)</u>
Max Uplift:	40.07 (kip)	Moment Ice:	120.13 (kip-ft)	Moment:	413.36 (kip-ft)
Max Down:	48.31 (kip)	Total Down Ice:	17.7 (kip)	Total Down:	9.62 (kip)
Max Shear:	4.77 (kip)	Total Shear Ice:	2.28 (kip)	Total Shear:	7.76 (kip)
1.2D + 1.0W Normal					

# EXHIBIT 4



Colliers Engineering & Design,  
Architecture, Landscape Architecture, Surveying, CT P.C.  
1055 Washington Blvd  
Stamford, CT 06901  
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## New/Replacement Antenna Mount Analysis Report and PMI Requirements

Mount ReAnalysis-VZW

SMART Tool Project #: 10216609  
Colliers Engineering & Design Project #: 23777242 (Rev. 1)

December 22, 2023

### Site Information

Site ID: 5000386525-VZW / BROOKFIELD CT  
Site Name: BROOKFIELD CT  
Carrier Name: Verizon Wireless  
Address: 37 Carmen Hill Rd.  
Brookfield, Connecticut 06804  
Fairfield County  
Latitude: 41.49293889°  
Longitude: -73.42733056°

### Structure Information

Tower Type: 80-Ft Self Support  
Mount Type: 12.50-Ft Sector Mount

FUZE ID # 16486743

### Analysis Results

Sector Mount: 41.0% **Pass w/ Mount Replacement\***  
**((3) Site Pro 1 VFA12-HD)**

**\*Antennas and equipment to be installed in compliance with PMI Requirements of this mount analysis.**

### \*\*\*Contractor PMI Requirements:

**Included at the end of this MA report**  
**Available & Submitted via portal at <https://pmi.vzwsmart.com>**  
**For additional questions and support, please reach out to:**  
**[pmisupport@colliersengineering.com](mailto:pmisupport@colliersengineering.com)**

Report Prepared By: Prasanna Dhakal



12/26/2023

**Executive Summary:**

The objective of this report is to determine the capacity of the proposed antenna support mount at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards. The proposed mount was assumed to be installed properly to the existing tower per the manufacturer's instructions. Colliers Engineering & Design cannot verify that the proposed mount will fit properly and is not liable for any fit-up issues during installation.

This analysis is inclusive of the mount structure only and does not address the structural capacity of the supporting structure. This mounting frame was not analyzed as an anchor attachment point for fall protection. All climbing activities are required to have a fall protection plan completed by a competent person.

**Sources of Information:**

Document Type	Remarks
Radio Frequency Data Sheet (RFDS)	Verizon RFDS, Site ID: 323498, dated December 7, 2023
Mount Mapping Report	Onsight Services, LLC, Site ID: 468123, dated October 1, 2021
Previous Mount Analysis	Colliers Engineering & Design, Project #: 23777242, dated October 24, 2023
Mount Specification	Site Pro 1, Part #: VFA12-HD

**Analysis Criteria:**

Codes and Standards:	ANSI/TIA-222-H 2022 Connecticut State Building Code, Effective October 1, 2022
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), $V_{ULT}$ : 120 mph Ice Wind Speed (3-sec. Gust): 50 mph Design Ice Thickness: 1.00 in Risk Category: II Exposure Category: B Topographic Category: 1 Topographic Feature Considered: N/A Topographic Method: N/A Ground Elevation Factor, $K_e$ : 0.974
Seismic Parameters:	$S_s$ : 0.210 g $S_1$ : 0.055 g
Maintenance Parameters:	Wind Speed (3-sec. Gust): 30 mph Maintenance Load, $L_v$ : 250 lbs. Maintenance Load, $L_m$ : 500 lbs.
Analysis Software:	RISA-3D (V20)

**Final Loading Configuration:**

The following equipment has been considered for the analysis of the mounts:

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
77.00	77.00	6	Commscope	JAHH-65B-R3B	Retained
		3	Samsung	B2/B66A RRH-BR049	
		3	Samsung	B5/B13 RRH-BR04C	
		3	Commscope	CBC78T-DS-43-2X	
		3	Samsung	MT6413-77A	Added
		4	KAelus	BSF0020F3V1-1	
		1	Raycap	RVZDC-6627-PF-48	

Any proposed antennas not currently installed should be mounted such that the centerline of the antennas does not exceed 6 inches vertically from the center of the antenna mounts.

It is acceptable to install up to any three (3) of the OVP model numbers listed below as required at any location other than the mount face without affecting the structural capacity of the mount. If OVP units are installed on the mount face, a mount re-analysis may be required.

Model Number	Ports	AKA
DB-B1-6C-12AB-0Z	6	OVP-6
RVZDC-6627-PF-48	12	OVP-12

**Standard Conditions:**

1. All engineering services are performed on the basis that the information provided to Colliers Engineering & Design and used in this analysis is current and correct. The existing equipment loading has been applied at locations determined from the supplied documentation. Any deviation from the loading locations specified in this report shall be communicated to Colliers Engineering & Design to verify deviation will not adversely impact the analysis.
2. Mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer’s specifications.
3. For mount analyses completed from other data sources (including new replacement mounts) and not specifically mapped in accordance with the NSTD-446 Standard, the mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer’s specifications.
4. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
5. The mount was checked up to, and including, the bolts that fasten it to the mount collar/attachment and threaded rod connections in collar members if applicable. Local deformation and interaction between the mount collar/attachment and the supporting tower structure are outside the scope of this analysis.
6. All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Colliers Engineering & Design is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.



7. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
- Channel, Solid Round, Angle, Plate      ASTM A36 (Gr. 36)
  - HSS (Rectangular)                              ASTM 500 (Gr. B-46)
  - Pipe    ASTM A53 (Gr. B-35)
  - Threaded Rod                                      F1554 (Gr. 36)
  - Bolts     ASTM A325

Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Colliers Engineering & Design.

**Analysis Results:**

Component	Utilization %	Pass/Fail
<i>Face Horizontal</i>	24.5%	<i>Pass</i>
<i>Standoff Plate</i>	32.2%	<i>Pass</i>
<i>Standoff Horizontal</i>	19.4%	<i>Pass</i>
<i>Standoff Diagonal</i>	7.4%	<i>Pass</i>
<i>Tieback</i>	1.4%	<i>Pass</i>
<i>Mount Pipe</i>	41.0%	<i>Pass</i>
<i>Standoff Vertical</i>	8.7%	<i>Pass</i>
<i>Mount Connection</i>	10.9%	<i>Pass</i>

<b>Structure Rating – (Controlling Utilization of all Components)</b>	<b>41.0%</b>
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**Mount Connection Envelope Reactions:**

Connection Description	Elev. AGL (Ft)	Node Label	Envelope Wind Reactions				Envelope Wind + Ice Reactions			
			Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)	Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)
Bottom Standoff	75.18	N35	491	1298	0.265	0.000	985	1334	0.526	0.000
Top Standoff	78.52	N36	481	1523	0.276	0.000	959	1400	0.507	0.000

Notes:

- Axial loads act along the axis of the tower leg
- Lateral reactions act perpendicular to the tower leg
- Moment loads introduce bending moment to the tower leg
- Torsion loads introduce twisting moment to the tower leg
- Batch solutions by individual load cases are included at the end of this document

**Mount Steel (EPA)a per ANSI/TIA-222-H Section 2.6.11.2:**

Ice Thickness (In)	Mount Pipes Excluded		Mount Pipes Included	
	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)
0	15.6	5.6	24.7	14.7
0.5	24.5	10.7	37.4	23.7
1	32.6	15.2	49.4	32.0

Notes:

- (EPA)a values listed above may be used in the absence of more precise information
- (EPA)a values in the table above include 1 sector.
- Ka factors included in (EPA)a calculations

**Requirements:**

The proposed antenna mounts are **SUFFICIENT** for the final loading configuration (attachment 2) upon completion of the mount replacement (attachment 3) and requirements below.

- |   |
|---|
| 1. Refer to document at the end of this form for special instructions. Contact EOR if special instructions are not available. |
|---|

ANSI/ASSP rigging plan review services compliant with the requirements of ANSI/TIA 322 are available for a Construction Class IV site or other, if required. Separate review fees will apply.

**Attachments:**

1. Contractor Required Post Installation Inspection (PMI) Report Deliverables
2. Antenna Placement Diagrams
3. Mount Manufacturer Drawings
4. Existing Mount Photos
5. Analysis Calculations

# Mount Desktop – Post Modification Inspection (PMI) Report Requirements

## Documents & Photos Required from Contractor – **New Mount Passing MA**

Electronic pdf version of this can be downloaded at <https://pmi.vzwsmart.com>

For additional questions and support, please reach out to [pmisupport@colliersengineering.com](mailto:pmisupport@colliersengineering.com)

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MDG #: 5000386525

SMART Project #: 10216609

Fuze Project ID: 16486743

**Purpose** – to provide SMART Tool structural vendor the proper documentation in order to complete the required Mount Desktop review of the Post Modification Inspection Report.

- Contractor is responsible for making certain the photos provided as noted below provide confirmation that the installation was completed in accordance with this Passing Mount Analysis.
- Contractor shall relay any data that can impact the performance of the mount, this includes safety issues.

### **Base Requirements:**

- If installation will cause damage to the structure, the climbing facility, or safety climb if present or any installed system, SMART Tool vendor to be notified prior to install. Any special photos outside of the standard requirements will be indicated on the drawings.
- Provide “as built mount drawings” showing contractor’s name, contact information, preparer’s signature, and date. Any deviations from the drawings (Proposed modification) shall be shown. NOTE: If loading is different than what is conveyed in the passing mount analysis (MA) contact the SMART Tool vendor immediately.
- Each photo should be time and date stamped.
- Photos should be high resolution.
- Contractor shall ensure that the safety climb wire rope is supported and not adversely impacted by the install of the modification components. This may involve the install of wire rope guides, or other items to protect the wire rope. If there is conflict, contact the SMART Tool engineer for recommendations.
- The PMI can be accessed at the following portal: <https://pmi.vzwsmart.com>

### **Photo Requirements:**

- Photos taken at ground level
  - Photo of Gate Signs showing the tower owner, site name, and number.
  - Overall tower structure after installation.
  - Photos of the mount after installation; if the mounts are at different rad elevations, pictures must be provided for all elevations that equipment was installed.
- Photos taken at Mount Elevation
  - Photos showing the safety climb wire rope above and below the mount prior to installation.
  - Photos showing the climbing facility and safety climb if present.
  - Photos showing each individual sector after installation of mounts. Each entire sector shall be in one photo to show the interconnection of members.

- These photos shall also certify that the placement and geometry of the equipment on the mount is as depicted in the antenna placement diagram in this form.
- Photos that show the model number of each antenna and piece of equipment installed per sector.
- Photos of each installed mount; pictures shall also include connection hardware (U-bolts, bolts, nuts, all-threaded rods, etc.)
- Photos showing the installed mount elevation.

**Antenna & Equipment Placement and Geometry Confirmation:**

- The contractor shall certify that the antenna & equipment placement and geometry is in accordance with the sketch and table as included in the mount analysis and noted below.
  - The contractor certifies that the photos support and the equipment on the mount is as depicted on the sketch and table included in this form and with the mount analysis provided.

OR

- The contractor notes that the equipment on the mount is not in accordance with the sketch and has noted the differences below and provided photo documentation of any alterations.

**Special Instructions / Validation as required from the MA or any other information the contractor deems necessary to share that was identified:**

**Issue:**

- |   |
|---|
| 1. Refer to document at the end of this form for special instructions. Contact EOR if special instructions are not available. |
|---|

**Response:**

--

**Special Instruction Confirmation:**

- The contractor has read and acknowledges the above special instructions.

**Contractor certifies that the climbing facility / safety climb was not damaged prior to starting work:**

- Yes       No

**Contractor certifies no new damage created during the current installation:**

- Yes       No

**Contractor to certify the condition of the safety climb and verify no damage when leaving the site:**

Safety Climb in Good Condition

Safety Climb Damaged

**Comments:**

--

**New Mount Certification:**

- The contractor certifies that the New Mount installed is as specified in the Passing Mount Analysis.
- The contractor notes that the New Mount installed is not as specified and engineering approval was received for the New Mount installed.

**Certifying Individual:**

Company:	
Employee Name:	
Contact Phone:	
Email:	
Date:	



MDG #: **5000386525**

Site Name: **Brookfield CT**

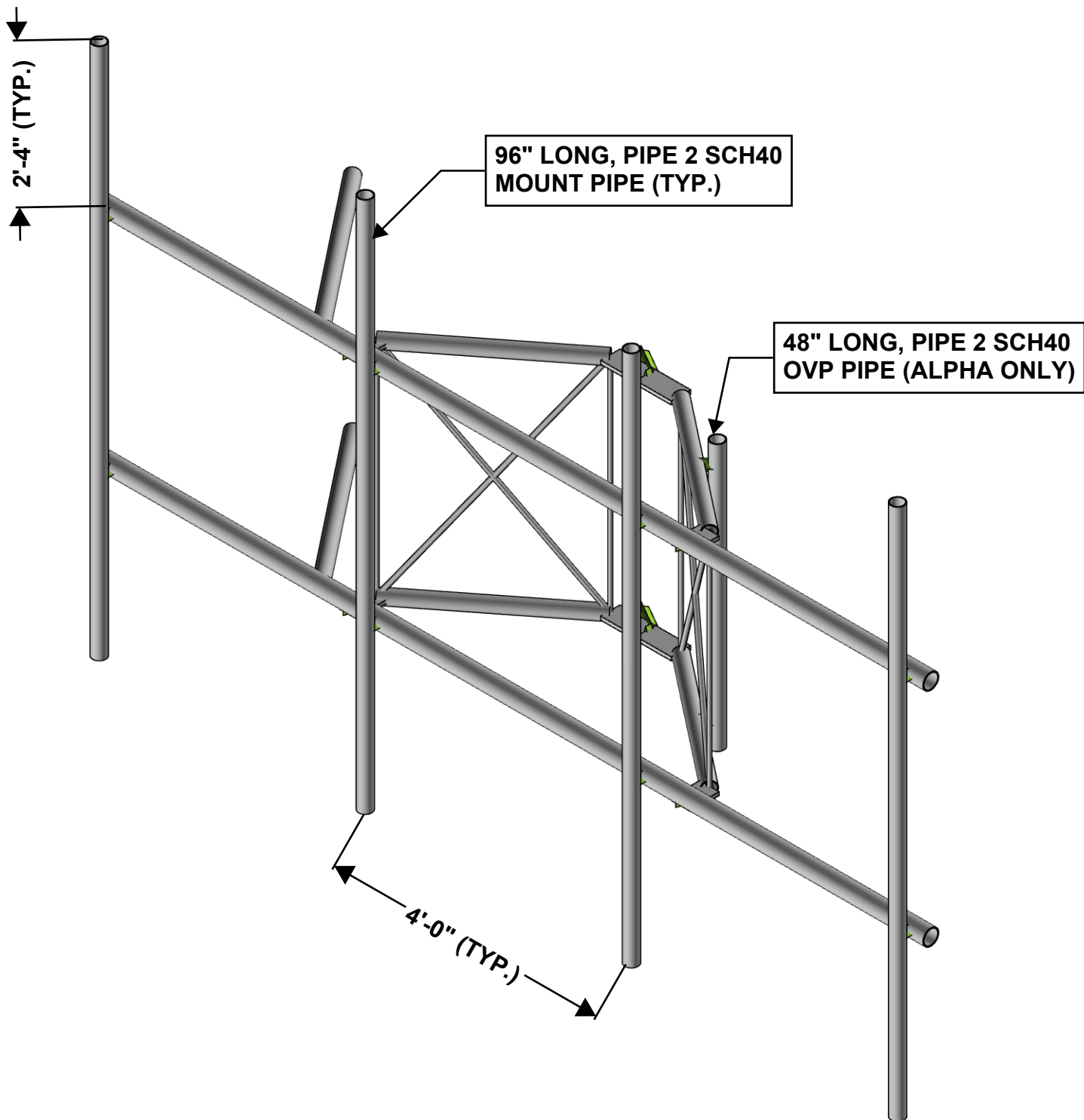
Fuze ID #: **16486743**

Colliers Engineering & Design Project #: **23777242 (Rev. 1)**

### **PMI INSTRUCTIONS:**

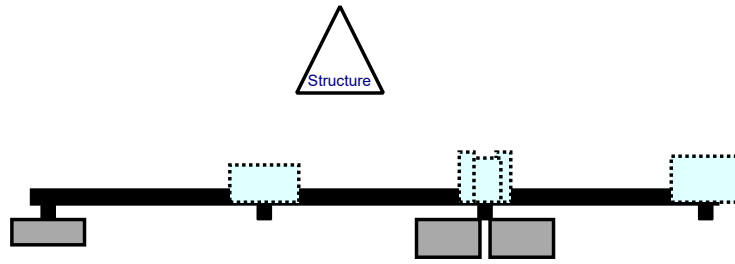
1. Contractor shall remove existing mount and associated hardware. Contractor shall restore any degradation in galvanization on tower due to removed mount and protect with two (2) coats of cold galvanization (Zinga or Zinc Kote).
2. Contractor shall install the proposed Site Pro 1, VFA12-HD mounts in accordance with manufacturer specifications and the Mount Replacement Sketch. Contact EOR if these documents are not available.
3. Attach tiebacks to adjacent tower legs. Proposed tiebacks shall extend no more than 12" beyond the plane of the tower face. Contractor shall trim as require and protect cut end with two (2) coats of cold galvanization (Zinga or Zinc Kote).
4. Contractor shall install (4) 96" long PIPE 2 SCH40 mount pipes per sector. Refer to placement diagrams and Mount Replacement Sketch. Contact EOR if these documents are not available.
5. Contractor shall install OVP on a new 48" long PIPE 2 SCH 40 pipe connected to the welded tabs of the alpha sector standoff.
6. Contractor shall install the proposed filter units on new Site Pro 1 Dual Swivel Mount Kit (Part #: RRUDSM or EOR approved equivalent) in the location shown in the placement diagrams.
7. Contractor shall inspect climbing facilities and safety climb and ensure they are in good condition. Contractor shall install safety climb wire rope guides in locations where wire rope is rubbing against the mount or mount-to-tower connection steel. Wire brush clean any observed corrosion and protect with two (2) coats of cold galvanization (Zinga or Zinc Kote). Contractor shall provide photos of wire rope guide installation as part of PMI documents. Contact EOR if additional guidance is required.

# MOUNT REPLACEMENT SKETCH

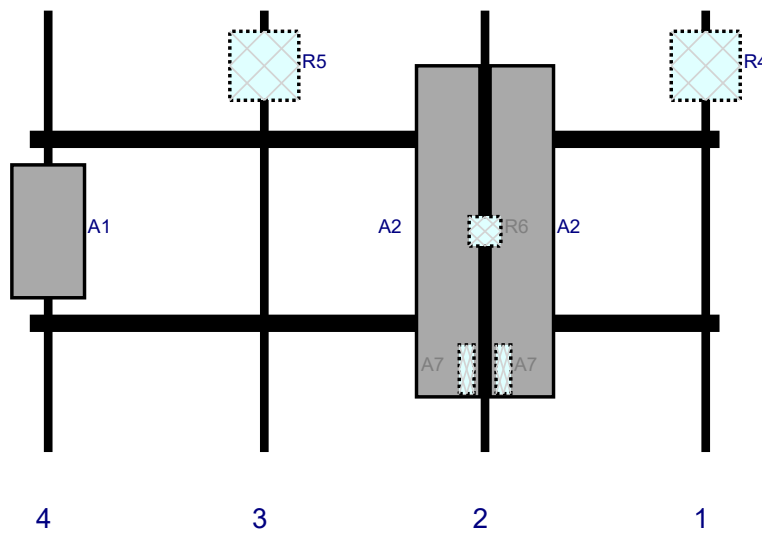


MOUNT ISOMETRIC VIEW  
N.T.S

Plan View



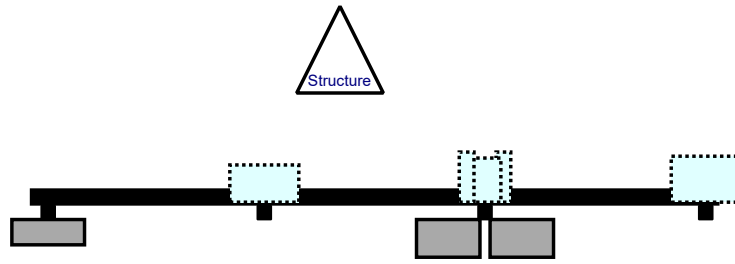
Front View - Looking at Structure



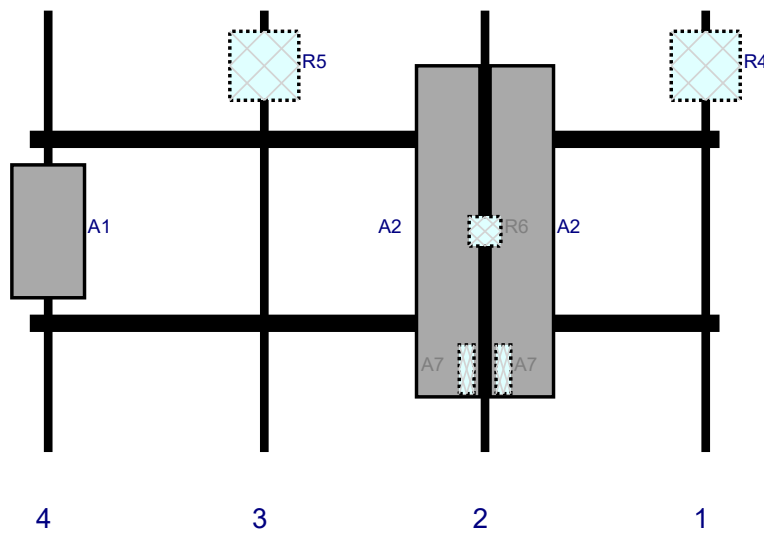
Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
R4	B2/B66A RRH-BR049	15	15	147	1	a	Behind	12	0	Retained	04/28/2021
A2	JAHH-65B-R3B	72	13.8	99	2	a	Front	48	8	Retained	04/28/2021
A2	JAHH-65B-R3B	72	13.8	99	2	b	Front	48	-8	Retained	04/28/2021
R6	CBC78T-DS-43-2X	6.4	6.9	99	2	a	Behind	48	0	Retained	04/28/2021
A7	BSF0020F3V1-1	10.6	3.2	99	2	a	Behind	78	-4	Added	
A7	BSF0020F3V1-1	10.6	3.2	99	2	b	Behind	78	4	Added	
R5	B5/B13 RRH-BR04C	15	15	51	3	a	Behind	12	0	Retained	04/28/2021
A1	MT6413-77A	28.9	15.8	4	4	a	Front	48	0	Retained	
OVP	RVZDC-6627-PF-48	29.5	16.5			Member				Added	



Plan View

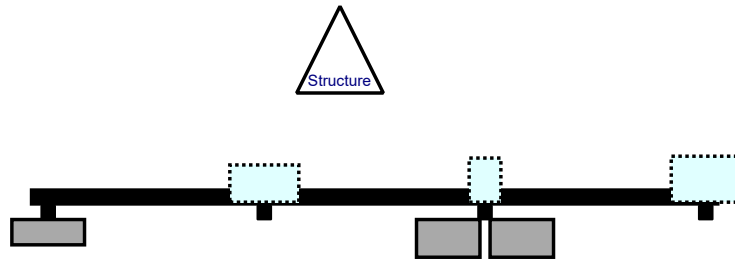


Front View - Looking at Structure

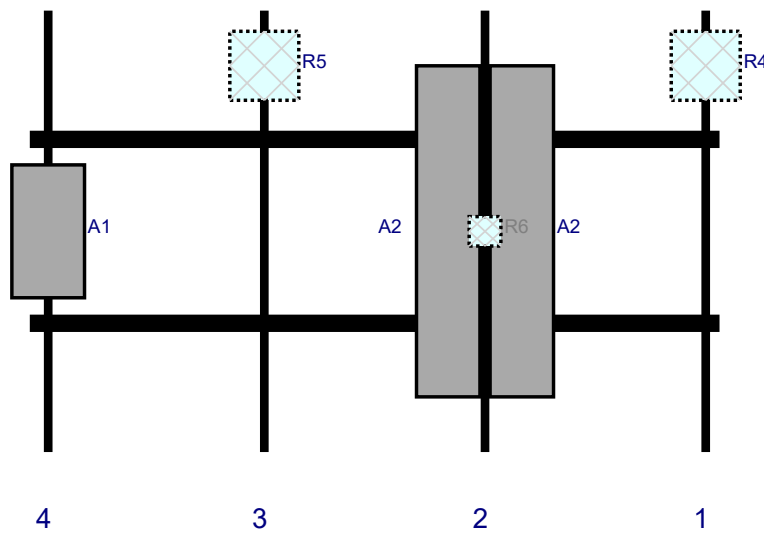


Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
R4	B2/B66A RRH-BR049	15	15	147	1	a	Behind	12	0	Retained	04/28/2021
A2	JAHH-65B-R3B	72	13.8	99	2	a	Front	48	8	Retained	04/28/2021
A2	JAHH-65B-R3B	72	13.8	99	2	b	Front	48	-8	Retained	04/28/2021
R6	CBC78T-DS-43-2X	6.4	6.9	99	2	a	Behind	48	0	Retained	04/28/2021
A7	BSF0020F3V1-1	10.6	3.2	99	2	a	Behind	78	-4	Added	
A7	BSF0020F3V1-1	10.6	3.2	99	2	b	Behind	78	4	Added	
R5	B5/B13 RRH-BR04C	15	15	51	3	a	Behind	12	0	Retained	04/28/2021
A1	MT6413-77A	28.9	15.8	4	4	a	Front	48	0	Retained	

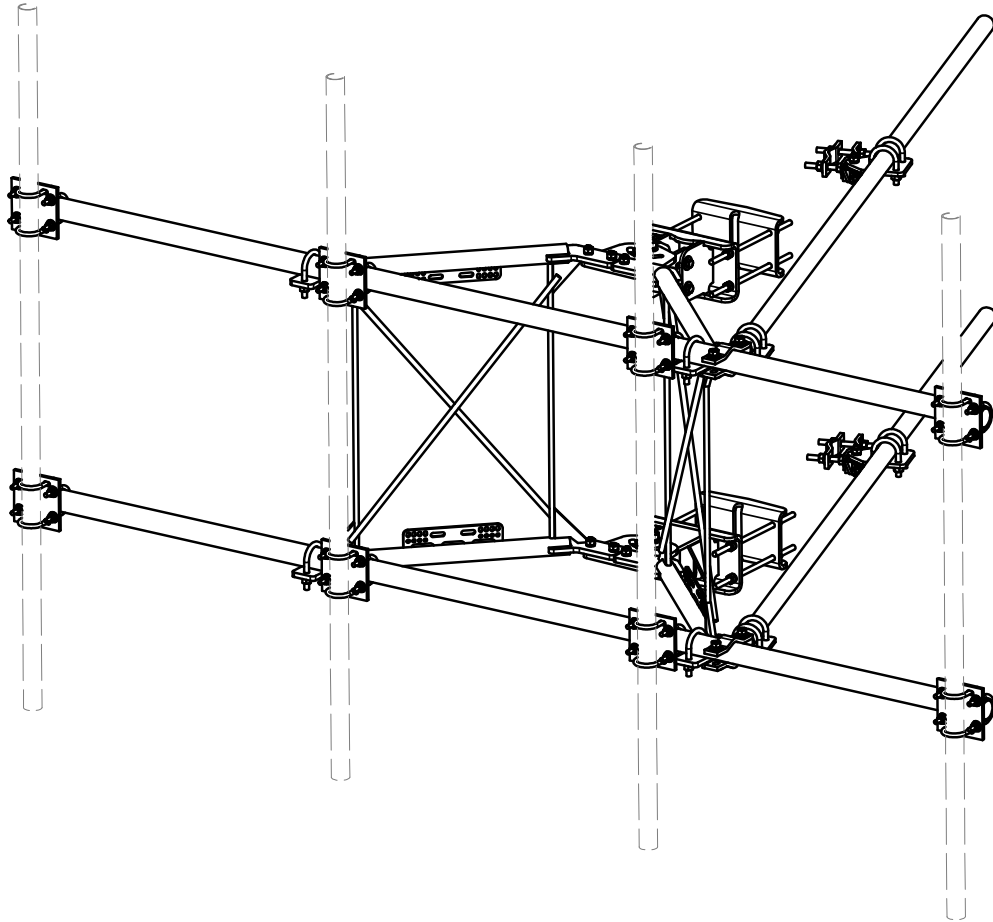
Plan View



Front View - Looking at Structure



Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
R4	B2/B66A RRH-BR049	15	15	147	1	a	Behind	12	0	Retained	04/28/2021
A2	JAHH-65B-R3B	72	13.8	99	2	a	Front	48	8	Retained	04/28/2021
A2	JAHH-65B-R3B	72	13.8	99	2	b	Front	48	-8	Retained	04/28/2021
R6	CBC78T-DS-43-2X	6.4	6.9	99	2	a	Behind	48	0	Retained	04/28/2021
R5	B5/B13 RRH-BR04C	15	15	51	3	a	Behind	12	0	Retained	04/28/2021
A1	MT6413-77A	28.9	15.8	4	4	a	Front	48	0	Retained	



