Robinson+Cole

KENNETH C. BALDWIN

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Also admitted in Massachusetts

October 25, 2019

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**
227 Boombridge Road, North Stonington, Connecticut

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains nine (9) antennas at the 136-foot level of the existing 180-foot tower at 227 Boombridge Road in North Stonington, Connecticut (the "Property"). The tower is owned by Wireless Solutions. The Property is owned by David Babcock Lewis, LLC. According to a June 11, 2018 filing by Sprint (EM-SPRINT-102-180615), the tower was approved by the Town of North Stonington Zoning Official and Building Official in 1997 (Building Permit No. 97-012).

The Council approved Cellco's use of this tower in 2003. Cellco now intends to modify its facility by removing three (3) antennas and replacing them with six (6) newer model antennas for a total of twelve (12) antennas; and installing six (6) new remote radio heads ("RRHs") and two (2) HYBRIFLEX™ fiber optic antenna cables. The existing antenna mounts will also be replaced as a part of these modifications. Included in Attachment 1 are plans and specifications for Cellco's replacement antennas, RRHs and HYBRIFLEX™ cables.

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 North Stonington First Selectman, Michael A. Urgo; Juliet Hodge, North Stonington Planning, Development and Zoning Official; David Babcock Lewis, LLC, the owner of the Property; and Wireless Solutions, the tower owner.

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 a centerline height of 136 feet on the 180-foot 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 six (6) new antennas and six (6) RRHs will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A worst-case radio frequency table for Cellco's modified facility is included in Attachment 2.

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

6. The tower and its foundation can support Cellco's proposed modifications. (*See* Structural Analysis Report and Mount Analysis Report included in Attachment 3).

A copy of the parcel map and Property owner information is included in Attachment 4. A Certificate of Mailing verifying that this filing was sent to municipal officials and the Property owner is included in Attachment 5.

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:
Michael A. Urgo, North Stonington First Selectman
Juliet Hodge, North Stonington Planning, Development and Zoning Official
David Babcock Lewis, LLC
Wireless Solutions
Tim Parks

ATTACHMENT 1

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE PROJECT OWNERS REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SHEET INDEX

VICINITY MAP

NOTE:

PER THE STRUCTURAL ANALYSIS PERFORMED BY NEXIUS, THE EXISTING T-FRAME SECTOR MOUNTS ARE NOT ADEQUATE TO SUPPORT THE PROPOSED INSTALLATION. A MOUNT REPLACEMENT IS RECOMMENDED. SEE DETAIL 1 ON SHEET A-2 FOR REPLACEMENT SPECIFICATIONS.

APPLICANT:
CELLCO PARTNERSHIP d/b/a
VERIZON WIRELESS

SCOPE OF WORK:
PROPOSED EQUIPMENT & ANTENNA MODIFICATIONS
TO AN EXISTING VERIZON WIRELESS INSTALLATION
AT A 180'-0"± GUY TOWER

SITE NAME
N_STONINGTON_2_CT

LOCATION CODE
467124

ADDRESS
227 BOOM BRIDGE ROAD
PAWCATUCK, CT 06379

COORDINATES
41° 25' 44.35" N
71° 48' 31.24" W

Digitally signed by Jiazhu Hu, Ph.D., P.E.
DN: cn=Jiazhu Hu, Ph.D., P.E., o=Nexius, ou=Engineering, email=Jiazhu.Hu@Nexius.com, c=US
Date: 2019.05.23 14:05:34 -04'00'

NOTES

GENERAL NOTES:

1. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
2. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
3. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
4. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
5. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
6. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
7. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
8. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
9. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
10. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
11. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
12. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
13. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
14. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
15. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
16. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
17. APPLICABLE BUILDING CODES:
    SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
    BUILDING CODE: 2018 CONNECTICUT STATE BUILDING CODE (IBC 2015)
    ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
    LIGHTENING CODE: REFER TO ELECTRICAL DRAWINGS

    SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

    ACI 318-14: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.

    AISC 360-10: SPECIFICATIONS STEEL FOR STRUCTURAL STEEL BUILDINGS.

    ANSI/TIA-222-G WITH ADDENDUMS, STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ELECTRICAL & GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
6. GROUNDING SHALL COMPLY WITH NEC ART. 250.
7. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
8. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
9. 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.
10. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
11. CONNECTIONS TO MGB SHALL BE ARRANGED IN THREE MAIN GROUPS: SURGE PRODUCERS (COAXIAL CABLE GROUND KITS, TELCO AND POWER PANEL GROUND); (GROUNDING ELECTRODE RING OR BUILDING STEEL); NON-SURGING OBJECTS (EGB GROUND IN BTS UNIT).
12. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS
13. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
14. BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
15. BOND ANTENNA EGB'S AND MGB TO WATER MAIN.
16. TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION.
17. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.

PREPARED BY:
NEXIUS
TRANSFORM YOUR BUSINESS THROUGH WIRELESS
A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

APPLICANT:
CELLCO PARTNERSHIP d/b/a
verizon
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492

PROFESSIONAL STAMP:

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	05/13/19	FOR CONSTRUCTION	AA
1	05/23/19	REVISED PER COMMENTS	AA

SITE INFORMATION:
SITE NAME:
N_STONINGTON_2_CT
LOCATION CODE:
467124
SITE ADDRESS:
227 BOOM BRIDGE ROAD
PAWCATUCK, CT 06379

DRAWN BY:	DATE:
AA	05/23/19
CHECKED BY:	DATE:
KB	05/23/19

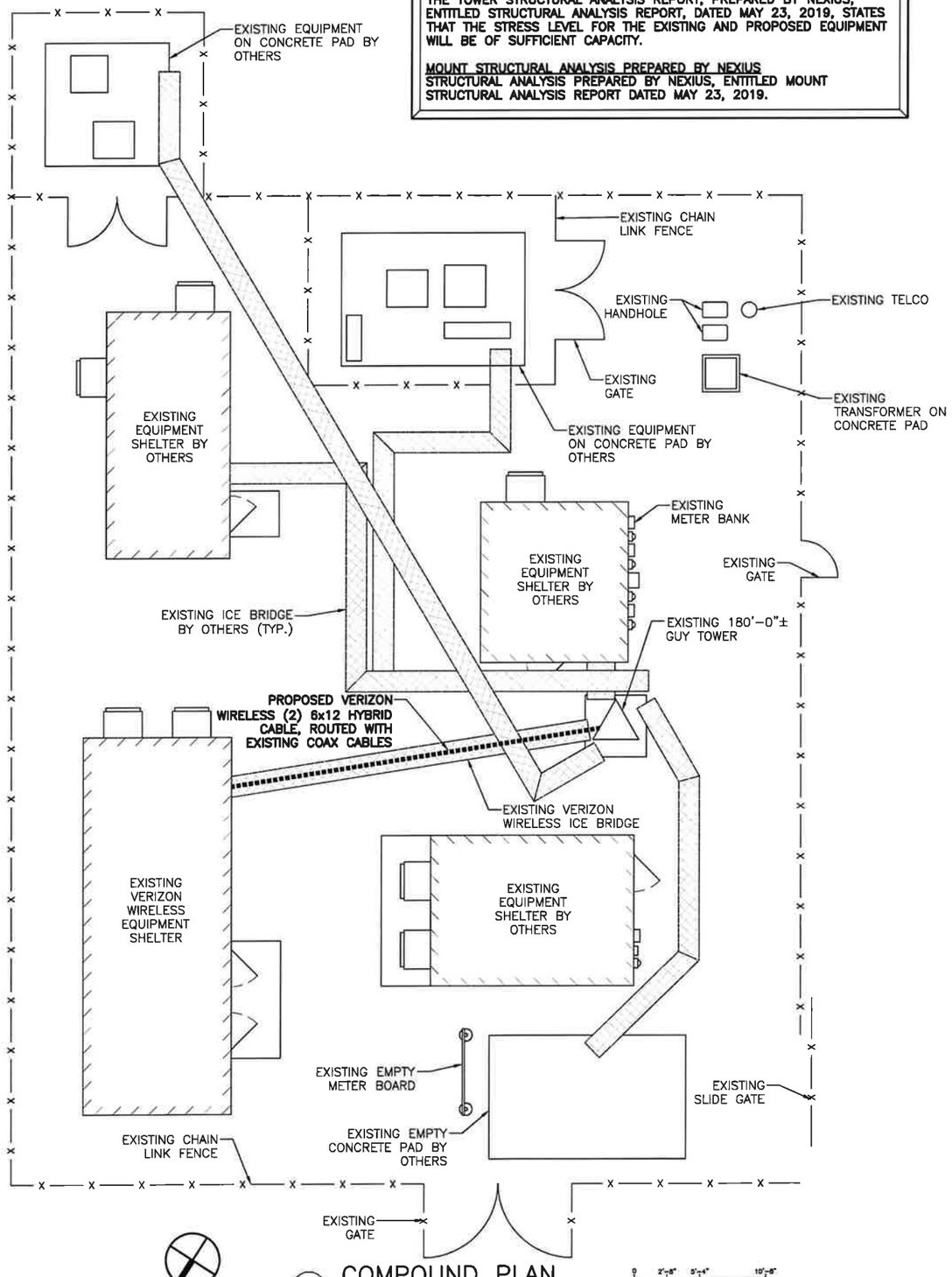
NEXIUS PROJECT NO.:
VZ11509

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
T-1

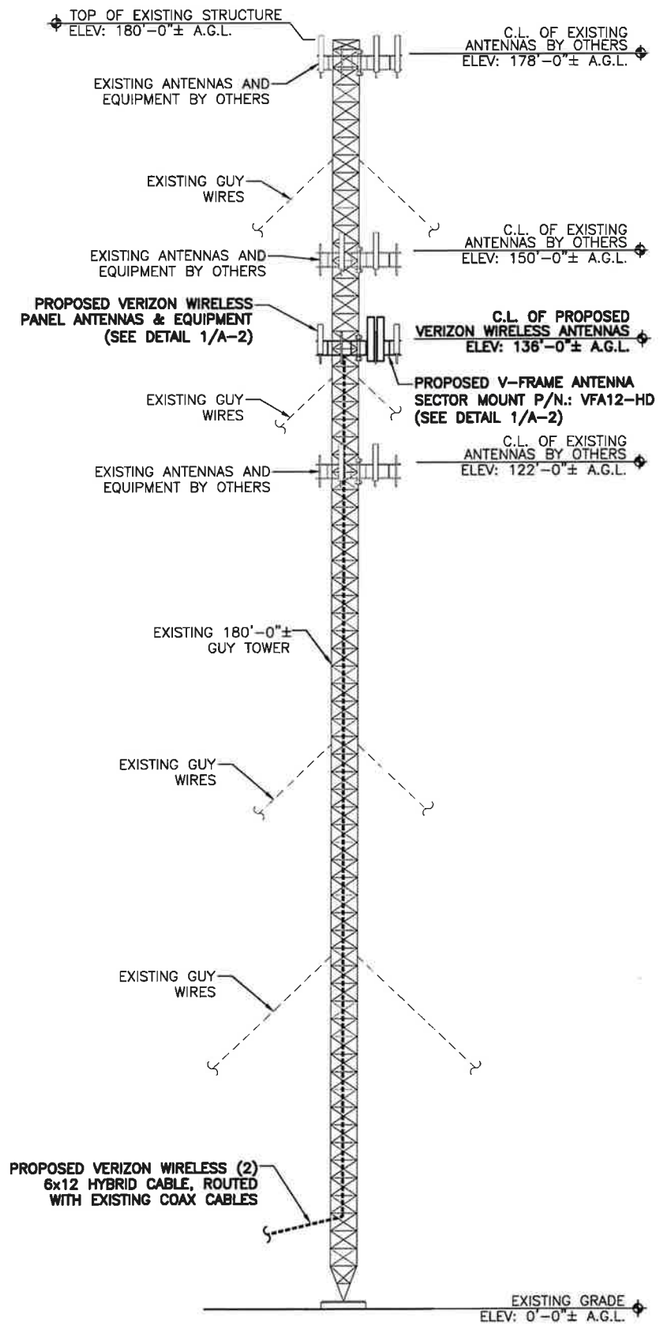
TOWER STRUCTURAL ANAYLSIS REPORT PREPARED BY NEXIUS
THE TOWER STRUCTURAL ANALYSIS REPORT, PREPARED BY NEXIUS, ENTITLED STRUCTURAL ANALYSIS REPORT, DATED MAY 23, 2019, STATES THAT THE STRESS LEVEL FOR THE EXISTING AND PROPOSED EQUIPMENT WILL BE OF SUFFICIENT CAPACITY.

MOUNT STRUCTURAL ANALYSIS PREPARED BY NEXIUS
STRUCTURAL ANALYSIS PREPARED BY NEXIUS, ENTITLED MOUNT STRUCTURAL ANALYSIS REPORT DATED MAY 23, 2019.



1 COMPOUND PLAN
SCALE: 3/16" = 1'-0"

GRAPHIC SCALE: 3/16"=1'-0"



2 TOWER ELEVATION
SCALE: 3/32" = 1'-0"

GRAPHIC SCALE: 3/32"=1'-0"

PREPARED BY:
NEXIUS
TRANFORM YOUR BUSINESS...THROUGH WIRELESS
A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

APPLICANT:
CELLCO PARTNERSHIP d/b/a
verizon
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492

PROFESSIONAL STAMP:

STATE OF CONNECTICUT
JIAZHU HU
31530
LICENSED PROFESSIONAL ENGINEER

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	05/13/19	FOR CONSTRUCTION	AA
1	05/23/19	REVISED PER COMMENTS	AA

SITE INFORMATION:

SITE NAME:
N_STONINGTON_2_CT

LOCATION CODE:
467124

SITE ADDRESS:
227 BOOM BRIDGE ROAD
PAWCATUCK, CT 06379

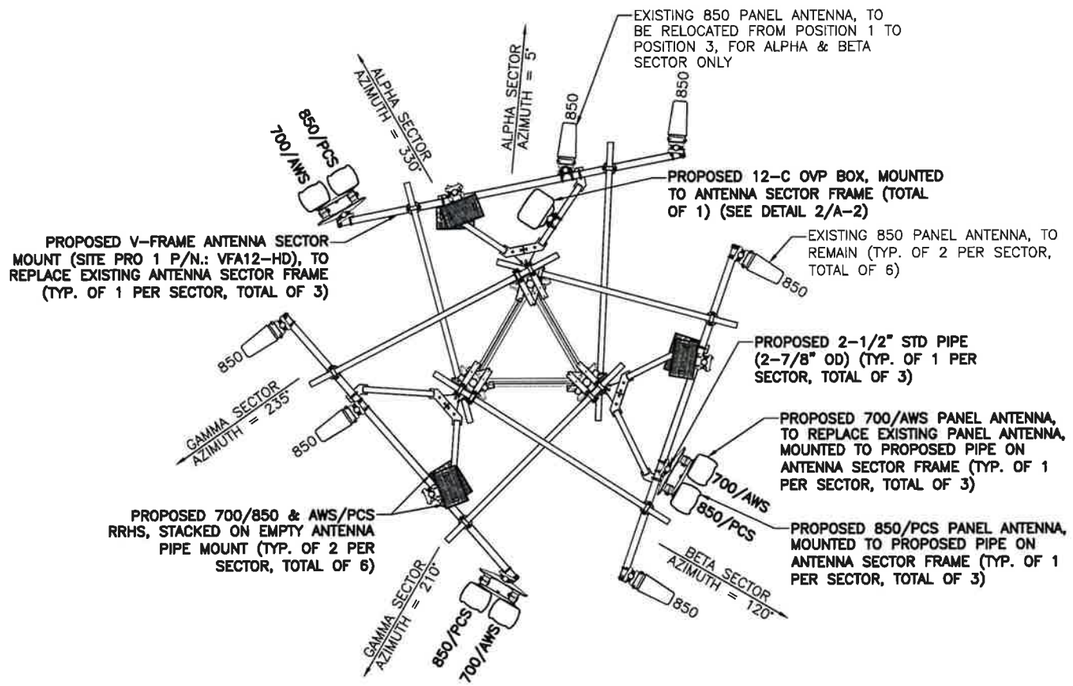
DRAWN BY:	DATE:
AA	05/23/19
CHECKED BY:	DATE:
KB	05/23/19

NEXIUS PROJECT NO.:
VZ11509

SHEET TITLE:
COMPOUND PLAN & TOWER ELEVATION

SHEET NUMBER:
A-1

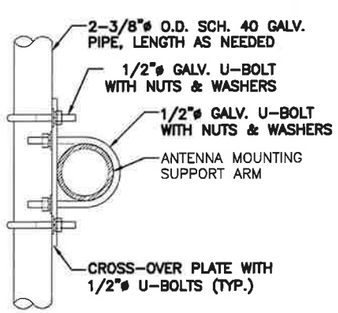
NOTE:
REMOVE EXISTING 700 RRHS LOCATED IN THE SHELTER.



APPROX. NORTH

1 ANTENNA PLAN
SCALE: 3/8" = 1'-0"

GRAPHIC SCALE: 3/8"=1'-0"



2 PIPE MOUNT TO ANTENNA MOUNT SUPPORT ARM DETAIL
SCALE: N.T.S.

SCOPE OF WORK:

ALPHA SECTOR:
- REMOVE (2) EXISTING 700 PANEL ANTENNA.
- REMOVE (2) EXISTING DIPLEXERS.
- REMOVE (1) ANTENNA PIPE MOUNT.
- REMOVE (1) ANTENNA SECTOR MOUNT.
- INSTALL (1) NEW QUINTEL QS6656-5D 700/AWS ANTENNA AS SHOWN ON PLANS.
- INSTALL (1) NEW QUINTEL QS6656-5D 850/PCS ANTENNA AS SHOWN ON PLANS.
- INSTALL (1) NEW QUINTEL AS-005245 SIDE-BY-SIDE ANTENNA MOUNTING BRACKET W/ 2-1/2" STD PIPE (2-7/8" OD) FOR 700/AWS & 850/PCS ANTENNAS.
- INSTALL (1) V-FRAME ANTENNA SECTOR MOUNT P/N.: VFA12-HD.
- INSTALL (1) RRH-BR04C B5/B13 700/850 RRH AT ANTENNAS, AS SHOWN ON PLANS.
- INSTALL (1) RRH-BR049 B2/B66A 850/PCS RRH AT ANTENNAS, AS SHOWN ON PLANS.
- INSTALL (1) 1x1 HYBRID CABLE FROM 6C OVP BOX TO 700/850 RRH.
- INSTALL (1) 1x1 HYBRID CABLE FROM 6C OVP BOX TO AWS/PCS RRH.
- INSTALL NEW RET CABLE FROM 700/850 RRH TO 700/AWS PANEL ANTENNA.
- INSTALL NEW RET CABLE FROM AWS/PCS RRH TO 850/PCS PANEL ANTENNA.
- INSTALL 1/2" ANTENNA JUMPERS, AS REQUIRED.

BETA SECTOR:
- REMOVE (2) EXISTING 700 PANEL ANTENNA.
- REMOVE (2) EXISTING DIPLEXERS.
- REMOVE (1) ANTENNA PIPE MOUNT.
- REMOVE (1) ANTENNA SECTOR MOUNT.
- INSTALL (1) NEW QUINTEL QS6656-5D 700/AWS ANTENNA AS SHOWN ON PLANS.
- INSTALL (1) NEW QUINTEL QS6656-5D 850/PCS ANTENNA AS SHOWN ON PLANS.
- INSTALL (1) NEW QUINTEL AS-005245 SIDE-BY-SIDE ANTENNA MOUNTING BRACKET W/ 2-1/2" STD PIPE (2-7/8" OD) FOR 700/AWS & 850/PCS ANTENNAS.
- INSTALL (1) V-FRAME ANTENNA SECTOR MOUNT P/N.: VFA12-HD.
- INSTALL (1) RRH-BR04C B5/B13 700/850 RRH AT ANTENNAS, AS SHOWN ON PLANS.
- INSTALL (1) RRH-BR049 B2/B66A 850/PCS RRH AT ANTENNAS, AS SHOWN ON PLANS.
- INSTALL (1) 1x1 HYBRID CABLE FROM 6C OVP BOX TO 700/850 RRH.
- INSTALL (1) 1x1 HYBRID CABLE FROM 6C OVP BOX TO AWS/PCS RRH.
- INSTALL NEW RET CABLE FROM 700/850 RRH TO 700/AWS PANEL ANTENNA.
- INSTALL NEW RET CABLE FROM AWS/PCS RRH TO 850/PCS PANEL ANTENNA.
- INSTALL 1/2" ANTENNA JUMPERS, AS REQUIRED.

GAMMA SECTOR:
- REMOVE (2) EXISTING 700 PANEL ANTENNA.
- REMOVE (2) EXISTING DIPLEXERS.
- REMOVE (1) ANTENNA PIPE MOUNT.
- REMOVE (1) ANTENNA SECTOR MOUNT.
- INSTALL (1) NEW QUINTEL QS6656-5D 700/AWS ANTENNA AS SHOWN ON PLANS.
- INSTALL (1) NEW QUINTEL QS6656-5D 850/PCS ANTENNA AS SHOWN ON PLANS.
- INSTALL (1) NEW QUINTEL AS-005245 SIDE-BY-SIDE ANTENNA MOUNTING BRACKET W/ 2-1/2" STD PIPE (2-7/8" OD) FOR 700/AWS & 850/PCS ANTENNAS.
- INSTALL (1) V-FRAME ANTENNA SECTOR MOUNT P/N.: VFA12-HD.
- INSTALL (1) RRH-BR04C B5/B13 700/850 RRH AT ANTENNAS, AS SHOWN ON PLANS.
- INSTALL (1) RRH-BR049 B2/B66A 850/PCS RRH AT ANTENNAS, AS SHOWN ON PLANS.
- INSTALL (1) 1x1 HYBRID CABLE FROM 6C OVP BOX TO 700/850 RRH.
- INSTALL (1) 1x1 HYBRID CABLE FROM 6C OVP BOX TO AWS/PCS RRH.
- INSTALL NEW RET CABLE FROM 700/850 RRH TO 700/AWS PANEL ANTENNA.
- INSTALL NEW RET CABLE FROM AWS/PCS RRH TO 850/PCS PANEL ANTENNA.
- INSTALL 1/2" ANTENNA JUMPERS, AS REQUIRED.

INSTALL (1) NEW 12C OVP BOXES (DB-C1-12C-24AB-0Z) AT ANTENNAS, AS SHOWN ON PLANS.
INSTALL (2) NEW 6x12 HYBRID CABLES AS SHOWN ON THE PLANS.

DESIGN SHOWN HEREIN IS BASED OFF A RFDS PROVIDED BY VERIZON WIRELESS DATED 01/08/19.

PREPARED BY:
NEXIUS
TRANFORM YOUR BUSINESS, THROUGH WIRELESS
A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

APPLICANT:
CELLCO PARTNERSHIP d/b/a
verizon
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 22"x34" SIZE PRINTED MEDIA ONLY. 11"x17" IS DEEMED HALF SCALE, AND ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	05/13/19	FOR CONSTRUCTION	AA
1	05/23/19	REVISED PER COMMENTS	AA

SITE INFORMATION:
SITE NAME:
N_STONINGTON_2_CT
LOCATION CODE:
467124
SITE ADDRESS:
227 BOOM BRIDGE ROAD
PAWCATUCK, CT 06379

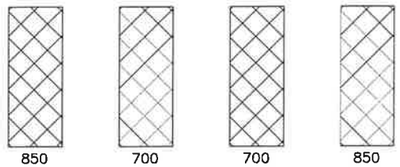
DRAWN BY:	DATE:
AA	05/23/19
CHECKED BY:	DATE:
KB	05/23/19

NEXIUS PROJECT NO.:
VZ11509

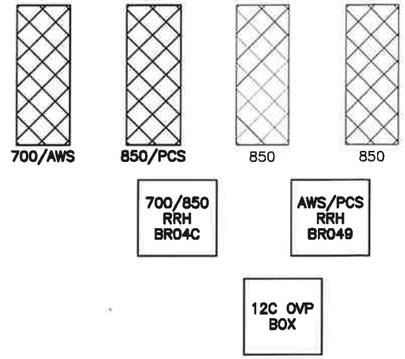
SHEET TITLE:
ANTENNA PLAN, DETAILS & NOTES

SHEET NUMBER:
A-2

NOTE: ALL ANTENNAS ARE VIEWED FROM THE REAR

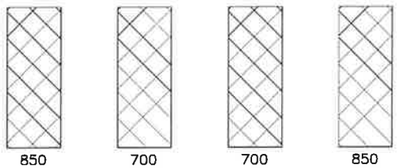


EXISTING CONFIGURATION

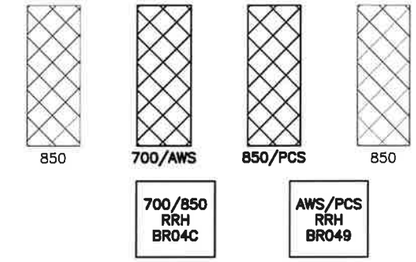


PROPOSED CONFIGURATION

ALPHA SECTOR ANTENNA CONFIGURATION

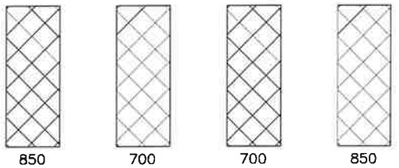


EXISTING CONFIGURATION

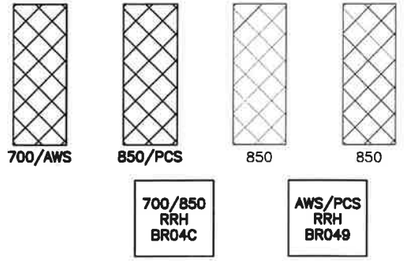


PROPOSED CONFIGURATION

BETA SECTOR ANTENNA CONFIGURATION



EXISTING CONFIGURATION



PROPOSED CONFIGURATION

GAMMA SECTOR ANTENNA CONFIGURATION

GENERAL NOTES:

1. INSTALL ALL EQUIPMENT, MOUNTING BRACKETS, AND HARDWARE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2. GROUND DISTRIBUTION BOXES, MOUNTING PIPES, AND RRH'S IN ACCORDANCE WITH THE NEC ARTICLE 250 & THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
3. INSTALLED EQUIPMENT AND MOUNTING BRACKETS SHALL NOT INTERFERE WITH CLIMBING ACCESS NOR ANY INSTALLED SAFETY DEVICES.

PREPARED BY:

NEXIUS
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

APPLICANT:

CELLCO PARTNERSHIP d/b/a
verizon

20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492

PROFESSIONAL STAMP:

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	05/13/19	FOR CONSTRUCTION	AA
1	05/23/19	REVISED PER COMMENTS	AA

SITE INFORMATION:

SITE NAME:
N_STONINGTON_2_CT

LOCATION CODE:
467124

SITE ADDRESS:
227 BOOM BRIDGE ROAD
PAWCATUCK, CT 06379

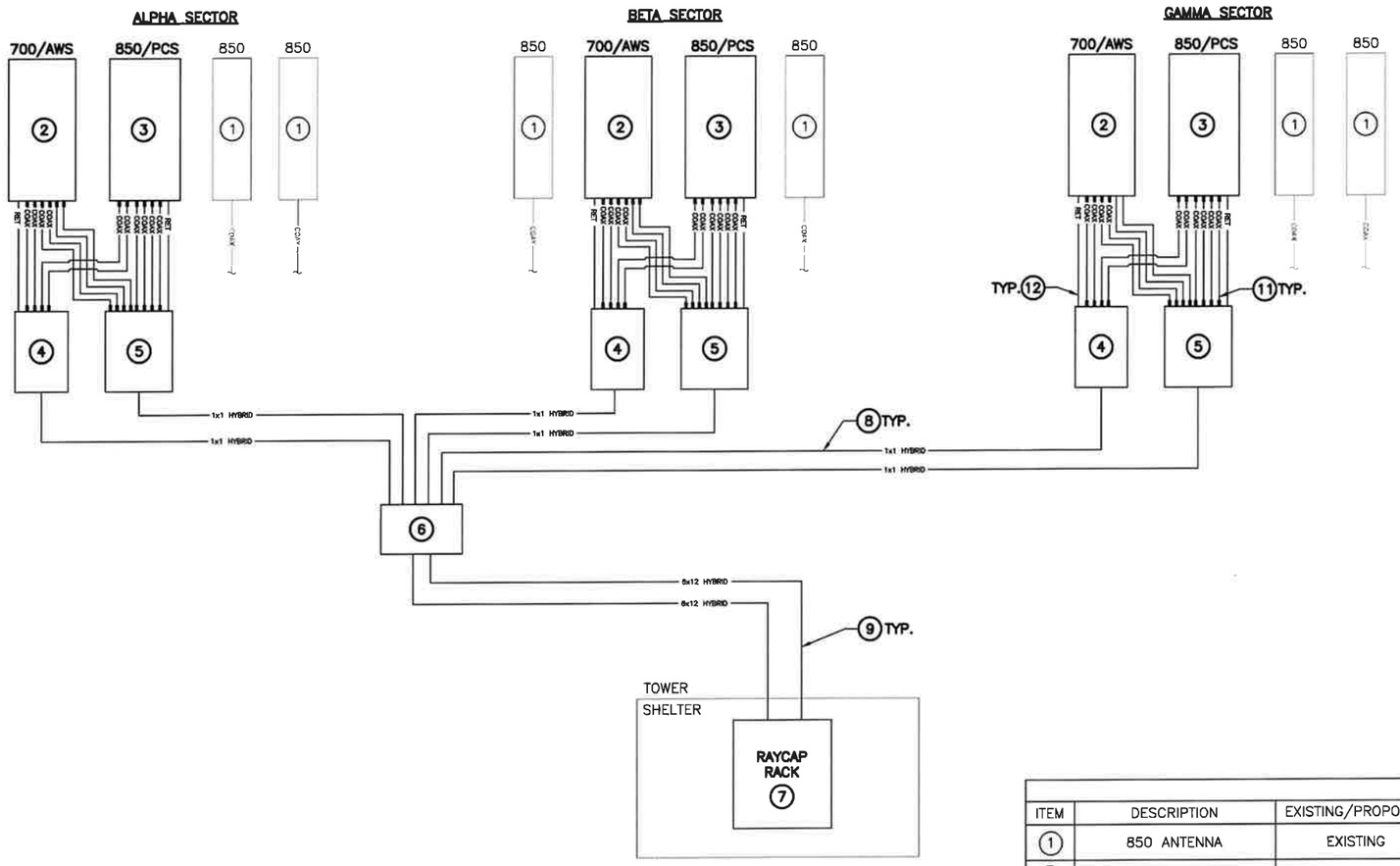
DRAWN BY:	DATE:
AA	05/23/19
CHECKED BY:	DATE:
KB	05/23/19

NEXIUS PROJECT NO.:
VZ11509

SHEET TITLE:
ANTENNA SECTOR CONFIGURATIONS, DETAILS & NOTES

SHEET NUMBER:
A-3

NOTE: ALL ANTENNAS ARE VIEWED FROM THE REAR



GENERAL NOTES:

1. CONTRACTOR SHALL REFER TO THE LATEST VERIZON WIRELESS RFDS WHICH MAY INCLUDE ANTENNA SECTOR AZIMUITHS/ANTENNA CHANGES, ETC. THAT ARE REQUIRED AS PART OF THE PROJECT.
2. CONTRACTOR SHALL SECURE ALL CONTROL CABLES IN ACCORDANCE WITH INDUSTRY STANDARDS & MANUFACTURERS INSTRUCTIONS. EXTERIOR CONTROL CABLES MAY BE TAPED OR TIE-WRAPPED TO EXISTING COAXIAL CABLES EVERY 4' MAX. FOR HORIZONTAL RUNS. CONTRACTOR MAY USE HOISTING GRIPS AT TOP OF VERTICAL CABLE RUNS IN CERTAIN APPLICATIONS.
3. RET CABLES SHALL BE ROUTED & SECURED ON STRUCTURAL MEMBERS ONLY. DO NOT LOOP THE CABLES IN MID-AIR BETWEET ANTENNAS.
4. CONTRACTOR SHALL VERIFY ALL CABLE LENGTHS PRIOR TO CONSTRUCTION.

BILL OF MATERIALS

ITEM	DESCRIPTION	EXISTING/PROPOSED	QTY.	LENGTH	COMMENTS
1	850 ANTENNA	EXISTING	6	NA	EXISTING 850 ANTENNAS, TO REMAIN
2	700/AWS ANTENNA	PROPOSED	3	NA	REPLACE EXISTING PANEL ANTENNA WITH QUINTEL QS6656-5D
3	850/PCS ANTENNA	PROPOSED	3	NA	REPLACE EXISTING PANEL ANTENNA WITH QUINTEL QS6656-5D
4	700/850 RRH	PROPOSED	3	NA	INSTALL 700/850 RRH SAMSUNG B5/B13 RRH BR049 AT ANTENNAS
5	AWS/PCS RRH	PROPOSED	3	NA	INSTALL AWS/PCS RRH SAMSUNG B2/B66A RRH BR049 AT ANTENNAS
6	UPPER 12C OVP BOX	PROPOSED	1	NA	INSTALL DB-C1-12C-24AB-0Z AT ANTENNAS
7	LOWER OVP RACK MOUNT	PROPOSED	1	NA	INSTALL RAYCAP ON NEW EQUIPMENT RACK
8	1x1 HYBRID	PROPOSED	6	15'	INSTALL HYBRID JUMPERS AT NEW 700/850 & AWS/PCS RRH'S
9	6x12 HYBRID	PROPOSED	2	210'±	ROUTED FROM SHELTER TO TOWER
10	RET CABLE	PROPOSED	6	6.6'± (2M)	ROUTED AS SHOWN ON SCHEMATIC
11	1/2" COAX CABLES	PROPOSED	36	15' EA.	ROUTED AS SHOWN ON SCHEMATIC
12	SIDE-BY-SIDE ANTENNA MOUNTING BRACKET	PROPOSED	3	NA	INSTALL QUINTEL AS-005245 SIDE-BY-SIDE ANTENNA MOUNTING BRACKET FOR 700/AWS & 850/PCS ANTENNAS ONLY

1. ITEMS SHOWN ARE FOR MAJOR DESIGN ELEMENTS ONLY, REFER TO VERIZON WIRELESS' B.O.M. FOR ALL MANUFACTURERS PART NUMBERS & ACCESSORY ITEMS REQUIRED FOR A COMPLETE INSTALLATION.
2. CONTRACTOR SHALL REFER TO THE LATEST VERIZON WIRELESS RFDS WHICH MAY INCLUDE ANTENNA SECTOR AZIMUTHS/ANTENNA CHANGES, ETC. THAT ARE REQUIRED AS PART OF THE PROJECT.

* SIGNIFIES LEASE ONLY.

PREPARED BY:

NEXIUS
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

APPLICANT:

CELLCO PARTNERSHIP d/b/a
verizon

20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 22"x34" SIZE PRINTED MEDIA ONLY. 11"x17" IS DEEMED HALF SCALE, AND ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	05/13/19	FOR CONSTRUCTION	AA
1	05/23/19	REVISED PER COMMENTS	AA

SITE INFORMATION:

SITE NAME:
N_STONINGTON_2_CT

LOCATION CODE:
467124

SITE ADDRESS:
227 BOOM BRIDGE ROAD
PAWCATUCK, CT 06379

DRAWN BY:	DATE:
AA	05/23/19
CHECKED BY:	DATE:
KB	05/23/19

NEXIUS PROJECT NO.:
VZ11509

SHEET TITLE:
RET SYSTEM WIRING SCHEMATIC

SHEET NUMBER:
A-4

Quintel®
New Dimensions in Wireless

QS6656-5D

6ft 65° XXX MultiServ™ 6-Port Antenna

2x698-806MHz & 824-894MHz / **4x1695-2400MHz**

MultiServ.

- Provides 6 antenna Ports in a slim-line form factor
- Independent 700 & 850 Tilt for use with **dual band radios**
- Optimized Azimuth patterns for Min Inter-Sector Interference

- 700, 850, PCS, AWS & WCS bands in one antenna
- AISG & 3GPP compliant internal (RET) with Smart Bias T
- Industry leading Minimal Wind-Load design

The Quintel MultiServ™ Multiband 6 Port Antenna with patented QTilt™ technology uniquely delivers three independent services in a single slim-line antenna. This antenna allows for the use of **dual band radios** with 700 and 850 on a single pair of lowband ports while offering independent tilt between the 700 and 850 bands. This enables existing antenna network sites to be upgraded constraint free to add new services such as LTE for 700, 850, PCS, AWS and WCS bands with the replacement of one antenna. The QS6656-5D also provides 4x1695-2400MHz ports as two side-by-side (CLA-2X) arrays for connection to 2T4R/4T4R services.

