

Derek Maheux Program Manager
c/o Cellco Partnership d/b/a Verizon Wireless
Centerline Communications, LLC
750 West Center Street, Suite 301
West Bridgewater, MA 02379
Mobile: (508)649-3407
Dmaheux@clinellc.com

April 18, 2024

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

**RE: Notice of Exempt Modification // Site: BYRAM PARK CT (ATC: 414240)
36 Ritch Avenue West, Greenwich, CT 06830
N 41.00506338 // W -73.64831111**

Dear Ms. Bachman,

Cellco Partnership d/b/a Verizon Wireless currently maintains twelve (12) antenna at the 57-ft level on the existing 77 ft Tower, located at 36 Ritch Avenue West, Greenwich, CT. The tower is owned by American Tower. Verizon Wireless proposed modification involves the installation of a new mount modification, three (3) diplexers, (1) OVP and (1) hybrid cable 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 Greenwich'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 April 17, 2024, by NB&C LLC, a structural analysis dated May 2, 2023, by American Tower Corp., and a structural mount analysis by Colliers Engineering and Design dated January 29, 2024, and Non-Ionizing Electromagnetic Radiation (NIER) Study dated April 19, 2022, 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

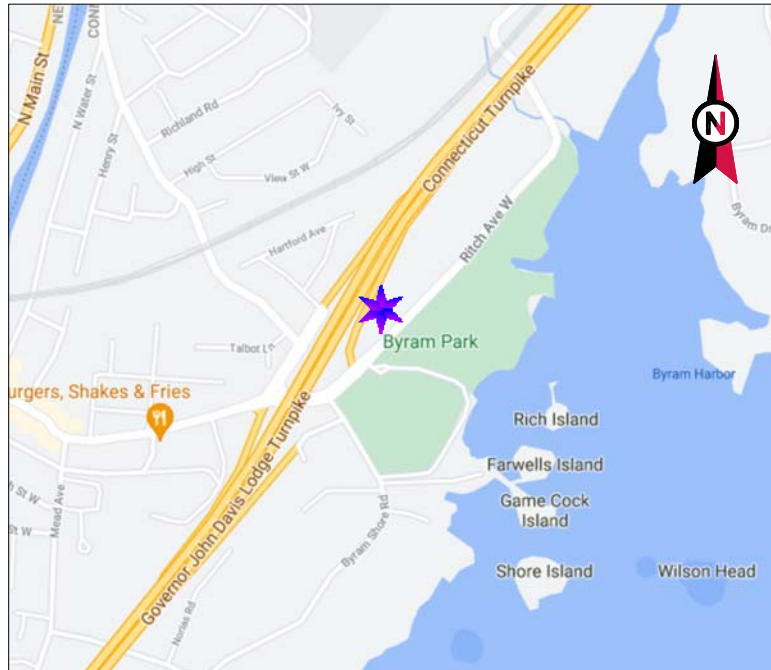
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Attachments: Exhibit 1 – Construction Drawings
Exhibit 2 – Property Card and GIS
Exhibit 3 – Structural Analysis
Exhibit 4 – Mount Analysis
Exhibit 5 – RF Emissions Analysis Report Evaluation
Exhibit 6 – Available Original Tower Approval Records
Exhibit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

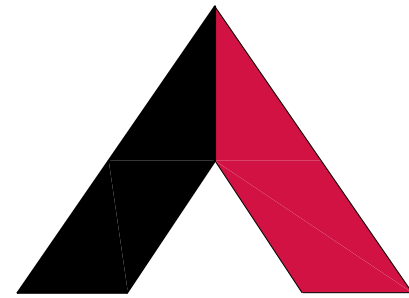
cc: Fred Camillo – First Selectman – Chief Elected Official
Patrick LaRow – ACIP - as P&Z official
36 Ritch Avenue LLC – as ground owner
American Tower Corporation - as tower owner

EXHIBIT 1





VICINITY MAP



AMERICAN TOWER®

ATC SITE NAME: BYRAM PARK CT
 ATC SITE NUMBER: 414240
 VERIZON SITE NAME: BYRAM PARK CT
 VERIZON SITE NUMBER: 468044
 SITE ADDRESS: 48 RITCH AVENUE WEST
 GREENWICH, CT 06830-9992



LOCATION MAP



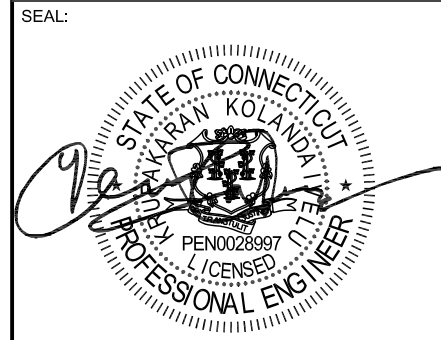
REV.	DESCRIPTION	BY	DATE
A	PRELIM	TH	07/23/21
0	FOR CONSTRUCTION	BIW	09/21/21
1	FOR CONSTRUCTION	BW	03/21/24
2	FOR CONSTRUCTION	BW	04/17/24

ATC SITE NUMBER:
414240

ATC SITE NAME:
BYRAM PARK CT

VERIZON SITE NAME:
BYRAM PARK CT

SITE ADDRESS:
36 RITCH AVE WEST
GREENWICH, CT 06830-9992



DATE DRAWN:	04/17/24
ATC JOB NO:	13701270
CUSTOMER ID:	BYRAM PARK CT
CUSTOMER #:	468044

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	2

VERIZON
ANTENNA AMENDMENT DRAWINGS

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. 1. 2021 INTERNATIONAL BUILDING CODE (IBC) W/ 2022 STATE AMENDMENTS 2. 2020 NATIONAL ELECTRIC CODE (NEC) W/ 2022 STATE AMENDMENTS 3. LOCAL BUILDING CODE 4. CITY/COUNTY ORDINANCES	<u>SITE ADDRESS:</u> 48 RITCH AVENUE WEST GREENWICH, CT 06830-9992 COUNTY: FAIRFIELD <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41.00506388 LONGITUDE: -73.64831111 GROUND ELEVATION: 53' AMSL	THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW: REMOVE (9) ANTENNA(S), (6) RRH(S), (1) OVP(S), AND (1) 1-5/8" COAX CABLE(S) INSTALL MOUNT MODIFICATIONS, (9) ANTENNA(S), (6) RRH(S), (3) DIPLEXER(S), (1) OVP, AND (1) 6x12 HYBRID CABLE EXISTING (3) ANTENNA(S), (1) 6x12 HYBRID CABLE, AND (16) 1-5/8" COAX CABLE(S) TO REMAIN	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
	<u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801 <u>ENGINEER:</u> NB+C ENGINEERING SERVICES, LLC 8601 SIX FORKS ROAD, SUITE 540 RALEIGH, NC 27615 <u>PROPERTY OWNER:</u> 36 RITCH AVENUE LLC 48 RITCH AVENUE WEST GREENWICH, CT 06830-9992	<u>PROJECT TEAM</u> <u>APPLICANT:</u> VERIZON WIRELESS 180 WASHINGTON VALLEY RD BEDMINSTER, NJ 07921	PROJECT NOTES 1. THE FACILITY IS UNMANNED. 2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE. 3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE. 4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED. 5. HANDICAP ACCESS IS NOT REQUIRED. 6. THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION REMOVAL AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR 1.61000 (B)(7).	G-001	TITLE SHEET	2	04/17/24
<u>UTILITY COMPANIES</u> POWER COMPANY: EVERSOURCE PHONE: (866) 554-6025 TELEPHONE COMPANY: UNKNOWN PHONE: (000) 000-0000		PROJECT LOCATION DIRECTIONS TAKE RITCH AVE W AND HAMILTON AVE TO GLEN ST IN GREENWICH, 4 MIN (1.6 MI), HEAD NORTHEAST ON I-95 N, 0.2 MI, TAKE EXIT 2 FOR BYRAM TOWARD DELAVAN AVE, 0.2 MI, CONTINUE ONTO DORAN AVE, 361 FT, TURN LEFT ONTO BYRAM SHORE RD, 167 FT, TURN RIGHT ONTO RITCH AVE W, 0.6 MI, CONTINUE ONTO HAMILTON AVE, 0.5 MI, TAKE RODWELL AVE TO HAMILTON AVE, 43 S (0.2 MI), TURN RIGHT ONTO GLEN ST, 351 FT, GLEN ST TURNS LEFT AND BECOMES RODWELL AVE, 476 FT, RODWELL AVE TURNS LEFT AND BECOMES STONE AVE, 358 FT, CONTINUE ON HAMILTON AVE, DRIVE TO RITCH AVE W, 3 MIN (1.1 MI), TURN LEFT ONTO HAMILTON AVE, 0.6 MI, CONTINUE ONTO RITCH AVE W, DESTINATION WILL BE ON THE RIGHT.	G-002	GENERAL NOTES	2	04/17/24	BW
			C-101	DETAILED SITE PLAN	2	04/17/24	BW
			C-201	TOWER ELEVATION	2	04/17/24	BW
			C-401	ANTENNA INFORMATION & SCHEDULE	2	04/17/24	BW
			C-501	CONSTRUCTION DETAILS	2	04/17/24	BW
			E-501	GROUNDING DETAILS	2	04/17/24	BW
			R-601	SUPPLEMENTAL			
			R-602	SUPPLEMENTAL			
			R-603	SUPPLEMENTAL			
			R-604	SUPPLEMENTAL			
				MOUNT MODIFICATION DRAWINGS			



Know what's below.
Call before you dig.

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 ANSIEIA/ITIA-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. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY 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.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE 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.
31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
32. 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.
33. 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 T- MOBILE PROJECT MANAGER IN WRITING

SPECIAL CONSTRUCTION

ANTENNA INSTALLATION NOTES:

1. WORK INCLUDED:
 - A. ANTENNA AND COAXIAL 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 AND
 - B. INSTALL ANTENNA AS INDICATE 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. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.
 - F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
 - G. ANTENNA AND COAXIAL CABLE GROUNDING:

2. ALL EXTERIOR #6 GREED GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.
3. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)

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



AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
 3500 REGENCY PARKWAY
 SUITE 100
 CARY, NC 27518
 PHONE: (919) 468-0112
 COA: P-1177



TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
 8601 SIX FORKS ROAD, SUITE 540
 RALEIGH, NC 27615
 (919) 657-9131

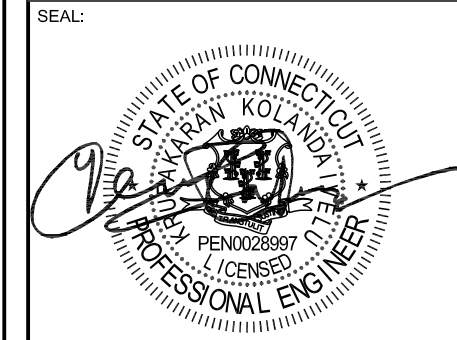
REV.	DESCRIPTION	BY	DATE
A	PRELIM	TH	07/23/21
0	FOR CONSTRUCTION	BIW	09/21/21
1	FOR CONSTRUCTION	BW	03/21/24
2	FOR CONSTRUCTION	BW	04/17/24
△			

ATC SITE NUMBER:
414240

ATC SITE NAME:
BYRAM PARK CT

VERIZON SITE NAME:
BYRAM PARK CT

SITE ADDRESS:
 36 RITCH AVE WEST
 GREENWICH, CT 06830-9992



DATE DRAWN:	04/17/24
ATC JOB NO:	13701270
CUSTOMER ID:	BYRAM PARK CT
CUSTOMER #:	468044

GENERAL NOTES

SHEET NUMBER:
G-002

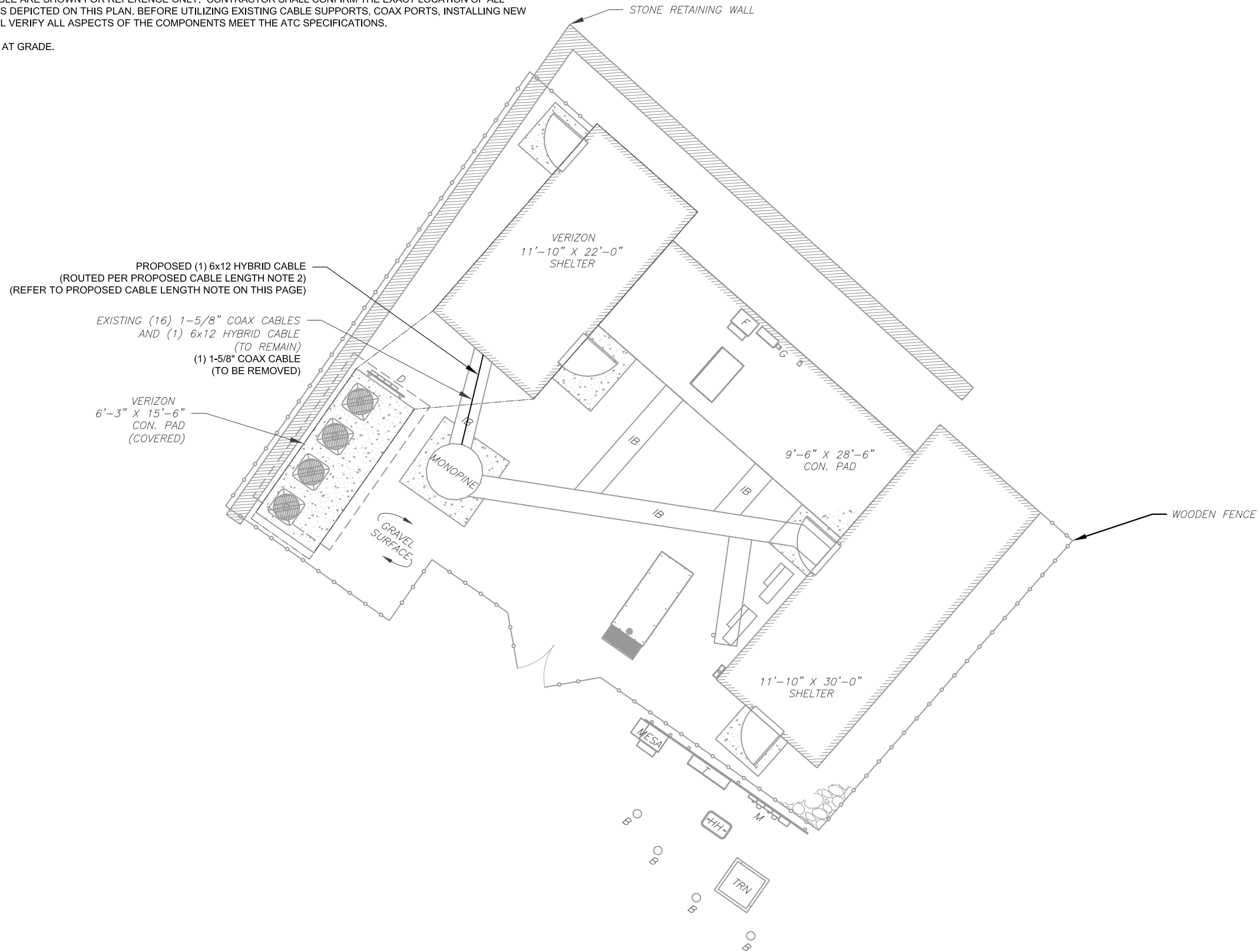
REVISION:
2

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SITE PLAN NOTES:

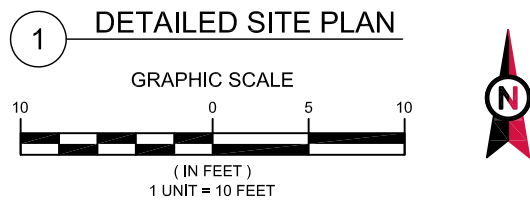
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
3. THIS PROJECT INCLUDES NO INSTALL OR MODIFICATION AT GRADE.

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



PROPOSED CABLE LENGTH:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **75**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES), CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.



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 COA: P-1177

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 RALEIGH, NC 27615
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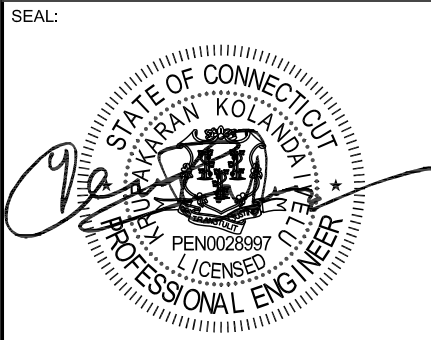
REV.	DESCRIPTION	BY	DATE
A	PRELIM	TH	07/23/21
0	FOR CONSTRUCTION	BIW	09/21/21
1	FOR CONSTRUCTION	BW	03/21/24
2	FOR CONSTRUCTION	BW	04/17/24

ATC SITE NUMBER:
414240

ATC SITE NAME:
BYRAM PARK CT

VERIZON SITE NAME:
BYRAM PARK CT

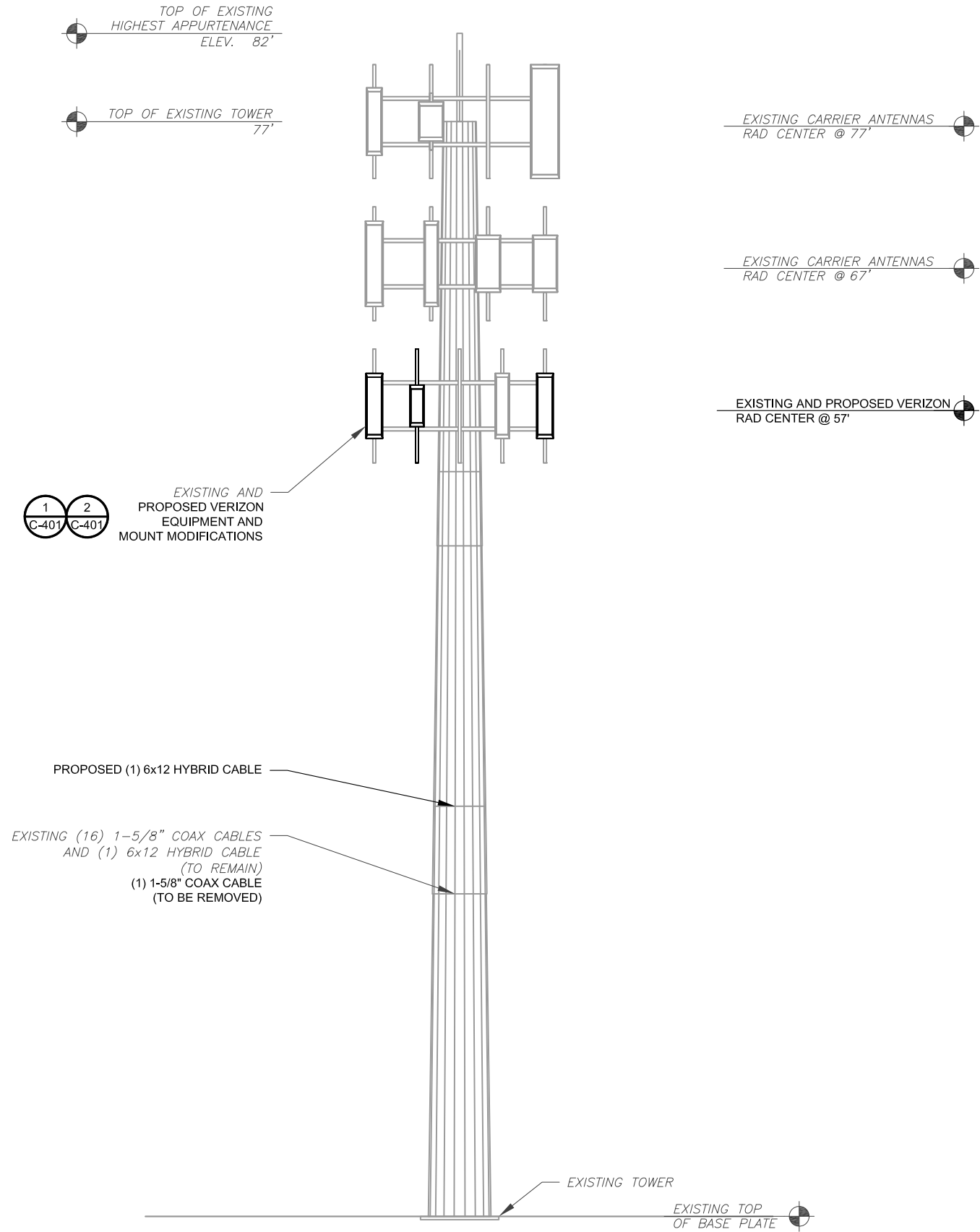
SITE ADDRESS:
 36 RITCH AVE WEST
 GREENWICH, CT 06830-9992



DATE DRAWN:	04/17/24
ATC JOB NO:	13701270
CUSTOMER ID:	BYRAM PARK CT
CUSTOMER #:	468044

DETAILED SITE PLAN	
SHEET NUMBER: C-101	REVISION: 2

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PER MOUNT ANALYSIS COMPLETED BY COLLIERS ENGINEERING AND DESIGN, DATED 01/29/2024, THE EXISTING MOUNT MUST BE MODIFIED TO ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT.

- 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. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
 - TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

1 TOWER ELEVATION
SCALE: N.T.S.



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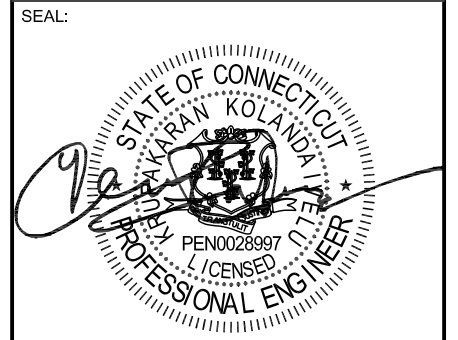
REV.	DESCRIPTION	BY	DATE
A	PRELIM	TH	07/23/21
0	FOR CONSTRUCTION	BIW	09/21/21
1	FOR CONSTRUCTION	BW	03/21/24
2	FOR CONSTRUCTION	BW	04/17/24

ATC SITE NUMBER:
414240

ATC SITE NAME:
BYRAM PARK CT

VERIZON SITE NAME:
BYRAM PARK CT

SITE ADDRESS:
36 RITCH AVE WEST
GREENWICH, CT 06830-9992



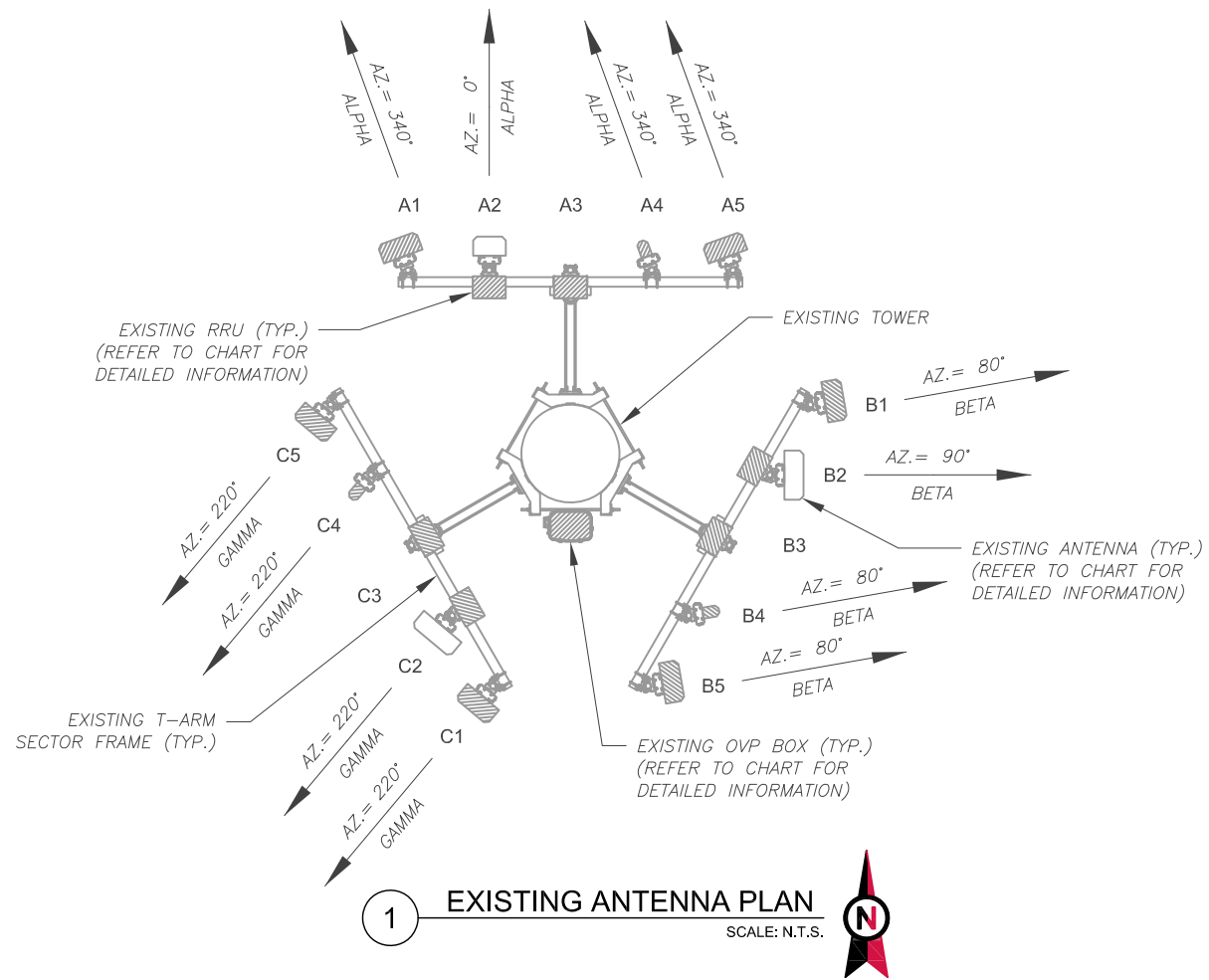
DATE DRAWN:	04/17/24
ATC JOB NO:	13701270
CUSTOMER ID:	BYRAM PARK CT
CUSTOMER #:	468044

TOWER ELEVATION

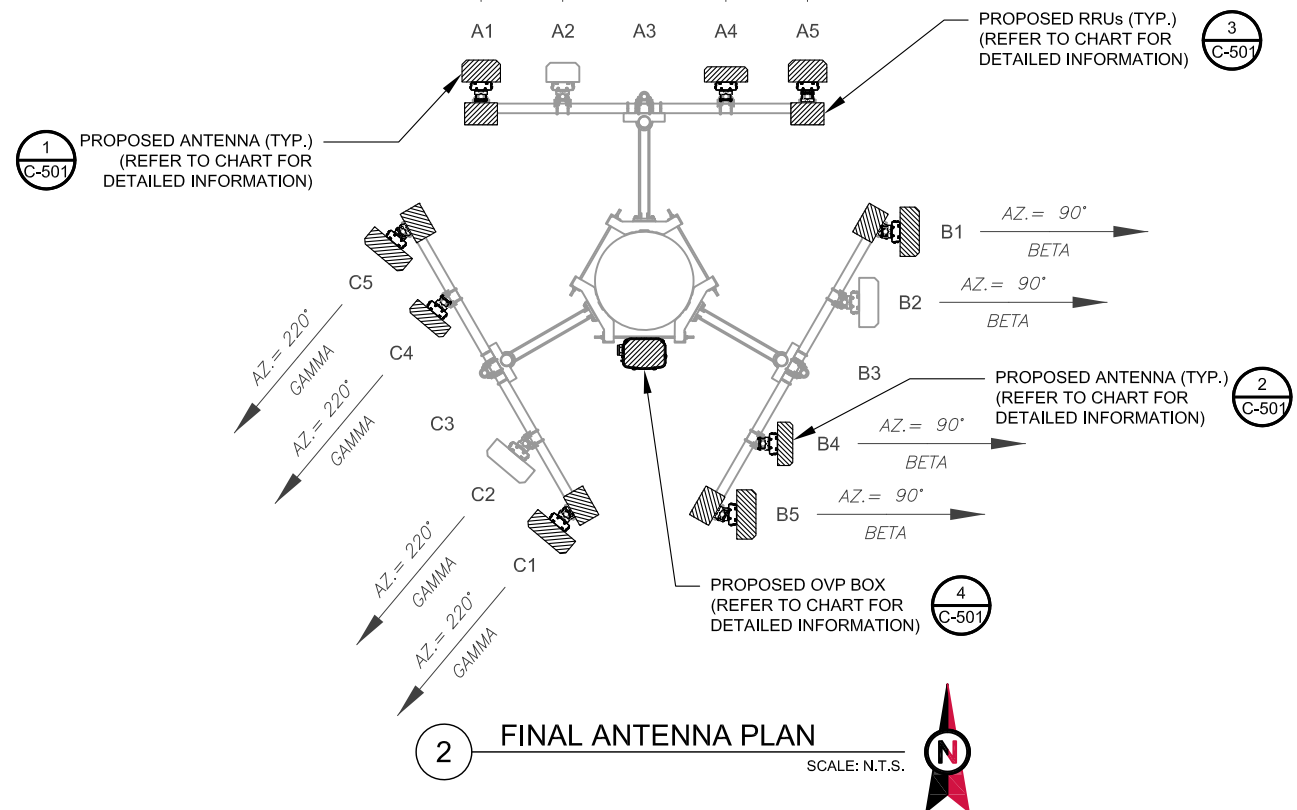
SHEET NUMBER:	REVISION:
C-201	2

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PER MOUNT ANALYSIS COMPLETED BY COLLIER'S ENGINEERING AND DESIGN, DATED 01/29/2024, THE EXISTING MOUNT MUST BE MODIFIED TO ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT.



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



2 FINAL ANTENNA PLAN
SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE										
LOCATION		ANTENNA SUMMARY					NON ANTENNA SUMMARY			
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS	
ALPHA	57'	0°	A1	LPA-80063/6CF-EDIN-X	-	-	RMV	-	-	
			A2	SBNHH-1D65A	700/AWS	0/0/0	RMN	UHBA B13 RRH 4X30	RMV	
			A3	-	-	-	-	UHIE B66A RRH 4X45	RMV	
			A4	BXA-171063-12CF	-	-	-	RMV	-	-
BETA	57'	90°	B1	LPA-80063/6CF-EDIN-X	-	-	RMV	-	-	
			B2	SBNHH-1D45A	700/AWS	0/2/1	RMN	UHBA B13 RRH 4X30	RMV	
			B3	-	-	-	-	UHIE B66A RRH 4X45	RMV	
			B4	BXA-171063-12CF	-	-	-	RMV	-	-
			B5	LPA-80063/6CF-EDIN-X	-	-	-	RMV	-	-
GAMMA	57'	220°	C1	LPA-80063/6CF-EDIN-X	-	-	RMV	-	-	
			C2	SBNHH-1D45A	700/AWS	0/2/1	RMN	UHBA B13 RRH 4X30	RMV	
			C3	-	-	-	-	UHIE B66A RRH 4X45	RMV	
			C4	BXA-171063-12CF	-	-	-	RMV	-	-
			C5	LPA-80063/6CF-EDIN-X	-	-	-	RMV	-	-

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	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS	
ALPHA	57'	0°	A1	JAHH-65A-R3B	700/850/1900/AWS	0/4/2/2	ADD	CBC78T-DS-43-2X RF4461D-13A	ADD	
			A2	SBNHH-1D65A	-	-	RMN	-	-	
			A3	-	-	-	-	ADD	-	-
			A4	MT6413-77A	L-SUB6	0/1	ADD	INTEGRATED RADIO	ADD	
			A5	JAHH-65A-R3B	700/850/1900/AWS	0/4/2/2	ADD	RF4439D-25A	ADD	
BETA	57'	90°	B1	JAHH-45A-R3B	700/850/1900/AWS	0/6/3/3	ADD	CBC78T-DS-43-2X RF4461D-13A	ADD	
			B2	SBNHH-1D45A	-	-	RMN	-	-	
			B3	-	-	-	ADD	-	-	
			B4	MT6413-77A	L-SUB6	0/1	ADD	INTEGRATED RADIO	ADD	
			B5	JAHH-45A-R3B	700/850/1900/AWS	0/6/3/3	ADD	RF4439D-25A	ADD	
GAMMA	57'	220°	C1	JAHH-45A-R3B	700/850/1900/AWS	0/6/2/2	ADD	CBC78T-DS-43-2X RF4461D-13A	ADD	
			C2	SBNHH-1D45A	-	-	RMN	-	-	
			C3	-	-	-	ADD	-	-	
			C4	MT6413-77A	L-SUB6	0/1	ADD	INTEGRATED RADIO	ADD	
			C5	JAHH-45A-R3B	700/850/1900/AWS	0/6/2/2	ADD	RF4439D-25A	ADD	

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
RC2DC-4750-PF-48	RMV	(16) 1-5/8"	(1) 6x12	RMN
-	-	(1) 1-5/8"	-	RMV

3 EQUIPMENT SCHEDULES

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
RCMDC-6627-PF-48	ADD	(16) 1-5/8"	(1) 6x12	RMN
-	-	-	(1) 6x12	ADD

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REV.	DESCRIPTION	BY	DATE
A	PRELIM	TH	07/23/21
0	FOR CONSTRUCTION	BIW	09/21/21
1	FOR CONSTRUCTION	BW	03/21/24
2	FOR CONSTRUCTION	BW	04/17/24

ATC SITE NUMBER:
414240

ATC SITE NAME:
BYRAM PARK CT

VERIZON SITE NAME:
BYRAM PARK CT

SITE ADDRESS:
36 RITCH AVE WEST
GREENWICH, CT 06830-9992

SEAL:

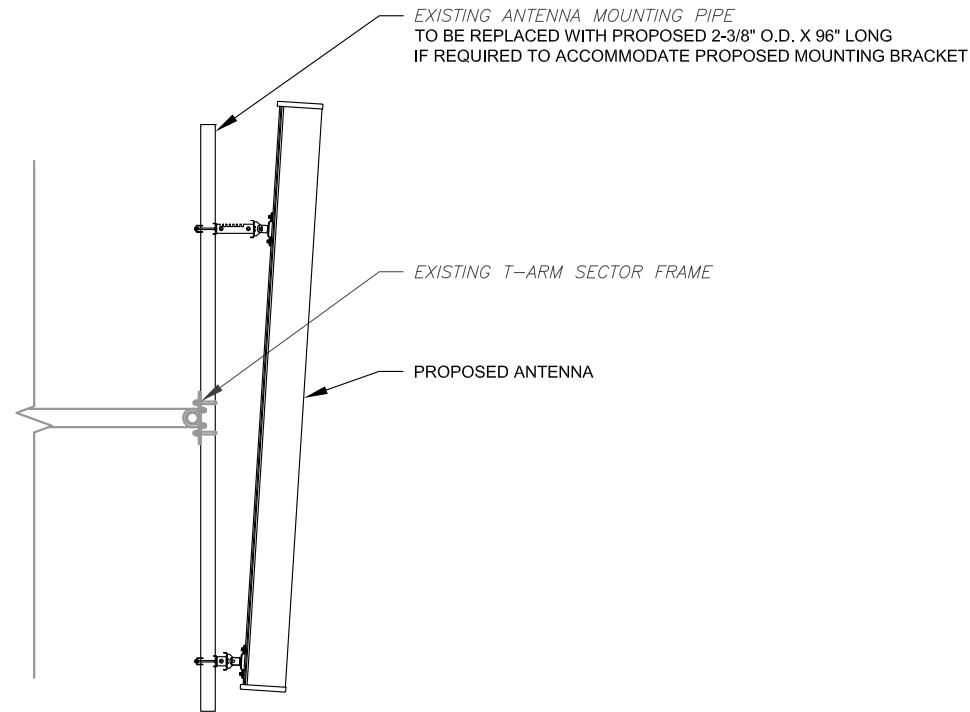
verizon

DATE DRAWN: 04/17/24
ATC JOB NO: 13701270
CUSTOMER ID: BYRAM PARK CT
CUSTOMER #: 468044

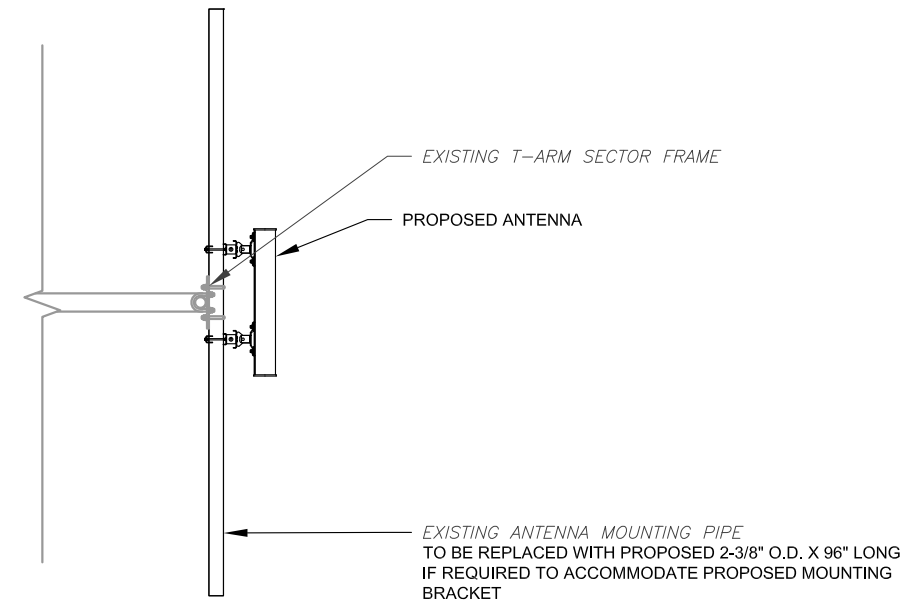
ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER: **C-401**
REVISION: **2**

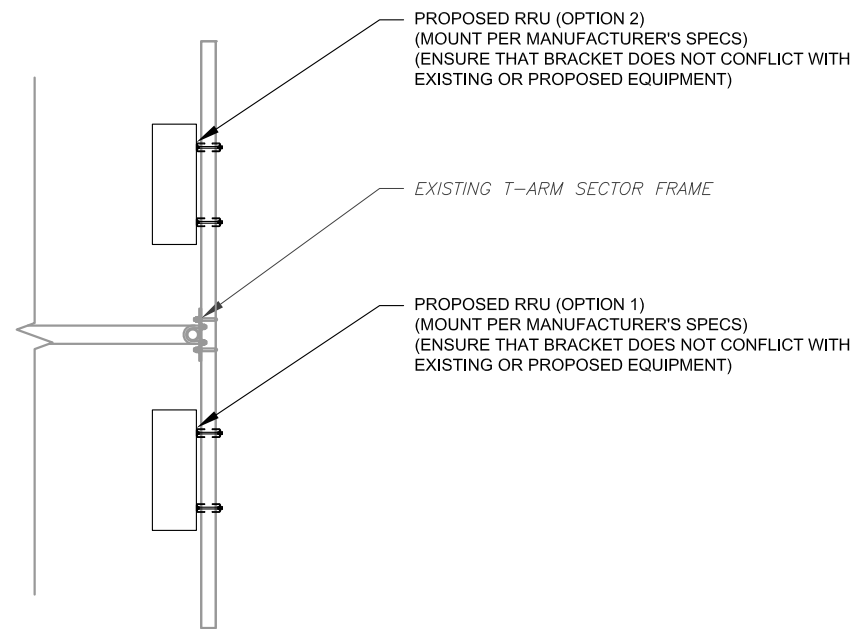
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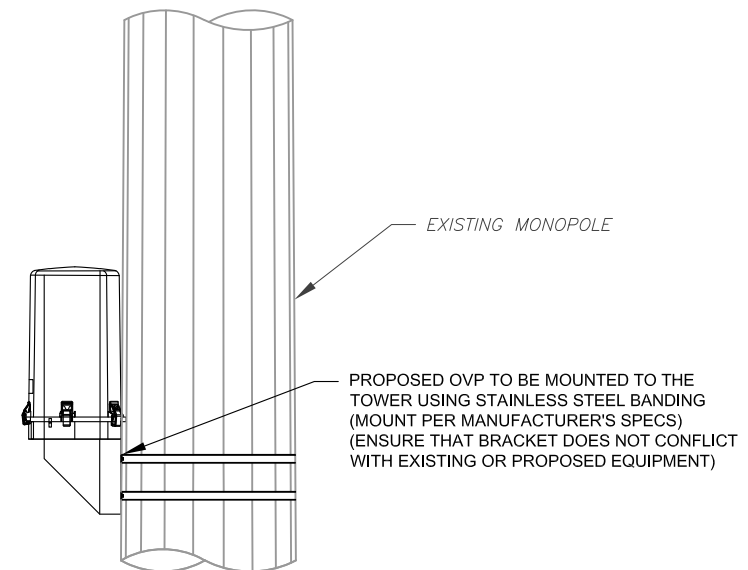
1 PROPOSED ANTENNA MOUNTING DETAIL - TYPICAL
SCALE: NOT TO SCALE



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



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



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



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1	FOR CONSTRUCTION	BW	03/21/24
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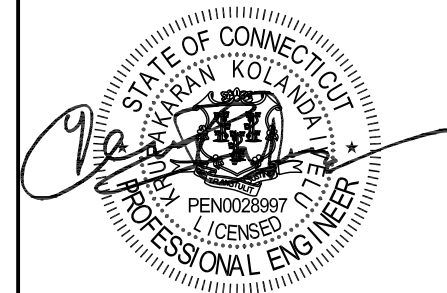
ATC SITE NUMBER:
414240

ATC SITE NAME:
BYRAM PARK CT

VERIZON SITE NAME:
BYRAM PARK CT

SITE ADDRESS:
36 FITCH AVE WEST
GREENWICH, CT 06830-9992

SEAL:

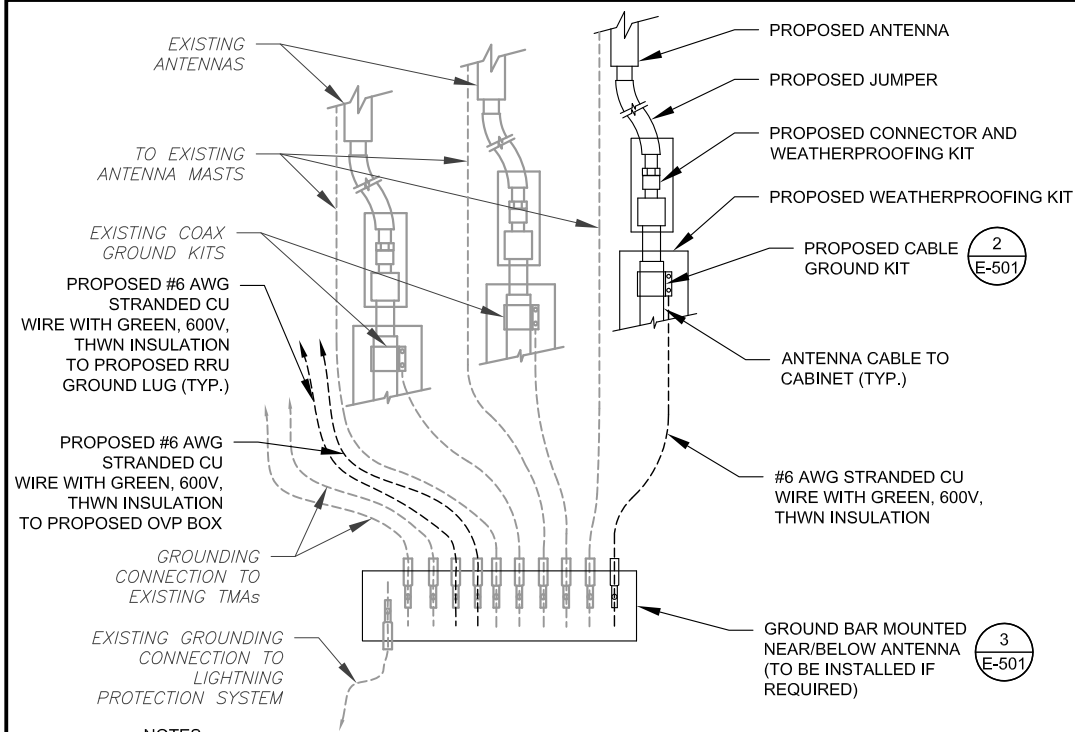


DATE DRAWN:	04/17/24
ATC JOB NO:	13701270
CUSTOMER ID:	BYRAM PARK CT
CUSTOMER #:	468044

**CONSTRUCTION
DETAILS**

SHEET NUMBER: **C-501** REVISION: **2**

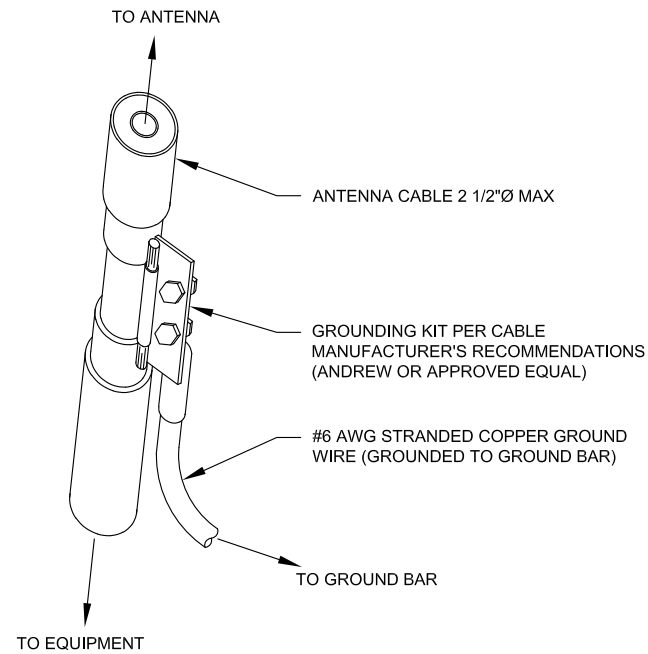
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NOTES:

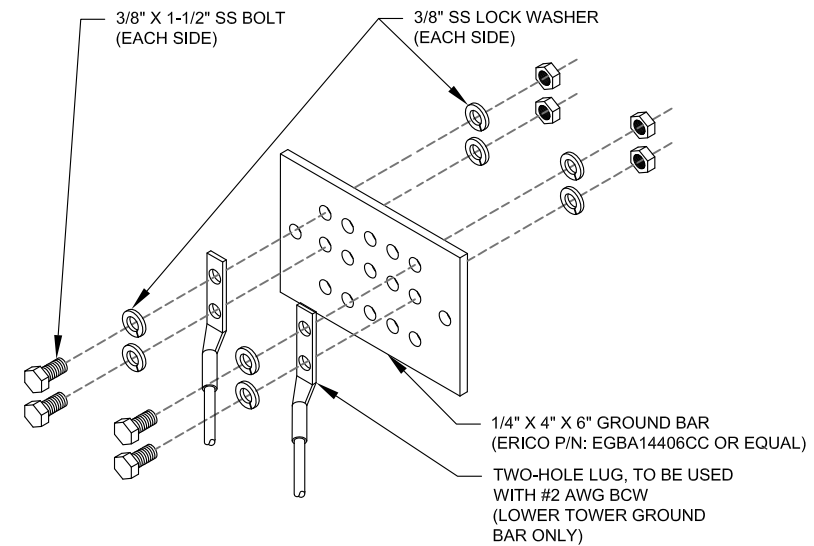
1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH VERIZON GROUNDING 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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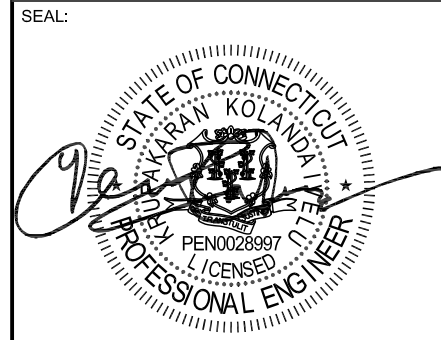
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VERIZON SITE NAME:
BYRAM PARK CT

SITE ADDRESS:
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GREENWICH, CT 06830-9992

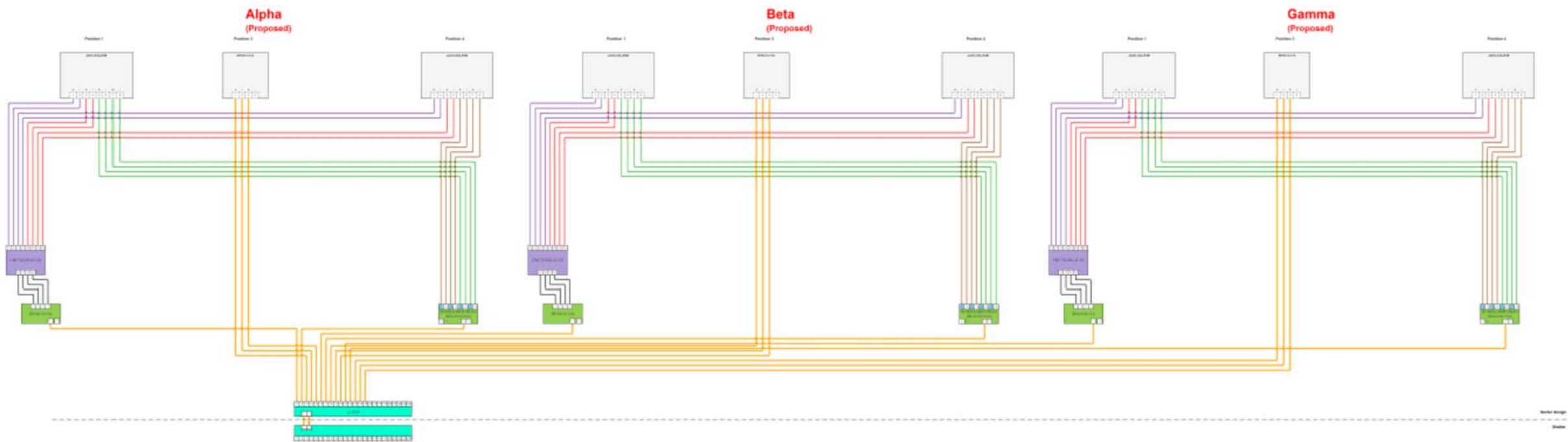


DATE DRAWN:	04/17/24
ATC JOB NO:	13701270
CUSTOMER ID:	BYRAM PARK CT
CUSTOMER #:	468044

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	2

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1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE

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.

SUPPLEMENTAL

SHEET NUMBER: R-601	REVISION: 2
-------------------------------	-----------------------

Band	Sector 1 (Alpha) Color Codes								Sector 2 (Beta) Color Codes								Sector 3 (Gamma) Color Codes																	
850 CDMA		R								B										G														
		R	R								B	B									G	G												
700		R	P								B	P									G	P												
		R	R	P							B	B	B	P							G	G	P											
		R	R	R	R	P						B	B	B	B	P					G	G	G	P										
850 LTE		R	P	P	P							P	P								G	P	P	P										
		R	R	R	R	P	P					B	B	B	P	P					G	G	G	P	P									
		R	R	R	R	R	P	P	P				B	B	B	B	P	P	P		G	G	G	G	P	P	P							
700 / 850		R	P	P	P							P	P	P							G	P	P	P										
		R	R	R	R	P	P	P				B	B	B	P	P	P				G	G	P	P	P									
		R	R	R	R	R	P	P	P	P			B	B	B	B	P	P	P		G	G	G	P	P	P	P							
AWS		R	W									W									G	W												
		R	R	W								B	B	W							G	G	W											
		R	R	R	R	W						B	B	B	B	W					G	G	G	G	W									
PCS		R	W	W								W	W								G	W	W	W										
		R	R	R	W	W						B	B	B	W	W					G	G	G	W	W									
		R	R	R	R	W	W					B	B	B	B	W	W				G	G	G	G	W	W								
AWS / PCS		R	W	W	W							W	W	W							G	W	W	W	W									
		R	R	R	W	W	W					B	B	B	W	W	W				G	G	W	W	W	W								
		R	R	R	R	W	W	W	W			B	B	B	B	W	W	W			G	G	G	W	W	W	W							
CBRS		R	Y									Y									G	Y												
		R	R	Y								B	B	Y							G	G	Y											
		R	R	R	Y							B	B	B	Y						G	G	G	Y										
LAA		R	Y	Y								Y	Y								G	Y	Y											
		R	R	Y	Y							B	B	Y	Y						G	G	Y	Y										
		R	R	Y	Y							B	B	Y	Y						G	G	Y	Y										
	Sector 4 (Delta) Color Codes								Sector 5 (Epsilon) Color Codes								Sector 6 (Zeta) Color Codes																	
850 CDMA	Gray	R								Gray	B									Gray	G													
		R	R								Gray	B	B								Gray	G	G											
700		R	P								Gray	B	P								Gray	G	P											
		R	R	P								B	B	P							Gray	G	G	P										
		R	R	R	R	P						B	B	B	P						Gray	G	G	G	P									
850 LTE		R	P	P	P							P	P								Gray	G	P	P	P									
		R	R	R	R	P	P					B	B	B	P	P					Gray	G	G	G	P	P								
		R	R	R	R	R	P	P	P				B	B	B	B	P	P	P		Gray	G	G	G	G	P	P	P						
700 / 850		R	P	P	P							P	P								Gray	G	P	P	P									
		R	R	R	R	P	P	P				B	B	B	P	P	P				Gray	G	G	P	P	P								
		R	R	R	R	R	P	P	P	P			B	B	B	B	P	P	P		Gray	G	G	G	P	P	P	P						
AWS		R	W									W									Gray	G	W											
		R	R	W								B	B	W							Gray	G	G	W										
		R	R	R	R	W						B	B	B	B	W					Gray	G	G	G	G	W								
PCS		R	W	W								W	W								Gray	G	W	W	W									
		R	R	R	W	W						B	B	B	W	W					Gray	G	G	G	W	W								
		R	R	R	R	W	W					B	B	B	B	W	W				Gray	G	G	G	G	W	W							
AWS / PCS		R	W	W	W							W	W	W							Gray	G	W	W	W	W								
		R	R	R	W	W	W					B	B	B	W	W	W				Gray	G	G	W	W	W	W							
		R	R	R	R	W	W	W	W			B	B	B	B	W	W	W			Gray	G	G	G	W	W	W	W						
CBRS		R	Y									Y									Gray	G	Y											
		R	R	Y								B	B	Y							Gray	G	G	Y										
		R	R	R	Y							B	B	B	Y						Gray	G	G	G	Y									
LAA		R	Y	Y								Y	Y								Gray	G	Y	Y										
		R	R	Y	Y							B	B	Y	Y						Gray	G	G	Y	Y									
		R	R	Y	Y							B	B	Y	Y						Gray	G	G	Y	Y									

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Page 15 of 20

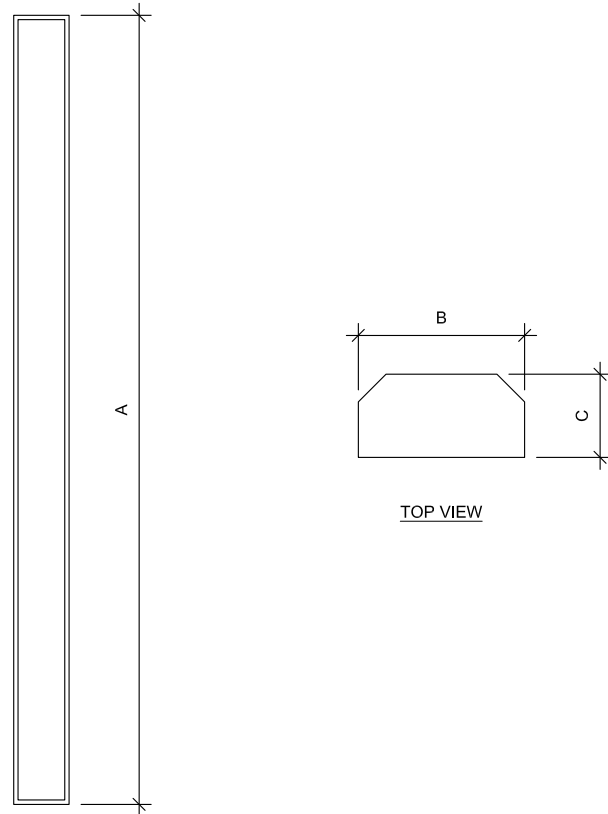
1 CABLE COLOR GUIDE
SCALE: NOT TO SCALE

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.

