

August 16, 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
482 Pigeon Hill Road, Windsor, 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. Cellco’s facility was approved by the Siting Council (“Council”) in July of 1986 (Docket No. 58). A copy of the Council’s Docket No. 58 Decision and Order is included in Attachment 1.

Cellco’s proposed modification involves the installation of four (4) interference mitigation filters (“Filters”) on Cellco’s existing antenna platform and 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 Windsor’s Chief Elected Official and Land Use Officer. Cellco is the owner of the tower and Property.

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

1. The proposed modifications 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.

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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 tower, foundation, antenna platform and 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:

Peter Souza, Town Manager
Eric Barz, AICP, Town Planner
Daniel Fitzpatrick, Verizon Wireless

ATTACHMENT 1

DOCKET NO. 58

AN APPLICATION OF HARTFORD CELLULAR
COMPANY FOR A CERTIFICATE OF
ENVIRONMENTAL COMPATIBILITY AND PUBLIC
NEED FOR THE CONSTRUCTION, MAINTENANCE,
AND OPERATION OF FACILITIES TO PROVIDE
CELLULAR SERVICE IN HARTFORD, TOLLAND AND
MIDDLESEX COUNTIES.

CONNECTICUT SITING

COUNCIL

July 11, 1986.

D E C I S I O N A N D O R D E R

Pursuant to the foregoing opinion, the Connecticut Siting Council (Council) hereby directs that a Certificate of Environmental Compatibility and Public Need as provided by Section 16-50k of the General Statutes of Connecticut (CGS) be issued to the Hartford Cellular Company for the construction, maintenance, and operation of cellular mobile phone telecommunication towers and associated equipment in the towns of Glastonbury, Haddam, Hartford, Portland, Rocky Hill, Somers, Vernon, Windsor, and Willington subject to the conditions below.

- 1) The proposed Bloomfield and Middlefield sites are rejected without prejudice.
- 2) The antennas on the Glastonbury tower shall be mounted no higher than the 180' level of this existing tower.
- 3) The Portland and Rocky Hill towers shall be monopoles.
- 4) The towers shall be no taller than necessary to provide the proposed service, and in no event shall exceed total heights, including antennas, of
 - a) 193' at the Haddam site;
 - b) 173' at the Portland site;

- c) 153' at the Rocky Hill site;
- d) 173' at the Somers site;
- e) 173' at the Vernon site;
- f) 153' at the Willington site;
- g) 173' at the Windsor site.

5) The Hartford site receive antennas shall be mounted below the top of the high point of the building to preclude visibility.

6) Any future actions requiring the removal of the existing Glastonbury tower to be shared by the certificate holder shall also apply to the equipment mounted on that tower by the certificate holder, regardless of that equipment's status under Chapter 277a of the CGS.

7) The certificate holder shall submit a development and management (D&M) plan for the Haddam, Portland, Rocky Hill, Somers, Vernon and Windsor sites pursuant to Sections 16-50j-75 through 16-50j-77 of the Regulations of State Agencies (RSA), except that irrelevant items in Section 16-50j-76 need only be identified as such. In addition to the requirements of Section 16-50j-76, the D&M plan shall provide plans for evergreen screening around the fenced perimeter at the Haddam, Somers, Vernon, and Windsor sites. The D&M plan shall include a proposal for painting the approved monopole structures to blend with the sky. The D&M plan must be approved prior to facility construction. Any changes to specifications in the D&M plan must be approved by the Council prior to facility operation.

8) All certified facilities shall be constructed, operated, and maintained as specified in the Council's record and in the

site plan required by order number 7.

9) The certificate holder shall comply with any future radiofrequency (RF) standards promulgated by state or federal regulatory agencies. Upon the establishment of any new governmental RF standards, the facilities granted in this decision shall continue to be in compliance with such standards.

10) The certificate holder shall permit public or private entities to share space on the towers approved herein, for due consideration received, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing. In addition to complying with Section 16-50j-73 of the RSA, the certificate holder shall notify the Council of the addition of any equipment to any approved tower.

11) A fence not lower than 8' shall surround each tower and associated equipment.

12) Unless necessary to comply with order 13, no lights shall be installed on any of these towers.

13) The facilities' construction and any future tower sharing shall be in accordance with all applicable federal, state, and municipal laws and regulations. Shared uses by entities not subject to jurisdiction pursuant to Section 16-50k of the CGS shall be subject to all applicable federal, state, and municipal laws and regulations.

14) Construction activities shall take place during daylight working hours.

15) This decision and order shall be void and the towers and associate equipment shall be dismantled and removed, or reapplication for any new use shall be made to the Council before any such new use is made, if the towers do not provide or permanently cease to provide cellular service following completion of construction.

16) This decision and order shall be void if all construction authorized herein is not completed within three years of the issuance of this decision, or within three years of the completion of any appeal if appeal of this decision is taken, unless otherwise approved by the Council.

Pursuant to CGS Section 16-50p, we hereby direct that a copy of the decision and order shall be served on each person listed below. A notice of the issuance shall be published in the Hartford Courant, Middletown Press, Manchester Journal Inquirer, and the Willimantic Chronicle.

The parties to the proceeding are:

Metro Mobile (applicant)
5 Eversley Avenue
Norwalk, Connecticut 06855
ATTN: Armand Mascioli
General Manager

Howard L. Slater, Esq. (its attorneys)
Scott A. Gursky, Esq.
Byrne, Slater, Sandler,
Shulman & Rouse, P.C.
111 Pearl Street
Hartford, Connecticut 06103

Richard Rubin, Esq.
Fleischman and Walsh, P.C.
1725 N Street, N.W.
Washington, D. C. 20036

Mr. William Wamester
1225 Randolph Road
Middletown, Connecticut 06457

The Southern New England Telephone Company
227 Church Street
New Haven, Connecticut 06506
ATTN: Peter J. Tyrrell, Esq.

Mr. James W. Tilney

represented by:
Patricia A. Ayars
Samuel Baily, Jr.
Robinson & Cole
One Commercial Plaza
Hartford, CT. 06103-3597

Mr. Samuel DuBosar, Chairman
Bessie Bennett, Esq.
Town Plan & Zoning Commission
P.O. Box 337
Bloomfield, Connecticut 06002

Town of Somers

represented by:

Mr. Robert F. Peters
Town Counsel
Tatoian, Devline, Peters
& Davis
11 South Road
P.O. Box 415
Somers, CT. 06071

Town of Haddam
represented by:

Lucy R. Petrella
Chairperson
Town Office Building
Route 9A
P.O. Box 87
Haddam, CT. 06438

Midstate Regional Planning Agency

represented by:

Thomas M. Gilligan
Regional Planner
P.O. Box 139
Middletown, CT. 06457

Dr. Donald P. LaSalle
Director
Talcott Mountain Science Center
Montevideo Road
Avon, Connecticut 06001

Barnard Tilson
Secretary
Avon Planning and Zoning
60 West Main Street
Avon, Connecticut 06001

(service waived)

Alden Giddings
33 Privelege Road
Bloomfield, Connecticut 06002

Town of Bloomfield

represented by:

Joseph M. Suggs, Jr.
Deputy Mayor
Town Hall
880 Bloomfield Avenue
P.O. Box 337
Bloomfield, CT. 06002
(service waived)

Town of Middlefield

represented by:

David Silverstone, Esq.
Silverstone & Koontz
37 Lewis Street
Hartford, CT. 06103

with a copy to:

Geoffrey Colegrove
Midstate Regional Planning Agency
100 DeKoven Drive
Middletown, CT. 06457

Zoning Commission
Town of Somers

represented by:

Joseph A. Paradis
Chairman
Town Hall
600 Main Street
P.O. Box 803
Somers, CT. 06071

Barbara Sirwilo, Secretary (service waived)
Planning & Zoning Commission
Town of Rocky Hill
600 Old Main Street
P.O. Box 657
Rocky Hill, Connecticut 06067

H. Robert Goodrich (service waived)
Goodrich Lane
Portland, Connecticut 06480

The Honorable Richard P. Antonetti
State Representative (service waived)
5 Sachem Circle
Meriden, Connecticut 06450

John Hevrin
R.D. #1 - Plains Road
Haddam, Connecticut 06438







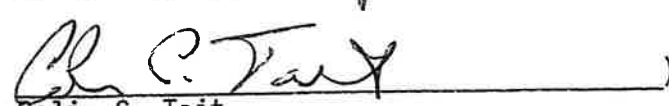
Norman and Darlene Manning (represented by)

Elizabeth Allen, Esq.
P.O. Box 467
Higganum, CT. 06441
(service waived)

C E R T I F I C A T I O N

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case or read the record thereof, and that we voted as follows:

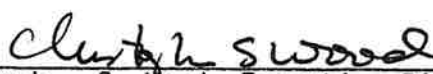
Dated at New Britain, Connecticut, this 11th day of July, 1986.

<u>Council Members</u>	<u>Vote Cast</u>
_____ Gloria Dibble Pond Chairperson	Absent
 _____ Commissioner John Dowley Designee: Patricia Shea	Yes
 _____ Commissioner Stanley Pac Designee: Christopher Cooper	Yes
 _____ Owen L. Clark	Yes
 _____ Mortimer A. Gelston	Yes
 _____ James G. Horsfall	Yes
_____ Pamela B. Katz	Absent
 _____ William H. Smith	Yes
 _____ Colin C. Tait	Yes

STATE OF CONNECTICUT)
 :
COUNTY OF HARTFORD) ss. New Britain, July 11, 1986

I hereby certify that the foregoing is a true and correct copy of the decision and order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:



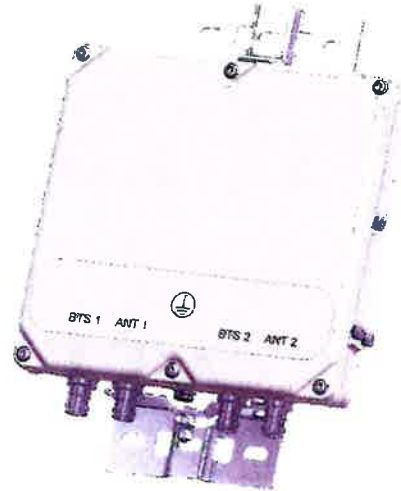
Christopher S. Wood, Executive Director
Connecticut Siting Council

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

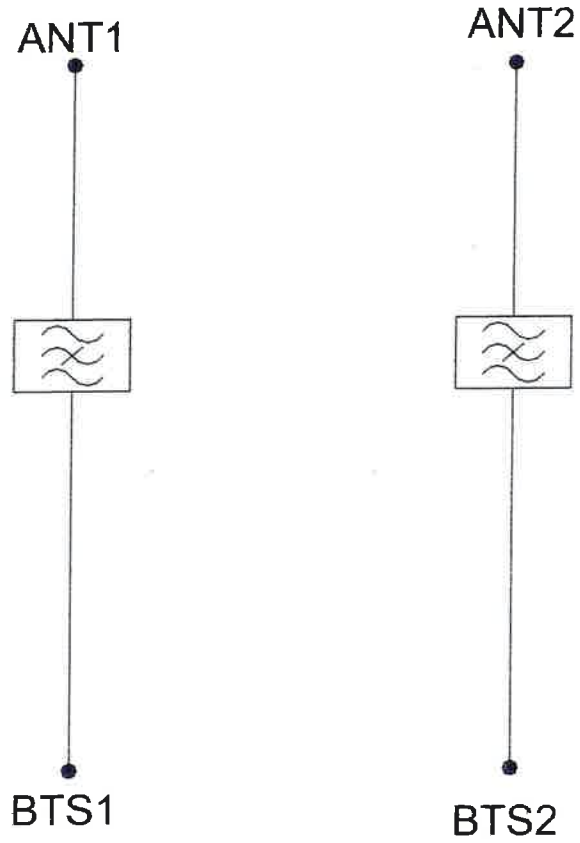
TECHNICAL SPECIFICATIONS

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.	

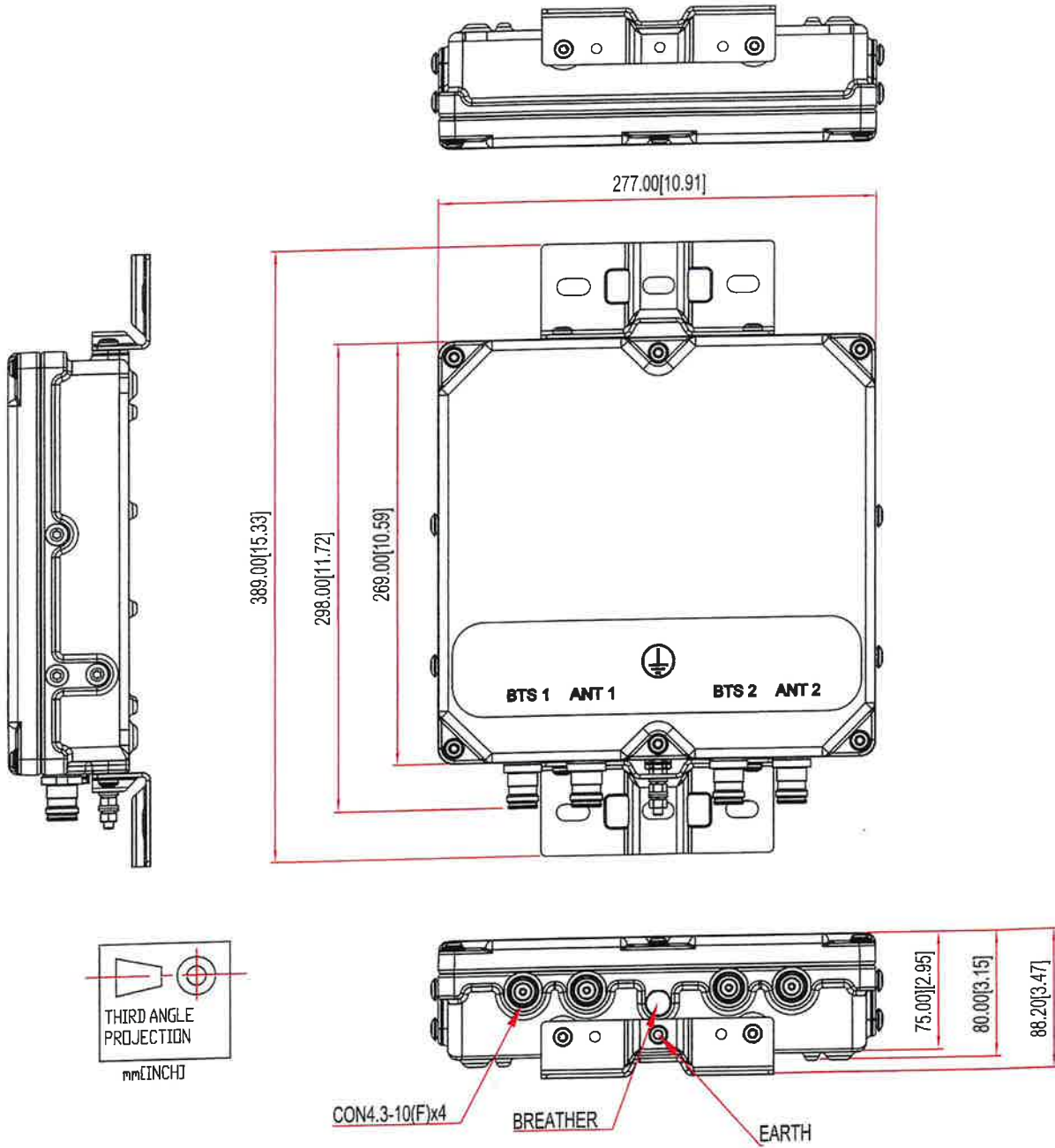
ORDERING INFORMATION

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

ELECTRICAL BLOCK DIAGRAM



MECHANICAL BLOCK DIAGRAM



ATTACHMENT 3

**PJF PAUL J. FORD
& COMPANY**

Report Date: August 3, 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 160-ft Self Support Tower
Site Name: Windsor CT
Site Address: 482 Pigeon Hill Rd
City, County, State: Windsor, Hartford County, CT
Latitude, Longitude: 41.86664°, -72.674778°

PJF Project: A42923-0005.001.8700

Paul J. Ford and Company is pleased to submit this "**Structural Analysis Report**" to determine the tower stress level.

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:

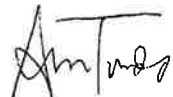
The structure was analyzed with the proposed loading configuration shown in Table 1 combined with the other considered equipment shown in Table 2 of this report.

Summary of Analysis Results:

Existing Structure: Pass – 88.5%
Existing Foundation: Pass – 85.8%

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*



250 E Broad St, Suite 600
Columbus, OH 43215
Phone 614.221.6679

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1) INTRODUCTION

This tower is a 168 ft Self Support tower designed by Rohn in April of 1987. The tower has been modified multiple times in the past.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	120 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
155.0	155.0	2	misc	OVP	9 2	1-5/8 6x12
		3	tower mounts	VFA-12		
		3	andrew	LNx-6513DS-A1M w/ Mount Pipe		
		6	commscope	NNHH-65B-R4_ w/ Mount Pipe		
		4	kaelus	BSF0020F3V1-1		
		3	samsung telecommunications	B2/B66A RRH-BR049		
		3	samsung telecommunications	B5/B13 RRH-BR04C		
		3	samsung telecommunications	MT6407-77A w/ Mount Pipe		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
169.0	169.0	3	ericsson	RADIO 4449 B5/B12	6 2 2 2	1-1/4 7/8 .39 .78
		3	ericsson	RADIO 8843 B2/B66A		
		3	ericsson	RRUS 32 B30		
		1	kathrein	80010964 w/ Mount Pipe		
		2	kathrein	80010965 w/ Mount Pipe		
		3	quintel technology	QS66512-2 w/ Mount Pipe		
		1	raycap	DC6-48-60-18-8C		
		1	raycap	DC6-48-60-18-8F		
		1	tower mounts	T-Arm Mount		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
160.0	165.0	1	generic	15 ft x 2" omni whip	1	7/8
	160.0	1	tower mounts	Side Arm Mount		
145.0	145.0	6	generic	TMA (10" x 8" x 3")	18	1-5/8
		3	andrew	LNx-6515DS-A1M w/ Mount Pipe		
		3	celwave	Celwave APX16DWV-16DWV-S-E-A20 w/Mount Pipe		
		1	tower mounts	Sector Mount		
118.0	128.0	1	generic	15 ft x 2" omni whip	1	7/8
	118.0	1	tower mounts	Side Arm Mount		
99.0	108.0	1	generic	16 ft x 2" omni whip	1	7/8
	99.0	1	tower mounts	Side Arm Mount		
47.0	47.0	1	tower mounts	Side Arm Mount	-	-
38.0	46.0	1	generic	12 ft x 2" omni whip	1	1/2
	38.0	1	tower mounts	Side Arm Mount		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Source
TOWER STRUCTURAL ANALYSIS REPORTS	All-Points Technology Corporation 06/26/2017	On Air Engineering, LLC
TOWER STRUCTURAL ANALYSIS REPORTS	Centek Engineering, 04/20/2017	On Air Engineering, LLC
TOWER AND FOUNDATION DRAWINGS	Rohn #22282JC, 04/20/87	On Air Engineering, LLC
GEOTECHNICAL REPORTS	DR. Clarence Welti, 09/20/2010	On Air Engineering, LLC
MODIFICATION LETTER	Centek Engineering, 07/11/2011	On Air Engineering, LLC
TOWER REINFORCEMENT DESIGN/DRAWINGS	PJF, 42918-0018.004.8800 04/11/2019	-
TOWER STRUCTURAL ANALYSIS REPORTS	Semaan Engineering solutions, 10,21,2020	On Air Engineering, LLC
MOUNT ANALYSIS	Colliers Engineering and Design, 7/10/2023	On Air Engineering, LLC
VERIZON CD's	Verizon, 07/19/2023	On Air Engineering, LLC

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 maintained in accordance with the TIA-222 Standard.
- 2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
- 3) The modification dated 4/11/2019 does not have a post modification inspection. It was assumed the structure was modified in conformance with the referenced modification drawings.

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
L1	168 - 160	Pole	Pipe 8.625" x 0.322" (8 STD)	1	-3.29	396.87	35.2	Pass
T1	160 - 140	Leg	Pipe 2.875" x 0.203" (2.5 STD)	3	-25.08	60.05	41.8	Pass
T2	140 - 133.333	Leg	Pipe 2.875" x 0.276" (2.5 XS)	33	-34.10	61.44	55.5	Pass
T3	133.333 - 126.667	Leg	Pipe 2.875" x 0.276" (2.5 XS)	45	-43.01	61.44	70.0	Pass
T4	126.667 - 120	Leg	Pipe 2.875" x 0.276" (2.5 XS)	54	-51.70	91.97	56.2	Pass
T5	120 - 100	Leg	Pipe 2.875" x 0.276" (2.5 XS)	69	-79.00	92.09	85.8	Pass
T6	100 - 80	Leg	Pipe 3.5" x 0.300" (3 XS)	99	-106.80	129.56	82.4	Pass
T7	80 - 60	Leg	Pipe 4.5" x 0.337" (4 XS)	129	-132.28	183.05	72.3	Pass
T8	60 - 40	Leg	Pipe 5.563" x 0.375" (5 XS)	150	-160.19	211.31	75.8	Pass
T9	40 - 20	Leg	Pipe 5.563" x 0.375" (5 XS)	165	-187.02	211.29	88.5	Pass
T10	20 - 1e-006	Leg	Pipe 6.625" x 0.340" (6 EHS)	180	-213.31	256.27	83.2	Pass
T1	160 - 140	Diagonal	L 1.75 x 1.75 x 3/16	11	-4.52	6.82	66.4 71.7 (b)	Pass
T2	140 - 133.333	Diagonal	L 2 x 2 x 3/16	41	-4.18	7.57	55.2 56.8 (b)	Pass
T3	133.333 - 126.667	Diagonal	L 2 x 2 x 3/16	50	-4.24	6.88	61.6	Pass
T4	126.667 - 120	Diagonal	L 2.5 x 2.5 x 3/16	62	-4.51	12.01	37.5 39.0 (b)	Pass
T5	120 - 100	Diagonal	L 2.5 x 2.5 x 3/16	74	-4.94	9.22	53.6 58.3 (b)	Pass
T6	100 - 80	Diagonal	L 3 x 3 x 3/16	102	-5.91	12.82	46.1 66.5 (b)	Pass
T7	80 - 60	Diagonal	L 3 x 3 x 1/4	132	-6.96	11.36	61.3	Pass
T8	60 - 40	Diagonal	L 3.5 x 3.5 x 1/4	153	-7.42	15.96	46.5 64.4 (b)	Pass
T9	40 - 20	Diagonal	L 3.5 x 3.5 x 1/4	168	-7.64	13.43	56.9 65.2 (b)	Pass
T10	20 - 1e-006	Diagonal	L 4 x 4 x 1/4	183	-8.73	17.47	49.9 72.1 (b)	Pass
T4	126.667 - 120	Secondary Horizontal	L 2 x 2 x 1/4	65	-0.90	11.82	7.6 8.2 (b)	Pass
T5	120 - 100	Secondary Horizontal	L 2.5 x 2.5 x 3/16	77	-1.37	12.61	10.9	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T6	100 - 80	Secondary Horizontal	L 3 x 3 x 3/16	107	-1.85	16.36	11.3	Pass
T7	80 - 60	Secondary Horizontal	L 3 x 3 x 1/4	137	-2.29	16.74	13.7	Pass
T1	160 - 140	Top Girt	L 2.5 x 2.5 x 3/16	6	-1.54	6.92	22.3	Pass
T2	140 - 133.333	Top Girt	L 2 x 2 x 3/16	35	-0.59	5.18	11.4	Pass
T4	126.667 - 120	Top Girt	L 2.5 x 2.5 x 3/16	56	-0.90	4.86	18.4	Pass
T1	160 - 140	Pole Socket	Pipe 8.625" x 0.322" (8 STD)	197	-3.47	367.06	35.3	Pass
							Summary	
							Pole (L1)	35.2 Pass
							Leg (T9)	88.5 Pass
							Diagonal (T10)	72.1 Pass
							Secondary Horizontal (T7)	13.7 Pass
							Top Girt (T1)	22.3 Pass
							Pole Socket (T1)	35.3 Pass
							Bolt Checks	72.1 Pass
							Rating =	88.5 Pass

Table 5 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	-	58.6	Pass
1	Base Foundation (Structure)	-	71.0	Pass
1	Base Foundation (Soil Interaction)	-	85.8	Pass

Structure Rating (max from all components) =	88.5%
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Notes:

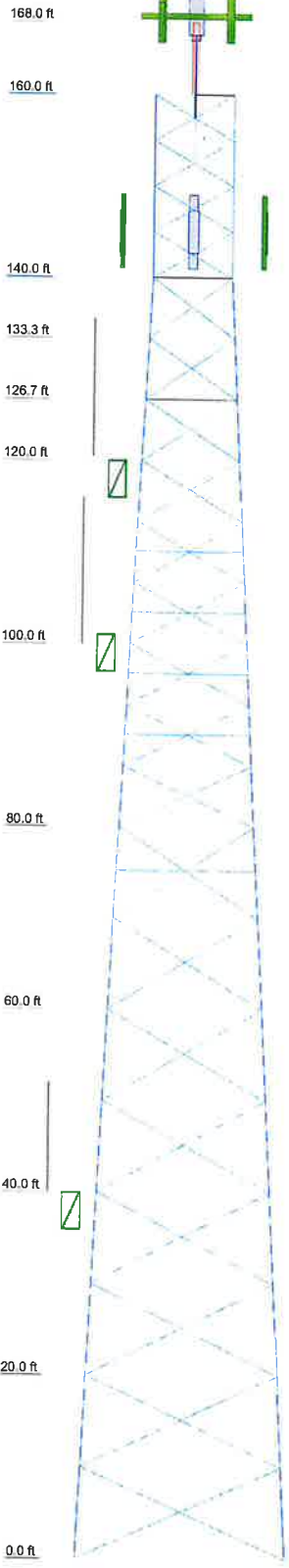
- All structural ratings are per TIA-222-H Section 15.5
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

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

Section	110	10	18	17	16	15	14	13	12	11	11
Legs	Pipe 6.625" x 0.340" (6 EHS)	Pipe 5.563" x 0.375" (5 XS)	Pipe 5.563" x 0.375" (5 XS)	Pipe 4.5" x 0.337" (4 XS)	Pipe 3.5" x 0.300" (3 XS)	Pipe 2.875" x 0.276" (2.5 XS)					
Leg Grade	L 4 x 4 x 1/4	L 3.5 x 3.5 x 1/4	L 3.5 x 3.5 x 1/4	L 3 x 3 x 1/4	L 3 x 3 x 3/16	L 2.5 x 2.5 x 3/16	L 2 x 2 x 3/16	L 2 x 2 x 3/16	L 2.5 x 2.5 x 3/16	L 1.75 x 1.75 x 3/16	
Diagonals	L 4 x 4 x 1/4	L 3.5 x 3.5 x 1/4	L 3.5 x 3.5 x 1/4	L 3 x 3 x 1/4	L 3 x 3 x 3/16	L 2.5 x 2.5 x 3/16	L 2 x 2 x 3/16	L 2 x 2 x 3/16	L 2.5 x 2.5 x 3/16	L 1.75 x 1.75 x 3/16	
Diagonal Grade	L 4 x 4 x 1/4	L 3.5 x 3.5 x 1/4	L 3.5 x 3.5 x 1/4	L 3 x 3 x 1/4	L 3 x 3 x 3/16	L 2.5 x 2.5 x 3/16	L 2 x 2 x 3/16	L 2 x 2 x 3/16	L 2.5 x 2.5 x 3/16	L 1.75 x 1.75 x 3/16	
Top Girts											
Sec. Horizontals											
Face Width (ft)	20.8646	18.7708	16.7708	14.6979	12.6675	10.6458	9.97917	9.3125	8.64583	0.71875	
# Panels @ (ft)	34	8 @ 10	26	22	18	15	12	12	12	12	
Weight (K)	16.3	2.5	2.8	2.6	2.2	1.8	1.5	1.2	1.2	1.2	



MARK	SIZE	MARK	SIZE
A	Pipe 6.625" x 0.322" (8 STD)	D	L 2.5 x 2.5 x 3/16
B	Pipe 2.875" x 0.203" (2.5 STD)	E	L 2 x 2 x 1/4
C	L 2 x 2 x 3/16		

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

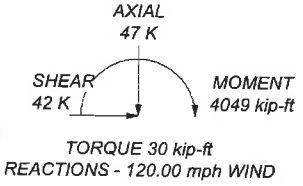
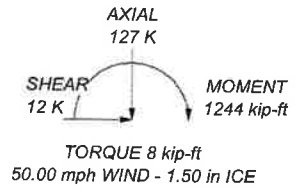
TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure B 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 1.50 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: 88.5%

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
 DOWN: 220 K
 SHEAR: 26 K

UPLIFT: -182 K
 SHEAR: 22 K



<p>Paul J. Ford and Company 250 East Broad St., Suite 600 Columbus, OH 43215 Phone: 614-221-6679 FAX:</p>	Job: Existing 160 ft self-supporting tower Project: Windsor, CT / P.J.F 42923-0005 Client: On Air Engineering Code: TIA-222-H Path:	Drawn by: Anna Trudo Date: 08/03/23 Scale: NTS Dwg No.: E-1
	App'd:	
	Scale: NTS	
	Dwg No.: E-1	
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Tower Input Data

The main tower is a 3x free standing tower with an overall height of 168.00 ft above the ground line.
 The base of the tower is set at an elevation of 0.00 ft above the ground line.
 The face width of the tower is 8.65 ft at the top and 22.86 ft at the base.
 An index plate is provided at the 3x free standing -tower connection.
 There is a pole section.

