



Crown Castle  
3 Corporate Park Drive, Suite 101  
Clifton Park, NY 12065

April 1, 2024

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

RE: **Notice of Exempt Modification for Verizon Wireless  
Crown #801487  
848 East Street, Suffield, CT 06078  
Latitude: 41° 57' 25.20" / Longitude: -72° 37' 32.60"**

Dear Ms. Bachman:

Verizon Wireless currently maintains nine (9) antennas at the 151-foot mount on the existing 166-foot monopole tower located at 848 East Street, Suffield, CT. The property is owned by the Town of Suffield and the tower is owned by Crown Castle. Verizon now intends to add two (2) interference mitigation filters at the 151-foot level. This modification/proposal includes hardware that is both 4G (LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

**Panned Modification:**

**Tower:**

Install New:

(2) Kaelus BSF0020F3V1- Interference Mitigation Filters

The facility was approved by the Town of Suffield Planning and Zoning Commission on May 1, 2000. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Colin Moll, First Selectman on behalf of the Town of Westbrook and as the property owner. Notice is being sent to Bill Hawkins, Planning Director, Town of Suffield. Crown Castle is the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

**The Foundation for a Wireless World.**

CrownCastle.com

Melanie A. Bachman

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4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, Verizon Wireless respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Jeffrey Barbadora.

Sincerely,

*Jeff Barbadora*

Jeffrey Barbadora  
Permitting Specialist  
1800 W. Park Drive  
Westborough, MA 01581  
(781) 970-0053  
Jeff.Barbadora@crowncastle.com

Attachments

cc:

Colin Moll, First Selectman for the Town & Property Owner  
Town of Suffield  
83 Mountain Road  
Suffield, CT 06078  
860-668-3300

Bill Hawkins, Planning Director  
Town of Suffield  
83 Mountain Road  
Suffield, CT 06078  
860-668-3848

Crown Castle, Tower Owner

**SUFFIELD ZONING AND PLANNING COMMISSION  
MINUTES OF A SPECIAL MEETING  
MAY 1, 2000**

PRESENT:.....Dr. Douglas Viets, Chairman  
.....Mr. Stephen Martin, Secretary  
.....Mr. Lawrence Boudreau, Alternate  
.....Mr. Christopher Burke  
.....Mr. Chester Kuras  
.....Mr. Timothy Reynolds, Alternate

ABSENT.....Mr. Frank Bauchiero, Jr.  
.....Mr. David Berto, Alternate  
.....Mr. J. Scott Guilmartin

ALSO PRESENT:.....Mr. William Kweder, Planning Consultant  
.....Mr. Gerald Turbet, Town Engineer

Chairman Viets called the Special Meeting to order at 7:38 P.M.

**File #740**— Request of Suffield Economic Development Commission for a special use permit for the approval of sites for communication towers located on Town properties: WPCA, Highway Department, and Landfill. Discussion tabled from the April 17, 2000 Regular Meeting.

Chairman Viets appointed Mr. Reynolds as voting alternate since he had been present at the public hearing on File #740.

Mr. Boudreau stated that he had not been present nor had he listened to the hearing tapes. Therefore, voting members numbered five.

Chairman Viets asked if the requested information from the State Historic Preservation Office concerning the impact on the Hatheway House had been received. Mr. Kweder reported that no information had been received to this date. Upon questioning, it was found that the applicant had received a letter, but it had not been forwarded to the Commission.

Crown Atlantic Company's attorney, Kenneth Baldwin, presented the State Historic Preservation Office (SHPO) letter, dated April 11, 2000, to Commission. Chairman Viets read the letter to the Commission for the record. The had been sent prior to the public hearing when the Town Garage Site was proposed to support a 180-foot tower. The size of the tower was reduced (public hearing testimony) to 120-feet. The Commission proceeded to review the three proposed tower sites beginning with the Town Garage.

Mr. Turbet suggested that, if the three sites were approved, general conditions be approved for all three locations. These conditions, in brief, are:

1. provision of detail;
2. submission of FCC licenses for each company;
3. revision of site plans;
4. provisions of self-collapsing towers certified by a registered Connecticut professional engineer;

SUFFIELD ZONING AND PLANNING COMMISSION MEETING MINUTES  
SPECIAL MEETING  
MAY 1, 2000

2

5. under-grounding of utilities;
6. sign-off by the Zoning Enforcement Official on each application;
7. height limits to include antennae at tops of structures.

The Public Garage site tower was reduced from 180-feet to 120-feet. The Commission members reviewed pictures of the site with and without the tower from South Main Street along with the view-shed map for this site, and discussed the location in respect to visibility.

The WPCA Site tower was reduced from 199-feet to 174-feet. The Commission members reviewed view-shed maps and discussed the location in respect to visibility.

The Transfer Station Site tower was 199-feet. The same procedure was followed in respect to visibility.

Following an extensive discussion, a motion was made by Mr. Martin, seconded by Mr. Burke, to approve a special use permit for the Town of Suffield for three (3) proposed telecommunication sites located as designated:

1. Town of Suffield Transfer Station site on the west side of Mountain Road (Route 168), on undeveloped land west of the Transfer Station operations (Site A);
2. Town of Suffield Public Works garage/maintenance facility off of Mountain Road, on land immediately adjacent to the Maintenance Facility Building (Site B); and
3. Town of Suffield Sewage Treatment Plant on the east side of East Street (Route 159), on undeveloped land along the north side of the Treatment's Plant's access driveway (Site C).

with the following conditions:

1. The heights of the respective mono-pole towers, including antennae, shall not exceed 199-feet (Site A); 120-feet (Site B); and 174-feet (Site C);
2. Each tower shall be certified as "self-collapsing" by a Connecticut registered professional engineer;
3. Details drawings are to be submitted with each request for building permits for both the towers and related facilities;
4. FCC licenses shall be produced prior to the issuance of the permits for company leasing space on the towers;
5. The Zoning Enforcement Officer shall review each proposal for zoning conformance prior to the issuance of the building permits;
6. All utilities are to be underground;
7. Site plans are to be revised.

The motion was approved 5-0-0.

Mr. Boudreau was seated for the next item of business.



SUFFIELD ZONING AND PLANNING COMMISSION MEETING MINUTES  
SPECIAL MEETING  
MAY 1, 2000

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**File #740A** – Request of the Board of Selectmen for a report on the proposed twenty-year lease of portions of Town property known as:

1. Transfer Station;
2. Town Yard;
3. Sewer Plant.

First Selectman, Robert Skinner, sat as an ex-officio member of the Commission and answered various questions from the members regarding the lease agreement.

Following discussion, a motion was made by Mr. Burke, seconded by Mr. Reynolds, to forward a favorable report to the Board of Selectmen, as required under CGS 8-24, concerning a lease agreement between Crown Atlantic Company, LLC as Lessee and the Town of Suffield as the Lessor for sites for telecommunication towers located on Town properties as follows:

1. Town of Suffield Transfer Station site on the west side of Mountain Road (Route 168), on undeveloped land west of the Transfer Station operations (Site A);
2. Town of Suffield Public Works garage/maintenance facility off of Mountain Road, on land immediately adjacent to the Maintenance Facility Building (Site B); and
3. Town of Suffield Sewage Treatment Plant on the east side of East Street (Route 159), on undeveloped land along the north side of the Treatment's Plant's access driveway (Site C).

The motion was approved 6-0-0.

There, being no further business before the Special Meeting, a motion was made by Mr. Burke, seconded by Mr. Reynolds, to adjourn. The motion was 6-0-0. The Special Meeting was adjourned at 8:30 P.M.

Respectfully submitted,

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Stephen J. Martin, Secretary

WGK:SJM:bgk



# Town of Suffield, CT

## Property Listing Report

Map Block Lot 69 H 55 78

Developer Map

Unique Identifier R69524

Developer Lot

Building #

### Property Information

Property Location	848 EAST ST S
Mailing Address	83 MOUNTAIN RD SUFFIELD CT 060782041
Land Use	Commercial Vacant Land
Zoning Code	PDIP
Neighborhood	EC

Owner	SUFFIELD TOWN OF
Co-Owner	TOWN HALL
Book / Page	0200/0182
Land Class	Vacant Land
Census Tract	4771.02
Acreage	4.7

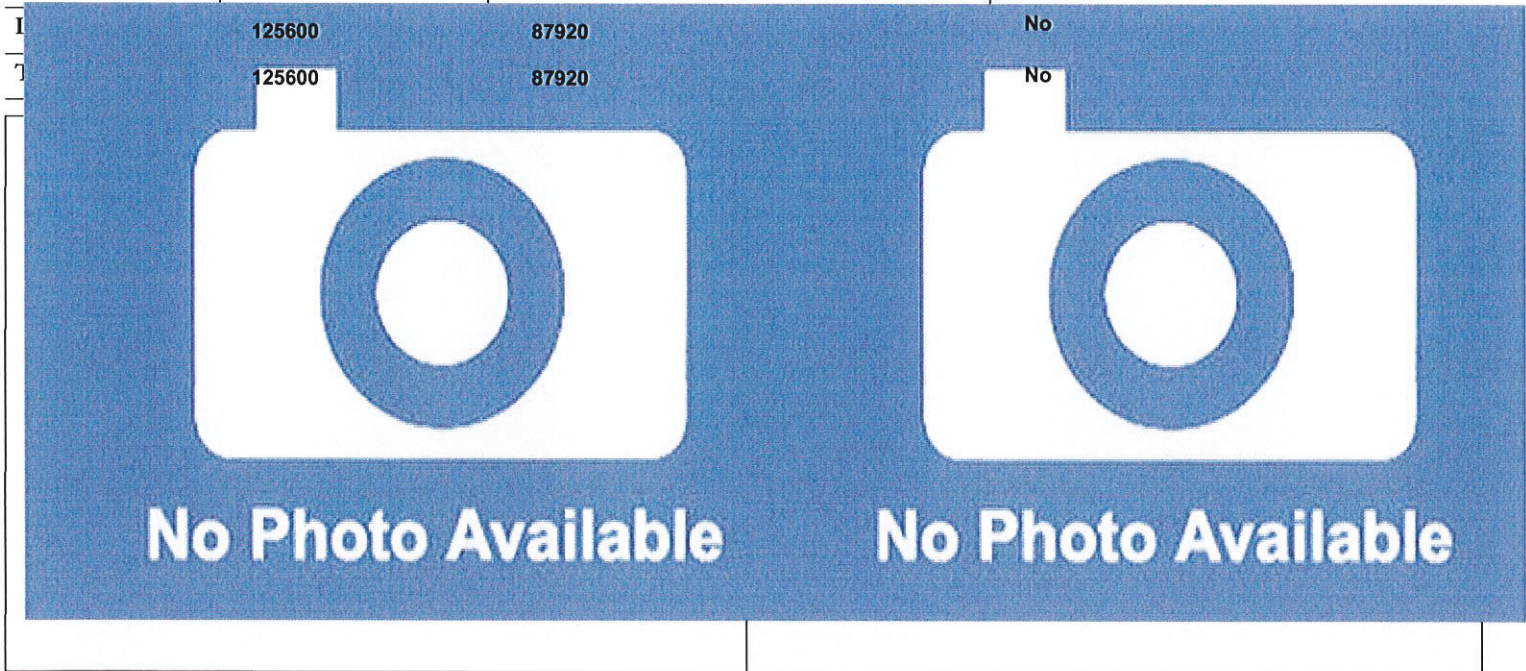
### Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	0	0
Outbuildings	0	0

### Utility Information

Electric	No
Gas	No
Sewer	No



### Primary Construction Details

Year Built	
Building Desc.	
Building Style	
Stories	
Exterior Walls	
Exterior Walls 2	
Interior Walls	
Interior Walls 2	
Interior Floors 1	
Interior Floors 2	

Heating Fuel	
Heating Type	
AC Type	
Bedrooms	
Full Bathrooms	
Half Bathrooms	
Extra Fixtures	
Total Rooms	
Bath Style	
Kitchen Style	
Occupancy	

Livable Area (ft)	
Building Use	
Building Condition	
Frame Type	
Building Grade	
Fireplaces	
Wood Stoves	
Attic Access	
Roof Style	
Roof Cover	

Bsmt Area	
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Access	
Bsmt Gar	
Bsmt Sump Pump	

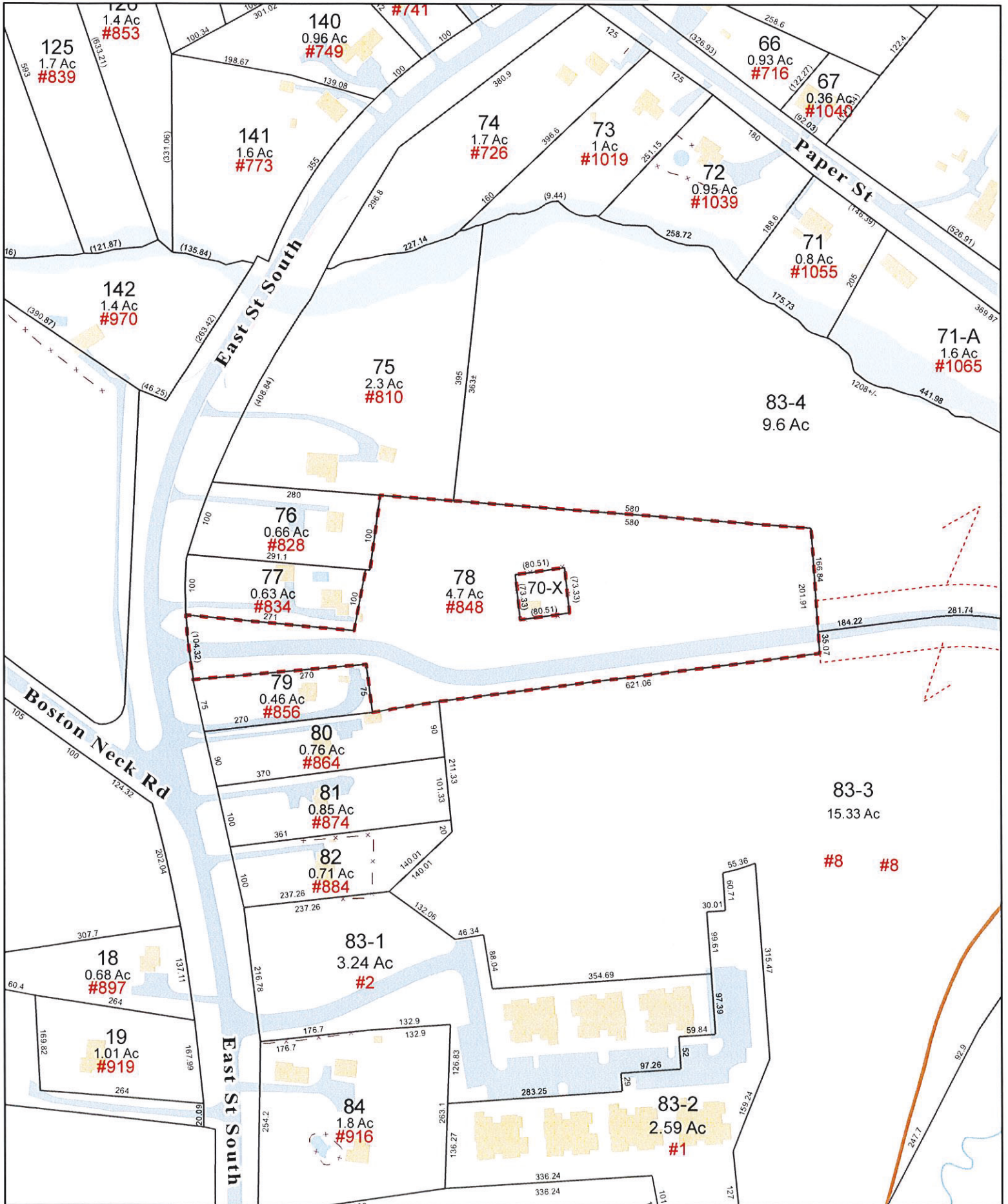




# Town of Suffield, Connecticut - Assessment Parcel Map

Parcel: 69H-55-78

Address: 848 EAST ST S



Scale  
1:2,400

Map Produced: March 2023  
Grand List: October 2022

Disclaimer: This map is for informational purposes only. All information is subject to verification by any user. The Town of Suffield and its mapping contractors assume no legal responsibility for the information contained herein.

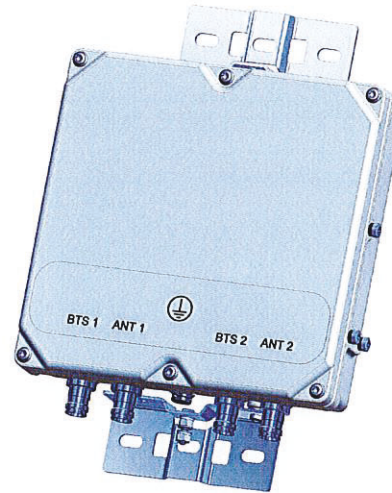
# BSF0020F3V1-1

## TWIN BANDSTOP 900MHZ INTERFERENCE MITIGATION FILTER

The BSF0020 is ideal for co-located 700, 850 and 900 networks. Utilising a 2.6MHz guardband the BSF0020 provides rejection of the 900 UL band while passing 700/850 UL and DL bands. Capable of being used in an outdoor environment the BSF0020 contains two identical bandstop filters, suitable for 2x2 MIMO configuration, offering excellent insertion loss, group delay and rejection.

### FEATURES

- Passes full 700 and 850 bands
- Low insertion loss
- Rejection of 900MHz uplink
- DC/AISG pass
- Twin unit
- Dual twin mounting available



### TECHNICAL SPECIFICATIONS

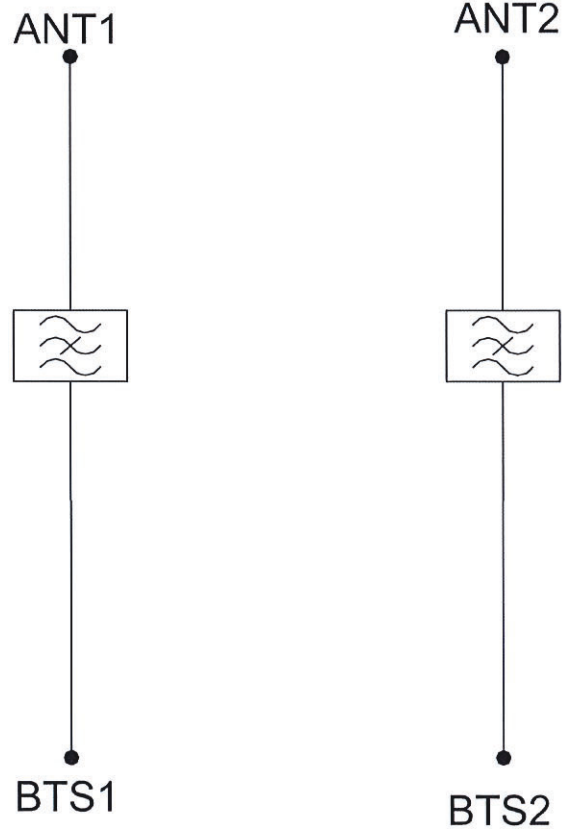
BAND NAME	700 PATH / 850 UPLINK PATH	850 DOWNLINK PATH
Passband	698 - 849MHz	869 - 891.5MHz
Insertion loss	0.1dB typical / 0.3dB maximum	0.5dB typical, 1.45dB maximum
Return loss	24dB typical, 18dB minimum	
Maximum input power (Per Port)	100W average	200W average and 66W per 5MHz
Rejection	53dB minimum @ 894.1 - 896.5MHz	
<b>ELECTRICAL</b>		
Impedance	50Ohms	
Intermodulation products	-160dBc maximum in UL Band (assuming 20MHz Signal), with 2 x 43dBm carriers -153dBc maximum with 2 x 43dBm	
<b>DC / AISG</b>		
Passband	0 - 13MHz	
Insertion loss	0.3dB maximum	
Return loss	15dB minimum	
Input voltage range	± 33V	
DC current rating	2A continuous, 4A peak	
Compliance	3GPP TS 25.461	
<b>ENVIRONMENTAL</b>		
For further details of environmental compliance, please contact Kaelus.		
Temperature range	-20°C to +60°C   -4°F to +140°F	
Ingress protection	IP67	
Altitude	2600m   8530ft	
Lightning protection	RF port: ±5kA maximum (8/20us), IEC 61000-4-5 – Unit must be terminated with some lightning protection circuits.	
MTBF	>1,000,000 hours	
Compliance	ETSI EN 300 019 class 4.1H, RoHS, NEBS GR-487-CORE	
<b>MECHANICAL</b>		
Dimensions H x D x W	269 x 277 x 80mm   10.60 x 10.90 x 3.15in (Excluding brackets and connectors)	
Weight	8.0 kg   17.6 lbs (no bracket)	
Finish	Powder coated, light grey (RAL7035)	
Connectors	RF: 4.3-10 (F) x 4	
Mounting	Optional pole/wall bracket supplied with two metal clamps 45-178mm diameter poles or custom bracket. See ordering information.	



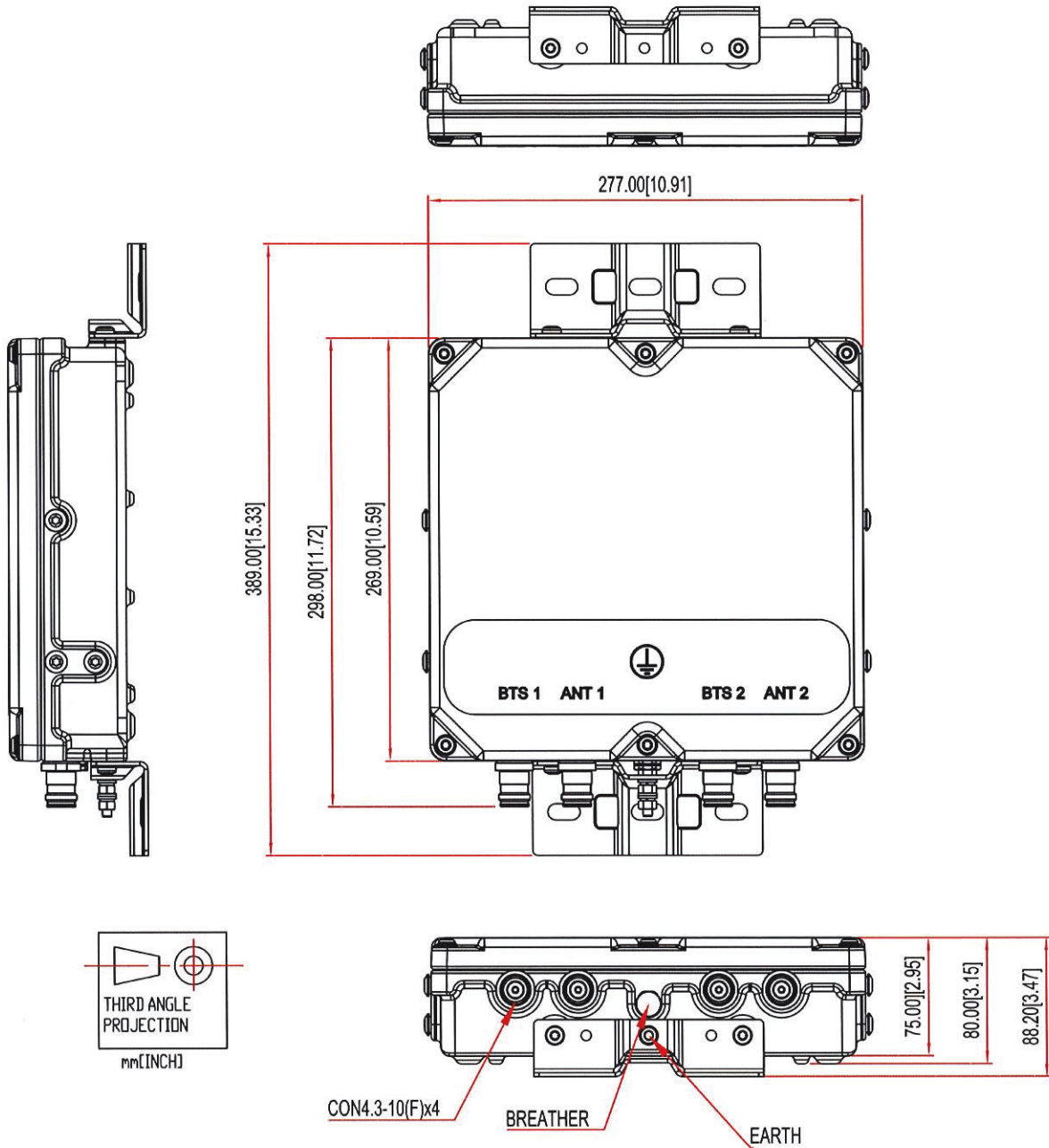
## ORDERING INFORMATION

PART NUMBER	CONFIGURATION	OPTIONAL FEATURES	CONNECTORS
BSF0020F3V1	TWIN, 2 in / 2 out	DC/AISG PASS NO BRACKET	4.3-10 (F)
BSF0020F3V1-1	TWIN, 2 in / 2 out	DC/AISG PASS	4.3-10 (F)
BSF0020F3V1-2	QUAD, 4 in / 4 out	DC/AISG PASS	4.3-10 (F)

ELECTRICAL BLOCK DIAGRAM



**MECHANICAL BLOCK DIAGRAM**



**Barbadora, Jeff**

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**From:** TrackingUpdates@fedex.com  
**Sent:** Wednesday, April 3, 2024 4:18 PM  
**To:** Barbadora, Jeff  
**Subject:** FedEx Shipment 775788117210: Your package has been delivered

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.



Hi. Your package was  
delivered Wed, 04/03/2024 at  
4:11pm.



Delivered to 83 MOUNTAIN RD, SUFFIELD, CT 06078  
Received by M.URCH

[OBTAIN PROOF OF DELIVERY](#)

# How was your delivery ?



<b>TRACKING NUMBER</b>	<a href="#">775788117210</a>
<b>FROM</b>	Crown Castle 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
<b>TO</b>	Town of Suffield Colin Moll, First Selectman 83 Mountain Road SUFFIELD, CT, US, 06078
<b>REFERENCE</b>	799001.7680
<b>SHIPPER REFERENCE</b>	799001.7680
<b>SHIP DATE</b>	Tue 4/02/2024 05:48 PM
<b>DELIVERED TO</b>	Receptionist/Front Desk
<b>PACKAGING TYPE</b>	FedEx Envelope
<b>ORIGIN</b>	WESTBOROUGH, MA, US, 01581
<b>DESTINATION</b>	SUFFIELD, CT, US, 06078
<b>SPECIAL HANDLING</b>	Deliver Weekday
<b>NUMBER OF PIECES</b>	1
<b>TOTAL SHIPMENT WEIGHT</b>	0.50 LB
<b>SERVICE TYPE</b>	FedEx Standard Overnight



**Barbadora, Jeff**

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**From:** TrackingUpdates@fedex.com  
**Sent:** Wednesday, April 3, 2024 4:18 PM  
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**Subject:** FedEx Shipment 775788138160: Your package has been delivered

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Hi. Your package was  
delivered Wed, 04/03/2024 at  
4:11pm.



Delivered to 83 MOUNTAIN RD, SUFFIELD, CT 06078  
Received by M.URCH

[OBTAIN PROOF OF DELIVERY](#)

# How was your delivery ?



<b>TRACKING NUMBER</b>	<a href="#">775788138160</a>
<b>FROM</b>	Crown Castle 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
<b>TO</b>	Town of Suffield Bill hawkins, Planning Director 83 Mountain Road SUFFIELD, CT, US, 06078
<b>REFERENCE</b>	799001.7680
<b>SHIPPER REFERENCE</b>	799001.7680
<b>SHIP DATE</b>	Tue 4/02/2024 05:48 PM
<b>DELIVERED TO</b>	Receptionist/Front Desk
<b>PACKAGING TYPE</b>	FedEx Envelope
<b>ORIGIN</b>	WESTBOROUGH, MA, US, 01581
<b>DESTINATION</b>	SUFFIELD, CT, US, 06078
<b>SPECIAL HANDLING</b>	Deliver Weekday
<b>NUMBER OF PIECES</b>	1
<b>TOTAL SHIPMENT WEIGHT</b>	0.50 LB
<b>SERVICE TYPE</b>	FedEx Standard Overnight

Date: February 22, 2024



Crown Castle  
2000 Corporate Drive  
Canonsburg, PA 15317  
(724) 416-2000

**Subject:** Structural Analysis Report

**Carrier Designation:** Verizon Wireless Co-Locate  
**Site Number:** 5000179836  
**Site Name:** SUFFIELD 4 CT

**Crown Castle Designation:** BU Number: 801487  
Site Name: CT SUFFIELD 3 CAC 801487  
JDE Job Number: 752477  
Work Order Number: 2285482  
Order Number: 655662 Rev. 1

**Engineering Firm Designation:** Crown Castle Project Number 2285482

**Site Data:** 848 East Street, Suffield, Hartford County, CT  
Latitude: 41° 57' 25.2" Longitude: -72° 37' 32.6"  
165.5 ft - Monopole Tower

Crown Castle is pleased to submit this “**Structural Analysis Report**” to determine the structural integrity of the above-mentioned tower.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration

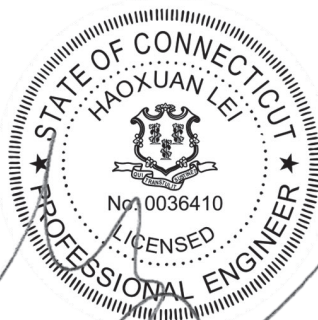
**Sufficient Capacity - 49.8%**

This analysis has been performed in accordance with the 2022 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 116 mph. Applicable Standard references and design criteria are listed in Section 2 – “Analysis Criteria”.

Structural analysis prepared by: Emma McCarty

Respectfully submitted by:

Haoxuan Lei, P.E.  
Project Engineer



Digitally signed  
by Haoxuan Lei  
Date:  
2024.02.29  
10:22:33 -06'00'

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tnxTower Output

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**1) INTRODUCTION**

This tower is a 165.5 ft Monopole Tower designed by Fwt Inc..

**2) ANALYSIS CRITERIA**

TIA-222 Revision: TIA-222-H  
 Risk Category: II  
 Wind Speed: 116 mph  
 Exposure Category: C  
 Topographic Factor: 1  
 Ice Thickness: 1.50 in  
 Wind Speed with Ice: 50 mph  
 Service Wind Speed: 60 mph

**Table 1 - Proposed Equipment Configuration**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
150	153	6	commscope	SBNHH-1D65B w/ Mount Pipe	14	1-5/8
		2	kaelus	BSF0020F3V1		
		2	raycap	RHSDC-3315-PF-48		
		3	samsung telecommunications	MT6407-77A w/ Mount Pipe		
		3	samsung telecommunications	RF4439D-25A		
		3	samsung telecommunications	RF4440D-13A		
	150	1	tower mounts	Platform Mount [LP 303-1_HR-1]		

**Table 2 - Other Considered Equipment**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
162	164	3	ericsson	RADIO 4449 B71 B85A_T-MOBILE	10	1-5/8
	163	3	ericsson	AIR 32 B2A B66AA_T-MOBILE w/ Mount Pipe		
		3	ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe		
		3	ericsson	RADIO 4415 B66A_CCIV2		
	162	1	tower mounts	Sector Mount [SM 308-3]		
	161	3	commscope	SDX1926Q-43		
	160	3	ericsson	KRY 112 144/1		
3		rfs celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe			
126	126	3	fujitsu	TA08025-B604	1	1-1/2
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		



Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		1	tower mounts	Commscope MC-PK8-DSH		

### 3) ANALYSIS PROCEDURE

**Table 3 - Documents Provided**

Document	Reference	Source
4-GEOTECHNICAL REPORTS	2373668	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1118795	CCISITES
4-TOWER MANUFACTURER DRAWINGS	961597	CCISITES

#### 3.1) Analysis Method

tnxTower (version 8.2.4.3), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

#### 3.2) Assumptions

- 1) Tower and structures were maintained in accordance with the TIA-222 Standard.
- 2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

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

### 4) ANALYSIS RESULTS

**Table 4 - Section Capacity (Summary)**

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass/Fail
L1	165.5 - 136.83	Pole	TP24.279x17x0.188	1	-7.502	851.257	32.4	Pass
L2	136.83 - 95.5	Pole	TP34.4x23.099x0.313	2	-16.462	2007.190	40.1	Pass
L3	95.5 - 47	Pole	TP46.06x32.632x0.375	3	-27.509	3228.939	42.7	Pass
L4	47 - 0	Pole	TP57.275x43.79x0.375	4	-43.814	4160.026	49.8	Pass
							Summary	
						Pole (L4)	49.8	Pass
						RATING =	49.8	Pass

**Table 5 - Tower Component Stresses vs. Capacity - LC7**

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	46.3	Pass
1	Base Plate	0	21.8	Pass
1, 2	Drilled Pier Foundation (Structural)	0	46.1	Pass
1, 2	Drilled Pier Foundation (Soil)	0	34.4	Pass
1, 2	Pier and Pad Foundation (Structural)	0	49.1	Pass
1, 2	Pier and Pad Foundation (Soil)	0	26.6	Pass

<b>Structure Rating (max from all components) =</b>	<b>49.8%</b>
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Notes:

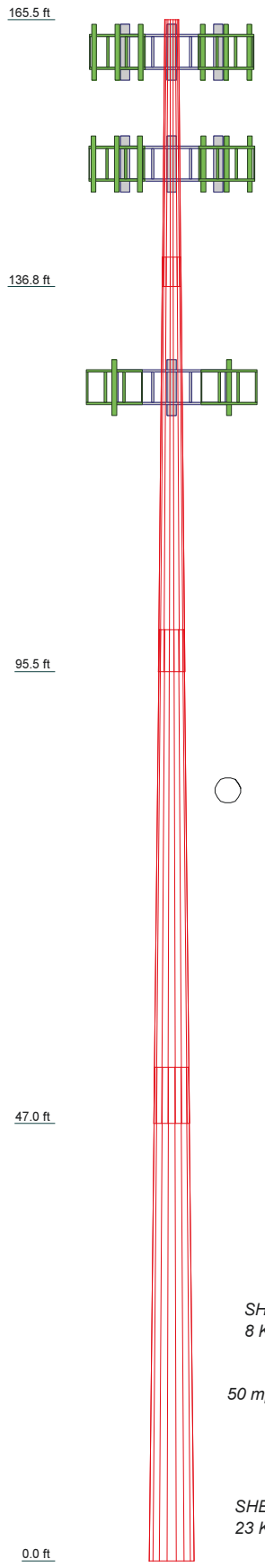
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed
- 2) It is unknown whether the foundation is a pier and pad or a drilled pier. Both designs were analyzed.

**4.1) Recommendations**

The tower and its foundation have sufficient capacity to carry the considered equipment configuration. No modifications are required at this time.

**APPENDIX A**  
**TNXTOWER OUTPUT**

Section	1	2	3	4
Length (ft)	28.670	44.500	53.000	53.000
Number of Sides	18	18	18	18
Thickness (in)	0.188	0.312	0.375	0.375
Socket Length (ft)	3.170	4.500	6.000	43.790
Top Dia (in)	17.000	23.099	32.632	43.790
Bot Dia (in)	24.279	34.400	46.060	57.275
Grade			A572-65	
Weight (K)	1.2	4.3	8.4	10.8



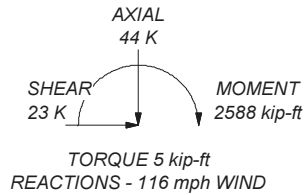
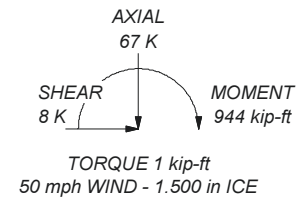
**MATERIAL STRENGTH**


GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

**TOWER DESIGN NOTES**

1. Tower designed for Exposure C to the TIA-222-H Standard.
2. Tower designed for a 116 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.000 ft
7. TOWER RATING: 49.8%

ALL REACTIONS ARE FACTORED



 <p><b>CROWN CASTLE</b> The Pathway to Possible</p>	<p><b>Crown Castle</b> 2000 Corporate Drive Canonsburg, PA 15317 Phone: (724) 416-2000 FAX:</p>		<p>Job: <b>BU 801487</b></p>
	Project:	Client: Crown Castle	App'd:
	Code: TIA-222-H	Drawn by: EMcCarty	Scale: NTS
	Path: C:\WORK\AREA\801487\WO 2285482 - SAIProd\801487.er	Date: 02/22/24	Dwg No. E-1

## Tower Input Data

The tower is a monopole.

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

The following design criteria apply:

Tower base elevation above sea level: 115.000 ft.

Basic wind speed of 116 mph.

Risk Category II.

Exposure Category C.

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

Topographic Category: 1.

Crest Height: 0.000 ft.

Nominal ice thickness of 1.500 in.

Ice thickness is considered to increase with height.

Ice density of 56.000 pcf.

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

Temperature drop of 50.000 °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 pole design is 1.

Tower analysis based on target reliabilities in accordance with Annex S.

Load Modification Factors used:  $K_{es}(F_w) = 0.95$ ,  $K_{es}(t_i) = 0.85$ .

Maximum demand-capacity ratio is: 1.05.

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

## Options

Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification <input checked="" type="checkbox"/> Use Code Stress Ratios <input checked="" type="checkbox"/> Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric Distribute Leg Loads As Uniform	Assume Legs Pinned <input checked="" type="checkbox"/> Assume Rigid Index Plate <input checked="" type="checkbox"/> Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension <input checked="" type="checkbox"/> Bypass Mast Stability Checks <input checked="" type="checkbox"/> Use Azimuth Dish Coefficients <input checked="" type="checkbox"/> Project Wind Area of Appurtenances Alternative Appurt. EPA Calculation Autocalc Torque Arm Areas Add IBC .6D+W Combination <input checked="" type="checkbox"/> Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs Use ASCE 10 X-Brace Ly Rules	Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation <input checked="" type="checkbox"/> Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <div style="text-align: center; background-color: #f0f0f0; padding: 2px;"><b>Poles</b></div> <input checked="" type="checkbox"/> Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets <input checked="" type="checkbox"/> Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known
---	---	---

## Tapered Pole Section Geometry



Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	165.500-136.830	28.670	3.170	18	17.000	24.279	0.188	0.750	A572-65 (65 ksi)
L2	136.830-95.500	44.500	4.500	18	23.099	34.400	0.312	1.250	A572-65 (65 ksi)
L3	95.500-47.000	53.000	6.000	18	32.632	46.060	0.375	1.500	A572-65 (65 ksi)
L4	47.000-0.000	53.000		18	43.790	57.275	0.375	1.500	A572-65 (65 ksi)

### Tapered Pole Properties

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	It/Q in <sup>2</sup>	w in	w/t
L1	17.233	10.006	357.308	5.968	8.636	41.374	715.086	5.004	2.662	14.197
	24.625	14.337	1051.325	8.552	12.334	85.240	2104.034	7.170	3.943	21.03
L2	24.225	22.602	1482.645	8.089	11.734	126.351	2967.240	11.303	3.515	11.249
	34.882	33.811	4963.407	12.101	17.475	284.026	9933.344	16.908	5.504	17.614
L3	34.235	38.394	5047.269	11.451	16.577	304.471	10101.179	19.201	5.083	13.555
	46.713	54.377	14338.263	16.218	23.398	612.786	28695.392	27.193	7.447	19.857
L4	45.958	51.675	12305.274	15.412	22.245	553.164	24626.739	25.842	7.047	18.792
	58.101	67.725	27702.084	20.200	29.096	952.102	55440.619	33.869	9.420	25.121

Tower Elevation ft	Gusset Area (per face) ft <sup>2</sup>	Gusset Thickness in	Gusset Grade	Adjust. Factor A <sub>f</sub>	Adjust. Factor A <sub>r</sub>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 165.500-136.830				1	1	1			
L2 136.830-95.500				1	1	1			
L3 95.500-47.000				1	1	1			
L4 47.000-0.000				1	1	1			

### Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
***											

### Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C <sub>A</sub> A <sub>A</sub>	Weight klf	
Safety Line 3/8	A	No	No	CaAa (Out)	165.500 - 0.000	1	No Ice	0.037	0.000

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C <sub>A</sub> A <sub>A</sub> ft <sup>2</sup> /ft	Weight kif
				Of Face)			1/2" Ice	0.137	0.001
							1" Ice	0.238	0.001
							2" Ice	0.437	0.002
***									
AL7-50(1-5/8)	B	No	No	Inside Pole	162.000 - 0.000	6	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
HCS 6X12 4AWG(1-5/8)	B	No	No	Inside Pole	162.000 - 0.000	3	No Ice	0.000	0.002
							1/2" Ice	0.000	0.002
							1" Ice	0.000	0.002
							2" Ice	0.000	0.002
MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	B	No	No	Inside Pole	162.000 - 0.000	1	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
***									
AVA7-50(1-5/8)	C	No	No	Inside Pole	150.000 - 0.000	12	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
HB158-1-08U8-S8J18(1-5/8)	C	No	No	Inside Pole	150.000 - 0.000	2	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
***									
CU12PSM9P6XXX(1-1/2)	B	No	No	Inside Pole	126.000 - 0.000	1	No Ice	0.000	0.002
							1/2" Ice	0.000	0.002
							1" Ice	0.000	0.002
							2" Ice	0.000	0.002
***									

### Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>	Weight K
L1	165.500-136.830	A	0.000	0.000	0.000	1.075	0.006
		B	0.000	0.000	0.000	0.000	0.287
		C	0.000	0.000	0.000	0.000	0.145
L2	136.830-95.500	A	0.000	0.000	0.000	1.550	0.009
		B	0.000	0.000	0.000	0.000	0.542
		C	0.000	0.000	0.000	0.000	0.455
L3	95.500-47.000	A	0.000	0.000	0.000	1.819	0.011
		B	0.000	0.000	0.000	0.000	0.666
		C	0.000	0.000	0.000	0.000	0.533
L4	47.000-0.000	A	0.000	0.000	0.000	1.762	0.010
		B	0.000	0.000	0.000	0.000	0.646
		C	0.000	0.000	0.000	0.000	0.517

### Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>	Weight K
L1	165.500-136.830	A	1.484	0.000	0.000	0.000	9.583	0.051
		B		0.000	0.000	0.000	0.000	0.287
		C		0.000	0.000	0.000	0.000	0.145
L2	136.830-95.500	A	1.445	0.000	0.000	0.000	13.815	0.074
		B		0.000	0.000	0.000	0.000	0.542
		C		0.000	0.000	0.000	0.000	0.455
L3	95.500-47.000	A	1.375	0.000	0.000	0.000	15.832	0.085
		B		0.000	0.000	0.000	0.000	0.666
		C		0.000	0.000	0.000	0.000	0.533
L4	47.000-0.000	A	1.233	0.000	0.000	0.000	14.692	0.079
		B		0.000	0.000	0.000	0.000	0.646
		C		0.000	0.000	0.000	0.000	0.517

**Feed Line Center of Pressure**

Section	Elevation ft	CP <sub>X</sub> in	CP <sub>Z</sub> in	CP <sub>X</sub> Ice in	CP <sub>Z</sub> Ice in
L1	165.500-136.830	0.000	-0.341	0.000	-1.366
L2	136.830-95.500	0.000	-0.344	0.000	-1.473
L3	95.500-47.000	0.000	-0.346	0.000	-1.519
L4	47.000-0.000	0.000	-0.347	0.000	-1.510

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

**Discrete Tower Loads**

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
*** 162 ***					
AIR 32 B2A B66AA_T-MOBILE w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	162.000
AIR 32 B2A B66AA_T-MOBILE w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	162.000
AIR 32 B2A B66AA_T-MOBILE w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	162.000
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	162.000
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	162.000
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.000 0.000	0.000	162.000

