Robinson+Cole

KENNETH C. BALDWIN

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Also admitted in Massachusetts and New York

May 29, 2024

Via Electronic Mail

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

Re: **Notice of Exempt Modification – Facility Modification**
55 King Spring Road, Windsor Locks, Connecticut

Dear Attorney Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains an existing wireless telecommunications facility at the above-referenced property address (the "Property"). The facility consists of antennas on an existing tower and associated equipment on the ground, near the base of the tower. The tower was approved by the Siting Council ("Council") in May of 1984 (Docket No. 41). Cellco's shared use of the tower was approved by the Council in October of 2008 (EM-VER-165-081008). A copy of the Council's Docket No. 41 Decision and Order and Cellco's shared use approval are included in Attachment 1.

Cellco now intends to modify its facility by removing nine (9) antennas and three (3) remote radio heads ("RRHs") and installing nine (9) new antennas and six (6) new RRHs on its existing antenna platform with new antenna mounts. A set of project plans showing Cellco's proposed facility modifications and the specifications for Cellco's new antennas and RRHs are included in Attachment 2.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Windsor Locks' Chief Elected Officials and Land Use Officer. A copy of this letter is also being sent to the owner of the Property.

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

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's new antennas and RRHs will be installed at the same height on the tower.

2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, 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 installation of Cellco's new antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. Included in Attachment 3 is a Calculated Radio Frequency Emissions Report demonstrating that the proposed modified facility will comply with the FCC safety standards. The modified facility will be capable of providing Cellco's 5G wireless service.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. According to the attached Structural Analysis Report ("SA") and Antenna Mount Analysis Report ("MA"), the existing tower, tower foundation and new antenna mounts, with certain modifications, can support Cellco's proposed modifications. Copies of the SA and MA are included in Attachment 4.

A copy of the parcel map and Property owner information is included in Attachment 5. A Certificate of Mailing verifying that this filing was sent to municipal officials and the property owner is included in Attachment 6.

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

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:
Scott A. Storms, First Selectman
William Voelker, Town Planner
S and D Sales LLC, Property Owner
Aleksey Tyurin

ATTACHMENT 1

DOCKET NO. 41

AN APPLICATION SUBMITTED BY CONTINENTAL CABLEVISION OF CONNECTICUT INC., FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE ERECTION OF A COMMUNITY ANTENNA TELEVISION TOWER AND ASSOCIATED EQUIPMENT IN THE TOWN OF WINDSOR LOCKS.	:	CONNECTICUT SITING COUNCIL
	:	May 15, 1984

DECISION AND ORDER

Pursuant to the foregoing opinion, the Council hereby directs that a certificate of environmental compatibility and public need as required by section 16-50k of the General Statutes of Connecticut, revisions of 1958, revised to 1983, as amended, shall be issued to Continental Cablevision of Connecticut, Inc. for the erection of a community antenna television tower and associated equipment in the town of Windsor Locks, as specified in the Council's record on this matter, subject to the following conditions:

1. The tower shall be no taller or wider than proposed and in no event shall exceed 100', plus the height of the dish mounted on the tower;
2. A fence not lower than eight feet shall surround the facility site;
3. No associated equipment other than that referenced in finding 22 shall be added to the facility without prior notification to the Council;
4. The applicant shall comply with the reporting requirements of a development and management plan pursuant to section 16-50j-77 of the regulations of state agencies;
5. The facilities construction shall be conducted in accordance with all applicable federal, state, and municipal laws and regulations; and

6. This decision and order shall be void if all construction authorized is not completed by June 30, 1987.

We hereby direct, pursuant to section 16-50p(c) of the General Statutes, that a copy of the decision and order be served on each person listed below. A notice of the issuance shall be published in the Hartford Courant, and Manchester Journal Inquirer. The parties to this proceeding are:

Mr. Roger Worboys (Applicant)
Continental Cablevision of
Connecticut, Inc.
5 Shoham Road
East Windsor, Connecticut 06088

Leete, O'Neill & Kosto (its attorney)
Suite 600
60 Washington Street
Hartford, Connecticut 06106

R. Clifford Randall
First Selectman
Town Office Building
50 Church Street
P.O. Box L
Windsor Locks, Connecticut 06096

Doris McAusland (service waived)
Area 11 Cable Advisory Board
29 Marshall Road
Windsor Locks, Connecticut

C E R T I F I C A T I O N

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case or read the record thereof, and that we voted as follows:

Dated at New Britain, Connecticut, this 15th day of May, 1984.

Council Members	Vote Cast
Gloria Dibble Pond Gloria Dibble Pond Chairperson	Yes
Commissioner John Downey Designee: Commissioner Peter G. Boucher	Yes
Commissioner Stanley Pac Designee: Christopher Cooper	Yes
Owen L. Clark	Yes
Fred J. Doocy	Yes
Mortimer A. Gelston	Yes
James G. Horsfall	Absent
Janet Sitty	Yes
Colin C. Tait	Absent

STATE OF CONNECTICUT)
: ss. New Britain, May 15, 1984
COUNTY OF HARTFORD)

I hereby certify that the foregoing is a true and correct copy of the decision and order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:

Christopher S. Wood, Executive Director
Connecticut Siting Council

October 21, 2008

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

RE: **EM-VER-165-081008** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 55 King Spring Road, Windsor Locks, Connecticut.

Dear Attorney Baldwin:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- The foundation shall be analyzed for adequacy; and
- A signed letter from a Professional Engineer duly licensed in the State of Connecticut is submitted to the Council to certify that the foundation is adequate to support the proposed loading, or in the alternative, that the foundation has been reinforced and a post-construction foundation rating of not more than 100 percent has been achieved.

The proposed modifications are to be implemented as specified here and in your notice dated October 8, 2008, including the placement of all necessary equipment and shelters within the tower compound. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/MP/jb

c: The Honorable Steven N. Wawruck, Jr., First Selectman, Town of Windsor Locks

Alan Gannuscio, Planning & Zoning Chairman, Town of Windsor Locks
Cox Communications

ATTACHMENT 2

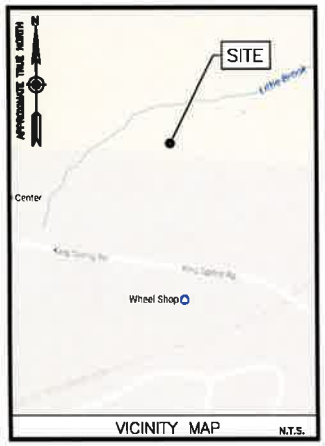
verizon WIRELESS

SUFFIELD S CT

55 KING SPRING ROAD
WINDSOR LOCKS, CT 06096

FUZE PROJECT ID: 16092584

PSLC: 468895



VICINITY MAP N.T.S.

ENGINEER
DEWBERRY ENGINEERS INC.
99 SUMMER ST.
SUITE 700
BOSTON, MA 02110

PHONE # (617) 531-0800

CONTACT: BENJAMIN REVETTE, PE

CONSTRUCTION
VERIZON WIRELESS
51 ALDER STREET
MEDWAY, MA 02053

LAND OWNER
S&D SALES LLC
363 HALLADAY AVE W
SUFFIELD, CT 6078

COORDINATES*:
LATITUDE: 41° 56' 48.01" N (41.946669)
LONGITUDE: 72° 39' 54.32" W (72.665083)
*PER RFDS

GROUND ELEVATION*:
143'±
*PER GOOGLE EARTH

PROJECT INFORMATION

PMI ACCESSED AT:	HTTPS://PMI.VZWSMART.COM
SMART TOOL VENDOR PROJECT NUMBER:	10215772
VZW LOCATION CODE (PSLC):	468895
FUZE NUMBER:	16092584
PMI AND REQUIREMENTS ALSO IMBEDDED IN MOUNT ANALYSIS REPORT	
MOUNT MODIFICATION REQUIRED?	YES (REPLACEMENT)

THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.

A.D.A. COMPLIANCE:
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.

- REMOVE EXISTING ANTENNA MOUNTS AND INSTALL NEW ANTENNA MOUNTS IN ACCORDANCE WITH MOUNT ANALYSIS BY COLLIERS ENGINEERING & DESIGN.
- REMOVE (12) EXISTING ANTENNAS.
- REMOVE (3) RRHs FROM INSIDE THE EQUIPMENT SHELTER.
- INSTALL (6) NHH-65B-R2B ANTENNAS.
- INSTALL (3) MT6413-77A ANTENNAS WITH INTEGRATED RRHS.
- INSTALL (3) B5/B13 RRH-RF4461d-13A AND (3) B2/B66A RRH-RF4439d-25A RADIO UNITS.
- REPLACE (2) EXISTING COAX CABLES WITH (2) PROPOSED 6X12 HYBRID CABLES.
- INSTALL (2) 6-OVPS.
- INSTALL NEW JUMPER CABLING BETWEEN OVPS AND ANTENNAS AS REQUIRED.

NOTE:
1. SCOPE OF WORK BASED ON ANTENNA REC FOR SUFFIELD S CT DATED 12/04/23. VERIFY SCOPE OF WORK WITH FINAL RFDS PRIOR TO CONSTRUCTION.

SCOPE OF WORK

SHT. NO.	DESCRIPTION
T-1	TITLE SHEET
GN-1	GENERAL NOTES
C-1	SITE PLAN & ELEVATION
C-2	EXISTING & PROPOSED ANTENNA PLANS
C-3	CONSTRUCTION DETAILS
C-4	SMART TOOL SECTOR PLANS & ELEVATION DETAILS
C-5	FINAL EQUIPMENT CONFIGURATION

SHEET INDEX

verizon WIRELESS

VERIZON WIRELESS
51 ALDER STREET
MEDWAY, MA 02053

SUFFIELD S CT

CONSTRUCTION DRAWINGS		
4	03/20/24	FOR SUBMITTAL
3	01/26/24	FOR SUBMITTAL
2	02/14/22	FOR SUBMITTAL
1	11/17/21	FOR SUBMITTAL
0	11/11/21	FOR SUBMITTAL
A	10/25/21	FOR REVIEW

Dewberry
Dewberry Engineers Inc.
99 SUMMER STREET
SUITE 700
BOSTON, MA 02110
PHONE: 617.913.3400
FAX: 617.905.3310

STATE OF CONNECTICUT
BENJAMIN REVETTE
28971
LICENSED
PROFESSIONAL ENGINEER

03/20/2024

DRAWN BY:	TOC
REVIEWED BY:	CDH
CHECKED BY:	BMR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143536

468895

SITE ADDRESS

55 KING SPRING ROAD
WINDSOR LOCKS, CT 06096

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

GENERAL CONSTRUCTION NOTES :

1. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, AND COMPLY WITH VERIZON WIRELESS SPECIFICATIONS.
2. CONTRACTOR SHALL CONTACT "DIG SAFE" (888-344-7233) FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
4. 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.
5. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
6. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
7. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
9. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
10. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING.
11. EACH CONTRACTOR SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
12. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE VERIZON WIRELESS CONSTRUCTION MANAGER.
13. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
14. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR WILL NOTIFY ENGINEER, VERIZON WIRELESS PROJECT CONSTRUCTION MANAGER, AND LANDLORD IMMEDIATELY.
15. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
16. ALL ROOF WORK SHALL BE DONE BY A QUALIFIED AND EXPERIENCED ROOFING CONTRACTOR IN COORDINATION WITH ANY CONTRACTOR WARRANTING THE ROOF TO ENSURE THAT THE WARRANTY IS MAINTAINED.
17. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
18. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH LANDLORD AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
19. CONTRACTOR SHALL FURNISH VERIZON WIRELESS WITH THREE AS-BUILT SETS OF DRAWINGS UPON COMPLETION OF WORK.
20. ANTENNAS AND CABLES ARE TYPICALLY PROVIDED BY VERIZON WIRELESS. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH PROJECT MANAGER TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED BY VERIZON WIRELESS. ALL ITEMS NOT PROVIDED BY VERIZON WIRELESS SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED BY VERIZON WIRELESS.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR WILL COORDINATE WITH VERIZON WIRELESS PROJECT MANAGER TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY VERIZON WIRELESS. ALL REQUIRED PERMITS NOT OBTAINED BY VERIZON WIRELESS MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
22. GENERAL CONTRACTOR SHALL HAVE A LICENSED HVAC CONTRACTOR START THE HVAC UNITS, SYNCHRONIZE THE THERMOSTATS, ADJUST ALL SETTINGS ON EACH UNIT ACCORDING TO VERIZON WIRELESS CONSTRUCTION MANAGER'S SPECIFICATIONS, AND THOROUGHLY TEST AND BALANCE EACH UNIT TO ENSURE PROPER OPERATION PRIOR TO TURNING THE SITE OVER TO OWNER.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH VERIZON WIRELESS SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. UNLESS OTHERWISE NOTED VERIZON WIRELESS SHALL PROVIDE ALL REQUIRED RF MATERIAL FOR CONTRACTOR TO INSTALL, INCLUDING ANTENNAS, TMA'S, BIAS-T'S, COMBINERS, POU, DC BLOCKS, SURGE ARRESTORS, GPS ANTENNA, GPS SURGE ARRESTOR, COAXIAL CABLE.
26. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL VERIFY ALL EQUIPMENT TO BE PROVIDED BY VERIZON WIRELESS FOR INSTALLATION BY CONTRACTOR.
27. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO VERIZON WIRELESS SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
28. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
29. 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.
30. CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF 48 HOURS IN ADVANCE PRIOR TO CONSTRUCTION START, WORK SPECIFICALLY BEFORE; SEALING ANY FLOOR, WALL OR ROOF PENETRATION, FINAL UTILITY CONNECTIONS, POURING CONCRETE, BACKFILLING UTILITY TRENCHES AND STRUCTURAL POST OR MOUNTING CONNECTIONS, FOR ENGINEERING REVIEW AND INSPECTION.
31. SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH UL LISTED O FIRE CODE APPROVED MATERIALS.
32. REPAIR ANY DAMAGE DURING CONSTRUCTION TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE CONSTRUCTION MANAGER AND LANDLORD.
33. ALL DISRUPTIVE WORK AND WORK WITHIN TENANT SPACES TO BE COORDINATED WITH BUILDING REPRESENTATIVE.

CODE SPECIFICATIONS:

1. ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:

   2022 CONNECTICUT STATE BUILDING CODE WITH THE FOLLOWING APPLICABLE CODES:
   2021 INTERNATIONAL RESIDENTIAL CODE (IRC)
   2021 INTERNATIONAL EXISTING BUILDING CODE (IEBC)
   2021 INTERNATIONAL BUILDING CODE (IBC)
   2021 INTERNATIONAL MECHANICAL CODE (IMC)
   2020 NATIONAL ELECTRICAL CODE (NEC) (NFPA 70)
   2021 INTERNATIONAL PLUMBING CODE (IPC)
   2021 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

   IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL.
2. ALL STRUCTURAL WORK TO BE DONE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL, 13TH EDITION (AISC 13TH ED.)
3. ALL CONCRETE WORK TO BE DONE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE (ACI 301) SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 318) AND BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
4. ALL REINFORCING STEEL WORK TO BE DONE IN ACCORDANCE WITH THE (ACI 315) MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES.

GROUNDING NOTES:

1. GROUNDING SHALL COMPLY WITH NEC ART. 250.
2. GROUNDING CONDUCTORS SHALL BE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR INDOOR USE.
3. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
4. ROUTE GROUNDING CONNECTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NOT BE BENT AT RIGHT ANGLE. ALWAYS MAKE 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 8" RADIUS WHEN NECESSARY.
5. CONNECTIONS TO GROUNDING BAR SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
6. TEST COMPLETED GROUNDING SYSTEM AND RECORD RESISTANCE VALUES FOR PROJECT CLOSE-OUT DOCUMENTATION. GROUND RESISTANCE SHALL NOT EXCEED 5 OHMS.
7. GROUNDING CONDUCTORS BETWEEN MGB AND WATERMAIN SHALL BE #2/0. BONDING JUMPERS FROM METALLIC SURFACES SHALL BE #2 MINIMUM. ALL GROUND CONDUCTORS AND BONDING JUMPERS SHALL BE SOFT DRAWN ANNEALED, TINNED, BARE STRANDED COPPER WIRE. COAXIAL CABLES SHALL BE GROUNDED AT A MINIMUM OF TWO LOCATIONS USING VERIZON PROVIDED GROUNDING KITS. EXACT LOCATIONS SHALL BE FINALIZED IN THE FIELD BY THE CONSTRUCTION MANAGER.

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:

ASTM A-992, GRADE 50	ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE.
ASTM A-36	ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.
ASTM A-500, GRADE B	HSS SECTION (SQUARE, RECTANGULAR, ROUND)
ASTM A-325, TYPE SC OR N	ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS.
F1554, GRADE 36	ALL ANCHORS BOLTS, UNLESS NOTED OTHERWISE.
ASTM A-53, GRADE B	STEEL PIPE

3. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1 WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 14TH EDITION. WHERE WELD LENGTH IS NOT INDICATED, USE FULL LENGTH WELD. AT THE COMPLETION OF ALL WELDING, ALL DAMAGE TO GALVANIZED COATING SHALL BE REPAIRED.
4. BOLTED CONNECTIONS SHALL USE BEARING TYPE GALVANIZED ASTM A325 BOLTS (3/4" DIA.) SUPPLIED WITH A NUT AND WASHER UNDER TURNED END AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
6. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. GALVANIZED ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
7. USE PRECAUTIONS & PROCEDURES PER AWS D1.1 WHEN WELDING GALVANIZED METALS.
8. ALL EXISTING BEAM AND COLUMN DIMENSIONS SHALL BE FIELD VERIFY BY CONTRACTOR PRIOR TO FABRICATION. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THOSE SHOWN SHALL BE REPORTED TO DEWBERRY ENGINEER IMMEDIATELY.
9. CONNECTION DESIGN BY FABRICATOR WILL BE SUBJECT TO REVIEW AND APPROVAL BY ENGINEER.
10. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH SPECIFICATION ASTM A123/A123M-00 HOT-DIP GALVANIZED FINISH UNLESS OTHERWISE NOTED. GALVANIZING SHALL BE PERFORMED AFTER SHOP FABRICATION TO THE GREATEST EXTENT POSSIBLE. ALL BINDS, SCRAPES, MARS, AND WELDS IN THE GALVANIZED AREAS SHALL BE REPAIRED. REPAIR DAMAGED GALVANIZED COATINGS ON GALVANIZED ITEMS WITH GALVANIZED REPAIR PAINT ACCORDING TO ASTM A780 AND MANUFACTURER'S WRITTEN INSTRUCTIONS, PRIOR TO COMPLETION OF WORK. TOUCHUP ALL DAMAGED GALVANIZED STEEL WITH APPROVED COLD ZINC, "GALVANOX", "DRY GALV", "ZINC-IT", OR APPROVED EQUIVALENT, IN ACCORDANCE WITH MANUFACTURERS GUIDELINES. TOUCHUP DAMAGED NON GALVANIZED STEEL WITH SAME PAINT APPLIED IN SHOP OR FIELD.
11. ALL WELDED COMPONENTS TO BE SHOP WELDED PRIOR TO INSTALLATION. NO WELDING ACTIVITIES IS PERMITTED DURING INSTALLATION OF PROPOSED EQUIPMENTS AND/OR HARDWARE ON SITE.

verizon WIRELESS

VERIZON WIRELESS
51 ALDER STREET
MEDWAY, MA 02053

SUFFIELD S CT

CONSTRUCTION DRAWINGS		
4	03/20/24	FOR SUBMITTAL
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1	11/17/21	FOR SUBMITTAL
0	11/11/21	FOR SUBMITTAL
A	10/25/21	FOR REVIEW

Dewberry

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

STATE OF CONNECTICUT
28971
LICENSED
PROFESSIONAL ENGINEER

03/20/2024

DRAWN BY:	TGC
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143636

468895

SITE ADDRESS

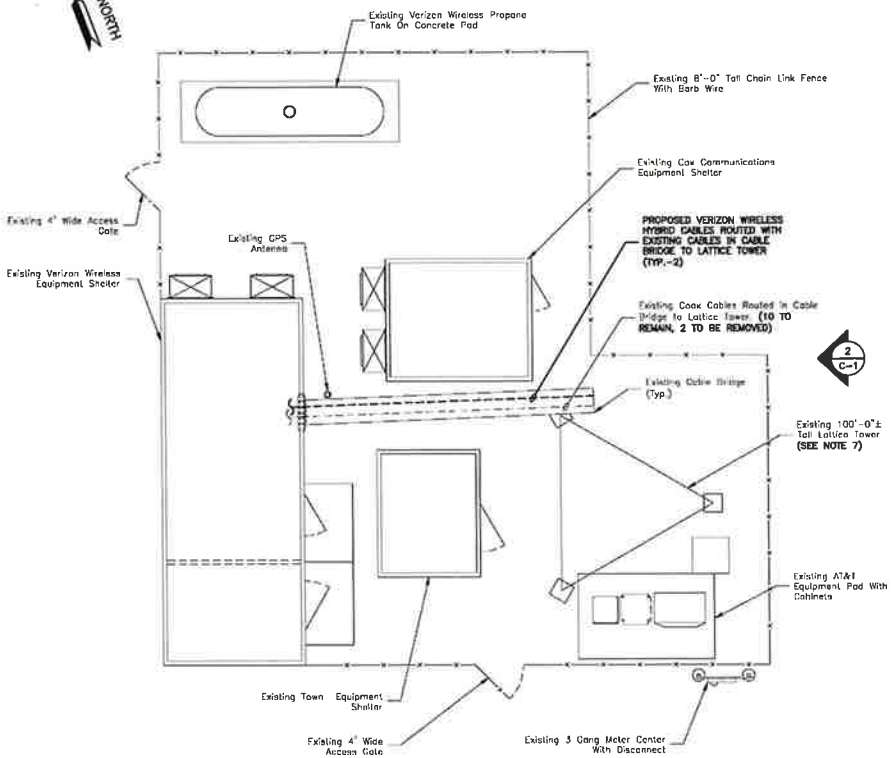
55 KING SPRING ROAD
WINDSOR LOCKS, CT 06096

SHEET TITLE

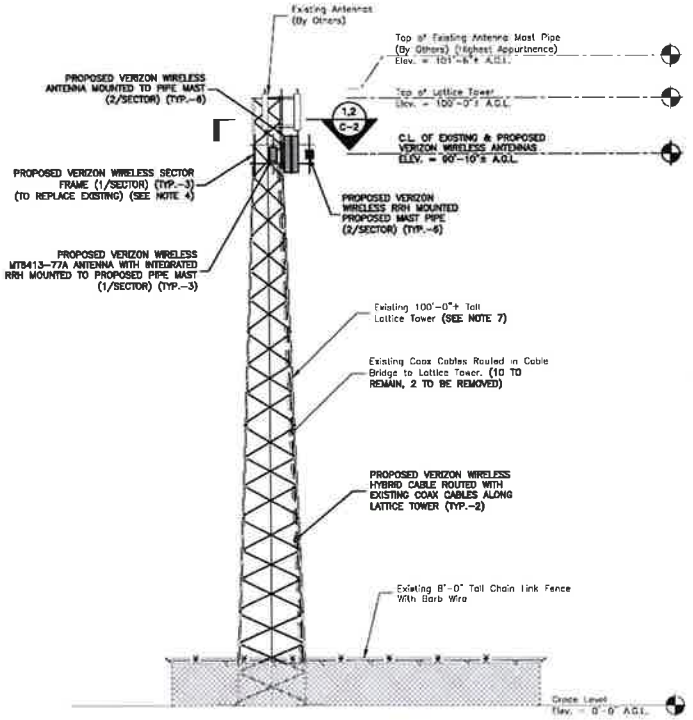
GENERAL NOTES

SHEET NUMBER

GN-1



SITE PLAN (1)
SCALE: 1"=10' FOR 11"x17"
1"=5' FOR 22"x34"
0' 5' 10'



ELEVATION (2)
SCALE: 1"=20' FOR 11"x17"
1"=10' FOR 22"x34"
0' 10' 20'

NOTES:

1. NORTH AND ELEVATION SHOWN AS APPROXIMATE.
2. SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
3. SITE PLAN & ELEVATION BASED ON SITE VISIT BY DEWBERRY ENGINEERS INC. ON 09/20/21.
4. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND MOUNT ANALYSIS BY COLLIERS ENGINEERING & DESIGN DATED 01/10/24.
5. REUSE EXISTING ANTENNA MOUNTS. INSPECT FOR DAMAGE OR DECAY AND REPLACE AS NEEDED.
6. A.G.L. = ABOVE GROUND LEVEL
7. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS BY ALL-POINTS TECHNOLOGY CORPORATION DATED 02/07/24.

verizon WIRELESS

VERIZON WIRELESS
51 ALDER STREET
MEDWAY, MA 02053

SUFFIELD S CT

CONSTRUCTION DRAWINGS		
4	03/20/24	FOR SUBMITTAL
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A	10/25/21	FOR REVIEW

Dewberry
Dewberry Engineers Inc.
90 SUMMER STREET
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BOSTON, MA 02110
PHONE: 617.953.3400
FAX: 617.619.3219

STATE OF CONNECTICUT
CHRISTOPHER D. HOWE
28971
LICENSED
PROFESSIONAL ENGINEER

03/20/2024

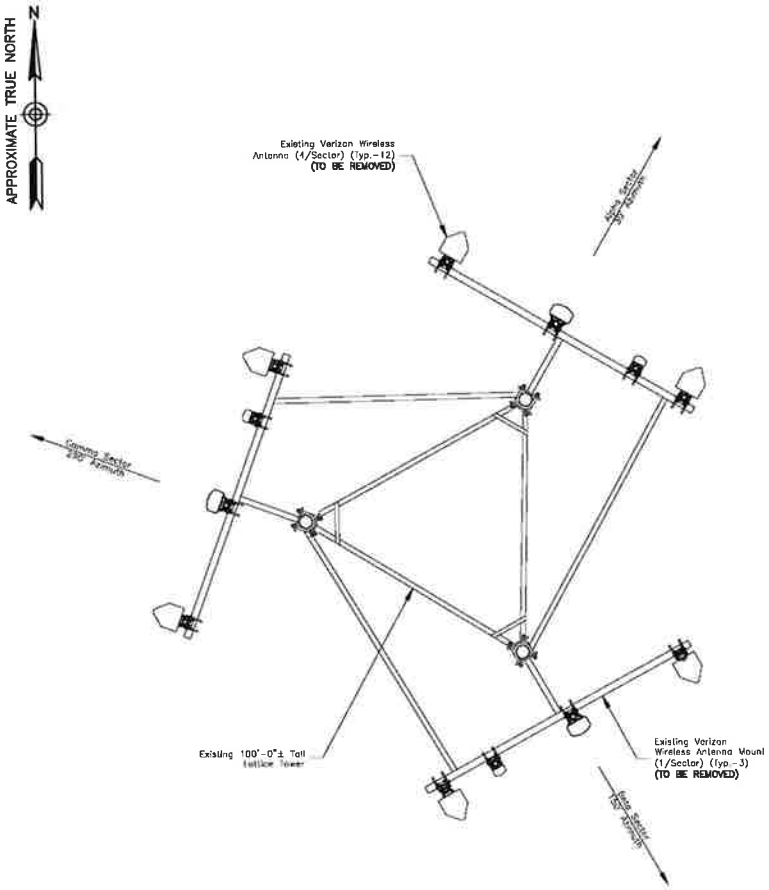
DRAWN BY:	TOC
REVIEWED BY:	CDH
CHECKED BY:	BMR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143638

468895
SITE ADDRESS

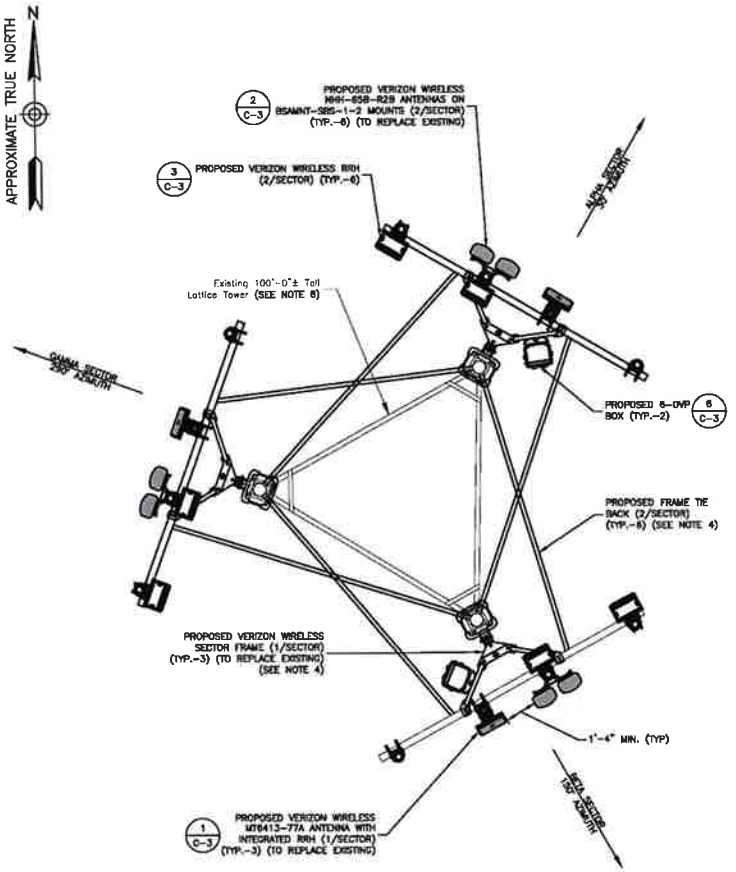
55 KING SPRING ROAD
WINDSOR LOCKS, CT 06096

SHEET TITLE
SITE PLAN & ELEVATION

SHEET NUMBER
C-1



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



PROPOSED ANTENNA PLAN (2)
SCALE: N.T.S.

NOTES:

1. NORTH AND ELEVATION SHOWN AS APPROXIMATE.
2. SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
3. SITE PLAN & ELEVATION BASED ON SITE VISIT BY DEWBERRY ENGINEERS INC. ON 09/20/21.
4. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND MOUNT ANALYSIS BY COLLIERS ENGINEERING & DESIGN DATED 01/10/24.
5. REUSE EXISTING ANTENNA MOUNTS. INSPECT FOR DAMAGE OR DECAY AND REPLACE AS NEEDED.
6. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS BY ALL-POINTS TECHNOLOGY CORPORATION DATED 02/07/24.

verizon WIRELESS

VERIZON WIRELESS
51 ALDER STREET
MEDWAY, MA 02053

SUFFIELD S CT

CONSTRUCTION DRAWINGS		
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03/20/2024

DRAWN BY:	TGC
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143838

468895

SITE ADDRESS

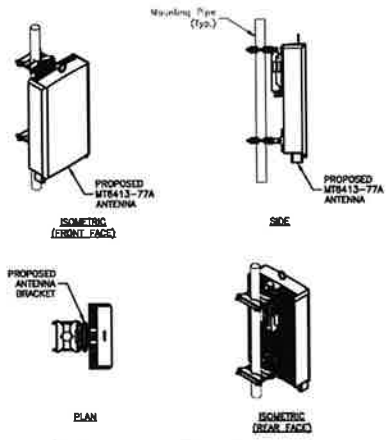
55 KING SPRING ROAD
WINDSOR LOCKS, CT 06096

SHEET TITLE

EXISTING & PROPOSED ANTENNA PLANS

SHEET NUMBER

C-2

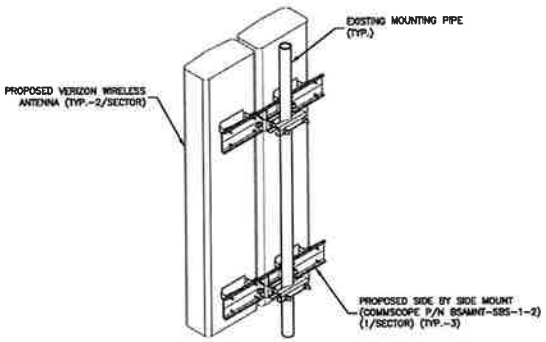


MODEL:	MT6413-77A
DIMENSIONS:	28.90"H X 18.75"W X 5.51"D
WEIGHT:	57.3 LBS

NOTE:

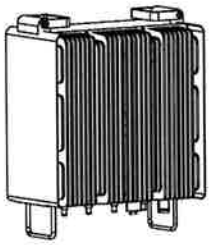
1. INSTALL ALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. USE APPROPRIATE MOUNTING HARDWARE FOR CONSTRUCTION TYPE.