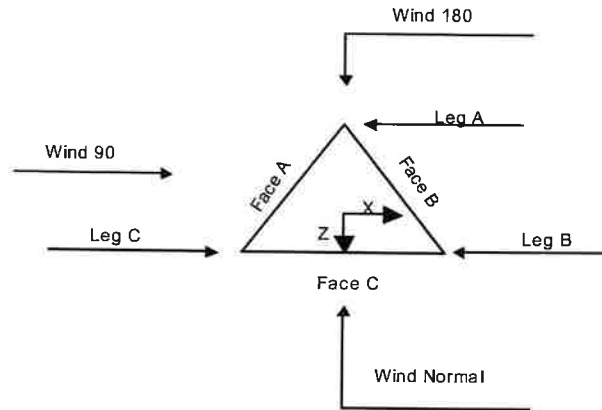
This tower is designed using the TIA-222-H standard.

The following design criteria apply:

- Tower is located in Hartford County, Connecticut.
- Tower base elevation above sea level: 167.00 ft.
- Basic wind speed of 120.00 mph.
- Risk Category II.
- Exposure Category B.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.50 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 50.00 mph is used in combination with ice.
- Temperature drop of 50 °F.
- 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 pole design is 1.05.
- 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

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile
 √ Include Bolts In Member Capacity
 Leg Bolts Are At Top Of Section √ Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric | <ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned Assume Rigid Index Plate √ Use Clear Spans For Wind Area √ Use Clear Spans For KL/r Retension Guys To Initial Tension √ Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt.
 Autocalc Torque Arm Areas
 Add IBC .6D+W Combination √ Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs | <ul style="list-style-type: none"> √ Use ASCE 10 X-Brace Ly Rules √ Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feed Line Torque √ Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption
 <li style="text-align: center;">Poles Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known |
|--|---|--|



Triangular Tower

Pole Section Geometry

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L1	168.00-160.00	8.00	Pipe 8.625" x 0.322" (8 STD)	A572-50 (50 ksi)	8.00

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _r	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
L1 168.00-160.00				1.03	1	1			

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	160.00-140.00		08N056	8.65	1	20.00
T2	140.00-133.33		09N115	8.65	1	6.67
T3	133.33-126.67		09N115	9.31	1	6.67
T4	126.67-120.00		09N115	9.98	1	6.67
T5	120.00-100.00		10N106	10.65	1	20.00
T6	100.00-80.00		11N076	12.69	1	20.00
T7	80.00-60.00		12N005	14.70	1	20.00
T8	60.00-40.00		13N011	16.77	1	20.00
T9	40.00-20.00		14N003	18.77	1	20.00
T10	20.00-0.00		15N023	20.86	1	20.00

Tower Section Geometry (cont'd)

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	160.00-140.00	5.00	X Brace	No	No	0.00	0.00
T2	140.00-133.33	6.67	X Brace	No	No	0.00	0.00
T3	133.33-126.67	6.67	X Brace	No	No	0.00	0.00
T4	126.67-120.00	6.67	X Brace	No	Yes	0.00	0.00
T5	120.00-100.00	6.67	X Brace	No	Yes	0.00	0.00
T6	100.00-80.00	6.67	X Brace	No	Yes	0.00	0.00
T7	80.00-60.00	10.00	X Brace	No	Yes	0.00	0.00
T8	60.00-40.00	10.00	X Brace	No	No	0.00	0.00
T9	40.00-20.00	10.00	X Brace	No	No	0.00	0.00
T10	20.00-0.00	10.00	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 160.00-140.00	Pipe	Pipe 2.875" x 0.203" (2.5 STD)	A572-50 (50 ksi)	Single Angle	L 1.75 x 1.75 x 3/16	A36 (36 ksi)
T2 140.00-133.33	Pipe	Pipe 2.875" x 0.276" (2.5 XS)	A572-50 (50 ksi)	Single Angle	L 2 x 2 x 3/16	A36 (36 ksi)
T3 133.33-126.67	Pipe	Pipe 2.875" x 0.276" (2.5 XS)	A572-50 (50 ksi)	Single Angle	L 2 x 2 x 3/16	A36 (36 ksi)
T4 126.67-120.00	Pipe	Pipe 2.875" x 0.276" (2.5 XS)	A572-50 (50 ksi)	Single Angle	L 2.5 x 2.5 x 3/16	A572-50 (50 ksi)
T5 120.00-100.00	Pipe	Pipe 2.875" x 0.276" (2.5 XS)	A572-50 (50 ksi)	Single Angle	L 2.5 x 2.5 x 3/16	A36 (36 ksi)
T6 100.00-80.00	Pipe	Pipe 3.5" x 0.300" (3 XS)	A572-50 (50 ksi)	Single Angle	L 3 x 3 x 3/16	A36 (36 ksi)
T7 80.00-60.00	Pipe	Pipe 4.5" x 0.337" (4 XS)	A572-50 (50 ksi)	Single Angle	L 3 x 3 x 1/4	A36 (36 ksi)
T8 60.00-40.00	Pipe	Pipe 5.563" x 0.375" (5 XS)	A572-50 (50 ksi)	Single Angle	L 3.5 x 3.5 x 1/4	A36 (36 ksi)
T9 40.00-20.00	Pipe	Pipe 5.563" x 0.375" (5 XS)	A572-50 (50 ksi)	Single Angle	L 3.5 x 3.5 x 1/4	A36 (36 ksi)
T10 20.00-0.00	Pipe	Pipe 6.625" x 0.340" (6 EHS)	A572-50 (50 ksi)	Single Angle	L 4 x 4 x 1/4	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 160.00-140.00	Single Angle	L 2.5 x 2.5 x 3/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)
T2 140.00-133.33	Single Angle	L 2 x 2 x 3/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)
T4 126.67-120.00	Single Angle	L 2.5 x 2.5 x 3/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
<i>ft</i>						
T4 126.67-120.00	Single Angle	L 2 x 2 x 1/4	A572-50 (50 ksi)	Single Angle		A36 (36 ksi)
T5 120.00-100.00	Single Angle	L 2.5 x 2.5 x 3/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)
T6 100.00-80.00	Single Angle	L 3 x 3 x 3/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)
T7 80.00-60.00	Single Angle	L 3 x 3 x 1/4	A36 (36 ksi)	Single Angle		A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_r	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
<i>ft</i>	<i>ft²</i>	<i>in</i>					<i>in</i>	<i>in</i>	<i>in</i>
T1 160.00-140.00	0.00	0.25	A36 (36 ksi)	1.03	1	1.05	6.00	6.00	36.00
T2 140.00-133.33	0.00	0.25	A36 (36 ksi)	1.03	1	1.05	6.00	6.00	36.00
T3 133.33-126.67	0.00	0.25	A36 (36 ksi)	1.03	1	1.05	6.00	6.00	36.00
T4 126.67-120.00	0.00	0.25	A36 (36 ksi)	1.03	1	1.05	6.00	6.00	36.00
T5 120.00-100.00	0.00	0.25	A36 (36 ksi)	1.03	1	1.05	6.00	6.00	36.00
T6 100.00-80.00	0.00	0.25	A36 (36 ksi)	1.03	1	1.05	6.00	6.00	36.00
T7 80.00-60.00	0.00	0.25	A36 (36 ksi)	1.03	1	1.05	6.00	6.00	36.00
T8 60.00-40.00	0.00	0.25	A36 (36 ksi)	1.03	1	1.05	6.00	6.00	36.00
T9 40.00-20.00	0.00	0.25	A36 (36 ksi)	1.03	1	1.05	6.00	6.00	36.00
T10 20.00-0.00	0.00	0.25	A36 (36 ksi)	1.03	1	1.05	6.00	6.00	36.00

Tower Section Geometry (cont'd)

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	K Factors ¹								
			Legs	X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace	
											X
<i>ft</i>			Y	Y	Y	Y	Y	Y	Y	Y	
T1 160.00-140.00	Yes	Yes	1	1	1	1	1	1	1	1	1
T2 140.00-133.33	Yes	Yes	1	1	1	1	1	1	1	1	1
T3 133.33-126.67	Yes	Yes	1	1	1	1	1	1	1	1	1
T4 126.67-120.00	No	Yes	1	1	1	1	1	1	1	1	1
T5 120.00-100.00	No	Yes	1	1	1	1	1	1	0.5	1	1
T6 100.00-80.00	No	Yes	1	1	1	1	1	1	0.5	1	1
T7 80.00-60.00	No	Yes	1	1	1	1	1	1	0.5	1	1

168 Ft Self Support Tower Structural Analysis
Project Number 42923-0005.001.8700

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors ¹									
			Legs	X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace		
				X Y	X Y	X Y	X Y	X Y	X Y	X Y		
T8 60.00-40.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1
T9 40.00-20.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1
T10 20.00-0.00	Yes	Yes	1	1	1	1	1	1	1	1	1	1

¹Note: 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 160.00-140.00	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 140.00-133.33	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 133.33-126.67	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
T4 126.67-120.00	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
T5 120.00-100.00	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
T6 100.00-80.00	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
T7 80.00-60.00	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
T8 60.00-40.00	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
T9 40.00-20.00	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
T10 20.00-0.00	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 160.00-140.00	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 140.00-133.33	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 133.33-126.67	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
T4 126.67-120.00	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
T5 120.00-100.00	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
T6 100.00-80.00	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
T7 80.00-60.00	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 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
T8 60.00-40.00	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
T9 40.00-20.00	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
T10 20.00-0.00	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 Bolt Size in	Leg No.	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.
T1 160.00-140.00	Flange	0.63 A325N	4	0.63 A325N	1	0.63 A325N	1	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0
T2 140.00-133.33	Flange	0.63 A325N	0	0.63 A325N	1	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0
T3 133.33-126.67	Flange	0.63 A325N	0	0.63 A325N	1	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0
T4 126.67-120.00	Flange	0.63 A325N	4	0.63 A325N	1	0.63 A325N	1	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.63 A325N	1
T5 120.00-100.00	Flange	0.75 A325N	4	0.63 A325N	1	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.75 A325N	0
T6 100.00-80.00	Flange	0.88 A325N	4	0.63 A325N	1	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.63 A325N	0
T7 80.00-60.00	Flange	1.00 A325N	4	0.63 A325N	1	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.63 A325N	0
T8 60.00-40.00	Flange	1.00 A325N	4	0.63 A325N	1	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0
T9 40.00-20.00	Flange	1.00 A325N	6	0.63 A325N	1	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0
T10 20.00-0.00	Flange	1.00 A325N	0	0.63 A325N	1	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0	0.00 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Shield	Allow	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
LDF6-50 (1 1/4" foam)	A	No	No	No	Ar (CaAa)	160.00 - 0.00	0.00	0.3	6	6	0.50	1.50	1.00	0.66
1.5" flat Cable Ladder Rail	A	No	No	No	Af (CaAa)	160.00 - 0.00	0.00	0.3	2	2	24.00	1.50	1.50	1.80
HFT1206-24SVL-210(1-5/8)	A	No	No	No	Ar (CaAa)	145.00 - 0.00	0.00	-0.37	18	9	0.27	1.71	0.52	1.92
1.5" flat Cable Ladder Rail *****	A	No	No	No	Af (CaAa)	145.00 - 0.00	0.00	-0.37	2	2	24.00	1.50	1.50	1.80
LDF5-50A (7/8" foam)	B	No	No	No	Ar (CaAa)	160.00 - 0.00	0.00	0.4	1	1	1.09	1.09		0.33
Fiber Trunk	B	No	No	No	Ar (CaAa)	160.00 - 0.00	0.00	-0.35	2	2	1.75	1.75		3.00

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Description	Face or Shield 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
DC Trunk	B	No	No	Ar (CaAa)	160.00 - 0.00	0.00	-0.37	4	4	0.26	0.26		0.03
LDF5-50A (7/8" foam)	B	No	No	Ar (CaAa)	120.00 - 0.00	0.00	0.36	1	1	1.09	1.09		0.33
LDF4-50A (1/2" foam)	B	No	No	Ar (CaAa)	40.00 - 0.00	0.00	0.33	1	1	0.63	0.63		0.15
1.5" flat Cable Ladder Rail	B	No	No	Af (CaAa)	160.00 - 0.00	0.00	-0.4	2	2	20.00 1.50	1.50		1.80
1.5" flat Cable Ladder Rail	B	No	No	Af (CaAa)	160.00 - 0.00	0.00	0.37	2	2	20.00 1.50	1.50		1.80
HFT1206-24SVL-XXX(1-5/8)	C	No	No	Ar (CaAa)	155.00 - 0.00	0.00	-0.4	11	11	0.50 0.52	1.63		1.92
1.5" flat Cable Ladder Rail	C	No	No	Af (CaAa)	155.00 - 0.00	0.00	-0.4	2	2	24.00 1.50	1.50		1.80
LDF5-50A (7/8" foam)	B	No	No	Ar (CaAa)	99.00 - 0.00	0.00	0.36	1	1	1.09	1.09		0.33

Feed Line/Linear Appurtenances Section Areas

Tower Section n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L1	168.00-160.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
T1	160.00-140.00	A	0.000	0.000	45.890	0.000	0.34
		B	0.000	0.000	31.228	0.000	0.27
		C	0.000	0.000	34.313	0.000	0.37
T2	140.00-133.33	A	0.000	0.000	33.187	0.000	0.30
		B	0.000	0.000	10.409	0.000	0.09
		C	0.000	0.000	15.250	0.000	0.16
T3	133.33-126.67	A	0.000	0.000	33.187	0.000	0.30
		B	0.000	0.000	10.409	0.000	0.09
		C	0.000	0.000	15.250	0.000	0.16
T4	126.67-120.00	A	0.000	0.000	33.187	0.000	0.30
		B	0.000	0.000	10.409	0.000	0.09
		C	0.000	0.000	15.250	0.000	0.16
T5	120.00-100.00	A	0.000	0.000	99.560	0.000	0.91
		B	0.000	0.000	33.408	0.000	0.28
		C	0.000	0.000	45.750	0.000	0.49
T6	100.00-80.00	A	0.000	0.000	99.560	0.000	0.91
		B	0.000	0.000	35.479	0.000	0.29
		C	0.000	0.000	45.750	0.000	0.49
T7	80.00-60.00	A	0.000	0.000	99.560	0.000	0.91
		B	0.000	0.000	35.588	0.000	0.29
		C	0.000	0.000	45.750	0.000	0.49
T8	60.00-40.00	A	0.000	0.000	99.560	0.000	0.91
		B	0.000	0.000	35.588	0.000	0.29
		C	0.000	0.000	45.750	0.000	0.49
T9	40.00-20.00	A	0.000	0.000	99.560	0.000	0.91
		B	0.000	0.000	36.848	0.000	0.29
		C	0.000	0.000	45.750	0.000	0.49
T10	20.00-0.00	A	0.000	0.000	99.560	0.000	0.91
		B	0.000	0.000	36.848	0.000	0.29
		C	0.000	0.000	45.750	0.000	0.49

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section n	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
L1	168.00-160.00	A	1.761	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
T1	160.00-140.00	A	1.745	0.000	0.000	83.397	0.000	1.44
		B		0.000	0.000	98.752	0.000	1.48
		C		0.000	0.000	68.328	0.000	1.25
T2	140.00-133.33	A	1.729	0.000	0.000	47.581	0.000	0.96
		B		0.000	0.000	32.735	0.000	0.49
		C		0.000	0.000	30.293	0.000	0.55
T3	133.33-126.67	A	1.720	0.000	0.000	47.498	0.000	0.96
		B		0.000	0.000	32.638	0.000	0.49
		C		0.000	0.000	30.254	0.000	0.55
T4	126.67-120.00	A	1.711	0.000	0.000	47.412	0.000	0.95
		B		0.000	0.000	32.536	0.000	0.48
		C		0.000	0.000	30.212	0.000	0.55
T5	120.00-100.00	A	1.692	0.000	0.000	141.677	0.000	2.84
		B		0.000	0.000	105.897	0.000	1.55
		C		0.000	0.000	90.366	0.000	1.62
T6	100.00-80.00	A	1.658	0.000	0.000	140.713	0.000	2.80
		B		0.000	0.000	112.998	0.000	1.62
		C		0.000	0.000	89.901	0.000	1.60
T7	80.00-60.00	A	1.617	0.000	0.000	139.534	0.000	2.74
		B		0.000	0.000	111.718	0.000	1.58
		C		0.000	0.000	89.331	0.000	1.57
T8	60.00-40.00	A	1.564	0.000	0.000	138.002	0.000	2.68
		B		0.000	0.000	109.482	0.000	1.52
		C		0.000	0.000	88.592	0.000	1.53
T9	40.00-20.00	A	1.486	0.000	0.000	135.774	0.000	2.58
		B		0.000	0.000	113.431	0.000	1.51
		C		0.000	0.000	87.516	0.000	1.47
T10	20.00-0.00	A	1.331	0.000	0.000	131.361	0.000	2.40
		B		0.000	0.000	106.360	0.000	1.33
		C		0.000	0.000	85.386	0.000	1.37

Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
L1	168.00-160.00	0.00	0.00	0.00	0.00
T1	160.00-140.00	8.60	-9.73	10.01	-10.94
T2	140.00-133.33	4.88	-4.50	6.68	-6.57
T3	133.33-126.67	5.62	-5.13	7.53	-7.39
T4	126.67-120.00	4.65	-4.29	6.77	-6.61
T5	120.00-100.00	5.86	-4.67	8.81	-6.99
T6	100.00-80.00	6.37	-4.46	10.40	-6.84
T7	80.00-60.00	7.76	-5.32	12.44	-8.07
T8	60.00-40.00	8.90	-6.03	14.27	-9.22
T9	40.00-20.00	9.87	-6.23	16.55	-9.24
T10	20.00-0.00	9.86	-6.22	16.87	-9.48