Description	Face or Leg	Offset Type	Offsets:			Azimuth Adjustment	Placement
			Horz Lateral	Vert			
			ft	ft	°	ft	
APXVAALL24_43-U- NA20_TMO w/ Mount Pipe	A	From Leg	1.000 4.000 0.000 -2.000		0.000	162.000	
APXVAALL24_43-U- NA20_TMO w/ Mount Pipe	B	From Leg	4.000 0.000 -2.000		0.000	162.000	
APXVAALL24_43-U- NA20_TMO w/ Mount Pipe	C	From Leg	4.000 0.000 -2.000		0.000	162.000	
SDX1926Q-43	A	From Leg	4.000 0.000 -1.000		0.000	162.000	
SDX1926Q-43	B	From Leg	4.000 0.000 -1.000		0.000	162.000	
SDX1926Q-43	C	From Leg	4.000 0.000 -1.000		0.000	162.000	
KRY 112 144/1	A	From Leg	4.000 0.000 -2.000		0.000	162.000	
KRY 112 144/1	B	From Leg	4.000 0.000 -2.000		0.000	162.000	
KRY 112 144/1	C	From Leg	4.000 0.000 -2.000		0.000	162.000	
RADIO 4415 B66A_CCIV2	A	From Leg	4.000 0.000 1.000		0.000	162.000	
RADIO 4415 B66A_CCIV2	B	From Leg	4.000 0.000 1.000		0.000	162.000	
RADIO 4415 B66A_CCIV2	C	From Leg	4.000 0.000 1.000		0.000	162.000	
RADIO 4449 B71 B85A_T- MOBILE	A	From Leg	4.000 0.000 2.000		0.000	162.000	
RADIO 4449 B71 B85A_T- MOBILE	B	From Leg	4.000 0.000 2.000		0.000	162.000	
RADIO 4449 B71 B85A_T- MOBILE	C	From Leg	4.000 0.000 2.000		0.000	162.000	
10' x 2.375" Horizontal Mount Pipe	A	From Leg	4.000 0.000 0.000		0.000	162.000	
10' x 2.375" Horizontal Mount Pipe	B	From Leg	4.000 0.000 0.000		0.000	162.000	
10' x 2.375" Horizontal Mount Pipe	C	From Leg	4.000 0.000 0.000		0.000	162.000	
Sector Mount [SM 308-3] *** 150 ***	C	None			0.000	162.000	
BSF0020F3V1	A	From Leg	4.000		0.000	150.000	

Description	Face or Leg	Offset Type	Offsets:			Azimuth Adjustment	Placement
			Horz Lateral	Vert			
			ft	ft	°	ft	
			0.000				
BSF0020F3V1	B	From Leg	3.000				
			4.000		0.000	150.000	
			0.000				
(2) SBNHH-1D65B w/ Mount Pipe	A	From Leg	3.000				
			4.000		0.000	150.000	
			0.000				
(2) SBNHH-1D65B w/ Mount Pipe	B	From Leg	3.000				
			4.000		0.000	150.000	
			0.000				
(2) SBNHH-1D65B w/ Mount Pipe	C	From Leg	3.000				
			4.000		0.000	150.000	
			0.000				
MT6407-77A w/ Mount Pipe	A	From Leg	3.000				
			4.000		0.000	150.000	
			0.000				
MT6407-77A w/ Mount Pipe	B	From Leg	3.000				
			4.000		0.000	150.000	
			0.000				
MT6407-77A w/ Mount Pipe	C	From Leg	3.000				
			4.000		0.000	150.000	
			0.000				
RHSDC-3315-PF-48	C	From Leg	3.000				
			4.000		0.000	150.000	
			0.000				
RHSDC-3315-PF-48	C	From Leg	3.000				
			4.000		0.000	150.000	
			0.000				
RF4439D-25A	A	From Leg	3.000				
			4.000		0.000	150.000	
			0.000				
RF4439D-25A	B	From Leg	3.000				
			4.000		0.000	150.000	
			0.000				
RF4439D-25A	C	From Leg	3.000				
			4.000		0.000	150.000	
			0.000				
RF4440D-13A	A	From Leg	3.000				
			4.000		0.000	150.000	
			0.000				
RF4440D-13A	B	From Leg	3.000				
			4.000		0.000	150.000	
			0.000				
RF4440D-13A	C	From Leg	3.000				
			4.000		0.000	150.000	
			0.000				
(2) 8' x 2" Mount Pipe	A	From Leg	3.000				
			4.000		0.000	150.000	
			0.000				
(2) 8' x 2" Mount Pipe	B	From Leg	0.000				
			4.000		0.000	150.000	
			0.000				
(2) 8' x 2" Mount Pipe	C	From Leg	0.000				
			4.000		0.000	150.000	
			0.000				
BSAMNT-SBS-1-2	C	None	0.000		0.000	150.000	
Platform Mount [LP 303-	C	None	0.000		0.000	150.000	

Description	Face or Leg	Offset Type	Offsets:			Azimuth Adjustment	Placement
			Horz	Lateral	Vert		
			ft	ft	ft	°	ft
<b>1_HR-1]</b>							
*****							
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	0.000	126.000
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	0.000	126.000
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	0.000	126.000
TA08025-B604	A	From Leg	4.000	0.000	0.000	0.000	126.000
TA08025-B604	B	From Leg	4.000	0.000	0.000	0.000	126.000
TA08025-B604	C	From Leg	4.000	0.000	0.000	0.000	126.000
TA08025-B605	A	From Leg	4.000	0.000	0.000	0.000	126.000
TA08025-B605	B	From Leg	4.000	0.000	0.000	0.000	126.000
TA08025-B605	C	From Leg	4.000	0.000	0.000	0.000	126.000
RDIDC-9181-PF-48	A	From Leg	4.000	0.000	0.000	0.000	126.000
(2) 8' x 2" Mount Pipe	A	From Leg	4.000	0.000	0.000	0.000	126.000
(2) 8' x 2" Mount Pipe	B	From Leg	4.000	0.000	0.000	0.000	126.000
(2) 8' x 2" Mount Pipe	C	From Leg	4.000	0.000	0.000	0.000	126.000
Commscope MC-PK8-DSH	C	None				0.000	126.000
*****							
***							

**Dishes**

Description	Face or Leg	Dish Type	Offset Type	Offsets:	Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight
				Horz	°	°	ft	ft	ft <sup>2</sup>	K
				Lateral						
				Vert						
				ft						

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight
				Horz Lateral	Vert						
				ft	°	°	ft	ft	ft <sup>2</sup>	K	
*											

## Load Combinations

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 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	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
L1	165.5 - 136.83	Pole	Max Tension	2	0.000	-0.001	-0.000
			Max. Compression	26	-18.401	0.988	-0.514
			Max. Mx	20	-7.503	150.133	0.074
			Max. My	14	-7.507	0.196	-149.606
			Max. Vy	20	-9.228	150.133	0.074
			Max. Vx	14	9.196	0.196	-149.606
			Max. Torque	5			3.579
L2	136.83 - 95.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-32.498	0.999	0.018
			Max. Mx	20	-16.464	657.953	0.125
			Max. My	2	-16.465	0.228	656.810
			Max. Vy	20	-15.262	657.953	0.125
			Max. Vx	2	-15.260	0.228	656.810
			Max. Torque	5			4.548
L3	95.5 - 47	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-46.854	0.999	0.155
			Max. Mx	20	-27.511	1463.939	0.082
			Max. My	2	-27.511	0.245	1462.737
			Max. Vy	20	-19.070	1463.939	0.082
			Max. Vx	2	-19.068	0.245	1462.737
			Max. Torque	5			4.596
L4	47 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.408	0.999	0.346
			Max. Mx	20	-43.814	2584.136	0.108
			Max. My	2	-43.814	0.248	2582.899
			Max. Vy	20	-23.029	2584.136	0.108
			Max. Vx	2	-23.028	0.248	2582.899
			Max. Torque	5			4.660

### Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	36	67.408	8.224	0.000
	Max. H <sub>x</sub>	20	43.827	23.003	-0.000
	Max. H <sub>z</sub>	2	43.827	0.000	23.002
	Max. M <sub>x</sub>	2	2582.899	0.000	23.002
	Max. M <sub>z</sub>	8	2583.630	-23.003	-0.000
	Max. Torsion	5	4.660	-11.513	19.941
	Min. Vert	25	32.870	11.489	19.900
	Min. H <sub>x</sub>	8	43.827	-23.003	-0.000
	Min. H <sub>z</sub>	14	43.827	0.000	-23.002
	Min. M <sub>x</sub>	14	-2582.759	0.000	-23.002
	Min. M <sub>z</sub>	20	-2584.136	23.003	-0.000
	Min. Torsion	17	-4.660	11.513	-19.941

### Tower Mast Reaction Summary

Load Combination	Vertical	Shear <sub>x</sub>	Shear <sub>z</sub>	Overturning Moment, M <sub>x</sub>	Overturning Moment, M <sub>z</sub>	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead Only	36.523	0.000	0.000	-0.057	0.194	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	43.827	-0.000	-23.002	-2582.899	0.247	-0.702
0.9 Dead+1.0 Wind 0 deg - No Ice	32.870	-0.000	-23.002	-2554.388	0.181	-0.705
1.2 Dead+1.0 Wind 30 deg - No Ice	43.827	11.513	-19.941	-2240.356	-1293.227	-4.657
0.9 Dead+1.0 Wind 30 deg - No Ice	32.870	11.513	-19.941	-2215.613	-1279.005	-4.660
1.2 Dead+1.0 Wind 60 deg - No Ice	43.827	19.942	-11.513	-1293.769	-2240.505	-0.534
0.9 Dead+1.0 Wind 60 deg - No Ice	32.870	19.942	-11.513	-1279.468	-2215.832	-0.534
1.2 Dead+1.0 Wind 90 deg - No Ice	43.827	23.003	0.000	-0.109	-2583.630	3.733
0.9 Dead+1.0 Wind 90 deg - No Ice	32.870	23.003	0.000	-0.080	-2555.172	3.735
1.2 Dead+1.0 Wind 120 deg - No Ice	43.827	19.901	11.490	1289.849	-2233.959	0.169
0.9 Dead+1.0 Wind 120 deg - No Ice	32.870	19.901	11.490	1275.631	-2209.368	0.171
1.2 Dead+1.0 Wind 150 deg - No Ice	43.827	11.489	19.900	2233.708	-1289.381	-3.441
0.9 Dead+1.0 Wind 150 deg - No Ice	32.870	11.489	19.900	2209.072	-1275.225	-3.440
1.2 Dead+1.0 Wind 180 deg - No Ice	43.827	-0.000	23.002	2582.759	0.247	0.702
0.9 Dead+1.0 Wind 180 deg - No Ice	32.870	-0.000	23.002	2554.284	0.181	0.705
1.2 Dead+1.0 Wind 210 deg - No Ice	43.827	-11.513	19.941	2240.260	1293.658	4.657
0.9 Dead+1.0 Wind 210 deg - No Ice	32.870	-11.513	19.941	2215.540	1279.322	4.660
1.2 Dead+1.0 Wind 240 deg - No Ice	43.827	-19.942	11.513	1293.634	2241.009	0.534
0.9 Dead+1.0 Wind 240 deg - No Ice	32.870	-19.942	11.513	1279.367	2216.201	0.534
1.2 Dead+1.0 Wind 270 deg - No Ice	43.827	-23.003	0.000	-0.109	2584.136	-3.733
0.9 Dead+1.0 Wind 270 deg - No Ice	32.870	-23.003	0.000	-0.080	2555.542	-3.735
1.2 Dead+1.0 Wind 300 deg - No Ice	43.827	-19.901	-11.490	-1289.994	2234.461	-0.169
0.9 Dead+1.0 Wind 300 deg - No Ice	32.870	-19.901	-11.490	-1275.739	2209.736	-0.171
1.2 Dead+1.0 Wind 330 deg - No Ice	43.827	-11.489	-19.900	-2233.814	1289.944	3.441
0.9 Dead+1.0 Wind 330 deg - No Ice	32.870	-11.489	-19.900	-2209.152	1275.638	3.440
1.2 Dead+1.0 Ice+1.0 Temp	67.408	-0.000	0.000	-0.346	0.999	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	67.408	-0.000	-8.224	-942.566	1.137	-0.149
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	67.408	4.114	-7.126	-817.021	-470.368	-1.264
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	67.408	7.126	-4.114	-471.899	-815.587	-0.563
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	67.408	8.224	-0.000	-0.370	-941.211	0.289
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	67.408	7.118	4.110	470.413	-814.270	-0.413
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	67.408	4.110	7.118	814.984	-469.596	-1.005

Load Combination	Vertical	Shear <sub>x</sub>	Shear <sub>z</sub>	Overturning Moment, M <sub>x</sub>	Overturning Moment, M <sub>z</sub>	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	67.408	-0.000	8.224	941.837	1.137	0.149
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	67.408	-4.114	7.126	816.300	472.630	1.264
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	67.408	-7.126	4.114	471.173	817.861	0.563
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	67.408	-8.224	-0.000	-0.370	943.487	-0.289
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	67.408	-7.118	-4.110	-471.140	816.547	0.413
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	67.408	-4.110	-7.118	-815.706	471.884	1.005
Dead+Wind 0 deg - Service	36.523	0.000	-5.796	-646.628	0.209	-0.179
Dead+Wind 30 deg - Service	36.523	2.901	-5.025	-560.879	-323.583	-1.184
Dead+Wind 60 deg - Service	36.523	5.025	-2.901	-323.914	-560.726	-0.135
Dead+Wind 90 deg - Service	36.523	5.796	0.000	-0.060	-646.620	0.949
Dead+Wind 120 deg - Service	36.523	5.014	2.895	322.851	-559.084	0.044
Dead+Wind 150 deg - Service	36.523	2.895	5.014	559.125	-322.633	-0.874
Dead+Wind 180 deg - Service	36.523	0.000	5.796	646.512	0.209	0.179
Dead+Wind 210 deg - Service	36.523	-2.901	5.025	560.766	323.999	1.184
Dead+Wind 240 deg - Service	36.523	-5.025	2.901	323.798	561.145	0.135
Dead+Wind 270 deg - Service	36.523	-5.796	0.000	-0.060	647.039	-0.949
Dead+Wind 300 deg - Service	36.523	-5.014	-2.895	-322.966	559.503	-0.044
Dead+Wind 330 deg - Service	36.523	-2.895	-5.014	-559.238	323.055	0.874

## 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	0.000	-36.523	0.000	0.000	36.523	0.000	0.000%	
2	0.000	-43.827	-23.002	0.000	43.827	23.002	0.000%	
3	0.000	-32.870	-23.002	0.000	32.870	23.002	0.000%	
4	11.513	-43.827	-19.941	-11.513	43.827	19.941	0.000%	
5	11.513	-32.870	-19.941	-11.513	32.870	19.941	0.000%	
6	19.942	-43.827	-11.513	-19.942	43.827	11.513	0.000%	
7	19.942	-32.870	-11.513	-19.942	32.870	11.513	0.000%	
8	23.003	-43.827	0.000	-23.003	43.827	-0.000	0.000%	
9	23.003	-32.870	0.000	-23.003	32.870	0.000	0.000%	
10	19.901	-43.827	11.490	-19.901	43.827	-11.490	0.000%	
11	19.901	-32.870	11.490	-19.901	32.870	-11.490	0.000%	
12	11.489	-43.827	19.900	-11.489	43.827	-19.900	0.000%	
13	11.489	-32.870	19.900	-11.489	32.870	-19.900	0.000%	
14	0.000	-43.827	23.002	0.000	43.827	-23.002	0.000%	
15	0.000	-32.870	23.002	0.000	32.870	-23.002	0.000%	
16	-11.513	-43.827	19.941	11.513	43.827	-19.941	0.000%	
17	-11.513	-32.870	19.941	11.513	32.870	-19.941	0.000%	
18	-19.942	-43.827	11.513	19.942	43.827	-11.513	0.000%	
19	-19.942	-32.870	11.513	19.942	32.870	-11.513	0.000%	
20	-23.003	-43.827	0.000	23.003	43.827	-0.000	0.000%	
21	-23.003	-32.870	0.000	23.003	32.870	0.000	0.000%	
22	-19.901	-43.827	-11.490	19.901	43.827	11.490	0.000%	
23	-19.901	-32.870	-11.490	19.901	32.870	11.490	0.000%	
24	-11.489	-43.827	-19.900	11.489	43.827	19.900	0.000%	
25	-11.489	-32.870	-19.900	11.489	32.870	19.900	0.000%	
26	0.000	-67.408	0.000	0.000	67.408	-0.000	0.000%	
27	0.000	-67.408	-8.224	0.000	67.408	8.224	0.000%	
28	4.114	-67.408	-7.126	-4.114	67.408	7.126	0.000%	
29	7.126	-67.408	-4.114	-7.126	67.408	4.114	0.000%	
30	8.224	-67.408	0.000	-8.224	67.408	0.000	0.000%	

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
31	7.118	-67.408	4.110	-7.118	67.408	-4.110	0.000%
32	4.110	-67.408	7.118	-4.110	67.408	-7.118	0.000%
33	0.000	-67.408	8.224	0.000	67.408	-8.224	0.000%
34	-4.114	-67.408	7.126	4.114	67.408	-7.126	0.000%
35	-7.126	-67.408	4.114	7.126	67.408	-4.114	0.000%
36	-8.224	-67.408	0.000	8.224	67.408	0.000	0.000%
37	-7.118	-67.408	-4.110	7.118	67.408	4.110	0.000%
38	-4.110	-67.408	-7.118	4.110	67.408	7.118	0.000%
39	0.000	-36.523	-5.796	0.000	36.523	5.796	0.000%
40	2.901	-36.523	-5.025	-2.901	36.523	5.025	0.000%
41	5.025	-36.523	-2.901	-5.025	36.523	2.901	0.000%
42	5.796	-36.523	0.000	-5.796	36.523	-0.000	0.000%
43	5.014	-36.523	2.895	-5.014	36.523	-2.895	0.000%
44	2.895	-36.523	5.014	-2.895	36.523	-5.014	0.000%
45	0.000	-36.523	5.796	0.000	36.523	-5.796	0.000%
46	-2.901	-36.523	5.025	2.901	36.523	-5.025	0.000%
47	-5.025	-36.523	2.901	5.025	36.523	-2.901	0.000%
48	-5.796	-36.523	0.000	5.796	36.523	-0.000	0.000%
49	-5.014	-36.523	-2.895	5.014	36.523	2.895	0.000%
50	-2.895	-36.523	-5.014	2.895	36.523	5.014	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	0.00078481
3	Yes	4	0.00000001	0.00047867
4	Yes	5	0.00000001	0.00076425
5	Yes	5	0.00000001	0.00035406
6	Yes	5	0.00000001	0.00086318
7	Yes	5	0.00000001	0.00040309
8	Yes	5	0.00000001	0.00021350
9	Yes	5	0.00000001	0.00010530
10	Yes	5	0.00000001	0.00086153
11	Yes	5	0.00000001	0.00040291
12	Yes	5	0.00000001	0.00095163
13	Yes	5	0.00000001	0.00044887
14	Yes	4	0.00000001	0.00078475
15	Yes	4	0.00000001	0.00047864
16	Yes	6	0.00000001	0.00005398
17	Yes	5	0.00000001	0.00047514
18	Yes	5	0.00000001	0.00084981
19	Yes	5	0.00000001	0.00039610
20	Yes	5	0.00000001	0.00021352
21	Yes	5	0.00000001	0.00010530
22	Yes	5	0.00000001	0.00083769
23	Yes	5	0.00000001	0.00039060
24	Yes	5	0.00000001	0.00077619
25	Yes	5	0.00000001	0.00036003
26	Yes	4	0.00000001	0.00000219
27	Yes	5	0.00000001	0.00037674
28	Yes	5	0.00000001	0.00056012
29	Yes	5	0.00000001	0.00057844
30	Yes	5	0.00000001	0.00038362
31	Yes	5	0.00000001	0.00057018
32	Yes	5	0.00000001	0.00059586
33	Yes	5	0.00000001	0.00037678

34	Yes	5	0.00000001	0.00061371
35	Yes	5	0.00000001	0.00057395
36	Yes	5	0.00000001	0.00038604
37	Yes	5	0.00000001	0.00057763
38	Yes	5	0.00000001	0.00056500
39	Yes	4	0.00000001	0.00005474
40	Yes	4	0.00000001	0.00029939
41	Yes	4	0.00000001	0.00029649
42	Yes	4	0.00000001	0.00026361
43	Yes	4	0.00000001	0.00030025
44	Yes	4	0.00000001	0.00042610
45	Yes	4	0.00000001	0.00005474
46	Yes	4	0.00000001	0.00049616
47	Yes	4	0.00000001	0.00028235
48	Yes	4	0.00000001	0.00026406
49	Yes	4	0.00000001	0.00027452
50	Yes	4	0.00000001	0.00026636

**Maximum Tower Deflections - Service Wind**

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	165.5 - 136.83	22.355	47	1.262	0.018
L2	140 - 95.5	15.818	47	1.131	0.009
L3	100 - 47	7.748	47	0.765	0.003
L4	53 - 0	2.108	47	0.373	0.001

**Critical Deflections and Radius of Curvature - Service Wind**

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
162.000	AIR 32 B2A B66AA_T-MOBILE w/ Mount Pipe	47	21.429	1.247	0.017	31593
150.000	BSF0020F3V1	47	18.301	1.191	0.012	10191
126.000	MX08FRO665-21 w/ Mount Pipe	47	12.649	1.018	0.006	6305

**Maximum Tower Deflections - Design Wind**

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	165.5 - 136.83	89.320	18	5.048	0.071
L2	140 - 95.5	63.229	18	4.526	0.036
L3	100 - 47	30.977	18	3.062	0.014
L4	53 - 0	8.427	18	1.491	0.005

**Critical Deflections and Radius of Curvature - Design Wind**

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
162.000	AIR 32 B2A B66AA_T-MOBILE w/ Mount Pipe	18	85.627	4.989	0.066	8044
150.000	BSF0020F3V1	18	73.141	4.765	0.049	2593
126.000	MX08FRO665-21 w/ Mount Pipe	18	50.568	4.074	0.025	1596

### Compression Checks

### Pole Design Data

Section No.	Elevation ft	Size	L ft	$L_u$ ft	$KI/r$	A $in^2$	$P_u$ K	$\phi P_n$ K	Ratio $\frac{P_u}{\phi P_n}$
L1	165.5 - 136.83 (1)	TP24.279x17x0.188	28.670	0.000	0.0	13.858	-7.502	810.721	0.009
L2	136.83 - 95.5 (2)	TP34.4x23.099x0.313	44.500	0.000	0.0	32.677	-16.462	1911.610	0.009
L3	95.5 - 47 (3)	TP46.06x32.632x0.375	53.000	0.000	0.0	52.567	-27.509	3075.180	0.009
L4	47 - 0 (4)	TP57.275x43.79x0.375	53.000	0.000	0.0	67.725	-43.814	3961.930	0.011

### Pole Bending Design Data

Section No.	Elevation ft	Size	$M_{ux}$ kip-ft	$\phi M_{nx}$ kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	$M_{uy}$ kip-ft	$\phi M_{ny}$ kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	165.5 - 136.83 (1)	TP24.279x17x0.188	150.135	456.926	0.329	0.000	456.926	0.000
L2	136.83 - 95.5 (2)	TP34.4x23.099x0.313	659.005	1599.367	0.412	0.000	1599.367	0.000
L3	95.5 - 47 (3)	TP46.06x32.632x0.375	1466.133	3342.775	0.439	0.000	3342.775	0.000
L4	47 - 0 (4)	TP57.275x43.79x0.375	2587.583	5057.017	0.512	0.000	5057.017	0.000

### Pole Shear Design Data

Section No.	Elevation ft	Size	Actual $V_u$ K	$\phi V_n$ K	Ratio $\frac{V_u}{\phi V_n}$	Actual $T_u$ kip-ft	$\phi T_n$ kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	165.5 - 136.83 (1)	TP24.279x17x0.188	9.228	243.216	0.038	3.577	495.998	0.007
L2	136.83 - 95.5 (2)	TP34.4x23.099x0.313	15.288	573.482	0.027	0.318	1654.575	0.000
L3	95.5 - 47 (3)	TP46.06x32.632x0.375	19.094	922.555	0.021	0.417	3568.200	0.000
L4	47 - 0 (4)	TP57.275x43.79x0.375	23.052	1188.580	0.019	0.534	5922.700	0.000

**Pole Interaction Design Data**

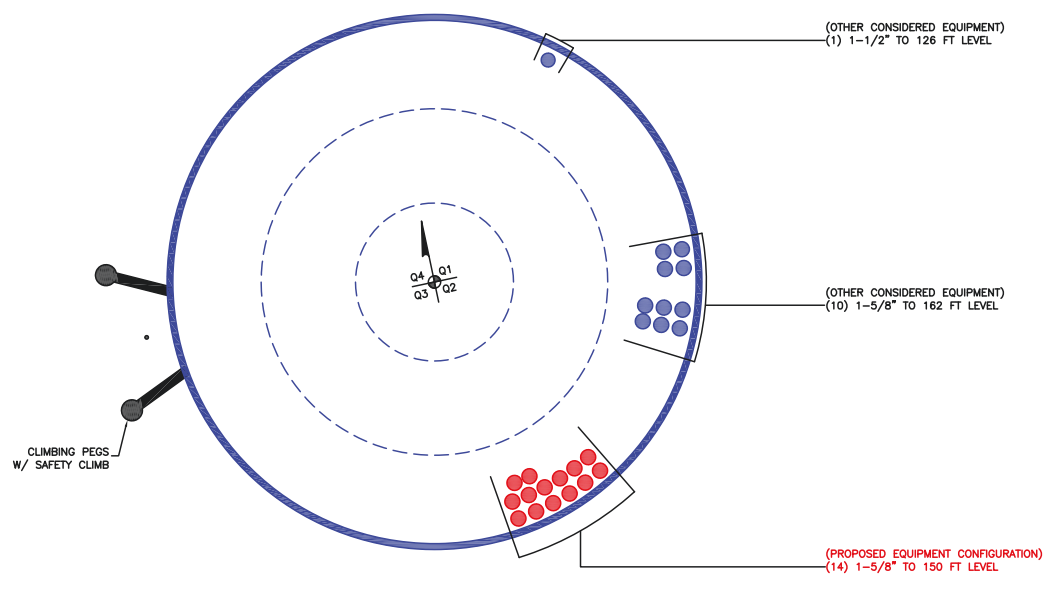
Section No.	Elevation ft	Ratio	Ratio	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		$P_u$	$M_{ux}$	$M_{uy}$	$V_u$	$T_u$			
L1	165.5 - 136.83 (1)	0.009	0.329	0.000	0.038	0.007	0.340	1.050	
L2	136.83 - 95.5 (2)	0.009	0.412	0.000	0.027	0.000	0.421	1.050	
L3	95.5 - 47 (3)	0.009	0.439	0.000	0.021	0.000	0.448	1.050	
L4	47 - 0 (4)	0.011	0.512	0.000	0.019	0.000	0.523	1.050	

**Section Capacity Table**

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$\phi P_{allow}$ K	% Capacity	Pass Fail	
L1	165.5 - 136.83	Pole	TP24.279x17x0.188	1	-7.502	851.257	32.4	Pass	
L2	136.83 - 95.5	Pole	TP34.4x23.099x0.313	2	-16.462	2007.190	40.1	Pass	
L3	95.5 - 47	Pole	TP46.06x32.632x0.375	3	-27.509	3228.939	42.7	Pass	
L4	47 - 0	Pole	TP57.275x43.79x0.375	4	-43.814	4160.026	49.8	Pass	
							Summary		
							Pole (L4)	49.8	Pass
							<b>RATING =</b>	<b>49.8</b>	<b>Pass</b>



**APPENDIX B**  
**BASE LEVEL DRAWING**



**APPENDIX C**  
**ADDITIONAL CALCULATIONS**

# Monopole Base Plate Connection

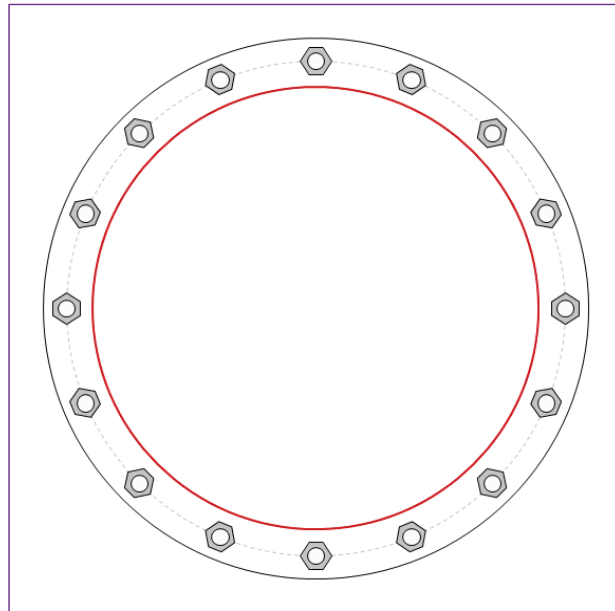


Site Info	
BU #	801487
Site Name	Suffield 3 Cac 801487,
Order #	655662 REV. 1

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
$l_{ar}$ (in)	1.5

Applied Loads	
Moment (kip-ft)	2587.59
Axial Force (kips)	43.81
Shear Force (kips)	23.05

\*TIA-222-H Section 15.5 Applied



Connection Properties	Analysis Results
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Anchor Rod Data
(16) 2-1/4" $\phi$ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 64" BC
Base Plate Data
70" OD x 2.75" Plate (A633 Gr. E; $F_y=60$ ksi, $F_u=70$ ksi)
Stiffener Data
N/A
Pole Data
57.275" x 0.375" 18-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)

Anchor Rod Summary		<i>(units of kips, kip-in)</i>	
$P_{u_t} = 118.49$	$\phi P_{n_t} = 243.75$		<b>Stress Rating</b>
$V_u = 1.44$	$\phi V_n = 149.1$		<b>46.3%</b>
$M_u = n/a$	$\phi M_n = n/a$		<b>Pass</b>
Base Plate Summary			
Max Stress (ksi):	12.38		(Flexural)
Allowable Stress (ksi):	54		
Stress Rating:	<b>21.8%</b>		<b>Pass</b>

# Pier and Pad Foundation



**BU #:** 801487  
**Site Name:** Ct Suffield 3 Cac 8  
**App. Number:** 655662 REV. 1

**TIA-222 Revision:** H  
**Tower Type:** Monopole

**Top & Bot. Pad Rein. Different?:**   
**Block Foundation?:**   
**Rectangular Pad?:**

Superstructure Analysis Reactions		
Compression, $P_{comp}$ :	43.83	kips
Base Shear, $V_{u\_comp}$ :	23.03	kips
Moment, $M_u$ :	2587.59	ft-kips
Tower Height, $H$ :	165.5	ft
BP Dist. Above Fdn, $bp_{dist}$ :	3.75	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	646.99	23.03	3.4%	Pass
<i>Bearing Pressure (ksf)</i>	9.00	1.51	16.0%	Pass
<i>Overtuning (kip*ft)</i>	10357.06	2756.00	26.6%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	6482.42	2691.23	39.5%	Pass
<i>Pier Compression (kip)</i>	21089.12	79.61	0.4%	Pass
<i>Pad Flexure (kip*ft)</i>	3179.02	986.27	29.5%	Pass
<i>Pad Shear - 1-way (kips)</i>	748.54	133.28	17.0%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.164	0.036	20.9%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	3133.22	1614.74	49.1%	Pass

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, $dpier$ :	7.5	ft
Ext. Above Grade, $E$ :	0.5	ft
Pier Rebar Size, $Sc$ :	9	
Pier Rebar Quantity, $mc$ :	38	
Pier Tie/Spiral Size, $St$ :	5	
Pier Tie/Spiral Quantity, $mt$ :	9	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, $cc_{pier}$ :	3	in

\*Rating per TIA-222-H Section 15.5

Structural Rating*:	49.1%
Soil Rating*:	26.6%

Pad Properties		
Depth, $D$ :	6.5	ft
Pad Width, $W_1$ :	30	ft
Pad Thickness, $T$ :	2.5	ft
Pad Rebar Size (Bottom dir. 2), $Sp_2$ :	9	
Pad Rebar Quantity (Bottom dir. 2), $mp_2$ :	29	
Pad Clear Cover, $cc_{pad}$ :	3	in

Material Properties		
Rebar Grade, $F_y$ :	60	ksi
Concrete Compressive Strength, $F'_c$ :	3	ksi
Dry Concrete Density, $\delta_c$ :	150	pcf

Soil Properties		
Total Soil Unit Weight, $\gamma$ :	120	pcf
Ultimate Gross Bearing, $Q_{ult}$ :	12.000	ksf
Cohesion, $C_u$ :	0.750	ksf
Friction Angle, $\phi$ :	0	degrees
SPT Blow Count, $N_{blows}$ :		
Base Friction, $\mu$ :		
Neglected Depth, $N$ :	2.00	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, $gw$ :	18	ft

<-- Toggle between Gross and Net

### Drilled Pier Foundation

BU # :	801487
Site Name:	Ct Suffield 3 Cac 801487, C
Order Number:	655662 REV. 1
TIA-222 Revision:	H
Tower Type:	Monopole



Check Limitation	
Apply TIA-222-H Section 15.5:	<input checked="" type="checkbox"/>
	N/A
Design Options	
Input Effective Depths (else Actual):	<input type="checkbox"/>
Consider non-tapered moment capacity:	<input type="checkbox"/>
Check Shear along Depth of Pier:	<input checked="" type="checkbox"/>
Utilize Shear-Friction Methodology:	<input type="checkbox"/>
Override Critical Depth:	<input type="checkbox"/>

[Go to Soil Calculations](#)

Applied Loads		
	Comp.	Uplift
Moment (kip-ft)	2587.59	
Axial Force (kips)	43.83	
Shear Force (kips)	23.03	

Material Properties	
Concrete Strength, f <sub>c</sub> :	3 ksi
Rebar Strength, F <sub>y</sub> :	60 ksi
Tie Yield Strength, F <sub>y</sub> :	40 ksi

Pier Design Data	
Depth	23.5 ft
Ext. Above Grade	0.5 ft
Pier Section 1	
<i>From 0.5' above grade to 23.5' below grade</i>	
Pier Diameter	7.5 ft
Rebar Quantity	21
Rebar Size	11
Clear Cover to Ties	4 in
Tie Size	5
Tie Spacing	18 in

[Rebar & Pier Options](#)

[Embedded Pole Inputs](#)

[Belled Pier Inputs](#)

Analysis Results		
Soil Lateral Check	Compression	Uplift
D <sub>req</sub> (ft from TOC)	4.39	-
Soil Safety Factor	3.68	-
Max Moment (kip-ft)	2667.52	-
Rating*	34.4%	-
Soil Vertical Check	Compression	Uplift
Skin Friction (kips)	538.68	-
End Bearing (kips)	596.41	-
Weight of Concrete (kips)	172.63	-
Total Capacity (kips)	1135.09	-
Axial (kips)	216.46	-
Rating*	18.2%	-
Reinforced Concrete Flexure	Compression	Uplift
Critical Depth (ft from TOC)	3.97	-
Critical Moment (kip-ft)	2666.42	-
Critical Moment Capacity	5653.99	-
Rating*	44.9%	-
Reinforced Concrete Shear	Compression	Uplift
Critical Depth (ft from TOC)	17.12	-
Critical Shear (kip)	307.46	-
Critical Shear Capacity	635.78	-
Rating*	46.1%	-
Structural Foundation Rating*	46.1%	
Soil Interaction Rating*	34.4%	

\*Rating per TIA-222-H Section 15.5

Soil Profile	
Groundwater Depth	18
# of Layers	4

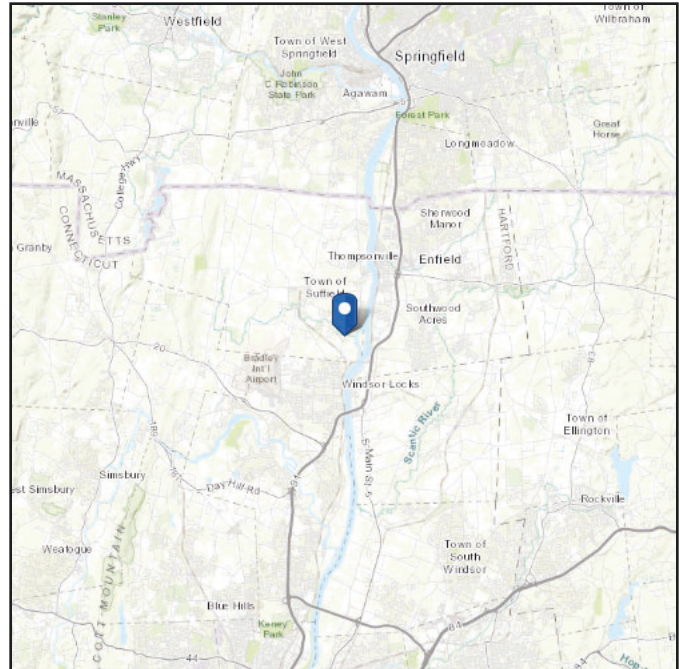
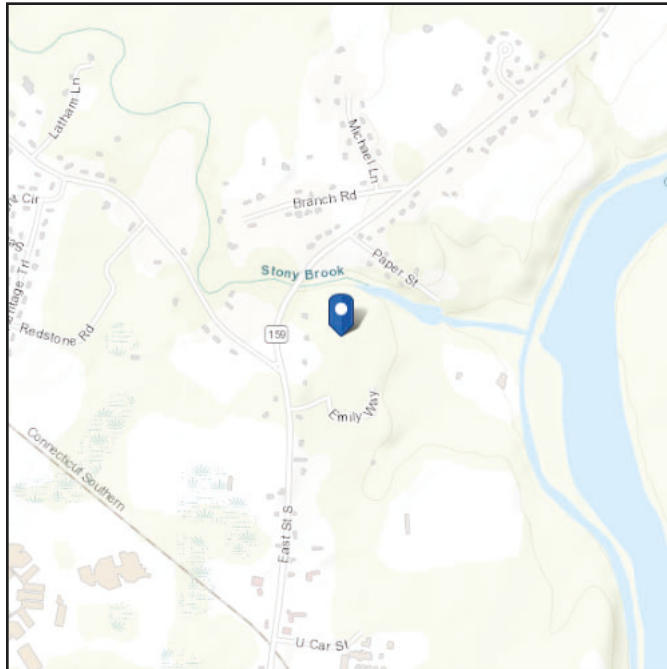
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ <sub>soil</sub> (pcf)	γ <sub>concrete</sub> (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type	
1	0	2	2	115	150	0	0	0.000	0.000	0.00	0.00			Cohesionless	
2	2	6.3	4.3	120	150	0.75	0	0.413	0.413					Cohesive	
3	6.3	18	11.7	120	150	0	32	1.491	1.491				50	Cohesionless	
4	18	23.5	5.5	60	87.6	0	32	2.049	2.049				18	95	Cohesionless

# ASCE Hazards Report

**Address:**  
No Address at This Location

**Standard:** ASCE/SEI 7-16  
**Risk Category:** II  
**Soil Class:** D - Default (see Section 11.4.3)

**Latitude:** 41.957  
**Longitude:** -72.625722  
**Elevation:** 117.66225084852525 ft (NAVD 88)



## Wind

### Results:

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

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed: Thu Feb 22 2024

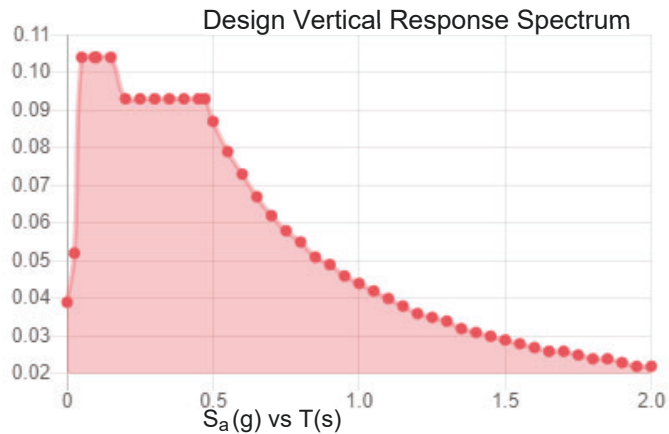
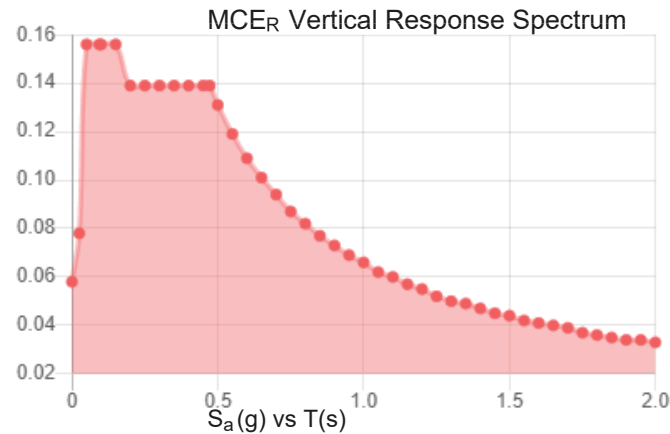
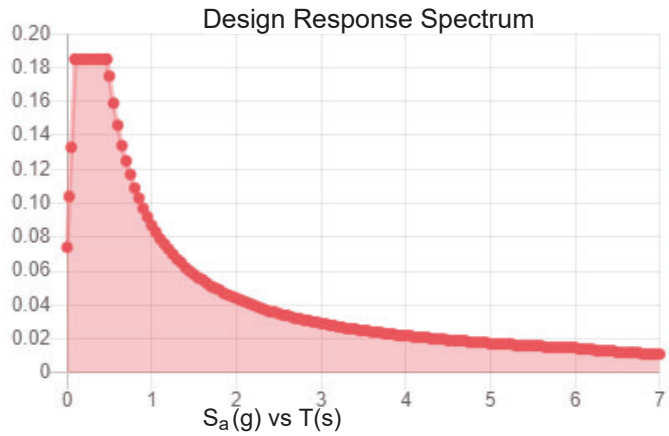
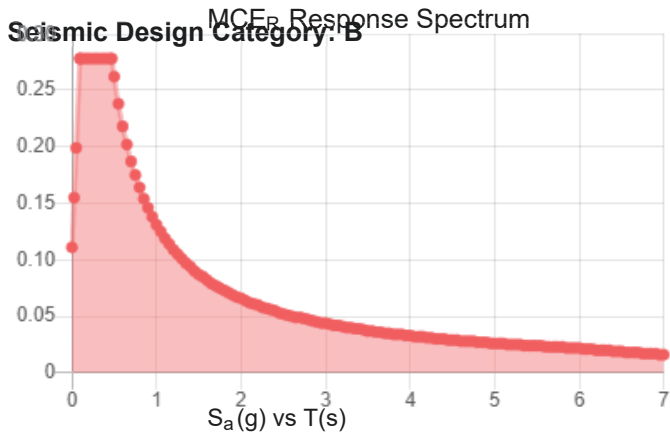
Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance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

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

**Site Soil Class:** D - Default (see Section 11.4.3)

**Results:**

$S_s$ :	0.174	$S_{D1}$ :	0.087
$S_1$ :	0.055	$T_L$ :	6
$F_a$ :	1.6	PGA :	0.091
$F_v$ :	2.4	PGA <sub>M</sub> :	0.146
$S_{MS}$ :	0.278	$F_{PGA}$ :	1.6
$S_{M1}$ :	0.131	$I_e$ :	1
$S_{DS}$ :	0.185	$C_v$ :	0.7



**Data Accessed:** Thu Feb 22 2024

**Date Source:**

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.