MT6413-77A ANTENNA DETAILS (1)
SCALE: N.T.S.



MANUFACTURER:	COMMSCOPE
PART NUMBER:	NHH-65B-R2B
DIMENSIONS:	72.0"H X 11.9"W X 7.1"D
WEIGHT:	43.7 LBS

NHH-65B-R2B SIDE BY SIDE ANTENNA DETAIL (2)
SCALE: N.T.S.



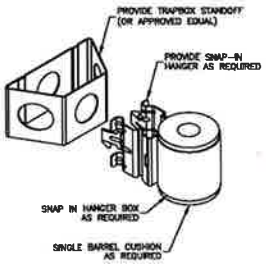
PROPOSED LTE AWS/PCS	
MANUFACTURER:	SAMSUNG
MODEL:	AWS/PCS MACRO RADIO RF4439d-25A
DIMENSIONS:	14.9"H X 14.9"W X 10.0"D
WEIGHT:	74.7 LBS

PROPOSED LTE 700/850	
MANUFACTURER:	SAMSUNG
MODEL:	1900/AWS MACRO RADIO RF4461d-13A
DIMENSIONS:	14.9"H X 14.9"W X 10.2"D
WEIGHT:	79.2 LBS

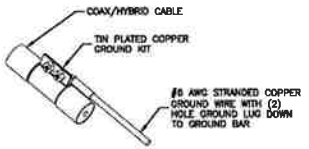
NOTE:

1. CONTRACTOR TO VERIFY WITH CONSTRUCTION MANAGER FOR FINAL MANUFACTURER SPECIFICATIONS PRIOR TO CONSTRUCTION.

REMOTE UNIT DETAILS (3)
SCALE: N.T.S.



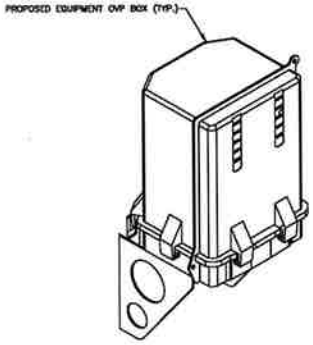
JUMPER MOUNT (4)
SCALE: N.T.S.



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND. ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TIN PLATED COPPER WITH TWO-HOLE LUG, SIZE PER COAX DIAMETER.
3. WEATHER SEAL GROUND KIT PER CARRIER REQUIREMENTS.
4. COAX CABLE GROUND KIT LOCATION & QUANTITY SHALL BE PER CARRIER SPECIFICATIONS & STANDARDS.

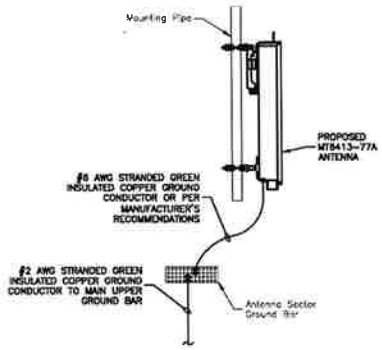
COAX/HYBRID GROUNDING DETAIL (5)
SCALE: N.T.S.



NOTE:

1. JUMPERS & CABLES NOT SHOWN FOR CLARITY.

OVP DETAIL (6)
SCALE: N.T.S.



NOTES:

1. VERIFY EXISTING GROUNDING SYSTEM IS INSTALLED PER VERIZON WIRELESS STANDARDS.
2. BOND NEW EQUIPMENT INTO EXISTING GROUND SYSTEM IN ACCORDANCE WITH VERIZON WIRELESS STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.

TYPICAL ANTENNA GROUNDING DETAIL (7)
SCALE: N.T.S.

verizon WIRELESS

VERIZON WIRELESS
51 ALDER STREET
MEDWAY, MA 02053

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CONSTRUCTION DRAWINGS		
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1	11/17/21	FOR SUBMITTAL
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A	10/25/21	FOR REVIEW

Dewberry

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STATE OF CONNECTICUT
BENJAMIN R. BUTLER
28971
LICENSED
PROFESSIONAL ENGINEER

03/20/2024

DRAWN BY:	TGC
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143636

468895

SITE ADDRESS

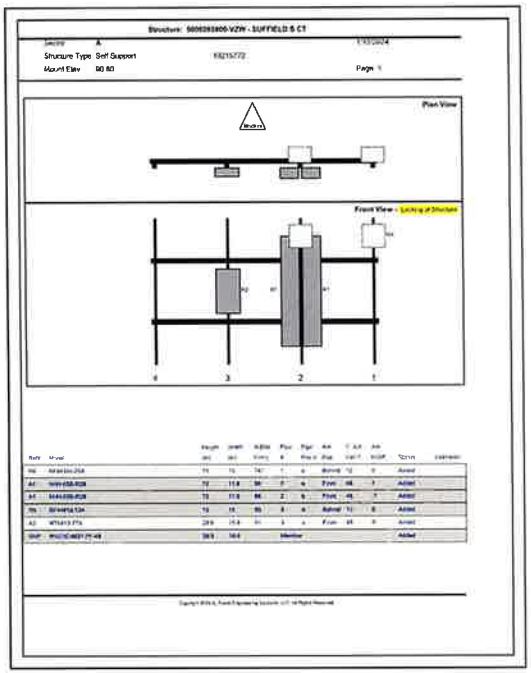
55 KING SPRING ROAD
WINDSOR LOCKS, CT 06096

SHEET TITLE

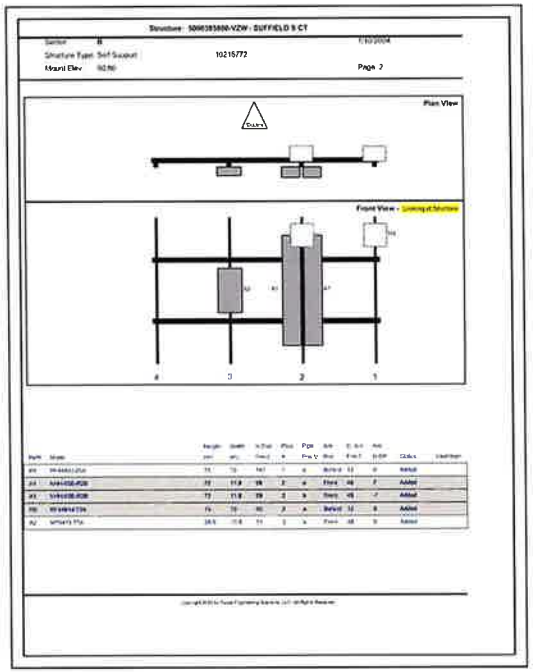
CONSTRUCTION DETAILS

SHEET NUMBER

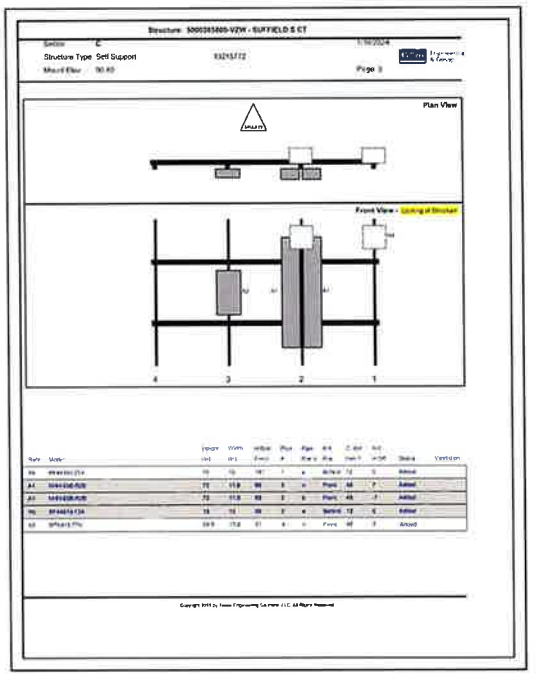
C-3



ALPHA SECTOR (1)
SCALE: N.T.S.



BETA SECTOR (2)
SCALE: N.T.S.



GAMMA SECTOR (3)
SCALE: N.T.S.

NOTE:

1. SECTOR PLANS AND ELEVATIONS TAKEN FROM MOUNT ANALYSIS: SMART TOOL # 10215772, COLLIERS ENGINEERING & DESIGN PROJECT # 21777790 (REV. 1), FUZE # 16092584 BY COLLIERS ENGINEERING & DESIGN DATED 01/10/24.

verizon WIRELESS

VERIZON WIRELESS
51 ALDER STREET
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A	10/25/21	FOR REVIEW

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03/20/2024

DRAWN BY:	TGC
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143636

468895

SITE ADDRESS

55 KING SPRING ROAD
WINDSOR LOCKS, CT 06096

SHEET TITLE

SMART TOOL SECTOR PLANS & ELEVATION DETAILS

SHEET NUMBER

C-4

FINAL EQUIPMENT CONFIGURATION

SECTOR	POSITION	TECHNOLOGY	ANTENNA MODEL	VENDOR	RRH (QTY./MODEL)	CENTERLINE	AZIMUTH	OVP	HYBRID CABLE TYPE	FEED LINE LENGTH*
ALPHA	A1	–	–	–	(P) B2/B66A RRH RF4439d-25A	–	–°	(2) (P) OVP-6 BOX	(2) (P) 8X12 HYBRID CABLE	140'±
	A2(A)	LTE 700/850/1900/AWS	(P) NHH-65B-R2B	COMMSCOPE	(P) B5/B13 RRH RF4461d-13A	90'-10"±	30°			
	A2(B)	LTE 700/850/1900/AWS	(P) NHH-65B-R2B	COMMSCOPE		90'-10"±	30°			
	A3	5G	(P) MT6413-77A	SAMSUNG	–	90'-10"±	30°			
	A4	–	–	–	–	–	–			
BETA	B1	–	–	–	(P) B2/B66A RRH RF4439d-25A	–	–°			
	B2(A)	LTE 700/850/1900/AWS	(P) NHH-65B-R2B	COMMSCOPE	(P) B5/B13 RRH RF4461d-13A	90'-10"±	150°			
	B2(B)	LTE 700/850/1900/AWS	(P) NHH-65B-R2B	COMMSCOPE		90'-10"±	150°			
	B3	5G	(P) MT6413-77A	SAMSUNG	–	90'-10"±	150°			
	B4	–	–	–	–	–	–			
GAMMA	G1	–	–	–	(P) B2/B66A RRH RF4439d-25A	–	–°			
	G2(A)	LTE 700/850/1900/AWS	(P) NHH-65B-R2B	COMMSCOPE	(P) B5/B13 RRH RF4461d-13A	90'-10"±	290°			
	G2(B)	LTE 700/850/1900/AWS	(P) NHH-65B-R2B	COMMSCOPE		90'-10"±	290°			
	G3	5G	(P) MT6413-77A	SAMSUNG	–	90'-10"±	290°			
	G4	–	–	–	–	–	–			

*CONTRACTOR TO FIELD VERIFY HYBRID CABLE LENGTHS PRIOR TO CONSTRUCTION. LENGTH IS ESTIMATED FROM THE BASE EQUIPMENT OVP TO SECTOR OVP.

(E) = Existing
(P) = PROPOSED

FINAL EQUIPMENT CONFIGURATION (1)
SCALE: N.T.S.

VERIZON WIRELESS
51 ALDER STREET
MEDWAY, MA 02053

SUFFIELD S CT

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28971
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PROFESSIONAL ENGINEER

03/20/2024

DRAWN BY:	TGC
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143836

468895

SITE ADDRESS

55 KING SPRING ROAD
WINDSOR LOCKS, CT 06096

SHEET TITLE

FINAL EQUIPMENT CONFIGURATION

SHEET NUMBER

C-5

C-band 64T64R

SAMSUNG

Gen 2

Gen 2 : Higher conducted power radio with reduced size/volume/weight vs Gen 1 and also SOC embedded for flexibility to support new features

※ Preliminary Design: External appearance and mechanical design can be subject to change

Gen 2. 64T64R C-band MMU Dimensions	
Size (WxHxD)	**400 x 734 x 140 mm (15.75 x 28.90 x 5.51 inch)**
Weight	**26kg (57.3 lb)**

Item	Gen 2 64T64R (MT6413-77A)
Air Technology	NR n77/TDD
Frequency	3700 – 3980 MHz
IBW	200 MHz
OBW	200 MHz
Carrier Bandwidth	20(HW ready)/40/60/80/100 MHz
# of Carriers	2 carriers
Layer	DL : 16L, UL : 16RX (8L)
RF Chain	64T64R
Antenna Configuration	4V16H with 192 AE
EIRP	80.5 dBm @320W (55 dBm + 25.5 dBi)
Conductive Power	320W
Spectrum Analyzer	TX/RX support
RX Sensitivity	Typical -97.8dBm @(1Rx, 18.36MHz with 30kHz,51RBs)
Modulation	DL 256QAM support, (DL 1024QAM with 1~2dB power back-off)
Function Split	DL/UL option 7-2x
Input Power	-48 VDC (-38 VDC to -57 VDC)
Power Consumption	1,287W (100% load, room temp.)
Size (WHD)	**400 x 734 x 140 mm (15.75 x 28.90 x 5.51 inch)**
Volume	**41.1L**
Weight	**26kg (57.3 lb)**
Operating Temperature	-40℃ - 55℃ (w/o solar load)
Cooling	Natural convection
Unwanted Emission	3GPP 38.104 FCC 47 CFR 27.53 : < -13dBm/MHz < -40 dBm/MHz @ above 4 GHz <-50 dBm /MHz @ 4,040 ~ 4,050 MHz, <-60 dBm /MHz @ above 4,050 MHz
Optic Interface	15km, 4 ports (25Gbps x 4), SFP28, single mode, Bi-di (Option: Duplex)
Mounting Options	Pole, wall
NB-IoT	Not support
External Alarm	4RX
Fronthaul Interface	eCPRI

SAMSUNG

AWS/PCS MACRO RADIO

DUAL-BAND AND HIGH POWER FOR MACRO COVERAGE

Samsung's future proof dual-band radio is designed to help effectively increase the coverage areas in wireless networks. This AWS/PCS 4T4R dual-band radio has 4Tx/4Rx to 2Tx/2Rx RF chains options and a total output power of 320W, making it ideal for macro sites.

Model Code	RF4439d-25A

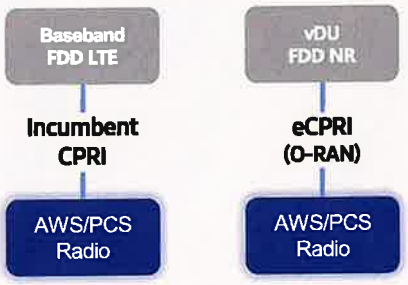
Homepage
samsungnetworks.com

Youtube
www.youtube.com/samsung5g

Points of Differentiation

Continuous Migration

Samsung's AWS/PCS macro radio can support each incumbent CPRI interface as well as advanced eCPRI interfaces. This feature provides installable options for both legacy LTE networks and added NR networks.



O-RAN Compliant

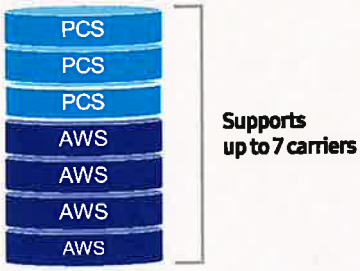
A standardized O-RAN radio can help in implementing cost-effective networks, which are capable of sending more data without compromising additional investments.

Samsung's state-of-the-art O-RAN technology will help accelerate the effort toward constructing a solid O-RAN ecosystem.

Optimum Spectrum Utilization

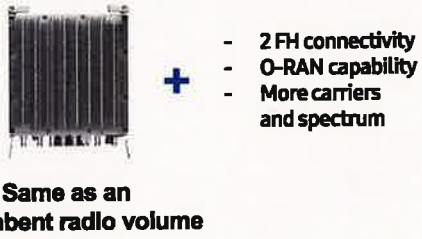
The number of required carriers varies according to site (region). Supporting many carriers is essential for using all frequencies that the operator has available.

The new AWS/PCS dual-band radio can support up to 3 carriers in the PCS (1.9GHz) band and 4 carriers in the AWS (2.1GHz) band, respectively.



Brand New Features in a Compact Size

Samsung's AWS/PCS macro radio offers several features, such as dual connectivity for baseband for both CDU and vDU, O-RAN capability, more carriers and an enlarged PCS spectrum, combined into an incumbent radio volume of 36.8L.



Technical Specifications

Item	Specification
Tech	LTE / NR
Brand	B25(PCS), B66(AWS)
Frequency Band	DL: 1930 – 1995MHz, UL: 1850 – 1915MHz DL: 2110 – 2200MHz, UL: 1710 – 1780MHz
RF Power	(B25) 4 × 40W or 2 × 60W (B66) 4 × 60W or 2 × 80W
IBW/OBW	(B25) 65MHz / 30MHz (B66) DL 90MHz, UL 70MHz / 60MHz
Installation	Pole, Wall
Size/ Weight	14.96 x 14.96 x 10.04inch (36.8L) / 74.7lb

700/850 4T4R Macro 320W ORU - New Filter (RF4461d-13A)

SAMSUNG

Specifications

Item	Specification	
Air Interface	LTE, NR(HW resource ready)	
Band	Band13 (700MHz)	Band5 (850MHz)
Frequency	DL: 746~756MHz UL: 777~787MHz	DL: 869~894MHz UL: 824~849MHz
IBW	10MHz	25MHz
OBW	10MHz	25MHz
Carrier Bandwidth	LTE/NR 5*/10MHz	LTE 5/10MHz NR 5/10/15/20MHz
# of carriers	2C*	3C
Total # of carriers	4C + B13 (SDL) 1C	
RF Chain	4T4R/2T4R/2T2R/1T2R 2T2R+2T2R bi-sector	
RF Output Power	Total : 320W 4 x 40W or 2 x 60W	4 x 40W or 2 x 60W
Spectrum Analyzer	TX/RX Support	
RX Sensitivity	Typ. -104.5dBm @1Rx (25RBs 5MHz)	
Modulation	256QAM support, (1024QAM with 1~2dB power back-off)	
Input Power	-48VDC (-38VDC to -57VDC)	
Power Consumption	1,165 Watt @ 100% RF load, room temperature	
Size (WHD)	380 x 380 x 260 mm (14.96 x 14.96 x 10.23 inch)	
Volume	37.5 L	
Weight (W/o Solar Shield & finger guard)	35.9 kg (79.1 lb)	
Operating Temperature	-40℃ (-40℉) ~ 55℃ (131℉) (Without solar load)	
Cooling	Natural convection	
Unwanted Emission	3GPP 36.104 FCC 47 CFR 27.53 c), f)	3GPP 36.104 FCC 47 CFR 22.917 -69 dBm/100 kHz per path @ 896 ~901MHz
CPRI Cascade	Not supported	
Optic Interface	20km, 2 ports (9.8Gbps x 2), SFP+, single mode, Duplex (Option: Bi-di)	
RET & TMA Interface	AISG 3.0	
Bias-T	4 ports (2 ports per band)	
Mounting Options	Pole, wall	
NB-IoT	2GB+2IB or 4IB	2SA+2GB or 2GB+2IB or 4GB
PIM Cancellation	Support	
# of antenna port	4	
External Alarm	4	
Fronthaul Interface	Opt. 8 CPRI / Opt. 7-2x selectable (not simultaneous support)	
CPRI compression	Not Support	

* 5MHz supporting in B13(700MHz) depends on 3GPP std. and UE capability.
External filters in interferer and victim sides for Mexican boarder to support 5MHz service need to be considered
** Finger guard is not needed.

ATTACHMENT 3

C Squared Systems, LLC
65 Dartmouth Drive
Auburn, NH 03032
(603) 644-2800
support@csquaredsystems.com

Calculated Radio Frequency Emissions Report

Suffield South CT

55 King Spring Road, Suffield, CT 06078

May 23, 2024

Table of Contents

List of Figures

List of Tables

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modification of Verizon's antenna arrays mounted at 90.8' on an existing self-support tower located at 55 King Spring Road in Suffield, CT. The coordinates of the tower are 41° 56' 48" N, 72° 39' 54.3" W.

Verizon is proposing the following:

1) Install nine (9) multi-band antennas, three (3) per sector to support its commercial LTE and 5G network.

This report considers the planned antenna configuration for Verizon[1] as well as existing antenna configuration for AT&T[2] to derive the resulting % MPE of its proposed modification.

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. 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.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment C of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment C contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

[1] As referenced to Verizon's Radio Frequency Design Sheet updated 12/04/2023.

[2] As referenced to AT&T's Connecticut Siting Council Notice of Exempt Modification – 55 King Spring Road, Windsor Locks, Connecticut, dated 12/08/2016 and Verizon's Connecticut Siting Council Notice of Exempt Modification – 55 King Spring Road, Windsor Locks, Connecticut, dated 12/08/2021

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{\text{GRF}^2 \times 1.64 \times \text{ERP}}{4\pi \times R^2}\right) \text{X Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Off Beam Loss is determined by the selected antenna patterns

Ground reflection factor (GRF) of 1.6

These calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the final installations.

4. Antenna Inventory

Table 1 below outlines Verizon's proposed antenna configuration for the site. The associated data sheets and antenna patterns for these specific antenna models are included in Attachments C.

Operator	Sector / Azimuth	TX Freq (MHz)	Power at Antenna (Watts)	Ant Gain (dBi)	Power EIRP (Watts)	Antenna Model	Beam Width	Mech. Tilt	Length (ft)	Antenna Centerline Height (ft)
Verizon	Alpha / 30°	700	160	14.9	4944	NHH-65B-R2B	65	0	6	90.8
		850	160	15.0	5060		60			
		1900	160	17.9	9866		69			
		2100	240	18.4	16604		64			
		3700	320	25.5	113540	MT6413-77A	-	0	2.46	90.8
	Beta / 150°	700	160	14.9	4944	NHH-65B-R2B	65	0	6	90.8
		850	160	15.0	5060		60			
		1900	160	17.9	9866		69			
		2100	240	18.4	16604		64			
		3700	320	25.5	113540	MT6413-77A	-	0	2.46	90.8
	Gamma / 290°	700	160	14.9	4944	NHH-65B-R2B	65	0	6	90.8
		850	160	15.0	5060		60			
		1900	160	17.9	9866		69			
		2100	240	18.4	16604		64			
		3700	320	25.5	113540	MT6413-77A	-	0	2.46	90.8

Table 1: Proposed Antenna Inventory[3] [4]

[3] Antenna heights are in reference to Verizon's Radio Frequency Design Sheet updated 12/04/2023.

[4] Transmit power assumes 0 dB of cable loss.

5. Calculation Results

The calculated power density results are shown in Figure 1 below. For completeness, the calculations for this analysis range from 0 feet horizontal distance (directly below the antennas) to a value of 3,000 feet horizontal distance from the site. In addition to the other worst-case scenario considerations that were previously mentioned, the power density calculations to each horizontal distance point away from the antennas was completed using a local maximum off beam antenna gain (within ± 5 degrees of the true mathematical angle) to incorporate a realistic worst-case scenario.

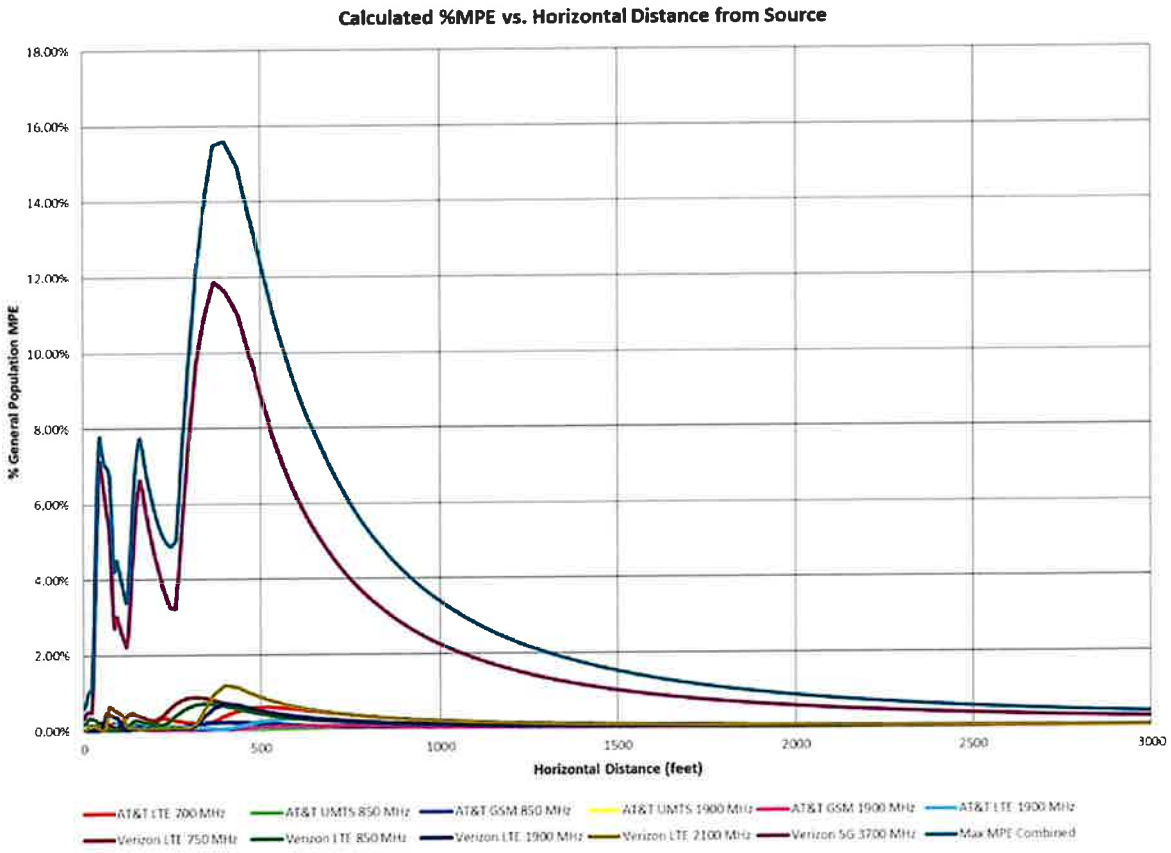


Figure 1: Graph of General Population % MPE vs. Distance

The highest percent of MPE (15.58% of the General Population limit) is calculated to occur at a horizontal distance of 399 feet from antennas. Please note that the percent of MPE calculations close to the site take into account off beam loss, which is determined from the vertical pattern of the antennas used. Therefore, RF power density levels may increase as the distance from the site increases. At distances of approximately 1500 feet and beyond, one would now be in the main beam of the antenna pattern and off beam loss is no longer considered. Beyond this point, RF levels become calculated solely on distance from the site and the percent of MPE decreases significantly as distance from the site increases.

Table 2 below lists percent of MPE values as well as the associated parameters that were included in the calculations. The highest percent of MPE value was calculated to occur at a horizontal distance of 399 feet from the site (reference Figure 1).

As stated in Section 3, all calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. In addition, a six foot height offset was considered in this analysis to account for average human height. As a result, the predicted signal levels are significantly higher than the actual signal levels will be from the final configuration. The results presented in Figure 1 and Table 2 assume level ground elevation from the base of the tower out to the horizontal distances calculated.

Carrier	Number of Transmitters	Power out of Base Station Per Transmitter (Watts)	Antenna Height (Feet)	Distance to the Base of Antennas (Feet)	Power Density (mW/cm^2)	Limit (mW/cm^2)	% MPE
AT&T GSM 1900 MHz	1	60.0	97.0	399	0.000149	1.000	0.01%
AT&T GSM 850 MHz	1	60.0	97.0	399	0.001195	0.567	0.21%
AT&T LTE 1900 MHz	1	120.0	97.0	399	0.000429	1.000	0.04%
AT&T LTE 700 MHz	1	120.0	97.0	399	0.001810	0.467	0.39%
AT&T UMTS 1900 MHz	1	60.0	97.0	399	0.000149	1.000	0.01%
AT&T UMTS 850 MHz	1	60.0	180.0	399	0.000131	0.567	0.02%
Verizon 5G 3700 MHz	1	320.0	90.8	399	0.116168	1.000	11.62%
Verizon LTE 1900 MHz	1	160.0	90.8	399	0.007097	1.000	0.71%
Verizon LTE 2100 MHz	1	240.0	90.8	399	0.011944	1.000	1.19%
Verizon LTE 750 MHz	1	160.0	90.8	399	0.003540	0.500	0.71%
Verizon LTE 850 MHz	1	160.0	90.8	399	0.003698	0.567	0.65%
						Total	**15.58%**

Table 2: Maximum Percent of General Population Exposure Values[5] [6]

[5] Frequencies listed are representative of the operating band and are not the specific operating frequency.

[6] The total % MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not reflect the total value listed in the table.

6. Conclusion

The above analysis verifies that RF exposure levels from the site with Verizon's proposed antenna configuration will be well below the maximum permissible levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using the conservative calculation methods and parameters detailed above, the maximum cumulative percent of MPE in consideration of all transmitters is calculated to be **15.58%** of the FCC limit (General Population/Uncontrolled). This maximum cumulative percent of MPE value is calculated to occur 399 feet away from the site.

7. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.

Report Prepared By: Ram Acharya
RF Engineer
C Squared Systems, LLC

May 22, 2024
Date

Reviewed/Approved By: Martin Lavin
Senior RF Engineer
C Squared Systems, LLC

May 23, 2024
Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

IEEE C95.1-2019, IEEE Standard Safety Levels With Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz IEEE-SA Standards Board

IEEE C95.3-2021, IEEE Recommended Practice for Measurements and Computations of Electric, Magnetic, and Electromagnetic Fields with Respect to Human Exposure to Such Fields, 0 Hz-300 GHz IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure[7]

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

(B) Limits for General Population/Uncontrolled Exposure[8]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (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 in MHz * Plane-wave equivalent power density

Table 3: FCC Limits for Maximum Permissible Exposure

[7] 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.

[8] 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.

