

One State Street
Hartford, CT 06103
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

Also admitted in Massachusetts
and New York

October 28, 2024

Via Electronic Mail

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

Re: **Notice of Exempt Modification – Facility Modification
179 Shunpike Road, Cromwell, Connecticut**

Dear Attorney Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains an existing wireless telecommunications facility at the above-referenced property address (the “Property”). The facility consists of antennas on an existing tower and associated equipment on the ground, near the base of the tower. The tower was approved by the Town of Cromwell (“Town”) in November of 1999. Cellco’s share use of the tower was approved by the Siting Council (“Council”) in October of 2007 (EM-VER-033-071005). A copy of the Town’s approval and the Council’s EM-VER-033-071005 approval are included in Attachment 1.

Cellco now intends to modify its facility by removing nine (9) antennas and six (6) remote radio heads (“RRHs”) and installing twelve (12) new antennas and nine (9) new RRHs on its existing antenna mounting structure and antenna mounts. A set of project plans showing Cellco’s proposed facility modifications and the specifications for Cellco’s new antennas and RRHs are included in Attachment 2.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Cromwell’s Town Manager and Land Use Officer. A copy of this letter is being sent to the Cromwell Fire District, owner of the tower and 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).

30443457-v1

Robinson+Cole

Melanie A. Bachman, Esq.

October 28, 2024

Page 2

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's new antennas and RRHs will be installed at the same height on the tower.
2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The installation of Cellco's new antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. Included in Attachment 3 is a Calculated Radio Frequency Emissions Report demonstrating that the proposed modified facility will comply with the FCC safety standards. The modified facility will be capable of providing Cellco's 5G wireless service.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. According to the attached Structural Analysis Report ("SA") and Post-Modification Antenna Mount Analysis Report ("MA"), the existing tower, tower foundation and antenna mounts, with certain modifications, can support Cellco's proposed modifications. Copies of the SA and MA are included in Attachment 4.

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

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

Sincerely,



Kenneth C. Baldwin

Enclosures

Copy to:

Anthony J. Salvatore, Town Manager
Stuart Popper, Director of Planning and Development
Cromwell Fire District, Tower/Property Owner
Aleksy Tyurin

ATTACHMENT 1

№ 010409

Instructions on Reverse Side

Application for Building Permit

Date Nov 30 19 99

☐ SEPTIC SYSTEM ☐ WELL WATER
☐ CITY SEWER ☐ CITY WATER

Estimated Cost of Construction \$ 150,000

(Including Value of Labor & Material)

Building Fee \$ Fee waived by First selectman.

TEL. NOS.

HOME

WORK 914.225.3060

Cert. of Occupancy Fee. \$

TOTAL \$

TO PUBLIC WORKS DEPARTMENT - BUILDING DIVISION, TOWN OF CROMWELL

The undersigned, hereby applies for a permit to do work according to the following specifications:

Address 179 SHUNPIKE RD Lot No. 12 Side of Street WEST Zone

Nearest Cross Street or Name of Development COURT ST.

Owner of Building CROMWELL FIRE DISTRICT Address

Contractor MDM CONSTRUCTION INC Address 1092 STEVENS RD TULLY NY 13159

Architect PVTNAM ENGINEERING Address 102 GLENEIDA AVE CARMEL NY 10512

Purpose of this Permit CONSTRUCTION OF TELECOMMUNICATIONS TOWER

AND EQUIPMENT SHELTER. AS PER PLANS - 150' Tower

Size of Main Building 12' x 38' Area-Sq. Ft. 1st fl. 2nd fl. Garage Size & Location

No. of Families No. of Stories Frame Rooms: 1st 2nd 3rd

Size of Lot Distance from E. W. N. S.

Size of Footing Material and Thickness of Foundation

No. of Piers 8 Distance Apart ± 12' No. of Rows 2 Size of Pier Foundation VARIES

Size of Girders Material of Same

Size of Sill Size of Plate

Size of Outside and Bearing Wall Studs Distance Apart

Size of Joists: 1st 2nd 3rd Longest Span On Center

Size of Rafters Longest Span On Center

No. of Chimneys Size of Flue Liners

No. of Stairways Location

Plumbing Contractor N/A Lic. #

Heating and/or Air Conditioning Contractor N/A

Electrical Contractor

Home Improvement Contractor

I hereby agree to conform to all the requirements of the Laws of the State of Connecticut, the Ordinances of the Town of Cromwell, all stipulations listed on the reverse side of this application, and to notify the Building Official of any alteration in the plans or specifications of the Building for which this permit is asked. And agree that this building is to be located the proper distance from all street lines, side yard lines and required distances from all other zones and is located in a zone in which this building and its use is allowed.

Signed [Signature]

Permit Approved 12.9 19 99

Permit Revoked 19

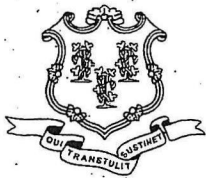
[Signature]

Building Official

[Signature]

Building Official

Instructions on Reverse Side



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

Internet: ct.gov/csc

Daniel F. Caruso
Chairman

October 24, 2007

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

RE: **EM-VER-033-071005** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 179 Shunpike Road, Cromwell, Connecticut.

Dear Attorney Baldwin:

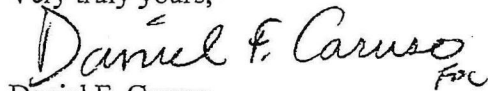
At a public meeting held on October 16, 2007, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the condition that the modifications specified in the structural analysis report dated October 3, 2007, and sealed by Richard Sambor, P.E. are performed prior to the antenna installation.

The proposed modifications are to be implemented as specified here and in your notice dated October 5, 2007, including the placement of all necessary equipment and shelters within the tower compound. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

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

Thank you for your attention and cooperation.

Very truly yours,


Daniel F. Caruso

Chairman

DFC/MP/cm

c: The Honorable Paul C. Beaulieu, First Selectman, Town of Cromwell
Frederic Curtin, Zoning Enforcement Officer, Town of Cromwell
Cromwell Fire District



ATTACHMENT 2



1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2021 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2022 CONNECTICUT SUPPLEMENT, INCLUDING THE TM/EM-222 REVISION "H" STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES,* 2022 CONNECTICUT FIRE SAFETY CODE, NATIONAL ELECTRICAL CODE AND LOCAL CODES.

- [illegible]

FROM: 20 ALEXANDER DRIVE
20 ALEXANDER DRIVE
172 SHUNPAC RD.
TO: COWBELL, CT 06416

1. TURN RIGHT ONTO ALEXANDER ST. GO FOR 1.1 MI.
2. TURN LEFT GO FOR 300 E. ST. GO FOR 0.1 MI.
3. TURN RIGHT ONTO ALEXANDER ST. GO FOR 0.3 MI.
4. TURN RIGHT ONTO BARNES INQUIRY RD. GO FOR 0.1 MI.
5. TURN RIGHT ONTO BARNES INQUIRY RD. GO FOR 0.1 MI.
6. TURN RIGHT AND TAKE RAMP TOWARD MEDICAL/CT-16 GO FOR 0.2 MI.
7. TURN RIGHT AND TAKE RAMP TOWARD MEDICAL/CT-16 GO FOR 0.2 MI.
8. TURN RIGHT AND TAKE RAMP TOWARD MEDICAL/CT-16 GO FOR 0.2 MI.
9. TURN RIGHT AND TAKE RAMP TOWARD MEDICAL/CT-16 GO FOR 0.2 MI.
10. TAKE EXIT 68A-E TOWARD HARTFORD/CT-16 GO FOR 0.2 MI.
11. TAKE EXIT 68A-E TOWARD HARTFORD/CT-16 GO FOR 0.2 MI.
12. TAKE EXIT 68A-E TOWARD HARTFORD/CT-16 GO FOR 0.2 MI.
13. TAKE EXIT 68A-E TOWARD HARTFORD/CT-16 GO FOR 0.2 MI.
14. TURN RIGHT ONTO SHUNPAC RD. GO FOR 0.3 MI.
15. TURN RIGHT ONTO SHUNPAC RD. GO FOR 0.3 MI.
16. TURN RIGHT ONTO SHUNPAC RD. GO FOR 0.3 MI.
17. TURN RIGHT ONTO SHUNPAC RD. GO FOR 0.3 MI.
18. TURN RIGHT ONTO SHUNPAC RD. GO FOR 0.3 MI.
19. TURN RIGHT ONTO SHUNPAC RD. GO FOR 0.3 MI.
20. TURN RIGHT ONTO SHUNPAC RD. GO FOR 0.3 MI.

SITE NAME: CROWMELL, N CT
SITING: 20 ALVARD RD
SITE ADDRESS: CROWMELL, CT 06416
LESTER/TUNNEY: CELLO PARTNERSHIP
20 ALVARD RD
20 ALVARD RD
WALLINGFORD, CT 06492
CONTACT PERSON: ANDREW JENSON/CONSULTING GROUP
(617) 824-1175
ENGINEER: CENTEX ENGINEERING, INC.
1000 WASHINGTON BLVD
BRANDY, MD 20634
(203) 488-0380
PROJECT COORDINATES: LATITUDE: 41°37'23.50"N
LONGITUDE: 72°46'44.508"W
(COORDINATES RETRIEVED FROM RIFDS DATED 01/01/98)

REV.	DESCRIPTION	SHF. NO.
1	TITLE SHEET	T-1
1	NOTES, SPECIFICATIONS AND ANTENNA SCHEDULE	N-1
1	COMPOUND PLAN AND ELEVATION	C-1
1	ANTENNA CONFIGURATIONS, ELEVATIONS AND DETAILS	C-2
1	TYPICAL DETAILS	C-3
1	ELECTRICAL DETAILS AND SPECIFICATIONS	E-1

1. THE PROPOSED UPGRADE SCOPE OF WORK AT THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY GENERALLY INCLUDES THE FOLLOWING:
 - A. AT THE EXISTING MONOPINE MOUNTED ANTENNA SECTORS:
 - RETAIN (3) EXISTING COMUSCOPE LNX-6514DS-VTM ANTENNAS.

1. THE PROPOSED UPGRADE SCOPE OF WORK AT THE EXISTING UNMANNED AERIAL VEHICLE (UAV) FACILITY INCLUDES THE FOLLOWING:
 - A. AT THE EXISTING MOBILE MOUNTED ANTENNA LOCATIONS:
 - RETAIN (2) EXISTING COMPOSITE LG-64160S-100V ANTENNAS.
 - RETAIN (1) EXISTING 1-1/8" COMB CABLES.
 - RETAIN (1) EXISTING 1-1/8" HYBRID CABLE.
 - RETAIN (1) EXISTING 1/2" HYBRID CABLE.
 - INSTALL (3) PROPOSED SAMPLING MP4113-271N ANTENNAS.
 - INSTALL (3) PROPOSED JMW MP402580-03 ANTENNAS.
 - INSTALL (3) PROPOSED SAMPLING X00M41-12-45 ANTENNAS.
 - INSTALL (3) PROPOSED SAMPLING RF4423-48 REPA.
 - INSTALL (1) PROPOSED OPN 12 BOX.
 - INSTALL (1) PROPOSED 6412 HYBRID CABLE.
 - INSTALL (1) PROPOSED JVA DUAL ANTENNA MOUNTS.
 - INSTALL (3) PROPOSED 12/856A BIN GRAB (RF4346-324).

MOUNT REINFORCEMENT MODIFICATIONS OUTLINED IN THE
 "MOUNT MODIFICATIONS DRAWINGS" PREPARED BY "MASER
 CONSULTING", JOB NO. 21781096, DATED OCTOBER 31,
 2023 ARE TO BE COMPLETED PRIOR TO ANY PROPOSED
 EQUIPMENT WORK SHOWN HEREIN

Cellco Partnership d/b/a Verizon Wireless

CROMWELL N CT

779 SHUNPINE ROAD

CROMWELL CT 06416

www.Verizon.com

DATE: 09/26/23

SCALE: AS NOTED

JOB NO. 2303211

TITLE

SHEET

Professional Engineer Seal





REV.	DATE	BY	CHKD BY	DESCRIPTION
1	09/26/23	SPR	TJR	CONSTRUCTION DIMENSIONS - REVISIT FOR CLIENT COMMENTS
2	11/17/23	SPR	TJR	CONSTRUCTION DIMENSIONS - SLOTTED FOR CONDUIT/CABLE
3	09/26/23	SPR	TJR	CONSTRUCTION DIMENSIONS - SLOTTED FOR CLIENT REVIEW



MOUNT REINFORCEMENT MODIFICATIONS OUTLINED IN THE "MOUNT MODIFICATIONS DRAWINGS" PREPARED BY "LASER CONSULTING", JOB NO. 21781096, DATED OCTOBER 31, 2023 ARE TO BE COMPLETED PRIOR TO ANY PROPOSED EQUIPMENT WORK SHOWN HEREIN.

NOTE: NO EQUIPMENT SHALL BE INSTALLED ON THE HOSTING STRUCTURE WITHOUT A PASSING STRUCTURAL ANALYSIS REPORT AND CONTRACTOR PRIOR CONFIRMATION THAT ANY AND ALL REQUISITE MODIFICATIONS HAVE BEEN COMPLETED.

											Sheet No. 1 of 1
											C-1

											Compound Plan and Elevation

DATE: 09/28/23
SCALE: AS NOTED
JOB NO.: 2-0332.11

Calico Partnership d/b/a Verizon Wireless
CROWNELL N CT
729 SHUNPIKE ROAD
CROWNELL, CT 06416



[illegible][illegible]

MOUNT REINFORCEMENT MODIFICATIONS OUTLINED IN THE "MOUNT MODIFICATIONS DRAWINGS" PREPARED BY "WASER CONSULTING", JOB NO. 21781096, DATED OCTOBER 31, 2023 ARE TO BE COMPLETED PRIOR TO ANY PROPOSED EQUIPMENT WORK SHOWN HEREIN.

2 **PROPOSED SECTOR CONFIGURATION PLAN**
C-2 SCALE: 1/4"=1'-0"

TYPICAL SECTOR

DATE:	09/28/23
SCALE:	AS NOTED
JOB NO.	23032.11
ANTENNA CONFIGURATIONS, ELEVATIONS AND DETAILS	
C-2	
Sheet No. <u>4</u>	of <u>6</u>

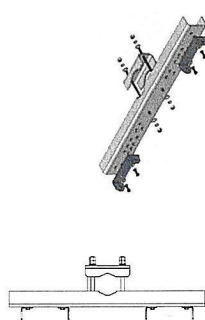
CROMWELL N CT
79 SHUNPKE ROAD
CROMWELL, CT 06416

CEN TEK
CONCRETE
CORPORATION
P.O. Box 1080
Northford, CT 06457
(203) 488-0580
(203) 488-8587 Fax
www.CenTekEng.com

REV.	DATE	DRAWN BY	CHECKED BY	DESCRIPTION
0	12/27/98	gsp	tlf	CONSTRUCTION DIMENSIONS - REVISION PER CLIENT COMMENTS
1	06/25/99	gsp	tlf	CONSTRUCTION DIMENSIONS - SELECTED FOR CONSTRUCTION REVIEW
2	11/03/99	tlr	tlf	CONSTRUCTION DIMENSIONS - SELECTED FOR CLIENT REVIEW
3	07/27/99	gsp	tlf	CONSTRUCTION DIMENSIONS - SELECTED FOR CLIENT REVIEW

8) DUAL ANTENNA
C-3 SCALE: NOT TO SCALE

ANTENNA MOUNT ISOMETRIC



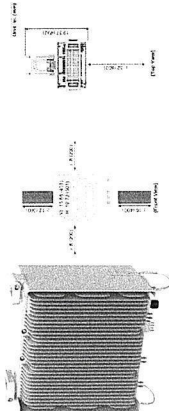
PROPOSED O
SCALE: NOT TO SCALE

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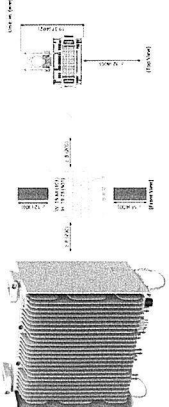
6) DUAL-BAND 7
C-3 SCALE: NOT TO SCALE

RRH CLEARANCES



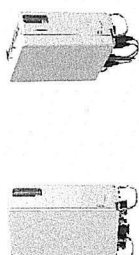
5) DUAL-BAND /
C-3 SCALE: NOT TO SCALE

CLEARANCES



4) CENS AREA DE
C-3 SCALE: NOT TO SCALE

RRH WITH ANTENNA

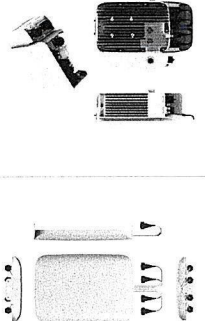


C-3

COMBINED HF

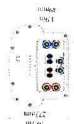
SCALE: NOT TO SCALE

ALL-IN-ONE ANTENNA & RRH



SECTION ANTI

WOLFG



C-3

ANTENNA FRONT

MX06FRO660-03

NWAV™ X-Pol Hex-Port Antenna

X-Pol Hex-Port 6 ft 60° Fast Roll Off antenna with independent tilt on 700 & 850 MHz:

2 ports 698-798, 824-894 MHz and 4 ports 1695-2180 MHz

- Fast Roll Off (FRO™) azimuth beam pattern improves Intra- and Inter-cell SINR
- Compatible with dual band 700/850 MHz radios with independent low band EDT without external diplexers
- Fully integrated (iRETs) with independent RET control for low and high bands for ease of network optimization
- SON-Ready array spacing supports beamforming capabilities
- Suitable for LTE/CDMA/PCS/UMTS/GSM air interface technologies
- Integrated Smart Bias-Ts reduce leasing costs



NWAV

Fast Roll-Off antennas increase data throughput without compromising coverage

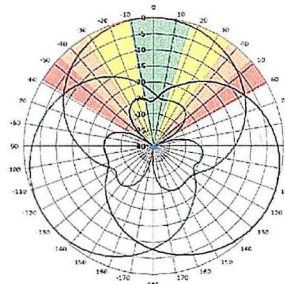
The horizontal beam produced by Fast Roll-Off (FRO) technology increases the Signal to Interference & Noise Ratio (SINR) by eliminating overlap between sectors.

Non-FRO antenna

Large traditional antenna pattern overlap creates harmful interference.

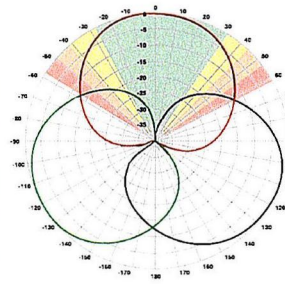
JMA's FRO antenna pattern minimizes overlap, thereby minimizing interference.

JMA FRO antenna



LTE throughput	SINR	Speed (bps/Hz)	Speed increase	CQI
Excellent	>18	>4.5	333+%	8-10
Good	15-18	3.3-4.5	277%	6-7
Fair	10-15	2-3.3	160%	4-6
Poor	<10	<2	0%	1-3

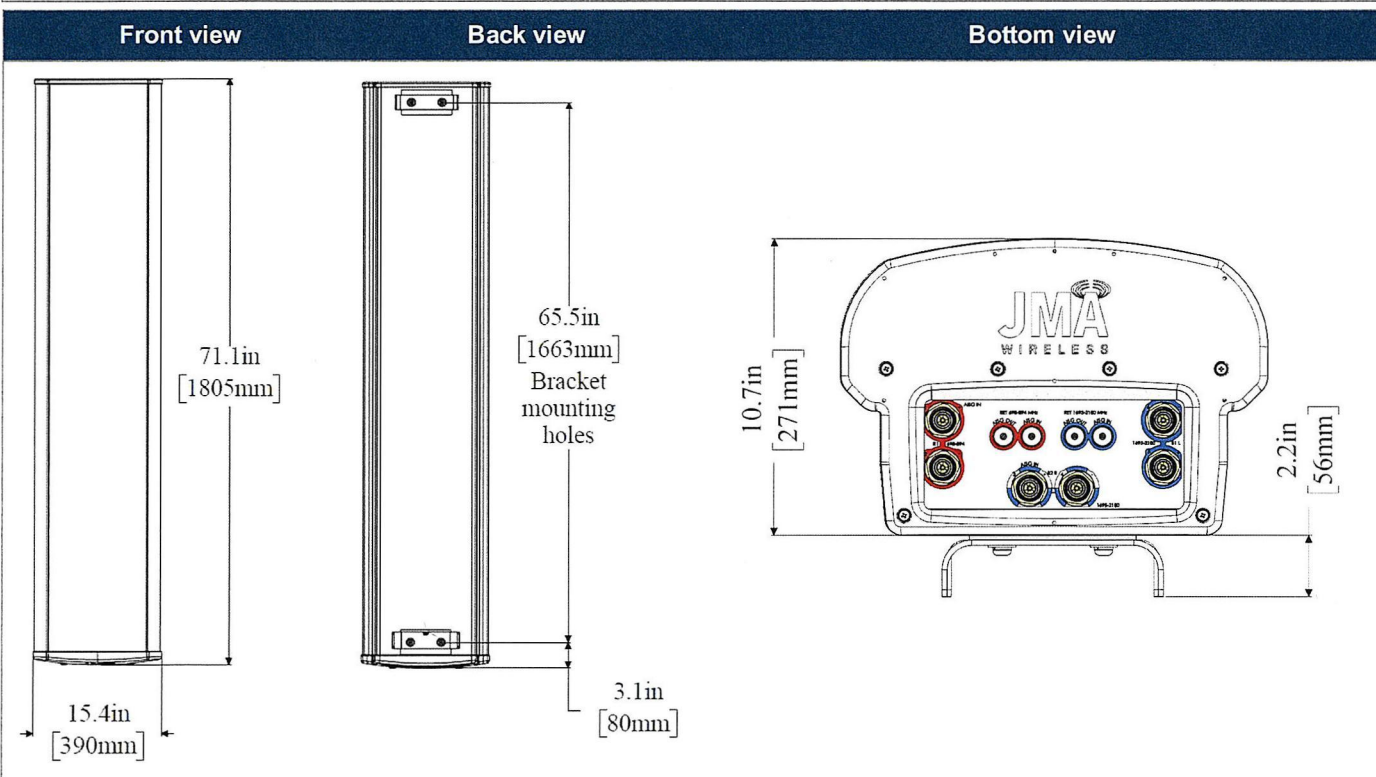
The LTE radio automatically selects the best throughput based on measured SINR.



Electrical specification (minimum/maximum)	Ports 1, 2		Ports 3, 4, 5, 6		
Frequency bands, MHz	698-798	824-894	1695-1880	1850-1990	1920-2180
Polarization	± 45°		± 45°		
Average gain over all tilts, dBi	14.4	14.0	17.6	18.0	18.2
Horizontal beamwidth (HBW), degrees	60.5	53.0	55.0	55.0	55.5
Front-to-back ratio, co-polar power @180°± 30°, dB	>24	>24.0	>25.0	>25.0	>25.0
X-Pol discrimination (CPR) at boresight, dB	>15.0	>14.2	>18	>18	>15
Sector power ratio, percent	<3.5	<3.0	<3.7	<3.8	<3.6
Vertical beamwidth (VBW), degrees ¹	13.1	11.8	6.0	5.5	5.5
Electrical downtilt (EDT) range, degrees	2-14	2-14	0-9		
First upper side lobe (USLS) suppression, dB ¹	≤-15.0	≤-16.5	≤-16.0	≤-16.0	≤-16.0
Cross-polar isolation, port-to-port, dB ¹	25	25	25	25	25
Max VSWR / return loss, dB	1.5:1 / -14.0		1.5:1 / -14.0		
Max passive intermodulation (PIM), 2x20W carrier, dBc	-153		-153		
Max input power per any port, watts	300		250		
Total composite power all ports, watts	1500				

¹ Typical value over frequency and tilt

Mechanical specifications	
Dimensions height/width/depth, inches (mm)	71.3/ 15.4/ 10.7 (1811/ 392/ 273)
Shipping dimensions length/width/height, inches (mm)	82/ 20/ 15 (2083/ 508/ 381)
No. of RF input ports, connector type, and location	6 x 4.3-10 female, bottom
RF connector torque	96 lbf-in (10.85 N·m or 8 lbf-ft)
Net antenna weight, lb (kg)	60 (27.0)
Shipping weight, lb (kg)	90 (41.0)
Antenna mounting and downtilt kit included with antenna	91900318
Net weight of the mounting and downtilt kit, lb (kg)	18 (8.18)
Range of mechanical up/down tilt	-2° to 14°
Rated wind survival speed, mph (km/h)	150 (241)
Frontal, lateral, and rear wind loading @ 150 km/h, lbf (N)	154 (685), 73 (325), 158 (703)
Equivalent flat plate @ 100 mph and Cd=2, sq ft	2.6



Ordering information	
Antenna model	Description
MX06FRO660-03	6F X-Pol HEX FRO 60° independent tilt 700/850 RET, 4.3-10 & SBT
Optional accessories	
<u>AISG cables</u>	M/F cables for AISG connections
<u>PCU-1000 RET controller</u>	Stand-alone controller for RET control and configurations

Remote electrical tilt (RET 1000) information

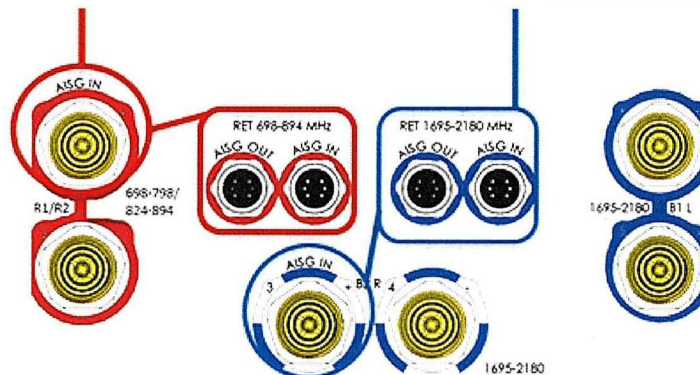
RET location	Integrated into antenna
RET interface connector type	8-pin AISG connector per IEC 60130-9
RET connector torque	Min 0.5 N·m to max 1.0 N·m (hand pressure & finger tight)
RET interface connector quantity	2 pairs of AISG male/female connectors
RET interface connector location	Bottom of the antenna
Total no. of internal RETs (low bands)	2
Total no. of internal RETs (high bands)	1
RET input operating voltage, vdc	10-30
RET max power consumption, idle state, W	≤ 2.0
RET max power consumption, normal operating conditions, W	≤ 13.0
RET communication protocol	AISG 2.0 / 3GPP

RET and RF connector topology

Each RET device can be controlled either via the designated external AISG connector or RF port as shown below:

RET device	Band	RF port
R1	698-798	1-2
R2	824-894	1-2

RET device	Band	RF port
B1/B2	1695-2180	3-6

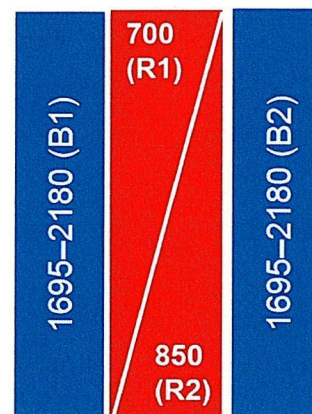


Array topology

3 sets of radiating arrays

R1/R2: 698-894 MHz
B1: 1695-2180 MHz
B2: 1695-2180 MHz

Band	RF port
1695-2180	3-4
698-894	1-2
1695-2180	5-6

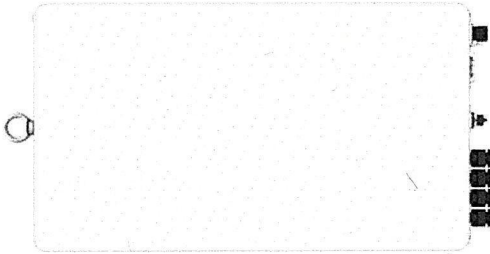


C-band 64T64R

Gen 2

SAMSUNG

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



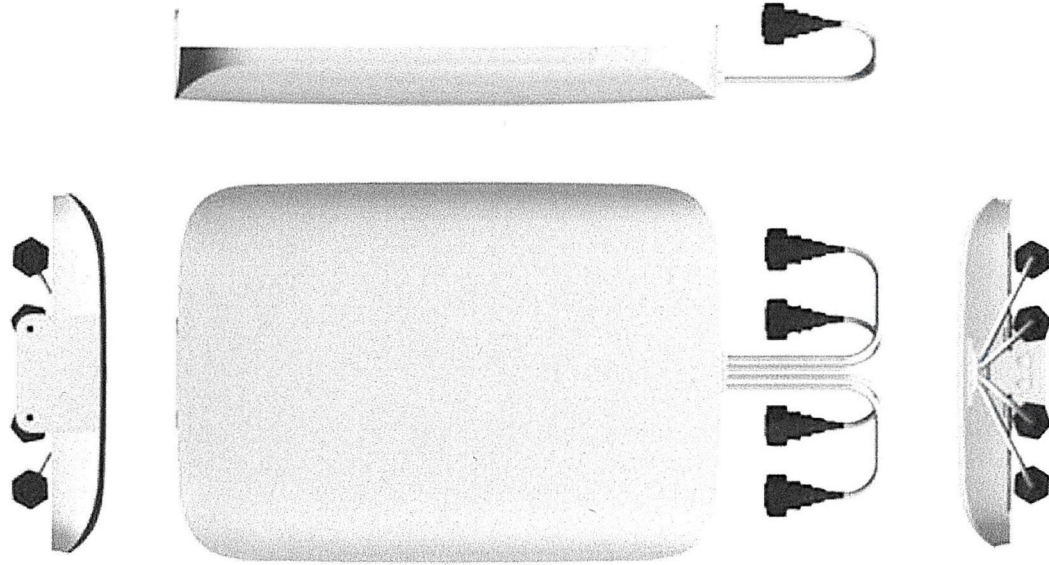
※ Preliminary Design: External appearance and mechanical design can be subject to change

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

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

[CBRS] Clip-on Antenna Specifications

VzW accepted IP45 in FLD, but IP55 is Samsung Spec.

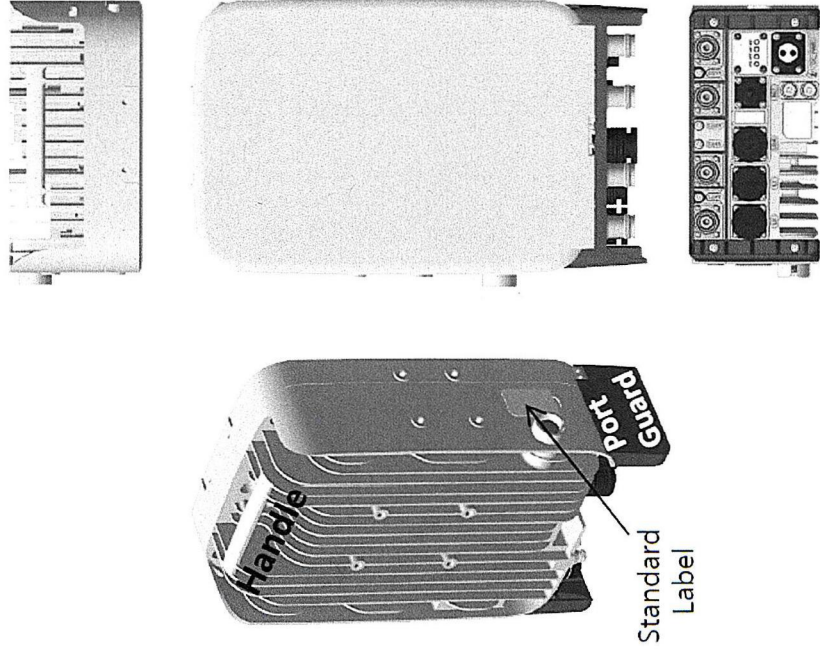


Items	Clip-on Antenna, BASTA**
Antenna Gain	12.5 ± 0.5 dBi (Max 13 dBi)
Horizontal BW (-3dB)	65° ± 5°
Vertical BW (-3dB)	17° ± 3°
Electrical Tilt	8° (fixed) ± 2°
Front-to-Back Ratio	> 25 dB
Port-to-Port Tracking	< 3 dB
VSWR	< 1.5
Isolation	> 25 dB
Ingress Protection	IP55
Size	220(W)×313(H)×34.3(D) mm (*) (8.7 x 12.3 x 1.4 inch.)
Weight	< 2.0 kg [Typ. 1.3 kg]
It is required that the radio should be weatherproofed properly with JMA WPS Boot with external antenna or with Weatherproof Boot for clip-on antennas.	

Antenna includes integrated cable with connector
 * Design is subject to minor change

** Ant. spec. follows NGMN recommendations on Base Station Antenna Standards (BASTA). For example, 'mean ± tolerance of 86.6%' is applied to double-sided specification of statistical RF parameters.

[CBRS RRRH] Spec.



Current Size: 216 x 307 x 105.5 mm (6.99L)
(8.5 x 12.1 x 4.1 inch., excluding Port Guard)

Design is subject to minor change

Item	Specification
Band	Band 48 (3.5 GHz)
Frequency	3550~3700 MHz
IBW	150 MHz
OBW	80 MHz
# of Carriers	5/10/15/20 MHz x 4 carriers
RF Chain	4TX / 4RX
RF Output Power & EIRP	4 path x 5 W (Total: 20 W = 43 dBm) (EIRP: 47 dBm / 10 MHz)
RX Sensitivity	Typical : -101.5 dBm @ 1 Rx (3GPP 36.104, Wide Area)
Modulation	256-QAM support (1024-QAM with 1~2dB power back-off) -48 VDC (-38 to -57 VDC, 1 SKU), with clip-on AC-DC converter (Option)
Input Power	About 160 Watt @ 100% RF load, typical conditions
Power Consumption	Under 7L (w/o Antenna), Under 9.6L (with antenna)
Volume	Under 8.0 kg (18.64 lb) (w/o Antenna), Under 10.5 Kg (with ant.)
Weight	-40°C (-40°F) ~ 55°C (131°F) (W/o solar load)
Operating Temperature	Natural convection
Cooling	3GPP 36.104 Category A [B48] : FCC 47 CFR 96.41 e)
Unwanted Emission	20km, 2 ports (9.8Gbps x 2), SFP, single mode, duplex or Bi-Di
Optic Interface	Not supported
CPRI Cascade	4
# of Antenna Port	4
External Alarm (UDA)	AISG 2.2
RET	Not supported
TMA & built-in Bias-T I//F and PIM cancellation	Pole, wall, tower, back to back, side by side (for external ant), 3 RRH with Clip-on Antenna on the pole
Mounting Options	Integrated (Clip-on) antenna (Option), External antenna (Option)
Antenna Type	Not Supported (HW Resource reserved for 1 Guard Band NB-IoT per LTE carrier)
NB-IoT	TX/RX Support
Spectrum Analyzer	4
External Alarm (UDA)	Support with S/W upgrade
5G NR	Support with S/W upgrade
XRAIN	

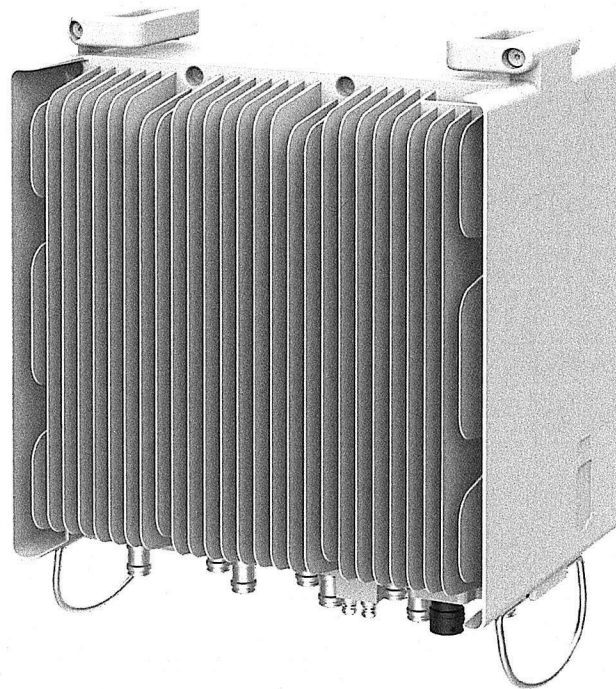


AWS/PCS MACRO RADIO

DUAL-BAND AND HIGH POWER
FOR MACRO COVERAGE

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

Model Code RF4439d-25A



Homepage
samsungnetworks.com

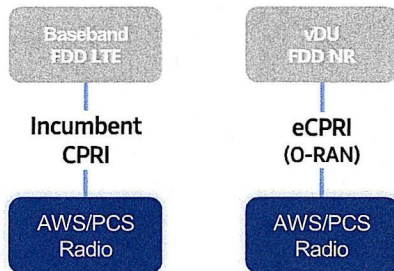


Youtube
www.youtube.com/samsung5g

Points of Differentiation

Continuous Migration

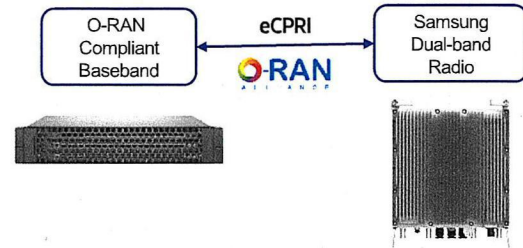
Samsung's AWS/PCS macro radio can support each incumbent CPRI interface as well as advanced eCPRI interfaces. This feature provides installable options for both legacy LTE networks and added NR networks.



O-RAN Compliant

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

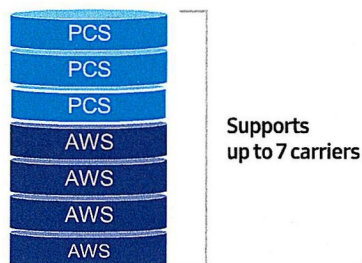
Samsung's state-of-the-art O-RAN technology will help accelerate the effort toward constructing a solid O-RAN ecosystem.



Optimum Spectrum Utilization

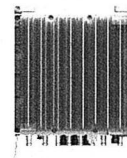
The number of required carriers varies according to site (region). Supporting many carriers is essential for using all frequencies that the operator has available.

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



Brand New Features in a Compact Size

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



- 2 FH connectivity
- O-RAN capability
- More carriers and spectrum

Same as an incumbent radio volume

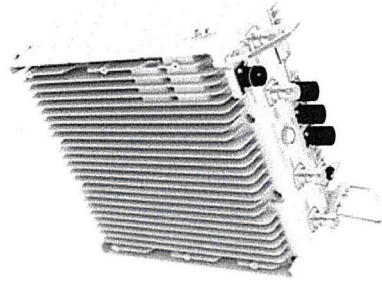
Technical Specifications

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

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

Specifications

SAMSUNG



Item	Specification
Air Interface	LTE, NR(HW resource ready)
Band	Band13 (700MHz) DL: 869~894MHz UL: 824~849MHz 25MHz 25MHz
Frequency	DL: 746~756MHz UL: 777~787MHz 10MHz 10MHz
IBW	10MHz
OBW	10MHz
Carrier Bandwidth	LTE/NR 5*/10MHz
# of carriers	2C*
Total # of carriers	4C + B13 (SDL) 1C
RF Chain	4T4R/2T4R/2T2R/1T2R 2T2R+2T2R bi-sector Total : 320W
RF Output Power	4 x 40W or 2 x 60W TX/RX Support 4 x 40W or 2 x 60W
Spectrum Analyzer	Typ. -104.5dBm @1Rx (25RBs 5MHz)
RX Sensitivity	256QAM support, (1024QAM with 1~2dB power back-off)
Modulation	-48VDC (-38VDC to -57VDC)
Input Power	1.165 Watt @ 100% RF load, room temperature
Power Consumption	380 x 380 x 260 mm (14.96 x 14.96 x 10.23 inch)
Size (WHD)	37.5 L
Volume	35.9 kg (79.1 lb)
Weight (w/o Solar Shield & finger guard)	-40°C (-40°F) ~ 55°C (131°F) (Without solar load)
Operating Temperature	Natural convection
Cooling	3GPP 36.104 FCC 47 CFR 27.53 c), f)
Unwanted Emission	Not supported -69 dBm/100 kHz per path @ 896 ~901MHz
CPRI Cascade	20km, 2 ports (9.8Gbps x 2), SFP+, single mode, Duplex (Option: Bi-di)
Optic Interface	AISG 3.0
RET & TMA Interface	4 ports (2 ports per band)
Bias-T	Pole, wall
Mounting Options	Support
NB-IoT	2GB+2IB or 4IB
PIM Cancellation	2SA-2GB or 2GB+2IB or 4GB
# of antenna port	4
External Alarm	4
Fronthaul Interface	Opt. 8 CPRI / Opt. 7-2x selectable (not simultaneous support)
CPRI compression	Not Support

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

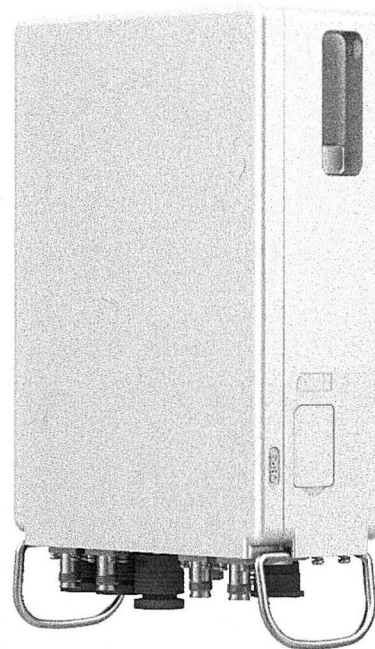
SAMSUNG

Samsung Micro Radio

CBRS(N48)
4T4R Micro Radio

Samsung's CBRS 4T4R Micro Radio provides mobile operators with a cost-effective solution to fill coverage gaps encountered when Macro Radios are in use.

Model Code	RT4423-48A(DC) RT4423-48B(AC)
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Homepage
samsungnetworks.com

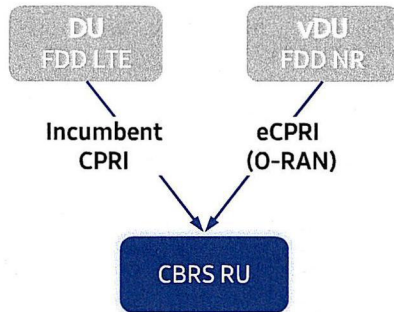


Youtube
www.youtube.com/samsung5g

Points of Differentiation

Dual Personality

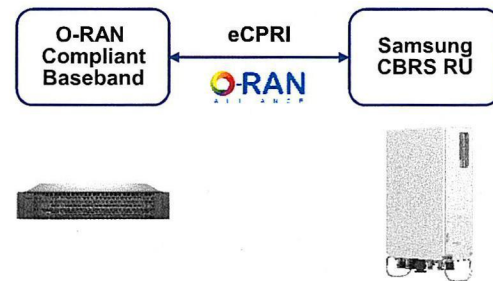
The new CBRS Radio supports existing CPRI and advanced eCPRI interfaces providing installation options for both legacy LTE and NR network equipment.



O-RAN Compliant

A standardized O-RAN radio supports implementing cost-effective networks capable of enhanced data throughput without compromising existing or new network investments.

Samsung O-RAN products ensure state-of-the-art O-RAN technology will accelerate efforts for creating solid O-RAN ecosystems.



High Capacity

The number of carriers required varies according to site(region). Supporting multiple carriers is essential to customers as they seek to utilize all frequencies available to them.

The new CBRS radio can support up to 5 carriers which is an increase of 3 carriers over the capacity of the previous CBRS product.

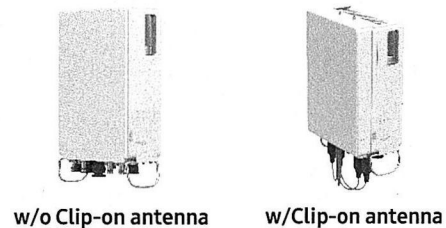


Compact and Easy Installation

New CBRS RU is compact in its design with a volume of 6L and weighing only about 7kg.

This compact design allows for various installation options including, tower, rooftop, pole, wall and shroud.

A clip on antenna is available providing flexibility to installation requirements.



Technical Specifications

Item	Specification
Tech	LTE / NR
Band	B48, n48 / TDD
Frequency Band	3,550 – 3,700 MHz
RF Power	20 W (5 W x 4 Ports)
IBW/OBW	150MHz / 100MHz
Installation	Pole, Wall, Side by side (max 3 radio)
Size/ Weight	[Radio] w/o Clip-on antenna : 8.7 x 11.8 x 3.6 inch, 5.97L, 7kg w/ Clip-on antenna : 8.7 x 11.8 x 5.0 inch, 8.42L, 8.5kg *AC and DC type have same size and weight [Bracket Weight] Tilting & Swivel (EP97-02038A) : 2.51kg Fixed (EP97-02037A) : 1.31kg Side by side (EP97-02089A) : 8.0kg

ATTACHMENT 3



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

Calculated Radio Frequency Emissions Report



Cromwell N CT
179 Shunpike Road, Cromwell, CT 06416

October 23, 2024

Table of Contents

1. Introduction	1
2. FCC Guidelines for Evaluating RF Radiation Exposure Limits.....	1
3. RF Exposure Prediction Methods.....	2
4. Antenna Inventory.....	3
5. Calculation Results.....	4
6. Conclusion.....	6
7. Statement of Certification.....	6
Attachment A: References	7
Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)	8
Attachment C: Verizon Antenna Model Data and Electrical Patterns.....	10

List of Figures

Figure 1: Graph of General Population % MPE vs. Distance	4
Figure 2: Graph of FCC Limits for Maximum Permissible Exposure (MPE).....	9

List of Tables

Table 1: Proposed Antenna Inventory ,	3
Table 2: Maximum Percent of General Population Exposure Values,,	5
Table 3: FCC Limits for Maximum Permissible Exposure	8

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modification of Verizon's antenna array mounted at 98', 100' and 101.5' on an existing guyed tower located at 179 Shunpike Road in Cromwell, CT. The coordinates of the guyed tower are 41° 37' 23.6" N, 72° 40' 44.5" W.

Verizon is proposing the following:

- 1) Install twelve (12) panel antennas, four (4) per sector to support its commercial LTE and 5G network.

This report considers the planned antenna configuration for Verizon¹ as well as existing antenna configuration for AT&T², T-Mobile³ and Others⁴ (CFD, Municipal, VHF and UHF Antennas) to derive the resulting % Maximum Permissible Exposure (MPE) at ground level around the existing facility.

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

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

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm²). The general population exposure limits for the various frequency ranges are defined in the documents referenced in Attachment A of this report.

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

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

¹ As referenced to Verizon's Radio Frequency Design Sheet, dated 9/4/2024.

² As referenced to AT&T's Connecticut Siting Council Notice of Exempt Modification – 179 Shunpike Road, Cromwell, CT dated 7/14/2022.

³ As referenced to T-Mobile's Connecticut Siting Council Notice of Exempt Modification – 179 Shunpike Road, Cromwell, CT dated 9/28/2022.

⁴ As referenced to CENTEK Engineering's Structural Analysis Report prepared for Verizon Wireless dated 11/6/2023 (Rev. 1).

3. RF Exposure Prediction Methods

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

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

Where:

ERP = Effective Isotropic Radiated Power

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

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Off Beam Loss is determined by the selected antenna patterns

Ground reflection factor (GRF) of 1.6

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

The percent of MPE values presented in this report reflect levels that one may encounter from one sector of a carrier's antennas. Most carriers use 3 or 4 sectors per site with azimuths approximately 90 or 120 degrees apart, respectively; therefore, one could not be standing in the main beam of all sectors at the same time. In cases where antenna models are not uniform across all sectors, the antenna model with the highest gain was used for the calculations. This results in a conservative or "worst case" assumption for percent of MPE calculations.

4. Antenna Inventory

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

Operator	Sector / Azimuth	TX Freq (MHz)	Power at Antenna (Watts)	Ant Gain (dBi)	Power EIRP (Watts)	Antenna Model	Beam Width	Mech. Tilt	Length (ft)	Antenna Centerline Height (ft)
Verizon	Alpha / 280°	700	160	14.4	4407	MX06FRO660-03	60.5	0	6	100
		850	160	14	4019		53			
		1900	160	18	10095		55			
		2100	240	18.2	15857		55.5			
		3500	20	12.52	357	R0440CC	-	0	1	98
		3700	320	25.5	113540	MT6413-77A	-	0	2.46	101.5
	Beta / 90°	700	160	14.4	4407	MX06FRO660-03	60.5	0	6	100
		850	160	14	4019		53			
		1900	160	18	10095		55			
		2100	240	18.2	15857		55.5			
		3500	20	12.52	357	R0440CC	-	0	1	98
		3700	320	25.5	113540	MT6413-77A	-	0	2.46	101.5
	Gamma / 190°	700	160	14.4	4407	MX06FRO660-03	60.5	0	6	100
		850	160	14	4019		53			
		1900	160	18	10095		55			
		2100	240	18.2	15857		55.5			
		3500	20	12.52	357	R0440CC	-	0	1	98
		3700	320	25.5	113540	MT6413-77A	-	0	2.46	101.5

Table 1: Proposed Antenna Inventory ^{5, 6}

⁵ Antenna heights are in reference to Verizon's Radio Frequency Design Sheet dated 9/4/2024.

⁶ Transmit power assumes 0 dB of cable loss.

5. Calculation Results

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

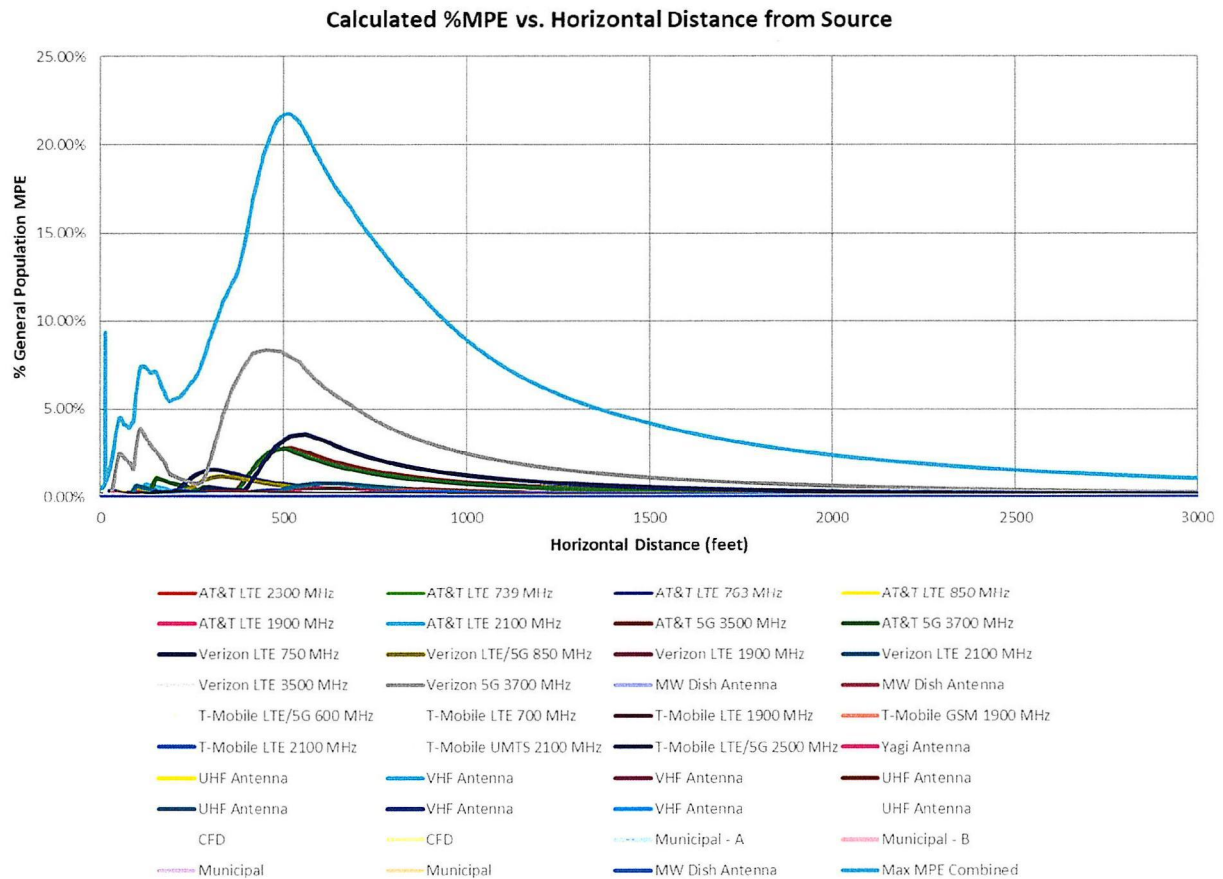


Figure 1: Graph of General Population % MPE vs. Distance

The highest percent of MPE (21.75% of the General Population limit) is calculated to occur at a horizontal distance of 515 feet from antennas. Please note that the percent of MPE calculations close to the site take into account off beam loss, which is determined from the vertical pattern of the antennas used. Therefore, RF power density levels may increase as the distance from the site increases. At distances of approximately 900 feet and beyond, one would now be in the main beam of the antenna pattern and off beam loss is no longer considered. Beyond this point, RF levels become calculated solely on distance from the site and the percent of MPE decreases significantly as distance from the site increases.

Table 2 below lists percent of MPE values as well as the associated parameters that were included in the calculations. The highest percent of MPE value was calculated to occur at a horizontal distance of 515 feet from the site (reference Figure 1).

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

Carrier	Number of Transmitters	Power out of Base Station Per Transmitter (Watts)	Antenna Height (Feet)	Distance to the Base of Antennas (Feet)	Power Density (mW/cm ²)	Limit (mW/cm ²)	% MPE
AT&T 5G 3500 MHz	1	108.4	116.7	515	0.027827	1.000	2.78%
AT&T 5G 3700 MHz	1	108.4	113.0	515	0.026630	1.000	2.66%
AT&T LTE 1900 MHz	1	160.0	115.0	515	0.001255	1.000	0.13%
AT&T LTE 2100 MHz	1	240.0	115.0	515	0.001182	1.000	0.12%
AT&T LTE 2300 MHz	1	100.0	115.0	515	0.000886	1.000	0.09%
AT&T LTE 739 MHz	1	160.0	115.0	515	0.002018	0.493	0.41%
AT&T LTE 763 MHz	1	160.0	115.0	515	0.002009	0.509	0.39%
AT&T LTE 850 MHz	1	160.0	115.0	515	0.001656	0.567	0.29%
CFD	1	100.0	170.0	515	0.000164	0.200	0.08%
CFD	1	100.0	170.0	515	0.000164	0.200	0.08%
Municipal	1	1.0	168.0	515	0.000018	1.000	0.00%
Municipal	1	100.0	158.5	515	0.000132	0.567	0.02%
Municipal - A	1	100.0	170.0	515	0.000044	0.300	0.01%
Municipal - B	1	100.0	170.0	515	0.000034	0.200	0.02%
MW Dish Antenna	1	1.0	134.0	515	0.000005	1.000	0.00%
MW Dish Antenna	1	1.0	83.0	515	0.000136	1.000	0.01%
MW Dish Antenna	1	1.0	135.0	515	0.000023	1.000	0.00%
T-Mobile GSM 1900 MHz	1	15.0	125.0	515	0.000013	1.000	0.00%
T-Mobile LTE 1900 MHz	1	160.0	125.0	515	0.000136	1.000	0.01%
T-Mobile LTE 2100 MHz	1	160.0	125.0	515	0.000223	1.000	0.02%
T-Mobile LTE 700 MHz	1	40.0	125.0	515	0.000503	0.467	0.11%
T-Mobile LTE/5G 2500 MHz	1	160.0	125.0	515	0.034464	1.000	3.45%
T-Mobile LTE/5G 600 MHz	1	80.0	125.0	515	0.000932	0.400	0.23%
T-Mobile UMTS 2100 MHz	1	40.0	125.0	515	0.000056	1.000	0.01%
UHF Antenna	1	100.0	170.0	515	0.000044	0.300	0.01%
UHF Antenna	2	100.0	170.0	515	0.000087	0.300	0.03%
UHF Antenna	1	100.0	144.0	515	0.000137	0.300	0.05%
UHF Antenna	1	100.0	138.5	515	0.000013	0.300	0.00%
Verizon 5G 3700 MHz	1	320.0	101.5	515	0.079906	1.000	7.99%
Verizon LTE 1900 MHz	1	160.0	100.0	515	0.003448	1.000	0.34%
Verizon LTE 2100 MHz	1	240.0	100.0	515	0.005330	1.000	0.53%
Verizon LTE 3500 MHz	1	20.0	98.0	515	0.000286	1.000	0.03%
Verizon LTE 750 MHz	1	160.0	100.0	515	0.003446	0.500	0.69%
Verizon LTE 5G 850 MHz	1	160.0	100.0	515	0.003446	0.567	0.61%
VHF Antenna	1	100.0	170.0	515	0.000164	0.200	0.08%
VHF Antenna	3	100.0	170.0	515	0.000491	0.200	0.25%
VHF Antenna	1	100.0	141.0	515	0.000190	0.200	0.10%
VHF Antenna	1	100.0	139.0	515	0.000192	0.200	0.10%
Yagi Antenna	1	1.0	24.0	515	0.000014	0.600	0.00%
Total							21.75%

Table 2: Maximum Percent of General Population Exposure Values^{7,8,9,10}

⁷ Frequencies listed are representative of the operating band and are not the specific operating frequency.

⁸ The total % MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not reflect the total value listed in the table.

⁹ In the case where specific antenna pattern is not available, similar antenna pattern was used based on the frequency, bandwidth and gain of the antenna.

¹⁰ The antenna pattern, frequency and power information used for CFD, Municipal, VHF/UHF/MW Dish Antenna was based on reasonable assumptions.

6. Conclusion

The above analysis verifies that RF exposure levels from the site with Verizon's proposed antenna configuration will be well below the maximum permissible levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using the conservative calculation methods and parameters detailed above, the maximum cumulative percent of MPE in consideration of all transmitters is calculated to be **21.75%** of the FCC limit (General Population/Uncontrolled). This maximum cumulative percent of MPE value is calculated to occur 515 feet away from the site.

7. Statement of Certification

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



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

October 23, 2024
Date



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

October 23, 2024
Date

Attachment A: References

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

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

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

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

(A) Limits for Occupational/Controlled Exposure¹¹

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

(B) Limits for General Population/Uncontrolled Exposure¹²

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

f = frequency in MHz * Plane-wave equivalent power density

Table 3: FCC Limits for Maximum Permissible Exposure

¹¹ Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

¹² General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

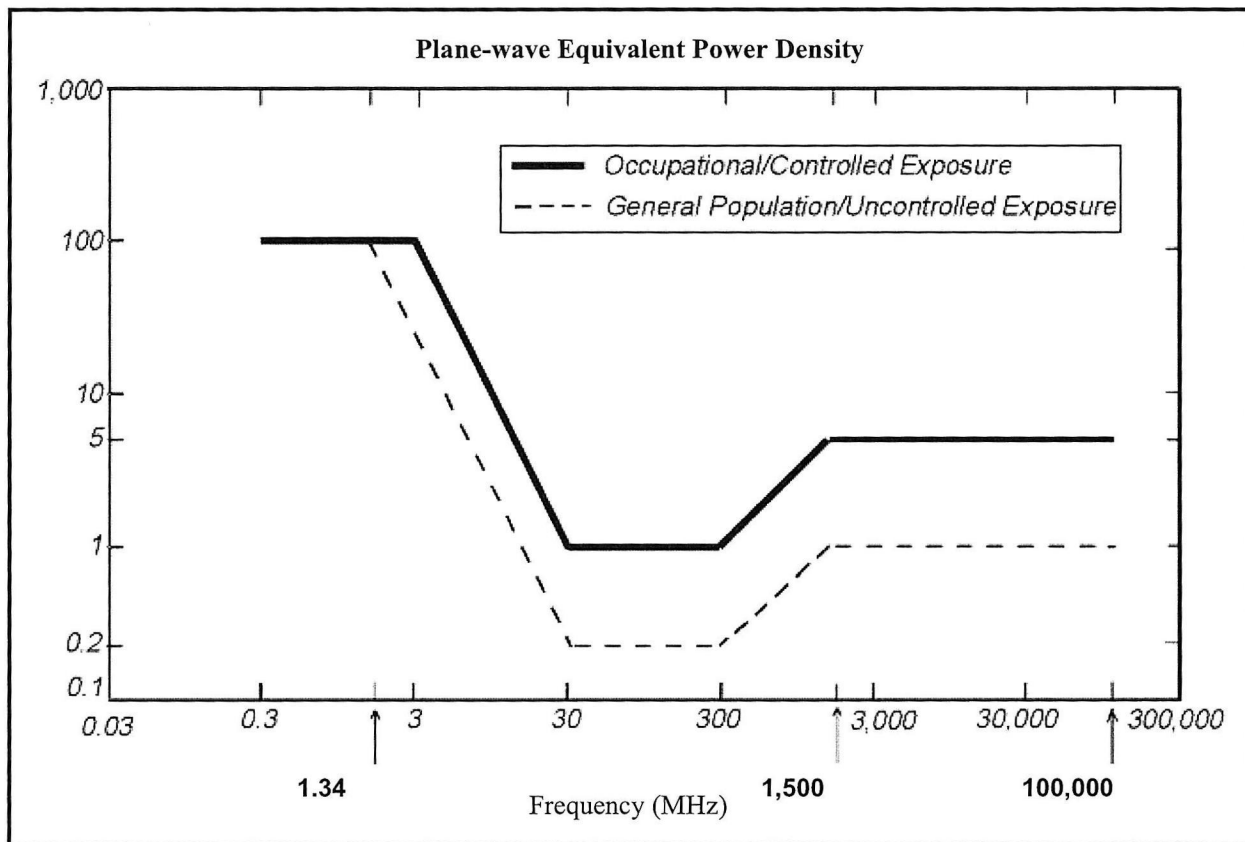
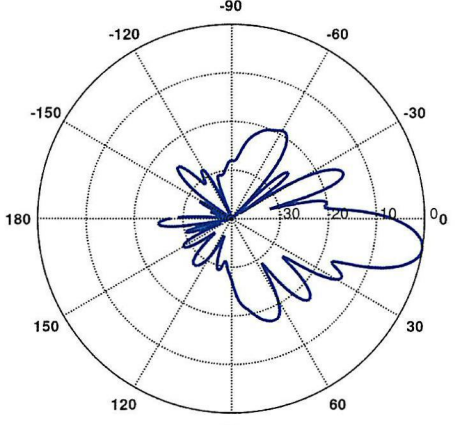
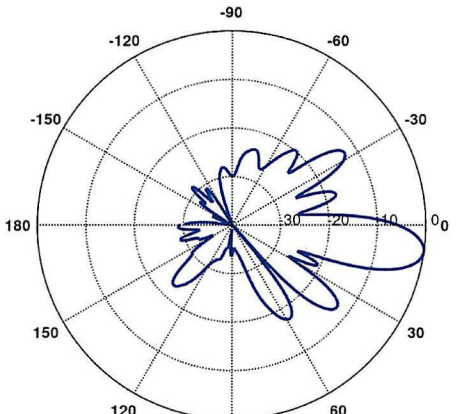
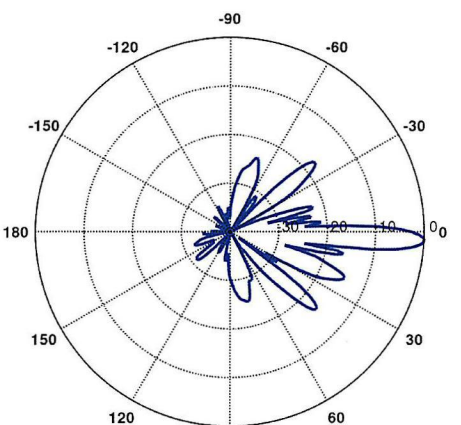
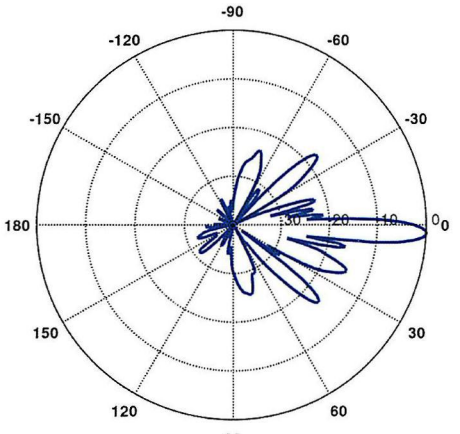


Figure 2: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: Verizon Antenna Model Data and Electrical Patterns

750 MHz Manufacturer: JMA Model #: MX06FRO660-03 Frequency Band: 698-798 MHz Gain: 14.4 dBi Vertical Beamwidth: 13.1° Horizontal Beamwidth: 60.5° Polarization: ±45° Dimensions (L x W x D): 71.3" x 15.4" x 10.7"	
850 MHz Manufacturer: JMA Model #: MX06FRO660-03 Frequency Band: 806-894 MHz Gain: 14.0 dBi Vertical Beamwidth: 11.8° Horizontal Beamwidth: 53° Polarization: ±45° Dimensions (L x W x D): 71.3" x 15.4" x 10.7"	
1900 MHz Manufacturer: JMA Model #: MX06FRO660-03 Frequency Band: 1850-1990 MHz Gain: 18 dBi Vertical Beamwidth: 5.5° Horizontal Beamwidth: 55° Polarization: ±45° Dimensions (L x W x D): 71.3" x 15.4" x 10.7"	

2100 MHz Manufacturer: JMA Model #: MX06FRO660-03 Frequency Band: 1920-2200 MHz Gain: 18.2 dBi Vertical Beamwidth: 5.5° Horizontal Beamwidth: 55.5° Polarization: ±45° Dimensions (L x W x D): 71.3" x 15.4" x 10.7"	
3500 MHz Manufacturer: SAMSUNG Model #: R0440CC Frequency Band: 3550 ~ 3700 MHz Gain: ~12.5 dBi Vertical Beamwidth: N/A ° Horizontal Beamwidth: N/A ° Polarization: N/A ° Dimensions (L x W x D): 8.7" x 12.0" x 1.5"	N/A
3700 MHz Manufacturer: SAMSUNG Model #: MT6413-77A Frequency Band: 3700-3980 MHz Gain: 25.5 dBi Vertical Beamwidth: N/A ° Horizontal Beamwidth: N/A ° Polarization: N/A ° Dimensions (L x W x D): 29.53" x 15.75" x 5.51"	N/A

ATTACHMENT 4

Structural Analysis Report

170' Existing Lattice Tower

*Proposed Verizon
Antenna Upgrade*

Site Ref: Cromwell North

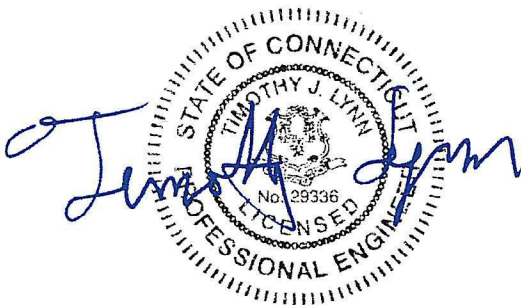
*179 Shunpike Road
Cromwell, CT*

CEN TEK Project No. 23032.11

~~*Date: September 11, 2023*~~

Rev 1: November 6, 2023

Max Stress Ratio = 75.4 %



Prepared for:
Verizon Wireless
20 Alexander Drive
Wallingford, CT 06492

Table of Contents

SECTION 1 - REPORT

- INTRODUCTION
- ANTENNA AND APPURTENANCE SUMMARY
- PRIMARY ASSUMPTIONS USED IN THE ANALYSIS
- ANALYSIS
- TOWER LOADING
- TOWER CAPACITY
- FOUNDATION AND ANCHORS
- CONCLUSION

SECTION 2 – CONDITIONS & SOFTWARE

- STANDARD ENGINEERING CONDITIONS
- GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM

SECTION 3 – CALCULATIONS

- tnxTower INPUT/OUTPUT SUMMARY
- tnxTower FEED LINE PLAN
- tnxTower FEED LINE DISTRIBUTION
- tnxTower DETAILED OUTPUT
- ANCHOR BOLT ANALYSIS
- FOUNDATION ANALYSIS

SECTION 4 – REFERENCE MATERIALS

- RF DATA SHEET

I n t r o d u c t i o n

The purpose of this report is to summarize the results of the non-linear, P- Δ structural analysis of the antenna upgrade proposed by Verizon on the existing lattice tower located in Cromwell, Connecticut.

The host tower is a 170-ft, three legged, lattice tower originally designed and manufactured by PiROD, Inc. project no. A-116398 dated 11/18/99. The tower geometry, structure member sizes and foundation information were taken from a previous structural analysis report prepared by Centek job no. 22007.04 dated April 11, 2022.

Antenna and appurtenance inventory was taken from the aforementioned structural analysis report prepared by Centek, a previous structural analysis report prepared by Efi Global dated September 12, 2022 and information provided by Verizon.

The tower consists of nine (9) vertical sections consisting of pipe legs conforming to ASTM A572 Gr. 50 and steel angle lateral bracing. The vertical tower sections are connected by bolted flange plates with the diagonal and horizontal bracing to pipe legs consisting of bolted connections. The width of the tower face is 5-ft at the top and 20-ft at the bottom.

A n t e n n a a n d A p p u r t e n a n c e S u m m a r y

The existing and proposed loads considered in the analysis consist of the following:

- CFD/Municipal (Existing):
Antenna: Two (2) dbSpectra DS1F03F36U-D Omni-directional antennas, one (1) 20' 8-bay dipole antenna, one (1) 101-90-08-0-01 antenna, one (1) 3-ft whip antenna, three (3) 2.5-ft Omni-directional antennas, two (2) 10' Omni-directional antennas, one (1) Telewave ANT150F6-3 Omni-directional antenna, one (1) Camera, one (1) SU-RA-HP panel antenna and one (1) PTP49600 antenna mounted on (1) halo mount to the top of the tower.
Cables: Two (2) 1-5/8"Ø, eight (8) 7/8"Ø and four (4) 1/2"Ø cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- CFD/Municipal (Existing):
Antenna: One (1) Sinclair SC420-HF1LDF Omni-directional antenna, one (1) 20-ft Omni-directional antenna, one (1) 15' Omni-directional antenna, two (2) 10' Omni-directional antennas, one (1) 2-ft microwave dish and one (1) grid dish mounted on (1) 20-ft platform with an elevation of 134-ft AGL.
Cables: One (1) 1-5/8"Ø, two (2) 7/8"Ø and three (3) 1/2"Ø cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- T-MOBILE (Existing):
Antennas: Three (3) RFS APXVAALL24_43 panel antennas, three (3) Ericsson AIR6419 panel antennas, three (3) Ericsson 4480 RRHs and three (3) Ericsson 4460 RRSs mounted on three (3) 10-ft T-frames with a RAD center elevation of ± 125 -ft above grade level.
Cables: Three (3) 6x24 hybrid cables running on a face of the existing tower as specified in Section 3 of this report.

- AT&T (Existing):
Antenna: Three (3) CCI DMP65R-BU6D panel antennas, three (3) CCI TPA65R-BU6D panel antennas, three (3) Ericsson AIR6449 panel antennas and three (3) Ericsson AIR6419 panel antennas three (3) Ericsson 4449 B5/B12 remote radio heads, three (3) Ericsson 8843 B2/B66A remote radio heads, three (3) Ericsson RRUS-32 remote radio heads, three (3) Ericsson 4478 B14 remote radio heads and three (3) Raycap surge arrestors mounted on three (3) 12-ft HD V-Booms with a RAD center elevation of ± 115 -ft above grade level.
Cables: Six (6) 1-5/8" $\varnothing$ cables, three (3) fiber cable and six (6) DC cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- Unknown (Existing):
Antenna: One (1) panel antenna and one (1) TMA pipe mounted with an elevation of 87-ft AGL.
Cables: Two (2) CAT5 cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- Unknown (Existing):
Antenna: One (1) 3-ft dish and one (1) TMA mounted on a 3-ft standoff with an elevation of 83-ft AGL.
Cables: Two (2) CAT5 cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- Unknown (Existing):
Antenna: One (1) panel antenna and one (1) TMA mounted on a 3-ft standoff with an elevation of 80-ft AGL.
Cables: Two (2) CAT5 cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- Unknown (Existing):
Antenna: One (1) camera leg mounted on with an elevation of 30-ft AGL.
Cables: Two (2) 1/2" $\varnothing$ cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- Unknown (Existing):
Antenna: One (1) 3-ft yagi leg mounted on with an elevation of 24-ft AGL.
Cables: One (1) 1/2" $\varnothing$ cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- Verizon (Existing to Remain):
Antennas: Three (3) Commscope LNX-6514DS panel antennas mounted on three (3) 12-ft T-frames with a RAD center elevation of ± 100 -ft above grade level.
Cables: Six (6) 7/8" $\varnothing$ coax cables and one (1) hybrid cable running on a face of the existing tower as specified in Section 3 of this report.

CEN TEK Engineering, Inc.

Structural Analysis - 170-ft Lattice Tower

Verizon Antenna Upgrade – Cromwell North

Cromwell, CT

Rev 1 ~ November 6, 2023

- Verizon (Existing to Remove):
Antennas: Three (3) Commscope HBXX-6517DS panel antennas, three (3) Commscope LNX-4514DS panel antennas, three (3) Antel BXA-171063-12BF panel antennas, six (6) diplexers, three (3) RRH-2x40 AWS remote radio heads and one (1) main distribution box mounted on three (3) 12-ft T-frames with a RAD center elevation of ± 100 -ft above grade level.
Cables: Six (6) 7/8" $\varnothing$ coax cables running on a face of the existing tower as specified in Section 3 of this report.
- **Verizon (Proposed):**
Antennas: Six (6) JMA MX06FRO660-03 panel antennas, three (3) Samsung MT6413-77A panel antennas, three (3) Samsung XXDWMM-12.5-65-8T panel antennas, three (3) Samsung 4439d-25A remote radio heads, three (3) Samsung RF4461d-13A remote radio heads, three (3) Samsung CBS RT4423-48B remote radio heads and one (1) main distribution box mounted on three (3) 12-ft T-frames with a RAD center elevation of ± 100 -ft above grade level.
Cables: One (1) 1-5/8" $\varnothing$ hybrid cable running on a face of the existing tower as specified in Section 3 of this report.
Mount Modification: Install mount modifications per Mount Modification Drawings prepared by Maser dated October 31, 2023.

Primary Assumptions Used in the Analysis

- The tower structure's theoretical capacity not including any assessment of the condition of the tower.
- The tower carries the horizontal and vertical loads due to the weight of antennas, ice load and wind.
- Tower is properly installed and maintained.
- Tower is in plumb condition.
- Tower loading for antennas and mounts as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds are fabricated with ER-70S-6 electrodes.
- All members are assumed to be as specified in the original tower design documents.
- All members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- All member protective coatings are in good condition.
- All tower members were properly designed, detailed, fabricated, installed and have been properly maintained since erection.
- Any deviation from the analyzed antenna loading will require a new analysis for verification of structural adequacy.
- All coax cables should be routed as specified in section 3 of this report.
- **Previous reinforcements per the below listed structural analysis and modification report are assumed to be installed.**
 - **Structural report prepared by AECOM job no. CFD-015 60605529 dated August 7, 2019.**

Analysis

The existing tower was analyzed using a comprehensive computer program entitled tnxTower. The program analyzes the tower, considering the worst case loading condition. The tower is considered as loaded by concentric forces along the tower, and the model assumes that the tower members are subjected to bending, axial, and shear forces.