## Ice

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**Results:**

Ice Thickness: 1.50 in.  
Concurrent Temperature: 5 F  
Gust Speed 50 mph

**Data Source:** Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

**Date Accessed:** Thu Feb 22 2024

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

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

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The ASCE Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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## Antenna Mount Analysis Report and PMI Requirements

Mount ReAnalysis

SMART Tool Project #: 10221532  
Colliers Engineering & Design Project #: 24777014

January 31, 2024

### Site Information

Site ID: 5000179836-VZW / SUFFIELD 4 CT  
Site Name: SUFFIELD 4 CT  
Carrier Name: Verizon Wireless  
Address: 848 East Street  
Suffield, Connecticut 06108  
Hartford County  
Latitude: 41.957000°  
Longitude: -72.62572°

### Structure Information

Tower Type: Monopole  
Mount Type: 11.83-Ft Platform

FUZE ID # 17226185

### Analysis Results

Platform: 46.7% Pass\*

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

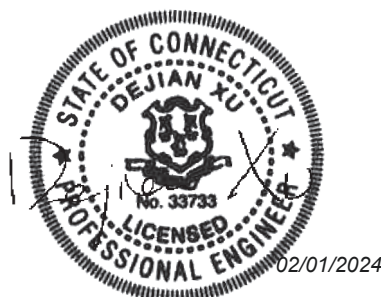
### \*\*\*Contractor PMI Requirements:

*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](mailto:pmisupport@colliersengineering.com)*

Report Prepared By: Carol Luengas



## **Executive Summary:**

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

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

## **Sources of Information:**

<b>Document Type</b>	<b>Remarks</b>
<i>Radio Frequency Data Sheet (RFDS)</i>	<i>Verizon RFDS, Site ID: 675065, dated January 18, 2024</i>
<i>Mount Mapping Report</i>	<i>Roaming Networks Inc., Site ID: PSLC535835, dated March 26, 2021</i>
<i>Previous Mount Modification</i>	<i>Maser Consulting Connecticut, Project #: 21777476A, dated September 16, 2021</i>
<i>Post Modification Inspection</i>	<i>Colliers Engineering &amp; Design Project #: 21777476A, dated December 9, 2022</i>

## **Analysis Criteria:**

Codes and Standards:	ANSI/TIA-222-H 2022 Connecticut Building State Code (CSBC), Effective October 1, 2022
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), $V_{ULT}$ : 120 mph Ice Wind Speed (3-sec. Gust): 50 mph Design Ice Thickness: 1.50 in Risk Category: II Exposure Category: B Topographic Category: 1 Topographic Feature Considered: N/A Topographic Method: N/A Ground Elevation Factor, $K_e$ : 0.996
Seismic Parameters:	$S_s$ : 0.170 g $S_1$ : 0.054 g
Maintenance Parameters:	Wind Speed (3-sec. Gust): 30 mph Maintenance Load, $L_v$ : 250 lbs. Maintenance Load, $L_m$ : 500 lbs.
Analysis Software:	RISA-3D (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
151.25	153.00	3	Samsung	MT6407-77A	Retained
		3	Samsung	RF4439d-25A	
		3	Samsung	RF4440d-13A	
		6	Andrew	SBNHH-1D65B	
		2	Raycap	RC3DC-3315-PF-48*	
		2	Kaelus	BSF0020F3V1-1	Added

\* Equipment is flush mounted directly to the Monopole. They are not mounted on the platform mount and are not included in this mount analysis.

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

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

**Analysis Results:**

Component	Utilization %	Pass/Fail
Face Horizontal	15.6 %	Pass
Standoff Horizontal	34.6 %	Pass
Platform Crossmember	19.0 %	Pass
Mount Pipe	27.3 %	Pass
Corner Plate	12.1 %	Pass
Grating Support	10.4 %	Pass
Cross Arm Plate	38.0 %	Pass
Support Rail	14.8 %	Pass
Support Rail Connection	17.7 %	Pass
Mount Connection	46.7 %	Pass

<b>Structure Rating – (Controlling Utilization of all Components)</b>	<b>46.7%</b>
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**Mount Connection Envelope Reactions:**

Connection Description	Elev. AGL (Ft)	Node Label	Envelope Wind Reactions				Envelope Wind + Ice Reactions			
			Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)	Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)
Sector B Standoff	151.2	N3	1394	1337	3.509	0.921	2603	636	5.447	0.289
Sector A Standoff	151.2	N87D	1406	1387	3.494	1.059	2668	655	5.518	0.312
Sector C Standoff	151.2	N115	1426	1459	3.571	0.994	2678	667	5.559	0.311

Notes:

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

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

Ice Thickness (In)	Mount Pipes Excluded		Mount Pipes Included	
	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)
0	23.7	23.7	37.4	37.4
0.5	30.6	30.6	50.0	50.0
1	37.0	37.0	62.2	62.2

Notes:

- (EPA)a values listed above may be used in the absence of more precise information
- (EPA)a values in the table above include 3 sector(s).
- Ka factors included in (EPA)a calculations

**Requirements:**

The existing mount is **SUFFICIENT** for the final loading configuration shown in attachment 2 and do not require modifications. Additional requirements are noted below.

Contractor shall install the proposed filter units on new Site Pro 1 Dual Swivel Mount Kit (Part #: RRUDSM or EOR approved equivalent) in the location shown in the placement diagrams.

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

**Attachments:**

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

# Mount Desktop – Post Modification Inspection (PMI) Report Requirements

## Documents & Photos Required from Contractor – **Passing Mount Analysis**

Passing Mount Analysis requires a PMI due to a modification in loading.

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](mailto:pmisupport@colliersengineering.com)

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MDG #: 5000179836

SMART Project #: 10221532

Fuze Project ID: 17226185

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

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

### **Base Requirements:**

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

### **Photo Requirements:**

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

- These photos shall also certify that the placement and geometry of the equipment on the mount is as depicted in the antenna placement diagram in this form.
- Photos that show the model number of each antenna and piece of equipment installed per sector.

**Antenna & equipment placement and Geometry Confirmation:**

- The contractor shall certify that the antenna & equipment placement and geometry is in accordance with the sketch and table as included in the mount analysis and noted below.
  - The contractor certifies that the photos support and the equipment on the mount is as depicted on the sketch and table included in this form and with the mount analysis provided.

OR

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

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

**Issue:**

Contractor shall install the proposed filter units on new Site Pro 1 Dual Swivel Mount Kit (Part #: RRUDSM or EOR approved equivalent) in the location shown in the placement diagrams.

**Response:**

**Special Instruction Confirmation:**

- The contractor has read and acknowledges the above special instructions.
- All hardware listed in the Special Instructions above (if applicable) has been properly installed, and the existing hardware was inspected.
- The material utilized was as specified in the SMART Tool engineering vendor Special Instructions above (if applicable) 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.



**Comments:**

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**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

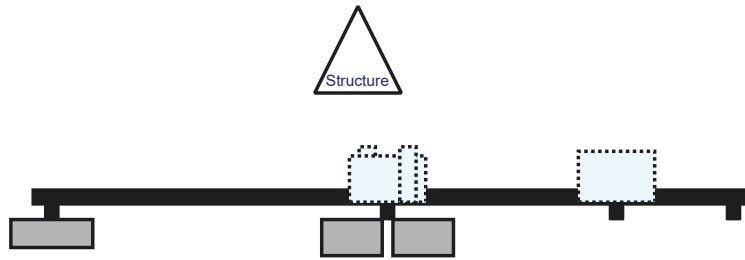
**Contractor to certify the condition of the safety climb and verify no damage when leaving the site:**

Safety Climb in Good Condition                       Safety Climb Damaged

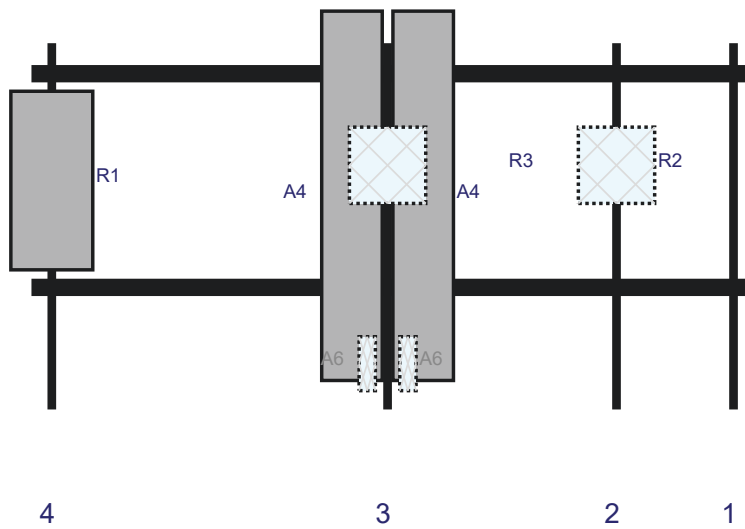
**Certifying Individual:**

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

Plan View

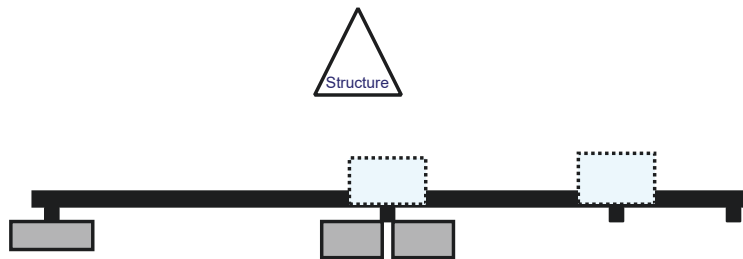


Front View - Looking at Structure

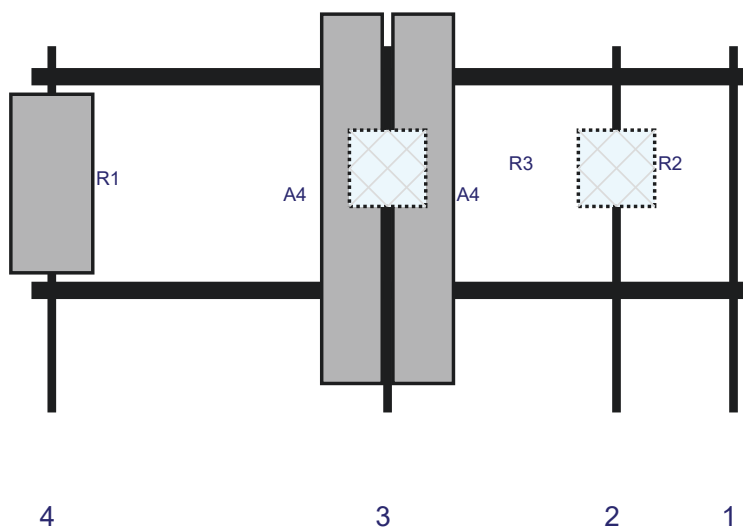


Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
R2	RF4439d-25A	15	15	115	2	a	Behind	24	0	Retained	12/02/2022
A4	SBNHH-1D65B	72.6	11.9	70	3	a	Front	30	-7	Retained	12/02/2022
A4	SBNHH-1D65B	72.6	11.9	70	3	b	Front	30	7	Retained	12/02/2022
R3	RF4440d-13A	15	15	70	3	a	Behind	24	0	Retained	12/02/2022
A6	BSF0020F3V1-1	10.6	3.2	70	3	a	Behind	63	4	Added	
A6	BSF0020F3V1-1	10.6	3.2	70	3	b	Behind	63	-4	Added	
R1	MT6407-77A	35.1	16.1	4	4	a	Front	27	0	Retained	12/02/2022

Plan View

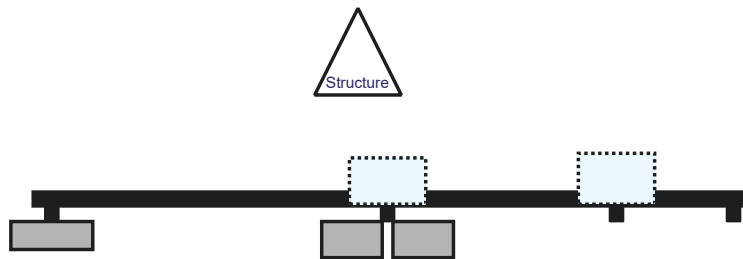


Front View - Looking at Structure

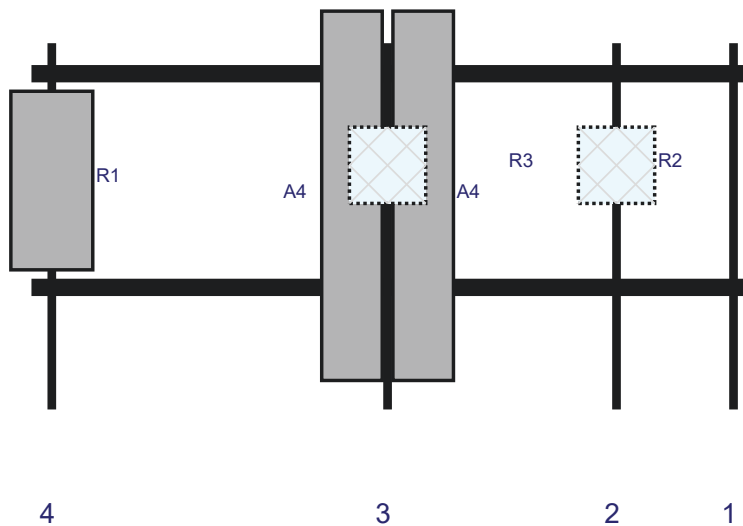


Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
R2	RF4439d-25A	15	15	115	2	a	Behind	24	0	Retained	12/02/2022
A4	SBNHH-1D65B	72.6	11.9	70	3	a	Front	30	-7	Retained	12/02/2022
A4	SBNHH-1D65B	72.6	11.9	70	3	b	Front	30	7	Retained	12/02/2022
R3	RF4440d-13A	15	15	70	3	a	Behind	24	0	Retained	12/02/2022
R1	MT6407-77A	35.1	16.1	4	4	a	Front	27	0	Retained	12/02/2022

Plan View




Front View - Looking at Structure



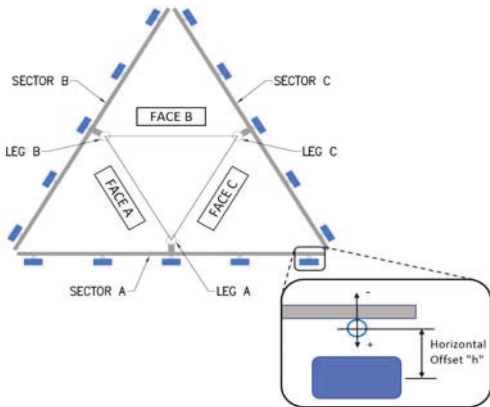
Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
R2	RF4439d-25A	15	15	115	2	a	Behind	24	0	Retained	12/02/2022
A4	SBNHH-1D65B	72.6	11.9	70	3	a	Front	30	-7	Retained	12/02/2022
A4	SBNHH-1D65B	72.6	11.9	70	3	b	Front	30	7	Retained	12/02/2022
R3	RF4440d-13A	15	15	70	3	a	Behind	24	0	Retained	12/02/2022
R1	MT6407-77A	35.1	16.1	4	4	a	Front	27	0	Retained	12/02/2022



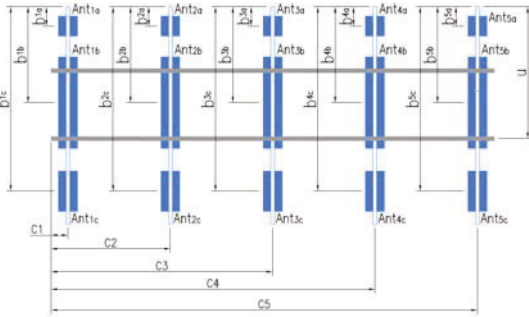
 <p><b>PAUL J. FORD &amp; COMPANY</b></p>	<b>Antenna Mount Mapping Form (PATENT PENDING)</b>			FCC #
				N/A
Tower Owner:	Other	Mapping Date:	3/26/2021	
Site Name:	SUFFIELD 4 CT	Tower Type:	Self Support	
Site Number or ID:	PSLC535835	Tower Height (Ft.):	N/A	
Mapping Contractor:	Roaming Networks Inc.	Mount Elevation (Ft.):	152.5	

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Mount Pipe Configuration and Geometries [Unit = Inches]							
Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."	Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."
A1	PIPE 2.38"Ø X 0.15" X 72" LONG	47.00	4.00	C1	PIPE 2.38"Ø X 0.15" X 72" LONG	47.00	4.00
A2	PIPE 2.38"Ø X 0.15" X 72" LONG	47.00	70.00	C2	PIPE 2.38"Ø X 0.15" X 72" LONG	47.00	70.00
A3	PIPE 2.38"Ø X 0.15" X 72" LONG	48.00	115.00	C3	PIPE 2.38"Ø X 0.15" X 72" LONG	48.00	115.00
A4	PIPE 2.38"Ø X 0.15" X 72" LONG	47.00	139.00	C4	PIPE 2.38"Ø X 0.15" X 72" LONG	47.00	139.00
A5				C5			
A6				C6			
B1	PIPE 2.38"Ø X 0.15" X 72" LONG	47.00	4.00	D1			
B2	PIPE 2.38"Ø X 0.15" X 72" LONG	47.00	70.00	D2			
B3	PIPE 2.38"Ø X 0.15" X 72" LONG	48.00	115.00	D3			
B4	PIPE 2.38"Ø X 0.15" X 72" LONG	47.00	139.00	D4			
B5				D5			
B6				D6			
Distance from bottom rail and mount CL elevation (dim d). Unit is inches. See 'Mount Elev Ref' tab for details. :							0.00
Distance from top of bottom support rail to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.) :							1.5
Distance from top of bottom support rail to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.) :							2.8
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.):			21.3	



Ants. Items	Enter antenna model. If not labeled, enter "Unknown".					Mounting Locations [Units are inches and degrees]				Photos of antennas  Photo Numbers
	Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Antenna Center-line (Ft.)	Vertical Distances "b <sub>1a</sub> , b <sub>2a</sub> , b <sub>3a</sub> , b <sub>1b</sub> ,..." (Inches)	Horiz. Offset "h" (Use "-" if Ant. is behind)	Antenna Azimuth (Degrees)	
<b>Sector A</b>										
Ant <sub>1a</sub>	LPA 80080/6CF-EDIN	13.20	5.50	70.90		153.5	35.00	16.00	244.00	9,10
Ant <sub>1b</sub>										
Ant <sub>1c</sub>										
Ant <sub>2a</sub>	B4 RRH2x60-4R	10.63	5.75	36.61		155.083	16.00			11,12
Ant <sub>2b</sub>	SBNHH-1D65B	11.85	7.09	72.87		154.167	27.00	8.00	244.00	13
Ant <sub>2c</sub>										
Ant <sub>3a</sub>	B13 RRH 4x30	12.00	9.00	21.60		154.667	22.00			4,5
Ant <sub>3b</sub>	SBNHH-1D65B	11.85	7.09	72.87		154.25	27.00	8.00	244.00	6
Ant <sub>3c</sub>										
Ant <sub>4a</sub>	LPA 80080/6CF-EDIN	13.20	5.50	70.90		153.5	35.00	16.00	244.00	7,8
Ant <sub>4b</sub>										
Ant <sub>4c</sub>										
Ant <sub>5a</sub>										
Ant <sub>5b</sub>										
Ant <sub>5c</sub>										
Ant on Standoff										
Ant on Standoff										
Ant on Tower	RC3DC-3315-PF-48	15.73	10.30	28.93						
Ant on Tower										



**Antenna Layout (Looking Out From Tower)**

Mount Azimuth (Degree) for Each Sector				Tower Leg Azimuth (Degree) for Each Sector		Sector B																
Sector A:	244.00	Deg	Leg A:		Deg	Ant <sub>1a</sub>	LPA 80080/6CF-EDIN	13.20	5.50	70.90		153.5	35.00	16.00	359.00	9,10						
Sector B:	359.00	Deg	Leg B:		Deg	Ant <sub>1b</sub>																
Sector C:	137.00	Deg	Leg C:		Deg	Ant <sub>1c</sub>																
Sector D:		Deg	Leg D:		Deg	Ant <sub>2a</sub>	B4 RRH2x60-4R	10.63	5.75	36.61		155.083	16.00			11,12						
Climbing Facility Information						Ant <sub>2b</sub>	SBNHH-1D65B	11.85	7.09	72.87		154.167	27.00	8.00	359.00	13						
						Ant <sub>2c</sub>																
Location:		Deg	Other		Deg	Ant <sub>3a</sub>	B13 RRH 4x30	12.00	9.00	21.60		154.667	22.00			4,5						
Climbing Facility	Corrosion Type:		Good condition.		Deg	Ant <sub>3b</sub>	SBNHH-1D65B	11.85	7.09	72.87		154.25	27.00	8.00		6						
	Access:		Climbing path was unobstructed.		Deg	Ant <sub>3c</sub>																
	Condition:		Good condition.		Deg	Ant <sub>4a</sub>	LPA 80080/6CF-EDIN	13.20	5.50	70.90		153.5	35.00	16.00	359.00	7,8						
						Ant <sub>4b</sub>																
						Ant <sub>4c</sub>																
						Ant <sub>5a</sub>																
						Ant <sub>5b</sub>																
						Ant <sub>5c</sub>																
						Ant on Standoff																
						Ant on Standoff																
						Ant on Tower					Deg	RC3DC-3315-PF-48	15.73	10.30	28.93							
						Ant on Tower					Deg											
												Sector C										
Ant <sub>1a</sub>	LPA 80080/6CF-EDIN	13.20	5.50	70.90								153.5	35.00	16.00	137.00	9,10						
Ant <sub>1b</sub>																						
Ant <sub>1c</sub>																						
Ant <sub>2a</sub>	B4 RRH2x60-4R	10.63	5.75	36.61								155.083	16.00			11,12						
Ant <sub>2b</sub>	SBNHH-1D65B	11.85	7.09	72.87								154.167	27.00	8.00	137.00	13						
Ant <sub>2c</sub>																						
Ant <sub>3a</sub>	B13 RRH 4x30	12.00	9.00	21.60								154.667	22.00			4,5						
Ant <sub>3b</sub>	SBNHH-1D65B	11.85	7.09	72.87								154.25	27.00	8.00	137.00	6						
Ant <sub>3c</sub>																						
Ant <sub>4a</sub>	LPA 80080/6CF-EDIN	13.20	5.50	70.90								153.5	35.00	16.00	137.00	7,8						
Ant <sub>4b</sub>																						
Ant <sub>4c</sub>																						
Ant <sub>5a</sub>																						
Ant <sub>5b</sub>																						
Ant <sub>5c</sub>																						
Ant on Standoff																						
Ant on Standoff					Deg	RC3DC-3315-PF-48	15.73	10.30	28.93													
Ant on Tower					Deg																	
Ant on Tower					Deg																	
						Sector D																
						Ant <sub>1a</sub>																
						Ant <sub>1b</sub>																
						Ant <sub>1c</sub>																
						Ant <sub>2a</sub>																
						Ant <sub>2b</sub>																
						Ant <sub>2c</sub>																
						Ant <sub>3a</sub>																
						Ant <sub>3b</sub>																
						Ant <sub>3c</sub>																
						Ant <sub>4a</sub>																
						Ant <sub>4b</sub>																
						Ant <sub>4c</sub>																
						Ant <sub>5a</sub>																
						Ant <sub>5b</sub>																
Ant <sub>5c</sub>																						
Ant on Standoff																						
Ant on Standoff																						
Ant on Tower																						
Ant on Tower																						

**Observed Safety and Structural Issues During the Mount Mapping**

Issue #	Description of Issue	Photo #

1		
2		
3		
4		
5		
6		
7		
8		

**Mapping Notes**

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

**Standard Conditions**

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



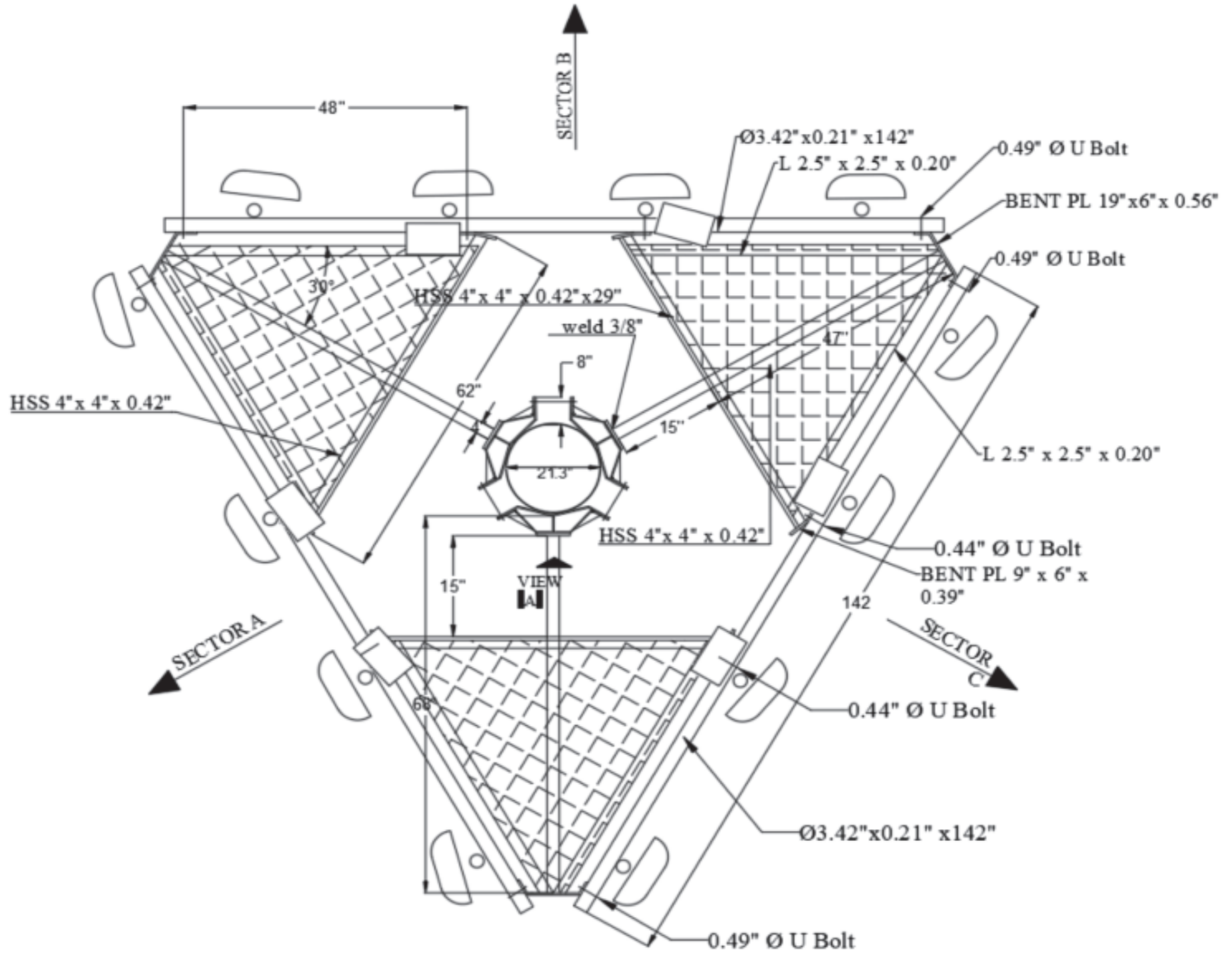
**Antenna Mount Mapping Form (PATENT PENDING)**



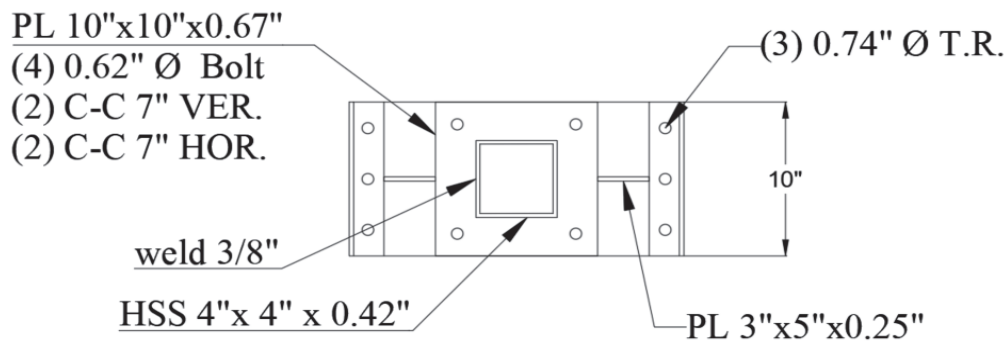
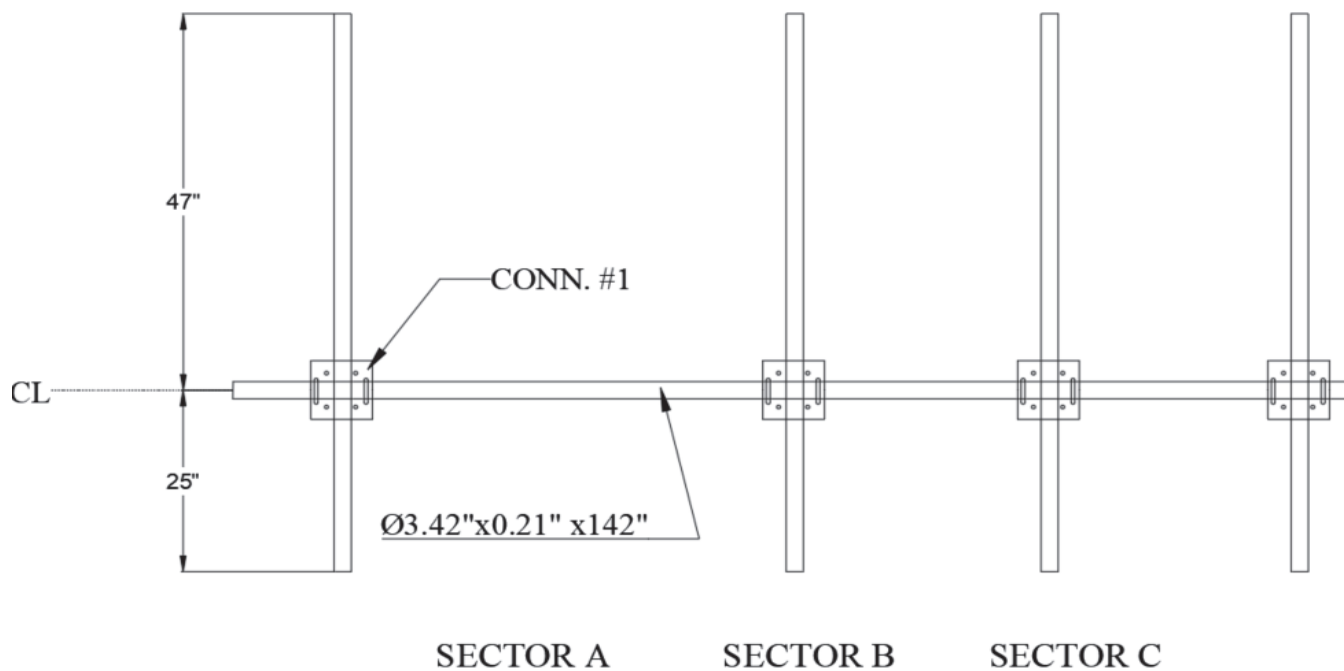
<b>Tower Owner:</b>	Other	<b>Mapping Date:</b>	3/26/2021
<b>Site Name:</b>	SUFFIELD 4 CT	<b>Tower Type:</b>	Self Support
<b>Site Number or ID:</b>	PSLC535835	<b>Tower Height (FT):</b>	N/A
<b>Mapping Contractor:</b>	Roaming Networks Inc.	<b>Mount Elevation (FT):</b>	152.5

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Please Insert Sketches of the Antenna Mount



**ANTENNA  
PLAN VIEW**



VIEW "A"



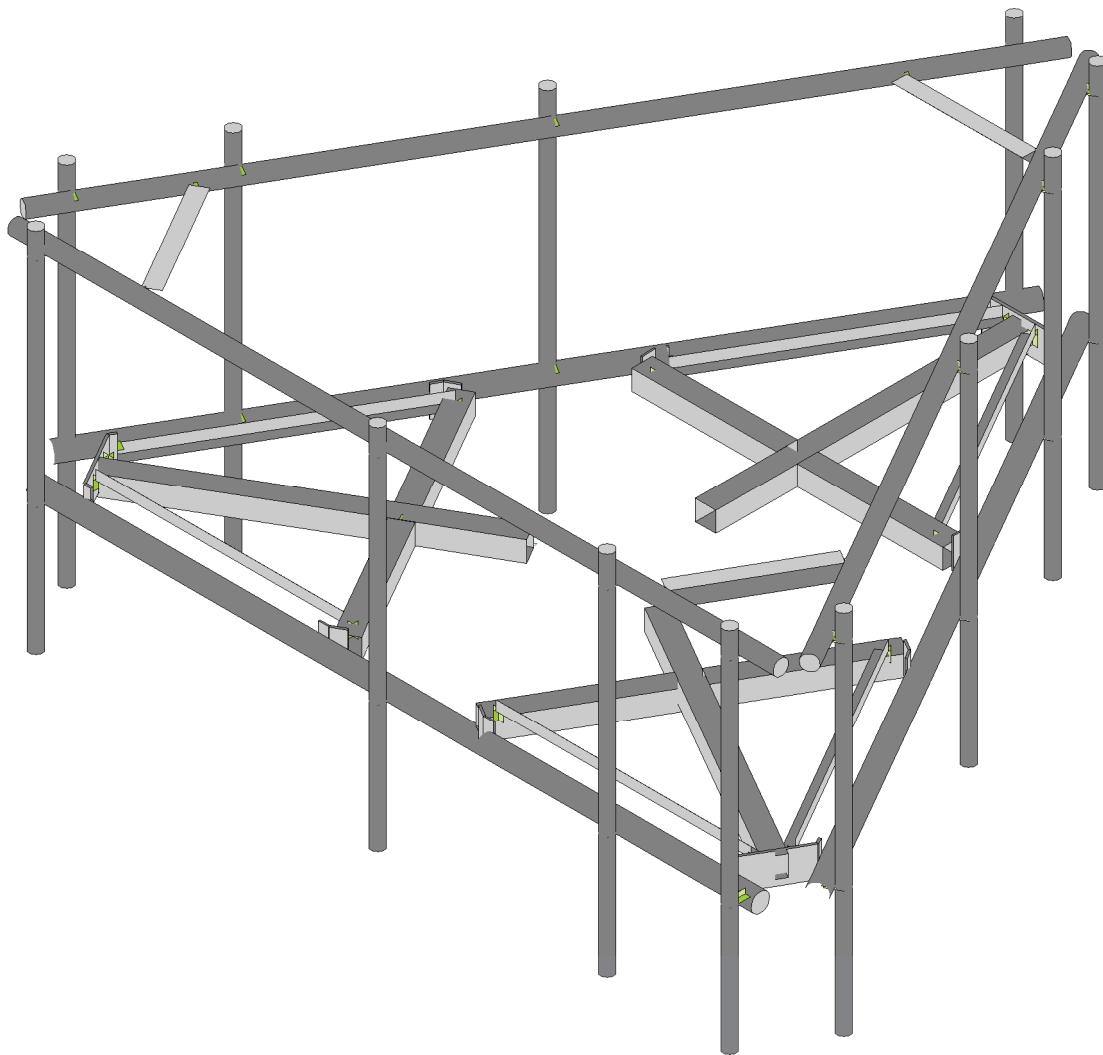
0.45" Ø U Bolt  
0.44" Ø U Bolt  
BENT PL 9"x11"x 0.35"

CONN.1



RAYCAP CONN. TO  
TOWER





Envelope Only Solution

Colliers Engineering & Des...

Project No. 10221532

5000179836-VZW\_MT\_LO\_H

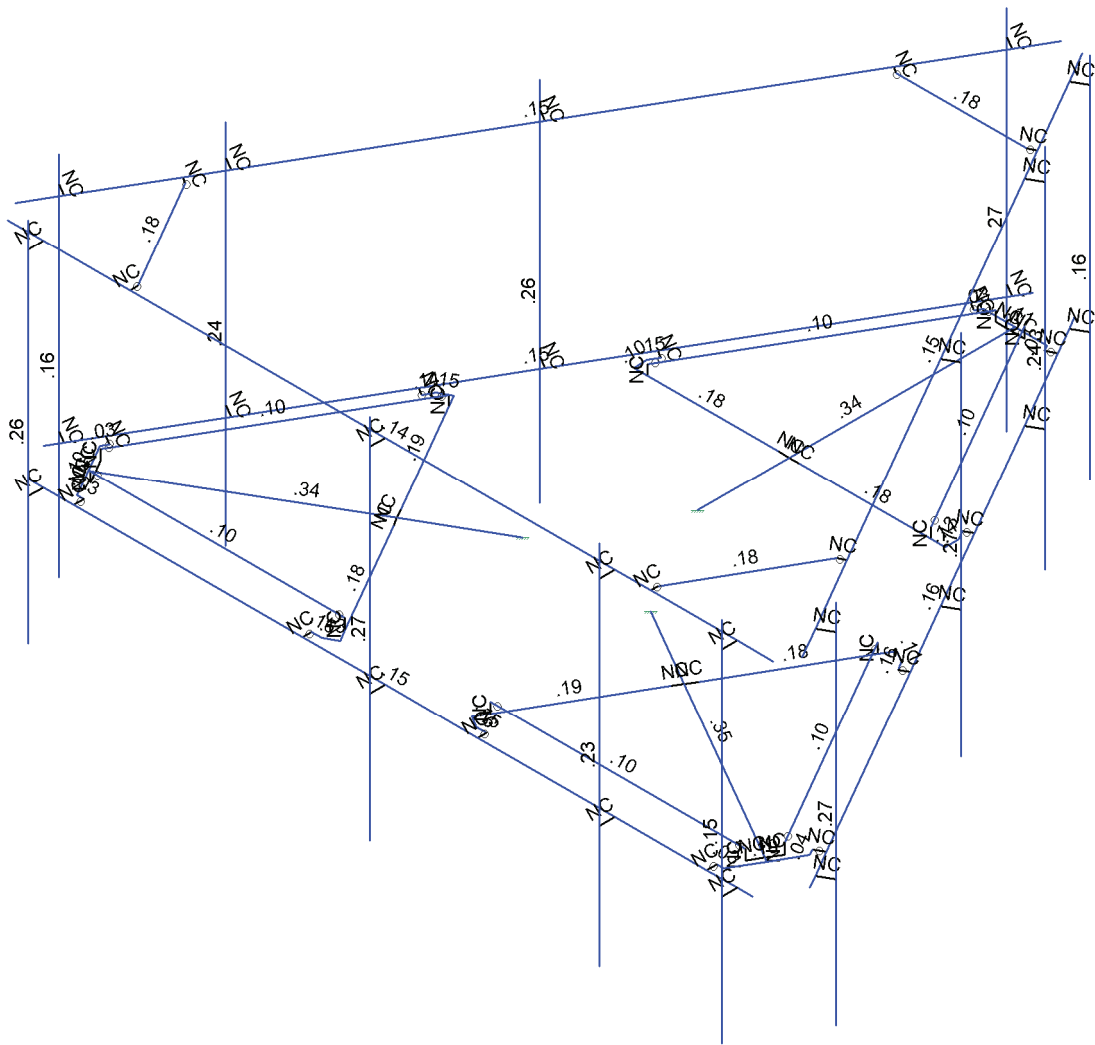
SK - 1

Jan 31, 2024 at 3:13 PM

5000179836-VZW\_MT\_LO\_H.r3d



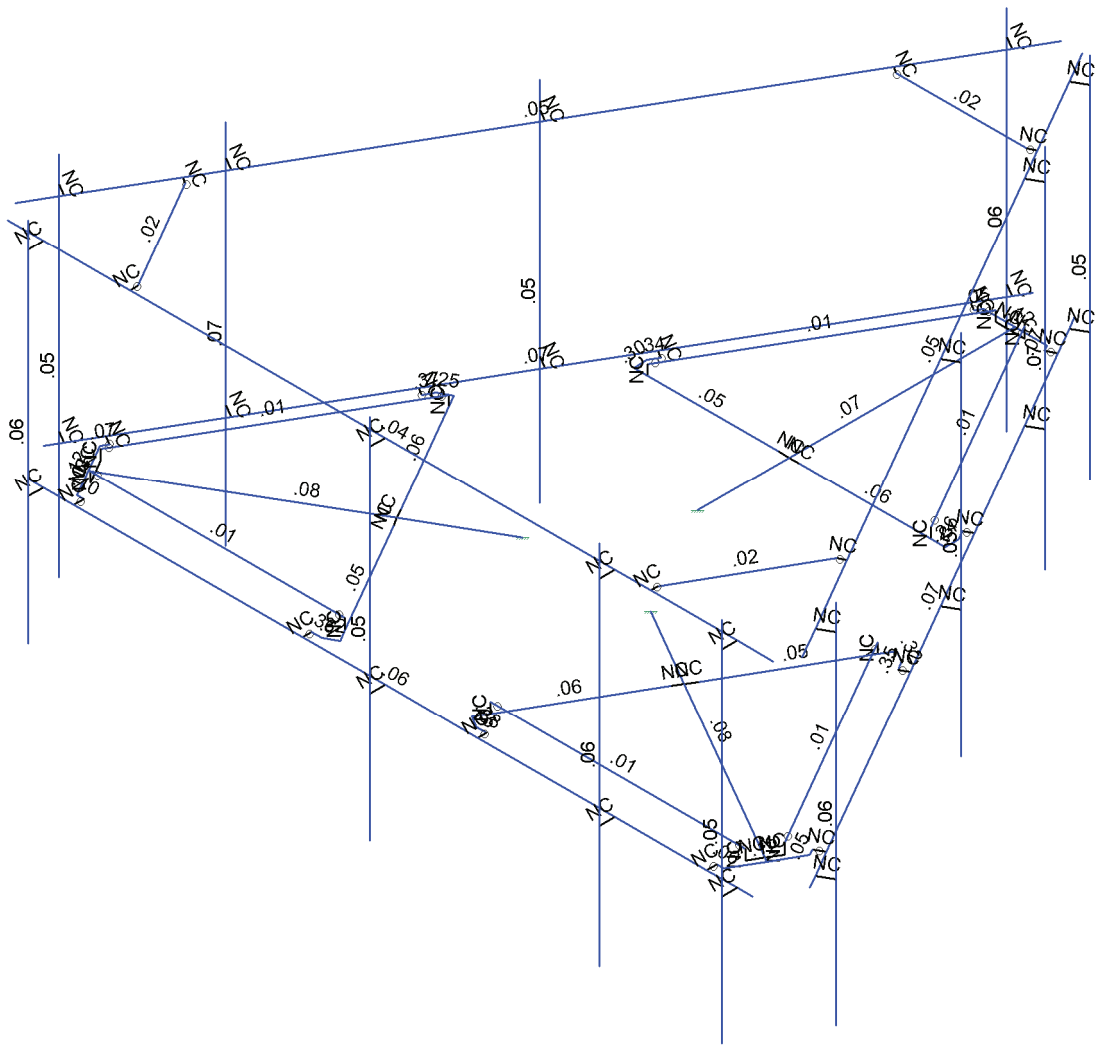
Code Check (Elev)	
■	No Calc
■	> 1.0
■	90-1.0
■	75-90
■	50-75
■	0-50



Member Code Checks Displayed (Enveloped)  
Envelope Only Solution

Colliers Engineering & Des...	5000179836-VZW_MT_LO_H	SK - 2
		Jan 31, 2024 at 3:13 PM
Project No. 10221532		5000179836-VZW_MT_LO_H.r3d





Member Shear Checks Displayed (Enveloped)  
Envelope Only Solution

Colliers Engineering & Des...	5000179836-VZW_MT_LO_H	SK - 3
		Jan 31, 2024 at 3:13 PM
Project No. 10221532		5000179836-VZW_MT_LO_H.r3d



Company : Colliers Engineering & Design  
 Designer :  
 Job Number : Project No. 10221532  
 Model Name : 5000179836-VZW\_MT\_LO\_H

Jan 31, 2024  
 3:14 PM  
 Checked By: \_\_\_\_\_

**Basic Load Cases**

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me... Surface(...	
1	Antenna D	None					84		
2	Antenna Di	None					84		
3	Antenna Wo (0 Deg)	None					84		
4	Antenna Wo (30 Deg)	None					84		
5	Antenna Wo (60 Deg)	None					84		
6	Antenna Wo (90 Deg)	None					84		
7	Antenna Wo (120 Deg)	None					84		
8	Antenna Wo (150 Deg)	None					84		
9	Antenna Wo (180 Deg)	None					84		
10	Antenna Wo (210 Deg)	None					84		
11	Antenna Wo (240 Deg)	None					84		
12	Antenna Wo (270 Deg)	None					84		
13	Antenna Wo (300 Deg)	None					84		
14	Antenna Wo (330 Deg)	None					84		
15	Antenna Wi (0 Deg)	None					84		
16	Antenna Wi (30 Deg)	None					84		
17	Antenna Wi (60 Deg)	None					84		
18	Antenna Wi (90 Deg)	None					84		
19	Antenna Wi (120 Deg)	None					84		
20	Antenna Wi (150 Deg)	None					84		
21	Antenna Wi (180 Deg)	None					84		
22	Antenna Wi (210 Deg)	None					84		
23	Antenna Wi (240 Deg)	None					84		
24	Antenna Wi (270 Deg)	None					84		
25	Antenna Wi (300 Deg)	None					84		
26	Antenna Wi (330 Deg)	None					84		
27	Antenna Wm (0 Deg)	None					84		
28	Antenna Wm (30 Deg)	None					84		
29	Antenna Wm (60 Deg)	None					84		
30	Antenna Wm (90 Deg)	None					84		
31	Antenna Wm (120 Deg)	None					84		
32	Antenna Wm (150 Deg)	None					84		
33	Antenna Wm (180 Deg)	None					84		
34	Antenna Wm (210 Deg)	None					84		
35	Antenna Wm (240 Deg)	None					84		
36	Antenna Wm (270 Deg)	None					84		
37	Antenna Wm (300 Deg)	None					84		
38	Antenna Wm (330 Deg)	None					84		
39	Structure D	None		-1					3
40	Structure Di	None						57	3
41	Structure Wo (0 Deg)	None						114	
42	Structure Wo (30 Deg)	None						114	
43	Structure Wo (60 Deg)	None						114	
44	Structure Wo (90 Deg)	None						114	
45	Structure Wo (120 Deg)	None						114	
46	Structure Wo (150 Deg)	None						114	
47	Structure Wo (180 Deg)	None						114	
48	Structure Wo (210 Deg)	None						114	
49	Structure Wo (240 Deg)	None						114	
50	Structure Wo (270 Deg)	None						114	
51	Structure Wo (300 Deg)	None						114	
52	Structure Wo (330 Deg)	None						114	
53	Structure Wi (0 Deg)	None						114	