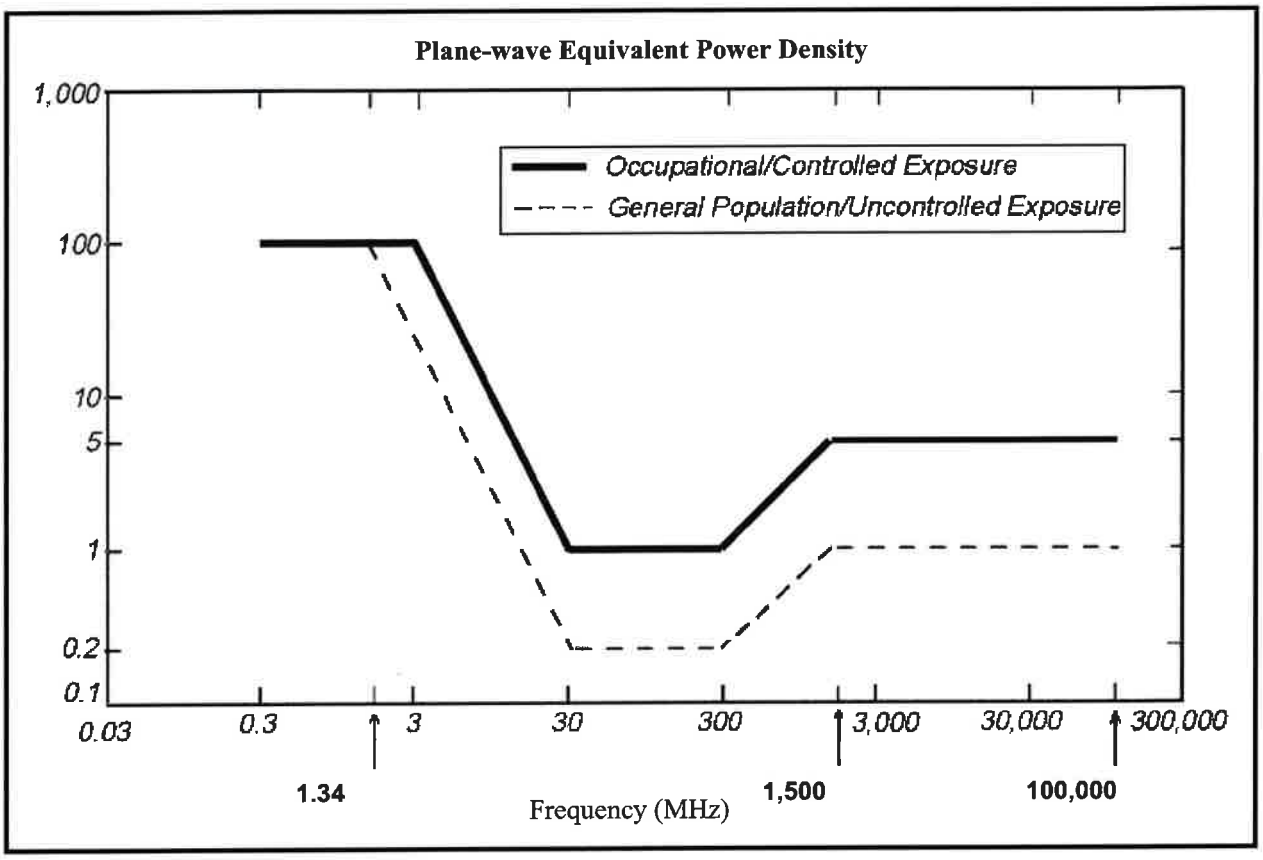
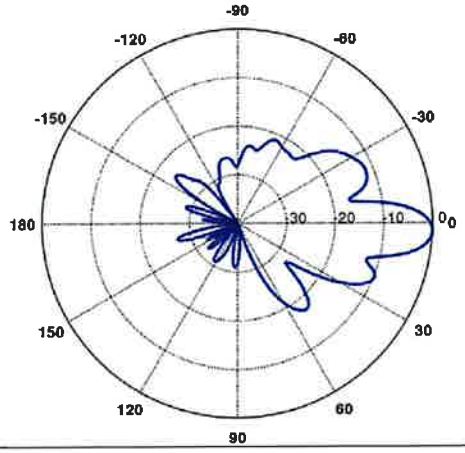


Figure 2: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: Verizon Antenna Model Data Sheets and Electrical Patterns

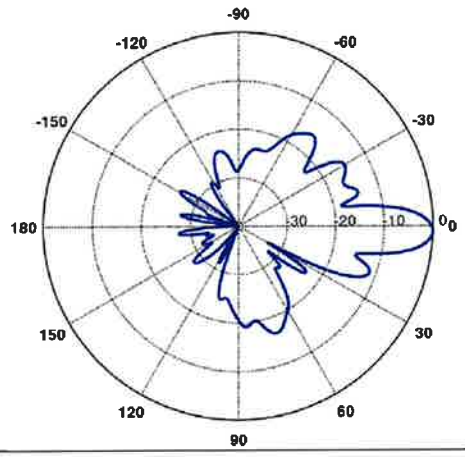
750 MHz

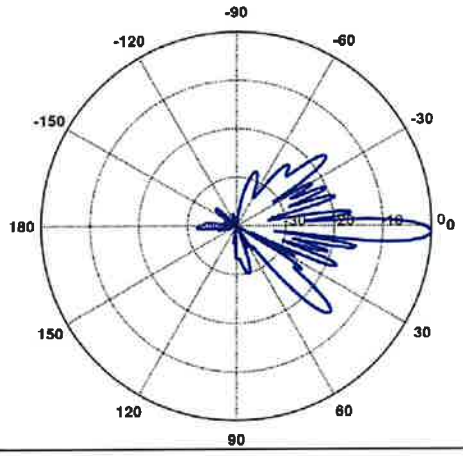
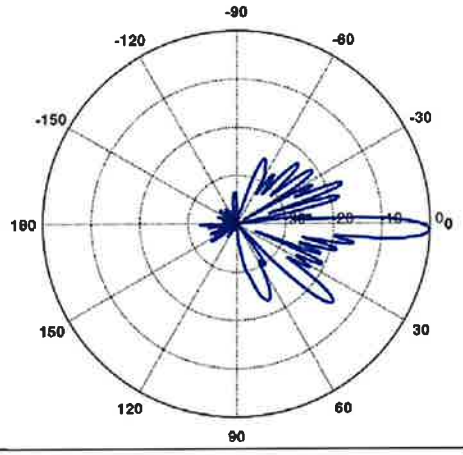
Manufacturer:	COMMSCOPE
Model #:	NHH-65B-R2B
Frequency Band:	698-806 MHz
Gain:	14.9 dBi
Vertical Beamwidth:	12.4°
Horizontal Beamwidth:	65°
Polarization:	±45°
Dimensions (L x W x D):	72.0" x 11.9" x 7.1"



885 MHz

Manufacturer:	COMMSCOPE
Model #:	NHH-65B-R2B
Frequency Band:	806-896 MHz
Gain:	15.0 dBi
Vertical Beamwidth:	11.2°
Horizontal Beamwidth:	60°
Polarization:	±45°
Dimensions (L x W x D):	72.0" x 11.9" x 7.1"



1900 MHz Manufacturer: COMMSCOPE Model #: NHH-65B-R2B Frequency Band: 1850-1990 MHz Gain: 17.9 dBi Vertical Beamwidth: 5.2° Horizontal Beamwidth: 69° Polarization: ±45° Dimensions (L x W x D): 72.0" x 11.9" x 7.1"	
2100 MHz Manufacturer: COMMSCOPE Model #: NHH-65B-R2B Frequency Band: 1920-2200 MHz Gain: 18.4 dBi Vertical Beamwidth: 4.9° Horizontal Beamwidth: 64° Polarization: ±45° Dimensions (L x W x D): 72.0" x 11.9" x 7.1"	

ATTACHMENT 4

ALL-POINTS
TECHNOLOGY CORPORATION

STRUCTURAL ANALYSIS REPORT
FOR PROPOSED ANTENNA AND APPURTENANCE MODIFICATION
ON A 100' SELF-SUPPORTING TOWER
WINDSOR LOCKS, CONNECTICUT

Prepared for
Verizon Wireless

verizon

Verizon Site Ref:
Suffield S CT

Site Address: 55 King Spring Road, Windsor Locks, CT 06096
FUZE Project ID: 16092584
VZW PSLC: 468895
MDG Location ID: 5000385800
Project Type: Modification

APT Filing No. CT141_12940

~~Rev 0 October 26, 2021~~
~~Rev.1 November 16, 2021~~
Rev. 2 February 7, 2024

ALL-POINTS TECHNOLOGY CORPORATION, P.C.
567 VAUXHALL STREET EXTENSION · SUITE 311 · WATERFORD, CT 06385 · PHONE 860-663-1697

STRUCTURAL ANALYSIS REPORT
100-ft SELF-SUPPORTING TOWER
WINDSOR LOCKS, CONNECTICUT
prepared for
Verizon Wireless

EXECUTIVE SUMMARY:

All-Points Technology Corporation, P.C. (APT) performed a structural analysis of the subject 100' self-supporting lattice tower structure to support a proposed Verizon equipment modification.

The proposed Verizon antenna and appurtenance modification consists of the installation of six (6) new panel antennas, three (3) new LSub6 antennas with integrated Remote Radio Heads (RRHs), six (6) new RRHs, and two (2) new OVPs, and the removal of twelve (12) panel antennas, three (3) existing RRHs, and two (2) existing 1-5/8" coaxial cables. Equipment shall be installed on three (3) proposed VFA12-HD mounts and be fed by ten (10) existing 1-5/8" coaxial cables and two (2) proposed 6x12 Low-Inductance (LI) hybrid feed line cables. Reference can be made to the inventory table on the following page for additional information.

The results of this analysis indicate that the existing tower structure meets the requirements of the 2021 International Building Code (IBC), as amended by the 2022 Connecticut State Building Code, and the ANSI/TIA-222-H standard with the proposed equipment modification.

Evaluation of the base foundation was performed by comparing reactions calculated under the proposed loads with reactions indicated within a Centek Engineering Structural Analysis Report provided to APT. Reactions imposed by the proposed installation are less than the published allowable reactions, indicating that the foundation is adequately sized.

The steel component structure usage is summarized in the table below:

Elevation/Component	Usage (%)
Legs (20'-40')	76%

INTRODUCTION:

A structural analysis was performed on the above-mentioned communications tower by APT for Verizon Wireless. The tower is located at 55 King Spring Road in Windsor Locks, Connecticut.

The following information was utilized in the preparation of this analysis:

- RFDS detailing Verizon's proposed equipment changes, latest version.
- Structural Analysis Report prepared by APT (Project No. CT141_12940) marked Rev. 1, dated 11/16/21.
- New/Replacement Antenna Mount Analysis Report prepared by Colliers Engineering & Design (Project No. 21777790), marked Rev 1 dated 01/10/24.
- Field notes and photos from APT's site visit on 10/07/21. APT climbed the structure in its entirety to record information regarding physical and dimensional properties of the structure and its appurtenances.

- Structural Analysis Report prepared by Centek Engineering (Project No. 16001.33) dated 9/9/16.

The structure is a 100', galvanized steel self-supporting lattice tower manufactured by ROHN. The tower is comprised of galvanized pipe legs with angle steel bracing arranged in an X-brace configuration.

The analysis was conducted using the following antenna inventory (proposed equipment shown in **bold** text):

Carrier	Antenna and Appurtenance Make/Model	Elevation	Status	Mount Type	Coax/Feed-Line
AT&T	(3) Kathrein 800-10121 panel antenna, (2) P65-17-XLH-RR panel antennas, (1) KMW AM-X-CD-16-65 panel antenna, (6) TMAs, (6) RETs, (3) Ericsson RRUS-11 RRHs, (3) Ericsson RRUS-12 RRHs, (1) Raycap "squid" D-box	97'	ETR	(3) 5' T-arms	(6) 7/8", (1) 3/8", (1) 2" conduit
Verizon Wireless	**(6) Commscope NHH-65B-R2B antennas & (3) Samsung MT6413-77A antennas w/ integrated RRHs, (3) Samsung RF4439d-25A RRHs, (3) Samsung RF4461d-13A RRHs, (2) Raycap RVZDC-6627-PF-48 12 OVPs**	90.8'	**P**	**(3) 12' sector mounts (SitePro1 VFA12-HD)**	~~(2) 1-5/8"~~ (10) 1-5/8" **(2) 6x12 hybrid**
	~~(3) Antel LPA-70063-6CF-EDIN antennas, (3) Antel BXA-171063-12BF-EDIN-2 antennas, (3) Amphenol BXA-70063-6CF antennas (3) Nokia-UHBC-B13-TRDU-2x40-RRHs~~		~~R~~	~~(3) T-Frames~~	

Notes:

1. ETR = Existing to Remain; ERL= Existing to be Relocated; **P** = Proposed; ~~R~~ = Removed.

STRUCTURAL ANALYSIS:

Methodology:

This structural analysis has been prepared in accordance with the ANSI/TIA-222-H standard entitled "Structural Standard for Antenna Supporting Structures, Antennas and Small Wind Turbine Support Structures"; American Institute of Steel Construction (AISC) Manual of Steel Construction, and the 2021 International Building Code (IBC), as amended by the 2022 Connecticut State Building Code, using the following design criteria:

- Load Case 1: 120 mph (3-second gust), Ultimate Wind Speed 0" ice
- Load Case 2: 50 mph (3-second gust) w/ 1.5" ice thickness required
- Load Case 3: 60 mph (3-second gust) (Service Load)
- Risk Category: II
- Exposure Category: C
- Topographic Category: 1

Analysis Results:

Analysis of the tower was conducted in accordance with the criteria outlined herein with the aforementioned loading. The following table summarizes the results of the analysis:

Elevation	Leg Usage (%)	Bracing Usage (%)
80'-100'	38%	51%
60'-80'	53%	33% [2]
40'-60'	58%	37% [2]
20'-40'	76%	42% [2]
0'-20'	71%	57%

Notes:

2. Member connection controls.

Anchor Bolts:

Anchor bolts were evaluated under the proposed loading. All anchor bolts were found to be adequately sized to support the proposed equipment.

Bracing and Splice Bolts:

Connection bolts were evaluated under the proposed loading. All bolts were found to be adequately sized to support the proposed loads.

Base Foundation:

Evaluation of the base foundation was performed by comparing reactions calculated under the proposed loads with reactions indicated within the aforementioned Centek Engineering Structural Analysis Report. Reactions imposed by the proposed installation are less than the published reactions, indicating that the foundation is adequately sized. It should be noted that the foundation capacity is governed by the overturning moment capacity.

The calculated base reactions are indicated within the table below:

Load Effect	Centek Reactions [3]	Calculated Reactions	Result
Compression	21.60 k	15.6 k	PASS
Leg Shear	14.85 k	11.3 k	PASS
Overturning Moment	1,413 ft-kips	1,092 ft-kips	PASS

Notes:

3. Previous Centek TIA-222-F design reactions multiplied by factor of 1.35 per TIA-222-H paragraph 15.6.2

CONCLUSIONS AND RECOMMENDATIONS:

In conclusion, our analysis indicates that the existing self-supporting lattice tower structure located at 55 King Spring Road in Windsor Locks, Connecticut meets the requirements of the 2021 International Building Code (IBC), as amended by the 2022 Connecticut State Building Code, and the ANSI/TIA-222-H standard with the proposed Verizon equipment modification.

Sincerely,
All-Points Technology Corp. P.C.

Domenic Aversa, PE
Senior Structural Engineer

Prepared by:
All-Points Technology Corp. P.C.

Ali M. Adair-Crump
Project Structural Engineer

LIMITATIONS:

This report is based on the following:

1. Tower is properly installed and maintained.
2. All members are in an undeteriorated condition.
3. All required members are in place.
4. All bolts are in place and are properly tightened.
5. Tower is in plumb condition.
6. All tower members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.

All-Points Technology Corporation, P.C. (APT) is not responsible for modifications completed prior to or hereafter which APT is not or was not directly involved. Modifications include but are not limited to:

1. Replacing or strengthening bracing members.
2. Reinforcing vertical members in any manner.
3. Adding or relocating torque arms or guys.
4. Installing antenna mounting gates or side arms or waveguide cables.
5. Extending tower.

APT hereby states that this document represents the entire report and that it assumes no liability for any factual changes that may occur after the date of this report. All representations, recommendations, and conclusions are based upon the information contained and set forth herein. If you are aware of any information which is contrary to that which is contained herein, or you are aware of any defects arising from the original design, material, fabrication and erection deficiencies, you should disregard this report and immediately contact APT. APT disclaims all liability for any representation, recommendation, or conclusion not expressly stated herein.

Appendix A

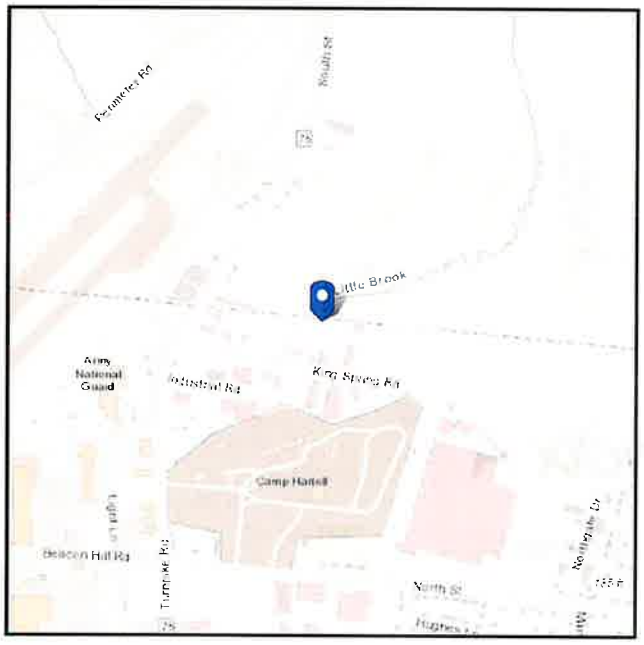
Design Criteria

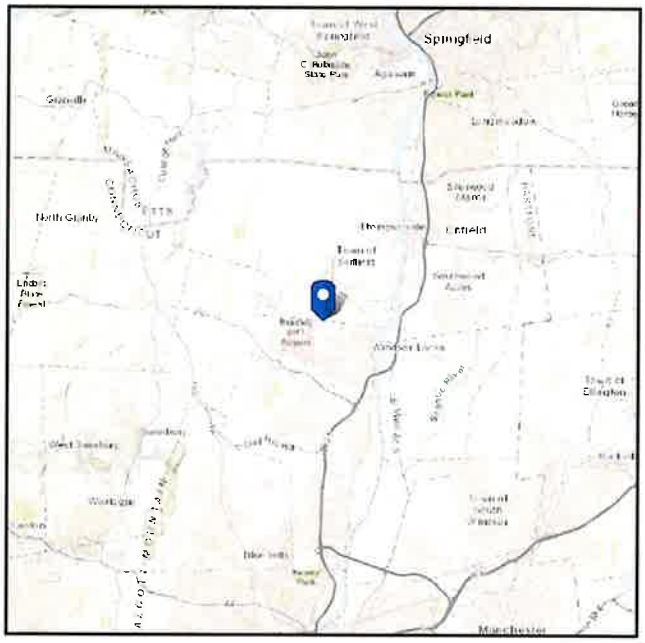
ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: undefined

Latitude: 41.946511
Longitude: -72.665047
Elevation: 141.66497010414506 ft (NAVD 88)





Wind

Results:

Wind Speed	116 Vmph
10-year MRI	75 Vmph
25-year MRI	83 Vmph
50-year MRI	90 Vmph
100-year MRI	96 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Fri Dec 22 2023

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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Ice

Results:

Ice Thickness:	1.50 in.
Concurrent Temperature:	5 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Fri Dec 22 2023

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

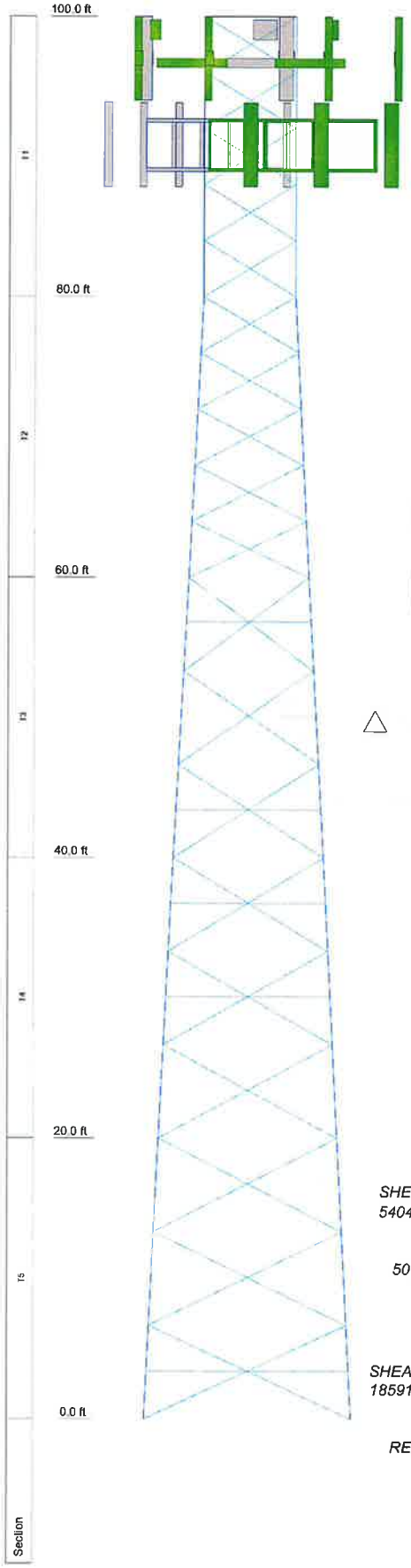
Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Municipality	Basic Design Wind Speeds, V (mph)				Allowable Stress Design Wind Speeds, V_{asd} (mph)				Ground Snow Load p_g (psf)	MCE Ground Accelerations		Wind-Borne Debris Region[1]		Hurricane-Prone Region
	Risk Cat. I	Risk Cat. II	Risk Cat. III	Risk Cat. IV	Risk Cat. I	Risk Cat. II	Risk Cat. III	Risk Cat. IV		S_S (g)	S_1 (g)	Risk Cat. III Occup. I-2	Risk Cat. IV	
Wethersfield	110	120	130	135	85	93	101	105	30	0.196	0.055			Yes
Willington	110	120	130	135	85	93	101	105	35	0.181	0.055			Yes
Wilton	110	120	130	135	85	93	101	105	30	0.241	0.057			Yes
Winchester	110	115	125	130	85	89	97	101	40	0.167	0.054			
Windham	115	125	135	135	89	97	105	105	30	0.190	0.055			Yes
Windsor	110	120	130	135	85	93	101	105	30	0.181	0.055			Yes
Windsor Locks	110	120	125	130	85	93	97	101	35	0.175	0.055			Yes
Wolcott	110	120	130	135	85	93	101	105	35	0.191	0.054			Yes
Woodbridge	110	120	130	135	85	93	101	105	30	0.200	0.054			Yes
Woodbury	110	120	125	130	85	93	97	101	35	0.194	0.054			Yes
Woodstock	110	120	130	135	85	93	101	105	40	0.182	0.055			Yes

1. Wind-borne debris regions:
   Type A: Full municipality.
   Type B: Areas within one mile (1.61 km) of the mean high-water line where an Exposure D condition exists upwind at the waterline.

Appendix B

Tower Schematic



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
800-10121 (ATI)	97	(2) NHH-65B-R2B (VzW)	90.8
800-10121 (ATI)	97	(2) NHH-65B-R2B (VzW)	90.8
800-10121 (ATI)	97	(2) NHH-65B-R2B (VzW)	90.8
P65-17-XLH-RR panel (ATI)	97	MT6413-77A (VzW)	90.8
AM-X-CD-14-65 (ATI)	97	MT6413-77A (VzW)	90.8
P65-17-XLH-RR panel (ATI)	97	MT6413-77A (VzW)	90.8
(2) RIU Bias-T (ATI)	97	Samsung RF4439d-25A RRHs (VzW)	90.8
(2) RIU Bias-T (ATI)	97	Samsung RF4439d-25A RRHs (VzW)	90.8
(2) RIU Bias-T (ATI)	97	Samsung RF4439d-25A RRHs (VzW)	90.8
(2) TMA-T-DB78-DD-A (ATI)	97	Samsung B5/B13 ORAN RRH (RF4461d-13A) (VzW)	90.8
(2) TMA-T-DB78-DD-A (ATI)	97		
(2) TMA-T-DB78-DD-A (ATI)	97	Samsung B5/B13 ORAN RRH (RF4461d-13A) (VzW)	90.8
Raycap DC6-48-60-18-8F squid (ATI)	97	Samsung B5/B13 ORAN RRH (RF4461d-13A) (VzW)	90.8
Ericsson RRUS-11 (ATI)	97		
Ericsson RRUS-11 (ATI)	97	Commscope RCMDC-6627-PF-48 (12 OVP) (VzW)	90.8
Ericsson RRUS-11 (ATI)	97	Commscope RCMDC-6627-PF-48 (12 OVP) (VzW)	90.8
Ericsson RRUS-12 (ATI)	97		
Ericsson RRUS-12 (ATI)	97	SitePro VFA12-HD (VzW)	90.8
Ericsson RRUS-12 (ATI)	97	SitePro VFA12-HD (VzW)	90.8
5' T-arm (ATI)	97	SitePro VFA12-HD (VzW)	90.8
5' T-arm (ATI)	97		
5' T-arm (ATI)	97		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

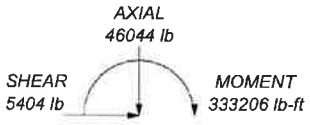
TOWER DESIGN NOTES

1. Tower is located in Bristol County, Massachusetts.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 75.8%

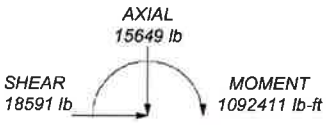
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 91038 lb
SHEAR: 11251 lb

UPLIFT: -77259 lb
SHEAR: 9718 lb



TORQUE 1804 lb-ft
50 mph WIND - 1.5000 in ICE



TORQUE 10365 lb-ft
REACTIONS - 120 mph WIND

All Points Technology
567 Vauxhall St. Ext., Suite 311
Waterford, CT 06385
Phone: (860) 663-1697
FAX: (860) 663-0935

Job: *100' Self-Supporting Tower*			
Project: *CT141_12940*			
Client: 16092584; Suffield S CT	Drawn by: AMA	App'd:	
Code: TIA-222-H	Date: 02/07/24	Scale: NTS	
Path:		Dwg No. E-1	

Appendix C

Calculations

tnxTower	Job	Page
	100' Self-Supporting Tower	1 of 6
All Points Technology 567 Vauxhall St. Ext., Suite 311 Waterford, CT 06385 Phone: (860) 663-1697 FAX: (860) 663-0935	**Project** CT141_12940	**Date** 16:22:39 02/07/24
	Client 16092584; Suffield S CT	**Designed by** AMA

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 100.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 6.52 ft at the top and 14.70 ft at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower is located in Bristol County, Massachusetts.
Tower base elevation above sea level: 142.00 ft.
Basic wind speed of 120 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 1.5000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Feed Line/Linear Appurtenances

Description	*Face or Leg*	*Allow Shield*	*Exclude From Torque Calculation*	*Component Type*	*Placement ft*	*Face Offset in*	*Lateral Offset (Frac FW)*	*#*	*# Per Row*	*Clear Spacing in*	*Width or Diameter in*	*Perimeter in*	*Weight plf*
1 5/8 (VzW)	A	No	No	Ar (CaAa)	90.80 - 5.00	0.0000	-0.35	10	10	0.5000	1.9800		1.04
6x24 fiber cable (VzW)	A	No	No	Ar (CaAa)	90.80 - 5.00	0.0000	0.26	2	2	1.9760	1.9760		2.22
7/8 (AT&T)	B	No	No	Ar (CaAa)	97.00 - 5.00	0.0000	0	6	6	1.1100	1.1100		0.54
3/8 (AT&T)	B	No	No	Ar (CaAa)	97.00 - 5.00	0.0000	0.05	1	1	0.4400	0.4400		0.08
2" conduit (AT&T)	B	No	No	Ar (CaAa)	97.00 - 5.00	0.0000	-0.05	1	1	2.0000	2.0000		2.00
EW90 (inactive)	B	No	No	Ar (CaAa)	17.00 - 5.00	0.0000	0.5	1	1	0.9869	0.9869		0.32

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
800-10121 (AT&T)	A	From Leg	4.00 -2.50 0.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.16 5.51 5.87 6.61	3.29 3.64 3.99 4.71	50.00 82.91 120.59 211.06
800-10121 (AT&T)	B	From Leg	4.00 -2.50 0.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.16 5.51 5.87 6.61	3.29 3.64 3.99 4.71	50.00 82.91 120.59 211.06
800-10121 (AT&T)	C	From Leg	4.00 -2.50 0.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.16 5.51 5.87 6.61	3.29 3.64 3.99 4.71	50.00 82.91 120.59 211.06
P65-17-XLH-RR panel (AT&T)	A	From Leg	4.00 2.50 0.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.47 12.08 12.71 13.95	6.80 7.38 7.98 9.18	60.00 122.06 191.70 354.52
AM-X-CD-14-65 (AT&T)	B	From Leg	4.00 2.50 0.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.99 5.32 5.65 6.33	2.83 3.14 3.45 4.07	40.00 71.95 108.36 195.30
P65-17-XLH-RR panel (AT&T)	C	From Leg	4.00 2.50 0.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.47 12.08 12.71 13.95	6.80 7.38 7.98 9.18	60.00 122.06 191.70 354.52
(2) RIU Bias-T (AT&T)	A	From Leg	4.00 -2.50 0.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.08 0.12 0.17 0.28	0.05 0.08 0.12 0.22	1.30 2.26 3.93 10.21
(2) RIU Bias-T (AT&T)	B	From Leg	4.00 -2.50 0.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.08 0.12 0.17 0.28	0.05 0.08 0.12 0.22	1.30 2.26 3.93 10.21
(2) RIU Bias-T (AT&T)	C	From Leg	4.00 -2.50 0.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.08 0.12 0.17 0.28	0.05 0.08 0.12 0.22	1.30 2.26 3.93 10.21
(2) TMA-T-DB78-DD-A (AT&T)	A	From Leg	4.00 -2.50 0.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.58 1.73 2.07	0.60 0.70 0.82 1.06	40.00 51.46 65.18 100.19
(2) TMA-T-DB78-DD-A (AT&T)	B	From Leg	4.00 -2.50 0.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.58 1.73 2.07	0.60 0.70 0.82 1.06	40.00 51.46 65.18 100.19
(2) TMA-T-DB78-DD-A (AT&T)	C	From Leg	4.00 -2.50 0.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.58 1.73 2.07	0.60 0.70 0.82 1.06	40.00 51.46 65.18 100.19
Raycap DC6-48-60-18-8F squid (AT&T)	A	From Leg	0.00 0.00 -2.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.19 1.37 1.56 1.91	1.19 1.37 1.56 1.91	30.00 44.34 60.93 87.36
Ericsson RRUS-11 (AT&T)	A	From Leg	3.50 1.00	0.0000	97.00	No Ice 1/2" Ice	2.79 3.00	1.02 1.16	55.00 75.86