SUPPLEMENTAL

SHEET NUMBER:
R-602

REVISION:
2

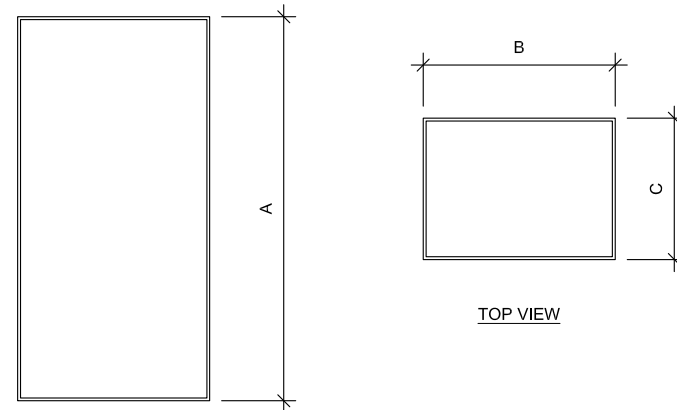


FRONT VIEW

TOP VIEW

1 ANTENNA SPECIFICATIONS
FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
JAHH-65A-R3B	55.0"	13.8"	8.2"	50.7
JAHH-45A-R3B	55.0"	18.0"	7.0"	70.5
MT6413-77A	28.9"	15.8"	5.5"	57.3

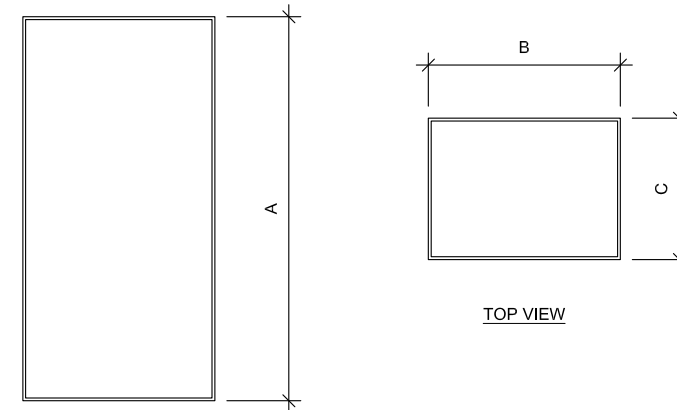


FRONT VIEW

TOP VIEW

2 RRU SPECIFICATIONS
FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

RRU SPECIFICATIONS					
RRU MODEL	A	B	C	WEIGHT (LBS)	
RF4439D-25A	15.0"	15.0"	10.0"	74.7	
RF4461D-13A	15.0"	15.0"	10.2"	79.1	



FRONT VIEW

TOP VIEW

3 TMA SPECIFICATIONS
FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

TMA SPECIFICATIONS					
TMA MODEL	A	B	C	WEIGHT (LBS)	
CBC78T-DS-43-2X	9.6"	6.9"	6.4"	20.7	

SUPPLEMENTAL

SHEET NUMBER:
R-603

REVISION:
2



Colliers Engineering & Design, Architecture,
Landscape Architecture, Surveying, CT P.C.
1055 Washington Boulevard
Stamford, CT 06901
203.324.0800
peter.albano@collierseng.com

Post-Modification Antenna Mount Analysis Report and PMI Requirements

Mount Fix

SMART Tool Project #: 10218076
Colliers Engineering & Design Project #: 20777259 (Rev. 1)

January 29, 2024

Site Information

Site ID: 5000382611-VZW / Byram Park CT
Site Name: Byram Park CT
Carrier Name: Verizon Wireless
Address: 36 Ritch Ave W
Greenwich, Connecticut 06830
Fairfield County
Latitude: 41.005084°
Longitude: -73.648312°

Structure Information

Tower Type: 79-Ft Monopole
Mount Type: 10.00-Ft T-Frame

FUZE ID # 16231909

Analysis Results

T-Frame: **94.7% Pass w/ Modifications***

*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

Report Prepared By: Madison Shell



Mount Post-Modification Analysis Report
(3) 10.00-Ft T-Frames

January 29, 2024
Site ID: 5000382611-VZW / Byram Park CT
Page | 5

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	11.4	2.6	23.5	14.7
0.5	14.8	3.7	32.0	20.9
1	17.9	4.4	40.2	26.7

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(s).
- Ka factors included in (EPA)a calculations

Requirements:

The existing mounts will be **SUFFICIENT** for the final loading configuration (attachment 2) after the modifications detailed in attachment 3 are successfully completed.

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 PMI Report Deliverables
2. Antenna Placement Diagrams
3. Mount Modification Drawings
4. Mount Photos
5. Mount Mapping Report (for reference only)
6. Analysis Calculations



MOUNT MODIFICATION DRAWINGS
EXISTING 10.00' T-FRAME

TOWER OWNER: AMERICAN TOWER CORPORATION
TOWER OWNER SITE NUMBER: 414240

CARRIER SITE NAME: BYRAM PARK CT
CARRIER SITE NUMBER: 5000382611
FUZE ID: 16231909

36 RITCH AVE W
GREENWICH, CT 06830
FAIRFIELD COUNTY

LATITUDE: 41.005064° N
LONGITUDE: 73.648312° W



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FAIRFIELD COUNTY

STAMFORD
1055 Washington Boulevard
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TITLE SHEET

ST-1

DESIGN CRITERIA
WIND LOADS BASIC WIND SPEED (3 SECOND GUST), V = 120 MPH EXPOSURE CATEGORY D TOPOGRAPHIC CATEGORY: I TOPOGRAPHIC CONSIDERED: N/A TOPOGRAPHIC METHOD: N/A MEAN BASE ELEVATION (AMSL) = 50.68'
ICE LOADS ICE WIND SPEED (3 SECOND GUST), V = 50 MPH ICE THICKNESS = 1.00 IN
SEISMIC LOADS SEISMIC DESIGN CATEGORY B SHORT TERM MCER GROUND MOTION, S _s = .274 LONG TERM MCER GROUND MOTION, S _l = .059

PROJECT INFORMATION
APPLICANT/LESSEE COMPANY: VERIZON WIRELESS CLIENT REPRESENTATIVE COMPANY: VERIZON WIRELESS PROJECT MANAGER COMPANY: COLLIERS ENGINEERING & DESIGN CONTACT: PETER ALBANO PHONE: 856.797.0412 E-MAIL: PETER.ALBANO@COLLIERSENG.COM
CONTRACTOR PMI REQUIREMENTS PMI LOCATION: HTTPS://PMI.VZWSMART.COM SMART TOOL PROJECT #: 10218076 VZW MDG #: 5000382611 ANALYSIS DATE: 1/29/2024 PMI REQUIREMENTS EMBEDDED WITHIN MOUNT MODIFICATION REPORT

SHEET INDEX
SHEET DESCRIPTION
ST-1 TITLE SHEET
SBOM-1 BILL OF MATERIALS
SGN-1 GENERAL NOTES
SCF-1 CLIMBING FACILITY DETAIL
SS-1 MODIFICATION DETAILS
SS-2 MOUNT PHOTOS
SPECIFICATION SHEETS

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GENERAL NOTES

- THESE MODIFICATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF THE TELECOMMUNICATIONS INDUSTRY STANDARD TIA-222-H. MATERIALS AND SERVICES PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE ABOVE MENTIONED CODES.
- CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE TO EXISTING STRUCTURES. ANY DAMAGE TO EXISTING STRUCTURES AS A RESULT OF THE CONTRACTOR'S WORK OR FROM DAMAGE DUE TO OTHER CAUSES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS BEFORE BEGINNING WORK, ORDERING MATERIAL, AND PREPARING OF SHOP DRAWINGS. ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER. IF THE CONTRACTOR DISCOVERS ANY EXISTING CONDITIONS THAT ARE NOT REPRESENTED ON THESE DRAWINGS, OR ANY CONDITIONS THAT WOULD INTERFERE WITH THE INSTALLATION OF THE MODIFICATIONS, NOTIFY THE ENGINEER IMMEDIATELY.
- IT IS ASSUMED THAT ANY STRUCTURAL MODIFICATION WORK SPECIFIED ON THESE PLANS WILL BE ACCOMPLISHED BY KNOWLEDGEABLE WORKMEN WITH TOWER CONSTRUCTION EXPERIENCE.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES, AND PROCEDURES.
- ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN AND SHALL MEET ANSI/TIA-322 (LATEST EDITION), OSHA, AND GENERAL INDUSTRY STANDARDS. ALL RIGGING PLANS SHALL ADHERE TO ANSI/TIA-322 (LATEST EDITION) INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PROGRAMS IN ACCORDANCE WITH APPLICABLE SAFETY CODES.
- WORK SHALL ONLY BE PERFORMED DURING CALM DRY DAYS (WINDS LESS THAN 30-MPH). THE STRUCTURE SHOWN ON THE DRAWINGS IS STRUCTURALLY SOUND ONLY IN THE COMPLETED FORM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STRENGTH AND STABILITY OF THE STRUCTURE DURING ERECTION. CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT, SHORING, BRACING AND ANY OTHER STRUCTURAL SYSTEMS AS REQUIRED TO RESIST ALL FORCES THAT MAY OCCUR DURING HANDLING AND ERECTION UNTIL THE STRUCTURE IS FULLY COMPLETED. TEMPORARY SUPPORTS, BRACING AND OTHER STRUCTURAL SYSTEMS REQUIRED DURING CONSTRUCTION SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER THEIR USE.
- ALL INSTALLATIONS PERFORMED ON THIS STRUCTURE SHALL BE COMPLETED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF THE STANDARD FOR INSTALLATION, ALTERATION AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS, ANSI/TIA-322.
- CONTRACTOR SHALL SECURE SITE BACK TO EXISTING CONDITION UNDER SUPERVISION OF OWNER. ALL FENCE, STONE, GEOTEXTILE, GROUNDING, AND SURROUNDING GRADE SHALL BE REPLACED AND REPAIRED AS REQUIRED TO ACHIEVE OWNER APPROVAL. POSITIVE DRAINAGE AWAY FROM TOWER SITE SHALL BE MAINTAINED.
- CONNECTIONS BETWEEN ITEMS SUPPORTED BY THE STRUCTURE AND THE STRUCTURE NOT SPECIFICALLY DETAILED IN THE CONTRACT DOCUMENTS ARE THE RESPONSIBILITY OF THE CONTRACTOR. SUCH CONNECTIONS SHALL BE DESIGNED, COORDINATED AND INSPECTED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF THE PROJECT. SUBMIT SIGNED AND SEALED CALCULATIONS DURING SHOP DRAWING REVIEW.
- DO NOT SCALE DRAWINGS.
- DO NOT USE THESE DRAWINGS FOR ANY OTHER SITE.
- ALL MATERIAL UTILIZED FOR THIS PROJECT MUST BE NEW AND FREE OF ANY DEFECTS. ANY MATERIAL SUBSTITUTIONS, INCLUDING BUT NOT LIMITED TO ALTERED SIZE AND/OR STRENGTHS, MUST BE APPROVED BY THE OWNER AND ENGINEER IN WRITING.
- THE MOUNT UNDER NO CIRCUMSTANCES SHOULD BE USED AS A TIE OFF POINT.

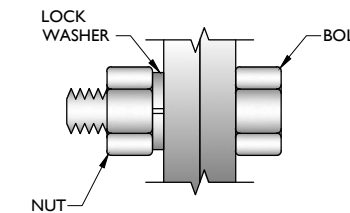
STRUCTURAL STEEL

- DESIGN, DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING PUBLICATIONS EXCEPT AS SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS.
 - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION (15TH EDITION)
 - SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS
 - AISC CODE OF STANDARD PRACTICE
- STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING UNLESS OTHERWISE SHOWN:

CHANNELS, ANGLES, PLATES, ETC.	ASTM A36 (GR 36)
STEEL PIPE	ASTM A53 (GR 35)
BOLTS	ASTM A325
NUTS	ASTM A563
LOCK WASHERS	LOCKING STRUCTURAL GRADE
- ALL SUBSTITUTIONS PROPOSED BY THE CONTRACTOR SHALL BE APPROVED IN WRITING BY THE ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER FOR VERIFYING THE SUBSTITUTE IS SUITABLE FOR USE AND MEETS ORIGINAL DESIGN CRITERIA. DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT, SHALL BE NOTED. ESTIMATES OF COSTS/CREDITS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING RE-DESIGN COSTS AND COSTS TO SUB-CONTRACTORS) SHALL BE PROVIDED TO THE ENGINEER. CONTRACTOR SHALL PROVIDE ADDITIONAL DOCUMENTATION AND/OR SPECIFICATIONS TO THE ENGINEER AS REQUESTED.
- PROVIDE STRUCTURAL STEEL SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
 - SUBMIT SHOP DRAWINGS TO
PETER.ALBANO@COLLIERSENG.COM
 - PROVIDE COLLIERS ENGINEERING & DESIGN PROJECT # AND COLLIERS ENGINEERING & DESIGN PROJECT ENGINEER CONTACT IN THE BODY OF THE EMAIL.
- DRILL NO HOLES IN ANY NEW OR EXISTING STRUCTURAL STEEL MEMBERS OTHER THAN THOSE SHOWN ON STRUCTURAL DRAWINGS WITHOUT THE APPROVAL OF THE ENGINEER OF RECORD.
- GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
- ALL NEW STEEL SHALL BE HOT BE DIPPED GALVANIZED FOR FULL WEATHER PROTECTION. IN ADDITION ALL NEW STEEL SHALL BE PAINTED TO MATCH EXISTING STEEL. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
- ALL BOLT ASSEMBLIES FOR STRUCTURAL MEMBERS REPRESENTED IN THIS DRAWING REQUIRE LOCKING DEVICES TO BE INSTALLED IN ACCORDANCE WITH TIA-222-H SECTION 4.9.2 REQUIREMENTS.
- WHERE CONNECTIONS ARE NOT FULLY DETAILED ON THESE DRAWINGS, FABRICATOR SHALL DESIGN CONNECTIONS TO RESIST LOADS AND FORCES WHERE SHOWN ON DRAWINGS AND AS OUTLINED IN SPECIFICATIONS.
- FOR MEMBERS BEING REPLACED, PROVIDE NEW BOLTS AND MATCH EXISTING SIZE AND GRADE. MAINTAIN AISC REQUIREMENTS FOR MINIMUM BOLT DISTANCE AND SPACING.
- ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH SUCH THAT THE END OF THE BOLT IS AT LEAST FLUSH WITH THE FACE OF THE NUT. IT IS NOT PERMITTED FOR THE BOLT END TO BE BELOW THE FACE OF THE NUT AFTER TIGHTENING IS COMPLETED.
- GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
- ALL NEW STEEL SHALL BE HOT BE DIPPED GALVANIZED FOR FULL WEATHER PROTECTION. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
- ALL EXISTING PAINTED/GALVANIZED SURFACES DAMAGED DURING REHAB INCLUDING AREAS UNDER STIFFENER PLATES SHALL BE WIRE BRUSHED CLEAN, REPAIRED BY COLD GALVANIZING (ZINC COTE, OR EOR APPROVED EQUAL), AND REPAINTED TO MATCH THE EXISTING FINISH (IF APPLICABLE).
- ALL HOLES IN STEEL MEMBERS SHALL BE SIZED 1/16" LARGER THAN THE BOLT DIAMETER. STANDARD HOLES SHALL BE USED UNLESS NOTED OTHERWISE.

BOLT SCHEDULE (IN.)				
BOLT DIAMETER	STANDARD HOLE	SHORT SLOT	MIN. EDGE DISTANCE	SPACING
1/2	9/16	9/16 x 11/16	7/8	1 1/2
5/8	11/16	11/16 x 7/8	1 1/8	1 7/8
3/4	13/16	13/16 x 1	1 1/4	2 1/4
7/8	15/16	15/16 x 1 1/8	1 1/2	2 5/8
1	1 1/16	1 1/16 x 1 5/16	1 3/4	3

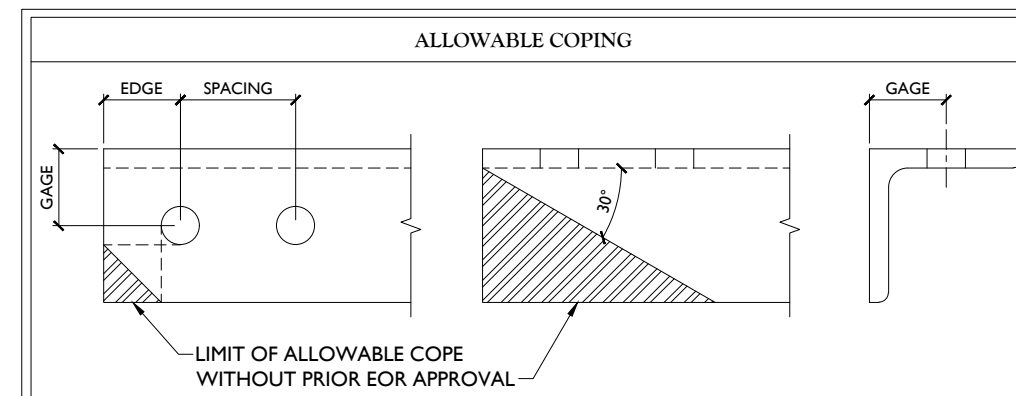
WORKABLE GAGES (IN.)	
LEG	GAGE
4	2 1/2
3 1/2	2
3	1 3/4
2 1/2	1 3/8
2	1 1/8



TYP. BOLT ASSEMBLY

NOTES:

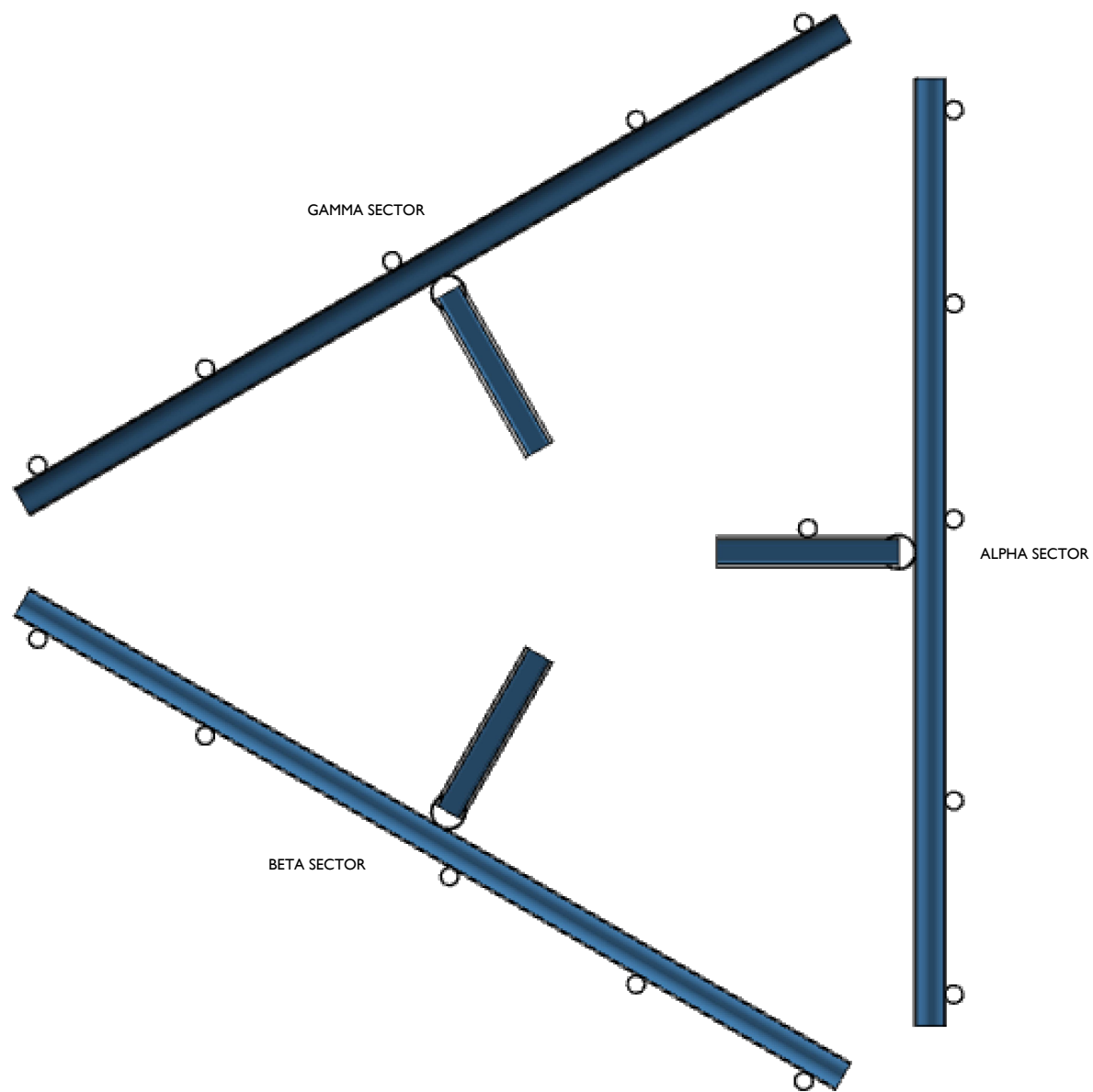
- ALL DIMENSIONS REPRESENTED IN THE ABOVE TABLES ARE AISC MINIMUM REQUIREMENTS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ENGINEER IF DISTANCES ARE LESS THAN THOSE PROVIDED.
- THE DIMENSIONS PROVIDED ARE MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS OF PROPOSED MEMBERS WITHIN THESE DRAWINGS MAY VARY FROM THE AISC MINIMUM REQUIREMENTS.
- SHORT SLOT HOLES SHALL ONLY BE USED WHEN DEPICTED IN THE DRAWINGS
- MATCH EXISTING GAGES WHEN APPLICABLE, UNLESS MINIMUM EDGE DISTANCES ARE COMPROMISED.



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DATE: 01/29/24	ISSUED FOR CONSTRUCTION			
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36 RITCH AVE W
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FAIRFIELD COUNTY



STRUCTURAL NOTES:

1. PER THE MOUNT MAPPING COMPLETED BY TOWER ENGINEERING PROFESSIONALS ON 10/21/2020, NO SAFETY CLIMB OR CLIMBING FACILITIES UP TO THE VERIZON MOUNT ELEVATION (56'-0") WERE OBSERVED. COLLIERS ENGINEERING & DESIGN DOES NOT WARRANT THIS INFORMATION.
2. INSTALL SHALL NOT CAUSE HARM TO THE STRUCTURE, CLIMBING FACILITY, SAFETY CLIMB, OR ANY SYSTEM INSTALLED ON THE STRUCTURE. TIMELY NOTICE AND DOCUMENTATION SHALL BE PROVIDED BY CONTRACTORS TO THE EOR (OF STRUCTURAL DESIGN) IF AN OBSTRUCTION WAS REQUIRED TO MEET THE RF SYSTEM DESIGN REQUIREMENTS AND PERFORMANCES.
3. CONTRACTOR SHALL GRIND OFF BRANCH RECEPTACLES AS NEEDED TO INSTALL PROPOSED MODIFICATION COLLARS. CONTRACTOR SHALL MINIMIZE THE QUANTITY OF RECEPTACLES BEING REMOVED, ONLY REMOVE RECEPTACLES DIRECTLY INTERFERING WITH PROPOSED COLLAR LOCATION.
4. COAX IS FLAMMABLE AND CAN CATCH FIRE IF PROPER PRECAUTIONS ARE NOT MADE TO SHIELD COAX FROM GRINDING PROCEDURES. ALL COAX SHALL BE SHIELDED AT AND BELOW EACH GRINDING PROCEDURE AND ELEVATION. IN ADDITION, COAX SHALL BE PUSHED AWAY FROM TOWER FACE WHERE WELDING OR GRINDING IS BEING PERFORMED. INSTALL 3000° (NFPA701) FIRE BLANKET AROUND ALL COAX.

NOTE:
NO EXISTING CLIMBING FACILITY.



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LEGEND:

- PROPOSED
- RELOCATED
- EXISTING

MOUNT MODIFICATION SCHEDULE

NO.	ELEVATION	QUANTITY	DESCRIPTION	NOTES
1	56'-0"	3	PROPOSED T-ARM KIT (PART #: VZWSMART-SFK4)	CONTRACTOR TO VERIFY THE LENGTH REQUIRED AND TRIM AS NECESSARY IN ACCORDANCE WITH THE 'STRUCTURAL STEEL' NOTES ON SHEET SGN- I. CONNECT OTHER END OF T-ARM KIT TO MONOPOLE COLLAR MOUNT ASSEMBLY (PART #: VZWSMART-PLK7). SEE GENERAL NOTE B.
2		3	PROPOSED 120" LONG, PIPE 3 SCH40 FACE HORIZONTAL	CONNECT NEW HORIZONTAL TO ALL EXISTING VERTICAL MOUNT PIPES WITH CROSSOVER PLATES (PART #: VZWSMART-MSK2).
3		1	PROPOSED 36" LONG, PIPE 2 SCH40 OVP PIPE	CONNECT NEW OVP PIPE TO EXISTING STANDOFF HORIZONTAL WITH BACK TO BACK CROSSOVER PLATE (VZWSMART-MSK6). ALPHA SECTOR ONLY.

GENERAL NOTES:

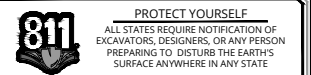
- A. CONTRACTOR SHALL VERIFY THAT NEW & EXISTING STEEL IS FREE OF CORROSION. VISIBLE MINOR CORROSION SHALL BE WIRE BRUSHED CLEAN AND TREATED WITH COLD GALVANIZATION. REPORT ANY SIGNIFICANT CORROSION TO EOR
- B. THREADED ROD FROM PROPOSED KITS SHALL BE TRIMMED TO EXTEND NO MORE THAN 3" BEYOND THE LOCK NUT. TREAT ALL CUT ENDS WITH (2) COATS OF COLD GALVANIZATION (ZINC KOTE, OR EOR APPROVED EQUAL).
- C. MOUNT MEMBERS NOT SHOWN FOR CLARITY U.N.O.



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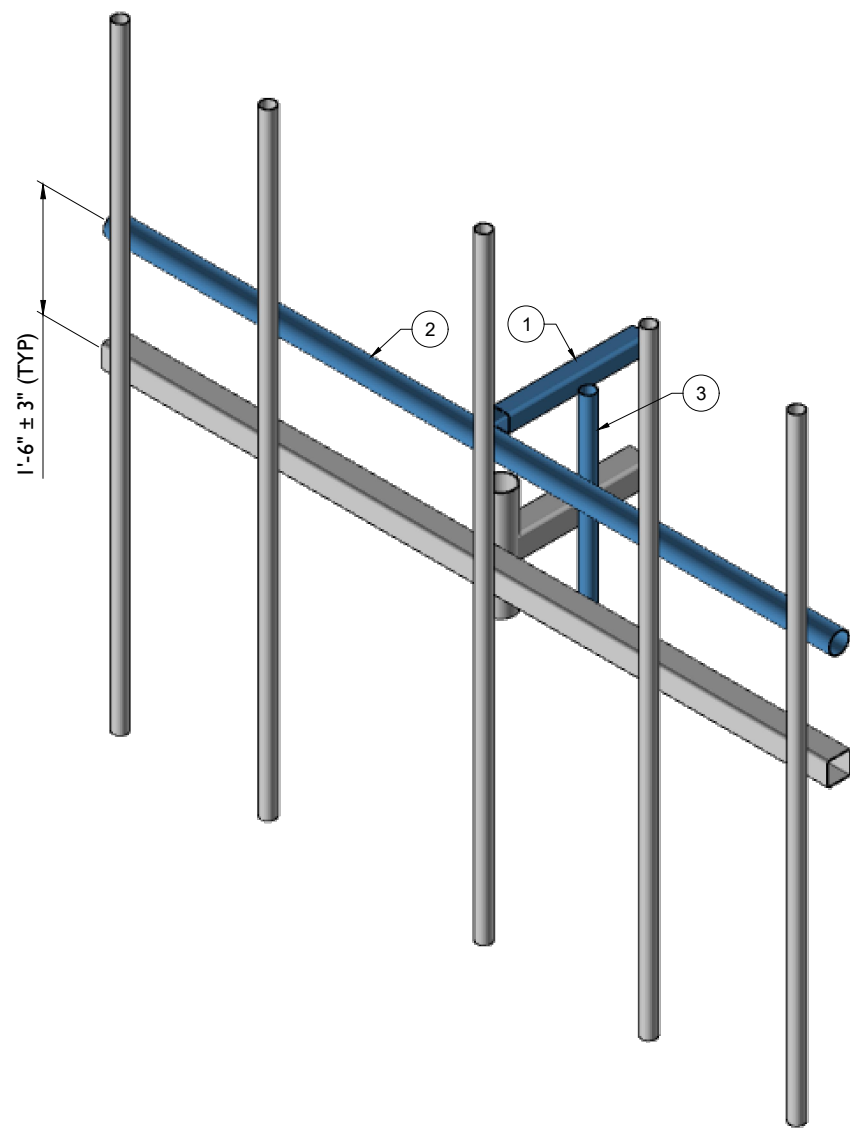
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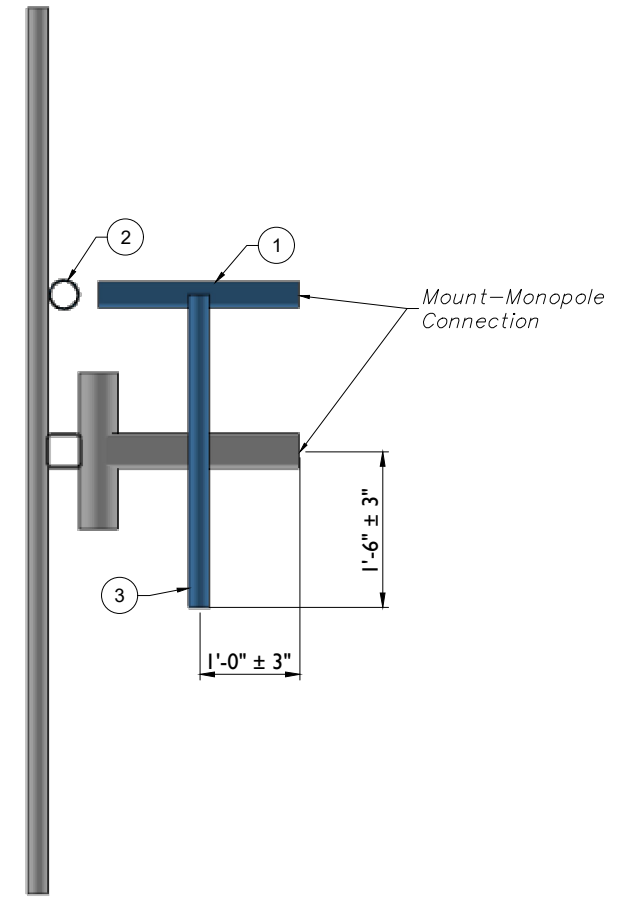
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1055 Washington Boulevard
Stamford, CT 06901
Phone: 203.324.0800
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

SHEET TITLE:
MODIFICATION DETAILS

SHEET NUMBER:
SS-1



1 PROPOSED ISOMETRIC VIEW (SIM. ALL SECTORS)
SCALE : N.T.S.



2 PROPOSED SIDE ELEVATION VIEW (SIM. ALL SECTORS)
SCALE : N.T.S.



MOUNT PHOTO 1



MOUNT PHOTO 2



MOUNT PHOTO 3



MOUNT PHOTO 4



811 PROTECT YOURSELF
 ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
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SCALE: AS SHOWN JOB NUMBER: 20777259

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	01/29/24	ISSUED FOR CONSTRUCTION	MKS	DK

COLLIERS ENGINEERING & DESIGN CT, P.C.
 C.T. JPC-0000131

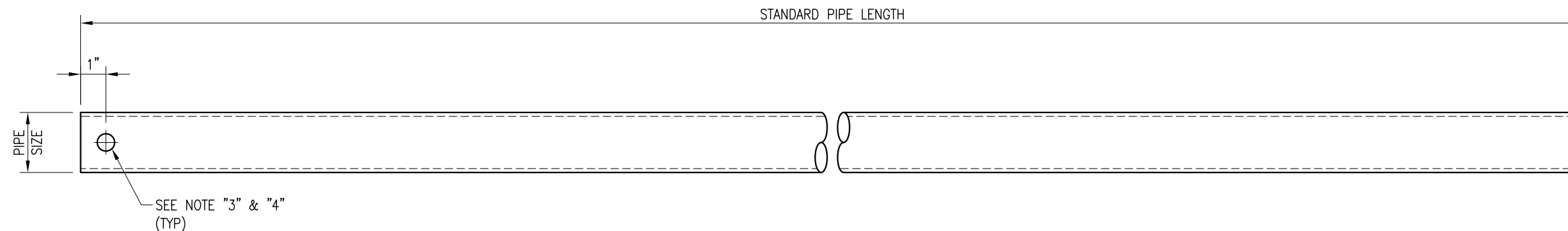
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF THE RESPONSIBLE LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SITE NAME:
 BYRAM PARK CT
 5000382611
 36 RITCH AVE W
 GREENWICH, CT 06830
 FAIRFIELD COUNTY

Colliers Engineering & Design
 STAMFORD
 1055 Washington Boulevard
 Stamford, CT 06901
 Phone: 203.324.0800
 COLLIERS ENGINEERING & DESIGN CT, P.C.
 DOING BUSINESS AS MASER CONSULTING

SHEET TITLE:
 MOUNT PHOTOS

SHEET NUMBER:
 SS-2



VZWSMART Standard Pipe		
VZWSMART Number	Size	Length
P40-238X048	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	48"
P40-238X072	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	72"
P40-238X096	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	96"
P40-238X120	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	120"
P40-238X126	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	126"
P40-238X150	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	150"
P40-238X174	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	174"
P40-278X048	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	48"
P40-278X072	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	72"
P40-278X096	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	96"
P40-278X120	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	120"
P40-278X126	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	126"
P40-278X150	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	150"
P40-278X174	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	174"
P40-312X048	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	48"
P40-312X072	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	72"
P40-312X126	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	126"
P40-312X150	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	150"
P40-312X174	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	174"

NOTE:
 APPROVED SMART KIT VENDORS ARE ALLOWED TO SUBSTITUTE AT THEIR DISCRETION
 PIPES LISTED ON THIS PAGE FOR CUSTOM LENGTH COMPONENTS OF MATCHING SIZE.
 SUBSTITUTIONS SHALL MEET THE ORIGINAL STRUCTURAL INTENT.

- NOTES:**
1. ALL PIPE GRADE A53-B OR BETTER.
 2. HOT-DIPPED GALVANIZED PER ASTM A123.
 3. ALL HOLES ARE 11/16" DIA. U.N.O
 4. HOLES MAY OR MAY NOT BE PRESENT, DEPEND UPON MANUFACTURE DISCRETION.
 5. ALL FIELD CUT AND DRILLED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATS OF ZINGA OR ZINC COTE PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

FOR REFERENCE
 ONLY

DRAWN BY: BT CHECKED BY: HMA/KW

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	BT	08/04/21

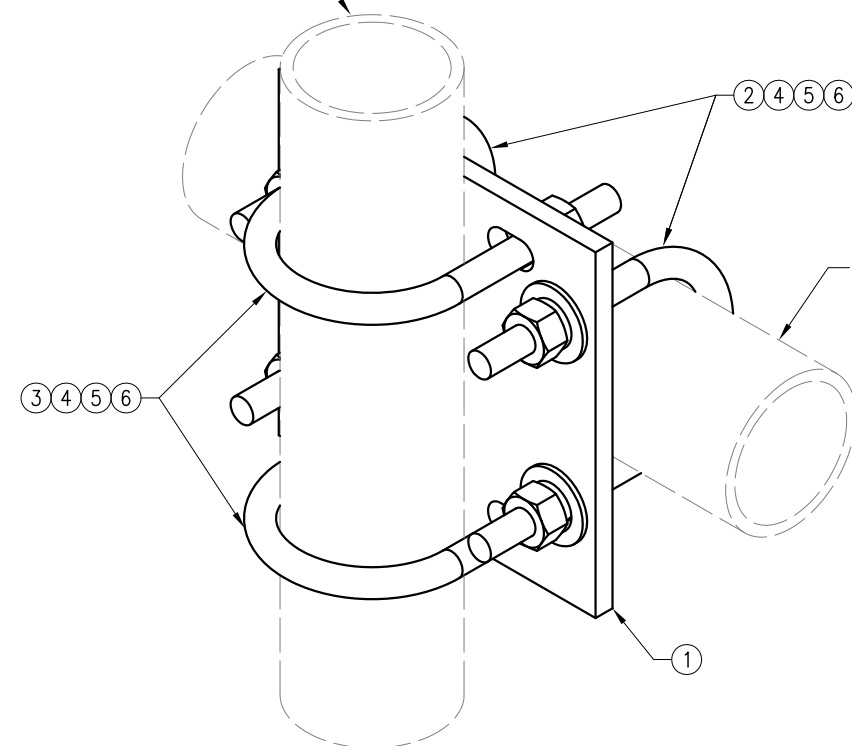
SHEET TITLE:

VZWSMART
 STANDARD PIPE

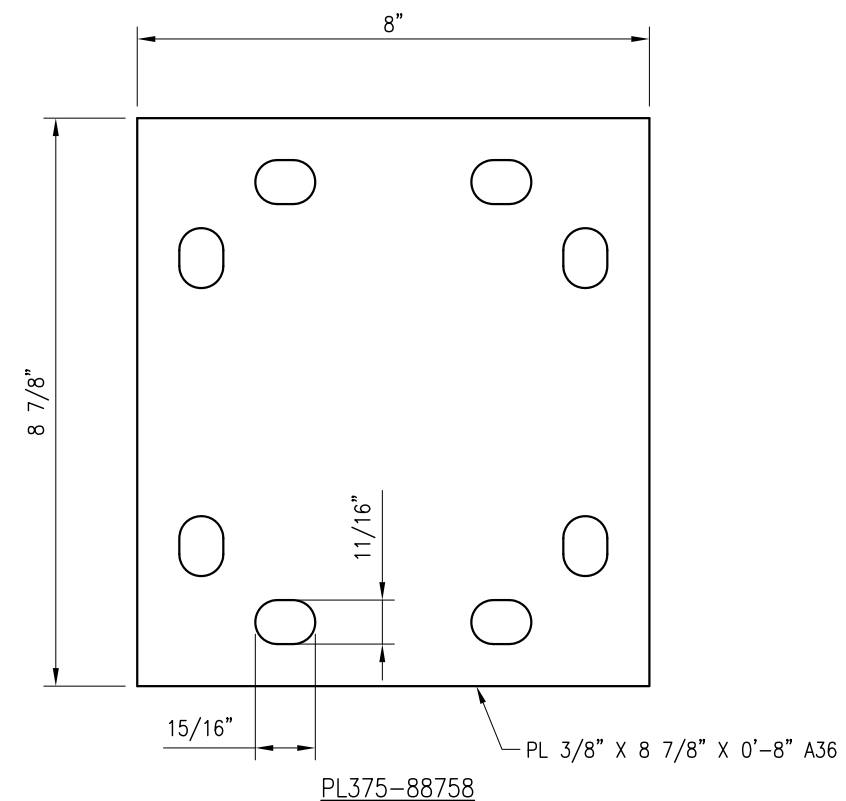
SHEET NUMBER: REV #:
 VZWSMART-PIPE 0



FITS 2.375" O.D. AND 2.875" O.D.
 VERTICAL PIPE.
 (NOT INCLUDED IN THIS KIT)



FITS 3.5" O.D. AND 4" O.D.
 HORIZONTAL PIPE.
 (NOT INCLUDED IN THIS KIT)



FOR REFERENCE
 ONLY

DRAWN BY: H.R. CHECKED BY: HMA

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	H.R.	05/08/20

SHEET TITLE:

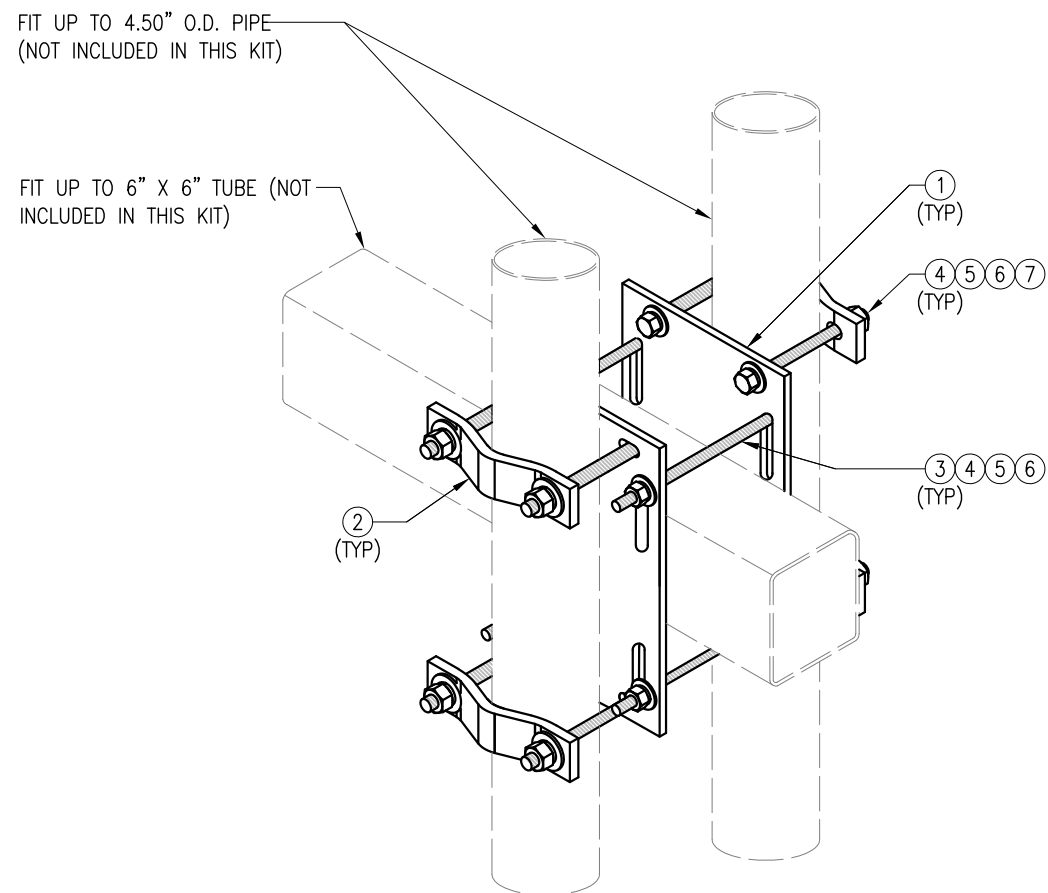
VZSMART-MSK2
 CROSSOVER PLATE

SHEET NUMBER: REV #:

VZSMART-MSK2 0

NOTES:
 1. HOT-DIPPED GALVANIZED PER ASTM A123.

VZSMART-MSK2 (CROSSOVER PLATE)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	1	PL375-88758	PL 3/8" X 8 3/4" X 0'-8" A36	MSK2-F1	8
2	2	MS02-625-4125-600	RU-BOLT 5/8" X 4 1/8" I.W. X 6" I.L. A36 (OR EQUIV.)	RBC-1	3
3	2	MS02-625-300-500	RU-BOLT 5/8" X 3" I.W. X 5" I.L. A36 (OR EQUIV.)	RBC-1	3
4	8	FW-625	5/8" HDG USS FLAT WASHER	---	1
5	8	LW-625	5/8" HDG LOCK WASHER	---	0
6	8	NUT-625	5/8" HDG HEX NUT	---	1
GALVANIZED WT					15



ISOMETRIC VIEW
 BACK TO BACK CROSSOVER

FOR REFERENCE
 ONLY

DRAWN BY: SK CHECKED BY: BT/KW

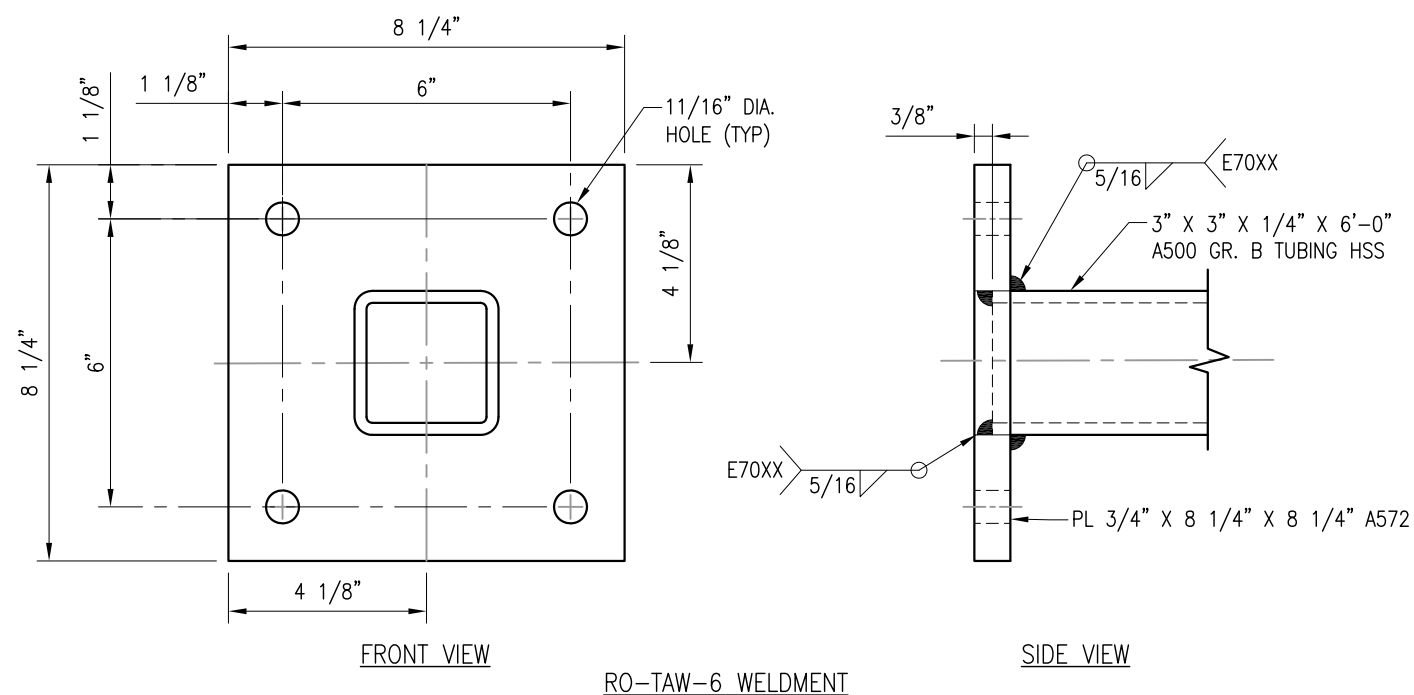
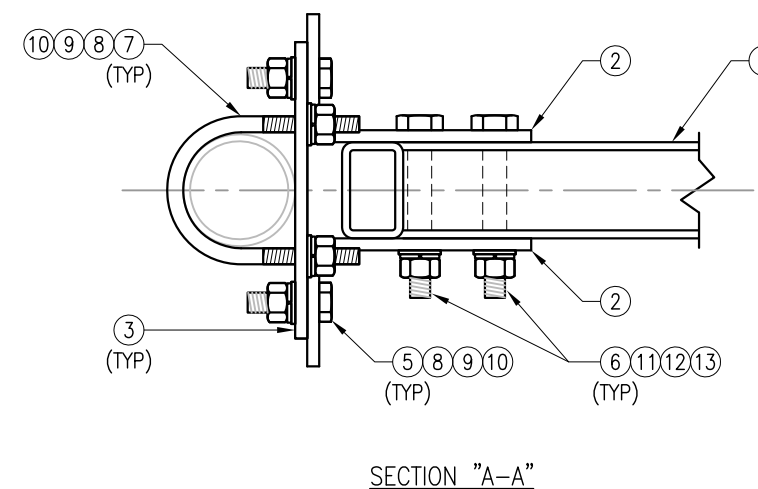
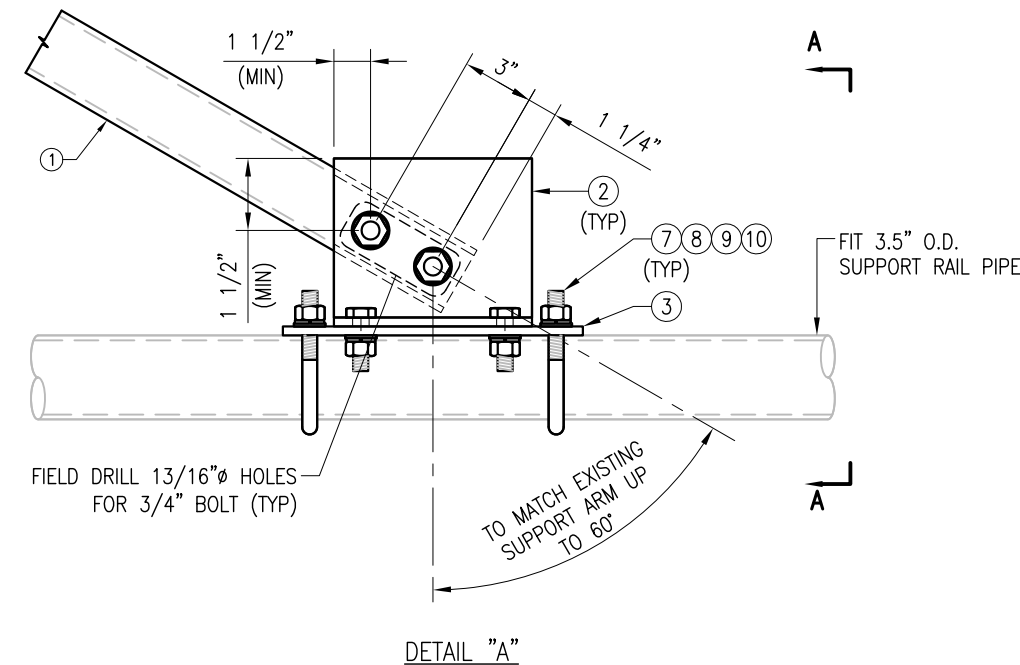
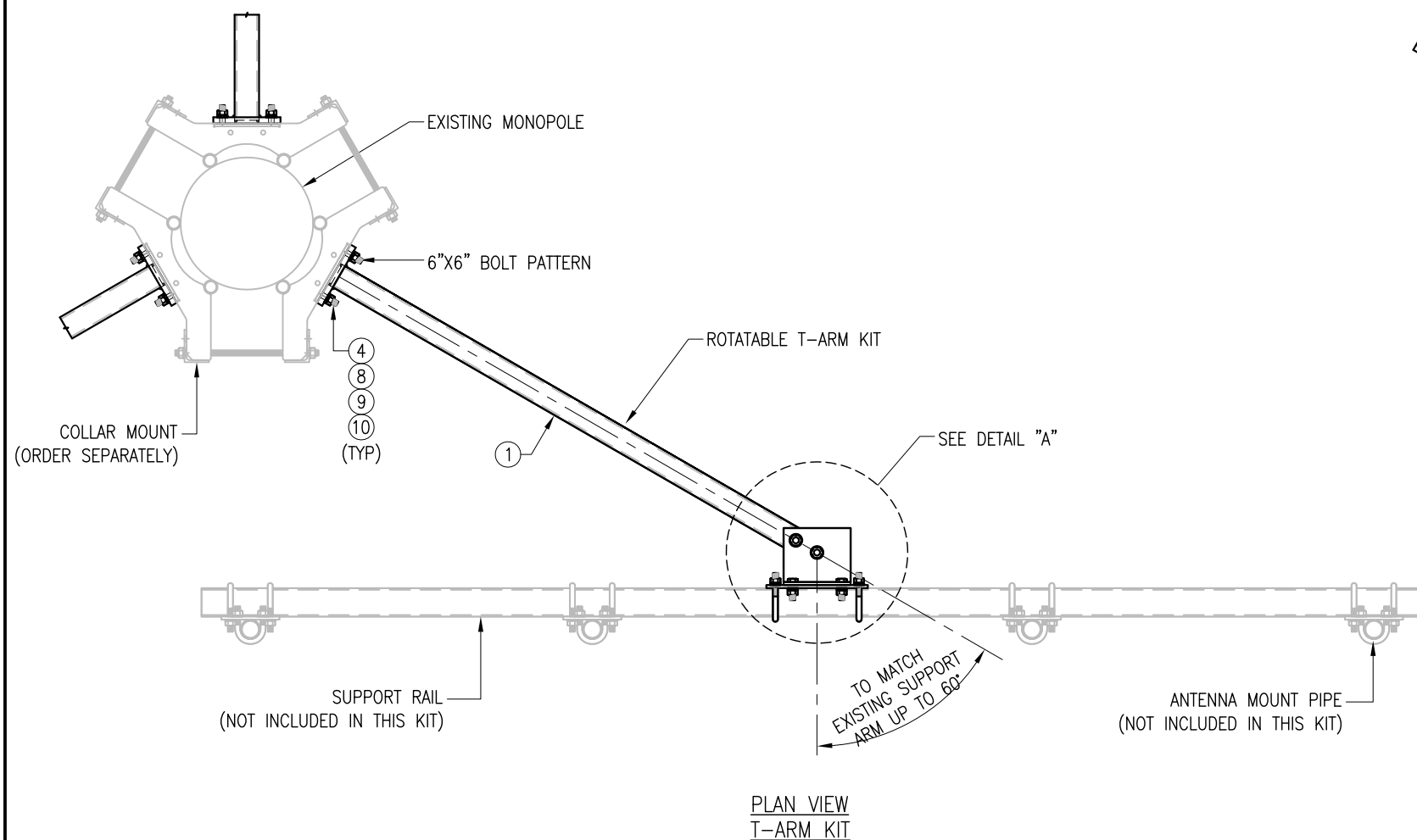
REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	SK	05/08/20

SHEET TITLE:
 VZSMART-MSK6
 BACK TO BACK
 CROSSOVER

SHEET NUMBER: VZSMART-MSK6
 REV #: 0

VZSMART-MSK6 (VZSMART-MSK6 - BACK TO BACK CROSSOVER)						
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT	
1	2	PL375-8512	PL 3/8" X 8 1/2" X 1'-0" A36	MSK6-F2	20.7	
2	4	VCP	PL 1/2" X 2" X 8 5/8" A36 BENT PLATE	MSK6-F1	9.6	
3	4	---	THREADED ROD 5/8" DIA. X 10" F1554-36 HDG	---	---	
4	16	NUT-625	5/8" HDG HEX NUT	---	2	
5	16	FW-625	5/8" HDG USS FLAT WASHER	---	1	
6	16	LW-625	5/8" HDG LOCK WASHER	---	0	
7	8	---	BOLT 5/8" X 6" SAE GRADE 5 ALL THREAD	---	1	
					GALVANIZED WT	34

NOTES:
 1. HOT-DIPPED GALVANIZED PER ASTM A123.



