Robinson+Cole

KENNETH C. BALDWIN

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

October 10, 2023

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

Re: **Notice of Exempt Modification – Facility Modification**
38 Elm Street, Meriden, Connecticut

Dear Attorney Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains a wireless telecommunications facility at the above-referenced address (the "Property"). Cellco's facility consists of antennas and remote radio heads attached to a tower. Equipment associated with the facility is located on the ground adjacent to the tower. The roof-top tower was approved by the City of Meriden ("City"). Cellco's representatives reached out to the City officials in an effort to obtain a copy of the original tower approval. City officials were unable, however, to locate copies of the original approval. Cellco's use of the tower was approved by the Council in June of 1995. A copy of the Council's approval letter and staff report are included in Attachment 1.

Cellco's proposed modification involves the installation of six (6) interference mitigation filters ("Filters") on its existing antenna mounting assembly. The Filter specification sheet is included in Attachment 2.

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

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

1. The proposed modification will not result in an increase in the height of the existing tower. The Filters will be installed on Cellco's existing antenna platform and mounting

assembly.

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

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

4. The installation of Cellco's new Filters will not result in a change to radio frequency (RF) emissions from the facility. Therefore, no new RF emissions information is included in this filing.

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

6. According to the attached Structural Analysis Report ("SA") and Antenna Mount Analysis Report ("MA"), the existing roof-top tower, host structure, antenna mounting assembly can support Cellco's proposed modifications. A copy of the SA and MA are included in Attachment 3.

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

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

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:
Kevin Scarpati, Mayor
Monica Sims, Director of Planning and Enforcement
Ashley Harriman LLC, Property Owner
Alex Tyurin, Verizon Wireless

ATTACHMENT 1

FILE

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL
136 Main Street, Suite 401
New Britain, Connecticut 06051-4225
Phone: 827-7682

June 21, 1995

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

Re: Metro Mobile CTS of New Haven, Inc. request for an order to approve tower sharing at an existing telecommunications facility located on the roof of a building at 38 Elm Street, Meriden, Connecticut.

Dear Attorney Baldwin:

At a meeting held June 20, 1995, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this tower to avoid the unnecessary proliferation of tower structures.

The proposed shared use is to be implemented as specified in your letter dated June 6, 1995. Please notify the Council when all work is complete. A copy of the staff report on this request is enclosed for your information.

Very truly yours,

Mortimer A. Gelston
Chairman

MAG:FOC:mmb
Enclosure

cc: The Honorable Joseph J. Marinan, Jr., Mayor, City of Meriden

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL
136 Main Street, Suite 401
New Britain, Connecticut 06051-4225
Phone: 827-7682

Metro Mobile CTS of New Haven, Inc.
Request for Order to Approve Tower Sharing
Meriden, Connecticut
June 20, 1995

On June 6, 1995, Metro Mobile CTS of New Haven, Inc. (Metro Mobile) submitted to the Connecticut Siting Council (Council) a request for the Council to order shared use of an existing tower pursuant to General Statutes § 16-50aa which states, "An owner of a facility which agrees to the shared use of the facility pursuant to this section may request in writing that the Council approve the proposed shared use of the facility. If the council finds that the proposed shared use of the facility is technically, legally, environmentally, and economically feasible and meets public safety concerns, the council shall issue an order approving such shared use."

On June 16, 1995, Mortimer A. Gelston, Chairman of the Council, William J. Huber and Joel M. Rinebold inspected the site. Fred Cunliffe of the Council staff met with Sandy Ranciato and Mark Gauger to review the proposed site.

The existing tower site is located on the roof of a 19-foot building at 38 Elm Street, Meriden, Connecticut, owned and operated by John Arnold. A 45-foot self-supporting lattice tower is supported by a three-foot high steel support structure attached to the roof. Presently, a single whip antenna is attached to the top of this tower creating an overall height of 80 feet above ground level. Metro Mobile will forward a structural analysis of the existing tower with Metro Mobile antennas on it when it becomes available.

Metro Mobile would install 15 four-foot by one-foot antennas with the center of radiation at the 68-foot level of the existing tower. Metro Mobile would construct a 21-foot by 30-foot equipment shelter to the rear of Mr. Arnold's building. On October 11, 1994, Mr. Arnold received a building permit from the City of Meriden for the construction of the tower. Metro Mobile would obtain a building permit for its equipment shelter subsequent to Council approval. Surrounding land use is commercial and residential.

The addition of the cellular antennas to the existing tower would not increase the tower's height, extend the boundaries of the site, increase noise levels at the site boundaries by six decibels or more or increase the total radio frequency electromagnetic radiation power density to or above the State standard (28.5% of the State standard) pursuant to General Statutes § 22a-162. In addition, there is no expectation that this facility would cause local radio interference. No waste or sanitary facilities would be required, and no air pollutants would be emitted.

Metro Mobile contends the sharing of this tower is technically, legally, environmentally, and economically feasible and meets public safety concerns. Therefore, Metro Mobile requests the Council approve the proposed shared use of the facility and issue an order approving such shared use under General Statutes § 16-50aa.

Fred O. Cunliffe
Siting Analyst

FOC:mmb

ATTACHMENT 2

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	

ELECTRICAL	
Impedance	50Ohms
Intermodulation products	-160dBc maximum in UL Band (assuming 20MHz Signal), with 2 x 43dBm carriers -153dBc maximum with 2 x 43dBm

DC / AISG	
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

ENVIRONMENTAL	
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

MECHANICAL	
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.

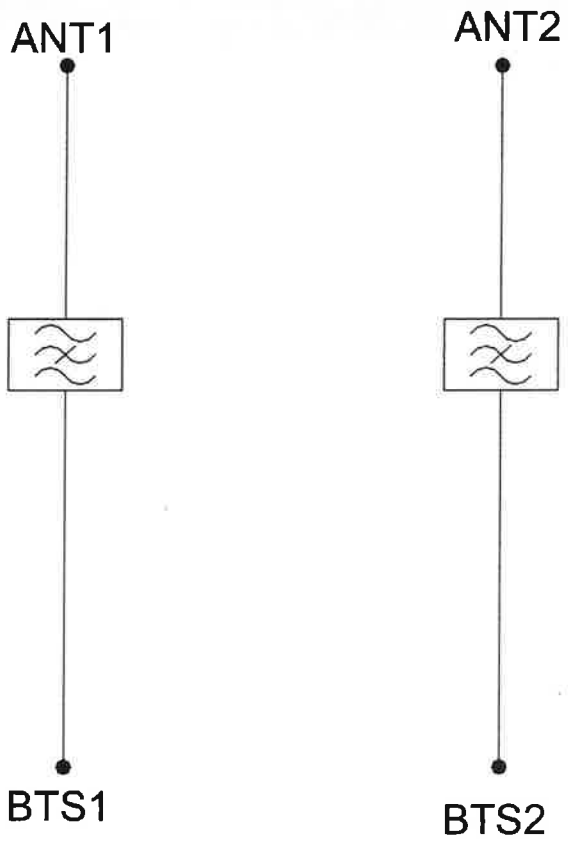
Contact Us: +1 303 768 8080 | +61 (0) 7 3907 1200 | www.kaelus.com

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)

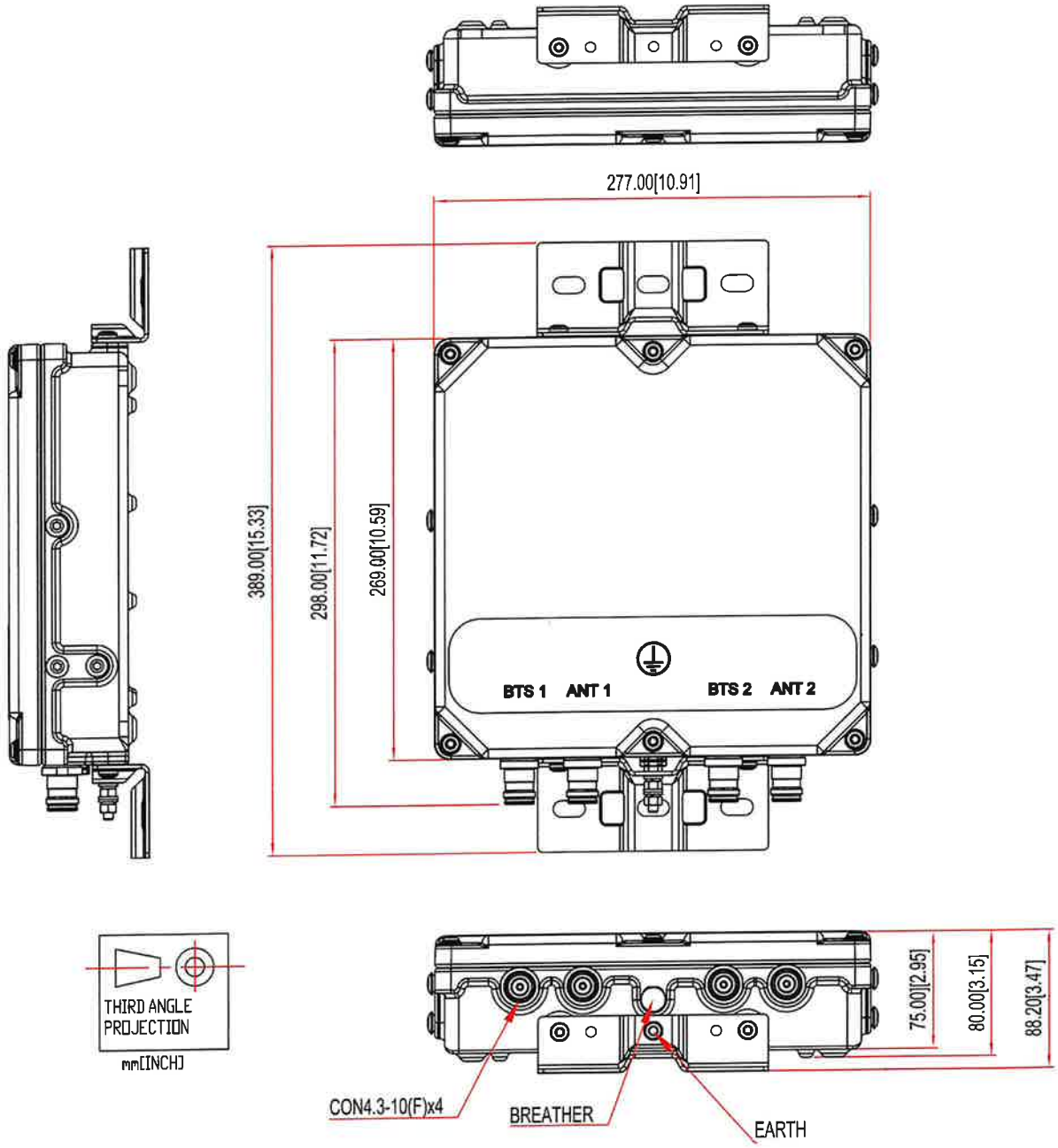
Contact Us: +1 303 768 8080 | +61 (0) 7 3907 1200 | www.kaelus.com

ELECTRICAL BLOCK DIAGRAM



Contact Us: +1 303 768 8080 | +61 (0) 7 3907 1200 | www.kaelus.com

MECHANICAL BLOCK DIAGRAM



Contact Us: +1 303 768 8080 | +61 (0) 7 3907 1200 | www.kaelus.com

ATTACHMENT 3

PAUL J. FORD & COMPANY

Report Date: September 1, 2023

Client: On Air Engineering, LLC
88 Foundry Pond Road
Cold Spring, NY 10516
Attn: David Weinpahl, P.E.
(201) 456-4624
dweinpahl@onaireng.com

Structure: Existing 45-ft Self Support Tower on 24-ft Building
Verizon Site Name: Meriden E CT
Site Address: 38 Elm Street
City, County, State: Meriden, New Haven County, CT
Latitude, Longitude: 41.534265°, -72.796485°

PJF Project: A42923-0006.002.8700

Paul J. Ford and Company is pleased to submit this "**Structural Analysis Report**" to determine the tower stress level for a proposed Verizon loading modification.

Analysis Criteria:
This analysis utilizes an ultimate 3-second gust wind speed of 120 mph as required by the 2022 Connecticut Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Proposed Appurtenance Loads:
The structure was analyzed with the proposed loading configuration shown in Table 1 combined with the other considered equipment shown in Table 2 of this report.

Summary of Analysis Results:
Existing Structure: Pass – 66.0%
Existing Foundation: Acceptable – 72.5%

We at Paul J. Ford and Company appreciate the opportunity of providing our continuing professional services to you and On Air Engineering, LLC. If you have any questions or need further assistance on this or any other projects, please give us a call.

Respectfully Submitted by:
Paul J. Ford and Company

Anna Trudo, EI
Structural Designer
atrudo@pauljford.com

MTB

09/05/2023

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 45 ft self-support tower on a 24ft roof top designed by Rohn.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	120 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration (Verizon)

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
65.0	66.0	3	jma wireless	91900314-02 SBS Bracket	1 15	2 1-1/4
		2	antel	LPA-80063/6CF w/ Mount Pipe		
		4	antel	LPA-80080/6CF w/ Mount Pipe		
		6	jma wireless	MX06FRO660-03 w/ Mount Pipe		
		1	raycap	RHSDC-3315-PF-48		
		3	samsung telecommunications	B2/B66A RRH-BR049		
		3	samsung telecommunications	B5/B13 RRH-BR04C		
		3	samsung telecommunications	MT6407-77A w/ Mount Pipe		
		6	site pro	RRUDSM Mtg. Bracket		
		6	kaelus	BSF0020F3V1-1		
	65.0	1	tower mounts	(3) 17' Sector Mount		

Table 2 - Other Considered Equipment (Dish Wireless)

Mounting Level (m)	Center Line Elevation (m)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
56.0	56.0	3	fujitsu	TA08025-B604	1	1.411
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	(3) 8' Sector Mount		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
Site Photos	On Air, 12/5/2018	-	On Air Engineering
Tower Structural Analysis Report	Natcomm, 4/20/2010	-	On Air Engineering
Tower Structural Analysis Report	Centek, 7/30/2015	-	On Air Engineering
Tower Structural Analysis Report	Structural Components LLC, 10/19/2022	-	On Air Engineering
Construction Drawings	Dish Wireless, 12/16/2022	-	On Air Engineering
Construction Drawings	On Air Engineering, 7/20/23	-	On Air Engineering
Mount Structural Analysis Report	Verizon, 10206580, 7/10/23	-	On Air Engineering

3.1) Analysis Method

tnxTower (version 8.1.1.0), 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.

3.2) Assumptions

1) Tower and structures were built and maintained in accordance with the manufacturer's specifications.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
3) At the time of analysis, the original foundation drawings or a foundation mapping was not available. However, the 2010 tower structural analysis report, referenced in Table 3, provided the base design reactions from the original drawings. Using these reactions, we have compared them to the reactions of this analysis. By doing this we have assumed the existing foundation/structure was properly designed to handle the loading from the original tower design.
4) All tower geometry was taken from the previous structural analysis indicated in Table 3 of this report.

This analysis may be affected if any assumptions are not valid or have been made in error. Paul J. Ford and Company 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
T1	69 - 64	Leg	Pipe 2.375" x 0.218" (2 EH)	3	-3.66	42.47	8.6	Pass
T2	64 - 44	Leg	Pipe 2.375" x 0.218" (2 EH)	15	-26.53	52.40	50.6	Pass
T3	44 - 24	Leg	Pipe 2.875" x 0.276" (2.5 EH)	46	-48.30	78.15	61.8	Pass
T1	69 - 64	Diagonal	L 1.5 x 1.5 x 3/16	7	-0.98	6.29	15.6	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
							20.7 (b)	
T2	64 - 44	Diagonal	L 1.5 x 1.5 x 3/16	20	-3.34	7.21	46.3 66.0 (b)	Pass
T3	44 - 24	Diagonal	L 1.75 x 1.75 x 3/16	57	-2.57	6.77	38.0 43.2 (b)	Pass
T1	69 - 64	Top Girt	L 1.5 x 1.5 x 3/16	4	-0.62	2.53	24.6	Pass
T3	44 - 24	Top Girt	L 1.5 x 1.5 x 3/16	51	-0.84	2.53	33.1	Pass
							Summary	
						Leg (T3)	61.8	Pass
						Diagonal (T2)	66.0	Pass
						Top Girt (T3)	33.1	Pass
						Bolt Checks	66.0	Pass
						Rating =	66.0	Pass

Table 5 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (m)	% Capacity	Pass / Fail
1	Base Foundation (Compared w/ Design Loads)	24	72.5	Pass

Structure Rating (max from all components) =	72.5%[2]

Notes:

- All structural ratings are per TIA-222-H Section 15.5

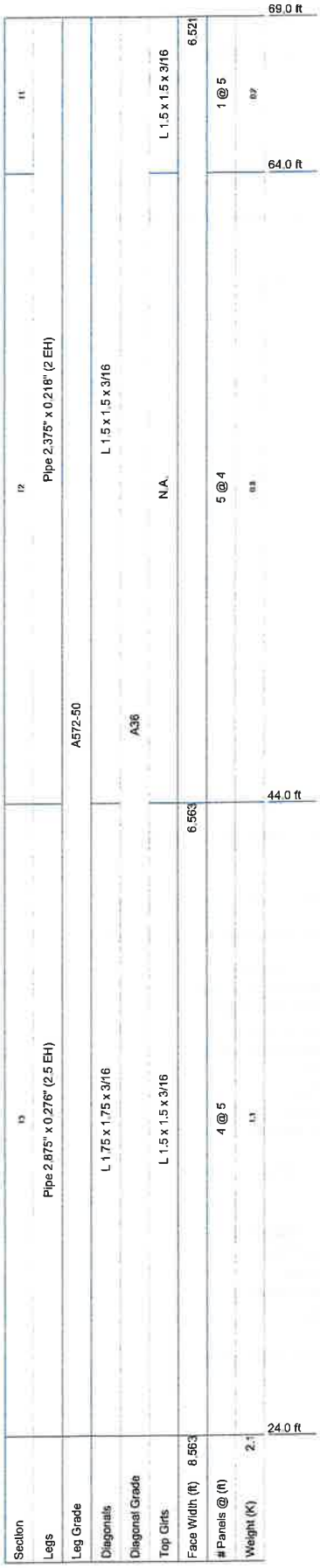
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
2) Foundation capacity determined by comparing analysis reactions to original design reactions.

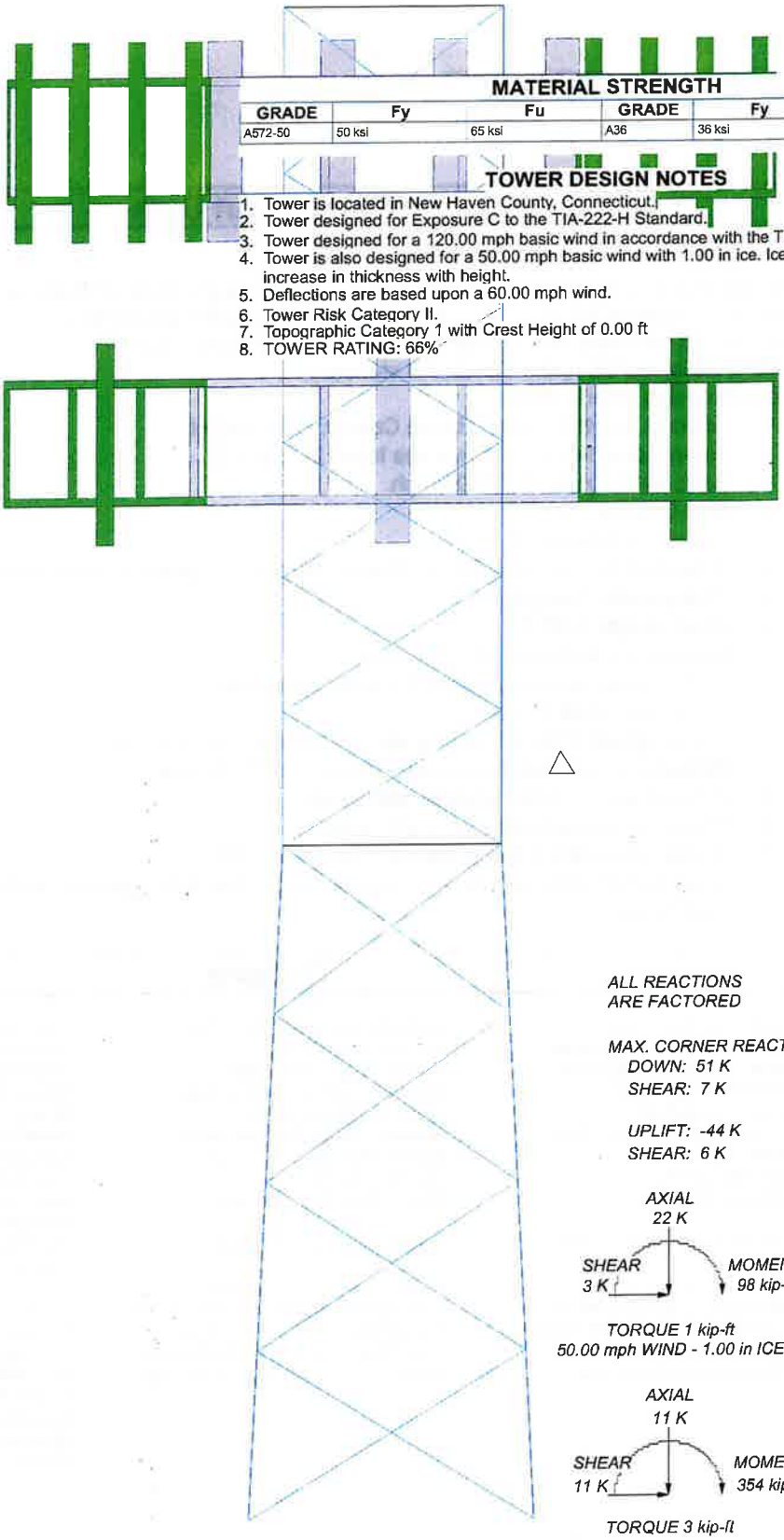
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT





MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 120.00 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50.00 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60.00 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 66%

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 51 K
SHEAR: 7 K

UPLIFT: -44 K
SHEAR: 6 K

TORQUE 1 kip-ft
50.00 mph WIND - 1.00 in ICE

TORQUE 3 kip-ft
REACTIONS - 120.00 mph WIND

Paul J. Ford and Company
250 East Broad St., Suite 600
Columbus, OH 43215
Phone: 614-221-6679
FAX:

Job:	Existing 45 ft Rooftop SST / Meriden, CT
Project:	42923-0006.002.8700
Client: On Air Engineering, LLC	Drawn by: Anna Trudo / App'd:
Code: TIA-222-H	Date: 09/01/23 / Scale: NTS
Path:	Dwg No. E-1

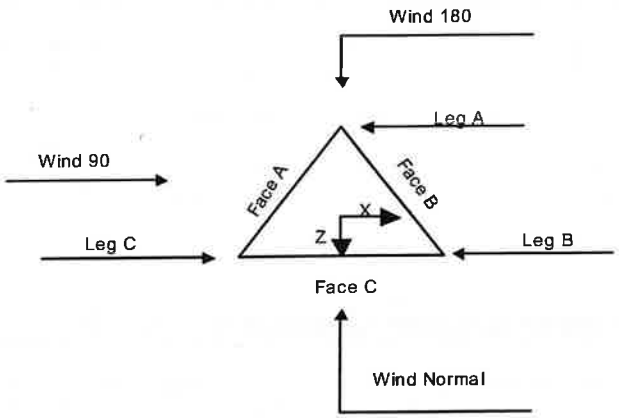
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 69.00 ft above the ground line.
The base of the tower is set at an elevation of 24.00 ft above the ground line.
The face width of the tower is 6.52 ft at the top and 8.56 ft at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

- Tower is located in New Haven County, Connecticut.
- Tower base elevation above sea level: 282.50 ft.
- Basic wind speed of 120.00 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.00 in.
- Ice thickness is considered to increase with height.
- Ice density of 56.00 pcf.
- A wind speed of 50.00 mph is used in combination with ice.
- Deflections calculated using a wind speed of 60.00 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in tower member design is 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	69.00-64.00			6.52	1	5.00
T2	64.00-44.00			6.52	1	20.00
T3	44.00-24.00			6.56	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	69.00-64.00	5.00	X Brace	No	No	0.00	0.00
T2	64.00-44.00	4.00	X Brace	No	No	0.00	0.00
T3	44.00-24.00	5.00	X Brace	No	No	0.00	0.00