The existing tower was analyzed for the controlling basic wind speed with no ice and the applicable wind and ice combination to determine stresses in members as per guidelines of TIA-222-H entitled "Structural Standard for Antenna Support Structures, Antennas and Small Wind Turbine Support Structures", the American Institute of Steel Construction (AISC) and the Manual of Steel Construction; Load and Resistance Factor Design (LRFD).

The controlling wind speed is determined by evaluating the local available wind speed data as provided in Appendix P of the CSBC¹ and the wind speed data available in the TIA-222-H Standard.

Tower Loading

Tower loading was determined by the basic wind speed as applied to projected surface areas with modification factors per TIA-222-H, gravity loads of the tower structure and its components, and the application of 1.0" radial ice on the tower structure and its components.

Load Cases:	<u>Load Case 1</u> ; 135 mph (Risk Cat IV) wind speed w/ no ice plus gravity load – used in calculation of tower stresses and rotation.	<i>[Appendix P of the 2022 CT Building Code]</i>
	<u>Load Case 2</u> ; 50 mph wind speed w/ 1.00" radial ice plus gravity load – used in calculation of tower stresses.	<i>[Annex B of TIA-222-H]</i>

¹ The 2021 International Building Code as amended by the 2022 Connecticut State Building Code (CSBC).

Tower Capacity

Tower stresses were calculated utilizing the structural analysis software tnxTower.

- Calculated stresses **were found to be within allowable limits.**

Tower Section	Elevation	Stress Ratio (percentage of capacity)	Result
Leg (T9)	20.0' - 40.0'	75.4%	PASS
Diagonal (T4)	100.0' – 120.0'	69.6%	PASS
Mid Girt (T4)	100.0' - 120.0'	30.1%	PASS

Foundation and Anchors

The existing foundation consists of a three (3) 5.5-ft Ø x 41.5-ft long reinforced concrete caissons. The sub grade conditions used in the foundation analysis were derived from aforementioned structural analysis. The base of the tower is connected to the foundation by means of (6) 1.25"Ø anchor bolts per leg embedded into the concrete foundation structure.

- The tower reactions developed from the governing Load Case were used in the verification of the foundation and anchor bolts:

Load Effect	Proposed Tower Reactions
Leg Shear	45 kips
Leg Compression	395 kips
Leg Tension	348 kips
Base Moment	6483 ft-kips
Base Shear	71 kips

- The anchor bolts were found to be within allowable limits.

Tower Section	Component	Stress Ratio (percentage of capacity)	Result
Anchor Bolts	Combined Compression and Shear	58.8%	PASS

- The foundation was found to be within allowable limits.

Foundation	Design Limit	(percentage of capacity)	Result
Reinforced Concrete Caissons	Uplift	36.7%	PASS
	Bearing	39.2%	PASS

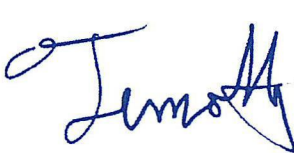
Conclusion

This analysis shows that the subject tower **is adequate** to support the proposed antenna configuration.

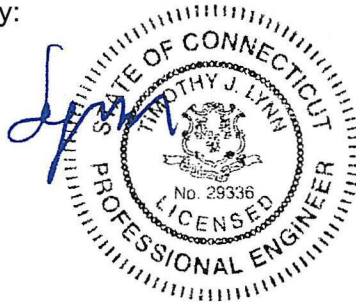
The analysis is based, in part, on the information provided to this office by Verizon. If the existing conditions are different than the information in this report, Centek Engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:



Timothy J. Lynn, PE
Structural Engineer



*Standard Conditions for Furnishing of
Professional Engineering Services on
Existing Structures*

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessarily limited to:

- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from the field and/or drawings in the possession of Centek Engineering, Inc. or generated by field inspections or measurements of the structure.
- It is the responsibility of the client to ensure that the information provided to Centek Engineering, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the "as new" condition.
- All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222
- All services performed, results obtained, and recommendations made are in accordance with generally accepted engineering principles and practices. Centek Engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM

tnxTower, is an integrated structural analysis and design software package for Designed specifically for the telecommunications industry, tnxTower, formerly RISA Tower, automates much of the tower analysis and design required by the TIA/EIA 222 Standard.

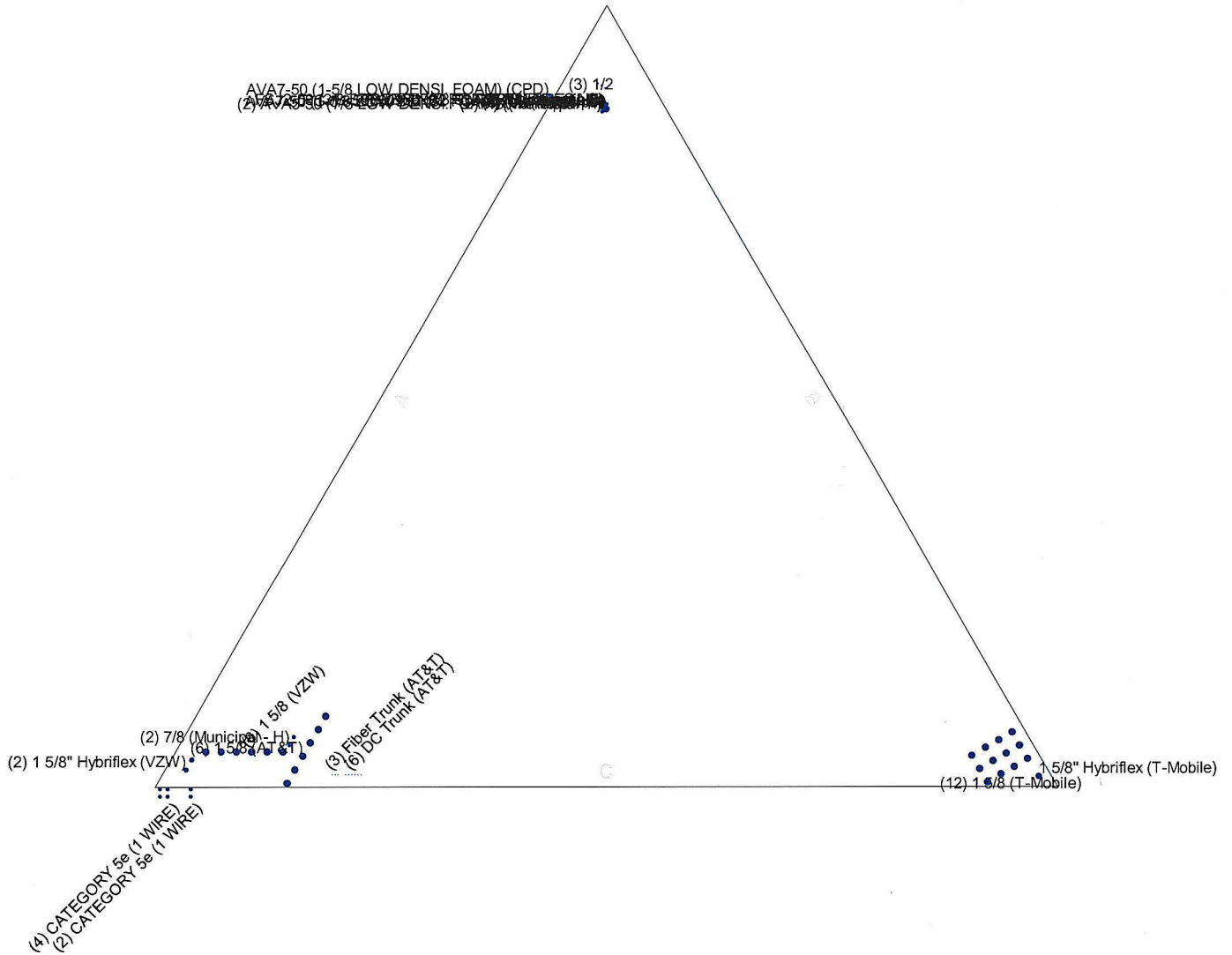
tnxTower Features:

- tnxTower can analyze and design 3- and 4-sided guyed towers, 3- and 4-sided self-supporting towers and either round or tapered ground mounted poles with or without guys.
- The program analyzes towers using the TIA-222-H standard or any of the previous TIA/EIA standards back to RS-222 (1959). Steel design is checked using the AISC ASD or the AISC LRFD specifications.
- Linear and non-linear (P-delta) analyses can be used in determining displacements and forces in the structure. Wind pressures and forces are automatically calculated.
- Extensive graphics plots include material take-off, shear-moment, leg compression, displacement, twist, feed line, guy anchor and stress plots.
- tnxTower contains unique features such as True Cable behavior, hog rod take-up, foundation stiffness and much more.

Section	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	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Feed Line Plan

Round Flat App In Face App Out Face Truss-Leg

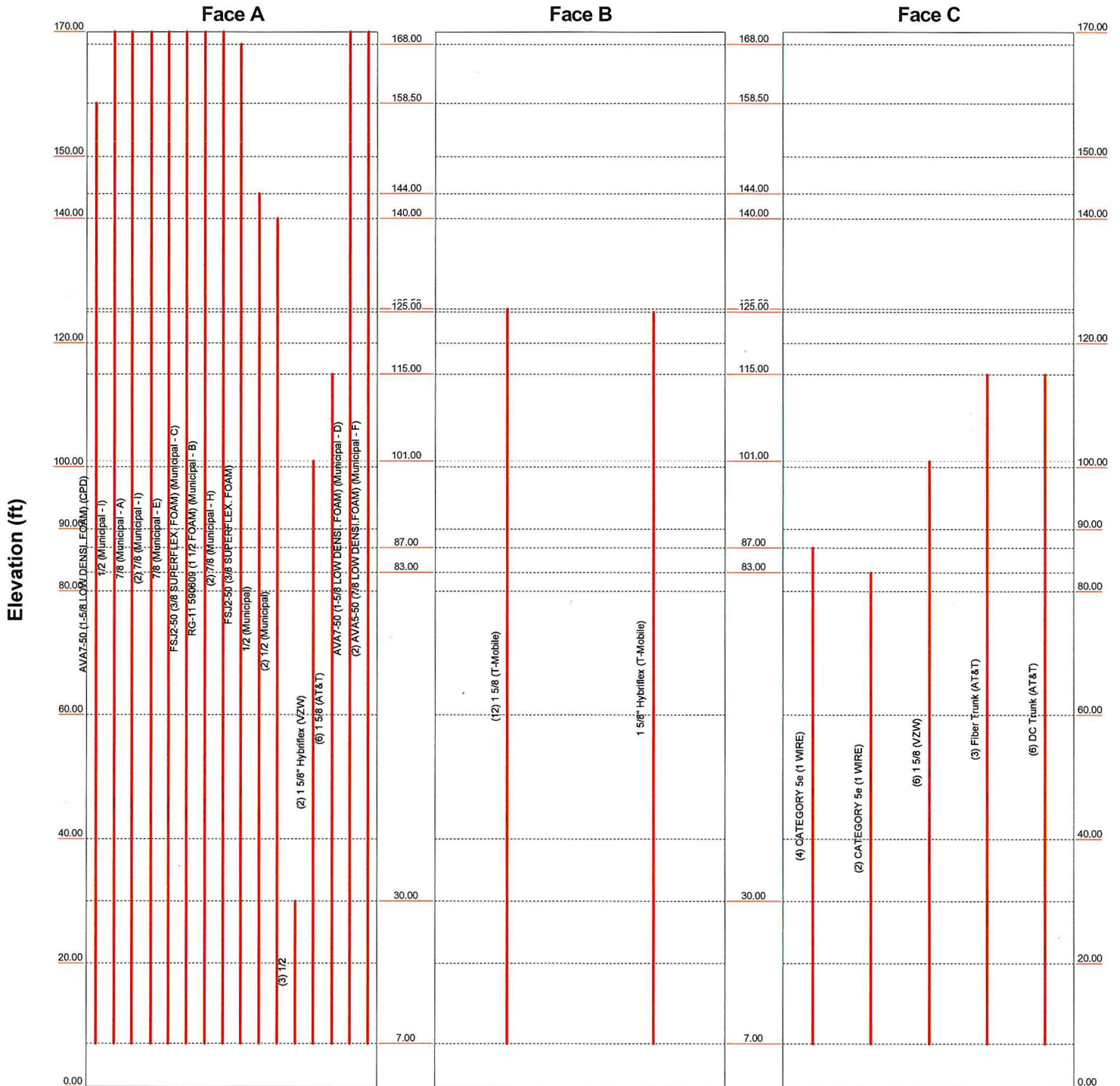


Centek Engineering Inc.		Job: 23032.11 - Cromwell North	
63-2 North Branford Rd.		Project: 170' Lattice Tower Cromwell, CT	
Branford, CT 06405		Client: Verizon	App'd:
Phone: (203) 488-0580		Code: TIA-222-H	Date: 09/11/23
FAX: (203) 488-8587		Path:	Scale: NTS
		Dwg No. E-7	

Feed Line Distribution Chart

0' - 170'

Round Flat App In Face App Out Face Truss Leg



Centek Engineering Inc.		Job: 23032.11 - Cromwell North	
63-2 North Branford Rd.		Project: 170' Lattice Tower Cromwell, CT	
Branford, CT 06405		Client: Verizon	App'd:
Phone: (203) 488-0580		Code: TIA-222-H	Scale: NTS
FAX: (203) 488-8587		Date: 09/11/23	Dwg No. E-7
		Path:	

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	1 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 170.00 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 5.00 ft at the top and 20.00 ft at the base.

This tower is designed using the TIA-222-H standard.

The following design criteria apply:

Tower base elevation above sea level: 0.00 ft.

Basic wind speed of 135 mph.

Risk Category IV.

Exposure Category C.

Simplified Topographic Factor Procedure for wind speed-up calculations is used.

Topographic Category: 1.

Crest Height: 0.00 ft.

Nominal ice thickness of 1.0000 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 50 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

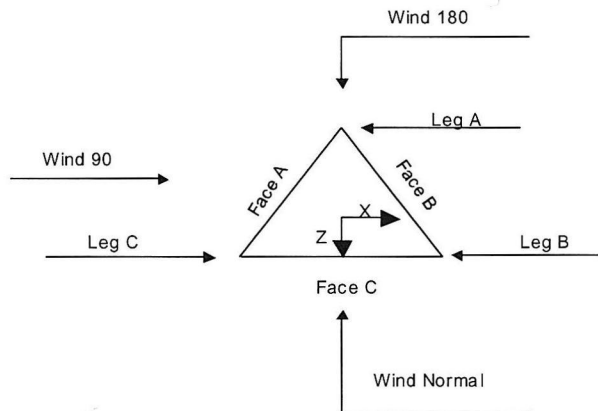
Stress ratio used in tower member design is 1.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	2 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	170.00-150.00			5.00	1	20.00
T2	150.00-140.00		U6.0 105244	5.00	1	10.00
T3	140.00-120.00		U8.0 105216	6.00	1	20.00
T4	120.00-100.00		U10.0 105217 L3x3/16	8.00	1	20.00
T5	100.00-90.00		U12.0 105216	10.00	1	10.00
T6	90.00-80.00		U12.0 105216	11.00	1	10.00
T7	80.00-60.00		U14.0 105218	12.00	1	20.00
T8	60.00-40.00		U16.0 105219	14.00	1	20.00
T9	40.00-20.00		U18.0 105219	16.00	1	20.00
T10	20.00-0.00		U20.0 105219 L4x1/4	18.00	1	20.00

Tower Section Geometry (cont'd)

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	170.00-150.00	2.49	X Brace	No	No	0.0000	1.0000
T2	150.00-140.00	10.00	X Brace	No	No	0.0000	0.0000
T3	140.00-120.00	10.00	X Brace	No	No	0.0000	0.0000
T4	120.00-100.00	10.00	X Brace	No	No	0.0000	0.0000
T5	100.00-90.00	10.00	X Brace	No	No	0.0000	0.0000

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	3 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T6	90.00-80.00	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 170.00-150.00	Solid Round	1 3/4	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T2 150.00-140.00	Truss Leg	Pirol 105244	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T3 140.00-120.00	Truss Leg	Pirol 105216	A572-50 (50 ksi)	Single Angle	L3x3x1/4	A529-50 (50 ksi)
T4 120.00-100.00	Truss Leg	Pirol 105217	A572-50 (50 ksi)	Single Angle	L3x3x1/4	A36 (36 ksi)
T5 100.00-90.00	Truss Leg	Pirol 105217	A572-50 (50 ksi)	Single Angle	L3x3x5/16	A36 (36 ksi)
T6 90.00-80.00	Truss Leg	Pirol 105217 reinf w/ 1" dia bar	A572-50 (50 ksi)	Single Angle	L3 1/2x3 1/2x5/16	A529-50 (50 ksi)
T7 80.00-60.00	Truss Leg	Pirol 105218 reinf w/ 1" dia bar	A572-50 (50 ksi)	Single Angle	L3 1/2x3 1/2x5/16	A529-50 (50 ksi)
T8 60.00-40.00	Truss Leg	Pirol 105219	A572-50 (50 ksi)	Single Angle	L3 1/2x3 1/2x5/16	A36 (36 ksi)
T9 40.00-20.00	Truss Leg	Pirol 105219 reinf w/ 1" dia bar	A572-50 (50 ksi)	Single Angle	L4x4x5/16	A529-50 (50 ksi)
T10 20.00-0.00	Truss Leg	Pirol 105220 reinf w/ 1" dia bar	A572-50 (50 ksi)	Single Angle	L5x5x5/16	A529-50 (50 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 170.00-150.00	Solid Round	7/8	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T2 150.00-140.00	Single Angle	L3x3x3/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)

Tower Section Geometry (cont'd)

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	4 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Tower Elevation <i>ft</i>	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T4 120.00-100.00	1	Single Angle	L3x3x3/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation <i>ft</i>	Gusset Area (per face) <i>ft²</i>	Gusset Thickness <i>in</i>	Gusset Grade	Adjust. Factor <i>A_f</i>	Adjust. Factor <i>A_r</i>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals <i>in</i>	Double Angle Stitch Bolt Spacing Horizontals <i>in</i>	Double Angle Stitch Bolt Spacing Redundants <i>in</i>
T1 170.00-150.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 150.00-140.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T3 140.00-120.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T4 120.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T5 100.00-90.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T6 90.00-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T7 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T8 60.00-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T9 40.00-20.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T10 20.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

Tower Section Geometry (cont'd)

Tower Elevation <i>ft</i>	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 170.00-150.00	Yes	Yes	1	1	1	1	1	1	1	1
T2 150.00-140.00	Yes	Yes	1	1	1	1	1	1	1	1
T3 140.00-120.00	Yes	Yes	1	1	1	1	1	1	1	1
T4 120.00-100.00	Yes	Yes	1	1	1	1	1	1	1	1
T5 100.00-90.00	Yes	Yes	1	1	1	1	1	1	1	1
T6 90.00-80.00	Yes	Yes	1	1	1	1	1	1	1	1

Page	6 of 55
Date	14:29:52 09/11/23
Designed by	TJL

[illegible][illegible]

Tower Section Geometry (cont'd)

[illegible]

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	7 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

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.
T4	Flange	1.0000	6	1.0000	1	0.6250	0	0.6250	0	1.0000	1	0.6250	0	0.6250	0
120.00-100.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T5	Flange	1.0000	6	1.0000	1	0.6250	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
100.00-90.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T6 90.00-80.00	Flange	0.0000	0	1.0000	1	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T7 80.00-60.00	Flange	1.0000	6	1.0000	1	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T8 60.00-40.00	Flange	1.0000	6	1.2500	1	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A490N		A325N		A325N		A325N		A325N		A325N		A325N	
T9 40.00-20.00	Flange	1.2500	6	1.2500	1	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T10 20.00-0.00	Flange	1.2500	6	1.2500	1	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	

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
*** (Cables in order of height from ground per Leg 05/23/2019													
AVA7-50 (1-5/8 LOW DENSE FOAM) (CPD)	A	No	No	Ar (CaAa)	158.50 - 7.00	0.0000	0.38	1	1	1.9800	1.9800		0.72
1/2 (Municipal - I)	A	No	No	Ar (CaAa)	170.00 - 7.00	-12.0000	0.4	1	1	0.5800	0.5800		0.25
7/8 (Municipal - A)	A	No	No	Ar (CaAa)	170.00 - 7.00	-12.0000	0.4	1	1	1.1100	1.1100		0.54
7/8 (Municipal - I)	A	No	No	Ar (CaAa)	170.00 - 7.00	-12.0000	0.4	2	2	1.1100	1.1100		0.54
7/8 (Municipal - E)	A	No	No	Ar (CaAa)	170.00 - 7.00	-12.0000	0.4	1	1	1.1100	1.1100		0.54
FSJ2-50 (3/8 SUPERFLEX FOAM) (Municipal - C)	A	No	No	Ar (CaAa)	170.00 - 7.00	-12.0000	0.4	1	1	0.4300	0.4300		0.08
RG-11 590609 (1 1/2 FOAM) (Municipal - B)	A	No	No	Ar (CaAa)	170.00 - 7.00	-12.0000	0.4	1	1	1.5900	1.5900		0.94
7/8 (Municipal - H)	A	No	No	Ar (CaAa)	170.00 - 7.00	-24.0000	-0.38	2	2	1.1100	1.1100		0.54
FSJ2-50 (3/8	A	No	No	Ar (CaAa)	168.00 -	-12.0000	0.4	1	1	0.4300	0.4300		0.08

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	8 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

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
SUPERFLEX. FOAM)					7.00	0							
1/2 (Municipal)	A	No	No	Ar (CaAa)	144.00 - 7.00	-12.000 0	0.4	1	1	0.5800	0.5800		0.25
1/2 (Municipal)	A	No	No	Ar (CaAa)	140.00 - 7.00	-12.000 0	0.4	2	1	0.5800	0.5800		0.25
1/2	A	No	No	Ar (CaAa)	30.00 - 7.00	-10.000 0	0.42	3	1	0.5800	0.5800		0.25
CATEGORY 5e (1 WIRE)	C	No	No	Ar (CaAa)	87.00 - 7.00	0.0000	0.49	4	2	1.0000	1.0000		0.21
CATEGORY 5e (1 WIRE)	C	No	No	Ar (CaAa)	83.00 - 7.00	0.0000	0.46	2	1	1.0000	1.0000		0.21
*** Carrier T-Mobile 1 5/8	B	No	No	Ar (CaAa)	125.50 - 7.00	-14.000 0	0.44	12	3	1.9800	1.9800		1.04
(T-Mobile) 1 5/8"	B	No	No	Ar (CaAa)	125.00 - 7.00	-2.0000	0.48	1	1	1.5750	1.5750		1.07
Hybriflex (T-Mobile)													
*** Carrier VZW 1 5/8 (VZW)	C	No	No	Ar (CaAa)	101.00 - 7.00	-8.0000	0.4	6	6	1.9800	1.9800		1.04
1 5/8"	A	No	No	Ar (CaAa)	101.00 - 7.00	-4.0000	-0.46	2	2	1.5000	1.5000		1.07
Hybriflex (VZW)													
*** Carrier AT&T 1 5/8 (AT&T)	A	No	No	Ar (CaAa)	115.00 - 7.00	-28.000 0	-0.38	6	6	1.9800	1.9800		1.04
Fiber Trunk (AT&T)	C	No	No	Ar (CaAa)	115.00 - 7.00	-3.0000	0.3	3	3	0.4000	0.4000		1.00
DC Trunk (AT&T)	C	No	No	Ar (CaAa)	115.00 - 7.00	-3.0000	0.28	6	6	0.4000	0.4000		0.11
*** CFD Replacement Cables AVA7-50 (1-5/8 LOW DENSE. FOAM) (Municipal - D)	A	No	No	Ar (CaAa)	170.00 - 7.00	-12.000 0	0.4	1	1	1.9800	1.9800		0.72
AVA5-50 (7/8 LOW DENSE LFOA M) (Municipal - F)	A	No	No	Ar (CaAa)	170.00 - 7.00	-12.000 0	0.4	2	2	1.1000	1.1000		0.30

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{A A A} In Face ft ²	C _{A A A} Out Face ft ²	Weight K
T1	170.00-150.00	A	0.000	0.000	29.337	0.000	0.12

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page 9 of 55
	Project	170' Lattice Tower Cromwell, CT	Date 14:29:52 09/11/23
	Client	Verizon	Designed by TJL

Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
T2	150.00-140.00	A	0.000	0.000	16.082	0.000	0.07
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
T3	140.00-120.00	A	0.000	0.000	35.180	0.000	0.15
		B	0.000	0.000	13.855	0.000	0.07
		C	0.000	0.000	0.000	0.000	0.00
T4	120.00-100.00	A	0.000	0.000	53.300	0.000	0.24
		B	0.000	0.000	50.670	0.000	0.27
		C	0.000	0.000	6.588	0.000	0.06
T5	100.00-90.00	A	0.000	0.000	32.470	0.000	0.16
		B	0.000	0.000	25.335	0.000	0.14
		C	0.000	0.000	15.480	0.000	0.10
T6	90.00-80.00	A	0.000	0.000	32.470	0.000	0.16
		B	0.000	0.000	25.335	0.000	0.14
		C	0.000	0.000	18.880	0.000	0.11
T7	80.00-60.00	A	0.000	0.000	64.940	0.000	0.32
		B	0.000	0.000	50.670	0.000	0.27
		C	0.000	0.000	42.960	0.000	0.22
T8	60.00-40.00	A	0.000	0.000	64.940	0.000	0.32
		B	0.000	0.000	50.670	0.000	0.27
		C	0.000	0.000	42.960	0.000	0.22
T9	40.00-20.00	A	0.000	0.000	66.680	0.000	0.32
		B	0.000	0.000	50.670	0.000	0.27
		C	0.000	0.000	42.960	0.000	0.22
T10	20.00-0.00	A	0.000	0.000	44.473	0.000	0.21
		B	0.000	0.000	32.935	0.000	0.18
		C	0.000	0.000	27.924	0.000	0.15

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} In Face ft ²	C_{AA} Out Face ft ²	Weight K
T1	170.00-150.00	A	1.464	0.000	0.000	114.721	0.000	1.26
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
T2	150.00-140.00	A	1.449	0.000	0.000	61.532	0.000	0.68
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
T3	140.00-120.00	A	1.434	0.000	0.000	140.731	0.000	1.53
		B		0.000	0.000	16.688	0.000	0.47
		C		0.000	0.000	0.000	0.000	0.00
T4	120.00-100.00	A	1.410	0.000	0.000	187.274	0.000	2.16
		B		0.000	0.000	61.231	0.000	1.70
		C		0.000	0.000	28.824	0.000	0.29
T5	100.00-90.00	A	1.389	0.000	0.000	110.779	0.000	1.27
		B		0.000	0.000	30.503	0.000	0.84
		C		0.000	0.000	48.258	0.000	0.59
T6	90.00-80.00	A	1.374	0.000	0.000	110.192	0.000	1.26
		B		0.000	0.000	30.418	0.000	0.84
		C		0.000	0.000	57.795	0.000	0.69
T7	80.00-60.00	A	1.348	0.000	0.000	218.365	0.000	2.47
		B		0.000	0.000	60.545	0.000	1.67
		C		0.000	0.000	132.814	0.000	1.54
T8	60.00-40.00	A	1.303	0.000	0.000	214.961	0.000	2.38
		B		0.000	0.000	60.054	0.000	1.64

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	10 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	$C_A A_A$ In Face ft^2	$C_A A_A$ Out Face ft^2	Weight K
T9	40.00-20.00	C	1.238	0.000	0.000	131.328	0.000	1.49
		A		0.000	0.000	217.740	0.000	2.35
		B		0.000	0.000	59.340	0.000	1.61
		C		0.000	0.000	129.169	0.000	1.43
T10	20.00-0.00	A	1.109	0.000	0.000	139.605	0.000	1.42
		B		0.000	0.000	37.650	0.000	1.00
		C		0.000	0.000	81.182	0.000	0.85

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	170.00-150.00	2.4006	-7.5197	2.7706	-8.2492
T2	150.00-140.00	0.9956	-5.2195	1.0236	-4.6210
T3	140.00-120.00	3.7916	-4.0924	2.3914	-8.1540
T4	120.00-100.00	6.4602	4.5311	1.1322	-1.4768
T5	100.00-90.00	0.1785	8.1899	-7.4301	3.3093
T6	90.00-80.00	-1.5879	9.1921	-10.0767	4.5203
T7	80.00-60.00	-3.1642	10.3797	-13.3319	5.9257
T8	60.00-40.00	-3.7686	11.1499	-15.7592	6.5816
T9	40.00-20.00	-4.2015	11.0573	-17.3179	5.9074
T10	20.00-0.00	-3.2240	7.8434	-14.5002	4.4022

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	4	AVA7-50 (1-5/8 LOW DENS. FOAM)	150.00 - 158.50	0.6000	0.5718
T1	5	1/2	150.00 - 170.00	0.6000	0.5718
T1	6	7/8	150.00 - 170.00	0.6000	0.5718
T1	7	7/8	150.00 - 170.00	0.6000	0.5718
T1	9	7/8	150.00 - 170.00	0.6000	0.5718
T1	10	FSJ2-50 (3/8 SUPERFLEX. FOAM)	150.00 - 170.00	0.6000	0.5718
T1	11	RG-11 590609 (1 1/2 FOAM)	150.00 - 170.00	0.6000	0.5718
T1	14	7/8	150.00 - 170.00	0.6000	0.5718
T1	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	150.00 - 168.00	0.6000	0.5718
T1	37	AVA7-50 (1-5/8 LOW DENS. FOAM)	150.00 - 170.00	0.6000	0.5718
T1	38	AVA5-50 (7/8 LOW DENS. FOAM)	150.00 - 170.00	0.6000	0.5718
T2	4	AVA7-50 (1-5/8 LOW	140.00 -	0.6000	0.3354

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	11 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
		DENSI. FOAM)	150.00		
T2	5	1/2	140.00 -	0.6000	0.3354
			150.00		
T2	6	7/8	140.00 -	0.6000	0.3354
			150.00		
T2	7	7/8	140.00 -	0.6000	0.3354
			150.00		
T2	9	7/8	140.00 -	0.6000	0.3354
			150.00		
T2	10	FSJ2-50 (3/8 SUPERFLEX. FOAM)	140.00 -	0.6000	0.3354
			150.00		
T2	11	RG-11 590609 (1 1/2 FOAM)	140.00 -	0.6000	0.3354
			150.00		
T2	14	7/8	140.00 -	0.6000	0.3354
			150.00		
T2	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	140.00 -	0.6000	0.3354
			150.00		
T2	18	1/2	140.00 -	0.6000	0.3354
			144.00		
T2	37	AVA7-50 (1-5/8 LOW DENSI. FOAM)	140.00 -	0.6000	0.3354
			150.00		
T2	38	AVA5-50 (7/8 LOW DENSI. FOAM)	140.00 -	0.6000	0.3354
			150.00		
T3	4	AVA7-50 (1-5/8 LOW DENSI. FOAM)	120.00 -	0.6000	0.4655
			140.00		
T3	5	1/2	120.00 -	0.6000	0.4655
			140.00		
T3	6	7/8	120.00 -	0.6000	0.4655
			140.00		
T3	7	7/8	120.00 -	0.6000	0.4655
			140.00		
T3	9	7/8	120.00 -	0.6000	0.4655
			140.00		
T3	10	FSJ2-50 (3/8 SUPERFLEX. FOAM)	120.00 -	0.6000	0.4655
			140.00		
T3	11	RG-11 590609 (1 1/2 FOAM)	120.00 -	0.6000	0.4655
			140.00		
T3	14	7/8	120.00 -	0.6000	0.4655
			140.00		
T3	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	120.00 -	0.6000	0.4655
			140.00		
T3	18	1/2	120.00 -	0.6000	0.4655
			140.00		
T3	20	1/2	120.00 -	0.6000	0.4655
			140.00		
T3	27	1 5/8	120.00 -	0.6000	0.4655
			125.50		
T3	28	1 5/8" Hybriflex	120.00 -	0.6000	0.4655
			125.00		
T3	37	AVA7-50 (1-5/8 LOW DENSI. FOAM)	120.00 -	0.6000	0.4655
			140.00		
T3	38	AVA5-50 (7/8 LOW DENSI. FOAM)	120.00 -	0.6000	0.4655
			140.00		
T4	4	AVA7-50 (1-5/8 LOW DENSI. FOAM)	100.00 -	0.6000	0.5345
			120.00		
T4	5	1/2	100.00 -	0.6000	0.5345
			120.00		
T4	6	7/8	100.00 -	0.6000	0.5345
			120.00		
T4	7	7/8	100.00 -	0.6000	0.5345
			120.00		
T4	9	7/8	100.00 -	0.6000	0.5345

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	12 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
			120.00		
T4	10	FSJ2-50 (3/8 SUPERFLEX. FOAM)	100.00 - 120.00	0.6000	0.5345
T4	11	RG-11 590609 (1 1/2 FOAM)	100.00 - 120.00	0.6000	0.5345
T4	14	7/8	100.00 - 120.00	0.6000	0.5345
T4	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	100.00 - 120.00	0.6000	0.5345
T4	18	1/2	100.00 - 120.00	0.6000	0.5345
T4	20	1/2	100.00 - 120.00	0.6000	0.5345
T4	27	1 5/8	100.00 - 120.00	0.6000	0.5345
T4	28	1 5/8" Hybriflex	100.00 - 120.00	0.6000	0.5345
T4	30	1 5/8	100.00 - 101.00	0.6000	0.5345
T4	31	1 5/8" Hybriflex	100.00 - 101.00	0.6000	0.5345
T4	33	1 5/8	100.00 - 115.00	0.6000	0.5345
T4	34	Fiber Trunk	100.00 - 115.00	0.6000	0.5345
T4	35	DC Trunk	100.00 - 115.00	0.6000	0.5345
T4	37	AVA7-50 (1-5/8 LOW DENS. FOAM)	100.00 - 120.00	0.6000	0.5345
T4	38	AVA5-50 (7/8 LOW DENS. FOAM)	100.00 - 120.00	0.6000	0.5345
T5	4	AVA7-50 (1-5/8 LOW DENS. FOAM)	90.00 - 100.00	0.6000	0.6000
T5	5	1/2	90.00 - 100.00	0.6000	0.6000
T5	6	7/8	90.00 - 100.00	0.6000	0.6000
T5	7	7/8	90.00 - 100.00	0.6000	0.6000
T5	9	7/8	90.00 - 100.00	0.6000	0.6000
T5	10	FSJ2-50 (3/8 SUPERFLEX. FOAM)	90.00 - 100.00	0.6000	0.6000
T5	11	RG-11 590609 (1 1/2 FOAM)	90.00 - 100.00	0.6000	0.6000
T5	14	7/8	90.00 - 100.00	0.6000	0.6000
T5	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	90.00 - 100.00	0.6000	0.6000
T5	18	1/2	90.00 - 100.00	0.6000	0.6000
T5	20	1/2	90.00 - 100.00	0.6000	0.6000
T5	27	1 5/8	90.00 - 100.00	0.6000	0.6000
T5	28	1 5/8" Hybriflex	90.00 - 100.00	0.6000	0.6000
T5	30	1 5/8	90.00 - 100.00	0.6000	0.6000
T5	31	1 5/8" Hybriflex	90.00 - 100.00	0.6000	0.6000
T5	33	1 5/8	90.00 - 100.00	0.6000	0.6000
T5	34	Fiber Trunk	90.00 - 100.00	0.6000	0.6000
T5	35	DC Trunk	90.00 - 100.00	0.6000	0.6000
T5	37	AVA7-50 (1-5/8 LOW DENS. FOAM)	90.00 - 100.00	0.6000	0.6000
T5	38	AVA5-50 (7/8 LOW DENS. FOAM)	90.00 - 100.00	0.6000	0.6000
T6	4	AVA7-50 (1-5/8 LOW DENS. FOAM)	80.00 - 90.00	0.6000	0.6000
T6	5	1/2	80.00 - 90.00	0.6000	0.6000
T6	6	7/8	80.00 - 90.00	0.6000	0.6000
T6	7	7/8	80.00 - 90.00	0.6000	0.6000
T6	9	7/8	80.00 - 90.00	0.6000	0.6000

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	13 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T6	10	FSJ2-50 (3/8 SUPERFLEX. FOAM)	80.00 - 90.00	0.6000	0.6000
T6	11	RG-11 590609 (1 1/2 FOAM)	80.00 - 90.00	0.6000	0.6000
T6	14	7/8	80.00 - 90.00	0.6000	0.6000
T6	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	80.00 - 90.00	0.6000	0.6000
T6	18	1/2	80.00 - 90.00	0.6000	0.6000
T6	20	1/2	80.00 - 90.00	0.6000	0.6000
T6	24	CATEGORY 5e (1 WIRE)	80.00 - 87.00	0.6000	0.6000
T6	25	CATEGORY 5e (1 WIRE)	80.00 - 83.00	0.6000	0.6000
T6	27	1 5/8	80.00 - 90.00	0.6000	0.6000
T6	28	1 5/8" Hybriflex	80.00 - 90.00	0.6000	0.6000
T6	30	1 5/8	80.00 - 90.00	0.6000	0.6000
T6	31	1 5/8" Hybriflex	80.00 - 90.00	0.6000	0.6000
T6	33	1 5/8	80.00 - 90.00	0.6000	0.6000
T6	34	Fiber Trunk	80.00 - 90.00	0.6000	0.6000
T6	35	DC Trunk	80.00 - 90.00	0.6000	0.6000
T6	37	AVA7-50 (1-5/8 LOW DENS. FOAM)	80.00 - 90.00	0.6000	0.6000
T6	38	AVA5-50 (7/8 LOW DENS. FOAM)	80.00 - 90.00	0.6000	0.6000
T7	4	AVA7-50 (1-5/8 LOW DENS. FOAM)	60.00 - 80.00	0.6000	0.6000
T7	5	1/2	60.00 - 80.00	0.6000	0.6000
T7	6	7/8	60.00 - 80.00	0.6000	0.6000
T7	7	7/8	60.00 - 80.00	0.6000	0.6000
T7	9	7/8	60.00 - 80.00	0.6000	0.6000
T7	10	FSJ2-50 (3/8 SUPERFLEX. FOAM)	60.00 - 80.00	0.6000	0.6000
T7	11	RG-11 590609 (1 1/2 FOAM)	60.00 - 80.00	0.6000	0.6000
T7	14	7/8	60.00 - 80.00	0.6000	0.6000
T7	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	60.00 - 80.00	0.6000	0.6000
T7	18	1/2	60.00 - 80.00	0.6000	0.6000
T7	20	1/2	60.00 - 80.00	0.6000	0.6000
T7	24	CATEGORY 5e (1 WIRE)	60.00 - 80.00	0.6000	0.6000
T7	25	CATEGORY 5e (1 WIRE)	60.00 - 80.00	0.6000	0.6000
T7	27	1 5/8	60.00 - 80.00	0.6000	0.6000
T7	28	1 5/8" Hybriflex	60.00 - 80.00	0.6000	0.6000
T7	30	1 5/8	60.00 - 80.00	0.6000	0.6000
T7	31	1 5/8" Hybriflex	60.00 - 80.00	0.6000	0.6000
T7	33	1 5/8	60.00 - 80.00	0.6000	0.6000
T7	34	Fiber Trunk	60.00 - 80.00	0.6000	0.6000
T7	35	DC Trunk	60.00 - 80.00	0.6000	0.6000
T7	37	AVA7-50 (1-5/8 LOW DENS. FOAM)	60.00 - 80.00	0.6000	0.6000
T7	38	AVA5-50 (7/8 LOW DENS. FOAM)	60.00 - 80.00	0.6000	0.6000
T8	4	AVA7-50 (1-5/8 LOW DENS. FOAM)	40.00 - 60.00	0.6000	0.6000
T8	5	1/2	40.00 - 60.00	0.6000	0.6000
T8	6	7/8	40.00 - 60.00	0.6000	0.6000
T8	7	7/8	40.00 - 60.00	0.6000	0.6000
T8	9	7/8	40.00 - 60.00	0.6000	0.6000
T8	10	FSJ2-50 (3/8 SUPERFLEX. FOAM)	40.00 - 60.00	0.6000	0.6000
T8	11	RG-11 590609 (1 1/2 FOAM)	40.00 - 60.00	0.6000	0.6000
T8	14	7/8	40.00 - 60.00	0.6000	0.6000
T8	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	40.00 - 60.00	0.6000	0.6000
T8	18	1/2	40.00 - 60.00	0.6000	0.6000
T8	20	1/2	40.00 - 60.00	0.6000	0.6000

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	14 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T8	24	CATEGORY 5e (1 WIRE)	40.00 - 60.00	0.6000	0.6000
T8	25	CATEGORY 5e (1 WIRE)	40.00 - 60.00	0.6000	0.6000
T8	27	1 5/8	40.00 - 60.00	0.6000	0.6000
T8	28	1 5/8" Hybriflex	40.00 - 60.00	0.6000	0.6000
T8	30	1 5/8	40.00 - 60.00	0.6000	0.6000
T8	31	1 5/8" Hybriflex	40.00 - 60.00	0.6000	0.6000
T8	33	1 5/8	40.00 - 60.00	0.6000	0.6000
T8	34	Fiber Trunk	40.00 - 60.00	0.6000	0.6000
T8	35	DC Trunk	40.00 - 60.00	0.6000	0.6000
T8	37	AVA7-50 (1-5/8 LOW DENS. FOAM)	40.00 - 60.00	0.6000	0.6000
T8	38	AVA5-50 (7/8 LOW DENS. FOAM)	40.00 - 60.00	0.6000	0.6000
T9	4	AVA7-50 (1-5/8 LOW DENS. FOAM)	20.00 - 40.00	0.6000	0.6000
T9	5	1/2	20.00 - 40.00	0.6000	0.6000
T9	6	7/8	20.00 - 40.00	0.6000	0.6000
T9	7	7/8	20.00 - 40.00	0.6000	0.6000
T9	9	7/8	20.00 - 40.00	0.6000	0.6000
T9	10	FSJ2-50 (3/8 SUPERFLEX. FOAM)	20.00 - 40.00	0.6000	0.6000
T9	11	RG-11 590609 (1 1/2 FOAM)	20.00 - 40.00	0.6000	0.6000
T9	14	7/8	20.00 - 40.00	0.6000	0.6000
T9	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	20.00 - 40.00	0.6000	0.6000
T9	18	1/2	20.00 - 40.00	0.6000	0.6000
T9	20	1/2	20.00 - 40.00	0.6000	0.6000
T9	21	1/2	20.00 - 30.00	0.6000	0.6000
T9	24	CATEGORY 5e (1 WIRE)	20.00 - 40.00	0.6000	0.6000
T9	25	CATEGORY 5e (1 WIRE)	20.00 - 40.00	0.6000	0.6000
T9	27	1 5/8	20.00 - 40.00	0.6000	0.6000
T9	28	1 5/8" Hybriflex	20.00 - 40.00	0.6000	0.6000
T9	30	1 5/8	20.00 - 40.00	0.6000	0.6000
T9	31	1 5/8" Hybriflex	20.00 - 40.00	0.6000	0.6000
T9	33	1 5/8	20.00 - 40.00	0.6000	0.6000
T9	34	Fiber Trunk	20.00 - 40.00	0.6000	0.6000
T9	35	DC Trunk	20.00 - 40.00	0.6000	0.6000
T9	37	AVA7-50 (1-5/8 LOW DENS. FOAM)	20.00 - 40.00	0.6000	0.6000
T9	38	AVA5-50 (7/8 LOW DENS. FOAM)	20.00 - 40.00	0.6000	0.6000
T10	4	AVA7-50 (1-5/8 LOW DENS. FOAM)	7.00 - 20.00	0.6000	0.6000
T10	5	1/2	7.00 - 20.00	0.6000	0.6000
T10	6	7/8	7.00 - 20.00	0.6000	0.6000
T10	7	7/8	7.00 - 20.00	0.6000	0.6000
T10	9	7/8	7.00 - 20.00	0.6000	0.6000
T10	10	FSJ2-50 (3/8 SUPERFLEX. FOAM)	7.00 - 20.00	0.6000	0.6000
T10	11	RG-11 590609 (1 1/2 FOAM)	7.00 - 20.00	0.6000	0.6000
T10	14	7/8	7.00 - 20.00	0.6000	0.6000
T10	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	7.00 - 20.00	0.6000	0.6000
T10	18	1/2	7.00 - 20.00	0.6000	0.6000
T10	20	1/2	7.00 - 20.00	0.6000	0.6000
T10	21	1/2	7.00 - 20.00	0.6000	0.6000
T10	24	CATEGORY 5e (1 WIRE)	7.00 - 20.00	0.6000	0.6000
T10	25	CATEGORY 5e (1 WIRE)	7.00 - 20.00	0.6000	0.6000
T10	27	1 5/8	7.00 - 20.00	0.6000	0.6000
T10	28	1 5/8" Hybriflex	7.00 - 20.00	0.6000	0.6000
T10	30	1 5/8	7.00 - 20.00	0.6000	0.6000
T10	31	1 5/8" Hybriflex	7.00 - 20.00	0.6000	0.6000

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	15 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T10	33	1 5/8	7.00 - 20.00	0.6000	0.6000
T10	34	Fiber Trunk	7.00 - 20.00	0.6000	0.6000
T10	35	DC Trunk	7.00 - 20.00	0.6000	0.6000
T10	37	AVA7-50 (1-5/8 LOW DENS. FOAM)	7.00 - 20.00	0.6000	0.6000
T10	38	AVA5-50 (7/8 LOW DENS. FOAM)	7.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
9 Arm Halo Mount (Municipal)	C	None		0.0000	168.00	No Ice	62.60	62.60	3.60
						1/2" Ice	80.40	80.40	4.80
						1" Ice	98.20	98.20	6.00
Sabre 12" HD V-Boom (AT&T)	A	None		0.0000	115.00	No Ice	9.12	8.00	0.60
						1/2" Ice	11.00	9.60	0.75
						1" Ice	12.88	11.20	0.90
Sabre 12" HD V-Boom (AT&T)	B	None		0.0000	115.00	No Ice	9.12	8.00	0.60
						1/2" Ice	11.00	9.60	0.75
						1" Ice	12.88	11.20	0.90
Sabre 12" HD V-Boom (AT&T)	C	None		0.0000	115.00	No Ice	9.12	8.00	0.60
						1/2" Ice	11.00	9.60	0.75
						1" Ice	12.88	11.20	0.90
DMP65R-BU6D (AT&T)	A	From Leg	4.00 -6.00 0.00	0.0000	115.00	No Ice	12.71	5.62	0.10
						1/2" Ice	13.21	6.07	0.17
						1" Ice	13.71	6.53	0.25
AIR6449 (AT&T)	A	From Leg	4.00 0.00 3.00	0.0000	115.00	No Ice	4.05	2.74	0.10
						1/2" Ice	4.32	2.97	0.13
						1" Ice	4.59	3.20	0.17
AIR6419 (AT&T)	A	From Leg	4.00 0.00 -3.00	0.0000	115.00	No Ice	4.17	2.02	0.06
						1/2" Ice	4.44	2.23	0.09
						1" Ice	4.71	2.44	0.12
TPA65R-BU6D (AT&T)	A	From Leg	4.00 6.00 0.00	0.0000	115.00	No Ice	12.71	5.62	0.08
						1/2" Ice	13.21	6.07	0.15
						1" Ice	13.71	6.53	0.23
DMP65R-BU6D (AT&T)	B	From Leg	4.00 -6.00 0.00	0.0000	115.00	No Ice	12.71	5.62	0.10
						1/2" Ice	13.21	6.07	0.17
						1" Ice	13.71	6.53	0.25
AIR6449 (AT&T)	B	From Leg	4.00 0.00 3.00	0.0000	115.00	No Ice	4.05	2.74	0.10
						1/2" Ice	4.32	2.97	0.13
						1" Ice	4.59	3.20	0.17
AIR6419 (AT&T)	B	From Leg	4.00 0.00 -3.00	0.0000	115.00	No Ice	4.17	2.02	0.06
						1/2" Ice	4.44	2.23	0.09
						1" Ice	4.71	2.44	0.12
TPA65R-BU6D (AT&T)	B	From Leg	4.00 6.00 0.00	0.0000	115.00	No Ice	12.71	5.62	0.08
						1/2" Ice	13.21	6.07	0.15
						1" Ice	13.71	6.53	0.23
DMP65R-BU6D (AT&T)	C	From Leg	4.00 -6.00	0.0000	115.00	No Ice	12.71	5.62	0.10
						1/2" Ice	13.21	6.07	0.17

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	16 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
AIR6449 (AT&T)	C	From Leg	0.00 4.00 0.00 3.00	0.0000	115.00	1" Ice No Ice 1/2" Ice 1" Ice	13.71 4.05 4.32 4.59	6.53 2.74 2.97 3.20	0.25 0.10 0.13 0.17
AIR6419 (AT&T)	C	From Leg	4.00 0.00 -3.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	4.17 4.44 4.71	2.02 2.23 2.44	0.06 0.09 0.12
TPA65R-BU6D (AT&T)	C	From Leg	4.00 6.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	12.71 13.21 13.71	5.62 6.07 6.53	0.08 0.15 0.23
4449 B5/B12 (AT&T)	A	From Leg	4.00 -6.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
4449 B5/B12 (AT&T)	B	From Leg	4.00 -6.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
4449 B5/B12 (AT&T)	C	From Leg	4.00 -6.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
8843 B2/B66A (AT&T)	A	From Leg	4.00 2.00 2.50	0.0000	115.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.35 1.50 1.65	0.07 0.09 0.11
8843 B2/B66A (AT&T)	B	From Leg	4.00 2.00 2.50	0.0000	115.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.35 1.50 1.65	0.07 0.09 0.11
8843 B2/B66A (AT&T)	C	From Leg	4.00 2.00 2.50	0.0000	115.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.35 1.50 1.65	0.07 0.09 0.11
RRUS-32 (AT&T)	A	From Leg	4.00 2.00 -2.50	0.0000	115.00	No Ice 1/2" Ice 1" Ice	3.31 3.56 3.81	2.42 2.64 2.86	0.08 0.10 0.14
RRUS-32 (AT&T)	B	From Leg	4.00 2.00 -2.50	0.0000	115.00	No Ice 1/2" Ice 1" Ice	3.31 3.56 3.81	2.42 2.64 2.86	0.08 0.10 0.14
RRUS-32 (AT&T)	C	From Leg	4.00 2.00 -2.50	0.0000	115.00	No Ice 1/2" Ice 1" Ice	3.31 3.56 3.81	2.42 2.64 2.86	0.08 0.10 0.14
4478 B14 (AT&T)	A	From Leg	4.00 -6.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	1.06 1.20 1.34	0.06 0.08 0.09
4478 B14 (AT&T)	B	From Leg	4.00 -6.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	1.06 1.20 1.34	0.06 0.08 0.09
4478 B14 (AT&T)	C	From Leg	4.00 -6.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	1.06 1.20 1.34	0.06 0.08 0.09
(3) DC6-48-60-18-8F (Squid) Suppressor (AT&T)	C	From Leg	0.00 0.00 0.00	0.0000	115.00	No Ice 1/2" Ice 1" Ice	0.79 1.27 1.45	0.79 1.27 1.45	0.02 0.04 0.05
PiROD 12' Lightweight T-Frame (Verizon)	A	From Leg	0.00 0.00 0.00	0.0000	98.50	No Ice 1/2" Ice 1" Ice	10.20 16.20 22.20	10.20 16.20 22.20	0.25 0.35 0.46
PiROD 12' Lightweight T-Frame (Verizon)	B	From Leg	0.00 0.00 0.00	0.0000	98.50	No Ice 1/2" Ice 1" Ice	10.20 16.20 22.20	10.20 16.20 22.20	0.25 0.35 0.46
PiROD 12' Lightweight T-Frame	C	From Leg	0.00 0.00	0.0000	98.50	No Ice 1/2" Ice	10.20 16.20	10.20 16.20	0.25 0.35

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	17 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
(Verizon)			0.00			1" Ice 22.20	22.20	0.46
(2) Commscope	A	From Leg	0.00	0.0000	98.50	No Ice 5.00	5.00	0.09
VZWSMART-SFK3			0.00			1/2" Ice 7.00	7.00	0.12
(Verizon - Proposed)			0.00			1" Ice 9.00	9.00	0.16
(2) Commscope	B	From Leg	0.00	0.0000	98.50	No Ice 5.00	5.00	0.09
VZWSMART-SFK3			0.00			1/2" Ice 7.00	7.00	0.12
(Verizon - Proposed)			0.00			1" Ice 9.00	9.00	0.16
(2) Commscope	C	From Leg	0.00	0.0000	98.50	No Ice 5.00	5.00	0.09
VZWSMART-SFK3			0.00			1/2" Ice 7.00	7.00	0.12
(Verizon - Proposed)			0.00			1" Ice 9.00	9.00	0.16
LNx-6514DS	A	From Leg	4.00	0.0000	100.00	No Ice 8.17	5.41	0.04
(Verizon)			-6.00			1/2" Ice 8.63	5.86	0.09
			0.00			1" Ice 9.10	6.33	0.15
(2) MX06FRO660	A	From Leg	4.00	0.0000	100.00	No Ice 9.87	7.34	0.06
(Verizon - Proposed)			-2.00			1/2" Ice 10.34	7.78	0.13
			0.00			1" Ice 10.82	8.24	0.20
MT6413-77A	A	From Leg	4.00	0.0000	101.50	No Ice 3.79	1.46	0.06
(Verizon - Proposed)			2.00			1/2" Ice 4.04	1.65	0.08
			0.00			1" Ice 4.30	1.85	0.11
XXDWMM-12.5-65-8T	A	From Leg	4.00	0.0000	98.00	No Ice 0.89	0.17	0.01
(Verizon - Proposed)			6.00			1/2" Ice 1.01	0.25	0.01
			0.00			1" Ice 1.14	0.34	0.02
LNx-6514DS	B	From Leg	4.00	0.0000	100.00	No Ice 8.17	5.41	0.04
(Verizon)			-6.00			1/2" Ice 8.63	5.86	0.09
			0.00			1" Ice 9.10	6.33	0.15
(2) MX06FRO660	B	From Leg	4.00	0.0000	100.00	No Ice 9.87	7.34	0.06
(Verizon - Proposed)			-2.00			1/2" Ice 10.34	7.78	0.13
			0.00			1" Ice 10.82	8.24	0.20
MT6413-77A	B	From Leg	4.00	0.0000	101.50	No Ice 3.79	1.46	0.06
(Verizon - Proposed)			2.00			1/2" Ice 4.04	1.65	0.08
			0.00			1" Ice 4.30	1.85	0.11
XXDWMM-12.5-65-8T	B	From Leg	4.00	0.0000	98.00	No Ice 0.89	0.17	0.01
(Verizon - Proposed)			6.00			1/2" Ice 1.01	0.25	0.01
			0.00			1" Ice 1.14	0.34	0.02
LNx-6514DS	C	From Leg	4.00	0.0000	100.00	No Ice 8.17	5.41	0.04
(Verizon)			-6.00			1/2" Ice 8.63	5.86	0.09
			0.00			1" Ice 9.10	6.33	0.15
(2) MX06FRO660	C	From Leg	4.00	0.0000	100.00	No Ice 9.87	7.34	0.06
(Verizon - Proposed)			-2.00			1/2" Ice 10.34	7.78	0.13
			0.00			1" Ice 10.82	8.24	0.20
MT6413-77A	C	From Leg	4.00	0.0000	101.50	No Ice 3.79	1.46	0.06
(Verizon - Proposed)			2.00			1/2" Ice 4.04	1.65	0.08
			0.00			1" Ice 4.30	1.85	0.11
XXDWMM-12.5-65-8T	C	From Leg	4.00	0.0000	98.00	No Ice 0.89	0.17	0.01
(Verizon - Proposed)			6.00			1/2" Ice 1.01	0.25	0.01
			0.00			1" Ice 1.14	0.34	0.02
RF4439d-25A (B2/B66A	A	From Leg	4.00	0.0000	100.00	No Ice 1.88	1.25	0.08
RRH)			2.00			1/2" Ice 2.05	1.39	0.09
(Verizon - Proposed)			0.00			1" Ice 2.22	1.54	0.11
RF4439d-25A (B2/B66A	B	From Leg	4.00	0.0000	100.00	No Ice 1.88	1.25	0.08
RRH)			2.00			1/2" Ice 2.05	1.39	0.09
(Verizon - Proposed)			0.00			1" Ice 2.22	1.54	0.11
RF4439d-25A (B2/B66A	C	From Leg	4.00	0.0000	100.00	No Ice 1.88	1.25	0.08
RRH)			2.00			1/2" Ice 2.05	1.39	0.09
(Verizon - Proposed)			0.00			1" Ice 2.22	1.54	0.11
RF4461d-13A	A	From Leg	4.00	0.0000	100.00	No Ice 1.87	1.28	0.08
(Verizon - Proposed)			2.00			1/2" Ice 2.03	1.42	0.10

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	18 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
RF4461d-13A (Verizon - Proposed)	B	From Leg	0.00 4.00 2.00 0.00	0.0000	100.00	1" Ice 2.21 No Ice 1.87 1/2" Ice 2.03 1" Ice 2.21	1.57 1.28 1.42 1.57	0.12 0.08 0.10 0.12
RF4461d-13A (Verizon - Proposed)	C	From Leg	4.00 2.00 0.00	0.0000	100.00	No Ice 1.87 1/2" Ice 2.03 1" Ice 2.21	1.28 1.42 1.57	0.08 0.10 0.12
CBRS RRH-RT4423-48A (Verizon - Proposed)	A	From Leg	4.00 2.00 0.00	0.0000	100.00	No Ice 0.86 1/2" Ice 0.97 1" Ice 1.10	0.36 0.45 0.54	0.02 0.03 0.03
CBRS RRH-RT4423-48A (Verizon - Proposed)	B	From Leg	4.00 2.00 0.00	0.0000	100.00	No Ice 0.86 1/2" Ice 0.97 1" Ice 1.10	0.36 0.45 0.54	0.02 0.03 0.03
CBRS RRH-RT4423-48A (Verizon - Proposed)	C	From Leg	4.00 2.00 0.00	0.0000	100.00	No Ice 0.86 1/2" Ice 0.97 1" Ice 1.10	0.36 0.45 0.54	0.02 0.03 0.03
RVZDC-6627-PF-48 (Verizon - Proposed)	C	From Leg	4.00 2.00 0.00	0.0000	100.00	No Ice 3.25 1/2" Ice 3.48 1" Ice 3.71	2.15 2.35 2.55	0.03 0.06 0.09
PiROD 10' Lightweight T-Frame (T-Mobile)	A	From Leg	2.00 0.00 0.00	0.0000	125.00	No Ice 9.30 1/2" Ice 14.50 1" Ice 19.70	9.30 14.50 19.70	0.25 0.34 0.44
PiROD 10' Lightweight T-Frame (T-Mobile)	B	From Leg	2.00 0.00 0.00	0.0000	125.00	No Ice 9.30 1/2" Ice 14.50 1" Ice 19.70	9.30 14.50 19.70	0.25 0.34 0.44
PiROD 10' Lightweight T-Frame (T-Mobile)	C	From Leg	2.00 0.00 0.00	0.0000	125.00	No Ice 9.30 1/2" Ice 14.50 1" Ice 19.70	9.30 14.50 19.70	0.25 0.34 0.44
APXVAALL24-43 (T-Mobile)	A	From Leg	4.00 3.00 0.00	0.0000	125.00	No Ice 20.24 1/2" Ice 20.89 1" Ice 21.54	8.89 9.49 10.09	0.15 0.27 0.39
AIR6419 (T-Mobile)	A	From Leg	4.00 -3.00 0.00	0.0000	125.00	No Ice 4.17 1/2" Ice 4.44 1" Ice 4.71	2.02 2.23 2.44	0.06 0.09 0.12
APXVAALL24-43 (T-Mobile)	B	From Leg	4.00 3.00 0.00	0.0000	125.00	No Ice 20.24 1/2" Ice 20.89 1" Ice 21.54	8.89 9.49 10.09	0.15 0.27 0.39
AIR6419 (T-Mobile)	B	From Leg	4.00 -3.00 0.00	0.0000	125.00	No Ice 4.17 1/2" Ice 4.44 1" Ice 4.71	2.02 2.23 2.44	0.06 0.09 0.12
APXVAALL24-43 (T-Mobile)	C	From Leg	4.00 3.00 0.00	0.0000	125.00	No Ice 20.24 1/2" Ice 20.89 1" Ice 21.54	8.89 9.49 10.09	0.15 0.27 0.39
AIR6419 (T-Mobile)	C	From Leg	4.00 -3.00 0.00	0.0000	125.00	No Ice 4.17 1/2" Ice 4.44 1" Ice 4.71	2.02 2.23 2.44	0.06 0.09 0.12
4480 B71+B85 (T-Mobile)	A	From Leg	4.00 0.00 0.00	0.0000	125.00	No Ice 2.85 1/2" Ice 3.06 1" Ice 3.28	1.38 1.54 1.71	0.08 0.11 0.13
4480 B71+B85 (T-Mobile)	B	From Leg	4.00 0.00 0.00	0.0000	125.00	No Ice 2.85 1/2" Ice 3.06 1" Ice 3.28	1.38 1.54 1.71	0.08 0.11 0.13
4480 B71+B85 (T-Mobile)	C	From Leg	4.00 0.00 0.00	0.0000	125.00	No Ice 2.85 1/2" Ice 3.06 1" Ice 3.28	1.38 1.54 1.71	0.08 0.11 0.13
4460 B25+B66 (T-Mobile)	A	From Leg	4.00 0.00	0.0000	125.00	No Ice 2.56 1/2" Ice 2.76	1.98 2.16	0.11 0.13

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	19 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
4460 B25+B66 (T-Mobile)	B	From Leg	0.00 4.00 0.00 0.00	0.0000	125.00	1" Ice No Ice 1/2" Ice 1" Ice	2.97 2.56 2.76 2.97	2.34 1.98 2.16 2.34	0.16 0.11 0.13 0.16
4460 B25+B66 (T-Mobile)	C	From Leg	4.00 0.00 0.00	0.0000	125.00	No Ice 1/2" Ice 1" Ice	2.56 2.76 2.97	1.98 2.16 2.34	0.11 0.13 0.16
*** CFD Proposed									
DS1F03F36U-D Omni Antenna (CFD)	C	From Leg	8.25 0.00 8.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	3.77 5.07 6.38	3.77 5.07 6.38	0.06 0.09 0.12
DS1F03F36D 23' Omni Antenna (CFD)	A	From Leg	7.00 4.00 1.50	0.0000	170.00	No Ice 1/2" Ice 1" Ice	6.69 8.95 11.23	6.69 8.95 11.23	0.09 0.14 0.20
*** CFD Proposed									
*** Remaining									
Antennas/Appurtenances on Halo mt.									
101-90-08-0-01 ((183') Municipal - A)	A	From Leg	7.00 4.00 13.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	2.77 4.31 4.93	2.77 4.31 4.93	0.04 0.06 0.09
15' Mount Pipe ((183') Municipal - A)	A	From Leg	7.00 4.00 8.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	4.50 6.03 7.58	4.50 6.03 7.58	0.09 0.12 0.16
20' 8 Bay Di-Pole ((178') Municipal - E)	C	From Leg	7.00 0.00 10.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	4.00 6.00 8.00	4.00 6.00 8.00	0.06 0.10 0.14
3' Whip (3in diameter) /w mount ((175.5') Municipal - C)	B	From Leg	0.00 0.00 5.50	0.0000	170.00	No Ice 1/2" Ice 1" Ice	1.27 1.64 2.04	1.27 1.64 2.04	0.02 0.03 0.05
2.5' Decibel Omni ((175') Municipal - I)	A	From Leg	7.00 4.00 10.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	0.41 0.56 0.71	0.41 0.56 0.71	0.01 0.01 0.02
2.5' Decibel Omni ((175') Municipal - I)	B	From Leg	7.00 8.00 10.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	0.41 0.56 0.71	0.41 0.56 0.71	0.01 0.01 0.02
2.5' Decibel Omni ((175') Municipal - I)	C	From Leg	8.25 0.00 10.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	0.41 0.56 0.71	0.41 0.56 0.71	0.01 0.01 0.02
2" Dia 10' Omni ((174.5') Municipal - H)	B	From Leg	8.25 0.00 5.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	2.00 3.03 4.06	2.00 3.03 4.06	0.01 0.03 0.04
2" Dia 10' Omni ((174.5') Municipal - H)	B	From Leg	7.00 8.00 5.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	2.00 3.03 4.06	2.00 3.03 4.06	0.01 0.03 0.04
ANT150F6 ((174') Municipal - B)	A	From Leg	1.00 2.00 4.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	4.80 6.83 8.87	4.80 6.83 8.87	0.03 0.07 0.11
*** Sprint / Ramaker Inventory 10/25/2018									
*** Sprint / Ramaker Inventory 10/25/2018									
*** Inventory Below Halo Mount									
SC420-HF1LDF (Municipal)	A	From Face	6.00 0.00 0.00	0.0000	158.50	No Ice 1/2" Ice 1" Ice	2.14 3.02 3.79	2.14 3.02 3.79	0.02 0.03 0.05

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	20 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
2.5" x 20'6" Whip (Municipal)	A	From Face	6.00 9.00 0.00	0.0000	144.00	No Ice 1/2" Ice 1" Ice	5.14 7.24 9.37	5.14 7.24 9.37	0.15 0.19 0.24
2" Dia 15' Omni (Municipal)	B	From Face	6.00 -5.00 0.00	0.0000	141.00	No Ice 1/2" Ice 1" Ice	3.20 4.83 6.47	3.20 4.83 6.47	0.04 0.06 0.10
1.5" x 10' Omni (Municipal)	B	From Face	6.00 5.00 0.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice	1.50 2.52 3.56	1.50 2.52 3.56	0.06 0.07 0.09
9' Whip (Municipal)	A	From Face	6.00 0.00 0.00	0.0000	138.50	No Ice 1/2" Ice 1" Ice	5.85 7.66 8.90	5.85 7.66 8.90	0.12 0.17 0.23
PiROD 20' Universal Platform (Municipal)	C	None		0.0000	134.00	No Ice 1/2" Ice 1" Ice	33.10 47.10 61.10	33.10 47.10 61.10	2.27 2.70 3.13
3"x2"x22" Panel (Unknown)	B	From Leg	2.00 0.00 0.00	0.0000	87.00	No Ice 1/2" Ice 1" Ice	0.65 0.81 0.98	0.47 0.61 0.76	0.05 0.05 0.06
TMA (Unknown)	B	From Leg	2.00 0.00 0.00	0.0000	84.50	No Ice 1/2" Ice 1" Ice	1.06 1.21 1.37	0.45 0.57 0.71	0.02 0.03 0.03
3' Stand-off	B	From Leg	1.50 0.00 0.00	0.0000	83.50	No Ice 1/2" Ice 1" Ice	1.00 1.20 1.40	2.00 2.70 3.40	0.05 0.07 0.10
3' Stand-off	A	From Leg	1.50 0.00 0.00	0.0000	83.50	No Ice 1/2" Ice 1" Ice	1.00 1.20 1.40	2.00 2.70 3.40	0.05 0.07 0.10
TMA (Unknown)	A	From Leg	2.00 0.00 0.00	0.0000	80.00	No Ice 1/2" Ice 1" Ice	1.06 1.21 1.37	0.45 0.57 0.71	0.02 0.03 0.03
TMA (Unknown)	B	From Leg	2.00 0.00 0.00	0.0000	82.50	No Ice 1/2" Ice 1" Ice	1.06 1.21 1.37	0.45 0.57 0.71	0.02 0.03 0.03
3"x2"x22" Panel (Unknown)	B	From Leg	2.00 0.00 0.00	0.0000	80.00	No Ice 1/2" Ice 1" Ice	0.65 0.81 0.98	0.47 0.61 0.76	0.05 0.05 0.06
Camera	A	From Leg	0.00 0.00 0.00	0.0000	30.00	No Ice 1/2" Ice 1" Ice	0.50 0.60 0.70	0.50 0.60 0.70	0.01 0.02 0.03
PC9013N	A	From Leg	1.00 0.00 0.00	0.0000	24.00	No Ice 1/2" Ice 1" Ice	0.46 0.52 0.58	0.46 0.52 0.58	0.00 0.00 0.00
SU-RA-HP-2.4 Antenna (Municipal)	A	From Leg	7.00 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	0.69 0.79 0.91	0.33 0.41 0.50	0.00 0.01 0.02
PTP49600 (CPD)	C	From Leg	7.00 8.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	2.04 2.24 2.44	0.53 0.65 0.78	0.01 0.02 0.04
CFD Halo Camera Bracket (Camera)	A	From Leg	7.00 4.00 0.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	0.72 0.83 0.95	0.24 0.31 0.38	0.00 0.01 0.02
CFD Halo Mounted Camera (Camera)	A	From Leg	7.00 4.00 0.00	0.0000	170.00	No Ice 1/2" Ice 1" Ice	0.32 0.54 0.66	0.32 0.54 0.66	0.02 0.02 0.03

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	21 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Dishes

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 ft ²	Weight K
3' Dish	A	Paraboloid w/o Radome	From Leg	2.00 0.00 0.00	Worst		83.00	3.00	No Ice 7.07 1/2" Ice 7.47 1" Ice 7.86	0.23 0.27 0.31
VHLP2.5-180 (Clearwire)	A	Paraboloid w/o Radome	From Face	6.00 0.00 0.00	Worst		134.00	2.50	No Ice 4.90 1/2" Ice 5.24 1" Ice 5.58	0.07 0.10 0.12
VHLP2.5-180 (Clearwire)	A	Paraboloid w/o Radome	From Face	6.00 -7.00 0.00	Worst		134.00	2.50	No Ice 4.90 1/2" Ice 5.24 1" Ice 5.58	0.07 0.10 0.12
VHLP2.5-180 (Clearwire)	B	Paraboloid w/o Radome	From Face	6.00 -7.00 0.00	Worst		134.00	2.50	No Ice 4.90 1/2" Ice 5.24 1" Ice 5.58	0.07 0.10 0.12
VHLP2-180 (Clearwire)	C	Paraboloid w/o Radome	From Face	6.00 0.00 0.00	Worst		134.00	2.00	No Ice 3.14 1/2" Ice 3.41 1" Ice 3.67	0.03 0.04 0.06
HPD2-4.7 (Updated Elevation per NET Inc. Inventory)	C	Paraboloid w/Radome	From Face	9.00 0.00 0.00	Worst		135.00	2.00	No Ice 3.14 1/2" Ice 3.41 1" Ice 3.68	0.03 0.04 0.06
4' Grid Dish (Unknown)	A	Grid	From Leg	6.00 -7.00 0.00	Worst		134.00	4.00	No Ice 12.57 1/2" Ice 13.10 1" Ice 13.62	0.06 0.11 0.17

Truss-Leg Properties

Section Designation	Area in ²	Area Ice in ²	Self Weight K	Ice Weight K	Equiv. Diameter in	Equiv. Diameter Ice in	Leg Area in ²
Pirol 105244	1026.8606	3030.3095	0.54	0.43	7.1310	21.0438	3.6816
Pirol 105216	2169.0308	5929.0711	0.45	0.79	7.5314	20.5871	3.6816
Pirol 105217	2296.2363	5984.1760	0.56	0.79	7.9730	20.7784	5.3014
Pirol 105217	2296.2363	5969.5800	0.56	0.77	7.9730	20.7277	5.3014
Pirol 105217 reinf w/ 1" dia bar	2291.5652	6334.8772	0.75	0.84	7.9568	21.9961	7.6570
Pirol 105218 reinf w/ 1" dia bar	2425.8928	6383.5214	0.90	0.84	8.4232	22.1650	9.9280
Pirol 105219	2597.9095	6052.1363	1.03	0.77	9.0205	21.0144	9.4248
Pirol 105219 reinf w 1" dia bar	2571.0468	6339.5313	1.06	0.77	8.9272	22.0123	11.7803
Pirol 105220 reinf w/ 1" dia bar	2697.7688	6290.8016	1.23	0.67	9.3673	21.8431	14.2843

Tower Pressures - No Ice

$$G_H = 0.850$$

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	22 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Section Elevation	z	K _Z	q _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
ft	ft		psf	ft ²		ft ²	ft ²	ft ²			ft ²
T1 170.00-150.00	160.00	1.397	55	102.917	A	0.000	12.868	5.833	45.33	29.337	0.000
					B	0.000	12.868		45.33	0.000	0.000
					C	0.000	12.868		45.33	0.000	0.000
T2 150.00-140.00	145.00	1.369	54	66.055	A	4.893	11.905	11.905	70.87	16.082	0.000
					B	4.893	11.905		70.87	0.000	0.000
					C	4.893	11.905		70.87	0.000	0.000
T3 140.00-120.00	130.00	1.337	53	162.111	A	10.467	25.146	25.146	70.61	35.180	0.000
					B	10.467	25.146		70.61	13.855	0.000
					C	10.467	25.146		70.61	0.000	0.000
T4 120.00-100.00	110.00	1.291	51	202.528	A	13.964	26.621	26.621	65.59	53.300	0.000
					B	13.964	26.621		65.59	50.670	0.000
					C	13.964	26.621		65.59	6.588	0.000
T5 100.00-90.00	95.00	1.252	50	116.264	A	6.561	13.311	13.311	66.98	32.470	0.000
					B	6.561	13.311		66.98	25.335	0.000
					C	6.561	13.311		66.98	15.480	0.000
T6 90.00-80.00	85.00	1.223	49	126.517	A	8.119	13.283	13.283	62.07	32.470	0.000
					B	8.119	13.283		62.07	25.335	0.000
					C	8.119	13.283		62.07	18.880	0.000
T7 80.00-60.00	70.00	1.174	47	283.450	A	17.668	28.124	28.124	61.42	64.940	0.000
					B	17.668	28.124		61.42	50.670	0.000
					C	17.668	28.124		61.42	42.960	0.000
T8 60.00-40.00	50.00	1.094	43	323.362	A	19.635	30.118	30.118	60.54	64.940	0.000
					B	19.635	30.118		60.54	50.670	0.000
					C	19.635	30.118		60.54	42.960	0.000
T9 40.00-20.00	30.00	0.982	39	363.756	A	24.755	29.807	29.807	54.63	66.680	0.000
					B	24.755	29.807		54.63	50.670	0.000
					C	24.755	29.807		54.63	42.960	0.000
T10 20.00-0.00	10.00	0.85	34	404.134	A	33.906	31.276	31.276	47.98	44.473	0.000
					B	33.906	31.276		47.98	32.935	0.000
					C	33.906	31.276		47.98	27.924	0.000

