Robinson+Cole

KENNETH C. BALDWIN

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Hartford, CT 06103-3597
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Also admitted in Massachusetts
and New York

June 22, 2021

Via Electronic Mail

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

Re: **Notice of Exempt Modification – Facility Modification**
169 Cross Street, Middletown, Connecticut

Dear Attorney Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains an existing wireless telecommunications facility at the above-referenced property address (the "Property"). The facility consists of antennas and remote radio heads attached to a tower and related equipment on the ground, near the base of the tower. The tower was approved by the City of Middletown ("City") in July of 1998 and is adjacent to the Middletown Fire Department Engine Co. No. 2 station house. Cellco's shared use of the tower was approved by the Council in April 2018 (PE1133-VER-20180305a). A copy of the City's original tower approval and the Council's approval letter for PE1133-VER-20180305a are included in Attachment 1.

Cellco now intends to modify its facility by removing nine (9) of its existing antennas and installing three (3) Samsung MT6407-77A antennas and six (6) JAHH-65B-R3B antennas on its existing mounts. Cellco also intends to remove six (6) of its remote radio heads ("RRHs") and install six (6) new RRHs behind its antennas. A set of project plans showing Cellco's proposed facility modifications and new antennas and RRHs specifications are included in Attachment 2.

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

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

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

2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The installation of Cellco's new antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A General Power Density table for the modified facility is included in Attachment 3. The modified facility will be capable of providing Cellco's 5G wireless service.

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

6. According to the attached Structural Analysis ("SA") and Mount Analysis ("MA"), the existing tower, tower foundation and antenna mounting structures can support Cellco's proposed modifications. Copies of the SA and MA are included in Attachment 4. Also included in Attachment 4 is a separate letter prepared by the consulting engineer responsible for the preparation of the SA and MA verifying that the antenna model described in the SA and MA, respectively, as a nL-Sub6 Antenna or L-Sub6 Antenna, is the Samsung 64T64R model antenna.

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

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

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:
Benjamin Florsheim, Middletown Mayor
Joseph Samolis, Director Planning, Conservation and Development
Aleksey Tyurin

ATTACHMENT 1

SPR98-84

SPR98-84

INITIAL APPLICATION FOR LAND-USE IN MIDDLETOWN, CT

Please fill out this application so we will know who you are, what you are applying to do, and how to contact you. With this basic information we will evaluate your project as it relates to City regulations as quickly as possible. Thank you for your cooperation.

GENERAL INFORMATION ABOUT THE PEOPLE INVOLVED Date 7-9-98

Applicant: MICHAEL MILARDO / Superintendent of ALARMS Phone#(860) 343-8013

Address: 169 CROSS ST. City MIDDLETOWN State CT Zip 06457

Agent: CITY OF MIDDLETOWN, Central Communications Phone#(860) 343-8013

Address: 169 CROSS ST City MIDDLETOWN State CT Zip 06457

WHAT ARE YOU APPLYING TO DO? (CHECK ONE OR MORE)

( ) Add an addition to a single/two family dwelling to be used for _____

( ) Construct a single family dwelling (A-2 survey required)

( ) Add an addition to a multi-family or non-residential building to be used for (A-2 survey required) _____

( ) Convert an existing building from present use as _____ to a new use as _____

( ) Construct one or more new buildings to be used for (A-2 survey required) _____

( ) Subdivide land into building lots (A-2 survey required)

( ) Change the text of the Zoning Code or amend the Zoning Map

( ) Install a sign

( ) Start a Residential Unit Business Pursuit

( ) Application for Zoning Board of Appeals

( ) Extract Natural Resources like sand or gravel or fill an area

(X) Other ADD ON A SMALL AREA FOR the Installation of Radio Equipment + SMALL OFFICE

98 JUL -9 AM 10:05

DEPT. PLANNING & ZONING

FACTS ABOUT LAND PROPOSED FOR USE

Landowner: CITY OF MIDDLETOWN Location: 169 CROSS ST.

Zone ID Lot Area _____ Tax Assessor's Map _____ Block _____ Lot _____

Is this project within 500' of a Municipal Boundary? Yes _____ No _____

Is this project located in a FEMA 100 or 500 year flood plain? Yes _____ No ✓

Utilities Available: City Water (X); Private Well ( ); City Sewer (X); Private Septic ( )

SIGNATURE OF I.W.A. STAFF

DATE APPLIED 7/13/98

( ) PERMIT REQUIRED

(✓) PERMIT NOT REQUIRED

( ) IWA REVIEW REQUIRED

Michael Milardo / SUPT. OF ALARMS.
SIGNATURE OF APPLICANT/AGENT**

SIGNATURE OF OWNER**

**Both signatures required. I certify that the above information and plans submitted are true and correct, and that, if required, an application for an Inland/Wetlands permit has been filed before or on the same day as the filing of this application with the P&Z Commission.

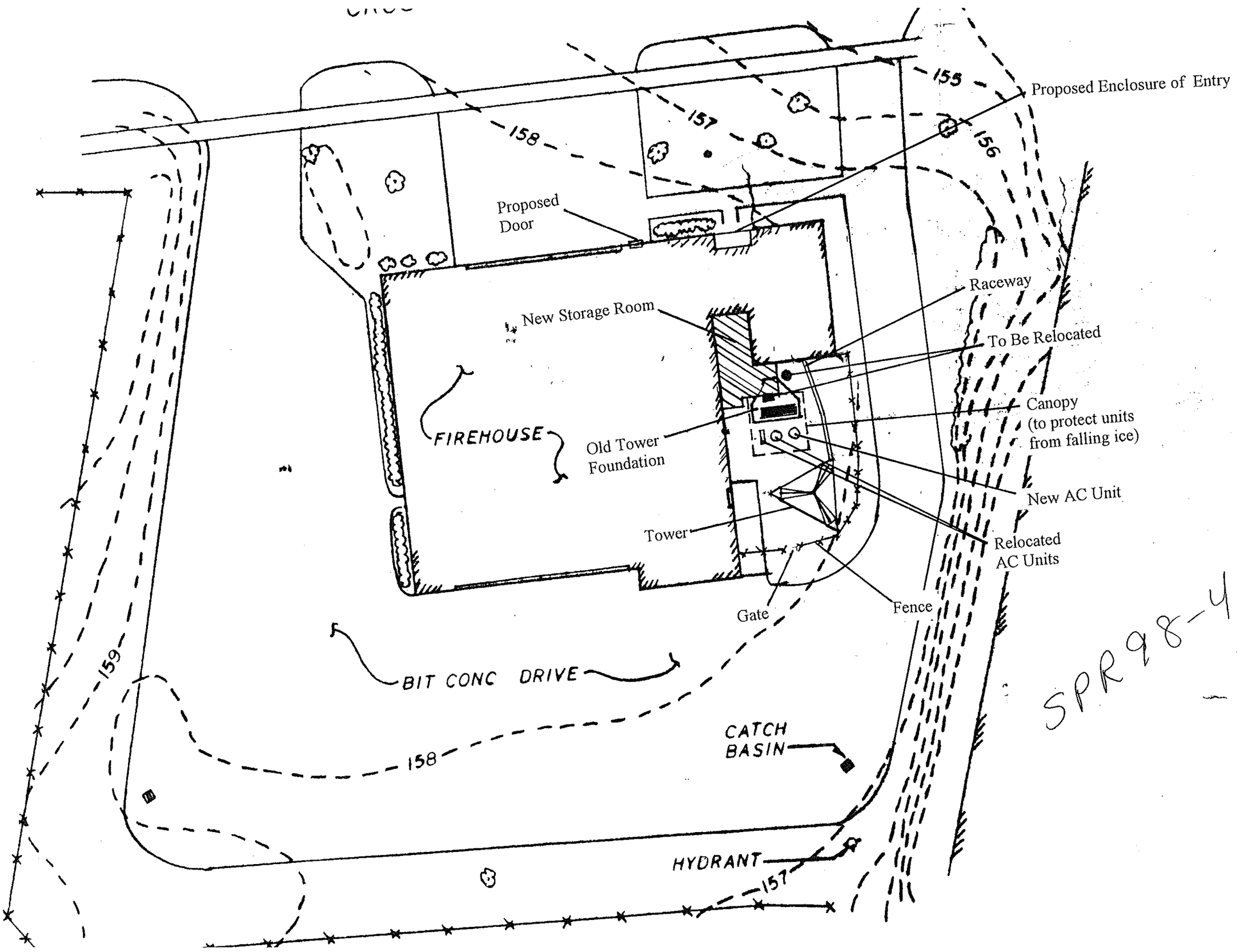
☒ Meets Zoning Requirements

Wayne J. Bell
ZONING ENFORCEMENT OFFICER

July 14, 1998
DATE

DATE OF APPROVED PLANS

APPROVAL EXPIRATION DATE


Proposed Enclosure of Entry
Proposed Door
New Storage Room
Raceway
To Be Relocated
FIREHOUSE
Old Tower Foundation
Canopy (to protect units from falling ice)
New AC Unit
Tower
Relocated AC Units
Gate
Fence
BIT CONC DRIVE
CATCH BASIN
HYDRANT
155
156
157
158
159

SPR98-4

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

April 2, 2018

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

RE: **PE1133-VER-20180305a** – Cellco Partnership d/b/a Verizon Wireless sub-petition for a declaratory ruling for approval of an eligible facility request for modifications to an existing telecommunications facility located at 169 Cross Street, Middletown, Connecticut.

Dear Attorney Baldwin:

The Connecticut Siting Council (Council) hereby approves your Eligible Facilities Request (EFR) to install antennas and associated equipment at the above-referenced facility pursuant to the Federal Communications Commission Wireless Infrastructure Report and Order, with the following conditions:

1. Reinforcements shall be made in accordance with the structural analysis report dated August 17, 2017 performed by All-Points Technology Corporation and stamped by Robert E. Adair and the associated reinforcement drawings dated June 30, 2017 stamped by Robert E. Adair;
2. Within 45 days following completion of equipment installation, Cellco shall provide documentation certified by a Professional Engineer that its installation complied with the recommendations of the structural analysis report;
3. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
4. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by the Petitioner shall be removed within 60 days of the date the antenna ceased to function;
5. The validity of this action shall expire one year from the date of this letter; and
6. The Petitioner may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the EFR dated March 2, 2018 and additional information dated March 22, 2018. Any minor changes to the eligible facility request require advance notification and approval.

Thank you for your attention and cooperation.

Sincerely,

Melanie Bachman
Executive Director

MB/CW

c: Honorable Daniel T. Drew, Mayor, City of Middletown
Joseph Samolis, Director of Planning, Conservation, and Development, City of Middletown

S:\PETITIONS\1101-1200\1133\3_Subpetitions_ByTown\Middletown\PE1133-VER-20180305a_decision.docx

ATTACHMENT 2

WIRELESS COMMUNICATIONS FACILITY

WESLEYAN UNIVERSITY CT
169 CROSS STREET
MIDDLETOWN, CT 06457

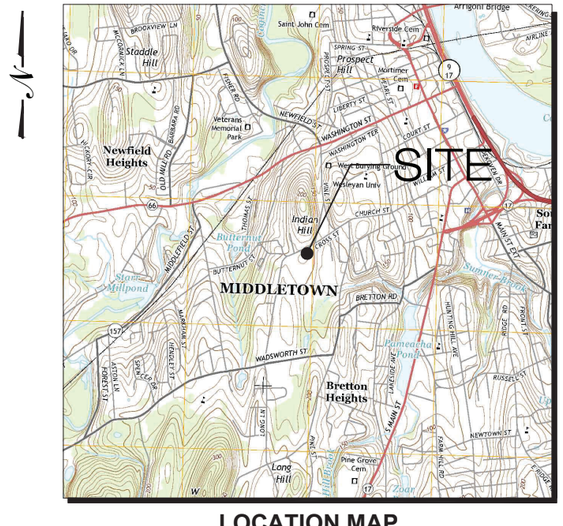
DRAWING INDEX

SITE DIRECTIONS

START: 20 ALEXANDER DRIVE
WALLINGFORD, CONNECTICUT 06492

END: 169 CROSS STREET
MIDDLETOWN, CT 06457

1.	HEAD NORTH ON ALEXANDER DRIVE	0.2 MI
2.	TURN RIGHT ONTO BARNES INDUSTRIAL ROAD	0.1 MI
3.	TURN RIGHT ONTO CT-68 E	1.8 MI
4.	SHARP LEFT TO MERGE ONTO I-91 N	4.0 MI
5.	TAKE EXIT 18 TO MERGE ONTO CT-66 E	0.2 MI
6.	MERGE ONTO CT-66 E	5.9 MI
7.	TURN RIGHT ONTO BUTTERNUT STREET	0.4 MI
8.	SLIGHT LEFT ONTO CROSS STREET	0.2 MI
9.	TURN LEFT ONTO CROSS STREET, DESTINATION ON RIGHT	0.1 MI



LOCATION MAP
SCALE : 1" = 2000'-0"

SITE INFORMATION

VZ SITE NAME:	WESLEYAN UNIVERSITY CT
VZ PROJ FUZE ID:	16244634
VZ PROJECT CODE:	20202199130
VZ LOCATION CODE:	470718
LOCATION:	169 CROSS STREET MIDDLETOWN, CT 06457
ASSESSORS TAX I.D:	25-0100
LATITUDE:	41° 33' 04.9381" N (41.5513717° N)
LONGITUDE:	72° 39' 43.6871" W (72.6621353° W)
GROUND ELEVATION:	157.2'± AMSL
PROPERTY OWNER:	CITY OF MIDDLETOWN PO BOX 1300 MIDDLETOWN, CT 06457
APPLICANT:	CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS 20 ALEXANDER DRIVE WALLINGFORD, CT 06492
LEGAL/REGULATORY COUNSEL:	ROBINSON & COLE, LLP KENNETH C. BALDWIN, ESQ. 280 TRUMBULL STREET HARTFORD, CT 06103
ENGINEER CONTACT:	ALL-POINTS TECHNOLOGY CORP., P.C. 567 VAUXHALL STREET EXTENSION - SUITE 311 WATERFORD, CT 06385 (860) 663-1697

COORDINATES & GROUND ELEVATION INDICATED HEREIN WERE ESTABLISHED FROM AN FAA 2-C SURVEY CERTIFICATION, AS PREPARED BY MARTIN SURVEYING ASSOCIATES, LLC., DATED JULY 25, 2017.

Cellco Partnership d/b/a
verizon
20 ALEXANDER DRIVE
WALLINGFORD, CT 06492

ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860) 663-1697
WWW.ALLPOINTSTECH.COM FAX: (860) 663-0935

CONSTRUCTION DOCUMENTS

NO	DATE	REVISION
0	01/13/21	FOR REVIEW: JRM
1	06/16/21	REV. FOR FILING: JRM
2		
3		
4		
5		
6		

STATE OF CONNECTICUT
MICHAEL TRODDEN
33313
LICENSED
PROFESSIONAL ENGINEER

DESIGN PROFESSIONALS OF RECORD

PROF: MICHAEL S. TRODDEN P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 567 VAUXHALL STREET EXT. SUITE 311 KILLINGWORTH, CT 06419

OWNER: CITY OF MIDDLETOWN
ADDRESS: PO BOX 1300 MIDDLETOWN, CT 06457

WESLEYAN UNIVERSITY CT

SITE ADDRESS: 169 CROSS STREET MIDDLETOWN, CT 06457

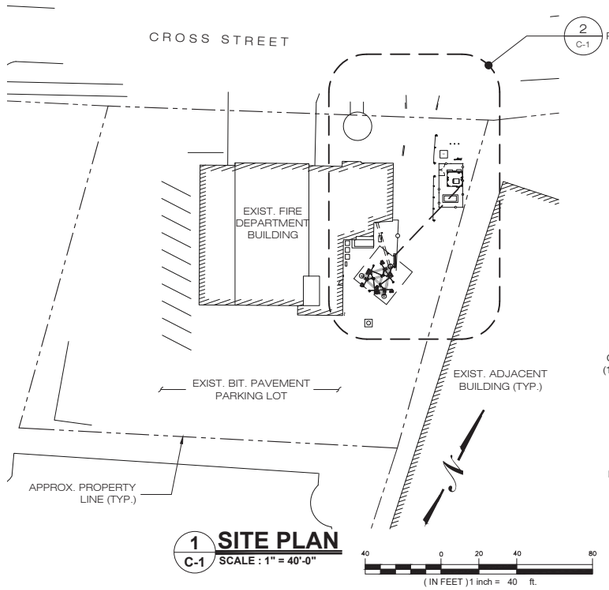
APT FILING NUMBER: CT141_11880

DRAWN BY: EEL
DATE: 01/13/21 CHECKED BY: JRM

VZW PROJECT CODE: 20202199130
VZW LOCATION CODE: 470718
VZW FUZE ID: 16244634

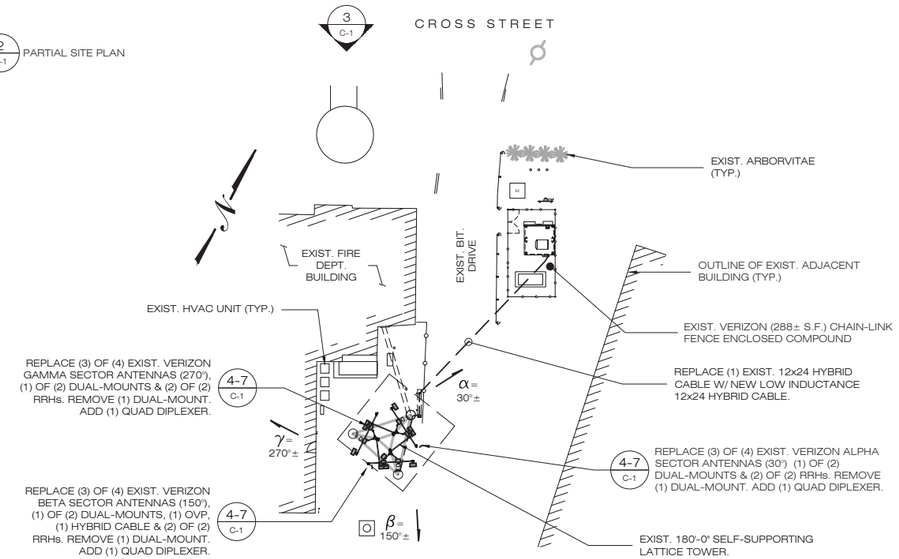
SHEET TITLE:
TITLE SHEET & INDEX

SHEET NUMBER:
T-1



1 C-1 SITE PLAN
SCALE : 1" = 40'-0"

(IN FEET)1 inch = 40 ft.

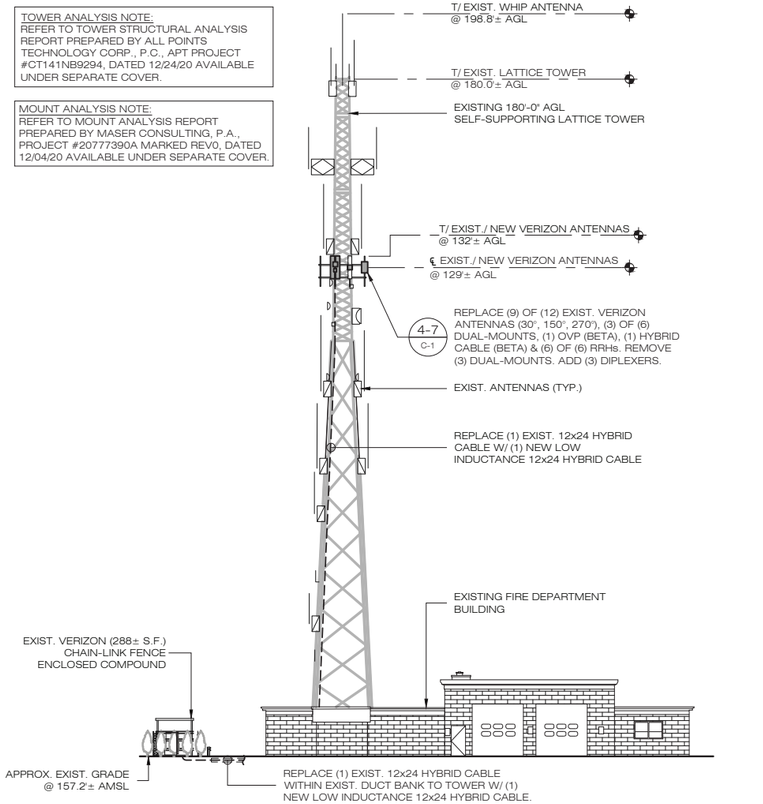


2 C-1 PARTIAL SITE PLAN
SCALE : 1" = 20'-0"

(IN FEET)1 inch = 20 ft.

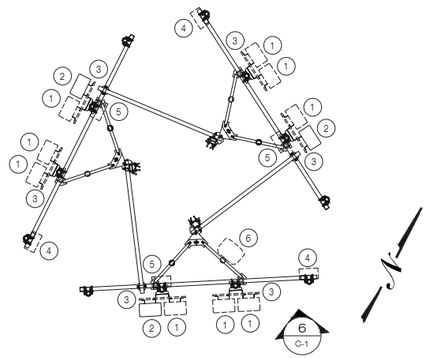
TOWER ANALYSIS NOTE:
REFER TO TOWER STRUCTURAL ANALYSIS REPORT PREPARED BY ALL POINTS TECHNOLOGY CORP., P.C., APT PROJECT #CT141NB9294, DATED 12/24/20 AVAILABLE UNDER SEPARATE COVER.

MOUNT ANALYSIS NOTE:
REFER TO MOUNT ANALYSIS REPORT PREPARED BY MASER CONSULTING, P.A., PROJECT #20777390A MARKED REV0, DATED 12/04/20 AVAILABLE UNDER SEPARATE COVER.

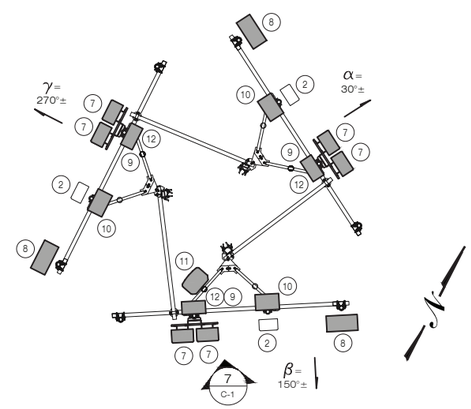


3 C-1 NORTH ELEVATION
SCALE : 1" = 20'-0"

(IN FEET)1 inch = 20 ft.



4 C-1 EQUIP. CONFIGURATION PLAN (EXIST.)
SCALE : 1/4" = 1'-0"



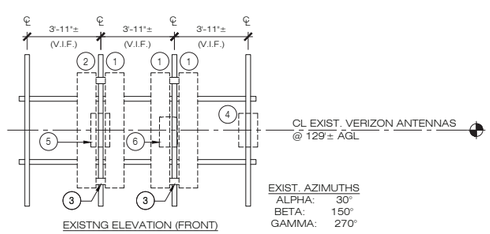
5 C-1 EQUIP. CONFIGURATION PLAN (NEW)
SCALE : ¼" = 1'-0"

NOTES:

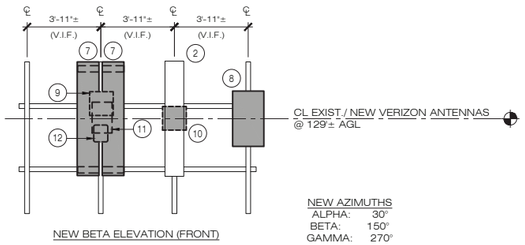
1. REFER TO TOWER STRUCTURAL ANALYSIS REPORT PREPARED BY ALL POINTS TECHNOLOGY CORP., P.C., APT PROJECT #CT141NB9294, DATED 12/24/20 AVAILABLE UNDER SEPARATE COVER.
2. REFER TO MOUNT ANALYSIS REPORT AND PMI REQUIREMENTS PREPARED BY MASER CONSULTING, P.A., PROJECT #20777390A MARKED REV0, DATED 01/18/21 AVAILABLE UNDER SEPARATE COVER.
3. BASE MAPPING FROM FIELD MEASUREMENTS TAKEN BY ALL-POINTS TECH. CORP., P.C. ON 12/10/20.
4. PROJECT SCOPE INCLUDES THE FOLLOWING:
   - REPLACEMENT OF (9) OF (12) PANEL ANTENNAS, INCLUDING (3) NEW LICENSED SUB 6 ANTENNAS.
   - REPLACEMENT OF (3) OF (6) DUAL-MOUNT ASSEMBLIES.
   - REMOVAL OF (3) DUAL-MOUNT ASSEMBLIES.
   - REPLACEMENT OF (6) OF (6) RRHs W/ NEW DUAL BAND RRHs.
   - REPLACEMENT OF (1) EXIST. OVP W/ (1) NEW 12OVP (BETA SECTOR).
   - REPLACEMENT OF (1) EXIST. HYBRID CABLE W/ (1) NEW 1¼" 12x24 LOW-INDUCTANCE HYBRID CABLE.
   - ADDITION OF (3) QUAD DIPLEXERS.
4. ALL EXPOSED STEEL AND HARDWARE TO BE HOT DIP GALV. (HDG). PAINT TO MATCH EXIST. (WHERE APPLICABLE)
5. CAP & WEATHERPROOF ALL UN-USED CABLE ENTRY PORTS (WHERE APPLICABLE).
6. MOUNT & GROUND ALL NEW EQUIPMENT IN ACCORDANCE WITH NEC (NFPA-70), NESC AND MANUFACTURERS SPECIFICATION.
7. SECURE ALL NEW ANTENNA CABLES PER MANUFACTURER RECOMMENDATIONS.
8. BOND NEW ANTENNA MOUNTING PIPES TO ANTENNA SECTOR GROUND BAR w/ # 2 AWG, BCW, (WHERE APPLICABLE).
9. ANTENNA CONFIGURATIONS SHOWN HEREIN ARE FRONT ELEVATIONS.
10. ANTENNA SPACING DIMENSIONS ARE TO THE CENTER OF THE EXIST. ANTENNA AND NEW ANTENNA FACE.
11. REFER TO THE FINAL RFDS PROVIDED BY VERIZON FOR THE LATEST INFORMATION REGARDING EQUIPMENT MODELS, REQUIRED CABLING & DOWN-TILT INFORMATION.

GENERAL ABBREVIATION LIST:

ABP	ABOVE BASE PLATE
AGL	ABOVE GROUND LEVEL
AMSL	ABOVE MEAN SEA LEVEL
AWS	ADVANCED WIRELESS SERVICE
HDG	HOT DIP GALVANIZED
OVP	OVER VOLTAGE PROTECTION
RRH	REMOTE RADIO HEAD
V.I.F.	VERIFY IN FIELD
W.P.	WORK POINT
A.F.R.	ABOVE FINISH ROOF



6 C-1 EQUIP. MOUNTING CONFIG. (EXIST.)
SCALE : ¼" = 1'-0"



7 C-1 BETA EQUIP. MOUNTING CONFIG. (NEW)
SCALE : ¼" = 1'-0"

SCOPE OF WORK (ALL) SECTORS

1. EXIST. ANTENNA (TO BE REPLACED) MODEL: COMMSCOPE SBNHH-1D65B
2. EXIST. ANTENNA (TO BE REUSED) MODEL: COMMSCOPE SBNHH-1D65B
3. EXIST. DUAL-MOUNT (TO BE REMOVED) MODEL: COMMSCOPE BSAMNT-SBS-1-2
4. EXIST. RRH (TO BE REPLACED) MODEL: NOKIA B66 RRH 4x45-2100
5. EXIST. RRH (TO BE REPLACED) MODEL: NOKIA B13 RRH 4x30-700
6. EXIST. 12 OVP (TO BE REPLACED @ BETA ONLY) MODEL: RAYCAP RCMDC-6627-PF-48 (V.I.F.)
7. NEW ANTENNA MOUNTED VIA NEW SIDE BY SIDE MOUNT BRACKETS (COMMSCOPE BSAMNT-SBS-2-2) MODEL: COMMSCOPE JAHH-65B-R3B
8. NEW LICENSED SUB 6 ANTENNA
9. NEW DUAL BAND RRH MODEL: SAMSUNG B13/B5 RRH-BR04C (RFV01U-D2A)
10. NEW DUAL BAND RRH MODEL: SAMSUNG B66/B2A RRH-BR049 (RFV01U-D1A)
11. NEW 12OVP (@ BETA ONLY) MODEL: RAYCAP RVZDC-6627-PF-48
12. NEW QUAD DIPLEXER MODEL: COMMSCOPE CBC78T-DS-43-2X

Cellco Partnership d/b/a
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20 ALEXANDER DRIVE
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ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860) 663-1697
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STATE OF CONNECTICUT · MICHAEL TRODDEN · 33313 · LICENSED PROFESSIONAL ENGINEER

DESIGN PROFESSIONALS OF RECORD

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WESLEYAN UNIVERSITY CT

SITE ADDRESS: 169 CROSS STREET MIDDLETOWN, CT 06457

APT FILING NUMBER: CT141_11880

DRAWN BY: EEL
DATE: 01/13/21
CHECKED BY: JRM

VZW PROJECT CODE: 20202199130
VZW LOCATION CODE: 470718
VZW FUZE ID: 16244634

SHEET TITLE:
PLANS, ELEVATION, EQUIP. CONFIGURATION PLANS & ELEVATIONS

SHEET NUMBER:
C-1

EQUIPMENT DATA

EQUIPMENT SPECIFICATIONS

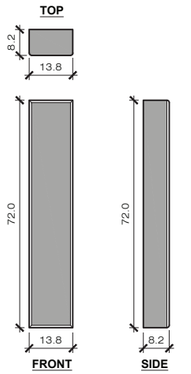
SECTOR	ANTENNA MAKE/MODEL		QTY	AZIMUTH	EQUIPMENT STATUS	HEIGHT (IN)	WIDTH (IN)	DEPTH (IN)	WEIGHT (LBS)
ALPHA	700/850/1900/2100:	COMMSCOPE JAHH-65B-R3B	1	30°	NEW	72.0	13.8	8.2	68.6 (2)
	700/850/1900/2100:	COMMSCOPE JAHH-65B-R3B	1	30°	NEW	72.0	13.8	8.2	68.6 (2)
	700/2100:	COMMSCOPE SBNHH-1D65B	1	30°	ETR	72.9	11.9	7.1	40.6 (2)
		LICENSED SUB 6 ANTENNA	1	30°	NEW	35.0	19.7	10.0	99.2 (2)(5)
BETA	700/850/1900/2100:	COMMSCOPE JAHH-65B-R3B	1	150°	NEW	72.0	13.8	8.2	68.6 (2)
	700/850/1900/2100:	COMMSCOPE JAHH-65B-R3B	1	150°	NEW	72.0	13.8	8.2	68.6 (2)
	700/2100:	COMMSCOPE SBNHH-1D65B	1	150°	ETR	72.9	11.9	7.1	40.6 (2)
		LICENSED SUB 6 ANTENNA	1	150°	NEW	35.0	19.7	10.0	99.2 (2)(5)
GAMMA	700/850/1900/2100:	COMMSCOPE JAHH-65B-R3B	1	270°	NEW	72.0	13.8	8.2	68.6 (2)
	700/850/1900/2100:	COMMSCOPE JAHH-65B-R3B	1	270°	NEW	72.0	13.8	8.2	68.6 (2)
	700/2100:	COMMSCOPE SBNHH-1D65B	1	270°	ETR	72.9	11.9	7.1	40.6 (2)
		LICENSED SUB 6 ANTENNA	1	270°	NEW	35.0	19.7	10.0	99.2 (2)(5)
	APPURTENANCE MAKE/MODEL								
	SAMSUNG B2/B66A RRH-BR049 (RFV01U-D1A)		3	-	NEW	14.9	14.9	10.04	97.5
	SAMSUNG B5/B13 RRH-BR04C (RFV01U-D2A)		3	-	NEW	14.9	14.9	8.14	82.0
	RAYCAP RVZDC-6627-PF-48		1	-	NEW	29.5	16.5	12.6	32
	COMMSCOPE CBC78T-DS-43-2X		3	-	NEW	6.4	6.9	9.6	20.7

(1) 'ETR' DENOTES EXIST. TO REMAIN
(2) WEIGHT WITHOUT MOUNTING BRACKET.
(3) ANTENNA DATA BASED ON RFDS DATED 11/18/20
(4) EQUIPMENT CONFIGURATION AS VIEWED FROM IN FRONT.
(5) NOT TO EXCEED

BILL OF MATERIALS

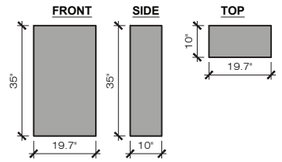
		QTY	LENGTH	COMMENTS
(1)	700/850/1900/2100	6		(COMMSCOPE JAHH-65B-R3B) MOUNTED TO PIPE MAST VIA NEW SBS MOUNT (COMMSCOPE BSAMNT-SBS-2-2)
(2)	LICENSED SUB 6 ANTENNA	3		MOUNTED TO PIPE MAST
(3)	1/2" JUMPER CABLE	48	15 FT	ROUTE FROM AWS/PCS RRH & QUAD DIPLEXER TO ANTENNAS
(4)	1/2" JUMPER CABLE	12	6 FT	ROUTE FROM 700/850 RRH TO QUAD DIPLEXER
(5)	ANTENNA LINK CABLES	9	15 FT	ROUTE FROM UPPER OVP TO ANTENNAS
(6)	ANTENNA POWER CABLES	3	15 FT	PROPRIETARY POWER CABLE FROM UPPER OVP TO ANTENNAS
(7)	QUAD DIPLEXER	3		COMMSCOPE CBC78T-43-2X QUAD DIPLEXER
(8)	AWS/PCS RRH	3		SAMSUNG B2/B66A RRH-BR049 (RFV01U-D1A)
(9)	700/850 RRH	3		SAMSUNG B5/B13 RRH-BR04C (RFV01U-D2A)
(10)	RRH CABLES	6	15M	PROPRIETARY POWER & FIBER CABLES
(11)	UPPER 12OVP	1		RAYCAP RVZDC-6627-PF-48
(12)	HYBRID CABLE (BETA)	1	250'± FT	12x24 LOW INDUCTANCE HYBRID CABLE (1¼"Ø)

NOTES:
1. INFORMATION SHOWN HEREON IS FOR USE BY VERIZON EQUIPMENT OPERATIONS.
2. INFORMATION IS BASED ON RFDS DATED 11/18/20.
3. * DENOTES EQUIPMENT DESIGNATED "FOR LEASING ONLY" (WHERE APPLICABLE)
4. INSTALL ALARM BOARDS AT ALL OVPs WHERE REQUIRED. COORDINATE w/ VERIZON EQUIPMENT ENGINEERING.
5. INSTALL UP-CONVERTER(S) LOCATED AT BASE OVPs WHERE REQUIRED. COORDINATE w/ VERIZON EQUIPMENT ENGINEERING AS NECESSARY.
6. COORDINATE ANTENNA CABLING REQUIREMENTS WITH VERIZON ENGINEERING.



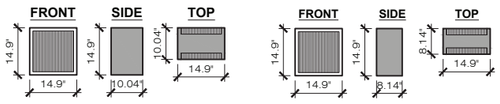
COMMSCOPE JAHH-65B-R3B
HxWxD=72.0"x13.8"x8.2 (68.6 Lbs)

2 B-1 NEW ANTENNA DETAIL
SCALE : ½" = 1'-0"



LICENSED SUB 6 ANTENNA
HxWxD=35.0"x19.7"x10.0 (99.2 Lbs)
(NOT TO EXCEED)

3 B-1 NEW LICENSED SUB 6 ANTENNA DETAIL
SCALE : ½" = 1'-0"

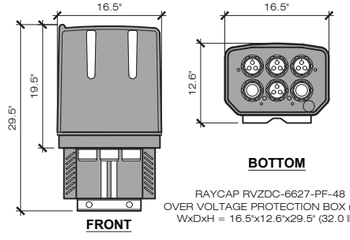


SAMSUNG DUAL HIGH BAND B2/B66A
RRH-BR049 (RFV01U-D1A)
RRH PCS/AWS
REMOTE RADIO HEAD (RRH)
WxDxH=14.9"x14.9"x10.04" (97.5 Lbs)

SAMSUNG DUAL HIGH BAND B5/B13
RRH-BR04C (RFV01U-D2A)
RRH 850/700
REMOTE RADIO HEAD (RRH)
WxDxH=14.9"x14.9"x8.14" (82.0 Lbs)

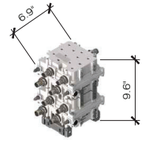
NOTE: WEIGHTS INCLUDE SOLAR SHEILD & MOUNTING BRACKET

4 B-1 RRH EQUIPMENT DETAILS
SCALE : ½" = 1'-0"



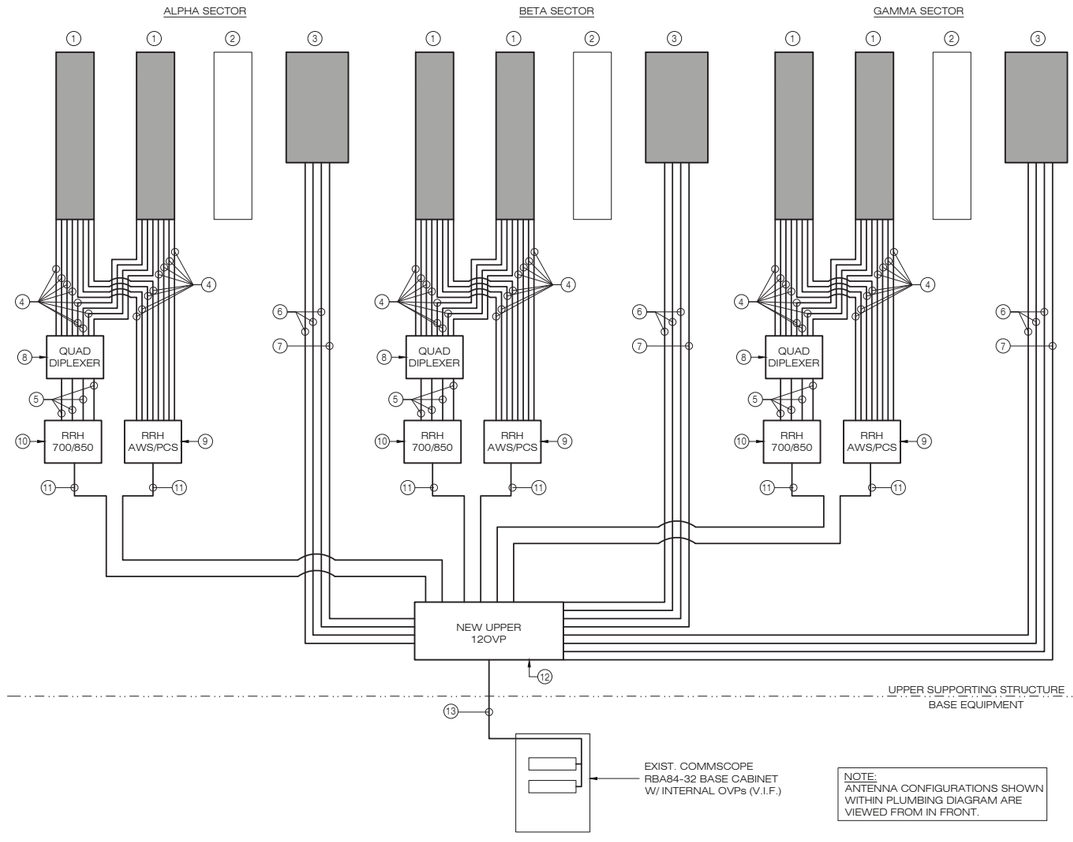
RAYCAP RVZDC-6627-PF-48
OVER VOLTAGE PROTECTION BOX (OVP)
WxDxH = 16.5"x12.6"x29.5" (32.0 lbs)

5 B-1 OVER VOLTAGE PROTECTION BOX (OVP)
SCALE : 1" = 1'-0"



COMMSCOPE CBC78T-DS-43-2X
QUAD DIPLEXER
HxWxD=6.4"x6.9"x9.6" (20.7 lbs)

6 B-1 QUAD DIPLEXER
SCALE: 1" = 1'-0"



NOTE:
ANTENNA CONFIGURATIONS SHOWN WITHIN PLUMBING DIAGRAM ARE VIEWED FROM IN FRONT.

1 B-1 PLUMBING DIAGRAM
NOT TO SCALE

Cellco Partnership d/b/a
verizon
20 ALEXANDER DRIVE
WALLINGFORD, CT 06492

ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860) 663-1697
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CONSTRUCTION DOCUMENTS

NO	DATE	REVISION
0	01/13/21	FOR REVIEW: JRM
1	06/16/21	REV. FOR FILING: JRM
2		
3		
4		
5		
6		

STATE OF CONNECTICUT
MICHAEL TRODDEN
33313
LICENSED PROFESSIONAL ENGINEER

DESIGN PROFESSIONALS OF RECORD

PROF: MICHAEL S. TRODDEN P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 567 VAUXHALL STREET EXT. SUITE 311 KILLINGWORTH, CT 06419

OWNER: CITY OF MIDDLETOWN
ADDRESS: PO BOX 1300 MIDDLETOWN, CT 06457

WESLEYAN UNIVERSITY CT

SITE ADDRESS: 169 CROSS STREET MIDDLETOWN, CT 06457

APT FILING NUMBER: CT141_11880

DRAWN BY: EEL
DATE: 01/13/21
CHECKED BY: JRM

VZW PROJECT CODE: 20202199130
VZW LOCATION CODE: 470718
VZW FUZE ID: 16244634

SHEET TITLE:
RF BILL OF MATERIALS, MECHANICAL SPECIFICATION & EQUIPMENT DETAILS

SHEET NUMBER:
B-1

DESIGN BASIS:

GOVERNING CODES/DESIGN STANDARDS:

2015 INTERNATIONAL BUILDING CODE (IBC) AS AMENDED BY THE 2018 CONNECTICUT STATE BUILDING CODE
ASCE 7-10
TIA-222-G

DESIGN CRITERIA:

STRUCTURE CLASS :	III	(TIA-222-G, TABLE 2-1 & ANNEX A.)
RISK CATEGORY:	III	(IBC 2015 TABLE 1604.5)

WIND LOADS:

ULTIMATE BASIC WIND SPEED, V_{ULT}: (3-SECOND GUST)	135 MPH	(2018 CSBC APPENDIX N)
NOMINAL BASIC WIND SPEED, V_{3S}: (3-SECOND GUST)	105 MPH	(2018 CSBC APPENDIX N)
EXPOSURE CATEGORY	B	(2015 IBC SEC. 1609.4.3)
WIND IMPORTANCE FACTOR, I_W:	1.15	(TIA-222G, TABLE 2-3)

ICE LOADS:

ICE THICKNESS, T_I:	0.75 IN	(TIA-222G, ANNEX B)
ICE THICKNESS IMPORTANCE FACTOR, I_I:	1.25	(TIA-222G, TABLE 2-3)
NOMINAL BASIC WIND SPEED W/ ICE, VI (3-SECOND GUST)	50 MPH	(TIA-222G, ANNEX B)
WIND LOAD W/ICE IMPORTANCE FACTOR, I_{WI}:	1.0	(TIA-222G, TABLE 2-3)

SEISMIC LOAD:

REFER TO SECTION 1613 OF THE 2015 IBC/2018 CONNECTICUT STATE BUILDING CODE FOR SEISMIC CLASSIFICATION AND LOADING DETERMINATION.

01 GENERAL:

ABBREVIATIONS USED IN THESE SPECIFICATIONS INCLUDE THE FOLLOWING:

ACI	AMERICAN CONCRETE INSTITUTE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AWS	AMERICAN WELDING SOCIETY
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN STANDARDS AND TESTING METHODS
CRSI	CONCRETE REINFORCING STEEL INSTITUTE
ICC-ES	INTERNATIONAL CODE COUNCIL EVALUATION SERVICE
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
UL	UNDERWIRTERS LABORATORIES
NEC	NATIONAL ELECTRICAL CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

EVERY INDIVIDUAL TRADE, DISCIPLINE, AND CONTRACTOR SHALL INCLUDE THESE GENERAL SPECIFICATIONS.

THE ENGINEER IS NOT RESPONSIBLE FOR NOR A GUARANTOR OF THE INSTALLING CONTRACTORS WORK, ADEQUACY OF ANY SITE COMPONENT, SUPERVISION OF ANY WORK, AND SAFETY IN, ON, OR ABOUT THE WORK SITE.

ANY REFERENCE HEREIN TO AN OR EQUAL ITEM, THAT EQUAL ITEM SHALL BE PRE-APPROVED BY THE CONSTRUCTION MANAGER BEFORE INSTALLATION

ALL TRADES SHALL COORDINATE THEIR WORK WITH ALL OTHER TRADES AND OTHER WORK AND CONDITIONS AS APNEWRIATE OR REQUIRED TO AVOID CONFLICTS. RESOLVE AND COORDINATE ALL CONFLICTS WITH ALL AFFECTED WORK AND SITE OPERATIONS. COORDINATION WITH THE SITE SHALL BE WITH THE OWNER, OR OWNER'S SPECIFIED REPRESENTATIVE, FOR EVERYTHING RELATED TO THE INSTALLATION OF THIS PROJECT.

ALL WORK SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE EDITIONS OF ALL APPLICABLE CODES AND SHALL BE ACCEPTABLE TO ALL AUTHORITIES HAVING JURISDICTION (AHJ). WHERE A CONFLICT EXISTS BETWEEN CODES, PLANS, SPECIFICATIONS, AND/OR AHJ, THE MORE STRINGENT AUTHORITY SHALL APPLY. WHERE CONFLICT EXISTS BETWEEN PLANS AND SPECIFICATIONS, PLAN SHALL APPLY. WHERE CONFLICT EXISTS BETWEEN PLAN SHEETS, CONSTRUCTION MANAGER SHALL BE CONSULTED PRIOR TO COMMENCING ANY WORK.

CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR A COMPLETE AND NEWERLY OPERATIVE AND USABLE SYSTEM THROUGHOUT AND AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN AND/OR OTHERWISE REQUIRED.

CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, INSTALLATIONS, AND EQUIPMENT IN THE FIELD PRIOR TO BID, FABRICATION, AND INSTALLATION OF ANY WORK.

CONTRACTORS SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. THE ENGINEER SHALL BE NOTIFIED FOR INSPECTIONS PRIOR TO CLOSING PENETRATIONS AND OF ANY CONDITIONS WHICH PRECLUDE COMPLETION OF THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

CONTRACTOR SHALL VISIT THE SITE TO MANAGE AND GAIN APPROVAL FOR ALL TENANT DISRUPTIONS, POWER OUTAGES, WORK SCHEDULES, DEFINITION OF WORK AREA AND WORK STORAGE, NEWER BUILDING/SITE ACCESS, NOISE AND CLEANLINESS REQUIREMENTS WITH THE BUILDING/SITE MANAGEMENT PRIOR TO ALL WORK. ANY DISRUPTIONS SHALL BE KEPT TO A MINIMUM AND SHALL BE IMPLEMENTED ONLY UPON WRITTEN APPROVAL OF THE OWNER.

THE CONTRACTOR SHALL SAFEGUARD AGAINST CREATING ANY HAZARD AFFECTING TENANT EGRESS OR COMPROMISING SITE SECURITY MEASURES.

PRIOR TO ALL BELOW-GRADE WORK AND ANY SURFACE WORK IN A NEW AREA FOR STRUCTURES OR VEHICLES, CONTRACTOR SHALL ENGAGE A MARKOUT SERVICE TO IDENTIFY ANY UNDERGROUND STRUCTURES, CONDUITS, AND PIPELINES IN THE AREA. ALL EXISTING SEWER, WATER, GAS, ELECTRIC, FIBER OPTIC, AND OTHER UNDERGROUND UTILITIES IDENTIFIED OR ENCOUNTERED, SHALL BE PROTECTED AT ALL TIMES. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN DIGGING OR EXCAVATING IN ANY MANNER AROUND OR NEAR SUCH UTILITIES. CONTRACTOR IS RESPONSIBLE FOR REPAIRS, REPLACEMENT, AND ALL DAMAGES DUE TO DAMAGE OF UTILITIES BY HIS OPERATIONS.

ALL EXISTING AND NEW EQUIPMENT AND MATERIAL LOCATIONS, ROUTING, ORIENTATION, MOUNTING, SPECIFICATIONS AND GENERAL INSTALLED CHARACTERISTICS SHALL BE CONSIDERED DIAGRAMMATIC ON THE PLANS. EXACT CONDITIONS SHALL BE DETERMINED IN THE FIELD PRIOR TO ANY INSTALLATION. ANY DIFFERENCES THAT MAY CAUSE SCHEDULE, COST, OR QUALITY SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER OR ENGINEER PRIOR TO ANY WORK.

ALL REFERENCES HEREIN TO VERIFICATION OF ANY CONDITION OF SITE, FIELD, PLANS, OR SPECIFICATIONS PRIOR TO ANY WORK SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR. ANY AND ALL ADDITIONS, MODIFICATIONS, CHANGES, REPAIR, OR DEMOLITION AS A RESULT OF FAILURE TO BRING ANY EXISTING CONDITION NEWERLY TO THE ATTENTION OF THE OWNER OR ENGINEER SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR WITHOUT DELAY, COST, OR CHANGES IN QUALITY.

ALL NOTES THIS SHEET SHALL APPLY UNLESS SPECIFICALLY NOTED OTHERWISE ON THE INCLUDED DRAWINGS OR IN SEPARATE PROJECT SPECIFICATIONS AS APPLICABLE. ALL SPECIFICATIONS SHALL BE CONSIDERED REQUIRED UNLESS APPROVED EQUAL BY THE OWNER, CONSTRUCTION MANAGER, OR ENGINEER AS APPLICABLE.

THE WORDS “PROVIDE” OR “INSTALL” SHALL MEAN FURNISH AND INSTALL.

CONTRACTOR SHALL PROVIDE ALL CUTTING AND PATCHING AS REQUIRED FOR THE INSTALLATION OF HIS WORK. ANY PATCHING SHALL MATCH EXISTING SURROUNDING AREA IN ALL RESPECTS. ALL REMOVED MATERIAL SHALL BE REMOVED FROM THE PREMISES DAILY IN AN APPROVED SAFE MANNER.

ALL SURPLUS MATERIAL SHALL BE REMOVED FROM THE SITE PROMPTLY WHEN DEEMED TO BE SURPLUS.

EVERY CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF HIS WORK AND NEWLY INSTALLED OR EXISTING WORK, INCLUDING PROTECTION OF THE SITE, ALL STRUCTURES, AND ALL OCCUPANTS. FURNISH, INSTALL, MAINTAIN, AND REMOVE AS APNEWRIATE, ALL APNEWRIATE BARRIERS, SAFETY GUARDS, SIGNAGE, AND SECURITY AS REQUIRED.

EVERY CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR RESPECTIVE FEES, PERMITS, INSPECTIONS, TESTING, CERTIFICATES, AND ALL MANAGEMENT OF SAME REQUIRED FOR COMPLETION OF AND LEGAL OCCUPANCY OF THE FINISHED PROJECT.

ALL CONTRACTORS SHALL PROVIDE ALL NECESSARY TOOLS, FIXTURES, SERVICES, MATERIALS, JOB AIDS, AND PERSONNEL REQUIRED FOR THE EXECUTION OF THEIR WORK.

EACH CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP BY THEM TO BE FREE OF DEFECTS AND MAINTAINED FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE OF THE INSTALLATION BY THE OWNER AND ENGINEER.

ALL WORK SHALL BE PERFORMED BY LICENSED CONTRACTORS IN THE TRADE HAVING JURISDICTION.

ANY DEVIATION, MODIFICATION, ADDITION, OR CHANGE IN DESIGN SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL OF THE OWNER OR ENGINEER.

ALL CONTRACTORS SHALL SUBMIT SHOP DRAWINGS OF ALL EQUIPMENT AND MATERIALS TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION AND INSTALLATION, AND SHALL NOT PROCEED UNTIL ENGINEER APPROVAL IN WRITING IS RETURNED. EACH CONTRACTOR SHALL MAINTAIN ON JOB SITE A COMPLETE SET OF SHOP DRAWINGS WITH ANY DEVIATIONS FROM THE ORIGINAL DESIGN SHALL BE NOTED.

ALL MATERIALS AND EQUIPMENT SHALL BE NEW, WITHOUT BLEMISH OR DEFECT, AND SUITABLE AND LISTED FOR THE INSTALLATION AND SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS OR SPECIFICATIONS. ALL ITEMS OF EQUIPMENT OR MATERIAL THAT ARE OF ONE GENERIC TYPE SHALL BE ONE MANUFACTURER THROUGHOUT.

ALL MATERIALS, EQUIPMENT, TOOLS, AND ITEMS UNDER THE CONTRACTOR'S RESPONSIBILITY ON THE JOBSITE SHALL BE ADEQUATELY SECURED, MAINTAINED, AND PROTECTED, SO AS NOT TO BECOME DAMAGED OR CREATE ANY HAZARD TO PERSONNEL OR NEWERTY.

THE CONTRACTORS HOURS OF WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES AND ORDINANCES AND BE APPROVED BY THE OWNER.

CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR ALL OF HIS CREW AND INSURE THAT EVERY CREW MEMBER FOLLOWS SAVE WORK PRACTICES. SAFETY TRAINING SHALL INCLUDE, BUT NOT BE LIMITED TO, FALL PROTECTION, CONFINED SPACE ENTRY, ELECTRICAL SAFETY, AND TRENCHING/EXCAVATION SAFETY WHERE SUCH WORK IS EXECUTED OR ENCOUNTERED.