**Basic Load Cases (Continued)**

BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me... Surface(...
54 Structure Wi (30 Deg)	None						114
55 Structure Wi (60 Deg)	None						114
56 Structure Wi (90 Deg)	None						114
57 Structure Wi (120 Deg)	None						114
58 Structure Wi (150 Deg)	None						114
59 Structure Wi (180 Deg)	None						114
60 Structure Wi (210 Deg)	None						114
61 Structure Wi (240 Deg)	None						114
62 Structure Wi (270 Deg)	None						114
63 Structure Wi (300 Deg)	None						114
64 Structure Wi (330 Deg)	None						114
65 Structure Wm (0 Deg)	None						114
66 Structure Wm (30 Deg)	None						114
67 Structure Wm (60 Deg)	None						114
68 Structure Wm (90 Deg)	None						114
69 Structure Wm (120 Deg)	None						114
70 Structure Wm (150 Deg)	None						114
71 Structure Wm (180 Deg)	None						114
72 Structure Wm (210 Deg)	None						114
73 Structure Wm (240 Deg)	None						114
74 Structure Wm (270 Deg)	None						114
75 Structure Wm (300 Deg)	None						114
76 Structure Wm (330 Deg)	None						114
77 Lm1	None					1	
78 Lm2	None					1	
79 Lv1	None					1	
80 Lv2	None					1	
81 Antenna Ev	None					84	
82 Antenna Eh (0 Deg)	None					56	
83 Antenna Eh (90 Deg)	None					56	
84 Structure Ev	ELY		-0.036				3
85 Structure Eh (0 Deg)	ELZ			-0.091			3
86 Structure Eh (90 Deg)	ELX	0.091					3
87 BLC 39 Transient Area Loads	None						30
88 BLC 40 Transient Area Loads	None						30
89 BLC 84 Transient Area Loads	None						30
90 BLC 85 Transient Area Loads	None						30
91 BLC 86 Transient Area Loads	None						30

**Load Combinations**

Description	S...	PDelta	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	
1 1.2D+1.0Wo (0 Deg)	Yes	Y		1	1.2	39	1.2	3	1	41	1											
2 1.2D+1.0Wo (30 Deg)	Yes	Y		1	1.2	39	1.2	4	1	42	1											
3 1.2D+1.0Wo (60 Deg)	Yes	Y		1	1.2	39	1.2	5	1	43	1											
4 1.2D+1.0Wo (90 Deg)	Yes	Y		1	1.2	39	1.2	6	1	44	1											
5 1.2D+1.0Wo (120 Deg)	Yes	Y		1	1.2	39	1.2	7	1	45	1											
6 1.2D+1.0Wo (150 Deg)	Yes	Y		1	1.2	39	1.2	8	1	46	1											
7 1.2D+1.0Wo (180 Deg)	Yes	Y		1	1.2	39	1.2	9	1	47	1											
8 1.2D+1.0Wo (210 Deg)	Yes	Y		1	1.2	39	1.2	10	1	48	1											
9 1.2D+1.0Wo (240 Deg)	Yes	Y		1	1.2	39	1.2	11	1	49	1											
10 1.2D+1.0Wo (270 Deg)	Yes	Y		1	1.2	39	1.2	12	1	50	1											
11 1.2D+1.0Wo (300 Deg)	Yes	Y		1	1.2	39	1.2	13	1	51	1											
12 1.2D+1.0Wo (330 Deg)	Yes	Y		1	1.2	39	1.2	14	1	52	1											
13 1.2D + 1.0Di + 1.0Wi (0...	Yes	Y		1	1.2	39	1.2	2	1	40	1	15	1	53	1							
14 1.2D + 1.0Di + 1.0Wi (3...	Yes	Y		1	1.2	39	1.2	2	1	40	1	16	1	54	1							



**Load Combinations (Continued)**

Description	S...	PDelta	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
15	1.2D + 1.0Di + 1.0Wi (6...	Yes	Y		1	1.2	39	1.2	2	1	40	1	17	1	55	1					
16	1.2D + 1.0Di + 1.0Wi (9...	Yes	Y		1	1.2	39	1.2	2	1	40	1	18	1	56	1					
17	1.2D + 1.0Di + 1.0Wi (1...	Yes	Y		1	1.2	39	1.2	2	1	40	1	19	1	57	1					
18	1.2D + 1.0Di + 1.0Wi (1...	Yes	Y		1	1.2	39	1.2	2	1	40	1	20	1	58	1					
19	1.2D + 1.0Di + 1.0Wi (1...	Yes	Y		1	1.2	39	1.2	2	1	40	1	21	1	59	1					
20	1.2D + 1.0Di + 1.0Wi (2...	Yes	Y		1	1.2	39	1.2	2	1	40	1	22	1	60	1					
21	1.2D + 1.0Di + 1.0Wi (2...	Yes	Y		1	1.2	39	1.2	2	1	40	1	23	1	61	1					
22	1.2D + 1.0Di + 1.0Wi (2...	Yes	Y		1	1.2	39	1.2	2	1	40	1	24	1	62	1					
23	1.2D + 1.0Di + 1.0Wi (3...	Yes	Y		1	1.2	39	1.2	2	1	40	1	25	1	63	1					
24	1.2D + 1.0Di + 1.0Wi (3...	Yes	Y		1	1.2	39	1.2	2	1	40	1	26	1	64	1					
25	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	27	1	65	1							
26	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	28	1	66	1							
27	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	29	1	67	1							
28	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	30	1	68	1							
29	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	31	1	69	1							
30	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	32	1	70	1							
31	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	33	1	71	1							
32	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	34	1	72	1							
33	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	35	1	73	1							
34	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	36	1	74	1							
35	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	37	1	75	1							
36	1.2D + 1.5Lm1 + 1.0W...	Yes	Y		1	1.2	39	1.2	77	1.5	38	1	76	1							
37	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	27	1	65	1							
38	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	28	1	66	1							
39	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	29	1	67	1							
40	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	30	1	68	1							
41	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	31	1	69	1							
42	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	32	1	70	1							
43	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	33	1	71	1							
44	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	34	1	72	1							
45	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	35	1	73	1							
46	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	36	1	74	1							
47	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	37	1	75	1							
48	1.2D + 1.5Lm2 + 1.0W...	Yes	Y		1	1.2	39	1.2	78	1.5	38	1	76	1							
49	1.2D + 1.5Lv1	Yes	Y		1	1.2	39	1.2	79	1.5											
50	1.2D + 1.5Lv2	Yes	Y		1	1.2	39	1.2	80	1.5											
51	1.4D	Yes	Y		1	1.4	39	1.4													
52	1.2D + 1.0Ev + 1.0Eh (0...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	1	83		ELZ	1	E...		
53	1.2D + 1.0Ev + 1.0Eh (3...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.866	83	.5	ELZ	.866	E...	.5	
54	1.2D + 1.0Ev + 1.0Eh (6...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.5	83	.866	ELZ	.5	E...	.866	
55	1.2D + 1.0Ev + 1.0Eh (9...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82		83	1	ELZ		E...	1	
56	1.2D + 1.0Ev + 1.0Eh (1...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.5	83	.866	ELZ	-.5	E...	.866	
57	1.2D + 1.0Ev + 1.0Eh (1...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.866	83	.5	ELZ	-.866	E...	.5	
58	1.2D + 1.0Ev + 1.0Eh (1...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-1	83		ELZ	-1	E...		
59	1.2D + 1.0Ev + 1.0Eh (2...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.866	83	-.5	ELZ	-.866	E...	-.5	
60	1.2D + 1.0Ev + 1.0Eh (2...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.5	83	-.866	ELZ	-.5	E...	-.866	
61	1.2D + 1.0Ev + 1.0Eh (2...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82		83	-1	ELZ		E...	-1	
62	1.2D + 1.0Ev + 1.0Eh (3...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.5	83	-.866	ELZ	.5	E...	-.866	
63	1.2D + 1.0Ev + 1.0Eh (3...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.866	83	-.5	ELZ	.866	E...	-.5	
64	0.9D - 1.0Ev + 1.0Eh (0...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	1	83		ELZ	1	E...		
65	0.9D - 1.0Ev + 1.0Eh (3...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.866	83	.5	ELZ	.866	E...	.5	
66	0.9D - 1.0Ev + 1.0Eh (6...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.5	83	.866	ELZ	.5	E...	.866	
67	0.9D - 1.0Ev + 1.0Eh (9...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82		83	1	ELZ		E...	1	
68	0.9D - 1.0Ev + 1.0Eh (1...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.5	83	.866	ELZ	-.5	E...	.866	
69	0.9D - 1.0Ev + 1.0Eh (1...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.866	83	.5	ELZ	-.866	E...	.5	
70	0.9D - 1.0Ev + 1.0Eh (1...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-1	83		ELZ	-1	E...		
71	0.9D - 1.0Ev + 1.0Eh (2...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.866	83	-.5	ELZ	-.866	E...	-.5	



### Load Combinations (Continued)

Description	S...	PDelta	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	
72 0.9D - 1.0Ev + 1.0Eh (2...	Yes	Y		1	.9	.39	.9	.81	-1	E...	-1	.82	-.5	.83	-.866	ELZ	-.5	E...	-.866					
73 0.9D - 1.0Ev + 1.0Eh (2...	Yes	Y		1	.9	.39	.9	.81	-1	E...	-1	.82		.83	-1	ELZ		E...	-1					
74 0.9D - 1.0Ev + 1.0Eh (3...	Yes	Y		1	.9	.39	.9	.81	-1	E...	-1	.82	.5	.83	-.866	ELZ	.5	E...	-.866					
75 0.9D - 1.0Ev + 1.0Eh (3...	Yes	Y		1	.9	.39	.9	.81	-1	E...	-1	.82	.866	.83	-.5	ELZ	.866	E...	-.5					

### Hot Rolled Steel Section Sets

Label	Shape	Type	Design List	Material	Design ...	A [in <sup>2</sup> ]	I <sub>yy</sub> [in <sup>4</sup> ]	I <sub>zz</sub> [in <sup>4</sup> ]	J [in <sup>4</sup> ]
1 Face Horizontal	PIPE 3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2 Standoff Horizontal	HSS4X4X4	Beam	SquareTube	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
3 Corner Plate	PL1/2x6	Beam	BAR	A36 Gr.36	Typical	3	.063	9	.237
4 Platform Crossmember	HSS4X4X4	Beam	SquareTube	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
5 Grating Support	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.009
6 Mount Pipe	PIPE 2.0	Column	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
7 Cross Arm Plate	PL3/8x6	Column	RECT	A36 Gr.36	Typical	2.25	.026	6.75	.101
8 Support Rail	PIPE 2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
9 Support Rail Conection	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	.031

### Hot Rolled Steel Properties

Label	E [ksi]	G [ksi]	Nu	Therm (/1...	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1 A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2 A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3 A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4 A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5 A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6 A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7 A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3
8 Q235	29000	11154	.3	.65	.49	35	1.5	58	1.2

### Member Primary Data

Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1 M1	N1	N2			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical
2 M4	N3	N27			Standoff Horiz...	Beam	SquareTube	A500 Gr.B...	Typical
3 M10	N101	N103A			Platform Cross...	Beam	SquareTube	A500 Gr.B...	Typical
4 M19	N8	N9			RIGID	None	None	RIGID	Typical
5 M20	N10	N11			RIGID	None	None	RIGID	Typical
6 M21	N12	N13			RIGID	None	None	RIGID	Typical
7 M22	N14	N15			RIGID	None	None	RIGID	Typical
8 MP3A	N17	N16			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
9 MP4A	N19	N18			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
10 MP2A	N21	N20			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
11 MP1A	N23	N22			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
12 M43	N102	N5			Platform Cross...	Beam	SquareTube	A500 Gr.B...	Typical
13 M46	N86C	N87A			Corner Plate	Beam	BAR	A36 Gr.36	Typical
14 M35A	N7	N30			RIGID	None	None	RIGID	Typical
15 M36A	N6	N29			RIGID	None	None	RIGID	Typical
16 M51B	N87C	N6			Grating Support	Beam	Single Angle	A36 Gr.36	Typical
17 M52B	N7	N87B			Grating Support	Beam	Single Angle	A36 Gr.36	Typical
18 M52	N87B	N88C			RIGID	None	None	RIGID	Typical
19 M58	N102	N24			RIGID	None	None	RIGID	Typical
20 M59	N24	N103A			RIGID	None	None	RIGID	Typical
21 M76	N101	N105			Cross Arm Plate	Column	RECT	A36 Gr.36	Typical
22 M77	N105	N131			Cross Arm Plate	Column	RECT	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
23	M79	N131	N86A			RIGID	None	None	RIGID	Typical
24	M80	N87A	N135			Corner Plate	Beam	BAR	A36 Gr.36	Typical
25	M83	N135	N86D			RIGID	None	None	RIGID	Typical
26	M84	N5	N104A			Cross Arm Plate	Column	RECT	A36 Gr.36	Typical
27	M85	N104A	N144			Cross Arm Plate	Column	RECT	A36 Gr.36	Typical
28	M88	N144	N86B			RIGID	None	None	RIGID	Typical
29	M91	N86C	N148			Corner Plate	Beam	BAR	A36 Gr.36	Typical
30	M92	N148	N86E			RIGID	None	None	RIGID	Typical
31	M50	N88C	N88A			RIGID	None	None	RIGID	Typical
32	M51	N88A	N86G			RIGID	None	None	RIGID	Typical
33	M51A	N87C	N86G			RIGID	None	None	RIGID	Typical
34	M52A	N87D	N92			Standoff Horiz...	Beam	SquareTube	A500 Gr.B...	Typical
35	M53	N95	N97			Platform Cross...	Beam	SquareTube	A500 Gr.B...	Typical
36	M54	N96	N88B			Platform Cross...	Beam	SquareTube	A500 Gr.B...	Typical
37	M55	N106	N107			Corner Plate	Beam	BAR	A36 Gr.36	Typical
38	M56	N90	N94			RIGID	None	None	RIGID	Typical
39	M57	N89	N93			RIGID	None	None	RIGID	Typical
40	M58A	N111	N89			Grating Support	Beam	Single Angle	A36 Gr.36	Typical
41	M59A	N90	N113			Grating Support	Beam	Single Angle	A36 Gr.36	Typical
42	M60	N113	N114			RIGID	None	None	RIGID	Typical
43	M61	N96	N91			RIGID	None	None	RIGID	Typical
44	M62	N91	N97			RIGID	None	None	RIGID	Typical
45	M63	N95	N99			Cross Arm Plate	Column	RECT	A36 Gr.36	Typical
46	M64	N99	N100			Cross Arm Plate	Column	RECT	A36 Gr.36	Typical
47	M65	N100	N104			RIGID	None	None	RIGID	Typical
48	M66	N107	N101A			Corner Plate	Beam	BAR	A36 Gr.36	Typical
49	M67	N101A	N108			RIGID	None	None	RIGID	Typical
50	M68	N88B	N98			Cross Arm Plate	Column	RECT	A36 Gr.36	Typical
51	M69	N98	N102A			Cross Arm Plate	Column	RECT	A36 Gr.36	Typical
52	M70	N102A	N105A			RIGID	None	None	RIGID	Typical
53	M71	N106	N103			Corner Plate	Beam	BAR	A36 Gr.36	Typical
54	M72	N103	N109			RIGID	None	None	RIGID	Typical
55	M73	N114	N110			RIGID	None	None	RIGID	Typical
56	M74	N110	N112			RIGID	None	None	RIGID	Typical
57	M75	N111	N112			RIGID	None	None	RIGID	Typical
58	M76A	N115	N120			Standoff Horiz...	Beam	SquareTube	A500 Gr.B...	Typical
59	M77A	N123	N125			Platform Cross...	Beam	SquareTube	A500 Gr.B...	Typical
60	M78	N124	N116			Platform Cross...	Beam	SquareTube	A500 Gr.B...	Typical
61	M79A	N134	N135A			Corner Plate	Beam	BAR	A36 Gr.36	Typical
62	M80A	N118	N122			RIGID	None	None	RIGID	Typical
63	M81	N117	N121			RIGID	None	None	RIGID	Typical
64	M82	N139	N117			Grating Support	Beam	Single Angle	A36 Gr.36	Typical
65	M83A	N118	N141			Grating Support	Beam	Single Angle	A36 Gr.36	Typical
66	M84A	N141	N142			RIGID	None	None	RIGID	Typical
67	M85A	N124	N119			RIGID	None	None	RIGID	Typical
68	M86	N119	N125			RIGID	None	None	RIGID	Typical
69	M87	N123	N127			Cross Arm Plate	Column	RECT	A36 Gr.36	Typical
70	M88A	N127	N128			Cross Arm Plate	Column	RECT	A36 Gr.36	Typical
71	M89	N128	N132			RIGID	None	None	RIGID	Typical
72	M90	N135A	N129			Corner Plate	Beam	BAR	A36 Gr.36	Typical
73	M91A	N129	N136			RIGID	None	None	RIGID	Typical
74	M92A	N116	N126			Cross Arm Plate	Column	RECT	A36 Gr.36	Typical
75	M93	N126	N130			Cross Arm Plate	Column	RECT	A36 Gr.36	Typical
76	M94	N130	N133			RIGID	None	None	RIGID	Typical
77	M95	N134	N131A			Corner Plate	Beam	BAR	A36 Gr.36	Typical
78	M96	N131A	N137			RIGID	None	None	RIGID	Typical
79	M97	N142	N138			RIGID	None	None	RIGID	Typical



**Member Primary Data (Continued)**

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
80	M98	N138	N140			RIGID	None	None	RIGID	Typical
81	M99	N139	N140			RIGID	None	None	RIGID	Typical
82	M82A	N104B	N105B			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical
83	M91B	N126A	N127A			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical
84	M100	N142B	N143A			RIGID	None	None	RIGID	Typical
85	M101	N144A	N145			RIGID	None	None	RIGID	Typical
86	M102	N146	N147			RIGID	None	None	RIGID	Typical
87	M103	N148A	N149			RIGID	None	None	RIGID	Typical
88	M112	N141B	N140B			Support Rail	Beam	Pipe	A53 Gr.B	Typical
89	M113	N169	N168			Support Rail	Beam	Pipe	A53 Gr.B	Typical
90	M114	N173	N172			Support Rail	Beam	Pipe	A53 Gr.B	Typical
91	M115	N166	N176			RIGID	None	None	RIGID	Typical
92	M116	N167	N178			RIGID	None	None	RIGID	Typical
93	M117	N170	N180			RIGID	None	None	RIGID	Typical
94	M118	N171	N181			RIGID	None	None	RIGID	Typical
95	M119	N174	N184			RIGID	None	None	RIGID	Typical
96	M120	N175	N185			RIGID	None	None	RIGID	Typical
97	M121	N176	N185		90	Support Rail C...	Beam	Single Angle	A36 Gr.36	Typical
98	M122	N180	N178		90	Support Rail C...	Beam	Single Angle	A36 Gr.36	Typical
99	M123	N184	N181		90	Support Rail C...	Beam	Single Angle	A36 Gr.36	Typical
100	M100A	N134A	N135B			RIGID	None	None	RIGID	Typical
101	M101A	N136A	N137A			RIGID	None	None	RIGID	Typical
102	M102A	N138A	N139A			RIGID	None	None	RIGID	Typical
103	M103A	N140A	N141A			RIGID	None	None	RIGID	Typical
104	MP3C	N143	N142A			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
105	MP4C	N145A	N144B			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
106	MP2C	N147A	N146A			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
107	MP1C	N149A	N148B			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
108	M108	N151	N152			RIGID	None	None	RIGID	Typical
109	M109	N153	N154			RIGID	None	None	RIGID	Typical
110	M110	N155	N156			RIGID	None	None	RIGID	Typical
111	M111	N157	N158			RIGID	None	None	RIGID	Typical
112	M112A	N159	N160			RIGID	None	None	RIGID	Typical
113	M113A	N161	N162			RIGID	None	None	RIGID	Typical
114	M114A	N163	N164			RIGID	None	None	RIGID	Typical
115	M115A	N165	N166A			RIGID	None	None	RIGID	Typical
116	MP3B	N168A	N167A			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
117	MP4B	N170A	N169A			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
118	MP2B	N172A	N171A			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
119	MP1B	N174A	N173A			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
120	M120A	N176A	N177			RIGID	None	None	RIGID	Typical
121	M121A	N178A	N179			RIGID	None	None	RIGID	Typical
122	M122A	N180A	N181A			RIGID	None	None	RIGID	Typical
123	M123A	N182	N183			RIGID	None	None	RIGID	Typical

**Member Advanced Data**

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes	Default			None
2	M4						Yes				None
3	M10						Yes	Default			None
4	M19						Yes	** NA **			None
5	M20						Yes	** NA **			None
6	M21						Yes	** NA **			None
7	M22						Yes	** NA **			None
8	MP3A						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..
9	MP4A						Yes	** NA **			None
10	MP2A						Yes	** NA **			None
11	MP1A						Yes	** NA **			None
12	M43						Yes	Default			None
13	M46						Yes	Default			None
14	M35A						Yes	** NA **			None
15	M36A						Yes	** NA **			None
16	M51B	OOOOOX	OOOOOX				Yes	Default			None
17	M52B	OOOOOX	OOOOOX				Yes	Default			None
18	M52						Yes	** NA **			None
19	M58						Yes	** NA **			None
20	M59						Yes	** NA **			None
21	M76						Yes	** NA **			None
22	M77						Yes	** NA **			None
23	M79		BenPIN				Yes	** NA **			None
24	M80						Yes				None
25	M83		BenPIN				Yes	** NA **			None
26	M84						Yes	** NA **			None
27	M85						Yes	** NA **			None
28	M88		BenPIN				Yes	** NA **			None
29	M91						Yes				None
30	M92		BenPIN				Yes	** NA **			None
31	M50						Yes	** NA **			None
32	M51						Yes	** NA **			None
33	M51A						Yes	** NA **			None
34	M52A						Yes				None
35	M53						Yes	Default			None
36	M54						Yes	Default			None
37	M55						Yes	Default			None
38	M56						Yes	** NA **			None
39	M57						Yes	** NA **			None
40	M58A	OOOOOX	OOOOOX				Yes	Default			None
41	M59A	OOOOOX	OOOOOX				Yes	Default			None
42	M60						Yes	** NA **			None
43	M61						Yes	** NA **			None
44	M62						Yes	** NA **			None
45	M63						Yes	** NA **			None
46	M64						Yes	** NA **			None
47	M65		BenPIN				Yes	** NA **			None
48	M66						Yes				None
49	M67		BenPIN				Yes	** NA **			None
50	M68						Yes	** NA **			None
51	M69						Yes	** NA **			None
52	M70		BenPIN				Yes	** NA **			None
53	M71						Yes				None
54	M72		BenPIN				Yes	** NA **			None
55	M73						Yes	** NA **			None
56	M74						Yes	** NA **			None
57	M75						Yes	** NA **			None
58	M76A						Yes				None
59	M77A						Yes	Default			None
60	M78						Yes	Default			None
61	M79A						Yes	Default			None
62	M80A						Yes	** NA **			None
63	M81						Yes	** NA **			None
64	M82	OOOOOX	OOOOOX				Yes	Default			None
65	M83A	OOOOOX	OOOOOX				Yes	Default			None



**Member Advanced Data (Continued)**

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
66	M84A						Yes	** NA **			None
67	M85A						Yes	** NA **			None
68	M86						Yes	** NA **			None
69	M87						Yes	** NA **			None
70	M88A						Yes	** NA **			None
71	M89		BenPIN				Yes	** NA **			None
72	M90						Yes				None
73	M91A		BenPIN				Yes	** NA **			None
74	M92A						Yes	** NA **			None
75	M93						Yes	** NA **			None
76	M94		BenPIN				Yes	** NA **			None
77	M95						Yes				None
78	M96		BenPIN				Yes	** NA **			None
79	M97						Yes	** NA **			None
80	M98						Yes	** NA **			None
81	M99						Yes	** NA **			None
82	M82A						Yes	Default			None
83	M91B						Yes	Default			None
84	M100						Yes	** NA **			None
85	M101						Yes	** NA **			None
86	M102						Yes	** NA **			None
87	M103						Yes	** NA **			None
88	M112						Yes				None
89	M113						Yes				None
90	M114						Yes				None
91	M115	OOOOOX					Yes	** NA **			None
92	M116	OOOOOX					Yes	** NA **			None
93	M117	OOOOOX					Yes	** NA **			None
94	M118	OOOOOX					Yes	** NA **			None
95	M119	OOOOOX					Yes	** NA **			None
96	M120	OOOOOX					Yes	** NA **			None
97	M121						Yes	Default			None
98	M122						Yes	Default			None
99	M123						Yes	Default			None
100	M100A						Yes	** NA **			None
101	M101A						Yes	** NA **			None
102	M102A						Yes	** NA **			None
103	M103A						Yes	** NA **			None
104	MP3C						Yes	** NA **			None
105	MP4C						Yes	** NA **			None
106	MP2C						Yes	** NA **			None
107	MP1C						Yes	** NA **			None
108	M108						Yes	** NA **			None
109	M109						Yes	** NA **			None
110	M110						Yes	** NA **			None
111	M111						Yes	** NA **			None
112	M112A						Yes	** NA **			None
113	M113A						Yes	** NA **			None
114	M114A						Yes	** NA **			None
115	M115A						Yes	** NA **			None
116	MP3B						Yes	** NA **			None
117	MP4B						Yes	** NA **			None
118	MP2B						Yes	** NA **			None
119	MP1B						Yes	** NA **			None
120	M120A						Yes	** NA **			None
121	M121A						Yes	** NA **			None
122	M122A						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...
123	M123A						Yes	** NA **			None

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP4A	Y	-43.55	1.25
2	MP4A	My	-.022	1.25
3	MP4A	Mz	0	1.25
4	MP4A	Y	-43.55	3.25
5	MP4A	My	-.022	3.25
6	MP4A	Mz	0	3.25
7	MP4B	Y	-43.55	1.25
8	MP4B	My	.014	1.25
9	MP4B	Mz	-.017	1.25
10	MP4B	Y	-43.55	3.25
11	MP4B	My	.014	3.25
12	MP4B	Mz	-.017	3.25
13	MP4C	Y	-43.55	1.25
14	MP4C	My	.007	1.25
15	MP4C	Mz	.02	1.25
16	MP4C	Y	-43.55	3.25
17	MP4C	My	.007	3.25
18	MP4C	Mz	.02	3.25
19	MP2A	Y	-74.7	2
20	MP2A	My	.037	2
21	MP2A	Mz	0	2
22	MP2B	Y	-74.7	2
23	MP2B	My	-.024	2
24	MP2B	Mz	.029	2
25	MP2C	Y	-74.7	2
26	MP2C	My	-.013	2
27	MP2C	Mz	-.035	2
28	MP3A	Y	-70.3	2
29	MP3A	My	.035	2
30	MP3A	Mz	0	2
31	MP3B	Y	-70.3	2
32	MP3B	My	-.023	2
33	MP3B	Mz	.027	2
34	MP3C	Y	-70.3	2
35	MP3C	My	-.012	2
36	MP3C	Mz	-.033	2
37	MP3A	Y	-20	.5
38	MP3A	My	-.01	.5
39	MP3A	Mz	-.012	.5
40	MP3A	Y	-20	4.5
41	MP3A	My	-.01	4.5
42	MP3A	Mz	-.012	4.5
43	MP3B	Y	-20	.5
44	MP3B	My	.015	.5
45	MP3B	Mz	-.000161	.5
46	MP3B	Y	-20	4.5
47	MP3B	My	.015	4.5
48	MP3B	Mz	-.000161	4.5
49	MP3C	Y	-20	.5
50	MP3C	My	-.008	.5
51	MP3C	Mz	.013	.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
52	MP3C	Y	-20	4.5
53	MP3C	My	-.008	4.5
54	MP3C	Mz	.013	4.5
55	MP3A	Y	-20	.5
56	MP3A	My	-.01	.5
57	MP3A	Mz	.012	.5
58	MP3A	Y	-20	4.5
59	MP3A	My	-.01	4.5
60	MP3A	Mz	.012	4.5
61	MP3B	Y	-20	.5
62	MP3B	My	-.003	.5
63	MP3B	Mz	-.015	.5
64	MP3B	Y	-20	4.5
65	MP3B	My	-.003	4.5
66	MP3B	Mz	-.015	4.5
67	MP3C	Y	-20	.5
68	MP3C	My	.014	.5
69	MP3C	Mz	.005	.5
70	MP3C	Y	-20	4.5
71	MP3C	My	.014	4.5
72	MP3C	Mz	.005	4.5
73	MP3A	Y	-8.8	4.75
74	MP3A	My	.009	4.75
75	MP3A	Mz	.003	4.75
76	MP3A	Y	-8.8	5.75
77	MP3A	My	.009	5.75
78	MP3A	Mz	.003	5.75
79	MP3A	Y	-8.8	4.75
80	MP3A	My	.009	4.75
81	MP3A	Mz	-.003	4.75
82	MP3A	Y	-8.8	5.75
83	MP3A	My	.009	5.75
84	MP3A	Mz	-.003	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	Y	-57.095	1.25
2	MP4A	My	-.029	1.25
3	MP4A	Mz	0	1.25
4	MP4A	Y	-57.095	3.25
5	MP4A	My	-.029	3.25
6	MP4A	Mz	0	3.25
7	MP4B	Y	-57.095	1.25
8	MP4B	My	.018	1.25
9	MP4B	Mz	-.022	1.25
10	MP4B	Y	-57.095	3.25
11	MP4B	My	.018	3.25
12	MP4B	Mz	-.022	3.25
13	MP4C	Y	-57.095	1.25
14	MP4C	My	.01	1.25
15	MP4C	Mz	.027	1.25
16	MP4C	Y	-57.095	3.25
17	MP4C	My	.01	3.25
18	MP4C	Mz	.027	3.25
19	MP2A	Y	-72.583	2
20	MP2A	My	.036	2



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
21	MP2A	Mz	0	2
22	MP2B	Y	-72.583	2
23	MP2B	My	-.023	2
24	MP2B	Mz	.028	2
25	MP2C	Y	-72.583	2
26	MP2C	My	-.012	2
27	MP2C	Mz	-.034	2
28	MP3A	Y	-69.247	2
29	MP3A	My	.035	2
30	MP3A	Mz	0	2
31	MP3B	Y	-69.247	2
32	MP3B	My	-.022	2
33	MP3B	Mz	.027	2
34	MP3C	Y	-69.247	2
35	MP3C	My	-.012	2
36	MP3C	Mz	-.033	2
37	MP3A	Y	-97.451	.5
38	MP3A	My	-.049	.5
39	MP3A	Mz	-.057	.5
40	MP3A	Y	-97.451	4.5
41	MP3A	My	-.049	4.5
42	MP3A	Mz	-.057	4.5
43	MP3B	Y	-97.451	.5
44	MP3B	My	.075	.5
45	MP3B	Mz	-.000786	.5
46	MP3B	Y	-97.451	4.5
47	MP3B	My	.075	4.5
48	MP3B	Mz	-.000786	4.5
49	MP3C	Y	-97.451	.5
50	MP3C	My	-.037	.5
51	MP3C	Mz	.065	.5
52	MP3C	Y	-97.451	4.5
53	MP3C	My	-.037	4.5
54	MP3C	Mz	.065	4.5
55	MP3A	Y	-97.451	.5
56	MP3A	My	-.049	.5
57	MP3A	Mz	.057	.5
58	MP3A	Y	-97.451	4.5
59	MP3A	My	-.049	4.5
60	MP3A	Mz	.057	4.5
61	MP3B	Y	-97.451	.5
62	MP3B	My	-.012	.5
63	MP3B	Mz	-.074	.5
64	MP3B	Y	-97.451	4.5
65	MP3B	My	-.012	4.5
66	MP3B	Mz	-.074	4.5
67	MP3C	Y	-97.451	.5
68	MP3C	My	.07	.5
69	MP3C	Mz	.026	.5
70	MP3C	Y	-97.451	4.5
71	MP3C	My	.07	4.5
72	MP3C	Mz	.026	4.5
73	MP3A	Y	-14.632	4.75
74	MP3A	My	.015	4.75
75	MP3A	Mz	.005	4.75
76	MP3A	Y	-14.632	5.75
77	MP3A	My	.015	5.75



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
78	MP3A	Mz	.005	5.75
79	MP3A	Y	-14.632	4.75
80	MP3A	My	.015	4.75
81	MP3A	Mz	-.005	4.75
82	MP3A	Y	-14.632	5.75
83	MP3A	My	.015	5.75
84	MP3A	Mz	-.005	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP4A	X	0	1.25
2	MP4A	Z	-68.425	1.25
3	MP4A	Mx	0	1.25
4	MP4A	X	0	3.25
5	MP4A	Z	-68.425	3.25
6	MP4A	Mx	0	3.25
7	MP4B	X	0	1.25
8	MP4B	Z	-42.1	1.25
9	MP4B	Mx	.016	1.25
10	MP4B	X	0	3.25
11	MP4B	Z	-42.1	3.25
12	MP4B	Mx	.016	3.25
13	MP4C	X	0	1.25
14	MP4C	Z	-28.813	1.25
15	MP4C	Mx	-.014	1.25
16	MP4C	X	0	3.25
17	MP4C	Z	-28.813	3.25
18	MP4C	Mx	-.014	3.25
19	MP2A	X	0	2
20	MP2A	Z	-54.112	2
21	MP2A	Mx	0	2
22	MP2B	X	0	2
23	MP2B	Z	-43.664	2
24	MP2B	Mx	-.017	2
25	MP2C	X	0	2
26	MP2C	Z	-38.39	2
27	MP2C	Mx	.018	2
28	MP3A	X	0	2
29	MP3A	Z	-54.112	2
30	MP3A	Mx	0	2
31	MP3B	X	0	2
32	MP3B	Z	-41.615	2
33	MP3B	Mx	-.016	2
34	MP3C	X	0	2
35	MP3C	Z	-35.307	2
36	MP3C	Mx	.017	2
37	MP3A	X	0	.5
38	MP3A	Z	-96.179	.5
39	MP3A	Mx	.056	.5
40	MP3A	X	0	4.5
41	MP3A	Z	-96.179	4.5
42	MP3A	Mx	.056	4.5
43	MP3B	X	0	.5
44	MP3B	Z	-64.016	.5
45	MP3B	Mx	.000516	.5
46	MP3B	X	0	4.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
47	MP3B	Z	-64.016	4.5
48	MP3B	Mx	.000516	4.5
49	MP3C	X	0	.5
50	MP3C	Z	-47.781	.5
51	MP3C	Mx	-.032	.5
52	MP3C	X	0	4.5
53	MP3C	Z	-47.781	4.5
54	MP3C	Mx	-.032	4.5
55	MP3A	X	0	.5
56	MP3A	Z	-96.179	.5
57	MP3A	Mx	-.056	.5
58	MP3A	X	0	4.5
59	MP3A	Z	-96.179	4.5
60	MP3A	Mx	-.056	4.5
61	MP3B	X	0	.5
62	MP3B	Z	-64.016	.5
63	MP3B	Mx	.049	.5
64	MP3B	X	0	4.5
65	MP3B	Z	-64.016	4.5
66	MP3B	Mx	.049	4.5
67	MP3C	X	0	.5
68	MP3C	Z	-47.781	.5
69	MP3C	Mx	-.013	.5
70	MP3C	X	0	4.5
71	MP3C	Z	-47.781	4.5
72	MP3C	Mx	-.013	4.5
73	MP3A	X	0	4.75
74	MP3A	Z	-16.757	4.75
75	MP3A	Mx	-.006	4.75
76	MP3A	X	0	5.75
77	MP3A	Z	-16.757	5.75
78	MP3A	Mx	-.006	5.75
79	MP3A	X	0	4.75
80	MP3A	Z	-16.757	4.75
81	MP3A	Mx	.006	4.75
82	MP3A	X	0	5.75
83	MP3A	Z	-16.757	5.75
84	MP3A	Mx	.006	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	28.605	1.25
2	MP4A	Z	-49.545	1.25
3	MP4A	Mx	-.014	1.25
4	MP4A	X	28.605	3.25
5	MP4A	Z	-49.545	3.25
6	MP4A	Mx	-.014	3.25
7	MP4B	X	12.459	1.25
8	MP4B	Z	-21.579	1.25
9	MP4B	Mx	.012	1.25
10	MP4B	X	12.459	3.25
11	MP4B	Z	-21.579	3.25
12	MP4B	Mx	.012	3.25
13	MP4C	X	24.945	1.25
14	MP4C	Z	-43.206	1.25
15	MP4C	Mx	-.016	1.25





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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
16	MP4C	X	24.945	3.25
17	MP4C	Z	-43.206	3.25
18	MP4C	Mx	-.016	3.25
19	MP2A	X	24.83	2
20	MP2A	Z	-43.007	2
21	MP2A	Mx	.012	2
22	MP2B	X	18.422	2
23	MP2B	Z	-31.908	2
24	MP2B	Mx	-.018	2
25	MP2C	X	23.378	2
26	MP2C	Z	-40.491	2
27	MP2C	Mx	.015	2
28	MP3A	X	24.394	2
29	MP3A	Z	-42.252	2
30	MP3A	Mx	.012	2
31	MP3B	X	16.729	2
32	MP3B	Z	-28.976	2
33	MP3B	Mx	-.016	2
34	MP3C	X	22.657	2
35	MP3C	Z	-39.242	2
36	MP3C	Mx	.015	2
37	MP3A	X	41.238	.5
38	MP3A	Z	-71.427	.5
39	MP3A	Mx	.021	.5
40	MP3A	X	41.238	4.5
41	MP3A	Z	-71.427	4.5
42	MP3A	Mx	.021	4.5
43	MP3B	X	21.511	.5
44	MP3B	Z	-37.258	.5
45	MP3B	Mx	.017	.5
46	MP3B	X	21.511	4.5
47	MP3B	Z	-37.258	4.5
48	MP3B	Mx	.017	4.5
49	MP3C	X	36.767	.5
50	MP3C	Z	-63.682	.5
51	MP3C	Mx	-.056	.5
52	MP3C	X	36.767	4.5
53	MP3C	Z	-63.682	4.5
54	MP3C	Mx	-.056	4.5
55	MP3A	X	41.238	.5
56	MP3A	Z	-71.427	.5
57	MP3A	Mx	-.062	.5
58	MP3A	X	41.238	4.5
59	MP3A	Z	-71.427	4.5
60	MP3A	Mx	-.062	4.5
61	MP3B	X	21.511	.5
62	MP3B	Z	-37.258	.5
63	MP3B	Mx	.026	.5
64	MP3B	X	21.511	4.5
65	MP3B	Z	-37.258	4.5
66	MP3B	Mx	.026	4.5
67	MP3C	X	36.767	.5
68	MP3C	Z	-63.682	.5
69	MP3C	Mx	.009	.5
70	MP3C	X	36.767	4.5
71	MP3C	Z	-63.682	4.5
72	MP3C	Mx	.009	4.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
73	MP3A	X	8.385	4.75
74	MP3A	Z	-14.523	4.75
75	MP3A	Mx	.004	4.75
76	MP3A	X	8.385	5.75
77	MP3A	Z	-14.523	5.75
78	MP3A	Mx	.004	5.75
79	MP3A	X	8.385	4.75
80	MP3A	Z	-14.523	4.75
81	MP3A	Mx	.013	4.75
82	MP3A	X	8.385	5.75
83	MP3A	Z	-14.523	5.75
84	MP3A	Mx	.013	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	30.12	1.25
2	MP4A	Z	-17.39	1.25
3	MP4A	Mx	-.015	1.25
4	MP4A	X	30.12	3.25
5	MP4A	Z	-17.39	3.25
6	MP4A	Mx	-.015	3.25
7	MP4B	X	24.952	1.25
8	MP4B	Z	-14.406	1.25
9	MP4B	Mx	.014	1.25
10	MP4B	X	24.952	3.25
11	MP4B	Z	-14.406	3.25
12	MP4B	Mx	.014	3.25
13	MP4C	X	58.087	1.25
14	MP4C	Z	-33.536	1.25
15	MP4C	Mx	-.006	1.25
16	MP4C	X	58.087	3.25
17	MP4C	Z	-33.536	3.25
18	MP4C	Mx	-.006	3.25
19	MP2A	X	35.298	2
20	MP2A	Z	-20.379	2
21	MP2A	Mx	.018	2
22	MP2B	X	33.247	2
23	MP2B	Z	-19.195	2
24	MP2B	Mx	-.018	2
25	MP2C	X	46.397	2
26	MP2C	Z	-26.787	2
27	MP2C	Mx	.005	2
28	MP3A	X	33.03	2
29	MP3A	Z	-19.07	2
30	MP3A	Mx	.017	2
31	MP3B	X	30.577	2
32	MP3B	Z	-17.654	2
33	MP3B	Mx	-.017	2
34	MP3C	X	46.306	2
35	MP3C	Z	-26.735	2
36	MP3C	Mx	.005	2
37	MP3A	X	47.694	.5
38	MP3A	Z	-27.536	.5
39	MP3A	Mx	-.008	.5
40	MP3A	X	47.694	4.5
41	MP3A	Z	-27.536	4.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
42	MP3A	Mx	-0.008	4.5
43	MP3B	X	41.38	.5
44	MP3B	Z	-23.89	.5
45	MP3B	Mx	.032	.5
46	MP3B	X	41.38	4.5
47	MP3B	Z	-23.89	4.5
48	MP3B	Mx	.032	4.5
49	MP3C	X	81.863	.5
50	MP3C	Z	-47.263	.5
51	MP3C	Mx	-.063	.5
52	MP3C	X	81.863	4.5
53	MP3C	Z	-47.263	4.5
54	MP3C	Mx	-.063	4.5
55	MP3A	X	47.694	.5
56	MP3A	Z	-27.536	.5
57	MP3A	Mx	-.04	.5
58	MP3A	X	47.694	4.5
59	MP3A	Z	-27.536	4.5
60	MP3A	Mx	-.04	4.5
61	MP3B	X	41.38	.5
62	MP3B	Z	-23.89	.5
63	MP3B	Mx	.013	.5
64	MP3B	X	41.38	4.5
65	MP3B	Z	-23.89	4.5
66	MP3B	Mx	.013	4.5
67	MP3C	X	81.863	.5
68	MP3C	Z	-47.263	.5
69	MP3C	Mx	.046	.5
70	MP3C	X	81.863	4.5
71	MP3C	Z	-47.263	4.5
72	MP3C	Mx	.046	4.5
73	MP3A	X	14.544	4.75
74	MP3A	Z	-8.397	4.75
75	MP3A	Mx	.012	4.75
76	MP3A	X	14.544	5.75
77	MP3A	Z	-8.397	5.75
78	MP3A	Mx	.012	5.75
79	MP3A	X	14.544	4.75
80	MP3A	Z	-8.397	4.75
81	MP3A	Mx	.017	4.75
82	MP3A	X	14.544	5.75
83	MP3A	Z	-8.397	5.75
84	MP3A	Mx	.017	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	23.565	1.25
2	MP4A	Z	0	1.25
3	MP4A	Mx	-.012	1.25
4	MP4A	X	23.565	3.25
5	MP4A	Z	0	3.25
6	MP4A	Mx	-.012	3.25
7	MP4B	X	49.89	1.25
8	MP4B	Z	0	1.25
9	MP4B	Mx	.016	1.25
10	MP4B	X	49.89	3.25