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 69.00-64.00	Pipe	Pipe 2.375" x 0.218" (2 EH)	A572-50 (50 ksi)	Single Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)
T2 64.00-44.00	Pipe	Pipe 2.375" x 0.218" (2 EH)	A572-50 (50 ksi)	Single Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)
T3 44.00-24.00	Pipe	Pipe 2.875" x 0.276" (2.5 EH)	A572-50 (50 ksi)	Single Angle	L 1.75 x 1.75 x 3/16	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 69.00-64.00	Single Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)
T3 44.00-24.00	Single Angle	L 1.5 x 1.5 x 3/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 69.00-64.00	0.00	0.00	A36 (36 ksi)	1.03	1	1.1	36.00	36.00	36.00
T2 64.00-44.00	0.00	0.00	A36 (36 ksi)	1.03	1	1.1	36.00	36.00	36.00
T3 44.00-24.00	0.00	0.00	A36 (36 ksi)	1.03	1	1.1	36.00	36.00	36.00

Tower Section Geometry (cont'd)

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 69.00-64.00	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T2 64.00-44.00	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T3 44.00-24.00	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1

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

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 69.00-64.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T2 64.00-44.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T3 44.00-24.00	0.00	1	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 69.00-64.00	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T2 64.00-44.00	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75
T3 44.00-24.00	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75	0.00	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 69.00-64.00	Flange	0.63 A325N	4	0.50 A325N	1	0.50 A325N	1	0.00 A325N	0	0.63 A325N	0	0.00 A325N	0	0.63 A325N	0
T2 64.00-44.00	Flange	0.63 A325N	4	0.50 A325N	1	0.00 A325N	0	0.00 A325N	0	0.63 A325N	0	0.00 A325N	0	0.63 A325N	0
T3 44.00-24.00	Flange	0.63 A325N	4	0.50 A325N	1	0.50 A325N	1	0.00 A325N	0	0.63 A325N	0	0.00 A325N	0	0.63 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1/4" x 2-1/2" Climb Ladder Rail	B	No	No	Af (CaAa)	24.00 - 29.00	-7.00	0	2	2	12.00 0.25	0.25		2.12
3/4" ladder rung (12" long 12" oc)	B	No	No	Ar (CaAa)	24.00 - 29.00	-7.00	0	1	1	0.75	0.75		1.50
Safety Line 3/8 *	B	No	No	Ar (CaAa)	24.00 - 29.00	-11.00	0	1	1	0.38	0.38		0.22
1.5" flat Cable Ladder Rail	B	No	No	Af (CaAa)	66.50 - 24.00	0.00	0	2	2	42.00 1.50	1.50		1.80
AVA6-50(1-1/4")	B	No	No	Ar (CaAa)	65.00 - 24.00	0.00	0	15	15	0.75 0.50	1.56		0.45

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
MLCH 12/24 LOW INDUCTION(2) ***	B	No	No	Ar (CaAa)	65.00 - 24.00	0.00	-0.2	1	1	2.02	2.02		3.04
Hybrid 1.411" OD	B	No	No	Ar (CaAa)	56.00 - 24.00	0.00	0.5	1	1	1.43	1.41		1.72

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	69.00-64.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	3.792	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.00
T2	64.00-44.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	62.525	0.000	0.29
		C	0.000	0.000	0.000	0.000	0.00
T3	44.00-24.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	64.625	0.000	0.33
		C	0.000	0.000	0.000	0.000	0.00

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	69.00-64.00	A	1.073	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	7.268	0.000	0.08
		C		0.000	0.000	0.000	0.000	0.00
T2	64.00-44.00	A	1.050	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	121.319	0.000	1.35
		C		0.000	0.000	0.000	0.000	0.00
T3	44.00-24.00	A	1.003	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	127.554	0.000	1.43
		C		0.000	0.000	0.000	0.000	0.00

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	69.00-64.00	2.46	-2.31	2.50	-2.37
T2	64.00-44.00	7.61	-5.97	7.60	-5.80
T3	44.00-24.00	8.27	-6.05	8.87	-5.98

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	5	1.5" flat Cable Ladder Rail	64.00 - 66.50	0.6000	0.6000
T1	6	AVA6-50(1-1/4")	64.00 - 65.00	0.6000	0.6000
T1	9	MLCH 12/24 LOW INDUCTION(2)	64.00 - 65.00	0.6000	0.6000
T2	5	1.5" flat Cable Ladder Rail	44.00 - 64.00	0.6000	0.6000
T2	6	AVA6-50(1-1/4")	44.00 - 64.00	0.6000	0.6000
T2	9	MLCH 12/24 LOW INDUCTION(2)	44.00 - 64.00	0.6000	0.6000
T2	12	Hybrid 1.411" OD	44.00 - 56.00	0.6000	0.6000
T3	1	1/4" x 2-1/2" Climb Ladder Rail	24.00 - 29.00	0.6000	0.6000
T3	2	3/4" ladder rung (12" long 12" oc)	24.00 - 29.00	0.6000	0.6000
T3	3	Safety Line 3/8	24.00 - 29.00	0.6000	0.6000
T3	5	1.5" flat Cable Ladder Rail	24.00 - 44.00	0.6000	0.6000
T3	6	AVA6-50(1-1/4")	24.00 - 44.00	0.6000	0.6000
T3	9	MLCH 12/24 LOW INDUCTION(2)	24.00 - 44.00	0.6000	0.6000
T3	12	Hybrid 1.411" OD	24.00 - 44.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(3) 17' Sector Mount	C	None			0.000	65.00	No Ice	32.87	32.87	1.76
							1/2" Ice	46.26	46.26	2.41
							1" Ice	59.46	59.46	3.28
SitePro1 STK-U Stiff Arm	A	From Leg	2.00	0.00	0.000	65.00	No Ice	2.97	2.97	0.06
							1/2" Ice	4.25	4.25	0.08
							1" Ice	5.54	5.54	0.11
SitePro1 STK-U Stiff Arm	B	From Leg	2.00	0.00	0.000	65.00	No Ice	2.97	2.97	0.06
							1/2" Ice	4.25	4.25	0.08
							1" Ice	5.54	5.54	0.11
SitePro1 STK-U Stiff Arm	C	From Leg	2.00	0.00	0.000	65.00	No Ice	2.97	2.97	0.06
							1/2" Ice	4.25	4.25	0.08
							1" Ice	5.54	5.54	0.11
3 Sch 40 X 6' Mount Pipe	A	From Leg	4.00	0.00	0.000	65.00	No Ice	1.93	1.93	0.06
							1/2" Ice	2.29	2.29	0.07
							1" Ice	2.67	2.67	0.09
3 Sch 40 X 6' Mount Pipe	B	From Leg	4.00	0.00	0.000	65.00	No Ice	1.93	1.93	0.06
							1/2" Ice	2.29	2.29	0.07
							1" Ice	2.67	2.67	0.09

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
3 Sch 40 X 6' Mount Pipe	C	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	1.93 2.29 2.67	1.93 2.29 2.67	0.06 0.07 0.09
(2) LPA-80063/6CF_TIA w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	9.83 10.40 10.93	10.22 11.38 12.27	0.05 0.14 0.25
(2) LPA-80080/6CF_TIA w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	4.56 5.11 5.61	10.26 11.43 12.31	0.05 0.11 0.19
(2) LPA-80080/6CF_TIA w/ Mount Pipe	C	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	4.56 5.11 5.61	10.26 11.43 12.31	0.05 0.11 0.19
RHSDC-3315-PF-48	C	From Face	0.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	3.71 3.95 4.20	2.19 2.39 2.61	0.03 0.06 0.10
B5/B13 RRH-BR04C	A	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	0.07 0.09 0.11
B5/B13 RRH-BR04C	B	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	0.07 0.09 0.11
B5/B13 RRH-BR04C	C	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	0.07 0.09 0.11
B2/B66A RRH-BR049	A	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	0.07 0.09 0.11
B2/B66A RRH-BR049	B	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	0.07 0.09 0.11
B2/B66A RRH-BR049	C	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	0.07 0.09 0.11
(2) MX06FRO660-03_TIA w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	10.11 10.68 11.22	8.99 10.15 11.03	0.10 0.19 0.29
(2) MX06FRO660-03_TIA w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	10.11 10.68 11.22	8.99 10.15 11.03	0.10 0.19 0.29
(2) MX06FRO660-03_TIA w/ Mount Pipe	C	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	10.11 10.68 11.22	8.99 10.15 11.03	0.10 0.19 0.29
jma 91900314-02 SBS Bracket	A	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.00 0.00 0.00	0.03 0.05 0.07
jma 91900314-02 SBS Bracket	B	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.00 0.00 0.00	0.03 0.05 0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
jma 91900314-02 SBS Bracket	C	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.00 0.00 0.00	0.03 0.05 0.07
MT6407-77A_TIA w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	4.91 5.26 5.61	2.68 3.14 3.62	0.10 0.14 0.18
MT6407-77A_TIA w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	4.91 5.26 5.61	2.68 3.14 3.62	0.10 0.14 0.18
MT6407-77A_TIA w/ Mount Pipe	C	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	4.91 5.26 5.61	2.68 3.14 3.62	0.10 0.14 0.18
(2) BSF0020F3V1-1	A	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	0.96 1.09 1.22	0.29 0.36 0.45	0.02 0.02 0.03
(2) BSF0020F3V1-1	B	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	0.96 1.09 1.22	0.29 0.36 0.45	0.02 0.02 0.03
(2) BSF0020F3V1-1	C	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	0.96 1.09 1.22	0.29 0.36 0.45	0.02 0.02 0.03
(2) site pro RRUDSM Mounting Bracket	A	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	0.72 0.87 1.03	0.01 0.24 0.43	0.01 0.01 0.02
(2) site pro RRUDSM Mounting Bracket	B	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	0.72 0.87 1.03	0.01 0.24 0.43	0.01 0.01 0.02
(2) site pro RRUDSM Mounting Bracket	C	From Leg	4.00 0.00 1.00	0.000	65.00	No Ice 1/2" Ice 1" Ice	0.72 0.87 1.03	0.01 0.24 0.43	0.01 0.01 0.02
** MX08FRO665-21_TIA w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.000	56.00	No Ice 1/2" Ice 1" Ice	12.73 13.33 13.89	7.53 8.72 9.62	0.11 0.20 0.30
MX08FRO665-21_TIA w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.000	56.00	No Ice 1/2" Ice 1" Ice	12.73 13.33 13.89	7.53 8.72 9.62	0.11 0.20 0.30
MX08FRO665-21_TIA w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.000	56.00	No Ice 1/2" Ice 1" Ice	12.73 13.33 13.89	7.53 8.72 9.62	0.11 0.20 0.30
TA08025-B604	A	From Leg	4.00 0.00 0.00	0.000	56.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	0.98 1.11 1.25	0.06 0.08 0.10
TA08025-B604	B	From Leg	4.00 0.00 0.00	0.000	56.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	0.98 1.11 1.25	0.06 0.08 0.10
TA08025-B604	C	From Leg	4.00 0.00 0.00	0.000	56.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	0.98 1.11 1.25	0.06 0.08 0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
TA08025-B605	A	From Leg	4.00 0.00 0.00	0.000	56.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	1.13 1.27 1.41	0.08 0.09 0.11
TA08025-B605	B	From Leg	4.00 0.00 0.00	0.000	56.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	1.13 1.27 1.41	0.08 0.09 0.11
TA08025-B605	C	From Leg	4.00 0.00 0.00	0.000	56.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	1.13 1.27 1.41	0.08 0.09 0.11
RDIDC-9181-PF-48	A	From Leg	4.00 0.00 0.00	0.000	56.00	No Ice 1/2" Ice 1" Ice	2.01 2.19 2.37	1.17 1.31 1.46	0.02 0.04 0.06
MTC3975083	A	From Leg	2.00 0.00 0.00	0.000	56.00	No Ice 1/2" Ice 1" Ice	9.60 14.50 19.40	8.60 13.30 18.00	0.47 0.59 0.70
MTC3975083	B	From Leg	2.00 0.00 0.00	0.000	56.00	No Ice 1/2" Ice 1" Ice	9.60 14.50 19.40	8.60 13.30 18.00	0.47 0.59 0.70
MTC3975083	C	From Leg	2.00 0.00 0.00	0.000	56.00	No Ice 1/2" Ice 1" Ice	9.60 14.50 19.40	8.60 13.30 18.00	0.47 0.59 0.70
**									

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

Comb. No.	Description
26	1.2 Dead+1.0 Ice
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice
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 Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	50.86	5.72	-3.32
	Max. H_x	18	50.86	5.72	-3.32
	Max. H_z	7	-43.82	-5.21	3.02
	Min. Vert	7	-43.82	-5.21	3.02
	Min. H_x	7	-43.82	-5.21	3.02
	Min. H_z	18	50.86	5.72	-3.32
Leg B	Max. Vert	10	48.96	-5.27	-3.26
	Max. H_x	23	-41.35	4.75	2.95
	Max. H_z	23	-41.35	4.75	2.95
	Min. Vert	23	-41.35	4.75	2.95
	Min. H_x	10	48.96	-5.27	-3.26
	Min. H_z	10	48.96	-5.27	-3.26
Leg A	Max. Vert	2	50.30	0.18	6.33
	Max. H_x	20	3.69	1.17	0.22
	Max. H_z	2	50.30	0.18	6.33
	Min. Vert	15	-42.67	-0.17	-5.73
	Min. H_x	9	2.76	-1.16	0.16
	Min. H_z	15	-42.67	-0.17	-5.73

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	8.91	0.00	0.00	-0.75	-1.16	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	10.69	0.00	-10.62	-346.62	-1.40	2.61
0.9 Dead+1.0 Wind 0 deg - No Ice	8.02	0.00	-10.62	-346.17	-1.05	2.60
1.2 Dead+1.0 Wind 30 deg - No Ice	10.69	5.40	-9.63	-309.01	-172.72	2.32

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
0.9 Dead+1.0 Wind 30 deg - No Ice	8.02	5.40	-9.63	-308.59	-172.26	2.32
1.2 Dead+1.0 Wind 60 deg - No Ice	10.69	9.27	-5.51	-177.71	-296.26	-0.01
0.9 Dead+1.0 Wind 60 deg - No Ice	8.02	9.27	-5.51	-177.38	-295.72	-0.01
1.2 Dead+1.0 Wind 90 deg - No Ice	10.69	10.80	-0.00	-0.90	-344.03	-2.34
0.9 Dead+1.0 Wind 90 deg - No Ice	8.02	10.80	-0.00	-0.68	-343.46	-2.34
1.2 Dead+1.0 Wind 120 deg - No Ice	10.69	8.92	5.31	171.96	-289.42	-2.62
0.9 Dead+1.0 Wind 120 deg - No Ice	8.02	8.92	5.31	172.07	-288.88	-2.62
1.2 Dead+1.0 Wind 150 deg - No Ice	10.69	4.55	8.15	275.91	-154.64	-1.09
0.9 Dead+1.0 Wind 150 deg - No Ice	8.02	4.55	8.15	275.95	-154.19	-1.09
1.2 Dead+1.0 Wind 180 deg - No Ice	10.69	-0.00	10.24	336.21	-1.40	-2.61
0.9 Dead+1.0 Wind 180 deg - No Ice	8.02	-0.00	10.24	336.22	-1.05	-2.60
1.2 Dead+1.0 Wind 210 deg - No Ice	10.69	-5.40	9.63	307.22	169.91	-2.32
0.9 Dead+1.0 Wind 210 deg - No Ice	8.02	-5.40	9.63	307.25	170.15	-2.32
1.2 Dead+1.0 Wind 240 deg - No Ice	10.69	-9.60	5.70	180.22	300.92	0.01
0.9 Dead+1.0 Wind 240 deg - No Ice	8.02	-9.60	5.70	180.33	301.08	0.01
1.2 Dead+1.0 Wind 270 deg - No Ice	10.69	-10.80	-0.00	-0.90	341.23	2.34
0.9 Dead+1.0 Wind 270 deg - No Ice	8.02	-10.80	-0.00	-0.68	341.36	2.34
1.2 Dead+1.0 Wind 300 deg - No Ice	10.69	-8.59	-5.12	-169.46	279.15	2.62
0.9 Dead+1.0 Wind 300 deg - No Ice	8.02	-8.59	-5.12	-169.12	279.32	2.62
1.2 Dead+1.0 Wind 330 deg - No Ice	10.69	-4.55	-8.15	-277.70	151.84	1.09
0.9 Dead+1.0 Wind 330 deg - No Ice	8.02	-4.55	-8.15	-277.29	152.09	1.09
1.2 Dead+1.0 Ice	22.41	0.00	0.00	-4.28	-5.48	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice	22.41	0.00	-2.69	-91.00	-5.49	0.71
1.2 Dead+1.0 Wind 30 deg+1.0 Ice	22.41	1.42	-2.50	-83.01	-49.77	0.68
1.2 Dead+1.0 Wind 60 deg+1.0 Ice	22.41	2.55	-1.50	-50.86	-84.14	0.02
1.2 Dead+1.0 Wind 90 deg+1.0 Ice	22.41	2.83	0.00	-4.29	-94.05	-0.64
1.2 Dead+1.0 Wind 120 deg+1.0 Ice	22.41	2.28	1.34	39.07	-78.56	-0.69
1.2 Dead+1.0 Wind 150 deg+1.0 Ice	22.41	1.21	2.14	66.66	-45.29	-0.43
1.2 Dead+1.0 Wind 180 deg+1.0 Ice	22.41	0.00	2.63	81.18	-5.49	-0.71
1.2 Dead+1.0 Wind 210 deg+1.0 Ice	22.41	-1.42	2.50	74.43	38.79	-0.68
1.2 Dead+1.0 Wind 240 deg+1.0 Ice	22.41	-2.59	1.53	42.91	74.23	-0.02
1.2 Dead+1.0 Wind 270 deg+1.0 Ice	22.41	-2.83	0.00	-4.29	83.07	0.64
1.2 Dead+1.0 Wind 300 deg+1.0 Ice	22.41	-2.23	-1.32	-47.02	66.50	0.69
1.2 Dead+1.0 Wind 330 deg+1.0 Ice	22.41	-1.21	-2.14	-75.24	34.30	0.43
Dead+Wind 0 deg - Service	8.91	0.00	-2.66	-87.14	-1.17	0.65
Dead+Wind 30 deg - Service	8.91	1.35	-2.41	-77.74	-43.98	0.58

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead+Wind 60 deg - Service	8.91	2.32	-1.38	-44.93	-74.85	-0.00
Dead+Wind 90 deg - Service	8.91	2.70	0.00	-0.75	-86.79	-0.58
Dead+Wind 120 deg - Service	8.91	2.23	1.33	42.45	-73.14	-0.65
Dead+Wind 150 deg - Service	8.91	1.14	2.04	68.42	-39.46	-0.27
Dead+Wind 180 deg - Service	8.91	0.00	2.56	83.49	-1.17	-0.65
Dead+Wind 210 deg - Service	8.91	-1.35	2.41	76.25	41.64	-0.58
Dead+Wind 240 deg - Service	8.91	-2.40	1.43	44.51	74.38	0.00
Dead+Wind 270 deg - Service	8.91	-2.70	0.00	-0.75	84.45	0.58
Dead+Wind 300 deg - Service	8.91	-2.15	-1.28	-42.87	68.94	0.65
Dead+Wind 330 deg - Service	8.91	-1.14	-2.04	-69.92	37.12	0.27

Solution Summary

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
1	0.00	-8.91	0.00	0.00	8.91	0.00	0.000%
2	0.00	-10.69	-10.62	-0.00	10.69	10.62	0.000%
3	0.00	-8.02	-10.62	-0.00	8.02	10.62	0.000%
4	5.40	-10.69	-9.63	-5.40	10.69	9.63	0.000%
5	5.40	-8.02	-9.63	-5.40	8.02	9.63	0.000%
6	9.27	-10.69	-5.51	-9.27	10.69	5.51	0.000%
7	9.27	-8.02	-5.51	-9.27	8.02	5.51	0.000%
8	10.80	-10.69	0.00	-10.80	10.69	0.00	0.000%
9	10.80	-8.02	0.00	-10.80	8.02	0.00	0.000%
10	8.92	-10.69	5.31	-8.92	10.69	-5.31	0.000%
11	8.92	-8.02	5.31	-8.92	8.02	-5.31	0.000%
12	4.55	-10.69	8.15	-4.55	10.69	-8.15	0.000%
13	4.55	-8.02	8.15	-4.55	8.02	-8.15	0.000%
14	0.00	-10.69	10.24	0.00	10.69	-10.24	0.000%
15	0.00	-8.02	10.24	0.00	8.02	-10.24	0.000%
16	-5.40	-10.69	9.63	5.40	10.69	-9.63	0.000%
17	-5.40	-8.02	9.63	5.40	8.02	-9.63	0.000%
18	-9.60	-10.69	5.70	9.60	10.69	-5.70	0.000%
19	-9.60	-8.02	5.70	9.60	8.02	-5.70	0.000%
20	-10.80	-10.69	0.00	10.80	10.69	0.00	0.000%
21	-10.80	-8.02	0.00	10.80	8.02	0.00	0.000%
22	-8.59	-10.69	-5.12	8.59	10.69	5.12	0.000%
23	-8.59	-8.02	-5.12	8.59	8.02	5.12	0.000%
24	-4.55	-10.69	-8.15	4.55	10.69	8.15	0.000%
25	-4.55	-8.02	-8.15	4.55	8.02	8.15	0.000%
26	0.00	-22.41	0.00	0.00	22.41	0.00	0.000%
27	0.00	-22.41	-2.69	0.00	22.41	2.69	0.000%
28	1.42	-22.41	-2.50	-1.42	22.41	2.50	0.000%
29	2.55	-22.41	-1.50	-2.55	22.41	1.50	0.000%
30	2.83	-22.41	0.00	-2.83	22.41	0.00	0.000%
31	2.28	-22.41	1.34	-2.28	22.41	-1.34	0.000%
32	1.21	-22.41	2.14	-1.21	22.41	-2.14	0.000%
33	0.00	-22.41	2.63	0.00	22.41	-2.63	0.000%
34	-1.42	-22.41	2.50	1.42	22.41	-2.50	0.000%
35	-2.59	-22.41	1.53	2.59	22.41	-1.53	0.000%
36	-2.83	-22.41	0.00	2.83	22.41	0.00	0.000%
37	-2.23	-22.41	-1.32	2.23	22.41	1.32	0.000%
38	-1.21	-22.41	-2.14	1.21	22.41	2.14	0.000%
39	0.00	-8.91	-2.66	0.00	8.91	2.66	0.000%
40	1.35	-8.91	-2.41	-1.35	8.91	2.41	0.000%
41	2.32	-8.91	-1.38	-2.32	8.91	1.38	0.000%
42	2.70	-8.91	0.00	-2.70	8.91	0.00	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
43	2.23	-8.91	1.33	-2.23	8.91	-1.33	0.000%
44	1.14	-8.91	2.04	-1.14	8.91	-2.04	0.000%
45	0.00	-8.91	2.56	0.00	8.91	-2.56	0.000%
46	-1.35	-8.91	2.41	1.35	8.91	-2.41	0.000%
47	-2.40	-8.91	1.43	2.40	8.91	-1.43	0.000%
48	-2.70	-8.91	0.00	2.70	8.91	0.00	0.000%
49	-2.15	-8.91	-1.28	2.15	8.91	1.28	0.000%
50	-1.14	-8.91	-2.04	1.14	8.91	2.04	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00000001
3	Yes	4	0.00000001	0.00000001
4	Yes	4	0.00000001	0.00000001
5	Yes	4	0.00000001	0.00000001
6	Yes	4	0.00000001	0.00000001
7	Yes	4	0.00000001	0.00000001
8	Yes	4	0.00000001	0.00000001
9	Yes	4	0.00000001	0.00000001
10	Yes	4	0.00000001	0.00000001
11	Yes	4	0.00000001	0.00000001
12	Yes	4	0.00000001	0.00000001
13	Yes	4	0.00000001	0.00000001
14	Yes	4	0.00000001	0.00000001
15	Yes	4	0.00000001	0.00000001
16	Yes	4	0.00000001	0.00000001
17	Yes	4	0.00000001	0.00000001
18	Yes	4	0.00000001	0.00000001
19	Yes	4	0.00000001	0.00000001
20	Yes	4	0.00000001	0.00000001
21	Yes	4	0.00000001	0.00000001
22	Yes	4	0.00000001	0.00000001
23	Yes	4	0.00000001	0.00000001
24	Yes	4	0.00000001	0.00000001
25	Yes	4	0.00000001	0.00000001
26	Yes	4	0.00000001	0.00000001
27	Yes	4	0.00000001	0.00000001
28	Yes	4	0.00000001	0.00000001
29	Yes	4	0.00000001	0.00000001
30	Yes	4	0.00000001	0.00000001
31	Yes	4	0.00000001	0.00000001
32	Yes	4	0.00000001	0.00000001
33	Yes	4	0.00000001	0.00000001
34	Yes	4	0.00000001	0.00000001
35	Yes	4	0.00000001	0.00000001
36	Yes	4	0.00000001	0.00000001
37	Yes	4	0.00000001	0.00000001
38	Yes	4	0.00000001	0.00000001
39	Yes	4	0.00000001	0.00000001
40	Yes	4	0.00000001	0.00000001
41	Yes	4	0.00000001	0.00000001
42	Yes	4	0.00000001	0.00000001
43	Yes	4	0.00000001	0.00000001
44	Yes	4	0.00000001	0.00000001
45	Yes	4	0.00000001	0.00000001
46	Yes	4	0.00000001	0.00000001
47	Yes	4	0.00000001	0.00000001
48	Yes	4	0.00000001	0.00000001
49	Yes	4	0.00000001	0.00000001
50	Yes	4	0.00000001	0.00000001