Electrical Characteristics	2x Ports 1&2		4x Ports 3-6			
Operating Frequency (MHz)	698-806	824-894	1695-2400			
	698-806	824-894	1695-1780	1850-1990	2110-2180	2300-2400
Azimuth beamwidth[1]	67°	64°	67°	63°	60°	59°
Elevation beamwidth[1]	12.1°	10.6°	6.2°	5.9°	5.2°	4.8°
Gain[1] (dBi)	12.5	13.4	17	17.1	17.8	18.0
Polarization	±45°		2x ±45°			
Electrical down-tilt range	2°-10°	2°-10°	0° – 8°			
Upper SLL (20° > mainbeam)[1]	-17dB	-17dB	-16dB	-18dB	-17dB	-16dB
Front to Back Ratio(180°±10°)[1]	≥25dB	≥25dB	≥25dB	≥25dB	≥28dB	≥30dB
Port to Port isolation[1]	≥25dB	≥25dB	≥30dB	≥30dB	≥30dB	≥30dB
Return loss (VSWR)	14dB(1.5)	14dB(1.5)	14dB(1.5)	14dB(1.5)	14dB (1.5)	14dB(1.5)
X Polar Discrimination (at 0°)[1]	>16dB	>16dB	>19dB	>19dB	>19dB	>19dB
Max Power handling (per any port)	250 watts		250 watts			
PIM (3rd Order) (2x43dBm)	>153dBc		>153dBc			
X Band PIM (3rd Order) (2x43dBm)	>159dBc					

[1] Typical Performance across frequency and Downtilt.

Mechanical Characteristics	
Dimensions	L 72"(1828mm) x W 12"(304mm) x D 9.6"(245mm)
Weight (excl mounting brackets)	92.5lbs (42.0kg)
No. of Connectors	6x 4.3-10 DIN Female Long Neck
Max Wind Speed	150mph (67m/s)
Equivalent Flat Plate Area[2]	Front: 2.6ft² (0.24m²) Side: 5ft² (0.48m²)
Wind Load @160km/h (45m/s)[2]	Front: 284.7N (64 lbs), Side: 535.5N (120.4 lbs)
Operating Temperature	-40°C to +65°C

[2] Derived from wind tunnel measurements

Fully Integrated RET Characteristics	
AISG Standards	V1.1, V 2.0 and 3GPP
Factory Default	AISG 2.0
Surge Immunity	IEC 61000-4-5:2005 4KV (AISG PIN)
Device Type	SRET Type 1
AISG Data rate	9.6 kbps
No of connectors	2in/2out.
Connector type	IEC 60130-9 (Ed 3.0)
MTBF	36,000 Operational moves

RET Configuration

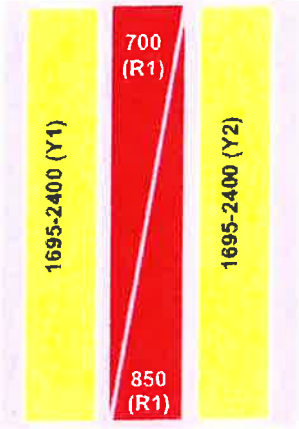
The Quintel MultiServ™ Multiband 6 Port Antenna has the following Array, RF Port and AISG I/O Configurations.

The 6-Port array topology consists of 3 radiating arrays.

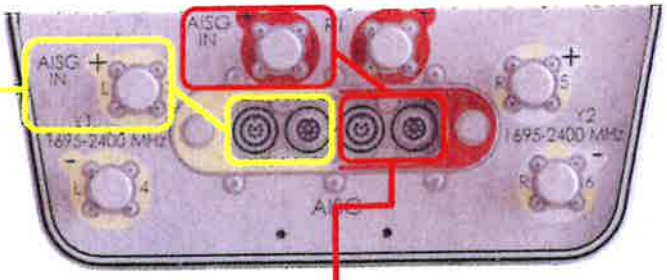
R1 – 698-806 & 824-894MHz
Y1 – 1695-2400MHz
Y2 – 1695-2400MHz

RF Connector Port Configuration

	Ports	Freq (MHz)
R1	1-2	698-806 & 824-894
Y1	3-4	1695-2400



The RET Devices can be communicated with either via the designated external AISG connector or RF Port as shown below.



AISG I/O Configuration

RET Device	Band	RF Ports
3	1695-2400	3-6

AISG I/O Configuration

RET Device	Band	RF Ports
1	698-806	1-2
2	824-894	1-2

Multiband Optimization

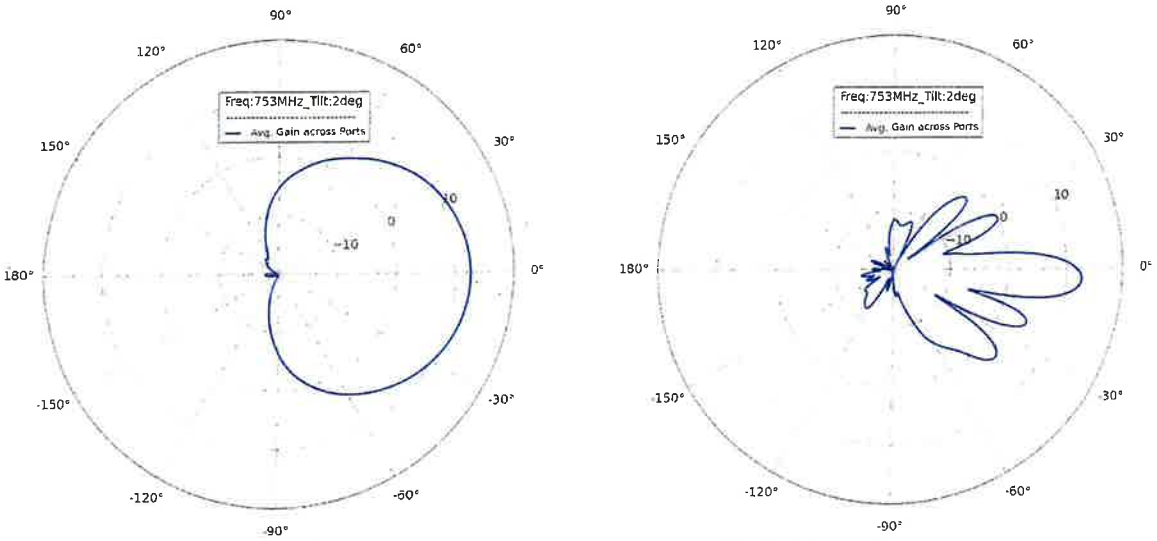
The Quintel MultiServ™ Multiband QSx656-5D series of 6 Port Antennas are the only antenna solutions for independently optimizing 700MHz and 850MHz services when dual-band, lowband radios are used at site. Independent tilting ensures that traffic in each band can be optimized for coverage, capacity, interference, contouring at 850MHz band, spectrum border area transitions, and for optimal carrier aggregation tuning in the future.

The tilt of each service is controlled independently via internal RET actuators compliant to AISG1.1, AISG2.0 and 3GPP protocols. The QS6656-5D provides a total of 3 independent tilts:

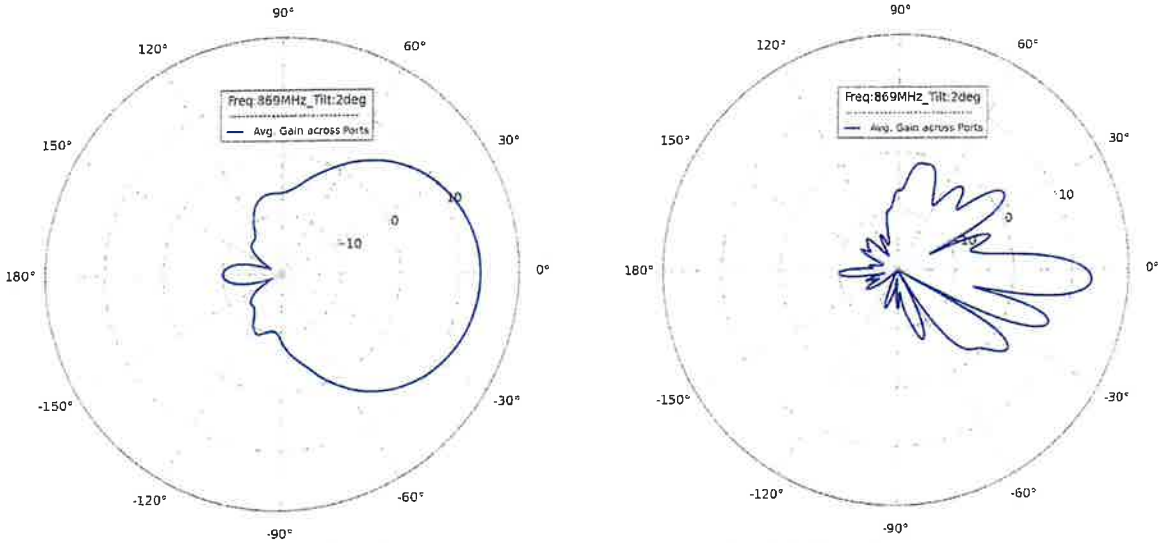
- 1x(698-806MHz)
- 1x(824-894MHz)
- 1x Left & Right Array (1695-2400MHz)

Design Optimization

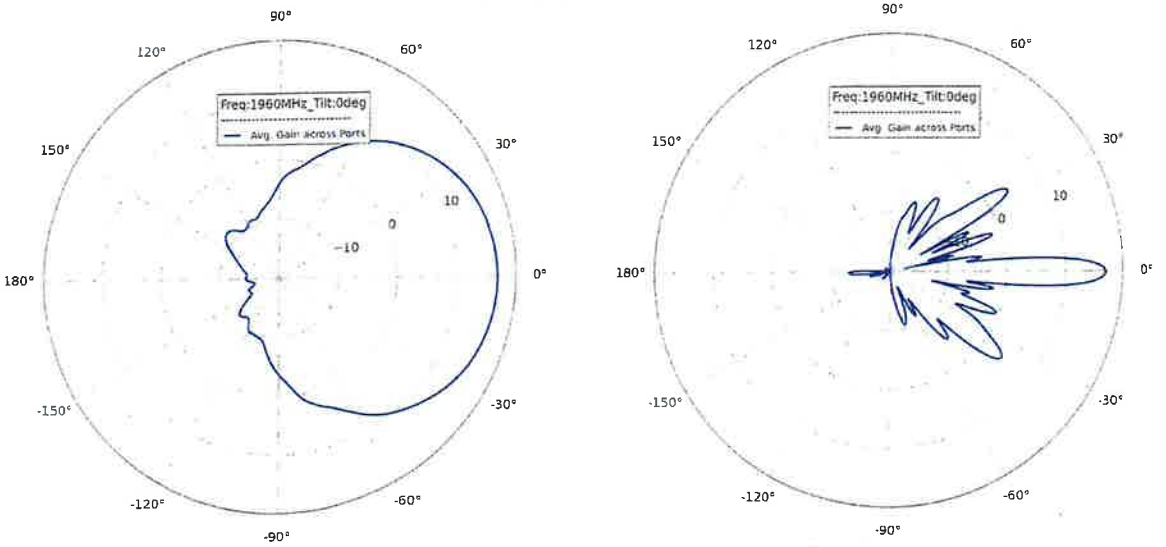
All Quintel antennas use the same mechanical mounting brackets thus making maintenance swaps easy and future proof. All Quintel Antennas also have Azimuth patterns optimized with network design and deployment in mind. The 3dB Azimuth beamwidth is ~65° as with most Antennas, but we have optimized how the pattern rolls-off and where the sidelobes emerge such that there is minimal Inter-Sector Interference when 3x sectors are deployed. For interference limited networks, we can deliver 25% more capacity.



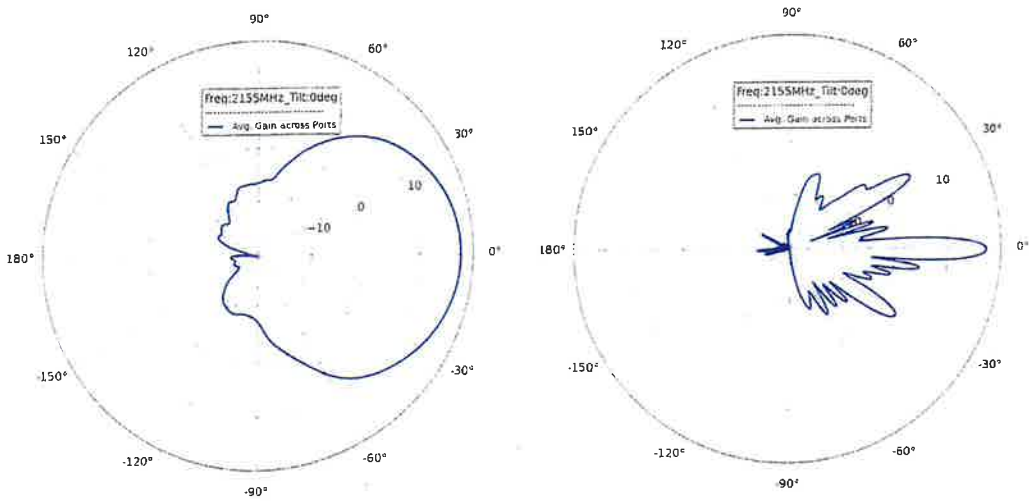
753MHz Azimuth (Left) and Elevation (Right) Patterns



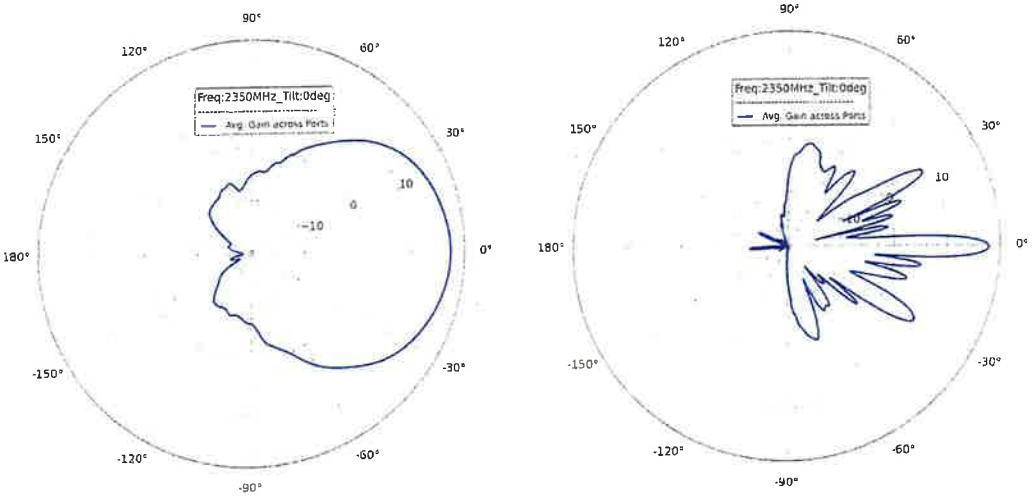
869MHz Azimuth (Left) and Elevation (Right) Patterns



1960MHz Azimuth (Left) and Elevation (Right) Patterns



2155MHz Azimuth (Left) and Elevation (Right) Patterns



2350MHz Azimuth (Left) and Elevation (Right) Patterns

Tel (Americas): +1 (585) 420-8720
info@quintelsolutions.com
www.quintelsolutions.com

SAMSUNG

Dual-Band Radio Unit
700/850MHz (B13/B5)

RFV01U-D2A

Samsung's RFV01U-D2A is a compact remote Radio Unit (RU) designed for deployments that require flexibility in installation and rapid onlining, without compromising on coverage, capacity or operational expenses.

The RFV01U-D2A RU targets dual-band support across Band 13 (700MHz) and Band 5 (850MHz), making it an ideal product for broad coverage footprints across multiple common low-end, long-range frequencies.

The RU handles all Radio Frequency (RF) processing in a single, compact unit, and is designed to interface via CPRI with Samsung's CDU baseband offerings, in both distributed- and central-RAN configurations.

In addition to its minimal footprint and ease of installation, the RU is also designed to reduce cost of ownership through its integrated spectrum analyzer, which allows for remote RF monitoring, greatly reducing the need for on-site maintenance visits.

Features and Benefits

- Dual-band support for broad frequency coverage
- Minimal footprint reduces site costs
- Rapid, easy installation
- Flexibly deployable in any location
- Remote RF monitoring capability
- Convection cooled, silent operation

Key Technical Specifications

Duplex Type: FDD
Operating Frequencies:
B13: DL(746-756MHz)/UL(777-787MHz)
B5: DL(869-894MHz)/UL(824-849MHz)
Instantaneous Bandwidth: 10MHz(B13) + 25MHz(B5)
RF Chain: 4T4R/2T4R/2T2R
Output Power: Total 320W
DU-RU Interface: CPRI (10Gbps)
Dimensions: 380 x 380 x 207mm (29.9L)
Weight: 31.9kg
Input Power: -48V DC
Operating Temp.: -40 - 55°(w/o solar load)
Cooling: Natural convection

SAMSUNG

Dual-Band Radio Unit
AWS/PCS (B66/B2)
RFV01U-D1A

Samsung's RFV01U-D1A is a compact remote Radio Unit (RU) designed for deployments that require flexibility in installation and rapid onlining, without compromising on coverage, capacity or operational expenses.

The RFV01U-D1A RU targets dual-band support across Band 66 (AWS) and Band 2 (PCS), making it an ideal product for broad coverage footprints across multiple common mid-range frequencies.

The RU handles all Radio Frequency (RF) processing in a single, compact unit, and is designed to interface via CPRI with Samsung's CDU baseband offerings, in both distributed- and central-RAN configurations.

In addition to its minimal footprint and ease of installation, the RU is also designed to reduce cost of ownership through its integrated spectrum analyzer, which allows for remote RF monitoring, greatly reducing the need for on-site maintenance visits.

Features and Benefits

- Dual-band support for broad frequency coverage
- Minimal footprint reduces site costs
- Rapid, easy installation
- Flexibly deployable in any location
- Remote RF monitoring capability
- Convection cooled, silent operation
- Built-in Broadcast Auxiliary Services (BAS) filter ensures compliant AWS operation without impacting footprint

Key Technical Specifications

Duplex Type: FDD
Operating Frequencies:
B66: DL(2,110-2,180MHz)/UL(1,710-1,780MHz)
B2: DL(1,930-1,990MHz)/UL(1,850-1,910MHz)
Instantaneous Bandwidth:
70MHz(B66) + 60MHz(B2)
RF Chain: 4T4R/2T4R/2T2R
Output Power: Total 320W
DU-RU Interface: CPRI (10Gbps)
Dimensions: 380 x 380 x 255mm (36.8L)
Weight: 38.3kg
Input Power: -48V DC
Operating Temp.: -40 - 55°(w/o solar load)
Cooling: Natural convection

Product Data Sheet HB158-1-08U8-58J18

HYBRIFLEX™ RRH Hybrid Feeder Cabling Solution, 1-5/8", Single-Mode Fiber

Product Description

RFS' HYBRIFLEX Remote Radio Head (RRH) hybrid feeder cabling solution combines optical fiber and DC power for RRHs in a single lightweight aluminum corrugated cable, making it the world's most innovative solution for RRH deployments.

It was developed to reduce installation complexity and costs at Cellular sites. HYBRIFLEX allows mobile operators deploying an RRH architecture to standardize the RRH installation process and eliminate the need for and cost of cable grounding. HYBRIFLEX combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable. It eliminates the need for junction boxes and can connect multiple RRHs with a single feeder. Standard RFS CELLFLEX² accessories can be used with HYBRIFLEX cable. Both pre-connectorized and on-site options are available.

Figure 1: HYBRIFLEX Series

Features/Benefits

- Aluminum corrugated armor with outstanding bending characteristics – minimizes installation time and enables mechanical protection and shielding
- Same accessories as 1 5/8" coaxial cable
- Outer conductor grounding – Eliminates typical grounding requirements and saves on installation costs
- Lightweight solution and compact design – Decreases tower loading
- Robust cabling – Eliminates need for expensive cable trays and ducts
- Installation of tight bundled fiber optic cable pairs directly to the RRH – Reduces CAPEX and wind load by eliminating need for interconnection
- Optical fiber and power cables housed in single corrugated cable – Saves CAPEX by standardizing RRH cable installation and reducing installation requirements
- Outdoor polyethylene jacket – Ensures long-lasting cable protection

Technical Specifications

Outer Conductor Armor	Corrugated Aluminum	[mm (in)]	46.5 (1.83)
Jacket	Polyethylene, PE	[mm (in)]	50.3 (1.98)
UV-Protection	Individual and External Jacket		Yes
Weight, Approximate		[kg/m (lb/ft)]	1.9 (1.30)
Minimum Bending Radius, Single Bending		[mm (in)]	200 (8)
Minimum Bending Radius, Repeated Bending		[mm (in)]	500 (20)
Recommended/Maximum Clamp Spacing		[m (ft)]	1.0 / 1.2 (3.25 / 4.0)
DC-Resistance Outer Conductor Armor		[Ω/km (Ω/1000ft)]	068 (0.205)
DC-Resistance Power Cable, 8.4mm²(8AWG)		[Ω/km (Ω/1000ft)]	2.1 (0.307)
Version			Single-mode OM3
Quantity, Fiber Count			16 (8 pairs)
Core/Clad		[µm]	50/125
Primary Coating (Acrylate)		[µm]	245
Buffer Diameter, Nominal		[µm]	900
Secondary Protection, Jacket, Nominal		[mm (in)]	2.0 (0.08)
Minimum Bending Radius		[mm (in)]	104 (4.1)
Insertion Loss @ wavelength 850nm		dB/km	3.0
Insertion Loss @ wavelength 1310nm		dB/km	1.0
Standards (Meets or exceeds)			UL94-V0, UL1666 RoHS Compliant
Size (Power)		[mm² (AWG)]	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		[mm² (AWG)]	0.8 (18)
Quantity, Wire Count (Alarm)			4 (2 pairs)
Type			UV protected
Strands			19
Primary Jacket Diameter, Nominal		[mm (in)]	6.8 (0.27)
Standards (Meets or exceeds)			NFPA 130, ICEA S-99-552 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1202/FT4 RoHS Compliant
Installation Temperature		[°C (°F)]	-40 to +65 (-40 to149)
Operation Temperature		[°C (°F)]	-40 to +65 (-40 to149)

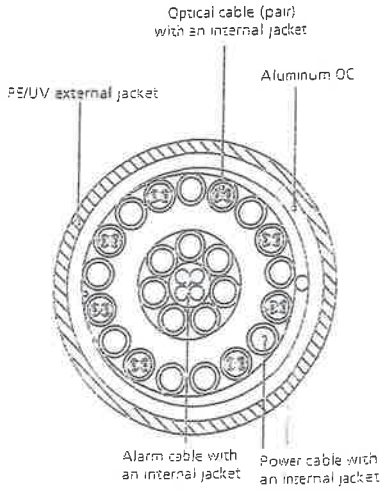


Figure 2: Construction Detail

- This data is provisional and subject to change

ATTACHMENT 2

	General	Power	Density					
Site Name: North Stonington 2								
Tower Height: 180ft								
CARRIER	**# OF CHAN.**	**WATTS ERP**	**HEIGHT**	**CALC. POWER DENS**	**FREQ.**	**MAX. PERMISS. EXP.**	**FRACTION MPE**	**Total**
*AT&T	2	1077	180	700	0.0256	0.4667	0.55%	
*AT&T	2	789	180	700	0.0187	0.4667	0.40%	
*AT&T	2	885	180	850	0.0210	0.5667	0.37%	
*AT&T	4	949	180	1900	0.0451	1.0000	0.45%	
*AT&T	2	553	180	850	0.0131	0.5667	0.23%	
*AT&T	2	414	180	850	0.0098	0.5667	0.17%	
*Sprint	1	377	152	850	0.0064	0.5667	0.11%	
*Sprint	2	377	152	850	0.0127	0.5667	0.22%	
*Sprint	5	512	152	1900	0.0432	1.0000	0.43%	
*Sprint	2	1280	152	1900	0.0432	1.0000	0.43%	
*Sprint	8	778	152	2500	0.1050	1.0000	1.05%	
*T-Mobile	4	1751	120	1900/2100	0.1938	1.0000	1.94%	
*T-Mobile	3	1007	120	700	0.0836	0.4667	1.79%	
VZW PCS	**1**	**5004**	**136**	**0.0973**	**1970**	**1.0000**	**9.73%**	
VZW Cellular	**2**	**376**	**136**	**0.0073**	**869**	**0.5793**	**1.26%**	
VZW Cellular	**1**	**2134**	**136**	**0.0415**	**880**	**0.5866**	**7.07%**	
VZW AWS	**1**	**5879**	**136**	**0.1143**	**2145**	**1.0000**	**11.43%**	
VZW 700	**1**	**1735**	**136**	**0.0337**	**746**	**0.4973**	**6.78%**	
								44.42%
* Source: Siting Council								

ATTACHMENT 3

NEXIUS

Structural Analysis Report

Property Owner	Centerline Communications
Structural Type	180 ft GuyTowe r
Site Address	227 Boom Bridge Rd, Pawcatuck, New London County, CT 06379
Site ID	N/A
Site Name	N/A
Latitude	41.428988
Longitude	-71.80868

Client	**Verizon Wireless** *118 Flanders Road, 3rd Floor* *Westborough, MA 01581*
Site Type	MACRO
Site ID	N/A
Site Name	Pawcatuck – Boom Bridge Road
Location Code	467124

Prepared by	Nexius Solutions, Inc. *2595 North Dallas Parkway Suite 300* *Frisco, TX 75034*
Job/Task Number	VZW467124A01-NX062(SA)
Email	structurals@nexius.com
Phone	972-581-9888
Date	05/23/2019
Result	**Pass (85.0 %)**

NEXIUS

Dear Sir / Madam:

Nexius Solutions is pleased to submit this **Structural Analysis Report** to determine the structural integrity of the referred tower.

Referenced documents used for this analysis are listed in the section DOCUMENTS & REFERENCES. This analysis has been performed in compliance with the

- *2018 Connecticut State Building Code (IBC 2015 w/ State Amendments) and*
- *ANSI/TIA-222-G w/ Addendums, Structural Standard for Antenna Supporting Structures and Antennas.*

Detailed design parameters are listed in Table 1. Analysis loading is detailed in Table 2 and Table 3.

Based on our analysis we have determined the following result:

Tower Stress Level	**Tower Structural:**	**Sufficient (85.0 %)**
	Foundation:	**Sufficient**

Nexius Solutions appreciates the opportunity of providing continued engineering services. Should you have any questions, comments or require additional information, please do not hesitate to contact us.

Sincerely,

Analysis Prepared by:

Jiazhu Hu, P.E.
Engineering Manager
License #: 31530

Digitally signed by Jiazhu Hu, Ph.D., P.E.
DN: cn=Jiazhu Hu, Ph.D., P.E., o=Nexius, ou=Engineering, email=Jiazhu.Hu@Nexius.com, c=US
Date: 2019.05.23 13:09:33 -04'00'

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DOCUMENTS & REFERENCES

- Construction Drawings (FOR CONSTRUCTION), Verizon Location Code:467124, Site Name: Pawcatuck – Boom Bridge Road, by Nexius, dated 05/23/2019.
- RFDS, Location Code: 467124, Site Name: Pawcatuck – Boom Bridge Road , by Verizon Wireless, dated 01/08/2019.
- Structural Analysis Report, ATT Site ID: CT2167, Site Name: Pawcatuck – Boom Bridge Road , by Hudson Design Group LLC, dated 11/14/2018.

DESIGN STANDARDS & PARAMETERS

TABLE 1 STANDARDS & DESIGN PARAMETERS

Codes and Standards	
Building Code	*2018 Connecticut State Building Code (2015 IBC w/ State Amendments)*
TIA Standard	ANSI/TIA-222-G w/ Addendums
Wind Parameters	
Ultimate Wind Speed	136 mph
Nominal Wind Speed	105 mph
Nominal Wind Speed with Ice	50 mph
Radial Ice Thickness	0.75 in
Exposure Category	C
Structure Class	II
Topographic Category	1
Seismic Design Parameters*	
S_S	0.161
S_1	0.058

RESULTS & RECOMMENDATIONS

Based on our analysis, it is determined that the existing tower structure and its foundation to be **adequate** to support the existing and proposed loading.

If the site conditions are different or do not meet requirements, the analysis result would not be valid and Nexius should be notified for re-evaluation

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LOADING

TABLE 2 – PROPOSED ANTENNA AND CABLE INFORMATION

Mount Elev. ft	Ant. Ctr. Elev. ft	Qty	Antenna Manufacturer	Antenna Model	No. of Feed Lines	Feed Line Size in	Note
136.0	136.0	6	Quintel	QS6656-5D	2	Hybrid Fiber: HB158-13U12S24-270-LI	-
		3	Samsung	B2/B66A RRH-BR049			
		3	Samsung	B5/B13 RRH-BR04C			
		1	RFS	DB-C1-12C-24AB-0Z			
		3	Site Pro 1	Sector Mount P/N: VFA12-HD			

TABLE 3 – EXISTING AND RESERVED ANTENNA AND CABLE INFORMATION

Mount Elev. ft	Ant. Ctr. Elev. ft	Qty	Antenna Manufacturer	Antenna Model	No. of Feed Lines	Feed Line Size in	Note
180.0	180.0	3	Powerwave	7770	12 2 1	1 5/8 DC Fiber	1
		2	Powerwave	P65-17-XLH-RR			
		1	CommScope	SBNH-1D6565C			
		3	CCI	TPA-65R-LCUUUU-H8			
		3	Ericsson	RRUS 11			
		3	Ericsson	RRUS B25 4415			
		3	CCI	DTMABP7819VG12A			
		6	Kaelus	DBC0061F1V51-2			
		1	Raycap	DC6-48-60-18-8F			
		3	Unknown	15' Sector Mounts			
152.0	152.0	3	CommScope	NNVV-65B-R4	6 4	1 5/8 1 1/4	1
		3	RFS	APXVTM14			
		3	ALU	TD-RRH8X20-25			
		6	-	RRH-800			
		3	-	RRH 190			
		3	Unknown	15' Sector Mounts			
136.0	136.0*	6	Antel	LPA-80080/4CF (171502)	6	1 5/8	2
		3	*Amphenol*	*BXA-70063-6CF*	-	-	3
		3		*Unknown*			
		6	*RFS*	*FD9R6004/2C-3L*			
		3	*Unknown*	*15 ft T-Frame Mounts*			
120.0	120.0	3	Ericsson	AIR 21 B4A B2P	12	1 5/8	1
		3	Ericsson	KRC118 057/1			
		3	EricssonRRUS-11				
		3	-	TMA			
		3	Unknown	Standoff Side Mounts			
98.0	98.0	1	-	GPS on Standoff Mount	1	1/2	1

* Based on mount mapping and RFDS.

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Notes:
1) Existing Equipment
2) Reserved Equipment
3) Equipment to be removed; Not considered in this analysis

ANALYSIS

tnxTower, a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for required loading cases. Selected output from the analysis is included in APPENDICES.

RESULTS

Tower Structural Capacity Ratios

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	180 - 160	Leg	ROHN 2.5 X STR	2	-45.07	101.57	44.4	Pass
T2	160 - 140	Leg	ROHN 2.5 X STR	59	-41.17	101.57	40.5	Pass
T3	140 - 120	Leg	ROHN 2.5 X STR	115	-62.40	100.86	61.9	Pass
T4	120 - 100	Leg	ROHN 2.5 X STR	172	-62.85	100.85	62.3	Pass
T5	100 - 80	Leg	ROHN 2.5 X STR	231	-56.32	100.56	56.0	Pass
T6	80 - 60	Leg	ROHN 2.5 X STR	288	-55.39	81.62	67.9	Pass
T7	60 - 40	Leg	ROHN 2.5 X STR	319	-55.60	81.62	68.1	Pass
T8	40 - 20	Leg	ROHN 2.5 X STR	352	-59.69	81.62	73.1	Pass
T9	20 - 5	Leg	ROHN 2.5 X STR	385	-59.89	82.19	72.9	Pass
T10	5 - 0	Leg	ROHN 2.5 X STR	414	-63.59	99.33	64.0	Pass
T1	180 - 160	Diagonal	L2x2x1/4	14	-9.44	25.15	37.5	Pass
T2	160 - 140	Diagonal	ROHN TS 1.5 x 11Ga	113	-7.60	17.05	44.6	Pass
T3	140 - 120	Diagonal	ROHN TS 1.5 x 16Ga	170	-4.45	8.99	49.5	Pass
T4	120 - 100	Diagonal	ROHN TS 1.5 x 11Ga	183	-3.36	17.05	19.7	Pass
T5	100 - 80	Diagonal	ROHN TS 1.5 x 16Ga	246	-4.04	8.99	44.9	Pass
T6	80 - 60	Diagonal	ROHN TS 1.5 x 11Ga	316	-3.93	11.22	35.0	Pass
T7	60 - 40	Diagonal	ROHN TS 1.5 x 16Ga	328	-5.19	6.11	85.0	Pass
T8	40 - 20	Diagonal	ROHN TS 1.5 x 16Ga	382	-4.81	6.11	78.8	Pass
T9	20 - 5	Diagonal	ROHN TS 1.5 x 16Ga	396	-4.36	6.13	71.1	Pass
T10	5 - 0	Horizontal	L4x4x1/4	420	-0.29	49.31	25.7	Pass
T1	180 - 160	Top Girt	L2x2x1/4	6	-0.71	16.30	4.3	Pass
T2	160 - 140	Top Girt	ROHN TS 1.5 x 11Ga	63	-1.36	13.50	10.0	Pass
T3	140 - 120	Top Girt	ROHN TS 1.5 x 16Ga	118	0.33	10.23	3.2	Pass
T4	120 - 100	Top Girt	ROHN TS 1.5 x 11Ga	177	1.05	19.61	5.3	Pass
T5	100 - 80	Top Girt	ROHN TS 1.5 x 16Ga	234	0.84	10.23	8.2	Pass
T6	80 - 60	Top Girt	ROHN TS 1.5 x 11Ga	289	-1.46	13.50	10.8	Pass
T7	60 - 40	Top Girt	ROHN TS 1.5 x 16Ga	324	-0.77	7.25	10.6	Pass
T8	40 - 20	Top Girt	ROHN TS 1.5 x 16Ga	355	-1.35	7.25	18.6	Pass
T9	20 - 5	Top Girt	ROHN TS 1.5 x 16Ga	390	-0.97	7.25	13.3	Pass
T10	5 - 0	Top Girt	L4x4x1/4	417	3.15	62.86	5.0	Pass
T1	180 - 160	Bottom Girt	L2x2x1/4	9	1.93	30.39	6.3	Pass
T2	160 - 140	Bottom Girt	ROHN TS 1.5 x 11Ga	66	0.71	19.61	3.6	Pass
T3	140 - 120	Bottom Girt	ROHN TS 1.5 x 16Ga	123	0.64	10.23	6.3	Pass
T4	120 - 100	Bottom Girt	ROHN TS 1.5 x 11Ga	180	0.76	19.61	3.9	Pass
T5	100 - 80	Bottom Girt	ROHN TS 1.5 x 16Ga	235	0.74	10.23	7.2	Pass
T6	80 - 60	Bottom Girt	ROHN TS 1.5 x 11Ga	293	-0.63	13.50	4.7	Pass
T7	60 - 40	Bottom Girt	ROHN TS 1.5 x 16Ga	325	-1.36	7.25	18.8	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T8	40 - 20	Bottom Girt	ROHN TS 1.5 x 16Ga	360	-0.88	7.25	12.2	Pass
T9	20 - 5	Bottom Girt	L3x3x1/2	392	11.01	89.10	12.4	Pass
T1	180 - 160	Guy A@162.527	1/2	435	9.02	16.14	55.9	Pass
		Guy A@162.527	7/8	456	24.73	47.82	51.7	Pass
T3	140 - 120	Guy A@132.178	9/16	444	14.89	21.00	70.9	Pass
T5	100 - 80	Guy A@82.5273	3/4	450	19.61	34.98	56.1	Pass
T7	60 - 40	Guy A@49.7656	1/2	462	8.40	16.14	52.0	Pass
T1	180 - 160	Guy B@162.527	1/2	432	10.46	16.14	64.8	Pass
		Guy B@162.527	7/8	455	25.41	47.82	53.1	Pass
T3	140 - 120	Guy B@132.178	9/16	443	15.86	21.00	75.5	Pass
T5	100 - 80	Guy B@82.5273	3/4	449	22.59	34.98	64.6	Pass
T7	60 - 40	Guy B@49.7656	1/2	461	10.05	16.14	62.3	Pass
T1	180 - 160	Guy C@162.527	1/2	427	10.44	16.14	64.7	Pass
		Guy C@162.527	7/8	451	25.36	47.82	53.0	Pass
T3	140 - 120	Guy C@132.178	9/16	439	15.87	21.00	75.6	Pass
T5	100 - 80	Guy C@82.5273	3/4	445	22.63	34.98	64.7	Pass
T7	60 - 40	Guy C@49.7656	1/2	457	10.06	16.14	62.4	Pass
T1	180 - 160	Top Guy Pull-Off@162.527	2L2x2x1/4x3/8	454	9.08	60.91	14.9	Pass
T3	140 - 120	Top Guy Pull-Off@132.178	4X3/8	442	6.01	48.60	12.4	Pass
T5	100 - 80	Top Guy Pull-Off@82.5273	2L2x2x1/4x3/8	448	8.51	60.91	14.0	Pass
T7	60 - 40	Top Guy Pull-Off@49.7656	4X3/8	459	5.62	48.60	11.6	Pass
T1	180 - 160	Torque Arm Top@162.527	C12x20.7	437	-2.76	173.45	31.4	Pass

	Summary	
Leg (T8)	73.1	Pass
Diagonal (T7)	85.0	Pass
Horizontal (T10)	25.7	Pass
Top Girt (T8)	18.6	Pass
Bottom Girt (T7)	18.8	Pass
Guy A (T3)	70.9	Pass
Guy B (T3)	75.5	Pass
Guy C (T3)	75.6	Pass
Top Guy Pull-Off (T1)	14.9	Pass
Torque Arm Top (T1)	31.4	Pass
RATING =	**85.0**	**Pass**

Foundation Analysis

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Tower Structural	Reactions	Previous Analysis	Present Analysis	Conclusion
Tower Mast	**Axial**	222.8 kips	175 kips	Adequate
	Shear	3.6 kips	2 kips	
Inner Guy	**Uplift**	27.8 kips	19 kips	
	Shear	38.6 kips	26 kips	
Middle Guy	**Uplift**	42.8 kips	29 kips	
	Shear	41.2 kips	28 kips	
Outer Guy	**Uplift**	19.7 kips	13 kips	
	Shear	20.7 kips	13 kips	

ASSUMPTIONS

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with manufacturer's specification.
3) No detailed information of tower structural connections available and they are assumed to be as strong as the members and/or structural components they connect.
4) The existing configuration of antennas, transmission cables, mounts and other appurtenances listed in the referred previous structural analysis are accurate and are as specified in Tables 2 and 3.
5) The tower foundations are in good condition and previous analyses are accurate about the foundation condition and capacities.