Tower Pressure - With Ice

$$G_H = 0.850$$

Section Elevation	z	K _Z	q _z	t _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
ft	ft		psf	in	ft ²		ft ²	ft ²	ft ²			ft ²
T1 170.00-150.00	160.00	1.397	8	1.4638	107.796	A	0.000	46.161	15.592	33.78	114.721	0.000
						B	0.000	46.161		33.78	0.000	0.000
						C	0.000	46.161		33.78	0.000	0.000
T2 150.00-140.00	145.00	1.369	7	1.4494	68.474	A	4.893	40.612	35.131	77.20	61.532	0.000
						B	4.893	40.612		77.20	0.000	0.000
						C	4.893	40.612		77.20	0.000	0.000
T3 140.00-120.00	130.00	1.337	7	1.4337	166.896	A	10.467	78.742	68.738	77.05	140.731	0.000
						B	10.467	78.742		77.05	16.688	0.000
						C	10.467	78.742		77.05	0.000	0.000
T4 120.00-100.00	110.00	1.291	7	1.4099	207.234	A	13.964	82.502	69.377	71.92	187.274	0.000
						B	13.964	82.502		71.92	61.231	0.000
						C	13.964	82.502		71.92	28.824	0.000
T5 100.00-90.00	95.00	1.252	7	1.3894	118.583	A	6.561	40.681	34.604	73.25	110.779	0.000
						B	6.561	40.681		73.25	30.503	0.000
						C	6.561	40.681		73.25	48.258	0.000
T6 90.00-80.00	85.00	1.223	7	1.3740	128.810	A	8.119	43.096	36.721	71.70	110.192	0.000
						B	8.119	43.096		71.70	30.418	0.000

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	23 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Section Elevation	z	K _Z	q _z	t _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
ft	ft		psf	in	ft ²		ft ²	ft ²	ft ²			
T7 80.00-60.00	70.00	1.174	6	1.3476	287.948	C	8.119	43.096	74.006	71.70	57.795	0.000
						A	17.668	87.612		70.29	218.365	0.000
						B	17.668	87.612		70.29	60.545	0.000
T8 60.00-40.00	50.00	1.094	6	1.3030	327.711	C	17.668	87.612	70.165	70.29	132.814	0.000
						A	19.635	84.784		67.19	214.961	0.000
						B	19.635	84.784		67.19	60.054	0.000
T9 40.00-20.00	30.00	0.982	5	1.2381	367.889	C	19.635	84.784	73.496	67.19	131.328	0.000
						A	24.755	88.822		64.71	217.740	0.000
						B	24.755	88.822		64.71	59.340	0.000
T10 20.00-0.00	10.00	0.85	5	1.1093	407.836	C	24.755	88.822	72.931	64.71	129.169	0.000
						A	33.906	87.977		59.84	139.605	0.000
						B	33.906	87.977		59.84	37.650	0.000
						C	33.906	87.977		59.84	81.182	0.000

Tower Pressure - Service

$$G_H = 0.850$$

Section Elevation	z	K _Z	q _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
ft	ft		psf	ft ²		ft ²	ft ²	ft ²			
T1 170.00-150.00	160.00	1.397	11	102.917	A	0.000	12.868	5.833	45.33	29.337	0.000
					B	0.000	12.868		45.33	0.000	0.000
					C	0.000	12.868		45.33	0.000	0.000
T2 150.00-140.00	145.00	1.369	11	66.055	A	4.893	11.905	11.905	70.87	16.082	0.000
					B	4.893	11.905		70.87	0.000	0.000
					C	4.893	11.905		70.87	0.000	0.000
T3 140.00-120.00	130.00	1.337	10	162.111	A	10.467	25.146	25.146	70.61	35.180	0.000
					B	10.467	25.146		70.61	13.855	0.000
					C	10.467	25.146		70.61	0.000	0.000
T4 120.00-100.00	110.00	1.291	10	202.528	A	13.964	26.621	26.621	65.59	53.300	0.000
					B	13.964	26.621		65.59	50.670	0.000
					C	13.964	26.621		65.59	6.588	0.000
T5 100.00-90.00	95.00	1.252	10	116.264	A	6.561	13.311	13.311	66.98	32.470	0.000
					B	6.561	13.311		66.98	25.335	0.000
					C	6.561	13.311		66.98	15.480	0.000
T6 90.00-80.00	85.00	1.223	10	126.517	A	8.119	13.283	13.283	62.07	32.470	0.000
					B	8.119	13.283		62.07	25.335	0.000
					C	8.119	13.283		62.07	18.880	0.000
T7 80.00-60.00	70.00	1.174	9	283.450	A	17.668	28.124	28.124	61.42	64.940	0.000
					B	17.668	28.124		61.42	50.670	0.000
					C	17.668	28.124		61.42	42.960	0.000
T8 60.00-40.00	50.00	1.094	9	323.362	A	19.635	30.118	30.118	60.54	64.940	0.000
					B	19.635	30.118		60.54	50.670	0.000
					C	19.635	30.118		60.54	42.960	0.000
T9 40.00-20.00	30.00	0.982	8	363.756	A	24.755	29.807	29.807	54.63	66.680	0.000
					B	24.755	29.807		54.63	50.670	0.000
					C	24.755	29.807		54.63	42.960	0.000
T10 20.00-0.00	10.00	0.85	7	404.134	A	33.906	31.276	31.276	47.98	44.473	0.000
					B	33.906	31.276		47.98	32.935	0.000
					C	33.906	31.276		47.98	27.924	0.000

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page 24 of 55
	Project	170' Lattice Tower Cromwell, CT	Date 14:29:52 09/11/23
	Client	Verizon	Designed by TJL

Tower Forces - No Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K	e									
T1 170.00-150.00	0.12	1.10	A	0.125	2.866	55	1	1	7.276	1.81	90.56	C
			B	0.125	2.866		1	1	7.276			
			C	0.125	2.866		1	1	7.276			
T2 150.00-140.00	0.07	1.07	A	0.254	2.425	54	1	1	11.870	1.77	177.29	C
			B	0.254	2.425		1	1	11.870			
			C	0.254	2.425		1	1	11.870			
T3 140.00-120.00	0.22	2.07	A	0.22	2.532	53	1	1	25.007	4.18	209.03	C
			B	0.22	2.532		1	1	25.007			
			C	0.22	2.532		1	1	25.007			
T4 120.00-100.00	0.58	2.57	A	0.2	2.595	51	1	1	29.259	6.19	309.60	C
			B	0.2	2.595		1	1	29.259			
			C	0.2	2.595		1	1	29.259			
T5 100.00-90.00	0.39	1.37	A	0.171	2.696	50	1	1	14.148	3.47	346.56	C
			B	0.171	2.696		1	1	14.148			
			C	0.171	2.696		1	1	14.148			
T6 90.00-80.00	0.40	1.77	A	0.169	2.702	49	1	1	15.687	3.64	364.46	C
			B	0.169	2.702		1	1	15.687			
			C	0.169	2.702		1	1	15.687			
T7 80.00-60.00	0.81	4.11	A	0.162	2.729	47	1	1	33.666	7.40	370.10	C
			B	0.162	2.729		1	1	33.666			
			C	0.162	2.729		1	1	33.666			
T8 60.00-40.00	0.81	4.65	A	0.154	2.757	43	1	1	36.740	7.24	362.15	C
			B	0.154	2.757		1	1	36.740			
			C	0.154	2.757		1	1	36.740			
T9 40.00-20.00	0.82	5.11	A	0.15	2.772	39	1	1	41.672	7.01	350.44	C
			B	0.15	2.772		1	1	41.672			
			C	0.15	2.772		1	1	41.672			
T10 20.00-0.00	0.54	6.34	A	0.161	2.73	34	1	1	51.696	5.86	292.76	C
			B	0.161	2.73		1	1	51.696			
			C	0.161	2.73		1	1	51.696			
Sum Weight:	4.75	30.16						OTM	3559.58 kip-ft	48.58		

Tower Forces - No Ice - Wind 45 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K	e									
T1 170.00-150.00	0.12	1.10	A	0.125	2.866	55	0.825	1	7.276	1.81	90.56	C
			B	0.125	2.866		0.825	1	7.276			
			C	0.125	2.866		0.825	1	7.276			
T2 150.00-140.00	0.07	1.07	A	0.254	2.425	54	0.825	1	11.014	1.68	167.72	C
			B	0.254	2.425		0.825	1	11.014			
			C	0.254	2.425		0.825	1	11.014			
T3 140.00-120.00	0.22	2.07	A	0.22	2.532	53	0.825	1	23.175	3.97	198.58	C
			B	0.22	2.532		0.825	1	23.175			
			C	0.22	2.532		0.825	1	23.175			
T4 120.00-100.00	0.58	2.57	A	0.2	2.595	51	0.825	1	26.816	5.92	295.80	C
			B	0.2	2.595		0.825	1	26.816			
			C	0.2	2.595		0.825	1	26.816			

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	25 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
T5 100.00-90.00	0.39	1.37	A	0.171	2.696	50	0.825	1	13.000	3.33	333.49	C
			B	0.171	2.696		0.825	1	13.000			
			C	0.171	2.696		0.825	1	13.000			
T6 90.00-80.00	0.40	1.77	A	0.169	2.702	49	0.825	1	14.266	3.49	348.63	C
			B	0.169	2.702		0.825	1	14.266			
			C	0.169	2.702		0.825	1	14.266			
T7 80.00-60.00	0.81	4.11	A	0.162	2.729	47	0.825	1	30.574	7.07	353.40	C
			B	0.162	2.729		0.825	1	30.574			
			C	0.162	2.729		0.825	1	30.574			
T8 60.00-40.00	0.81	4.65	A	0.154	2.757	43	0.825	1	33.304	6.89	344.69	C
			B	0.154	2.757		0.825	1	33.304			
			C	0.154	2.757		0.825	1	33.304			
T9 40.00-20.00	0.82	5.11	A	0.15	2.772	39	0.825	1	37.340	6.61	330.57	C
			B	0.15	2.772		0.825	1	37.340			
			C	0.15	2.772		0.825	1	37.340			
T10 20.00-0.00	0.54	6.34	A	0.161	2.73	34	0.825	1	45.762	5.39	269.55	C
			B	0.161	2.73		0.825	1	45.762			
			C	0.161	2.73		0.825	1	45.762			
Sum Weight:	4.75	30.16						OTM	3404.87 kip-ft	46.16		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
T1 170.00-150.00	0.12	1.10	A	0.125	2.866	55	0.8	1	7.276	1.81	90.56	C
			B	0.125	2.866		0.8	1	7.276			
			C	0.125	2.866		0.8	1	7.276			
T2 150.00-140.00	0.07	1.07	A	0.254	2.425	54	0.8	1	10.891	1.66	166.35	C
			B	0.254	2.425		0.8	1	10.891			
			C	0.254	2.425		0.8	1	10.891			
T3 140.00-120.00	0.22	2.07	A	0.22	2.532	53	0.8	1	22.913	3.94	197.09	C
			B	0.22	2.532		0.8	1	22.913			
			C	0.22	2.532		0.8	1	22.913			
T4 120.00-100.00	0.58	2.57	A	0.2	2.595	51	0.8	1	26.467	5.88	293.83	C
			B	0.2	2.595		0.8	1	26.467			
			C	0.2	2.595		0.8	1	26.467			
T5 100.00-90.00	0.39	1.37	A	0.171	2.696	50	0.8	1	12.836	3.32	331.63	C
			B	0.171	2.696		0.8	1	12.836			
			C	0.171	2.696		0.8	1	12.836			
T6 90.00-80.00	0.40	1.77	A	0.169	2.702	49	0.8	1	14.063	3.46	346.37	C
			B	0.169	2.702		0.8	1	14.063			
			C	0.169	2.702		0.8	1	14.063			
T7 80.00-60.00	0.81	4.11	A	0.162	2.729	47	0.8	1	30.132	7.02	351.01	C
			B	0.162	2.729		0.8	1	30.132			
			C	0.162	2.729		0.8	1	30.132			
T8 60.00-40.00	0.81	4.65	A	0.154	2.757	43	0.8	1	32.813	6.84	342.19	C
			B	0.154	2.757		0.8	1	32.813			
			C	0.154	2.757		0.8	1	32.813			
T9 40.00-20.00	0.82	5.11	A	0.15	2.772	39	0.8	1	36.721	6.55	327.73	C
			B	0.15	2.772		0.8	1	36.721			
			C	0.15	2.772		0.8	1	36.721			

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	26 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K	e									
T10 20.00-0.00	0.54	6.34	A B C	0.161 0.161 0.161	2.73 2.73 2.73	34	0.8 0.8 0.8	1 1 1	44.915 44.915 44.915	5.32	266.23	C
Sum Weight:	4.75	30.16						OTM	3382.77 kip-ft	45.82		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K	e									
T1 170.00-150.00	0.12	1.10	A B C	0.125 0.125 0.125	2.866 2.866 2.866	55	0.85 0.85 0.85	1 1 1	7.276 7.276 7.276	1.81	90.56	C
T2 150.00-140.00	0.07	1.07	A B C	0.254 0.254 0.254	2.425 2.425 2.425	54	0.85 0.85 0.85	1 1 1	11.136 11.136 11.136	1.69	169.08	C
T3 140.00-120.00	0.22	2.07	A B C	0.22 0.22 0.22	2.532 2.532 2.532	53	0.85 0.85 0.85	1 1 1	23.437 23.437 23.437	4.00	200.07	C
T4 120.00-100.00	0.58	2.57	A B C	0.2 0.2 0.2	2.595 2.595 2.595	51	0.85 0.85 0.85	1 1 1	27.165 27.165 27.165	5.96	297.77	C
T5 100.00-90.00	0.39	1.37	A B C	0.171 0.171 0.171	2.696 2.696 2.696	50	0.85 0.85 0.85	1 1 1	13.164 13.164 13.164	3.35	335.36	C
T6 90.00-80.00	0.40	1.77	A B C	0.169 0.169 0.169	2.702 2.702 2.702	49	0.85 0.85 0.85	1 1 1	14.469 14.469 14.469	3.51	350.89	C
T7 80.00-60.00	0.81	4.11	A B C	0.162 0.162 0.162	2.729 2.729 2.729	47	0.85 0.85 0.85	1 1 1	31.015 31.015 31.015	7.12	355.79	C
T8 60.00-40.00	0.81	4.65	A B C	0.154 0.154 0.154	2.757 2.757 2.757	43	0.85 0.85 0.85	1 1 1	33.795 33.795 33.795	6.94	347.18	C
T9 40.00-20.00	0.82	5.11	A B C	0.15 0.15 0.15	2.772 2.772 2.772	39	0.85 0.85 0.85	1 1 1	37.959 37.959 37.959	6.67	333.41	C
T10 20.00-0.00	0.54	6.34	A B C	0.161 0.161 0.161	2.73 2.73 2.73	34	0.85 0.85 0.85	1 1 1	46.610 46.610 46.610	5.46	272.86	C
Sum Weight:	4.75	30.16						OTM	3426.98 kip-ft	46.51		

Tower Forces - With Ice - Wind Normal To Face

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	27 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
T1 170.00-150.00	1.26	2.69	A	0.428	2.011	8	1	1	29.954	0.81	40.65	C
			B	0.428	2.011		1	1	29.954			
			C	0.428	2.011		1	1	29.954			
T2 150.00-140.00	0.68	2.48	A	0.665	1.778	7	1	1	36.828	0.55	54.50	C
			B	0.665	1.778		1	1	36.828			
			C	0.665	1.778		1	1	36.828			
T3 140.00-120.00	2.00	5.89	A	0.535	1.859	7	1	1	65.919	1.21	60.56	C
			B	0.535	1.859		1	1	65.919			
			C	0.535	1.859		1	1	65.919			
T4 120.00-100.00	4.15	6.77	A	0.465	1.949	7	1	1	68.991	1.69	84.39	C
			B	0.465	1.949		1	1	68.991			
			C	0.465	1.949		1	1	68.991			
T5 100.00-90.00	2.71	3.35	A	0.398	2.067	7	1	1	32.416	1.05	104.63	C
			B	0.398	2.067		1	1	32.416			
			C	0.398	2.067		1	1	32.416			
T6 90.00-80.00	2.79	4.01	A	0.398	2.069	7	1	1	35.493	1.09	108.85	C
			B	0.398	2.069		1	1	35.493			
			C	0.398	2.069		1	1	35.493			
T7 80.00-60.00	5.67	8.66	A	0.366	2.136	6	1	1	72.167	2.18	108.90	C
			B	0.366	2.136		1	1	72.167			
			C	0.366	2.136		1	1	72.167			
T8 60.00-40.00	5.52	9.12	A	0.319	2.248	6	1	1	70.924	2.04	101.97	C
			B	0.319	2.248		1	1	70.924			
			C	0.319	2.248		1	1	70.924			
T9 40.00-20.00	5.39	9.88	A	0.309	2.273	5	1	1	78.198	1.91	95.72	C
			B	0.309	2.273		1	1	78.198			
			C	0.309	2.273		1	1	78.198			
T10 20.00-0.00	3.27	11.21	A	0.299	2.299	5	1	1	86.566	1.39	69.58	C
			B	0.299	2.299		1	1	86.566			
			C	0.299	2.299		1	1	86.566			
Sum Weight:	33.42	64.07						OTM	1069.92 kip-ft	13.92		

Tower Forces - With Ice - Wind 45 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
T1 170.00-150.00	1.26	2.69	A	0.428	2.011	8	0.825	1	29.954	0.81	40.65	C
			B	0.428	2.011		0.825	1	29.954			
			C	0.428	2.011		0.825	1	29.954			
T2 150.00-140.00	0.68	2.48	A	0.665	1.778	7	0.825	1	35.971	0.54	53.54	C
			B	0.665	1.778		0.825	1	35.971			
			C	0.665	1.778		0.825	1	35.971			
T3 140.00-120.00	2.00	5.89	A	0.535	1.859	7	0.825	1	64.088	1.19	59.50	C
			B	0.535	1.859		0.825	1	64.088			
			C	0.535	1.859		0.825	1	64.088			
T4 120.00-100.00	4.15	6.77	A	0.465	1.949	7	0.825	1	66.548	1.66	82.97	C
			B	0.465	1.949		0.825	1	66.548			
			C	0.465	1.949		0.825	1	66.548			
T5 100.00-90.00	2.71	3.35	A	0.398	2.067	7	0.825	1	31.268	1.03	103.26	C
			B	0.398	2.067		0.825	1	31.268			
			C	0.398	2.067		0.825	1	31.268			

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	28 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K	e									
T6 90.00-80.00	2.79	4.01	A	0.398	2.069	7	0.825	1	34.072	1.07	107.19	C
			B	0.398	2.069		0.825	1	34.072			
			C	0.398	2.069		0.825	1	34.072			
T7 80.00-60.00	5.67	8.66	A	0.366	2.136	6	0.825	1	69.075	2.14	107.11	C
			B	0.366	2.136		0.825	1	69.075			
			C	0.366	2.136		0.825	1	69.075			
T8 60.00-40.00	5.52	9.12	A	0.319	2.248	6	0.825	1	67.488	2.00	100.01	C
			B	0.319	2.248		0.825	1	67.488			
			C	0.319	2.248		0.825	1	67.488			
T9 40.00-20.00	5.39	9.88	A	0.309	2.273	5	0.825	1	73.866	1.87	93.48	C
			B	0.309	2.273		0.825	1	73.866			
			C	0.309	2.273		0.825	1	73.866			
T10 20.00-0.00	3.27	11.21	A	0.299	2.299	5	0.825	1	80.633	1.34	66.90	C
			B	0.299	2.299		0.825	1	80.633			
			C	0.299	2.299		0.825	1	80.633			
Sum Weight:	33.42	64.07						OTM	1053.59 kip-ft	13.65		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K	e									
T1 170.00-150.00	1.26	2.69	A	0.428	2.011	8	0.8	1	29.954	0.81	40.65	C
			B	0.428	2.011		0.8	1	29.954			
			C	0.428	2.011		0.8	1	29.954			
T2 150.00-140.00	0.68	2.48	A	0.665	1.778	7	0.8	1	35.849	0.53	53.40	C
			B	0.665	1.778		0.8	1	35.849			
			C	0.665	1.778		0.8	1	35.849			
T3 140.00-120.00	2.00	5.89	A	0.535	1.859	7	0.8	1	63.826	1.19	59.35	C
			B	0.535	1.859		0.8	1	63.826			
			C	0.535	1.859		0.8	1	63.826			
T4 120.00-100.00	4.15	6.77	A	0.465	1.949	7	0.8	1	66.198	1.66	82.77	C
			B	0.465	1.949		0.8	1	66.198			
			C	0.465	1.949		0.8	1	66.198			
T5 100.00-90.00	2.71	3.35	A	0.398	2.067	7	0.8	1	31.104	1.03	103.06	C
			B	0.398	2.067		0.8	1	31.104			
			C	0.398	2.067		0.8	1	31.104			
T6 90.00-80.00	2.79	4.01	A	0.398	2.069	7	0.8	1	33.869	1.07	106.95	C
			B	0.398	2.069		0.8	1	33.869			
			C	0.398	2.069		0.8	1	33.869			
T7 80.00-60.00	5.67	8.66	A	0.366	2.136	6	0.8	1	68.633	2.14	106.85	C
			B	0.366	2.136		0.8	1	68.633			
			C	0.366	2.136		0.8	1	68.633			
T8 60.00-40.00	5.52	9.12	A	0.319	2.248	6	0.8	1	66.997	1.99	99.73	C
			B	0.319	2.248		0.8	1	66.997			
			C	0.319	2.248		0.8	1	66.997			
T9 40.00-20.00	5.39	9.88	A	0.309	2.273	5	0.8	1	73.247	1.86	93.16	C
			B	0.309	2.273		0.8	1	73.247			
			C	0.309	2.273		0.8	1	73.247			
T10 20.00-0.00	3.27	11.21	A	0.299	2.299	5	0.8	1	79.785	1.33	66.52	C
			B	0.299	2.299		0.8	1	79.785			
			C	0.299	2.299		0.8	1	79.785			

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	29 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
Sum Weight:	33.42	64.07						OTM	1051.26 kip-ft	13.61		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
T1 170.00-150.00	1.26	2.69	A	0.428	2.011	8	0.85	1	29.954	0.81	40.65	C
			B	0.428	2.011		0.85	1	29.954			
			C	0.428	2.011		0.85	1	29.954			
T2 150.00-140.00	0.68	2.48	A	0.665	1.778	7	0.85	1	36.094	0.54	53.68	C
			B	0.665	1.778		0.85	1	36.094			
			C	0.665	1.778		0.85	1	36.094			
T3 140.00-120.00	2.00	5.89	A	0.535	1.859	7	0.85	1	64.349	1.19	59.65	C
			B	0.535	1.859		0.85	1	64.349			
			C	0.535	1.859		0.85	1	64.349			
T4 120.00-100.00	4.15	6.77	A	0.465	1.949	7	0.85	1	66.897	1.66	83.18	C
			B	0.465	1.949		0.85	1	66.897			
			C	0.465	1.949		0.85	1	66.897			
T5 100.00-90.00	2.71	3.35	A	0.398	2.067	7	0.85	1	31.432	1.03	103.46	C
			B	0.398	2.067		0.85	1	31.432			
			C	0.398	2.067		0.85	1	31.432			
T6 90.00-80.00	2.79	4.01	A	0.398	2.069	7	0.85	1	34.275	1.07	107.42	C
			B	0.398	2.069		0.85	1	34.275			
			C	0.398	2.069		0.85	1	34.275			
T7 80.00-60.00	5.67	8.66	A	0.366	2.136	6	0.85	1	69.517	2.15	107.36	C
			B	0.366	2.136		0.85	1	69.517			
			C	0.366	2.136		0.85	1	69.517			
T8 60.00-40.00	5.52	9.12	A	0.319	2.248	6	0.85	1	67.979	2.01	100.29	C
			B	0.319	2.248		0.85	1	67.979			
			C	0.319	2.248		0.85	1	67.979			
T9 40.00-20.00	5.39	9.88	A	0.309	2.273	5	0.85	1	74.484	1.88	93.80	C
			B	0.309	2.273		0.85	1	74.484			
			C	0.309	2.273		0.85	1	74.484			
T10 20.00-0.00	3.27	11.21	A	0.299	2.299	5	0.85	1	81.480	1.35	67.29	C
			B	0.299	2.299		0.85	1	81.480			
			C	0.299	2.299		0.85	1	81.480			
Sum Weight:	33.42	64.07						OTM	1055.93 kip-ft	13.69		

Tower Forces - Service - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
T1	0.12	1.10	A	0.125	2.866	11	1	1	7.276	0.36	17.89	C

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	30 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
170.00-150.00			B	0.125	2.866		1	1	7.276			
			C	0.125	2.866		1	1	7.276			
T2	0.07	1.07	A	0.254	2.425	11	1	1	11.870	0.35	35.02	C
150.00-140.00			B	0.254	2.425		1	1	11.870			
			C	0.254	2.425		1	1	11.870			
T3	0.22	2.07	A	0.22	2.532	10	1	1	25.007	0.83	41.29	C
140.00-120.00			B	0.22	2.532		1	1	25.007			
			C	0.22	2.532		1	1	25.007			
T4	0.58	2.57	A	0.2	2.595	10	1	1	29.259	1.22	61.15	C
120.00-100.00			B	0.2	2.595		1	1	29.259			
			C	0.2	2.595		1	1	29.259			
T5	0.39	1.37	A	0.171	2.696	10	1	1	14.148	0.68	68.46	C
100.00-90.00			B	0.171	2.696		1	1	14.148			
			C	0.171	2.696		1	1	14.148			
T6	0.40	1.77	A	0.169	2.702	10	1	1	15.687	0.72	71.99	C
90.00-80.00			B	0.169	2.702		1	1	15.687			
			C	0.169	2.702		1	1	15.687			
T7	0.81	4.11	A	0.162	2.729	9	1	1	33.666	1.46	73.11	C
80.00-60.00			B	0.162	2.729		1	1	33.666			
			C	0.162	2.729		1	1	33.666			
T8	0.81	4.65	A	0.154	2.757	9	1	1	36.740	1.43	71.54	C
60.00-40.00			B	0.154	2.757		1	1	36.740			
			C	0.154	2.757		1	1	36.740			
T9	0.82	5.11	A	0.15	2.772	8	1	1	41.672	1.38	69.22	C
40.00-20.00			B	0.15	2.772		1	1	41.672			
			C	0.15	2.772		1	1	41.672			
T10	0.54	6.34	A	0.161	2.73	7	1	1	51.696	1.16	57.83	C
20.00-0.00			B	0.161	2.73		1	1	51.696			
			C	0.161	2.73		1	1	51.696			
Sum Weight:	4.75	30.16						OTM	703.13 kip-ft	9.60		

Tower Forces - Service - Wind 45 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
T1	0.12	1.10	A	0.125	2.866	11	0.825	1	7.276	0.36	17.89	C
170.00-150.00			B	0.125	2.866		0.825	1	7.276			
			C	0.125	2.866		0.825	1	7.276			
T2	0.07	1.07	A	0.254	2.425	11	0.825	1	11.014	0.33	33.13	C
150.00-140.00			B	0.254	2.425		0.825	1	11.014			
			C	0.254	2.425		0.825	1	11.014			
T3	0.22	2.07	A	0.22	2.532	10	0.825	1	23.175	0.78	39.23	C
140.00-120.00			B	0.22	2.532		0.825	1	23.175			
			C	0.22	2.532		0.825	1	23.175			
T4	0.58	2.57	A	0.2	2.595	10	0.825	1	26.816	1.17	58.43	C
120.00-100.00			B	0.2	2.595		0.825	1	26.816			
			C	0.2	2.595		0.825	1	26.816			
T5	0.39	1.37	A	0.171	2.696	10	0.825	1	13.000	0.66	65.88	C
100.00-90.00			B	0.171	2.696		0.825	1	13.000			
			C	0.171	2.696		0.825	1	13.000			
T6	0.40	1.77	A	0.169	2.702	10	0.825	1	14.266	0.69	68.86	C

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	31 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
90.00-80.00			B	0.169	2.702		0.825	1	14.266			
			C	0.169	2.702		0.825	1	14.266			
T7	0.81	4.11	A	0.162	2.729	9	0.825	1	30.574	1.40	69.81	C
80.00-60.00			B	0.162	2.729		0.825	1	30.574			
			C	0.162	2.729		0.825	1	30.574			
T8	0.81	4.65	A	0.154	2.757	9	0.825	1	33.304	1.36	68.09	C
60.00-40.00			B	0.154	2.757		0.825	1	33.304			
			C	0.154	2.757		0.825	1	33.304			
T9	0.82	5.11	A	0.15	2.772	8	0.825	1	37.340	1.31	65.30	C
40.00-20.00			B	0.15	2.772		0.825	1	37.340			
			C	0.15	2.772		0.825	1	37.340			
T10	0.54	6.34	A	0.161	2.73	7	0.825	1	45.762	1.06	53.24	C
20.00-0.00			B	0.161	2.73		0.825	1	45.762			
			C	0.161	2.73		0.825	1	45.762			
Sum Weight:	4.75	30.16						OTM	672.57 kip-ft	9.12		

Tower Forces - Service - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
T1	0.12	1.10	A	0.125	2.866	11	0.8	1	7.276	0.36	17.89	C
170.00-150.00			B	0.125	2.866		0.8	1	7.276			
			C	0.125	2.866		0.8	1	7.276			
T2	0.07	1.07	A	0.254	2.425	11	0.8	1	10.891	0.33	32.86	C
150.00-140.00			B	0.254	2.425		0.8	1	10.891			
			C	0.254	2.425		0.8	1	10.891			
T3	0.22	2.07	A	0.22	2.532	10	0.8	1	22.913	0.78	38.93	C
140.00-120.00			B	0.22	2.532		0.8	1	22.913			
			C	0.22	2.532		0.8	1	22.913			
T4	0.58	2.57	A	0.2	2.595	10	0.8	1	26.467	1.16	58.04	C
120.00-100.00			B	0.2	2.595		0.8	1	26.467			
			C	0.2	2.595		0.8	1	26.467			
T5	0.39	1.37	A	0.171	2.696	10	0.8	1	12.836	0.66	65.51	C
100.00-90.00			B	0.171	2.696		0.8	1	12.836			
			C	0.171	2.696		0.8	1	12.836			
T6	0.40	1.77	A	0.169	2.702	10	0.8	1	14.063	0.68	68.42	C
90.00-80.00			B	0.169	2.702		0.8	1	14.063			
			C	0.169	2.702		0.8	1	14.063			
T7	0.81	4.11	A	0.162	2.729	9	0.8	1	30.132	1.39	69.34	C
80.00-60.00			B	0.162	2.729		0.8	1	30.132			
			C	0.162	2.729		0.8	1	30.132			
T8	0.81	4.65	A	0.154	2.757	9	0.8	1	32.813	1.35	67.59	C
60.00-40.00			B	0.154	2.757		0.8	1	32.813			
			C	0.154	2.757		0.8	1	32.813			
T9	0.82	5.11	A	0.15	2.772	8	0.8	1	36.721	1.29	64.74	C
40.00-20.00			B	0.15	2.772		0.8	1	36.721			
			C	0.15	2.772		0.8	1	36.721			
T10	0.54	6.34	A	0.161	2.73	7	0.8	1	44.915	1.05	52.59	C
20.00-0.00			B	0.161	2.73		0.8	1	44.915			
			C	0.161	2.73		0.8	1	44.915			
Sum Weight:	4.75	30.16						OTM	668.20	9.05		

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	32 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K							kip-ft			

Tower Forces - Service - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
T1 170.00-150.00	0.12	1.10	A	0.125	2.866	11	0.85	1	7.276	0.36	17.89	C
			B	0.125	2.866		0.85	1	7.276			
			C	0.125	2.866		0.85	1	7.276			
T2 150.00-140.00	0.07	1.07	A	0.254	2.425	11	0.85	1	11.136	0.33	33.40	C
			B	0.254	2.425		0.85	1	11.136			
			C	0.254	2.425		0.85	1	11.136			
T3 140.00-120.00	0.22	2.07	A	0.22	2.532	10	0.85	1	23.437	0.79	39.52	C
			B	0.22	2.532		0.85	1	23.437			
			C	0.22	2.532		0.85	1	23.437			
T4 120.00-100.00	0.58	2.57	A	0.2	2.595	10	0.85	1	27.165	1.18	58.82	C
			B	0.2	2.595		0.85	1	27.165			
			C	0.2	2.595		0.85	1	27.165			
T5 100.00-90.00	0.39	1.37	A	0.171	2.696	10	0.85	1	13.164	0.66	66.24	C
			B	0.171	2.696		0.85	1	13.164			
			C	0.171	2.696		0.85	1	13.164			
T6 90.00-80.00	0.40	1.77	A	0.169	2.702	10	0.85	1	14.469	0.69	69.31	C
			B	0.169	2.702		0.85	1	14.469			
			C	0.169	2.702		0.85	1	14.469			
T7 80.00-60.00	0.81	4.11	A	0.162	2.729	9	0.85	1	31.015	1.41	70.28	C
			B	0.162	2.729		0.85	1	31.015			
			C	0.162	2.729		0.85	1	31.015			
T8 60.00-40.00	0.81	4.65	A	0.154	2.757	9	0.85	1	33.795	1.37	68.58	C
			B	0.154	2.757		0.85	1	33.795			
			C	0.154	2.757		0.85	1	33.795			
T9 40.00-20.00	0.82	5.11	A	0.15	2.772	8	0.85	1	37.959	1.32	65.86	C
			B	0.15	2.772		0.85	1	37.959			
			C	0.15	2.772		0.85	1	37.959			
T10 20.00-0.00	0.54	6.34	A	0.161	2.73	7	0.85	1	46.610	1.08	53.90	C
			B	0.161	2.73		0.85	1	46.610			
			C	0.161	2.73		0.85	1	46.610			
Sum Weight:	4.75	30.16						OTM	676.93 kip-ft	9.19		

Force Totals

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M _x kip-ft	Sum of Overturning Moments, M _z kip-ft	Sum of Torques kip-ft
Leg Weight	18.97					
Bracing Weight	11.19					

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page 33 of 55
	Project	170' Lattice Tower Cromwell, CT	Date 14:29:52 09/11/23
	Client	Verizon	Designed by TJL

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Total Member Self-Weight	30.16			1.48	2.06	
Total Weight	50.67			1.48	2.06	
Wind 0 deg - No Ice		0.04	-71.29	-6442.66	-3.95	-11.82
Wind 30 deg - No Ice		34.66	-59.96	-5467.47	-3160.71	-6.48
Wind 45 deg - No Ice		48.76	-48.73	-4450.07	-4452.04	-3.04
Wind 60 deg - No Ice		59.40	-34.29	-3137.39	-5431.74	0.60
Wind 90 deg - No Ice		69.26	-0.04	-4.52	-6313.08	7.52
Wind 120 deg - No Ice		61.75	35.61	3218.35	-5578.85	12.42
Wind 135 deg - No Ice		49.68	49.65	4507.05	-4506.06	13.68
Wind 150 deg - No Ice		34.60	59.92	5464.43	-3150.32	14.00
Wind 180 deg - No Ice		-0.04	68.53	6268.81	8.06	11.82
Wind 210 deg - No Ice		-34.66	59.96	5470.43	3164.82	6.48
Wind 225 deg - No Ice		-48.76	48.73	4453.02	4456.15	3.04
Wind 240 deg - No Ice		-61.79	35.67	3228.75	5588.97	-0.60
Wind 270 deg - No Ice		-69.26	0.04	7.48	6317.20	-7.52
Wind 300 deg - No Ice		-59.36	-34.23	-3126.99	5429.85	-12.42
Wind 315 deg - No Ice		-48.70	-48.67	-4441.58	4447.66	-13.68
Wind 330 deg - No Ice		-34.60	-59.92	-5461.47	3154.43	-14.00
Member Ice	33.90					
Total Weight Ice	131.11			18.56	13.52	
Wind 0 deg - Ice		0.01	-19.10	-1724.35	12.35	-12.21
Wind 30 deg - Ice		9.45	-16.35	-1479.31	-852.33	-11.77
Wind 45 deg - Ice		13.34	-13.33	-1203.15	-1208.72	-10.33
Wind 60 deg - Ice		16.30	-9.41	-844.58	-1480.97	-8.18
Wind 90 deg - Ice		18.89	-0.01	17.40	-1716.15	-2.40
Wind 120 deg - Ice		16.55	9.54	889.01	-1495.96	4.03
Wind 135 deg - Ice		13.43	13.42	1245.21	-1213.67	6.94
Wind 150 deg - Ice		9.44	16.35	1515.27	-850.31	9.38
Wind 180 deg - Ice		-0.01	18.80	1742.82	14.68	12.21
Wind 210 deg - Ice		-9.45	16.35	1516.43	879.36	11.77
Wind 225 deg - Ice		-13.34	13.33	1240.27	1235.76	10.33
Wind 240 deg - Ice		-16.56	9.56	891.03	1524.16	8.18
Wind 270 deg - Ice		-18.89	0.01	19.73	1743.19	2.40
Wind 300 deg - Ice		-16.29	-9.39	-842.56	1506.83	-4.03
Wind 315 deg - Ice		-13.32	-13.32	-1201.50	1234.11	-6.94
Wind 330 deg - Ice		-9.44	-16.35	-1478.14	877.34	-9.38
Total Weight	50.67			1.48	2.06	
Wind 0 deg - Service		0.01	-14.09	-1280.69	-0.18	-2.31
Wind 30 deg - Service		6.85	-11.85	-1087.93	-624.23	-1.29
Wind 45 deg - Service		9.63	-9.63	-886.81	-879.51	-0.62
Wind 60 deg - Service		11.74	-6.78	-627.31	-1073.18	0.08
Wind 90 deg - Service		13.69	-0.01	-7.99	-1247.41	1.43
Wind 120 deg - Service		12.20	7.04	629.12	-1102.24	2.40
Wind 135 deg - Service		9.82	9.81	883.88	-890.18	2.65
Wind 150 deg - Service		6.84	11.84	1073.14	-622.17	2.72
Wind 180 deg - Service		-0.01	13.54	1232.16	2.19	2.31
Wind 210 deg - Service		-6.85	11.85	1074.33	626.24	1.29
Wind 225 deg - Service		-9.63	9.63	873.20	881.51	0.62
Wind 240 deg - Service		-12.21	7.05	631.17	1105.44	-0.08
Wind 270 deg - Service		-13.69	0.01	-5.62	1249.41	-1.43
Wind 300 deg - Service		-11.73	-6.76	-625.26	1074.00	-2.40
Wind 315 deg - Service		-9.62	-9.62	-885.13	879.84	-2.65
Wind 330 deg - Service		-6.84	-11.84	-1086.75	624.18	-2.72

Load Combinations

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	34 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 45 deg - No Ice
7	0.9 Dead+1.0 Wind 45 deg - No Ice
8	1.2 Dead+1.0 Wind 60 deg - No Ice
9	0.9 Dead+1.0 Wind 60 deg - No Ice
10	1.2 Dead+1.0 Wind 90 deg - No Ice
11	0.9 Dead+1.0 Wind 90 deg - No Ice
12	1.2 Dead+1.0 Wind 120 deg - No Ice
13	0.9 Dead+1.0 Wind 120 deg - No Ice
14	1.2 Dead+1.0 Wind 135 deg - No Ice
15	0.9 Dead+1.0 Wind 135 deg - No Ice
16	1.2 Dead+1.0 Wind 150 deg - No Ice
17	0.9 Dead+1.0 Wind 150 deg - No Ice
18	1.2 Dead+1.0 Wind 180 deg - No Ice
19	0.9 Dead+1.0 Wind 180 deg - No Ice
20	1.2 Dead+1.0 Wind 210 deg - No Ice
21	0.9 Dead+1.0 Wind 210 deg - No Ice
22	1.2 Dead+1.0 Wind 225 deg - No Ice
23	0.9 Dead+1.0 Wind 225 deg - No Ice
24	1.2 Dead+1.0 Wind 240 deg - No Ice
25	0.9 Dead+1.0 Wind 240 deg - No Ice
26	1.2 Dead+1.0 Wind 270 deg - No Ice
27	0.9 Dead+1.0 Wind 270 deg - No Ice
28	1.2 Dead+1.0 Wind 300 deg - No Ice
29	0.9 Dead+1.0 Wind 300 deg - No Ice
30	1.2 Dead+1.0 Wind 315 deg - No Ice
31	0.9 Dead+1.0 Wind 315 deg - No Ice
32	1.2 Dead+1.0 Wind 330 deg - No Ice
33	0.9 Dead+1.0 Wind 330 deg - No Ice
34	1.2 Dead+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
39	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
40	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
41	1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp
42	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
43	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
44	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
45	1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp
46	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
47	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
48	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
49	1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp
50	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
51	Dead+Wind 0 deg - Service
52	Dead+Wind 30 deg - Service
53	Dead+Wind 45 deg - Service
54	Dead+Wind 60 deg - Service
55	Dead+Wind 90 deg - Service
56	Dead+Wind 120 deg - Service
57	Dead+Wind 135 deg - Service
58	Dead+Wind 150 deg - Service
59	Dead+Wind 180 deg - Service
60	Dead+Wind 210 deg - Service
61	Dead+Wind 225 deg - Service
62	Dead+Wind 240 deg - Service

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page 35 of 55
	Project	170' Lattice Tower Cromwell, CT	Date 14:29:52 09/11/23
	Client	Verizon	Designed by TJL

Comb. No.	Description
63	Dead+ Wind 270 deg - Service
64	Dead+ Wind 300 deg - Service
65	Dead+ Wind 315 deg - Service
66	Dead+ Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	170 - 150	Leg	Max Tension	9	25.85	-0.04	0.04
			Max. Compression	2	-29.85	0.00	0.34
			Max. Mx	26	-2.13	-0.31	-0.00
			Max. My	2	-29.85	0.00	0.34
			Max. Vy	24	-2.62	0.26	-0.23
			Max. Vx	2	-3.35	0.00	0.34
		Diagonal	Max Tension	30	2.97	0.00	0.00
			Max. Compression	14	-3.01	0.00	0.00
			Max. Mx	35	0.67	-0.01	0.00
			Max. My	28	-2.27	-0.00	0.00
			Max. Vy	35	0.01	-0.01	0.00
			Max. Vx	28	0.00	0.00	0.00
		Top Girt	Max Tension	3	0.04	0.00	0.00
			Max. Compression	24	-0.06	0.00	0.00
			Max. Mx	34	-0.03	0.02	0.00
			Max. My	26	0.02	0.00	-0.00
			Max. Vy	34	-0.02	0.00	0.00
			Max. Vx	26	0.00	0.00	0.00
		Bottom Girt	Max Tension	8	0.16	0.00	0.00
			Max. Compression	2	-0.16	0.00	0.00
			Max. Mx	34	-0.01	0.02	0.00
			Max. My	26	-0.01	0.00	-0.00
			Max. Vy	34	-0.02	0.00	0.00
			Max. Vx	26	0.00	0.00	0.00
T2	150 - 140	Leg	Max Tension	9	28.86	-0.32	0.06
			Max. Compression	2	-33.43	2.74	0.32
			Max. Mx	8	28.40	-3.05	0.81
			Max. My	26	-3.19	-0.17	-4.25
			Max. Vy	18	0.54	-3.02	-0.33
			Max. Vx	26	0.97	-0.17	-4.25
		Diagonal	Max Tension	29	4.45	0.00	0.00
			Max. Compression	12	-4.88	0.00	0.00
			Max. Mx	8	1.83	0.04	0.01
			Max. My	12	-4.86	-0.02	0.02
			Max. Vy	38	0.02	0.03	0.01
			Max. Vx	28	0.01	0.00	0.00
		Top Girt	Max Tension	8	0.40	0.00	0.00
			Max. Compression	3	-0.36	0.00	0.00
			Max. Mx	34	0.04	-0.05	0.00
			Max. My	47	0.04	0.00	0.00
			Max. Vy	34	-0.04	0.00	0.00
			Max. Vx	47	-0.00	0.00	0.00
T3	140 - 120	Leg	Max Tension	29	54.70	-3.65	-0.05
			Max. Compression	2	-64.38	3.29	-0.10
			Max. Mx	28	53.05	-3.95	-0.08
			Max. My	4	-4.56	-0.39	-5.50
			Max. Vy	18	0.95	-3.61	-0.41
			Max. Vx	24	1.12	-1.78	-3.25
		Diagonal	Max Tension	6	8.79	0.00	0.00

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page 36 of 55
	Project	170' Lattice Tower Cromwell, CT	Date 14:29:52 09/11/23
	Client	Verizon	Designed by TJL

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T4	120 - 100	Leg	Max. Compression	22	-9.04	0.00	0.00
			Max. Mx	2	4.21	0.11	0.01
			Max. My	8	-5.99	-0.03	0.03
			Max. Vy	35	-0.04	0.09	0.01
			Max. Vx	8	-0.01	0.00	0.00
			Max Tension	9	95.41	-4.64	-0.03
			Max. Compression	2	-110.51	2.70	-0.03
			Max. Mx	2	-86.46	5.33	-0.01
			Max. My	4	-7.30	-0.37	-5.50
			Max. Vy	2	-1.09	5.33	-0.01
		Diagonal	Max. Vx	4	-1.39	-0.39	-5.50
			Max Tension	7	10.84	0.00	0.00
			Max. Compression	22	-11.47	0.00	0.00
			Max. Mx	2	5.98	0.10	0.01
			Max. My	22	-11.44	-0.05	-0.04
		Mid Girt	Max. Vy	38	0.05	0.08	0.01
			Max. Vx	6	-0.01	0.00	0.00
			Max Tension	8	3.06	0.00	0.00
			Max. Compression	3	-2.56	0.00	0.00
			Max. Mx	34	0.73	-0.14	0.00
T5	100 - 90	Leg	Max. My	46	1.03	0.00	0.00
			Max. Vy	34	0.06	0.00	0.00
			Max. Vx	46	0.00	0.00	0.00
			Max Tension	9	121.89	-3.22	0.05
			Max. Compression	2	-140.27	4.75	0.01
			Max. Mx	2	-140.27	4.75	0.01
			Max. My	4	-8.13	-0.37	-5.50
			Max. Vy	8	-1.70	-3.32	0.06
			Max. Vx	32	1.92	-0.37	5.45
		Diagonal	Max Tension	20	12.69	0.00	0.00
			Max. Compression	20	-12.87	0.00	0.00
			Max. Mx	2	9.74	0.14	0.01
			Max. My	46	-0.09	0.08	-0.02
			Max. Vy	35	-0.06	0.13	0.01
		Leg	Max. Vx	46	0.00	0.00	0.00
			Max Tension	9	148.83	-4.49	0.03
			Max. Compression	2	-170.04	4.47	-0.01
			Max. Mx	2	-169.26	4.75	0.01
			Max. My	26	-10.25	0.11	-4.46
			Max. Vy	18	0.34	-4.43	0.00
			Max. Vx	10	-0.34	-0.01	3.68
		Diagonal	Max Tension	20	12.79	0.00	0.00
			Max. Compression	20	-13.09	0.00	0.00
			Max. Mx	2	10.19	0.18	0.01
			Max. My	38	2.38	0.13	0.02
			Max. Vy	35	-0.07	0.16	0.02
T6	90 - 80	Leg	Max. Vx	38	-0.00	0.00	0.00
			Max Tension	9	200.54	-4.50	-0.04
			Max. Compression	2	-226.44	4.97	0.02
			Max. Mx	2	-226.44	4.97	0.02
			Max. My	32	-12.43	0.01	4.63
			Max. Vy	8	0.22	-4.84	-0.03
			Max. Vx	14	0.33	-1.21	-4.42
		Diagonal	Max Tension	20	13.04	0.00	0.00
			Max. Compression	20	-13.31	0.00	0.00
			Max. Mx	35	2.66	0.16	0.02
			Max. My	38	-3.19	0.11	0.02
			Max. Vy	48	0.08	0.16	0.02
		Leg	Max. Vx	38	-0.01	0.00	0.00
			Max Tension	9	248.81	-4.66	-0.04
			Max. Compression	24	-280.14	5.82	0.02
T7	80 - 60	Leg					
		Diagonal					
T8	60 - 40	Leg					
		Diagonal					

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	37 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T9	40 - 20	Diagonal	Max. Mx	2	-279.92	5.83	0.05
			Max. My	32	-13.63	-0.12	5.41
			Max. Vy	2	-0.30	5.83	0.05
			Max. Vx	14	0.31	-1.32	-5.26
			Max Tension	20	13.30	0.00	0.00
			Max. Compression	20	-13.71	0.00	0.00
			Max. Mx	46	2.83	0.20	-0.02
			Max. My	45	0.89	0.16	-0.03
		Leg	Max. Vy	48	0.09	0.19	0.02
			Max. Vx	45	-0.01	0.00	0.00
			Max Tension	9	294.42	-4.77	-0.03
			Max. Compression	24	-331.88	6.96	0.01
			Max. Mx	48	43.10	-8.35	0.04
			Max. My	20	-15.70	-0.21	5.42
			Max. Vy	38	1.08	-8.35	0.03
			Max. Vx	14	-0.31	-1.41	-5.29
		Diagonal	Max Tension	4	13.76	0.00	0.00
			Max. Compression	4	-14.24	0.00	0.00
			Max. Mx	46	2.61	0.24	-0.03
			Max. My	35	-0.94	0.22	0.03
			Max. Vy	43	0.11	0.23	-0.03
			Max. Vx	35	-0.01	0.00	0.00
			Max Tension	9	336.91	-5.28	-0.01
			Max. Compression	24	-381.15	0.00	-0.00
T10	20 - 0	Leg	Max. Mx	46	-134.64	11.32	-0.01
			Max. My	20	-18.34	-0.44	9.67
			Max. Vy	38	-1.75	-8.35	0.03
			Max. Vx	16	-1.13	-0.43	-9.64
			Max Tension	7	14.93	0.00	0.00
			Max. Compression	12	-15.58	0.00	0.00
			Max. Mx	46	0.45	0.43	-0.04
			Max. My	43	-6.38	0.33	-0.05
		Diagonal	Max. Vy	43	0.15	0.43	-0.04
			Max. Vx	43	0.01	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	24	394.58	39.17	-22.59
	Max. H _x	24	394.58	39.17	-22.59
	Max. H _z	7	-337.04	-33.72	20.73
	Min. Vert	9	-348.17	-35.35	20.39
	Min. H _x	9	-348.17	-35.35	20.39
	Min. H _z	24	394.58	39.17	-22.59
Leg B	Max. Vert	12	393.73	-39.29	-22.28
	Max. H _x	29	-347.75	35.49	20.07
	Max. H _z	31	-336.55	33.92	20.28
	Min. Vert	29	-347.75	35.49	20.07
	Min. H _x	12	393.73	-39.29	-22.28
	Min. H _z	12	393.73	-39.29	-22.28
Leg A	Max. Vert	2	393.85	-0.34	45.17
	Max. H _x	27	14.78	3.58	1.27
	Max. H _z	2	393.85	-0.34	45.17
	Min. Vert	19	-347.91	0.34	-40.77
	Min. H _x	11	15.48	-3.58	1.32

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	38 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. H _z	19	-347.91	0.34	-40.77

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturing Moment, M _x kip-ft	Overturing Moment, M _z kip-ft	Torque kip-ft
Dead Only	50.67	0.00	0.00	1.47	2.06	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	60.80	0.04	-71.29	-6470.62	-3.52	-11.84
0.9 Dead+1.0 Wind 0 deg - No Ice	45.60	0.04	-71.29	-6463.95	-4.14	-11.84
1.2 Dead+1.0 Wind 30 deg - No Ice	60.80	34.66	-59.96	-5491.31	-3174.19	-6.51
0.9 Dead+1.0 Wind 30 deg - No Ice	45.60	34.66	-59.96	-5485.68	-3171.31	-6.50
1.2 Dead+1.0 Wind 45 deg - No Ice	60.80	48.76	-48.73	-4469.47	-4471.23	-3.08
0.9 Dead+1.0 Wind 45 deg - No Ice	45.60	48.76	-48.73	-4464.95	-4466.90	-3.07
1.2 Dead+1.0 Wind 60 deg - No Ice	60.80	59.40	-34.29	-3151.03	-5455.27	0.55
0.9 Dead+1.0 Wind 60 deg - No Ice	45.60	59.40	-34.29	-3147.96	-5449.85	0.56
1.2 Dead+1.0 Wind 90 deg - No Ice	60.80	69.26	-0.04	-4.36	-6340.44	7.45
0.9 Dead+1.0 Wind 90 deg - No Ice	45.60	69.26	-0.04	-4.77	-6334.08	7.47
1.2 Dead+1.0 Wind 120 deg - No Ice	60.80	61.75	35.61	3232.66	-5602.85	12.39
0.9 Dead+1.0 Wind 120 deg - No Ice	45.60	61.75	35.61	3228.70	-5597.33	12.40
1.2 Dead+1.0 Wind 135 deg - No Ice	60.80	49.68	49.65	4527.06	-4525.40	13.67
0.9 Dead+1.0 Wind 135 deg - No Ice	45.60	49.68	49.65	4521.66	-4521.04	13.68
1.2 Dead+1.0 Wind 150 deg - No Ice	60.80	34.60	59.92	5488.72	-3163.72	14.00
0.9 Dead+1.0 Wind 150 deg - No Ice	45.60	34.60	59.92	5482.25	-3160.86	14.00
1.2 Dead+1.0 Wind 180 deg - No Ice	60.80	-0.04	68.53	6296.69	8.57	11.84
0.9 Dead+1.0 Wind 180 deg - No Ice	45.60	-0.04	68.53	6289.31	7.93	11.83
1.2 Dead+1.0 Wind 210 deg - No Ice	60.80	-34.66	59.96	5494.72	3179.21	6.51
0.9 Dead+1.0 Wind 210 deg - No Ice	45.60	-34.66	59.96	5488.25	3175.08	6.50
1.2 Dead+1.0 Wind 225 deg - No Ice	60.80	-48.76	48.73	4472.84	4476.22	3.08
0.9 Dead+1.0 Wind 225 deg - No Ice	45.60	-48.76	48.73	4467.48	4470.65	3.06
1.2 Dead+1.0 Wind 240 deg - No Ice	60.80	-61.79	35.67	3243.09	5613.88	-0.54
0.9 Dead+1.0 Wind 240 deg - No Ice	45.60	-61.79	35.67	3239.11	5607.10	-0.56
1.2 Dead+1.0 Wind 270 deg -	60.80	-69.26	0.04	7.73	6345.41	-7.45

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	39 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
No Ice						
0.9 Dead+1.0 Wind 270 deg - No Ice	45.60	-69.26	0.04	7.30	6337.80	-7.47
1.2 Dead+1.0 Wind 300 deg - No Ice	60.80	-59.36	-34.23	-3140.53	5454.21	-12.39
0.9 Dead+1.0 Wind 300 deg - No Ice	45.60	-59.36	-34.23	-3137.48	5447.55	-12.40
1.2 Dead+1.0 Wind 315 deg - No Ice	60.80	-48.70	-48.67	-4460.88	4467.69	-13.66
0.9 Dead+1.0 Wind 315 deg - No Ice	45.60	-48.70	-48.67	-4456.38	4462.13	-13.67
1.2 Dead+1.0 Wind 330 deg - No Ice	60.80	-34.60	-59.92	-5485.24	3168.75	-14.00
0.9 Dead+1.0 Wind 330 deg - No Ice	45.60	-34.60	-59.92	-5479.61	3164.63	-14.00
1.2 Dead+1.0 Ice+1.0 Temp	141.24	0.00	-0.00	18.63	13.95	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	141.24	0.01	-19.10	-1741.69	12.84	-12.22
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	141.24	9.45	-16.35	-1494.24	-860.51	-11.79
1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp	141.24	13.34	-13.33	-1215.32	-1220.47	-10.36
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	141.24	16.30	-9.41	-853.16	-1495.46	-8.21
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	141.24	18.89	-0.01	17.45	-1732.99	-2.42
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	141.24	16.55	9.54	897.78	-1510.55	4.01
1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp	141.24	13.43	13.42	1257.57	-1225.45	6.93
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	141.24	9.44	16.35	1530.34	-858.46	9.37
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	141.24	-0.01	18.80	1760.18	15.21	12.22
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	141.24	-9.45	16.35	1531.51	888.55	11.79
1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp	141.24	-13.34	13.33	1252.59	1248.51	10.35
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	141.24	-16.56	9.56	899.82	1539.77	8.21
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	141.24	-18.89	0.01	19.82	1761.02	2.42
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	141.24	-16.29	-9.39	-851.10	1522.31	-4.01
1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp	141.24	-13.32	-13.32	-1213.63	1246.84	-6.93
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	141.24	-9.44	-16.35	-1493.05	886.50	-9.37
Dead+Wind 0 deg - Service	50.67	0.01	-14.09	-1277.12	0.88	-2.32
Dead+Wind 30 deg - Service	50.67	6.85	-11.85	-1083.67	-625.47	-1.30
Dead+Wind 45 deg - Service	50.67	9.63	-9.63	-881.81	-881.69	-0.63
Dead+Wind 60 deg - Service	50.67	11.74	-6.78	-621.36	-1076.08	0.07
Dead+Wind 90 deg - Service	50.67	13.69	-0.01	0.25	-1250.94	1.43
Dead+Wind 120 deg - Service	50.67	12.20	7.04	639.69	-1105.22	2.39
Dead+Wind 135 deg - Service	50.67	9.82	9.81	895.39	-892.39	2.64
Dead+Wind 150 deg - Service	50.67	6.84	11.84	1085.37	-623.40	2.72
Dead+Wind 180 deg - Service	50.67	-0.01	13.54	1244.98	3.26	2.32
Dead+Wind 210 deg - Service	50.67	-6.85	11.85	1086.56	629.61	1.30
Dead+Wind 225 deg - Service	50.67	-9.63	9.63	884.69	885.83	0.64
Dead+Wind 240 deg - Service	50.67	-12.21	7.05	641.75	1110.55	-0.07
Dead+Wind 270 deg - Service	50.67	-13.69	0.01	2.63	1255.08	-1.43

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page 40 of 55
	Project	170' Lattice Tower Cromwell, CT	Date 14:29:52 09/11/23
	Client	Verizon	Designed by TJL

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead+Wind 300 deg - Service	50.67	-11.73	-6.76	-619.29	1079.03	-2.39
Dead+Wind 315 deg - Service	50.67	-9.62	-9.62	-880.13	884.14	-2.64
Dead+Wind 330 deg - Service	50.67	-6.84	-11.84	-1082.48	627.54	-2.72

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-50.67	0.00	0.00	50.67	0.00	0.000%
2	0.04	-60.80	-71.29	-0.04	60.80	71.29	0.000%
3	0.04	-45.60	-71.29	-0.04	45.60	71.29	0.000%
4	34.66	-60.80	-59.96	-34.66	60.80	59.96	0.000%
5	34.66	-45.60	-59.96	-34.66	45.60	59.96	0.000%
6	48.76	-60.80	-48.73	-48.76	60.80	48.73	0.000%
7	48.76	-45.60	-48.73	-48.76	45.60	48.73	0.000%
8	59.40	-60.80	-34.29	-59.40	60.80	34.29	0.000%
9	59.40	-45.60	-34.29	-59.40	45.60	34.29	0.000%
10	69.26	-60.80	-0.04	-69.26	60.80	0.04	0.000%
11	69.26	-45.60	-0.04	-69.26	45.60	0.04	0.000%
12	61.75	-60.80	35.61	-61.75	60.80	-35.61	0.000%
13	61.75	-45.60	35.61	-61.75	45.60	-35.61	0.000%
14	49.68	-60.80	49.65	-49.68	60.80	-49.65	0.000%
15	49.68	-45.60	49.65	-49.68	45.60	-49.65	0.000%
16	34.60	-60.80	59.92	-34.60	60.80	-59.92	0.002%
17	34.60	-45.60	59.92	-34.60	45.60	-59.92	0.000%
18	-0.04	-60.80	68.53	0.04	60.80	-68.53	0.000%
19	-0.04	-45.60	68.53	0.04	45.60	-68.53	0.000%
20	-34.66	-60.80	59.96	34.66	60.80	-59.96	0.000%
21	-34.66	-45.60	59.96	34.66	45.60	-59.96	0.000%
22	-48.76	-60.80	48.73	48.76	60.80	-48.73	0.000%
23	-48.76	-45.60	48.73	48.76	45.60	-48.73	0.000%
24	-61.79	-60.80	35.67	61.79	60.80	-35.67	0.000%
25	-61.79	-45.60	35.67	61.79	45.60	-35.67	0.000%
26	-69.26	-60.80	0.04	69.26	60.80	-0.04	0.000%
27	-69.26	-45.60	0.04	69.26	45.60	-0.04	0.000%
28	-59.36	-60.80	-34.23	59.36	60.80	34.23	0.000%
29	-59.36	-45.60	-34.23	59.36	45.60	34.23	0.000%
30	-48.70	-60.80	-48.67	48.70	60.80	48.67	0.000%
31	-48.70	-45.60	-48.67	48.70	45.60	48.67	0.000%
32	-34.60	-60.80	-59.92	34.60	60.80	59.92	0.002%
33	-34.60	-45.60	-59.92	34.60	45.60	59.92	0.000%
34	0.00	-141.24	0.00	-0.00	141.24	0.00	0.000%
35	0.01	-141.24	-19.10	-0.01	141.24	19.10	0.000%
36	9.45	-141.24	-16.35	-9.45	141.24	16.35	0.000%
37	13.34	-141.24	-13.33	-13.34	141.24	13.33	0.000%
38	16.30	-141.24	-9.41	-16.30	141.24	9.41	0.000%
39	18.89	-141.24	-0.01	-18.89	141.24	0.01	0.000%
40	16.55	-141.24	9.54	-16.55	141.24	-9.54	0.000%
41	13.43	-141.24	13.42	-13.43	141.24	-13.42	0.000%
42	9.44	-141.24	16.35	-9.44	141.24	-16.35	0.000%
43	-0.01	-141.24	18.80	0.01	141.24	-18.80	0.000%
44	-9.45	-141.24	16.35	9.45	141.24	-16.35	0.000%
45	-13.34	-141.24	13.33	13.34	141.24	-13.33	0.000%
46	-16.56	-141.24	9.56	16.56	141.24	-9.56	0.000%
47	-18.89	-141.24	0.01	18.89	141.24	-0.01	0.000%
48	-16.29	-141.24	-9.39	16.29	141.24	9.39	0.000%
49	-13.32	-141.24	-13.32	13.32	141.24	13.32	0.000%

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	41 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
50	-9.44	-141.24	-16.35	9.44	141.24	16.35	0.000%
51	0.01	-50.67	-14.09	-0.01	50.67	14.09	0.000%
52	6.85	-50.67	-11.85	-6.85	50.67	11.85	0.000%
53	9.63	-50.67	-9.63	-9.63	50.67	9.63	0.000%
54	11.74	-50.67	-6.78	-11.74	50.67	6.78	0.000%
55	13.69	-50.67	-0.01	-13.69	50.67	0.01	0.000%
56	12.20	-50.67	7.04	-12.20	50.67	-7.04	0.000%
57	9.82	-50.67	9.81	-9.82	50.67	-9.81	0.000%
58	6.84	-50.67	11.84	-6.84	50.67	-11.84	0.000%
59	-0.01	-50.67	13.54	0.01	50.67	-13.54	0.000%
60	-6.85	-50.67	11.85	6.85	50.67	-11.85	0.000%
61	-9.63	-50.67	9.63	9.63	50.67	-9.63	0.000%
62	-12.21	-50.67	7.05	12.21	50.67	-7.05	0.000%
63	-13.69	-50.67	0.01	13.69	50.67	-0.01	0.000%
64	-11.73	-50.67	-6.76	11.73	50.67	6.76	0.000%
65	-9.62	-50.67	-9.62	9.62	50.67	9.62	0.000%
66	-6.84	-50.67	-11.84	6.84	50.67	11.84	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00000001
3	Yes	4	0.00000001	0.00000001
4	Yes	4	0.00000001	0.00000001
5	Yes	4	0.00000001	0.00000001
6	Yes	4	0.00000001	0.00000001
7	Yes	4	0.00000001	0.00000001
8	Yes	4	0.00000001	0.00000001
9	Yes	4	0.00000001	0.00000001
10	Yes	4	0.00000001	0.00000001
11	Yes	4	0.00000001	0.00000001
12	Yes	4	0.00000001	0.00000001
13	Yes	4	0.00000001	0.00000001
14	Yes	4	0.00000001	0.00000001
15	Yes	4	0.00000001	0.00000001
16	Yes	4	0.00000001	0.00000160
17	Yes	4	0.00000001	0.00000001
18	Yes	4	0.00000001	0.00000001
19	Yes	4	0.00000001	0.00000001
20	Yes	4	0.00000001	0.00000001
21	Yes	4	0.00000001	0.00000001
22	Yes	4	0.00000001	0.00000001
23	Yes	4	0.00000001	0.00000001
24	Yes	4	0.00000001	0.00000001
25	Yes	4	0.00000001	0.00000001
26	Yes	4	0.00000001	0.00000001
27	Yes	4	0.00000001	0.00000001
28	Yes	4	0.00000001	0.00000001
29	Yes	4	0.00000001	0.00000001
30	Yes	4	0.00000001	0.00000001
31	Yes	4	0.00000001	0.00000001
32	Yes	4	0.00000001	0.00000160
33	Yes	4	0.00000001	0.00000001
34	Yes	4	0.00000001	0.00000001

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	42 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

35	Yes	4	0.00000001	0.00000355
36	Yes	4	0.00000001	0.00000364
37	Yes	4	0.00000001	0.00000371
38	Yes	4	0.00000001	0.00000372
39	Yes	4	0.00000001	0.00000359
40	Yes	4	0.00000001	0.00000344
41	Yes	4	0.00000001	0.00000344
42	Yes	4	0.00000001	0.00000349
43	Yes	4	0.00000001	0.00000357
44	Yes	4	0.00000001	0.00000350
45	Yes	4	0.00000001	0.00000346
46	Yes	4	0.00000001	0.00000346
47	Yes	4	0.00000001	0.00000360
48	Yes	4	0.00000001	0.00000372
49	Yes	4	0.00000001	0.00000371
50	Yes	4	0.00000001	0.00000364
51	Yes	4	0.00000001	0.00000001
52	Yes	4	0.00000001	0.00000001
53	Yes	4	0.00000001	0.00000001
54	Yes	4	0.00000001	0.00000001
55	Yes	4	0.00000001	0.00000001
56	Yes	4	0.00000001	0.00000001
57	Yes	4	0.00000001	0.00000001
58	Yes	4	0.00000001	0.00000001
59	Yes	4	0.00000001	0.00000001
60	Yes	4	0.00000001	0.00000001
61	Yes	4	0.00000001	0.00000001
62	Yes	4	0.00000001	0.00000001
63	Yes	4	0.00000001	0.00000001
64	Yes	4	0.00000001	0.00000001
65	Yes	4	0.00000001	0.00000001
66	Yes	4	0.00000001	0.00000001

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	170 - 150	3.448	51	0.1903	0.0512
T2	150 - 140	2.664	51	0.1727	0.0350
T3	140 - 120	2.307	51	0.1619	0.0257
T4	120 - 100	1.672	51	0.1341	0.0121
T5	100 - 90	1.141	51	0.1086	0.0050
T6	90 - 80	0.920	51	0.0929	0.0035
T7	80 - 60	0.730	62	0.0809	0.0026
T8	60 - 40	0.413	62	0.0605	0.0015
T9	40 - 20	0.187	62	0.0369	0.0010
T10	20 - 0	0.053	62	0.0170	0.0005

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
170.00	DS1F03F36U-D Omni Antenna	51	3.448	0.1903	0.0512	156326
168.00	9 Arm Halo Mount	51	3.367	0.1886	0.0497	156326

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	43 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
ft						
158.50	SC420-HF1LDF	51	2.989	0.1805	0.0427	67968
144.00	2.5" x 20'6" Whip	51	2.446	0.1665	0.0291	42646
141.00	2" Dia 15' Omni	51	2.341	0.1631	0.0265	44448
139.00	1.5" x 10' Omni	51	2.272	0.1607	0.0249	45313
138.50	9' Whip	51	2.255	0.1600	0.0245	45470
135.00	HPD2-4.7	51	2.138	0.1553	0.0217	46174
134.00	VHLP2.5-180	51	2.105	0.1539	0.0210	46329
125.00	PiROD 10' Lightweight T-Frame	51	1.821	0.1410	0.0149	47776
115.00	Sabre 12" HD V-Boom	51	1.529	0.1278	0.0098	45976
101.50	MT6413-77A	51	1.177	0.1108	0.0054	40075
100.00	LNK-6514DS	51	1.141	0.1086	0.0050	39484
98.50	PiROD 12' Lightweight T-Frame	51	1.106	0.1063	0.0047	38888
98.00	XXDWMM-12.5-65-8T	51	1.095	0.1055	0.0046	38690
87.00	3"x2"x22" Panel	62	0.860	0.0889	0.0032	41372
84.50	TMA	62	0.812	0.0859	0.0030	47344
83.50	3' Stand-off	62	0.794	0.0847	0.0029	50248
83.00	3' Dish	62	0.785	0.0842	0.0028	51759
82.50	TMA	62	0.775	0.0836	0.0028	53280
80.00	TMA	62	0.730	0.0809	0.0026	59838
30.00	Camera	62	0.108	0.0264	0.0007	50845
24.00	PC9013N	62	0.072	0.0207	0.0006	49390

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	170 - 150	17.228	2	0.9328	0.2512
T2	150 - 140	13.366	2	0.8537	0.1734
T3	140 - 120	11.597	2	0.8030	0.1286
T4	120 - 100	8.433	24	0.6716	0.0606
T5	100 - 90	5.770	24	0.5464	0.0251
T6	90 - 80	4.655	24	0.4683	0.0176
T7	80 - 60	3.693	24	0.4085	0.0130
T8	60 - 40	2.091	24	0.3059	0.0085
T9	40 - 20	0.947	24	0.1867	0.0051
T10	20 - 0	0.269	24	0.0860	0.0025

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
170.00	DS1F03F36U-D Omni Antenna	2	17.228	0.9328	0.2512	34011
168.00	9 Arm Halo Mount	2	16.833	0.9254	0.2444	34011
158.50	SC420-HF1LDF	2	14.971	0.8894	0.2103	14787
144.00	2.5" x 20'6" Whip	2	12.289	0.8249	0.1454	9165
141.00	2" Dia 15' Omni	2	11.768	0.8087	0.1328	9495
139.00	1.5" x 10' Omni	2	11.427	0.7971	0.1245	9652
138.50	9' Whip	2	11.343	0.7941	0.1225	9681
135.00	HPD2-4.7	2	10.760	0.7721	0.1088	9802
134.00	VHLP2.5-180	2	10.596	0.7655	0.1051	9826

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	44 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
125.00	PiROD 10' Lightweight T-Frame	2	9.178	0.7044	0.0746	10047
115.00	Sabre 12" HD V-Boom	24	7.718	0.6414	0.0487	9500
101.50	MT6413-77A	24	5.950	0.5574	0.0267	8057
100.00	LNK-6514DS	24	5.770	0.5464	0.0251	7924
98.50	PiROD 12' Lightweight T-Frame	24	5.592	0.5349	0.0236	7795
98.00	XXDWMM-12.5-65-8T	24	5.534	0.5310	0.0231	7753
87.00	3"x2"x22" Panel	24	4.353	0.4482	0.0160	8270
84.50	TMA	24	4.110	0.4331	0.0149	9460
83.50	3' Stand-off	24	4.016	0.4274	0.0144	10039
83.00	3' Dish	24	3.969	0.4246	0.0142	10340
82.50	TMA	24	3.922	0.4218	0.0140	10642
80.00	TMA	24	3.693	0.4085	0.0130	11944
30.00	Camera	24	0.548	0.1334	0.0038	10057
24.00	PC9013N	24	0.366	0.1044	0.0030	9773

Bolt Design Data

Section No.	Elevation	Component Type	Bolt Grade	Bolt Size	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria
	ft			in						
T1	170	Diagonal	A325N	0.6250	1	3.01	13.81	0.218	✓	1 Bolt Shear
T2	150	Leg	A325N	1.0000	6	4.81	54.52	0.088	✓	1 Bolt Tension
		Diagonal	A325N	1.0000	1	4.45	10.66	0.417	✓	1 Member Block Shear
		Top Girt	A325N	1.0000	1	0.58	10.16	0.057	✓	1 Member Block Shear
T3	140	Leg	A325N	1.0000	6	6.72	54.52	0.123	✓	1 Bolt Tension
		Diagonal	A325N	1.0000	1	8.79	18.89	0.465	✓	1 Member Block Shear
T4	120	Leg	A325N	1.0000	6	12.30	54.52	0.226	✓	1 Bolt Tension
		Diagonal	A325N	1.0000	1	10.84	15.58	0.696	✓	1 Member Block Shear
		Mid Girt	A325N	1.0000	1	3.06	10.16	0.301	✓	1 Member Block Shear
T5	100	Leg	A325N	1.0000	6	20.31	54.52	0.373	✓	1 Bolt Tension
		Diagonal	A325N	1.0000	1	12.69	19.47	0.652	✓	1 Member Block Shear
T6	90	Diagonal	A325N	1.0000	1	12.79	22.85	0.560	✓	1 Member Block Shear
T7	80	Leg	A325N	1.0000	6	29.18	54.52	0.535	✓	1 Bolt Tension
		Diagonal	A325N	1.0000	1	13.04	22.85	0.571	✓	1 Member Block Shear
T8	60	Leg	A490N	1.0000	6	37.53	68.15	0.551	✓	1 Bolt Tension
		Diagonal	A325N	1.2500	1	13.30	20.54	0.647	✓	1 Member Block Shear
T9	40	Leg	A325N	1.2500	6	45.37	87.22	0.520	✓	1 Bolt Tension
		Diagonal	A325N	1.2500	1	13.76	23.23	0.592	✓	1 Member Block Shear
T10	20	Leg	A325N	1.2500	6	52.81	87.22	0.606	✓	1 Bolt Tension
		Diagonal	A325N	1.2500	1	14.93	36.56	0.408	✓	1 Member Block Shear

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	45 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

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

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	170 - 150	1 3/4	20.00	2.49	68.3 K=1.00	2.4053	-29.85	76.97	0.388 ¹
T2	150 - 140	Pirod 105244	10.02	10.02	45.4 K=1.00	3.6816	-33.43	142.49	0.235 ¹
T3	140 - 120	Pirod 105216	20.03	10.02	45.4 K=1.00	3.6816	-64.38	142.49	0.452 ¹
T4	120 - 100	Pirod 105217	20.03	10.02	37.8 K=1.00	5.3014	-110.51	214.86	0.514 ¹
T5	100 - 90	Pirod 105217	10.02	10.02	37.8 K=1.00	5.3014	-140.27	214.86	0.653 ¹
T6	90 - 80	Pirod 105217 reinf w/ 1" dia bar	10.02	10.02	57.7 K=1.00	7.6570	-170.04	270.18	0.629 ¹
T7	80 - 60	Pirod 105218 reinf w/ 1" dia bar	20.03	10.02	52.4 K=1.00	9.9280	-226.44	365.45	0.620 ¹
T8	60 - 40	Pirod 105219	20.03	10.02	28.4 K=1.00	9.4248	-280.14	399.87	0.701 ¹
T9	40 - 20	Pirod 105219 reinf w /1" dia bar	20.03	10.02	50.5 K=1.00	11.7803	-331.88	439.99	0.754 ¹
T10	20 - 0	Pirod 105220 reinf w/ 1" dia bar	20.03	10.02	47.6 K=1.00	14.2843	-381.15	544.59	0.700 ¹