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	69 - 64	0.41	40	0.060	0.004
T2	64 - 44	0.34	40	0.060	0.004
T3	44 - 24	0.10	40	0.037	0.003

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
65.00	(3) 17' Sector Mount	40	0.36	0.060	0.004	79740
56.00	MX08FRO665-21_TIA w/ Mount Pipe	40	0.24	0.055	0.004	111973

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	69 - 64	1.61	4	0.238	0.018
T2	64 - 44	1.37	4	0.238	0.018
T3	44 - 24	0.40	4	0.146	0.011

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
65.00	(3) 17' Sector Mount	4	1.42	0.239	0.018	19923
56.00	MX08FRO665-21_TIA w/ Mount Pipe	4	0.95	0.216	0.016	28456

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	69	Leg	A325N	0.63	4	0.31	20.34	0.015	1	Bolt Tension
		Diagonal	A325N	0.50	1	1.02	4.69	0.217	1.05	Member Block Shear
		Top Girt	A325N	0.50	1	0.59	4.69	0.125	1.05	Member Block Shear
T2	64	Leg	A325N	0.63	4	5.22	20.34	0.256	1.05	Bolt Tension
		Diagonal	A325N	0.50	1	3.25	4.69	0.693	1.05	Member Block Shear
T3	44	Leg	A325N	0.63	4	10.37	20.34	0.510	1.05	Bolt Tension

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
		Diagonal	A325N	0.50	1	2.59	5.71	0.453	1.05	Member Block Shear
		Top Girt	A325N	0.50	1	0.84	4.69	0.179	1.05	Member Block Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	69 - 64	Pipe 2.375" x 0.218" (2 EH)	5.00	5.00	78.3 K=1.00	1.48	-3.66	42.47	0.086 *1
T2	64 - 44	Pipe 2.375" x 0.218" (2 EH)	20.00	4.00	62.6 K=1.00	1.48	-26.53	49.90	0.532 1
T3	44 - 24	Pipe 2.875" x 0.276" (2.5 EH)	20.03	5.01	65.0 K=1.00	2.25	-48.30	74.43	0.649 1

* DL controls
1 $P_u / \phi P_n$ controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	69 - 64	L 1.5 x 1.5 x 3/16	8.22	3.88	158.7 K=1.00	0.53	-0.98	5.99	0.164 1
T2	64 - 44	L 1.5 x 1.5 x 3/16	7.68	3.62	148.2 K=1.00	0.53	-3.34	6.87	0.486 1
T3	44 - 24	L 1.75 x 1.75 x 3/16	9.70	4.75	166.1 K=1.00	0.62	-2.57	6.45	0.399 1

1 $P_u / \phi P_n$ controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	69 - 64	L 1.5 x 1.5 x 3/16	6.52	6.11	250.1 K=1.00	0.53	-0.62	2.41	0.258 1
T3	44 - 24	KL/R > 200 (C) - 4 L 1.5 x 1.5 x 3/16 KL/R > 200 (C) - 51	6.56	6.12	250.1 K=1.00	0.53	-0.84	2.41	0.347 1

1 $P_u / \phi P_n$ controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	69 - 64	Pipe 2.375" x 0.218" (2 EH)	5.00	5.00	78.3	1.48	0.19	66.48	0.003 [1]
T2	64 - 44	Pipe 2.375" x 0.218" (2 EH)	20.00	4.00	62.6	1.48	20.87	66.48	0.314 [1]
T3	44 - 24	Pipe 2.875" x 0.276" (2.5 EH)	20.03	5.01	65.0	2.25	41.50	101.41	0.409 [1]

[1] $P_u / \phi P_n$ controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	69 - 64	L 1.5 x 1.5 x 3/16	8.22	3.88	104.7	0.31	1.02	13.38	0.076 [1]
T2	64 - 44	L 1.5 x 1.5 x 3/16	7.68	3.62	98.0	0.31	3.25	13.38	0.243 [1]
T3	44 - 24	L 1.75 x 1.75 x 3/16	8.86	4.34	99.3	0.38	2.59	16.44	0.157 [1]

[1] $P_u / \phi P_n$ controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	69 - 64	L 1.5 x 1.5 x 3/16	6.52	6.11	166.1	0.31	0.59	13.38	0.044 [1]
T3	44 - 24	L 1.5 x 1.5 x 3/16	6.56	6.12	166.2	0.31	0.84	13.38	0.063 [1]

[1] $P_u / \phi P_n$ controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	69 - 64	Leg	Pipe 2.375" x 0.218" (2 EH)	3	-3.66	42.47	8.6	Pass
T2	64 - 44	Leg	Pipe 2.375" x 0.218" (2 EH)	15	-26.53	52.40	50.6	Pass
T3	44 - 24	Leg	Pipe 2.875" x 0.276" (2.5 EH)	46	-48.30	78.15	61.8	Pass
T1	69 - 64	Diagonal	L 1.5 x 1.5 x 3/16	7	-0.98	6.29	15.6 20.7 (b)	Pass
T2	64 - 44	Diagonal	L 1.5 x 1.5 x 3/16	20	-3.34	7.21	46.3 66.0 (b)	Pass
T3	44 - 24	Diagonal	L 1.75 x 1.75 x 3/16	57	-2.57	6.77	38.0 43.2 (b)	Pass
T1	69 - 64	Top Girt	L 1.5 x 1.5 x 3/16	4	-0.62	2.53	24.6	Pass
T3	44 - 24	Top Girt	L 1.5 x 1.5 x 3/16	51	-0.84	2.53	33.1	Pass

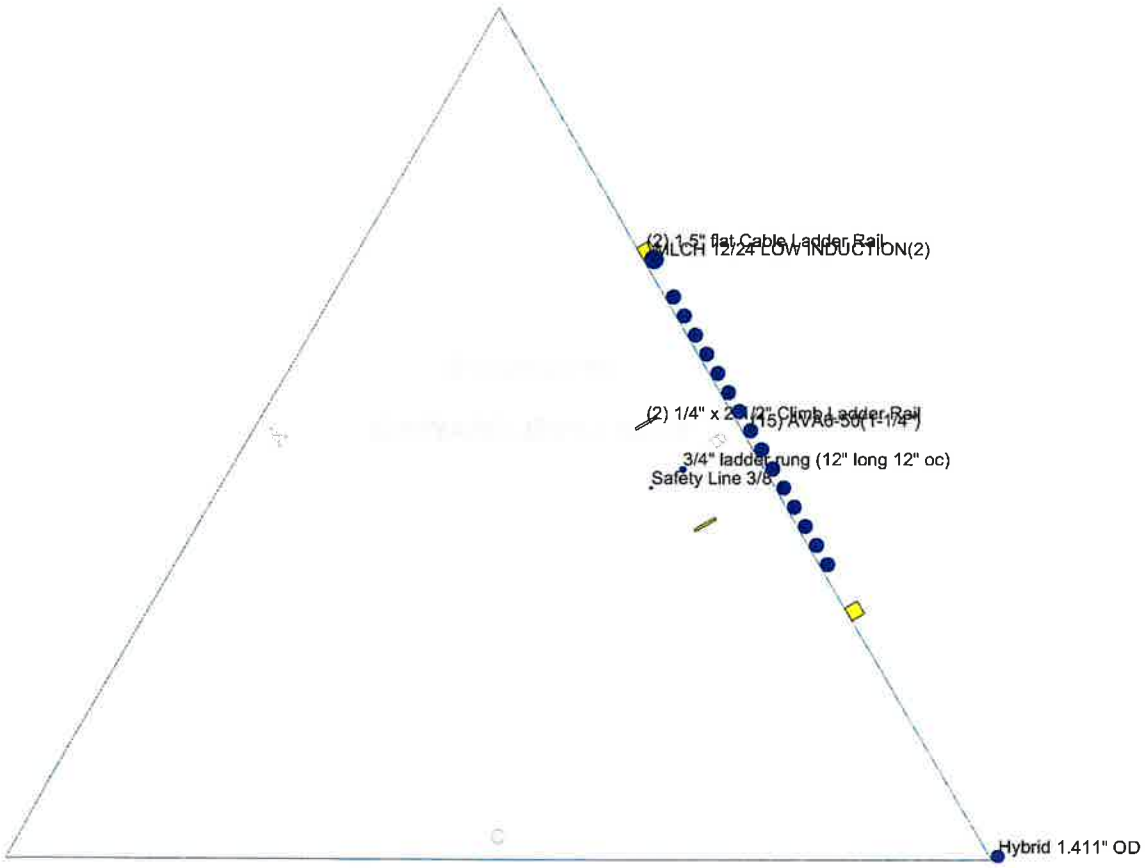
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
						Summary		
						Leg (T3)	61.8	Pass
						Diagonal (T2)	66.0	Pass
						Top Girt (T3)	33.1	Pass
						Bolt Checks	66.0	Pass
						RATING =	**66.0**	**Pass**

APPENDIX B

BASE LEVEL DRAWING

Feed Line Plan

Round Flat App In Face App Out Face



Paul J. Ford and Company
250 East Broad St., Suite 600
Columbus, OH 43215
Phone: 614-221-6679
FAX:

Job: Existing 45 ft Rooftop SST / Meriden, CT			
Project: 42923-0006.002.8700			
Client: On Air Engineering, LLC	Drawn by: Anna Trudo		App'd:
Code: TIA-222-H	Date: 08/29/23		Scale: NTS
Path:			Dwg No. E-7

APPENDIX C

ADDITIONAL CALCULATIONS

PAUL J. FORD & COMPANY
250 E Broad St, Ste 600 • Columbus, OH 43215
Phone 614.221.6679 www.pauljford.com

Page 1 of 1
By AKT Date 9/1/2023
Project # 42923-0006

Self-Support Tower Anchor Rod Capacity - TIA-H

Loads

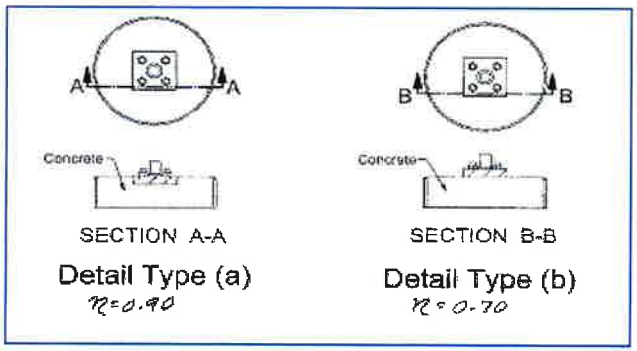
Compression :	51	kips	Tension :	44	kips
Comp. Shear :	7	kips	Ten.Shear :	6	kips

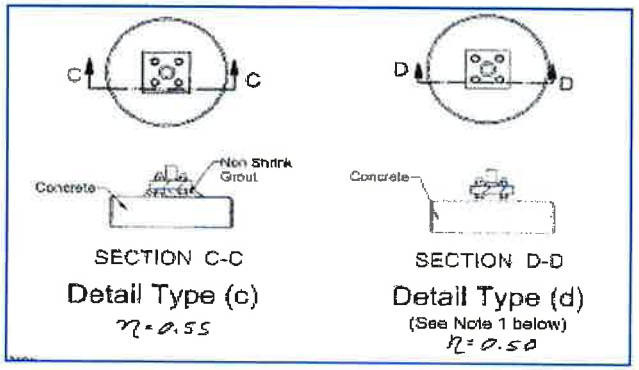
Code: TIA-H
Maximum Ratio: 1.00
Grout f'c ≥ 5000 psi:

Existing Anchor Rods

Anchor Rod ø :	5/8	in	l_{ar} :		inches
Anchor Rod Quantity :	4		Comp. M_u :	0.00	k-in
Anchor Rod Grade :	A325		ϕ_c :	0.90	
F_y :	92	ksi	ϕ_v :	0.75	
F_u :	120	ksi	ϕ_f :	0.90	
Threads per Inch	11		$\phi_v R_{nv}$:	55.22	kips
Net Tensile Area	0.23	in^2			
ϕ_t :	0.75		$\phi_f M_n$:	12.70	k-in
$\phi_t R_{nt}$:	81.36	kip	$\phi_c R_{nc}$:	101.61	kips
Anchor Rod Ratio :	0.541		$\phi_c R_{nvc}$:	45.72	kips

Ten. M_u : 0.00 k-in





PAUL J. FORD & COMPANY
250 E Broad St, Ste 600 • Columbus, OH 43215
Phone 614.221.6679 www.pauljford.com

Job Number:	42923-0006.002.8700
Engineer:	AKT
Date:	9/1/2023
Site Name:	Meriden E CT
Site Number:	
Client Project:	
Client Project 1:	

Monopole and Tower Foundation Comparison Tool

(Version v1.5 - Effective Date 04/1/2020)

- [x] Apply Capacity Normalization per Section 15.5
- [x] Compare Base Shear
- [ ] Compare Base Axial Compression

Structure Type:	Self-Support Tower
Current Analysis Code:	TIA-222-H
Original Design Code:	TIA-222-F

Manufacturer:	Rohn
Design Drawing Number:	-
Design Drawing Date:	-

Reference File Information

Manufacturer:	Natcomm, Inc.
Analysis #:	10001-CO13
Analysis Date:	40288.00

Base Reaction	Original Design (kips, kip-ft)	Adjusted Original Design	Current Analysis (kips, kip-ft)	Reactions Ratio	Result
Compression (kips)	50.90	68.72	51.00	70.69%	Sufficient
Tension (kips)	46.30	62.51	44.00	67.04%	Sufficient
Total Shear (kips)	10.70	14.45	11.00	72.52%	Sufficient
OTM (kip-ft)	356.30	481.01	354.00	70.09%	Sufficient

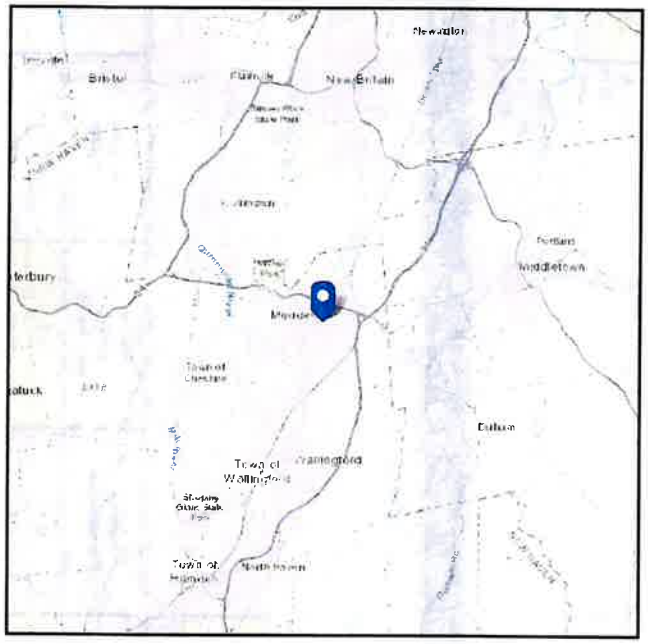
Notes: 1. Reaction Ratio Normalized per TIA-222-H Section 15.5
2. The original tower design was completed in accordance with the TIA-222-F standard. Per section 15.6.2 of the TIA-222-H standard, the reactions from the original design shall be multiplied by 1.35 for comparison to the reactions from this analysis.

ASCE 7 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: 41.534265
Longitude: -72.796485
Elevation: 258.51117858731806 ft (NAVD 88)



Wind

Results:

Wind Speed	119 Vmph ← 120 mph per Appendix P
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Fri Jul 21 2023

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

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

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

Seismic

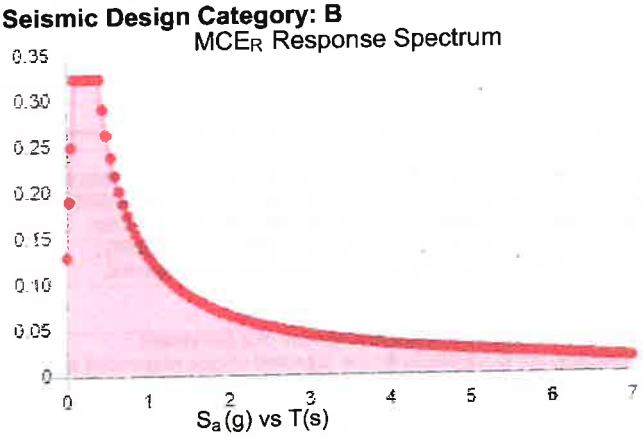
D - Default (see Section 11.4.3)

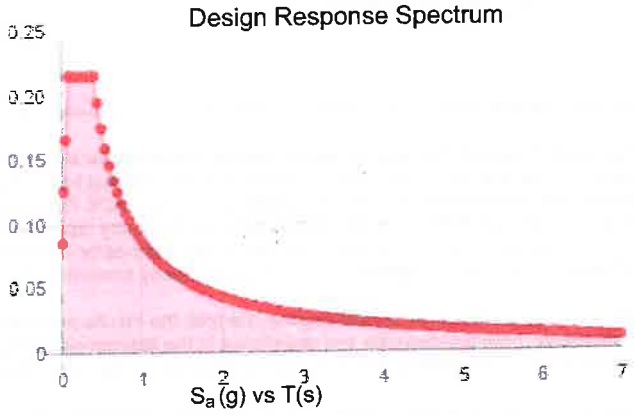
Site Soil Class:

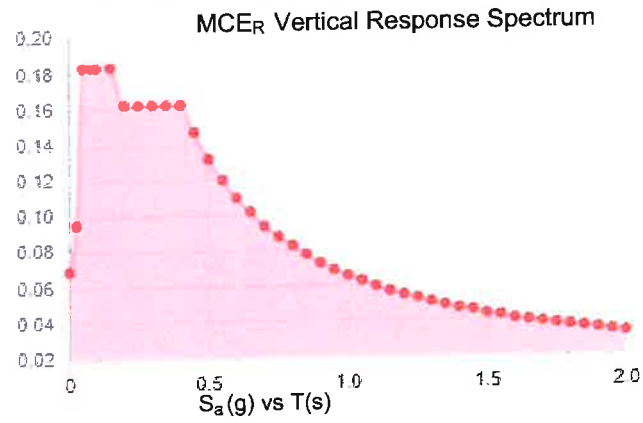
Results:

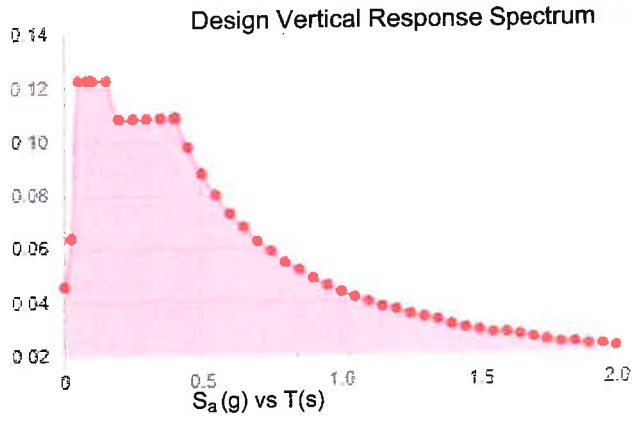
S_S :	0.204	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.113
F_v :	2.4	PGA_M :	0.178
S_{MS} :	0.326	F_{PGA} :	1.574
S_{M1} :	0.132	I_e :	1
S_{DS} :	0.217	C_v :	0.707

Seismic Design Category: B









Data Accessed: **Fri Jul 21 2023**

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

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Fri Jul 21 2023

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

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

Municipality	Basic Design Wind Speeds, V (mph)				Allowable Stress Design Wind Speeds, V_{asd} (mph)				Ground Snow Load p_g (psf)	MCE Ground Accelerations		Wind-Borne Debris Region[1]		Hurricane-Prone Region
	Risk Cat. I	Risk Cat. II	Risk Cat. III	Risk Cat. IV	Risk Cat. I	Risk Cat. II	Risk Cat. III	Risk Cat. IV		S_S (g)	S_1 (g)	Risk Cat. III Occup. I-2	Risk Cat. IV	
Hampton	115	125	130	135	89	97	101	105	35	0.184	0.054			Yes
Hartford	110	120	130	135	85	93	101	105	30	0.189	0.055			Yes
Hartland	110	115	125	130	85	89	97	101	35	0.167	0.054			
Harwinton	110	120	125	130	85	93	97	101	35	0.177	0.054			Yes
Hebron	115	125	130	135	89	97	101	105	30	0.200	0.055			Yes
Kent	105	115	125	130	81	89	97	101	40	0.184	0.054			
Killingly	115	125	135	140	89	97	105	108	35	0.186	0.055			Yes
Killingworth	115	125	135	140	89	97	105	108	30	0.210	0.055			Yes
Lebanon	115	125	135	135	89	97	105	105	30	0.196	0.055			Yes
Ledyard	120	130	140	140	93	101	108	108	30	0.190	0.053			Yes
Lisbon	115	125	135	140	89	97	105	108	30	0.190	0.054			Yes
Litchfield	110	115	125	130	85	89	97	101	35	0.178	0.054			
Lyme	115	125	135	140	89	97	105	108	30	0.207	0.054			Yes
Madison	115	125	135	140	89	97	105	108	30	0.206	0.054	Type B	Type B	Yes
Manchester	110	120	130	135	85	93	101	105	30	0.190	0.055			Yes
Mansfield	110	120	130	135	85	93	101	105	35	0.186	0.055			Yes
Marlborough	110	125	130	135	85	97	101	105	30	0.205	0.056			Yes
Meriden	110	120	130	135	85	93	101	105	30	0.203	0.055			Yes
Middlebury	110	120	130	130	85	93	101	101	35	0.194	0.054			Yes
Middlefield	110	120	130	135	85	93	101	105	30	0.209	0.055			Yes
Middletown	110	120	130	135	85	93	101	105	30	0.209	0.056			Yes
Milford	110	120	130	135	85	93	101	105	30	0.202	0.053	Type B	Type B	Yes
Monroe	110	120	130	135	85	93	101	105	30	0.208	0.055			Yes
Montville	120	125	135	140	93	97	105	108	30	0.198	0.054			Yes
Morris	110	115	125	130	85	89	97	101	35	0.182	0.054			
Naugatuck	110	120	130	135	85	93	101	105	30	0.197	0.054			Yes
New Britain	110	120	130	135	85	93	101	105	30	0.195	0.055			Yes
New Canaan	110	120	130	135	85	93	101	105	30	0.252	0.058			Yes
New Fairfield	110	115	125	130	85	89	97	101	30	0.219	0.056			
New Hartford	110	115	125	130	85	89	97	101	35	0.172	0.054			
New Haven	110	125	130	135	85	97	101	105	30	0.201	0.054	Type B	Type B	Yes
New London	120	130	140	140	93	101	108	108	30	0.191	0.053	Type B	Type A	Yes

STANDARD CONDITIONS FOR FURNISHING OF PROFESSIONAL ENGINEERING SERVICES ON EXISTING STRUCTURES BY PAUL J. FORD AND COMPANY

1) Paul J. Ford and Company has not made a field inspection to verify the tower member sizes or the antenna/coax loading. If the existing conditions are not as represented on these drawings, we should be contacted immediately to evaluate the significance of the deviation.

2) No allowance was made for any damaged, missing, or rusted members. The analysis of this tower assumes that no physical deterioration has occurred in any of the structural components of the tower and that all the tower members have the same load carrying capacity as the day the tower was erected.

3) It is not possible to have all the detailed information to perform a thorough analysis of every structural sub-component of an existing tower. The structural analysis by Paul J. Ford and Company verifies the adequacy of the main structural members of the tower. Paul J. Ford and Company provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc.

4) The structural integrity of the existing tower foundation can only be verified if exact foundation sizes are known. Paul J. Ford and Company will not accept any responsibility for the adequacy of the existing foundations unless the foundation sizes provided

5) This tower has been analyzed according to the minimum design wind loads recommended by the Telecommunications Industry Association Standard ANSI/TIA-222-H. If the owner or local or state agencies require a higher design wind load, Paul J. Ford and Company should be made aware of this requirement.

6) The enclosed sketches are a schematic representation of the tower that we have analyzed. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions and for the proper fit and clearance in the field.