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
11	MP4B	Z	0	3.25
12	MP4B	Mx	.016	3.25
13	MP4C	X	63.178	1.25
14	MP4C	Z	0	1.25
15	MP4C	Mx	.011	1.25
16	MP4C	X	63.178	3.25
17	MP4C	Z	0	3.25
18	MP4C	Mx	.011	3.25
19	MP2A	X	36.307	2
20	MP2A	Z	0	2
21	MP2A	Mx	.018	2
22	MP2B	X	46.755	2
23	MP2B	Z	0	2
24	MP2B	Mx	-.015	2
25	MP2C	X	52.029	2
26	MP2C	Z	0	2
27	MP2C	Mx	-.009	2
28	MP3A	X	32.816	2
29	MP3A	Z	0	2
30	MP3A	Mx	.016	2
31	MP3B	X	45.313	2
32	MP3B	Z	0	2
33	MP3B	Mx	-.015	2
34	MP3C	X	51.621	2
35	MP3C	Z	0	2
36	MP3C	Mx	-.009	2
37	MP3A	X	41.369	.5
38	MP3A	Z	0	.5
39	MP3A	Mx	-.021	.5
40	MP3A	X	41.369	4.5
41	MP3A	Z	0	4.5
42	MP3A	Mx	-.021	4.5
43	MP3B	X	73.533	.5
44	MP3B	Z	0	.5
45	MP3B	Mx	.056	.5
46	MP3B	X	73.533	4.5
47	MP3B	Z	0	4.5
48	MP3B	Mx	.056	4.5
49	MP3C	X	89.768	.5
50	MP3C	Z	0	.5
51	MP3C	Mx	-.034	.5
52	MP3C	X	89.768	4.5
53	MP3C	Z	0	4.5
54	MP3C	Mx	-.034	4.5
55	MP3A	X	41.369	.5
56	MP3A	Z	0	.5
57	MP3A	Mx	-.021	.5
58	MP3A	X	41.369	4.5
59	MP3A	Z	0	4.5
60	MP3A	Mx	-.021	4.5
61	MP3B	X	73.533	.5
62	MP3B	Z	0	.5
63	MP3B	Mx	-.009	.5
64	MP3B	X	73.533	4.5
65	MP3B	Z	0	4.5
66	MP3B	Mx	-.009	4.5
67	MP3C	X	89.768	.5



Company : Colliers Engineering & Design  
 Designer :  
 Job Number : Project No. 10221532  
 Model Name : 5000179836-VZW\_MT\_LO\_H

Jan 31, 2024  
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**Member Point Loads (BLC 6 : Antenna Wo (90 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
68	MP3C	Z	0	.5
69	MP3C	Mx	.065	.5
70	MP3C	X	89.768	4.5
71	MP3C	Z	0	4.5
72	MP3C	Mx	.065	4.5
73	MP3A	X	16.807	4.75
74	MP3A	Z	0	4.75
75	MP3A	Mx	.017	4.75
76	MP3A	X	16.807	5.75
77	MP3A	Z	0	5.75
78	MP3A	Mx	.017	5.75
79	MP3A	X	16.807	4.75
80	MP3A	Z	0	4.75
81	MP3A	Mx	.017	4.75
82	MP3A	X	16.807	5.75
83	MP3A	Z	0	5.75
84	MP3A	Mx	.017	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP4A	X	30.12	1.25
2	MP4A	Z	17.39	1.25
3	MP4A	Mx	-.015	1.25
4	MP4A	X	30.12	3.25
5	MP4A	Z	17.39	3.25
6	MP4A	Mx	-.015	3.25
7	MP4B	X	58.087	1.25
8	MP4B	Z	33.536	1.25
9	MP4B	Mx	.006	1.25
10	MP4B	X	58.087	3.25
11	MP4B	Z	33.536	3.25
12	MP4B	Mx	.006	3.25
13	MP4C	X	36.46	1.25
14	MP4C	Z	21.05	1.25
15	MP4C	Mx	.016	1.25
16	MP4C	X	36.46	3.25
17	MP4C	Z	21.05	3.25
18	MP4C	Mx	.016	3.25
19	MP2A	X	35.298	2
20	MP2A	Z	20.379	2
21	MP2A	Mx	.018	2
22	MP2B	X	46.397	2
23	MP2B	Z	26.787	2
24	MP2B	Mx	-.005	2
25	MP2C	X	37.814	2
26	MP2C	Z	21.832	2
27	MP2C	Mx	-.017	2
28	MP3A	X	33.03	2
29	MP3A	Z	19.07	2
30	MP3A	Mx	.017	2
31	MP3B	X	46.306	2
32	MP3B	Z	26.735	2
33	MP3B	Mx	-.005	2
34	MP3C	X	36.04	2
35	MP3C	Z	20.808	2
36	MP3C	Mx	-.016	2



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
37	MP3A	X	47.694	.5
38	MP3A	Z	27.536	.5
39	MP3A	Mx	-.04	.5
40	MP3A	X	47.694	4.5
41	MP3A	Z	27.536	4.5
42	MP3A	Mx	-.04	4.5
43	MP3B	X	81.863	.5
44	MP3B	Z	47.263	.5
45	MP3B	Mx	.063	.5
46	MP3B	X	81.863	4.5
47	MP3B	Z	47.263	4.5
48	MP3B	Mx	.063	4.5
49	MP3C	X	55.439	.5
50	MP3C	Z	32.008	.5
51	MP3C	Mx	.000516	.5
52	MP3C	X	55.439	4.5
53	MP3C	Z	32.008	4.5
54	MP3C	Mx	.000516	4.5
55	MP3A	X	47.694	.5
56	MP3A	Z	27.536	.5
57	MP3A	Mx	-.008	.5
58	MP3A	X	47.694	4.5
59	MP3A	Z	27.536	4.5
60	MP3A	Mx	-.008	4.5
61	MP3B	X	81.863	.5
62	MP3B	Z	47.263	.5
63	MP3B	Mx	-.046	.5
64	MP3B	X	81.863	4.5
65	MP3B	Z	47.263	4.5
66	MP3B	Mx	-.046	4.5
67	MP3C	X	55.439	.5
68	MP3C	Z	32.008	.5
69	MP3C	Mx	.049	.5
70	MP3C	X	55.439	4.5
71	MP3C	Z	32.008	4.5
72	MP3C	Mx	.049	4.5
73	MP3A	X	14.544	4.75
74	MP3A	Z	8.397	4.75
75	MP3A	Mx	.017	4.75
76	MP3A	X	14.544	5.75
77	MP3A	Z	8.397	5.75
78	MP3A	Mx	.017	5.75
79	MP3A	X	14.544	4.75
80	MP3A	Z	8.397	4.75
81	MP3A	Mx	.012	4.75
82	MP3A	X	14.544	5.75
83	MP3A	Z	8.397	5.75
84	MP3A	Mx	.012	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	28.605	1.25
2	MP4A	Z	49.545	1.25
3	MP4A	Mx	-.014	1.25
4	MP4A	X	28.605	3.25
5	MP4A	Z	49.545	3.25



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
6	MP4A	Mx	-.014	3.25
7	MP4B	X	31.589	1.25
8	MP4B	Z	54.713	1.25
9	MP4B	Mx	-.011	1.25
10	MP4B	X	31.589	3.25
11	MP4B	Z	54.713	3.25
12	MP4B	Mx	-.011	3.25
13	MP4C	X	12.459	1.25
14	MP4C	Z	21.579	1.25
15	MP4C	Mx	.012	1.25
16	MP4C	X	12.459	3.25
17	MP4C	Z	21.579	3.25
18	MP4C	Mx	.012	3.25
19	MP2A	X	24.83	2
20	MP2A	Z	43.007	2
21	MP2A	Mx	.012	2
22	MP2B	X	26.015	2
23	MP2B	Z	45.059	2
24	MP2B	Mx	.009	2
25	MP2C	X	18.422	2
26	MP2C	Z	31.908	2
27	MP2C	Mx	-.018	2
28	MP3A	X	24.394	2
29	MP3A	Z	42.252	2
30	MP3A	Mx	.012	2
31	MP3B	X	25.81	2
32	MP3B	Z	44.705	2
33	MP3B	Mx	.009	2
34	MP3C	X	16.729	2
35	MP3C	Z	28.976	2
36	MP3C	Mx	-.016	2
37	MP3A	X	41.238	.5
38	MP3A	Z	71.427	.5
39	MP3A	Mx	-.062	.5
40	MP3A	X	41.238	4.5
41	MP3A	Z	71.427	4.5
42	MP3A	Mx	-.062	4.5
43	MP3B	X	44.884	.5
44	MP3B	Z	77.741	.5
45	MP3B	Mx	.034	.5
46	MP3B	X	44.884	4.5
47	MP3B	Z	77.741	4.5
48	MP3B	Mx	.034	4.5
49	MP3C	X	21.511	.5
50	MP3C	Z	37.258	.5
51	MP3C	Mx	.017	.5
52	MP3C	X	21.511	4.5
53	MP3C	Z	37.258	4.5
54	MP3C	Mx	.017	4.5
55	MP3A	X	41.238	.5
56	MP3A	Z	71.427	.5
57	MP3A	Mx	.021	.5
58	MP3A	X	41.238	4.5
59	MP3A	Z	71.427	4.5
60	MP3A	Mx	.021	4.5
61	MP3B	X	44.884	.5
62	MP3B	Z	77.741	.5





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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
63	MP3B	Mx	-.065	.5
64	MP3B	X	44.884	4.5
65	MP3B	Z	77.741	4.5
66	MP3B	Mx	-.065	4.5
67	MP3C	X	21.511	.5
68	MP3C	Z	37.258	.5
69	MP3C	Mx	.026	.5
70	MP3C	X	21.511	4.5
71	MP3C	Z	37.258	4.5
72	MP3C	Mx	.026	4.5
73	MP3A	X	8.385	4.75
74	MP3A	Z	14.523	4.75
75	MP3A	Mx	.013	4.75
76	MP3A	X	8.385	5.75
77	MP3A	Z	14.523	5.75
78	MP3A	Mx	.013	5.75
79	MP3A	X	8.385	4.75
80	MP3A	Z	14.523	4.75
81	MP3A	Mx	.004	4.75
82	MP3A	X	8.385	5.75
83	MP3A	Z	14.523	5.75
84	MP3A	Mx	.004	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	0	1.25
2	MP4A	Z	68.425	1.25
3	MP4A	Mx	0	1.25
4	MP4A	X	0	3.25
5	MP4A	Z	68.425	3.25
6	MP4A	Mx	0	3.25
7	MP4B	X	0	1.25
8	MP4B	Z	42.1	1.25
9	MP4B	Mx	-.016	1.25
10	MP4B	X	0	3.25
11	MP4B	Z	42.1	3.25
12	MP4B	Mx	-.016	3.25
13	MP4C	X	0	1.25
14	MP4C	Z	28.813	1.25
15	MP4C	Mx	.014	1.25
16	MP4C	X	0	3.25
17	MP4C	Z	28.813	3.25
18	MP4C	Mx	.014	3.25
19	MP2A	X	0	2
20	MP2A	Z	54.112	2
21	MP2A	Mx	0	2
22	MP2B	X	0	2
23	MP2B	Z	43.664	2
24	MP2B	Mx	.017	2
25	MP2C	X	0	2
26	MP2C	Z	38.39	2
27	MP2C	Mx	-.018	2
28	MP3A	X	0	2
29	MP3A	Z	54.112	2
30	MP3A	Mx	0	2
31	MP3B	X	0	2



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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
32	MP3B	Z	41.615	2
33	MP3B	Mx	.016	2
34	MP3C	X	0	2
35	MP3C	Z	35.307	2
36	MP3C	Mx	-.017	2
37	MP3A	X	0	.5
38	MP3A	Z	96.179	.5
39	MP3A	Mx	-.056	.5
40	MP3A	X	0	4.5
41	MP3A	Z	96.179	4.5
42	MP3A	Mx	-.056	4.5
43	MP3B	X	0	.5
44	MP3B	Z	64.016	.5
45	MP3B	Mx	-.000516	.5
46	MP3B	X	0	4.5
47	MP3B	Z	64.016	4.5
48	MP3B	Mx	-.000516	4.5
49	MP3C	X	0	.5
50	MP3C	Z	47.781	.5
51	MP3C	Mx	.032	.5
52	MP3C	X	0	4.5
53	MP3C	Z	47.781	4.5
54	MP3C	Mx	.032	4.5
55	MP3A	X	0	.5
56	MP3A	Z	96.179	.5
57	MP3A	Mx	.056	.5
58	MP3A	X	0	4.5
59	MP3A	Z	96.179	4.5
60	MP3A	Mx	.056	4.5
61	MP3B	X	0	.5
62	MP3B	Z	64.016	.5
63	MP3B	Mx	-.049	.5
64	MP3B	X	0	4.5
65	MP3B	Z	64.016	4.5
66	MP3B	Mx	-.049	4.5
67	MP3C	X	0	.5
68	MP3C	Z	47.781	.5
69	MP3C	Mx	.013	.5
70	MP3C	X	0	4.5
71	MP3C	Z	47.781	4.5
72	MP3C	Mx	.013	4.5
73	MP3A	X	0	4.75
74	MP3A	Z	16.757	4.75
75	MP3A	Mx	.006	4.75
76	MP3A	X	0	5.75
77	MP3A	Z	16.757	5.75
78	MP3A	Mx	.006	5.75
79	MP3A	X	0	4.75
80	MP3A	Z	16.757	4.75
81	MP3A	Mx	-.006	4.75
82	MP3A	X	0	5.75
83	MP3A	Z	16.757	5.75
84	MP3A	Mx	-.006	5.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
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**Member Point Loads (BLC 10 : Antenna Wo (210 Deg)) (Continued)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-28.605	1.25
2	MP4A	Z	49.545	1.25
3	MP4A	Mx	.014	1.25
4	MP4A	X	-28.605	3.25
5	MP4A	Z	49.545	3.25
6	MP4A	Mx	.014	3.25
7	MP4B	X	-12.459	1.25
8	MP4B	Z	21.579	1.25
9	MP4B	Mx	-.012	1.25
10	MP4B	X	-12.459	3.25
11	MP4B	Z	21.579	3.25
12	MP4B	Mx	-.012	3.25
13	MP4C	X	-24.945	1.25
14	MP4C	Z	43.206	1.25
15	MP4C	Mx	.016	1.25
16	MP4C	X	-24.945	3.25
17	MP4C	Z	43.206	3.25
18	MP4C	Mx	.016	3.25
19	MP2A	X	-24.83	2
20	MP2A	Z	43.007	2
21	MP2A	Mx	-.012	2
22	MP2B	X	-18.422	2
23	MP2B	Z	31.908	2
24	MP2B	Mx	.018	2
25	MP2C	X	-23.378	2
26	MP2C	Z	40.491	2
27	MP2C	Mx	-.015	2
28	MP3A	X	-24.394	2
29	MP3A	Z	42.252	2
30	MP3A	Mx	-.012	2
31	MP3B	X	-16.729	2
32	MP3B	Z	28.976	2
33	MP3B	Mx	.016	2
34	MP3C	X	-22.657	2
35	MP3C	Z	39.242	2
36	MP3C	Mx	-.015	2
37	MP3A	X	-41.238	.5
38	MP3A	Z	71.427	.5
39	MP3A	Mx	-.021	.5
40	MP3A	X	-41.238	4.5
41	MP3A	Z	71.427	4.5
42	MP3A	Mx	-.021	4.5
43	MP3B	X	-21.511	.5
44	MP3B	Z	37.258	.5
45	MP3B	Mx	-.017	.5
46	MP3B	X	-21.511	4.5
47	MP3B	Z	37.258	4.5
48	MP3B	Mx	-.017	4.5
49	MP3C	X	-36.767	.5
50	MP3C	Z	63.682	.5
51	MP3C	Mx	.056	.5
52	MP3C	X	-36.767	4.5
53	MP3C	Z	63.682	4.5
54	MP3C	Mx	.056	4.5
55	MP3A	X	-41.238	.5
56	MP3A	Z	71.427	.5
57	MP3A	Mx	.062	.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
58	MP3A	X	-41.238	4.5
59	MP3A	Z	71.427	4.5
60	MP3A	Mx	.062	4.5
61	MP3B	X	-21.511	.5
62	MP3B	Z	37.258	.5
63	MP3B	Mx	-.026	.5
64	MP3B	X	-21.511	4.5
65	MP3B	Z	37.258	4.5
66	MP3B	Mx	-.026	4.5
67	MP3C	X	-36.767	.5
68	MP3C	Z	63.682	.5
69	MP3C	Mx	-.009	.5
70	MP3C	X	-36.767	4.5
71	MP3C	Z	63.682	4.5
72	MP3C	Mx	-.009	4.5
73	MP3A	X	-8.385	4.75
74	MP3A	Z	14.523	4.75
75	MP3A	Mx	-.004	4.75
76	MP3A	X	-8.385	5.75
77	MP3A	Z	14.523	5.75
78	MP3A	Mx	-.004	5.75
79	MP3A	X	-8.385	4.75
80	MP3A	Z	14.523	4.75
81	MP3A	Mx	-.013	4.75
82	MP3A	X	-8.385	5.75
83	MP3A	Z	14.523	5.75
84	MP3A	Mx	-.013	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-30.12	1.25
2	MP4A	Z	17.39	1.25
3	MP4A	Mx	.015	1.25
4	MP4A	X	-30.12	3.25
5	MP4A	Z	17.39	3.25
6	MP4A	Mx	.015	3.25
7	MP4B	X	-24.952	1.25
8	MP4B	Z	14.406	1.25
9	MP4B	Mx	-.014	1.25
10	MP4B	X	-24.952	3.25
11	MP4B	Z	14.406	3.25
12	MP4B	Mx	-.014	3.25
13	MP4C	X	-58.087	1.25
14	MP4C	Z	33.536	1.25
15	MP4C	Mx	.006	1.25
16	MP4C	X	-58.087	3.25
17	MP4C	Z	33.536	3.25
18	MP4C	Mx	.006	3.25
19	MP2A	X	-35.298	2
20	MP2A	Z	20.379	2
21	MP2A	Mx	-.018	2
22	MP2B	X	-33.247	2
23	MP2B	Z	19.195	2
24	MP2B	Mx	.018	2
25	MP2C	X	-46.397	2
26	MP2C	Z	26.787	2



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
27	MP2C	Mx	-.005	2
28	MP3A	X	-33.03	2
29	MP3A	Z	19.07	2
30	MP3A	Mx	-.017	2
31	MP3B	X	-30.577	2
32	MP3B	Z	17.654	2
33	MP3B	Mx	.017	2
34	MP3C	X	-46.306	2
35	MP3C	Z	26.735	2
36	MP3C	Mx	-.005	2
37	MP3A	X	-47.694	.5
38	MP3A	Z	27.536	.5
39	MP3A	Mx	.008	.5
40	MP3A	X	-47.694	4.5
41	MP3A	Z	27.536	4.5
42	MP3A	Mx	.008	4.5
43	MP3B	X	-41.38	.5
44	MP3B	Z	23.89	.5
45	MP3B	Mx	-.032	.5
46	MP3B	X	-41.38	4.5
47	MP3B	Z	23.89	4.5
48	MP3B	Mx	-.032	4.5
49	MP3C	X	-81.863	.5
50	MP3C	Z	47.263	.5
51	MP3C	Mx	.063	.5
52	MP3C	X	-81.863	4.5
53	MP3C	Z	47.263	4.5
54	MP3C	Mx	.063	4.5
55	MP3A	X	-47.694	.5
56	MP3A	Z	27.536	.5
57	MP3A	Mx	.04	.5
58	MP3A	X	-47.694	4.5
59	MP3A	Z	27.536	4.5
60	MP3A	Mx	.04	4.5
61	MP3B	X	-41.38	.5
62	MP3B	Z	23.89	.5
63	MP3B	Mx	-.013	.5
64	MP3B	X	-41.38	4.5
65	MP3B	Z	23.89	4.5
66	MP3B	Mx	-.013	4.5
67	MP3C	X	-81.863	.5
68	MP3C	Z	47.263	.5
69	MP3C	Mx	-.046	.5
70	MP3C	X	-81.863	4.5
71	MP3C	Z	47.263	4.5
72	MP3C	Mx	-.046	4.5
73	MP3A	X	-14.544	4.75
74	MP3A	Z	8.397	4.75
75	MP3A	Mx	-.012	4.75
76	MP3A	X	-14.544	5.75
77	MP3A	Z	8.397	5.75
78	MP3A	Mx	-.012	5.75
79	MP3A	X	-14.544	4.75
80	MP3A	Z	8.397	4.75
81	MP3A	Mx	-.017	4.75
82	MP3A	X	-14.544	5.75
83	MP3A	Z	8.397	5.75



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
84	MP3A	Mx	-.017	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-23.565	1.25
2	MP4A	Z	0	1.25
3	MP4A	Mx	.012	1.25
4	MP4A	X	-23.565	3.25
5	MP4A	Z	0	3.25
6	MP4A	Mx	.012	3.25
7	MP4B	X	-49.89	1.25
8	MP4B	Z	0	1.25
9	MP4B	Mx	-.016	1.25
10	MP4B	X	-49.89	3.25
11	MP4B	Z	0	3.25
12	MP4B	Mx	-.016	3.25
13	MP4C	X	-63.178	1.25
14	MP4C	Z	0	1.25
15	MP4C	Mx	-.011	1.25
16	MP4C	X	-63.178	3.25
17	MP4C	Z	0	3.25
18	MP4C	Mx	-.011	3.25
19	MP2A	X	-36.307	2
20	MP2A	Z	0	2
21	MP2A	Mx	-.018	2
22	MP2B	X	-46.755	2
23	MP2B	Z	0	2
24	MP2B	Mx	.015	2
25	MP2C	X	-52.029	2
26	MP2C	Z	0	2
27	MP2C	Mx	.009	2
28	MP3A	X	-32.816	2
29	MP3A	Z	0	2
30	MP3A	Mx	-.016	2
31	MP3B	X	-45.313	2
32	MP3B	Z	0	2
33	MP3B	Mx	.015	2
34	MP3C	X	-51.621	2
35	MP3C	Z	0	2
36	MP3C	Mx	.009	2
37	MP3A	X	-41.369	.5
38	MP3A	Z	0	.5
39	MP3A	Mx	.021	.5
40	MP3A	X	-41.369	4.5
41	MP3A	Z	0	4.5
42	MP3A	Mx	.021	4.5
43	MP3B	X	-73.533	.5
44	MP3B	Z	0	.5
45	MP3B	Mx	-.056	.5
46	MP3B	X	-73.533	4.5
47	MP3B	Z	0	4.5
48	MP3B	Mx	-.056	4.5
49	MP3C	X	-89.768	.5
50	MP3C	Z	0	.5
51	MP3C	Mx	.034	.5
52	MP3C	X	-89.768	4.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
53	MP3C	Z	0	4.5
54	MP3C	Mx	.034	4.5
55	MP3A	X	-41.369	.5
56	MP3A	Z	0	.5
57	MP3A	Mx	.021	.5
58	MP3A	X	-41.369	4.5
59	MP3A	Z	0	4.5
60	MP3A	Mx	.021	4.5
61	MP3B	X	-73.533	.5
62	MP3B	Z	0	.5
63	MP3B	Mx	.009	.5
64	MP3B	X	-73.533	4.5
65	MP3B	Z	0	4.5
66	MP3B	Mx	.009	4.5
67	MP3C	X	-89.768	.5
68	MP3C	Z	0	.5
69	MP3C	Mx	-.065	.5
70	MP3C	X	-89.768	4.5
71	MP3C	Z	0	4.5
72	MP3C	Mx	-.065	4.5
73	MP3A	X	-16.807	4.75
74	MP3A	Z	0	4.75
75	MP3A	Mx	-.017	4.75
76	MP3A	X	-16.807	5.75
77	MP3A	Z	0	5.75
78	MP3A	Mx	-.017	5.75
79	MP3A	X	-16.807	4.75
80	MP3A	Z	0	4.75
81	MP3A	Mx	-.017	4.75
82	MP3A	X	-16.807	5.75
83	MP3A	Z	0	5.75
84	MP3A	Mx	-.017	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-30.12	1.25
2	MP4A	Z	-17.39	1.25
3	MP4A	Mx	.015	1.25
4	MP4A	X	-30.12	3.25
5	MP4A	Z	-17.39	3.25
6	MP4A	Mx	.015	3.25
7	MP4B	X	-58.087	1.25
8	MP4B	Z	-33.536	1.25
9	MP4B	Mx	-.006	1.25
10	MP4B	X	-58.087	3.25
11	MP4B	Z	-33.536	3.25
12	MP4B	Mx	-.006	3.25
13	MP4C	X	-36.46	1.25
14	MP4C	Z	-21.05	1.25
15	MP4C	Mx	-.016	1.25
16	MP4C	X	-36.46	3.25
17	MP4C	Z	-21.05	3.25
18	MP4C	Mx	-.016	3.25
19	MP2A	X	-35.298	2
20	MP2A	Z	-20.379	2
21	MP2A	Mx	-.018	2





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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
22	MP2B	X	-46.397	2
23	MP2B	Z	-26.787	2
24	MP2B	Mx	.005	2
25	MP2C	X	-37.814	2
26	MP2C	Z	-21.832	2
27	MP2C	Mx	.017	2
28	MP3A	X	-33.03	2
29	MP3A	Z	-19.07	2
30	MP3A	Mx	-.017	2
31	MP3B	X	-46.306	2
32	MP3B	Z	-26.735	2
33	MP3B	Mx	.005	2
34	MP3C	X	-36.04	2
35	MP3C	Z	-20.808	2
36	MP3C	Mx	.016	2
37	MP3A	X	-47.694	.5
38	MP3A	Z	-27.536	.5
39	MP3A	Mx	.04	.5
40	MP3A	X	-47.694	4.5
41	MP3A	Z	-27.536	4.5
42	MP3A	Mx	.04	4.5
43	MP3B	X	-81.863	.5
44	MP3B	Z	-47.263	.5
45	MP3B	Mx	-.063	.5
46	MP3B	X	-81.863	4.5
47	MP3B	Z	-47.263	4.5
48	MP3B	Mx	-.063	4.5
49	MP3C	X	-55.439	.5
50	MP3C	Z	-32.008	.5
51	MP3C	Mx	-.000516	.5
52	MP3C	X	-55.439	4.5
53	MP3C	Z	-32.008	4.5
54	MP3C	Mx	-.000516	4.5
55	MP3A	X	-47.694	.5
56	MP3A	Z	-27.536	.5
57	MP3A	Mx	.008	.5
58	MP3A	X	-47.694	4.5
59	MP3A	Z	-27.536	4.5
60	MP3A	Mx	.008	4.5
61	MP3B	X	-81.863	.5
62	MP3B	Z	-47.263	.5
63	MP3B	Mx	.046	.5
64	MP3B	X	-81.863	4.5
65	MP3B	Z	-47.263	4.5
66	MP3B	Mx	.046	4.5
67	MP3C	X	-55.439	.5
68	MP3C	Z	-32.008	.5
69	MP3C	Mx	-.049	.5
70	MP3C	X	-55.439	4.5
71	MP3C	Z	-32.008	4.5
72	MP3C	Mx	-.049	4.5
73	MP3A	X	-14.544	4.75
74	MP3A	Z	-8.397	4.75
75	MP3A	Mx	-.017	4.75
76	MP3A	X	-14.544	5.75
77	MP3A	Z	-8.397	5.75
78	MP3A	Mx	-.017	5.75



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
79	MP3A	X	-14.544	4.75
80	MP3A	Z	-8.397	4.75
81	MP3A	Mx	-.012	4.75
82	MP3A	X	-14.544	5.75
83	MP3A	Z	-8.397	5.75
84	MP3A	Mx	-.012	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	-28.605	1.25
2	MP4A	Z	-49.545	1.25
3	MP4A	Mx	.014	1.25
4	MP4A	X	-28.605	3.25
5	MP4A	Z	-49.545	3.25
6	MP4A	Mx	.014	3.25
7	MP4B	X	-31.589	1.25
8	MP4B	Z	-54.713	1.25
9	MP4B	Mx	.011	1.25
10	MP4B	X	-31.589	3.25
11	MP4B	Z	-54.713	3.25
12	MP4B	Mx	.011	3.25
13	MP4C	X	-12.459	1.25
14	MP4C	Z	-21.579	1.25
15	MP4C	Mx	-.012	1.25
16	MP4C	X	-12.459	3.25
17	MP4C	Z	-21.579	3.25
18	MP4C	Mx	-.012	3.25
19	MP2A	X	-24.83	2
20	MP2A	Z	-43.007	2
21	MP2A	Mx	-.012	2
22	MP2B	X	-26.015	2
23	MP2B	Z	-45.059	2
24	MP2B	Mx	-.009	2
25	MP2C	X	-18.422	2
26	MP2C	Z	-31.908	2
27	MP2C	Mx	.018	2
28	MP3A	X	-24.394	2
29	MP3A	Z	-42.252	2
30	MP3A	Mx	-.012	2
31	MP3B	X	-25.81	2
32	MP3B	Z	-44.705	2
33	MP3B	Mx	-.009	2
34	MP3C	X	-16.729	2
35	MP3C	Z	-28.976	2
36	MP3C	Mx	.016	2
37	MP3A	X	-41.238	.5
38	MP3A	Z	-71.427	.5
39	MP3A	Mx	.062	.5
40	MP3A	X	-41.238	4.5
41	MP3A	Z	-71.427	4.5
42	MP3A	Mx	.062	4.5
43	MP3B	X	-44.884	.5
44	MP3B	Z	-77.741	.5
45	MP3B	Mx	-.034	.5
46	MP3B	X	-44.884	4.5
47	MP3B	Z	-77.741	4.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
48	MP3B	Mx	-.034	4.5
49	MP3C	X	-21.511	.5
50	MP3C	Z	-37.258	.5
51	MP3C	Mx	-.017	.5
52	MP3C	X	-21.511	4.5
53	MP3C	Z	-37.258	4.5
54	MP3C	Mx	-.017	4.5
55	MP3A	X	-41.238	.5
56	MP3A	Z	-71.427	.5
57	MP3A	Mx	-.021	.5
58	MP3A	X	-41.238	4.5
59	MP3A	Z	-71.427	4.5
60	MP3A	Mx	-.021	4.5
61	MP3B	X	-44.884	.5
62	MP3B	Z	-77.741	.5
63	MP3B	Mx	.065	.5
64	MP3B	X	-44.884	4.5
65	MP3B	Z	-77.741	4.5
66	MP3B	Mx	.065	4.5
67	MP3C	X	-21.511	.5
68	MP3C	Z	-37.258	.5
69	MP3C	Mx	-.026	.5
70	MP3C	X	-21.511	4.5
71	MP3C	Z	-37.258	4.5
72	MP3C	Mx	-.026	4.5
73	MP3A	X	-8.385	4.75
74	MP3A	Z	-14.523	4.75
75	MP3A	Mx	-.013	4.75
76	MP3A	X	-8.385	5.75
77	MP3A	Z	-14.523	5.75
78	MP3A	Mx	-.013	5.75
79	MP3A	X	-8.385	4.75
80	MP3A	Z	-14.523	4.75
81	MP3A	Mx	-.004	4.75
82	MP3A	X	-8.385	5.75
83	MP3A	Z	-14.523	5.75
84	MP3A	Mx	-.004	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP4A	X	0	1.25
2	MP4A	Z	-17.086	1.25
3	MP4A	Mx	0	1.25
4	MP4A	X	0	3.25
5	MP4A	Z	-17.086	3.25
6	MP4A	Mx	0	3.25
7	MP4B	X	0	1.25
8	MP4B	Z	-11.517	1.25
9	MP4B	Mx	.004	1.25
10	MP4B	X	0	3.25
11	MP4B	Z	-11.517	3.25
12	MP4B	Mx	.004	3.25
13	MP4C	X	0	1.25
14	MP4C	Z	-8.707	1.25
15	MP4C	Mx	-.004	1.25
16	MP4C	X	0	3.25



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
17	MP4C	Z	-8.707	3.25
18	MP4C	Mx	-.004	3.25
19	MP2A	X	0	2
20	MP2A	Z	-14.811	2
21	MP2A	Mx	0	2
22	MP2B	X	0	2
23	MP2B	Z	-12.287	2
24	MP2B	Mx	-.005	2
25	MP2C	X	0	2
26	MP2C	Z	-11.012	2
27	MP2C	Mx	.005	2
28	MP3A	X	0	2
29	MP3A	Z	-14.811	2
30	MP3A	Mx	0	2
31	MP3B	X	0	2
32	MP3B	Z	-11.832	2
33	MP3B	Mx	-.005	2
34	MP3C	X	0	2
35	MP3C	Z	-10.328	2
36	MP3C	Mx	.005	2
37	MP3A	X	0	.5
38	MP3A	Z	-28.672	.5
39	MP3A	Mx	.017	.5
40	MP3A	X	0	4.5
41	MP3A	Z	-28.672	4.5
42	MP3A	Mx	.017	4.5
43	MP3B	X	0	.5
44	MP3B	Z	-23.683	.5
45	MP3B	Mx	.000191	.5
46	MP3B	X	0	4.5
47	MP3B	Z	-23.683	4.5
48	MP3B	Mx	.000191	4.5
49	MP3C	X	0	.5
50	MP3C	Z	-21.165	.5
51	MP3C	Mx	-.014	.5
52	MP3C	X	0	4.5
53	MP3C	Z	-21.165	4.5
54	MP3C	Mx	-.014	4.5
55	MP3A	X	0	.5
56	MP3A	Z	-28.672	.5
57	MP3A	Mx	-.017	.5
58	MP3A	X	0	4.5
59	MP3A	Z	-28.672	4.5
60	MP3A	Mx	-.017	4.5
61	MP3B	X	0	.5
62	MP3B	Z	-23.683	.5
63	MP3B	Mx	.018	.5
64	MP3B	X	0	4.5
65	MP3B	Z	-23.683	4.5
66	MP3B	Mx	.018	4.5
67	MP3C	X	0	.5
68	MP3C	Z	-21.165	.5
69	MP3C	Mx	-.006	.5
70	MP3C	X	0	4.5
71	MP3C	Z	-21.165	4.5
72	MP3C	Mx	-.006	4.5
73	MP3A	X	0	4.75



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
74	MP3A	Z	-1.747	4.75
75	MP3A	Mx	-.000582	4.75
76	MP3A	X	0	5.75
77	MP3A	Z	-1.747	5.75
78	MP3A	Mx	-.000582	5.75
79	MP3A	X	0	4.75
80	MP3A	Z	-1.747	4.75
81	MP3A	Mx	.000582	4.75
82	MP3A	X	0	5.75
83	MP3A	Z	-1.747	5.75
84	MP3A	Mx	.000582	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	7.357	1.25
2	MP4A	Z	-12.742	1.25
3	MP4A	Mx	-.004	1.25
4	MP4A	X	7.357	3.25
5	MP4A	Z	-12.742	3.25
6	MP4A	Mx	-.004	3.25
7	MP4B	X	3.941	1.25
8	MP4B	Z	-6.827	1.25
9	MP4B	Mx	.004	1.25
10	MP4B	X	3.941	3.25
11	MP4B	Z	-6.827	3.25
12	MP4B	Mx	.004	3.25
13	MP4C	X	6.583	1.25
14	MP4C	Z	-11.401	1.25
15	MP4C	Mx	-.004	1.25
16	MP4C	X	6.583	3.25
17	MP4C	Z	-11.401	3.25
18	MP4C	Mx	-.004	3.25
19	MP2A	X	6.868	2
20	MP2A	Z	-11.896	2
21	MP2A	Mx	.003	2
22	MP2B	X	5.319	2
23	MP2B	Z	-9.213	2
24	MP2B	Mx	-.005	2
25	MP2C	X	6.517	2
26	MP2C	Z	-11.288	2
27	MP2C	Mx	.004	2
28	MP3A	X	6.771	2
29	MP3A	Z	-11.728	2
30	MP3A	Mx	.003	2
31	MP3B	X	4.944	2
32	MP3B	Z	-8.563	2
33	MP3B	Mx	-.005	2
34	MP3C	X	6.357	2
35	MP3C	Z	-11.01	2
36	MP3C	Mx	.004	2
37	MP3A	X	13.273	.5
38	MP3A	Z	-22.99	.5
39	MP3A	Mx	.007	.5
40	MP3A	X	13.273	4.5
41	MP3A	Z	-22.99	4.5
42	MP3A	Mx	.007	4.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
43	MP3B	X	10.214	.5
44	MP3B	Z	-17.69	.5
45	MP3B	Mx	.008	.5
46	MP3B	X	10.214	4.5
47	MP3B	Z	-17.69	4.5
48	MP3B	Mx	.008	4.5
49	MP3C	X	12.58	.5
50	MP3C	Z	-21.789	.5
51	MP3C	Mx	-.019	.5
52	MP3C	X	12.58	4.5
53	MP3C	Z	-21.789	4.5
54	MP3C	Mx	-.019	4.5
55	MP3A	X	13.273	.5
56	MP3A	Z	-22.99	.5
57	MP3A	Mx	-.02	.5
58	MP3A	X	13.273	4.5
59	MP3A	Z	-22.99	4.5
60	MP3A	Mx	-.02	4.5
61	MP3B	X	10.214	.5
62	MP3B	Z	-17.69	.5
63	MP3B	Mx	.012	.5
64	MP3B	X	10.214	4.5
65	MP3B	Z	-17.69	4.5
66	MP3B	Mx	.012	4.5
67	MP3C	X	12.58	.5
68	MP3C	Z	-21.789	.5
69	MP3C	Mx	.003	.5
70	MP3C	X	12.58	4.5
71	MP3C	Z	-21.789	4.5
72	MP3C	Mx	.003	4.5
73	MP3A	X	1.18	4.75
74	MP3A	Z	-2.045	4.75
75	MP3A	Mx	.000498	4.75
76	MP3A	X	1.18	5.75
77	MP3A	Z	-2.045	5.75
78	MP3A	Mx	.000498	5.75
79	MP3A	X	1.18	4.75
80	MP3A	Z	-2.045	4.75
81	MP3A	Mx	.002	4.75
82	MP3A	X	1.18	5.75
83	MP3A	Z	-2.045	5.75
84	MP3A	Mx	.002	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	8.633	1.25
2	MP4A	Z	-4.985	1.25
3	MP4A	Mx	-.004	1.25
4	MP4A	X	8.633	3.25
5	MP4A	Z	-4.985	3.25
6	MP4A	Mx	-.004	3.25
7	MP4B	X	7.54	1.25
8	MP4B	Z	-4.353	1.25
9	MP4B	Mx	.004	1.25
10	MP4B	X	7.54	3.25
11	MP4B	Z	-4.353	3.25



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
12	MP4B	Mx	.004	3.25
13	MP4C	X	14.549	1.25
14	MP4C	Z	-8.4	1.25
15	MP4C	Mx	-.001	1.25
16	MP4C	X	14.549	3.25
17	MP4C	Z	-8.4	3.25
18	MP4C	Mx	-.001	3.25
19	MP2A	X	10.032	2
20	MP2A	Z	-5.792	2
21	MP2A	Mx	.005	2
22	MP2B	X	9.537	2
23	MP2B	Z	-5.506	2
24	MP2B	Mx	-.005	2
25	MP2C	X	12.715	2
26	MP2C	Z	-7.341	2
27	MP2C	Mx	.001	2
28	MP3A	X	9.529	2
29	MP3A	Z	-5.502	2
30	MP3A	Mx	.005	2
31	MP3B	X	8.944	2
32	MP3B	Z	-5.164	2
33	MP3B	Mx	-.005	2
34	MP3C	X	12.695	2
35	MP3C	Z	-7.329	2
36	MP3C	Mx	.001	2
37	MP3A	X	19.309	.5
38	MP3A	Z	-11.148	.5
39	MP3A	Mx	-.003	.5
40	MP3A	X	19.309	4.5
41	MP3A	Z	-11.148	4.5
42	MP3A	Mx	-.003	4.5
43	MP3B	X	18.33	.5
44	MP3B	Z	-10.583	.5
45	MP3B	Mx	.014	.5
46	MP3B	X	18.33	4.5
47	MP3B	Z	-10.583	4.5
48	MP3B	Mx	.014	4.5
49	MP3C	X	24.608	.5
50	MP3C	Z	-14.208	.5
51	MP3C	Mx	-.019	.5
52	MP3C	X	24.608	4.5
53	MP3C	Z	-14.208	4.5
54	MP3C	Mx	-.019	4.5
55	MP3A	X	19.309	.5
56	MP3A	Z	-11.148	.5
57	MP3A	Mx	-.016	.5
58	MP3A	X	19.309	4.5
59	MP3A	Z	-11.148	4.5
60	MP3A	Mx	-.016	4.5
61	MP3B	X	18.33	.5
62	MP3B	Z	-10.583	.5
63	MP3B	Mx	.006	.5
64	MP3B	X	18.33	4.5
65	MP3B	Z	-10.583	4.5
66	MP3B	Mx	.006	4.5
67	MP3C	X	24.608	.5
68	MP3C	Z	-14.208	.5





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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
69	MP3C	Mx	.014	.5
70	MP3C	X	24.608	4.5
71	MP3C	Z	-14.208	4.5
72	MP3C	Mx	.014	4.5
73	MP3A	X	3.109	4.75
74	MP3A	Z	-1.795	4.75
75	MP3A	Mx	.003	4.75
76	MP3A	X	3.109	5.75
77	MP3A	Z	-1.795	5.75
78	MP3A	Mx	.003	5.75
79	MP3A	X	3.109	4.75
80	MP3A	Z	-1.795	4.75
81	MP3A	Mx	.004	4.75
82	MP3A	X	3.109	5.75
83	MP3A	Z	-1.795	5.75
84	MP3A	Mx	.004	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	7.597	1.25
2	MP4A	Z	0	1.25
3	MP4A	Mx	-.004	1.25
4	MP4A	X	7.597	3.25
5	MP4A	Z	0	3.25
6	MP4A	Mx	-.004	3.25
7	MP4B	X	13.165	1.25
8	MP4B	Z	0	1.25
9	MP4B	Mx	.004	1.25
10	MP4B	X	13.165	3.25
11	MP4B	Z	0	3.25
12	MP4B	Mx	.004	3.25
13	MP4C	X	15.976	1.25
14	MP4C	Z	0	1.25
15	MP4C	Mx	.003	1.25
16	MP4C	X	15.976	3.25
17	MP4C	Z	0	3.25
18	MP4C	Mx	.003	3.25
19	MP2A	X	10.509	2
20	MP2A	Z	0	2
21	MP2A	Mx	.005	2
22	MP2B	X	13.034	2
23	MP2B	Z	0	2
24	MP2B	Mx	-.004	2
25	MP2C	X	14.308	2
26	MP2C	Z	0	2
27	MP2C	Mx	-.002	2
28	MP3A	X	9.734	2
29	MP3A	Z	0	2
30	MP3A	Mx	.005	2
31	MP3B	X	12.714	2
32	MP3B	Z	0	2
33	MP3B	Mx	-.004	2
34	MP3C	X	14.218	2
35	MP3C	Z	0	2
36	MP3C	Mx	-.002	2
37	MP3A	X	20.171	.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
38	MP3A	Z	0	.5
39	MP3A	Mx	-.01	.5
40	MP3A	X	20.171	4.5
41	MP3A	Z	0	4.5
42	MP3A	Mx	-.01	4.5
43	MP3B	X	25.159	.5
44	MP3B	Z	0	.5
45	MP3B	Mx	.019	.5
46	MP3B	X	25.159	4.5
47	MP3B	Z	0	4.5
48	MP3B	Mx	.019	4.5
49	MP3C	X	27.677	.5
50	MP3C	Z	0	.5
51	MP3C	Mx	-.01	.5
52	MP3C	X	27.677	4.5
53	MP3C	Z	0	4.5
54	MP3C	Mx	-.01	4.5
55	MP3A	X	20.171	.5
56	MP3A	Z	0	.5
57	MP3A	Mx	-.01	.5
58	MP3A	X	20.171	4.5
59	MP3A	Z	0	4.5
60	MP3A	Mx	-.01	4.5
61	MP3B	X	25.159	.5
62	MP3B	Z	0	.5
63	MP3B	Mx	-.003	.5
64	MP3B	X	25.159	4.5
65	MP3B	Z	0	4.5
66	MP3B	Mx	-.003	4.5
67	MP3C	X	27.677	.5
68	MP3C	Z	0	.5
69	MP3C	Mx	.02	.5
70	MP3C	X	27.677	4.5
71	MP3C	Z	0	4.5
72	MP3C	Mx	.02	4.5
73	MP3A	X	4.204	4.75
74	MP3A	Z	0	4.75
75	MP3A	Mx	.004	4.75
76	MP3A	X	4.204	5.75
77	MP3A	Z	0	5.75
78	MP3A	Mx	.004	5.75
79	MP3A	X	4.204	4.75
80	MP3A	Z	0	4.75
81	MP3A	Mx	.004	4.75
82	MP3A	X	4.204	5.75
83	MP3A	Z	0	5.75
84	MP3A	Mx	.004	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP4A	X	8.633	1.25
2	MP4A	Z	4.985	1.25
3	MP4A	Mx	-.004	1.25
4	MP4A	X	8.633	3.25
5	MP4A	Z	4.985	3.25
6	MP4A	Mx	-.004	3.25