ALL TEMPORARY WORK REQUIRED OR SPECIFIED AS A PART OF THIS WORK, SHALL MEET ALL OF THE SAME REQUIREMENTS AS PERMANENT INSTALLATIONS, SHALL MEET ALL APPLICABLE CODE REQUIREMENTS, AND SHALL BE COMPLETELY REMOVED AFTER ITS PURPOSES HAVE BEEN SERVED.

ANY EXISTING UTILITY, SERVICE, STRUCTURE, EQUIPMENT, OR FIXTURE OBSTRUCTING THE WORK SHALL BE REMOVED AND/OR RELOCATED AS DIRECTED BY THE CONSTRUCTION MANAGER.

IF ASBESTOS IS ENCOUNTERED DURING WORK EXECUTION, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER AND CEASE ALL ACTIVITIES IN AFFECTED AREAS UNTIL NOTIFIED BY THE CONSTRUCTION TO RESUME OPERATIONS.

EXIST. ELECTRICAL AND MECHANICAL FIXTURES, PIPING, WIRING AND EQUIPMENT OBSTRUCTING THE WORK SHALL BE REMOVED AND/OR RELOCATED AS DIRECTED BY THE CONSTRUCTION MANAGER. TEMPORARY SERVICE INTERRUPTIONS MUST BE COORDINATED WITH OWNER.

26 ELECTRICAL:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

ALL ELECTRICAL CONDUCTORS:

- INSULATION SHALL BE MINIMUM 600V TYPE THHN, THWN-2, OR XHHW.
- BRANCH CIRCUIT CONDUCTORS SHALL BE SOFT DRAWN 98% MINIMUM CONDUCTIVITY NEWERLY REFINED COPPER.
- FEEDER CIRCUIT CONDUCTORS SHALL BE EITHER COPPER OR ALUMINUM OF THE APNEWRIATE SIZE FOR THE APPLICATION, OR AS SPECIFICALLY NOTED.
- PERMANENTLY LABEL OR TAG ALL CONDUCTORS WITH THEIR CIRCUIT DESIGNATION AT ALL TERMINATION ENDS, SPLICES, AND VISIBLE AS PASS-THROUGH IN ALL ENCLOSURES.

ALL CONDUIT, RACEWAY, WIREWAYS, DUCTS, ETC. SHALL BE LISTED AND SUITABLE FOR THE APPLICATION. ONLY THE FOLLOWING CONDUITS AS APPROVED AND LISTED FOR THE APPLICATION SHALL BE ACCEPTABLE:

- ELECTRICAL METALLIC TUBING (EMT).
- COMPRESSION COUPLINGS AND CONNECTORS ONLY MADE UP WRENCH TIGHT.
- FLEXIBLE METAL CONDUIT (FMC) AND LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC).
- FINAL CONNECTIONS TO VIBRATING OR ADJUSTABLE EQUIPMENT INCLUDING, BUT NOT LIMITED TO, LIGHT FIXTURES, HVAC UNITS, TRANSFORMERS, MOTORS, ETC. OR WHERE EQUIPMENT IS PLACED UPON SLAB ON-GRADE.
- RIGID GALVANIZED STEEL (RGS).
- ALL FITTINGS, CONNECTORS, AND COUPLINGS SHALL BE THREADED MADE UP WRENCH TIGHT.
- RIGID POLYVINYL CHLORIDE (PVC) SCHEDULE 40 OR SCHEDULE 80.
- MAY BE USED FOR SERVICES, EXTERIOR, BELOW GRADE, AND WET LOCATIONS.
- SHALL NOT BE USED IN CONCRETE SLABS NOR EXPOSED WITHIN A BUILDING OR STRUCTURE.
- METAL-CLAD CABLE (MC)
- CONCEALED INSTALLATIONS ONLY.
- WITHIN A DUCT WITH SMOOTH OR CORRUGATED METAL JACKET AND NO OUTER COVERING OVER THE METAL JACKET.

IN FINISHED SPACES, ALL CONDUITS SHALL BE CONCEALED EXCEPT TO MAKE A FINAL CONNECTION TO EQUIPMENT NOT MOUNTED IN OR AGAINST FINISH MATERIAL.

ALL FEEDER AND BRANCH CIRCUITS SHALL HAVE A SEPARATE NEWERLY SIZED AND MARKED GROUNDING CONDUCTOR, PER APPLICABLE CODES, THAT BONDS ALL ENCLOSURES, BOXES, ETC. CONDUIT SHALL NOT BE USED AS A GROUNDING OR BONDING CONDUCTOR.

IF EXISTING ELECTRIC SERVICE IS TO REMAIN, CONTRACTOR SHALL BE VERIFY THAT IT MEETS PROJECT REQUIREMENTS WITHOUT MODIFICATION. IF IT IS TO BE ADDED OR REPLACED AS A PART OF THIS WORK, CONTRACTOR SHALL ORDER FROM, COORDINATE WITH, AND GAIN APPROVAL FROM THE ELECTRICAL UTILITY. ALL ELECTRICAL EQUIPMENT SHALL BE AS SPECIFIED AND AS APPROVED BY THE LOCAL UTILITY WHERE APPLICABLE.

ALL EQUIPMENT, ENCLOSURES, ETC. SHALL BE SUITABLE FOR THE INSTALLED ENVIRONMENT, MINIMUM NEMA 3R FOR ALL EXTERIOR INSTALLATIONS.

WIRING DEVICES SHALL BE SPECIFICATION GRADE AND WIRING DEVICE COVER PLATES SHALL BE PLASTIC WITH ENGRAVING AS SPECIFIED. COLOR SHALL BE IVORY. ALL DEVICES AND COVER PLATES SHALL BE OF THE SAME MANUFACTURER.

ALL FIRE-RATED PENETRATIONS SHALL BE SEALED USING A SUITABLE AND LISTED FIRE SEALING DEVICE OR GROUT THAT WILL MAINTAIN THE FIRE RATING OF THE STRUCTURE PENETRATED.

PROVIDE PERMANENTLY AFFIXED ENGRAVED NAMEPLATES FOR ALL CODE REQUIRED LABELING AND ON ALL PANELS, METERING, DISCONNECTS, AND ELECTRICAL EQUIPMENT THAT IDENTIFIES EQUIPMENT SERVED, ELECTRICAL SOURCE WITH CIRCUIT IDENTIFICATION, AND VOLTAGES WITHIN.

ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL FINAL TERMINATIONS TO ALL EQUIPMENT.

ALL ELECTRICAL APPURTENANCES THAT ARE DISCONNECTED SHALL BE COMPLETELY REMOVED WITH EXISTING STRUCTURES TO REMAIN, REPAIRED, FINISHED, FILLED, PAINTED, ETC. ALL PANEL SCHEDULES, EQUIPMENT LABELING, AND CODE-REQUIRED LABELING, SHALL BE VERIFIED AND NEWERLY COMPLETED TO MATCH THE INSTALLATION.

26 GROUNDING:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

GROUND ALL SYSTEMS AND EQUIPMENT IN ACCORDANCE WITH BEST INDUSTRY PRACTICE, THE REQUIREMENTS OF THE NFPA 70 NATIONAL ELECTRICAL CODE (NEC), AND ALL OTHER APPLICABLE CODES AND REGULATIONS.

ALL GROUNDING ELECTRODES PRESENT AT EACH SERVICE LOCATION SHALL BE BONDED TOGETHER TO FORM THE GROUNDING ELECTRODE SYSTEM.

ALL EQUIPMENT ENCLOSURES, DEVICES, AND CONDUITS SHALL BE GROUNDED BY THE INSTALLATION OF A SEPARATE GROUNDING CONDUCTOR FOR ALL FEEDER AND BRANCH CIRCUITS THAT IS SIZED PER CODE OR IS OF THE SIZE INDICATED ON THE DRAWINGS, SHALL BE CONTINUOUS IN LENGTH, AND SHALL BE BONDED TO EACH ENCLOSURE PASSED THROUGH. CONDUIT SHALL NOT BE USED AS A GROUNDING OR BONDING WIRE OR CIRCUIT.

BOND ALL METALLIC CONDUITS TOGETHER THAT ARE CONNECTED TO NON-METALLIC ENCLOSURES, IN-GROUND BOXES, AND TO AN ENCLOSURE WHERE A GROUND BUS IS SPECIFIED OR SUPPLIED. ACCOMPLISH THIS BOND WITH GROUNDING CONDUCTORS MINIMUM SIZED TO THE LARGEST GROUNDING CONDUCTOR PRESENT IN THE ENCLOSURE CONNECTED TO A GROUNDING TYPE BUSHING EQUALLY SIZED OR MAXIMUM GROUND WIRE ACCOMMODATION AVAILABLE IN STANDARD MANUFACTURE FOR THE CONDUIT SIZE, WHICHEVER IS LESS.

EQUIPMENT GROUNDING AND LOAD SIDE BONDING CONDUCTORS SHALL BE SIZED PER THE CIRCUIT'S OVER-CURRENT PROTECTIVE DEVICE (OCPD) SIZE. WHERE THE UNGROUNDED CONDUCTORS ARE INCREASED IN SIZE ABOVE THE STANDARD FOR THE CIRCUIT'S OCPD, INCREASE THE GROUNDING CONDUCTOR NEWORTIONATELY TO THE CROSS-SECTIONAL AREA OF THE UNGROUNDED CONDUCTORS.

SERVICE MAIN BONDING JUMPERS AND GROUNDING ELECTRODE CONDUCTORS SHALL BE SIZED AND INSTALLED PER THE MINIMUM OF ALL APPLICABLE CODES AND REGULATIONS.

26 LIGHTNING PROTECTION:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS AND THE GROUNDING SPECIFICATIONS HEREIN.

THE LIGHTNING PROTECTION GROUNDING SYSTEM (LPGS) SHALL CONSIST OF BONDING ALL EQUIPMENT AND CONDUCTIVE STRUCTURES TO LOCALIZED SINGLE-POINT GROUNDING CONNECTIONS (TYPICALLY GROUND BARS) WHICH ARE BONDED TOGETHER AND TO AN IN-GROUND SYSTEM. IF THE LPGS IS ON A BUILDING, IT SHALL BE EFFECTIVELY BONDED TO THE ELECTRICAL SERVICE MAIN BONDING JUMPER AND TO ADDITIONAL IN-GROUND ELECTRODES AS MAY BE REQUIRED OR INDICATED. IF THE LPGS IS ON A DEDICATED COMMUNICATION SITE, ALL EQUIPMENT AREAS AND TOWERS SHALL EACH HAVE THEIR OWN IN-GROUND RING WITH EVERY RING BONDED TOGETHER, AND ALL CONDUCTIVE STRUCTURES IN CLOSE PROXIMITY (FENCES, ICE BRIDGES, ISOLATED EQUIPMENT, ETC.) ALSO BONDED TO PROVIDE A COMMON ELECTRICAL EQUIPOTENTIAL SYSTEM FOR ALL CONDUCTIVE ELEMENTS AND STRUCTURES.

CONDUCTORS:

- MIN #2 AWG SOLID BARE TINNED COPPER (SBTC) FOR ALL IN-GROUND CONDUCTORS.
- MIN #2 AWG COPPER GREEN STRANDED FOR BONDING STRUCTURES, AND FOR INTER-SYSTEM BONDING OF INDIVIDUAL ELEMENTS SUCH AS GROUND BAR TO GROUND BAR.
- MIN #6 AWG COPPER GREEN STRANDED OR ALL EQUIPMENT BONDING.
- INSTALL ALL IN-GROUND CONDUCTORS IN THE SAME HORIZONTAL PLANE OR IN A DOWNWARD DIRECTION AWAY FROM THE TOWER AND EQUIPMENT AREAS.
- AVOID LONG RUNS. MAKE DIRECT RUNS AS MUCH AS POSSIBLE.
- PLACE THROUGH NON-METALLIC SLEEVES WHEN PASSING THROUGH FLOORS, WALLS, CEILINGS, AND SIMILAR STRUCTURES.
- MAKE ALL CONNECTIONS IN CONTACT WITH EARTH WITH EXOTHERMIC WELDING. MAKE ALL OTHER CONNECTIONS WITH EXOTHERMIC WELDING, IRREVERSIBLE COMPRESSION CONNECTORS, OR LISTED COMPRESSION TWO-HOLE LUGS.
- INSTALL ALL CONDUCTORS WITH A MINIMUM 18 INCH BEND RADIUS AND NO BEND LONGER THAN A 90 DEGREE ARC. ALL BENDS SHALL BE HORIZONTAL, OR DOWNWARD TOWARDS EARTH.
- ALL CONDUCTORS PASSING FROM ABOVE-GROUND TO IN-GROUND CONNECTIONS, WHERE EXPOSED, SHALL BE COVERED AND PROTECTED WITH A NON-METALLIC CONDUIT SEALED AT BOTH ENDS.
- IF 2 OR MORE IN-GROUND CONDUCTOS ARE IN THE SAME PATH (2 RINGS OVERLAPPING, BONDING FOLLOWING ANOTHER RING OR RADIAL, OR SIMILAR), COMBINE WITH A SHARED SINGLE CONDUCTOR.

EQUIPMENT AND TOWER GROUND RINGS SHALL BE:

- BONDED TO ANY CONDUCTIVE OBJECT OR STRUCTURE WITHIN 5 FEET OF EQUIPMENT GROUND RINGS AND WITHIN 20 FEET OF TOWER GROUND RINGS.
- INSTALLED MINIMUM 18 INCHES FROM FOUNDATIONS, FOOTINGS, AND SIMILAR.

INSTALL ALL IN-GROUND RINGS, RADIALS, BONDS CONNECTING THEM, AND ALL SIMILAR GROUNDING:

- MIN 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE, WHICHEVER IS GREATER DEPTH.
- MIN 2 FEET FROM FOUNDATIONS, FOOTINGS, OTHER GROUNDING SYSTEMS, AND SIMILAR STRUCTURES, EXCEPT WHEN MAKING A BOND TO ANY OF THESE STRUCTURES. DO NOT BOND TO FOUNDATION INTERNAL REINFORCEMENT.

ALL EQUIPMENT GROUPED IN A COMMON AREA, COMPOUND, STRUCTURE, OR SIMILAR SHALL BE BONDED TO A SINGLE-POINT GROUND, PREFERABLY AN ISOLATED GROUND BAR. BOND THE GROUND BAR TO THE SYSTEM WITH MINIMUM SINGLE BONDING CONDUCTOR. IF BONDING TO AN IN-GROUND RING, INSTALL 2 BONDING CONDUCTORS MINIMUM WITH EACH CONDUCTOR INSTALLED DIRECTIONALLY AWAY FROM EACH OTHER AND PARALLEL TO THE IN-GROUND CONDUCTOR, WITH NO TEE CONNECTIONS.

TOWER GROUNDING:

- EACH TOWER LEG SHALL BE BONDED TO ITS RING. SINGLE-LEGGED TOWERS, OR MONOPOLES, SHALL HAVE 2 BONDS ON OPPOSITE SIDES.
- BOND TO TOWER BASE, NOT TO VERTICAL TOWER STRUCTURE, AWAY FROM TOWER MOUNTING HARDWARE.
- EACH BOND SHALL HAVE A CORRESPONDING GROUND ROD ON THE RING.
- EACH BOND SHALL CONSIST OF 2 CONDUCTORS FROM THE TOWER TO ITS RING WITH EACH CONDUCTOR DIRECTED IN OPPOSITE DIRECTIONS WITH A PARALLEL CONNECTION ON THE RING ON OPPOSITE SIDES OF THE GROUND ROD.

EQUIPMENT AREA GROUNDING:

- COMMUNICATION AREAS ON EARTH SHALL HAVE A GROUND RING.
- BOND ALL EQUIPMENT TO A SINGLE-POINT GROUND (GROUND BAR).
- BOND THE EQIPMENT SINGLE-POINT GROUND TO THE EQUIPMENT GROUND RING WITH MINIMUM 2 CONDUCTORS DIRECTED IN OPPOSITE DIRECTIONS WITH PARALLEL CONNECTIONS ON THE RING.
- IF EQUIPMENT IS ENCLOSED IN A SHELTER:
- IF THE SHELTER IS CONSIDERED TO BE EXPOSED TO A DIRECT LIGHTNING STRIKE, INSTALL A BUILDING LIGHTNING PROTECTION SYSTEM PER APPLICABLE VERSION OF NFPA 780.
- BOND ALL FIXED CONDUCTIVE BUILDING COMPONENTS TOGETHER AND TO THE BUILDING RING GROUND AT THE CORNERS. THIS IS TYPICALLY CALLED THE HALO GROUND. DO NOT BOND EQUIPMENT TO THE HALO GROUND.
- BOND ALL EQUIPMENT TOGETHER TO A SINGLE-POINT OR INTERIOR EQUIPMENT RING GROUND (IEGR). BOND THE SINGLE-POINT OR IEGR TO THE EXTERNAL EQUIPMENT RING GROUND.
- PLACE GROUND RODS AT THE EQUIPMENT GROUND RING CORNERS.

GROUND RODS:

- SEPARATION SPACE BETWEEN ANY 2 GROUND RODS SHALL BE NO CLOSER THAN THEIR DEPTH. THIS APPLIES TO ALL RODS IN THE COMPLETE SYSTEM.
- DRIVE VERTICALLY IN UNDISTURBED SOIL WITH THE TOP AT SAME DEPTH AS THE IN-GROUND CONDUCTOR. IF NOT POSSIBLE TO INSTALL VERTICALLY, PLACE AS CLOSE TO VERTICAL AS POSSIBLE AND IN A DIRECTION AWAY FROM THE NEAREST ABOVE-GROUND CONDUCTIVE ELEMENT (TOWER, EQUIPMENT, ETC.).

RADIALS (TYP. NEW DEDICATED COMMUNICATION SITES):

- WHERE FEASIBLE WITH ENOUGH SPACE AVAILABLE, INSTALL A MINIMUM OF 4, MAXIMUM 10 RING RADIALS.
- EACH RADIAL'S LENGTH SHALL BE MIN 20 FT, MAX 80 FT.
- EXTEND RADIALS PERPENDICULAR FROM RINGS IN AS STRAIGHT LINE AS POSSIBLE, AWAY FROM OTHER RING GROUNDS, RADIALS, BONDS, AND SIMILAR.
- A COMMON PRACTICE IS TO PLACE 4 RADIALS FROM THE TOWER RING TO THE 4 CORNERS OF THE AVAILABLE AREA.

AT A MINIMUM, BOND ALL COMPOUND CONDUCTIVE FENCE CORNER POSTS AND GATE POSTS TO THE LPGS. PREFERABLY, INSTALL A GROUND RING THAT FOLLOWS THE FENCE LINE, BONDING ALL POSTS TO THE RING.

27 ANTENNAS & CABLES:

THESE SPECIFICATIONS SHALL INCLUDE THE GENERAL SPECIFICATIONS HEREIN.

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TRANSMISSION CABLES, JUMPERS, CONNECTORS, GROUNDING STRAPS, ANTENNAS, MOUNT AND HARDWARE. ALL MATERIALS SHALL BE INSPECTED BY THE CONTRACTOR FOR DAMAGE UPON DELIVERY. JUMPERS SHALL BE SUPPLIED AT ANTENNAS AND EQUIPMENT INSIDE SHELTER. COORDINATE LENGTH OF JUMPER CABLES WITH OWNER. COORDINATE AND VERIFY ALL OF THE MATERIALS TO BE PROVIDED WITH OWNER PRIOR TO SUBMITTING BID AND ORDERING MATERIALS.

AFTER INSTALLATION, THE TRANSMISSION LINE SYSTEM SHALL BE PIM / SWEEP TESTED FOR NEWER INSTALLATION AND DAMAGE WITH ANTENNAS CONNECTED. CONTRACTOR SHALL OBTAIN AND USE LATEST TESTING PROCEDURES FROM OWNER OR MANUFACTURER PRIOR TO BIDDING.

ANTENNA CABLES SHALL BE UNIQUELY COLOR-CODED AT THE ANTENNAS, BOTH SIDES OF EQUIPMENT SHELTER WALL, AND JUMPER CABLES AT THE EQUIPMENT.

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL CONNECTORS, ASSOCIATED CABLE MOUNTING AND GROUNDING HARDWARE, WALL MOUNTS, STANDOFFS, AND ALL ASSOCIATED HARDWARE TO INSTALL ALL CABLES AND ANTENNAS TO THE MANUFACTURER'S AND OWNER'S SPECIFICATIONS.

ANTENNA CABLES SHALL BE FOAM DIELECTRIC COAXIAL CABLES AS FOLLOWS:

- BASE STATION ANTENNAS:
  - 7/8" DIAMETER FOR CABLE LENGTHS UP TO 100 FT.
  - 1-5/8" DIAMETER FOR CABLE LENGTHS GREATER THAN 100 FT.
  - GPS ANTENNAS:
  - 7/8" DIAMETER FOR CABLE LENGTHS UP TO 200 FT.
  - 1-5/8" DIAMETER FOR CABLE LENGTHS GREATER THAN 200 FT.

MINIMUM BENDING RADIUS FOR COAXIAL CABLES SHALL BE:

- 15 FT FOR 7/8" COAXIAL CABLES.
- 25 FT FOR 1-5/8" COAXIAL CABLES.

CABLE SHALL BE INSTALLED WITH A MINIMUM NUMBER OF BENDS WHERE POSSIBLE. CABLE SHALL NOT BE LEFT UNTERMINATED AND SHALL BE SEALED IMMEDIATELY AFTER BEING INSTALLED.

ALL EXTERIOR CABLE CONNECTIONS SHALL BE COVERED WITH A WATERPROOF SPLICING KIT.

CONTRACTOR SHALL VERIFY EXACT LENGTH AND DIRECTION OF TRAVEL IN FIELD PRIOR TO CONSTRUCTION.

CABLE SHALL BE FURNISHED AND INSTALLED WITHOUT SPLICES AND WITH CONNECTORS AT EACH END.

Cellco Partnership d/b/a

verizon

20 ALEXANDER DRIVE
WALLINGFORD, CT 06492

ALL-POINTS
TECHNOLOGY CORPORATION

567 VAUXHALL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860) 663-1697
WWW.ALLPOINTSTECH.COM FAX: (860) 663-0935

CONSTRUCTION DOCUMENTS

NO	DATE	REVISION
0	01/13/21	FOR REVIEW: JRM
1	06/16/21	REV. FOR FILING: JRM
2		
3		
4		
5		
6		

MICHAEL TRODDEN
33313

DESIGN PROFESSIONALS OF RECORD

PROF: MICHAEL S. TRODDEN P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION, P.C.
ADD: 567 VAUXHALL STREET EXT.
SUITE 311
KILLINGWORTH, CT 06419

OWNER: CITY OF MIDDLETOWN
ADDRESS: PO BOX 1300
MIDDLETOWN, CT 06457

WESLEYAN UNIVERSITY CT

SITE ADDRESS: 169 CROSS STREET
MIDDLETOWN, CT 06457

APT FILING NUMBER: CT141_11880

DRAWN BY: EEL

DATE: 01/13/21

CHECKED BY: JRM

VZW PROJECT CODE: 20202199130

VZW LOCATION CODE: 470718

VZW FUZE ID: 16244634

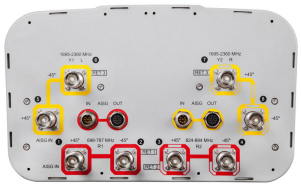
SHEET TITLE:

NOTES & SPECIFICATIONS

SHEET NUMBER:

N-1

JAHH-65B-R3B



8-port sector antenna, 2x 698–787, 2x 824-894 and 4x 1695–2360 MHz, 65° HPBW, 3x RET and low bands have diplexers. Internal SBT's on first LB(Port 1) and first HB(Port 5).

- Internal SBT on low and high band allow remote RET control from the radio over the RF jumper cable
- One RET for 700MHz, one RET for 850MHz, and one RET for both high bands to ensure same tilt level for 4x Rx or 4x MIMO
- Internal filter on low band and interleaved dipole technology providing for attractive, low wind load mechanical package
- Separate RS-485 RET input/output for low and high band

General Specifications

Antenna Type	Sector
Band	Multiband
Color	Light gray
Effective Projective Area (EPA), frontal	0.28 m^2 | 3.014 ft^2
Effective Projective Area (EPA), lateral	0.24 m^2 | 2.583 ft^2
Grounding Type	RF connector body grounded to reflector and mounting bracket
Performance Note	Outdoor usage | Wind loading figures are validated by wind tunnel measurements described in white paper WP-112534-EN
Radome Material	Fiberglass, UV resistant
Radiator Material	Aluminum | Low loss circuit board
Reflector Material	Aluminum
RF Connector Interface	4.3-10 Female
RF Connector Location	Bottom
RF Connector Quantity, high band	4
RF Connector Quantity, low band	4
RF Connector Quantity, total	8

Remote Electrical Tilt (RET) Information, General

RET Interface	8-pin DIN Female | 8-pin DIN Male
RET Interface, quantity	2 female | 2 male

Dimensions

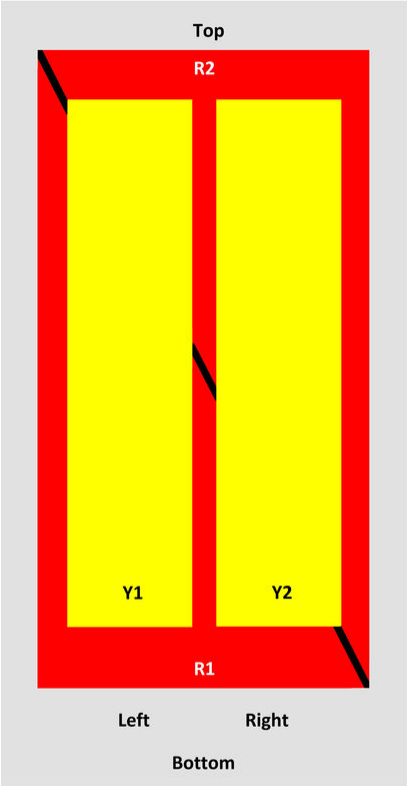
Width	350 mm | 13.78 in

JAHH-65B-R3B

Length	1828 mm | 71.969 in
Depth	208 mm | 8.189 in

Array Layout

JAHH-65A-R3B JAHH-65B-R3B JAHH-65C-R3B



Array	Freq (MHz)	Conns	RET (SRET)	AISG RET UID
R1	698-798	1-2	1	ANxxxxxxxxxxxxxxx1
R2	824-894	3-4	2	ANxxxxxxxxxxxxxxx2
Y1	1695-2360	5-6	3	ANxxxxxxxxxxxxxxx3
Y2	1695-2360	7-8		

View from the front of the antenna

(Sizes of colored boxes are not true depictions of array sizes)

Electrical Specifications

Impedance	50 ohm
Operating Frequency Band	1695 – 2360 MHz | 698 – 787 MHz | 824 – 894 MHz
Polarization	±45°

Remote Electrical Tilt (RET) Information, Electrical

Protocol	3GPP/AISG 2.0 (Single RET)
Power Consumption, idle state, maximum	2 W

JAHH-65B-R3B

Power Consumption, normal conditions, maximum	13 W
Input Voltage	10–30 Vdc
Internal Bias Tee	Port 1 | Port 5
Internal RET	High band (1) | Low band (2)

Electrical Specifications

Frequency Band, MHz	**698–787**	**824–894**	**1695–1880**	**1850–1990**	**1920–2200**	**2300–2360**
Gain, dBi	14.5	15.8	18	18.4	18.5	18.8
Beamwidth, Horizontal, degrees	67	65	63	63	65	68
Beamwidth, Vertical, degrees	12.4	10.5	5.7	5.2	4.9	4.4
Beam Tilt, degrees	2–14	2–14	0–10	0–10	0–10	0–10
USLS (First Lobe), dB	18	18	20	20	21	23
Front-to-Back Ratio at 180°, dB	32	34	31	35	36	38
Isolation, Cross Polarization, dB	25	25	25	25	25	25
Isolation, Inter-band, dB	30	30	30	30	30	30
VSWR | Return loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port at 50° C, maximum, watts	200	200	300	300	300	250

Electrical Specifications, BASTA

Frequency Band, MHz	**698–787**	**824–894**	**1695–1880**	**1850–1990**	**1920–2200**	**2300–2360**
Gain by all Beam Tilts, average, dBi	14.3	14.9	17.6	18.1	18.2	18.5
Gain by all Beam Tilts Tolerance, dB	±0.3	±0.5	±0.6	±0.4	±0.5	±0.6
Gain by Beam Tilt, average, dBi	2 ° | 14.3 8 ° | 14.3 14 ° | 14.3	2 ° | 15.0 8 ° | 14.9 14 ° | 15.4	0 ° | 17.2 5 ° | 17.6 10 ° | 17.6	0 ° | 17.6 5 ° | 18.2 10 ° | 18.2	0 ° | 17.7 5 ° | 18.3 10 ° | 18.3	0 ° | 17.9 5 ° | 18.7 10 ° | 18.7
Beamwidth, Horizontal Tolerance, degrees	±1.2	±1.4	±4	±2.4	±2.9	±2.7
Beamwidth, Vertical Tolerance, degrees	±0.9	±0.5	±0.3	±0.2	±0.3	±0.1
USLS, beampeak to 20° above beampeak, dB	18	17	17	18	19	18
Front-to-Back Total Power at 180° ± 30°, dB	25	24	26	29	27	29
CPR at Boresight, dB	22	23	20	21	21	24

JAHH-65B-R3B

CPR at Sector, dB	11	12	11	11	11	8

Mechanical Specifications

Wind Loading at Velocity, frontal	301.0 N @ 150 km/h | 67.7 lbf @ 150 km/h
Wind Loading at Velocity, lateral	254.0 N @ 150 km/h | 57.1 lbf @ 150 km/h
Wind Loading at Velocity, maximum	143.4 lbf @ 150 km/h | 638.0 N @ 150 km/h
Wind Speed, maximum	241 km/h | 149.75 mph

Packaging and Weights

Width, packed	456 mm | 17.953 in
Depth, packed	357 mm | 14.055 in
Length, packed	1975 mm | 77.756 in
Net Weight, without mounting kit	29.2 kg | 64.375 lb
Weight, gross	42.5 kg | 93.696 lb

Regulatory Compliance/Certifications

Agency	Classification
CHINA-ROHS	Above maximum concentration value
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
ROHS	Compliant/Exempted

Included Products

BSAMNT-3	Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

* Footnotes

Performance Note	Severe environmental conditions may degrade optimum performance

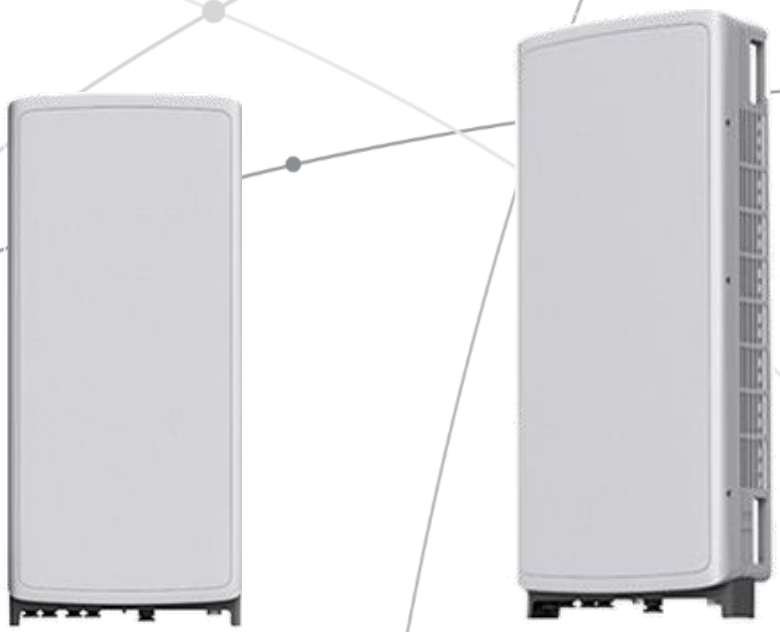
SAMSUNG

SAMSUNG C-Band 64T64R Massive MIMO Radio

for High Capacity and Wide Coverage

Samsung C-Band 64T64R Massive MIMO Radio enables mobile operators to increase coverage range, boost data speeds and ultimately offer enriched 5G experiences to users in the U.S..

Model Code : MT6407-77A

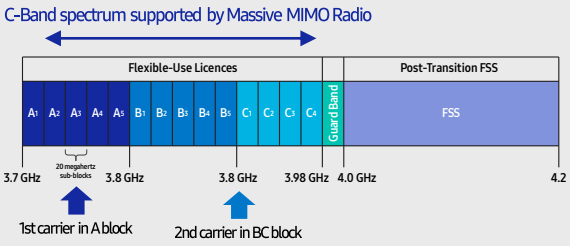


Points of Differentiation

Wide Bandwidth

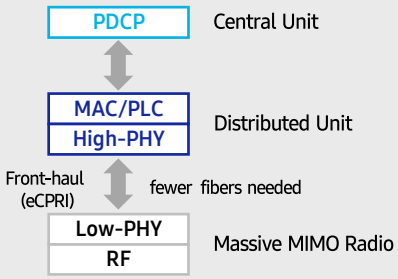
With capability to support up to 2 CC carrier configuration, Samsung C-Band massive MIMO Radio supports 200 MHz bandwidth in the C-Band spectrum.

Samsung C-Band massive MIMO Radio covers the entire C-Band 280 MHz spectrum, so it can meet the operator's needs in current A block and future B/C blocks



Future Proof Product

Samsung C-Band 64T64R Massive MIMO radio supports not only CPRI but also eCPRI as front-haul interface.
It enables operators can cut down on OPEX/CAPEX by reducing front-haul bandwidth through low layer split and using ethernet based higher efficient line.



Enhanced Performance

C-Band massive MIMO Radio creates sharp beams and extends networks' coverage on the critical mid-band spectrum using a large number of antenna elements and high output power to boost data speeds.

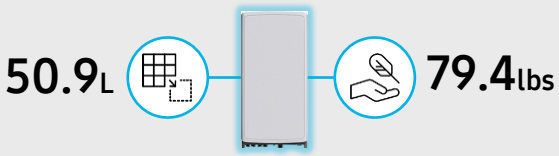
This helps operators reduce their CAPEX as they now need less products to cover the same area than before.

Furthermore, as C-Band massive MIMO Radio supports MU-MIMO(Multi-user MIMO) , it enables to increase user throughput by minimizing interference.

Well Matched Design

Samsung C-Band Massive MIMO radio utilizes 64 antennas, supports up to 280MHz bandwidth, and delivers a 200W output power. despite the above advanced performance, the Radio has a compact size of 50.9L and 79.4lbs. This makes it easy to install the Radio.

It is designed to look solid and compact, with a low profile appearance so that, when installed, harmonizes well with the surrounding environment..



Technical Specifications

Item	Specification
Tech	NR
Band	n77
Frequency Band	3700 - 3980 MHz
EIRP	78.5dBm (53.0 dBm+25.5 dBi)
IBW/OBW	280 MHz / 200 MHz
Installation	Pole/Wall
Size/ Weight	16.06 x 35.06 x 5.51 inch (50.86L)/ 79.4 lbs

SAMSUNG

About Samsung Electronics Co., Ltd.

Samsung inspires the world and shapes the future with transformative ideas and technologies. The company is redefining the worlds of TVs, smartphones, wearable devices, tablets, digital appliances, network systems, and memory, system LSI, foundry and LED solutions.

129 Samsung-ro, Yeongtong-gu, Suwon-si Gyeonggi-do, Korea

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

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

ATTACHMENT 3

Site Name: Wesleyan University CT

Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP -10 dB**	Distance to Target	Calculated Power Density	Maximum Permissible Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
VZW 700	746	4	635	254	129	0.0055	0.497333333	1.10%
VZW Cellular	880	4	720	288	129	0.0062	0.586666667	1.06%
VZW PCS	1,970	4	1,586	635	129	0.0137	1.0	1.37%
VZW AWS	2,145	4	1,566	626	129	0.0135	1.0	1.35%
VZW C-Band	3,700	1	43,154	4,315	129	0.0933	1.0	9.33%

Total Percentage of Maximum Permissible Exposure 14.22%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Section 1.13101 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

**Calculation includes a -10 dB Off Beam Antenna Pattern Adjustment pursuant to Attachments B and C of the Siting Council's November 10, 2015 Memorandum for Exempt Modification filings

MHz = Megahertz

mW/cm^2 = milliwatts per square centimeter

ERP = Effective Radiated Power

Absolute worst case maximum values used, including the following assumptions:

1. closest accessible point is distance from antenna to base of pole
2. continuous transmission from all available channels at full power for indefinite time period

ATTACHMENT 4

STRUCTURAL ANALYSIS REPORT
180' SELF-SUPPORTING TOWER
MIDDLETOWN, CONNECTICUT

Prepared for
Verizon Wireless

Verizon Site: 470718; Wesleyan University

December 24, 2020

APT Project #CT141NB9294

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⊗ 116 GRANDVIEW ROAD · CONWAY, NH 03818 · PHONE 603-496-5853 · FAX 603-447-2124

CONDITION ASSESSMENT & STRUCTURAL ANALYSIS REPORT
180' SELF-SUPPORTING TOWER
MIDDLETOWN, CONNECTICUT
prepared for
Verizon Wireless

EXECUTIVE SUMMARY:

All-Points Technology Corporation, P.C. (APT) performed a condition assessment and structural analysis of this 180-foot self-supporting tower located at Wesleyan University in Middletown, Connecticut. The analysis was performed for Verizon Wireless's proposed removal of nine existing panel antennas, six remote radio heads (RRHs) and one power-fiber distribution box (D-box), and installation of nine new panel antennas, six new RRHs, three new diplexers and one new OVP12 D-box. The existing mounts will be utilized and equipment will be fed by one new 12x24 hybrid line as detailed below.

APT's analysis indicates the tower and foundation meets the requirements of the 2018 Connecticut State Building Code, International Building Code 2015 (IBC 2015) and TIA-222 Revision G with Verizon Wireless's proposed equipment changes. Evaluation of the existing base foundation was performed from original PiROD Inc. design drawings. The foundation was found to be adequately sized for the proposed equipment. Usage values are as follows:

Member	Capacity
Legs	69%
Bracing	67%
Foundation	75%

INTRODUCTION:

A condition assessment and structural analysis was performed on the above-mentioned communications tower by APT for Verizon Wireless. The tower is located in Wesleyan University at 169 Cross Street Middletown, Connecticut. APT visited the tower site on December 15, 2020 for this particular analysis.

The structure is a 180-foot galvanized steel guyed tower manufactured by PiROD Inc. The following documents were utilized:

Document	Remarks	Date	Source
PiROD tower & foundation drawings	PiROD Inc. Eng. File #A-110626	8/15/1994	Owner
Structural Analysis Report	CENTEK Project No. 16104.00	7/25/2016	Verizon
Antenna/Coax Verification	HighTower Solutions mapping	3/29/2017	Owner
Middletown proposed additions	Robert Baumeister email	4/6/2017	Verizon
Proposed equipment changes	RFDS Wesleyan University	11/18/2020	Verizon

The analysis was performed in accordance with the 2018 Connecticut State Building Code, IBC 2015 and TIA-222 Revision G using the following antenna inventory (proposed equipment shown in **bold text**):

Carrier	Antenna	Mount Ctr.	Rad Ctr.	Mount	Feed lines
-	Lightning rod	180'	184'	10' pipe extension	N.A.
	(2) 10' omnidirectional whips	179'	184'	Legs	(2) 7/8"
	DB404-B dipole (inverted)	179'	175'	On sidearm below	7/8"
	PD1142 omnidirectional whip 20' omnidirectional whip	178' 178'	182.3' 188'	(2) 3' sidearms	(2) 7/8"
	Cambium PTP 50650	178'	178'	Leg	3/8"
	SC479-HF1LDF omni w/ DS428E83I01T TTA	163'	170'	6' sidearm	1/2"
	PD1142 omnidirectional whip	157'	161.3'	6' sidearm	7/8"
	10' omnidirectional whip	152'	158'	6' sidearm	7/8"
	DB404-B dipole (inverted)	154'	150'	On 6' sidearm at 152'	7/8"
	PD1142 omnidirectional whip	148.75'	153'	6' sidearm	7/8"
	PD1142 omnidirectional whip	148.25'	152.5'	6' sidearm	7/8"
	20' omnidirectional whip	147.67'	157.67'	3' sidearm	7/8"
	8-bay dipole	147'	152'	6' sidearm	7/8"
	3' high performance dish	135'	135'	Leg	EW90
	SC479-HF1LDF omni	135'	142'	6' sidearm	7/8"
Verizon Wireless	**(3)** SBNHH-1D65B, **(6) JAHH-65B-R3B** & **(3) Licensed Sub 6 Antenna** panels, (3) **RFV01U-D1A RRHs,** (3) **RFV01U-D2A RRHs,** **(3) CBC78T-DS-43-2X diplexers,** **RVZDC-6627-PF-48 D-box** [1]	128'	129'	(3) 13' sector mounts	**12x24 hybrid**, 3/8" ground
	PTP 58400 panel	124'	124'	Leg	3/8"
	3' high performance dish	120'	120'	Leg	EW90
	2' high performance dish	119'	119'	Leg	(2) 3/8"
	3' high performance dish	116'	116'	Leg	EW90
	4' high performance dish	115.5'	115.5'	4' sidearm	(2) 3/8"
	15' omnidirectional whip	109'	116.5'	3' sidearm	7/8"
	20' omnidirectional whip	104'	114'	3' sidearm	7/8"
	17' omnidirectional whip	98'	106.5'	2' standoff	7/8"
	17' omnidirectional whip	97.83'	106.33'	2' standoff	7/8"
	20' omnidirectional whip	97.33'	107.33'	2' standoff	7/8"
	20' omnidirectional whip	87'	97'	1' sidearm	1/2"
	(2) 3' high performance dish	85'	85'	Leg	(2) EW90
	(3) 17' omnidirectional whip	78'	86.5'	(3) 2' standoff	(3) 7/8"
	12' omnidirectional whip	63'	69'	6' sidearm	1/2"
	3' yagi w/ spray	55'	55'	Leg	1/2"
	20' omnidirectional whip	54.5'	64.5'	2' standoff	1/2"

	.8M satellite dish	51.67'	51.67'	1.5' sidearm	1/4"
	3' yagi	46'	46'	Leg	1/2"
	8' omnidirectional whip	34'	38'	2' standoff	3/8"
	MAXRAD MFBW7463 (2' x 1" omni whip)	30'	31'	6' sidearm	1/2"
	3' yagi	25'	25'	Leg	1/2"

[1] Currently installed – twelve SBNHH-1D65B panel antennas, three RRH4x30 RRHs, three RRH4x45-AWS RRHs, and one RCMDC-6627-PF-48 D-box, fed by 1-5/8" hybrid line and one 3/8" ground.

CONDITION ASSESSMENT:

- **General Condition:** The tower, a galvanized steel structure, appeared to be in generally sound condition. No signs of movement or overstress of the tower were noted.

- **Climbing Facilities:** A climbing ladder is in place on the southwestern leg along with a 3/8" safety climbing cable, both appeared to be in good condition.

- **Leg Members:** Leg members are comprised of truss legs from 1'-110' & solid rod steel from 110'-180' and appeared to be in fair condition.

- **Lattice Bracing:** Braces, which consist of angle and solid steel in an X-brace pattern, appeared to be in fair condition. Bracing connections were visually observed to the maximum extent practicable and appeared to be in generally sound condition. No weld defects were noted.

- **Splice Connections:** Connections were checked by hand for tightness at each splice location. No loose or missing splice bolts were observed.

- **Appurtenance Connections:** Antenna mounting hardware appeared to be in good condition, with corrosion resistant hardware and galvanized members prevalent.

- **Base Foundation:** The base foundation was observed to be in sound condition.

STRUCTURAL ANALYSIS:

Methodology:

The structural analysis was done in accordance with the 2018 Connecticut State Building Code, IBC 2015 and TIA-222, Revision G (TIA), Structural Standard for Antenna Supporting Structures and Antennas.

The analysis was conducted using a 3-second gust wind speed of 135 miles per hour (Ultimate) with no ice and 50-mph with ¾" radial ice in accordance with the TIA-222-G standard for this area of Middlesex County, Connecticut. The following additional design criteria were used:

Structure Class:	III (emergency services facility)
Topographic Category:	1
Exposure Category:	B

Analysis Results:

Analysis of the tower was conducted in accordance with the criteria outlined herein with antenna changes as previously described. The following table summarizes the results of the analysis based on stresses of individual leg and bracing members:

Elevation	Leg Capacity	Bracing Capacity
170'-180'	10%	23%
150'-170'	32%	28%
130'-150'	42%	24%
110'-130'	68%	50%
100'-110'	57%	49%
80'-100'	43%	39%
60'-80'	52%	50%
40'-60'	60%	68%
20'-40'	54%	51%
0'-20'	60%	52%

Bracing, Splice and Anchor Bolts:

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

Base Foundation and Guy Anchors:

Evaluation of the existing base foundation was performed from original design drawings. The foundation was determined to be adequately sized for the proposed equipment. Factored base reactions imposed with the additional antennas were calculated as follows:

Compression:	200.1 kips
Uplift:	-177.5 kips
Shear:	19.8 kips
Overturning Moment:	2624 ft-kips

CONCLUSIONS AND RECOMMENDATIONS:

APT's structural analysis indicates that the 180-foot self-supporting tower and base foundation located in Wesleyan University at 169 Cross Street Middletown, Connecticut meets the requirements of the 2018 Connecticut State Building Code, IBC 2015 and TIA-222 Revision G with Verizon Wireless's proposed equipment changes.

LIMITATIONS:

This report is based on the following:

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

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

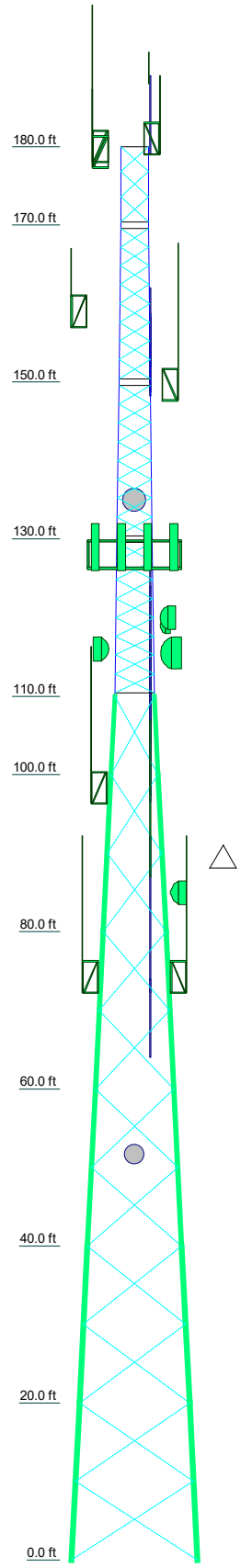
1. Replacing or strengthening bracing members.
2. Reinforcing vertical members in any manner.
3. Adding or relocating torque arms or guys.
4. Installing antenna mounting gates or side arms.

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

Appendix A

Tower Schematic

Section	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	Pirod 105217 w/ (2) 1-1/4" tie rods			Pirod 105216 w/ (2) 1-1/4" tie rods		A	1-3/4" SR with 1" SR	1-1/2" SR with 1" SR	SR 1 1/2	
Leg Grade	A572-50									
Diagonals	L3x3x5/16	L3x3x3/16		L2 1/2x2 1/2x3/16			SR 3/4		SR 5/8	SR 9/16
Diagonal Grade	A36									
Top Girts							SR 1	SR 7/8	SR 3/4	
Bottom Girts							SR 1	SR 7/8	SR 3/4	
Face Width (ft)	16	14	12	10	8	6	4.5	4	3.5	
# Panels @ (ft)			11 @ 10				24 @ 2.39583		3 @ 3.19444	
Weight (lb)	19053.6	3850.3	3240.9	2705.0	2650.4	2602.3	1066.3	1111.4	925.3	617.7	284.1



DESIGNED APPURTENANCE LOADING

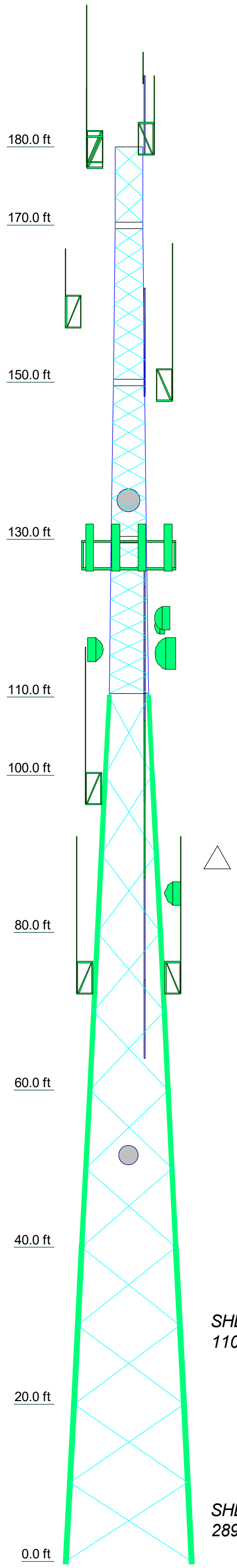
TYPE	ELEVATION	TYPE	ELEVATION
Generic Lightning Rod 4' copper	180	RFV01U-D2A (VzW)	129
10'x2 3/8" Pipe Mount	180	RFV01U-D2A (VzW)	129
10' x 2" omni whip	179	RVZDC-6627-PF-48 (VzW)	129
10' x 2" omni whip	179	SBNHH-1D65B (VzW existing)	129
DB404	179 - 175	Valmont VFA12-RRU (VzW existing)	128
20' x 2.5" omni whip	178	Valmont VFA12-RRU (VzW existing)	128
3' sidearm	178	Valmont VFA12-RRU (VzW existing)	128
PD1142-3	178	15' x 2.5" omni whip	124 - 109
3' sidearm	178	20' x 2.5" omni whip	124 - 104
PTP 50650	178	PTP 58400	124
20' x 3" omni whip	167.67 - 147.67	3' HP dish	120
PD1142-3	167 - 157	2' HP dish	119
6' sidearm	163	20' x 2.5" omni whip	117.33 - 97.33
DS428E83I01T TTA	163	3' HP dish	116
SC479-HF1LDF	163	4' HP dish	115.5
PD1142-3	158.75 - 148.75	4' sidearm	115.5
PD1142-3	158.25 - 148.25	17' x 2" omni whip	115 - 98
6' sidearm	157	17' x 2" omni whip	114.83 - 97.83
DB404	154 - 150	3' sidearm	109
DB404	154 - 150	20' x 2.5" omni whip	107 - 87
6' sidearm	152	3' sidearm	104
10' x 2" omni whip	152	2' standoff	98
6' sidearm	148.75	2' standoff	97.83
6' sidearm	148.25	2' standoff	97.33
3' sidearm	147.67	1' sidearm	87
10' 8-bay dipole	147	17' x 2" omni whip	86.5 - 78
6' sidearm	147	17' x 2" omni whip	86.5 - 78
SC479-HF1LDF	135	17' x 2" omni whip	86.5 - 78
6' sidearm	135	3' HP dish	85
3' HP dish	135	2' standoff	78
SBNHH-1D65B (VzW existing)	129	2' standoff	78
SBNHH-1D65B (VzW existing)	129	2' standoff	78
(2) JAHH-65B-R3B (VzW)	129	12' x 1.5" omni whip	75 - 63
(2) JAHH-65B-R3B (VzW)	129	20' x 2.5" omni whip	74.5 - 54.5
(2) JAHH-65B-R3B (VzW)	129	6' sidearm	63
Licensed Sub6 Antenna (VzW)	129	3' Yagi w/ spray	55
Licensed Sub6 Antenna (VzW)	129	2' standoff	54.5
Licensed Sub6 Antenna (VzW)	129	.8M satellite dish	51.67
CBC78T-DS-43-2X diplexer (VzW)	129	1.5' sidearm	51.67
CBC78T-DS-43-2X diplexer (VzW)	129	3' Yagi	46
CBC78T-DS-43-2X diplexer (VzW)	129	8' x 1" omni whip	42 - 34
RFV01U-D1A (VzW)	129	2' standoff	34
RFV01U-D1A (VzW)	129	MFBW7463 omni	32 - 30
RFV01U-D1A (VzW)	129	6' sidearm	30
RFV01U-D2A (VzW)	129	3' Yagi	25

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	Pirod 105244		

All-Points Technology Corp., P.C.
116 Grandview Road
Conway, NH 03818
Phone: (603) 496-5853
FAX: 603) 447-2124

Job: ***180' Self-Supporting Tower, Middletown, CT***			
Project: ***CT141NB9294 Wesleyan***			
Client: Verizon Wireless	Drawn by: Rob Adair	App'd:	
Code: TIA-222-G	Date: 12/24/20	Scale: NTS	
Path: Z:\Shared\NH Office\Jobs\2 Verizon\CT14111880 Wesleyan University\CT141NB9294 Wesleyan.en		Dwg No. E-1	



Section	Legs	Leg Grade	Diagonals	Diagonal Grade	Top Girts	Bottom Girts	Face Width (ft)	# Panels @ (ft)	Weight (lb)
T1	SR 1 1/2	A572-50	SR 9/16	A36			3.5	3 @ 3.19444	284.1
T2	SR 1 1/2	A572-50	SR 5/8	A36	SR 3/4	SR 3/4		24 @ 2.39583	617.7
T3	1-1/2" SR with 1" SR	A572-50	SR 3/4	A36	SR 7/8	SR 7/8	4	24 @ 2.39583	925.3
T4	1-3/4" SR with 1" SR	A572-50	SR 3/4	A36	SR 1	SR 1	4.5	24 @ 2.39583	1111.4
T5	A	A572-50	L2 1/2x2 1/2x3/16	A36	N.A.	N.A.	5	11 @ 10	1066.3
T6	Pirod 105216 w/ (2) 1-1/4" tie rods	A572-50	L2 1/2x2 1/2x3/16	A36	N.A.	N.A.	6	11 @ 10	2602.3
T7	Pirod 105216 w/ (2) 1-1/4" tie rods	A572-50	L2 1/2x2 1/2x3/16	A36	N.A.	N.A.	8	11 @ 10	2650.4
T8	Pirod 105216 w/ (2) 1-1/4" tie rods	A572-50	L2 1/2x2 1/2x3/16	A36	N.A.	N.A.	10	11 @ 10	2705.0
T9	Pirod 105217 w/ (2) 1-1/4" tie rods	A572-50	L3x3x3/16	A36	N.A.	N.A.	12	11 @ 10	3240.9
T10	Pirod 105217 w/ (2) 1-1/4" tie rods	A572-50	L3x3x5/16	A36	N.A.	N.A.	14	11 @ 10	3850.3
							16		19053.6

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	Pirod 105244		

MATERIAL STRENGTH

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

ALL REACTIONS
ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 200114 lb
SHEAR: 19765 lb

UPLIFT: -177522 lb
SHEAR: 17696 lb

AXIAL
111763 lb
SHEAR
11048 lb
MOMENT
1063378 lb-ft
TORQUE 7001 lb-ft
50 mph WIND - 0.7500 in ICE

AXIAL
32284 lb
SHEAR
28963 lb
MOMENT
2624232 lb-ft
TORQUE 9158 lb-ft
REACTIONS - 105 mph WIND

All-Points Technology Corp., P.C.
116 Grandview Road
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Phone: (603) 496-5853
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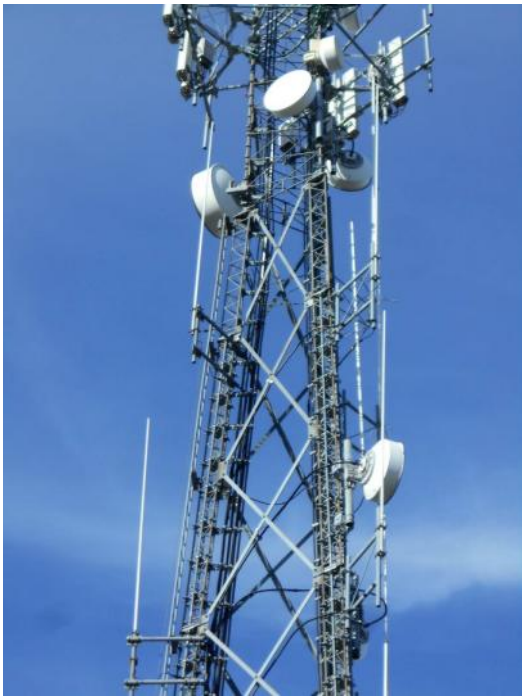
Job: ***180' Self-Supporting Tower, Middletown, CT***		
Project: ***CT141NB9294 Wesleyan***		
Client: Verizon Wireless	Drawn by: Rob Adair	App'd:
Code: TIA-222-G	Date: 12/24/20	Scale: NTS
Path: Z:\Shared\NH Office\Jobs\2 Verizon\CT14111880 Wesleyan University\CT141NB9294 Wesleyan.eri		Dwg No. E-1

Appendix B

Photographs

VERIZON WIRELESS
180’ SELF-SUPPORTING TOWER
MIDDLETOWN, CONNECTICUT
VERIZON SITE: WESLEYAN UNIVERSITY

Overview photo of the 180’ self-supporting tower located in Middletown, Connecticut.