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

Shielding Factor Ka

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	LDF6-50 (1 1/4" foam)	140.00 - 160.00	0.6000	0.6000
T1	2	1.5" flat Cable Ladder Rail	140.00 - 160.00	0.6000	0.6000
T1	3	HFT1206-24SVL-210(1- 5/8)	140.00 - 145.00	0.6000	0.6000
T1	4	1.5" flat Cable Ladder Rail	140.00 - 145.00	0.6000	0.6000
T1	7	LDF5-50A (7/8" foam)	140.00 - 160.00	0.6000	0.6000
T1	8	Fiber Trunk	140.00 - 160.00	0.6000	0.6000
T1	9	DC Trunk	140.00 - 160.00	0.6000	0.6000
T1	12	1.5" flat Cable Ladder Rail	140.00 - 160.00	0.6000	0.6000
T1	13	1.5" flat Cable Ladder Rail	140.00 - 160.00	0.6000	0.6000
T1	15	HFT1206-24SVL-XXX(1- 5/8)	140.00 - 155.00	0.6000	0.6000
T1	16	1.5" flat Cable Ladder Rail	140.00 - 155.00	0.6000	0.6000
T2	1	LDF6-50 (1 1/4" foam)	133.33 - 140.00	0.6000	0.6000
T2	2	1.5" flat Cable Ladder Rail	133.33 - 140.00	0.6000	0.6000
T2	3	HFT1206-24SVL-210(1- 5/8)	133.33 - 140.00	0.6000	0.6000
T2	4	1.5" flat Cable Ladder Rail	133.33 - 140.00	0.6000	0.6000
T2	7	LDF5-50A (7/8" foam)	133.33 - 140.00	0.6000	0.6000
T2	8	Fiber Trunk	133.33 - 140.00	0.6000	0.6000
T2	9	DC Trunk	133.33 - 140.00	0.6000	0.6000
T2	12	1.5" flat Cable Ladder Rail	133.33 - 140.00	0.6000	0.6000
T2	13	1.5" flat Cable Ladder Rail	133.33 - 140.00	0.6000	0.6000
T2	15	HFT1206-24SVL-XXX(1- 5/8)	133.33 - 140.00	0.6000	0.6000
T2	16	1.5" flat Cable Ladder Rail	133.33 - 140.00	0.6000	0.6000
T3	1	LDF6-50 (1 1/4" foam)	126.67 - 133.33	0.6000	0.6000
T3	2	1.5" flat Cable Ladder Rail	126.67 - 133.33	0.6000	0.6000
T3	3	HFT1206-24SVL-210(1- 5/8)	126.67 - 133.33	0.6000	0.6000
T3	4	1.5" flat Cable Ladder Rail	126.67 - 133.33	0.6000	0.6000
T3	7	LDF5-50A (7/8" foam)	126.67 - 133.33	0.6000	0.6000
T3	8	Fiber Trunk	126.67 - 133.33	0.6000	0.6000
T3	9	DC Trunk	126.67 - 133.33	0.6000	0.6000
T3	12	1.5" flat Cable Ladder Rail	126.67 - 133.33	0.6000	0.6000
T3	13	1.5" flat Cable Ladder Rail	126.67 - 133.33	0.6000	0.6000
T3	15	HFT1206-24SVL-XXX(1- 5/8)	126.67 - 133.33	0.6000	0.6000
T3	16	1.5" flat Cable Ladder Rail	126.67 - 133.33	0.6000	0.6000
T4	1	LDF6-50 (1 1/4" foam)	120.00 - 126.67	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_g No Ice	K_g Ice
T4	2	1.5" flat Cable Ladder Rail	120.00 - 126.67	0.6000	0.6000
T4	3	HFT1206-24SVL-210(1- 5/8)	120.00 - 126.67	0.6000	0.6000
T4	4	1.5" flat Cable Ladder Rail	120.00 - 126.67	0.6000	0.6000
T4	7	LDF5-50A (7/8" foam)	120.00 - 126.67	0.6000	0.6000
T4	8	Fiber Trunk	120.00 - 126.67	0.6000	0.6000
T4	9	DC Trunk	120.00 - 126.67	0.6000	0.6000
T4	12	1.5" flat Cable Ladder Rail	120.00 - 126.67	0.6000	0.6000
T4	13	1.5" flat Cable Ladder Rail	120.00 - 126.67	0.6000	0.6000
T4	15	HFT1206-24SVL-XXX(1- 5/8)	120.00 - 126.67	0.6000	0.6000
T4	16	1.5" flat Cable Ladder Rail	120.00 - 126.67	0.6000	0.6000
T5	1	LDF6-50 (1 1/4" foam)	100.00 - 120.00	0.6000	0.6000
T5	2	1.5" flat Cable Ladder Rail	100.00 - 120.00	0.6000	0.6000
T5	3	HFT1206-24SVL-210(1- 5/8)	100.00 - 120.00	0.6000	0.6000
T5	4	1.5" flat Cable Ladder Rail	100.00 - 120.00	0.6000	0.6000
T5	7	LDF5-50A (7/8" foam)	100.00 - 120.00	0.6000	0.6000
T5	8	Fiber Trunk	100.00 - 120.00	0.6000	0.6000
T5	9	DC Trunk	100.00 - 120.00	0.6000	0.6000
T5	10	LDF5-50A (7/8" foam)	100.00 - 120.00	0.6000	0.6000
T5	12	1.5" flat Cable Ladder Rail	100.00 - 120.00	0.6000	0.6000
T5	13	1.5" flat Cable Ladder Rail	100.00 - 120.00	0.6000	0.6000
T5	15	HFT1206-24SVL-XXX(1- 5/8)	100.00 - 120.00	0.6000	0.6000
T5	16	1.5" flat Cable Ladder Rail	100.00 - 120.00	0.6000	0.6000
T6	1	LDF6-50 (1 1/4" foam)	80.00 - 100.00	0.6000	0.6000
T6	2	1.5" flat Cable Ladder Rail	80.00 - 100.00	0.6000	0.6000
T6	3	HFT1206-24SVL-210(1- 5/8)	80.00 - 100.00	0.6000	0.6000
T6	4	1.5" flat Cable Ladder Rail	80.00 - 100.00	0.6000	0.6000
T6	7	LDF5-50A (7/8" foam)	80.00 - 100.00	0.6000	0.6000
T6	8	Fiber Trunk	80.00 - 100.00	0.6000	0.6000
T6	9	DC Trunk	80.00 - 100.00	0.6000	0.6000
T6	10	LDF5-50A (7/8" foam)	80.00 - 100.00	0.6000	0.6000
T6	12	1.5" flat Cable Ladder Rail	80.00 - 100.00	0.6000	0.6000
T6	13	1.5" flat Cable Ladder Rail	80.00 - 100.00	0.6000	0.6000
T6	15	HFT1206-24SVL-XXX(1- 5/8)	80.00 - 100.00	0.6000	0.6000
T6	16	1.5" flat Cable Ladder Rail	80.00 - 100.00	0.6000	0.6000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _s No Ice	K _s Ice
T6	17	LDF5-50A (7/8" foam)	80.00 - 99.00	0.6000	0.6000
T7	1	LDF6-50 (1 1/4" foam)	60.00 - 80.00	0.6000	0.6000
T7	2	1.5" flat Cable Ladder Rail	60.00 - 80.00	0.6000	0.6000
T7	3	HFT1206-24SVL-210(1-5/8)	60.00 - 80.00	0.6000	0.6000
T7	4	1.5" flat Cable Ladder Rail	60.00 - 80.00	0.6000	0.6000
T7	7	LDF5-50A (7/8" foam)	60.00 - 80.00	0.6000	0.6000
T7	8	Fiber Trunk	60.00 - 80.00	0.6000	0.6000
T7	9	DC Trunk	60.00 - 80.00	0.6000	0.6000
T7	10	LDF5-50A (7/8" foam)	60.00 - 80.00	0.6000	0.6000
T7	12	1.5" flat Cable Ladder Rail	60.00 - 80.00	0.6000	0.6000
T7	13	1.5" flat Cable Ladder Rail	60.00 - 80.00	0.6000	0.6000
T7	15	HFT1206-24SVL-XXX(1-5/8)	60.00 - 80.00	0.6000	0.6000
T7	16	1.5" flat Cable Ladder Rail	60.00 - 80.00	0.6000	0.6000
T7	17	LDF5-50A (7/8" foam)	60.00 - 80.00	0.6000	0.6000
T8	1	LDF6-50 (1 1/4" foam)	40.00 - 60.00	0.6000	0.6000
T8	2	1.5" flat Cable Ladder Rail	40.00 - 60.00	0.6000	0.6000
T8	3	HFT1206-24SVL-210(1-5/8)	40.00 - 60.00	0.6000	0.6000
T8	4	1.5" flat Cable Ladder Rail	40.00 - 60.00	0.6000	0.6000
T8	7	LDF5-50A (7/8" foam)	40.00 - 60.00	0.6000	0.6000
T8	8	Fiber Trunk	40.00 - 60.00	0.6000	0.6000
T8	9	DC Trunk	40.00 - 60.00	0.6000	0.6000
T8	10	LDF5-50A (7/8" foam)	40.00 - 60.00	0.6000	0.6000
T8	12	1.5" flat Cable Ladder Rail	40.00 - 60.00	0.6000	0.6000
T8	13	1.5" flat Cable Ladder Rail	40.00 - 60.00	0.6000	0.6000
T8	15	HFT1206-24SVL-XXX(1-5/8)	40.00 - 60.00	0.6000	0.6000
T8	16	1.5" flat Cable Ladder Rail	40.00 - 60.00	0.6000	0.6000
T8	17	LDF5-50A (7/8" foam)	40.00 - 60.00	0.6000	0.6000
T9	1	LDF6-50 (1 1/4" foam)	20.00 - 40.00	0.6000	0.6000
T9	2	1.5" flat Cable Ladder Rail	20.00 - 40.00	0.6000	0.6000
T9	3	HFT1206-24SVL-210(1-5/8)	20.00 - 40.00	0.6000	0.6000
T9	4	1.5" flat Cable Ladder Rail	20.00 - 40.00	0.6000	0.6000
T9	7	LDF5-50A (7/8" foam)	20.00 - 40.00	0.6000	0.6000
T9	8	Fiber Trunk	20.00 - 40.00	0.6000	0.6000
T9	9	DC Trunk	20.00 - 40.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T9	10	LDF5-50A (7/8" foam)	20.00 - 40.00	0.6000	0.6000
T9	11	LDF4-50A (1/2" foam)	20.00 - 40.00	0.6000	0.6000
T9	12	1.5" flat Cable Ladder Rail	20.00 - 40.00	0.6000	0.6000
T9	13	1.5" flat Cable Ladder Rail	20.00 - 40.00	0.6000	0.6000
T9	15	HFT1206-24SVL-XXX(1-5/8)	20.00 - 40.00	0.6000	0.6000
T9	16	1.5" flat Cable Ladder Rail	20.00 - 40.00	0.6000	0.6000
T9	17	LDF5-50A (7/8" foam)	20.00 - 40.00	0.6000	0.6000
T10	1	LDF6-50 (1 1/4" foam)	0.00 - 20.00	0.6000	0.6000
T10	2	1.5" flat Cable Ladder Rail	0.00 - 20.00	0.6000	0.6000
T10	3	HFT1206-24SVL-210(1-5/8)	0.00 - 20.00	0.6000	0.6000
T10	4	1.5" flat Cable Ladder Rail	0.00 - 20.00	0.6000	0.6000
T10	7	LDF5-50A (7/8" foam)	0.00 - 20.00	0.6000	0.6000
T10	8	Fiber Trunk	0.00 - 20.00	0.6000	0.6000
T10	9	DC Trunk	0.00 - 20.00	0.6000	0.6000
T10	10	LDF5-50A (7/8" foam)	0.00 - 20.00	0.6000	0.6000
T10	11	LDF4-50A (1/2" foam)	0.00 - 20.00	0.6000	0.6000
T10	12	1.5" flat Cable Ladder Rail	0.00 - 20.00	0.6000	0.6000
T10	13	1.5" flat Cable Ladder Rail	0.00 - 20.00	0.6000	0.6000
T10	15	HFT1206-24SVL-XXX(1-5/8)	0.00 - 20.00	0.6000	0.6000
T10	16	1.5" flat Cable Ladder Rail	0.00 - 20.00	0.6000	0.6000
T10	17	LDF5-50A (7/8" foam)	0.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	CaA _A Front ft ²	CaA _A Side ft ²	Weight K	

15 ft x 2" omni whip	A	From Leg	1.00	0.000	160.00	No Ice	3.00	3.00	0.03
						1/2" Ice	4.53	4.53	0.05
						Ice	6.07	6.07	0.09
						1" Ice	9.20	9.20	0.18
						2" Ice			
Side Arm Mount [SO 302-1]	A	From Leg	3.00	0.000	160.00	No Ice	0.81	3.31	0.06
						1/2" Ice	1.30	5.00	0.08
						Ice	1.81	6.80	0.12
						1" Ice	2.91	10.99	0.23
						2" Ice			

RADIO 4449 B5/B12	A	From Leg	4.00	0.000	169.00	No Ice	1.64	1.30	0.07
						1/2" Ice	1.80	1.45	0.09
						Ice	1.97	1.60	0.11
						1" Ice	2.33	1.92	0.16
						2" Ice			
RADIO 4449 B5/B12	B	From Leg	4.00	0.000	169.00	No Ice	1.64	1.30	0.07
						1/2" Ice	1.80	1.45	0.09
						Ice	1.97	1.60	0.11
						1" Ice	2.33	1.92	0.16
						2" Ice			
RADIO 4449 B5/B12	C	From Leg	4.00	0.000	169.00	No Ice	1.64	1.30	0.07

168 Ft Self Support Tower Structural Analysis
Project Number 42923-0005.001.8700

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A _A Front	C _A A _A Side	Weight
			Horz Lateral	Vert					
			ft	ft		ft	ft ²	ft ²	K
			0	0		1/2"	1.80	1.45	0.09
			0	0		Ice	1.97	1.60	0.11
			0	0		1" Ice	2.33	1.92	0.16
			0	0		2" Ice			
RADIO 8843 B2/B66A	A	From Leg	4.00	0.000	169.00	No Ice	1.64	1.38	0.08
			0	0		1/2"	1.80	1.53	0.09
			0	0		Ice	1.97	1.69	0.11
			0	0		1" Ice	2.33	2.02	0.16
			0	0		2" Ice			
RADIO 8843 B2/B66A	B	From Leg	4.00	0.000	169.00	No Ice	1.64	1.38	0.08
			0	0		1/2"	1.80	1.53	0.09
			0	0		Ice	1.97	1.69	0.11
			0	0		1" Ice	2.33	2.02	0.16
			0	0		2" Ice			
RADIO 8843 B2/B66A	C	From Leg	4.00	0.000	169.00	No Ice	1.64	1.38	0.08
			0	0		1/2"	1.80	1.53	0.09
			0	0		Ice	1.97	1.69	0.11
			0	0		1" Ice	2.33	2.02	0.16
			0	0		2" Ice			
80010964_TIA w/ Mount Pipe	A	From Leg	4.00	0.000	169.00	No Ice	10.23	5.51	0.12
			0	0		1/2"	10.74	6.37	0.19
			0	0		Ice	11.24	7.12	0.27
			0	0		1" Ice	12.25	8.64	0.46
			0	0		2" Ice			
80010965_TIA w/ Mount Pipe	B	From Leg	4.00	0.000	169.00	No Ice	14.05	7.63	0.14
			0	0		1/2"	14.69	8.90	0.23
			0	0		Ice	15.30	9.96	0.34
			0	0		1" Ice	16.53	11.92	0.58
			0	0		2" Ice			
80010965_TIA w/ Mount Pipe	C	From Leg	4.00	0.000	169.00	No Ice	14.05	7.63	0.14
			0	0		1/2"	14.69	8.90	0.23
			0	0		Ice	15.30	9.96	0.34
			0	0		1" Ice	16.53	11.92	0.58
			0	0		2" Ice			
RRUS 32 B30	A	From Leg	4.00	0.000	169.00	No Ice	2.74	1.67	0.05
			0	0		1/2"	2.96	1.86	0.07
			0	0		Ice	3.19	2.05	0.10
			0	0		1" Ice	3.68	2.46	0.16
			0	0		2" Ice			
RRUS 32 B30	B	From Leg	4.00	0.000	169.00	No Ice	2.74	1.67	0.05
			0	0		1/2"	2.96	1.86	0.07
			0	0		Ice	3.19	2.05	0.10
			0	0		1" Ice	3.68	2.46	0.16
			0	0		2" Ice			
RRUS 32 B30	C	From Leg	4.00	0.000	169.00	No Ice	2.74	1.67	0.05
			0	0		1/2"	2.96	1.86	0.07
			0	0		Ice	3.19	2.05	0.10
			0	0		1" Ice	3.68	2.46	0.16
			0	0		2" Ice			
DC6-48-60-18-8C	C	From Leg	4.00	0.000	169.00	No Ice	1.14	1.14	0.03
			0	0		1/2"	1.79	1.79	0.05
			0	0		Ice	2.00	2.00	0.07
			0	0		1" Ice	2.45	2.45	0.13
			0	0		2" Ice			
QS66512-2_TIA w/ Mount Pipe	A	From Leg	4.00	0.000	169.00	No Ice	8.37	8.46	0.14
			0	0		1/2"	8.93	9.66	0.21
			0	0		Ice	9.46	10.55	0.30
			0	0		1" Ice	10.53	12.35	0.49
			0	0		2" Ice			
QS66512-2_TIA w/ Mount Pipe	B	From Leg	4.00	0.000	169.00	No Ice	8.37	8.46	0.14
			0	0		1/2"	8.93	9.66	0.21
			0	0		Ice	9.46	10.55	0.30
			0	0		1" Ice	10.53	12.35	0.49
			0	0		2" Ice			

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A _A		Weight	
			Horz	Lateral			Front	Side		
			ft	ft	°	ft	ft ²	ft ²	K	
QS66512-2_TIA w/ Mount Pipe	C	From Leg	4.00	0	0.000	169.00	No Ice	8.37	8.46	0.14
							1/2" Ice	8.93	9.66	0.21
							Ice	9.46	10.55	0.30
							1" Ice	10.53	12.35	0.49
							2" Ice			
DC6-48-60-18-8F	A	From Leg	4.00	0	0.000	169.00	No Ice	1.21	1.21	0.03
							1/2" Ice	1.89	1.89	0.05
							Ice	2.11	2.11	0.08
							1" Ice	2.57	2.57	0.14
							2" Ice			
T-Arm Mount [TA 701-3]	C	From Centroid-Face	2.00	0	0.000	169.00	No Ice	23.94	23.94	1.09
							1/2" Ice	30.04	30.04	1.48
							Ice	36.16	36.16	1.95
							1" Ice	48.72	48.72	3.16
							2" Ice			

LNX-6513DS-A1M_TIA w/ Mount Pipe	A	From Leg	4.00	0	0.000	155.00	No Ice	6.08	5.16	0.06
							1/2" Ice	6.52	5.92	0.12
							Ice	6.95	6.62	0.18
							1" Ice	7.84	8.04	0.32
							2" Ice			
LNX-6513DS-A1M_TIA w/ Mount Pipe	B	From Leg	4.00	0	0.000	155.00	No Ice	6.08	5.16	0.06
							1/2" Ice	6.52	5.92	0.12
							Ice	6.95	6.62	0.18
							1" Ice	7.84	8.04	0.32
							2" Ice			
LNX-6513DS-A1M_TIA w/ Mount Pipe	C	From Leg	4.00	0	0.000	155.00	No Ice	6.08	5.16	0.06
							1/2" Ice	6.52	5.92	0.12
							Ice	6.95	6.62	0.18
							1" Ice	7.84	8.04	0.32
							2" Ice			
MT6407-77A_TIA w/ Mount Pipe	A	From Leg	4.00	0	0.000	155.00	No Ice	4.91	2.68	0.10
							1/2" Ice	5.26	3.14	0.14
							Ice	5.61	3.62	0.18
							1" Ice	6.36	4.63	0.29
							2" Ice			
MT6407-77A_TIA w/ Mount Pipe	B	From Leg	4.00	0	0.000	155.00	No Ice	4.91	2.68	0.10
							1/2" Ice	5.26	3.14	0.14
							Ice	5.61	3.62	0.18
							1" Ice	6.36	4.63	0.29
							2" Ice			
MT6407-77A_TIA w/ Mount Pipe	C	From Leg	4.00	0	0.000	155.00	No Ice	4.91	2.68	0.10
							1/2" Ice	5.26	3.14	0.14
							Ice	5.61	3.62	0.18
							1" Ice	6.36	4.63	0.29
							2" Ice			
(2) NNHH-65B-R4_TIA w/ Mount Pipe	A	From Leg	4.00	0	0.000	155.00	No Ice	12.51	7.41	0.10
							1/2" Ice	13.11	8.60	0.19
							Ice	13.67	9.50	0.29
							1" Ice	14.82	11.33	0.52
							2" Ice			
(2) NNHH-65B-R4_TIA w/ Mount Pipe	B	From Leg	4.00	0	0.000	155.00	No Ice	12.51	7.41	0.10
							1/2" Ice	13.11	8.60	0.19
							Ice	13.67	9.50	0.29
							1" Ice	14.82	11.33	0.52
							2" Ice			
(2) NNHH-65B-R4_TIA w/ Mount Pipe	C	From Leg	4.00	0	0.000	155.00	No Ice	12.51	7.41	0.10
							1/2" Ice	13.11	8.60	0.19
							Ice	13.67	9.50	0.29
							1" Ice	14.82	11.33	0.52
							2" Ice			
B5/B13 RRH-BR04C	A	From Leg	4.00	0	0.000	155.00	No Ice	1.88	1.01	0.07
							1/2" Ice	2.05	1.14	0.09
							Ice	2.22	1.28	0.11
							1" Ice	2.60	1.59	0.15
							2" Ice			

168 Ft Self Support Tower Structural Analysis
Project Number 42923-0005.001.8700

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A _A Front	C _A A _A Side	Weight	
			Horz Lateral	Vert						
			ft	ft		ft	ft ²	ft ²	K	
B5/B13 RRH-BR04C	B	From Leg	4.00	0	0.000	155.00	2" Ice			
							No Ice	1.88	1.01	0.07
							1/2" Ice	2.05	1.14	0.09
							Ice	2.22	1.28	0.11
							1" Ice	2.60	1.59	0.15
B5/B13 RRH-BR04C	C	From Leg	4.00	0	0.000	155.00	2" Ice			
							No Ice	1.88	1.01	0.07
							1/2" Ice	2.05	1.14	0.09
							Ice	2.22	1.28	0.11
							1" Ice	2.60	1.59	0.15
B2/B66A RRH-BR049	A	From Leg	4.00	0	0.000	155.00	2" Ice			
							No Ice	1.88	1.01	0.07
							1/2" Ice	2.05	1.14	0.09
							Ice	2.22	1.28	0.11
							1" Ice	2.60	1.59	0.15
B2/B66A RRH-BR049	B	From Leg	4.00	0	0.000	155.00	2" Ice			
							No Ice	1.88	1.01	0.07
							1/2" Ice	2.05	1.14	0.09
							Ice	2.22	1.28	0.11
							1" Ice	2.60	1.59	0.15
B2/B66A RRH-BR049	C	From Leg	4.00	0	0.000	155.00	2" Ice			
							No Ice	1.88	1.01	0.07
							1/2" Ice	2.05	1.14	0.09
							Ice	2.22	1.28	0.11
							1" Ice	2.60	1.59	0.15
OVP	B	From Leg	4.00	0	0.000	155.00	2" Ice			
							No Ice	3.79	2.51	0.03
							1/2" Ice	4.04	2.73	0.06
							Ice	4.30	2.95	0.10
							1" Ice	4.84	3.42	0.18
OVP	C	From Leg	4.00	0	0.000	155.00	2" Ice			
							No Ice	3.79	2.51	0.03
							1/2" Ice	4.04	2.73	0.06
							Ice	4.30	2.95	0.10
							1" Ice	4.84	3.42	0.18
(2) BSF0020F3V1-1	B	From Leg	4.00	0	0.000	155.00	2" Ice			
							No Ice	0.96	0.29	0.02
							1/2" Ice	1.09	0.36	0.02
							Ice	1.22	0.45	0.03
							1" Ice	1.50	0.64	0.06
(2) BSF0020F3V1-1	C	From Leg	4.00	0	0.000	155.00	2" Ice			
							No Ice	0.96	0.29	0.02
							1/2" Ice	1.09	0.36	0.02
							Ice	1.22	0.45	0.03
							1" Ice	1.50	0.64	0.06
VFA-12	C	None			0.000	155.00	2" Ice			
							No Ice	33.64	33.64	1.69
							1/2" Ice	48.17	48.17	2.26
							Ice	62.70	62.70	2.82
							1" Ice	91.76	91.76	3.95
(2) TMA (10" x 8" x 3")	A	From Leg	4.00	0	0.000	145.00	2" Ice			
							No Ice	0.67	0.33	0.02
							1/2" Ice	0.77	0.41	0.03
							Ice	0.88	0.50	0.03
							1" Ice	1.13	0.70	0.05
(2) TMA (10" x 8" x 3")	B	From Leg	4.00	0	0.000	145.00	2" Ice			
							No Ice	0.67	0.33	0.02
							1/2" Ice	0.77	0.41	0.03
							Ice	0.88	0.50	0.03
							1" Ice	1.13	0.70	0.05
(2) TMA (10" x 8" x 3")	C	From Leg	4.00	0	0.000	145.00	2" Ice			
							No Ice	0.67	0.33	0.02
							1/2" Ice	0.77	0.41	0.03
							Ice	0.88	0.50	0.03
							1" Ice	1.13	0.70	0.05

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A _A Front	C _A A _A Side	Weight
			Horz Lateral	Vert					
							ft ²	ft ²	K
Celwave APX16DWV-16DWV-S-E-A20 w/Mount Pipe	A	From Leg	4.00	0	0.000	145.00	1" Ice	1.13	0.05
							2" Ice		
							No Ice	6.67	0.06
							1/2" Ice	7.06	0.11
							Ice	7.47	0.16
Celwave APX16DWV-16DWV-S-E-A20 w/Mount Pipe	B	From Leg	4.00	0	0.000	145.00	1" Ice	8.30	0.29
							2" Ice		
							No Ice	6.67	0.06
							1/2" Ice	7.06	0.11
							Ice	7.47	0.16
Celwave APX16DWV-16DWV-S-E-A20 w/Mount Pipe	C	From Leg	4.00	0	0.000	145.00	1" Ice	8.30	0.29
							2" Ice		
							No Ice	6.67	0.06
							1/2" Ice	7.06	0.11
							Ice	7.47	0.16
LNX-6515DS-A1M_TIA w/Mount Pipe	A	From Leg	4.00	0	0.000	145.00	1" Ice	8.30	0.29
							2" Ice		
							No Ice	11.68	0.09
							1/2" Ice	12.40	0.18
							Ice	13.14	0.28
LNX-6515DS-A1M_TIA w/Mount Pipe	B	From Leg	4.00	0	0.000	145.00	1" Ice	14.51	0.51
							2" Ice		
							No Ice	11.68	0.09
							1/2" Ice	12.40	0.18
							Ice	13.14	0.28
LNX-6515DS-A1M_TIA w/Mount Pipe	C	From Leg	4.00	0	0.000	145.00	1" Ice	14.51	0.51
							2" Ice		
							No Ice	11.68	0.09
							1/2" Ice	12.40	0.18
							Ice	13.14	0.28
Sector Mount [SM 408-3]	C	None			0.000	145.00	1" Ice	14.51	0.51
							2" Ice		
							No Ice	22.38	1.02
							1/2" Ice	33.31	1.46
							Ice	44.35	2.06
***** 15 ft x 2" omni whip	C	From Leg	6.00	0	0.000	118.00	1" Ice	9.20	0.18
							2" Ice		
							No Ice	3.00	0.03
							1/2" Ice	4.53	0.05
							Ice	6.07	0.09
Side Arm Mount [SO 302-1]	C	From Leg	3.00	0	0.000	118.00	1" Ice	9.20	0.18
							2" Ice		
							No Ice	0.81	0.06
							1/2" Ice	1.30	0.08
							Ice	1.81	0.12
***** 16 ft x 2" omni whip	C	From Leg	6.00	0	0.000	99.00	1" Ice	9.80	0.19
							2" Ice		
							No Ice	3.20	0.03
							1/2" Ice	4.83	0.06
							Ice	6.47	0.09
Side Arm Mount [SO 302-1]	C	From Leg	3.00	0	0.000	99.00	1" Ice	9.80	0.19
							2" Ice		
							No Ice	0.81	0.06
							1/2" Ice	1.30	0.08
							Ice	1.81	0.12
***** Side Arm Mount [SO 302-1]	A	From Leg	3.00	0	0.000	47.00	1" Ice	2.91	0.23
							2" Ice		
							No Ice	0.81	0.06
							1/2" Ice	1.30	0.08
							Ice	1.81	0.12

168 Ft Self Support Tower Structural Analysis
Project Number 42923-0005.001.8700

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K	
***** 12 ft x 2" omni whip	C	From Leg	6.00 0 8	0.000	38.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.40 3.63 4.87 7.35	2.40 3.63 4.87 7.35	0.02 0.04 0.07 0.14
Side Arm Mount [SO 302-1]	C	From Leg	3.00 0 0	0.000	38.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.81 1.30 1.81 2.91	3.31 5.00 6.80 10.99	0.06 0.08 0.12 0.23

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service

Comb. No.	Description
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	206.76	20.63	-11.83
	Max. H _x	18	206.76	20.63	-11.83
	Max. H _z	7	-166.60	-17.43	10.01
	Min. Vert	7	-166.60	-17.43	10.01
	Min. H _x	7	-166.60	-17.43	10.01
Leg B	Min. H _z	18	206.76	20.63	-11.83
	Max. Vert	10	220.10	-22.46	-12.67
	Max. H _x	23	-182.36	19.31	10.89
	Max. H _z	23	-182.36	19.31	10.89
	Min. Vert	23	-182.36	19.31	10.89
Leg A	Min. H _x	10	220.10	-22.46	-12.67
	Min. H _z	10	220.10	-22.46	-12.67
	Max. Vert	2	212.05	0.37	24.81
	Max. H _x	21	11.21	3.09	0.92
	Max. H _z	2	212.05	0.37	24.81
	Min. Vert	15	-176.11	-0.41	-21.22
	Min. H _x	9	10.49	-3.11	0.83
	Min. H _z	15	-176.11	-0.41	-21.22

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturing Moment, M _x kip-ft	Overturing Moment, M _z kip-ft	Torque kip-ft
Dead Only	39.03	0.00	0.00	19	13	0
1.2 Dead+1.0 Wind 0 deg - No Ice	46.84	-0.08	-40.16	-3890	23	15
0.9 Dead+1.0 Wind 0 deg - No Ice	35.13	-0.08	-40.16	-3890	19	15
1.2 Dead+1.0 Wind 30 deg - No Ice	46.84	17.68	-30.58	-3023	-1751	30
0.9 Dead+1.0 Wind 30 deg - No Ice	35.13	17.68	-30.58	-3024	-1752	30
1.2 Dead+1.0 Wind 60 deg - No Ice	46.84	30.93	-17.73	-1742	-3070	2
0.9 Dead+1.0 Wind 60 deg - No Ice	35.13	30.93	-17.73	-1745	-3069	2
1.2 Dead+1.0 Wind 90 deg - No Ice	46.84	36.90	0.08	30	-3637	-10
0.9 Dead+1.0 Wind 90 deg - No Ice	35.13	36.90	0.08	24	-3636	-10
1.2 Dead+1.0 Wind 120 deg - No Ice	46.84	36.24	20.89	2042	-3496	10
0.9 Dead+1.0 Wind 120 deg - No Ice	35.13	36.24	20.89	2034	-3495	10
1.2 Dead+1.0 Wind 150 deg - No Ice	46.84	19.67	33.86	3334	-1912	10
0.9 Dead+1.0 Wind 150 deg - No Ice	35.13	19.67	33.86	3324	-1914	10