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			2.00			1" Ice	3.21	1.30	99.77
						2" Ice	3.66	1.62	157.47
Ericsson RRUS-11 (AT&T)	B	From Leg	3.50 1.00 2.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.79 3.00 3.21 3.66	1.02 1.16 1.30 1.62	55.00 75.86 99.77 157.47
Ericsson RRUS-11 (AT&T)	C	From Leg	3.50 1.00 2.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.79 3.00 3.21 3.66	1.02 1.16 1.30 1.62	55.00 75.86 99.77 157.47
Ericsson RRUS-12 (AT&T)	A	From Leg	3.50 2.50 2.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.15 3.36 3.59 4.07	1.85 2.03 2.22 2.61	85.00 112.62 143.66 216.78
Ericsson RRUS-12 (AT&T)	B	From Leg	3.50 2.50 2.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.15 3.36 3.59 4.07	1.85 2.03 2.22 2.61	85.00 112.62 143.66 216.78
Ericsson RRUS-12 (AT&T)	C	From Leg	3.50 2.50 2.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.15 3.36 3.59 4.07	1.85 2.03 2.22 2.61	85.00 112.62 143.66 216.78
5' T-arm (AT&T)	A	From Leg	1.00 0.00 0.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.65 3.56 4.48 6.31	4.96 6.81 8.66 12.36	140.00 240.00 340.00 540.00
5' T-arm (AT&T)	B	From Leg	1.00 0.00 0.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.65 3.56 4.48 6.31	4.96 6.81 8.66 12.36	140.00 240.00 340.00 540.00
5' T-arm (AT&T)	C	From Leg	1.00 0.00 0.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.65 3.56 4.48 6.31	4.96 6.81 8.66 12.36	140.00 240.00 340.00 540.00
(2) NHH-65B-R2B (VzW)	A	From Face	4.00 -5.00 0.00	0.0000	90.80	No Ice 1/2" Ice 1" Ice 2" Ice	8.08 8.53 9.00 9.95	5.34 5.79 6.26 7.20	69.20 119.25 175.40 306.75
(2) NHH-65B-R2B (VzW)	B	From Face	4.00 -5.00 0.00	0.0000	90.80	No Ice 1/2" Ice 1" Ice 2" Ice	8.08 8.53 9.00 9.95	5.34 5.79 6.26 7.20	69.20 119.25 175.40 306.75
(2) NHH-65B-R2B (VzW)	C	From Face	4.00 -5.00 0.00	0.0000	90.80	No Ice 1/2" Ice 1" Ice 2" Ice	8.08 8.53 9.00 9.95	5.34 5.79 6.26 7.20	69.20 119.25 175.40 306.75
MT6413-77A (VzW)	A	From Face	4.00 0.00 0.00	0.0000	90.80	No Ice 1/2" Ice 1" Ice 2" Ice	3.88 4.13 4.39 4.94	1.50 1.69 1.89 2.31	55.10 79.94 108.26 176.14
MT6413-77A (VzW)	B	From Face	4.00 0.00 0.00	0.0000	90.80	No Ice 1/2" Ice 1" Ice 2" Ice	3.88 4.13 4.39 4.94	1.50 1.69 1.89 2.31	55.10 79.94 108.26 176.14
MT6413-77A (VzW)	C	From Face	4.00 0.00 0.00	0.0000	90.80	No Ice 1/2" Ice 1" Ice	3.88 4.13 4.39	1.50 1.69 1.89	55.10 79.94 108.26

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
						2" Ice	4.94	2.31	176.14
Samsung RF4439d-25A RRHs (VzW)	A	From Face	3.50 -11.00 0.00	0.0000	90.80	No Ice 1/2" Ice 1" Ice 2" Ice	1.87 2.03 2.21 2.59	1.25 1.39 1.54 1.87	100.00 118.32 139.42 190.75
Samsung RF4439d-25A RRHs (VzW)	B	From Face	3.50 -11.00 0.00	0.0000	90.80	No Ice 1/2" Ice 1" Ice 2" Ice	1.87 2.03 2.21 2.59	1.25 1.39 1.54 1.87	100.00 118.32 139.42 190.75
Samsung RF4439d-25A RRHs (VzW)	C	From Face	3.50 -11.00 0.00	0.0000	90.80	No Ice 1/2" Ice 1" Ice 2" Ice	1.87 2.03 2.21 2.59	1.25 1.39 1.54 1.87	100.00 118.32 139.42 190.75
Samsung B5/B13 ORAN RRH (RF4461d-13A) (VzW)	A	From Face	3.50 -6.00 0.00	0.0000	90.80	No Ice 1/2" Ice 1" Ice 2" Ice	1.87 2.03 2.21 2.59	1.28 1.42 1.57 1.89	79.10 97.61 118.91 170.68
Samsung B5/B13 ORAN RRH (RF4461d-13A) (VzW)	B	From Face	3.50 -6.00 0.00	0.0000	90.80	No Ice 1/2" Ice 1" Ice 2" Ice	1.87 2.03 2.21 2.59	1.28 1.42 1.57 1.89	79.10 97.61 118.91 170.68
Samsung B5/B13 ORAN RRH (RF4461d-13A) (VzW)	C	From Face	3.50 -6.00 0.00	0.0000	90.80	No Ice 1/2" Ice 1" Ice 2" Ice	1.87 2.03 2.21 2.59	1.28 1.42 1.57 1.89	79.10 97.61 118.91 170.68
Commscope RCMDC-6627-PF-48 (12 OVP) (VzW)	A	From Face	1.00 -2.00 0.00	0.0000	90.80	No Ice 1/2" Ice 1" Ice 2" Ice	6.12 6.44 6.76 7.43	5.25 5.55 5.85 6.49	50.00 108.92 172.82 316.39
Commscope RCMDC-6627-PF-48 (12 OVP) (VzW)	B	From Face	1.00 -2.00 0.00	0.0000	90.80	No Ice 1/2" Ice 1" Ice 2" Ice	6.12 6.44 6.76 7.43	5.25 5.55 5.85 6.49	50.00 108.92 172.82 316.39
SitePro VFA12-HD (VzW)	A	From Face	1.50 -3.00 0.00	0.0000	90.80	No Ice 1/2" Ice 1" Ice 2" Ice	13.20 19.50 25.80 38.40	9.20 14.60 19.50 30.80	658.00 804.00 1015.00 1242.00
SitePro VFA12-HD (VzW)	B	From Face	1.50 -3.00 0.00	0.0000	90.80	No Ice 1/2" Ice 1" Ice 2" Ice	13.20 19.50 25.80 38.40	9.20 14.60 19.50 30.80	658.00 804.00 1015.00 1242.00
SitePro VFA12-HD (VzW)	C	From Face	1.50 -3.00 0.00	0.0000	90.80	No Ice 1/2" Ice 1" Ice 2" Ice	13.20 19.50 25.80 38.40	9.20 14.60 19.50 30.80	658.00 804.00 1015.00 1242.00

Solution Summary

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	100 - 80	1.809	48	0.1447	0.0192

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T2	80 - 60	1.197	48	0.1321	0.0120
T3	60 - 40	0.677	48	0.1020	0.0067
T4	40 - 20	0.308	43	0.0695	0.0050
T5	20 - 0	0.086	43	0.0309	0.0031

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
97.00	800-10121	48	1.715	0.1435	0.0181	193199
90.80	(2) NHH-65B-R2B	48	1.521	0.1406	0.0160	105000

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	100 - 80	7.247	10	0.5750	0.0767
T2	80 - 60	4.809	10	0.5272	0.0479
T3	60 - 40	2.731	10	0.4085	0.0267
T4	40 - 20	1.244	10	0.2794	0.0200
T5	20 - 0	0.347	10	0.1248	0.0124

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
97.00	800-10121	10	6.872	0.5706	0.0726	49501
90.80	(2) NHH-65B-R2B	10	6.103	0.5598	0.0639	26903

Section Capacity Table

Section No.	Elevation ft	Component Type	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	**100 - 80**	**Leg**	**1**	**-14121.20**	**36842.20**	**38.3**	**Pass**
		Diagonal	12	-2568.49	4994.25	51.4	Pass
		Top Girt	4	-19.00	4069.59	0.7	Pass
						1.0 (b)	
T2	**80 - 60**	**Leg**	**38**	**-33401.70**	**63518.80**	**52.6**	**Pass**
		Diagonal	41	-2239.30	7689.21	29.1	Pass
						33.0 (b)	
T3	**60 - 40**	**Leg**	**71**	**-50477.90**	**87567.00**	**57.6**	**Pass**
		Diagonal	74	-3254.54	27599.90	11.8	Pass
						36.8 (b)	
		Secondary Horizontal	79	-227.88	5658.39	4.0	Pass
T4	**40 - 20**	**Leg**	**101**	**-69390.30**	**91506.00**	**75.8**	**Pass**
		Diagonal	104	-3682.94	21297.60	17.3	Pass
						41.7 (b)	
		Secondary Horizontal	109	-356.28	3903.86	9.1	Pass
T5	**20 - 0**	**Leg**	**131**	**-87890.30**	**123382.00**	**71.2**	**Pass**

Section No.	Elevation ft	Component Type	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
		Diagonal	134	-4111.86	7265.53	56.6	Pass
		Secondary Horizontal	149	-328.22	3135.34	10.5	Pass
						Summary	
						Leg (T4) 75.8	Pass
						Diagonal (T5) 56.6	Pass
						Secondary Horizontal (T5) 10.5	Pass
						Top Girt (T1) 1.0	Pass
						Bolt Checks 46.5	Pass
						RATING = 75.8	**Pass**

Program Version 8.2.3.1 - 12/11/2023 File:Z:/Shared/NH Office/Jobs/Verizon/CT141_12940 Suffield South CT/Engineering/Tower SA/Rev 2/Modeling/CT141_12940 Suffield S CT.eri

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

New/Replacement Antenna Mount Analysis Report and PMI Requirements

Mount Analysis-R

SMART Tool Project #: 10215772
Colliers Engineering & Design Project #: 21777790 (Rev 1)

January 10, 2024

Site Information	*Site ID:*	*5000385800-VZW / SUFFIELD S CT*
	Site Name:	*SUFFIELD S CT*
	Carrier Name:	*Verizon Wireless*
	Address:	*55 King Spring Road* *Suffield, Connecticut 06078* *Hartford County*
	Latitude:	*41.946669°*
	Longitude:	*-72.665089°*
Structure Information	*Tower Type:*	*100-Ft Self Support*
	Mount Type:	*12.50-Ft Sector Frame*
	FUZE ID # 16092584	

Analysis Results

Sector Frame: **29.8% Pass w/ Mount Replacement***
((3) Site Pro 1 VFA12-HD)

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

******Contractor PMI Requirements:***
Included at the end of this MA report
Available & Submitted via portal at https://pmi.vzwsmart.com
For additional questions and support, please reach out to:
pmisupport@colliersengineering.com

Report Prepared By: David Anuka

01/12/2024

Executive Summary:

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

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

Sources of Information:

Document Type	Remarks
Radio Frequency Data Sheet (RFDS)	*Verizon RFDS, Site ID: 324942, dated September 19, 2023*
Mount Specifications	*Site Pro 1, Part No. VFA12-HD*

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:	1.50 in
	Risk Category:	II
	Exposure Category:	C
	Topographic Category:	1
	Topographic Feature Considered:	N/A
	Topographic Method:	N/A
	Ground Elevation Factor, K_e:	0.995
Seismic Parameters:	S_S:	0.170 g
	S_1:	0.054 g
Maintenance Parameters:	Wind Speed (3-sec. Gust):	30 mph
	Maintenance Load, Lv:	250 lbs.
	Maintenance Load, Lm:	500 lbs.
Analysis Software:	RISA-3D (V17)	

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
90.80	90.80	6	Commscope	NHH-65B-R2B	Added
		3	Samsung	MT6413-77A	
		1	Raycap	RVZDC-6627-PF-48	
		3	Samsung	RF4439d-25A	
		3	Samsung	RF4461d-13A	

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

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

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

Standard Conditions:

1. All engineering services are performed on the basis that the information provided to Colliers Engineering & Design and used in this analysis is current and correct. The existing equipment loading has been applied at locations determined from the supplied documentation. Any deviation from the loading locations specified in this report shall be communicated to Colliers Engineering & Design to verify deviation will not adversely impact the analysis.

2. Mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.

3. For mount analyses completed from other data sources (including new replacement mounts) and not specifically mapped in accordance with the NSTD-446 Standard, the mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.

4. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.

5. The mount was checked up to, and including, the bolts that fasten it to the mount collar/attachment and threaded rod connections in collar members if applicable. Local deformation and interaction between the mount collar/attachment and the supporting tower structure are outside the scope of this analysis.

6. All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Colliers Engineering & Design is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.

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

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

Analysis Results:

Component	Utilization %	Pass/Fail
Face Horizontal	14.9 %	Pass
Standoff Plate	29.8 %	Pass
Standoff Horizontal	14.5 %	Pass
Standoff Diagonal	6.9 %	Pass
Mount Pipe	23.6 %	Pass
Standoff Vertical	4.2 %	Pass
Tieback	8.6 %	Pass
Connection Check	9.9 %	Pass

Structure Rating – *(Controlling Utilization of all Components)*	**29.8%**

Mount Connection Envelope Reactions:

Connection Description	Elev. AGL (Ft)	Node Label	Envelope Wind Reactions				Envelope Wind + Ice Reactions			
			Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)	Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)
Bottom Standoff	89.2	N35	451	1085	0.241	0.000	1218	1607	0.551	0.000
Top Standoff	92.5	N36	463	724	0.229	0.000	1242	693	0.563	0.000

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

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

Ice Thickness (In)	Mount Pipes Excluded		Mount Pipes Included	
	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)
0	15.8	8.9	24.9	18.0
0.5	24.7	15.3	37.6	28.3
1	32.9	21.2	49.7	38.0

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

Requirements:

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

See PMI notes at the end of this report

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

Attachments:

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

Mount Desktop – Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor – New Mount Passing MA

Electronic pdf version of this can be downloaded at https://pmi.vzwsmart.com
For additional questions and support, please reach out to pmisupport@colliersengineering.com

MDG #: 5000385800 SMART Project #: 10215772 Fuze Project ID: 16092584

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

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

Base Requirements:

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

Photo Requirements:

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

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

Antenna & Equipment Placement and Geometry Confirmation:

- The contractor shall certify that the antenna & equipment placement and geometry is in accordance with the sketch and table as included in the mount analysis and noted below.

☐ The contractor certifies that the photos support and the equipment on the mount is as depicted on the sketch and table included in this form and with the mount analysis provided.

OR

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

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

Issue:

See PMI notes at the end of this report

Response:

Special Instruction Confirmation:

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

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

☐ Yes ☐ No

Contractor certifies no new damage created during the current installation:

☐ Yes ☐ No

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

☐ Safety Climb in Good Condition ☐ Safety Climb Damaged

Comments:

New Mount Certification:

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

Certifying Individual:

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

MDG #: 5000385800
Site Name: SUFFIELD S CT
Fuze ID #: 16092584
Colliers Engineering & Design Project #: 21777790 (Rev 1)

PMI INSTRUCTIONS:

Contractor shall remove existing mount and associated hardware. Contractor shall restore any degradation in galvanization on tower due to removed mount and protect with two (2) coats of cold galvanization (Zinga or Zinc Kote).

Contractor shall inspect climbing facilities and safety climb, if present, and ensure they are in good condition. Contractor shall install safety climb wire rope guides in locations where wire rope is rubbing against the mount or mount-to-tower connection steel. Wire brush clean any observed corrosion and protect with two (2) coats of cold galvanization (Zinga or Zinc Kote). Contractor shall provide photos of wire rope guide installation as part of PMI documents. Contact EOR if additional guidance is required.

Contractor shall install the proposed sector frame (Site Pro 1 VFA12-HD) mounts in accordance with manufacturer specifications and the Mount Replacement Sketch. Contact EOR if these documents are not available.

Contractor shall install (4) 96" long P2 SCH40 mount pipes per mount. Refer to placement diagrams and Mount Replacement Sketch. Contact EOR if these documents are not available.

Attach tiebacks to adjacent tower legs. Proposed tieback shall extend no more than 12" beyond the plane of the tower face. Contractor shall trim as required and protect cut end with two (2) coats of cold galvanization (Zinga or Zinc Kote).

Contractor shall install OVP on a new 48" long P2 SCH40 pipe connected to the welded tabs of the Alpha sector standoff.

Structure: 5000385800-VZW - SUFFIELD S CT

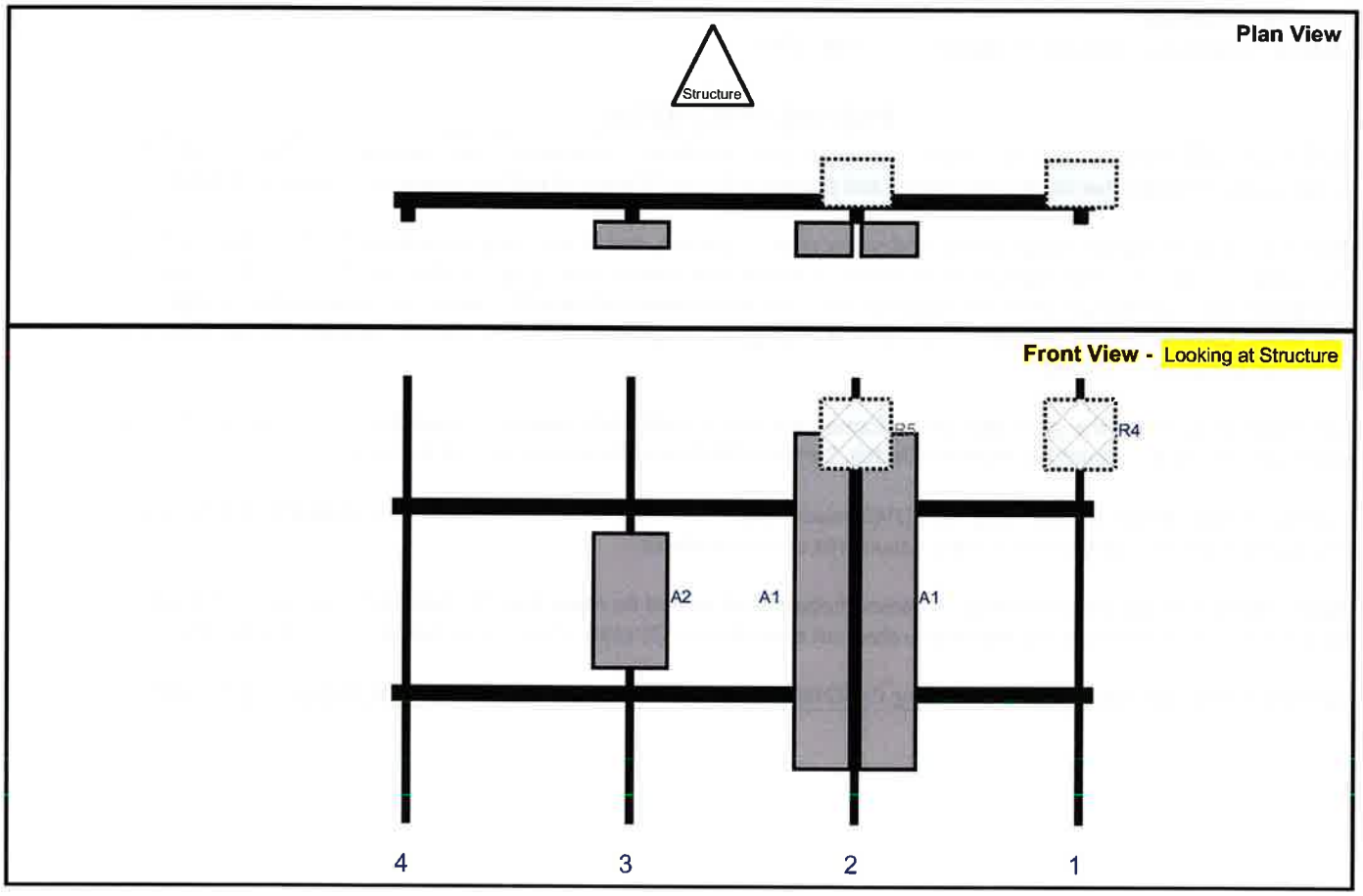
Sector: **A**

Structure Type: Self Support

Mount Elev: 90.80

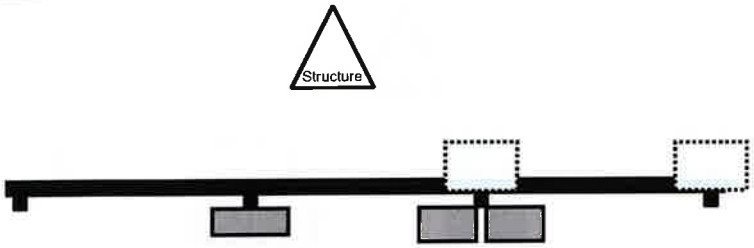
10215772

1/10/2024

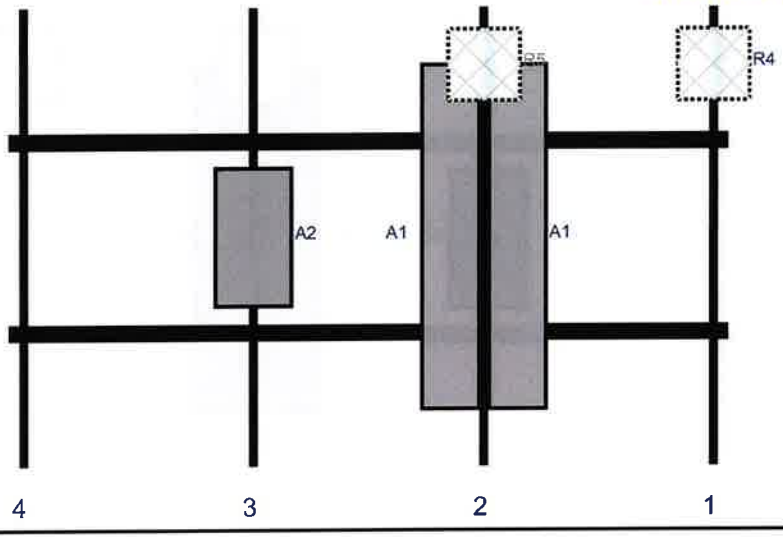


Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
R4	RF4439d-25A	15	15	147	1	a	Behind	12	0	Added	
A1	NHH-65B-R2B	72	11.9	99	2	a	Front	48	7	Added	
A1	NHH-65B-R2B	72	11.9	99	2	b	Front	48	-7	Added	
R5	RF4461d-13A	15	15	99	2	a	Behind	12	0	Added	
A2	MT6413-77A	28.9	15.8	51	3	a	Front	48	0	Added	
OVP	RVZDC-6627-PF-48	29.5	16.5		Member					Added	

Plan View



Front View - Looking at Structure



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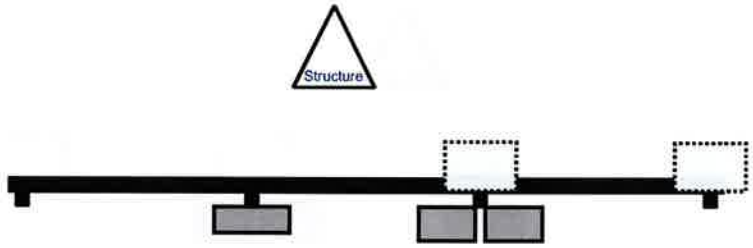
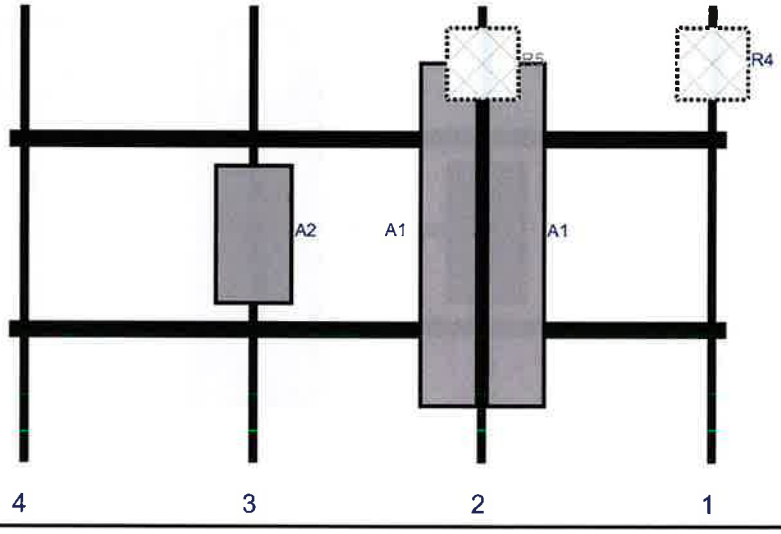
A1	NHH-65B-R2B	72	11.9	99	2	a	Front	48	7	Added	
A1	NHH-65B-R2B	72	11.9	99	2	b	Front	48	-7	Added	
R5	RF4461d-13A	15	15	99	2	a	Behind	12	0	Added	
A2	MT6413-77A	28.9	15.8	51	3	a	Front	48	0	Added	

Plan View



Front View - Looking at Structure



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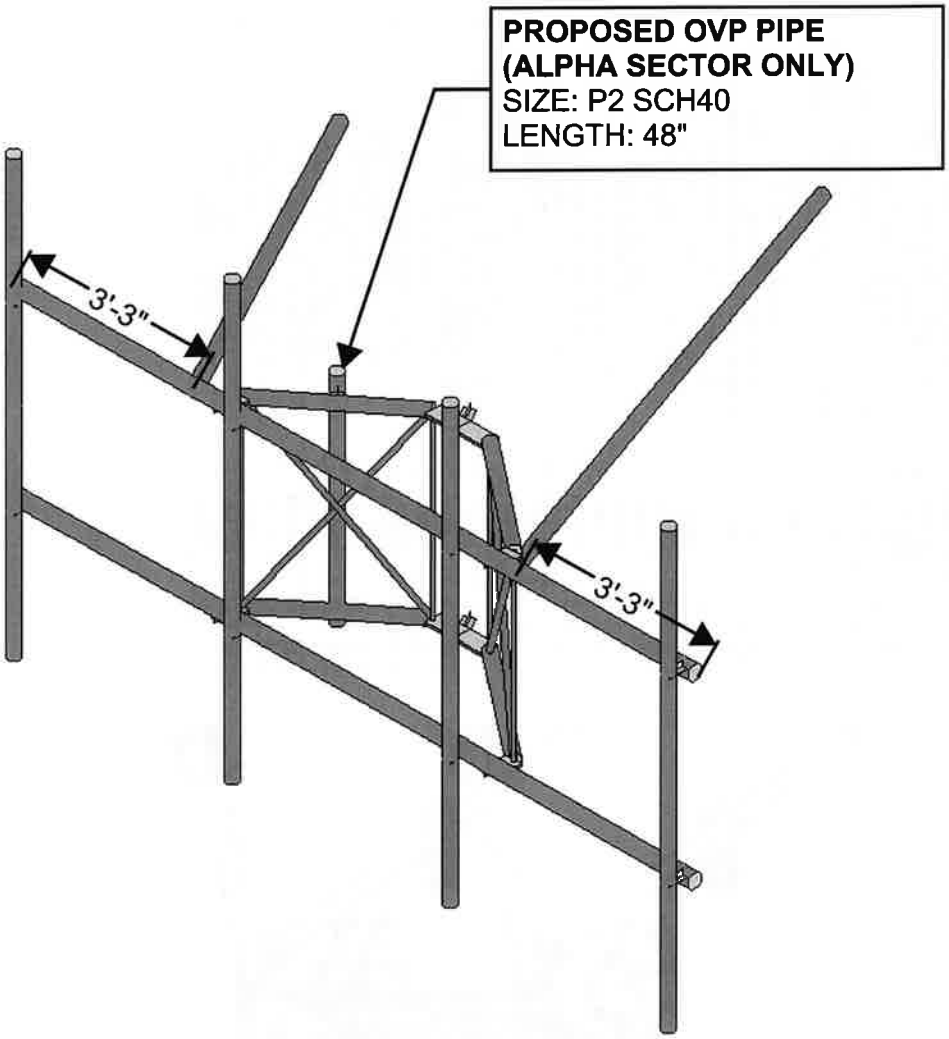
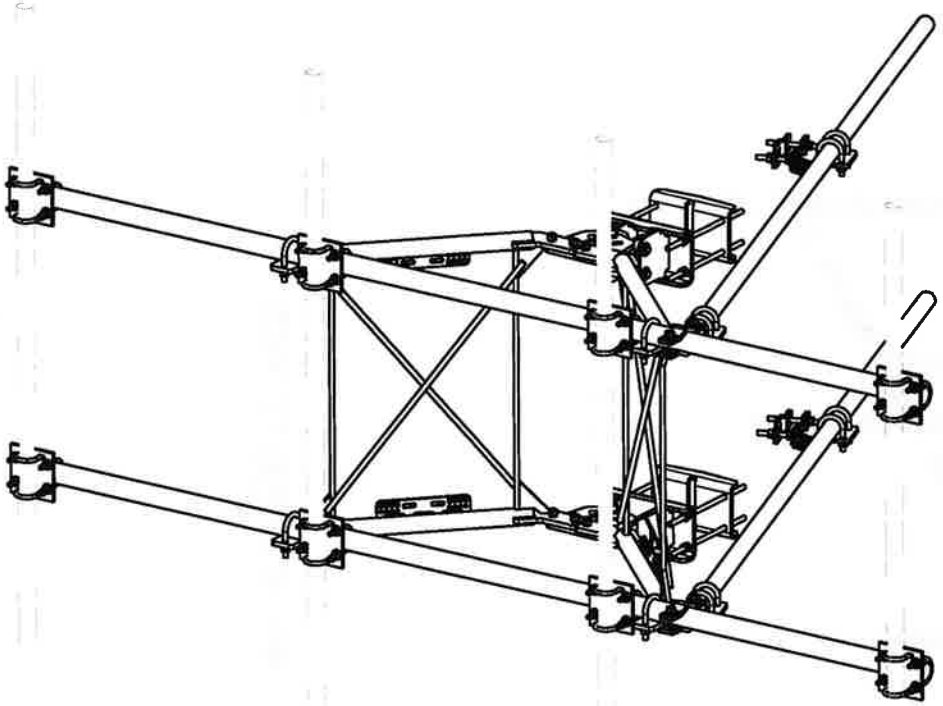
R4	RF4439d-25A	15	15	147	1	a	Behind	12	0	Added	
A1	NHH-65B-R2B	72	11.9	99	2	a	Front	48	7	Added	
A1	NHH-65B-R2B	72	11.9	99	2	b	Front	48	-7	Added	
R5	RF4461d-13A	15	15	99	2	a	Behind	12	0	Added	
A2	MT6413-77A	28.9	15.8	51	3	a	Front	48	0	Added	

Mount Replacement Sketch



MOUNT ISOMETRIC VIEW
N.T.S



PARTS LIST

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

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

REVISION HISTORY

TOLERANCE NOTES

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

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

SITE PRO 1
A valmont COMPANY

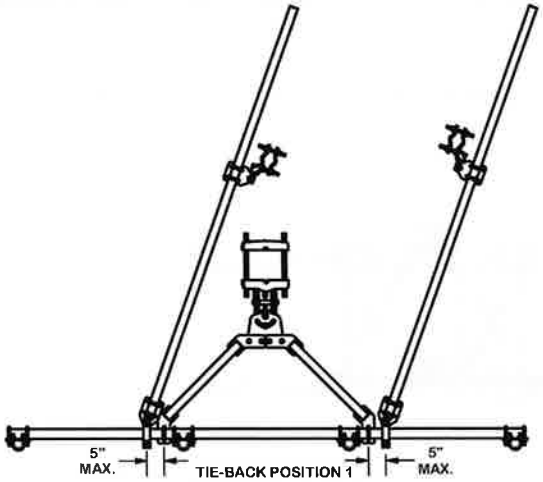
Engineering Support Team: 1-888-753-7446