This analysis may be affected if any assumptions are not valid or have been made in error. Nexius should be notified to determine the effect on the structural integrity of the tower.

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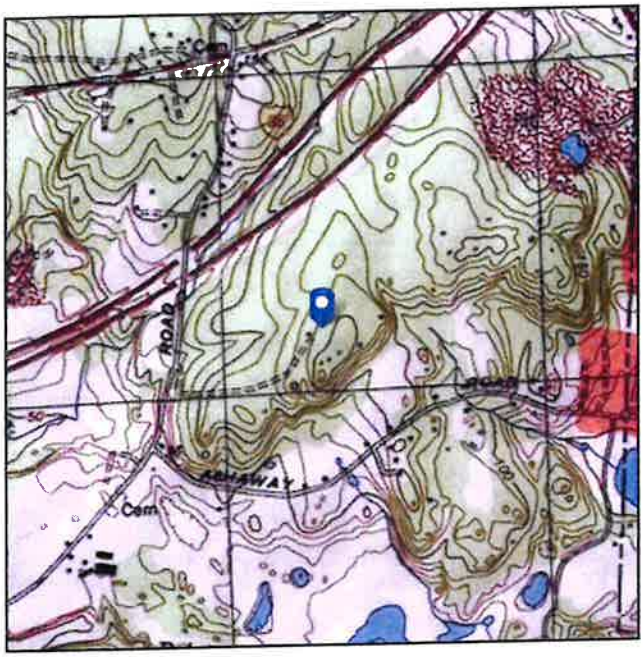
Appendix #1: Loading Parameters and Calculations

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 192.54 ft (NAVD 88)
Latitude: 41.428988
Longitude: -71.80868



Wind

Results:

Wind Speed:	136 Vmph
10-year MRI	80 Vmph
25-year MRI	90 Vmph
50-year MRI	100 Vmph
100-year MRI	110 Vmph
Data Source:	ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014
Date Accessed:	Tue May 07 2019

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 7-10 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 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

ASCE
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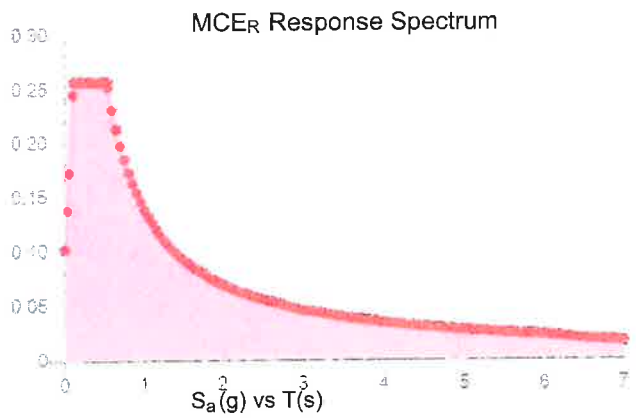
Seismic

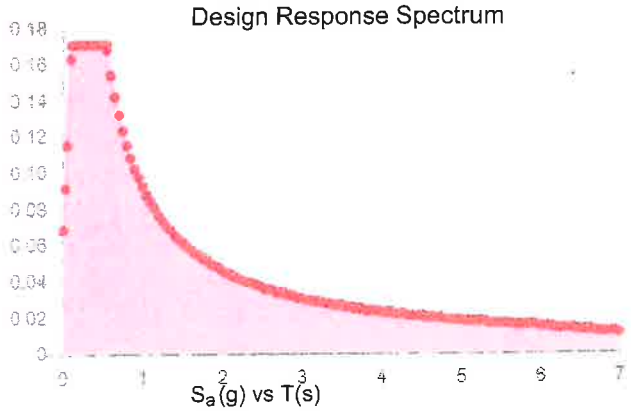
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.161	S_{DS} :	0.172
S_1 :	0.058	S_{D1} :	0.093
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.08
S_{MS} :	0.258	PGA_M :	0.129
S_{M1} :	0.139	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Tue May 07 2019

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

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Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Tue May 07 2019

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 50-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.

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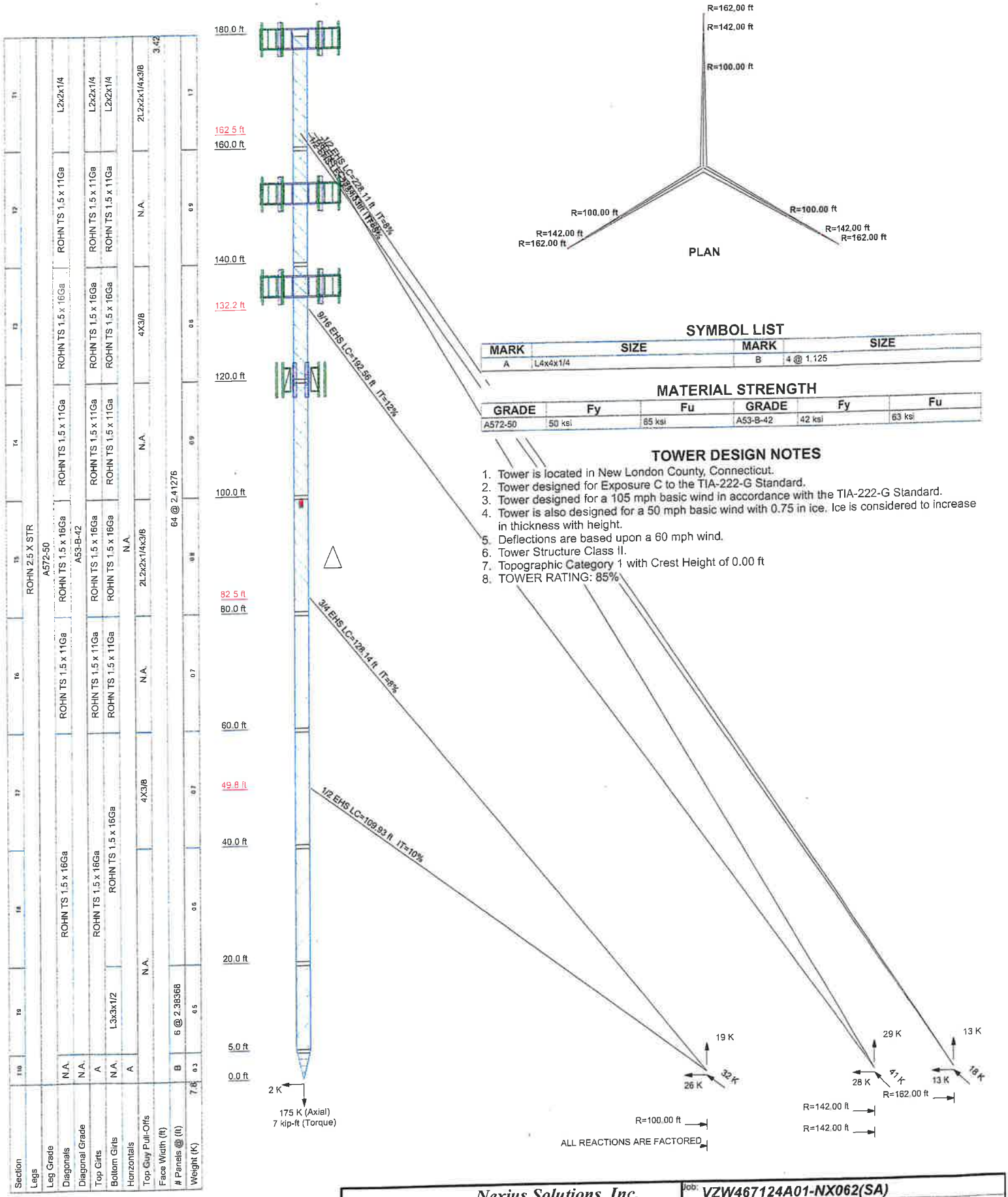
Appendix #2: tnxTower Output



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L4x4x1/4	B	4 @ 1.125

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A53-B-42	42 ksi	63 ksi

TOWER DESIGN NOTES

1. Tower is located in New London County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 105 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 85%

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Frisco, TX 75034
Phone: 972-581-9888
FAX:
Nexius Solutions, Inc.

Job: VZW467124A01-NX062(SA)			
Project: VZW11509-N_Stonington_2_CT			
Client: Verizon	Drawn by: JHU	App'd:	
Code: TIA-222-G	Date: 05/23/19	Scale: NTS	
Path:		Dwg No. E-1	

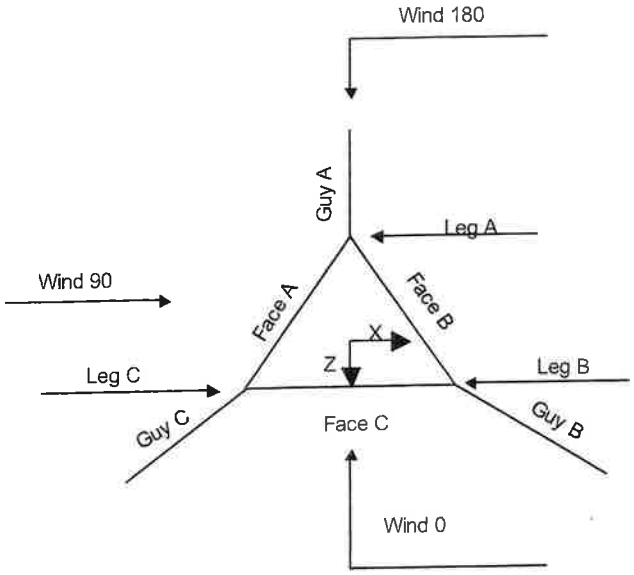
Tower Input Data

The main tower is a 3x guyed tower with an overall height of 180.00 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 3.42 ft at the top and tapered at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

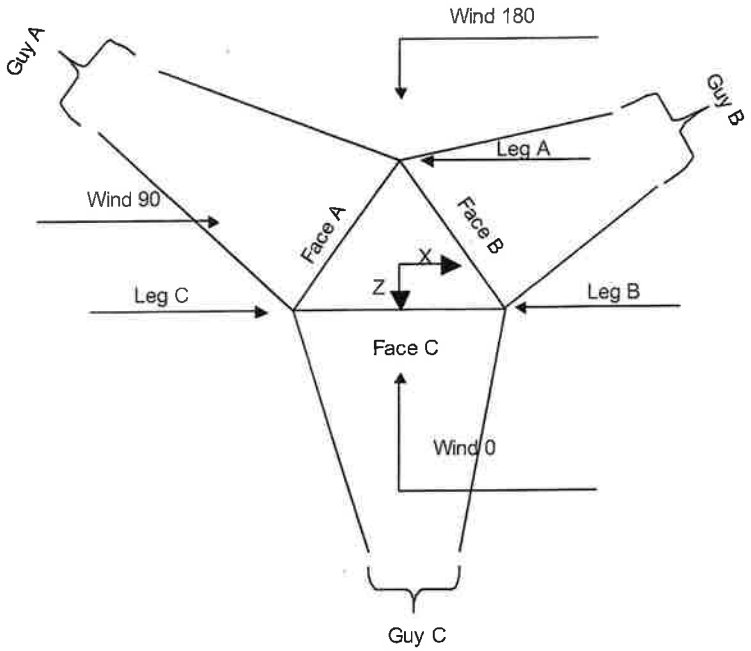
Tower is located in New London County, Connecticut.
Basic wind speed of 105 mph.
Structure Class II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Pressures are calculated at each section.
Safety factor used in guy design is 1.
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.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned	√	Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios	√	Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys	√	Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice		Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients	√	Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-G Bracing Resist. Exemption
√	Include Bolts In Member Capacity	√	Autocalc Torque Arm Areas		Use TIA-222-G Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
√	Secondary Horizontal Braces Leg	√	Sort Capacity Reports By Component		Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)	√	Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
√	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known



Corner & Starmount Guyed Tower



Face Guyed

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	180.00-160.00			3.42	1	20.00
T2	160.00-140.00			3.42	1	20.00
T3	140.00-120.00			3.42	1	20.00
T4	120.00-100.00			3.42	1	20.00
T5	100.00-80.00			3.42	1	20.00
T6	80.00-60.00			3.42	1	20.00
T7	60.00-40.00			3.42	1	20.00
T8	40.00-20.00			3.42	1	20.00
T9	20.00-5.00			3.42	1	15.00
T10	5.00-0.00			3.42	1	5.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	180.00-160.00	2.41	X Brace	No	No	7.0000	1.3750
T2	160.00-140.00	2.41	X Brace	No	No	7.0000	1.3750
T3	140.00-120.00	2.41	X Brace	No	No	7.0000	1.3750
T4	120.00-100.00	2.41	X Brace	No	No	7.0000	1.3750
T5	100.00-80.00	2.41	X Brace	No	No	7.0000	1.3750
T6	80.00-60.00	2.41	K Brace Right	No	No	7.0000	1.3750
T7	60.00-40.00	2.41	K Brace Right	No	No	7.0000	1.3750
T8	40.00-20.00	2.41	K Brace Right	No	No	7.0000	1.3750
T9	20.00-5.00	2.38	K Brace Right	No	No	7.0000	1.3750
T10	5.00-0.00	1.13	X Brace	No	Yes	6.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 180.00-160.00	Pipe	ROHN 2.5 X STR	A572-50 (50 ksi)	Equal Angle	L2x2x1/4	A53-B-42 (42 ksi)
T2 160.00-140.00	Pipe	ROHN 2.5 X STR	A572-50 (50 ksi)	Pipe	ROHN TS 1.5 x 11Ga	A53-B-42 (42 ksi)
T3 140.00-120.00	Pipe	ROHN 2.5 X STR	A572-50 (50 ksi)	Pipe	ROHN TS 1.5 x 16Ga	A53-B-42 (42 ksi)
T4 120.00-100.00	Pipe	ROHN 2.5 X STR	A572-50 (50 ksi)	Pipe	ROHN TS 1.5 x 11Ga	A53-B-42 (42 ksi)
T5 100.00-80.00	Pipe	ROHN 2.5 X STR	A572-50 (50 ksi)	Pipe	ROHN TS 1.5 x 16Ga	A53-B-42 (42 ksi)
T6 80.00-60.00	Pipe	ROHN 2.5 X STR	A572-50 (50 ksi)	Pipe	ROHN TS 1.5 x 11Ga	A53-B-42 (42 ksi)
T7 60.00-40.00	Pipe	ROHN 2.5 X STR	A572-50 (50 ksi)	Pipe	ROHN TS 1.5 x 16Ga	A53-B-42 (42 ksi)
T8 40.00-20.00	Pipe	ROHN 2.5 X STR	A572-50 (50 ksi)	Pipe	ROHN TS 1.5 x 16Ga	A53-B-42 (42 ksi)
T9 20.00-5.00	Pipe	ROHN 2.5 X STR	A572-50 (50 ksi)	Pipe	ROHN TS 1.5 x 16Ga	A53-B-42 (42 ksi)
T10 5.00-0.00	Pipe	ROHN 2.5 X STR	A572-50 (50 ksi)	Equal Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 180.00-160.00	Equal Angle	L2x2x1/4	A36 (36 ksi)	Equal Angle	L2x2x1/4	A36 (36 ksi)
T2 160.00-140.00	Pipe	ROHN TS 1.5 x 11Ga	A53-B-42 (42 ksi)	Pipe	ROHN TS 1.5 x 11Ga	A53-B-42 (42 ksi)
T3 140.00-120.00	Pipe	ROHN TS 1.5 x 16Ga	A53-B-42 (42 ksi)	Pipe	ROHN TS 1.5 x 16Ga	A53-B-42 (42 ksi)
T4 120.00-100.00	Pipe	ROHN TS 1.5 x 11Ga	A53-B-42 (42 ksi)	Pipe	ROHN TS 1.5 x 11Ga	A53-B-42 (42 ksi)
T5 100.00-80.00	Pipe	ROHN TS 1.5 x 16Ga	A53-B-42	Pipe	ROHN TS 1.5 x 16Ga	A53-B-42

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T6 80.00-60.00	Pipe	ROHN TS 1.5 x 11Ga	(42 ksi) A53-B-42 (42 ksi)	Pipe	ROHN TS 1.5 x 11Ga	(42 ksi) A53-B-42 (42 ksi)
T7 60.00-40.00	Pipe	ROHN TS 1.5 x 16Ga	(42 ksi) A53-B-42 (42 ksi)	Pipe	ROHN TS 1.5 x 16Ga	(42 ksi) A53-B-42 (42 ksi)
T8 40.00-20.00	Pipe	ROHN TS 1.5 x 16Ga	(42 ksi) A53-B-42 (42 ksi)	Pipe	ROHN TS 1.5 x 16Ga	(42 ksi) A53-B-42 (42 ksi)
T9 20.00-5.00	Pipe	ROHN TS 1.5 x 16Ga	(42 ksi) A53-B-42 (42 ksi)	Equal Angle	L3x3x1/2	(36 ksi) A36 (36 ksi)
T10 5.00-0.00	Equal Angle	L4x4x1/4	A36 (36 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T10 5.00-0.00	None	Solid Round		A572-50 (50 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T10 5.00-0.00	Equal Angle	L4x4x1/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 180.00-160.00	0.00	0.3750	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 160.00-140.00	0.00	0.3750	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T3 140.00-120.00	0.00	0.3750	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T4 120.00-100.00	0.00	0.3750	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T5 100.00-80.00	0.00	0.3750	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft²	in					in	in	in
T6 80.00-60.00	0.00	0.3750	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T7 60.00-40.00	0.00	0.3750	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T8 40.00-20.00	0.00	0.3750	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T9 20.00-5.00	0.00	0.3750	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T10 5.00-0.00	0.00	0.3750	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

Tower Section Geometry (cont'd)

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X	X Brace Diags Y	K Brace Diags X	K Brace Diags Y	Single Diags X	Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
ft																	
T1 180.00-160.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T2 160.00-140.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T3 140.00-120.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T4 120.00-100.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T5 100.00-80.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T6 80.00-60.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T7 60.00-40.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T8 40.00-20.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T9 20.00-5.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T10 5.00-0.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 180.00-160.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T2 160.00-140.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T3 140.00-120.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T4 120.00-100.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T5 100.00-80.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T6 80.00-60.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T7 60.00-40.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T8 40.00-20.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T9 20.00-5.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T10 5.00-0.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
162.527	EHS	A	1/2	2.15	8%	21000	0.517	227.97	162.00	0.0000	0.00	100%
		B	1/2	2.15	8%	21000	0.517	227.97	162.00	0.0000	0.00	100%
		C	1/2	2.15	8%	21000	0.517	227.97	162.00	0.0000	0.00	100%
132.178	EHS	A	9/16	4.20	12%	21000	0.671	192.36	142.00	0.0000	0.00	100%
		B	9/16	4.20	12%	21000	0.671	192.36	142.00	0.0000	0.00	100%
		C	9/16	4.20	12%	21000	0.671	192.36	142.00	0.0000	0.00	100%
82.5273	EHS	A	3/4	4.66	8%	19000	1.155	128.05	100.00	0.0000	0.00	100%
		B	3/4	4.66	8%	19000	1.155	128.05	100.00	0.0000	0.00	100%
		C	3/4	4.66	8%	19000	1.155	128.05	100.00	0.0000	0.00	100%
162.527	EHS	A	7/8	6.38	8%	19000	1.581	214.38	142.00	0.0000	0.00	100%
		B	7/8	6.38	8%	19000	1.581	214.38	142.00	0.0000	0.00	100%
		C	7/8	6.38	8%	19000	1.581	214.38	142.00	0.0000	0.00	100%
49.7656	EHS	A	1/2	2.69	10%	21000	0.517	109.84	100.00	0.0000	0.00	100%
		B	1/2	2.69	10%	21000	0.517	109.84	100.00	0.0000	0.00	100%
		C	1/2	2.69	10%	21000	0.517	109.84	100.00	0.0000	0.00	100%

Guy Data *(cont'd)*

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
162.527	Torque Arm	6.83	0.0000	Channel	A36 (36 ksi)	Channel	C12x20.7
132.178	Corner						
82.5273	Corner						

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
162.527	Corner						
49.7656	Corner						

Guy Data (cont'd)

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap	Pull-Off Grade	Pull-Off Type	Pull-Off Size
162.53	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Flat Bar	
132.18	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Flat Bar	4X3/8
82.53	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Double Equal Angle	2L2x2x1/4x3/8
162.53	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Double Equal Angle	2L2x2x1/4x3/8
49.77	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Flat Bar	4X3/8

Guy Data (cont'd)

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
162.527	0.12	0.12	0.12		6.13 4.3 sec/pulse	6.13 4.3 sec/pulse	6.13 4.3 sec/pulse	
132.178	0.13	0.13	0.13		2.93 3.0 sec/pulse	2.93 3.0 sec/pulse	2.93 3.0 sec/pulse	
82.5273	0.15	0.15	0.15		2.01 2.4 sec/pulse	2.01 2.4 sec/pulse	2.01 2.4 sec/pulse	
162.527	0.34	0.34	0.34		5.59 4.1 sec/pulse	5.59 4.1 sec/pulse	5.59 4.1 sec/pulse	
49.7656	0.06	0.06	0.06		1.15 1.9 sec/pulse	1.15 1.9 sec/pulse	1.15 1.9 sec/pulse	

Guy Data (cont'd)

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
162.527	No	No	1	1	1	1	1	1
132.178	No	No			1	1	1	1
82.5273	No	No			1	1	1	1
162.527	No	No			1	1	1	1

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
49.7656	No	No			1	1	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
162.527	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
132.178	0.0000 A325X	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
82.5273	0.0000 A325X	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
162.527	0.0000 A325X	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
49.7656	0.0000 A325X	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
162.527	A	81.26	29	7	1.6415
	B	81.26	29	7	1.6415
	C	81.26	29	7	1.6415
132.178	A	66.09	28	6	1.6079
	B	66.09	28	6	1.6079
	C	66.09	28	6	1.6079
82.5273	A	41.26	25	6	1.5339
	B	41.26	25	6	1.5339
	C	41.26	25	6	1.5339
162.527	A	81.26	29	7	1.6415
	B	81.26	29	7	1.6415
	C	81.26	29	7	1.6415
49.7656	A	24.88	23	5	1.4582
	B	24.88	23	5	1.4582
	C	24.88	23	5	1.4582

Feed Line/Linear Appurtenances - Entered As Round Or Flat

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
LDF7-50A (1-5/8 FOAM)	B	No	No	Ar (CaAa)	152.00 - 7.00	0.0000	-0.15	6	6	0.5000	1.9800		0.82

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
LDF7-50A (1-5/8 FOAM)	B	No	No	Ar (CaAa)	136.00 - 7.00	0.0000	0.15	3	3	0.5000	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	B	No	No	Ar (CaAa)	136.00 - 7.00	0.0000	0.28	3	3	0.5000	1.9800		0.82
LDF7-50A (1-5/8 FOAM)	A	No	No	Ar (CaAa)	120.00 - 7.00	0.0000	0	12	6	0.5000	1.9800		0.82
LDF4-50A (1/2 FOAM)	A	No	No	Ar (CaAa)	98.00 - 7.00	0.0000	0.4	1	1	0.5000 0.6300	0.6300		0.15
LDF6-50A (1-1/4 FOAM)	A	No	No	Ar (CaAa)	177.00 - 7.00	0.0000	0.15	1	1	0.5000	1.5500		0.66
LDF6-50A (1-1/4 FOAM)	A	No	No	Ar (CaAa)	152.00 - 7.00	0.0000	0.15	4	4	0.5000	1.5500		0.66
LDF7-50A (1-5/8 FOAM)	A	No	No	Ar (CaAa)	180.00 - 7.00	0.0000	0	12	12	0.5000	1.9800		0.82
Safety Line 3/8	A	No	No	Ar (CaAa)	120.00 - 8.00	0.0000	0.5	1	1	0.3750	0.3750		0.22
FB-L98B-002-XXX(3/8")	A	No	No	Ar (CaAa)	180.00 - 2.00	0.0000	0.25	1	1	0.3937	0.3937		0.06
WR-VG122ST-BRDA(7/16')	A	No	No	Ar (CaAa)	180.00 - 7.00	2.0000	0.3	2	2	0.0000 0.4600	0.4600		0.14
6X12 Hybrid Fiber	B	No	No	Ar (CaAa)	136.00 - 7.00	0.0000	0	2	2	1.9800	0.5000		1.90

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	180.00-160.00	A	0.000	0.000	52.782	0.000	0.21
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
T2	160.00-140.00	A	0.000	0.000	60.687	0.000	0.25
		B	0.000	0.000	14.256	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.00
T3	140.00-120.00	A	0.000	0.000	65.647	0.000	0.27
		B	0.000	0.000	44.368	0.000	0.24
		C	0.000	0.000	0.000	0.000	0.00
T4	120.00-100.00	A	0.000	0.000	113.917	0.000	0.47
		B	0.000	0.000	49.520	0.000	0.27
		C	0.000	0.000	0.000	0.000	0.00
T5	100.00-80.00	A	0.000	0.000	115.051	0.000	0.47
		B	0.000	0.000	49.520	0.000	0.27
		C	0.000	0.000	0.000	0.000	0.00
T6	80.00-60.00	A	0.000	0.000	115.177	0.000	0.47
		B	0.000	0.000	49.520	0.000	0.27
		C	0.000	0.000	0.000	0.000	0.00
T7	60.00-40.00	A	0.000	0.000	115.177	0.000	0.47
		B	0.000	0.000	49.520	0.000	0.27
		C	0.000	0.000	0.000	0.000	0.00
T8	40.00-20.00	A	0.000	0.000	115.177	0.000	0.47
		B	0.000	0.000	49.520	0.000	0.27
		C	0.000	0.000	0.000	0.000	0.00
T9	20.00-5.00	A	0.000	0.000	74.907	0.000	0.31
		B	0.000	0.000	32.188	0.000	0.18
		C	0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
T10	5.00-0.00	A	0.000	0.000	0.118	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
T1	180.00-160.00	A	1.767	0.000	0.000	114.594	0.000	1.61
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
T2	160.00-140.00	A	1.745	0.000	0.000	134.072	0.000	1.85
		B		0.000	0.000	28.033	0.000	0.40
		C		0.000	0.000	0.000	0.000	0.00
T3	140.00-120.00	A	1.720	0.000	0.000	145.665	0.000	1.97
		B		0.000	0.000	108.479	0.000	1.44
		C		0.000	0.000	0.000	0.000	0.00
T4	120.00-100.00	A	1.692	0.000	0.000	200.948	0.000	2.98
		B		0.000	0.000	123.199	0.000	1.61
		C		0.000	0.000	0.000	0.000	0.00
T5	100.00-80.00	A	1.658	0.000	0.000	206.775	0.000	3.01
		B		0.000	0.000	122.306	0.000	1.58
		C		0.000	0.000	0.000	0.000	0.00
T6	80.00-60.00	A	1.617	0.000	0.000	205.837	0.000	2.96
		B		0.000	0.000	121.213	0.000	1.54
		C		0.000	0.000	0.000	0.000	0.00
T7	60.00-40.00	A	1.564	0.000	0.000	203.593	0.000	2.87
		B		0.000	0.000	119.794	0.000	1.50
		C		0.000	0.000	0.000	0.000	0.00
T8	40.00-20.00	A	1.486	0.000	0.000	200.330	0.000	2.75
		B		0.000	0.000	117.733	0.000	1.43
		C		0.000	0.000	0.000	0.000	0.00
T9	20.00-5.00	A	1.361	0.000	0.000	127.141	0.000	1.67
		B		0.000	0.000	74.391	0.000	0.86
		C		0.000	0.000	0.000	0.000	0.00
T10	5.00-0.00	A	1.159	0.000	0.000	0.813	0.000	0.01
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	180.00-160.00	-2.9275	-3.3329	-1.6024	-2.3931
T2	160.00-140.00	-3.1020	-5.4116	-1.8775	-4.0452
T3	140.00-120.00	-0.2153	-5.0868	0.0970	-3.8804
T4	120.00-100.00	-1.4229	-5.3955	-0.4561	-4.6627
T5	100.00-80.00	-1.4101	-5.4396	-0.4833	-4.7926
T6	80.00-60.00	-1.5215	-5.7224	-0.6809	-6.1860
T7	60.00-40.00	-1.4724	-5.6193	-0.6714	-6.0439
T8	40.00-20.00	-1.5215	-5.7224	-0.7188	-6.2163
T9	20.00-5.00	-1.4147	-5.4619	-0.7228	-5.9242

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
T10	5.00-0.00	-0.0293	-0.0891	-0.0560	-0.1631

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	7	LDF6-50A (1-1/4 FOAM)	160.00 - 177.00	0.6000	0.3110
T1	9	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.3110
T1	11	FB-L98B-002-XXX(3/8")	160.00 - 180.00	0.6000	0.3110
T1	12	WR-VG122ST-BRDA(7/16")	160.00 - 180.00	0.6000	0.3110
T2	1	LDF7-50A (1-5/8 FOAM)	140.00 - 152.00	0.6000	0.3702
T2	7	LDF6-50A (1-1/4 FOAM)	140.00 - 160.00	0.6000	0.3702
T2	8	LDF6-50A (1-1/4 FOAM)	140.00 - 152.00	0.6000	0.3702
T2	9	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.3702
T2	11	FB-L98B-002-XXX(3/8")	140.00 - 160.00	0.6000	0.3702
T2	12	WR-VG122ST-BRDA(7/16")	140.00 - 160.00	0.6000	0.3702
T3	1	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.3502
T3	3	LDF7-50A (1-5/8 FOAM)	120.00 - 136.00	0.6000	0.3502
T3	4	LDF7-50A (1-5/8 FOAM)	120.00 - 136.00	0.6000	0.3502
T3	7	LDF6-50A (1-1/4 FOAM)	120.00 - 140.00	0.6000	0.3502
T3	8	LDF6-50A (1-1/4 FOAM)	120.00 - 140.00	0.6000	0.3502
T3	9	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.3502
T3	11	FB-L98B-002-XXX(3/8")	120.00 - 140.00	0.6000	0.3502
T3	12	WR-VG122ST-BRDA(7/16")	120.00 - 140.00	0.6000	0.3502
T3	13	6X12 Hybrid Fiber	120.00 - 136.00	0.6000	0.3502
T4	1	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.3810
T4	3	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.3810
T4	4	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.3810
T4	5	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.3810
T4	7	LDF6-50A (1-1/4 FOAM)	100.00 - 120.00	0.6000	0.3810
T4	8	LDF6-50A (1-1/4 FOAM)	100.00 -	0.6000	0.3810

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T4	9	LDF7-50A (1-5/8 FOAM)	120.00 100.00 - 120.00	0.6000	0.3810
T4	10	Safety Line 3/8	100.00 - 120.00	0.6000	0.3810
T4	11	FB-L98B-002-XXX(3/8")	100.00 - 120.00	0.6000	0.3810
T4	12	WR-VG122ST-BRDA(7/16")	100.00 - 120.00	0.6000	0.3810
T4	13	6X12 Hybrid Fiber	100.00 - 120.00	0.6000	0.3810
T5	1	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.3699
T5	3	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.3699
T5	4	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.3699
T5	5	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.3699
T5	6	LDF4-50A (1/2 FOAM)	80.00 - 98.00	0.6000	0.3699
T5	7	LDF6-50A (1-1/4 FOAM)	80.00 - 100.00	0.6000	0.3699
T5	8	LDF6-50A (1-1/4 FOAM)	80.00 - 100.00	0.6000	0.3699
T5	9	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.3699
T5	10	Safety Line 3/8	80.00 - 100.00	0.6000	0.3699
T5	11	FB-L98B-002-XXX(3/8")	80.00 - 100.00	0.6000	0.3699
T5	12	WR-VG122ST-BRDA(7/16")	80.00 - 100.00	0.6000	0.3699
T5	13	6X12 Hybrid Fiber	80.00 - 100.00	0.6000	0.3699
T6	1	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.5526
T6	3	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.5526
T6	4	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.5526
T6	5	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.5526
T6	6	LDF4-50A (1/2 FOAM)	60.00 - 80.00	0.6000	0.5526
T6	7	LDF6-50A (1-1/4 FOAM)	60.00 - 80.00	0.6000	0.5526
T6	8	LDF6-50A (1-1/4 FOAM)	60.00 - 80.00	0.6000	0.5526
T6	9	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.5526
T6	10	Safety Line 3/8	60.00 - 80.00	0.6000	0.5526
T6	11	FB-L98B-002-XXX(3/8")	60.00 - 80.00	0.6000	0.5526
T6	12	WR-VG122ST-BRDA(7/16")	60.00 - 80.00	0.6000	0.5526
T6	13	6X12 Hybrid Fiber	60.00 - 80.00	0.6000	0.5526
T7	1	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.5363
T7	3	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.5363
T7	4	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.5363
T7	5	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.5363
T7	6	LDF4-50A (1/2 FOAM)	40.00 - 60.00	0.6000	0.5363
T7	7	LDF6-50A (1-1/4 FOAM)	40.00 - 60.00	0.6000	0.5363
T7	8	LDF6-50A (1-1/4 FOAM)	40.00 - 60.00	0.6000	0.5363
T7	9	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.5363
T7	10	Safety Line 3/8	40.00 - 60.00	0.6000	0.5363
T7	11	FB-L98B-002-XXX(3/8")	40.00 - 60.00	0.6000	0.5363
T7	12	WR-VG122ST-BRDA(7/16")	40.00 - 60.00	0.6000	0.5363
T7	13	6X12 Hybrid Fiber	40.00 - 60.00	0.6000	0.5363
T8	1	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5718
T8	3	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5718
T8	4	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5718
T8	5	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5718
T8	6	LDF4-50A (1/2 FOAM)	20.00 - 40.00	0.6000	0.5718
T8	7	LDF6-50A (1-1/4 FOAM)	20.00 - 40.00	0.6000	0.5718
T8	8	LDF6-50A (1-1/4 FOAM)	20.00 - 40.00	0.6000	0.5718
T8	9	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.5718
T8	10	Safety Line 3/8	20.00 - 40.00	0.6000	0.5718
T8	11	FB-L98B-002-XXX(3/8")	20.00 - 40.00	0.6000	0.5718
T8	12	WR-VG122ST-BRDA(7/16")	20.00 - 40.00	0.6000	0.5718
T8	13	6X12 Hybrid Fiber	20.00 - 40.00	0.6000	0.5718
T9	1	LDF7-50A (1-5/8 FOAM)	7.00 - 20.00	0.6000	0.5743
T9	3	LDF7-50A (1-5/8 FOAM)	7.00 - 20.00	0.6000	0.5743
T9	4	LDF7-50A (1-5/8 FOAM)	7.00 - 20.00	0.6000	0.5743