168 Ft Self Support Tower Structural Analysis
Project Number 42923-0005.001.8700

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturing Moment, M _x kip-ft	Overturing Moment, M _z kip-ft	Torque kip-ft
1.2 Dead+1.0 Wind 180 deg	46.84	0.08	37.54	3730	9	-15
- No Ice						
0.9 Dead+1.0 Wind 180 deg	35.13	0.08	37.54	3719	5	-15
- No Ice						
1.2 Dead+1.0 Wind 210 deg	46.84	-17.68	30.58	3069	1783	-30
- No Ice						
0.9 Dead+1.0 Wind 210 deg	35.13	-17.68	30.58	3058	1776	-30
- No Ice						
1.2 Dead+1.0 Wind 240 deg	46.84	-33.19	19.04	1890	3279	-2
- No Ice						
0.9 Dead+1.0 Wind 240 deg	35.13	-33.19	19.04	1882	3270	-2
- No Ice						
1.2 Dead+1.0 Wind 270 deg	46.84	-36.90	-0.08	16	3669	10
- No Ice						
0.9 Dead+1.0 Wind 270 deg	35.13	-36.90	-0.08	10	3660	10
- No Ice						
1.2 Dead+1.0 Wind 300 deg	46.84	-33.97	-19.58	-1894	3351	-10
- No Ice						
0.9 Dead+1.0 Wind 300 deg	35.13	-33.97	-19.58	-1897	3342	-10
- No Ice						
1.2 Dead+1.0 Wind 330 deg	46.84	-19.67	-33.86	-3289	1944	-10
- No Ice						
0.9 Dead+1.0 Wind 330 deg	35.13	-19.67	-33.86	-3290	1938	-10
- No Ice						
1.2 Dead+1.0 Ice+1.0 Temp	127.24	0.00	-0.00	29	3	0
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	127.24	-0.04	-12.22	-1191	6	7
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	127.24	5.54	-9.60	-946	-561	8
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	127.24	9.76	-5.60	-538	-989	-1
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	127.24	11.41	0.04	33	-1152	-5
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	127.24	10.69	6.17	644	-1064	-1
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	127.24	5.91	10.17	1050	-592	-1
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	127.24	0.04	11.84	1219	-1	-7
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	127.24	-5.54	9.60	1004	566	-8
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	127.24	-10.10	5.79	611	1020	1
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	127.24	-11.41	-0.04	25	1157	5
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	127.24	-10.35	-5.98	-571	1044	1
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	127.24	-5.91	-10.17	-992	597	1
Dead+Wind 0 deg - Service	39.03	-0.02	-10.11	-963	15	4
Dead+Wind 30 deg - Service	39.03	4.45	-7.70	-746	-430	8
Dead+Wind 60 deg - Service	39.03	7.79	-4.47	-424	-762	1
Dead+Wind 90 deg - Service	39.03	9.29	0.02	21	-904	-2
Dead+Wind 120 deg - Service	39.03	9.12	5.26	526	-868	2
Dead+Wind 150 deg - Service	39.03	4.95	8.52	850	-471	2
Dead+Wind 180 deg - Service	39.03	0.02	9.45	950	11	-4
Dead+Wind 210 deg - Service	39.03	-4.45	7.70	784	457	-8
Dead+Wind 240 deg - Service	39.03	-8.36	4.79	488	832	-1
Dead+Wind 270 deg - Service	39.03	-9.29	-0.02	17	930	2
Dead+Wind 300 deg - Service	39.03	-8.55	-4.93	-462	850	-2
Dead+Wind 330 deg - Service	39.03	-4.95	-8.52	-812	497	-2

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-39.03	0.00	0.00	39.03	0.00	0.000%
2	-0.08	-46.84	-40.16	0.08	46.84	40.16	0.000%
3	-0.08	-35.13	-40.16	0.08	35.13	40.16	0.000%
4	17.68	-46.84	-30.58	-17.68	46.84	30.58	0.000%
5	17.68	-35.13	-30.58	-17.68	35.13	30.58	0.000%
6	30.93	-46.84	-17.73	-30.93	46.84	17.73	0.000%
7	30.93	-35.13	-17.73	-30.93	35.13	17.73	0.000%
8	36.90	-46.84	0.08	-36.90	46.84	-0.08	0.000%
9	36.90	-35.13	0.08	-36.90	35.13	-0.08	0.000%
10	36.24	-46.84	20.89	-36.24	46.84	-20.89	0.000%
11	36.24	-35.13	20.89	-36.24	35.13	-20.89	0.000%
12	19.67	-46.84	33.86	-19.67	46.84	-33.86	0.000%
13	19.67	-35.13	33.86	-19.67	35.13	-33.86	0.000%
14	0.08	-46.84	37.54	-0.08	46.84	-37.54	0.000%
15	0.08	-35.13	37.54	-0.08	35.13	-37.54	0.000%
16	-17.68	-46.84	30.58	17.68	46.84	-30.58	0.000%
17	-17.68	-35.13	30.58	17.68	35.13	-30.58	0.000%
18	-33.19	-46.84	19.04	33.19	46.84	-19.04	0.000%
19	-33.19	-35.13	19.04	33.19	35.13	-19.04	0.000%
20	-36.90	-46.84	-0.08	36.90	46.84	0.08	0.000%
21	-36.90	-35.13	-0.08	36.90	35.13	0.08	0.000%
22	-33.97	-46.84	-19.58	33.97	46.84	19.58	0.000%
23	-33.97	-35.13	-19.58	33.97	35.13	19.58	0.000%
24	-19.67	-46.84	-33.86	19.67	46.84	33.86	0.000%
25	-19.67	-35.13	-33.86	19.67	35.13	33.86	0.000%
26	0.00	-127.24	0.00	0.00	127.24	0.00	0.000%
27	-0.04	-127.24	-12.22	0.04	127.24	12.22	0.000%
28	5.54	-127.24	-9.60	-5.54	127.24	9.60	0.000%
29	9.76	-127.24	-5.60	-9.76	127.24	5.60	0.000%
30	11.41	-127.24	0.04	-11.41	127.24	-0.04	0.000%
31	10.69	-127.24	6.17	-10.69	127.24	-6.17	0.000%
32	5.91	-127.24	10.17	-5.91	127.24	-10.17	0.000%
33	0.04	-127.24	11.84	-0.04	127.24	-11.84	0.000%
34	-5.54	-127.24	9.60	5.54	127.24	-9.60	0.000%
35	-10.10	-127.24	5.79	10.10	127.24	-5.79	0.000%
36	-11.41	-127.24	-0.04	11.41	127.24	0.04	0.000%
37	-10.35	-127.24	-5.98	10.35	127.24	5.98	0.000%
38	-5.91	-127.24	-10.17	5.91	127.24	10.17	0.000%
39	-0.02	-39.03	-10.11	0.02	39.03	10.11	0.000%
40	4.45	-39.03	-7.70	-4.45	39.03	7.70	0.000%
41	7.79	-39.03	-4.47	-7.79	39.03	4.47	0.000%
42	9.29	-39.03	0.02	-9.29	39.03	-0.02	0.000%
43	9.12	-39.03	5.26	-9.12	39.03	-5.26	0.000%
44	4.95	-39.03	8.52	-4.95	39.03	-8.52	0.000%
45	0.02	-39.03	9.45	-0.02	39.03	-9.45	0.000%
46	-4.45	-39.03	7.70	4.45	39.03	-7.70	0.000%
47	-8.36	-39.03	4.79	8.36	39.03	-4.79	0.000%
48	-9.29	-39.03	-0.02	9.29	39.03	0.02	0.000%
49	-8.55	-39.03	-4.93	8.55	39.03	4.93	0.000%
50	-4.95	-39.03	-8.52	4.95	39.03	8.52	0.000%

Non-Linear Convergence Results

168 Ft Self Support Tower Structural Analysis
Project Number 42923-0005.001.8700

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00000289
3	Yes	4	0.00000001	0.00000197
4	Yes	4	0.00000001	0.00001158
5	Yes	4	0.00000001	0.00000667
6	Yes	4	0.00000001	0.00000860
7	Yes	4	0.00000001	0.00000499
8	Yes	4	0.00000001	0.00000886
9	Yes	4	0.00000001	0.00000503
10	Yes	4	0.00000001	0.00001244
11	Yes	4	0.00000001	0.00000707
12	Yes	4	0.00000001	0.00000755
13	Yes	4	0.00000001	0.00000458
14	Yes	4	0.00000001	0.00000395
15	Yes	4	0.00000001	0.00000294
16	Yes	4	0.00000001	0.00001101
17	Yes	4	0.00000001	0.00000634
18	Yes	4	0.00000001	0.00001108
19	Yes	4	0.00000001	0.00000629
20	Yes	4	0.00000001	0.00000887
21	Yes	4	0.00000001	0.00000504
22	Yes	4	0.00000001	0.00000977
23	Yes	4	0.00000001	0.00000571
24	Yes	4	0.00000001	0.00000835
25	Yes	4	0.00000001	0.00000499
26	Yes	4	0.00000001	0.00000001
27	Yes	4	0.00000001	0.00001595
28	Yes	4	0.00000001	0.00001852
29	Yes	4	0.00000001	0.00001919
30	Yes	4	0.00000001	0.00002043
31	Yes	4	0.00000001	0.00002283
32	Yes	4	0.00000001	0.00002080
33	Yes	4	0.00000001	0.00001984
34	Yes	4	0.00000001	0.00002386
35	Yes	4	0.00000001	0.00002272
36	Yes	4	0.00000001	0.00002068
37	Yes	4	0.00000001	0.00001980
38	Yes	4	0.00000001	0.00001702
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 °
L1	168 - 160	4.45	43	0.513	0.038
T1	160 - 140	3.76	43	0.217	0.019
T2	140 - 133.333	2.85	43	0.203	0.017
T3	133.333 - 126.667	2.56	43	0.194	0.016
T4	126.667 - 120	2.29	43	0.185	0.015
T5	120 - 100	2.03	43	0.173	0.014
T6	100 - 80	1.36	43	0.132	0.011
T7	80 - 60	0.85	43	0.095	0.008
T8	60 - 40	0.49	43	0.067	0.006

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T9	40 - 20	0.23	43	0.045	0.004
T10	20 - 1e-006	0.07	43	0.022	0.002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
169.00	RADIO 4449 B5/B12	43	4.45	0.513	0.038	3430
160.00	15 ft x 2" omni whip	43	3.76	0.217	0.019	2510
155.00	LNX-6513DS-A1M_TIA w/ Mount Pipe	43	3.45	0.175	0.015	3172
145.00	(2) TMA (10" x 8" x 3")	43	3.03	0.183	0.016	213160
118.00	15 ft x 2" omni whip	43	1.95	0.169	0.013	26993
99.00	16 ft x 2" omni whip	43	1.33	0.130	0.010	30479
47.00	Side Arm Mount [SO 302-1]	43	0.31	0.053	0.004	53545
38.00	12 ft x 2" omni whip	43	0.21	0.043	0.003	54414

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	168 - 160	17.56	10	1.748	0.152
T1	160 - 140	14.97	10	0.860	0.077
T2	140 - 133.333	11.33	10	0.805	0.069
T3	133.333 - 126.667	10.19	10	0.772	0.065
T4	126.667 - 120	9.11	10	0.734	0.060
T5	120 - 100	8.08	10	0.689	0.055
T6	100 - 80	5.42	10	0.526	0.042
T7	80 - 60	3.40	10	0.381	0.031
T8	60 - 40	1.96	10	0.268	0.022
T9	40 - 20	0.93	10	0.181	0.015
T10	20 - 1e-006	0.27	10	0.088	0.007

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
169.00	RADIO 4449 B5/B12	10	17.56	1.748	0.152	1080
160.00	15 ft x 2" omni whip	10	14.97	0.860	0.077	790
155.00	LNX-6513DS-A1M_TIA w/ Mount Pipe	10	13.77	0.650	0.061	995
145.00	(2) TMA (10" x 8" x 3")	10	12.10	0.727	0.066	75742
118.00	15 ft x 2" omni whip	10	7.78	0.673	0.054	6888
99.00	16 ft x 2" omni whip	10	5.31	0.518	0.042	7652
47.00	Side Arm Mount [SO 302-1]	10	1.25	0.211	0.017	13418
38.00	12 ft x 2" omni whip	10	0.85	0.172	0.014	13632

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	160	Leg	A325N	0.63	4	4.44	20.34	0.218 ✓	1.05	Bolt Tension
		Diagonal	A325N	0.63	1	4.37	5.81	0.753 ✓	1.05	Member Block Shear
		Top Girt	A325N	0.63	1	1.57	7.83	0.201 ✓	1.05	Member Bearing
T2	140	Diagonal	A325N	0.63	1	4.08	6.83	0.597 ✓	1.05	Member Block Shear
T3	133.333	Diagonal	A325N	0.63	1	4.24	6.83	0.621 ✓	1.05	Member Block Shear
T4	126.667	Leg	A325N	0.63	4	10.43	20.34	0.513 ✓	1.05	Bolt Tension
		Diagonal	A325N	0.63	1	4.27	10.44	0.409 ✓	1.05	Gusset Bearing
		Secondary Horizontal	A325N	0.63	1	0.90	10.44	0.086 ✓	1.05	Gusset Bearing
		Top Girt	A325N	0.63	1	0.90	7.83	0.115 ✓	1.05	Member Bearing
T5	120	Leg	A325N	0.75	4	16.41	30.10	0.545 ✓	1.05	Bolt Tension
		Diagonal	A325N	0.63	1	4.80	7.83	0.612 ✓	1.05	Member Bearing
T6	100	Leg	A325N	0.88	4	22.37	41.56	0.538 ✓	1.05	Bolt Tension
		Diagonal	A325N	0.63	1	5.46	7.83	0.698 ✓	1.05	Member Bearing
T7	80	Leg	A325N	1.00	4	27.69	54.52	0.508 ✓	1.05	Bolt Tension
		Diagonal	A325N	0.63	1	6.39	10.44	0.612 ✓	1.05	Gusset Bearing
T8	60	Leg	A325N	1.00	4	33.51	54.52	0.615 ✓	1.05	Bolt Tension
		Diagonal	A325N	0.63	1	7.05	10.44	0.676 ✓	1.05	Gusset Bearing
T9	40	Leg	A325N	1.00	6	26.00	54.52	0.477 ✓	1.05	Bolt Tension
		Diagonal	A325N	0.63	1	7.15	10.44	0.685 ✓	1.05	Gusset Bearing
T10	20	Diagonal	A325N	0.63	1	7.90	10.44	0.757 ✓	1.05	Gusset Bearing

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	KI/r	A in ²	P _v K	φP _n K	Ratio P _v φP _n
L1	168 - 160 (1)	Pipe 8.625" x 0.322" (8 STD)	8.00	0.00	0.0	8.40	-3.29	377.97	0.009
T1	160 - 140 (197)	Pipe 8.625" x 0.322" (8 STD)	8.00	0.00	32.7 K=1.00	8.40	-3.47	349.58	0.010

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{nx} kip-ft	Ratio M _{ux} φM _{nx}	M _{uy} kip-ft	φM _{ny} kip-ft	Ratio M _{uy} φM _{ny}
L1	168 - 160 (1)	Pipe 8.625" x 0.322" (8 STD)	30	83	0.360	0	83	0.000
T1	160 - 140 (197)	Pipe 8.625" x 0.322" (8 STD)	30	83	0.360	0	83	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
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Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	168 - 160 (1)	Pipe 8.625" x 0.322" (8 STD)	3.09	113.39	0.027	0	83	0.002
T1	160 - 140 (197)	Pipe 8.625" x 0.322" (8 STD)	3.75	113.39	0.033	0	83	0.002

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u ϕP_n	Ratio M_{ux} ϕM_{nx}	Ratio M_{uy} ϕM_{ny}	Ratio V_u ϕV_n	Ratio T_u ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	168 - 160 (1)	0.009	0.360	0.000	0.027	0.002	0.369	1.050	4.8.2 ✓
T1	160 - 140 (197)	0.010	0.360	0.000	0.033	0.002	0.371	1.050	4.8.2 ✓

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	KI/r	A in ²	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	160 - 140	Pipe 2.875" x 0.203" (2.5 STD)	20.00	5.00	63.3 K=1.00	1.70	-25.08	57.19	0.439 ¹
T2	140 - 133.333	Pipe 2.875" x 0.276" (2.5 XS)	6.68	6.68	86.7 K=1.00	2.25	-34.10	58.52	0.583 ¹
T3	133.333 - 126.667	Pipe 2.875" x 0.276" (2.5 XS)	6.68	6.68	86.7 K=1.00	2.25	-43.01	58.52	0.735 ¹
T4	126.667 - 120	Pipe 2.875" x 0.276" (2.5 XS)	6.68	3.45	44.8 K=1.00	2.25	-51.70	87.59	0.590 ¹
T5	120 - 100	Pipe 2.875" x 0.276" (2.5 XS)	20.03	3.43	44.6 K=1.00	2.25	-79.00	87.71	0.901 ¹
T6	100 - 80	Pipe 3.5" x 0.300" (3 XS)	20.03	3.42	36.1 K=1.00	3.02	-106.80	123.39	0.866 ¹
T7	80 - 60	Pipe 4.5" x 0.337" (4 XS)	20.04	5.17	42.0 K=1.00	4.41	-132.28	174.33	0.759 ¹
T8	60 - 40	Pipe 5.563" x 0.375" (5 XS)	20.03	10.02	65.4 K=1.00	6.11	-160.19	201.25	0.796 ¹
T9	40 - 20	Pipe 5.563" x 0.375" (5 XS)	20.04	10.02	65.4 K=1.00	6.11	-187.02	201.23	0.929 ¹
T10	20 - 1e-006	Pipe 6.625" x 0.340" (6 EHS)	20.03	10.02	54.0 K=1.00	6.71	-213.31	244.06	0.874 ¹

¹ $P_u / \phi P_n$ controls

Leg Bending Design Data (Compression)

Section No.	Elevation ft	Size	M_{ux}	ϕM_{nx}	Ratio	M_{uy}	ϕM_{ny}	Ratio
			kip-ft	kip-ft	$\frac{M_{ux}}{\phi M_{nx}}$	kip-ft	kip-ft	$\frac{M_{uy}}{\phi M_{ny}}$
T1	160 - 140	Pipe 2.875" x 0.203" (2.5 STD)	0	5	0.000	0	5	0.000
T2	140 - 133.333	Pipe 2.875" x 0.276" (2.5 XS)	0	7	0.000	0	7	0.000
T3	133.333 - 126.667	Pipe 2.875" x 0.276" (2.5 XS)	0	7	0.000	0	7	0.000
T4	126.667 - 120	Pipe 2.875" x 0.276" (2.5 XS)	0	7	0.000	0	7	0.000
T5	120 - 100	Pipe 2.875" x 0.276" (2.5 XS)	0	7	0.000	0	7	0.000
T6	100 - 80	Pipe 3.5" x 0.300" (3 XS)	0	12	0.000	0	12	0.000
T7	80 - 60	Pipe 4.5" x 0.337" (4 XS)	0	22	0.000	0	22	0.000
T8	60 - 40	Pipe 5.563" x 0.375" (5 XS)	0	38	0.000	0	38	0.000
T9	40 - 20	Pipe 5.563" x 0.375" (5 XS)	0	38	0.000	0	38	0.000
T10	20 - 1e-006	Pipe 6.625" x 0.340" (6 EHS)	0	50	0.000	0	50	0.000

Leg Interaction Design Data (Compression)

Section No.	Elevation ft	Size	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
			$\frac{P_u}{\phi P_n}$	$\frac{M_{ux}}{\phi M_{nx}}$	$\frac{M_{uy}}{\phi M_{ny}}$			
T1	160 - 140	Pipe 2.875" x 0.203" (2.5 STD)	0.439	0.000	0.000	0.439 ¹	1.050	4.8.1 ✓
T2	140 - 133.333	Pipe 2.875" x 0.276" (2.5 XS)	0.583	0.000	0.000	0.583 ¹	1.050	4.8.1 ✓
T3	133.333 - 126.667	Pipe 2.875" x 0.276" (2.5 XS)	0.735	0.000	0.000	0.735 ¹	1.050	4.8.1 ✓
T4	126.667 - 120	Pipe 2.875" x 0.276" (2.5 XS)	0.590	0.000	0.000	0.590 ¹	1.050	4.8.1 ✓
T5	120 - 100	Pipe 2.875" x 0.276" (2.5 XS)	0.901	0.000	0.000	0.901 ¹	1.050	4.8.1 ✓
T6	100 - 80	Pipe 3.5" x 0.300" (3 XS)	0.866	0.000	0.000	0.866 ¹	1.050	4.8.1 ✓
T7	80 - 60	Pipe 4.5" x 0.337" (4 XS)	0.759	0.000	0.000	0.759 ¹	1.050	4.8.1 ✓
T8	60 - 40	Pipe 5.563" x 0.375" (5 XS)	0.796	0.000	0.000	0.796 ¹	1.050	4.8.1 ✓
T9	40 - 20	Pipe 5.563" x 0.375" (5 XS)	0.929	0.000	0.000	0.929 ¹	1.050	4.8.1 ✓
T10	20 - 1e-006	Pipe 6.625" x 0.340" (6 EHS)	0.874	0.000	0.000	0.874 ¹	1.050	4.8.1 ✓

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	160 - 140	L 1.75 x 1.75 x 3/16	9.99	4.74	165.5 K=1.00	0.62	-4.52	6.49	0.697 ¹
T2	140 - 133.333	L 2 x 2 x 3/16	11.19	5.53	168.5 K=1.00	0.71	-4.18	7.21	0.580 ¹
T3	133.333 - 126.667	L 2 x 2 x 3/16	11.73	5.80	176.7 K=1.00	0.71	-4.24	6.56	0.647 ¹
T4	126.667 - 120	L 2.5 x 2.5 x 3/16	12.28	6.20	150.2 K=1.00	0.90	-4.51	11.44	0.394 ¹
T5	120 - 100	L 2.5 x 2.5 x 3/16	14.03	7.07	171.5 K=1.00	0.90	-4.94	8.78	0.563 ¹
T6	100 - 80	L 3 x 3 x 3/16	15.84	7.94	159.8 K=1.00	1.09	-5.91	12.21	0.484 ¹
T7	80 - 60	L 3 x 3 x 1/4	19.09	9.63	195.0 K=1.00	1.44	-6.96	10.82	0.644 ¹
T8	60 - 40	L 3.5 x 3.5 x 1/4	20.83	10.32	178.4 K=1.00	1.69	-7.42	15.20	0.488 ¹
T9	40 - 20	L 3.5 x 3.5 x 1/4	22.67	11.25	194.5 K=1.00	1.69	-7.64	12.79	0.597 ¹
T10	20 - 1e-006	L 4 x 4 x 1/4	24.50	12.10	182.7 K=1.00	1.94	-8.73	16.64	0.524 ¹

¹ P_u / φP_n controls

Secondary Horizontal 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 $\frac{P_u}{\phi P_n}$
T4	126.667 - 120	L 2 x 2 x 1/4	10.30	5.03	154.4 K=1.00	0.94	-0.90	11.26	0.080 ¹
T5	120 - 100	L 2.5 x 2.5 x 3/16	12.34	6.05	146.6 K=1.00	0.90	-1.37	12.01	0.114 ¹
T6	100 - 80	L 3 x 3 x 3/16	14.35	7.03	141.5 K=1.00	1.09	-1.85	15.58	0.119 ¹
T7	80 - 60	L 3 x 3 x 1/4	16.24	7.93	160.7 K=1.00	1.44	-2.29	15.94	0.144 ¹

¹ P_u / φP_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	160 - 140	L 2.5 x 2.5 x 3/16	8.65	8.17	198.0 K=1.00	0.90	-1.54	6.59	0.234 ¹
T2	140 - 133.333	L 2 x 2 x 3/16	8.65	8.41	203.7 K=0.80	0.71	-0.59	4.93	0.120 ¹
T4	126.667 - 120	KL/R > 200 (C) - 35 L 2.5 x 2.5 x 3/16	9.98	9.74	236.1 K=1.00	0.90	-0.90	4.63	0.194 ¹
		KL/R > 200 (C) - 56							

¹ $P_u / \phi P_n$ controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	KI/r	A in ²	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	160 - 140	Pipe 2.875" x 0.203" (2.5 STD)	20.00	5.00	63.3	1.70	17.77	76.68	0.232 ¹
T2	140 - 133.333	Pipe 2.875" x 0.276" (2.5 XS)	6.68	6.68	86.7	2.25	25.94	101.41	0.256 ¹
T3	133.333 - 126.667	Pipe 2.875" x 0.276" (2.5 XS)	6.68	6.68	86.7	2.25	33.90	101.41	0.334 ¹
T4	126.667 - 120	Pipe 2.875" x 0.276" (2.5 XS)	6.68	3.23	42.0	2.25	41.77	101.41	0.412 ¹
T5	120 - 100	Pipe 2.875" x 0.276" (2.5 XS)	20.03	3.25	42.2	2.25	65.70	101.41	0.648 ¹
T6	100 - 80	Pipe 3.5" x 0.300" (3 XS)	20.03	3.26	34.4	3.02	89.56	135.72	0.660 ¹
T7	80 - 60	Pipe 4.5" x 0.337" (4 XS)	20.04	4.85	39.4	4.41	110.88	198.34	0.559 ¹
T8	60 - 40	Pipe 5.563" x 0.375" (5 XS)	20.03	10.02	65.4	6.11	134.03	275.04	0.487 ¹
T9	40 - 20	Pipe 5.563" x 0.375" (5 XS)	20.04	10.02	65.4	6.11	155.97	275.04	0.567 ¹
T10	20 - 1e-006	Pipe 6.625" x 0.340" (6 EHS)	20.03	10.02	54.0	6.71	177.10	302.10	0.586 ¹

¹ $P_u / \phi P_n$ controls

Leg Bending Design Data (Tension)

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	160 - 140	Pipe 2.875" x 0.203" (2.5 STD)	0	5	0.000	0	5	0.000
T2	140 - 133.333	Pipe 2.875" x 0.276" (2.5 XS)	0	7	0.000	0	7	0.000
T3	133.333 - 126.667	Pipe 2.875" x 0.276" (2.5 XS)	0	7	0.000	0	7	0.000
T4	126.667 - 120	Pipe 2.875" x 0.276" (2.5 XS)	0	7	0.000	0	7	0.000
T5	120 - 100	Pipe 2.875" x 0.276" (2.5 XS)	0	7	0.000	0	7	0.000
T6	100 - 80	Pipe 3.5" x 0.300" (3 XS)	0	12	0.000	0	12	0.000
T7	80 - 60	Pipe 4.5" x 0.337" (4 XS)	0	22	0.000	0	22	0.000
T8	60 - 40	Pipe 5.563" x 0.375" (5 XS)	0	38	0.000	0	38	0.000
T9	40 - 20	Pipe 5.563" x 0.375" (5 XS)	0	38	0.000	0	38	0.000
T10	20 - 1e-006	Pipe 6.625" x 0.340" (6 EHS)	0	50	0.000	0	50	0.000

Leg Interaction Design Data (Tension)