VZWSMART-SFK4 (T-ARM KIT)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	1	RO-TAW-6	T-ARM WELDMENT	SFK4-F1	71
2	2	BP825-94375	PL 3/8" X 8 1/4" X 9 7/16" A36 BEND PLATE	SFK4-F2	17
3	1	PL375-92512025	PL 3/8" X 9 1/4" X 1'-0 1/2" A36	SFK4-F3	12
4	4	---	BOLT 5/8" X 2 1/4" A325	---	0
5	4	---	BOLT 5/8" X 2" A325	---	0
6	2	---	BOLT 3/4" X 5 1/4" A325	---	0
7	2	MS02-625-3625-600	RU-BOLT 5/8" X 3 5/8" I.W. X 6" I.L. A36 (OR EQUIV.)	RBC-1	3
8	12	FW-625	5/8" HDG USS FLAT WASHER	---	1
9	12	LW-625	5/8" HDG LOCK WASHER	---	0
10	12	NUT-625	5/8" HDG HEX NUT	---	1
11	2	FW-75	3/4" HDG USS FLAT WASHER	---	0
12	2	LW-75	3/4" HDG LOCK WASHER	---	0
13	2	NUT-75	3/4" HDG HEX NUT	---	0
GALVANIZED WT					106

FOR REFERENCE ONLY

DRAWN BY: BT CHECKED BY: HMA/KW

REV. DESCRIPTION BY DATE
△ FIRST ISSUE BT 05/08/20

SHEET TITLE:

VZWSMART-SFK4
T-ARM KIT

SHEET NUMBER: REV #:

VZWSMART-SFK4 0

NOTES:
1. HOT-DIPPED GALVANIZED PER ASTM A123.



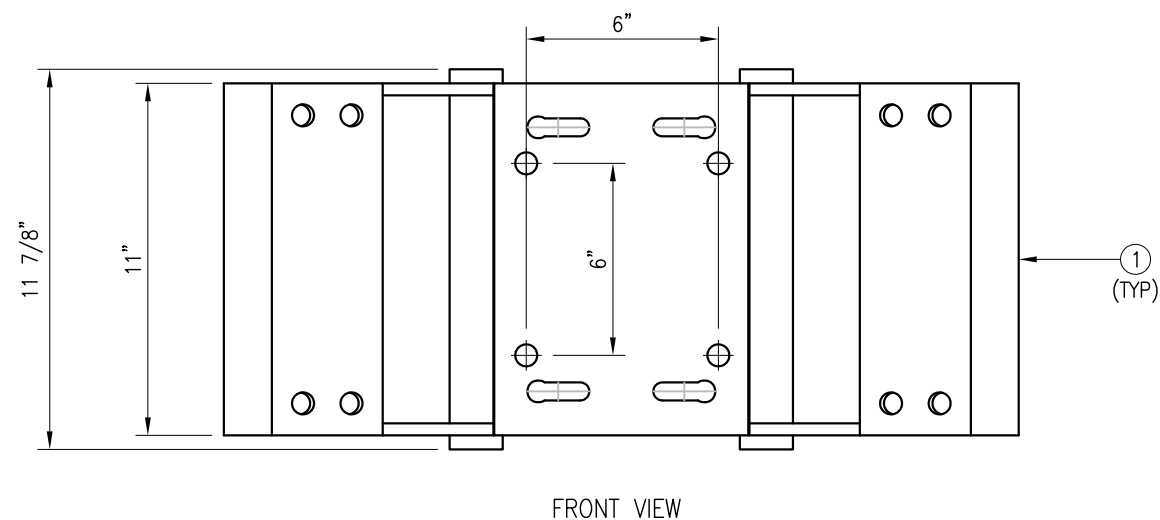
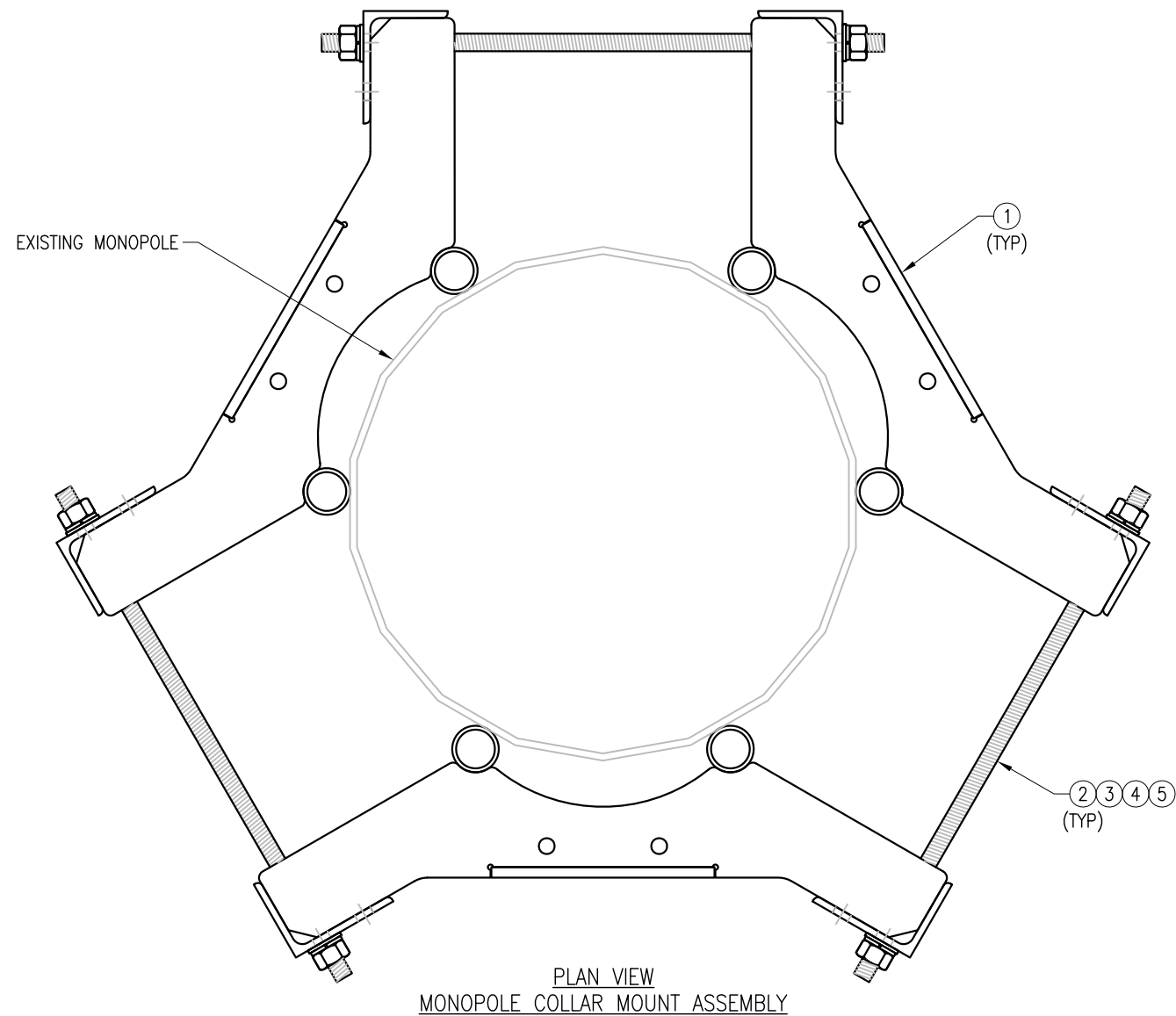
FOR REFERENCE
 ONLY

DRAWN BY: BT CHECKED BY: HMA/KW

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	BT	05/11/20

SHEET TITLE:
 VZSMART-PLK7
 MONOPOLE COLLAR
 MOUNT ASSEMBLY

SHEET NUMBER: VZSMART-PLK7 REV #: 0



- NOTES:
 1. FIT 12" TO 45" DIA MONOPOLE.
 2. HOT-DIPPED GALVANIZED PER ASTM A123.

VZSMART-PLK7 (MONOPOLE COLLAR MOUNT ASSEMBLY)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	3	CM-1245	COLLAR MOUNT ASSEMBLY	PLK7-F1	147
2	6	---	THREADED ROD 5/8" X 4'-0" A193-B7	---	---
3	12	FW-625	5/8" HDG USS FLAT WASHER	---	1
4	12	LW-625	5/8" HDG LOCK WASHER	---	0
5	12	NUT-625	5/8" HDG HEX NUT	---	1
GALVANIZED WT					150

EXHIBIT 2



ADMINISTRATIVE INFORMATION

OWNERSHIP

Tax ID 182/005

Printed 01/12/2021 Card No. 1 of 1

PARCEL NUMBER 04-2334/S
Parent Parcel Number

36 RITCH AVENUE LLC
16B ARTHUR STREET
GREENWICH, CT 06831
LOT NO PT5 & PT7A-1-1-3 R ITCH AV N1B

TRANSFER OF OWNERSHIP

Table with columns: Date, Name, Amount. Rows include transfers to Kelly Brian & Laura W/S, Catalano Anthony Etal, and NA.

Property Address RITCH AVENUE 0036

Neighborhood 2700 BYRAM

Property Class 270 Telecommunications

TAXING DISTRICT INFORMATION

Jurisdiction 57 Greenwich, CT
Area 001
Corporation 057
District 04
Section & Plat 040
Routing Number 7117N0001

COMMERCIAL

VALUATION RECORD

Table with columns: Assessment Year, Reason for Change, Valuation (Market, 70% Assessed) for years 2015-2020.

Site Description

Topography:
Public Utilities: Water, Sewer, Electric

LAND DATA AND CALCULATIONS

Table with columns: Rating, Measured, Table, Prod. Factor, Depth Factor, Base Rate, Adjusted Rate, Extended Value, Influence Factor, Value. Includes zoning information.

BA10: Sustained
BA15: Decrease Total value by \$114,700
BP15: 15-0972, \$15,000 9 Antenna Panels
BP17: 16-3234, 16-4235, 16-4392: Cellular Work, \$85,000
CKMP: 8586
DBA: Telecommunications site w/ a 70' flagpole monopole owned by Cingular (and carrier), and a 77' monopine (pole) owned by Verizon (w/ Verizon, ATT & Mobile carriers) both serviced by a custom utility bldg.
LAND: See BP03 memo.

Supplemental Cards

TRUE TAX VALUE 664000

Table with columns: Permit Number, FilingDate, Est. Cost, Field Visit, Est. SqFt.

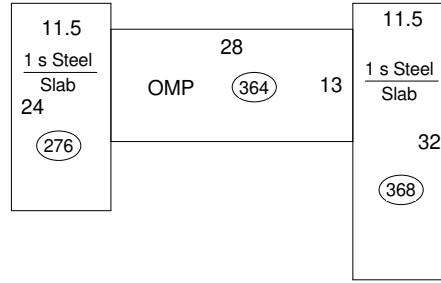
Supplemental Cards
TOTAL LAND VALUE

664000

IMPROVEMENT DATA

PHYSICAL CHARACTERISTICS

ROOFING				
Built-up				
WALLS				
Frame	B	1	2	U
Brick				
Metal				
Guard				
FRAMING				
F Res	B	1	2	U
	0	644	0	0
HEATING AND AIR CONDITIONING				
Heat	B	1	2	U
Sprink	0	644	0	0



- 01 02 03 04 05 06

Item Description	Units	Cost	Total	Pct

M & S Cost Database Date: 01/2015				
Base Cost	644	61.99	39922	
Exterior Walls	644	31.57	20331	
Heating & Cooling	644	53.92	34724	
Sprinklers	644	7.68	4946	
Basic Structure Cost	644	155.16	99923	
Physical	0	0.00	2998	3.00
Depreciated Cost	644	150.50	96925	
Rounded Total	0	0.00	96900	
OMP	364	33.87	12330	
Total Exterior Features Value				12330
Depreciated Ext Features			11960	
Total Before Adjustments			108860	
Neighborhood Adjustment			54440	50.00
TOTAL VALUE			163300	

(LCM: 150.00)

SPECIAL FEATURES

SUMMARY OF IMPROVEMENTS

Description	Value	ID	Use	Stry Hgt	Const Type	Grade	Year Const	Eff Year	Cond	Base Rate	Feat-ures	Adj Rate	Size or Area	Computed Value	Phys Depr	Obsol Depr	Market Adj	% Comp	Value
C STGCA	0.00				Good		2012	2012	AV	0.00	N	0.00	644	0	0	0	150	100	163300
01 TOWERMON	0.00		5PF		Good		2003	2003	GD	1477	N	3323	70	232630	0	0	100	100	663000
02 STNWALGS	8.00				Good		2012	2012	AV	125.00	N	281.25	992@ 0	279000	2	0	100	100	779200
03 PAVING	0.00		85		Avg		2012	2012	AV	5.20	N	7.80	2856	22280	2	0	100	100	62200
04 RTWCBREF	0.00		41C		Good		2012	2012	AV	17.00	N	38.25	4x112	17140	2	0	100	100	47900
05 TOWERMON	0.00		5PF		Exe		2012	2012	AV	0.00	N	0.00	77	200000	2	SV	100	100	558600
06 COMCNPYH	0.00		51		Exe		2012	2012	AV	63.00	N	226.80	8x 18	32660	2	0	100	100	91200

Data Collector/Date

Appraiser/Date

Neighborhood

Supplemental Cards

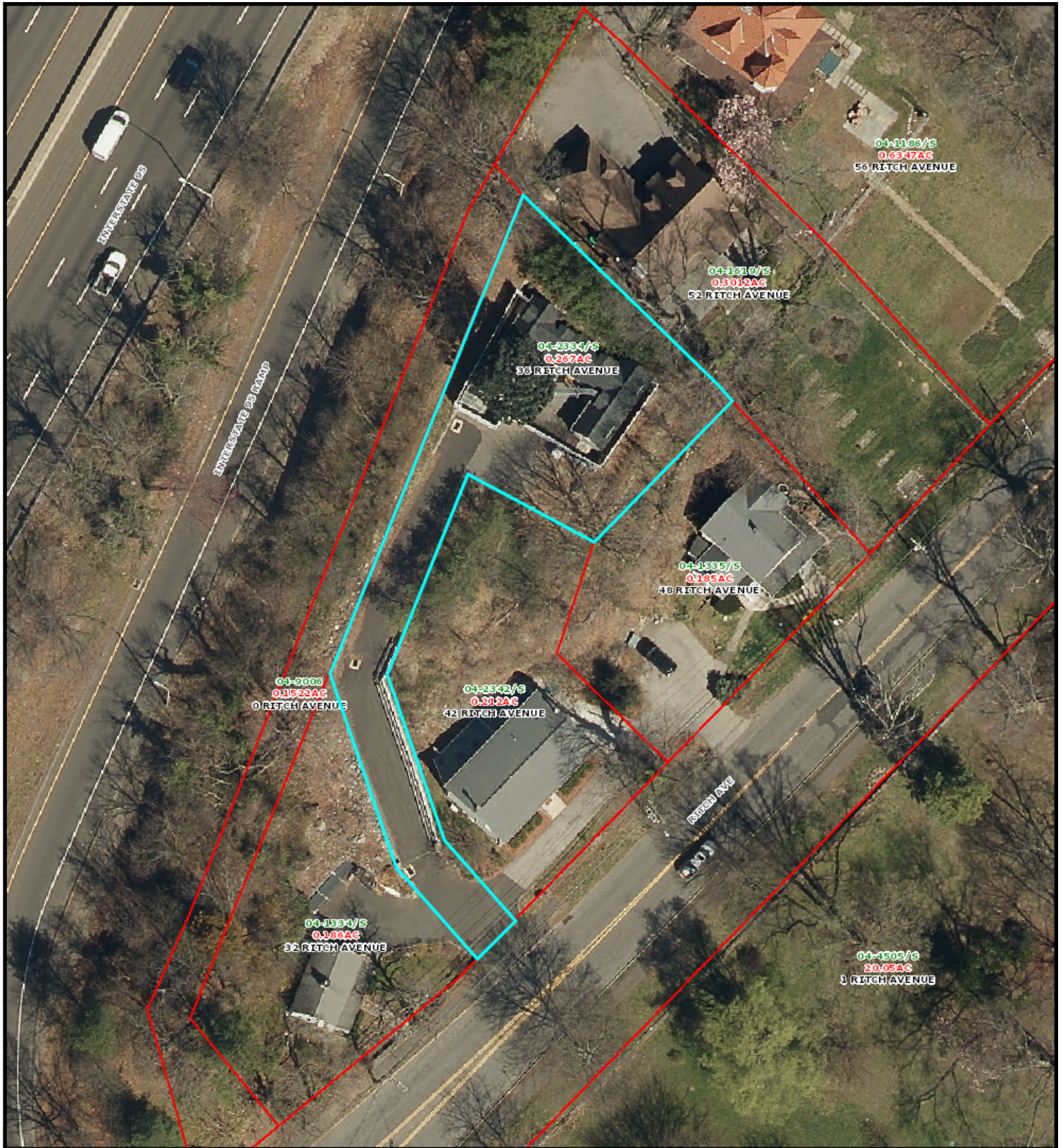
TD 08/03/2017

TOG 10/01/2015

Neigh 2700 AV

TOTAL IMPROVEMENT VALUE

2365400



10/22/2021 3:57:15 PM

Scale: 1"=50'

Scale is approximate

This map was produced from the Town of Greenwich Geographic Information System. The Town expressly disclaims any liability that may result from the use of this map. Aerial: 4/2016. Topo: 4/2016
Property Data: 10/1/19.

Map Printed Date: 10/22/2021 3:57:15 Copyright © 2000 by the Town of Greenwich.



EXHIBIT 3





AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 83 ft Monopine
ATC Asset Name : Byram Park CT
ATC Asset Number : 414240
Engineering Number : 13701270_C3_06
Proposed Carrier : VERIZON WIRELESS
Carrier Site Name : BYRAM PARK CT
Carrier Site Number : 468044
Site Location : 48 RITCH AVENUE WEST
GREENWICH, CT 06830-9992
41.0051, -73.6483
County : Fairfield
Date : May 2, 2023
Max Usage : 75%
Analysis Result : Pass

Prepared By:

Sarah Kramer
Structural Engineer I

Sarah D. Kramer

Reviewed By:



COA: PEC.0001553

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 83 ft Monopine tower to reflect the change in loading by VERIZON WIRELESS.

Supporting Documents

Tower Drawing:	EI Project #16733 Rev. 3, dated December 9, 2011
Foundation Drawing:	Centek Engineering Job #09129 Rev. 0, dated February 14, 2012
Geotechnical Report:	DET Job #2010.14, dated October 4, 2010
Modification:	ATC Project #OAA711130_C6_09, dated October 26, 2018
Inspection:	ATC Project #13755490_C8_05, dated July 18, 2022

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	120 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.00" radial ice concurrent
Code(s):	ANSI/TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Spectral Response:	$S_s = 0.28, S_1 = 0.06$
Site Class:	D - Stiff Soil - Default

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

Conclusion

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

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

Proposed Carrier Final Loading

Elev.*	Qty	Equipment	Lines	Carrier
62.7'	3	Samsung B2/B66A RRH-BR049	-	VERIZON WIRELESS
62.6'	3	Samsung B5/B13 RRH-BR04C	-	
62.0'	1	Raycap RCMDC-6627-PF-48	(2) 1 5/8" Hybriflex	
60.4'	6	Amphenol Antel LPA-80063-6CF-EDIN-X	-	
57.0'	1	Mount Reinforcement	-	
	3	T-Arm		
56.0'	1	VZW Unused Reserve (14306.88 sqin)	(16) 1 5/8" Coax	
	2	Commscope JAHH-65A-R3B		
	3	Commscope CBC78T-DS-43-2X		
	3	Samsung MT6407-77A		
	4	Commscope JAHH-45A-R3B		

(If table breaks across pages, please see previous page for data in merged cells)

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

Other Existing/Reserved Loading

Elev.*	Qty	Equipment	Lines	Carrier
89.0'	1	Bird 428D-83I-01-T	(2) 1/2" Coax	TOWN OF GREENWICH, CT
	2	dbSpectra DS7C09P36U-D	(2) 7/8" Coax	
82.3'	3	Ericsson RRUS 32 B66	-	T-MOBILE
82.0'	-	-	(1) 1 1/4" Hybriflex Cable	TOWN OF GREENWICH, CT
	2	Pole Mount	-	
81.6'	3	Ericsson Air6449 B41	-	T-MOBILE
	3	Ericsson Radio 4449 B71 B85A	-	
80.0'	1	Pine Branches	-	-
77.0'	3	Commscope CBC1923Q-43	(3) 1 1/4" (1.25"- 31.8mm) Fiber (3) 1 5/8" (1.63"-41.3mm) Fiber	T-MOBILE
	3	Ericsson AIR32 B66Aa/B2a		
	3	Ericsson RRUS 4415 B25		
	3	RFS APXVAARR24_43-U-NA20		
76.0'	3	T-Arm	-	
75.0'	1	Pine Branches	-	-
71.9'	3	Ericsson RRUS 32 B2	-	AT&T MOBILITY
71.8'	3	Ericsson RRUS 4426 B66	-	
70.0'	1	Pine Branches	-	-
67.0'	3	Ericsson Air 6449 B77D	-	AT&T MOBILITY
	1	Raycap DC9-48-60-24-8C-EV	(3) 0.41" (10.3mm) Fiber (6) 0.82" (20.8mm) 8 AWG 6 (1) 0.92" (23.4mm) Cable (6) 1 5/8" Coax (4) 2" conduit (2) 3" conduit	
	2	Raycap DC6-48-60-18-8F(32.8 lbs)		
	3	CCI DMP65R-BU4D		
	3	Ericsson RRUS 32 B30		
	3	Ericsson RRUS 4449 B5, B12		
	3	Ericsson RRUS 4478 B14		
	3	Ericsson RRUS E2 B29		
	3	T-Arm		
	3	Quintel QD6616-7		
3	Site PRO1, RMV12-496			
65.0'	3	Ericsson AIR 6419 B77G	-	-
	1	Pine Branches	-	



Elev.*	Qty	Equipment	Lines	Carrier
60.0'	1	Pine Branches	-	-
55.0'	1	Pine Branches	-	-
50.0'	1	Pine Branches	-	-
45.0'	1	Raycap RDIDC-9181-PF-48 (19")	(1) 1.41" (35.8mm) Hybrid	DISH WIRELESS L.L.C.
	3	Commscope FFVV-65B-R2		
	3	Fujitsu TA08025-B604		
	3	Fujitsu TA08025-B605		
	3	T-Arm		
	1	Pine Branches		
40.0'	1	Pine Branches	-	-
35.0'	1	Pine Branches	-	-
30.0'	1	Pine Branches	-	-
25.0'	1	Pine Branches	-	-
20.0'	1	Pine Branches	-	-
15.0'	1	Pine Branches	-	-

(If table breaks across pages, please see previous page for data in merged cells)

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

Structure Usages

Structural Component	Usage	Pass/Fail
Anchor Rods	39%	Pass
Base Plate	22%	Pass
Shaft	75%	Pass
Flange Bolts	6%	Pass
Flange Plates	5%	Pass

Foundation Reactions & Usages

Reaction Component	Analysis Reactions	Usage
Moment (k-ft)	2733.6	35%
Axial (k)	61.4	8%
Shear (k)	50.4	24%

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

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.

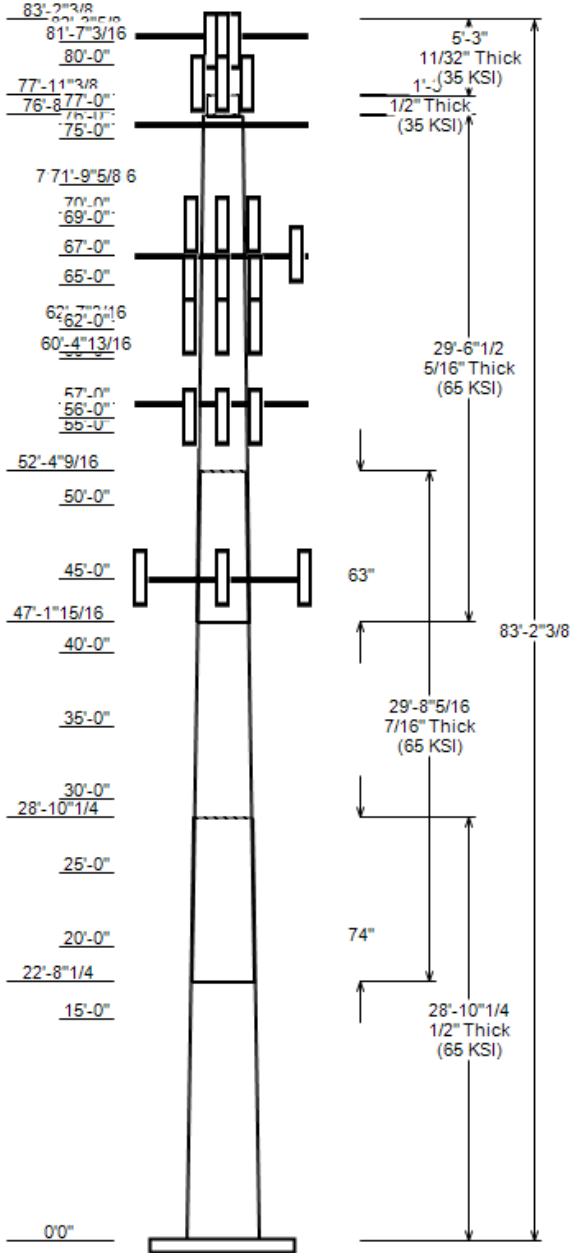
All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Services LLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

ANALYSIS PARAMETERS

Nominal Wind: 117 mph	Ice Wind: 49 mph w/ 0.85" ice	Service Wind: 60 mph
Risk Category: II	Exposure: C	S _s : 0.277 S _i : 0.06
Topo Category: 1	Topo Factor: Method 1	Topo Feature:
Structure Height: 83.2 ft	Base Elevation: 0.00 ft	Structure Type: Custom
Base Diameter: 52 in	Base Rotation: 0°	Taper: 0.3360 (in/ft)

POLE SECTION PROPERTIES

Section	Length (ft)	Flat Diameter (in)		Thick (in)	Joint Type	Joint Length (in)	Pole Shape	Yield Strength (ksi)
		Top	Bottom					
1	28.852	42.32	52.00	0.500		0.000	18 Sides	65
2	29.693	35.29	45.26	0.438	Slip Joint	73.970	18 Sides	65
3	29.541	27.75	37.67	0.312	Slip Joint	62.660	18 Sides	65
4	1.250	24.00	24.00	0.500	Butt Joint	0.000	Round	35
5	5.250	4.50	4.50	0.337	Butt Joint	0.000	Round	35



DISCRETE APPURTENANCE

Elev (ft)	Description
89.0	(1) Bird 428D-83I-01-T
89.0	(2) dbSpectra DS7C09P36U-D
82.3	(3) Ericsson RRUS 32 B66
82.0	(2) Pole Mount
81.6	(3) Ericsson Radio 4449 B71 B85A
81.6	(3) Ericsson Air6449 B41
80.0	(1) Pine Branches
77.0	(3) Commscope CBC1923Q-43
77.0	(3) Ericsson RRUS 4415 B25
77.0	(3) Ericsson AIR32 B66Aa/B2a
77.0	(3) RFS APXVAARR24_43-U-NA20
76.0	(3) Generic Round T-Arm
75.0	(1) Pine Branches
71.9	(3) Ericsson RRUS 32 B2
71.8	(3) Ericsson RRUS 4426 B66
70.0	(1) Pine Branches
69.0	(3) Ericsson Air 6449 B77D
67.0	(2) Raycap DC6-48-60-18-8F(32.8 lb
67.0	(3) Ericsson RRUS 4449 B5, B12
67.0	(3) Ericsson RRUS 4478 B14
67.0	(3) Ericsson RRUS 32 B30
67.0	(3) Ericsson RRUS E2 B29
67.0	(1) Raycap DC9-48-60-24-8C-EV
67.0	(3) CCI DMP65R-BU4D
67.0	(3) Site PRO1, RMV12-496
67.0	(3) Generic Round T-Arm
67.0	(3) Quintel QD6616-7
65.0	(3) Ericsson AIR 6419 B77G
65.0	(1) Pine Branches
62.7	(3) Samsung B2/B66A RRH-BR049
62.6	(3) Samsung B5/B13 RRH-BR04C
62.0	(1) Raycap RCMDC-6627-PF-48
60.4	(6) Amphenol Antel LPA-80063-6CF-E
60.0	(1) Pine Branches
57.0	(1) Generic Mount Reinforcement
57.0	(3) Generic Flat T-Arm
56.0	(3) Commscope CBC78T-DS-43-2X
56.0	(3) Samsung MT6407-77A
56.0	(2) Commscope JAHH-65A-R3B
56.0	(4) Commscope JAHH-45A-R3B
56.0	(1) VZW Unused Reserve (14306.88 s
55.0	(1) Pine Branches
50.0	(1) Pine Branches
45.0	(3) Fujitsu TA08025-B605
45.0	(3) Fujitsu TA08025-B604
45.0	(1) Raycap RDIDC-9181-PF-48 (19")
45.0	(3) Commscope FFVV-65B-R2
45.0	(3) Generic Flat T-Arm
45.0	(1) Pine Branches
40.0	(1) Pine Branches
35.0	(1) Pine Branches
30.0	(1) Pine Branches
25.0	(1) Pine Branches
20.0	(1) Pine Branches
15.0	(1) Pine Branches

LINEAR APPURTENANCE

Elev To (ft)	Description
89.0	(2) 7/8" Coax
89.0	(2) 1/2" Coax
82.0	(1) 1 1/4" Hybriflex Cable
77.0	(3) 1 5/8" (1.63"-41.3mm) Fiber
77.0	(3) 1 1/4" (1.25"- 31.8mm) Fiber
67.0	(2) 3" conduit
67.0	(4) 2" conduit
67.0	(6) 1 5/8" Coax
67.0	(1) 0.92" (23.4mm) Cable
67.0	(6) 0.82" (20.8mm) 8 AWG 6
67.0	(3) 0.41" (10.3mm) Fiber
62.0	(2) 1 5/8" Hybriflex
56.0	(16) 1 5/8" Coax
45.0	(1) 1.41" (35.8mm) Hybrid

GLOBAL BASE REACTIONS

Load Case	Moment (kip-ft)	Axial (kip)	Shear (kip)
1.2D + 1.0W	2733.57	49.88	50.42
0.9D + 1.0W	2726.37	37.39	50.41
1.2D + 1.0Di + 1.0Wi	637.14	61.42	11.87
1.2D + 1.0Ev + 1.0Eh	184.51	50.23	3.20
0.9D - 1.0Ev + 1.0Eh	183.85	33.60	3.20
1.0D + 1.0W	642.92	41.62	11.87

ANALYSIS PARAMETERS

Location:	Fairfield County,CT	Height:	83.2 ft
Type and Shape:	Custom, Round	Base Diameter:	52.00 in
Manufacturer:	EEL	Top Diameter:	4.50 in
K_d (non-service):	0.95	Taper:	0.3360 in/ft
K_e:	1.00	Rotation:	0.000°

ICE & WIND PARAMETERS

Risk Category:	II	Design Wind Speed:	117 mph
Exposure Category:	C	Design Wind Speed w/ Ice:	49 mph
Topo Factor Procedure:	Method 1	Design Ice Thickness:	0.85 in
Topographic Category:	1	Service Wind Speed:	60 mph
Crest Height:	0 ft	HMSL:	53.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil	Period Based on Rayleigh Method (sec):	0.83
T_L (sec):	6	P:	1
S_s:	0.277	S₁:	0.060
F_a:	1.578	F_v:	2.400
S_{ds}:	0.291	S_{d1}:	0.096
		C_s:	0.077
		C_s Max:	0.077
		C_s Min:	0.030

LOAD CASES

1.2D + 1.0W	116.96 mph Wind with No Ice
0.9D + 1.0W	116.96 mph Wind with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	48.73 mph Wind with 0.85" Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	60 mph Wind with No Ice

SHAFT SECTION PROPERTIES

Section	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Bottom						Top								
						Weight (lb)	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)	
1-18	28.85	0.5000	65		0.00	7,269	52.00	-0.002	81.73	27,386.5	16.93	104.00	42.32	28.85	66.36	14,658.	13.51	84.63	0.3357	
2-18	29.69	0.4375	65	Slip	73.97	5,589	45.26	22.687	62.24	15,797.0	16.83	103.45	35.29	52.38	48.40	7,427.8	12.81	80.67	0.3357	
3-18	29.54	0.3125	65	Slip	62.66	3,230	37.67	47.159	37.05	6,532.6	19.84	120.54	27.75	76.70	27.22	2,588.9	14.25	88.81	0.3357	
4-R	1.25	0.5000	35	Butt	0.00	157	24.00	76.700	36.91	2,550.2	0.00	48.00	24.00	77.95	36.91	2,550.2	0.00	48.00	0.0000	
5-R	5.25	0.3370	35	Butt	0.00	79	4.50	77.950	4.41	9.6	0.00	13.35	4.50	83.20	4.41	9.6	0.00	13.35	0.0000	
Total Shaft Weight						16,324														

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice			Ice		
					Weight (lb)	EPAa (sf)	Orientation Factor	Weight (lb)	EPAa (sf)	Orientation Factor
89.00	dbSpectra DS7C09P36U-D	2	1.00	0.000	70.00	3.550	1.00	119.08	6.251	1.00
89.00	Bird 428D-83I-01-T	1	1.00	0.000	8.90	0.465	1.00	18.26	0.719	1.00
82.30	Ericsson RRUS 32 B66	3	0.80	0.000	53.00	2.743	0.50	92.32	3.368	0.50
82.00	Pole Mount	2	1.00	0.000	40.00	1.630	1.00	65.21	2.236	1.00
81.60	Ericsson Radio 4449 B71 B85A	3	0.80	0.000	75.00	1.650	0.50	107.10	2.103	0.50
81.60	Ericsson Air6449 B41	3	0.80	0.000	104.00	5.682	0.63	176.74	6.529	0.63
80.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	822.60	61.695	1.00
77.00	RFS APXVAARR24_43-U-NA20	3	0.80	2.200	127.90	20.243	0.63	336.40	22.213	0.63
77.00	Ericsson AIR32 B66Aa/B2a	3	0.80	3.000	132.20	6.510	0.71	216.97	7.673	0.71
77.00	Ericsson RRUS 4415 B25	3	0.80	0.900	46.00	1.842	0.50	72.04	2.318	0.50
77.00	Commscope CBC1923Q-43	3	0.80	0.100	7.30	0.318	0.50	13.17	0.532	0.50
76.00	Generic Round T-Arm	3	0.75	1.000	312.50	9.700	0.67	451.00	14.071	0.67
75.00	Pine Branches	1	1.00	0.400	600.00	45.000	1.00	820.99	61.574	1.00
71.90	Ericsson RRUS 32 B2	3	0.80	1.000	53.00	2.743	0.50	91.80	3.360	0.50
71.80	Ericsson RRUS 4426 B66	3	0.80	1.000	48.40	1.650	0.50	71.92	2.098	0.50
70.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	819.77	61.483	1.00
69.00	Ericsson Air 6449 B77D	3	0.80	0.000	81.60	4.028	0.65	135.55	4.749	0.65
67.00	Quintel QD6616-7	3	0.80	0.000	130.00	51.400	0.64	283.01	57.019	0.64
67.00	Generic Round T-Arm	3	0.75	1.000	312.50	9.700	0.67	449.15	14.012	0.67
67.00	Site PRO1, RMV12-496	3	0.75	0.000	452.60	9.700	0.67	617.53	13.235	0.67
67.00	CCI DMP65R-BU4D	3	0.80	0.000	67.90	8.280	0.62	162.37	9.339	0.62
67.00	Raycap DC9-48-60-24-8C-EV	1	0.80	0.000	16.00	4.788	1.00	83.53	5.557	1.00
67.00	Ericsson RRUS E2 B29	3	0.80	0.000	60.00	3.145	0.50	102.31	3.751	0.50
67.00	Ericsson RRUS 32 B30	3	0.80	0.000	60.00	2.743	0.50	98.48	3.355	0.50
67.00	Ericsson RRUS 4478 B14	3	0.80	0.000	59.40	2.021	0.50	91.50	2.514	0.50
67.00	Raycap DC6-48-60-18-8F(32.8 lb	2	0.80	1.000	32.80	1.470	1.00	65.07	1.835	1.00
67.00	Ericsson RRUS 4449 B5, B12	3	0.80	0.000	71.00	1.969	0.50	104.71	2.457	0.50
65.00	Ericsson AIR 6419 B77G	3	0.80	0.000	66.10	3.797	0.65	116.68	4.484	0.65
65.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	817.92	61.344	1.00
62.70	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.875	0.50	117.60	2.345	0.50
62.60	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.875	0.50	100.05	2.344	0.50
62.00	Raycap RCMDC-6627-PF-48	1	0.80	0.000	32.00	4.056	1.00	97.98	4.765	1.00
60.40	Amphenol Antel LPA-80063-6CF-E	6	0.80	1.000	27.00	9.732	0.75	162.25	11.152	0.75
60.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	816.02	61.202	1.00
57.00	Generic Flat T-Arm	3	0.75	0.000	312.50	12.900	0.67	447.04	17.112	0.67
57.00	Generic Mount Reinforcement	1	0.75	0.000	200.00	7.500	0.67	299.67	11.356	0.67
56.00	VZW Unused Reserve (14306.88 s	1	0.80	0.000	1151.60	99.353	0.90	1564.04	134.936	0.90
56.00	Commscope CBC78T-DS-43-2X	3	0.80	0.000	20.70	0.552	0.50	32.06	0.813	0.50
56.00	Samsung MT6407-77A	3	0.80	0.000	81.60	4.709	0.61	134.00	5.490	0.61
56.00	Commscope JAHH-65A-R3B	2	0.80	0.000	50.70	6.673	0.76	132.01	7.772	0.76
56.00	Commscope JAHH-45A-R3B	4	0.80	0.000	70.50	8.420	0.63	162.31	9.548	0.63
55.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	814.17	61.063	1.00
50.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	812.04	60.903	1.00
45.00	Generic Flat T-Arm	3	0.75	0.000	312.50	12.900	0.67	443.27	16.994	0.67
45.00	Commscope FFVV-65B-R2	3	0.80	0.000	70.80	12.271	0.64	196.59	13.675	0.64
45.00	Raycap RDIDC-9181-PF-48 (19")	1	0.80	0.000	21.90	2.565	1.00	60.93	3.091	1.00
45.00	Fujitsu TA08025-B605	3	0.80	0.000	75.00	1.962	0.50	106.36	2.422	0.50
45.00	Fujitsu TA08025-B604	3	0.80	0.000	63.90	1.962	0.50	93.09	2.422	0.50

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice			Ice		
					Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor
45.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	809.23	60.692	1.00
40.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	806.62	60.497	1.00
35.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	803.69	60.277	1.00
30.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	801.67	60.126	1.00
25.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	797.48	59.811	1.00
20.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	791.46	59.360	1.00
15.00	Pine Branches	1	1.00	0.000	600.00	45.000	1.00	785.13	58.885	1.00
Totals	Row Count: 55	125			20,897.70			32,211.11		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg): 0.00

Elev From (ft)	Elev To (ft)	Qty	Description	Diameter (in)	Weight (lb/ft)	Flat	Max/Row	Distance Between Rows (in)	Distance Between Cols (in)	Azimuth (deg)	Distance From Face (in)	Exposed To Wind	Carrier
0.00	89.00	2	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	TOWN OF GREENWICH,
0.00	89.00	2	1/2" Coax	0.63	0.15	N	0	0	0	0	0	N	TOWN OF GREENWICH,
0.00	82.00	1	1 1/4" Hybriflex Cabl	1.54	1	N	0	0	0	0	0	N	T-MOBILE
0.00	77.00	3	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0	0	0	0	N	T-MOBILE
0.00	77.00	3	1 1/4" (1.25"- 31.8mm)	1.25	1.05	N	0	0	0	0	0	N	T-MOBILE
0.00	67.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	67.00	6	0.82" (20.8mm) 8 AWG	0.82	0.62	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	67.00	4	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	67.00	3	0.41" (10.3mm) Fiber	0.41	0.09	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	67.00	2	3" conduit	3.5	7.58	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	67.00	1	0.92" (23.4mm) Cable	0.92	0.89	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	62.00	2	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	VERIZON WIRELESS
0.00	56.00	16	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIRELESS
0.00	45.00	1	1.41" (35.8mm) Hybrid	1.41	1.66	N	1	1	1.21	90	1	Y	DISH WIRELESS L.L.C.

SEGMENT PROPERTIES

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.5000	52.000	81.728	27,386.50	16.93	104.00	81.5	1037.3	0.0	0.0
5.00		0.5000	50.322	79.064	24,795.00	16.34	100.64	82.2	970.5	0.0	1,367.8
10.00		0.5000	48.643	76.400	22,372.50	15.74	97.29	82.6	905.9	0.0	1,322.5
15.00		0.5000	46.965	73.737	20,113.10	15.15	93.93	82.6	843.5	0.0	1,277.2
20.00		0.5000	45.286	71.073	18,011.10	14.56	90.57	82.6	783.4	0.0	1,231.9
22.69	Bot - Section 2	0.5000	44.384	69.641	16,944.40	14.24	88.77	82.6	751.9	0.0	643.4
25.00		0.5000	43.608	68.409	16,061.00	13.97	87.22	82.6	725.4	0.0	1,028.6
28.85	Top - Section 1	0.4375	43.190	59.364	13,708.60	16.00	98.72	82.6	625.2	0.0	1,672.9
30.00		0.4375	42.804	58.829	13,341.10	15.84	97.84	82.6	613.9	0.0	230.9
35.00		0.4375	41.126	56.498	11,817.40	15.16	94.00	82.6	566.0	0.0	981.1
40.00		0.4375	39.447	54.168	10,414.40	14.49	90.16	82.6	520.0	0.0	941.4
45.00		0.4375	37.769	51.837	9,127.10	13.81	86.33	82.6	476.0	0.0	901.8
47.16	Bot - Section 3	0.4375	37.044	50.831	8,605.70	13.52	84.67	82.6	457.6	0.0	377.1
50.00		0.4375	36.090	49.506	7,950.50	13.13	82.49	82.6	433.9	0.0	838.6
52.38	Top - Section 2	0.3125	35.916	35.313	5,655.50	18.85	114.93	79.2	310.1	0.0	685.7
55.00		0.3125	35.037	34.441	5,246.70	18.36	112.12	79.8	294.9	0.0	310.9
56.00		0.3125	34.701	34.108	5,096.00	18.17	111.04	80	289.2	0.0	116.6
57.00		0.3125	34.365	33.775	4,948.20	17.98	109.97	80.3	283.6	0.0	115.5
60.00		0.3125	33.358	32.776	4,522.00	17.41	106.75	80.9	267.0	0.0	339.7
60.40		0.3125	33.224	32.643	4,467.10	17.34	106.32	81	264.8	0.0	44.5
62.00		0.3125	32.687	32.110	4,251.90	17.03	104.60	81.4	256.2	0.0	176.3
62.60		0.3125	32.485	31.910	4,173.10	16.92	103.95	81.5	253.0	0.0	65.4
62.70		0.3125	32.452	31.877	4,160.00	16.90	103.85	81.5	252.5	0.0	10.9
65.00		0.3125	31.680	31.111	3,867.30	16.46	101.37	82	240.4	0.0	246.5
67.00		0.3125	31.008	30.445	3,624.30	16.09	99.23	82.5	230.2	0.0	209.5
69.00		0.3125	30.337	29.779	3,391.60	15.71	97.08	82.6	220.2	0.0	204.9
70.00		0.3125	30.001	29.446	3,279.10	15.52	96.00	82.6	215.3	0.0	100.8

SEGMENT PROPERTIES

Seg Top Elev (ft)	Description	(Max Length: 5 ft)	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Fy (ksi)	S (in ³)	Z (in ³)	Weight (lb)
71.80			0.3125	29.397	28.847	3,083.00	15.18	94.07	82.6	206.6	0.0	178.5
71.90			0.3125	29.363	28.814	3,072.30	15.16	93.96	82.6	206.1	0.0	9.8
75.00			0.3125	28.323	27.781	2,753.80	14.57	90.63	82.6	191.5	0.0	298.5
76.00			0.3125	27.987	27.448	2,656.00	14.38	89.56	82.6	186.9	0.0	94.0
76.70	Top - Section 3		0.3125	27.752	27.215	2,588.90	14.25	88.81	82.6	183.7	0.0	65.1
76.70	Bot - Section 4		0.5000	24.000	36.914	2,550.20	0.00	48.00	35	212.5	276.2	
77.00			0.5000	24.000	36.914	2,550.20	0.00	48.00	35	212.5	276.2	37.7
77.95	Top - Section 4		0.5000	24.000	36.914	2,550.20	0.00	48.00	35	212.5	276.2	119.3
77.95	Bot - Section 5		0.3370	4.500	4.407	9.60	0.00	13.35	35	4.2	5.9	
80.00			0.3370	4.500	4.407	9.60	0.00	13.35	35	4.2	5.9	30.7
81.60			0.3370	4.500	4.407	9.60	0.00	13.35	35	4.2	5.9	24.0
82.00			0.3370	4.500	4.407	9.60	0.00	13.35	35	4.2	5.9	6.0
82.30			0.3370	4.500	4.407	9.60	0.00	13.35	35	4.2	5.9	4.5
83.20			0.3370	4.500	4.407	9.60	0.00	13.35	35	4.2	5.9	13.5
Total:												16,324.0

CALCULATED FORCES

Load Case: 1.2D + 1.0W 116.96 mph Wind with No Ice 17 Iterations

Gust Response Factor: 1.10
 Dead load Factor: 1.20
 Wind Load Factor: 1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-49.88	-50.42	0.00	-2,733.6	0.00	2,733.57	5,994.05	1,434.32	6,672.27	6,339.93	0	0	0.441
5.00	-47.72	-50.05	0.00	-2,481.5	0.00	2,481.47	5,848.23	1,387.57	6,244.49	5,982.15	0.07	-0.14	0.424
10.00	-45.62	-49.68	0.00	-2,231.2	0.00	2,231.23	5,676.15	1,340.82	5,830.89	5,608.58	0.29	-0.27	0.407
15.00	-42.86	-47.91	0.00	-1,982.8	0.00	1,982.82	5,478.25	1,294.08	5,431.45	5,222.38	0.65	-0.4	0.389
20.00	-40.20	-46.13	0.00	-1,743.3	0.00	1,743.26	5,280.36	1,247.33	5,046.18	4,849.95	1.15	-0.54	0.368
22.69	-39.16	-45.93	0.00	-1,619.3	0.00	1,619.29	5,173.98	1,222.20	4,844.96	4,655.46	1.47	-0.61	0.357
25.00	-36.98	-44.11	0.00	-1,513.1	0.00	1,513.09	5,082.46	1,200.58	4,675.09	4,491.29	1.78	-0.67	0.346
28.85	-34.62	-43.88	0.00	-1,343.2	0.00	1,343.20	4,410.48	1,041.84	4,023.35	3,870.56	2.36	-0.77	0.357
30.00	-33.50	-42.01	0.00	-1,292.8	0.00	1,292.81	4,370.71	1,032.45	3,951.12	3,800.72	2.55	-0.8	0.349
35.00	-31.14	-39.90	0.00	-1,082.8	0.00	1,082.77	4,197.54	991.55	3,644.30	3,504.05	3.45	-0.92	0.318
40.00	-28.86	-37.74	0.00	-883.3	0.00	883.26	4,024.38	950.64	3,349.87	3,219.43	4.49	-1.04	0.283
45.00	-24.78	-33.85	0.00	-694.6	0.00	694.56	3,851.22	909.74	3,067.84	2,946.87	5.64	-1.15	0.244
47.16	-24.13	-33.63	0.00	-621.5	0.00	621.49	3,776.46	892.08	2,949.90	2,832.91	6.17	-1.19	0.227
50.00	-22.20	-31.57	0.00	-526.0	0.00	525.95	3,678.06	868.83	2,798.22	2,686.37	6.89	-1.25	0.203
52.38	-21.17	-31.34	0.00	-450.8	0.00	450.80	2,517.86	619.74	1,993.02	1,842.82	7.53	-1.29	0.256
55.00	-19.91	-29.33	0.00	-368.7	0.00	368.69	2,473.76	604.43	1,895.79	1,765.43	8.25	-1.33	0.219
56.00	-17.57	-24.93	0.00	-339.4	0.00	339.37	2,456.68	598.59	1,859.31	1,736.14	8.53	-1.35	0.204
57.00	-16.02	-23.77	0.00	-314.4	0.00	314.44	2,439.47	592.75	1,823.19	1,707.00	8.81	-1.37	0.192
60.00	-14.74	-21.73	0.00	-243.1	0.00	243.12	2,387.04	575.22	1,716.96	1,620.46	9.69	-1.41	0.158
60.40	-14.51	-20.18	0.00	-233.0	0.00	232.96	2,379.96	572.88	1,703.04	1,609.02	9.81	-1.42	0.152
62.00	-14.16	-19.95	0.00	-200.7	0.00	200.67	2,351.42	563.53	1,647.91	1,563.54	10.29	-1.44	0.136
62.60	-13.79	-19.82	0.00	-188.7	0.00	188.70	2,340.63	560.02	1,627.47	1,546.59	10.47	-1.45	0.129
62.70	-13.47	-19.62	0.00	-186.7	0.00	186.72	2,338.83	559.44	1,624.08	1,543.77	10.5	-1.45	0.128
65.00	-12.13	-17.26	0.00	-141.6	0.00	141.59	2,296.98	546.00	1,546.99	1,479.38	11.21	-1.48	0.102
67.00	-7.45	-11.09	0.00	-106.3	0.00	106.34	2,260.03	534.31	1,481.49	1,424.11	11.83	-1.5	0.078
69.00	-6.90	-10.69	0.00	-84.2	0.00	84.17	2,212.44	522.62	1,417.40	1,363.33	12.46	-1.51	0.065
70.00	-6.10	-8.62	0.00	-73.5	0.00	73.48	2,187.71	516.78	1,385.88	1,332.86	12.78	-1.52	0.058
71.80	-5.69	-8.45	0.00	-57.9	0.00	57.87	2,143.18	506.26	1,330.05	1,278.88	13.35	-1.53	0.048
71.90	-5.49	-8.18	0.00	-56.9	0.00	56.89	2,140.71	505.68	1,326.98	1,275.91	13.39	-1.53	0.047
75.00	-4.43	-6.04	0.00	-30.7	0.00	30.73	2,064.02	487.56	1,233.63	1,185.66	14.38	-1.54	0.028
76.00	-3.20	-5.30	0.00	-24.1	0.00	24.06	2,039.28	481.72	1,204.24	1,157.26	14.71	-1.54	0.022
76.70	-3.12	-5.26	0.00	-20.4	0.00	20.35	2,021.97	477.63	1,183.88	1,137.58	14.93	-1.55	0.020
76.70	-3.12	-5.26	0.00	-20.4	0.00	20.35	1,162.78	348.83	720.72	724.94	14.93	-1.55	0.031
77.00	-1.99	-3.25	0.00	-14.2	0.00	14.25	1,162.78	348.83	720.72	724.94	15.03	-1.55	0.021
77.95	-1.85	-3.20	0.00	-11.2	0.00	11.16	1,162.78	348.83	720.72	724.94	15.34	-1.55	0.017
77.95	-1.85	-3.20	0.00	-11.2	0.00	11.16	138.83	41.65	15.24	15.36	15.34	-1.55	0.746
80.00	-1.14	-1.17	0.00	-4.6	0.00	4.60	138.83	41.65	15.24	15.36	16	-1.55	0.308
81.60	-0.48	-0.67	0.00	-2.7	0.00	2.72	138.83	41.65	15.24	15.36	16.55	-1.72	0.181