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	2	X-VFAW	SUPPORT ARM		71.41	142.81
2	1	X-HDCAMTBW	CLAMP WELDMENT FOR BCAM-HD		33.86	33.86
3	1	X-MHTPHD	MULTI-HOLE TAPER PLATE WELDMENT		36.24	36.24
4	2	X-VFAPL4	VFA-HD PIVOT PLATE	12 in	15.88	31.77
5	2	X-LCBP4	BENT BACKING PLATE	13 in	19.00	38.01
6	1	X-HDCAMSS	ANGLE ADJUSTMENT WELDMENT FOR BCAM-HD		16.39	16.39
7	4	X-SPTB	SLIDING PIPE TIE BACK PLATE	5 1/2 in	5.87	23.49
8	1	X-HDCAMSP	POSITIONING PLATE WELDMENT FOR BCAM-HD		2.58	2.58
9	4	X-TBCA	TIE BACK CLIP ANGLE		2.01	8.02
10	8	SCX2	CROSSOVER PLATE	7 in	4.80	38.37
11	4	MCP	CLAMP HALF 1/2" THICK, 11-5/8" LONG	12 1/16 in	3.59	14.37
12	8	DCP	1/2" THICK, 5-3/4" CTR TO CENTER CLAMP HALF	8 1/8 in	2.36	18.90
13	2	P2126	2-3/8" X 126" (2" SCH. 40) GALVANIZED PIPE	126 in	40.75	81.50
14	2	P30150	2-7/8" X 150" (2-1/2" SCH. 40) GALVANIZED PIPE	150 in	76.94	153.87
15	4	A34212	3/4" x 2-1/2" UNC HEX BOLT (A325)	2 1/2 in	0.48	1.92
16	4	G34FW	3/4" HDG USS FLATWASHER		0.06	0.24
17	4	G34LW	3/4" HDG LOCKWASHER		0.04	0.17
18	4	G34NUT	3/4" HDG HEAVY 2H HEX NUT		0.21	0.85
19	8	G58R-18	5/8" x 18" THREADED ROD (HDG.)	18 in	0.40	3.19
20	4	G58R-12	5/8" x 12" THREADED ROD (HDG.)		1.05	4.18
21	4	G58R-8	5/8" x 8" THREADED ROD (HDG.)		0.70	2.79
22	4	X-UB5300	5/8" X 3" X 5-1/4" X 2-1/2" U-BOLT (HDG.)		1.15	4.60
23	8	X-UB5258	5/8" X 2-5/8" X 4-1/2" X 2" U-BOLT (HDG.)		1.00	8.00
24	2	G5807	5/8" x 7" HDG HEX BOLT GR5 FULL THREAD	7 in	0.70	1.41
25	1	G5806	5/8" x 6" HDG HEX BOLT GR5 FULL THREAD	6 in	0.62	0.62
26	8	G5804	5/8" x 4" HDG HEX BOLT GR5		0.44	3.55
27	4	G5802	5/8" x 2" HDG HEX BOLT GR5		0.27	1.08
28	8	A582114	5/8" x 2-1/4" HDG A325 HEX BOLT	2 1/4 in	0.31	2.50
29	25	G58FW	5/8" HDG USS FLATWASHER	1/8 in	0.07	1.76
30	66	G58LW	5/8" HDG LOCKWASHER		0.03	1.72
31	71	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	9.22
32	32	X-UB1300	1/2" X 3" X 5" X 2" GALV U-BOLT		0.74	23.64
33	16	X-UB1212	1/2" X 2" X 3" X 1-1/4" U-BOLT (HDG.)		0.60	9.56
34	64	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	2.18
35	64	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.89
36	64	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	4.58
					<b>TOTAL WT. #</b>	<b>738.06</b>

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
D	UPDATED BCAM VERSION 1 TO BCAM VERSION 2		CEK	6/29/2018
C	UPDATED PIN LEG CONNECTION TO B-CAM CONNECTION		CEK	12/7/2017
B	CHANGED TIE-BACK BACK CONNECTION		CEK	7/31/2017
A	CHANGED TIE-BACK FRONT CONNECTION		CEK	2/2/2017

**TOLERANCE NOTES**  
**TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:  
 SAWED, SHEARED AND GAS CUT EDGES ( $\pm 0.030"$ )  
 DRILLED AND GAS CUT HOLES ( $\pm 0.030"$ ) - NO CONING OF HOLES  
 LASER CUT EDGES AND HOLES ( $\pm 0.010"$ ) - NO CONING OF HOLES  
 BENDS ARE  $\pm 1/2$  DEGREE  
 ALL OTHER MACHINING ( $\pm 0.030"$ )  
 ALL OTHER ASSEMBLY ( $\pm 0.060"$ )**

PROPRIETARY NOTE:  
 THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION		12' 6" HEAVY DUTY V-FRAME ASSEMBLY WITH TWO STIFF ARMS	
CPD NO.	DRAWN BY	ENG. APPROVAL	
	CEK 1/25/2017		
CLASS	SUB	DRAWING USAGE	CHECKED BY
81	02	CUSTOMER	BMC 12/13/2017

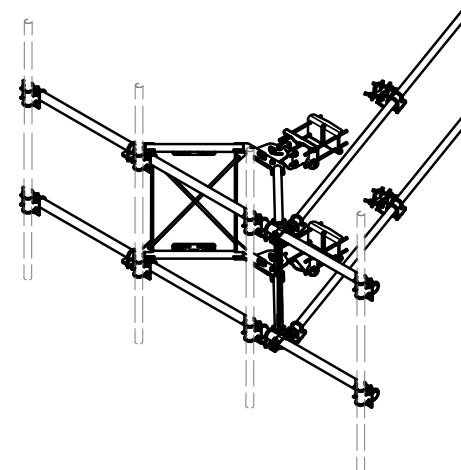
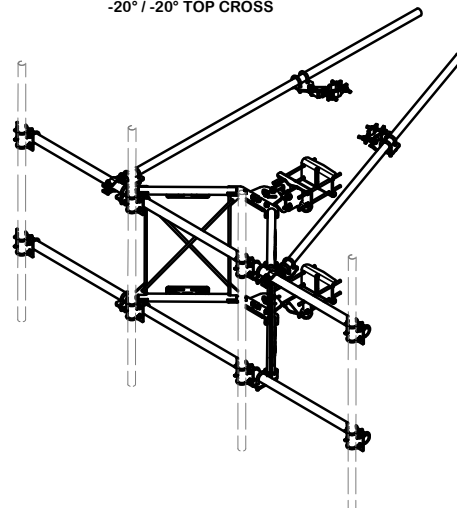
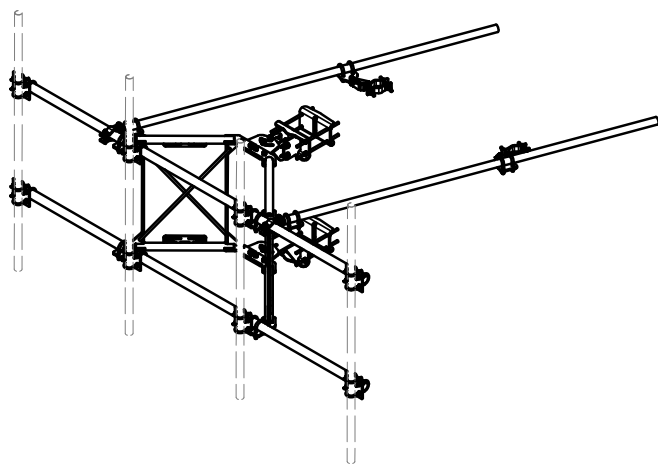
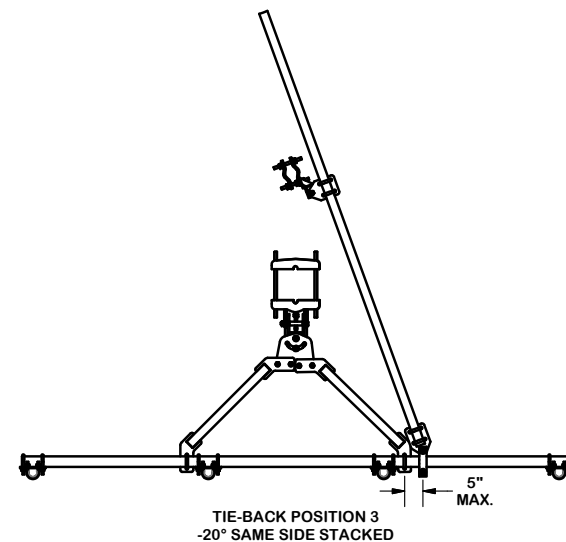
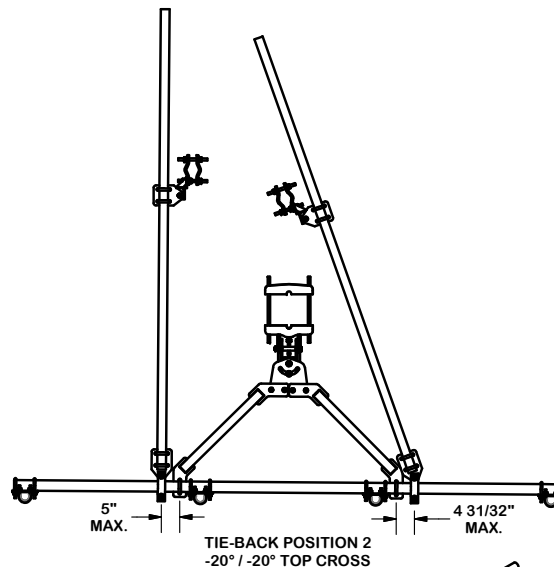
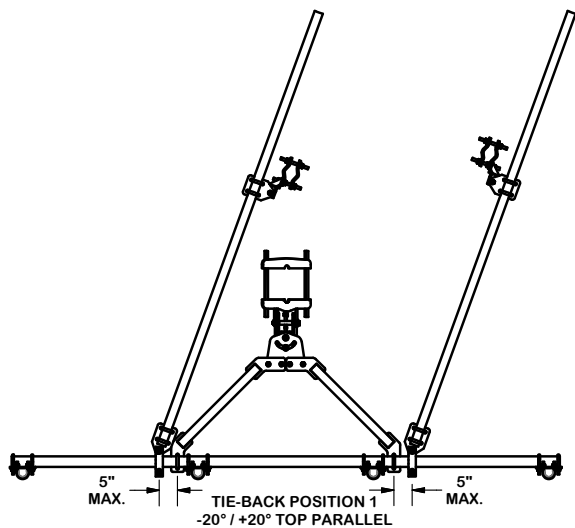
**A valmont COMPANY**

Locations:  
 New York, NY  
 Atlanta, GA  
 Los Angeles, CA  
 Plymouth, IN  
 Salem, OR  
 Dallas, TX

Engineering Support Team:  
 1-888-753-7446

PART NO.	VFA12-HD	1 OF 5
DWG. NO.	VFA12-HD	

# TIE-BACK POSITIONS



REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
D	UPDATED BCAM VERSION 1 TO BCAM VERSION 2		CEK	6/29/2018
C	UPDATED PIN LEG CONNECTION TO B-CAM CONNECTION		CEK	12/7/2017
B	CHANGED TIE-BACK BACK CONNECTION		CEK	7/31/2017
A	CHANGED TIE-BACK FRONT CONNECTION		CEK	2/2/2017

REVISION HISTORY

**TOLERANCE NOTES**

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:  
 SAWED, SHEARED AND GAS CUT EDGES ( $\pm 0.030"$ )  
 DRILLED AND GAS CUT HOLES ( $\pm 0.030"$ ) - NO CONING OF HOLES  
 LASER CUT EDGES AND HOLES ( $\pm 0.010"$ ) - NO CONING OF HOLES  
 BENDS ARE  $\pm 1/2$  DEGREE  
 ALL OTHER MACHINING ( $\pm 0.030"$ )  
 ALL OTHER ASSEMBLY ( $\pm 0.060"$ )

PROPRIETARY NOTE:  
 THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

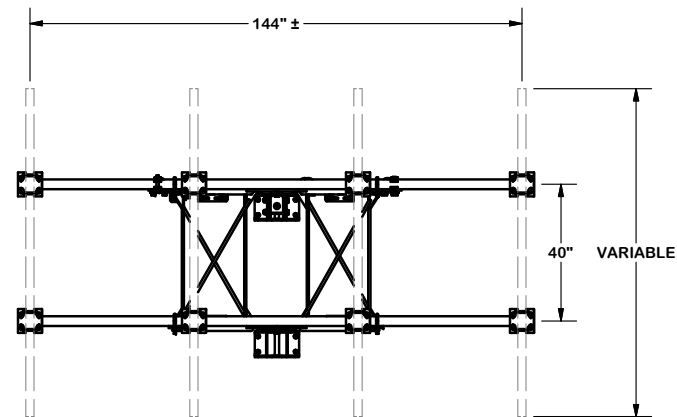
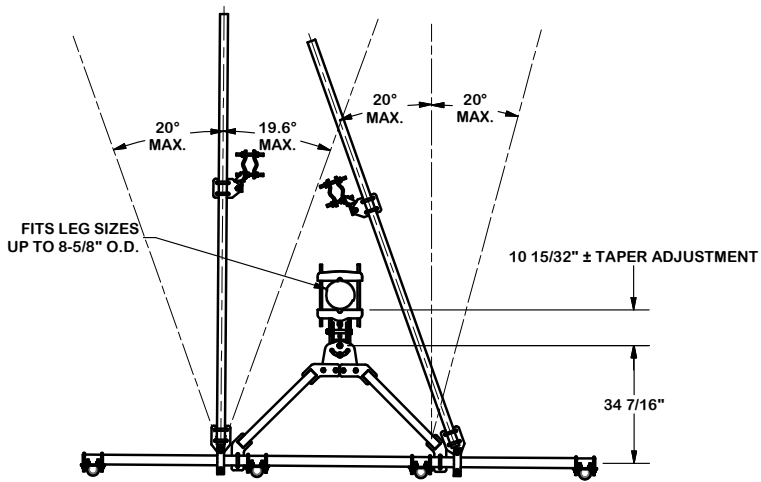
DESCRIPTION  
 12' 6" HEAVY DUTY  
 V-FRAME ASSEMBLY  
 WITH TWO STIFF ARMS

CPD NO.	DRAWN BY	ENG. APPROVAL
	CEK 1/25/2017	
CLASS	DRAWING USAGE	CHECKED BY
81	CUSTOMER	BMC 12/13/2017

**SITE PRO 1**  
 Engineering Support Team:  
 1-888-753-7446

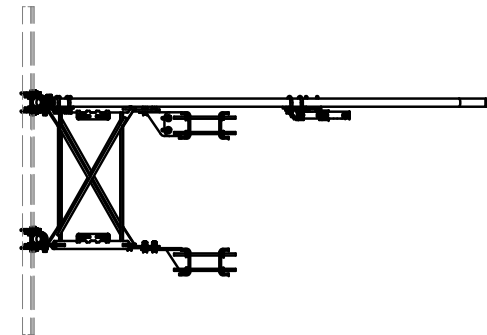
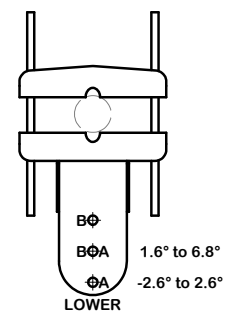
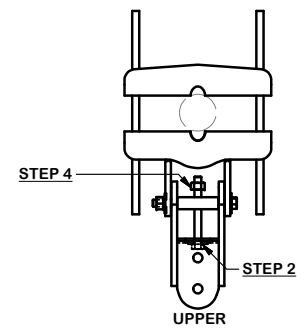
Locations:  
 New York, NY  
 Atlanta, GA  
 Los Angeles, CA  
 Plymouth, IN  
 Salem, OR  
 Dallas, TX

PART NO.	VFA12-HD	PAGE
DWG. NO.	VFA12-HD	2 OF 5



**ANGLE CALIBRATING PROCEDURE:**

1. MEASURE TOWER TAPER AND PICK LOWER BRACKET HOLE:
  - HOLE A = -2.6° TO 2.6°
  - HOLE B = 1.6° TO 6.8°
2. USE CALIBRATING BOLT TO ADJUST FRAME TO DESIRED TAPER
3. TORQUE LOCKING BOLTS TO 100 ft.-lbs.
4. ADVANCE LOCKING NUT TO POSITIONING PLATE, THEN TIGHTEN.



REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
D	UPDATED BCAM VERSION 1 TO BCAM VERSION 2		CEK	6/29/2018
C	UPDATED PIN LEG CONNECTION TO B-CAM CONNECTION		CEK	12/7/2017
B	CHANGED TIE-BACK BACK CONNECTION		CEK	7/31/2017
A	CHANGED TIE-BACK FRONT CONNECTION		CEK	2/2/2017
REVISION HISTORY				

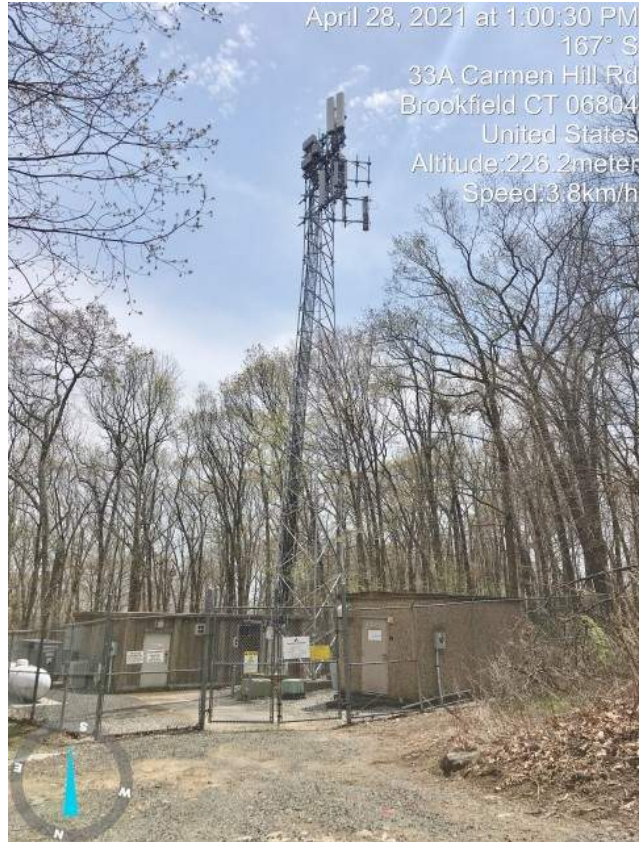
**TOLERANCE NOTES**

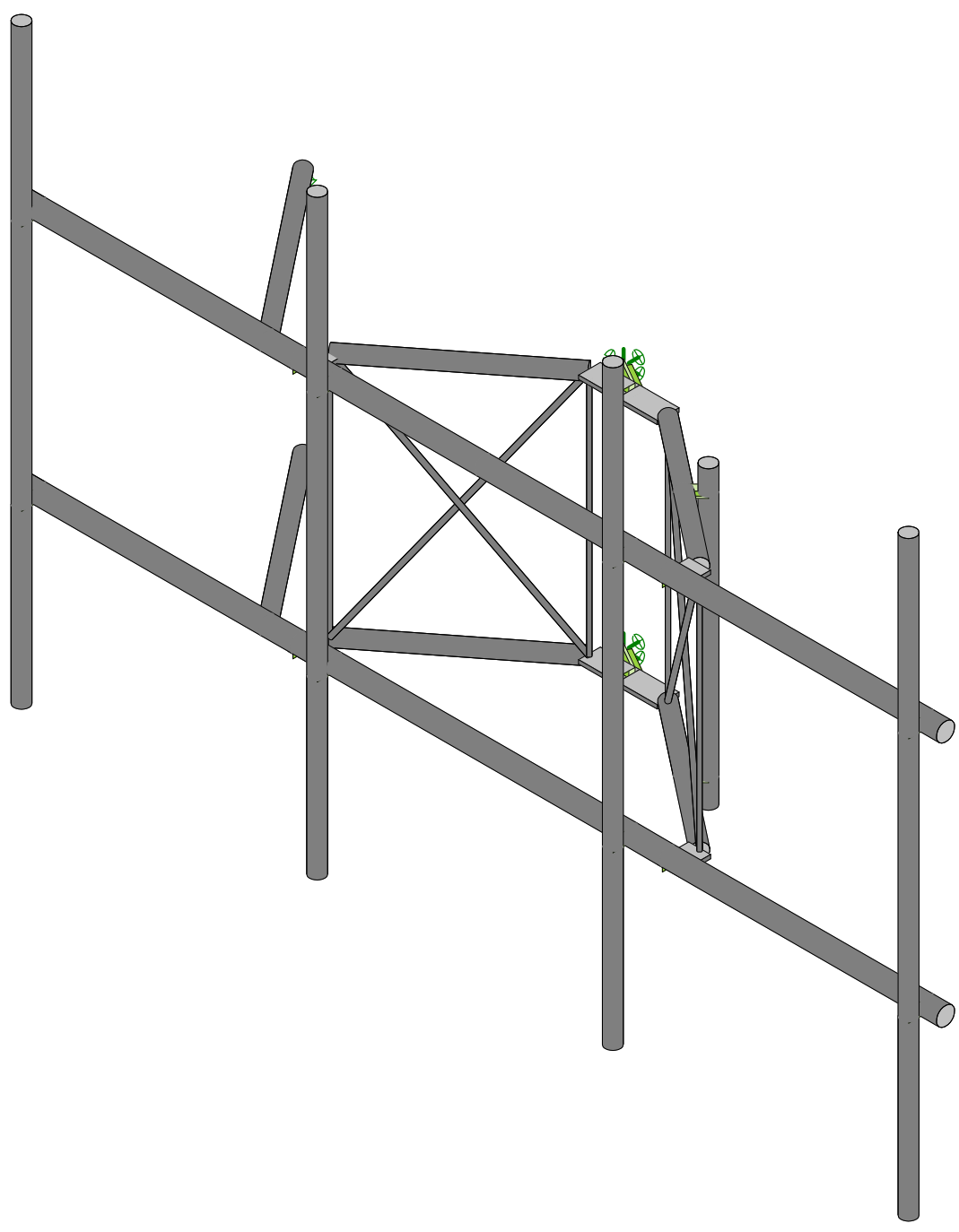
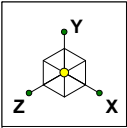
TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:  
 SAWED, SHEARED AND GAS CUT EDGES ( $\pm 0.030"$ )  
 DRILLED AND GAS CUT HOLES ( $\pm 0.030"$ ) - NO CONING OF HOLES  
 LASER CUT EDGES AND HOLES ( $\pm 0.010"$ ) - NO CONING OF HOLES  
 BENDS ARE  $\pm 1/2$  DEGREE  
 ALL OTHER MACHINING ( $\pm 0.030"$ )  
 ALL OTHER ASSEMBLY ( $\pm 0.060"$ )

PROPRIETARY NOTE:  
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DESCRIPTION		12' 6" HEAVY DUTY V-FRAME ASSEMBLY WITH TWO STIFF ARMS	
CPD NO.	DRAWN BY	ENG. APPROVAL	
	CEK 1/25/2017		
CLASS	SUB	DRAWING USAGE	CHECKED BY
81	02	CUSTOMER	BMC 12/13/2017

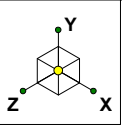
 A valmont COMPANY	Locations: New York, NY Atlanta, GA Los Angeles, CA Plymouth, IN Salem, OR Dallas, TX	
	Engineering Support Team: 1-888-753-7446	
PART NO.	VFA12-HD	PAGE 3 OF 5
DWG. NO.	VFA12-HD	





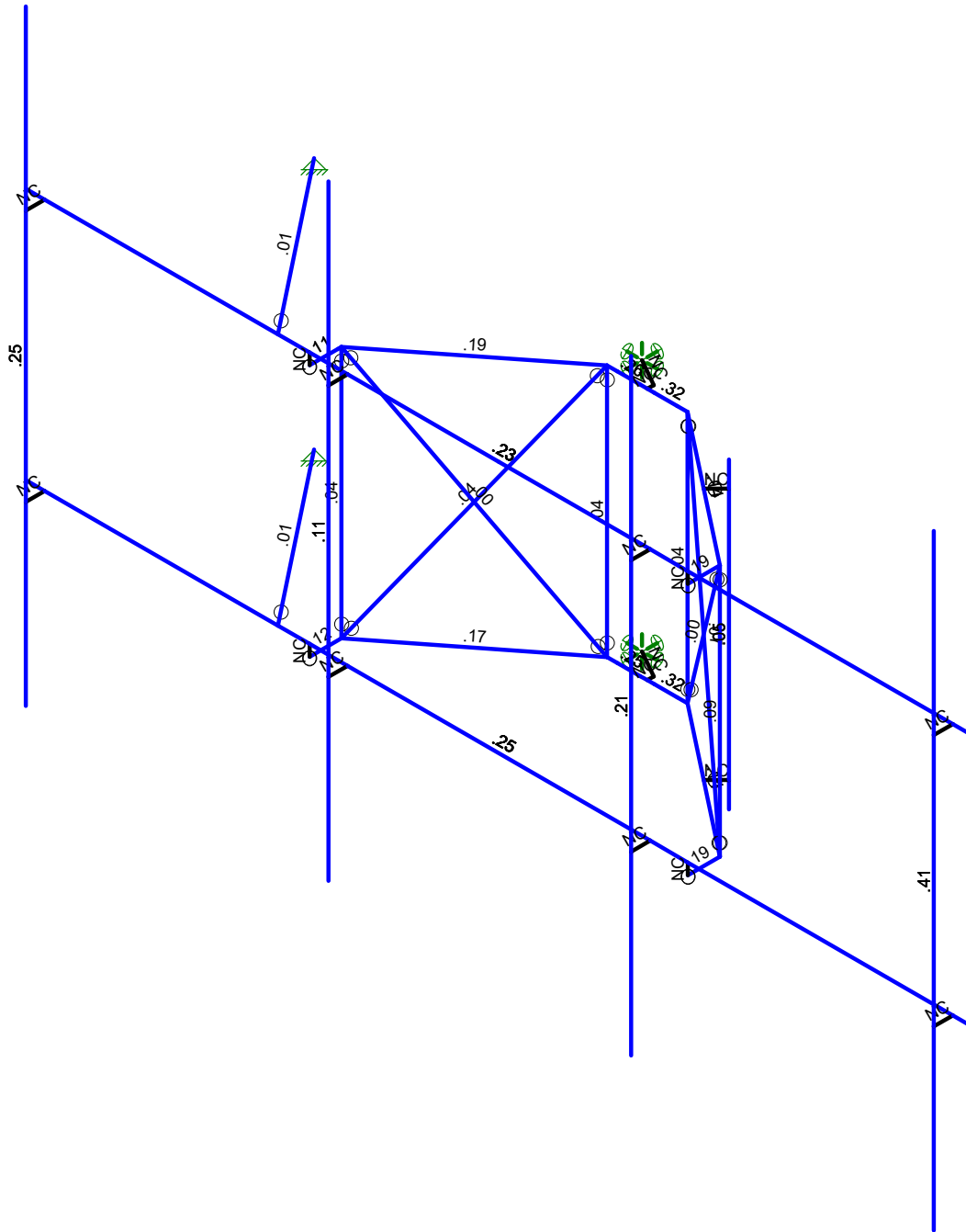
Envelope Only Solution

Colliers Engineering & De...		SK - 1
	Antenna Mount Analysis	Dec 22, 2023 at 1:41 PM
Project # 23777242		5000386525-VZW_MT_LOT_A_H....