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

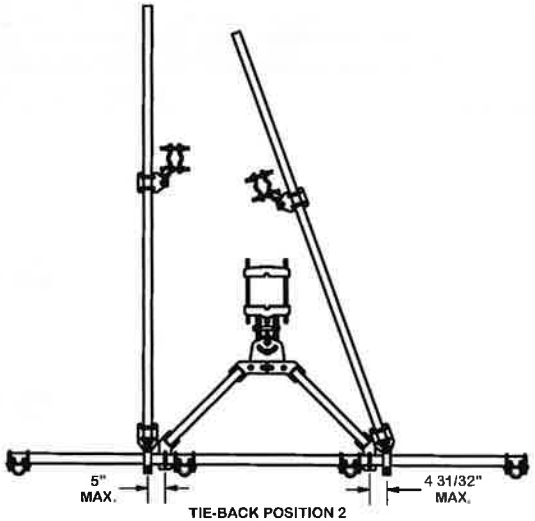
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
	CEK 1/25/2017		VFA12-HD

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	02	CUSTOMER	BMC 12/13/2017	VFA12-HD

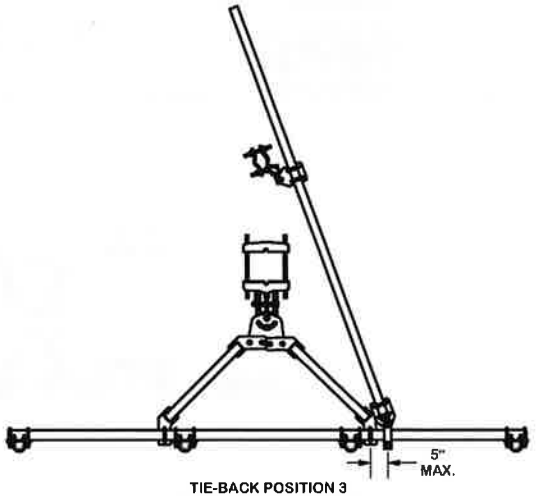
TIE-BACK POSITIONS



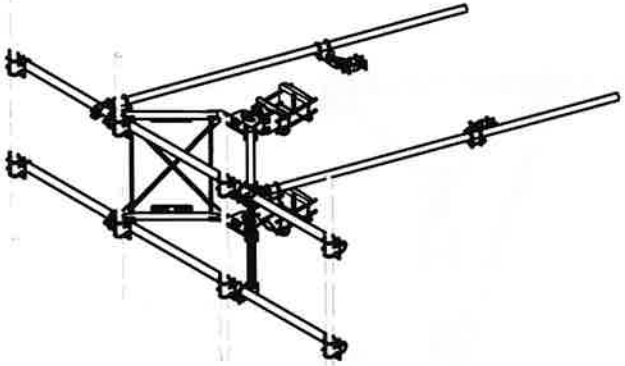
TIE-BACK POSITION 1
-20° / +20° TOP PARALLEL

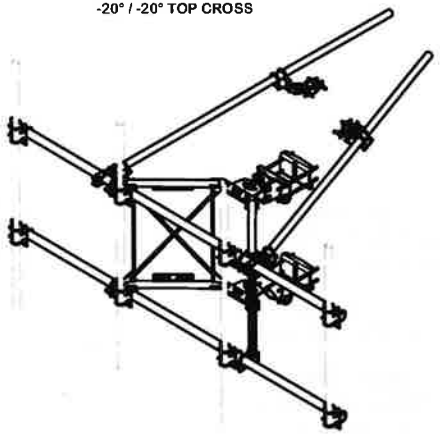


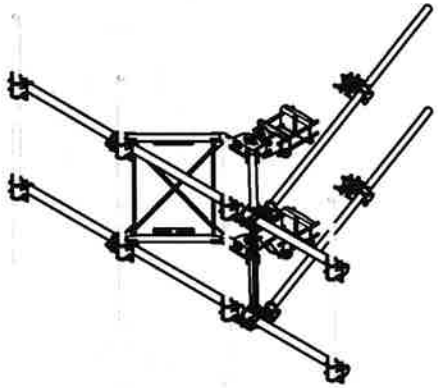
TIE-BACK POSITION 2
-20° / -20° TOP CROSS



TIE-BACK POSITION 3
-20° SAME SIDE STACKED







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

REVISION HISTORY

TOLERANCE NOTES

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SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
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BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

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

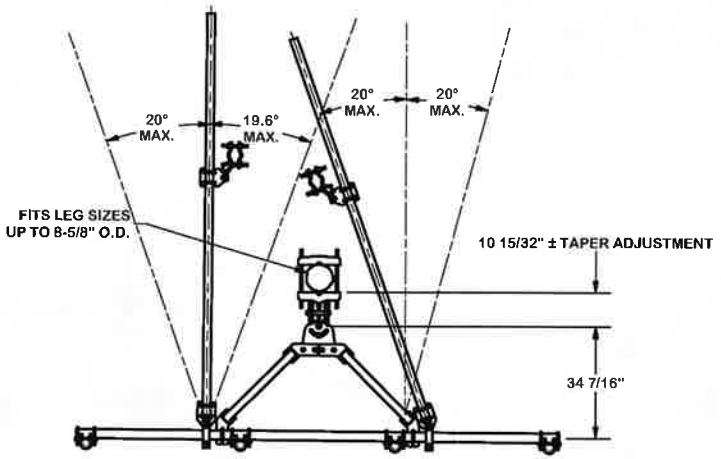
SITE PRO 1
A valmont COMPANY

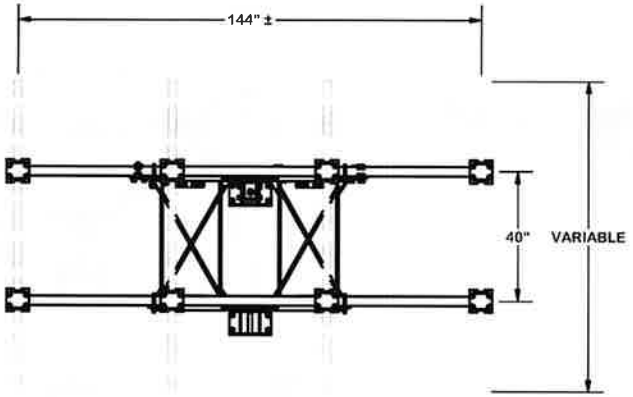
Engineering Support Team: 1-888-753-7446

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

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
	CEK 1/25/2017		VFA12-HD

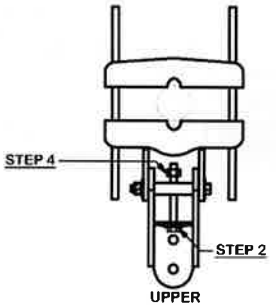
CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	02	CUSTOMER	BMC 12/13/2017	VFA12-HD

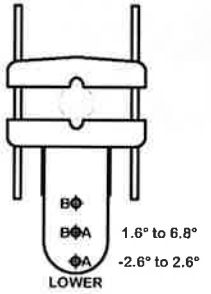


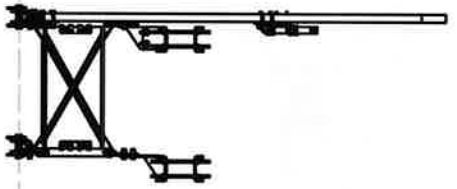


ANGLE CALIBRATING PROCEDURE:

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







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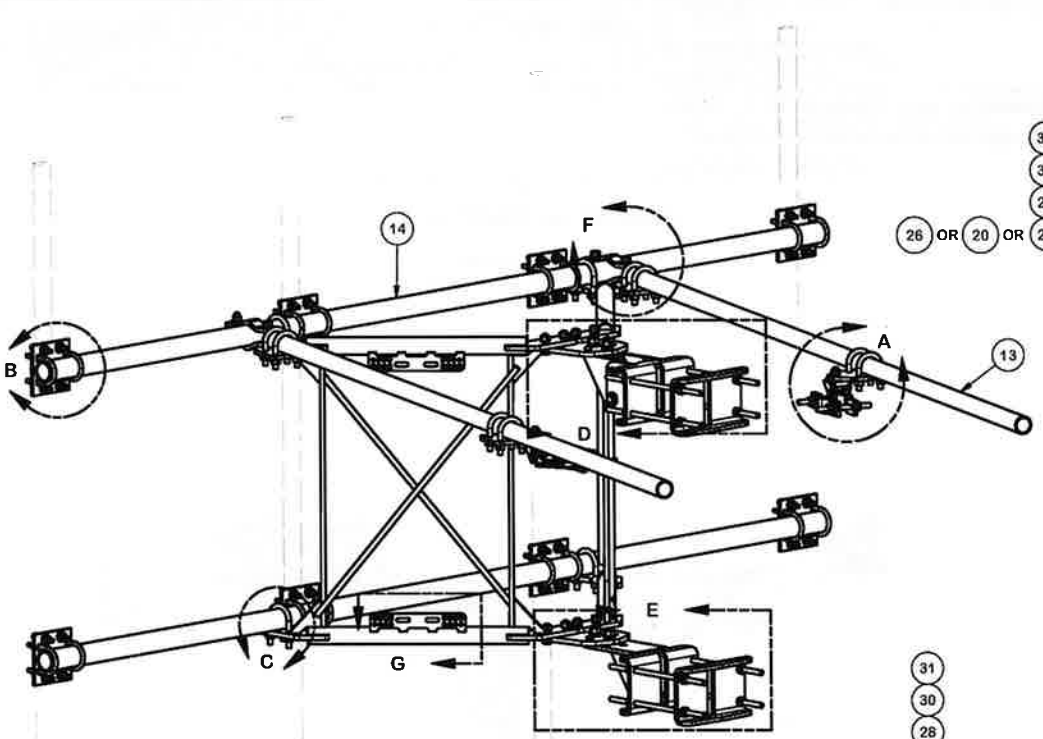
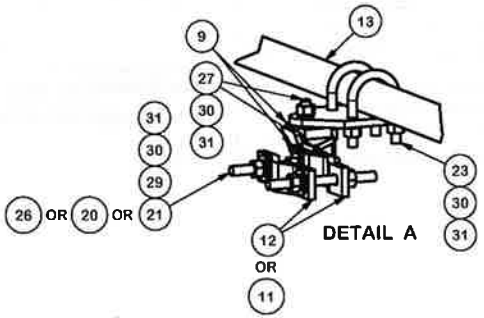
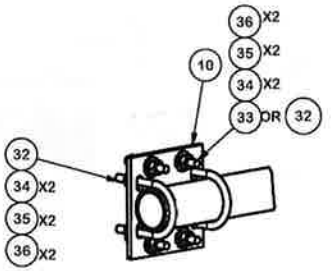
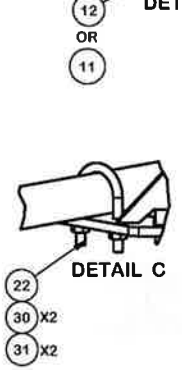




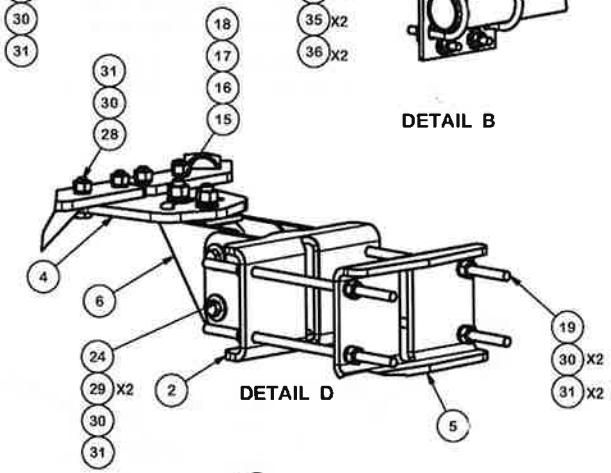
DETAIL A



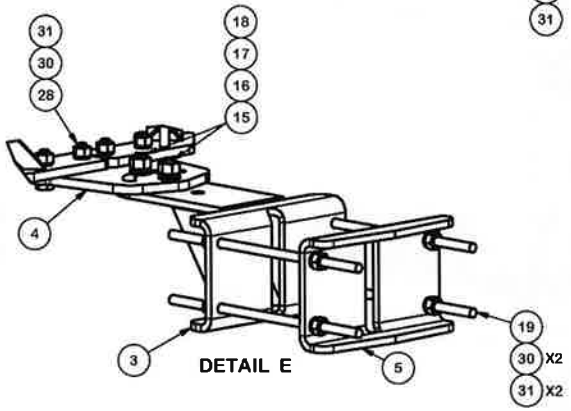
DETAIL B



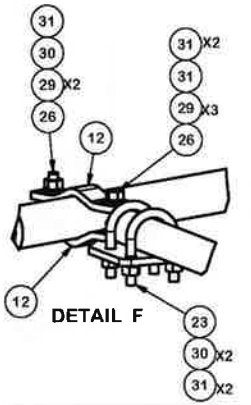
DETAIL C



DETAIL D



DETAIL E

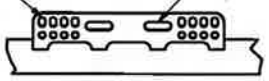


DETAIL F

7/16" LUG HOLES

REVIEW CARRIER STANDARDS FOR PROPER SURFACE PREPARTION AND ASSEMBLY OF ELECTRICAL CONNECTIONS

9/16" SLOTTED HOLE FOR EQUIPMENT PIPE U-BOLT



DETAIL G

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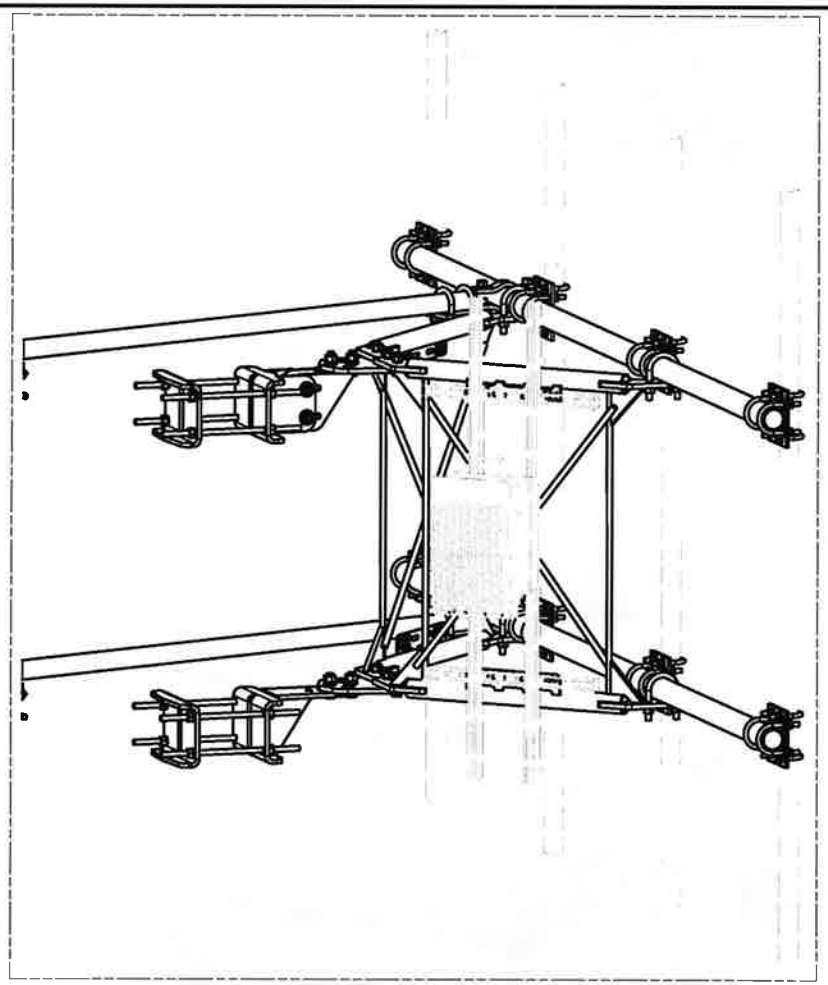
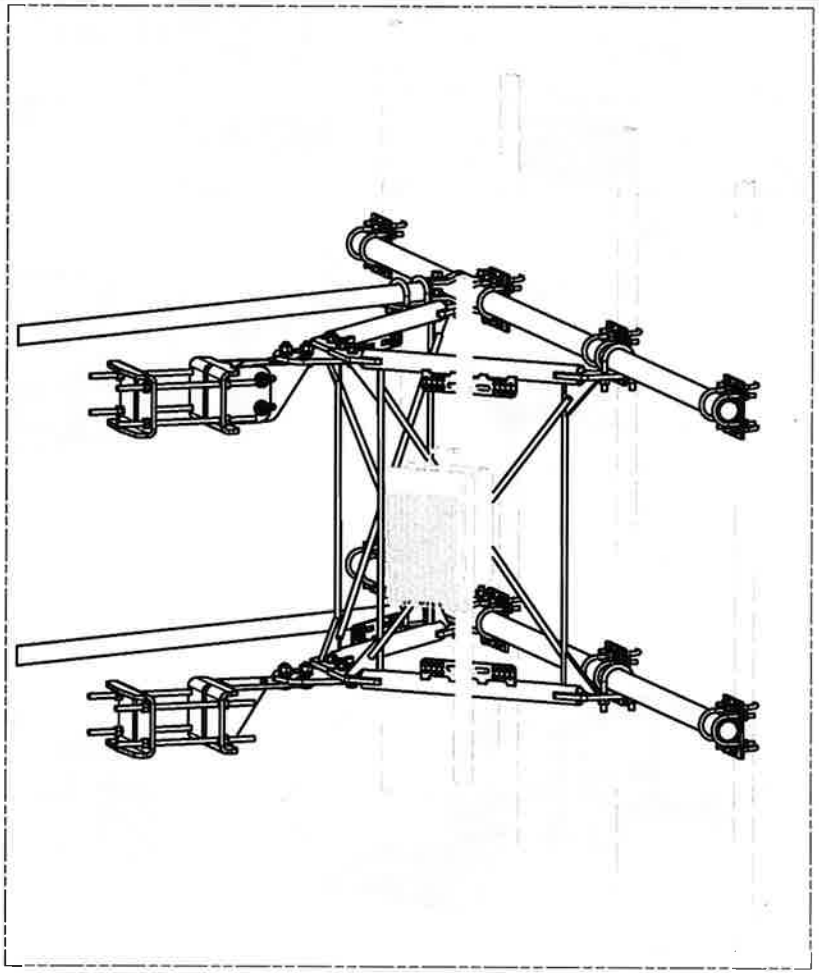


UNISTRUT AND HARDWARE
SOLD SEPARATELY.

REQUIRES 3/8" HARDWARE



EQUIPMENT PIPE AND HARDWARE
SOLD SEPARATELY.

REQUIRES 1/2" HARDWARE
AND 2-3/8" TO 4-1/2" O.D. PIPE

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REVISION HISTORY

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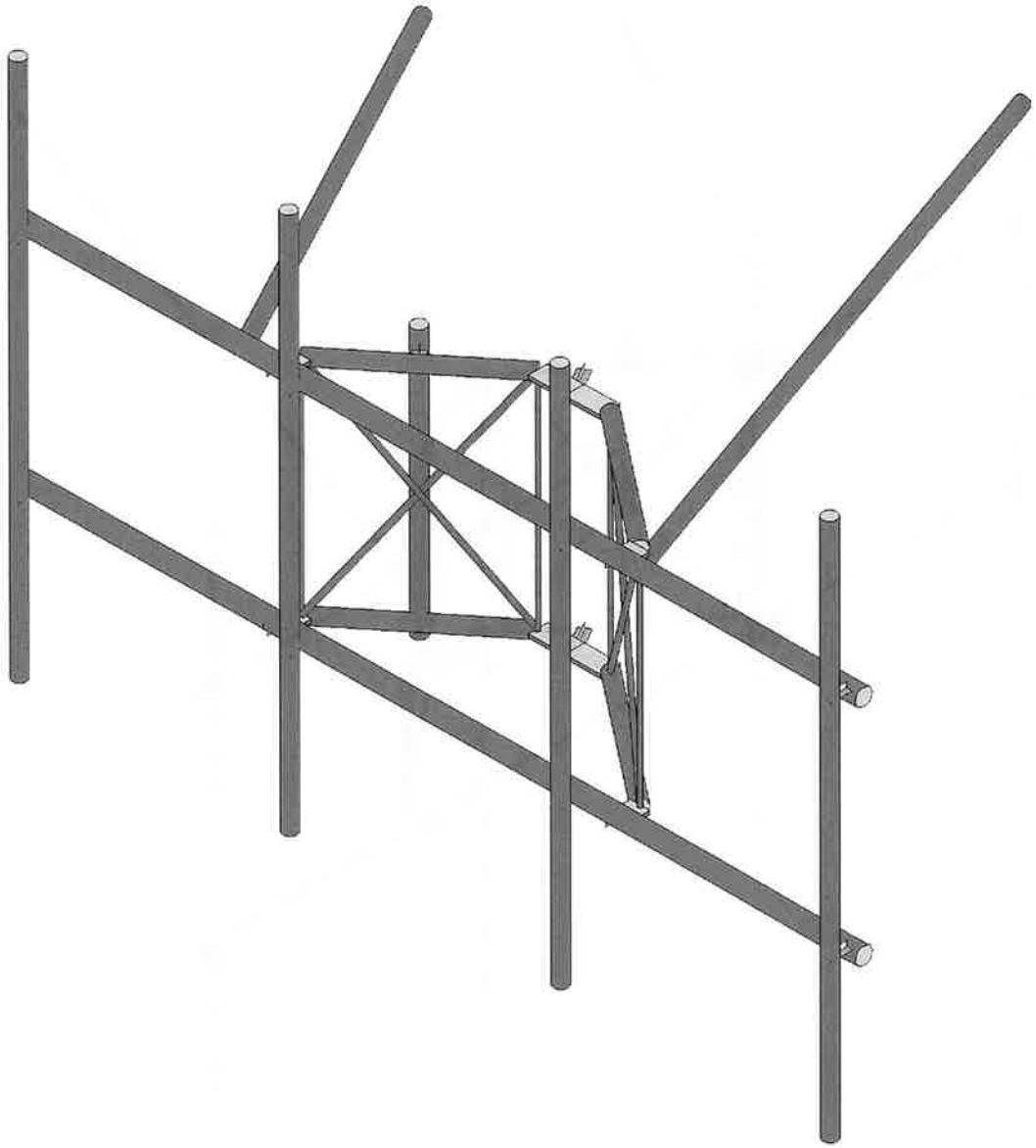

Envelope Only Solution

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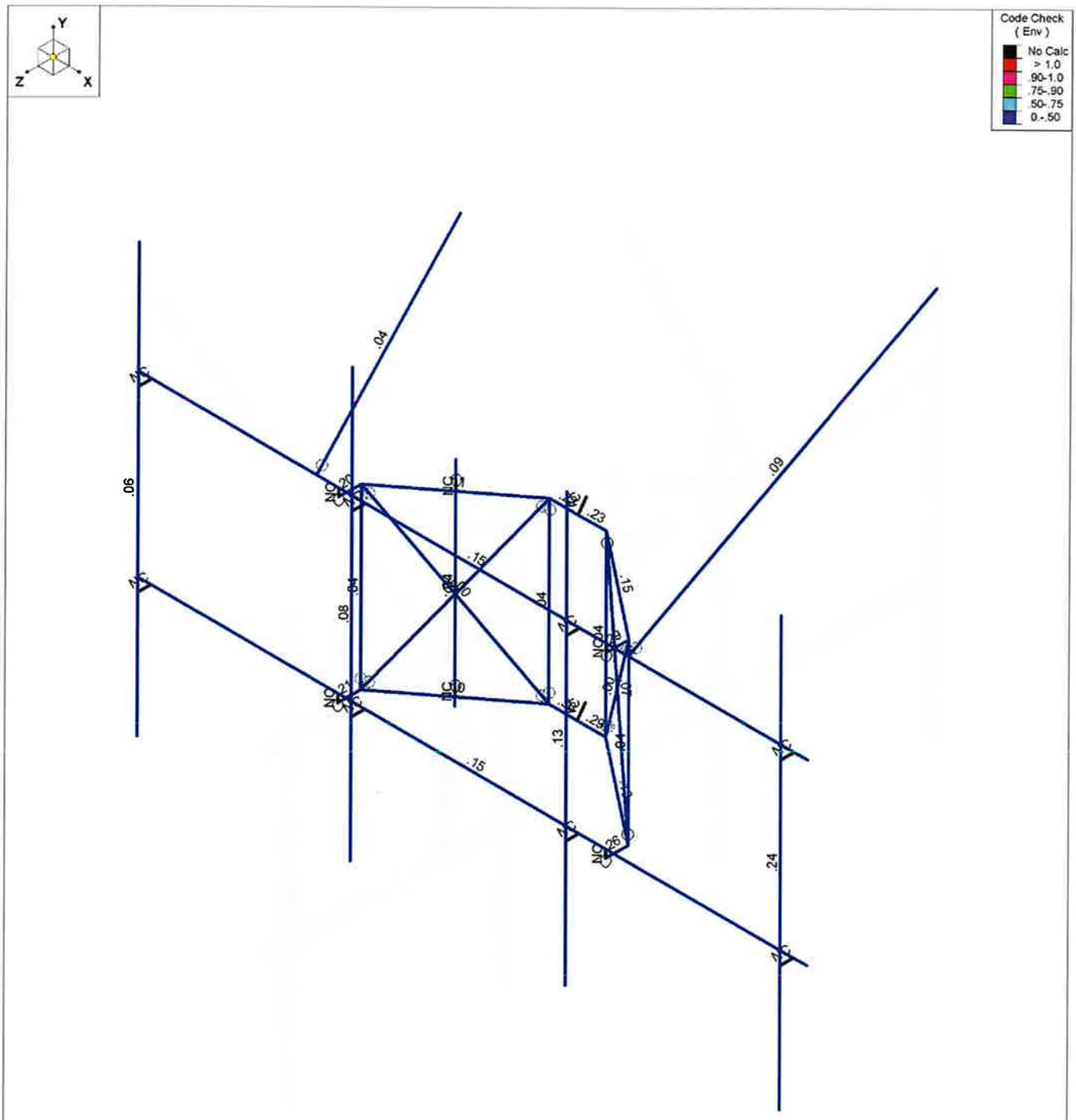

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

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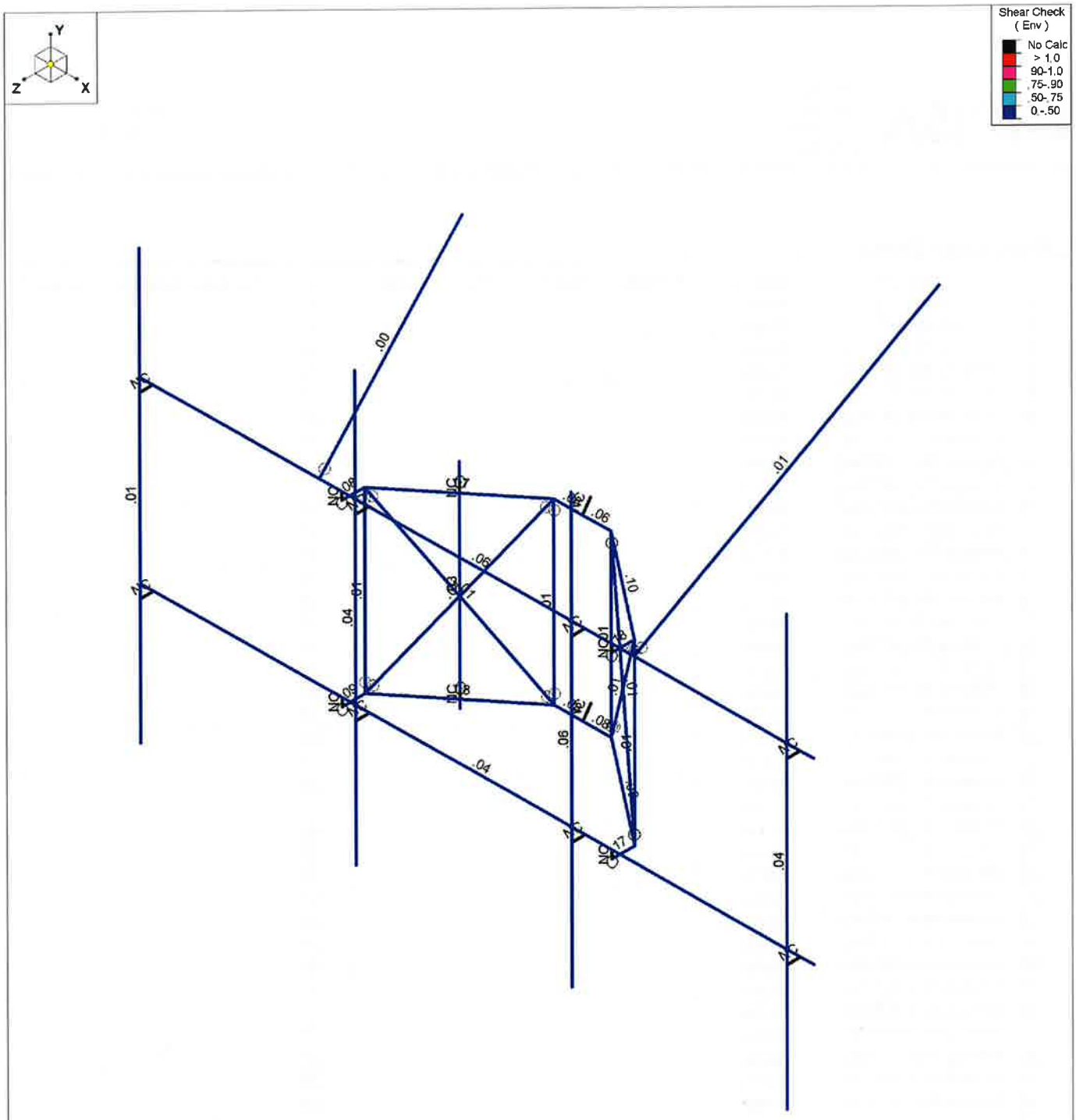

Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

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Basic Load Cases

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

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
49	Structure Wo (240 D...	None						58		
50	Structure Wo (270 D...	None						58		
51	Structure Wo (300 D...	None						58		
52	Structure Wo (330 D...	None						58		
53	Structure Wi (0 Deg)	None						58		
54	Structure Wi (30 Deg)	None						58		
55	Structure Wi (60 Deg)	None						58		
56	Structure Wi (90 Deg)	None						58		
57	Structure Wi (120 De...	None						58		
58	Structure Wi (150 De...	None						58		
59	Structure Wi (180 De...	None						58		
60	Structure Wi (210 De...	None						58		
61	Structure Wi (240 De...	None						58		
62	Structure Wi (270 De...	None						58		
63	Structure Wi (300 De...	None						58		
64	Structure Wi (330 De...	None						58		
65	Structure Wm (0 Deg)	None						58		
66	Structure Wm (30 D...	None						58		
67	Structure Wm (60 D...	None						58		
68	Structure Wm (90 D...	None						58		
69	Structure Wm (120 ...	None						58		
70	Structure Wm (150 ...	None						58		
71	Structure Wm (180 ...	None						58		
72	Structure Wm (210 ...	None						58		
73	Structure Wm (240 ...	None						58		
74	Structure Wm (270 ...	None						58		
75	Structure Wm (300 ...	None						58		
76	Structure Wm (330 ...	None						58		
77	Lm1	None					1			
78	Lm2	None					1			
79	Lv1	None					1			
80	Lv2	None					1			
81	Antenna Ev	None					27			
82	Antenna Eh (0 Deg)	None					18			
83	Antenna Eh (90 Deg)	None					18			
84	Structure Ev	ELY		-.037						
85	Structure Eh (0 Deg)	ELZ			-.093					
86	Structure Eh (90 Deg)	ELX	.093							