CALCULATED FORCES

82.00	-0.38	-0.52	0.00	-2.4	0.00	2.45	138.83	41.65	15.24	15.36	16.7	-1.75	0.163
82.30	-0.18	-0.35	0.00	-2.3	0.00	2.30	138.83	41.65	15.24	15.36	16.81	-1.78	0.151
83.20	0.00	-0.35	0.00	-2.0	0.00	1.98	138.83	41.65	15.24	15.36	17.15	-1.83	0.129

CALCULATED FORCES

Load Case: 0.9D + 1.0W 116.96 mph Wind with No Ice (Reduced DL) 17 Iterations
 Gust Response Factor: 1.10
 Dead load Factor: 0.90
 Wind Load Factor: 1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-37.39	-50.41	0.00	-2,726.4	0.00	2,726.37	5,994.05	1,434.32	6,672.27	6,339.93	0	0	0.438
5.00	-35.75	-50.01	0.00	-2,474.4	0.00	2,474.35	5,848.23	1,387.57	6,244.49	5,982.15	0.07	-0.14	0.421
10.00	-34.14	-49.61	0.00	-2,224.3	0.00	2,224.32	5,676.15	1,340.82	5,830.89	5,608.58	0.29	-0.27	0.404
15.00	-32.05	-47.82	0.00	-1,976.3	0.00	1,976.26	5,478.25	1,294.08	5,431.45	5,222.38	0.65	-0.4	0.386
20.00	-30.04	-46.02	0.00	-1,737.2	0.00	1,737.15	5,280.36	1,247.33	5,046.18	4,849.95	1.14	-0.53	0.365
22.69	-29.24	-45.82	0.00	-1,613.5	0.00	1,613.46	5,173.98	1,222.20	4,844.96	4,655.46	1.46	-0.61	0.354
25.00	-27.60	-43.99	0.00	-1,507.5	0.00	1,507.51	5,082.46	1,200.58	4,675.09	4,491.29	1.77	-0.67	0.342
28.85	-25.82	-43.76	0.00	-1,338.1	0.00	1,338.08	4,410.48	1,041.84	4,023.35	3,870.56	2.35	-0.76	0.353
30.00	-24.97	-41.88	0.00	-1,287.8	0.00	1,287.83	4,370.71	1,032.45	3,951.12	3,800.72	2.54	-0.79	0.346
35.00	-23.19	-39.76	0.00	-1,078.4	0.00	1,078.44	4,197.54	991.55	3,644.30	3,504.05	3.44	-0.92	0.315
40.00	-21.47	-37.60	0.00	-879.6	0.00	879.62	4,024.38	950.64	3,349.87	3,219.43	4.47	-1.04	0.280
45.00	-18.42	-33.72	0.00	-691.6	0.00	691.63	3,851.22	909.74	3,067.84	2,946.87	5.62	-1.14	0.241
47.16	-17.93	-33.50	0.00	-618.8	0.00	618.85	3,776.46	892.08	2,949.90	2,832.91	6.15	-1.19	0.225
50.00	-16.48	-31.44	0.00	-523.7	0.00	523.68	3,678.06	868.83	2,798.22	2,686.37	6.87	-1.24	0.201
52.38	-15.71	-31.21	0.00	-448.8	0.00	448.84	2,517.86	619.74	1,993.02	1,842.82	7.5	-1.28	0.252
55.00	-14.76	-29.21	0.00	-367.1	0.00	367.07	2,473.76	604.43	1,895.79	1,765.43	8.22	-1.32	0.216
56.00	-13.04	-24.82	0.00	-337.9	0.00	337.86	2,456.68	598.59	1,859.31	1,736.14	8.5	-1.34	0.202
57.00	-11.87	-23.67	0.00	-313.0	0.00	313.04	2,439.47	592.75	1,823.19	1,707.00	8.78	-1.36	0.190
60.00	-10.93	-21.64	0.00	-242.0	0.00	242.03	2,387.04	575.22	1,716.96	1,620.46	9.66	-1.41	0.155
60.40	-10.76	-20.09	0.00	-231.9	0.00	231.91	2,379.96	572.88	1,703.04	1,609.02	9.78	-1.42	0.150
62.00	-10.49	-19.86	0.00	-199.8	0.00	199.77	2,351.42	563.53	1,647.91	1,563.54	10.25	-1.44	0.133
62.60	-10.22	-19.73	0.00	-187.8	0.00	187.85	2,340.63	560.02	1,627.47	1,546.59	10.44	-1.45	0.127
62.70	-9.98	-19.53	0.00	-185.9	0.00	185.88	2,338.83	559.44	1,624.08	1,543.77	10.47	-1.45	0.126
65.00	-8.99	-17.18	0.00	-141.0	0.00	140.96	2,296.98	546.00	1,546.99	1,479.38	11.17	-1.47	0.100
67.00	-5.52	-11.04	0.00	-105.9	0.00	105.88	2,260.03	534.31	1,481.49	1,424.11	11.79	-1.49	0.077
69.00	-5.10	-10.64	0.00	-83.8	0.00	83.81	2,212.44	522.62	1,417.40	1,363.33	12.42	-1.51	0.064
70.00	-4.52	-8.58	0.00	-73.2	0.00	73.17	2,187.71	516.78	1,385.88	1,332.86	12.74	-1.51	0.057
71.80	-4.21	-8.41	0.00	-57.6	0.00	57.64	2,143.18	506.26	1,330.05	1,278.88	13.31	-1.52	0.047
71.90	-4.07	-8.14	0.00	-56.6	0.00	56.65	2,140.71	505.68	1,326.98	1,275.91	13.34	-1.52	0.047
75.00	-3.29	-6.01	0.00	-30.6	0.00	30.62	2,064.02	487.56	1,233.63	1,185.66	14.33	-1.54	0.028
76.00	-2.37	-5.28	0.00	-24.0	0.00	23.98	2,039.28	481.72	1,204.24	1,157.26	14.66	-1.54	0.022
76.70	-2.30	-5.24	0.00	-20.3	0.00	20.28	2,021.97	477.63	1,183.88	1,137.58	14.88	-1.54	0.019
76.70	-2.30	-5.24	0.00	-20.3	0.00	20.28	1,162.78	348.83	720.72	724.94	14.88	-1.54	0.030
77.00	-1.47	-3.23	0.00	-14.2	0.00	14.19	1,162.78	348.83	720.72	724.94	14.98	-1.54	0.021
77.95	-1.37	-3.19	0.00	-11.1	0.00	11.12	1,162.78	348.83	720.72	724.94	15.28	-1.54	0.017
77.95	-1.37	-3.19	0.00	-11.1	0.00	11.12	138.83	41.65	15.24	15.36	15.28	-1.54	0.739
80.00	-0.85	-1.16	0.00	-4.6	0.00	4.58	138.83	41.65	15.24	15.36	15.95	-1.54	0.305
81.60	-0.35	-0.67	0.00	-2.7	0.00	2.72	138.83	41.65	15.24	15.36	16.5	-1.72	0.180
82.00	-0.28	-0.51	0.00	-2.4	0.00	2.45	138.83	41.65	15.24	15.36	16.64	-1.75	0.162
82.30	-0.14	-0.35	0.00	-2.3	0.00	2.30	138.83	41.65	15.24	15.36	16.75	-1.77	0.151
83.20	0.00	-0.35	0.00	-2.0	0.00	1.98	138.83	41.65	15.24	15.36	17.09	-1.83	0.129

CALCULATED FORCES

Load Case: 1.2D + 1.0Di + 1.0Wi													48.73 mph Wind with 0.85" Radial Ice		16 Iterations
Gust Response Factor:		1.10	Ice Dead Load Factor			1.00	Ice Importance Factor						1.00		
Dead load Factor:		1.20													
Wind Load Factor:		1.00													
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio		
0.00	-61.42	-11.87	0.00	-637.1	0.00	637.14	5,994.05	1,434.32	6,672.27	6,339.93	0	0	0.111		
5.00	-59.15	-11.76	0.00	-577.8	0.00	577.79	5,848.23	1,387.57	6,244.49	5,982.15	0.02	-0.03	0.107		
10.00	-56.93	-11.65	0.00	-519.0	0.00	518.99	5,676.15	1,340.82	5,830.89	5,608.58	0.07	-0.06	0.103		
15.00	-53.91	-11.23	0.00	-460.7	0.00	460.72	5,478.25	1,294.08	5,431.45	5,222.38	0.15	-0.09	0.098		
20.00	-50.94	-10.80	0.00	-404.6	0.00	404.60	5,280.36	1,247.33	5,046.18	4,849.95	0.27	-0.12	0.093		
22.69	-49.82	-10.74	0.00	-375.6	0.00	375.58	5,173.98	1,222.20	4,844.96	4,655.46	0.34	-0.14	0.090		
25.00	-47.43	-10.30	0.00	-350.8	0.00	350.75	5,082.46	1,200.58	4,675.09	4,491.29	0.41	-0.16	0.088		
28.85	-44.93	-10.24	0.00	-311.1	0.00	311.06	4,410.48	1,041.84	4,023.35	3,870.56	0.55	-0.18	0.091		
30.00	-43.65	-9.79	0.00	-299.3	0.00	299.31	4,370.71	1,032.45	3,951.12	3,800.72	0.59	-0.18	0.089		
35.00	-40.97	-9.27	0.00	-250.4	0.00	250.38	4,197.54	991.55	3,644.30	3,504.05	0.8	-0.21	0.081		
40.00	-38.35	-8.74	0.00	-204.0	0.00	204.03	4,024.38	950.64	3,349.87	3,219.43	1.04	-0.24	0.073		
45.00	-33.17	-7.84	0.00	-160.3	0.00	160.34	3,851.22	909.74	3,067.84	2,946.87	1.31	-0.27	0.063		
47.16	-32.46	-7.78	0.00	-143.4	0.00	143.41	3,776.46	892.08	2,949.90	2,832.91	1.43	-0.28	0.059		
50.00	-30.24	-7.28	0.00	-121.3	0.00	121.31	3,678.06	868.83	2,798.22	2,686.37	1.6	-0.29	0.053		
52.38	-29.14	-7.21	0.00	-104.0	0.00	103.99	2,517.86	619.74	1,993.02	1,842.82	1.75	-0.3	0.068		
55.00	-27.58	-6.73	0.00	-85.1	0.00	85.09	2,473.76	604.43	1,895.79	1,765.43	1.92	-0.31	0.059		
56.00	-24.30	-5.73	0.00	-78.4	0.00	78.37	2,456.68	598.59	1,859.31	1,736.14	1.98	-0.31	0.055		
57.00	-22.33	-5.44	0.00	-72.6	0.00	72.64	2,439.47	592.75	1,823.19	1,707.00	2.05	-0.32	0.052		
60.00	-20.75	-4.95	0.00	-56.3	0.00	56.31	2,387.04	575.22	1,716.96	1,620.46	2.25	-0.33	0.044		
60.40	-19.87	-4.63	0.00	-54.0	0.00	54.04	2,379.96	572.88	1,703.04	1,609.02	2.28	-0.33	0.042		
62.00	-19.41	-4.57	0.00	-46.6	0.00	46.63	2,351.42	563.53	1,647.91	1,563.54	2.39	-0.33	0.038		
62.60	-18.96	-4.54	0.00	-43.9	0.00	43.89	2,340.63	560.02	1,627.47	1,546.59	2.43	-0.34	0.037		
62.70	-18.56	-4.49	0.00	-43.4	0.00	43.43	2,338.83	559.44	1,624.08	1,543.77	2.44	-0.34	0.036		
65.00	-16.82	-3.93	0.00	-33.1	0.00	33.11	2,296.98	546.00	1,546.99	1,479.38	2.6	-0.34	0.030		
67.00	-10.31	-2.63	0.00	-25.1	0.00	25.08	2,260.03	534.31	1,481.49	1,424.11	2.75	-0.35	0.022		
69.00	-9.56	-2.53	0.00	-19.8	0.00	19.82	2,212.44	522.62	1,417.40	1,363.33	2.89	-0.35	0.019		
70.00	-8.51	-2.03	0.00	-17.3	0.00	17.29	2,187.71	516.78	1,385.88	1,332.86	2.97	-0.35	0.017		
71.80	-7.99	-1.99	0.00	-13.6	0.00	13.62	2,143.18	506.26	1,330.05	1,278.88	3.1	-0.35	0.014		
71.90	-7.70	-1.92	0.00	-13.4	0.00	13.39	2,140.71	505.68	1,326.98	1,275.91	3.11	-0.35	0.014		
75.00	-6.32	-1.40	0.00	-7.2	0.00	7.25	2,064.02	487.56	1,233.63	1,185.66	3.34	-0.36	0.009		
76.00	-4.73	-1.21	0.00	-5.7	0.00	5.69	2,039.28	481.72	1,204.24	1,157.26	3.41	-0.36	0.007		
76.70	-4.62	-1.20	0.00	-4.8	0.00	4.85	2,021.97	477.63	1,183.88	1,137.58	3.47	-0.36	0.007		
76.70	-4.62	-1.20	0.00	-4.8	0.00	4.85	1,162.78	348.83	720.72	724.94	3.47	-0.36	0.011		
77.00	-2.73	-0.79	0.00	-3.6	0.00	3.61	1,162.78	348.83	720.72	724.94	3.49	-0.36	0.007		
77.95	-2.56	-0.77	0.00	-2.9	0.00	2.86	1,162.78	348.83	720.72	724.94	3.56	-0.36	0.006		
77.95	-2.56	-0.77	0.00	-2.9	0.00	2.86	138.83	41.65	15.24	15.36	3.56	-0.36	0.205		
80.00	-1.62	-0.29	0.00	-1.3	0.00	1.27	138.83	41.65	15.24	15.36	3.71	-0.36	0.095		
81.60	-0.71	-0.18	0.00	-0.8	0.00	0.81	138.83	41.65	15.24	15.36	3.84	-0.41	0.058		
82.00	-0.56	-0.14	0.00	-0.7	0.00	0.74	138.83	41.65	15.24	15.36	3.88	-0.42	0.052		
82.30	-0.28	-0.11	0.00	-0.7	0.00	0.70	138.83	41.65	15.24	15.36	3.9	-0.42	0.047		
83.20	0.00	-0.11	0.00	-0.6	0.00	0.60	138.83	41.65	15.24	15.36	3.99	-0.44	0.039		

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

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

Spectral Response Acceleration for Short Period (S_S):	0.277
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.060
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_e):	1.000
Site Coefficient F_a :	1.578
Site Coefficient F_v :	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.291
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.096
Seismic Response Coefficient (C_s):	0.077
Upper Limit C_s :	0.077
Lower Limit C_s :	0.030
Period based on Rayleigh Method (sec):	0.830
Redundancy Factor (ρ):	1.000
Seismic Force Distribution Exponent (k):	1.170
Total Unfactored Dead Load:	41.620 k
Seismic Base Shear (E):	3.200 k

SEISMIC FORCES

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
38	82.75	14	2	0.001	2	18
37	82.15	5	1	0.000	1	6
36	81.8	7	1	0.000	1	9
35	80.8	27	5	0.001	4	34
34	78.975	35	6	0.002	5	44
33	77.475	121	19	0.005	17	152
32	76.85	41	6	0.002	6	51
31	76.35	72	11	0.003	10	91
30	75.5	104	16	0.004	14	131
29	73.45	329	49	0.014	44	414
28	71.85	11	2	0.000	1	14
27	70.9	196	28	0.008	25	247
26	69.5	111	16	0.004	14	139
25	68	225	31	0.008	27	283
24	66	308	41	0.011	36	388
23	63.85	360	46	0.013	41	453
22	62.65	16	2	0.000	2	20
21	62.3	95	12	0.003	10	120
20	61.2	260	31	0.009	28	327
19	60.2	65	8	0.002	7	82
18	58.5	496	57	0.016	51	624
17	56.5	168	18	0.005	16	211
16	55.5	182	20	0.005	17	229
15	53.6901	482	50	0.014	44	606
14	51.1901	841	83	0.023	73	1,058
13	48.5794	1,024	95	0.026	84	1,288
12	46.0794	518	45	0.012	40	652
11	42.5	1,236	98	0.027	87	1,555
10	37.5	1,276	87	0.024	77	1,605
9	32.5	1,315	76	0.021	68	1,655
8	29.4258	308	16	0.004	14	387
7	26.9258	1,931	90	0.025	80	2,429
6	23.8438	1,183	48	0.013	42	1,489
5	21.3438	823	29	0.008	26	1,036
4	17.5	1,566	44	0.012	39	1,971
3	12.5	1,612	31	0.008	27	2,028
2	7.5	1,657	17	0.005	15	2,085
1	2.5	1,702	5	0.001	4	2,142

SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh

Seismic

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
Bird 428D-83I-01-T	83.2	9	2	0.000	1	11
dbSpectra DS7C09P36U-D	83.2	140	24	0.007	22	176
Ericsson RRUS 32 B66	82.3	159	27	0.008	24	200
Pole Mount	82	80	14	0.004	12	101
Ericsson Radio 4449 B71 B85A	81.6	225	38	0.010	34	283
Ericsson Air6449 B41	81.6	312	53	0.015	47	393
Pine Branches	80	600	99	0.028	88	755
Pine Branches	75	600	92	0.026	82	755
Pine Branches	70	600	85	0.024	75	755
Pine Branches	65	600	78	0.022	69	755
Pine Branches	60	600	71	0.020	63	755
Pine Branches	55	600	64	0.018	57	755
Pine Branches	50	600	57	0.016	51	755
Pine Branches	45	600	51	0.014	45	755
Pine Branches	40	600	44	0.012	39	755
Pine Branches	35	600	38	0.010	34	755
Pine Branches	30	600	32	0.009	28	755
Pine Branches	25	600	26	0.007	23	755
Pine Branches	20	600	20	0.006	17	755
Pine Branches	15	600	14	0.004	13	755
Commscope CBC1923Q-43	77	22	3	0.001	3	28
Ericsson RRUS 4415 B25	77	138	22	0.006	19	174
Ericsson AIR32 B66Aa/B2a	77	397	63	0.017	56	499
RFS APXVAARR24_43-U-NA20	77	384	61	0.017	54	483
Generic Round T-Arm	76	938	146	0.040	130	1,180
Generic Round T-Arm	67	938	126	0.035	112	1,180
Ericsson RRUS 32 B2	71.9	159	23	0.006	21	200
Ericsson RRUS 4426 B66	71.8	145	21	0.006	19	183
Ericsson Air 6449 B77D	69	245	34	0.009	30	308
Raycap DC6-48-60-18-8F(32.8 lbs)	67	66	9	0.002	8	83
Ericsson RRUS 4449 B5, B12	67	213	29	0.008	25	268
Ericsson RRUS 4478 B14	67	178	24	0.007	21	224
Ericsson RRUS 32 B30	67	180	24	0.007	21	226
Ericsson RRUS E2 B29	67	180	24	0.007	21	226
Raycap DC9-48-60-24-8C-EV	67	16	2	0.001	2	20
CCI DMP65R-BU4D	67	204	27	0.008	24	256
Site PRO1, RMV12-496	67	1,358	183	0.051	162	1,709
Quintel QD6616-7	67	390	52	0.014	47	491
Ericsson AIR 6419 B77G	65	198	26	0.007	23	250
Samsung B2/B66A RRH-BR049	62.7	253	32	0.009	28	319
Samsung B5/B13 RRH-BR04C	62.6	211	26	0.007	23	265
Raycap RCMDC-6627-PF-48	62	32	4	0.001	3	40
Amphenol Antel LPA-80063-6CF-EDIN-X	60.4	162	19	0.005	17	204
Generic Mount Reinforcement	57	200	22	0.006	20	252
Generic Flat T-Arm	57	938	104	0.029	93	1,180
Generic Flat T-Arm	45	938	79	0.022	70	1,180
Commscope CBC78T-DS-43-2X	56	62	7	0.002	6	78
Samsung MT6407-77A	56	245	27	0.007	24	308
Commscope JAHH-65A-R3B	56	101	11	0.003	10	128
Commscope JAHH-45A-R3B	56	282	31	0.008	27	355
VZW Unused Reserve (14306.88 sqin)	56	1,152	126	0.035	111	1,449
Fujitsu TA08025-B604	45	192	16	0.004	14	241
Fujitsu TA08025-B605	45	225	19	0.005	17	283
Raycap RDIDC-9181-PF-48 (19")	45	22	2	0.000	2	28
Commscope FFVV-65B-R2	45	212	18	0.005	16	267
Totals:		41,619	3,610	1.000	3,204	52,369

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
38	82.75	14	2	0.001	2	12
37	82.15	5	1	0.000	1	4
36	81.8	7	1	0.000	1	6
35	80.8	27	5	0.001	4	23
34	78.975	35	6	0.002	5	29
33	77.475	121	19	0.005	17	102
32	76.85	41	6	0.002	6	34
31	76.35	72	11	0.003	10	61
30	75.5	104	16	0.004	14	87
29	73.45	329	49	0.014	44	277
28	71.85	11	2	0.000	1	9
27	70.9	196	28	0.008	25	165
26	69.5	111	16	0.004	14	93
25	68	225	31	0.008	27	189
24	66	308	41	0.011	36	260
23	63.85	360	46	0.013	41	303
22	62.65	16	2	0.000	2	13
21	62.3	95	12	0.003	10	80
20	61.2	260	31	0.009	28	219
19	60.2	65	8	0.002	7	55
18	58.5	496	57	0.016	51	417
17	56.5	168	18	0.005	16	141
16	55.5	182	20	0.005	17	153
15	53.6901	482	50	0.014	44	406
14	51.1901	841	83	0.023	73	708
13	48.5794	1,024	95	0.026	84	862
12	46.0794	518	45	0.012	40	436
11	42.5	1,236	98	0.027	87	1,040
10	37.5	1,276	87	0.024	77	1,074
9	32.5	1,315	76	0.021	68	1,107
8	29.4258	308	16	0.004	14	259
7	26.9258	1,931	90	0.025	80	1,625
6	23.8438	1,183	48	0.013	42	996
5	21.3438	823	29	0.008	26	693
4	17.5	1,566	44	0.012	39	1,318
3	12.5	1,612	31	0.008	27	1,356
2	7.5	1,657	17	0.005	15	1,395
1	2.5	1,702	5	0.001	4	1,433
Bird 428D-83I-01-T	83.2	9	2	0.000	1	7
dbSpectra DS7C09P36U-D	83.2	140	24	0.007	22	118
Ericsson RRUS 32 B66	82.3	159	27	0.008	24	134
Pole Mount	82	80	14	0.004	12	67
Ericsson Radio 4449 B71 B85A	81.6	225	38	0.010	34	189
Ericsson Air6449 B41	81.6	312	53	0.015	47	263
Pine Branches	80	600	99	0.028	88	505
Pine Branches	75	600	92	0.026	82	505
Pine Branches	70	600	85	0.024	75	505
Pine Branches	65	600	78	0.022	69	505
Pine Branches	60	600	71	0.020	63	505
Pine Branches	55	600	64	0.018	57	505
Pine Branches	50	600	57	0.016	51	505
Pine Branches	45	600	51	0.014	45	505
Pine Branches	40	600	44	0.012	39	505
Pine Branches	35	600	38	0.010	34	505
Pine Branches	30	600	32	0.009	28	505
Pine Branches	25	600	26	0.007	23	505
Pine Branches	20	600	20	0.006	17	505
Pine Branches	15	600	14	0.004	13	505
Commscope CBC1923Q-43	77	22	3	0.001	3	18
Ericsson RRUS 4415 B25	77	138	22	0.006	19	116
Ericsson AIR32 B66Aa/B2a	77	397	63	0.017	56	334

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
RFS APXVAARR24_43-U-NA20	77	384	61	0.017	54	323
Generic Round T-Arm	76	938	146	0.040	130	789
Generic Round T-Arm	67	938	126	0.035	112	789
Ericsson RRUS 32 B2	71.9	159	23	0.006	21	134
Ericsson RRUS 4426 B66	71.8	145	21	0.006	19	122
Ericsson Air 6449 B77D	69	245	34	0.009	30	206
Raycap DC6-48-60-18-8F(32.8 lbs)	67	66	9	0.002	8	55
Ericsson RRUS 4449 B5, B12	67	213	29	0.008	25	179
Ericsson RRUS 4478 B14	67	178	24	0.007	21	150
Ericsson RRUS 32 B30	67	180	24	0.007	21	152
Ericsson RRUS E2 B29	67	180	24	0.007	21	152
Raycap DC9-48-60-24-8C-EV	67	16	2	0.001	2	13
CCI DMP65R-BU4D	67	204	27	0.008	24	171
Site PRO1, RMV12-496	67	1,358	183	0.051	162	1,143
Quintel QD6616-7	67	390	52	0.014	47	328
Ericsson AIR 6419 B77G	65	198	26	0.007	23	167
Samsung B2/B66A RRH-BR049	62.7	253	32	0.009	28	213
Samsung B5/B13 RRH-BR04C	62.6	211	26	0.007	23	178
Raycap RCMDC-6627-PF-48	62	32	4	0.001	3	27
Amphenol Antel LPA-80063-6CF-EDIN-X	60.4	162	19	0.005	17	136
Generic Mount Reinforcement	57	200	22	0.006	20	168
Generic Flat T-Arm	57	938	104	0.029	93	789
Generic Flat T-Arm	45	938	79	0.022	70	789
Commscope CBC78T-DS-43-2X	56	62	7	0.002	6	52
Samsung MT6407-77A	56	245	27	0.007	24	206
Commscope JAHH-65A-R3B	56	101	11	0.003	10	85
Commscope JAHH-45A-R3B	56	282	31	0.008	27	237
VZW Unused Reserve (14306.88 sqin)	56	1,152	126	0.035	111	969
Fujitsu TA08025-B604	45	192	16	0.004	14	161
Fujitsu TA08025-B605	45	225	19	0.005	17	189
Raycap RDIDC-9181-PF-48 (19")	45	22	2	0.000	2	18
Commscope FFV-65B-R2	45	212	18	0.005	16	179
Totals:		41,619	3,610	1.000	3,204	35,031

1.2D + 1.0Ev + 1.0Eh

Seismic

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-50.23	-3.20	0.00	-184.51	0.00	184.51	5,994.05	1,434.32	6,672	6,339.93	0.00	0.00	0.04
5.00	-48.14	-3.19	0.00	-168.50	0.00	168.50	5,848.23	1,387.57	6,244	5,982.15	0.01	-0.01	0.04
10.00	-46.11	-3.17	0.00	-152.53	0.00	152.53	5,676.15	1,340.82	5,831	5,608.58	0.02	-0.02	0.04
15.00	-43.39	-3.13	0.00	-136.66	0.00	136.66	5,478.25	1,294.08	5,431	5,222.38	0.04	-0.03	0.03
20.00	-41.60	-3.09	0.00	-121.01	0.00	121.01	5,280.36	1,247.33	5,046	4,849.95	0.08	-0.04	0.03
22.69	-40.11	-3.05	0.00	-112.71	0.00	112.71	5,173.98	1,222.20	4,845	4,655.46	0.10	-0.04	0.03
25.00	-36.92	-2.95	0.00	-105.66	0.00	105.66	5,082.46	1,200.58	4,675	4,491.29	0.12	-0.05	0.03
28.85	-36.54	-2.94	0.00	-94.31	0.00	94.31	4,410.48	1,041.84	4,023	3,870.56	0.16	-0.05	0.03
30.00	-34.12	-2.84	0.00	-90.94	0.00	90.94	4,370.71	1,032.45	3,951	3,800.72	0.17	-0.05	0.03
35.00	-31.76	-2.73	0.00	-76.73	0.00	76.73	4,197.54	991.55	3,644	3,504.05	0.24	-0.06	0.03
40.00	-29.45	-2.61	0.00	-63.06	0.00	63.06	4,024.38	950.64	3,350	3,219.43	0.31	-0.07	0.03
45.00	-26.05	-2.40	0.00	-50.02	0.00	50.02	3,851.22	909.74	3,068	2,946.87	0.39	-0.08	0.02
47.16	-24.76	-2.32	0.00	-44.84	0.00	44.84	3,776.46	892.08	2,950	2,832.91	0.42	-0.08	0.02
50.00	-22.95	-2.19	0.00	-38.25	0.00	38.25	3,678.06	868.83	2,798	2,686.37	0.48	-0.09	0.02
52.38	-22.34	-2.15	0.00	-33.03	0.00	33.03	2,517.86	619.74	1,993	1,842.82	0.52	-0.09	0.03
55.00	-21.36	-2.07	0.00	-27.40	0.00	27.40	2,473.76	604.43	1,896	1,765.43	0.57	-0.09	0.02
56.00	-18.83	-1.87	0.00	-25.33	0.00	25.33	2,456.68	598.59	1,859	1,736.14	0.59	-0.09	0.02
57.00	-16.77	-1.71	0.00	-23.46	0.00	23.46	2,439.47	592.75	1,823	1,707.00	0.61	-0.10	0.02
60.00	-15.94	-1.64	0.00	-18.33	0.00	18.33	2,387.04	575.22	1,717	1,620.46	0.67	-0.10	0.02
60.40	-15.41	-1.59	0.00	-17.67	0.00	17.67	2,379.96	572.88	1,703	1,609.02	0.68	-0.10	0.02
62.00	-15.25	-1.58	0.00	-15.12	0.00	15.12	2,351.42	563.53	1,648	1,563.54	0.71	-0.10	0.02

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
62.60	-14.96	-1.55	0.00	-14.18	0.00	14.18	2,340.63	560.02	1,627	1,546.59	0.73	-0.10	0.02
62.70	-14.19	-1.48	0.00	-14.02	0.00	14.02	2,338.83	559.44	1,624	1,543.77	0.73	-0.10	0.02
65.00	-12.80	-1.35	0.00	-10.61	0.00	10.61	2,296.98	546.00	1,547	1,479.38	0.78	-0.10	0.01
67.00	-7.83	-0.87	0.00	-7.90	0.00	7.90	2,260.03	534.31	1,481	1,424.11	0.82	-0.11	0.01
69.00	-7.38	-0.83	0.00	-6.15	0.00	6.15	2,212.44	522.62	1,417	1,363.33	0.87	-0.11	0.01
70.00	-6.38	-0.73	0.00	-5.32	0.00	5.32	2,187.71	516.78	1,386	1,332.86	0.89	-0.11	0.01
71.80	-6.19	-0.71	0.00	-4.02	0.00	4.02	2,143.18	506.26	1,330	1,278.88	0.93	-0.11	0.01
71.90	-5.57	-0.64	0.00	-3.95	0.00	3.95	2,140.71	505.68	1,327	1,275.91	0.93	-0.11	0.01
75.00	-4.69	-0.54	0.00	-1.96	0.00	1.96	2,064.02	487.56	1,234	1,185.66	1.00	-0.11	0.00
76.00	-3.42	-0.40	0.00	-1.42	0.00	1.42	2,039.28	481.72	1,204	1,157.26	1.03	-0.11	0.00
76.70	-3.36	-0.40	0.00	-1.13	0.00	1.13	2,021.97	477.63	1,184	1,137.58	1.04	-0.11	0.00
76.70	-3.36	-0.40	0.00	-1.13	0.00	1.13	1,162.78	348.83	721	724.94	1.04	-0.11	0.00
77.00	-2.03	-0.24	0.00	-1.02	0.00	1.02	1,162.78	348.83	721	724.94	1.05	-0.11	0.00
77.95	-1.99	-0.24	0.00	-0.78	0.00	0.78	1,162.78	348.83	721	724.94	1.07	-0.11	0.00
77.95	-1.99	-0.24	0.00	-0.78	0.00	0.78	138.83	41.65	15	15.36	1.07	-0.11	0.07
80.00	-1.20	-0.15	0.00	-0.29	0.00	0.29	138.83	41.65	15	15.36	1.12	-0.11	0.03
81.60	-0.51	-0.06	0.00	-0.06	0.00	0.06	138.83	41.65	15	15.36	1.15	-0.12	0.01
82.00	-0.41	-0.05	0.00	-0.04	0.00	0.04	138.83	41.65	15	15.36	1.16	-0.12	0.01
82.30	-0.19	-0.02	0.00	-0.02	0.00	0.02	138.83	41.65	15	15.36	1.17	-0.12	0.00
83.20	0.00	-0.02	0.00	0.00	0.00	0.00	138.83	41.65	15	15.36	1.19	-0.12	0.00

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

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-33.60	-3.20	0.00	-183.85	0.00	183.85	5,994.05	1,434.32	6,672	6,339.93	0.00	0.00	0.04
5.00	-32.20	-3.19	0.00	-167.84	0.00	167.84	5,848.23	1,387.57	6,244	5,982.15	0.01	-0.01	0.03
10.00	-30.85	-3.17	0.00	-151.89	0.00	151.89	5,676.15	1,340.82	5,831	5,608.58	0.02	-0.02	0.03
15.00	-29.02	-3.12	0.00	-136.05	0.00	136.05	5,478.25	1,294.08	5,431	5,222.38	0.04	-0.03	0.03
20.00	-27.82	-3.08	0.00	-120.45	0.00	120.45	5,280.36	1,247.33	5,046	4,849.95	0.08	-0.04	0.03
22.69	-26.83	-3.04	0.00	-112.17	0.00	112.17	5,173.98	1,222.20	4,845	4,655.46	0.10	-0.04	0.03
25.00	-24.70	-2.94	0.00	-105.15	0.00	105.15	5,082.46	1,200.58	4,675	4,491.29	0.12	-0.05	0.03
28.85	-24.44	-2.92	0.00	-93.83	0.00	93.83	4,410.48	1,041.84	4,023	3,870.56	0.16	-0.05	0.03
30.00	-22.83	-2.83	0.00	-90.48	0.00	90.48	4,370.71	1,032.45	3,951	3,800.72	0.17	-0.05	0.03
35.00	-21.25	-2.72	0.00	-76.33	0.00	76.33	4,197.54	991.55	3,644	3,504.05	0.24	-0.06	0.03
40.00	-19.70	-2.60	0.00	-62.72	0.00	62.72	4,024.38	950.64	3,350	3,219.43	0.31	-0.07	0.02
45.00	-17.42	-2.39	0.00	-49.75	0.00	49.75	3,851.22	909.74	3,068	2,946.87	0.39	-0.08	0.02
47.16	-16.56	-2.31	0.00	-44.59	0.00	44.59	3,776.46	892.08	2,950	2,832.91	0.42	-0.08	0.02
50.00	-15.35	-2.18	0.00	-38.04	0.00	38.04	3,678.06	868.83	2,798	2,686.37	0.47	-0.09	0.02
52.38	-14.94	-2.14	0.00	-32.85	0.00	32.85	2,517.86	619.74	1,993	1,842.82	0.52	-0.09	0.02
55.00	-14.28	-2.06	0.00	-27.25	0.00	27.25	2,473.76	604.43	1,896	1,765.43	0.57	-0.09	0.02
56.00	-12.59	-1.86	0.00	-25.19	0.00	25.19	2,456.68	598.59	1,859	1,736.14	0.59	-0.09	0.02
57.00	-11.22	-1.70	0.00	-23.32	0.00	23.32	2,439.47	592.75	1,823	1,707.00	0.61	-0.10	0.02
60.00	-10.66	-1.63	0.00	-18.23	0.00	18.23	2,387.04	575.22	1,717	1,620.46	0.67	-0.10	0.02
60.40	-10.30	-1.58	0.00	-17.57	0.00	17.57	2,379.96	572.88	1,703	1,609.02	0.68	-0.10	0.02
62.00	-10.20	-1.57	0.00	-15.04	0.00	15.04	2,351.42	563.53	1,648	1,563.54	0.71	-0.10	0.01
62.60	-10.01	-1.54	0.00	-14.10	0.00	14.10	2,340.63	560.02	1,627	1,546.59	0.72	-0.10	0.01
62.70	-9.49	-1.48	0.00	-13.94	0.00	13.94	2,338.83	559.44	1,624	1,543.77	0.73	-0.10	0.01
65.00	-8.56	-1.35	0.00	-10.55	0.00	10.55	2,296.98	546.00	1,547	1,479.38	0.77	-0.10	0.01
67.00	-5.24	-0.87	0.00	-7.86	0.00	7.86	2,260.03	534.31	1,481	1,424.11	0.82	-0.10	0.01
69.00	-4.94	-0.82	0.00	-6.12	0.00	6.12	2,212.44	522.62	1,417	1,363.33	0.86	-0.11	0.01
70.00	-4.27	-0.72	0.00	-5.30	0.00	5.30	2,187.71	516.78	1,386	1,332.86	0.89	-0.11	0.01
71.80	-4.14	-0.70	0.00	-3.99	0.00	3.99	2,143.18	506.26	1,330	1,278.88	0.93	-0.11	0.01
71.90	-3.73	-0.64	0.00	-3.92	0.00	3.92	2,140.71	505.68	1,327	1,275.91	0.93	-0.11	0.01
75.00	-3.13	-0.54	0.00	-1.95	0.00	1.95	2,064.02	487.56	1,234	1,185.66	1.00	-0.11	0.00
76.00	-2.28	-0.40	0.00	-1.41	0.00	1.41	2,039.28	481.72	1,204	1,157.26	1.02	-0.11	0.00
76.70	-2.25	-0.39	0.00	-1.13	0.00	1.13	2,021.97	477.63	1,184	1,137.58	1.04	-0.11	0.00
76.70	-2.25	-0.39	0.00	-1.13	0.00	1.13	1,162.78	348.83	721	724.94	1.04	-0.11	0.00
77.00	-1.36	-0.24	0.00	-1.01	0.00	1.01	1,162.78	348.83	721	724.94	1.04	-0.11	0.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
77.95	-1.33	-0.24	0.00	-0.78	0.00	0.78	1,162.78	348.83	721	724.94	1.06	-0.11	0.00
77.95	-1.33	-0.24	0.00	-0.78	0.00	0.78	138.83	41.65	15	15.36	1.06	-0.11	0.06
80.00	-0.80	-0.14	0.00	-0.29	0.00	0.29	138.83	41.65	15	15.36	1.11	-0.11	0.03
81.60	-0.34	-0.06	0.00	-0.06	0.00	0.06	138.83	41.65	15	15.36	1.15	-0.12	0.01
82.00	-0.27	-0.05	0.00	-0.04	0.00	0.04	138.83	41.65	15	15.36	1.16	-0.12	0.00
82.30	-0.13	-0.02	0.00	-0.02	0.00	0.02	138.83	41.65	15	15.36	1.17	-0.12	0.00
83.20	0.00	-0.02	0.00	0.00	0.00	0.00	138.83	41.65	15	15.36	1.19	-0.12	0.00

ANALYSIS SUMMARY

Load Case	Base Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W	50.42	0.00	49.88	0.00	0.00	2733.57	77.95	0.75
0.9D + 1.0W	50.41	0.00	37.39	0.00	0.00	2726.37	77.95	0.74
1.2D + 1.0Di + 1.0Wi	11.87	0.00	61.42	0.00	0.00	637.14	77.95	0.2
1.2D + 1.0Ev + 1.0Eh	3.20	0.00	50.23	0.00	0.00	184.51	77.95	0.07
0.9D - 1.0Ev + 1.0Eh	3.20	0.00	33.60	0.00	0.00	183.85	77.95	0.06
1.0D + 1.0W	11.87	0.00	41.62	0.00	0.00	642.92	77.95	0.18

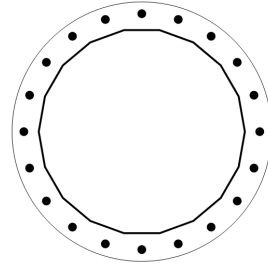
BASE PLATE ANALYSIS @ 0 FT

APPLIED REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
2733.57	49.88	50.42

PLATE PARAMETERS (ID# 25255)

Width:	66	in
Shape:	Round	
Thickness:	2.75	in
Grade:	A572-50	
Yield Strength:	50	ksi
Tensile Strength:	65	ksi
Rod Detail Type:	d	
Clear Distance	4.5	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Plastic	
Neutral Axis:	36	°



ANCHOR ROD PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	F _y (ksi)	F _u (ksi)	Spacing (in)	Offset (°)
Original [ID#25922]	Radial	20	2.25	60	A615-75	75	100	-	-

COMPONENT PROPERTIES

Component	ID	Gross Area (in ²)	Net Area (in ²)	Individual Inertia (in ⁴)	Moment of Inertia (in ⁴)	Threads/in
Pole	52"Ø x 0.5" (18 Sides)	80.4859	-	-	26690.34	-
Bolt Group	Original (20) 2.25"Ø	3.9761	3.2477	0.8393	26744.38	4.5

REACTION DISTRIBUTION

Component	ID	Moment M _u (k-ft)	Axial Load P _u (k)	Shear V _u (k)	Moment Factor
Pole	52"Ø x 0.5" (18 Sides)	2733.6	49.88	50.42	1.000
Bolt Group	Original (20) 2.25"Ø	2733.6	-	50.42	1.000

BASE PLATE BEND LINE ANALYSIS @ 0 FT

POLE PROPERTIES

Flat-to-Flat Diameter:	52.12	in
Point-to-Point Diameter:	52.93	in
Orientation Offset:	-	°

Flat Width:	9.191	in
Flat Radians:	0.349	rad

PLATE PROPERTIES

Neutral Axis:	36	°
Bend Line Limits:	1.726 to 2.672	rad

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in ³)	Applied Moment M _u (k-in)	Moment Capacity ΦM _n (k-in)	Flexure Result M _u /ΦM _n
Flats	36.073	0.00	68.201	578.0	3069.0	18.8%
Corners	34.883	0.00	65.950	441.6	2967.8	14.9%
Circumferential	41.030	0.00	77.572	753.8	3490.7	21.6%

PLASTIC ANCHOR ROD ANALYSIS

Class	Group Quantity	Rod Diameter (in)	Applied Axial Load P _u (k)	Applied Shear Load V _u (k)	Compressive Capacity ΦP _n (k)	Plastic Result
Original	20	2.25	95.5	4.0	243.6	39.2%

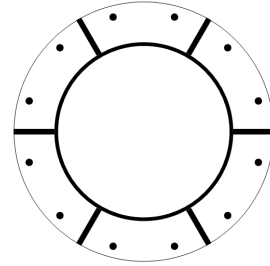
UPPER FLANGE PLATE ANALYSIS @ 76.7 FT

APPLIED REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
20.35	3.12	5.26

PLATE PARAMETERS (ID# 25254)

Width:	35	in
Shape:	Round	
Thickness:	1.5	in
Grade:	A572-50	
Yield Strength:	50	ksi
Tensile Strength:	65	ksi
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Plastic	
Neutral Axis:	60	°

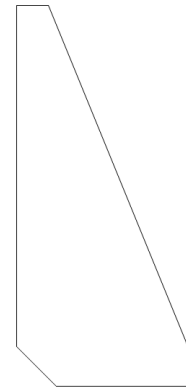


FLANGE BOLT PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	F _y (ksi)	F _u (ksi)	Spacing (in)	Offset (°)
Original [ID#25923]	Radial	12	1	32	A325	92	120	-	15

STIFFENER PARAMETERS

Arrangement:	Radial	
Quantity:	6	
Height:	12	in
Width:	5.5	in
Thickness:	0.75	in
Notch:	1.25	in
Grade:	A572-50	
Yield Strength:	50	ksi
Tensile Strength:	65	ksi
Horizontal Weld Type:	Fillet	
Horizontal Weld Fillet Size:	0.313	in
Vertical Weld Fillet Size:	0.313	in
Weld Strength:	70	ksi
Orientation Offset:	30	°



COMPONENT PROPERTIES

Component	ID	Gross Area (in ²)	Net Area (in ²)	Individual Inertia (in ⁴)	Moment of Inertia (in ⁴)	Threads/in
Pole	24"Ø x 0.5" (Round)	36.9133	-	-	2551.28	-
Bolt Group	Original (12) 1"Ø	0.7854	0.6057	0.0292	859.51	8.0
Stiffeners	(6) 12"H x 5.5"W x 0.75"T	3.1875	2.8688	41.5938	1904.17	-

ASSET: 414240, Byram Park CT
 CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
 PROJECT: 13701270

REACTION DISTRIBUTION

Component	ID	Moment M_u (k-ft)	Axial Load P_u (k)	Shear V_u (k)	Moment Factor
Pole	24"Ø x 0.5" (Round)	20.4	3.12	5.26	1.000
Bolt Group	Original (12) 1"Ø	20.4	-	5.26	1.000
Stiffeners	(6) 12"H x 5.5"W x 0.75"T	8.7	-	2.25	0.427

UPPER FLANGE PLATE BEND LINE ANALYSIS @ 76.7 FT

POLE PROPERTIES

Flat-to-Flat Diameter: 24.12 in
 Point-to-Point Diameter: 24.12 in
 Orientation Offset: - °

Flat Width: 0.211 in
 Flat Radians: 0.017 rad

PLATE PROPERTIES

Neutral Axis: 60 °
 Bend Line Limits: 2.179 to 3.057 rad

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in ³)	Applied Moment M_u (k-in)	Moment Capacity ΦM_n (k-in)	Flexure Result $M_u/\Phi M_n$	
Flats	23.351	4.34	15.579	15.7	701.1	2.2%	✓
Corners	23.351	4.34	15.579	15.7	701.1	2.2%	✓
Circumferential	24.135	0.00	13.576	18.7	610.9	3.1%	✓

PLASTIC FLANGE BOLT ANALYSIS

Class	Group Quantity	Bolt Diameter (in)	Applied Axial Load P_u (k)	Applied Shear Load V_u (k)	Compressive Capacity ΦP_n (k)	Interaction Result
Original	12	1	2.6	0.7	54.5	6.4% ✓

UPPER FLANGE PLATE STIFFENER ANALYSIS

Quantity:	6	
Height:	12	in
Width:	5.5	in
Effective Width:	5.500	in
Thickness:	0.75	in
Notch:	1.25	in
Grade:	A572-50	
Yield Strength:	50	ksi
Tensile Strength:	65	ksi
Horizontal Weld Type:	Fillet	
Horizontal Weld Fillet Size:	0.313	in
Horizontal Weld Bevel Size:		in
Vertical Weld Fillet Size:	0.313	in
Weld Strength:	70	ksi
Electrode Coefficient:	1.000	

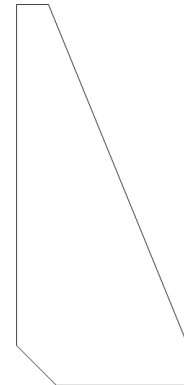


PLATE COMPRESSION

Radius of Gyration:	0.217	in ³
k/r:	33.26	
4.71 √(E/F _y):	113.43	
Buckling Stress, F _e :	258.81	ksi
Crit. Buckling Stress, F _{cr} :	226.97	ksi
Applied Compression, P _u :	2.23	k
Compressive Capacity, ΦP _n :	651.13	k
Compressive Result, P _u /ΦP _n :	0.2%	✓

PLATE TENSION

Gross Cross Section:	3.1875	in ²
Net Cross Section:	2.8688	in ²
Applied Tension, T _u :	1.79	k
Tensile Capacity, ΦT _n :	139.85	k
Tension Result, T _u /ΦT _n :	0.6%	✓

VERTICAL WELD TO POLE

Vertical Eccentricity Ratio, a=e _x /l:	0.153	
Spacing Ratio, k:	0.063	
Weld Coefficient, C:	3.670	
Applied Compression, P _u :	2.23	k
Compressive Capacity, ΦP _n :	165.41	k
Horizontal Eccentricity Ratio, a=e _y /l:	0.333	
Weld Coefficient, C:	2.940	
Applied Shear, V _u :	0.32	k
Shear Capacity, ΦV _n :	132.51	k
Weld Result, P _u /ΦP _n + V _u /ΦV _n :	1.6%	✓

HORIZONTAL WELD TO PLATE

Horizontal Eccentricity Ratio, a=e _x /l:	0.167	
Spacing Ratio, k:	0.136	
Weld Coefficient, C:	3.940	
Effective Fillet Size:	0.313	in
Applied Compression, P _u :	2.23	k
Compressive Capacity, ΦP _n :	81.39	k
Vertical Eccentricity Ratio, a=e _y /l:	0.364	
Weld Coefficient, C:	3.090	
Applied Shear, V _u :	0.32	k
Shear Capacity, ΦV _n :	63.83	k
Weld Result, P _u /ΦP _n + V _u /ΦV _n :	3.2%	✓

ASSET: 414240, Byram Park CT
 CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
 PROJECT: 13701270

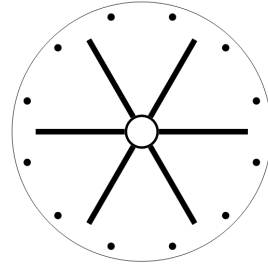
UPPER FLANGE PLATE ANALYSIS @ 77.95 FT

APPLIED REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
11.16	1.85	3.2

PLATE PARAMETERS (ID# 25256)

Width: 35 in
 Shape: Round
 Thickness: 1.5 in
 Grade: A572-50
 Yield Strength: 50 ksi
 Tensile Strength: 65 ksi
 Base Weld Size: 0.125 in
 Orientation Offset: - °
 Analysis Type: Plastic
 Neutral Axis: 44 °

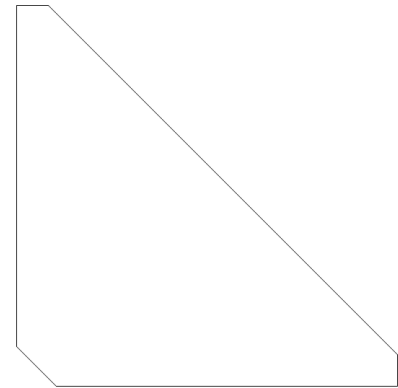


FLANGE BOLT PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	F _y (ksi)	F _u (ksi)	Spacing (in)	Offset (°)
Original [ID#25924]	Radial	12	1	32	A325	92	120	-	15

STIFFENER PARAMETERS

Arrangement: Radial
 Quantity: 6
 Height: 12 in
 Width: 12 in
 Thickness: 0.75 in
 Notch: 1.25 in
 Grade: A572-50
 Yield Strength: 50 ksi
 Tensile Strength: 65 ksi
 Horizontal Weld Type: Fillet
 Horizontal Weld Fillet Size: 0.313 in
 Vertical Weld Fillet Size: 0.313 in
 Weld Strength: 70 ksi
 Orientation Offset: 30 °



COMPONENT PROPERTIES

Component	ID	Gross Area (in ²)	Net Area (in ²)	Individual Inertia (in ⁴)	Moment of Inertia (in ⁴)	Threads/in
Pole	4.5"Ø x 0.337" (Round)	4.4074	-	-	9.72	-
Bolt Group	Original (12) 1"Ø	0.7854	0.6057	0.0292	859.51	8.0
Stiffeners	(6) 12"H x 12"W x 0.75"T	8.0625	7.2563	432.0000	1806.90	-

ASSET: 414240, Byram Park CT
 CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
 PROJECT: 13701270

REACTION DISTRIBUTION

Component	ID	Moment M _u (k-ft)	Axial Load P _u (k)	Shear V _u (k)	Moment Factor
Pole	4.5"Ø x 0.337" (Round)	11.2	1.85	3.20	1.000
Bolt Group	Original (12) 1"Ø	11.2	-	3.20	1.000
Stiffeners	(6) 12"H x 12"W x 0.75"T	11.1	-	3.18	0.995

UPPER FLANGE PLATE BEND LINE ANALYSIS @ 77.95 FT

POLE PROPERTIES

Flat-to-Flat Diameter: 4.62 in
 Point-to-Point Diameter: 4.62 in
 Orientation Offset: - °

Flat Width: 0.040 in
 Flat Radians: 0.017 rad

PLATE PROPERTIES

Neutral Axis: 44 °
 Bend Line Limits: 0.612 to 4.101 rad

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in ³)	Applied Moment M _u (k-in)	Moment Capacity ΦM _n (k-in)	Flexure Result M _u /ΦM _n	
Flats	33.255	19.72	29.799	61.5	1341.0	4.6%	✓
Corners	33.255	19.72	29.799	61.5	1341.0	4.6%	✓
Circumferential	49.187	38.25	49.183	80.8	2213.3	3.7%	✓

PLASTIC FLANGE BOLT ANALYSIS

Class	Group Quantity	Bolt Diameter (in)	Applied Axial Load P _u (k)	Applied Shear Load V _u (k)	Compressive Capacity ΦP _n (k)	Interaction Result
Original	12	1	1.5	0.4	54.5	3.8% ✓

UPPER FLANGE PLATE STIFFENER ANALYSIS

Quantity:	6	
Height:	12	in
Width:	12	in
Effective Width:	12.000	in
Thickness:	0.75	in
Notch:	1.25	in
Grade:	A572-50	
Yield Strength:	50	ksi
Tensile Strength:	65	ksi
Horizontal Weld Type:	Fillet	
Horizontal Weld Fillet Size:	0.313	in
Horizontal Weld Bevel Size:		in
Vertical Weld Fillet Size:	0.313	in
Weld Strength:	70	ksi
Electrode Coefficient:	1.000	

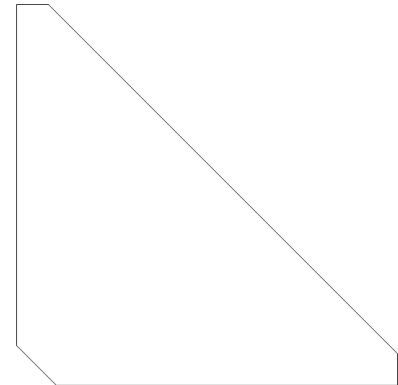


PLATE COMPRESSION

Radius of Gyration:	0.217	in ³
k/r:	33.26	
$4.71 \sqrt{(E/F_y)}$:	113.43	
Buckling Stress, F_e :	258.81	ksi
Crit. Buckling Stress, F_{cr} :	226.97	ksi
Applied Compression, P_u :	4.59	k
Compressive Capacity, ΦP_n :	1646.97	k
Compressive Result, $P_u/\Phi P_n$:	0.1%	✓

PLATE TENSION

Gross Cross Section:	8.0625	in ²
Net Cross Section:	7.2563	in ²
Applied Tension, T_u :	3.98	k
Tensile Capacity, ΦT_n :	353.74	k
Tension Result, $T_u/\Phi T_n$:	0.6%	✓