Photos of typical existing equipment and mounts.

Photos taken by All-Points Technology Corporation, P.C. on December 15, 2020.

VERIZON WIRELESS
180' SELF-SUPPORTING TOWER
MIDDLETOWN, CONNECTICUT
VERIZON SITE: WESLEYAN UNIVERSITY

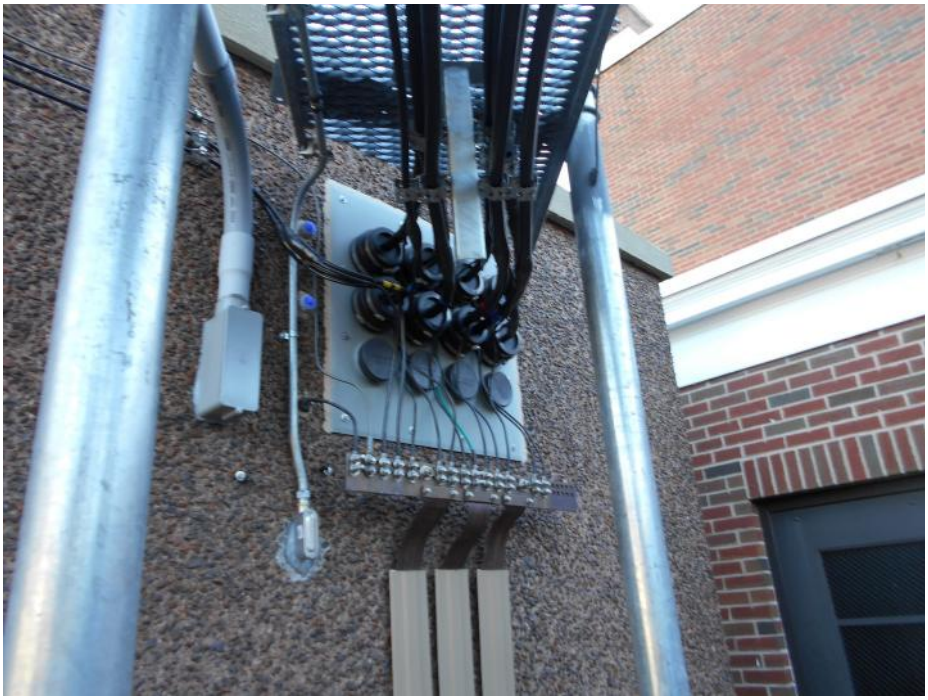


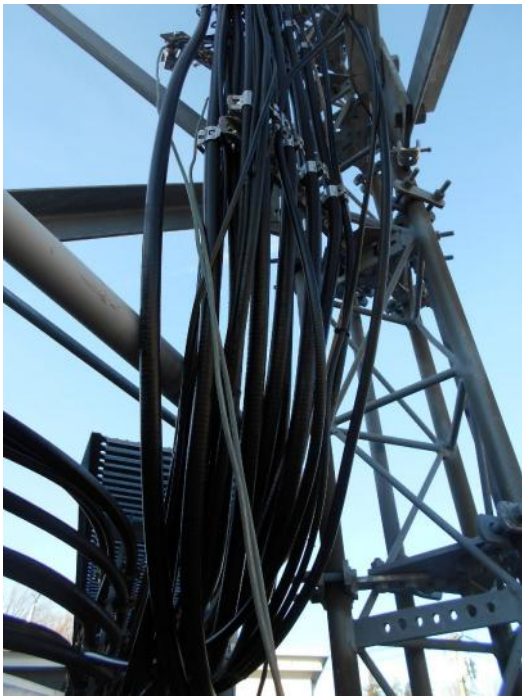
Photo of existing hatch plates and ground bar at shelter.

Photo of existing ice bridge and feed lines at tower.

Photos taken by All-Points Technology Corporation, P.C. on December 15, 2020.

VERIZON WIRELESS
180' SELF-SUPPORTING TOWER
MIDDLETOWN, CONNECTICUT
VERIZON SITE: WESLEYAN UNIVERSITY

Photo of existing feed lines and ice bridge.



Photos of existing feed lines at tower.

Photos taken by All-Points Technology Corporation, P.C. on December 15, 2020.

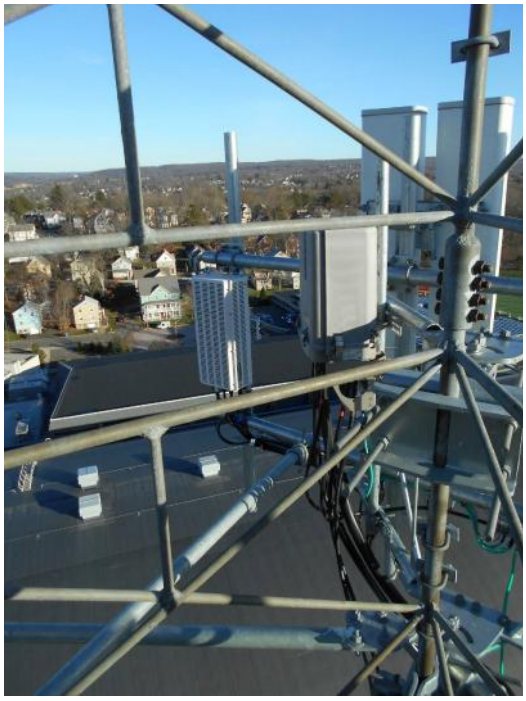
VERIZON WIRELESS
180' SELF-SUPPORTING TOWER
MIDDLETOWN, CONNECTICUT
VERIZON SITE: WESLEYAN UNIVERSITY

Photos of Verizon Wireless's typical existing equipment and mounts at 129'.

Photos taken by All-Points Technology Corporation, P.C. on December 15, 2020.

VERIZON WIRELESS
180' SELF-SUPPORTING TOWER
MIDDLETOWN, CONNECTICUT
VERIZON SITE: WESLEYAN UNIVERSITY

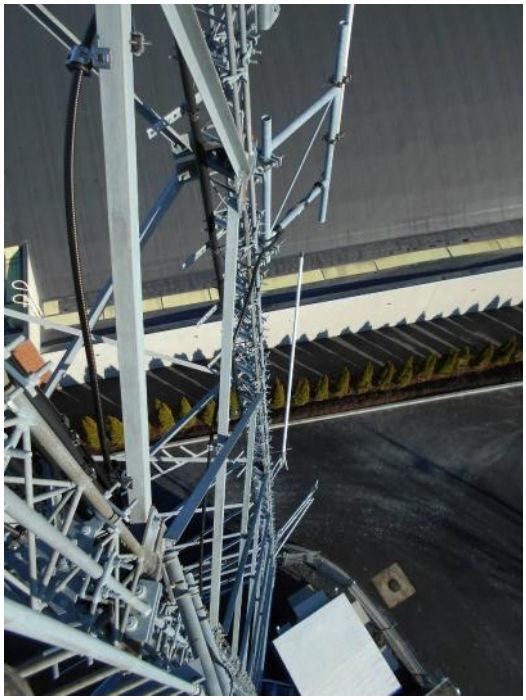
Additional photos of Verizon Wireless's typical existing equipment and mounts at 129'.



Photos taken by All-Points Technology Corporation, P.C. on December 15, 2020.

VERIZON WIRELESS
180' SELF-SUPPORTING TOWER
MIDDLETOWN, CONNECTICUT
VERIZON SITE: WESLEYAN UNIVERSITY

Photos of typical existing equipment and mounts.



Photos taken by All-Points Technology Corporation, P.C. on December 15, 2020.

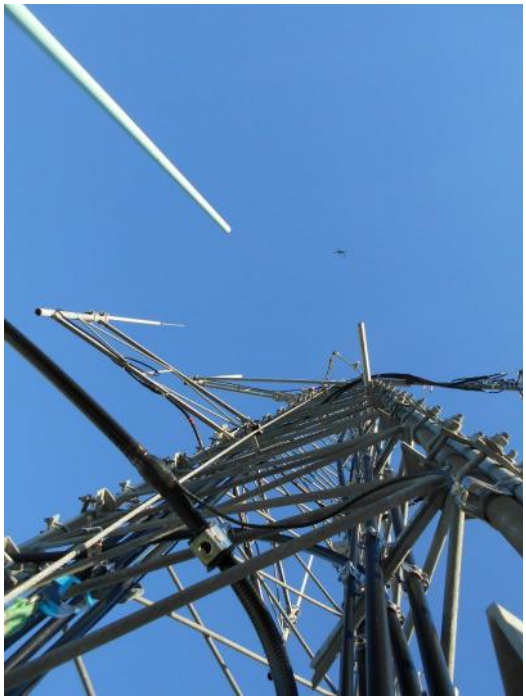
VERIZON WIRELESS
180' SELF-SUPPORTING TOWER
MIDDLETOWN, CONNECTICUT
VERIZON SITE: WESLEYAN UNIVERSITY

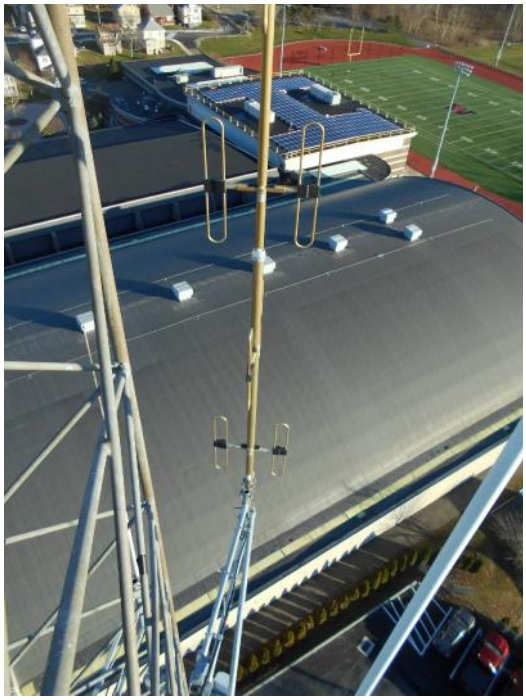
Additional photos of typical existing equipment and mounts.

Photos taken by All-Points Technology Corporation, P.C. on December 15, 2020.

VERIZON WIRELESS
180' SELF-SUPPORTING TOWER
MIDDLETOWN, CONNECTICUT
VERIZON SITE: WESLEYAN UNIVERSITY

Additional photos of typical existing equipment and mounts.





Photos taken by All-Points Technology Corporation, P.C. on December 15, 2020.

VERIZON WIRELESS
180' SELF-SUPPORTING TOWER
MIDDLETOWN, CONNECTICUT
VERIZON SITE: WESLEYAN UNIVERSITY

Additional photos of typical existing equipment and mounts.

Photos taken by All-Points Technology Corporation, P.C. on December 15, 2020.

VERIZON WIRELESS
180' SELF-SUPPORTING TOWER
MIDDLETOWN, CONNECTICUT
VERIZON SITE: WESLEYAN UNIVERSITY

Photos of typical existing base foundations.

Photos taken by All-Points Technology Corporation, P.C. on December 15, 2020.

VERIZON WIRELESS
180' SELF-SUPPORTING TOWER
MIDDLETOWN, CONNECTICUT
VERIZON SITE: WESLEYAN UNIVERSITY

Overview photos of compound from ground.

Photos taken by All-Points Technology Corporation, P.C. on December 15, 2020.

Appendix C

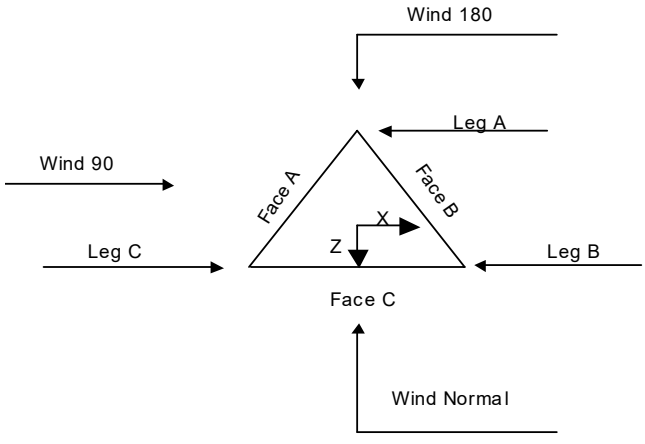
Calculations

All-Points Technology Corp., P.C.
116 Grandview Road
Conway, NH 03818
Phone: (603) 496-5853
FAX: 603) 447-2124

Tower Input Data

The main tower is a 3x free standing 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 3.50 ft at the top and 16.00 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).
Basic wind speed of 105 mph.
Ultimate wind speed of 135 mph.
Structure Class III.
Exposure Category B.
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.
Antennas not shown.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.



Triangular Tower

All-Points Technology Corp., P.C.
116 Grandview Road
Conway, NH 03818
Phone: (603) 496-5853
FAX: 603) 447-2124

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	180.00-170.00			3.50	1	10.00
T2	170.00-150.00			3.50	1	20.00
T3	150.00-130.00			4.00	1	20.00
T4	130.00-110.00			4.50	1	20.00
T5	110.00-100.00			5.00	1	10.00
T6	100.00-80.00			6.00	1	20.00
T7	80.00-60.00			8.00	1	20.00
T8	60.00-40.00			10.00	1	20.00
T9	40.00-20.00			12.00	1	20.00
T10	20.00-0.00			14.00	1	20.00

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	180.00-170.00	3.19	X Brace	No	No	0.0000	5.0000
T2	170.00-150.00	2.40	X Brace	No	No	5.0000	5.0000
T3	150.00-130.00	2.40	X Brace	No	No	5.0000	5.0000
T4	130.00-110.00	2.40	X Brace	No	No	5.0000	5.0000
T5	110.00-100.00	10.00	X Brace	No	No	0.0000	0.0000
T6	100.00-80.00	10.00	X Brace	No	No	0.0000	0.0000
T7	80.00-60.00	10.00	X Brace	No	No	0.0000	0.0000
T8	60.00-40.00	10.00	X Brace	No	No	0.0000	0.0000
T9	40.00-20.00	10.00	X Brace	No	No	0.0000	0.0000
T10	20.00-0.00	10.00	X Brace	No	No	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 180.00-170.00	Solid Round	1 1/2	A572-50 (50 ksi)	Solid Round	9/16	A36 (36 ksi)
T2 170.00-150.00	Solid Round	1 1/2	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T3 150.00-130.00	Arbitrary Shape	1-1/2" SR with 1" SR	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T4 130.00-110.00	Arbitrary Shape	1-3/4" SR with 1" SR	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T5 110.00-100.00	Truss Leg	Pirod 105244	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T6 100.00-80.00	Truss Leg	Pirod 105216 w/ (2) 1-1/4" tie rods	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T7 80.00-60.00	Truss Leg	Pirod 105216 w/ (2) 1-1/4" tie rods	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T8 60.00-40.00	Truss Leg	Pirod 105216 w/ (2) 1-1/4" tie rods	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T9 40.00-20.00	Truss Leg	Pirod 105217 w/ (2) 1-1/4" tie rods	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T10 20.00-0.00	Truss Leg	Pirod 105217 w/ (2) 1-1/4" tie rods	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	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 180.00-170.00	Solid Round	3/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T2 170.00-150.00	Solid Round	3/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T3 150.00-130.00	Solid Round	7/8	A36 (36 ksi)	Solid Round	7/8	A36 (36 ksi)
T4 130.00-110.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	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 180.00-170.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 170.00-150.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T3 150.00-130.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T4 130.00-110.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T5 110.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T6 100.00-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T7 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T8 60.00-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T9 40.00-20.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T10 20.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1	No	No	1	0.7	0.7	0.7	0.7	0.7	1	1
180.00-170.00				0.7	0.7	0.7	0.7	0.7	1	1
T2	No	No	1	0.7	0.7	0.7	0.7	0.7	1	1
170.00-150.00				0.7	0.7	0.7	0.7	0.7	1	1
T3	No	No	1	0.7	0.7	0.7	0.7	0.7	1	1
150.00-130.00				0.7	0.7	0.7	0.7	0.7	1	1
T4	No	No	1	0.7	0.7	0.7	0.7	0.7	1	1
130.00-110.00				0.7	0.7	0.7	0.7	0.7	1	1
T5	No	No	1	1	1	1	1	1	1	1
110.00-100.00				1	1	1	1	1	1	1
T6	No	No	1	1	1	1	1	1	1	1
100.00-80.00				1	1	1	1	1	1	1
T7	No	No	1	1	1	1	1	1	1	1
80.00-60.00				1	1	1	1	1	1	1
T8	No	No	1	1	1	1	1	1	1	1
60.00-40.00				1	1	1	1	1	1	1
T9	No	No	1	1	1	1	1	1	1	1
40.00-20.00				1	1	1	1	1	1	1
T10	No	No	1	1	1	1	1	1	1	1
20.00-0.00				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	Truss-Leg K Factors: Truss-Legs Used As Leg Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals	Truss-Legs Used As Inner Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals
T5	1	0.5	0.85	1	0.5	0.85
110.00-100.00						
T6	1	0.5	0.85	1	0.5	0.85
100.00-80.00						
T7	1	0.5	0.85	1	0.5	0.85
80.00-60.00						
T8	1	0.5	0.85	1	0.5	0.85
60.00-40.00						
T9	1	0.5	0.85	1	0.5	0.85
40.00-20.00						
T10	1	0.5	0.85	1	0.5	0.85
20.00-0.00						

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 180.00-170.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 170.00-150.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 150.00-130.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 130.00-110.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 110.00-100.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T6 100.00-80.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T7 80.00-60.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T8 60.00-40.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T9 40.00-20.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1
T10 20.00-0.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 180.00-170.00	Sleeve DS	0.5625 A325N	3	0.0000 A325N	0	0.6250 A325N	0	0.3750 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 170.00-150.00	Sleeve DS	0.5625 A325N	3	0.0000 A325N	0	0.3750 A325N	0	0.3750 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 150.00-130.00	Sleeve DS	0.6250 A325N	4	0.0000 A325N	0	0.3750 A325N	0	0.3750 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 130.00-110.00	Flange	1.0000 A325N	6	0.0000 A325N	0	0.3750 A325N	0	0.3750 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 110.00-100.00	Flange	1.0000 A325N	6	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 100.00-80.00	Flange	1.0000 A325N	6	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 80.00-60.00	Flange	1.0000 A325N	6	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T8 60.00-40.00	Flange	1.0000 A325N	6	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T9 40.00-20.00	Flange	1.0000 A325N	6	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T10 20.00-0.00	Flange	1.0000 A325N	6	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

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
7/8	B	No	No	Ar (CaAa)	78.00 - 8.00	-6.0000	-0.4	3	2	1.1100	1.1100		0.54
7/8	B	No	No	Ar (CaAa)	98.00 - 8.00	-7.0000	-0.38	3	3	1.1100	1.1100		0.54
7/8	B	No	No	Ar (CaAa)	104.00 - 8.00	-8.0000	-0.4	1	1	1.1100	1.1100		0.54
7/8	B	No	No	Ar (CaAa)	109.00 - 8.00	-6.0000	-0.42	1	1	1.1100	1.1100		0.54
7/8	B	No	No	Ar (CaAa)	135.00 - 8.00	-7.0000	-0.4	1	1	1.1100	1.1100		0.54
7/8	B	No	No	Ar (CaAa)	147.00 - 8.00	-8.0000	-0.41	1	1	1.1100	1.1100		0.54
1/2	A	No	No	Ar (CaAa)	55.00 - 8.00	-6.0000	0.39	2	2	0.5800	0.5800		0.25
1/2	A	No	No	Ar (CaAa)	46.00 - 8.00	-7.0000	0.38	1	1	0.5800	0.5800		0.25
1/2	A	No	No	Ar (CaAa)	63.00 - 8.00	-8.0000	0.42	1	1	0.5800	0.5800		0.25
1/2	A	No	No	Ar (CaAa)	87.00 - 8.00	-6.0000	0.43	1	1	0.5800	0.5800		0.25
1/2	A	No	No	Ar (CaAa)	163.00 - 8.00	-7.0000	0.37	1	1	0.5800	0.5800		0.25
1/4	A	No	No	Ar (CaAa)	52.00 - 8.00	-7.0000	0.37	1	1	0.2500	0.2500		0.05
EW90	C	No	No	Ar (CaAa)	85.00 - 8.00	-8.0000	0.38	2	2	0.9869	0.9869		0.32
EW90	C	No	No	Ar (CaAa)	116.00 - 8.00	-7.0000	0.4	1	1	0.9869	0.9869		0.32
3/8	C	No	No	Ar (CaAa)	119.00 - 8.00	-7.0000	0.4	2	2	0.4400	0.4400		0.08
EW90	C	No	No	Ar (CaAa)	120.00 - 8.00	-5.0000	0.39	1	1	0.9869	0.9869		0.32
EW90	C	No	No	Ar (CaAa)	135.00 - 8.00	-6.0000	0.41	1	1	0.9869	0.9869		0.32
1/2	C	No	No	Ar (CaAa)	25.00 - 8.00	-9.0000	0.42	1	1	0.5800	0.5800		0.25
1/2	C	No	No	Ar (CaAa)	30.00 - 8.00	-5.0000	0.42	1	1	0.5800	0.5800		0.25
7/8	A	No	No	Ar (CaAa)	148.00 - 8.00	-5.0000	-0.42	2	2	1.1100	1.1100		0.54
7/8	A	No	No	Ar (CaAa)	178.00 - 8.00	-9.0000	-0.39	2	2	1.1100	1.1100		0.54
7/8	A	No	No	Ar (CaAa)	152.00 - 8.00	-6.0000	-0.4	1	1	1.1100	1.1100		0.54
7/8	A	No	No	Ar (CaAa)	154.00 - 8.00	-7.0000	-0.45	1	1	1.1100	1.1100		0.54
7/8	A	No	No	Ar (CaAa)	163.00 - 8.00	-5.0000	-0.45	1	1	1.1100	1.1100		0.54
2" hybrid (12x24) (VzW)	C	No	No	Ar (CaAa)	129.00 - 8.00	-6.0000	-0.42	1	1	2.0160	2.0160		3.04
3/8 ground (VzW existing)	C	No	No	Ar (CaAa)	129.00 - 8.00	-6.0000	-0.44	1	1	0.4400	0.4400		0.08
3/8" safety cable	A	No	No	Ar (CaAa)	180.00 - 0.00	0.0000	-0.47	1	1	0.3750	0.3750		0.22

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 lb
T1	180.00-170.00	A	0.000	0.000	2.151	0.000	10.84
		B	0.000	0.000	0.000	0.000	0.00

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 lb
		C	0.000	0.000	0.000	0.000	0.00
T2	170.00-150.00	A	0.000	0.000	8.053	0.000	39.51
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
T3	150.00-130.00	A	0.000	0.000	17.006	0.000	82.84
		B	0.000	0.000	2.442	0.000	11.88
		C	0.000	0.000	0.493	0.000	1.60
T4	130.00-110.00	A	0.000	0.000	17.450	0.000	85.00
		B	0.000	0.000	4.440	0.000	21.60
		C	0.000	0.000	9.011	0.000	72.24
T5	110.00-100.00	A	0.000	0.000	8.725	0.000	42.50
		B	0.000	0.000	3.663	0.000	17.82
		C	0.000	0.000	6.297	0.000	42.40
T6	100.00-80.00	A	0.000	0.000	17.856	0.000	86.75
		B	0.000	0.000	14.874	0.000	72.36
		C	0.000	0.000	13.581	0.000	88.00
T7	80.00-60.00	A	0.000	0.000	18.784	0.000	90.75
		B	0.000	0.000	21.534	0.000	104.76
		C	0.000	0.000	16.541	0.000	97.60
T8	60.00-40.00	A	0.000	0.000	22.158	0.000	104.60
		B	0.000	0.000	22.200	0.000	108.00
		C	0.000	0.000	16.541	0.000	97.60
T9	40.00-20.00	A	0.000	0.000	23.750	0.000	111.00
		B	0.000	0.000	22.200	0.000	108.00
		C	0.000	0.000	17.411	0.000	101.35
T10	20.00-0.00	A	0.000	0.000	14.550	0.000	68.36
		B	0.000	0.000	13.320	0.000	64.80
		C	0.000	0.000	11.317	0.000	64.56

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	180.00-170.00	A	2.215	0.000	0.000	14.342	0.000	188.22
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
T2	170.00-150.00	A	2.196	0.000	0.000	50.149	0.000	707.51
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
T3	150.00-130.00	A	2.167	0.000	0.000	96.548	0.000	1376.96
		B		0.000	0.000	11.975	0.000	202.68
		C		0.000	0.000	2.660	0.000	43.33
T4	130.00-110.00	A	2.133	0.000	0.000	97.773	0.000	1373.18
		B		0.000	0.000	21.507	0.000	359.74
		C		0.000	0.000	48.012	0.000	772.28
T5	110.00-100.00	A	2.105	0.000	0.000	48.406	0.000	673.11
		B		0.000	0.000	17.557	0.000	290.69
		C		0.000	0.000	35.499	0.000	533.19
T6	100.00-80.00	A	2.073	0.000	0.000	99.028	0.000	1364.64
		B		0.000	0.000	66.861	0.000	1012.10
		C		0.000	0.000	75.607	0.000	1101.76
T7	80.00-60.00	A	2.021	0.000	0.000	104.607	0.000	1421.62
		B		0.000	0.000	91.906	0.000	1316.86
		C		0.000	0.000	90.293	0.000	1235.32
T8	60.00-40.00	A	1.955	0.000	0.000	130.875	0.000	1688.17
		B		0.000	0.000	92.517	0.000	1292.20
		C		0.000	0.000	88.018	0.000	1175.68

All-Points Technology Corp., P.C.
116 Grandview Road
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Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T9	40.00-20.00	A	1.857	0.000	0.000	139.455	0.000	1722.44
		B		0.000	0.000	89.615	0.000	1209.31
		C		0.000	0.000	91.149	0.000	1178.32
T10	20.00-0.00	A	1.664	0.000	0.000	80.039	0.000	912.88
		B		0.000	0.000	50.314	0.000	631.75
		C		0.000	0.000	56.262	0.000	676.10

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	180.00-170.00	-2.2556	2.1417	-3.3492	2.4557
T2	170.00-150.00	-3.3826	2.7438	-3.9951	2.6413
T3	150.00-130.00	-5.5554	2.9799	-6.1952	3.1389
T4	130.00-110.00	-4.9503	3.1383	-6.3285	3.5209
T5	110.00-100.00	-3.9703	1.7045	-5.1649	2.1536
T6	100.00-80.00	-4.7158	-0.0680	-8.0598	1.2444
T7	80.00-60.00	-6.0176	-2.0470	-11.4447	-0.3686
T8	60.00-40.00	-6.8140	-3.7514	-13.4914	-4.0348
T9	40.00-20.00	-7.4258	-4.3501	-15.6328	-5.6373
T10	20.00-0.00	-5.9115	-2.8565	-14.2562	-3.3992

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	21	7/8	170.00 - 178.00	0.6000	0.3939
T1	28	3/8" safety cable	170.00 - 180.00	1.0000	1.0000
T2	11	1/2	150.00 - 163.00	0.6000	0.3926
T2	21	7/8	150.00 - 170.00	0.6000	0.3926
T2	22	7/8	150.00 - 152.00	0.6000	0.3926
T2	23	7/8	150.00 - 154.00	0.6000	0.3926
T2	24	7/8	150.00 - 163.00	0.6000	0.3926
T2	28	3/8" safety cable	150.00 - 170.00	1.0000	1.0000
T3	5	7/8	130.00 - 135.00	0.6000	0.3906
T3	6	7/8	130.00 - 147.00	0.6000	0.3906
T3	11	1/2	130.00 - 150.00	0.6000	0.3906
T3	17	EW90	130.00 - 135.00	0.6000	0.3906
T3	20	7/8	130.00 - 148.00	0.6000	0.3906
T3	21	7/8	130.00 -	0.6000	0.3906

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T3	22	7/8	130.00 - 150.00	0.6000	0.3906
T3	23	7/8	130.00 - 150.00	0.6000	0.3906
T3	24	7/8	130.00 - 150.00	0.6000	0.3906
T3	28	3/8" safety cable	130.00 - 150.00	1.0000	1.0000
T4	5	7/8	110.00 - 130.00	0.6000	0.4170
T4	6	7/8	110.00 - 130.00	0.6000	0.4170
T4	11	1/2	110.00 - 130.00	0.6000	0.4170
T4	14	EW90	110.00 - 116.00	0.6000	0.4170
T4	15	3/8	110.00 - 119.00	0.6000	0.4170
T4	16	EW90	110.00 - 120.00	0.6000	0.4170
T4	17	EW90	110.00 - 130.00	0.6000	0.4170
T4	20	7/8	110.00 - 130.00	0.6000	0.4170
T4	21	7/8	110.00 - 130.00	0.6000	0.4170
T4	22	7/8	110.00 - 130.00	0.6000	0.4170
T4	23	7/8	110.00 - 130.00	0.6000	0.4170
T4	24	7/8	110.00 - 130.00	0.6000	0.4170
T4	26	2" hybrid (12x24)	110.00 - 129.00	0.6000	0.4170
T4	27	3/8 ground	110.00 - 129.00	0.6000	0.4170
T4	28	3/8" safety cable	110.00 - 130.00	1.0000	1.0000
T5	3	7/8	100.00 - 104.00	0.6000	0.2968
T5	4	7/8	100.00 - 109.00	0.6000	0.2968
T5	5	7/8	100.00 - 110.00	0.6000	0.2968
T5	6	7/8	100.00 - 110.00	0.6000	0.2968
T5	11	1/2	100.00 - 110.00	0.6000	0.2968
T5	14	EW90	100.00 - 110.00	0.6000	0.2968
T5	15	3/8	100.00 - 110.00	0.6000	0.2968
T5	16	EW90	100.00 - 110.00	0.6000	0.2968
T5	17	EW90	100.00 - 110.00	0.6000	0.2968
T5	20	7/8	100.00 - 110.00	0.6000	0.2968
T5	21	7/8	100.00 - 110.00	0.6000	0.2968
T5	22	7/8	100.00 -	0.6000	0.2968

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			110.00		
T5	23	7/8	100.00 - 110.00	0.6000	0.2968
T5	24	7/8	100.00 - 110.00	0.6000	0.2968
T5	26	2" hybrid (12x24)	100.00 - 110.00	0.6000	0.2968
T5	27	3/8 ground	100.00 - 110.00	0.6000	0.2968
T5	28	3/8" safety cable	100.00 - 110.00	1.0000	1.0000
T6	2	7/8	80.00 - 98.00	0.6000	0.4199
T6	3	7/8	80.00 - 100.00	0.6000	0.4199
T6	4	7/8	80.00 - 100.00	0.6000	0.4199
T6	5	7/8	80.00 - 100.00	0.6000	0.4199
T6	6	7/8	80.00 - 100.00	0.6000	0.4199
T6	10	1/2	80.00 - 87.00	0.6000	0.4199
T6	11	1/2	80.00 - 100.00	0.6000	0.4199
T6	13	EW90	80.00 - 85.00	0.6000	0.4199
T6	14	EW90	80.00 - 100.00	0.6000	0.4199
T6	15	3/8	80.00 - 100.00	0.6000	0.4199
T6	16	EW90	80.00 - 100.00	0.6000	0.4199
T6	17	EW90	80.00 - 100.00	0.6000	0.4199
T6	20	7/8	80.00 - 100.00	0.6000	0.4199
T6	21	7/8	80.00 - 100.00	0.6000	0.4199
T6	22	7/8	80.00 - 100.00	0.6000	0.4199
T6	23	7/8	80.00 - 100.00	0.6000	0.4199
T6	24	7/8	80.00 - 100.00	0.6000	0.4199
T6	26	2" hybrid (12x24)	80.00 - 100.00	0.6000	0.4199
T6	27	3/8 ground	80.00 - 100.00	0.6000	0.4199
T6	28	3/8" safety cable	80.00 - 100.00	1.0000	1.0000
T7	1	7/8	60.00 - 78.00	0.6000	0.5183
T7	2	7/8	60.00 - 80.00	0.6000	0.5183
T7	3	7/8	60.00 - 80.00	0.6000	0.5183
T7	4	7/8	60.00 - 80.00	0.6000	0.5183
T7	5	7/8	60.00 - 80.00	0.6000	0.5183
T7	6	7/8	60.00 - 80.00	0.6000	0.5183
T7	9	1/2	60.00 - 63.00	0.6000	0.5183
T7	10	1/2	60.00 - 80.00	0.6000	0.5183
T7	11	1/2	60.00 - 80.00	0.6000	0.5183
T7	13	EW90	60.00 - 80.00	0.6000	0.5183
T7	14	EW90	60.00 - 80.00	0.6000	0.5183
T7	15	3/8	60.00 - 80.00	0.6000	0.5183
T7	16	EW90	60.00 - 80.00	0.6000	0.5183
T7	17	EW90	60.00 - 80.00	0.6000	0.5183
T7	20	7/8	60.00 - 80.00	0.6000	0.5183
T7	21	7/8	60.00 - 80.00	0.6000	0.5183
T7	22	7/8	60.00 - 80.00	0.6000	0.5183
T7	23	7/8	60.00 - 80.00	0.6000	0.5183
T7	24	7/8	60.00 - 80.00	0.6000	0.5183
T7	26	2" hybrid (12x24)	60.00 - 80.00	0.6000	0.5183
T7	27	3/8 ground	60.00 - 80.00	0.6000	0.5183
T7	28	3/8" safety cable	60.00 - 80.00	1.0000	1.0000
T8	1	7/8	40.00 - 60.00	0.6000	0.5862
T8	2	7/8	40.00 - 60.00	0.6000	0.5862
T8	3	7/8	40.00 - 60.00	0.6000	0.5862
T8	4	7/8	40.00 - 60.00	0.6000	0.5862
T8	5	7/8	40.00 - 60.00	0.6000	0.5862
T8	6	7/8	40.00 - 60.00	0.6000	0.5862
T8	7	1/2	40.00 - 55.00	0.6000	0.5862
T8	8	1/2	40.00 - 46.00	0.6000	0.5862
T8	9	1/2	40.00 - 60.00	0.6000	0.5862

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T8	10	1/2	40.00 - 60.00	0.6000	0.5862
T8	11	1/2	40.00 - 60.00	0.6000	0.5862
T8	12	1/4	40.00 - 52.00	0.6000	0.5862
T8	13	EW90	40.00 - 60.00	0.6000	0.5862
T8	14	EW90	40.00 - 60.00	0.6000	0.5862
T8	15	3/8	40.00 - 60.00	0.6000	0.5862
T8	16	EW90	40.00 - 60.00	0.6000	0.5862
T8	17	EW90	40.00 - 60.00	0.6000	0.5862
T8	20	7/8	40.00 - 60.00	0.6000	0.5862
T8	21	7/8	40.00 - 60.00	0.6000	0.5862
T8	22	7/8	40.00 - 60.00	0.6000	0.5862
T8	23	7/8	40.00 - 60.00	0.6000	0.5862
T8	24	7/8	40.00 - 60.00	0.6000	0.5862
T8	26	2" hybrid (12x24)	40.00 - 60.00	0.6000	0.5862
T8	27	3/8 ground	40.00 - 60.00	0.6000	0.5862
T8	28	3/8" safety cable	40.00 - 60.00	1.0000	1.0000
T9	1	7/8	20.00 - 40.00	0.6000	0.6000
T9	2	7/8	20.00 - 40.00	0.6000	0.6000
T9	3	7/8	20.00 - 40.00	0.6000	0.6000
T9	4	7/8	20.00 - 40.00	0.6000	0.6000
T9	5	7/8	20.00 - 40.00	0.6000	0.6000
T9	6	7/8	20.00 - 40.00	0.6000	0.6000
T9	7	1/2	20.00 - 40.00	0.6000	0.6000
T9	8	1/2	20.00 - 40.00	0.6000	0.6000
T9	9	1/2	20.00 - 40.00	0.6000	0.6000
T9	10	1/2	20.00 - 40.00	0.6000	0.6000
T9	11	1/2	20.00 - 40.00	0.6000	0.6000
T9	12	1/4	20.00 - 40.00	0.6000	0.6000
T9	13	EW90	20.00 - 40.00	0.6000	0.6000
T9	14	EW90	20.00 - 40.00	0.6000	0.6000
T9	15	3/8	20.00 - 40.00	0.6000	0.6000
T9	16	EW90	20.00 - 40.00	0.6000	0.6000
T9	17	EW90	20.00 - 40.00	0.6000	0.6000
T9	18	1/2	20.00 - 25.00	0.6000	0.6000
T9	19	1/2	20.00 - 30.00	0.6000	0.6000
T9	20	7/8	20.00 - 40.00	0.6000	0.6000
T9	21	7/8	20.00 - 40.00	0.6000	0.6000
T9	22	7/8	20.00 - 40.00	0.6000	0.6000
T9	23	7/8	20.00 - 40.00	0.6000	0.6000
T9	24	7/8	20.00 - 40.00	0.6000	0.6000
T9	26	2" hybrid (12x24)	20.00 - 40.00	0.6000	0.6000
T9	27	3/8 ground	20.00 - 40.00	0.6000	0.6000
T9	28	3/8" safety cable	20.00 - 40.00	1.0000	1.0000
T10	1	7/8	8.00 - 20.00	0.6000	0.6000
T10	2	7/8	8.00 - 20.00	0.6000	0.6000
T10	3	7/8	8.00 - 20.00	0.6000	0.6000
T10	4	7/8	8.00 - 20.00	0.6000	0.6000
T10	5	7/8	8.00 - 20.00	0.6000	0.6000
T10	6	7/8	8.00 - 20.00	0.6000	0.6000
T10	7	1/2	8.00 - 20.00	0.6000	0.6000
T10	8	1/2	8.00 - 20.00	0.6000	0.6000
T10	9	1/2	8.00 - 20.00	0.6000	0.6000
T10	10	1/2	8.00 - 20.00	0.6000	0.6000
T10	11	1/2	8.00 - 20.00	0.6000	0.6000
T10	12	1/4	8.00 - 20.00	0.6000	0.6000
T10	13	EW90	8.00 - 20.00	0.6000	0.6000
T10	14	EW90	8.00 - 20.00	0.6000	0.6000
T10	15	3/8	8.00 - 20.00	0.6000	0.6000
T10	16	EW90	8.00 - 20.00	0.6000	0.6000
T10	17	EW90	8.00 - 20.00	0.6000	0.6000
T10	18	1/2	8.00 - 20.00	0.6000	0.6000
T10	19	1/2	8.00 - 20.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T10	20	7/8	8.00 - 20.00	0.6000	0.6000
T10	21	7/8	8.00 - 20.00	0.6000	0.6000
T10	22	7/8	8.00 - 20.00	0.6000	0.6000
T10	23	7/8	8.00 - 20.00	0.6000	0.6000
T10	24	7/8	8.00 - 20.00	0.6000	0.6000
T10	26	2" hybrid (12x24)	8.00 - 20.00	0.6000	0.6000
T10	27	3/8 ground	8.00 - 20.00	0.6000	0.6000
T10	28	3/8" safety cable	0.00 - 20.00	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Generic Lightning Rod 4' copper	B	From Leg	0.00 0.00 10.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	0.50 1.00 1.50	0.50 1.00 1.50	0.00 0.00 0.00
10'x2 3/8" Pipe Mount	B	From Leg	0.00 0.00 5.00	0.0000	180.00	No Ice 1/2" Ice 1" Ice	2.38 3.40 4.45	2.38 3.40 4.45	36.50 54.35 78.71
10' x 2" omni whip	A	From Leg	0.50 0.00 5.00	0.0000	179.00	No Ice 1/2" Ice 1" Ice	2.00 3.02 4.07	2.00 3.02 4.07	60.00 75.50 97.47
10' x 2" omni whip	B	From Leg	0.50 0.00 5.00	0.0000	179.00	No Ice 1/2" Ice 1" Ice	2.00 3.02 4.07	2.00 3.02 4.07	60.00 75.50 97.47
DB404	C	From Leg	3.00 0.00 0.00	0.0000	175.00 - 179.00	No Ice 1/2" Ice 1" Ice	1.14 2.05 2.96	1.14 2.05 2.96	14.00 18.20 22.40
20' x 2.5" omni whip	C	From Leg	3.00 0.00 10.00	0.0000	178.00	No Ice 1/2" Ice 1" Ice	5.00 7.03 9.07	5.00 7.03 9.07	50.00 86.96 136.55
3' sidearm	C	None		0.0000	178.00	No Ice 1/2" Ice 1" Ice	1.43 2.18 2.93	0.72 1.09 1.47	30.00 65.00 105.00
PD1142-3	C	From Leg	3.00 0.00 4.30	0.0000	178.00	No Ice 1/2" Ice 1" Ice	1.29 2.17 3.07	1.29 2.17 3.07	10.00 20.67 36.89
3' sidearm	C	None		0.0000	178.00	No Ice 1/2" Ice 1" Ice	1.43 2.18 2.93	0.72 1.09 1.47	30.00 65.00 105.00
PTP 50650	C	From Leg	1.50 0.00 0.00	0.0000	178.00	No Ice 1/2" Ice 1" Ice	0.80 0.91 1.04	0.27 0.35 0.44	20.00 25.49 32.64
SC479-HF1LDF	A	From Leg	6.00 0.00 7.00	0.0000	163.00	No Ice 1/2" Ice 1" Ice	4.98 6.54 8.04	4.98 6.54 8.04	35.00 70.82 115.98
DS428E83I01T TTA	A	From Leg	6.00 0.00 0.00	0.0000	163.00	No Ice 1/2" Ice 1" Ice	0.40 0.48 0.57	0.46 0.55 0.65	10.00 15.02 21.56
6' sidearm	B	None		0.0000	163.00	No Ice 1/2" Ice 1" Ice	4.17 6.17 8.17	2.09 3.09 4.09	75.00 125.00 200.00
PD1142-3	C	From Leg	6.00 0.00	0.0000	167.00 - 157.00	No Ice 1/2" Ice	1.29 2.17	1.29 2.17	10.00 20.67

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1" Ice	3.07	3.07	36.89
6' sidearm	C	None		0.0000	157.00	No Ice	4.17	2.09	75.00
						1/2" Ice	6.17	3.09	125.00
						1" Ice	8.17	4.09	200.00
DB404	C	From Leg	3.00	0.0000	150.00 - 154.00	No Ice	1.14	1.14	14.00
			0.00			1/2" Ice	2.05	2.05	18.20
			0.00			1" Ice	2.96	2.96	22.40
DB404	A	From Leg	6.00	0.0000	150.00 - 154.00	No Ice	1.14	1.14	14.00
			0.00			1/2" Ice	2.05	2.05	18.20
			0.00			1" Ice	2.96	2.96	22.40
10' x 2" omni whip	A	From Leg	6.00	0.0000	152.00	No Ice	2.00	2.00	60.00
			0.00			1/2" Ice	3.02	3.02	75.50
			5.00			1" Ice	4.07	4.07	97.47
6' sidearm	A	None		0.0000	152.00	No Ice	4.17	2.09	75.00
						1/2" Ice	6.17	3.09	125.00
						1" Ice	8.17	4.09	200.00
PD1142-3	A	From Leg	6.00	0.0000	158.75 - 148.75	No Ice	1.29	1.29	10.00
			0.00			1/2" Ice	2.17	2.17	20.67
			0.00			1" Ice	3.07	3.07	36.89
6' sidearm	A	None		0.0000	148.75	No Ice	4.17	2.09	75.00
						1/2" Ice	6.17	3.09	125.00
						1" Ice	8.17	4.09	200.00
PD1142-3	A	From Leg	6.00	0.0000	158.25 - 148.25	No Ice	1.29	1.29	10.00
			0.00			1/2" Ice	2.17	2.17	20.67
			0.00			1" Ice	3.07	3.07	36.89
6' sidearm	A	None		0.0000	148.25	No Ice	4.17	2.09	75.00
						1/2" Ice	6.17	3.09	125.00
						1" Ice	8.17	4.09	200.00
20' x 3" omni whip	B	From Leg	3.00	0.0000	167.67 - 147.67	No Ice	6.00	6.00	50.00
			0.00			1/2" Ice	8.03	8.03	93.17
			0.00			1" Ice	10.08	10.08	149.01
3' sidearm	B	None		0.0000	147.67	No Ice	1.43	0.72	30.00
						1/2" Ice	2.18	1.09	65.00
						1" Ice	2.93	1.47	105.00
10' 8-bay dipole	B	From Leg	6.00	0.0000	147.00	No Ice	2.50	2.50	75.00
			0.00			1/2" Ice	3.53	3.53	93.64
			5.00			1" Ice	4.58	4.58	118.79
6' sidearm	A	None		0.0000	147.00	No Ice	4.17	2.09	75.00
						1/2" Ice	6.17	3.09	125.00
						1" Ice	8.17	4.09	200.00
SC479-HF1LDF	A	From Leg	6.00	0.0000	135.00	No Ice	5.06	5.06	35.00
			0.00			1/2" Ice	6.54	6.54	70.82
			7.00			1" Ice	8.04	8.04	115.98
6' sidearm	A	None		0.0000	135.00	No Ice	4.17	2.09	75.00
						1/2" Ice	6.17	3.09	125.00
						1" Ice	8.17	4.09	200.00
SBNHH-1D65B (VzW existing)	A	From Face	3.00	0.0000	129.00	No Ice	8.08	5.34	45.00
			0.00			1/2" Ice	8.53	5.79	95.05
			0.00			1" Ice	9.00	6.26	151.20
SBNHH-1D65B (VzW existing)	B	From Face	3.00	0.0000	129.00	No Ice	8.08	5.34	45.00
			0.00			1/2" Ice	8.53	5.79	95.05
			0.00			1" Ice	9.00	6.26	151.20
SBNHH-1D65B (VzW existing)	C	From Face	3.00	0.0000	129.00	No Ice	8.08	5.34	45.00
			0.00			1/2" Ice	8.53	5.79	95.05
			0.00			1" Ice	9.00	6.26	151.20
(2) JAHH-65B-R3B (VzW)	A	From Face	3.00	0.0000	129.00	No Ice	9.11	5.98	65.00
			0.00			1/2" Ice	9.58	6.44	123.08

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00			1" Ice	10.05	6.91	187.45
(2) JAHH-65B-R3B (VzW)	B	From Face	3.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	9.11 9.58 10.05	5.98 6.44 6.91	65.00 123.08 187.45
(2) JAHH-65B-R3B (VzW)	C	From Face	3.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	9.11 9.58 10.05	5.98 6.44 6.91	65.00 123.08 187.45
Licensed Sub6 Antenna (VzW)	A	From Face	3.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	5.75 6.05 6.37	3.02 3.27 3.52	105.00 147.20 193.79
Licensed Sub6 Antenna (VzW)	B	From Face	3.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	5.75 6.05 6.37	3.02 3.27 3.52	105.00 147.20 193.79
Licensed Sub6 Antenna (VzW)	C	From Face	3.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	5.75 6.05 6.37	3.02 3.27 3.52	105.00 147.20 193.79
CBC78T-DS-43-2X diplexer (VzW)	A	From Face	3.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	0.37 0.45 0.53	0.51 0.61 0.71	26.00 32.37 40.42
CBC78T-DS-43-2X diplexer (VzW)	B	From Face	3.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	0.37 0.45 0.53	0.51 0.61 0.71	26.00 32.37 40.42
CBC78T-DS-43-2X diplexer (VzW)	C	From Face	3.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	0.37 0.45 0.53	0.51 0.61 0.71	26.00 32.37 40.42
RFV01U-D1A (VzW)	A	From Face	2.50 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.25 1.39 1.54	86.00 104.34 125.47
RFV01U-D1A (VzW)	B	From Face	2.50 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.25 1.39 1.54	86.00 104.34 125.47
RFV01U-D1A (VzW)	C	From Face	2.50 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.25 1.39 1.54	86.00 104.34 125.47
RFV01U-D2A (VzW)	A	From Face	2.50 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	73.00 89.43 108.53
RFV01U-D2A (VzW)	B	From Face	2.50 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	73.00 89.43 108.53
RFV01U-D2A (VzW)	C	From Face	2.50 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	73.00 89.43 108.53
RVZDC-6627-PF-48 (VzW)	A	None		0.0000	129.00	No Ice 1/2" Ice 1" Ice	6.13 6.44 6.76	5.25 5.55 5.85	45.00 103.92 167.82
Valmont VFA12-RRU (VzW existing)	A	None		0.0000	128.00	No Ice 1/2" Ice 1" Ice	12.13 15.16 19.20	8.42 10.53 12.63	500.00 575.00 650.00
Valmont VFA12-RRU (VzW existing)	B	None		0.0000	128.00	No Ice 1/2" Ice 1" Ice	12.13 15.16 19.20	8.42 10.53 12.63	500.00 575.00 650.00
Valmont VFA12-RRU (VzW existing)	C	None		0.0000	128.00	No Ice 1/2" Ice 1" Ice	12.13 15.16 19.20	8.42 10.53 12.63	500.00 575.00 650.00
PTP 58400	A	None		0.0000	124.00	No Ice 1/2" Ice	1.75 1.92	0.48 0.58	12.00 23.43

All-Points Technology Corp., P.C.
116 Grandview Road
Conway, NH 03818
Phone: (603) 496-5853
FAX: 603) 447-2124