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T9	5	LDF7-50A (1-5/8 FOAM)	7.00 - 20.00	0.6000	0.5743
T9	6	LDF4-50A (1/2 FOAM)	7.00 - 20.00	0.6000	0.5743
T9	7	LDF6-50A (1-1/4 FOAM)	7.00 - 20.00	0.6000	0.5743
T9	8	LDF6-50A (1-1/4 FOAM)	7.00 - 20.00	0.6000	0.5743
T9	9	LDF7-50A (1-5/8 FOAM)	7.00 - 20.00	0.6000	0.5743
T9	10	Safety Line 3/8	8.00 - 20.00	0.6000	0.5743
T9	11	FB-L98B-002-XXX(3/8")	5.00 - 20.00	0.6000	0.5743
T9	12	WR-VG122ST-BRDA(7/16")	7.00 - 20.00	0.6000	0.5743
T9	13	6X12 Hybrid Fiber	7.00 - 20.00	0.6000	0.5743
T10	11	FB-L98B-002-XXX(3/8")	2.00 - 5.00	0.5088	0.2433

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Pirod 15' T-Frame Sector Mount (1)	A	From Leg	2.50	0.00	0.0000	179.00	No Ice	15.00	15.00	0.50
				0.00			1/2" Ice	20.60	20.60	0.65
							1" Ice	26.20	26.20	0.80
Pirod 15' T-Frame Sector Mount (1)	B	From Leg	2.50	0.00	0.0000	179.00	No Ice	15.00	15.00	0.50
				0.00			1/2" Ice	20.60	20.60	0.65
							1" Ice	26.20	26.20	0.80
Pirod 15' T-Frame Sector Mount (1)	C	From Leg	2.50	0.00	0.0000	179.00	No Ice	15.00	15.00	0.50
				0.00			1/2" Ice	20.60	20.60	0.65
							1" Ice	26.20	26.20	0.80
7770.00 w/ Mount Pipe	A	From Leg	4.50	0.00	0.0000	179.00	No Ice	5.75	4.25	0.06
				1.00			1/2" Ice	6.18	5.01	0.10
							1" Ice	6.61	5.71	0.16
7770.00 w/ Mount Pipe	B	From Leg	4.50	0.00	0.0000	179.00	No Ice	5.75	4.25	0.06
				1.00			1/2" Ice	6.18	5.01	0.10
							1" Ice	6.61	5.71	0.16
7770.00 w/ Mount Pipe	C	From Leg	4.50	0.00	0.0000	179.00	No Ice	5.75	4.25	0.06
				1.00			1/2" Ice	6.18	5.01	0.10
							1" Ice	6.61	5.71	0.16
P65-17-XLH-RR w/ Mount Pipe	A	From Leg	4.50	0.00	0.0000	179.00	No Ice	11.70	8.94	0.09
				1.00			1/2" Ice	12.42	10.45	0.18
							1" Ice	13.15	11.99	0.27
P65-17-XLH-RR w/ Mount Pipe	B	From Leg	4.50	0.00	0.0000	179.00	No Ice	11.70	8.94	0.09
				1.00			1/2" Ice	12.42	10.45	0.18
							1" Ice	13.15	11.99	0.27
SBNH-1D6565C w/ Mount Pipe	C	From Leg	4.50	0.00	0.0000	179.00	No Ice	11.68	9.84	0.09
				1.00			1/2" Ice	12.40	11.37	0.18
							1" Ice	13.14	12.91	0.28
DTMABP7819VG12A	A	From Leg	3.50	0.00	0.0000	179.00	No Ice	0.98	0.34	0.02
				1.00			1/2" Ice	1.10	0.42	0.03
							1" Ice	1.23	0.51	0.04
DTMABP7819VG12A	B	From Leg	3.50	0.00	0.0000	179.00	No Ice	0.98	0.34	0.02
				1.00			1/2" Ice	1.10	0.42	0.03
							1" Ice	1.23	0.51	0.04
DTMABP7819VG12A	C	From Leg	3.50	0.00	0.0000	179.00	No Ice	0.98	0.34	0.02
							1/2" Ice	1.10	0.42	0.03

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 K
			1.00			1" Ice	1.23	0.51	0.04
RRU-11	A	From Leg	3.50	0.0000	179.00	No Ice	1.64	1.26	0.04
			0.00			1/2" Ice	1.80	1.41	0.06
			1.00			1" Ice	1.97	1.57	0.08
RRU-11	B	From Leg	3.50	0.0000	179.00	No Ice	1.64	1.26	0.04
			0.00			1/2" Ice	1.80	1.41	0.06
			1.00			1" Ice	1.97	1.57	0.08
RRU-11	C	From Leg	3.50	0.0000	179.00	No Ice	1.64	1.26	0.04
			0.00			1/2" Ice	1.80	1.41	0.06
			1.00			1" Ice	1.97	1.57	0.08
DC6-48-60-18-8F	A	From Leg	1.00	0.0000	179.00	No Ice	0.79	0.79	0.02
			0.00			1/2" Ice	1.27	1.27	0.04
			1.00			1" Ice	1.45	1.45	0.05
TPA-65R-LCUUUU-H8 w/ Mount Pipe	A	From Leg	4.50	0.0000	179.00	No Ice	13.54	10.96	0.11
			0.00			1/2" Ice	14.24	12.49	0.22
			1.00			1" Ice	14.95	14.04	0.33
TPA-65R-LCUUUU-H8 w/ Mount Pipe	B	From Leg	4.50	0.0000	179.00	No Ice	13.54	10.96	0.11
			0.00			1/2" Ice	14.24	12.49	0.22
			1.00			1" Ice	14.95	14.04	0.33
TPA-65R-LCUUUU-H8 w/ Mount Pipe	C	From Leg	4.50	0.0000	179.00	No Ice	13.54	10.96	0.11
			0.00			1/2" Ice	14.24	12.49	0.22
			1.00			1" Ice	14.95	14.04	0.33
(2) DBC0061F1V51-2	A	From Leg	3.50	0.0000	179.00	No Ice	0.41	0.43	0.03
			0.00			1/2" Ice	0.50	0.52	0.03
			1.00			1" Ice	0.59	0.61	0.04
(2) DBC0061F1V51-2	B	From Leg	3.50	0.0000	179.00	No Ice	0.41	0.43	0.03
			0.00			1/2" Ice	0.50	0.52	0.03
			1.00			1" Ice	0.59	0.61	0.04
(2) DBC0061F1V51-2	C	From Leg	3.50	0.0000	179.00	No Ice	0.41	0.43	0.03
			0.00			1/2" Ice	0.50	0.52	0.03
			1.00			1" Ice	0.59	0.61	0.04
RRUS B25 4415	A	From Leg	3.50	0.0000	179.00	No Ice	2.79	1.19	0.05
			0.00			1/2" Ice	3.00	1.34	0.07
			1.00			1" Ice	3.21	1.50	0.10
RRUS B25 4415	B	From Leg	3.50	0.0000	179.00	No Ice	2.79	1.19	0.05
			0.00			1/2" Ice	3.00	1.34	0.07
			1.00			1" Ice	3.21	1.50	0.10
RRUS B25 4415	C	From Leg	3.50	0.0000	179.00	No Ice	2.79	1.19	0.05
			0.00			1/2" Ice	3.00	1.34	0.07
			1.00			1" Ice	3.21	1.50	0.10
152									
Pirod 15' T-Frame Sector Mount (1)	A	From Leg	2.00	0.0000	152.00	No Ice	15.00	15.00	0.50
			0.00			1/2" Ice	20.60	20.60	0.65
			0.00			1" Ice	26.20	26.20	0.80
Pirod 15' T-Frame Sector Mount (1)	B	From Leg	2.00	0.0000	152.00	No Ice	15.00	15.00	0.50
			0.00			1/2" Ice	20.60	20.60	0.65
			0.00			1" Ice	26.20	26.20	0.80
Pirod 15' T-Frame Sector Mount (1)	C	From Leg	2.00	0.0000	152.00	No Ice	15.00	15.00	0.50
			0.00			1/2" Ice	20.60	20.60	0.65
			0.00			1" Ice	26.20	26.20	0.80
TD-RRH8x20-25	A	From Leg	3.50	0.0000	152.00	No Ice	4.05	1.53	0.07
			1.00			1/2" Ice	4.30	1.71	0.10
			0.00			1" Ice	4.56	1.90	0.13
(2) RRH 800	A	From Leg	3.50	0.0000	152.00	No Ice	1.72	1.43	0.05
			-1.00			1/2" Ice	1.90	1.60	0.06
			0.00			1" Ice	2.07	1.76	0.08
RRH2X60-1900	A	From Leg	3.50	0.0000	152.00	No Ice	1.87	1.22	0.04

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 K
			0.00			1/2" Ice	2.05	1.37	0.06
			0.00			1" Ice	2.24	1.52	0.08
NNVV-65B-R4 w/ Mount Pipe	A	From Leg	3.50 -3.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice	12.51 13.11 13.67	7.41 8.60 9.50	0.10 0.19 0.29
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	3.50 3.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice	6.58 7.03 7.47	4.96 5.75 6.47	0.07 0.13 0.19
B									
TD-RRH8x20-25	B	From Leg	3.50 1.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice	4.05 4.30 4.56	1.53 1.71 1.90	0.07 0.10 0.13
(2) RRH 800	B	From Leg	3.50 -1.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice	1.72 1.90 2.07	1.43 1.60 1.76	0.05 0.06 0.08
RRH2X60-1900	B	From Leg	3.50 0.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice	1.87 2.05 2.24	1.22 1.37 1.52	0.04 0.06 0.08
NNVV-65B-R4 w/ Mount Pipe	B	From Leg	3.50 -3.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice	12.51 13.11 13.67	7.41 8.60 9.50	0.10 0.19 0.29
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	3.50 3.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice	6.58 7.03 7.47	4.96 5.75 6.47	0.07 0.13 0.19
C									
TD-RRH8x20-25	C	From Leg	3.50 1.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice	4.05 4.30 4.56	1.53 1.71 1.90	0.07 0.10 0.13
(2) RRH 800	C	From Leg	3.50 -1.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice	1.72 1.90 2.07	1.43 1.60 1.76	0.05 0.06 0.08
RRH2X60-1900	C	From Leg	3.50 0.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice	1.87 2.05 2.24	1.22 1.37 1.52	0.04 0.06 0.08
NNVV-65B-R4 w/ Mount Pipe	C	From Leg	3.50 -3.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice	12.51 13.11 13.67	7.41 8.60 9.50	0.10 0.19 0.29
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	3.50 3.00 0.00	0.0000	152.00	No Ice 1/2" Ice 1" Ice	6.58 7.03 7.47	4.96 5.75 6.47	0.07 0.13 0.19
136									
LPA-80080/4CF w/ Mount Pipe	A	From Leg	3.00 -6.00 0.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	2.86 3.22 3.59	6.57 7.19 7.84	0.03 0.08 0.13
LPA-80080/4CF w/ Mount Pipe	A	From Leg	3.00 -3.00 0.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	2.86 3.22 3.59	6.57 7.19 7.84	0.03 0.08 0.13
B									
LPA-80080/4CF w/ Mount Pipe	B	From Leg	3.00 -6.00 0.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	2.86 3.22 3.59	6.57 7.19 7.84	0.03 0.08 0.13
LPA-80080/4CF w/ Mount Pipe	B	From Leg	3.00 -3.00 0.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	2.86 3.22 3.59	6.57 7.19 7.84	0.03 0.08 0.13
C									
LPA-80080/4CF w/ Mount Pipe	C	From Leg	3.00 -6.00	0.0000	136.00	No Ice 1/2" Ice	2.86 3.22	6.57 7.19	0.03 0.08

tnxTower	Job: VZW467124A01-NX062(SA)	Page: 17 of 20
Nexius Solutions, Inc. 2595 North Dallas Parkway Suite 300 Frisco, TX 75034 Phone: 972-581-9888 FAX:	Project: VZW11509-N_Stonington_2_CT	Date: 13:02:05 05/23/19
	Client: Verizon	Designed by: JHU

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 K
			0.00			1" Ice	3.59	7.84	0.13
LPA-80080/4CF w/ Mount Pipe	C	From Leg	3.00 -6.00 0.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	2.86 3.22 3.59	6.57 7.19 7.84	0.03 0.08 0.13
120									
Pirod 4' Side Mount Standoff (1)	A	From Leg	2.00 0.00 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	2.72 4.91 7.10	2.72 4.91 7.10	0.05 0.09 0.13
Pirod 4' Side Mount Standoff (1)	B	From Leg	2.00 0.00 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	2.72 4.91 7.10	2.72 4.91 7.10	0.05 0.09 0.13
Pirod 4' Side Mount Standoff (1)	C	From Leg	2.00 0.00 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	2.72 4.91 7.10	2.72 4.91 7.10	0.05 0.09 0.13
AIR 21 B4A/B2P w/ Mount Pipe	A	From Leg	4.00 1.50 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	6.16 6.60 7.03	5.55 6.30 7.00	0.10 0.16 0.22
KRC 118 057/1 w/ Mount Pipe	A	From Leg	4.00 -1.50 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	8.86 9.36 9.84	7.72 8.62 9.39	0.17 0.24 0.33
RRU-11	A	From Leg	3.50 0.00 1.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.26 1.41 1.57	0.04 0.06 0.08
Gen. TMA	A	From Leg	3.00 0.00 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	1.03 1.15 1.29	0.39 0.48 0.58	0.02 0.02 0.03
B									
AIR 21 B4A/B2P w/ Mount Pipe	B	From Leg	4.00 1.50 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	6.16 6.60 7.03	5.55 6.30 7.00	0.10 0.16 0.22
KRC 118 057/1 w/ Mount Pipe	B	From Leg	4.00 -1.50 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	8.86 9.36 9.84	7.72 8.62 9.39	0.17 0.24 0.33
RRU-11	B	From Leg	3.50 0.00 1.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.26 1.41 1.57	0.04 0.06 0.08
Gen. TMA	B	From Leg	3.00 0.00 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	1.03 1.15 1.29	0.39 0.48 0.58	0.02 0.02 0.03
C									
AIR 21 B4A/B2P w/ Mount Pipe	C	From Leg	4.00 1.50 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	6.16 6.60 7.03	5.55 6.30 7.00	0.10 0.16 0.22
KRC 118 057/1 w/ Mount Pipe	C	From Leg	4.00 -1.50 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	8.86 9.36 9.84	7.72 8.62 9.39	0.17 0.24 0.33
RRU-11	C	From Leg	3.50 0.00 1.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.26 1.41 1.57	0.04 0.06 0.08
Gen. TMA	C	From Leg	3.00 0.00 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	1.03 1.15 1.29	0.39 0.48 0.58	0.02 0.02 0.03
98									
8" x 1" Stand Off	A	From Leg	0.50 0.00 0.00	0.0000	98.00	No Ice 1/2" Ice 1" Ice	0.09 0.18 0.27	0.01 0.01 0.01	0.00 0.00 0.00
GPS_A	A	From Leg	1.00	0.0000	98.00	No Ice	0.26	0.26	0.00

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 K
			0.00			1/2" Ice	0.32	0.32	0.00
			0.00			1" Ice	0.39	0.39	0.01
136 Proposed									
Sector Mount [SM 1304-3]	A	From Leg	2.00	0.0000	136.00	No Ice	51.00	51.00	1.56
			0.00			1/2" Ice	69.20	69.20	2.65
			0.00			1" Ice	87.40	87.40	3.74
B2/B66A	A	From Leg	3.00	0.0000	136.00	No Ice	2.58	1.63	0.07
			-3.00			1/2" Ice	2.79	1.81	0.09
			0.00			1" Ice	3.01	2.00	0.11
B5/B13	A	From Leg	3.00	0.0000	136.00	No Ice	2.16	1.62	0.06
			-3.00			1/2" Ice	2.35	1.79	0.08
			0.00			1" Ice	2.55	1.97	0.10
(2) QS6656-5D w/ Mount Pipe	A	From Leg	3.00	0.0000	136.00	No Ice	8.37	8.46	0.11
			-6.00			1/2" Ice	8.93	9.66	0.19
			0.00			1" Ice	9.46	10.55	0.27
B									
B2/B66A	B	From Leg	3.00	0.0000	136.00	No Ice	2.58	1.63	0.07
			-3.00			1/2" Ice	2.79	1.81	0.09
			0.00			1" Ice	3.01	2.00	0.11
B5/B13	B	From Leg	3.00	0.0000	136.00	No Ice	2.16	1.62	0.06
			-3.00			1/2" Ice	2.35	1.79	0.08
			0.00			1" Ice	2.55	1.97	0.10
(2) QS6656-5D w/ Mount Pipe	B	From Leg	3.00	0.0000	136.00	No Ice	8.37	8.46	0.11
			-6.00			1/2" Ice	8.93	9.66	0.19
			0.00			1" Ice	9.46	10.55	0.27
C									
B2/B66A	C	From Leg	3.00	0.0000	136.00	No Ice	2.58	1.63	0.07
			-3.00			1/2" Ice	2.79	1.81	0.09
			0.00			1" Ice	3.01	2.00	0.11
B5/B13	C	From Leg	3.00	0.0000	136.00	No Ice	2.16	1.62	0.06
			-3.00			1/2" Ice	2.35	1.79	0.08
			0.00			1" Ice	2.55	1.97	0.10
(2) QS6656-5D w/ Mount Pipe	C	From Leg	3.00	0.0000	136.00	No Ice	8.37	8.46	0.11
			3.00			1/2" Ice	8.93	9.66	0.19
			0.00			1" Ice	9.46	10.55	0.27

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	180 - 160	Leg	ROHN 2.5 X STR	2	-45.07	101.57	44.4	Pass
T2	160 - 140	Leg	ROHN 2.5 X STR	59	-41.17	101.57	40.5	Pass
T3	140 - 120	Leg	ROHN 2.5 X STR	115	-62.40	100.86	61.9	Pass
T4	120 - 100	Leg	ROHN 2.5 X STR	172	-62.85	100.85	62.3	Pass
T5	100 - 80	Leg	ROHN 2.5 X STR	231	-56.32	100.56	56.0	Pass
T6	80 - 60	Leg	ROHN 2.5 X STR	288	-55.39	81.62	67.9	Pass
T7	60 - 40	Leg	ROHN 2.5 X STR	319	-55.60	81.62	68.1	Pass
T8	40 - 20	Leg	ROHN 2.5 X STR	352	-59.69	81.62	73.1	Pass
T9	20 - 5	Leg	ROHN 2.5 X STR	385	-59.89	82.19	72.9	Pass
T10	5 - 0	Leg	ROHN 2.5 X STR	414	-63.59	99.33	64.0	Pass
T1	180 - 160	Diagonal	L2x2x1/4	14	-9.44	25.15	37.5	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T2	160 - 140	Diagonal	ROHN TS 1.5 x 11Ga	113	-7.60	17.05	44.6	Pass
T3	140 - 120	Diagonal	ROHN TS 1.5 x 16Ga	170	-4.45	8.99	49.5	Pass
T4	120 - 100	Diagonal	ROHN TS 1.5 x 11Ga	183	-3.36	17.05	19.7	Pass
T5	100 - 80	Diagonal	ROHN TS 1.5 x 16Ga	246	-4.04	8.99	44.9	Pass
T6	80 - 60	Diagonal	ROHN TS 1.5 x 11Ga	316	-3.93	11.22	35.0	Pass
T7	60 - 40	Diagonal	ROHN TS 1.5 x 16Ga	328	-5.19	6.11	85.0	Pass
T8	40 - 20	Diagonal	ROHN TS 1.5 x 16Ga	382	-4.81	6.11	78.8	Pass
T9	20 - 5	Diagonal	ROHN TS 1.5 x 16Ga	396	-4.36	6.13	71.1	Pass
T10	5 - 0	Horizontal	L4x4x1/4	420	-0.29	49.31	25.7	Pass
T1	180 - 160	Top Girt	L2x2x1/4	6	-0.71	16.30	4.3	Pass
T2	160 - 140	Top Girt	ROHN TS 1.5 x 11Ga	63	-1.36	13.50	10.0	Pass
T3	140 - 120	Top Girt	ROHN TS 1.5 x 16Ga	118	0.33	10.23	3.2	Pass
T4	120 - 100	Top Girt	ROHN TS 1.5 x 11Ga	177	1.05	19.61	5.3	Pass
T5	100 - 80	Top Girt	ROHN TS 1.5 x 16Ga	234	0.84	10.23	8.2	Pass
T6	80 - 60	Top Girt	ROHN TS 1.5 x 11Ga	289	-1.46	13.50	10.8	Pass
T7	60 - 40	Top Girt	ROHN TS 1.5 x 16Ga	324	-0.77	7.25	10.6	Pass
T8	40 - 20	Top Girt	ROHN TS 1.5 x 16Ga	355	-1.35	7.25	18.6	Pass
T9	20 - 5	Top Girt	ROHN TS 1.5 x 16Ga	390	-0.97	7.25	13.3	Pass
T10	5 - 0	Top Girt	L4x4x1/4	417	3.15	62.86	5.0	Pass
T1	180 - 160	Bottom Girt	L2x2x1/4	9	1.93	30.39	6.3	Pass
T2	160 - 140	Bottom Girt	ROHN TS 1.5 x 11Ga	66	0.71	19.61	3.6	Pass
T3	140 - 120	Bottom Girt	ROHN TS 1.5 x 16Ga	123	0.64	10.23	6.3	Pass
T4	120 - 100	Bottom Girt	ROHN TS 1.5 x 11Ga	180	0.76	19.61	3.9	Pass
T5	100 - 80	Bottom Girt	ROHN TS 1.5 x 16Ga	235	0.74	10.23	7.2	Pass
T6	80 - 60	Bottom Girt	ROHN TS 1.5 x 11Ga	293	-0.63	13.50	4.7	Pass
T7	60 - 40	Bottom Girt	ROHN TS 1.5 x 16Ga	325	-1.36	7.25	18.8	Pass
T8	40 - 20	Bottom Girt	ROHN TS 1.5 x 16Ga	360	-0.88	7.25	12.2	Pass
T9	20 - 5	Bottom Girt	L3x3x1/2	392	11.01	89.10	12.4	Pass
T1	180 - 160	Guy A@162.527	1/2	435	9.02	16.14	55.9	Pass
		Guy A@162.527	7/8	456	24.73	47.82	51.7	Pass
T3	140 - 120	Guy A@132.178	9/16	444	14.89	21.00	70.9	Pass
T5	100 - 80	Guy A@82.5273	3/4	450	19.61	34.98	56.1	Pass
T7	60 - 40	Guy A@49.7656	1/2	462	8.40	16.14	52.0	Pass
T1	180 - 160	Guy B@162.527	1/2	432	10.46	16.14	64.8	Pass
		Guy B@162.527	7/8	455	25.41	47.82	53.1	Pass
T3	140 - 120	Guy B@132.178	9/16	443	15.86	21.00	75.5	Pass
T5	100 - 80	Guy B@82.5273	3/4	449	22.59	34.98	64.6	Pass
T7	60 - 40	Guy B@49.7656	1/2	461	10.05	16.14	62.3	Pass
T1	180 - 160	Guy C@162.527	1/2	427	10.44	16.14	64.7	Pass
		Guy C@162.527	7/8	451	25.36	47.82	53.0	Pass
T3	140 - 120	Guy C@132.178	9/16	439	15.87	21.00	75.6	Pass
T5	100 - 80	Guy C@82.5273	3/4	445	22.63	34.98	64.7	Pass
T7	60 - 40	Guy C@49.7656	1/2	457	10.06	16.14	62.4	Pass
T1	180 - 160	Top Guy Pull-Off@162.527	2L2x2x1/4x3/8	454	9.08	60.91	14.9	Pass
T3	140 - 120	Top Guy Pull-Off@132.178	4X3/8	442	6.01	48.60	12.4	Pass
T5	100 - 80	Top Guy Pull-Off@82.5273	2L2x2x1/4x3/8	448	8.51	60.91	14.0	Pass
T7	60 - 40	Top Guy Pull-Off@49.7656	4X3/8	459	5.62	48.60	11.6	Pass
T1	180 - 160	Torque Arm Top@162.527	C12x20.7	437	-2.76	173.45	31.4	Pass

Summary

Leg (T8)	73.1	Pass
Diagonal (T7)	85.0	Pass
Horizontal (T10)	25.7	Pass
Top Girt (T8)	18.6	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
						Bottom Girt (T7)	18.8	Pass
						Guy A (T3)	70.9	Pass
						Guy B (T3)	75.5	Pass
						Guy C (T3)	75.6	Pass
						Top Guy Pull-Off (T1)	14.9	Pass
						Torque Arm Top (T1)	31.4	Pass
						RATING =	**85.0**	**Pass**

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Mount Analysis Report

Property Owner	N/A
Structural Type	180 ft Guy Tower
Site Address	227 Boom Bridge Rd, Pawcatuck, New London County, CT 06379
Site ID	N/A
Site Name	N/A
Latitude	41.428988
Longitude	-71.80868

Client	**Verizon Wireless** *118 Flanders Road, 3rd Floor* *Westborough, MA 01581*
Site Type	MACRO
Site ID	N/A
Site Name	N_STONINGTON_2_CT
Location Code	467124
Mount Type	**Proposed Site Pro 1, P/N: VFA12-HD Sector Frames**
Elevation(s)	136 ft AGL

Prepared by	Nexius Solutions, Inc. *2595 North Dallas Parkway Suite 300* *Frisco, TX 75034*
Job/Task Numbers	VZW467124A01-NX064
Email	structurals@nexius.com
Phone	972-581-9888
Date	10/22/2019
Result	**PASS (61.4 %)**

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Dear Sir / Madam:

Nexius Solutions is pleased to submit this analysis to determine the structural integrity of the referred structure.

Referenced documents used for this analysis are listed in the section DOCUMENTS & REFERENCES. This analysis has been performed in compliance with

- *2018 Connecticut State Building Code (IBC 2015)*
- *ANSI/TIA-222-G w/ Addendums, Structural Standard for Antenna Supporting Structures and Antennas.*

Detailed design parameters are listed in Table 1. Analysis loading is detailed in Table 2

Based on our analysis we have determined the following result:

Antenna mounting Structure **Adequate (61.4 %)**

Nexius Solutions appreciates the opportunity of providing continued engineering services. Should you have any questions, comments or require additional information, please do not hesitate to contact us.

Sincerely,

Prepared by:

Akshay Doddamani
Structural Engineer

Approved by:

Jiazhu Hu, P.E.
Engineering Manager
License #: 31530

Digitally signed by Jiazhu Hu, Ph.D., P.E.
DN: cn=Jiazhu Hu, Ph.D., P.E., o=Nexius, ou=Engineering, email=Jiazhu.Hu@Nexius.com, c=US
Date: 2019.10.22 16:30:16 -04'00'

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DOCUMENTS & REFERENCES

- Construction Drawings (FOR CONSTRUCTION), Verizon Location Code: 467124, Site Name: N_STONINGTON_2_CT, by Nexius, dated 05/23/2019.
- Mount Mapping, Verizon Location Code: 467124, Site Name: N_STONINGTON_2_CT, by Nexius, dated 04/30/2019.
- Mount Analysis, Verizon Location Code: 467124, Site Name: N_STONINGTON_2_CT, by Nexius, dated 05/23/2019.
- RFDS, Site Name: N_STONINGTON_2_CT, by Verizon Wireless, dated 01/08/2019.

DESIGN STANDARDS & PARAMETERS

TABLE 1 STANDARDS & DESIGN PARAMETERS

Codes and Standards	
Building Code	*2018 Connecticut State Building Code (2015 IBC w/ State Amendments)*
TIA Standard	ANSI/TIA-222-G w/ Addendums
Wind Parameters	
Ultimate Wind Speed	136 mph
Nominal Wind Speed	105 mph
Nominal Wind Speed with Ice	50 mph
Radial Ice Thickness	0.75 in
Exposure Category	C
Structure Class	II
Topographic Category	1
Seismic Design Parameters*	
S_S	0.161
S_1	0.058

* In accordance with Section 2.7.3 of TIA-222-G, seismic effects need not to be considered for site with Ss values less than 1, therefore no further seismic analysis is needed at this time.

RESULTS & RECOMMENDATIONS

Based on our analysis, it is determined that the proposed antenna mounting structure, **Site Pro 1, P/N: VFA12-HD Sector Frames,** to be **adequate** to support the existing and proposed loading.

The proposed installation shall have (1) VFA12-HD mount with (4) 2" STD, 8 ft long antenna pipes and (2) tiebacks per sector (twelve (12) antenna pipes and six (6) tiebacks in total). The proposed antennas shall be equally spaced on the mount.

Additionally, it is required that:

- All structural components and connections should be checked for tightness and good condition prior to installing the proposed equipment.

If the site conditions are different or do not meet requirements, the analysis result would not be valid and Nexius should be notified for re-evaluation.

LOADING

TABLE 2 LOADING

Mount Elev. ft	Ant. Ctr. Elev. ft	Qty	Description	Carrier	Mount Type	Status
136.0	136.0	**6**	**Quintel QS6656-5D**	VERIZON WIRELESS	Proposed Site Pro 1, P/N: VFA12-HD Sector Frames	**Proposed**
		3	**Samsung B2/B66A RRH-BR049**			
		3	**Samsung B5/B13 RRH-BR04C**			
		3	**RRH 4X30-4R-B5**			
		1	**RFS DB-C1-12C-24AB-0Z**			
		6	Antel LPA-80080/4CF (171502)			Existing to Remain
		3	*Amphenol BXA-70063-6CF*			*Existing to be Removed*
		3	*Amphenol BXA-70063-6CF-2*			
		6	*RFS FD9R6004/2C-3L*			

ANALYSIS

RISA-3D, a commercially available finite element method-based software package for structural analysis, was used to create a three-dimensional model of the structure and calculate member stresses for required loading cases. Selected output from the analysis is included in APPENDICES.