VERTICAL WELD TO POLE

Vertical Eccentricity Ratio, $a=e_x/l$:	0.333	
Spacing Ratio, k:	0.063	
Weld Coefficient, C:	3.090	
Applied Compression, P_u :	4.59	k
Compressive Capacity, ΦP_n :	139.27	k
Horizontal Eccentricity Ratio, $a=e_x/l$:	0.333	
Weld Coefficient, C:	2.940	
Applied Shear, V_u :	0.20	k
Shear Capacity, ΦV_n :	132.51	k
Weld Result, $P_u/\Phi P_n + V_u/\Phi V_n$:	3.4%	✓

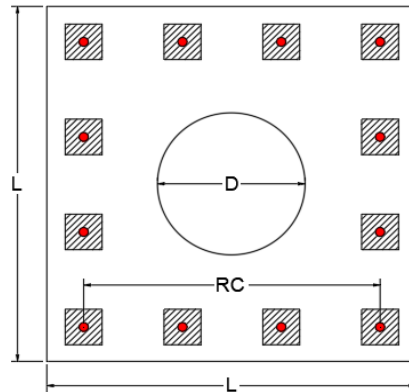
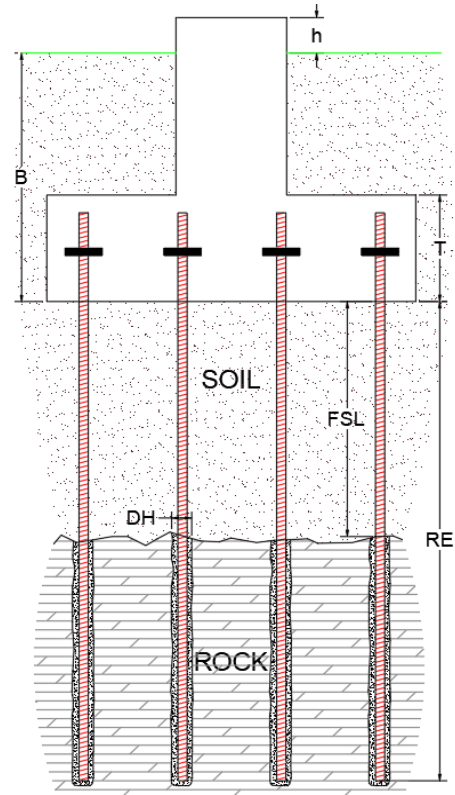
HORIZONTAL WELD TO PLATE

Horizontal Eccentricity Ratio, $a=e_x/l$:	0.167	
Spacing Ratio, k:	0.063	
Weld Coefficient, C:	3.900	
Effective Fillet Size:	0.313	in
Applied Compression, P_u :	4.59	k
Compressive Capacity, ΦP_n :	175.78	k
Vertical Eccentricity Ratio, $a=e_x/l$:	0.167	
Weld Coefficient, C:	3.670	
Applied Shear, V_u :	0.20	k
Shear Capacity, ΦV_n :	165.41	k
Weld Result, $P_u/\Phi P_n + V_u/\Phi V_n$:	2.7%	✓

Site Name: Byram Park CT, CT
 Site Number: 414240
 Tower Type: SST
 Design Base Loads (Factored) - Analysis per TIA-222-H Standards

Rock Anchor Group Foundation Analysis

Foundation Parameters		
Include Rebar Analysis?	Y	
Include Bearing Plate Analysis?	Y	
Moment (Overturning) (M_u):	2733.57	k-ft
Shear/Leg (V_u):	50.4	k
Compression/Leg (P_u):	61.4	k
Uplift/Leg (T_u):	0.0	k
Mat/Pier Height Above Ground [h]:	1	ft
Pier Diameter [D]:	8	ft
Length / Width of Mat [L]:	14	ft
Mat Thickness [T]:	14	ft
Base Depth of Mat [B]:	5	ft
Water Table Depth (BGL):		ft
Unit Weight of Concrete:	150	pcf
Unit Weight of Soil at Mat/Pier:	125	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Below Water Table:	62.6	pcf
Ultimate Compressive Bearing Pressure:	40,000	psf
Shear Friction Coefficient:	0.2	
Capacity Increase (Due to Transient Loads):	1	
Pullout Angle:	30	°
Rod Diameter:	1.380	in
Rod Ultimate Strength:	75	ksi
Rod Net Area:	1.50	in ²
Number of Rods:	16	
Rod Arrangement:	Square	
If Square: Grid or Border?	Grid	
Number of Rows:	4	
Number of Columns:	4	
Rod Group Width [RC]:	132	in
Diameter of Cored Hole [DH]:	4	in
Overall Rod Embedment Length [RE]:	384	in
Free Stress Length [FSL]	120	in
Ultimate Rod-to-Grout Interface Bond Strength:	75	psi
Ultimate Grout-to-Rock Anchor Interface Bond Strength:	150	psi
Lock Off Load:	0	k
Rock Anchor Design Plastic or Elastic:	Elastic	
Ignore Pullout Weight Resistance (Y/N):	N	



Capacities & Results		
Soil Strength Reduction Factor (ϕ_s):	0.75	
Bearing Strength Reduction Factor (ϕ_b):	0.75	
Factored Moment Capacity per Leg ($\phi_s M_n$):	8948.2	k
Factored Uplift Capacity per Leg ($\phi_s T_n$):	1624.2	k
Applied Moment, M_u :	3036.1	k-ft
Applied Uplift, T_u :	0.0	k
$T_u/\phi_s T_n + M_u/\phi_s M_n$:	34%	Pass
Applied Axial, P_u :	382.0	k
Factored Compressive Capacity per Leg ($\phi_b P_n$):	4618.1	k
$P_u/\phi_b P_n$:	8%	Pass
Applied Shear, V_u :	50.4	k
Factored Shear Capacity per Leg ($\phi_s V_n$):	807.7	k
$V_u/\phi_s V_n$:	6%	Pass

Governing Strengths		
Total Pullout Weight:	1,489.1	k
Total Grout-to-Rock Bond Strength:	3,981.0	k
Total Rod-to-Grout Bond Strength:	2,746.9	k
Total Rod Mechanical Strength:	1,794.9	k
Pullout Weight per Rod:	93.1	k
Rock-to-Grout Bond Strength per Rod:	248.8	k
Rod-to-Grout Bond Strength per Rod:	171.7	k
Rod Mechanical Strength per Rod:	112.2	k



Mat Strength Capacity		
Concrete Compressive Strength (f'_c):	4,000	psi
Mat Steel Rebar Size #:	8	-
Mat Steel Rebar Area:	0.79	in ²
# of Rebar in Top of Mat:	27	-
# of Rebar in Base of Mat:	27	-
Mat Steel Rebar Yield Strength (F_y):	60	ksi
Mat Clear Cover:	3	in
b:	0.85	-
Lower Mat Flexural Reinforcement Steel Area:	21.33	-
Upper Mat Flexural Reinforcement Steel Area:	21.33	-
Lower Mat Flexural Reinforcement Spacing:	6.23	in
Upper Mat Flexural Reinforcement Spacing:	6.23	in
One Way Design Shear (V_u):	0.00	k
Factored One Way Shear Capacity (ΦV_c):	2629.09	k
$V_u / \Phi V_c$:	0%	Pass
Punching Design Shear Stress (v_u):	0.00	psi
Factored Punching Shear Capacity ($\Phi_c V_n$):	189.74	psi
v_u / Φ_c :	0%	Pass
Pier Moment at Mat Joint, M_{sc} :	27,357	k-in
Neutral Axis Depth:	62.74	in
Factored Moment Transfer Flexural Capacity ($\Phi M_{sc,f}$):	15,876,399	k-in
$g_f M_{sc} / \Phi M_{sc,f}$:	0%	Pass
Flexural Loading Due to Soil Pressure (M_u):	41.79	k-ft
Factored Lower Steel Mat Moment Capacity (ΦM_n):	15682.00	k-ft
$M_u / \Phi M_n$:	0%	Pass
Flexural Loading Due to Mat and Soil Above Mat:	2.39	k-ft
Flexural Loading Due to Rock Anchors:	1929.10	k-ft
Flexural Loading Due to Uplift (M_u):	0.00	k-ft
Factored Upper Steel Mat Moment Capacity (ΦM_n):	15682.00	k-ft
$M_u / \Phi M_n$:	0%	Pass

OK - Minimum Reinforcement Ratio Met - ACI 318-14 - 7.6.1.1

OK - Minimum Reinforcement Ratio Met - ACI 318-14 - 7.6.1.1

Mat Reinforcing Spacing OK - ACI 318-14 - 8.7.2.2

Mat Reinforcing Spacing OK - ACI 318-14 - 8.7.2.2

Recommended Lock Off Load:	17.8	k
Recommended Test Load:	23.7	k
Maximum Allowable Test Load:	74.5	k

Caisson Strength Capacity		
Concrete Compressive Strength (f'_c):	4,000	psi
Vertical Steel Rebar Size #:	8	-
Vertical Steel Rebar Area:	0.79	in ²
# of Vertical Steel Rebars:	56	-
Vertical Steel Rebar Yield Strength (F_y):	60	ksi
Rebar Cage Diameter:	88.00	in
Horizontal Tie / Stirrup Size #:	5	-
Horizontal Tie / Stirrup Area:	0.31	in ²
Horizontal Tie / Stirrup Spacing:	6.0	in
Horizontal Tie / Stirrup Steel Yield Strength (F_y):	40	ksi
Strength Bending/Tension Reduction Factor (ϕ_B):	0.90	
Strength Shear Reduction Factor (ϕ_V):	0.75	
Strength Compression/Bearing Reduction Factor ($\phi_{P/B}$):	0.65	
Wind Design Factor:	1.0	
Steel Elastic Modulus:	29,000	ksi
Design Moment (M_u):	3036.1	k-ft
Factored Nominal Moment Capacity ($\phi_B M_n$):	8565.9	k-ft
$M_u / \phi_B M_n$:	35%	Pass
Design Shear (V_u):	216.9	k
Factored Nominal Shear Capacity ($\phi_V V_n$):	892.5	k
$V_u / \phi_V V_n$:	24%	Pass
Design Tension (T_u):	0.0	k
Factored Nominal Tension Capacity ($\phi_T T_n$):	2389.0	k
$T_u / \phi_T T_n$:	0%	Pass
Design Compression (P_u):	61.4	k
Factored Nominal Compression Capacity ($\phi_P P_n$):	46015.5	k
$P_u / \phi_P P_n$:	0%	Pass
Bending Reinforcement Ratio:	0.006	
$M_u / \phi_B M_n + T_u / \phi_T T_n$:	35%	Pass

Minimum # of vertical rebar met

Reinforcement Ratio is Satisfactory - ACI318-05 - 10.8.4 & 10.9.1

EXHIBIT 4



Colliers Engineering & Design, Architecture,
Landscape Architecture, Surveying, CT P.C.
1055 Washington Boulevard
Stamford, CT 06901
203.324.0800
peter.albano@collierseng.com

Post-Modification Antenna Mount Analysis Report and PMI Requirements

Mount Fix

SMART Tool Project #: 10218076
Colliers Engineering & Design Project #: 20777259 (Rev. 1)

January 29, 2024

Site Information

Site ID: 5000382611-VZW / Byram Park CT
Site Name: Byram Park CT
Carrier Name: Verizon Wireless
Address: 36 Ritch Ave W
Greenwich, Connecticut 06830
Fairfield County
Latitude: 41.005064°
Longitude: -73.648312°

Structure Information

Tower Type: 79-Ft Monopole
Mount Type: 10.00-Ft T-Frame

FUZE ID # 16231909

Analysis Results

T-Frame: **94.7% Pass w/ Modifications***

***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

Report Prepared By: Madison Shell



01/29/2024

Executive Summary:

The objective of this report is to summarize the analysis results of the antenna support mount including the proposed modifications at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards.

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
<i>Radio Frequency Data Sheet (RFDS)</i>	<i>Verizon RFDS, Site ID: 688717, dated December 6, 2023</i>
<i>Mount Mapping Report</i>	<i>Tower Engineering Professionals, Site ID: 468044-VZW, dated October 21, 2020</i>
<i>Previous Mount Analysis Report</i>	<i>Colliers Engineering & Design, Project #: 20777259 (Rev. 1), dated December 26, 2023</i>
<i>Mount Modification Drawings</i>	<i>Colliers Engineering & Design, Project #: 20777259 (Rev. 1), dated January 29, 2024</i>

Analysis Criteria:

Codes and Standards:	ANSI/TIA-222-H 2022 Connecticut State Building Code (CSBC), 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: D Topographic Category: 1 Topographic Feature Considered: N/A Topographic Method: N/A Ground Elevation Factor, K_e : 0.998
Seismic Parameters:	S_s : 0.274 g S_1 : 0.059 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
56.00	57.00	4	Commscope	JAHH-45A-R3B	Added
		2	Commscope	JAHH-65A-R3B	
		3	Samsung	MT6413-77A	
		3	Commscope	CBC78T-DS-43-2X	
		3	Samsung	RF4439d-25A	
		3	Samsung	RF4461d-13A	
		1	Raycap	RVZDC-6627-PF-48	
		2	Commscope	SBNHH-1D45A	Retained
		1	Andrew	SBNHH-1D65A	

The recent mount mapping reported existing OVP units. 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 unless replacing an existing OVP.

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.

Obvious safety and structural issues/deficiencies noticed at the time of the mount mapping and reported in the Mount Mapping Report are assumed to be corrected and documented as part of the PMI process and are not considered in the mount analysis.

The mount analysis and the mount mapping are not a condition assessment of the mount. Proper maintenance and condition assessments are still required post analysis.

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:
 - o Channel, Solid Round, Angle, Plate ASTM A36 (Gr. 36)
 - o HSS (Rectangular) ASTM 500 (Gr. B-46)
 - o Pipe ASTM A53 (Gr. B-35)
 - o Threaded Rod F1554 (Gr. 36)
 - o Bolts ASTM A325
8. Any mount modifications listed under Sources of Information are assumed to have been installed per the design specifications.

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>MOD Standoff</i>	30.5%	Pass
<i>MOD Face Horizontal</i>	31.6%	Pass
<i>Antenna Pipe</i>	34.2%	Pass
<i>Face Horizontal</i>	20.4%	Pass
<i>Standoff</i>	23.2%	Pass
<i>Mount Connection</i>	94.7%	Pass

Structure Rating – (Controlling Utilization of all Components)	94.7%
---	--------------

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)
Sector C Bottom Standoff	56	N1	840	1644	1.499	2.084	1340	1239	2.308	0.690
Sector C Reinforcement	57.5	N51	529	1506	0.623	1.454	713	1170	1.030	0.504

Notes:

- Axial loads act along the axis of the tower
- Lateral reactions act perpendicular to the tower
- Moment loads introduce bending moment to the tower
- Torsion loads introduce twisting moment to the tower
- 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	11.4	2.6	23.5	14.7
0.5	14.8	3.7	32.0	20.9
1	17.9	4.4	40.2	26.7

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(s).
- Ka factors included in (EPA)a calculations

Requirements:

The existing mounts will be **SUFFICIENT** for the final loading configuration (attachment 2) **after the modifications detailed in attachment 3 are successfully completed.**

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 PMI Report Deliverables**
2. Antenna Placement Diagrams
3. Mount Modification Drawings
4. Mount Photos
5. Mount Mapping Report (for reference only)
6. Analysis Calculations

Mount Desktop – Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor – Mount Modification

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

MDG #: 5000382611

SMART Project #: 10218076

Fuze Project ID: 16231909

Purpose – to upload the proper documentation to the SMART Tool in order to allow the SMART Tool engineering vendor 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 modification was completed in accordance with the modification drawings.
- Contractor shall relay any data that can impact the performance of the mount or the mount modification, this includes safety issues.

Base Requirements:

- If installation of the modification 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 drawings” showing contractor’s name, 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 post-modification passing mount analysis (MA) contact the SMART Tool vendor immediately.
- Each photo shall be time and date stamped.
- Photos should be high resolution.
- Contractor shall ensure that the safety climb wire rope is 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 of the modifications.
 - Photos of the mount after installation of the modifications; if the mounts are at different rad elevations, pictures must be provided for all elevations that the modifications were installed
- Photos taken at Mount Elevation
 - Photos showing the safety climb wire rope above and below the mount prior to modification.
 - Photos showing the climbing facility and safety climb if present.

- Photos showing each individual sector after installation of modifications. Each entire sector must 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 modification per the modification drawings; pictures shall also include connection hardware (U-bolts, bolts, nuts, all-threaded rods, etc.)
- Photos showing the distances (relative distance between collars) of the installed modifications from the appropriate reference locations shown in the modification drawings.
- Photos showing the installed modifications onto the tower (i.e. ring/collar mounts, tie-backs, V-bracing kits, etc.); if the existing mount elevation needs to be changed according to the modification drawings, an elevation measurement shall be provided before the elevation change.

Material Certification:

- Materials utilized must be as per specification on the drawings or the equivalent as validated by the SMART Tool vendor.
 - If the materials are as specified on the drawings
 - The contractor shall provide the packing list, or the materials certifications for the materials utilized to perform the mount modification
 - Commscope, Metrosite, Perfect Vision, Sabre, and Site Pro have all agreed to support Verizon vendors with the necessary material certifications
 - If seeking permission to use an equivalent
 - It is required that the SMART Tool engineering vendor approval of such is included in the contractor submission package. There may be an additional charge for approval if the equivalent submission doesn't meet specifications as prescribed in the drawings.

All hardware has been properly installed, and the existing hardware was inspected.

The material utilized was as specified on the SMART Tool engineering vendor Mount Modification Drawings and included in the material certification folder is a packing list or invoice for these materials.

OR

The material utilized was approved by a SMART Tool engineering vendor as an "equivalent" and this approval is included as part of the contractor submission.

Antenna & Equipment Placement and Geometry Confirmation:

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.

Comments:

Was the mount modification completed in conjunction with the equipment change / installation?

- Yes No

Special Instructions / Validation as required from the MA or Mod Drawings:

Issue:

Contractor shall install OVP on proposed OVP pipe in accordance with the Mount Modification Drawings.

Response:

Special Instruction Confirmation:

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

Comments:

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:

Certifying Individual:

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

S r A
 Sr r T M
 M E .

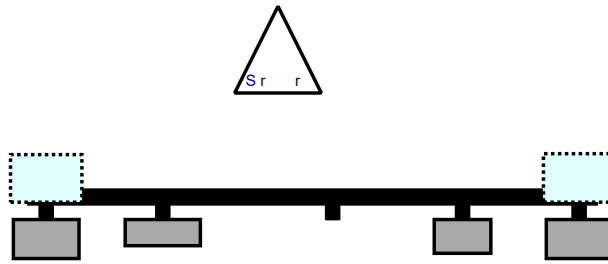
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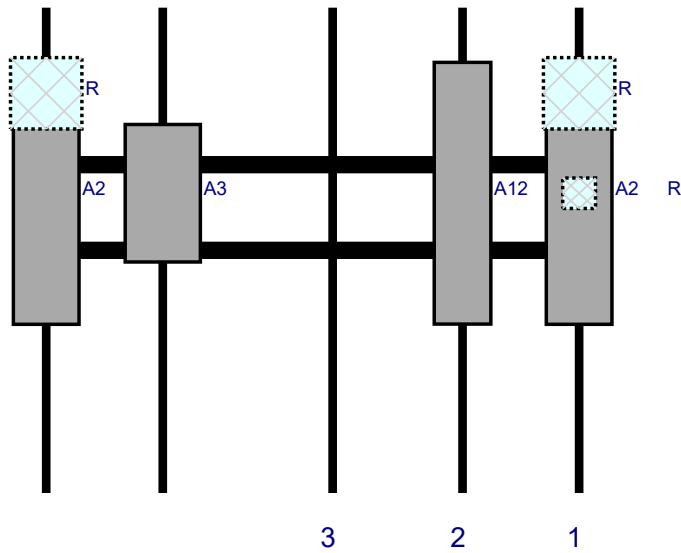


P 1

Plan View



Front View - L S r r



R	M d		d	D	P	P	A	.A	A		
			r L.			P	P	r T.	O	S	d
A2	A	A R3B	.1	13.	11	1	r	3			Add d
R	B	T DS 3 2	.	.	11	1	B	d 3			Add d
R	R	1d 13A	1	1	11	1	B	d 1			Add d
A12	SB	1D A		11.	1.	2	r	3			R d 12 2 23
A3	MT	13 A	2 .	1 .	2 .		r	3			Add d
A2	A	A R3B	.1	13.			r	3			Add d
R	R	3 d 2 A	1	1			B	d 1			Add d
M1	R	D 2 P	2 .	1 .		M	r				Add d
M	L r	P Br				M	r				R d

S r B
 Sr r T M
 M E .

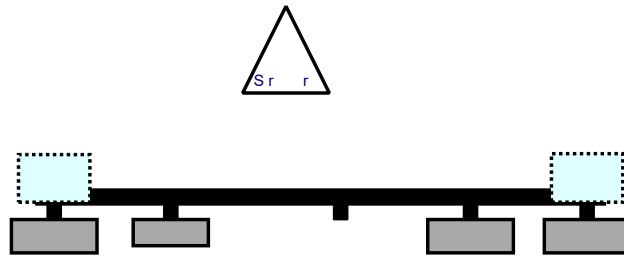
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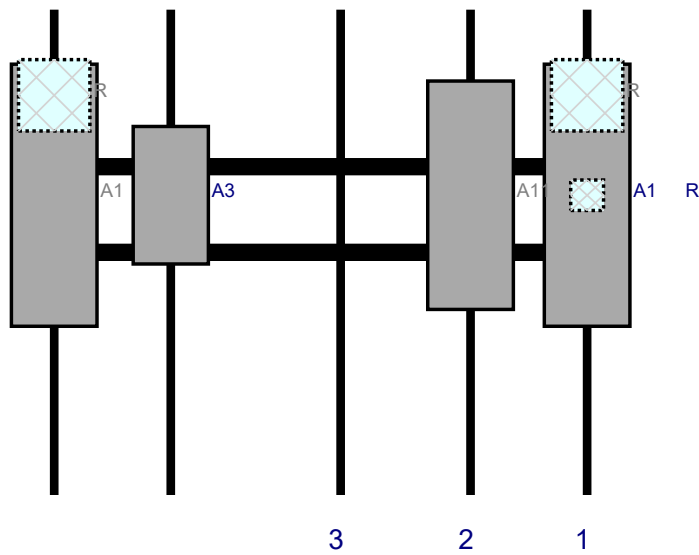


P 2

Plan View



Front View - L S r r



R	M d	d	D	P	P	A	.A	A	S	d
		r	L.	P	P	P	r	T.	O	
A1	A A R3B	.	1.	11	1	r	3			Add d
R	B T DS 3 2	.	.	11	1	B	d 3			Add d
R	R 1d 13A	1	1	11	1	B	d 1			Add d
A11	SB 1D A		1	1.	2	r	3			R d 12 2 23
A3	MT 13 A	2 .	1 .	2 .		r	3			Add d
A1	A A R3B	.	1.			r	3			Add d
R	R 3 d 2 A	1	1			B	d 1			Add d

S r C
 Sr r T M
 M E .

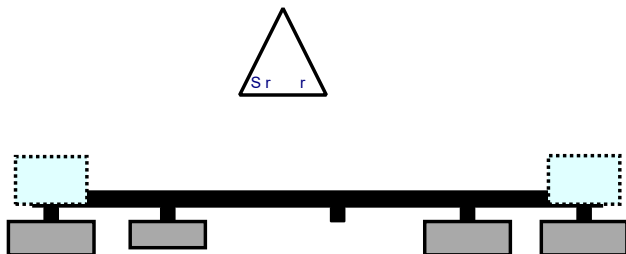
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12 2 2

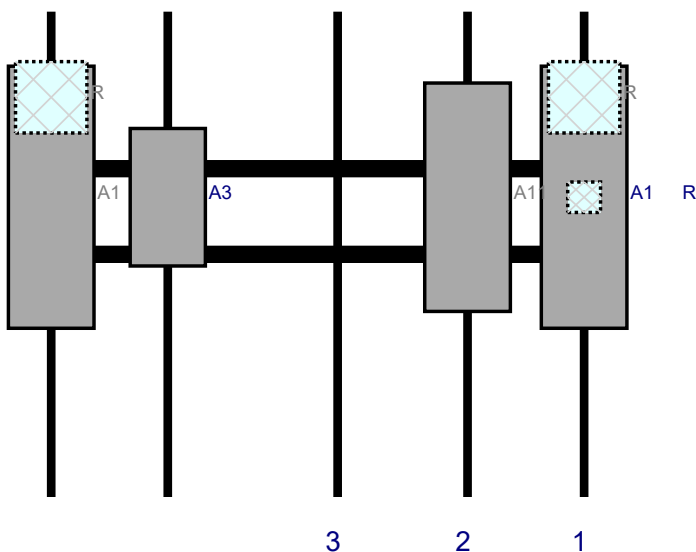


P 3

Plan View



Front View - L Sr r



R	M d	d	D	P	P	A	.A	A	S	d
		r	L	L	P	P	r	T.	O	
A1	A A R3B	.	1.	11	1	r	3			Add d
R	B T DS 3 2	.	.	11	1	B	d 3			Add d
R	R 1d 13A	1	1	11	1	B	d 1			Add d
A11	SB 1D A		1	1.	2	r	3		R	d 12 2 23
A3	MT 13 A	2 .	1 .	2 .		r	3			Add d
A1	A A R3B	.	1.			r	3			Add d
R	R 3 d 2 A	1	1			B	d 1			Add d



MOUNT MODIFICATION DRAWINGS
EXISTING 10.00' T-FRAME

TOWER OWNER: AMERICAN TOWER CORPORATION
TOWER OWNER SITE NUMBER: 414240

CARRIER SITE NAME: BYRAM PARK CT
CARRIER SITE NUMBER: 5000382611
FUZE ID: 16231909

36 RITCH AVE W
GREENWICH, CT 06830
FAIRFIELD COUNTY

LATITUDE: 41.005064° N
LONGITUDE: 73.648312° W



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SCALE: AS SHOWN JOB NUMBER: 20777259

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	01/29/24	ISSUED FOR CONSTRUCTION	MKS	DK

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SITE NAME:

BYRAM PARK CT
5000382611
36 RITCH AVE W
GREENWICH, CT 06830
FAIRFIELD COUNTY

STAMFORD
1055 Washington Boulevard
Stamford, CT 06901
Phone: 203.324.0800
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

TITLE SHEET

ST-1

DESIGN CRITERIA
<u>WIND LOADS</u> BASIC WIND SPEED (3 SECOND GUST), V = 120 MPH EXPOSURE CATEGORY D TOPOGRAPHIC CATEGORY: I TOPOGRAPHIC CONSIDERED: N/A TOPOGRAPHIC METHOD: N/A MEAN BASE ELEVATION (AMSL) = 50.68'
<u>ICE LOADS</u> ICE WIND SPEED (3 SECOND GUST), V = 50 MPH ICE THICKNESS = 1.00 IN
<u>SEISMIC LOADS</u> SEISMIC DESIGN CATEGORY B SHORT TERM MCER GROUND MOTION, S _s = .274 LONG TERM MCER GROUND MOTION, S _l = .059

PROJECT INFORMATION
<u>APPLICANT/LESSEE</u> COMPANY: VERIZON WIRELESS <u>CLIENT REPRESENTATIVE</u> COMPANY: VERIZON WIRELESS <u>PROJECT MANAGER</u> COMPANY: COLLIERS ENGINEERING & DESIGN CONTACT: PETER ALBANO PHONE: 856.797.0412 E-MAIL: PETER.ALBANO@COLLIERSENG.COM
<u>CONTRACTOR PMI REQUIREMENTS</u> PMI LOCATION: HTTPS://PMI.VZWSMART.COM SMART TOOL PROJECT #: 10218076 VZW MDG #: 5000382611 ANALYSIS DATE: 1/29/2024 PMI REQUIREMENTS EMBEDDED WITHIN MOUNT MODIFICATION REPORT

SHEET INDEX
SHEET DESCRIPTION
ST-1 TITLE SHEET
SBOM-1 BILL OF MATERIALS
SGN-1 GENERAL NOTES
SCF-1 CLIMBING FACILITY DETAIL
SS-1 MODIFICATION DETAILS
SS-2 MOUNT PHOTOS
SPECIFICATION SHEETS

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GENERAL NOTES

- THESE MODIFICATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF THE TELECOMMUNICATIONS INDUSTRY STANDARD TIA-222-H. MATERIALS AND SERVICES PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE ABOVE MENTIONED CODES.
- CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE TO EXISTING STRUCTURES. ANY DAMAGE TO EXISTING STRUCTURES AS A RESULT OF THE CONTRACTOR'S WORK OR FROM DAMAGE DUE TO OTHER CAUSES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS BEFORE BEGINNING WORK, ORDERING MATERIAL, AND PREPARING OF SHOP DRAWINGS. ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER. IF THE CONTRACTOR DISCOVERS ANY EXISTING CONDITIONS THAT ARE NOT REPRESENTED ON THESE DRAWINGS, OR ANY CONDITIONS THAT WOULD INTERFERE WITH THE INSTALLATION OF THE MODIFICATIONS, NOTIFY THE ENGINEER IMMEDIATELY.
- IT IS ASSUMED THAT ANY STRUCTURAL MODIFICATION WORK SPECIFIED ON THESE PLANS WILL BE ACCOMPLISHED BY KNOWLEDGEABLE WORKMEN WITH TOWER CONSTRUCTION EXPERIENCE.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES, AND PROCEDURES.
- ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN AND SHALL MEET ANSI/TIA-322 (LATEST EDITION), OSHA, AND GENERAL INDUSTRY STANDARDS. ALL RIGGING PLANS SHALL ADHERE TO ANSI/TIA-322 (LATEST EDITION) INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PROGRAMS IN ACCORDANCE WITH APPLICABLE SAFETY CODES.
- WORK SHALL ONLY BE PERFORMED DURING CALM DRY DAYS (WINDS LESS THAN 30-MPH). THE STRUCTURE SHOWN ON THE DRAWINGS IS STRUCTURALLY SOUND ONLY IN THE COMPLETED FORM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STRENGTH AND STABILITY OF THE STRUCTURE DURING ERECTION. CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT, SHORING, BRACING AND ANY OTHER STRUCTURAL SYSTEMS AS REQUIRED TO RESIST ALL FORCES THAT MAY OCCUR DURING HANDLING AND ERECTION UNTIL THE STRUCTURE IS FULLY COMPLETED. TEMPORARY SUPPORTS, BRACING AND OTHER STRUCTURAL SYSTEMS REQUIRED DURING CONSTRUCTION SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER THEIR USE.
- ALL INSTALLATIONS PERFORMED ON THIS STRUCTURE SHALL BE COMPLETED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF THE STANDARD FOR INSTALLATION, ALTERATION AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS, ANSI/TIA-322.
- CONTRACTOR SHALL SECURE SITE BACK TO EXISTING CONDITION UNDER SUPERVISION OF OWNER. ALL FENCE, STONE, GEOTEXTILE, GROUNDING, AND SURROUNDING GRADE SHALL BE REPLACED AND REPAIRED AS REQUIRED TO ACHIEVE OWNER APPROVAL. POSITIVE DRAINAGE AWAY FROM TOWER SITE SHALL BE MAINTAINED.
- CONNECTIONS BETWEEN ITEMS SUPPORTED BY THE STRUCTURE AND THE STRUCTURE NOT SPECIFICALLY DETAILED IN THE CONTRACT DOCUMENTS ARE THE RESPONSIBILITY OF THE CONTRACTOR. SUCH CONNECTIONS SHALL BE DESIGNED, COORDINATED AND INSPECTED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF THE PROJECT. SUBMIT SIGNED AND SEALED CALCULATIONS DURING SHOP DRAWING REVIEW.
- DO NOT SCALE DRAWINGS.
- DO NOT USE THESE DRAWINGS FOR ANY OTHER SITE.
- ALL MATERIAL UTILIZED FOR THIS PROJECT MUST BE NEW AND FREE OF ANY DEFECTS. ANY MATERIAL SUBSTITUTIONS, INCLUDING BUT NOT LIMITED TO ALTERED SIZE AND/OR STRENGTHS, MUST BE APPROVED BY THE OWNER AND ENGINEER IN WRITING.
- THE MOUNT UNDER NO CIRCUMSTANCES SHOULD BE USED AS A TIE OFF POINT.

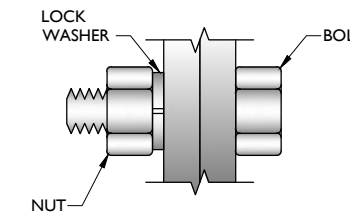
STRUCTURAL STEEL

- DESIGN, DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING PUBLICATIONS EXCEPT AS SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS.
 - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION (15TH EDITION)
 - SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS
 - AISC CODE OF STANDARD PRACTICE
- STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING UNLESS OTHERWISE SHOWN:

CHANNELS, ANGLES, PLATES, ETC.	ASTM A36 (GR 36)
STEEL PIPE	ASTM A53 (GR 35)
BOLTS	ASTM A325
NUTS	ASTM A563
LOCK WASHERS	LOCKING STRUCTURAL GRADE
- ALL SUBSTITUTIONS PROPOSED BY THE CONTRACTOR SHALL BE APPROVED IN WRITING BY THE ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER FOR VERIFYING THE SUBSTITUTE IS SUITABLE FOR USE AND MEETS ORIGINAL DESIGN CRITERIA. DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT, SHALL BE NOTED. ESTIMATES OF COSTS/CREDITS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING RE-DESIGN COSTS AND COSTS TO SUB-CONTRACTORS) SHALL BE PROVIDED TO THE ENGINEER. CONTRACTOR SHALL PROVIDE ADDITIONAL DOCUMENTATION AND/OR SPECIFICATIONS TO THE ENGINEER AS REQUESTED.
- PROVIDE STRUCTURAL STEEL SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
 - SUBMIT SHOP DRAWINGS TO
PETER.ALBANO@COLLIERSENG.COM
 - PROVIDE COLLIERS ENGINEERING & DESIGN PROJECT # AND COLLIERS ENGINEERING & DESIGN PROJECT ENGINEER CONTACT IN THE BODY OF THE EMAIL.
- DRILL NO HOLES IN ANY NEW OR EXISTING STRUCTURAL STEEL MEMBERS OTHER THAN THOSE SHOWN ON STRUCTURAL DRAWINGS WITHOUT THE APPROVAL OF THE ENGINEER OF RECORD.
- GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
- ALL NEW STEEL SHALL BE HOT BE DIPPED GALVANIZED FOR FULL WEATHER PROTECTION. IN ADDITION ALL NEW STEEL SHALL BE PAINTED TO MATCH EXISTING STEEL. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
- ALL BOLT ASSEMBLIES FOR STRUCTURAL MEMBERS REPRESENTED IN THIS DRAWING REQUIRE LOCKING DEVICES TO BE INSTALLED IN ACCORDANCE WITH TIA-222-H SECTION 4.9.2 REQUIREMENTS.
- WHERE CONNECTIONS ARE NOT FULLY DETAILED ON THESE DRAWINGS, FABRICATOR SHALL DESIGN CONNECTIONS TO RESIST LOADS AND FORCES WHERE SHOWN ON DRAWINGS AND AS OUTLINED IN SPECIFICATIONS.
- FOR MEMBERS BEING REPLACED, PROVIDE NEW BOLTS AND MATCH EXISTING SIZE AND GRADE. MAINTAIN AISC REQUIREMENTS FOR MINIMUM BOLT DISTANCE AND SPACING.
- ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH SUCH THAT THE END OF THE BOLT IS AT LEAST FLUSH WITH THE FACE OF THE NUT. IT IS NOT PERMITTED FOR THE BOLT END TO BE BELOW THE FACE OF THE NUT AFTER TIGHTENING IS COMPLETED.
- GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
- ALL NEW STEEL SHALL BE HOT BE DIPPED GALVANIZED FOR FULL WEATHER PROTECTION. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
- ALL EXISTING PAINTED/GALVANIZED SURFACES DAMAGED DURING REHAB INCLUDING AREAS UNDER STIFFENER PLATES SHALL BE WIRE BRUSHED CLEAN, REPAIRED BY COLD GALVANIZING (ZINC COTE, OR EOR APPROVED EQUAL), AND REPAINTED TO MATCH THE EXISTING FINISH (IF APPLICABLE).
- ALL HOLES IN STEEL MEMBERS SHALL BE SIZED 1/16" LARGER THAN THE BOLT DIAMETER. STANDARD HOLES SHALL BE USED UNLESS NOTED OTHERWISE.

BOLT SCHEDULE (IN.)				
BOLT DIAMETER	STANDARD HOLE	SHORT SLOT	MIN. EDGE DISTANCE	SPACING
1/2	9/16	9/16 x 1 1/16	7/8	1 1/2
5/8	1 1/16	1 1/16 x 7/8	1 1/8	1 7/8
3/4	1 3/16	1 3/16 x 1	1 1/4	2 1/4
7/8	1 5/16	1 5/16 x 1 1/8	1 1/2	2 5/8
1	1 7/16	1 7/16 x 1 5/16	1 3/4	3

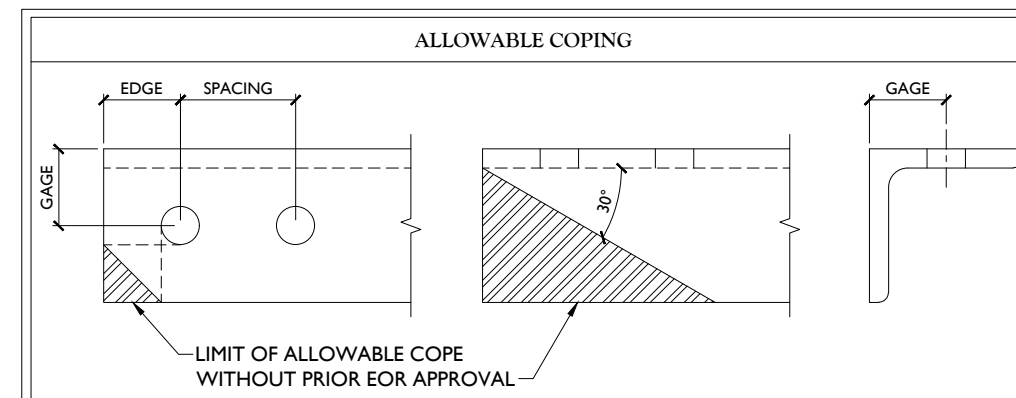
WORKABLE GAGES (IN.)	
LEG	GAGE
4	2 1/2
3 1/2	2
3	1 3/4
2 1/2	1 3/8
2	1 1/8



TYP. BOLT ASSEMBLY

NOTES:

- ALL DIMENSIONS REPRESENTED IN THE ABOVE TABLES ARE AISC MINIMUM REQUIREMENTS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ENGINEER IF DISTANCES ARE LESS THAN THOSE PROVIDED.
- THE DIMENSIONS PROVIDED ARE MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS OF PROPOSED MEMBERS WITHIN THESE DRAWINGS MAY VARY FROM THE AISC MINIMUM REQUIREMENTS.
- SHORT SLOT HOLES SHALL ONLY BE USED WHEN DEPICTED IN THE DRAWINGS
- MATCH EXISTING GAGES WHEN APPLICABLE, UNLESS MINIMUM EDGE DISTANCES ARE COMPROMISED.

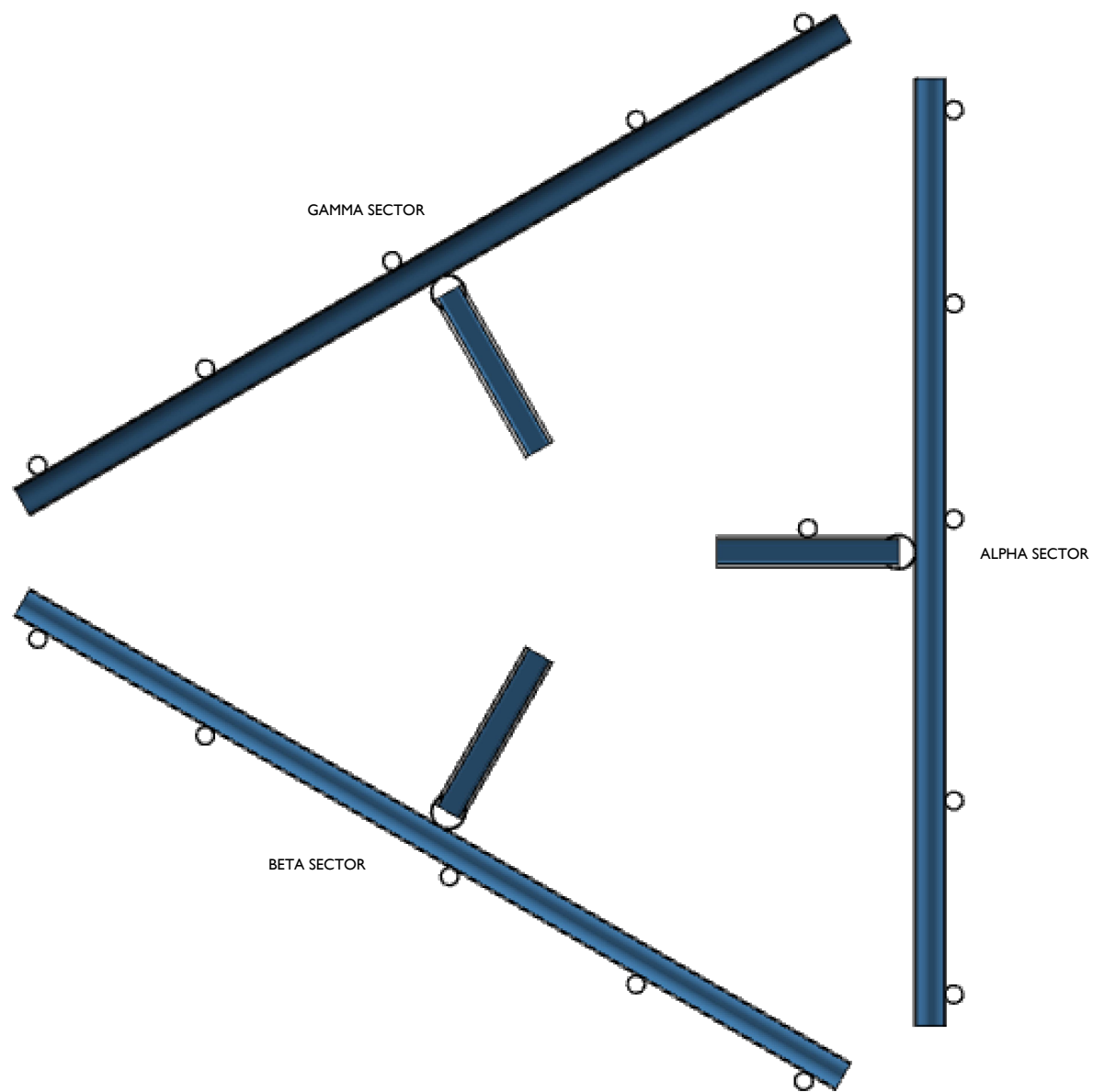


SCALE: AS SHOWN	JOB NUMBER: 20777259			
DATE: 01/29/24	ISSUED FOR CONSTRUCTION			
REV	DATE	DESCRIPTION	MKS	DK
			DRAWN BY	CHECKED BY

SITE NAME:

BYRAM PARK CT
5000382611
36 RITCH AVE W
GREENWICH, CT 06830
FAIRFIELD COUNTY

GENERAL NOTES



STRUCTURAL NOTES:

1. PER THE MOUNT MAPPING COMPLETED BY TOWER ENGINEERING PROFESSIONALS ON 10/21/2020, NO SAFETY CLIMB OR CLIMBING FACILITIES UP TO THE VERIZON MOUNT ELEVATION (56'-0") WERE OBSERVED. COLLIERS ENGINEERING & DESIGN DOES NOT WARRANT THIS INFORMATION.
2. INSTALL SHALL NOT CAUSE HARM TO THE STRUCTURE, CLIMBING FACILITY, SAFETY CLIMB, OR ANY SYSTEM INSTALLED ON THE STRUCTURE. TIMELY NOTICE AND DOCUMENTATION SHALL BE PROVIDED BY CONTRACTORS TO THE EOR (OF STRUCTURAL DESIGN) IF AN OBSTRUCTION WAS REQUIRED TO MEET THE RF SYSTEM DESIGN REQUIREMENTS AND PERFORMANCES.
3. CONTRACTOR SHALL GRIND OFF BRANCH RECEPTACLES AS NEEDED TO INSTALL PROPOSED MODIFICATION COLLARS. CONTRACTOR SHALL MINIMIZE THE QUANTITY OF RECEPTACLES BEING REMOVED, ONLY REMOVE RECEPTACLES DIRECTLY INTERFERING WITH PROPOSED COLLAR LOCATION.
4. COAX IS FLAMMABLE AND CAN CATCH FIRE IF PROPER PRECAUTIONS ARE NOT MADE TO SHIELD COAX FROM GRINDING PROCEDURES. ALL COAX SHALL BE SHIELDED AT AND BELOW EACH GRINDING PROCEDURE AND ELEVATION. IN ADDITION, COAX SHALL BE PUSHED AWAY FROM TOWER FACE WHERE WELDING OR GRINDING IS BEING PERFORMED. INSTALL 3000° (NFPA701) FIRE BLANKET AROUND ALL COAX.

NOTE:
NO EXISTING CLIMBING FACILITY.



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SITE NAME:

BYRAM PARK CT
5000382611
36 RITCH AVE W
GREENWICH, CT 06830
FAIRFIELD COUNTY

LEGEND:

- PROPOSED
- RELOCATED
- EXISTING

MOUNT MODIFICATION SCHEDULE

NO.	ELEVATION	QUANTITY	DESCRIPTION	NOTES
1	56'-0"	3	PROPOSED T-ARM KIT (PART #: VZWSMART-SFK4)	CONTRACTOR TO VERIFY THE LENGTH REQUIRED AND TRIM AS NECESSARY IN ACCORDANCE WITH THE 'STRUCTURAL STEEL' NOTES ON SHEET SGN- I. CONNECT OTHER END OF T-ARM KIT TO MONOPOLE COLLAR MOUNT ASSEMBLY (PART #: VZWSMART-PLK7). SEE GENERAL NOTE B.
2		3	PROPOSED 120" LONG, PIPE 3 SCH40 FACE HORIZONTAL	CONNECT NEW HORIZONTAL TO ALL EXISTING VERTICAL MOUNT PIPES WITH CROSSOVER PLATES (PART #: VZWSMART-MSK2).
3		1	PROPOSED 36" LONG, PIPE 2 SCH40 OVP PIPE	CONNECT NEW OVP PIPE TO EXISTING STANDOFF HORIZONTAL WITH BACK TO BACK CROSSOVER PLATE (VZWSMART-MSK6). ALPHA SECTOR ONLY.

GENERAL NOTES:

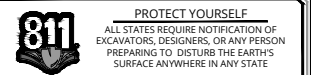
- A. CONTRACTOR SHALL VERIFY THAT NEW & EXISTING STEEL IS FREE OF CORROSION. VISIBLE MINOR CORROSION SHALL BE WIRE BRUSHED CLEAN AND TREATED WITH COLD GALVANIZATION. REPORT ANY SIGNIFICANT CORROSION TO EOR
- B. THREADED ROD FROM PROPOSED KITS SHALL BE TRIMMED TO EXTEND NO MORE THAN 3" BEYOND THE LOCK NUT. TREAT ALL CUT ENDS WITH (2) COATS OF COLD GALVANIZATION (ZINC KOTE, OR EOR APPROVED EQUAL).
- C. MOUNT MEMBERS NOT SHOWN FOR CLARITY U.N.O.



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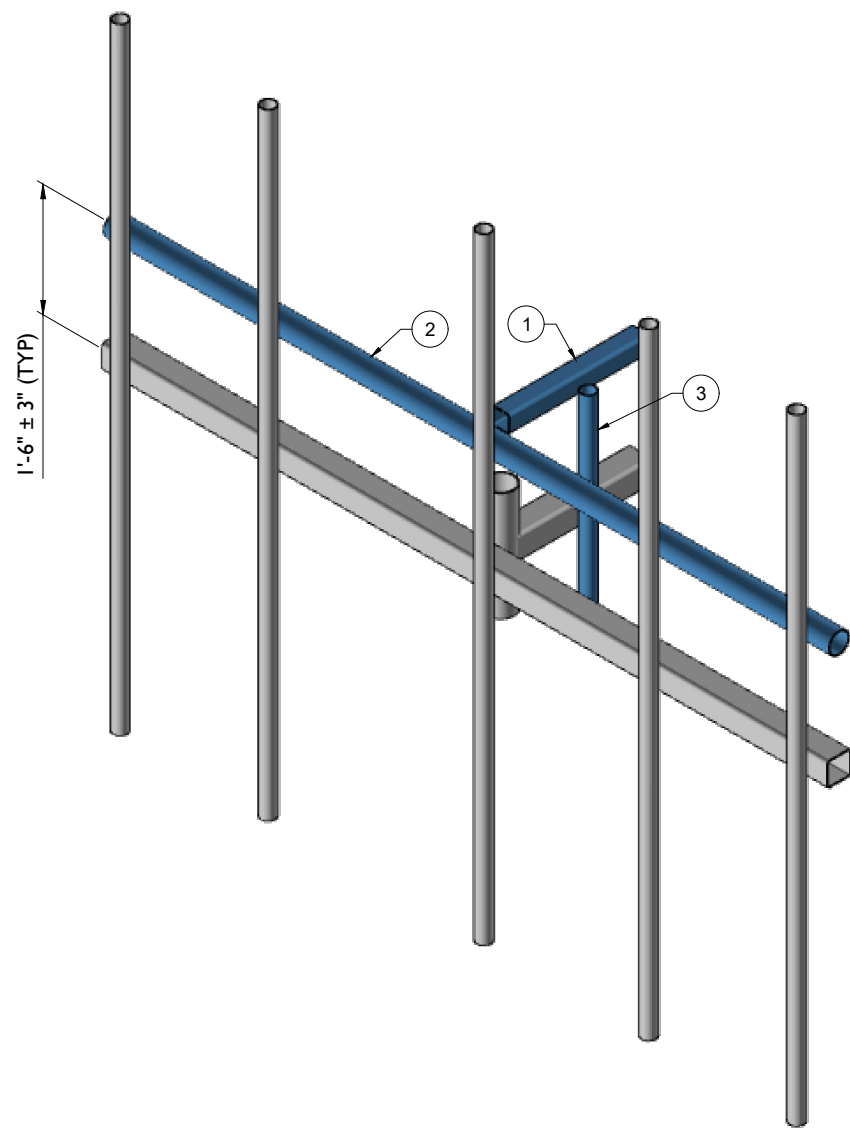
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GREENWICH, CT 06830
FAIRFIELD COUNTY

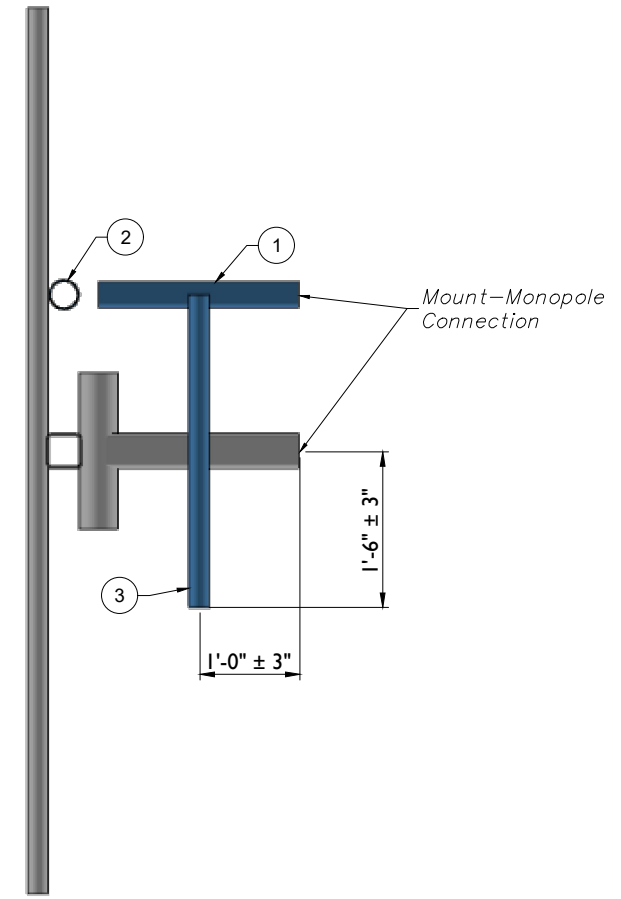
STAMFORD
1055 Washington Boulevard
Stamford, CT 06901
Phone: 203.324.0800
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

MODIFICATION DETAILS

SHEET NUMBER: **SS-1**



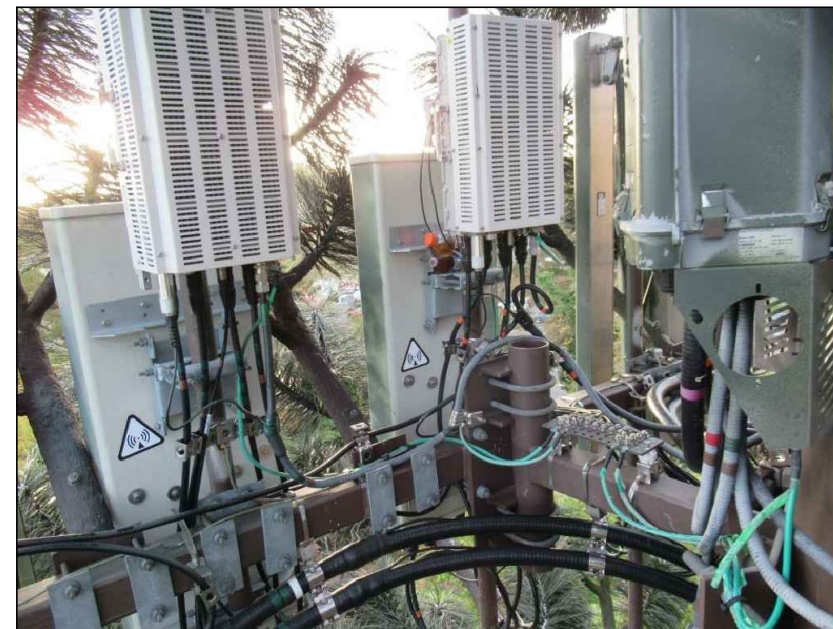
1 PROPOSED ISOMETRIC VIEW (SIM. ALL SECTORS)
SCALE : N.T.S.