Load Combinations

	Description	So...	PDelta	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
1	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	3	1	41	1												
2	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	4	1	42	1												
3	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	5	1	43	1												
4	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	6	1	44	1												
5	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	7	1	45	1												
6	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	8	1	46	1												
7	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	9	1	47	1												
8	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	10	1	48	1												
9	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	11	1	49	1												

Load Combinations (Continued)

	Description	So...	PDelta	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
10	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	12	1	50	1												
11	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	13	1	51	1												
12	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	14	1	52	1												
13	1.2D + 1....	Yes	Y		1	1.2	39	1.2	2	1	40	1	15	1	53	1								
14	1.2D + 1....	Yes	Y		1	1.2	39	1.2	2	1	40	1	16	1	54	1								
15	1.2D + 1....	Yes	Y		1	1.2	39	1.2	2	1	40	1	17	1	55	1								
16	1.2D + 1....	Yes	Y		1	1.2	39	1.2	2	1	40	1	18	1	56	1								
17	1.2D + 1....	Yes	Y		1	1.2	39	1.2	2	1	40	1	19	1	57	1								
18	1.2D + 1....	Yes	Y		1	1.2	39	1.2	2	1	40	1	20	1	58	1								
19	1.2D + 1....	Yes	Y		1	1.2	39	1.2	2	1	40	1	21	1	59	1								
20	1.2D + 1....	Yes	Y		1	1.2	39	1.2	2	1	40	1	22	1	60	1								
21	1.2D + 1....	Yes	Y		1	1.2	39	1.2	2	1	40	1	23	1	61	1								
22	1.2D + 1....	Yes	Y		1	1.2	39	1.2	2	1	40	1	24	1	62	1								
23	1.2D + 1....	Yes	Y		1	1.2	39	1.2	2	1	40	1	25	1	63	1								
24	1.2D + 1....	Yes	Y		1	1.2	39	1.2	2	1	40	1	26	1	64	1								
25	1.2D + 1....	Yes	Y		1	1.2	39	1.2	77	1.5	27	1	65	1										
26	1.2D + 1....	Yes	Y		1	1.2	39	1.2	77	1.5	28	1	66	1										
27	1.2D + 1....	Yes	Y		1	1.2	39	1.2	77	1.5	29	1	67	1										
28	1.2D + 1....	Yes	Y		1	1.2	39	1.2	77	1.5	30	1	68	1										
29	1.2D + 1....	Yes	Y		1	1.2	39	1.2	77	1.5	31	1	69	1										
30	1.2D + 1....	Yes	Y		1	1.2	39	1.2	77	1.5	32	1	70	1										
31	1.2D + 1....	Yes	Y		1	1.2	39	1.2	77	1.5	33	1	71	1										
32	1.2D + 1....	Yes	Y		1	1.2	39	1.2	77	1.5	34	1	72	1										
33	1.2D + 1....	Yes	Y		1	1.2	39	1.2	77	1.5	35	1	73	1										
34	1.2D + 1....	Yes	Y		1	1.2	39	1.2	77	1.5	36	1	74	1										
35	1.2D + 1....	Yes	Y		1	1.2	39	1.2	77	1.5	37	1	75	1										
36	1.2D + 1....	Yes	Y		1	1.2	39	1.2	77	1.5	38	1	76	1										
37	1.2D + 1....	Yes	Y		1	1.2	39	1.2	78	1.5	27	1	65	1										
38	1.2D + 1....	Yes	Y		1	1.2	39	1.2	78	1.5	28	1	66	1										
39	1.2D + 1....	Yes	Y		1	1.2	39	1.2	78	1.5	29	1	67	1										
40	1.2D + 1....	Yes	Y		1	1.2	39	1.2	78	1.5	30	1	68	1										
41	1.2D + 1....	Yes	Y		1	1.2	39	1.2	78	1.5	31	1	69	1										
42	1.2D + 1....	Yes	Y		1	1.2	39	1.2	78	1.5	32	1	70	1										
43	1.2D + 1....	Yes	Y		1	1.2	39	1.2	78	1.5	33	1	71	1										
44	1.2D + 1....	Yes	Y		1	1.2	39	1.2	78	1.5	34	1	72	1										
45	1.2D + 1....	Yes	Y		1	1.2	39	1.2	78	1.5	35	1	73	1										
46	1.2D + 1....	Yes	Y		1	1.2	39	1.2	78	1.5	36	1	74	1										
47	1.2D + 1....	Yes	Y		1	1.2	39	1.2	78	1.5	37	1	75	1										
48	1.2D + 1....	Yes	Y		1	1.2	39	1.2	78	1.5	38	1	76	1										
49	1.2D + 1....	Yes	Y		1	1.2	39	1.2	79	1.5														
50	1.2D + 1....	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....	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	1	83		ELZ	1	ELX					
53	1.2D + 1....	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	.866	83	.5	ELZ	.866	ELX	.5				
54	1.2D + 1....	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	.5	83	.866	ELZ	.5	ELX	.866				
55	1.2D + 1....	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82		83	1	ELZ		ELX	1				
56	1.2D + 1....	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.5	83	.866	ELZ	-.5	ELX	.866				
57	1.2D + 1....	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.866	83	.5	ELZ	-.866	ELX	.5				
58	1.2D + 1....	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-1	83		ELZ	-1	ELX					
59	1.2D + 1....	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.866	83	-.5	ELZ	-.866	ELX	-.5				
60	1.2D + 1....	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.5	83	-.866	ELZ	-.5	ELX	-.866				
61	1.2D + 1....	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82		83	-1	ELZ		ELX	-1				

Load Combinations (Continued)

	Description	So...	PDelta	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
62	1.2D + 1....	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	.5	83	-.866	ELZ	.5	ELX	-.866				
63	1.2D + 1....	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	.866	83	-.5	ELZ	.866	ELX	-.5				
64	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	1	83		ELZ	1	ELX					
65	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	.866	83	.5	ELZ	.866	ELX	.5				
66	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	.5	83	.866	ELZ	.5	ELX	.866				
67	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82		83	1	ELZ		ELX	1				
68	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.5	83	.866	ELZ	-.5	ELX	.866				
69	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.866	83	.5	ELZ	-.866	ELX	.5				
70	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-1	83		ELZ	-1	ELX					
71	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.866	83	-.5	ELZ	-.866	ELX	-.5				
72	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.5	83	-.866	ELZ	-.5	ELX	-.866				
73	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82		83	-1	ELZ		ELX	-1				
74	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	.5	83	-.866	ELZ	.5	ELX	-.866				
75	0.9D - 1.0...	Yes	Y		1	.9	39	.9	81	-1	ELY	-1	82	.866	83	-.5	ELZ	.866	ELX	-.5				

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Mount Pipe	PIPE_2.0	Column	Pipe	A53 Gr. B	Typical	1.02	.627	.627	1.25
2	Mount Pipe ...	PIPE_2.5	Column	Pipe	A53 Gr. B	Typical	1.61	1.45	1.45	2.89
3	Face Horizo...	PIPE_2.5	Beam	Pipe	Q235	Typical	1.61	1.45	1.45	2.89
4	Standoff Hor...	PIPE_2.0	Beam	Pipe	Q235	Typical	1.02	.627	.627	1.25
5	Standoff Dia...	SR 0.75	Column	BAR	Q235	Typical	.442	.016	.016	.031
6	Tieback	PIPE_2.0	Beam	Pipe	Q235	Typical	1.02	.627	.627	1.25
7	Standoff Ver...	SR 0.625	Column	BAR	Q235	Typical	.307	.007	.007	.015
8	Standoff Plate	PL5/8X3.5	Beam	BAR	Q235	Typical	2.188	.071	2.233	.253

Hot Rolled Steel Properties

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

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	F	N2	N1			Face Horizontal	Beam	Pipe	Q235	Typical
2	M2	N4	N3			Face Horizontal	Beam	Pipe	Q235	Typical
3	M3	N5	N13			RIGID	None	None	RIGID	Typical
4	M4	N6	N14			RIGID	None	None	RIGID	Typical
5	M5	N8	N16			RIGID	None	None	RIGID	Typical
6	2	N7	N15			RIGID	None	None	RIGID	Typical
7	M9	N10	N18			RIGID	None	None	RIGID	Typical
8	1	N9	N17			RIGID	None	None	RIGID	Typical
9	M11	N12	N20			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
10	M12	N11	N19			RIGID	None	None	RIGID	Typical
11	M13	N22	N26		90	Standoff Plate	Beam	BAR	Q235	Typical
12	M14	N21	N25		90	Standoff Plate	Beam	BAR	Q235	Typical
13	M15	N23	N27		90	Standoff Plate	Beam	BAR	Q235	Typical
14	M16	N24	N28		90	Standoff Plate	Beam	BAR	Q235	Typical
15	M17	N26	N32			Standoff Horiz...	Beam	Pipe	Q235	Typical
16	M18	N25	N31			Standoff Horiz...	Beam	Pipe	Q235	Typical
17	M19	N27	N33			Standoff Horiz...	Beam	Pipe	Q235	Typical
18	M67	N28	N34			Standoff Horiz...	Beam	Pipe	Q235	Typical
19	M21	N32	N30		90	Standoff Plate	Beam	BAR	Q235	Typical
20	M22	N34	N30		90	Standoff Plate	Beam	BAR	Q235	Typical
21	M23	N31	N29		90	Standoff Plate	Beam	BAR	Q235	Typical
22	M24	N33	N29		90	Standoff Plate	Beam	BAR	Q235	Typical
23	M25	N31	N26			Standoff Diago...	Column	BAR	Q235	Typical
24	M26	N32	N25			Standoff Diago...	Column	BAR	Q235	Typical
25	M27	N33	N28			Standoff Diago...	Column	BAR	Q235	Typical
26	M28	N27	N34			Standoff Diago...	Column	BAR	Q235	Typical
27	M29	N29	N35			RIGID	None	None	RIGID	Typical
28	M30	N30	N36			RIGID	None	None	RIGID	Typical
29	MP4A	N39	N43			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
30	MP3A	N40	N44			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
31	MP2A	N41	N45			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
32	MP1A	N42	N46			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
33	M44	N25	N26			Standoff Vertical	Column	BAR	Q235	Typical
34	M45	N31	N32			Standoff Vertical	Column	BAR	Q235	Typical
35	M46	N33	N34			Standoff Vertical	Column	BAR	Q235	Typical
36	M47	N27	N28			Standoff Vertical	Column	BAR	Q235	Typical
37	M47B	N22	N60			RIGID	None	None	RIGID	Typical
38	M48A	N21	N59			RIGID	None	None	RIGID	Typical
39	M49A	N24	N62			RIGID	None	None	RIGID	Typical
40	M50A	N23	N61			RIGID	None	None	RIGID	Typical
41	M43	N36	N30			RIGID	None	None	RIGID	Typical
42	M44A	N35	N29			RIGID	None	None	RIGID	Typical
43	M43A	N55	N52			Tieback	Beam	Pipe	Q235	Typical
44	M44B	N38	N53			Tieback	Beam	Pipe	Q235	Typical
45	M45A	N54	N56			RIGID	None	None	RIGID	Typical
46	M46A	N53A	N55A			RIGID	None	None	RIGID	Typical
47	OVP	N57	N58			Mount Pipe	Column	Pipe	A53 Gr. B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	F						Yes				None
2	M2						Yes				None
3	M3						Yes	** NA **			None
4	M4						Yes	** NA **			None
5	M5						Yes	** NA **			None
6	2						Yes	** NA **			None
7	M9						Yes	** NA **			None
8	1						Yes	** NA **			None
9	M11						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
10	M12						Yes	** NA **			None
11	M13						Yes	Default			None
12	M14						Yes	Default			None
13	M15						Yes	Default			None
14	M16						Yes	Default			None
15	M17						Yes	Default			None
16	M18						Yes				None
17	M19						Yes				None
18	M67						Yes	Default			None
19	M21						Yes	Default			None
20	M22						Yes	Default			None
21	M23						Yes				None
22	M24						Yes				None
23	M25	BenPIN	BenPIN			Euler Buc..	Yes	** NA **			None
24	M26	BenPIN	BenPIN			Euler Buc..	Yes	** NA **			None
25	M27	BenPIN	BenPIN			Euler Buc..	Yes	** NA **			None
26	M28	BenPIN	BenPIN			Euler Buc..	Yes	** NA **			None
27	M29						Yes	** NA **		Inactive	None
28	M30						Yes	** NA **		Inactive	None
29	MP4A						Yes	** NA **			None
30	MP3A						Yes	** NA **			None
31	MP2A						Yes	** NA **			None
32	MP1A						Yes	** NA **			None
33	M44	BenPIN	BenPIN				Yes	** NA **			None
34	M45	BenPIN	BenPIN				Yes	** NA **			None
35	M46	BenPIN	BenPIN				Yes	** NA **			None
36	M47	BenPIN	BenPIN				Yes	** NA **			None
37	M47B		OOOXOO				Yes	** NA **			None
38	M48A		OOOXOO				Yes	** NA **			None
39	M49A		OOOXOO				Yes	** NA **			None
40	M50A		OOOXOO				Yes	** NA **			None
41	M43						Yes	** NA **			None
42	M44A						Yes	** NA **			None
43	M43A	BenPIN					Yes	Default			None
44	M44B	BenPIN					Yes	Default			None
45	M45A	OOOXOX					Yes	** NA **			None
46	M46A	OOOXOX					Yes	** NA **			None
47	OVP						Yes	** NA **			None

Member Point Loads (BLC 1 : Antenna D)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	Y	-21.85	2
2	MP2A	My	-.011	2
3	MP2A	Mz	.013	2
4	MP2A	Y	-21.85	6
5	MP2A	My	-.011	6
6	MP2A	Mz	.013	6
7	MP2A	Y	-21.85	2
8	MP2A	My	-.011	2
9	MP2A	Mz	-.013	2

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
10	MP2A	Y	-21.85	6
11	MP2A	My	-.011	6
12	MP2A	Mz	-.013	6
13	MP3A	Y	-28.65	3
14	MP3A	My	-.014	3
15	MP3A	Mz	0	3
16	MP3A	Y	-28.65	5
17	MP3A	My	-.014	5
18	MP3A	Mz	0	5
19	OVP	Y	-32	1.25
20	OVP	My	0	1.25
21	OVP	Mz	0	1.25
22	MP1A	Y	-74.7	1
23	MP1A	My	.037	1
24	MP1A	Mz	0	1
25	MP2A	Y	-79.1	1
26	MP2A	My	.04	1
27	MP2A	Mz	0	1

Member Point Loads (BLC 2 : Antenna Di)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	Y	-91.2	2
2	MP2A	My	-.046	2
3	MP2A	Mz	.053	2
4	MP2A	Y	-91.2	6
5	MP2A	My	-.046	6
6	MP2A	Mz	.053	6
7	MP2A	Y	-91.2	2
8	MP2A	My	-.046	2
9	MP2A	Mz	-.053	2
10	MP2A	Y	-91.2	6
11	MP2A	My	-.046	6
12	MP2A	Mz	-.053	6
13	MP3A	Y	-45.135	3
14	MP3A	My	-.023	3
15	MP3A	Mz	0	3
16	MP3A	Y	-45.135	5
17	MP3A	My	-.023	5
18	MP3A	Mz	0	5
19	OVP	Y	-131.772	1.25
20	OVP	My	0	1.25
21	OVP	Mz	0	1.25
22	MP1A	Y	-68.318	1
23	MP1A	My	.034	1
24	MP1A	Mz	0	1
25	MP2A	Y	-69.02	1
26	MP2A	My	.035	1
27	MP2A	Mz	0	1

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

Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	0	2
2	MP2A	Z	-105.594	2
3	MP2A	Mx	-.062	2
4	MP2A	X	0	6
5	MP2A	Z	-105.594	6
6	MP2A	Mx	-.062	6
7	MP2A	X	0	2
8	MP2A	Z	-105.594	2
9	MP2A	Mx	.062	2
10	MP2A	X	0	6
11	MP2A	Z	-105.594	6
12	MP2A	Mx	.062	6
13	MP3A	X	0	3
14	MP3A	Z	-61.45	3
15	MP3A	Mx	0	3
16	MP3A	X	0	5
17	MP3A	Z	-61.45	5
18	MP3A	Mx	0	5
19	OVP	X	0	1.25
20	OVP	Z	-115.9	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	0	1
23	MP1A	Z	-60.284	1
24	MP1A	Mx	0	1
25	MP2A	X	0	1
26	MP2A	Z	-72.729	1
27	MP2A	Mx	0	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	45.261	2
2	MP2A	Z	-78.395	2
3	MP2A	Mx	-.068	2
4	MP2A	X	45.261	6
5	MP2A	Z	-78.395	6
6	MP2A	Mx	-.068	6
7	MP2A	X	45.261	2
8	MP2A	Z	-78.395	2
9	MP2A	Mx	.023	2
10	MP2A	X	45.261	6
11	MP2A	Z	-78.395	6
12	MP2A	Mx	.023	6
13	MP3A	X	25.742	3
14	MP3A	Z	-44.587	3
15	MP3A	Mx	-.013	3
16	MP3A	X	25.742	5
17	MP3A	Z	-44.587	5
18	MP3A	Mx	-.013	5
19	OVP	X	50.56	1.25
20	OVP	Z	-87.573	1.25
21	OVP	Mx	0	1.25

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
22	MP1A	X	27.662	1
23	MP1A	Z	-47.913	1
24	MP1A	Mx	.014	1
25	MP2A	X	33.472	1
26	MP2A	Z	-57.975	1
27	MP2A	Mx	.017	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	52.291	2
2	MP2A	Z	-30.19	2
3	MP2A	Mx	-.044	2
4	MP2A	X	52.291	6
5	MP2A	Z	-30.19	6
6	MP2A	Mx	-.044	6
7	MP2A	X	52.291	2
8	MP2A	Z	-30.19	2
9	MP2A	Mx	-.009	2
10	MP2A	X	52.291	6
11	MP2A	Z	-30.19	6
12	MP2A	Mx	-.009	6
13	MP3A	X	27.325	3
14	MP3A	Z	-15.776	3
15	MP3A	Mx	-.014	3
16	MP3A	X	27.325	5
17	MP3A	Z	-15.776	5
18	MP3A	Mx	-.014	5
19	OVP	X	81.174	1.25
20	OVP	Z	-46.866	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	39.324	1
23	MP1A	Z	-22.704	1
24	MP1A	Mx	.02	1
25	MP2A	X	47.955	1
26	MP2A	Z	-27.687	1
27	MP2A	Mx	.024	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	45.31	2
2	MP2A	Z	0	2
3	MP2A	Mx	-.023	2
4	MP2A	X	45.31	6
5	MP2A	Z	0	6
6	MP2A	Mx	-.023	6
7	MP2A	X	45.31	2
8	MP2A	Z	0	2
9	MP2A	Mx	-.023	2
10	MP2A	X	45.31	6
11	MP2A	Z	0	6
12	MP2A	Mx	-.023	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
13	MP3A	X	21.585	3
14	MP3A	Z	0	3
15	MP3A	Mx	-.011	3
16	MP3A	X	21.585	5
17	MP3A	Z	0	5
18	MP3A	Mx	-.011	5
19	OVP	X	101.121	1.25
20	OVP	Z	0	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	40.448	1
23	MP1A	Z	0	1
24	MP1A	Mx	.02	1
25	MP2A	X	49.588	1
26	MP2A	Z	0	1
27	MP2A	Mx	.025	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	52.291	2
2	MP2A	Z	30.19	2
3	MP2A	Mx	-.009	2
4	MP2A	X	52.291	6
5	MP2A	Z	30.19	6
6	MP2A	Mx	-.009	6
7	MP2A	X	52.291	2
8	MP2A	Z	30.19	2
9	MP2A	Mx	-.044	2
10	MP2A	X	52.291	6
11	MP2A	Z	30.19	6
12	MP2A	Mx	-.044	6
13	MP3A	X	27.325	3
14	MP3A	Z	15.776	3
15	MP3A	Mx	-.014	3
16	MP3A	X	27.325	5
17	MP3A	Z	15.776	5
18	MP3A	Mx	-.014	5
19	OVP	X	100.372	1.25
20	OVP	Z	57.95	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	39.324	1
23	MP1A	Z	22.704	1
24	MP1A	Mx	.02	1
25	MP2A	X	47.955	1
26	MP2A	Z	27.687	1
27	MP2A	Mx	.024	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	45.261	2
2	MP2A	Z	78.395	2
3	MP2A	Mx	.023	2

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
4	MP2A	X	45.261	6
5	MP2A	Z	78.395	6
6	MP2A	Mx	.023	6
7	MP2A	X	45.261	2
8	MP2A	Z	78.395	2
9	MP2A	Mx	-.068	2
10	MP2A	X	45.261	6
11	MP2A	Z	78.395	6
12	MP2A	Mx	-.068	6
13	MP3A	X	25.742	3
14	MP3A	Z	44.587	3
15	MP3A	Mx	-.013	3
16	MP3A	X	25.742	5
17	MP3A	Z	44.587	5
18	MP3A	Mx	-.013	5
19	OVP	X	61.645	1.25
20	OVP	Z	106.772	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	27.662	1
23	MP1A	Z	47.913	1
24	MP1A	Mx	.014	1
25	MP2A	X	33.472	1
26	MP2A	Z	57.975	1
27	MP2A	Mx	.017	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	0	2
2	MP2A	Z	105.594	2
3	MP2A	Mx	.062	2
4	MP2A	X	0	6
5	MP2A	Z	105.594	6
6	MP2A	Mx	.062	6
7	MP2A	X	0	2
8	MP2A	Z	105.594	2
9	MP2A	Mx	-.062	2
10	MP2A	X	0	6
11	MP2A	Z	105.594	6
12	MP2A	Mx	-.062	6
13	MP3A	X	0	3
14	MP3A	Z	61.45	3
15	MP3A	Mx	0	3
16	MP3A	X	0	5
17	MP3A	Z	61.45	5
18	MP3A	Mx	0	5
19	OVP	X	0	1.25
20	OVP	Z	115.9	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	0	1
23	MP1A	Z	60.284	1
24	MP1A	Mx	0	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
25	MP2A	X	0	1
26	MP2A	Z	72.729	1
27	MP2A	Mx	0	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-45.261	2
2	MP2A	Z	78.395	2
3	MP2A	Mx	.068	2
4	MP2A	X	-45.261	6
5	MP2A	Z	78.395	6
6	MP2A	Mx	.068	6
7	MP2A	X	-45.261	2
8	MP2A	Z	78.395	2
9	MP2A	Mx	-.023	2
10	MP2A	X	-45.261	6
11	MP2A	Z	78.395	6
12	MP2A	Mx	-.023	6
13	MP3A	X	-25.742	3
14	MP3A	Z	44.587	3
15	MP3A	Mx	.013	3
16	MP3A	X	-25.742	5
17	MP3A	Z	44.587	5
18	MP3A	Mx	.013	5
19	OVP	X	-50.56	1.25
20	OVP	Z	87.573	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	-27.662	1
23	MP1A	Z	47.913	1
24	MP1A	Mx	-.014	1
25	MP2A	X	-33.472	1
26	MP2A	Z	57.975	1
27	MP2A	Mx	-.017	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-52.291	2
2	MP2A	Z	30.19	2
3	MP2A	Mx	.044	2
4	MP2A	X	-52.291	6
5	MP2A	Z	30.19	6
6	MP2A	Mx	.044	6
7	MP2A	X	-52.291	2
8	MP2A	Z	30.19	2
9	MP2A	Mx	.009	2
10	MP2A	X	-52.291	6
11	MP2A	Z	30.19	6
12	MP2A	Mx	.009	6
13	MP3A	X	-27.325	3
14	MP3A	Z	15.776	3
15	MP3A	Mx	.014	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
16	MP3A	X	-27.325	5
17	MP3A	Z	15.776	5
18	MP3A	Mx	.014	5
19	OVP	X	-81.174	1.25
20	OVP	Z	46.866	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	-39.324	1
23	MP1A	Z	22.704	1
24	MP1A	Mx	-.02	1
25	MP2A	X	-47.955	1
26	MP2A	Z	27.687	1
27	MP2A	Mx	-.024	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-45.31	2
2	MP2A	Z	0	2
3	MP2A	Mx	.023	2
4	MP2A	X	-45.31	6
5	MP2A	Z	0	6
6	MP2A	Mx	.023	6
7	MP2A	X	-45.31	2
8	MP2A	Z	0	2
9	MP2A	Mx	.023	2
10	MP2A	X	-45.31	6
11	MP2A	Z	0	6
12	MP2A	Mx	.023	6
13	MP3A	X	-21.585	3
14	MP3A	Z	0	3
15	MP3A	Mx	.011	3
16	MP3A	X	-21.585	5
17	MP3A	Z	0	5
18	MP3A	Mx	.011	5
19	OVP	X	-101.121	1.25
20	OVP	Z	0	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	-40.448	1
23	MP1A	Z	0	1
24	MP1A	Mx	-.02	1
25	MP2A	X	-49.588	1
26	MP2A	Z	0	1
27	MP2A	Mx	-.025	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-52.291	2
2	MP2A	Z	-30.19	2
3	MP2A	Mx	.009	2
4	MP2A	X	-52.291	6
5	MP2A	Z	-30.19	6
6	MP2A	Mx	.009	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
7	MP2A	X	-52.291	2
8	MP2A	Z	-30.19	2
9	MP2A	Mx	.044	2
10	MP2A	X	-52.291	6
11	MP2A	Z	-30.19	6
12	MP2A	Mx	.044	6
13	MP3A	X	-27.325	3
14	MP3A	Z	-15.776	3
15	MP3A	Mx	.014	3
16	MP3A	X	-27.325	5
17	MP3A	Z	-15.776	5
18	MP3A	Mx	.014	5
19	OVP	X	-100.372	1.25
20	OVP	Z	-57.95	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	-39.324	1
23	MP1A	Z	-22.704	1
24	MP1A	Mx	-.02	1
25	MP2A	X	-47.955	1
26	MP2A	Z	-27.687	1
27	MP2A	Mx	-.024	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-45.261	2
2	MP2A	Z	-78.395	2
3	MP2A	Mx	-.023	2
4	MP2A	X	-45.261	6
5	MP2A	Z	-78.395	6
6	MP2A	Mx	-.023	6
7	MP2A	X	-45.261	2
8	MP2A	Z	-78.395	2
9	MP2A	Mx	.068	2
10	MP2A	X	-45.261	6
11	MP2A	Z	-78.395	6
12	MP2A	Mx	.068	6
13	MP3A	X	-25.742	3
14	MP3A	Z	-44.587	3
15	MP3A	Mx	.013	3
16	MP3A	X	-25.742	5
17	MP3A	Z	-44.587	5
18	MP3A	Mx	.013	5
19	OVP	X	-61.645	1.25
20	OVP	Z	-106.772	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	-27.662	1
23	MP1A	Z	-47.913	1
24	MP1A	Mx	-.014	1
25	MP2A	X	-33.472	1
26	MP2A	Z	-57.975	1
27	MP2A	Mx	-.017	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	0	2
2	MP2A	Z	-31.413	2
3	MP2A	Mx	-.018	2
4	MP2A	X	0	6
5	MP2A	Z	-31.413	6
6	MP2A	Mx	-.018	6
7	MP2A	X	0	2
8	MP2A	Z	-31.413	2
9	MP2A	Mx	.018	2
10	MP2A	X	0	6
11	MP2A	Z	-31.413	6
12	MP2A	Mx	.018	6
13	MP3A	X	0	3
14	MP3A	Z	-15.463	3
15	MP3A	Mx	0	3
16	MP3A	X	0	5
17	MP3A	Z	-15.463	5
18	MP3A	Mx	0	5
19	OVP	X	0	1.25
20	OVP	Z	-31.038	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	0	1
23	MP1A	Z	-16.291	1
24	MP1A	Mx	0	1
25	MP2A	X	0	1
26	MP2A	Z	-16.291	1
27	MP2A	Mx	0	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	14.534	2
2	MP2A	Z	-25.174	2
3	MP2A	Mx	-.022	2
4	MP2A	X	14.534	6
5	MP2A	Z	-25.174	6
6	MP2A	Mx	-.022	6
7	MP2A	X	14.534	2
8	MP2A	Z	-25.174	2
9	MP2A	Mx	.007	2
10	MP2A	X	14.534	6
11	MP2A	Z	-25.174	6
12	MP2A	Mx	.007	6
13	MP3A	X	6.648	3
14	MP3A	Z	-11.514	3
15	MP3A	Mx	-.003	3
16	MP3A	X	6.648	5
17	MP3A	Z	-11.514	5
18	MP3A	Mx	-.003	5
19	OVP	X	13.794	1.25
20	OVP	Z	-23.892	1.25
21	OVP	Mx	0	1.25

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
22	MP1A	X	7.55	1
23	MP1A	Z	-13.077	1
24	MP1A	Mx	.004	1
25	MP2A	X	7.574	1
26	MP2A	Z	-13.118	1
27	MP2A	Mx	.004	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	21.113	2
2	MP2A	Z	-12.19	2
3	MP2A	Mx	-.018	2
4	MP2A	X	21.113	6
5	MP2A	Z	-12.19	6
6	MP2A	Mx	-.018	6
7	MP2A	X	21.113	2
8	MP2A	Z	-12.19	2
9	MP2A	Mx	-.003	2
10	MP2A	X	21.113	6
11	MP2A	Z	-12.19	6
12	MP2A	Mx	-.003	6
13	MP3A	X	7.76	3
14	MP3A	Z	-4.48	3
15	MP3A	Mx	-.004	3
16	MP3A	X	7.76	5
17	MP3A	Z	-4.48	5
18	MP3A	Mx	-.004	5
19	OVP	X	22.399	1.25
20	OVP	Z	-12.932	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	11.013	1
23	MP1A	Z	-6.359	1
24	MP1A	Mx	.006	1
25	MP2A	X	11.137	1
26	MP2A	Z	-6.43	1
27	MP2A	Mx	.006	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	22.035	2
2	MP2A	Z	0	2
3	MP2A	Mx	-.011	2
4	MP2A	X	22.035	6
5	MP2A	Z	0	6
6	MP2A	Mx	-.011	6
7	MP2A	X	22.035	2
8	MP2A	Z	0	2
9	MP2A	Mx	-.011	2
10	MP2A	X	22.035	6
11	MP2A	Z	0	6
12	MP2A	Mx	-.011	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
13	MP3A	X	6.793	3
14	MP3A	Z	0	3
15	MP3A	Mx	-.003	3
16	MP3A	X	6.793	5
17	MP3A	Z	0	5
18	MP3A	Mx	-.003	5
19	OVP	X	27.588	1.25
20	OVP	Z	0	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	11.526	1
23	MP1A	Z	0	1
24	MP1A	Mx	.006	1
25	MP2A	X	11.716	1
26	MP2A	Z	0	1
27	MP2A	Mx	.006	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	21.113	2
2	MP2A	Z	12.19	2
3	MP2A	Mx	-.003	2
4	MP2A	X	21.113	6
5	MP2A	Z	12.19	6
6	MP2A	Mx	-.003	6
7	MP2A	X	21.113	2
8	MP2A	Z	12.19	2
9	MP2A	Mx	-.018	2
10	MP2A	X	21.113	6
11	MP2A	Z	12.19	6
12	MP2A	Mx	-.018	6
13	MP3A	X	7.76	3
14	MP3A	Z	4.48	3
15	MP3A	Mx	-.004	3
16	MP3A	X	7.76	5
17	MP3A	Z	4.48	5
18	MP3A	Mx	-.004	5
19	OVP	X	26.879	1.25
20	OVP	Z	15.519	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	11.013	1
23	MP1A	Z	6.359	1
24	MP1A	Mx	.006	1
25	MP2A	X	11.137	1
26	MP2A	Z	6.43	1
27	MP2A	Mx	.006	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	14.534	2
2	MP2A	Z	25.174	2
3	MP2A	Mx	.007	2