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Standard Conditions for Providing Structural Consulting Services on Existing Structures

1. Mounting hardware is analyzed to the best of our ability using all information that is provided or can be obtained during fieldwork (if authorized by client). If the existing conditions are not as we have represented in this analysis, we should be contacted to evaluate the significance of the deviation and revise the assessment accordingly.
2. The structural analysis has been performed assuming that the hardware is in "like new" condition. No allowance was made for excessive corrosion, damaged or missing structural members, loose bolts, misaligned parts, or any reduction in strength due to the age or fatigue of the product.
3. The structural analysis provided is an assessment of the primary load carrying capacity of the hardware. We provided a limited scope of service. In some cases, we cannot verify the capacity of every weld, plate, connection detail, etc. In some cases, structural fabrication details are unknown at the time of our analysis, and the detailed field measurement of some of the required details may not be possible. In instances where we cannot perform connection capacity calculations, it is assumed that the existing manufactured connections develop the full capacity of the primary members being connected.
4. We cannot be held responsible for mounting hardware that is installed improperly or hardware that is loose or has a tendency of working loose over the lifetime of the mounting hardware. Our analysis has been performed assuming fully tightened connections, and proper installation and symmetry of the mounting hardware per manufacturer's instructions.
5. The structural analysis has been performed using information currently provided by the client and potentially field verified. We have been provided with a mounting arrangement for all telecommunications equipment, including antennas RRH's, TMA's, RRU's, diplexers, surge protection devices, etc. Our analysis has been based upon a particular mounting arrangement. We are not responsible for deviations in the mounting arrangements that may occur over time. If deviations in equipment type or mounting arrangements are proposed, then we should be contacted to revise the recommendations of this structural report.
6. We cannot be held responsible for temporary and unbalanced loads on mounting hardware. Our analysis is based on a particular mounting arrangement or as-build field condition. We are not responsible for the methods and means of how the mounting arrangement is accomplished by the contractor. These methods and means may include rigging of equipment or hardware to lift and locate, temporary hanging of equipment in locations other than the final arrangement, movement and tie off of tower riggers, personnel, and their equipment, etc.
7. Steel grade and strength is unknown and cannot be field tested. We cannot be held responsible for equipment manufactured from inferior steel or bolts. Our analysis assumes that standard structural grade steel has been used by the equipment manufacturer for all assembled parts of the mounting apparatus. Acceptable steels and connection components are specified by the American Institute of Steel Construction. It is assumed all welded connections are performed in the shop under the latest American
8. Welding Society Code. No field welds are permitted or assumed for the existing pre-manufactured equipment. In case no accurate info available, following material assumptions were used:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM 500 (GR B-46)
HSS (Round)	ASTM 500 (GR B-42)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325
U-Bolts	SAE 429 Gr.2

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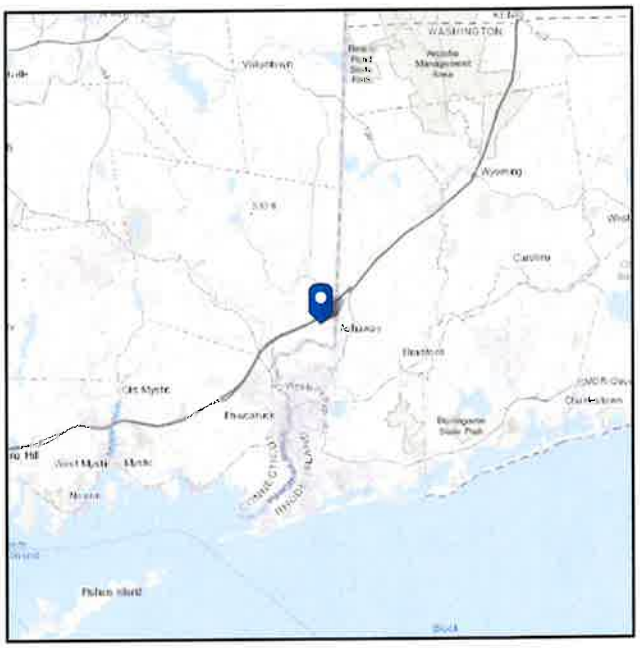
Appendix #1: Loading Parameters and Calculations

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 192.54 ft (NAVD 88)
Latitude: 41.428988
Longitude: -71.80868



Wind

Results:

Wind Speed:	136 Vmph
10-year MRI	80 Vmph
25-year MRI	90 Vmph
50-year MRI	100 Vmph
100-year MRI	110 Vmph
Data Source:	ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014
Date Accessed:	Tue May 07 2019

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 7-10 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 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

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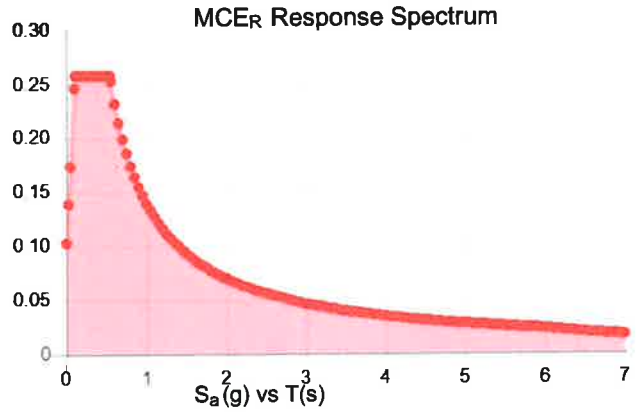
Seismic

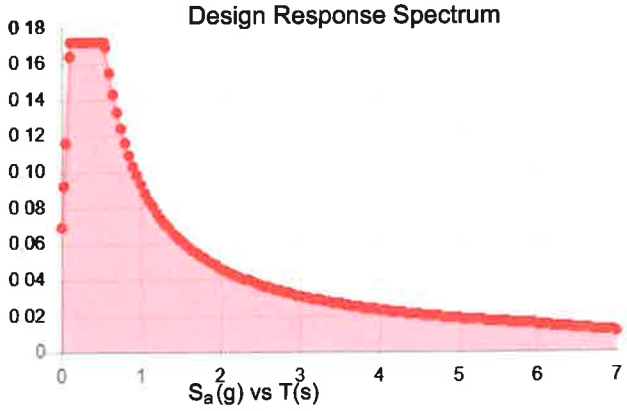
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.161	S_{DS} :	0.172
S_1 :	0.058	S_{D1} :	0.093
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.08
S_{MS} :	0.258	PGA_M :	0.129
S_{M1} :	0.139	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Tue May 07 2019

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

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Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Tue May 07 2019

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 50-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.

nexius

Mount Analysis Loading Calculations

Site Name	N_STONINGTON_2_CT
Site ID	
Job Number	VZW467124A01-NX064
TIA-222 Code Rev.	G

Legend
Input
Calculated
Notes

Maximum Capacity		
Controlling Capacity	61.4%	PASS

Basic Parameters		
Mount Height	136	ft
Exposure Category	C	(B,C, or D)
Nominal Wind Speed	105.345147	mph
Ice Wind Speed	50	mph
Design Ice Thickness, t_i	0.75	in
Maintenance Wind Speed	30	mph
Run Earthquake Analysis?	No	

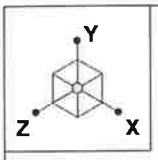
Wind Parameters		
Gust Effect Factor, G_h	1.000	2.6.9
K_z	1.350	2.6.5.2
K_{zt}	1.000	2.6.6.4
K_d	0.950	Table 2-2
I	1.000	Table 2-3
q_z	36.443	psf, 2.6.9.6
C/D	122.412	Table 2-8
t_{iz}	1.728	in, 2.6.8
q_{iz}	8.210	psf, 2.6.9.6
C/D_{iz}	58.100	Table 2-8
$q_{Maintenance}$	2.660	psf, 2.6.9.6
$C/D_{Maintenance}$	34.860	Table 2-8
Ice Dead, Grating	0.016129858	ksf

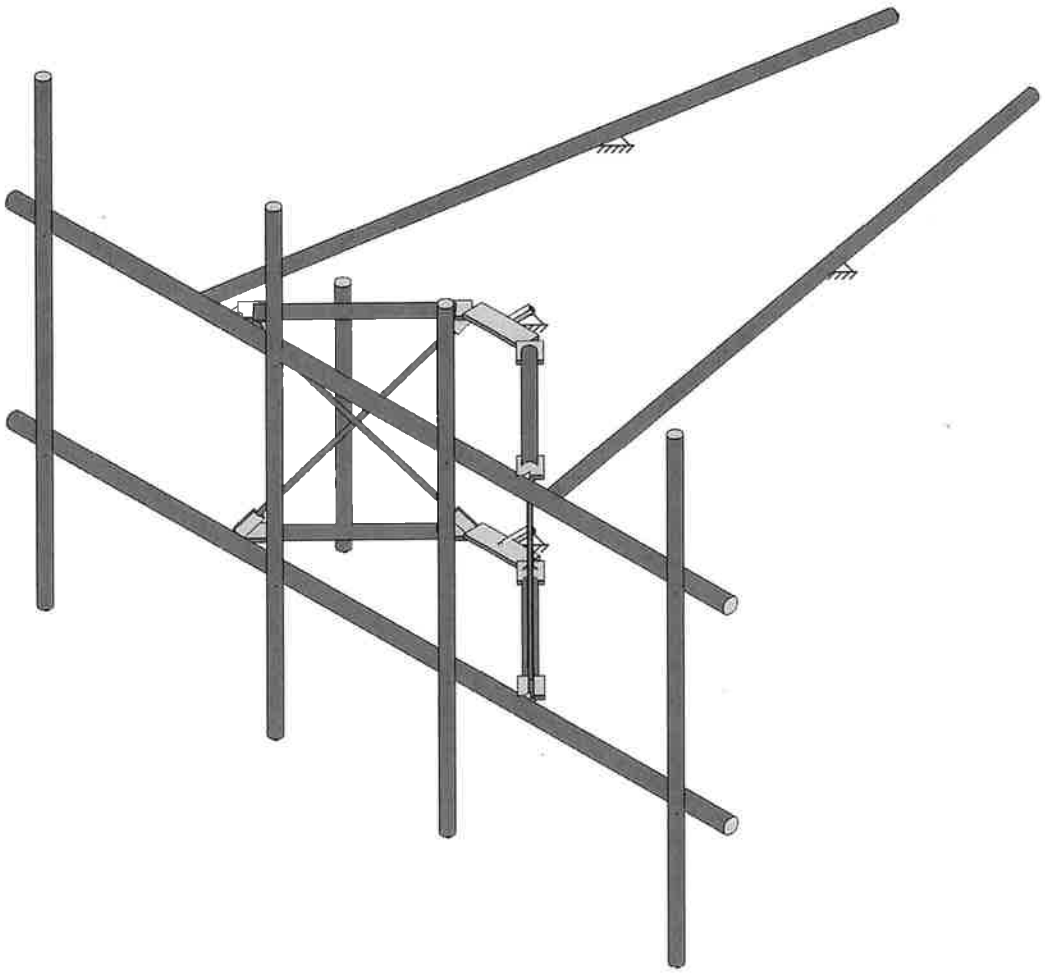
Mounting Pipes (Orientation Drawn Top-Down)			
Risa 3D Label	Elevation (ft)	Length (in)	Diameter (in)
M44	136	96	2.375
M50	136	96	2.375
M47	136	96	2.375
M5	136	96	2.375
M54A	136	48	2.375

Appurtenances					
Model	Type	Height (in)	Width (in)	Depth (in)	Weight (lbs)
QUINTEL QS6656-5D	Antenna	72	12	9.6	88
ANTEL LPA-80080/4CF	Antenna	47.2	5.5	13.2	12
SAMSUNG B5/B13 RRH BR04C	RRU, TMA, Etc.	15	15	8.1	82
SAMSUNG B2/B66A RRH BR049	RRU, TMA, Etc.	15	15	10	97.5
RFS DB-C1-12C-24AB-0Z	RRU, TMA, Etc.	12.6	16.5	29.5	32
RRH4X30-4R 850	RRU, TMA, Etc.	21.6	12	9	57.2

Pipe Mount	Antenna	Elevation (ft)	Quantity	Orientation (deg)	Front Exposed (%)	Side Exposed (%)	Front CaAa (ft^2)	Side CaAa (ft^2)	Front F_A (kips)	Side F_A (kips)	Top %	Bottom %
M44	QUINTEL QS6656-5D	137	1	0	100.0%	100.0%	8.133	6.800	0.296	0.248	0.0%	75.0%
M44	QUINTEL QS6656-5D	137	1	0	100.0%	0.0%	8.133	6.800	0.296	0.000	0.0%	75.0%
M44	RRH4X30-4R 850	136	1	0	100.0%	100.0%	2.160	1.620	0.079	0.059	38.7%	61.3%
M50	SAMSUNG B5/B13 RRH BR04C	139	1	0	100.0%	100.0%	1.875	1.013	0.068	0.037	4.7%	20.3%
M50	SAMSUNG B2/B66A RRH BR049	137	1	0	100.0%	100.0%	1.875	1.250	0.068	0.046	29.7%	45.3%
M47	ANTEL LPA-80080/4CF	138	1	0	100.0%	100.0%	2.619	5.399	0.095	0.197	0.4%	49.6%
M5	ANTEL LPA-80080/4CF	138	1	0	100.0%	100.0%	2.619	5.399	0.095	0.197	0.4%	49.6%
M54A	RFS DB-C1-12C-24AB-0Z	137	1	90	100.0%	100.0%	1.733	3.098	0.113	0.063	11.9%	38.1%

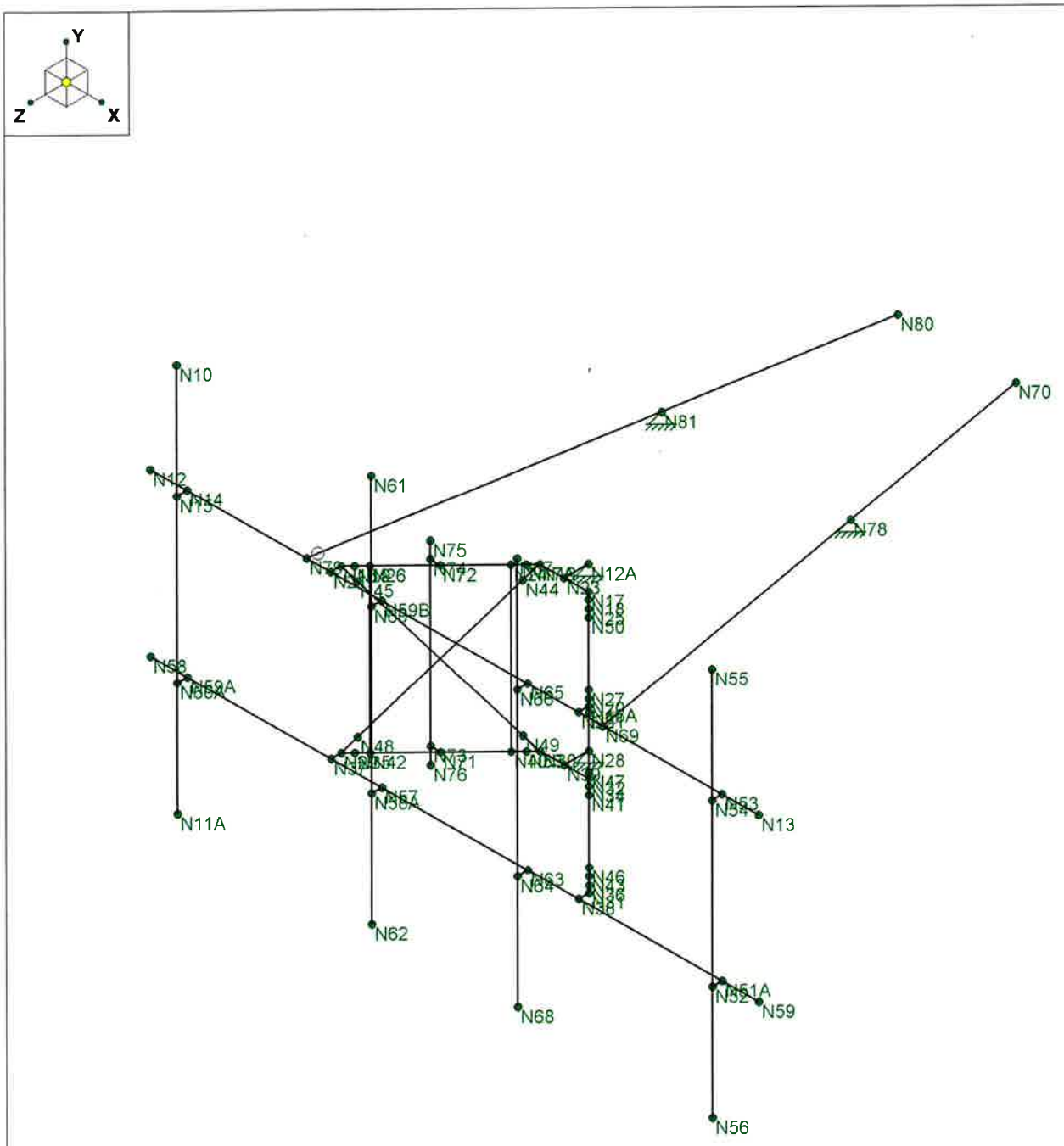
Appendix #2: RISA-3D Output





Envelope Only Solution

Nexius	STONINGTON_2_CT	Rendered
ADB		Oct 22, 2019 at 3:35 PM
VZW467124A01-NX064		VFA12-HD.r3d



Envelope Only Solution

Nexius	STONINGTON_2_CT	Nodes
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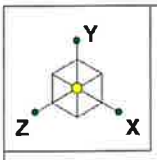

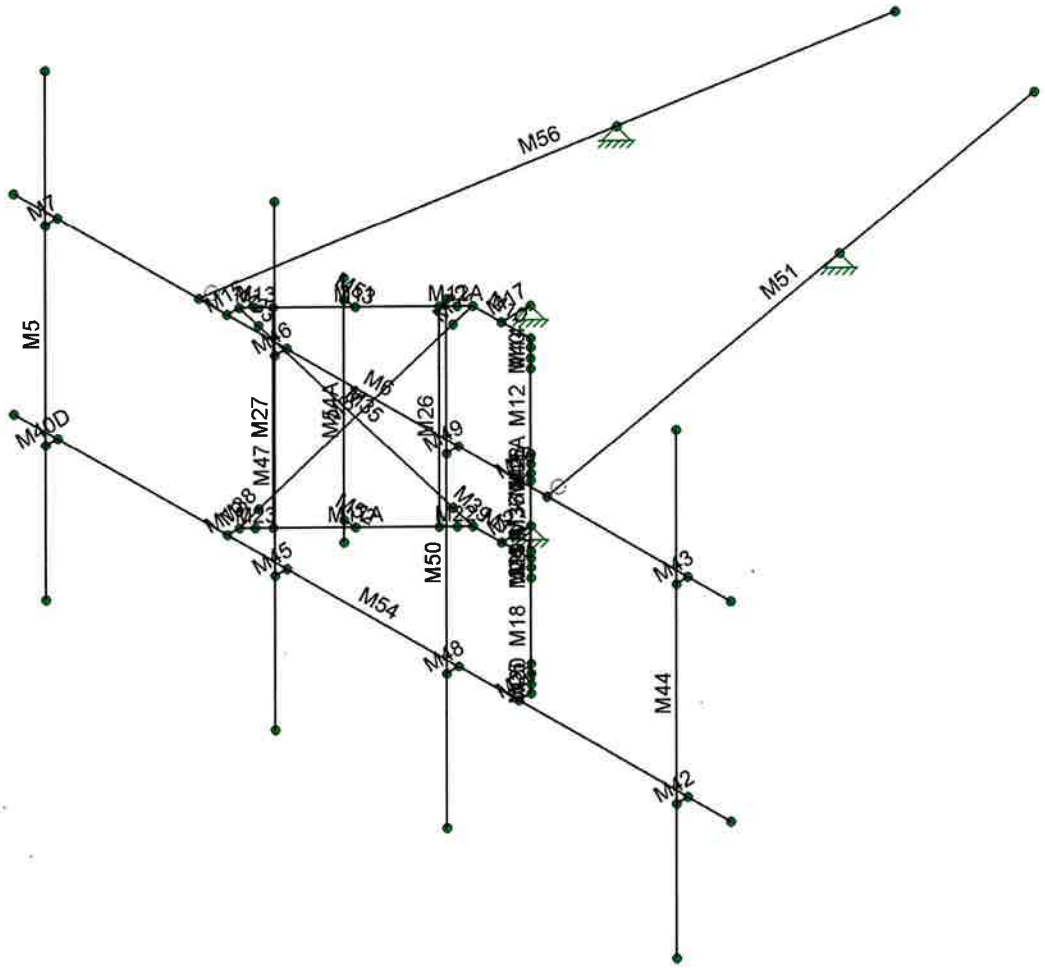

Envelope Only Solution

Nexius	STONINGTON_2_CT	Member Label
ADB		Oct 22, 2019 at 3:35 PM
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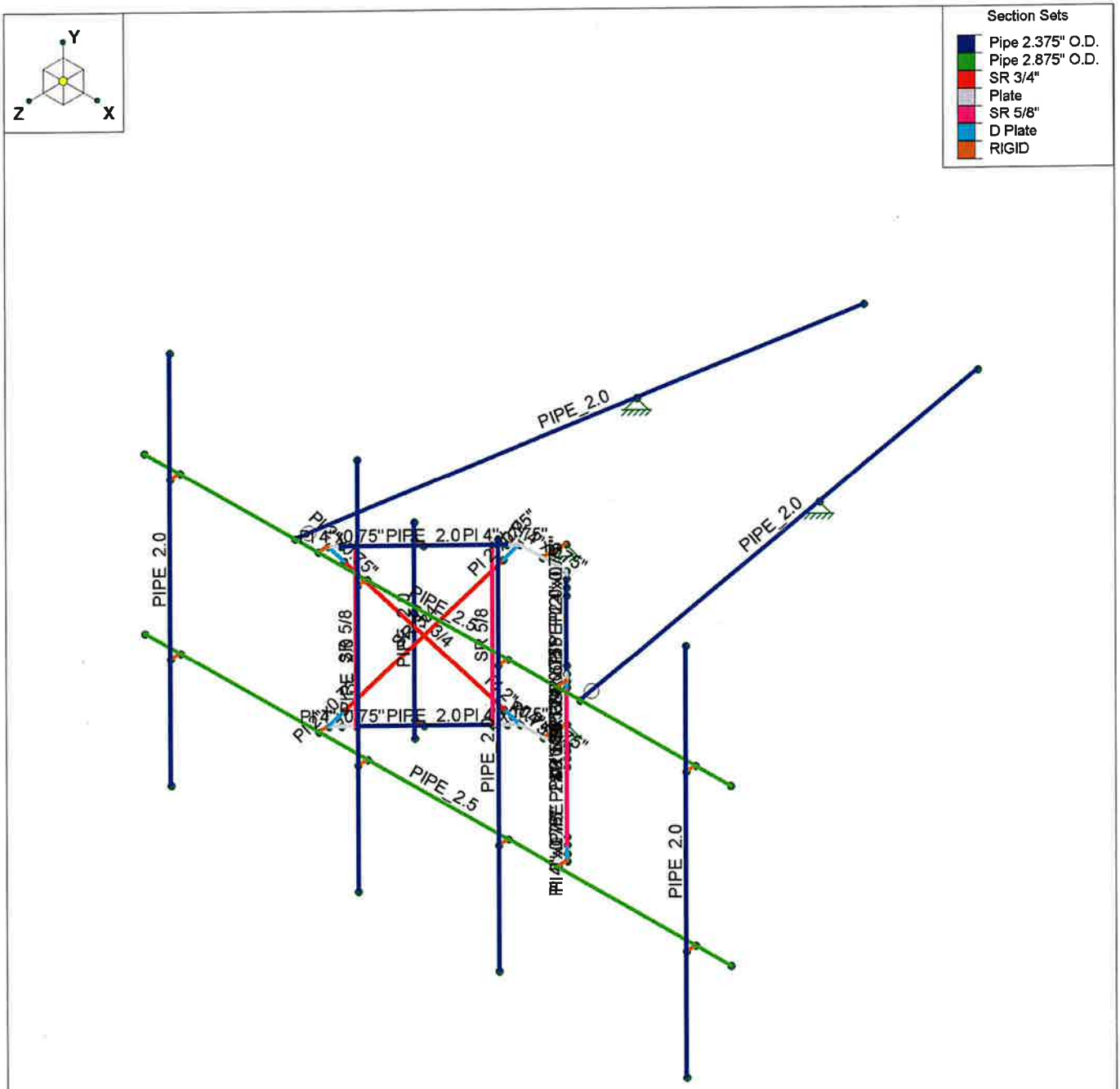
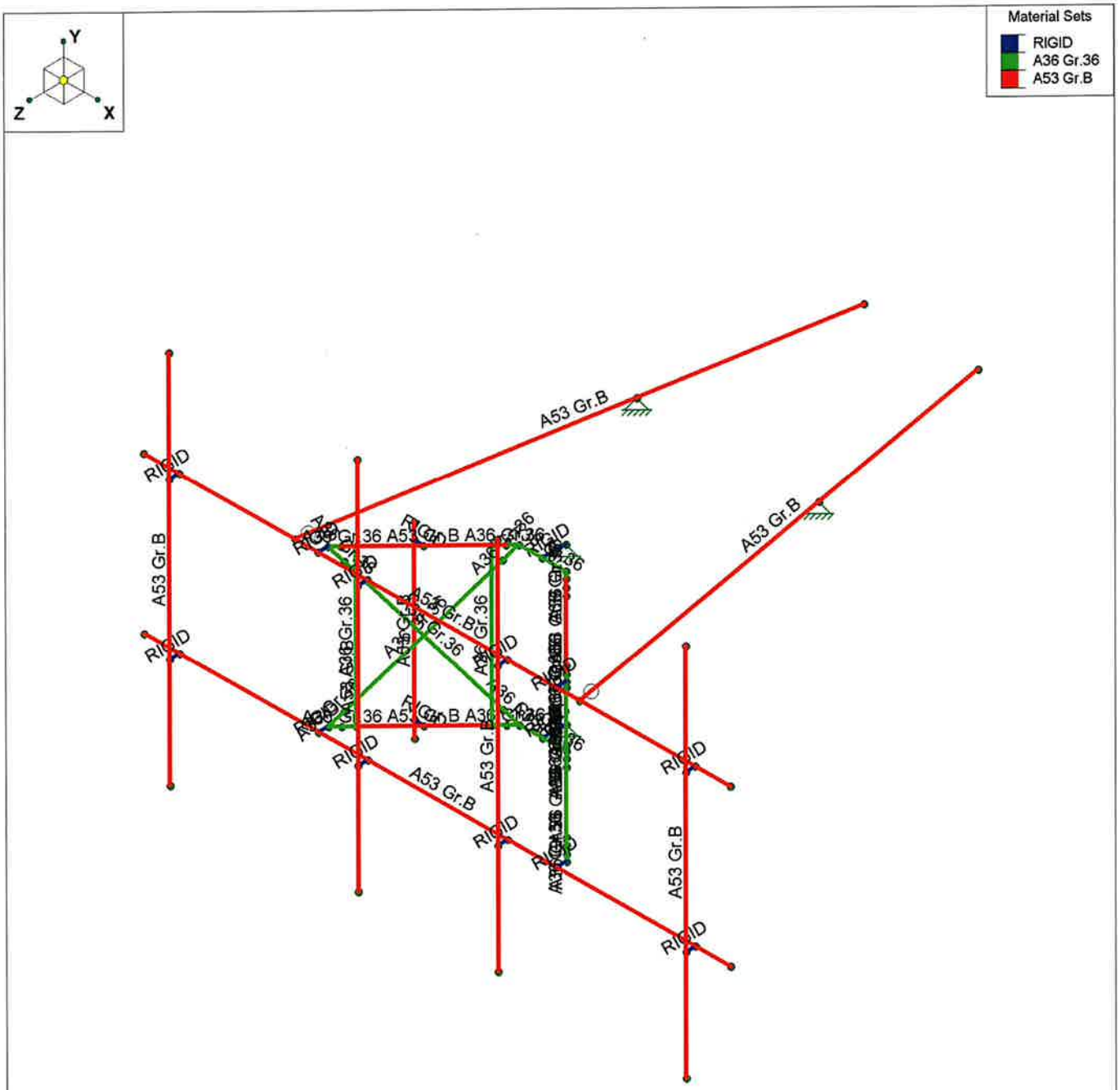


Envelope Only Solution

Nexius	STONINGTON_2_CT	Shape
ADB		Oct 22, 2019 at 3:36 PM
VZW467124A01-NX064		VFA12-HD.r3d



Envelope Only Solution

Nexius	STONINGTON_2_CT	Material Property
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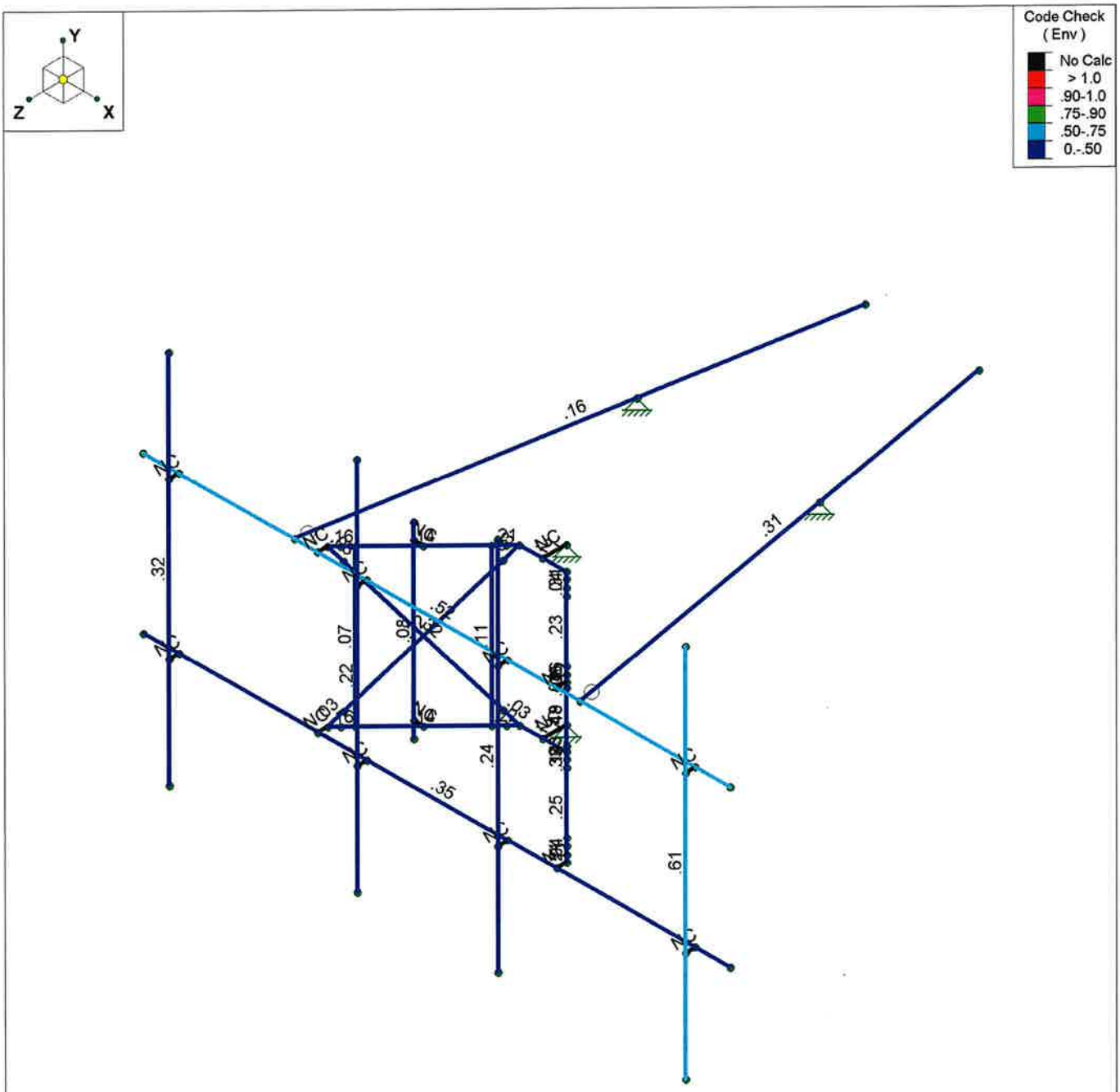
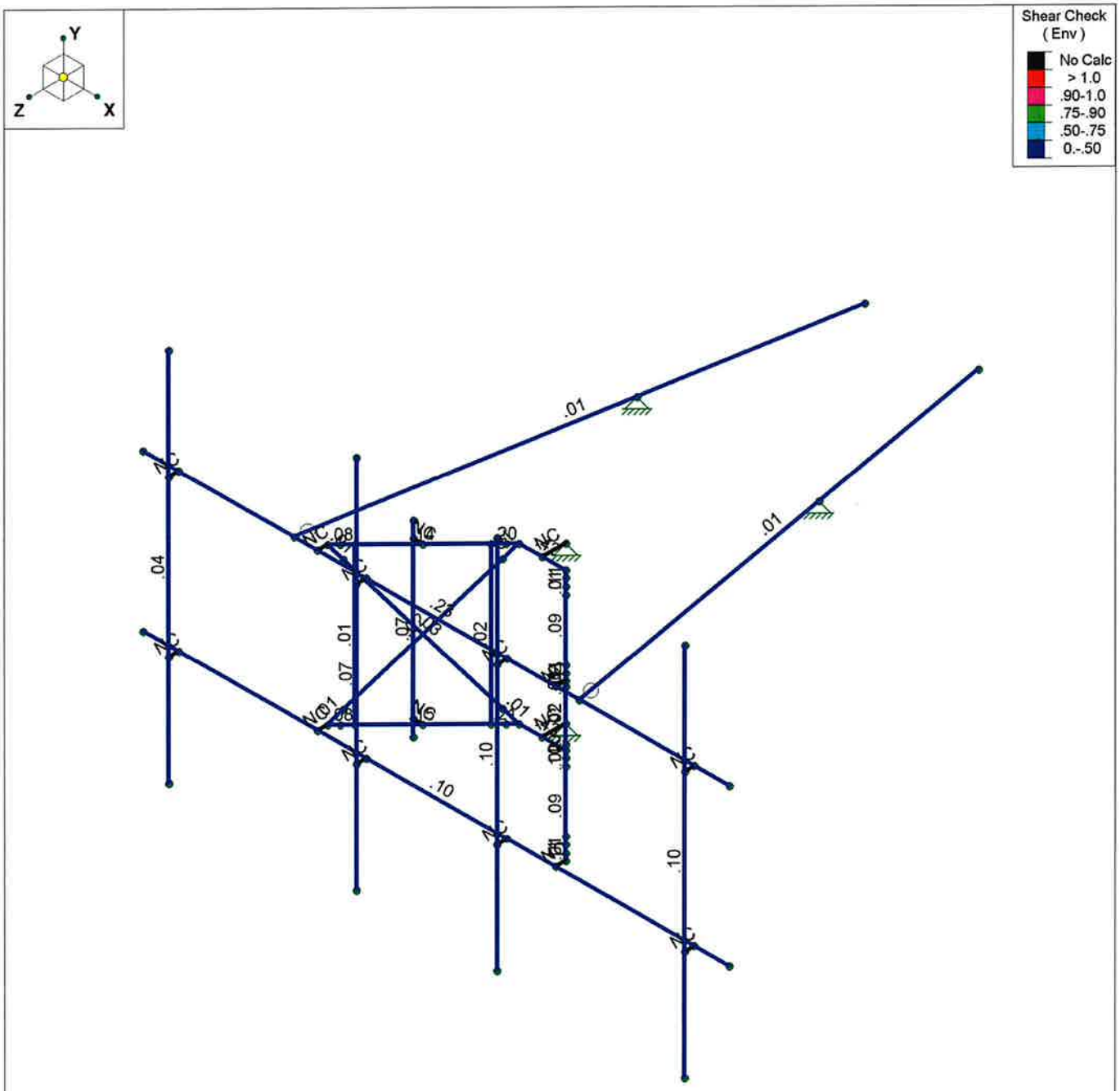


Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Nexius	STONINGTON_2_CT	Ration_Flexural
ADB		Oct 22, 2019 at 3:36 PM
VZW467124A01-NX064		VFA12-HD.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Nexius	STONINGTON_2_CT	Ration_Shear
ADB		Oct 22, 2019 at 3:36 PM
VZW467124A01-NX064		VFA12-HD.r3d

Hot Rolled Steel Properties

	Label	E [k...	G [k...	Nu	Therm (\1E5 F)	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	290...	111...	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr....	290...	111...	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr..	290...	111...	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr..	290...	111...	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr..	290...	111...	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	290...	111...	.3	.65	.49	35	1.6	60	1.2
7	A1085	290...	111...	.3	.65	.49	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Pipe 2.375" O.D.	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
2	Pipe 2.875" O.D.	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
3	SR 3/4"	SR 3/4	Beam	Pipe	A36 Gr.36	Typical	.442	.016	.016	.031
4	Plate	PI 4"x0.75"	Beam	RECT	A36 Gr.36	Typical	3	.141	4	.496
5	SR 5/8"	SR 5/8	Beam	Pipe	A36 Gr.36	Typical	.307	.007	.007	.015
6	D Plate	PI 2"x0.75"	Beam	RECT	A36 Gr.36	Typical	1.5	.07	.5	.215

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N58	-6.25	-3.333333	2.541667	32	
2	N59	6.25	-3.333333	2.541667	32	
3	N59A	-5.5	-3.333333	2.541667	32	
4	N60A	-5.5	-3.333333	2.75	32	
5	N12	-6.25	0	2.541667	32	
6	N13	6.25	0	2.541667	32	
7	N14	-5.5	0	2.541667	32	
8	N15	-5.5	0	2.75	32	
9	N10	-5.5	2.333333	2.75	32	
10	N11A	-5.5	-5.666667	2.75	32	
11	N12A	0	0	-0.208333	0	
12	N13A	-2.541667	0	2.333333	0	
13	N16	-0.5	0	0.291667	0	
14	N16A	2.541667	0	2.333333	0	
15	N17	0.5	0	0.291667	0	
16	N17A	-0.636943	0	0.42861	0	
17	N18	0.636943	0	0.42861	0	
18	N19	-2.40471	0	2.196377	0	
19	N20	2.40471	0	2.196377	0	
20	N21	-2.541667	0	2.541667	0	
21	N22	2.541667	0	2.541667	0	
22	N23	0	0	0.291667	0	
23	N24	-0.794628	0	0.586294	0	
24	N25	0.794628	0	0.586294	0	
25	N26	-2.247025	0	2.038692	0	
26	N27	2.247025	0	2.038692	0	
27	N28	0	-3.333333	-0.208333	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
28	N29	-2.541667	-3.333333	2.333333	0	
29	N30	-0.5	-3.333333	0.291667	0	
30	N31	2.541667	-3.333333	2.333333	0	
31	N32	0.5	-3.333333	0.291667	0	
32	N33	-0.636943	-3.333333	0.42861	0	
33	N34	0.636943	-3.333333	0.42861	0	
34	N35	-2.40471	-3.333333	2.196377	0	
35	N36	2.40471	-3.333333	2.196377	0	
36	N37	-2.541667	-3.333333	2.541667	0	
37	N38	2.541667	-3.333333	2.541667	0	
38	N39	0	-3.333333	0.291667	0	
39	N40	-0.794628	-3.333333	0.586294	0	
40	N41	0.794628	-3.333333	0.586294	0	
41	N42	-2.247025	-3.333333	2.038692	0	
42	N43	2.247025	-3.333333	2.038692	0	
43	N44	-0.672069	-0.280929	0.463735	0	
44	N45	-2.369598	-0.280929	2.161265	0	
45	N46	2.369598	-3.052405	2.161265	0	
46	N47	0.672069	-3.052405	0.463735	0	
47	N48	-2.369608	-3.052421	2.161274	0	
48	N49	-0.672059	-3.052421	0.463726	0	
49	N50	0.672059	-0.280913	0.463726	0	
50	N51	2.369608	-0.280913	2.161274	0	
51	N51A	5.5	-3.333333	2.541667	32	
52	N52	5.5	-3.333333	2.75	32	
53	N53	5.5	0	2.541667	32	
54	N54	5.5	0	2.75	32	
55	N55	5.5	2.333333	2.75	32	
56	N56	5.5	-5.666667	2.75	32	
57	N57	-1.5	-3.333333	2.541667	32	
58	N58A	-1.5	-3.333333	2.75	32	
59	N59B	-1.5	0	2.541667	32	
60	N60	-1.5	0	2.75	32	
61	N61	-1.5	2.333333	2.75	32	
62	N62	-1.5	-5.666667	2.75	32	
63	N63	1.5	-3.333333	2.541667	32	
64	N64	1.5	-3.333333	2.75	32	
65	N65	1.5	0	2.541667	32	
66	N66	1.5	0	2.75	32	
67	N67	1.5	2.333333	2.75	32	
68	N68	1.5	-5.666667	2.75	32	
69	N69	3.041667	0	2.541667	0	
70	N70	1.218361	0	-7.798815	0	
71	N71	-1.520826	-3.333333	1.312493	0	
72	N72	-1.520826	0	1.312493	0	
73	N73	-1.729159	-3.333333	1.312493	0	
74	N74	-1.729159	0	1.312493	0	
75	N75	-1.729159	0.3333	1.312493	0	
76	N76	-1.729159	-3.6667	1.312493	0	
77	N78	1.947683	0	-3.662622	0	
78	N79	-3.041667	0	2.541667	0	
79	N80	-1.218361	0	-7.798815	0	
80	N81	-1.947683	0	-3.662622	0	