7) Miscellaneous items such as antenna mounts etc. have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

Colliers Engineering & Design
2000 Midlantic Drive Suite 100
Mt. Laurel, NJ 08054
856.797.0412
peter.albano@collierseng.com

Antenna Mount Analysis Report and PMI Requirements

Mount ReAnalysis

SMART Tool Project #: 10206580
Colliers Engineering & Design Project #: 23777095 (Rev. 1)

July 10, 2023

Site Information	*Site ID:*	*5000382483-VZW / Meriden East CT*
	Site Name:	*Meriden East CT*
	Carrier Name:	*Verizon Wireless*
	Address:	*38 ELM ST* *Meriden, Connecticut 06450* *New Haven County*
	Latitude:	*41.534265°*
	Longitude:	*-72.796485°*
Structure Information	*Tower Type:*	*71-Ft Self Support*
	Mount Type:	*17.00-Ft Sector Frame*

FUZE ID # 17123806

Analysis Results

Sector Frame: **63.1% 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

Report Prepared By: Frank Centone

Executive Summary:

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

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

Sources of Information:

Document Type	Remarks
Radio Frequency Data Sheet (RFDS)	*Verizon RFDS, Site ID: 324329, dated January 20, 2021*
Mount Mapping Report	*Tower Engineering Professionals, Site ID: 468199, dated October 22, 2020*
Filter Add Scope Provided by Verizon Wireless	*KAelus BSF0020F3V1-1 Specifications*
Post Modification Inspection Report	*Maser Consulting Connecticut Project #: 20777261, dated October 28, 2021*

Analysis Criteria:

Codes and Standards:	ANSI/TIA-222-H 2022 Connecticut State Building Code (CSBC),	 Effective October 1, 2022
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT}: Ice Wind Speed (3-sec. Gust): Design Ice Thickness: Risk Category: Exposure Category: Topographic Category: Topographic Feature Considered: Topographic Method: Ground Elevation Factor, K_e:	120 mph 50 mph 1.00 in II C 1 N/A N/A 0.991
Seismic Parameters:	S_S: S_1:	0.204 g 0.055 g
Maintenance Parameters:	Wind Speed (3-sec. Gust): Maintenance Load, Lv: Maintenance Load, Lm:	30 mph 250 lbs. 500 lbs.
Analysis Software:	RISA-3D (V17)	

Final Loading Configuration:

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

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
65.00	66.00	6	KAelus	BSF0020F3V1-1	Added
		2	Antel	LPA-80063/6CF	Retained
		4	Antel	LPA-80080/6CF	
		1	Raycap	RHSDC-3315-PF-48*	
		3	Samsung	B2/B66A RRH-BR049	
		3	Samsung	B5/B13 RRH-BR04C	
		6	JMA Wireless	MX06FRO660-03	
	65.50	3	Samsung	MT6407-77A	

* Equipment is flush mounted directly to the Self Support. It is not mounted on sector frame mounts and is not included in this mount analysis.

The recent mount mapping reported existing OVP units. 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:
   - Channel, Solid Round, Angle, Plate — ASTM A36 (Gr. 36)
   - HSS (Rectangular) — ASTM 500 (Gr. B-46)
   - Pipe — ASTM A53 (Gr. B-35)
   - Threaded Rod — F1554 (Gr. 36)
   - Bolts — ASTM A325

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

Analysis Results:

Component	Utilization %	Pass/Fail
Face Horizontal	63.1 %	Pass
Standoff Horizontal	42.1 %	Pass
Standoff Plate	39.0 %	Pass
Bracing Plate	15.5 %	Pass
Standoff Diagonal	10.8 %	Pass
Standoff Vertical	0.8 %	Pass
Antenna Pipe	30.2 %	Pass
Tie Back	6.5 %	Pass
Mount Connection	26.1 %	Pass

Structure Rating – *(Controlling Utilization of all Components)*	63.1%

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	22.3	11.7	31.2	20.7
0.5	31.8	17.6	44.5	30.3
1	40.4	22.6	56.9	39.1

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

Requirements:

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

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

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MDG #: 5000382483 SMART Project #: 10206580 Fuze Project ID: 17123806

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:

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:

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:	

Structure: 5000382483-VZW - Meriden East CT

Sector: A

Structure Type: Self Support

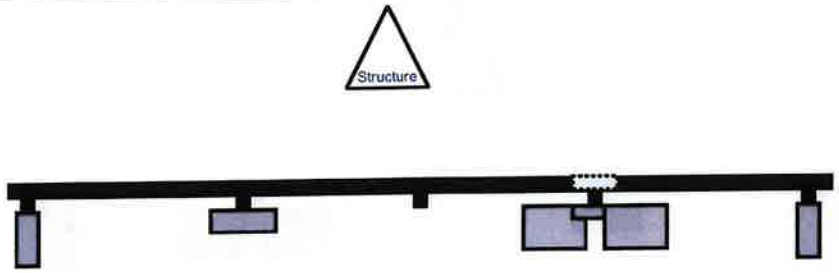
Mount Elev: 65.00

10206580

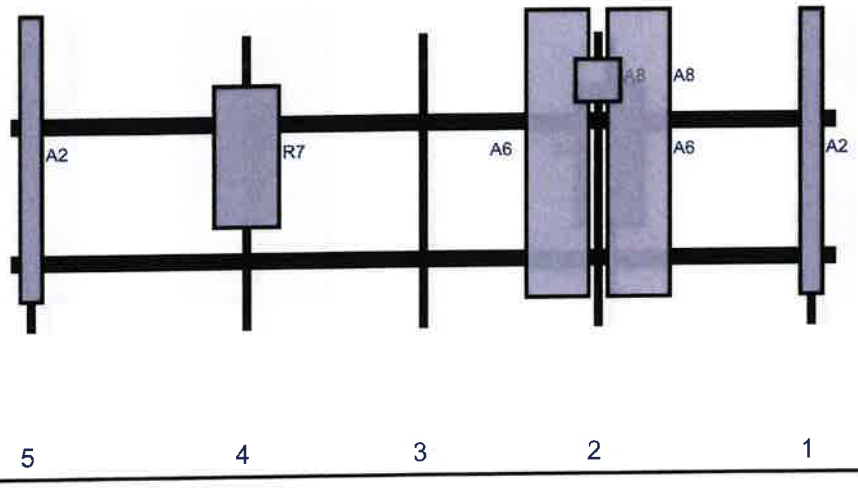
7/10/2023

Colliers Engineering & Design

Plan View

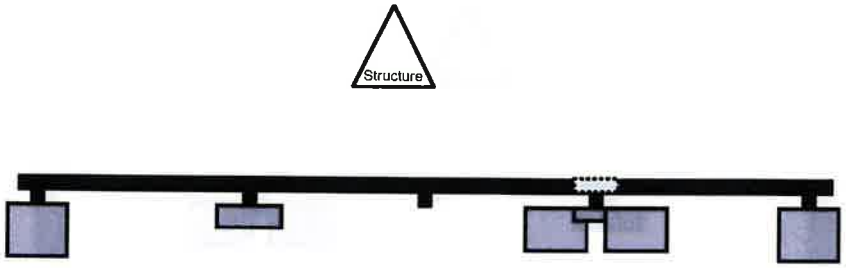


Front View - Looking at Structure

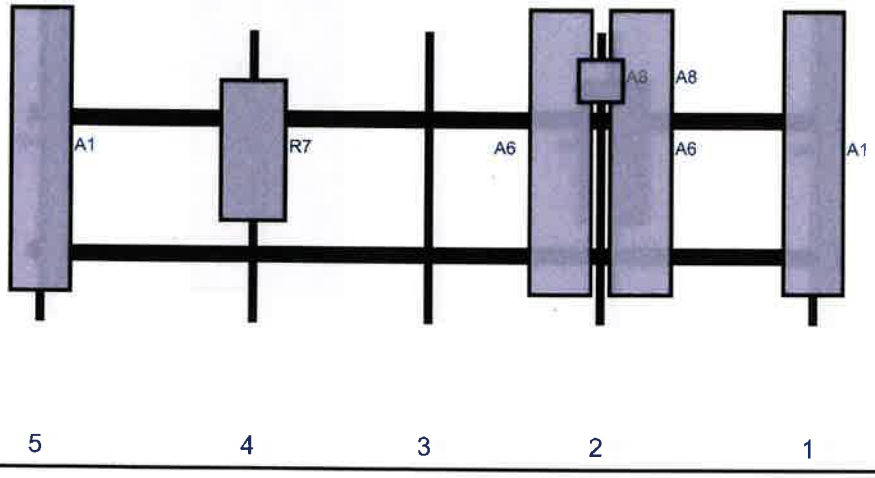


Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A2	LPA-80080/6CF	70.9	5.5	198	1	a	Front	30	0	Retained	10/13/2021
A6	MX06FRO660-02	71.3	15.4	145	2	a	Front	30	10	Retained	10/13/2021
A6	MX06FRO660-02	71.3	15.4	145	2	b	Front	30	-10	Retained	10/13/2021
A8	BSF0020F3V1-1	10.6	10.9	145	2	a	Behind	12	0	Added	
A8	BSF0020F3V1-1	10.6	10.9	145	2	b	Front	12	0	Added	
R7	MT6407-77A	35.1	16.1	58	4	a	Front	30	0	Retained	10/13/2021
A2	LPA-80080/6CF	70.9	5.5	5	5	a	Front	30	0	Retained	10/13/2021
O1	B2/B66A RRH-BR049 (RFV01U-D1A)	15	15		Member					Retained	10/13/2021
O2	B5/B13 RRH-BR04C (RFV01U-D2A)	15	15		Member					Retained	10/13/2021

Plan View

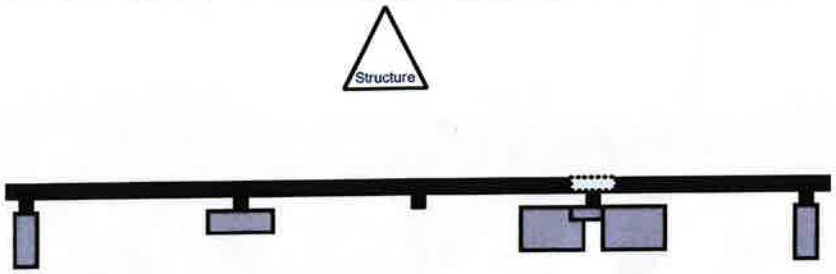


Front View - Looking at Structure

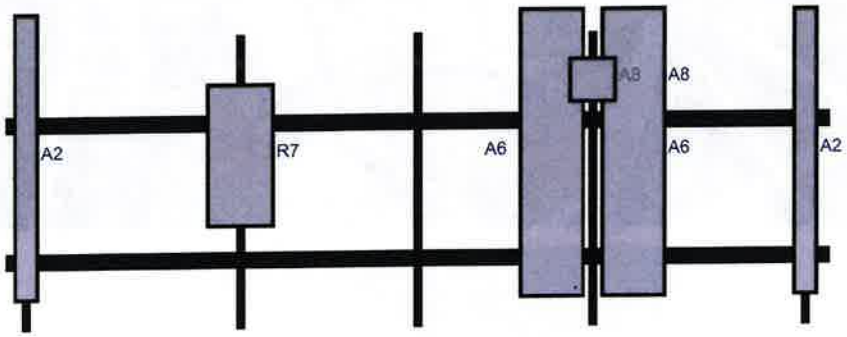


Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A1	LPA-80063/6CF	70.9	15	198	1	a	Front	30	0	Retained	10/13/2021
A6	MX06FRO660-02	71.3	15.4	145	2	a	Front	30	10	Retained	10/13/2021
A6	MX06FRO660-02	71.3	15.4	145	2	b	Front	30	-10	Retained	10/13/2021
A8	BSF0020F3V1-1	10.6	10.9	145	2	a	Behind	12	0	Added	
A8	BSF0020F3V1-1	10.6	10.9	145	2	b	Front	12	0	Added	
R7	MT6407-77A	35.1	16.1	68	4	a	Front	30	0	Retained	10/13/2021
A1	LPA-80063/6CF	70.9	15	5	5	a	Front	30	0	Retained	10/13/2021

Plan View



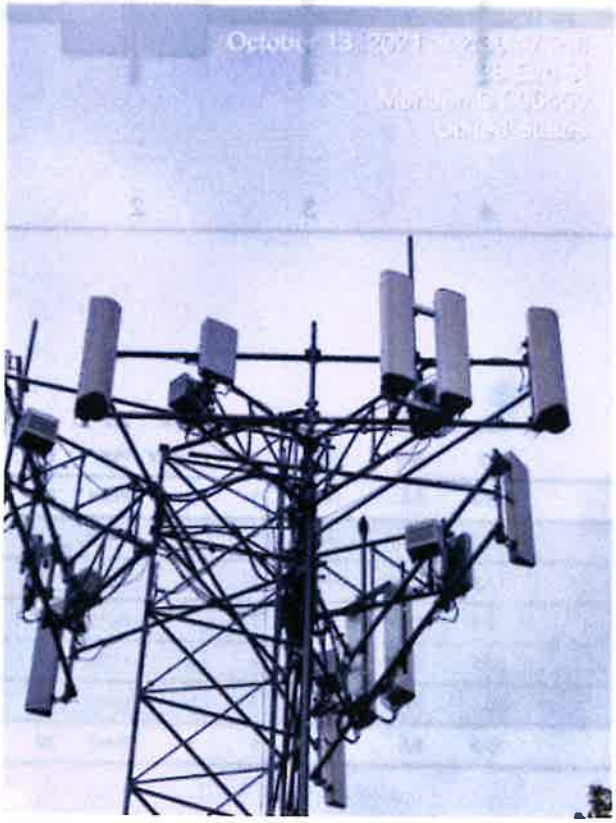
Front View - Looking at Structure



5 4 3 2 1

Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A2	LPA-80080/6CF	70.9	5.5	198	1	a	Front	30	0	Retained	10/13/2021
A6	MX06FRO660-02	71.3	15.4	145	2	a	Front	30	10	Retained	10/13/2021
A6	MX06FRO660-02	71.3	15.4	145	2	b	Front	30	-10	Retained	10/13/2021
A8	BSF0020F3V1-1	10.6	10.9	145	2	a	Behind	12	0	Added	
A8	BSF0020F3V1-1	10.6	10.9	145	2	b	Front	12	0	Added	
R7	MT6407-77A	35.1	16.1	58	4	a	Front	30	0	Retained	10/13/2021
A2	LPA-80080/6CF	70.9	5.5	5	5	a	Front	30	0	Retained	10/13/2021


October 13, 2021 at 2:19:52 PM
38 Elm St
Meriden CT 06450
United States

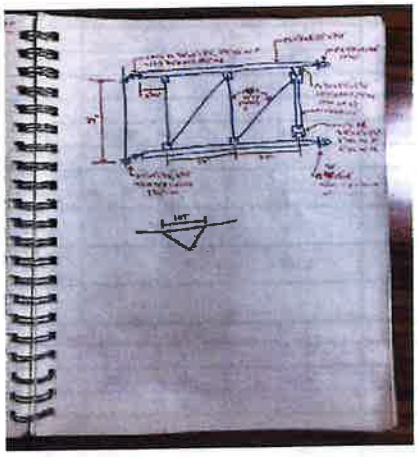


V3.0 Updated on 8-31-2020

Antenna Mount Mapping Form (PATENT PENDING)

FCC #: N/A

Tower Owner:	ASHLEY HARRIMAN, LLC	Mapping Date:	10/22/2020
Site Name:	Meriden East CT	Tower Type:	Self Support
Site Number or ID:	468199	Tower Height (Ft.):	71
Mapping Contractor:	TEP	Mount Elevation (Ft.):	66.5



Mount Pipe Configuration and Geometries [Unit = Inches]

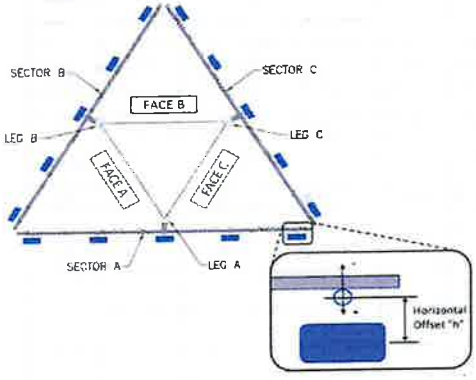
Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."	Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."
A1	2.4"Øx0.125"x60"	48.00	6.00	C1	2.4"Øx0.125"x60"	48.00	6.00
A2	2.4"Øx0.125"x126"	114.00	59.00	C2	2.4"Øx0.125"x126"	114.00	59.00
A3	2.4"Øx0.125"x73"	56.00	102.00	C3	2.4"Øx0.125"x73"	56.00	102.00
A4	2.4"Øx0.125"x58"	48.00	146.00	C4	2.4"Øx0.125"x58"	48.00	146.00
A5	2.4"Øx0.125"x60"	48.00	199.00	C5	2.4"Øx0.125"x60"	48.00	199.00
A6				C6			
B1	2.4"Øx0.125"x60"	48.00	6.00	D1			
B2	2.4"Øx0.125"x126"	114.00	59.00	D2			
B3	2.4"Øx0.125"x73"	56.00	102.00	D3			
B4	2.4"Øx0.125"x58"	48.00	146.00	D4			
B5	2.4"Øx0.125"x60"	48.00	199.00	D5			
B6				D6			

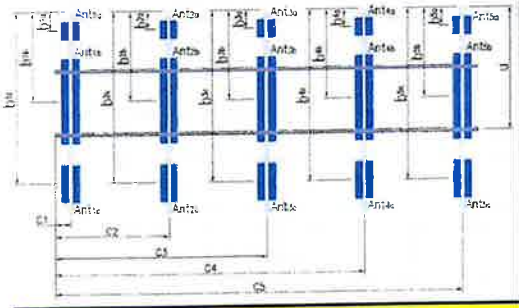
Distance between bottom rail and mount CL elevation (dim d). Unit is inches. See 'Mount Elev Ref' tab for details. :	17.00
Distance from top of bottom support rail to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.) :	
Distance from top of bottom support rail to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.) :	

Please enter additional infomation or comments below.

Coax: (15)1.25FH, (1)1.5"Ø Hybrid (1)0.5FH

Tower Face Width at Mount Elev. (ft.):	78	Tower Leg Size or Pole Shaft Diameter at Mount Elev. (in.):	



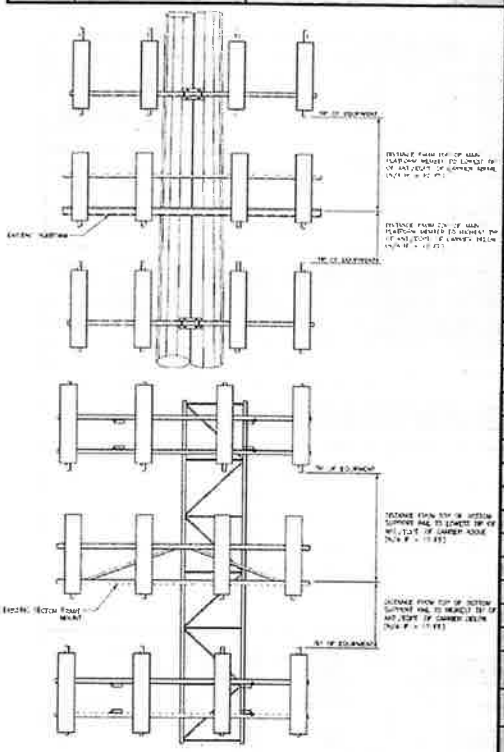


Antenna Layout (Looking Out From Tower)

Ants. Items	Enter antenna model. If not labeled, enter "Unknown". Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Antenna Center-line (Ft.)	Mounting Locations [Units are inches and degrees] Vertical Distances"b_{1a}, b_{2a}, b_{3a}, b_{1b},..." (Inches)	Horiz. Offset "h" (Use "-" if Ant. is behind)	Antenna Azimuth (Degrees)	Photos of antennas Photo Numbers
	Sector A									
Ant_{1a}										
Ant_{1b}	LPA 80080-6CF-EDIN	11.20	4.50	71.10	see notes	66.4167	32.00	13.50	35.00	39
Ant_{1c}	FD9R6004-2C-BL	6.46	2.26	7.58		65.5	43.00	-4.00		40
Ant_{2a}										
Ant_{2b}	SBNHH-1D65B	11.85	7.09	72.87	see notes	67.4167	86.00	8.00	35.00	43
Ant_{2c}										
Ant_{3a}										
Ant_{3b}										
Ant_{3c}	B13 RRH4x30	11.97	7.18	21.20		66.9167	34.00	-7.00		49
Ant_{4a}										
Ant_{4b}	SBNHH-1D65B	11.85	7.09	72.87	see notes	67.4167	20.00	8.50	35.00	51
Ant_{4c}										
Ant_{5a}										
Ant_{5b}	LPA 80080-6CF-EDIN	11.20	4.50	71.10	see notes	66.4167	32.00	13.50	35.00	53
Ant_{5c}										
Ant on Standoff	B4 RRH2x60-4R	10.60	5.70	36.60			17.00	-8.00		46
Ant on Standoff										
Ant on Tower										
Ant on Tower										

Mount Azimuth (Degree) for Each Sector				Tower Leg Azimuth (Degree) for Each Sector	
Sector A:	55.00	Deg	Leg A:	20.00	Deg
Sector B:	175.00	Deg	Leg B:	140.00	Deg
Sector C:	275.00	Deg	Leg C:	260.00	Deg
Sector D:		Deg	Leg D:		Deg

Climbing Facility Information		
Location:		Deg
Climbing Facility	Corrosion Type:	
	Access:	
	Condition:	



Sector B										
Ant_{1a}										
Ant_{1b}	LPA 80063-6CF-EDIN	11.20	4.50	71.10	see notes	66.4167	32.00	12.00	150.00	62
Ant_{1c}	FD9R6004-2C-BL	6.46	2.26	7.58		65.5	43.00	42.00		63
Ant_{2a}										
Ant_{2b}	SBNHH-1D65B	11.85	7.09	72.87	see notes	67.4167	86.00	86.00	150.00	65
Ant_{2c}										
Ant_{3a}										
Ant_{3b}										
Ant_{3c}	B13 RRH4x30	11.97	7.18	21.20		66.9167	34.00	34.00		70
Ant_{4a}										
Ant_{4b}	SBNHH-1D65B	11.85	7.09	72.87	see notes	67.4167	20.00	20.00	150.00	72
Ant_{4c}										
Ant_{5a}										
Ant_{5b}	LPA 80063-6CF-EDIN	11.20	4.50	71.10	see notes	66.4167	32.00	33.00	150.00	74
Ant_{5c}										
Ant on Standoff	B4 RRH2x60-4R	10.60	5.70	36.60			17.00	-8.00		68
Ant on Standoff										
Ant on Tower	RHSDC-3315-PF-48	15.73	10.30	28.93			30.00	8.00		57
Ant on Tower										
Sector C										
Ant_{1a}										
Ant_{1b}	LPA 80080-6CF-EDIN	11.20	4.50	71.10	see notes	66.4167	32.00	12.00	275.00	76
Ant_{1c}	FD9R6004-2C-BL	6.46	2.26	7.58		65.5	43.00	42.00		79
Ant_{2a}										
Ant_{2b}	SBNHH-1D65B	11.85	7.09	72.87	see notes	67.4167	86.00	86.00	275.00	81
Ant_{2c}										
Ant_{3a}										
Ant_{3b}										
Ant_{3c}	B13 RRH4x30	11.97	7.18	21.20		66.9167	34.00	34.00		87
Ant_{4a}										
Ant_{4b}	SBNHH-1D65B	11.85	7.09	72.87	see notes	67.4167	20.00	20.00	275.00	90
Ant_{4c}										
Ant_{5a}										
Ant_{5b}	LPA 80080-6CF-EDIN	11.20	4.50	71.10	see notes	66.4167	32.00	33.00	275.00	92
Ant_{5c}										
Ant on Standoff	B4 RRH2x60-4R	10.60	5.70	36.60			17.00	-8.00		83
Ant on Standoff										
Ant on Tower										
Ant on Tower										
Sector D										
Ant_{1a}										
Ant_{1b}										
Ant_{1c}										
Ant_{2a}										
Ant_{2b}										
Ant_{2c}										
Ant_{3a}										
Ant_{3b}										
Ant_{3c}										
Ant_{4a}										
Ant_{4b}										
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										

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

1		
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.

V3.0 Updated on 8-31-2020

MASER CONSULTING P.A.