Code Check ( Env )

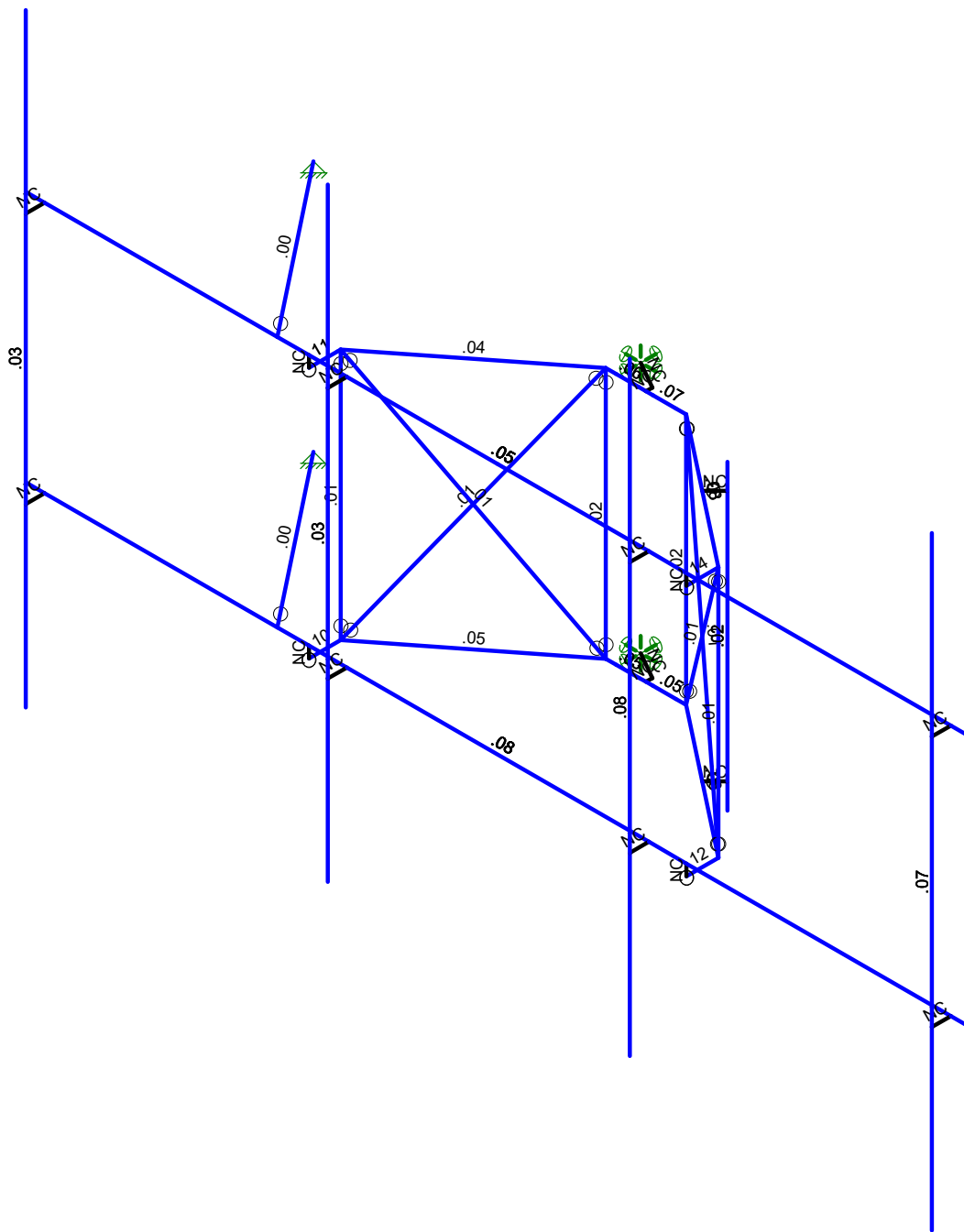
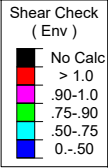
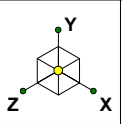
Black	No Calc
Red	> 1.0
Magenta	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0.-.50



Member Code Checks Displayed (Enveloped)  
Envelope Only Solution

Colliers Engineering & De...	Antenna Mount Analysis	SK - 2
		Dec 22, 2023 at 1:53 PM
Project # 23777242		5000386525-VZW_MT_LOT_A_H....





Member Shear Checks Displayed (Enveloped)  
Envelope Only Solution

Colliers Engineering & De...	Antenna Mount Analysis	SK - 3
		Dec 22, 2023 at 1:53 PM
Project # 23777242		5000386525-VZW_MT_LOT_A_H....



**Basic Load Cases**

	BLC Description	Category	X Gr...	Y Gr...	Z Gr...	Joint	Point	Distributed	Area(Member)	Surfa...
1	Antenna D	None					42			
2	Antenna Di	None					42			
3	Antenna Wo (0 Deg)	None					42			
4	Antenna Wo (30 Deg)	None					42			
5	Antenna Wo (60 Deg)	None					42			
6	Antenna Wo (90 Deg)	None					42			
7	Antenna Wo (120 Deg)	None					42			
8	Antenna Wo (150 Deg)	None					42			
9	Antenna Wo (180 Deg)	None					42			
10	Antenna Wo (210 Deg)	None					42			
11	Antenna Wo (240 Deg)	None					42			
12	Antenna Wo (270 Deg)	None					42			
13	Antenna Wo (300 Deg)	None					42			
14	Antenna Wo (330 Deg)	None					42			
15	Antenna Wi (0 Deg)	None					42			
16	Antenna Wi (30 Deg)	None					42			
17	Antenna Wi (60 Deg)	None					42			
18	Antenna Wi (90 Deg)	None					42			
19	Antenna Wi (120 Deg)	None					42			
20	Antenna Wi (150 Deg)	None					42			
21	Antenna Wi (180 Deg)	None					42			
22	Antenna Wi (210 Deg)	None					42			
23	Antenna Wi (240 Deg)	None					42			
24	Antenna Wi (270 Deg)	None					42			
25	Antenna Wi (300 Deg)	None					42			
26	Antenna Wi (330 Deg)	None					42			
27	Antenna Wm (0 Deg)	None					42			
28	Antenna Wm (30 Deg)	None					42			
29	Antenna Wm (60 Deg)	None					42			
30	Antenna Wm (90 Deg)	None					42			
31	Antenna Wm (120 Deg)	None					42			
32	Antenna Wm (150 Deg)	None					42			
33	Antenna Wm (180 Deg)	None					42			
34	Antenna Wm (210 Deg)	None					42			
35	Antenna Wm (240 Deg)	None					42			
36	Antenna Wm (270 Deg)	None					42			
37	Antenna Wm (300 Deg)	None					42			
38	Antenna Wm (330 Deg)	None					42			
39	Structure D	None		-1						
40	Structure Di	None						29		
41	Structure Wo (0 Deg)	None						58		
42	Structure Wo (30 Deg)	None						58		
43	Structure Wo (60 Deg)	None						58		
44	Structure Wo (90 Deg)	None						58		
45	Structure Wo (120 Deg)	None						58		
46	Structure Wo (150 Deg)	None						58		
47	Structure Wo (180 Deg)	None						58		
48	Structure Wo (210 Deg)	None						58		
49	Structure Wo (240 Deg)	None						58		
50	Structure Wo (270 Deg)	None						58		
51	Structure Wo (300 Deg)	None						58		
52	Structure Wo (330 Deg)	None						58		
53	Structure Wi (0 Deg)	None						58		
54	Structure Wi (30 Deg)	None						58		
55	Structure Wi (60 Deg)	None						58		
56	Structure Wi (90 Deg)	None						58		



**Basic Load Cases (Continued)**

BLC Description	Category	X Gr...	Y Gr...	Z Gr...	Joint	Point	Distributed	Area(Member)	Surfa...
57 Structure Wi (120 Deg)	None						58		
58 Structure Wi (150 Deg)	None						58		
59 Structure Wi (180 Deg)	None						58		
60 Structure Wi (210 Deg)	None						58		
61 Structure Wi (240 Deg)	None						58		
62 Structure Wi (270 Deg)	None						58		
63 Structure Wi (300 Deg)	None						58		
64 Structure Wi (330 Deg)	None						58		
65 Structure Wm (0 Deg)	None						58		
66 Structure Wm (30 Deg)	None						58		
67 Structure Wm (60 Deg)	None						58		
68 Structure Wm (90 Deg)	None						58		
69 Structure Wm (120 Deg)	None						58		
70 Structure Wm (150 Deg)	None						58		
71 Structure Wm (180 Deg)	None						58		
72 Structure Wm (210 Deg)	None						58		
73 Structure Wm (240 Deg)	None						58		
74 Structure Wm (270 Deg)	None						58		
75 Structure Wm (300 Deg)	None						58		
76 Structure Wm (330 Deg)	None						58		
77 Lm1	None					1			
78 Lm2	None					1			
79 Lv1	None					1			
80 Lv2	None					1			
81 Antenna Ev	None					42			
82 Antenna Eh (0 Deg)	None					28			
83 Antenna Eh (90 Deg)	None					28			
84 Structure Ev	ELY			-0.0448					
85 Structure Eh (0 Deg)	ELZ					-0.112			
86 Structure Eh (90 Deg)	ELX	.112							

**Load Combinations**

Description	S...	PDel...	SR...	BLC Fa...	BLC Fa...	BLC Fa...	B... Fa...	B... Fa...	B... Fa...	BLC Fa...	B... Fa...	B... Fa...	B... Fa...
1 1.2D+1.0Wo (0 Deg)	Yes	Y		1	1.2	39	1.2	3	1	41	1		
2 1.2D+1.0Wo (30 Deg)	Yes	Y		1	1.2	39	1.2	4	1	42	1		
3 1.2D+1.0Wo (60 Deg)	Yes	Y		1	1.2	39	1.2	5	1	43	1		
4 1.2D+1.0Wo (90 Deg)	Yes	Y		1	1.2	39	1.2	6	1	44	1		
5 1.2D+1.0Wo (120 De...	Yes	Y		1	1.2	39	1.2	7	1	45	1		
6 1.2D+1.0Wo (150 De...	Yes	Y		1	1.2	39	1.2	8	1	46	1		
7 1.2D+1.0Wo (180 De...	Yes	Y		1	1.2	39	1.2	9	1	47	1		
8 1.2D+1.0Wo (210 De...	Yes	Y		1	1.2	39	1.2	10	1	48	1		
9 1.2D+1.0Wo (240 De...	Yes	Y		1	1.2	39	1.2	11	1	49	1		
10 1.2D+1.0Wo (270 De...	Yes	Y		1	1.2	39	1.2	12	1	50	1		
11 1.2D+1.0Wo (300 De...	Yes	Y		1	1.2	39	1.2	13	1	51	1		
12 1.2D+1.0Wo (330 De...	Yes	Y		1	1.2	39	1.2	14	1	52	1		
13 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	15	1
14 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	16	1
15 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	17	1
16 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	18	1
17 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	19	1
18 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	20	1
19 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	21	1
20 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	22	1
21 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	23	1
22 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	24	1



**Load Combinations (Continued)**

	Description	S...	PDel...	SR...	BLC	Fa...	BLC	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
23	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	25	1	63	1								
24	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	26	1	64	1								
25	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	27	1	65	1										
26	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	28	1	66	1										
27	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	29	1	67	1										
28	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	30	1	68	1										
29	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	31	1	69	1										
30	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	32	1	70	1										
31	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	33	1	71	1										
32	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	34	1	72	1										
33	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	35	1	73	1										
34	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	36	1	74	1										
35	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	37	1	75	1										
36	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	38	1	76	1										
37	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	27	1	65	1										
38	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	28	1	66	1										
39	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	29	1	67	1										
40	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	30	1	68	1										
41	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	31	1	69	1										
42	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	32	1	70	1										
43	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	33	1	71	1										
44	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	34	1	72	1										
45	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	35	1	73	1										
46	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	36	1	74	1										
47	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	37	1	75	1										
48	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	38	1	76	1										
49	1.2D + 1.5Lv1	Yes	Y		1	1.2	39	1.2	79	1.5														
50	1.2D + 1.5Lv2	Yes	Y		1	1.2	39	1.2	80	1.5														
51	1.4D	Yes	Y		1	1.4	39	1.4																
52	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	1	83		ELZ	1	E...					
53	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.866	83	.5	ELZ	.866	E...	.5				
54	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.5	83	.866	ELZ	.5	E...	.866				
55	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82		83	1	ELZ		E...	1				
56	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.5	83	.866	ELZ	-.5	E...	.866				
57	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.8...	83	.5	ELZ	-.8...	E...	.5				
58	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-1	83		ELZ	-1	E...					
59	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.8...	83	-.5	ELZ	-.8...	E...	-.5				
60	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.5	83	-.8...	ELZ	-.5	E...	-.8...				
61	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82		83	-1	ELZ		E...	-1				
62	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.5	83	-.8...	ELZ	.5	E...	-.8...				
63	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.866	83	-.5	ELZ	.866	E...	-.5				
64	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	1	83		ELZ	1	E...					
65	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.866	83	.5	ELZ	.866	E...	.5				
66	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.5	83	.866	ELZ	.5	E...	.866				
67	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82		83	1	ELZ		E...	1				
68	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.5	83	.866	ELZ	-.5	E...	.866				
69	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.8...	83	.5	ELZ	-.8...	E...	.5				
70	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-1	83		ELZ	-1	E...					
71	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.8...	83	-.5	ELZ	-.8...	E...	-.5				
72	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.5	83	-.8...	ELZ	-.5	E...	-.8...				
73	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82		83	-1	ELZ		E...	-1				
74	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.5	83	-.8...	ELZ	.5	E...	-.8...				
75	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.866	83	-.5	ELZ	.866	E...	-.5				



### Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design... A [in2]	Iyy [i...	Izz [i...	J [in4]
1	Mount Pipe	PIPE 2.0	Column	Pipe	A53 Gr. B	Typical 1.02	.627	.627	1.25
2	Face Horizontal	PIPE 2.5	Beam	Pipe	Q235	Typical 1.61	1.45	1.45	2.89
3	Standoff Horizontal	PIPE 2.0	Beam	Pipe	Q235	Typical 1.02	.627	.627	1.25
4	Standoff Diagonal	SR 0.75	Column	BAR	Q235	Typical .4418	.0155	.0155	.0311
5	Tieback	PIPE 2.0	Beam	Pipe	Q235	Typical 1.02	.627	.627	1.25
6	Standoff Vertical	SR 0.625	Column	BAR	Q235	Typical .3068	.0075	.0075	.015
7	Standoff Plate	PL5/8X3.5	Beam	RECT	Q235	Typical 2.1875	.0712	2.2331	.2528

### Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/...	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A53 Gr. B	29000	11154	.3	.65	.49	35	1.5	60	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
5	A500 Gr. B 42	29000	11154	.3	.65	.49	42	1.4	58	1.3
6	A500 Gr. B 46	29000	11154	.3	.65	.49	46	1.4	58	1.3
7	Q235	29000	11154	.3	.65	.49	35	1.5	58	1.2

### Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
1	M1	N2	N1			Face Horizontal	Beam	Pipe	Q235	Typical
2	M2	N4	N3			Face Horizontal	Beam	Pipe	Q235	Typical
3	M3	N5	N13			RIGID	None	None	RIGID	Typical
4	M4	N6	N14			RIGID	None	None	RIGID	Typical
5	M5	N8	N16			RIGID	None	None	RIGID	Typical
6	M6	N7	N15			RIGID	None	None	RIGID	Typical
7	M9	N10	N18			RIGID	None	None	RIGID	Typical
8	M10	N9	N17			RIGID	None	None	RIGID	Typical
9	M11	N12	N20			RIGID	None	None	RIGID	Typical
10	M12	N11	N19			RIGID	None	None	RIGID	Typical
11	M13	N22	N26		90	Standoff Plate	Beam	RECT	Q235	Typical
12	M14	N21	N25		90	Standoff Plate	Beam	RECT	Q235	Typical
13	M15	N23	N27		90	Standoff Plate	Beam	RECT	Q235	Typical
14	M16	N24	N28		90	Standoff Plate	Beam	RECT	Q235	Typical
15	M17	N26	N32			Standoff Horizontal	Beam	Pipe	Q235	Typical
16	M18	N25	N31			Standoff Horizontal	Beam	Pipe	Q235	Typical
17	M19	N27	N33			Standoff Horizontal	Beam	Pipe	Q235	Typical
18	M20	N28	N34			Standoff Horizontal	Beam	Pipe	Q235	Typical
19	M21	N32	N30		90	Standoff Plate	Beam	RECT	Q235	Typical
20	M22	N34	N30		90	Standoff Plate	Beam	RECT	Q235	Typical
21	M23	N31	N29		90	Standoff Plate	Beam	RECT	Q235	Typical
22	M24	N33	N29		90	Standoff Plate	Beam	RECT	Q235	Typical
23	M25	N31	N26			Standoff Diagonal	Column	BAR	Q235	Typical
24	M26	N32	N25			Standoff Diagonal	Column	BAR	Q235	Typical
25	M27	N33	N28			Standoff Diagonal	Column	BAR	Q235	Typical
26	M28	N27	N34			Standoff Diagonal	Column	BAR	Q235	Typical
27	M29	N29	N35			RIGID	None	None	RIGID	Typical
28	M30	N30	N36			RIGID	None	None	RIGID	Typical
29	M31	N37	N72			Tieback	Beam	Pipe	Q235	Typical
30	MP4A	N39	N43			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
31	MP3A	N40	N44			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
32	MP2A	N41	N45			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
33	MP1A	N42	N46			Mount Pipe	Column	Pipe	A53 Gr. B	Typical



**Member Primary Data (Continued)**

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
34	M44	N25	N26			Standoff Vertical	Column	BAR	Q235	Typical
35	M45	N31	N32			Standoff Vertical	Column	BAR	Q235	Typical
36	M46	N33	N34			Standoff Vertical	Column	BAR	Q235	Typical
37	M47	N27	N28			Standoff Vertical	Column	BAR	Q235	Typical
38	M47B	N22	N60			RIGID	None	None	RIGID	Typical
39	M48A	N21	N59			RIGID	None	None	RIGID	Typical
40	M49A	N24	N62			RIGID	None	None	RIGID	Typical
41	M50A	N23	N61			RIGID	None	None	RIGID	Typical
42	M51A	N70	N36			RIGID	None	None	RIGID	Typical
43	M52A	N69	N35			RIGID	None	None	RIGID	Typical
44	M45A	N64A	N66			RIGID	None	None	RIGID	Typical
45	M46A	N63A	N65			RIGID	None	None	RIGID	Typical
46	OVP	N67	N68			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
47	M48	N30	N70			RIGID	None	None	RIGID	Typical
48	M49	N29	N69			RIGID	None	None	RIGID	Typical
49	M50	N73	N74			Tieback	Beam	Pipe	Q235	Typical

**Member Advanced Data**

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical Defl Ratio Opti...	Analysis ...	Inactive	Seismi...
1	M1						Yes			None
2	M2						Yes			None
3	M3						Yes	** NA **		None
4	M4						Yes	** NA **		None
5	M5						Yes	** NA **		None
6	M6						Yes	** NA **		None
7	M9						Yes	** NA **		None
8	M10						Yes	** NA **		None
9	M11						Yes	** NA **		None
10	M12						Yes	** NA **		None
11	M13						Yes	Default		None
12	M14						Yes	Default		None
13	M15						Yes			None
14	M16						Yes			None
15	M17						Yes	Default		None
16	M18						Yes			None
17	M19						Yes			None
18	M20						Yes	Default		None
19	M21						Yes	Default		None
20	M22						Yes			None
21	M23						Yes			None
22	M24						Yes			None
23	M25	BenPIN	BenPIN			Euler Bu...	Yes	** NA **		None
24	M26	BenPIN	BenPIN			Euler Bu...	Yes	** NA **		None
25	M27	BenPIN	BenPIN			Euler Bu...	Yes	** NA **		None
26	M28	BenPIN	BenPIN			Euler Bu...	Yes	** NA **		None
27	M29						Yes	** NA **	Inactive	None
28	M30						Yes	** NA **	Inactive	None
29	M31	BenPIN					Yes	Default		None
30	MP4A						Yes	** NA **		None
31	MP3A						Yes	** NA **		None
32	MP2A						Yes	** NA **		None
33	MP1A						Yes	** NA **		None
34	M44	BenPIN	BenPIN				Yes	** NA **		None
35	M45	BenPIN	BenPIN				Yes	** NA **		None
36	M46	BenPIN	BenPIN				Yes	** NA **		None





**Member Advanced Data (Continued)**

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical Defl Ratio	Opti...	Analysis ...	Inactive	Seismi...
37	M47	BenPIN	BenPIN				Yes	** NA **			None
38	M47B		000X00				Yes	** NA **			None
39	M48A		000X00				Yes	** NA **			None
40	M49A		000X00				Yes	** NA **			None
41	M50A		000X00				Yes	** NA **			None
42	M51A						Yes	** NA **			None
43	M52A						Yes	** NA **			None
44	M45A		000X00				Yes	** NA **			None
45	M46A		000X00				Yes	** NA **			None
46	OVP						Yes	** NA **			None
47	M48						Yes	** NA **			None
48	M49						Yes	** NA **			None
49	M50	BenPIN					Yes	Default			None

**Member Point Loads (BLC 1 : Antenna D)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	Y	-28.65	3
2	MP4A	My	-.0143	3
3	MP4A	Mz	0	3
4	MP4A	Y	-28.65	5
5	MP4A	My	-.0143	5
6	MP4A	Mz	0	5
7	MP2A	Y	-31.65	1.5
8	MP2A	My	-.0158	1.5
9	MP2A	Mz	.0211	1.5
10	MP2A	Y	-31.65	6.5
11	MP2A	My	-.0158	6.5
12	MP2A	Mz	.0211	6.5
13	MP2A	Y	-31.65	1.5
14	MP2A	My	-.0158	1.5
15	MP2A	Mz	-.0211	1.5
16	MP2A	Y	-31.65	6.5
17	MP2A	My	-.0158	6.5
18	MP2A	Mz	-.0211	6.5
19	MP1A	Y	-84.4	1
20	MP1A	My	.0422	1
21	MP1A	Mz	0	1
22	MP3A	Y	-70.3	1
23	MP3A	My	.0352	1
24	MP3A	Mz	0	1
25	MP2A	Y	-20.8	4
26	MP2A	My	.0069	4
27	MP2A	Mz	0	4
28	MP2A	Y	-8.8	6
29	MP2A	My	.0088	6
30	MP2A	Mz	-.0029	6
31	MP2A	Y	-8.8	7
32	MP2A	My	.0088	7
33	MP2A	Mz	-.0029	7
34	MP2A	Y	-8.8	6
35	MP2A	My	-.0088	6
36	MP2A	Mz	.0029	6
37	MP2A	Y	-8.8	7
38	MP2A	My	-.0088	7
39	MP2A	Mz	.0029	7



**Member Point Loads (BLC 1 : Antenna D) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
40	OVP	Y	-32	2
41	OVP	My	.016	2
42	OVP	Mz	0	2

**Member Point Loads (BLC 2 : Antenna Di)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	Y	-27.9531	3
2	MP4A	My	-.014	3
3	MP4A	Mz	0	3
4	MP4A	Y	-27.9531	5
5	MP4A	My	-.014	5
6	MP4A	Mz	0	5
7	MP2A	Y	-65.6201	1.5
8	MP2A	My	-.0328	1.5
9	MP2A	Mz	.0437	1.5
10	MP2A	Y	-65.6201	6.5
11	MP2A	My	-.0328	6.5
12	MP2A	Mz	.0437	6.5
13	MP2A	Y	-65.6201	1.5
14	MP2A	My	-.0328	1.5
15	MP2A	Mz	-.0437	1.5
16	MP2A	Y	-65.6201	6.5
17	MP2A	My	-.0328	6.5
18	MP2A	Mz	-.0437	6.5
19	MP1A	Y	-42.0361	1
20	MP1A	My	.021	1
21	MP1A	Mz	0	1
22	MP3A	Y	-37.7858	1
23	MP3A	My	.0189	1
24	MP3A	Mz	0	1
25	MP2A	Y	-15.0597	4
26	MP2A	My	.005	4
27	MP2A	Mz	0	4
28	MP2A	Y	-8.0793	6
29	MP2A	My	.0081	6
30	MP2A	Mz	-.0027	6
31	MP2A	Y	-8.0793	7
32	MP2A	My	.0081	7
33	MP2A	Mz	-.0027	7
34	MP2A	Y	-8.0793	6
35	MP2A	My	-.0081	6
36	MP2A	Mz	.0027	6
37	MP2A	Y	-8.0793	7
38	MP2A	My	-.0081	7
39	MP2A	Mz	.0027	7
40	OVP	Y	-82.4695	2
41	OVP	My	.0412	2
42	OVP	Mz	0	2

**Member Point Loads (BLC 3 : Antenna Wo (0 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	0	3
2	MP4A	Z	-53.647	3
3	MP4A	Mx	0	3
4	MP4A	X	0	5
5	MP4A	Z	-53.647	5





**Member Point Loads (BLC 3 : Antenna Wo (0 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
6	MP4A	Mx	0	5
7	MP2A	X	0	1.5
8	MP2A	Z	-128.242	1.5
9	MP2A	Mx	-.0855	1.5
10	MP2A	X	0	6.5
11	MP2A	Z	-128.242	6.5
12	MP2A	Mx	-.0855	6.5
13	MP2A	X	0	1.5
14	MP2A	Z	-128.242	1.5
15	MP2A	Mx	.0855	1.5
16	MP2A	X	0	6.5
17	MP2A	Z	-128.242	6.5
18	MP2A	Mx	.0855	6.5
19	MP1A	X	0	1
20	MP1A	Z	-43.639	1
21	MP1A	Mx	0	1
22	MP3A	X	0	1
23	MP3A	Z	-43.639	1
24	MP3A	Mx	0	1
25	MP2A	X	0	4
26	MP2A	Z	-10.417	4
27	MP2A	Mx	0	4
28	MP2A	X	0	6
29	MP2A	Z	-10.558	6
30	MP2A	Mx	.0035	6
31	MP2A	X	0	7
32	MP2A	Z	-10.558	7
33	MP2A	Mx	.0035	7
34	MP2A	X	0	6
35	MP2A	Z	-10.558	6
36	MP2A	Mx	-.0035	6
37	MP2A	X	0	7
38	MP2A	Z	-10.558	7
39	MP2A	Mx	-.0035	7
40	OVP	X	0	2
41	OVP	Z	-89.248	2
42	OVP	Mx	0	2

**Member Point Loads (BLC 4 : Antenna Wo (30 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	22.7	3
2	MP4A	Z	-39.318	3
3	MP4A	Mx	-.0114	3
4	MP4A	X	22.7	5
5	MP4A	Z	-39.318	5
6	MP4A	Mx	-.0114	5
7	MP2A	X	58.619	1.5
8	MP2A	Z	-101.531	1.5
9	MP2A	Mx	-.097	1.5
10	MP2A	X	58.619	6.5
11	MP2A	Z	-101.531	6.5
12	MP2A	Mx	-.097	6.5
13	MP2A	X	58.619	1.5
14	MP2A	Z	-101.531	1.5
15	MP2A	Mx	.0384	1.5
16	MP2A	X	58.619	6.5