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M44	Y	-.088	%37.5
2	M44	Y	-.088	%37.5
3	M44	Y	-.057	%50
4	M50	Y	-.082	%12.5
5	M50	Y	-.098	%37.5
6	M47	Y	-.012	%25
7	M5	Y	-.012	%25
8	M54A	Y	-.032	%25

Member Point Loads (BLC 2 : Ice Dead)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M44	Y	-.217	%37.5
2	M44	Y	-.217	%37.5
3	M44	Y	-.064	%50
4	M50	Y	-.05	%12.5
5	M50	Y	-.052	%37.5
6	M47	Y	-.133	%25
7	M5	Y	-.133	%25
8	M54A	Y	-.079	%25

Member Point Loads (BLC 3 : Full Wind Antenna (0 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M44	Z	-.148	0
2	M44	Z	-.148	0
3	M44	Z	-.079	%50
4	M50	Z	-.068	%12.5
5	M50	Z	-.068	%37.5
6	M47	Z	-.048	%.4
7	M5	Z	-.048	%.4
8	M54A	Z	-.113	%25
9	M44	Z	-.148	%75
10	M44	Z	-.148	%75
11	M47	Z	-.048	%49.6
12	M5	Z	-.048	%49.6

Member Point Loads (BLC 4 : Full Wind Antenna (30 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M44	Z	-.123	0
2	M44	Z	-.096	0
3	M44	Z	-.064	%50
4	M50	Z	-.052	%12.5
5	M50	Z	-.054	%37.5
6	M47	Z	-.052	%.4
7	M5	Z	-.052	%.4
8	M54A	Z	-.087	%25
9	M44	Z	-.123	%75
10	M44	Z	-.096	%75
11	M47	Z	-.052	%49.6
12	M5	Z	-.052	%49.6
13	M44	X	.071	0
14	M44	X	.056	0
15	M44	X	.037	%50
16	M50	X	.03	%12.5
17	M50	X	.031	%37.5

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
18	M47	X	.03	%.4
19	M5	X	.03	%.4
20	M54A	X	.05	%25
21	M44	X	.071	%75
22	M44	X	.056	%75
23	M47	X	.03	%49.6
24	M5	X	.03	%49.6

Member Point Loads (BLC 5 : Full Wind Antenna (60 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M44	Z	-.065	0
2	M44	Z	-.019	0
3	M44	Z	-.032	%50
4	M50	Z	-.022	%12.5
5	M50	Z	-.026	%37.5
6	M47	Z	-.043	%.4
7	M5	Z	-.043	%.4
8	M54A	Z	-.038	%25
9	M44	Z	-.065	%75
10	M44	Z	-.019	%75
11	M47	Z	-.043	%49.6
12	M5	Z	-.043	%49.6
13	M44	X	.113	0
14	M44	X	.032	0
15	M44	X	.055	%50
16	M50	X	.039	%12.5
17	M50	X	.044	%37.5
18	M47	X	.074	%.4
19	M5	X	.074	%.4
20	M54A	X	.065	%25
21	M44	X	.113	%75
22	M44	X	.032	%75
23	M47	X	.074	%49.6
24	M5	X	.074	%49.6

Member Point Loads (BLC 6 : Full Wind Antenna (90 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M44	Z	0	0
2	M44	Z	0	0
3	M44	Z	0	%50
4	M50	Z	0	%12.5
5	M50	Z	0	%37.5
6	M47	Z	0	%.4
7	M5	Z	0	%.4
8	M54A	Z	0	%25
9	M44	Z	0	%75
10	M44	Z	0	%75
11	M47	Z	0	%49.6
12	M5	Z	0	%49.6
13	M44	X	.124	0
14	M44	X	0	0
15	M44	X	.059	%50
16	M50	X	.037	%12.5
17	M50	X	.046	%37.5
18	M47	X	.098	%.4
19	M5	X	.098	%.4

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
20	M54A	X	.063	%25
21	M44	X	.124	%75
22	M44	X	0	%75
23	M47	X	.098	%49.6
24	M5	X	.098	%49.6

Member Point Loads (BLC 7 : Full Wind Antenna (120 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M44	Z	.065	0
2	M44	Z	.019	0
3	M44	Z	.032	%50
4	M50	Z	.022	%12.5
5	M50	Z	.026	%37.5
6	M47	Z	.043	%.4
7	M5	Z	.043	%.4
8	M54A	Z	.038	%25
9	M44	Z	.065	%75
10	M44	Z	.019	%75
11	M47	Z	.043	%49.6
12	M5	Z	.043	%49.6
13	M44	X	.113	0
14	M44	X	.032	0
15	M44	X	.055	%50
16	M50	X	.039	%12.5
17	M50	X	.044	%37.5
18	M47	X	.074	%.4
19	M5	X	.074	%.4
20	M54A	X	.065	%25
21	M44	X	.113	%75
22	M44	X	.032	%75
23	M47	X	.074	%49.6
24	M5	X	.074	%49.6

Member Point Loads (BLC 8 : Full Wind Antenna (150 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M44	Z	.123	0
2	M44	Z	.096	0
3	M44	Z	.064	%50
4	M50	Z	.052	%12.5
5	M50	Z	.054	%37.5
6	M47	Z	.052	%.4
7	M5	Z	.052	%.4
8	M54A	Z	.087	%25
9	M44	Z	.123	%75
10	M44	Z	.096	%75
11	M47	Z	.052	%49.6
12	M5	Z	.052	%49.6
13	M44	X	.071	0
14	M44	X	.056	0
15	M44	X	.037	%50
16	M50	X	.03	%12.5
17	M50	X	.031	%37.5
18	M47	X	.03	%.4
19	M5	X	.03	%.4
20	M54A	X	.05	%25
21	M44	X	.071	%75

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
22	M44	X	.056	%75
23	M47	X	.03	%49.6
24	M5	X	.03	%49.6

Member Point Loads (BLC 15 : Ice Wind Antenna (0 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M44	Z	-.043	0
2	M44	Z	-.043	0
3	M44	Z	-.026	%50
4	M50	Z	-.023	%12.5
5	M50	Z	-.023	%37.5
6	M47	Z	-.017	%.4
7	M5	Z	-.017	%.4
8	M54A	Z	-.036	%25
9	M44	Z	-.043	%75
10	M44	Z	-.043	%75
11	M47	Z	-.017	%49.6
12	M5	Z	-.017	%49.6

Member Point Loads (BLC 16 : Ice Wind Antenna (30 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M44	Z	-.036	0
2	M44	Z	-.028	0
3	M44	Z	-.022	%50
4	M50	Z	-.018	%12.5
5	M50	Z	-.019	%37.5
6	M47	Z	-.018	%.4
7	M5	Z	-.018	%.4
8	M54A	Z	-.028	%25
9	M44	Z	-.036	%75
10	M44	Z	-.028	%75
11	M47	Z	-.018	%49.6
12	M5	Z	-.018	%49.6
13	M44	X	.021	0
14	M44	X	.016	0
15	M44	X	.013	%50
16	M50	X	.011	%12.5
17	M50	X	.011	%37.5
18	M47	X	.01	%.4
19	M5	X	.01	%.4
20	M54A	X	.016	%25
21	M44	X	.021	%75
22	M44	X	.016	%75
23	M47	X	.01	%49.6
24	M5	X	.01	%49.6

Member Point Loads (BLC 17 : Ice Wind Antenna (60 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M44	Z	-.02	0
2	M44	Z	-.005	0
3	M44	Z	-.011	%50
4	M50	Z	-.008	%12.5
5	M50	Z	-.009	%37.5
6	M47	Z	-.013	%.4
7	M5	Z	-.013	%.4

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
8	M54A	Z	-.013	%25
9	M44	Z	-.02	%75
10	M44	Z	-.005	%75
11	M47	Z	-.013	%49.6
12	M5	Z	-.013	%49.6
13	M44	X	.034	0
14	M44	X	.009	0
15	M44	X	.02	%50
16	M50	X	.015	%12.5
17	M50	X	.016	%37.5
18	M47	X	.023	%.4
19	M5	X	.023	%.4
20	M54A	X	.022	%25
21	M44	X	.034	%75
22	M44	X	.009	%75
23	M47	X	.023	%49.6
24	M5	X	.023	%49.6

Member Point Loads (BLC 18 : Ice Wind Antenna (90 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M44	Z	0	0
2	M44	Z	0	0
3	M44	Z	0	%50
4	M50	Z	0	%12.5
5	M50	Z	0	%37.5
6	M47	Z	0	%.4
7	M5	Z	0	%.4
8	M54A	Z	0	%25
9	M44	Z	0	%75
10	M44	Z	0	%75
11	M47	Z	0	%49.6
12	M5	Z	0	%49.6
13	M44	X	.038	0
14	M44	X	0	0
15	M44	X	.021	%50
16	M50	X	.015	%12.5
17	M50	X	.017	%37.5
18	M47	X	.029	%.4
19	M5	X	.029	%.4
20	M54A	X	.022	%25
21	M44	X	.038	%75
22	M44	X	0	%75
23	M47	X	.029	%49.6
24	M5	X	.029	%49.6

Member Point Loads (BLC 19 : Ice Wind Antenna (120 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M44	Z	.02	0
2	M44	Z	.005	0
3	M44	Z	.011	%50
4	M50	Z	.008	%12.5
5	M50	Z	.009	%37.5
6	M47	Z	.013	%.4
7	M5	Z	.013	%.4
8	M54A	Z	.013	%25
9	M44	Z	.02	%75

Member Point Loads (BLC 19 : Ice Wind Antenna (120 Deg)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
10	M44	Z	.005	%75
11	M47	Z	.013	%49.6
12	M5	Z	.013	%49.6
13	M44	X	.034	0
14	M44	X	.009	0
15	M44	X	.02	%50
16	M50	X	.015	%12.5
17	M50	X	.016	%37.5
18	M47	X	.023	%.4
19	M5	X	.023	%.4
20	M54A	X	.022	%25
21	M44	X	.034	%75
22	M44	X	.009	%75
23	M47	X	.023	%49.6
24	M5	X	.023	%49.6

Member Point Loads (BLC 20 : Ice Wind Antenna (150 Deg))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M44	Z	.036	0
2	M44	Z	.005	0
3	M44	Z	.011	%50
4	M50	Z	.008	%12.5
5	M50	Z	.009	%37.5
6	M47	Z	.013	%.4
7	M5	Z	.013	%.4
8	M54A	Z	.013	%25
9	M44	Z	.036	%75
10	M44	Z	.005	%75
11	M47	Z	.013	%49.6
12	M5	Z	.013	%49.6
13	M44	X	.021	0
14	M44	X	.009	0
15	M44	X	.02	%50
16	M50	X	.015	%12.5
17	M50	X	.016	%37.5
18	M47	X	.023	%.4
19	M5	X	.023	%.4
20	M54A	X	.022	%25
21	M44	X	.021	%75
22	M44	X	.009	%75
23	M47	X	.023	%49.6
24	M5	X	.023	%49.6

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

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M44	Z	-.003	%37.5
2	M44	Z	-.003	%37.5
3	M44	Z	-.002	%50
4	M50	Z	-.002	%12.5
5	M50	Z	-.003	%37.5
6	M47	Z	0	%25
7	M5	Z	0	%25
8	M54A	Z	-.001	%25

Member Point Loads (BLC 28 : Seismic Antenna (90 Deg))

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

Member Point Loads (BLC 28 : Seismic Antenna (90 Deg)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M44	X	.003	%37.5
2	M44	X	.003	%37.5
3	M44	X	.002	%50
4	M50	X	.002	%12.5
5	M50	X	.003	%37.5
6	M47	X	0	%25
7	M5	X	0	%25
8	M54A	X	.001	%25

Member Point Loads (BLC 41 : Seismic Vertical Antennas)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M44	Y	-.018	%37.5
2	M44	Y	-.018	%37.5
3	M44	Y	-.011	%50
4	M50	Y	-.016	%12.5
5	M50	Y	-.02	%37.5
6	M47	Y	-.002	%25
7	M5	Y	-.002	%25
8	M54A	Y	-.006	%25

Member Distributed Loads (BLC 2 : Ice Dead)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
1	M54	Y	-.01	-.01	0	%100
2	M40D	Y	-.004	-.004	0	%100
3	M6	Y	-.01	-.01	0	%100
4	M7	Y	-.004	-.004	0	%100
5	M5	Y	-.009	-.009	0	%100
6	M10	Y	-.004	-.004	0	%100
7	M11	Y	-.009	-.009	0	%100
8	M12	Y	-.009	-.009	0	%100
9	M15	Y	-.004	-.004	0	%100
10	M16	Y	-.004	-.004	0	%100
11	M17	Y	-.004	-.004	0	%100
12	M12A	Y	-.004	-.004	0	%100
13	M13	Y	-.004	-.004	0	%100
14	M14	Y	-.004	-.004	0	%100
15	M15A	Y	-.004	-.004	0	%100
16	M16A	Y	-.004	-.004	0	%100
17	M17A	Y	-.009	-.009	0	%100
18	M18	Y	-.009	-.009	0	%100
19	M19	Y	-.004	-.004	0	%100
20	M20	Y	-.004	-.004	0	%100
21	M21	Y	-.004	-.004	0	%100
22	M22	Y	-.004	-.004	0	%100
23	M23	Y	-.004	-.004	0	%100
24	M24	Y	-.004	-.004	0	%100
25	M25	Y	-.004	-.004	0	%100
26	M26	Y	-.005	-.005	0	%100
27	M27	Y	-.005	-.005	0	%100
28	M28	Y	-.005	-.005	0	%100
29	M29	Y	-.005	-.005	0	%100
30	M30	Y	-.004	-.004	0	%100
31	M31	Y	-.004	-.004	0	%100
32	M32	Y	-.004	-.004	0	%100
33	M33	Y	-.004	-.004	0	%100

Member Distributed Loads (BLC 2 : Ice Dead) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,...
34	M34	Y	-.005	-.005	0	%100
35	M35	Y	-.005	-.005	0	%100
36	M36	Y	-.005	-.005	0	%100
37	M37	Y	-.005	-.005	0	%100
38	M38	Y	-.004	-.004	0	%100
39	M39	Y	-.004	-.004	0	%100
40	M40	Y	-.004	-.004	0	%100
41	M41	Y	-.004	-.004	0	%100
42	M42	Y	-.004	-.004	0	%100
43	M43	Y	-.004	-.004	0	%100
44	M44	Y	-.009	-.009	0	%100
45	M45	Y	-.004	-.004	0	%100
46	M46	Y	-.004	-.004	0	%100
47	M47	Y	-.009	-.009	0	%100
48	M48	Y	-.004	-.004	0	%100
49	M49	Y	-.004	-.004	0	%100
50	M50	Y	-.009	-.009	0	%100
51	M51	Y	-.009	-.009	0	%100
52	M52	Y	-.004	-.004	0	%100
53	M53	Y	-.004	-.004	0	%100
54	M54A	Y	-.009	-.009	0	%100
55	M56	Y	-.009	-.009	0	%100

Member Distributed Loads (BLC 9 : Full Wind Members (0 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,...
1	M54	Z	-.01	-.01	0	%100
2	M6	Z	-.01	-.01	0	%100
3	M5	Z	-.009	-.009	0	%.4
4	M11	Z	-.004	-.004	0	%100
5	M12	Z	-.004	-.004	0	%100
6	M17A	Z	-.004	-.004	0	%100
7	M18	Z	-.004	-.004	0	%100
8	M26	Z	-.002	-.002	0	%100
9	M27	Z	-.002	-.002	0	%100
10	M28	Z	-.002	-.002	0	%100
11	M29	Z	-.002	-.002	0	%100
12	M34	Z	-.002	-.002	0	%100
13	M35	Z	-.002	-.002	0	%100
14	M36	Z	-.002	-.002	0	%100
15	M37	Z	-.002	-.002	0	%100
16	M47	Z	-.009	-.009	0	%.4
17	M50	Z	-.009	-.009	0	%4.7
18	M51	Z	0	0	0	%100
19	M54A	Z	-.009	-.009	0	%100
20	M56	Z	0	0	0	%100
21	M5	Z	-.009	-.009	%49.6	%100
22	M44	Z	-.009	-.009	%75	%100
23	M47	Z	-.009	-.009	%49.6	%100
24	M50	Z	-.009	-.009	%45.3	%100
25	M54	X	0	0	0	%100
26	M6	X	0	0	0	%100
27	M5	X	0	0	0	%100
28	M11	X	0	0	0	%100
29	M12	X	0	0	0	%100
30	M17A	X	0	0	0	%100
31	M18	X	0	0	0	%100

Member Distributed Loads (BLC 9 : Full Wind Members (0 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
32	M26	X	0	0	0	%100
33	M27	X	0	0	0	%100
34	M28	X	0	0	0	%100
35	M29	X	0	0	0	%100
36	M34	X	0	0	0	%100
37	M35	X	0	0	0	%100
38	M36	X	0	0	0	%100
39	M37	X	0	0	0	%100
40	M44	X	0	0	0	%100
41	M47	X	0	0	0	%100
42	M50	X	0	0	0	%100
43	M51	X	0	0	0	%100
44	M54A	X	0	0	0	%11.9
45	M56	X	0	0	0	%100
46	M54A	X	0	0	%38.1	%100

Member Distributed Loads (BLC 10 : Full Wind Members (30 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
1	M54	Z	-.007	-.007	0	%100
2	M6	Z	-.007	-.007	0	%100
3	M5	Z	-.008	-.008	0	%.4
4	M11	Z	-.001	-.001	0	%100
5	M12	Z	-.007	-.007	0	%100
6	M17A	Z	-.001	-.001	0	%100
7	M18	Z	-.007	-.007	0	%100
8	M26	Z	-.002	-.002	0	%100
9	M27	Z	-.002	-.002	0	%100
10	M28	Z	-.002	-.002	0	%100
11	M29	Z	-.002	-.002	0	%100
12	M34	Z	-.002	-.002	0	%100
13	M35	Z	-.002	-.002	0	%100
14	M36	Z	-.002	-.002	0	%100
15	M37	Z	-.002	-.002	0	%100
16	M47	Z	-.008	-.008	0	%.4
17	M50	Z	-.008	-.008	0	%4.7
18	M51	Z	-.003	-.003	0	%100
19	M54A	Z	-.008	-.008	0	%100
20	M56	Z	-.001	-.001	0	%100
21	M5	Z	-.008	-.008	%49.6	%100
22	M44	Z	-.008	-.008	%75	%100
23	M47	Z	-.008	-.008	%49.6	%100
24	M50	Z	-.008	-.008	%45.3	%100
25	M54	X	.004	.004	0	%100
26	M6	X	.004	.004	0	%100
27	M5	X	.004	.004	0	%100
28	M11	X	0	0	0	%100
29	M12	X	.004	.004	0	%100
30	M17A	X	0	0	0	%100
31	M18	X	.004	.004	0	%100
32	M26	X	.001	.001	0	%100
33	M27	X	.001	.001	0	%100
34	M28	X	.001	.001	0	%100
35	M29	X	.001	.001	0	%100
36	M34	X	.001	.001	0	%100
37	M35	X	.001	.001	0	%100
38	M36	X	.001	.001	0	%100

Member Distributed Loads (BLC 10 : Full Wind Members (30 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
39	M37	X	.001	.001	0	%100
40	M44	X	.004	.004	0	%100
41	M47	X	.004	.004	0	%100
42	M50	X	.004	.004	0	%100
43	M51	X	.002	.002	0	%100
44	M54A	X	.004	.004	0	%11.9
45	M56	X	.001	.001	0	%100
46	M54A	X	.004	.004	%38.1	%100

Member Distributed Loads (BLC 11 : Full Wind Members (60 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
1	M54	Z	-.001	-.001	0	%100
2	M6	Z	-.001	-.001	0	%100
3	M5	Z	-.004	-.004	0	%.4
4	M11	Z	0	0	0	%100
5	M12	Z	-.004	-.004	0	%100
6	M17A	Z	0	0	0	%100
7	M18	Z	-.004	-.004	0	%100
8	M26	Z	-.001	-.001	0	%100
9	M27	Z	-.001	-.001	0	%100
10	M28	Z	-.001	-.001	0	%100
11	M29	Z	-.001	-.001	0	%100
12	M34	Z	-.001	-.001	0	%100
13	M35	Z	-.001	-.001	0	%100
14	M36	Z	-.001	-.001	0	%100
15	M37	Z	-.001	-.001	0	%100
16	M47	Z	-.004	-.004	0	%.4
17	M50	Z	-.004	-.004	0	%4.7
18	M51	Z	-.004	-.004	0	%100
19	M54A	Z	-.004	-.004	0	%100
20	M56	Z	-.003	-.003	0	%100
21	M5	Z	-.004	-.004	%49.6	%100
22	M44	Z	-.004	-.004	%75	%100
23	M47	Z	-.004	-.004	%49.6	%100
24	M50	Z	-.004	-.004	%45.3	%100
25	M54	X	.002	.002	0	%100
26	M6	X	.002	.002	0	%100
27	M5	X	.008	.008	0	%100
28	M11	X	.001	.001	0	%100
29	M12	X	.007	.007	0	%100
30	M17A	X	.001	.001	0	%100
31	M18	X	.007	.007	0	%100
32	M26	X	.002	.002	0	%100
33	M27	X	.002	.002	0	%100
34	M28	X	.002	.002	0	%100
35	M29	X	.002	.002	0	%100
36	M34	X	.002	.002	0	%100
37	M35	X	.002	.002	0	%100
38	M36	X	.002	.002	0	%100
39	M37	X	.002	.002	0	%100
40	M44	X	.008	.008	0	%100
41	M47	X	.008	.008	0	%100
42	M50	X	.008	.008	0	%100
43	M51	X	.007	.007	0	%100
44	M54A	X	.008	.008	0	%11.9
45	M56	X	.004	.004	0	%100

Member Distributed Loads (BLC 11 : Full Wind Members (60 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
46	M54A	X	.008	.008	%38.1	%100

Member Distributed Loads (BLC 12 : Full Wind Members (90 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
1	M54	Z	0	0	0	%100
2	M6	Z	0	0	0	%100
3	M5	Z	0	0	0	%.4
4	M11	Z	0	0	0	%100
5	M12	Z	0	0	0	%100
6	M17A	Z	0	0	0	%100
7	M18	Z	0	0	0	%100
8	M26	Z	0	0	0	%100
9	M27	Z	0	0	0	%100
10	M28	Z	0	0	0	%100
11	M29	Z	0	0	0	%100
12	M34	Z	0	0	0	%100
13	M35	Z	0	0	0	%100
14	M36	Z	0	0	0	%100
15	M37	Z	0	0	0	%100
16	M47	Z	0	0	0	%.4
17	M50	Z	0	0	0	%4.7
18	M51	Z	0	0	0	%100
19	M54A	Z	0	0	0	%100
20	M56	Z	0	0	0	%100
21	M5	Z	0	0	%49.6	%100
22	M44	Z	0	0	%75	%100
23	M47	Z	0	0	%49.6	%100
24	M50	Z	0	0	%45.3	%100
25	M54	X	0	0	0	%100
26	M6	X	0	0	0	%100
27	M5	X	.009	.009	0	%100
28	M11	X	.004	.004	0	%100
29	M12	X	.004	.004	0	%100
30	M17A	X	.004	.004	0	%100
31	M18	X	.004	.004	0	%100
32	M26	X	.002	.002	0	%100
33	M27	X	.002	.002	0	%100
34	M28	X	.002	.002	0	%100
35	M29	X	.002	.002	0	%100
36	M34	X	.002	.002	0	%100
37	M35	X	.002	.002	0	%100
38	M36	X	.002	.002	0	%100
39	M37	X	.002	.002	0	%100
40	M44	X	.009	.009	0	%100
41	M47	X	.009	.009	0	%100
42	M50	X	.009	.009	0	%100
43	M51	X	.008	.008	0	%100
44	M54A	X	.009	.009	0	%11.9
45	M56	X	.008	.008	0	%100
46	M54A	X	.009	.009	%38.1	%100

Member Distributed Loads (BLC 13 : Full Wind Members (120 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
1	M54	Z	.001	.001	0	%100
2	M6	Z	.001	.001	0	%100
3	M5	Z	.004	.004	0	%.4

Member Distributed Loads (BLC 13 : Full Wind Members (120 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
4	M11	Z	.004	.004	0	%100
5	M12	Z	0	0	0	%100
6	M17A	Z	.004	.004	0	%100
7	M18	Z	0	0	0	%100
8	M26	Z	.001	.001	0	%100
9	M27	Z	.001	.001	0	%100
10	M28	Z	.001	.001	0	%100
11	M29	Z	.001	.001	0	%100
12	M34	Z	.001	.001	0	%100
13	M35	Z	.001	.001	0	%100
14	M36	Z	.001	.001	0	%100
15	M37	Z	.001	.001	0	%100
16	M47	Z	.004	.004	0	%.4
17	M50	Z	.004	.004	0	%4.7
18	M51	Z	.003	.003	0	%100
19	M54A	Z	.004	.004	0	%100
20	M56	Z	.004	.004	0	%100
21	M5	Z	.004	.004	%49.6	%100
22	M44	Z	.004	.004	%75	%100
23	M47	Z	.004	.004	%49.6	%100
24	M50	Z	.004	.004	%45.3	%100
25	M54	X	.002	.002	0	%100
26	M6	X	.002	.002	0	%100
27	M5	X	.008	.008	0	%100
28	M11	X	.007	.007	0	%100
29	M12	X	.001	.001	0	%100
30	M17A	X	.007	.007	0	%100
31	M18	X	.001	.001	0	%100
32	M26	X	.002	.002	0	%100
33	M27	X	.002	.002	0	%100
34	M28	X	.002	.002	0	%100
35	M29	X	.002	.002	0	%100
36	M34	X	.002	.002	0	%100
37	M35	X	.002	.002	0	%100
38	M36	X	.002	.002	0	%100
39	M37	X	.002	.002	0	%100
40	M44	X	.008	.008	0	%100
41	M47	X	.008	.008	0	%100
42	M50	X	.008	.008	0	%100
43	M51	X	.004	.004	0	%100
44	M54A	X	.008	.008	0	%11.9
45	M56	X	.007	.007	0	%100
46	M54A	X	.008	.008	%38.1	%100

Member Distributed Loads (BLC 14 : Full Wind Members (150 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
1	M54	Z	.007	.007	0	%100
2	M6	Z	.007	.007	0	%100
3	M5	Z	.008	.008	0	%.4
4	M11	Z	.007	.007	0	%100
5	M12	Z	.001	.001	0	%100
6	M17A	Z	.007	.007	0	%100
7	M18	Z	.001	.001	0	%100
8	M26	Z	.002	.002	0	%100
9	M27	Z	.002	.002	0	%100
10	M28	Z	.002	.002	0	%100

Member Distributed Loads (BLC 14 : Full Wind Members (150 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
11	M29	Z	.002	.002	0	%100
12	M34	Z	.002	.002	0	%100
13	M35	Z	.002	.002	0	%100
14	M36	Z	.002	.002	0	%100
15	M37	Z	.002	.002	0	%100
16	M47	Z	.008	.008	0	%.4
17	M50	Z	.008	.008	0	%4.7
18	M51	Z	.001	.001	0	%100
19	M54A	Z	.008	.008	0	%100
20	M56	Z	.003	.003	0	%100
21	M5	Z	.008	.008	%49.6	%100
22	M44	Z	.008	.008	%75	%100
23	M47	Z	.008	.008	%49.6	%100
24	M50	Z	.008	.008	%45.3	%100
25	M54	X	.004	.004	0	%100
26	M6	X	.004	.004	0	%100
27	M5	X	.004	.004	0	%100
28	M11	X	.004	.004	0	%100
29	M12	X	0	0	0	%100
30	M17A	X	.004	.004	0	%100
31	M18	X	0	0	0	%100
32	M26	X	.001	.001	0	%100
33	M27	X	.001	.001	0	%100
34	M28	X	.001	.001	0	%100
35	M29	X	.001	.001	0	%100
36	M34	X	.001	.001	0	%100
37	M35	X	.001	.001	0	%100
38	M36	X	.001	.001	0	%100
39	M37	X	.001	.001	0	%100
40	M44	X	.004	.004	0	%100
41	M47	X	.004	.004	0	%100
42	M50	X	.004	.004	0	%100
43	M51	X	.001	.001	0	%100
44	M54A	X	.004	.004	0	%11.9
45	M56	X	.002	.002	0	%100
46	M54A	X	.004	.004	%38.1	%100

Member Distributed Loads (BLC 21 : Ice Wind Members (0 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
1	M54	Z	-.005	-.005	0	%100
2	M40D	Z	0	0	0	%100
3	M6	Z	-.005	-.005	0	%100
4	M7	Z	0	0	0	%100
5	M5	Z	-.005	-.005	0	%.4
6	M10	Z	-.004	-.004	0	%100
7	M11	Z	-.003	-.003	0	%100
8	M12	Z	-.003	-.003	0	%100
9	M15	Z	0	0	0	%100
10	M16	Z	0	0	0	%100
11	M17	Z	0	0	0	%100
12	M12A	Z	-.002	-.002	0	%100
13	M13	Z	-.002	-.002	0	%100
14	M14	Z	-.002	-.002	0	%100
15	M15A	Z	-.002	-.002	0	%100
16	M16A	Z	-.004	-.004	0	%100
17	M17A	Z	-.003	-.003	0	%100

Member Distributed Loads (BLC 21 : Ice Wind Members (0 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
18	M18	Z	-.003	-.003	0	%100
19	M19	Z	0	0	0	%100
20	M20	Z	0	0	0	%100
21	M21	Z	0	0	0	%100
22	M22	Z	-.002	-.002	0	%100
23	M23	Z	-.002	-.002	0	%100
24	M24	Z	-.002	-.002	0	%100
25	M25	Z	-.002	-.002	0	%100
26	M26	Z	-.004	-.004	0	%100
27	M27	Z	-.004	-.004	0	%100
28	M28	Z	-.004	-.004	0	%100
29	M29	Z	-.004	-.004	0	%100
30	M30	Z	-.007	-.007	0	%100
31	M31	Z	-.007	-.007	0	%100
32	M32	Z	-.007	-.007	0	%100
33	M33	Z	-.007	-.007	0	%100
34	M34	Z	-.004	-.004	0	%100
35	M35	Z	-.004	-.004	0	%100
36	M36	Z	-.004	-.004	0	%100
37	M37	Z	-.004	-.004	0	%100
38	M38	Z	-.007	-.007	0	%100
39	M39	Z	-.007	-.007	0	%100
40	M40	Z	-.007	-.007	0	%100
41	M41	Z	-.007	-.007	0	%100
42	M42	Z	0	0	0	%100
43	M43	Z	0	0	0	%100
44	M45	Z	0	0	0	%100
45	M46	Z	0	0	0	%100
46	M47	Z	-.005	-.005	0	%.4
47	M48	Z	0	0	0	%100
48	M49	Z	0	0	0	%100
49	M50	Z	-.005	-.005	0	%4.7
50	M51	Z	0	0	0	%100
51	M52	Z	-.007	-.007	0	%100
52	M53	Z	-.007	-.007	0	%100
53	M54A	Z	-.005	-.005	0	%100
54	M56	Z	0	0	0	%100
55	M5	Z	-.005	-.005	%49.6	%100
56	M44	Z	-.005	-.005	%75	%100
57	M47	Z	-.005	-.005	%49.6	%100
58	M50	Z	-.005	-.005	%45.3	%100
59	M54	X	0	0	0	%100
60	M40D	X	0	0	0	%100
61	M6	X	0	0	0	%100
62	M7	X	0	0	0	%100
63	M5	X	0	0	0	%100
64	M10	X	0	0	0	%100
65	M11	X	0	0	0	%100
66	M12	X	0	0	0	%100
67	M15	X	0	0	0	%100
68	M16	X	0	0	0	%100
69	M17	X	0	0	0	%100
70	M12A	X	0	0	0	%100
71	M13	X	0	0	0	%100
72	M14	X	0	0	0	%100
73	M15A	X	0	0	0	%100
74	M16A	X	0	0	0	%100

Member Distributed Loads (BLC 21 : Ice Wind Members (0 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft..	End Location[ft,...
75	M17A	X	0	0	0	%100
76	M18	X	0	0	0	%100
77	M19	X	0	0	0	%100
78	M20	X	0	0	0	%100
79	M21	X	0	0	0	%100
80	M22	X	0	0	0	%100
81	M23	X	0	0	0	%100
82	M24	X	0	0	0	%100
83	M25	X	0	0	0	%100
84	M26	X	0	0	0	%100
85	M27	X	0	0	0	%100
86	M28	X	0	0	0	%100
87	M29	X	0	0	0	%100
88	M30	X	0	0	0	%100
89	M31	X	0	0	0	%100
90	M32	X	0	0	0	%100
91	M33	X	0	0	0	%100
92	M34	X	0	0	0	%100
93	M35	X	0	0	0	%100
94	M36	X	0	0	0	%100
95	M37	X	0	0	0	%100
96	M38	X	0	0	0	%100
97	M39	X	0	0	0	%100
98	M40	X	0	0	0	%100
99	M41	X	0	0	0	%100
100	M42	X	0	0	0	%100
101	M43	X	0	0	0	%100
102	M44	X	0	0	0	%100
103	M45	X	0	0	0	%100
104	M46	X	0	0	0	%100
105	M47	X	0	0	0	%100
106	M48	X	0	0	0	%100
107	M49	X	0	0	0	%100
108	M50	X	0	0	0	%100
109	M51	X	0	0	0	%100
110	M52	X	0	0	0	%100
111	M53	X	0	0	0	%100
112	M54A	X	0	0	0	%11.9
113	M56	X	0	0	0	%100
114	M54A	X	0	0	%38.1	%100

Member Distributed Loads (BLC 22 : Ice Wind Members (30 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft..	End Location[ft,...
1	M54	Z	-.004	-.004	0	%100
2	M40D	Z	0	0	0	%100
3	M6	Z	-.004	-.004	0	%100
4	M7	Z	0	0	0	%100
5	M5	Z	-.004	-.004	0	%.4
6	M10	Z	-.003	-.003	0	%100
7	M11	Z	-.002	-.002	0	%100
8	M12	Z	-.003	-.003	0	%100
9	M15	Z	0	0	0	%100
10	M16	Z	0	0	0	%100
11	M17	Z	0	0	0	%100
12	M12A	Z	-.002	-.002	0	%100
13	M13	Z	-.002	-.002	0	%100

Member Distributed Loads (BLC 22 : Ice Wind Members (30 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,...
14	M14	Z	-.002	-.002	0	%100
15	M15A	Z	-.002	-.002	0	%100
16	M16A	Z	-.003	-.003	0	%100
17	M17A	Z	-.002	-.002	0	%100
18	M18	Z	-.003	-.003	0	%100
19	M19	Z	0	0	0	%100
20	M20	Z	0	0	0	%100
21	M21	Z	0	0	0	%100
22	M22	Z	-.002	-.002	0	%100
23	M23	Z	-.002	-.002	0	%100
24	M24	Z	-.002	-.002	0	%100
25	M25	Z	-.002	-.002	0	%100
26	M26	Z	-.003	-.003	0	%100
27	M27	Z	-.003	-.003	0	%100
28	M28	Z	-.003	-.003	0	%100
29	M29	Z	-.003	-.003	0	%100
30	M30	Z	-.006	-.006	0	%100
31	M31	Z	-.006	-.006	0	%100
32	M32	Z	-.006	-.006	0	%100
33	M33	Z	-.006	-.006	0	%100
34	M34	Z	-.003	-.003	0	%100
35	M35	Z	-.003	-.003	0	%100
36	M36	Z	-.003	-.003	0	%100
37	M37	Z	-.003	-.003	0	%100
38	M38	Z	-.006	-.006	0	%100
39	M39	Z	-.006	-.006	0	%100
40	M40	Z	-.006	-.006	0	%100
41	M41	Z	-.006	-.006	0	%100
42	M42	Z	0	0	0	%100
43	M43	Z	0	0	0	%100
44	M45	Z	0	0	0	%100
45	M46	Z	0	0	0	%100
46	M47	Z	-.004	-.004	0	%.4
47	M48	Z	0	0	0	%100
48	M49	Z	0	0	0	%100
49	M50	Z	-.004	-.004	0	%4.7
50	M51	Z	-.001	-.001	0	%100
51	M52	Z	-.006	-.006	0	%100
52	M53	Z	-.006	-.006	0	%100
53	M54A	Z	-.005	-.005	0	%100
54	M56	Z	0	0	0	%100
55	M5	Z	-.004	-.004	%49.6	%100
56	M44	Z	-.004	-.004	%75	%100
57	M47	Z	-.004	-.004	%49.6	%100
58	M50	Z	-.004	-.004	%45.3	%100
59	M54	X	.002	.002	0	%100
60	M40D	X	0	0	0	%100
61	M6	X	.002	.002	0	%100
62	M7	X	0	0	0	%100
63	M5	X	.003	.003	0	%100
64	M10	X	.002	.002	0	%100
65	M11	X	.001	.001	0	%100
66	M12	X	.002	.002	0	%100
67	M15	X	0	0	0	%100
68	M16	X	0	0	0	%100
69	M17	X	0	0	0	%100
70	M12A	X	.001	.001	0	%100