¹ P_u / φP_n controls

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L _d ft	Kl/r	φP _n K	A in ²	V _u K	φV _n K	Stress Ratio
T2	150 - 140	0.5	1.48	121.0	165.67	0.1963	0.97	3.39	0.286
T3	140 - 120	0.5	1.48	121.0	165.67	0.1963	1.23	3.29	0.374
T4	120 - 100	0.5	1.47	120.0	238.57	0.1963	1.40	3.34	0.419
T5	100 - 90	0.5	1.47	120.0	238.57	0.1963	1.94	3.34	0.581

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	46 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Section No.	Elevation ft	Diagonal Size	L_d ft	KL/r	ϕP_n K	A in ²	V_u K	ϕV_n K	Stress Ratio
T6	90 - 80	0.5	1.46	118.8	344.57	0.1963	0.37	3.39	0.110
T7	80 - 60	0.5	1.44	117.8	446.76	0.1963	0.34	3.43	0.099
T8	60 - 40	0.625	1.45	94.4	424.12	0.3068	0.32	6.96	0.046
T9	40 - 20	0.625	1.44	93.7	530.11	0.3068	1.08	8.13	0.132
T10	20 - 0	0.625	1.42	93.0	642.79	0.3068	1.75	7.06	0.248

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	KL/r	A in ²	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	170 - 150	7/8	5.59	2.71	133.9 K=0.90	0.6013	-3.01	7.58	0.397 ¹
T2	150 - 140	L2 1/2x2 1/2x3/16	11.42	4.98	120.8 K=1.00	0.9020	-4.88	17.58	0.278 ¹
T3	140 - 120	L3x3x1/4	12.50	5.63	115.5 K=1.01	1.4400	-9.04	30.87	0.293 ¹
T4	120 - 100	L3x3x1/4	13.80	6.33	128.3 K=1.00	1.4400	-11.47	25.06	0.458 ¹
T5	100 - 90	L3x3x5/16	14.50	6.70	136.5 K=1.00	1.7800	-12.87	27.36	0.470 ¹
T6	90 - 80	L3 1/2x3 1/2x5/16	15.24	7.12	123.9 K=1.00	2.0900	-13.09	38.98	0.336 ¹
T7	80 - 60	L3 1/2x3 1/2x5/16	16.80	7.92	137.8 K=1.00	2.0900	-13.31	31.50	0.423 ¹
T8	60 - 40	L3 1/2x3 1/2x5/16	18.45	8.73	151.8 K=1.00	2.0900	-13.71	25.96	0.528 ¹
T9	40 - 20	L4x4x5/16	20.16	9.59	145.5 K=1.00	2.4000	-14.24	32.43	0.439 ¹
T10	20 - 0	L5x5x5/16	21.92	10.43	125.9 K=1.00	3.0300	-15.58	54.73	0.285 ¹

¹ $P_u / \phi P_n$ controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	KL/r	A in ²	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	170 - 150	7/8	5.00	4.85	186.4 K=0.70	0.6013	-0.06	3.91	0.016 ¹
T2	150 - 140	L3x3x3/16	5.00	3.67	96.9 K=1.31	1.0900	-0.58	27.09	0.021 ¹

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	47 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in ²	K	K	

¹ P_u / φP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in ²	K	K	
T1	170 - 150	7/8	5.00	4.85	186.4 K=0.70	0.6013	-0.52	3.91	0.132 ¹

¹ P_u / φP_n controls

Mid Girt Design Data (Compression)

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in ²	K	K	
T4	120 - 100	L3x3x3/16	9.00	7.67	154.4 K=1.00	1.0900	-2.56	13.09	0.196 ¹

¹ P_u / φP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in ²	K	K	
T1	170 - 150	1 3/4	20.00	2.49	68.3	2.4053	25.85	108.24	0.239 ¹
T2	150 - 140	Pirol 105244	10.02	10.02	45.4	3.6816	28.86	165.67	0.174 ¹
T3	140 - 120	Pirol 105216	20.03	10.02	45.4	3.6816	54.70	165.67	0.330 ¹
T4	120 - 100	Pirol 105217	20.03	10.02	37.8	5.3014	95.41	238.57	0.400 ¹
T5	100 - 90	Pirol 105217	10.02	10.02	37.8	5.3014	121.89	238.57	0.511 ¹
T6	90 - 80	Pirol 105217 reinf w/ 1" dia bar	10.02	10.02	57.7	7.6570	148.83	344.57	0.432 ¹

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	48 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T7	80 - 60	Pirod 105218 reinf w/ 1" dia bar	20.03	10.02	52.4	9.9280	200.54	446.76	0.449 ¹
T8	60 - 40	Pirod 105219	20.03	10.02	28.4	9.4248	248.81	424.12	0.587 ¹
T9	40 - 20	Pirod 105219 reinf w/ 1" dia bar	20.03	10.02	50.5	11.7803	294.42	530.11	0.555 ¹
T10	20 - 0	Pirod 105220 reinf w/ 1" dia bar	20.03	10.02	47.6	14.2843	336.92	642.79	0.524 ¹

¹ P_u / φP_n controls

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L _d ft	Kl/r	φP _n K	A in ²	V _u K	φV _n K	Stress Ratio
T2	150 - 140	0.5	1.48	121.0	165.67	0.1963	0.97	3.39	0.286
T3	140 - 120	0.5	1.48	121.0	165.67	0.1963	1.23	3.29	0.374
T4	120 - 100	0.5	1.47	120.0	238.57	0.1963	1.40	3.34	0.419
T5	100 - 90	0.5	1.47	120.0	238.57	0.1963	1.94	3.34	0.581
T6	90 - 80	0.5	1.46	118.8	344.57	0.1963	0.37	3.39	0.110
T7	80 - 60	0.5	1.44	117.8	446.76	0.1963	0.34	3.43	0.099
T8	60 - 40	0.625	1.45	94.4	424.12	0.3068	0.32	6.96	0.046
T9	40 - 20	0.625	1.44	93.7	530.11	0.3068	1.08	8.13	0.132
T10	20 - 0	0.625	1.42	93.0	642.79	0.3068	1.75	7.06	0.248

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	170 - 150	7/8	5.59	2.71	148.7	0.6013	2.97	27.06	0.110 ¹
T2	150 - 140	L2 1/2x2 1/2x3/16	11.42	4.98	80.1	0.9020	4.45	29.22	0.152 ¹
T3	140 - 120	L3x3x1/4	12.50	5.63	75.3	1.1588	8.79	56.49	0.156 ¹
T4	120 - 100	L3x3x1/4	13.80	6.33	84.3	1.4400	10.84	46.66	0.232 ¹

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	49 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T5	100 - 90	L3x3x5/16	14.50	6.70	89.9	1.7800	12.69	57.67	0.220 ¹
T6	90 - 80	L3 1/2x3 1/2x5/16	15.24	7.12	81.0	1.7384	12.79	84.75	0.151 ¹ ✓
T7	80 - 60	L3 1/2x3 1/2x5/16	16.80	7.92	89.9	1.7384	13.04	84.75	0.154 ¹ ✓
T8	60 - 40	L3 1/2x3 1/2x5/16	18.45	8.73	99.2	2.0900	13.30	67.72	0.196 ¹ ✓
T9	40 - 20	L4x4x5/16	20.16	9.59	94.8	1.9703	13.76	96.05	0.143 ¹ ✓
T10	20 - 0	L5x5x5/16	21.92	10.43	81.6	2.6003	14.93	126.77	0.118 ¹ ✓

¹ P_u / φP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	170 - 150	7/8	5.00	4.85	266.3	0.6013	0.04	27.06	0.001 ¹
T2	150 - 140	L3x3x3/16	5.00	3.67	51.1	1.0900	0.58	35.32	0.016 ¹ ✓

¹ P_u / φP_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	170 - 150	7/8	5.00	4.85	266.3	0.6013	0.52	27.06	0.019 ¹ ✓

¹ P_u / φP_n controls

Mid Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T4	120 - 100	L3x3x3/16	9.00	7.67	102.2	1.0900	3.06	35.32	0.087 ¹

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	50 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Section No.	Elevation ft	Size	L ft	L _u ft	KI/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
									✓

¹ P_u / φP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	φP _{allow} K	% Capacity	Pass Fail
T1	170 - 150	Leg	1 3/4	1	-29.15	76.97	37.9	Pass
		Leg	1 3/4	2	-28.91	76.97	37.6	Pass
		Leg	1 3/4	3	-29.85	76.97	38.8	Pass
T2	150 - 140	Leg	Pirod 105244	58	-32.10	142.49	22.5	Pass
		Leg	Pirod 105244	59	-31.79	142.49	22.3	Pass
		Leg	Pirod 105244	60	-33.43	142.49	28.6	Pass
T3	140 - 120	Leg	Pirod 105216	70	-63.26	142.49	44.4	Pass
		Leg	Pirod 105216	71	-62.41	142.49	43.8	Pass
		Leg	Pirod 105216	72	-64.38	142.49	45.2	Pass
T4	120 - 100	Leg	Pirod 105217	85	-109.82	214.86	51.1	Pass
		Leg	Pirod 105217	86	-109.12	214.86	50.8	Pass
		Leg	Pirod 105217	87	-110.51	214.86	51.4	Pass
T5	100 - 90	Leg	Pirod 105217	103	-139.85	214.86	65.1	Pass
		Leg	Pirod 105217	104	-139.05	214.86	64.7	Pass
		Leg	Pirod 105217	105	-140.27	214.86	65.3	Pass
T6	90 - 80	Leg	Pirod 105217 reinf w/ 1" dia bar	112	-169.43	270.18	62.7	Pass
		Leg	Pirod 105217 reinf w/ 1" dia bar	113	-168.80	270.18	62.5	Pass
		Leg	Pirod 105217 reinf w/ 1" dia bar	114	-170.04	270.18	62.9	Pass
T7	80 - 60	Leg	Pirod 105218 reinf w/ 1" dia bar	121	-226.27	365.45	61.9	Pass
		Leg	Pirod 105218 reinf w/ 1" dia bar	122	-225.62	365.45	61.7	Pass
		Leg	Pirod 105218 reinf w/ 1" dia bar	123	-226.44	365.45	62.0	Pass
T8	60 - 40	Leg	Pirod 105219	136	-280.14	399.87	70.1	Pass
		Leg	Pirod 105219	137	-279.41	399.87	69.9	Pass
		Leg	Pirod 105219	138	-279.92	399.87	70.0	Pass
T9	40 - 20	Leg	Pirod 105219 reinf w /1" dia bar	151	-331.88	439.99	75.4	Pass
		Leg	Pirod 105219 reinf w /1" dia bar	152	-331.07	439.99	75.2	Pass
		Leg	Pirod 105219 reinf w /1" dia bar	153	-331.33	439.99	75.3	Pass
T10	20 - 0	Leg	Pirod 105220 reinf w/ 1" dia bar	166	-381.15	544.59	70.0	Pass
		Leg	Pirod 105220 reinf w/ 1" dia bar	167	-380.30	544.59	69.8	Pass
		Leg	Pirod 105220 reinf w/ 1" dia bar	168	-380.42	544.59	69.9	Pass
T1	170 - 150	Diagonal	7/8	10	-1.69	7.58	22.3	Pass
		Diagonal	7/8	11	-1.69	7.58	22.3	Pass
		Diagonal	7/8	12	-3.01	7.58	39.7	Pass
		Diagonal	7/8	13	-2.94	7.58	38.8	Pass
		Diagonal	7/8	14	-2.87	7.58	37.8	Pass
		Diagonal	7/8	15	-2.94	7.58	38.8	Pass
		Diagonal	7/8	16	-1.60	7.58	21.1	Pass
		Diagonal	7/8	17	-1.60	7.58	21.1	Pass
		Diagonal	7/8	18	-2.84	7.58	37.5	Pass
		Diagonal	7/8	19	-2.88	7.58	38.0	Pass
		Diagonal	7/8	20	-2.82	7.58	37.2	Pass
		Diagonal	7/8	21	-2.77	7.58	36.6	Pass
		Diagonal	7/8	22	-1.55	7.58	20.5	Pass
		Diagonal	7/8	23	-1.55	7.58	20.5	Pass
		Diagonal	7/8	24	-2.81	7.58	37.1	Pass
		Diagonal	7/8	25	-2.75	7.58	36.3	Pass
		Diagonal	7/8	26	-2.71	7.58	35.7	Pass

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	52 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T4	120 - 100	Diagonal	L3x3x1/4	82	-5.74	32.96	17.4	Pass
		Diagonal	L3x3x1/4	83	-6.37	32.96	30.6 (b)	Pass
		Diagonal	L3x3x1/4	84	-6.74	32.96	19.3	Pass
		Diagonal	L3x3x1/4	91	-8.54	25.06	33.6 (b)	Pass
		Diagonal	L3x3x1/4	92	-8.94	25.06	20.5	Pass
		Diagonal	L3x3x1/4	93	-11.02	25.06	34.7 (b)	Pass
		Diagonal	L3x3x1/4	94	-10.21	25.06	34.1	Pass
		Diagonal	L3x3x1/4	95	-10.92	25.06	50.8 (b)	Pass
		Diagonal	L3x3x1/4	96	-11.47	25.06	35.7	Pass
		Diagonal	L3x3x1/4	97	-7.28	27.60	52.8 (b)	Pass
		Diagonal	L3x3x1/4	98	-7.72	27.60	44.0	Pass
		Diagonal	L3x3x1/4	99	-10.27	27.60	65.9 (b)	Pass
		Diagonal	L3x3x1/4	100	-9.43	27.60	40.7	Pass
		Diagonal	L3x3x1/4	101	-10.52	27.60	62.0 (b)	Pass
		Diagonal	L3x3x1/4	102	-11.01	27.60	43.6	Pass
T5	100 - 90	Diagonal	L3x3x5/16	106	-10.97	27.36	66.4 (b)	Pass
		Diagonal	L3x3x5/16	107	-10.98	27.36	45.8	Pass
		Diagonal	L3x3x5/16	108	-12.42	27.36	69.6 (b)	Pass
		Diagonal	L3x3x5/16	109	-12.25	27.36	26.4	Pass
		Diagonal	L3x3x5/16	110	-12.84	27.36	44.3 (b)	Pass
		Diagonal	L3x3x5/16	111	-12.87	27.36	28.0	Pass
T6	90 - 80	Diagonal	L3 1/2x3 1/2x5/16	115	-11.56	38.98	46.0 (b)	Pass
		Diagonal	L3 1/2x3 1/2x5/16	116	-11.57	38.98	37.2	Pass
		Diagonal	L3 1/2x3 1/2x5/16	117	-12.60	38.98	62.1 (b)	Pass
		Diagonal	L3 1/2x3 1/2x5/16	118	-12.56	38.98	34.2	Pass
		Diagonal	L3 1/2x3 1/2x5/16	119	-13.06	38.98	58.3 (b)	Pass
		Diagonal	L3 1/2x3 1/2x5/16	120	-13.09	38.98	38.1	Pass
T7	80 - 60	Diagonal	L3 1/2x3 1/2x5/16	124	-12.28	31.50	65.2 (b)	Pass
		Diagonal	L3 1/2x3 1/2x5/16	125	-12.29	31.50	47.0	Pass
		Diagonal	L3 1/2x3 1/2x5/16	126	-12.84	31.50	65.0 (b)	Pass
		Diagonal	L3 1/2x3 1/2x5/16	127	-12.82	31.50	29.7	Pass

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	53 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T8	60 - 40	Diagonal	L3 1/2x3 1/2x5/16	128	-13.29	31.50	55.0 (b) 42.2	Pass
		Diagonal	L3 1/2x3 1/2x5/16	129	-13.31	31.50	57.1 (b) 42.3	Pass
		Diagonal	L3 1/2x3 1/2x5/16	130	-11.78	34.82	56.9 (b) 33.8	Pass
		Diagonal	L3 1/2x3 1/2x5/16	131	-11.78	34.82	50.6 (b) 33.8	Pass
		Diagonal	L3 1/2x3 1/2x5/16	132	-12.80	34.82	50.6 (b) 36.8	Pass
		Diagonal	L3 1/2x3 1/2x5/16	133	-12.73	34.82	54.7 (b) 36.6	Pass
		Diagonal	L3 1/2x3 1/2x5/16	134	-13.14	34.82	54.9 (b) 37.7	Pass
		Diagonal	L3 1/2x3 1/2x5/16	135	-13.18	34.82	56.7 (b) 37.8	Pass
		Diagonal	L3 1/2x3 1/2x5/16	139	-13.19	25.96	56.6 (b) 50.8	Pass
		Diagonal	L3 1/2x3 1/2x5/16	140	-13.20	25.96	62.3 (b) 50.8	Pass
		Diagonal	L3 1/2x3 1/2x5/16	141	-13.15	25.96	62.2 (b) 50.7	Pass
		Diagonal	L3 1/2x3 1/2x5/16	142	-13.14	25.96	62.0 (b) 50.6	Pass
		Diagonal	L3 1/2x3 1/2x5/16	143	-13.70	25.96	62.0 (b) 52.8	Pass
		Diagonal	L3 1/2x3 1/2x5/16	144	-13.71	25.96	64.7 (b) 52.8	Pass
		Diagonal	L3 1/2x3 1/2x5/16	145	-12.71	28.58	64.7 (b) 44.5	Pass
		Diagonal	L3 1/2x3 1/2x5/16	146	-12.71	28.58	60.5 (b) 44.5	Pass
		Diagonal	L3 1/2x3 1/2x5/16	147	-12.95	28.58	60.5 (b) 45.3	Pass
		Diagonal	L3 1/2x3 1/2x5/16	148	-12.93	28.58	61.6 (b) 45.2	Pass
		Diagonal	L3 1/2x3 1/2x5/16	149	-13.45	28.58	61.7 (b) 47.1	Pass
		Diagonal	L3 1/2x3 1/2x5/16	150	-13.46	28.58	64.2 (b) 47.1	Pass
T9	40 - 20	Diagonal	L4x4x5/16	154	-14.07	32.43	64.1 (b) 43.4	Pass
		Diagonal	L4x4x5/16	155	-14.07	32.43	58.5 (b) 43.4	Pass
		Diagonal	L4x4x5/16	156	-13.63	32.43	58.5 (b) 42.0	Pass
		Diagonal	L4x4x5/16	157	-13.61	32.43	56.5 (b) 42.0	Pass
		Diagonal	L4x4x5/16	158	-14.24	32.43	56.5 (b) 43.9	Pass
		Diagonal	L4x4x5/16	159	-14.24	32.43	59.2 (b) 43.9	Pass
		Diagonal	L4x4x5/16	160	-13.62	35.52	59.2 (b) 38.3	Pass
		Diagonal	L4x4x5/16	161	-13.63	35.52	57.6 (b) 38.4	Pass
		Diagonal	L4x4x5/16	162	-13.34	35.52	57.6 (b) 37.6	Pass
		Diagonal	L4x4x5/16	163	-13.34	35.52	56.4 (b) 37.5	Pass
							56.4 (b)	

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	54 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T10	20 - 0	Diagonal	L4x4x5/16	164	-13.95	35.52	39.3	Pass
		Diagonal	L4x4x5/16	165	-13.95	35.52	59.0 (b) 39.3	Pass
		Diagonal	L5x5x5/16	169	-15.53	54.73	59.0 (b) 28.4	Pass
		Diagonal	L5x5x5/16	170	-15.58	54.73	40.8 (b) 28.5	Pass
		Diagonal	L5x5x5/16	171	-15.36	54.73	40.8 (b) 28.1	Pass
		Diagonal	L5x5x5/16	172	-14.86	54.73	39.3 (b) 27.2	Pass
		Diagonal	L5x5x5/16	173	-15.58	54.73	38.9 (b) 28.5	Pass
		Diagonal	L5x5x5/16	174	-15.55	54.73	40.7 (b) 28.4	Pass
		Diagonal	L5x5x5/16	175	-14.08	59.65	40.8 (b) 23.6	Pass
		Diagonal	L5x5x5/16	176	-14.09	59.65	38.1 (b) 23.6	Pass
		Diagonal	L5x5x5/16	177	-13.48	59.65	38.1 (b) 22.6	Pass
		Diagonal	L5x5x5/16	178	-13.48	59.65	36.4 (b) 22.6	Pass
		Diagonal	L5x5x5/16	179	-14.15	59.65	36.5 (b) 23.7	Pass
		Diagonal	L5x5x5/16	180	-14.15	59.65	38.2 (b) 23.7	Pass
T1	170 - 150	Top Girt	7/8	4	-0.06	3.91	38.3 (b) 1.6	Pass
T2	150 - 140	Top Girt	7/8	5	-0.06	3.91	1.6	Pass
		Top Girt	7/8	6	-0.06	3.91	1.5	Pass
		Top Girt	L3x3x3/16	61	-0.55	27.09	2.0	Pass
		Top Girt	L3x3x3/16	62	-0.58	27.09	5.4 (b) 2.1	Pass
		Top Girt	L3x3x3/16	63	-0.56	27.09	5.7 (b) 2.1	Pass
							5.5 (b)	
T1	170 - 150	Bottom Girt	7/8	7	-0.50	3.91	12.8	Pass
T4	120 - 100	Bottom Girt	7/8	8	-0.52	3.91	13.2	Pass
		Bottom Girt	7/8	9	-0.50	3.91	12.9	Pass
		Mid Girt	L3x3x3/16	88	-2.56	13.09	19.6	Pass
		Mid Girt	L3x3x3/16	89	-2.54	13.09	29.7 (b) 19.4	Pass
		Mid Girt	L3x3x3/16	90	-2.52	13.09	30.1 (b) 19.3	Pass
							30.1 (b)	
							Summary	
						Leg (T9)	75.4	Pass
						Diagonal (T4)	69.6	Pass
						Top Girt (T2)	5.7	Pass
						Bottom Girt (T1)	13.2	Pass
						Mid Girt (T4)	30.1	Pass
						Bolt Checks	69.6	Pass
						RATING =	75.4	Pass

<i>tnxTower</i> Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job	23032.11 - Cromwell North	Page	55 of 55
	Project	170' Lattice Tower Cromwell, CT	Date	14:29:52 09/11/23
	Client	Verizon	Designed by	TJL

Program Version 8.1.1.0 - 6/3/2021 File:J:\Jobs\2303200.WI\11_Cromwell North CT\05_Structural\Calcs\tnxtower\G_U20x170' PiROD Self-Supporting Lattice Tower.eri

Subject:

Anchor Bolt Analysis

Location:

170-ft Lattice Tower
 Cromwell, CT

Rev. 0: 9/11/23

Prepared by: T.J.L. Checked by: C.F.C.
 Job No. 23032.11

Anchor Bolt Analysis:

Input Data:

Tower Reactions:

Tension Force =	Tension := 348-kips	(Input From tnxTower)
Compression Force =	Compression := 395-kips	(Input From tnxTower)
Shear Force =	Shear := 45-kips	(Input From tnxTower)

Anchor Bolt Data:

ASTMA687

Number of Anchor Bolts =	N := 6	(User Input)
Bolt Ultimate Strength =	$F_u := 150\text{-ksi}$	(User Input)
Bolt Yield Strength =	$F_y := 105\text{-ksi}$	(User Input)
Bolt Modulus =	E := 29000-ksi	(User Input)
Diameter of Anchor Bolts =	D := 1.25-in	(User Input)
Threads per Inch =	n := 7	(User Input)
Length from Top of Pier to Bottom of Leveling Nut =	$L_{ar} := 1\text{-in}$	(User Input)

Anchor Bolt Analysis:

Calculated Anchor Bolt Properties:

Gross Area of Bolt =

$$A_g := \frac{\pi}{4} \cdot D^2 = 1.227 \cdot \text{in}^2$$

Net Area of Bolt =

$$A_n := \frac{\pi}{4} \cdot \left(D - \frac{0.9743 \cdot \text{in}}{n} \right)^2 = 0.969 \cdot \text{in}^2$$

Net Diameter =

$$D_n := \frac{2 \cdot \sqrt{A_n}}{\sqrt{\pi}} = 1.111 \cdot \text{in}$$

Radius of Gyration of Bolt =

$$r := \frac{D_n}{4} = 0.278 \cdot \text{in}$$

Elastic Section Modulus of Bolt =

$$S_x := \frac{\pi \cdot D_n^3}{32} = 0.135 \cdot \text{in}^3$$

Plastic Section Modulus of Bolt =

$$Z_x := \frac{D_n^3}{6} = 0.228 \cdot \text{in}^3$$

Anchor Bolt Design Strength:

Resistance Factor for Flexure =

$$\phi_f := 0.9$$

Resistance Factor for Compression =

$$\phi_c := 0.9$$

Resistance Factor for Tension =

$$\phi_t := 0.75$$

Resistance Factor for Shear =

$$\phi_v := 0.75$$

Design Tensile Strength =

$$\Phi R_{nt} := \phi_t \cdot F_u \cdot A_n = 109 \cdot \text{k}$$

Design Compression Strength =

$$\Phi R_{nc} := \phi_c \cdot F_y \cdot A_g = 116 \cdot \text{k}$$

Design Shear Strength (Tension) =

$$\Phi R_{nv} := \phi_v \cdot 0.5 F_u \cdot A_g = 69 \cdot \text{k}$$

Design Shear Strength (Compression) =

$$\Phi R_{nvc} := \phi_c \cdot 0.6 F_y \cdot A_g \cdot 0.75 = 52.2 \cdot \text{k}$$

Check Anchor Bolt Tension Force:

Maximum Tensile Force =

$$P_{ut} := \frac{\text{Tension}}{N} = 58\text{-kips}$$

Maximum Compressive Force =

$$P_{uc} := \frac{\text{Compression}}{N} = 65.8\text{-kips}$$

Maximum Shear Force =

$$V_u := \frac{\text{Shear}}{N} = 7.5\text{-kips}$$

Condition1 =

$$\text{Condition1} := \text{if} \left[\left[\left(\frac{P_{ut}}{\Phi R_{nt}} \right)^2 + \left(\frac{V_u}{\Phi R_{nv}} \right)^2 \right] \leq 1.00, \text{"OK"}, \text{"Overstressed"} \right]$$

Condition1 = "OK"

Condition2 =

$$\text{Condition2} := \text{if} \left[\left[\left(\frac{P_{uc}}{\Phi R_{nc}} \right)^2 + \left(\frac{V_u}{\Phi R_{nvc}} \right)^2 \right] \leq 1.00, \text{"OK"}, \text{"Overstressed"} \right]$$

Condition2 = "OK"

Bolt % of Capacity =

$$\max \left[\left(\frac{P_{ut}}{\Phi R_{nt}} \right)^2 + \left(\frac{V_u}{\Phi R_{nv}} \right)^2, \left(\frac{P_{uc}}{\Phi R_{nc}} \right)^2 + \left(\frac{V_u}{\Phi R_{nvc}} \right)^2 \right] = 58.8\%$$

Caisson Foundation:

Input Data:

Tower Data

Uplift =	Uplift := 348-kips	(User Input)
Compression =	Comp := 395-kips	(User Input)
Shear Force =	Shear := 45-kips	(User Input)
Tower Height =	H _t := 170-ft	(User Input)

Footing Data:

Length of Caisson =	L _c := 41.5-ft	(User Input)
Extension of Caisson Above Grade =	L _{cag} := 0.5-ft	(User Input)
Diameter of Caisson =	d _c := 5.5-ft	(User Input)
Length of Caisson Above Water Table =	L _{c,AWT} := 41.5-ft	(User Input)
Length of Caisson Below Water Table =	L _{c,BWT} := 0-ft	(User Input)

Material Properties:

Concrete Compressive Strength =	f _c := 4000-psi	(User Input)
Steel Reinforcement Yield Strength =	f _y := 60000-psi	(User Input)
Ultimate Skin Friction =	μ := 1.8-ksf	(User Input)
Ultimate Bearing Capacity =	q _u := 32000-psf	(User Input)
Unit Weight of Soil =	γ _{soil} := 100-pcf	(User Input)
Unit Weight of Concrete =	γ _{conc} := 150-pcf	(User Input)
Depth to Neglect =	n := 6-ft	(User Input)
Resistance Factor for Bearing =	Φ _{sBearing} := 0.75	(TIA-222-H 9.7)
Resistance Factor for Friction =	Φ _{sFriction} := 0.75	(TIA-222-H 9.7)

Calculated Properties:

Adjusted Concrete Unit Weight =

$$\gamma_c := \gamma_{conc} - 62.4 \text{ pcf} = 87.6 \text{ pcf}$$

Weight of Concrete Caisson (no water) =

$$WT_{c,comp} := \frac{\pi}{4} \cdot (d_c^2 L_c) \cdot \gamma_{conc} = 147.895 \cdot \text{kip}$$

Weight of Concrete Caisson (water) =

$$WT_{c,uplift} := \frac{\pi}{4} \cdot \left[(d_c^2 L_{c,AWT}) \cdot \gamma_{conc} + (d_c^2 L_{c,BWT}) \cdot \gamma_c \right] = 147.895 \cdot \text{kip}$$

Check Uplift:

Uplift Resistance from Concrete Weight =

$$Uplift_{conc} := WT_{c,uplift} \cdot 0.9 = 133.106 \cdot \text{kips}$$

Uplift Resistance from Skin Friction =

$$Uplift_{SF} := \pi \cdot d_c \cdot (L_c - L_{cag} - n) \cdot \mu \cdot \Phi_{sFriction} = 816.421 \cdot \text{kips}$$

Total Uplift Resistance =

$$Uplift_R := Uplift_{conc} + Uplift_{SF} = 949.527 \cdot \text{kips}$$

Uplift Check =

$$\frac{Uplift}{Uplift_R} = 36.65\%$$

$$Uplift_Check := \text{if} \left(\frac{Uplift_R}{Uplift} \geq 1.0, \text{"Okay"}, \text{"No Good"} \right)$$

Uplift_Check = "Okay"

Check Compression:

Total Compression Force =

$$Comp_{tot} := WT_{c,comp} + Comp = 542.895 \cdot \text{kips}$$

Compression Resistance from Bearing =

$$Comp_{bearing} := \frac{\pi}{4} \cdot d_c^2 \cdot q_u \cdot \Phi_{sBearing} = 570.199 \cdot \text{kips}$$

Compression Resistance from Skin Friction =

$$Comp_{SF} := \pi \cdot d_c \cdot (L_c - L_{cag} - n) \cdot \mu \cdot \Phi_{sFriction} = 816.421 \cdot \text{kips}$$

Total Compression Resistance =

$$Comp_R := Comp_{bearing} + Comp_{SF} = 1386.6 \cdot \text{kips}$$

Compression Check =

$$\frac{Comp_{tot}}{Comp_R} = 39.15\%$$

$$Compression_Check := \text{if} \left(\frac{Comp_R}{Comp_{tot}} \geq 1.0, \text{"Okay"}, \text{"No Good"} \right)$$

Compression_Check = "Okay"



NORTHEAST > North East > New England > Windsor-3 > CROMWELL N CT
SUMMERS, MELISSA - melissa.summers@verizonwireless.com - 20230830_164645

Project Details		Location Information	
Carrier Aggregation	N	Site Id	674871
Ecip	N	Search Ring#	
Project Name	850 ADD	E-NodeB ID#	068946
Project Alt Name	CROMWELL N CT 850 / PCS LTE ADD	PSLC#	535821
Project Id	15232181	Switch Name	Windsor-3
Designed Sector Carrier 4G	15	Tower Type	
Designed Sector Carrier 5G	6	Site Type	MACRO
Additional Sector Carrier 4G	0	Street Address	179 Shunpike Road
Additional Sector Carrier 5G	0	City	Cromwell
Suffix	REV6	State	CT
FP Solution Type & Tech Type	MODIFICATION;4G_4TX;5G_850;4G_CBRS ;5G_L-Sub6;4G_PCS;4G_Radio Swap	Zip Code	06416
		County	Middlesex
		Latitude	41.62322/ 41° 37' 23.592"
		Longitude	-72.67903/ 72° 40' 44.508"

Project Scope
RFDS SOW: 850A 5GNR/ PCS/ CBRS/ L-Sub6 carrier add, Samsung dual band RRH swap, antenna/ azimuth change REV1 (2/14/20): Changed antennas to JMA with side-by-side mount. Added CBRS REV2 (9/1/20): Added L-Sub6, changed CBRS antenna REV3 (6/3/21): Updates L-SUB6 antenna/ RRH models and adds 850 5GNR carrier REV4 (2/18/21): Updates Regulatory power (no material changes) REV5 (4/4/23): Updates to O-RAN RRH REV6 (8/30/23): Upgrades LB/ C-Band/ CBRS RRH, adds C-Band B carrier, and retains hybrid 1- Retain 700/ AWS carriers and add 850A 5GNR/ PCS/ CBRS/ L-Sub6 carrier 2- Remove (9) existing antennas in positions 1-3. Retain (3) SPARE antennas in position 4 3- Add (6) new JMA MX06FRO660-03 antennas on new 91900314-02 side-by-side mounts to position 2

Project Scope

- 4- Add (3) L-Sub6 All-in-One antenna/ RRHs to position 1
- 5- Add (3) Samsung XXDWMM-12.5-65-8T-CBRS RRH/ antenna below L-SUB6 antenna
- 6- Replace (3) existing Nokia RRHs from tower and (3) from shelter with (3) new Samsung B5/B13 RRH- RF4461d-13A and (3) new Samsung B2/B66A RRH- RF4439d-25A on tower
- 7- Remove existing diplexers from tower
- 8- Replace (1) existing OVP-6 with (1) new OVP-12 on tower
- 9- Replace (6) unused 1 5/8" coax and existing Hybriflex with (1) new 6x12 Hybriflex (LI)
- 10- Plumb 700/ 850/ PCS/ AWS/ CBRS/ L-Sub6 according to the plumbing diagram
- 11- Use RF ports on dual band RRHs to communicate with RETs via Smart bias-T built into the antenna
- 12- Cap and weatherproof unused ports/connectors

Antenna Summary

Added Antenna												
700	850	1900	AWS	CBRS	L-Sub6	Make	Model	Center line	Tip Height	Azimuth	Install Type	Quantit
					5G	Samsung	MT6413-77A	101.5	102.7	280(A),90(B),1 90(C)	PHYSICAL	3
LTE	5G,LTE	LTE	LTE			JMA	MX06FRO660-03	100	103	280(A),90(B),1 90(C)	PHYSICAL	6
				LTE		SAMSUNG	XXDWM-12.5-65	98	98.5	280(A),90(B),1 90(C)	PHYSICAL	3

Removed Antenna												
700	850	1900	AWS	CBRS	L-Sub6	Make	Model	Center line	Tip Height	Azimuth	Install Type	Quantit
						AMPHENOL	BXA-171063-12BF-EDIN	100	103	110(A), 200(B), 280(C)	SPARE	3
			LTE			ANDREW	HBX-6517DS-VTM	100	103.1	280(A),90(B),2 00(C)	PHYSICAL	3
LTE						ANDREW	LNK-4514DS-A1M	100	102.1	280(A),90(B),2 00(C)	PHYSICAL	3

Retained Antenna												
700	850	1900	AWS	CBRS	L-Sub6	Make	Model	Center line	Tip Height	Azimuth	Install Type	Quantit
						COMMSCOPE	LNK-6514DS-VTM	100	103	110(A), 200(B), 280(C)	SPARE	3

Added: 12	Removed: 9	Retained: 3
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Non Antenna Summary											
Added Non Antenna											
Equipment Type	Locatio	700	850	1900	AWS	CBRS	L-Sub6	Make	Model	Install Type	Quantity
OVP	Tower	LTE	LTE,5G	LTE	LTE		5G		12 OVP	PHYSICAL	1
Hybrid Cable	Tower	LTE	LTE,5G	LTE	LTE		5G	N/A	6x12 Hybriflex	PHYSICAL	1
RRU	Tower			LTE	LTE			Samsung	B2/B66A RRH ORAN (RF4439d-25A)	PHYSICAL	3
Mount	Tower	LTE	LTE,5G	LTE	LTE			JMA	JMA Mount	PHYSICAL	3
RRU	Tower						5G	Samsung	MT6413-77A	PHYSICAL	0
RRU	Tower	LTE	5G,LTE					Samsung	RF4461d-13A	PHYSICAL	3
RRU	Tower					LTE		Samsung	RT4423-48B	PHYSICAL	3

Removed Non Antenna											
Equipment Type	Locatio	700	850	1900	AWS	CBRS	L-Sub6	Make	Model	Install Type	Quantity
Coaxial Cables	Tower							N/A	1-5/8" Coax	PHYSICAL	6
OVP	Tower	LTE			LTE				6 OVP	PHYSICAL	1
Diplexer	Tower	LTE						RFS	FD9R6004/2C-3L	PHYSICAL	6
RRU	Shelter	LTE						Nokia	UHBA B13 RRH 4x30	PHYSICAL	3
RRU	Tower				LTE			Nokia	UHID B4 RRH 2x40	PHYSICAL	3

Retained Non Antenna											
Equipment Type	Locatio	700	850	1900	AWS	CBRS	L-Sub6	Make	Model	Install Type	Quantity
Coaxial Cables	Tower							N/A	1-5/8" Coax	PHYSICAL	6
Hybrid Cable	Tower	LTE			LTE			N/A	6x12 Hybriflex	PHYSICAL	1

Added: 14	Removed: 19	Retained: 7
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Services									
700 LTE				0000 (311135)			5GLS (1175253)		
Sector	01	02	03	01	02	03	01	02	03
Azimuth	280	90	200	280	90	200	280	90	190
Cell/Enodeb-Id	068946	068946	068946	068946	068946	068946	068946	068946	068946
Antenna Model	LNX-4514DS-A1M	LNX-4514DS-A1M	LNX-4514DS-A1M	LNX-4514DS-A1M	LNX-4514DS-A1M	LNX-4514DS-A1M	MX06FRO660-03	MX06FRO660-03	MX06FRO660-03
Antenna Make	ANDREW	ANDREW	ANDREW	ANDREW	ANDREW	ANDREW	JMA	JMA	JMA
Centerline	100	100	100	100	100	100	100	100	100
DLEARFCN	5230	5230	5230	5230	5230	5230	5230	5230	5230
Mech Down-tilt	3	0	3	0	0	3	0	0	0
Elect Down-tilt	11	6	2	9	6	2	9	6	9
Tip Height	102.1	102.1	102.1	103	102.1	102.1	103	103	103
Regulatory Power	108.38 (W/MHz) ERP	107.74 (W/MHz) ERP	107.74 (W/MHz) ERP	69.27 (W/MHz) ERP	107.74 (W/MHz) ERP	107.74 (W/MHz) ERP	69.27 (W/MHz) ERP	69.27 (W/MHz) ERP	69.27 (W/MHz) ERP
Cell Max Power	47.8 dBm	47.8 dBm	47.8 dBm	46.0 dBm	47.8 dBm	47.8 dBm	46.0 dBm	46.0 dBm	46.0 dBm
TMA Make									
TMA Model									
RRU Make	Nokia	Nokia	Nokia	Samsung	Nokia	Nokia	Samsung	Samsung	Samsung
RRU Model	UHBA B13 RRH 4x30	UHBA B13 RRH 4x30	UHBA B13 RRH 4x30	UHBA B13 RRH 4x30	UHBA B13 RRH 4x30	UHBA B13 RRH 4x30	RF4461d-13A	RF4461d-13A	RF4461d-13A
Number of Tx,Rx	2 , 4	2 , 4	2 , 4	4 , 4	2 , 4	2 , 4	4 , 4	4 , 4	4 , 4
Position	1	1	1	2L,2R	1	1	2L,2R	2L,2R	2L,2R
Transmitter Id	1968469	1968475	1968481	8126749	1968475	1968481	8126753	8126757	8126757
Source	VZNPP	VZNPP	VZNPP	VZNPP	VZNPP	VZNPP	VZNPP	VZNPP	VZNPP
Bandwidth	10	10	10	10	10	10	10	10	10
Ant. Dimensions H x W x D(inch)	51.49 x 15.31 x 6.41	51.5 x 15.3 x 7.08	51.5 x 15.3 x 6.4	71.3 x 15.4 x 10.7	51.5 x 15.3 x 7.08	51.5 x 15.3 x 6.4	71.3 x 15.4 x 10.7	71.3 x 15.4 x 10.7	71.3 x 15.4 x 10.7
Weight(lb)	29.23	29.45	29.3	60.0	29.45	29.3	60.0	60.0	60.0

Services			5GLS (1175253)		
850 LTE	0000 (311135)				
Sector	01	02	03		
Azimuth	280	90	190		
Cell/Enodeb-Id	068946	068946	068946		
Antenna Model	MX06FRO660-03	MX06FRO660-03	MX06FRO660-03		
Antenna Make	JMA	JMA	JMA		
Centerline	100	100	100		
DLEARFCN	2450	2450	2450		
Mech Down-tilt	0	0	0		
Elect Down-tilt	6	6	6		
Tip Height	103	103	103		
Regulatory Power	277.09 (W/MHz) ERPSPD	277.09 (W/MHz) ERPSPD	277.09 (W/MHz) ERPSPD		
Cell Max Power	46.0 dBm	46.0 dBm	46.0 dBm		
TMA Make					
TMA Model					
RRU Make	Samsung	Samsung	Samsung		
RRU Model	RF4461d-13A	RF4461d-13A	RF4461d-13A		
Number of Tx,Rx	4 , 4	4 , 4	4 , 4		
Position	2L,2R	2L,2R	2L,2R		
Transmitter Id	10394855	10394856	10394857		
Source	VZNPP	VZNPP	VZNPP		
Bandwidth	10	10	10		
Ant. Dimensions H x W x D(Inch)	71.3 x 15.4 x 10.7	71.3 x 15.4 x 10.7	71.3 x 15.4 x 10.7		
Weight(lb)	60.0	60.0	60.0		

Services		
850 NR	0000 (311135)	5GLS (1175253)
Sector	0445	0446 0447
Azimuth	280	90 190
Cell/Enodeb-Id	0689552	0689552 0689552
Antenna Model	MX06FRO660-03	MX06FRO660-03
Antenna Make	JMA	JMA JMA
Centerline	100	100 100
DLEARFCN	2450	2450 2450
Mech Down-tilt	0	0 0
Elect Down-tilt	6	6 6
Tip Height	103	103 103
Regulatory Power	277.09 (W/MHz) ERPSP	277.09 (W/MHz) ERPSP 277.09 (W/MHz) ERPSP
Cell Max Power	46.0 dBm	46.0 dBm 46.0 dBm
TMA Make		
TMA Model		
RRU Make	Samsung	Samsung Samsung
RRU Model	RF4461d-13A	RF4461d-13A RF4461d-13A
Number of Tx,Rx	4 , 4	4 , 4 4 , 4
Position	2L,2R	2L,2R 2L,2R
Transmitter Id	10394855	10394855 10394857
Source	VZNPP	VZNPP VZNPP
Bandwidth	10	10 10
Ant. Dimensions H x W x D(inch)	71.3 x 15.4 x 10.7	71.3 x 15.4 x 10.7 71.3 x 15.4 x 10.7
Weight(lb)	60.0	60.0 60.0

Services		
1900 LTE	0000 (311135)	5GLS (1175253)
Sector	01	02 03
Azimuth	280	90 190
Cell/Enodeb-Id	068946	068946 068946
Antenna Model	MX06FRO660-03	MX06FRO660-03
Antenna Make	JMA	JMA JMA
Centerline	100	100 100
DLEARFCN	1050	1050 1050
Mech Down-tilt	0	0 0
Elect Down-tilt	1	1 1
Tip Height	103	103 103
Regulatory Power	266.41 (W/MHz) EIRP	266.41 (W/MHz) EIRP 266.41 (W/MHz) EIRP
Cell Max Power	46.0 dBm	46.0 dBm 46.0 dBm
TMA Make		
TMA Model		
RRU Make	Samsung	Samsung Samsung
RRU Model	B2/B66A RRH ORAN (RF4439d-25A)	B2/B66A RRH ORAN (RF4439d-25A) B2/B66A RRH ORAN (RF4439d-25A)
Number of Tx,Rx	4 , 4	4 , 4 4 , 4
Position	2R	2R 2R
Transmitter Id	8126750	8126754 8126758
Source	VZNPP	VZNPP VZNPP
Bandwidth	10	10 10
Ant. Dimensions H x W x D(inch)	71.3 x 15.4 x 10.7	71.3 x 15.4 x 10.7 71.3 x 15.4 x 10.7
Weight(lb)	60.0	60.0 60.0

Services									
AWS LTE			0000 (311135)			5GLS (1175253)			
Sector	01	02	03	01	02	03			
Azimuth	280	90	200	280	90	190			
Cell/Enodeb-Id	068946	068946	068946	068946	068946	068946			
Antenna Model	HBX-6517DS-VTM	HBX-6517DS-VTM	HBX-6517DS-VTM	MX06FRO660-03	MX06FRO660-03	MX06FRO660-03			
Antenna Make	ANDREW	ANDREW	ANDREW	JMA	JMA	JMA			
Centerline	100	100	100	100	100	100			
DLEARFCN	2050	2050	2050	2050	2050	2050			
Mech Down-tilt	0	0	0	0	0	0			
Elect Down-tilt	4	4	4	1	1	1			
Tip Height	103.1	103.1	103.1	103	103	103			
Regulatory Power	184.30 (W/MHz) EIRP	184.30 (W/MHz) EIRP	184.30 (W/MHz) EIRP	139.48 (W/MHz) EIRP	139.48 (W/MHz) EIRP	139.48 (W/MHz) EIRP			
Cell Max Power	46.0 dBm	46.0 dBm	46.0 dBm	46.0 dBm	46.0 dBm	46.0 dBm			
TMA Make									
TMA Model									
RRU Make	Nokia	Nokia	Nokia	Samsung	Samsung	Samsung			
RRU Model	UHID B4 RRH 2x40	UHID B4 RRH 2x40	UHID B4 RRH 2x40	B2/B66A RRH ORAN (RF4439d-25A)	B2/B66A RRH ORAN (RF4439d-25A)	B2/B66A RRH ORAN (RF4439d-25A)			
Number of Tx,Rx	2, 4	2, 4	2, 4	4, 4	4, 4	4, 4			
Position	2	2	2	2L	2L	2L			
Transmitter Id	1968472	1968478	1968483	8126751	8126755	8126759			
Source	VZNPP	VZNPP	VZNPP	VZNPP	VZNPP	VZNPP			
Bandwidth	20	20	20	20	20	20			
Ant. Dimensions H x W x D (inch)	74.88 x 6.49 x 3.3	74.88 x 6.49 x 3.3	74.88 x 6.49 x 3.3	71.3 x 15.4 x 10.7	71.3 x 15.4 x 10.7	71.3 x 15.4 x 10.7			
Weight(lb)	13.17	13.17	13.17	60.0	60.0	60.0			

Services		5GLS (1175253)		
CBRS LTE	0000 (311135)			
Sector		19	20	21
Azimuth		280	90	190
Cell/Enodeb-Id		068946	068946	068946
Antenna Model		XXDWM-12.5-65	XXDWM-12.5-65	XXDWM-12.5-65
Antenna Make		SAMSUNG	SAMSUNG	SAMSUNG
Centerline		98	98	98
DLEARFCN		55343, 55541, 55739, 55937	55343, 55541, 55739, 55937	55343, 55541, 55739, 55937
Mech Down-tilt		0	0	0
Elect Down-tilt		8	8	8
Tip Height		98.5	98.5	98.5
Regulatory Power		5.09 (W/MHz) EIRP, 5.09 (W/MHz) EIRP, 5.09 (W/MHz) EIRP, 5.09 (W/MHz) EIRP	5.09 (W/MHz) EIRP, 5.09 (W/MHz) EIRP, 5.09 (W/MHz) EIRP, 5.09 (W/MHz) EIRP	5.09 (W/MHz) EIRP, 5.09 (W/MHz) EIRP, 5.09 (W/MHz) EIRP, 5.09 (W/MHz) EIRP
Cell Max Power		37.02 dBm	37.02 dBm	37.02 dBm
TMA Make				
TMA Model				
RRU Make		Samsung	Samsung	Samsung
RRU Model		RT4423-48B	RT4423-48B	RT4423-48B
Number of Tx,Rx		4, 4	4, 4	4, 4
Position		1	1	1
Transmitter Id		8126761	8126762	8126763
Source		VZNPP	VZNPP	VZNPP
Bandwidth		20, 20, 20, 20	20, 20, 20, 20	20, 20, 20, 20
Ant. Dimensions H x W x D(inch)		12.32 x 8.66 x 1.35	12.32 x 8.66 x 1.35	12.32 x 8.66 x 1.35
Weight(lb)		2.86	2.86	2.86

Services			5GLS (1175253)		
CBAND NR	0000 (311135)				
Sector	0445	0446	0447		
Azimuth	280	90	190		
Cell/Enodeb-Id	0689552	0689552	0689552		
Antenna Model	MT6413-77A	MT6413-77A	MT6413-77A		
Antenna Make	Samsung	Samsung	Samsung		
Centerline	101.5	101.5	101.5		
DLEARFCN	650004, 655324	650004, 655324	650004, 655324		
Mech Down-tilt	0	0	0		
Elect Down-tilt	3	3	3		
Tip Height	102.7	102.7	102.7		
Regulatory Power	1170.73 (W/MHz) EIRP, 1622.95 (W/MHz) EIRP	1170.73 (W/MHz) EIRP, 1622.95 (W/MHz) EIRP	1170.73 (W/MHz) EIRP, 1622.95 (W/MHz) EIRP		
Cell Max Power	54.58 dBm	54.58 dBm	54.58 dBm		
TMA Make					
TMA Model					
RRU Make	Samsung	Samsung	Samsung		
RRU Model	MT6413-77A	MT6413-77A	MT6413-77A		
Number of Tx,Rx	2, 2	2, 2	2, 2		
Position	1	1	1		
Transmitter Id	8126764	8126765	8126766		
Source	VZNPP	VZNPP	VZNPP		
Bandwidth	100, 60	100, 60	100, 60		
Ant. Dimensions H x W x D(Inch)	29.53 x 15.75 x 5.51	29.53 x 15.75 x 5.51	29.53 x 15.75 x 5.51		
Weight(lb)	55.1	55.1	55.1		

Sector	Make	Model	Ant CL Height AG	Ant Tip Height	Azimuth	Elect Down-tilt	Mech Down-tilt	Gain	Bandwidth	Regulatory Power	700	850	1900	2100	28 GHz	31 GHz	39 GHz	LSub-6	CBRS
02	JMA	MX06FRO660-03	100	103	90	6	0	12.148	50.6	277.09		KNK4A04							
02	JMA	MX06FRO660-03	100	103	90	1	0	15.948	50.8	139.48				WQGA906, WQGB276					
03	JMA	MX06FRO660-03	100	103	190	9	0	12.048	57.2	69.27	WQJQ689								
0446	Samsung	MT6413-77A	101.5	102.7	90	3	0	23.35	105	1170.73								WRNE581, WRNE582, WRNE583, WRNE584, WRNE585	
03	JMA	MX06FRO660-03	100	103	190	1	0	15.948	50.8	139.48					WQGA906, WQGB276				
01	JMA	MX06FRO660-03	100	103	280	6	0	12.148	50.6	277.09		KNK4A04							
0446	Samsung	MT6413-77A	101.5	102.7	90	3	0	23.35	105	1622.95								WRNE585, WRNE586, WRNE587, WRNE588	
0447	Samsung	MT6413-77A	101.5	102.7	190	3	0	23.35	105	1170.73								WRNE581, WRNE582, WRNE583, WRNE584, WRNE585	
03	JMA	MX06FRO660-03	100	103	190	1	0	15.548	56.5	266.41				KNLH251, WPOJ730					
01	JMA	MX06FRO660-03	100	103	280	1	0	15.948	50.8	139.48									
0447	JMA	MX06FRO660-03	100	103	190	6	0	12.148	50.6	277.09		KNK4A04							
02	JMA	MX06FRO660-03	100	103	90	1	0	15.548	56.5	266.41				KNLH251, WPOJ730					
0445	Samsung	MT6413-77A	101.5	102.7	280	3	0	23.35	105	1622.95								WRNE585, WRNE586, WRNE587, WRNE588	
0446	JMA	MX06FRO660-03	100	103	90	6	0	12.148	50.6	277.09		KNK4A04							
03	JMA	MX06FRO660-03	100	103	190	6	0	12.148	50.6	277.09		KNK4A04							
01	JMA	MX06FRO660-03	100	103	280	9	0	12.048	57.2	69.27	WQJQ689								
19	SAMSUNG	XXDWM-12 98 5-65	98.5	98.5	280	8	0	10.448	64.7	5.09									CBRS_CALLS IGN
21	SAMSUNG	XXDWM-12 98 5-65	98.5	98.5	190	8	0	10.448	64.7	5.09									CBRS_CALLS IGN
0445	Samsung	MT6413-77A	101.5	102.7	280	3	0	23.35	105	1170.73								WRNE581, WRNE582, WRNE583, WRNE584, WRNE585	
01	JMA	MX06FRO660-03	100	103	280	1	0	15.548	56.5	266.41				KNLH251, WPOJ730					
02	JMA	MX06FRO660-03	100	103	90	6	0	12.148	57.4	69.27	WQJQ689								

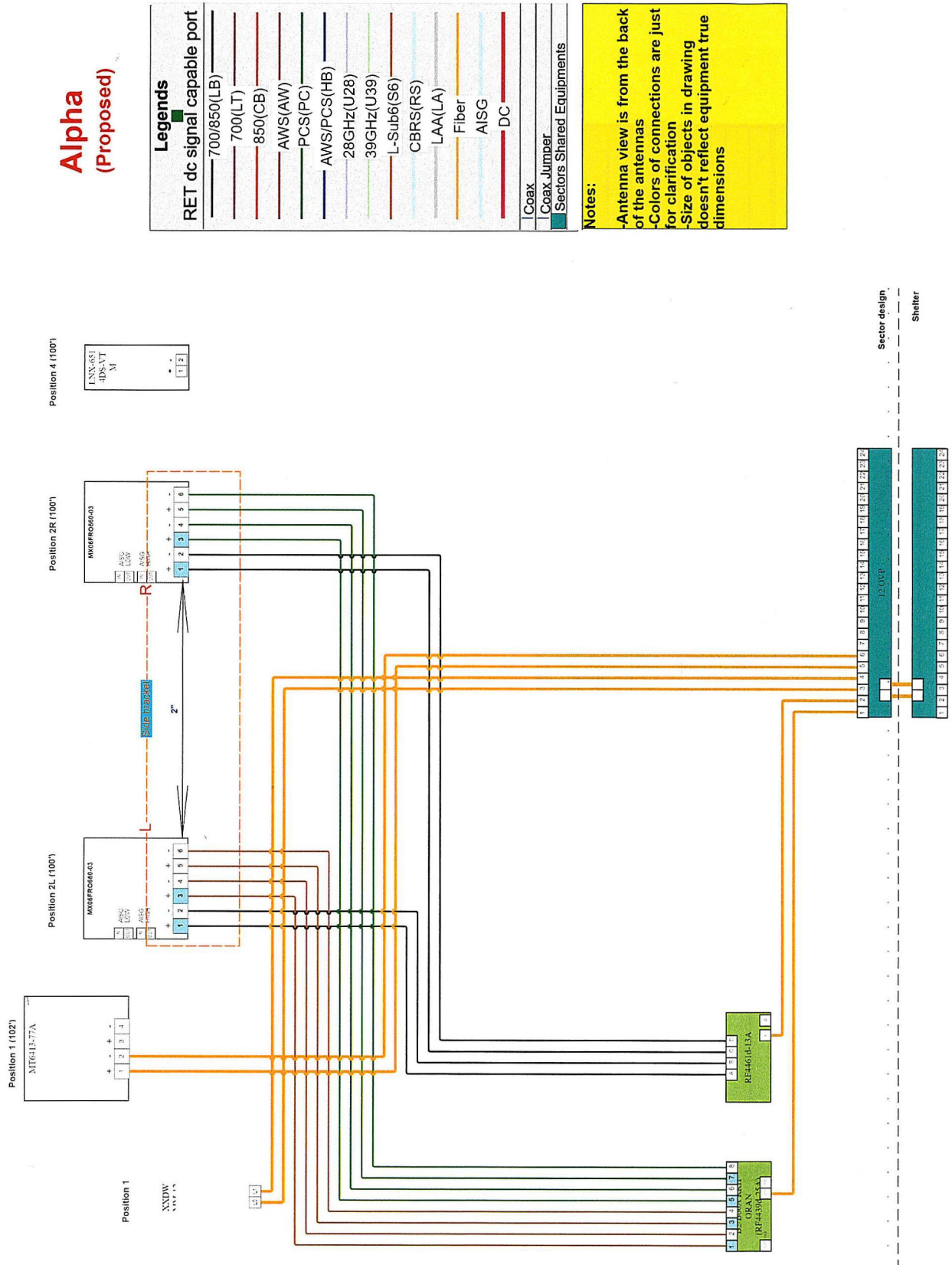
Call Signs

Call Sign	Market	Radio Code	Market #	Block	State	County	License Name	Wholly Owner	Total MHz	Freq Range 1	Freq Range 2	Freq Range 3	Freq Range 4	Regulatory Power	Threshold (W)	POPs/Sq. mil	Status	Action	Approve for Insvc
WQJQ689	Northeast	WU	REA001	C	CT	9007	Celco Partnershi	Yes	22.000	746.000 - 757.000/0.000 - .000	776.000 - 787.000/0.000 - .000	746.000 - 757.000/0.000 - .000	776.000 - 787.000/0.000 - .000	69.27	1000	444.75	proposed	added	1
KNKA404	Hartford-New Britain-Bristol, CT	CL	CMA032	A	CT	9007	Celco Partnershi	Yes	25.000	824.000 - 835.000/84.000 - .000	869.000 - 880.000/89.000 - .000	824.000 - 835.000/84.000 - .000	869.000 - 880.000/89.000 - .000	277.09	400	444.75	proposed	added	1
WPOJ730	Hartford, CT	CW	BTA184	C	CT	9007	Celco Partnershi	Yes	10.000	1895.000 - 1900.000/0.000 - .000	1975.000 - 1980.000/0.000 - .000	1895.000 - 1900.000/0.000 - .000	1975.000 - 1980.000/0.000 - .000	266.41	1640	444.75	proposed	added	1
KNLH251	Hartford, CT	CW	BTA184	F	CT	9007	Celco Partnershi	Yes	10.000	1890.000 - 1895.000/0.000 - .000	1970.000 - 1975.000/0.000 - .000	1890.000 - 1895.000/0.000 - .000	1970.000 - 1975.000/0.000 - .000	266.41	1640	444.75	proposed	added	1
CBRS_CALLSIGN	UNLICENSED	3.5 GHz	UNLICENSED	UNLICENSED	UNLICENSED CT	UNLICENSED	UNLICENSED	UNLICENSED	UNLICENSED	UNLICENSED	UNLICENSED	UNLICENSED	UNLICENSED	5.09	-/-	444.75	proposed	added	
WQGB276	Hartford-New Britain-Bristol, CT	AW	CMA032	A	CT	9007	Celco Partnershi	Yes	20.000	1710.000 - 1720.000/0.000 - .000	2110.000 - 2120.000/0.000 - .000	1710.000 - 1720.000/0.000 - .000	2110.000 - 2120.000/0.000 - .000	139.48	1640	444.75	proposed	added	1
WRNE581	New York, NY	PM	PEA001	A1	CT	9007	Celco Partnershi	Yes	20.000	3700.000 - 3720.000/0.000 - .000	3700.000 - 3720.000/0.000 - .000	3700.000 - 3720.000/0.000 - .000	3700.000 - 3720.000/0.000 - .000	1170.73	1640	444.75	proposed	added	1
WRNE582	New York, NY	PM	PEA001	A2	CT	9007	Celco Partnershi	Yes	20.000	3720.000 - 3740.000/0.000 - .000	3720.000 - 3740.000/0.000 - .000	3720.000 - 3740.000/0.000 - .000	3720.000 - 3740.000/0.000 - .000	1170.73	1640	444.75	proposed	added	1
WRNE583	New York, NY	PM	PEA001	A3	CT	9007	Celco Partnershi	Yes	20.000	3740.000 - 3760.000/0.000 - .000	3740.000 - 3760.000/0.000 - .000	3740.000 - 3760.000/0.000 - .000	3740.000 - 3760.000/0.000 - .000	1170.73	1640	444.75	proposed	added	1
WRNE584	New York, NY	PM	PEA001	A4	CT	9007	Celco Partnershi	Yes	20.000	3760.000 - 3780.000/0.000 - .000	3760.000 - 3780.000/0.000 - .000	3760.000 - 3780.000/0.000 - .000	3760.000 - 3780.000/0.000 - .000	1170.73	1640	444.75	proposed	added	1
WRNE585	New York, NY	PM	PEA001	A5	CT	9007	Celco Partnershi	Yes	20.000	3780.000 - 3800.000/0.000 - .000	3780.000 - 3800.000/0.000 - .000	3780.000 - 3800.000/0.000 - .000	3780.000 - 3800.000/0.000 - .000	1622.95	1640	444.75	proposed	added	1
WQGA906	New York-New Jersey-Long Island, NY-NJ-CT-P A-MA-	AW	BEA010	B	CT	9007	Celco Partnershi	Yes	20.000	1720.000 - 1730.000/0.000 - .000	2120.000 - 2130.000/0.000 - .000	1720.000 - 1730.000/0.000 - .000	2120.000 - 2130.000/0.000 - .000	139.48	1640	444.75	proposed	added	1
WRNE586	New York, NY	PM	PEA001	B1	CT	9007	Celco Partnershi	Yes	20.000	3800.000 - 3820.000/0.000 - .000	3800.000 - 3820.000/0.000 - .000	3800.000 - 3820.000/0.000 - .000	3800.000 - 3820.000/0.000 - .000	1622.95	1640	444.75	proposed	added	1
WRNE587	New York, NY	PM	PEA001	B2	CT	9007	Celco Partnershi	Yes	20.000	3820.000 - 3840.000/0.000 - .000	3820.000 - 3840.000/0.000 - .000	3820.000 - 3840.000/0.000 - .000	3820.000 - 3840.000/0.000 - .000	1622.95	1640	444.75	proposed	added	1

WRNE588	New York, NY	PM	PEA001	B3	CT	9007	Cellco Partnershi	Yes	20,000	3840,000 - 3860,000/ 000 - .000	000 - .000/ 000 - .000	1622.95	1640	444.75	proposed	added	1
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Band	Sector 1 (Alpha) Color Codes										Sector 2 (Beta) Color Codes										Sector 3 (Gamma) Color Codes									
850 CDMA																														
700																														
850 LTE																														
700 / 850																														
AWS																														
PCS																														
AWS / PCS																														
CBRS																														
LAA																														
850 CDMA																														
700																														
850 LTE																														
700 / 850																														
AWS																														
PCS																														
AWS / PCS																														
CBRS																														
LAA																														
850 CDMA																														
700																														
850 LTE																														
700 / 850																														
AWS																														
PCS																														
AWS / PCS																														
CBRS																														
LAA																														

Sector	Antenna Desc	Base Station ID	Sector ID
Alpha	700	068946 1 1	068946 1
Alpha	850	068946 1 6	068946 1 6
Alpha	AWS	068946 1 2	068946 1 2
Alpha	PCS	068946 1 4	068946 1 4
Beta	700	068946 2 1	068946 2
Beta	850	068946 2 6	068946 2 6
Beta	AWS	068946 2 2	068946 2 2
Beta	PCS	068946 2 4	068946 2 4
Gamma	700	068946 3 1	068946 3
Gamma	850	068946 3 6	068946 3 6
Gamma	AWS	068946 3 2	068946 3 2
Gamma	PCS	068946 3 4	068946 3 4



Beta (Proposed)

Legends

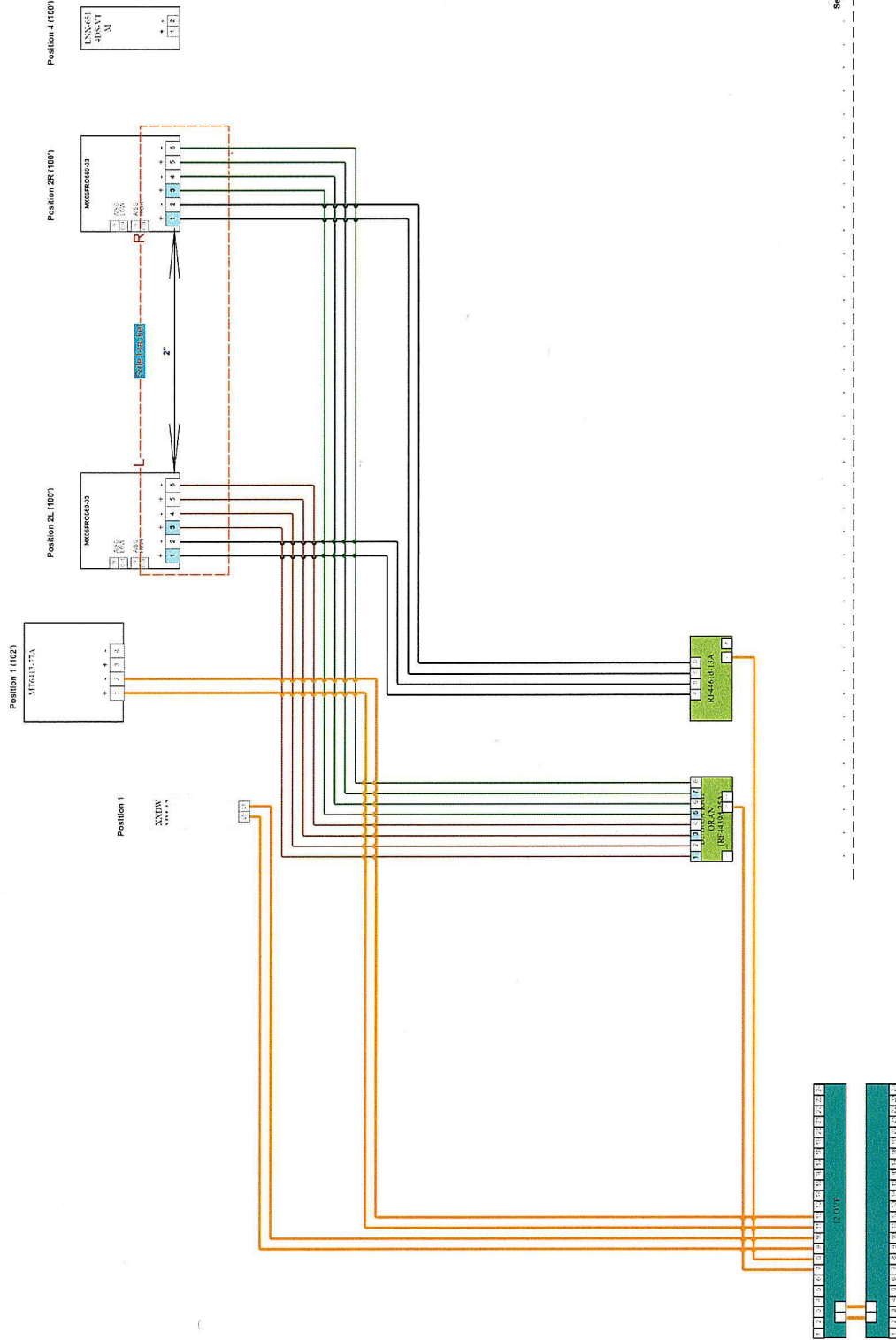
RET dc signal capable port

- 700/850(LB)
- 700(LT)
- 850(OB)
- AWS(AW)
- PCS(PC)
- AWS/PCS(HB)
- 28GHz(U28)
- 39GHz(U39)
- L-Sub6(S6)
- CBRS(RS)
- LAA(LA)
- Fiber
- AISG
- DC

- Coax
- Coax Jumper
- Sectors Shared Equipments

Notes:

- Antenna view is from the back of the antennas
- Colors of connections are just for clarification
- Size of objects in drawing doesn't reflect equipment true dimensions



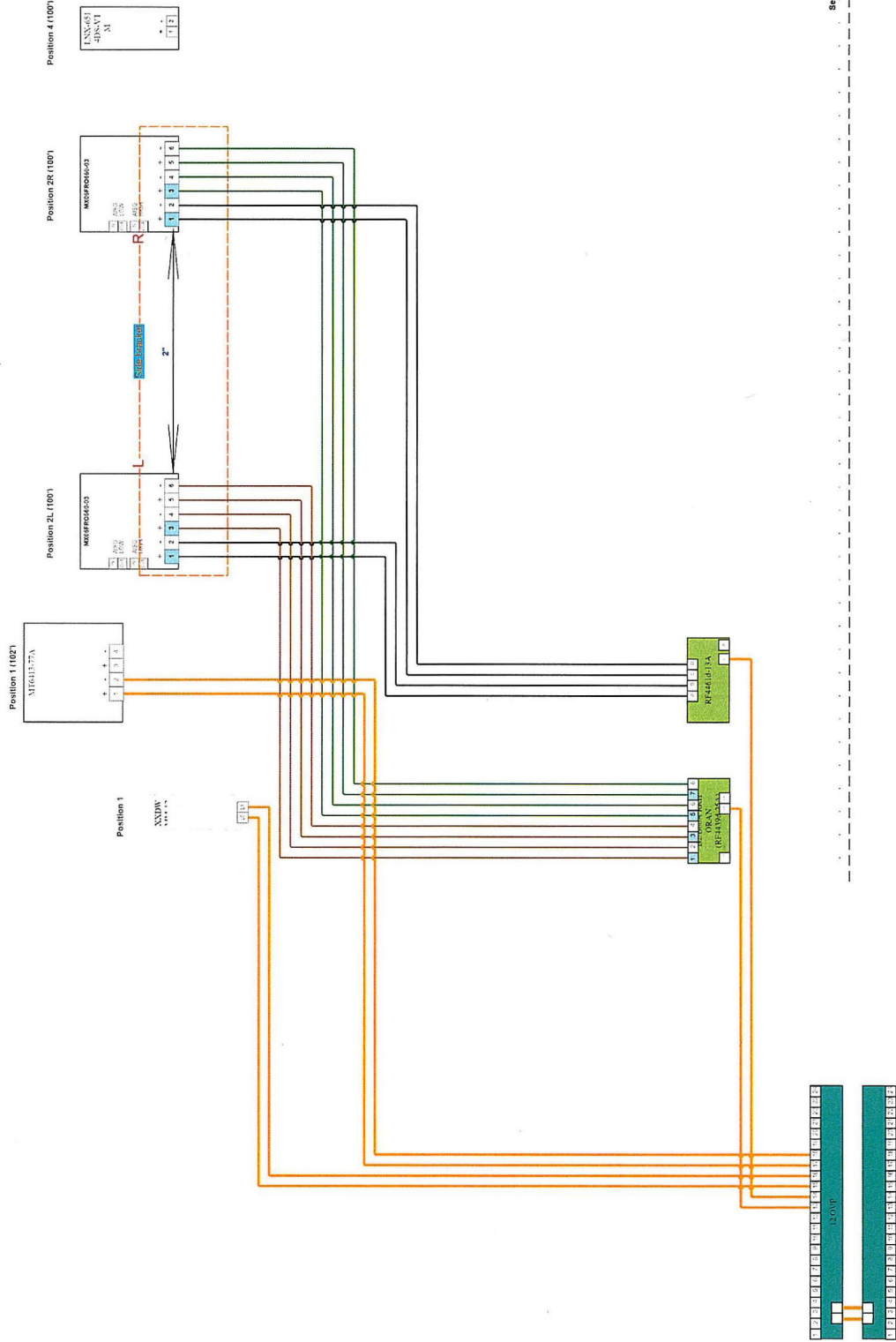
Gamma (Proposed)

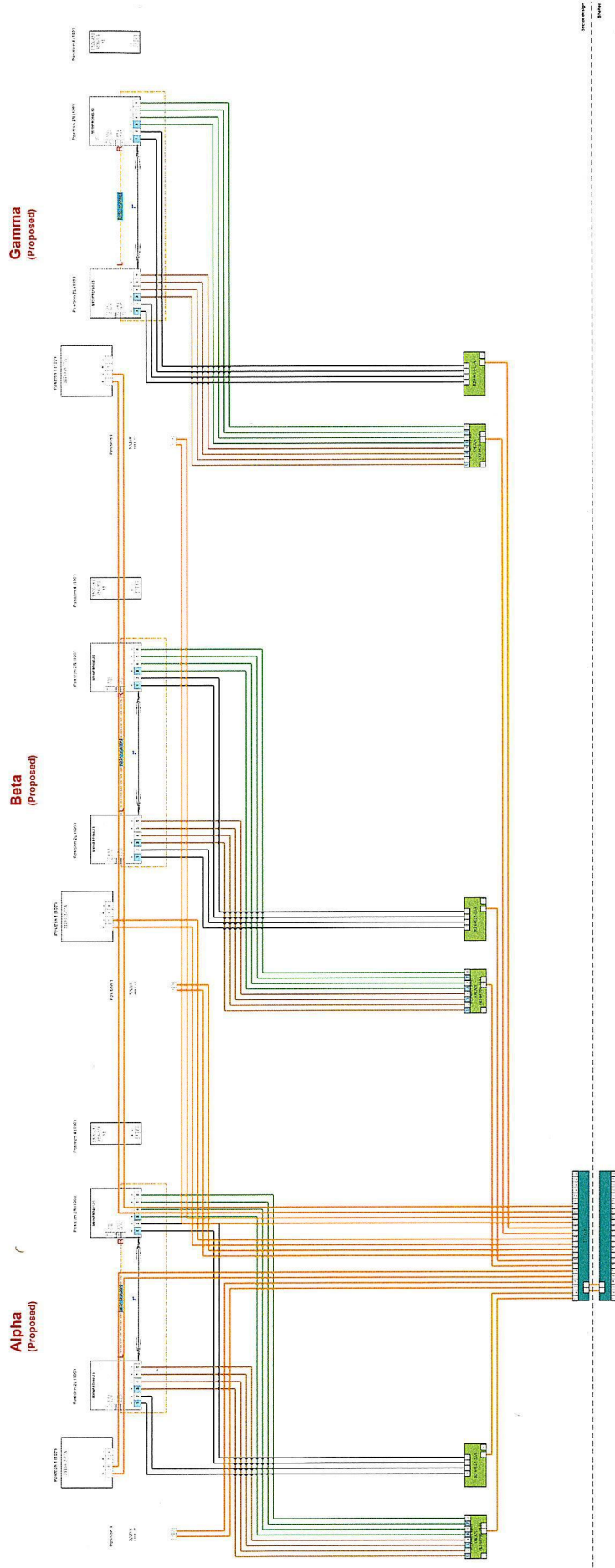
Legends
RET dc signal capable port

700/850(LB)
700(LT)
850(OB)
AWS(AW)
PCS(PC)
AWS/PCS(HB)
28GHz(U28)
39GHz(U39)
L-Sub6(S6)
CBRS(RS)
LAA(LA)
Fiber
AISG
DC

Coax
Coax Jumper
Sectors Shared Equipments

Notes:
- Antenna view is from the back of the antennas
- Colors of connections are just for clarification
- Size of objects in drawing doesn't reflect equipment true dimensions







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Surveying, CT P.C.
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Stamford, CT 06901
203.324.0800
peter.albano@collierseng.com

Post-Modification Antenna Mount Analysis Report and PMI Requirements

Mount Fix

SMART Tool Project #: 10203181
Colliers Engineering & Design Project #: 21781096 (Rev 1)

October 31, 2023

Site Information

Site ID: 5000055679-VZW / CROMWELL N CT
Site Name: CROMWELL N CT
Carrier Name: Verizon Wireless
Address: 179 Shunpike Road
Cromwell, Connecticut 06416
Middlesex County
Latitude: 41.623222°
Longitude: -72.679028°

Structure Information

Tower Type: 150-Ft Self Support
Mount Type: 12.00-Ft T-Frame

FUZE ID # 15232181

Analysis Results

T-Frame: 88.3% Pass w/ Modifications*

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

***Contractor PMI Requirements:

Included at the end of this MA report

Available & Submitted via portal at <https://pmi.vzwsmart.com>

For additional questions and support, please reach out to:

pmisupport@colliersengineering.com

Report Prepared By: David Anuka



Executive Summary:

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

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

Sources of Information:

Document Type	Remarks
Radio Frequency Data Sheet (RFDS)	Verizon RFDS, Site ID: 674871, dated August 30, 2023
Mount Mapping Report	Hudson Design Group, LLC, Site ID: 535821, dated July 8, 2021
Previous Mount Analysis	Colliers Engineering & Design, Project #: 21781096 (Rev 1), dated May 16, 2023
Mount Modification Drawings	Colliers Engineering & Design, Project #: 21781096 (Rev 1), dated October 31, 2023

Analysis Criteria:

Codes and Standards:	ANSI/TIA-222-H Connecticut State Building Code, Effective October 1, 2022	
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT} : Ice Wind Speed (3-sec. Gust): Design Ice Thickness: Risk Category: Exposure Category: Topographic Category: Topographic Feature Considered: Topographic Method: Ground Elevation Factor, K_e :	120 mph 50 mph 1.50 in II B 1 N/A N/A 0.990
Seismic Parameters:	S_s : S_1 :	0.207 g 0.056 g
Maintenance Parameters:	Wind Speed (3-sec. Gust): Maintenance Load, L_v : Maintenance Load, L_m :	30 mph 250 lbs. 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
98.30	101.50	3	Samsung	MT6413-77A	Added
	100.00	6	JMA Wireless	MX06FRO660-03	
		1	Raycap	RVZDC-6627-PF-48	
		3	Samsung	RF4439d-25A	
		3	Samsung	RF4461d-13A	
		3	Andrew	LNK-6514DS-VTM	Retained
	98.00	3	Samsung	XXDWMM-12.5-65-8T-CBRS	Added

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

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

Standard Conditions:

1. All engineering services are performed on the basis that the information provided to Colliers Engineering & Design and used in this analysis is current and correct. The existing equipment loading has been applied at locations determined from the supplied documentation. Any deviation from the loading locations specified in this report shall be communicated to Colliers Engineering & Design to verify deviation will not adversely impact the analysis.
2. Mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.