Antenna Mount Mapping Form (PATENT PENDING)

FCC # N/A

Tower Owner:	ASHLEY HARRIMAN, LLC	Mapping Date:	10/22/2020
Site Name:	Meriden East CT	Tower Type:	Self Support
Site Number or ID:	468199	Tower Height (Ft.):	71
Mapping Contractor:	TEP	Mount Elevation (Ft.):	66.5

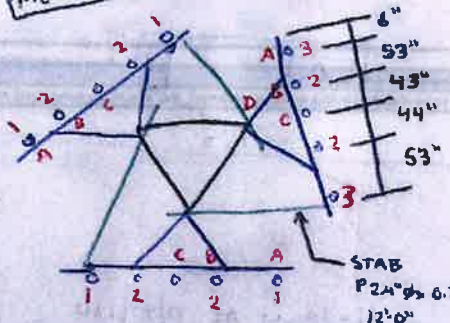
Please Insert Sketches of the Antenna Mount

T/ROOF: 18'-0"
T/TWR: 71'-0"
℄ MOUNT: 66'-6"

COAX: (15) FH [illegible] 1¼, (1) HYB 1 3/8"ø, (1) FH ½" CUT AT MNT
TWR LEG ø: 2.4" (CUT AT MNT)
TWR FW: 78"

MERIDEN EAST

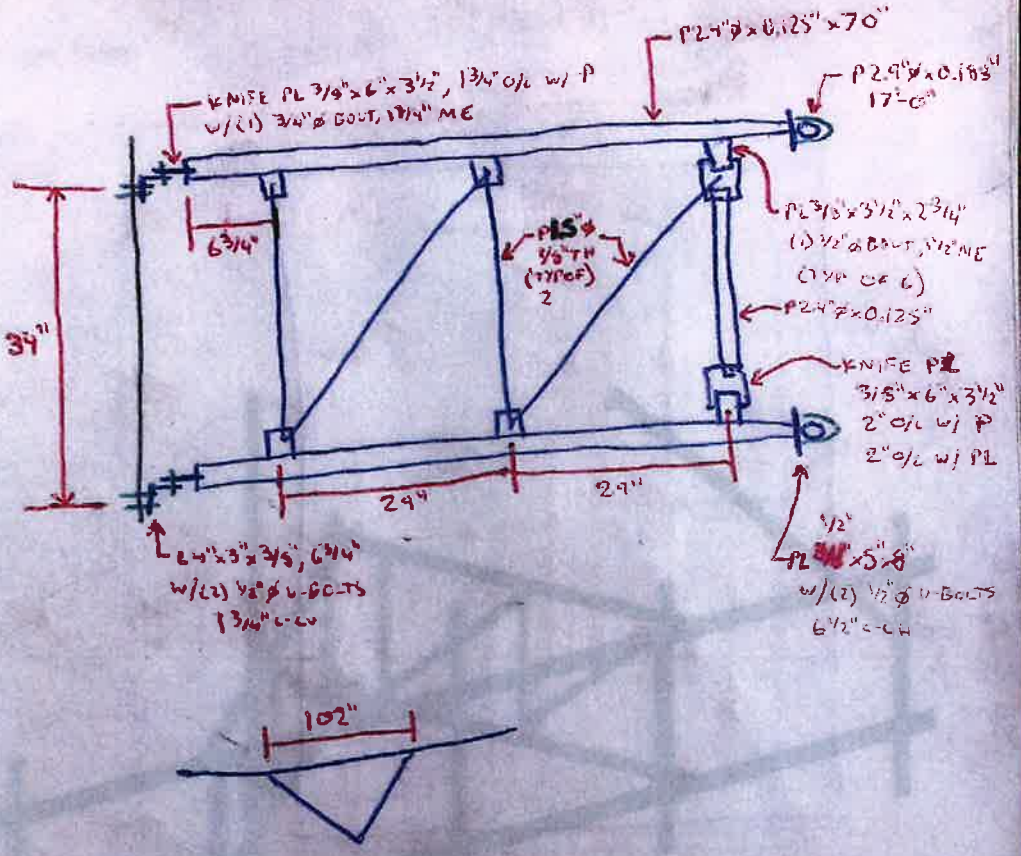
MNT Az: 55/175/275
ANT Az: 35/150/275
A LEG Az: 20°

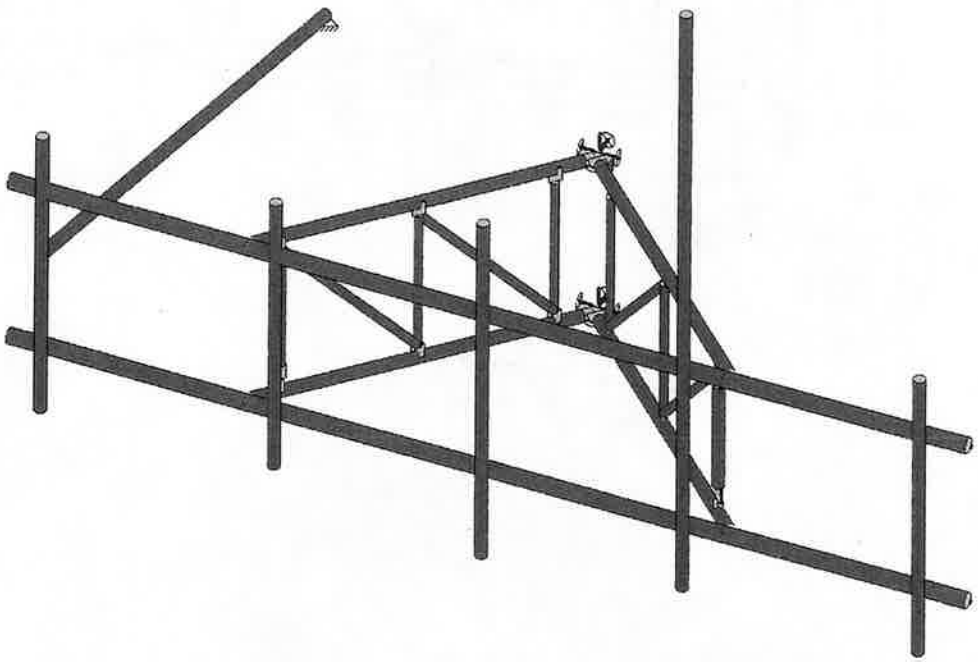


1 AMPH LPA 80080-6CF-EDIN 32"V 13½"H
A RFS FD9R6004-2C-3L 42"V 4"H
2 ANT SBNHH-1D65B
B ALU B4 RRH 2x60-4R *ON STANDOFF VERT
C ALU B13 RRH 4x30
3 AMPH LPA 80063-6CF-EDIN
D RC RHSDC-3315-PF-48 *ON B LEG

	PIPE	LENGTH	Pv	ANTv	ANTH
P1	2.4"ø x 0.125" x	60"	14"	33"	12" A3
P2		126"	80"	86"	8"
P3		73"	22"	34"	-7"
P4		58"	14"	20"	8½"
P5		66"	14"	93"	12" A3

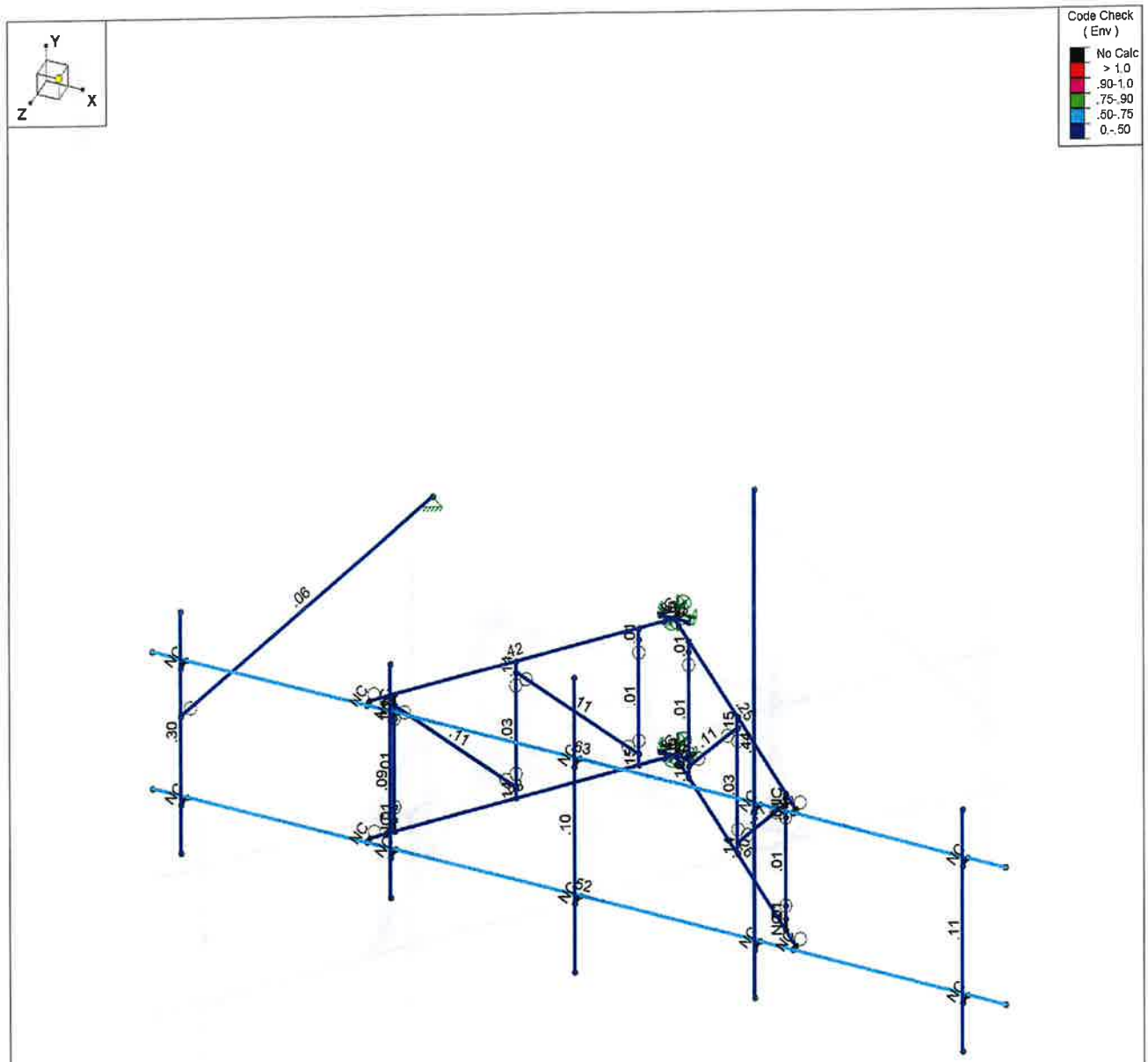
Please Insert Sketches of the Antenna Mount, cont'd





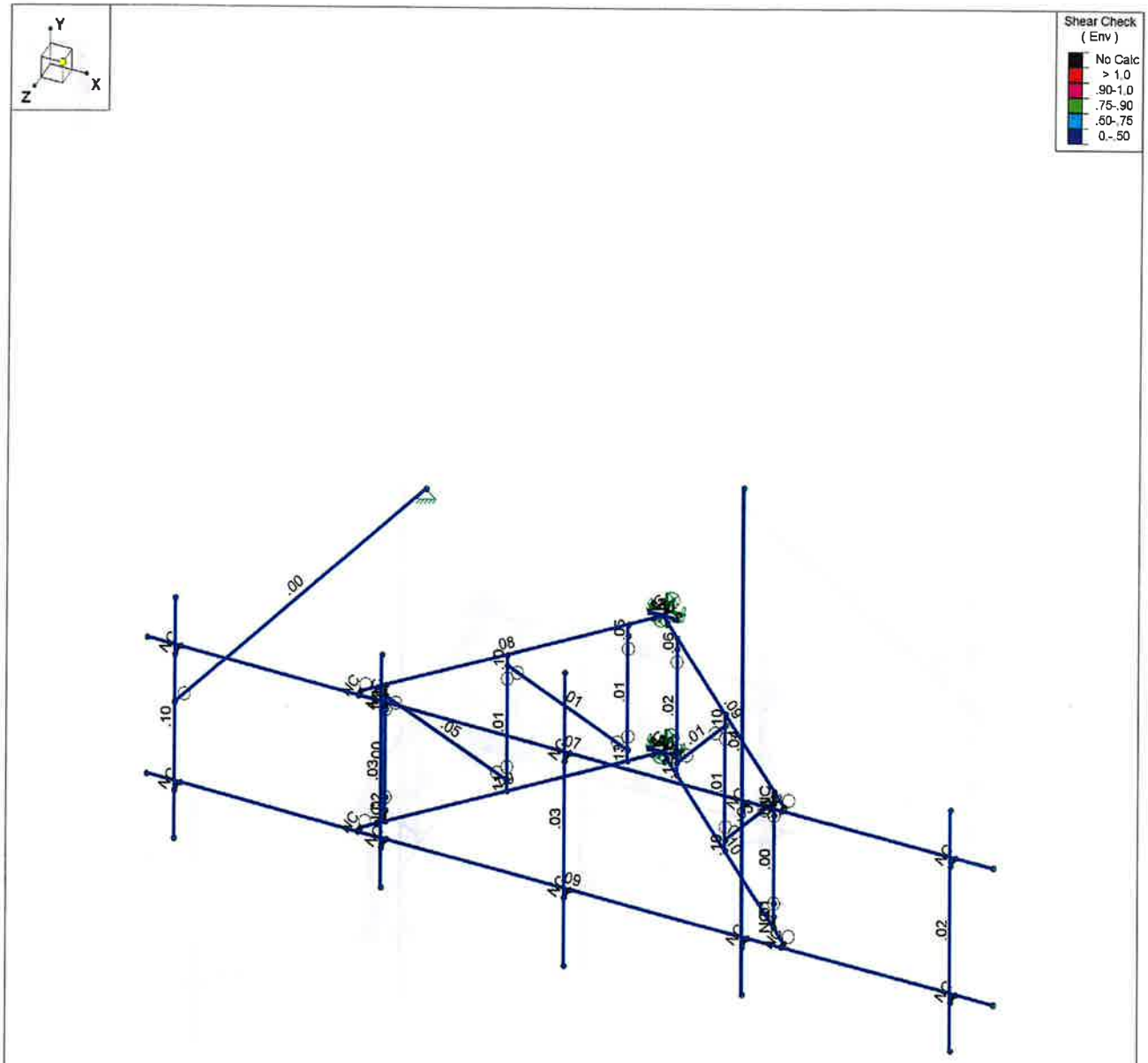
Envelope Only Solution

		SK - 1
		July 5, 2023 at 9:41 AM
		5000382483-VZW_MT_LOT_A_H.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

		SK - 2
		July 5, 2023 at 9:41 AM
		5000382483-VZW_MT_LOT_A_H.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

		SK - 3
		July 5, 2023 at 9:42 AM
		5000382483-VZW_MT_LOT_A_H.r3d

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
1	Antenna D	None					33			
2	Antenna Di	None					33			
3	Antenna Wo (0 Deg)	None					33			
4	Antenna Wo (30 Deg)	None					33			
5	Antenna Wo (60 Deg)	None					33			
6	Antenna Wo (90 Deg)	None					33			
7	Antenna Wo (120 Deg)	None					33			
8	Antenna Wo (150 Deg)	None					33			
9	Antenna Wo (180 Deg)	None					33			
10	Antenna Wo (210 Deg)	None					33			
11	Antenna Wo (240 Deg)	None					33			
12	Antenna Wo (270 Deg)	None					33			
13	Antenna Wo (300 Deg)	None					33			
14	Antenna Wo (330 Deg)	None					33			
15	Antenna Wi (0 Deg)	None					33			
16	Antenna Wi (30 Deg)	None					33			
17	Antenna Wi (60 Deg)	None					33			
18	Antenna Wi (90 Deg)	None					33			
19	Antenna Wi (120 Deg)	None					33			
20	Antenna Wi (150 Deg)	None					33			
21	Antenna Wi (180 Deg)	None					33			
22	Antenna Wi (210 Deg)	None					33			
23	Antenna Wi (240 Deg)	None					33			
24	Antenna Wi (270 Deg)	None					33			
25	Antenna Wi (300 Deg)	None					33			
26	Antenna Wi (330 Deg)	None					33			
27	Antenna Wm (0 Deg)	None					33			
28	Antenna Wm (30 Deg)	None					33			
29	Antenna Wm (60 Deg)	None					33			
30	Antenna Wm (90 Deg)	None					33			
31	Antenna Wm (120 Deg)	None					33			
32	Antenna Wm (150 Deg)	None					33			
33	Antenna Wm (180 Deg)	None					33			
34	Antenna Wm (210 Deg)	None					33			
35	Antenna Wm (240 Deg)	None					33			
36	Antenna Wm (270 Deg)	None					33			
37	Antenna Wm (300 Deg)	None					33			
38	Antenna Wm (330 Deg)	None					33			
39	Structure D	None		-1						
40	Structure Di	None						40		
41	Structure Wo (0 Deg)	None						80		
42	Structure Wo (30 Deg)	None						80		
43	Structure Wo (60 Deg)	None						80		
44	Structure Wo (90 Deg)	None						80		
45	Structure Wo (120 Deg)	None						80		
46	Structure Wo (150 Deg)	None						80		
47	Structure Wo (180 Deg)	None						80		
48	Structure Wo (210 Deg)	None						80		
49	Structure Wo (240 Deg)	None						80		
50	Structure Wo (270 Deg)	None						80		
51	Structure Wo (300 Deg)	None						80		
52	Structure Wo (330 Deg)	None						80		
53	Structure Wi (0 Deg)	None						80		
54	Structure Wi (30 Deg)	None						80		
55	Structure Wi (60 Deg)	None						80		

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
56	Structure Wi (90 Deg)	None						80		
57	Structure Wi (120 Deg)	None						80		
58	Structure Wi (150 Deg)	None						80		
59	Structure Wi (180 Deg)	None						80		
60	Structure Wi (210 Deg)	None						80		
61	Structure Wi (240 Deg)	None						80		
62	Structure Wi (270 Deg)	None						80		
63	Structure Wi (300 Deg)	None						80		
64	Structure Wi (330 Deg)	None						80		
65	Structure Wm (0 Deg)	None						80		
66	Structure Wm (30 Deg)	None						80		
67	Structure Wm (60 Deg)	None						80		
68	Structure Wm (90 Deg)	None						80		
69	Structure Wm (120 Deg)	None						80		
70	Structure Wm (150 Deg)	None						80		
71	Structure Wm (180 Deg)	None						80		
72	Structure Wm (210 Deg)	None						80		
73	Structure Wm (240 Deg)	None						80		
74	Structure Wm (270 Deg)	None						80		
75	Structure Wm (300 Deg)	None						80		
76	Structure Wm (330 Deg)	None						80		
77	Lm1	None					1			
78	Lm2	None					1			
79	Lv1	None					1			
80	Lv2	None					1			
81	Antenna Ev	None					33			
82	Antenna Eh (0 Deg)	None					22			
83	Antenna Eh (90 Deg)	None					22			
84	Structure Ev	ELY								
85	Structure Eh (0 Deg)	ELZ			-.03					
86	Structure Eh (90 Deg)	ELX	.03							

Load Combinations

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

Load Combinations (Continued)

	Description	S...	PDelta	S...	B...	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
24	1.2D + 1.0Di + 1.0...	Y...	Y		1	1.2	39	1.2	2	1	40	1	26	1	64	1						
25	1.2D + 1.5Lm1 + ...	Y...	Y		1	1.2	39	1.2	77	1.5	28	1	66	1								
26	1.2D + 1.5Lm1 + ...	Y...	Y		1	1.2	39	1.2	77	1.5	28	1	66	1								
27	1.2D + 1.5Lm1 + ...	Y...	Y		1	1.2	39	1.2	77	1.5	29	1	67	1								
28	1.2D + 1.5Lm1 + ...	Y...	Y		1	1.2	39	1.2	77	1.5	30	1	68	1								
29	1.2D + 1.5Lm1 + ...	Y...	Y		1	1.2	39	1.2	77	1.5	31	1	69	1								
30	1.2D + 1.5Lm1 + ...	Y...	Y		1	1.2	39	1.2	77	1.5	32	1	70	1								
31	1.2D + 1.5Lm1 + ...	Y...	Y		1	1.2	39	1.2	77	1.5	33	1	71	1								
32	1.2D + 1.5Lm1 + ...	Y...	Y		1	1.2	39	1.2	77	1.5	34	1	72	1								
33	1.2D + 1.5Lm1 + ...	Y...	Y		1	1.2	39	1.2	77	1.5	35	1	73	1								
34	1.2D + 1.5Lm1 + ...	Y...	Y		1	1.2	39	1.2	77	1.5	36	1	74	1								
35	1.2D + 1.5Lm1 + ...	Y...	Y		1	1.2	39	1.2	77	1.5	37	1	75	1								
36	1.2D + 1.5Lm1 + ...	Y...	Y		1	1.2	39	1.2	77	1.5	38	1	76	1								
37	1.2D + 1.5Lm2 + ...	Y...	Y		1	1.2	39	1.2	78	1.5	27	1	65	1								
38	1.2D + 1.5Lm2 + ...	Y...	Y		1	1.2	39	1.2	78	1.5	28	1	66	1								
39	1.2D + 1.5Lm2 + ...	Y...	Y		1	1.2	39	1.2	78	1.5	29	1	67	1								
40	1.2D + 1.5Lm2 + ...	Y...	Y		1	1.2	39	1.2	78	1.5	30	1	68	1								
41	1.2D + 1.5Lm2 + ...	Y...	Y		1	1.2	39	1.2	78	1.5	31	1	69	1								
42	1.2D + 1.5Lm2 + ...	Y...	Y		1	1.2	39	1.2	78	1.5	32	1	70	1								
43	1.2D + 1.5Lm2 + ...	Y...	Y		1	1.2	39	1.2	78	1.5	33	1	71	1								
44	1.2D + 1.5Lm2 + ...	Y...	Y		1	1.2	39	1.2	78	1.5	34	1	72	1								
45	1.2D + 1.5Lm2 + ...	Y...	Y		1	1.2	39	1.2	78	1.5	35	1	73	1								
46	1.2D + 1.5Lm2 + ...	Y...	Y		1	1.2	39	1.2	78	1.5	36	1	74	1								
47	1.2D + 1.5Lm2 + ...	Y...	Y		1	1.2	39	1.2	78	1.5	37	1	75	1								
48	1.2D + 1.5Lm2 + ...	Y...	Y		1	1.2	39	1.2	78	1.5	38	1	76	1								
49	1.2D + 1.5Lv1	Y...	Y		1	1.2	39	1.2	79	1.5												
50	1.2D + 1.5Lv2	Y...	Y		1	1.2	39	1.2	80	1.5												
51	1.4D	Y...	Y		1	1.4	39	1.4														
52	1.2D + 1.0Ev + 1....	Y...	Y		1	1.2	39	1.2	81	1	ELY	1	82	1	83		E...	1	E...			
53	1.2D + 1.0Ev + 1....	Y...	Y		1	1.2	39	1.2	81	1	ELY	1	82	.866	83	.5	E...	.866	E...	.5		
54	1.2D + 1.0Ev + 1....	Y...	Y		1	1.2	39	1.2	81	1	ELY	1	82	.5	83	.866	E...	.5	E...	.866		
55	1.2D + 1.0Ev + 1....	Y...	Y		1	1.2	39	1.2	81	1	ELY	1	82		83	1	E...		E...	1		
56	1.2D + 1.0Ev + 1....	Y...	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.5	83	.866	E...	-.5	E...	.866		
57	1.2D + 1.0Ev + 1....	Y...	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.8...	83	.5	E...	-.8...	E...	.5		
58	1.2D + 1.0Ev + 1....	Y...	Y		1	1.2	39	1.2	81	1	ELY	1	82	-1	83		E...	-1	E...			
59	1.2D + 1.0Ev + 1....	Y...	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.8...	83	-.5	E...	-.8...	E...	-.5		
60	1.2D + 1.0Ev + 1....	Y...	Y		1	1.2	39	1.2	81	1	ELY	1	82	-.5	83	-.8...	E...	-.5	E...	-.8...		
61	1.2D + 1.0Ev + 1....	Y...	Y		1	1.2	39	1.2	81	1	ELY	1	82		83	-1	E...		E...	-1		
62	1.2D + 1.0Ev + 1....	Y...	Y		1	1.2	39	1.2	81	1	ELY	1	82	.5	83	-.8...	E...	.5	E...	-.8...		
63	1.2D + 1.0Ev + 1....	Y...	Y		1	1.2	39	1.2	81	1	ELY	1	82	.866	83	-.5	E...	.866	E...	-.5		
64	0.9D - 1.0Ev + 1.0...	Y...	Y		1	.9	39	.9	81	-1	ELY	-1	82	1	83		E...	1	E...			
65	0.9D - 1.0Ev + 1.0...	Y...	Y		1	.9	39	.9	81	-1	ELY	-1	82	.866	83	.5	E...	.866	E...	.5		
66	0.9D - 1.0Ev + 1.0...	Y...	Y		1	.9	39	.9	81	-1	ELY	-1	82	.5	83	.866	E...	.5	E...	.866		
67	0.9D - 1.0Ev + 1.0...	Y...	Y		1	.9	39	.9	81	-1	ELY	-1	82		83	1	E...		E...	1		
68	0.9D - 1.0Ev + 1.0...	Y...	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.5	83	.866	E...	-.5	E...	.866		
69	0.9D - 1.0Ev + 1.0...	Y...	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.8...	83	.5	E...	-.8...	E...	.5		
70	0.9D - 1.0Ev + 1.0...	Y...	Y		1	.9	39	.9	81	-1	ELY	-1	82	-1	83		E...	-1	E...			
71	0.9D - 1.0Ev + 1.0...	Y...	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.8...	83	-.5	E...	-.8...	E...	-.5		
72	0.9D - 1.0Ev + 1.0...	Y...	Y		1	.9	39	.9	81	-1	ELY	-1	82	-.5	83	-.8...	E...	-.5	E...	-.8...		
73	0.9D - 1.0Ev + 1.0...	Y...	Y		1	.9	39	.9	81	-1	ELY	-1	82		83	-1	E...		E...	-1		
74	0.9D - 1.0Ev + 1.0...	Y...	Y		1	.9	39	.9	81	-1	ELY	-1	82	.5	83	-.8...	E...	.5	E...	-.8...		
75	0.9D - 1.0Ev + 1.0...	Y...	Y		1	.9	39	.9	81	-1	ELY	-1	82	.866	83	-.5	E...	.866	E...	-.5		