Member Distributed Loads (BLC 22 : Ice Wind Members (30 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
71	M13	X	.001	.001	0	%100
72	M14	X	.001	.001	0	%100
73	M15A	X	.001	.001	0	%100
74	M16A	X	.002	.002	0	%100
75	M17A	X	.001	.001	0	%100
76	M18	X	.002	.002	0	%100
77	M19	X	0	0	0	%100
78	M20	X	0	0	0	%100
79	M21	X	0	0	0	%100
80	M22	X	.001	.001	0	%100
81	M23	X	.001	.001	0	%100
82	M24	X	.001	.001	0	%100
83	M25	X	.001	.001	0	%100
84	M26	X	.002	.002	0	%100
85	M27	X	.002	.002	0	%100
86	M28	X	.002	.002	0	%100
87	M29	X	.002	.002	0	%100
88	M30	X	.004	.004	0	%100
89	M31	X	.004	.004	0	%100
90	M32	X	.003	.003	0	%100
91	M33	X	.003	.003	0	%100
92	M34	X	.002	.002	0	%100
93	M35	X	.002	.002	0	%100
94	M36	X	.002	.002	0	%100
95	M37	X	.002	.002	0	%100
96	M38	X	.003	.003	0	%100
97	M39	X	.003	.003	0	%100
98	M40	X	.004	.004	0	%100
99	M41	X	.004	.004	0	%100
100	M42	X	0	0	0	%100
101	M43	X	0	0	0	%100
102	M44	X	.003	.003	0	%100
103	M45	X	0	0	0	%100
104	M46	X	0	0	0	%100
105	M47	X	.003	.003	0	%100
106	M48	X	0	0	0	%100
107	M49	X	0	0	0	%100
108	M50	X	.003	.003	0	%100
109	M51	X	0	0	0	%100
110	M52	X	.003	.003	0	%100
111	M53	X	.003	.003	0	%100
112	M54A	X	.003	.003	0	%11.9
113	M56	X	0	0	0	%100
114	M54A	X	.003	.003	%38.1	%100

Member Distributed Loads (BLC 23 : Ice Wind Members (60 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
1	M54	Z	-.002	-.002	0	%100
2	M40D	Z	0	0	0	%100
3	M6	Z	-.002	-.002	0	%100
4	M7	Z	0	0	0	%100
5	M5	Z	-.003	-.003	0	%.4
6	M10	Z	-.002	-.002	0	%100
7	M11	Z	-.001	-.001	0	%100
8	M12	Z	-.002	-.002	0	%100
9	M15	Z	0	0	0	%100

Member Distributed Loads (BLC 23 : Ice Wind Members (60 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,...
10	M16	Z	0	0	0	%100
11	M17	Z	0	0	0	%100
12	M12A	Z	-.001	-.001	0	%100
13	M13	Z	-.001	-.001	0	%100
14	M14	Z	-.001	-.001	0	%100
15	M15A	Z	-.001	-.001	0	%100
16	M16A	Z	-.002	-.002	0	%100
17	M17A	Z	-.001	-.001	0	%100
18	M18	Z	-.002	-.002	0	%100
19	M19	Z	0	0	0	%100
20	M20	Z	0	0	0	%100
21	M21	Z	0	0	0	%100
22	M22	Z	-.001	-.001	0	%100
23	M23	Z	-.001	-.001	0	%100
24	M24	Z	-.001	-.001	0	%100
25	M25	Z	-.001	-.001	0	%100
26	M26	Z	-.002	-.002	0	%100
27	M27	Z	-.002	-.002	0	%100
28	M28	Z	-.002	-.002	0	%100
29	M29	Z	-.002	-.002	0	%100
30	M30	Z	-.004	-.004	0	%100
31	M31	Z	-.004	-.004	0	%100
32	M32	Z	-.003	-.003	0	%100
33	M33	Z	-.003	-.003	0	%100
34	M34	Z	-.002	-.002	0	%100
35	M35	Z	-.002	-.002	0	%100
36	M36	Z	-.002	-.002	0	%100
37	M37	Z	-.002	-.002	0	%100
38	M38	Z	-.003	-.003	0	%100
39	M39	Z	-.003	-.003	0	%100
40	M40	Z	-.004	-.004	0	%100
41	M41	Z	-.004	-.004	0	%100
42	M42	Z	0	0	0	%100
43	M43	Z	0	0	0	%100
44	M45	Z	0	0	0	%100
45	M46	Z	0	0	0	%100
46	M47	Z	-.003	-.003	0	%.4
47	M48	Z	0	0	0	%100
48	M49	Z	0	0	0	%100
49	M50	Z	-.003	-.003	0	%4.7
50	M51	Z	-.001	-.001	0	%100
51	M52	Z	-.003	-.003	0	%100
52	M53	Z	-.003	-.003	0	%100
53	M54A	Z	-.003	-.003	0	%100
54	M56	Z	-.001	-.001	0	%100
55	M5	Z	-.003	-.003	%49.6	%100
56	M44	Z	-.003	-.003	%75	%100
57	M47	Z	-.003	-.003	%49.6	%100
58	M50	Z	-.003	-.003	%45.3	%100
59	M54	X	.003	.003	0	%100
60	M40D	X	0	0	0	%100
61	M6	X	.003	.003	0	%100
62	M7	X	0	0	0	%100
63	M5	X	.004	.004	0	%100
64	M10	X	.003	.003	0	%100
65	M11	X	.002	.002	0	%100
66	M12	X	.003	.003	0	%100

Member Distributed Loads (BLC 23 : Ice Wind Members (60 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
67	M15	X	0	0	0	%100
68	M16	X	0	0	0	%100
69	M17	X	0	0	0	%100
70	M12A	X	.002	.002	0	%100
71	M13	X	.002	.002	0	%100
72	M14	X	.002	.002	0	%100
73	M15A	X	.002	.002	0	%100
74	M16A	X	.003	.003	0	%100
75	M17A	X	.002	.002	0	%100
76	M18	X	.003	.003	0	%100
77	M19	X	0	0	0	%100
78	M20	X	0	0	0	%100
79	M21	X	0	0	0	%100
80	M22	X	.002	.002	0	%100
81	M23	X	.002	.002	0	%100
82	M24	X	.002	.002	0	%100
83	M25	X	.002	.002	0	%100
84	M26	X	.003	.003	0	%100
85	M27	X	.003	.003	0	%100
86	M28	X	.003	.003	0	%100
87	M29	X	.003	.003	0	%100
88	M30	X	.006	.006	0	%100
89	M31	X	.006	.006	0	%100
90	M32	X	.006	.006	0	%100
91	M33	X	.006	.006	0	%100
92	M34	X	.003	.003	0	%100
93	M35	X	.003	.003	0	%100
94	M36	X	.003	.003	0	%100
95	M37	X	.003	.003	0	%100
96	M38	X	.006	.006	0	%100
97	M39	X	.006	.006	0	%100
98	M40	X	.006	.006	0	%100
99	M41	X	.006	.006	0	%100
100	M42	X	0	0	0	%100
101	M43	X	0	0	0	%100
102	M44	X	.004	.004	0	%100
103	M45	X	0	0	0	%100
104	M46	X	0	0	0	%100
105	M47	X	.004	.004	0	%100
106	M48	X	0	0	0	%100
107	M49	X	0	0	0	%100
108	M50	X	.004	.004	0	%100
109	M51	X	.002	.002	0	%100
110	M52	X	.006	.006	0	%100
111	M53	X	.006	.006	0	%100
112	M54A	X	.005	.005	0	%11.9
113	M56	X	.001	.001	0	%100
114	M54A	X	.005	.005	%38.1	%100

Member Distributed Loads (BLC 24 : Ice Wind Members (90 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
1	M54	Z	0	0	0	%100
2	M40D	Z	0	0	0	%100
3	M6	Z	0	0	0	%100
4	M7	Z	0	0	0	%100
5	M5	Z	0	0	0	%.4

Member Distributed Loads (BLC 24 : Ice Wind Members (90 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,...
6	M10	Z	0	0	0	%100
7	M11	Z	0	0	0	%100
8	M12	Z	0	0	0	%100
9	M15	Z	0	0	0	%100
10	M16	Z	0	0	0	%100
11	M17	Z	0	0	0	%100
12	M12A	Z	0	0	0	%100
13	M13	Z	0	0	0	%100
14	M14	Z	0	0	0	%100
15	M15A	Z	0	0	0	%100
16	M16A	Z	0	0	0	%100
17	M17A	Z	0	0	0	%100
18	M18	Z	0	0	0	%100
19	M19	Z	0	0	0	%100
20	M20	Z	0	0	0	%100
21	M21	Z	0	0	0	%100
22	M22	Z	0	0	0	%100
23	M23	Z	0	0	0	%100
24	M24	Z	0	0	0	%100
25	M25	Z	0	0	0	%100
26	M26	Z	0	0	0	%100
27	M27	Z	0	0	0	%100
28	M28	Z	0	0	0	%100
29	M29	Z	0	0	0	%100
30	M30	Z	0	0	0	%100
31	M31	Z	0	0	0	%100
32	M32	Z	0	0	0	%100
33	M33	Z	0	0	0	%100
34	M34	Z	0	0	0	%100
35	M35	Z	0	0	0	%100
36	M36	Z	0	0	0	%100
37	M37	Z	0	0	0	%100
38	M38	Z	0	0	0	%100
39	M39	Z	0	0	0	%100
40	M40	Z	0	0	0	%100
41	M41	Z	0	0	0	%100
42	M42	Z	0	0	0	%100
43	M43	Z	0	0	0	%100
44	M45	Z	0	0	0	%100
45	M46	Z	0	0	0	%100
46	M47	Z	0	0	0	%.4
47	M48	Z	0	0	0	%100
48	M49	Z	0	0	0	%100
49	M50	Z	0	0	0	%4.7
50	M51	Z	0	0	0	%100
51	M52	Z	0	0	0	%100
52	M53	Z	0	0	0	%100
53	M54A	Z	0	0	0	%100
54	M56	Z	0	0	0	%100
55	M5	Z	0	0	%49.6	%100
56	M44	Z	0	0	%75	%100
57	M47	Z	0	0	%49.6	%100
58	M50	Z	0	0	%45.3	%100
59	M54	X	.003	.003	0	%100
60	M40D	X	0	0	0	%100
61	M6	X	.003	.003	0	%100
62	M7	X	0	0	0	%100

Member Distributed Loads (BLC 24 : Ice Wind Members (90 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,...
63	M5	X	.005	.005	0	%100
64	M10	X	.004	.004	0	%100
65	M11	X	.003	.003	0	%100
66	M12	X	.003	.003	0	%100
67	M15	X	0	0	0	%100
68	M16	X	0	0	0	%100
69	M17	X	0	0	0	%100
70	M12A	X	.002	.002	0	%100
71	M13	X	.002	.002	0	%100
72	M14	X	.002	.002	0	%100
73	M15A	X	.002	.002	0	%100
74	M16A	X	.004	.004	0	%100
75	M17A	X	.003	.003	0	%100
76	M18	X	.003	.003	0	%100
77	M19	X	0	0	0	%100
78	M20	X	0	0	0	%100
79	M21	X	0	0	0	%100
80	M22	X	.002	.002	0	%100
81	M23	X	.002	.002	0	%100
82	M24	X	.002	.002	0	%100
83	M25	X	.002	.002	0	%100
84	M26	X	.004	.004	0	%100
85	M27	X	.004	.004	0	%100
86	M28	X	.004	.004	0	%100
87	M29	X	.004	.004	0	%100
88	M30	X	.007	.007	0	%100
89	M31	X	.007	.007	0	%100
90	M32	X	.007	.007	0	%100
91	M33	X	.007	.007	0	%100
92	M34	X	.004	.004	0	%100
93	M35	X	.004	.004	0	%100
94	M36	X	.004	.004	0	%100
95	M37	X	.004	.004	0	%100
96	M38	X	.007	.007	0	%100
97	M39	X	.007	.007	0	%100
98	M40	X	.007	.007	0	%100
99	M41	X	.007	.007	0	%100
100	M42	X	0	0	0	%100
101	M43	X	0	0	0	%100
102	M44	X	.005	.005	0	%100
103	M45	X	0	0	0	%100
104	M46	X	0	0	0	%100
105	M47	X	.005	.005	0	%100
106	M48	X	0	0	0	%100
107	M49	X	0	0	0	%100
108	M50	X	.005	.005	0	%100
109	M51	X	.002	.002	0	%100
110	M52	X	.007	.007	0	%100
111	M53	X	.007	.007	0	%100
112	M54A	X	.005	.005	0	%11.9
113	M56	X	.002	.002	0	%100
114	M54A	X	.005	.005	%38.1	%100

Member Distributed Loads (BLC 25 : Ice Wind Members (120 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,...	End Location[ft,...
1	M54	Z	.002	.002	0	%100

Member Distributed Loads (BLC 25 : Ice Wind Members (120 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
2	M40D	Z	0	0	0	%100
3	M6	Z	.002	.002	0	%100
4	M7	Z	0	0	0	%100
5	M5	Z	.003	.003	0	%.4
6	M10	Z	.002	.002	0	%100
7	M11	Z	.002	.002	0	%100
8	M12	Z	.001	.001	0	%100
9	M15	Z	0	0	0	%100
10	M16	Z	0	0	0	%100
11	M17	Z	0	0	0	%100
12	M12A	Z	.001	.001	0	%100
13	M13	Z	.001	.001	0	%100
14	M14	Z	.001	.001	0	%100
15	M15A	Z	.001	.001	0	%100
16	M16A	Z	.002	.002	0	%100
17	M17A	Z	.002	.002	0	%100
18	M18	Z	.001	.001	0	%100
19	M19	Z	0	0	0	%100
20	M20	Z	0	0	0	%100
21	M21	Z	0	0	0	%100
22	M22	Z	.001	.001	0	%100
23	M23	Z	.001	.001	0	%100
24	M24	Z	.001	.001	0	%100
25	M25	Z	.001	.001	0	%100
26	M26	Z	.002	.002	0	%100
27	M27	Z	.002	.002	0	%100
28	M28	Z	.002	.002	0	%100
29	M29	Z	.002	.002	0	%100
30	M30	Z	.003	.003	0	%100
31	M31	Z	.003	.003	0	%100
32	M32	Z	.004	.004	0	%100
33	M33	Z	.004	.004	0	%100
34	M34	Z	.002	.002	0	%100
35	M35	Z	.002	.002	0	%100
36	M36	Z	.002	.002	0	%100
37	M37	Z	.002	.002	0	%100
38	M38	Z	.004	.004	0	%100
39	M39	Z	.004	.004	0	%100
40	M40	Z	.003	.003	0	%100
41	M41	Z	.003	.003	0	%100
42	M42	Z	0	0	0	%100
43	M43	Z	0	0	0	%100
44	M45	Z	0	0	0	%100
45	M46	Z	0	0	0	%100
46	M47	Z	.003	.003	0	%.4
47	M48	Z	0	0	0	%100
48	M49	Z	0	0	0	%100
49	M50	Z	.003	.003	0	%4.7
50	M51	Z	.001	.001	0	%100
51	M52	Z	.003	.003	0	%100
52	M53	Z	.003	.003	0	%100
53	M54A	Z	.003	.003	0	%100
54	M56	Z	.001	.001	0	%100
55	M5	Z	.003	.003	%49.6	%100
56	M44	Z	.003	.003	%75	%100
57	M47	Z	.003	.003	%49.6	%100
58	M50	Z	.003	.003	%45.3	%100

Member Distributed Loads (BLC 25 : Ice Wind Members (120 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
59	M54	X	.003	.003	0	%100
60	M40D	X	0	0	0	%100
61	M6	X	.003	.003	0	%100
62	M7	X	0	0	0	%100
63	M5	X	.004	.004	0	%100
64	M10	X	.003	.003	0	%100
65	M11	X	.003	.003	0	%100
66	M12	X	.002	.002	0	%100
67	M15	X	0	0	0	%100
68	M16	X	0	0	0	%100
69	M17	X	0	0	0	%100
70	M12A	X	.002	.002	0	%100
71	M13	X	.002	.002	0	%100
72	M14	X	.002	.002	0	%100
73	M15A	X	.002	.002	0	%100
74	M16A	X	.003	.003	0	%100
75	M17A	X	.003	.003	0	%100
76	M18	X	.002	.002	0	%100
77	M19	X	0	0	0	%100
78	M20	X	0	0	0	%100
79	M21	X	0	0	0	%100
80	M22	X	.002	.002	0	%100
81	M23	X	.002	.002	0	%100
82	M24	X	.002	.002	0	%100
83	M25	X	.002	.002	0	%100
84	M26	X	.003	.003	0	%100
85	M27	X	.003	.003	0	%100
86	M28	X	.003	.003	0	%100
87	M29	X	.003	.003	0	%100
88	M30	X	.006	.006	0	%100
89	M31	X	.006	.006	0	%100
90	M32	X	.006	.006	0	%100
91	M33	X	.006	.006	0	%100
92	M34	X	.003	.003	0	%100
93	M35	X	.003	.003	0	%100
94	M36	X	.003	.003	0	%100
95	M37	X	.003	.003	0	%100
96	M38	X	.006	.006	0	%100
97	M39	X	.006	.006	0	%100
98	M40	X	.006	.006	0	%100
99	M41	X	.006	.006	0	%100
100	M42	X	0	0	0	%100
101	M43	X	0	0	0	%100
102	M44	X	.004	.004	0	%100
103	M45	X	0	0	0	%100
104	M46	X	0	0	0	%100
105	M47	X	.004	.004	0	%100
106	M48	X	0	0	0	%100
107	M49	X	0	0	0	%100
108	M50	X	.004	.004	0	%100
109	M51	X	.001	.001	0	%100
110	M52	X	.006	.006	0	%100
111	M53	X	.006	.006	0	%100
112	M54A	X	.005	.005	0	%11.9
113	M56	X	.002	.002	0	%100
114	M54A	X	.005	.005	%38.1	%100

Member Distributed Loads (BLC 26 : Ice Wind Members (150 Deg))

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
1	M54	Z	.004	.004	0	%100
2	M40D	Z	0	0	0	%100
3	M6	Z	.004	.004	0	%100
4	M7	Z	0	0	0	%100
5	M5	Z	.004	.004	0	%.4
6	M10	Z	.003	.003	0	%100
7	M11	Z	.003	.003	0	%100
8	M12	Z	.002	.002	0	%100
9	M15	Z	0	0	0	%100
10	M16	Z	0	0	0	%100
11	M17	Z	0	0	0	%100
12	M12A	Z	.002	.002	0	%100
13	M13	Z	.002	.002	0	%100
14	M14	Z	.002	.002	0	%100
15	M15A	Z	.002	.002	0	%100
16	M16A	Z	.003	.003	0	%100
17	M17A	Z	.003	.003	0	%100
18	M18	Z	.002	.002	0	%100
19	M19	Z	0	0	0	%100
20	M20	Z	0	0	0	%100
21	M21	Z	0	0	0	%100
22	M22	Z	.002	.002	0	%100
23	M23	Z	.002	.002	0	%100
24	M24	Z	.002	.002	0	%100
25	M25	Z	.002	.002	0	%100
26	M26	Z	.003	.003	0	%100
27	M27	Z	.003	.003	0	%100
28	M28	Z	.003	.003	0	%100
29	M29	Z	.003	.003	0	%100
30	M30	Z	.006	.006	0	%100
31	M31	Z	.006	.006	0	%100
32	M32	Z	.006	.006	0	%100
33	M33	Z	.006	.006	0	%100
34	M34	Z	.003	.003	0	%100
35	M35	Z	.003	.003	0	%100
36	M36	Z	.003	.003	0	%100
37	M37	Z	.003	.003	0	%100
38	M38	Z	.006	.006	0	%100
39	M39	Z	.006	.006	0	%100
40	M40	Z	.006	.006	0	%100
41	M41	Z	.006	.006	0	%100
42	M42	Z	0	0	0	%100
43	M43	Z	0	0	0	%100
44	M45	Z	0	0	0	%100
45	M46	Z	0	0	0	%100
46	M47	Z	.004	.004	0	%.4
47	M48	Z	0	0	0	%100
48	M49	Z	0	0	0	%100
49	M50	Z	.004	.004	0	%4.7
50	M51	Z	0	0	0	%100
51	M52	Z	.006	.006	0	%100
52	M53	Z	.006	.006	0	%100
53	M54A	Z	.005	.005	0	%100
54	M56	Z	.001	.001	0	%100
55	M5	Z	.004	.004	%49.6	%100
56	M44	Z	.004	.004	%75	%100
57	M47	Z	.004	.004	%49.6	%100

Member Distributed Loads (BLC 26 : Ice Wind Members (150 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/ft,F,ksf]	Start Location[ft,..	End Location[ft,...
58	M50	Z	.004	.004	%45.3	%100
59	M54	X	.002	.002	0	%100
60	M40D	X	0	0	0	%100
61	M6	X	.002	.002	0	%100
62	M7	X	0	0	0	%100
63	M5	X	.003	.003	0	%100
64	M10	X	.002	.002	0	%100
65	M11	X	.002	.002	0	%100
66	M12	X	.001	.001	0	%100
67	M15	X	0	0	0	%100
68	M16	X	0	0	0	%100
69	M17	X	0	0	0	%100
70	M12A	X	.001	.001	0	%100
71	M13	X	.001	.001	0	%100
72	M14	X	.001	.001	0	%100
73	M15A	X	.001	.001	0	%100
74	M16A	X	.002	.002	0	%100
75	M17A	X	.002	.002	0	%100
76	M18	X	.001	.001	0	%100
77	M19	X	0	0	0	%100
78	M20	X	0	0	0	%100
79	M21	X	0	0	0	%100
80	M22	X	.001	.001	0	%100
81	M23	X	.001	.001	0	%100
82	M24	X	.001	.001	0	%100
83	M25	X	.001	.001	0	%100
84	M26	X	.002	.002	0	%100
85	M27	X	.002	.002	0	%100
86	M28	X	.002	.002	0	%100
87	M29	X	.002	.002	0	%100
88	M30	X	.003	.003	0	%100
89	M31	X	.003	.003	0	%100
90	M32	X	.004	.004	0	%100
91	M33	X	.004	.004	0	%100
92	M34	X	.002	.002	0	%100
93	M35	X	.002	.002	0	%100
94	M36	X	.002	.002	0	%100
95	M37	X	.002	.002	0	%100
96	M38	X	.004	.004	0	%100
97	M39	X	.004	.004	0	%100
98	M40	X	.003	.003	0	%100
99	M41	X	.003	.003	0	%100
100	M42	X	0	0	0	%100
101	M43	X	0	0	0	%100
102	M44	X	.003	.003	0	%100
103	M45	X	0	0	0	%100
104	M46	X	0	0	0	%100
105	M47	X	.003	.003	0	%100
106	M48	X	0	0	0	%100
107	M49	X	0	0	0	%100
108	M50	X	.003	.003	0	%100
109	M51	X	0	0	0	%100
110	M52	X	.003	.003	0	%100
111	M53	X	.003	.003	0	%100
112	M54A	X	.003	.003	0	%11.9
113	M56	X	0	0	0	%100
114	M54A	X	.003	.003	%38.1	%100

Member Area Loads

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

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
1	Dead	None		-1			8			
2	Ice Dead	None					8	55		
3	Full Wind Antenna (0 Deg)	None					12			
4	Full Wind Antenna (30 Deg)	None					24			
5	Full Wind Antenna (60 Deg)	None					24			
6	Full Wind Antenna (90 Deg)	None					24			
7	Full Wind Antenna (120 Deg)	None					24			
8	Full Wind Antenna (150 Deg)	None					24			
9	Full Wind Members (0 Deg)	None						46		
10	Full Wind Members (30 Deg)	None						46		
11	Full Wind Members (60 Deg)	None						46		
12	Full Wind Members (90 Deg)	None						46		
13	Full Wind Members (120 Deg)	None						46		
14	Full Wind Members (150 Deg)	None						46		
15	Ice Wind Antenna (0 Deg)	None					12			
16	Ice Wind Antenna (30 Deg)	None					24			
17	Ice Wind Antenna (60 Deg)	None					24			
18	Ice Wind Antenna (90 Deg)	None					24			
19	Ice Wind Antenna (120 Deg)	None					24			
20	Ice Wind Antenna (150 Deg)	None					24			
21	Ice Wind Members (0 Deg)	None						114		
22	Ice Wind Members (30 Deg)	None						114		
23	Ice Wind Members (60 Deg)	None						114		
24	Ice Wind Members (90 Deg)	None						114		
25	Ice Wind Members (120 Deg)	None						114		
26	Ice Wind Members (150 Deg)	None						114		
27	Seismic Antenna (0 Deg)	None					8			
28	Seismic Antenna (90 Deg)	None					8			
29	Seismic Members (0 Deg)	None			-.03					
30	Seismic Members (30 Deg)	None	.015		-.026					
31	Seismic Members (60 Deg)	None	.026		-.015					
32	Seismic Members (90 Deg)	None	.03		-1.838e-...					
33	Seismic Members (120 Deg)	None	.026		.015					
34	Seismic Members (150 Deg)	None	.015		.026					
35	Seismic Members (180 Deg)	None	3.675e-18		.03					
36	Seismic Members (210 Deg)	None	-.015		.026					
37	Seismic Members (240 Deg)	None	-.026		.015					
38	Seismic Members (270 Deg)	None	-.03		5.513e-18					
39	Seismic Members (300 Deg)	None	-.026		-.015					
40	Seismic Members (330 Deg)	None	-.015		-.026					
41	Seismic Vertical Antennas	None					8			
42	Man 1 (500 lbs)	None				1				
43	Man 2 (500 lbs)	None				1				
44	Man 3 (500 lbs)	None				1				
45	Man 4 (250 lbs)	None				1				
46	Man 5 (250 lbs)	None				1				
47	Man 6 (250 lbs)	None				1				

Load Combinations

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
1	1.4D	Yes	Y		1	1.4																				
2	1.2D + 1.6W 0°	Yes	Y		1	1.2	3	1.6	9	1.6																
3	1.2D + 1.6W 30°	Yes	Y		1	1.2	4	1.6	10	1.6																
4	1.2D + 1.6W 60°	Yes	Y		1	1.2	5	1.6	11	1.6																
5	1.2D + 1.6W 90°	Yes	Y		1	1.2	6	1.6	12	1.6																
6	1.2D + 1.6W 120°	Yes	Y		1	1.2	7	1.6	13	1.6																
7	1.2D + 1.6W 150°	Yes	Y		1	1.2	8	1.6	14	1.6																
8	1.2D + 1.6W 180°	Yes	Y		1	1.2	3	-1.6	9	-1.6																
9	1.2D + 1.6W 210°	Yes	Y		1	1.2	4	-1.6	10	-1.6																
10	1.2D + 1.6W 240°	Yes	Y		1	1.2	5	-1.6	11	-1.6																
11	1.2D + 1.6W 270°	Yes	Y		1	1.2	6	-1.6	12	-1.6																
12	1.2D + 1.6W 300°	Yes	Y		1	1.2	7	-1.6	13	-1.6																
13	1.2D + 1.6W 330°	Yes	Y		1	1.2	8	-1.6	14	-1.6																
14	1.2D + 1.0Di + 1.0Wi ..	Yes	Y		1	1.2	2	1	15	1	21	1														
15	1.2D + 1.0Di + 1.0Wi ..	Yes	Y		1	1.2	2	1	16	1	22	1														
16	1.2D + 1.0Di + 1.0Wi ..	Yes	Y		1	1.2	2	1	17	1	23	1														
17	1.2D + 1.0Di + 1.0Wi ..	Yes	Y		1	1.2	2	1	18	1	24	1														
18	1.2D + 1.0Di + 1.0Wi ..	Yes	Y		1	1.2	2	1	19	1	25	1														
19	1.2D + 1.0Di + 1.0Wi ..	Yes	Y		1	1.2	2	1	20	1	26	1														
20	1.2D + 1.0Di + 1.0Wi ..	Yes	Y		1	1.2	2	1	15	-1	21	-1														
21	1.2D + 1.0Di + 1.0Wi ..	Yes	Y		1	1.2	2	1	16	-1	22	-1														
22	1.2D + 1.0Di + 1.0Wi ..	Yes	Y		1	1.2	2	1	17	-1	23	-1														
23	1.2D + 1.0Di + 1.0Wi ..	Yes	Y		1	1.2	2	1	18	-1	24	-1														
24	1.2D + 1.0Di + 1.0Wi ..	Yes	Y		1	1.2	2	1	19	-1	25	-1														
25	1.2D + 1.0Di + 1.0Wi ..	Yes	Y		1	1.2	2	1	20	-1	26	-1														
26	1.2D + 1.5Lm_1 + 1.0..	Yes	Y		1	1.2	3	.073	9	.073	42	1.5														
27	1.2D + 1.5Lm_1 + 1.0..	Yes	Y		1	1.2	4	.073	10	.073	42	1.5														
28	1.2D + 1.5Lm_1 + 1.0..	Yes	Y		1	1.2	5	.073	11	.073	42	1.5														
29	1.2D + 1.5Lm_1 + 1.0..	Yes	Y		1	1.2	6	.073	12	.073	42	1.5														
30	1.2D + 1.5Lm_1 + 1.0..	Yes	Y		1	1.2	7	.073	13	.073	42	1.5														
31	1.2D + 1.5Lm_1 + 1.0..	Yes	Y		1	1.2	8	.073	14	.073	42	1.5														
32	1.2D + 1.5Lm_1 + 1.0..	Yes	Y		1	1.2	3	-.073	9	-.073	42	1.5														
33	1.2D + 1.5Lm_1 + 1.0..	Yes	Y		1	1.2	4	-.073	10	-.073	42	1.5														
34	1.2D + 1.5Lm_1 + 1.0..	Yes	Y		1	1.2	5	-.073	11	-.073	42	1.5														
35	1.2D + 1.5Lm_1 + 1.0..	Yes	Y		1	1.2	6	-.073	12	-.073	42	1.5														
36	1.2D + 1.5Lm_1 + 1.0..	Yes	Y		1	1.2	7	-.073	13	-.073	42	1.5														
37	1.2D + 1.5Lm_1 + 1.0..	Yes	Y		1	1.2	8	-.073	14	-.073	42	1.5														
38	1.2D + 1.5Lm_2 + 1.0..	Yes	Y		1	1.2	3	.073	9	.073	43	1.5														
39	1.2D + 1.5Lm_2 + 1.0..	Yes	Y		1	1.2	4	.073	10	.073	43	1.5														
40	1.2D + 1.5Lm_2 + 1.0..	Yes	Y		1	1.2	5	.073	11	.073	43	1.5														
41	1.2D + 1.5Lm_2 + 1.0..	Yes	Y		1	1.2	6	.073	12	.073	43	1.5														
42	1.2D + 1.5Lm_2 + 1.0..	Yes	Y		1	1.2	7	.073	13	.073	43	1.5														
43	1.2D + 1.5Lm_2 + 1.0..	Yes	Y		1	1.2	8	.073	14	.073	43	1.5														
44	1.2D + 1.5Lm_2 + 1.0..	Yes	Y		1	1.2	3	-.073	9	-.073	43	1.5														
45	1.2D + 1.5Lm_2 + 1.0..	Yes	Y		1	1.2	4	-.073	10	-.073	43	1.5														
46	1.2D + 1.5Lm_2 + 1.0..	Yes	Y		1	1.2	5	-.073	11	-.073	43	1.5														
47	1.2D + 1.5Lm_2 + 1.0..	Yes	Y		1	1.2	6	-.073	12	-.073	43	1.5														
48	1.2D + 1.5Lm_2 + 1.0..	Yes	Y		1	1.2	7	-.073	13	-.073	43	1.5														
49	1.2D + 1.5Lm_2 + 1.0..	Yes	Y		1	1.2	8	-.073	14	-.073	43	1.5														
50	1.2D + 1.5Lm_3 + 1.0..	Yes	Y		1	1.2	3	.073	9	.073	44	1.5														
51	1.2D + 1.5Lm_3 + 1.0..	Yes	Y		1	1.2	4	.073	10	.073	44	1.5														
52	1.2D + 1.5Lm_3 + 1.0..	Yes	Y		1	1.2	5	.073	11	.073	44	1.5														
53	1.2D + 1.5Lm_3 + 1.0..	Yes	Y		1	1.2	6	.073	12	.073	44	1.5														
54	1.2D + 1.5Lm_3 + 1.0..	Yes	Y		1	1.2	7	.073	13	.073	44	1.5														
55	1.2D + 1.5Lm_3 + 1.0..	Yes	Y		1	1.2	8	.073	14	.073	44	1.5														
56	1.2D + 1.5Lm_3 + 1.0..	Yes	Y		1	1.2	3	-.073	9	-.073	44	1.5														

Load Combinations (Continued)