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

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

3. For mount analyses completed from other data sources (including new replacement mounts) and not specifically mapped in accordance with the NSTD-446 Standard, the mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.
4. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
5. The mount was checked up to, and including, the bolts that fasten it to the mount collar/attachment and threaded rod connections in collar members if applicable. Local deformation and interaction between the mount collar/attachment and the supporting tower structure are outside the scope of this analysis.

6. All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Colliers Engineering & Design is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.
7. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
 - o Channel, Solid Round, Angle, Plate ASTM A36 (Gr. 36)
 - o HSS (Rectangular) ASTM 500 (Gr. B-46)
 - o Pipe ASTM A53 (Gr. B-35)
 - o Threaded Rod F1554 (Gr. 36)
 - o Bolts ASTM A325
8. Any mount modifications listed under Sources of Information are assumed to have been installed per the design specifications.

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

Analysis Results:

Component	Utilization %	Pass/Fail
Standoff Horizontal	35.5 %	Pass
Face Horizontal	80.9 %	Pass
Mast Pipe	12.7 %	Pass
Standoff Bracing	10.9 %	Pass
Vertical Face Bracing	7.3 %	Pass
Face Bracing	19.9 %	Pass
Mount Pipe	45.6 %	Pass
Tieback	18.3 %	Pass
Proposed V-Bracing	17.5 %	Pass
Proposed Face Horizontal	19.6 %	Pass
Connection Check	88.3 %	Pass

Structure Rating – (Controlling Utilization of all Components)	88.3%
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Mount Steel (EPA)a per ANSI/TIA-222-H Section 2.6.11.2:

Ice Thickness (In)	Mount Pipes Excluded		Mount Pipes Included	
	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)
0	30.8	17.2	37.6	24.1
0.5	44.7	25.4	54.5	35.2
1	57.4	32.1	70.0	44.7

Notes:

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

Requirements:

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

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

Attachments:

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

Mount Desktop – Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor – Mount Modification

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

For additional questions and support, please reach out to pmisupport@colliersengineering.com

MDG#: 5000055679

SMART Project #: 10203181

Fuze Project ID: 15232181

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

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

Base Requirements:

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

Photo Requirements:

- Photos taken at ground level
 - Photo of Gate Signs showing the tower owner, site name, and number.
 - Overall tower structure after installation of the modifications.
 - Photos of the mount after installation of the modifications; if the mounts are at different rad elevations, pictures must be provided for all elevations that the modifications were installed
- Photos taken at Mount Elevation
 - Photos showing the safety climb wire rope above and below the mount prior to modification.
 - Photos showing the climbing facility and safety climb if present.

- Photos showing each individual sector after installation of modifications. Each entire sector must be in one photo to show the interconnection of members.
 - These photos shall also certify that the placement and geometry of the equipment on the mount is as depicted in the antenna placement diagram in this form.
- Photos that show the model number of each antenna and piece of equipment installed per sector.
- Photos of each installed modification per the modification drawings; pictures shall also include connection hardware (U-bolts, bolts, nuts, all-threaded rods, etc.)
- Photos showing the distances (relative distance between collars) of the installed modifications from the appropriate reference locations shown in the modification drawings.
- Photos showing the installed modifications onto the tower (i.e. ring/collar mounts, tie-backs, V-bracing kits, etc.); if the existing mount elevation needs to be changed according to the modification drawings, an elevation measurement shall be provided before the elevation change.

Material Certification:

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

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

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

OR

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

Antenna & Equipment Placement and Geometry Confirmation:

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

OR

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

Comments:

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

- ☐ Yes ☐ No

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

Issue:

Contractor shall install R5 Reinforcement kit on all mount to tower connections.

Response:

Special Instruction Confirmation:

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

Comments:

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

- ☐ Yes ☐ No

Contractor certifies no new damage created during the current installation:

- ☐ Yes ☐ No

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

- ☐ Safety Climb in Good Condition ☐ Safety Climb Damaged

Comments:

--

Certifying Individual:

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

Sector: A

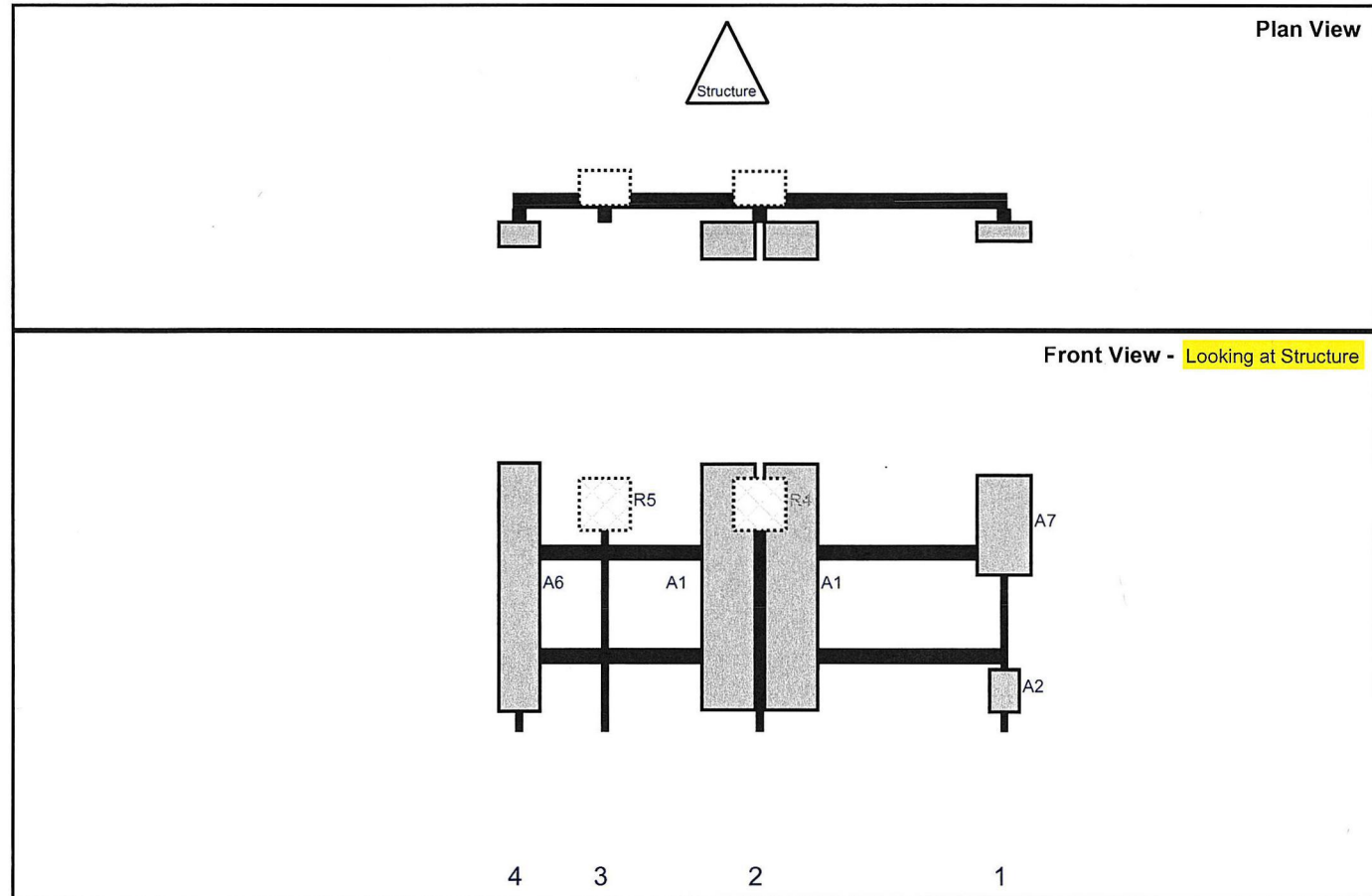
10/28/2023

Structure Type: Self Support

10203181

Mount Elev: 98.30

Page: 1



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	XXDWMM-12.5-65-8T-CBRS	12.3	8.7	143	1	a	Front	60	0	Added	
A7	MT6413-77A	28.9	15.8	143	1	a	Front	12	0	Added	
A1	MX06FRO660-03	71.3	15.4	72	2	a	Front	30	9	Added	
A1	MX06FRO660-03	71.3	15.4	72	2	b	Front	30	-9	Added	
R4	RF4439d-25A	15	15	72	2	a	Behind	6	0	Added	
R5	RF4461d-13A	15	15	27	3	a	Behind	6	0	Added	
A6	LNx-6514DS-VTM	72	11.9	2	4	a	Front	30	0	Retained	07/08/2021
M6	RVZDC-6627-PF-48	29.5	16.5		Member					Added	

Structure: 5000055679-VZW - CROMWELL N CT

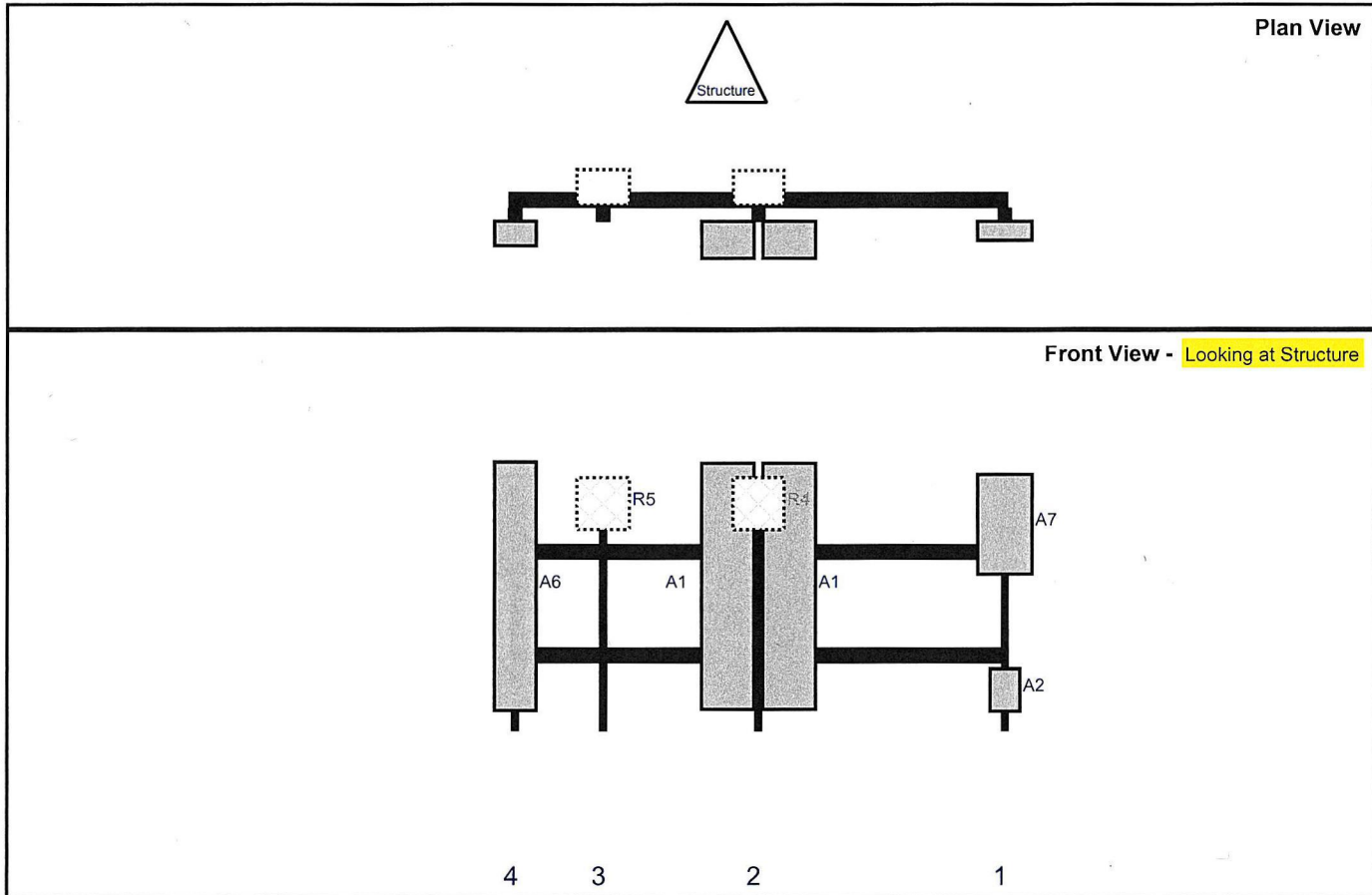
Sector: B
Structure Type: Self Support
Mount Elev: 98.30

10203181

10/28/2023



Page: 2



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	XXDWMM-12.5-65-8T-CBRS	12.3	8.7	143	1	a	Front	60	0	Added	
A7	MT6413-77A	28.9	15.8	143	1	a	Front	12	0	Added	
A1	MX06FRO660-03	71.3	15.4	72	2	a	Front	30	9	Added	
A1	MX06FRO660-03	71.3	15.4	72	2	b	Front	30	-9	Added	
R4	RF4439d-25A	15	15	72	2	a	Behind	6	0	Added	
R5	RF4461d-13A	15	15	27	3	a	Behind	6	0	Added	
A6	LNx-6514DS-VTM	72	11.9	2	4	a	Front	30	0	Retained	07/08/2021

Structure: 5000055679-VZW - CROMWELL N CT

Sector: C

10/28/2023

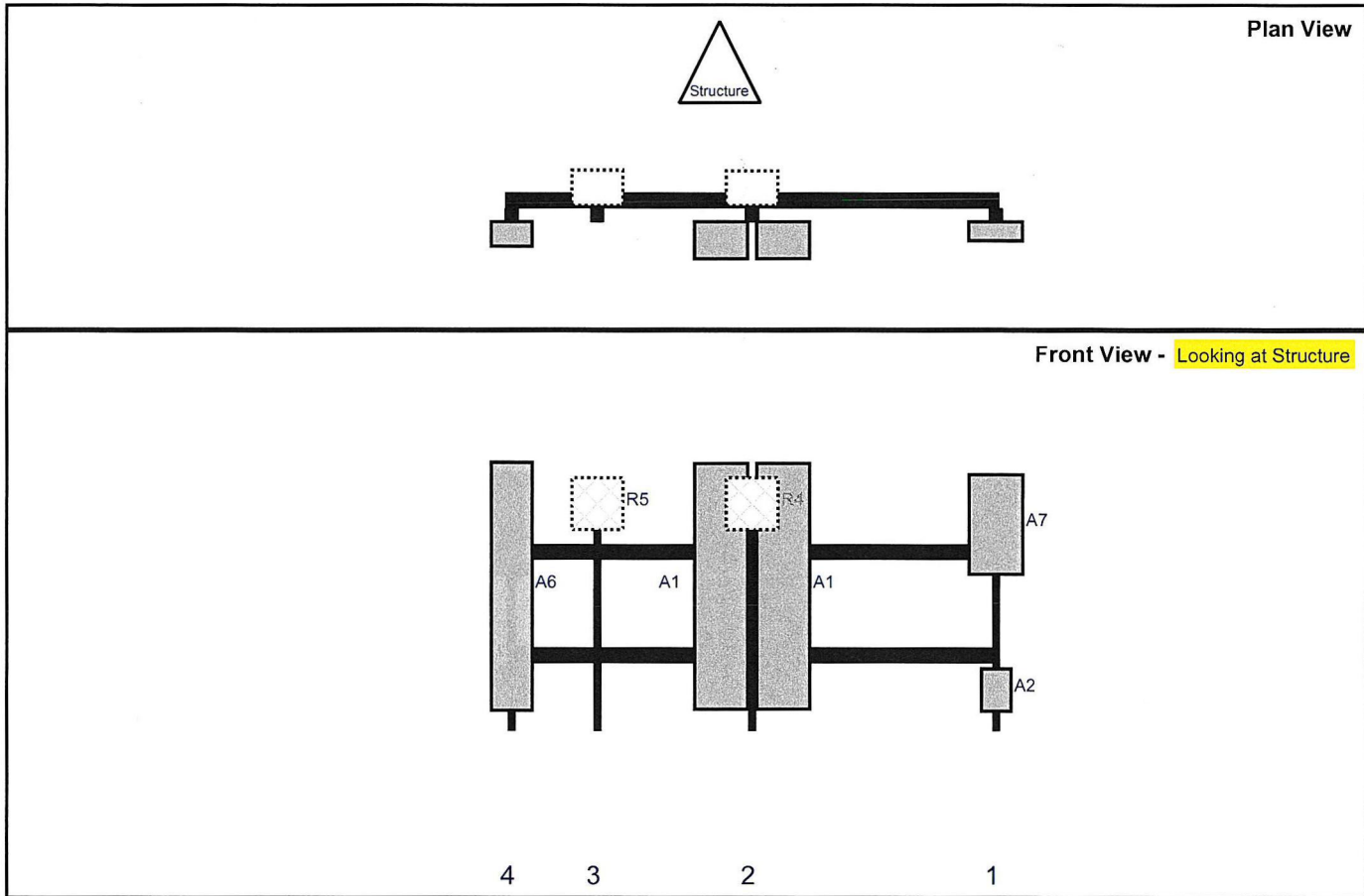
Structure Type: Self Support

10203181



Mount Elev: 98.30

Page: 3



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	XXDWMM-12.5-65-8T-CBRS	12.3	8.7	143	1	a	Front	60	0	Added	
A7	MT6413-77A	28.9	15.8	143	1	a	Front	12	0	Added	
A1	MX06FRO660-03	71.3	15.4	72	2	a	Front	30	9	Added	
A1	MX06FRO660-03	71.3	15.4	72	2	b	Front	30	-9	Added	
R4	RF4439d-25A	15	15	72	2	a	Behind	6	0	Added	
R5	RF4461d-13A	15	15	27	3	a	Behind	6	0	Added	
A6	LNx-6514DS-VTM	72	11.9	2	4	a	Front	30	0	Retained	07/08/2021



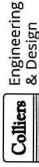
MOUNT MODIFICATION DRAWINGS
EXISTING 12.00' T-FRAME

TOWER OWNER: VERIZON WIRELESS
TOWER OWNER SITE NUMBER: 17/03/946

CARRIER SITE NAME: CROMWELL N CT
CARRIER SITE NUMBER: 5000055679
FUZE ID: 15232181

179 SHUNPIKE ROAD
CROMWELL, CT 06416
MIDDLESEX COUNTY

LATITUDE: 41.623222° N
LONGITUDE: 72.679028° W



Engineering
& Design
www.colliersengineering.com

NOTES: 1. All drawings shall be prepared in accordance with the latest edition of the American Institute of Steel Construction, Inc. (AISC) Specification for Structural Steel Buildings. 2. All drawings shall be prepared in accordance with the latest edition of the American Institute of Steel Construction, Inc. (AISC) Specification for Structural Steel Buildings. 3. All drawings shall be prepared in accordance with the latest edition of the American Institute of Steel Construction, Inc. (AISC) Specification for Structural Steel Buildings.



PROJECT NUMBER:
A-179 SHUNPIKE ROAD
CROMWELL, CT 06416
MIDDLESEX COUNTY
CARRIER SITE NUMBER: 5000055679
FUZE ID: 15232181

DATE: 01/10/2023
DRAWN BY: [REDACTED]
CHECKED BY: [REDACTED]
APPROVED BY: [REDACTED]

NO.	DATE	DESCRIPTION	BY	CHKD
1	01/10/2023	ISSUED FOR PERMIT	DA	DA
2	01/10/2023	ISSUED FOR PERMIT	DA	DA
3	01/10/2023	ISSUED FOR PERMIT	DA	DA
4	01/10/2023	ISSUED FOR PERMIT	DA	DA
5	01/10/2023	ISSUED FOR PERMIT	DA	DA
6	01/10/2023	ISSUED FOR PERMIT	DA	DA
7	01/10/2023	ISSUED FOR PERMIT	DA	DA
8	01/10/2023	ISSUED FOR PERMIT	DA	DA
9	01/10/2023	ISSUED FOR PERMIT	DA	DA
10	01/10/2023	ISSUED FOR PERMIT	DA	DA

SHEET INDEX

SHEET	DESCRIPTION
ST-1	TITLE SHEET
SGN-1	GENERAL NOTES
SGN-2	CLIMBING FACILITY DETAIL
SGN-3	CLIMBING FACILITY DETAIL
SGN-4	CLIMBING FACILITY DETAIL
SGN-5	CLIMBING FACILITY DETAIL
SGN-6	CLIMBING FACILITY DETAIL
SGN-7	CLIMBING FACILITY DETAIL
SGN-8	CLIMBING FACILITY DETAIL
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SGN-98	CLIMBING FACILITY DETAIL
SGN-99	CLIMBING FACILITY DETAIL
SGN-100	CLIMBING FACILITY DETAIL

PROJECT INFORMATION

APPLICANT/LESSEE	VERIZON WIRELESS
COMPANY:	VERIZON WIRELESS
CLIENT REPRESENTATIVE	PETER ALBANO
COMPANY:	VERIZON WIRELESS
PROJECT MANAGER	PETER ALBANO
COMPANY:	VERIZON WIRELESS
CONTACT:	PETER ALBANO
PHONE:	860.336.1234
EMAIL:	PETER.ALBANO@COLLIERSENG.COM
CONTRACTOR PMI REQUIREMENTS	
PMI LOCATION:	179 SHUNPIKE ROAD
SHAW TOOL PROJECT #:	5000055679
VZW HDG #:	1070/2023
ANALYSIS DATE:	10/10/2023
PMI REQUIREMENTS EMBEDDED WITHIN MOUNT MODIFICATION REPORT	

DESIGN CRITERIA

WIND LOADS
BASIC WIND SPEED (1 SECOND GUST), $V = 120$ MPH
EXPOSURE CATEGORY: B
TOPOGRAPHIC CATEGORY: 1
TOPOGRAPHIC CONSIDERED: NO
MEAN BASE ELEVATION (AMSL) = 278.56'
ICE LOADS
ICE WIND SPEED (1 SECOND GUST), $V = 50$ MPH
ICE THICKNESS = 1.50 IN
SEISMIC LOADS
SEISMIC DESIGN CATEGORY: B
SHORT TERM MCEER GROUND MOTION, $S_1 = .307$
LONG TERM MCEER GROUND MOTION, $S_2 = .056$

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COLLIERS ENGINEERING & DESIGN

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NOTE: DO NOT SCALE DRAWING FOR CONSTRUCTION.

BILL OF MATERIALS	

SECTION I - VZWSMART KITS

QUANTITY	MANUFACTURER	PART NUMBER	DESCRIPTION	NOTES	UNIT WEIGHT (LBS.)	WEIGHT (LBS.)
6		VZWSHART-5KJ-SL	BRACING KIT	CONTRACTOR TO VERIFY THE LENGTH REQUIRED AND TRIM AS NECESSARY IN ACCORDANCE WITH THE STRUCTURAL STEEL NOTES ON SHEET SGN-1.	122	732
6		VZWSHART-AL333	CLIP ANGLE		3	18
24		VZWSHART-MBK1	CROSSOVER PLATE		14	336
	VZWSHART					

[illegible][illegible][illegible]

QUANTITY	MANUFACTURER	PART NUMBER	DESCRIPTION	NOTES	UNIT WEIGHT (LBS.)	WEIGHT (LBS.)
1	PERFECT VISION	PV-CLAMP-LW-0106	CLAMP BRACKET	OR EOR APPROVED EQUIVALENT	-	-
1	PERFECT VISION	PV-CHX-CG-SH	WIRE ROPE GUIDE	OR EOR APPROVED EQUIVALENT	-	-
					TOTAL:	1640

ALL MATERIALS REQUIRED FOR THE DESIGNED MODIFICATIONS BUT NOT LISTED IN THIS SHEET ARE ASSUMED TO BE PROVIDED BY THE CONTRACTOR.

COMMSCOPE				PERFECTVISION				SITE PRO 1				BETTER METAL, LLC			
CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT
PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE
EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL
WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE
SALVADOR ANGUIANO				WIRELESS SALES				PAULIA BOSWELL				DAVID STANSBERRY			
(817) 304-7493				(841) 887-4733				(972) 234-8843				(615) 516-0990 (O) (615) 631-2520 (M)			
SALVADOR.ANGUIANO@COMMSCOPE.COM				WWW.PERFECTVISION.COM				PAULIA.BOSWELL@VALHOUT.COM				DLS@BETTERMETAL.COM			
WWW.COMMSCOPE.COM				WIRELESSKILLER@PERFECTVISION.COM				WWW.SITEPRO1.COM				WWW.BETTERMETAL.COM			
METROSITE FABRICATORS, LLC				SABRE INDUSTRIES, INC.				NEWAVE							
CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT	CONTACT
PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE	PHONE
EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL	EMAIL
WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE	WEBSITE
KENT RAHEY				JANGE WELCH				NEWAVE SALES TEAM							
(706) 335-7045 (O) (706) 982-9788 (M)				(845) 428-6937				(971) 239-4762							
KENT@METROSITELLC.COM				AKWELCH@SABREINDUSTRIES.COM				SALES@NEWAVETC.COM							
METROSITEFABRICATORS.COM				WWW.SABRESITESOLUTIONS.COM				WWW.NEWAVETC.COM							

1. THE MANUFACTURERS LISTED ARE THE APPROVED VENDORS FOR THE VZW MOUNT KITS. EACH MANUFACTURER WILL BE AWARE OF WHICH KITS HAVE BEEN THROUGH THE VZW APPROVAL PROCESS AND THEY ARE IN TURN APPROVED TO SELL. PLEASE NOTE THAT THE MATERIAL UTILIZED ON THE MOUNT MODIFICATIONS WILL BE REVIEWED AS A PART OF THE DESKTOP PMI COMPLETED BY THE SMART TOOL VENDOR. IT WILL BE REQUIRED THAT THE VZW KITS SPECIFIED ARE UTILIZED IN THE MODIFICATIONS.

2. ALL MATERIALS REQUIRED FOR THE DESIGNED MODIFICATIONS BUT NOT LISTED IN THIS SHEET ARE ASSUMED TO BE PROVIDED BY THE CONTRACTOR.

[illegible]

GENERAL NOTES

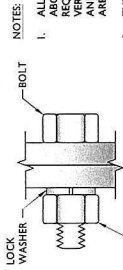
- THESE MODIFICATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF THE TELECOMMUNICATIONS INDUSTRY STANDARD (TIA-222-H) AND THE REQUIREMENTS PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE ABOVE MENTIONED CODES.
- CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE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

STRUCTURAL STEEL

- DESIGN, DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING PUBLICATIONS EXCEPT AS SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS.
 - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION (15TH EDITION)
 - SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS
 - ASC CODE OF STANDARD PRACTICE
- STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING UNLESS OTHERWISE SHOWN:
 - CHANNELS, ANGLES, PLATES, ETC. ASTM A36 (GR. 36)
 - STEEL PIPE ASTM A53 (GR. 35)
 - BOLTS ASTM A325
 - LOCK WASHERS ASTM A563
- ALL SUBSTITUTIONS PROPOSED BY THE CONTRACTOR SHALL BE APPROVED IN WRITING BY THE ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER FOR VERIFYING THE SUBSTITUTION IS SUITABLE FOR USE AND MEETS ORIGINAL DESIGN CRITERIA. DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT, SHALL BE NOTED. ESTIMATES OF COSTS/CREDITS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING RE-DESIGN COSTS AND COSTS TO THE ENGINEER) SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. CONTRACTOR SHALL PROVIDE ADDITIONAL DOCUMENTATION AND/OR SPECIFICATIONS TO THE ENGINEER AS REQUESTED.
- PROVIDE STRUCTURAL STEEL SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
 - SUBMIT SHOP DRAWINGS TO:
PETER ALBANO@COLLIERSG.COM
 - PROVIDE COLLIER'S ENGINEERING & DESIGN PROJECT # AND COLLIER'S ENGINEERING & DESIGN PROJECT ENGINEER CONTACT IN THE BODY OF THE EMAIL.
 - DRILL NO HOLES IN ANY NEW OR EXISTING STRUCTURAL STEEL MEMBERS OTHER THAN THOSE SHOWN ON STRUCTURAL DRAWINGS WITHOUT THE APPROVAL OF THE ENGINEER OF RECORD.
 - GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
 - ALL NEW STEEL SHALL BE HOT DIP GALVANIZED FOR FULL WEATHER PROTECTION. IN ADDITION ALL NEW STEEL SHALL BE PAINTED TO MATCH EXISTING STEEL. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
 - ALL BOLT ASSEMBLIES FOR STRUCTURAL MEMBERS REPRESENTED IN THIS DRAWING REQUIRE LOCKING DEVICES TO BE INSTALLED IN ACCORDANCE WITH TIA-222-H SECTION 4.3.2 REQUIREMENTS.
 - WHERE CONNECTIONS ARE NOT FULLY DETAILED ON THESE DRAWINGS, FABRICATOR SHALL DESIGN CONNECTIONS TO RESIST LOADS AND FORCES WHERE SHOWN ON DRAWINGS AND AS OUTLINED IN SPECIFICATIONS.
 - FOR MEMBERS BEING REPLACED, PROVIDE NEW BOLTS AND MATCH EXISTING SIZE AND GRADE. MAINTAIN AISC REQUIREMENTS FOR MINIMUM BOLT DISTANCE AND SPACING.
 - ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH SUCH THAT THE END OF THE BOLT IS AT LEAST FLUSH WITH THE FACE OF THE MEMBER. IT IS NOT PERMITTED FOR THE BOLT END TO BE BELOW THE FACE OF THE MEMBER AFTER TIGHTENING IS COMPLETED.
 - GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
 - ALL NEW STEEL SHALL BE HOT DIP GALVANIZED FOR FULL WEATHER PROTECTION. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
 - ALL EXISTING PAINTED/GALVANIZED SURFACES DAMAGED DURING REHAB INCLUDING AREAS UNDER STIFFENER PLATES SHALL BE WIRE BRUSHED CLEAN, REPAIRED BY COLD GALVANIZING (ZINC COATING OR FOR APPROVED EQUIVALENT), AND REPAINTED TO MATCH THE EXISTING FINISH (IF APPLICABLE).
 - ALL HOLES IN STEEL MEMBERS SHALL BE SIZED 1/16" LARGER THAN THE BOLT DIAMETER. STANDARD HOLES SHALL BE USED UNLESS NOTED OTHERWISE.

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

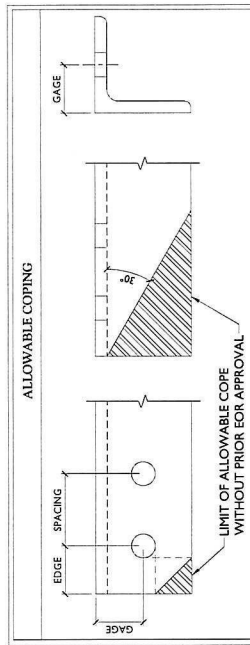
WORKABLE GAGES (IN.)	
LEG	GAGE
4	2 1/2
3 1/2	2
3	1 3/4
2 1/2	1 3/8
2	1 1/8

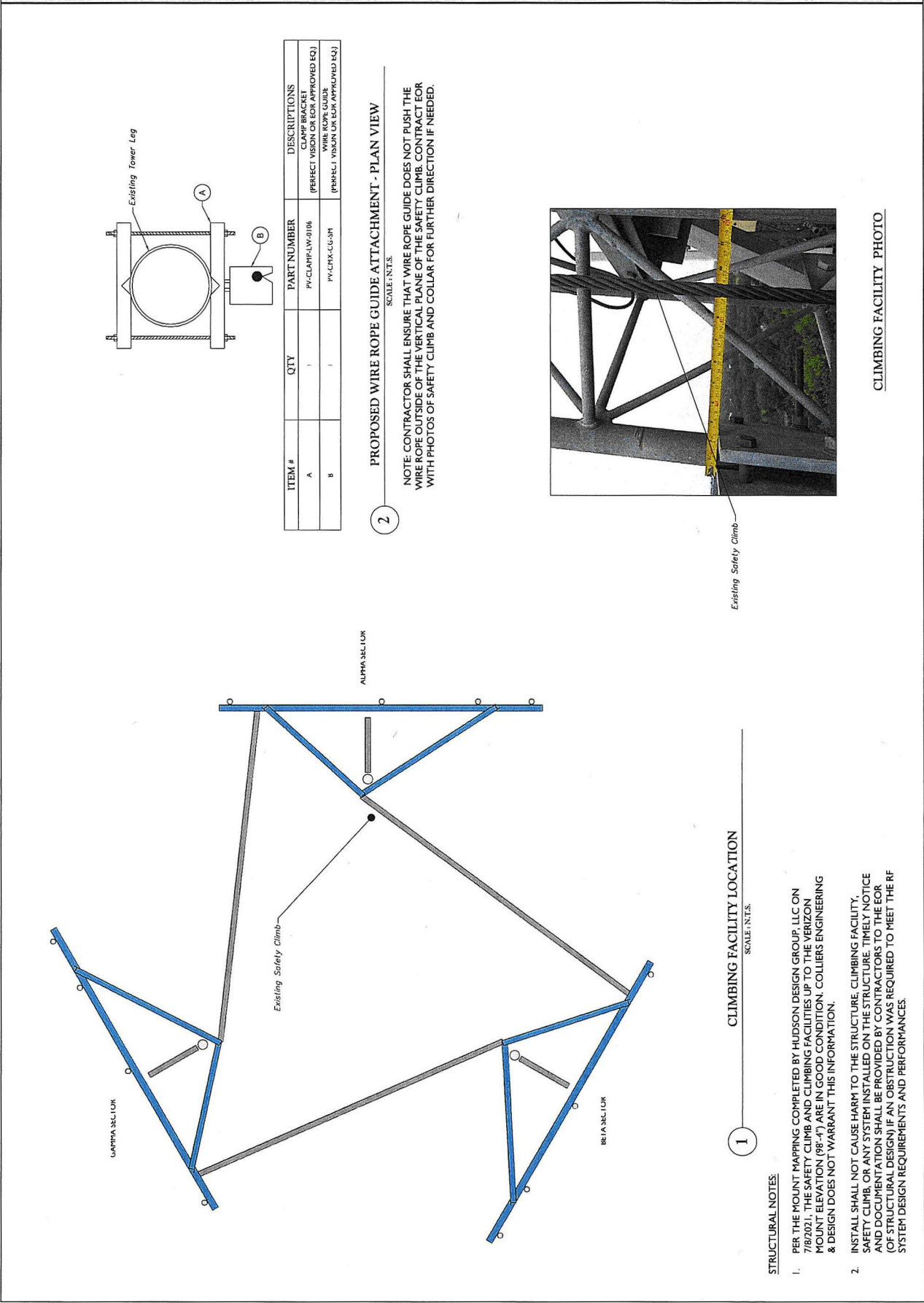


TYP. BOLT ASSEMBLY

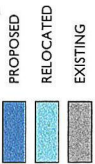
NOTES:

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





LEGEND:

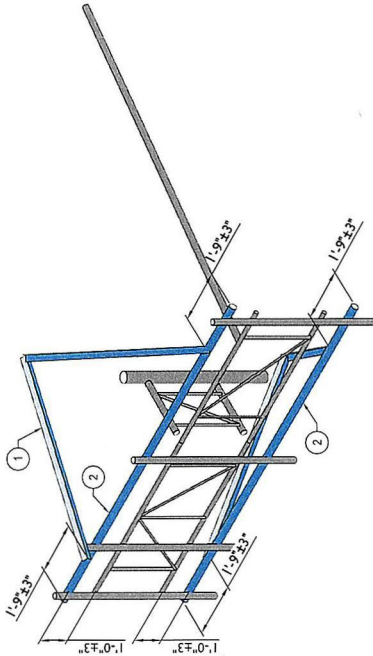


MOUNT MODIFICATION SCHEDULE

NO.	ELEVATION	QUANTITY	DESCRIPTION	NOTES
1		6	PROPOSED V-BRACING KIT (PART #: VZWGHART-SFK3.SI)	CONTRACTOR TO VERIFY THE LENGTH REQUIRED AND TRIM AS NECESSARY IN ACCORDANCE WITH THE STRUCTURAL STEEL NOTES ON SHEET SGN-1. SEE GENERAL NOTE B. CONTRACTOR SHALL INSTALL ONE PROPOSED CLIP ANGLE (PART #: VZWGHART-AL333) AT EACH END OF THE MOUNT. THE MOUNT SHALL BE INSTALLED AS INDICATED IN CHUCK LO. ACHIEVE INSTALLATION OF HORIZONTAL AS SHOWN. LOK SHALL BE NOTIFIED IF EQUIPMENT NEEDS TO BE RELOCATED TO ANOTHER MOUNT PIPE. LUNNELT NEW HORIZONTAL TO ALL EXISTING VERTICAL MOUNT PIPES WITH CROSSOVER PLATE (PART #: VZWGHART-LPSK1).
2	38'-4"	6	PROPOSED 156" LONG, PIPE 2 1/2 SCH40 FACE HORIZONTAL	
3		3	RS UNIVERSAL PIPE MOUNT REINFORCEMENT KIT (PART #: SP1 RS-REINP)	CONTRACTOR TO CONTACT LOK IF RE-REINFORCEMENT IS REQUIRED BASED ON IN-FIELD CONDITIONS. VERIFY PRIOR TO CONSTRUCTION. SEE NOTE D.

GENERAL NOTES:

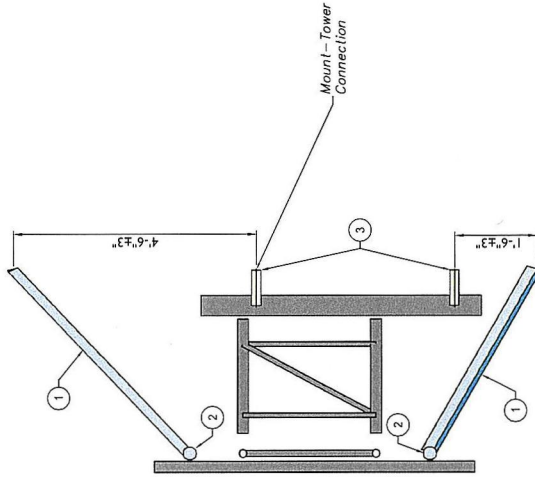
- CONTRACTOR SHALL VERIFY THAT NEW & EXISTING STEEL IS FREE OF CORROSION. VISIBLE MINOR CORROSION SHALL BE WIRE BRUSHED CLEAN AND TREATED WITH COLD GALVANIZATION. REPORT ANY SIGNIFICANT CORROSION TO LOK.
- THREADS ROD FROM PROPOSED KITS SHALL BE TRIMMED TO EXTEND NO MORE THAN 3" BEYOND THE LOCK NUT. TREAT ALL CUT ENDS WITH (2) COATS OF COLD GALVANIZATION (ZINC KOTE OR LOK APPROVED EQUAL).
- PROPOSED REINFORCEMENT KIT SHALL BE INSTALLED AS SHOWN FOR CLAW TAIL. IT SHALL BE INSTALLED AT THE END OF THE MOUNT. TOWER KITS SHALL BE RE-INSTALLED TO HAVE ALL THREADED ROD HEADS INSIDE AS SHOWN IN SPEC SHEET. THREADED RODS SHALL BE TRIMMED TO EXTEND NO MORE THAN 3" BEYOND THE LOCK NUT. TREAT ALL CUT ENDS WITH (2) COATS OF COLD GALVANIZATION (ZINC KOTE OR LOK APPROVED EQUAL).



PROPOSED ISOMETRIC VIEW (TYP. ALL SECTORS)

SCALE: N.T.S.

1



PROPOSED SIDE ELEVATION VIEW (TYP. ALL SECTORS)

SCALE: N.T.S.

2

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AS SHOWN	DATE	DESCRIPTION	BY	DATE	DESCRIPTION	BY
1	10/10/2017	DESIGN	DM	10		
2	10/10/2017	DESIGN	DM	10		
3	10/10/2017	DESIGN	DM	10		
4	10/10/2017	DESIGN	DM	10		
5	10/10/2017	DESIGN	DM	10		
6	10/10/2017	DESIGN	DM	10		
7	10/10/2017	DESIGN	DM	10		
8	10/10/2017	DESIGN	DM	10		
9	10/10/2017	DESIGN	DM	10		
10	10/10/2017	DESIGN	DM	10		

COLLINS ENGINEERING & DESIGN, P.C.
C.T. JACOBSON

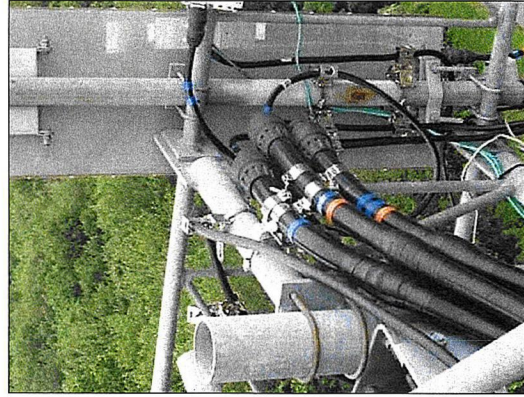
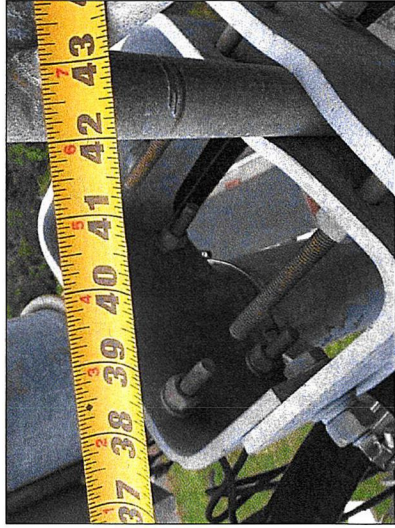
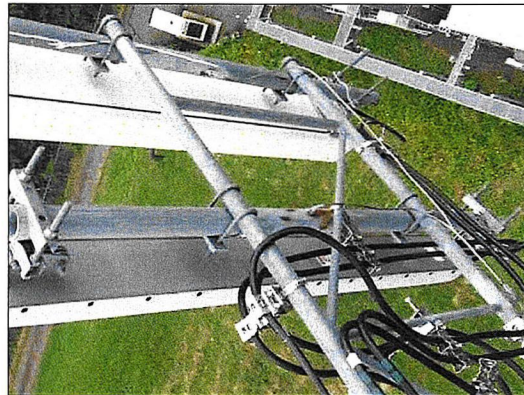
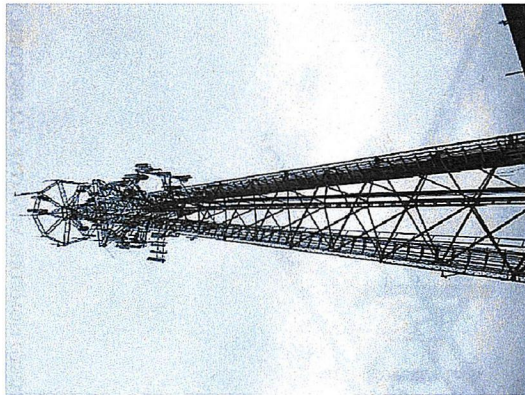
THIS IS A VIOLATION OF LAW FOR ANY PERSON
TO REPRODUCE OR TRANSMIT THIS DOCUMENT
WITHOUT THE WRITTEN PERMISSION OF THE
ENGINEER TO ALTER THIS DOCUMENT

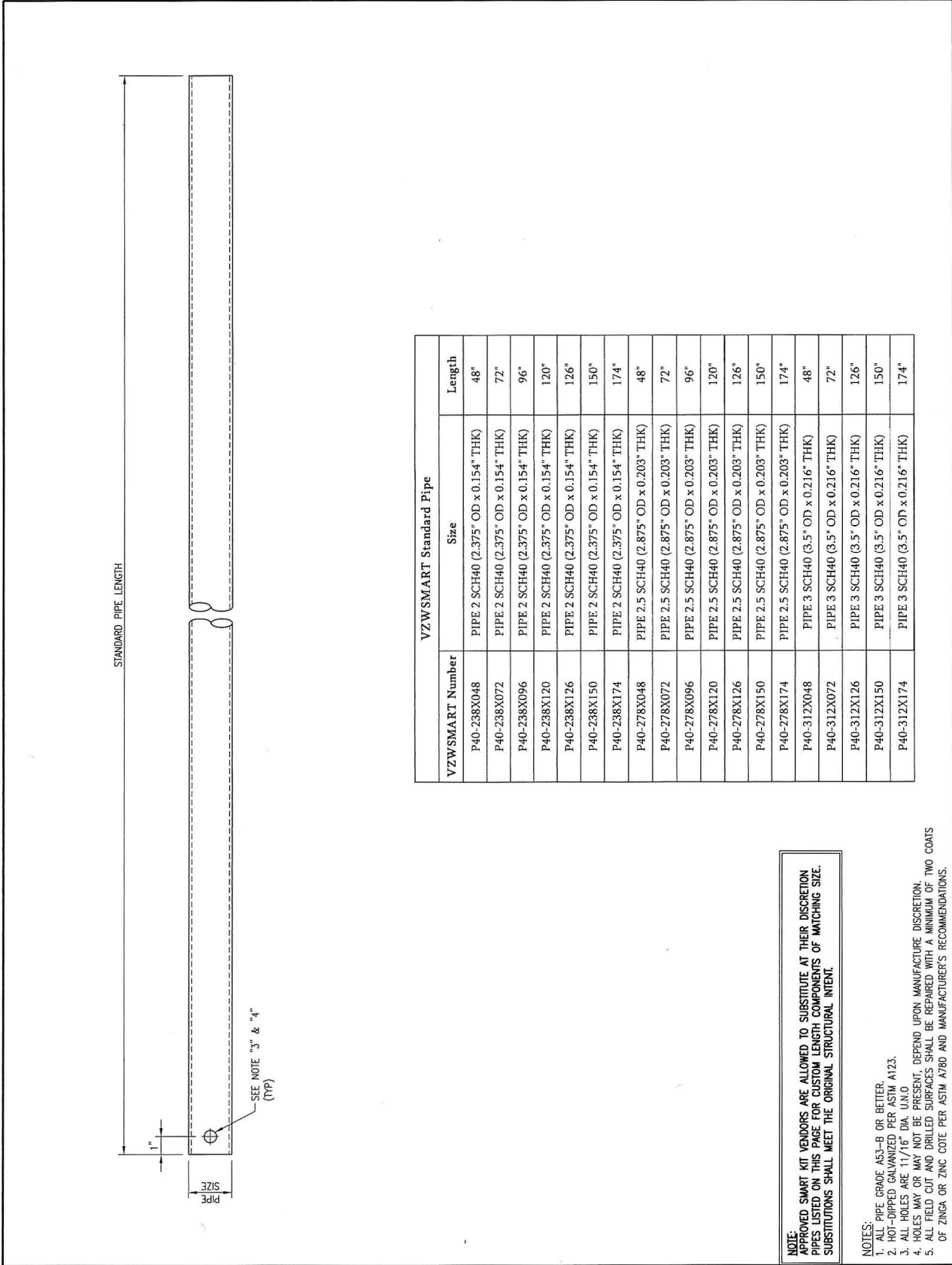
SITE NAME:
CROWWELL, N CT
5000055679
179 SHUNKIE ROAD
CROWWELL, CT 06037
MIDDLESEX COUNTY

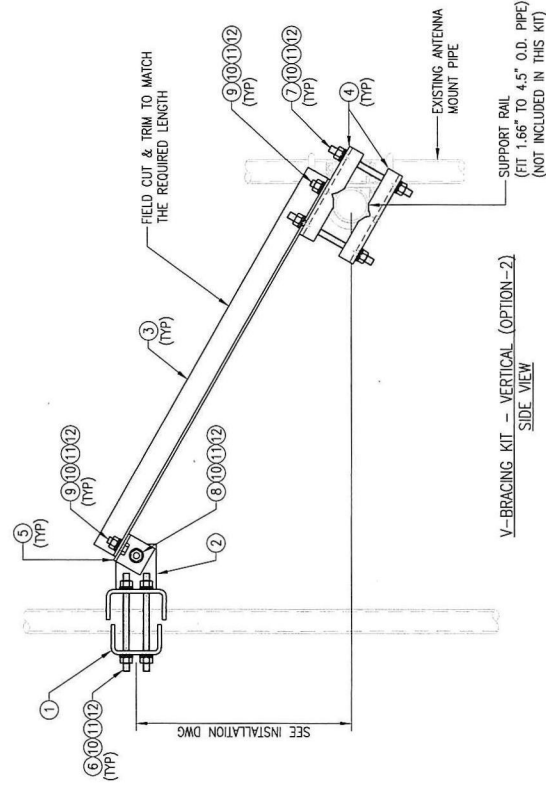
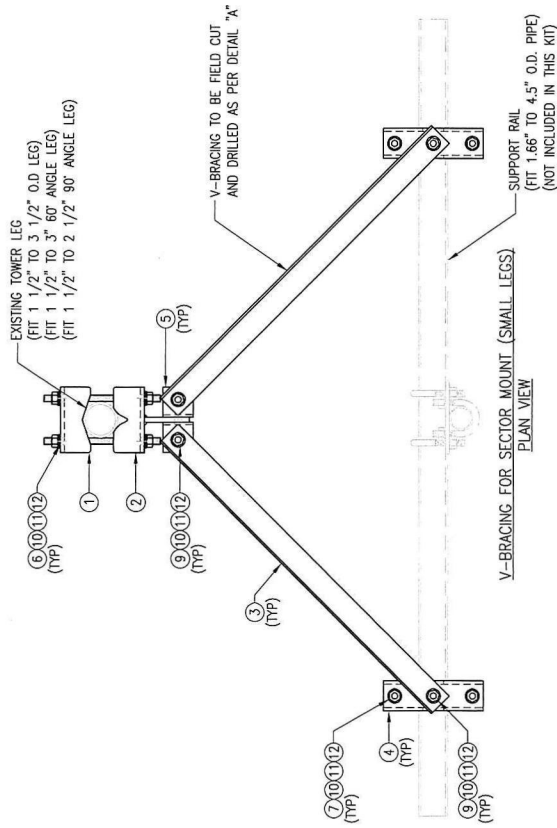
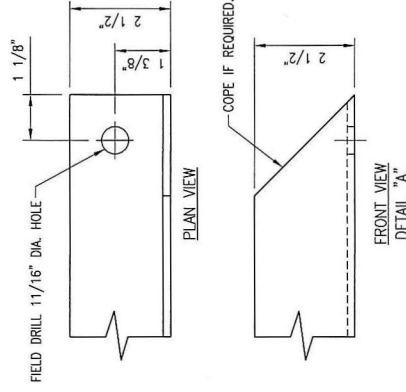
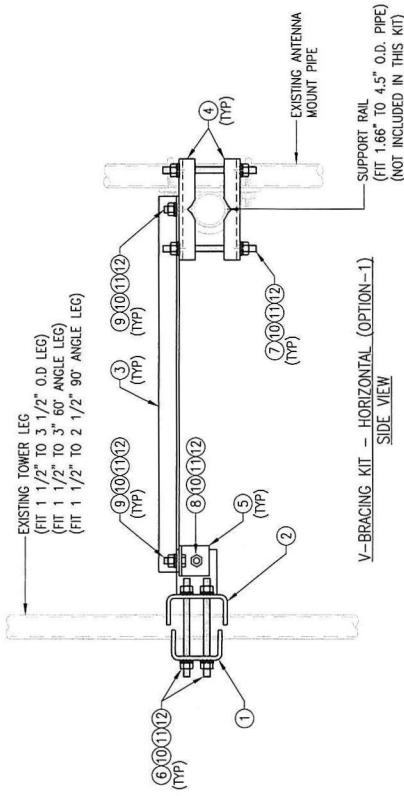
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MODIFICATION DETAILS

SS-1

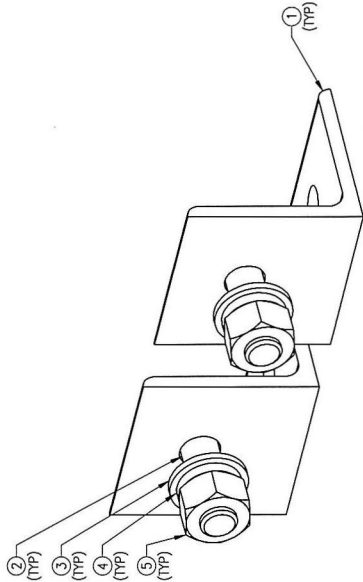






ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	1	BP9625-65	PL 3/8" X 9 5/8" X 6 1/2" A36 BENT PLATE	VBSM-SL-F1	12
2	1	BRKW-VBSM-SL	WELDMENT BRACKET	VBSM-SL-F3	11
3	2	L252525-8	L 2 1/2" X 2 1/2" X 1/4" X 8"-0" A36	VBSM-F5	67
4	4	BP6875-10	PL 3/8" X 6 7/8" X 10" A36 BENT PLATE	VBSM-F2	20
5	2	AL-333	L 3" X 3" X 1/4" X 3" A36	VBSM-F2	3
6	4	---	THREADED ROD 5/8" DIA. X 1'-0" F1554-36 HDG	---	---
7	4	---	THREADED ROD 5/8" DIA. X 10" F1554-36 HDG	---	---
8	1	---	BOLT 5/8" X 2 1/4" A325	---	---
9	4	---	BOLT 5/8" X 1 3/4" A325	---	---
10	21	FW-625	5/8" HDG USS FLAT WASHER	---	2
11	21	LW-625	5/8" HDG LOCK WASHER	---	0
12	21	NUT-625	5/8" HDG HEX NUT	---	2
GALVANIZED WT					117

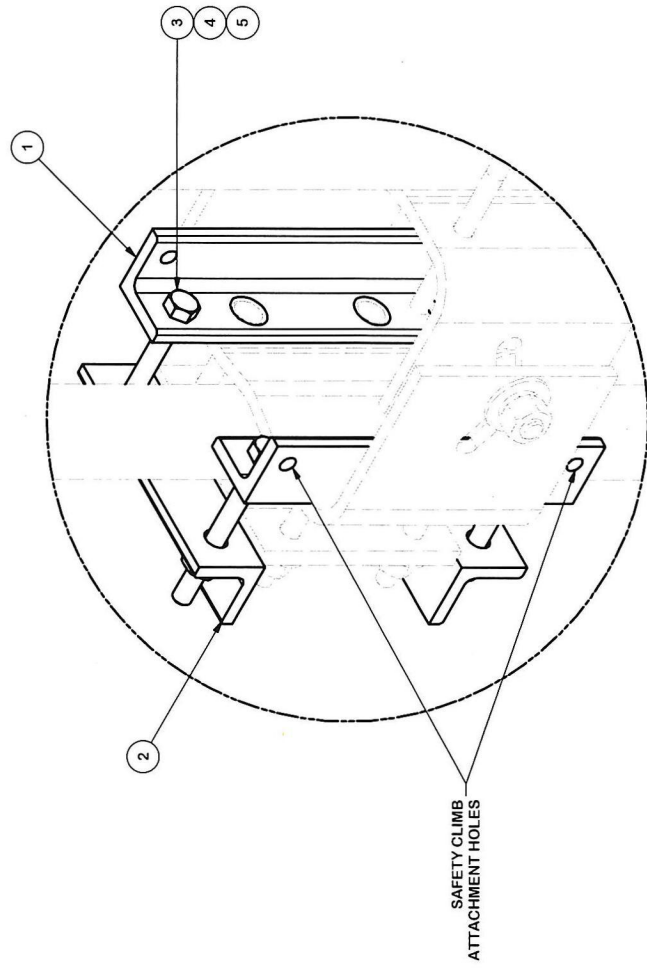
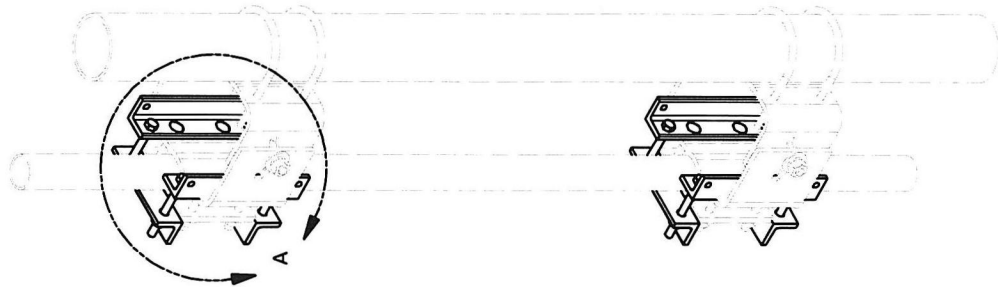
NOTES:
1. HOT-DIPPED GALVANIZED PER ASTM A123.



CLIP ANGLE
ISOMETRIC VIEW

VZWSMART-AL333 (CLIP ANGLE)				
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #
1	2	AL-333	L 3" X 3" X 1/4" X 3" A36	AL333-F1
2	2	---	BOLT 5/8" X 2" FULL THREAD SAE GR-5	---
3	2	FW-625	5/8" HDG USS FLAT WASHER	---
4	2	LW-625	5/8" HDG LOCK WASHER	---
5	2	NUT-625	5/8" HDG HEX NUT	---
				GALVANIZED WT
				3.27

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



DETAIL A

PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.
1	4	X-R5-FRA1	REINFORCEMENT ANGLE	10 in	3.84
2	4	X-R5-RFA2	REINFORCEMENT ANGLE	7 1/8 in	2.86
3	8	G1208	1/2" x 8" HDG HEX BOLT GRS FULL THREAD	8 in	0.49
3	8	G1205	1/2" x 5" HDG HEX BOLT GRS FULL THREAD	5 in	0.33
4	8	G12LW	1/2" HDG LOCKWASHER		0.01
5	8	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07
TOTAL WT. #					34.04

TOLERANCE NOTES

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

PROPERTY NOTICE:
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DESCRIPTION

R5 UNIVERSAL PIPE MOUNT REINFORCEMENT KIT

Locations:
 New York, NY
 Atlanta, GA
 Los Angeles, CA
 Plymouth, IN
 Springfield, IL
 Dallas, TX

Engineering Support Team:
 1-888-753-7446

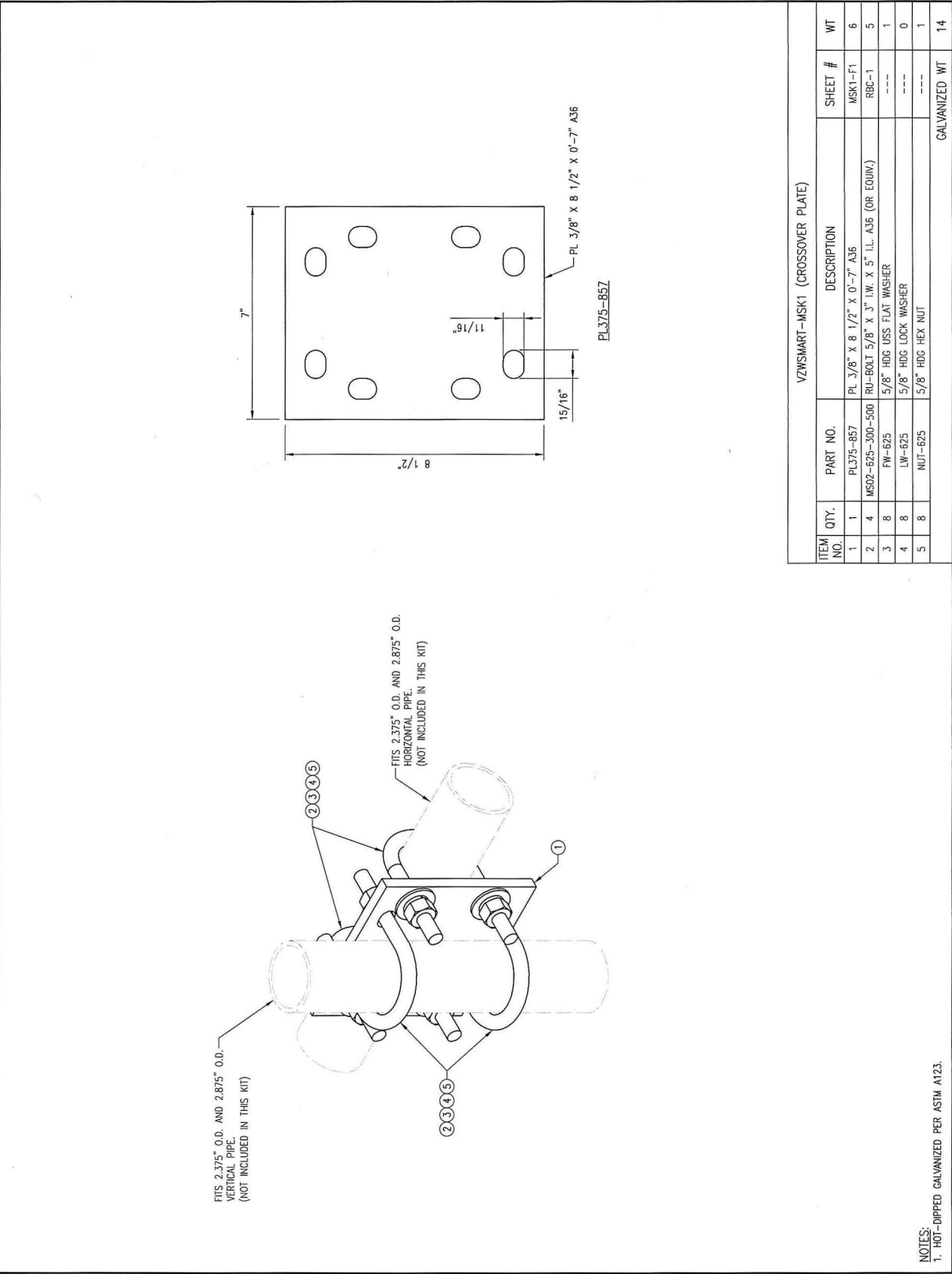
valmont

1 OF 1

R5-REINF

R5-REINF

FOR REFERENCE ONLY







Antenna Mount Mapping Form (PATENT PENDING)

FCC #

Tower Owner:	OTHER	Mapping Date:	7/8/2021
Site Name:	CROMWELL N CT	Tower Type:	Self Support
Site Number or ID:	535821	Tower Height (Ft.):	150
Mapping Contractor:	HUDSON DESIGN GROUP, LLC.	Mount Elevation (Ft.):	100.58

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Please Insert Sketches of the Antenna Mount

DATE: 7/8/21

Project Name: Cromwell N CT

Project No.:

Design By: Peter

Chk'd By:

Page 1 of 1

HUDSON
Design Group LLC45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01854TEL: (978) 557-5553
FAX: (978) 336-5554

Mount: 100' 7"

Ant. Tip:

Ant. Q:

Ant. Pipe: 2 3/8"

Face: 12"

Face MT: 4"

Face Flange: 4x6x1/2"

Face Flange Bolts: 1/2"

S.O. RM: 1/2"

S.O. Flange: 5x10 1/4 x 1/2"

S.O. Flange Bolts: 1/2"

Mounting Pipe: 4 1/2"

TL: 1 1/2" Bk 020

TF: 11"

VSEP: 41 1/4"

#1 HBX-6517DS-VTM

(3) 9442-RRH2x40 AWS

#2 LNX-4514DS-AIM

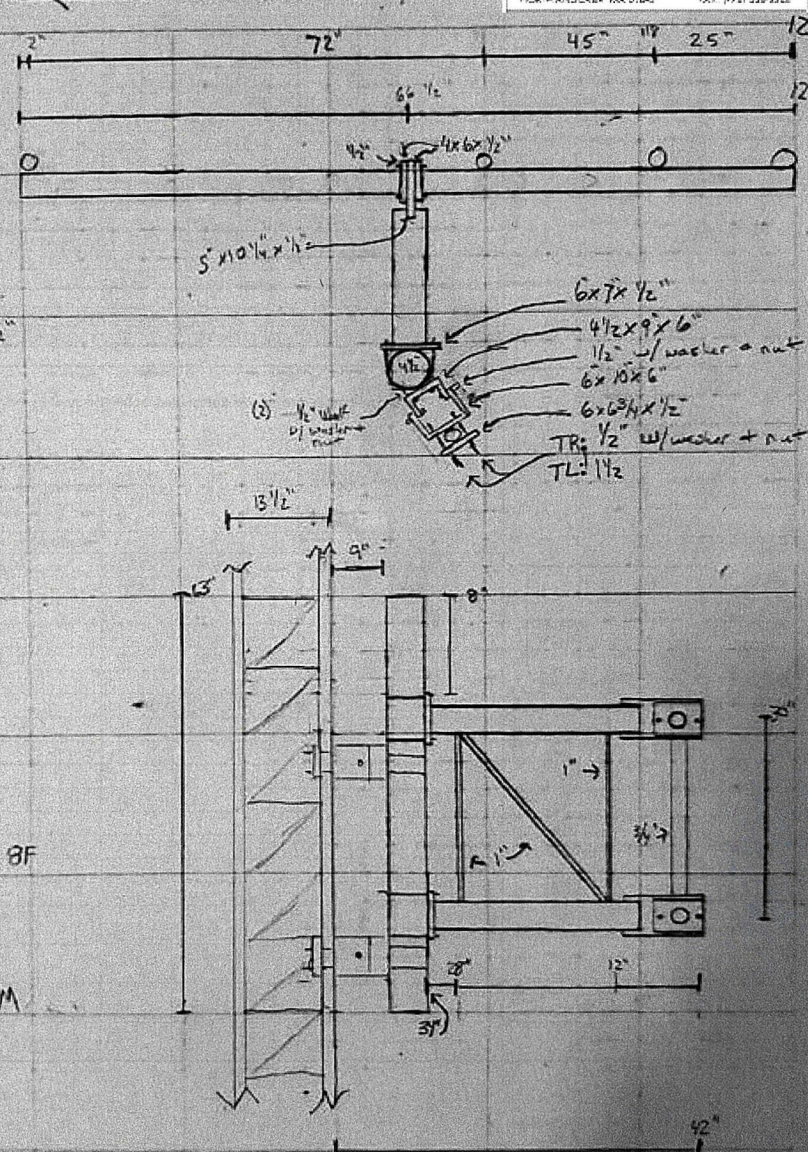
#3 BXA 1710 63-12BF

#4 LNX-6514DS-VTM

(1) OUP inside C leg

(6) TMA's

Lines: (12) 1 7/8" Case



ECC

7/8/2021

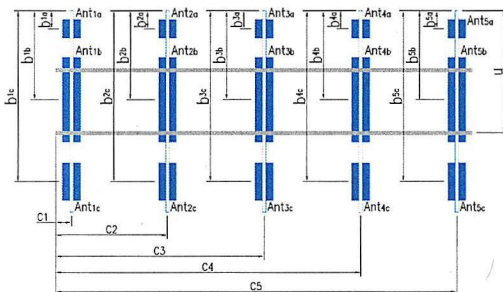
Self Support

150

100.58

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The diagram illustrates a triangular structure composed of three sectors (A, B, C) and three legs (A, B, C). The sectors are labeled "FACE A", "FACE B", and "FACE C". The legs are labeled "LEG A", "LEG B", and "LEG C". A detailed view of the joint shows a horizontal offset "h" between the sectors.



Antenna Layout (Looking Out From Tower)

Mount Pipe Configuration and Geometries [Unit = Inches]							
Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "y"	Horizontal Offset "C1, C2, C3, etc."	Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "y"	Horizontal Offset "C1, C2, C3, etc."
A1	2.38"O.D.X.125 WALLX72"LONG	50.00	2.00	C1	2.38"O.D.X.125 WALLX72"LONG	50.00	2.00
A2	2.38"O.D.X.125 WALLX72"LONG	50.00	73.00	C2	2.38"O.D.X.125 WALLX72"LONG	50.00	73.00
A3	2.38"O.D.X.125 WALLX72"LONG	50.00	118.00	C3	2.38"O.D.X.125 WALLX72"LONG	50.00	118.00
A4	2.38"O.D.X.125 WALLX72"LONG	50.00	143.00	C4	2.38"O.D.X.125 WALLX72"LONG	50.00	143.00
A5				C5			
A6				C6			
B1	2.38"O.D.X.125 WALLX72"LONG	50.00	2.00	D1			
B2	2.38"O.D.X.125 WALLX72"LONG	50.00	73.00	D2			
B3	2.38"O.D.X.125 WALLX72"LONG	50.00	118.00	D3			
B4	2.38"O.D.X.125 WALLX72"LONG	50.00	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. :

Distance from top of bottom support rail to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.):

Distance from top of bottom support rail to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.) :

Please enter additional information or comments below.

Tower Face Width at Mount Elev. (ft.):

Tower Leg Size or Pole Shaft Diameter at Mount Elev. (in.):

1.5

For T-Arms/Platforms on monopoles, report the weld size from the main standoff to the plate bolting into the collar mount.

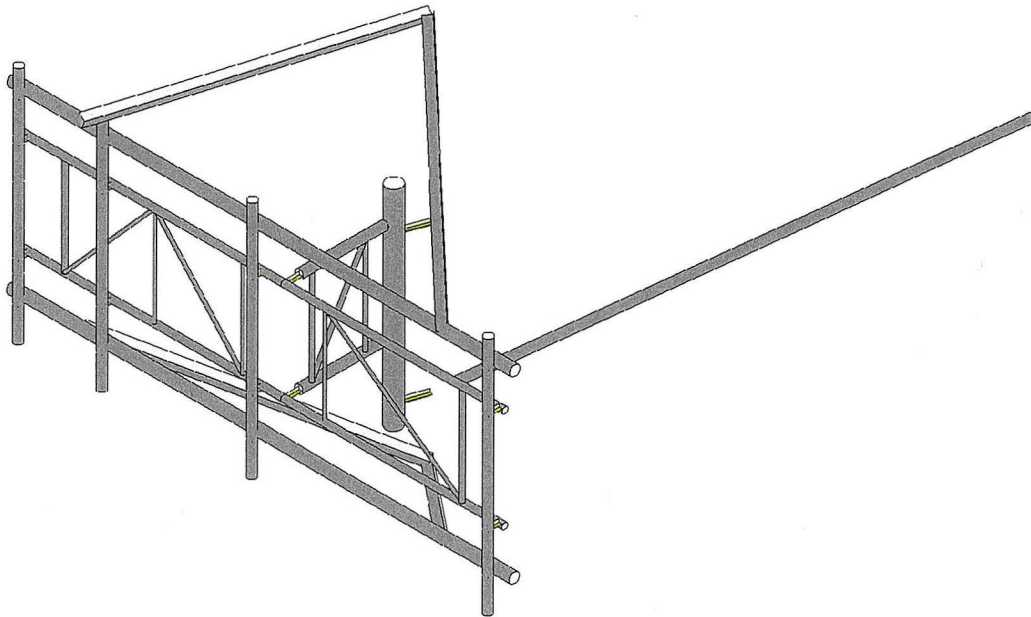
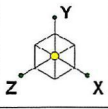
[illegible]

Observed Safety and Structural Issues During the Mount Mapping		
Issue #	Description of Issue	Photo #
1		
2		
3		
4		
5		
6		
7		
8		

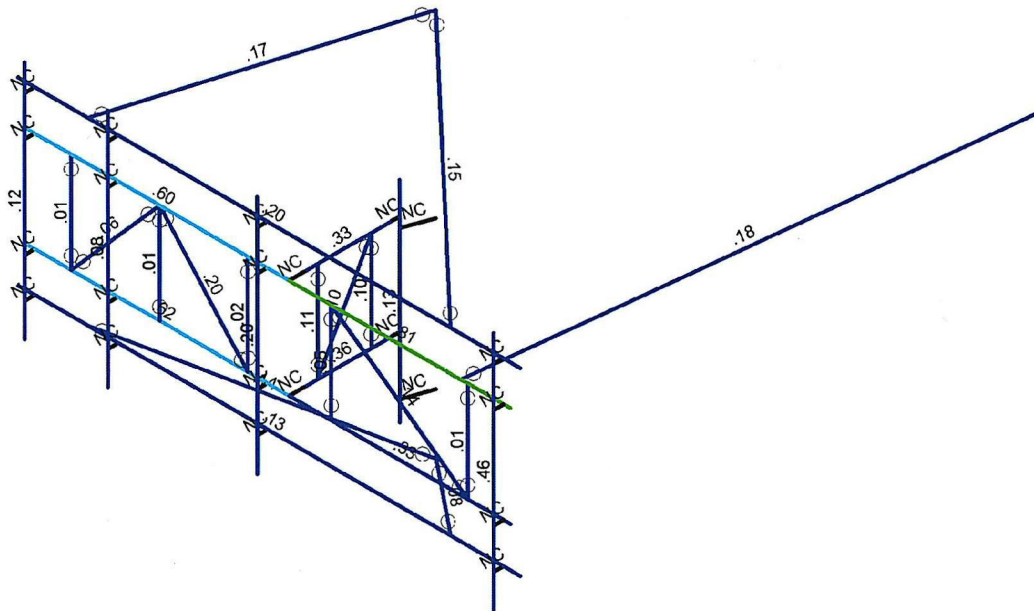
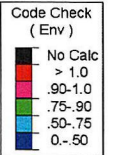
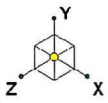
Observed Obstructions to Tower Lighting System			
If the tower lighting system is being obstructed by the carrier's equipment (for example: a light nested by the antennas), please provide photos and fill in the information below.			Photo #
Description of Obstruction:			
Type of Light:		Photo #	Additional Comments:
Lighting Technology:		Photo #	
Elevation (AGL) at base of light (Ft.):		Photo #	
Is a service loop available?		Photo #	
Is beacon installed on an extension?		Photo #	

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.