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
7	MP4B	X	14.549	1.25
8	MP4B	Z	8.4	1.25
9	MP4B	Mx	.001	1.25
10	MP4B	X	14.549	3.25
11	MP4B	Z	8.4	3.25
12	MP4B	Mx	.001	3.25
13	MP4C	X	9.974	1.25
14	MP4C	Z	5.759	1.25
15	MP4C	Mx	.004	1.25
16	MP4C	X	9.974	3.25
17	MP4C	Z	5.759	3.25
18	MP4C	Mx	.004	3.25
19	MP2A	X	10.032	2
20	MP2A	Z	5.792	2
21	MP2A	Mx	.005	2
22	MP2B	X	12.715	2
23	MP2B	Z	7.341	2
24	MP2B	Mx	-.001	2
25	MP2C	X	10.64	2
26	MP2C	Z	6.143	2
27	MP2C	Mx	-.005	2
28	MP3A	X	9.529	2
29	MP3A	Z	5.502	2
30	MP3A	Mx	.005	2
31	MP3B	X	12.695	2
32	MP3B	Z	7.329	2
33	MP3B	Mx	-.001	2
34	MP3C	X	10.247	2
35	MP3C	Z	5.916	2
36	MP3C	Mx	-.005	2
37	MP3A	X	19.309	.5
38	MP3A	Z	11.148	.5
39	MP3A	Mx	-.016	.5
40	MP3A	X	19.309	4.5
41	MP3A	Z	11.148	4.5
42	MP3A	Mx	-.016	4.5
43	MP3B	X	24.608	.5
44	MP3B	Z	14.208	.5
45	MP3B	Mx	.019	.5
46	MP3B	X	24.608	4.5
47	MP3B	Z	14.208	4.5
48	MP3B	Mx	.019	4.5
49	MP3C	X	20.51	.5
50	MP3C	Z	11.842	.5
51	MP3C	Mx	.000191	.5
52	MP3C	X	20.51	4.5
53	MP3C	Z	11.842	4.5
54	MP3C	Mx	.000191	4.5
55	MP3A	X	19.309	.5
56	MP3A	Z	11.148	.5
57	MP3A	Mx	-.003	.5
58	MP3A	X	19.309	4.5
59	MP3A	Z	11.148	4.5
60	MP3A	Mx	-.003	4.5
61	MP3B	X	24.608	.5
62	MP3B	Z	14.208	.5
63	MP3B	Mx	-.014	.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.-%]
64	MP3B	X	24.608	4.5
65	MP3B	Z	14.208	4.5
66	MP3B	Mx	-.014	4.5
67	MP3C	X	20.51	.5
68	MP3C	Z	11.842	.5
69	MP3C	Mx	.018	.5
70	MP3C	X	20.51	4.5
71	MP3C	Z	11.842	4.5
72	MP3C	Mx	.018	4.5
73	MP3A	X	3.109	4.75
74	MP3A	Z	1.795	4.75
75	MP3A	Mx	.004	4.75
76	MP3A	X	3.109	5.75
77	MP3A	Z	1.795	5.75
78	MP3A	Mx	.004	5.75
79	MP3A	X	3.109	4.75
80	MP3A	Z	1.795	4.75
81	MP3A	Mx	.003	4.75
82	MP3A	X	3.109	5.75
83	MP3A	Z	1.795	5.75
84	MP3A	Mx	.003	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.-%]
1	MP4A	X	7.357	1.25
2	MP4A	Z	12.742	1.25
3	MP4A	Mx	-.004	1.25
4	MP4A	X	7.357	3.25
5	MP4A	Z	12.742	3.25
6	MP4A	Mx	-.004	3.25
7	MP4B	X	7.988	1.25
8	MP4B	Z	13.835	1.25
9	MP4B	Mx	-.003	1.25
10	MP4B	X	7.988	3.25
11	MP4B	Z	13.835	3.25
12	MP4B	Mx	-.003	3.25
13	MP4C	X	3.941	1.25
14	MP4C	Z	6.827	1.25
15	MP4C	Mx	.004	1.25
16	MP4C	X	3.941	3.25
17	MP4C	Z	6.827	3.25
18	MP4C	Mx	.004	3.25
19	MP2A	X	6.868	2
20	MP2A	Z	11.896	2
21	MP2A	Mx	.003	2
22	MP2B	X	7.154	2
23	MP2B	Z	12.391	2
24	MP2B	Mx	.002	2
25	MP2C	X	5.319	2
26	MP2C	Z	9.213	2
27	MP2C	Mx	-.005	2
28	MP3A	X	6.771	2
29	MP3A	Z	11.728	2
30	MP3A	Mx	.003	2
31	MP3B	X	7.109	2
32	MP3B	Z	12.313	2



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
33	MP3B	Mx	.002	2
34	MP3C	X	4.944	2
35	MP3C	Z	8.563	2
36	MP3C	Mx	-.005	2
37	MP3A	X	13.273	.5
38	MP3A	Z	22.99	.5
39	MP3A	Mx	-.02	.5
40	MP3A	X	13.273	4.5
41	MP3A	Z	22.99	4.5
42	MP3A	Mx	-.02	4.5
43	MP3B	X	13.839	.5
44	MP3B	Z	23.969	.5
45	MP3B	Mx	.01	.5
46	MP3B	X	13.839	4.5
47	MP3B	Z	23.969	4.5
48	MP3B	Mx	.01	4.5
49	MP3C	X	10.214	.5
50	MP3C	Z	17.69	.5
51	MP3C	Mx	.008	.5
52	MP3C	X	10.214	4.5
53	MP3C	Z	17.69	4.5
54	MP3C	Mx	.008	4.5
55	MP3A	X	13.273	.5
56	MP3A	Z	22.99	.5
57	MP3A	Mx	.007	.5
58	MP3A	X	13.273	4.5
59	MP3A	Z	22.99	4.5
60	MP3A	Mx	.007	4.5
61	MP3B	X	13.839	.5
62	MP3B	Z	23.969	.5
63	MP3B	Mx	-.02	.5
64	MP3B	X	13.839	4.5
65	MP3B	Z	23.969	4.5
66	MP3B	Mx	-.02	4.5
67	MP3C	X	10.214	.5
68	MP3C	Z	17.69	.5
69	MP3C	Mx	.012	.5
70	MP3C	X	10.214	4.5
71	MP3C	Z	17.69	4.5
72	MP3C	Mx	.012	4.5
73	MP3A	X	1.18	4.75
74	MP3A	Z	2.045	4.75
75	MP3A	Mx	.002	4.75
76	MP3A	X	1.18	5.75
77	MP3A	Z	2.045	5.75
78	MP3A	Mx	.002	5.75
79	MP3A	X	1.18	4.75
80	MP3A	Z	2.045	4.75
81	MP3A	Mx	.000498	4.75
82	MP3A	X	1.18	5.75
83	MP3A	Z	2.045	5.75
84	MP3A	Mx	.000498	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	0	1.25



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
2	MP4A	Z	17.086	1.25
3	MP4A	Mx	0	1.25
4	MP4A	X	0	3.25
5	MP4A	Z	17.086	3.25
6	MP4A	Mx	0	3.25
7	MP4B	X	0	1.25
8	MP4B	Z	11.517	1.25
9	MP4B	Mx	-.004	1.25
10	MP4B	X	0	3.25
11	MP4B	Z	11.517	3.25
12	MP4B	Mx	-.004	3.25
13	MP4C	X	0	1.25
14	MP4C	Z	8.707	1.25
15	MP4C	Mx	.004	1.25
16	MP4C	X	0	3.25
17	MP4C	Z	8.707	3.25
18	MP4C	Mx	.004	3.25
19	MP2A	X	0	2
20	MP2A	Z	14.811	2
21	MP2A	Mx	0	2
22	MP2B	X	0	2
23	MP2B	Z	12.287	2
24	MP2B	Mx	.005	2
25	MP2C	X	0	2
26	MP2C	Z	11.012	2
27	MP2C	Mx	-.005	2
28	MP3A	X	0	2
29	MP3A	Z	14.811	2
30	MP3A	Mx	0	2
31	MP3B	X	0	2
32	MP3B	Z	11.832	2
33	MP3B	Mx	.005	2
34	MP3C	X	0	2
35	MP3C	Z	10.328	2
36	MP3C	Mx	-.005	2
37	MP3A	X	0	.5
38	MP3A	Z	28.672	.5
39	MP3A	Mx	-.017	.5
40	MP3A	X	0	4.5
41	MP3A	Z	28.672	4.5
42	MP3A	Mx	-.017	4.5
43	MP3B	X	0	.5
44	MP3B	Z	23.683	.5
45	MP3B	Mx	-.000191	.5
46	MP3B	X	0	4.5
47	MP3B	Z	23.683	4.5
48	MP3B	Mx	-.000191	4.5
49	MP3C	X	0	.5
50	MP3C	Z	21.165	.5
51	MP3C	Mx	.014	.5
52	MP3C	X	0	4.5
53	MP3C	Z	21.165	4.5
54	MP3C	Mx	.014	4.5
55	MP3A	X	0	.5
56	MP3A	Z	28.672	.5
57	MP3A	Mx	.017	.5
58	MP3A	X	0	4.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
59	MP3A	Z	28.672	4.5
60	MP3A	Mx	.017	4.5
61	MP3B	X	0	.5
62	MP3B	Z	23.683	.5
63	MP3B	Mx	-.018	.5
64	MP3B	X	0	4.5
65	MP3B	Z	23.683	4.5
66	MP3B	Mx	-.018	4.5
67	MP3C	X	0	.5
68	MP3C	Z	21.165	.5
69	MP3C	Mx	.006	.5
70	MP3C	X	0	4.5
71	MP3C	Z	21.165	4.5
72	MP3C	Mx	.006	4.5
73	MP3A	X	0	4.75
74	MP3A	Z	1.747	4.75
75	MP3A	Mx	.000582	4.75
76	MP3A	X	0	5.75
77	MP3A	Z	1.747	5.75
78	MP3A	Mx	.000582	5.75
79	MP3A	X	0	4.75
80	MP3A	Z	1.747	4.75
81	MP3A	Mx	-.000582	4.75
82	MP3A	X	0	5.75
83	MP3A	Z	1.747	5.75
84	MP3A	Mx	-.000582	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-7.357	1.25
2	MP4A	Z	12.742	1.25
3	MP4A	Mx	.004	1.25
4	MP4A	X	-7.357	3.25
5	MP4A	Z	12.742	3.25
6	MP4A	Mx	.004	3.25
7	MP4B	X	-3.941	1.25
8	MP4B	Z	6.827	1.25
9	MP4B	Mx	-.004	1.25
10	MP4B	X	-3.941	3.25
11	MP4B	Z	6.827	3.25
12	MP4B	Mx	-.004	3.25
13	MP4C	X	-6.583	1.25
14	MP4C	Z	11.401	1.25
15	MP4C	Mx	.004	1.25
16	MP4C	X	-6.583	3.25
17	MP4C	Z	11.401	3.25
18	MP4C	Mx	.004	3.25
19	MP2A	X	-6.868	2
20	MP2A	Z	11.896	2
21	MP2A	Mx	-.003	2
22	MP2B	X	-5.319	2
23	MP2B	Z	9.213	2
24	MP2B	Mx	.005	2
25	MP2C	X	-6.517	2
26	MP2C	Z	11.288	2
27	MP2C	Mx	-.004	2





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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
28	MP3A	X	-6.771	2
29	MP3A	Z	11.728	2
30	MP3A	Mx	-.003	2
31	MP3B	X	-4.944	2
32	MP3B	Z	8.563	2
33	MP3B	Mx	.005	2
34	MP3C	X	-6.357	2
35	MP3C	Z	11.01	2
36	MP3C	Mx	-.004	2
37	MP3A	X	-13.273	.5
38	MP3A	Z	22.99	.5
39	MP3A	Mx	-.007	.5
40	MP3A	X	-13.273	4.5
41	MP3A	Z	22.99	4.5
42	MP3A	Mx	-.007	4.5
43	MP3B	X	-10.214	.5
44	MP3B	Z	17.69	.5
45	MP3B	Mx	-.008	.5
46	MP3B	X	-10.214	4.5
47	MP3B	Z	17.69	4.5
48	MP3B	Mx	-.008	4.5
49	MP3C	X	-12.58	.5
50	MP3C	Z	21.789	.5
51	MP3C	Mx	.019	.5
52	MP3C	X	-12.58	4.5
53	MP3C	Z	21.789	4.5
54	MP3C	Mx	.019	4.5
55	MP3A	X	-13.273	.5
56	MP3A	Z	22.99	.5
57	MP3A	Mx	.02	.5
58	MP3A	X	-13.273	4.5
59	MP3A	Z	22.99	4.5
60	MP3A	Mx	.02	4.5
61	MP3B	X	-10.214	.5
62	MP3B	Z	17.69	.5
63	MP3B	Mx	-.012	.5
64	MP3B	X	-10.214	4.5
65	MP3B	Z	17.69	4.5
66	MP3B	Mx	-.012	4.5
67	MP3C	X	-12.58	.5
68	MP3C	Z	21.789	.5
69	MP3C	Mx	-.003	.5
70	MP3C	X	-12.58	4.5
71	MP3C	Z	21.789	4.5
72	MP3C	Mx	-.003	4.5
73	MP3A	X	-1.18	4.75
74	MP3A	Z	2.045	4.75
75	MP3A	Mx	-.000498	4.75
76	MP3A	X	-1.18	5.75
77	MP3A	Z	2.045	5.75
78	MP3A	Mx	-.000498	5.75
79	MP3A	X	-1.18	4.75
80	MP3A	Z	2.045	4.75
81	MP3A	Mx	-.002	4.75
82	MP3A	X	-1.18	5.75
83	MP3A	Z	2.045	5.75
84	MP3A	Mx	-.002	5.75



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-8.633	1.25
2	MP4A	Z	4.985	1.25
3	MP4A	Mx	.004	1.25
4	MP4A	X	-8.633	3.25
5	MP4A	Z	4.985	3.25
6	MP4A	Mx	.004	3.25
7	MP4B	X	-7.54	1.25
8	MP4B	Z	4.353	1.25
9	MP4B	Mx	-.004	1.25
10	MP4B	X	-7.54	3.25
11	MP4B	Z	4.353	3.25
12	MP4B	Mx	-.004	3.25
13	MP4C	X	-14.549	1.25
14	MP4C	Z	8.4	1.25
15	MP4C	Mx	.001	1.25
16	MP4C	X	-14.549	3.25
17	MP4C	Z	8.4	3.25
18	MP4C	Mx	.001	3.25
19	MP2A	X	-10.032	2
20	MP2A	Z	5.792	2
21	MP2A	Mx	-.005	2
22	MP2B	X	-9.537	2
23	MP2B	Z	5.506	2
24	MP2B	Mx	.005	2
25	MP2C	X	-12.715	2
26	MP2C	Z	7.341	2
27	MP2C	Mx	-.001	2
28	MP3A	X	-9.529	2
29	MP3A	Z	5.502	2
30	MP3A	Mx	-.005	2
31	MP3B	X	-8.944	2
32	MP3B	Z	5.164	2
33	MP3B	Mx	.005	2
34	MP3C	X	-12.695	2
35	MP3C	Z	7.329	2
36	MP3C	Mx	-.001	2
37	MP3A	X	-19.309	.5
38	MP3A	Z	11.148	.5
39	MP3A	Mx	.003	.5
40	MP3A	X	-19.309	4.5
41	MP3A	Z	11.148	4.5
42	MP3A	Mx	.003	4.5
43	MP3B	X	-18.33	.5
44	MP3B	Z	10.583	.5
45	MP3B	Mx	-.014	.5
46	MP3B	X	-18.33	4.5
47	MP3B	Z	10.583	4.5
48	MP3B	Mx	-.014	4.5
49	MP3C	X	-24.608	.5
50	MP3C	Z	14.208	.5
51	MP3C	Mx	.019	.5
52	MP3C	X	-24.608	4.5
53	MP3C	Z	14.208	4.5
54	MP3C	Mx	.019	4.5
55	MP3A	X	-19.309	.5
56	MP3A	Z	11.148	.5
57	MP3A	Mx	.016	.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
58	MP3A	X	-19.309	4.5
59	MP3A	Z	11.148	4.5
60	MP3A	Mx	.016	4.5
61	MP3B	X	-18.33	.5
62	MP3B	Z	10.583	.5
63	MP3B	Mx	-.006	.5
64	MP3B	X	-18.33	4.5
65	MP3B	Z	10.583	4.5
66	MP3B	Mx	-.006	4.5
67	MP3C	X	-24.608	.5
68	MP3C	Z	14.208	.5
69	MP3C	Mx	-.014	.5
70	MP3C	X	-24.608	4.5
71	MP3C	Z	14.208	4.5
72	MP3C	Mx	-.014	4.5
73	MP3A	X	-3.109	4.75
74	MP3A	Z	1.795	4.75
75	MP3A	Mx	-.003	4.75
76	MP3A	X	-3.109	5.75
77	MP3A	Z	1.795	5.75
78	MP3A	Mx	-.003	5.75
79	MP3A	X	-3.109	4.75
80	MP3A	Z	1.795	4.75
81	MP3A	Mx	-.004	4.75
82	MP3A	X	-3.109	5.75
83	MP3A	Z	1.795	5.75
84	MP3A	Mx	-.004	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-7.597	1.25
2	MP4A	Z	0	1.25
3	MP4A	Mx	.004	1.25
4	MP4A	X	-7.597	3.25
5	MP4A	Z	0	3.25
6	MP4A	Mx	.004	3.25
7	MP4B	X	-13.165	1.25
8	MP4B	Z	0	1.25
9	MP4B	Mx	-.004	1.25
10	MP4B	X	-13.165	3.25
11	MP4B	Z	0	3.25
12	MP4B	Mx	-.004	3.25
13	MP4C	X	-15.976	1.25
14	MP4C	Z	0	1.25
15	MP4C	Mx	-.003	1.25
16	MP4C	X	-15.976	3.25
17	MP4C	Z	0	3.25
18	MP4C	Mx	-.003	3.25
19	MP2A	X	-10.509	2
20	MP2A	Z	0	2
21	MP2A	Mx	-.005	2
22	MP2B	X	-13.034	2
23	MP2B	Z	0	2
24	MP2B	Mx	.004	2
25	MP2C	X	-14.308	2
26	MP2C	Z	0	2



Company : Colliers Engineering & Design  
 Designer :  
 Job Number : Project No. 10221532  
 Model Name : 5000179836-VZW\_MT\_LO\_H

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
27	MP2C	Mx	.002	2
28	MP3A	X	-9.734	2
29	MP3A	Z	0	2
30	MP3A	Mx	-.005	2
31	MP3B	X	-12.714	2
32	MP3B	Z	0	2
33	MP3B	Mx	.004	2
34	MP3C	X	-14.218	2
35	MP3C	Z	0	2
36	MP3C	Mx	.002	2
37	MP3A	X	-20.171	.5
38	MP3A	Z	0	.5
39	MP3A	Mx	.01	.5
40	MP3A	X	-20.171	4.5
41	MP3A	Z	0	4.5
42	MP3A	Mx	.01	4.5
43	MP3B	X	-25.159	.5
44	MP3B	Z	0	.5
45	MP3B	Mx	-.019	.5
46	MP3B	X	-25.159	4.5
47	MP3B	Z	0	4.5
48	MP3B	Mx	-.019	4.5
49	MP3C	X	-27.677	.5
50	MP3C	Z	0	.5
51	MP3C	Mx	.01	.5
52	MP3C	X	-27.677	4.5
53	MP3C	Z	0	4.5
54	MP3C	Mx	.01	4.5
55	MP3A	X	-20.171	.5
56	MP3A	Z	0	.5
57	MP3A	Mx	.01	.5
58	MP3A	X	-20.171	4.5
59	MP3A	Z	0	4.5
60	MP3A	Mx	.01	4.5
61	MP3B	X	-25.159	.5
62	MP3B	Z	0	.5
63	MP3B	Mx	.003	.5
64	MP3B	X	-25.159	4.5
65	MP3B	Z	0	4.5
66	MP3B	Mx	.003	4.5
67	MP3C	X	-27.677	.5
68	MP3C	Z	0	.5
69	MP3C	Mx	-.02	.5
70	MP3C	X	-27.677	4.5
71	MP3C	Z	0	4.5
72	MP3C	Mx	-.02	4.5
73	MP3A	X	-4.204	4.75
74	MP3A	Z	0	4.75
75	MP3A	Mx	-.004	4.75
76	MP3A	X	-4.204	5.75
77	MP3A	Z	0	5.75
78	MP3A	Mx	-.004	5.75
79	MP3A	X	-4.204	4.75
80	MP3A	Z	0	4.75
81	MP3A	Mx	-.004	4.75
82	MP3A	X	-4.204	5.75
83	MP3A	Z	0	5.75



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
84	MP3A	Mx	-.004	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-8.633	1.25
2	MP4A	Z	-4.985	1.25
3	MP4A	Mx	.004	1.25
4	MP4A	X	-8.633	3.25
5	MP4A	Z	-4.985	3.25
6	MP4A	Mx	.004	3.25
7	MP4B	X	-14.549	1.25
8	MP4B	Z	-8.4	1.25
9	MP4B	Mx	-.001	1.25
10	MP4B	X	-14.549	3.25
11	MP4B	Z	-8.4	3.25
12	MP4B	Mx	-.001	3.25
13	MP4C	X	-9.974	1.25
14	MP4C	Z	-5.759	1.25
15	MP4C	Mx	-.004	1.25
16	MP4C	X	-9.974	3.25
17	MP4C	Z	-5.759	3.25
18	MP4C	Mx	-.004	3.25
19	MP2A	X	-10.032	2
20	MP2A	Z	-5.792	2
21	MP2A	Mx	-.005	2
22	MP2B	X	-12.715	2
23	MP2B	Z	-7.341	2
24	MP2B	Mx	.001	2
25	MP2C	X	-10.64	2
26	MP2C	Z	-6.143	2
27	MP2C	Mx	.005	2
28	MP3A	X	-9.529	2
29	MP3A	Z	-5.502	2
30	MP3A	Mx	-.005	2
31	MP3B	X	-12.695	2
32	MP3B	Z	-7.329	2
33	MP3B	Mx	.001	2
34	MP3C	X	-10.247	2
35	MP3C	Z	-5.916	2
36	MP3C	Mx	.005	2
37	MP3A	X	-19.309	.5
38	MP3A	Z	-11.148	.5
39	MP3A	Mx	.016	.5
40	MP3A	X	-19.309	4.5
41	MP3A	Z	-11.148	4.5
42	MP3A	Mx	.016	4.5
43	MP3B	X	-24.608	.5
44	MP3B	Z	-14.208	.5
45	MP3B	Mx	-.019	.5
46	MP3B	X	-24.608	4.5
47	MP3B	Z	-14.208	4.5
48	MP3B	Mx	-.019	4.5
49	MP3C	X	-20.51	.5
50	MP3C	Z	-11.842	.5
51	MP3C	Mx	-.000191	.5
52	MP3C	X	-20.51	4.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
53	MP3C	Z	-11.842	4.5
54	MP3C	Mx	-0.00191	4.5
55	MP3A	X	-19.309	.5
56	MP3A	Z	-11.148	.5
57	MP3A	Mx	.003	.5
58	MP3A	X	-19.309	4.5
59	MP3A	Z	-11.148	4.5
60	MP3A	Mx	.003	4.5
61	MP3B	X	-24.608	.5
62	MP3B	Z	-14.208	.5
63	MP3B	Mx	.014	.5
64	MP3B	X	-24.608	4.5
65	MP3B	Z	-14.208	4.5
66	MP3B	Mx	.014	4.5
67	MP3C	X	-20.51	.5
68	MP3C	Z	-11.842	.5
69	MP3C	Mx	-.018	.5
70	MP3C	X	-20.51	4.5
71	MP3C	Z	-11.842	4.5
72	MP3C	Mx	-.018	4.5
73	MP3A	X	-3.109	4.75
74	MP3A	Z	-1.795	4.75
75	MP3A	Mx	-.004	4.75
76	MP3A	X	-3.109	5.75
77	MP3A	Z	-1.795	5.75
78	MP3A	Mx	-.004	5.75
79	MP3A	X	-3.109	4.75
80	MP3A	Z	-1.795	4.75
81	MP3A	Mx	-.003	4.75
82	MP3A	X	-3.109	5.75
83	MP3A	Z	-1.795	5.75
84	MP3A	Mx	-.003	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-7.357	1.25
2	MP4A	Z	-12.742	1.25
3	MP4A	Mx	.004	1.25
4	MP4A	X	-7.357	3.25
5	MP4A	Z	-12.742	3.25
6	MP4A	Mx	.004	3.25
7	MP4B	X	-7.988	1.25
8	MP4B	Z	-13.835	1.25
9	MP4B	Mx	.003	1.25
10	MP4B	X	-7.988	3.25
11	MP4B	Z	-13.835	3.25
12	MP4B	Mx	.003	3.25
13	MP4C	X	-3.941	1.25
14	MP4C	Z	-6.827	1.25
15	MP4C	Mx	-.004	1.25
16	MP4C	X	-3.941	3.25
17	MP4C	Z	-6.827	3.25
18	MP4C	Mx	-.004	3.25
19	MP2A	X	-6.868	2
20	MP2A	Z	-11.896	2
21	MP2A	Mx	-.003	2



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
22	MP2B	X	-7.154	2
23	MP2B	Z	-12.391	2
24	MP2B	Mx	-.002	2
25	MP2C	X	-5.319	2
26	MP2C	Z	-9.213	2
27	MP2C	Mx	.005	2
28	MP3A	X	-6.771	2
29	MP3A	Z	-11.728	2
30	MP3A	Mx	-.003	2
31	MP3B	X	-7.109	2
32	MP3B	Z	-12.313	2
33	MP3B	Mx	-.002	2
34	MP3C	X	-4.944	2
35	MP3C	Z	-8.563	2
36	MP3C	Mx	.005	2
37	MP3A	X	-13.273	.5
38	MP3A	Z	-22.99	.5
39	MP3A	Mx	.02	.5
40	MP3A	X	-13.273	4.5
41	MP3A	Z	-22.99	4.5
42	MP3A	Mx	.02	4.5
43	MP3B	X	-13.839	.5
44	MP3B	Z	-23.969	.5
45	MP3B	Mx	-.01	.5
46	MP3B	X	-13.839	4.5
47	MP3B	Z	-23.969	4.5
48	MP3B	Mx	-.01	4.5
49	MP3C	X	-10.214	.5
50	MP3C	Z	-17.69	.5
51	MP3C	Mx	-.008	.5
52	MP3C	X	-10.214	4.5
53	MP3C	Z	-17.69	4.5
54	MP3C	Mx	-.008	4.5
55	MP3A	X	-13.273	.5
56	MP3A	Z	-22.99	.5
57	MP3A	Mx	-.007	.5
58	MP3A	X	-13.273	4.5
59	MP3A	Z	-22.99	4.5
60	MP3A	Mx	-.007	4.5
61	MP3B	X	-13.839	.5
62	MP3B	Z	-23.969	.5
63	MP3B	Mx	.02	.5
64	MP3B	X	-13.839	4.5
65	MP3B	Z	-23.969	4.5
66	MP3B	Mx	.02	4.5
67	MP3C	X	-10.214	.5
68	MP3C	Z	-17.69	.5
69	MP3C	Mx	-.012	.5
70	MP3C	X	-10.214	4.5
71	MP3C	Z	-17.69	4.5
72	MP3C	Mx	-.012	4.5
73	MP3A	X	-1.18	4.75
74	MP3A	Z	-2.045	4.75
75	MP3A	Mx	-.002	4.75
76	MP3A	X	-1.18	5.75
77	MP3A	Z	-2.045	5.75
78	MP3A	Mx	-.002	5.75





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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
79	MP3A	X	-1.18	4.75
80	MP3A	Z	-2.045	4.75
81	MP3A	Mx	-.000498	4.75
82	MP3A	X	-1.18	5.75
83	MP3A	Z	-2.045	5.75
84	MP3A	Mx	-.000498	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	0	1.25
2	MP4A	Z	-4.277	1.25
3	MP4A	Mx	0	1.25
4	MP4A	X	0	3.25
5	MP4A	Z	-4.277	3.25
6	MP4A	Mx	0	3.25
7	MP4B	X	0	1.25
8	MP4B	Z	-2.631	1.25
9	MP4B	Mx	.001	1.25
10	MP4B	X	0	3.25
11	MP4B	Z	-2.631	3.25
12	MP4B	Mx	.001	3.25
13	MP4C	X	0	1.25
14	MP4C	Z	-1.801	1.25
15	MP4C	Mx	-.000846	1.25
16	MP4C	X	0	3.25
17	MP4C	Z	-1.801	3.25
18	MP4C	Mx	-.000846	3.25
19	MP2A	X	0	2
20	MP2A	Z	-3.382	2
21	MP2A	Mx	0	2
22	MP2B	X	0	2
23	MP2B	Z	-2.729	2
24	MP2B	Mx	-.001	2
25	MP2C	X	0	2
26	MP2C	Z	-2.399	2
27	MP2C	Mx	.001	2
28	MP3A	X	0	2
29	MP3A	Z	-3.382	2
30	MP3A	Mx	0	2
31	MP3B	X	0	2
32	MP3B	Z	-2.601	2
33	MP3B	Mx	-.000996	2
34	MP3C	X	0	2
35	MP3C	Z	-2.207	2
36	MP3C	Mx	.001	2
37	MP3A	X	0	.5
38	MP3A	Z	-6.011	.5
39	MP3A	Mx	.004	.5
40	MP3A	X	0	4.5
41	MP3A	Z	-6.011	4.5
42	MP3A	Mx	.004	4.5
43	MP3B	X	0	.5
44	MP3B	Z	-4.001	.5
45	MP3B	Mx	3.2e-5	.5
46	MP3B	X	0	4.5
47	MP3B	Z	-4.001	4.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
48	MP3B	Mx	3.2e-5	4.5
49	MP3C	X	0	.5
50	MP3C	Z	-2.986	.5
51	MP3C	Mx	-.002	.5
52	MP3C	X	0	4.5
53	MP3C	Z	-2.986	4.5
54	MP3C	Mx	-.002	4.5
55	MP3A	X	0	.5
56	MP3A	Z	-6.011	.5
57	MP3A	Mx	-.004	.5
58	MP3A	X	0	4.5
59	MP3A	Z	-6.011	4.5
60	MP3A	Mx	-.004	4.5
61	MP3B	X	0	.5
62	MP3B	Z	-4.001	.5
63	MP3B	Mx	.003	.5
64	MP3B	X	0	4.5
65	MP3B	Z	-4.001	4.5
66	MP3B	Mx	.003	4.5
67	MP3C	X	0	.5
68	MP3C	Z	-2.986	.5
69	MP3C	Mx	-.000807	.5
70	MP3C	X	0	4.5
71	MP3C	Z	-2.986	4.5
72	MP3C	Mx	-.000807	4.5
73	MP3A	X	0	4.75
74	MP3A	Z	-1.047	4.75
75	MP3A	Mx	-.000349	4.75
76	MP3A	X	0	5.75
77	MP3A	Z	-1.047	5.75
78	MP3A	Mx	-.000349	5.75
79	MP3A	X	0	4.75
80	MP3A	Z	-1.047	4.75
81	MP3A	Mx	.000349	4.75
82	MP3A	X	0	5.75
83	MP3A	Z	-1.047	5.75
84	MP3A	Mx	.000349	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP4A	X	1.788	1.25
2	MP4A	Z	-3.097	1.25
3	MP4A	Mx	-.000894	1.25
4	MP4A	X	1.788	3.25
5	MP4A	Z	-3.097	3.25
6	MP4A	Mx	-.000894	3.25
7	MP4B	X	.779	1.25
8	MP4B	Z	-1.349	1.25
9	MP4B	Mx	.000767	1.25
10	MP4B	X	.779	3.25
11	MP4B	Z	-1.349	3.25
12	MP4B	Mx	.000767	3.25
13	MP4C	X	1.559	1.25
14	MP4C	Z	-2.7	1.25
15	MP4C	Mx	-.001	1.25
16	MP4C	X	1.559	3.25



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
17	MP4C	Z	-2.7	3.25
18	MP4C	Mx	-.001	3.25
19	MP2A	X	1.552	2
20	MP2A	Z	-2.688	2
21	MP2A	Mx	.000776	2
22	MP2B	X	1.151	2
23	MP2B	Z	-1.994	2
24	MP2B	Mx	-.001	2
25	MP2C	X	1.461	2
26	MP2C	Z	-2.531	2
27	MP2C	Mx	.000939	2
28	MP3A	X	1.525	2
29	MP3A	Z	-2.641	2
30	MP3A	Mx	.000762	2
31	MP3B	X	1.046	2
32	MP3B	Z	-1.811	2
33	MP3B	Mx	-.001	2
34	MP3C	X	1.416	2
35	MP3C	Z	-2.453	2
36	MP3C	Mx	.00091	2
37	MP3A	X	2.577	.5
38	MP3A	Z	-4.464	.5
39	MP3A	Mx	.001	.5
40	MP3A	X	2.577	4.5
41	MP3A	Z	-4.464	4.5
42	MP3A	Mx	.001	4.5
43	MP3B	X	1.344	.5
44	MP3B	Z	-2.329	.5
45	MP3B	Mx	.001	.5
46	MP3B	X	1.344	4.5
47	MP3B	Z	-2.329	4.5
48	MP3B	Mx	.001	4.5
49	MP3C	X	2.298	.5
50	MP3C	Z	-3.98	.5
51	MP3C	Mx	-.004	.5
52	MP3C	X	2.298	4.5
53	MP3C	Z	-3.98	4.5
54	MP3C	Mx	-.004	4.5
55	MP3A	X	2.577	.5
56	MP3A	Z	-4.464	.5
57	MP3A	Mx	-.004	.5
58	MP3A	X	2.577	4.5
59	MP3A	Z	-4.464	4.5
60	MP3A	Mx	-.004	4.5
61	MP3B	X	1.344	.5
62	MP3B	Z	-2.329	.5
63	MP3B	Mx	.002	.5
64	MP3B	X	1.344	4.5
65	MP3B	Z	-2.329	4.5
66	MP3B	Mx	.002	4.5
67	MP3C	X	2.298	.5
68	MP3C	Z	-3.98	.5
69	MP3C	Mx	.000577	.5
70	MP3C	X	2.298	4.5
71	MP3C	Z	-3.98	4.5
72	MP3C	Mx	.000577	4.5
73	MP3A	X	.524	4.75



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
74	MP3A	Z	-.908	4.75
75	MP3A	Mx	.000221	4.75
76	MP3A	X	.524	5.75
77	MP3A	Z	-.908	5.75
78	MP3A	Mx	.000221	5.75
79	MP3A	X	.524	4.75
80	MP3A	Z	-.908	4.75
81	MP3A	Mx	.000827	4.75
82	MP3A	X	.524	5.75
83	MP3A	Z	-.908	5.75
84	MP3A	Mx	.000827	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	1.883	1.25
2	MP4A	Z	-1.087	1.25
3	MP4A	Mx	-.000942	1.25
4	MP4A	X	1.883	3.25
5	MP4A	Z	-1.087	3.25
6	MP4A	Mx	-.000942	3.25
7	MP4B	X	1.56	1.25
8	MP4B	Z	-.9	1.25
9	MP4B	Mx	.000846	1.25
10	MP4B	X	1.56	3.25
11	MP4B	Z	-.9	3.25
12	MP4B	Mx	.000846	3.25
13	MP4C	X	3.63	1.25
14	MP4C	Z	-2.096	1.25
15	MP4C	Mx	-.000364	1.25
16	MP4C	X	3.63	3.25
17	MP4C	Z	-2.096	3.25
18	MP4C	Mx	-.000364	3.25
19	MP2A	X	2.206	2
20	MP2A	Z	-1.274	2
21	MP2A	Mx	.001	2
22	MP2B	X	2.078	2
23	MP2B	Z	-1.2	2
24	MP2B	Mx	-.001	2
25	MP2C	X	2.9	2
26	MP2C	Z	-1.674	2
27	MP2C	Mx	.000291	2
28	MP3A	X	2.064	2
29	MP3A	Z	-1.192	2
30	MP3A	Mx	.001	2
31	MP3B	X	1.911	2
32	MP3B	Z	-1.103	2
33	MP3B	Mx	-.001	2
34	MP3C	X	2.894	2
35	MP3C	Z	-1.671	2
36	MP3C	Mx	.00029	2
37	MP3A	X	2.981	.5
38	MP3A	Z	-1.721	.5
39	MP3A	Mx	-.000487	.5
40	MP3A	X	2.981	4.5
41	MP3A	Z	-1.721	4.5
42	MP3A	Mx	-.000487	4.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
43	MP3B	X	2.586	.5
44	MP3B	Z	-1.493	.5
45	MP3B	Mx	.002	.5
46	MP3B	X	2.586	4.5
47	MP3B	Z	-1.493	4.5
48	MP3B	Mx	.002	4.5
49	MP3C	X	5.116	.5
50	MP3C	Z	-2.954	.5
51	MP3C	Mx	-.004	.5
52	MP3C	X	5.116	4.5
53	MP3C	Z	-2.954	4.5
54	MP3C	Mx	-.004	4.5
55	MP3A	X	2.981	.5
56	MP3A	Z	-1.721	.5
57	MP3A	Mx	-.002	.5
58	MP3A	X	2.981	4.5
59	MP3A	Z	-1.721	4.5
60	MP3A	Mx	-.002	4.5
61	MP3B	X	2.586	.5
62	MP3B	Z	-1.493	.5
63	MP3B	Mx	.000807	.5
64	MP3B	X	2.586	4.5
65	MP3B	Z	-1.493	4.5
66	MP3B	Mx	.000807	4.5
67	MP3C	X	5.116	.5
68	MP3C	Z	-2.954	.5
69	MP3C	Mx	.003	.5
70	MP3C	X	5.116	4.5
71	MP3C	Z	-2.954	4.5
72	MP3C	Mx	.003	4.5
73	MP3A	X	.909	4.75
74	MP3A	Z	-.525	4.75
75	MP3A	Mx	.000734	4.75
76	MP3A	X	.909	5.75
77	MP3A	Z	-.525	5.75
78	MP3A	Mx	.000734	5.75
79	MP3A	X	.909	4.75
80	MP3A	Z	-.525	4.75
81	MP3A	Mx	.001	4.75
82	MP3A	X	.909	5.75
83	MP3A	Z	-.525	5.75
84	MP3A	Mx	.001	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	1.473	1.25
2	MP4A	Z	0	1.25
3	MP4A	Mx	-.000737	1.25
4	MP4A	X	1.473	3.25
5	MP4A	Z	0	3.25
6	MP4A	Mx	-.000737	3.25
7	MP4B	X	3.118	1.25
8	MP4B	Z	0	1.25
9	MP4B	Mx	.001	1.25
10	MP4B	X	3.118	3.25
11	MP4B	Z	0	3.25



Company : Colliers Engineering & Design  
 Designer :  
 Job Number : Project No. 10221532  
 Model Name : 5000179836-VZW\_MT\_LO\_H

Jan 31, 2024  
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 Checked By: \_\_\_\_\_

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
12	MP4B	Mx	.001	3.25
13	MP4C	X	3.949	1.25
14	MP4C	Z	0	1.25
15	MP4C	Mx	.000675	1.25
16	MP4C	X	3.949	3.25
17	MP4C	Z	0	3.25
18	MP4C	Mx	.000675	3.25
19	MP2A	X	2.269	2
20	MP2A	Z	0	2
21	MP2A	Mx	.001	2
22	MP2B	X	2.922	2
23	MP2B	Z	0	2
24	MP2B	Mx	-.000939	2
25	MP2C	X	3.252	2
26	MP2C	Z	0	2
27	MP2C	Mx	-.000556	2
28	MP3A	X	2.051	2
29	MP3A	Z	0	2
30	MP3A	Mx	.001	2
31	MP3B	X	2.832	2
32	MP3B	Z	0	2
33	MP3B	Mx	-.00091	2
34	MP3C	X	3.226	2
35	MP3C	Z	0	2
36	MP3C	Mx	-.000552	2
37	MP3A	X	2.586	.5
38	MP3A	Z	0	.5
39	MP3A	Mx	-.001	.5
40	MP3A	X	2.586	4.5
41	MP3A	Z	0	4.5
42	MP3A	Mx	-.001	4.5
43	MP3B	X	4.596	.5
44	MP3B	Z	0	.5
45	MP3B	Mx	.004	.5
46	MP3B	X	4.596	4.5
47	MP3B	Z	0	4.5
48	MP3B	Mx	.004	4.5
49	MP3C	X	5.61	.5
50	MP3C	Z	0	.5
51	MP3C	Mx	-.002	.5
52	MP3C	X	5.61	4.5
53	MP3C	Z	0	4.5
54	MP3C	Mx	-.002	4.5
55	MP3A	X	2.586	.5
56	MP3A	Z	0	.5
57	MP3A	Mx	-.001	.5
58	MP3A	X	2.586	4.5
59	MP3A	Z	0	4.5
60	MP3A	Mx	-.001	4.5
61	MP3B	X	4.596	.5
62	MP3B	Z	0	.5
63	MP3B	Mx	-.000577	.5
64	MP3B	X	4.596	4.5
65	MP3B	Z	0	4.5
66	MP3B	Mx	-.000577	4.5
67	MP3C	X	5.61	.5
68	MP3C	Z	0	.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
69	MP3C	Mx	.004	.5
70	MP3C	X	5.61	4.5
71	MP3C	Z	0	4.5
72	MP3C	Mx	.004	4.5
73	MP3A	X	1.05	4.75
74	MP3A	Z	0	4.75
75	MP3A	Mx	.001	4.75
76	MP3A	X	1.05	5.75
77	MP3A	Z	0	5.75
78	MP3A	Mx	.001	5.75
79	MP3A	X	1.05	4.75
80	MP3A	Z	0	4.75
81	MP3A	Mx	.001	4.75
82	MP3A	X	1.05	5.75
83	MP3A	Z	0	5.75
84	MP3A	Mx	.001	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	1.883	1.25
2	MP4A	Z	1.087	1.25
3	MP4A	Mx	-.000942	1.25
4	MP4A	X	1.883	3.25
5	MP4A	Z	1.087	3.25
6	MP4A	Mx	-.000942	3.25
7	MP4B	X	3.63	1.25
8	MP4B	Z	2.096	1.25
9	MP4B	Mx	.000364	1.25
10	MP4B	X	3.63	3.25
11	MP4B	Z	2.096	3.25
12	MP4B	Mx	.000364	3.25
13	MP4C	X	2.279	1.25
14	MP4C	Z	1.316	1.25
15	MP4C	Mx	.001	1.25
16	MP4C	X	2.279	3.25
17	MP4C	Z	1.316	3.25
18	MP4C	Mx	.001	3.25
19	MP2A	X	2.206	2
20	MP2A	Z	1.274	2
21	MP2A	Mx	.001	2
22	MP2B	X	2.9	2
23	MP2B	Z	1.674	2
24	MP2B	Mx	-.000291	2
25	MP2C	X	2.363	2
26	MP2C	Z	1.364	2
27	MP2C	Mx	-.001	2
28	MP3A	X	2.064	2
29	MP3A	Z	1.192	2
30	MP3A	Mx	.001	2
31	MP3B	X	2.894	2
32	MP3B	Z	1.671	2
33	MP3B	Mx	-.00029	2
34	MP3C	X	2.252	2
35	MP3C	Z	1.3	2
36	MP3C	Mx	-.000996	2
37	MP3A	X	2.981	.5