2 PROPOSED SIDE ELEVATION VIEW (SIM. ALL SECTORS)
SCALE : N.T.S.



MOUNT PHOTO 1



MOUNT PHOTO 2



MOUNT PHOTO 3



MOUNT PHOTO 4



811 PROTECT YOURSELF
 ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
 Know what's below. Call before you dig.
 FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE: AS SHOWN JOB NUMBER: 20777259

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	01/29/24	ISSUED FOR CONSTRUCTION	MKS	DK

COLLIERS ENGINEERING & DESIGN CT, P.C.
 C.T. JPC-0000131

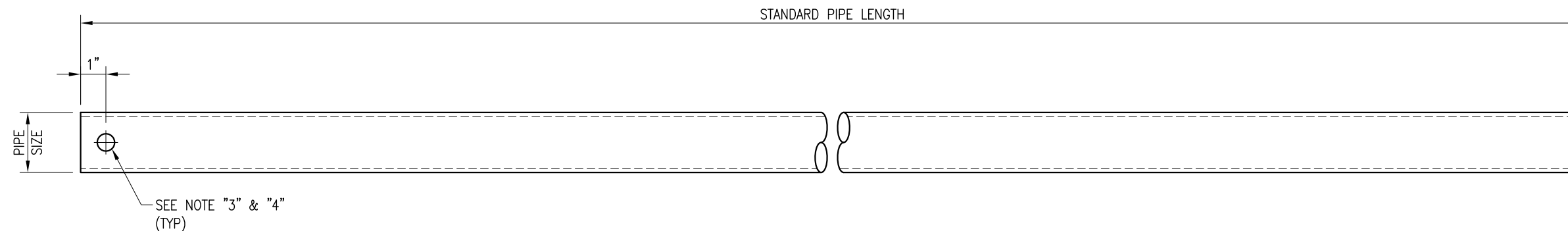
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF THE RESPONSIBLE LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SITE NAME:
 BYRAM PARK CT
 5000382611
 36 RITCH AVE W
 GREENWICH, CT 06830
 FAIRFIELD COUNTY

Colliers Engineering & Design
 STAMFORD
 1055 Washington Boulevard
 Stamford, CT 06901
 Phone: 203.324.0800
 COLLIERS ENGINEERING & DESIGN CT, P.C.
 DOING BUSINESS AS MASER CONSULTING

SHEET TITLE:
 MOUNT PHOTOS

SHEET NUMBER:
 SS-2



VZWSMART Standard Pipe		
VZWSMART Number	Size	Length
P40-238X048	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	48"
P40-238X072	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	72"
P40-238X096	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	96"
P40-238X120	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	120"
P40-238X126	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	126"
P40-238X150	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	150"
P40-238X174	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	174"
P40-278X048	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	48"
P40-278X072	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	72"
P40-278X096	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	96"
P40-278X120	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	120"
P40-278X126	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	126"
P40-278X150	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	150"
P40-278X174	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	174"
P40-312X048	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	48"
P40-312X072	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	72"
P40-312X126	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	126"
P40-312X150	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	150"
P40-312X174	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	174"

NOTE:
 APPROVED SMART KIT VENDORS ARE ALLOWED TO SUBSTITUTE AT THEIR DISCRETION
 PIPES LISTED ON THIS PAGE FOR CUSTOM LENGTH COMPONENTS OF MATCHING SIZE.
 SUBSTITUTIONS SHALL MEET THE ORIGINAL STRUCTURAL INTENT.

- NOTES:**
1. ALL PIPE GRADE A53-B OR BETTER.
 2. HOT-DIPPED GALVANIZED PER ASTM A123.
 3. ALL HOLES ARE 11/16" DIA. U.N.O
 4. HOLES MAY OR MAY NOT BE PRESENT, DEPEND UPON MANUFACTURE DISCRETION.
 5. ALL FIELD CUT AND DRILLED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATS OF ZINGA OR ZINC COTE PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

FOR REFERENCE
 ONLY

DRAWN BY: BT CHECKED BY: HMA/KW

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	BT	08/04/21

SHEET TITLE:

VZWSMART
 STANDARD PIPE

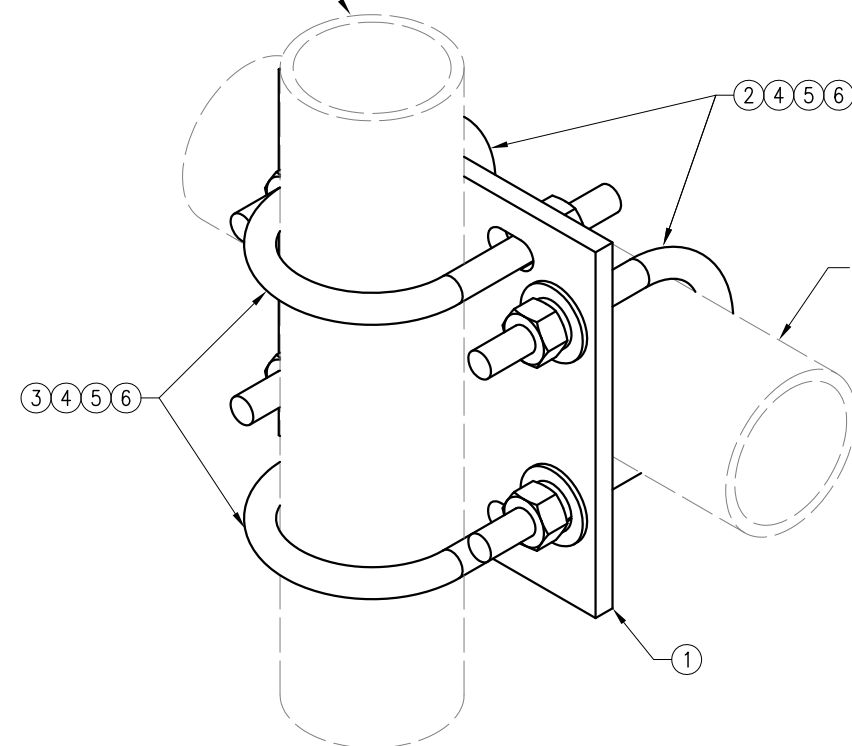
SHEET NUMBER: REV #:

VZWSMART-PIPE

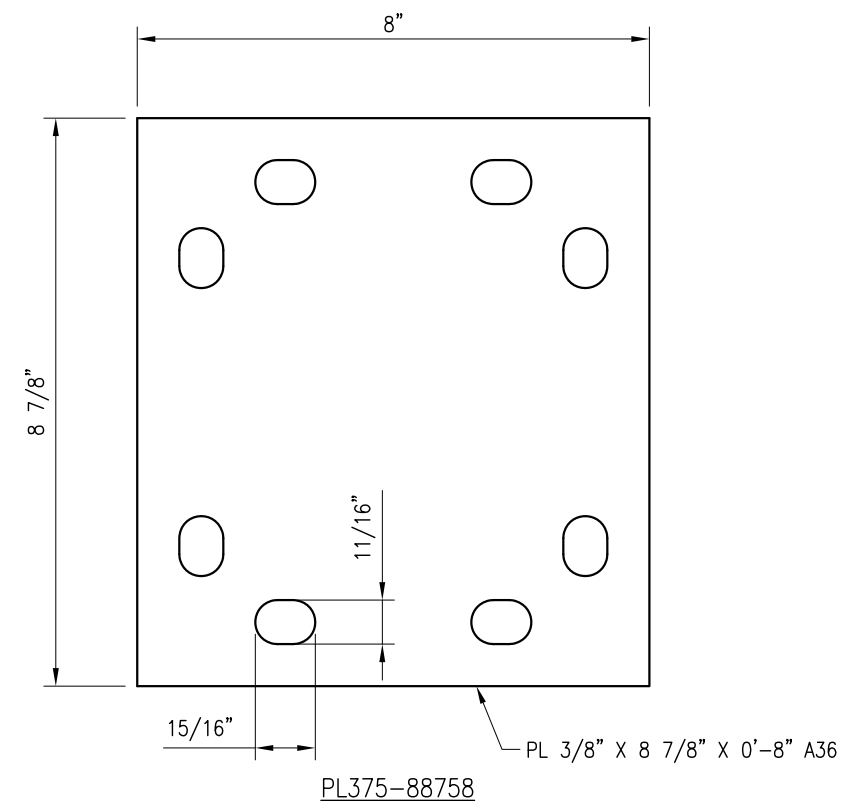
0



FITS 2.375" O.D. AND 2.875" O.D.
 VERTICAL PIPE.
 (NOT INCLUDED IN THIS KIT)



FITS 3.5" O.D. AND 4" O.D.
 HORIZONTAL PIPE.
 (NOT INCLUDED IN THIS KIT)



FOR REFERENCE
 ONLY

DRAWN BY: H.R. CHECKED BY: HMA

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	H.R.	05/08/20

SHEET TITLE:

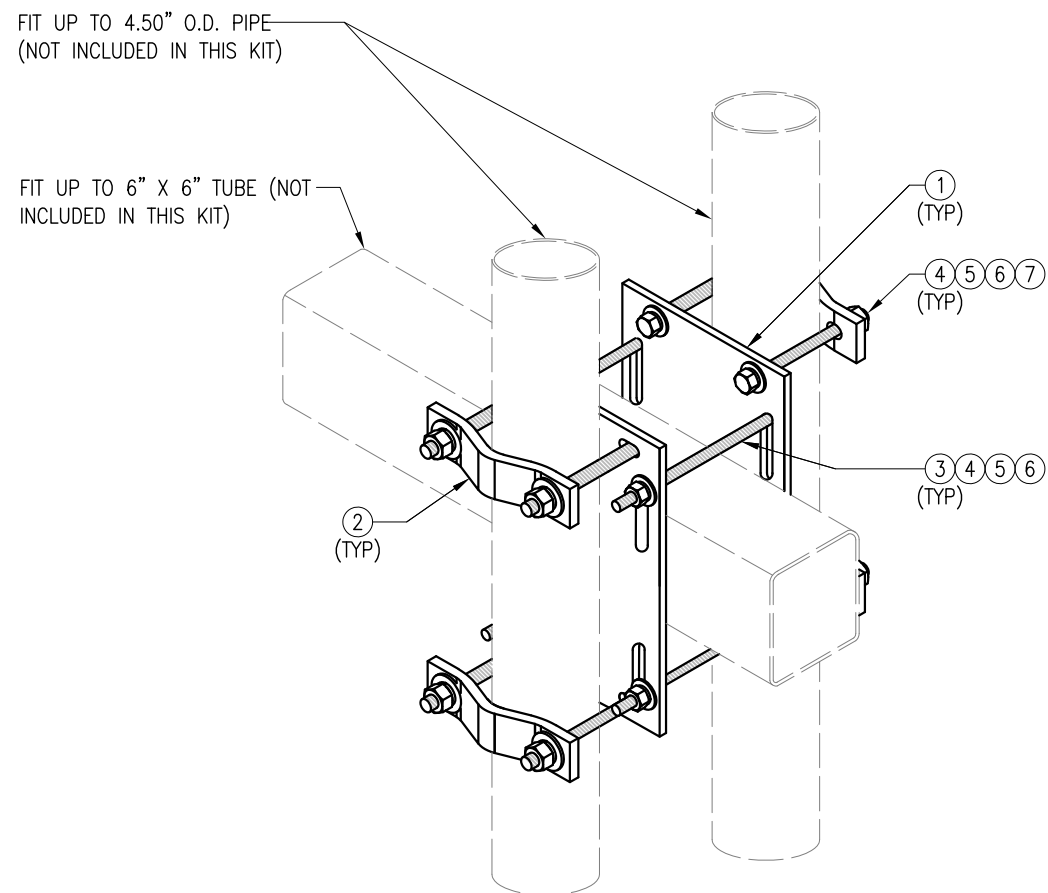
VZSMART-MSK2
 CROSSOVER PLATE

SHEET NUMBER: REV #:

VZSMART-MSK2 0

NOTES:
 1. HOT-DIPPED GALVANIZED PER ASTM A123.

VZSMART-MSK2 (CROSSOVER PLATE)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	1	PL375-88758	PL 3/8" X 8 3/4" X 0'-8" A36	MSK2-F1	8
2	2	MS02-625-4125-600	RU-BOLT 5/8" X 4 1/8" I.W. X 6" I.L. A36 (OR EQUIV.)	RBC-1	3
3	2	MS02-625-300-500	RU-BOLT 5/8" X 3" I.W. X 5" I.L. A36 (OR EQUIV.)	RBC-1	3
4	8	FW-625	5/8" HDG USS FLAT WASHER	---	1
5	8	LW-625	5/8" HDG LOCK WASHER	---	0
6	8	NUT-625	5/8" HDG HEX NUT	---	1
GALVANIZED WT					15



ISOMETRIC VIEW
 BACK TO BACK CROSSOVER

FOR REFERENCE
 ONLY

DRAWN BY: SK CHECKED BY: BT/KW

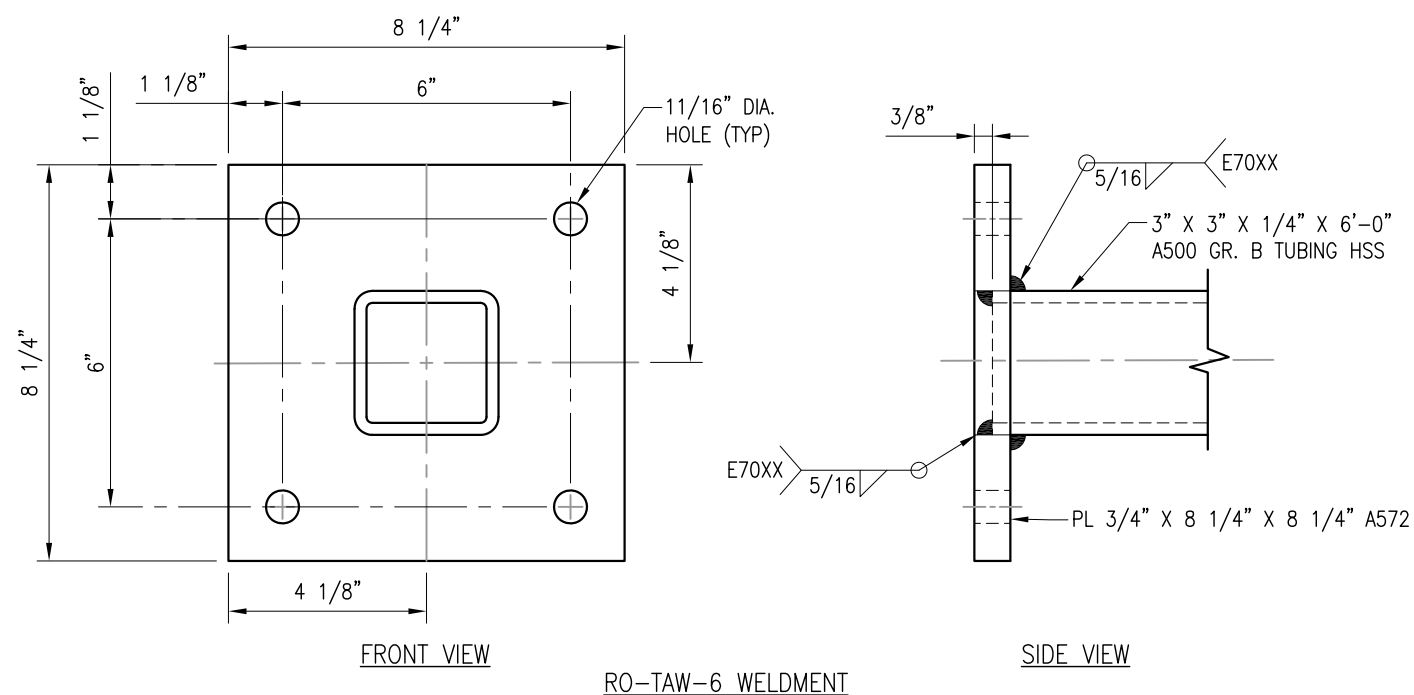
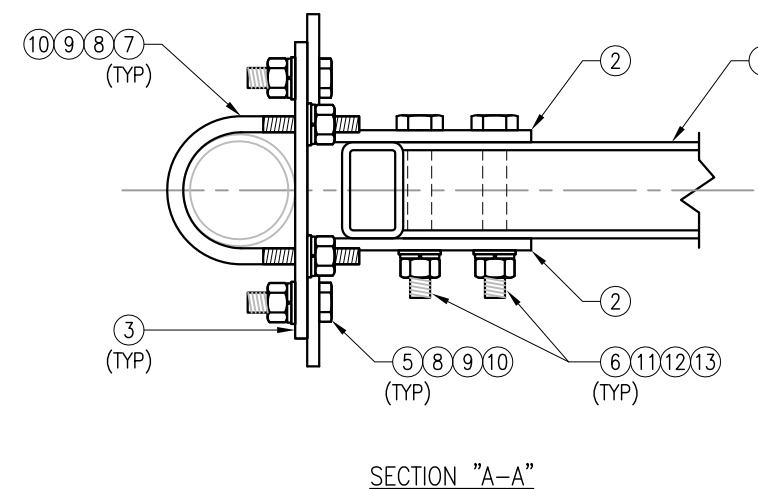
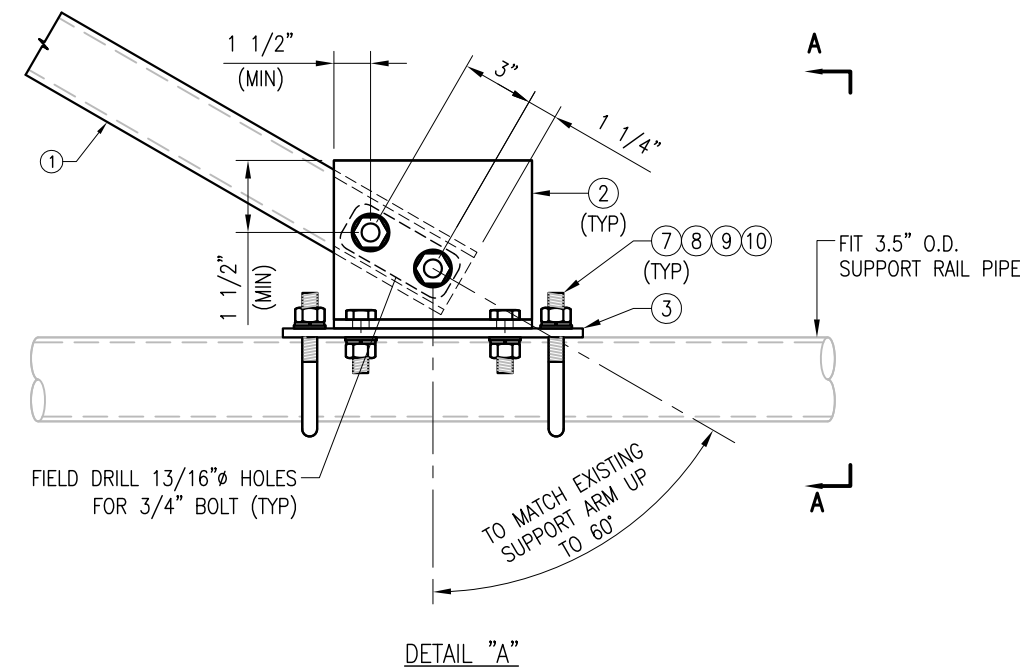
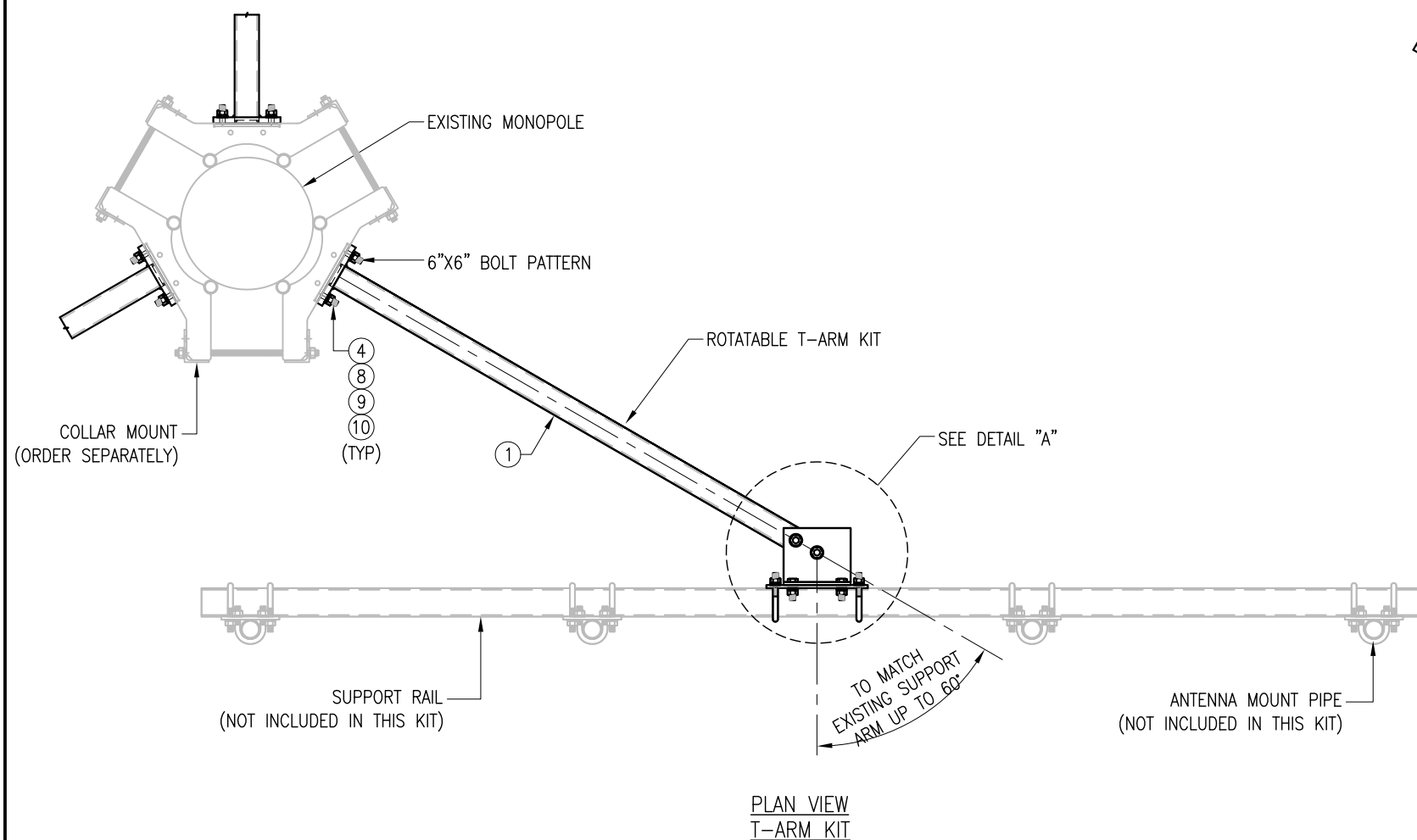
REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	SK	05/08/20
△			
△			
△			
△			

SHEET TITLE:
 VZSMART-MSK6
 BACK TO BACK
 CROSSOVER

SHEET NUMBER: VZSMART-MSK6
 REV #: 0

VZSMART-MSK6 (VZSMART-MSK6 - BACK TO BACK CROSSOVER)						
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT	
1	2	PL375-8512	PL 3/8" X 8 1/2" X 1'-0" A36	MSK6-F2	20.7	
2	4	VCP	PL 1/2" X 2" X 8 5/8" A36 BENT PLATE	MSK6-F1	9.6	
3	4	---	THREADED ROD 5/8" DIA. X 10" F1554-36 HDG	---	---	
4	16	NUT-625	5/8" HDG HEX NUT	---	2	
5	16	FW-625	5/8" HDG USS FLAT WASHER	---	1	
6	16	LW-625	5/8" HDG LOCK WASHER	---	0	
7	8	---	BOLT 5/8" X 6" SAE GRADE 5 ALL THREAD	---	1	
					GALVANIZED WT	34

NOTES:
 1. HOT-DIPPED GALVANIZED PER ASTM A123.



VZWSMART-SFK4 (T-ARM KIT)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	1	RO-TAW-6	T-ARM WELDMENT	SFK4-F1	71
2	2	BP825-94375	PL 3/8" X 8 1/4" X 9 7/16" A36 BEND PLATE	SFK4-F2	17
3	1	PL375-92512025	PL 3/8" X 9 1/4" X 1'-0 1/2" A36	SFK4-F3	12
4	4	---	BOLT 5/8" X 2 1/4" A325	---	0
5	4	---	BOLT 5/8" X 2" A325	---	0
6	2	---	BOLT 3/4" X 5 1/4" A325	---	0
7	2	MS02-625-3625-600	RU-BOLT 5/8" X 3 5/8" I.W. X 6" I.L. A36 (OR EQUIV.)	RBC-1	3
8	12	FW-625	5/8" HDG USS FLAT WASHER	---	1
9	12	LW-625	5/8" HDG LOCK WASHER	---	0
10	12	NUT-625	5/8" HDG HEX NUT	---	1
11	2	FW-75	3/4" HDG USS FLAT WASHER	---	0
12	2	LW-75	3/4" HDG LOCK WASHER	---	0
13	2	NUT-75	3/4" HDG HEX NUT	---	0
GALVANIZED WT					106

NOTES:
1. HOT-DIPPED GALVANIZED PER ASTM A123.

FOR REFERENCE ONLY

DRAWN BY: BT CHECKED BY: HMA/KW

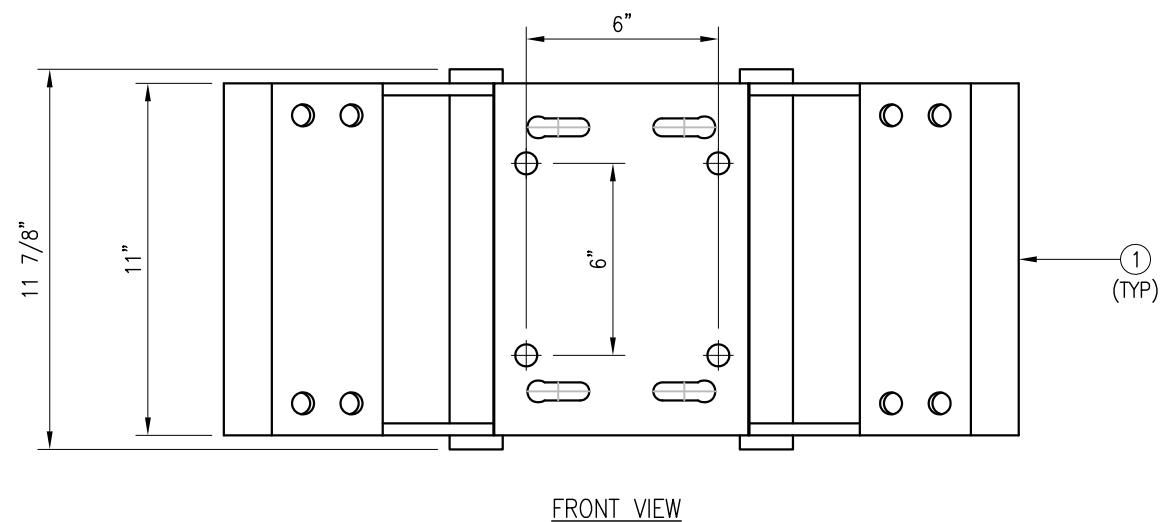
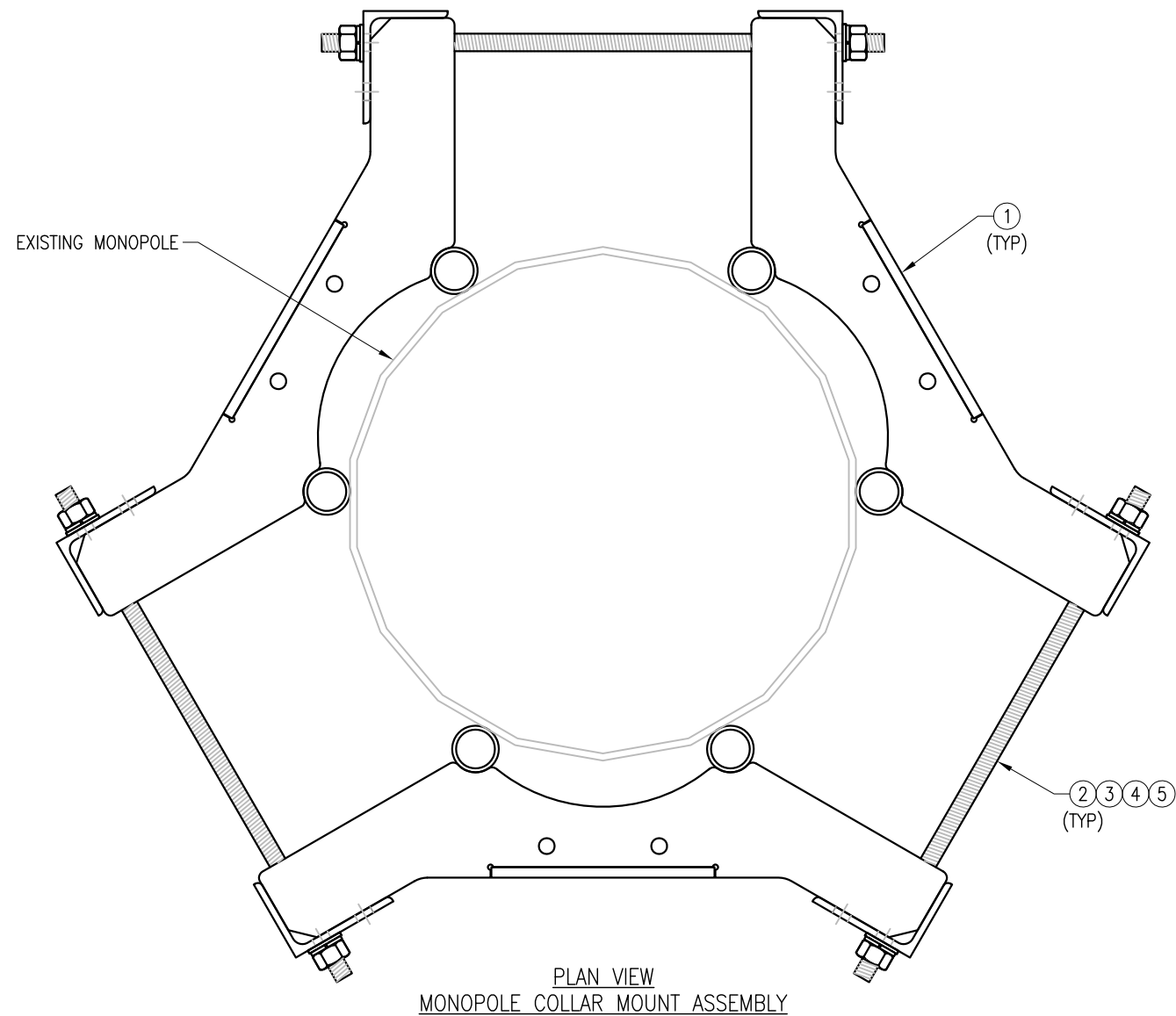
REV.	DESCRIPTION	BY	DATE
△	FIRST ISSUE	BT	05/08/20
△			
△			
△			

SHEET TITLE:

VZWSMART-SFK4
T-ARM KIT

SHEET NUMBER: REV #:

VZWSMART-SFK4 0



- NOTES:**
 1. FIT 12" TO 45" DIA MONOPOLE.
 2. HOT-DIPPED GALVANIZED PER ASTM A123.

VZSMART-PLK7 (MONOPOLE COLLAR MOUNT ASSEMBLY)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	3	CM-1245	COLLAR MOUNT ASSEMBLY	PLK7-F1	147
2	6	---	THREADED ROD 5/8" X 4'-0" A193-B7	---	
3	12	FW-625	5/8" HDG USS FLAT WASHER	---	1
4	12	LW-625	5/8" HDG LOCK WASHER	---	0
5	12	NUT-625	5/8" HDG HEX NUT	---	1
GALVANIZED WT					150

FOR REFERENCE ONLY

DRAWN BY: BT CHECKED BY: HMA/KW

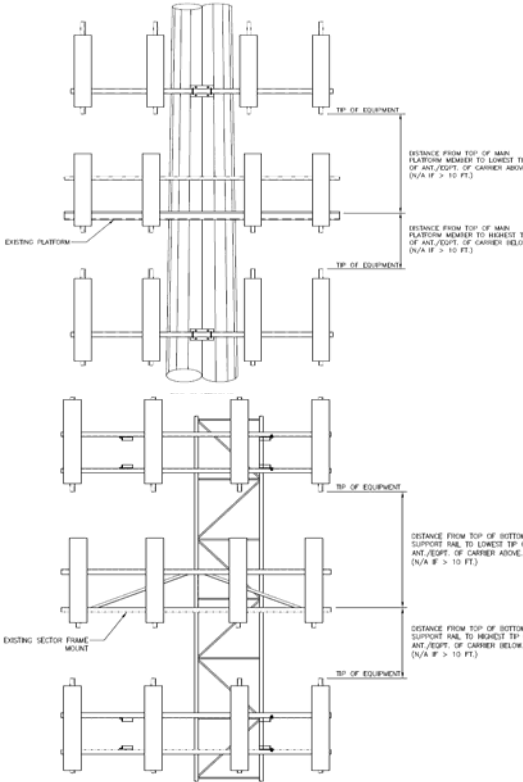
REV.	DESCRIPTION	BY	DATE
△	FIRST ISSUE	BT	05/11/20
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△			
△			

SHEET TITLE:
 VZSMART-PLK7
 MONOPOLE COLLAR
 MOUNT ASSEMBLY

SHEET NUMBER: VZSMART-PLK7 REV #: 0



Mount Azimuth (Degree) for Each Sector				Tower Leg Azimuth (Degree) for Each Sector				Sector B																
Sector A:	0.00	Deg	Leg A:		Deg	Sector B:	120.00	Deg	Leg B:		Deg	Sector C:	240.00	Deg	Leg C:		Deg	Sector D:		Deg	Leg D:		Deg	
Ant _{1a}						Ant _{1b}	LPA-80063-6CF-EDIN	14.96	13.07	70.87	1)FH 1-5/8	58	39.00	14.00	118.00	61-63								
Ant _{1c}						Ant _{2a}	B66a RRH 4x45	11.80	10.30	28.93	from Ray	60.8333	5.00	-6.00		66								
Ant _{2b}						Ant _{2c}	SBNHH-1D45A	17.99	7.01	48.03	from Ray	57.5833	44.00	9.00	117.00	64-65								
Ant _{3a}						Ant _{3b}	B13 RRH 4x30	12.00	8.50	21.50	from Ray	60.75	6.00	-6.00		70-71								
Ant _{3c}						Ant _{4a}	SBNHH-1D45A	17.99	7.01	48.03	from Ray	57.5833	44.00	9.00	118.00	67-69								
Ant _{4b}						Ant _{4c}	BXA-171063-12BF-ED	4.10	6.10	72.50	2)FH 1-5/8	58	39.00	8.00	118.00	72-73								
Ant _{5a}						Ant _{5b}	LPA-80063-6CF-EDIN	14.96	13.07	70.87	1)FH 1-5/8	58	39.00	14.00	117.00	74-75								
Ant _{5c}						Ant on Standoff																		
Ant on Standoff						Ant on Standoff																		
Ant on Tower						Ant on Tower	RRFDC-3315-PF-48 (N	11.88	8.50	21.50	Hybrid 1.5	60				77-78								
Ant on Tower						Sector C																		
Ant _{1a}						Ant _{1b}	LPA-80063-6CF-EDIN	14.96	13.07	70.87	1)FH 1-5/8	58	39.00	14.00	241.00	79-81								
Ant _{1c}						Ant _{2a}	B66a RRH 4x45	11.80	10.30	28.93	from Ray	60.8333	5.00	-6.00		84-85								
Ant _{2b}						Ant _{2c}	SBNHH-1D45A	17.99	7.01	48.03	from Ray	57.5833	44.00	9.00	241.00	82-83								
Ant _{3a}						Ant _{3b}	B13 RRH 4x30	12.00	8.50	21.50	from Ray	60.75	6.00	-6.00		88-89								
Ant _{3c}						Ant _{4a}	SBNHH-1D45A	17.99	7.01	48.03	from Ray	57.5833	44.00	9.00	241.00	86-87								
Ant _{4b}						Ant _{4c}	BXA-171063-12BF-ED	4.10	6.10	72.50	2)FH 1-5/8	58	39.00	8.00	241.00	90-91								
Ant _{5a}						Ant _{5b}	LPA-80063-6CF-EDIN	14.96	13.07	70.87	1)FH 1-5/8	58	39.00	14.00	241.00	92-93								
Ant _{5c}						Ant on Standoff																		
Ant on Standoff						Ant on Standoff																		
Ant on Tower						Ant on Tower																		
Ant on Tower						Sector D																		
Ant _{1a}						Ant _{1b}																		
Ant _{1c}						Ant _{2a}																		
Ant _{2b}						Ant _{2c}																		
Ant _{3a}						Ant _{3b}																		
Ant _{3c}						Ant _{4a}																		
Ant _{4b}						Ant _{4c}																		
Ant _{5a}						Ant _{5b}																		
Ant _{5c}						Ant on Standoff																		
Ant on Standoff						Ant on Standoff																		
Ant on Tower						Ant on Tower																		
Ant on Tower																								



Observed Safety and Structural Issues During the Mount Mapping		
Issue #	Description of Issue	Photo #

1	(6) Unused (cut) FH 1-5/8 at mount	
2		
3		
4		
5		
6		
7		
8		

Mapping Notes

1. Please report any visible structural or safety issues observed on the antenna mounts (Damaged members, loose connections, tilting mounts, safety climb issues, etc.)
2. If the thickness of the existing pipes or tubing can't be obtained from a general tool (such as Caliper), please use an ultrasonic measurement tool (thickness gauge) to measure the thickness.
3. Please create all required detail sketches of the mounts and insert them into the "Sketches" tab.
4. Please measure and enter the bolt sizes and types under the Members Box in the spreadsheet of the mount type.
5. Take and label the photos of the tower, mounts, connections, antennas and all measurements. Minimum 50 photos are required.
6. Please measure and report the size and length of all existing antenna mounting pipes.
7. Please measure and report the antenna information for all sectors.
8. Don't delete or rearrange any sheet or contents of any sheet from this mapping form.

Standard Conditions

1. Obvious safety and structural issues/deficiencies noticed at the time of the mount mapping are to be reported in this mapping. However, this mount mapping is not a condition assessment of the mount.



Antenna Mount Mapping Form (PATENT PENDING)

FCC #
N/A

Tower Owner:	American Tower	Mapping Date:	10/21/2020
Site Name:	Byram Park CT	Tower Type:	Monopole
Site Number or ID:	468044-VZW	Tower Height (Ft.):	79
Mapping Contractor:	TEP	Mount Elevation (Ft.):	57

This antenna mapping form is the property of TES and under PATENT PENDING. The formation contained herein is considered confidential in nature and is to be used only for the specific customer it was intended for. Reproduction, transmission, publication, modification or disclosure by any method is prohibited except by express written permission of TES. All means and methods are the responsibility of the contractor and the work shall be compliant with ANSI/ASSE A 10.48, OSHA, FCC, FAA and other safety requirements that may apply. TES is not warranting the usability of the safety climb as it must be assessed prior to each use in compliance with OSHA requirements.

Please Insert Sketches of the Antenna Mount

Byram Park CT

Owner: American Tower - 414240

T/Tower = 77'-0"

FCC: N/A

Safety: FL 1, 3/8" (7- strand), Height = 14'

FL 1 Az = 0°

Verizon Core:

Verizon:

(18) FH 1 5/8"

Mnt CL = 57'-0"

(1) Hybrid 1 1/4" (1 1/8" Ø)

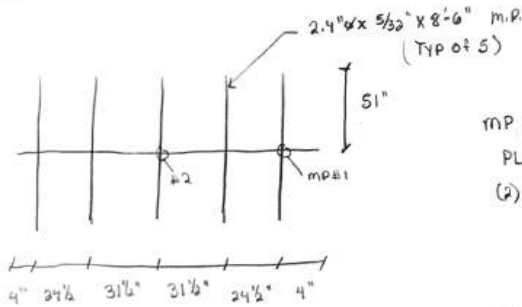
Ant CL = Position 223 = 57'-0"

* (6) FH 1 5/8" cut @ mnt

Position 1, 4, 5 = 58'-0"

W3FL = 18"

Front View



M.P. Cxn #1:

PL 2" x 7" x 5/16" w/ (2) 1/2" Ø U-Bolts, 6 1/2" C-C

(2) PL 4 3/4" x 3" x 5/16" w/ (4) 1/2" Ø Bolts, 4 3/4" C-C v, 5 1/2" C-C H

M.P. Cxn #2:

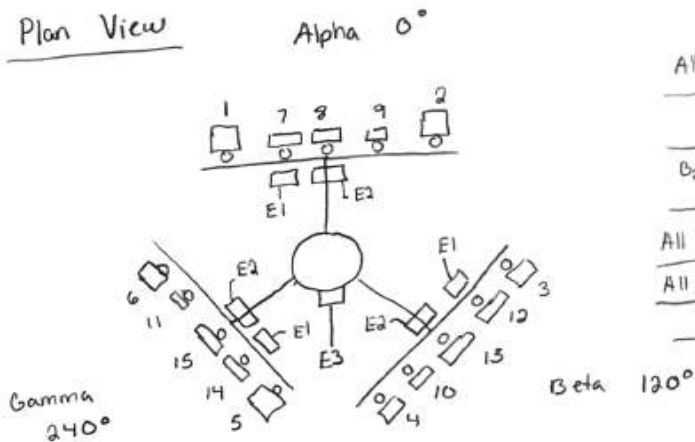
L 3" x 3" x 5/16" x 6" L w/

(2) 3/8" Ø T.R., 3 1/2" C-C, [Go through NSS]

(1) 1/2" Ø U-Bolt, 1 3/4" GA

(Typ 2) (Top & Bottom NSS)

Plan View

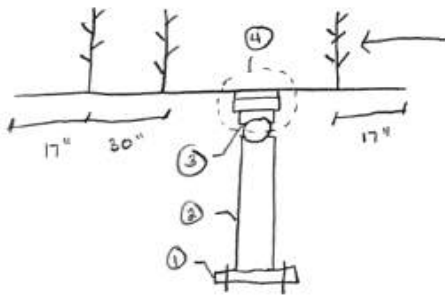


	Ant	B Vertical	U	H
All Pos. 1		39"	51"	14"
A2, A3		44"	51"	8"
B2, B3, G2, G3		44"	51"	9"
All Pos. 4		39"	51"	8"
All Pos. 5		39"	51"	14"
E1		5"	-	6"
E2		6"	-	6"

- 1-6 Amphenol LPA-80063-6CF-EDIN
- 7-8 Commscope SBNHA-1D65A
- 9-11 Amphenol BXA-171063-12BF-EDIN
- 12-15 Commscope SBNHA-1D45A

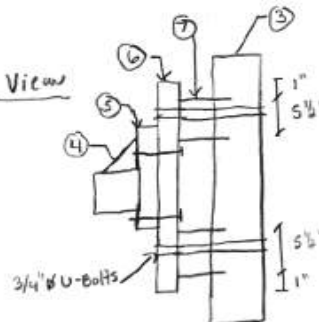
- E1 = B66a RRA 4x45
- E2 = B13 RR4 4x30
- E3 = Raycap RRFDC-3315-PF-48

Plan View Details



Branches mounted to face only on Alpha & Gamma
 * connection to face = same as M.P. Crn #1
 ± 6' Branch

④ Side View



- ① PL 10" x 6" x 1/2" w/ (4) 5/8" ⌀ Bolts, 3" C-C H, 8" C-C V
- ② HSS 4" x 4" x 1/4" x 23" L (welded)
- ③ 4.5" ⌀ x 1/4" x 27" Pipe
- ④ (2) Triang. Stiff 3" PL 3/8" TH, 7 1/2" C-C
- ⑤ PL 9 1/2" x 13" x 1/2" w/ (4) 5/8" ⌀ Bolts, 10 1/2" C-C H, 7" C-C V

- ⑥ PL 23 1/4" x 13" x 1/2" w/ (4) 3/4" ⌀ U-Bolts, 2 1/2" ME Top & Bott, 2 1/2" C-C
- ⑦ PL 3" D x 1/2" TH x 8 1/2" Long (welded) 1" ME Top & Bott, 5 1/2" C-C

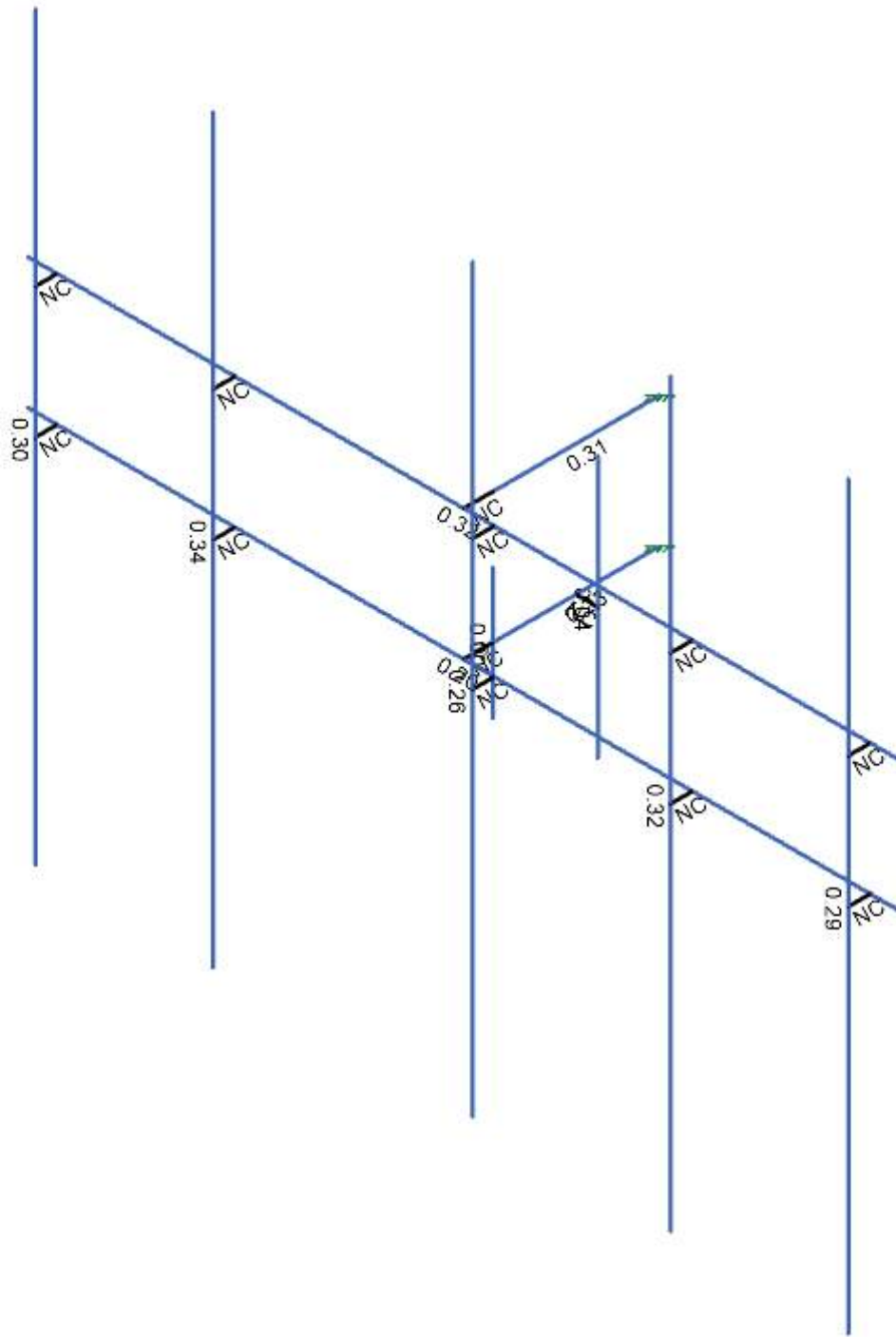
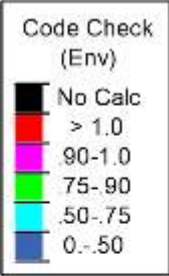


Envelope Only Solution

Colliers Engineering & Design

5000382611-VZW_MT_LOT_SectorC_H

SK-1
Jan 26, 2024
5000382611-VZW_MT_LOT_C_H...



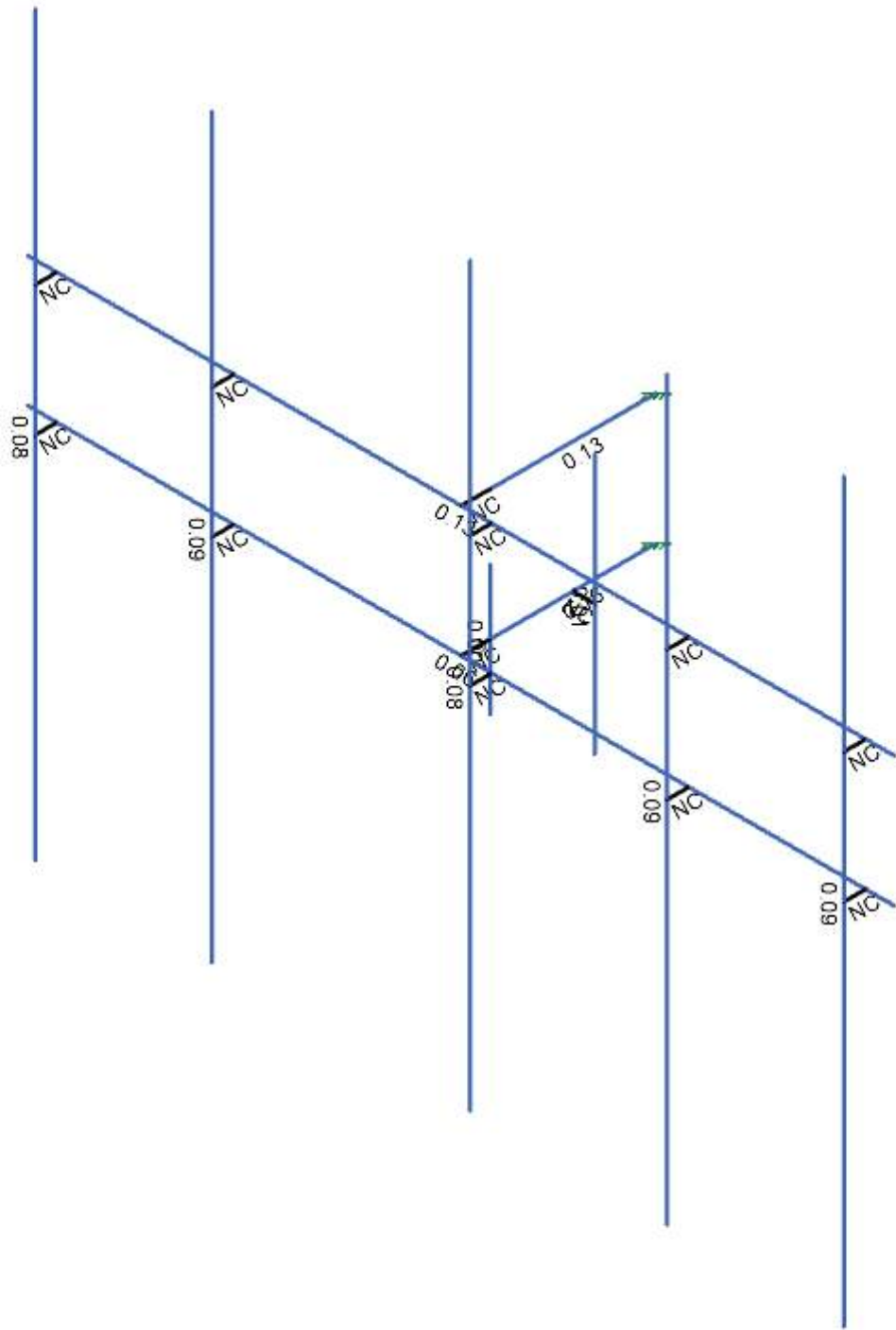
Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Colliers Engineering & Design	5000382611-VZW_MT_LOT_SectorC_H	SK-2
		Jan 26, 2024
		5000382611-VZW_MT_LOT_C_H...



Shear Check (Env)

- No Calc
- > 1.0
- 90-1.0
- 75-90
- 50-75
- 0-.50



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Colliers Engineering & Design	5000382611-VZW_MT_LOT_SectorC_H	SK-3
		Jan 26, 2024
		5000382611-VZW_MT_LOT_C_H...