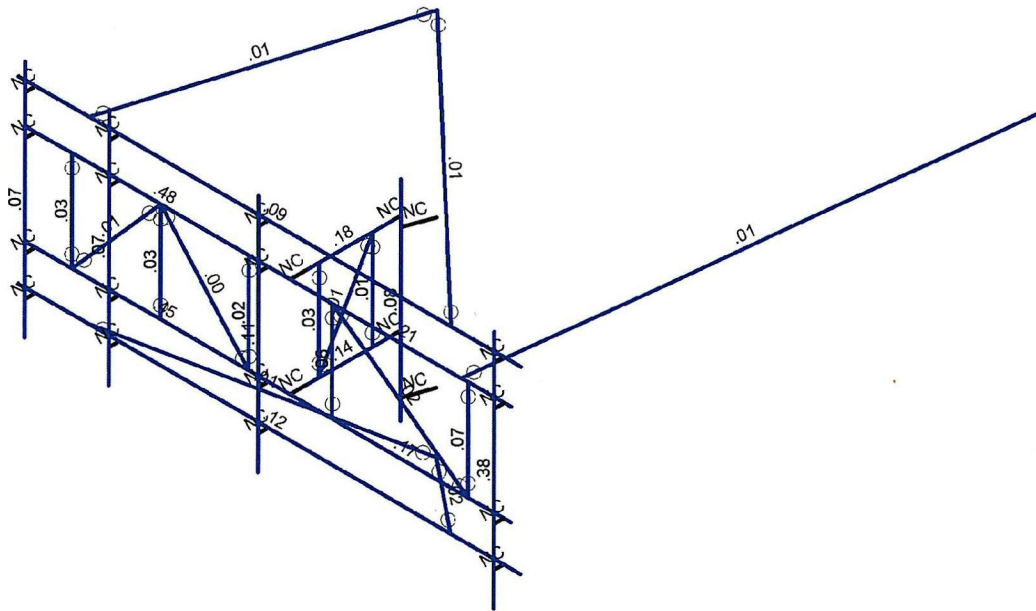
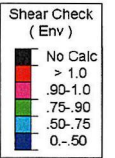
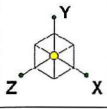


		SK - 1
		Oct 28, 2023 at 12:28 PM
		5000055679-VZW_MT_LOT_A_H.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

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		Oct 28, 2023 at 12:30 PM
		5000055679-VZW_MT_LOT_A_H.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

		SK - 3
		Oct 28, 2023 at 12:30 PM
		5000055679-VZW_MT_LOT_A_H.r3d



Company :
 Designer :
 Job Number :
 Model Name :

Oct 28, 2023
 12:30 PM
 Checked By: _____

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	

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
49	Structure Wo (240 D...	None						58	
50	Structure Wo (270 D...	None						58	
51	Structure Wo (300 D...	None						58	
52	Structure Wo (330 D...	None						58	
53	Structure Wi (0 Deg)	None						58	
54	Structure Wi (30 Deg)	None						58	
55	Structure Wi (60 Deg)	None						58	
56	Structure Wi (90 Deg)	None						58	
57	Structure Wi (120 De...	None						58	
58	Structure Wi (150 De...	None						58	
59	Structure Wi (180 De...	None						58	
60	Structure Wi (210 De...	None						58	
61	Structure Wi (240 De...	None						58	
62	Structure Wi (270 De...	None						58	
63	Structure Wi (300 De...	None						58	
64	Structure Wi (330 De...	None						58	
65	Structure Wm (0 Deg)	None						58	
66	Structure Wm (30 D...	None						58	
67	Structure Wm (60 D...	None						58	
68	Structure Wm (90 D...	None						58	
69	Structure Wm (120 ...	None						58	
70	Structure Wm (150 ...	None						58	
71	Structure Wm (180 ...	None						58	
72	Structure Wm (210 ...	None						58	
73	Structure Wm (240 ...	None						58	
74	Structure Wm (270 ...	None						58	
75	Structure Wm (300 ...	None						58	
76	Structure Wm (330 ...	None						58	
77	Lm1	None					1		
78	Lm2	None					1		
79	Lv1	None					1		
80	Lv2	None					1		
81	Antenna Ev	None					36		
82	Antenna Eh (0 Deg)	None					24		
83	Antenna Eh (90 Deg)	None					24		
84	Structure Ev	ELY		-.043					
85	Structure Eh (0 Deg)	ELZ			-.108				
86	Structure Eh (90 Deg)	ELX	.108						

Load Combinations

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

Load Combinations (Continued)

	Description	So...	PDelta	S...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...
10	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	12	1	50	1						
11	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	13	1	51	1						
12	1.2D+1.0...	Yes	Y		1	1.2	39	1.2	14	1	52	1						
13	1.2D + 1...	Yes	Y		1	1.2	39	1.2	2	1	40	1	15	1	53	1		
14	1.2D + 1...	Yes	Y		1	1.2	39	1.2	2	1	40	1	16	1	54	1		
15	1.2D + 1...	Yes	Y		1	1.2	39	1.2	2	1	40	1	17	1	55	1		
16	1.2D + 1...	Yes	Y		1	1.2	39	1.2	2	1	40	1	18	1	56	1		
17	1.2D + 1...	Yes	Y		1	1.2	39	1.2	2	1	40	1	19	1	57	1		
18	1.2D + 1...	Yes	Y		1	1.2	39	1.2	2	1	40	1	20	1	58	1		
19	1.2D + 1...	Yes	Y		1	1.2	39	1.2	2	1	40	1	21	1	59	1		
20	1.2D + 1...	Yes	Y		1	1.2	39	1.2	2	1	40	1	22	1	60	1		
21	1.2D + 1...	Yes	Y		1	1.2	39	1.2	2	1	40	1	23	1	61	1		
22	1.2D + 1...	Yes	Y		1	1.2	39	1.2	2	1	40	1	24	1	62	1		
23	1.2D + 1...	Yes	Y		1	1.2	39	1.2	2	1	40	1	25	1	63	1		
24	1.2D + 1...	Yes	Y		1	1.2	39	1.2	2	1	40	1	26	1	64	1		
25	1.2D + 1...	Yes	Y		1	1.2	39	1.2	77	1.5	27	1	65	1				
26	1.2D + 1...	Yes	Y		1	1.2	39	1.2	77	1.5	28	1	66	1				
27	1.2D + 1...	Yes	Y		1	1.2	39	1.2	77	1.5	29	1	67	1				
28	1.2D + 1...	Yes	Y		1	1.2	39	1.2	77	1.5	30	1	68	1				
29	1.2D + 1...	Yes	Y		1	1.2	39	1.2	77	1.5	31	1	69	1				
30	1.2D + 1...	Yes	Y		1	1.2	39	1.2	77	1.5	32	1	70	1				
31	1.2D + 1...	Yes	Y		1	1.2	39	1.2	77	1.5	33	1	71	1				
32	1.2D + 1...	Yes	Y		1	1.2	39	1.2	77	1.5	34	1	72	1				
33	1.2D + 1...	Yes	Y		1	1.2	39	1.2	77	1.5	35	1	73	1				
34	1.2D + 1...	Yes	Y		1	1.2	39	1.2	77	1.5	36	1	74	1				
35	1.2D + 1...	Yes	Y		1	1.2	39	1.2	77	1.5	37	1	75	1				
36	1.2D + 1...	Yes	Y		1	1.2	39	1.2	77	1.5	38	1	76	1				
37	1.2D + 1...	Yes	Y		1	1.2	39	1.2	78	1.5	27	1	65	1				
38	1.2D + 1...	Yes	Y		1	1.2	39	1.2	78	1.5	28	1	66	1				
39	1.2D + 1...	Yes	Y		1	1.2	39	1.2	78	1.5	29	1	67	1				
40	1.2D + 1...	Yes	Y		1	1.2	39	1.2	78	1.5	30	1	68	1				
41	1.2D + 1...	Yes	Y		1	1.2	39	1.2	78	1.5	31	1	69	1				
42	1.2D + 1...	Yes	Y		1	1.2	39	1.2	78	1.5	32	1	70	1				
43	1.2D + 1...	Yes	Y		1	1.2	39	1.2	78	1.5	33	1	71	1				
44	1.2D + 1...	Yes	Y		1	1.2	39	1.2	78	1.5	34	1	72	1				
45	1.2D + 1...	Yes	Y		1	1.2	39	1.2	78	1.5	35	1	73	1				
46	1.2D + 1...	Yes	Y		1	1.2	39	1.2	78	1.5	36	1	74	1				
47	1.2D + 1...	Yes	Y		1	1.2	39	1.2	78	1.5	37	1	75	1				
48	1.2D + 1...	Yes	Y		1	1.2	39	1.2	78	1.5	38	1	76	1				
49	1.2D + 1...	Yes	Y		1	1.2	39	1.2	79	1.5								
50	1.2D + 1...	Yes	Y		1	1.2	39	1.2	80	1.5								
51	1.4D	Yes	Y		1	1.4	39	1.4										
52	1.2D + 1...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	1	83	ELZ	1	ELX
53	1.2D + 1...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	.866	83	.5	ELZ	.866
54	1.2D + 1...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	.5	83	.866	ELZ	.5
55	1.2D + 1...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82		83	1	ELZ	ELX
56	1.2D + 1...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.5	83	.866	ELZ	-.5
57	1.2D + 1...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.866	83	.5	ELZ	-.866
58	1.2D + 1...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-1	83		ELZ	-1
59	1.2D + 1...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.866	83	-.5	ELZ	-.866
60	1.2D + 1...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.5	83	-.866	ELZ	-.5
61	1.2D + 1...	Yes	Y		1	1.2	39	1.2	81	1	ELY	1	82		83	-1	ELZ	ELX

Load Combinations (Continued)

[illegible]

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	0	0	0.979167	0	
2	N2	0	0	3.5	0	
3	N3	0	0	3.125	0	
4	N4	5.541667	0	3.5	0	
5	N5	-6.541667	0	3.5	0	
6	N6	0	0	2.78125	0	
7	N7	0	0	1.447917	0	
8	N8	0	0	0.729167	0	
9	N9	0	2.5	0.979167	0	
10	N10	0	2.5	3.5	0	
11	N11	0	2.5	3.125	0	
12	N12	5.541667	2.5	3.5	0	
13	N13	-6.541667	2.5	3.5	0	
14	N14	0	2.5	2.78125	0	
15	N15	0	2.5	1.447917	0	
16	N16	0	2.5	0.729167	0	
17	N17	0	3.2875	0.729167	0	
18	N18	0	-1.9625	0.729167	0	
19	N19	0	2.25	0.729167	0	
20	N20	0	-1.4625	0.729167	0	
21	N21	0.242264	2.25	0.063551	0	
22	N22	0.242264	-1.4625	0.063551	0	
23	N41	1.052083	0	3.5	0	
24	N42	1.052083	2.5	3.5	0	
25	N43	-3.25	0	3.5	0	
26	N44	-3.25	2.5	3.5	0	
27	N45	-5.46875	0	3.5	0	
28	N46	-5.46875	2.5	3.5	0	
29	N47	4.46875	0	3.5	0	
30	N48	4.46875	2.5	3.5	0	
31	N53	-1.03125	0	3.5	0	
32	N54	-1.03125	2.5	3.5	0	
33	N35	5.375	0	3.5	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
34	N36	5.375	2.5	3.5	0	
35	N37	-0.541667	0	3.5	0	
36	N38	-0.541667	2.5	3.5	0	
37	N39	-4.291667	0	3.5	0	
38	N40	-4.291667	2.5	3.5	0	
39	N41A	-6.375	0	3.5	0	
40	N42A	-6.375	2.5	3.5	0	
41	N43A	5.375	0	3.75	0	
42	N44A	5.375	2.5	3.75	0	
43	N45A	-0.541667	0	3.75	0	
44	N46A	-0.541667	2.5	3.75	0	
45	N47A	-4.291667	0	3.75	0	
46	N48A	-4.291667	2.5	3.75	0	
47	N49	-6.375	0	3.75	0	
48	N50	-6.375	2.5	3.75	0	
49	N51	5.375	4.166667	3.75	0	
50	N52	-0.541667	4.166667	3.75	0	
51	N53A	-4.291667	4.166667	3.75	0	
52	N54A	-6.375	4.166667	3.75	0	
53	N55A	5.375	-1.833333	3.75	0	
54	N56	-0.541667	-1.833333	3.75	0	
55	N57	-4.291667	-1.833333	3.75	0	
56	N58	-6.375	-1.833333	3.75	0	
57	N57A	4.291667	2.5	3.5	0	
58	N58A	5.742264	2.5	-9.462728	0	
59	N59	-6.375	1.666667	3.75	0	
60	N60	-6.375	3.666667	3.75	0	
61	N61	-6.375	-0.333333	3.75	0	
62	N62	-6.375	2.666667	3.75	0	
63	N63	-6.375	0.666667	3.75	0	
64	N66	-5.257736	2.5	-9.462728	0	
65	N65	0.242264	6.75	0.063551	0	
66	N66A	0.242264	-2.9625	0.063551	0	
67	N67	-5.041667	3.5	3.5	0	
68	N68	4.041667	3.5	3.5	0	
69	N69	-5.041667	-1	3.5	0	
70	N70	4.041667	-1	3.5	0	
71	N71	5.791667	3.5	3.5	0	
72	N72	-6.791667	3.5	3.5	0	
73	N73	5.375	3.5	3.5	0	
74	N74	-0.541667	3.5	3.5	0	
75	N75	-4.291667	3.5	3.5	0	
76	N76	-6.375	3.5	3.5	0	
77	N77	5.375	3.5	3.75	0	
78	N78	-0.541667	3.5	3.75	0	
79	N79	-4.291667	3.5	3.75	0	
80	N80	-6.375	3.5	3.75	0	
81	N83	5.791667	-1	3.5	0	
82	N84	-6.791667	-1	3.5	0	
83	N85	5.375	-1	3.5	0	
84	N86	-0.541667	-1	3.5	0	
85	N87	-4.291667	-1	3.5	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
86	N88	-6.375	-1	3.5	0	
87	N89	5.375	-1	3.75	0	
88	N90	-0.541667	-1	3.75	0	
89	N91	-4.291667	-1	3.75	0	
90	N92	-6.375	-1	3.75	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Mount Pipe	PIPE 2.0	Beam	Pipe	A53 Gr. B	Typical	1.02	.627	.627	1.25
2	Tieback	PIPE 2.0	Beam	Pipe	A53 Gr. B	Typical	1.02	.627	.627	1.25
3	Mast Pipe	PIPE 4.0	Beam	Pipe	A53 Gr. B	Typical	2.96	6.82	6.82	13.6
4	Standoff Hori...	PIPE 2.0	Beam	Pipe	A53 Gr. B	Typical	1.02	.627	.627	1.25
5	Face Horizo...	PIPE 1.25	Beam	Pipe	A53 Gr. B	Typical	.625	.184	.184	.368
6	Vertical Face...	SR 1.25	Beam	BAR	A36 Gr.36	Typical	1.227	.12	.12	.24
7	Standoff Bra...	SR 1	Beam	BAR	A36 Gr.36	Typical	.785	.049	.049	.098
8	Face Bracing	SR 0.75	Beam	BAR	A36 Gr.36	Typical	.442	.016	.016	.031
9	Standoff Plate	PL 1/2x5	Beam	BAR	A36 Gr.36	Typical	2.5	.052	5.208	.195
10	Proposed Fa...	PIPE 2.5	Beam	Pipe	A53 Gr. B	Typical	1.61	1.45	1.45	2.89
11	HR11	PIPE 2.5	Beam	Pipe	A53 Gr. B	Typical	1.61	1.45	1.45	2.89
12	Proposed Vb...	L2.5x2.5x4	Beam	Pipe	A36 Gr.36	Typical	1.19	.692	.692	.026

Hot Rolled Steel Properties

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

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N3			Standoff Horiz...	Beam	Pipe	A53 Gr. B	Typical
2	LV	N5	N2			Face Horizontal	Beam	Pipe	A53 Gr. B	Typical
3	M4	N2	N4			Face Horizontal	Beam	Pipe	A53 Gr. B	Typical
4	M5	N1	N8			RIGID	None	None	RIGID	Typical
5	M6	N9	N11			Standoff Horiz...	Beam	Pipe	A53 Gr. B	Typical
6	M8	N13	N10			Face Horizontal	Beam	Pipe	A53 Gr. B	Typical
7	M9	N10	N12			Face Horizontal	Beam	Pipe	A53 Gr. B	Typical
8	M10	N9	N16			RIGID	None	None	RIGID	Typical
9	M11	N18	N17			Mast Pipe	Beam	Pipe	A53 Gr. B	Typical
10	M12	N19	N21			RIGID	None	None	RIGID	Typical
11	M13	N20	N22			RIGID	None	None	RIGID	Typical
12	M14	N6	N14			Standoff Bracing	Beam	BAR	A36 Gr.36	Typical
13	M15	N7	N15			Standoff Bracing	Beam	BAR	A36 Gr.36	Typical
14	M16	N15	N6			Standoff Bracing	Beam	BAR	A36 Gr.36	Typical
15	M26	N45	N46			Vertical Face ...	Beam	BAR	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
16	M27	N43	N44			Face Bracing	Beam	BAR	A36 Gr.36	Typical
17	M28	N41	N42			Face Bracing	Beam	BAR	A36 Gr.36	Typical
18	M29	N47	N48			Vertical Face ...	Beam	BAR	A36 Gr.36	Typical
19	M30	N44	N45			Face Bracing	Beam	BAR	A36 Gr.36	Typical
20	M31	N42	N47			Face Bracing	Beam	BAR	A36 Gr.36	Typical
21	M34	N54	N53			Face Bracing	Beam	BAR	A36 Gr.36	Typical
22	M35	N53	N44			Face Bracing	Beam	BAR	A36 Gr.36	Typical
23	M33	N3	N2			RIGID	None	None	RIGID	Typical
24	M34A	N11	N10			RIGID	None	None	RIGID	Typical
25	M26A	N49	N41A			RIGID	None	None	RIGID	Typical
26	M27A	N50	N42A			RIGID	None	None	RIGID	Typical
27	M28A	N48A	N40			RIGID	None	None	RIGID	Typical
28	M29A	N47A	N39			RIGID	None	None	RIGID	Typical
29	LM1	N45A	N37			RIGID	None	None	RIGID	Typical
30	M31A	N46A	N38			RIGID	None	None	RIGID	Typical
31	LM2	N43A	N35			RIGID	None	None	RIGID	Typical
32	M33A	N44A	N36			RIGID	None	None	RIGID	Typical
33	MP4A	N54A	N58			Mount Pipe	Beam	Pipe	A53 Gr. B	Typical
34	MP3A	N53A	N57			Mount Pipe	Beam	Pipe	A53 Gr. B	Typical
35	MP2A	N52	N56			Mount Pipe	Beam	Pipe	A53 Gr. B	Typical
36	MP1A	N51	N55A			Mount Pipe	Beam	Pipe	A53 Gr. B	Typical
37	M37	N57A	N58A			Tieback	Beam	Pipe	A53 Gr. B	Typical
38	M38	N67	N65			Proposed Vbra..	Beam	Pipe	A36 Gr.36	Typical
39	M39	N65	N68			Proposed Vbra..	Beam	Pipe	A36 Gr.36	Typical
40	M40	N69	N66A			Proposed Vbra..	Beam	Pipe	A36 Gr.36	Typical
41	M41	N66A	N70			Proposed Vbra..	Beam	Pipe	A36 Gr.36	Typical
42	M42	N80	N76			RIGID	None	None	RIGID	Typical
43	M43	N79	N75			RIGID	None	None	RIGID	Typical
44	M44	N78	N74			RIGID	None	None	RIGID	Typical
45	M45	N77	N73			RIGID	None	None	RIGID	Typical
46	M46	N72	N71			Proposed Face..	Beam	Pipe	A53 Gr. B	Typical
47	M47	N92	N88			RIGID	None	None	RIGID	Typical
48	M48	N91	N87			RIGID	None	None	RIGID	Typical
49	M49	N90	N86			RIGID	None	None	RIGID	Typical
50	M50	N89	N85			RIGID	None	None	RIGID	Typical
51	M51	N84	N83			Proposed Face..	Beam	Pipe	A53 Gr. B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes				None
2	LV						Yes				None
3	M4						Yes				None
4	M5						Yes	** NA **			None
5	M6						Yes				None
6	M8						Yes	Default			None
7	M9						Yes	Default			None
8	M10						Yes	** NA **			None
9	M11						Yes				None
10	M12						Yes	** NA **			None
11	M13						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
12	M14	BenPIN	BenPIN				Yes				None
13	M15	BenPIN	BenPIN				Yes				None
14	M16	BenPIN	BenPIN				Yes				None
15	M26	BenPIN	BenPIN				Yes	Default			None
16	M27	BenPIN	BenPIN				Yes				None
17	M28	BenPIN	BenPIN				Yes				None
18	M29	BenPIN	BenPIN				Yes	Default			None
19	M30	BenPIN	BenPIN				Yes				None
20	M31	BenPIN	BenPIN				Yes				None
21	M34	BenPIN	BenPIN				Yes	Default			None
22	M35	BenPIN	BenPIN				Yes	Default			None
23	M33						Yes	** NA **			None
24	M34A						Yes	** NA **			None
25	M26A						Yes	** NA **			None
26	M27A						Yes	** NA **			None
27	M28A						Yes	** NA **			None
28	M29A						Yes	** NA **			None
29	LM1						Yes	** NA **			None
30	M31A						Yes	** NA **			None
31	LM2						Yes	** NA **			None
32	M33A						Yes	** NA **			None
33	MP4A						Yes				None
34	MP3A						Yes				None
35	MP2A						Yes	Default			None
36	MP1A						Yes	Default			None
37	M37	BenPIN					Yes	Default			None
38	M38	BenPIN	BenPIN				Yes				None
39	M39	BenPIN	BenPIN				Yes				None
40	M40	BenPIN	BenPIN				Yes				None
41	M41	BenPIN	BenPIN				Yes				None
42	M42						Yes	** NA **			None
43	M43						Yes	** NA **			None
44	M44						Yes	** NA **			None
45	M45						Yes	** NA **			None
46	M46						Yes				None
47	M47						Yes	** NA **			None
48	M48						Yes	** NA **			None
49	M49						Yes	** NA **			None
50	M50						Yes	** NA **			None
51	M51						Yes				None

Member Point Loads (BLC 1 : Antenna D)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	Y	-23	.5
2	MP2A	My	-.017	.5
3	MP2A	Mz	.017	.5
4	MP2A	Y	-23	4.5
5	MP2A	My	-.017	4.5
6	MP2A	Mz	.017	4.5
7	MP2A	Y	-23	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
8	MP2A	My	-.017	.5
9	MP2A	Mz	-.017	.5
10	MP2A	Y	-23	4.5
11	MP2A	My	-.017	4.5
12	MP2A	Mz	-.017	4.5
13	MP1A	Y	-4.4	5
14	MP1A	My	-.003	5
15	MP1A	Mz	0	5
16	M6	Y	-32	1
17	M6	My	0	1
18	M6	Mz	0	1
19	MP2A	Y	-74.7	.5
20	MP2A	My	.037	.5
21	MP2A	Mz	0	.5
22	MP3A	Y	-79.1	.5
23	MP3A	My	.059	.5
24	MP3A	Mz	0	.5
25	MP4A	Y	-16.55	.5
26	MP4A	My	-.012	.5
27	MP4A	Mz	0	.5
28	MP4A	Y	-16.55	4.5
29	MP4A	My	-.012	4.5
30	MP4A	Mz	0	4.5
31	MP1A	Y	-28.65	.25
32	MP1A	My	-.021	.25
33	MP1A	Mz	0	.25
34	MP1A	Y	-28.65	1.75
35	MP1A	My	-.021	1.75
36	MP1A	Mz	0	1.75

Member Point Loads (BLC 2 : Antenna Di)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	Y	-124.024	.5
2	MP2A	My	-.093	.5
3	MP2A	Mz	.093	.5
4	MP2A	Y	-124.024	4.5
5	MP2A	My	-.093	4.5
6	MP2A	Mz	.093	4.5
7	MP2A	Y	-124.024	.5
8	MP2A	My	-.093	.5
9	MP2A	Mz	-.093	.5
10	MP2A	Y	-124.024	4.5
11	MP2A	My	-.093	4.5
12	MP2A	Mz	-.093	4.5
13	MP1A	Y	-21.81	5
14	MP1A	My	-.016	5
15	MP1A	Mz	0	5
16	M6	Y	-132.964	1
17	M6	My	0	1
18	M6	Mz	0	1
19	MP2A	Y	-68.962	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
20	MP2A	My	.034	.5
21	MP2A	Mz	0	.5
22	MP3A	Y	-69.67	.5
23	MP3A	My	.052	.5
24	MP3A	Mz	0	.5
25	MP4A	Y	-92.034	.5
26	MP4A	My	-.069	.5
27	MP4A	Mz	0	.5
28	MP4A	Y	-92.034	4.5
29	MP4A	My	-.069	4.5
30	MP4A	Mz	0	4.5
31	MP1A	Y	-45.557	.25
32	MP1A	My	-.034	.25
33	MP1A	Mz	0	.25
34	MP1A	Y	-45.557	1.75
35	MP1A	My	-.034	1.75
36	MP1A	Mz	0	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	0	.5
2	MP2A	Z	-72.569	.5
3	MP2A	Mx	-.054	.5
4	MP2A	X	0	4.5
5	MP2A	Z	-72.569	4.5
6	MP2A	Mx	-.054	4.5
7	MP2A	X	0	.5
8	MP2A	Z	-72.569	.5
9	MP2A	Mx	.054	.5
10	MP2A	X	0	4.5
11	MP2A	Z	-72.569	4.5
12	MP2A	Mx	.054	4.5
13	MP1A	X	0	5
14	MP1A	Z	-27.309	5
15	MP1A	Mx	0	5
16	M6	X	0	1
17	M6	Z	-74.653	1
18	M6	Mx	0	1
19	MP2A	X	0	.5
20	MP2A	Z	-47.561	.5
21	MP2A	Mx	0	.5
22	MP3A	X	0	.5
23	MP3A	Z	-47.561	.5
24	MP3A	Mx	0	.5
25	MP4A	X	0	.5
26	MP4A	Z	-124.119	.5
27	MP4A	Mx	0	.5
28	MP4A	X	0	4.5
29	MP4A	Z	-124.119	4.5
30	MP4A	Mx	0	4.5
31	MP1A	X	0	.25

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
32	MP1A	Z	-58.147	.25
33	MP1A	Mx	0	.25
34	MP1A	X	0	1.75
35	MP1A	Z	-58.147	1.75
36	MP1A	Mx	0	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	34.002	.5
2	MP2A	Z	-58.894	.5
3	MP2A	Mx	-.07	.5
4	MP2A	X	34.002	4.5
5	MP2A	Z	-58.894	4.5
6	MP2A	Mx	-.07	4.5
7	MP2A	X	34.002	.5
8	MP2A	Z	-58.894	.5
9	MP2A	Mx	.019	.5
10	MP2A	X	34.002	4.5
11	MP2A	Z	-58.894	4.5
12	MP2A	Mx	.019	4.5
13	MP1A	X	10.91	5
14	MP1A	Z	-18.897	5
15	MP1A	Mx	-.008	5
16	M6	X	41.793	1
17	M6	Z	-72.387	1
18	M6	Mx	0	1
19	MP2A	X	21.824	.5
20	MP2A	Z	-37.801	.5
21	MP2A	Mx	.011	.5
22	MP3A	X	21.441	.5
23	MP3A	Z	-37.137	.5
24	MP3A	Mx	.016	.5
25	MP4A	X	56.789	.5
26	MP4A	Z	-98.361	.5
27	MP4A	Mx	-.043	.5
28	MP4A	X	56.789	4.5
29	MP4A	Z	-98.361	4.5
30	MP4A	Mx	-.043	4.5
31	MP1A	X	24.605	.25
32	MP1A	Z	-42.617	.25
33	MP1A	Mx	-.018	.25
34	MP1A	X	24.605	1.75
35	MP1A	Z	-42.617	1.75
36	MP1A	Mx	-.018	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	50.988	.5
2	MP2A	Z	-29.438	.5
3	MP2A	Mx	-.06	.5
4	MP2A	X	50.988	4.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
5	MP2A	Z	-29.438	4.5
6	MP2A	Mx	-.06	4.5
7	MP2A	X	50.988	.5
8	MP2A	Z	-29.438	.5
9	MP2A	Mx	-.016	.5
10	MP2A	X	50.988	4.5
11	MP2A	Z	-29.438	4.5
12	MP2A	Mx	-.016	4.5
13	MP1A	X	9.391	5
14	MP1A	Z	-5.422	5
15	MP1A	Mx	-.007	5
16	M6	X	81.876	1
17	M6	Z	-47.271	1
18	M6	Mx	0	1
19	MP2A	X	31.025	.5
20	MP2A	Z	-17.912	.5
21	MP2A	Mx	.016	.5
22	MP3A	X	29.032	.5
23	MP3A	Z	-16.761	.5
24	MP3A	Mx	.022	.5
25	MP4A	X	80.103	.5
26	MP4A	Z	-46.247	.5
27	MP4A	Mx	-.06	.5
28	MP4A	X	80.103	4.5
29	MP4A	Z	-46.247	4.5
30	MP4A	Mx	-.06	4.5
31	MP1A	X	27.136	.25
32	MP1A	Z	-15.667	.25
33	MP1A	Mx	-.02	.25
34	MP1A	X	27.136	1.75
35	MP1A	Z	-15.667	1.75
36	MP1A	Mx	-.02	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	54.312	.5
2	MP2A	Z	0	.5
3	MP2A	Mx	-.041	.5
4	MP2A	X	54.312	4.5
5	MP2A	Z	0	4.5
6	MP2A	Mx	-.041	4.5
7	MP2A	X	54.312	.5
8	MP2A	Z	0	.5
9	MP2A	Mx	-.041	.5
10	MP2A	X	54.312	4.5
11	MP2A	Z	0	4.5
12	MP2A	Mx	-.041	4.5
13	MP1A	X	5.356	5
14	MP1A	Z	0	5
15	MP1A	Mx	-.004	5
16	M6	X	96.567	1

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
17	M6	Z	0	1
18	M6	Mx	0	1
19	MP2A	X	31.912	.5
20	MP2A	Z	0	.5
21	MP2A	Mx	.016	.5
22	MP3A	X	28.844	.5
23	MP3A	Z	0	.5
24	MP3A	Mx	.022	.5
25	MP4A	X	81.953	.5
26	MP4A	Z	0	.5
27	MP4A	Mx	-.061	.5
28	MP4A	X	81.953	4.5
29	MP4A	Z	0	4.5
30	MP4A	Mx	-.061	4.5
31	MP1A	X	22.395	.25
32	MP1A	Z	0	.25
33	MP1A	Mx	-.017	.25
34	MP1A	X	22.395	1.75
35	MP1A	Z	0	1.75
36	MP1A	Mx	-.017	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	50.988	.5
2	MP2A	Z	29.438	.5
3	MP2A	Mx	-.016	.5
4	MP2A	X	50.988	4.5
5	MP2A	Z	29.438	4.5
6	MP2A	Mx	-.016	4.5
7	MP2A	X	50.988	.5
8	MP2A	Z	29.438	.5
9	MP2A	Mx	-.06	.5
10	MP2A	X	50.988	4.5
11	MP2A	Z	29.438	4.5
12	MP2A	Mx	-.06	4.5
13	MP1A	X	9.391	5
14	MP1A	Z	5.422	5
15	MP1A	Mx	-.007	5
16	M6	X	75.894	1
17	M6	Z	43.817	1
18	M6	Mx	0	1
19	MP2A	X	31.025	.5
20	MP2A	Z	17.912	.5
21	MP2A	Mx	.016	.5
22	MP3A	X	29.032	.5
23	MP3A	Z	16.761	.5
24	MP3A	Mx	.022	.5
25	MP4A	X	80.103	.5
26	MP4A	Z	46.247	.5
27	MP4A	Mx	-.06	.5
28	MP4A	X	80.103	4.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
29	MP4A	Z	46.247	4.5
30	MP4A	Mx	-.06	4.5
31	MP1A	X	27.136	.25
32	MP1A	Z	15.667	.25
33	MP1A	Mx	-.02	.25
34	MP1A	X	27.136	1.75
35	MP1A	Z	15.667	1.75
36	MP1A	Mx	-.02	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	34.002	.5
2	MP2A	Z	58.894	.5
3	MP2A	Mx	.019	.5
4	MP2A	X	34.002	4.5
5	MP2A	Z	58.894	4.5
6	MP2A	Mx	.019	4.5
7	MP2A	X	34.002	.5
8	MP2A	Z	58.894	.5
9	MP2A	Mx	-.07	.5
10	MP2A	X	34.002	4.5
11	MP2A	Z	58.894	4.5
12	MP2A	Mx	-.07	4.5
13	MP1A	X	10.91	5
14	MP1A	Z	18.897	5
15	MP1A	Mx	-.008	5
16	M6	X	38.339	1
17	M6	Z	66.405	1
18	M6	Mx	0	1
19	MP2A	X	21.824	.5
20	MP2A	Z	37.801	.5
21	MP2A	Mx	.011	.5
22	MP3A	X	21.441	.5
23	MP3A	Z	37.137	.5
24	MP3A	Mx	.016	.5
25	MP4A	X	56.789	.5
26	MP4A	Z	98.361	.5
27	MP4A	Mx	-.043	.5
28	MP4A	X	56.789	4.5
29	MP4A	Z	98.361	4.5
30	MP4A	Mx	-.043	4.5
31	MP1A	X	24.605	.25
32	MP1A	Z	42.617	.25
33	MP1A	Mx	-.018	.25
34	MP1A	X	24.605	1.75
35	MP1A	Z	42.617	1.75
36	MP1A	Mx	-.018	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	0	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
2	MP2A	Z	72.569	.5
3	MP2A	Mx	.054	.5
4	MP2A	X	0	4.5
5	MP2A	Z	72.569	4.5
6	MP2A	Mx	.054	4.5
7	MP2A	X	0	.5
8	MP2A	Z	72.569	.5
9	MP2A	Mx	-.054	.5
10	MP2A	X	0	4.5
11	MP2A	Z	72.569	4.5
12	MP2A	Mx	-.054	4.5
13	MP1A	X	0	5
14	MP1A	Z	27.309	5
15	MP1A	Mx	0	5
16	M6	X	0	1
17	M6	Z	74.653	1
18	M6	Mx	0	1
19	MP2A	X	0	.5
20	MP2A	Z	47.561	.5
21	MP2A	Mx	0	.5
22	MP3A	X	0	.5
23	MP3A	Z	47.561	.5
24	MP3A	Mx	0	.5
25	MP4A	X	0	.5
26	MP4A	Z	124.119	.5
27	MP4A	Mx	0	.5
28	MP4A	X	0	4.5
29	MP4A	Z	124.119	4.5
30	MP4A	Mx	0	4.5
31	MP1A	X	0	.25
32	MP1A	Z	58.147	.25
33	MP1A	Mx	0	.25
34	MP1A	X	0	1.75
35	MP1A	Z	58.147	1.75
36	MP1A	Mx	0	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-34.002	.5
2	MP2A	Z	58.894	.5
3	MP2A	Mx	.07	.5
4	MP2A	X	-34.002	4.5
5	MP2A	Z	58.894	4.5
6	MP2A	Mx	.07	4.5
7	MP2A	X	-34.002	.5
8	MP2A	Z	58.894	.5
9	MP2A	Mx	-.019	.5
10	MP2A	X	-34.002	4.5
11	MP2A	Z	58.894	4.5
12	MP2A	Mx	-.019	4.5
13	MP1A	X	-10.91	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
14	MP1A	Z	18.897	5
15	MP1A	Mx	.008	5
16	M6	X	-41.793	1
17	M6	Z	72.387	1
18	M6	Mx	0	1
19	MP2A	X	-21.824	.5
20	MP2A	Z	37.801	.5
21	MP2A	Mx	-.011	.5
22	MP3A	X	-21.441	.5
23	MP3A	Z	37.137	.5
24	MP3A	Mx	-.016	.5
25	MP4A	X	-56.789	.5
26	MP4A	Z	98.361	.5
27	MP4A	Mx	.043	.5
28	MP4A	X	-56.789	4.5
29	MP4A	Z	98.361	4.5
30	MP4A	Mx	.043	4.5
31	MP1A	X	-24.605	.25
32	MP1A	Z	42.617	.25
33	MP1A	Mx	.018	.25
34	MP1A	X	-24.605	1.75
35	MP1A	Z	42.617	1.75
36	MP1A	Mx	.018	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	-50.988	.5
2	MP2A	Z	29.438	.5
3	MP2A	Mx	.06	.5
4	MP2A	X	-50.988	4.5
5	MP2A	Z	29.438	4.5
6	MP2A	Mx	.06	4.5
7	MP2A	X	-50.988	.5
8	MP2A	Z	29.438	.5
9	MP2A	Mx	.016	.5
10	MP2A	X	-50.988	4.5
11	MP2A	Z	29.438	4.5
12	MP2A	Mx	.016	4.5
13	MP1A	X	-9.391	5
14	MP1A	Z	5.422	5
15	MP1A	Mx	.007	5
16	M6	X	-81.876	1
17	M6	Z	47.271	1
18	M6	Mx	0	1
19	MP2A	X	-31.025	.5
20	MP2A	Z	17.912	.5
21	MP2A	Mx	-.016	.5
22	MP3A	X	-29.032	.5
23	MP3A	Z	16.761	.5
24	MP3A	Mx	-.022	.5
25	MP4A	X	-80.103	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
26	MP4A	Z	46.247	.5
27	MP4A	Mx	.06	.5
28	MP4A	X	-80.103	4.5
29	MP4A	Z	46.247	4.5
30	MP4A	Mx	.06	4.5
31	MP1A	X	-27.136	.25
32	MP1A	Z	15.667	.25
33	MP1A	Mx	.02	.25
34	MP1A	X	-27.136	1.75
35	MP1A	Z	15.667	1.75
36	MP1A	Mx	.02	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	-54.312	.5
2	MP2A	Z	0	.5
3	MP2A	Mx	.041	.5
4	MP2A	X	-54.312	4.5
5	MP2A	Z	0	4.5
6	MP2A	Mx	.041	4.5
7	MP2A	X	-54.312	.5
8	MP2A	Z	0	.5
9	MP2A	Mx	.041	.5
10	MP2A	X	-54.312	4.5
11	MP2A	Z	0	4.5
12	MP2A	Mx	.041	4.5
13	MP1A	X	-5.356	5
14	MP1A	Z	0	5
15	MP1A	Mx	.004	5
16	M6	X	-96.567	1
17	M6	Z	0	1
18	M6	Mx	0	1
19	MP2A	X	-31.912	.5
20	MP2A	Z	0	.5
21	MP2A	Mx	-.016	.5
22	MP3A	X	-28.844	.5
23	MP3A	Z	0	.5
24	MP3A	Mx	-.022	.5
25	MP4A	X	-81.953	.5
26	MP4A	Z	0	.5
27	MP4A	Mx	.061	.5
28	MP4A	X	-81.953	4.5
29	MP4A	Z	0	4.5
30	MP4A	Mx	.061	4.5
31	MP1A	X	-22.395	.25
32	MP1A	Z	0	.25
33	MP1A	Mx	.017	.25
34	MP1A	X	-22.395	1.75
35	MP1A	Z	0	1.75
36	MP1A	Mx	.017	1.75



Company :
 Designer :
 Job Number :
 Model Name :

Oct 28, 2023
 12:30 PM
 Checked By: _____

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	-50.988	.5
2	MP2A	Z	-29.438	.5
3	MP2A	Mx	.016	.5
4	MP2A	X	-50.988	4.5
5	MP2A	Z	-29.438	4.5
6	MP2A	Mx	.016	4.5
7	MP2A	X	-50.988	.5
8	MP2A	Z	-29.438	.5
9	MP2A	Mx	.06	.5
10	MP2A	X	-50.988	4.5
11	MP2A	Z	-29.438	4.5
12	MP2A	Mx	.06	4.5
13	MP1A	X	-9.391	5
14	MP1A	Z	-5.422	5
15	MP1A	Mx	.007	5
16	M6	X	-75.894	1
17	M6	Z	-43.817	1
18	M6	Mx	0	1
19	MP2A	X	-31.025	.5
20	MP2A	Z	-17.912	.5
21	MP2A	Mx	-.016	.5
22	MP3A	X	-29.032	.5
23	MP3A	Z	-16.761	.5
24	MP3A	Mx	-.022	.5
25	MP4A	X	-80.103	.5
26	MP4A	Z	-46.247	.5
27	MP4A	Mx	.06	.5
28	MP4A	X	-80.103	4.5
29	MP4A	Z	-46.247	4.5
30	MP4A	Mx	.06	4.5
31	MP1A	X	-27.136	.25
32	MP1A	Z	-15.667	.25
33	MP1A	Mx	.02	.25
34	MP1A	X	-27.136	1.75
35	MP1A	Z	-15.667	1.75
36	MP1A	Mx	.02	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	-34.002	.5
2	MP2A	Z	-58.894	.5
3	MP2A	Mx	-.019	.5
4	MP2A	X	-34.002	4.5
5	MP2A	Z	-58.894	4.5
6	MP2A	Mx	-.019	4.5
7	MP2A	X	-34.002	.5
8	MP2A	Z	-58.894	.5
9	MP2A	Mx	.07	.5
10	MP2A	X	-34.002	4.5
11	MP2A	Z	-58.894	4.5
12	MP2A	Mx	.07	4.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
13	MP1A	X	-10.91	5
14	MP1A	Z	-18.897	5
15	MP1A	Mx	.008	5
16	M6	X	-38.339	1
17	M6	Z	-66.405	1
18	M6	Mx	0	1
19	MP2A	X	-21.824	.5
20	MP2A	Z	-37.801	.5
21	MP2A	Mx	-.011	.5
22	MP3A	X	-21.441	.5
23	MP3A	Z	-37.137	.5
24	MP3A	Mx	-.016	.5
25	MP4A	X	-56.789	.5
26	MP4A	Z	-98.361	.5
27	MP4A	Mx	.043	.5
28	MP4A	X	-56.789	4.5
29	MP4A	Z	-98.361	4.5
30	MP4A	Mx	.043	4.5
31	MP1A	X	-24.605	.25
32	MP1A	Z	-42.617	.25
33	MP1A	Mx	.018	.25
34	MP1A	X	-24.605	1.75
35	MP1A	Z	-42.617	1.75
36	MP1A	Mx	.018	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	0	.5
2	MP2A	Z	-29.795	.5
3	MP2A	Mx	-.022	.5
4	MP2A	X	0	4.5
5	MP2A	Z	-29.795	4.5
6	MP2A	Mx	-.022	4.5
7	MP2A	X	0	.5
8	MP2A	Z	-29.795	.5
9	MP2A	Mx	.022	.5
10	MP2A	X	0	4.5
11	MP2A	Z	-29.795	4.5
12	MP2A	Mx	.022	4.5
13	MP1A	X	0	5
14	MP1A	Z	-6.86	5
15	MP1A	Mx	0	5
16	M6	X	0	1
17	M6	Z	-20.603	1
18	M6	Mx	0	1
19	MP2A	X	0	.5
20	MP2A	Z	-12.878	.5
21	MP2A	Mx	0	.5
22	MP3A	X	0	.5
23	MP3A	Z	-12.878	.5
24	MP3A	Mx	0	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
25	MP4A	X	0	.5
26	MP4A	Z	-24.811	.5
27	MP4A	Mx	0	.5
28	MP4A	X	0	4.5
29	MP4A	Z	-24.811	4.5
30	MP4A	Mx	0	4.5
31	MP1A	X	0	.25
32	MP1A	Z	-12.217	.25
33	MP1A	Mx	0	.25
34	MP1A	X	0	1.75
35	MP1A	Z	-12.217	1.75
36	MP1A	Mx	0	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	14.014	.5
2	MP2A	Z	-24.273	.5
3	MP2A	Mx	-.029	.5
4	MP2A	X	14.014	4.5
5	MP2A	Z	-24.273	4.5
6	MP2A	Mx	-.029	4.5
7	MP2A	X	14.014	.5
8	MP2A	Z	-24.273	.5
9	MP2A	Mx	.008	.5
10	MP2A	X	14.014	4.5
11	MP2A	Z	-24.273	4.5
12	MP2A	Mx	.008	4.5
13	MP1A	X	2.86	5
14	MP1A	Z	-4.954	5
15	MP1A	Mx	-.002	5
16	M6	X	11.344	1
17	M6	Z	-19.649	1
18	M6	Mx	0	1
19	MP2A	X	5.969	.5
20	MP2A	Z	-10.338	.5
21	MP2A	Mx	.003	.5
22	MP3A	X	5.987	.5
23	MP3A	Z	-10.37	.5
24	MP3A	Mx	.004	.5
25	MP4A	X	11.481	.5
26	MP4A	Z	-19.885	.5
27	MP4A	Mx	-.009	.5
28	MP4A	X	11.481	4.5
29	MP4A	Z	-19.885	4.5
30	MP4A	Mx	-.009	4.5
31	MP1A	X	5.253	.25
32	MP1A	Z	-9.098	.25
33	MP1A	Mx	-.004	.25
34	MP1A	X	5.253	1.75
35	MP1A	Z	-9.098	1.75
36	MP1A	Mx	-.004	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	21.212	.5
2	MP2A	Z	-12.247	.5
3	MP2A	Mx	-.025	.5
4	MP2A	X	21.212	4.5
5	MP2A	Z	-12.247	4.5
6	MP2A	Mx	-.025	4.5
7	MP2A	X	21.212	.5
8	MP2A	Z	-12.247	.5
9	MP2A	Mx	-.007	.5
10	MP2A	X	21.212	4.5
11	MP2A	Z	-12.247	4.5
12	MP2A	Mx	-.007	4.5
13	MP1A	X	2.98	5
14	MP1A	Z	-1.721	5
15	MP1A	Mx	-.002	5
16	M6	X	21.865	1
17	M6	Z	-12.624	1
18	M6	Mx	0	1
19	MP2A	X	8.709	.5
20	MP2A	Z	-5.028	.5
21	MP2A	Mx	.004	.5
22	MP3A	X	8.806	.5
23	MP3A	Z	-5.084	.5
24	MP3A	Mx	.007	.5
25	MP4A	X	16.681	.5
26	MP4A	Z	-9.631	.5
27	MP4A	Mx	-.013	.5
28	MP4A	X	16.681	4.5
29	MP4A	Z	-9.631	4.5
30	MP4A	Mx	-.013	4.5
31	MP1A	X	6.135	.25
32	MP1A	Z	-3.542	.25
33	MP1A	Mx	-.005	.25
34	MP1A	X	6.135	1.75
35	MP1A	Z	-3.542	1.75
36	MP1A	Mx	-.005	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	22.727	.5
2	MP2A	Z	0	.5
3	MP2A	Mx	-.017	.5
4	MP2A	X	22.727	4.5
5	MP2A	Z	0	4.5
6	MP2A	Mx	-.017	4.5
7	MP2A	X	22.727	.5
8	MP2A	Z	0	.5
9	MP2A	Mx	-.017	.5
10	MP2A	X	22.727	4.5
11	MP2A	Z	0	4.5
12	MP2A	Mx	-.017	4.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
13	MP1A	X	2.301	5
14	MP1A	Z	0	5
15	MP1A	Mx	-.002	5
16	M6	X	25.72	1
17	M6	Z	0	1
18	M6	Mx	0	1
19	MP2A	X	9.115	.5
20	MP2A	Z	0	.5
21	MP2A	Mx	.005	.5
22	MP3A	X	9.266	.5
23	MP3A	Z	0	.5
24	MP3A	Mx	.007	.5
25	MP4A	X	17.411	.5
26	MP4A	Z	0	.5
27	MP4A	Mx	-.013	.5
28	MP4A	X	17.411	4.5
29	MP4A	Z	0	4.5
30	MP4A	Mx	-.013	4.5
31	MP1A	X	5.373	.25
32	MP1A	Z	0	.25
33	MP1A	Mx	-.004	.25
34	MP1A	X	5.373	1.75
35	MP1A	Z	0	1.75
36	MP1A	Mx	-.004	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	21.212	.5
2	MP2A	Z	12.247	.5
3	MP2A	Mx	-.007	.5
4	MP2A	X	21.212	4.5
5	MP2A	Z	12.247	4.5
6	MP2A	Mx	-.007	4.5
7	MP2A	X	21.212	.5
8	MP2A	Z	12.247	.5
9	MP2A	Mx	-.025	.5
10	MP2A	X	21.212	4.5
11	MP2A	Z	12.247	4.5
12	MP2A	Mx	-.025	4.5
13	MP1A	X	2.98	5
14	MP1A	Z	1.721	5
15	MP1A	Mx	-.002	5
16	M6	X	20.468	1
17	M6	Z	11.817	1
18	M6	Mx	0	1
19	MP2A	X	8.709	.5
20	MP2A	Z	5.028	.5
21	MP2A	Mx	.004	.5
22	MP3A	X	8.806	.5
23	MP3A	Z	5.084	.5
24	MP3A	Mx	.007	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
25	MP4A	X	16.681	.5
26	MP4A	Z	9.631	.5
27	MP4A	Mx	-.013	.5
28	MP4A	X	16.681	4.5
29	MP4A	Z	9.631	4.5
30	MP4A	Mx	-.013	4.5
31	MP1A	X	6.135	.25
32	MP1A	Z	3.542	.25
33	MP1A	Mx	-.005	.25
34	MP1A	X	6.135	1.75
35	MP1A	Z	3.542	1.75
36	MP1A	Mx	-.005	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	14.014	.5
2	MP2A	Z	24.273	.5
3	MP2A	Mx	.008	.5
4	MP2A	X	14.014	4.5
5	MP2A	Z	24.273	4.5
6	MP2A	Mx	.008	4.5
7	MP2A	X	14.014	.5
8	MP2A	Z	24.273	.5
9	MP2A	Mx	-.029	.5
10	MP2A	X	14.014	4.5
11	MP2A	Z	24.273	4.5
12	MP2A	Mx	-.029	4.5
13	MP1A	X	2.86	5
14	MP1A	Z	4.954	5
15	MP1A	Mx	-.002	5
16	M6	X	10.538	1
17	M6	Z	18.252	1
18	M6	Mx	0	1
19	MP2A	X	5.969	.5
20	MP2A	Z	10.338	.5
21	MP2A	Mx	.003	.5
22	MP3A	X	5.987	.5
23	MP3A	Z	10.37	.5
24	MP3A	Mx	.004	.5
25	MP4A	X	11.481	.5
26	MP4A	Z	19.885	.5
27	MP4A	Mx	-.009	.5
28	MP4A	X	11.481	4.5
29	MP4A	Z	19.885	4.5
30	MP4A	Mx	-.009	4.5
31	MP1A	X	5.253	.25
32	MP1A	Z	9.098	.25
33	MP1A	Mx	-.004	.25
34	MP1A	X	5.253	1.75
35	MP1A	Z	9.098	1.75
36	MP1A	Mx	-.004	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	0	.5
2	MP2A	Z	29.795	.5
3	MP2A	Mx	.022	.5
4	MP2A	X	0	4.5
5	MP2A	Z	29.795	4.5
6	MP2A	Mx	.022	4.5
7	MP2A	X	0	.5
8	MP2A	Z	29.795	.5
9	MP2A	Mx	-.022	.5
10	MP2A	X	0	4.5
11	MP2A	Z	29.795	4.5
12	MP2A	Mx	-.022	4.5
13	MP1A	X	0	5
14	MP1A	Z	6.86	5
15	MP1A	Mx	0	5
16	M6	X	0	1
17	M6	Z	20.603	1
18	M6	Mx	0	1
19	MP2A	X	0	.5
20	MP2A	Z	12.878	.5
21	MP2A	Mx	0	.5
22	MP3A	X	0	.5
23	MP3A	Z	12.878	.5
24	MP3A	Mx	0	.5
25	MP4A	X	0	.5
26	MP4A	Z	24.811	.5
27	MP4A	Mx	0	.5
28	MP4A	X	0	4.5
29	MP4A	Z	24.811	4.5
30	MP4A	Mx	0	4.5
31	MP1A	X	0	.25
32	MP1A	Z	12.217	.25
33	MP1A	Mx	0	.25
34	MP1A	X	0	1.75
35	MP1A	Z	12.217	1.75
36	MP1A	Mx	0	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	-14.014	.5
2	MP2A	Z	24.273	.5
3	MP2A	Mx	.029	.5
4	MP2A	X	-14.014	4.5
5	MP2A	Z	24.273	4.5
6	MP2A	Mx	.029	4.5
7	MP2A	X	-14.014	.5
8	MP2A	Z	24.273	.5
9	MP2A	Mx	-.008	.5
10	MP2A	X	-14.014	4.5
11	MP2A	Z	24.273	4.5
12	MP2A	Mx	-.008	4.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
13	MP1A	X	-2.86	5
14	MP1A	Z	4.954	5
15	MP1A	Mx	.002	5
16	M6	X	-11.344	1
17	M6	Z	19.649	1
18	M6	Mx	0	1
19	MP2A	X	-5.969	.5
20	MP2A	Z	10.338	.5
21	MP2A	Mx	-.003	.5
22	MP3A	X	-5.987	.5
23	MP3A	Z	10.37	.5
24	MP3A	Mx	-.004	.5
25	MP4A	X	-11.481	.5
26	MP4A	Z	19.885	.5
27	MP4A	Mx	.009	.5
28	MP4A	X	-11.481	4.5
29	MP4A	Z	19.885	4.5
30	MP4A	Mx	.009	4.5
31	MP1A	X	-5.253	.25
32	MP1A	Z	9.098	.25
33	MP1A	Mx	.004	.25
34	MP1A	X	-5.253	1.75
35	MP1A	Z	9.098	1.75
36	MP1A	Mx	.004	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	-21.212	.5
2	MP2A	Z	12.247	.5
3	MP2A	Mx	.025	.5
4	MP2A	X	-21.212	4.5
5	MP2A	Z	12.247	4.5
6	MP2A	Mx	.025	4.5
7	MP2A	X	-21.212	.5
8	MP2A	Z	12.247	.5
9	MP2A	Mx	.007	.5
10	MP2A	X	-21.212	4.5
11	MP2A	Z	12.247	4.5
12	MP2A	Mx	.007	4.5
13	MP1A	X	-2.98	5
14	MP1A	Z	1.721	5
15	MP1A	Mx	.002	5
16	M6	X	-21.865	1
17	M6	Z	12.624	1
18	M6	Mx	0	1
19	MP2A	X	-8.709	.5
20	MP2A	Z	5.028	.5
21	MP2A	Mx	-.004	.5
22	MP3A	X	-8.806	.5
23	MP3A	Z	5.084	.5
24	MP3A	Mx	-.007	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
25	MP4A	X	-16.681	.5
26	MP4A	Z	9.631	.5
27	MP4A	Mx	.013	.5
28	MP4A	X	-16.681	4.5
29	MP4A	Z	9.631	4.5
30	MP4A	Mx	.013	4.5
31	MP1A	X	-6.135	.25
32	MP1A	Z	3.542	.25
33	MP1A	Mx	.005	.25
34	MP1A	X	-6.135	1.75
35	MP1A	Z	3.542	1.75
36	MP1A	Mx	.005	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	-22.727	.5
2	MP2A	Z	0	.5
3	MP2A	Mx	.017	.5
4	MP2A	X	-22.727	4.5
5	MP2A	Z	0	4.5
6	MP2A	Mx	.017	4.5
7	MP2A	X	-22.727	.5
8	MP2A	Z	0	.5
9	MP2A	Mx	.017	.5
10	MP2A	X	-22.727	4.5
11	MP2A	Z	0	4.5
12	MP2A	Mx	.017	4.5
13	MP1A	X	-2.301	5
14	MP1A	Z	0	5
15	MP1A	Mx	.002	5
16	M6	X	-25.72	1
17	M6	Z	0	1
18	M6	Mx	0	1
19	MP2A	X	-9.115	.5
20	MP2A	Z	0	.5
21	MP2A	Mx	-.005	.5
22	MP3A	X	-9.266	.5
23	MP3A	Z	0	.5
24	MP3A	Mx	-.007	.5
25	MP4A	X	-17.411	.5
26	MP4A	Z	0	.5
27	MP4A	Mx	.013	.5
28	MP4A	X	-17.411	4.5
29	MP4A	Z	0	4.5
30	MP4A	Mx	.013	4.5
31	MP1A	X	-5.373	.25
32	MP1A	Z	0	.25
33	MP1A	Mx	.004	.25
34	MP1A	X	-5.373	1.75
35	MP1A	Z	0	1.75
36	MP1A	Mx	.004	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	-21.212	.5
2	MP2A	Z	-12.247	.5
3	MP2A	Mx	.007	.5
4	MP2A	X	-21.212	4.5
5	MP2A	Z	-12.247	4.5
6	MP2A	Mx	.007	4.5
7	MP2A	X	-21.212	.5
8	MP2A	Z	-12.247	.5
9	MP2A	Mx	.025	.5
10	MP2A	X	-21.212	4.5
11	MP2A	Z	-12.247	4.5
12	MP2A	Mx	.025	4.5
13	MP1A	X	-2.98	5
14	MP1A	Z	-1.721	5
15	MP1A	Mx	.002	5
16	M6	X	-20.468	1
17	M6	Z	-11.817	1
18	M6	Mx	0	1
19	MP2A	X	-8.709	.5
20	MP2A	Z	-5.028	.5
21	MP2A	Mx	-.004	.5
22	MP3A	X	-8.806	.5
23	MP3A	Z	-5.084	.5
24	MP3A	Mx	-.007	.5
25	MP4A	X	-16.681	.5
26	MP4A	Z	-9.631	.5
27	MP4A	Mx	.013	.5
28	MP4A	X	-16.681	4.5
29	MP4A	Z	-9.631	4.5
30	MP4A	Mx	.013	4.5
31	MP1A	X	-6.135	.25
32	MP1A	Z	-3.542	.25
33	MP1A	Mx	.005	.25
34	MP1A	X	-6.135	1.75
35	MP1A	Z	-3.542	1.75
36	MP1A	Mx	.005	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	-14.014	.5
2	MP2A	Z	-24.273	.5
3	MP2A	Mx	-.008	.5
4	MP2A	X	-14.014	4.5
5	MP2A	Z	-24.273	4.5
6	MP2A	Mx	-.008	4.5
7	MP2A	X	-14.014	.5
8	MP2A	Z	-24.273	.5
9	MP2A	Mx	.029	.5
10	MP2A	X	-14.014	4.5
11	MP2A	Z	-24.273	4.5
12	MP2A	Mx	.029	4.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
13	MP1A	X	-2.86	5
14	MP1A	Z	-4.954	5
15	MP1A	Mx	.002	5
16	M6	X	-10.538	1
17	M6	Z	-18.252	1
18	M6	Mx	0	1
19	MP2A	X	-5.969	.5
20	MP2A	Z	-10.338	.5
21	MP2A	Mx	-.003	.5
22	MP3A	X	-5.987	.5
23	MP3A	Z	-10.37	.5
24	MP3A	Mx	-.004	.5
25	MP4A	X	-11.481	.5
26	MP4A	Z	-19.885	.5
27	MP4A	Mx	.009	.5
28	MP4A	X	-11.481	4.5
29	MP4A	Z	-19.885	4.5
30	MP4A	Mx	.009	4.5
31	MP1A	X	-5.253	.25
32	MP1A	Z	-9.098	.25
33	MP1A	Mx	.004	.25
34	MP1A	X	-5.253	1.75
35	MP1A	Z	-9.098	1.75
36	MP1A	Mx	.004	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	0	.5
2	MP2A	Z	-4.536	.5
3	MP2A	Mx	-.003	.5
4	MP2A	X	0	4.5
5	MP2A	Z	-4.536	4.5
6	MP2A	Mx	-.003	4.5
7	MP2A	X	0	.5
8	MP2A	Z	-4.536	.5
9	MP2A	Mx	.003	.5
10	MP2A	X	0	4.5
11	MP2A	Z	-4.536	4.5
12	MP2A	Mx	.003	4.5
13	MP1A	X	0	5
14	MP1A	Z	-1.707	5
15	MP1A	Mx	0	5
16	M6	X	0	1
17	M6	Z	-4.666	1
18	M6	Mx	0	1
19	MP2A	X	0	.5
20	MP2A	Z	-2.973	.5
21	MP2A	Mx	0	.5
22	MP3A	X	0	.5
23	MP3A	Z	-2.973	.5
24	MP3A	Mx	0	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
25	MP4A	X	0	.5
26	MP4A	Z	-7.757	.5
27	MP4A	Mx	0	.5
28	MP4A	X	0	4.5
29	MP4A	Z	-7.757	4.5
30	MP4A	Mx	0	4.5
31	MP1A	X	0	.25
32	MP1A	Z	-3.634	.25
33	MP1A	Mx	0	.25
34	MP1A	X	0	1.75
35	MP1A	Z	-3.634	1.75
36	MP1A	Mx	0	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	2.125	.5
2	MP2A	Z	-3.681	.5
3	MP2A	Mx	-.004	.5
4	MP2A	X	2.125	4.5
5	MP2A	Z	-3.681	4.5
6	MP2A	Mx	-.004	4.5
7	MP2A	X	2.125	.5
8	MP2A	Z	-3.681	.5
9	MP2A	Mx	.001	.5
10	MP2A	X	2.125	4.5
11	MP2A	Z	-3.681	4.5
12	MP2A	Mx	.001	4.5
13	MP1A	X	.682	5
14	MP1A	Z	-1.181	5
15	MP1A	Mx	-.000512	5
16	M6	X	2.612	1
17	M6	Z	-4.524	1
18	M6	Mx	0	1
19	MP2A	X	1.364	.5
20	MP2A	Z	-2.363	.5
21	MP2A	Mx	.000682	.5
22	MP3A	X	1.34	.5
23	MP3A	Z	-2.321	.5
24	MP3A	Mx	.001	.5
25	MP4A	X	3.549	.5
26	MP4A	Z	-6.148	.5
27	MP4A	Mx	-.003	.5
28	MP4A	X	3.549	4.5
29	MP4A	Z	-6.148	4.5
30	MP4A	Mx	-.003	4.5
31	MP1A	X	1.538	.25
32	MP1A	Z	-2.664	.25
33	MP1A	Mx	-.001	.25
34	MP1A	X	1.538	1.75
35	MP1A	Z	-2.664	1.75
36	MP1A	Mx	-.001	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	3.187	.5
2	MP2A	Z	-1.84	.5
3	MP2A	Mx	-.004	.5
4	MP2A	X	3.187	4.5
5	MP2A	Z	-1.84	4.5
6	MP2A	Mx	-.004	4.5
7	MP2A	X	3.187	.5
8	MP2A	Z	-1.84	.5
9	MP2A	Mx	-.001	.5
10	MP2A	X	3.187	4.5
11	MP2A	Z	-1.84	4.5
12	MP2A	Mx	-.001	4.5
13	MP1A	X	.587	5
14	MP1A	Z	-.339	5
15	MP1A	Mx	-.00044	5
16	M6	X	5.117	1
17	M6	Z	-2.954	1
18	M6	Mx	0	1
19	MP2A	X	1.939	.5
20	MP2A	Z	-1.12	.5
21	MP2A	Mx	.00097	.5
22	MP3A	X	1.814	.5
23	MP3A	Z	-1.048	.5
24	MP3A	Mx	.001	.5
25	MP4A	X	5.006	.5
26	MP4A	Z	-2.89	.5
27	MP4A	Mx	-.004	.5
28	MP4A	X	5.006	4.5
29	MP4A	Z	-2.89	4.5
30	MP4A	Mx	-.004	4.5
31	MP1A	X	1.696	.25
32	MP1A	Z	-.979	.25
33	MP1A	Mx	-.001	.25
34	MP1A	X	1.696	1.75
35	MP1A	Z	-.979	1.75
36	MP1A	Mx	-.001	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	3.394	.5
2	MP2A	Z	0	.5
3	MP2A	Mx	-.003	.5
4	MP2A	X	3.394	4.5
5	MP2A	Z	0	4.5
6	MP2A	Mx	-.003	4.5
7	MP2A	X	3.394	.5
8	MP2A	Z	0	.5
9	MP2A	Mx	-.003	.5
10	MP2A	X	3.394	4.5
11	MP2A	Z	0	4.5
12	MP2A	Mx	-.003	4.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
13	MP1A	X	.335	5
14	MP1A	Z	0	5
15	MP1A	Mx	-.000251	5
16	M6	X	6.035	1
17	M6	Z	0	1
18	M6	Mx	0	1
19	MP2A	X	1.994	.5
20	MP2A	Z	0	.5
21	MP2A	Mx	.000997	.5
22	MP3A	X	1.803	.5
23	MP3A	Z	0	.5
24	MP3A	Mx	.001	.5
25	MP4A	X	5.122	.5
26	MP4A	Z	0	.5
27	MP4A	Mx	-.004	.5
28	MP4A	X	5.122	4.5
29	MP4A	Z	0	4.5
30	MP4A	Mx	-.004	4.5
31	MP1A	X	1.4	.25
32	MP1A	Z	0	.25
33	MP1A	Mx	-.001	.25
34	MP1A	X	1.4	1.75
35	MP1A	Z	0	1.75
36	MP1A	Mx	-.001	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	3.187	.5
2	MP2A	Z	1.84	.5
3	MP2A	Mx	-.001	.5
4	MP2A	X	3.187	4.5
5	MP2A	Z	1.84	4.5
6	MP2A	Mx	-.001	4.5
7	MP2A	X	3.187	.5
8	MP2A	Z	1.84	.5
9	MP2A	Mx	-.004	.5
10	MP2A	X	3.187	4.5
11	MP2A	Z	1.84	4.5
12	MP2A	Mx	-.004	4.5
13	MP1A	X	.587	5
14	MP1A	Z	.339	5
15	MP1A	Mx	-.00044	5
16	M6	X	4.743	1
17	M6	Z	2.739	1
18	M6	Mx	0	1
19	MP2A	X	1.939	.5
20	MP2A	Z	1.12	.5
21	MP2A	Mx	.00097	.5
22	MP3A	X	1.814	.5
23	MP3A	Z	1.048	.5
24	MP3A	Mx	.001	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
25	MP4A	X	5.006	.5
26	MP4A	Z	2.89	.5
27	MP4A	Mx	-.004	.5
28	MP4A	X	5.006	4.5
29	MP4A	Z	2.89	4.5
30	MP4A	Mx	-.004	4.5
31	MP1A	X	1.696	.25
32	MP1A	Z	.979	.25
33	MP1A	Mx	-.001	.25
34	MP1A	X	1.696	1.75
35	MP1A	Z	.979	1.75
36	MP1A	Mx	-.001	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	2.125	.5
2	MP2A	Z	3.681	.5
3	MP2A	Mx	.001	.5
4	MP2A	X	2.125	4.5
5	MP2A	Z	3.681	4.5
6	MP2A	Mx	.001	4.5
7	MP2A	X	2.125	.5
8	MP2A	Z	3.681	.5
9	MP2A	Mx	-.004	.5
10	MP2A	X	2.125	4.5
11	MP2A	Z	3.681	4.5
12	MP2A	Mx	-.004	4.5
13	MP1A	X	.682	5
14	MP1A	Z	1.181	5
15	MP1A	Mx	-.000512	5
16	M6	X	2.396	1
17	M6	Z	4.15	1
18	M6	Mx	0	1
19	MP2A	X	1.364	.5
20	MP2A	Z	2.363	.5
21	MP2A	Mx	.000682	.5
22	MP3A	X	1.34	.5
23	MP3A	Z	2.321	.5
24	MP3A	Mx	.001	.5
25	MP4A	X	3.549	.5
26	MP4A	Z	6.148	.5
27	MP4A	Mx	-.003	.5
28	MP4A	X	3.549	4.5
29	MP4A	Z	6.148	4.5
30	MP4A	Mx	-.003	4.5
31	MP1A	X	1.538	.25
32	MP1A	Z	2.664	.25
33	MP1A	Mx	-.001	.25
34	MP1A	X	1.538	1.75
35	MP1A	Z	2.664	1.75
36	MP1A	Mx	-.001	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	0	.5
2	MP2A	Z	4.536	.5
3	MP2A	Mx	.003	.5
4	MP2A	X	0	4.5
5	MP2A	Z	4.536	4.5
6	MP2A	Mx	.003	4.5
7	MP2A	X	0	.5
8	MP2A	Z	4.536	.5
9	MP2A	Mx	-.003	.5
10	MP2A	X	0	4.5
11	MP2A	Z	4.536	4.5
12	MP2A	Mx	-.003	4.5
13	MP1A	X	0	5
14	MP1A	Z	1.707	5
15	MP1A	Mx	0	5
16	M6	X	0	1
17	M6	Z	4.666	1
18	M6	Mx	0	1
19	MP2A	X	0	.5
20	MP2A	Z	2.973	.5
21	MP2A	Mx	0	.5
22	MP3A	X	0	.5
23	MP3A	Z	2.973	.5
24	MP3A	Mx	0	.5
25	MP4A	X	0	.5
26	MP4A	Z	7.757	.5
27	MP4A	Mx	0	.5
28	MP4A	X	0	4.5
29	MP4A	Z	7.757	4.5
30	MP4A	Mx	0	4.5
31	MP1A	X	0	.25
32	MP1A	Z	3.634	.25
33	MP1A	Mx	0	.25
34	MP1A	X	0	1.75
35	MP1A	Z	3.634	1.75
36	MP1A	Mx	0	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	-2.125	.5
2	MP2A	Z	3.681	.5
3	MP2A	Mx	.004	.5
4	MP2A	X	-2.125	4.5
5	MP2A	Z	3.681	4.5
6	MP2A	Mx	.004	4.5
7	MP2A	X	-2.125	.5
8	MP2A	Z	3.681	.5
9	MP2A	Mx	-.001	.5
10	MP2A	X	-2.125	4.5
11	MP2A	Z	3.681	4.5
12	MP2A	Mx	-.001	4.5

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [ft, %]
13	MP1A	X	-.682	5
14	MP1A	Z	1.181	5
15	MP1A	Mx	.000512	5
16	M6	X	-2.612	1
17	M6	Z	4.524	1
18	M6	Mx	0	1
19	MP2A	X	-1.364	.5
20	MP2A	Z	2.363	.5
21	MP2A	Mx	-.000682	.5
22	MP3A	X	-1.34	.5
23	MP3A	Z	2.321	.5
24	MP3A	Mx	-.001	.5
25	MP4A	X	-3.549	.5
26	MP4A	Z	6.148	.5
27	MP4A	Mx	.003	.5
28	MP4A	X	-3.549	4.5
29	MP4A	Z	6.148	4.5
30	MP4A	Mx	.003	4.5
31	MP1A	X	-1.538	.25
32	MP1A	Z	2.664	.25
33	MP1A	Mx	.001	.25
34	MP1A	X	-1.538	1.75
35	MP1A	Z	2.664	1.75
36	MP1A	Mx	.001	1.75

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [ft, %]
1	MP2A	X	-3.187	.5
2	MP2A	Z	1.84	.5
3	MP2A	Mx	.004	.5
4	MP2A	X	-3.187	4.5
5	MP2A	Z	1.84	4.5
6	MP2A	Mx	.004	4.5
7	MP2A	X	-3.187	.5
8	MP2A	Z	1.84	.5
9	MP2A	Mx	.001	.5
10	MP2A	X	-3.187	4.5
11	MP2A	Z	1.84	4.5
12	MP2A	Mx	.001	4.5
13	MP1A	X	-.587	5
14	MP1A	Z	.339	5
15	MP1A	Mx	.00044	5
16	M6	X	-5.117	1
17	M6	Z	2.954	1
18	M6	Mx	0	1
19	MP2A	X	-1.939	.5
20	MP2A	Z	1.12	.5
21	MP2A	Mx	-.00097	.5
22	MP3A	X	-1.814	.5
23	MP3A	Z	1.048	.5
24	MP3A	Mx	-.001	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
25	MP4A	X	-5.006	.5
26	MP4A	Z	2.89	.5
27	MP4A	Mx	.004	.5
28	MP4A	X	-5.006	4.5
29	MP4A	Z	2.89	4.5
30	MP4A	Mx	.004	4.5
31	MP1A	X	-1.696	.25
32	MP1A	Z	.979	.25
33	MP1A	Mx	.001	.25
34	MP1A	X	-1.696	1.75
35	MP1A	Z	.979	1.75
36	MP1A	Mx	.001	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	-3.394	.5
2	MP2A	Z	0	.5
3	MP2A	Mx	.003	.5
4	MP2A	X	-3.394	4.5
5	MP2A	Z	0	4.5
6	MP2A	Mx	.003	4.5
7	MP2A	X	-3.394	.5
8	MP2A	Z	0	.5
9	MP2A	Mx	.003	.5
10	MP2A	X	-3.394	4.5
11	MP2A	Z	0	4.5
12	MP2A	Mx	.003	4.5
13	MP1A	X	-.335	5
14	MP1A	Z	0	5
15	MP1A	Mx	.000251	5
16	M6	X	-6.035	1
17	M6	Z	0	1
18	M6	Mx	0	1
19	MP2A	X	-1.994	.5
20	MP2A	Z	0	.5
21	MP2A	Mx	-.000997	.5
22	MP3A	X	-1.803	.5
23	MP3A	Z	0	.5
24	MP3A	Mx	-.001	.5
25	MP4A	X	-5.122	.5
26	MP4A	Z	0	.5
27	MP4A	Mx	.004	.5
28	MP4A	X	-5.122	4.5
29	MP4A	Z	0	4.5
30	MP4A	Mx	.004	4.5
31	MP1A	X	-1.4	.25
32	MP1A	Z	0	.25
33	MP1A	Mx	.001	.25
34	MP1A	X	-1.4	1.75
35	MP1A	Z	0	1.75
36	MP1A	Mx	.001	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	-3.187	.5
2	MP2A	Z	-1.84	.5
3	MP2A	Mx	.001	.5
4	MP2A	X	-3.187	4.5
5	MP2A	Z	-1.84	4.5
6	MP2A	Mx	.001	4.5
7	MP2A	X	-3.187	.5
8	MP2A	Z	-1.84	.5
9	MP2A	Mx	.004	.5
10	MP2A	X	-3.187	4.5
11	MP2A	Z	-1.84	4.5
12	MP2A	Mx	.004	4.5
13	MP1A	X	-.587	5
14	MP1A	Z	-.339	5
15	MP1A	Mx	.00044	5
16	M6	X	-4.743	1
17	M6	Z	-2.739	1
18	M6	Mx	0	1
19	MP2A	X	-1.939	.5
20	MP2A	Z	-1.12	.5
21	MP2A	Mx	-.00097	.5
22	MP3A	X	-1.814	.5
23	MP3A	Z	-1.048	.5
24	MP3A	Mx	-.001	.5
25	MP4A	X	-5.006	.5
26	MP4A	Z	-2.89	.5
27	MP4A	Mx	.004	.5
28	MP4A	X	-5.006	4.5
29	MP4A	Z	-2.89	4.5
30	MP4A	Mx	.004	4.5
31	MP1A	X	-1.696	.25
32	MP1A	Z	-.979	.25
33	MP1A	Mx	.001	.25
34	MP1A	X	-1.696	1.75
35	MP1A	Z	-.979	1.75
36	MP1A	Mx	.001	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	-2.125	.5
2	MP2A	Z	-3.681	.5
3	MP2A	Mx	-.001	.5
4	MP2A	X	-2.125	4.5
5	MP2A	Z	-3.681	4.5
6	MP2A	Mx	-.001	4.5
7	MP2A	X	-2.125	.5
8	MP2A	Z	-3.681	.5
9	MP2A	Mx	.004	.5
10	MP2A	X	-2.125	4.5
11	MP2A	Z	-3.681	4.5
12	MP2A	Mx	.004	4.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
13	MP1A	X	-.682	5
14	MP1A	Z	-1.181	5
15	MP1A	Mx	.000512	5
16	M6	X	-2.396	1
17	M6	Z	-4.15	1
18	M6	Mx	0	1
19	MP2A	X	-1.364	.5
20	MP2A	Z	-2.363	.5
21	MP2A	Mx	-.000682	.5
22	MP3A	X	-1.34	.5
23	MP3A	Z	-2.321	.5
24	MP3A	Mx	-.001	.5
25	MP4A	X	-3.549	.5
26	MP4A	Z	-6.148	.5
27	MP4A	Mx	.003	.5
28	MP4A	X	-3.549	4.5
29	MP4A	Z	-6.148	4.5
30	MP4A	Mx	.003	4.5
31	MP1A	X	-1.538	.25
32	MP1A	Z	-2.664	.25
33	MP1A	Mx	.001	.25
34	MP1A	X	-1.538	1.75
35	MP1A	Z	-2.664	1.75
36	MP1A	Mx	.001	1.75