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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
38	MP3A	Z	1.721	.5
39	MP3A	Mx	-.002	.5
40	MP3A	X	2.981	4.5
41	MP3A	Z	1.721	4.5
42	MP3A	Mx	-.002	4.5
43	MP3B	X	5.116	.5
44	MP3B	Z	2.954	.5
45	MP3B	Mx	.004	.5
46	MP3B	X	5.116	4.5
47	MP3B	Z	2.954	4.5
48	MP3B	Mx	.004	4.5
49	MP3C	X	3.465	.5
50	MP3C	Z	2	.5
51	MP3C	Mx	3.2e-5	.5
52	MP3C	X	3.465	4.5
53	MP3C	Z	2	4.5
54	MP3C	Mx	3.2e-5	4.5
55	MP3A	X	2.981	.5
56	MP3A	Z	1.721	.5
57	MP3A	Mx	-.000487	.5
58	MP3A	X	2.981	4.5
59	MP3A	Z	1.721	4.5
60	MP3A	Mx	-.000487	4.5
61	MP3B	X	5.116	.5
62	MP3B	Z	2.954	.5
63	MP3B	Mx	-.003	.5
64	MP3B	X	5.116	4.5
65	MP3B	Z	2.954	4.5
66	MP3B	Mx	-.003	4.5
67	MP3C	X	3.465	.5
68	MP3C	Z	2	.5
69	MP3C	Mx	.003	.5
70	MP3C	X	3.465	4.5
71	MP3C	Z	2	4.5
72	MP3C	Mx	.003	4.5
73	MP3A	X	.909	4.75
74	MP3A	Z	.525	4.75
75	MP3A	Mx	.001	4.75
76	MP3A	X	.909	5.75
77	MP3A	Z	.525	5.75
78	MP3A	Mx	.001	5.75
79	MP3A	X	.909	4.75
80	MP3A	Z	.525	4.75
81	MP3A	Mx	.000734	4.75
82	MP3A	X	.909	5.75
83	MP3A	Z	.525	5.75
84	MP3A	Mx	.000734	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	1.788	1.25
2	MP4A	Z	3.097	1.25
3	MP4A	Mx	-.000894	1.25
4	MP4A	X	1.788	3.25
5	MP4A	Z	3.097	3.25
6	MP4A	Mx	-.000894	3.25



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
7	MP4B	X	1.974	1.25
8	MP4B	Z	3.42	1.25
9	MP4B	Mx	-.000676	1.25
10	MP4B	X	1.974	3.25
11	MP4B	Z	3.42	3.25
12	MP4B	Mx	-.000676	3.25
13	MP4C	X	.779	1.25
14	MP4C	Z	1.349	1.25
15	MP4C	Mx	.000767	1.25
16	MP4C	X	.779	3.25
17	MP4C	Z	1.349	3.25
18	MP4C	Mx	.000767	3.25
19	MP2A	X	1.552	2
20	MP2A	Z	2.688	2
21	MP2A	Mx	.000776	2
22	MP2B	X	1.626	2
23	MP2B	Z	2.816	2
24	MP2B	Mx	.000556	2
25	MP2C	X	1.151	2
26	MP2C	Z	1.994	2
27	MP2C	Mx	-.001	2
28	MP3A	X	1.525	2
29	MP3A	Z	2.641	2
30	MP3A	Mx	.000762	2
31	MP3B	X	1.613	2
32	MP3B	Z	2.794	2
33	MP3B	Mx	.000552	2
34	MP3C	X	1.046	2
35	MP3C	Z	1.811	2
36	MP3C	Mx	-.001	2
37	MP3A	X	2.577	.5
38	MP3A	Z	4.464	.5
39	MP3A	Mx	-.004	.5
40	MP3A	X	2.577	4.5
41	MP3A	Z	4.464	4.5
42	MP3A	Mx	-.004	4.5
43	MP3B	X	2.805	.5
44	MP3B	Z	4.859	.5
45	MP3B	Mx	.002	.5
46	MP3B	X	2.805	4.5
47	MP3B	Z	4.859	4.5
48	MP3B	Mx	.002	4.5
49	MP3C	X	1.344	.5
50	MP3C	Z	2.329	.5
51	MP3C	Mx	.001	.5
52	MP3C	X	1.344	4.5
53	MP3C	Z	2.329	4.5
54	MP3C	Mx	.001	4.5
55	MP3A	X	2.577	.5
56	MP3A	Z	4.464	.5
57	MP3A	Mx	.001	.5
58	MP3A	X	2.577	4.5
59	MP3A	Z	4.464	4.5
60	MP3A	Mx	.001	4.5
61	MP3B	X	2.805	.5
62	MP3B	Z	4.859	.5
63	MP3B	Mx	-.004	.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
64	MP3B	X	2.805	4.5
65	MP3B	Z	4.859	4.5
66	MP3B	Mx	-.004	4.5
67	MP3C	X	1.344	.5
68	MP3C	Z	2.329	.5
69	MP3C	Mx	.002	.5
70	MP3C	X	1.344	4.5
71	MP3C	Z	2.329	4.5
72	MP3C	Mx	.002	4.5
73	MP3A	X	.524	4.75
74	MP3A	Z	.908	4.75
75	MP3A	Mx	.000827	4.75
76	MP3A	X	.524	5.75
77	MP3A	Z	.908	5.75
78	MP3A	Mx	.000827	5.75
79	MP3A	X	.524	4.75
80	MP3A	Z	.908	4.75
81	MP3A	Mx	.000221	4.75
82	MP3A	X	.524	5.75
83	MP3A	Z	.908	5.75
84	MP3A	Mx	.000221	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	0	1.25
2	MP4A	Z	4.277	1.25
3	MP4A	Mx	0	1.25
4	MP4A	X	0	3.25
5	MP4A	Z	4.277	3.25
6	MP4A	Mx	0	3.25
7	MP4B	X	0	1.25
8	MP4B	Z	2.631	1.25
9	MP4B	Mx	-.001	1.25
10	MP4B	X	0	3.25
11	MP4B	Z	2.631	3.25
12	MP4B	Mx	-.001	3.25
13	MP4C	X	0	1.25
14	MP4C	Z	1.801	1.25
15	MP4C	Mx	.000846	1.25
16	MP4C	X	0	3.25
17	MP4C	Z	1.801	3.25
18	MP4C	Mx	.000846	3.25
19	MP2A	X	0	2
20	MP2A	Z	3.382	2
21	MP2A	Mx	0	2
22	MP2B	X	0	2
23	MP2B	Z	2.729	2
24	MP2B	Mx	.001	2
25	MP2C	X	0	2
26	MP2C	Z	2.399	2
27	MP2C	Mx	-.001	2
28	MP3A	X	0	2
29	MP3A	Z	3.382	2
30	MP3A	Mx	0	2
31	MP3B	X	0	2
32	MP3B	Z	2.601	2



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
33	MP3B	Mx	.000996	2
34	MP3C	X	0	2
35	MP3C	Z	2.207	2
36	MP3C	Mx	-.001	2
37	MP3A	X	0	.5
38	MP3A	Z	6.011	.5
39	MP3A	Mx	-.004	.5
40	MP3A	X	0	4.5
41	MP3A	Z	6.011	4.5
42	MP3A	Mx	-.004	4.5
43	MP3B	X	0	.5
44	MP3B	Z	4.001	.5
45	MP3B	Mx	-3.2e-5	.5
46	MP3B	X	0	4.5
47	MP3B	Z	4.001	4.5
48	MP3B	Mx	-3.2e-5	4.5
49	MP3C	X	0	.5
50	MP3C	Z	2.986	.5
51	MP3C	Mx	.002	.5
52	MP3C	X	0	4.5
53	MP3C	Z	2.986	4.5
54	MP3C	Mx	.002	4.5
55	MP3A	X	0	.5
56	MP3A	Z	6.011	.5
57	MP3A	Mx	.004	.5
58	MP3A	X	0	4.5
59	MP3A	Z	6.011	4.5
60	MP3A	Mx	.004	4.5
61	MP3B	X	0	.5
62	MP3B	Z	4.001	.5
63	MP3B	Mx	-.003	.5
64	MP3B	X	0	4.5
65	MP3B	Z	4.001	4.5
66	MP3B	Mx	-.003	4.5
67	MP3C	X	0	.5
68	MP3C	Z	2.986	.5
69	MP3C	Mx	.000807	.5
70	MP3C	X	0	4.5
71	MP3C	Z	2.986	4.5
72	MP3C	Mx	.000807	4.5
73	MP3A	X	0	4.75
74	MP3A	Z	1.047	4.75
75	MP3A	Mx	.000349	4.75
76	MP3A	X	0	5.75
77	MP3A	Z	1.047	5.75
78	MP3A	Mx	.000349	5.75
79	MP3A	X	0	4.75
80	MP3A	Z	1.047	4.75
81	MP3A	Mx	-.000349	4.75
82	MP3A	X	0	5.75
83	MP3A	Z	1.047	5.75
84	MP3A	Mx	-.000349	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	-1.788	1.25



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
2	MP4A	Z	3.097	1.25
3	MP4A	Mx	.000894	1.25
4	MP4A	X	-1.788	3.25
5	MP4A	Z	3.097	3.25
6	MP4A	Mx	.000894	3.25
7	MP4B	X	-.779	1.25
8	MP4B	Z	1.349	1.25
9	MP4B	Mx	-.000767	1.25
10	MP4B	X	-.779	3.25
11	MP4B	Z	1.349	3.25
12	MP4B	Mx	-.000767	3.25
13	MP4C	X	-1.559	1.25
14	MP4C	Z	2.7	1.25
15	MP4C	Mx	.001	1.25
16	MP4C	X	-1.559	3.25
17	MP4C	Z	2.7	3.25
18	MP4C	Mx	.001	3.25
19	MP2A	X	-1.552	2
20	MP2A	Z	2.688	2
21	MP2A	Mx	-.000776	2
22	MP2B	X	-1.151	2
23	MP2B	Z	1.994	2
24	MP2B	Mx	.001	2
25	MP2C	X	-1.461	2
26	MP2C	Z	2.531	2
27	MP2C	Mx	-.000939	2
28	MP3A	X	-1.525	2
29	MP3A	Z	2.641	2
30	MP3A	Mx	-.000762	2
31	MP3B	X	-1.046	2
32	MP3B	Z	1.811	2
33	MP3B	Mx	.001	2
34	MP3C	X	-1.416	2
35	MP3C	Z	2.453	2
36	MP3C	Mx	-.00091	2
37	MP3A	X	-2.577	.5
38	MP3A	Z	4.464	.5
39	MP3A	Mx	-.001	.5
40	MP3A	X	-2.577	4.5
41	MP3A	Z	4.464	4.5
42	MP3A	Mx	-.001	4.5
43	MP3B	X	-1.344	.5
44	MP3B	Z	2.329	.5
45	MP3B	Mx	-.001	.5
46	MP3B	X	-1.344	4.5
47	MP3B	Z	2.329	4.5
48	MP3B	Mx	-.001	4.5
49	MP3C	X	-2.298	.5
50	MP3C	Z	3.98	.5
51	MP3C	Mx	.004	.5
52	MP3C	X	-2.298	4.5
53	MP3C	Z	3.98	4.5
54	MP3C	Mx	.004	4.5
55	MP3A	X	-2.577	.5
56	MP3A	Z	4.464	.5
57	MP3A	Mx	.004	.5
58	MP3A	X	-2.577	4.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
59	MP3A	Z	4.464	4.5
60	MP3A	Mx	.004	4.5
61	MP3B	X	-1.344	.5
62	MP3B	Z	2.329	.5
63	MP3B	Mx	-.002	.5
64	MP3B	X	-1.344	4.5
65	MP3B	Z	2.329	4.5
66	MP3B	Mx	-.002	4.5
67	MP3C	X	-2.298	.5
68	MP3C	Z	3.98	.5
69	MP3C	Mx	-.000577	.5
70	MP3C	X	-2.298	4.5
71	MP3C	Z	3.98	4.5
72	MP3C	Mx	-.000577	4.5
73	MP3A	X	-.524	4.75
74	MP3A	Z	.908	4.75
75	MP3A	Mx	-.000221	4.75
76	MP3A	X	-.524	5.75
77	MP3A	Z	.908	5.75
78	MP3A	Mx	-.000221	5.75
79	MP3A	X	-.524	4.75
80	MP3A	Z	.908	4.75
81	MP3A	Mx	-.000827	4.75
82	MP3A	X	-.524	5.75
83	MP3A	Z	.908	5.75
84	MP3A	Mx	-.000827	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-1.883	1.25
2	MP4A	Z	1.087	1.25
3	MP4A	Mx	.000942	1.25
4	MP4A	X	-1.883	3.25
5	MP4A	Z	1.087	3.25
6	MP4A	Mx	.000942	3.25
7	MP4B	X	-1.56	1.25
8	MP4B	Z	.9	1.25
9	MP4B	Mx	-.000846	1.25
10	MP4B	X	-1.56	3.25
11	MP4B	Z	.9	3.25
12	MP4B	Mx	-.000846	3.25
13	MP4C	X	-3.63	1.25
14	MP4C	Z	2.096	1.25
15	MP4C	Mx	.000364	1.25
16	MP4C	X	-3.63	3.25
17	MP4C	Z	2.096	3.25
18	MP4C	Mx	.000364	3.25
19	MP2A	X	-2.206	2
20	MP2A	Z	1.274	2
21	MP2A	Mx	-.001	2
22	MP2B	X	-2.078	2
23	MP2B	Z	1.2	2
24	MP2B	Mx	.001	2
25	MP2C	X	-2.9	2
26	MP2C	Z	1.674	2
27	MP2C	Mx	-.000291	2



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
28	MP3A	X	-2.064	2
29	MP3A	Z	1.192	2
30	MP3A	Mx	-.001	2
31	MP3B	X	-1.911	2
32	MP3B	Z	1.103	2
33	MP3B	Mx	.001	2
34	MP3C	X	-2.894	2
35	MP3C	Z	1.671	2
36	MP3C	Mx	-.00029	2
37	MP3A	X	-2.981	.5
38	MP3A	Z	1.721	.5
39	MP3A	Mx	.000487	.5
40	MP3A	X	-2.981	4.5
41	MP3A	Z	1.721	4.5
42	MP3A	Mx	.000487	4.5
43	MP3B	X	-2.586	.5
44	MP3B	Z	1.493	.5
45	MP3B	Mx	-.002	.5
46	MP3B	X	-2.586	4.5
47	MP3B	Z	1.493	4.5
48	MP3B	Mx	-.002	4.5
49	MP3C	X	-5.116	.5
50	MP3C	Z	2.954	.5
51	MP3C	Mx	.004	.5
52	MP3C	X	-5.116	4.5
53	MP3C	Z	2.954	4.5
54	MP3C	Mx	.004	4.5
55	MP3A	X	-2.981	.5
56	MP3A	Z	1.721	.5
57	MP3A	Mx	.002	.5
58	MP3A	X	-2.981	4.5
59	MP3A	Z	1.721	4.5
60	MP3A	Mx	.002	4.5
61	MP3B	X	-2.586	.5
62	MP3B	Z	1.493	.5
63	MP3B	Mx	-.000807	.5
64	MP3B	X	-2.586	4.5
65	MP3B	Z	1.493	4.5
66	MP3B	Mx	-.000807	4.5
67	MP3C	X	-5.116	.5
68	MP3C	Z	2.954	.5
69	MP3C	Mx	-.003	.5
70	MP3C	X	-5.116	4.5
71	MP3C	Z	2.954	4.5
72	MP3C	Mx	-.003	4.5
73	MP3A	X	-.909	4.75
74	MP3A	Z	.525	4.75
75	MP3A	Mx	-.000734	4.75
76	MP3A	X	-.909	5.75
77	MP3A	Z	.525	5.75
78	MP3A	Mx	-.000734	5.75
79	MP3A	X	-.909	4.75
80	MP3A	Z	.525	4.75
81	MP3A	Mx	-.001	4.75
82	MP3A	X	-.909	5.75
83	MP3A	Z	.525	5.75
84	MP3A	Mx	-.001	5.75





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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-1.473	1.25
2	MP4A	Z	0	1.25
3	MP4A	Mx	.000737	1.25
4	MP4A	X	-1.473	3.25
5	MP4A	Z	0	3.25
6	MP4A	Mx	.000737	3.25
7	MP4B	X	-3.118	1.25
8	MP4B	Z	0	1.25
9	MP4B	Mx	-.001	1.25
10	MP4B	X	-3.118	3.25
11	MP4B	Z	0	3.25
12	MP4B	Mx	-.001	3.25
13	MP4C	X	-3.949	1.25
14	MP4C	Z	0	1.25
15	MP4C	Mx	-.000675	1.25
16	MP4C	X	-3.949	3.25
17	MP4C	Z	0	3.25
18	MP4C	Mx	-.000675	3.25
19	MP2A	X	-2.269	2
20	MP2A	Z	0	2
21	MP2A	Mx	-.001	2
22	MP2B	X	-2.922	2
23	MP2B	Z	0	2
24	MP2B	Mx	.000939	2
25	MP2C	X	-3.252	2
26	MP2C	Z	0	2
27	MP2C	Mx	.000556	2
28	MP3A	X	-2.051	2
29	MP3A	Z	0	2
30	MP3A	Mx	-.001	2
31	MP3B	X	-2.832	2
32	MP3B	Z	0	2
33	MP3B	Mx	.00091	2
34	MP3C	X	-3.226	2
35	MP3C	Z	0	2
36	MP3C	Mx	.000552	2
37	MP3A	X	-2.586	.5
38	MP3A	Z	0	.5
39	MP3A	Mx	.001	.5
40	MP3A	X	-2.586	4.5
41	MP3A	Z	0	4.5
42	MP3A	Mx	.001	4.5
43	MP3B	X	-4.596	.5
44	MP3B	Z	0	.5
45	MP3B	Mx	-.004	.5
46	MP3B	X	-4.596	4.5
47	MP3B	Z	0	4.5
48	MP3B	Mx	-.004	4.5
49	MP3C	X	-5.61	.5
50	MP3C	Z	0	.5
51	MP3C	Mx	.002	.5
52	MP3C	X	-5.61	4.5
53	MP3C	Z	0	4.5
54	MP3C	Mx	.002	4.5
55	MP3A	X	-2.586	.5
56	MP3A	Z	0	.5
57	MP3A	Mx	.001	.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
58	MP3A	X	-2.586	4.5
59	MP3A	Z	0	4.5
60	MP3A	Mx	.001	4.5
61	MP3B	X	-4.596	.5
62	MP3B	Z	0	.5
63	MP3B	Mx	.000577	.5
64	MP3B	X	-4.596	4.5
65	MP3B	Z	0	4.5
66	MP3B	Mx	.000577	4.5
67	MP3C	X	-5.61	.5
68	MP3C	Z	0	.5
69	MP3C	Mx	-.004	.5
70	MP3C	X	-5.61	4.5
71	MP3C	Z	0	4.5
72	MP3C	Mx	-.004	4.5
73	MP3A	X	-1.05	4.75
74	MP3A	Z	0	4.75
75	MP3A	Mx	-.001	4.75
76	MP3A	X	-1.05	5.75
77	MP3A	Z	0	5.75
78	MP3A	Mx	-.001	5.75
79	MP3A	X	-1.05	4.75
80	MP3A	Z	0	4.75
81	MP3A	Mx	-.001	4.75
82	MP3A	X	-1.05	5.75
83	MP3A	Z	0	5.75
84	MP3A	Mx	-.001	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-1.883	1.25
2	MP4A	Z	-1.087	1.25
3	MP4A	Mx	.000942	1.25
4	MP4A	X	-1.883	3.25
5	MP4A	Z	-1.087	3.25
6	MP4A	Mx	.000942	3.25
7	MP4B	X	-3.63	1.25
8	MP4B	Z	-2.096	1.25
9	MP4B	Mx	-.000364	1.25
10	MP4B	X	-3.63	3.25
11	MP4B	Z	-2.096	3.25
12	MP4B	Mx	-.000364	3.25
13	MP4C	X	-2.279	1.25
14	MP4C	Z	-1.316	1.25
15	MP4C	Mx	-.001	1.25
16	MP4C	X	-2.279	3.25
17	MP4C	Z	-1.316	3.25
18	MP4C	Mx	-.001	3.25
19	MP2A	X	-2.206	2
20	MP2A	Z	-1.274	2
21	MP2A	Mx	-.001	2
22	MP2B	X	-2.9	2
23	MP2B	Z	-1.674	2
24	MP2B	Mx	.000291	2
25	MP2C	X	-2.363	2
26	MP2C	Z	-1.364	2



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
27	MP2C	Mx	.001	2
28	MP3A	X	-2.064	2
29	MP3A	Z	-1.192	2
30	MP3A	Mx	-.001	2
31	MP3B	X	-2.894	2
32	MP3B	Z	-1.671	2
33	MP3B	Mx	.00029	2
34	MP3C	X	-2.252	2
35	MP3C	Z	-1.3	2
36	MP3C	Mx	.000996	2
37	MP3A	X	-2.981	.5
38	MP3A	Z	-1.721	.5
39	MP3A	Mx	.002	.5
40	MP3A	X	-2.981	4.5
41	MP3A	Z	-1.721	4.5
42	MP3A	Mx	.002	4.5
43	MP3B	X	-5.116	.5
44	MP3B	Z	-2.954	.5
45	MP3B	Mx	-.004	.5
46	MP3B	X	-5.116	4.5
47	MP3B	Z	-2.954	4.5
48	MP3B	Mx	-.004	4.5
49	MP3C	X	-3.465	.5
50	MP3C	Z	-2	.5
51	MP3C	Mx	-3.2e-5	.5
52	MP3C	X	-3.465	4.5
53	MP3C	Z	-2	4.5
54	MP3C	Mx	-3.2e-5	4.5
55	MP3A	X	-2.981	.5
56	MP3A	Z	-1.721	.5
57	MP3A	Mx	.000487	.5
58	MP3A	X	-2.981	4.5
59	MP3A	Z	-1.721	4.5
60	MP3A	Mx	.000487	4.5
61	MP3B	X	-5.116	.5
62	MP3B	Z	-2.954	.5
63	MP3B	Mx	.003	.5
64	MP3B	X	-5.116	4.5
65	MP3B	Z	-2.954	4.5
66	MP3B	Mx	.003	4.5
67	MP3C	X	-3.465	.5
68	MP3C	Z	-2	.5
69	MP3C	Mx	-.003	.5
70	MP3C	X	-3.465	4.5
71	MP3C	Z	-2	4.5
72	MP3C	Mx	-.003	4.5
73	MP3A	X	-.909	4.75
74	MP3A	Z	-.525	4.75
75	MP3A	Mx	-.001	4.75
76	MP3A	X	-.909	5.75
77	MP3A	Z	-.525	5.75
78	MP3A	Mx	-.001	5.75
79	MP3A	X	-.909	4.75
80	MP3A	Z	-.525	4.75
81	MP3A	Mx	-.000734	4.75
82	MP3A	X	-.909	5.75
83	MP3A	Z	-.525	5.75



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
84	MP3A	Mx	-0.00734	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-1.788	1.25
2	MP4A	Z	-3.097	1.25
3	MP4A	Mx	.000894	1.25
4	MP4A	X	-1.788	3.25
5	MP4A	Z	-3.097	3.25
6	MP4A	Mx	.000894	3.25
7	MP4B	X	-1.974	1.25
8	MP4B	Z	-3.42	1.25
9	MP4B	Mx	.000676	1.25
10	MP4B	X	-1.974	3.25
11	MP4B	Z	-3.42	3.25
12	MP4B	Mx	.000676	3.25
13	MP4C	X	-.779	1.25
14	MP4C	Z	-1.349	1.25
15	MP4C	Mx	-.000767	1.25
16	MP4C	X	-.779	3.25
17	MP4C	Z	-1.349	3.25
18	MP4C	Mx	-.000767	3.25
19	MP2A	X	-1.552	2
20	MP2A	Z	-2.688	2
21	MP2A	Mx	-.000776	2
22	MP2B	X	-1.626	2
23	MP2B	Z	-2.816	2
24	MP2B	Mx	-.000556	2
25	MP2C	X	-1.151	2
26	MP2C	Z	-1.994	2
27	MP2C	Mx	.001	2
28	MP3A	X	-1.525	2
29	MP3A	Z	-2.641	2
30	MP3A	Mx	-.000762	2
31	MP3B	X	-1.613	2
32	MP3B	Z	-2.794	2
33	MP3B	Mx	-.000552	2
34	MP3C	X	-1.046	2
35	MP3C	Z	-1.811	2
36	MP3C	Mx	.001	2
37	MP3A	X	-2.577	.5
38	MP3A	Z	-4.464	.5
39	MP3A	Mx	.004	.5
40	MP3A	X	-2.577	4.5
41	MP3A	Z	-4.464	4.5
42	MP3A	Mx	.004	4.5
43	MP3B	X	-2.805	.5
44	MP3B	Z	-4.859	.5
45	MP3B	Mx	-.002	.5
46	MP3B	X	-2.805	4.5
47	MP3B	Z	-4.859	4.5
48	MP3B	Mx	-.002	4.5
49	MP3C	X	-1.344	.5
50	MP3C	Z	-2.329	.5
51	MP3C	Mx	-.001	.5
52	MP3C	X	-1.344	4.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
53	MP3C	Z	-2.329	4.5
54	MP3C	Mx	-.001	4.5
55	MP3A	X	-2.577	.5
56	MP3A	Z	-4.464	.5
57	MP3A	Mx	-.001	.5
58	MP3A	X	-2.577	4.5
59	MP3A	Z	-4.464	4.5
60	MP3A	Mx	-.001	4.5
61	MP3B	X	-2.805	.5
62	MP3B	Z	-4.859	.5
63	MP3B	Mx	.004	.5
64	MP3B	X	-2.805	4.5
65	MP3B	Z	-4.859	4.5
66	MP3B	Mx	.004	4.5
67	MP3C	X	-1.344	.5
68	MP3C	Z	-2.329	.5
69	MP3C	Mx	-.002	.5
70	MP3C	X	-1.344	4.5
71	MP3C	Z	-2.329	4.5
72	MP3C	Mx	-.002	4.5
73	MP3A	X	-.524	4.75
74	MP3A	Z	-.908	4.75
75	MP3A	Mx	-.000827	4.75
76	MP3A	X	-.524	5.75
77	MP3A	Z	-.908	5.75
78	MP3A	Mx	-.000827	5.75
79	MP3A	X	-.524	4.75
80	MP3A	Z	-.908	4.75
81	MP3A	Mx	-.000221	4.75
82	MP3A	X	-.524	5.75
83	MP3A	Z	-.908	5.75
84	MP3A	Mx	-.000221	5.75

**Member Point Loads (BLC 77 : Lm1)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	M1	Y	-500	%49

**Member Point Loads (BLC 78 : Lm2)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	M1	Y	-500	%81

**Member Point Loads (BLC 79 : Lv1)**

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	M1	Y	-250	%100

**Member Point Loads (BLC 80 : Lv2)**

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

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	Y	-1.579	1.25
2	MP4A	My	-.00079	1.25
3	MP4A	Mz	0	1.25



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
4	MP4A	Y	-1.579	3.25
5	MP4A	My	-0.00079	3.25
6	MP4A	Mz	0	3.25
7	MP4B	Y	-1.579	1.25
8	MP4B	My	.000508	1.25
9	MP4B	Mz	-0.000605	1.25
10	MP4B	Y	-1.579	3.25
11	MP4B	My	.000508	3.25
12	MP4B	Mz	-0.000605	3.25
13	MP4C	Y	-1.579	1.25
14	MP4C	My	.00027	1.25
15	MP4C	Mz	.000742	1.25
16	MP4C	Y	-1.579	3.25
17	MP4C	My	.00027	3.25
18	MP4C	Mz	.000742	3.25
19	MP2A	Y	-2.709	2
20	MP2A	My	.001	2
21	MP2A	Mz	0	2
22	MP2B	Y	-2.709	2
23	MP2B	My	-0.000871	2
24	MP2B	Mz	.001	2
25	MP2C	Y	-2.709	2
26	MP2C	My	-0.000463	2
27	MP2C	Mz	-.001	2
28	MP3A	Y	-2.55	2
29	MP3A	My	.001	2
30	MP3A	Mz	0	2
31	MP3B	Y	-2.55	2
32	MP3B	My	-0.000819	2
33	MP3B	Mz	.000977	2
34	MP3C	Y	-2.55	2
35	MP3C	My	-0.000436	2
36	MP3C	Mz	-.001	2
37	MP3A	Y	-.725	.5
38	MP3A	My	-0.000363	.5
39	MP3A	Mz	-0.000423	.5
40	MP3A	Y	-.725	4.5
41	MP3A	My	-0.000363	4.5
42	MP3A	Mz	-0.000423	4.5
43	MP3B	Y	-.725	.5
44	MP3B	My	.000557	.5
45	MP3B	Mz	-6e-6	.5
46	MP3B	Y	-.725	4.5
47	MP3B	My	.000557	4.5
48	MP3B	Mz	-6e-6	4.5
49	MP3C	Y	-.725	.5
50	MP3C	My	-0.000274	.5
51	MP3C	Mz	.000486	.5
52	MP3C	Y	-.725	4.5
53	MP3C	My	-0.000274	4.5
54	MP3C	Mz	.000486	4.5
55	MP3A	Y	-.725	.5
56	MP3A	My	-0.000363	.5
57	MP3A	Mz	.000423	.5
58	MP3A	Y	-.725	4.5
59	MP3A	My	-0.000363	4.5
60	MP3A	Mz	.000423	4.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
61	MP3B	Y	-.725	.5
62	MP3B	My	-9.1e-5	.5
63	MP3B	Mz	-.00055	.5
64	MP3B	Y	-.725	4.5
65	MP3B	My	-9.1e-5	4.5
66	MP3B	Mz	-.00055	4.5
67	MP3C	Y	-.725	.5
68	MP3C	My	.000522	.5
69	MP3C	Mz	.000196	.5
70	MP3C	Y	-.725	4.5
71	MP3C	My	.000522	4.5
72	MP3C	Mz	.000196	4.5
73	MP3A	Y	-.319	4.75
74	MP3A	My	.000319	4.75
75	MP3A	Mz	.000106	4.75
76	MP3A	Y	-.319	5.75
77	MP3A	My	.000319	5.75
78	MP3A	Mz	.000106	5.75
79	MP3A	Y	-.319	4.75
80	MP3A	My	.000319	4.75
81	MP3A	Mz	-.000106	4.75
82	MP3A	Y	-.319	5.75
83	MP3A	My	.000319	5.75
84	MP3A	Mz	-.000106	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	Z	-3.949	1.25
2	MP4A	Mx	0	1.25
3	MP4A	Z	-3.949	3.25
4	MP4A	Mx	0	3.25
5	MP4B	Z	-3.949	1.25
6	MP4B	Mx	.002	1.25
7	MP4B	Z	-3.949	3.25
8	MP4B	Mx	.002	3.25
9	MP4C	Z	-3.949	1.25
10	MP4C	Mx	-.002	1.25
11	MP4C	Z	-3.949	3.25
12	MP4C	Mx	-.002	3.25
13	MP2A	Z	-6.773	2
14	MP2A	Mx	0	2
15	MP2B	Z	-6.773	2
16	MP2B	Mx	-.003	2
17	MP2C	Z	-6.773	2
18	MP2C	Mx	.003	2
19	MP3A	Z	-6.374	2
20	MP3A	Mx	0	2
21	MP3B	Z	-6.374	2
22	MP3B	Mx	-.002	2
23	MP3C	Z	-6.374	2
24	MP3C	Mx	.003	2
25	MP3A	Z	-1.813	.5
26	MP3A	Mx	.001	.5
27	MP3A	Z	-1.813	4.5
28	MP3A	Mx	.001	4.5
29	MP3B	Z	-1.813	.5





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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
30	MP3B	Mx	1.5e-5	.5
31	MP3B	Z	-1.813	4.5
32	MP3B	Mx	1.5e-5	4.5
33	MP3C	Z	-1.813	.5
34	MP3C	Mx	-.001	.5
35	MP3C	Z	-1.813	4.5
36	MP3C	Mx	-.001	4.5
37	MP3A	Z	-1.813	.5
38	MP3A	Mx	-.001	.5
39	MP3A	Z	-1.813	4.5
40	MP3A	Mx	-.001	4.5
41	MP3B	Z	-1.813	.5
42	MP3B	Mx	.001	.5
43	MP3B	Z	-1.813	4.5
44	MP3B	Mx	.001	4.5
45	MP3C	Z	-1.813	.5
46	MP3C	Mx	-.00049	.5
47	MP3C	Z	-1.813	4.5
48	MP3C	Mx	-.00049	4.5
49	MP3A	Z	-.798	4.75
50	MP3A	Mx	-.000266	4.75
51	MP3A	Z	-.798	5.75
52	MP3A	Mx	-.000266	5.75
53	MP3A	Z	-.798	4.75
54	MP3A	Mx	.000266	4.75
55	MP3A	Z	-.798	5.75
56	MP3A	Mx	.000266	5.75

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft,%]
1	MP4A	X	3.949	1.25
2	MP4A	Mx	-.002	1.25
3	MP4A	X	3.949	3.25
4	MP4A	Mx	-.002	3.25
5	MP4B	X	3.949	1.25
6	MP4B	Mx	.001	1.25
7	MP4B	X	3.949	3.25
8	MP4B	Mx	.001	3.25
9	MP4C	X	3.949	1.25
10	MP4C	Mx	.000675	1.25
11	MP4C	X	3.949	3.25
12	MP4C	Mx	.000675	3.25
13	MP2A	X	6.773	2
14	MP2A	Mx	.003	2
15	MP2B	X	6.773	2
16	MP2B	Mx	-.002	2
17	MP2C	X	6.773	2
18	MP2C	Mx	-.001	2
19	MP3A	X	6.374	2
20	MP3A	Mx	.003	2
21	MP3B	X	6.374	2
22	MP3B	Mx	-.002	2
23	MP3C	X	6.374	2
24	MP3C	Mx	-.001	2
25	MP3A	X	1.813	.5
26	MP3A	Mx	-.000907	.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
27	MP3A	X	1.813	4.5
28	MP3A	Mx	-.000907	4.5
29	MP3B	X	1.813	.5
30	MP3B	Mx	.001	.5
31	MP3B	X	1.813	4.5
32	MP3B	Mx	.001	4.5
33	MP3C	X	1.813	.5
34	MP3C	Mx	-.000684	.5
35	MP3C	X	1.813	4.5
36	MP3C	Mx	-.000684	4.5
37	MP3A	X	1.813	.5
38	MP3A	Mx	-.000907	.5
39	MP3A	X	1.813	4.5
40	MP3A	Mx	-.000907	4.5
41	MP3B	X	1.813	.5
42	MP3B	Mx	-.000228	.5
43	MP3B	X	1.813	4.5
44	MP3B	Mx	-.000228	4.5
45	MP3C	X	1.813	.5
46	MP3C	Mx	.001	.5
47	MP3C	X	1.813	4.5
48	MP3C	Mx	.001	4.5
49	MP3A	X	.798	4.75
50	MP3A	Mx	.000798	4.75
51	MP3A	X	.798	5.75
52	MP3A	Mx	.000798	5.75
53	MP3A	X	.798	4.75
54	MP3A	Mx	.000798	4.75
55	MP3A	X	.798	5.75
56	MP3A	Mx	.000798	5.75

**Joint Loads and Enforced Displacements**

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

**Member Area Loads (BLC 39 : Structure D)**

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N87C	N87B	N7	N6	Y	Two Way	-.005
2	N118	N141	N139	N117	Y	Two Way	-.005
3	N89	N90	N113	N111	Y	Two Way	-.005

**Member Area Loads (BLC 40 : Structure Di)**

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N87C	N87B	N7	N6	Y	Two Way	-.013
2	N118	N141	N139	N117	Y	Two Way	-.013
3	N89	N90	N113	N111	Y	Two Way	-.013

**Member Area Loads (BLC 84 : Structure Ev)**

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N87C	N87B	N7	N6	Y	Two Way	-.000189
2	N118	N141	N139	N117	Y	Two Way	-.000189
3	N89	N90	N113	N111	Y	Two Way	-.000189



**Member Area Loads (BLC 85 : Structure Eh (0 Deg))**

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N87C	N87B	N7	N6	Z	Two Way	-.000471
2	N118	N141	N139	N117	Z	Two Way	-.000471
3	N89	N90	N113	N111	Z	Two Way	-.000471

**Member Area Loads (BLC 86 : Structure Eh (90 Deg))**

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N87C	N87B	N7	N6	X	Two Way	.000471
2	N118	N141	N139	N117	X	Two Way	.000471
3	N89	N90	N113	N111	X	Two Way	.000471

**Envelope Joint Reactions**

Joint	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	LCMZ [...]	LC	
1	N3	m... 595.998	10	2603.032	13	1233.094	1	5.447	13	.919	4	.156	6
2		m... -597.046	4	436.857	7	-1336.356	7	.205	7	-.921	10	-.096	12
3	N87D	m... 1120.393	9	2667.683	21	880.786	1	-.077	3	1.053	12	-.301	3
4		m... -1218.717	3	485.642	3	-828.048	7	-2.786	21	-1.059	6	-4.763	21
5	N115	m... 1239.629	11	2677.698	17	770.152	11	-.259	11	.994	8	4.759	17
6		m... -1140.046	5	464.235	11	-720.176	5	-2.874	17	-.991	2	.109	11
7	Totals:	m... 2847.497	10	7451.011	13	2868.38	1						
8		m... -2847.501	4	2018.246	70	-2868.386	7						

**Joint Reactions (By Combination)**

LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
1	1	N3	-51.48	1393.533	1233.094	3.508	-.062
2	1	N87D	-523.917	725.09	880.786	-.382	-.899
3	1	N115	575.411	685.411	754.5	-.619	1
4	1	Totals:	.013	2804.033	2868.38		
5	1	COG (ft):	X: -.001	Y: 1.146	Z: .061		
6	2	N3	-58.528	1329.579	1099.484	3.201	-.005
7	2	N87D	-1092.899	554.944	749.732	-.128	-.454
8	2	N115	-254.35	919.506	585.73	-.991	1.765
9	2	Totals:	-1405.776	2804.029	2434.947		
10	2	COG (ft):	X: -.001	Y: 1.146	Z: .061		
11	3	N3	-325.553	1165.239	706.989	2.557	.058
12	3	N87D	-1218.717	485.642	662.113	-.077	-.301
13	3	N115	-881.604	1153.14	31.512	-1.346	2.455
14	3	Totals:	-2425.875	2804.02	1400.614		
15	3	COG (ft):	X: -.001	Y: 1.146	Z: .061		
16	4	N3	-597.046	936.566	-40.198	1.728	.115
17	4	N87D	-1145.628	528.706	578.193	-.242	-.476
18	4	N115	-1104.827	1338.737	-537.998	-1.619	2.946
19	4	Totals:	-2847.501	2804.009	-.003		
20	4	COG (ft):	X: -.001	Y: 1.146	Z: .061		
21	5	N3	-434.436	691.367	-840.444	.909	.153
22	5	N87D	-940.683	686.546	108.452	-.612	-.99
23	5	N115	-1140.046	1426.08	-720.176	-1.747	3.114
24	5	Totals:	-2515.164	2803.994	-1452.169		
25	5	COG (ft):	X: -.001	Y: 1.146	Z: .061		
26	6	N3	-64.215	503.66	-1277.621	.342	.156
27	6	N87D	-382.772	924.271	-557.678	-1.09	-1.712
28	6	N115	-1010.357	1376.049	-688.933	-1.666	2.852
29	6	Totals:	-1457.344	2803.98	-2524.231		
30	6	COG (ft):	X: -.001	Y: 1.146	Z: .061		



**Joint Reactions (By Combination) (Continued)**

LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]	
31	7	N3	50.017	436.857	-1336.356	.205	-.168	.123
32	7	N87D	426.622	1164.544	-828.048	-1.511	-.634	-2.388
33	7	N115	-476.656	1202.573	-703.982	-1.388	.299	2.224
34	7	Totals:	-.017	2803.975	-2868.386			
35	7	COG (ft):	X: -.001	Y: 1.146	Z: .061			
36	8	N3	59.219	500.005	-1203.011	.513	.209	.066
37	8	N87D	994.785	1335.946	-695.031	-1.765	.198	-2.832
38	8	N115	351.768	968.029	-536.91	-1.017	.994	1.46
39	8	Totals:	1405.772	2803.979	-2434.952			
40	8	COG (ft):	X: -.001	Y: 1.146	Z: .061			
41	9	N3	325.318	662.969	-809.302	1.157	-.268	.002
42	9	N87D	1120.393	1405.936	-608.789	-1.816	.165	-2.985
43	9	N115	980.159	735.082	17.471	-.661	.628	.77
44	9	Totals:	2425.871	2803.988	-1400.62			
45	9	COG (ft):	X: -.001	Y: 1.146	Z: .061			
46	10	N3	595.998	891.143	-60.253	1.987	-.921	-.055
47	10	N87D	1046.166	1362.105	-526.565	-1.652	-.151	-2.811
48	10	N115	1205.332	550.751	586.815	-.387	-.142	.277
49	10	Totals:	2847.497	2803.999	-.003			
50	10	COG (ft):	X: -.001	Y: 1.146	Z: .061			
51	11	N3	432.688	1137.039	738.813	2.804	-.53	-.092
52	11	N87D	842.844	1202.74	-56.802	-1.281	.384	-2.297
53	11	N115	1239.629	464.235	770.152	-.259	-.08	.109
54	11	Totals:	2515.161	2804.014	1452.163			
55	11	COG (ft):	X: -.001	Y: 1.146	Z: .061			
56	12	N3	61.184	1326.048	1174.038	3.37	.251	-.096
57	12	N87D	286.561	964.529	609.103	-.804	1.053	-1.576
58	12	N115	1109.596	513.451	741.084	-.341	.241	.372
59	12	Totals:	1457.34	2804.028	2524.226			
60	12	COG (ft):	X: -.001	Y: 1.146	Z: .061			
61	13	N3	-8.749	2603.032	289.568	5.447	.037	.033
62	13	N87D	-323.155	2427.778	346.996	-2.28	.184	-4.029
63	13	N115	331.905	2420.201	332.919	-2.482	-.114	4.027
64	13	Totals:	.002	7451.011	969.484			
65	13	COG (ft):	X: -.001	Y: 1.137	Z: .055			
66	14	N3	-31.006	2582.114	239.953	5.343	-.03	.053
67	14	N87D	-515.568	2366.161	330.519	-2.186	-.037	-3.869
68	14	N115	65.701	2502.734	262.442	-2.613	-.291	4.294
69	14	Totals:	-480.873	7451.009	832.914			
70	14	COG (ft):	X: -.001	Y: 1.137	Z: .055			
71	15	N3	-115.669	2523.864	88.481	5.115	.121	.075
72	15	N87D	-575.391	2341.989	312.301	-2.17	-.036	-3.818
73	15	N115	-144.461	2585.154	81.619	-2.738	-.178	4.538
74	15	Totals:	-835.521	7451.006	482.401			
75	15	COG (ft):	X: -.001	Y: 1.137	Z: .055			
76	16	N3	-185.99	2443.154	-169.295	4.824	.289	.095
77	16	N87D	-552.955	2359.126	267.601	-2.232	.019	-3.886
78	16	N115	-236.584	2648.722	-98.312	-2.831	.032	4.707
79	16	Totals:	-975.53	7451.002	-.006			
80	16	COG (ft):	X: -.001	Y: 1.137	Z: .055			
81	17	N3	-134.271	2358.376	-437.052	4.542	.171	.108
82	17	N87D	-463.926	2414.924	109.623	-2.361	-.143	-4.066
83	17	N115	-253.322	2677.698	-164.221	-2.874	.027	4.759
84	17	Totals:	-851.519	7450.997	-491.65			
85	17	COG (ft):	X: -.001	Y: 1.137	Z: .055			
86	18	N3	-28.332	2293.019	-597.949	4.345	-.04	.11
87	18	N87D	-265.961	2497.067	-89.633	-2.526	-.312	-4.314