**Member Point Loads (BLC 4 : Antenna Wo (30 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
17	MP2A	Z	-101.531	6.5
18	MP2A	Mx	.0384	6.5
19	MP1A	X	20.025	1
20	MP1A	Z	-34.684	1
21	MP1A	Mx	.01	1
22	MP3A	X	19.356	1
23	MP3A	Z	-33.525	1
24	MP3A	Mx	.0097	1
25	MP2A	X	5.708	4
26	MP2A	Z	-9.887	4
27	MP2A	Mx	.0019	4
28	MP2A	X	5.653	6
29	MP2A	Z	-9.792	6
30	MP2A	Mx	.0089	6
31	MP2A	X	5.653	7
32	MP2A	Z	-9.792	7
33	MP2A	Mx	.0089	7
34	MP2A	X	5.653	6
35	MP2A	Z	-9.792	6
36	MP2A	Mx	-.0089	6
37	MP2A	X	5.653	7
38	MP2A	Z	-9.792	7
39	MP2A	Mx	-.0089	7
40	OVP	X	41.949	2
41	OVP	Z	-72.659	2
42	OVP	Mx	.021	2

**Member Point Loads (BLC 5 : Antenna Wo (60 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	25.035	3
2	MP4A	Z	-14.454	3
3	MP4A	Mx	-.0125	3
4	MP4A	X	25.035	5
5	MP4A	Z	-14.454	5
6	MP4A	Mx	-.0125	5
7	MP2A	X	82.472	1.5
8	MP2A	Z	-47.615	1.5
9	MP2A	Mx	-.073	1.5
10	MP2A	X	82.472	6.5
11	MP2A	Z	-47.615	6.5
12	MP2A	Mx	-.073	6.5
13	MP2A	X	82.472	1.5
14	MP2A	Z	-47.615	1.5
15	MP2A	Mx	-.0095	1.5
16	MP2A	X	82.472	6.5
17	MP2A	Z	-47.615	6.5
18	MP2A	Mx	-.0095	6.5
19	MP1A	X	28.466	1
20	MP1A	Z	-16.435	1
21	MP1A	Mx	.0142	1
22	MP3A	X	24.992	1
23	MP3A	Z	-14.429	1
24	MP3A	Mx	.0125	1
25	MP2A	X	11.618	4
26	MP2A	Z	-6.708	4
27	MP2A	Mx	.0039	4



**Member Point Loads (BLC 5 : Antenna Wo (60 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
28	MP2A	X	11.089	6
29	MP2A	Z	-6.402	6
30	MP2A	Mx	.0132	6
31	MP2A	X	11.089	7
32	MP2A	Z	-6.402	7
33	MP2A	Mx	.0132	7
34	MP2A	X	11.089	6
35	MP2A	Z	-6.402	6
36	MP2A	Mx	-.0132	6
37	MP2A	X	11.089	7
38	MP2A	Z	-6.402	7
39	MP2A	Mx	-.0132	7
40	OVP	X	63.393	2
41	OVP	Z	-36.6	2
42	OVP	Mx	.0317	2

**Member Point Loads (BLC 6 : Antenna Wo (90 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	20.662	3
2	MP4A	Z	0	3
3	MP4A	Mx	-.0103	3
4	MP4A	X	20.662	5
5	MP4A	Z	0	5
6	MP4A	Mx	-.0103	5
7	MP2A	X	84.227	1.5
8	MP2A	Z	0	1.5
9	MP2A	Mx	-.0421	1.5
10	MP2A	X	84.227	6.5
11	MP2A	Z	0	6.5
12	MP2A	Mx	-.0421	6.5
13	MP2A	X	84.227	1.5
14	MP2A	Z	0	1.5
15	MP2A	Mx	-.0421	1.5
16	MP2A	X	84.227	6.5
17	MP2A	Z	0	6.5
18	MP2A	Mx	-.0421	6.5
19	MP1A	X	29.28	1
20	MP1A	Z	0	1
21	MP1A	Mx	.0146	1
22	MP3A	X	23.931	1
23	MP3A	Z	0	1
24	MP3A	Mx	.012	1
25	MP2A	X	14.415	4
26	MP2A	Z	0	4
27	MP2A	Mx	.0048	4
28	MP2A	X	13.554	6
29	MP2A	Z	0	6
30	MP2A	Mx	.0136	6
31	MP2A	X	13.554	7
32	MP2A	Z	0	7
33	MP2A	Mx	.0136	7
34	MP2A	X	13.554	6
35	MP2A	Z	0	6
36	MP2A	Mx	-.0136	6
37	MP2A	X	13.554	7
38	MP2A	Z	0	7



Company : Colliers Engineering & Design  
 Designer :  
 Job Number : Project # 23777242  
 Model Name : Antenna Mount Analysis

Dec 22, 2023  
 1:57 PM  
 Checked By: \_\_\_\_\_

**Member Point Loads (BLC 6 : Antenna Wo (90 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
39	MP2A	Mx	-0136	7
40	OVP	X	67.851	2
41	OVP	Z	0	2
42	OVP	Mx	.0339	2

**Member Point Loads (BLC 7 : Antenna Wo (120 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	25.035	3
2	MP4A	Z	14.454	3
3	MP4A	Mx	-0125	3
4	MP4A	X	25.035	5
5	MP4A	Z	14.454	5
6	MP4A	Mx	-0125	5
7	MP2A	X	82.472	1.5
8	MP2A	Z	47.615	1.5
9	MP2A	Mx	-0095	1.5
10	MP2A	X	82.472	6.5
11	MP2A	Z	47.615	6.5
12	MP2A	Mx	-0095	6.5
13	MP2A	X	82.472	1.5
14	MP2A	Z	47.615	1.5
15	MP2A	Mx	-073	1.5
16	MP2A	X	82.472	6.5
17	MP2A	Z	47.615	6.5
18	MP2A	Mx	-073	6.5
19	MP1A	X	28.466	1
20	MP1A	Z	16.435	1
21	MP1A	Mx	.0142	1
22	MP3A	X	24.992	1
23	MP3A	Z	14.429	1
24	MP3A	Mx	.0125	1
25	MP2A	X	11.618	4
26	MP2A	Z	6.708	4
27	MP2A	Mx	.0039	4
28	MP2A	X	11.089	6
29	MP2A	Z	6.402	6
30	MP2A	Mx	.009	6
31	MP2A	X	11.089	7
32	MP2A	Z	6.402	7
33	MP2A	Mx	.009	7
34	MP2A	X	11.089	6
35	MP2A	Z	6.402	6
36	MP2A	Mx	-.009	6
37	MP2A	X	11.089	7
38	MP2A	Z	6.402	7
39	MP2A	Mx	-.009	7
40	OVP	X	63.393	2
41	OVP	Z	36.6	2
42	OVP	Mx	.0317	2

**Member Point Loads (BLC 8 : Antenna Wo (150 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	22.7	3
2	MP4A	Z	39.318	3
3	MP4A	Mx	-0114	3
4	MP4A	X	22.7	5



**Member Point Loads (BLC 8 : Antenna Wo (150 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
5	MP4A	Z	39.318	5
6	MP4A	Mx	-.0114	5
7	MP2A	X	58.619	1.5
8	MP2A	Z	101.531	1.5
9	MP2A	Mx	.0384	1.5
10	MP2A	X	58.619	6.5
11	MP2A	Z	101.531	6.5
12	MP2A	Mx	.0384	6.5
13	MP2A	X	58.619	1.5
14	MP2A	Z	101.531	1.5
15	MP2A	Mx	-.097	1.5
16	MP2A	X	58.619	6.5
17	MP2A	Z	101.531	6.5
18	MP2A	Mx	-.097	6.5
19	MP1A	X	20.025	1
20	MP1A	Z	34.684	1
21	MP1A	Mx	.01	1
22	MP3A	X	19.356	1
23	MP3A	Z	33.525	1
24	MP3A	Mx	.0097	1
25	MP2A	X	5.708	4
26	MP2A	Z	9.887	4
27	MP2A	Mx	.0019	4
28	MP2A	X	5.653	6
29	MP2A	Z	9.792	6
30	MP2A	Mx	.0024	6
31	MP2A	X	5.653	7
32	MP2A	Z	9.792	7
33	MP2A	Mx	.0024	7
34	MP2A	X	5.653	6
35	MP2A	Z	9.792	6
36	MP2A	Mx	-.0024	6
37	MP2A	X	5.653	7
38	MP2A	Z	9.792	7
39	MP2A	Mx	-.0024	7
40	OVP	X	41.949	2
41	OVP	Z	72.659	2
42	OVP	Mx	.021	2

**Member Point Loads (BLC 9 : Antenna Wo (180 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	0	3
2	MP4A	Z	53.647	3
3	MP4A	Mx	0	3
4	MP4A	X	0	5
5	MP4A	Z	53.647	5
6	MP4A	Mx	0	5
7	MP2A	X	0	1.5
8	MP2A	Z	128.242	1.5
9	MP2A	Mx	.0855	1.5
10	MP2A	X	0	6.5
11	MP2A	Z	128.242	6.5
12	MP2A	Mx	.0855	6.5
13	MP2A	X	0	1.5
14	MP2A	Z	128.242	1.5
15	MP2A	Mx	-.0855	1.5



Company : Colliers Engineering & Design  
 Designer :  
 Job Number : Project # 23777242  
 Model Name : Antenna Mount Analysis

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**Member Point Loads (BLC 9 : Antenna Wo (180 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
16	MP2A	X	0	6.5
17	MP2A	Z	128.242	6.5
18	MP2A	Mx	-.0855	6.5
19	MP1A	X	0	1
20	MP1A	Z	43.639	1
21	MP1A	Mx	0	1
22	MP3A	X	0	1
23	MP3A	Z	43.639	1
24	MP3A	Mx	0	1
25	MP2A	X	0	4
26	MP2A	Z	10.417	4
27	MP2A	Mx	0	4
28	MP2A	X	0	6
29	MP2A	Z	10.558	6
30	MP2A	Mx	-.0035	6
31	MP2A	X	0	7
32	MP2A	Z	10.558	7
33	MP2A	Mx	-.0035	7
34	MP2A	X	0	6
35	MP2A	Z	10.558	6
36	MP2A	Mx	.0035	6
37	MP2A	X	0	7
38	MP2A	Z	10.558	7
39	MP2A	Mx	.0035	7
40	OVP	X	0	2
41	OVP	Z	89.248	2
42	OVP	Mx	0	2

**Member Point Loads (BLC 10 : Antenna Wo (210 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	-22.7	3
2	MP4A	Z	39.318	3
3	MP4A	Mx	.0114	3
4	MP4A	X	-22.7	5
5	MP4A	Z	39.318	5
6	MP4A	Mx	.0114	5
7	MP2A	X	-58.619	1.5
8	MP2A	Z	101.531	1.5
9	MP2A	Mx	.097	1.5
10	MP2A	X	-58.619	6.5
11	MP2A	Z	101.531	6.5
12	MP2A	Mx	.097	6.5
13	MP2A	X	-58.619	1.5
14	MP2A	Z	101.531	1.5
15	MP2A	Mx	-.0384	1.5
16	MP2A	X	-58.619	6.5
17	MP2A	Z	101.531	6.5
18	MP2A	Mx	-.0384	6.5
19	MP1A	X	-20.025	1
20	MP1A	Z	34.684	1
21	MP1A	Mx	-.01	1
22	MP3A	X	-19.356	1
23	MP3A	Z	33.525	1
24	MP3A	Mx	-.0097	1
25	MP2A	X	-5.708	4
26	MP2A	Z	9.887	4



**Member Point Loads (BLC 10 : Antenna Wo (210 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
27	MP2A	Mx	-0.019	4
28	MP2A	X	-5.653	6
29	MP2A	Z	9.792	6
30	MP2A	Mx	-0.089	6
31	MP2A	X	-5.653	7
32	MP2A	Z	9.792	7
33	MP2A	Mx	-0.089	7
34	MP2A	X	-5.653	6
35	MP2A	Z	9.792	6
36	MP2A	Mx	.0089	6
37	MP2A	X	-5.653	7
38	MP2A	Z	9.792	7
39	MP2A	Mx	.0089	7
40	OVP	X	-41.949	2
41	OVP	Z	72.659	2
42	OVP	Mx	-.021	2

**Member Point Loads (BLC 11 : Antenna Wo (240 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	-25.035	3
2	MP4A	Z	14.454	3
3	MP4A	Mx	.0125	3
4	MP4A	X	-25.035	5
5	MP4A	Z	14.454	5
6	MP4A	Mx	.0125	5
7	MP2A	X	-82.472	1.5
8	MP2A	Z	47.615	1.5
9	MP2A	Mx	.073	1.5
10	MP2A	X	-82.472	6.5
11	MP2A	Z	47.615	6.5
12	MP2A	Mx	.073	6.5
13	MP2A	X	-82.472	1.5
14	MP2A	Z	47.615	1.5
15	MP2A	Mx	.0095	1.5
16	MP2A	X	-82.472	6.5
17	MP2A	Z	47.615	6.5
18	MP2A	Mx	.0095	6.5
19	MP1A	X	-28.466	1
20	MP1A	Z	16.435	1
21	MP1A	Mx	-.0142	1
22	MP3A	X	-24.992	1
23	MP3A	Z	14.429	1
24	MP3A	Mx	-.0125	1
25	MP2A	X	-11.618	4
26	MP2A	Z	6.708	4
27	MP2A	Mx	-.0039	4
28	MP2A	X	-11.089	6
29	MP2A	Z	6.402	6
30	MP2A	Mx	-.0132	6
31	MP2A	X	-11.089	7
32	MP2A	Z	6.402	7
33	MP2A	Mx	-.0132	7
34	MP2A	X	-11.089	6
35	MP2A	Z	6.402	6
36	MP2A	Mx	.0132	6
37	MP2A	X	-11.089	7



**Member Point Loads (BLC 11 : Antenna Wo (240 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
38	MP2A	Z	6.402	7
39	MP2A	Mx	.0132	7
40	OVP	X	-63.393	2
41	OVP	Z	36.6	2
42	OVP	Mx	-.0317	2

**Member Point Loads (BLC 12 : Antenna Wo (270 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	-20.662	3
2	MP4A	Z	0	3
3	MP4A	Mx	.0103	3
4	MP4A	X	-20.662	5
5	MP4A	Z	0	5
6	MP4A	Mx	.0103	5
7	MP2A	X	-84.227	1.5
8	MP2A	Z	0	1.5
9	MP2A	Mx	.0421	1.5
10	MP2A	X	-84.227	6.5
11	MP2A	Z	0	6.5
12	MP2A	Mx	.0421	6.5
13	MP2A	X	-84.227	1.5
14	MP2A	Z	0	1.5
15	MP2A	Mx	.0421	1.5
16	MP2A	X	-84.227	6.5
17	MP2A	Z	0	6.5
18	MP2A	Mx	.0421	6.5
19	MP1A	X	-29.28	1
20	MP1A	Z	0	1
21	MP1A	Mx	-.0146	1
22	MP3A	X	-23.931	1
23	MP3A	Z	0	1
24	MP3A	Mx	-.012	1
25	MP2A	X	-14.415	4
26	MP2A	Z	0	4
27	MP2A	Mx	-.0048	4
28	MP2A	X	-13.554	6
29	MP2A	Z	0	6
30	MP2A	Mx	-.0136	6
31	MP2A	X	-13.554	7
32	MP2A	Z	0	7
33	MP2A	Mx	-.0136	7
34	MP2A	X	-13.554	6
35	MP2A	Z	0	6
36	MP2A	Mx	.0136	6
37	MP2A	X	-13.554	7
38	MP2A	Z	0	7
39	MP2A	Mx	.0136	7
40	OVP	X	-67.851	2
41	OVP	Z	0	2
42	OVP	Mx	-.0339	2

**Member Point Loads (BLC 13 : Antenna Wo (300 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	-25.035	3
2	MP4A	Z	-14.454	3
3	MP4A	Mx	.0125	3





**Member Point Loads (BLC 13 : Antenna Wo (300 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
4	MP4A	X	-25.035	5
5	MP4A	Z	-14.454	5
6	MP4A	Mx	.0125	5
7	MP2A	X	-82.472	1.5
8	MP2A	Z	-47.615	1.5
9	MP2A	Mx	.0095	1.5
10	MP2A	X	-82.472	6.5
11	MP2A	Z	-47.615	6.5
12	MP2A	Mx	.0095	6.5
13	MP2A	X	-82.472	1.5
14	MP2A	Z	-47.615	1.5
15	MP2A	Mx	.073	1.5
16	MP2A	X	-82.472	6.5
17	MP2A	Z	-47.615	6.5
18	MP2A	Mx	.073	6.5
19	MP1A	X	-28.466	1
20	MP1A	Z	-16.435	1
21	MP1A	Mx	-.0142	1
22	MP3A	X	-24.992	1
23	MP3A	Z	-14.429	1
24	MP3A	Mx	-.0125	1
25	MP2A	X	-11.618	4
26	MP2A	Z	-6.708	4
27	MP2A	Mx	-.0039	4
28	MP2A	X	-11.089	6
29	MP2A	Z	-6.402	6
30	MP2A	Mx	-.009	6
31	MP2A	X	-11.089	7
32	MP2A	Z	-6.402	7
33	MP2A	Mx	-.009	7
34	MP2A	X	-11.089	6
35	MP2A	Z	-6.402	6
36	MP2A	Mx	.009	6
37	MP2A	X	-11.089	7
38	MP2A	Z	-6.402	7
39	MP2A	Mx	.009	7
40	OVP	X	-63.393	2
41	OVP	Z	-36.6	2
42	OVP	Mx	-.0317	2

**Member Point Loads (BLC 14 : Antenna Wo (330 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-22.7	3
2	MP4A	Z	-39.318	3
3	MP4A	Mx	.0114	3
4	MP4A	X	-22.7	5
5	MP4A	Z	-39.318	5
6	MP4A	Mx	.0114	5
7	MP2A	X	-58.619	1.5
8	MP2A	Z	-101.531	1.5
9	MP2A	Mx	-.0384	1.5
10	MP2A	X	-58.619	6.5
11	MP2A	Z	-101.531	6.5
12	MP2A	Mx	-.0384	6.5
13	MP2A	X	-58.619	1.5
14	MP2A	Z	-101.531	1.5



**Member Point Loads (BLC 14 : Antenna Wo (330 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
15	MP2A	Mx	.097	1.5
16	MP2A	X	-58.619	6.5
17	MP2A	Z	-101.531	6.5
18	MP2A	Mx	.097	6.5
19	MP1A	X	-20.025	1
20	MP1A	Z	-34.684	1
21	MP1A	Mx	-.01	1
22	MP3A	X	-19.356	1
23	MP3A	Z	-33.525	1
24	MP3A	Mx	-.0097	1
25	MP2A	X	-5.708	4
26	MP2A	Z	-9.887	4
27	MP2A	Mx	-.0019	4
28	MP2A	X	-5.653	6
29	MP2A	Z	-9.792	6
30	MP2A	Mx	-.0024	6
31	MP2A	X	-5.653	7
32	MP2A	Z	-9.792	7
33	MP2A	Mx	-.0024	7
34	MP2A	X	-5.653	6
35	MP2A	Z	-9.792	6
36	MP2A	Mx	.0024	6
37	MP2A	X	-5.653	7
38	MP2A	Z	-9.792	7
39	MP2A	Mx	.0024	7
40	OVP	X	-41.949	2
41	OVP	Z	-72.659	2
42	OVP	Mx	-.021	2

**Member Point Loads (BLC 15 : Antenna Wi (0 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	0	3
2	MP4A	Z	-10.572	3
3	MP4A	Mx	0	3
4	MP4A	X	0	5
5	MP4A	Z	-10.572	5
6	MP4A	Mx	0	5
7	MP2A	X	0	1.5
8	MP2A	Z	-24.272	1.5
9	MP2A	Mx	-.0162	1.5
10	MP2A	X	0	6.5
11	MP2A	Z	-24.272	6.5
12	MP2A	Mx	-.0162	6.5
13	MP2A	X	0	1.5
14	MP2A	Z	-24.272	1.5
15	MP2A	Mx	.0162	1.5
16	MP2A	X	0	6.5
17	MP2A	Z	-24.272	6.5
18	MP2A	Mx	.0162	6.5
19	MP1A	X	0	1
20	MP1A	Z	-10.829	1
21	MP1A	Mx	0	1
22	MP3A	X	0	1
23	MP3A	Z	-10.829	1
24	MP3A	Mx	0	1
25	MP2A	X	0	4



**Member Point Loads (BLC 15 : Antenna Wi (0 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
26	MP2A	Z	-2.599	4
27	MP2A	Mx	0	4
28	MP2A	X	0	6
29	MP2A	Z	-1.104	6
30	MP2A	Mx	.000368	6
31	MP2A	X	0	7
32	MP2A	Z	-1.104	7
33	MP2A	Mx	.000368	7
34	MP2A	X	0	6
35	MP2A	Z	-1.104	6
36	MP2A	Mx	-.000368	6
37	MP2A	X	0	7
38	MP2A	Z	-1.104	7
39	MP2A	Mx	-.000368	7
40	OVP	X	0	2
41	OVP	Z	-22.318	2
42	OVP	Mx	0	2

**Member Point Loads (BLC 16 : Antenna Wi (30 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	4.52	3
2	MP4A	Z	-7.829	3
3	MP4A	Mx	-.0023	3
4	MP4A	X	4.52	5
5	MP4A	Z	-7.829	5
6	MP4A	Mx	-.0023	5
7	MP2A	X	11.167	1.5
8	MP2A	Z	-19.342	1.5
9	MP2A	Mx	-.0185	1.5
10	MP2A	X	11.167	6.5
11	MP2A	Z	-19.342	6.5
12	MP2A	Mx	-.0185	6.5
13	MP2A	X	11.167	1.5
14	MP2A	Z	-19.342	1.5
15	MP2A	Mx	.0073	1.5
16	MP2A	X	11.167	6.5
17	MP2A	Z	-19.342	6.5
18	MP2A	Mx	.0073	6.5
19	MP1A	X	5	1
20	MP1A	Z	-8.661	1
21	MP1A	Mx	.0025	1
22	MP3A	X	4.843	1
23	MP3A	Z	-8.388	1
24	MP3A	Mx	.0024	1
25	MP2A	X	1.405	4
26	MP2A	Z	-2.434	4
27	MP2A	Mx	.000468	4
28	MP2A	X	.785	6
29	MP2A	Z	-1.359	6
30	MP2A	Mx	.0012	6
31	MP2A	X	.785	7
32	MP2A	Z	-1.359	7
33	MP2A	Mx	.0012	7
34	MP2A	X	.785	6
35	MP2A	Z	-1.359	6
36	MP2A	Mx	-.0012	6



**Member Point Loads (BLC 16 : Antenna Wi (30 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
37	MP2A	X	.785	7
38	MP2A	Z	-1.359	7
39	MP2A	Mx	-.0012	7
40	OVP	X	10.548	2
41	OVP	Z	-18.27	2
42	OVP	Mx	.0053	2

**Member Point Loads (BLC 17 : Antenna Wi (60 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	5.174	3
2	MP4A	Z	-2.987	3
3	MP4A	Mx	-.0026	3
4	MP4A	X	5.174	5
5	MP4A	Z	-2.987	5
6	MP4A	Mx	-.0026	5
7	MP2A	X	15.987	1.5
8	MP2A	Z	-9.23	1.5
9	MP2A	Mx	-.0141	1.5
10	MP2A	X	15.987	6.5
11	MP2A	Z	-9.23	6.5
12	MP2A	Mx	-.0141	6.5
13	MP2A	X	15.987	1.5
14	MP2A	Z	-9.23	1.5
15	MP2A	Mx	-.0018	1.5
16	MP2A	X	15.987	6.5
17	MP2A	Z	-9.23	6.5
18	MP2A	Mx	-.0018	6.5
19	MP1A	X	7.226	1
20	MP1A	Z	-4.172	1
21	MP1A	Mx	.0036	1
22	MP3A	X	6.408	1
23	MP3A	Z	-3.7	1
24	MP3A	Mx	.0032	1
25	MP2A	X	2.799	4
26	MP2A	Z	-1.616	4
27	MP2A	Mx	.000933	4
28	MP2A	X	2.165	6
29	MP2A	Z	-1.25	6
30	MP2A	Mx	.0026	6
31	MP2A	X	2.165	7
32	MP2A	Z	-1.25	7
33	MP2A	Mx	.0026	7
34	MP2A	X	2.165	6
35	MP2A	Z	-1.25	6
36	MP2A	Mx	-.0026	6
37	MP2A	X	2.165	7
38	MP2A	Z	-1.25	7
39	MP2A	Mx	-.0026	7
40	OVP	X	16.153	2
41	OVP	Z	-9.326	2
42	OVP	Mx	.0081	2

**Member Point Loads (BLC 18 : Antenna Wi (90 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	4.441	3
2	MP4A	Z	0	3



**Member Point Loads (BLC 18 : Antenna Wi (90 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
3	MP4A	Mx	-0.022	3
4	MP4A	X	4.441	5
5	MP4A	Z	0	5
6	MP4A	Mx	-0.022	5
7	MP2A	X	16.522	1.5
8	MP2A	Z	0	1.5
9	MP2A	Mx	-0.083	1.5
10	MP2A	X	16.522	6.5
11	MP2A	Z	0	6.5
12	MP2A	Mx	-0.083	6.5
13	MP2A	X	16.522	1.5
14	MP2A	Z	0	1.5
15	MP2A	Mx	-0.083	1.5
16	MP2A	X	16.522	6.5
17	MP2A	Z	0	6.5
18	MP2A	Mx	-0.083	6.5
19	MP1A	X	7.515	1
20	MP1A	Z	0	1
21	MP1A	Mx	.0038	1
22	MP3A	X	6.256	1
23	MP3A	Z	0	1
24	MP3A	Mx	.0031	1
25	MP2A	X	3.443	4
26	MP2A	Z	0	4
27	MP2A	Mx	.0011	4
28	MP2A	X	2.965	6
29	MP2A	Z	0	6
30	MP2A	Mx	.003	6
31	MP2A	X	2.965	7
32	MP2A	Z	0	7
33	MP2A	Mx	.003	7
34	MP2A	X	2.965	6
35	MP2A	Z	0	6
36	MP2A	Mx	-.003	6
37	MP2A	X	2.965	7
38	MP2A	Z	0	7
39	MP2A	Mx	-.003	7
40	OVP	X	17.43	2
41	OVP	Z	0	2
42	OVP	Mx	.0087	2

**Member Point Loads (BLC 19 : Antenna Wi (120 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	5.174	3
2	MP4A	Z	2.987	3
3	MP4A	Mx	-0.026	3
4	MP4A	X	5.174	5
5	MP4A	Z	2.987	5
6	MP4A	Mx	-0.026	5
7	MP2A	X	15.987	1.5
8	MP2A	Z	9.23	1.5
9	MP2A	Mx	-0.018	1.5
10	MP2A	X	15.987	6.5
11	MP2A	Z	9.23	6.5
12	MP2A	Mx	-0.018	6.5
13	MP2A	X	15.987	1.5



**Member Point Loads (BLC 19 : Antenna Wi (120 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
14	MP2A	Z	9.23	1.5
15	MP2A	Mx	-.0141	1.5
16	MP2A	X	15.987	6.5
17	MP2A	Z	9.23	6.5
18	MP2A	Mx	-.0141	6.5
19	MP1A	X	7.226	1
20	MP1A	Z	4.172	1
21	MP1A	Mx	.0036	1
22	MP3A	X	6.408	1
23	MP3A	Z	3.7	1
24	MP3A	Mx	.0032	1
25	MP2A	X	2.799	4
26	MP2A	Z	1.616	4
27	MP2A	Mx	.000933	4
28	MP2A	X	2.165	6
29	MP2A	Z	1.25	6
30	MP2A	Mx	.0017	6
31	MP2A	X	2.165	7
32	MP2A	Z	1.25	7
33	MP2A	Mx	.0017	7
34	MP2A	X	2.165	6
35	MP2A	Z	1.25	6
36	MP2A	Mx	-.0017	6
37	MP2A	X	2.165	7
38	MP2A	Z	1.25	7
39	MP2A	Mx	-.0017	7
40	OVP	X	16.153	2
41	OVP	Z	9.326	2
42	OVP	Mx	.0081	2