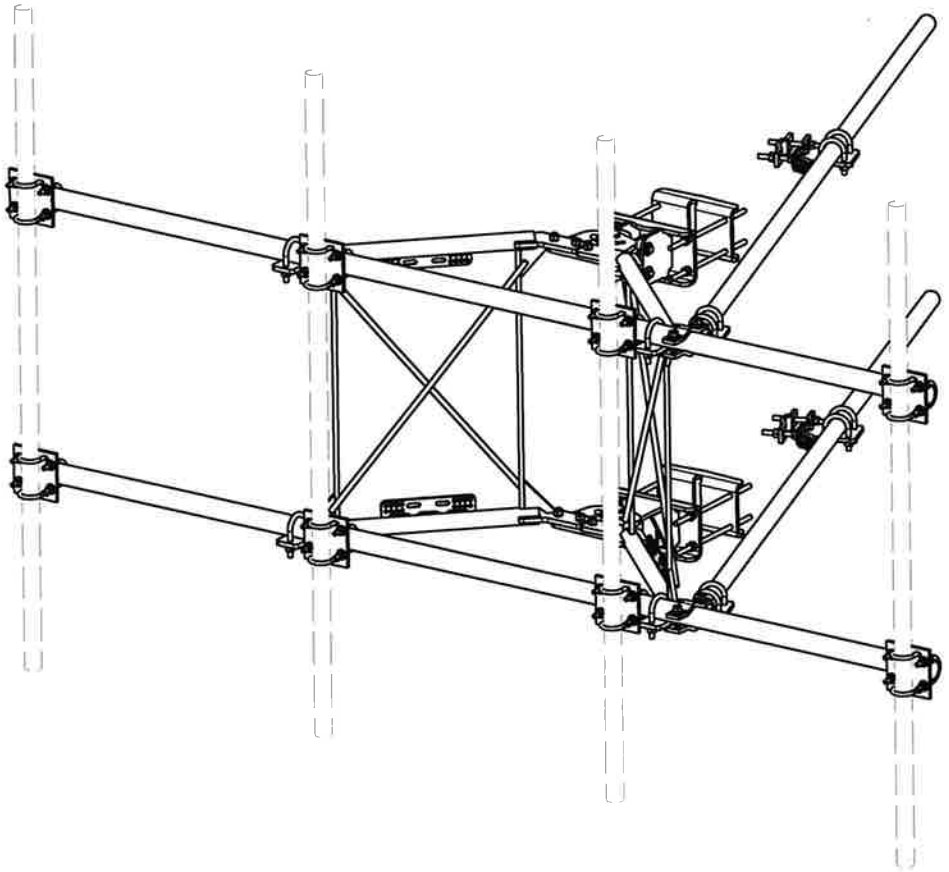
	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..
57	1.2D + 1.5Lm_3 + 1.0..	Yes	Y		1	1.2	4	-.073	10	-.073	44	1.5												
58	1.2D + 1.5Lm_3 + 1.0..	Yes	Y		1	1.2	5	-.073	11	-.073	44	1.5												
59	1.2D + 1.5Lm_3 + 1.0..	Yes	Y		1	1.2	6	-.073	12	-.073	44	1.5												
60	1.2D + 1.5Lm_3 + 1.0..	Yes	Y		1	1.2	7	-.073	13	-.073	44	1.5												
61	1.2D + 1.5Lm_3 + 1.0..	Yes	Y		1	1.2	8	-.073	14	-.073	44	1.5												
62	1.2D + 1.5Lv_1 0°	Yes	Y		1	1.2	45	1.5																
63	1.2D + 1.5Lv_1 30°	Yes	Y		1	1.2	45	1.5																
64	1.2D + 1.5Lv_1 60°	Yes	Y		1	1.2	45	1.5																
65	1.2D + 1.5Lv_1 90°	Yes	Y		1	1.2	45	1.5																
66	1.2D + 1.5Lv_1 120°	Yes	Y		1	1.2	45	1.5																
67	1.2D + 1.5Lv_1 150°	Yes	Y		1	1.2	45	1.5																
68	1.2D + 1.5Lv_1 180°	Yes	Y		1	1.2	45	1.5																
69	1.2D + 1.5Lv_1 210°	Yes	Y		1	1.2	45	1.5																
70	1.2D + 1.5Lv_1 240°	Yes	Y		1	1.2	45	1.5																
71	1.2D + 1.5Lv_1 270°	Yes	Y		1	1.2	45	1.5																
72	1.2D + 1.5Lv_1 300°	Yes	Y		1	1.2	45	1.5																
73	1.2D + 1.5Lv_1 330°	Yes	Y		1	1.2	45	1.5																
74	1.2D + 1.5Lv_2 0°	Yes	Y		1	1.2	46	1.5																
75	1.2D + 1.5Lv_2 30°	Yes	Y		1	1.2	46	1.5																
76	1.2D + 1.5Lv_2 60°	Yes	Y		1	1.2	46	1.5																
77	1.2D + 1.5Lv_2 90°	Yes	Y		1	1.2	46	1.5																
78	1.2D + 1.5Lv_2 120°	Yes	Y		1	1.2	46	1.5																
79	1.2D + 1.5Lv_2 150°	Yes	Y		1	1.2	46	1.5																
80	1.2D + 1.5Lv_2 180°	Yes	Y		1	1.2	46	1.5																
81	1.2D + 1.5Lv_2 210°	Yes	Y		1	1.2	46	1.5																
82	1.2D + 1.5Lv_2 240°	Yes	Y		1	1.2	46	1.5																
83	1.2D + 1.5Lv_2 270°	Yes	Y		1	1.2	46	1.5																
84	1.2D + 1.5Lv_2 300°	Yes	Y		1	1.2	46	1.5																
85	1.2D + 1.5Lv_2 330°	Yes	Y		1	1.2	46	1.5																
86	1.2D + 1.5Lv_3 0°	Yes	Y		1	1.2	47	1.5																
87	1.2D + 1.5Lv_3 30°	Yes	Y		1	1.2	47	1.5																
88	1.2D + 1.5Lv_3 60°	Yes	Y		1	1.2	47	1.5																
89	1.2D + 1.5Lv_3 90°	Yes	Y		1	1.2	47	1.5																
90	1.2D + 1.5Lv_3 120°	Yes	Y		1	1.2	47	1.5																
91	1.2D + 1.5Lv_3 150°	Yes	Y		1	1.2	47	1.5																
92	1.2D + 1.5Lv_3 180°	Yes	Y		1	1.2	47	1.5																
93	1.2D + 1.5Lv_3 210°	Yes	Y		1	1.2	47	1.5																
94	1.2D + 1.5Lv_3 240°	Yes	Y		1	1.2	47	1.5																
95	1.2D + 1.5Lv_3 270°	Yes	Y		1	1.2	47	1.5																
96	1.2D + 1.5Lv_3 300°	Yes	Y		1	1.2	47	1.5																
97	1.2D + 1.5Lv_3 330°	Yes	Y		1	1.2	47	1.5																

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N12A	m...	1.536	11	1.473	19	.695	8	0	97	0	97	0	97
2		m...	-2.535	5	.511	12	-2.027	2	0	1	0	1	0	1
3	N28	m...	1.76	60	1.441	25	2.549	14	0	97	0	97	0	97
4		m...	-.76	28	.509	6	.054	8	0	1	0	1	0	1
5	N78	m...	.426	2	.117	21	2.577	3	0	97	0	97	0	97
6		m...	-.454	8	.035	2	-2.75	9	0	1	0	1	0	1
7	N81	m...	.221	7	.116	18	1.446	12	0	97	0	97	0	97
8		m...	-.194	13	.036	13	-1.605	6	0	1	0	1	0	1
9	Totals:	m...	2.278	11	3.12	23	2.605	2						
10		m...	-2.278	5	1.133	3	-2.605	8						

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

	Member	Shape	Code C...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
1	M54	PIPE_2.5	.345	8.854	2	.098	8.854		8	41.049	50.715	3.596	3.596	1	H1-1b
2	M6	PIPE_2.5	.519	9.245	8	.229	9.245		2	41.049	50.715	3.596	3.596	1	H1-1b
3	M5	PIPE_2.0	.325	2.333	35	.040	2.333		36	14.916	32.13	1.872	1.872	4....	H1-1b
4	M10	PI 4"x0.75"	.268	.5	17	.416	.5	y	21	82.686	97.2	1.519	8.1	1....	H1-1b
5	M11	PIPE_2.0	.136	.234	26	.144	1.25		25	29.81	32.13	1.872	1.872	1....	H1-1b
6	M12	PIPE_2.0	.229	2.266	2	.090	2.266		14	29.81	32.13	1.872	1.872	1....	H1-1b
7	M12A	PI 4"x0.75"	.212	.417	26	.200	.417	y	20	94.509	97.2	1.519	8.1	1....	H1-1b
8	M13	PI 4"x0.75"	.161	0	33	.079	0	y	24	94.509	97.2	1.519	8.1	1....	H1-1b
9	M14	PI 4"x0.75"	.310	0	23	.111	0	y	26	94.509	97.2	1.519	8.1	1....	H1-1b
10	M15A	PI 4"x0.75"	.258	.417	8	.105	.226	y	26	94.509	97.2	1.519	8.1	1....	H1-1b
11	M16A	PI 4"x0.75"	.268	.5	25	.433	.5	y	24	82.686	97.2	1.519	8.1	1....	H1-1b
12	M17A	PIPE_2.0	.139	.234	27	.146	1.25		21	29.81	32.13	1.872	1.872	1....	H1-1b
13	M18	PIPE_2.0	.254	2.266	2	.087	2.266		19	29.81	32.13	1.872	1.872	1....	H1-1b
14	M22	PI 4"x0.75"	.219	.417	27	.205	.417	y	23	94.509	97.2	1.519	8.1	1....	H1-1b
15	M23	PI 4"x0.75"	.164	0	26	.076	0	y	20	94.509	97.2	1.519	8.1	1....	H1-1b
16	M24	PI 4"x0.75"	.327	0	21	.112	0	y	27	94.509	97.2	1.519	8.1	1....	H1-1b
17	M25	PI 4"x0.75"	.213	.417	14	.105	.226	y	27	94.509	97.2	1.519	8.1	1....	H1-1b
18	M26	SR 5/8	.112	0	20	.019	0		9	2.503	9.94	.104	.104	2....	H1-1b
19	M27	SR 5/8	.067	0	12	.013	3.333		9	2.503	9.94	.104	.104	2....	H1-1b
20	M28	SR 5/8	.081	0	20	.018	0		9	2.503	9.94	.104	.104	2....	H1-1b
21	M29	SR 5/8	.144	3.333	2	.017	0		9	2.503	9.94	.104	.104	2....	H1-1b*
22	M30	PI 2"x0.75"	.041	0	22	.006	0	y	2	47.526	48.6	.759	2.025	1....	H1-1b
23	M31	PI 2"x0.75"	.035	0	23	.005	0	y	28	47.526	48.6	.759	2.025	1....	H1-1b*
24	M32	PI 2"x0.75"	.032	0	19	.006	0	y	57	47.526	48.6	.759	2.025	1....	H1-1b
25	M33	PI 2"x0.75"	.033	0	19	.008	0	y	23	47.526	48.6	.759	2.025	1....	H1-1b
26	M34	SR 3/4	.116	3.667	27	.024	3.667		24	4.419	14.321	.184	.184	2....	H1-1b
27	M35	SR 3/4	.321	3.667	27	.026	0		23	4.419	14.321	.184	.184	2....	H1-1a
28	M36	SR 3/4	.186	0	24	.023	0		2	4.419	14.321	.184	.184	2....	H1-1b
29	M37	SR 3/4	.483	3.667	21	.017	3.667		28	4.419	14.321	.184	.184	2....	H1-1a
30	M38	PI 2"x0.75"	.033	.372	14	.007	.372	y	24	47.526	48.6	.759	2.025	1....	H1-1b
31	M39	PI 2"x0.75"	.029	.372	14	.007	.372	y	23	47.526	48.6	.759	2.025	1....	H1-1b
32	M40	PI 2"x0.75"	.044	.372	21	.006	.372	y	2	47.526	48.6	.759	2.025	1....	H1-1b
33	M41	PI 2"x0.75"	.043	.372	21	.005	.372	y	28	47.526	48.6	.759	2.025	1....	H1-1b
34	M44	PIPE_2.0	.614	2.333	2	.099	5.667		2	14.916	32.13	1.872	1.872	4....	H1-1b
35	M47	PIPE_2.0	.225	2.333	10	.072	2.333		9	14.916	32.13	1.872	1.872	2....	H1-1b
36	M50	PIPE_2.0	.244	2.333	9	.095	2.333		9	14.916	32.13	1.872	1.872	3....	H1-1b
37	M51	PIPE_2.0	.314	6.234	3	.006	6.234		22	8.922	32.13	1.872	1.872	2....	H1-1a
38	M54A	PIPE_2.0	.075	.333	18	.069	.333		9	26.521	32.13	1.872	1.872	2....	H1-1b
39	M56	PIPE_2.0	.160	6.234	12	.006	6.234		18	8.922	32.13	1.872	1.872	2....	H1-1b*



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
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B	CHANGED TIE-BACK BACK CONNECTION		CEK	7/31/2017
A	CHANGED TIE-BACK FRONT CONNECTION		CEK	2/2/2017

REVISION HISTORY

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ALL OTHER ASSEMBLY *(± 0.060")*

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

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A valmont COMPANY

Engineering Support Team: 1-888-753-7446

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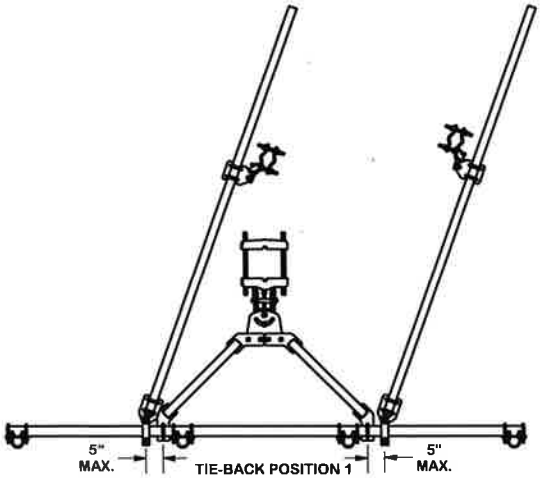
Plymouth, IN
Salem, OR
Dallas, TX

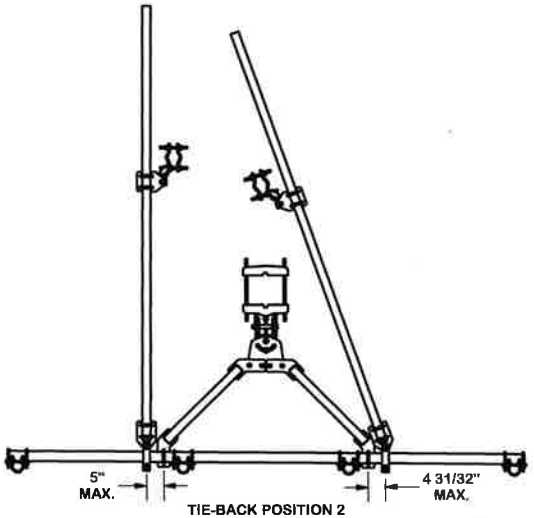
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
	CEK 1/25/2017		VFA12-HD

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

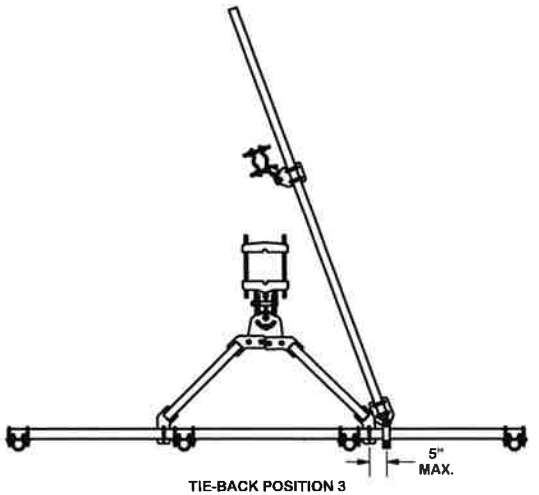
TIE-BACK POSITIONS



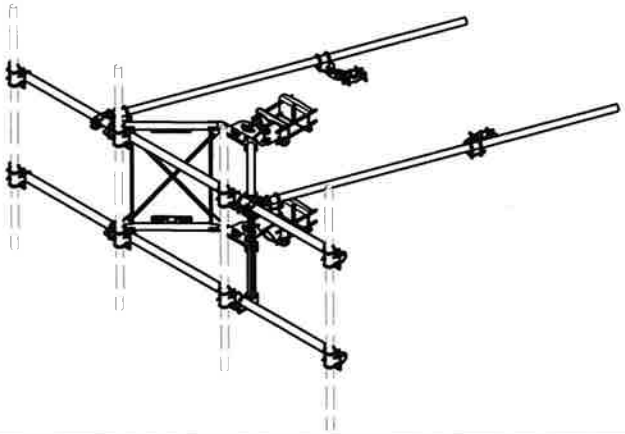
TIE-BACK POSITION 1
-20° / +20° TOP PARALLEL

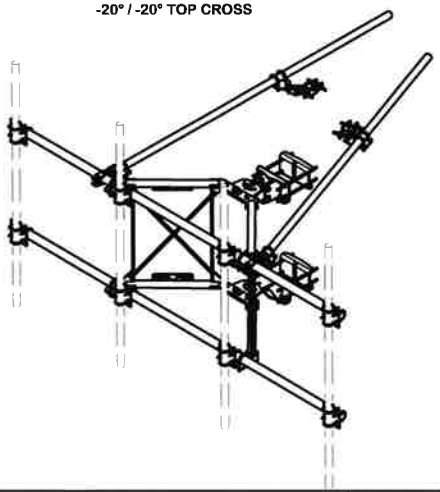


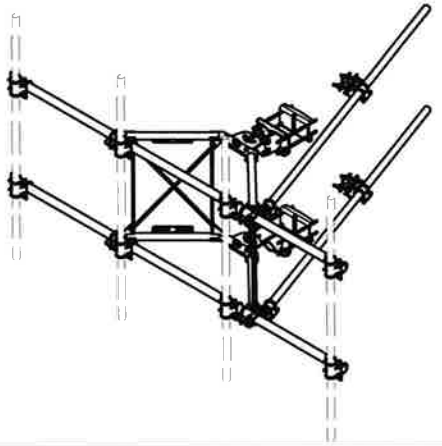
TIE-BACK POSITION 2
-20° / -20° TOP CROSS



TIE-BACK POSITION 3
-20° SAME SIDE STACKED







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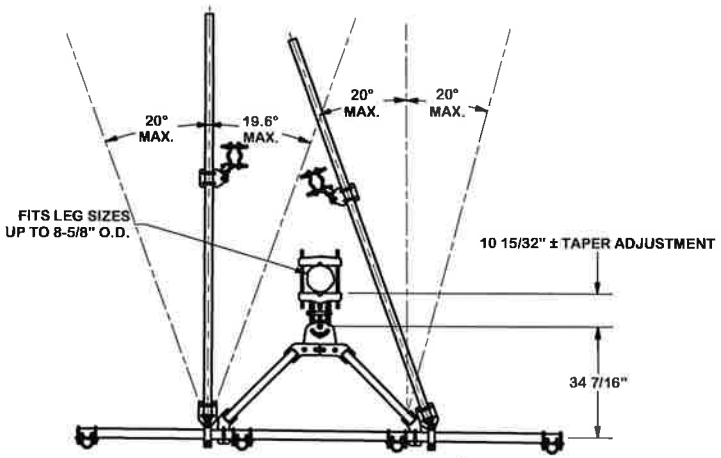
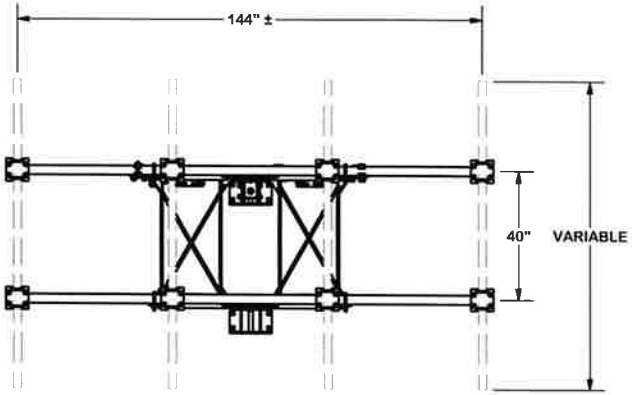
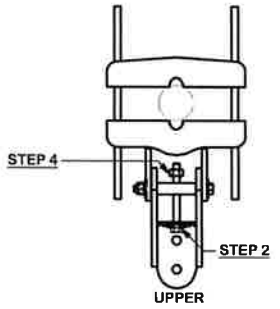
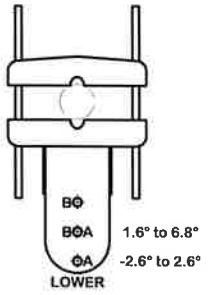


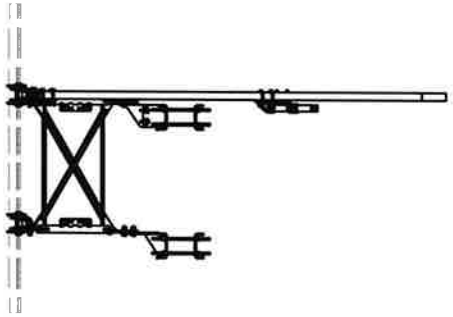


ANGLE CALIBRATING PROCEDURE:

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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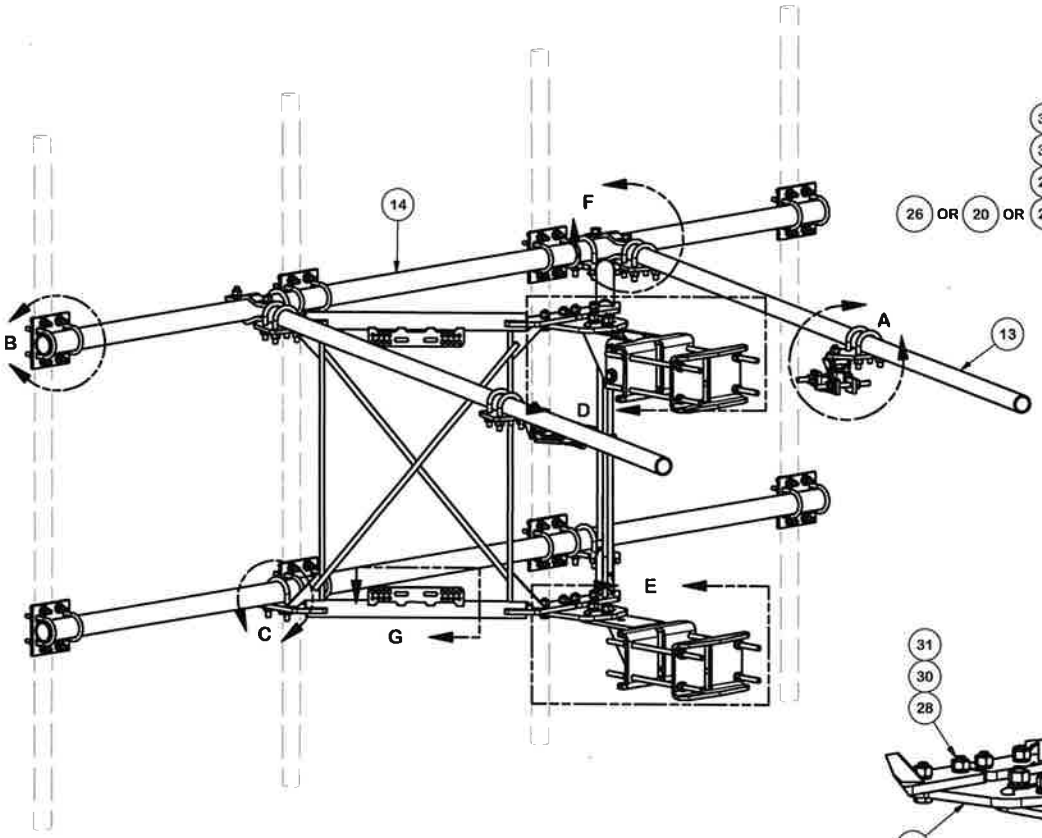
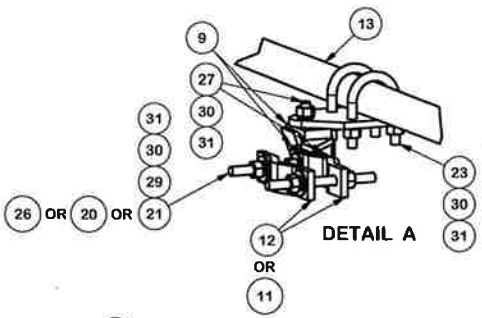
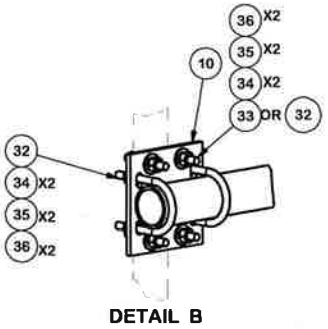
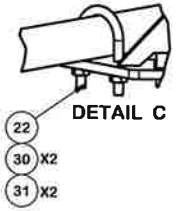




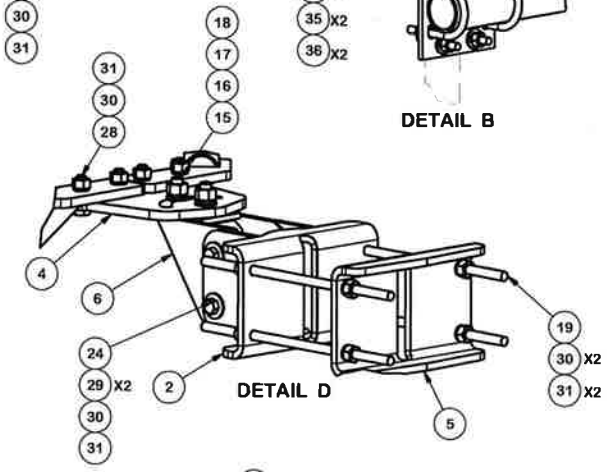
DETAIL A



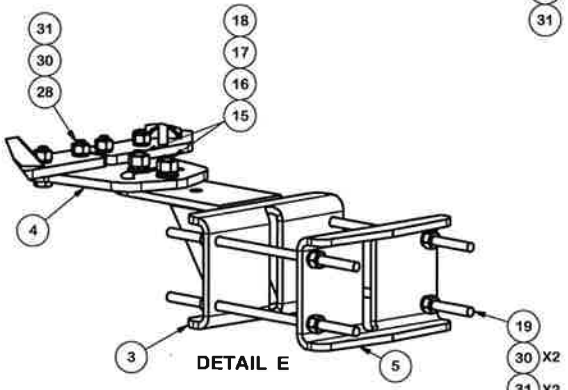
DETAIL B



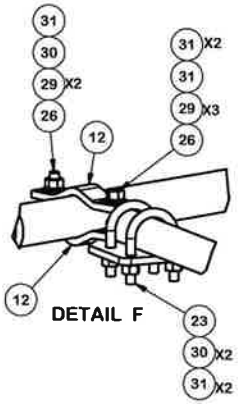
DETAIL C



DETAIL D



DETAIL E

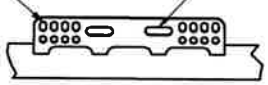


DETAIL F

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

REVISION HISTORY				
REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
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WITH TWO STIFF ARMS

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Engineering Support Team: 1-888-753-7446

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

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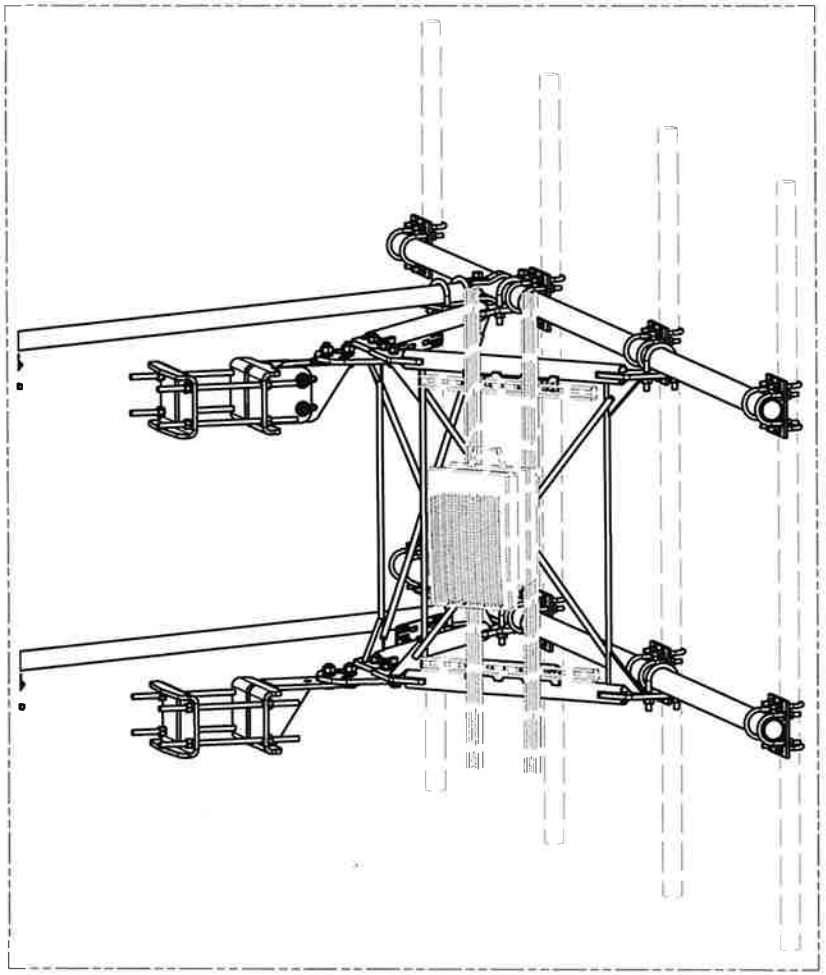
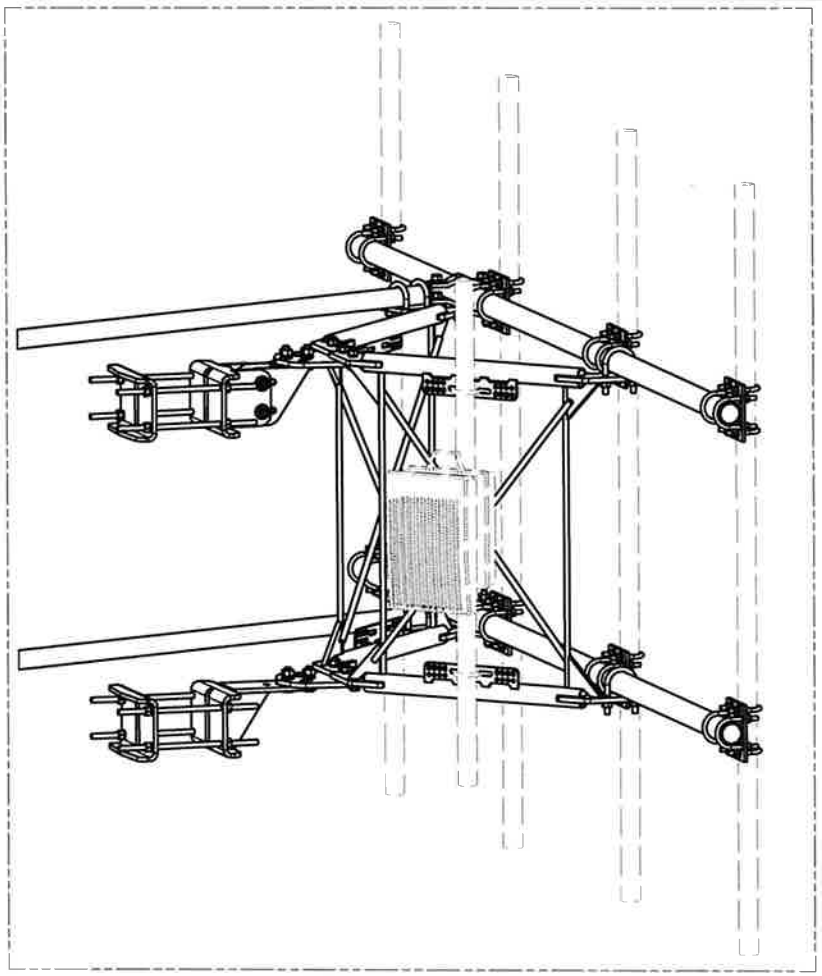
	CEK 1/25/2017		VFA12-HD

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



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

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
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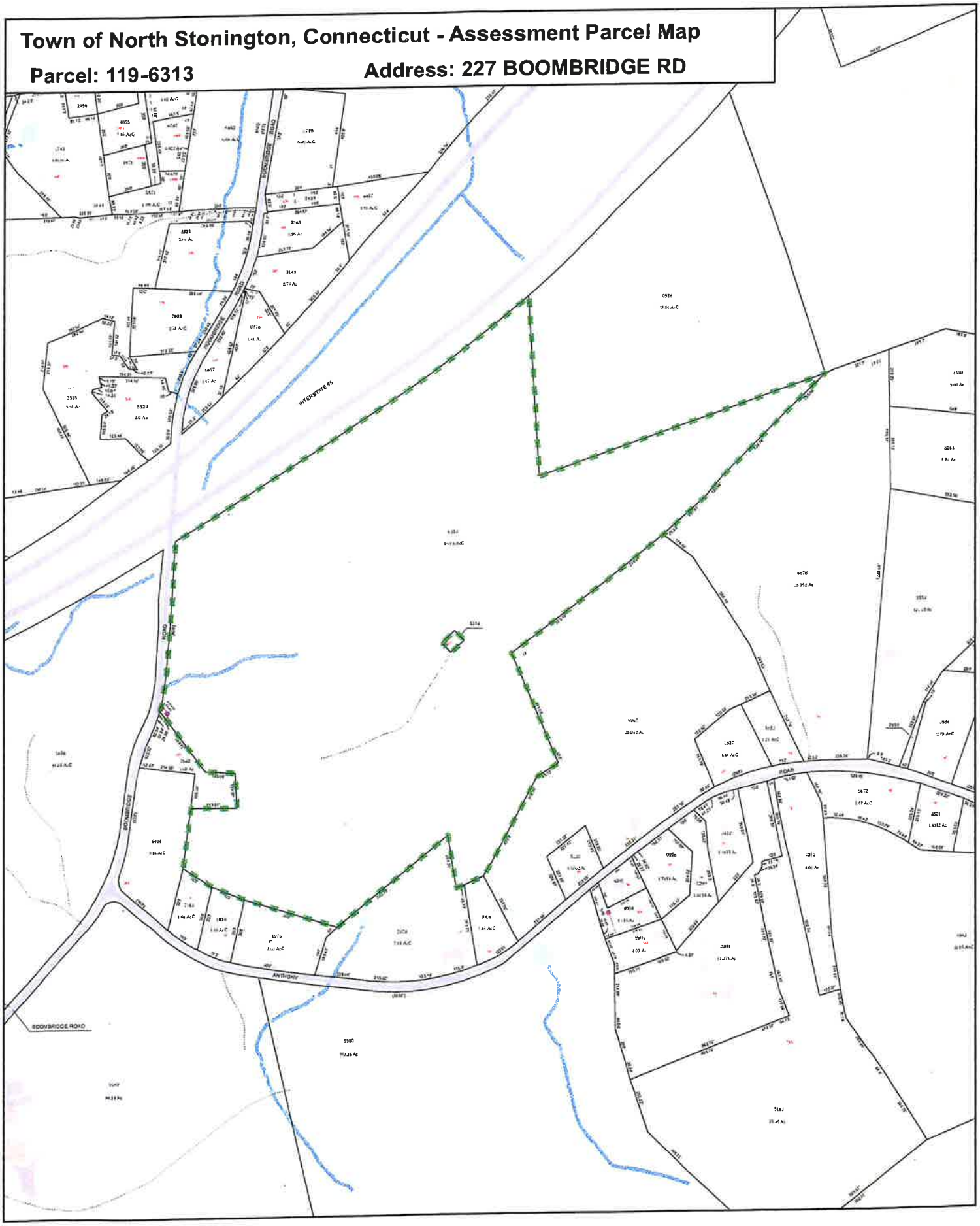
81	02	CUSTOMER	BMC 12/13/2017	VFA12-HD

ATTACHMENT 4

Town of North Stonington, Connecticut - Assessment Parcel Map

Parcel: 119-6313 **Address: 227 BOOMBRIDGE RD**



Approximate Scale: 1:7,200

0 140 280 560 840 1,120 Feet

Map Produced November 2018

Town of North Stonington, CT

Property Listing Report | Map Block Lot 119-6313 | Account L9857500

Property Information

Property Location	227 BOOMBRIDGE RD
Owner	LEWIS DAVID BABCOCK LLC
Co-Owner	
Mailing Address	273 BOOMBRIDGE RD NORTH STONINGTON CT 06359
Land Use	7131 Tillable B 490
Land Class	S
Zoning Code	R60
Census Tract	7071
Sub Lot	

Neighborhood	
Acreage	95.3
Utilities	
Lot Setting/Desc	Rural Rolling
Survey Map	
Additional Info	

Photo

Sketch

Primary Construction Details

Year Built	
Stories	
Building Style	
Building Use	
Building Condition	
Floors	
Total Rooms	

Bedrooms	
Full Bathrooms	
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	
Roof Cover	

Exterior Walls	
Interior Walls	
Heating Type	
Heating Fuel	
AC Type	
Gross Bldg Area	
Total Living Area	

Report Created On 10/8/2019

Town of North Stonington, CT

Property Listing Report | Map Block Lot 119-6313 | Account L9857500

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	0	0
Extras	0	0
Outbuildings	0	0
Land	345900	34215
Total	345900	34215

Outbuilding and Extra Items

Type	Description

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area		0

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
LEWIS DAVID BABCOCK LLC	140/ 513	12/28/2001	0
LEWIS ROSALIND M	126/ 960	8/5/1999	
LEWIS DAVID B EST & ROSALIND M	116/ 313	10/15/1997	0
(-1.69 ACS TO LEDYARD LEWIS)	-106/ 618	8/8/1995	0
PORTION CONVEYED TO O'KEEFE	(-)49/ 236	11/6/1975	0
LEWIS DAVID B & ROSALIND M	32/ 296	6/9/1964	0

Report Created On 10/8/2019

ATTACHMENT 5

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	2	3	neopost 10/25/2019 US POSTAGE $002.79⁰ ZIP 06103 041L12203937
	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.	Michael A. Urgo, First Selectman Town of North Stonington 40 Main Street North Stonington, CT 06359				
2.	Juliet Hodge, Planning, Development and Zoning Official Town of North Stonington 40 Main Street North Stonington, CT 06359		HARTFORD, CT, ANN ST OCT 25 2019 06103 - USPS		
3.	David Babcock Lewis, LLC 273 Boom Bridge Road North Stonington, CT 06359				
4.					
5.					
6.					

See Reverse for Instructions