Basic Load Cases

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

Basic Load Cases (Continued)

BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Point	Distributed
56 Structure Wi (90 Deg)	None					22
57 Structure Wi (120 Deg)	None					22
58 Structure Wi (150 Deg)	None					22
59 Structure Wi (180 Deg)	None					22
60 Structure Wi (210 Deg)	None					22
61 Structure Wi (240 Deg)	None					22
62 Structure Wi (270 Deg)	None					22
63 Structure Wi (300 Deg)	None					22
64 Structure Wi (330 Deg)	None					22
65 Structure Wm (0 Deg)	None					22
66 Structure Wm (30 Deg)	None					22
67 Structure Wm (60 Deg)	None					22
68 Structure Wm (90 Deg)	None					22
69 Structure Wm (120 Deg)	None					22
70 Structure Wm (150 Deg)	None					22
71 Structure Wm (180 Deg)	None					22
72 Structure Wm (210 Deg)	None					22
73 Structure Wm (240 Deg)	None					22
74 Structure Wm (270 Deg)	None					22
75 Structure Wm (300 Deg)	None					22
76 Structure Wm (330 Deg)	None					22
77 Lm1	None				1	
78 Lm2	None				1	
79 Lv1	None				1	
80 Lv2	None				1	
81 Antenna Ev	None				36	
82 Antenna Eh (0 Deg)	None				24	
83 Antenna Eh (90 Deg)	None				24	
84 Structure Ev	ELY					
85 Structure Eh (0 Deg)	ELZ			-0.03		
86 Structure Eh (90 Deg)	ELX	0.03				

Load Combinations

Description	Solve	P-Delta	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor
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 Deg)	Yes	Y	1	1.2	39	1.2	7	1	45	1									
6 1.2D+1.0Wo (150 Deg)	Yes	Y	1	1.2	39	1.2	8	1	46	1									
7 1.2D+1.0Wo (180 Deg)	Yes	Y	1	1.2	39	1.2	9	1	47	1									
8 1.2D+1.0Wo (210 Deg)	Yes	Y	1	1.2	39	1.2	10	1	48	1									
9 1.2D+1.0Wo (240 Deg)	Yes	Y	1	1.2	39	1.2	11	1	49	1									
10 1.2D+1.0Wo (270 Deg)	Yes	Y	1	1.2	39	1.2	12	1	50	1									
11 1.2D+1.0Wo (300 Deg)	Yes	Y	1	1.2	39	1.2	13	1	51	1									
12 1.2D+1.0Wo (330 Deg)	Yes	Y	1	1.2	39	1.2	14	1	52	1									
13 1.2D + 1.0Di + 1.0Wi (0 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	15	1	53	1					
14 1.2D + 1.0Di + 1.0Wi (30 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	16	1	54	1					
15 1.2D + 1.0Di + 1.0Wi (60 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	17	1	55	1					
16 1.2D + 1.0Di + 1.0Wi (90 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	18	1	56	1					
17 1.2D + 1.0Di + 1.0Wi (120 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	19	1	57	1					
18 1.2D + 1.0Di + 1.0Wi (150 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	20	1	58	1					
19 1.2D + 1.0Di + 1.0Wi (180 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	21	1	59	1					
20 1.2D + 1.0Di + 1.0Wi (210 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	22	1	60	1					
21 1.2D + 1.0Di + 1.0Wi (240 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	23	1	61	1					

Load Combinations (Continued)

Description	Solve	P-Delta	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor	BLCFactor
22 1.2D + 1.0Di + 1.0Wi (270 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	24	1	62	1				
23 1.2D + 1.0Di + 1.0Wi (300 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	25	1	63	1				
24 1.2D + 1.0Di + 1.0Wi (330 Deg)	Yes	Y	1	1.2	39	1.2	2	1	40	1	26	1	64	1				
25 1.2D + 1.5Lm1 + 1.0Wm (0 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	27	1	65	1						
26 1.2D + 1.5Lm1 + 1.0Wm (30 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	28	1	66	1						
27 1.2D + 1.5Lm1 + 1.0Wm (60 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	29	1	67	1						
28 1.2D + 1.5Lm1 + 1.0Wm (90 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	30	1	68	1						
29 1.2D + 1.5Lm1 + 1.0Wm (120 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	31	1	69	1						
30 1.2D + 1.5Lm1 + 1.0Wm (150 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	32	1	70	1						
31 1.2D + 1.5Lm1 + 1.0Wm (180 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	33	1	71	1						
32 1.2D + 1.5Lm1 + 1.0Wm (210 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	34	1	72	1						
33 1.2D + 1.5Lm1 + 1.0Wm (240 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	35	1	73	1						
34 1.2D + 1.5Lm1 + 1.0Wm (270 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	36	1	74	1						
35 1.2D + 1.5Lm1 + 1.0Wm (300 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	37	1	75	1						
36 1.2D + 1.5Lm1 + 1.0Wm (330 Deg)	Yes	Y	1	1.2	39	1.2	77	1.5	38	1	76	1						
37 1.2D + 1.5Lm2 + 1.0Wm (0 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	27	1	65	1						
38 1.2D + 1.5Lm2 + 1.0Wm (30 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	28	1	66	1						
39 1.2D + 1.5Lm2 + 1.0Wm (60 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	29	1	67	1						
40 1.2D + 1.5Lm2 + 1.0Wm (90 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	30	1	68	1						
41 1.2D + 1.5Lm2 + 1.0Wm (120 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	31	1	69	1						
42 1.2D + 1.5Lm2 + 1.0Wm (150 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	32	1	70	1						
43 1.2D + 1.5Lm2 + 1.0Wm (180 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	33	1	71	1						
44 1.2D + 1.5Lm2 + 1.0Wm (210 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	34	1	72	1						
45 1.2D + 1.5Lm2 + 1.0Wm (240 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	35	1	73	1						
46 1.2D + 1.5Lm2 + 1.0Wm (270 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	36	1	74	1						
47 1.2D + 1.5Lm2 + 1.0Wm (300 Deg)	Yes	Y	1	1.2	39	1.2	78	1.5	37	1	75	1						
48 1.2D + 1.5Lm2 + 1.0Wm (330 Deg)	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 + 1.0Eh (0 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	1	83		ELZ	1	ELX	
53 1.2D + 1.0Ev + 1.0Eh (30 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	0.866	83	0.5	ELZ	0.866	ELX	0.5
54 1.2D + 1.0Ev + 1.0Eh (60 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	0.5	83	0.866	ELZ	0.5	ELX	0.866
55 1.2D + 1.0Ev + 1.0Eh (90 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82		83	1	ELZ		ELX	1
56 1.2D + 1.0Ev + 1.0Eh (120 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-0.5	83	0.866	ELZ	-0.5	ELX	0.866
57 1.2D + 1.0Ev + 1.0Eh (150 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-0.866	83	0.5	ELZ	-0.866	ELX	0.5
58 1.2D + 1.0Ev + 1.0Eh (180 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-1	83		ELZ	-1	ELX	
59 1.2D + 1.0Ev + 1.0Eh (210 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-0.866	83	-0.5	ELZ	-0.866	ELX	-0.5
60 1.2D + 1.0Ev + 1.0Eh (240 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	-0.5	83	-0.866	ELZ	-0.5	ELX	-0.866
61 1.2D + 1.0Ev + 1.0Eh (270 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82		83	-1	ELZ		ELX	-1
62 1.2D + 1.0Ev + 1.0Eh (300 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	0.5	83	-0.866	ELZ	0.5	ELX	-0.866
63 1.2D + 1.0Ev + 1.0Eh (330 Deg)	Yes	Y	1	1.2	39	1.2	81	1	ELY	1	82	0.866	83	-0.5	ELZ	0.866	ELX	-0.5
64 0.9D - 1.0Ev + 1.0Eh (0 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	1	83		ELZ	1	ELX	
65 0.9D - 1.0Ev + 1.0Eh (30 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	0.866	83	0.5	ELZ	0.866	ELX	0.5
66 0.9D - 1.0Ev + 1.0Eh (60 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	0.5	83	0.866	ELZ	0.5	ELX	0.866
67 0.9D - 1.0Ev + 1.0Eh (90 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82		83	1	ELZ		ELX	1
68 0.9D - 1.0Ev + 1.0Eh (120 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	-0.5	83	0.866	ELZ	-0.5	ELX	0.866
69 0.9D - 1.0Ev + 1.0Eh (150 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	-0.866	83	0.5	ELZ	-0.866	ELX	0.5
70 0.9D - 1.0Ev + 1.0Eh (180 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	-1	83		ELZ	-1	ELX	
71 0.9D - 1.0Ev + 1.0Eh (210 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	-0.866	83	-0.5	ELZ	-0.866	ELX	-0.5
72 0.9D - 1.0Ev + 1.0Eh (240 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	-0.5	83	-0.866	ELZ	-0.5	ELX	-0.866
73 0.9D - 1.0Ev + 1.0Eh (270 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82		83	-1	ELZ		ELX	-1
74 0.9D - 1.0Ev + 1.0Eh (300 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	0.5	83	-0.866	ELZ	0.5	ELX	-0.866
75 0.9D - 1.0Ev + 1.0Eh (330 Deg)	Yes	Y	1	0.9	39	0.9	81	-1	ELY	-1	82	0.866	83	-0.5	ELZ	0.866	ELX	-0.5

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	N1	0	0	0.708333	
2	N3	0	0	2.625	
3	N4	0	0	2.958333	
4	N5	0	-0.75	2.625	
5	N6	0	0.75	2.625	
6	N7	5	0	2.958333	
7	N8	-5	0	2.958333	
8	N9	-4.666667	0	2.958333	
9	N11	4.666667	0	2.958333	
10	N12	-4.666667	0	3.208333	
11	N13	0.35	0	3.208333	
12	N14	4.666667	0	3.208333	
13	N15	-4.666667	4.25	3.208333	
14	N16	0.35	4.25	3.208333	
15	N17	4.666667	4.25	3.208333	
16	N18	-4.666667	-4.25	3.208333	
17	N19	0.35	-4.25	3.208333	
18	N20	4.666667	-4.25	3.208333	
19	N20A	0	0	1.666667	
20	N21	0.25	0	1.666667	
21	N22	0.25	1.5	1.666667	
22	N23	0.25	-1.5	1.666667	
23	N24	2.625	0	2.958333	
24	N25	2.625	0	3.208333	
25	N26	2.625	4.25	3.208333	
26	N27	2.625	-4.25	3.208333	
27	N28	-2.625	0	2.958333	
28	N29	-2.625	0	3.208333	
29	N30	-2.625	4.25	3.208333	
30	N31	-2.625	-4.25	3.208333	
31	N31A	4.666667	1	3.208333	
32	N32	4.666667	3	3.208333	
33	N33	-4.666667	1	3.208333	
34	N35	2.625	1	3.208333	
35	N36	-2.625	1	3.208333	
36	N37	2.625	2	3.208333	
37	N38	-2.625	3	3.208333	
38	N39	0	1.5	2.958333	
39	N40	5	1.5	2.958333	
40	N41	-5	1.5	2.958333	
41	N42	-4.666667	1.5	2.958333	
42	N43	4.666667	1.5	2.958333	
43	N44	-4.666667	1.5	3.208333	
44	N45	0.35	1.5	3.208333	
45	N46	4.666667	1.5	3.208333	
46	N47	2.625	1.5	2.958333	
47	N48	2.625	1.5	3.208333	
48	N49	-2.625	1.5	2.958333	
49	N50	-2.625	1.5	3.208333	
50	N51	0	1.5	0.708333	
51	N52	0	1.5	2.625	
52	N53	0.35	0	2.958333	
53	N54	0.35	1.5	2.958333	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
1	Antenna Pipe	PIPE 2.0	Beam	Pipe	A53 Gr. B	Typical	1.02	0.627	0.627	1.25
2	Face Horizontal	HSS4X4X4	Beam	SquareTube	A500 Gr. B 46	Typical	3.37	7.8	7.8	12.8
3	Standoff Vertical	PIPE 4.0	Column	Pipe	A53 Gr. B	Typical	2.96	6.82	6.82	13.6
4	Standoff	HSS4X4X4	Beam	SquareTube	A500 Gr. B 46	Typical	3.37	7.8	7.8	12.8
5	MOD STANDOFF	HSS3X3X4	Beam	SquareTube	A500 Gr. B 46	Typical	2.44	3.02	3.02	5.08
6	Prop Antenna Pipe	PIPE 2.5	Beam	Pipe	A53 Gr. B	Typical	1.61	1.45	1.45	2.89
7	MOD FACE	PIPE 3.0	Beam	Pipe	A53 Gr. B	Typical	2.07	2.85	2.85	5.69

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e ⁶ F ⁻¹]	Density [k/ft ³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
2	A53 Gr. B	29000	11154	0.3	0.65	0.49	35	1.5	60	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
5	A500 Gr. B 42	29000	11154	0.3	0.65	0.49	42	1.4	58	1.3
6	A500 Gr. B 46	29000	11154	0.3	0.65	0.49	46	1.4	58	1.3

Member Primary Data

	Label	I Node	J Node	Section/Shape	Type	Design List	Material	Design Rule
1	M4	N6	N5	Standoff Vertical	Column	Pipe	A53 Gr. B	Typical
2	M3	N1	N3	Standoff	Beam	SquareTube	A500 Gr. B 46	Typical
3	M1	N3	N4	RIGID	None	None	RIGID	Typical
4	M9	N9	N12	RIGID	None	None	RIGID	Typical
5	M10	N53	N13	RIGID	None	None	RIGID	Typical
6	M11	N11	N14	RIGID	None	None	RIGID	Typical
7	M11A	N20A	N21	RIGID	None	None	RIGID	Typical
8	M14	N24	N25	RIGID	None	None	RIGID	Typical
9	M16	N28	N29	RIGID	None	None	RIGID	Typical
10	M5	N8	N7	Face Horizontal	Beam	SquareTube	A500 Gr. B 46	Typical
11	MP1A	N17	N20	Antenna Pipe	Beam	Pipe	A53 Gr. B	Typical
12	MP3A	N16	N19	Antenna Pipe	Beam	Pipe	A53 Gr. B	Typical
13	MP5A	N15	N18	Antenna Pipe	Beam	Pipe	A53 Gr. B	Typical
14	M17	N22	N23	Antenna Pipe	Beam	Pipe	A53 Gr. B	Typical
15	MP2A	N26	N27	Antenna Pipe	Beam	Pipe	A53 Gr. B	Typical
16	MP4A	N30	N31	Antenna Pipe	Beam	Pipe	A53 Gr. B	Typical
17	M17A	N42	N44	RIGID	None	None	RIGID	Typical
18	M18	N54	N45	RIGID	None	None	RIGID	Typical
19	M19	N43	N46	RIGID	None	None	RIGID	Typical
20	M20	N47	N48	RIGID	None	None	RIGID	Typical
21	M21	N49	N50	RIGID	None	None	RIGID	Typical
22	M22	N41	N40	MOD FACE	Beam	Pipe	A53 Gr. B	Typical
23	M23	N51	N52	MOD STANDOFF	Beam	SquareTube	A500 Gr. B 46	Typical
24	M24	N52	N39	RIGID	None	None	RIGID	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
1	M4	Standoff Vertical	1.5	Lbyy	N/A	N/A	Lateral
2	M3	Standoff	1.917	Lbyy	N/A	N/A	Lateral
3	M5	Face Horizontal	10	Lbyy	N/A	N/A	Lateral
4	MP1A	Antenna Pipe	8.5	Lbyy	N/A	N/A	Lateral
5	MP3A	Antenna Pipe	8.5	Lbyy	N/A	N/A	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
6	MP5A	Antenna Pipe	8.5	Lbyy	N/A	N/A	Lateral
7	M17	Antenna Pipe	3	Lbyy	N/A	N/A	Lateral
8	MP2A	Antenna Pipe	8.5	Lbyy	N/A	N/A	Lateral
9	MP4A	Antenna Pipe	8.5	Lbyy	N/A	N/A	Lateral
10	M22	MOD FACE	10	Lbyy	N/A	N/A	Lateral
11	M23	MOD STANDOFF	1.917	Lbyy	N/A	N/A	Lateral

Member Point Loads (BLC 1 : Antenna D)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	Y	-36.93	1.25
2	MP1A	My	-0.022	1.25
3	MP1A	Mz	0	1.25
4	MP1A	Y	-36.93	5.25
5	MP1A	My	-0.022	5.25
6	MP1A	Mz	0	5.25
7	MP5A	Y	-36.93	1.25
8	MP5A	My	-0.022	1.25
9	MP5A	Mz	0	1.25
10	MP5A	Y	-36.93	5.25
11	MP5A	My	-0.022	5.25
12	MP5A	Mz	0	5.25
13	MP4A	Y	-28.65	2.25
14	MP4A	My	-0.014	2.25
15	MP4A	Mz	0	2.25
16	MP4A	Y	-28.65	4.25
17	MP4A	My	-0.014	4.25
18	MP4A	Mz	0	4.25
19	MP1A	Y	-20.8	3.25
20	MP1A	My	0.007	3.25
21	MP1A	Mz	0	3.25
22	MP5A	Y	-74.7	1.5
23	MP5A	My	0.05	1.5
24	MP5A	Mz	0	1.5
25	MP1A	Y	-79.1	1.5
26	MP1A	My	0.053	1.5
27	MP1A	Mz	0	1.5
28	M17	Y	-32	1
29	M17	My	0	1
30	M17	Mz	0	1
31	MP2A	Y	-25.25	2.25
32	MP2A	My	-0.013	2.25
33	MP2A	Mz	0	2.25
34	MP2A	Y	-25.25	4.25
35	MP2A	My	-0.013	4.25
36	MP2A	Mz	0	4.25

Member Point Loads (BLC 2 : Antenna Di)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	Y	-55.968	1.25
2	MP1A	My	-0.033	1.25
3	MP1A	Mz	0	1.25
4	MP1A	Y	-55.968	5.25
5	MP1A	My	-0.033	5.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
6	MP1A	Mz	0	5.25
7	MP5A	Y	-55.968	1.25
8	MP5A	My	-0.033	1.25
9	MP5A	Mz	0	1.25
10	MP5A	Y	-55.968	5.25
11	MP5A	My	-0.033	5.25
12	MP5A	Mz	0	5.25
13	MP4A	Y	-26.922	2.25
14	MP4A	My	-0.013	2.25
15	MP4A	Mz	0	2.25
16	MP4A	Y	-26.922	4.25
17	MP4A	My	-0.013	4.25
18	MP4A	Mz	0	4.25
19	MP1A	Y	-14.493	3.25
20	MP1A	My	0.005	3.25
21	MP1A	Mz	0	3.25
22	MP5A	Y	-40.562	1.5
23	MP5A	My	0.027	1.5
24	MP5A	Mz	0	1.5
25	MP1A	Y	-40.994	1.5
26	MP1A	My	0.027	1.5
27	MP1A	Mz	0	1.5
28	M17	Y	-79.66	1
29	M17	My	0	1
30	M17	Mz	0	1
31	MP2A	Y	-49.516	2.25
32	MP2A	My	-0.025	2.25
33	MP2A	Mz	0	2.25
34	MP2A	Y	-49.516	4.25
35	MP2A	My	-0.025	4.25
36	MP2A	Mz	0	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	0	1.25
2	MP1A	Z	-182.387	1.25
3	MP1A	Mx	0	1.25
4	MP1A	X	0	5.25
5	MP1A	Z	-182.387	5.25
6	MP1A	Mx	0	5.25
7	MP5A	X	0	1.25
8	MP5A	Z	-182.387	1.25
9	MP5A	Mx	0	1.25
10	MP5A	X	0	5.25
11	MP5A	Z	-182.387	5.25
12	MP5A	Mx	0	5.25
13	MP4A	X	0	2.25
14	MP4A	Z	-64.396	2.25
15	MP4A	Mx	0	2.25
16	MP4A	X	0	4.25
17	MP4A	Z	-64.396	4.25
18	MP4A	Mx	0	4.25
19	MP1A	X	0	3.25
20	MP1A	Z	-15.08	3.25
21	MP1A	Mx	0	3.25



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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
22	MP5A	X	0	1.5
23	MP5A	Z	-63.173	1.5
24	MP5A	Mx	0	1.5
25	MP1A	X	0	1.5
26	MP1A	Z	-76.215	1.5
27	MP1A	Mx	0	1.5
28	M17	X	0	1
29	M17	Z	-116.401	1
30	M17	Mx	0	1
31	MP2A	X	0	2.25
32	MP2A	Z	-147.54	2.25
33	MP2A	Mx	0	2.25
34	MP2A	X	0	4.25
35	MP2A	Z	-147.54	4.25
36	MP2A	Mx	0	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	78.153	1.25
2	MP1A	Z	-135.364	1.25
3	MP1A	Mx	-0.046	1.25
4	MP1A	X	78.153	5.25
5	MP1A	Z	-135.364	5.25
6	MP1A	Mx	-0.046	5.25
7	MP5A	X	78.153	1.25
8	MP5A	Z	-135.364	1.25
9	MP5A	Mx	-0.046	1.25
10	MP5A	X	78.153	5.25
11	MP5A	Z	-135.364	5.25
12	MP5A	Mx	-0.046	5.25
13	MP4A	X	26.976	2.25
14	MP4A	Z	-46.724	2.25
15	MP4A	Mx	-0.013	2.25
16	MP4A	X	26.976	4.25
17	MP4A	Z	-46.724	4.25
18	MP4A	Mx	-0.013	4.25
19	MP1A	X	8.263	3.25
20	MP1A	Z	-14.313	3.25
21	MP1A	Mx	0.003	3.25
22	MP5A	X	28.988	1.5
23	MP5A	Z	-50.209	1.5
24	MP5A	Mx	0.019	1.5
25	MP1A	X	35.076	1.5
26	MP1A	Z	-60.754	1.5
27	MP1A	Mx	0.023	1.5
28	M17	X	50.924	1
29	M17	Z	-88.203	1
30	M17	Mx	0	1
31	MP2A	X	63.611	2.25
32	MP2A	Z	-110.177	2.25
33	MP2A	Mx	-0.032	2.25
34	MP2A	X	63.611	4.25
35	MP2A	Z	-110.177	4.25
36	MP2A	Mx	-0.032	4.25



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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	90.189	1.25
2	MP1A	Z	-52.071	1.25
3	MP1A	Mx	-0.053	1.25
4	MP1A	X	90.189	5.25
5	MP1A	Z	-52.071	5.25
6	MP1A	Mx	-0.053	5.25
7	MP5A	X	90.189	1.25
8	MP5A	Z	-52.071	1.25
9	MP5A	Mx	-0.053	1.25
10	MP5A	X	90.189	5.25
11	MP5A	Z	-52.071	5.25
12	MP5A	Mx	-0.053	5.25
13	MP4A	X	28.634	2.25
14	MP4A	Z	-16.532	2.25
15	MP4A	Mx	-0.014	2.25
16	MP4A	X	28.634	4.25
17	MP4A	Z	-16.532	4.25
18	MP4A	Mx	-0.014	4.25
19	MP1A	X	16.819	3.25
20	MP1A	Z	-9.71	3.25
21	MP1A	Mx	0.006	3.25
22	MP5A	X	41.209	1.5
23	MP5A	Z	-23.792	1.5
24	MP5A	Mx	0.027	1.5
25	MP1A	X	50.253	1.5
26	MP1A	Z	-29.014	1.5
27	MP1A	Mx	0.034	1.5
28	M17	X	85.873	1
29	M17	Z	-49.579	1
30	M17	Mx	0	1
31	MP2A	X	74.985	2.25
32	MP2A	Z	-43.293	2.25
33	MP2A	Mx	-0.037	2.25
34	MP2A	X	74.985	4.25
35	MP2A	Z	-43.293	4.25
36	MP2A	Mx	-0.037	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	78.059	1.25
2	MP1A	Z	0	1.25
3	MP1A	Mx	-0.046	1.25
4	MP1A	X	78.059	5.25
5	MP1A	Z	0	5.25
6	MP1A	Mx	-0.046	5.25
7	MP5A	X	78.059	1.25
8	MP5A	Z	0	1.25
9	MP5A	Mx	-0.046	1.25
10	MP5A	X	78.059	5.25
11	MP5A	Z	0	5.25
12	MP5A	Mx	-0.046	5.25
13	MP4A	X	22.62	2.25
14	MP4A	Z	0	2.25
15	MP4A	Mx	-0.011	2.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
16	MP4A	X	22.62	4.25
17	MP4A	Z	0	4.25
18	MP4A	Mx	-0.011	4.25
19	MP1A	X	20.868	3.25
20	MP1A	Z	0	3.25
21	MP1A	Mx	0.007	3.25
22	MP5A	X	42.387	1.5
23	MP5A	Z	0	1.5
24	MP5A	Mx	0.028	1.5
25	MP1A	X	51.965	1.5
26	MP1A	Z	0	1.5
27	MP1A	Mx	0.035	1.5
28	M17	X	111.022	1
29	M17	Z	0	1
30	M17	Mx	0	1
31	MP2A	X	66.268	2.25
32	MP2A	Z	0	2.25
33	MP2A	Mx	-0.033	2.25
34	MP2A	X	66.268	4.25
35	MP2A	Z	0	4.25
36	MP2A	Mx	-0.033	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	90.189	1.25
2	MP1A	Z	52.071	1.25
3	MP1A	Mx	-0.053	1.25
4	MP1A	X	90.189	5.25
5	MP1A	Z	52.071	5.25
6	MP1A	Mx	-0.053	5.25
7	MP5A	X	90.189	1.25
8	MP5A	Z	52.071	1.25
9	MP5A	Mx	-0.053	1.25
10	MP5A	X	90.189	5.25
11	MP5A	Z	52.071	5.25
12	MP5A	Mx	-0.053	5.25
13	MP4A	X	28.634	2.25
14	MP4A	Z	16.532	2.25
15	MP4A	Mx	-0.014	2.25
16	MP4A	X	28.634	4.25
17	MP4A	Z	16.532	4.25
18	MP4A	Mx	-0.014	4.25
19	MP1A	X	16.819	3.25
20	MP1A	Z	9.71	3.25
21	MP1A	Mx	0.006	3.25
22	MP5A	X	41.209	1.5
23	MP5A	Z	23.792	1.5
24	MP5A	Mx	0.027	1.5
25	MP1A	X	50.253	1.5
26	MP1A	Z	29.014	1.5
27	MP1A	Mx	0.034	1.5
28	M17	X	108.752	1
29	M17	Z	62.788	1
30	M17	Mx	0	1
31	MP2A	X	74.985	2.25



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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
32	MP2A	Z	43.293	2.25
33	MP2A	Mx	-0.037	2.25
34	MP2A	X	74.985	4.25
35	MP2A	Z	43.293	4.25
36	MP2A	Mx	-0.037	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	78.153	1.25
2	MP1A	Z	135.364	1.25
3	MP1A	Mx	-0.046	1.25
4	MP1A	X	78.153	5.25
5	MP1A	Z	135.364	5.25
6	MP1A	Mx	-0.046	5.25
7	MP5A	X	78.153	1.25
8	MP5A	Z	135.364	1.25
9	MP5A	Mx	-0.046	1.25
10	MP5A	X	78.153	5.25
11	MP5A	Z	135.364	5.25
12	MP5A	Mx	-0.046	5.25
13	MP4A	X	26.976	2.25
14	MP4A	Z	46.724	2.25
15	MP4A	Mx	-0.013	2.25
16	MP4A	X	26.976	4.25
17	MP4A	Z	46.724	4.25
18	MP4A	Mx	-0.013	4.25
19	MP1A	X	8.263	3.25
20	MP1A	Z	14.313	3.25
21	MP1A	Mx	0.003	3.25
22	MP5A	X	28.988	1.5
23	MP5A	Z	50.209	1.5
24	MP5A	Mx	0.019	1.5
25	MP1A	X	35.076	1.5
26	MP1A	Z	60.754	1.5
27	MP1A	Mx	0.023	1.5
28	M17	X	64.133	1
29	M17	Z	111.081	1
30	M17	Mx	0	1
31	MP2A	X	63.611	2.25
32	MP2A	Z	110.177	2.25
33	MP2A	Mx	-0.032	2.25
34	MP2A	X	63.611	4.25
35	MP2A	Z	110.177	4.25
36	MP2A	Mx	-0.032	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	0	1.25
2	MP1A	Z	182.387	1.25
3	MP1A	Mx	0	1.25
4	MP1A	X	0	5.25
5	MP1A	Z	182.387	5.25
6	MP1A	Mx	0	5.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
7	MP5A	X	0	1.25
8	MP5A	Z	182.387	1.25
9	MP5A	Mx	0	1.25
10	MP5A	X	0	5.25
11	MP5A	Z	182.387	5.25
12	MP5A	Mx	0	5.25
13	MP4A	X	0	2.25
14	MP4A	Z	64.396	2.25
15	MP4A	Mx	0	2.25
16	MP4A	X	0	4.25
17	MP4A	Z	64.396	4.25
18	MP4A	Mx	0	4.25
19	MP1A	X	0	3.25
20	MP1A	Z	15.08	3.25
21	MP1A	Mx	0	3.25
22	MP5A	X	0	1.5
23	MP5A	Z	63.173	1.5
24	MP5A	Mx	0	1.5
25	MP1A	X	0	1.5
26	MP1A	Z	76.215	1.5
27	MP1A	Mx	0	1.5
28	M17	X	0	1
29	M17	Z	116.401	1
30	M17	Mx	0	1
31	MP2A	X	0	2.25
32	MP2A	Z	147.54	2.25
33	MP2A	Mx	0	2.25
34	MP2A	X	0	4.25
35	MP2A	Z	147.54	4.25
36	MP2A	Mx	0	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	-78.153	1.25
2	MP1A	Z	135.364	1.25
3	MP1A	Mx	0.046	1.25
4	MP1A	X	-78.153	5.25
5	MP1A	Z	135.364	5.25
6	MP1A	Mx	0.046	5.25
7	MP5A	X	-78.153	1.25
8	MP5A	Z	135.364	1.25
9	MP5A	Mx	0.046	1.25
10	MP5A	X	-78.153	5.25
11	MP5A	Z	135.364	5.25
12	MP5A	Mx	0.046	5.25
13	MP4A	X	-26.976	2.25
14	MP4A	Z	46.724	2.25
15	MP4A	Mx	0.013	2.25
16	MP4A	X	-26.976	4.25
17	MP4A	Z	46.724	4.25
18	MP4A	Mx	0.013	4.25
19	MP1A	X	-8.263	3.25
20	MP1A	Z	14.313	3.25
21	MP1A	Mx	-0.003	3.25
22	MP5A	X	-28.988	1.5

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
23	MP5A	Z	50.209	1.5
24	MP5A	Mx	-0.019	1.5
25	MP1A	X	-35.076	1.5
26	MP1A	Z	60.754	1.5
27	MP1A	Mx	-0.023	1.5
28	M17	X	-50.924	1
29	M17	Z	88.203	1
30	M17	Mx	0	1
31	MP2A	X	-63.611	2.25
32	MP2A	Z	110.177	2.25
33	MP2A	Mx	0.032	2.25
34	MP2A	X	-63.611	4.25
35	MP2A	Z	110.177	4.25
36	MP2A	Mx	0.032	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	-90.189	1.25
2	MP1A	Z	52.071	1.25
3	MP1A	Mx	0.053	1.25
4	MP1A	X	-90.189	5.25
5	MP1A	Z	52.071	5.25
6	MP1A	Mx	0.053	5.25
7	MP5A	X	-90.189	1.25
8	MP5A	Z	52.071	1.25
9	MP5A	Mx	0.053	1.25
10	MP5A	X	-90.189	5.25
11	MP5A	Z	52.071	5.25
12	MP5A	Mx	0.053	5.25
13	MP4A	X	-28.634	2.25
14	MP4A	Z	16.532	2.25
15	MP4A	Mx	0.014	2.25
16	MP4A	X	-28.634	4.25
17	MP4A	Z	16.532	4.25
18	MP4A	Mx	0.014	4.25
19	MP1A	X	-16.819	3.25
20	MP1A	Z	9.71	3.25
21	MP1A	Mx	-0.006	3.25
22	MP5A	X	-41.209	1.5
23	MP5A	Z	23.792	1.5
24	MP5A	Mx	-0.027	1.5
25	MP1A	X	-50.253	1.5
26	MP1A	Z	29.014	1.5
27	MP1A	Mx	-0.034	1.5
28	M17	X	-85.873	1
29	M17	Z	49.579	1
30	M17	Mx	0	1
31	MP2A	X	-74.985	2.25
32	MP2A	Z	43.293	2.25
33	MP2A	Mx	0.037	2.25
34	MP2A	X	-74.985	4.25
35	MP2A	Z	43.293	4.25
36	MP2A	Mx	0.037	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	-78.059	1.25
2	MP1A	Z	0	1.25
3	MP1A	Mx	0.046	1.25
4	MP1A	X	-78.059	5.25
5	MP1A	Z	0	5.25
6	MP1A	Mx	0.046	5.25
7	MP5A	X	-78.059	1.25
8	MP5A	Z	0	1.25
9	MP5A	Mx	0.046	1.25
10	MP5A	X	-78.059	5.25
11	MP5A	Z	0	5.25
12	MP5A	Mx	0.046	5.25
13	MP4A	X	-22.62	2.25
14	MP4A	Z	0	2.25
15	MP4A	Mx	0.011	2.25
16	MP4A	X	-22.62	4.25
17	MP4A	Z	0	4.25
18	MP4A	Mx	0.011	4.25
19	MP1A	X	-20.868	3.25
20	MP1A	Z	0	3.25
21	MP1A	Mx	-0.007	3.25
22	MP5A	X	-42.387	1.5
23	MP5A	Z	0	1.5
24	MP5A	Mx	-0.028	1.5
25	MP1A	X	-51.965	1.5
26	MP1A	Z	0	1.5
27	MP1A	Mx	-0.035	1.5
28	M17	X	-111.022	1
29	M17	Z	0	1
30	M17	Mx	0	1
31	MP2A	X	-66.268	2.25
32	MP2A	Z	0	2.25
33	MP2A	Mx	0.033	2.25
34	MP2A	X	-66.268	4.25
35	MP2A	Z	0	4.25
36	MP2A	Mx	0.033	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	-90.189	1.25
2	MP1A	Z	-52.071	1.25
3	MP1A	Mx	0.053	1.25
4	MP1A	X	-90.189	5.25
5	MP1A	Z	-52.071	5.25
6	MP1A	Mx	0.053	5.25
7	MP5A	X	-90.189	1.25
8	MP5A	Z	-52.071	1.25
9	MP5A	Mx	0.053	1.25
10	MP5A	X	-90.189	5.25
11	MP5A	Z	-52.071	5.25
12	MP5A	Mx	0.053	5.25
13	MP4A	X	-28.634	2.25
14	MP4A	Z	-16.532	2.25
15	MP4A	Mx	0.014	2.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
16	MP4A	X	-28.634	4.25
17	MP4A	Z	-16.532	4.25
18	MP4A	Mx	0.014	4.25
19	MP1A	X	-16.819	3.25
20	MP1A	Z	-9.71	3.25
21	MP1A	Mx	-0.006	3.25
22	MP5A	X	-41.209	1.5
23	MP5A	Z	-23.792	1.5
24	MP5A	Mx	-0.027	1.5
25	MP1A	X	-50.253	1.5
26	MP1A	Z	-29.014	1.5
27	MP1A	Mx	-0.034	1.5
28	M17	X	-108.752	1
29	M17	Z	-62.788	1
30	M17	Mx	0	1
31	MP2A	X	-74.985	2.25
32	MP2A	Z	-43.293	2.25
33	MP2A	Mx	0.037	2.25
34	MP2A	X	-74.985	4.25
35	MP2A	Z	-43.293	4.25
36	MP2A	Mx	0.037	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	-78.153	1.25
2	MP1A	Z	-135.364	1.25
3	MP1A	Mx	0.046	1.25
4	MP1A	X	-78.153	5.25
5	MP1A	Z	-135.364	5.25
6	MP1A	Mx	0.046	5.25
7	MP5A	X	-78.153	1.25
8	MP5A	Z	-135.364	1.25
9	MP5A	Mx	0.046	1.25
10	MP5A	X	-78.153	5.25
11	MP5A	Z	-135.364	5.25
12	MP5A	Mx	0.046	5.25
13	MP4A	X	-26.976	2.25
14	MP4A	Z	-46.724	2.25
15	MP4A	Mx	0.013	2.25
16	MP4A	X	-26.976	4.25
17	MP4A	Z	-46.724	4.25
18	MP4A	Mx	0.013	4.25
19	MP1A	X	-8.263	3.25
20	MP1A	Z	-14.313	3.25
21	MP1A	Mx	-0.003	3.25
22	MP5A	X	-28.988	1.5
23	MP5A	Z	-50.209	1.5
24	MP5A	Mx	-0.019	1.5
25	MP1A	X	-35.076	1.5
26	MP1A	Z	-60.754	1.5
27	MP1A	Mx	-0.023	1.5
28	M17	X	-64.133	1
29	M17	Z	-111.081	1
30	M17	Mx	0	1
31	MP2A	X	-63.611	2.25



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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
32	MP2A	Z	-110.177	2.25
33	MP2A	Mx	0.032	2.25
34	MP2A	X	-63.611	4.25
35	MP2A	Z	-110.177	4.25
36	MP2A	Mx	0.032	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	0	1.25
2	MP1A	Z	-32.344	1.25
3	MP1A	Mx	0	1.25
4	MP1A	X	0	5.25
5	MP1A	Z	-32.344	5.25
6	MP1A	Mx	0	5.25
7	MP5A	X	0	1.25
8	MP5A	Z	-32.344	1.25
9	MP5A	Mx	0	1.25
10	MP5A	X	0	5.25
11	MP5A	Z	-32.344	5.25
12	MP5A	Mx	0	5.25
13	MP4A	X	0	2.25
14	MP4A	Z	-15.16	2.25
15	MP4A	Mx	0	2.25
16	MP4A	X	0	4.25
17	MP4A	Z	-15.16	4.25
18	MP4A	Mx	0	4.25
19	MP1A	X	0	3.25
20	MP1A	Z	-3.721	3.25
21	MP1A	Mx	0	3.25
22	MP5A	X	0	1.5
23	MP5A	Z	-15.596	1.5
24	MP5A	Mx	0	1.5
25	MP1A	X	0	1.5
26	MP1A	Z	-15.596	1.5
27	MP1A	Mx	0	1.5
28	M17	X	0	1
29	M17	Z	-29.271	1
30	M17	Mx	0	1
31	MP2A	X	0	2.25
32	MP2A	Z	-27.943	2.25
33	MP2A	Mx	0	2.25
34	MP2A	X	0	4.25
35	MP2A	Z	-27.943	4.25
36	MP2A	Mx	0	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	14.077	1.25
2	MP1A	Z	-24.381	1.25
3	MP1A	Mx	-0.008	1.25
4	MP1A	X	14.077	5.25
5	MP1A	Z	-24.381	5.25
6	MP1A	Mx	-0.008	5.25



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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
7	MP5A	X	14.077	1.25
8	MP5A	Z	-24.381	1.25
9	MP5A	Mx	-0.008	1.25
10	MP5A	X	14.077	5.25
11	MP5A	Z	-24.381	5.25
12	MP5A	Mx	-0.008	5.25
13	MP4A	X	6.479	2.25
14	MP4A	Z	-11.221	2.25
15	MP4A	Mx	-0.003	2.25
16	MP4A	X	6.479	4.25
17	MP4A	Z	-11.221	4.25
18	MP4A	Mx	-0.003	4.25
19	MP1A	X	2.013	3.25
20	MP1A	Z	-3.486	3.25
21	MP1A	Mx	0.000671	3.25
22	MP5A	X	7.2	1.5
23	MP5A	Z	-12.471	1.5
24	MP5A	Mx	0.005	1.5
25	MP1A	X	7.224	1.5
26	MP1A	Z	-12.512	1.5
27	MP1A	Mx	0.005	1.5
28	M17	X	12.975	1
29	M17	Z	-22.474	1
30	M17	Mx	0	1
31	MP2A	X	12.138	2.25
32	MP2A	Z	-21.024	2.25
33	MP2A	Mx	-0.006	2.25
34	MP2A	X	12.138	4.25
35	MP2A	Z	-21.024	4.25
36	MP2A	Mx	-0.006	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	17.123	1.25
2	MP1A	Z	-9.886	1.25
3	MP1A	Mx	-0.01	1.25
4	MP1A	X	17.123	5.25
5	MP1A	Z	-9.886	5.25
6	MP1A	Mx	-0.01	5.25
7	MP5A	X	17.123	1.25
8	MP5A	Z	-9.886	1.25
9	MP5A	Mx	-0.01	1.25
10	MP5A	X	17.123	5.25
11	MP5A	Z	-9.886	5.25
12	MP5A	Mx	-0.01	5.25
13	MP4A	X	7.407	2.25
14	MP4A	Z	-4.276	2.25
15	MP4A	Mx	-0.004	2.25
16	MP4A	X	7.407	4.25
17	MP4A	Z	-4.276	4.25
18	MP4A	Mx	-0.004	4.25
19	MP1A	X	4.012	3.25
20	MP1A	Z	-2.316	3.25
21	MP1A	Mx	0.001	3.25
22	MP5A	X	10.399	1.5

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
23	MP5A	Z	-6.004	1.5
24	MP5A	Mx	0.007	1.5
25	MP1A	X	10.523	1.5
26	MP1A	Z	-6.075	1.5
27	MP1A	Mx	0.007	1.5
28	M17	X	21.942	1
29	M17	Z	-12.668	1
30	M17	Mx	0	1
31	MP2A	X	14.673	2.25
32	MP2A	Z	-8.471	2.25
33	MP2A	Mx	-0.007	2.25
34	MP2A	X	14.673	4.25
35	MP2A	Z	-8.471	4.25
36	MP2A	Mx	-0.007	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	15.581	1.25
2	MP1A	Z	0	1.25
3	MP1A	Mx	-0.009	1.25
4	MP1A	X	15.581	5.25
5	MP1A	Z	0	5.25
6	MP1A	Mx	-0.009	5.25
7	MP5A	X	15.581	1.25
8	MP5A	Z	0	1.25
9	MP5A	Mx	-0.009	1.25
10	MP5A	X	15.581	5.25
11	MP5A	Z	0	5.25
12	MP5A	Mx	-0.009	5.25
13	MP4A	X	6.35	2.25
14	MP4A	Z	0	2.25
15	MP4A	Mx	-0.003	2.25
16	MP4A	X	6.35	4.25
17	MP4A	Z	0	4.25
18	MP4A	Mx	-0.003	4.25
19	MP1A	X	4.936	3.25
20	MP1A	Z	0	3.25
21	MP1A	Mx	0.002	3.25
22	MP5A	X	10.811	1.5
23	MP5A	Z	0	1.5
24	MP5A	Mx	0.007	1.5
25	MP1A	X	11.002	1.5
26	MP1A	Z	0	1.5
27	MP1A	Mx	0.007	1.5
28	M17	X	28.044	1
29	M17	Z	0	1
30	M17	Mx	0	1
31	MP2A	X	13.276	2.25
32	MP2A	Z	0	2.25
33	MP2A	Mx	-0.007	2.25
34	MP2A	X	13.276	4.25
35	MP2A	Z	0	4.25
36	MP2A	Mx	-0.007	4.25



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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	17.123	1.25
2	MP1A	Z	9.886	1.25
3	MP1A	Mx	-0.01	1.25
4	MP1A	X	17.123	5.25
5	MP1A	Z	9.886	5.25
6	MP1A	Mx	-0.01	5.25
7	MP5A	X	17.123	1.25
8	MP5A	Z	9.886	1.25
9	MP5A	Mx	-0.01	1.25
10	MP5A	X	17.123	5.25
11	MP5A	Z	9.886	5.25
12	MP5A	Mx	-0.01	5.25
13	MP4A	X	7.407	2.25
14	MP4A	Z	4.276	2.25
15	MP4A	Mx	-0.004	2.25
16	MP4A	X	7.407	4.25
17	MP4A	Z	4.276	4.25
18	MP4A	Mx	-0.004	4.25
19	MP1A	X	4.012	3.25
20	MP1A	Z	2.316	3.25
21	MP1A	Mx	0.001	3.25
22	MP5A	X	10.399	1.5
23	MP5A	Z	6.004	1.5
24	MP5A	Mx	0.007	1.5
25	MP1A	X	10.523	1.5
26	MP1A	Z	6.075	1.5
27	MP1A	Mx	0.007	1.5
28	M17	X	27.162	1
29	M17	Z	15.682	1
30	M17	Mx	0	1
31	MP2A	X	14.673	2.25
32	MP2A	Z	8.471	2.25
33	MP2A	Mx	-0.007	2.25
34	MP2A	X	14.673	4.25
35	MP2A	Z	8.471	4.25
36	MP2A	Mx	-0.007	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	14.077	1.25
2	MP1A	Z	24.381	1.25
3	MP1A	Mx	-0.008	1.25
4	MP1A	X	14.077	5.25
5	MP1A	Z	24.381	5.25
6	MP1A	Mx	-0.008	5.25
7	MP5A	X	14.077	1.25
8	MP5A	Z	24.381	1.25
9	MP5A	Mx	-0.008	1.25
10	MP5A	X	14.077	5.25
11	MP5A	Z	24.381	5.25
12	MP5A	Mx	-0.008	5.25
13	MP4A	X	6.479	2.25
14	MP4A	Z	11.221	2.25
15	MP4A	Mx	-0.003	2.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
16	MP4A	X	6.479	4.25
17	MP4A	Z	11.221	4.25
18	MP4A	Mx	-0.003	4.25
19	MP1A	X	2.013	3.25
20	MP1A	Z	3.486	3.25
21	MP1A	Mx	0.000671	3.25
22	MP5A	X	7.2	1.5
23	MP5A	Z	12.471	1.5
24	MP5A	Mx	0.005	1.5
25	MP1A	X	7.224	1.5
26	MP1A	Z	12.512	1.5
27	MP1A	Mx	0.005	1.5
28	M17	X	15.989	1
29	M17	Z	27.693	1
30	M17	Mx	0	1
31	MP2A	X	12.138	2.25
32	MP2A	Z	21.024	2.25
33	MP2A	Mx	-0.006	2.25
34	MP2A	X	12.138	4.25
35	MP2A	Z	21.024	4.25
36	MP2A	Mx	-0.006	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	0	1.25
2	MP1A	Z	32.344	1.25
3	MP1A	Mx	0	1.25
4	MP1A	X	0	5.25
5	MP1A	Z	32.344	5.25
6	MP1A	Mx	0	5.25
7	MP5A	X	0	1.25
8	MP5A	Z	32.344	1.25
9	MP5A	Mx	0	1.25
10	MP5A	X	0	5.25
11	MP5A	Z	32.344	5.25
12	MP5A	Mx	0	5.25
13	MP4A	X	0	2.25
14	MP4A	Z	15.16	2.25
15	MP4A	Mx	0	2.25
16	MP4A	X	0	4.25
17	MP4A	Z	15.16	4.25
18	MP4A	Mx	0	4.25
19	MP1A	X	0	3.25
20	MP1A	Z	3.721	3.25
21	MP1A	Mx	0	3.25
22	MP5A	X	0	1.5
23	MP5A	Z	15.596	1.5
24	MP5A	Mx	0	1.5
25	MP1A	X	0	1.5
26	MP1A	Z	15.596	1.5
27	MP1A	Mx	0	1.5
28	M17	X	0	1
29	M17	Z	29.271	1
30	M17	Mx	0	1
31	MP2A	X	0	2.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
32	MP2A	Z	27.943	2.25
33	MP2A	Mx	0	2.25
34	MP2A	X	0	4.25
35	MP2A	Z	27.943	4.25
36	MP2A	Mx	0	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	-14.077	1.25
2	MP1A	Z	24.381	1.25
3	MP1A	Mx	0.008	1.25
4	MP1A	X	-14.077	5.25
5	MP1A	Z	24.381	5.25
6	MP1A	Mx	0.008	5.25
7	MP5A	X	-14.077	1.25
8	MP5A	Z	24.381	1.25
9	MP5A	Mx	0.008	1.25
10	MP5A	X	-14.077	5.25
11	MP5A	Z	24.381	5.25
12	MP5A	Mx	0.008	5.25
13	MP4A	X	-6.479	2.25
14	MP4A	Z	11.221	2.25
15	MP4A	Mx	0.003	2.25
16	MP4A	X	-6.479	4.25
17	MP4A	Z	11.221	4.25
18	MP4A	Mx	0.003	4.25
19	MP1A	X	-2.013	3.25
20	MP1A	Z	3.486	3.25
21	MP1A	Mx	-0.000671	3.25
22	MP5A	X	-7.2	1.5
23	MP5A	Z	12.471	1.5
24	MP5A	Mx	-0.005	1.5
25	MP1A	X	-7.224	1.5
26	MP1A	Z	12.512	1.5
27	MP1A	Mx	-0.005	1.5
28	M17	X	-12.975	1
29	M17	Z	22.474	1
30	M17	Mx	0	1
31	MP2A	X	-12.138	2.25
32	MP2A	Z	21.024	2.25
33	MP2A	Mx	0.006	2.25
34	MP2A	X	-12.138	4.25
35	MP2A	Z	21.024	4.25
36	MP2A	Mx	0.006	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	-17.123	1.25
2	MP1A	Z	9.886	1.25
3	MP1A	Mx	0.01	1.25
4	MP1A	X	-17.123	5.25
5	MP1A	Z	9.886	5.25
6	MP1A	Mx	0.01	5.25



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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
7	MP5A	X	-17.123	1.25
8	MP5A	Z	9.886	1.25
9	MP5A	Mx	0.01	1.25
10	MP5A	X	-17.123	5.25
11	MP5A	Z	9.886	5.25
12	MP5A	Mx	0.01	5.25
13	MP4A	X	-7.407	2.25
14	MP4A	Z	4.276	2.25
15	MP4A	Mx	0.004	2.25
16	MP4A	X	-7.407	4.25
17	MP4A	Z	4.276	4.25
18	MP4A	Mx	0.004	4.25
19	MP1A	X	-4.012	3.25
20	MP1A	Z	2.316	3.25
21	MP1A	Mx	-0.001	3.25
22	MP5A	X	-10.399	1.5
23	MP5A	Z	6.004	1.5
24	MP5A	Mx	-0.007	1.5
25	MP1A	X	-10.523	1.5
26	MP1A	Z	6.075	1.5
27	MP1A	Mx	-0.007	1.5
28	M17	X	-21.942	1
29	M17	Z	12.668	1
30	M17	Mx	0	1
31	MP2A	X	-14.673	2.25
32	MP2A	Z	8.471	2.25
33	MP2A	Mx	0.007	2.25
34	MP2A	X	-14.673	4.25
35	MP2A	Z	8.471	4.25
36	MP2A	Mx	0.007	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	-15.581	1.25
2	MP1A	Z	0	1.25
3	MP1A	Mx	0.009	1.25
4	MP1A	X	-15.581	5.25
5	MP1A	Z	0	5.25
6	MP1A	Mx	0.009	5.25
7	MP5A	X	-15.581	1.25
8	MP5A	Z	0	1.25
9	MP5A	Mx	0.009	1.25
10	MP5A	X	-15.581	5.25
11	MP5A	Z	0	5.25
12	MP5A	Mx	0.009	5.25
13	MP4A	X	-6.35	2.25
14	MP4A	Z	0	2.25
15	MP4A	Mx	0.003	2.25
16	MP4A	X	-6.35	4.25
17	MP4A	Z	0	4.25
18	MP4A	Mx	0.003	4.25
19	MP1A	X	-4.936	3.25
20	MP1A	Z	0	3.25
21	MP1A	Mx	-0.002	3.25
22	MP5A	X	-10.811	1.5

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
23	MP5A	Z	0	1.5
24	MP5A	Mx	-0.007	1.5
25	MP1A	X	-11.002	1.5
26	MP1A	Z	0	1.5
27	MP1A	Mx	-0.007	1.5
28	M17	X	-28.044	1
29	M17	Z	0	1
30	M17	Mx	0	1
31	MP2A	X	-13.276	2.25
32	MP2A	Z	0	2.25
33	MP2A	Mx	0.007	2.25
34	MP2A	X	-13.276	4.25
35	MP2A	Z	0	4.25
36	MP2A	Mx	0.007	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	-17.123	1.25
2	MP1A	Z	-9.886	1.25
3	MP1A	Mx	0.01	1.25
4	MP1A	X	-17.123	5.25
5	MP1A	Z	-9.886	5.25
6	MP1A	Mx	0.01	5.25
7	MP5A	X	-17.123	1.25
8	MP5A	Z	-9.886	1.25
9	MP5A	Mx	0.01	1.25
10	MP5A	X	-17.123	5.25
11	MP5A	Z	-9.886	5.25
12	MP5A	Mx	0.01	5.25
13	MP4A	X	-7.407	2.25
14	MP4A	Z	-4.276	2.25
15	MP4A	Mx	0.004	2.25
16	MP4A	X	-7.407	4.25
17	MP4A	Z	-4.276	4.25
18	MP4A	Mx	0.004	4.25
19	MP1A	X	-4.012	3.25
20	MP1A	Z	-2.316	3.25
21	MP1A	Mx	-0.001	3.25
22	MP5A	X	-10.399	1.5
23	MP5A	Z	-6.004	1.5
24	MP5A	Mx	-0.007	1.5
25	MP1A	X	-10.523	1.5
26	MP1A	Z	-6.075	1.5
27	MP1A	Mx	-0.007	1.5
28	M17	X	-27.162	1
29	M17	Z	-15.682	1
30	M17	Mx	0	1
31	MP2A	X	-14.673	2.25
32	MP2A	Z	-8.471	2.25
33	MP2A	Mx	0.007	2.25
34	MP2A	X	-14.673	4.25
35	MP2A	Z	-8.471	4.25
36	MP2A	Mx	0.007	4.25



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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	-14.077	1.25
2	MP1A	Z	-24.381	1.25
3	MP1A	Mx	0.008	1.25
4	MP1A	X	-14.077	5.25
5	MP1A	Z	-24.381	5.25
6	MP1A	Mx	0.008	5.25
7	MP5A	X	-14.077	1.25
8	MP5A	Z	-24.381	1.25
9	MP5A	Mx	0.008	1.25
10	MP5A	X	-14.077	5.25
11	MP5A	Z	-24.381	5.25
12	MP5A	Mx	0.008	5.25
13	MP4A	X	-6.479	2.25
14	MP4A	Z	-11.221	2.25
15	MP4A	Mx	0.003	2.25
16	MP4A	X	-6.479	4.25
17	MP4A	Z	-11.221	4.25
18	MP4A	Mx	0.003	4.25
19	MP1A	X	-2.013	3.25
20	MP1A	Z	-3.486	3.25
21	MP1A	Mx	-0.000671	3.25
22	MP5A	X	-7.2	1.5
23	MP5A	Z	-12.471	1.5
24	MP5A	Mx	-0.005	1.5
25	MP1A	X	-7.224	1.5
26	MP1A	Z	-12.512	1.5
27	MP1A	Mx	-0.005	1.5
28	M17	X	-15.989	1
29	M17	Z	-27.693	1
30	M17	Mx	0	1
31	MP2A	X	-12.138	2.25
32	MP2A	Z	-21.024	2.25
33	MP2A	Mx	0.006	2.25
34	MP2A	X	-12.138	4.25
35	MP2A	Z	-21.024	4.25
36	MP2A	Mx	0.006	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	0	1.25
2	MP1A	Z	-11.399	1.25
3	MP1A	Mx	0	1.25
4	MP1A	X	0	5.25
5	MP1A	Z	-11.399	5.25
6	MP1A	Mx	0	5.25
7	MP5A	X	0	1.25
8	MP5A	Z	-11.399	1.25
9	MP5A	Mx	0	1.25
10	MP5A	X	0	5.25
11	MP5A	Z	-11.399	5.25
12	MP5A	Mx	0	5.25
13	MP4A	X	0	2.25
14	MP4A	Z	-4.025	2.25
15	MP4A	Mx	0	2.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
16	MP4A	X	0	4.25
17	MP4A	Z	-4.025	4.25
18	MP4A	Mx	0	4.25
19	MP1A	X	0	3.25
20	MP1A	Z	-0.943	3.25
21	MP1A	Mx	0	3.25
22	MP5A	X	0	1.5
23	MP5A	Z	-3.948	1.5
24	MP5A	Mx	0	1.5
25	MP1A	X	0	1.5
26	MP1A	Z	-4.763	1.5
27	MP1A	Mx	0	1.5
28	M17	X	0	1
29	M17	Z	-7.275	1
30	M17	Mx	0	1
31	MP2A	X	0	2.25
32	MP2A	Z	-9.221	2.25
33	MP2A	Mx	0	2.25
34	MP2A	X	0	4.25
35	MP2A	Z	-9.221	4.25
36	MP2A	Mx	0	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	4.885	1.25
2	MP1A	Z	-8.46	1.25
3	MP1A	Mx	-0.003	1.25
4	MP1A	X	4.885	5.25
5	MP1A	Z	-8.46	5.25
6	MP1A	Mx	-0.003	5.25
7	MP5A	X	4.885	1.25
8	MP5A	Z	-8.46	1.25
9	MP5A	Mx	-0.003	1.25
10	MP5A	X	4.885	5.25
11	MP5A	Z	-8.46	5.25
12	MP5A	Mx	-0.003	5.25
13	MP4A	X	1.686	2.25
14	MP4A	Z	-2.92	2.25
15	MP4A	Mx	-0.000843	2.25
16	MP4A	X	1.686	4.25
17	MP4A	Z	-2.92	4.25
18	MP4A	Mx	-0.000843	4.25
19	MP1A	X	0.516	3.25
20	MP1A	Z	-0.895	3.25
21	MP1A	Mx	0.000172	3.25
22	MP5A	X	1.812	1.5
23	MP5A	Z	-3.138	1.5
24	MP5A	Mx	0.001	1.5
25	MP1A	X	2.192	1.5
26	MP1A	Z	-3.797	1.5
27	MP1A	Mx	0.001	1.5
28	M17	X	3.183	1
29	M17	Z	-5.513	1
30	M17	Mx	0	1
31	MP2A	X	3.976	2.25