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	0	-0.583333	0.166667	0	
2	N2	-0.28125	-0.583333	0.166667	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
3	N3	0.28125	-0.583333	0.166667	0	
4	N4	0	-0.583333	0	0	
5	N5	0	-3.416667	0.166667	0	
6	N6	-0.28125	-3.416667	0.166667	0	
7	N7	0.28125	-3.416667	0.166667	0	
8	N11A	-8.5	-0.583333	4.583333	0	
9	N12	8.5	-0.583333	4.583333	0	
10	N16	-8.5	-3.416667	4.583333	0	
11	N17	8.5	-3.416667	4.583333	0	
12	N65	0	-3.416667	0	0	
13	N66	-4.25	-0.583333	4.583333	0	
14	N67	-4.25	-3.416667	4.583333	0	
15	N68	-4.25	-0.583333	4.458333	0	
16	N69	-4.25	-3.416667	4.458333	0	
17	N66B	-0.14538	-0.583333	0.313472	0	
18	N67A	-0.14538	-3.416667	0.313472	0	
19	N54A	-3.898175	-0.583333	4.10306	0	
20	N55A	-3.898175	-3.187667	4.10306	0	
21	N56A	-2.19769	-0.583333	2.385903	0	
22	N57A	-2.19769	-3.416667	2.385903	0	
23	N58A	-0.497205	-0.583333	0.668746	0	
24	N59A	-0.497205	-3.416667	0.668746	0	
25	N60A	-3.898175	-1.083333	4.10306	0	
26	N61A	-3.898175	-2.916667	4.10306	0	
27	N62A	-2.19769	-0.8125	2.385903	0	
28	N63	-0.497205	-0.8125	0.668746	0	
29	N64	-2.19769	-3.1875	2.385903	0	
30	N65A	-0.497205	-3.1875	0.668746	0	
31	N66A	-3.898175	-0.8125	4.10306	0	
32	N53A	4.25	-0.583333	4.583333	0	
33	N54B	4.25	-3.416667	4.583333	0	
34	N55B	4.25	-0.583333	4.458333	0	
35	N56B	4.25	-3.416667	4.458333	0	
36	N57B	0.14538	-0.583333	0.313472	0	
37	N58B	0.14538	-3.416667	0.313472	0	
38	N59B	3.898175	-0.583333	4.10306	0	
39	N60B	3.898175	-3.416667	4.10306	0	
40	N61B	2.19769	-0.583333	2.385903	0	
41	N62B	2.19769	-3.416667	2.385903	0	
42	N63A	0.497205	-0.583333	0.668746	0	
43	N64A	0.497205	-3.416667	0.668746	0	
44	N65B	3.898175	-1.083333	4.10306	0	
45	N66C	3.898175	-2.916667	4.10306	0	
46	N67B	2.19769	-0.8125	2.385903	0	
47	N68A	0.497205	-0.8125	0.668746	0	
48	N69A	2.19769	-3.1875	2.385903	0	
49	N70	0.497205	-3.1875	0.668746	0	
50	N71	3.898175	-0.8125	4.10306	0	
51	N51	7.75	-3.416667	4.583333	0	
52	N52	7.75	-3.416667	4.833333	0	
53	N53	7.75	-0.583333	4.583333	0	
54	N54	7.75	-0.583333	4.833333	0	
55	N55	3.583333	-3.416667	4.583333	0	
56	N56	3.583333	-3.416667	4.833333	0	
57	N57	3.583333	-0.583333	4.583333	0	
58	N58	3.583333	-0.583333	4.833333	0	
59	N59	0	-3.416667	4.583333	0	
60	N60	0	-3.416667	4.833333	0	
61	N61	0	-0.583333	4.583333	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
62	N62	0	-0.583333	4.833333	0	
63	N63B	-3.666667	-3.416667	4.583333	0	
64	N64B	-3.666667	-3.416667	4.833333	0	
65	N65C	-3.666667	-0.583333	4.583333	0	
66	N66D	-3.666667	-0.583333	4.833333	0	
67	N67C	-7.833333	-3.416667	4.583333	0	
68	N68B	-7.833333	-3.416667	4.833333	0	
69	N69B	-7.833333	-0.583333	4.583333	0	
70	N70A	-7.833333	-0.583333	4.833333	0	
71	N71A	7.75	0.583333	4.833333	0	
72	N72	-7.833333	0.583333	4.833333	0	
73	N73	7.75	-4.416667	4.833333	0	
74	N74	-7.833333	-4.416667	4.833333	0	
75	N77	0	1.25	4.833333	0	
76	N78	0	-4.833333	4.833333	0	
77	N77A	3.583333	6.083333	4.833333	0	
78	N78A	3.583333	-4.416667	4.833333	0	
79	N79	-3.666667	0.583333	4.833333	0	
80	N80	-3.666667	-4.25	4.833333	0	
81	N81	-7.833333	-1.583333	4.833333	0	
82	N87	-6.045599	-1.583333	-2.771594	0	
83	N83	-3.898175	-3.416667	4.10306	0	
84	N84	3.898175	-3.187667	4.10306	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design L...	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Antenna Pipe	PIPE 2.0	Column	Pipe	A53 Gr. B	Typical	1.02	.627	.627	1.25
2	Standoff Horizontal	PIPE 2.0	Beam	Pipe	A53 Gr. B	Typical	1.02	.627	.627	1.25
3	Standoff Vertical	PIPE 2.0	Column	Pipe	A53 Gr. B	Typical	1.02	.627	.627	1.25
4	Standoff Diagonal	PIPE 1.25	Column	Pipe	A53 Gr. B	Typical	.625	.184	.184	.368
5	Face Horizontal	PIPE 2.5	Beam	Pipe	A53 Gr. B	Typical	1.61	1.45	1.45	2.89
6	Tie Back	PIPE 2.0	Beam	Pipe	A53 Gr. B	Typical	1.02	.627	.627	1.25
7	Bracing Plate	PL3/8x2.75	Beam	RECT	A36 Gr.36	Typical	1.031	.012	.65	.044
8	Mount Angle	L4X3X6	Beam	Single A...	A36 Gr.36	Typical	2.49	1.89	3.94	.123
9	Kickers	L2.5x2.5x3	Beam	Single A...	A36 Gr.36	Typical	.901	.535	.535	.011
10	Standoff Plate	PL3/8x3.5	Beam	RECT	A36 Gr.36	Typical	1.313	.015	1.34	.057

Hot Rolled Steel Properties

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

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(de...	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N2	N3		90	Mount Angle	Beam	Single Angle	A36 Gr.36	Typical
2	M2	N1	N4			RIGID	None	None	RIGID	Typical
3	M3	N6	N7		90	Mount Angle	Beam	Single Angle	A36 Gr.36	Typical
4	M7	N11A	N12			Face Horizont...	Beam	Pipe	A53 Gr. B	Typical
5	M10	N16	N17			Face Horizont...	Beam	Pipe	A53 Gr. B	Typical
6	M46A	N5	N65			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(de...	Section/Shape	Type	Design List	Material	Design Rules
7	M47	N66	N68			RIGID	None	None	RIGID	Typical
8	M48	N67	N69			RIGID	None	None	RIGID	Typical
9	M49	N68	N66B			Standoff Hori...	Beam	Pipe	A53 Gr. B	Typical
10	M50	N69	N67A			Standoff Hori...	Beam	Pipe	A53 Gr. B	Typical
11	M47A	N66B	N1		90	Standoff Plate	Beam	RECT	A36 Gr.36	Typical
12	M48A	N67A	N5		90	Standoff Plate	Beam	RECT	A36 Gr.36	Typical
13	M37A	N66A	N60A	N1		Bracing Plate	Beam	RECT	A36 Gr.36	Typical
14	M38A	N56A	N62A	N1		Bracing Plate	Beam	RECT	A36 Gr.36	Typical
15	M39	N58A	N63	N1		Bracing Plate	Beam	RECT	A36 Gr.36	Typical
16	M40A	N66A	N64			Standoff Diag...	Column	Pipe	A53 Gr. B	Typical
17	M41A	N62A	N65A			Standoff Diag...	Column	Pipe	A53 Gr. B	Typical
18	O1	N60A	N61A			Standoff Verti...	Column	Pipe	A53 Gr. B	Typical
19	M43A	N61A	N55A	N1		Bracing Plate	Beam	RECT	A36 Gr.36	Typical
20	M44A	N62A	N64			Standoff Diag...	Column	Pipe	A53 Gr. B	Typical
21	M45	N63	N65A			Standoff Diag...	Column	Pipe	A53 Gr. B	Typical
22	M46	N64	N57A	N1		Bracing Plate	Beam	RECT	A36 Gr.36	Typical
23	M47B	N65A	N59A	N1		Bracing Plate	Beam	RECT	A36 Gr.36	Typical
24	M33	N53A	N55B			RIGID	None	None	RIGID	Typical
25	M34	N54B	N56B			RIGID	None	None	RIGID	Typical
26	M35	N55B	N57B			Standoff Hori...	Beam	Pipe	A53 Gr. B	Typical
27	M36	N56B	N58B			Standoff Hori...	Beam	Pipe	A53 Gr. B	Typical
28	M37B	N57B	N1		90	Standoff Plate	Beam	RECT	A36 Gr.36	Typical
29	M38B	N58B	N5		90	Standoff Plate	Beam	RECT	A36 Gr.36	Typical
30	M39A	N71	N65B	N1		Bracing Plate	Beam	RECT	A36 Gr.36	Typical
31	M40B	N61B	N67B	N1		Bracing Plate	Beam	RECT	A36 Gr.36	Typical
32	M41B	N63A	N68A	N1		Bracing Plate	Beam	RECT	A36 Gr.36	Typical
33	M42A	N71	N69A			Standoff Diag...	Column	Pipe	A53 Gr. B	Typical
34	M43B	N67B	N70			Standoff Diag...	Column	Pipe	A53 Gr. B	Typical
35	O2	N65B	N66C			Standoff Verti...	Column	Pipe	A53 Gr. B	Typical
36	M45A	N66C	N84	N1		Bracing Plate	Beam	RECT	A36 Gr.36	Typical
37	M46B	N67B	N69A			Standoff Diag...	Column	Pipe	A53 Gr. B	Typical
38	M47C	N68A	N70			Standoff Diag...	Column	Pipe	A53 Gr. B	Typical
39	M48B	N69A	N62B	N1		Bracing Plate	Beam	RECT	A36 Gr.36	Typical
40	M49A	N70	N64A	N1		Bracing Plate	Beam	RECT	A36 Gr.36	Typical
41	M41	N52	N51			RIGID	None	None	RIGID	Typical
42	M42B	N54	N53			RIGID	None	None	RIGID	Typical
43	M43	N56	N55			RIGID	None	None	RIGID	Typical
44	M44	N58	N57			RIGID	None	None	RIGID	Typical
45	M45B	N60	N59			RIGID	None	None	RIGID	Typical
46	M46C	N62	N61			RIGID	None	None	RIGID	Typical
47	M47D	N64B	N63B			RIGID	None	None	RIGID	Typical
48	M48C	N66D	N65C			RIGID	None	None	RIGID	Typical
49	M49B	N68B	N67C			RIGID	None	None	RIGID	Typical
50	M50A	N70A	N69B			RIGID	None	None	RIGID	Typical
51	MP5A	N72	N74			Antenna Pipe	Column	Pipe	A53 Gr. B	Typical
52	MP1A	N71A	N73			Antenna Pipe	Column	Pipe	A53 Gr. B	Typical
53	MP3A	N77	N78			Antenna Pipe	Column	Pipe	A53 Gr. B	Typical
54	MP2A	N77A	N78A			Antenna Pipe	Column	Pipe	A53 Gr. B	Typical
55	MP4A	N79	N80			Antenna Pipe	Column	Pipe	A53 Gr. B	Typical
56	M56	N81	N87			Tie Back	Beam	Pipe	A53 Gr. B	Typical
57	M57	N54A	N66A			RIGID	None	None	RIGID	Typical
58	M58	N55A	N83			RIGID	None	None	RIGID	Typical
59	M59	N59B	N71			RIGID	None	None	RIGID	Typical
60	M60	N84	N60B			RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ratio Options	Analysis ...	Inactive	Seismi...
1	M1						Yes				None
2	M2						Yes	** NA **			None
3	M3						Yes				None
4	M7						Yes				None
5	M10						Yes				None
6	M46A						Yes	** NA **			None
7	M47	OOOOOX					Yes	** NA **			None
8	M48	OOOOOX					Yes	** NA **			None
9	M49						Yes				None
10	M50						Yes				None
11	M47A						Yes	Default			None
12	M48A						Yes	Default			None
13	M37A	BenPIN					Yes	Default			None
14	M38A						Yes	Default			None
15	M39						Yes				None
16	M40A	BenPIN	BenPIN				Yes	** NA **			None
17	M41A	BenPIN	BenPIN				Yes	** NA **			None
18	O1						Yes	** NA **			None
19	M43A		BenPIN				Yes				None
20	M44A	BenPIN	BenPIN				Yes	** NA **			None
21	M45	BenPIN	BenPIN				Yes	** NA **			None
22	M46						Yes	Default			None
23	M47B						Yes				None
24	M33	OOOOOX					Yes	** NA **			None
25	M34	OOOOOX					Yes	** NA **			None
26	M35						Yes				None
27	M36						Yes				None
28	M37B						Yes	Default			None
29	M38B						Yes	Default			None
30	M39A	BenPIN					Yes	Default			None
31	M40B						Yes	Default			None
32	M41B						Yes				None
33	M42A	BenPIN	BenPIN				Yes	** NA **			None
34	M43B	BenPIN	BenPIN				Yes	** NA **			None
35	O2						Yes	** NA **			None
36	M45A		BenPIN				Yes				None
37	M46B	BenPIN	BenPIN				Yes	** NA **			None
38	M47C	BenPIN	BenPIN				Yes	** NA **			None
39	M48B						Yes	Default			None
40	M49A						Yes				None
41	M41						Yes	** NA **			None
42	M42B						Yes	** NA **			None
43	M43						Yes	** NA **			None
44	M44						Yes	** NA **			None
45	M45B						Yes	** NA **			None
46	M46C						Yes	** NA **			None
47	M47D						Yes	** NA **			None
48	M48C						Yes	** NA **			None
49	M49B						Yes	** NA **			None
50	M50A						Yes	** NA **			None
51	MP5A						Yes	** NA **			None
52	MP1A						Yes	** NA **			None
53	MP3A						Yes	** NA **			None
54	MP2A						Yes	** NA **			None
55	MP4A						Yes	** NA **			None
56	M56	OOOOXO					Yes	Default			None
57	M57						Yes	** NA **			None
58	M58						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ratio Options	Analysis ...	Inactive	Seismi...
59	M59						Yes	** NA **			None
60	M60						Yes	** NA **			None

Member Point Loads (BLC 1 : Antenna D)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	Y	-10.5	.25
2	MP1A	My	0	.25
3	MP1A	Mz	0	.25
4	MP1A	Y	-10.5	4.75
5	MP1A	My	0	4.75
6	MP1A	Mz	0	4.75
7	MP5A	Y	-10.5	.25
8	MP5A	My	0	.25
9	MP5A	Mz	0	.25
10	MP5A	Y	-10.5	4.75
11	MP5A	My	0	4.75
12	MP5A	Mz	0	4.75
13	MP2A	Y	-23	3
14	MP2A	My	0	3
15	MP2A	Mz	.015	3
16	MP2A	Y	-23	9.5
17	MP2A	My	0	9.5
18	MP2A	Mz	.015	9.5
19	MP2A	Y	-23	3
20	MP2A	My	0	3
21	MP2A	Mz	-.015	3
22	MP2A	Y	-23	9.5
23	MP2A	My	0	9.5
24	MP2A	Mz	-.015	9.5
25	MP4A	Y	-43.55	1.75
26	MP4A	My	0	1.75
27	MP4A	Mz	0	1.75
28	MP4A	Y	-43.55	3.25
29	MP4A	My	0	3.25
30	MP4A	Mz	0	3.25
31	MP2A	Y	-17.6	6
32	MP2A	My	.009	6
33	MP2A	Mz	0	6

Member Point Loads (BLC 2 : Antenna Di)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	Y	-53.806	.25
2	MP1A	My	0	.25
3	MP1A	Mz	0	.25
4	MP1A	Y	-53.806	4.75
5	MP1A	My	0	4.75
6	MP1A	Mz	0	4.75
7	MP5A	Y	-53.806	.25
8	MP5A	My	0	.25
9	MP5A	Mz	0	.25
10	MP5A	Y	-53.806	4.75
11	MP5A	My	0	4.75
12	MP5A	Mz	0	4.75
13	MP2A	Y	-76.015	3
14	MP2A	My	0	3
15	MP2A	Mz	.051	3
16	MP2A	Y	-76.015	9.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
17	MP2A	My	0	9.5
18	MP2A	Mz	.051	9.5
19	MP2A	Y	-76.015	3
20	MP2A	My	0	3
21	MP2A	Mz	-.051	3
22	MP2A	Y	-76.015	9.5
23	MP2A	My	0	9.5
24	MP2A	Mz	-.051	9.5
25	MP4A	Y	-32.753	1.75
26	MP4A	My	0	1.75
27	MP4A	Mz	0	1.75
28	MP4A	Y	-32.753	3.25
29	MP4A	My	0	3.25
30	MP4A	Mz	0	3.25
31	MP2A	Y	-15.832	6
32	MP2A	My	.008	6
33	MP2A	Mz	0	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	0	.25
2	MP1A	Z	-76.861	.25
3	MP1A	Mx	0	.25
4	MP1A	X	0	4.75
5	MP1A	Z	-76.861	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	0	.25
8	MP5A	Z	-76.861	.25
9	MP5A	Mx	0	.25
10	MP5A	X	0	4.75
11	MP5A	Z	-76.861	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	0	3
14	MP2A	Z	-83.962	3
15	MP2A	Mx	-.056	3
16	MP2A	X	0	9.5
17	MP2A	Z	-83.962	9.5
18	MP2A	Mx	-.056	9.5
19	MP2A	X	0	3
20	MP2A	Z	-83.962	3
21	MP2A	Mx	.056	3
22	MP2A	X	0	9.5
23	MP2A	Z	-83.962	9.5
24	MP2A	Mx	.056	9.5
25	MP4A	X	0	1.75
26	MP4A	Z	-69.584	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	0	3.25
29	MP4A	Z	-69.584	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	0	6
32	MP2A	Z	-34.082	6
33	MP2A	Mx	0	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	47.968	.25
2	MP1A	Z	-83.083	.25