Section No.	Elevation ft	Size	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
			P_u	M_{ux}	M_{uy}			
			ϕP_n	ϕM_{nx}	ϕM_{ny}			
T1	160 - 140	Pipe 2.875" x 0.203" (2.5 STD)	0.232	0.000	0.000	0.232 ¹	1.050	4.8.1 ✓
T2	140 - 133.333	Pipe 2.875" x 0.276" (2.5 XS)	0.256	0.000	0.000	0.256 ¹	1.050	4.8.1 ✓
T3	133.333 - 126.667	Pipe 2.875" x 0.276" (2.5 XS)	0.334	0.000	0.000	0.334 ¹	1.050	4.8.1 ✓
T4	126.667 - 120	Pipe 2.875" x 0.276" (2.5 XS)	0.412	0.000	0.000	0.412 ¹	1.050	4.8.1 ✓
T5	120 - 100	Pipe 2.875" x 0.276" (2.5 XS)	0.648	0.000	0.000	0.648 ¹	1.050	4.8.1 ✓
T6	100 - 80	Pipe 3.5" x 0.300" (3 XS)	0.660	0.000	0.000	0.660 ¹	1.050	4.8.1 ✓
T7	80 - 60	Pipe 4.5" x 0.337" (4 XS)	0.559	0.000	0.000	0.559 ¹	1.050	4.8.1 ✓
T8	60 - 40	Pipe 5.563" x 0.375" (5 XS)	0.487	0.000	0.000	0.487 ¹	1.050	4.8.1 ✓
T9	40 - 20	Pipe 5.563" x 0.375" (5 XS)	0.567	0.000	0.000	0.567 ¹	1.050	4.8.1 ✓
T10	20 - 1e-006	Pipe 6.625" x 0.340" (6 EHS)	0.586	0.000	0.000	0.586 ¹	1.050	4.8.1 ✓

¹ $P_u / \phi P_n$ controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio
			ft	ft		in ²	K	K	$\frac{P_u}{\phi P_n}$
T1	160 - 140	L 1.75 x 1.75 x 3/16	9.99	4.74	162.8	0.36	4.37	15.68	0.279 ¹
T2	140 - 133.333	L 2 x 2 x 3/16	11.19	5.53	160.8	0.43	4.08	18.74	0.218 ¹
T3	133.333 - 126.667	L 2 x 2 x 3/16	11.73	5.80	168.8	0.43	4.24	18.74	0.226 ¹
T4	126.667 - 120	L 2.5 x 2.5 x 3/16	12.28	6.20	140.2	0.57	4.27	27.84	0.153 ¹
T5	120 - 100	L 2.5 x 2.5 x 3/16	14.03	7.07	160.5	0.57	4.80	24.84	0.193 ¹
T6	100 - 80	L 3 x 3 x 3/16	15.84	7.94	149.8	0.71	5.46	30.97	0.176 ¹
T7	80 - 60	L 3 x 3 x 1/4	19.09	9.63	182.3	0.94	6.39	40.78	0.157 ¹
T8	60 - 40	L 3.5 x 3.5 x 1/4	20.83	10.32	169.1	1.13	7.05	49.02	0.144 ¹
T9	40 - 20	L 3.5 x 3.5 x 1/4	22.67	11.25	184.4	1.13	7.15	49.02	0.146 ¹
T10	20 - 1e-006	L 4 x 4 x 1/4	24.50	12.10	173.1	1.31	7.90	57.18	0.138 ¹

¹ $P_u / \phi P_n$ controls

Secondary Horizontal Design Data (Tension)

168 Ft Self Support Tower Structural Analysis
Project Number 42923-0005.001.8700

Section No.	Elevation ft	Size	L ft	L _u ft	KI/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$ ¹
T4	126.667 - 120	L 2 x 2 x 1/4	10.30	5.03	198.3	0.56	0.90	27.44	0.033 ¹ ✓
T5	120 - 100	L 2.5 x 2.5 x 3/16	12.34	6.05	186.4	0.90	1.37	29.22	0.047 ¹ ✓
T6	100 - 80	L 3 x 3 x 3/16	13.68	6.70	171.1	1.09	1.85	35.31	0.052 ¹ ✓
T7	80 - 60	L 3 x 3 x 1/4	15.20	7.41	191.2	1.44	2.29	46.58	0.049 ¹ ✓

¹ P_u / φP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	KI/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$ ¹
T1	160 - 140	L 2.5 x 2.5 x 3/16	8.65	8.17	129.5	0.57	1.57	24.84	0.063 ¹ ✓
T2	140 - 133.333	L 2 x 2 x 3/16	8.65	8.41	163.5	0.71	0.59	23.17	0.026 ¹ ✓
T4	126.667 - 120	L 2.5 x 2.5 x 3/16	9.98	9.74	150.1	0.57	0.90	24.84	0.036 ¹ ✓

¹ P_u / φP_n controls

Section Capacity Table

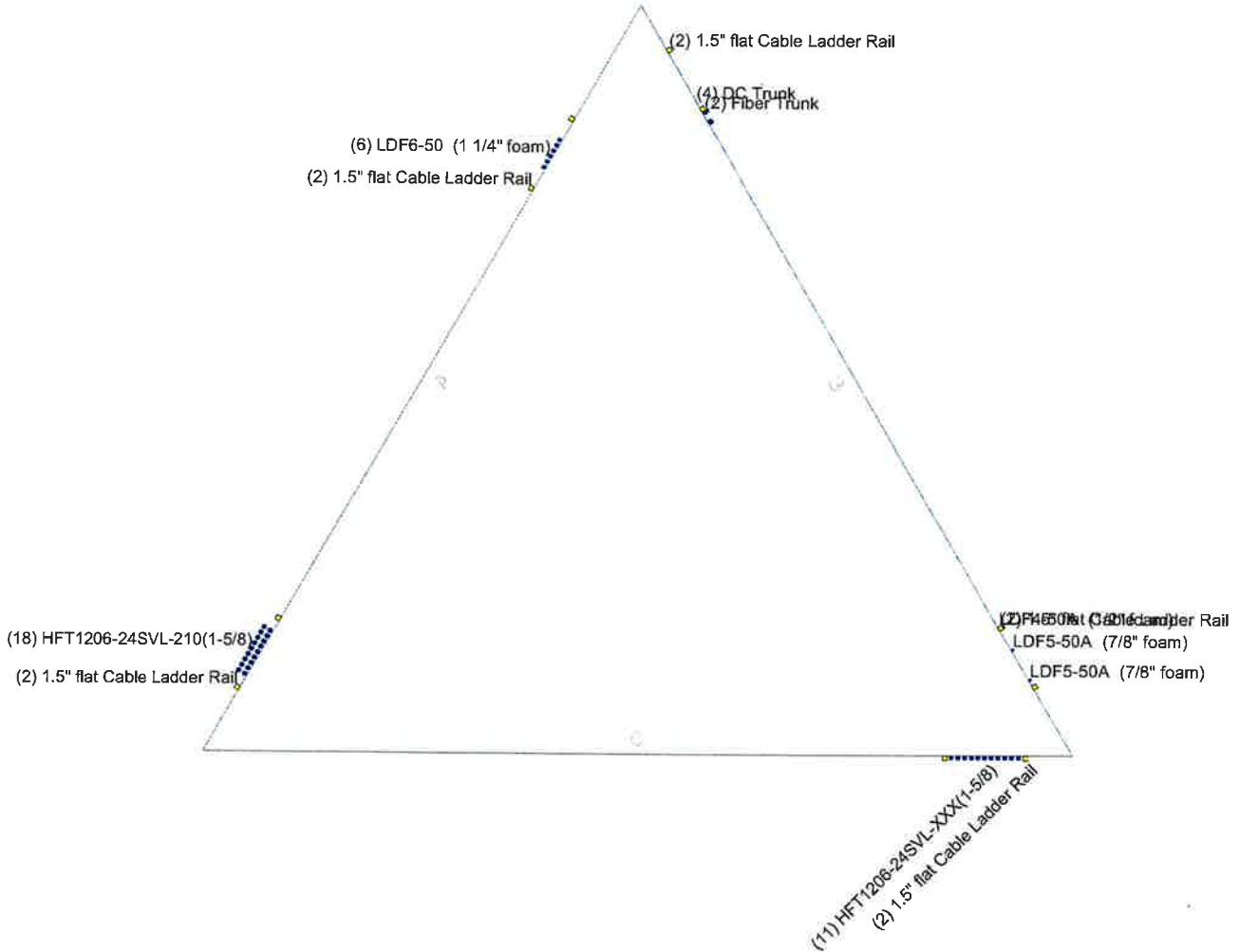
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	φP _{allow} K	% Capacity	Pass Fail
L1	168 - 160	Pole	Pipe 8.625" x 0.322" (8 STD)	1	-3.29	396.87	35.2	Pass
T1	160 - 140	Leg	Pipe 2.875" x 0.203" (2.5 STD)	3	-25.08	60.05	41.8	Pass
T2	140 - 133.333	Leg	Pipe 2.875" x 0.276" (2.5 XS)	33	-34.10	61.44	55.5	Pass
T3	133.333 - 126.667	Leg	Pipe 2.875" x 0.276" (2.5 XS)	45	-43.01	61.44	70.0	Pass
T4	126.667 - 120	Leg	Pipe 2.875" x 0.276" (2.5 XS)	54	-51.70	91.97	56.2	Pass
T5	120 - 100	Leg	Pipe 2.875" x 0.276" (2.5 XS)	69	-79.00	92.09	85.8	Pass
T6	100 - 80	Leg	Pipe 3.5" x 0.300" (3 XS)	99	-106.80	129.56	82.4	Pass
T7	80 - 60	Leg	Pipe 4.5" x 0.337" (4 XS)	129	-132.28	183.05	72.3	Pass
T8	60 - 40	Leg	Pipe 5.563" x 0.375" (5 XS)	150	-160.19	211.31	75.8	Pass
T9	40 - 20	Leg	Pipe 5.563" x 0.375" (5 XS)	165	-187.02	211.29	88.5	Pass
T10	20 - 1e-006	Leg	Pipe 6.625" x 0.340" (6 EHS)	180	-213.31	256.27	83.2	Pass
T1	160 - 140	Diagonal	L 1.75 x 1.75 x 3/16	11	-4.52	6.82	66.4	Pass
T2	140 - 133.333	Diagonal	L 2 x 2 x 3/16	41	-4.18	7.57	71.7 (b)	Pass
T3	133.333 - 126.667	Diagonal	L 2 x 2 x 3/16	50	-4.24	6.88	55.2	Pass
T4	126.667 - 120	Diagonal	L 2.5 x 2.5 x 3/16	62	-4.51	12.01	61.6	Pass
T5	120 - 100	Diagonal	L 2.5 x 2.5 x 3/16	74	-4.94	9.22	37.5	Pass
T6	100 - 80	Diagonal	L 3 x 3 x 3/16	102	-5.91	12.82	39.0 (b)	Pass
T7	80 - 60	Diagonal	L 3 x 3 x 1/4	132	-6.96	11.36	53.6	Pass
T8	60 - 40	Diagonal	L 3.5 x 3.5 x 1/4	153	-7.42	15.96	58.3 (b)	Pass
							46.1	Pass
							66.5 (b)	Pass
							61.3	Pass
							46.5	Pass
							64.4 (b)	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	σP_{allow} K	% Capacity	Pass Fail	
T9	40 - 20	Diagonal	L 3.5 x 3.5 x 1/4	168	-7.64	13.43	56.9	Pass	
T10	20 - 1e-006	Diagonal	L 4 x 4 x 1/4	183	-8.73	17.47	65.2 (b) 49.9	Pass	
T4	126.667 - 120	Secondary Horizontal	L 2 x 2 x 1/4	65	-0.90	11.82	72.1 (b) 7.6	Pass	
T5	120 - 100	Secondary Horizontal	L 2.5 x 2.5 x 3/16	77	-1.37	12.61	8.2 (b) 10.9	Pass	
T6	100 - 80	Secondary Horizontal	L 3 x 3 x 3/16	107	-1.85	16.36	11.3	Pass	
T7	80 - 60	Secondary Horizontal	L 3 x 3 x 1/4	137	-2.29	16.74	13.7	Pass	
T1	160 - 140	Top Girt	L 2.5 x 2.5 x 3/16	6	-1.54	6.92	22.3	Pass	
T2	140 - 133.333	Top Girt	L 2 x 2 x 3/16	35	-0.59	5.18	11.4	Pass	
T4	126.667 - 120	Top Girt	L 2.5 x 2.5 x 3/16	56	-0.90	4.86	18.4	Pass	
T1	160 - 140	Pole Socket	Pipe 8.625" x 0.322" (8 STD)	197	-3.47	367.06	35.3	Pass	
							Summary		
							Pole (L1)	35.2	Pass
							Leg (T9)	88.5	Pass
							Diagonal (T10)	72.1	Pass
							Secondary Horizontal (T7)	13.7	Pass
							Top Girt (T1)	22.3	Pass
							Pole	35.3	Pass
							Socket (T1)		
							Bolt	72.1	Pass
							Checks		
							RATING =	88.5	Pass

APPENDIX B
BASE LEVEL DRAWING

Feed Line Plan

Round
Flat
App In Face
App Out Face



	Paul J. Ford and Company	Job: Existing 160 ft self-supporting tower		
	250 East Broad St., Suite 600	Project: Windsor, CT / PJF 42923-0005		
	Columbus, OH 43215	Client: On Air Engineering	Drawn by: Anna Trudo	App'd:
	Phone: 614-221-6679	Code: TIA-222-H	Date: 08/02/23	Scale: NTS
	FAX:	Path:		Dwg No. E-7

APPENDIX C
ADDITIONAL CALCULATIONS

Self-Support Tower Anchor Rod Capacity - TIA-H

Loads

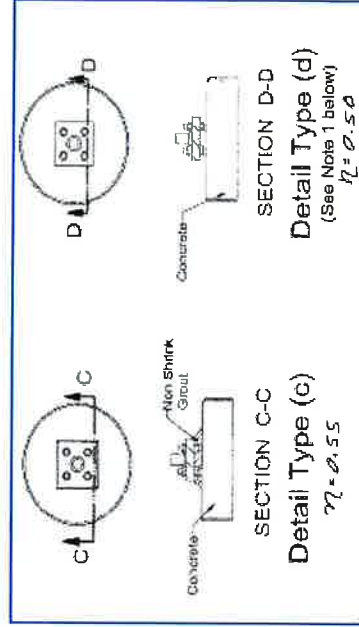
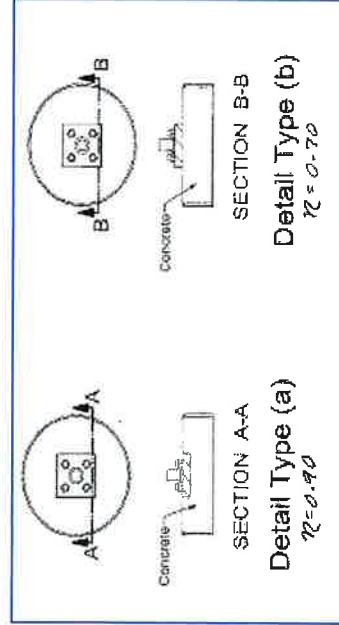
Compression :	220 kips	Tension :	182 kips
Comp. Shear :	26 kips	Ten. Shear :	22 kips

Code:	TIA-H
Maximum Ratio:	1.00
Grout $f_c \geq 5000$ psi:	

Existing Anchor Rods

Anchor Rod ϕ :	1 in
Anchor Rod Quantity :	6
Anchor Rod Grade :	A449 (1/4 to 1 Incl.)
F_y :	92 ksi
F_u :	120 ksi
Threads per Inch	8
Net Tensile Area	0.61 in ²
ϕ_t :	0.75
$\phi_t R_{nt}$:	327.10 kip
Anchor Rod Ratio :	0.586

l_{ar} :	<input type="text"/> inches	Ten. M_u :	0.00 k-in
Comp. M_u :	0.00 k-in		
ϕ_c :	0.90		
ϕ_v :	0.75		
ϕ_f :	0.90		
$\phi_v R_{nv}$:	212.06 kips		
$\phi_t M_t$:	78.04 k-in		
$\phi_c R_{nc}$:	390.19 kips		
$\phi_c R_{nvc}$:	175.58 kips		



Project Number:	42923-0005.001.8700
Engineer:	AKT
Date:	8/3/2023
Site Name:	Windsor CT
Site Number:	
Client Project:	
Client Project 1:	

PAD AND PIER FOUNDATION

(Version v5.4 - Effective Date 10/26/2022)

STRUCTURE SETTINGS

TIA Standard:	TIA-222-H	
Capacity Normalization:	Yes	(TIA-222-H Section 15.5)
Foundation Type:	Pad and Pier	
Structure Type:	SST	
Structure Height:	160.00	ft
BP Dist. Above Fnd.:	2.00	in
Bolt Circle/Bearing Plate Width:	10.50	in

PAD PROPERTIES

Pad Width (B):	8.00	ft
Pad Length (L):	8.00	ft (Square)
Pad Thickness (T):	2.00	ft
Depth to Top of Pad:	10.50	ft
Depth to Bottom of Pad (D):	12.50	ft
Top & Btm Pad Steel Different?	No	
	Dir.1	Dir.2
Pad Clear Cover (Top) (C2):	3.00	in
Pad Rebar Size (Top):	7	# bar
Pad Rebar Quantity (Top):	9	
Pad Rebar Length:	7.50	ft
Pad Clear Cover (Bottom) (C3):		in
Pad Rebar Size (Bottom):		
Pad Rebar Quantity (Bottom):		
Pad Rebar Length:	7.50	ft

FACTORED FOUNDATION LOADS

Load Combo 1 = Comp = 1.2D + 1.0W_o
 Load Combo 2 = Uplift = 0.9D + 1.0W_o

	Global	LC1 (+C)	LC2 (-T)	
Applied Axial:	220.00	-182.00		kip
Applied Shear:	26.00	22.00		kip
Applied Moment:				kip-ft
Load Offset (Dir.1) (eB):	0.00			ft
Load Offset (Dir.2) (eL):	0.00			ft

PIER PROPERTIES

Pier Shape:	Round	
Diameter (W1):	3.00	ft
Height Above Grade (E):	0.50	ft
Total Pier Height:	11.00	ft
Pier Clear Cover (C1):	3.00	in
Pier Rebar Layout:	Round	
Pier Rebar Size:	9	# bar
Pier Rebar Quantity:	16	
Pier Reinf. Type:	Tie	
Pier Tie Size:	4	# bar
Pier Tie Spacing (S1):	12.00	in
*p provided = 0.0157		

MATERIAL PROPERTIES

Concrete Strength, F' _c :	3.00	ksi
Concrete Density, γ _c :	150	pcf
Long. Rebar Strength, F _y :	60	ksi
Tie Rebar Strength, F _y :	60	ksi

SOIL PROPERTIES

Layer	Thickness (ft)	Soil Density (pcf)	Cohesion (ksf)	Friction Angle (deg)	Ultimate Gross Bearing (ksf)	Depth (ft)
1	13.00	100.00		30.00	24.00	13.00
2						
3						
4						

Base Friction, μ:	0.30	
Groundwater Depth:	99.00	ft
Neglected Depth:	0.00	ft

RESULTS

	Demand	Capacity	Rating	
Pad Shear - 1-Way (kip)	-58.48	155.28	35.9%	Pass
Pad Shear - 2-Way (Comp) (ksi)	0.059	0.164	34.2%	Pass
Flexural 2-Way (Comp) * (kip-ft)	148.36	693.49	20.4%	Pass
Pad Flexural* (kip-ft)	258.58	346.74	71.0%	Pass
Pad Shear - 2-Way (Uplift) (ksi)	0.00	0.16	0.0%	Pass
Flexural 2-Way (Tension) * (kip-ft)	147.40	693.49	20.2%	Pass

*Capacity reduced per AC 318-19 Section 9.6.1.3

Pier Shear (kip)	22.00	97.92	21.4%	Pass
Pier Compression (kip)	234.00	1827.69	12.2%	Pass
Pier Flexural (Comp) (kip-ft)	247.26	1027.67	22.9%	Pass
Pier Flexural (Tension) (kip-ft)	245.67	738.29	31.7%	Pass

	Demand	Capacity	Rating	
Lateral (kip)	22.00	78.61	26.7%	Pass
Overturning	-	-	STABLE	Pass
Bearing Pressure (ksf)	7.18	18.00	38.0%	Pass
Uplift (kip)	182.00	202.11	85.8%	Pass

Structural Rating*:	71.0%	Pass
Soil Rating*:	85.8%	Pass

*Rating per TIA-222-H Section 15.5

ANALYSIS ASSUMPTIONS

1. PASSIVE PRESSURE: INCLUDED ON PAD AND PIER



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: 41.86664
Longitude: -72.674778
Elevation: 167.0083277130327 ft (NAVD 88)



Wind

Results:

Wind Speed	116 Vmph	← 120 mph per Appendix P
10-year MRI	75 Vmph	
25-year MRI	83 Vmph	
50-year MRI	90 Vmph	
100-year MRI	97 Vmph	

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Thu Jul 20 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.

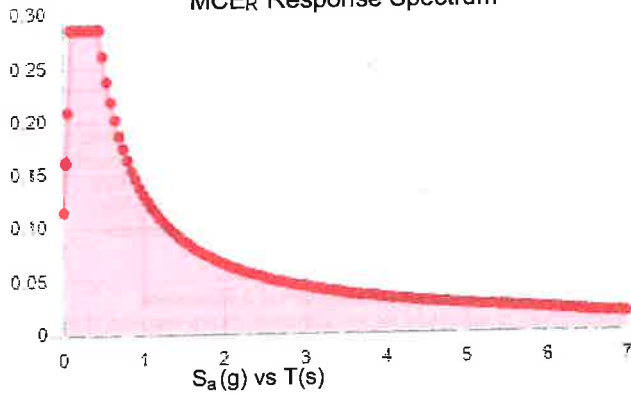
Site Soil Class:

Results:

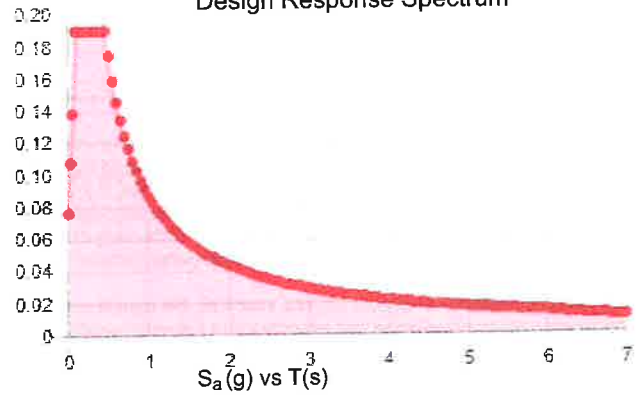
S_S :	0.179	S_{D1} :	0.087
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.095
F_v :	2.4	PGA _M :	0.152
S_{MS} :	0.287	F_{PGA} :	1.6
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.191	C_v :	0.7

Seismic Design Category: B

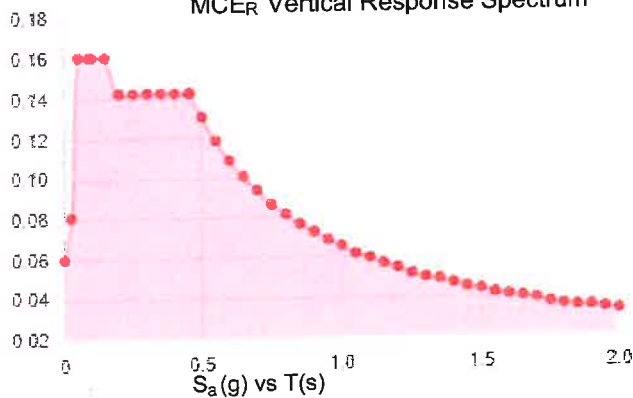
MCE_R Response Spectrum



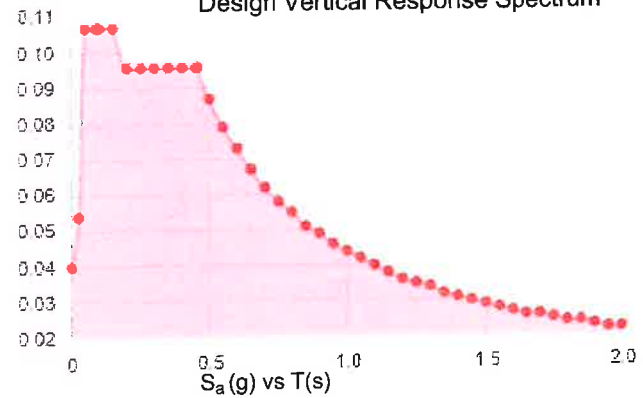
Design Response Spectrum



MCE_R Vertical Response Spectrum



Design Vertical Response Spectrum



Data Accessed:

Thu Jul 20 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: 1.50 in.
Concurrent Temperature: 5 F
Gust Speed 50 mph

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

Date Accessed: Thu Jul 20 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.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

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_I (g)	Risk Cat. III Occup. 1-2	Risk Cat. IV	
Wethersfield	110	120	130	135	85	93	101	105	30	0.196	0.055		Yes	
Wilmington	110	120	130	135	85	93	101	105	35	0.181	0.055		Yes	
Wilton	110	120	130	135	85	93	101	105	30	0.241	0.057		Yes	
Winchester	110	115	125	130	85	89	97	101	40	0.167	0.054			
Windham	115	125	135	135	89	97	105	105	30	0.190	0.055		Yes	
Windsor	110	120	130	135	85	93	101	105	30	0.181	0.055		Yes	
Windsor Locks	110	120	125	130	85	93	97	101	35	0.175	0.055		Yes	
Wolcott	110	120	130	135	85	93	101	105	35	0.191	0.054		Yes	
Woodbridge	110	120	130	135	85	93	101	105	30	0.200	0.054		Yes	
Woodbury	110	120	125	130	85	93	97	101	35	0.194	0.054		Yes	
Woodstock	110	120	130	135	85	93	101	105	40	0.182	0.055		Yes	

1. Wind-Borne Debris Regions

Type A: Full municipality

Type B: Areas within one mile (1.61 km) of the mean high-water line where an Exposure D condition exists upwind at the waterline.