**Member Point Loads (BLC 20 : Antenna Wi (150 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	4.52	3
2	MP4A	Z	7.829	3
3	MP4A	Mx	-.0023	3
4	MP4A	X	4.52	5
5	MP4A	Z	7.829	5
6	MP4A	Mx	-.0023	5
7	MP2A	X	11.167	1.5
8	MP2A	Z	19.342	1.5
9	MP2A	Mx	.0073	1.5
10	MP2A	X	11.167	6.5
11	MP2A	Z	19.342	6.5
12	MP2A	Mx	.0073	6.5
13	MP2A	X	11.167	1.5
14	MP2A	Z	19.342	1.5
15	MP2A	Mx	-.0185	1.5
16	MP2A	X	11.167	6.5
17	MP2A	Z	19.342	6.5
18	MP2A	Mx	-.0185	6.5
19	MP1A	X	5	1
20	MP1A	Z	8.661	1
21	MP1A	Mx	.0025	1
22	MP3A	X	4.843	1
23	MP3A	Z	8.388	1
24	MP3A	Mx	.0024	1



**Member Point Loads (BLC 20 : Antenna Wi (150 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
25	MP2A	X	1.405	4
26	MP2A	Z	2.434	4
27	MP2A	Mx	.000468	4
28	MP2A	X	.785	6
29	MP2A	Z	1.359	6
30	MP2A	Mx	.000332	6
31	MP2A	X	.785	7
32	MP2A	Z	1.359	7
33	MP2A	Mx	.000332	7
34	MP2A	X	.785	6
35	MP2A	Z	1.359	6
36	MP2A	Mx	-.000332	6
37	MP2A	X	.785	7
38	MP2A	Z	1.359	7
39	MP2A	Mx	-.000332	7
40	OVP	X	10.548	2
41	OVP	Z	18.27	2
42	OVP	Mx	.0053	2

**Member Point Loads (BLC 21 : Antenna Wi (180 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	0	3
2	MP4A	Z	10.572	3
3	MP4A	Mx	0	3
4	MP4A	X	0	5
5	MP4A	Z	10.572	5
6	MP4A	Mx	0	5
7	MP2A	X	0	1.5
8	MP2A	Z	24.272	1.5
9	MP2A	Mx	.0162	1.5
10	MP2A	X	0	6.5
11	MP2A	Z	24.272	6.5
12	MP2A	Mx	.0162	6.5
13	MP2A	X	0	1.5
14	MP2A	Z	24.272	1.5
15	MP2A	Mx	-.0162	1.5
16	MP2A	X	0	6.5
17	MP2A	Z	24.272	6.5
18	MP2A	Mx	-.0162	6.5
19	MP1A	X	0	1
20	MP1A	Z	10.829	1
21	MP1A	Mx	0	1
22	MP3A	X	0	1
23	MP3A	Z	10.829	1
24	MP3A	Mx	0	1
25	MP2A	X	0	4
26	MP2A	Z	2.599	4
27	MP2A	Mx	0	4
28	MP2A	X	0	6
29	MP2A	Z	1.104	6
30	MP2A	Mx	-.000368	6
31	MP2A	X	0	7
32	MP2A	Z	1.104	7
33	MP2A	Mx	-.000368	7
34	MP2A	X	0	6
35	MP2A	Z	1.104	6



**Member Point Loads (BLC 21 : Antenna Wi (180 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
36	MP2A	Mx	.000368	6
37	MP2A	X	0	7
38	MP2A	Z	1.104	7
39	MP2A	Mx	.000368	7
40	OVP	X	0	2
41	OVP	Z	22.318	2
42	OVP	Mx	0	2

**Member Point Loads (BLC 22 : Antenna Wi (210 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	-4.52	3
2	MP4A	Z	7.829	3
3	MP4A	Mx	.0023	3
4	MP4A	X	-4.52	5
5	MP4A	Z	7.829	5
6	MP4A	Mx	.0023	5
7	MP2A	X	-11.167	1.5
8	MP2A	Z	19.342	1.5
9	MP2A	Mx	.0185	1.5
10	MP2A	X	-11.167	6.5
11	MP2A	Z	19.342	6.5
12	MP2A	Mx	.0185	6.5
13	MP2A	X	-11.167	1.5
14	MP2A	Z	19.342	1.5
15	MP2A	Mx	-.0073	1.5
16	MP2A	X	-11.167	6.5
17	MP2A	Z	19.342	6.5
18	MP2A	Mx	-.0073	6.5
19	MP1A	X	-5	1
20	MP1A	Z	8.661	1
21	MP1A	Mx	-.0025	1
22	MP3A	X	-4.843	1
23	MP3A	Z	8.388	1
24	MP3A	Mx	-.0024	1
25	MP2A	X	-1.405	4
26	MP2A	Z	2.434	4
27	MP2A	Mx	-.000468	4
28	MP2A	X	-.785	6
29	MP2A	Z	1.359	6
30	MP2A	Mx	-.0012	6
31	MP2A	X	-.785	7
32	MP2A	Z	1.359	7
33	MP2A	Mx	-.0012	7
34	MP2A	X	-.785	6
35	MP2A	Z	1.359	6
36	MP2A	Mx	.0012	6
37	MP2A	X	-.785	7
38	MP2A	Z	1.359	7
39	MP2A	Mx	.0012	7
40	OVP	X	-10.548	2
41	OVP	Z	18.27	2
42	OVP	Mx	-.0053	2

**Member Point Loads (BLC 23 : Antenna Wi (240 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	-5.174	3





**Member Point Loads (BLC 23 : Antenna Wi (240 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
2	MP4A	Z	2.987	3
3	MP4A	Mx	.0026	3
4	MP4A	X	-5.174	5
5	MP4A	Z	2.987	5
6	MP4A	Mx	.0026	5
7	MP2A	X	-15.987	1.5
8	MP2A	Z	9.23	1.5
9	MP2A	Mx	.0141	1.5
10	MP2A	X	-15.987	6.5
11	MP2A	Z	9.23	6.5
12	MP2A	Mx	.0141	6.5
13	MP2A	X	-15.987	1.5
14	MP2A	Z	9.23	1.5
15	MP2A	Mx	.0018	1.5
16	MP2A	X	-15.987	6.5
17	MP2A	Z	9.23	6.5
18	MP2A	Mx	.0018	6.5
19	MP1A	X	-7.226	1
20	MP1A	Z	4.172	1
21	MP1A	Mx	-.0036	1
22	MP3A	X	-6.408	1
23	MP3A	Z	3.7	1
24	MP3A	Mx	-.0032	1
25	MP2A	X	-2.799	4
26	MP2A	Z	1.616	4
27	MP2A	Mx	-.000933	4
28	MP2A	X	-2.165	6
29	MP2A	Z	1.25	6
30	MP2A	Mx	-.0026	6
31	MP2A	X	-2.165	7
32	MP2A	Z	1.25	7
33	MP2A	Mx	-.0026	7
34	MP2A	X	-2.165	6
35	MP2A	Z	1.25	6
36	MP2A	Mx	.0026	6
37	MP2A	X	-2.165	7
38	MP2A	Z	1.25	7
39	MP2A	Mx	.0026	7
40	OVP	X	-16.153	2
41	OVP	Z	9.326	2
42	OVP	Mx	-.0081	2

**Member Point Loads (BLC 24 : Antenna Wi (270 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	-4.441	3
2	MP4A	Z	0	3
3	MP4A	Mx	.0022	3
4	MP4A	X	-4.441	5
5	MP4A	Z	0	5
6	MP4A	Mx	.0022	5
7	MP2A	X	-16.522	1.5
8	MP2A	Z	0	1.5
9	MP2A	Mx	.0083	1.5
10	MP2A	X	-16.522	6.5
11	MP2A	Z	0	6.5
12	MP2A	Mx	.0083	6.5



**Member Point Loads (BLC 24 : Antenna Wi (270 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
13	MP2A	X	-16.522	1.5
14	MP2A	Z	0	1.5
15	MP2A	Mx	.0083	1.5
16	MP2A	X	-16.522	6.5
17	MP2A	Z	0	6.5
18	MP2A	Mx	.0083	6.5
19	MP1A	X	-7.515	1
20	MP1A	Z	0	1
21	MP1A	Mx	-.0038	1
22	MP3A	X	-6.256	1
23	MP3A	Z	0	1
24	MP3A	Mx	-.0031	1
25	MP2A	X	-3.443	4
26	MP2A	Z	0	4
27	MP2A	Mx	-.0011	4
28	MP2A	X	-2.965	6
29	MP2A	Z	0	6
30	MP2A	Mx	-.003	6
31	MP2A	X	-2.965	7
32	MP2A	Z	0	7
33	MP2A	Mx	-.003	7
34	MP2A	X	-2.965	6
35	MP2A	Z	0	6
36	MP2A	Mx	.003	6
37	MP2A	X	-2.965	7
38	MP2A	Z	0	7
39	MP2A	Mx	.003	7
40	OVP	X	-17.43	2
41	OVP	Z	0	2
42	OVP	Mx	-.0087	2

**Member Point Loads (BLC 25 : Antenna Wi (300 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-5.174	3
2	MP4A	Z	-2.987	3
3	MP4A	Mx	.0026	3
4	MP4A	X	-5.174	5
5	MP4A	Z	-2.987	5
6	MP4A	Mx	.0026	5
7	MP2A	X	-15.987	1.5
8	MP2A	Z	-9.23	1.5
9	MP2A	Mx	.0018	1.5
10	MP2A	X	-15.987	6.5
11	MP2A	Z	-9.23	6.5
12	MP2A	Mx	.0018	6.5
13	MP2A	X	-15.987	1.5
14	MP2A	Z	-9.23	1.5
15	MP2A	Mx	.0141	1.5
16	MP2A	X	-15.987	6.5
17	MP2A	Z	-9.23	6.5
18	MP2A	Mx	.0141	6.5
19	MP1A	X	-7.226	1
20	MP1A	Z	-4.172	1
21	MP1A	Mx	-.0036	1
22	MP3A	X	-6.408	1
23	MP3A	Z	-3.7	1



**Member Point Loads (BLC 25 : Antenna Wi (300 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
24	MP3A	Mx	-0.032	1
25	MP2A	X	-2.799	4
26	MP2A	Z	-1.616	4
27	MP2A	Mx	-0.00933	4
28	MP2A	X	-2.165	6
29	MP2A	Z	-1.25	6
30	MP2A	Mx	-0.017	6
31	MP2A	X	-2.165	7
32	MP2A	Z	-1.25	7
33	MP2A	Mx	-0.017	7
34	MP2A	X	-2.165	6
35	MP2A	Z	-1.25	6
36	MP2A	Mx	.0017	6
37	MP2A	X	-2.165	7
38	MP2A	Z	-1.25	7
39	MP2A	Mx	.0017	7
40	OVP	X	-16.153	2
41	OVP	Z	-9.326	2
42	OVP	Mx	-0.081	2

**Member Point Loads (BLC 26 : Antenna Wi (330 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-4.52	3
2	MP4A	Z	-7.829	3
3	MP4A	Mx	.0023	3
4	MP4A	X	-4.52	5
5	MP4A	Z	-7.829	5
6	MP4A	Mx	.0023	5
7	MP2A	X	-11.167	1.5
8	MP2A	Z	-19.342	1.5
9	MP2A	Mx	-0.073	1.5
10	MP2A	X	-11.167	6.5
11	MP2A	Z	-19.342	6.5
12	MP2A	Mx	-0.073	6.5
13	MP2A	X	-11.167	1.5
14	MP2A	Z	-19.342	1.5
15	MP2A	Mx	.0185	1.5
16	MP2A	X	-11.167	6.5
17	MP2A	Z	-19.342	6.5
18	MP2A	Mx	.0185	6.5
19	MP1A	X	-5	1
20	MP1A	Z	-8.661	1
21	MP1A	Mx	-0.025	1
22	MP3A	X	-4.843	1
23	MP3A	Z	-8.388	1
24	MP3A	Mx	-0.024	1
25	MP2A	X	-1.405	4
26	MP2A	Z	-2.434	4
27	MP2A	Mx	-0.00468	4
28	MP2A	X	-.785	6
29	MP2A	Z	-1.359	6
30	MP2A	Mx	-0.00332	6
31	MP2A	X	-.785	7
32	MP2A	Z	-1.359	7
33	MP2A	Mx	-0.00332	7
34	MP2A	X	-.785	6



Company : Colliers Engineering & Design  
 Designer :  
 Job Number : Project # 23777242  
 Model Name : Antenna Mount Analysis

Dec 22, 2023  
 1:57 PM  
 Checked By: \_\_\_\_\_

**Member Point Loads (BLC 26 : Antenna Wi (330 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
35	MP2A	Z	-1.359	6
36	MP2A	Mx	.000332	6
37	MP2A	X	-.785	7
38	MP2A	Z	-1.359	7
39	MP2A	Mx	.000332	7
40	OVP	X	-10.548	2
41	OVP	Z	-18.27	2
42	OVP	Mx	-.0053	2

**Member Point Loads (BLC 27 : Antenna Wm (0 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	0	3
2	MP4A	Z	-3.353	3
3	MP4A	Mx	0	3
4	MP4A	X	0	5
5	MP4A	Z	-3.353	5
6	MP4A	Mx	0	5
7	MP2A	X	0	1.5
8	MP2A	Z	-8.015	1.5
9	MP2A	Mx	-.0053	1.5
10	MP2A	X	0	6.5
11	MP2A	Z	-8.015	6.5
12	MP2A	Mx	-.0053	6.5
13	MP2A	X	0	1.5
14	MP2A	Z	-8.015	1.5
15	MP2A	Mx	.0053	1.5
16	MP2A	X	0	6.5
17	MP2A	Z	-8.015	6.5
18	MP2A	Mx	.0053	6.5
19	MP1A	X	0	1
20	MP1A	Z	-2.727	1
21	MP1A	Mx	0	1
22	MP3A	X	0	1
23	MP3A	Z	-2.727	1
24	MP3A	Mx	0	1
25	MP2A	X	0	4
26	MP2A	Z	-.651	4
27	MP2A	Mx	0	4
28	MP2A	X	0	6
29	MP2A	Z	-.66	6
30	MP2A	Mx	.00022	6
31	MP2A	X	0	7
32	MP2A	Z	-.66	7
33	MP2A	Mx	.00022	7
34	MP2A	X	0	6
35	MP2A	Z	-.66	6
36	MP2A	Mx	-.00022	6
37	MP2A	X	0	7
38	MP2A	Z	-.66	7
39	MP2A	Mx	-.00022	7
40	OVP	X	0	2
41	OVP	Z	-5.578	2
42	OVP	Mx	0	2

**Member Point Loads (BLC 28 : Antenna Wm (30 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
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**Member Point Loads (BLC 28 : Antenna Wm (30 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	1.419	3
2	MP4A	Z	-2.457	3
3	MP4A	Mx	-.00071	3
4	MP4A	X	1.419	5
5	MP4A	Z	-2.457	5
6	MP4A	Mx	-.00071	5
7	MP2A	X	3.664	1.5
8	MP2A	Z	-6.346	1.5
9	MP2A	Mx	-.0061	1.5
10	MP2A	X	3.664	6.5
11	MP2A	Z	-6.346	6.5
12	MP2A	Mx	-.0061	6.5
13	MP2A	X	3.664	1.5
14	MP2A	Z	-6.346	1.5
15	MP2A	Mx	.0024	1.5
16	MP2A	X	3.664	6.5
17	MP2A	Z	-6.346	6.5
18	MP2A	Mx	.0024	6.5
19	MP1A	X	1.252	1
20	MP1A	Z	-2.168	1
21	MP1A	Mx	.000626	1
22	MP3A	X	1.21	1
23	MP3A	Z	-2.095	1
24	MP3A	Mx	.000605	1
25	MP2A	X	.357	4
26	MP2A	Z	-.618	4
27	MP2A	Mx	.000119	4
28	MP2A	X	.353	6
29	MP2A	Z	-.612	6
30	MP2A	Mx	.000557	6
31	MP2A	X	.353	7
32	MP2A	Z	-.612	7
33	MP2A	Mx	.000557	7
34	MP2A	X	.353	6
35	MP2A	Z	-.612	6
36	MP2A	Mx	-.000557	6
37	MP2A	X	.353	7
38	MP2A	Z	-.612	7
39	MP2A	Mx	-.000557	7
40	OVP	X	2.622	2
41	OVP	Z	-4.541	2
42	OVP	Mx	.0013	2

**Member Point Loads (BLC 29 : Antenna Wm (60 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	1.565	3
2	MP4A	Z	-.903	3
3	MP4A	Mx	-.000783	3
4	MP4A	X	1.565	5
5	MP4A	Z	-.903	5
6	MP4A	Mx	-.000783	5
7	MP2A	X	5.155	1.5
8	MP2A	Z	-2.976	1.5
9	MP2A	Mx	-.0046	1.5
10	MP2A	X	5.155	6.5
11	MP2A	Z	-2.976	6.5



**Member Point Loads (BLC 29 : Antenna Wm (60 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
12	MP2A	Mx	-.0046	6.5
13	MP2A	X	5.155	1.5
14	MP2A	Z	-2.976	1.5
15	MP2A	Mx	-.000594	1.5
16	MP2A	X	5.155	6.5
17	MP2A	Z	-2.976	6.5
18	MP2A	Mx	-.000594	6.5
19	MP1A	X	1.779	1
20	MP1A	Z	-1.027	1
21	MP1A	Mx	.00089	1
22	MP3A	X	1.562	1
23	MP3A	Z	-.902	1
24	MP3A	Mx	.000781	1
25	MP2A	X	.726	4
26	MP2A	Z	-.419	4
27	MP2A	Mx	.000242	4
28	MP2A	X	.693	6
29	MP2A	Z	-.4	6
30	MP2A	Mx	.000826	6
31	MP2A	X	.693	7
32	MP2A	Z	-.4	7
33	MP2A	Mx	.000826	7
34	MP2A	X	.693	6
35	MP2A	Z	-.4	6
36	MP2A	Mx	-.000826	6
37	MP2A	X	.693	7
38	MP2A	Z	-.4	7
39	MP2A	Mx	-.000826	7
40	OVP	X	3.962	2
41	OVP	Z	-2.288	2
42	OVP	Mx	.002	2

**Member Point Loads (BLC 30 : Antenna Wm (90 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	1.291	3
2	MP4A	Z	0	3
3	MP4A	Mx	-.000645	3
4	MP4A	X	1.291	5
5	MP4A	Z	0	5
6	MP4A	Mx	-.000645	5
7	MP2A	X	5.264	1.5
8	MP2A	Z	0	1.5
9	MP2A	Mx	-.0026	1.5
10	MP2A	X	5.264	6.5
11	MP2A	Z	0	6.5
12	MP2A	Mx	-.0026	6.5
13	MP2A	X	5.264	1.5
14	MP2A	Z	0	1.5
15	MP2A	Mx	-.0026	1.5
16	MP2A	X	5.264	6.5
17	MP2A	Z	0	6.5
18	MP2A	Mx	-.0026	6.5
19	MP1A	X	1.83	1
20	MP1A	Z	0	1
21	MP1A	Mx	.000915	1
22	MP3A	X	1.496	1



**Member Point Loads (BLC 30 : Antenna Wm (90 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
23	MP3A	Z	0	1
24	MP3A	Mx	.000748	1
25	MP2A	X	.901	4
26	MP2A	Z	0	4
27	MP2A	Mx	.0003	4
28	MP2A	X	.847	6
29	MP2A	Z	0	6
30	MP2A	Mx	.000847	6
31	MP2A	X	.847	7
32	MP2A	Z	0	7
33	MP2A	Mx	.000847	7
34	MP2A	X	.847	6
35	MP2A	Z	0	6
36	MP2A	Mx	-.000847	6
37	MP2A	X	.847	7
38	MP2A	Z	0	7
39	MP2A	Mx	-.000847	7
40	OVP	X	4.241	2
41	OVP	Z	0	2
42	OVP	Mx	.0021	2

**Member Point Loads (BLC 31 : Antenna Wm (120 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	1.565	3
2	MP4A	Z	.903	3
3	MP4A	Mx	-.000783	3
4	MP4A	X	1.565	5
5	MP4A	Z	.903	5
6	MP4A	Mx	-.000783	5
7	MP2A	X	5.155	1.5
8	MP2A	Z	2.976	1.5
9	MP2A	Mx	-.000594	1.5
10	MP2A	X	5.155	6.5
11	MP2A	Z	2.976	6.5
12	MP2A	Mx	-.000594	6.5
13	MP2A	X	5.155	1.5
14	MP2A	Z	2.976	1.5
15	MP2A	Mx	-.0046	1.5
16	MP2A	X	5.155	6.5
17	MP2A	Z	2.976	6.5
18	MP2A	Mx	-.0046	6.5
19	MP1A	X	1.779	1
20	MP1A	Z	1.027	1
21	MP1A	Mx	.00089	1
22	MP3A	X	1.562	1
23	MP3A	Z	.902	1
24	MP3A	Mx	.000781	1
25	MP2A	X	.726	4
26	MP2A	Z	.419	4
27	MP2A	Mx	.000242	4
28	MP2A	X	.693	6
29	MP2A	Z	.4	6
30	MP2A	Mx	.00056	6
31	MP2A	X	.693	7
32	MP2A	Z	.4	7
33	MP2A	Mx	.00056	7



**Member Point Loads (BLC 31 : Antenna Wm (120 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
34	MP2A	X	.693	6
35	MP2A	Z	.4	6
36	MP2A	Mx	-.00056	6
37	MP2A	X	.693	7
38	MP2A	Z	.4	7
39	MP2A	Mx	-.00056	7
40	OVP	X	3.962	2
41	OVP	Z	2.288	2
42	OVP	Mx	.002	2

**Member Point Loads (BLC 32 : Antenna Wm (150 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	1.419	3
2	MP4A	Z	2.457	3
3	MP4A	Mx	-.00071	3
4	MP4A	X	1.419	5
5	MP4A	Z	2.457	5
6	MP4A	Mx	-.00071	5
7	MP2A	X	3.664	1.5
8	MP2A	Z	6.346	1.5
9	MP2A	Mx	.0024	1.5
10	MP2A	X	3.664	6.5
11	MP2A	Z	6.346	6.5
12	MP2A	Mx	.0024	6.5
13	MP2A	X	3.664	1.5
14	MP2A	Z	6.346	1.5
15	MP2A	Mx	-.0061	1.5
16	MP2A	X	3.664	6.5
17	MP2A	Z	6.346	6.5
18	MP2A	Mx	-.0061	6.5
19	MP1A	X	1.252	1
20	MP1A	Z	2.168	1
21	MP1A	Mx	.000626	1
22	MP3A	X	1.21	1
23	MP3A	Z	2.095	1
24	MP3A	Mx	.000605	1
25	MP2A	X	.357	4
26	MP2A	Z	.618	4
27	MP2A	Mx	.000119	4
28	MP2A	X	.353	6
29	MP2A	Z	.612	6
30	MP2A	Mx	.000149	6
31	MP2A	X	.353	7
32	MP2A	Z	.612	7
33	MP2A	Mx	.000149	7
34	MP2A	X	.353	6
35	MP2A	Z	.612	6
36	MP2A	Mx	-.000149	6
37	MP2A	X	.353	7
38	MP2A	Z	.612	7
39	MP2A	Mx	-.000149	7
40	OVP	X	2.622	2
41	OVP	Z	4.541	2
42	OVP	Mx	.0013	2





**Member Point Loads (BLC 33 : Antenna Wm (180 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	0	3
2	MP4A	Z	3.353	3
3	MP4A	Mx	0	3
4	MP4A	X	0	5
5	MP4A	Z	3.353	5
6	MP4A	Mx	0	5
7	MP2A	X	0	1.5
8	MP2A	Z	8.015	1.5
9	MP2A	Mx	.0053	1.5
10	MP2A	X	0	6.5
11	MP2A	Z	8.015	6.5
12	MP2A	Mx	.0053	6.5
13	MP2A	X	0	1.5
14	MP2A	Z	8.015	1.5
15	MP2A	Mx	-.0053	1.5
16	MP2A	X	0	6.5
17	MP2A	Z	8.015	6.5
18	MP2A	Mx	-.0053	6.5
19	MP1A	X	0	1
20	MP1A	Z	2.727	1
21	MP1A	Mx	0	1
22	MP3A	X	0	1
23	MP3A	Z	2.727	1
24	MP3A	Mx	0	1
25	MP2A	X	0	4
26	MP2A	Z	.651	4
27	MP2A	Mx	0	4
28	MP2A	X	0	6
29	MP2A	Z	.66	6
30	MP2A	Mx	-.00022	6
31	MP2A	X	0	7
32	MP2A	Z	.66	7
33	MP2A	Mx	-.00022	7
34	MP2A	X	0	6
35	MP2A	Z	.66	6
36	MP2A	Mx	.00022	6
37	MP2A	X	0	7
38	MP2A	Z	.66	7
39	MP2A	Mx	.00022	7
40	OVP	X	0	2
41	OVP	Z	5.578	2
42	OVP	Mx	0	2

**Member Point Loads (BLC 34 : Antenna Wm (210 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	-1.419	3
2	MP4A	Z	2.457	3
3	MP4A	Mx	.00071	3
4	MP4A	X	-1.419	5
5	MP4A	Z	2.457	5
6	MP4A	Mx	.00071	5
7	MP2A	X	-3.664	1.5
8	MP2A	Z	6.346	1.5
9	MP2A	Mx	.0061	1.5
10	MP2A	X	-3.664	6.5
11	MP2A	Z	6.346	6.5



**Member Point Loads (BLC 34 : Antenna Wm (210 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
12	MP2A	Mx	.0061	6.5
13	MP2A	X	-3.664	1.5
14	MP2A	Z	6.346	1.5
15	MP2A	Mx	-.0024	1.5
16	MP2A	X	-3.664	6.5
17	MP2A	Z	6.346	6.5
18	MP2A	Mx	-.0024	6.5
19	MP1A	X	-1.252	1
20	MP1A	Z	2.168	1
21	MP1A	Mx	-.000626	1
22	MP3A	X	-1.21	1
23	MP3A	Z	2.095	1
24	MP3A	Mx	-.000605	1
25	MP2A	X	-.357	4
26	MP2A	Z	.618	4
27	MP2A	Mx	-.000119	4
28	MP2A	X	-.353	6
29	MP2A	Z	.612	6
30	MP2A	Mx	-.000557	6
31	MP2A	X	-.353	7
32	MP2A	Z	.612	7
33	MP2A	Mx	-.000557	7
34	MP2A	X	-.353	6
35	MP2A	Z	.612	6
36	MP2A	Mx	.000557	6
37	MP2A	X	-.353	7
38	MP2A	Z	.612	7
39	MP2A	Mx	.000557	7
40	OVP	X	-2.622	2
41	OVP	Z	4.541	2
42	OVP	Mx	-.0013	2

**Member Point Loads (BLC 35 : Antenna Wm (240 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-1.565	3
2	MP4A	Z	.903	3
3	MP4A	Mx	.000783	3
4	MP4A	X	-1.565	5
5	MP4A	Z	.903	5
6	MP4A	Mx	.000783	5
7	MP2A	X	-5.155	1.5
8	MP2A	Z	2.976	1.5
9	MP2A	Mx	.0046	1.5
10	MP2A	X	-5.155	6.5
11	MP2A	Z	2.976	6.5
12	MP2A	Mx	.0046	6.5
13	MP2A	X	-5.155	1.5
14	MP2A	Z	2.976	1.5
15	MP2A	Mx	.000594	1.5
16	MP2A	X	-5.155	6.5
17	MP2A	Z	2.976	6.5
18	MP2A	Mx	.000594	6.5
19	MP1A	X	-1.779	1
20	MP1A	Z	1.027	1
21	MP1A	Mx	-.00089	1
22	MP3A	X	-1.562	1



**Member Point Loads (BLC 35 : Antenna Wm (240 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
23	MP3A	Z	.902	1
24	MP3A	Mx	-.000781	1
25	MP2A	X	-.726	4
26	MP2A	Z	.419	4
27	MP2A	Mx	-.000242	4
28	MP2A	X	-.693	6
29	MP2A	Z	.4	6
30	MP2A	Mx	-.000826	6
31	MP2A	X	-.693	7
32	MP2A	Z	.4	7
33	MP2A	Mx	-.000826	7
34	MP2A	X	-.693	6
35	MP2A	Z	.4	6
36	MP2A	Mx	.000826	6
37	MP2A	X	-.693	7
38	MP2A	Z	.4	7
39	MP2A	Mx	.000826	7
40	OVP	X	-3.962	2
41	OVP	Z	2.288	2
42	OVP	Mx	-.002	2