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
4	MP2A	X	14.534	6
5	MP2A	Z	25.174	6
6	MP2A	Mx	.007	6
7	MP2A	X	14.534	2
8	MP2A	Z	25.174	2
9	MP2A	Mx	-.022	2
10	MP2A	X	14.534	6
11	MP2A	Z	25.174	6
12	MP2A	Mx	-.022	6
13	MP3A	X	6.648	3
14	MP3A	Z	11.514	3
15	MP3A	Mx	-.003	3
16	MP3A	X	6.648	5
17	MP3A	Z	11.514	5
18	MP3A	Mx	-.003	5
19	OVP	X	16.381	1.25
20	OVP	Z	28.373	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	7.55	1
23	MP1A	Z	13.077	1
24	MP1A	Mx	.004	1
25	MP2A	X	7.574	1
26	MP2A	Z	13.118	1
27	MP2A	Mx	.004	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	0	2
2	MP2A	Z	31.413	2
3	MP2A	Mx	.018	2
4	MP2A	X	0	6
5	MP2A	Z	31.413	6
6	MP2A	Mx	.018	6
7	MP2A	X	0	2
8	MP2A	Z	31.413	2
9	MP2A	Mx	-.018	2
10	MP2A	X	0	6
11	MP2A	Z	31.413	6
12	MP2A	Mx	-.018	6
13	MP3A	X	0	3
14	MP3A	Z	15.463	3
15	MP3A	Mx	0	3
16	MP3A	X	0	5
17	MP3A	Z	15.463	5
18	MP3A	Mx	0	5
19	OVP	X	0	1.25
20	OVP	Z	31.038	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	0	1
23	MP1A	Z	16.291	1
24	MP1A	Mx	0	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
25	MP2A	X	0	1
26	MP2A	Z	16.291	1
27	MP2A	Mx	0	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-14.534	2
2	MP2A	Z	25.174	2
3	MP2A	Mx	.022	2
4	MP2A	X	-14.534	6
5	MP2A	Z	25.174	6
6	MP2A	Mx	.022	6
7	MP2A	X	-14.534	2
8	MP2A	Z	25.174	2
9	MP2A	Mx	-.007	2
10	MP2A	X	-14.534	6
11	MP2A	Z	25.174	6
12	MP2A	Mx	-.007	6
13	MP3A	X	-6.648	3
14	MP3A	Z	11.514	3
15	MP3A	Mx	.003	3
16	MP3A	X	-6.648	5
17	MP3A	Z	11.514	5
18	MP3A	Mx	.003	5
19	OVP	X	-13.794	1.25
20	OVP	Z	23.892	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	-7.55	1
23	MP1A	Z	13.077	1
24	MP1A	Mx	-.004	1
25	MP2A	X	-7.574	1
26	MP2A	Z	13.118	1
27	MP2A	Mx	-.004	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-21.113	2
2	MP2A	Z	12.19	2
3	MP2A	Mx	.018	2
4	MP2A	X	-21.113	6
5	MP2A	Z	12.19	6
6	MP2A	Mx	.018	6
7	MP2A	X	-21.113	2
8	MP2A	Z	12.19	2
9	MP2A	Mx	.003	2
10	MP2A	X	-21.113	6
11	MP2A	Z	12.19	6
12	MP2A	Mx	.003	6
13	MP3A	X	-7.76	3
14	MP3A	Z	4.48	3
15	MP3A	Mx	.004	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
16	MP3A	X	-7.76	5
17	MP3A	Z	4.48	5
18	MP3A	Mx	.004	5
19	OVP	X	-22.399	1.25
20	OVP	Z	12.932	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	-11.013	1
23	MP1A	Z	6.359	1
24	MP1A	Mx	-.006	1
25	MP2A	X	-11.137	1
26	MP2A	Z	6.43	1
27	MP2A	Mx	-.006	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-22.035	2
2	MP2A	Z	0	2
3	MP2A	Mx	.011	2
4	MP2A	X	-22.035	6
5	MP2A	Z	0	6
6	MP2A	Mx	.011	6
7	MP2A	X	-22.035	2
8	MP2A	Z	0	2
9	MP2A	Mx	.011	2
10	MP2A	X	-22.035	6
11	MP2A	Z	0	6
12	MP2A	Mx	.011	6
13	MP3A	X	-6.793	3
14	MP3A	Z	0	3
15	MP3A	Mx	.003	3
16	MP3A	X	-6.793	5
17	MP3A	Z	0	5
18	MP3A	Mx	.003	5
19	OVP	X	-27.588	1.25
20	OVP	Z	0	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	-11.526	1
23	MP1A	Z	0	1
24	MP1A	Mx	-.006	1
25	MP2A	X	-11.716	1
26	MP2A	Z	0	1
27	MP2A	Mx	-.006	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-21.113	2
2	MP2A	Z	-12.19	2
3	MP2A	Mx	.003	2
4	MP2A	X	-21.113	6
5	MP2A	Z	-12.19	6
6	MP2A	Mx	.003	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
7	MP2A	X	-21.113	2
8	MP2A	Z	-12.19	2
9	MP2A	Mx	.018	2
10	MP2A	X	-21.113	6
11	MP2A	Z	-12.19	6
12	MP2A	Mx	.018	6
13	MP3A	X	-7.76	3
14	MP3A	Z	-4.48	3
15	MP3A	Mx	.004	3
16	MP3A	X	-7.76	5
17	MP3A	Z	-4.48	5
18	MP3A	Mx	.004	5
19	OVP	X	-26.879	1.25
20	OVP	Z	-15.519	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	-11.013	1
23	MP1A	Z	-6.359	1
24	MP1A	Mx	-.006	1
25	MP2A	X	-11.137	1
26	MP2A	Z	-6.43	1
27	MP2A	Mx	-.006	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-14.534	2
2	MP2A	Z	-25.174	2
3	MP2A	Mx	-.007	2
4	MP2A	X	-14.534	6
5	MP2A	Z	-25.174	6
6	MP2A	Mx	-.007	6
7	MP2A	X	-14.534	2
8	MP2A	Z	-25.174	2
9	MP2A	Mx	.022	2
10	MP2A	X	-14.534	6
11	MP2A	Z	-25.174	6
12	MP2A	Mx	.022	6
13	MP3A	X	-6.648	3
14	MP3A	Z	-11.514	3
15	MP3A	Mx	.003	3
16	MP3A	X	-6.648	5
17	MP3A	Z	-11.514	5
18	MP3A	Mx	.003	5
19	OVP	X	-16.381	1.25
20	OVP	Z	-28.373	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	-7.55	1
23	MP1A	Z	-13.077	1
24	MP1A	Mx	-.004	1
25	MP2A	X	-7.574	1
26	MP2A	Z	-13.118	1
27	MP2A	Mx	-.004	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	0	2
2	MP2A	Z	-6.6	2
3	MP2A	Mx	-.004	2
4	MP2A	X	0	6
5	MP2A	Z	-6.6	6
6	MP2A	Mx	-.004	6
7	MP2A	X	0	2
8	MP2A	Z	-6.6	2
9	MP2A	Mx	.004	2
10	MP2A	X	0	6
11	MP2A	Z	-6.6	6
12	MP2A	Mx	.004	6
13	MP3A	X	0	3
14	MP3A	Z	-3.841	3
15	MP3A	Mx	0	3
16	MP3A	X	0	5
17	MP3A	Z	-3.841	5
18	MP3A	Mx	0	5
19	OVP	X	0	1.25
20	OVP	Z	-7.244	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	0	1
23	MP1A	Z	-3.768	1
24	MP1A	Mx	0	1
25	MP2A	X	0	1
26	MP2A	Z	-4.546	1
27	MP2A	Mx	0	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	2.829	2
2	MP2A	Z	-4.9	2
3	MP2A	Mx	-.004	2
4	MP2A	X	2.829	6
5	MP2A	Z	-4.9	6
6	MP2A	Mx	-.004	6
7	MP2A	X	2.829	2
8	MP2A	Z	-4.9	2
9	MP2A	Mx	.001	2
10	MP2A	X	2.829	6
11	MP2A	Z	-4.9	6
12	MP2A	Mx	.001	6
13	MP3A	X	1.609	3
14	MP3A	Z	-2.787	3
15	MP3A	Mx	-.000804	3
16	MP3A	X	1.609	5
17	MP3A	Z	-2.787	5
18	MP3A	Mx	-.000804	5
19	OVP	X	3.16	1.25
20	OVP	Z	-5.473	1.25
21	OVP	Mx	0	1.25

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
22	MP1A	X	1.729	1
23	MP1A	Z	-2.995	1
24	MP1A	Mx	.000864	1
25	MP2A	X	2.092	1
26	MP2A	Z	-3.623	1
27	MP2A	Mx	.001	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	3.268	2
2	MP2A	Z	-1.887	2
3	MP2A	Mx	-.003	2
4	MP2A	X	3.268	6
5	MP2A	Z	-1.887	6
6	MP2A	Mx	-.003	6
7	MP2A	X	3.268	2
8	MP2A	Z	-1.887	2
9	MP2A	Mx	-.000533	2
10	MP2A	X	3.268	6
11	MP2A	Z	-1.887	6
12	MP2A	Mx	-.000533	6
13	MP3A	X	1.708	3
14	MP3A	Z	-.986	3
15	MP3A	Mx	-.000854	3
16	MP3A	X	1.708	5
17	MP3A	Z	-.986	5
18	MP3A	Mx	-.000854	5
19	OVP	X	5.073	1.25
20	OVP	Z	-2.929	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	2.458	1
23	MP1A	Z	-1.419	1
24	MP1A	Mx	.001	1
25	MP2A	X	2.997	1
26	MP2A	Z	-1.73	1
27	MP2A	Mx	.001	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	2.832	2
2	MP2A	Z	0	2
3	MP2A	Mx	-.001	2
4	MP2A	X	2.832	6
5	MP2A	Z	0	6
6	MP2A	Mx	-.001	6
7	MP2A	X	2.832	2
8	MP2A	Z	0	2
9	MP2A	Mx	-.001	2
10	MP2A	X	2.832	6
11	MP2A	Z	0	6
12	MP2A	Mx	-.001	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
13	MP3A	X	1.349	3
14	MP3A	Z	0	3
15	MP3A	Mx	-.000674	3
16	MP3A	X	1.349	5
17	MP3A	Z	0	5
18	MP3A	Mx	-.000674	5
19	OVP	X	6.32	1.25
20	OVP	Z	0	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	2.528	1
23	MP1A	Z	0	1
24	MP1A	Mx	.001	1
25	MP2A	X	3.099	1
26	MP2A	Z	0	1
27	MP2A	Mx	.002	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	3.268	2
2	MP2A	Z	1.887	2
3	MP2A	Mx	-.000533	2
4	MP2A	X	3.268	6
5	MP2A	Z	1.887	6
6	MP2A	Mx	-.000533	6
7	MP2A	X	3.268	2
8	MP2A	Z	1.887	2
9	MP2A	Mx	-.003	2
10	MP2A	X	3.268	6
11	MP2A	Z	1.887	6
12	MP2A	Mx	-.003	6
13	MP3A	X	1.708	3
14	MP3A	Z	.986	3
15	MP3A	Mx	-.000854	3
16	MP3A	X	1.708	5
17	MP3A	Z	.986	5
18	MP3A	Mx	-.000854	5
19	OVP	X	6.273	1.25
20	OVP	Z	3.622	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	2.458	1
23	MP1A	Z	1.419	1
24	MP1A	Mx	.001	1
25	MP2A	X	2.997	1
26	MP2A	Z	1.73	1
27	MP2A	Mx	.001	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	2.829	2
2	MP2A	Z	4.9	2
3	MP2A	Mx	.001	2

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
4	MP2A	X	2.829	6
5	MP2A	Z	4.9	6
6	MP2A	Mx	.001	6
7	MP2A	X	2.829	2
8	MP2A	Z	4.9	2
9	MP2A	Mx	-.004	2
10	MP2A	X	2.829	6
11	MP2A	Z	4.9	6
12	MP2A	Mx	-.004	6
13	MP3A	X	1.609	3
14	MP3A	Z	2.787	3
15	MP3A	Mx	-.000804	3
16	MP3A	X	1.609	5
17	MP3A	Z	2.787	5
18	MP3A	Mx	-.000804	5
19	OVP	X	3.853	1.25
20	OVP	Z	6.673	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	1.729	1
23	MP1A	Z	2.995	1
24	MP1A	Mx	.000864	1
25	MP2A	X	2.092	1
26	MP2A	Z	3.623	1
27	MP2A	Mx	.001	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	0	2
2	MP2A	Z	6.6	2
3	MP2A	Mx	.004	2
4	MP2A	X	0	6
5	MP2A	Z	6.6	6
6	MP2A	Mx	.004	6
7	MP2A	X	0	2
8	MP2A	Z	6.6	2
9	MP2A	Mx	-.004	2
10	MP2A	X	0	6
11	MP2A	Z	6.6	6
12	MP2A	Mx	-.004	6
13	MP3A	X	0	3
14	MP3A	Z	3.841	3
15	MP3A	Mx	0	3
16	MP3A	X	0	5
17	MP3A	Z	3.841	5
18	MP3A	Mx	0	5
19	OVP	X	0	1.25
20	OVP	Z	7.244	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	0	1
23	MP1A	Z	3.768	1
24	MP1A	Mx	0	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
25	MP2A	X	0	1
26	MP2A	Z	4.546	1
27	MP2A	Mx	0	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-2.829	2
2	MP2A	Z	4.9	2
3	MP2A	Mx	.004	2
4	MP2A	X	-2.829	6
5	MP2A	Z	4.9	6
6	MP2A	Mx	.004	6
7	MP2A	X	-2.829	2
8	MP2A	Z	4.9	2
9	MP2A	Mx	-.001	2
10	MP2A	X	-2.829	6
11	MP2A	Z	4.9	6
12	MP2A	Mx	-.001	6
13	MP3A	X	-1.609	3
14	MP3A	Z	2.787	3
15	MP3A	Mx	.000804	3
16	MP3A	X	-1.609	5
17	MP3A	Z	2.787	5
18	MP3A	Mx	.000804	5
19	OVP	X	-3.16	1.25
20	OVP	Z	5.473	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	-1.729	1
23	MP1A	Z	2.995	1
24	MP1A	Mx	-.000864	1
25	MP2A	X	-2.092	1
26	MP2A	Z	3.623	1
27	MP2A	Mx	-.001	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-3.268	2
2	MP2A	Z	1.887	2
3	MP2A	Mx	.003	2
4	MP2A	X	-3.268	6
5	MP2A	Z	1.887	6
6	MP2A	Mx	.003	6
7	MP2A	X	-3.268	2
8	MP2A	Z	1.887	2
9	MP2A	Mx	.000533	2
10	MP2A	X	-3.268	6
11	MP2A	Z	1.887	6
12	MP2A	Mx	.000533	6
13	MP3A	X	-1.708	3
14	MP3A	Z	.986	3
15	MP3A	Mx	.000854	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
16	MP3A	X	-1.708	5
17	MP3A	Z	.986	5
18	MP3A	Mx	.000854	5
19	OVP	X	-5.073	1.25
20	OVP	Z	2.929	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	-2.458	1
23	MP1A	Z	1.419	1
24	MP1A	Mx	-.001	1
25	MP2A	X	-2.997	1
26	MP2A	Z	1.73	1
27	MP2A	Mx	-.001	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-2.832	2
2	MP2A	Z	0	2
3	MP2A	Mx	.001	2
4	MP2A	X	-2.832	6
5	MP2A	Z	0	6
6	MP2A	Mx	.001	6
7	MP2A	X	-2.832	2
8	MP2A	Z	0	2
9	MP2A	Mx	.001	2
10	MP2A	X	-2.832	6
11	MP2A	Z	0	6
12	MP2A	Mx	.001	6
13	MP3A	X	-1.349	3
14	MP3A	Z	0	3
15	MP3A	Mx	.000674	3
16	MP3A	X	-1.349	5
17	MP3A	Z	0	5
18	MP3A	Mx	.000674	5
19	OVP	X	-6.32	1.25
20	OVP	Z	0	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	-2.528	1
23	MP1A	Z	0	1
24	MP1A	Mx	-.001	1
25	MP2A	X	-3.099	1
26	MP2A	Z	0	1
27	MP2A	Mx	-.002	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-3.268	2
2	MP2A	Z	-1.887	2
3	MP2A	Mx	.000533	2
4	MP2A	X	-3.268	6
5	MP2A	Z	-1.887	6
6	MP2A	Mx	.000533	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
7	MP2A	X	-3.268	2
8	MP2A	Z	-1.887	2
9	MP2A	Mx	.003	2
10	MP2A	X	-3.268	6
11	MP2A	Z	-1.887	6
12	MP2A	Mx	.003	6
13	MP3A	X	-1.708	3
14	MP3A	Z	-.986	3
15	MP3A	Mx	.000854	3
16	MP3A	X	-1.708	5
17	MP3A	Z	-.986	5
18	MP3A	Mx	.000854	5
19	OVP	X	-6.273	1.25
20	OVP	Z	-3.622	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	-2.458	1
23	MP1A	Z	-1.419	1
24	MP1A	Mx	-.001	1
25	MP2A	X	-2.997	1
26	MP2A	Z	-1.73	1
27	MP2A	Mx	-.001	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-2.829	2
2	MP2A	Z	-4.9	2
3	MP2A	Mx	-.001	2
4	MP2A	X	-2.829	6
5	MP2A	Z	-4.9	6
6	MP2A	Mx	-.001	6
7	MP2A	X	-2.829	2
8	MP2A	Z	-4.9	2
9	MP2A	Mx	.004	2
10	MP2A	X	-2.829	6
11	MP2A	Z	-4.9	6
12	MP2A	Mx	.004	6
13	MP3A	X	-1.609	3
14	MP3A	Z	-2.787	3
15	MP3A	Mx	.000804	3
16	MP3A	X	-1.609	5
17	MP3A	Z	-2.787	5
18	MP3A	Mx	.000804	5
19	OVP	X	-3.853	1.25
20	OVP	Z	-6.673	1.25
21	OVP	Mx	0	1.25
22	MP1A	X	-1.729	1
23	MP1A	Z	-2.995	1
24	MP1A	Mx	-.000864	1
25	MP2A	X	-2.092	1
26	MP2A	Z	-3.623	1
27	MP2A	Mx	-.001	1

Member Point Loads (BLC 77 : Lm1)

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

Member Point Loads (BLC 78 : Lm2)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	2	Y	-500	0

Member Point Loads (BLC 79 : Lv1)

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

Member Point Loads (BLC 80 : Lv2)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	F	Y	-250	%100

Member Point Loads (BLC 81 : Antenna Ev)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	Y	-.816	2
2	MP2A	My	-.000408	2
3	MP2A	Mz	.000476	2
4	MP2A	Y	-.816	6
5	MP2A	My	-.000408	6
6	MP2A	Mz	.000476	6
7	MP2A	Y	-.816	2
8	MP2A	My	-.000408	2
9	MP2A	Mz	-.000476	2
10	MP2A	Y	-.816	6
11	MP2A	My	-.000408	6
12	MP2A	Mz	-.000476	6
13	MP3A	Y	-1.07	3
14	MP3A	My	-.000535	3
15	MP3A	Mz	0	3
16	MP3A	Y	-1.07	5
17	MP3A	My	-.000535	5
18	MP3A	Mz	0	5
19	OVP	Y	-1.195	1.25
20	OVP	My	0	1.25
21	OVP	Mz	0	1.25
22	MP1A	Y	-2.789	1
23	MP1A	My	.001	1
24	MP1A	Mz	0	1
25	MP2A	Y	-2.953	1
26	MP2A	My	.001	1
27	MP2A	Mz	0	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	Z	-2.039	2
2	MP2A	Mx	-.001	2
3	MP2A	Z	-2.039	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
4	MP2A	Mx	-.001	6
5	MP2A	Z	-2.039	2
6	MP2A	Mx	.001	2
7	MP2A	Z	-2.039	6
8	MP2A	Mx	.001	6
9	MP3A	Z	-2.674	3
10	MP3A	Mx	0	3
11	MP3A	Z	-2.674	5
12	MP3A	Mx	0	5
13	OVP	Z	-2.987	1.25
14	OVP	Mx	0	1.25
15	MP1A	Z	-6.972	1
16	MP1A	Mx	0	1
17	MP2A	Z	-7.383	1
18	MP2A	Mx	0	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	2.039	2
2	MP2A	Mx	-.001	2
3	MP2A	X	2.039	6
4	MP2A	Mx	-.001	6
5	MP2A	X	2.039	2
6	MP2A	Mx	-.001	2
7	MP2A	X	2.039	6
8	MP2A	Mx	-.001	6
9	MP3A	X	2.674	3
10	MP3A	Mx	-.001	3
11	MP3A	X	2.674	5
12	MP3A	Mx	-.001	5
13	OVP	X	2.987	1.25
14	OVP	Mx	0	1.25
15	MP1A	X	6.972	1
16	MP1A	Mx	.003	1
17	MP2A	X	7.383	1
18	MP2A	Mx	.004	1

Member Area Loads

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

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N35	max	845.707	50	1218.311	20	1541.95	13	-.115	65	0	75	.296	21
2		min	-230.438	41	305.566	64	-139.073	7	-.467	19	0	1	.062	2
3	N36	max	539.356	9	1241.623	14	64.449	2	-.121	69	0	75	.297	21
4		min	-723.45	3	313.836	70	-689.987	20	-.479	13	0	1	.078	5
5	N52	max	185.454	11	39.05	17	344.389	11	0	75	0	75	0	75

Envelope Joint Reactions (Continued)

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
6		min	-286.373	5	9.426	73	-536.848	5	0	1	0	1	0	1
7	N53	max	187.044	2	58.15	20	584.856	2	0	75	0	75	0	75
8		min	-303.245	8	14.027	65	-913.622	8	0	1	0	1	0	1
9	Totals:	max	993.202	9	2540.652	19	1548.822	1						
10		min	-993.202	3	645.981	65	-1548.828	7						

Joint Reactions (By Combination)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
1	1	N35	219.054	404.819	1062.596	-.134	0	.089
2	1	N36	-389.439	461.284	-9.966	-.177	0	.112
3	1	N52	-4.506	13.107	-2.337	0	0	0
4	1	N53	174.893	19.372	498.529	0	0	0
5	1	Totals:	.001	898.581	1548.822			
6	1	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
7	2	N35	-16.488	403.382	913.229	-.137	0	.062
8	2	N36	-702.484	462.704	64.449	-.176	0	.085
9	2	N52	-186.549	13.15	-318.1	0	0	0
10	2	N53	187.044	19.345	584.856	0	0	0
11	2	Totals:	-718.476	898.582	1244.434			
12	2	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
13	3	N35	-83.777	410.255	647.8	-.148	0	.065
14	3	N36	-723.45	455.75	21.094	-.173	0	.08
15	3	N52	-266.614	13.167	-446.162	0	0	0
16	3	N53	80.639	19.409	350.688	0	0	0
17	3	Totals:	-993.202	898.582	573.421			
18	3	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
19	4	N35	-75.173	417.475	457.163	-.157	0	.074
20	4	N36	-604.096	448.457	-42.757	-.168	0	.083
21	4	N52	-273.714	13.171	-478.714	0	0	0
22	4	N53	-15.637	19.48	64.309	0	0	0
23	4	Totals:	-968.62	898.582	.001			
24	4	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
25	5	N35	-102.578	425.273	262.831	-.166	0	.076
26	5	N36	-476.344	440.594	-102.811	-.164	0	.078
27	5	N52	-286.373	13.186	-536.848	0	0	0
28	5	N53	-70.444	19.529	-163.414	0	0	0
29	5	Totals:	-935.739	898.583	-540.241			
30	5	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
31	6	N35	-48.233	437.675	-2.88	-.179	0	.091
32	6	N36	-217.02	428.132	-228.386	-.162	0	.084
33	6	N52	-250.876	13.188	-478.786	0	0	0
34	6	N53	-169.173	19.588	-476.917	0	0	0
35	6	Totals:	-685.302	898.583	-1186.97			
36	6	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
37	7	N35	182.809	449.328	-139.073	-.189	0	.128
38	7	N36	204.657	416.483	-392.619	-.163	0	.112
39	7	N52	-96.496	13.139	-190.472	0	0	0
40	7	N53	-290.97	19.633	-826.664	0	0	0
41	7	Totals:	0	898.583	-1548.828			
42	7	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			

Joint Reactions (By Combination) (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
43	8	N35	418.199	450.991	10.501	-.186	0	.154
44	8	N36	518.268	414.883	-466.327	-.164	0	.138
45	8	N52	85.255	13.08	125.007	0	0	0
46	8	N53	-303.245	19.629	-913.622	0	0	0
47	8	Totals:	718.476	898.583	-1244.44			
48	8	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
49	9	N35	485.422	444.173	275.953	-.176	0	.152
50	9	N36	539.356	421.754	-423.055	-.167	0	.143
51	9	N52	165.444	13.058	253.382	0	0	0
52	9	N53	-197.02	19.598	-679.707	0	0	0
53	9	Totals:	993.202	898.583	-573.427			
54	9	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
55	10	N35	476.868	436.884	466.541	-.167	0	.143
56	10	N36	419.821	429.078	-359.583	-.172	0	.141
57	10	N52	172.678	13.055	286.101	0	0	0
58	10	N53	-100.747	19.565	-393.066	0	0	0
59	10	Totals:	968.621	898.582	-.007			
60	10	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
61	11	N35	504.333	429.006	660.871	-.157	0	.141
62	11	N36	291.836	436.995	-299.957	-.176	0	.146
63	11	N52	185.454	13.051	344.389	0	0	0
64	11	N53	-45.884	19.53	-165.067	0	0	0
65	11	Totals:	935.739	898.582	540.235			
66	11	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
67	12	N35	450.079	416.462	926.457	-.144	0	.126
68	12	N36	32.157	449.592	-174.705	-.178	0	.14
69	12	N52	150.11	13.066	286.463	0	0	0
70	12	N53	52.956	19.462	148.749	0	0	0
71	12	Totals:	685.302	898.582	1186.964			
72	12	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
73	13	N35	453.019	1202.416	1541.95	-.451	0	.27
74	13	N36	-260.707	1241.373	-555.738	-.479	0	.282
75	13	N52	-114.984	38.952	-216.867	0	0	0
76	13	N53	-77.327	57.91	-216.317	0	0	0
77	13	Totals:	.001	2540.651	553.028			
78	13	COG (ft):	X: -2.305	Y: 2.335	Z: 7.629			
79	14	N35	358.586	1202.128	1491.653	-.451	0	.259
80	14	N36	-372.699	1241.623	-522.686	-.478	0	.272
81	14	N52	-182.142	39.008	-332.206	0	0	0
82	14	N53	-70.369	57.892	-174.962	0	0	0
83	14	Totals:	-266.624	2540.651	461.799			
84	14	COG (ft):	X: -2.305	Y: 2.335	Z: 7.629			
85	15	N35	318.181	1204.346	1394.341	-.454	0	.258
86	15	N36	-393.799	1239.34	-525.486	-.477	0	.269
87	15	N52	-221.661	39.038	-397.581	0	0	0
88	15	N53	-103.184	57.928	-240.07	0	0	0
89	15	Totals:	-400.463	2540.651	231.204			
90	15	COG (ft):	X: -2.305	Y: 2.335	Z: 7.629			
91	16	N35	311.908	1207.305	1309.567	-.458	0	.261
92	16	N36	-357.252	1236.326	-548.624	-.475	0	.269
93	16	N52	-229.083	39.045	-419.456	0	0	0
94	16	N53	-136.945	57.976	-341.491	0	0	0

Joint Reactions (By Combination) (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
95	16	Totals:	-411.371	2540.651	-.004			
96	16	COG (ft):	X: -2.305	Y: 2.335	Z: 7.629			
97	17	N35	311.063	1210.696	1224.063	-.461	0	.264
98	17	N36	-297.572	1232.883	-573.839	-.473	0	.269
99	17	N52	-227.152	39.05	-429.572	0	0	0
100	17	N53	-159.733	58.022	-436.235	0	0	0
101	17	Totals:	-373.394	2540.651	-215.583			
102	17	COG (ft):	X: -2.305	Y: 2.335	Z: 7.629			
103	18	N35	346.6	1214.783	1127.255	-.465	0	.271
104	18	N36	-191.863	1228.75	-609.114	-.473	0	.273
105	18	N52	-210.27	39.039	-401.279	0	0	0
106	18	N53	-195.464	58.079	-551.601	0	0	0
107	18	Totals:	-250.996	2540.652	-434.739			
108	18	COG (ft):	X: -2.305	Y: 2.335	Z: 7.629			
109	19	N35	439.373	1217.998	1081.084	-.467	0	.284
110	19	N36	-43.68	1225.525	-657.015	-.472	0	.284
111	19	N52	-158.246	38.993	-304.569	0	0	0
112	19	N53	-237.447	58.136	-672.538	0	0	0
113	19	Totals:	0	2540.652	-553.039			
114	19	COG (ft):	X: -2.305	Y: 2.335	Z: 7.629			
115	20	N35	533.788	1218.311	1131.409	-.466	0	.294
116	20	N36	68.379	1225.255	-689.987	-.473	0	.294
117	20	N52	-91.123	38.936	-189.265	0	0	0
118	20	N53	-244.418	58.15	-713.968	0	0	0
119	20	Totals:	266.625	2540.652	-461.81			
120	20	COG (ft):	X: -2.305	Y: 2.335	Z: 7.629			
121	21	N35	574.18	1216.102	1228.731	-.463	0	.296
122	21	N36	89.506	1227.525	-687.187	-.474	0	.297
123	21	N52	-51.596	38.906	-123.854	0	0	0
124	21	N53	-211.626	58.119	-648.904	0	0	0
125	21	Totals:	400.464	2540.651	-231.215			
126	21	COG (ft):	X: -2.305	Y: 2.335	Z: 7.629			
127	22	N35	580.457	1213.136	1313.496	-.46	0	.293
128	22	N36	52.941	1230.542	-664.09	-.476	0	.297
129	22	N52	-44.154	38.898	-101.95	0	0	0
130	22	N53	-177.871	58.075	-547.463	0	0	0
131	22	Totals:	411.373	2540.651	-.007			
132	22	COG (ft):	X: -2.305	Y: 2.335	Z: 7.629			
133	23	N35	581.312	1209.731	1398.993	-.457	0	.29
134	23	N36	-6.774	1233.994	-638.929	-.478	0	.297
135	23	N52	-46.066	38.894	-91.812	0	0	0
136	23	N53	-155.077	58.032	-452.68	0	0	0
137	23	Totals:	373.395	2540.651	215.572			
138	23	COG (ft):	X: -2.305	Y: 2.335	Z: 7.629			
139	24	N35	545.787	1205.629	1495.782	-.453	0	.283
140	24	N36	-112.531	1238.144	-603.694	-.479	0	.293
141	24	N52	-62.932	38.906	-120.099	0	0	0
142	24	N53	-119.327	57.973	-337.262	0	0	0
143	24	Totals:	250.998	2540.651	434.728			
144	24	COG (ft):	X: -2.305	Y: 2.335	Z: 7.629			
145	25	N35	609.144	822.827	910.006	-.341	0	.256
146	25	N36	-412.598	793.001	-347.318	-.328	0	.247