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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
32	MP2A	Z	-6.886	2.25
33	MP2A	Mx	-0.002	2.25
34	MP2A	X	3.976	4.25
35	MP2A	Z	-6.886	4.25
36	MP2A	Mx	-0.002	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	5.637	1.25
2	MP1A	Z	-3.254	1.25
3	MP1A	Mx	-0.003	1.25
4	MP1A	X	5.637	5.25
5	MP1A	Z	-3.254	5.25
6	MP1A	Mx	-0.003	5.25
7	MP5A	X	5.637	1.25
8	MP5A	Z	-3.254	1.25
9	MP5A	Mx	-0.003	1.25
10	MP5A	X	5.637	5.25
11	MP5A	Z	-3.254	5.25
12	MP5A	Mx	-0.003	5.25
13	MP4A	X	1.79	2.25
14	MP4A	Z	-1.033	2.25
15	MP4A	Mx	-0.000895	2.25
16	MP4A	X	1.79	4.25
17	MP4A	Z	-1.033	4.25
18	MP4A	Mx	-0.000895	4.25
19	MP1A	X	1.051	3.25
20	MP1A	Z	-0.607	3.25
21	MP1A	Mx	0.00035	3.25
22	MP5A	X	2.576	1.5
23	MP5A	Z	-1.487	1.5
24	MP5A	Mx	0.002	1.5
25	MP1A	X	3.141	1.5
26	MP1A	Z	-1.813	1.5
27	MP1A	Mx	0.002	1.5
28	M17	X	5.367	1
29	M17	Z	-3.099	1
30	M17	Mx	0	1
31	MP2A	X	4.687	2.25
32	MP2A	Z	-2.706	2.25
33	MP2A	Mx	-0.002	2.25
34	MP2A	X	4.687	4.25
35	MP2A	Z	-2.706	4.25
36	MP2A	Mx	-0.002	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	4.879	1.25
2	MP1A	Z	0	1.25
3	MP1A	Mx	-0.003	1.25
4	MP1A	X	4.879	5.25
5	MP1A	Z	0	5.25
6	MP1A	Mx	-0.003	5.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
7	MP5A	X	4.879	1.25
8	MP5A	Z	0	1.25
9	MP5A	Mx	-0.003	1.25
10	MP5A	X	4.879	5.25
11	MP5A	Z	0	5.25
12	MP5A	Mx	-0.003	5.25
13	MP4A	X	1.414	2.25
14	MP4A	Z	0	2.25
15	MP4A	Mx	-0.000707	2.25
16	MP4A	X	1.414	4.25
17	MP4A	Z	0	4.25
18	MP4A	Mx	-0.000707	4.25
19	MP1A	X	1.304	3.25
20	MP1A	Z	0	3.25
21	MP1A	Mx	0.000435	3.25
22	MP5A	X	2.649	1.5
23	MP5A	Z	0	1.5
24	MP5A	Mx	0.002	1.5
25	MP1A	X	3.248	1.5
26	MP1A	Z	0	1.5
27	MP1A	Mx	0.002	1.5
28	M17	X	6.939	1
29	M17	Z	0	1
30	M17	Mx	0	1
31	MP2A	X	4.142	2.25
32	MP2A	Z	0	2.25
33	MP2A	Mx	-0.002	2.25
34	MP2A	X	4.142	4.25
35	MP2A	Z	0	4.25
36	MP2A	Mx	-0.002	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	5.637	1.25
2	MP1A	Z	3.254	1.25
3	MP1A	Mx	-0.003	1.25
4	MP1A	X	5.637	5.25
5	MP1A	Z	3.254	5.25
6	MP1A	Mx	-0.003	5.25
7	MP5A	X	5.637	1.25
8	MP5A	Z	3.254	1.25
9	MP5A	Mx	-0.003	1.25
10	MP5A	X	5.637	5.25
11	MP5A	Z	3.254	5.25
12	MP5A	Mx	-0.003	5.25
13	MP4A	X	1.79	2.25
14	MP4A	Z	1.033	2.25
15	MP4A	Mx	-0.000895	2.25
16	MP4A	X	1.79	4.25
17	MP4A	Z	1.033	4.25
18	MP4A	Mx	-0.000895	4.25
19	MP1A	X	1.051	3.25
20	MP1A	Z	0.607	3.25
21	MP1A	Mx	0.00035	3.25
22	MP5A	X	2.576	1.5



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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
23	MP5A	Z	1.487	1.5
24	MP5A	Mx	0.002	1.5
25	MP1A	X	3.141	1.5
26	MP1A	Z	1.813	1.5
27	MP1A	Mx	0.002	1.5
28	M17	X	6.797	1
29	M17	Z	3.924	1
30	M17	Mx	0	1
31	MP2A	X	4.687	2.25
32	MP2A	Z	2.706	2.25
33	MP2A	Mx	-0.002	2.25
34	MP2A	X	4.687	4.25
35	MP2A	Z	2.706	4.25
36	MP2A	Mx	-0.002	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	4.885	1.25
2	MP1A	Z	8.46	1.25
3	MP1A	Mx	-0.003	1.25
4	MP1A	X	4.885	5.25
5	MP1A	Z	8.46	5.25
6	MP1A	Mx	-0.003	5.25
7	MP5A	X	4.885	1.25
8	MP5A	Z	8.46	1.25
9	MP5A	Mx	-0.003	1.25
10	MP5A	X	4.885	5.25
11	MP5A	Z	8.46	5.25
12	MP5A	Mx	-0.003	5.25
13	MP4A	X	1.686	2.25
14	MP4A	Z	2.92	2.25
15	MP4A	Mx	-0.000843	2.25
16	MP4A	X	1.686	4.25
17	MP4A	Z	2.92	4.25
18	MP4A	Mx	-0.000843	4.25
19	MP1A	X	0.516	3.25
20	MP1A	Z	0.895	3.25
21	MP1A	Mx	0.000172	3.25
22	MP5A	X	1.812	1.5
23	MP5A	Z	3.138	1.5
24	MP5A	Mx	0.001	1.5
25	MP1A	X	2.192	1.5
26	MP1A	Z	3.797	1.5
27	MP1A	Mx	0.001	1.5
28	M17	X	4.008	1
29	M17	Z	6.943	1
30	M17	Mx	0	1
31	MP2A	X	3.976	2.25
32	MP2A	Z	6.886	2.25
33	MP2A	Mx	-0.002	2.25
34	MP2A	X	3.976	4.25
35	MP2A	Z	6.886	4.25
36	MP2A	Mx	-0.002	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	0	1.25
2	MP1A	Z	11.399	1.25
3	MP1A	Mx	0	1.25
4	MP1A	X	0	5.25
5	MP1A	Z	11.399	5.25
6	MP1A	Mx	0	5.25
7	MP5A	X	0	1.25
8	MP5A	Z	11.399	1.25
9	MP5A	Mx	0	1.25
10	MP5A	X	0	5.25
11	MP5A	Z	11.399	5.25
12	MP5A	Mx	0	5.25
13	MP4A	X	0	2.25
14	MP4A	Z	4.025	2.25
15	MP4A	Mx	0	2.25
16	MP4A	X	0	4.25
17	MP4A	Z	4.025	4.25
18	MP4A	Mx	0	4.25
19	MP1A	X	0	3.25
20	MP1A	Z	0.943	3.25
21	MP1A	Mx	0	3.25
22	MP5A	X	0	1.5
23	MP5A	Z	3.948	1.5
24	MP5A	Mx	0	1.5
25	MP1A	X	0	1.5
26	MP1A	Z	4.763	1.5
27	MP1A	Mx	0	1.5
28	M17	X	0	1
29	M17	Z	7.275	1
30	M17	Mx	0	1
31	MP2A	X	0	2.25
32	MP2A	Z	9.221	2.25
33	MP2A	Mx	0	2.25
34	MP2A	X	0	4.25
35	MP2A	Z	9.221	4.25
36	MP2A	Mx	0	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	-4.885	1.25
2	MP1A	Z	8.46	1.25
3	MP1A	Mx	0.003	1.25
4	MP1A	X	-4.885	5.25
5	MP1A	Z	8.46	5.25
6	MP1A	Mx	0.003	5.25
7	MP5A	X	-4.885	1.25
8	MP5A	Z	8.46	1.25
9	MP5A	Mx	0.003	1.25
10	MP5A	X	-4.885	5.25
11	MP5A	Z	8.46	5.25
12	MP5A	Mx	0.003	5.25
13	MP4A	X	-1.686	2.25
14	MP4A	Z	2.92	2.25
15	MP4A	Mx	0.000843	2.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
16	MP4A	X	-1.686	4.25
17	MP4A	Z	2.92	4.25
18	MP4A	Mx	0.000843	4.25
19	MP1A	X	-0.516	3.25
20	MP1A	Z	0.895	3.25
21	MP1A	Mx	-0.000172	3.25
22	MP5A	X	-1.812	1.5
23	MP5A	Z	3.138	1.5
24	MP5A	Mx	-0.001	1.5
25	MP1A	X	-2.192	1.5
26	MP1A	Z	3.797	1.5
27	MP1A	Mx	-0.001	1.5
28	M17	X	-3.183	1
29	M17	Z	5.513	1
30	M17	Mx	0	1
31	MP2A	X	-3.976	2.25
32	MP2A	Z	6.886	2.25
33	MP2A	Mx	0.002	2.25
34	MP2A	X	-3.976	4.25
35	MP2A	Z	6.886	4.25
36	MP2A	Mx	0.002	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	-5.637	1.25
2	MP1A	Z	3.254	1.25
3	MP1A	Mx	0.003	1.25
4	MP1A	X	-5.637	5.25
5	MP1A	Z	3.254	5.25
6	MP1A	Mx	0.003	5.25
7	MP5A	X	-5.637	1.25
8	MP5A	Z	3.254	1.25
9	MP5A	Mx	0.003	1.25
10	MP5A	X	-5.637	5.25
11	MP5A	Z	3.254	5.25
12	MP5A	Mx	0.003	5.25
13	MP4A	X	-1.79	2.25
14	MP4A	Z	1.033	2.25
15	MP4A	Mx	0.000895	2.25
16	MP4A	X	-1.79	4.25
17	MP4A	Z	1.033	4.25
18	MP4A	Mx	0.000895	4.25
19	MP1A	X	-1.051	3.25
20	MP1A	Z	0.607	3.25
21	MP1A	Mx	-0.00035	3.25
22	MP5A	X	-2.576	1.5
23	MP5A	Z	1.487	1.5
24	MP5A	Mx	-0.002	1.5
25	MP1A	X	-3.141	1.5
26	MP1A	Z	1.813	1.5
27	MP1A	Mx	-0.002	1.5
28	M17	X	-5.367	1
29	M17	Z	3.099	1
30	M17	Mx	0	1
31	MP2A	X	-4.687	2.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
32	MP2A	Z	2.706	2.25
33	MP2A	Mx	0.002	2.25
34	MP2A	X	-4.687	4.25
35	MP2A	Z	2.706	4.25
36	MP2A	Mx	0.002	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	-4.879	1.25
2	MP1A	Z	0	1.25
3	MP1A	Mx	0.003	1.25
4	MP1A	X	-4.879	5.25
5	MP1A	Z	0	5.25
6	MP1A	Mx	0.003	5.25
7	MP5A	X	-4.879	1.25
8	MP5A	Z	0	1.25
9	MP5A	Mx	0.003	1.25
10	MP5A	X	-4.879	5.25
11	MP5A	Z	0	5.25
12	MP5A	Mx	0.003	5.25
13	MP4A	X	-1.414	2.25
14	MP4A	Z	0	2.25
15	MP4A	Mx	0.000707	2.25
16	MP4A	X	-1.414	4.25
17	MP4A	Z	0	4.25
18	MP4A	Mx	0.000707	4.25
19	MP1A	X	-1.304	3.25
20	MP1A	Z	0	3.25
21	MP1A	Mx	-0.000435	3.25
22	MP5A	X	-2.649	1.5
23	MP5A	Z	0	1.5
24	MP5A	Mx	-0.002	1.5
25	MP1A	X	-3.248	1.5
26	MP1A	Z	0	1.5
27	MP1A	Mx	-0.002	1.5
28	M17	X	-6.939	1
29	M17	Z	0	1
30	M17	Mx	0	1
31	MP2A	X	-4.142	2.25
32	MP2A	Z	0	2.25
33	MP2A	Mx	0.002	2.25
34	MP2A	X	-4.142	4.25
35	MP2A	Z	0	4.25
36	MP2A	Mx	0.002	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	-5.637	1.25
2	MP1A	Z	-3.254	1.25
3	MP1A	Mx	0.003	1.25
4	MP1A	X	-5.637	5.25
5	MP1A	Z	-3.254	5.25
6	MP1A	Mx	0.003	5.25



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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
7	MP5A	X	-5.637	1.25
8	MP5A	Z	-3.254	1.25
9	MP5A	Mx	0.003	1.25
10	MP5A	X	-5.637	5.25
11	MP5A	Z	-3.254	5.25
12	MP5A	Mx	0.003	5.25
13	MP4A	X	-1.79	2.25
14	MP4A	Z	-1.033	2.25
15	MP4A	Mx	0.000895	2.25
16	MP4A	X	-1.79	4.25
17	MP4A	Z	-1.033	4.25
18	MP4A	Mx	0.000895	4.25
19	MP1A	X	-1.051	3.25
20	MP1A	Z	-0.607	3.25
21	MP1A	Mx	-0.00035	3.25
22	MP5A	X	-2.576	1.5
23	MP5A	Z	-1.487	1.5
24	MP5A	Mx	-0.002	1.5
25	MP1A	X	-3.141	1.5
26	MP1A	Z	-1.813	1.5
27	MP1A	Mx	-0.002	1.5
28	M17	X	-6.797	1
29	M17	Z	-3.924	1
30	M17	Mx	0	1
31	MP2A	X	-4.687	2.25
32	MP2A	Z	-2.706	2.25
33	MP2A	Mx	0.002	2.25
34	MP2A	X	-4.687	4.25
35	MP2A	Z	-2.706	4.25
36	MP2A	Mx	0.002	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	-4.885	1.25
2	MP1A	Z	-8.46	1.25
3	MP1A	Mx	0.003	1.25
4	MP1A	X	-4.885	5.25
5	MP1A	Z	-8.46	5.25
6	MP1A	Mx	0.003	5.25
7	MP5A	X	-4.885	1.25
8	MP5A	Z	-8.46	1.25
9	MP5A	Mx	0.003	1.25
10	MP5A	X	-4.885	5.25
11	MP5A	Z	-8.46	5.25
12	MP5A	Mx	0.003	5.25
13	MP4A	X	-1.686	2.25
14	MP4A	Z	-2.92	2.25
15	MP4A	Mx	0.000843	2.25
16	MP4A	X	-1.686	4.25
17	MP4A	Z	-2.92	4.25
18	MP4A	Mx	0.000843	4.25
19	MP1A	X	-0.516	3.25
20	MP1A	Z	-0.895	3.25
21	MP1A	Mx	-0.000172	3.25
22	MP5A	X	-1.812	1.5

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
23	MP5A	Z	-3.138	1.5
24	MP5A	Mx	-0.001	1.5
25	MP1A	X	-2.192	1.5
26	MP1A	Z	-3.797	1.5
27	MP1A	Mx	-0.001	1.5
28	M17	X	-4.008	1
29	M17	Z	-6.943	1
30	M17	Mx	0	1
31	MP2A	X	-3.976	2.25
32	MP2A	Z	-6.886	2.25
33	MP2A	Mx	0.002	2.25
34	MP2A	X	-3.976	4.25
35	MP2A	Z	-6.886	4.25
36	MP2A	Mx	0.002	4.25

Member Point Loads (BLC 77 : Lm1)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	M9	Y	-500	0

Member Point Loads (BLC 78 : Lm2)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	M11	Y	-500	0

Member Point Loads (BLC 79 : Lv1)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	M5	Y	-250	0

Member Point Loads (BLC 80 : Lv2)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	M5	Y	-250	%50

Member Point Loads (BLC 81 : Antenna Ev)

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	Y	0	1.25
2	MP1A	My	0	1.25
3	MP1A	Mz	0	1.25
4	MP1A	Y	0	5.25
5	MP1A	My	0	5.25
6	MP1A	Mz	0	5.25
7	MP5A	Y	0	1.25
8	MP5A	My	0	1.25
9	MP5A	Mz	0	1.25
10	MP5A	Y	0	5.25
11	MP5A	My	0	5.25
12	MP5A	Mz	0	5.25
13	MP4A	Y	0	2.25
14	MP4A	My	0	2.25
15	MP4A	Mz	0	2.25
16	MP4A	Y	0	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
17	MP4A	My	0	4.25
18	MP4A	Mz	0	4.25
19	MP1A	Y	0	3.25
20	MP1A	My	0	3.25
21	MP1A	Mz	0	3.25
22	MP5A	Y	0	1.5
23	MP5A	My	0	1.5
24	MP5A	Mz	0	1.5
25	MP1A	Y	0	1.5
26	MP1A	My	0	1.5
27	MP1A	Mz	0	1.5
28	M17	Y	0	1
29	M17	My	0	1
30	M17	Mz	0	1
31	MP2A	Y	0	2.25
32	MP2A	My	0	2.25
33	MP2A	Mz	0	2.25
34	MP2A	Y	0	4.25
35	MP2A	My	0	4.25
36	MP2A	Mz	0	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	Z	-1.108	1.25
2	MP1A	Mx	0	1.25
3	MP1A	Z	-1.108	5.25
4	MP1A	Mx	0	5.25
5	MP5A	Z	-1.108	1.25
6	MP5A	Mx	0	1.25
7	MP5A	Z	-1.108	5.25
8	MP5A	Mx	0	5.25
9	MP4A	Z	-0.86	2.25
10	MP4A	Mx	0	2.25
11	MP4A	Z	-0.86	4.25
12	MP4A	Mx	0	4.25
13	MP1A	Z	-0.624	3.25
14	MP1A	Mx	0	3.25
15	MP5A	Z	-2.241	1.5
16	MP5A	Mx	0	1.5
17	MP1A	Z	-2.373	1.5
18	MP1A	Mx	0	1.5
19	M17	Z	-0.96	1
20	M17	Mx	0	1
21	MP2A	Z	-0.757	2.25
22	MP2A	Mx	0	2.25
23	MP2A	Z	-0.757	4.25
24	MP2A	Mx	0	4.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
1	MP1A	X	1.108	1.25
2	MP1A	Mx	-0.000646	1.25
3	MP1A	X	1.108	5.25

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [(ft, %)]
4	MP1A	Mx	-0.000646	5.25
5	MP5A	X	1.108	1.25
6	MP5A	Mx	-0.000646	1.25
7	MP5A	X	1.108	5.25
8	MP5A	Mx	-0.000646	5.25
9	MP4A	X	0.86	2.25
10	MP4A	Mx	-0.00043	2.25
11	MP4A	X	0.86	4.25
12	MP4A	Mx	-0.00043	4.25
13	MP1A	X	0.624	3.25
14	MP1A	Mx	0.000208	3.25
15	MP5A	X	2.241	1.5
16	MP5A	Mx	0.001	1.5
17	MP1A	X	2.373	1.5
18	MP1A	Mx	0.002	1.5
19	M17	X	0.96	1
20	M17	Mx	0	1
21	MP2A	X	0.757	2.25
22	MP2A	Mx	-0.000379	2.25
23	MP2A	X	0.757	4.25
24	MP2A	Mx	-0.000379	4.25

Member Area Loads

No Data to Print...													
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Envelope Node Reactions

Node Label	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC		
1	N1	max	1139.659	9	1339.815	19	1639.091	1	-0.816	1	2.084	9	1.751	38
2		min	-1051.615	3	500.418	1	-692.081	7	-2.304	19	-1.916	3	-1.654	32
3	N51	max	739.442	36	712.709	13	544.782	1	-0.397	75	1.465	33	0.692	38
4		min	-850.207	42	189.513	7	-1491.795	7	-1.026	13	-1.676	39	-0.665	32
5	Totals:	max	1268.323	11	1968.71	21	2183.873	1						
6		min	-1268.322	5	772.338	67	-2183.875	7						

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

Member	Shape	Code Check	Loc[ft]	LC	Shear	Check	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	M4	PIPE 4.0	0	0.75	21	0	0.75	8	92571.332	93240	10.631	10.631	1	H1-1b*	
2	M3	HSS4X4X4	0.232	0	45	0.158	0	y	39	137389.397	139518	16.181	16.181	1.807	H1-1b
3	M5	HSS4X4X4	0.204	5	1	0.059	5	y	44	91806.571	139518	16.181	16.181	1.735	H1-1b
4	MP1A	PIPE 2.0	0.295	4.25	47	0.086	2.833	8	13511.278	32130	1.872	1.872	1	H1-1b	
5	MP3A	PIPE 2.0	0.261	4.25	20	0.085	2.833	8	13511.278	32130	1.872	1.872	1	H1-1b	
6	MP5A	PIPE 2.0	0.299	4.25	26	0.084	3.188	25	13511.278	32130	1.872	1.872	1	H1-1b	
7	M17	PIPE 2.0	0.04	1.5	6	0.015	1.5	6	28843.414	32130	1.872	1.872	1	H1-1b	
8	MP2A	PIPE 2.0	0.322	4.25	45	0.087	4.25	44	13511.278	32130	1.872	1.872	1	H1-1b	
9	MP4A	PIPE 2.0	0.342	4.25	27	0.095	4.25	30	13511.278	32130	1.872	1.872	1	H1-1b	
10	M22	PIPE 3.0	0.316	5	7	0.128	5	21	38176.7	65205	5.749	5.749	1	H1-1b	
11	M23	HSS3X3X4	0.305	0	39	0.125	0	z	39	98153.086	101016	8.556	8.556	2.07	H1-1b

Node Reactions

	LC	Node Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
1	1	N1	-123.984	500.418	1639.091	-0.816	-0.273	0.235
2	1	N51	123.984	529.366	544.782	-0.577	-0.363	0.096
3	1	Totals:	0	1029.784	2183.873			
4	1	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
5	2	N1	-883.12	541.557	1345.159	-0.94	-1.659	0.581
6	2	N51	-80.123	488.226	323.225	-0.58	-1.341	0.228
7	2	Totals:	-963.242	1029.783	1668.384			
8	2	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
9	3	N1	-1051.615	614.887	844.729	-1.099	-1.916	0.575
10	3	N51	-193.829	414.896	-125.667	-0.564	-1.454	0.22
11	3	Totals:	-1245.443	1029.783	719.062			
12	3	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
13	4	N1	-963.751	678.436	441.574	-1.199	-1.697	0.461
14	4	N51	-243.389	351.348	-441.572	-0.535	-1.241	0.17
15	4	Totals:	-1207.141	1029.784	0.002			
16	4	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
17	5	N1	-949.057	742.167	19.657	-1.309	-1.662	0.454
18	5	N51	-319.266	287.616	-751.923	-0.51	-1.246	0.165
19	5	Totals:	-1268.322	1029.783	-732.266			
20	5	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
21	6	N1	-632.458	811.287	-477.456	-1.454	-1.103	0.311
22	6	N51	-343.994	218.496	-1213.802	-0.493	-0.901	0.109
23	6	Totals:	-976.452	1029.784	-1691.258			
24	6	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
25	7	N1	208.584	840.272	-692.081	-1.495	0.435	-0.113
26	7	N51	-208.584	189.513	-1491.795	-0.482	0.193	-0.055
27	7	Totals:	0	1029.785	-2183.875			
28	7	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
29	8	N1	969.998	799.118	-397.451	-1.371	1.823	-0.464
30	8	N51	-6.755	230.668	-1270.935	-0.479	1.174	-0.188
31	8	Totals:	963.243	1029.786	-1668.386			
32	8	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
33	9	N1	1139.659	725.842	103.025	-1.212	2.084	-0.459
34	9	N51	105.785	303.944	-822.089	-0.495	1.29	-0.18
35	9	Totals:	1245.444	1029.786	-719.064			
36	9	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
37	10	N1	1051.493	662.328	505.991	-1.113	1.865	-0.344
38	10	N51	155.647	367.458	-505.995	-0.524	1.076	-0.13
39	10	Totals:	1207.141	1029.786	-0.004			
40	10	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
41	11	N1	1036.04	598.612	927.522	-1.003	1.83	-0.336
42	11	N51	232.282	431.173	-195.258	-0.55	1.081	-0.124
43	11	Totals:	1268.323	1029.786	732.264			
44	11	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
45	12	N1	717.61	529.478	1424.116	-0.858	1.269	-0.191
46	12	N51	258.842	500.308	267.14	-0.566	0.733	-0.068
47	12	Totals:	976.452	1029.785	1691.256			
48	12	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
49	13	N1	74.838	1256	1236.51	-2.167	0.134	0.19
50	13	N51	-74.837	712.709	-725.409	-1.026	-0.237	0.068
51	13	Totals:	0	1968.709	511.102			
52	13	COG (ft):	X: 0.188	Y: 0.902	Z: 2.982			
53	14	N1	-110.877	1265.056	1168.412	-2.192	-0.203	0.262
54	14	N51	-118.651	703.653	-770.865	-1.026	-0.457	0.095
55	14	Totals:	-229.528	1968.709	397.547			

Node Reactions (Continued)

	LC	Node Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
56	14	COG (ft):	X: 0.188	Y: 0.902	Z: 2.982			
57	15	N1	-172.348	1282.532	1045.789	-2.225	-0.303	0.267
58	15	N51	-140.265	686.178	-865.306	-1.02	-0.504	0.095
59	15	Totals:	-312.613	1968.709	180.483			
60	15	COG (ft):	X: 0.188	Y: 0.902	Z: 2.982			
61	16	N1	-166.484	1299.924	936.17	-2.246	-0.279	0.248
62	16	N51	-148.462	668.785	-936.172	-1.01	-0.472	0.087
63	16	Totals:	-314.946	1968.709	-0.001			
64	16	COG (ft):	X: 0.188	Y: 0.902	Z: 2.982			
65	17	N1	-156.626	1317.161	823.13	-2.269	-0.259	0.247
66	17	N51	-161.207	651.548	-1006.63	-1	-0.468	0.086
67	17	Totals:	-317.833	1968.709	-183.5			
68	17	COG (ft):	X: 0.188	Y: 0.902	Z: 2.982			
69	18	N1	-72.053	1333.441	702.292	-2.297	-0.11	0.22
70	18	N51	-160.489	635.268	-1105.061	-0.994	-0.385	0.075
71	18	Totals:	-232.542	1968.709	-402.769			
72	18	COG (ft):	X: 0.188	Y: 0.902	Z: 2.982			
73	19	N1	126.396	1339.815	651.849	-2.304	0.252	0.137
74	19	N51	-126.396	628.895	-1162.955	-0.991	-0.148	0.043
75	19	Totals:	0	1968.71	-511.106			
76	19	COG (ft):	X: 0.188	Y: 0.902	Z: 2.982			
77	20	N1	312.198	1330.757	719.98	-2.279	0.589	0.065
78	20	N51	-82.67	637.952	-1117.531	-0.991	0.072	0.016
79	20	Totals:	229.528	1968.71	-397.551			
80	20	COG (ft):	X: 0.188	Y: 0.902	Z: 2.982			
81	21	N1	373.713	1313.284	842.609	-2.246	0.69	0.059
82	21	N51	-61.1	655.426	-1023.096	-0.997	0.119	0.016
83	21	Totals:	312.613	1968.71	-180.488			
84	21	COG (ft):	X: 0.188	Y: 0.902	Z: 2.982			
85	22	N1	367.834	1295.893	952.218	-2.225	0.665	0.078
86	22	N51	-52.888	672.817	-952.221	-1.007	0.087	0.024
87	22	Totals:	314.947	1968.71	-0.003			
88	22	COG (ft):	X: 0.188	Y: 0.902	Z: 2.982			
89	23	N1	357.937	1278.657	1065.239	-2.202	0.645	0.079
90	23	N51	-40.103	690.053	-881.743	-1.017	0.083	0.025
91	23	Totals:	317.833	1968.71	183.496			
92	23	COG (ft):	X: 0.188	Y: 0.902	Z: 2.982			
93	24	N1	273.295	1262.377	1186.053	-2.174	0.496	0.106
94	24	N51	-40.753	706.333	-783.288	-1.023	0	0.036
95	24	Totals:	232.542	1968.71	402.764			
96	24	COG (ft):	X: 0.188	Y: 0.902	Z: 2.982			
97	25	N1	-730.984	1159.615	857.082	-1.98	-1.404	-1.611
98	25	N51	730.982	620.173	-720.594	-0.91	1.362	-0.648
99	25	Totals:	-0.002	1779.788	136.488			
100	25	COG (ft):	X: -1.885	Y: 0.57	Z: 2.982			
101	26	N1	-778.531	1162.187	838.772	-1.987	-1.491	-1.589
102	26	N51	718.324	617.601	-734.503	-0.91	1.3	-0.639
103	26	Totals:	-60.207	1779.788	104.27			
104	26	COG (ft):	X: -1.885	Y: 0.57	Z: 2.982			
105	27	N1	-789.139	1166.763	807.504	-1.997	-1.507	-1.59
106	27	N51	711.294	613.024	-762.568	-0.909	1.293	-0.64
107	27	Totals:	-77.845	1779.788	44.936			
108	27	COG (ft):	X: -1.885	Y: 0.57	Z: 2.982			
109	28	N1	-783.67	1170.73	782.294	-2.003	-1.494	-1.597
110	28	N51	708.219	609.057	-782.297	-0.907	1.306	-0.643

Node Reactions (Continued)

	LC	Node Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
111	28	Totals:	-75.451	1779.788	-0.003			
112	28	COG (ft):	X: -1.885	Y: 0.57	Z: 2.982			
113	29	N1	-782.762	1174.711	755.936	-2.01	-1.492	-1.597
114	29	N51	703.487	605.077	-801.704	-0.905	1.306	-0.643
115	29	Totals:	-79.275	1779.788	-45.768			
116	29	COG (ft):	X: -1.885	Y: 0.57	Z: 2.982			
117	30	N1	-762.962	1179.025	724.854	-2.019	-1.457	-1.606
118	30	N51	701.93	600.762	-830.56	-0.904	1.328	-0.647
119	30	Totals:	-61.032	1779.788	-105.706			
120	30	COG (ft):	X: -1.885	Y: 0.57	Z: 2.982			
121	31	N1	-710.394	1180.832	711.339	-2.022	-1.36	-1.633
122	31	N51	710.392	598.956	-847.833	-0.904	1.396	-0.657
123	31	Totals:	-0.002	1779.788	-136.495			
124	31	COG (ft):	X: -1.885	Y: 0.57	Z: 2.982			
125	32	N1	-662.838	1178.26	729.651	-2.014	-1.274	-1.654
126	32	N51	723.041	601.528	-833.927	-0.903	1.457	-0.665
127	32	Totals:	60.203	1779.788	-104.276			
128	32	COG (ft):	X: -1.885	Y: 0.57	Z: 2.982			
129	33	N1	-652.226	1173.683	760.92	-2.005	-1.257	-1.654
130	33	N51	730.067	606.105	-805.863	-0.904	1.465	-0.665
131	33	Totals:	77.841	1779.788	-44.943			
132	33	COG (ft):	X: -1.885	Y: 0.57	Z: 2.982			
133	34	N1	-657.696	1169.716	786.129	-1.998	-1.271	-1.647
134	34	N51	733.143	610.071	-786.133	-0.906	1.451	-0.662
135	34	Totals:	75.446	1779.788	-0.004			
136	34	COG (ft):	X: -1.885	Y: 0.57	Z: 2.982			
137	35	N1	-658.607	1165.736	812.485	-1.991	-1.273	-1.647
138	35	N51	737.877	614.051	-766.724	-0.908	1.452	-0.661
139	35	Totals:	79.271	1779.788	45.761			
140	35	COG (ft):	X: -1.885	Y: 0.57	Z: 2.982			
141	36	N1	-678.414	1161.422	843.566	-1.982	-1.308	-1.638
142	36	N51	739.442	618.366	-737.866	-0.909	1.43	-0.658
143	36	Totals:	61.028	1779.788	105.699			
144	36	COG (ft):	X: -1.885	Y: 0.57	Z: 2.982			
145	37	N1	820.825	1158.951	872.112	-1.965	1.572	1.729
146	37	N51	-820.823	620.828	-735.621	-0.902	-1.608	0.684
147	37	Totals:	0.002	1779.779	136.492			
148	37	COG (ft):	X: 2.048	Y: 0.57	Z: 2.982			
149	38	N1	773.315	1161.516	853.639	-1.973	1.486	1.751
150	38	N51	-833.517	618.263	-749.366	-0.902	-1.669	0.692
151	38	Totals:	-60.202	1779.779	104.273			
152	38	COG (ft):	X: 2.048	Y: 0.57	Z: 2.982			
153	39	N1	762.788	1166.092	822.367	-1.983	1.47	1.751
154	39	N51	-840.629	613.687	-777.427	-0.901	-1.676	0.692
155	39	Totals:	-77.84	1779.779	44.94			
156	39	COG (ft):	X: 2.048	Y: 0.57	Z: 2.982			
157	40	N1	768.322	1170.059	797.209	-1.989	1.483	1.743
158	40	N51	-843.768	609.72	-797.208	-0.899	-1.663	0.688
159	40	Totals:	-75.446	1779.779	0.001			
160	40	COG (ft):	X: 2.048	Y: 0.57	Z: 2.982			
161	41	N1	769.293	1174.038	770.863	-1.996	1.485	1.743
162	41	N51	-848.563	605.741	-816.627	-0.897	-1.663	0.688
163	41	Totals:	-79.27	1779.779	-45.764			
164	41	COG (ft):	X: 2.048	Y: 0.57	Z: 2.982			
165	42	N1	789.179	1178.353	739.854	-2.005	1.521	1.734

Node Reactions (Continued)

	LC	Node Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
166	42	N51	-850.207	601.426	-845.557	-0.896	-1.641	0.685
167	42	Totals:	-61.027	1779.779	-105.702			
168	42	COG (ft):	X: 2.048	Y: 0.57	Z: 2.982			
169	43	N1	841.8	1180.166	726.538	-2.007	1.617	1.708
170	43	N51	-841.797	599.613	-863.029	-0.896	-1.573	0.674
171	43	Totals:	0.002	1779.779	-136.491			
172	43	COG (ft):	X: 2.048	Y: 0.57	Z: 2.982			
173	44	N1	889.319	1177.6	745.015	-2	1.704	1.686
174	44	N51	-829.112	602.179	-849.287	-0.895	-1.512	0.666
175	44	Totals:	60.207	1779.779	-104.273			
176	44	COG (ft):	X: 2.048	Y: 0.57	Z: 2.982			
177	45	N1	899.85	1173.025	776.287	-1.99	1.72	1.686
178	45	N51	-822.005	606.754	-821.226	-0.896	-1.505	0.667
179	45	Totals:	77.845	1779.779	-44.939			
180	45	COG (ft):	X: 2.048	Y: 0.57	Z: 2.982			
181	46	N1	894.315	1169.058	801.444	-1.984	1.706	1.693
182	46	N51	-818.865	610.721	-801.444	-0.898	-1.518	0.67
183	46	Totals:	75.451	1779.779	0			
184	46	COG (ft):	X: 2.048	Y: 0.57	Z: 2.982			
185	47	N1	893.342	1165.079	827.789	-1.977	1.704	1.694
186	47	N51	-814.066	614.7	-782.024	-0.9	-1.518	0.67
187	47	Totals:	79.275	1779.779	45.765			
188	47	COG (ft):	X: 2.048	Y: 0.57	Z: 2.982			
189	48	N1	873.448	1160.764	858.795	-1.968	1.669	1.703
190	48	N51	-812.416	619.015	-753.092	-0.901	-1.539	0.674
191	48	Totals:	61.032	1779.779	105.703			
192	48	COG (ft):	X: 2.048	Y: 0.57	Z: 2.982			
193	49	N1	-369.535	920.035	629.978	-1.577	-0.709	-0.838
194	49	N51	369.534	484.752	-629.981	-0.718	0.707	-0.338
195	49	Totals:	-0.001	1404.786	-0.002			
196	49	COG (ft):	X: -1.232	Y: 0.722	Z: 2.989			
197	50	N1	45.258	932.644	622.474	-1.599	0.087	0.054
198	50	N51	-45.258	472.14	-622.476	-0.708	-0.087	0.023
199	50	Totals:	0	1404.784	-0.001			
200	50	COG (ft):	X: 0.103	Y: 0.722	Z: 2.989			
201	51	N1	50.683	782.075	552.784	-1.349	0.097	0.069
202	51	N51	-50.683	419.34	-552.785	-0.618	-0.097	0.024
203	51	Totals:	0	1201.415	-0.001			
204	51	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
205	52	N1	42.501	668.619	486.183	-1.151	0.081	0.06
206	52	N51	-42.501	361.165	-460.439	-0.53	-0.085	0.021
207	52	Totals:	0	1029.785	25.744			
208	52	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
209	53	N1	33.482	668.923	484.255	-1.152	0.065	0.065
210	53	N51	-46.354	360.862	-461.961	-0.53	-0.098	0.023
211	53	Totals:	-12.872	1029.785	22.294			
212	53	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
213	54	N1	27.13	669.621	479.529	-1.154	0.053	0.069
214	54	N51	-49.424	360.163	-466.657	-0.53	-0.107	0.024
215	54	Totals:	-22.295	1029.785	12.871			
216	54	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
217	55	N1	25.146	670.527	473.269	-1.157	0.05	0.07
218	55	N51	-50.891	359.257	-473.27	-0.53	-0.11	0.024
219	55	Totals:	-25.745	1029.785	-0.001			
220	55	COG (ft):	X: 0.141	Y: 0.984	Z: 3			

Node Reactions (Continued)

	LC	Node Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
221	56	N1	28.064	671.399	467.153	-1.159	0.056	0.068
222	56	N51	-50.359	358.386	-480.027	-0.53	-0.105	0.024
223	56	Totals:	-22.295	1029.785	-12.873			
224	56	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
225	57	N1	35.1	672.002	462.821	-1.161	0.069	0.064
226	57	N51	-47.973	357.782	-485.117	-0.53	-0.095	0.022
227	57	Totals:	-12.872	1029.785	-22.296			
228	57	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
229	58	N1	44.371	672.175	461.432	-1.161	0.085	0.058
230	58	N51	-44.371	357.609	-487.177	-0.53	-0.082	0.02
231	58	Totals:	0	1029.785	-25.746			
232	58	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
233	59	N1	53.391	671.872	463.359	-1.16	0.102	0.053
234	59	N51	-40.518	357.913	-485.655	-0.53	-0.068	0.018
235	59	Totals:	12.872	1029.785	-22.296			
236	59	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
237	60	N1	59.743	671.174	468.085	-1.158	0.113	0.05
238	60	N51	-37.448	358.611	-480.959	-0.53	-0.059	0.017
239	60	Totals:	22.295	1029.785	-12.873			
240	60	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
241	61	N1	61.726	670.267	474.345	-1.155	0.117	0.049
242	61	N51	-35.981	359.517	-474.346	-0.53	-0.056	0.016
243	61	Totals:	25.745	1029.785	-0.001			
244	61	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
245	62	N1	58.808	669.396	480.461	-1.153	0.111	0.051
246	62	N51	-36.513	360.389	-467.59	-0.53	-0.061	0.017
247	62	Totals:	22.295	1029.785	12.871			
248	62	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
249	63	N1	51.771	668.793	484.793	-1.151	0.098	0.055
250	63	N51	-38.899	360.992	-462.499	-0.53	-0.071	0.019
251	63	Totals:	12.872	1029.785	22.294			
252	63	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
253	64	N1	31.635	501.073	367.727	-0.862	0.06	0.046
254	64	N51	-31.635	271.266	-341.983	-0.397	-0.064	0.016
255	64	Totals:	0	772.338	25.744			
256	64	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
257	65	N1	22.614	501.376	365.799	-0.863	0.044	0.05
258	65	N51	-35.486	270.962	-343.505	-0.397	-0.077	0.018
259	65	Totals:	-12.872	772.338	22.294			
260	65	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
261	66	N1	16.261	502.075	361.071	-0.865	0.033	0.054
262	66	N51	-38.556	270.264	-348.2	-0.397	-0.086	0.019
263	66	Totals:	-22.295	772.338	12.872			
264	66	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
265	67	N1	14.277	502.981	354.809	-0.868	0.029	0.055
266	67	N51	-40.022	269.357	-354.81	-0.397	-0.089	0.019
267	67	Totals:	-25.745	772.338	-0.001			
268	67	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
269	68	N1	17.196	503.853	348.691	-0.87	0.035	0.053
270	68	N51	-39.491	268.485	-361.564	-0.398	-0.085	0.018
271	68	Totals:	-22.295	772.338	-12.873			
272	68	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
273	69	N1	24.233	504.457	344.357	-0.872	0.048	0.049
274	69	N51	-37.105	267.882	-366.653	-0.398	-0.074	0.017
275	69	Totals:	-12.872	772.338	-22.296			

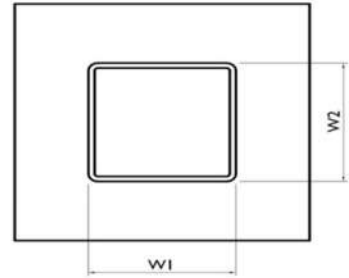
Node Reactions (Continued)

	LC	Node Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
276	69	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
277	70	N1	33.504	504.63	342.967	-0.872	0.065	0.044
278	70	N51	-33.504	267.709	-368.712	-0.398	-0.061	0.015
279	70	Totals:	0	772.338	-25.745			
280	70	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
281	71	N1	42.525	504.326	344.895	-0.871	0.081	0.039
282	71	N51	-29.653	268.012	-367.19	-0.397	-0.048	0.013
283	71	Totals:	12.872	772.338	-22.296			
284	71	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
285	72	N1	48.878	503.628	349.622	-0.869	0.092	0.035
286	72	N51	-26.583	268.71	-362.495	-0.397	-0.038	0.012
287	72	Totals:	22.295	772.338	-12.873			
288	72	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
289	73	N1	50.862	502.721	355.884	-0.866	0.096	0.034
290	73	N51	-25.117	269.617	-355.885	-0.397	-0.036	0.011
291	73	Totals:	25.745	772.338	-0.001			
292	73	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
293	74	N1	47.943	501.85	362.002	-0.864	0.09	0.036
294	74	N51	-25.648	270.489	-349.131	-0.397	-0.04	0.012
295	74	Totals:	22.295	772.338	12.872			
296	74	COG (ft):	X: 0.141	Y: 0.984	Z: 3			
297	75	N1	40.906	501.246	366.337	-0.862	0.077	0.04
298	75	N51	-28.034	271.092	-344.043	-0.397	-0.05	0.014
299	75	Totals:	12.872	772.338	22.294			
300	75	COG (ft):	X: 0.141	Y: 0.984	Z: 3			

Tower Connection Weld Checks

Weld Shape:
 Weld Stiffener Configuration:
 Weld Size (1/16 in):
 W1 (in):
 W2 (in):
 Weld Total Length (in):
 Z_x (in³/in):
 Z_y (in³/in):
 J_p (in⁴/in):
 c_x (in):
 c_y (in):
 Required combined strength (kip/in):
 Weld Capacity (kip/in):
 Weld Utilization:

Yes
Rectangle
None
4
4
4
16.00
21.33
21.33
85.33
2.25
2.25
1.53
5.57
27.5%



Tower Connection Weld Checks

Weld Shape:
 Weld Stiffener Configuration:
 Weld Size (1/16 in):
 W1 (in):
 W2 (in):
 Weld Total Length (in):
 Z_x (in³/in):
 Z_y (in³/in):
 J_p (in⁴/in):
 c_x (in):
 c_y (in):
 Required combined strength (kip/in):
 Weld Capacity (kip/in):
 Weld Utilization:

Yes
Rectangle
None
5
3
3
12.00
12.00
12.00
36.00
1.75
1.75
2.75
6.96
39.5%

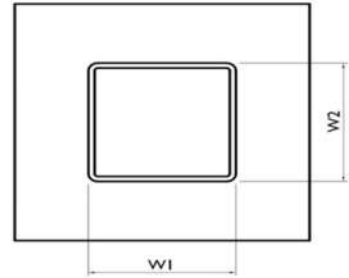


EXHIBIT 5





NIER Study Report

SITE NAME:

414240 Byram Park CT

ATC Customer:

Verizon Wireless

LOCATION:

Greenwich, Connecticut

COMPANY:

**American Tower
Woburn, Massachusetts**

April 19th, 2022

115537-P316982



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TOWER ENGINEERING PROFESSIONALS
KINSTON, NORTH CAROLINA



NIER STUDY REPORT

414240 Byram Park CT

Greenwich, CT

INTRODUCTION

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

SITE AND FACILITY CONSIDERATIONS

Site Byram Park CT is located at 48 Rich Ave. in Greenwich, CT at coordinates 41.005067, -73.648303. The support structure is an 82' stealth monopine. Verizon Wireless (VZW) is proposing to add new facilities at this location with a center of radiation of 57' above ground level. All data used in this study was provided by one or more of the following sources:

1. ATC furnished data
2. Compiled from carrier and manufacturer standard configurations
3. Empirical data collected by TEP
4. Data obtained from the CT Siting Committee database

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



POWER DENSITY CALCULATIONS

A chart showing the VZW cumulative MPE percentages along with the site cumulative MPE values, compared to FCC MPE general population limits, may be seen in Appendix 2. These limits are based upon the Information Relating to MPE Standards found in Appendix 3. Study methodology may be seen in Appendix 4 which describes the Non-Ionizing Radiation Prediction Models.

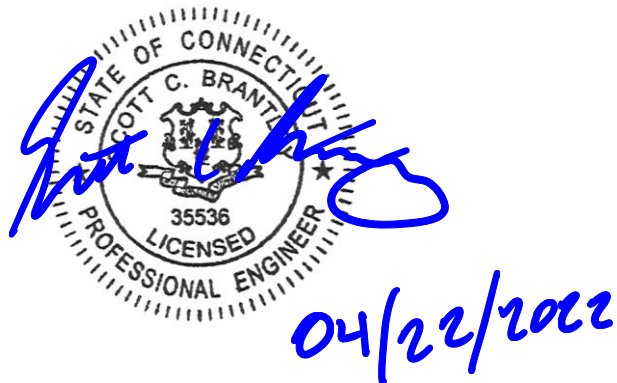
April 19th, 2022

Prepared By:

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Director: RF Designs and Services
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Approved By:

Scott C. Brantley, PE
Director of Development Services
Tower Engineering Professionals



APPENDIX 1 Satellite Photo





APPENDIX 2 Cumulative MPE Charts

Carrier Maximum MPE Values							
Carrier	Technology	Frequqncy (MHz)	Maximum ERP ¹ (W)	Antenna Centerline (ft)	Allowable Power Density (un-controlled access) (mW/cm ²)*	Calculated Power Density (mW/cm ²)	Calculated MPE (Allowable)
VZW	LTE 700	751	294.50	57	0.5007	0.0250	0.0499
VZW	CDMA 700	877.26	99.80	57	0.5848	0.0085	0.0145
VZW	Cellular 800	874	336.50	57	0.5827	0.0286	0.0491
VZW	PCS	1980	814.00	57	1.0000	0.0691	0.0691
VZW	AWS	2120	814.00	57	1.0000	0.0901	0.0901
VZW	C-Band	3730.08	160.00	57	1.0000	0.0136	0.0136
						MPE Total:	0.2864

Compliance Status:	Compliant
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¹ ERP is based on data provided by VZW and includes -10dB off-beam pattern adjustment as described in CT 16-50j.

² Based on data contained in the Conneticut Siting Committee database and data provided in Conneticut Siting Committee e-mail dated March 30, 2022.

* Calculated as described in FCC OET-65 Table 1 (B)

Site Composite MPE (%)	
T-Mobile ² :	36.43
AT&T ² :	28.91
Verizon:	28.64
Site Total MPE:	93.98
Site Status:	Compliant



APPENDIX 3 Information Pertaining to MPE Studies

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

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

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

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



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

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

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



APPENDIX 4 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/cm²)	Averaging Time E ², H ² or S (minutes)
0.3 - 3.0	614	1.63	100*	6
3.0 - 30	1842/f	4.89/f	900/F ²	6
30 - 300	61.4	0.163	1.0	6
300 - 1500	--	--	f/300	6
1500 - 100,000	--	--	5	6

f = frequency

* = Plane-wave equivalent power density



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

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

f = frequency

* = Plane-wave equivalent power density

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

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

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



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

Cylindrical Model (Near Field Predictions)

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

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

Where:

S = Power Density

P = Total Power into antenna

R = Distance from the antenna

L = Antenna aperture length

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

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

Where:

S = Power Density

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

P = Total Power into antenna

R = Distance from the antenna

L = Antenna aperture length

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

EXHIBIT 6



DOCKET NO. 414 - Cellco Partnership d/b/a Verizon Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 36 Ritch Avenue, Greenwich, Connecticut.	} } }	Connecticut Siting Council July 14, 2011
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Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, maintenance, and operation of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Cellco Partnership d/b/a Verizon Wireless, hereinafter referred to as the Certificate Holder, for a telecommunications facility at 36 Ritch Avenue in Greenwich, Connecticut.

Unless otherwise approved by the Council, the facility shall be constructed, operated, and maintained substantially as specified in the Council’s record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a 77-foot monopole, designed as a simulated pine tree. Simulated branches shall not extend higher than 84 feet above ground level. The tower shall be no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Cellco, T-Mobile, AT&T and other entities, both public and private.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Greenwich for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line, and landscaping; and
 - b) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
 - c) simulated pine tree tower designs and photographs of actual installations from various manufacturers.
 - d) construction schedule.

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

4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
6. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of Greenwich public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.
7. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed with at least one fully operational wireless telecommunications carrier providing wireless service within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The Certificate Holder shall provide written notice to the Executive Director of any schedule changes as soon as is practicable.
8. Any request for extension of the time period referred to in Condition 7 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Greenwich. Any proposed modifications to this Decision and Order shall likewise be so served.
9. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
10. Any nonfunctioning antenna, and associated antenna mounting equipment, on this facility shall be removed within 60 days of the date the antenna ceased to function.
11. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction, and the commencement of site operation.
12. The Certificate Holder shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v.

13. This Certificate may be transferred in accordance with Conn. Gen. Stat. §16-50k(b), provided both the Certificate Holder/transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. In addition, both the Certificate Holder/transferor and the transferee shall provide the Council a written agreement as to the entity responsible for any quarterly assessment charges under Conn. Gen. Stat. §16-50v(b)(2) that may be associated with this facility.
14. The Certificate Holder shall maintain the facility and associated equipment, including but not limited to, the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line and landscaping in a reasonable physical and operational condition that is consistent with this Decision and Order and a Development and Management Plan to be approved by the Council.
15. If the Certificate Holder is a wholly-owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the Certificate Holder within 30 days of the sale and/or transfer.

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

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

The parties and intervenors to this proceeding are:

Applicant

Cellco Partnership d/b/a
Verizon Wireless

Its Representative

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

Alexandria Carter
Regulatory Manager
Verizon Wireless
99 East River Drive
East Hartford, CT 06108

Party

John Hartwell
42 Ritch Avenue W.
Greenwich, CT 06830

Intervenor

T-Mobile Northeast LLC

Its Representative

Julie D. Kohler, Esq.
Cohen and Wolf, P.C.
1115 Broad Street
Bridgeport, CT 06604

EXHIBIT 7





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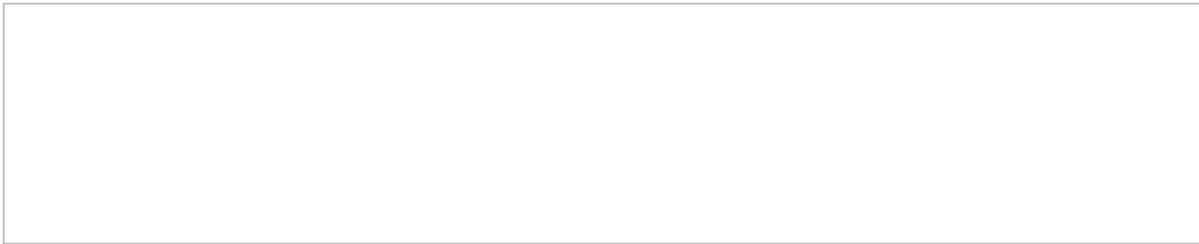


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Signed by: CHERYL

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