**Joint Reactions (By Combination) (Continued)**

LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]	
88	18	N115	-195.823	2660.906	-161.337	-2.846	-0.029	4.669
89	18	Totals:	-490.115	7450.992	-848.92			
90	18	COG (ft):	X: -.001	Y: 1.137	Z: .055			
91	19	N3	14.723	2267.785	-636.174	4.291	-0.029	.099
92	19	N87D	-2.416	2581.661	-177.864	-2.677	-.185	-4.551
93	19	N115	-12.315	2601.544	-155.458	-2.75	.134	4.456
94	19	Totals:	-.008	7450.99	-969.496			
95	19	COG (ft):	X: -.001	Y: 1.137	Z: .055			
96	20	N3	37.191	2288.601	-586.571	4.395	.039	.079
97	20	N87D	189.892	2643.433	-161.201	-2.77	.036	-4.711
98	20	N115	253.784	2518.957	-85.154	-2.619	.311	4.189
99	20	Totals:	480.867	7450.992	-832.926			
100	20	COG (ft):	X: -.001	Y: 1.137	Z: .055			
101	21	N3	121.774	2346.688	-434.951	4.623	-.113	.057
102	21	N87D	249.658	2667.683	-143.124	-2.786	.035	-4.763
103	21	N115	464.083	2436.623	95.661	-2.494	.198	3.945
104	21	Totals:	835.516	7450.995	-482.413			
105	21	COG (ft):	X: -.001	Y: 1.137	Z: .055			
106	22	N3	191.997	2427.34	-176.996	4.914	-.281	.037
107	22	N87D	227.125	2650.447	-98.602	-2.724	-.02	-4.695
108	22	N115	556.401	2373.211	275.591	-2.401	-.012	3.776
109	22	Totals:	975.524	7450.999	-.006			
110	22	COG (ft):	X: -.001	Y: 1.137	Z: .055			
111	23	N3	140.185	2512.205	90.631	5.195	-.162	.024
112	23	N87D	138.266	2594.477	59.363	-2.595	.142	-4.514
113	23	N115	573.062	2344.322	341.643	-2.359	-.007	3.723
114	23	Totals:	851.513	7451.004	491.637			
115	23	COG (ft):	X: -.001	Y: 1.137	Z: .055			
116	24	N3	34.138	2577.72	251.335	5.393	.048	.022
117	24	N87D	-59.524	2512.277	258.617	-2.43	.311	-4.266
118	24	N115	515.496	2361.012	338.954	-2.386	.049	3.814
119	24	Totals:	490.11	7451.009	848.907			
120	24	COG (ft):	X: -.001	Y: 1.137	Z: .055			
121	25	N3	-3.609	762.3	29.105	1.603	.01	.023
122	25	N87D	-82.169	1382.631	79.842	-1.736	.035	-1.969
123	25	N115	85.777	1409.051	70.321	-1.875	-.015	2.005
124	25	Totals:	-.001	3553.981	179.268			
125	25	COG (ft):	X: .024	Y: .904	Z: .853			
126	26	N3	-4.11	758.332	20.766	1.584	-.014	.026
127	26	N87D	-117.706	1371.958	71.595	-1.72	-.017	-1.941
128	26	N115	33.956	1423.69	59.822	-1.898	-.059	2.053
129	26	Totals:	-87.861	3553.981	152.183			
130	26	COG (ft):	X: .024	Y: .904	Z: .853			
131	27	N3	-20.769	748.112	-3.796	1.544	.016	.03
132	27	N87D	-125.563	1367.595	66.153	-1.717	-.015	-1.931
133	27	N115	-5.285	1438.273	25.178	-1.92	-.036	2.096
134	27	Totals:	-151.618	3553.98	87.535			
135	27	COG (ft):	X: .024	Y: .904	Z: .853			
136	28	N3	-37.713	733.842	-50.541	1.492	.057	.034
137	28	N87D	-120.957	1370.297	60.951	-1.727	.005	-1.942
138	28	N115	-19.299	1449.841	-10.414	-1.937	.013	2.127
139	28	Totals:	-177.97	3553.98	-.004			
140	28	COG (ft):	X: .024	Y: .904	Z: .853			
141	29	N3	-27.529	718.503	-100.511	1.441	.032	.036
142	29	N87D	-108.187	1380.208	31.585	-1.75	-.029	-1.974
143	29	N115	-21.482	1455.268	-21.838	-1.945	.009	2.137
144	29	Totals:	-157.198	3553.979	-90.764			



**Joint Reactions (By Combination) (Continued)**

LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]	
145	29	COG (ft):	X: .024	Y: .904	Z: .853			
146	30	N3	-4.355	706.743	-127.774	1.406	-.017	.036
147	30	N87D	-73.359	1395.083	-10.045	-1.78	-.071	-2.02
148	30	N115	-13.368	1452.152	-19.954	-1.94	-.012	2.121
149	30	Totals:	-91.082	3553.978	-157.773			
150	30	COG (ft):	X: .024	Y: .904	Z: .853			
151	31	N3	2.735	702.555	-131.449	1.397	-.011	.034
152	31	N87D	-22.74	1410.071	-26.98	-1.806	-.044	-2.062
153	31	N115	20.002	1441.351	-20.846	-1.922	.022	2.082
154	31	Totals:	-.003	3553.977	-179.275			
155	31	COG (ft):	X: .024	Y: .904	Z: .853			
156	32	N3	3.245	706.52	-123.111	1.416	.012	.031
157	32	N87D	12.794	1420.748	-18.726	-1.822	.008	-2.09
158	32	N115	71.818	1426.709	-10.354	-1.899	.066	2.034
159	32	Totals:	87.857	3553.978	-152.191			
160	32	COG (ft):	X: .024	Y: .904	Z: .853			
161	33	N3	19.9	716.735	-98.544	1.456	-.017	.027
162	33	N87D	20.65	1425.115	-13.29	-1.825	.006	-2.099
163	33	N115	111.064	1412.129	24.291	-1.877	.043	1.991
164	33	Totals:	151.614	3553.978	-87.543			
165	33	COG (ft):	X: .024	Y: .904	Z: .853			
166	34	N3	36.841	731.003	-51.791	1.508	-.058	.023
167	34	N87D	16.04	1422.41	-8.095	-1.815	-.014	-2.088
168	34	N115	125.085	1400.567	59.882	-1.86	-.005	1.96
169	34	Totals:	177.966	3553.979	-.004			
170	34	COG (ft):	X: .024	Y: .904	Z: .853			
171	35	N3	26.654	746.344	-1.826	1.559	-.034	.021
172	35	N87D	3.276	1412.493	21.272	-1.792	.02	-2.056
173	35	N115	127.264	1395.143	71.31	-1.852	-.002	1.95
174	35	Totals:	157.194	3553.98	90.756			
175	35	COG (ft):	X: .024	Y: .904	Z: .853			
176	36	N3	3.475	758.11	25.429	1.595	.015	.021
177	36	N87D	-31.546	1397.616	62.901	-1.762	.061	-2.011
178	36	N115	119.149	1398.255	69.435	-1.857	.019	1.966
179	36	Totals:	91.078	3553.981	157.765			
180	36	COG (ft):	X: .024	Y: .904	Z: .853			
181	37	N3	3.813	788.855	18.896	1.529	.001	-.021
182	37	N87D	-98.467	1759.326	86.94	-2.438	.038	-3.303
183	37	N115	94.641	1005.773	73.427	-1.147	0	1.356
184	37	Totals:	-.014	3553.953	179.263			
185	37	COG (ft):	X: -.775	Y: .904	Z: .853			
186	38	N3	3.31	784.902	10.563	1.51	-.023	-.017
187	38	N87D	-133.993	1748.645	78.694	-2.422	-.014	-3.275
188	38	N115	42.81	1020.406	62.923	-1.17	-.043	1.404
189	38	Totals:	-87.874	3553.953	152.179			
190	38	COG (ft):	X: -.775	Y: .904	Z: .853			
191	39	N3	-13.347	774.691	-14.002	1.47	.007	-.014
192	39	N87D	-141.844	1744.285	73.256	-2.419	-.012	-3.265
193	39	N115	3.561	1034.977	28.276	-1.193	-.02	1.447
194	39	Totals:	-151.63	3553.952	87.531			
195	39	COG (ft):	X: -.775	Y: .904	Z: .853			
196	40	N3	-30.288	760.425	-60.755	1.418	.048	-.01
197	40	N87D	-137.237	1746.999	68.061	-2.429	.008	-3.276
198	40	N115	-10.458	1046.528	-7.314	-1.21	.028	1.478
199	40	Totals:	-177.983	3553.952	-.008			
200	40	COG (ft):	X: -.775	Y: .904	Z: .853			
201	41	N3	-20.101	745.088	-110.742	1.367	.024	-.008





**Joint Reactions (By Combination) (Continued)**

LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
202	41	N87D	-124.472	1756.924	38.708	-2.453	-3.308
203	41	N115	-12.637	1051.938	-18.734	-1.218	1.488
204	41	Totals:	-157.211	3553.951	-90.768		
205	41	COG (ft):	X: -.775	Y: .904	Z: .853		
206	42	N3	3.073	733.323	-138.027	1.331	-0.007
207	42	N87D	-89.654	1771.816	-2.907	-2.482	-3.353
208	42	N115	-4.515	1048.811	-16.843	-1.213	1.472
209	42	Totals:	-91.095	3553.95	-157.777		
210	42	COG (ft):	X: -.775	Y: .904	Z: .853		
211	43	N3	10.164	729.122	-141.718	1.323	-0.009
212	43	N87D	-39.047	1786.82	-19.835	-2.509	-3.396
213	43	N115	28.867	1038.007	-17.727	-1.195	1.433
214	43	Totals:	-.016	3553.95	-179.28		
215	43	COG (ft):	X: -.775	Y: .904	Z: .853		
216	44	N3	10.675	733.072	-133.385	1.342	-0.013
217	44	N87D	-3.523	1797.506	-11.581	-2.524	-3.423
218	44	N115	80.692	1023.372	-7.229	-1.172	1.385
219	44	Totals:	87.844	3553.95	-152.196		
220	44	COG (ft):	X: -.775	Y: .904	Z: .853		
221	45	N3	27.329	743.278	-108.816	1.382	-0.017
222	45	N87D	4.326	1801.869	-6.149	-2.528	-3.433
223	45	N115	119.946	1008.804	27.418	-1.15	1.342
224	45	Totals:	151.601	3553.95	-87.547		
225	45	COG (ft):	X: -.775	Y: .904	Z: .853		
226	46	N3	44.266	757.542	-62.055	1.434	-0.021
227	46	N87D	-.285	1799.152	-.961	-2.517	-3.422
228	46	N115	133.972	997.258	63.008	-1.133	1.311
229	46	Totals:	177.953	3553.951	-.008		
230	46	COG (ft):	X: -.775	Y: .904	Z: .853		
231	47	N3	34.077	772.881	-12.073	1.485	-0.023
232	47	N87D	-13.044	1789.22	28.392	-2.494	-3.39
233	47	N115	136.148	991.851	74.432	-1.125	1.3
234	47	Totals:	157.181	3553.952	90.751		
235	47	COG (ft):	X: -.775	Y: .904	Z: .853		
236	48	N3	10.898	784.651	15.205	1.521	-0.023
237	48	N87D	-47.856	1774.327	70.007	-2.465	-3.345
238	48	N115	128.024	994.975	72.549	-1.13	1.317
239	48	Totals:	91.065	3553.953	157.761		
240	48	COG (ft):	X: -.775	Y: .904	Z: .853		
241	49	N3	7.426	845.563	-68.035	1.604	-0.015
242	49	N87D	-73.934	1430.1	40.684	-1.816	-2.953
243	49	N115	66.493	903.3	27.344	-0.961	1.322
244	49	Totals:	-.014	3178.963	-.007		
245	49	COG (ft):	X: -.699	Y: 1.011	Z: .504		
246	50	N3	-.491	823.326	-51.479	1.679	0
247	50	N87D	-50.938	1178.691	26.51	-1.374	-1.844
248	50	N115	51.427	1176.974	24.966	-1.436	1.814
249	50	Totals:	-.002	3178.992	-.003		
250	50	COG (ft):	X: -.001	Y: 1.011	Z: .504		
251	51	N3	-.661	1066.934	-60.508	2.168	0
252	51	N87D	-57.755	1102.609	31.093	-1.106	-1.919
253	51	N115	58.414	1101.794	29.412	-1.172	1.883
254	51	Totals:	-.002	3271.338	-.003		
255	51	COG (ft):	X: -.001	Y: 1.146	Z: .061		
256	52	N3	-.81	975.871	54.047	2.03	0
257	52	N87D	-85.77	958.111	79.466	-.937	-1.643
258	52	N115	86.579	954.778	78.34	-1.008	1.619





**Joint Reactions (By Combination) (Continued)**

LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]	
259	52	Totals:	-0.001	2888.761	211.853			
260	52	COG (ft):	X: -0.001	Y: 1.146	Z: .061			
261	53	N3	-15.342	972.118	39.767	2.011	.018	.029
262	53	N87D	-126.896	945.337	89.918	-.917	.016	-1.609
263	53	N115	36.312	971.305	53.78	-1.034	-.04	1.673
264	53	Totals:	-105.926	2888.761	183.464			
265	53	COG (ft):	X: -0.001	Y: 1.146	Z: .061			
266	54	N3	-25.918	960.337	.519	1.965	.032	.033
267	54	N87D	-147.686	940.151	83.631	-.913	-.005	-1.598
268	54	N115	-9.86	988.272	21.775	-1.06	-.035	1.723
269	54	Totals:	-183.464	2888.76	105.925			
270	54	COG (ft):	X: -0.001	Y: 1.146	Z: .061			
271	55	N3	-29.706	943.685	-53.188	1.906	.036	.037
272	55	N87D	-142.571	943.94	62.29	-.926	-.026	-1.613
273	55	N115	-39.576	1001.134	-9.105	-1.079	-.02	1.757
274	55	Totals:	-211.852	2888.759	-.003			
275	55	COG (ft):	X: -0.001	Y: 1.146	Z: .061			
276	56	N3	-25.687	926.624	-106.962	1.85	.031	.04
277	56	N87D	-112.914	955.694	31.612	-.953	-.04	-1.65
278	56	N115	-44.864	1006.44	-30.581	-1.087	0	1.766
279	56	Totals:	-183.465	2888.758	-105.931			
280	56	COG (ft):	X: -0.001	Y: 1.146	Z: .061			
281	57	N3	-14.939	913.727	-146.391	1.81	.017	.04
282	57	N87D	-66.673	972.262	-.176	-.985	-.044	-1.699
283	57	N115	-24.316	1002.768	-36.903	-1.08	.022	1.747
284	57	Totals:	-105.928	2888.757	-183.47			
285	57	COG (ft):	X: -0.001	Y: 1.146	Z: .061			
286	58	N3	-.34	908.444	-160.916	1.799	-.002	.038
287	58	N87D	-16.23	989.208	-24.565	-1.016	-.038	-1.747
288	58	N115	16.568	991.105	-26.379	-1.062	.037	1.705
289	58	Totals:	-.003	2888.757	-211.859			
290	58	COG (ft):	X: -0.001	Y: 1.146	Z: .061			
291	59	N3	14.196	912.194	-146.633	1.819	-.02	.034
292	59	N87D	24.892	1001.988	-35.014	-1.035	-.021	-1.781
293	59	N115	66.835	974.575	-1.823	-1.036	.044	1.652
294	59	Totals:	105.923	2888.757	-183.47			
295	59	COG (ft):	X: -0.001	Y: 1.146	Z: .061			
296	60	N3	24.771	923.969	-107.381	1.864	-.033	.029
297	60	N87D	45.678	1007.177	-28.73	-1.039	0	-1.792
298	60	N115	113.01	957.612	30.18	-1.01	.039	1.602
299	60	Totals:	183.46	2888.758	-105.931			
300	60	COG (ft):	X: -0.001	Y: 1.146	Z: .061			
301	61	N3	28.555	940.619	-53.671	1.923	-.038	.025
302	61	N87D	40.564	1003.383	-7.394	-1.026	.02	-1.777
303	61	N115	142.729	944.756	61.062	-.991	.024	1.568
304	61	Totals:	211.848	2888.759	-.003			
305	61	COG (ft):	X: -0.001	Y: 1.146	Z: .061			
306	62	N3	24.532	957.683	.101	1.98	-.033	.023
307	62	N87D	10.911	991.623	23.282	-1	.035	-1.74
308	62	N115	148.018	939.453	82.542	-.983	.003	1.559
309	62	Totals:	183.461	2888.76	105.925			
310	62	COG (ft):	X: -0.001	Y: 1.146	Z: .061			
311	63	N3	13.784	970.586	39.525	2.019	-.019	.023
312	63	N87D	-35.327	975.054	55.072	-.967	.039	-1.691
313	63	N115	127.467	943.121	88.867	-.989	-.018	1.578
314	63	Totals:	105.924	2888.76	183.464			
315	63	COG (ft):	X: -0.001	Y: 1.146	Z: .061			



**Joint Reactions (By Combination) (Continued)**

LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]	
316	64	N3	-0.623	691.917	70.121	1.453	0	.016
317	64	N87D	-70.389	664.719	71.196	-0.643	.033	-1.132
318	64	N115	71.011	661.613	70.536	-0.696	-0.034	1.118
319	64	Totals:	0	2018.25	211.854			
320	64	COG (ft):	X: -.001	Y: 1.146	Z: .061			
321	65	N3	-15.166	688.167	55.844	1.434	.019	.019
322	65	N87D	-111.512	651.961	81.637	-0.623	.017	-1.098
323	65	N115	20.752	678.122	45.985	-0.722	-0.04	1.172
324	65	Totals:	-105.926	2018.25	183.465			
325	65	COG (ft):	X: -.001	Y: 1.146	Z: .061			
326	66	N3	-25.751	676.398	16.604	1.388	.032	.024
327	66	N87D	-132.304	646.783	75.339	-0.619	-0.005	-1.087
328	66	N115	-25.408	695.068	13.983	-0.748	-0.035	1.222
329	66	Totals:	-183.463	2018.249	105.926			
330	66	COG (ft):	X: -.001	Y: 1.146	Z: .061			
331	67	N3	-29.542	659.763	-37.092	1.329	.037	.028
332	67	N87D	-127.197	650.57	53.989	-0.632	-0.025	-1.102
333	67	N115	-55.112	707.915	-16.899	-0.767	-0.021	1.256
334	67	Totals:	-211.852	2018.248	-0.002			
335	67	COG (ft):	X: -.001	Y: 1.146	Z: .061			
336	68	N3	-25.52	642.722	-90.856	1.273	.031	.03
337	68	N87D	-97.552	662.312	23.309	-0.659	-0.039	-1.139
338	68	N115	-60.391	713.213	-38.383	-0.775	0	1.265
339	68	Totals:	-183.464	2018.247	-105.93			
340	68	COG (ft):	X: -.001	Y: 1.146	Z: .061			
341	69	N3	-14.764	629.84	-130.277	1.233	.017	.03
342	69	N87D	-51.323	678.861	-8.477	-0.691	-0.044	-1.188
343	69	N115	-39.84	709.545	-44.716	-0.768	.021	1.246
344	69	Totals:	-105.927	2018.246	-183.469			
345	69	COG (ft):	X: -.001	Y: 1.146	Z: .061			
346	70	N3	-1.153	624.565	-144.798	1.222	-0.001	.028
347	70	N87D	-0.889	695.787	-32.857	-0.721	-0.037	-1.236
348	70	N115	1.041	697.894	-34.203	-0.75	.037	1.204
349	70	Totals:	-0.002	2018.246	-211.858			
350	70	COG (ft):	X: -.001	Y: 1.146	Z: .061			
351	71	N3	14.394	628.312	-130.518	1.242	-0.02	.024
352	71	N87D	40.23	708.551	-43.295	-0.741	-0.021	-1.127
353	71	N115	51.299	681.384	-9.657	-0.724	.043	1.151
354	71	Totals:	105.923	2018.246	-183.469			
355	71	COG (ft):	X: -.001	Y: 1.146	Z: .061			
356	72	N3	24.979	640.075	-91.274	1.287	-0.033	.02
357	72	N87D	61.019	713.731	-36.999	-0.745	0	-1.281
358	72	N115	97.463	664.441	22.342	-0.698	.038	1.101
359	72	Totals:	183.461	2018.247	-105.93			
360	72	COG (ft):	X: -.001	Y: 1.146	Z: .061			
361	73	N3	28.766	656.707	-37.575	1.346	-0.038	.016
362	73	N87D	55.913	709.94	-15.654	-0.732	.021	-1.266
363	73	N115	127.17	651.601	53.227	-0.679	.023	1.067
364	73	Totals:	211.849	2018.248	-0.002			
365	73	COG (ft):	X: -.001	Y: 1.146	Z: .061			
366	74	N3	24.74	673.752	16.186	1.403	-0.032	.014
367	74	N87D	26.271	698.192	15.024	-0.705	.035	-1.229
368	74	N115	132.45	646.305	74.715	-0.671	.003	1.058
369	74	Totals:	183.461	2018.249	105.926			
370	74	COG (ft):	X: -.001	Y: 1.146	Z: .061			
371	75	N3	13.984	686.64	55.602	1.442	-0.019	.013
372	75	N87D	-19.955	681.641	46.812	-0.673	.04	-1.18



**Joint Reactions (By Combination) (Continued)**

LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
373	75 N115	111.896	649.969	81.051	-678	-018	1.077
374	75 Totals:	105.924	2018.249	183.465			
375	75 COG (ft):	X: -.001	Y: 1.146	Z: .061			

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

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	L... Dir	LC	phi*Pn...	phi*P...	phi*Mn y...	phi*Mn .....	Eqn	
1	M1	PIPE...	.152	7.273	19	.062	4...	18	30813...	65205	5.749	5.749	H1...
2	M4	HSS4...	.340	0	13	.072	0 y	15	12465...	139518	16.181	16.181	H1...
3	M10	HSS4...	.181	2.375	14	.056	2... y	14	13626...	139518	16.181	16.181	H1...
4	MP3A	PIPE...	.272	3.875	4	.050	1...	3	20866...	32130	1.872	1.872	H1...
5	MP4A	PIPE...	.261	3.875	17	.058	1...	6	20866...	32130	1.872	1.872	H1...
6	MP2A	PIPE...	.232	4	9	.062	4	8	20866...	32130	1.872	1.872	H1...
7	MP1A	PIPE...	.150	3.875	9	.046	3...	8	20866...	32130	1.872	1.872	H1...
8	M43	HSS4...	.176	0	24	.049	0 y	13	13626...	139518	16.181	16.181	H1...
9	M46	PL1/2x6	.106	.516	12	.116	1... y	16	66009...	97200	1.012	12.15	H1...
10	M51B	L2x2x3	.103	0	18	.015	4... y	17	9823.1...	23392...	.558	1.077	H2-1
11	M52B	L2x2x3	.103	1.951	18	.014	0 y	22	9823.1...	23392...	.558	1.076	H2-1
12	M76	PL3/8x6	.142	0	4	.241	0 y	17	70647...	72900	.57	9.113	H1...
13	M77	PL3/8x6	.133	.167	8	.361	0 y	14	71583...	72900	.57	9.113	H1...
14	M80	PL1/2x6	.031	.112	1	.068	.... y	5	96757...	97200	1.012	12.15	H1...
15	M84	PL3/8x6	.103	0	10	.301	0 y	20	70647...	72900	.57	9.113	H1...
16	M85	PL3/8x6	.151	.167	6	.342	0 y	13	71583...	72900	.57	9.113	H1...
17	M91	PL1/2x6	.034	.112	1	.050	0 y	4	96757...	97200	1.012	12.15	H1...
18	M52A	HSS4...	.344	0	21	.082	0 y	44	12465...	139518	16.181	16.181	H1...
19	M53	HSS4...	.185	2.375	22	.057	2... y	22	13626...	139518	16.181	16.181	H1...
20	M54	HSS4...	.183	0	20	.052	0 y	21	13626...	139518	16.181	16.181	H1...
21	M55	PL1/2x6	.102	.516	2	.121	.... y	48	66009...	97200	1.012	12.15	H1...
22	M58A	L2x2x3	.104	0	14	.015	0 y	13	9823.1...	23392...	.558	1.077	H2-1
23	M59A	L2x2x3	.104	1.951	14	.014	0 y	18	9823.1...	23392...	.558	1.076	H2-1
24	M63	PL3/8x6	.154	0	12	.254	0 y	13	70647...	72900	.57	9.113	H1...
25	M64	PL3/8x6	.138	.167	4	.371	0 y	22	71583...	72900	.57	9.113	H1...
26	M66	PL1/2x6	.032	.112	10	.068	.... y	1	96757...	97200	1.012	12.15	H1...
27	M68	PL3/8x6	.134	0	6	.316	0 y	16	70647...	72900	.57	9.113	H1...
28	M69	PL3/8x6	.157	.167	2	.360	0 y	21	71583...	72900	.57	9.113	H1...
29	M71	PL1/2x6	.033	.112	9	.096	0 y	48	96757...	97200	1.012	12.15	H1...
30	M76A	HSS4...	.346	0	17	.083	0 y	31	12465...	139518	16.181	16.181	H1...
31	M77A	HSS4...	.190	2.375	18	.058	2... y	18	13626...	139518	16.181	16.181	H1...
32	M78	HSS4...	.180	0	16	.050	0 y	17	13626...	139518	16.181	16.181	H1...
33	M79A	PL1/2x6	.104	.516	10	.117	1... y	20	66009...	97200	1.012	12.15	H1...
34	M82	L2x2x3	.104	0	22	.015	0 y	21	9823.1...	23392...	.558	1.077	H2-1
35	M83A	L2x2x3	.103	1.951	22	.014	0 y	14	9823.1...	23392...	.558	1.077	H2-1
36	M87	PL3/8x6	.158	0	8	.253	0 y	21	70647...	72900	.57	9.113	H1...
37	M88A	PL3/8x6	.148	.167	12	.380	0 y	18	71583...	72900	.57	9.113	H1...
38	M90	PL1/2x6	.033	.112	11	.064	.... y	9	96757...	97200	1.012	12.15	H1...
39	M92A	PL3/8x6	.110	0	2	.317	0 y	24	70647...	72900	.57	9.113	H1...
40	M93	PL3/8x6	.155	.167	10	.352	0 y	17	71583...	72900	.57	9.113	H1...
41	M95	PL1/2x6	.035	.112	5	.048	0 y	7	96757...	97200	1.012	12.15	H1...
42	M82A	PIPE...	.156	7.273	15	.066	4...	14	30813...	65205	5.749	5.749	H1...
43	M91B	PIPE...	.151	7.273	23	.066	4...	22	30813...	65205	5.749	5.749	H1...
44	M112	PIPE...	.143	6.12	18	.044	1...	2	14558...	50715	3.596	3.596	H1...
45	M113	PIPE...	.148	6.12	14	.046	1...	10	14558...	50715	3.596	3.596	H1...
46	M114	PIPE...	.146	6.12	22	.047	1...	6	14558...	50715	3.596	3.596	H1...
47	M121	L3X3X4	.177	0	5	.020	0 y	12	42181...	46656	1.688	3.756	H2-1
48	M122	L3X3X4	.177	0	1	.019	2... y	9	42181...	46656	1.688	3.756	H2-1
49	M123	L3X3X4	.177	0	9	.020	2... y	5	42181...	46656	1.688	3.756	H2-1



Company : Colliers Engineering & Design  
 Designer :  
 Job Number : Project No. 10221532  
 Model Name : 5000179836-VZW\_MT\_LO\_H

Jan 31, 2024  
 3:14 PM  
 Checked By: \_\_\_\_\_

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

Member	Shape	Code Check	Locft]	LC	Shear Check	L... Dir	LC	phi*Pn...	phi*P...	phi*Mn v...	phi*Mn .....	Egn	
50	MP3C	PIPE_...	.271	3.875	12	.049	1...	11	20866...	32130	1.872	1.872	...H1-...
51	MP4C	PIPE_...	.273	3.875	13	.059	1...	2	20866...	32130	1.872	1.872	...H1-...
52	MP2C	PIPE_...	.241	4	5	.065	4	4	20866...	32130	1.872	1.872	...H1-...
53	MP1C	PIPE_...	.158	3.875	5	.049	3...	4	20866...	32130	1.872	1.872	...H1-...
54	MP3B	PIPE_...	.260	3.875	8	.048	1...	7	20866...	32130	1.872	1.872	...H1-...
55	MP4B	PIPE_...	.265	3.875	21	.060	1...	10	20866...	32130	1.872	1.872	...H1-...
56	MP2B	PIPE_...	.240	4	1	.066	4	12	20866...	32130	1.872	1.872	...H1-...
57	MP1B	PIPE_...	.157	3.875	1	.050	3...	12	20866...	32130	1.872	1.872	...H1-...

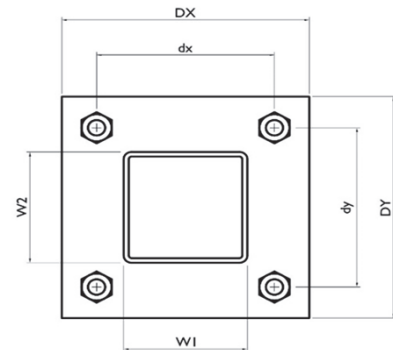
**I. Mount-to-Tower Connection Check**

Custom Orientation Required

Tower Connection Bolt Checks

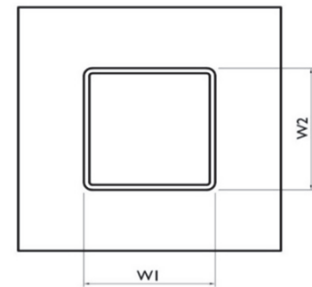
Bolt Orientation

Bolt Quantity per Reaction:	4
$d_x$ (in) (Delta X of typ. bolt config. sketch) :	7
$d_y$ (in) (Delta Y of typ. bolt config. sketch) :	7
Bolt Type:	A325N
Bolt Diameter (in):	0.625
Required Tensile Strength / bolt (kips):	4.9
Required Shear Strength / bolt (kips):	0.7
Tensile Capacity / bolt (kips):	20.7
Shear Capacity / bolt (kips):	12.4
Bolt Overall Utilization:	<b>23.5%</b>



Tower Connection Baseplate Checks

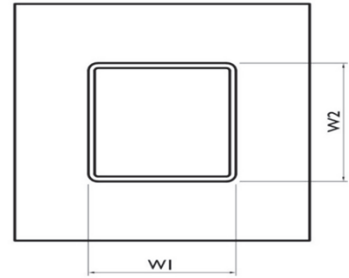
Connecting Standoff Member Shape:	Rect Tube
Weld Stiffener Configuration:	No Stiffeners
Plate Width, $D_x$ (in):	10
Plate Height, $D_y$ (in):	10
$W_1$ (in):	4
$W_2$ (in):	4
Member Thickness (in):	0.25
Stiffener location $a_1$ (in):	
Stiffener location $b_1$ (in):	
Stiffener location $a_2$ (in):	
Stiffener location $b_2$ (in):	
$F_y$ (ksi, plate):	36
Plate Thickness (in):	0.625
Length of Yield Line, $L_y$ (in):	7.75
Bolt Eccentricity, $e$ (in):	2.35
$M_u$ (kip-in):	11.45
$\Phi * M_n$ (kip-in):	24.52
Plate Bending Utilization:	<b>46.7%</b>



Tower Connection Weld Checks

Weld Shape:  
 Weld Stiffener Configuration:  
 Weld Size (1/16 in):  
 W1 (in):  
 W2 (in):  
 Weld Total Length (in):  
 Z<sub>x</sub> (in<sup>3</sup>/in):  
 Z<sub>y</sub> (in<sup>3</sup>/in):  
 J<sub>p</sub> (in<sup>4</sup>/in):  
 c<sub>x</sub> (in)  
 c<sub>y</sub> (in)  
 Required combined strength (kip/in):  
 Weld Capacity (kip/in):  
 Weld Utilization:

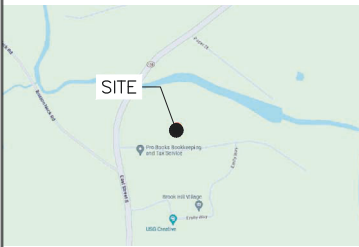
Yes
Rectangle
None
6
4
4
16.00
21.33
21.33
85.33
2.25
2.25
2.12
8.35
<b>25.3%</b>



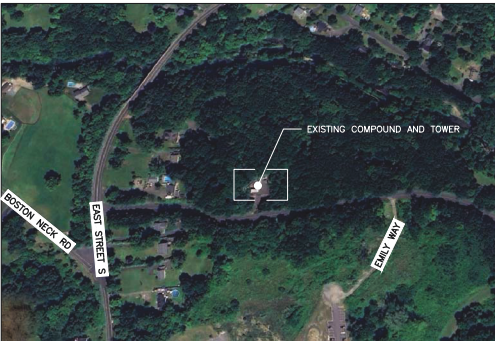
**NOTE:**  
AN ANALYSIS OF THE CAPACITY OF THE STRUCTURE TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY TOWER ENGINEERING PROFESSIONALS DATED FEBRUARY 29, 2024.

**LEASE EXHIBIT:**  
THIS LEASE EXHIBIT IS DIAGRAMMATIC IN NATURE AND IS INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION AND SIZE OF THE PROPOSED WIRELESS COMMUNICATION FACILITY. THE SITE LAYOUT WILL BE FINALIZED UPON COMPLETION OF THE SITE SURVEY AND FACILITY DESIGN.

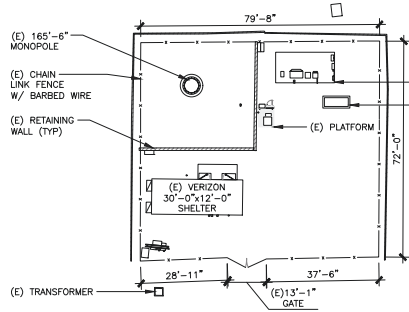
**LOCATION MAP N.T.S**



APPROXIMATE COORDINATES: LATITUDE: 41° 57' 25.20" N 41.9570007° N  
LONGITUDE: 72° 37' 32.60" W 72.625722° W

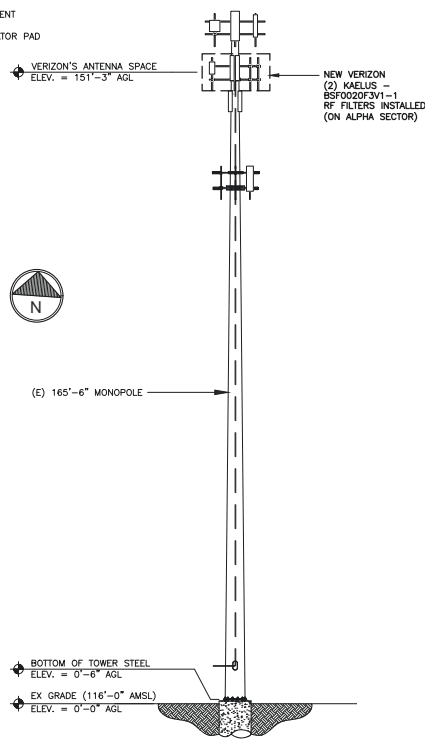


**1 PARTIAL SITE / KEY PLAN**  
SCALE: N.T.S.

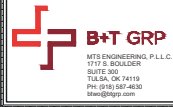


**2 SITE PLAN**  
SCALE: 0 16 32 48 64

**INSTALLER NOTE:**  
FAA APPROVED HEIGHT 166'-0"



**3 TOWER ELEVATION**  
SCALE: N.T.S.

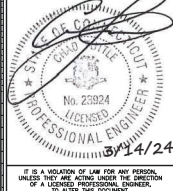


**SUFFIELD 4 CT**  
848 EAST STREET  
848 EAST STREET, CT 06108  
EXISTING MONOPOLE

PROJECT NO: 151124.006.01  
CHECKED BY: LR

ISSUED FOR:			
REV	DATE	OWN	DESCRIPTION
0	3/14/24	YES	CONSTRUCTION

MTS ENGINEERING P.L.L.C.  
BER-2386085  
Expires 3/31/24

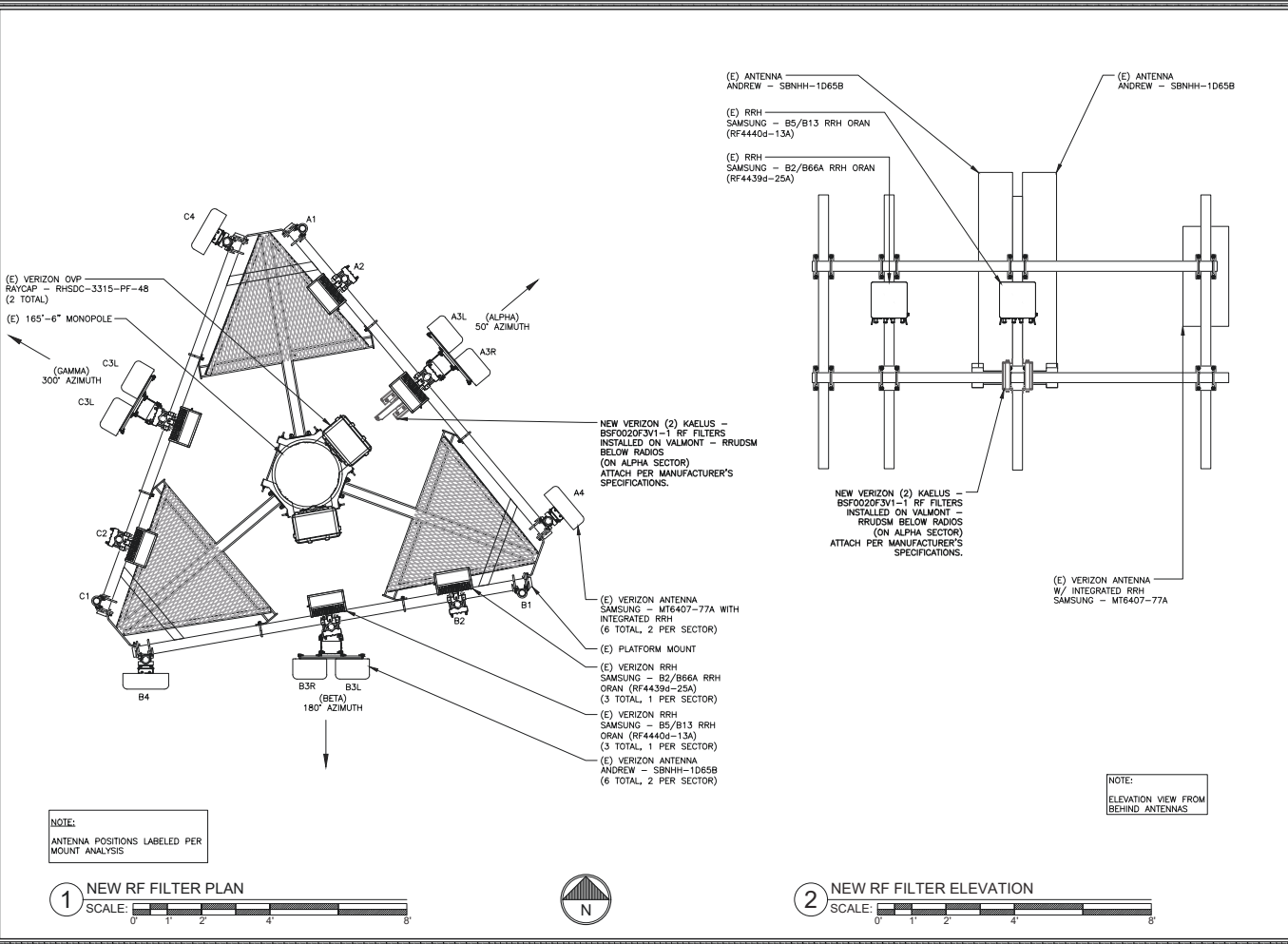


IF A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

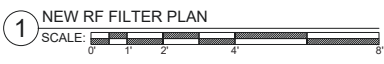
SHEET NUMBER: **LE-1** REVISION: **0**



151124.006.01.0001\_01 SUPFIELD\_3.DWG 8/14/24/24 - User: Brouder - Mar 14, 2024 - 10:48am



**NOTE:**  
ANTENNA POSITIONS LABELED PER MOUNT ANALYSIS



**verizon**  
20 ALEXANDER DRIVE  
WALLINGFORD, CT 06492

**B+T GRP**  
MTS ENGINEERING, P.L.L.C.  
1717 S. BOULDER  
SUITE 300  
TULSA, OK 74119  
PH: 918.587.4632  
btm@btgrp.com

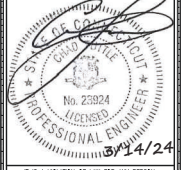
**SUFFIELD 4 CT**  
848 EAST STREET  
848 EAST STREET, CT 06108  
EXISTING MONOPOLE

PROJECT NO: 151124.006.01  
CHECKED BY: LR

**ISSUED FOR:**

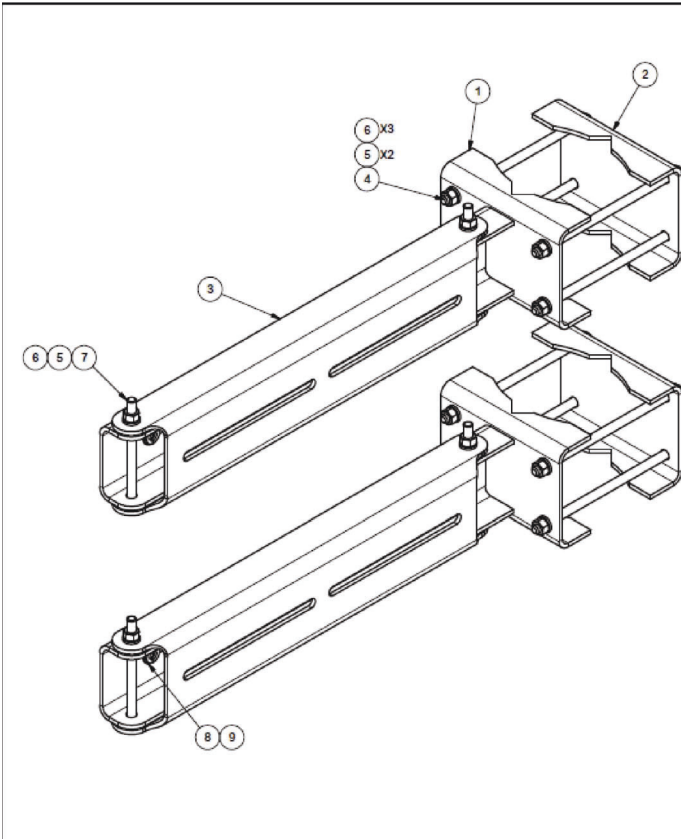
REV	DATE	BY	DESCRIPTION
0	3/14/24	LR	CONSTRUCTION

MTS ENGINEERING P.L.L.C.  
BER-2386985  
Expires 3/31/24

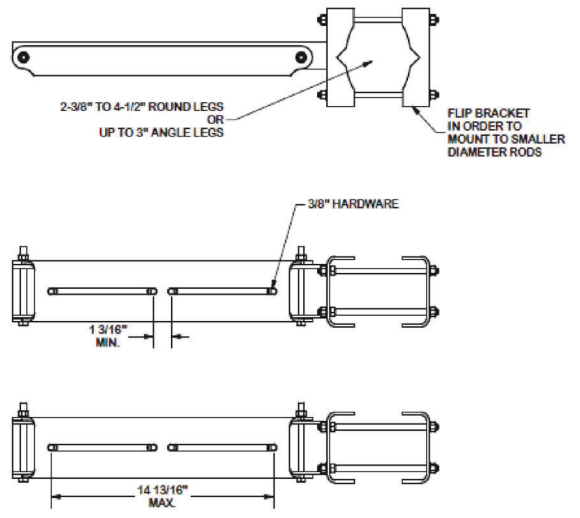


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SHEET NUMBER: **LE-2** REVISION: **0**



PARTS LIST					
ITEM	QTY	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	2	MOUNTING ARM		8.99	17.97
2	2	CLAMP PLATE		2.35	4.69
3	2	SWIVEL MOUNT		6.65	13.30
4	8	3/8"-16 UNC X 8" GALV. THREADED ROD		0.25	2.00
5	20	3/8" GALV LOCK WASHER		0.01	0.13
6	28	3/8"-16 UNC GALV HEX NUT		0.02	0.52
7	4	3/8" X 5" GALV BOLT		0.18	0.71
8	8	3/8" SS FLAT WASHER		0.01	0.06
9	8	3/8" SS LOCK WASHER		0.01	0.05
				TOTAL WT. #	39.43



**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 ( $\pm 0.060$ )

PROPRIETARY NOTE:  
 THE DATA AND TOLERANCES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION			
RRU DUAL SWIVEL MOUNT			
CRD NO.	DRAWN BY	ENG. APPROVAL	
	CEK	1/12/2015	
CLASS	SUB	DRAWING USAGE	CHECKED BY
81	01	SHOP	BMC 2/3/2015

	Engineering Support Team: 1-866-753-7446	Locations: New York, NY Atlanta, GA Los Angeles, CA Plymouth, IN Salem, OR Dallas, TX
	A valmont  COMPANY	
PART NO.	RRUDSM	
DWG. NO.	RRUDSM	