**Member Point Loads (BLC 36 : Antenna Wm (270 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	-1.291	3
2	MP4A	Z	0	3
3	MP4A	Mx	.000645	3
4	MP4A	X	-1.291	5
5	MP4A	Z	0	5
6	MP4A	Mx	.000645	5
7	MP2A	X	-5.264	1.5
8	MP2A	Z	0	1.5
9	MP2A	Mx	.0026	1.5
10	MP2A	X	-5.264	6.5
11	MP2A	Z	0	6.5
12	MP2A	Mx	.0026	6.5
13	MP2A	X	-5.264	1.5
14	MP2A	Z	0	1.5
15	MP2A	Mx	.0026	1.5
16	MP2A	X	-5.264	6.5
17	MP2A	Z	0	6.5
18	MP2A	Mx	.0026	6.5
19	MP1A	X	-1.83	1
20	MP1A	Z	0	1
21	MP1A	Mx	-.000915	1
22	MP3A	X	-1.496	1
23	MP3A	Z	0	1
24	MP3A	Mx	-.000748	1
25	MP2A	X	-.901	4
26	MP2A	Z	0	4
27	MP2A	Mx	-.0003	4
28	MP2A	X	-.847	6
29	MP2A	Z	0	6
30	MP2A	Mx	-.000847	6
31	MP2A	X	-.847	7
32	MP2A	Z	0	7
33	MP2A	Mx	-.000847	7



**Member Point Loads (BLC 36 : Antenna Wm (270 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
34	MP2A	X	- .847	6
35	MP2A	Z	0	6
36	MP2A	Mx	.000847	6
37	MP2A	X	- .847	7
38	MP2A	Z	0	7
39	MP2A	Mx	.000847	7
40	OVP	X	-4.241	2
41	OVP	Z	0	2
42	OVP	Mx	-.0021	2

**Member Point Loads (BLC 37 : Antenna Wm (300 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	-1.565	3
2	MP4A	Z	-.903	3
3	MP4A	Mx	.000783	3
4	MP4A	X	-1.565	5
5	MP4A	Z	-.903	5
6	MP4A	Mx	.000783	5
7	MP2A	X	-5.155	1.5
8	MP2A	Z	-2.976	1.5
9	MP2A	Mx	.000594	1.5
10	MP2A	X	-5.155	6.5
11	MP2A	Z	-2.976	6.5
12	MP2A	Mx	.000594	6.5
13	MP2A	X	-5.155	1.5
14	MP2A	Z	-2.976	1.5
15	MP2A	Mx	.0046	1.5
16	MP2A	X	-5.155	6.5
17	MP2A	Z	-2.976	6.5
18	MP2A	Mx	.0046	6.5
19	MP1A	X	-1.779	1
20	MP1A	Z	-1.027	1
21	MP1A	Mx	-.00089	1
22	MP3A	X	-1.562	1
23	MP3A	Z	-.902	1
24	MP3A	Mx	-.000781	1
25	MP2A	X	-.726	4
26	MP2A	Z	-.419	4
27	MP2A	Mx	-.000242	4
28	MP2A	X	-.693	6
29	MP2A	Z	-.4	6
30	MP2A	Mx	-.00056	6
31	MP2A	X	-.693	7
32	MP2A	Z	-.4	7
33	MP2A	Mx	-.00056	7
34	MP2A	X	-.693	6
35	MP2A	Z	-.4	6
36	MP2A	Mx	.00056	6
37	MP2A	X	-.693	7
38	MP2A	Z	-.4	7
39	MP2A	Mx	.00056	7
40	OVP	X	-3.962	2
41	OVP	Z	-2.288	2
42	OVP	Mx	-.002	2



**Member Point Loads (BLC 38 : Antenna Wm (330 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP4A	X	-1.419	3
2	MP4A	Z	-2.457	3
3	MP4A	Mx	.00071	3
4	MP4A	X	-1.419	5
5	MP4A	Z	-2.457	5
6	MP4A	Mx	.00071	5
7	MP2A	X	-3.664	1.5
8	MP2A	Z	-6.346	1.5
9	MP2A	Mx	-.0024	1.5
10	MP2A	X	-3.664	6.5
11	MP2A	Z	-6.346	6.5
12	MP2A	Mx	-.0024	6.5
13	MP2A	X	-3.664	1.5
14	MP2A	Z	-6.346	1.5
15	MP2A	Mx	.0061	1.5
16	MP2A	X	-3.664	6.5
17	MP2A	Z	-6.346	6.5
18	MP2A	Mx	.0061	6.5
19	MP1A	X	-1.252	1
20	MP1A	Z	-2.168	1
21	MP1A	Mx	-.000626	1
22	MP3A	X	-1.21	1
23	MP3A	Z	-2.095	1
24	MP3A	Mx	-.000605	1
25	MP2A	X	-.357	4
26	MP2A	Z	-.618	4
27	MP2A	Mx	-.000119	4
28	MP2A	X	-.353	6
29	MP2A	Z	-.612	6
30	MP2A	Mx	-.000149	6
31	MP2A	X	-.353	7
32	MP2A	Z	-.612	7
33	MP2A	Mx	-.000149	7
34	MP2A	X	-.353	6
35	MP2A	Z	-.612	6
36	MP2A	Mx	.000149	6
37	MP2A	X	-.353	7
38	MP2A	Z	-.612	7
39	MP2A	Mx	.000149	7
40	OVP	X	-2.622	2
41	OVP	Z	-4.541	2
42	OVP	Mx	-.0013	2

**Member Point Loads (BLC 77 : Lm1)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	M1	Y	-500	%98

**Member Point Loads (BLC 78 : Lm2)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	M1	Y	-500	%66

**Member Point Loads (BLC 79 : Lv1)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	M1	Y	-250	0



**Member Point Loads (BLC 80 : Lv2)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	M1	Y	-250	%50

**Member Point Loads (BLC 81 : Antenna Ev)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	Y	-1.2835	3
2	MP4A	My	-.000642	3
3	MP4A	Mz	0	3
4	MP4A	Y	-1.2835	5
5	MP4A	Mv	-.000642	5
6	MP4A	Mz	0	5
7	MP2A	Y	-1.4179	1.5
8	MP2A	My	-.000709	1.5
9	MP2A	Mz	.000945	1.5
10	MP2A	Y	-1.4179	6.5
11	MP2A	Mv	-.000709	6.5
12	MP2A	Mz	.000945	6.5
13	MP2A	Y	-1.4179	1.5
14	MP2A	My	-.000709	1.5
15	MP2A	Mz	-.000945	1.5
16	MP2A	Y	-1.4179	6.5
17	MP2A	Mv	-.000709	6.5
18	MP2A	Mz	-.000945	6.5
19	MP1A	Y	-3.7811	1
20	MP1A	My	.0019	1
21	MP1A	Mz	0	1
22	MP3A	Y	-3.1494	1
23	MP3A	My	.0016	1
24	MP3A	Mz	0	1
25	MP2A	Y	-.9318	4
26	MP2A	My	.000311	4
27	MP2A	Mz	0	4
28	MP2A	Y	-.3942	6
29	MP2A	My	.000394	6
30	MP2A	Mz	-.000131	6
31	MP2A	Y	-.3942	7
32	MP2A	My	.000394	7
33	MP2A	Mz	-.000131	7
34	MP2A	Y	-.3942	6
35	MP2A	Mv	-.000394	6
36	MP2A	Mz	.000131	6
37	MP2A	Y	-.3942	7
38	MP2A	My	-.000394	7
39	MP2A	Mz	.000131	7
40	OVP	Y	-1.4336	2
41	OVP	Mv	.000717	2
42	OVP	Mz	0	2

**Member Point Loads (BLC 82 : Antenna Eh (0 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	Z	-3.2088	3
2	MP4A	Mx	0	3
3	MP4A	Z	-3.2088	5
4	MP4A	Mx	0	5
5	MP2A	Z	-3.5448	1.5
6	MP2A	Mx	-.0024	1.5
7	MP2A	Z	-3.5448	6.5



**Member Point Loads (BLC 82 : Antenna Eh (0 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
8	MP2A	Mx	-.0024	6.5
9	MP2A	Z	-3.5448	1.5
10	MP2A	Mx	.0024	1.5
11	MP2A	Z	-3.5448	6.5
12	MP2A	Mx	.0024	6.5
13	MP1A	Z	-9.4528	1
14	MP1A	Mx	0	1
15	MP3A	Z	-7.8736	1
16	MP3A	Mx	0	1
17	MP2A	Z	-2.3296	4
18	MP2A	Mx	0	4
19	MP2A	Z	-.9856	6
20	MP2A	Mx	.000329	6
21	MP2A	Z	-.9856	7
22	MP2A	Mx	.000329	7
23	MP2A	Z	-.9856	6
24	MP2A	Mx	-.000329	6
25	MP2A	Z	-.9856	7
26	MP2A	Mx	-.000329	7
27	OVP	Z	-3.584	2
28	OVP	Mx	0	2

**Member Point Loads (BLC 83 : Antenna Eh (90 Deg))**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	3.2088	3
2	MP4A	Mx	-.0016	3
3	MP4A	X	3.2088	5
4	MP4A	Mx	-.0016	5
5	MP2A	X	3.5448	1.5
6	MP2A	Mx	-.0018	1.5
7	MP2A	X	3.5448	6.5
8	MP2A	Mx	-.0018	6.5
9	MP2A	X	3.5448	1.5
10	MP2A	Mx	-.0018	1.5
11	MP2A	X	3.5448	6.5
12	MP2A	Mx	-.0018	6.5
13	MP1A	X	9.4528	1
14	MP1A	Mx	.0047	1
15	MP3A	X	7.8736	1
16	MP3A	Mx	.0039	1
17	MP2A	X	2.3296	4
18	MP2A	Mx	.000777	4
19	MP2A	X	.9856	6
20	MP2A	Mx	.000986	6
21	MP2A	X	.9856	7
22	MP2A	Mx	.000986	7
23	MP2A	X	.9856	6
24	MP2A	Mx	-.000986	6
25	MP2A	X	.9856	7
26	MP2A	Mx	-.000986	7
27	OVP	X	3.584	2
28	OVP	Mx	.0018	2



### Member Area Loads

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
No Data to Print ...						

### Envelope Joint Reactions

Joint	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	...	MZ [k-ft]	LC		
1	N35	...	1245.072	35	984.787	19	1296.728	14	-.105	74	0	75	.517	30
2		...	-412.182	49	344.833	64	-207.311	8	-.305	14	0	1	.145	73
3	N36	...	412.257	49	958.842	13	424.522	2	-.093	8	0	75	.508	26
4		...	-1247.902	29	337.376	70	-1502.82	8	-.288	14	0	1	.141	71
5	N72	...	245.633	9	12.652	15	299.809	9	0	75	0	75	0	75
6		...	-247.266	3	4.251	72	-301.375	3	0	1	0	1	0	1
7	N74	...	258.66	9	12.694	15	316.29	9	0	75	0	75	0	75
8		...	-257.167	3	4.253	72	-313.917	3	0	1	0	1	0	1
9	Totals:	...	898.724	10	1965.417	13	1391.543	1						
10		...	-898.723	4	693.153	71	-1391.541	7						

### Joint Reactions

LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]	
1	1	N35	261.527	479.256	1271.028	-.164	0	.204
2	1	N36	-17.982	481.256	423.293	-.184	0	.202
3	1	N72	-110.34	6.045	-136.899	0	0	0
4	1	N74	-133.2	6.062	-165.879	0	0	0
5	1	Totals:	.005	972.619	1391.543			
6	1	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
7	2	N35	90.255	479.727	1285.067	-.166	0	.206
8	2	N36	-241.818	480.642	424.522	-.185	0	.205
9	2	N72	-237.133	6.118	-290.537	0	0	0
10	2	N74	-251.976	6.132	-309.356	0	0	0
11	2	Totals:	-640.673	972.619	1109.696			
12	2	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
13	3	N35	-27.721	481.916	1044.527	-.162	0	.206
14	3	N36	-364.136	478.43	88.245	-.17	0	.204
15	3	N72	-247.266	6.133	-301.375	0	0	0
16	3	N74	-257.167	6.141	-313.917	0	0	0
17	3	Totals:	-896.29	972.619	517.479			
18	3	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
19	4	N35	-92.445	483.571	755.658	-.155	0	.206
20	4	N36	-415.156	476.834	-271.745	-.153	0	.203
21	4	N72	-194.545	6.108	-240.678	0	0	0
22	4	N74	-196.577	6.107	-243.233	0	0	0
23	4	Totals:	-898.723	972.619	.003			
24	4	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
25	5	N35	-135.473	485.505	463.686	-.148	0	.206
26	5	N36	-465.744	474.966	-623.694	-.136	0	.203
27	5	N72	-143.38	6.08	-181.267	0	0	0
28	5	N74	-129.133	6.068	-163.171	0	0	0
29	5	Totals:	-873.73	972.619	-504.446			
30	5	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
31	6	N35	-113.591	488.812	104.943	-.14	0	.207
32	6	N36	-439.254	471.791	-1097.043	-.114	0	.201
33	6	N72	-51.018	6.018	-64.798	0	0	0
34	6	N74	-23.79	5.997	-30.23	0	0	0
35	6	Totals:	-627.652	972.619	-1087.128			
36	6	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			





**Joint Reactions (Continued)**

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
37	7	N35	16.056	491.382	-192.637	-.133	0	.206
38	7	N36	-258.411	469.466	-1500.751	-.094	0	.197
39	7	N72	108.233	5.894	134.505	0	0	0
40	7	N74	134.119	5.877	167.341	0	0	0
41	7	Totals:	-.004	972.619	-1391.541			
42	7	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
43	8	N35	187.015	490.964	-207.311	-.13	0	.204
44	8	N36	-34.855	470.072	-1502.82	-.093	0	.194
45	8	N72	235.29	5.795	288.869	0	0	0
46	8	N74	253.222	5.788	311.567	0	0	0
47	8	Totals:	640.673	972.619	-1109.694			
48	8	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
49	9	N35	304.817	488.877	33.156	-.134	0	.204
50	9	N36	87.18	472.15	-1166.731	-.108	0	.195
51	9	N72	245.633	5.8	299.809	0	0	0
52	9	N74	258.66	5.793	316.29	0	0	0
53	9	Totals:	896.291	972.619	-517.477			
54	9	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
55	10	N35	369.556	487.264	322.25	-.141	0	.205
56	10	N36	138.132	473.669	-806.506	-.125	0	.196
57	10	N72	192.943	5.845	238.875	0	0	0
58	10	N74	198.094	5.841	245.38	0	0	0
59	10	Totals:	898.724	972.619	-.001			
60	10	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
61	11	N35	412.719	485.317	614.543	-.148	0	.204
62	11	N36	188.848	475.529	-454.183	-.143	0	.196
63	11	N72	141.656	5.883	179.127	0	0	0
64	11	N74	130.507	5.89	164.961	0	0	0
65	11	Totals:	873.731	972.619	504.448			
66	11	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
67	12	N35	391.124	481.92	973.678	-.156	0	.203
68	12	N36	162.698	478.786	19.739	-.165	0	.198
69	12	N72	49.008	5.949	62.193	0	0	0
70	12	N74	24.824	5.964	31.519	0	0	0
71	12	Totals:	627.653	972.619	1087.13			
72	12	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
73	13	N35	332.837	981.318	1291.784	-.304	0	.428
74	13	N36	-277.979	958.842	-860.506	-.287	0	.417
75	13	N72	-10.633	12.606	-12.489	0	0	0
76	13	N74	-44.223	12.651	-55.088	0	0	0
77	13	Totals:	.001	1965.417	363.7			
78	13	COG (ft):	X: -2.326	Y: 2.092	Z: 7.94			
79	14	N35	287.347	981.608	1296.728	-.305	0	.429
80	14	N36	-339.601	958.472	-860.155	-.288	0	.417
81	14	N72	-43.107	12.648	-51.307	0	0	0
82	14	N74	-74.481	12.689	-91.085	0	0	0
83	14	Totals:	-169.842	1965.417	294.181			
84	14	COG (ft):	X: -2.326	Y: 2.092	Z: 7.94			
85	15	N35	255.391	982.304	1239.386	-.304	0	.429
86	15	N36	-374.017	957.766	-945.849	-.284	0	.417
87	15	N72	-47.473	12.652	-56.141	0	0	0
88	15	N74	-78.876	12.694	-95.956	0	0	0
89	15	Totals:	-244.974	1965.417	141.44			
90	15	COG (ft):	X: -2.326	Y: 2.092	Z: 7.94			
91	16	N35	238.442	982.778	1165.012	-.302	0	.429
92	16	N36	-387.49	957.324	-1040.949	-.28	0	.417
93	16	N72	-35.375	12.637	-42.842	0	0	0



**Joint Reactions (Continued)**

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
94	16	N74	-65.639	12.678	-81.218	0	0	0
95	16	Totals:	-250.062	1965.417	.003			
96	16	COG (ft):	X: -2.326	Y: 2.092	Z: 7.94			
97	17	N35	231.207	983.306	1088.235	-.301	0	.429
98	17	N36	-397.386	956.831	-1135.396	-.275	0	.417
99	17	N72	-22.326	12.622	-28.116	0	0	0
100	17	N74	-48.854	12.657	-61.761	0	0	0
101	17	Totals:	-237.359	1965.417	-137.037			
102	17	COG (ft):	X: -2.326	Y: 2.092	Z: 7.94			
103	18	N35	242.716	984.19	999.721	-.299	0	.429
104	18	N36	-385.559	956.012	-1257.579	-.27	0	.416
105	18	N72	1.002	12.591	1.26	0	0	0
106	18	N74	-23.605	12.624	-29.961	0	0	0
107	18	Totals:	-165.446	1965.417	-286.559			
108	18	COG (ft):	X: -2.326	Y: 2.092	Z: 7.94			
109	19	N35	279.7	984.787	928.467	-.297	0	.428
110	19	N36	-334.223	955.52	-1359.361	-.266	0	.415
111	19	N72	40.632	12.537	50.574	0	0	0
112	19	N74	13.89	12.573	16.624	0	0	0
113	19	Totals:	0	1965.417	-363.695			
114	19	COG (ft):	X: -2.326	Y: 2.092	Z: 7.94			
115	20	N35	325.167	984.5	923.48	-.296	0	.428
116	20	N36	-272.623	955.89	-1359.772	-.265	0	.414
117	20	N72	73.127	12.494	89.444	0	0	0
118	20	N74	44.172	12.533	52.672	0	0	0
119	20	Totals:	169.843	1965.417	-294.176			
120	20	COG (ft):	X: -2.326	Y: 2.092	Z: 7.94			
121	21	N35	357.112	983.809	980.817	-.297	0	.428
122	21	N36	-238.225	956.589	-1274.092	-.269	0	.415
123	21	N72	77.506	12.49	94.285	0	0	0
124	21	N74	48.582	12.529	57.554	0	0	0
125	21	Totals:	244.975	1965.417	-141.435			
126	21	COG (ft):	X: -2.326	Y: 2.092	Z: 7.94			
127	22	N35	374.065	983.338	1055.208	-.299	0	.428
128	22	N36	-224.754	957.026	-1178.973	-.273	0	.415
129	22	N72	65.408	12.506	80.968	0	0	0
130	22	N74	35.344	12.547	42.799	0	0	0
131	22	Totals:	250.063	1965.417	.002			
132	22	COG (ft):	X: -2.326	Y: 2.092	Z: 7.94			
133	23	N35	381.312	982.809	1132.009	-.3	0	.428
134	23	N36	-214.846	957.518	-1084.496	-.278	0	.415
135	23	N72	52.348	12.522	66.215	0	0	0
136	23	N74	18.547	12.568	23.314	0	0	0
137	23	Totals:	237.36	1965.417	137.042			
138	23	COG (ft):	X: -2.326	Y: 2.092	Z: 7.94			
139	24	N35	369.822	981.921	1220.548	-.302	0	.428
140	24	N36	-226.65	958.341	-962.274	-.283	0	.416
141	24	N72	28.999	12.554	36.808	0	0	0
142	24	N74	-6.724	12.601	-8.517	0	0	0
143	24	Totals:	165.447	1965.417	286.564			
144	24	COG (ft):	X: -2.326	Y: 2.092	Z: 7.94			
145	25	N35	1235.583	852.861	825.737	-.257	0	.517
146	25	N36	-1219.998	857.785	-719.511	-.262	0	.508
147	25	N72	-163.926	6.085	-207.709	0	0	0
148	25	N74	148.34	5.889	188.456	0	0	0
149	25	Totals:	0	1722.621	86.972			
150	25	COG (ft):	X: .05	Y: 1.334	Z: 8.028			



**Joint Reactions (Continued)**

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
151	26	N35	1224.862	852.886	826.626	-257	0	.517
152	26	N36	-1233.949	857.751	-719.394	-262	0	.508
153	26	N72	-171.867	6.09	-217.337	0	0	0
154	26	N74	140.909	5.894	179.463	0	0	0
155	26	Totals:	-40.044	1722.621	69.358			
156	26	COG (ft):	X: .05	Y: 1.334	Z: 8.028			
157	27	N35	1217.478	853.015	811.579	-257	0	.517
158	27	N36	-1241.565	857.621	-740.384	-261	0	.508
159	27	N72	-172.516	6.091	-218.035	0	0	0
160	27	N74	140.583	5.894	179.184	0	0	0
161	27	Totals:	-56.02	1722.621	32.344			
162	27	COG (ft):	X: .05	Y: 1.334	Z: 8.028			
163	28	N35	1213.429	853.113	793.502	-257	0	.517
164	28	N36	-1244.743	857.527	-762.872	-26	0	.508
165	28	N72	-169.231	6.089	-214.251	0	0	0
166	28	N74	144.376	5.891	183.622	0	0	0
167	28	Totals:	-56.169	1722.621	.002			
168	28	COG (ft):	X: .05	Y: 1.334	Z: 8.028			
169	29	N35	1210.732	853.23	775.234	-256	0	.517
170	29	N36	-1247.902	857.415	-784.859	-259	0	.508
171	29	N72	-166.04	6.088	-210.547	0	0	0
172	29	N74	148.599	5.889	188.647	0	0	0
173	29	Totals:	-54.61	1722.621	-31.525			
174	29	COG (ft):	X: .05	Y: 1.334	Z: 8.028			
175	30	N35	1212.097	853.433	752.785	-256	0	.517
176	30	N36	-1246.258	857.219	-814.441	-258	0	.508
177	30	N72	-160.268	6.084	-203.276	0	0	0
178	30	N74	155.199	5.884	196.988	0	0	0
179	30	Totals:	-39.23	1722.621	-67.944			
180	30	COG (ft):	X: .05	Y: 1.334	Z: 8.028			
181	31	N35	1220.221	853.594	734.186	-255	0	.517
182	31	N36	-1234.977	857.071	-839.655	-256	0	.508
183	31	N72	-150.317	6.078	-190.845	0	0	0
184	31	N74	165.073	5.878	209.345	0	0	0
185	31	Totals:	0	1722.621	-86.969			
186	31	COG (ft):	X: .05	Y: 1.334	Z: 8.028			
187	32	N35	1230.941	853.569	733.295	-255	0	.517
188	32	N36	-1221.027	857.105	-839.775	-256	0	.507
189	32	N72	-142.376	6.073	-181.213	0	0	0
190	32	N74	172.505	5.873	218.34	0	0	0
191	32	Totals:	40.044	1722.621	-69.354			
192	32	COG (ft):	X: .05	Y: 1.334	Z: 8.028			
193	33	N35	1238.325	853.441	748.342	-255	0	.517
194	33	N36	-1213.412	857.234	-818.786	-257	0	.507
195	33	N72	-141.725	6.073	-180.516	0	0	0
196	33	N74	172.833	5.873	218.62	0	0	0
197	33	Totals:	56.02	1722.621	-32.339			
198	33	COG (ft):	X: .05	Y: 1.334	Z: 8.028			
199	34	N35	1242.374	853.343	766.419	-256	0	.517
200	34	N36	-1210.234	857.328	-796.297	-258	0	.508
201	34	N72	-145.01	6.074	-184.301	0	0	0
202	34	N74	169.04	5.876	214.18	0	0	0
203	34	Totals:	56.169	1722.621	.002			
204	34	COG (ft):	X: .05	Y: 1.334	Z: 8.028			
205	35	N35	1245.072	853.226	784.689	-256	0	.517
206	35	N36	-1207.076	857.44	-774.308	-259	0	.508
207	35	N72	-148.202	6.076	-188.006	0	0	0



**Joint Reactions (Continued)**

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
208	35	N74	164.816	5.878	209.154	0	0	0
209	35	Totals:	54.61	1722.621	31.529			
210	35	COG (ft):	X: .05	Y: 1.334	Z: 8.028			
211	36	N35	1243.707	853.022	807.139	-.257	0	.517
212	36	N36	-1208.718	857.637	-744.725	-.261	0	.508
213	36	N72	-153.974	6.079	-195.278	0	0	0
214	36	N74	158.215	5.883	200.812	0	0	0
215	36	Totals:	39.23	1722.621	67.948			
216	36	COG (ft):	X: .05	Y: 1.334	Z: 8.028			
217	37	N35	564.444	867.974	1045.721	-.276	0	.429
218	37	N36	-549.176	842.672	-939.752	-.251	0	.417
219	37	N72	11.691	5.97	15.019	0	0	0
220	37	N74	-26.958	6.003	-34.014	0	0	0
221	37	Totals:	0	1722.619	86.973			
222	37	COG (ft):	X: -1.692	Y: 1.334	Z: 8.028			
223	38	N35	553.742	867.999	1046.61	-.276	0	.429
224	38	N36	-563.149	842.635	-939.638	-.251	0	.417
225	38	N72	3.754	5.976	5.389	0	0	0
226	38	N74	-34.39	6.009	-43.002	0	0	0
227	38	Totals:	-40.043	1722.619	69.359			
228	38	COG (ft):	X: -1.692	Y: 1.334	Z: 8.028			
229	39	N35	546.366	868.129	1031.575	-.276	0	.429
230	39	N36	-570.779	842.504	-960.649	-.25	0	.417
231	39	N72	3.114	5.977	4.708	0	0	0
232	39	N74	-34.72	6.009	-43.29	0	0	0
233	39	Totals:	-56.02	1722.619	32.344			
234	39	COG (ft):	X: -1.692	Y: 1.334	Z: 8.028			
235	40	N35	542.317	868.229	1013.513	-.276	0	.429
236	40	N36	-573.963	842.41	-983.158	-.249	0	.417
237	40	N72	6.409	5.974	8.511	0	0	0
238	40	N74	-30.931	6.006	-38.863	0	0	0
239	40	Totals:	-56.168	1722.619	.003			
240	40	COG (ft):	X: -1.692	Y: 1.334	Z: 8.028			
241	41	N35	539.62	868.347	995.258	-.275	0	.429
242	41	N36	-577.126	842.297	-1005.166	-.248	0	.417
243	41	N72	9.609	5.971	12.233	0	0	0
244	41	N74	-26.713	6.003	-33.85	0	0	0
245	41	Totals:	-54.61	1722.619	-31.525			
246	41	COG (ft):	X: -1.692	Y: 1.334	Z: 8.028			
247	42	N35	540.978	868.553	972.826	-.275	0	.429
248	42	N36	-575.482	842.102	-1034.772	-.247	0	.417
249	42	N72	15.391	5.966	19.527	0	0	0
250	42	N74	-20.117	5.997	-25.525	0	0	0
251	42	Totals:	-39.229	1722.619	-67.943			
252	42	COG (ft):	X: -1.692	Y: 1.334	Z: 8.028			
253	43	N35	549.083	868.716	954.24	-.274	0	.429
254	43	N36	-564.185	841.957	-1060.004	-.246	0	.417
255	43	N72	25.347	5.957	31.98	0	0	0
256	43	N74	-10.246	5.989	-13.184	0	0	0
257	43	Totals:	0	1722.619	-86.968			
258	43	COG (ft):	X: -1.692	Y: 1.334	Z: 8.028			
259	44	N35	559.784	868.692	953.348	-.274	0	.429
260	44	N36	-550.213	841.994	-1060.12	-.246	0	.416
261	44	N72	33.285	5.951	41.612	0	0	0
262	44	N74	-2.812	5.983	-4.194	0	0	0
263	44	Totals:	40.044	1722.619	-69.354			
264	44	COG (ft):	X: -1.692	Y: 1.334	Z: 8.028			