Joint Reactions (By Combination) (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
147	25	N52	-96.55	13.141	-183.85	0	0	0
148	25	N53	-99.996	19.617	-282.038	0	0	0
149	25	Totals:	0	1648.585	96.8			
150	25	COG (ft):	X: -1.532	Y: 1.458	Z: 7.875			
151	26	N35	594.444	822.734	900.636	-.342	0	.254
152	26	N36	-432.205	793.092	-342.681	-.328	0	.245
153	26	N52	-107.914	13.144	-203.566	0	0	0
154	26	N53	-99.23	19.615	-276.615	0	0	0
155	26	Totals:	-44.905	1648.585	77.774			
156	26	COG (ft):	X: -1.532	Y: 1.458	Z: 7.875			
157	27	N35	590.239	823.161	884.044	-.342	0	.254
158	27	N36	-433.518	792.657	-345.393	-.328	0	.245
159	27	N52	-112.919	13.146	-211.574	0	0	0
160	27	N53	-105.876	19.622	-291.244	0	0	0
161	27	Totals:	-62.074	1648.585	35.834			
162	27	COG (ft):	X: -1.532	Y: 1.458	Z: 7.875			
163	28	N35	590.769	823.612	872.138	-.343	0	.255
164	28	N36	-426.048	792.199	-349.38	-.327	0	.245
165	28	N52	-113.366	13.146	-213.612	0	0	0
166	28	N53	-111.893	19.628	-309.151	0	0	0
167	28	Totals:	-60.538	1648.585	-.005			
168	28	COG (ft):	X: -1.532	Y: 1.458	Z: 7.875			
169	29	N35	589.055	824.101	859.992	-.343	0	.255
170	29	N36	-418.06	791.703	-353.126	-.327	0	.245
171	29	N52	-114.158	13.147	-217.246	0	0	0
172	29	N53	-115.319	19.634	-323.39	0	0	0
173	29	Totals:	-58.483	1648.585	-33.77			
174	29	COG (ft):	X: -1.532	Y: 1.458	Z: 7.875			
175	30	N35	592.439	824.878	843.4	-.344	0	.256
176	30	N36	-401.835	790.919	-360.978	-.327	0	.245
177	30	N52	-111.943	13.147	-213.62	0	0	0
178	30	N53	-121.493	19.642	-342.994	0	0	0
179	30	Totals:	-42.832	1648.585	-74.192			
180	30	COG (ft):	X: -1.532	Y: 1.458	Z: 7.875			
181	31	N35	606.856	825.601	834.925	-.345	0	.258
182	31	N36	-375.453	790.191	-371.278	-.327	0	.247
183	31	N52	-102.29	13.143	-195.594	0	0	0
184	31	N53	-129.113	19.651	-364.863	0	0	0
185	31	Totals:	0	1648.585	-96.81			
186	31	COG (ft):	X: -1.532	Y: 1.458	Z: 7.875			
187	32	N35	621.555	825.695	844.296	-.345	0	.26
188	32	N36	-355.844	790.099	-375.912	-.327	0	.249
189	32	N52	-90.926	13.139	-175.879	0	0	0
190	32	N53	-129.879	19.652	-370.289	0	0	0
191	32	Totals:	44.907	1648.585	-77.784			
192	32	COG (ft):	X: -1.532	Y: 1.458	Z: 7.875			
193	33	N35	625.76	825.268	860.888	-.344	0	.26
194	33	N36	-354.53	790.534	-373.201	-.327	0	.249
195	33	N52	-85.921	13.138	-167.87	0	0	0
196	33	N53	-123.234	19.646	-355.661	0	0	0
197	33	Totals:	62.075	1648.585	-35.844			
198	33	COG (ft):	X: -1.532	Y: 1.458	Z: 7.875			

Joint Reactions (By Combination) (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
199	34	N35	625.231	824.816	872.794	-.344	0	.259
200	34	N36	-362.001	790.992	-369.215	-.328	0	.249
201	34	N52	-85.474	13.138	-165.832	0	0	0
202	34	N53	-117.217	19.639	-337.753	0	0	0
203	34	Totals:	60.539	1648.585	-.005			
204	34	COG (ft):	X: -1.532	Y: 1.458	Z: 7.875			
205	35	N35	626.945	824.327	884.94	-.343	0	.259
206	35	N36	-369.99	791.487	-365.47	-.328	0	.249
207	35	N52	-84.681	13.137	-162.197	0	0	0
208	35	N53	-113.79	19.634	-323.513	0	0	0
209	35	Totals:	58.484	1648.585	33.76			
210	35	COG (ft):	X: -1.532	Y: 1.458	Z: 7.875			
211	36	N35	623.561	823.55	901.531	-.342	0	.258
212	36	N36	-386.216	792.272	-357.62	-.328	0	.249
213	36	N52	-86.895	13.137	-165.822	0	0	0
214	36	N53	-107.616	19.626	-303.908	0	0	0
215	36	Totals:	42.833	1648.585	74.182			
216	36	COG (ft):	X: -1.532	Y: 1.458	Z: 7.875			
217	37	N35	-210.367	820.226	912.376	-.344	0	.121
218	37	N36	367.261	795.626	-444.662	-.331	0	.12
219	37	N52	-78.092	13.189	-148.667	0	0	0
220	37	N53	-78.802	19.544	-222.245	0	0	0
221	37	Totals:	0	1648.586	96.802			
222	37	COG (ft):	X: -3.352	Y: 1.458	Z: 7.875			
223	38	N35	-225.05	820.12	903.061	-.344	0	.119
224	38	N36	347.648	795.722	-440.046	-.331	0	.118
225	38	N52	-89.461	13.2	-168.397	0	0	0
226	38	N53	-78.044	19.544	-216.843	0	0	0
227	38	Totals:	-44.906	1648.586	77.777			
228	38	COG (ft):	X: -3.352	Y: 1.458	Z: 7.875			
229	39	N35	-229.251	820.546	886.469	-.345	0	.119
230	39	N36	346.332	795.288	-442.751	-.331	0	.118
231	39	N52	-94.467	13.205	-176.409	0	0	0
232	39	N53	-84.688	19.547	-231.472	0	0	0
233	39	Totals:	-62.075	1648.586	35.837			
234	39	COG (ft):	X: -3.352	Y: 1.458	Z: 7.875			
235	40	N35	-228.724	821	874.546	-.345	0	.12
236	40	N36	353.801	794.83	-446.727	-.331	0	.118
237	40	N52	-94.914	13.205	-178.447	0	0	0
238	40	N53	-90.703	19.55	-249.374	0	0	0
239	40	Totals:	-60.539	1648.586	-.002			
240	40	COG (ft):	X: -3.352	Y: 1.458	Z: 7.875			
241	41	N35	-230.438	821.489	862.398	-.346	0	.12
242	41	N36	361.79	794.336	-450.469	-.33	0	.118
243	41	N52	-95.707	13.207	-182.084	0	0	0
244	41	N53	-94.128	19.553	-263.612	0	0	0
245	41	Totals:	-58.483	1648.586	-33.767			
246	41	COG (ft):	X: -3.352	Y: 1.458	Z: 7.875			
247	42	N35	-227.061	822.272	845.779	-.347	0	.121
248	42	N36	378.018	793.551	-458.305	-.33	0	.118
249	42	N52	-93.492	13.206	-178.457	0	0	0
250	42	N53	-100.297	19.557	-283.206	0	0	0

Joint Reactions (By Combination) (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
251	42	Totals:	-42.833	1648.586	-74.189			
252	42	COG (ft):	X: -3.352	Y: 1.458	Z: 7.875			
253	43	N35	-212.665	823.012	837.232	-.347	0	.123
254	43	N36	404.405	792.817	-468.572	-.33	0	.12
255	43	N52	-83.835	13.196	-160.419	0	0	0
256	43	N53	-107.905	19.561	-305.049	0	0	0
257	43	Totals:	0	1648.586	-96.807			
258	43	COG (ft):	X: -3.352	Y: 1.458	Z: 7.875			
259	44	N35	-197.983	823.12	846.548	-.347	0	.125
260	44	N36	424.021	792.721	-473.186	-.33	0	.121
261	44	N52	-72.468	13.184	-140.69	0	0	0
262	44	N53	-108.664	19.561	-310.453	0	0	0
263	44	Totals:	44.906	1648.586	-77.781			
264	44	COG (ft):	X: -3.352	Y: 1.458	Z: 7.875			
265	45	N35	-193.782	822.693	863.141	-.347	0	.125
266	45	N36	425.337	793.154	-470.48	-.331	0	.122
267	45	N52	-67.461	13.18	-132.677	0	0	0
268	45	N53	-102.02	19.558	-295.825	0	0	0
269	45	Totals:	62.074	1648.586	-35.841			
270	45	COG (ft):	X: -3.352	Y: 1.458	Z: 7.875			
271	46	N35	-194.309	822.239	875.063	-.346	0	.124
272	46	N36	417.867	793.613	-466.506	-.331	0	.122
273	46	N52	-67.014	13.179	-130.638	0	0	0
274	46	N53	-96.006	19.555	-277.922	0	0	0
275	46	Totals:	60.539	1648.586	-.003			
276	46	COG (ft):	X: -3.352	Y: 1.458	Z: 7.875			
277	47	N35	-192.594	821.749	887.211	-.345	0	.124
278	47	N36	409.877	794.107	-462.766	-.331	0	.122
279	47	N52	-66.22	13.177	-127	0	0	0
280	47	N53	-92.58	19.553	-263.682	0	0	0
281	47	Totals:	58.483	1648.586	33.763			
282	47	COG (ft):	X: -3.352	Y: 1.458	Z: 7.875			
283	48	N35	-195.971	820.966	903.83	-.345	0	.123
284	48	N36	393.648	794.892	-454.931	-.331	0	.121
285	48	N52	-68.434	13.179	-130.627	0	0	0
286	48	N53	-86.411	19.549	-244.087	0	0	0
287	48	Totals:	42.832	1648.586	74.185			
288	48	COG (ft):	X: -3.352	Y: 1.458	Z: 7.875			
289	49	N35	199.272	617.41	663.83	-.255	0	.147
290	49	N36	-41.599	623.471	-285.638	-.259	0	.149
291	49	N52	-73.245	13.144	-139.789	0	0	0
292	49	N53	-84.427	19.56	-238.407	0	0	0
293	49	Totals:	0	1273.584	-.004			
294	49	COG (ft):	X: -2.327	Y: 1.844	Z: 7.814			
295	50	N35	845.707	619.62	681.253	-.219	0	.239
296	50	N36	-642.456	621.216	-193.769	-.222	0	.239
297	50	N52	-94.309	13.107	-179.94	0	0	0
298	50	N53	-108.941	19.639	-307.556	0	0	0
299	50	Totals:	0	1273.582	-.012			
300	50	COG (ft):	X: -.487	Y: 1.844	Z: 7.814			
301	51	N35	234.397	498.262	538.754	-.189	0	.127
302	51	N36	-107.633	511.983	-234.707	-.198	0	.13

Joint Reactions (By Combination) (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
303	51	N52	-58.883	15.311	-112.373	0	0	0
304	51	N53	-67.881	22.791	-191.677	0	0	0
305	51	Totals:	0	1048.346	-.004			
306	51	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
307	52	N35	207.957	438.854	494.698	-.166	0	.111
308	52	N36	-113.132	454.025	-204.516	-.176	0	.116
309	52	N52	-49.081	13.528	-92.647	0	0	0
310	52	N53	-45.744	20.13	-127.65	0	0	0
311	52	Totals:	0	926.538	69.885			
312	52	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
313	53	N35	199.917	438.913	492.016	-.165	0	.11
314	53	N36	-131.062	453.964	-196.616	-.176	0	.115
315	53	N52	-57.802	13.531	-108.454	0	0	0
316	53	N53	-45.997	20.13	-126.426	0	0	0
317	53	Totals:	-34.945	926.538	60.52			
318	53	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
319	54	N35	193.818	439.374	485.087	-.166	0	.11
320	54	N36	-139.369	453.5	-191.633	-.175	0	.114
321	54	N52	-64.977	13.533	-121.805	0	0	0
322	54	N53	-49.997	20.132	-136.707	0	0	0
323	54	Totals:	-60.524	926.538	34.941			
324	54	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
325	55	N35	191.293	440.112	475.766	-.166	0	.11
326	55	N36	-135.828	452.757	-190.902	-.175	0	.114
327	55	N52	-68.683	13.534	-129.127	0	0	0
328	55	N53	-56.672	20.136	-155.739	0	0	0
329	55	Totals:	-69.889	926.538	-.003			
330	55	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
331	56	N35	193.02	440.93	466.55	-.167	0	.111
332	56	N36	-121.385	451.935	-194.618	-.174	0	.114
333	56	N52	-67.926	13.534	-128.455	0	0	0
334	56	N53	-64.233	20.14	-178.425	0	0	0
335	56	Totals:	-60.524	926.538	-34.947			
336	56	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
337	57	N35	198.535	441.609	459.91	-.167	0	.111
338	57	N36	-99.913	451.253	-201.782	-.174	0	.114
339	57	N52	-62.911	13.533	-119.971	0	0	0
340	57	N53	-70.656	20.144	-198.684	0	0	0
341	57	Totals:	-34.945	926.538	-60.526			
342	57	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
343	58	N35	206.361	441.967	457.624	-.168	0	.113
344	58	N36	-77.161	450.894	-210.477	-.174	0	.115
345	58	N52	-54.98	13.531	-105.947	0	0	0
346	58	N53	-74.219	20.146	-211.092	0	0	0
347	58	Totals:	0	926.538	-69.892			
348	58	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
349	59	N35	214.4	441.909	460.306	-.168	0	.113
350	59	N36	-59.229	450.955	-218.372	-.175	0	.116
351	59	N52	-46.26	13.528	-90.141	0	0	0
352	59	N53	-73.967	20.146	-212.32	0	0	0
353	59	Totals:	34.945	926.538	-60.527			
354	59	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			

Joint Reactions (By Combination) (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
355	60	N35	220.498	441.449	467.236	-.168	0	.114
356	60	N36	-50.921	451.419	-223.355	-.175	0	.116
357	60	N52	-39.086	13.526	-76.789	0	0	0
358	60	N53	-69.967	20.144	-202.039	0	0	0
359	60	Totals:	60.524	926.538	-34.948			
360	60	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
361	61	N35	223.023	440.711	476.558	-.167	0	.114
362	61	N36	-54.462	452.162	-224.09	-.176	0	.117
363	61	N52	-35.38	13.525	-69.467	0	0	0
364	61	N53	-63.292	20.14	-183.004	0	0	0
365	61	Totals:	69.889	926.538	-.003			
366	61	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
367	62	N35	221.297	439.892	485.773	-.167	0	.113
368	62	N36	-68.908	452.985	-220.379	-.176	0	.117
369	62	N52	-36.136	13.525	-70.139	0	0	0
370	62	N53	-55.729	20.136	-160.315	0	0	0
371	62	Totals:	60.524	926.538	34.941			
372	62	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
373	63	N35	215.783	439.213	492.413	-.166	0	.112
374	63	N36	-90.381	453.667	-213.215	-.176	0	.117
375	63	N52	-41.15	13.526	-78.623	0	0	0
376	63	N53	-49.307	20.132	-140.055	0	0	0
377	63	Totals:	34.945	926.538	60.52			
378	63	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
379	64	N35	145.222	305.566	350.53	-.115	0	.077
380	64	N36	-84.354	316.96	-141.791	-.123	0	.081
381	64	N52	-33.308	9.429	-62.547	0	0	0
382	64	N53	-27.56	14.027	-76.305	0	0	0
383	64	Totals:	0	645.981	69.886			
384	64	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
385	65	N35	137.182	305.625	347.847	-.115	0	.077
386	65	N36	-102.284	316.9	-133.892	-.123	0	.08
387	65	N52	-42.029	9.43	-78.352	0	0	0
388	65	N53	-27.813	14.027	-75.081	0	0	0
389	65	Totals:	-34.945	645.981	60.521			
390	65	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
391	66	N35	131.082	306.084	340.916	-.115	0	.076
392	66	N36	-110.591	316.437	-128.907	-.122	0	.079
393	66	N52	-49.203	9.432	-91.704	0	0	0
394	66	N53	-31.813	14.028	-85.363	0	0	0
395	66	Totals:	-60.524	645.981	34.942			
396	66	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
397	67	N35	128.558	306.822	331.592	-.116	0	.076
398	67	N36	-107.05	315.696	-128.171	-.122	0	.079
399	67	N52	-52.909	9.432	-99.026	0	0	0
400	67	N53	-38.488	14.031	-104.397	0	0	0
401	67	Totals:	-69.889	645.981	-.002			
402	67	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
403	68	N35	130.285	307.639	322.374	-.116	0	.077
404	68	N36	-92.606	314.875	-131.882	-.121	0	.079
405	68	N52	-52.152	9.432	-98.354	0	0	0
406	68	N53	-46.051	14.034	-127.084	0	0	0

Joint Reactions (By Combination) (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
407	68	Totals:	-60.524	645.981	-34.946			
408	68	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
409	69	N35	135.801	308.319	315.732	-.117	0	.078
410	69	N36	-71.134	314.195	-139.042	-.121	0	.079
411	69	N52	-47.138	9.432	-89.871	0	0	0
412	69	N53	-52.474	14.036	-147.345	0	0	0
413	69	Totals:	-34.945	645.981	-60.525			
414	69	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
415	70	N35	143.628	308.677	313.445	-.117	0	.079
416	70	N36	-48.381	313.836	-147.733	-.121	0	.08
417	70	N52	-39.209	9.43	-75.848	0	0	0
418	70	N53	-56.037	14.038	-159.753	0	0	0
419	70	Totals:	0	645.981	-69.891			
420	70	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
421	71	N35	151.667	308.619	316.127	-.118	0	.08
422	71	N36	-30.448	313.895	-155.628	-.122	0	.081
423	71	N52	-30.489	9.428	-60.044	0	0	0
424	71	N53	-55.785	14.038	-160.981	0	0	0
425	71	Totals:	34.945	645.981	-60.526			
426	71	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
427	72	N35	157.766	308.16	323.058	-.117	0	.08
428	72	N36	-22.14	314.357	-160.613	-.122	0	.082
429	72	N52	-23.316	9.427	-46.693	0	0	0
430	72	N53	-51.786	14.037	-150.7	0	0	0
431	72	Totals:	60.524	645.981	-34.947			
432	72	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
433	73	N35	160.291	307.422	332.383	-.117	0	.08
434	73	N36	-25.682	315.098	-161.352	-.123	0	.082
435	73	N52	-19.61	9.426	-39.37	0	0	0
436	73	N53	-45.11	14.034	-131.663	0	0	0
437	73	Totals:	69.889	645.981	-.002			
438	73	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
439	74	N35	158.564	306.604	341.601	-.116	0	.079
440	74	N36	-40.128	315.92	-157.646	-.123	0	.082
441	74	N52	-20.365	9.426	-40.041	0	0	0
442	74	N53	-37.546	14.031	-108.972	0	0	0
443	74	Totals:	60.524	645.981	34.942			
444	74	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			
445	75	N35	153.049	305.925	348.243	-.116	0	.078
446	75	N36	-61.602	316.601	-150.487	-.123	0	.082
447	75	N52	-25.379	9.427	-48.524	0	0	0
448	75	N53	-31.123	14.028	-88.711	0	0	0
449	75	Totals:	34.945	645.981	60.521			
450	75	COG (ft):	X: -2.116	Y: 2.553	Z: 7.701			

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

	Member	Shape	Code Check	Loc[..	LC	Shear..	Loc[..	Dir	LC	phi*Pn...	phi*Pnt..	phi*Mn...	phi*Mn...	Cb	Eqn
1	F	PIPE_2.5	.149	8.854	50	.041	8.724		23	14558....	50715	3.596	3.596	2.379	H1-1b
2	M2	PIPE_2.5	.148	8.854	50	.064	8.854		20	14558....	50715	3.596	3.596	2.383	H1-1b
3	M13	PL5/8X3.5	.195	.422	39	.077	0	y	43	66184....	68906....	.897	5.024	1.667	H1-1b

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

	Member	Shape	Code Check	Loc[..	LC	Shear..	Loc[..	Dir	LC	phi*Pn...	phi*Pnt..	phi*Mn...	phi*Mn...	Cb	Eqn
4	M14	PL5/8X3.5	.213	.422	43	.091	0	y	43	66184...	68906....	.897	5.024	1.667	H1-1b
5	M15	PL5/8X3.5	.256	.422	20	.169	0	y	50	66184...	68906....	.897	5.024	1.667	H1-1b
6	M16	PL5/8X3.5	.292	.422	21	.177	0	y	50	66184...	68906....	.897	5.024	1.667	H1-1b
7	M17	PIPE_2.0	.113	0	2	.072	0		46	31128...	32130	1.872	1.872	1.209	H1-1b
8	M18	PIPE_2.0	.104	2.501	13	.081	0		43	31128...	32130	1.872	1.872	1.445	H1-1b
9	M19	PIPE_2.0	.126	0	24	.091	0		19	31128...	32130	1.872	1.872	2.291	H1-1b
10	M67	PIPE_2.0	.145	0	20	.097	0		24	31128...	32130	1.872	1.872	2.276	H1-1b
11	M21	PL5/8X3.5	.218	.531	20	.061	.531	y	45	67591...	68906....	.897	5.024	1.81	H1-1b
12	M22	PL5/8X3.5	.233	0	24	.062	0	y	27	67591...	68906....	.897	5.024	2.144	H1-1b
13	M23	PL5/8X3.5	.298	.531	14	.076	0	y	44	67591...	68906....	.897	5.024	1.389	H1-1b
14	M24	PL5/8X3.5	.294	.531	24	.078	.531	y	27	67591...	68906....	.897	5.024	2.151	H1-1b
15	M25	SR_0.75	.000	0	75	.009	4.167		18	8911.6...	13916....	.174	.174	1	H1-1a
16	M26	SR_0.75	.051	0	42	.008	0		2	8911.6...	13916....	.174	.174	1	H1-1b*
17	M27	SR_0.75	.000	0	75	.006	0		50	8911.6...	13916....	.174	.174	1	H1-1a
18	M28	SR_0.75	.069	4.167	20	.015	4.167		21	8911.6...	13916....	.174	.174	1	H1-1b*
19	MP4A	PIPE_2.0	.062	2.333	21	.008	2.333		20	14916...	32130	1.872	1.872	4.344	H1-1b
20	MP3A	PIPE_2.0	.078	2.333	9	.043	2.333		3	14916...	32130	1.872	1.872	3.715	H1-1b
21	MP2A	PIPE_2.0	.131	2.333	2	.057	2.333		8	14916...	32130	1.872	1.872	3.404	H1-1b
22	MP1A	PIPE_2.0	.236	5.667	50	.043	2.333		50	14916...	32130	1.872	1.872	4.809	H1-1b
23	M44	SR_0.625	.037	1.667	3	.011	0		50	2158.31	9664.0...	.101	.101	1.136	H1-1b
24	M45	SR_0.625	.042	1.667	9	.012	0		2	2158.31	9664.0...	.101	.101	1.136	H1-1b
25	M46	SR_0.625	.037	1.667	7	.013	0		2	2158.31	9664.0...	.101	.101	1	H1-1b
26	M47	SR_0.625	.040	1.597	19	.009	0		12	2158.31	9664.0...	.101	.101	1	H1-1b
27	M43A	PIPE_2.0	.041	3.147	15	.004	0		21	19984...	32130	1.872	1.872	1.136	H1-1b
28	M44B	PIPE_2.0	.086	4.681	21	.006	0		21	11224...	32130	1.872	1.872	1.136	H1-1b
29	OVP	PIPE_2.0	.044	1.292	7	.033	.333		11	26521...	32130	1.872	1.872	1.463	H1-1b

VzW SMART Tool© Vendor

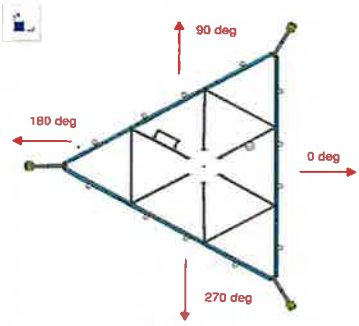
Client:	Verixon Wireless	Date:	1/10/2024
Site Name:	SUFFIELD S CT		
MDG #:	5000385800		
Fuze ID #:	16092584	Page:	1

Version 2.00

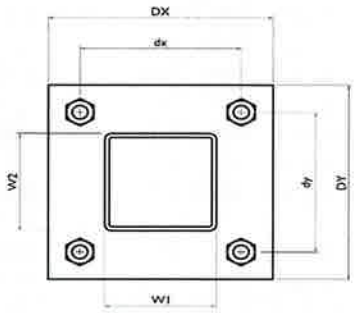
I. Mount-to-Tower Connection Check

Custom Orientation Required	Yes

Nodes (labeled per Risa)	Orientation (per graphic of typical platform)
N36	30
N35	30



Tower Connection Bolt Checks	Yes
Bolt Orientation	Parallel
Bolt Quantity per Reaction:	4
d_x (in) *(Delta X of typ. bolt config. sketch)* :	9.5
d_y (in) *(Delta Y of typ. bolt config. sketch)* :	3
Bolt Type:	J429 Gr.2
Bolt Diameter (in):	0.625
Required Tensile Strength / bolt (kips):	1.3
Required Shear Strength / bolt (kips):	0.3
Tensile Capacity / bolt (kips):	12.8
Shear Capacity / bolt (kips):	7.7
Bolt Overall Utilization:	**9.9%**
Tower Connection Baseplate Checks	No



ATTACHMENT 5

55 KING SPRING ROAD

Google Directions | Zoom

View Details

Google Maps Link

Downloadable Data

Property

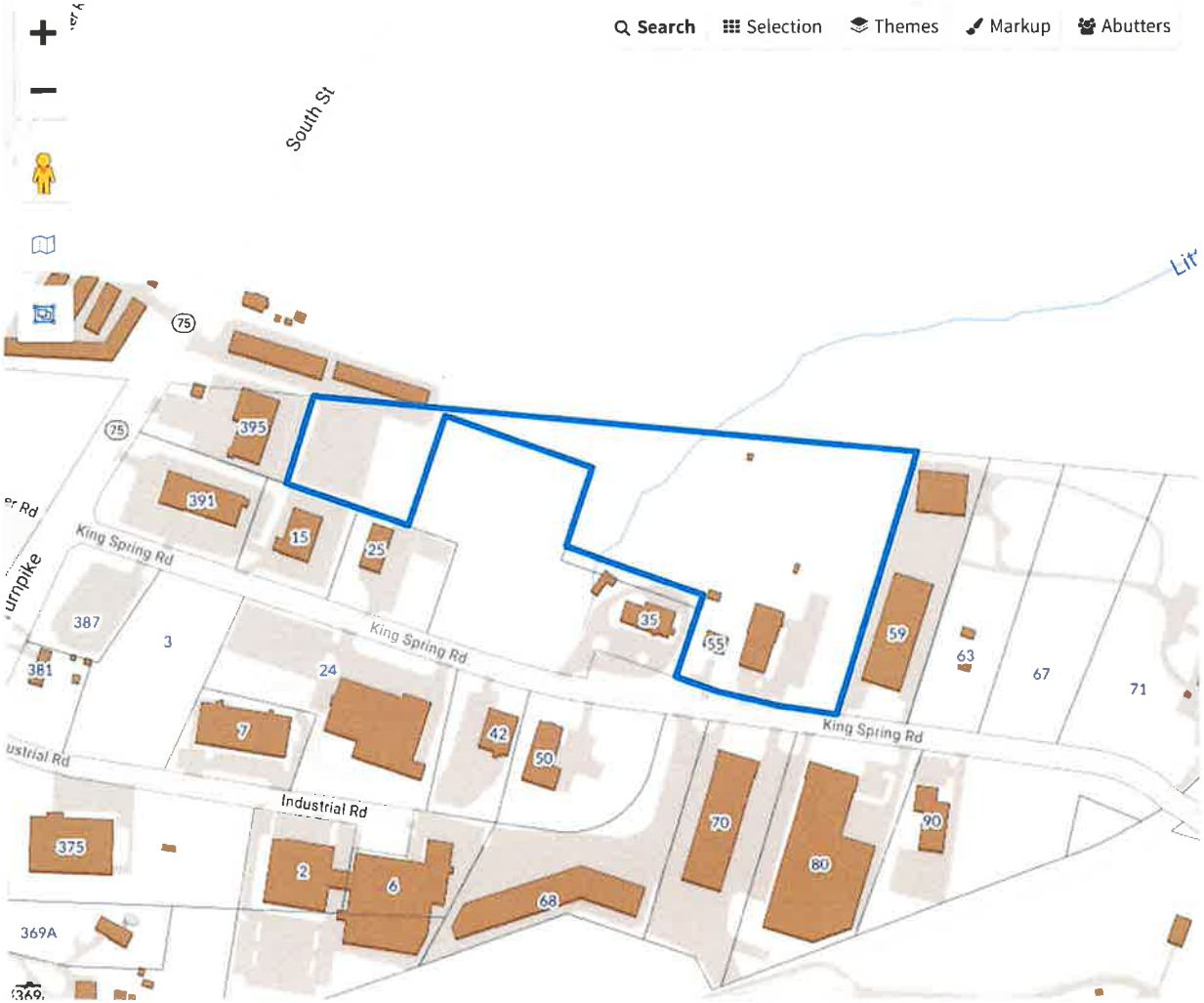
Address	55 KING SPRING ROAD
ID	003-002-282

Ownership

Name	S&D SALES LLC
Address	55 KING SPRING RD WINDSOR LOCKS, CT 6096

Land

Zone	IND1



Search

Advanced Search

Download Results | More

Showing 1-1 results. Scroll to see more.

55 KING SPRING ROAD
S&D SALES LLC
32282000

Windsor Locks, CT : Assessor Database

Property Search:

Parcel ID:	Alternate ID:	Owner 1 Name:	Street Number:	Street Name:
			55	KING SPRING ROAD

Search Reset

Property Detail:

Parcel ID:	Alternate ID/Map Block Lot:	Card:	Card:	Street Name:	Street Number:	Zoning:	LUC:	Acres:
32282000	003-002-282-	1	1	KING SPRING ROAD	55	IND1	Industrial	0.50

Owner Information:

Owner 1 Name:	S&D SALES LLC
Owner 2 Name:	SAMUEL SALES MBR MGR
Street 1:	363 HALLADAY AVE W
Street 2:	
City:	SUFFIELD
State:	CT
Zip:	06078
Volume:	453
Page:	671
Deed Date:	0000-00-00

Building Information:

Building Number:	1
Units:	0
Structure Type:	WAREHOUSE
Grade:	C
Identical Units:	1
Year Built:	1970

Valuation:

Property Images:

Picture:

Sketch:

ID	Code	Description	Area
A	VS1	1S	3608
B	VS1	1S	1820

ATTACHMENT 6

Verizon/Suffield South

UNITED STATES POSTAL SERVICE®

Certificate of Mailing — Firm

Name and Address of Sender	TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here *Postmark with Date of Receipt.*
Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	3	3	
	Postmaster, per *(name of receiving employee)*		

USPS® Tracking Number / Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	Scott A. Storms, First Selectman Town of Windsor Locks 50 Church Street Windsor Locks, CT 06096				
2.	William Voelker, Town Planner Town of Windsor Locks 50 Church Street Windsor Locks, CT 06096				
3.	S and D LLC 363 Halladay Avenue W Suffield, CT 06087				
4.					
5.					
6.					