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
						1" Ice	2.09	0.69	37.18
4' sidearm	A	None		0.0000	115.50	No Ice	2.43	1.22	50.00
						1/2" Ice	3.50	1.75	100.00
						1" Ice	4.50	2.25	175.00
15' x 2.5" omni whip	A	From Leg	3.00	0.0000	124.00 - 109.00	No Ice	3.75	3.75	50.00
			0.00			1/2" Ice	5.28	5.28	77.80
			0.00			1" Ice	6.83	6.83	115.17
3' sidearm	A	None		0.0000	109.00	No Ice	1.43	0.72	30.00
						1/2" Ice	2.18	1.09	65.00
						1" Ice	2.93	1.47	105.00
20' x 2.5" omni whip	A	From Leg	3.00	0.0000	124.00 - 104.00	No Ice	5.00	5.00	50.00
			0.00			1/2" Ice	7.03	7.03	86.96
			0.00			1" Ice	9.07	9.07	136.55
3' sidearm	A	None		0.0000	104.00	No Ice	1.43	0.72	30.00
						1/2" Ice	2.18	1.09	65.00
						1" Ice	2.93	1.47	105.00
17' x 2" omni whip	A	From Leg	2.00	0.0000	115.00 - 98.00	No Ice	3.20	3.20	75.00
			0.00			1/2" Ice	4.83	4.83	99.66
			0.00			1" Ice	6.47	6.47	134.46
2' standoff	A	None		0.0000	98.00	No Ice	0.60	0.07	30.00
						1/2" Ice	0.75	0.11	35.96
						1" Ice	0.91	0.16	44.06
2' standoff	C	None		0.0000	97.83	No Ice	0.60	0.07	30.00
						1/2" Ice	0.75	0.11	35.96
						1" Ice	0.91	0.16	44.06
17' x 2" omni whip	C	From Leg	2.00	0.0000	114.83 - 97.83	No Ice	3.20	3.20	75.00
			0.00			1/2" Ice	4.83	4.83	99.66
			0.00			1" Ice	6.47	6.47	134.46
2' standoff	A	None		0.0000	97.33	No Ice	0.60	0.07	30.00
						1/2" Ice	0.75	0.11	35.96
						1" Ice	0.91	0.16	44.06
20' x 2.5" omni whip	A	From Leg	2.00	0.0000	117.33 - 97.33	No Ice	5.00	5.00	50.00
			0.00			1/2" Ice	7.03	7.03	86.96
			0.00			1" Ice	9.07	9.07	136.55
20' x 2.5" omni whip	C	From Face	1.00	0.0000	107.00 - 87.00	No Ice	5.00	5.00	50.00
			0.00			1/2" Ice	7.03	7.03	86.96
			0.00			1" Ice	9.07	9.07	136.55
1' sidearm	B	From Leg	1.00	0.0000	87.00	No Ice	0.51	0.26	15.00
			0.00			1/2" Ice	0.95	0.48	25.00
			0.00			1" Ice	1.45	0.73	40.00
2' standoff	A	None		0.0000	78.00	No Ice	0.60	0.07	30.00
						1/2" Ice	0.75	0.11	35.96
						1" Ice	0.91	0.16	44.06
2' standoff	B	None		0.0000	78.00	No Ice	0.60	0.07	30.00
						1/2" Ice	0.75	0.11	35.96
						1" Ice	0.91	0.16	44.06
2' standoff	C	None		0.0000	78.00	No Ice	0.60	0.07	30.00
						1/2" Ice	0.75	0.11	35.96
						1" Ice	0.91	0.16	44.06
17' x 2" omni whip	A	From Leg	2.00	0.0000	86.50 - 78.00	No Ice	3.20	3.20	75.00
			0.00			1/2" Ice	4.83	4.83	99.66
			0.00			1" Ice	6.47	6.47	134.46
17' x 2" omni whip	B	From Leg	2.00	0.0000	86.50 - 78.00	No Ice	3.20	3.20	75.00
			0.00			1/2" Ice	4.83	4.83	99.66
			0.00			1" Ice	6.47	6.47	134.46
17' x 2" omni whip	C	From Leg	2.00	0.0000	86.50 - 78.00	No Ice	3.20	3.20	75.00
			0.00			1/2" Ice	4.83	4.83	99.66

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 lb
			0.00				1" Ice	6.47	6.47	134.46
12' x 1.5" omni whip	A	From Leg	2.00		0.0000	75.00 - 63.00	No Ice	1.80	1.80	60.00
			0.00				1/2" Ice	3.02	3.02	74.82
			0.00				1" Ice	4.26	4.26	97.28
6' sidearm	A	None			0.0000	63.00	No Ice	4.17	2.09	75.00
							1/2" Ice	6.17	3.09	125.00
							1" Ice	8.17	4.09	200.00
3' Yagi w/ spray	A	None			0.0000	55.00	No Ice	2.08	2.08	30.95
							1/2" Ice	3.79	3.79	52.87
							1" Ice	5.52	5.52	85.27
20' x 2.5" omni whip	A	From Leg	2.00		0.0000	74.50 - 54.50	No Ice	5.00	5.00	50.00
			0.00				1/2" Ice	7.03	7.03	86.96
			0.00				1" Ice	9.07	9.07	136.55
2' standoff	A	None			0.0000	54.50	No Ice	0.60	0.07	30.00
							1/2" Ice	0.75	0.11	35.96
							1" Ice	0.91	0.16	44.06
1.5' sidearm	B	None			0.0000	51.67	No Ice	0.60	0.07	30.00
							1/2" Ice	0.75	0.11	35.96
							1" Ice	0.91	0.16	44.06
3' Yagi	A	None			0.0000	46.00	No Ice	2.08	2.08	30.95
							1/2" Ice	3.79	3.79	52.87
							1" Ice	5.52	5.52	85.27
8' x 1" omni whip	A	From Leg	2.00		0.0000	42.00 - 34.00	No Ice	0.80	0.80	30.00
			0.00				1/2" Ice	1.62	1.62	37.43
			0.00				1" Ice	2.45	2.45	50.01
2' standoff	A	None			0.0000	34.00	No Ice	0.60	0.07	30.00
							1/2" Ice	0.75	0.11	35.96
							1" Ice	0.91	0.16	44.06
MFBW7463 omni	A	From Leg	6.00		0.0000	32.00 - 30.00	No Ice	0.23	0.23	10.00
			0.00				1/2" Ice	0.37	0.37	12.16
			0.00				1" Ice	0.52	0.52	15.96
6' sidearm	A	None			0.0000	30.00	No Ice	4.17	2.09	75.00
							1/2" Ice	6.17	3.09	125.00
							1" Ice	8.17	4.09	200.00
3' Yagi	A	None			0.0000	25.00	No Ice	2.08	2.08	30.95
							1/2" Ice	3.79	3.79	52.87
							1" Ice	5.52	5.52	85.27

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
.8M satellite dish	A	Paraboloid w/o Radome	From Leg	1.50		0.0000		51.67	2.60	No Ice	5.31	50.00
				0.00						1/2" Ice	5.66	79.00
				0.00						1" Ice	6.00	108.00
4' HP dish	B	Paraboloid w/Shroud (HP)	From Leg	1.00		0.0000		115.50	4.00	No Ice	12.57	150.00
				0.00						1/2" Ice	13.10	217.33
				0.00						1" Ice	13.62	284.66
2' HP dish	B	Paraboloid w/Shroud (HP)	From Leg	1.00		0.0000		119.00	2.00	No Ice	3.14	50.00
				0.00						1/2" Ice	3.41	67.50
				0.00						1" Ice	3.68	85.00

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft²	Weight lb
3' HP dish	A	Paraboloid w/Shroud (HP)	From Leg	1.00 0.00 0.00	0.0000		135.00	3.00	No Ice 1/2" Ice 1" Ice	7.07 7.47 7.86	75.00 113.33 153.33
3' HP dish	B	Paraboloid w/Shroud (HP)	From Leg	1.00 0.00 0.00	0.0000		120.00	3.00	No Ice 1/2" Ice 1" Ice	7.07 7.47 7.86	75.00 113.33 153.33
3' HP dish	C	Paraboloid w/Shroud (HP)	From Leg	1.00 0.00 0.00	0.0000		116.00	3.00	No Ice 1/2" Ice 1" Ice	7.07 7.47 7.86	75.00 113.33 153.33
3' HP dish	B	Paraboloid w/Shroud (HP)	From Leg	1.00 0.00 0.00	0.0000		85.00	3.00	No Ice 1/2" Ice 1" Ice	7.07 7.47 7.86	75.00 113.33 153.33

Truss-Leg Properties

Section Designation	Area in²	Area Ice in²	Self Weight lb	Ice Weight lb	Equiv. Diameter in	Equiv. Diameter Ice in	Leg Area in²
Pirod 105244	1026.8606	3318.2741	562.76	831.49	7.1310	23.0436	3.6816
Pirod 105216 w/ (2) 1-1/4" tie rods	2354.6652	6488.5107	708.75	1511.24	8.1759	22.5296	6.1359
Pirod 105216 w/ (2) 1-1/4" tie rods	2354.6652	6451.9159	708.75	1451.70	8.1759	22.4025	6.1359
Pirod 105216 w/ (2) 1-1/4" tie rods	2354.6652	6404.3390	708.75	1369.15	8.1759	22.2373	6.1359
Pirod 105217 w/ (2) 1-1/4" tie rods	2458.9425	6392.8619	823.33	1268.10	8.5380	22.1974	7.7558
Pirod 105217 w/ (2) 1-1/4" tie rods	2458.9425	6255.4127	823.33	1037.32	8.5380	21.7202	7.7558

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	1.2D+1.6W (pattern 1) 0 deg - No Ice
4	1.2D+1.6W (pattern 2) 0 deg - No Ice
5	0.9 Dead+1.6 Wind 0 deg - No Ice
6	1.2 Dead+1.6 Wind 90 deg - No Ice
7	1.2D+1.6W (pattern 1) 90 deg - No Ice
8	1.2D+1.6W (pattern 2) 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 180 deg - No Ice
11	1.2D+1.6W (pattern 1) 180 deg - No Ice
12	1.2D+1.6W (pattern 2) 180 deg - No Ice
13	0.9 Dead+1.6 Wind 180 deg - No Ice
14	1.2 Dead+1.0 Ice+1.0 Temp
15	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
16	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
17	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
18	Dead+Wind 0 deg - Service

Comb. No.	Description
19	Dead+Wind 90 deg - Service
20	Dead+Wind 180 deg - Service

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	180 - 170	5.050	18	0.2583	0.0481
T2	170 - 150	4.506	18	0.2563	0.0558
T3	150 - 130	3.442	18	0.2399	0.0544
T4	130 - 110	2.467	18	0.2093	0.0379
T5	110 - 100	1.646	18	0.1591	0.0198
T6	100 - 80	1.333	18	0.1321	0.0139
T7	80 - 60	0.832	18	0.1011	0.0081
T8	60 - 40	0.456	18	0.0716	0.0052
T9	40 - 20	0.201	18	0.0431	0.0027
T10	20 - 0	0.053	18	0.0213	0.0009

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180.00	Generic Lightning Rod 4' copper	18	5.050	0.2583	0.0481	375314
179.00	10' x 2" omni whip	18	4.996	0.2582	0.0490	375314
178.00	20' x 2.5" omni whip	18	4.941	0.2581	0.0499	375314
177.00	DB404	18	4.887	0.2580	0.0508	375314
175.00	DB404	18	4.778	0.2577	0.0524	375314
167.67	20' x 3" omni whip	18	4.379	0.2553	0.0568	144643
167.00	PD1142-3	18	4.343	0.2550	0.0570	135982
163.00	SC479-HF1LDF	18	4.127	0.2524	0.0578	99636
162.67	20' x 3" omni whip	18	4.109	0.2522	0.0578	97480
162.00	PD1142-3	18	4.073	0.2517	0.0579	93379
158.75	PD1142-3	18	3.900	0.2490	0.0576	75576
158.25	PD1142-3	18	3.873	0.2485	0.0575	73241
157.67	20' x 3" omni whip	18	3.842	0.2480	0.0574	70707
157.00	PD1142-3	18	3.807	0.2474	0.0573	67990
154.00	DB404	18	3.649	0.2443	0.0563	58022
153.75	PD1142-3	18	3.636	0.2441	0.0562	57333
153.25	PD1142-3	18	3.610	0.2435	0.0560	56021
152.67	20' x 3" omni whip	18	3.580	0.2429	0.0557	54611
152.00	DB404	18	3.545	0.2422	0.0554	53133
150.00	DB404	18	3.442	0.2399	0.0544	49689
148.75	PD1142-3	18	3.378	0.2384	0.0536	48239
148.25	PD1142-3	18	3.352	0.2378	0.0533	47776
147.67	20' x 3" omni whip	18	3.322	0.2371	0.0530	47302
147.00	10' 8-bay dipole	18	3.288	0.2363	0.0525	46824
135.00	3' HP dish	18	2.700	0.2187	0.0427	40838
129.00	SBNHH-1D65B	18	2.421	0.2072	0.0370	34914
128.00	Valmont VFA12-RRU	18	2.376	0.2051	0.0360	33029
124.00	PTP 58400	18	2.199	0.1961	0.0321	26120
120.00	3' HP dish	18	2.028	0.1862	0.0283	21449
119.00	2' HP dish	18	1.987	0.1837	0.0273	20531
117.33	20' x 2.5" omni whip	18	1.920	0.1793	0.0258	19162

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
116.00	3' HP dish	18	1.867	0.1757	0.0246	18195
115.50	4' HP dish	18	1.848	0.1744	0.0242	17856
115.00	17' x 2" omni whip	18	1.829	0.1730	0.0238	17530
114.83	17' x 2" omni whip	18	1.822	0.1726	0.0236	17422
114.00	15' x 2.5" omni whip	18	1.791	0.1703	0.0229	16923
112.33	20' x 2.5" omni whip	18	1.729	0.1657	0.0216	16154
109.33	17' x 2" omni whip	18	1.623	0.1572	0.0194	16092
109.16	17' x 2" omni whip	18	1.617	0.1567	0.0192	16157
109.00	15' x 2.5" omni whip	18	1.611	0.1562	0.0191	16226
107.33	20' x 2.5" omni whip	18	1.556	0.1515	0.0180	17320
107.00	20' x 2.5" omni whip	18	1.545	0.1505	0.0178	17616
104.00	20' x 2.5" omni whip	18	1.451	0.1422	0.0160	21424
103.67	17' x 2" omni whip	18	1.441	0.1413	0.0158	21955
103.50	17' x 2" omni whip	18	1.436	0.1408	0.0157	22233
102.33	20' x 2.5" omni whip	18	1.401	0.1378	0.0151	24243
102.00	20' x 2.5" omni whip	18	1.391	0.1369	0.0149	24835
98.00	17' x 2" omni whip	18	1.276	0.1277	0.0130	30758
97.83	2' standoff	18	1.272	0.1274	0.0130	30910
97.33	2' standoff	18	1.258	0.1264	0.0128	31311
97.00	20' x 2.5" omni whip	18	1.249	0.1257	0.0126	31543
92.00	20' x 2.5" omni whip	18	1.116	0.1171	0.0109	34025
87.00	20' x 2.5" omni whip	18	0.992	0.1101	0.0096	36715
86.50	17' x 2" omni whip	18	0.980	0.1094	0.0094	37008
85.00	3' HP dish	18	0.945	0.1075	0.0091	37914
82.25	17' x 2" omni whip	18	0.882	0.1040	0.0086	39578
78.00	2' standoff	18	0.789	0.0985	0.0078	40735
75.00	12' x 1.5" omni whip	18	0.727	0.0943	0.0073	40332
74.50	20' x 2.5" omni whip	18	0.717	0.0936	0.0072	40239
69.50	20' x 2.5" omni whip	18	0.620	0.0862	0.0065	39313
69.00	12' x 1.5" omni whip	18	0.610	0.0855	0.0064	39222
64.50	20' x 2.5" omni whip	18	0.530	0.0786	0.0058	38419
63.00	12' x 1.5" omni whip	18	0.505	0.0762	0.0056	38191
59.50	20' x 2.5" omni whip	18	0.448	0.0709	0.0051	38238
55.00	3' Yagi w/ spray	18	0.382	0.0640	0.0045	39948
54.50	20' x 2.5" omni whip	18	0.375	0.0633	0.0045	40193
51.67	.8M satellite dish	18	0.336	0.0591	0.0041	41642
46.00	3' Yagi	18	0.266	0.0510	0.0034	44885
42.00	8' x 1" omni whip	18	0.222	0.0457	0.0029	47280
38.00	8' x 1" omni whip	18	0.181	0.0407	0.0024	47654
34.00	8' x 1" omni whip	18	0.145	0.0361	0.0020	45911
32.00	MFBW7463 omni	18	0.129	0.0339	0.0018	44990
31.00	MFBW7463 omni	18	0.121	0.0328	0.0018	44544
30.00	MFBW7463 omni	18	0.113	0.0317	0.0017	44106
25.00	3' Yagi	18	0.079	0.0265	0.0013	42039

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	180 - 170	24.594	2	1.2568	0.2760
T2	170 - 150	21.945	2	1.2460	0.2743
T3	150 - 130	16.776	2	1.1655	0.2674
T4	130 - 110	12.036	2	1.0187	0.1865
T5	110 - 100	8.032	2	0.7755	0.0974
T6	100 - 80	6.506	2	0.6442	0.0684
T7	80 - 60	4.062	2	0.4935	0.0400
T8	60 - 40	2.228	2	0.3493	0.0256

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T9	40 - 20	0.982	2	0.2104	0.0131
T10	20 - 0	0.257	2	0.1040	0.0045

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180.00	Generic Lightning Rod 4' copper	2	24.594	1.2568	0.2760	68892
179.00	10' x 2" omni whip	2	24.329	1.2561	0.2720	68892
178.00	20' x 2.5" omni whip	2	24.064	1.2554	0.2679	68892
177.00	DB404	2	23.798	1.2547	0.2638	68892
175.00	DB404	2	23.268	1.2530	0.2577	68892
167.67	20' x 3" omni whip	2	21.331	1.2408	0.2794	27723
167.00	PD1142-3	2	21.154	1.2390	0.2805	26258
163.00	SC479-HF1LDF	2	20.106	1.2265	0.2844	19945
162.67	20' x 3" omni whip	2	20.019	1.2253	0.2845	19557
162.00	PD1142-3	2	19.845	1.2228	0.2846	18813
158.75	PD1142-3	2	19.002	1.2096	0.2833	15527
158.25	PD1142-3	2	18.872	1.2074	0.2829	15078
157.67	20' x 3" omni whip	2	18.723	1.2048	0.2823	14589
157.00	PD1142-3	2	18.551	1.2017	0.2815	14062
154.00	DB404	2	17.784	1.1870	0.2768	12107
153.75	PD1142-3	2	17.721	1.1857	0.2763	11970
153.25	PD1142-3	2	17.594	1.1831	0.2753	11709
152.67	20' x 3" omni whip	2	17.447	1.1801	0.2740	11429
152.00	DB404	2	17.278	1.1765	0.2725	11133
150.00	DB404	2	16.776	1.1655	0.2674	10437
148.75	PD1142-3	2	16.465	1.1584	0.2638	10139
148.25	PD1142-3	2	16.341	1.1556	0.2623	10043
147.67	20' x 3" omni whip	2	16.198	1.1522	0.2605	9944
147.00	10' 8-bay dipole	2	16.032	1.1482	0.2584	9843
135.00	3' HP dish	2	13.170	1.0639	0.2100	8558
129.00	SBNHH-1D65B	2	11.814	1.0088	0.1816	7281
128.00	Valmont VFA12-RRU	2	11.593	0.9986	0.1768	6877
124.00	PTP 58400	2	10.728	0.9549	0.1576	5406
120.00	3' HP dish	2	9.898	0.9072	0.1388	4422
119.00	2' HP dish	2	9.697	0.8948	0.1343	4229
117.33	20' x 2.5" omni whip	2	9.368	0.8736	0.1268	3942
116.00	3' HP dish	2	9.112	0.8564	0.1211	3740
115.50	4' HP dish	2	9.018	0.8498	0.1190	3670
115.00	17' x 2" omni whip	2	8.924	0.8432	0.1168	3602
114.83	17' x 2" omni whip	2	8.892	0.8410	0.1161	3579
114.00	15' x 2.5" omni whip	2	8.738	0.8299	0.1127	3475
112.33	20' x 2.5" omni whip	2	8.436	0.8074	0.1061	3315
109.33	17' x 2" omni whip	2	7.920	0.7662	0.0951	3301
109.16	17' x 2" omni whip	2	7.892	0.7639	0.0945	3314
109.00	15' x 2.5" omni whip	2	7.865	0.7616	0.0939	3328
107.33	20' x 2.5" omni whip	2	7.594	0.7384	0.0884	3554
107.00	20' x 2.5" omni whip	2	7.542	0.7338	0.0873	3614
104.00	20' x 2.5" omni whip	2	7.082	0.6933	0.0785	4386
103.67	17' x 2" omni whip	2	7.033	0.6889	0.0776	4494
103.50	17' x 2" omni whip	2	7.008	0.6867	0.0771	4550
102.33	20' x 2.5" omni whip	2	6.837	0.6719	0.0741	4956
102.00	20' x 2.5" omni whip	2	6.790	0.6678	0.0732	5076
98.00	17' x 2" omni whip	2	6.231	0.6230	0.0641	6281
97.83	2' standoff	2	6.208	0.6213	0.0638	6312

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
97.33	2' standoff	2	6.140	0.6164	0.0628	6395
97.00	20' x 2.5" omni whip	2	6.096	0.6132	0.0621	6442
92.00	20' x 2.5" omni whip	2	5.448	0.5711	0.0536	6956
87.00	20' x 2.5" omni whip	2	4.843	0.5370	0.0470	7507
86.50	17' x 2" omni whip	2	4.785	0.5338	0.0464	7566
85.00	3' HP dish	2	4.612	0.5245	0.0448	7752
82.25	17' x 2" omni whip	2	4.305	0.5076	0.0420	8093
78.00	2' standoff	2	3.852	0.4805	0.0383	8324
75.00	12' x 1.5" omni whip	2	3.548	0.4601	0.0359	8244
74.50	20' x 2.5" omni whip	2	3.499	0.4566	0.0355	8224
69.50	20' x 2.5" omni whip	2	3.025	0.4206	0.0319	8036
69.00	12' x 1.5" omni whip	2	2.979	0.4169	0.0315	8017
64.50	20' x 2.5" omni whip	2	2.588	0.3832	0.0285	7855
63.00	12' x 1.5" omni whip	2	2.465	0.3719	0.0275	7810
59.50	20' x 2.5" omni whip	2	2.190	0.3456	0.0252	7822
55.00	3' Yagi w/ spray	2	1.864	0.3122	0.0223	8178
54.50	20' x 2.5" omni whip	2	1.829	0.3085	0.0220	8229
51.67	.8M satellite dish	2	1.642	0.2881	0.0201	8531
46.00	3' Yagi	2	1.299	0.2487	0.0166	9207
42.00	8' x 1" omni whip	2	1.083	0.2227	0.0142	9697
38.00	8' x 1" omni whip	2	0.887	0.1985	0.0120	9771
34.00	8' x 1" omni whip	2	0.710	0.1759	0.0100	9412
32.00	MFBW7463 omni	2	0.629	0.1652	0.0091	9222
31.00	MFBW7463 omni	2	0.590	0.1599	0.0086	9130
30.00	MFBW7463 omni	2	0.553	0.1547	0.0082	9040
25.00	3' Yagi	2	0.388	0.1291	0.0062	8615

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	180	Leg	A325N	0.5625	3	1156.54	20128.90	0.057 ✔	1	Bolt DS
T2	170	Leg	A325N	0.5625	3	4500.37	20128.90	0.224 ✔	1	Bolt DS
T3	150	Leg	A325N	0.6250	4	18065.30	24850.50	0.727 ✔	1	Bolt DS
T4	130	Leg	A325N	1.0000	6	12340.60	53014.40	0.233 ✔	1	Bolt Tension
T5	110	Leg	A325N	1.0000	6	12549.90	53014.40	0.237 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	1	5659.06	12723.80	0.445 ✔	1	Member Bearing
T6	100	Leg	A325N	1.0000	6	16507.10	53014.40	0.311 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	1	4335.42	12723.80	0.341 ✔	1	Member Bearing
T7	80	Leg	A325N	1.0000	6	19820.50	53014.40	0.374 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	1	3732.82	12723.80	0.293 ✔	1	Member Bearing
T8	60	Leg	A325N	1.0000	6	22954.00	53014.40	0.433 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	1	4104.68	12723.80	0.323 ✔	1	Member Bearing
T9	40	Leg	A325N	1.0000	6	25981.60	53014.40	0.490 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	1	4345.82	12723.80	0.342 ✔	1	Member Bearing
T10	20	Leg	A325N	1.0000	6	28742.60	53014.40	0.542 ✔	1	Bolt Tension
		Diagonal	A325N	1.0000	1	5754.06	21206.30	0.271 ✔	1	Member Bearing

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load / Allowable	Allowable Ratio	Criteria

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	**180 - 170**	**Leg**	**1 1/2**	**3**	**-3750.26**	**37040.00**	**10.1**	**Pass**
		Diagonal	9/16	11	-702.30	3014.30	23.3	Pass
		Top Girt	3/4	4	-16.76	4365.65	0.4	Pass
		Bottom Girt	3/4	7	-180.25	4365.65	4.1	Pass
T2	**170 - 150**	**Leg**	**1 1/2**	**30**	**13501.10**	**41804.40**	**32.3**	**Pass**
		Diagonal	5/8	41	-1265.50	4574.55	27.7	Pass
		Top Girt	3/4	31	-218.60	4338.82	5.0	Pass
		Bottom Girt	3/4	34	-650.32	3329.59	19.5	Pass
T3	**150 - 130**	**Leg**	**1-1/2" SR with 1" SR**	**87**	**-36130.70**	**85202.30**	**42.4**	**Pass**
		Diagonal	3/4	98	-1843.60	7670.08	24.0	Pass
		Top Girt	7/8	88	-524.57	6372.94	8.2	Pass
		Bottom Girt	7/8	91	-974.68	5026.23	19.4	Pass
T4	**130 - 110**	**Leg**	**1-3/4" SR with 1" SR**	**144**	**-79889.30**	**117549.00**	**68.0**	**Pass**
		Diagonal	3/4	152	-3438.44	6841.00	50.3	Pass
		Top Girt	1	145	-1173.66	8574.52	13.7	Pass
		Bottom Girt	1	148	-1562.29	6935.24	22.5	Pass
T5	**110 - 100**	**Leg**	**Pirod 105244**	**201**	**-80789.80**	**142493.00**	**56.7**	**Pass**
		Diagonal	L2 1/2x2 1/2x3/16	204	-6249.32	12697.80	49.2	Pass
T6	**100 - 80**	**Leg**	**Pirod 105216 w/ (2) 1-1/4" tie rods**	**210**	**-107563.00**	**252244.00**	**42.6**	**Pass**
		Diagonal	L2 1/2x2 1/2x3/16	222	-4299.42	11091.80	38.8	Pass
T7	**80 - 60**	**Leg**	**Pirod 105216 w/ (2) 1-1/4" tie rods**	**225**	**-130531.00**	**252244.00**	**51.7**	**Pass**
		Diagonal	L2 1/2x2 1/2x3/16	230	-4019.24	8118.15	49.5	Pass
T8	**60 - 40**	**Leg**	**Pirod 105216 w/ (2) 1-1/4" tie rods**	**240**	**-152403.00**	**252244.00**	**60.4**	**Pass**
		Diagonal	L2 1/2x2 1/2x3/16	245	-4416.66	6524.21	67.7	Pass
T9	**40 - 20**	**Leg**	**Pirod 105217 w/ (2) 1-1/4" tie rods**	**255**	**-173817.00**	**324918.00**	**53.5**	**Pass**
		Diagonal	L3x3x3/16	260	-4732.43	9280.25	51.0	Pass
T10	**20 - 0**	**Leg**	**Pirod 105217 w/ (2) 1-1/4" tie rods**	**270**	**-193817.00**	**324918.00**	**59.7**	**Pass**
		Diagonal	L3x3x5/16	275	-6370.94	12157.80	52.4	Pass
						Summary		
						Leg (T4)	68.0	Pass
						Diagonal (T8)	67.7	Pass
						Top Girt (T4)	13.7	Pass
						Bottom Girt (T4)	22.5	Pass
						Bolt Checks	72.7	Pass
						RATING =	**72.7**	**Pass**

All-Points Technology Corp., P.C.
116 Grandview Road
Conway, NH 03818
(603) 496-5853

Client:	**Verizon Wireless**	Site No.:	**Wesleyan**
Job:	**Middletown, CT**	Job No.:	**CT141NB9294**
Calculated By:	**R. Adair**	Date:	**24-Dec-20**

Program assumes:

Mat is square in plan view.
Water table is below bottom of mat.
Unit weight of concrete = 150 pcf
Unit weight of soil = 100 pcf
Self-supporting tower with 3 piers

Information to be provided:

Pier is round or square in plan dimension ("R" or "S")	Shape =	R	
OTM = Overturning Moment to be resisted	OTM =	2624	ft-kips
H = Height from ground surface to top of mat (if buried	H =	2.5	ft.
P_M = Projection of pier above mat	P_M =	3.0	ft.
y = Thickness of mat	y =	2.50	ft.
x = Width of mat	x =	22.00	ft.
d = Diameter of round pier	d =	2.5	ft.
S = Size of tension bars	S =	8	

Mass of tower and appurtenances (below)

Results:

Component	Mass	Moment Arm	Moment Resist.
Pier	2.0 kips	11 ft.	21.9 ft-kips
Overburden	136.7 kips	11 ft.	1503.5 ft-kips
Mat	163.4 kips	11 ft.	1796.9 ft-kips

Overturning Moment Resistance = 3322.21 ft-kips
Factor of Safety = 1.3 SATISFACTORY
Concrete Quantity = 46.5 c.y.

April 09, 2021

Verizon Wireless
20 Alexander Drive
Wallingford, CT 06492

Attn: Mr. Andrew Leone

Re: Connecticut Siting Council Letter – LSub6 Project
Verizon Wireless Site I.D.: Wesleyan University CT
169 Cross Street
Middletown, CT 06457

Project/Location Code:	20202199130/470718
VZW FUZE I.D.:	16244634
APT Filing No.	CT141_11880

Dear Mr. Leone,

This letter is being provided to confirm that the mechanical characteristics of the Samsung 64T64R MMU antenna intended for utilization are comparable to the proposed Licensed Sub6 antenna noted within the following design documents prepared by All-Points Technology Corporation, P.C. (APT).

Referenced documentation is as follows:

- Construction Drawings, marked Rev0, dated 01/13/21.
- 180-ft Self-support tower structural analysis report, dated 12/24/20.

Please feel free to contact us should you have any questions pertaining to the above.

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

Michael S. Trodden, P.E.
Principal
Sr. Structural Engineer

STATE OF CONNECTICUT
MICHAEL TRODDEN
33313
LICENSED
PROFESSIONAL ENGINEER

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

Jason R. Mead
Department Manager/Structural Services

Maser Consulting Connecticut
2000 Midlantic Drive, Suite 100
Mt. Laurel, NJ 08054
856.797.0412
GDulnik@maserconsulting.com

Antenna Mount Analysis Report and PMI Requirements

Mount Analysis

SMART Tool Project #: 10019498
Maser Consulting Connecticut Project #: 20777390A

January 18, 2021

Site Information	*Site ID:*	*470718-VZW / Wesleyan University CT*
	Site Name:	*Wesleyan University CT*
	Carrier Name:	*Verizon Wireless*
	Address:	*169 Cross Street* *Middletown, Connecticut 06457* *Middlesex County*
	Latitude:	*41.55137166°*
	Longitude:	*-72.66213527°*
Structure Information	*Tower Type:*	*Self-Support*
	Mount Type:	*12.50-Ft Sector Frame*

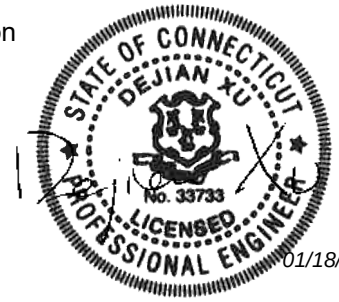
FUZE ID # 16244634

Analysis Results

Sector Frame: **33.7% Pass**

******Contractor PMI Requirements***:
Included at the end of this MA report
Available & Submitted via portal at https://pmi.vzwsmart.com
Contractor - Please Review Specific Site PMI Requirements Upon Award
Requirements also Noted on Mount Modification Drawings
Requirements may also be Noted on A & E drawings

Report Prepared By: Morgan Chatmon



01/18/2021

Executive Summary:

The objective of this report is to determine the capacity of the antenna support mount at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

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

Sources of Information:

Document Type	Remarks
Radio Frequency Data Sheet (RFDS)	*Verizon RFDS Site ID: 5035804* *Dated November 18, 2020*
Mount Mapping Report	*Delta Oaks Group, Site ID: 470718* *Dated November 11, 2020*
Construction Drawings	*All Points Technology Corporation Filing No. CT141_11880* *Dated January 13, 2021*

Analysis Criteria:

Codes and Standards:	ANSI/TIA-222-H	
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT}:	129 mph
	Ice Wind Speed (3-sec. Gust):	50 mph
	Design Ice Thickness:	1.00 in
	Risk Category:	III
	Exposure Category:	C
	Topographic Category:	1
	Topographic Feature Considered:	N/A
	Topographic Method:	N/A
	Ground Elevation Factor, K_e:	0.994
Seismic Parameters:	S_S:	0.209
	S_1:	0.055
Maintenance Parameters:	Wind Speed (3-sec. Gust):	30 mph
	Maintenance Live Load, Lv:	250 lbs.
	Maintenance Live Load, Lm:	500 lbs.
Analysis Software:	RISA-3D (V17)	

Final Loading Configuration:

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

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
128.20	129.00	6	Commscope	JAHH-65B-R3B	Added
		3	-	Licensed Sub 6 Antennas	
		3	Samsung	B2/B66A RRH-BR049	
		3	Samsung	B5/B13 RRH-BR04C	
		1	Raycap	RVZDC-6627-PF-48	
		3	Commscope	CBC78T-DS-43-2X	
		3	Andrew	SBNHH-1D65B	Retained

Standard Conditions:

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

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

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

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

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

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

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

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

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

Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Maser Consulting Connecticut.

Analysis Results:

Component	Utilization %	Pass/Fail
Standoff Diagonal	*6.2*	*Pass*
Standoff Vertical	*7.0*	*Pass*
Standoff Horizontal	*30.8*	*Pass*
Standoff Plate	*33.7*	*Pass*
Face Horizonal	*21.3*	*Pass*
Mount Pipe	*28.5*	*Pass*
Tie Back	*6.7*	*Pass*
Mount Connection	*11.5*	*Pass*

Structure Rating – *(Controlling Utilization of all Components)*	**33.7%**

Recommendation:

The existing mounts are **SUFFICIENT** for the final loading configuration and do not require modifications.

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

Attachments:

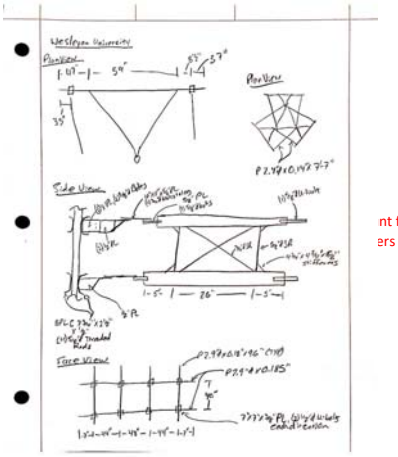
1. Mount Photos
2. Mount Mapping Report (for reference only)
3. Analysis Calculations
4. **Contractor Required Post Installation Inspection (PMI) Report Deliverables**
5. Antenna Placement Diagrams
6. TIA Adoption and Wind Speed Usage Letter

V3.0 Updated on 8-31-2020

Antenna Mount Mapping Form (PATENT PENDING)

FCC #

Tower Owner:	City of Middletown	**Mapping Date:**	11/11/2020
Site Name:	Wesleyan University CT	**Tower Type:**	Self Support
Site Number or ID:	470718	**Tower Height (Ft.):**	Unknown
Mapping Contractor:	Delta Oaks Group	**Mount Elevation (Ft.):**	129



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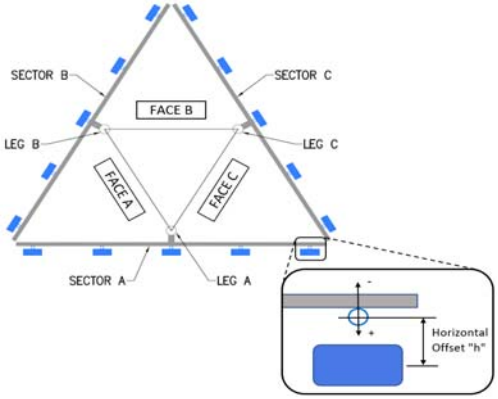
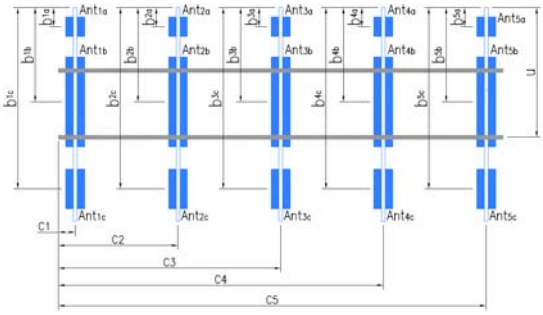
Scanned with CamScanner





Antenna Layout (Looking Out From Tower)

Mount Pipe Configuration and Geometries [Unit = Inches]

Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."	Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."
A1	2.9"x0.18"x96"	68.00	7.00	C1	2.9"x0.18"x96"	68.00	7.00
A2	2.9"x0.18"x96"	68.00	51.00	C2	2.9"x0.18"x96"	68.00	51.00
A3	2.9"x0.18"x96"	68.00	99.00	C3	2.9"x0.18"x96"	68.00	99.00
A4	2.9"x0.18"x96"	68.00	143.00	C4	2.9"x0.18"x96"	68.00	143.00
A5				C5			
A6				C6			
B1	2.9"x0.18"x96"	68.00	7.00	D1			
B2	2.9"x0.18"x96"	68.00	51.00	D2			
B3	2.9"x0.18"x96"	68.00	99.00	D3			
B4	2.9"x0.18"x96"	68.00	143.00	D4			
B5				D5			
B6				D6			

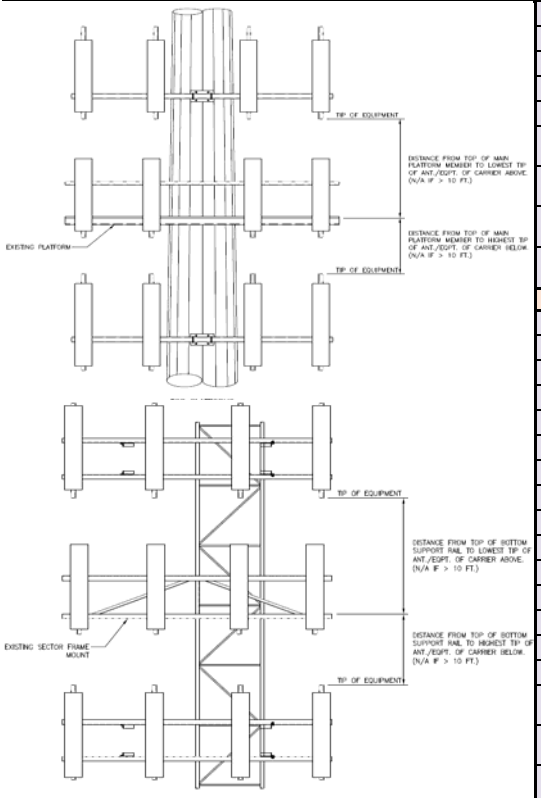
Distance between bottom rail and mount CL elevation (dim d). Unit is inches. See 'Mount Elev Ref' tab for details. :	20.00
Distance from top of bottom support rail to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.) :	72
Distance from top of bottom support rail to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.) :	36
Please enter additional infomation or comments below.	
(1) RCMDC-6627-PF-48 ON THE B MOUNT ARM	

Tower Face Width at Mount Elev. (ft.):	4.5	Tower Leg Size or Pole Shaft Diameter at Mount Elev. (in.):	1.75

	Enter antenna model. If not labeled, enter "Unknown".						Mounting Locations [Units are inches and degrees]			Photos of antennas
Ants. Items	Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Antenna Center-line (Ft.)	Vertical Distances"b_{1a}, b_{2a}, b_{3a}, b_{1b}...." (Inches)	Horiz. Offset "h" (Use "-" if Ant. is behind)	Antenna Azimuth (Degrees)	Photo Numbers
Sector A										
Ant_{1a}	UHIE B66A RRH 4X45	11.80	7.20	25.80	1 7/8" Hyb	129.333	44.00	-7.00		92
Ant_{1b}										
Ant_{1c}										
Ant_{2a}	SBNHH-1D65B	11.90	7.10	72.00		130.5	30.00	9.00	30.00	115
Ant_{2b}	SBNHH-1D65B	11.90	7.10	72.00		130.5	30.00	9.00	30.00	117
Ant_{2c}										
Ant_{3a}	SBNHH-1D65B	11.90	7.10	72.00		130.5	30.00	9.00	30.00	128
Ant_{3b}	SBNHH-1D65B	11.90	7.10	72.00		130.5	30.00	9.00	30.00	130
Ant_{3c}	B13 RRH 4X30	11.80	7.50	20.90		129.667	40.00	-7.00		137
Ant_{4a}										
Ant_{4b}										
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										

Mount Azimuth (Degree) for Each Sector			Tower Leg Azimuth (Degree) for Each Sector	
Sector A:	30.00	Deg	Leg A:	30.00	Deg
Sector B:	150.00	Deg	Leg B:	150.00	Deg
Sector C:	270.00	Deg	Leg C:	270.00	Deg
Sector D:		Deg	Leg D:		Deg

Climbing Facility Information		
Location:	270, 330 Deg	Outside Face C
Climbing Facility	Corrosion Type:	Good condition.
	Access:	Climbing path was unobstructed.
	Condition:	Good condition.



Sector B										
Ant_{1a}	UHIE B66A RRH 4X45	11.80	7.20	25.80		129.333	44.00	-7.00		270
Ant_{1b}										
Ant_{1c}										
Ant_{2a}	SBNHH-1D65B	11.90	7.10	72.00		130.5	30.00	9.00	150.00	272
Ant_{2b}	SBNHH-1D65B	11.90	7.10	72.00		130.5	30.00	9.00	150.00	274
Ant_{2c}										
Ant_{3a}	SBNHH-1D65B	11.90	7.10	72.00		130.5	30.00	9.00	150.00	299
Ant_{3b}	SBNHH-1D65B	11.90	7.10	72.00		130.5	30.00	9.00	150.00	301
Ant_{3c}	B13 RRH 4X30	11.80	7.50	20.90		129.667	40.00	-7.00		304
Ant_{4a}										
Ant_{4b}										
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										
Sector C										
Ant_{1a}	UHIE B66A RRH 4X45	11.80	7.20	25.80		129.333	44.00	-7.00		311
Ant_{1b}										
Ant_{1c}										
Ant_{2a}	SBNHH-1D65B	11.90	7.10	72.00		130.5	30.00	9.00	270.00	316
Ant_{2b}	SBNHH-1D65B	11.90	7.10	72.00		130.5	30.00	9.00	270.00	319
Ant_{2c}										
Ant_{3a}	SBNHH-1D65B	11.90	7.10	72.00		130.5	30.00	9.00	270.00	321
Ant_{3b}	SBNHH-1D65B	11.90	7.10	72.00		130.5	30.00	9.00	270.00	323
Ant_{3c}	B13 RRH 4X30	11.80	7.50	20.90		129.667	40.00	-7.00		325
Ant_{4a}										
Ant_{4b}										
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										
Sector D										
Ant_{1a}										
Ant_{1b}										
Ant_{1c}										
Ant_{2a}										
Ant_{2b}										
Ant_{2c}										
Ant_{3a}										
Ant_{3b}										
Ant_{3c}										
Ant_{4a}										
Ant_{4b}										
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										

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

1	The top cap of the safety cable system is damaged.	335
2	Corrosion on mount bracket.	329
3		
4		
5		
6		
7		
8		

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

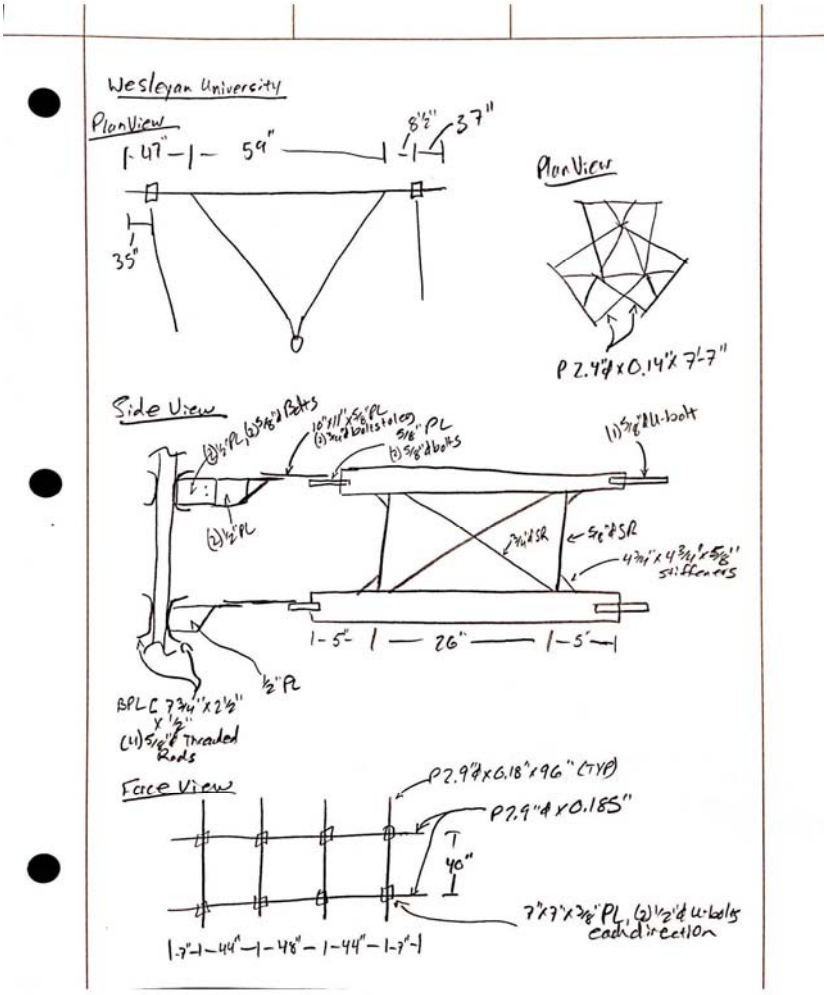
Standard Conditions
1. Obvious safety and structural issues/deficiencies noticed at the time of the mount mapping are to be reported in this mapping. However, this mount mapping is not a condition assessment of the mount.