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
3	MP1A	Mx	0	.25
4	MP1A	X	47.968	4.75
5	MP1A	Z	-83.083	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	47.968	.25
8	MP5A	Z	-83.083	.25
9	MP5A	Mx	0	.25
10	MP5A	X	47.968	4.75
11	MP5A	Z	-83.083	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	39.34	3
14	MP2A	Z	-68.14	3
15	MP2A	Mx	-.045	3
16	MP2A	X	39.34	9.5
17	MP2A	Z	-68.14	9.5
18	MP2A	Mx	-.045	9.5
19	MP2A	X	39.34	3
20	MP2A	Z	-68.14	3
21	MP2A	Mx	.045	3
22	MP2A	X	39.34	9.5
23	MP2A	Z	-68.14	9.5
24	MP2A	Mx	.045	9.5
25	MP4A	X	29.089	1.75
26	MP4A	Z	-50.384	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	29.089	3.25
29	MP4A	Z	-50.384	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	14.073	6
32	MP2A	Z	-24.375	6
33	MP2A	Mx	.007	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	116.122	.25
2	MP1A	Z	-67.043	.25
3	MP1A	Mx	0	.25
4	MP1A	X	116.122	4.75
5	MP1A	Z	-67.043	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	116.122	.25
8	MP5A	Z	-67.043	.25
9	MP5A	Mx	0	.25
10	MP5A	X	116.122	4.75
11	MP5A	Z	-67.043	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	58.993	3
14	MP2A	Z	-34.06	3
15	MP2A	Mx	-.023	3
16	MP2A	X	58.993	9.5
17	MP2A	Z	-34.06	9.5
18	MP2A	Mx	-.023	9.5
19	MP2A	X	58.993	3
20	MP2A	Z	-34.06	3
21	MP2A	Mx	.023	3
22	MP2A	X	58.993	9.5
23	MP2A	Z	-34.06	9.5
24	MP2A	Mx	.023	9.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
25	MP4A	X	30.63	1.75
26	MP4A	Z	-17.684	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	30.63	3.25
29	MP4A	Z	-17.684	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	14.093	6
32	MP2A	Z	-8.137	6
33	MP2A	Mx	.007	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	153.161	.25
2	MP1A	Z	0	.25
3	MP1A	Mx	0	.25
4	MP1A	X	153.161	4.75
5	MP1A	Z	0	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	153.161	.25
8	MP5A	Z	0	.25
9	MP5A	Mx	0	.25
10	MP5A	X	153.161	4.75
11	MP5A	Z	0	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	62.838	3
14	MP2A	Z	0	3
15	MP2A	Mx	0	3
16	MP2A	X	62.838	9.5
17	MP2A	Z	0	9.5
18	MP2A	Mx	0	9.5
19	MP2A	X	62.838	3
20	MP2A	Z	0	3
21	MP2A	Mx	0	3
22	MP2A	X	62.838	9.5
23	MP2A	Z	0	9.5
24	MP2A	Mx	0	9.5
25	MP4A	X	23.964	1.75
26	MP4A	Z	0	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	23.964	3.25
29	MP4A	Z	0	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	10.337	6
32	MP2A	Z	0	6
33	MP2A	Mx	.005	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	116.122	.25
2	MP1A	Z	67.043	.25
3	MP1A	Mx	0	.25
4	MP1A	X	116.122	4.75
5	MP1A	Z	67.043	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	116.122	.25
8	MP5A	Z	67.043	.25
9	MP5A	Mx	0	.25
10	MP5A	X	116.122	4.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
11	MP5A	Z	67.043	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	58.993	3
14	MP2A	Z	34.06	3
15	MP2A	Mx	.023	3
16	MP2A	X	58.993	9.5
17	MP2A	Z	34.06	9.5
18	MP2A	Mx	.023	9.5
19	MP2A	X	58.993	3
20	MP2A	Z	34.06	3
21	MP2A	Mx	-.023	3
22	MP2A	X	58.993	9.5
23	MP2A	Z	34.06	9.5
24	MP2A	Mx	-.023	9.5
25	MP4A	X	30.63	1.75
26	MP4A	Z	17.684	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	30.63	3.25
29	MP4A	Z	17.684	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	14.093	6
32	MP2A	Z	8.137	6
33	MP2A	Mx	.007	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	47.968	.25
2	MP1A	Z	83.083	.25
3	MP1A	Mx	0	.25
4	MP1A	X	47.968	4.75
5	MP1A	Z	83.083	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	47.968	.25
8	MP5A	Z	83.083	.25
9	MP5A	Mx	0	.25
10	MP5A	X	47.968	4.75
11	MP5A	Z	83.083	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	39.34	3
14	MP2A	Z	68.14	3
15	MP2A	Mx	.045	3
16	MP2A	X	39.34	9.5
17	MP2A	Z	68.14	9.5
18	MP2A	Mx	.045	9.5
19	MP2A	X	39.34	3
20	MP2A	Z	68.14	3
21	MP2A	Mx	-.045	3
22	MP2A	X	39.34	9.5
23	MP2A	Z	68.14	9.5
24	MP2A	Mx	-.045	9.5
25	MP4A	X	29.089	1.75
26	MP4A	Z	50.384	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	29.089	3.25
29	MP4A	Z	50.384	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	14.073	6
32	MP2A	Z	24.375	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
33	MP2A	Mx	.007	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	0	.25
2	MP1A	Z	76.861	.25
3	MP1A	Mx	0	.25
4	MP1A	X	0	4.75
5	MP1A	Z	76.861	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	0	.25
8	MP5A	Z	76.861	.25
9	MP5A	Mx	0	.25
10	MP5A	X	0	4.75
11	MP5A	Z	76.861	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	0	3
14	MP2A	Z	83.962	3
15	MP2A	Mx	.056	3
16	MP2A	X	0	9.5
17	MP2A	Z	83.962	9.5
18	MP2A	Mx	.056	9.5
19	MP2A	X	0	3
20	MP2A	Z	83.962	3
21	MP2A	Mx	-.056	3
22	MP2A	X	0	9.5
23	MP2A	Z	83.962	9.5
24	MP2A	Mx	-.056	9.5
25	MP4A	X	0	1.75
26	MP4A	Z	69.584	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	0	3.25
29	MP4A	Z	69.584	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	0	6
32	MP2A	Z	34.082	6
33	MP2A	Mx	0	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	-47.968	.25
2	MP1A	Z	83.083	.25
3	MP1A	Mx	0	.25
4	MP1A	X	-47.968	4.75
5	MP1A	Z	83.083	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	-47.968	.25
8	MP5A	Z	83.083	.25
9	MP5A	Mx	0	.25
10	MP5A	X	-47.968	4.75
11	MP5A	Z	83.083	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	-39.34	3
14	MP2A	Z	68.14	3
15	MP2A	Mx	.045	3
16	MP2A	X	-39.34	9.5
17	MP2A	Z	68.14	9.5
18	MP2A	Mx	.045	9.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
19	MP2A	X	-39.34	3
20	MP2A	Z	68.14	3
21	MP2A	Mx	-.045	3
22	MP2A	X	-39.34	9.5
23	MP2A	Z	68.14	9.5
24	MP2A	Mx	-.045	9.5
25	MP4A	X	-29.089	1.75
26	MP4A	Z	50.384	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	-29.089	3.25
29	MP4A	Z	50.384	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	-14.073	6
32	MP2A	Z	24.375	6
33	MP2A	Mx	-.007	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	-116.122	.25
2	MP1A	Z	67.043	.25
3	MP1A	Mx	0	.25
4	MP1A	X	-116.122	4.75
5	MP1A	Z	67.043	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	-116.122	.25
8	MP5A	Z	67.043	.25
9	MP5A	Mx	0	.25
10	MP5A	X	-116.122	4.75
11	MP5A	Z	67.043	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	-58.993	3
14	MP2A	Z	34.06	3
15	MP2A	Mx	.023	3
16	MP2A	X	-58.993	9.5
17	MP2A	Z	34.06	9.5
18	MP2A	Mx	.023	9.5
19	MP2A	X	-58.993	3
20	MP2A	Z	34.06	3
21	MP2A	Mx	-.023	3
22	MP2A	X	-58.993	9.5
23	MP2A	Z	34.06	9.5
24	MP2A	Mx	-.023	9.5
25	MP4A	X	-30.63	1.75
26	MP4A	Z	17.684	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	-30.63	3.25
29	MP4A	Z	17.684	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	-14.093	6
32	MP2A	Z	8.137	6
33	MP2A	Mx	-.007	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	-153.161	.25
2	MP1A	Z	0	.25
3	MP1A	Mx	0	.25
4	MP1A	X	-153.161	4.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
5	MP1A	Z	0	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	-153.161	.25
8	MP5A	Z	0	.25
9	MP5A	Mx	0	.25
10	MP5A	X	-153.161	4.75
11	MP5A	Z	0	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	-62.838	3
14	MP2A	Z	0	3
15	MP2A	Mx	0	3
16	MP2A	X	-62.838	9.5
17	MP2A	Z	0	9.5
18	MP2A	Mx	0	9.5
19	MP2A	X	-62.838	3
20	MP2A	Z	0	3
21	MP2A	Mx	0	3
22	MP2A	X	-62.838	9.5
23	MP2A	Z	0	9.5
24	MP2A	Mx	0	9.5
25	MP4A	X	-23.964	1.75
26	MP4A	Z	0	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	-23.964	3.25
29	MP4A	Z	0	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	-10.337	6
32	MP2A	Z	0	6
33	MP2A	Mx	-.005	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	-116.122	.25
2	MP1A	Z	-67.043	.25
3	MP1A	Mx	0	.25
4	MP1A	X	-116.122	4.75
5	MP1A	Z	-67.043	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	-116.122	.25
8	MP5A	Z	-67.043	.25
9	MP5A	Mx	0	.25
10	MP5A	X	-116.122	4.75
11	MP5A	Z	-67.043	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	-58.993	3
14	MP2A	Z	-34.06	3
15	MP2A	Mx	-.023	3
16	MP2A	X	-58.993	9.5
17	MP2A	Z	-34.06	9.5
18	MP2A	Mx	-.023	9.5
19	MP2A	X	-58.993	3
20	MP2A	Z	-34.06	3
21	MP2A	Mx	.023	3
22	MP2A	X	-58.993	9.5
23	MP2A	Z	-34.06	9.5
24	MP2A	Mx	.023	9.5
25	MP4A	X	-30.63	1.75
26	MP4A	Z	-17.684	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
27	MP4A	Mx	0	1.75
28	MP4A	X	-30.63	3.25
29	MP4A	Z	-17.684	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	-14.093	6
32	MP2A	Z	-8.137	6
33	MP2A	Mx	-.007	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	-47.968	.25
2	MP1A	Z	-83.083	.25
3	MP1A	Mx	0	.25
4	MP1A	X	-47.968	4.75
5	MP1A	Z	-83.083	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	-47.968	.25
8	MP5A	Z	-83.083	.25
9	MP5A	Mx	0	.25
10	MP5A	X	-47.968	4.75
11	MP5A	Z	-83.083	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	-39.34	3
14	MP2A	Z	-68.14	3
15	MP2A	Mx	-.045	3
16	MP2A	X	-39.34	9.5
17	MP2A	Z	-68.14	9.5
18	MP2A	Mx	-.045	9.5
19	MP2A	X	-39.34	3
20	MP2A	Z	-68.14	3
21	MP2A	Mx	.045	3
22	MP2A	X	-39.34	9.5
23	MP2A	Z	-68.14	9.5
24	MP2A	Mx	.045	9.5
25	MP4A	X	-29.089	1.75
26	MP4A	Z	-50.384	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	-29.089	3.25
29	MP4A	Z	-50.384	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	-14.073	6
32	MP2A	Z	-24.375	6
33	MP2A	Mx	-.007	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	0	.25
2	MP1A	Z	-15.739	.25
3	MP1A	Mx	0	.25
4	MP1A	X	0	4.75
5	MP1A	Z	-15.739	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	0	.25
8	MP5A	Z	-15.739	.25
9	MP5A	Mx	0	.25
10	MP5A	X	0	4.75
11	MP5A	Z	-15.739	4.75
12	MP5A	Mx	0	4.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
13	MP2A	X	0	3
14	MP2A	Z	-33.518	3
15	MP2A	Mx	-.022	3
16	MP2A	X	0	9.5
17	MP2A	Z	-33.518	9.5
18	MP2A	Mx	-.022	9.5
19	MP2A	X	0	3
20	MP2A	Z	-33.518	3
21	MP2A	Mx	.022	3
22	MP2A	X	0	9.5
23	MP2A	Z	-33.518	9.5
24	MP2A	Mx	.022	9.5
25	MP4A	X	0	1.75
26	MP4A	Z	-16.497	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	0	3.25
29	MP4A	Z	-16.497	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	0	6
32	MP2A	Z	-7.576	6
33	MP2A	Mx	0	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	9.59	.25
2	MP1A	Z	-16.61	.25
3	MP1A	Mx	0	.25
4	MP1A	X	9.59	4.75
5	MP1A	Z	-16.61	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	9.59	.25
8	MP5A	Z	-16.61	.25
9	MP5A	Mx	0	.25
10	MP5A	X	9.59	4.75
11	MP5A	Z	-16.61	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	15.734	3
14	MP2A	Z	-27.253	3
15	MP2A	Mx	-.018	3
16	MP2A	X	15.734	9.5
17	MP2A	Z	-27.253	9.5
18	MP2A	Mx	-.018	9.5
19	MP2A	X	15.734	3
20	MP2A	Z	-27.253	3
21	MP2A	Mx	.018	3
22	MP2A	X	15.734	9.5
23	MP2A	Z	-27.253	9.5
24	MP2A	Mx	.018	9.5
25	MP4A	X	7.059	1.75
26	MP4A	Z	-12.227	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	7.059	3.25
29	MP4A	Z	-12.227	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	3.192	6
32	MP2A	Z	-5.529	6
33	MP2A	Mx	.002	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	22.569	.25
2	MP1A	Z	-13.03	.25
3	MP1A	Mx	0	.25
4	MP1A	X	22.569	4.75
5	MP1A	Z	-13.03	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	22.569	.25
8	MP5A	Z	-13.03	.25
9	MP5A	Mx	0	.25
10	MP5A	X	22.569	4.75
11	MP5A	Z	-13.03	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	23.704	3
14	MP2A	Z	-13.686	3
15	MP2A	Mx	-.009	3
16	MP2A	X	23.704	9.5
17	MP2A	Z	-13.686	9.5
18	MP2A	Mx	-.009	9.5
19	MP2A	X	23.704	3
20	MP2A	Z	-13.686	3
21	MP2A	Mx	.009	3
22	MP2A	X	23.704	9.5
23	MP2A	Z	-13.686	9.5
24	MP2A	Mx	.009	9.5
25	MP4A	X	8.107	1.75
26	MP4A	Z	-4.681	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	8.107	3.25
29	MP4A	Z	-4.681	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	3.466	6
32	MP2A	Z	-2.001	6
33	MP2A	Mx	.002	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	29.501	.25
2	MP1A	Z	0	.25
3	MP1A	Mx	0	.25
4	MP1A	X	29.501	4.75
5	MP1A	Z	0	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	29.501	.25
8	MP5A	Z	0	.25
9	MP5A	Mx	0	.25
10	MP5A	X	29.501	4.75
11	MP5A	Z	0	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	25.323	3
14	MP2A	Z	0	3
15	MP2A	Mx	0	3
16	MP2A	X	25.323	9.5
17	MP2A	Z	0	9.5
18	MP2A	Mx	0	9.5
19	MP2A	X	25.323	3
20	MP2A	Z	0	3
21	MP2A	Mx	0	3
22	MP2A	X	25.323	9.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
23	MP2A	Z	0	9.5
24	MP2A	Mx	0	9.5
25	MP4A	X	6.983	1.75
26	MP4A	Z	0	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	6.983	3.25
29	MP4A	Z	0	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	2.811	6
32	MP2A	Z	0	6
33	MP2A	Mx	.001	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	22.569	.25
2	MP1A	Z	13.03	.25
3	MP1A	Mx	0	.25
4	MP1A	X	22.569	4.75
5	MP1A	Z	13.03	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	22.569	.25
8	MP5A	Z	13.03	.25
9	MP5A	Mx	0	.25
10	MP5A	X	22.569	4.75
11	MP5A	Z	13.03	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	23.704	3
14	MP2A	Z	13.686	3
15	MP2A	Mx	.009	3
16	MP2A	X	23.704	9.5
17	MP2A	Z	13.686	9.5
18	MP2A	Mx	.009	9.5
19	MP2A	X	23.704	3
20	MP2A	Z	13.686	3
21	MP2A	Mx	-.009	3
22	MP2A	X	23.704	9.5
23	MP2A	Z	13.686	9.5
24	MP2A	Mx	-.009	9.5
25	MP4A	X	8.107	1.75
26	MP4A	Z	4.681	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	8.107	3.25
29	MP4A	Z	4.681	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	3.466	6
32	MP2A	Z	2.001	6
33	MP2A	Mx	.002	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	9.59	.25
2	MP1A	Z	16.61	.25
3	MP1A	Mx	0	.25
4	MP1A	X	9.59	4.75
5	MP1A	Z	16.61	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	9.59	.25
8	MP5A	Z	16.61	.25

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
9	MP5A	Mx	0	.25
10	MP5A	X	9.59	4.75
11	MP5A	Z	16.61	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	15.734	3
14	MP2A	Z	27.253	3
15	MP2A	Mx	.018	3
16	MP2A	X	15.734	9.5
17	MP2A	Z	27.253	9.5
18	MP2A	Mx	.018	9.5
19	MP2A	X	15.734	3
20	MP2A	Z	27.253	3
21	MP2A	Mx	-.018	3
22	MP2A	X	15.734	9.5
23	MP2A	Z	27.253	9.5
24	MP2A	Mx	-.018	9.5
25	MP4A	X	7.059	1.75
26	MP4A	Z	12.227	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	7.059	3.25
29	MP4A	Z	12.227	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	3.192	6
32	MP2A	Z	5.529	6
33	MP2A	Mx	.002	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	0	.25
2	MP1A	Z	15.739	.25
3	MP1A	Mx	0	.25
4	MP1A	X	0	4.75
5	MP1A	Z	15.739	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	0	.25
8	MP5A	Z	15.739	.25
9	MP5A	Mx	0	.25
10	MP5A	X	0	4.75
11	MP5A	Z	15.739	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	0	3
14	MP2A	Z	33.518	3
15	MP2A	Mx	.022	3
16	MP2A	X	0	9.5
17	MP2A	Z	33.518	9.5
18	MP2A	Mx	.022	9.5
19	MP2A	X	0	3
20	MP2A	Z	33.518	3
21	MP2A	Mx	-.022	3
22	MP2A	X	0	9.5
23	MP2A	Z	33.518	9.5
24	MP2A	Mx	-.022	9.5
25	MP4A	X	0	1.75
26	MP4A	Z	16.497	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	0	3.25
29	MP4A	Z	16.497	3.25
30	MP4A	Mx	0	3.25

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
31	MP2A	X	0	6
32	MP2A	Z	7.576	6
33	MP2A	Mx	0	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	-9.59	.25
2	MP1A	Z	16.61	.25
3	MP1A	Mx	0	.25
4	MP1A	X	-9.59	4.75
5	MP1A	Z	16.61	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	-9.59	.25
8	MP5A	Z	16.61	.25
9	MP5A	Mx	0	.25
10	MP5A	X	-9.59	4.75
11	MP5A	Z	16.61	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	-15.734	3
14	MP2A	Z	27.253	3
15	MP2A	Mx	.018	3
16	MP2A	X	-15.734	9.5
17	MP2A	Z	27.253	9.5
18	MP2A	Mx	.018	9.5
19	MP2A	X	-15.734	3
20	MP2A	Z	27.253	3
21	MP2A	Mx	-.018	3
22	MP2A	X	-15.734	9.5
23	MP2A	Z	27.253	9.5
24	MP2A	Mx	-.018	9.5
25	MP4A	X	-7.059	1.75
26	MP4A	Z	12.227	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	-7.059	3.25
29	MP4A	Z	12.227	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	-3.192	6
32	MP2A	Z	5.529	6
33	MP2A	Mx	-.002	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	-22.569	.25
2	MP1A	Z	13.03	.25
3	MP1A	Mx	0	.25
4	MP1A	X	-22.569	4.75
5	MP1A	Z	13.03	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	-22.569	.25
8	MP5A	Z	13.03	.25
9	MP5A	Mx	0	.25
10	MP5A	X	-22.569	4.75
11	MP5A	Z	13.03	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	-23.704	3
14	MP2A	Z	13.686	3
15	MP2A	Mx	.009	3
16	MP2A	X	-23.704	9.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
17	MP2A	Z	13.686	9.5
18	MP2A	Mx	.009	9.5
19	MP2A	X	-23.704	3
20	MP2A	Z	13.686	3
21	MP2A	Mx	-.009	3
22	MP2A	X	-23.704	9.5
23	MP2A	Z	13.686	9.5
24	MP2A	Mx	-.009	9.5
25	MP4A	X	-8.107	1.75
26	MP4A	Z	4.681	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	-8.107	3.25
29	MP4A	Z	4.681	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	-3.466	6
32	MP2A	Z	2.001	6
33	MP2A	Mx	-.002	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	-29.501	.25
2	MP1A	Z	0	.25
3	MP1A	Mx	0	.25
4	MP1A	X	-29.501	4.75
5	MP1A	Z	0	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	-29.501	.25
8	MP5A	Z	0	.25
9	MP5A	Mx	0	.25
10	MP5A	X	-29.501	4.75
11	MP5A	Z	0	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	-25.323	3
14	MP2A	Z	0	3
15	MP2A	Mx	0	3
16	MP2A	X	-25.323	9.5
17	MP2A	Z	0	9.5
18	MP2A	Mx	0	9.5
19	MP2A	X	-25.323	3
20	MP2A	Z	0	3
21	MP2A	Mx	0	3
22	MP2A	X	-25.323	9.5
23	MP2A	Z	0	9.5
24	MP2A	Mx	0	9.5
25	MP4A	X	-6.983	1.75
26	MP4A	Z	0	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	-6.983	3.25
29	MP4A	Z	0	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	-2.811	6
32	MP2A	Z	0	6
33	MP2A	Mx	-.001	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	-22.569	.25
2	MP1A	Z	-13.03	.25

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
3	MP1A	Mx	0	.25
4	MP1A	X	-22.569	4.75
5	MP1A	Z	-13.03	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	-22.569	.25
8	MP5A	Z	-13.03	.25
9	MP5A	Mx	0	.25
10	MP5A	X	-22.569	4.75
11	MP5A	Z	-13.03	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	-23.704	3
14	MP2A	Z	-13.686	3
15	MP2A	Mx	-.009	3
16	MP2A	X	-23.704	9.5
17	MP2A	Z	-13.686	9.5
18	MP2A	Mx	-.009	9.5
19	MP2A	X	-23.704	3
20	MP2A	Z	-13.686	3
21	MP2A	Mx	.009	3
22	MP2A	X	-23.704	9.5
23	MP2A	Z	-13.686	9.5
24	MP2A	Mx	.009	9.5
25	MP4A	X	-8.107	1.75
26	MP4A	Z	-4.681	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	-8.107	3.25
29	MP4A	Z	-4.681	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	-3.466	6
32	MP2A	Z	-2.001	6
33	MP2A	Mx	-.002	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	-9.59	.25
2	MP1A	Z	-16.61	.25
3	MP1A	Mx	0	.25
4	MP1A	X	-9.59	4.75
5	MP1A	Z	-16.61	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	-9.59	.25
8	MP5A	Z	-16.61	.25
9	MP5A	Mx	0	.25
10	MP5A	X	-9.59	4.75
11	MP5A	Z	-16.61	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	-15.734	3
14	MP2A	Z	-27.253	3
15	MP2A	Mx	-.018	3
16	MP2A	X	-15.734	9.5
17	MP2A	Z	-27.253	9.5
18	MP2A	Mx	-.018	9.5
19	MP2A	X	-15.734	3
20	MP2A	Z	-27.253	3
21	MP2A	Mx	.018	3
22	MP2A	X	-15.734	9.5
23	MP2A	Z	-27.253	9.5
24	MP2A	Mx	.018	9.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
25	MP4A	X	-7.059	1.75
26	MP4A	Z	-12.227	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	-7.059	3.25
29	MP4A	Z	-12.227	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	-3.192	6
32	MP2A	Z	-5.529	6
33	MP2A	Mx	-.002	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	0	.25
2	MP1A	Z	-4.885	.25
3	MP1A	Mx	0	.25
4	MP1A	X	0	4.75
5	MP1A	Z	-4.885	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	0	.25
8	MP5A	Z	-4.885	.25
9	MP5A	Mx	0	.25
10	MP5A	X	0	4.75
11	MP5A	Z	-4.885	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	0	3
14	MP2A	Z	-5.336	3
15	MP2A	Mx	-.004	3
16	MP2A	X	0	9.5
17	MP2A	Z	-5.336	9.5
18	MP2A	Mx	-.004	9.5
19	MP2A	X	0	3
20	MP2A	Z	-5.336	3
21	MP2A	Mx	.004	3
22	MP2A	X	0	9.5
23	MP2A	Z	-5.336	9.5
24	MP2A	Mx	.004	9.5
25	MP4A	X	0	1.75
26	MP4A	Z	-4.422	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	0	3.25
29	MP4A	Z	-4.422	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	0	6
32	MP2A	Z	-2.166	6
33	MP2A	Mx	0	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	3.049	.25
2	MP1A	Z	-5.28	.25
3	MP1A	Mx	0	.25
4	MP1A	X	3.049	4.75
5	MP1A	Z	-5.28	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	3.049	.25
8	MP5A	Z	-5.28	.25
9	MP5A	Mx	0	.25
10	MP5A	X	3.049	4.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
11	MP5A	Z	-5.28	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	2.5	3
14	MP2A	Z	-4.331	3
15	MP2A	Mx	-.003	3
16	MP2A	X	2.5	9.5
17	MP2A	Z	-4.331	9.5
18	MP2A	Mx	-.003	9.5
19	MP2A	X	2.5	3
20	MP2A	Z	-4.331	3
21	MP2A	Mx	.003	3
22	MP2A	X	2.5	9.5
23	MP2A	Z	-4.331	9.5
24	MP2A	Mx	.003	9.5
25	MP4A	X	1.849	1.75
26	MP4A	Z	-3.202	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	1.849	3.25
29	MP4A	Z	-3.202	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	.894	6
32	MP2A	Z	-1.549	6
33	MP2A	Mx	.000447	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	7.38	.25
2	MP1A	Z	-4.261	.25
3	MP1A	Mx	0	.25
4	MP1A	X	7.38	4.75
5	MP1A	Z	-4.261	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	7.38	.25
8	MP5A	Z	-4.261	.25
9	MP5A	Mx	0	.25
10	MP5A	X	7.38	4.75
11	MP5A	Z	-4.261	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	3.749	3
14	MP2A	Z	-2.165	3
15	MP2A	Mx	-.001	3
16	MP2A	X	3.749	9.5
17	MP2A	Z	-2.165	9.5
18	MP2A	Mx	-.001	9.5
19	MP2A	X	3.749	3
20	MP2A	Z	-2.165	3
21	MP2A	Mx	.001	3
22	MP2A	X	3.749	9.5
23	MP2A	Z	-2.165	9.5
24	MP2A	Mx	.001	9.5
25	MP4A	X	1.947	1.75
26	MP4A	Z	-1.124	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	1.947	3.25
29	MP4A	Z	-1.124	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	.896	6
32	MP2A	Z	-.517	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
33	MP2A	Mx	.000448	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	9.734	.25
2	MP1A	Z	0	.25
3	MP1A	Mx	0	.25
4	MP1A	X	9.734	4.75
5	MP1A	Z	0	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	9.734	.25
8	MP5A	Z	0	.25
9	MP5A	Mx	0	.25
10	MP5A	X	9.734	4.75
11	MP5A	Z	0	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	3.994	3
14	MP2A	Z	0	3
15	MP2A	Mx	0	3
16	MP2A	X	3.994	9.5
17	MP2A	Z	0	9.5
18	MP2A	Mx	0	9.5
19	MP2A	X	3.994	3
20	MP2A	Z	0	3
21	MP2A	Mx	0	3
22	MP2A	X	3.994	9.5
23	MP2A	Z	0	9.5
24	MP2A	Mx	0	9.5
25	MP4A	X	1.523	1.75
26	MP4A	Z	0	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	1.523	3.25
29	MP4A	Z	0	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	.657	6
32	MP2A	Z	0	6
33	MP2A	Mx	.000328	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	7.38	.25
2	MP1A	Z	4.261	.25
3	MP1A	Mx	0	.25
4	MP1A	X	7.38	4.75
5	MP1A	Z	4.261	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	7.38	.25
8	MP5A	Z	4.261	.25
9	MP5A	Mx	0	.25
10	MP5A	X	7.38	4.75
11	MP5A	Z	4.261	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	3.749	3
14	MP2A	Z	2.165	3
15	MP2A	Mx	.001	3
16	MP2A	X	3.749	9.5
17	MP2A	Z	2.165	9.5
18	MP2A	Mx	.001	9.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
19	MP2A	X	3.749	3
20	MP2A	Z	2.165	3
21	MP2A	Mx	-.001	3
22	MP2A	X	3.749	9.5
23	MP2A	Z	2.165	9.5
24	MP2A	Mx	-.001	9.5
25	MP4A	X	1.947	1.75
26	MP4A	Z	1.124	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	1.947	3.25
29	MP4A	Z	1.124	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	.896	6
32	MP2A	Z	.517	6
33	MP2A	Mx	.000448	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	3.049	.25
2	MP1A	Z	5.28	.25
3	MP1A	Mx	0	.25
4	MP1A	X	3.049	4.75
5	MP1A	Z	5.28	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	3.049	.25
8	MP5A	Z	5.28	.25
9	MP5A	Mx	0	.25
10	MP5A	X	3.049	4.75
11	MP5A	Z	5.28	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	2.5	3
14	MP2A	Z	4.331	3
15	MP2A	Mx	.003	3
16	MP2A	X	2.5	9.5
17	MP2A	Z	4.331	9.5
18	MP2A	Mx	.003	9.5
19	MP2A	X	2.5	3
20	MP2A	Z	4.331	3
21	MP2A	Mx	-.003	3
22	MP2A	X	2.5	9.5
23	MP2A	Z	4.331	9.5
24	MP2A	Mx	-.003	9.5
25	MP4A	X	1.849	1.75
26	MP4A	Z	3.202	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	1.849	3.25
29	MP4A	Z	3.202	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	.894	6
32	MP2A	Z	1.549	6
33	MP2A	Mx	.000447	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	0	.25
2	MP1A	Z	4.885	.25
3	MP1A	Mx	0	.25
4	MP1A	X	0	4.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
5	MP1A	Z	4.885	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	0	.25
8	MP5A	Z	4.885	.25
9	MP5A	Mx	0	.25
10	MP5A	X	0	4.75
11	MP5A	Z	4.885	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	0	3
14	MP2A	Z	5.336	3
15	MP2A	Mx	.004	3
16	MP2A	X	0	9.5
17	MP2A	Z	5.336	9.5
18	MP2A	Mx	.004	9.5
19	MP2A	X	0	3
20	MP2A	Z	5.336	3
21	MP2A	Mx	-.004	3
22	MP2A	X	0	9.5
23	MP2A	Z	5.336	9.5
24	MP2A	Mx	-.004	9.5
25	MP4A	X	0	1.75
26	MP4A	Z	4.422	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	0	3.25
29	MP4A	Z	4.422	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	0	6
32	MP2A	Z	2.166	6
33	MP2A	Mx	0	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	-3.049	.25
2	MP1A	Z	5.28	.25
3	MP1A	Mx	0	.25
4	MP1A	X	-3.049	4.75
5	MP1A	Z	5.28	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	-3.049	.25
8	MP5A	Z	5.28	.25
9	MP5A	Mx	0	.25
10	MP5A	X	-3.049	4.75
11	MP5A	Z	5.28	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	-2.5	3
14	MP2A	Z	4.331	3
15	MP2A	Mx	.003	3
16	MP2A	X	-2.5	9.5
17	MP2A	Z	4.331	9.5
18	MP2A	Mx	.003	9.5
19	MP2A	X	-2.5	3
20	MP2A	Z	4.331	3
21	MP2A	Mx	-.003	3
22	MP2A	X	-2.5	9.5
23	MP2A	Z	4.331	9.5
24	MP2A	Mx	-.003	9.5
25	MP4A	X	-1.849	1.75
26	MP4A	Z	3.202	1.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
27	MP4A	Mx	0	1.75
28	MP4A	X	-1.849	3.25
29	MP4A	Z	3.202	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	-.894	6
32	MP2A	Z	1.549	6
33	MP2A	Mx	-.000447	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	-7.38	.25
2	MP1A	Z	4.261	.25
3	MP1A	Mx	0	.25
4	MP1A	X	-7.38	4.75
5	MP1A	Z	4.261	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	-7.38	.25
8	MP5A	Z	4.261	.25
9	MP5A	Mx	0	.25
10	MP5A	X	-7.38	4.75
11	MP5A	Z	4.261	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	-3.749	3
14	MP2A	Z	2.165	3
15	MP2A	Mx	.001	3
16	MP2A	X	-3.749	9.5
17	MP2A	Z	2.165	9.5
18	MP2A	Mx	.001	9.5
19	MP2A	X	-3.749	3
20	MP2A	Z	2.165	3
21	MP2A	Mx	-.001	3
22	MP2A	X	-3.749	9.5
23	MP2A	Z	2.165	9.5
24	MP2A	Mx	-.001	9.5
25	MP4A	X	-1.947	1.75
26	MP4A	Z	1.124	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	-1.947	3.25
29	MP4A	Z	1.124	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	-.896	6
32	MP2A	Z	.517	6
33	MP2A	Mx	-.000448	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	-9.734	.25
2	MP1A	Z	0	.25
3	MP1A	Mx	0	.25
4	MP1A	X	-9.734	4.75
5	MP1A	Z	0	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	-9.734	.25
8	MP5A	Z	0	.25
9	MP5A	Mx	0	.25
10	MP5A	X	-9.734	4.75
11	MP5A	Z	0	4.75
12	MP5A	Mx	0	4.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
13	MP2A	X	-3.994	3
14	MP2A	Z	0	3
15	MP2A	Mx	0	3
16	MP2A	X	-3.994	9.5
17	MP2A	Z	0	9.5
18	MP2A	Mx	0	9.5
19	MP2A	X	-3.994	3
20	MP2A	Z	0	3
21	MP2A	Mx	0	3
22	MP2A	X	-3.994	9.5
23	MP2A	Z	0	9.5
24	MP2A	Mx	0	9.5
25	MP4A	X	-1.523	1.75
26	MP4A	Z	0	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	-1.523	3.25
29	MP4A	Z	0	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	-.657	6
32	MP2A	Z	0	6
33	MP2A	Mx	-.000328	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	-7.38	.25
2	MP1A	Z	-4.261	.25
3	MP1A	Mx	0	.25
4	MP1A	X	-7.38	4.75
5	MP1A	Z	-4.261	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	-7.38	.25
8	MP5A	Z	-4.261	.25
9	MP5A	Mx	0	.25
10	MP5A	X	-7.38	4.75
11	MP5A	Z	-4.261	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	-3.749	3
14	MP2A	Z	-2.165	3
15	MP2A	Mx	-.001	3
16	MP2A	X	-3.749	9.5
17	MP2A	Z	-2.165	9.5
18	MP2A	Mx	-.001	9.5
19	MP2A	X	-3.749	3
20	MP2A	Z	-2.165	3
21	MP2A	Mx	.001	3
22	MP2A	X	-3.749	9.5
23	MP2A	Z	-2.165	9.5
24	MP2A	Mx	.001	9.5
25	MP4A	X	-1.947	1.75
26	MP4A	Z	-1.124	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	-1.947	3.25
29	MP4A	Z	-1.124	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	-.896	6
32	MP2A	Z	-.517	6
33	MP2A	Mx	-.000448	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	-3.049	.25
2	MP1A	Z	-5.28	.25
3	MP1A	Mx	0	.25
4	MP1A	X	-3.049	4.75
5	MP1A	Z	-5.28	4.75
6	MP1A	Mx	0	4.75
7	MP5A	X	-3.049	.25
8	MP5A	Z	-5.28	.25
9	MP5A	Mx	0	.25
10	MP5A	X	-3.049	4.75
11	MP5A	Z	-5.28	4.75
12	MP5A	Mx	0	4.75
13	MP2A	X	-2.5	3
14	MP2A	Z	-4.331	3
15	MP2A	Mx	-.003	3
16	MP2A	X	-2.5	9.5
17	MP2A	Z	-4.331	9.5
18	MP2A	Mx	-.003	9.5
19	MP2A	X	-2.5	3
20	MP2A	Z	-4.331	3
21	MP2A	Mx	.003	3
22	MP2A	X	-2.5	9.5
23	MP2A	Z	-4.331	9.5
24	MP2A	Mx	.003	9.5
25	MP4A	X	-1.849	1.75
26	MP4A	Z	-3.202	1.75
27	MP4A	Mx	0	1.75
28	MP4A	X	-1.849	3.25
29	MP4A	Z	-3.202	3.25
30	MP4A	Mx	0	3.25
31	MP2A	X	-.894	6
32	MP2A	Z	-1.549	6
33	MP2A	Mx	-.000447	6