Member Point Loads (BLC 77 : Lm1)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	LM1	Y	-500	%100

Member Point Loads (BLC 78 : Lm2)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	LM2	Y	-500	%100

Member Point Loads (BLC 79 : Lv1)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	LM1	Y	-250	%100

Member Point Loads (BLC 80 : Lv2)

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

Member Point Loads (BLC 81 : Antenna Ev)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	Y	-.996	.5
2	MP2A	My	-.000747	.5
3	MP2A	Mz	.000747	.5
4	MP2A	Y	-.996	4.5
5	MP2A	My	-.000747	4.5
6	MP2A	Mz	.000747	4.5

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [ft, %]
7	MP2A	Y	-.996	.5
8	MP2A	My	-.000747	.5
9	MP2A	Mz	-.000747	.5
10	MP2A	Y	-.996	4.5
11	MP2A	My	-.000747	4.5
12	MP2A	Mz	-.000747	4.5
13	MP1A	Y	-.191	5
14	MP1A	My	-.000143	5
15	MP1A	Mz	0	5
16	M6	Y	-1.386	1
17	M6	My	0	1
18	M6	Mz	0	1
19	MP2A	Y	-3.235	.5
20	MP2A	My	.002	.5
21	MP2A	Mz	0	.5
22	MP3A	Y	-3.426	.5
23	MP3A	My	.003	.5
24	MP3A	Mz	0	.5
25	MP4A	Y	-.717	.5
26	MP4A	My	-.000538	.5
27	MP4A	Mz	0	.5
28	MP4A	Y	-.717	4.5
29	MP4A	My	-.000538	4.5
30	MP4A	Mz	0	4.5
31	MP1A	Y	-1.241	.25
32	MP1A	My	-.000931	.25
33	MP1A	Mz	0	.25
34	MP1A	Y	-1.241	1.75
35	MP1A	My	-.000931	1.75
36	MP1A	Mz	0	1.75

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

	Member Label	Direction	Magnitude [lb, k-ft]	Location [ft, %]
1	MP2A	Z	-2.49	.5
2	MP2A	Mx	-.002	.5
3	MP2A	Z	-2.49	4.5
4	MP2A	Mx	-.002	4.5
5	MP2A	Z	-2.49	.5
6	MP2A	Mx	.002	.5
7	MP2A	Z	-2.49	4.5
8	MP2A	Mx	.002	4.5
9	MP1A	Z	-.476	5
10	MP1A	Mx	0	5
11	M6	Z	-3.465	1
12	M6	Mx	0	1
13	MP2A	Z	-8.088	.5
14	MP2A	Mx	0	.5
15	MP3A	Z	-8.564	.5
16	MP3A	Mx	0	.5
17	MP4A	Z	-1.792	.5
18	MP4A	Mx	0	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
19	MP4A	Z	-1.792	4.5
20	MP4A	Mx	0	4.5
21	MP1A	Z	-3.102	.25
22	MP1A	Mx	0	.25
23	MP1A	Z	-3.102	1.75
24	MP1A	Mx	0	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	2.49	.5
2	MP2A	Mx	-.002	.5
3	MP2A	X	2.49	4.5
4	MP2A	Mx	-.002	4.5
5	MP2A	X	2.49	.5
6	MP2A	Mx	-.002	.5
7	MP2A	X	2.49	4.5
8	MP2A	Mx	-.002	4.5
9	MP1A	X	.476	5
10	MP1A	Mx	-.000357	5
11	M6	X	3.465	1
12	M6	Mx	0	1
13	MP2A	X	8.088	.5
14	MP2A	Mx	.004	.5
15	MP3A	X	8.564	.5
16	MP3A	Mx	.006	.5
17	MP4A	X	1.792	.5
18	MP4A	Mx	-.001	.5
19	MP4A	X	1.792	4.5
20	MP4A	Mx	-.001	4.5
21	MP1A	X	3.102	.25
22	MP1A	Mx	-.002	.25
23	MP1A	X	3.102	1.75
24	MP1A	Mx	-.002	1.75

Member Distributed Loads (BLC 40 : Structure Di)

	Member Label	Direction	Start Magnitude[lb/ft,...]	End Magnitude[lb/ft,F...]	Start Location[ft,%]	End Location[ft,%]
1	M1	Y	-8.274	-8.274	0	%100
2	LV	Y	-6.812	-6.812	0	%100
3	M4	Y	-6.812	-6.812	0	%100
4	M6	Y	-8.274	-8.274	0	%100
5	M8	Y	-6.812	-6.812	0	%100
6	M9	Y	-6.812	-6.812	0	%100
7	M11	Y	-12.617	-12.617	0	%100
8	M14	Y	-5.463	-5.463	0	%100
9	M15	Y	-5.463	-5.463	0	%100
10	M16	Y	-5.463	-5.463	0	%100
11	M26	Y	-5.974	-5.974	0	%100
12	M27	Y	-4.952	-4.952	0	%100
13	M28	Y	-4.952	-4.952	0	%100
14	M29	Y	-5.974	-5.974	0	%100

Member Distributed Loads (BLC 40 : Structure Di) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
15	M30	Y	-4.952	-4.952	0	%100
16	M31	Y	-4.952	-4.952	0	%100
17	M34	Y	-4.952	-4.952	0	%100
18	M35	Y	-4.952	-4.952	0	%100
19	MP4A	Y	-8.274	-8.274	0	%100
20	MP3A	Y	-8.274	-8.274	0	%100
21	MP2A	Y	-8.274	-8.274	0	%100
22	MP1A	Y	-8.274	-8.274	0	%100
23	M37	Y	-8.274	-8.274	0	%100
24	M38	Y	-10.646	-10.646	0	%100
25	M39	Y	-10.646	-10.646	0	%100
26	M40	Y	-10.646	-10.646	0	%100
27	M41	Y	-10.646	-10.646	0	%100
28	M46	Y	-9.296	-9.296	0	%100
29	M51	Y	-9.296	-9.296	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100
3	LV	X	0	0	0	%100
4	LV	Z	-5.094	-5.094	0	%100
5	M4	X	0	0	0	%100
6	M4	Z	-5.094	-5.094	0	%100
7	M6	X	0	0	0	%100
8	M6	Z	0	0	0	%100
9	M8	X	0	0	0	%100
10	M8	Z	-5.094	-5.094	0	%100
11	M9	X	0	0	0	%100
12	M9	Z	-5.094	-5.094	0	%100
13	M11	X	0	0	0	%100
14	M11	Z	-10.049	-10.049	0	%100
15	M14	X	0	0	0	%100
16	M14	Z	-3.068	-3.068	0	%100
17	M15	X	0	0	0	%100
18	M15	Z	-3.068	-3.068	0	%100
19	M16	X	0	0	0	%100
20	M16	Z	-2.389	-2.389	0	%100
21	M26	X	0	0	0	%100
22	M26	Z	-3.765	-3.765	0	%100
23	M27	X	0	0	0	%100
24	M27	Z	-2.301	-2.301	0	%100
25	M28	X	0	0	0	%100
26	M28	Z	-2.301	-2.301	0	%100
27	M29	X	0	0	0	%100
28	M29	Z	-3.765	-3.765	0	%100
29	M30	X	0	0	0	%100
30	M30	Z	-2.301	-2.301	0	%100
31	M31	X	0	0	0	%100
32	M31	Z	-2.301	-2.301	0	%100
33	M34	X	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
34	M34	Z	-2.301	-2.301	0	% 100
35	M35	X	0	0	0	% 100
36	M35	Z	-2.301	-2.301	0	% 100
37	MP4A	X	0	0	0	% 100
38	MP4A	Z	-7.288	-7.288	0	% 100
39	MP3A	X	0	0	0	% 100
40	MP3A	Z	-7.288	-7.288	0	% 100
41	MP2A	X	0	0	0	% 100
42	MP2A	Z	-7.288	-7.288	0	% 100
43	MP1A	X	0	0	0	% 100
44	MP1A	Z	-7.288	-7.288	0	% 100
45	M37	X	0	0	0	% 100
46	M37	Z	-.09	-.09	0	% 100
47	M38	X	0	0	0	% 100
48	M38	Z	-9.783	-9.783	0	% 100
49	M39	X	0	0	0	% 100
50	M39	Z	-8.683	-8.683	0	% 100
51	M40	X	0	0	0	% 100
52	M40	Z	-9.321	-9.321	0	% 100
53	M41	X	0	0	0	% 100
54	M41	Z	-7.769	-7.769	0	% 100
55	M46	X	0	0	0	% 100
56	M46	Z	-8.822	-8.822	0	% 100
57	M51	X	0	0	0	% 100
58	M51	Z	-8.822	-8.822	0	% 100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	.672	.672	0	% 100
2	M1	Z	-1.164	-1.164	0	% 100
3	LV	X	1.91	1.91	0	% 100
4	LV	Z	-3.308	-3.308	0	% 100
5	M4	X	1.91	1.91	0	% 100
6	M4	Z	-3.308	-3.308	0	% 100
7	M6	X	.672	.672	0	% 100
8	M6	Z	-1.164	-1.164	0	% 100
9	M8	X	1.91	1.91	0	% 100
10	M8	Z	-3.308	-3.308	0	% 100
11	M9	X	1.91	1.91	0	% 100
12	M9	Z	-3.308	-3.308	0	% 100
13	M11	X	5.024	5.024	0	% 100
14	M11	Z	-8.702	-8.702	0	% 100
15	M14	X	1.534	1.534	0	% 100
16	M14	Z	-2.657	-2.657	0	% 100
17	M15	X	1.534	1.534	0	% 100
18	M15	Z	-2.657	-2.657	0	% 100
19	M16	X	1.279	1.279	0	% 100
20	M16	Z	-2.216	-2.216	0	% 100
21	M26	X	1.882	1.882	0	% 100
22	M26	Z	-3.26	-3.26	0	% 100
23	M27	X	1.151	1.151	0	% 100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
24	M27	Z	-1.993	-1.993	0	%100
25	M28	X	1.151	1.151	0	%100
26	M28	Z	-1.993	-1.993	0	%100
27	M29	X	1.882	1.882	0	%100
28	M29	Z	-3.26	-3.26	0	%100
29	M30	X	1.024	1.024	0	%100
30	M30	Z	-1.773	-1.773	0	%100
31	M31	X	.963	.963	0	%100
32	M31	Z	-1.669	-1.669	0	%100
33	M34	X	1.151	1.151	0	%100
34	M34	Z	-1.993	-1.993	0	%100
35	M35	X	1.024	1.024	0	%100
36	M35	Z	-1.773	-1.773	0	%100
37	MP4A	X	3.644	3.644	0	%100
38	MP4A	Z	-6.311	-6.311	0	%100
39	MP3A	X	3.644	3.644	0	%100
40	MP3A	Z	-6.311	-6.311	0	%100
41	MP2A	X	3.644	3.644	0	%100
42	MP2A	Z	-6.311	-6.311	0	%100
43	MP1A	X	3.644	3.644	0	%100
44	MP1A	Z	-6.311	-6.311	0	%100
45	M37	X	.585	.585	0	%100
46	M37	Z	-1.013	-1.013	0	%100
47	M38	X	2.381	2.381	0	%100
48	M38	Z	-4.124	-4.124	0	%100
49	M39	X	6.191	6.191	0	%100
50	M39	Z	-10.724	-10.724	0	%100
51	M40	X	1.763	1.763	0	%100
52	M40	Z	-3.053	-3.053	0	%100
53	M41	X	6.147	6.147	0	%100
54	M41	Z	-10.646	-10.646	0	%100
55	M46	X	3.308	3.308	0	%100
56	M46	Z	-5.73	-5.73	0	%100
57	M51	X	3.308	3.308	0	%100
58	M51	Z	-5.73	-5.73	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	3.492	3.492	0	%100
2	M1	Z	-2.016	-2.016	0	%100
3	LV	X	1.103	1.103	0	%100
4	LV	Z	-.637	-.637	0	%100
5	M4	X	1.103	1.103	0	%100
6	M4	Z	-.637	-.637	0	%100
7	M6	X	3.492	3.492	0	%100
8	M6	Z	-2.016	-2.016	0	%100
9	M8	X	1.103	1.103	0	%100
10	M8	Z	-.637	-.637	0	%100
11	M9	X	1.103	1.103	0	%100
12	M9	Z	-.637	-.637	0	%100
13	M11	X	8.702	8.702	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
14	M11	Z	-5.024	-5.024	0	%100
15	M14	X	2.657	2.657	0	%100
16	M14	Z	-1.534	-1.534	0	%100
17	M15	X	2.657	2.657	0	%100
18	M15	Z	-1.534	-1.534	0	%100
19	M16	X	2.51	2.51	0	%100
20	M16	Z	-1.449	-1.449	0	%100
21	M26	X	3.26	3.26	0	%100
22	M26	Z	-1.882	-1.882	0	%100
23	M27	X	1.993	1.993	0	%100
24	M27	Z	-1.151	-1.151	0	%100
25	M28	X	1.993	1.993	0	%100
26	M28	Z	-1.151	-1.151	0	%100
27	M29	X	3.26	3.26	0	%100
28	M29	Z	-1.882	-1.882	0	%100
29	M30	X	1.334	1.334	0	%100
30	M30	Z	-.77	-.77	0	%100
31	M31	X	1.019	1.019	0	%100
32	M31	Z	-.589	-.589	0	%100
33	M34	X	1.993	1.993	0	%100
34	M34	Z	-1.151	-1.151	0	%100
35	M35	X	1.334	1.334	0	%100
36	M35	Z	-.77	-.77	0	%100
37	MP4A	X	6.311	6.311	0	%100
38	MP4A	Z	-3.644	-3.644	0	%100
39	MP3A	X	6.311	6.311	0	%100
40	MP3A	Z	-3.644	-3.644	0	%100
41	MP2A	X	6.311	6.311	0	%100
42	MP2A	Z	-3.644	-3.644	0	%100
43	MP1A	X	6.311	6.311	0	%100
44	MP1A	Z	-3.644	-3.644	0	%100
45	M37	X	4.09	4.09	0	%100
46	M37	Z	-2.362	-2.362	0	%100
47	M38	X	2.35	2.35	0	%100
48	M38	Z	-1.357	-1.357	0	%100
49	M39	X	10.329	10.329	0	%100
50	M39	Z	-5.963	-5.963	0	%100
51	M40	X	1.007	1.007	0	%100
52	M40	Z	-.581	-.581	0	%100
53	M41	X	10.163	10.163	0	%100
54	M41	Z	-5.868	-5.868	0	%100
55	M46	X	1.91	1.91	0	%100
56	M46	Z	-1.103	-1.103	0	%100
57	M51	X	1.91	1.91	0	%100
58	M51	Z	-1.103	-1.103	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M1	X	5.377	5.377	0	%100
2	M1	Z	0	0	0	%100
3	LV	X	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
4	LV	Z	0	0	0	% 100
5	M4	X	0	0	0	% 100
6	M4	Z	0	0	0	% 100
7	M6	X	5.377	5.377	0	% 100
8	M6	Z	0	0	0	% 100
9	M8	X	0	0	0	% 100
10	M8	Z	0	0	0	% 100
11	M9	X	0	0	0	% 100
12	M9	Z	0	0	0	% 100
13	M11	X	10.049	10.049	0	% 100
14	M11	Z	0	0	0	% 100
15	M14	X	3.068	3.068	0	% 100
16	M14	Z	0	0	0	% 100
17	M15	X	3.068	3.068	0	% 100
18	M15	Z	0	0	0	% 100
19	M16	X	3.068	3.068	0	% 100
20	M16	Z	0	0	0	% 100
21	M26	X	3.765	3.765	0	% 100
22	M26	Z	0	0	0	% 100
23	M27	X	2.301	2.301	0	% 100
24	M27	Z	0	0	0	% 100
25	M28	X	2.301	2.301	0	% 100
26	M28	Z	0	0	0	% 100
27	M29	X	3.765	3.765	0	% 100
28	M29	Z	0	0	0	% 100
29	M30	X	1.287	1.287	0	% 100
30	M30	Z	0	0	0	% 100
31	M31	X	.802	.802	0	% 100
32	M31	Z	0	0	0	% 100
33	M34	X	2.301	2.301	0	% 100
34	M34	Z	0	0	0	% 100
35	M35	X	1.287	1.287	0	% 100
36	M35	Z	0	0	0	% 100
37	MP4A	X	7.288	7.288	0	% 100
38	MP4A	Z	0	0	0	% 100
39	MP3A	X	7.288	7.288	0	% 100
40	MP3A	Z	0	0	0	% 100
41	MP2A	X	7.288	7.288	0	% 100
42	MP2A	Z	0	0	0	% 100
43	MP1A	X	7.288	7.288	0	% 100
44	MP1A	Z	0	0	0	% 100
45	M37	X	7.197	7.197	0	% 100
46	M37	Z	0	0	0	% 100
47	M38	X	5.687	5.687	0	% 100
48	M38	Z	0	0	0	% 100
49	M39	X	7.771	7.771	0	% 100
50	M39	Z	0	0	0	% 100
51	M40	X	4.594	4.594	0	% 100
52	M40	Z	0	0	0	% 100
53	M41	X	6.653	6.653	0	% 100
54	M41	Z	0	0	0	% 100
55	M46	X	0	0	0	% 100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
56	M46	Z	0	0	0	%100
57	M51	X	0	0	0	%100
58	M51	Z	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M1	X	3.492	3.492	0	%100
2	M1	Z	2.016	2.016	0	%100
3	LV	X	1.103	1.103	0	%100
4	LV	Z	.637	.637	0	%100
5	M4	X	1.103	1.103	0	%100
6	M4	Z	.637	.637	0	%100
7	M6	X	3.492	3.492	0	%100
8	M6	Z	2.016	2.016	0	%100
9	M8	X	1.103	1.103	0	%100
10	M8	Z	.637	.637	0	%100
11	M9	X	1.103	1.103	0	%100
12	M9	Z	.637	.637	0	%100
13	M11	X	8.702	8.702	0	%100
14	M11	Z	5.024	5.024	0	%100
15	M14	X	2.657	2.657	0	%100
16	M14	Z	1.534	1.534	0	%100
17	M15	X	2.657	2.657	0	%100
18	M15	Z	1.534	1.534	0	%100
19	M16	X	2.51	2.51	0	%100
20	M16	Z	1.449	1.449	0	%100
21	M26	X	3.26	3.26	0	%100
22	M26	Z	1.882	1.882	0	%100
23	M27	X	1.993	1.993	0	%100
24	M27	Z	1.151	1.151	0	%100
25	M28	X	1.993	1.993	0	%100
26	M28	Z	1.151	1.151	0	%100
27	M29	X	3.26	3.26	0	%100
28	M29	Z	1.882	1.882	0	%100
29	M30	X	1.334	1.334	0	%100
30	M30	Z	.77	.77	0	%100
31	M31	X	1.019	1.019	0	%100
32	M31	Z	.589	.589	0	%100
33	M34	X	1.993	1.993	0	%100
34	M34	Z	1.151	1.151	0	%100
35	M35	X	1.334	1.334	0	%100
36	M35	Z	.77	.77	0	%100
37	MP4A	X	6.311	6.311	0	%100
38	MP4A	Z	3.644	3.644	0	%100
39	MP3A	X	6.311	6.311	0	%100
40	MP3A	Z	3.644	3.644	0	%100
41	MP2A	X	6.311	6.311	0	%100
42	MP2A	Z	3.644	3.644	0	%100
43	MP1A	X	6.311	6.311	0	%100
44	MP1A	Z	3.644	3.644	0	%100
45	M37	X	5.298	5.298	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
46	M37	Z	3.059	3.059	0	%100
47	M38	X	9.274	9.274	0	%100
48	M38	Z	5.355	5.355	0	%100
49	M39	X	3.526	3.526	0	%100
50	M39	Z	2.036	2.036	0	%100
51	M40	X	8.997	8.997	0	%100
52	M40	Z	5.195	5.195	0	%100
53	M41	X	1.843	1.843	0	%100
54	M41	Z	1.064	1.064	0	%100
55	M46	X	1.91	1.91	0	%100
56	M46	Z	1.103	1.103	0	%100
57	M51	X	1.91	1.91	0	%100
58	M51	Z	1.103	1.103	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	.672	.672	0	%100
2	M1	Z	1.164	1.164	0	%100
3	LV	X	1.91	1.91	0	%100
4	LV	Z	3.308	3.308	0	%100
5	M4	X	1.91	1.91	0	%100
6	M4	Z	3.308	3.308	0	%100
7	M6	X	.672	.672	0	%100
8	M6	Z	1.164	1.164	0	%100
9	M8	X	1.91	1.91	0	%100
10	M8	Z	3.308	3.308	0	%100
11	M9	X	1.91	1.91	0	%100
12	M9	Z	3.308	3.308	0	%100
13	M11	X	5.024	5.024	0	%100
14	M11	Z	8.702	8.702	0	%100
15	M14	X	1.534	1.534	0	%100
16	M14	Z	2.657	2.657	0	%100
17	M15	X	1.534	1.534	0	%100
18	M15	Z	2.657	2.657	0	%100
19	M16	X	1.279	1.279	0	%100
20	M16	Z	2.216	2.216	0	%100
21	M26	X	1.882	1.882	0	%100
22	M26	Z	3.26	3.26	0	%100
23	M27	X	1.151	1.151	0	%100
24	M27	Z	1.993	1.993	0	%100
25	M28	X	1.151	1.151	0	%100
26	M28	Z	1.993	1.993	0	%100
27	M29	X	1.882	1.882	0	%100
28	M29	Z	3.26	3.26	0	%100
29	M30	X	1.024	1.024	0	%100
30	M30	Z	1.773	1.773	0	%100
31	M31	X	.963	.963	0	%100
32	M31	Z	1.669	1.669	0	%100
33	M34	X	1.151	1.151	0	%100
34	M34	Z	1.993	1.993	0	%100
35	M35	X	1.024	1.024	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
36	M35	Z	1.773	1.773	0	%100
37	MP4A	X	3.644	3.644	0	%100
38	MP4A	Z	6.311	6.311	0	%100
39	MP3A	X	3.644	3.644	0	%100
40	MP3A	Z	6.311	6.311	0	%100
41	MP2A	X	3.644	3.644	0	%100
42	MP2A	Z	6.311	6.311	0	%100
43	MP1A	X	3.644	3.644	0	%100
44	MP1A	Z	6.311	6.311	0	%100
45	M37	X	1.282	1.282	0	%100
46	M37	Z	2.221	2.221	0	%100
47	M38	X	6.378	6.378	0	%100
48	M38	Z	11.048	11.048	0	%100
49	M39	X	2.264	2.264	0	%100
50	M39	Z	3.921	3.921	0	%100
51	M40	X	6.376	6.376	0	%100
52	M40	Z	11.044	11.044	0	%100
53	M41	X	1.343	1.343	0	%100
54	M41	Z	2.326	2.326	0	%100
55	M46	X	3.308	3.308	0	%100
56	M46	Z	5.73	5.73	0	%100
57	M51	X	3.308	3.308	0	%100
58	M51	Z	5.73	5.73	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100
3	LV	X	0	0	0	%100
4	LV	Z	5.094	5.094	0	%100
5	M4	X	0	0	0	%100
6	M4	Z	5.094	5.094	0	%100
7	M6	X	0	0	0	%100
8	M6	Z	0	0	0	%100
9	M8	X	0	0	0	%100
10	M8	Z	5.094	5.094	0	%100
11	M9	X	0	0	0	%100
12	M9	Z	5.094	5.094	0	%100
13	M11	X	0	0	0	%100
14	M11	Z	10.049	10.049	0	%100
15	M14	X	0	0	0	%100
16	M14	Z	3.068	3.068	0	%100
17	M15	X	0	0	0	%100
18	M15	Z	3.068	3.068	0	%100
19	M16	X	0	0	0	%100
20	M16	Z	2.389	2.389	0	%100
21	M26	X	0	0	0	%100
22	M26	Z	3.765	3.765	0	%100
23	M27	X	0	0	0	%100
24	M27	Z	2.301	2.301	0	%100
25	M28	X	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
26	M28	Z	2.301	2.301	0	%100
27	M29	X	0	0	0	%100
28	M29	Z	3.765	3.765	0	%100
29	M30	X	0	0	0	%100
30	M30	Z	2.301	2.301	0	%100
31	M31	X	0	0	0	%100
32	M31	Z	2.301	2.301	0	%100
33	M34	X	0	0	0	%100
34	M34	Z	2.301	2.301	0	%100
35	M35	X	0	0	0	%100
36	M35	Z	2.301	2.301	0	%100
37	MP4A	X	0	0	0	%100
38	MP4A	Z	7.288	7.288	0	%100
39	MP3A	X	0	0	0	%100
40	MP3A	Z	7.288	7.288	0	%100
41	MP2A	X	0	0	0	%100
42	MP2A	Z	7.288	7.288	0	%100
43	MP1A	X	0	0	0	%100
44	MP1A	Z	7.288	7.288	0	%100
45	M37	X	0	0	0	%100
46	M37	Z	.09	.09	0	%100
47	M38	X	0	0	0	%100
48	M38	Z	9.783	9.783	0	%100
49	M39	X	0	0	0	%100
50	M39	Z	8.683	8.683	0	%100
51	M40	X	0	0	0	%100
52	M40	Z	9.321	9.321	0	%100
53	M41	X	0	0	0	%100
54	M41	Z	7.769	7.769	0	%100
55	M46	X	0	0	0	%100
56	M46	Z	8.822	8.822	0	%100
57	M51	X	0	0	0	%100
58	M51	Z	8.822	8.822	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	-.672	-.672	0	%100
2	M1	Z	1.164	1.164	0	%100
3	LV	X	-1.91	-1.91	0	%100
4	LV	Z	3.308	3.308	0	%100
5	M4	X	-1.91	-1.91	0	%100
6	M4	Z	3.308	3.308	0	%100
7	M6	X	-.672	-.672	0	%100
8	M6	Z	1.164	1.164	0	%100
9	M8	X	-1.91	-1.91	0	%100
10	M8	Z	3.308	3.308	0	%100
11	M9	X	-1.91	-1.91	0	%100
12	M9	Z	3.308	3.308	0	%100
13	M11	X	-5.024	-5.024	0	%100
14	M11	Z	8.702	8.702	0	%100
15	M14	X	-1.534	-1.534	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
16	M14	Z	2.657	2.657	0	%100
17	M15	X	-1.534	-1.534	0	%100
18	M15	Z	2.657	2.657	0	%100
19	M16	X	-1.279	-1.279	0	%100
20	M16	Z	2.216	2.216	0	%100
21	M26	X	-1.882	-1.882	0	%100
22	M26	Z	3.26	3.26	0	%100
23	M27	X	-1.151	-1.151	0	%100
24	M27	Z	1.993	1.993	0	%100
25	M28	X	-1.151	-1.151	0	%100
26	M28	Z	1.993	1.993	0	%100
27	M29	X	-1.882	-1.882	0	%100
28	M29	Z	3.26	3.26	0	%100
29	M30	X	-1.024	-1.024	0	%100
30	M30	Z	1.773	1.773	0	%100
31	M31	X	-.963	-.963	0	%100
32	M31	Z	1.669	1.669	0	%100
33	M34	X	-1.151	-1.151	0	%100
34	M34	Z	1.993	1.993	0	%100
35	M35	X	-1.024	-1.024	0	%100
36	M35	Z	1.773	1.773	0	%100
37	MP4A	X	-3.644	-3.644	0	%100
38	MP4A	Z	6.311	6.311	0	%100
39	MP3A	X	-3.644	-3.644	0	%100
40	MP3A	Z	6.311	6.311	0	%100
41	MP2A	X	-3.644	-3.644	0	%100
42	MP2A	Z	6.311	6.311	0	%100
43	MP1A	X	-3.644	-3.644	0	%100
44	MP1A	Z	6.311	6.311	0	%100
45	M37	X	-.585	-.585	0	%100
46	M37	Z	1.013	1.013	0	%100
47	M38	X	-2.381	-2.381	0	%100
48	M38	Z	4.124	4.124	0	%100
49	M39	X	-6.191	-6.191	0	%100
50	M39	Z	10.724	10.724	0	%100
51	M40	X	-1.763	-1.763	0	%100
52	M40	Z	3.053	3.053	0	%100
53	M41	X	-6.147	-6.147	0	%100
54	M41	Z	10.646	10.646	0	%100
55	M46	X	-3.308	-3.308	0	%100
56	M46	Z	5.73	5.73	0	%100
57	M51	X	-3.308	-3.308	0	%100
58	M51	Z	5.73	5.73	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M1	X	-3.492	-3.492	0	%100
2	M1	Z	2.016	2.016	0	%100
3	LV	X	-1.103	-1.103	0	%100
4	LV	Z	.637	.637	0	%100
5	M4	X	-1.103	-1.103	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
6	M4	Z	.637	.637	0	%100
7	M6	X	-3.492	-3.492	0	%100
8	M6	Z	2.016	2.016	0	%100
9	M8	X	-1.103	-1.103	0	%100
10	M8	Z	.637	.637	0	%100
11	M9	X	-1.103	-1.103	0	%100
12	M9	Z	.637	.637	0	%100
13	M11	X	-8.702	-8.702	0	%100
14	M11	Z	5.024	5.024	0	%100
15	M14	X	-2.657	-2.657	0	%100
16	M14	Z	1.534	1.534	0	%100
17	M15	X	-2.657	-2.657	0	%100
18	M15	Z	1.534	1.534	0	%100
19	M16	X	-2.51	-2.51	0	%100
20	M16	Z	1.449	1.449	0	%100
21	M26	X	-3.26	-3.26	0	%100
22	M26	Z	1.882	1.882	0	%100
23	M27	X	-1.993	-1.993	0	%100
24	M27	Z	1.151	1.151	0	%100
25	M28	X	-1.993	-1.993	0	%100
26	M28	Z	1.151	1.151	0	%100
27	M29	X	-3.26	-3.26	0	%100
28	M29	Z	1.882	1.882	0	%100
29	M30	X	-1.334	-1.334	0	%100
30	M30	Z	.77	.77	0	%100
31	M31	X	-1.019	-1.019	0	%100
32	M31	Z	.589	.589	0	%100
33	M34	X	-1.993	-1.993	0	%100
34	M34	Z	1.151	1.151	0	%100
35	M35	X	-1.334	-1.334	0	%100
36	M35	Z	.77	.77	0	%100
37	MP4A	X	-6.311	-6.311	0	%100
38	MP4A	Z	3.644	3.644	0	%100
39	MP3A	X	-6.311	-6.311	0	%100
40	MP3A	Z	3.644	3.644	0	%100
41	MP2A	X	-6.311	-6.311	0	%100
42	MP2A	Z	3.644	3.644	0	%100
43	MP1A	X	-6.311	-6.311	0	%100
44	MP1A	Z	3.644	3.644	0	%100
45	M37	X	-4.09	-4.09	0	%100
46	M37	Z	2.362	2.362	0	%100
47	M38	X	-2.35	-2.35	0	%100
48	M38	Z	1.357	1.357	0	%100
49	M39	X	-10.329	-10.329	0	%100
50	M39	Z	5.963	5.963	0	%100
51	M40	X	-1.007	-1.007	0	%100
52	M40	Z	.581	.581	0	%100
53	M41	X	-10.163	-10.163	0	%100
54	M41	Z	5.868	5.868	0	%100
55	M46	X	-1.91	-1.91	0	%100
56	M46	Z	1.103	1.103	0	%100
57	M51	X	-1.91	-1.91	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
58	M51	Z	1.103	1.103	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M1	X	-5.377	-5.377	0	%100
2	M1	Z	0	0	0	%100
3	LV	X	0	0	0	%100
4	LV	Z	0	0	0	%100
5	M4	X	0	0	0	%100
6	M4	Z	0	0	0	%100
7	M6	X	-5.377	-5.377	0	%100
8	M6	Z	0	0	0	%100
9	M8	X	0	0	0	%100
10	M8	Z	0	0	0	%100
11	M9	X	0	0	0	%100
12	M9	Z	0	0	0	%100
13	M11	X	-10.049	-10.049	0	%100
14	M11	Z	0	0	0	%100
15	M14	X	-3.068	-3.068	0	%100
16	M14	Z	0	0	0	%100
17	M15	X	-3.068	-3.068	0	%100
18	M15	Z	0	0	0	%100
19	M16	X	-3.068	-3.068	0	%100
20	M16	Z	0	0	0	%100
21	M26	X	-3.765	-3.765	0	%100
22	M26	Z	0	0	0	%100
23	M27	X	-2.301	-2.301	0	%100
24	M27	Z	0	0	0	%100
25	M28	X	-2.301	-2.301	0	%100
26	M28	Z	0	0	0	%100
27	M29	X	-3.765	-3.765	0	%100
28	M29	Z	0	0	0	%100
29	M30	X	-1.287	-1.287	0	%100
30	M30	Z	0	0	0	%100
31	M31	X	-.802	-.802	0	%100
32	M31	Z	0	0	0	%100
33	M34	X	-2.301	-2.301	0	%100
34	M34	Z	0	0	0	%100
35	M35	X	-1.287	-1.287	0	%100
36	M35	Z	0	0	0	%100
37	MP4A	X	-7.288	-7.288	0	%100
38	MP4A	Z	0	0	0	%100
39	MP3A	X	-7.288	-7.288	0	%100
40	MP3A	Z	0	0	0	%100
41	MP2A	X	-7.288	-7.288	0	%100
42	MP2A	Z	0	0	0	%100
43	MP1A	X	-7.288	-7.288	0	%100
44	MP1A	Z	0	0	0	%100
45	M37	X	-7.197	-7.197	0	%100
46	M37	Z	0	0	0	%100
47	M38	X	-5.687	-5.687	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
48	M38	Z	0	0	0	%100
49	M39	X	-7.771	-7.771	0	%100
50	M39	Z	0	0	0	%100
51	M40	X	-4.594	-4.594	0	%100
52	M40	Z	0	0	0	%100
53	M41	X	-6.653	-6.653	0	%100
54	M41	Z	0	0	0	%100
55	M46	X	0	0	0	%100
56	M46	Z	0	0	0	%100
57	M51	X	0	0	0	%100
58	M51	Z	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	-3.492	-3.492	0	%100
2	M1	Z	-2.016	-2.016	0	%100
3	LV	X	-1.103	-1.103	0	%100
4	LV	Z	-.637	-.637	0	%100
5	M4	X	-1.103	-1.103	0	%100
6	M4	Z	-.637	-.637	0	%100
7	M6	X	-3.492	-3.492	0	%100
8	M6	Z	-2.016	-2.016	0	%100
9	M8	X	-1.103	-1.103	0	%100
10	M8	Z	-.637	-.637	0	%100
11	M9	X	-1.103	-1.103	0	%100
12	M9	Z	-.637	-.637	0	%100
13	M11	X	-8.702	-8.702	0	%100
14	M11	Z	-5.024	-5.024	0	%100
15	M14	X	-2.657	-2.657	0	%100
16	M14	Z	-1.534	-1.534	0	%100
17	M15	X	-2.657	-2.657	0	%100
18	M15	Z	-1.534	-1.534	0	%100
19	M16	X	-2.51	-2.51	0	%100
20	M16	Z	-1.449	-1.449	0	%100
21	M26	X	-3.26	-3.26	0	%100
22	M26	Z	-1.882	-1.882	0	%100
23	M27	X	-1.993	-1.993	0	%100
24	M27	Z	-1.151	-1.151	0	%100
25	M28	X	-1.993	-1.993	0	%100
26	M28	Z	-1.151	-1.151	0	%100
27	M29	X	-3.26	-3.26	0	%100
28	M29	Z	-1.882	-1.882	0	%100
29	M30	X	-1.334	-1.334	0	%100
30	M30	Z	-.77	-.77	0	%100
31	M31	X	-1.019	-1.019	0	%100
32	M31	Z	-.589	-.589	0	%100
33	M34	X	-1.993	-1.993	0	%100
34	M34	Z	-1.151	-1.151	0	%100
35	M35	X	-1.334	-1.334	0	%100
36	M35	Z	-.77	-.77	0	%100
37	MP4A	X	-6.311	-6.311	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...]	End Magnitude[lb/ft,F...]	Start Location[ft,%]	End Location[ft,%]
38	MP4A	Z	-3.644	-3.644	0	%100
39	MP3A	X	-6.311	-6.311	0	%100
40	MP3A	Z	-3.644	-3.644	0	%100
41	MP2A	X	-6.311	-6.311	0	%100
42	MP2A	Z	-3.644	-3.644	0	%100
43	MP1A	X	-6.311	-6.311	0	%100
44	MP1A	Z	-3.644	-3.644	0	%100
45	M37	X	-5.298	-5.298	0	%100
46	M37	Z	-3.059	-3.059	0	%100
47	M38	X	-9.274	-9.274	0	%100
48	M38	Z	-5.355	-5.355	0	%100
49	M39	X	-3.526	-3.526	0	%100
50	M39	Z	-2.036	-2.036	0	%100
51	M40	X	-8.997	-8.997	0	%100
52	M40	Z	-5.195	-5.195	0	%100
53	M41	X	-1.843	-1.843	0	%100
54	M41	Z	-1.064	-1.064	0	%100
55	M46	X	-1.91	-1.91	0	%100
56	M46	Z	-1.103	-1.103	0	%100
57	M51	X	-1.91	-1.91	0	%100
58	M51	Z	-1.103	-1.103	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...]	End Magnitude[lb/ft,F...]	Start Location[ft,%]	End Location[ft,%]
1	M1	X	-.672	-.672	0	%100
2	M1	Z	-1.164	-1.164	0	%100
3	LV	X	-1.91	-1.91	0	%100
4	LV	Z	-3.308	-3.308	0	%100
5	M4	X	-1.91	-1.91	0	%100
6	M4	Z	-3.308	-3.308	0	%100
7	M6	X	-.672	-.672	0	%100
8	M6	Z	-1.164	-1.164	0	%100
9	M8	X	-1.91	-1.91	0	%100
10	M8	Z	-3.308	-3.308	0	%100
11	M9	X	-1.91	-1.91	0	%100
12	M9	Z	-3.308	-3.308	0	%100
13	M11	X	-5.024	-5.024	0	%100
14	M11	Z	-8.702	-8.702	0	%100
15	M14	X	-1.534	-1.534	0	%100
16	M14	Z	-2.657	-2.657	0	%100
17	M15	X	-1.534	-1.534	0	%100
18	M15	Z	-2.657	-2.657	0	%100
19	M16	X	-1.279	-1.279	0	%100
20	M16	Z	-2.216	-2.216	0	%100
21	M26	X	-1.882	-1.882	0	%100
22	M26	Z	-3.26	-3.26	0	%100
23	M27	X	-1.151	-1.151	0	%100
24	M27	Z	-1.993	-1.993	0	%100
25	M28	X	-1.151	-1.151	0	%100
26	M28	Z	-1.993	-1.993	0	%100
27	M29	X	-1.882	-1.882	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
28	M29	Z	-3.26	-3.26	0	%100
29	M30	X	-1.024	-1.024	0	%100
30	M30	Z	-1.773	-1.773	0	%100
31	M31	X	-.963	-.963	0	%100
32	M31	Z	-1.669	-1.669	0	%100
33	M34	X	-1.151	-1.151	0	%100
34	M34	Z	-1.993	-1.993	0	%100
35	M35	X	-1.024	-1.024	0	%100
36	M35	Z	-1.773	-1.773	0	%100
37	MP4A	X	-3.644	-3.644	0	%100
38	MP4A	Z	-6.311	-6.311	0	%100
39	MP3A	X	-3.644	-3.644	0	%100
40	MP3A	Z	-6.311	-6.311	0	%100
41	MP2A	X	-3.644	-3.644	0	%100
42	MP2A	Z	-6.311	-6.311	0	%100
43	MP1A	X	-3.644	-3.644	0	%100
44	MP1A	Z	-6.311	-6.311	0	%100
45	M37	X	-1.282	-1.282	0	%100
46	M37	Z	-2.221	-2.221	0	%100
47	M38	X	-6.378	-6.378	0	%100
48	M38	Z	-11.048	-11.048	0	%100
49	M39	X	-2.264	-2.264	0	%100
50	M39	Z	-3.921	-3.921	0	%100
51	M40	X	-6.376	-6.376	0	%100
52	M40	Z	-11.044	-11.044	0	%100
53	M41	X	-1.343	-1.343	0	%100
54	M41	Z	-2.326	-2.326	0	%100
55	M46	X	-3.308	-3.308	0	%100
56	M46	Z	-5.73	-5.73	0	%100
57	M51	X	-3.308	-3.308	0	%100
58	M51	Z	-5.73	-5.73	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100
3	LV	X	0	0	0	%100
4	LV	Z	-2.616	-2.616	0	%100
5	M4	X	0	0	0	%100
6	M4	Z	-2.498	-2.498	0	%100
7	M6	X	0	0	0	%100
8	M6	Z	0	0	0	%100
9	M8	X	0	0	0	%100
10	M8	Z	-2.616	-2.616	0	%100
11	M9	X	0	0	0	%100
12	M9	Z	-2.498	-2.498	0	%100
13	M11	X	0	0	0	%100
14	M11	Z	-3.488	-3.488	0	%100
15	M14	X	0	0	0	%100
16	M14	Z	-1.786	-1.786	0	%100
17	M15	X	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
18	M15	Z	-1.786	-1.786	0	%100
19	M16	X	0	0	0	%100
20	M16	Z	-1.421	-1.421	0	%100
21	M26	X	0	0	0	%100
22	M26	Z	-1.907	-1.907	0	%100
23	M27	X	0	0	0	%100
24	M27	Z	-1.653	-1.653	0	%100
25	M28	X	0	0	0	%100
26	M28	Z	-1.653	-1.653	0	%100
27	M29	X	0	0	0	%100
28	M29	Z	-1.907	-1.907	0	%100
29	M30	X	0	0	0	%100
30	M30	Z	-1.752	-1.752	0	%100
31	M31	X	0	0	0	%100
32	M31	Z	-1.858	-1.858	0	%100
33	M34	X	0	0	0	%100
34	M34	Z	-1.653	-1.653	0	%100
35	M35	X	0	0	0	%100
36	M35	Z	-1.752	-1.752	0	%100
37	MP4A	X	0	0	0	%100
38	MP4A	Z	-2.933	-2.933	0	%100
39	MP3A	X	0	0	0	%100
40	MP3A	Z	-2.933	-2.933	0	%100
41	MP2A	X	0	0	0	%100
42	MP2A	Z	-2.933	-2.933	0	%100
43	MP1A	X	0	0	0	%100
44	MP1A	Z	-2.933	-2.933	0	%100
45	M37	X	0	0	0	%100
46	M37	Z	-.038	-.038	0	%100
47	M38	X	0	0	0	%100
48	M38	Z	-3.062	-3.062	0	%100
49	M39	X	0	0	0	%100
50	M39	Z	-2.645	-2.645	0	%100
51	M40	X	0	0	0	%100
52	M40	Z	-2.886	-2.886	0	%100
53	M41	X	0	0	0	%100
54	M41	Z	-2.325	-2.325	0	%100
55	M46	X	0	0	0	%100
56	M46	Z	-3.314	-3.314	0	%100
57	M51	X	0	0	0	%100
58	M51	Z	-3.314	-3.314	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	.268	.268	0	%100
2	M1	Z	-.464	-.464	0	%100
3	LV	X	.981	.981	0	%100
4	LV	Z	-1.699	-1.699	0	%100
5	M4	X	.937	.937	0	%100
6	M4	Z	-1.622	-1.622	0	%100
7	M6	X	.268	.268	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
8	M6	Z	-.464	-.464	0	%100
9	M8	X	.981	.981	0	%100
10	M8	Z	-1.699	-1.699	0	%100
11	M9	X	.937	.937	0	%100
12	M9	Z	-1.622	-1.622	0	%100
13	M11	X	1.744	1.744	0	%100
14	M11	Z	-3.02	-3.02	0	%100
15	M14	X	.893	.893	0	%100
16	M14	Z	-1.547	-1.547	0	%100
17	M15	X	.893	.893	0	%100
18	M15	Z	-1.547	-1.547	0	%100
19	M16	X	.761	.761	0	%100
20	M16	Z	-1.318	-1.318	0	%100
21	M26	X	.953	.953	0	%100
22	M26	Z	-1.651	-1.651	0	%100
23	M27	X	.826	.826	0	%100
24	M27	Z	-1.431	-1.431	0	%100
25	M28	X	.826	.826	0	%100
26	M28	Z	-1.431	-1.431	0	%100
27	M29	X	.953	.953	0	%100
28	M29	Z	-1.651	-1.651	0	%100
29	M30	X	.78	.78	0	%100
30	M30	Z	-1.351	-1.351	0	%100
31	M31	X	.778	.778	0	%100
32	M31	Z	-1.347	-1.347	0	%100
33	M34	X	.826	.826	0	%100
34	M34	Z	-1.431	-1.431	0	%100
35	M35	X	.78	.78	0	%100
36	M35	Z	-1.351	-1.351	0	%100
37	MP4A	X	1.466	1.466	0	%100
38	MP4A	Z	-2.54	-2.54	0	%100
39	MP3A	X	1.466	1.466	0	%100
40	MP3A	Z	-2.54	-2.54	0	%100
41	MP2A	X	1.466	1.466	0	%100
42	MP2A	Z	-2.54	-2.54	0	%100
43	MP1A	X	1.466	1.466	0	%100
44	MP1A	Z	-2.54	-2.54	0	%100
45	M37	X	.245	.245	0	%100
46	M37	Z	-.424	-.424	0	%100
47	M38	X	.745	.745	0	%100
48	M38	Z	-1.291	-1.291	0	%100
49	M39	X	1.886	1.886	0	%100
50	M39	Z	-3.267	-3.267	0	%100
51	M40	X	.546	.546	0	%100
52	M40	Z	-.945	-.945	0	%100
53	M41	X	1.84	1.84	0	%100
54	M41	Z	-3.186	-3.186	0	%100
55	M46	X	1.243	1.243	0	%100
56	M46	Z	-2.153	-2.153	0	%100
57	M51	X	1.243	1.243	0	%100
58	M51	Z	-2.153	-2.153	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M1	X	1.393	1.393	0	%100
2	M1	Z	-.804	-.804	0	%100
3	LV	X	.566	.566	0	%100
4	LV	Z	-.327	-.327	0	%100
5	M4	X	.541	.541	0	%100
6	M4	Z	-.312	-.312	0	%100
7	M6	X	1.393	1.393	0	%100
8	M6	Z	-.804	-.804	0	%100
9	M8	X	.566	.566	0	%100
10	M8	Z	-.327	-.327	0	%100
11	M9	X	.541	.541	0	%100
12	M9	Z	-.312	-.312	0	%100
13	M11	X	3.02	3.02	0	%100
14	M11	Z	-1.744	-1.744	0	%100
15	M14	X	1.547	1.547	0	%100
16	M14	Z	-.893	-.893	0	%100
17	M15	X	1.547	1.547	0	%100
18	M15	Z	-.893	-.893	0	%100
19	M16	X	1.493	1.493	0	%100
20	M16	Z	-.862	-.862	0	%100
21	M26	X	1.651	1.651	0	%100
22	M26	Z	-.953	-.953	0	%100
23	M27	X	1.431	1.431	0	%100
24	M27	Z	-.826	-.826	0	%100
25	M28	X	1.431	1.431	0	%100
26	M28	Z	-.826	-.826	0	%100
27	M29	X	1.651	1.651	0	%100
28	M29	Z	-.953	-.953	0	%100
29	M30	X	1.016	1.016	0	%100
30	M30	Z	-.587	-.587	0	%100
31	M31	X	.823	.823	0	%100
32	M31	Z	-.475	-.475	0	%100
33	M34	X	1.431	1.431	0	%100
34	M34	Z	-.826	-.826	0	%100
35	M35	X	1.016	1.016	0	%100
36	M35	Z	-.587	-.587	0	%100
37	MP4A	X	2.54	2.54	0	%100
38	MP4A	Z	-1.466	-1.466	0	%100
39	MP3A	X	2.54	2.54	0	%100
40	MP3A	Z	-1.466	-1.466	0	%100
41	MP2A	X	2.54	2.54	0	%100
42	MP2A	Z	-1.466	-1.466	0	%100
43	MP1A	X	2.54	2.54	0	%100
44	MP1A	Z	-1.466	-1.466	0	%100
45	M37	X	1.711	1.711	0	%100
46	M37	Z	-.988	-.988	0	%100
47	M38	X	.736	.736	0	%100
48	M38	Z	-.425	-.425	0	%100
49	M39	X	3.147	3.147	0	%100
50	M39	Z	-1.817	-1.817	0	%100
51	M40	X	.312	.312	0	%100
52	M40	Z	-.18	-.18	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
53	M41	X	3.042	3.042	0	%100
54	M41	Z	-1.756	-1.756	0	%100
55	M46	X	.718	.718	0	%100
56	M46	Z	-.414	-.414	0	%100
57	M51	X	.718	.718	0	%100
58	M51	Z	-.414	-.414	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M1	X	2.145	2.145	0	%100
2	M1	Z	0	0	0	%100
3	LV	X	0	0	0	%100
4	LV	Z	0	0	0	%100
5	M4	X	0	0	0	%100
6	M4	Z	0	0	0	%100
7	M6	X	2.145	2.145	0	%100
8	M6	Z	0	0	0	%100
9	M8	X	0	0	0	%100
10	M8	Z	0	0	0	%100
11	M9	X	0	0	0	%100
12	M9	Z	0	0	0	%100
13	M11	X	3.488	3.488	0	%100
14	M11	Z	0	0	0	%100
15	M14	X	1.786	1.786	0	%100
16	M14	Z	0	0	0	%100
17	M15	X	1.786	1.786	0	%100
18	M15	Z	0	0	0	%100
19	M16	X	1.825	1.825	0	%100
20	M16	Z	0	0	0	%100
21	M26	X	1.907	1.907	0	%100
22	M26	Z	0	0	0	%100
23	M27	X	1.653	1.653	0	%100
24	M27	Z	0	0	0	%100
25	M28	X	1.653	1.653	0	%100
26	M28	Z	0	0	0	%100
27	M29	X	1.907	1.907	0	%100
28	M29	Z	0	0	0	%100
29	M30	X	.98	.98	0	%100
30	M30	Z	0	0	0	%100
31	M31	X	.648	.648	0	%100
32	M31	Z	0	0	0	%100
33	M34	X	1.653	1.653	0	%100
34	M34	Z	0	0	0	%100
35	M35	X	.98	.98	0	%100
36	M35	Z	0	0	0	%100
37	MP4A	X	2.933	2.933	0	%100
38	MP4A	Z	0	0	0	%100
39	MP3A	X	2.933	2.933	0	%100
40	MP3A	Z	0	0	0	%100
41	MP2A	X	2.933	2.933	0	%100
42	MP2A	Z	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
43	MP1A	X	2.933	2.933	0	% 100
44	MP1A	Z	0	0	0	% 100
45	M37	X	3.01	3.01	0	% 100
46	M37	Z	0	0	0	% 100
47	M38	X	1.78	1.78	0	% 100
48	M38	Z	0	0	0	% 100
49	M39	X	2.367	2.367	0	% 100
50	M39	Z	0	0	0	% 100
51	M40	X	1.422	1.422	0	% 100
52	M40	Z	0	0	0	% 100
53	M41	X	1.991	1.991	0	% 100
54	M41	Z	0	0	0	% 100
55	M46	X	0	0	0	% 100
56	M46	Z	0	0	0	% 100
57	M51	X	0	0	0	% 100
58	M51	Z	0	0	0	% 100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M1	X	1.393	1.393	0	% 100
2	M1	Z	.804	.804	0	% 100
3	LV	X	.566	.566	0	% 100
4	LV	Z	.327	.327	0	% 100
5	M4	X	.541	.541	0	% 100
6	M4	Z	.312	.312	0	% 100
7	M6	X	1.393	1.393	0	% 100
8	M6	Z	.804	.804	0	% 100
9	M8	X	.566	.566	0	% 100
10	M8	Z	.327	.327	0	% 100
11	M9	X	.541	.541	0	% 100
12	M9	Z	.312	.312	0	% 100
13	M11	X	3.02	3.02	0	% 100
14	M11	Z	1.744	1.744	0	% 100
15	M14	X	1.547	1.547	0	% 100
16	M14	Z	.893	.893	0	% 100
17	M15	X	1.547	1.547	0	% 100
18	M15	Z	.893	.893	0	% 100
19	M16	X	1.493	1.493	0	% 100
20	M16	Z	.862	.862	0	% 100
21	M26	X	1.651	1.651	0	% 100
22	M26	Z	.953	.953	0	% 100
23	M27	X	1.431	1.431	0	% 100
24	M27	Z	.826	.826	0	% 100
25	M28	X	1.431	1.431	0	% 100
26	M28	Z	.826	.826	0	% 100
27	M29	X	1.651	1.651	0	% 100
28	M29	Z	.953	.953	0	% 100
29	M30	X	1.016	1.016	0	% 100
30	M30	Z	.587	.587	0	% 100
31	M31	X	.823	.823	0	% 100
32	M31	Z	.475	.475	0	% 100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
33	M34	X	1.431	1.431	0	% 100
34	M34	Z	.826	.826	0	% 100
35	M35	X	1.016	1.016	0	% 100
36	M35	Z	.587	.587	0	% 100
37	MP4A	X	2.54	2.54	0	% 100
38	MP4A	Z	1.466	1.466	0	% 100
39	MP3A	X	2.54	2.54	0	% 100
40	MP3A	Z	1.466	1.466	0	% 100
41	MP2A	X	2.54	2.54	0	% 100
42	MP2A	Z	1.466	1.466	0	% 100
43	MP1A	X	2.54	2.54	0	% 100
44	MP1A	Z	1.466	1.466	0	% 100
45	M37	X	2.216	2.216	0	% 100
46	M37	Z	1.279	1.279	0	% 100
47	M38	X	2.903	2.903	0	% 100
48	M38	Z	1.676	1.676	0	% 100
49	M39	X	1.074	1.074	0	% 100
50	M39	Z	.62	.62	0	% 100
51	M40	X	2.786	2.786	0	% 100
52	M40	Z	1.608	1.608	0	% 100
53	M41	X	.552	.552	0	% 100
54	M41	Z	.318	.318	0	% 100
55	M46	X	.718	.718	0	% 100
56	M46	Z	.414	.414	0	% 100
57	M51	X	.718	.718	0	% 100
58	M51	Z	.414	.414	0	% 100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	.268	.268	0	% 100
2	M1	Z	.464	.464	0	% 100
3	LV	X	.981	.981	0	% 100
4	LV	Z	1.699	1.699	0	% 100
5	M4	X	.937	.937	0	% 100
6	M4	Z	1.622	1.622	0	% 100
7	M6	X	.268	.268	0	% 100
8	M6	Z	.464	.464	0	% 100
9	M8	X	.981	.981	0	% 100
10	M8	Z	1.699	1.699	0	% 100
11	M9	X	.937	.937	0	% 100
12	M9	Z	1.622	1.622	0	% 100
13	M11	X	1.744	1.744	0	% 100
14	M11	Z	3.02	3.02	0	% 100
15	M14	X	.893	.893	0	% 100
16	M14	Z	1.547	1.547	0	% 100
17	M15	X	.893	.893	0	% 100
18	M15	Z	1.547	1.547	0	% 100
19	M16	X	.761	.761	0	% 100
20	M16	Z	1.318	1.318	0	% 100
21	M26	X	.953	.953	0	% 100
22	M26	Z	1.651	1.651	0	% 100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
23	M27	X	.826	.826	0	%100
24	M27	Z	1.431	1.431	0	%100
25	M28	X	.826	.826	0	%100
26	M28	Z	1.431	1.431	0	%100
27	M29	X	.953	.953	0	%100
28	M29	Z	1.651	1.651	0	%100
29	M30	X	.78	.78	0	%100
30	M30	Z	1.351	1.351	0	%100
31	M31	X	.778	.778	0	%100
32	M31	Z	1.347	1.347	0	%100
33	M34	X	.826	.826	0	%100
34	M34	Z	1.431	1.431	0	%100
35	M35	X	.78	.78	0	%100
36	M35	Z	1.351	1.351	0	%100
37	MP4A	X	1.466	1.466	0	%100
38	MP4A	Z	2.54	2.54	0	%100
39	MP3A	X	1.466	1.466	0	%100
40	MP3A	Z	2.54	2.54	0	%100
41	MP2A	X	1.466	1.466	0	%100
42	MP2A	Z	2.54	2.54	0	%100
43	MP1A	X	1.466	1.466	0	%100
44	MP1A	Z	2.54	2.54	0	%100
45	M37	X	.536	.536	0	%100
46	M37	Z	.929	.929	0	%100
47	M38	X	1.997	1.997	0	%100
48	M38	Z	3.458	3.458	0	%100
49	M39	X	.69	.69	0	%100
50	M39	Z	1.195	1.195	0	%100
51	M40	X	1.974	1.974	0	%100
52	M40	Z	3.419	3.419	0	%100
53	M41	X	.402	.402	0	%100
54	M41	Z	.696	.696	0	%100
55	M46	X	1.243	1.243	0	%100
56	M46	Z	2.153	2.153	0	%100
57	M51	X	1.243	1.243	0	%100
58	M51	Z	2.153	2.153	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100
3	LV	X	0	0	0	%100
4	LV	Z	2.616	2.616	0	%100
5	M4	X	0	0	0	%100
6	M4	Z	2.498	2.498	0	%100
7	M6	X	0	0	0	%100
8	M6	Z	0	0	0	%100
9	M8	X	0	0	0	%100
10	M8	Z	2.616	2.616	0	%100
11	M9	X	0	0	0	%100
12	M9	Z	2.498	2.498	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
13	M11	X	0	0	0	%100
14	M11	Z	3.488	3.488	0	%100
15	M14	X	0	0	0	%100
16	M14	Z	1.786	1.786	0	%100
17	M15	X	0	0	0	%100
18	M15	Z	1.786	1.786	0	%100
19	M16	X	0	0	0	%100
20	M16	Z	1.421	1.421	0	%100
21	M26	X	0	0	0	%100
22	M26	Z	1.907	1.907	0	%100
23	M27	X	0	0	0	%100
24	M27	Z	1.653	1.653	0	%100
25	M28	X	0	0	0	%100
26	M28	Z	1.653	1.653	0	%100
27	M29	X	0	0	0	%100
28	M29	Z	1.907	1.907	0	%100
29	M30	X	0	0	0	%100
30	M30	Z	1.752	1.752	0	%100
31	M31	X	0	0	0	%100
32	M31	Z	1.858	1.858	0	%100
33	M34	X	0	0	0	%100
34	M34	Z	1.653	1.653	0	%100
35	M35	X	0	0	0	%100
36	M35	Z	1.752	1.752	0	%100
37	MP4A	X	0	0	0	%100
38	MP4A	Z	2.933	2.933	0	%100
39	MP3A	X	0	0	0	%100
40	MP3A	Z	2.933	2.933	0	%100
41	MP2A	X	0	0	0	%100
42	MP2A	Z	2.933	2.933	0	%100
43	MP1A	X	0	0	0	%100
44	MP1A	Z	2.933	2.933	0	%100
45	M37	X	0	0	0	%100
46	M37	Z	.038	.038	0	%100
47	M38	X	0	0	0	%100
48	M38	Z	3.062	3.062	0	%100
49	M39	X	0	0	0	%100
50	M39	Z	2.645	2.645	0	%100
51	M40	X	0	0	0	%100
52	M40	Z	2.886	2.886	0	%100
53	M41	X	0	0	0	%100
54	M41	Z	2.325	2.325	0	%100
55	M46	X	0	0	0	%100
56	M46	Z	3.314	3.314	0	%100
57	M51	X	0	0	0	%100
58	M51	Z	3.314	3.314	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	-.268	-.268	0	%100
2	M1	Z	.464	.464	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
3	LV	X	-.981	-.981	0	%100
4	LV	Z	1.699	1.699	0	%100
5	M4	X	-.937	-.937	0	%100
6	M4	Z	1.622	1.622	0	%100
7	M6	X	-.268	-.268	0	%100
8	M6	Z	.464	.464	0	%100
9	M8	X	-.981	-.981	0	%100
10	M8	Z	1.699	1.699	0	%100
11	M9	X	-.937	-.937	0	%100
12	M9	Z	1.622	1.622	0	%100
13	M11	X	-1.744	-1.744	0	%100
14	M11	Z	3.02	3.02	0	%100
15	M14	X	-.893	-.893	0	%100
16	M14	Z	1.547	1.547	0	%100
17	M15	X	-.893	-.893	0	%100
18	M15	Z	1.547	1.547	0	%100
19	M16	X	-.761	-.761	0	%100
20	M16	Z	1.318	1.318	0	%100
21	M26	X	-.953	-.953	0	%100
22	M26	Z	1.651	1.651	0	%100
23	M27	X	-.826	-.826	0	%100
24	M27	Z	1.431	1.431	0	%100
25	M28	X	-.826	-.826	0	%100
26	M28	Z	1.431	1.431	0	%100
27	M29	X	-.953	-.953	0	%100
28	M29	Z	1.651	1.651	0	%100
29	M30	X	-.78	-.78	0	%100
30	M30	Z	1.351	1.351	0	%100
31	M31	X	-.778	-.778	0	%100
32	M31	Z	1.347	1.347	0	%100
33	M34	X	-.826	-.826	0	%100
34	M34	Z	1.431	1.431	0	%100
35	M35	X	-.78	-.78	0	%100
36	M35	Z	1.351	1.351	0	%100
37	MP4A	X	-1.466	-1.466	0	%100
38	MP4A	Z	2.54	2.54	0	%100
39	MP3A	X	-1.466	-1.466	0	%100
40	MP3A	Z	2.54	2.54	0	%100
41	MP2A	X	-1.466	-1.466	0	%100
42	MP2A	Z	2.54	2.54	0	%100
43	MP1A	X	-1.466	-1.466	0	%100
44	MP1A	Z	2.54	2.54	0	%100
45	M37	X	-.245	-.245	0	%100
46	M37	Z	.424	.424	0	%100
47	M38	X	-.745	-.745	0	%100
48	M38	Z	1.291	1.291	0	%100
49	M39	X	-1.886	-1.886	0	%100
50	M39	Z	3.267	3.267	0	%100
51	M40	X	-.546	-.546	0	%100
52	M40	Z	.945	.945	0	%100
53	M41	X	-1.84	-1.84	0	%100
54	M41	Z	3.186	3.186	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
55	M46	X	-1.243	-1.243	0	% 100
56	M46	Z	2.153	2.153	0	% 100
57	M51	X	-1.243	-1.243	0	% 100
58	M51	Z	2.153	2.153	0	% 100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M1	X	-1.393	-1.393	0	% 100
2	M1	Z	.804	.804	0	% 100
3	LV	X	-.566	-.566	0	% 100
4	LV	Z	.327	.327	0	% 100
5	M4	X	-.541	-.541	0	% 100
6	M4	Z	.312	.312	0	% 100
7	M6	X	-1.393	-1.393	0	% 100
8	M6	Z	.804	.804	0	% 100
9	M8	X	-.566	-.566	0	% 100
10	M8	Z	.327	.327	0	% 100
11	M9	X	-.541	-.541	0	% 100
12	M9	Z	.312	.312	0	% 100
13	M11	X	-3.02	-3.02	0	% 100
14	M11	Z	1.744	1.744	0	% 100
15	M14	X	-1.547	-1.547	0	% 100
16	M14	Z	.893	.893	0	% 100
17	M15	X	-1.547	-1.547	0	% 100
18	M15	Z	.893	.893	0	% 100
19	M16	X	-1.493	-1.493	0	% 100
20	M16	Z	.862	.862	0	% 100
21	M26	X	-1.651	-1.651	0	% 100
22	M26	Z	.953	.953	0	% 100
23	M27	X	-1.431	-1.431	0	% 100
24	M27	Z	.826	.826	0	% 100
25	M28	X	-1.431	-1.431	0	% 100
26	M28	Z	.826	.826	0	% 100
27	M29	X	-1.651	-1.651	0	% 100
28	M29	Z	.953	.953	0	% 100
29	M30	X	-1.016	-1.016	0	% 100
30	M30	Z	.587	.587	0	% 100
31	M31	X	-.823	-.823	0	% 100
32	M31	Z	.475	.475	0	% 100
33	M34	X	-1.431	-1.431	0	% 100
34	M34	Z	.826	.826	0	% 100
35	M35	X	-1.016	-1.016	0	% 100
36	M35	Z	.587	.587	0	% 100
37	MP4A	X	-2.54	-2.54	0	% 100
38	MP4A	Z	1.466	1.466	0	% 100
39	MP3A	X	-2.54	-2.54	0	% 100
40	MP3A	Z	1.466	1.466	0	% 100
41	MP2A	X	-2.54	-2.54	0	% 100
42	MP2A	Z	1.466	1.466	0	% 100
43	MP1A	X	-2.54	-2.54	0	% 100
44	MP1A	Z	1.466	1.466	0	% 100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
45	M37	X	-1.711	-1.711	0	%100
46	M37	Z	.988	.988	0	%100
47	M38	X	-.736	-.736	0	%100
48	M38	Z	.425	.425	0	%100
49	M39	X	-3.147	-3.147	0	%100
50	M39	Z	1.817	1.817	0	%100
51	M40	X	-.312	-.312	0	%100
52	M40	Z	.18	.18	0	%100
53	M41	X	-3.042	-3.042	0	%100
54	M41	Z	1.756	1.756	0	%100
55	M46	X	-.718	-.718	0	%100
56	M46	Z	.414	.414	0	%100
57	M51	X	-.718	-.718	0	%100
58	M51	Z	.414	.414	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	-2.145	-2.145	0	%100
2	M1	Z	0	0	0	%100
3	LV	X	0	0	0	%100
4	LV	Z	0	0	0	%100
5	M4	X	0	0	0	%100
6	M4	Z	0	0	0	%100
7	M6	X	-2.145	-2.145	0	%100
8	M6	Z	0	0	0	%100
9	M8	X	0	0	0	%100
10	M8	Z	0	0	0	%100
11	M9	X	0	0	0	%100
12	M9	Z	0	0	0	%100
13	M11	X	-3.488	-3.488	0	%100
14	M11	Z	0	0	0	%100
15	M14	X	-1.786	-1.786	0	%100
16	M14	Z	0	0	0	%100
17	M15	X	-1.786	-1.786	0	%100
18	M15	Z	0	0	0	%100
19	M16	X	-1.825	-1.825	0	%100
20	M16	Z	0	0	0	%100
21	M26	X	-1.907	-1.907	0	%100
22	M26	Z	0	0	0	%100
23	M27	X	-1.653	-1.653	0	%100
24	M27	Z	0	0	0	%100
25	M28	X	-1.653	-1.653	0	%100
26	M28	Z	0	0	0	%100
27	M29	X	-1.907	-1.907	0	%100
28	M29	Z	0	0	0	%100
29	M30	X	-.98	-.98	0	%100
30	M30	Z	0	0	0	%100
31	M31	X	-.648	-.648	0	%100
32	M31	Z	0	0	0	%100
33	M34	X	-1.653	-1.653	0	%100
34	M34	Z	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
35	M35	X	-.98	-.98	0	%100
36	M35	Z	0	0	0	%100
37	MP4A	X	-2.933	-2.933	0	%100
38	MP4A	Z	0	0	0	%100
39	MP3A	X	-2.933	-2.933	0	%100
40	MP3A	Z	0	0	0	%100
41	MP2A	X	-2.933	-2.933	0	%100
42	MP2A	Z	0	0	0	%100
43	MP1A	X	-2.933	-2.933	0	%100
44	MP1A	Z	0	0	0	%100
45	M37	X	-3.01	-3.01	0	%100
46	M37	Z	0	0	0	%100
47	M38	X	-1.78	-1.78	0	%100
48	M38	Z	0	0	0	%100
49	M39	X	-2.367	-2.367	0	%100
50	M39	Z	0	0	0	%100
51	M40	X	-1.422	-1.422	0	%100
52	M40	Z	0	0	0	%100
53	M41	X	-1.991	-1.991	0	%100
54	M41	Z	0	0	0	%100
55	M46	X	0	0	0	%100
56	M46	Z	0	0	0	%100
57	M51	X	0	0	0	%100
58	M51	Z	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	-1.393	-1.393	0	%100
2	M1	Z	-.804	-.804	0	%100
3	LV	X	-.566	-.566	0	%100
4	LV	Z	-.327	-.327	0	%100
5	M4	X	-.541	-.541	0	%100
6	M4	Z	-.312	-.312	0	%100
7	M6	X	-1.393	-1.393	0	%100
8	M6	Z	-.804	-.804	0	%100
9	M8	X	-.566	-.566	0	%100
10	M8	Z	-.327	-.327	0	%100
11	M9	X	-.541	-.541	0	%100
12	M9	Z	-.312	-.312	0	%100
13	M11	X	-3.02	-3.02	0	%100
14	M11	Z	-1.744	-1.744	0	%100
15	M14	X	-1.547	-1.547	0	%100
16	M14	Z	-.893	-.893	0	%100
17	M15	X	-1.547	-1.547	0	%100
18	M15	Z	-.893	-.893	0	%100
19	M16	X	-1.493	-1.493	0	%100
20	M16	Z	-.862	-.862	0	%100
21	M26	X	-1.651	-1.651	0	%100
22	M26	Z	-.953	-.953	0	%100
23	M27	X	-1.431	-1.431	0	%100
24	M27	Z	-.826	-.826	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
25	M28	X	-1.431	-1.431	0	%100
26	M28	Z	-.826	-.826	0	%100
27	M29	X	-1.651	-1.651	0	%100
28	M29	Z	-.953	-.953	0	%100
29	M30	X	-1.016	-1.016	0	%100
30	M30	Z	-.587	-.587	0	%100
31	M31	X	-.823	-.823	0	%100
32	M31	Z	-.475	-.475	0	%100
33	M34	X	-1.431	-1.431	0	%100
34	M34	Z	-.826	-.826	0	%100
35	M35	X	-1.016	-1.016	0	%100
36	M35	Z	-.587	-.587	0	%100
37	MP4A	X	-2.54	-2.54	0	%100
38	MP4A	Z	-1.466	-1.466	0	%100
39	MP3A	X	-2.54	-2.54	0	%100
40	MP3A	Z	-1.466	-1.466	0	%100
41	MP2A	X	-2.54	-2.54	0	%100
42	MP2A	Z	-1.466	-1.466	0	%100
43	MP1A	X	-2.54	-2.54	0	%100
44	MP1A	Z	-1.466	-1.466	0	%100
45	M37	X	-2.216	-2.216	0	%100
46	M37	Z	-1.279	-1.279	0	%100
47	M38	X	-2.903	-2.903	0	%100
48	M38	Z	-1.676	-1.676	0	%100
49	M39	X	-1.074	-1.074	0	%100
50	M39	Z	-.62	-.62	0	%100
51	M40	X	-2.786	-2.786	0	%100
52	M40	Z	-1.608	-1.608	0	%100
53	M41	X	-.552	-.552	0	%100
54	M41	Z	-.318	-.318	0	%100
55	M46	X	-.718	-.718	0	%100
56	M46	Z	-.414	-.414	0	%100
57	M51	X	-.718	-.718	0	%100
58	M51	Z	-.414	-.414	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M1	X	-.268	-.268	0	%100
2	M1	Z	-.464	-.464	0	%100
3	LV	X	-.981	-.981	0	%100
4	LV	Z	-1.699	-1.699	0	%100
5	M4	X	-.937	-.937	0	%100
6	M4	Z	-1.622	-1.622	0	%100
7	M6	X	-.268	-.268	0	%100
8	M6	Z	-.464	-.464	0	%100
9	M8	X	-.981	-.981	0	%100
10	M8	Z	-1.699	-1.699	0	%100
11	M9	X	-.937	-.937	0	%100
12	M9	Z	-1.622	-1.622	0	%100
13	M11	X	-1.744	-1.744	0	%100
14	M11	Z	-3.02	-3.02	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
15	M14	X	-.893	-.893	0	% 100
16	M14	Z	-1.547	-1.547	0	% 100
17	M15	X	-.893	-.893	0	% 100
18	M15	Z	-1.547	-1.547	0	% 100
19	M16	X	-.761	-.761	0	% 100
20	M16	Z	-1.318	-1.318	0	% 100
21	M26	X	-.953	-.953	0	% 100
22	M26	Z	-1.651	-1.651	0	% 100
23	M27	X	-.826	-.826	0	% 100
24	M27	Z	-1.431	-1.431	0	% 100
25	M28	X	-.826	-.826	0	% 100
26	M28	Z	-1.431	-1.431	0	% 100
27	M29	X	-.953	-.953	0	% 100
28	M29	Z	-1.651	-1.651	0	% 100
29	M30	X	-.78	-.78	0	% 100
30	M30	Z	-1.351	-1.351	0	% 100
31	M31	X	-.778	-.778	0	% 100
32	M31	Z	-1.347	-1.347	0	% 100
33	M34	X	-.826	-.826	0	% 100
34	M34	Z	-1.431	-1.431	0	% 100
35	M35	X	-.78	-.78	0	% 100
36	M35	Z	-1.351	-1.351	0	% 100
37	MP4A	X	-1.466	-1.466	0	% 100
38	MP4A	Z	-2.54	-2.54	0	% 100
39	MP3A	X	-1.466	-1.466	0	% 100
40	MP3A	Z	-2.54	-2.54	0	% 100
41	MP2A	X	-1.466	-1.466	0	% 100
42	MP2A	Z	-2.54	-2.54	0	% 100
43	MP1A	X	-1.466	-1.466	0	% 100
44	MP1A	Z	-2.54	-2.54	0	% 100
45	M37	X	-.536	-.536	0	% 100
46	M37	Z	-.929	-.929	0	% 100
47	M38	X	-1.997	-1.997	0	% 100
48	M38	Z	-3.458	-3.458	0	% 100
49	M39	X	-.69	-.69	0	% 100
50	M39	Z	-1.195	-1.195	0	% 100
51	M40	X	-1.974	-1.974	0	% 100
52	M40	Z	-3.419	-3.419	0	% 100
53	M41	X	-.402	-.402	0	% 100
54	M41	Z	-.696	-.696	0	% 100
55	M46	X	-1.243	-1.243	0	% 100
56	M46	Z	-2.153	-2.153	0	% 100
57	M51	X	-1.243	-1.243	0	% 100
58	M51	Z	-2.153	-2.153	0	% 100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	0	0	0	% 100
2	M1	Z	0	0	0	% 100
3	LV	X	0	0	0	% 100
4	LV	Z	-.318	-.318	0	% 100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
5	M4	X	0	0	0	% 100
6	M4	Z	-.318	-.318	0	% 100
7	M6	X	0	0	0	% 100
8	M6	Z	0	0	0	% 100
9	M8	X	0	0	0	% 100
10	M8	Z	-.318	-.318	0	% 100
11	M9	X	0	0	0	% 100
12	M9	Z	-.318	-.318	0	% 100
13	M11	X	0	0	0	% 100
14	M11	Z	-.628	-.628	0	% 100
15	M14	X	0	0	0	% 100
16	M14	Z	-.192	-.192	0	% 100
17	M15	X	0	0	0	% 100
18	M15	Z	-.192	-.192	0	% 100
19	M16	X	0	0	0	% 100
20	M16	Z	-.149	-.149	0	% 100
21	M26	X	0	0	0	% 100
22	M26	Z	-.235	-.235	0	% 100
23	M27	X	0	0	0	% 100
24	M27	Z	-.144	-.144	0	% 100
25	M28	X	0	0	0	% 100
26	M28	Z	-.144	-.144	0	% 100
27	M29	X	0	0	0	% 100
28	M29	Z	-.235	-.235	0	% 100
29	M30	X	0	0	0	% 100
30	M30	Z	-.144	-.144	0	% 100
31	M31	X	0	0	0	% 100
32	M31	Z	-.144	-.144	0	% 100
33	M34	X	0	0	0	% 100
34	M34	Z	-.144	-.144	0	% 100
35	M35	X	0	0	0	% 100
36	M35	Z	-.144	-.144	0	% 100
37	MP4A	X	0	0	0	% 100
38	MP4A	Z	-.455	-.455	0	% 100
39	MP3A	X	0	0	0	% 100
40	MP3A	Z	-.455	-.455	0	% 100
41	MP2A	X	0	0	0	% 100
42	MP2A	Z	-.455	-.455	0	% 100
43	MP1A	X	0	0	0	% 100
44	MP1A	Z	-.455	-.455	0	% 100
45	M37	X	0	0	0	% 100
46	M37	Z	-.006	-.006	0	% 100
47	M38	X	0	0	0	% 100
48	M38	Z	-.611	-.611	0	% 100
49	M39	X	0	0	0	% 100
50	M39	Z	-.543	-.543	0	% 100
51	M40	X	0	0	0	% 100
52	M40	Z	-.583	-.583	0	% 100
53	M41	X	0	0	0	% 100
54	M41	Z	-.486	-.486	0	% 100
55	M46	X	0	0	0	% 100
56	M46	Z	-.551	-.551	0	% 100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
57	M51	X	0	0	0	%100
58	M51	Z	-.551	-.551	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M1	X	.042	.042	0	%100
2	M1	Z	-.073	-.073	0	%100
3	LV	X	.119	.119	0	%100
4	LV	Z	-.207	-.207	0	%100
5	M4	X	.119	.119	0	%100
6	M4	Z	-.207	-.207	0	%100
7	M6	X	.042	.042	0	%100
8	M6	Z	-.073	-.073	0	%100
9	M8	X	.119	.119	0	%100
10	M8	Z	-.207	-.207	0	%100
11	M9	X	.119	.119	0	%100
12	M9	Z	-.207	-.207	0	%100
13	M11	X	.314	.314	0	%100
14	M11	Z	-.544	-.544	0	%100
15	M14	X	.096	.096	0	%100
16	M14	Z	-.166	-.166	0	%100
17	M15	X	.096	.096	0	%100
18	M15	Z	-.166	-.166	0	%100
19	M16	X	.08	.08	0	%100
20	M16	Z	-.139	-.139	0	%100
21	M26	X	.118	.118	0	%100
22	M26	Z	-.204	-.204	0	%100
23	M27	X	.072	.072	0	%100
24	M27	Z	-.125	-.125	0	%100
25	M28	X	.072	.072	0	%100
26	M28	Z	-.125	-.125	0	%100
27	M29	X	.118	.118	0	%100
28	M29	Z	-.204	-.204	0	%100
29	M30	X	.064	.064	0	%100
30	M30	Z	-.111	-.111	0	%100
31	M31	X	.06	.06	0	%100
32	M31	Z	-.104	-.104	0	%100
33	M34	X	.072	.072	0	%100
34	M34	Z	-.125	-.125	0	%100
35	M35	X	.064	.064	0	%100
36	M35	Z	-.111	-.111	0	%100
37	MP4A	X	.228	.228	0	%100
38	MP4A	Z	-.394	-.394	0	%100
39	MP3A	X	.228	.228	0	%100
40	MP3A	Z	-.394	-.394	0	%100
41	MP2A	X	.228	.228	0	%100
42	MP2A	Z	-.394	-.394	0	%100
43	MP1A	X	.228	.228	0	%100
44	MP1A	Z	-.394	-.394	0	%100
45	M37	X	.037	.037	0	%100
46	M37	Z	-.063	-.063	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
47	M38	X	.149	.149	0	%100
48	M38	Z	-.258	-.258	0	%100
49	M39	X	.387	.387	0	%100
50	M39	Z	-.67	-.67	0	%100
51	M40	X	.11	.11	0	%100
52	M40	Z	-.191	-.191	0	%100
53	M41	X	.384	.384	0	%100
54	M41	Z	-.665	-.665	0	%100
55	M46	X	.207	.207	0	%100
56	M46	Z	-.358	-.358	0	%100
57	M51	X	.207	.207	0	%100
58	M51	Z	-.358	-.358	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	.218	.218	0	%100
2	M1	Z	-.126	-.126	0	%100
3	LV	X	.069	.069	0	%100
4	LV	Z	-.04	-.04	0	%100
5	M4	X	.069	.069	0	%100
6	M4	Z	-.04	-.04	0	%100
7	M6	X	.218	.218	0	%100
8	M6	Z	-.126	-.126	0	%100
9	M8	X	.069	.069	0	%100
10	M8	Z	-.04	-.04	0	%100
11	M9	X	.069	.069	0	%100
12	M9	Z	-.04	-.04	0	%100
13	M11	X	.544	.544	0	%100
14	M11	Z	-.314	-.314	0	%100
15	M14	X	.166	.166	0	%100
16	M14	Z	-.096	-.096	0	%100
17	M15	X	.166	.166	0	%100
18	M15	Z	-.096	-.096	0	%100
19	M16	X	.157	.157	0	%100
20	M16	Z	-.091	-.091	0	%100
21	M26	X	.204	.204	0	%100
22	M26	Z	-.118	-.118	0	%100
23	M27	X	.125	.125	0	%100
24	M27	Z	-.072	-.072	0	%100
25	M28	X	.125	.125	0	%100
26	M28	Z	-.072	-.072	0	%100
27	M29	X	.204	.204	0	%100
28	M29	Z	-.118	-.118	0	%100
29	M30	X	.083	.083	0	%100
30	M30	Z	-.048	-.048	0	%100
31	M31	X	.064	.064	0	%100
32	M31	Z	-.037	-.037	0	%100
33	M34	X	.125	.125	0	%100
34	M34	Z	-.072	-.072	0	%100
35	M35	X	.083	.083	0	%100
36	M35	Z	-.048	-.048	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
37	MP4A	X	.394	.394	0	%100
38	MP4A	Z	-.228	-.228	0	%100
39	MP3A	X	.394	.394	0	%100
40	MP3A	Z	-.228	-.228	0	%100
41	MP2A	X	.394	.394	0	%100
42	MP2A	Z	-.228	-.228	0	%100
43	MP1A	X	.394	.394	0	%100
44	MP1A	Z	-.228	-.228	0	%100
45	M37	X	.256	.256	0	%100
46	M37	Z	-.148	-.148	0	%100
47	M38	X	.147	.147	0	%100
48	M38	Z	-.085	-.085	0	%100
49	M39	X	.646	.646	0	%100
50	M39	Z	-.373	-.373	0	%100
51	M40	X	.063	.063	0	%100
52	M40	Z	-.036	-.036	0	%100
53	M41	X	.635	.635	0	%100
54	M41	Z	-.367	-.367	0	%100
55	M46	X	.119	.119	0	%100
56	M46	Z	-.069	-.069	0	%100
57	M51	X	.119	.119	0	%100
58	M51	Z	-.069	-.069	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	.336	.336	0	%100
2	M1	Z	0	0	0	%100
3	LV	X	0	0	0	%100
4	LV	Z	0	0	0	%100
5	M4	X	0	0	0	%100
6	M4	Z	0	0	0	%100
7	M6	X	.336	.336	0	%100
8	M6	Z	0	0	0	%100
9	M8	X	0	0	0	%100
10	M8	Z	0	0	0	%100
11	M9	X	0	0	0	%100
12	M9	Z	0	0	0	%100
13	M11	X	.628	.628	0	%100
14	M11	Z	0	0	0	%100
15	M14	X	.192	.192	0	%100
16	M14	Z	0	0	0	%100
17	M15	X	.192	.192	0	%100
18	M15	Z	0	0	0	%100
19	M16	X	.192	.192	0	%100
20	M16	Z	0	0	0	%100
21	M26	X	.235	.235	0	%100
22	M26	Z	0	0	0	%100
23	M27	X	.144	.144	0	%100
24	M27	Z	0	0	0	%100
25	M28	X	.144	.144	0	%100
26	M28	Z	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
27	M29	X	.235	.235	0	%100
28	M29	Z	0	0	0	%100
29	M30	X	.08	.08	0	%100
30	M30	Z	0	0	0	%100
31	M31	X	.05	.05	0	%100
32	M31	Z	0	0	0	%100
33	M34	X	.144	.144	0	%100
34	M34	Z	0	0	0	%100
35	M35	X	.08	.08	0	%100
36	M35	Z	0	0	0	%100
37	MP4A	X	.455	.455	0	%100
38	MP4A	Z	0	0	0	%100
39	MP3A	X	.455	.455	0	%100
40	MP3A	Z	0	0	0	%100
41	MP2A	X	.455	.455	0	%100
42	MP2A	Z	0	0	0	%100
43	MP1A	X	.455	.455	0	%100
44	MP1A	Z	0	0	0	%100
45	M37	X	.45	.45	0	%100
46	M37	Z	0	0	0	%100
47	M38	X	.355	.355	0	%100
48	M38	Z	0	0	0	%100
49	M39	X	.486	.486	0	%100
50	M39	Z	0	0	0	%100
51	M40	X	.287	.287	0	%100
52	M40	Z	0	0	0	%100
53	M41	X	.416	.416	0	%100
54	M41	Z	0	0	0	%100
55	M46	X	0	0	0	%100
56	M46	Z	0	0	0	%100
57	M51	X	0	0	0	%100
58	M51	Z	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M1	X	.218	.218	0	%100
2	M1	Z	.126	.126	0	%100
3	LV	X	.069	.069	0	%100
4	LV	Z	.04	.04	0	%100
5	M4	X	.069	.069	0	%100
6	M4	Z	.04	.04	0	%100
7	M6	X	.218	.218	0	%100
8	M6	Z	.126	.126	0	%100
9	M8	X	.069	.069	0	%100
10	M8	Z	.04	.04	0	%100
11	M9	X	.069	.069	0	%100
12	M9	Z	.04	.04	0	%100
13	M11	X	.544	.544	0	%100
14	M11	Z	.314	.314	0	%100
15	M14	X	.166	.166	0	%100
16	M14	Z	.096	.096	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
17	M15	X	.166	.166	0	%100
18	M15	Z	.096	.096	0	%100
19	M16	X	.157	.157	0	%100
20	M16	Z	.091	.091	0	%100
21	M26	X	.204	.204	0	%100
22	M26	Z	.118	.118	0	%100
23	M27	X	.125	.125	0	%100
24	M27	Z	.072	.072	0	%100
25	M28	X	.125	.125	0	%100
26	M28	Z	.072	.072	0	%100
27	M29	X	.204	.204	0	%100
28	M29	Z	.118	.118	0	%100
29	M30	X	.083	.083	0	%100
30	M30	Z	.048	.048	0	%100
31	M31	X	.064	.064	0	%100
32	M31	Z	.037	.037	0	%100
33	M34	X	.125	.125	0	%100
34	M34	Z	.072	.072	0	%100
35	M35	X	.083	.083	0	%100
36	M35	Z	.048	.048	0	%100
37	MP4A	X	.394	.394	0	%100
38	MP4A	Z	.228	.228	0	%100
39	MP3A	X	.394	.394	0	%100
40	MP3A	Z	.228	.228	0	%100
41	MP2A	X	.394	.394	0	%100
42	MP2A	Z	.228	.228	0	%100
43	MP1A	X	.394	.394	0	%100
44	MP1A	Z	.228	.228	0	%100
45	M37	X	.331	.331	0	%100
46	M37	Z	.191	.191	0	%100
47	M38	X	.58	.58	0	%100
48	M38	Z	.335	.335	0	%100
49	M39	X	.22	.22	0	%100
50	M39	Z	.127	.127	0	%100
51	M40	X	.562	.562	0	%100
52	M40	Z	.325	.325	0	%100
53	M41	X	.115	.115	0	%100
54	M41	Z	.067	.067	0	%100
55	M46	X	.119	.119	0	%100
56	M46	Z	.069	.069	0	%100
57	M51	X	.119	.119	0	%100
58	M51	Z	.069	.069	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	.042	.042	0	%100
2	M1	Z	.073	.073	0	%100
3	LV	X	.119	.119	0	%100
4	LV	Z	.207	.207	0	%100
5	M4	X	.119	.119	0	%100
6	M4	Z	.207	.207	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
7	M6	X	.042	.042	0	%100
8	M6	Z	.073	.073	0	%100
9	M8	X	.119	.119	0	%100
10	M8	Z	.207	.207	0	%100
11	M9	X	.119	.119	0	%100
12	M9	Z	.207	.207	0	%100
13	M11	X	.314	.314	0	%100
14	M11	Z	.544	.544	0	%100
15	M14	X	.096	.096	0	%100
16	M14	Z	.166	.166	0	%100
17	M15	X	.096	.096	0	%100
18	M15	Z	.166	.166	0	%100
19	M16	X	.08	.08	0	%100
20	M16	Z	.139	.139	0	%100
21	M26	X	.118	.118	0	%100
22	M26	Z	.204	.204	0	%100
23	M27	X	.072	.072	0	%100
24	M27	Z	.125	.125	0	%100
25	M28	X	.072	.072	0	%100
26	M28	Z	.125	.125	0	%100
27	M29	X	.118	.118	0	%100
28	M29	Z	.204	.204	0	%100
29	M30	X	.064	.064	0	%100
30	M30	Z	.111	.111	0	%100
31	M31	X	.06	.06	0	%100
32	M31	Z	.104	.104	0	%100
33	M34	X	.072	.072	0	%100
34	M34	Z	.125	.125	0	%100
35	M35	X	.064	.064	0	%100
36	M35	Z	.111	.111	0	%100
37	MP4A	X	.228	.228	0	%100
38	MP4A	Z	.394	.394	0	%100
39	MP3A	X	.228	.228	0	%100
40	MP3A	Z	.394	.394	0	%100
41	MP2A	X	.228	.228	0	%100
42	MP2A	Z	.394	.394	0	%100
43	MP1A	X	.228	.228	0	%100
44	MP1A	Z	.394	.394	0	%100
45	M37	X	.08	.08	0	%100
46	M37	Z	.139	.139	0	%100
47	M38	X	.399	.399	0	%100
48	M38	Z	.69	.69	0	%100
49	M39	X	.141	.141	0	%100
50	M39	Z	.245	.245	0	%100
51	M40	X	.399	.399	0	%100
52	M40	Z	.69	.69	0	%100
53	M41	X	.084	.084	0	%100
54	M41	Z	.145	.145	0	%100
55	M46	X	.207	.207	0	%100
56	M46	Z	.358	.358	0	%100
57	M51	X	.207	.207	0	%100
58	M51	Z	.358	.358	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	0	0	0	% 100
2	M1	Z	0	0	0	% 100
3	LV	X	0	0	0	% 100
4	LV	Z	.318	.318	0	% 100
5	M4	X	0	0	0	% 100
6	M4	Z	.318	.318	0	% 100
7	M6	X	0	0	0	% 100
8	M6	Z	0	0	0	% 100
9	M8	X	0	0	0	% 100
10	M8	Z	.318	.318	0	% 100
11	M9	X	0	0	0	% 100
12	M9	Z	.318	.318	0	% 100
13	M11	X	0	0	0	% 100
14	M11	Z	.628	.628	0	% 100
15	M14	X	0	0	0	% 100
16	M14	Z	.192	.192	0	% 100
17	M15	X	0	0	0	% 100
18	M15	Z	.192	.192	0	% 100
19	M16	X	0	0	0	% 100
20	M16	Z	.149	.149	0	% 100
21	M26	X	0	0	0	% 100
22	M26	Z	.235	.235	0	% 100
23	M27	X	0	0	0	% 100
24	M27	Z	.144	.144	0	% 100
25	M28	X	0	0	0	% 100
26	M28	Z	.144	.144	0	% 100
27	M29	X	0	0	0	% 100
28	M29	Z	.235	.235	0	% 100
29	M30	X	0	0	0	% 100
30	M30	Z	.144	.144	0	% 100
31	M31	X	0	0	0	% 100
32	M31	Z	.144	.144	0	% 100
33	M34	X	0	0	0	% 100
34	M34	Z	.144	.144	0	% 100
35	M35	X	0	0	0	% 100
36	M35	Z	.144	.144	0	% 100
37	MP4A	X	0	0	0	% 100
38	MP4A	Z	.455	.455	0	% 100
39	MP3A	X	0	0	0	% 100
40	MP3A	Z	.455	.455	0	% 100
41	MP2A	X	0	0	0	% 100
42	MP2A	Z	.455	.455	0	% 100
43	MP1A	X	0	0	0	% 100
44	MP1A	Z	.455	.455	0	% 100
45	M37	X	0	0	0	% 100
46	M37	Z	.006	.006	0	% 100
47	M38	X	0	0	0	% 100
48	M38	Z	.611	.611	0	% 100
49	M39	X	0	0	0	% 100
50	M39	Z	.543	.543	0	% 100
51	M40	X	0	0	0	% 100
52	M40	Z	.583	.583	0	% 100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
53	M41	X	0	0	0	%100
54	M41	Z	.486	.486	0	%100
55	M46	X	0	0	0	%100
56	M46	Z	.551	.551	0	%100
57	M51	X	0	0	0	%100
58	M51	Z	.551	.551	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M1	X	-.042	-.042	0	%100
2	M1	Z	.073	.073	0	%100
3	LV	X	-.119	-.119	0	%100
4	LV	Z	.207	.207	0	%100
5	M4	X	-.119	-.119	0	%100
6	M4	Z	.207	.207	0	%100
7	M6	X	-.042	-.042	0	%100
8	M6	Z	.073	.073	0	%100
9	M8	X	-.119	-.119	0	%100
10	M8	Z	.207	.207	0	%100
11	M9	X	-.119	-.119	0	%100
12	M9	Z	.207	.207	0	%100
13	M11	X	-.314	-.314	0	%100
14	M11	Z	.544	.544	0	%100
15	M14	X	-.096	-.096	0	%100
16	M14	Z	.166	.166	0	%100
17	M15	X	-.096	-.096	0	%100
18	M15	Z	.166	.166	0	%100
19	M16	X	-.08	-.08	0	%100
20	M16	Z	.139	.139	0	%100
21	M26	X	-.118	-.118	0	%100
22	M26	Z	.204	.204	0	%100
23	M27	X	-.072	-.072	0	%100
24	M27	Z	.125	.125	0	%100
25	M28	X	-.072	-.072	0	%100
26	M28	Z	.125	.125	0	%100
27	M29	X	-.118	-.118	0	%100
28	M29	Z	.204	.204	0	%100
29	M30	X	-.064	-.064	0	%100
30	M30	Z	.111	.111	0	%100
31	M31	X	-.06	-.06	0	%100
32	M31	Z	.104	.104	0	%100
33	M34	X	-.072	-.072	0	%100
34	M34	Z	.125	.125	0	%100
35	M35	X	-.064	-.064	0	%100
36	M35	Z	.111	.111	0	%100
37	MP4A	X	-.228	-.228	0	%100
38	MP4A	Z	.394	.394	0	%100
39	MP3A	X	-.228	-.228	0	%100
40	MP3A	Z	.394	.394	0	%100
41	MP2A	X	-.228	-.228	0	%100
42	MP2A	Z	.394	.394	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
43	MP1A	X	-.228	-.228	0	%100
44	MP1A	Z	.394	.394	0	%100
45	M37	X	-.037	-.037	0	%100
46	M37	Z	.063	.063	0	%100
47	M38	X	-.149	-.149	0	%100
48	M38	Z	.258	.258	0	%100
49	M39	X	-.387	-.387	0	%100
50	M39	Z	.67	.67	0	%100
51	M40	X	-.11	-.11	0	%100
52	M40	Z	.191	.191	0	%100
53	M41	X	-.384	-.384	0	%100
54	M41	Z	.665	.665	0	%100
55	M46	X	-.207	-.207	0	%100
56	M46	Z	.358	.358	0	%100
57	M51	X	-.207	-.207	0	%100
58	M51	Z	.358	.358	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	-.218	-.218	0	%100
2	M1	Z	.126	.126	0	%100
3	LV	X	-.069	-.069	0	%100
4	LV	Z	.04	.04	0	%100
5	M4	X	-.069	-.069	0	%100
6	M4	Z	.04	.04	0	%100
7	M6	X	-.218	-.218	0	%100
8	M6	Z	.126	.126	0	%100
9	M8	X	-.069	-.069	0	%100
10	M8	Z	.04	.04	0	%100
11	M9	X	-.069	-.069	0	%100
12	M9	Z	.04	.04	0	%100
13	M11	X	-.544	-.544	0	%100
14	M11	Z	.314	.314	0	%100
15	M14	X	-.166	-.166	0	%100
16	M14	Z	.096	.096	0	%100
17	M15	X	-.166	-.166	0	%100
18	M15	Z	.096	.096	0	%100
19	M16	X	-.157	-.157	0	%100
20	M16	Z	.091	.091	0	%100
21	M26	X	-.204	-.204	0	%100
22	M26	Z	.118	.118	0	%100
23	M27	X	-.125	-.125	0	%100
24	M27	Z	.072	.072	0	%100
25	M28	X	-.125	-.125	0	%100
26	M28	Z	.072	.072	0	%100
27	M29	X	-.204	-.204	0	%100
28	M29	Z	.118	.118	0	%100
29	M30	X	-.083	-.083	0	%100
30	M30	Z	.048	.048	0	%100
31	M31	X	-.064	-.064	0	%100
32	M31	Z	.037	.037	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
33	M34	X	-.125	-.125	0	%100
34	M34	Z	.072	.072	0	%100
35	M35	X	-.083	-.083	0	%100
36	M35	Z	.048	.048	0	%100
37	MP4A	X	-.394	-.394	0	%100
38	MP4A	Z	.228	.228	0	%100
39	MP3A	X	-.394	-.394	0	%100
40	MP3A	Z	.228	.228	0	%100
41	MP2A	X	-.394	-.394	0	%100
42	MP2A	Z	.228	.228	0	%100
43	MP1A	X	-.394	-.394	0	%100
44	MP1A	Z	.228	.228	0	%100
45	M37	X	-.256	-.256	0	%100
46	M37	Z	.148	.148	0	%100
47	M38	X	-.147	-.147	0	%100
48	M38	Z	.085	.085	0	%100
49	M39	X	-.646	-.646	0	%100
50	M39	Z	.373	.373	0	%100
51	M40	X	-.063	-.063	0	%100
52	M40	Z	.036	.036	0	%100
53	M41	X	-.635	-.635	0	%100
54	M41	Z	.367	.367	0	%100
55	M46	X	-.119	-.119	0	%100
56	M46	Z	.069	.069	0	%100
57	M51	X	-.119	-.119	0	%100
58	M51	Z	.069	.069	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	-.336	-.336	0	%100
2	M1	Z	0	0	0	%100
3	LV	X	0	0	0	%100
4	LV	Z	0	0	0	%100
5	M4	X	0	0	0	%100
6	M4	Z	0	0	0	%100
7	M6	X	-.336	-.336	0	%100
8	M6	Z	0	0	0	%100
9	M8	X	0	0	0	%100
10	M8	Z	0	0	0	%100
11	M9	X	0	0	0	%100
12	M9	Z	0	0	0	%100
13	M11	X	-.628	-.628	0	%100
14	M11	Z	0	0	0	%100
15	M14	X	-.192	-.192	0	%100
16	M14	Z	0	0	0	%100
17	M15	X	-.192	-.192	0	%100
18	M15	Z	0	0	0	%100
19	M16	X	-.192	-.192	0	%100
20	M16	Z	0	0	0	%100
21	M26	X	-.235	-.235	0	%100
22	M26	Z	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
23	M27	X	-.144	-.144	0	%100
24	M27	Z	0	0	0	%100
25	M28	X	-.144	-.144	0	%100
26	M28	Z	0	0	0	%100
27	M29	X	-.235	-.235	0	%100
28	M29	Z	0	0	0	%100
29	M30	X	-.08	-.08	0	%100
30	M30	Z	0	0	0	%100
31	M31	X	-.05	-.05	0	%100
32	M31	Z	0	0	0	%100
33	M34	X	-.144	-.144	0	%100
34	M34	Z	0	0	0	%100
35	M35	X	-.08	-.08	0	%100
36	M35	Z	0	0	0	%100
37	MP4A	X	-.455	-.455	0	%100
38	MP4A	Z	0	0	0	%100
39	MP3A	X	-.455	-.455	0	%100
40	MP3A	Z	0	0	0	%100
41	MP2A	X	-.455	-.455	0	%100
42	MP2A	Z	0	0	0	%100
43	MP1A	X	-.455	-.455	0	%100
44	MP1A	Z	0	0	0	%100
45	M37	X	-.45	-.45	0	%100
46	M37	Z	0	0	0	%100
47	M38	X	-.355	-.355	0	%100
48	M38	Z	0	0	0	%100
49	M39	X	-.486	-.486	0	%100
50	M39	Z	0	0	0	%100
51	M40	X	-.287	-.287	0	%100
52	M40	Z	0	0	0	%100
53	M41	X	-.416	-.416	0	%100
54	M41	Z	0	0	0	%100
55	M46	X	0	0	0	%100
56	M46	Z	0	0	0	%100
57	M51	X	0	0	0	%100
58	M51	Z	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M1	X	-.218	-.218	0	%100
2	M1	Z	-.126	-.126	0	%100
3	LV	X	-.069	-.069	0	%100
4	LV	Z	-.04	-.04	0	%100
5	M4	X	-.069	-.069	0	%100
6	M4	Z	-.04	-.04	0	%100
7	M6	X	-.218	-.218	0	%100
8	M6	Z	-.126	-.126	0	%100
9	M8	X	-.069	-.069	0	%100
10	M8	Z	-.04	-.04	0	%100
11	M9	X	-.069	-.069	0	%100
12	M9	Z	-.04	-.04	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
13	M11	X	-.544	-.544	0	%100
14	M11	Z	-.314	-.314	0	%100
15	M14	X	-.166	-.166	0	%100
16	M14	Z	-.096	-.096	0	%100
17	M15	X	-.166	-.166	0	%100
18	M15	Z	-.096	-.096	0	%100
19	M16	X	-.157	-.157	0	%100
20	M16	Z	-.091	-.091	0	%100
21	M26	X	-.204	-.204	0	%100
22	M26	Z	-.118	-.118	0	%100
23	M27	X	-.125	-.125	0	%100
24	M27	Z	-.072	-.072	0	%100
25	M28	X	-.125	-.125	0	%100
26	M28	Z	-.072	-.072	0	%100
27	M29	X	-.204	-.204	0	%100
28	M29	Z	-.118	-.118	0	%100
29	M30	X	-.083	-.083	0	%100
30	M30	Z	-.048	-.048	0	%100
31	M31	X	-.064	-.064	0	%100
32	M31	Z	-.037	-.037	0	%100
33	M34	X	-.125	-.125	0	%100
34	M34	Z	-.072	-.072	0	%100
35	M35	X	-.083	-.083	0	%100
36	M35	Z	-.048	-.048	0	%100
37	MP4A	X	-.394	-.394	0	%100
38	MP4A	Z	-.228	-.228	0	%100
39	MP3A	X	-.394	-.394	0	%100
40	MP3A	Z	-.228	-.228	0	%100
41	MP2A	X	-.394	-.394	0	%100
42	MP2A	Z	-.228	-.228	0	%100
43	MP1A	X	-.394	-.394	0	%100
44	MP1A	Z	-.228	-.228	0	%100
45	M37	X	-.331	-.331	0	%100
46	M37	Z	-.191	-.191	0	%100
47	M38	X	-.58	-.58	0	%100
48	M38	Z	-.335	-.335	0	%100
49	M39	X	-.22	-.22	0	%100
50	M39	Z	-.127	-.127	0	%100
51	M40	X	-.562	-.562	0	%100
52	M40	Z	-.325	-.325	0	%100
53	M41	X	-.115	-.115	0	%100
54	M41	Z	-.067	-.067	0	%100
55	M46	X	-.119	-.119	0	%100
56	M46	Z	-.069	-.069	0	%100
57	M51	X	-.119	-.119	0	%100
58	M51	Z	-.069	-.069	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M1	X	-.042	-.042	0	%100
2	M1	Z	-.073	-.073	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
3	LV	X	-.119	-.119	0	%100
4	LV	Z	-.207	-.207	0	%100
5	M4	X	-.119	-.119	0	%100
6	M4	Z	-.207	-.207	0	%100
7	M6	X	-.042	-.042	0	%100
8	M6	Z	-.073	-.073	0	%100
9	M8	X	-.119	-.119	0	%100
10	M8	Z	-.207	-.207	0	%100
11	M9	X	-.119	-.119	0	%100
12	M9	Z	-.207	-.207	0	%100
13	M11	X	-.314	-.314	0	%100
14	M11	Z	-.544	-.544	0	%100
15	M14	X	-.096	-.096	0	%100
16	M14	Z	-.166	-.166	0	%100
17	M15	X	-.096	-.096	0	%100
18	M15	Z	-.166	-.166	0	%100
19	M16	X	-.08	-.08	0	%100
20	M16	Z	-.139	-.139	0	%100
21	M26	X	-.118	-.118	0	%100
22	M26	Z	-.204	-.204	0	%100
23	M27	X	-.072	-.072	0	%100
24	M27	Z	-.125	-.125	0	%100
25	M28	X	-.072	-.072	0	%100
26	M28	Z	-.125	-.125	0	%100
27	M29	X	-.118	-.118	0	%100
28	M29	Z	-.204	-.204	0	%100
29	M30	X	-.064	-.064	0	%100
30	M30	Z	-.111	-.111	0	%100
31	M31	X	-.06	-.06	0	%100
32	M31	Z	-.104	-.104	0	%100
33	M34	X	-.072	-.072	0	%100
34	M34	Z	-.125	-.125	0	%100
35	M35	X	-.064	-.064	0	%100
36	M35	Z	-.111	-.111	0	%100
37	MP4A	X	-.228	-.228	0	%100
38	MP4A	Z	-.394	-.394	0	%100
39	MP3A	X	-.228	-.228	0	%100
40	MP3A	Z	-.394	-.394	0	%100
41	MP2A	X	-.228	-.228	0	%100
42	MP2A	Z	-.394	-.394	0	%100
43	MP1A	X	-.228	-.228	0	%100
44	MP1A	Z	-.394	-.394	0	%100
45	M37	X	-.08	-.08	0	%100
46	M37	Z	-.139	-.139	0	%100
47	M38	X	-.399	-.399	0	%100
48	M38	Z	-.69	-.69	0	%100
49	M39	X	-.141	-.141	0	%100
50	M39	Z	-.245	-.245	0	%100
51	M40	X	-.399	-.399	0	%100
52	M40	Z	-.69	-.69	0	%100
53	M41	X	-.084	-.084	0	%100
54	M41	Z	-.145	-.145	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
55	M46	X	-.207	-.207	0	%100
56	M46	Z	-.358	-.358	0	%100
57	M51	X	-.207	-.207	0	%100
58	M51	Z	-.358	-.358	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	N21	max	180.384	22	2084.102	24	-99.353	3	-.023	6	0	75	-.02	43
2		min	-87.593	4	33.405	6	-1407.198	20	-3.32	24	0	1	-.334	13
3	N22	max	-8.808	7	752.055	24	1478.899	24	.509	24	0	75	.078	48
4		min	-154.444	13	30.712	6	-86.438	6	-.079	6	0	1	-.026	6
5	N58A	max	152.723	11	81.332	23	1024.732	6	0	75	0	75	0	75
6		min	-148.812	5	19.39	66	-1041.534	12	0	1	0	1	0	1
7	N66	max	0	75	0	75	0	75	0	75	0	75	0	75
8		min	0	1	0	1	0	1	0	1	0	1	0	1
9	N65	max	484.94	10	1321.617	6	1219.012	12	.001	14	0	50	0	45
10		min	-361.862	4	-1076.887	12	-1416.736	6	0	8	0	45	0	50
11	N66A	max	401.918	11	462.828	12	807.939	12	.001	24	.002	12	.003	12
12		min	-522.111	5	-297.666	6	-610.712	6	0	6	-.002	6	-.003	6
13	Totals:	max	1159.669	10	3420.124	13	1735.473	1						
14		min	-1159.669	4	796.685	70	-1735.453	7						