**Joint Reactions (Continued)**

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
265	45	N35	567.16	868.562	968.383	-274	0	.429
266	45	N36	-542.584	842.124	-1039.11	-246	0	.416
267	45	N72	33.926	5.95	42.293	0	0	0
268	45	N74	-2.481	5.982	-3.905	0	0	0
269	45	Totals:	56.021	1722.619	-32.339			
270	45	COG (ft):	X: -1.692	Y: 1.334	Z: 8.028			
271	46	N35	571.209	868.462	986.446	-275	0	.429
272	46	N36	-539.4	842.218	-1016.6	-248	0	.416
273	46	N72	30.631	5.953	38.49	0	0	0
274	46	N74	-6.27	5.986	-8.333	0	0	0
275	46	Totals:	56.169	1722.619	.002			
276	46	COG (ft):	X: -1.692	Y: 1.334	Z: 8.028			
277	47	N35	573.906	868.344	1004.702	-275	0	.429
278	47	N36	-536.237	842.331	-994.591	-249	0	.416
279	47	N72	27.43	5.956	34.767	0	0	0
280	47	N74	-10.489	5.989	-13.348	0	0	0
281	47	Totals:	54.611	1722.619	31.53			
282	47	COG (ft):	X: -1.692	Y: 1.334	Z: 8.028			
283	48	N35	572.549	868.137	1027.136	-276	0	.429
284	48	N36	-537.88	842.526	-964.983	-25	0	.417
285	48	N72	21.648	5.961	27.47	0	0	0
286	48	N74	-17.086	5.995	-21.675	0	0	0
287	48	Totals:	39.23	1722.619	67.948			
288	48	COG (ft):	X: -1.692	Y: 1.334	Z: 8.028			
289	49	N35	-412.182	681.682	881.617	-215	0	.183
290	49	N36	412.257	653.977	-881.603	-188	0	.175
291	49	N72	96.769	5.808	122.82	0	0	0
292	49	N74	-96.844	6.151	-122.832	0	0	0
293	49	Totals:	0	1347.618	.001			
294	49	COG (ft):	X: -4.227	Y: 1.664	Z: 8.012			
295	50	N35	141.557	669.052	759.683	-205	0	.27
296	50	N36	-141.519	666.608	-759.635	-199	0	.266
297	50	N72	.791	5.979	1.003	0	0	0
298	50	N74	-.828	5.981	-1.05	0	0	0
299	50	Totals:	0	1347.619	.002			
300	50	COG (ft):	X: -2.487	Y: 1.664	Z: 8.012			
301	51	N35	161.659	566.215	628.892	-173	0	.239
302	51	N36	-161.613	554.554	-628.833	-163	0	.233
303	51	N72	-.93	6.977	-1.18	0	0	0
304	51	N74	.884	6.976	1.121	0	0	0
305	51	Totals:	0	1134.722	.001			
306	51	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
307	52	N35	150.339	502.304	596.056	-153	0	.213
308	52	N36	-135.556	494.209	-487.638	-147	0	.208
309	52	N72	-8.074	6.209	-9.686	0	0	0
310	52	N74	-6.709	6.208	-7.953	0	0	0
311	52	Totals:	0	1008.93	90.779			
312	52	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
313	53	N35	141.152	502.534	599.018	-154	0	.213
314	53	N36	-155.459	493.968	-482.645	-147	0	.208
315	53	N72	-17.868	6.216	-21.832	0	0	0
316	53	N74	-13.214	6.212	-15.926	0	0	0
317	53	Totals:	-45.388	1008.93	78.615			
318	53	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
319	54	N35	132.66	503.027	591.305	-154	0	.213
320	54	N36	-172.21	493.47	-498.141	-147	0	.208
321	54	N72	-23.096	6.219	-28.41	0	0	0





**Joint Reactions (Continued)**

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
322	54	N74	-15.968	6.214	-19.365	0	0	0
323	54	Totals:	-78.613	1008.93	45.39			
324	54	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
325	55	N35	127.135	503.652	574.983	-.154	0	.214
326	55	N36	-181.322	492.847	-529.974	-.146	0	.208
327	55	N72	-22.358	6.219	-27.659	0	0	0
328	55	N74	-14.233	6.213	-17.349	0	0	0
329	55	Totals:	-90.777	1008.93	.001			
330	55	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
331	56	N35	126.06	504.24	554.424	-.155	0	.213
332	56	N36	-180.35	492.267	-569.619	-.144	0	.207
333	56	N72	-15.85	6.214	-19.776	0	0	0
334	56	N74	-8.474	6.209	-10.417	0	0	0
335	56	Totals:	-78.613	1008.93	-45.388			
336	56	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
337	57	N35	129.72	504.634	535.136	-.154	0	.213
338	57	N36	-169.559	491.886	-606.448	-.143	0	.207
339	57	N72	-5.316	6.207	-6.875	0	0	0
340	57	N74	-.233	6.203	-.425	0	0	0
341	57	Totals:	-45.389	1008.93	-78.613			
342	57	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
343	58	N35	137.134	504.729	522.284	-.154	0	.213
344	58	N36	-151.839	491.806	-630.603	-.142	0	.206
345	58	N72	6.422	6.198	7.591	0	0	0
346	58	N74	8.283	6.197	9.951	0	0	0
347	58	Totals:	0	1008.93	-90.777			
348	58	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
349	59	N35	146.318	504.499	519.318	-.154	0	.212
350	59	N36	-131.937	492.047	-635.602	-.142	0	.206
351	59	N72	16.218	6.191	19.743	0	0	0
352	59	N74	14.79	6.193	17.928	0	0	0
353	59	Totals:	45.389	1008.93	-78.613			
354	59	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
355	60	N35	154.809	504.006	527.03	-.153	0	.212
356	60	N36	-115.188	492.545	-620.11	-.142	0	.206
357	60	N72	21.447	6.188	26.323	0	0	0
358	60	N74	17.546	6.191	21.369	0	0	0
359	60	Totals:	78.614	1008.93	-45.388			
360	60	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
361	61	N35	160.335	503.382	543.356	-.153	0	.212
362	61	N36	-106.075	493.167	-588.273	-.143	0	.206
363	61	N72	20.708	6.188	25.568	0	0	0
364	61	N74	15.81	6.192	19.35	0	0	0
365	61	Totals:	90.778	1008.93	0			
366	61	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
367	62	N35	161.413	502.794	563.92	-.153	0	.212
368	62	N36	-107.045	493.747	-548.623	-.145	0	.207
369	62	N72	14.197	6.193	17.68	0	0	0
370	62	N74	10.048	6.196	12.413	0	0	0
371	62	Totals:	78.614	1008.93	45.39			
372	62	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
373	63	N35	157.755	502.399	583.208	-.153	0	.212
374	63	N36	-117.834	494.128	-511.79	-.146	0	.207
375	63	N72	3.663	6.201	4.777	0	0	0
376	63	N74	1.806	6.202	2.42	0	0	0
377	63	Totals:	45.389	1008.93	78.615			
378	63	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			



**Joint Reactions (Continued)**

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
379	64	N35	105.344	344.833	421.055	-.105	0	.146
380	64	N36	-90.577	339.789	-312.658	-.102	0	.143
381	64	N72	-7.811	4.265	-9.352	0	0	0
382	64	N74	-6.956	4.265	-8.266	0	0	0
383	64	Totals:	0	693.153	90.779			
384	64	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
385	65	N35	96.158	345.065	424.017	-.106	0	.147
386	65	N36	-110.481	339.551	-307.666	-.102	0	.143
387	65	N72	-17.605	4.27	-21.498	0	0	0
388	65	N74	-13.46	4.268	-16.238	0	0	0
389	65	Totals:	-45.388	693.153	78.615			
390	65	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
391	66	N35	87.666	345.559	416.3	-.106	0	.147
392	66	N36	-127.234	339.052	-323.159	-.102	0	.143
393	66	N72	-22.833	4.272	-28.076	0	0	0
394	66	N74	-16.212	4.269	-19.675	0	0	0
395	66	Totals:	-78.613	693.153	45.39			
396	66	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
397	67	N35	82.144	346.185	399.971	-.106	0	.147
398	67	N36	-136.35	338.428	-354.987	-.1	0	.143
399	67	N72	-22.095	4.272	-27.325	0	0	0
400	67	N74	-14.476	4.268	-17.658	0	0	0
401	67	Totals:	-90.777	693.153	0			
402	67	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
403	68	N35	81.071	346.773	379.402	-.106	0	.147
404	68	N36	-135.382	337.845	-394.624	-.099	0	.143
405	68	N72	-15.587	4.269	-19.443	0	0	0
406	68	N74	-8.715	4.266	-10.723	0	0	0
407	68	Totals:	-78.613	693.153	-45.388			
408	68	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
409	69	N35	84.733	347.167	360.106	-.106	0	.147
410	69	N36	-124.594	337.46	-431.447	-.097	0	.142
411	69	N72	-5.054	4.264	-6.542	0	0	0
412	69	N74	-.474	4.262	-.73	0	0	0
413	69	Totals:	-45.389	693.153	-78.613			
414	69	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
415	70	N35	92.148	347.261	347.25	-.106	0	.146
416	70	N36	-106.875	337.376	-455.597	-.096	0	.141
417	70	N72	6.684	4.258	7.923	0	0	0
418	70	N74	8.043	4.258	9.646	0	0	0
419	70	Totals:	0	693.153	-90.777			
420	70	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
421	71	N35	101.331	347.03	344.284	-.105	0	.146
422	71	N36	-86.973	337.616	-460.595	-.096	0	.141
423	71	N72	16.48	4.253	20.075	0	0	0
424	71	N74	14.55	4.254	17.623	0	0	0
425	71	Totals:	45.389	693.153	-78.613			
426	71	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
427	72	N35	109.821	346.535	352	-.105	0	.145
428	72	N36	-70.221	338.114	-445.105	-.097	0	.141
429	72	N72	21.709	4.251	26.655	0	0	0
430	72	N74	17.303	4.253	21.062	0	0	0
431	72	Totals:	78.614	693.153	-45.388			
432	72	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
433	73	N35	115.346	345.91	368.333	-.105	0	.145
434	73	N36	-61.104	338.737	-413.274	-.098	0	.141
435	73	N72	20.97	4.251	25.9	0	0	0



**Joint Reactions (Continued)**

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
436	73	N74	15.566	4.254	19.041	0	0	0
437	73	Totals:	90.778	693.153	0			
438	73	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
439	74	N35	116.422	345.322	388.906	-1.05	0	.145
440	74	N36	-62.07	339.32	-373.631	-.1	0	.142
441	74	N72	14.46	4.255	18.013	0	0	0
442	74	N74	9.802	4.257	12.102	0	0	0
443	74	Totals:	78.614	693.153	45.39			
444	74	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			
445	75	N35	112.761	344.927	408.202	-1.05	0	.146
446	75	N36	-72.857	339.705	-336.805	-1.01	0	.143
447	75	N72	3.926	4.26	5.11	0	0	0
448	75	N74	1.559	4.261	2.107	0	0	0
449	75	Totals:	45.389	693.153	78.615			
450	75	COG (ft):	X: -2.354	Y: 2.25	Z: 7.985			

**Envelope AISC 15th(360-16): LRFD Steel Code Checks**

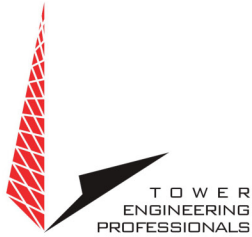
Member	Shape	Code Check	Lo...	LC	Shear Check	Lo.....	LC	phi*Pnc...	phi*Pnt [..	phi*Mn y...	phi*Mn...	Cb	Eqn	
1	M1	PIPE_2.5	.245	8....	30	.082	8....	43	14558.7...	50715	3.596	3.596	2.296	H1-...
2	M2	PIPE_2.5	.234	8....	36	.054	8....	25	14558.7...	50715	3.596	3.596	2.295	H1-...
3	M13	PL5/8X3.5	.114	.422	49	.114	.422	y 8	66184.77	68906.25	.897	5.024	1.667	H1-...
4	M14	PL5/8X3.5	.121	0	49	.096	.422	y 2	66184.77	68906.25	.897	5.024	1.667	H1-...
5	M15	PL5/8X3.5	.191	0	31	.119	0	y 1	66184.77	68906.25	.897	5.024	1.667	H1-...
6	M16	PL5/8X3.5	.186	.422	31	.135	0	y 7	66184.77	68906.25	.897	5.024	1.667	H1-...
7	M17	PIPE_2.0	.194	2....	7	.043	0	49	31128.25	32130	1.872	1.872	2.252	H1-...
8	M18	PIPE_2.0	.170	2....	2	.051	0	49	31128.25	32130	1.872	1.872	1.075	H1-...
9	M19	PIPE_2.0	.142	2....	25	.085	0	32	31128.25	32130	1.872	1.872	1.978	H1-...
10	M20	PIPE_2.0	.143	2....	31	.076	0	25	31128.25	32130	1.872	1.872	2.012	H1-...
11	M21	PL5/8X3.5	.258	.531	20	.060	.531	y 8	67591.76	68906.25	.897	5.024	1.311	H1-...
12	M22	PL5/8X3.5	.316	.531	31	.071	.531	y 7	67591.76	68906.25	.897	5.024	2.249	H1-...
13	M23	PL5/8X3.5	.252	.531	49	.050	.437	y 2	67591.76	68906.25	.897	5.024	1.429	H1-...
14	M24	PL5/8X3.5	.322	.531	25	.055	.437	y 25	67591.76	68906.25	.897	5.024	2.246	H1-...
15	M25	SR 0.75	.000	0	75	.009	0	1	2863.854	13916.2...	.174	.174	1.136	H1-...
16	M26	SR 0.75	.043	0	49	.009	4....	6	2863.854	13916.2...	.174	.174	1.136	H1-...
17	M27	SR 0.75	.000	0	75	.009	0	7	2863.854	13916.2...	.174	.174	1.136	H1-...
18	M28	SR 0.75	.074	4....	31	.013	4....	1	2863.854	13916.2...	.174	.174	1.136	H1-...
19	M31	PIPE_2.0	.013	2....	9	.001	0	21	29105.5...	32130	1.872	1.872	1.136	H1-...
20	MP4A	PIPE_2.0	.247	5....	49	.031	2....	49	14916.0...	32130	1.872	1.872	4.786	H1-...
21	MP3A	PIPE_2.0	.112	2....	49	.026	2....	32	14916.0...	32130	1.872	1.872	4.907	H1-...
22	MP2A	PIPE_2.0	.213	2....	30	.076	5....	5	14916.0...	32130	1.872	1.872	4.845	H1-...
23	MP1A	PIPE_2.0	.410	5....	30	.066	5....	25	14916.0...	32130	1.872	1.872	4.947	H1-...
24	M44	SR 0.625	.036	1....	12	.014	0	30	2158.31	9664.079	.101	.101	1.136	H1-...
25	M45	SR 0.625	.035	1....	8	.015	0	31	2158.31	9664.079	.101	.101	1.136	H1-...
26	M46	SR 0.625	.042	1....	7	.017	0	31	2158.31	9664.079	.101	.101	1	H1-...
27	M47	SR 0.625	.087	0	1	.014	0	31	2158.31	9664.079	.101	.101	1	H1-...
28	OVP	PIPE_2.0	.050	2	7	.016	.333	3	26521.4...	32130	1.872	1.872	1	H1-...
29	M50	PIPE_2.0	.014	2....	9	.001	0	21	29105.5...	32130	1.872	1.872	1.136	H1-...





# EXHIBIT 5





# Non-Ionizing Electromagnetic Radiation (NIER) Study

*Site Number:*

283426

*Site Name:*

Brookfield CT

*Location:*

Brookfield, Connecticut

*Tenants:*

Verizon Wireless

*Prepared For:*

American Tower, Inc.  
Woburn, Massachusetts

December 1<sup>st</sup>, 2023

68462 P411347

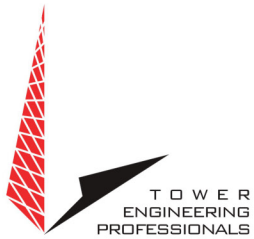
Prepared By:

Adam Carlson MS, CBRE, CPI  
Program Manager RF Design & Service  
Tower Engineering Professionals

Approved By:



12/4/2023



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## Disclaimer Notice

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

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RALIEGH, NORTH CAROLINA



## Non-Ionizing Electromagnetic Radiation (NIER) Study

283426 Brookfield CT  
Brookfield, Connecticut

### INTRODUCTION

Tower Engineering Professionals RF Design & Services Division (TEP-RF) of Raleigh, North Carolina, has been retained by American Tower, Inc. (ATC), of Woburn, Massachusetts to evaluate the RF emissions compared to the Maximum Permissible Exposure (MPE) limit for facilities at this location. This evaluation uses compliance standards as outlined in Federal Communications Commission (FCC) document OET-65.

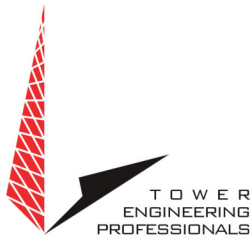
### SITE AND FACILITY CONSIDERATIONS

Site 283426 Brookfield CT is located at 37 Carmen Hill Rd., in Brookfield, Connecticut at coordinates 41.492932, -73.427318. The support structure is 82' self-support. An aerial view of the tower can be found in Appendix 1, Site Photos. The only tenant is Verizon Wireless (VZW). A table listing all antennae and effective radiated power (ERP) levels that were used in this study may be found in Appendix 2, Antenna Inventory.

### POWER DENSITY CALCULATIONS

Power densities were calculated based on FCC MPE limits for both General Population/Uncontrolled and Occupational/Controlled environments.

For the purpose of this study, a radius of 150' from the base of the tower with a height of 6' above ground level was used, beyond 150' the MPE levels become *di minimus*. This study utilized FCC recognized and accepted software programs using the maximum ERP levels for the antenna models provided by ATC. Diagrams depicting the predicted spatial average power density level at any specific location may be found in Appendix 3, MPE Limit Study. A discussion regarding the FCC limits may be found in Appendix 4, Information Pertaining to MPE Studies. Study methodology describing Non-ionizing Radiation Prediction Models used in this study may be found in Appendix 5, MPE Standards Methodology.



All data used in this study was collected from one or more of the following sources:

- ATC furnished data and does not include other unidentified communication facilities.
- Load List at Load List at 283426 Brookfield CT.RF NIER Study 11/15/23.
- FCC databases.
- Carrier standard configurations.
- Empirical data collected by TEP.

### SITE MITIGATION & CONTROL

In order to comply with FCC, tenant, & ATC requirements, TEP recommends the placement of signage at the base of the tower and all compound access points to alert workers of potential exposure to RF fields while working on or near the antennae.

TEP recommends that all personnel working on this tower be trained in RF safety procedures and carry a personal RF monitor at all times.

### COMPLIANCE DETERMINATION

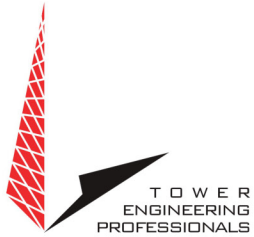
This installation IS in compliance with current FCC MPE limits as described in FCC OET-65.

## APPENDIX 1 Site Photos



Aerial View of Site

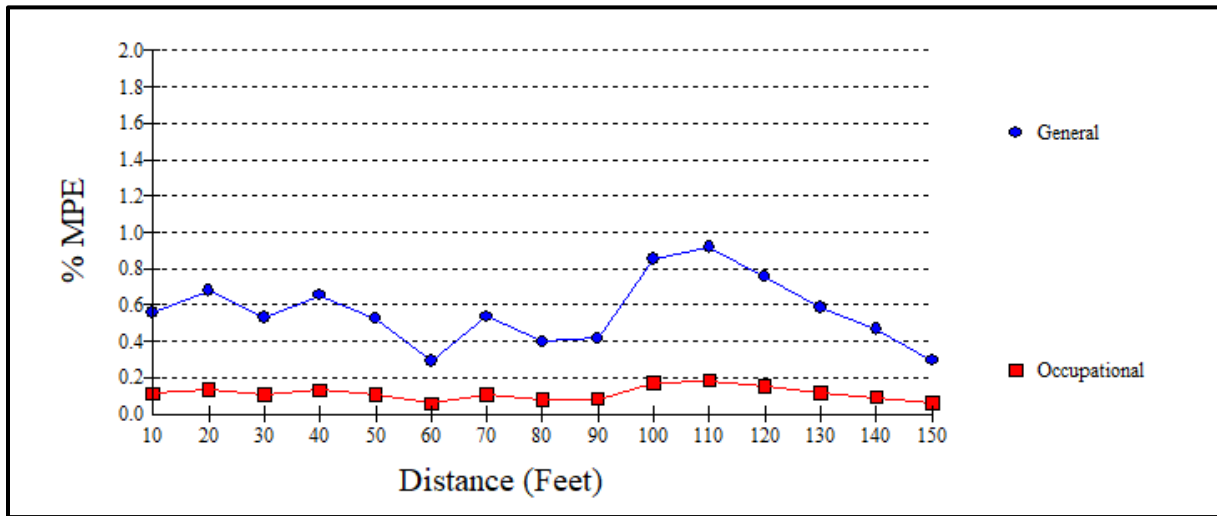




## Appendix 2      Antenna Inventory

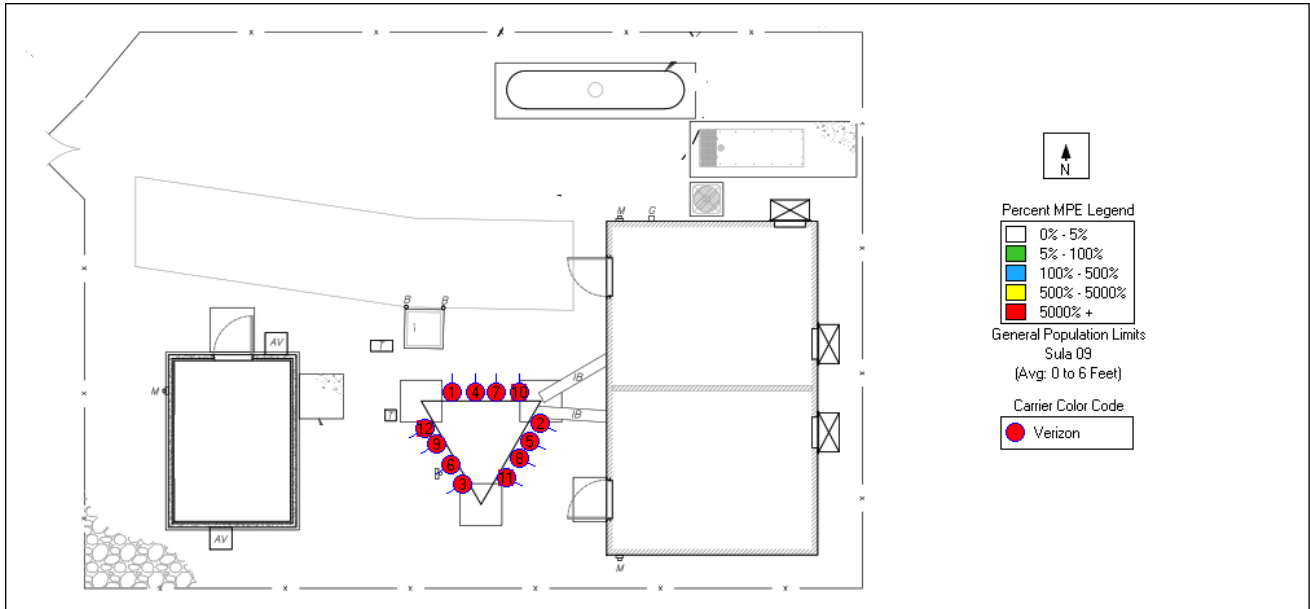
302523 New Milford CT							
Antenna Inventory							
Antenna #	Carrier	Antenna Manufacturer	Antenna Model	Frequency Band (MHz)	Azimuth (°)	Effective Radiated Power (W)	Radiation Center (ft)
1	Verizon	Commscope	JAHH-65B-R3B	700/800/1900/2100	000	38300	77.0
2	Verizon	Commscope	JAHH-65B-R3B	700/800/1900/2100	120	38300	77.0
3	Verizon	Commscope	JAHH-65B-R3B	700/800/1900/2100	240	38300	77.0
4	Verizon	Commscope	JAHH-65B-R3B	700/800/1900/2100	000	38300	77.0
5	Verizon	Commscope	JAHH-65B-R3B	700/800/1900/2100	120	38300	77.0
6	Verizon	Commscope	JAHH-65B-R3B	700/800/1900/2100	240	38300	77.0
7	Verizon	Antel	BXA-80063	800	000	7655	77.0
8	Verizon	Antel	BXA-80063	800	120	7655	77.0
9	Verizon	Antel	BXA-80063	800	240	7655	77.0
10	Verizon	JMA	Air 6419	3500-3700	000	8129	77.0
11	Verizon	JMA	Air 6419	3500-3700	120	8129	77.0
12	Verizon	JMA	Air 6419	3500-3700	240	8129	77.0

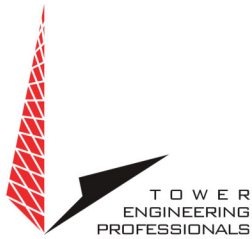
### Appendix 3.1 MPE Limit Study



Maximum Power Density (@110’):	0.0060 mW/cm <sup>2</sup>
General Population MPE (@110’):	0.9193%
Occupational MPE (@110’):	0.1835%

## Appendix 3.2 MPE Limit Study





## Appendix 4 Information Pertaining to MPE Studies

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

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

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

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



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

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

**General population/uncontrolled exposure** limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment-related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area. Additional details can be found in FCC OET 65.



## Appendix 5 MPE Standards Methodology

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

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

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

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

f = frequency

\* = Plane-wave equivalent power density

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

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

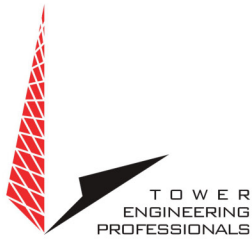
f = frequency

\* = Plane-wave equivalent power density

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

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





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

Two models are utilized to predict Near and Far field power densities. They are based on the formulae in FCC OET 65.