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 and soil conditions are known. Paul J. Ford and Company will not accept any responsibility for the adequacy of the existing foundations unless the foundation sizes and a soils report are 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 CT, P.C.
1055 Washington Boulevard
Stamford, CT 06901
203.324.0800
peter.albano@collierseng.com

Antenna Mount Analysis Report and PMI Requirements

Mount ReAnalysis

SMART Tool Project #: 10206408
Colliers Engineering & Design CT, P.C. Project #: 23777087

July 21, 2023

Site Information

Site ID: 5000385159-VZW / WINDSOR CT
Site Name: WINDSOR CT
Carrier Name: Verizon Wireless
Address: 482 Pigeon Hill Rd.
Windsor, Connecticut 06095
Hartford County
Latitude: 41.866640°
Longitude: -72.674778°

Structure Information

Tower Type: 160-Ft Self Support
Mount Type: 12.50-Ft Sector Frame

FUZE ID # 17123870

Analysis Results

Sector Frame: 56.3% 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: Prasanna Dhakal

Digitally signed by Derek Hartzell
Date: 2023.07.21 14:34:57 -0700

Derek Hartzell
32710
PROFESSIONAL ENGINEER
STATE OF CONNECTICUT

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
As-Built Radio Frequency Data Sheet (RFDS)	Verizon RFDS, Site ID: 325169, dated September 27, 2021
Mount Mapping Report	Delta Oaks Group, Site ID: 469487, dated November 11, 2020
Previous Mount Analysis	Maser Consulting Connecticut, Project #: 20777393, dated November 25, 2020
Antenna Mount Post-Modification Inspection Report	Maser Consulting Connecticut, Project #: 20777393, dated October 21, 2021
Final Loading Configuration	Filter Add Scope Provided by Verizon Wireless

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} : 120 mph Ice Wind Speed (3-sec. Gust): 50 mph Design Ice Thickness: 1.50 in Risk Category: II Exposure Category: C Topographic Category: 1 Topographic Feature Considered: N/A Topographic Method: N/A Ground Elevation Factor, K_e : 0.994
Seismic Parameters:	S_s : 0.181 g S_1 : 0.055 g
Maintenance Parameters:	Wind Speed (3-sec. Gust): 30 mph Maintenance Load, L_v : 250 lbs. Maintenance Load, L_m : 500 lbs.
Analysis Software:	RISA-3D (V17)

Final Loading Configuration:

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

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
156.00	157.50	4	KAelus	KA-6030	Added
		3	Andrew	LNx-6513DS-A1M	Retained
		3	Samsung	MT6407-77A	
		6	Commscope	NNHH-65B-R4	
		3	Samsung	B2/B66A RRH-BR049	
		3	Samsung	B5/B13 RRH-BR04C	
		1	Raycap	RHSDC-3315-PF-4*	

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

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

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

Standard Conditions:

1. All engineering services are performed on the basis that the information provided to Colliers Engineering & Design CT, P.C. 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 CT, P.C. 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 CT, P.C. is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.
7. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
 - o Channel, Solid Round, Angle, Plate ASTM A36 (Gr. 36)
 - o HSS (Rectangular) ASTM 500 (Gr. B-46)
 - o Pipe ASTM A53 (Gr. B-35)
 - o Threaded Rod F1554 (Gr. 36)
 - o Bolts ASTM A325

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

Analysis Results:

Component	Utilization %	Pass/Fail
Face Horizontal	56.3%	Pass
Standoff Plate	55.0%	Pass
Standoff Horizontal	43.2%	Pass
Standoff Diagonal	7.6%	Pass
Tieback	13.6%	Pass
Mount Pipe	35.9%	Pass
Standoff Vertical	5.8%	Pass
Mount Connection	21.8%	Pass

Structure Rating – (Controlling Utilization of all Components)	56.3%
---	--------------

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	17.1	10.0	25.0	17.9
0.5	26.4	16.8	37.8	28.2
1	35.1	23.1	49.8	37.8

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.
- 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

MDG #: 5000385159

SMART Project #: 10206408

Fuze Project ID: 17123870

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:

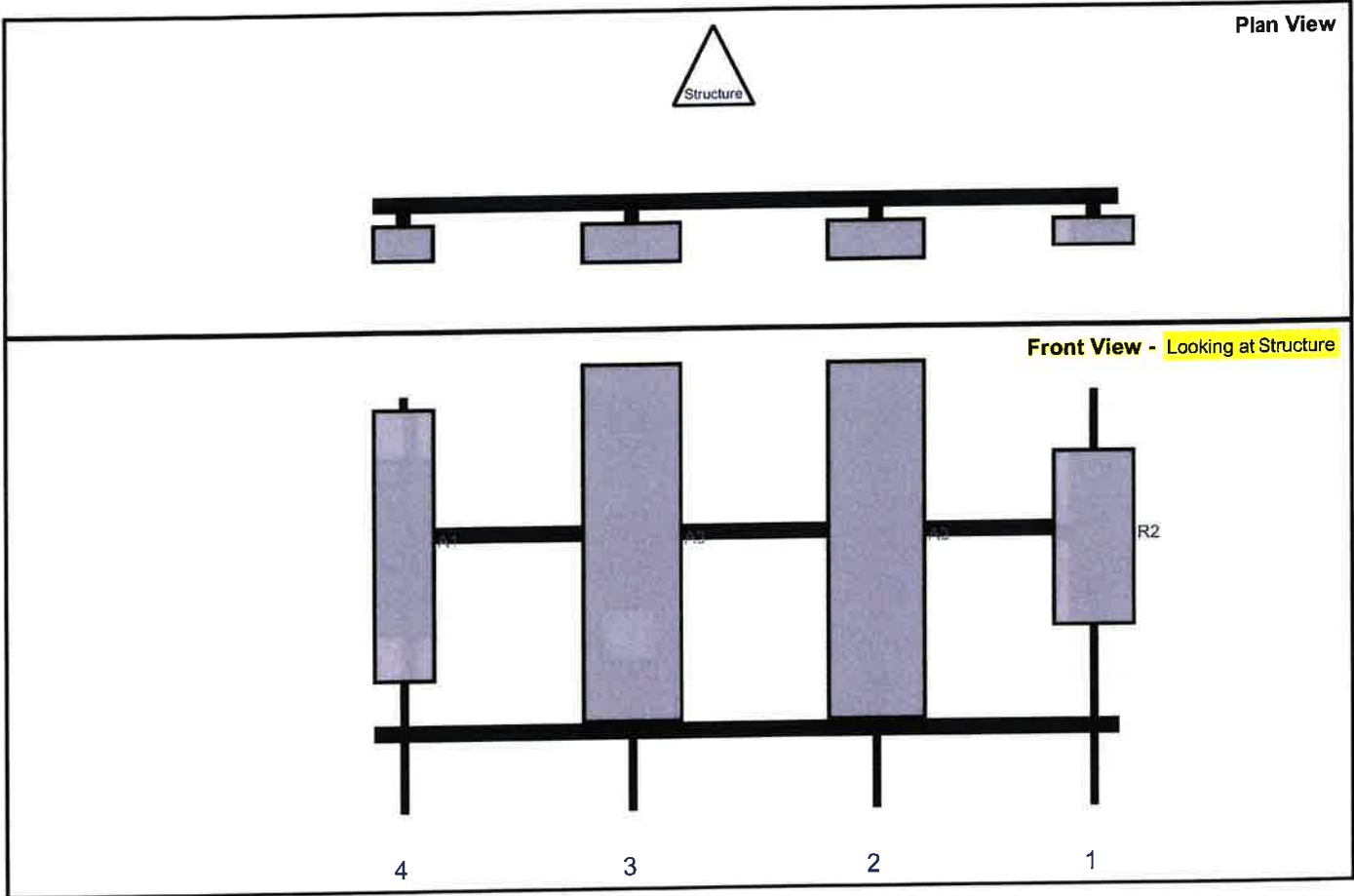
Company:	
Employee Name:	
Contact Phone:	
Email:	
Date:	

Sector: A

Structure Type: Self Support

10206408

Mount Elev: 156.00



Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
R2	MT6407-77A	35.1	16.1	145	1	a	Front	30	0	Retained	09/23/2021
A3	NNHH-65B-R4	72	19.6	101	2	a	Front	30	0	Retained	09/23/2021
A3	NNHH-65B-R4	72	19.6	52	3	a	Front	30	0	Retained	09/23/2021
A1	LNx-6513DS-A1M	54.7	11.9	6	4	a	Front	30	0	Retained	09/23/2021
M49	B2/B66A RRH-BR049	15	15				Member			Retained	09/23/2021
M48	B5/B13 RRH-BR04C	15	15				Member			Retained	09/23/2021

Structure: 5000385159-VZW - WINDSOR CT

Sector: B

7/21/2023

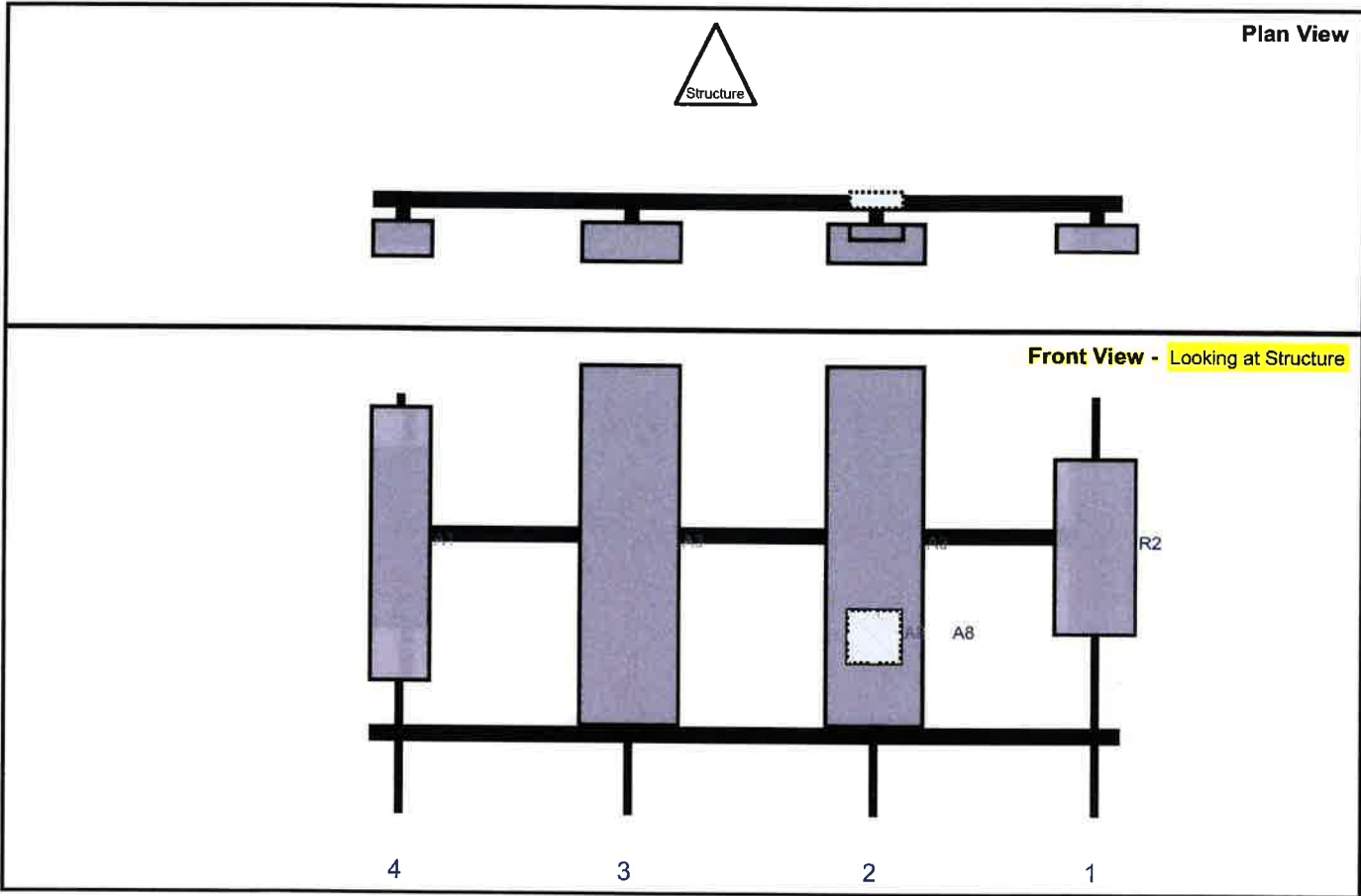
Structure Type: Self Support

10206408



Mount Elev: 156.00

Page: 2



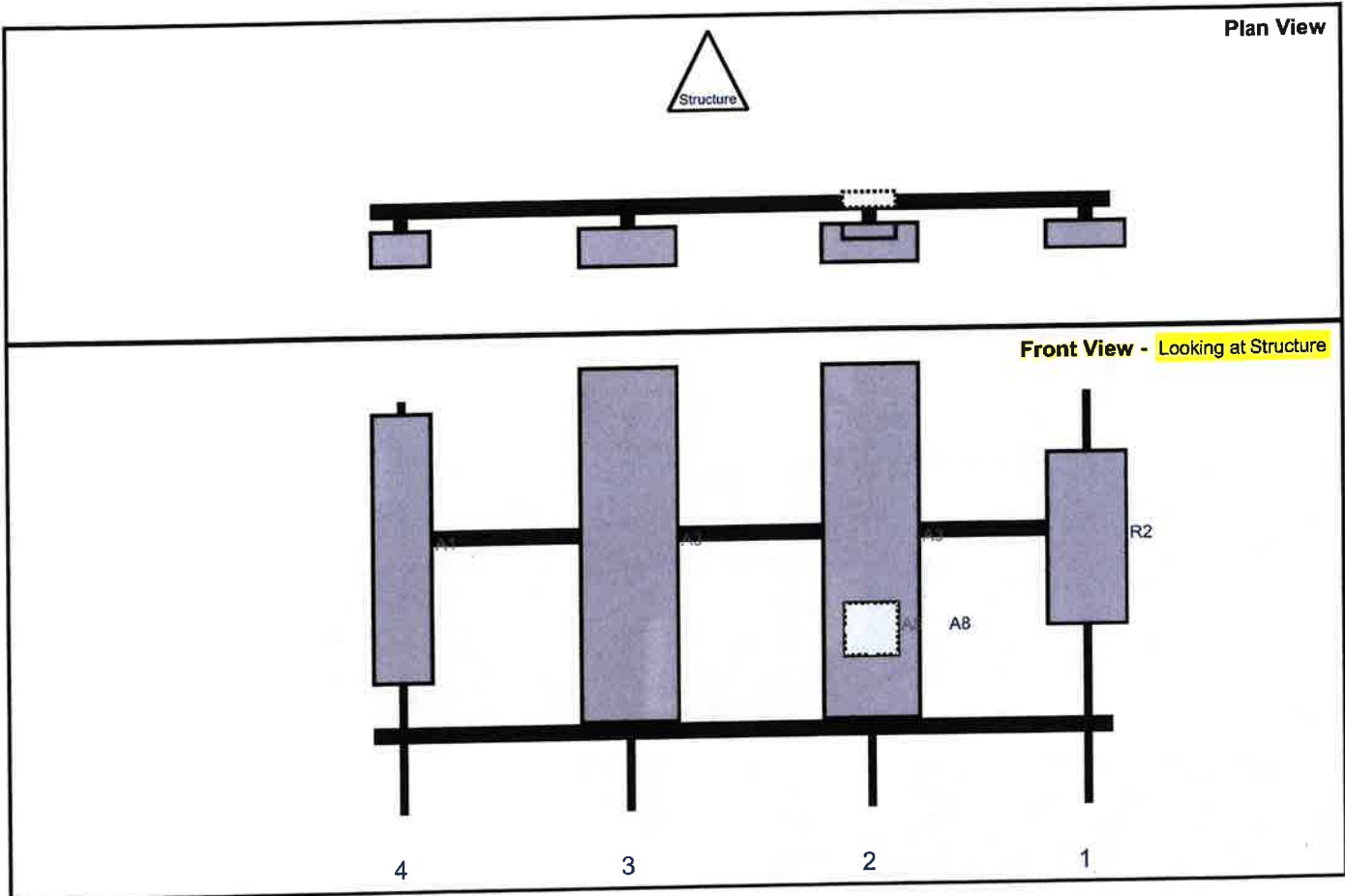
Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
R2	MT6407-77A	35.1	16.1	145	1	a	Front	30	0	Retained	09/23/2021
A3	NNHH-65B-R4	72	19.6	101	2	a	Front	30	0	Retained	09/23/2021
A8	KA-6030	10.6	10.9	101	2	a	Front	48	0	Added	
A8	KA-6030	10.6	10.9	101	2	b	Behind	48	0	Added	
A3	NNHH-65B-R4	72	19.6	52	3	a	Front	30	0	Retained	09/23/2021
A1	LNx-6513DS-A1M	54.7	11.9	6	4	a	Front	30	0	Retained	09/23/2021

Sector: C

Structure Type: Self Support

10206408

Mount Elev: 156.00

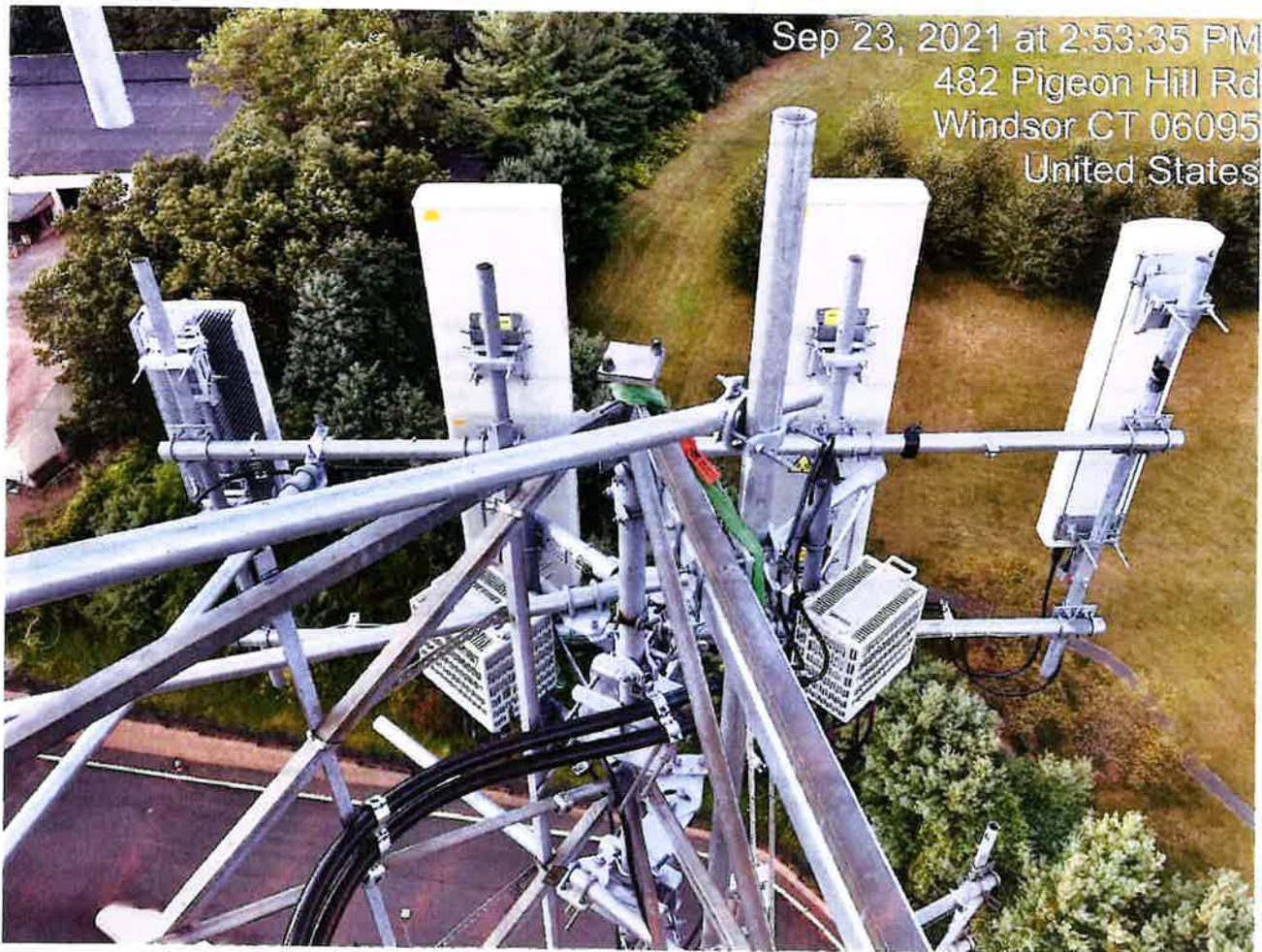


Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
R2	MT6407-77A	35.1	16.1	145	1	a	Front	30	0	Retained	09/23/2021
A3	NNHH-65B-R4	72	19.6	101	2	a	Front	30	0	Retained	09/23/2021
A8	KA-6030	10.6	10.9	101	2	a	Front	48	0	Added	
A8	KA-6030	10.6	10.9	101	2	b	Behind	48	0	Added	
A3	NNHH-65B-R4	72	19.6	52	3	a	Front	30	0	Retained	09/23/2021
A1	LNX-6513DS-A1M	54.7	11.9	6	4	a	Front	30	0	Retained	09/23/2021

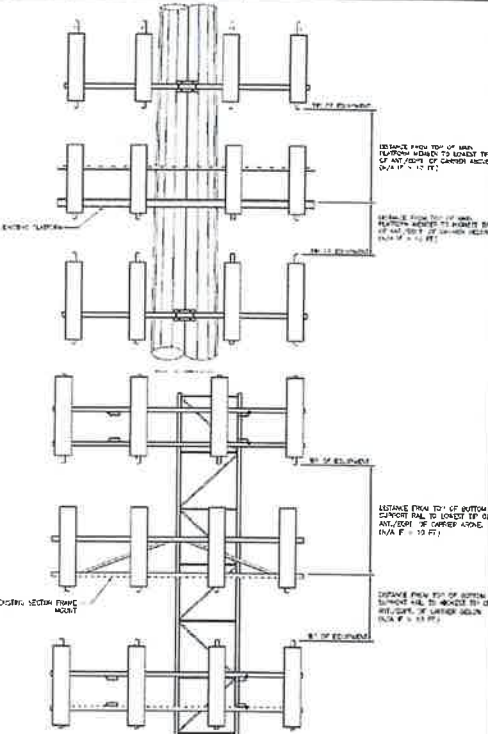
Sep 23, 2021 at 3:20:06 PM
482 Pigeon Hill Rd
Windsor CT 06095
United States



Sep 23, 2021 at 2:53:35 PM
482 Pigeon Hill Rd
Windsor CT 06095
United States



Mount Azimuth (Degree) for Each Sector		Tower Leg Azimuth (Degree) for Each Sector		Sector B										
Sector A:	327.00 Deg	Leg A:	345.00 Deg	Ant _{1a}	LPA 80063/4CF E-DIN	15.20	13.10	47.40		158.25	33.00	14.00	80.00	118
Sector B:	80.00 Deg	Leg B:	105.00 Deg	Ant _{1b}										
Sector C:	214.00 Deg	Leg C:	225.00 Deg	Ant _{2a}	NNHH-65B-R4-V1	19.60	7.80	72.00		158.25	33.00	9.50	80.00	120
Sector D:		Leg D:		Ant _{2b}										
Climbing Facility Information				Ant _{2c}										
Location:	225.00 Deg	On Leg B		Ant _{3a}	NNHH-65B-R4-V1	19.60	7.80	72.00		158.25	33.00	9.50	80.00	123
Climbing Facility	Corrosion Type:	Good condition.		Ant _{3b}										
	Access:	Climbing path was obstructed.		Ant _{3c}										
	Condition:	Missing safety cable.		Ant _{4a}	LPA 80063/4CF E-DIN	15.20	13.10	47.40		158.25	33.00	14.00	80.00	125
				Ant _{4b}										
				Ant _{4c}										
				Ant _{5a}										
				Ant _{5b}										
				Ant _{5c}										
				Ant on Standoff										
				Ant on Standoff										
				Ant on Tower										
				Ant on Tower										
				Sector C										
				Ant _{1a}	LPA 80063/4CF E-DIN	15.20	13.10	47.40		158.25	33.00	14.00	214.00	236
				Ant _{1b}										
				Ant _{1c}										
				Ant _{2a}	NNHH-65B-R4-V1	19.60	7.80	72.00		158.25	33.00	9.50	214.00	244
				Ant _{2b}										
				Ant _{2c}										
				Ant _{3a}	NNHH-65B-R4-V1	19.60	7.80	72.00		158.25	33.00	9.50	214.00	293
				Ant _{3b}										
				Ant _{3c}										
				Ant _{4a}	LPA 80063/4CF E-DIN	15.20	13.10	47.40		158.25	33.00	14.00	214.00	314
				Ant _{4b}										
				Ant _{4c}										
				Ant _{5a}										
				Ant _{5b}										
				Ant _{5c}										
				Ant on Standoff										
				Ant on Standoff										
				Ant on Tower										
				Ant on Tower										
				Sector D										
				Ant _{1a}										
				Ant _{1b}										
				Ant _{1c}										
				Ant _{2a}										
				Ant _{2b}										
				Ant _{2c}										
				Ant _{3a}										
				Ant _{3b}										
				Ant _{3c}										
				Ant _{4a}										
				Ant _{4b}										
				Ant _{4c}										
				Ant _{5a}										
				Ant _{5b}										
				Ant _{5c}										
				Ant on Standoff										
				Ant on Standoff										
				Ant on Tower										
				Ant on Tower										



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

1	No safety climb present and the step pegs stop at 80 feet.	62
2		
3		
4		
5		
6		
7		
8		

Mapping Notes

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

Standard Conditions

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



Antenna Mount Mapping Form (PATENT PENDING)

FCC #
n/a

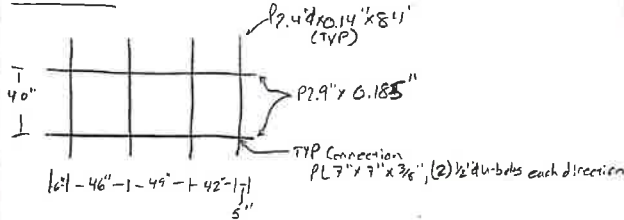
Tower Owner:	Verizon Wireless	Mapping Date:	11/11/2020
Site Name:	Windsor CT	Tower Type:	Self Support
Site Number or ID:	469487	Tower Height (FL):	160
Mapping Contractor:	Delta Oaks Group	Mount Elevation (FL):	157

This antenna mapping form is the property of TES and under PATENT PENDING. The formation contained herein is considered confidential in nature and is to be used only for the specific customer it was intended for. Reproduction, transmission, publication, modification or disclosure by any method is prohibited except by express written permission of TES. All means and methods are the responsibility of the contractor and the work shall be compliant with ANSI/ASSE A 10.48, OSHA, FCC, FAA and other safety requirements that may apply. TES is not warranting the usability of the safety climb as it must be assessed prior to each use in compliance with OSHA requirements.