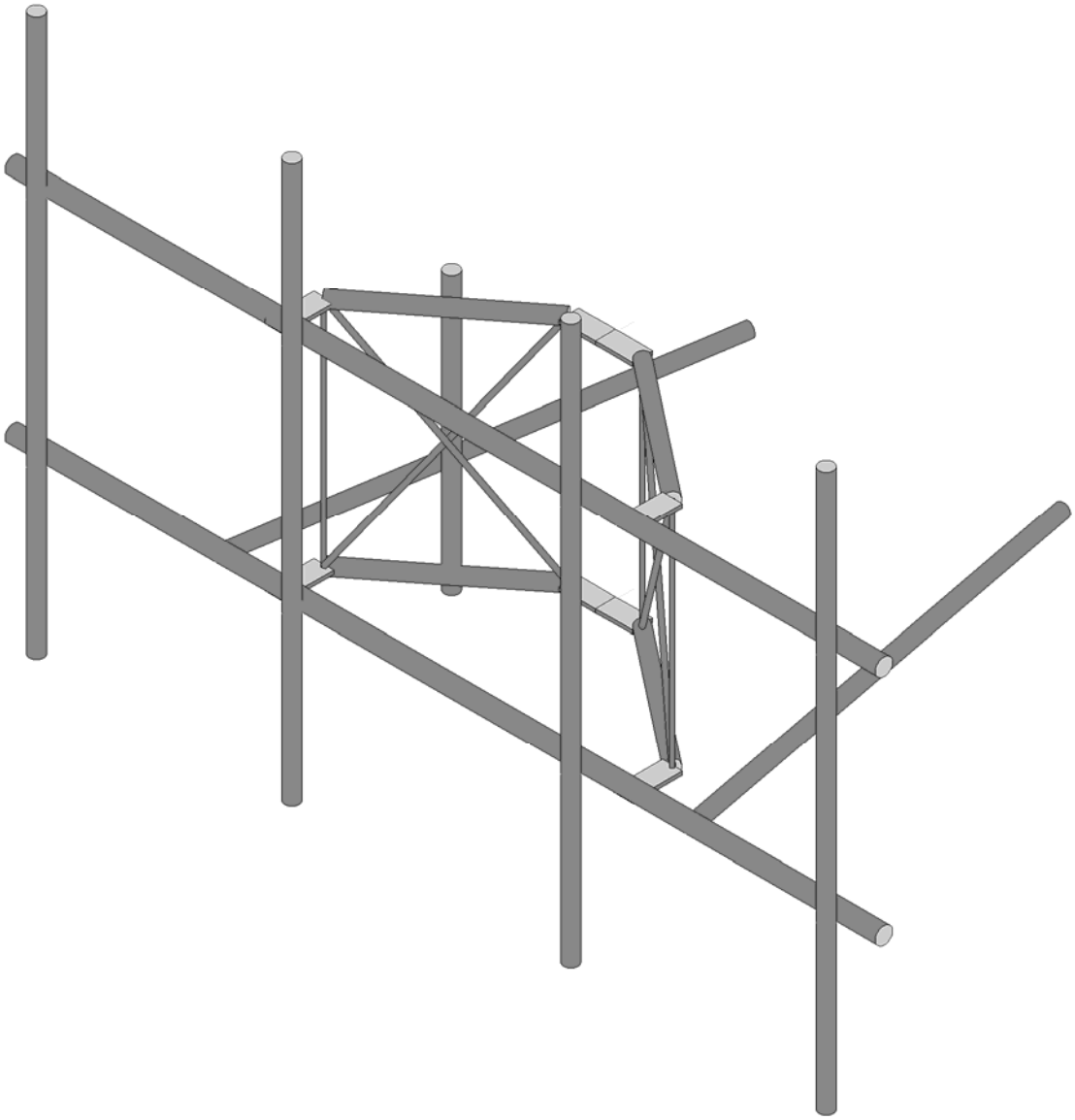
Antenna Mount Mapping Form (PATENT PENDING)

FCC #

Tower Owner:	City of Middletown	**Mapping Date:**	11/11/2020
Site Name:	Wesleyan University CT	**Tower Type:**	Self Support
Site Number or ID:	470718	**Tower Height (Ft.):**	Unknown
Mapping Contractor:	Delta Oaks Group	**Mount Elevation (Ft.):**	129

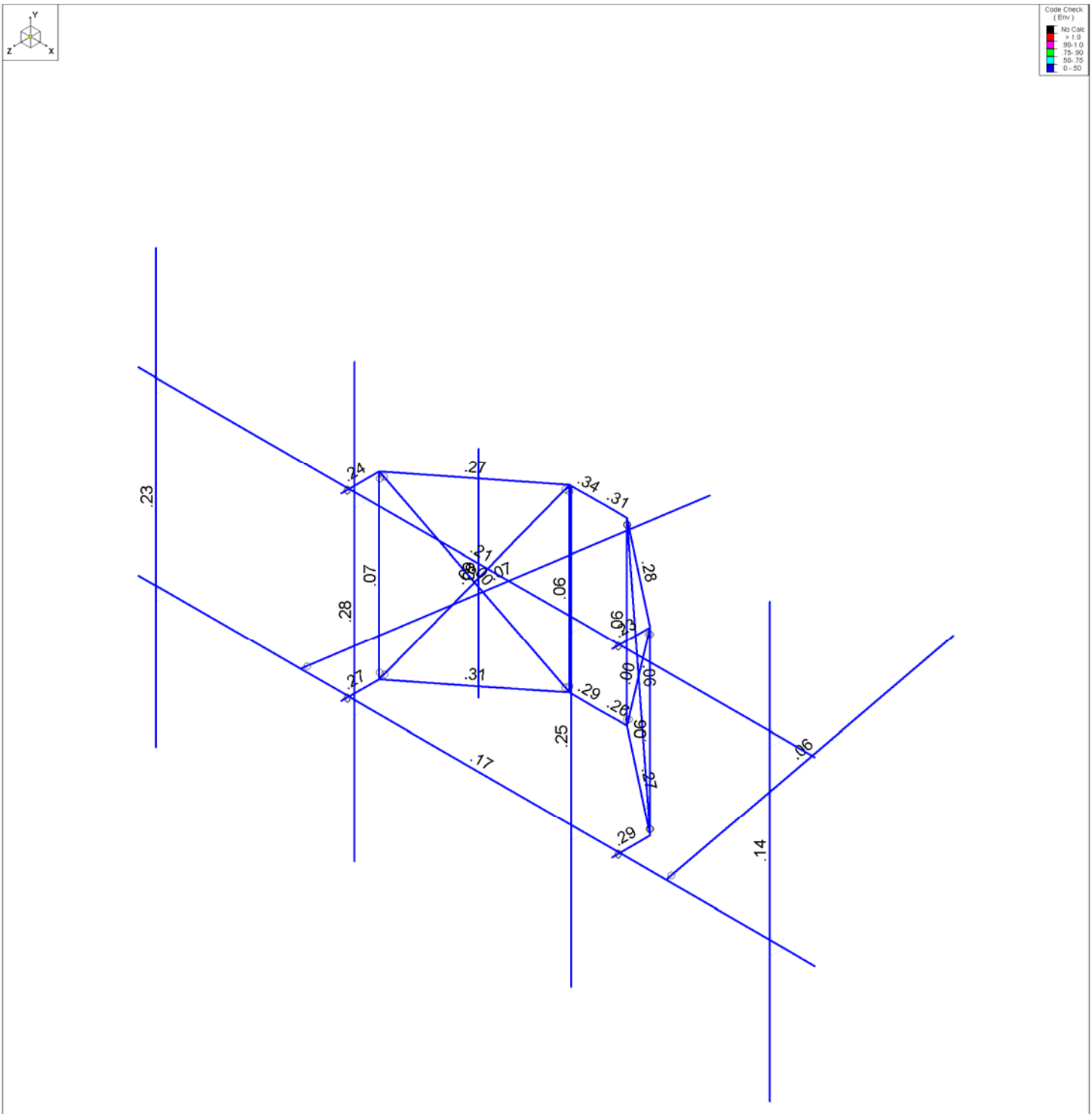
Please Insert Sketches of the Antenna Mount





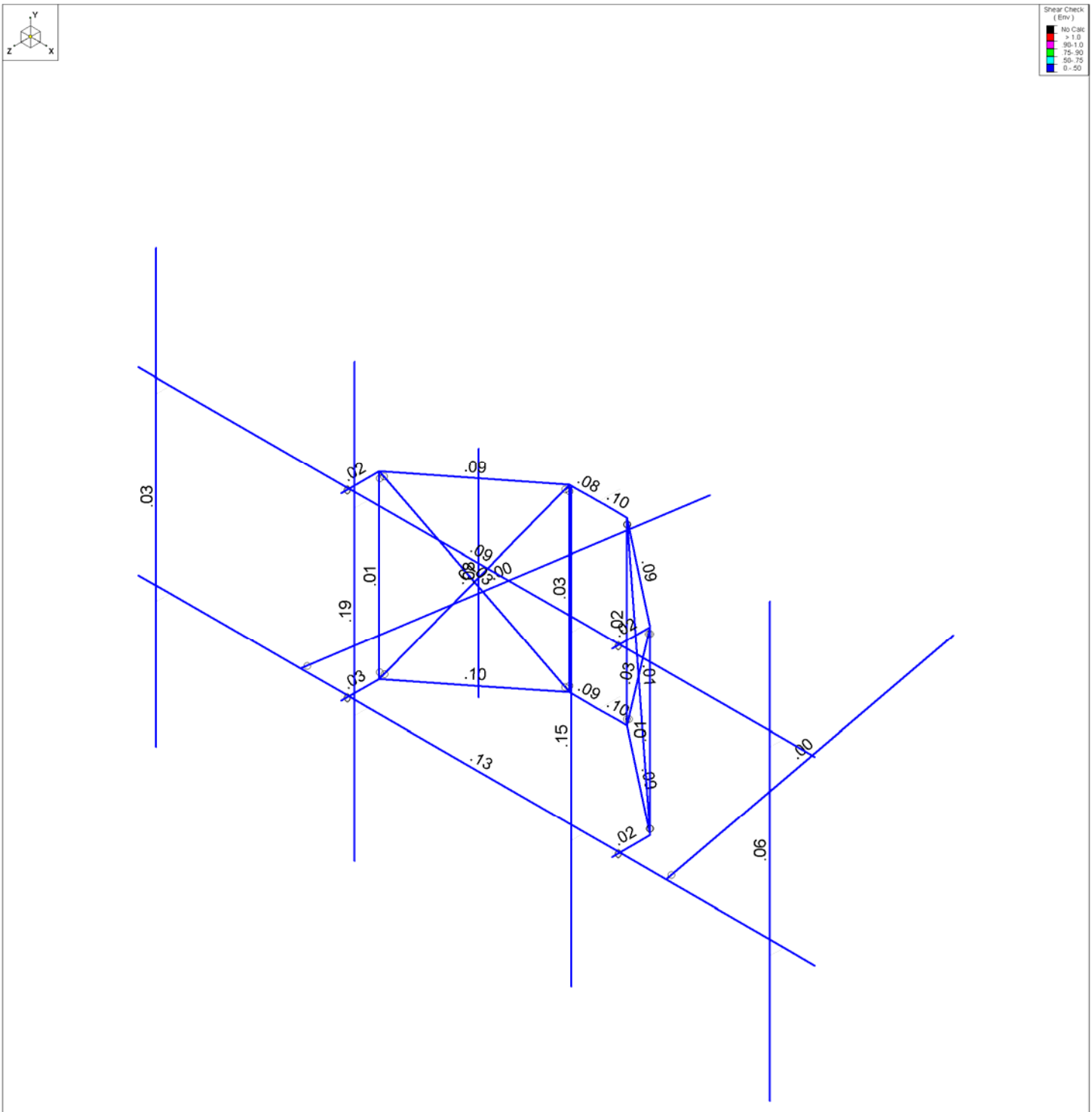
Envelope Only Solution

		SK - 1
		Jan 18, 2021 at 12:55 PM
	Rendered Model	470718-VZW_MT_LOT_A_H.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

		SK - 2
		Jan 18, 2021 at 12:55 PM
	Bending Check	470718-VZW_MT_LOT_A_H.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

		SK - 3
		Jan 18, 2021 at 12:55 PM
	Shear Check	470718-VZW_MT_LOT_A_H.r3d

Basic Load Cases

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

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
54	Structure Wi (30 Deg)	None						58		
55	Structure Wi (60 Deg)	None						58		
56	Structure Wi (90 Deg)	None						58		
57	Structure Wi (120 De...	None						58		
58	Structure Wi (150 De...	None						58		
59	Structure Wi (180 De...	None						58		
60	Structure Wi (210 De...	None						58		
61	Structure Wi (240 De...	None						58		
62	Structure Wi (270 De...	None						58		
63	Structure Wi (300 De...	None						58		
64	Structure Wi (330 De...	None						58		
65	Structure Wm (0 Deg)	None						58		
66	Structure Wm (30 De...	None						58		
67	Structure Wm (60 De...	None						58		
68	Structure Wm (90 De...	None						58		
69	Structure Wm (120 D...	None						58		
70	Structure Wm (150 D...	None						58		
71	Structure Wm (180 D...	None						58		
72	Structure Wm (210 D...	None						58		
73	Structure Wm (240 D...	None						58		
74	Structure Wm (270 D...	None						58		
75	Structure Wm (300 D...	None						58		
76	Structure Wm (330 D...	None						58		
77	Lm1	None					1			
78	Lm2	None					1			
79	Lv1	None					1			
80	Lv2	None					1			

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.2D+1.0Wo (0 Deg)	Yes	Y		1	1.2	39	1.2	3	1	41	1														
2	1.2D+1.0Wo (30 Deg)	Yes	Y		1	1.2	39	1.2	4	1	42	1														
3	1.2D+1.0Wo (60 Deg)	Yes	Y		1	1.2	39	1.2	5	1	43	1														
4	1.2D+1.0Wo (90 Deg)	Yes	Y		1	1.2	39	1.2	6	1	44	1														
5	1.2D+1.0Wo (120 Deg)	Yes	Y		1	1.2	39	1.2	7	1	45	1														
6	1.2D+1.0Wo (150 Deg)	Yes	Y		1	1.2	39	1.2	8	1	46	1														
7	1.2D+1.0Wo (180 Deg)	Yes	Y		1	1.2	39	1.2	9	1	47	1														
8	1.2D+1.0Wo (210 Deg)	Yes	Y		1	1.2	39	1.2	10	1	48	1														
9	1.2D+1.0Wo (240 Deg)	Yes	Y		1	1.2	39	1.2	11	1	49	1														
10	1.2D+1.0Wo (270 Deg)	Yes	Y		1	1.2	39	1.2	12	1	50	1														
11	1.2D+1.0Wo (300 Deg)	Yes	Y		1	1.2	39	1.2	13	1	51	1														
12	1.2D+1.0Wo (330 Deg)	Yes	Y		1	1.2	39	1.2	14	1	52	1														
13	1.2D + 1.0Di + 1.0Wi (0 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	15	1	53	1										
14	1.2D + 1.0Di + 1.0Wi (30 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	16	1	54	1										
15	1.2D + 1.0Di + 1.0Wi (60 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	17	1	55	1										
16	1.2D + 1.0Di + 1.0Wi (90 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	18	1	56	1										
17	1.2D + 1.0Di + 1.0Wi (120 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	19	1	57	1										
18	1.2D + 1.0Di + 1.0Wi (150 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	20	1	58	1										
19	1.2D + 1.0Di + 1.0Wi (180 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	21	1	59	1										
20	1.2D + 1.0Di + 1.0Wi (210 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	22	1	60	1										
21	1.2D + 1.0Di + 1.0Wi (240 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	23	1	61	1										
22	1.2D + 1.0Di + 1.0Wi (270 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	24	1	62	1										
23	1.2D + 1.0Di + 1.0Wi (300 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	25	1	63	1										
24	1.2D + 1.0Di + 1.0Wi (330 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	26	1	64	1										
25	1.2D + 1.5Lm1 + 1.0Wm (0 Deg)	Yes	Y		1	1.2	39	1.2	77	1.5	27	1	65	1												

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
26	1.2D + 1.5Lm1 + 1.0Wm (30 D...	Yes	Y		1	1.2	39	1.2	77	1.5	28	1	66	1										
27	1.2D + 1.5Lm1 + 1.0Wm (60 D...	Yes	Y		1	1.2	39	1.2	77	1.5	29	1	67	1										
28	1.2D + 1.5Lm1 + 1.0Wm (90 D...	Yes	Y		1	1.2	39	1.2	77	1.5	30	1	68	1										
29	1.2D + 1.5Lm1 + 1.0Wm (120 ...	Yes	Y		1	1.2	39	1.2	77	1.5	31	1	69	1										
30	1.2D + 1.5Lm1 + 1.0Wm (150 ...	Yes	Y		1	1.2	39	1.2	77	1.5	32	1	70	1										
31	1.2D + 1.5Lm1 + 1.0Wm (180 ...	Yes	Y		1	1.2	39	1.2	77	1.5	33	1	71	1										
32	1.2D + 1.5Lm1 + 1.0Wm (210 ...	Yes	Y		1	1.2	39	1.2	77	1.5	34	1	72	1										
33	1.2D + 1.5Lm1 + 1.0Wm (240 ...	Yes	Y		1	1.2	39	1.2	77	1.5	35	1	73	1										
34	1.2D + 1.5Lm1 + 1.0Wm (270 ...	Yes	Y		1	1.2	39	1.2	77	1.5	36	1	74	1										
35	1.2D + 1.5Lm1 + 1.0Wm (300 ...	Yes	Y		1	1.2	39	1.2	77	1.5	37	1	75	1										
36	1.2D + 1.5Lm1 + 1.0Wm (330 ...	Yes	Y		1	1.2	39	1.2	77	1.5	38	1	76	1										
37	1.2D + 1.5Lm2 + 1.0Wm (0 Deg)	Yes	Y		1	1.2	39	1.2	78	1.5	27	1	65	1										
38	1.2D + 1.5Lm2 + 1.0Wm (30 D...	Yes	Y		1	1.2	39	1.2	78	1.5	28	1	66	1										
39	1.2D + 1.5Lm2 + 1.0Wm (60 D...	Yes	Y		1	1.2	39	1.2	78	1.5	29	1	67	1										
40	1.2D + 1.5Lm2 + 1.0Wm (90 D...	Yes	Y		1	1.2	39	1.2	78	1.5	30	1	68	1										
41	1.2D + 1.5Lm2 + 1.0Wm (120 ...	Yes	Y		1	1.2	39	1.2	78	1.5	31	1	69	1										
42	1.2D + 1.5Lm2 + 1.0Wm (150 ...	Yes	Y		1	1.2	39	1.2	78	1.5	32	1	70	1										
43	1.2D + 1.5Lm2 + 1.0Wm (180 ...	Yes	Y		1	1.2	39	1.2	78	1.5	33	1	71	1										
44	1.2D + 1.5Lm2 + 1.0Wm (210 ...	Yes	Y		1	1.2	39	1.2	78	1.5	34	1	72	1										
45	1.2D + 1.5Lm2 + 1.0Wm (240 ...	Yes	Y		1	1.2	39	1.2	78	1.5	35	1	73	1										
46	1.2D + 1.5Lm2 + 1.0Wm (270 ...	Yes	Y		1	1.2	39	1.2	78	1.5	36	1	74	1										
47	1.2D + 1.5Lm2 + 1.0Wm (300 ...	Yes	Y		1	1.2	39	1.2	78	1.5	37	1	75	1										
48	1.2D + 1.5Lm2 + 1.0Wm (330 ...	Yes	Y		1	1.2	39	1.2	78	1.5	38	1	76	1										
49	1.2D + 1.5Lv1	Yes	Y		1	1.2	39	1.2	79	1.5														
50	1.2D + 1.5Lv2	Yes	Y		1	1.2	39	1.2	80	1.5														
51	1.4D	Yes	Y		1	1.4	39	1.4																
52	Seismic Mass		Y		1	1	39	1																
53	1.2D + 1.0Ev + 1.0Eh (0 Deg)		Y		1	1.2	39	1.2	SX		SY	1	SZ	-1										
54	1.2D + 1.0Ev + 1.0Eh (30 Deg)		Y		1	1.2	39	1.2	SX	.5	SY	1	SZ	-.8...										
55	1.2D + 1.0Ev + 1.0Eh (60 Deg)		Y		1	1.2	39	1.2	SX	.866	SY	1	SZ	-.5										
56	1.2D + 1.0Ev + 1.0Eh (90 Deg)		Y		1	1.2	39	1.2	SX	1	SY	1	SZ											
57	1.2D + 1.0Ev + 1.0Eh (120 Deg)		Y		1	1.2	39	1.2	SX	.866	SY	1	SZ	.5										
58	1.2D + 1.0Ev + 1.0Eh (150 Deg)		Y		1	1.2	39	1.2	SX	.5	SY	1	SZ	.866										
59	1.2D + 1.0Ev + 1.0Eh (180 Deg)		Y		1	1.2	39	1.2	SX		SY	1	SZ	1										
60	1.2D + 1.0Ev + 1.0Eh (210 Deg)		Y		1	1.2	39	1.2	SX	-.5	SY	1	SZ	.866										
61	1.2D + 1.0Ev + 1.0Eh (240 Deg)		Y		1	1.2	39	1.2	SX	-.8...	SY	1	SZ	.5										
62	1.2D + 1.0Ev + 1.0Eh (270 Deg)		Y		1	1.2	39	1.2	SX	-1	SY	1	SZ											
63	1.2D + 1.0Ev + 1.0Eh (300 Deg)		Y		1	1.2	39	1.2	SX	-.8...	SY	1	SZ	-.5										
64	1.2D + 1.0Ev + 1.0Eh (330 Deg)		Y		1	1.2	39	1.2	SX	-.5	SY	1	SZ	-.8...										

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	3.416667	0.145833	8.364383	0	
2	N2	-9.083333	0.145833	8.364383	0	
3	N3	3.416667	3.479167	8.364383	0	
4	N4	-9.083333	3.479167	8.364383	0	
5	N5	-8.5	0.145833	8.364383	0	
6	N6	-8.5	3.479167	8.364383	0	
7	N7	-4.833333	0.145833	8.364383	0	
8	N8	-4.833333	3.479167	8.364383	0	
9	N9	-0.833333	0.145833	8.364383	0	
10	N10	-0.833333	3.479167	8.364383	0	
11	N11	2.833333	0.145833	8.364383	0	
12	N12	2.833333	3.479167	8.364383	0	
13	N13	-8.5	0.145833	8.614383	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
14	N14	-8.5	3.479167	8.614383	0	
15	N15	-4.833333	0.145833	8.614383	0	
16	N16	-4.833333	3.479167	8.614383	0	
17	N17	-0.833333	0.145833	8.614383	0	
18	N18	-0.833333	3.479167	8.614383	0	
19	N19	2.833333	0.145833	8.614383	0	
20	N20	2.833333	3.479167	8.614383	0	
21	N21	-5.333333	0	8.364417	0	
22	N22	-5.333333	3.333333	8.364417	0	
23	N23	-0.333333	0	8.364383	0	
24	N24	-0.333333	3.333333	8.364417	0	
25	N25	-5.333333	0	7.661458	0	
26	N26	-5.333333	3.333333	7.661458	0	
27	N27	-0.333333	0	7.661458	0	
28	N28	-0.333333	3.333333	7.661458	0	
29	N29	-2.833333	0	6.119792	0	
30	N30	-2.833333	3.333333	6.119792	0	
31	N31	-3.364583	0	6.119792	0	
32	N32	-3.364583	3.333333	6.119792	0	
33	N33	-2.302083	0	6.119792	0	
34	N34	-2.302083	3.333333	6.119792	0	
35	N35	-2.833333	0	5.703125	0	
36	N36	-2.833333	3.333333	5.703125	0	
37	N37	-6.083328	0.145833	8.364383	0	
38	N38	0.66666	0.145833	8.364383	0	
39	N39	-8.5	5.8125	8.614383	0	
40	N40	-4.833333	5.8125	8.614383	0	
41	N41	-0.833333	5.8125	8.614383	0	
42	N42	2.833333	5.8125	8.614383	0	
43	N43	-8.5	-2.1875	8.614383	0	
44	N44	-4.833333	-2.1875	8.614383	0	
45	N45	-0.833333	-2.1875	8.614383	0	
46	N46	2.833333	-2.1875	8.614383	0	
47	N58	-5.333333	3.333333	7.708333	0	
48	N76	-2.927083	0	6.119792	0	
49	N77	-3.229167	0	6.119792	0	
50	N78	-2.739583	0	6.119792	0	
51	N79	-2.4375	0	6.119792	0	
52	N80	-2.927083	3.333333	6.119792	0	
53	N81	-3.229167	3.333333	6.119792	0	
54	N82	-2.739583	3.333333	6.119792	0	
55	N83	-2.4375	3.333333	6.119792	0	
56	N58A	-2.833333	3.479167	8.364383	0	
57	N59	-5.333333	0.145833	8.364383	0	
58	N60	-5.333333	3.479167	8.364383	0	
59	N61	-0.333333	0.145833	8.364383	0	
60	N62	-0.333333	3.479167	8.364383	0	
61	N63	-5.083333	0.145834	1.806011	0	
62	N66	-0.583333	0.145834	1.806011	0	
63	N69	-4.348958	3.333333	6.890625	0	
64	N70	-4.348958	0	6.890625	0	
65	N71	-4.453125	3.333333	6.710203	0	
66	N73	-4.453125	0	6.710203	0	
67	N73A	-4.453125	3.666667	6.710203	0	
68	N74	-4.453125	-0.333333	6.710203	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Antenna Pipe	PIPE_2.0	Beam	Pipe	A53 Gr. B	Typical	1.02	.627	.627	1.25
2	Horizontal mount pipe	PIPE_2.5	Beam	Pipe	Q235	Typical	1.61	1.45	1.45	2.89
3	Standoff Horizontal	PIPE_2.0	Beam	Pipe	Q235	Typical	1.02	.627	.627	1.25
4	Standoff Diagonal	SR_0.75	Beam	BAR	Q235	Typical	.442	.016	.016	.031
5	Tieback	PIPE_2.0	Beam	Pipe	Q235	Typical	1.02	.627	.627	1.25
6	Standoff Vertical	SR_0.625	Beam	BAR	Q235	Typical	.307	.007	.007	.015
7	Standoff Plate	PL5/8X3.5	Beam	BAR	Q235	Typical	2.188	.071	2.233	.253

Hot Rolled Steel Properties

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

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N2	N1			Horizontal mo...	Beam	Pipe	Q235	Typical
2	M2	N4	N3			Horizontal mo...	Beam	Pipe	Q235	Typical
3	M3	N5	N13			RIGID	None	None	RIGID	Typical
4	M4	N6	N14			RIGID	None	None	RIGID	Typical
5	M5	N8	N16			RIGID	None	None	RIGID	Typical
6	M6	N7	N15			RIGID	None	None	RIGID	Typical
7	M9	N10	N18			RIGID	None	None	RIGID	Typical
8	M10	N9	N17			RIGID	None	None	RIGID	Typical
9	M11	N12	N20			RIGID	None	None	RIGID	Typical
10	M12	N11	N19			RIGID	None	None	RIGID	Typical
11	M13	N22	N26		90	Standoff Plate	Beam	BAR	Q235	Typical
12	M14	N21	N25		90	Standoff Plate	Beam	BAR	Q235	Typical
13	M15	N23	N27		90	Standoff Plate	Beam	BAR	Q235	Typical
14	M16	N24	N28		90	Standoff Plate	Beam	BAR	Q235	Typical
15	M17	N26	N32			Standoff Horiz...	Beam	Pipe	Q235	Typical
16	M18	N25	N31			Standoff Horiz...	Beam	Pipe	Q235	Typical
17	M19	N27	N33			Standoff Horiz...	Beam	Pipe	Q235	Typical
18	M20	N28	N34			Standoff Horiz...	Beam	Pipe	Q235	Typical
19	M21	N32	N30		90	Standoff Plate	Beam	BAR	Q235	Typical
20	M22	N34	N30		90	Standoff Plate	Beam	BAR	Q235	Typical
21	M23	N31	N29		90	Standoff Plate	Beam	BAR	Q235	Typical
22	M24	N33	N29		90	Standoff Plate	Beam	BAR	Q235	Typical
23	M25	N31	N26			Standoff Diago...	Beam	BAR	Q235	Typical
24	M26	N32	N25			Standoff Diago...	Beam	BAR	Q235	Typical
25	M27	N33	N28			Standoff Diago...	Beam	BAR	Q235	Typical
26	M28	N27	N34			Standoff Diago...	Beam	BAR	Q235	Typical
27	M29	N29	N35			RIGID	None	None	RIGID	Typical
28	M30	N30	N36			RIGID	None	None	RIGID	Typical
29	M31	N37	N63			Tieback	Beam	Pipe	Q235	Typical
30	M32	N38	N66			Tieback	Beam	Pipe	Q235	Typical
31	MP4A	N39	N43			Antenna Pipe	Beam	Pipe	A53 Gr. B	Typical
32	MP3A	N40	N44			Antenna Pipe	Beam	Pipe	A53 Gr. B	Typical
33	MP2A	N41	N45			Antenna Pipe	Beam	Pipe	A53 Gr. B	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
34	MP1A	N42	N46			Antenna Pipe	Beam	Pipe	A53 Gr. B	Typical
35	M44	N25	N26			Standoff Vertical	Beam	BAR	Q235	Typical
36	M45	N31	N32			Standoff Vertical	Beam	BAR	Q235	Typical
37	M46	N33	N34			Standoff Vertical	Beam	BAR	Q235	Typical
38	M47	N27	N28			Standoff Vertical	Beam	BAR	Q235	Typical
39	M47B	N22	N60			RIGID	None	None	RIGID	Typical
40	M48A	N21	N59			RIGID	None	None	RIGID	Typical
41	M49A	N24	N62			RIGID	None	None	RIGID	Typical
42	M50A	N23	N61			RIGID	None	None	RIGID	Typical
43	M43	N69	N71			RIGID	None	None	RIGID	Typical
44	M44A	N70	N73			RIGID	None	None	RIGID	Typical
45	M45A	N73A	N74			Antenna Pipe	Beam	Pipe	A53 Gr. B	Typical
46	M46A	N30	N36			RIGID	None	None	RIGID	Typical
47	M47A	N29	N35			RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes				None
2	M2						Yes				None
3	M3						Yes	** NA **			None
4	M4						Yes	** NA **			None
5	M5						Yes	** NA **			None
6	M6						Yes	** NA **			None
7	M9						Yes	** NA **			None
8	M10						Yes	** NA **			None
9	M11						Yes	** NA **			None
10	M12						Yes	** NA **			None
11	M13	OOOXOX					Yes	Default			None
12	M14	OOOXOX					Yes	Default			None
13	M15	OOOXOX					Yes				None
14	M16	OOOXOX					Yes				None
15	M17						Yes	Default			None
16	M18						Yes				None
17	M19						Yes				None
18	M20						Yes	Default			None
19	M21						Yes	Default			None
20	M22						Yes				None
21	M23						Yes				None
22	M24						Yes				None
23	M25	BenPIN	BenPIN			Euler Buc...	Yes	Default			None
24	M26	BenPIN	BenPIN			Euler Buc...	Yes	Default			None
25	M27	BenPIN	BenPIN			Euler Buc...	Yes				None
26	M28	BenPIN	BenPIN			Euler Buc...	Yes				None
27	M29						Yes	** NA **		Inactive	None
28	M30						Yes	** NA **		Inactive	None
29	M31	BenPIN					Yes	Default			None
30	M32	BenPIN					Yes	Default			None
31	MP4A						Yes				None
32	MP3A						Yes				None
33	MP2A						Yes				None
34	MP1A						Yes				None
35	M44	BenPIN	BenPIN				Yes				None
36	M45	BenPIN	BenPIN				Yes				None
37	M46	BenPIN	BenPIN				Yes				None
38	M47	BenPIN	BenPIN				Yes	Default			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
39	M47B						Yes	** NA **			None
40	M48A						Yes	** NA **			None
41	M49A						Yes	** NA **			None
42	M50A						Yes	** NA **			None
43	M43		OOOXOO				Yes	** NA **			None
44	M44A		OOOXOO				Yes	** NA **			None
45	M45A						Yes				None
46	M46A						Yes	** NA **			None
47	M47A						Yes	** NA **			None

Member Point Loads (BLC 1 : Antenna D)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	Y	-31.65	1.5
2	MP3A	My	-.016	1.5
3	MP3A	Mz	.018	1.5
4	MP3A	Y	-31.65	5.5
5	MP3A	My	-.016	5.5
6	MP3A	Mz	.018	5.5
7	MP3A	Y	-31.65	1.5
8	MP3A	My	-.016	1.5
9	MP3A	Mz	-.018	1.5
10	MP3A	Y	-31.65	5.5
11	MP3A	My	-.016	5.5
12	MP3A	Mz	-.018	5.5
13	MP1A	Y	-40.8	2.5
14	MP1A	My	-.02	2.5
15	MP1A	Mz	0	2.5
16	MP1A	Y	-40.8	4.5
17	MP1A	My	-.02	4.5
18	MP1A	Mz	0	4.5
19	MP3A	Y	-84.4	3
20	MP3A	My	.042	3
21	MP3A	Mz	0	3
22	MP2A	Y	-70.3	3
23	MP2A	My	.035	3
24	MP2A	Mz	0	3
25	M45A	Y	-32	2
26	M45A	My	0	2
27	M45A	Mz	0	2
28	MP3A	Y	-10.4	5
29	MP3A	My	.005	5
30	MP3A	Mz	0	5
31	MP2A	Y	-20	1.5
32	MP2A	My	-.015	1.5
33	MP2A	Mz	0	1.5
34	MP2A	Y	-20	5.5
35	MP2A	My	-.015	5.5
36	MP2A	Mz	0	5.5