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

Member	Shape	Code Check	Loc[.LC Shear..Loc[.Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
1	M1	PIPE 2.0	.355	1.788 24	.145 1.811					H1-1b
2	LV	PIPE 1.25	.617	6.542 24	.454 6.542					H3-6
3	M4	PIPE 1.25	.331	0 48	.169 4.503					H1-1b
4	M6	PIPE 2.0	.325	1.788 24	.182 0					H1-1b
5	M8	PIPE 1.25	.595	6.542 13	.482 6.542					H3-6
6	M9	PIPE 1.25	.809	5.368 6	.209 5.368					H1-1b
7	M11	PIPE 4.0	.127	4.266 24	.080 .547					H1-1b
8	M14	SR 1	.109	0 24	.027 0					H1-1b*
9	M15	SR 1	.098	0 24	.008 0					H1-1b*
10	M16	SR 1	.096	1.417 24	.007 0					H1-1b
11	M26	SR 1.25	.007	0 24	.028 0					H1-1b*
12	M27	SR 0.75	.014	1.25 12	.026 0					H1-1b
13	M28	SR 0.75	.052	0 48	.062 0					H1-1b*
14	M29	SR 1.25	.011	0 37	.073 0					H1-1b*
15	M30	SR 0.75	.058	1.671 14	.010 3.343					H1-1b
16	M31	SR 0.75	.144	4.234 6	.017 0					H1-1b*
17	M34	SR 0.75	.017	1.25 11	.023 0					H1-1b
18	M35	SR 0.75	.199	0 24	.003 0					H1-1b*
19	MP4A	PIPE 2.0	.117	.688 18	.070 4.5					H1-1b

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

	Member	Shape	Code Check	Loc[...]	LC	Shear...	Loc[...]	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
20	MP3A	PIPE 2.0	.083	.688	12	.075	1.625		17	20866...	32130	1.872	1.872	2.121	H1-1b
21	MP2A	PIPE 2.0	.195	4.5	24	.112	1.625		6	20866...	32130	1.872	1.872	1.96	H1-1b
22	MP1A	PIPE 2.0	.456	1.625	12	.383	.688		12	20866...	32130	1.872	1.872	4.005	H3-6
23	M37	PIPE 2.0	.183	0	6	.009	13.0...		22	5781.5...	32130	1.872	1.872	1.136	H1-1b*
24	M38	L2.5x2.5x4	.175	3.546	12	.012	7.092	y	14	8624.2...	38556	1.114	2.059	1.136	H2-1
25	M39	L2.5x2.5x4	.150	3.033	12	.007	0	y	37	11783...	38556	1.114	2.148	1.136	H2-1
26	M40	L2.5x2.5x4	.140	3.37	13	.013	0	z	6	9952.3...	38556	1.114	2.1	1.136	H2-1
27	M41	L2.5x2.5x4	.084	2.686	24	.017	0	y	12	14411...	38556	1.114	2.202	1.136	H2-1
28	M46	PIPE 2.5	.196	12.0...	12	.094	10.8...		6	14366...	50715	3.596	3.596	1.721	H1-1b
29	M51	PIPE 2.5	.127	10.8...	12	.116	10.8...		12	14366...	50715	3.596	3.596	2.837	H1-1b

Version 1.01

Yes

A diagram of a triangular truss structure. The truss consists of three main members forming a triangle, with internal members connecting the midpoints of these sides. External forces are applied at the three vertices: a 90 deg force pointing upwards at the top vertex, a 0 deg force pointing to the right at the bottom-right vertex, and a 180 deg force pointing to the left at the bottom-left vertex. A 270 deg force is also indicated pointing downwards at the bottom-right vertex. A small square symbol indicates a right angle at the top vertex of the internal truss structure.

Yes

Parallel

4

5

	3.5
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A307

0.5

5.9

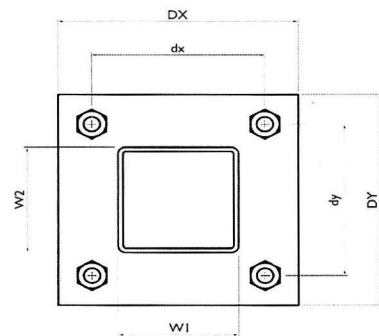
1.2

6.6

4.0

88.3%

No



BILL OF MATERIALS

SECTION 1 - VZWSMART KITS

QUANTITY	MANUFACTURER	PART NUMBER	DESCRIPTION	NOTES	UNIT WEIGHT (LBS.)	WEIGHT (LBS.)
6		VZWSMART-SFKJ-SL	V-BRACING KIT	CONTRACTOR TO VERIFY TILE LENGTH REQUIRED AND TRIM AS NECESSARY IN ACCORDANCE WITH THE STRUCTURAL STEEL NOTES ON SHEET SGN-1.	122	732
6		VZWSMART-ALJ3J	CLIP ANGLE		3	18
24		VZWSMART-MRK1	CROSSOVER PLATE		14	336
	VZWSMART					

SECTION 2 - OTHER REQUIRED PARTS

QUANTITY	MANUFACTURER	PART NUMBER	DESCRIPTION	NOTES	UNIT WEIGHT (LBS.)	WEIGHT (LBS.)
6			PROPOSED 156" LONG, PIPE 2 1/2 SCH40	GALVANIZED	75	452
3	SITE PRO 1	RS-REINF	RS UNIVERSAL PIPE MOUNT REINFORCEMENT KIT		34	102

SECTION 3 - REQUIRED SAFETY CLIMB PARTS

QUANTITY	MANUFACTURER	PART NUMBER	DESCRIPTION	NOTES	UNIT WEIGHT (LBS.)	WEIGHT (LBS.)
1	PERFECT VISION	PV-CLAMP-LW-0106	CLAMP BRACKET	OR FOR APPROVED EQUIVALENT	-	-
1	PERFECT VISION	PV-CHX-CG-SH	WIRE ROPE GUIDE	OR FOR APPROVED EQUIVALENT	-	-
				TOTAL:		1640

NOTES:

1. THE MANUFACTURERS LISTED ARE THE APPROVED VENDORS FOR THE VZW MOUNT KITS. EACH MANUFACTURER WILL BE AWARE OF WHICH KITS HAVE BEEN THROUGH THE VZW APPROVAL PROCESS AND THEY ARE IN TURN APPROVED TO SELL. PLEASE NOTE THAT THE MATERIAL UTILIZED ON THE MOUNT MODIFICATIONS WILL BE REVIEWED AS A PART OF THE DESKTOP PMI COMPLETED BY THE SMART TOOL VENDOR. IT WILL BE REQUIRED THAT THE VZW KITS SPECIFIED ARE UTILIZED IN THE MODIFICATIONS.

2. ALL MATERIALS REQUIRED FOR THE DESIGNED MODIFICATIONS BUT NOT LISTED IN THIS SHEET ARE ASSUMED TO BE PROVIDED BY THE CONTRACTOR.

VZWSMART KITS - APPROVED VENDORS

COMMSCOPE	
CONTACT	SALVADOR ANGUIANO
PHONE	(817) 394-7492
EMAIL	SALVADOR.ANGUIANO@COMMSCOPE.COM
WEBSITE	WWW.COMMSCOPE.COM
METROSITE FABRICATORS, LLC	
CONTACT	KENT RAMEY
PHONE	(706) 335-7045 (O) (706) 985-9788 (M)
EMAIL	KENT@METROSITELLC.COM
WEBSITE	METROSITEFABRICATORS.COM

PERFECTVISION	
CONTACT	WIRELESS SALES
PHONE	(644) 887-6723
EMAIL	WWW.PERFECTVISION.COM
WEBSITE	WIRELESS@PERFECT-VISION.COM
SABRE INDUSTRIES, INC.	
CONTACT	ANGIE WELCH
PHONE	(866) 426-6937
EMAIL	AKWELCH@SABREINDUSTRIES.COM
WEBSITE	WWW.SABRESOLUTIONS.COM

SITE PRO 1	
CONTACT	PAULA BOSWELL
PHONE	(972) 326-9843
EMAIL	PAULA.BOSWELL@VALMONT.COM
WEBSITE	WWW.SITEPRO1.COM
NEWAVE	
CONTACT	NEWAVE SALES TEAM
PHONE	(971) 379-4742
EMAIL	SALES@NEWAVETC.COM
WEBSITE	WWW.NEWAVETC.COM

BETTER METAL, LLC	
CONTACT	DAVID STANSBERRY
PHONE	(615) 535-0990 (O) (615) 631-2520 (M)
EMAIL	DLS@BETTERMETAL.COM
WEBSITE	WWW.BETTERMETAL.COM

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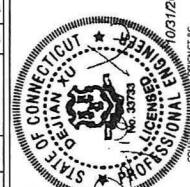
SHAWN E. BELL (SHAWN) is a Licensed Professional Engineer in the State of Connecticut, License No. 10000. He has been a member of the American Society of Civil Engineers (ASCE) since 1998 and is currently a Fellow Member. He has been a member of the Connecticut Society of Professional Engineers (CSPE) since 1998 and is currently a Fellow Member. He has been a member of the Connecticut Society of Professional Engineers (CSPE) since 1998 and is currently a Fellow Member.

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AS SHOWN 2179-098
DATE 10/31/2023
PROJECT 2179-098
SHEET 1 OF 1

REV	DATE	DESCRIPTION	BY	CHK
1	10/31/2023	ISSUED FOR PERMIT	SH	SH
2	10/31/2023	ISSUED FOR PERMIT	SH	SH
3	10/31/2023	ISSUED FOR PERMIT	SH	SH
4	10/31/2023	ISSUED FOR PERMIT	SH	SH
5	10/31/2023	ISSUED FOR PERMIT	SH	SH
6	10/31/2023	ISSUED FOR PERMIT	SH	SH
7	10/31/2023	ISSUED FOR PERMIT	SH	SH
8	10/31/2023	ISSUED FOR PERMIT	SH	SH
9	10/31/2023	ISSUED FOR PERMIT	SH	SH
10	10/31/2023	ISSUED FOR PERMIT	SH	SH



IT IS A VIOLATION OF LAW FOR ANY PERSON, OTHER THAN THE LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SITE NAME:
CROMWELL N CT
5000055679
179 SHUNPIKE ROAD
CROMWELL, CT 06416
MIDDLESEX COUNTY

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Engineering
& Design
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SHAWN E. BELL
10000
10/31/2023
2179-098
1 OF 1

BILL OF MATERIALS

SBOM-1

GENERAL NOTES

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

STRUCTURAL STEEL

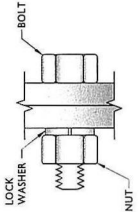
1. DESIGN, DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING PUBLICATIONS EXCEPT AS SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS.
 - a. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION (15TH EDITION)
 - b. SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS
 - c. AISC CODE OF STANDARD PRACTICE
2. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING UNLESS OTHERWISE SHOWN:
 - a. CHANNELS, ANGLES, PLATES, ETC. ASTM A36 (GR 36)
 - b. STEEL PIPE ASTM A53 (GR 35)
 - c. BOLTS ASTM A325
 - d. NUTS ASTM A325
 - e. LOCK WASHERS ASTM A563
3. ALL SUBSTITUTIONS PROPOSED BY THE CONTRACTOR SHALL BE APPROVED IN WRITING BY THE ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER FOR VERIFYING THE SUBSTITUTE IS SUITABLE FOR USE AND MEETS ORIGINAL DESIGN CRITERIA. DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT, SHALL BE NOTED. ESTIMATE OF COSTS/CREDITS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING RE-DESIGN COSTS AND COSTS TO SUBMITTER) SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW AND APPROVAL. CONTRACTOR SHALL PROVIDE ADDITIONAL DOCUMENTATION AND/OR SPECIFICATIONS TO THE ENGINEER AS REQUESTED.
4. PROVIDE STRUCTURAL STEEL SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
 - a. SUBMIT SHOP DRAWINGS TO
FETER ALBANO@COLLIERENGINE.COM
 - b. PROVIDE COLLIER ENGINEERING A DESIGN PROJECT # AND COLLIER ENGINEERING A DESIGN PROJECT ENGINEER CONTACT IN THE BODY OF THE EMAIL
 - c. DRILL NO HOLES IN ANY NEW OR EXISTING STRUCTURAL STEEL MEMBERS OTHER THAN THOSE SHOWN ON STRUCTURAL DRAWINGS WITHOUT THE APPROVAL OF THE ENGINEER OR RECORD.
 - d. GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
 - e. ALL NEW STEEL SHALL BE HOT BE DIPPE GALVANIZED FOR FULL WEATHER PROTECTION. IN ADDITION ALL NEW STEEL SHALL BE PAINTED TO MATCH EXISTING STEEL. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
 - f. ALL BOLT ASSEMBLIES FOR STRUCTURAL MEMBERS REPRESENTED IN THIS DRAWING SHALL BE INSTALLED IN ACCORDANCE WITH TIA-222-B SECTION 4.3.2 REQUIREMENTS.
 - g. WHERE CONNECTIONS ARE NOT FULLY DETAILED ON THESE DRAWINGS, CONTRACTOR SHALL PROVIDE DETAILS AND CONNECTIONS TO BE SHOWN WHERE SHOWN ON DRAWINGS AND AS OUTLINED IN SPECIFICATIONS.
 - h. FOR MEMBERS BEING REPLACED, PROVIDE NEW BOLTS AND MATCH EXISTING SIZE AND GRADE. MAINTAIN AISC REQUIREMENTS FOR MINIMUM BOLT DISTANCE AND SPACING.
 - i. ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH SUCH THAT THE END OF THE BOLT IS AT LEAST FLUSH WITH THE FACE OF THE MEMBER BEING REPLACED AND TO BE BELOW THE FACE OF THE NUT AFTER TIGHTENING IS COMPLETED.
 - j. GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
 - k. ALL NEW STEEL SHALL BE HOT BE DIPPE GALVANIZED FOR FULL WEATHER PROTECTION. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
 - l. ALL EXISTING PAINTED/GALVANIZED SURFACES DAMAGED DURING REHAB INCLUDING AREAS UNDER STRENGTHEN PLATES SHALL BE WIRE BRUSHED AND REPAINTED TO MATCH THE EXISTING FINISH (IF APPLICABLE).
 - m. ALL HOLES IN STEEL MEMBERS SHALL BE SIZED 1/16" LARGER THAN THE BOLT DIAMETER. STANDARD HOLES SHALL BE USED UNLESS NOTED OTHERWISE.

BOLT SCHEDULE (IN.)

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

WORKABLE GAGES (IN.)

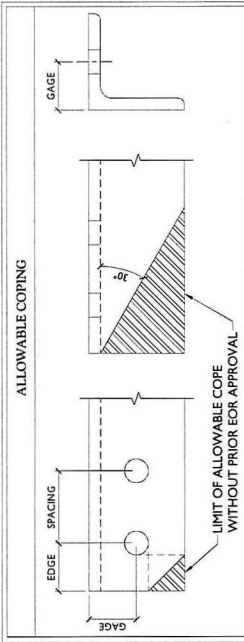
LEG	GAGE
4	2 1/2
3 1/2	2
3	1 3/4
2 1/2	1 3/8
2	1 1/8



TYP. BOLT ASSEMBLY

NOTES:

1. ALL DIMENSIONS REPRESENTED IN THE DRAWINGS SHALL BE MINIMUM REQUIREMENTS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ENGINEER IF DISTANCES ARE LESS THAN THOSE PROVIDED.
2. THE DIMENSIONS PROVIDED ARE MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS MAY VARY WITHIN THE AISC MINIMUM REQUIREMENTS.
3. SHORT SLOT HOLES SHALL ONLY BE USED WHEN DEPICTED IN THE DRAWINGS
4. MATCH EXISTING GAGES WHEN APPLICABLE. UNLESS MINIMUM EDGE DISTANCES ARE COMPROMISED.



[illegible]

Engineering & Design

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811

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State of Connecticut

10/31/2022

Colliers Engineering & Design

179 Shunpike Road

Cromwell, CT 06416

Middlesex County

Modification Details

SS-1

NO.

ELEVATION

QUANTITY

DESCRIPTION

NOTES

1

6

PROPOSED V-BRACING KIT (PART #: VZWSHART-SF03-SL)

CONTRACTOR TO VERIFY THE LENGTH REQUIRED AND TRIM AS NECESSARY IN FIELD. CONTRACTOR SHALL INSTALL ONE PROPOSED CLIP ANGLE (PART #: VZWSHART-AL33) AT EITHER END OF EACH LONG ANGLE IN THE SF03-SL KIT.

2

98'-4"

6

PROPOSED 15K' LONG, PIPE 2 1/2 SCH40 FACE HORIZONTAL

ACHIEVE INSTALLATION OF HORIZONTAL AS SHOWN. EOR SHALL BE NOTIFIED IF EQUIPMENT OR STRUCTURE IS ENCOUNTERED. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND COORDINATING WITH ALL AFFECTED UTILITIES. VERIFY PRIOR TO CONSTRUCTION.

3

3

R5 UNIVERSAL PIPE MOUNT REINFORCEMENT KIT(PART #: SP1 RS-REINF)

CONTRACTOR TO CONTACT EOR IF REINFORCEMENT IS REQUIRED AS SHOWN IN SPEC SHEET. VERIFY PRIOR TO CONSTRUCTION. SEE NOTE D.

GENERAL NOTES:

A. CONTRACTOR SHALL VERIFY THAT NEW & EXISTING STEEL IS FREE OF CORROSION. VISIBLE MINOR CORROSION SHALL BE WIRE BRUSHED CLEAN AND TREATED WITH COLD GALVANIZATION. REPORT ANY SIGNIFICANT CORROSION TO EOR.

B. THREADED ROD FROM PROPOSED KITS SHALL BE TRIMMED TO EXTEND NO MORE THAN 3" BEYOND THE LOCK NUT. TREAT ALL CUT ENDS WITH (2) COATS OF COLD GALVANIZATION (ZINC KOAT) OR EOR APPROVED EQUIVALENT.

C. MOUNTING PERMITS NOT SHOWN FOR CLARITY ONLY.

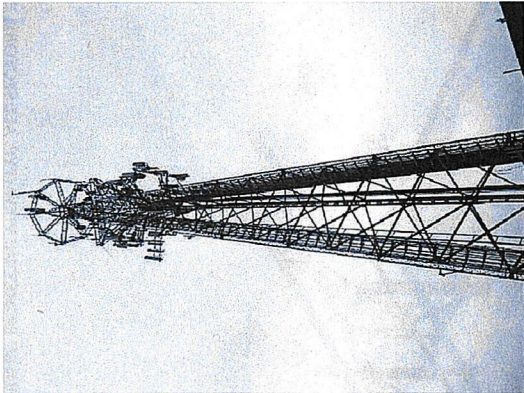
D. EXISTING THREADED RODS AT EXISTING SITE PRO 1 AS MOUNT-TOWER KITS SHALL BE RE-INSTALLED TO HAVE ALL THREADED ROD HEADS INSIDE AS SHOWN IN SPEC SHEET. THREADED RODS SHALL BE TRIMMED TO EXTEND NO MORE THAN 3" BEYOND THE LOCK NUT. TREAT ALL CUT ENDS WITH (2) COATS OF COLD GALVANIZATION (ZINC KOAT) OR EOR APPROVED EQUIVALENT.

PROPOSED ISOMETRIC VIEW (TYP. ALL SECTORS)

SCALE: N.T.S.

PROPOSED SIDE ELEVATION VIEW (TYP. ALL SECTORS)

SCALE: N.T.S.



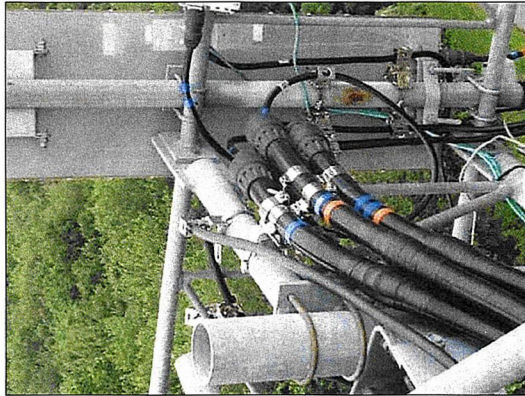
MOUNT PHOTO 1



MOUNT PHOTO 3



MOUNT PHOTO 2



MOUNT PHOTO 4

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www.colliersengineering.com

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verizon

811 PROTECT YOURSELF
ALL UTILITIES SHOULD BE LOCATED PRIOR TO ANY EXCAVATION OR DRILLING. CALL 811 TO GET THE LOCATION OF ALL UTILITIES. IT IS THE RESPONSIBILITY OF THE EXCAVATOR TO OBTAIN THE LOCATION OF ALL UTILITIES PRIOR TO ANY EXCAVATION OR DRILLING.

Colliers Engineering & Design, Inc.
2785 19th Ave. S.W.
Boulder, CO 80501
(303) 440-1111

PROJECT: 2785 19th

NO.	DATE	DESCRIPTION	BY	CHKD
1	03/12/2011	ISSUED FOR PERMIT	DA	DA
2	03/12/2011	REVISION	DA	DA
3	03/12/2011	REVISION	DA	DA
4	03/12/2011	REVISION	DA	DA
5	03/12/2011	REVISION	DA	DA
6	03/12/2011	REVISION	DA	DA
7	03/12/2011	REVISION	DA	DA
8	03/12/2011	REVISION	DA	DA
9	03/12/2011	REVISION	DA	DA
10	03/12/2011	REVISION	DA	DA



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

SITE NAME:
CRONWELL N CT
500055679
179 SHUNPIKE ROAD
CRONWELL, CT 06416
MIDDLESEX COUNTY

Colliers Engineering & Design
1850 Washington Boulevard
Baltimore, CT 06901
(404) 440-1111
www.colliersengineering.com

MOUNT PHOTOS

SS-2

STANDARD PIPE LENGTH

1"

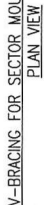
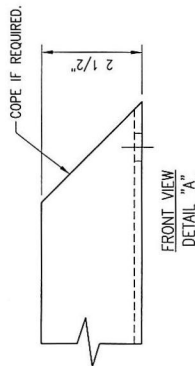
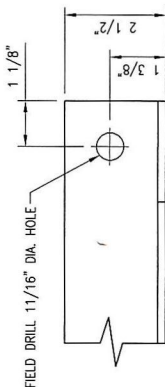
PIPE SIZE

SEE NOTE "3" & "4"
(TYP)

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

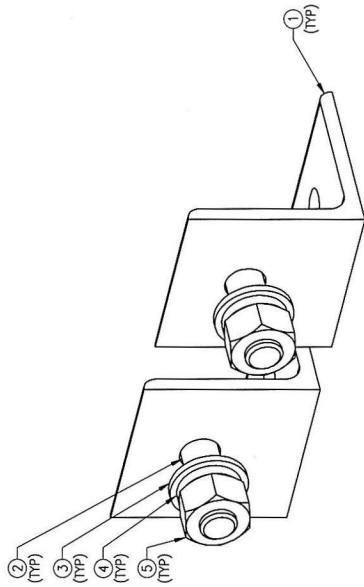
NOTE:
APPROVED SMART KIT VENDORS ARE ALLOWED TO SUBSTITUTE AT THEIR DISCRETION
PIPES LISTED ON THIS PAGE FOR CUSTOM LENGTH COMPONENTS OF MATCHING SIZE.
SUBSTITUTIONS SHALL MEET THE ORIGINAL STRUCTURAL INTENT.

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

VZWSMART-SFK3-SL (V-BRACING KIT FOR SMALL LEGS)

ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	1	BP9625-65	PL 3/8" X 5 9/8" X 1/2" A36 BENT PLATE	VB5M-SL-F1	12
2	1	BRKW-VB5M-SL	WELDMENT BRACKET	VB5M-SL-F3	11
3	2	L25525-8	L 2 1/2" X 2 1/2" X 1/4" A36 BENT PLATE	VB5M-F5	67
4	3	BP6875-10	PL 3/8" X 6 7/8" X 10" A36 BENT PLATE	VB5M-F2	20
5	2	AL-333	L 3" X 3" X 1/4" X 3" A36	VB5M-F2	3
6	4		THREADED ROD 5/8" DIA. X 1'-0" F1554-36 HDG	---	---
7	4		THREADED ROD 5/8" DIA. X 10" F1554-36 HDG	---	---
8	1		BOLT 5/8" X 2 1/4" A325	---	---
9	4		BOLT 5/8" X 1 3/4" A325	---	---
10	21	FW-625	5/8" HDG USS FLAT WASHER	---	2
11	21	LW-625	5/8" HDG LOCK WASHER	---	0
12	21	NUT-625	5/8" HDG HEX NUT	---	2
GALVANIZED WT					117

NOTES:

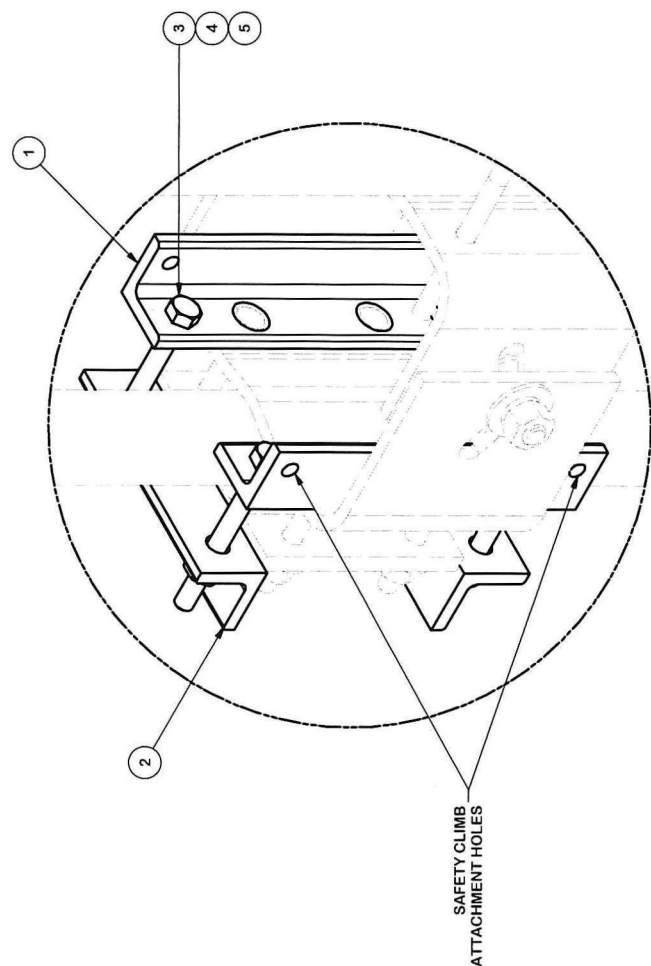


CLIP ANGLE
ISOMETRIC VIEW

VZWSMART-AL333 (CLIP ANGLE)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	2	AL-333	L 3" X 3" X 1/4" X 3" A36	AL333-F1	2.50
2	2	---	BOLT 5/8" X 2" FULL THREAD SAE GR-5	---	0.77
3	2	FW-625	5/8" HDG USS FLAT WASHER	---	0
4	2	LW-625	5/8" HDG LOCK WASHER	---	0
5	2	NUT-625	5/8" HDG HEX NUT	---	0
GALVANIZED WT					3.27

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

PARTS LIST					
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.
1	4	X-R5-FRA1	REINFORCEMENT ANGLE	10 in	3.84
2	4	X-R5-RFA2	REINFORCEMENT ANGLE	7 1/8 in	2.86
3	8	G1208	1/2" x 8" HDG HEX BOLT GR5 FULL THREAD	8 in	0.49
3	8	G1205	1/2" x 5" HDG HEX BOLT GR5 FULL THREAD	5 in	0.33
4	8	G12LW	1/2" HDG LOCKWASHER		0.01
5	8	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07
TOTAL WT. #					34.04



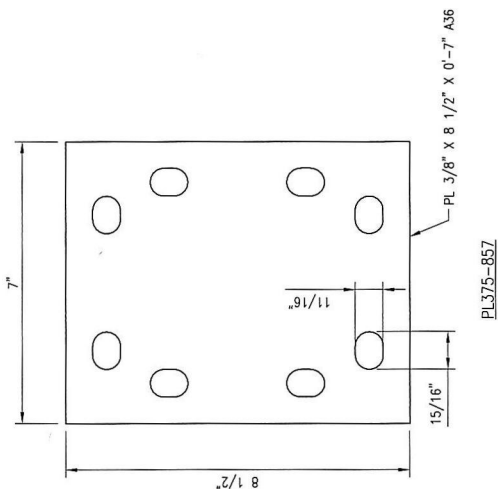
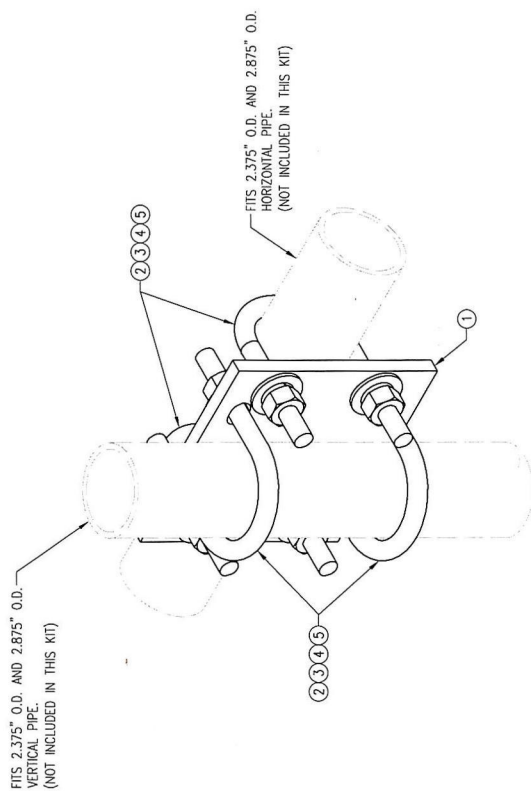
DETAIL A

FOR REFERENCE ONLY		TOLERANCE NOTES TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE: SAWED, SHEARED AND GAS CUT EDGES (± 0.030") DRILLED AND GAS CUT HOLES (± 0.030") - NO CONING OF HOLES LASER CUT EDGES AND HOLES (± 0.010") - NO CONING OF HOLES BENDS ARE ± 1/2 DEGREE ALL OTHER MACHINING (± 0.030") ALL OTHER ASSEMBLY (± 0.060") PROPRIETARY NOTE: THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES. ANY REUSE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.		DESCRIPTION		Locations: New York, NY Atlanta, GA Los Angeles, CA Plymouth, IN Salem, OR Dallas, TX Engineering Support Team: 1-888-753-7446 SITE PRO 1 A valmont  COMPANY		PAGE 1 OF 1	
				R5 UNIVERSAL PIPE MOUNT REINFORCEMENT KIT		PART NO. R5-REINF		DWG. NO. R5-REINF	
CPD NO.		DRAWN BY JFS		4/22/2020		ENG. APPROVAL 5/6/2020			
CLASS 81		SUB 02		DRAWING USAGE CUSTOMER		CHECKED BY BMC		5/6/2020	

FOR REFERENCE
ONLY

DRAWN BY: H.R	CHECKED BY: HMA
REV.	DESCRIPTION
BY	DATE
	H.R. 05/08/20

SHEET TITLE:	VZWSMART-MSK1 CROSSOVER PLATE
SHEET NUMBER:	REV #: 0

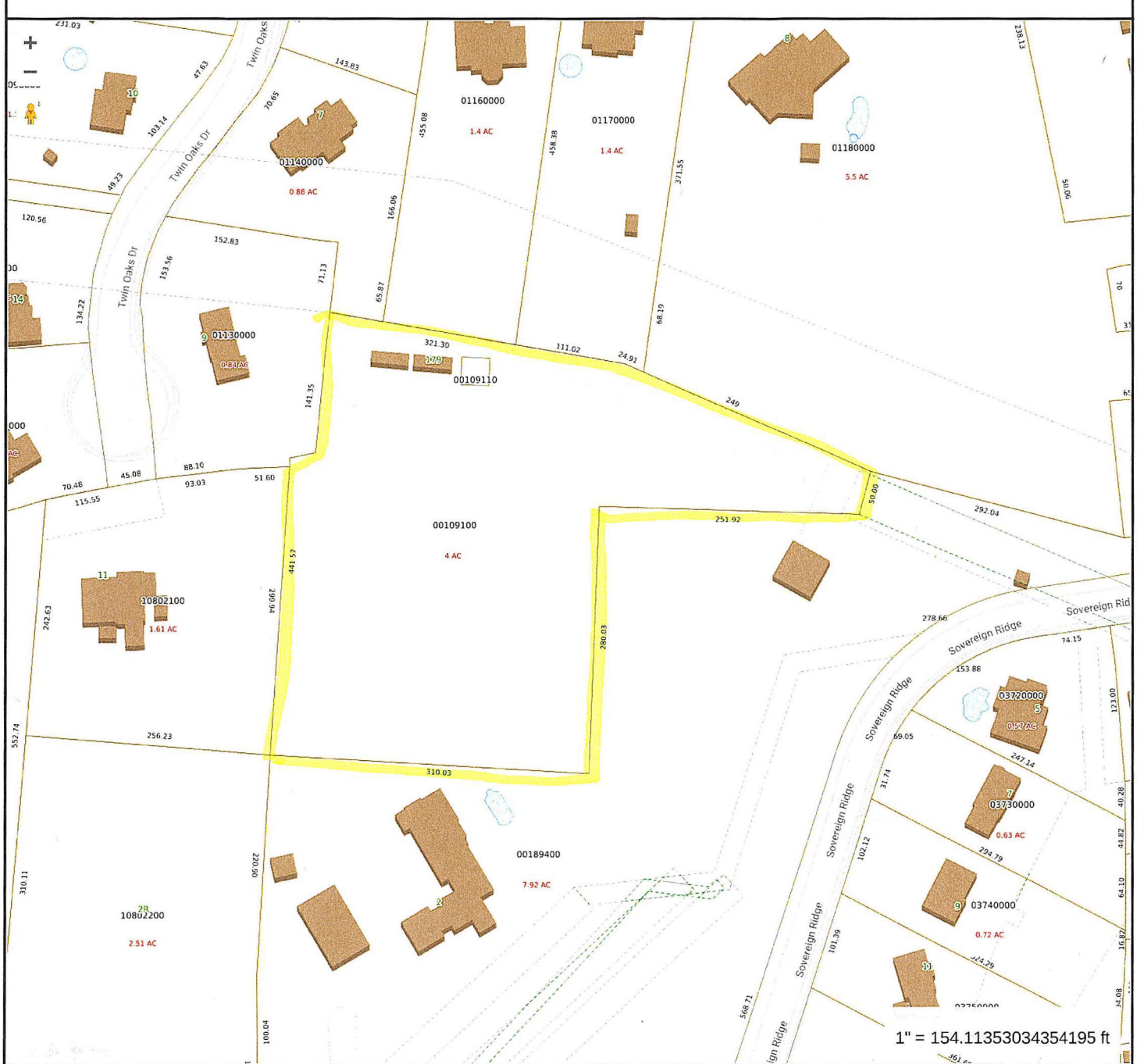


VZWSMART—MSK1 (CROSSOVER PLATE)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	1	PL375-857	PL 3/8" x 8 1/2" x 0"-7" A36	MSK1-F1	6
2	4	MS02-625-300-500	RU-BOLT 5/8" x 3" L.W. x 5" I.L. A36 (OR EQUIV.)	RBC-1	5
3	8	FW-625	5/8" HDC USS FLAT WASHER	---	1
4	8	LW-625	5/8" HDC LOCK WASHER	---	0
5	8	NUT-625	5/8" HDC HEX NUT	---	1
GALVANIZED WT					14

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

ATTACHMENT 5

prop manp



MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town of Cromwell, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 07/01/2024
Data updated on a daily basis

Print map scale is approximate.
Critical layout or measurement
activities should not be done using
this resource.



Patriot
Properties Inc.

Parcel ID: 00109100 Location: 179 SHUNPIKE ROAD Map-Lot 24-17B Last Revaluation - October 1, 2022

Current Value Information			
Use Code	Land Value	PA 490 Value	Mkt Adj Cost
920	146,000	0	0
TOTAL	146,000	0	0
Total Assessed			
102,200			

Current Owner
CROMWELL FIRE DISTRICT
1 WEST STREET
CROMWELL CT 06416

Previous Value Information

Tax Yr	Land Value	Bldg Value	Outbuildings	Total Value	Total Assessment
2021	120,300	0	0	120,300	84,210
2020	120,300	0	0	120,300	84,210
2019	120,300	0	0	120,300	84,210
2018	120,300	0	0	120,300	84,210
2017	120,300	0	0	120,300	84,210
2016	118,140	0	0	118,140	82,700

Previous Owner(s)

General Notes

Communication Tower Fire Dept

Sales Information

Grantee	Vol-Page	Type	SaleDate	SalePrice	Sale Verif	GeneralNotes
CROMWELL FIRE DISTRICT	86-469		09/21/1970	0		

Activity Information

Date	Results	Visited By	Date	Permit #	Description	Amount	% Comp	Visit Date	CO Date	GeneralNotes
09/07/2017	Change - Value Change Company	John Valente	11/09/2018	25739	Other	20,000	100		08-Jan-2020	SPRINT INSTALLATION
05/19/2017	No Change - Field Review	Dave Stannard	11/13/2014	23012	Other	15,000	100	13-Nov-2014	11-Aug-2015	Modifications to existing
11/13/2014	Permit- Miscellaneous	Assessor Office	01/31/2013	21434	Other	5,000	100	31-Jan-2013		Rplc & insll 2 Telecom ca
01/31/2013	Permit- Miscellaneous	Assessor Office	01/07/2013	21382	Other	15,000	100	07-Jan-2013	21-Feb-2013	Swap 12 of 12 existing an
01/07/2013	Permit- Miscellaneous	Assessor Office	07/31/2012	20958	Other	25,000	100	11-Sep-2012		Add 3 new antennas to exs
09/11/2012	Permit- Measure Exterior		10/22/2010	19434	Electric	8,000	100	22-Oct-2010		Feed for cell towers
09/11/2012	Permit- Miscellaneous	Assessor Office	04/12/2010	18982	Electric	0	100	12-Apr-2010		Disconnect & re-connect c
10/22/2010	Permit- Miscellaneous	Assessor Office	04/13/2009	18277	Electric	15,000	100	06-Apr-2009		rep 6 antennas & modifyin
04/12/2010	Permit- Miscellaneous	Assessor Office								
04/06/2009	Permit- Miscellaneous	Assessor Office								

Building Permit Information

Land Data

Use	Description	Units	Type	Neigh	Special Land Calc	Appraised Value	PA 490 Asmt	Neigh Order	Notes
920	Mun Land Com	43,560	SF	ED		108,900	0	2600	
920	Mun Land Com	3,000	AC	ED		37,100	0	2600	
Total Area: 4.00									
PA 490 Use Asmt: 0									
Total Appraised: 146,000									
Assessed Value: 102,200									

Property Factors

Census 5701
Flood:
Topo:
Street: Paved
Dev. Map
Dev. Map

Zoning Data

Desc. %
R-25 100.00

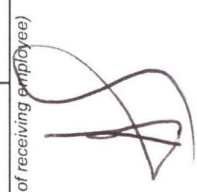
Utilities
6 Septic
9 Well-Pot Wat
BAA

ATTACHMENT 6



VW/Cromwell North

Certificate of Mailing — Firm

Name and Address of Sender Kenneth C. Baldwin, Esq. Robinson & Cole LLP One State Street Hartford, CT 06103		TOTAL NO. of Pieces Listed by Sender 3	TOTAL NO. of Pieces Received at Post Office™ 3	Affix Stamp Here Postmark with Date of Receipt.	
Postmaster, per (name of receiving employee) 		 quadrant CORRECTION IMI \$003.44 ⁰ 10/28/2024 ZIP 06103 043M3208619 US POSTAGE			
USPS® Tracking Number Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	Anthony J. Salvatore, Town Manager Town of Cromwell 41 West Street Cromwell, CT 06416				
2.	Stuart Popper, Director of Planning and Development Town of Cromwell 41 West Street Cromwell, CT 06416				
3.	Cromwell Fire District 1 West Street Cromwell, CT 06416				
4.					
5.					
6.					