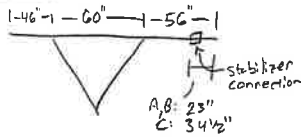
Please Insert Sketches of the Antenna Mount

Windsor CT

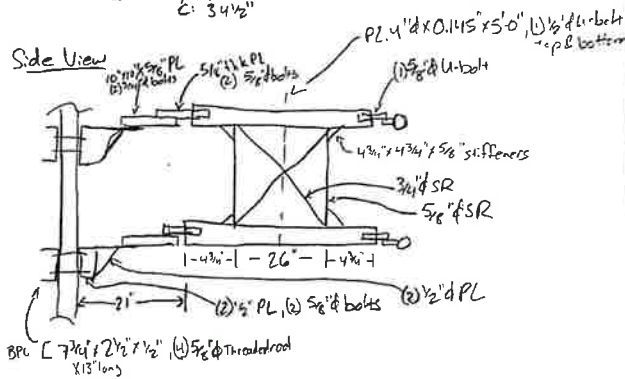
Face Detail

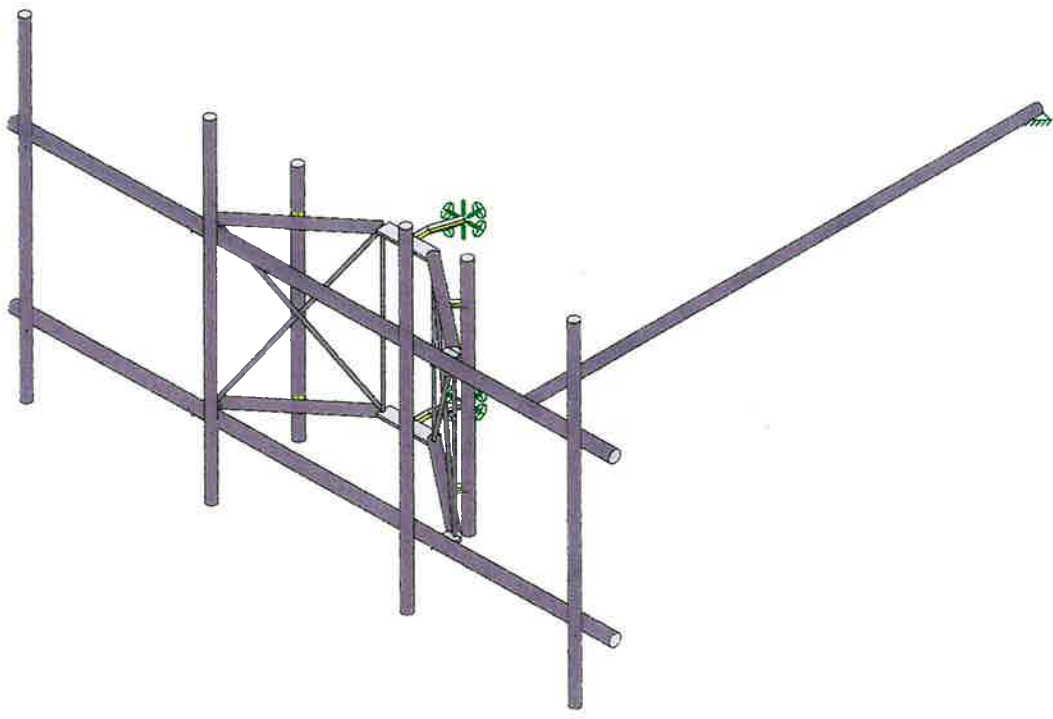
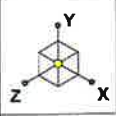


Plan View



Side View





Envelope Only Solution

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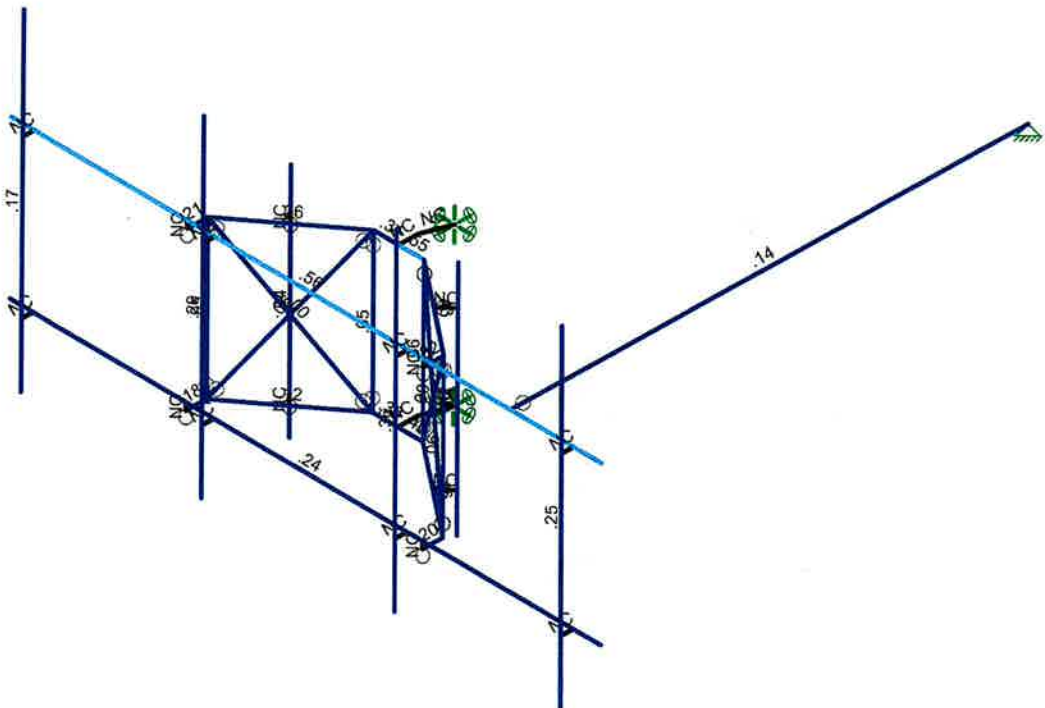
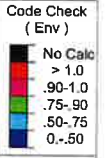
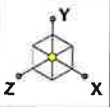
Antenna Mount Analysis

SK - 4

July 19, 2023 at 5:04 PM

Project # 23777087

5000385159-VZW_MT_LOT_C_H....



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Colliers Engineering & De...

Project # 23777087

Antenna Mount Analysis

SK - 5

July 19, 2023 at 5:04 PM

5000385159-VZW_MT_LOT_C_H....



Basic Load Cases

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



Company : Colliers Engineering & Design
 Designer :
 Job Number : Project # 23777087
 Model Name : Antenna Mount Analysis

July 19, 2023
 5:04 PM
 Checked By: _____

Basic Load Cases (Continued)

	BLC Description	Category	X Gr...	Y Gr...	Z Gr...	Joint	Point	Distributed	Area(Member)	Surfa...
57	Structure Wi (120 Deg)	None						58		
58	Structure Wi (150 Deg)	None						58		
59	Structure Wi (180 Deg)	None						58		
60	Structure Wi (210 Deg)	None						58		
61	Structure Wi (240 Deg)	None						58		
62	Structure Wi (270 Deg)	None						58		
63	Structure Wi (300 Deg)	None						58		
64	Structure Wi (330 Deg)	None						58		
65	Structure Wm (0 Deg)	None						58		
66	Structure Wm (30 Deg)	None						58		
67	Structure Wm (60 Deg)	None						58		
68	Structure Wm (90 Deg)	None						58		
69	Structure Wm (120 Deg)	None						58		
70	Structure Wm (150 Deg)	None						58		
71	Structure Wm (180 Deg)	None						58		
72	Structure Wm (210 Deg)	None						58		
73	Structure Wm (240 Deg)	None						58		
74	Structure Wm (270 Deg)	None						58		
75	Structure Wm (300 Deg)	None						58		
76	Structure Wm (330 Deg)	None						58		
77	Lm1	None					1			
78	Lm2	None					1			
79	Lv1	None					1			
80	Lv2	None					1			
81	Antenna Ev	None					36			
82	Antenna Eh (0 Deg)	None					24			
83	Antenna Eh (90 Deg)	None					24			
84	Structure Ev	ELY			-0386					
85	Structure Eh (0 Deg)	ELZ			-0965					
86	Structure Eh (90 Deg)	ELX	.0965							

Load Combinations

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



Load Combinations (Continued)

Description	S	PDel	SR	BLC	Fa	BLC	Fa	BLC	Fa	B	Fa	B	Fa	B	Fa	BLC	Fa	B	Fa	B	Fa	B	Fa	
23	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	25	1	63	1								
24	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	26	1	64	1								
25	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	27	1	65	1										
26	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	28	1	66	1										
27	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	29	1	67	1										
28	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	30	1	68	1										
29	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	31	1	69	1										
30	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	32	1	70	1										
31	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	33	1	71	1										
32	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	34	1	72	1										
33	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	35	1	73	1										
34	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	36	1	74	1										
35	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	37	1	75	1										
36	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	38	1	76	1										
37	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	27	1	65	1										
38	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	28	1	66	1										
39	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	29	1	67	1										
40	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	30	1	68	1										
41	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	31	1	69	1										
42	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	32	1	70	1										
43	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	33	1	71	1										
44	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	34	1	72	1										
45	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	35	1	73	1										
46	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	36	1	74	1										
47	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	37	1	75	1										
48	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	38	1	76	1										
49	1.2D + 1.5Lv1	Yes	Y		1	1.2	39	1.2	79	1.5														
50	1.2D + 1.5Lv2	Yes	Y		1	1.2	39	1.2	80	1.5														
51	1.4D	Yes	Y		1	1.4	39	1.4																
52	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	1	83	ELZ	1	E...						
53	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.866	83	.5	ELZ	.866	E...	.5				
54	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.5	83	.866	ELZ	.5	E...	.866				
55	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82		83	1	ELZ		E...	1				
56	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-5	83	.866	ELZ	-5	E...	.866				
57	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-8...	83	.5	ELZ	-8...	E...	.5				
58	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-1	83		ELZ	-1	E...					
59	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-8...	83	-5	ELZ	-8...	E...	-5				
60	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-5	83	-8...	ELZ	-5	E...	-8...				
61	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82		83	-1	ELZ		E...	-1				
62	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.5	83	-8...	ELZ	.5	E...	-8...				
63	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.866	83	-5	ELZ	.866	E...	-5				
64	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	1	83	ELZ	1	E...						
65	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.866	83	.5	ELZ	.866	E...	.5				
66	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.5	83	.866	ELZ	.5	E...	.866				
67	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82		83	1	ELZ		E...	1				
68	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-5	83	.866	ELZ	-5	E...	.866				
69	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-8...	83	.5	ELZ	-8...	E...	.5				
70	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-1	83		ELZ	-1	E...					
71	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-8...	83	-5	ELZ	-8...	E...	-5				
72	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-5	83	-8...	ELZ	-5	E...	-8...				
73	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82		83	-1	ELZ		E...	-1				
74	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.5	83	-8...	ELZ	.5	E...	-8...				
75	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.866	83	-5	ELZ	.866	E...	-5				



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Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	3.416667	0.145833	8.083333	0	
2	N2	-9.083333	0.145833	8.083333	0	
3	N3	3.416667	3.479167	8.083333	0	
4	N4	-9.083333	3.479167	8.083333	0	
5	N5	-8.583333	0.145833	8.083333	0	
6	N6	-8.583333	3.479167	8.083333	0	
7	N7	-4.75	0.145833	8.083333	0	
8	N8	-4.75	3.479167	8.083333	0	
9	N9	-0.666667	0.145833	8.083333	0	
10	N10	-0.666667	3.479167	8.083333	0	
11	N11	2.833333	0.145833	8.083333	0	
12	N12	2.833333	3.479167	8.083333	0	
13	N13	-8.583333	0.145833	8.333333	0	
14	N14	-8.583333	3.479167	8.333333	0	
15	N15	-4.75	0.145833	8.333333	0	
16	N16	-4.75	3.479167	8.333333	0	
17	N17	-0.666667	0.145833	8.333333	0	
18	N18	-0.666667	3.479167	8.333333	0	
19	N19	2.833333	0.145833	8.333333	0	
20	N20	2.833333	3.479167	8.333333	0	
21	N21	-5.333333	0	8.083333	0	
22	N22	-5.333333	3.333333	8.083333	0	
23	N23	-0.333333	0	8.083333	0	
24	N24	-0.333333	3.333333	8.083333	0	
25	N25	-5.333333	0	7.661458	0	
26	N26	-5.333333	3.333333	7.661458	0	
27	N27	-0.333333	0	7.661458	0	
28	N28	-0.333333	3.333333	7.661458	0	
29	N29	-2.833333	0	6.119792	0	
30	N30	-2.833333	3.333333	6.119792	0	
31	N31	-3.364583	0	6.119792	0	
32	N32	-3.364583	3.333333	6.119792	0	
33	N33	-2.302083	0	6.119792	0	
34	N34	-2.302083	3.333333	6.119792	0	
35	N35	-2.633822	0	5.154971	0	
36	N36	-2.633822	3.333333	5.154971	0	
37	N37	1.5	3.479167	8.083333	0	
38	N39	-8.583333	5.8125	8.333333	0	
39	N40	-4.75	5.8125	8.333333	0	
40	N41	-0.666667	5.8125	8.333333	0	
41	N42	2.833333	5.8125	8.333333	0	
42	N43	-8.583333	-1.1875	8.333333	0	
43	N44	-4.75	-1.1875	8.333333	0	
44	N45	-0.666667	-1.1875	8.333333	0	
45	N46	2.833333	-1.1875	8.333333	0	
46	N58	-5.333333	3.333333	7.708333	0	
47	N76	-2.927083	0	6.119792	0	
48	N77	-3.229167	0	6.119792	0	
49	N78	-2.739583	0	6.119792	0	
50	N79	-2.4375	0	6.119792	0	
51	N80	-2.927083	3.333333	6.119792	0	
52	N81	-3.229167	3.333333	6.119792	0	
53	N82	-2.739583	3.333333	6.119792	0	
54	N83	-2.4375	3.333333	6.119792	0	
55	N58A	-2.833333	3.479167	8.083333	0	
56	N59	-5.333333	0.145833	8.083333	0	



Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
57	N60	-5.333333	3.479167	8.083333	0	
58	N61	-0.333333	0.145833	8.083333	0	
59	N62	-0.333333	3.479167	8.083333	0	
60	N61A	-4.348958	3.333333	6.890625	0	
61	N62A	-4.348958	0	6.890625	0	
62	N63	-1.317708	0	6.890625	0	
63	N64	-1.317708	3.333333	6.890625	0	
64	N65	-4.598958	3.333333	6.640625	0	
65	N66	-4.598958	0	6.640625	0	
66	N67	-1.067708	0	6.640625	0	
67	N68	-1.067708	3.333333	6.640625	0	
68	N69	-4.598958	4.166667	6.640625	0	
69	N70	-1.067708	4.166667	6.640625	0	
70	N71	-4.598958	-0.833333	6.640625	0	
71	N72	-1.067708	-0.833333	6.640625	0	
72	N73A	-2.833333	3.333333	5.703125	0	
73	N74	-2.833333	0	5.703125	0	
74	N75	2.002978	3.833333	-2.265455	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Desig... A [in2]	Iyy [i... lzz [i... J [in4]
1	Mount Pipe	PIPE 2.0	Beam	Pipe	A53 Gr. B	Typical 1.02	.627 .627 1.25
2	Face Horizontal	PIPE 2.5	Beam	Pipe	Q235	Typical 1.61	1.45 1.45 2.89
3	Standoff Horizontal	PIPE 2.0	Beam	Pipe	Q235	Typical 1.02	.627 .627 1.25
4	Standoff Diagonal	SR 0.75	Beam	BAR	Q235	Typical .4418	.0155 .0155 .0311
5	Tieback	PIPE 2.0	Beam	Pipe	Q235	Typical 1.02	.627 .627 1.25
6	Standoff Vertical	SR 0.625	Beam	BAR	Q235	Typical .3068	.0075 .0075 .015
7	Standoff Plate	PL5/8X3.5	Beam	BAR	Q235	Typical 2.1875	.0712 2.2331 .2528

Hot Rolled Steel Properties

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

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
1	M1	N2	N1			Face Horizontal	Beam	Pipe	Q235	Typical
2	M2	N4	N3			Face Horizontal	Beam	Pipe	Q235	Typical
3	M3	N5	N13			RIGID	None	None	RIGID	Typical
4	M4	N6	N14			RIGID	None	None	RIGID	Typical
5	M5	N8	N16			RIGID	None	None	RIGID	Typical
6	M6	N7	N15			RIGID	None	None	RIGID	Typical
7	M9	N10	N18			RIGID	None	None	RIGID	Typical
8	M10	N9	N17			RIGID	None	None	RIGID	Typical
9	M11	N12	N20			RIGID	None	None	RIGID	Typical
10	M12	N11	N19			RIGID	None	None	RIGID	Typical
11	M13	N22	N26		90	Standoff Plate	Beam	BAR	Q235	Typical



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Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...)	Section/Shape	Type	Design List	Material	Design Ru...
12	M14	N21	N25		90	Standoff Plate	Beam	BAR	Q235	Typical
13	M15	N23	N27		90	Standoff Plate	Beam	BAR	Q235	Typical
14	M16	N24	N28		90	Standoff Plate	Beam	BAR	Q235	Typical
15	M17	N26	N32			Standoff Horizontal	Beam	Pipe	Q235	Typical
16	M18	N25	N31			Standoff Horizontal	Beam	Pipe	Q235	Typical
17	M19	N27	N33			Standoff Horizontal	Beam	Pipe	Q235	Typical
18	M20	N28	N34			Standoff Horizontal	Beam	Pipe	Q235	Typical
19	M21	N32	N30		90	Standoff Plate	Beam	BAR	Q235	Typical
20	M22	N34	N30		90	Standoff Plate	Beam	BAR	Q235	Typical
21	M23	N31	N29		90	Standoff Plate	Beam	BAR	Q235	Typical
22	M24	N33	N29		90	Standoff Plate	Beam	BAR	Q235	Typical
23	M25	N31	N26			Standoff Diagonal	Beam	BAR	Q235	Typical
24	M26	N32	N25			Standoff Diagonal	Beam	BAR	Q235	Typical
25	M27	N33	N28			Standoff Diagonal	Beam	BAR	Q235	Typical
26	M28	N27	N34			Standoff Diagonal	Beam	BAR	Q235	Typical
27	M29	N29	N35			RIGID	None	None	RIGID	Typical
28	M30	N30	N36			RIGID	None	None	RIGID	Typical
29	M31	N37	N75			Tieback	Beam	Pipe	Q235	Typical
30	MP4A	N39	N43			Mount Pipe	Beam	Pipe	A53 Gr. B	Typical
31	MP3A	N40	N44			Mount Pipe	Beam	Pipe	A53 Gr. B	Typical
32	MP2A	N41	N45			Mount Pipe	Beam	Pipe	A53 Gr. B	Typical
33	MP1A	N42	N46			Mount Pipe	Beam	Pipe	A53 Gr. B	Typical
34	M44	N25	N26			Standoff Vertical	Beam	BAR	Q235	Typical
35	M45	N31	N32			Standoff Vertical	Beam	BAR	Q235	Typical
36	M46	N33	N34			Standoff Vertical	Beam	BAR	Q235	Typical
37	M47	N27	N28			Standoff Vertical	Beam	BAR	Q235	Typical
38	M47B	N22	N60			RIGID	None	None	RIGID	Typical
39	M48A	N21	N59			RIGID	None	None	RIGID	Typical
40	M49A	N24	N62			RIGID	None	None	RIGID	Typical
41	M50A	N23	N61			RIGID	None	None	RIGID	Typical
42	M51A	N30	N73A			RIGID	None	None	RIGID	Typical
43	M52A	N29	N74			RIGID	None	None	RIGID	Typical
44	M44A	N62A	N66			RIGID	None	None	RIGID	Typical
45	M45A	N63	N67			RIGID	None	None	RIGID	Typical
46	M46A	N64	N68			RIGID	None	None	RIGID	Typical
47	M47A	N61A	N65			RIGID	None	None	RIGID	Typical
48	M48	N69	N71			Mount Pipe	Beam	Pipe	A53 Gr. B	Typical
49	M49	N70	N72			Mount Pipe	Beam	Pipe	A53 Gr. B	Typical
50	M50	N73A	N36			RIGID	None	None	RIGID	Typical
51	M51	N74	N35			RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	J Release	Offset(in)	J Offset(in)	T/C Only	Physical Defl Ratio Opti...	Analysis ...	Inactive	Seismi...
1	M1					Yes				None
2	M2					Yes				None
3	M3					Yes	** NA **			None
4	M4					Yes	** NA **			None
5	M5					Yes	** NA **			None
6	M6					Yes	** NA **			None
7	M9					Yes	** NA **			None
8	M10					Yes	** NA **			None
9	M11					Yes	** NA **			None
10	M12					Yes	** NA **			None
11	M13					Yes	Default			None
12	M14					Yes	Default			None



Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ratio	Opti...	Analysis ...	Inactive	Seismi...
13	M15						Yes					None
14	M16						Yes					None
15	M17						Yes	Default				None
16	M18						Yes					None
17	M19						Yes					None
18	M20						Yes	Default				None
19	M21						Yes	Default				None
20	M22						Yes					None
21	M23						Yes					None
22	M24						Yes					None
23	M25	BenPIN	BenPIN			Euler Bu...	Yes	Default				None
24	M26	BenPIN	BenPIN			Euler Bu...	Yes	Default				None
25	M27	BenPIN	BenPIN			Euler Bu...	Yes					None
26	M28	BenPIN	BenPIN			Euler Bu...	Yes					None
27	M29						Yes	** NA **			Inactive	None
28	M30						Yes	** NA **			Inactive	None
29	M31	BenPIN					Yes	Default				None
30	MP4A						Yes					None
31	MP3A						Yes					None
32	MP2A						Yes					None
33	MP1A						Yes					None
34	M44	BenPIN	BenPIN				Yes					None
35	M45	BenPIN	BenPIN				Yes					None
36	M46	BenPIN	BenPIN				Yes					None
37	M47	BenPIN	BenPIN				Yes	Default				None
38	M47B		000X00				Yes	** NA **				None
39	M48A		000X00				Yes	** NA **				None
40	M49A		000X00				Yes	** NA **				None
41	M50A		000X00				Yes	** NA **				None
42	M51A						Yes	** NA **				None
43	M52A						Yes	** NA **				None
44	M44A		000X00				Yes	** NA **				None
45	M45A		000X00				Yes	** NA **				None
46	M46A		000X00				Yes	** NA **				None
47	M47A		000X00				Yes	** NA **				None
48	M48						Yes					None
49	M49						Yes					None
50	M50						Yes	** NA **				None
51	M51						Yes	** NA **				None

Member Point Loads (BLC 1 : Antenna D)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	Y	-15.2	.5
2	MP4A	My	-0.101	.5
3	MP4A	Mz	0	.5
4	MP4A	Y	-15.2	4.5
5	MP4A	My	-0.101	4.5
6	MP4A	Mz	0	4.5
7	MP1A	Y	-43.55	1.5
8	MP1A	My	-0.109	1.5
9	MP1A	Mz	0	1.5
10	MP1A	Y	-43.55	3.5
11	MP1A	My	-0.109	3.5
12	MP1A	Mz	0	3.5
13	MP2A	Y	-38.7	.75



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
14	MP2A	My	-.0258	.75
15	MP2A	Mz	0	.75
16	MP2A	Y	-38.7	4.25
17	MP2A	My	-.0258	4.25
18	MP2A	Mz	0	4.25
19	MP3A	Y	-38.7	.75
20	MP3A	My	-.0258	.75
21	MP3A	Mz	0	.75
22	MP3A	Y	-38.7	4.25
23	MP3A	My	-.0258	4.25
24	MP3A	Mz	0	4.25
25	M49	Y	-84.4	2.5
26	M49	My	0	2.5
27	M49	Mz	0	2.5
28	M48	Y	-70.3	2.5
29	M48	My	0	2.5
30	M48	Mz	0	2.5
31	MP2A	Y	-17.6	4
32	MP2A	My	.0073	4
33	MP2A	Mz	0	4
34	MP3A	Y	-17.6	4
35	MP3A	My	.0073	4
36	MP3A	Mz	0	4