### **Cylindrical Model (Near Field Predictions)**

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

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

Where:

S = Power Density

P = Total Power into antenna

R = Distance from the antenna

L = Antenna aperture length



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

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

Where:

S = Power Density

$\theta_{BW}$  = Beam width of antenna in degrees (3 dB half-power point)

P = Total Power into antenna

R = Distance from the antenna

L = Antenna aperture length

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



### **Spherical Model (Far Field Predictions)**

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

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

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

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

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

Where:

S = Power Density

EIRP = Effective Radiated Power from antenna

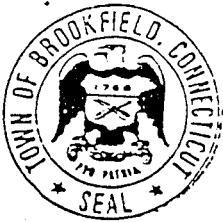
Rc = Reflection Coefficient (2.56)

R = Distance from the antenna

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

# EXHIBIT 6





TOWN OF BROOKFIELD  
ZONING COMMISSION

Permit No.: SP94-1  
Page 1 of 4

SPECIAL PERMIT - DESIGN REVIEW APPROVAL

<p><u>Issued to:</u> Danbury Broadcasting, Inc. 1004 Federal Road Brookfield, CT 06804</p>	<p><u>Owner of Record:</u> Danbury Broadcasting, Inc. 1004 Federal Road Brookfield, CT 06804</p>
<p><u>Location:</u> Lot No. B05013, 39 Carmen Hill Road, Brookfield, Connecticut.</p>	
<p><u>Project Description:</u> Replacement of an existing radio tower.</p> <p>Permitted Use: Existing/non-conforming      Zoning District: R-100 Application Date: 1-12-94                      Public Hearing Date: 2-10-94 Decision Date: 2-24-94                        Publication Date: 3-1-94</p>	
<p><u>Approval and Conditions:</u></p> <p>This Special Permit is issued pursuant to Title 8, Chapter 124, Sect. 3c of CGS and Chapter 242, Section 301C. of the Code of the Town of Brookfield. It is subject to the General Conditions, Special Stipulations, plans, drawings and documents as set forth hereinafter.</p>	
<p><u>Effectivity:</u>                      <u>This approval IS NOT VALID UNTIL:</u></p> <p>A. This document is filed by the record owner of the property with (i) The Town Clerk, and (ii) upon the land records of the Town of Brookfield prior to the commencement of any site work, but in no event later than sixty (60) days from the date hereof.</p> <p>B. A performance bond in the form of an irrevokable, unconditional, automatically renewable, bank letter of credit in the amount of: \$ <u>7,500</u> is on file in the Office of the First Selectman, Town of Brookfield, prior to the commencement of any site work, but in no event later than six (6) months from the date hereof.</p> <p>You are required to PROMPTLY RETURN the following documents to the Office of the Zoning Commission: (1) Certificate of Filing and Recording executed by the Town Clerk, (2) Site Work Bond and Agreement executed by you, (3) A signed copy of this Special Permit acknowledging both receipt hereof and your obligations hereunder.</p>	
<p><u>Attachments</u> (a part of this Special Permit):</p> <p>(1) General Conditions of Approval, (2) Special Stipulations, (3) Document Listing, (4) Certificate of Filing and Recording, (5) Site Work and Bond Agreement, (6) Acknowledgment copy of Permit</p>	
<p><u>Approval and Certification:</u></p> <p>Approved and certified to be a true copy of the Special Permit granted this <u>24th</u> day of <u>February</u>, <u>1994</u> at Brookfield, Connecticut.</p> <p><u>E. Polyzos</u> for The Brookfield Zoning Commission</p>	

## SPECIAL PERMIT - DESIGN REVIEW APPROVAL

## GENERAL CONDITIONS OF APPROVAL

- 
- (1) This approval shall be void and of no effect unless construction of all improvements, buildings and structures shown on the site plan is completed within two (2) years of the date of this letter. However, the Commission may extend said two (2) year period up to an additional three (3) years, if the Commission finds exceptional difficulty would result in applying the original two (2) year completion period. Any renewal periods shall be upon the same terms and conditions as originally approved unless modified by the Commission.
  - (2) If any activity on the site creates an impact upon the inland wetlands of the Town of Brookfield, then this approval is subject to such condition, if any, as may be imposed by the Inland Wetland Commission, Town of Brookfield.
  - (3) Prior to the construction of any structure(s), water supply or drainage system, or connection to a septic treatment facility or sewer, you shall conform to the requirements placed upon you by the Building Official, Health Department and Water Pollution Control Authority, Town of Brookfield,. Copies of documents reflecting final approval of these systems shall be filed by you with this Commission within fifteen (15) days after such approval is given.
  - (4) Any additions to the exterior lighting or the parking areas shall require specific approval of the Commission and shall be in accordance with the appropriate requirements of the Zoning Regulations, Town of Brookfield.
  - (5) If landscaping is required by the Commission per the approved site plan, you shall maintain such landscaping in a healthy growing condition throughout the duration of the use it is intended to serve. The Commission shall require the replacement of any landscaping which does not survive its initial planting.
  - (6) You are required to meet all the requirements of Section 242-602, "Technical Standards" of the Brookfield Code.
  - (7) Prior to the occupancy of any structure, you shall conform to such requirements as may be placed upon you by the Fire Marshal and Fire Chief, Town of Brookfield, relative to: emergency vehicle access, building egress, and provisions for an adequate supply of water for fire fighting purposes.
  - (8) During construction of the project, you shall take such precautions as may be prescribed by the Building Official, the Highway and Police Departments, Town of Brookfield, and the Zoning Commission, so as to protect the general health, safety, and welfare, and to preclude undue nuisance to residents of the general area. Construction trailers, equipment and the like shall be kept to a minimum of twenty-five (25) feet inside the property lines at all times.

## SPECIAL PERMIT - DESIGN REVIEW APPROVAL

GENERAL CONDITIONS OF APPROVAL

---

- (9) During construction of the project, the Erosion and Sediment Protection, (ESP), measures must be fully implemented in accordance with the approved plan. This shall apply not only to the installation of the required ESP measures but also to all maintenance procedures contained in the plan. Status reports on the ESP plan shall be filed with the Z.E.O. on a monthly basis.
- (10) Upon application for a Zoning Certificate of Compliance, you must provide a complete set of drawings revised to indicate the true "as built" condition of the project. These drawings shall be submitted in two (2) blue line copies and one (1) reproducible copy. The Zoning Enforcement Officer will then inspect the property to verify that the project has been completed in accordance with this approval. Only then will a Certificate of Compliance be issued. Occupancy shall not be permitted until such certificate is issued.
- (11) An "as built" plot plan shall be submitted to the Commission after the foundations and/or footings are poured. This plot plan shall contain all dimensions enabling the locations of the foundations, footings, drainage pipes, catch basins, galleries, underground utility lines, etc., to be compared for conformity to the approved site plan. No further earth covering over or building on these structures may be initiated until the submitted "as built" is approved by the Commission or the Zoning Enforcement Officer. The Commission will interpret failure to comply with this stipulation as grounds to deny any and all requests for subsequent modifications of the original site plan.

SPECIAL PERMIT - DESIGN REVIEW APPROVAL

SPECIAL STIPULATIONS

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1. The bond shall be set at \$7,500.

DOCUMENT LISTING

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1. Real Estate Impact Study, Proposed Radio Tower Replacement, Prepared by Leshner-Glendinning & Co., Inc./Appraisers & Counselors, P. O. BOX 402, Georgetown, Conn. 06829, Dated 2/8/94.
2. General Arrangement Drawing of WINE/WRKI RADIO, No. E-1, prepared by Stainless, Inc., 3rd St. and Montgomery Ave., North Wales, PA 19454, dated 12/15/93.
3. Site Plan Proposed Radio Tower Replacement, prepared for Danbury Broadcasting, Inc., 39 Carmen Hill Road, by Carroccio-Covill & Associates, Inc., 40 Old New Milford Road, Brookfield, CT 06804, Drawing No. 1465, Sheet 1 of 1, dated 1/24/94.



APPLICATION FOR DESIGN REVIEW APPROVAL

NO. SP 94-1



PROJECT DATA

Project Name: Proposed Radio Tower Replacement  
 Street Address: 39 Carmen Hill Road, Brookfield CT  
 Zoning District: R-100 Lot No.: B05013  
 Permitted Use: No; Existing/Non conform Permitted Use No.: N.A.  
 Acreage: 4.31 Ac Soil Types Present: Cr, Wx  
 Building Footprint: 1205 S.F. Intervious Area Footprint: 6205 S.F.  
 Total Building Sq. Ft. 1205 S.F. No. of Stories 1  
 No. of Occupants: 0 No. of Parking Spaces: 2  
 No. of Buildings: 2 (1 Building 1 Tower) Flood Plain Designation: N.A.  
 Wetlands Approval Req'd.? NO Wetlands Approval Obtained? N.A.  
 Steep Slopes Present? NO On Sewer Line? NO  
 Fences/Walls Present? YES Wooded Areas Present? YES  
 Fuel Tank Size: 275 gal. ± Fire Tank Size: N.A.  
 Phased Construction? NO Adjacent to Residential Zone? YES  
 Estimated Project Cost: \$300,000.00 Estimated Cost of Site Work: \$5100.00

Note: Application must be accompanied by all data specified in Section 242-301 C.(3) of the Brookfield Code, the required fee, and an itemized breakdown of site work costs.

APPLICANT DATA

<u>Owner of Record</u>	<u>Agent/Developer</u>
Name: <u>Danbury Broadcasting, Inc.</u>	<u>Attorney Ted D. Backer</u>
Street: <u>c/o 1004 Federal Road</u>	<u>Lee-Earn Corp. Park, 83 Wooster Heights</u>
City/Zip: <u>Brookfield, CT 06804</u>	<u>Danbury, CT 06813-3499</u>
Phone: <u>(203) 775-1212</u>	<u>(203) 743-2721</u>
Name of Proposed Occupant: <u>WINE/WRKI Radio Stations (Existing)</u>	
Occupant's Products/Services: <u>Broadcast Transmission (Existing)</u>	

AUTHORITY OF AGENT

I hereby authorize the above designated Agent/Developer to act in my behalf in all matters related to this application.

Owner of Record's Signature: Danbury Broadcasting, Inc. Date: Jan. 12/94  
 BY: [Signature]

APPLICANT'S REPRESENTATION

I hereby make application for Design Review Approval in accordance with the Zoning Regulations, Town of Brookfield. I agree herewith to hold the Town of Brookfield and its agents harmless for any and all expenses incurred as a result of the applicant/occupant's lack of compliance with the aforementioned regulations and any enforcement action resulting therefrom.

Applicant's Signature Ted D. Backer Date: Jan. 12/94

FOR COMMISSION USE

Date Received: 1/13/94 Date Application Accepted: 1/13/94  
 Fee Calculation: Amount \$ 190<sup>00</sup> + 10<sup>00</sup>  
 Hearing set for: 2/10/94 Publication Dates: 1/27 & 2/3 & 3/1/94  
 Disposition: approved w/stips. Date: 2/24/94  
 Bond Posted: \_\_\_\_\_ Approval Filed: \_\_\_\_\_



TOWN OF BROCKFIELD - ZONING COMMISSION

Rev. 4/87

DESIGN REVIEW APPROVAL - CHECKLIST

PROJECT ADDRESS: 39 Carmen Hill Road

PROJECT NAME: Danbury Broadcasting, Inc.

PART I - SITE PLAN REQUIRED DATA per Sect. 242-301 C. (3) (a & b)

SECT. No.	DATA ITEM	SECT. No.	DATA ITEM
( X ) a.	Key Map	( X ) b.7a.	Road and Drives, Configuration
( X ) b.	Four (4) copies of site plan	(NA ) b.7b.	Road/Drives Profiles
( X ) b.	Scale, not greater than 1"=100'	(NA ) b.7c.	Pavement Cross Section
( X ) b.1a.	Project Name	( X ) b.7d.	Walkways, Malls, Paths
( X ) b.1b.	Developer Name	( X ) b.7e.	Entranceways & Exits
( X ) b.1c.	Land Owner of Record	(NA ) b.8a.	Loading & Storage Areas
( X ) b.1d.	Zoning District	(NA ) b.8b.	Refuse Areas & Screening
(NA ) b.1e.	Permitted Use Identification	( X ) b.8c.	Machine & Equipment Areas
( X ) b.1f.	Names, Abutting Property Owners	( X ) b.8d.	Parking Area, loc., dim.
( X ) b.1g.	Northpoint	( X ) b.8e.	Total Vehicle Number
( X ) b.1h.	Scale	(NA ) b.8f.	Curbs, Barriers, Wheel Guards
( X ) b.1i.	Date of Preparation	( X ) b.8g.	Dustless Pavement Type
( X ) b.2a.	Boundary Lines	( X ) b.8h.	Catch Basins, loc., dim.
( X ) b.2b.	Bearings and Distances	( X ) b.8i.	Culverts & Pipe, loc., dim.
( X ) b.2c.	Total Property Area	(NA ) b.8j.	Parking Area Landscaping
( X ) b.2d.	Easements, purpose, loc., dim.	(NA ) b.9a.	Open Space, loc., dim., type
( X ) b.2e.	Names, Adjoining Streets	(NA ) b.9b.	Recreational Areas
( X ) b.2f.	Dimensions, Adjoining Streets	(NA ) b.10a.	Water Supply Plan
( X ) b.3a.	Buildings & Structures, type, loc., dim.	(NA ) b.10b.	Sewage Disposal Plan
( X ) b.3b.	Number of Occupants	(NA ) b.10c.	Reserve Areas, Septic
( X ) b.3c.	Distances to Property Lines & Buildings	(NA ) b.10d.	Drainage Plan & Calculations
( X ) b.4a.	Existing Contours @ 2' intervals	( X ) b.10e.	Electric, Phone, Gas Lines
(NA ) b.4b.	Proposed Contours @ 2' intervals	(NA ) b.10f.	Grades/Elevations, Basins/Piping
( X ) b.4c.	Watercourses, Wetlands, Soil Types	(NA ) b.11a.	Signs, description, loc., dim.
( X ) b.4d.	Proposed Site Alterations (fill etc.)	( X ) b.12a.	Walls/Fences, type, loc., dim.
( X ) b.4e.	Unusual Site Features	( X ) b.12b.	Unique Items, specify
( X ) b.5a.	Erosion & Sedimentation Plans (ESP)	( X ) b.13a.	Technical Data per 242-602 A thru H
( X ) b.5b.	ESP Design & Details	( X ) b.14a.	Prof. Engr. Seal, > 80,000 sq. ft.
( X ) b.5c.	ESP Procedures/Measures/Reports	( X ) b.15a.	Start/Completion Dates
( X ) b.6a.	Trees & Shrubs, Existing/Proposed	( X ) b.15b.	Milestone/Schedule
( X ) b.6b.	Tree/Shrub Names/Type/Size	( X ) b.15c.	Phases of Construction Shown
( ) other	_____	( ) other	_____
( ) other	_____	( ) other	_____

PART II - ARCHITECTURAL REQUIRED DATA per Sect. 242-301 C. (3)

SECT. No.	DATA ITEM	SECT. No.	DATA ITEM
( NA ) c.1.	Building Elevations & Floor Plans	( NA ) c.5.	Screening Details
( NA ) c.2.	Color & Texture of Building Material	( NA ) c.6.	Sign Details
( NA ) c.3.	Facade & Window Details	( X ) c.7.	Lighting Fixture Details
( NA ) c.4.	Roofscape Details	( NA ) c.8.	Illumination & Intensity Data

PART III - ADDITIONAL REQUIRED DATA per Sect. 242-301 C. (4). See cited Section to determine applicability.

( NA ) 602 F.	Hydrogeological Report	( NA ) 501 D2.	Water Retention Plan
( NA ) 602 G.	Traffic Report	( ) other	_____
( NA ) 502 E.	Spill Containment Plan	( ) other	_____

## DESIGN REVIEW APPROVAL - CHECKLIST

Danbury Broadcasting, Inc.

## PART IV - APPROVAL CRITERIA, STANDARDS, AND REQUIREMENTS (Industrial and Commercial Applications)

SECTION No.	ITEM	STANDARD/REQUIREMENT	PROPOSED	COMMENTS
<b>GENERAL</b>				
<b>*****</b>				
501 B.	Permitted use:	identify	N.A.	Existing Non-Conforming
501 C.	Lot Area:	I=80/C=40k sq. ft.	4.31 ac.	Conforms
501 C.	Lot Width:	I=200'/C=150'	295' ±	Conforms
501 C.	Side Yard:	I=50'/C=30'	64' ±	Conforms
501 C.	Rear Yard:	I=50'/C=30'	465' ±	Conforms
501 C.	Building Height:	I=40'/C=30'	250' +/-	Tower to be 499'
501 D.	Land Coverage:	75%	3.3%	
501 D.	Foundation Plantings:	req'd	N.A.	
501 D.	Water Retention Plan:	>50% coverage, req'd	N.A.	
501 E.	Set Back:	100' fm: lot line	N.A.	
501 E.	Set Back (no front parking):	50' fm: lot line	119' ±	Conforms
308 B.	Set Back, watercourse:	25'	N.A.	
308 H.	Residential Buffer:	100' side/rear, 25' front	N.A.	
501 F.	Drive Design:	per Road Ordinance	N.A.	Existing Drives Servicable
501 F.	Pavement:	10"/2"/1 1/2"/1 1/2"	N.A.	Existing Drives Servicable
201 C.	Lot Access:	>50' frontage	YES	300' ± Available
201 C.	R.O.W. Width:	>50'	50' ±	Site is 26'to30' from centerline
201 E.	Pre-existing Lot, Y / N:	prior to 6/60	YES	
309.	Non-conforming status:	See 242-309	YES	Existing Non-Conforming
203 C.	Zoning Boundry Verified:	Y / N	YES	
203 D.	Lot in 2 Districts:	(30' intrusion	NO	
301 C.	Alteration:	(25%/10K sq. ft.	YES	
301 C.	Inland Wetland Approval:	rec'd	N.A.	
301 C.	Erosion Control Plan:	See 242-602 D.	N.A.	
301 C.	Landscape:	adequate	N.A.	
301 C.	Drainage:	per Town Engr.	N.A.	
301 C.	Height, walls/fences:	(8'	6' ±	Around Tower Base
308 E.	Sight Obstruction, intersect.	(3'h@20' distance	N.A.	Existing is Adequate
302.	Natural Resources Removal:	See 242-302	N.A.	
303 A.	Fill Impact:	See 242-303 A.	N.A.	
303 B.	Fill, below structures:	See 242-303 B.	N.A.	
303 C.	Burial of Material:	See 242-303 C.	N.A.	
<b>PARKING</b>				
<b>*****</b>				
305 C1.	Parking Space Size:	9' x 20' min.	YES	
305 C1.	Pavement Type:	dustless	YES	Existing Bituminous Concrete
305 C1.	Pavement Markings:	req'd	YES	
305 C2.	Off-site Parking	(250' fm: building	N.A.	
305 C3.	Ingress/Egress:	defined drive req'd	YES	Existing Drive Entrance
305 C4.	Aisles:	24'@90 deg., 14'@parallel	YES	24' ± Available
305 C5.	Drive Width:	22'	NO	Intermittent Access:Satisfactory
305 C6.	Set Back, road pavement	20'	YES	Exists
305 C6.	Set Back, buildings	10'	YES	Exists
305 C7.	Walkways:	Commission option	YES	Exists
305 C8.	Curbing, perimeter	6"	NO	Wheel Stops to be Used
305 C9.	Set Back, intersection:	75'	N.A.	
305 C10.	Lighting:	See 242-602 B.	NO	No Parking illumination proposed
305 D.	Parking Space Calculation:	See 242-305 D.	YES	

SECTION No.	ITEM	STANDARD/REQUIREMENT	PROPOSED	COMMENTS
305 E.	Trailers, construction:	water/septic req'd	NO	None Required
305 E.	Trailer, mat'l storage:	60 day permit	NO	None Required
305 G.	Loading Area Calculation:	See 242-305 G.	N.A.	
305 H.	Landscape:	8% of parking area	N.A.	
305 H.	8' Planters:	>50 cars	N.A.	
305 H.	Trees, 2 1/2" @ 3'height:	1 per 12 cars	N.A.	
PERFORMANCE STANDARDS				
*****				
602 A.	NOISE:			
602 A2.	Ind'l DEB	Day 65, Night 55	N.A.	
602 A2.	Comm'l DBA	Day 60, Night 50	N.A.	
602 A2.	Resd'l DBA	Day 55, Night 45	N.A.	
602 B.	GLARE:			
602 B2a.	Light Source Visability:	none @ prop. line	YES	Aircraft Warning Lights
602 B2a.	Foot Candles:	( I/C=1.0, R=.5	YES	242-602 B.2.F.4.
602 B2c.	Upward Angle, no contact:	not permitted	N.A.	
602 B2d.	Signs, flashing, animated:	not permitted	N.A.	
602 C.	WASTEWATER:			
602 C2.	Soil Map Data:	req'd	N.A.	
602 C3.	Test Hole Analysis:	req'd	N.A.	
602 C4.	Discharge Rates:	Table I	N.A.	
602 C6.	Loading Rates:	Table II	N.A.	
602 C.	Sewer, municipal:	WPCA approval req'd	N.A.	
602 D.	EROSION/SEDIMENT PLAN:	See 242-602 D.	YES	See Plans
602 E.	WOODCUTTING:	See 242-602 F.	N.A.	
602 F.	WATERSUPPLY:			
602 F2.	Hydrogeological Report:	>2,500 gpd	N.A.	No new use proposed
602 F3a.	Water Source:	on-site/other	YES	Existing
602 F3b.	Demand/Availability:	in balance	YES	No previous problems reported
602 F3c.	DPUC/DHS Certificate:	>25 persons, 15 conc't'ns	N.A.	
602 F3d.	Stand-by Well:	>2,500 gpd	N.A.	
602 F3e.	Yield, multi-well project:	2 x avg daily demand	N.A.	
602 F3f.	Demand, drought periods:	> available supply	N.A.	
602 F3g.	Recharge Provisions:	maximize	N.A.	
602 F3h.	Yield Tests:	36hr/10gpa, 72hr/50gpa	N.A.	
602 F3i.	Long Term Supply Reduction:	Not permitted	N.A.	
602 F3j.	Conservation Plan:	>5,000 gpd	N.A.	
602 F3k.	Process Water:	(5,000 gpd	NO	None required
602 F3l.	Location, well sites:	contamination proof	YES	Existing
602 F3m.	Construction Start:	DH app'l of well/yield	N.A.	
602 F4.	Water Monitoring Program:	case-by-case	N.A.	
602 G.	TRAFFIC:			
602 G2.	Traffic Report:	>50 spaces/100 TPD	N.A.	
602 G3a&f.	Access/Circulation:	avoid queing	YES	Existing Adequate
602 G3b.	Access by resd'l streets:	avoid	YES	Exists
602 G3c.	Access on 2 streets:	use lesser impact steet.	N.A.	Exists
602 G3d.	Street Capacity:	adequate/calculated	N.A.	Use Exists
602 G3e.	Turn Lane/Controls:	case-by-case	N.A.	
602 G3g.	Grade/Algn't/Sight lines:	good engr. practice	YES	Existing Adequate
602 G3h.	Curb Cuts:	minimize	YES	One Existing
602 G3i.	Emergency Access:	req'd	NO	Not Required
602 G3i.	Interconnecting drives:	case-by-case	N.A.	
602 G3i.	Driveway Width:	(30'	20'	At R.O.W. Line
602 G3j.	Shoulder Improvements:	case-by-case	N.A.	
602 G3k.	Level of Service:	( Level "D"	N.A.	

SECTION No.	ITEM	STANDARD/REQUIREMENT	PROPOSED	COMMENTS
602 H.	FIRE PROTECTION:			
602 H2.	Storage Tank, or:	20,000 gal	<u>N.A.</u>	<u>Non-Flammable Alteration</u>
602 H2.	Other Supply, or	20,000 gal	<u>N.A.</u>	<u>Non-Flammable Alteration</u>
602 H2.	Sprinkler	option	<u>N.A.</u>	<u>Non-Flammable Alteration</u>
602 H3.	Location:	per Fire Marshall	<u>N.A.</u>	<u>Non-Flammable Alteration</u>
602 H3.	Fixturing:	per Fire Marshall	<u>N.A.</u>	<u>Non-Flammable Alteration</u>
602 H3.	Alarms/Key Box:	case-by-case	<u>N.A.</u>	<u>Non-Flammable Alteration</u>
301 C.	ENVIRONMENTAL			
	*****			
301 C5b.	Hazardous Material Storage:	case-by-case	<u>N.A.</u>	<u>None Proposed</u>
301 C5c.	Dust:	minimize	<u>N.A.</u>	<u>None Proposed</u>
301 C5c.	Odor:	not noticeable off-prem.	<u>N.A.</u>	<u>None Proposed</u>
301 C5c.	Vibration:	case-by-case	<u>N.A.</u>	<u>None Proposed</u>
	ARCHITECTURAL			
	*****			
301 C5d.	Color:	identify Orange & White	<u>N.A.</u>	<u>As Required by FAA &amp; FCC*</u>
301 C5d.	Type/Texture of Siding:	identify	<u>Paint</u>	<u>Smooth Paint on Metal</u>
301 C5d.	Facade/Window Detail:	identify	<u>N.A.</u>	
301 C5d.	Roofscape:	minimize appurtenances	<u>N.A.</u>	
301 C5d.	Screening:	mech. areas req'd	<u>N.A.</u>	
301 C5d.	Lighting:	See 242-602 B.	<u>YES</u>	<u>Per FAA &amp; FCC*</u>
301 C5d.	Area Compatibility:	req'd	<u>N.A.</u>	<u>Replacement of Existing</u>
301 C5d.	Preservation of Site Features:	maximize	<u>YES</u>	<u>Minimal disturbance</u>
301 C5d.	Landscaping, f'n'd'n plantings:	req'd	<u>N.A.</u>	<u>Minimal disturbance</u>
301 C5d.	Overall appearance:	case-by-case	<u>YES</u>	<u>Similar to Existing</u>
301 C5d.	Property Values:	No lessening impact	<u>YES</u>	<u>Similar to Existing</u>
503.	AQUIFER PROTECTION			
	*****			
503 B.	Prohibited uses:	Salt, hazardous/toxic, land fills, truck terminals, service stations, industrial wastes, metalworking, publishing and reproduction services.		<u>NOT APPLICABLE</u>
503 C.	Water Quality Impact:	not (Fed/State stds.		
503 C.	DH/TE/IWL/PC opinion:	req'd		
503 D.	Data:	See 242-503 D.		
503 D.	Analysis/Compliance Report:	req'd.		
503 E.	Spill Control Plan:	req'd.		
502.	FLOOD PLAIN			
	*****			
502 B.	Mean Flood Elevation at Site:	identify		<u>NOT APPLICABLE</u>
502 B.	Lowest Floor Elevation:	identify		
502 E.	Fill:	See 242-301 C.		
502.	Other Requirements:	See 242-502		

\* Federal Aviation Administration  
Federal Communications Commission

PART V - STIPULATIONS:

ADJOINING PROPERTY OWNERS  
WINE RADIO TOWER SITE  
37 TO 41 CARMEN HILL ROAD  
BROOKFIELD, CONNECTICUT  
DECEMBER 6, 1993

ASSESSOR'S LOT #	OWNER/ADDRESS
B05010	CROWN MEDIA, INC. 1 GALLERIA TOWER 13355 NOEL ROAD SUITE 1500 DALLAS, TEXAS 75240
B05011	DAVID HESAM SAADATMANDI 33 CARMEN HILL ROAD BROOKFIELD, CONNECTICUT 06804
B05012	ROBERT J. & RITA GARRETT 33A CARMEN HILL ROAD BROOKFIELD, CONNECTICUT 06804
B05014	RICHARD & J. PATRICIA ALEXANDER 43 CARMEN HILL ROAD BROOKFIELD, CONNECTICUT 06804
B05020	NORMAN TUCHMANN 46 River Street New Haven, Connecticut 06513

# EXHIBIT 7







**Hello, your package has been delivered.**

**Delivery Date:** Tuesday, 02/06/2024

**Delivery Time:** 3:28 PM

**Signed by:** DONNA

## **CENTERLINE SITE ACQUISITION**

<b>Tracking Number:</b>	<a href="#"><b>1Z9Y45030307397896</b></a>
<b>Ship To:</b>	AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 018011053 US
<b>Number of Packages:</b>	1
<b>UPS Service:</b>	UPS Ground
<b>Package Weight:</b>	1.0 LBS
<b>Reference Number:</b>	14527561

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# UPS Delivery Notification, Tracking Number 1Z9Y45030325771643

UPS <pkginfo@ups.com>

Tue 2/6/2024 11:39 AM

To: Barbara Kassabian <BKASSABIAN@CLINELLC.COM>



**Hello, your package has been delivered.**

**Delivery Date:** Tuesday, 02/06/2024

**Delivery Time:** 11:37 AM

**Left At:** RECEPTION

**Signed by:** caban

## CENTERLINE SITE ACQUISITION

<b>Tracking Number:</b>	<a href="#">1Z9Y45030325771643</a>
<b>Ship To:</b>	STEPHEN C DUNN FIRST SELECTMAN 100 POCONO ROAD BROOKFIELD, CT 068043322 US
<b>Number of Packages:</b>	1
<b>UPS Service:</b>	UPS Ground
<b>Package Weight:</b>	1.0 LBS
<b>Reference Number:</b>	14527561

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**Hello, your package has been delivered.**

**Delivery Date:** Tuesday, 02/06/2024

**Delivery Time:** 11:36 AM

**Signed by:** URBANSKI

## **CENTERLINE SITE ACQUISITION**

<b>Tracking Number:</b>	<a href="#"><u>1Z9Y45030303618887</u></a>
<b>Ship To:</b>	FRANCIS W. LOLLIE 100 POCONO ROAD BROOKFIELD, CT 068043322 US
<b>Number of Packages:</b>	1
<b>UPS Service:</b>	UPS Ground
<b>Package Weight:</b>	1.0 LBS
<b>Reference Number:</b>	14527561

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