Member Point Loads (BLC 2 : Antenna Di)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	Y	-80.956	1.5
2	MP3A	My	-.04	1.5
3	MP3A	Mz	.047	1.5
4	MP3A	Y	-80.956	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
5	MP3A	My	-.04	5.5
6	MP3A	Mz	.047	5.5
7	MP3A	Y	-80.956	1.5
8	MP3A	My	-.04	1.5
9	MP3A	Mz	-.047	1.5
10	MP3A	Y	-80.956	5.5
11	MP3A	My	-.04	5.5
12	MP3A	Mz	-.047	5.5
13	MP1A	Y	-41.629	2.5
14	MP1A	My	-.021	2.5
15	MP1A	Mz	0	2.5
16	MP1A	Y	-41.629	4.5
17	MP1A	My	-.021	4.5
18	MP1A	Mz	0	4.5
19	MP3A	Y	-52.232	3
20	MP3A	My	.026	3
21	MP3A	Mz	0	3
22	MP2A	Y	-47.027	3
23	MP2A	My	.024	3
24	MP2A	Mz	0	3
25	M45A	Y	-88.021	2
26	M45A	My	0	2
27	M45A	Mz	0	2
28	MP3A	Y	-12.738	5
29	MP3A	My	.006	5
30	MP3A	Mz	0	5
31	MP2A	Y	-70.781	1.5
32	MP2A	My	-.053	1.5
33	MP2A	Mz	0	1.5
34	MP2A	Y	-70.781	5.5
35	MP2A	My	-.053	5.5
36	MP2A	Mz	0	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	0	1.5
2	MP3A	Z	-220.268	1.5
3	MP3A	Mx	-.128	1.5
4	MP3A	X	0	5.5
5	MP3A	Z	-220.268	5.5
6	MP3A	Mx	-.128	5.5
7	MP3A	X	0	1.5
8	MP3A	Z	-220.268	1.5
9	MP3A	Mx	.128	1.5
10	MP3A	X	0	5.5
11	MP3A	Z	-220.268	5.5
12	MP3A	Mx	.128	5.5
13	MP1A	X	0	2.5
14	MP1A	Z	-97.44	2.5
15	MP1A	Mx	0	2.5
16	MP1A	X	0	4.5
17	MP1A	Z	-97.44	4.5
18	MP1A	Mx	0	4.5
19	MP3A	X	0	3
20	MP3A	Z	-90.428	3
21	MP3A	Mx	0	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
22	MP2A	X	0	3
23	MP2A	Z	-90.428	3
24	MP2A	Mx	0	3
25	M45A	X	0	2
26	M45A	Z	-167.784	2
27	M45A	Mx	0	2
28	MP3A	X	0	5
29	MP3A	Z	-17.892	5
30	MP3A	Mx	0	5
31	MP2A	X	0	1.5
32	MP2A	Z	-197.298	1.5
33	MP2A	Mx	0	1.5
34	MP2A	X	0	5.5
35	MP2A	Z	-197.298	5.5
36	MP2A	Mx	0	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	100.684	1.5
2	MP3A	Z	-174.39	1.5
3	MP3A	Mx	-.152	1.5
4	MP3A	X	100.684	5.5
5	MP3A	Z	-174.39	5.5
6	MP3A	Mx	-.152	5.5
7	MP3A	X	100.684	1.5
8	MP3A	Z	-174.39	1.5
9	MP3A	Mx	.051	1.5
10	MP3A	X	100.684	5.5
11	MP3A	Z	-174.39	5.5
12	MP3A	Mx	.051	5.5
13	MP1A	X	43.03	2.5
14	MP1A	Z	-74.53	2.5
15	MP1A	Mx	-.022	2.5
16	MP1A	X	43.03	4.5
17	MP1A	Z	-74.53	4.5
18	MP1A	Mx	-.022	4.5
19	MP3A	X	41.466	3
20	MP3A	Z	-71.822	3
21	MP3A	Mx	.021	3
22	MP2A	X	40.031	3
23	MP2A	Z	-69.335	3
24	MP2A	Mx	.02	3
25	M45A	X	68.402	2
26	M45A	Z	-118.475	2
27	M45A	Mx	0	2
28	MP3A	X	8.257	5
29	MP3A	Z	-14.302	5
30	MP3A	Mx	.004	5
31	MP2A	X	90.296	1.5
32	MP2A	Z	-156.398	1.5
33	MP2A	Mx	-.068	1.5
34	MP2A	X	90.296	5.5
35	MP2A	Z	-156.398	5.5
36	MP2A	Mx	-.068	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	141.655	1.5
2	MP3A	Z	-81.784	1.5
3	MP3A	Mx	-.119	1.5
4	MP3A	X	141.655	5.5
5	MP3A	Z	-81.784	5.5
6	MP3A	Mx	-.119	5.5
7	MP3A	X	141.655	1.5
8	MP3A	Z	-81.784	1.5
9	MP3A	Mx	-.023	1.5
10	MP3A	X	141.655	5.5
11	MP3A	Z	-81.784	5.5
12	MP3A	Mx	-.023	5.5
13	MP1A	X	54.818	2.5
14	MP1A	Z	-31.649	2.5
15	MP1A	Mx	-.027	2.5
16	MP1A	X	54.818	4.5
17	MP1A	Z	-31.649	4.5
18	MP1A	Mx	-.027	4.5
19	MP3A	X	58.84	3
20	MP3A	Z	-33.971	3
21	MP3A	Mx	.029	3
22	MP2A	X	51.38	3
23	MP2A	Z	-29.664	3
24	MP2A	Mx	.026	3
25	M45A	X	105.06	2
26	M45A	Z	-60.657	2
27	M45A	Mx	0	2
28	MP3A	X	11.915	5
29	MP3A	Z	-6.879	5
30	MP3A	Mx	.006	5
31	MP2A	X	127.462	1.5
32	MP2A	Z	-73.59	1.5
33	MP2A	Mx	-.096	1.5
34	MP2A	X	127.462	5.5
35	MP2A	Z	-73.59	5.5
36	MP2A	Mx	-.096	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	144.669	1.5
2	MP3A	Z	0	1.5
3	MP3A	Mx	-.072	1.5
4	MP3A	X	144.669	5.5
5	MP3A	Z	0	5.5
6	MP3A	Mx	-.072	5.5
7	MP3A	X	144.669	1.5
8	MP3A	Z	0	1.5
9	MP3A	Mx	-.072	1.5
10	MP3A	X	144.669	5.5
11	MP3A	Z	0	5.5
12	MP3A	Mx	-.072	5.5
13	MP1A	X	51.917	2.5
14	MP1A	Z	0	2.5
15	MP1A	Mx	-.026	2.5
16	MP1A	X	51.917	4.5
17	MP1A	Z	0	4.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
18	MP1A	Mx	-.026	4.5
19	MP3A	X	60.447	3
20	MP3A	Z	0	3
21	MP3A	Mx	.03	3
22	MP2A	X	48.962	3
23	MP2A	Z	0	3
24	MP2A	Mx	.024	3
25	M45A	X	136.804	2
26	M45A	Z	0	2
27	M45A	Mx	0	2
28	MP3A	X	12.379	5
29	MP3A	Z	0	5
30	MP3A	Mx	.006	5
31	MP2A	X	130.475	1.5
32	MP2A	Z	0	1.5
33	MP2A	Mx	-.098	1.5
34	MP2A	X	130.475	5.5
35	MP2A	Z	0	5.5
36	MP2A	Mx	-.098	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	141.655	1.5
2	MP3A	Z	81.784	1.5
3	MP3A	Mx	-.023	1.5
4	MP3A	X	141.655	5.5
5	MP3A	Z	81.784	5.5
6	MP3A	Mx	-.023	5.5
7	MP3A	X	141.655	1.5
8	MP3A	Z	81.784	1.5
9	MP3A	Mx	-.119	1.5
10	MP3A	X	141.655	5.5
11	MP3A	Z	81.784	5.5
12	MP3A	Mx	-.119	5.5
13	MP1A	X	54.818	2.5
14	MP1A	Z	31.649	2.5
15	MP1A	Mx	-.027	2.5
16	MP1A	X	54.818	4.5
17	MP1A	Z	31.649	4.5
18	MP1A	Mx	-.027	4.5
19	MP3A	X	58.84	3
20	MP3A	Z	33.971	3
21	MP3A	Mx	.029	3
22	MP2A	X	51.38	3
23	MP2A	Z	29.664	3
24	MP2A	Mx	.026	3
25	M45A	X	145.305	2
26	M45A	Z	83.892	2
27	M45A	Mx	0	2
28	MP3A	X	11.915	5
29	MP3A	Z	6.879	5
30	MP3A	Mx	.006	5
31	MP2A	X	127.462	1.5
32	MP2A	Z	73.59	1.5
33	MP2A	Mx	-.096	1.5
34	MP2A	X	127.462	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
35	MP2A	Z	73.59	5.5
36	MP2A	Mx	-.096	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	100.684	1.5
2	MP3A	Z	174.39	1.5
3	MP3A	Mx	.051	1.5
4	MP3A	X	100.684	5.5
5	MP3A	Z	174.39	5.5
6	MP3A	Mx	.051	5.5
7	MP3A	X	100.684	1.5
8	MP3A	Z	174.39	1.5
9	MP3A	Mx	-.152	1.5
10	MP3A	X	100.684	5.5
11	MP3A	Z	174.39	5.5
12	MP3A	Mx	-.152	5.5
13	MP1A	X	43.03	2.5
14	MP1A	Z	74.53	2.5
15	MP1A	Mx	-.022	2.5
16	MP1A	X	43.03	4.5
17	MP1A	Z	74.53	4.5
18	MP1A	Mx	-.022	4.5
19	MP3A	X	41.466	3
20	MP3A	Z	71.822	3
21	MP3A	Mx	.021	3
22	MP2A	X	40.031	3
23	MP2A	Z	69.335	3
24	MP2A	Mx	.02	3
25	M45A	X	91.637	2
26	M45A	Z	158.72	2
27	M45A	Mx	0	2
28	MP3A	X	8.257	5
29	MP3A	Z	14.302	5
30	MP3A	Mx	.004	5
31	MP2A	X	90.296	1.5
32	MP2A	Z	156.398	1.5
33	MP2A	Mx	-.068	1.5
34	MP2A	X	90.296	5.5
35	MP2A	Z	156.398	5.5
36	MP2A	Mx	-.068	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	0	1.5
2	MP3A	Z	220.268	1.5
3	MP3A	Mx	.128	1.5
4	MP3A	X	0	5.5
5	MP3A	Z	220.268	5.5
6	MP3A	Mx	.128	5.5
7	MP3A	X	0	1.5
8	MP3A	Z	220.268	1.5
9	MP3A	Mx	-.128	1.5
10	MP3A	X	0	5.5
11	MP3A	Z	220.268	5.5
12	MP3A	Mx	-.128	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
13	MP1A	X	0	2.5
14	MP1A	Z	97.44	2.5
15	MP1A	Mx	0	2.5
16	MP1A	X	0	4.5
17	MP1A	Z	97.44	4.5
18	MP1A	Mx	0	4.5
19	MP3A	X	0	3
20	MP3A	Z	90.428	3
21	MP3A	Mx	0	3
22	MP2A	X	0	3
23	MP2A	Z	90.428	3
24	MP2A	Mx	0	3
25	M45A	X	0	2
26	M45A	Z	167.784	2
27	M45A	Mx	0	2
28	MP3A	X	0	5
29	MP3A	Z	17.892	5
30	MP3A	Mx	0	5
31	MP2A	X	0	1.5
32	MP2A	Z	197.298	1.5
33	MP2A	Mx	0	1.5
34	MP2A	X	0	5.5
35	MP2A	Z	197.298	5.5
36	MP2A	Mx	0	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	-100.684	1.5
2	MP3A	Z	174.39	1.5
3	MP3A	Mx	.152	1.5
4	MP3A	X	-100.684	5.5
5	MP3A	Z	174.39	5.5
6	MP3A	Mx	.152	5.5
7	MP3A	X	-100.684	1.5
8	MP3A	Z	174.39	1.5
9	MP3A	Mx	-.051	1.5
10	MP3A	X	-100.684	5.5
11	MP3A	Z	174.39	5.5
12	MP3A	Mx	-.051	5.5
13	MP1A	X	-43.03	2.5
14	MP1A	Z	74.53	2.5
15	MP1A	Mx	.022	2.5
16	MP1A	X	-43.03	4.5
17	MP1A	Z	74.53	4.5
18	MP1A	Mx	.022	4.5
19	MP3A	X	-41.466	3
20	MP3A	Z	71.822	3
21	MP3A	Mx	-.021	3
22	MP2A	X	-40.031	3
23	MP2A	Z	69.335	3
24	MP2A	Mx	-.02	3
25	M45A	X	-68.402	2
26	M45A	Z	118.475	2
27	M45A	Mx	0	2
28	MP3A	X	-8.257	5
29	MP3A	Z	14.302	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
30	MP3A	Mx	-.004	5
31	MP2A	X	-90.296	1.5
32	MP2A	Z	156.398	1.5
33	MP2A	Mx	.068	1.5
34	MP2A	X	-90.296	5.5
35	MP2A	Z	156.398	5.5
36	MP2A	Mx	.068	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	-141.655	1.5
2	MP3A	Z	81.784	1.5
3	MP3A	Mx	.119	1.5
4	MP3A	X	-141.655	5.5
5	MP3A	Z	81.784	5.5
6	MP3A	Mx	.119	5.5
7	MP3A	X	-141.655	1.5
8	MP3A	Z	81.784	1.5
9	MP3A	Mx	.023	1.5
10	MP3A	X	-141.655	5.5
11	MP3A	Z	81.784	5.5
12	MP3A	Mx	.023	5.5
13	MP1A	X	-54.818	2.5
14	MP1A	Z	31.649	2.5
15	MP1A	Mx	.027	2.5
16	MP1A	X	-54.818	4.5
17	MP1A	Z	31.649	4.5
18	MP1A	Mx	.027	4.5
19	MP3A	X	-58.84	3
20	MP3A	Z	33.971	3
21	MP3A	Mx	-.029	3
22	MP2A	X	-51.38	3
23	MP2A	Z	29.664	3
24	MP2A	Mx	-.026	3
25	M45A	X	-105.06	2
26	M45A	Z	60.657	2
27	M45A	Mx	0	2
28	MP3A	X	-11.915	5
29	MP3A	Z	6.879	5
30	MP3A	Mx	-.006	5
31	MP2A	X	-127.462	1.5
32	MP2A	Z	73.59	1.5
33	MP2A	Mx	.096	1.5
34	MP2A	X	-127.462	5.5
35	MP2A	Z	73.59	5.5
36	MP2A	Mx	.096	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	-144.669	1.5
2	MP3A	Z	0	1.5
3	MP3A	Mx	.072	1.5
4	MP3A	X	-144.669	5.5
5	MP3A	Z	0	5.5
6	MP3A	Mx	.072	5.5
7	MP3A	X	-144.669	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
8	MP3A	Z	0	1.5
9	MP3A	Mx	.072	1.5
10	MP3A	X	-144.669	5.5
11	MP3A	Z	0	5.5
12	MP3A	Mx	.072	5.5
13	MP1A	X	-51.917	2.5
14	MP1A	Z	0	2.5
15	MP1A	Mx	.026	2.5
16	MP1A	X	-51.917	4.5
17	MP1A	Z	0	4.5
18	MP1A	Mx	.026	4.5
19	MP3A	X	-60.447	3
20	MP3A	Z	0	3
21	MP3A	Mx	-.03	3
22	MP2A	X	-48.962	3
23	MP2A	Z	0	3
24	MP2A	Mx	-.024	3
25	M45A	X	-136.804	2
26	M45A	Z	0	2
27	M45A	Mx	0	2
28	MP3A	X	-12.379	5
29	MP3A	Z	0	5
30	MP3A	Mx	-.006	5
31	MP2A	X	-130.475	1.5
32	MP2A	Z	0	1.5
33	MP2A	Mx	.098	1.5
34	MP2A	X	-130.475	5.5
35	MP2A	Z	0	5.5
36	MP2A	Mx	.098	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	-141.655	1.5
2	MP3A	Z	-81.784	1.5
3	MP3A	Mx	.023	1.5
4	MP3A	X	-141.655	5.5
5	MP3A	Z	-81.784	5.5
6	MP3A	Mx	.023	5.5
7	MP3A	X	-141.655	1.5
8	MP3A	Z	-81.784	1.5
9	MP3A	Mx	.119	1.5
10	MP3A	X	-141.655	5.5
11	MP3A	Z	-81.784	5.5
12	MP3A	Mx	.119	5.5
13	MP1A	X	-54.818	2.5
14	MP1A	Z	-31.649	2.5
15	MP1A	Mx	.027	2.5
16	MP1A	X	-54.818	4.5
17	MP1A	Z	-31.649	4.5
18	MP1A	Mx	.027	4.5
19	MP3A	X	-58.84	3
20	MP3A	Z	-33.971	3
21	MP3A	Mx	-.029	3
22	MP2A	X	-51.38	3
23	MP2A	Z	-29.664	3
24	MP2A	Mx	-.026	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
25	M45A	X	-145.305	2
26	M45A	Z	-83.892	2
27	M45A	Mx	0	2
28	MP3A	X	-11.915	5
29	MP3A	Z	-6.879	5
30	MP3A	Mx	-.006	5
31	MP2A	X	-127.462	1.5
32	MP2A	Z	-73.59	1.5
33	MP2A	Mx	.096	1.5
34	MP2A	X	-127.462	5.5
35	MP2A	Z	-73.59	5.5
36	MP2A	Mx	.096	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	-100.684	1.5
2	MP3A	Z	-174.39	1.5
3	MP3A	Mx	-.051	1.5
4	MP3A	X	-100.684	5.5
5	MP3A	Z	-174.39	5.5
6	MP3A	Mx	-.051	5.5
7	MP3A	X	-100.684	1.5
8	MP3A	Z	-174.39	1.5
9	MP3A	Mx	.152	1.5
10	MP3A	X	-100.684	5.5
11	MP3A	Z	-174.39	5.5
12	MP3A	Mx	.152	5.5
13	MP1A	X	-43.03	2.5
14	MP1A	Z	-74.53	2.5
15	MP1A	Mx	.022	2.5
16	MP1A	X	-43.03	4.5
17	MP1A	Z	-74.53	4.5
18	MP1A	Mx	.022	4.5
19	MP3A	X	-41.466	3
20	MP3A	Z	-71.822	3
21	MP3A	Mx	-.021	3
22	MP2A	X	-40.031	3
23	MP2A	Z	-69.335	3
24	MP2A	Mx	-.02	3
25	M45A	X	-91.637	2
26	M45A	Z	-158.72	2
27	M45A	Mx	0	2
28	MP3A	X	-8.257	5
29	MP3A	Z	-14.302	5
30	MP3A	Mx	-.004	5
31	MP2A	X	-90.296	1.5
32	MP2A	Z	-156.398	1.5
33	MP2A	Mx	.068	1.5
34	MP2A	X	-90.296	5.5
35	MP2A	Z	-156.398	5.5
36	MP2A	Mx	.068	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	0	1.5
2	MP3A	Z	-36.733	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
3	MP3A	Mx	-.021	1.5
4	MP3A	X	0	5.5
5	MP3A	Z	-36.733	5.5
6	MP3A	Mx	-.021	5.5
7	MP3A	X	0	1.5
8	MP3A	Z	-36.733	1.5
9	MP3A	Mx	.021	1.5
10	MP3A	X	0	5.5
11	MP3A	Z	-36.733	5.5
12	MP3A	Mx	.021	5.5
13	MP1A	X	0	2.5
14	MP1A	Z	-16.909	2.5
15	MP1A	Mx	0	2.5
16	MP1A	X	0	4.5
17	MP1A	Z	-16.909	4.5
18	MP1A	Mx	0	4.5
19	MP3A	X	0	3
20	MP3A	Z	-16.66	3
21	MP3A	Mx	0	3
22	MP2A	X	0	3
23	MP2A	Z	-16.66	3
24	MP2A	Mx	0	3
25	M45A	X	0	2
26	M45A	Z	-29.378	2
27	M45A	Mx	0	2
28	MP3A	X	0	5
29	MP3A	Z	-4.157	5
30	MP3A	Mx	0	5
31	MP2A	X	0	1.5
32	MP2A	Z	-33.143	1.5
33	MP2A	Mx	0	1.5
34	MP2A	X	0	5.5
35	MP2A	Z	-33.143	5.5
36	MP2A	Mx	0	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	16.921	1.5
2	MP3A	Z	-29.308	1.5
3	MP3A	Mx	-.026	1.5
4	MP3A	X	16.921	5.5
5	MP3A	Z	-29.308	5.5
6	MP3A	Mx	-.026	5.5
7	MP3A	X	16.921	1.5
8	MP3A	Z	-29.308	1.5
9	MP3A	Mx	.009	1.5
10	MP3A	X	16.921	5.5
11	MP3A	Z	-29.308	5.5
12	MP3A	Mx	.009	5.5
13	MP1A	X	7.536	2.5
14	MP1A	Z	-13.053	2.5
15	MP1A	Mx	-.004	2.5
16	MP1A	X	7.536	4.5
17	MP1A	Z	-13.053	4.5
18	MP1A	Mx	-.004	4.5
19	MP3A	X	7.704	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
20	MP3A	Z	-13.344	3
21	MP3A	Mx	.004	3
22	MP2A	X	7.466	3
23	MP2A	Z	-12.932	3
24	MP2A	Mx	.004	3
25	M45A	X	12.202	2
26	M45A	Z	-21.134	2
27	M45A	Mx	0	2
28	MP3A	X	1.952	5
29	MP3A	Z	-3.381	5
30	MP3A	Mx	.000976	5
31	MP2A	X	15.302	1.5
32	MP2A	Z	-26.504	1.5
33	MP2A	Mx	-.011	1.5
34	MP2A	X	15.302	5.5
35	MP2A	Z	-26.504	5.5
36	MP2A	Mx	-.011	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	24.3	1.5
2	MP3A	Z	-14.03	1.5
3	MP3A	Mx	-.02	1.5
4	MP3A	X	24.3	5.5
5	MP3A	Z	-14.03	5.5
6	MP3A	Mx	-.02	5.5
7	MP3A	X	24.3	1.5
8	MP3A	Z	-14.03	1.5
9	MP3A	Mx	-.004	1.5
10	MP3A	X	24.3	5.5
11	MP3A	Z	-14.03	5.5
12	MP3A	Mx	-.004	5.5
13	MP1A	X	9.872	2.5
14	MP1A	Z	-5.7	2.5
15	MP1A	Mx	-.005	2.5
16	MP1A	X	9.872	4.5
17	MP1A	Z	-5.7	4.5
18	MP1A	Mx	-.005	4.5
19	MP3A	X	11.176	3
20	MP3A	Z	-6.453	3
21	MP3A	Mx	.006	3
22	MP2A	X	9.941	3
23	MP2A	Z	-5.739	3
24	MP2A	Mx	.005	3
25	M45A	X	18.979	2
26	M45A	Z	-10.958	2
27	M45A	Mx	0	2
28	MP3A	X	2.945	5
29	MP3A	Z	-1.7	5
30	MP3A	Mx	.001	5
31	MP2A	X	22.106	1.5
32	MP2A	Z	-12.763	1.5
33	MP2A	Mx	-.017	1.5
34	MP2A	X	22.106	5.5
35	MP2A	Z	-12.763	5.5
36	MP2A	Mx	-.017	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	25.168	1.5
2	MP3A	Z	0	1.5
3	MP3A	Mx	-.013	1.5
4	MP3A	X	25.168	5.5
5	MP3A	Z	0	5.5
6	MP3A	Mx	-.013	5.5
7	MP3A	X	25.168	1.5
8	MP3A	Z	0	1.5
9	MP3A	Mx	-.013	1.5
10	MP3A	X	25.168	5.5
11	MP3A	Z	0	5.5
12	MP3A	Mx	-.013	5.5
13	MP1A	X	9.563	2.5
14	MP1A	Z	0	2.5
15	MP1A	Mx	-.005	2.5
16	MP1A	X	9.563	4.5
17	MP1A	Z	0	4.5
18	MP1A	Mx	-.005	4.5
19	MP3A	X	11.654	3
20	MP3A	Z	0	3
21	MP3A	Mx	.006	3
22	MP2A	X	9.751	3
23	MP2A	Z	0	3
24	MP2A	Mx	.005	3
25	M45A	X	24.403	2
26	M45A	Z	0	2
27	M45A	Mx	0	2
28	MP3A	X	3.148	5
29	MP3A	Z	0	5
30	MP3A	Mx	.002	5
31	MP2A	X	22.987	1.5
32	MP2A	Z	0	1.5
33	MP2A	Mx	-.017	1.5
34	MP2A	X	22.987	5.5
35	MP2A	Z	0	5.5
36	MP2A	Mx	-.017	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	24.3	1.5
2	MP3A	Z	14.03	1.5
3	MP3A	Mx	-.004	1.5
4	MP3A	X	24.3	5.5
5	MP3A	Z	14.03	5.5
6	MP3A	Mx	-.004	5.5
7	MP3A	X	24.3	1.5
8	MP3A	Z	14.03	1.5
9	MP3A	Mx	-.02	1.5
10	MP3A	X	24.3	5.5
11	MP3A	Z	14.03	5.5
12	MP3A	Mx	-.02	5.5
13	MP1A	X	9.872	2.5
14	MP1A	Z	5.7	2.5
15	MP1A	Mx	-.005	2.5
16	MP1A	X	9.872	4.5
17	MP1A	Z	5.7	4.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
18	MP1A	Mx	-.005	4.5
19	MP3A	X	11.176	3
20	MP3A	Z	6.453	3
21	MP3A	Mx	.006	3
22	MP2A	X	9.941	3
23	MP2A	Z	5.739	3
24	MP2A	Mx	.005	3
25	M45A	X	25.442	2
26	M45A	Z	14.689	2
27	M45A	Mx	0	2
28	MP3A	X	2.945	5
29	MP3A	Z	1.7	5
30	MP3A	Mx	.001	5
31	MP2A	X	22.106	1.5
32	MP2A	Z	12.763	1.5
33	MP2A	Mx	-.017	1.5
34	MP2A	X	22.106	5.5
35	MP2A	Z	12.763	5.5
36	MP2A	Mx	-.017	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	16.921	1.5
2	MP3A	Z	29.308	1.5
3	MP3A	Mx	.009	1.5
4	MP3A	X	16.921	5.5
5	MP3A	Z	29.308	5.5
6	MP3A	Mx	.009	5.5
7	MP3A	X	16.921	1.5
8	MP3A	Z	29.308	1.5
9	MP3A	Mx	-.026	1.5
10	MP3A	X	16.921	5.5
11	MP3A	Z	29.308	5.5
12	MP3A	Mx	-.026	5.5
13	MP1A	X	7.536	2.5
14	MP1A	Z	13.053	2.5
15	MP1A	Mx	-.004	2.5
16	MP1A	X	7.536	4.5
17	MP1A	Z	13.053	4.5
18	MP1A	Mx	-.004	4.5
19	MP3A	X	7.704	3
20	MP3A	Z	13.344	3
21	MP3A	Mx	.004	3
22	MP2A	X	7.466	3
23	MP2A	Z	12.932	3
24	MP2A	Mx	.004	3
25	M45A	X	15.933	2
26	M45A	Z	27.597	2
27	M45A	Mx	0	2
28	MP3A	X	1.952	5
29	MP3A	Z	3.381	5
30	MP3A	Mx	.000976	5
31	MP2A	X	15.302	1.5
32	MP2A	Z	26.504	1.5
33	MP2A	Mx	-.011	1.5
34	MP2A	X	15.302	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
35	MP2A	Z	26.504	5.5
36	MP2A	Mx	-.011	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	0	1.5
2	MP3A	Z	36.733	1.5
3	MP3A	Mx	.021	1.5
4	MP3A	X	0	5.5
5	MP3A	Z	36.733	5.5
6	MP3A	Mx	.021	5.5
7	MP3A	X	0	1.5
8	MP3A	Z	36.733	1.5
9	MP3A	Mx	-.021	1.5
10	MP3A	X	0	5.5
11	MP3A	Z	36.733	5.5
12	MP3A	Mx	-.021	5.5
13	MP1A	X	0	2.5
14	MP1A	Z	16.909	2.5
15	MP1A	Mx	0	2.5
16	MP1A	X	0	4.5
17	MP1A	Z	16.909	4.5
18	MP1A	Mx	0	4.5
19	MP3A	X	0	3
20	MP3A	Z	16.66	3
21	MP3A	Mx	0	3
22	MP2A	X	0	3
23	MP2A	Z	16.66	3
24	MP2A	Mx	0	3
25	M45A	X	0	2
26	M45A	Z	29.378	2
27	M45A	Mx	0	2
28	MP3A	X	0	5
29	MP3A	Z	4.157	5
30	MP3A	Mx	0	5
31	MP2A	X	0	1.5
32	MP2A	Z	33.143	1.5
33	MP2A	Mx	0	1.5
34	MP2A	X	0	5.5
35	MP2A	Z	33.143	5.5
36	MP2A	Mx	0	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	-16.921	1.5
2	MP3A	Z	29.308	1.5
3	MP3A	Mx	.026	1.5
4	MP3A	X	-16.921	5.5
5	MP3A	Z	29.308	5.5
6	MP3A	Mx	.026	5.5
7	MP3A	X	-16.921	1.5
8	MP3A	Z	29.308	1.5
9	MP3A	Mx	-.009	1.5
10	MP3A	X	-16.921	5.5
11	MP3A	Z	29.308	5.5
12	MP3A	Mx	-.009	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
13	MP1A	X	-7.536	2.5
14	MP1A	Z	13.053	2.5
15	MP1A	Mx	.004	2.5
16	MP1A	X	-7.536	4.5
17	MP1A	Z	13.053	4.5
18	MP1A	Mx	.004	4.5
19	MP3A	X	-7.704	3
20	MP3A	Z	13.344	3
21	MP3A	Mx	-.004	3
22	MP2A	X	-7.466	3
23	MP2A	Z	12.932	3
24	MP2A	Mx	-.004	3
25	M45A	X	-12.202	2
26	M45A	Z	21.134	2
27	M45A	Mx	0	2
28	MP3A	X	-1.952	5
29	MP3A	Z	3.381	5
30	MP3A	Mx	-.000976	5
31	MP2A	X	-15.302	1.5
32	MP2A	Z	26.504	1.5
33	MP2A	Mx	.011	1.5
34	MP2A	X	-15.302	5.5
35	MP2A	Z	26.504	5.5
36	MP2A	Mx	.011	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	-24.3	1.5
2	MP3A	Z	14.03	1.5
3	MP3A	Mx	.02	1.5
4	MP3A	X	-24.3	5.5
5	MP3A	Z	14.03	5.5
6	MP3A	Mx	.02	5.5
7	MP3A	X	-24.3	1.5
8	MP3A	Z	14.03	1.5
9	MP3A	Mx	.004	1.5
10	MP3A	X	-24.3	5.5
11	MP3A	Z	14.03	5.5
12	MP3A	Mx	.004	5.5
13	MP1A	X	-9.872	2.5
14	MP1A	Z	5.7	2.5
15	MP1A	Mx	.005	2.5
16	MP1A	X	-9.872	4.5
17	MP1A	Z	5.7	4.5
18	MP1A	Mx	.005	4.5
19	MP3A	X	-11.176	3
20	MP3A	Z	6.453	3
21	MP3A	Mx	-.006	3
22	MP2A	X	-9.941	3
23	MP2A	Z	5.739	3
24	MP2A	Mx	-.005	3
25	M45A	X	-18.979	2
26	M45A	Z	10.958	2
27	M45A	Mx	0	2
28	MP3A	X	-2.945	5
29	MP3A	Z	1.7	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
30	MP3A	Mx	-.001	5
31	MP2A	X	-22.106	1.5
32	MP2A	Z	12.763	1.5
33	MP2A	Mx	.017	1.5
34	MP2A	X	-22.106	5.5
35	MP2A	Z	12.763	5.5
36	MP2A	Mx	.017	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	-25.168	1.5
2	MP3A	Z	0	1.5
3	MP3A	Mx	.013	1.5
4	MP3A	X	-25.168	5.5
5	MP3A	Z	0	5.5
6	MP3A	Mx	.013	5.5
7	MP3A	X	-25.168	1.5
8	MP3A	Z	0	1.5
9	MP3A	Mx	.013	1.5
10	MP3A	X	-25.168	5.5
11	MP3A	Z	0	5.5
12	MP3A	Mx	.013	5.5
13	MP1A	X	-9.563	2.5
14	MP1A	Z	0	2.5
15	MP1A	Mx	.005	2.5
16	MP1A	X	-9.563	4.5
17	MP1A	Z	0	4.5
18	MP1A	Mx	.005	4.5
19	MP3A	X	-11.654	3
20	MP3A	Z	0	3
21	MP3A	Mx	-.006	3
22	MP2A	X	-9.751	3
23	MP2A	Z	0	3
24	MP2A	Mx	-.005	3
25	M45A	X	-24.403	2
26	M45A	Z	0	2
27	M45A	Mx	0	2
28	MP3A	X	-3.148	5
29	MP3A	Z	0	5
30	MP3A	Mx	-.002	5
31	MP2A	X	-22.987	1.5
32	MP2A	Z	0	1.5
33	MP2A	Mx	.017	1.5
34	MP2A	X	-22.987	5.5
35	MP2A	Z	0	5.5
36	MP2A	Mx	.017	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	-24.3	1.5
2	MP3A	Z	-14.03	1.5
3	MP3A	Mx	.004	1.5
4	MP3A	X	-24.3	5.5
5	MP3A	Z	-14.03	5.5
6	MP3A	Mx	.004	5.5
7	MP3A	X	-24.3	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
8	MP3A	Z	-14.03	1.5
9	MP3A	Mx	.02	1.5
10	MP3A	X	-24.3	5.5
11	MP3A	Z	-14.03	5.5
12	MP3A	Mx	.02	5.5
13	MP1A	X	-9.872	2.5
14	MP1A	Z	-5.7	2.5
15	MP1A	Mx	.005	2.5
16	MP1A	X	-9.872	4.5
17	MP1A	Z	-5.7	4.5
18	MP1A	Mx	.005	4.5
19	MP3A	X	-11.176	3
20	MP3A	Z	-6.453	3
21	MP3A	Mx	-.006	3
22	MP2A	X	-9.941	3
23	MP2A	Z	-5.739	3
24	MP2A	Mx	-.005	3
25	M45A	X	-25.442	2
26	M45A	Z	-14.689	2
27	M45A	Mx	0	2
28	MP3A	X	-2.945	5
29	MP3A	Z	-1.7	5
30	MP3A	Mx	-.001	5
31	MP2A	X	-22.106	1.5
32	MP2A	Z	-12.763	1.5
33	MP2A	Mx	.017	1.5
34	MP2A	X	-22.106	5.5
35	MP2A	Z	-12.763	5.5
36	MP2A	Mx	.017	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	-16.921	1.5
2	MP3A	Z	-29.308	1.5
3	MP3A	Mx	-.009	1.5
4	MP3A	X	-16.921	5.5
5	MP3A	Z	-29.308	5.5
6	MP3A	Mx	-.009	5.5
7	MP3A	X	-16.921	1.5
8	MP3A	Z	-29.308	1.5
9	MP3A	Mx	.026	1.5
10	MP3A	X	-16.921	5.5
11	MP3A	Z	-29.308	5.5
12	MP3A	Mx	.026	5.5
13	MP1A	X	-7.536	2.5
14	MP1A	Z	-13.053	2.5
15	MP1A	Mx	.004	2.5
16	MP1A	X	-7.536	4.5
17	MP1A	Z	-13.053	4.5
18	MP1A	Mx	.004	4.5
19	MP3A	X	-7.704	3
20	MP3A	Z	-13.344	3
21	MP3A	Mx	-.004	3
22	MP2A	X	-7.466	3
23	MP2A	Z	-12.932	3
24	MP2A	Mx	-.004	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
25	M45A	X	-15.933	2
26	M45A	Z	-27.597	2
27	M45A	Mx	0	2
28	MP3A	X	-1.952	5
29	MP3A	Z	-3.381	5
30	MP3A	Mx	-.000976	5
31	MP2A	X	-15.302	1.5
32	MP2A	Z	-26.504	1.5
33	MP2A	Mx	.011	1.5
34	MP2A	X	-15.302	5.5
35	MP2A	Z	-26.504	5.5
36	MP2A	Mx	.011	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	0	1.5
2	MP3A	Z	-11.913	1.5
3	MP3A	Mx	-.007	1.5
4	MP3A	X	0	5.5
5	MP3A	Z	-11.913	5.5
6	MP3A	Mx	-.007	5.5
7	MP3A	X	0	1.5
8	MP3A	Z	-11.913	1.5
9	MP3A	Mx	.007	1.5
10	MP3A	X	0	5.5
11	MP3A	Z	-11.913	5.5
12	MP3A	Mx	.007	5.5
13	MP1A	X	0	2.5
14	MP1A	Z	-5.27	2.5
15	MP1A	Mx	0	2.5
16	MP1A	X	0	4.5
17	MP1A	Z	-5.27	4.5
18	MP1A	Mx	0	4.5
19	MP3A	X	0	3
20	MP3A	Z	-4.891	3
21	MP3A	Mx	0	3
22	MP2A	X	0	3
23	MP2A	Z	-4.891	3
24	MP2A	Mx	0	3
25	M45A	X	0	2
26	M45A	Z	-9.074	2
27	M45A	Mx	0	2
28	MP3A	X	0	5
29	MP3A	Z	-.968	5
30	MP3A	Mx	0	5
31	MP2A	X	0	1.5
32	MP2A	Z	-10.671	1.5
33	MP2A	Mx	0	1.5
34	MP2A	X	0	5.5
35	MP2A	Z	-10.671	5.5
36	MP2A	Mx	0	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	5.445	1.5
2	MP3A	Z	-9.432	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
3	MP3A	Mx	-.008	1.5
4	MP3A	X	5.445	5.5
5	MP3A	Z	-9.432	5.5
6	MP3A	Mx	-.008	5.5
7	MP3A	X	5.445	1.5
8	MP3A	Z	-9.432	1.5
9	MP3A	Mx	.003	1.5
10	MP3A	X	5.445	5.5
11	MP3A	Z	-9.432	5.5
12	MP3A	Mx	.003	5.5
13	MP1A	X	2.327	2.5
14	MP1A	Z	-4.031	2.5
15	MP1A	Mx	-.001	2.5
16	MP1A	X	2.327	4.5
17	MP1A	Z	-4.031	4.5
18	MP1A	Mx	-.001	4.5
19	MP3A	X	2.243	3
20	MP3A	Z	-3.884	3
21	MP3A	Mx	.001	3
22	MP2A	X	2.165	3
23	MP2A	Z	-3.75	3
24	MP2A	Mx	.001	3
25	M45A	X	3.699	2
26	M45A	Z	-6.408	2
27	M45A	Mx	0	2
28	MP3A	X	.447	5
29	MP3A	Z	-.773	5
30	MP3A	Mx	.000223	5
31	MP2A	X	4.884	1.5
32	MP2A	Z	-8.458	1.5
33	MP2A	Mx	-.004	1.5
34	MP2A	X	4.884	5.5
35	MP2A	Z	-8.458	5.5
36	MP2A	Mx	-.004	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	7.661	1.5
2	MP3A	Z	-4.423	1.5
3	MP3A	Mx	-.006	1.5
4	MP3A	X	7.661	5.5
5	MP3A	Z	-4.423	5.5
6	MP3A	Mx	-.006	5.5
7	MP3A	X	7.661	1.5
8	MP3A	Z	-4.423	1.5
9	MP3A	Mx	-.001	1.5
10	MP3A	X	7.661	5.5
11	MP3A	Z	-4.423	5.5
12	MP3A	Mx	-.001	5.5
13	MP1A	X	2.965	2.5
14	MP1A	Z	-1.712	2.5
15	MP1A	Mx	-.001	2.5
16	MP1A	X	2.965	4.5
17	MP1A	Z	-1.712	4.5
18	MP1A	Mx	-.001	4.5
19	MP3A	X	3.182	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
20	MP3A	Z	-1.837	3
21	MP3A	Mx	.002	3
22	MP2A	X	2.779	3
23	MP2A	Z	-1.604	3
24	MP2A	Mx	.001	3
25	M45A	X	5.682	2
26	M45A	Z	-3.281	2
27	M45A	Mx	0	2
28	MP3A	X	.644	5
29	MP3A	Z	-.372	5
30	MP3A	Mx	.000322	5
31	MP2A	X	6.894	1.5
32	MP2A	Z	-3.98	1.5
33	MP2A	Mx	-.005	1.5
34	MP2A	X	6.894	5.5
35	MP2A	Z	-3.98	5.5
36	MP2A	Mx	-.005	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	7.824	1.5
2	MP3A	Z	0	1.5
3	MP3A	Mx	-.004	1.5
4	MP3A	X	7.824	5.5
5	MP3A	Z	0	5.5
6	MP3A	Mx	-.004	5.5
7	MP3A	X	7.824	1.5
8	MP3A	Z	0	1.5
9	MP3A	Mx	-.004	1.5
10	MP3A	X	7.824	5.5
11	MP3A	Z	0	5.5
12	MP3A	Mx	-.004	5.5
13	MP1A	X	2.808	2.5
14	MP1A	Z	0	2.5
15	MP1A	Mx	-.001	2.5
16	MP1A	X	2.808	4.5
17	MP1A	Z	0	4.5
18	MP1A	Mx	-.001	4.5
19	MP3A	X	3.269	3
20	MP3A	Z	0	3
21	MP3A	Mx	.002	3
22	MP2A	X	2.648	3
23	MP2A	Z	0	3
24	MP2A	Mx	.001	3
25	M45A	X	7.399	2
26	M45A	Z	0	2
27	M45A	Mx	0	2
28	MP3A	X	.67	5
29	MP3A	Z	0	5
30	MP3A	Mx	.000335	5
31	MP2A	X	7.056	1.5
32	MP2A	Z	0	1.5
33	MP2A	Mx	-.005	1.5
34	MP2A	X	7.056	5.5
35	MP2A	Z	0	5.5
36	MP2A	Mx	-.005	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	7.661	1.5
2	MP3A	Z	4.423	1.5
3	MP3A	Mx	-.001	1.5
4	MP3A	X	7.661	5.5
5	MP3A	Z	4.423	5.5
6	MP3A	Mx	-.001	5.5
7	MP3A	X	7.661	1.5
8	MP3A	Z	4.423	1.5
9	MP3A	Mx	-.006	1.5
10	MP3A	X	7.661	5.5
11	MP3A	Z	4.423	5.5
12	MP3A	Mx	-.006	5.5
13	MP1A	X	2.965	2.5
14	MP1A	Z	1.712	2.5
15	MP1A	Mx	-.001	2.5
16	MP1A	X	2.965	4.5
17	MP1A	Z	1.712	4.5
18	MP1A	Mx	-.001	4.5
19	MP3A	X	3.182	3
20	MP3A	Z	1.837	3
21	MP3A	Mx	.002	3
22	MP2A	X	2.779	3
23	MP2A	Z	1.604	3
24	MP2A	Mx	.001	3
25	M45A	X	7.859	2
26	M45A	Z	4.537	2
27	M45A	Mx	0	2
28	MP3A	X	.644	5
29	MP3A	Z	.372	5
30	MP3A	Mx	.000322	5
31	MP2A	X	6.894	1.5
32	MP2A	Z	3.98	1.5
33	MP2A	Mx	-.005	1.5
34	MP2A	X	6.894	5.5
35	MP2A	Z	3.98	5.5
36	MP2A	Mx	-.005	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	5.445	1.5
2	MP3A	Z	9.432	1.5
3	MP3A	Mx	.003	1.5
4	MP3A	X	5.445	5.5
5	MP3A	Z	9.432	5.5
6	MP3A	Mx	.003	5.5
7	MP3A	X	5.445	1.5
8	MP3A	Z	9.432	1.5
9	MP3A	Mx	-.008	1.5
10	MP3A	X	5.445	5.5
11	MP3A	Z	9.432	5.5
12	MP3A	Mx	-.008	5.5
13	MP1A	X	2.327	2.5
14	MP1A	Z	4.031	2.5
15	MP1A	Mx	-.001	2.5
16	MP1A	X	2.327	4.5
17	MP1A	Z	4.031	4.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
18	MP1A	Mx	-.001	4.5
19	MP3A	X	2.243	3
20	MP3A	Z	3.884	3
21	MP3A	Mx	.001	3
22	MP2A	X	2.165	3
23	MP2A	Z	3.75	3
24	MP2A	Mx	.001	3
25	M45A	X	4.956	2
26	M45A	Z	8.584	2
27	M45A	Mx	0	2
28	MP3A	X	.447	5
29	MP3A	Z	.773	5
30	MP3A	Mx	.000223	5
31	MP2A	X	4.884	1.5
32	MP2A	Z	8.458	1.5
33	MP2A	Mx	-.004	1.5
34	MP2A	X	4.884	5.5
35	MP2A	Z	8.458	5.5
36	MP2A	Mx	-.004	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	0	1.5
2	MP3A	Z	11.913	1.5
3	MP3A	Mx	.007	1.5
4	MP3A	X	0	5.5
5	MP3A	Z	11.913	5.5
6	MP3A	Mx	.007	5.5
7	MP3A	X	0	1.5
8	MP3A	Z	11.913	1.5
9	MP3A	Mx	-.007	1.5
10	MP3A	X	0	5.5
11	MP3A	Z	11.913	5.5
12	MP3A	Mx	-.007	5.5
13	MP1A	X	0	2.5
14	MP1A	Z	5.27	2.5
15	MP1A	Mx	0	2.5
16	MP1A	X	0	4.5
17	MP1A	Z	5.27	4.5
18	MP1A	Mx	0	4.5
19	MP3A	X	0	3
20	MP3A	Z	4.891	3
21	MP3A	Mx	0	3
22	MP2A	X	0	3
23	MP2A	Z	4.891	3
24	MP2A	Mx	0	3
25	M45A	X	0	2
26	M45A	Z	9.074	2
27	M45A	Mx	0	2
28	MP3A	X	0	5
29	MP3A	Z	.968	5
30	MP3A	Mx	0	5
31	MP2A	X	0	1.5
32	MP2A	Z	10.671	1.5
33	MP2A	Mx	0	1.5
34	MP2A	X	0	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
35	MP2A	Z	10.671	5.5
36	MP2A	Mx	0	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	-5.445	1.5
2	MP3A	Z	9.432	1.5
3	MP3A	Mx	.008	1.5
4	MP3A	X	-5.445	5.5
5	MP3A	Z	9.432	5.5
6	MP3A	Mx	.008	5.5
7	MP3A	X	-5.445	1.5
8	MP3A	Z	9.432	1.5
9	MP3A	Mx	-.003	1.5
10	MP3A	X	-5.445	5.5
11	MP3A	Z	9.432	5.5
12	MP3A	Mx	-.003	5.5
13	MP1A	X	-2.327	2.5
14	MP1A	Z	4.031	2.5
15	MP1A	Mx	.001	2.5
16	MP1A	X	-2.327	4.5
17	MP1A	Z	4.031	4.5
18	MP1A	Mx	.001	4.5
19	MP3A	X	-2.243	3
20	MP3A	Z	3.884	3
21	MP3A	Mx	-.001	3
22	MP2A	X	-2.165	3
23	MP2A	Z	3.75	3
24	MP2A	Mx	-.001	3
25	M45A	X	-3.699	2
26	M45A	Z	6.408	2
27	M45A	Mx	0	2
28	MP3A	X	-.447	5
29	MP3A	Z	.773	5
30	MP3A	Mx	-.000223	5
31	MP2A	X	-4.884	1.5
32	MP2A	Z	8.458	1.5
33	MP2A	Mx	.004	1.5
34	MP2A	X	-4.884	5.5
35	MP2A	Z	8.458	5.5
36	MP2A	Mx	.004	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	-7.661	1.5
2	MP3A	Z	4.423	1.5
3	MP3A	Mx	.006	1.5
4	MP3A	X	-7.661	5.5
5	MP3A	Z	4.423	5.5
6	MP3A	Mx	.006	5.5
7	MP3A	X	-7.661	1.5
8	MP3A	Z	4.423	1.5
9	MP3A	Mx	.001	1.5
10	MP3A	X	-7.661	5.5
11	MP3A	Z	4.423	5.5
12	MP3A	Mx	.001	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
13	MP1A	X	-2.965	2.5
14	MP1A	Z	1.712	2.5
15	MP1A	Mx	.001	2.5
16	MP1A	X	-2.965	4.5
17	MP1A	Z	1.712	4.5
18	MP1A	Mx	.001	4.5
19	MP3A	X	-3.182	3
20	MP3A	Z	1.837	3
21	MP3A	Mx	-.002	3
22	MP2A	X	-2.779	3
23	MP2A	Z	1.604	3
24	MP2A	Mx	-.001	3
25	M45A	X	-5.682	2
26	M45A	Z	3.281	2
27	M45A	Mx	0	2
28	MP3A	X	-.644	5
29	MP3A	Z	.372	5
30	MP3A	Mx	-.000322	5
31	MP2A	X	-6.894	1.5
32	MP2A	Z	3.98	1.5
33	MP2A	Mx	.005	1.5
34	MP2A	X	-6.894	5.5
35	MP2A	Z	3.98	5.5
36	MP2A	Mx	.005	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	-7.824	1.5
2	MP3A	Z	0	1.5
3	MP3A	Mx	.004	1.5
4	MP3A	X	-7.824	5.5
5	MP3A	Z	0	5.5
6	MP3A	Mx	.004	5.5
7	MP3A	X	-7.824	1.5
8	MP3A	Z	0	1.5
9	MP3A	Mx	.004	1.5
10	MP3A	X	-7.824	5.5
11	MP3A	Z	0	5.5
12	MP3A	Mx	.004	5.5
13	MP1A	X	-2.808	2.5
14	MP1A	Z	0	2.5
15	MP1A	Mx	.001	2.5
16	MP1A	X	-2.808	4.5
17	MP1A	Z	0	4.5
18	MP1A	Mx	.001	4.5
19	MP3A	X	-3.269	3
20	MP3A	Z	0	3
21	MP3A	Mx	-.002	3
22	MP2A	X	-2.648	3
23	MP2A	Z	0	3
24	MP2A	Mx	-.001	3
25	M45A	X	-7.399	2
26	M45A	Z	0	2
27	M45A	Mx	0	2
28	MP3A	X	-.67	5
29	MP3A	Z	0	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
30	MP3A	Mx	-.000335	5
31	MP2A	X	-7.056	1.5
32	MP2A	Z	0	1.5
33	MP2A	Mx	.005	1.5
34	MP2A	X	-7.056	5.5
35	MP2A	Z	0	5.5
36	MP2A	Mx	.005	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	-7.661	1.5
2	MP3A	Z	-4.423	1.5
3	MP3A	Mx	.001	1.5
4	MP3A	X	-7.661	5.5
5	MP3A	Z	-4.423	5.5
6	MP3A	Mx	.001	5.5
7	MP3A	X	-7.661	1.5
8	MP3A	Z	-4.423	1.5
9	MP3A	Mx	.006	1.5
10	MP3A	X	-7.661	5.5
11	MP3A	Z	-4.423	5.5
12	MP3A	Mx	.006	5.5
13	MP1A	X	-2.965	2.5
14	MP1A	Z	-1.712	2.5
15	MP1A	Mx	.001	2.5
16	MP1A	X	-2.965	4.5
17	MP1A	Z	-1.712	4.5
18	MP1A	Mx	.001	4.5
19	MP3A	X	-3.182	3
20	MP3A	Z	-1.837	3
21	MP3A	Mx	-.002	3
22	MP2A	X	-2.779	3
23	MP2A	Z	-1.604	3
24	MP2A	Mx	-.001	3
25	M45A	X	-7.859	2
26	M45A	Z	-4.537	2
27	M45A	Mx	0	2
28	MP3A	X	-.644	5
29	MP3A	Z	-.372	5
30	MP3A	Mx	-.000322	5
31	MP2A	X	-6.894	1.5
32	MP2A	Z	-3.98	1.5
33	MP2A	Mx	.005	1.5
34	MP2A	X	-6.894	5.5
35	MP2A	Z	-3.98	5.5
36	MP2A	Mx	.005	5.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP3A	X	-5.445	1.5
2	MP3A	Z	-9.432	1.5
3	MP3A	Mx	-.003	1.5
4	MP3A	X	-5.445	5.5
5	MP3A	Z	-9.432	5.5
6	MP3A	Mx	-.003	5.5
7	MP3A	X	-5.445	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
8	MP3A	Z	-9.432	1.5
9	MP3A	Mx	.008	1.5
10	MP3A	X	-5.445	5.5
11	MP3A	Z	-9.432	5.5
12	MP3A	Mx	.008	5.5
13	MP1A	X	-2.327	2.5
14	MP1A	Z	-4.031	2.5
15	MP1A	Mx	.001	2.5
16	MP1A	X	-2.327	4.5
17	MP1A	Z	-4.031	4.5
18	MP1A	Mx	.001	4.5
19	MP3A	X	-2.243	3
20	MP3A	Z	-3.884	3
21	MP3A	Mx	-.001	3
22	MP2A	X	-2.165	3
23	MP2A	Z	-3.75	3
24	MP2A	Mx	-.001	3
25	M45A	X	-4.956	2
26	M45A	Z	-8.584	2
27	M45A	Mx	0	2
28	MP3A	X	-.447	5
29	MP3A	Z	-.773	5
30	MP3A	Mx	-.000223	5
31	MP2A	X	-4.884	1.5
32	MP2A	Z	-8.458	1.5
33	MP2A	Mx	.004	1.5
34	MP2A	X	-4.884	5.5
35	MP2A	Z	-8.458	5.5
36	MP2A	Mx	.004	5.5

Member Point Loads (BLC 77 : Lm1)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	M1	Y	-500	%34

Member Point Loads (BLC 78 : Lm2)

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

Member Point Loads (BLC 79 : Lv1)

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

Member Point Loads (BLC 80 : Lv2)

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

Joint Loads and Enforced Displacements

Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2/ft, lb*s^2*ft)]
No Data to Print ...			

Member Distributed Loads (BLC 40 : Structure Di)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	Y	-6.752	-6.752	0	%100
2	M2	Y	-6.752	-6.752	0	%100
3	M13	Y	-7.847	-7.847	0	%100
4	M14	Y	-7.847	-7.847	0	%100
5	M15	Y	-7.847	-7.847	0	%100
6	M16	Y	-7.847	-7.847	0	%100
7	M17	Y	-5.946	-5.946	0	%100
8	M18	Y	-5.946	-5.946	0	%100
9	M19	Y	-5.946	-5.946	0	%100
10	M20	Y	-5.946	-5.946	0	%100
11	M21	Y	-7.847	-7.847	0	%100
12	M22	Y	-7.847	-7.847	0	%100
13	M23	Y	-7.847	-7.847	0	%100
14	M24	Y	-7.847	-7.847	0	%100
15	M25	Y	-3.33	-3.33	0	%100
16	M26	Y	-3.33	-3.33	0	%100
17	M27	Y	-3.33	-3.33	0	%100
18	M28	Y	-3.33	-3.33	0	%100
19	M31	Y	-5.946	-5.946	0	%100
20	M32	Y	-5.946	-5.946	0	%100
21	MP4A	Y	-5.946	-5.946	0	%100
22	MP3A	Y	-5.946	-5.946	0	%100
23	MP2A	Y	-5.946	-5.946	0	%100
24	MP1A	Y	-5.946	-5.946	0	%100
25	M44	Y	-3.129	-3.129	0	%100
26	M45	Y	-3.129	-3.129	0	%100
27	M46	Y	-3.129	-3.129	0	%100
28	M47	Y	-3.129	-3.129	0	%100
29	M45A	Y	-5.946	-5.946	0	%100

Member Distributed Loads (BLC 41 : Structure Wo (0 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	0	0	0	%100
2	M1	Z	-13.903	-13.903	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	-13.903	-13.903	0	%100
5	M13	X	0	0	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	0	0	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	0	0	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	0	0	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	0	0	0	%100
14	M17	Z	-5.489	-5.489	0	%100
15	M18	X	0	0	0	%100
16	M18	Z	-5.489	-5.489	0	%100
17	M19	X	0	0	0	%100
18	M19	Z	-5.489	-5.489	0	%100
19	M20	X	0	0	0	%100
20	M20	Z	-5.489	-5.489	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	-3.022	-3.022	0	%100
23	M22	X	0	0	0	%100

Member Distributed Loads (BLC 41 : Structure Wo (0 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
24	M22	Z	-3.022	-3.022	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	-3.022	-3.022	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	-3.022	-3.022	0	%100
29	M25	X	0	0	0	%100
30	M25	Z	-3.13	-3.13	0	%100
31	M26	X	0	0	0	%100
32	M26	Z	-3.13	-3.13	0	%100
33	M27	X	0	0	0	%100
34	M27	Z	-3.13	-3.13	0	%100
35	M28	X	0	0	0	%100
36	M28	Z	-3.13	-3.13	0	%100
37	M31	X	0	0	0	%100
38	M31	Z	-.261	-.261	0	%100
39	M32	X	0	0	0	%100
40	M32	Z	-.403	-.403	0	%100
41	MP4A	X	0	0	0	%100
42	MP4A	Z	-9.995	-9.995	0	%100
43	MP3A	X	0	0	0	%100
44	MP3A	Z	-9.995	-9.995	0	%100
45	MP2A	X	0	0	0	%100
46	MP2A	Z	-9.995	-9.995	0	%100
47	MP1A	X	0	0	0	%100
48	MP1A	Z	-9.995	-9.995	0	%100
49	M44	X	0	0	0	%100
50	M44	Z	-3.022	-3.022	0	%100
51	M45	X	0	0	0	%100
52	M45	Z	-3.022	-3.022	0	%100
53	M46	X	0	0	0	%100
54	M46	Z	-3.022	-3.022	0	%100
55	M47	X	0	0	0	%100
56	M47	Z	-3.022	-3.022	0	%100
57	M45A	X	0	0	0	%100
58	M45A	Z	-9.666	-9.666	0	%100

Member Distributed Loads (BLC 42 : Structure Wo (30 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	5.214	5.214	0	%100
2	M1	Z	-9.03	-9.03	0	%100
3	M2	X	5.214	5.214	0	%100
4	M2	Z	-9.03	-9.03	0	%100
5	M13	X	.378	.378	0	%100
6	M13	Z	-.654	-.654	0	%100
7	M14	X	.378	.378	0	%100
8	M14	Z	-.654	-.654	0	%100
9	M15	X	.378	.378	0	%100
10	M15	Z	-.654	-.654	0	%100
11	M16	X	.378	.378	0	%100
12	M16	Z	-.654	-.654	0	%100
13	M17	X	.618	.618	0	%100
14	M17	Z	-1.07	-1.07	0	%100
15	M18	X	.618	.618	0	%100
16	M18	Z	-1.07	-1.07	0	%100
17	M19	X	4.34	4.34	0	%100
18	M19	Z	-7.518	-7.518	0	%100

Member Distributed Loads (BLC 42 : Structure Wo (30 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
19	M20	X	4.34	4.34	0	%100
20	M20	Z	-7.518	-7.518	0	%100
21	M21	X	1.133	1.133	0	%100
22	M21	Z	-1.963	-1.963	0	%100
23	M22	X	1.133	1.133	0	%100
24	M22	Z	-1.963	-1.963	0	%100
25	M23	X	1.133	1.133	0	%100
26	M23	Z	-1.963	-1.963	0	%100
27	M24	X	1.133	1.133	0	%100
28	M24	Z	-1.963	-1.963	0	%100
29	M25	X	1.252	1.252	0	%100
30	M25	Z	-2.168	-2.168	0	%100
31	M26	X	1.252	1.252	0	%100
32	M26	Z	-2.168	-2.168	0	%100
33	M27	X	1.801	1.801	0	%100
34	M27	Z	-3.119	-3.119	0	%100
35	M28	X	1.801	1.801	0	%100
36	M28	Z	-3.119	-3.119	0	%100
37	M31	X	.76	.76	0	%100
38	M31	Z	-1.316	-1.316	0	%100
39	M32	X	2.451	2.451	0	%100
40	M32	Z	-4.245	-4.245	0	%100
41	MP4A	X	5.184	5.184	0	%100
42	MP4A	Z	-8.979	-8.979	0	%100
43	MP3A	X	5.184	5.184	0	%100
44	MP3A	Z	-8.979	-8.979	0	%100
45	MP2A	X	5.184	5.184	0	%100
46	MP2A	Z	-8.979	-8.979	0	%100
47	MP1A	X	5.184	5.184	0	%100
48	MP1A	Z	-8.979	-8.979	0	%100
49	M44	X	1.511	1.511	0	%100
50	M44	Z	-2.617	-2.617	0	%100
51	M45	X	1.511	1.511	0	%100
52	M45	Z	-2.617	-2.617	0	%100
53	M46	X	1.511	1.511	0	%100
54	M46	Z	-2.617	-2.617	0	%100
55	M47	X	1.511	1.511	0	%100
56	M47	Z	-2.617	-2.617	0	%100
57	M45A	X	4.933	4.933	0	%100
58	M45A	Z	-8.545	-8.545	0	%100

Member Distributed Loads (BLC 43 : Structure Wo (60 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	3.01	3.01	0	%100
2	M1	Z	-1.738	-1.738	0	%100
3	M2	X	3.01	3.01	0	%100
4	M2	Z	-1.738	-1.738	0	%100
5	M13	X	1.963	1.963	0	%100
6	M13	Z	-1.133	-1.133	0	%100
7	M14	X	1.963	1.963	0	%100
8	M14	Z	-1.133	-1.133	0	%100
9	M15	X	1.963	1.963	0	%100
10	M15	Z	-1.133	-1.133	0	%100
11	M16	X	1.963	1.963	0	%100
12	M16	Z	-1.133	-1.133	0	%100
13	M17	X	.151	.151	0	%100

Member Distributed Loads (BLC 43 : Structure Wo (60 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
14	M17	Z	-.087	-.087	0	%100
15	M18	X	.151	.151	0	%100
16	M18	Z	-.087	-.087	0	%100
17	M19	X	6.598	6.598	0	%100
18	M19	Z	-3.81	-3.81	0	%100
19	M20	X	6.598	6.598	0	%100
20	M20	Z	-3.81	-3.81	0	%100
21	M21	X	.654	.654	0	%100
22	M21	Z	-.378	-.378	0	%100
23	M22	X	.654	.654	0	%100
24	M22	Z	-.378	-.378	0	%100
25	M23	X	.654	.654	0	%100
26	M23	Z	-.378	-.378	0	%100
27	M24	X	.654	.654	0	%100
28	M24	Z	-.378	-.378	0	%100
29	M25	X	2.032	2.032	0	%100
30	M25	Z	-1.173	-1.173	0	%100
31	M26	X	2.032	2.032	0	%100
32	M26	Z	-1.173	-1.173	0	%100
33	M27	X	2.983	2.983	0	%100
34	M27	Z	-1.722	-1.722	0	%100
35	M28	X	2.983	2.983	0	%100
36	M28	Z	-1.722	-1.722	0	%100
37	M31	X	6.063	6.063	0	%100
38	M31	Z	-3.501	-3.501	0	%100
39	M32	X	8.87	8.87	0	%100
40	M32	Z	-5.121	-5.121	0	%100
41	MP4A	X	9.624	9.624	0	%100
42	MP4A	Z	-5.556	-5.556	0	%100
43	MP3A	X	9.624	9.624	0	%100
44	MP3A	Z	-5.556	-5.556	0	%100
45	MP2A	X	9.624	9.624	0	%100
46	MP2A	Z	-5.556	-5.556	0	%100
47	MP1A	X	9.624	9.624	0	%100
48	MP1A	Z	-5.556	-5.556	0	%100
49	M44	X	2.617	2.617	0	%100
50	M44	Z	-1.511	-1.511	0	%100
51	M45	X	2.617	2.617	0	%100
52	M45	Z	-1.511	-1.511	0	%100
53	M46	X	2.617	2.617	0	%100
54	M46	Z	-1.511	-1.511	0	%100
55	M47	X	2.617	2.617	0	%100
56	M47	Z	-1.511	-1.511	0	%100
57	M45A	X	8.891	8.891	0	%100
58	M45A	Z	-5.133	-5.133	0	%100

Member Distributed Loads (BLC 44 : Structure Wo (90 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	0	0	0	%100
5	M13	X	3.022	3.022	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	3.022	3.022	0	%100
8	M14	Z	0	0	0	%100

Member Distributed Loads (BLC 44 : Structure Wo (90 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
9	M15	X	3.022	3.022	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	3.022	3.022	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	3.366	3.366	0	%100
14	M17	Z	0	0	0	%100
15	M18	X	3.366	3.366	0	%100
16	M18	Z	0	0	0	%100
17	M19	X	3.366	3.366	0	%100
18	M19	Z	0	0	0	%100
19	M20	X	3.366	3.366	0	%100
20	M20	Z	0	0	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	0	0	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	0	0	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	0	0	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	0	0	0	%100
29	M25	X	2.817	2.817	0	%100
30	M25	Z	0	0	0	%100
31	M26	X	2.817	2.817	0	%100
32	M26	Z	0	0	0	%100
33	M27	X	2.817	2.817	0	%100
34	M27	Z	0	0	0	%100
35	M28	X	2.817	2.817	0	%100
36	M28	Z	0	0	0	%100
37	M31	X	11.224	11.224	0	%100
38	M31	Z	0	0	0	%100
39	M32	X	11.082	11.082	0	%100
40	M32	Z	0	0	0	%100
41	MP4A	X	11.485	11.485	0	%100
42	MP4A	Z	0	0	0	%100
43	MP3A	X	11.485	11.485	0	%100
44	MP3A	Z	0	0	0	%100
45	MP2A	X	11.485	11.485	0	%100
46	MP2A	Z	0	0	0	%100
47	MP1A	X	11.485	11.485	0	%100
48	MP1A	Z	0	0	0	%100
49	M44	X	3.022	3.022	0	%100
50	M44	Z	0	0	0	%100
51	M45	X	3.022	3.022	0	%100
52	M45	Z	0	0	0	%100
53	M46	X	3.022	3.022	0	%100
54	M46	Z	0	0	0	%100
55	M47	X	3.022	3.022	0	%100
56	M47	Z	0	0	0	%100
57	M45A	X	10.466	10.466	0	%100
58	M45A	Z	0	0	0	%100

Member Distributed Loads (BLC 45 : Structure Wo (120 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	3.01	3.01	0	%100
2	M1	Z	1.738	1.738	0	%100
3	M2	X	3.01	3.01	0	%100

Member Distributed Loads (BLC 45 : Structure Wo (120 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
4	M2	Z	1.738	1.738	0	%100
5	M13	X	1.963	1.963	0	%100
6	M13	Z	1.133	1.133	0	%100
7	M14	X	1.963	1.963	0	%100
8	M14	Z	1.133	1.133	0	%100
9	M15	X	1.963	1.963	0	%100
10	M15	Z	1.133	1.133	0	%100
11	M16	X	1.963	1.963	0	%100
12	M16	Z	1.133	1.133	0	%100
13	M17	X	6.598	6.598	0	%100
14	M17	Z	3.81	3.81	0	%100
15	M18	X	6.598	6.598	0	%100
16	M18	Z	3.81	3.81	0	%100
17	M19	X	.151	.151	0	%100
18	M19	Z	.087	.087	0	%100
19	M20	X	.151	.151	0	%100
20	M20	Z	.087	.087	0	%100
21	M21	X	.654	.654	0	%100
22	M21	Z	.378	.378	0	%100
23	M22	X	.654	.654	0	%100
24	M22	Z	.378	.378	0	%100
25	M23	X	.654	.654	0	%100
26	M23	Z	.378	.378	0	%100
27	M24	X	.654	.654	0	%100
28	M24	Z	.378	.378	0	%100
29	M25	X	2.983	2.983	0	%100
30	M25	Z	1.722	1.722	0	%100
31	M26	X	2.983	2.983	0	%100
32	M26	Z	1.722	1.722	0	%100
33	M27	X	2.032	2.032	0	%100
34	M27	Z	1.173	1.173	0	%100
35	M28	X	2.032	2.032	0	%100
36	M28	Z	1.173	1.173	0	%100
37	M31	X	8.63	8.63	0	%100
38	M31	Z	4.983	4.983	0	%100
39	M32	X	5.701	5.701	0	%100
40	M32	Z	3.292	3.292	0	%100
41	MP4A	X	9.624	9.624	0	%100
42	MP4A	Z	5.556	5.556	0	%100
43	MP3A	X	9.624	9.624	0	%100
44	MP3A	Z	5.556	5.556	0	%100
45	MP2A	X	9.624	9.624	0	%100
46	MP2A	Z	5.556	5.556	0	%100
47	MP1A	X	9.624	9.624	0	%100
48	MP1A	Z	5.556	5.556	0	%100
49	M44	X	2.617	2.617	0	%100
50	M44	Z	1.511	1.511	0	%100
51	M45	X	2.617	2.617	0	%100
52	M45	Z	1.511	1.511	0	%100
53	M46	X	2.617	2.617	0	%100
54	M46	Z	1.511	1.511	0	%100
55	M47	X	2.617	2.617	0	%100
56	M47	Z	1.511	1.511	0	%100
57	M45A	X	8.891	8.891	0	%100
58	M45A	Z	5.133	5.133	0	%100

Member Distributed Loads (BLC 46 : Structure Wo (150 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	5.214	5.214	0	%100
2	M1	Z	9.03	9.03	0	%100
3	M2	X	5.214	5.214	0	%100
4	M2	Z	9.03	9.03	0	%100
5	M13	X	.378	.378	0	%100
6	M13	Z	.654	.654	0	%100
7	M14	X	.378	.378	0	%100
8	M14	Z	.654	.654	0	%100
9	M15	X	.378	.378	0	%100
10	M15	Z	.654	.654	0	%100
11	M16	X	.378	.378	0	%100
12	M16	Z	.654	.654	0	%100
13	M17	X	4.34	4.34	0	%100
14	M17	Z	7.518	7.518	0	%100
15	M18	X	4.34	4.34	0	%100
16	M18	Z	7.518	7.518	0	%100
17	M19	X	.618	.618	0	%100
18	M19	Z	1.07	1.07	0	%100
19	M20	X	.618	.618	0	%100
20	M20	Z	1.07	1.07	0	%100
21	M21	X	1.133	1.133	0	%100
22	M21	Z	1.963	1.963	0	%100
23	M22	X	1.133	1.133	0	%100
24	M22	Z	1.963	1.963	0	%100
25	M23	X	1.133	1.133	0	%100
26	M23	Z	1.963	1.963	0	%100
27	M24	X	1.133	1.133	0	%100
28	M24	Z	1.963	1.963	0	%100
29	M25	X	1.801	1.801	0	%100
30	M25	Z	3.119	3.119	0	%100
31	M26	X	1.801	1.801	0	%100
32	M26	Z	3.119	3.119	0	%100
33	M27	X	1.252	1.252	0	%100
34	M27	Z	2.168	2.168	0	%100
35	M28	X	1.252	1.252	0	%100
36	M28	Z	2.168	2.168	0	%100
37	M31	X	2.242	2.242	0	%100
38	M31	Z	3.883	3.883	0	%100
39	M32	X	.622	.622	0	%100
40	M32	Z	1.077	1.077	0	%100
41	MP4A	X	5.184	5.184	0	%100
42	MP4A	Z	8.979	8.979	0	%100
43	MP3A	X	5.184	5.184	0	%100
44	MP3A	Z	8.979	8.979	0	%100
45	MP2A	X	5.184	5.184	0	%100
46	MP2A	Z	8.979	8.979	0	%100
47	MP1A	X	5.184	5.184	0	%100
48	MP1A	Z	8.979	8.979	0	%100
49	M44	X	1.511	1.511	0	%100
50	M44	Z	2.617	2.617	0	%100
51	M45	X	1.511	1.511	0	%100
52	M45	Z	2.617	2.617	0	%100
53	M46	X	1.511	1.511	0	%100
54	M46	Z	2.617	2.617	0	%100
55	M47	X	1.511	1.511	0	%100
56	M47	Z	2.617	2.617	0	%100
57	M45A	X	4.933	4.933	0	%100

Member Distributed Loads (BLC 46 : Structure Wo (150 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
58	M45A	Z	8.545	8.545	0	%100

Member Distributed Loads (BLC 47 : Structure Wo (180 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	0	0	0	%100
2	M1	Z	13.903	13.903	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	13.903	13.903	0	%100
5	M13	X	0	0	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	0	0	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	0	0	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	0	0	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	0	0	0	%100
14	M17	Z	5.489	5.489	0	%100
15	M18	X	0	0	0	%100
16	M18	Z	5.489	5.489	0	%100
17	M19	X	0	0	0	%100
18	M19	Z	5.489	5.489	0	%100
19	M20	X	0	0	0	%100
20	M20	Z	5.489	5.489	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	3.022	3.022	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	3.022	3.022	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	3.022	3.022	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	3.022	3.022	0	%100
29	M25	X	0	0	0	%100
30	M25	Z	3.13	3.13	0	%100
31	M26	X	0	0	0	%100
32	M26	Z	3.13	3.13	0	%100
33	M27	X	0	0	0	%100
34	M27	Z	3.13	3.13	0	%100
35	M28	X	0	0	0	%100
36	M28	Z	3.13	3.13	0	%100
37	M31	X	0	0	0	%100
38	M31	Z	.261	.261	0	%100
39	M32	X	0	0	0	%100
40	M32	Z	.403	.403	0	%100
41	MP4A	X	0	0	0	%100
42	MP4A	Z	9.995	9.995	0	%100
43	MP3A	X	0	0	0	%100
44	MP3A	Z	9.995	9.995	0	%100
45	MP2A	X	0	0	0	%100
46	MP2A	Z	9.995	9.995	0	%100
47	MP1A	X	0	0	0	%100
48	MP1A	Z	9.995	9.995	0	%100
49	M44	X	0	0	0	%100
50	M44	Z	3.022	3.022	0	%100
51	M45	X	0	0	0	%100
52	M45	Z	3.022	3.022	0	%100

Member Distributed Loads (BLC 47 : Structure Wo (180 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
53	M46	X	0	0	0	%100
54	M46	Z	3.022	3.022	0	%100
55	M47	X	0	0	0	%100
56	M47	Z	3.022	3.022	0	%100
57	M45A	X	0	0	0	%100
58	M45A	Z	9.666	9.666	0	%100

Member Distributed Loads (BLC 48 : Structure Wo (210 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	-5.214	-5.214	0	%100
2	M1	Z	9.03	9.03	0	%100
3	M2	X	-5.214	-5.214	0	%100
4	M2	Z	9.03	9.03	0	%100
5	M13	X	-.378	-.378	0	%100
6	M13	Z	.654	.654	0	%100
7	M14	X	-.378	-.378	0	%100
8	M14	Z	.654	.654	0	%100
9	M15	X	-.378	-.378	0	%100
10	M15	Z	.654	.654	0	%100
11	M16	X	-.378	-.378	0	%100
12	M16	Z	.654	.654	0	%100
13	M17	X	-.618	-.618	0	%100
14	M17	Z	1.07	1.07	0	%100
15	M18	X	-.618	-.618	0	%100
16	M18	Z	1.07	1.07	0	%100
17	M19	X	-4.34	-4.34	0	%100
18	M19	Z	7.518	7.518	0	%100
19	M20	X	-4.34	-4.34	0	%100
20	M20	Z	7.518	7.518	0	%100
21	M21	X	-1.133	-1.133	0	%100
22	M21	Z	1.963	1.963	0	%100
23	M22	X	-1.133	-1.133	0	%100
24	M22	Z	1.963	1.963	0	%100
25	M23	X	-1.133	-1.133	0	%100
26	M23	Z	1.963	1.963	0	%100
27	M24	X	-1.133	-1.133	0	%100
28	M24	Z	1.963	1.963	0	%100
29	M25	X	-1.252	-1.252	0	%100
30	M25	Z	2.168	2.168	0	%100
31	M26	X	-1.252	-1.252	0	%100
32	M26	Z	2.168	2.168	0	%100
33	M27	X	-1.801	-1.801	0	%100
34	M27	Z	3.119	3.119	0	%100
35	M28	X	-1.801	-1.801	0	%100
36	M28	Z	3.119	3.119	0	%100
37	M31	X	-.76	-.76	0	%100
38	M31	Z	1.316	1.316	0	%100
39	M32	X	-2.451	-2.451	0	%100
40	M32	Z	4.245	4.245	0	%100
41	MP4A	X	-5.184	-5.184	0	%100
42	MP4A	Z	8.979	8.979	0	%100
43	MP3A	X	-5.184	-5.184	0	%100
44	MP3A	Z	8.979	8.979	0	%100
45	MP2A	X	-5.184	-5.184	0	%100
46	MP2A	Z	8.979	8.979	0	%100
47	MP1A	X	-5.184	-5.184	0	%100

Member Distributed Loads (BLC 48 : Structure Wo (210 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
48	MP1A	Z	8.979	8.979	0	%100
49	M44	X	-1.511	-1.511	0	%100
50	M44	Z	2.617	2.617	0	%100
51	M45	X	-1.511	-1.511	0	%100
52	M45	Z	2.617	2.617	0	%100
53	M46	X	-1.511	-1.511	0	%100
54	M46	Z	2.617	2.617	0	%100
55	M47	X	-1.511	-1.511	0	%100
56	M47	Z	2.617	2.617	0	%100
57	M45A	X	-4.933	-4.933	0	%100
58	M45A	Z	8.545	8.545	0	%100

Member Distributed Loads (BLC 49 : Structure Wo (240 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	-3.01	-3.01	0	%100
2	M1	Z	1.738	1.738	0	%100
3	M2	X	-3.01	-3.01	0	%100
4	M2	Z	1.738	1.738	0	%100
5	M13	X	-1.963	-1.963	0	%100
6	M13	Z	1.133	1.133	0	%100
7	M14	X	-1.963	-1.963	0	%100
8	M14	Z	1.133	1.133	0	%100
9	M15	X	-1.963	-1.963	0	%100
10	M15	Z	1.133	1.133	0	%100
11	M16	X	-1.963	-1.963	0	%100
12	M16	Z	1.133	1.133	0	%100
13	M17	X	-.151	-.151	0	%100
14	M17	Z	.087	.087	0	%100
15	M18	X	-.151	-.151	0	%100
16	M18	Z	.087	.087	0	%100
17	M19	X	-6.598	-6.598	0	%100
18	M19	Z	3.81	3.81	0	%100
19	M20	X	-6.598	-6.598	0	%100
20	M20	Z	3.81	3.81	0	%100
21	M21	X	-.654	-.654	0	%100
22	M21	Z	.378	.378	0	%100
23	M22	X	-.654	-.654	0	%100
24	M22	Z	.378	.378	0	%100
25	M23	X	-.654	-.654	0	%100
26	M23	Z	.378	.378	0	%100
27	M24	X	-.654	-.654	0	%100
28	M24	Z	.378	.378	0	%100
29	M25	X	-2.032	-2.032	0	%100
30	M25	Z	1.173	1.173	0	%100
31	M26	X	-2.032	-2.032	0	%100
32	M26	Z	1.173	1.173	0	%100
33	M27	X	-2.983	-2.983	0	%100
34	M27	Z	1.722	1.722	0	%100
35	M28	X	-2.983	-2.983	0	%100
36	M28	Z	1.722	1.722	0	%100
37	M31	X	-6.063	-6.063	0	%100
38	M31	Z	3.501	3.501	0	%100
39	M32	X	-8.87	-8.87	0	%100
40	M32	Z	5.121	5.121	0	%100
41	MP4A	X	-9.624	-9.624	0	%100
42	MP4A	Z	5.556	5.556	0	%100