Member Point Loads (BLC 77 : Lm1)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	M47D	Y	-500	0

Member Point Loads (BLC 78 : Lm2)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	M43	Y	-500	0

Member Point Loads (BLC 79 : Lv1)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	M10	Y	-250	0

Member Point Loads (BLC 80 : Lv2)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	M10	Y	-250	%50

Member Point Loads (BLC 81 : Antenna Ev)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	Y	0	.25
2	MP1A	My	0	.25
3	MP1A	Mz	0	.25
4	MP1A	Y	0	4.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
5	MP1A	My	0	4.75
6	MP1A	Mz	0	4.75
7	MP5A	Y	0	.25
8	MP5A	My	0	.25
9	MP5A	Mz	0	.25
10	MP5A	Y	0	4.75
11	MP5A	My	0	4.75
12	MP5A	Mz	0	4.75
13	MP2A	Y	0	5
14	MP2A	My	0	5
15	MP2A	Mz	0	5
16	MP2A	Y	0	9.5
17	MP2A	My	0	9.5
18	MP2A	Mz	0	9.5
19	MP2A	Y	0	5
20	MP2A	My	0	5
21	MP2A	Mz	0	5
22	MP2A	Y	0	9.5
23	MP2A	My	0	9.5
24	MP2A	Mz	0	9.5
25	MP4A	Y	0	1.75
26	MP4A	My	0	1.75
27	MP4A	Mz	0	1.75
28	MP4A	Y	0	3.25
29	MP4A	My	0	3.25
30	MP4A	Mz	0	3.25
31	MP2A	Y	0	6
32	MP2A	My	0	6
33	MP2A	Mz	0	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	Z	-.315	.25
2	MP1A	Mx	0	.25
3	MP1A	Z	-.315	4.75
4	MP1A	Mx	0	4.75
5	MP5A	Z	-.315	.25
6	MP5A	Mx	0	.25
7	MP5A	Z	-.315	4.75
8	MP5A	Mx	0	4.75
9	MP2A	Z	-.69	5
10	MP2A	Mx	-.00046	5
11	MP2A	Z	-.69	9.5
12	MP2A	Mx	-.00046	9.5
13	MP2A	Z	-.69	5
14	MP2A	Mx	.00046	5
15	MP2A	Z	-.69	9.5
16	MP2A	Mx	.00046	9.5
17	MP4A	Z	-1.306	1.75
18	MP4A	Mx	0	1.75
19	MP4A	Z	-1.306	3.25
20	MP4A	Mx	0	3.25
21	MP2A	Z	-.528	6
22	MP2A	Mx	0	6

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	.315	.25

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
2	MP1A	Mx	0	.25
3	MP1A	X	.315	4.75
4	MP1A	Mx	0	4.75
5	MP5A	X	.315	.25
6	MP5A	Mx	0	.25
7	MP5A	X	.315	4.75
8	MP5A	Mx	0	4.75
9	MP2A	X	.69	5
10	MP2A	Mx	0	5
11	MP2A	X	.69	9.5
12	MP2A	Mx	0	9.5
13	MP2A	X	.69	5
14	MP2A	Mx	0	5
15	MP2A	X	.69	9.5
16	MP2A	Mx	0	9.5
17	MP4A	X	1.306	1.75
18	MP4A	Mx	0	1.75
19	MP4A	X	1.306	3.25
20	MP4A	Mx	0	3.25
21	MP2A	X	.528	6
22	MP2A	Mx	.000264	6

Member Area Loads

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

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

	Member	Shape	Code Check	Lo...	LC	Shear Check	Lo...			phi*P...	phi*P...	phi*M...	phi*M...		Eqn
1	M7	PIPE_2.5	.631	4.25	9	.070	12...		1	7871...	50715	3.596	3.596	...	H1-1b
2	M10	PIPE_2.5	.517	4.25	9	.090	4.25		4	7871...	50715	3.596	3.596	...	H1-1b
3	MP2A	PIPE_2.0	.441	6.5..	1	.036	6.6...		7	8922...	32130	1.872	1.872	...	H1-1b
4	M49	PIPE_2.0	.420	0	3	.084	.486		27	2136...	32130	1.872	1.872	...	H1-1b
5	M48A	PL3/8x3.5	.390	.207	33	.140	0	y	29	4135...	4254...	.332	3.1	...	H1-1b
6	M38B	PL3/8x3.5	.390	.207	46	.156	0	y	44	4135...	4254...	.332	3.1	...	H1-1b
7	M50	PIPE_2.0	.381	0	3	.093	5.8...		32	2136...	32130	1.872	1.872	...	H1-1b
8	M37B	PL3/8x3.5	.307	.207	16	.147	0	y	48	4135...	4254...	.332	3.1	...	H1-1b
9	MP5A	PIPE_2.0	.301	2.1..	4	.105	1.1...		3	2380...	32130	1.872	1.872	...	H1-1b
10	M47A	PL3/8x3.5	.292	.207	27	.135	0	y	35	4135...	4254...	.332	3.1	...	H1-1b
11	M36	PIPE_2.0	.261	5.3..	14	.095	5.8...		45	2136...	32130	1.872	1.872	...	H1-1b
12	M35	PIPE_2.0	.249	0	3	.087	.486		37	2136...	32130	1.872	1.872	...	H1-1b
13	M49A	PL3/8x2...	.156	.229	48	.125	.229	y	37	3228...	3340...	.262	1.914	...	H1-1b
14	M47B	PL3/8x2...	.155	.229	32	.126	0	y	49	3228...	3340...	.262	1.914	...	H1-1b
15	M40B	PL3/8x2...	.146	0	21	.099	0	y	17	3228...	3340...	.262	1.914	...	H1-1b
16	M38A	PL3/8x2...	.144	0	29	.095	.229	y	27	3228...	3340...	.262	1.914	...	H1-1b
17	M46	PL3/8x2...	.143	.229	27	.106	0	y	9	3228...	3340...	.262	1.914	...	H1-1b
18	M48B	PL3/8x2...	.142	.229	39	.097	0	y	44	3228...	3340...	.262	1.914	...	H1-1b
19	M43B	PIPE_1.25	.108	3.3..	38	.011	3.3...		11	1476...	1968...	.801	.801	...	H1-...
20	M41A	PIPE_1.25	.108	3.3..	32	.005	3.3...		3	1476...	1968...	.801	.801	...	H1-...
21	M42A	PIPE_1.25	.106	3.3..	38	.026	0		2	1476...	1968...	.801	.801	...	H1-...
22	M40A	PIPE_1.25	.105	3.3..	33	.049	0		3	1476...	1968...	.801	.801	...	H1-...
23	MP1A	PIPE_2.0	.105	1.1..	18	.020	1.1...		7	2380...	32130	1.872	1.872	...	H1-1b
24	MP3A	PIPE_2.0	.101	1.8..	49	.028	1.8...		49	2061...	32130	1.872	1.872	...	H1-1b
25	MP4A	PIPE_2.0	.094	3.9..	9	.027	1.2...		7	2428...	32130	1.872	1.872	...	H1-1b
26	M56	PIPE_2.0	.065	0	10	.004	0		22	1545...	32130	1.872	1.872	...	H1-...
27	M46B	PIPE_1.25	.028	1.1..	14	.005	2.3...		39	1709...	1968...	.801	.801	...	H1-1b
28	M44A	PIPE_1.25	.027	1.0..	33	.014	0		3	1709...	1968...	.801	.801	...	H1-1b

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

	Member	Shape	Code Check	Lo...	LC	Shear Check	Lo...	...	...	phi*P...	phi*P...	phi*M...	phi*M...	...	Eqn
29	M47C	PIPE_1.25	.013	1.1...	17	.015	0		49	1709...	1968...	.801	.801	...	H1-1b
30	M45	PIPE_1.25	.012	1.0...	32	.015	0		49	1709...	1968...	.801	.801	...	H1-1b
31	M39A	PL3/8x2...	.011	.271	8	.012	0	y	37	3184...	3340...	.262	1.914	...	H1-1b
32	M45A	PL3/8x2...	.011	0	8	.012	.271	y	37	3184...	3340...	.262	1.914	...	H1-1b
33	M41B	PL3/8x2...	.009	0	20	.056	0	y	49	3228...	3340...	.262	1.914	...	H1-1b
34	M37A	PL3/8x2...	.009	.271	5	.022	0	y	5	3184...	3340...	.262	1.914	...	H1-1b
35	M43A	PL3/8x2...	.009	0	5	.022	.271	y	5	3184...	3340...	.262	1.914	...	H1-1b
36	O2	PIPE_2.0	.008	.783	20	.002	0		1	3086...	32130	1.872	1.872	...	H1-1b
37	M39	PL3/8x2...	.008	0	30	.055	0	y	49	3228...	3340...	.262	1.914	...	H1-1b
38	O1	PIPE_2.0	.008	.592	30	.003	0		5	3086...	32130	1.872	1.872	...	H1-1b
39	M1	L4X3X6	.000	.281	18	.000	.281	z	24	8019...	80676	2.686	7.063	...	H2-1
40	M3	L4X3X6	.000	.281	18	.000	.281	z	24	8019...	80676	2.686	7.063	...	H2-1

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N4	max	1178.551	10	761.028	19	273.744	2	-.081	67	0	75	.019	40
2		min	-1191.806	4	238.067	64	-3254.41	20	-.256	23	0	1	-.047	49
3	N65	max	971.642	46	1273.081	13	2978.954	14	-.121	64	0	75	.032	39
4		min	-1052.328	49	405.203	69	505.563	8	-.38	20	0	1	-.058	49
5	N87	max	199.247	3	33.186	16	968.899	10	0	75	0	75	0	75
6		min	-210.779	9	8.984	10	-964.316	4	0	1	0	1	0	1
7	Totals:	max	1498.627	10	2054.608	19	1674.696	1						
8		min	-1498.625	4	654.599	64	-1674.694	7						

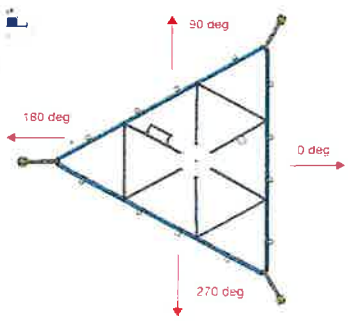
VzW SMART Tool© Vendor

Client:	Verizon Wireless	Date:	6/30/2023
Site Name:	Meriden E CT		
MDG #:	5000382483		
Fuze ID #:	17123806	Page:	1
			Version 1.01

I. Mount-to-Tower Connection Check

Custom Orientation Required — **Yes**

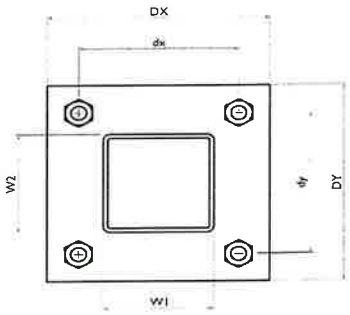
Nodes (labeled per Risa)	Orientation (per graphic of typical platform)
N4	0
N65	0



Tower Connection Bolt Checks — **Yes**

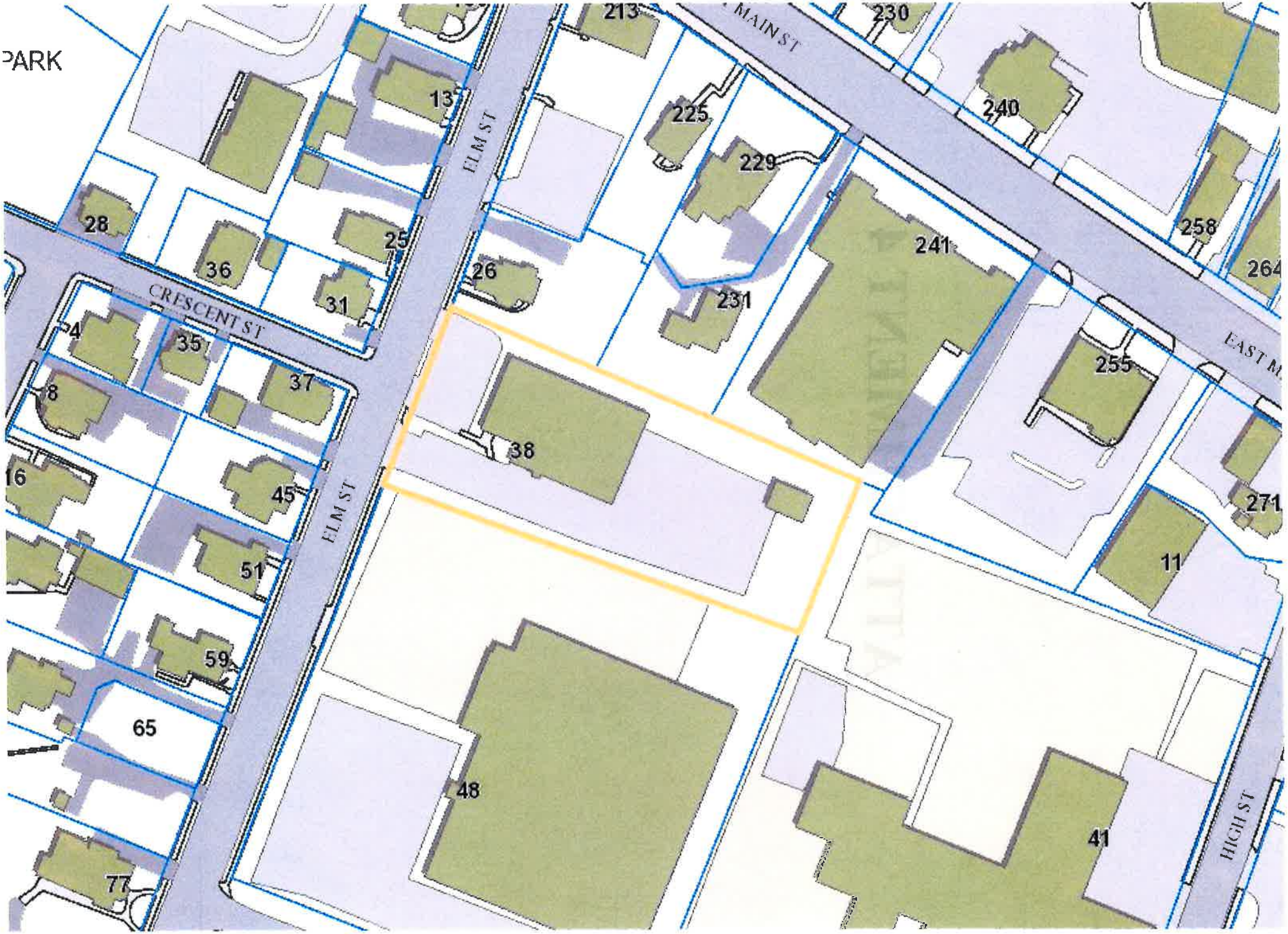
Bolt Orientation — **Parallel**

Bolt Quantity per Reaction:	4
d_x (in) *(Delta X of typ. bolt config. sketch)* :	3.5
d_y (in) *(Delta Y of typ. bolt config. sketch)* :	1.75
Bolt Type:	A36
Bolt Diameter (in):	0.5
Required Tensile Strength / bolt (kips):	1.7
Required Shear Strength / bolt (kips):	0.2
Tensile Capacity / bolt (kips):	6.4
Shear Capacity / bolt (kips):	3.8
Bolt Overall Utilization:	26.1%



Tower Connection Baseplate Checks — **No**

ATTACHMENT 4


PARK
213
MAIN ST
230
13
225
240
229
28
25
258
241
36
26
264
CRESCENT ST
31
231
4
35
255
37
8
38
16
45
271
51
11
59
65
48
41
77
HIGH ST

CITY OF MERIDEN

GIS Services

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THE USER IS RESPONSIBLE FOR CHECKING THE ACCURACY OF ALL INFORMATION OBTAINED WITH THE APPROPRIATE CITY DEPARTMENT AND TO COMPLY WITH ALL CURRENT LAWS, RULES, REGULATIONS, ORDINANCES, PROCEDURES, AND GUIDELINES.

PROPERTY INFORMATION Location: **38 ELM ST** Map/Lot: 0218-0111-0006-0000

OWNER INFORMATION

Owner(s):
ASHLEY HARRIMAN LLC
C/O TIM WALSH

Owner Address:
38 ELM ST
MERIDEN, CT 06450

BUILDING INFORMATION

Card Number: 1

OVERVIEW	
Building ID	3549
Finished Area	8,450
Comm/Rental Units	1
Living Units	0

ATTACHMENT 5

Verizon/Meriden East

UNITED STATES POSTAL SERVICE®

Certificate of Mailing — Firm

Name and Address of Sender	TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here *Postmark with Date of Receipt.*
Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	3	3	neopost 10/10/2023 US POSTAGE $003.19⁰ ZIP 06103 041L12203937
	Postmaster, per *(name of receiving employee)*		

USPS® Tracking Number / Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	Kevin Scarpati, Mayor City of Meriden 142 East Main Street Meriden, CT 06450				
2.	Monica Sims, Director of Planning and Enforcement City of Meriden 142 East Main Street Meriden, CT 06450				
3.	Ashley Harriman LLC c/o Tim Walsh 38 Elm Street Meriden, CT 06450				
4.					
5.					
6.					

USPS OCT 10 2023 OLD STATE HOUSE STA 06106