Member Distributed Loads (BLC 49 : Structure Wo (240 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
43	MP3A	X	-9.624	-9.624	0	%100
44	MP3A	Z	5.556	5.556	0	%100
45	MP2A	X	-9.624	-9.624	0	%100
46	MP2A	Z	5.556	5.556	0	%100
47	MP1A	X	-9.624	-9.624	0	%100
48	MP1A	Z	5.556	5.556	0	%100
49	M44	X	-2.617	-2.617	0	%100
50	M44	Z	1.511	1.511	0	%100
51	M45	X	-2.617	-2.617	0	%100
52	M45	Z	1.511	1.511	0	%100
53	M46	X	-2.617	-2.617	0	%100
54	M46	Z	1.511	1.511	0	%100
55	M47	X	-2.617	-2.617	0	%100
56	M47	Z	1.511	1.511	0	%100
57	M45A	X	-8.891	-8.891	0	%100
58	M45A	Z	5.133	5.133	0	%100

Member Distributed Loads (BLC 50 : Structure Wo (270 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	0	0	0	%100
5	M13	X	-3.022	-3.022	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	-3.022	-3.022	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	-3.022	-3.022	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	-3.022	-3.022	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	-3.366	-3.366	0	%100
14	M17	Z	0	0	0	%100
15	M18	X	-3.366	-3.366	0	%100
16	M18	Z	0	0	0	%100
17	M19	X	-3.366	-3.366	0	%100
18	M19	Z	0	0	0	%100
19	M20	X	-3.366	-3.366	0	%100
20	M20	Z	0	0	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	0	0	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	0	0	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	0	0	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	0	0	0	%100
29	M25	X	-2.817	-2.817	0	%100
30	M25	Z	0	0	0	%100
31	M26	X	-2.817	-2.817	0	%100
32	M26	Z	0	0	0	%100
33	M27	X	-2.817	-2.817	0	%100
34	M27	Z	0	0	0	%100
35	M28	X	-2.817	-2.817	0	%100
36	M28	Z	0	0	0	%100
37	M31	X	-11.224	-11.224	0	%100

Member Distributed Loads (BLC 50 : Structure Wo (270 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
38	M31	Z	0	0	0	%100
39	M32	X	-11.082	-11.082	0	%100
40	M32	Z	0	0	0	%100
41	MP4A	X	-11.485	-11.485	0	%100
42	MP4A	Z	0	0	0	%100
43	MP3A	X	-11.485	-11.485	0	%100
44	MP3A	Z	0	0	0	%100
45	MP2A	X	-11.485	-11.485	0	%100
46	MP2A	Z	0	0	0	%100
47	MP1A	X	-11.485	-11.485	0	%100
48	MP1A	Z	0	0	0	%100
49	M44	X	-3.022	-3.022	0	%100
50	M44	Z	0	0	0	%100
51	M45	X	-3.022	-3.022	0	%100
52	M45	Z	0	0	0	%100
53	M46	X	-3.022	-3.022	0	%100
54	M46	Z	0	0	0	%100
55	M47	X	-3.022	-3.022	0	%100
56	M47	Z	0	0	0	%100
57	M45A	X	-10.466	-10.466	0	%100
58	M45A	Z	0	0	0	%100

Member Distributed Loads (BLC 51 : Structure Wo (300 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	-3.01	-3.01	0	%100
2	M1	Z	-1.738	-1.738	0	%100
3	M2	X	-3.01	-3.01	0	%100
4	M2	Z	-1.738	-1.738	0	%100
5	M13	X	-1.963	-1.963	0	%100
6	M13	Z	-1.133	-1.133	0	%100
7	M14	X	-1.963	-1.963	0	%100
8	M14	Z	-1.133	-1.133	0	%100
9	M15	X	-1.963	-1.963	0	%100
10	M15	Z	-1.133	-1.133	0	%100
11	M16	X	-1.963	-1.963	0	%100
12	M16	Z	-1.133	-1.133	0	%100
13	M17	X	-6.598	-6.598	0	%100
14	M17	Z	-3.81	-3.81	0	%100
15	M18	X	-6.598	-6.598	0	%100
16	M18	Z	-3.81	-3.81	0	%100
17	M19	X	-.151	-.151	0	%100
18	M19	Z	-.087	-.087	0	%100
19	M20	X	-.151	-.151	0	%100
20	M20	Z	-.087	-.087	0	%100
21	M21	X	-.654	-.654	0	%100
22	M21	Z	-.378	-.378	0	%100
23	M22	X	-.654	-.654	0	%100
24	M22	Z	-.378	-.378	0	%100
25	M23	X	-.654	-.654	0	%100
26	M23	Z	-.378	-.378	0	%100
27	M24	X	-.654	-.654	0	%100
28	M24	Z	-.378	-.378	0	%100
29	M25	X	-2.983	-2.983	0	%100
30	M25	Z	-1.722	-1.722	0	%100
31	M26	X	-2.983	-2.983	0	%100
32	M26	Z	-1.722	-1.722	0	%100

Member Distributed Loads (BLC 51 : Structure Wo (300 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
33	M27	X	-2.032	-2.032	0	%100
34	M27	Z	-1.173	-1.173	0	%100
35	M28	X	-2.032	-2.032	0	%100
36	M28	Z	-1.173	-1.173	0	%100
37	M31	X	-8.63	-8.63	0	%100
38	M31	Z	-4.983	-4.983	0	%100
39	M32	X	-5.701	-5.701	0	%100
40	M32	Z	-3.292	-3.292	0	%100
41	MP4A	X	-9.624	-9.624	0	%100
42	MP4A	Z	-5.556	-5.556	0	%100
43	MP3A	X	-9.624	-9.624	0	%100
44	MP3A	Z	-5.556	-5.556	0	%100
45	MP2A	X	-9.624	-9.624	0	%100
46	MP2A	Z	-5.556	-5.556	0	%100
47	MP1A	X	-9.624	-9.624	0	%100
48	MP1A	Z	-5.556	-5.556	0	%100
49	M44	X	-2.617	-2.617	0	%100
50	M44	Z	-1.511	-1.511	0	%100
51	M45	X	-2.617	-2.617	0	%100
52	M45	Z	-1.511	-1.511	0	%100
53	M46	X	-2.617	-2.617	0	%100
54	M46	Z	-1.511	-1.511	0	%100
55	M47	X	-2.617	-2.617	0	%100
56	M47	Z	-1.511	-1.511	0	%100
57	M45A	X	-8.891	-8.891	0	%100
58	M45A	Z	-5.133	-5.133	0	%100

Member Distributed Loads (BLC 52 : Structure Wo (330 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	-5.214	-5.214	0	%100
2	M1	Z	-9.03	-9.03	0	%100
3	M2	X	-5.214	-5.214	0	%100
4	M2	Z	-9.03	-9.03	0	%100
5	M13	X	-.378	-.378	0	%100
6	M13	Z	-.654	-.654	0	%100
7	M14	X	-.378	-.378	0	%100
8	M14	Z	-.654	-.654	0	%100
9	M15	X	-.378	-.378	0	%100
10	M15	Z	-.654	-.654	0	%100
11	M16	X	-.378	-.378	0	%100
12	M16	Z	-.654	-.654	0	%100
13	M17	X	-4.34	-4.34	0	%100
14	M17	Z	-7.518	-7.518	0	%100
15	M18	X	-4.34	-4.34	0	%100
16	M18	Z	-7.518	-7.518	0	%100
17	M19	X	-.618	-.618	0	%100
18	M19	Z	-1.07	-1.07	0	%100
19	M20	X	-.618	-.618	0	%100
20	M20	Z	-1.07	-1.07	0	%100
21	M21	X	-1.133	-1.133	0	%100
22	M21	Z	-1.963	-1.963	0	%100
23	M22	X	-1.133	-1.133	0	%100
24	M22	Z	-1.963	-1.963	0	%100
25	M23	X	-1.133	-1.133	0	%100
26	M23	Z	-1.963	-1.963	0	%100
27	M24	X	-1.133	-1.133	0	%100

Member Distributed Loads (BLC 52 : Structure Wo (330 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
28	M24	Z	-1.963	-1.963	0	%100
29	M25	X	-1.801	-1.801	0	%100
30	M25	Z	-3.119	-3.119	0	%100
31	M26	X	-1.801	-1.801	0	%100
32	M26	Z	-3.119	-3.119	0	%100
33	M27	X	-1.252	-1.252	0	%100
34	M27	Z	-2.168	-2.168	0	%100
35	M28	X	-1.252	-1.252	0	%100
36	M28	Z	-2.168	-2.168	0	%100
37	M31	X	-2.242	-2.242	0	%100
38	M31	Z	-3.883	-3.883	0	%100
39	M32	X	-.622	-.622	0	%100
40	M32	Z	-1.077	-1.077	0	%100
41	MP4A	X	-5.184	-5.184	0	%100
42	MP4A	Z	-8.979	-8.979	0	%100
43	MP3A	X	-5.184	-5.184	0	%100
44	MP3A	Z	-8.979	-8.979	0	%100
45	MP2A	X	-5.184	-5.184	0	%100
46	MP2A	Z	-8.979	-8.979	0	%100
47	MP1A	X	-5.184	-5.184	0	%100
48	MP1A	Z	-8.979	-8.979	0	%100
49	M44	X	-1.511	-1.511	0	%100
50	M44	Z	-2.617	-2.617	0	%100
51	M45	X	-1.511	-1.511	0	%100
52	M45	Z	-2.617	-2.617	0	%100
53	M46	X	-1.511	-1.511	0	%100
54	M46	Z	-2.617	-2.617	0	%100
55	M47	X	-1.511	-1.511	0	%100
56	M47	Z	-2.617	-2.617	0	%100
57	M45A	X	-4.933	-4.933	0	%100
58	M45A	Z	-8.545	-8.545	0	%100

Member Distributed Loads (BLC 53 : Structure Wi (0 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	0	0	0	%100
2	M1	Z	-4.004	-4.004	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	-4.004	-4.004	0	%100
5	M13	X	0	0	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	0	0	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	0	0	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	0	0	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	0	0	0	%100
14	M17	Z	-1.712	-1.712	0	%100
15	M18	X	0	0	0	%100
16	M18	Z	-1.712	-1.712	0	%100
17	M19	X	0	0	0	%100
18	M19	Z	-1.712	-1.712	0	%100
19	M20	X	0	0	0	%100
20	M20	Z	-1.712	-1.712	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	-1.571	-1.571	0	%100

Member Distributed Loads (BLC 53 : Structure Wi (0 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
23	M22	X	0	0	0	%100
24	M22	Z	-1.571	-1.571	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	-1.571	-1.571	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	-1.571	-1.571	0	%100
29	M25	X	0	0	0	%100
30	M25	Z	-1.939	-1.939	0	%100
31	M26	X	0	0	0	%100
32	M26	Z	-1.939	-1.939	0	%100
33	M27	X	0	0	0	%100
34	M27	Z	-1.939	-1.939	0	%100
35	M28	X	0	0	0	%100
36	M28	Z	-1.939	-1.939	0	%100
37	M31	X	0	0	0	%100
38	M31	Z	-.083	-.083	0	%100
39	M32	X	0	0	0	%100
40	M32	Z	-.128	-.128	0	%100
41	MP4A	X	0	0	0	%100
42	MP4A	Z	-3.417	-3.417	0	%100
43	MP3A	X	0	0	0	%100
44	MP3A	Z	-3.417	-3.417	0	%100
45	MP2A	X	0	0	0	%100
46	MP2A	Z	-3.417	-3.417	0	%100
47	MP1A	X	0	0	0	%100
48	MP1A	Z	-3.417	-3.417	0	%100
49	M44	X	0	0	0	%100
50	M44	Z	-2.021	-2.021	0	%100
51	M45	X	0	0	0	%100
52	M45	Z	-2.021	-2.021	0	%100
53	M46	X	0	0	0	%100
54	M46	Z	-2.021	-2.021	0	%100
55	M47	X	0	0	0	%100
56	M47	Z	-2.021	-2.021	0	%100
57	M45A	X	0	0	0	%100
58	M45A	Z	-3.126	-3.126	0	%100

Member Distributed Loads (BLC 54 : Structure Wi (30 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	1.501	1.501	0	%100
2	M1	Z	-2.6	-2.6	0	%100
3	M2	X	1.501	1.501	0	%100
4	M2	Z	-2.6	-2.6	0	%100
5	M13	X	.199	.199	0	%100
6	M13	Z	-.346	-.346	0	%100
7	M14	X	.199	.199	0	%100
8	M14	Z	-.346	-.346	0	%100
9	M15	X	.199	.199	0	%100
10	M15	Z	-.346	-.346	0	%100
11	M16	X	.199	.199	0	%100
12	M16	Z	-.346	-.346	0	%100
13	M17	X	.193	.193	0	%100
14	M17	Z	-.334	-.334	0	%100
15	M18	X	.193	.193	0	%100
16	M18	Z	-.334	-.334	0	%100
17	M19	X	1.354	1.354	0	%100

Member Distributed Loads (BLC 54 : Structure Wi (30 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
18	M19	Z	-2.345	-2.345	0	%100
19	M20	X	1.354	1.354	0	%100
20	M20	Z	-2.345	-2.345	0	%100
21	M21	X	.589	.589	0	%100
22	M21	Z	-1.02	-1.02	0	%100
23	M22	X	.589	.589	0	%100
24	M22	Z	-1.02	-1.02	0	%100
25	M23	X	.589	.589	0	%100
26	M23	Z	-1.02	-1.02	0	%100
27	M24	X	.589	.589	0	%100
28	M24	Z	-1.02	-1.02	0	%100
29	M25	X	.775	.775	0	%100
30	M25	Z	-1.342	-1.342	0	%100
31	M26	X	.775	.775	0	%100
32	M26	Z	-1.342	-1.342	0	%100
33	M27	X	1.115	1.115	0	%100
34	M27	Z	-1.931	-1.931	0	%100
35	M28	X	1.115	1.115	0	%100
36	M28	Z	-1.931	-1.931	0	%100
37	M31	X	.241	.241	0	%100
38	M31	Z	-.417	-.417	0	%100
39	M32	X	.777	.777	0	%100
40	M32	Z	-1.346	-1.346	0	%100
41	MP4A	X	1.736	1.736	0	%100
42	MP4A	Z	-3.007	-3.007	0	%100
43	MP3A	X	1.736	1.736	0	%100
44	MP3A	Z	-3.007	-3.007	0	%100
45	MP2A	X	1.736	1.736	0	%100
46	MP2A	Z	-3.007	-3.007	0	%100
47	MP1A	X	1.736	1.736	0	%100
48	MP1A	Z	-3.007	-3.007	0	%100
49	M44	X	1.01	1.01	0	%100
50	M44	Z	-1.75	-1.75	0	%100
51	M45	X	1.01	1.01	0	%100
52	M45	Z	-1.75	-1.75	0	%100
53	M46	X	1.01	1.01	0	%100
54	M46	Z	-1.75	-1.75	0	%100
55	M47	X	1.01	1.01	0	%100
56	M47	Z	-1.75	-1.75	0	%100
57	M45A	X	1.578	1.578	0	%100
58	M45A	Z	-2.734	-2.734	0	%100

Member Distributed Loads (BLC 55 : Structure Wi (60 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	.867	.867	0	%100
2	M1	Z	-.5	-.5	0	%100
3	M2	X	.867	.867	0	%100
4	M2	Z	-.5	-.5	0	%100
5	M13	X	1.037	1.037	0	%100
6	M13	Z	-.598	-.598	0	%100
7	M14	X	1.037	1.037	0	%100
8	M14	Z	-.598	-.598	0	%100
9	M15	X	1.037	1.037	0	%100
10	M15	Z	-.598	-.598	0	%100
11	M16	X	1.037	1.037	0	%100
12	M16	Z	-.598	-.598	0	%100

Member Distributed Loads (BLC 55 : Structure Wi (60 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
13	M17	X	.047	.047	0	%100
14	M17	Z	-.027	-.027	0	%100
15	M18	X	.047	.047	0	%100
16	M18	Z	-.027	-.027	0	%100
17	M19	X	2.058	2.058	0	%100
18	M19	Z	-1.188	-1.188	0	%100
19	M20	X	2.058	2.058	0	%100
20	M20	Z	-1.188	-1.188	0	%100
21	M21	X	.34	.34	0	%100
22	M21	Z	-.196	-.196	0	%100
23	M22	X	.34	.34	0	%100
24	M22	Z	-.196	-.196	0	%100
25	M23	X	.34	.34	0	%100
26	M23	Z	-.196	-.196	0	%100
27	M24	X	.34	.34	0	%100
28	M24	Z	-.196	-.196	0	%100
29	M25	X	1.258	1.258	0	%100
30	M25	Z	-.727	-.727	0	%100
31	M26	X	1.258	1.258	0	%100
32	M26	Z	-.727	-.727	0	%100
33	M27	X	1.847	1.847	0	%100
34	M27	Z	-1.067	-1.067	0	%100
35	M28	X	1.847	1.847	0	%100
36	M28	Z	-1.067	-1.067	0	%100
37	M31	X	1.922	1.922	0	%100
38	M31	Z	-1.11	-1.11	0	%100
39	M32	X	2.811	2.811	0	%100
40	M32	Z	-1.623	-1.623	0	%100
41	MP4A	X	3.104	3.104	0	%100
42	MP4A	Z	-1.792	-1.792	0	%100
43	MP3A	X	3.104	3.104	0	%100
44	MP3A	Z	-1.792	-1.792	0	%100
45	MP2A	X	3.104	3.104	0	%100
46	MP2A	Z	-1.792	-1.792	0	%100
47	MP1A	X	3.104	3.104	0	%100
48	MP1A	Z	-1.792	-1.792	0	%100
49	M44	X	1.75	1.75	0	%100
50	M44	Z	-1.01	-1.01	0	%100
51	M45	X	1.75	1.75	0	%100
52	M45	Z	-1.01	-1.01	0	%100
53	M46	X	1.75	1.75	0	%100
54	M46	Z	-1.01	-1.01	0	%100
55	M47	X	1.75	1.75	0	%100
56	M47	Z	-1.01	-1.01	0	%100
57	M45A	X	2.786	2.786	0	%100
58	M45A	Z	-1.608	-1.608	0	%100

Member Distributed Loads (BLC 56 : Structure Wi (90 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	0	0	0	%100
5	M13	X	1.596	1.596	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	1.596	1.596	0	%100

Member Distributed Loads (BLC 56 : Structure Wi (90 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
8	M14	Z	0	0	0	%100
9	M15	X	1.596	1.596	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	1.596	1.596	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	1.05	1.05	0	%100
14	M17	Z	0	0	0	%100
15	M18	X	1.05	1.05	0	%100
16	M18	Z	0	0	0	%100
17	M19	X	1.05	1.05	0	%100
18	M19	Z	0	0	0	%100
19	M20	X	1.05	1.05	0	%100
20	M20	Z	0	0	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	0	0	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	0	0	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	0	0	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	0	0	0	%100
29	M25	X	1.745	1.745	0	%100
30	M25	Z	0	0	0	%100
31	M26	X	1.745	1.745	0	%100
32	M26	Z	0	0	0	%100
33	M27	X	1.745	1.745	0	%100
34	M27	Z	0	0	0	%100
35	M28	X	1.745	1.745	0	%100
36	M28	Z	0	0	0	%100
37	M31	X	3.558	3.558	0	%100
38	M31	Z	0	0	0	%100
39	M32	X	3.513	3.513	0	%100
40	M32	Z	0	0	0	%100
41	MP4A	X	3.64	3.64	0	%100
42	MP4A	Z	0	0	0	%100
43	MP3A	X	3.64	3.64	0	%100
44	MP3A	Z	0	0	0	%100
45	MP2A	X	3.64	3.64	0	%100
46	MP2A	Z	0	0	0	%100
47	MP1A	X	3.64	3.64	0	%100
48	MP1A	Z	0	0	0	%100
49	M44	X	2.021	2.021	0	%100
50	M44	Z	0	0	0	%100
51	M45	X	2.021	2.021	0	%100
52	M45	Z	0	0	0	%100
53	M46	X	2.021	2.021	0	%100
54	M46	Z	0	0	0	%100
55	M47	X	2.021	2.021	0	%100
56	M47	Z	0	0	0	%100
57	M45A	X	3.247	3.247	0	%100
58	M45A	Z	0	0	0	%100

Member Distributed Loads (BLC 57 : Structure Wi (120 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	.867	.867	0	%100
2	M1	Z	.5	.5	0	%100

Member Distributed Loads (BLC 57 : Structure Wi (120 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
3	M2	X	.867	.867	0	%100
4	M2	Z	.5	.5	0	%100
5	M13	X	1.037	1.037	0	%100
6	M13	Z	.598	.598	0	%100
7	M14	X	1.037	1.037	0	%100
8	M14	Z	.598	.598	0	%100
9	M15	X	1.037	1.037	0	%100
10	M15	Z	.598	.598	0	%100
11	M16	X	1.037	1.037	0	%100
12	M16	Z	.598	.598	0	%100
13	M17	X	2.058	2.058	0	%100
14	M17	Z	1.188	1.188	0	%100
15	M18	X	2.058	2.058	0	%100
16	M18	Z	1.188	1.188	0	%100
17	M19	X	.047	.047	0	%100
18	M19	Z	.027	.027	0	%100
19	M20	X	.047	.047	0	%100
20	M20	Z	.027	.027	0	%100
21	M21	X	.34	.34	0	%100
22	M21	Z	.196	.196	0	%100
23	M22	X	.34	.34	0	%100
24	M22	Z	.196	.196	0	%100
25	M23	X	.34	.34	0	%100
26	M23	Z	.196	.196	0	%100
27	M24	X	.34	.34	0	%100
28	M24	Z	.196	.196	0	%100
29	M25	X	1.847	1.847	0	%100
30	M25	Z	1.067	1.067	0	%100
31	M26	X	1.847	1.847	0	%100
32	M26	Z	1.067	1.067	0	%100
33	M27	X	1.258	1.258	0	%100
34	M27	Z	.727	.727	0	%100
35	M28	X	1.258	1.258	0	%100
36	M28	Z	.727	.727	0	%100
37	M31	X	2.736	2.736	0	%100
38	M31	Z	1.579	1.579	0	%100
39	M32	X	1.807	1.807	0	%100
40	M32	Z	1.043	1.043	0	%100
41	MP4A	X	3.104	3.104	0	%100
42	MP4A	Z	1.792	1.792	0	%100
43	MP3A	X	3.104	3.104	0	%100
44	MP3A	Z	1.792	1.792	0	%100
45	MP2A	X	3.104	3.104	0	%100
46	MP2A	Z	1.792	1.792	0	%100
47	MP1A	X	3.104	3.104	0	%100
48	MP1A	Z	1.792	1.792	0	%100
49	M44	X	1.75	1.75	0	%100
50	M44	Z	1.01	1.01	0	%100
51	M45	X	1.75	1.75	0	%100
52	M45	Z	1.01	1.01	0	%100
53	M46	X	1.75	1.75	0	%100
54	M46	Z	1.01	1.01	0	%100
55	M47	X	1.75	1.75	0	%100
56	M47	Z	1.01	1.01	0	%100
57	M45A	X	2.786	2.786	0	%100
58	M45A	Z	1.608	1.608	0	%100

Member Distributed Loads (BLC 58 : Structure Wi (150 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	1.501	1.501	0	%100
2	M1	Z	2.6	2.6	0	%100
3	M2	X	1.501	1.501	0	%100
4	M2	Z	2.6	2.6	0	%100
5	M13	X	.199	.199	0	%100
6	M13	Z	.346	.346	0	%100
7	M14	X	.199	.199	0	%100
8	M14	Z	.346	.346	0	%100
9	M15	X	.199	.199	0	%100
10	M15	Z	.346	.346	0	%100
11	M16	X	.199	.199	0	%100
12	M16	Z	.346	.346	0	%100
13	M17	X	1.354	1.354	0	%100
14	M17	Z	2.345	2.345	0	%100
15	M18	X	1.354	1.354	0	%100
16	M18	Z	2.345	2.345	0	%100
17	M19	X	.193	.193	0	%100
18	M19	Z	.334	.334	0	%100
19	M20	X	.193	.193	0	%100
20	M20	Z	.334	.334	0	%100
21	M21	X	.589	.589	0	%100
22	M21	Z	1.02	1.02	0	%100
23	M22	X	.589	.589	0	%100
24	M22	Z	1.02	1.02	0	%100
25	M23	X	.589	.589	0	%100
26	M23	Z	1.02	1.02	0	%100
27	M24	X	.589	.589	0	%100
28	M24	Z	1.02	1.02	0	%100
29	M25	X	1.115	1.115	0	%100
30	M25	Z	1.931	1.931	0	%100
31	M26	X	1.115	1.115	0	%100
32	M26	Z	1.931	1.931	0	%100
33	M27	X	.775	.775	0	%100
34	M27	Z	1.342	1.342	0	%100
35	M28	X	.775	.775	0	%100
36	M28	Z	1.342	1.342	0	%100
37	M31	X	.711	.711	0	%100
38	M31	Z	1.231	1.231	0	%100
39	M32	X	.197	.197	0	%100
40	M32	Z	.341	.341	0	%100
41	MP4A	X	1.736	1.736	0	%100
42	MP4A	Z	3.007	3.007	0	%100
43	MP3A	X	1.736	1.736	0	%100
44	MP3A	Z	3.007	3.007	0	%100
45	MP2A	X	1.736	1.736	0	%100
46	MP2A	Z	3.007	3.007	0	%100
47	MP1A	X	1.736	1.736	0	%100
48	MP1A	Z	3.007	3.007	0	%100
49	M44	X	1.01	1.01	0	%100
50	M44	Z	1.75	1.75	0	%100
51	M45	X	1.01	1.01	0	%100
52	M45	Z	1.75	1.75	0	%100
53	M46	X	1.01	1.01	0	%100
54	M46	Z	1.75	1.75	0	%100
55	M47	X	1.01	1.01	0	%100
56	M47	Z	1.75	1.75	0	%100
57	M45A	X	1.578	1.578	0	%100

Member Distributed Loads (BLC 58 : Structure Wi (150 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
58	M45A	Z	2.734	2.734	0	%100

Member Distributed Loads (BLC 59 : Structure Wi (180 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	0	0	0	%100
2	M1	Z	4.004	4.004	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	4.004	4.004	0	%100
5	M13	X	0	0	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	0	0	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	0	0	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	0	0	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	0	0	0	%100
14	M17	Z	1.712	1.712	0	%100
15	M18	X	0	0	0	%100
16	M18	Z	1.712	1.712	0	%100
17	M19	X	0	0	0	%100
18	M19	Z	1.712	1.712	0	%100
19	M20	X	0	0	0	%100
20	M20	Z	1.712	1.712	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	1.571	1.571	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	1.571	1.571	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	1.571	1.571	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	1.571	1.571	0	%100
29	M25	X	0	0	0	%100
30	M25	Z	1.939	1.939	0	%100
31	M26	X	0	0	0	%100
32	M26	Z	1.939	1.939	0	%100
33	M27	X	0	0	0	%100
34	M27	Z	1.939	1.939	0	%100
35	M28	X	0	0	0	%100
36	M28	Z	1.939	1.939	0	%100
37	M31	X	0	0	0	%100
38	M31	Z	.083	.083	0	%100
39	M32	X	0	0	0	%100
40	M32	Z	.128	.128	0	%100
41	MP4A	X	0	0	0	%100
42	MP4A	Z	3.417	3.417	0	%100
43	MP3A	X	0	0	0	%100
44	MP3A	Z	3.417	3.417	0	%100
45	MP2A	X	0	0	0	%100
46	MP2A	Z	3.417	3.417	0	%100
47	MP1A	X	0	0	0	%100
48	MP1A	Z	3.417	3.417	0	%100
49	M44	X	0	0	0	%100
50	M44	Z	2.021	2.021	0	%100
51	M45	X	0	0	0	%100
52	M45	Z	2.021	2.021	0	%100

Member Distributed Loads (BLC 59 : Structure Wi (180 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
53	M46	X	0	0	0	%100
54	M46	Z	2.021	2.021	0	%100
55	M47	X	0	0	0	%100
56	M47	Z	2.021	2.021	0	%100
57	M45A	X	0	0	0	%100
58	M45A	Z	3.126	3.126	0	%100

Member Distributed Loads (BLC 60 : Structure Wi (210 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	-1.501	-1.501	0	%100
2	M1	Z	2.6	2.6	0	%100
3	M2	X	-1.501	-1.501	0	%100
4	M2	Z	2.6	2.6	0	%100
5	M13	X	-.199	-.199	0	%100
6	M13	Z	.346	.346	0	%100
7	M14	X	-.199	-.199	0	%100
8	M14	Z	.346	.346	0	%100
9	M15	X	-.199	-.199	0	%100
10	M15	Z	.346	.346	0	%100
11	M16	X	-.199	-.199	0	%100
12	M16	Z	.346	.346	0	%100
13	M17	X	-.193	-.193	0	%100
14	M17	Z	.334	.334	0	%100
15	M18	X	-.193	-.193	0	%100
16	M18	Z	.334	.334	0	%100
17	M19	X	-1.354	-1.354	0	%100
18	M19	Z	2.345	2.345	0	%100
19	M20	X	-1.354	-1.354	0	%100
20	M20	Z	2.345	2.345	0	%100
21	M21	X	-.589	-.589	0	%100
22	M21	Z	1.02	1.02	0	%100
23	M22	X	-.589	-.589	0	%100
24	M22	Z	1.02	1.02	0	%100
25	M23	X	-.589	-.589	0	%100
26	M23	Z	1.02	1.02	0	%100
27	M24	X	-.589	-.589	0	%100
28	M24	Z	1.02	1.02	0	%100
29	M25	X	-.775	-.775	0	%100
30	M25	Z	1.342	1.342	0	%100
31	M26	X	-.775	-.775	0	%100
32	M26	Z	1.342	1.342	0	%100
33	M27	X	-1.115	-1.115	0	%100
34	M27	Z	1.931	1.931	0	%100
35	M28	X	-1.115	-1.115	0	%100
36	M28	Z	1.931	1.931	0	%100
37	M31	X	-.241	-.241	0	%100
38	M31	Z	.417	.417	0	%100
39	M32	X	-.777	-.777	0	%100
40	M32	Z	1.346	1.346	0	%100
41	MP4A	X	-1.736	-1.736	0	%100
42	MP4A	Z	3.007	3.007	0	%100
43	MP3A	X	-1.736	-1.736	0	%100
44	MP3A	Z	3.007	3.007	0	%100
45	MP2A	X	-1.736	-1.736	0	%100
46	MP2A	Z	3.007	3.007	0	%100
47	MP1A	X	-1.736	-1.736	0	%100

Member Distributed Loads (BLC 60 : Structure Wi (210 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
48	MP1A	Z	3.007	3.007	0	%100
49	M44	X	-1.01	-1.01	0	%100
50	M44	Z	1.75	1.75	0	%100
51	M45	X	-1.01	-1.01	0	%100
52	M45	Z	1.75	1.75	0	%100
53	M46	X	-1.01	-1.01	0	%100
54	M46	Z	1.75	1.75	0	%100
55	M47	X	-1.01	-1.01	0	%100
56	M47	Z	1.75	1.75	0	%100
57	M45A	X	-1.578	-1.578	0	%100
58	M45A	Z	2.734	2.734	0	%100

Member Distributed Loads (BLC 61 : Structure Wi (240 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	-.867	-.867	0	%100
2	M1	Z	.5	.5	0	%100
3	M2	X	-.867	-.867	0	%100
4	M2	Z	.5	.5	0	%100
5	M13	X	-1.037	-1.037	0	%100
6	M13	Z	.598	.598	0	%100
7	M14	X	-1.037	-1.037	0	%100
8	M14	Z	.598	.598	0	%100
9	M15	X	-1.037	-1.037	0	%100
10	M15	Z	.598	.598	0	%100
11	M16	X	-1.037	-1.037	0	%100
12	M16	Z	.598	.598	0	%100
13	M17	X	-.047	-.047	0	%100
14	M17	Z	.027	.027	0	%100
15	M18	X	-.047	-.047	0	%100
16	M18	Z	.027	.027	0	%100
17	M19	X	-2.058	-2.058	0	%100
18	M19	Z	1.188	1.188	0	%100
19	M20	X	-2.058	-2.058	0	%100
20	M20	Z	1.188	1.188	0	%100
21	M21	X	-.34	-.34	0	%100
22	M21	Z	.196	.196	0	%100
23	M22	X	-.34	-.34	0	%100
24	M22	Z	.196	.196	0	%100
25	M23	X	-.34	-.34	0	%100
26	M23	Z	.196	.196	0	%100
27	M24	X	-.34	-.34	0	%100
28	M24	Z	.196	.196	0	%100
29	M25	X	-1.258	-1.258	0	%100
30	M25	Z	.727	.727	0	%100
31	M26	X	-1.258	-1.258	0	%100
32	M26	Z	.727	.727	0	%100
33	M27	X	-1.847	-1.847	0	%100
34	M27	Z	1.067	1.067	0	%100
35	M28	X	-1.847	-1.847	0	%100
36	M28	Z	1.067	1.067	0	%100
37	M31	X	-1.922	-1.922	0	%100
38	M31	Z	1.11	1.11	0	%100
39	M32	X	-2.811	-2.811	0	%100
40	M32	Z	1.623	1.623	0	%100
41	MP4A	X	-3.104	-3.104	0	%100
42	MP4A	Z	1.792	1.792	0	%100

Member Distributed Loads (BLC 61 : Structure Wi (240 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
43	MP3A	X	-3.104	-3.104	0	%100
44	MP3A	Z	1.792	1.792	0	%100
45	MP2A	X	-3.104	-3.104	0	%100
46	MP2A	Z	1.792	1.792	0	%100
47	MP1A	X	-3.104	-3.104	0	%100
48	MP1A	Z	1.792	1.792	0	%100
49	M44	X	-1.75	-1.75	0	%100
50	M44	Z	1.01	1.01	0	%100
51	M45	X	-1.75	-1.75	0	%100
52	M45	Z	1.01	1.01	0	%100
53	M46	X	-1.75	-1.75	0	%100
54	M46	Z	1.01	1.01	0	%100
55	M47	X	-1.75	-1.75	0	%100
56	M47	Z	1.01	1.01	0	%100
57	M45A	X	-2.786	-2.786	0	%100
58	M45A	Z	1.608	1.608	0	%100

Member Distributed Loads (BLC 62 : Structure Wi (270 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	0	0	0	%100
5	M13	X	-1.596	-1.596	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	-1.596	-1.596	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	-1.596	-1.596	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	-1.596	-1.596	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	-1.05	-1.05	0	%100
14	M17	Z	0	0	0	%100
15	M18	X	-1.05	-1.05	0	%100
16	M18	Z	0	0	0	%100
17	M19	X	-1.05	-1.05	0	%100
18	M19	Z	0	0	0	%100
19	M20	X	-1.05	-1.05	0	%100
20	M20	Z	0	0	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	0	0	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	0	0	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	0	0	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	0	0	0	%100
29	M25	X	-1.745	-1.745	0	%100
30	M25	Z	0	0	0	%100
31	M26	X	-1.745	-1.745	0	%100
32	M26	Z	0	0	0	%100
33	M27	X	-1.745	-1.745	0	%100
34	M27	Z	0	0	0	%100
35	M28	X	-1.745	-1.745	0	%100
36	M28	Z	0	0	0	%100
37	M31	X	-3.558	-3.558	0	%100

Member Distributed Loads (BLC 62 : Structure Wi (270 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
38	M31	Z	0	0	0	%100
39	M32	X	-3.513	-3.513	0	%100
40	M32	Z	0	0	0	%100
41	MP4A	X	-3.64	-3.64	0	%100
42	MP4A	Z	0	0	0	%100
43	MP3A	X	-3.64	-3.64	0	%100
44	MP3A	Z	0	0	0	%100
45	MP2A	X	-3.64	-3.64	0	%100
46	MP2A	Z	0	0	0	%100
47	MP1A	X	-3.64	-3.64	0	%100
48	MP1A	Z	0	0	0	%100
49	M44	X	-2.021	-2.021	0	%100
50	M44	Z	0	0	0	%100
51	M45	X	-2.021	-2.021	0	%100
52	M45	Z	0	0	0	%100
53	M46	X	-2.021	-2.021	0	%100
54	M46	Z	0	0	0	%100
55	M47	X	-2.021	-2.021	0	%100
56	M47	Z	0	0	0	%100
57	M45A	X	-3.247	-3.247	0	%100
58	M45A	Z	0	0	0	%100

Member Distributed Loads (BLC 63 : Structure Wi (300 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	-.867	-.867	0	%100
2	M1	Z	-.5	-.5	0	%100
3	M2	X	-.867	-.867	0	%100
4	M2	Z	-.5	-.5	0	%100
5	M13	X	-1.037	-1.037	0	%100
6	M13	Z	-.598	-.598	0	%100
7	M14	X	-1.037	-1.037	0	%100
8	M14	Z	-.598	-.598	0	%100
9	M15	X	-1.037	-1.037	0	%100
10	M15	Z	-.598	-.598	0	%100
11	M16	X	-1.037	-1.037	0	%100
12	M16	Z	-.598	-.598	0	%100
13	M17	X	-2.058	-2.058	0	%100
14	M17	Z	-1.188	-1.188	0	%100
15	M18	X	-2.058	-2.058	0	%100
16	M18	Z	-1.188	-1.188	0	%100
17	M19	X	-.047	-.047	0	%100
18	M19	Z	-.027	-.027	0	%100
19	M20	X	-.047	-.047	0	%100
20	M20	Z	-.027	-.027	0	%100
21	M21	X	-.34	-.34	0	%100
22	M21	Z	-.196	-.196	0	%100
23	M22	X	-.34	-.34	0	%100
24	M22	Z	-.196	-.196	0	%100
25	M23	X	-.34	-.34	0	%100
26	M23	Z	-.196	-.196	0	%100
27	M24	X	-.34	-.34	0	%100
28	M24	Z	-.196	-.196	0	%100
29	M25	X	-1.847	-1.847	0	%100
30	M25	Z	-1.067	-1.067	0	%100
31	M26	X	-1.847	-1.847	0	%100
32	M26	Z	-1.067	-1.067	0	%100

Member Distributed Loads (BLC 63 : Structure Wi (300 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
33	M27	X	-1.258	-1.258	0	%100
34	M27	Z	-.727	-.727	0	%100
35	M28	X	-1.258	-1.258	0	%100
36	M28	Z	-.727	-.727	0	%100
37	M31	X	-2.736	-2.736	0	%100
38	M31	Z	-1.579	-1.579	0	%100
39	M32	X	-1.807	-1.807	0	%100
40	M32	Z	-1.043	-1.043	0	%100
41	MP4A	X	-3.104	-3.104	0	%100
42	MP4A	Z	-1.792	-1.792	0	%100
43	MP3A	X	-3.104	-3.104	0	%100
44	MP3A	Z	-1.792	-1.792	0	%100
45	MP2A	X	-3.104	-3.104	0	%100
46	MP2A	Z	-1.792	-1.792	0	%100
47	MP1A	X	-3.104	-3.104	0	%100
48	MP1A	Z	-1.792	-1.792	0	%100
49	M44	X	-1.75	-1.75	0	%100
50	M44	Z	-1.01	-1.01	0	%100
51	M45	X	-1.75	-1.75	0	%100
52	M45	Z	-1.01	-1.01	0	%100
53	M46	X	-1.75	-1.75	0	%100
54	M46	Z	-1.01	-1.01	0	%100
55	M47	X	-1.75	-1.75	0	%100
56	M47	Z	-1.01	-1.01	0	%100
57	M45A	X	-2.786	-2.786	0	%100
58	M45A	Z	-1.608	-1.608	0	%100

Member Distributed Loads (BLC 64 : Structure Wi (330 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	-1.501	-1.501	0	%100
2	M1	Z	-2.6	-2.6	0	%100
3	M2	X	-1.501	-1.501	0	%100
4	M2	Z	-2.6	-2.6	0	%100
5	M13	X	-.199	-.199	0	%100
6	M13	Z	-.346	-.346	0	%100
7	M14	X	-.199	-.199	0	%100
8	M14	Z	-.346	-.346	0	%100
9	M15	X	-.199	-.199	0	%100
10	M15	Z	-.346	-.346	0	%100
11	M16	X	-.199	-.199	0	%100
12	M16	Z	-.346	-.346	0	%100
13	M17	X	-1.354	-1.354	0	%100
14	M17	Z	-2.345	-2.345	0	%100
15	M18	X	-1.354	-1.354	0	%100
16	M18	Z	-2.345	-2.345	0	%100
17	M19	X	-.193	-.193	0	%100
18	M19	Z	-.334	-.334	0	%100
19	M20	X	-.193	-.193	0	%100
20	M20	Z	-.334	-.334	0	%100
21	M21	X	-.589	-.589	0	%100
22	M21	Z	-1.02	-1.02	0	%100
23	M22	X	-.589	-.589	0	%100
24	M22	Z	-1.02	-1.02	0	%100
25	M23	X	-.589	-.589	0	%100
26	M23	Z	-1.02	-1.02	0	%100
27	M24	X	-.589	-.589	0	%100

Member Distributed Loads (BLC 64 : Structure Wi (330 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
28	M24	Z	-1.02	-1.02	0	%100
29	M25	X	-1.115	-1.115	0	%100
30	M25	Z	-1.931	-1.931	0	%100
31	M26	X	-1.115	-1.115	0	%100
32	M26	Z	-1.931	-1.931	0	%100
33	M27	X	-.775	-.775	0	%100
34	M27	Z	-1.342	-1.342	0	%100
35	M28	X	-.775	-.775	0	%100
36	M28	Z	-1.342	-1.342	0	%100
37	M31	X	-.711	-.711	0	%100
38	M31	Z	-1.231	-1.231	0	%100
39	M32	X	-.197	-.197	0	%100
40	M32	Z	-.341	-.341	0	%100
41	MP4A	X	-1.736	-1.736	0	%100
42	MP4A	Z	-3.007	-3.007	0	%100
43	MP3A	X	-1.736	-1.736	0	%100
44	MP3A	Z	-3.007	-3.007	0	%100
45	MP2A	X	-1.736	-1.736	0	%100
46	MP2A	Z	-3.007	-3.007	0	%100
47	MP1A	X	-1.736	-1.736	0	%100
48	MP1A	Z	-3.007	-3.007	0	%100
49	M44	X	-1.01	-1.01	0	%100
50	M44	Z	-1.75	-1.75	0	%100
51	M45	X	-1.01	-1.01	0	%100
52	M45	Z	-1.75	-1.75	0	%100
53	M46	X	-1.01	-1.01	0	%100
54	M46	Z	-1.75	-1.75	0	%100
55	M47	X	-1.01	-1.01	0	%100
56	M47	Z	-1.75	-1.75	0	%100
57	M45A	X	-1.578	-1.578	0	%100
58	M45A	Z	-2.734	-2.734	0	%100

Member Distributed Loads (BLC 65 : Structure Wm (0 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	0	0	0	%100
2	M1	Z	-.752	-.752	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	-.752	-.752	0	%100
5	M13	X	0	0	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	0	0	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	0	0	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	0	0	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	0	0	0	%100
14	M17	Z	-.297	-.297	0	%100
15	M18	X	0	0	0	%100
16	M18	Z	-.297	-.297	0	%100
17	M19	X	0	0	0	%100
18	M19	Z	-.297	-.297	0	%100
19	M20	X	0	0	0	%100
20	M20	Z	-.297	-.297	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	-.163	-.163	0	%100

Member Distributed Loads (BLC 65 : Structure Wm (0 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
23	M22	X	0	0	0	%100
24	M22	Z	-.163	-.163	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	-.163	-.163	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	-.163	-.163	0	%100
29	M25	X	0	0	0	%100
30	M25	Z	-.169	-.169	0	%100
31	M26	X	0	0	0	%100
32	M26	Z	-.169	-.169	0	%100
33	M27	X	0	0	0	%100
34	M27	Z	-.169	-.169	0	%100
35	M28	X	0	0	0	%100
36	M28	Z	-.169	-.169	0	%100
37	M31	X	0	0	0	%100
38	M31	Z	-.014	-.014	0	%100
39	M32	X	0	0	0	%100
40	M32	Z	-.022	-.022	0	%100
41	MP4A	X	0	0	0	%100
42	MP4A	Z	-.541	-.541	0	%100
43	MP3A	X	0	0	0	%100
44	MP3A	Z	-.541	-.541	0	%100
45	MP2A	X	0	0	0	%100
46	MP2A	Z	-.541	-.541	0	%100
47	MP1A	X	0	0	0	%100
48	MP1A	Z	-.541	-.541	0	%100
49	M44	X	0	0	0	%100
50	M44	Z	-.163	-.163	0	%100
51	M45	X	0	0	0	%100
52	M45	Z	-.163	-.163	0	%100
53	M46	X	0	0	0	%100
54	M46	Z	-.163	-.163	0	%100
55	M47	X	0	0	0	%100
56	M47	Z	-.163	-.163	0	%100
57	M45A	X	0	0	0	%100
58	M45A	Z	-.523	-.523	0	%100

Member Distributed Loads (BLC 66 : Structure Wm (30 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	.282	.282	0	%100
2	M1	Z	-.488	-.488	0	%100
3	M2	X	.282	.282	0	%100
4	M2	Z	-.488	-.488	0	%100
5	M13	X	.02	.02	0	%100
6	M13	Z	-.035	-.035	0	%100
7	M14	X	.02	.02	0	%100
8	M14	Z	-.035	-.035	0	%100
9	M15	X	.02	.02	0	%100
10	M15	Z	-.035	-.035	0	%100
11	M16	X	.02	.02	0	%100
12	M16	Z	-.035	-.035	0	%100
13	M17	X	.033	.033	0	%100
14	M17	Z	-.058	-.058	0	%100
15	M18	X	.033	.033	0	%100
16	M18	Z	-.058	-.058	0	%100
17	M19	X	.235	.235	0	%100

Member Distributed Loads (BLC 66 : Structure Wm (30 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
18	M19	Z	-.407	-.407	0	%100
19	M20	X	.235	.235	0	%100
20	M20	Z	-.407	-.407	0	%100
21	M21	X	.061	.061	0	%100
22	M21	Z	-.106	-.106	0	%100
23	M22	X	.061	.061	0	%100
24	M22	Z	-.106	-.106	0	%100
25	M23	X	.061	.061	0	%100
26	M23	Z	-.106	-.106	0	%100
27	M24	X	.061	.061	0	%100
28	M24	Z	-.106	-.106	0	%100
29	M25	X	.068	.068	0	%100
30	M25	Z	-.117	-.117	0	%100
31	M26	X	.068	.068	0	%100
32	M26	Z	-.117	-.117	0	%100
33	M27	X	.097	.097	0	%100
34	M27	Z	-.169	-.169	0	%100
35	M28	X	.097	.097	0	%100
36	M28	Z	-.169	-.169	0	%100
37	M31	X	.041	.041	0	%100
38	M31	Z	-.071	-.071	0	%100
39	M32	X	.133	.133	0	%100
40	M32	Z	-.23	-.23	0	%100
41	MP4A	X	.28	.28	0	%100
42	MP4A	Z	-.486	-.486	0	%100
43	MP3A	X	.28	.28	0	%100
44	MP3A	Z	-.486	-.486	0	%100
45	MP2A	X	.28	.28	0	%100
46	MP2A	Z	-.486	-.486	0	%100
47	MP1A	X	.28	.28	0	%100
48	MP1A	Z	-.486	-.486	0	%100
49	M44	X	.082	.082	0	%100
50	M44	Z	-.142	-.142	0	%100
51	M45	X	.082	.082	0	%100
52	M45	Z	-.142	-.142	0	%100
53	M46	X	.082	.082	0	%100
54	M46	Z	-.142	-.142	0	%100
55	M47	X	.082	.082	0	%100
56	M47	Z	-.142	-.142	0	%100
57	M45A	X	.267	.267	0	%100
58	M45A	Z	-.462	-.462	0	%100

Member Distributed Loads (BLC 67 : Structure Wm (60 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	.163	.163	0	%100
2	M1	Z	-.094	-.094	0	%100
3	M2	X	.163	.163	0	%100
4	M2	Z	-.094	-.094	0	%100
5	M13	X	.106	.106	0	%100
6	M13	Z	-.061	-.061	0	%100
7	M14	X	.106	.106	0	%100
8	M14	Z	-.061	-.061	0	%100
9	M15	X	.106	.106	0	%100
10	M15	Z	-.061	-.061	0	%100
11	M16	X	.106	.106	0	%100
12	M16	Z	-.061	-.061	0	%100

Member Distributed Loads (BLC 67 : Structure Wm (60 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
13	M17	X	.008	.008	0	%100
14	M17	Z	-.005	-.005	0	%100
15	M18	X	.008	.008	0	%100
16	M18	Z	-.005	-.005	0	%100
17	M19	X	.357	.357	0	%100
18	M19	Z	-.206	-.206	0	%100
19	M20	X	.357	.357	0	%100
20	M20	Z	-.206	-.206	0	%100
21	M21	X	.035	.035	0	%100
22	M21	Z	-.02	-.02	0	%100
23	M22	X	.035	.035	0	%100
24	M22	Z	-.02	-.02	0	%100
25	M23	X	.035	.035	0	%100
26	M23	Z	-.02	-.02	0	%100
27	M24	X	.035	.035	0	%100
28	M24	Z	-.02	-.02	0	%100
29	M25	X	.11	.11	0	%100
30	M25	Z	-.063	-.063	0	%100
31	M26	X	.11	.11	0	%100
32	M26	Z	-.063	-.063	0	%100
33	M27	X	.161	.161	0	%100
34	M27	Z	-.093	-.093	0	%100
35	M28	X	.161	.161	0	%100
36	M28	Z	-.093	-.093	0	%100
37	M31	X	.328	.328	0	%100
38	M31	Z	-.189	-.189	0	%100
39	M32	X	.48	.48	0	%100
40	M32	Z	-.277	-.277	0	%100
41	MP4A	X	.52	.52	0	%100
42	MP4A	Z	-.301	-.301	0	%100
43	MP3A	X	.52	.52	0	%100
44	MP3A	Z	-.301	-.301	0	%100
45	MP2A	X	.52	.52	0	%100
46	MP2A	Z	-.301	-.301	0	%100
47	MP1A	X	.52	.52	0	%100
48	MP1A	Z	-.301	-.301	0	%100
49	M44	X	.142	.142	0	%100
50	M44	Z	-.082	-.082	0	%100
51	M45	X	.142	.142	0	%100
52	M45	Z	-.082	-.082	0	%100
53	M46	X	.142	.142	0	%100
54	M46	Z	-.082	-.082	0	%100
55	M47	X	.142	.142	0	%100
56	M47	Z	-.082	-.082	0	%100
57	M45A	X	.481	.481	0	%100
58	M45A	Z	-.278	-.278	0	%100

Member Distributed Loads (BLC 68 : Structure Wm (90 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	0	0	0	%100
5	M13	X	.163	.163	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	.163	.163	0	%100

Member Distributed Loads (BLC 68 : Structure Wm (90 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
8	M14	Z	0	0	0	%100
9	M15	X	.163	.163	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	.163	.163	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	.182	.182	0	%100
14	M17	Z	0	0	0	%100
15	M18	X	.182	.182	0	%100
16	M18	Z	0	0	0	%100
17	M19	X	.182	.182	0	%100
18	M19	Z	0	0	0	%100
19	M20	X	.182	.182	0	%100
20	M20	Z	0	0	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	0	0	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	0	0	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	0	0	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	0	0	0	%100
29	M25	X	.152	.152	0	%100
30	M25	Z	0	0	0	%100
31	M26	X	.152	.152	0	%100
32	M26	Z	0	0	0	%100
33	M27	X	.152	.152	0	%100
34	M27	Z	0	0	0	%100
35	M28	X	.152	.152	0	%100
36	M28	Z	0	0	0	%100
37	M31	X	.607	.607	0	%100
38	M31	Z	0	0	0	%100
39	M32	X	.599	.599	0	%100
40	M32	Z	0	0	0	%100
41	MP4A	X	.621	.621	0	%100
42	MP4A	Z	0	0	0	%100
43	MP3A	X	.621	.621	0	%100
44	MP3A	Z	0	0	0	%100
45	MP2A	X	.621	.621	0	%100
46	MP2A	Z	0	0	0	%100
47	MP1A	X	.621	.621	0	%100
48	MP1A	Z	0	0	0	%100
49	M44	X	.163	.163	0	%100
50	M44	Z	0	0	0	%100
51	M45	X	.163	.163	0	%100
52	M45	Z	0	0	0	%100
53	M46	X	.163	.163	0	%100
54	M46	Z	0	0	0	%100
55	M47	X	.163	.163	0	%100
56	M47	Z	0	0	0	%100
57	M45A	X	.566	.566	0	%100
58	M45A	Z	0	0	0	%100

Member Distributed Loads (BLC 69 : Structure Wm (120 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	.163	.163	0	%100
2	M1	Z	.094	.094	0	%100

Member Distributed Loads (BLC 69 : Structure Wm (120 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
3	M2	X	.163	.163	0	%100
4	M2	Z	.094	.094	0	%100
5	M13	X	.106	.106	0	%100
6	M13	Z	.061	.061	0	%100
7	M14	X	.106	.106	0	%100
8	M14	Z	.061	.061	0	%100
9	M15	X	.106	.106	0	%100
10	M15	Z	.061	.061	0	%100
11	M16	X	.106	.106	0	%100
12	M16	Z	.061	.061	0	%100
13	M17	X	.357	.357	0	%100
14	M17	Z	.206	.206	0	%100
15	M18	X	.357	.357	0	%100
16	M18	Z	.206	.206	0	%100
17	M19	X	.008	.008	0	%100
18	M19	Z	.005	.005	0	%100
19	M20	X	.008	.008	0	%100
20	M20	Z	.005	.005	0	%100
21	M21	X	.035	.035	0	%100
22	M21	Z	.02	.02	0	%100
23	M22	X	.035	.035	0	%100
24	M22	Z	.02	.02	0	%100
25	M23	X	.035	.035	0	%100
26	M23	Z	.02	.02	0	%100
27	M24	X	.035	.035	0	%100
28	M24	Z	.02	.02	0	%100
29	M25	X	.161	.161	0	%100
30	M25	Z	.093	.093	0	%100
31	M26	X	.161	.161	0	%100
32	M26	Z	.093	.093	0	%100
33	M27	X	.11	.11	0	%100
34	M27	Z	.063	.063	0	%100
35	M28	X	.11	.11	0	%100
36	M28	Z	.063	.063	0	%100
37	M31	X	.467	.467	0	%100
38	M31	Z	.269	.269	0	%100
39	M32	X	.308	.308	0	%100
40	M32	Z	.178	.178	0	%100
41	MP4A	X	.52	.52	0	%100
42	MP4A	Z	.301	.301	0	%100
43	MP3A	X	.52	.52	0	%100
44	MP3A	Z	.301	.301	0	%100
45	MP2A	X	.52	.52	0	%100
46	MP2A	Z	.301	.301	0	%100
47	MP1A	X	.52	.52	0	%100
48	MP1A	Z	.301	.301	0	%100
49	M44	X	.142	.142	0	%100
50	M44	Z	.082	.082	0	%100
51	M45	X	.142	.142	0	%100
52	M45	Z	.082	.082	0	%100
53	M46	X	.142	.142	0	%100
54	M46	Z	.082	.082	0	%100
55	M47	X	.142	.142	0	%100
56	M47	Z	.082	.082	0	%100
57	M45A	X	.481	.481	0	%100
58	M45A	Z	.278	.278	0	%100

Member Distributed Loads (BLC 70 : Structure Wm (150 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	.282	.282	0	%100
2	M1	Z	.488	.488	0	%100
3	M2	X	.282	.282	0	%100
4	M2	Z	.488	.488	0	%100
5	M13	X	.02	.02	0	%100
6	M13	Z	.035	.035	0	%100
7	M14	X	.02	.02	0	%100
8	M14	Z	.035	.035	0	%100
9	M15	X	.02	.02	0	%100
10	M15	Z	.035	.035	0	%100
11	M16	X	.02	.02	0	%100
12	M16	Z	.035	.035	0	%100
13	M17	X	.235	.235	0	%100
14	M17	Z	.407	.407	0	%100
15	M18	X	.235	.235	0	%100
16	M18	Z	.407	.407	0	%100
17	M19	X	.033	.033	0	%100
18	M19	Z	.058	.058	0	%100
19	M20	X	.033	.033	0	%100
20	M20	Z	.058	.058	0	%100
21	M21	X	.061	.061	0	%100
22	M21	Z	.106	.106	0	%100
23	M22	X	.061	.061	0	%100
24	M22	Z	.106	.106	0	%100
25	M23	X	.061	.061	0	%100
26	M23	Z	.106	.106	0	%100
27	M24	X	.061	.061	0	%100
28	M24	Z	.106	.106	0	%100
29	M25	X	.097	.097	0	%100
30	M25	Z	.169	.169	0	%100
31	M26	X	.097	.097	0	%100
32	M26	Z	.169	.169	0	%100
33	M27	X	.068	.068	0	%100
34	M27	Z	.117	.117	0	%100
35	M28	X	.068	.068	0	%100
36	M28	Z	.117	.117	0	%100
37	M31	X	.121	.121	0	%100
38	M31	Z	.21	.21	0	%100
39	M32	X	.034	.034	0	%100
40	M32	Z	.058	.058	0	%100
41	MP4A	X	.28	.28	0	%100
42	MP4A	Z	.486	.486	0	%100
43	MP3A	X	.28	.28	0	%100
44	MP3A	Z	.486	.486	0	%100
45	MP2A	X	.28	.28	0	%100
46	MP2A	Z	.486	.486	0	%100
47	MP1A	X	.28	.28	0	%100
48	MP1A	Z	.486	.486	0	%100
49	M44	X	.082	.082	0	%100
50	M44	Z	.142	.142	0	%100
51	M45	X	.082	.082	0	%100
52	M45	Z	.142	.142	0	%100
53	M46	X	.082	.082	0	%100
54	M46	Z	.142	.142	0	%100
55	M47	X	.082	.082	0	%100
56	M47	Z	.142	.142	0	%100
57	M45A	X	.267	.267	0	%100

Member Distributed Loads (BLC 70 : Structure Wm (150 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
58	M45A	Z	.462	.462	0	%100

Member Distributed Loads (BLC 71 : Structure Wm (180 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	0	0	0	%100
2	M1	Z	.752	.752	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	.752	.752	0	%100
5	M13	X	0	0	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	0	0	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	0	0	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	0	0	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	0	0	0	%100
14	M17	Z	.297	.297	0	%100
15	M18	X	0	0	0	%100
16	M18	Z	.297	.297	0	%100
17	M19	X	0	0	0	%100
18	M19	Z	.297	.297	0	%100
19	M20	X	0	0	0	%100
20	M20	Z	.297	.297	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	.163	.163	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	.163	.163	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	.163	.163	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	.163	.163	0	%100
29	M25	X	0	0	0	%100
30	M25	Z	.169	.169	0	%100
31	M26	X	0	0	0	%100
32	M26	Z	.169	.169	0	%100
33	M27	X	0	0	0	%100
34	M27	Z	.169	.169	0	%100
35	M28	X	0	0	0	%100
36	M28	Z	.169	.169	0	%100
37	M31	X	0	0	0	%100
38	M31	Z	.014	.014	0	%100
39	M32	X	0	0	0	%100
40	M32	Z	.022	.022	0	%100
41	MP4A	X	0	0	0	%100
42	MP4A	Z	.541	.541	0	%100
43	MP3A	X	0	0	0	%100
44	MP3A	Z	.541	.541	0	%100
45	MP2A	X	0	0	0	%100
46	MP2A	Z	.541	.541	0	%100
47	MP1A	X	0	0	0	%100
48	MP1A	Z	.541	.541	0	%100
49	M44	X	0	0	0	%100
50	M44	Z	.163	.163	0	%100
51	M45	X	0	0	0	%100
52	M45	Z	.163	.163	0	%100

Member Distributed Loads (BLC 71 : Structure Wm (180 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
53	M46	X	0	0	0	%100
54	M46	Z	.163	.163	0	%100
55	M47	X	0	0	0	%100
56	M47	Z	.163	.163	0	%100
57	M45A	X	0	0	0	%100
58	M45A	Z	.523	.523	0	%100

Member Distributed Loads (BLC 72 : Structure Wm (210 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	-.282	-.282	0	%100
2	M1	Z	.488	.488	0	%100
3	M2	X	-.282	-.282	0	%100
4	M2	Z	.488	.488	0	%100
5	M13	X	-.02	-.02	0	%100
6	M13	Z	.035	.035	0	%100
7	M14	X	-.02	-.02	0	%100
8	M14	Z	.035	.035	0	%100
9	M15	X	-.02	-.02	0	%100
10	M15	Z	.035	.035	0	%100
11	M16	X	-.02	-.02	0	%100
12	M16	Z	.035	.035	0	%100
13	M17	X	-.033	-.033	0	%100
14	M17	Z	.058	.058	0	%100
15	M18	X	-.033	-.033	0	%100
16	M18	Z	.058	.058	0	%100
17	M19	X	-.235	-.235	0	%100
18	M19	Z	.407	.407	0	%100
19	M20	X	-.235	-.235	0	%100
20	M20	Z	.407	.407	0	%100
21	M21	X	-.061	-.061	0	%100
22	M21	Z	.106	.106	0	%100
23	M22	X	-.061	-.061	0	%100
24	M22	Z	.106	.106	0	%100
25	M23	X	-.061	-.061	0	%100
26	M23	Z	.106	.106	0	%100
27	M24	X	-.061	-.061	0	%100
28	M24	Z	.106	.106	0	%100
29	M25	X	-.068	-.068	0	%100
30	M25	Z	.117	.117	0	%100
31	M26	X	-.068	-.068	0	%100
32	M26	Z	.117	.117	0	%100
33	M27	X	-.097	-.097	0	%100
34	M27	Z	.169	.169	0	%100
35	M28	X	-.097	-.097	0	%100
36	M28	Z	.169	.169	0	%100
37	M31	X	-.041	-.041	0	%100
38	M31	Z	.071	.071	0	%100
39	M32	X	-.133	-.133	0	%100
40	M32	Z	.23	.23	0	%100
41	MP4A	X	-.28	-.28	0	%100
42	MP4A	Z	.486	.486	0	%100
43	MP3A	X	-.28	-.28	0	%100
44	MP3A	Z	.486	.486	0	%100
45	MP2A	X	-.28	-.28	0	%100
46	MP2A	Z	.486	.486	0	%100
47	MP1A	X	-.28	-.28	0	%100

Member Distributed Loads (BLC 72 : Structure Wm (210 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
48	MP1A	Z	.486	.486	0	%100
49	M44	X	-.082	-.082	0	%100
50	M44	Z	.142	.142	0	%100
51	M45	X	-.082	-.082	0	%100
52	M45	Z	.142	.142	0	%100
53	M46	X	-.082	-.082	0	%100
54	M46	Z	.142	.142	0	%100
55	M47	X	-.082	-.082	0	%100
56	M47	Z	.142	.142	0	%100
57	M45A	X	-.267	-.267	0	%100
58	M45A	Z	.462	.462	0	%100

Member Distributed Loads (BLC 73 : Structure Wm (240 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	-.163	-.163	0	%100
2	M1	Z	.094	.094	0	%100
3	M2	X	-.163	-.163	0	%100
4	M2	Z	.094	.094	0	%100
5	M13	X	-.106	-.106	0	%100
6	M13	Z	.061	.061	0	%100
7	M14	X	-.106	-.106	0	%100
8	M14	Z	.061	.061	0	%100
9	M15	X	-.106	-.106	0	%100
10	M15	Z	.061	.061	0	%100
11	M16	X	-.106	-.106	0	%100
12	M16	Z	.061	.061	0	%100
13	M17	X	-.008	-.008	0	%100
14	M17	Z	.005	.005	0	%100
15	M18	X	-.008	-.008	0	%100
16	M18	Z	.005	.005	0	%100
17	M19	X	-.357	-.357	0	%100
18	M19	Z	.206	.206	0	%100
19	M20	X	-.357	-.357	0	%100
20	M20	Z	.206	.206	0	%100
21	M21	X	-.035	-.035	0	%100
22	M21	Z	.02	.02	0	%100
23	M22	X	-.035	-.035	0	%100
24	M22	Z	.02	.02	0	%100
25	M23	X	-.035	-.035	0	%100
26	M23	Z	.02	.02	0	%100
27	M24	X	-.035	-.035	0	%100
28	M24	Z	.02	.02	0	%100
29	M25	X	-.11	-.11	0	%100
30	M25	Z	.063	.063	0	%100
31	M26	X	-.11	-.11	0	%100
32	M26	Z	.063	.063	0	%100
33	M27	X	-.161	-.161	0	%100
34	M27	Z	.093	.093	0	%100
35	M28	X	-.161	-.161	0	%100
36	M28	Z	.093	.093	0	%100
37	M31	X	-.328	-.328	0	%100
38	M31	Z	.189	.189	0	%100
39	M32	X	-.48	-.48	0	%100
40	M32	Z	.277	.277	0	%100
41	MP4A	X	-.52	-.52	0	%100
42	MP4A	Z	.301	.301	0	%100

Member Distributed Loads (BLC 73 : Structure Wm (240 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
43	MP3A	X	-.52	-.52	0	%100
44	MP3A	Z	.301	.301	0	%100
45	MP2A	X	-.52	-.52	0	%100
46	MP2A	Z	.301	.301	0	%100
47	MP1A	X	-.52	-.52	0	%100
48	MP1A	Z	.301	.301	0	%100
49	M44	X	-.142	-.142	0	%100
50	M44	Z	.082	.082	0	%100
51	M45	X	-.142	-.142	0	%100
52	M45	Z	.082	.082	0	%100
53	M46	X	-.142	-.142	0	%100
54	M46	Z	.082	.082	0	%100
55	M47	X	-.142	-.142	0	%100
56	M47	Z	.082	.082	0	%100
57	M45A	X	-.481	-.481	0	%100
58	M45A	Z	.278	.278	0	%100

Member Distributed Loads (BLC 74 : Structure Wm (270 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	0	0	0	%100
5	M13	X	-.163	-.163	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	-.163	-.163	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	-.163	-.163	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	-.163	-.163	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	-.182	-.182	0	%100
14	M17	Z	0	0	0	%100
15	M18	X	-.182	-.182	0	%100
16	M18	Z	0	0	0	%100
17	M19	X	-.182	-.182	0	%100
18	M19	Z	0	0	0	%100
19	M20	X	-.182	-.182	0	%100
20	M20	Z	0	0	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	0	0	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	0	0	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	0	0	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	0	0	0	%100
29	M25	X	-.152	-.152	0	%100
30	M25	Z	0	0	0	%100
31	M26	X	-.152	-.152	0	%100
32	M26	Z	0	0	0	%100
33	M27	X	-.152	-.152	0	%100
34	M27	Z	0	0	0	%100
35	M28	X	-.152	-.152	0	%100
36	M28	Z	0	0	0	%100
37	M31	X	-.607	-.607	0	%100

Member Distributed Loads (BLC 74 : Structure Wm (270 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
38	M31	Z	0	0	0	%100
39	M32	X	-.599	-.599	0	%100
40	M32	Z	0	0	0	%100
41	MP4A	X	-.621	-.621	0	%100
42	MP4A	Z	0	0	0	%100
43	MP3A	X	-.621	-.621	0	%100
44	MP3A	Z	0	0	0	%100
45	MP2A	X	-.621	-.621	0	%100
46	MP2A	Z	0	0	0	%100
47	MP1A	X	-.621	-.621	0	%100
48	MP1A	Z	0	0	0	%100
49	M44	X	-.163	-.163	0	%100
50	M44	Z	0	0	0	%100
51	M45	X	-.163	-.163	0	%100
52	M45	Z	0	0	0	%100
53	M46	X	-.163	-.163	0	%100
54	M46	Z	0	0	0	%100
55	M47	X	-.163	-.163	0	%100
56	M47	Z	0	0	0	%100
57	M45A	X	-.566	-.566	0	%100
58	M45A	Z	0	0	0	%100

Member Distributed Loads (BLC 75 : Structure Wm (300 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	-.163	-.163	0	%100
2	M1	Z	-.094	-.094	0	%100
3	M2	X	-.163	-.163	0	%100
4	M2	Z	-.094	-.094	0	%100
5	M13	X	-.106	-.106	0	%100
6	M13	Z	-.061	-.061	0	%100
7	M14	X	-.106	-.106	0	%100
8	M14	Z	-.061	-.061	0	%100
9	M15	X	-.106	-.106	0	%100
10	M15	Z	-.061	-.061	0	%100
11	M16	X	-.106	-.106	0	%100
12	M16	Z	-.061	-.061	0	%100
13	M17	X	-.357	-.357	0	%100
14	M17	Z	-.206	-.206	0	%100
15	M18	X	-.357	-.357	0	%100
16	M18	Z	-.206	-.206	0	%100
17	M19	X	-.008	-.008	0	%100
18	M19	Z	-.005	-.005	0	%100
19	M20	X	-.008	-.008	0	%100
20	M20	Z	-.005	-.005	0	%100
21	M21	X	-.035	-.035	0	%100
22	M21	Z	-.02	-.02	0	%100
23	M22	X	-.035	-.035	0	%100
24	M22	Z	-.02	-.02	0	%100
25	M23	X	-.035	-.035	0	%100
26	M23	Z	-.02	-.02	0	%100
27	M24	X	-.035	-.035	0	%100
28	M24	Z	-.02	-.02	0	%100
29	M25	X	-.161	-.161	0	%100
30	M25	Z	-.093	-.093	0	%100
31	M26	X	-.161	-.161	0	%100
32	M26	Z	-.093	-.093	0	%100

Member Distributed Loads (BLC 75 : Structure Wm (300 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
33	M27	X	-.11	-.11	0	%100
34	M27	Z	-.063	-.063	0	%100
35	M28	X	-.11	-.11	0	%100
36	M28	Z	-.063	-.063	0	%100
37	M31	X	-.467	-.467	0	%100
38	M31	Z	-.269	-.269	0	%100
39	M32	X	-.308	-.308	0	%100
40	M32	Z	-.178	-.178	0	%100
41	MP4A	X	-.52	-.52	0	%100
42	MP4A	Z	-.301	-.301	0	%100
43	MP3A	X	-.52	-.52	0	%100
44	MP3A	Z	-.301	-.301	0	%100
45	MP2A	X	-.52	-.52	0	%100
46	MP2A	Z	-.301	-.301	0	%100
47	MP1A	X	-.52	-.52	0	%100
48	MP1A	Z	-.301	-.301	0	%100
49	M44	X	-.142	-.142	0	%100
50	M44	Z	-.082	-.082	0	%100
51	M45	X	-.142	-.142	0	%100
52	M45	Z	-.082	-.082	0	%100
53	M46	X	-.142	-.142	0	%100
54	M46	Z	-.082	-.082	0	%100
55	M47	X	-.142	-.142	0	%100
56	M47	Z	-.082	-.082	0	%100
57	M45A	X	-.481	-.481	0	%100
58	M45A	Z	-.278	-.278	0	%100

Member Distributed Loads (BLC 76 : Structure Wm (330 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
1	M1	X	-.282	-.282	0	%100
2	M1	Z	-.488	-.488	0	%100
3	M2	X	-.282	-.282	0	%100
4	M2	Z	-.488	-.488	0	%100
5	M13	X	-.02	-.02	0	%100
6	M13	Z	-.035	-.035	0	%100
7	M14	X	-.02	-.02	0	%100
8	M14	Z	-.035	-.035	0	%100
9	M15	X	-.02	-.02	0	%100
10	M15	Z	-.035	-.035	0	%100
11	M16	X	-.02	-.02	0	%100
12	M16	Z	-.035	-.035	0	%100
13	M17	X	-.235	-.235	0	%100
14	M17	Z	-.407	-.407	0	%100
15	M18	X	-.235	-.235	0	%100
16	M18	Z	-.407	-.407	0	%100
17	M19	X	-.033	-.033	0	%100
18	M19	Z	-.058	-.058	0	%100
19	M20	X	-.033	-.033	0	%100
20	M20	Z	-.058	-.058	0	%100
21	M21	X	-.061	-.061	0	%100
22	M21	Z	-.106	-.106	0	%100
23	M22	X	-.061	-.061	0	%100
24	M22	Z	-.106	-.106	0	%100
25	M23	X	-.061	-.061	0	%100
26	M23	Z	-.106	-.106	0	%100
27	M24	X	-.061	-.061	0	%100

Member Distributed Loads (BLC 76 : Structure Wm (330 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,ksf]	End Magnitude[lb/ft,F,ksf]	Start Location[ft...	End Location[ft,...
28	M24	Z	-.106	-.106	0	%100
29	M25	X	-.097	-.097	0	%100
30	M25	Z	-.169	-.169	0	%100
31	M26	X	-.097	-.097	0	%100
32	M26	Z	-.169	-.169	0	%100
33	M27	X	-.068	-.068	0	%100
34	M27	Z	-.117	-.117	0	%100
35	M28	X	-.068	-.068	0	%100
36	M28	Z	-.117	-.117	0	%100
37	M31	X	-.121	-.121	0	%100
38	M31	Z	-.21	-.21	0	%100
39	M32	X	-.034	-.034	0	%100
40	M32	Z	-.058	-.058	0	%100
41	MP4A	X	-.28	-.28	0	%100
42	MP4A	Z	-.486	-.486	0	%100
43	MP3A	X	-.28	-.28	0	%100
44	MP3A	Z	-.486	-.486	0	%100
45	MP2A	X	-.28	-.28	0	%100
46	MP2A	Z	-.486	-.486	0	%100
47	MP1A	X	-.28	-.28	0	%100
48	MP1A	Z	-.486	-.486	0	%100
49	M44	X	-.082	-.082	0	%100
50	M44	Z	-.142	-.142	0	%100
51	M45	X	-.082	-.082	0	%100
52	M45	Z	-.142	-.142	0	%100
53	M46	X	-.082	-.082	0	%100
54	M46	Z	-.142	-.142	0	%100
55	M47	X	-.082	-.082	0	%100
56	M47	Z	-.142	-.142	0	%100
57	M45A	X	-.267	-.267	0	%100
58	M45A	Z	-.462	-.462	0	%100

Member Area Loads

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

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N35	max	1116.946	10	1192.761	19	1456.349	15	-.194	1	0	51	.097	5
2		min	-992.589	4	486.181	1	232.598	8	-.569	19	0	1	-.105	11
3	N36	max	998.158	10	1191.257	13	1021.655	1	-.235	2	0	51	.103	5
4		min	-1124.304	4	486.344	7	-2318.792	7	-.556	23	0	1	-.112	11
5	N63	max	154.553	6	33.67	17	1262.786	11	0	51	0	51	0	51
6		min	-167.568	12	13.249	11	-1189.643	5	0	1	0	1	0	1
7	N66	max	155.303	2	33.865	21	929.143	3	0	51	0	51	0	51
8		min	-141.091	8	13.344	3	-859.669	9	0	1	0	1	0	1
9	Totals:	max	1889.308	10	2442.702	13	2701.395	1						
10		min	-1889.308	4	1036.604	7	-2701.395	7						

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

	Member	Shape	Code Check	Loc...	LC	Shear Check	Loc.....		LC	phi*Pn..	phi*Pn..	phi*M...	phi*M...	...	Eqn
1	M1	PIPE_2.5	.168	4.1...	11	.135	3.1...		11	14558..	50715	3.596	3.596	...	H1-1b
2	M2	PIPE_2.5	.213	8.7...	6	.089	8.7...		19	14558..	50715	3.596	3.596	...	H1-1b
3	M13	PL5/8X3.5	.239	0	12	.025	.703	y	8	61612..	68906...	.897	5.024	...	H1-1b
4	M14	PL5/8X3.5	.266	0	32	.028	.703	y	4	61612..	68906...	.897	5.024	...	H1-1b
5	M15	PL5/8X3.5	.289	0	41	.025	.703	y	11	61613..	68906...	.897	5.024	...	H1-1b
6	M16	PL5/8X3.5	.233	0	15	.025	.703	y	6	61612..	68906...	.897	5.024	...	H1-1b
7	M17	PIPE_2.0	.274	0	8	.095	0		21	31128..	32130	1.872	1.872	...	H1-1b
8	M18	PIPE_2.0	.308	0	4	.096	0		20	31128..	32130	1.872	1.872	...	H1-1b
9	M19	PIPE_2.0	.272	0	11	.091	0		42	31128..	32130	1.872	1.872	...	H1-1b
10	M20	PIPE_2.0	.276	0	6	.090	0		18	31128..	32130	1.872	1.872	...	H1-1b
11	M21	PL5/8X3.5	.337	.531	20	.078	.531	y	32	67591..	68906...	.897	5.024	...	H1-1b
12	M22	PL5/8X3.5	.308	.531	18	.096	.531	y	18	67591..	68906...	.897	5.024	...	H1-1b
13	M23	PL5/8X3.5	.290	.531	15	.088	0	y	30	67591..	68906...	.897	5.024	...	H1-1b
14	M24	PL5/8X3.5	.260	.531	14	.099	0	y	44	67591..	68906...	.897	5.024	...	H1-1b
15	M25	SR_0.75	.000	0	51	.032	0		9	2863....	13916...	.174	.174	...	H1-1a
16	M26	SR_0.75	.062	0	21	.011	0		49	2863....	13916...	.174	.174	...	H1-1...
17	M27	SR_0.75	.000	0	51	.032	4.1...		5	2863....	13916...	.174	.174	...	H1-1a
18	M28	SR_0.75	.060	4.1...	17	.012	4.1...		21	2863....	13916...	.174	.174	...	H1-1...
19	M31	PIPE_2.0	.067	6.6...	11	.004	0		10	18955..	32130	1.872	1.872	...	H1-1...
20	M32	PIPE_2.0	.056	3.3...	4	.004	0		10	18828..	32130	1.872	1.872	...	H1-1b
21	MP4A	PIPE_2.0	.226	5.6...	49	.032	5.6...		6	14916..	32130	1.872	1.872	...	H1-1b
22	MP3A	PIPE_2.0	.285	2.3...	8	.192	5.6...		11	14916..	32130	1.872	1.872	...	H1-1b
23	MP2A	PIPE_2.0	.248	2.3...	6	.146	5.6...		3	14916..	32130	1.872	1.872	...	H1-1b
24	MP1A	PIPE_2.0	.140	5.6...	9	.063	5.6...		8	14916..	32130	1.872	1.872	...	H1-1b
25	M44	SR_0.625	.070	1.6...	12	.009	0		49	2158....	9664....	.101	.101	...	H1-1b
26	M45	SR_0.625	.058	1.6...	8	.028	0		5	2158....	9664....	.101	.101	...	H1-1b
27	M46	SR_0.625	.059	1.6...	6	.025	0		10	2158....	9664....	.101	.101	...	H1-1b
28	M47	SR_0.625	.057	1.6...	3	.010	0		7	2158....	9664....	.101	.101	...	H1-1b
29	M45A	PIPE_2.0	.090	2	6	.077	3.6...		5	26521..	32130	1.872	1.872	...	H1-1b

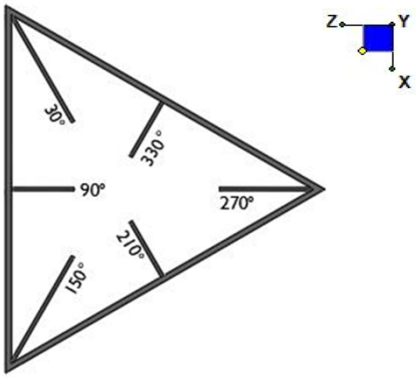
Client:	Verizon Wireless	Date:	1/18/2021
Site Name:	Wesleyan University CT		
Project No.	20777390A		
Title:	Mount Analysis	Page:	1

Version 3.1

I. Mount-to-Tower Connection Check

RISA Model Data

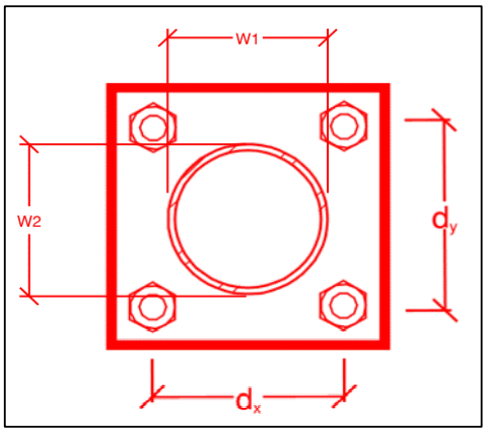
Nodes *(labeled per RISA)*	Orientation *(per graphic of typical platform)*
N35	90
N36	90



TYPICAL PLATFORM

Tower Connection Bolt Checks

Any moment resistance?:	yes
Bolt Quantity per Reaction:	4
d_x (in) *(Delta X of typ. bolt config. sketch)* :	11.5
d_y (in) *(Delta Y of typ. bolt config. sketch)* :	5
Bolt Type:	A307
Bolt Diameter (in):	0.625
Required Tensile Strength (kips):	4.6
Required Shear Strength (kips):	1.4
Tensile Strength / bolt (kips):	10.0
Shear Strength / bolt (kips):	6.0
Tensile Capacity Overall:	**11.5%***
Shear Capacity Overall:	**6.0%**



**Note: Tension reduction not required if tension or shear capacity < 30%*

Mount Desktop – Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor – Passing Mount Analysis

Purpose – to provide Maser Consulting the proper documentation in order to complete the required Mount Desktop review of the Post Modification Inspection Report.

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

Base Requirements:

- Any special photos outside of the standard requirements will be indicated on the passing MA
- Verification that loading is as communicated in the Passing Mount Analysis. NOTE If loading is different than what is conveyed contact Maser Consulting immediately.
- Each photo should be time and date stamped
- Photos should be high resolution and submitted in a Zip File and should be organized in the file structure as depicted in Schedule A attached.
- Contractor shall ensure that the safety climb wire rope is supported and not adversely impacted by the install of the modification components. This may involve the install of wire rope guides, or other items to protect the wire rope.
- The photos in the file structure should be uploaded to ***https://pmi.vzwsmart.com*** as depicted on the drawings

Photo Requirements:

- *Base and "During Installation Photos"*
  - Base pictures include
    - Photo of Gate Signs showing the tower owner, site name, and number
    - Photo of carrier shelter showing the carrier site name and number if available
    - Photos of the galvanizing compound and/or paint used (if applicable), clearly showing the label and name
  - "During Installation Photos if provided - must be placed only in this folder
- *Photos taken at ground level*
  - Overall tower structure before and after installation of the equipment modifications
  - Photos of the appropriate mount before and after installation of the modifications; if the mounts are at different rad elevations, pictures must be provided for all elevations that the modifications were installed
- *Photos taken at Mount Elevation*
  - Photos showing each individual sector before and also after installation of equipment.
    - These photos should also certify that the placement and geometry of the equipment on the mount is as depicted on the sketch and table in the mount analysis

- Photos showing the safety climb wire rope above and below the mount prior to modification.
- Photos showing the climbing facility and safety climb if present.

Antenna & equipment placement and Geometry Confirmation:

- The contractor must certify that the antenna & equipment placement and geometry is in accordance with the antenna placement diagrams as included in this mount analysis.

☐ The contractor certifies that the photos support and the equipment on the mount is as depicted on the antenna placement diagrams as included in this mount analysis.

☐ The contractor notes that the equipment on the mount is not in accordance with the antenna placement diagrams and has accordingly marked up the diagrams or provided a diagram outlining the differences.

Certifying Individual: Company _____

Name _____

Signature _____

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

Issue:

Proposed OVP is to be installed on the standoff pipe mast in Beta Sector.

Response:

Contractor to wire brush and clean all existing rusted hardware as required.

Schedule A – Photo & Document File Structure

- VzW Site Number / Name
  - Base & "During Installation" Photos
  - Pre-Installation Photos
    - Alpha
    - Beta
    - Gamma
    - Ground Level
    - Tape Drop
  - Post-Installation Photos
    - Alpha
    - Beta
    - Gamma
    - Ground Level
    - Tape Drop
    - Photos of climbing facility and safety climb – If Present
  - Certifications – Submission of this document including certifications
  - Specific Required Additional Photos

Structure: 470718-VZW - Wesleyan University CT

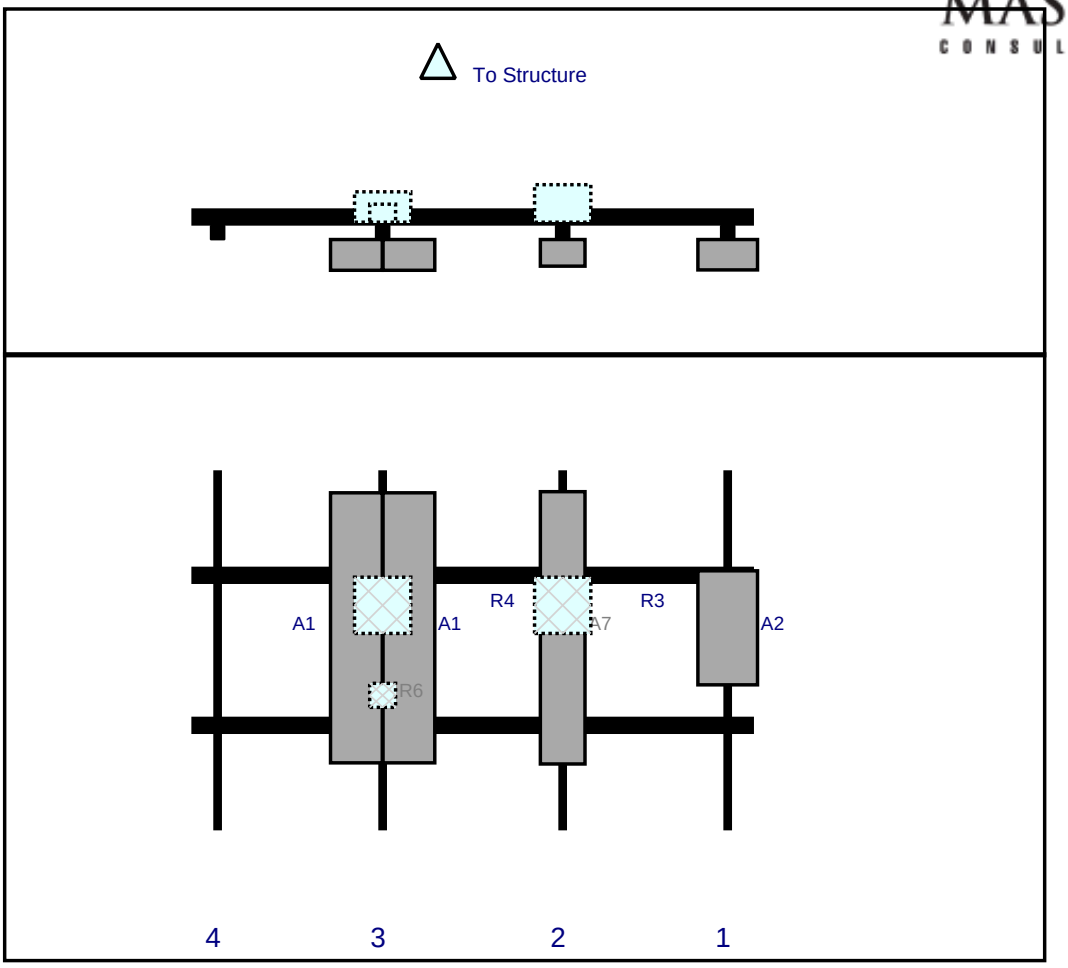
Sector: **A**

Structure Type: Self Support

Mount Elev: 129.00

1/18/2021

Plan View



Front View
Looking at Structure

Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A2	Licensed Sub 6 Antenna	30.4	15.9	143	1	a	Front	42	0	Added	
A7	SBNHH-1D65B	72.6	11.9	99	2	a	Front	42	0	Retained	11/11/2020
R3	B2/B66A RRH-BR049	15	15	99	2	a	Behind	36	0	Added	
A1	JAHH-65B-R3B	72	13.8	51	3	a	Front	42	7	Added	
A1	JAHH-65B-R3B	72	13.8	51	3	b	Front	42	-7	Added	
R4	B5/B13 RRH-BR04C	15	15	51	3	a	Behind	36	0	Added	
R6	CBC78T-DS-43-2X	6.4	6.9	51	3	a	Behind	60	0	Added	

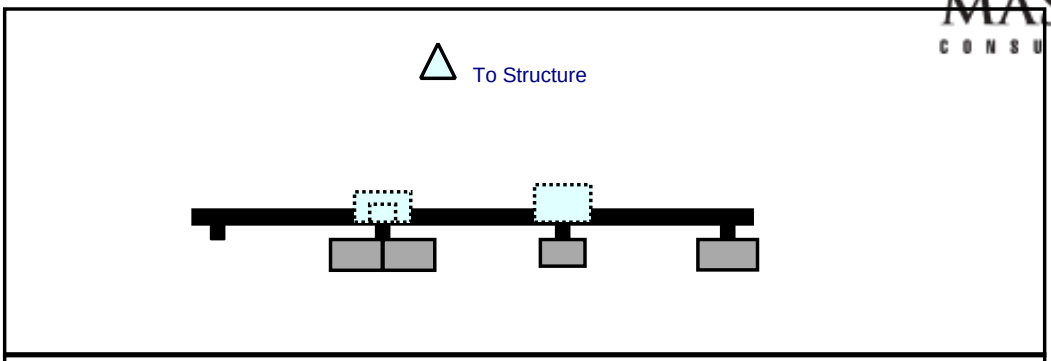
Sector: **B**

Structure Type: Self Support

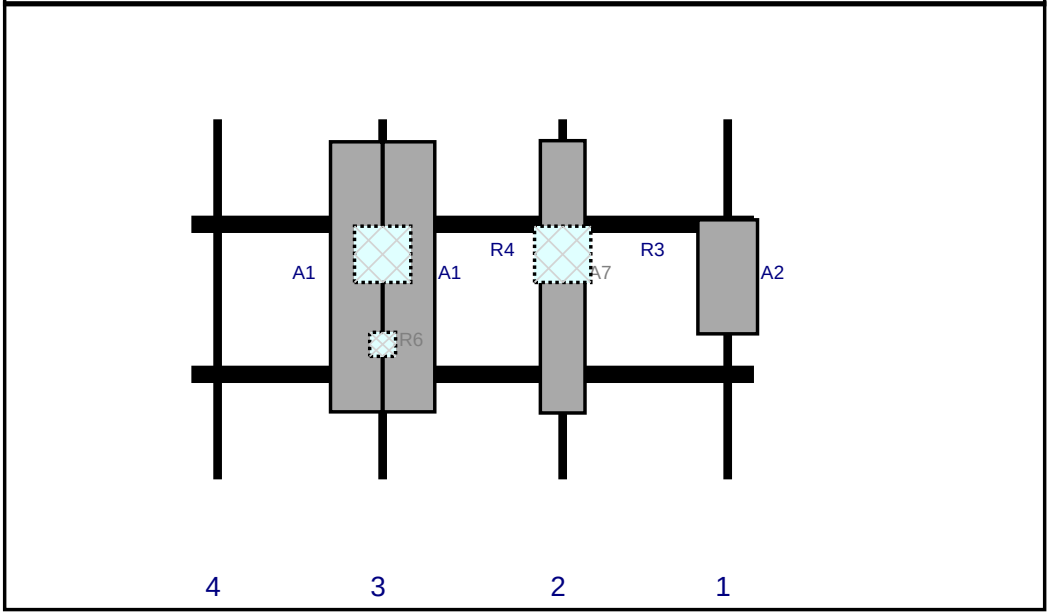
Mount Elev: 129.00

1/18/2021

Plan View



Front View
Looking at Structure



Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A2	Licensed Sub 6 Antenna	30.4	15.9	143	1	a	Front	42	0	Added	
A7	SBNHH-1D65B	72.6	11.9	99	2	a	Front	42	0	Retained	11/11/2020
R3	B2/B66A RRH-BR049	15	15	99	2	a	Behind	36	0	Added	
A1	JAHH-65B-R3B	72	13.8	51	3	a	Front	42	7	Added	
A1	JAHH-65B-R3B	72	13.8	51	3	b	Front	42	-7	Added	
R4	B5/B13 RRH-BR04C	15	15	51	3	a	Behind	36	0	Added	
R6	CBC78T-DS-43-2X	6.4	6.9	51	3	a	Behind	60	0	Added	

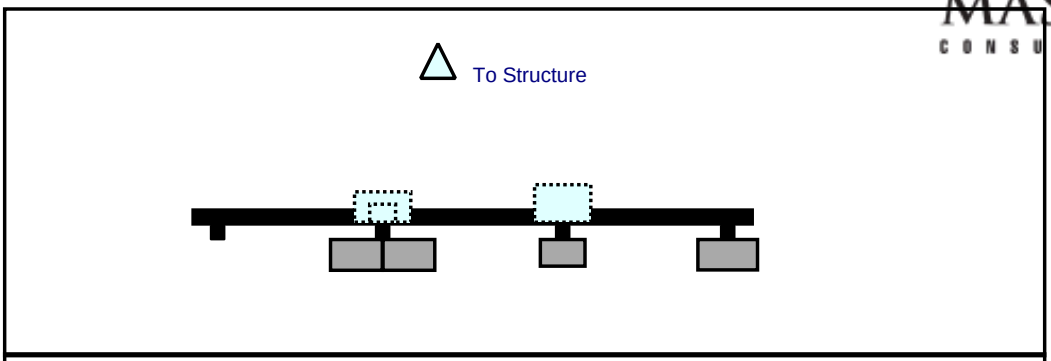
Sector: **C**

Structure Type: Self Support

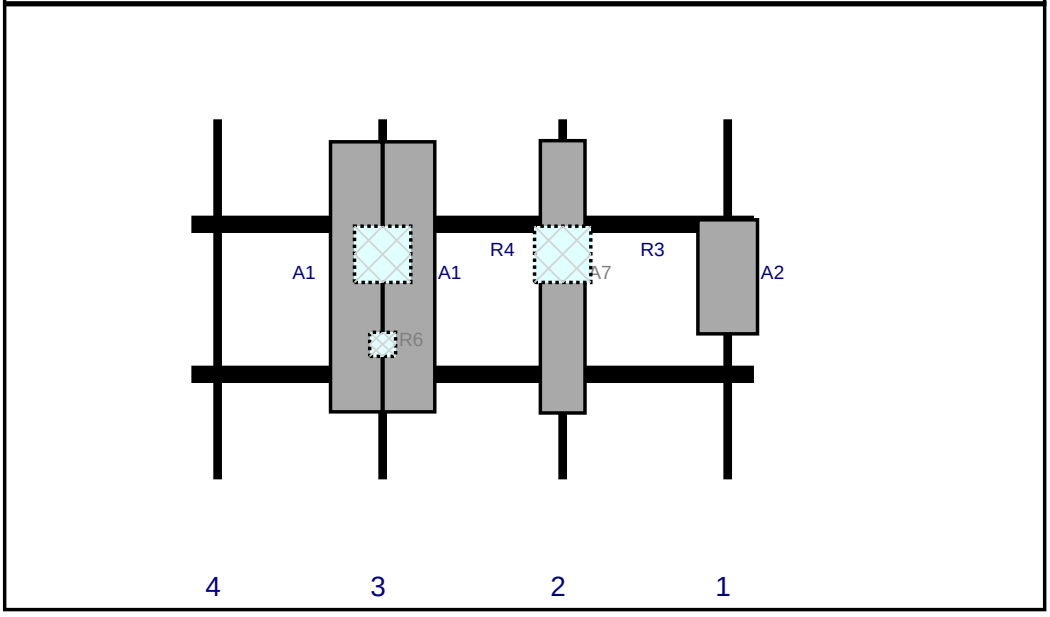
Mount Elev: 129.00

1/18/2021

Plan View



Front View
Looking at Structure



Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A2	Licensed Sub 6 Antenna	30.4	15.9	143	1	a	Front	42	0	Added	
A7	SBNHH-1D65B	72.6	11.9	99	2	a	Front	42	0	Retained	11/11/2020
R3	B2/B66A RRH-BR049	15	15	99	2	a	Behind	36	0	Added	
A1	JAHH-65B-R3B	72	13.8	51	3	a	Front	42	7	Added	
A1	JAHH-65B-R3B	72	13.8	51	3	b	Front	42	-7	Added	
R4	B5/B13 RRH-BR04C	15	15	51	3	a	Behind	36	0	Added	
R6	CBC78T-DS-43-2X	6.4	6.9	51	3	a	Behind	60	0	Added	

Maser Consulting Connecticut

MASER CONSULTING
—CONNECTICUT—

Subject	TIA-222-H Usage	
Site Information	*Site ID:*	*470718-VZW / Wesleyan University CT*
	Site Name:	*Wesleyan University CT*
	Carrier Name:	*Verizon Wireless*
	Address:	*169 Cross Street* *Middletown, Connecticut 06457* *Middlesex County*
	Latitude:	*41.55137166°*
	Longitude:	*-72.66213527°*
Structure Information	*Tower Type:*	*Self-Support*
	Mount Type:	*12.50-Ft Sector Frame*

To Whom It May Concern,

We respectfully submit the above referenced Antenna Mount Structural Analysis report in conformance with ANSI/TIA-222-H, Structural Standard for Antenna Supporting Structures and Antennas and Small Wind Turbine Support Structures.

The 2015 International Building Code states that, in Section 3108, telecommunication towers shall be designed and constructed in accordance with the provisions of TIA-222. The TIA-222-H is the latest revision of the TIA-222 Standard, effective as of January 01, 2018.

As with all ANSI standards and engineering best practice is to apply the most current revision of the standard. This ensures the engineer is applying all updates. As an example, the TIA-222-H standard includes updates to bring it in line with the latest AISC and ACI standards and it also incorporates the latest wind speed maps by ASCE 7 based on updated studies of the wind data.

The TIA-222-H standard clarifies these specific requirements for the antenna mount analysis such as modeling methods, seismic analysis, 30-degree increment wind directions and maintenance loading. Therefore, it is our opinion that TIA-222-H is the most appropriate standard for antenna mount structural analysis and is acceptable for use at this tower site to ensure the engineer is taking into account the most current engineering standard available.

Sincerely,

Dejian Xu

Dejian Xu, PE
Technical Specialist

MASER CONSULTING
— CONNECTICUT—

331 Newman Springs Road, Suite 203
Red Bank, NJ 07701
T: 732.383.1950
www.maserconsulting.com

March 29, 2021

Mr. Andrew Leone
Verizon Wireless
20 Alexander Dr.
Wallingford, CT 06492

Re: Verizon Wireless antenna Model Clarification for CT Siting Council

Dear Mr. Leone,

This letter is intended to clarify and confirm the antenna naming convention used by Verizon Wireless as a part of an antenna upgrade project on numerous wireless facilities.

The antenna naming convention "Licensed Sub-6, L-Sub6, nL-Sub6, VZS01" and any other slight variants refer to the 64T64RMMU antenna manufactured by Samsung Electronics. These names are interchangeable and are used in various documents, including but not limited to the "Antenna Mount Analysis".

If you have any questions or comments, or require additional information, please do not hesitate to contact me.

Very truly yours,
MASER CONSULTING CONNECTICUT

Petros Toukalas
Connecticut Professional Engineer
License Number: 32577

ATTACHMENT 5


25/0062
E30810
#178
1.5 AC
25/0063
E31033
#172
1 AC
E30431
#
0.54 AC
Entrance Road
94'
51.00'
112'
Cross Street
200'
175'
25/0100
E30080
#169
0.81 AC
175'
200'
25/0101
E30861
#161
12.34 AC
Wesleyan University: Freeman Athletic Center
25/0099
E30558
#170
94.69 AC
.552 Degrees

MIDDLETOWN,CT

169 CROSS ST

Location
169 CROSS ST
Map-Lot
25/ / 0100/ /
Acct#
E30080
Owner
CITY OF MIDDLETOWN
Municipality
Assessment
$1,066,450
Appraisal
$1,523,480
PID
39
Building Count
1
Assessing District

Current Value

Appraisal

Valuation Year	Improvements	Land	Total
2018	$1,180,480	$343,000	$1,523,480

Assessment

Valuation Year	Improvements	Land	Total
2018	$826,350	$240,100	$1,066,450

Parcel Addreses

Additional Addresses

No Additional Addresses available for this parcel

Owner of Record

Owner CITY OF MIDDLETOWN
Co-Owner
Address 245 DEKOVEN DR
MIDDLETOWN, CT 06457
Sale Price $0
Certificate
Book & Page 0336/0035
Sale Date 04/24/1964
Instrument 29

Ownership History

Ownership History

Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
CITY OF MIDDLETOWN	$0		0336/0035	29	04/24/1964

Building Information
Building 1 : Section 1

Year Built: 1970
Living Area: 6,747
Replacement Cost: $1,420,256
Building Percent Good: 77
Replacement Cost Less Depreciation: $1,093,600

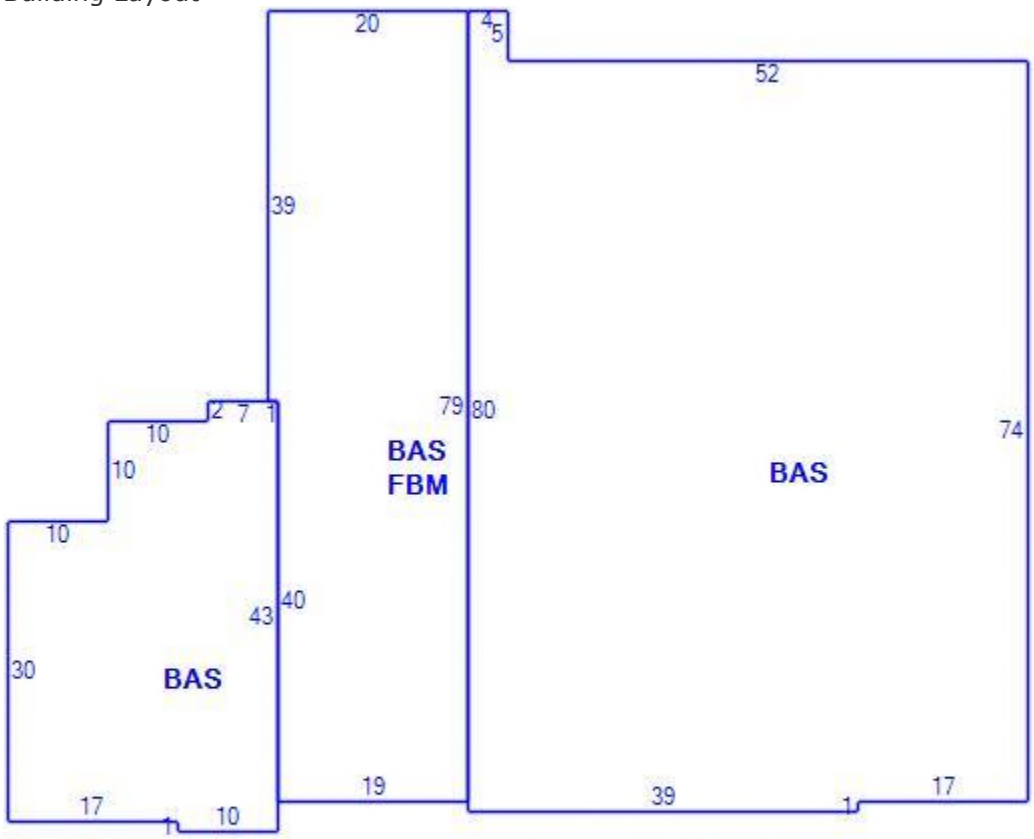
Building Attributes

Field	Description
Style	Fire Station
Model	Commercial
Grade	A-
Stories	1
Occupancy	1.00
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar and Gravel
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Concrete
Heating Fuel	Oil
Heating Type	Hot Water
AC Type	Partial
Struct Class	
Bldg Use	Fire Dept
Cov Parking	
Uncov Parking	
Percent Fin	
1st Floor Use	
Heat/AC	Heat/AC Split
Frame Type	Masonry
Baths/Plumbing	Average

Ceiling/Walls	Typical
Rooms/Prtns	Average
Wall Height	9.00

Building Photo

Building Layout



Building Sub-Areas (sq ft) Legend

Code	Description	Gross Area	Living Area
BAS	First Floor	6,747	6,747
FBM	Finished Basement	1,540	0
		8,287	6,747

Extra Features

Extra Features Legend

No Data for Extra Features

Land

Land Use

Use Code	928
Description	Fire Dept
Zone	R-15
Neighborhood	3200
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	0.81
Assessed Value	$240,100
Appraised Value	$343,000

Outbuildings

Outbuildings Legend

Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
PAV1	Paving	AS	Asphalt	17871.00 UNITS	$20,100	1
PAV2	Paving	CN	Concrete LD	1950.00 UNITS	$3,560	1
LT1	Lights-In W/Pl			1.00 UNITS	$50	1
FN5	Fence-10'Chain			70.00 UNITS	$1,190	1
SHD1	Shed	FR	Frame	264.00 UNITS	$1,980	1
SHD1	Shed	FR	Frame	120.00 UNITS	$60,000	1

Valuation History

Appraisal

Valuation Year	Improvements	Land	Total
2020	$1,180,480	$343,000	$1,523,480
2019	$1,180,480	$343,000	$1,523,480

2018	$1,180,480	$343,000	$1,523,480

Assessment

Valuation Year	Improvements	Land	Total
2020	$826,350	$240,100	$1,066,450
2019	$826,350	$240,100	$1,066,450
2018	$826,350	$240,100	$1,066,450

closecloseclose

ATTACHMENT 6

UNITED STATES POSTAL SERVICE®

WESLEYAN UNIVERSITY

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			neopost 06/22/2021 US POSTAGE $008.89⁰ ZIP 06103 041L1220[illegible] OLD STATE HOUSE STATION 06103 JUN 22 2021 USPS
	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.	Benjamin Florsheim, Mayor City of Middletown 245 deKoven Drive Middletown, CT 06457				
2.	Joseph Samolis, Director Planning, Conservation and Development City of Middletown 245 deKoven Drive Middletown, CT 06457				
3.					
4.					
5.					
6.					