Member Point Loads (BLC 2 : Antenna Di)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	Y	-75.7752	.5
2	MP4A	My	-.0505	.5
3	MP4A	Mz	0	.5
4	MP4A	Y	-75.7752	4.5
5	MP4A	My	-.0505	4.5
6	MP4A	Mz	0	4.5
7	MP1A	Y	-57.3658	1.5
8	MP1A	My	-.0143	1.5
9	MP1A	Mz	0	1.5
10	MP1A	Y	-57.3658	3.5
11	MP1A	My	-.0143	3.5
12	MP1A	Mz	0	3.5
13	MP2A	Y	-136.7409	.75
14	MP2A	My	-.0912	.75
15	MP2A	Mz	0	.75
16	MP2A	Y	-136.7409	4.25
17	MP2A	Mv	-.0912	4.25
18	MP2A	Mz	0	4.25
19	MP3A	Y	-136.7409	.75
20	MP3A	My	-.0912	.75
21	MP3A	Mz	0	.75
22	MP3A	Y	-136.7409	4.25
23	MP3A	My	-.0912	4.25
24	MP3A	Mz	0	4.25
25	M49	Y	-72.8507	2.5
26	M49	My	0	2.5
27	M49	Mz	0	2.5
28	M48	Y	-65.7839	2.5
29	M48	My	0	2.5
30	M48	Mz	0	2.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
9	MP1A	Mx	-0089	1.5
10	MP1A	X	35.746	3.5
11	MP1A	Z	-61.913	3.5
12	MP1A	Mx	-0089	3.5
13	MP2A	X	116.044	.75
14	MP2A	Z	-200.994	.75
15	MP2A	Mx	-0774	.75
16	MP2A	X	116.044	4.25
17	MP2A	Z	-200.994	4.25
18	MP2A	Mx	-0774	4.25
19	MP3A	X	116.044	.75
20	MP3A	Z	-200.994	.75
21	MP3A	Mx	-0774	.75
22	MP3A	X	116.044	4.25
23	MP3A	Z	-200.994	4.25
24	MP3A	Mx	-0774	4.25
25	M49	X	29.155	2.5
26	M49	Z	-50.497	2.5
27	M49	Mx	0	2.5
28	M48	X	27.446	2.5
29	M48	Z	-47.537	2.5
30	M48	Mx	0	2.5
31	MP2A	X	17.258	4
32	MP2A	Z	-29.892	4
33	MP2A	Mx	.0072	4
34	MP3A	X	17.258	4
35	MP3A	Z	-29.892	4
36	MP3A	Mx	.0072	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	81.925	.5
2	MP4A	Z	-47.299	.5
3	MP4A	Mx	-.0546	.5
4	MP4A	X	81.925	4.5
5	MP4A	Z	-47.299	4.5
6	MP4A	Mx	-.0546	4.5
7	MP1A	X	37.639	1.5
8	MP1A	Z	-21.731	1.5
9	MP1A	Mx	-.0094	1.5
10	MP1A	X	37.639	3.5
11	MP1A	Z	-21.731	3.5
12	MP1A	Mx	-.0094	3.5
13	MP2A	X	139.411	.75
14	MP2A	Z	-80.489	.75
15	MP2A	Mx	-.0929	.75
16	MP2A	X	139.411	4.25
17	MP2A	Z	-80.489	4.25
18	MP2A	Mx	-.0929	4.25
19	MP3A	X	139.411	.75
20	MP3A	Z	-80.489	.75
21	MP3A	Mx	-.0929	.75
22	MP3A	X	139.411	4.25
23	MP3A	Z	-80.489	4.25
24	MP3A	Mx	-.0929	4.25
25	M49	X	41.462	2.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
26	M49	Z	-23.938	2.5
27	M49	Mx	0	2.5
28	M48	X	35.137	2.5
29	M48	Z	-20.286	2.5
30	M48	Mx	0	2.5
31	MP2A	X	17.283	4
32	MP2A	Z	-9.978	4
33	MP2A	Mx	.0072	4
34	MP3A	X	17.283	4
35	MP3A	Z	-9.978	4
36	MP3A	Mx	.0072	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	83.742	.5
2	MP4A	Z	0	.5
3	MP4A	Mx	-.0558	.5
4	MP4A	X	83.742	4.5
5	MP4A	Z	0	4.5
6	MP4A	Mx	-.0558	4.5
7	MP1A	X	29.447	1.5
8	MP1A	Z	0	1.5
9	MP1A	Mx	-.0074	1.5
10	MP1A	X	29.447	3.5
11	MP1A	Z	0	3.5
12	MP1A	Mx	-.0074	3.5
13	MP2A	X	125.423	.75
14	MP2A	Z	0	.75
15	MP2A	Mx	-.0836	.75
16	MP2A	X	125.423	4.25
17	MP2A	Z	0	4.25
18	MP2A	Mx	-.0836	4.25
19	MP3A	X	125.423	.75
20	MP3A	Z	0	.75
21	MP3A	Mx	-.0836	.75
22	MP3A	X	125.423	4.25
23	MP3A	Z	0	4.25
24	MP3A	Mx	-.0836	4.25
25	M49	X	45.949	2.5
26	M49	Z	0	2.5
27	M49	Mx	0	2.5
28	M48	X	37.926	2.5
29	M48	Z	0	2.5
30	M48	Mx	0	2.5
31	MP2A	X	12.677	4
32	MP2A	Z	0	4
33	MP2A	Mx	.0053	4
34	MP3A	X	12.677	4
35	MP3A	Z	0	4
36	MP3A	Mx	.0053	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	81.925	.5
2	MP4A	Z	47.299	.5
3	MP4A	Mx	-.0546	.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
21	MP3A	Mx	-.0774	.75
22	MP3A	X	116.044	4.25
23	MP3A	Z	200.994	4.25
24	MP3A	Mx	-.0774	4.25
25	M49	X	32.443	2.5
26	M49	Z	56.193	2.5
27	M49	Mx	0	2.5
28	M48	X	31.959	2.5
29	M48	Z	55.355	2.5
30	M48	Mx	0	2.5
31	MP2A	X	17.258	4
32	MP2A	Z	29.892	4
33	MP2A	Mx	.0072	4
34	MP3A	X	17.258	4
35	MP3A	Z	29.892	4
36	MP3A	Mx	.0072	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	0	.5
2	MP4A	Z	127.169	.5
3	MP4A	Mx	0	.5
4	MP4A	X	0	4.5
5	MP4A	Z	127.169	4.5
6	MP4A	Mx	0	4.5
7	MP1A	X	0	1.5
8	MP1A	Z	85.506	1.5
9	MP1A	Mx	0	1.5
10	MP1A	X	0	3.5
11	MP1A	Z	85.506	3.5
12	MP1A	Mx	0	3.5
13	MP2A	X	0	.75
14	MP2A	Z	267.643	.75
15	MP2A	Mx	0	.75
16	MP2A	X	0	4.25
17	MP2A	Z	267.643	4.25
18	MP2A	Mx	0	4.25
19	MP3A	X	0	.75
20	MP3A	Z	267.643	.75
21	MP3A	Mx	0	.75
22	MP3A	X	0	4.25
23	MP3A	Z	267.643	4.25
24	MP3A	Mx	0	4.25
25	M49	X	0	2.5
26	M49	Z	66.814	2.5
27	M49	Mx	0	2.5
28	M48	X	0	2.5
29	M48	Z	66.565	2.5
30	M48	Mx	0	2.5
31	MP2A	X	0	4
32	MP2A	Z	41.796	4
33	MP2A	Mx	0	4
34	MP3A	X	0	4
35	MP3A	Z	41.796	4
36	MP3A	Mx	0	4



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
18	MP2A	Mx	.0929	4.25
19	MP3A	X	-139.411	.75
20	MP3A	Z	80.489	.75
21	MP3A	Mx	.0929	.75
22	MP3A	X	-139.411	4.25
23	MP3A	Z	80.489	4.25
24	MP3A	Mx	.0929	4.25
25	M49	X	-41.462	2.5
26	M49	Z	23.938	2.5
27	M49	Mx	0	2.5
28	M48	X	-35.137	2.5
29	M48	Z	20.286	2.5
30	M48	Mx	0	2.5
31	MP2A	X	-17.283	4
32	MP2A	Z	9.978	4
33	MP2A	Mx	-.0072	4
34	MP3A	X	-17.283	4
35	MP3A	Z	9.978	4
36	MP3A	Mx	-.0072	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-83.742	.5
2	MP4A	Z	0	.5
3	MP4A	Mx	.0558	.5
4	MP4A	X	-83.742	4.5
5	MP4A	Z	0	4.5
6	MP4A	Mx	.0558	4.5
7	MP1A	X	-29.447	1.5
8	MP1A	Z	0	1.5
9	MP1A	Mx	.0074	1.5
10	MP1A	X	-29.447	3.5
11	MP1A	Z	0	3.5
12	MP1A	Mx	.0074	3.5
13	MP2A	X	-125.423	.75
14	MP2A	Z	0	.75
15	MP2A	Mx	.0836	.75
16	MP2A	X	-125.423	4.25
17	MP2A	Z	0	4.25
18	MP2A	Mx	.0836	4.25
19	MP3A	X	-125.423	.75
20	MP3A	Z	0	.75
21	MP3A	Mx	.0836	.75
22	MP3A	X	-125.423	4.25
23	MP3A	Z	0	4.25
24	MP3A	Mx	.0836	4.25
25	M49	X	-45.949	2.5
26	M49	Z	0	2.5
27	M49	Mx	0	2.5
28	M48	X	-37.926	2.5
29	M48	Z	0	2.5
30	M48	Mx	0	2.5
31	MP2A	X	-12.677	4
32	MP2A	Z	0	4
33	MP2A	Mx	-.0053	4
34	MP3A	X	-12.677	4



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
35	MP3A	Z	0	4
36	MP3A	Mx	-0.053	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-81.925	.5
2	MP4A	Z	-47.299	.5
3	MP4A	Mx	.0546	.5
4	MP4A	X	-81.925	4.5
5	MP4A	Z	-47.299	4.5
6	MP4A	Mx	.0546	4.5
7	MP1A	X	-37.639	1.5
8	MP1A	Z	-21.731	1.5
9	MP1A	Mx	.0094	1.5
10	MP1A	X	-37.639	3.5
11	MP1A	Z	-21.731	3.5
12	MP1A	Mx	.0094	3.5
13	MP2A	X	-139.411	.75
14	MP2A	Z	-80.489	.75
15	MP2A	Mx	.0929	.75
16	MP2A	X	-139.411	4.25
17	MP2A	Z	-80.489	4.25
18	MP2A	Mx	.0929	4.25
19	MP3A	X	-139.411	.75
20	MP3A	Z	-80.489	.75
21	MP3A	Mx	.0929	.75
22	MP3A	X	-139.411	4.25
23	MP3A	Z	-80.489	4.25
24	MP3A	Mx	.0929	4.25
25	M49	X	-47.158	2.5
26	M49	Z	-27.227	2.5
27	M49	Mx	0	2.5
28	M48	X	-42.954	2.5
29	M48	Z	-24.8	2.5
30	M48	Mx	0	2.5
31	MP2A	X	-17.283	4
32	MP2A	Z	-9.978	4
33	MP2A	Mx	-.0072	4
34	MP3A	X	-17.283	4
35	MP3A	Z	-9.978	4
36	MP3A	Mx	-.0072	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-58.156	.5
2	MP4A	Z	-100.729	.5
3	MP4A	Mx	.0388	.5
4	MP4A	X	-58.156	4.5
5	MP4A	Z	-100.729	4.5
6	MP4A	Mx	.0388	4.5
7	MP1A	X	-35.746	1.5
8	MP1A	Z	-61.913	1.5
9	MP1A	Mx	.0089	1.5
10	MP1A	X	-35.746	3.5
11	MP1A	Z	-61.913	3.5
12	MP1A	Mx	.0089	3.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
13	MP2A	X	-116.044	.75
14	MP2A	Z	-200.994	.75
15	MP2A	Mx	.0774	.75
16	MP2A	X	-116.044	4.25
17	MP2A	Z	-200.994	4.25
18	MP2A	Mx	.0774	4.25
19	MP3A	X	-116.044	.75
20	MP3A	Z	-200.994	.75
21	MP3A	Mx	.0774	.75
22	MP3A	X	-116.044	4.25
23	MP3A	Z	-200.994	4.25
24	MP3A	Mx	.0774	4.25
25	M49	X	-32.443	2.5
26	M49	Z	-56.193	2.5
27	M49	Mx	0	2.5
28	M48	X	-31.959	2.5
29	M48	Z	-55.355	2.5
30	M48	Mx	0	2.5
31	MP2A	X	-17.258	4
32	MP2A	Z	-29.892	4
33	MP2A	Mx	-.0072	4
34	MP3A	X	-17.258	4
35	MP3A	Z	-29.892	4
36	MP3A	Mx	-.0072	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	0	.5
2	MP4A	Z	-26.225	.5
3	MP4A	Mx	0	.5
4	MP4A	X	0	4.5
5	MP4A	Z	-26.225	4.5
6	MP4A	Mx	0	4.5
7	MP1A	X	0	1.5
8	MP1A	Z	-21.366	1.5
9	MP1A	Mx	0	1.5
10	MP1A	X	0	3.5
11	MP1A	Z	-21.366	3.5
12	MP1A	Mx	0	3.5
13	MP2A	X	0	.75
14	MP2A	Z	-52.091	.75
15	MP2A	Mx	0	.75
16	MP2A	X	0	4.25
17	MP2A	Z	-52.091	4.25
18	MP2A	Mx	0	4.25
19	MP3A	X	0	.75
20	MP3A	Z	-52.091	.75
21	MP3A	Mx	0	.75
22	MP3A	X	0	4.25
23	MP3A	Z	-52.091	4.25
24	MP3A	Mx	0	4.25
25	M49	X	0	2.5
26	M49	Z	-18.324	2.5
27	M49	Mx	0	2.5
28	M48	X	0	2.5
29	M48	Z	-18.263	2.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
30	M48	Mx	0	2.5
31	MP2A	X	0	4
32	MP2A	Z	-10.497	4
33	MP2A	Mx	0	4
34	MP3A	X	0	4
35	MP3A	Z	-10.497	4
36	MP3A	Mx	0	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	12.113	.5
2	MP4A	Z	-20.98	.5
3	MP4A	Mx	-.0081	.5
4	MP4A	X	12.113	4.5
5	MP4A	Z	-20.98	4.5
6	MP4A	Mx	-.0081	4.5
7	MP1A	X	9.2	1.5
8	MP1A	Z	-15.935	1.5
9	MP1A	Mx	-.0023	1.5
10	MP1A	X	9.2	3.5
11	MP1A	Z	-15.935	3.5
12	MP1A	Mx	-.0023	3.5
13	MP2A	X	22.854	.75
14	MP2A	Z	-39.584	.75
15	MP2A	Mx	-.0152	.75
16	MP2A	X	22.854	4.25
17	MP2A	Z	-39.584	4.25
18	MP2A	Mx	-.0152	4.25
19	MP3A	X	22.854	.75
20	MP3A	Z	-39.584	.75
21	MP3A	Mx	-.0152	.75
22	MP3A	X	22.854	4.25
23	MP3A	Z	-39.584	4.25
24	MP3A	Mx	-.0152	4.25
25	M49	X	8.134	2.5
26	M49	Z	-14.089	2.5
27	M49	Mx	0	2.5
28	M48	X	7.713	2.5
29	M48	Z	-13.359	2.5
30	M48	Mx	0	2.5
31	MP2A	X	4.482	4
32	MP2A	Z	-7.763	4
33	MP2A	Mx	.0019	4
34	MP3A	X	4.482	4
35	MP3A	Z	-7.763	4
36	MP3A	Mx	.0019	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	17.518	.5
2	MP4A	Z	-10.114	.5
3	MP4A	Mx	-.0117	.5
4	MP4A	X	17.518	4.5
5	MP4A	Z	-10.114	4.5
6	MP4A	Mx	-.0117	4.5
7	MP1A	X	10.799	1.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
8	MP1A	Z	-6.235	1.5
9	MP1A	Mx	-.0027	1.5
10	MP1A	X	10.799	3.5
11	MP1A	Z	-6.235	3.5
12	MP1A	Mx	-.0027	3.5
13	MP2A	X	28.528	.75
14	MP2A	Z	-16.47	.75
15	MP2A	Mx	-.019	.75
16	MP2A	X	28.528	4.25
17	MP2A	Z	-16.47	4.25
18	MP2A	Mx	-.019	4.25
19	MP3A	X	28.528	.75
20	MP3A	Z	-16.47	.75
21	MP3A	Mx	-.019	.75
22	MP3A	X	28.528	4.25
23	MP3A	Z	-16.47	4.25
24	MP3A	Mx	-.019	4.25
25	M49	X	11.905	2.5
26	M49	Z	-6.873	2.5
27	M49	Mx	0	2.5
28	M48	X	10.345	2.5
29	M48	Z	-5.973	2.5
30	M48	Mx	0	2.5
31	MP2A	X	5.108	4
32	MP2A	Z	-2.949	4
33	MP2A	Mx	.0021	4
34	MP3A	X	5.108	4
35	MP3A	Z	-2.949	4
36	MP3A	Mx	.0021	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	18.229	.5
2	MP4A	Z	0	.5
3	MP4A	Mx	-.0122	.5
4	MP4A	X	18.229	4.5
5	MP4A	Z	0	4.5
6	MP4A	Mx	-.0122	4.5
7	MP1A	X	9.505	1.5
8	MP1A	Z	0	1.5
9	MP1A	Mx	-.0024	1.5
10	MP1A	X	9.505	3.5
11	MP1A	Z	0	3.5
12	MP1A	Mx	-.0024	3.5
13	MP2A	X	26.558	.75
14	MP2A	Z	0	.75
15	MP2A	Mx	-.0177	.75
16	MP2A	X	26.558	4.25
17	MP2A	Z	0	4.25
18	MP2A	Mx	-.0177	4.25
19	MP3A	X	26.558	.75
20	MP3A	Z	0	.75
21	MP3A	Mx	-.0177	.75
22	MP3A	X	26.558	4.25
23	MP3A	Z	0	4.25
24	MP3A	Mx	-.0177	4.25



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
25	M49	X	13.28	2.5
26	M49	Z	0	2.5
27	M49	Mx	0	2.5
28	M48	X	11.302	2.5
29	M48	Z	0	2.5
30	M48	Mx	0	2.5
31	MP2A	X	4.365	4
32	MP2A	Z	0	4
33	MP2A	Mx	.0018	4
34	MP3A	X	4.365	4
35	MP3A	Z	0	4
36	MP3A	Mx	.0018	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	17.518	.5
2	MP4A	Z	10.114	.5
3	MP4A	Mx	-.0117	.5
4	MP4A	X	17.518	4.5
5	MP4A	Z	10.114	4.5
6	MP4A	Mx	-.0117	4.5
7	MP1A	X	10.799	1.5
8	MP1A	Z	6.235	1.5
9	MP1A	Mx	-.0027	1.5
10	MP1A	X	10.799	3.5
11	MP1A	Z	6.235	3.5
12	MP1A	Mx	-.0027	3.5
13	MP2A	X	28.528	.75
14	MP2A	Z	16.47	.75
15	MP2A	Mx	-.019	.75
16	MP2A	X	28.528	4.25
17	MP2A	Z	16.47	4.25
18	MP2A	Mx	-.019	4.25
19	MP3A	X	28.528	.75
20	MP3A	Z	16.47	.75
21	MP3A	Mx	-.019	.75
22	MP3A	X	28.528	4.25
23	MP3A	Z	16.47	4.25
24	MP3A	Mx	-.019	4.25
25	M49	X	13.282	2.5
26	M49	Z	7.668	2.5
27	M49	Mx	0	2.5
28	M48	X	12.245	2.5
29	M48	Z	7.07	2.5
30	M48	Mx	0	2.5
31	MP2A	X	5.108	4
32	MP2A	Z	2.949	4
33	MP2A	Mx	.0021	4
34	MP3A	X	5.108	4
35	MP3A	Z	2.949	4
36	MP3A	Mx	.0021	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	12.113	.5
2	MP4A	Z	20.98	.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
3	MP4A	Mx	-.0081	.5
4	MP4A	X	12.113	4.5
5	MP4A	Z	20.98	4.5
6	MP4A	Mx	-.0081	4.5
7	MP1A	X	9.2	1.5
8	MP1A	Z	15.935	1.5
9	MP1A	Mx	-.0023	1.5
10	MP1A	X	9.2	3.5
11	MP1A	Z	15.935	3.5
12	MP1A	Mx	-.0023	3.5
13	MP2A	X	22.854	.75
14	MP2A	Z	39.584	.75
15	MP2A	Mx	-.0152	.75
16	MP2A	X	22.854	4.25
17	MP2A	Z	39.584	4.25
18	MP2A	Mx	-.0152	4.25
19	MP3A	X	22.854	.75
20	MP3A	Z	39.584	.75
21	MP3A	Mx	-.0152	.75
22	MP3A	X	22.854	4.25
23	MP3A	Z	39.584	4.25
24	MP3A	Mx	-.0152	4.25
25	M49	X	8.929	2.5
26	M49	Z	15.466	2.5
27	M49	Mx	0	2.5
28	M48	X	8.81	2.5
29	M48	Z	15.259	2.5
30	M48	Mx	0	2.5
31	MP2A	X	4.482	4
32	MP2A	Z	7.763	4
33	MP2A	Mx	.0019	4
34	MP3A	X	4.482	4
35	MP3A	Z	7.763	4
36	MP3A	Mx	.0019	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	0	.5
2	MP4A	Z	26.225	.5
3	MP4A	Mx	0	.5
4	MP4A	X	0	4.5
5	MP4A	Z	26.225	4.5
6	MP4A	Mx	0	4.5
7	MP1A	X	0	1.5
8	MP1A	Z	21.366	1.5
9	MP1A	Mx	0	1.5
10	MP1A	X	0	3.5
11	MP1A	Z	21.366	3.5
12	MP1A	Mx	0	3.5
13	MP2A	X	0	.75
14	MP2A	Z	52.091	.75
15	MP2A	Mx	0	.75
16	MP2A	X	0	4.25
17	MP2A	Z	52.091	4.25
18	MP2A	Mx	0	4.25
19	MP3A	X	0	.75



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
20	MP3A	Z	52.091	.75
21	MP3A	Mx	0	.75
22	MP3A	X	0	4.25
23	MP3A	Z	52.091	4.25
24	MP3A	Mx	0	4.25
25	M49	X	0	2.5
26	M49	Z	18.324	2.5
27	M49	Mx	0	2.5
28	M48	X	0	2.5
29	M48	Z	18.263	2.5
30	M48	Mx	0	2.5
31	MP2A	X	0	4
32	MP2A	Z	10.497	4
33	MP2A	Mx	0	4
34	MP3A	X	0	4
35	MP3A	Z	10.497	4
36	MP3A	Mx	0	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-12.113	.5
2	MP4A	Z	20.98	.5
3	MP4A	Mx	.0081	.5
4	MP4A	X	-12.113	4.5
5	MP4A	Z	20.98	4.5
6	MP4A	Mx	.0081	4.5
7	MP1A	X	-9.2	1.5
8	MP1A	Z	15.935	1.5
9	MP1A	Mx	.0023	1.5
10	MP1A	X	-9.2	3.5
11	MP1A	Z	15.935	3.5
12	MP1A	Mx	.0023	3.5
13	MP2A	X	-22.854	.75
14	MP2A	Z	39.584	.75
15	MP2A	Mx	.0152	.75
16	MP2A	X	-22.854	4.25
17	MP2A	Z	39.584	4.25
18	MP2A	Mx	.0152	4.25
19	MP3A	X	-22.854	.75
20	MP3A	Z	39.584	.75
21	MP3A	Mx	.0152	.75
22	MP3A	X	-22.854	4.25
23	MP3A	Z	39.584	4.25
24	MP3A	Mx	.0152	4.25
25	M49	X	-8.134	2.5
26	M49	Z	14.089	2.5
27	M49	Mx	0	2.5
28	M48	X	-7.713	2.5
29	M48	Z	13.359	2.5
30	M48	Mx	0	2.5
31	MP2A	X	-4.482	4
32	MP2A	Z	7.763	4
33	MP2A	Mx	-.0019	4
34	MP3A	X	-4.482	4
35	MP3A	Z	7.763	4
36	MP3A	Mx	-.0019	4



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-17.518	.5
2	MP4A	Z	10.114	.5
3	MP4A	Mx	.0117	.5
4	MP4A	X	-17.518	4.5
5	MP4A	Z	10.114	4.5
6	MP4A	Mx	.0117	4.5
7	MP1A	X	-10.799	1.5
8	MP1A	Z	6.235	1.5
9	MP1A	Mx	.0027	1.5
10	MP1A	X	-10.799	3.5
11	MP1A	Z	6.235	3.5
12	MP1A	Mx	.0027	3.5
13	MP2A	X	-28.528	.75
14	MP2A	Z	16.47	.75
15	MP2A	Mx	.019	.75
16	MP2A	X	-28.528	4.25
17	MP2A	Z	16.47	4.25
18	MP2A	Mx	.019	4.25
19	MP3A	X	-28.528	.75
20	MP3A	Z	16.47	.75
21	MP3A	Mx	.019	.75
22	MP3A	X	-28.528	4.25
23	MP3A	Z	16.47	4.25
24	MP3A	Mx	.019	4.25
25	M49	X	-11.905	2.5
26	M49	Z	6.873	2.5
27	M49	Mx	0	2.5
28	M48	X	-10.345	2.5
29	M48	Z	5.973	2.5
30	M48	Mx	0	2.5
31	MP2A	X	-5.108	4
32	MP2A	Z	2.949	4
33	MP2A	Mx	-.0021	4
34	MP3A	X	-5.108	4
35	MP3A	Z	2.949	4
36	MP3A	Mx	-.0021	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-18.229	.5
2	MP4A	Z	0	.5
3	MP4A	Mx	.0122	.5
4	MP4A	X	-18.229	4.5
5	MP4A	Z	0	4.5
6	MP4A	Mx	.0122	4.5
7	MP1A	X	-9.505	1.5
8	MP1A	Z	0	1.5
9	MP1A	Mx	.0024	1.5
10	MP1A	X	-9.505	3.5
11	MP1A	Z	0	3.5
12	MP1A	Mx	.0024	3.5
13	MP2A	X	-26.558	.75
14	MP2A	Z	0	.75
15	MP2A	Mx	.0177	.75
16	MP2A	X	-26.558	4.25
17	MP2A	Z	0	4.25



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
18	MP2A	Mx	.0177	4.25
19	MP3A	X	-26.558	.75
20	MP3A	Z	0	.75
21	MP3A	Mx	.0177	.75
22	MP3A	X	-26.558	4.25
23	MP3A	Z	0	4.25
24	MP3A	Mx	.0177	4.25
25	M49	X	-13.28	2.5
26	M49	Z	0	2.5
27	M49	Mx	0	2.5
28	M48	X	-11.302	2.5
29	M48	Z	0	2.5
30	M48	Mx	0	2.5
31	MP2A	X	-4.365	4
32	MP2A	Z	0	4
33	MP2A	Mx	-.0018	4
34	MP3A	X	-4.365	4
35	MP3A	Z	0	4
36	MP3A	Mx	-.0018	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-17.518	.5
2	MP4A	Z	-10.114	.5
3	MP4A	Mx	.0117	.5
4	MP4A	X	-17.518	4.5
5	MP4A	Z	-10.114	4.5
6	MP4A	Mx	.0117	4.5
7	MP1A	X	-10.799	1.5
8	MP1A	Z	-6.235	1.5
9	MP1A	Mx	.0027	1.5
10	MP1A	X	-10.799	3.5
11	MP1A	Z	-6.235	3.5
12	MP1A	Mx	.0027	3.5
13	MP2A	X	-28.528	.75
14	MP2A	Z	-16.47	.75
15	MP2A	Mx	.019	.75
16	MP2A	X	-28.528	4.25
17	MP2A	Z	-16.47	4.25
18	MP2A	Mx	.019	4.25
19	MP3A	X	-28.528	.75
20	MP3A	Z	-16.47	.75
21	MP3A	Mx	.019	.75
22	MP3A	X	-28.528	4.25
23	MP3A	Z	-16.47	4.25
24	MP3A	Mx	.019	4.25
25	M49	X	-13.282	2.5
26	M49	Z	-7.668	2.5
27	M49	Mx	0	2.5
28	M48	X	-12.245	2.5
29	M48	Z	-7.07	2.5
30	M48	Mx	0	2.5
31	MP2A	X	-5.108	4
32	MP2A	Z	-2.949	4
33	MP2A	Mx	-.0021	4
34	MP3A	X	-5.108	4



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
13	MP2A	X	0	.75
14	MP2A	Z	-16.728	.75
15	MP2A	Mx	0	.75
16	MP2A	X	0	4.25
17	MP2A	Z	-16.728	4.25
18	MP2A	Mx	0	4.25
19	MP3A	X	0	.75
20	MP3A	Z	-16.728	.75
21	MP3A	Mx	0	.75
22	MP3A	X	0	4.25
23	MP3A	Z	-16.728	4.25
24	MP3A	Mx	0	4.25
25	M49	X	0	2.5
26	M49	Z	-4.176	2.5
27	M49	Mx	0	2.5
28	M48	X	0	2.5
29	M48	Z	-4.16	2.5
30	M48	Mx	0	2.5
31	MP2A	X	0	4
32	MP2A	Z	-2.612	4
33	MP2A	Mx	0	4
34	MP3A	X	0	4
35	MP3A	Z	-2.612	4
36	MP3A	Mx	0	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	3.635	.5
2	MP4A	Z	-6.296	.5
3	MP4A	Mx	-.0024	.5
4	MP4A	X	3.635	4.5
5	MP4A	Z	-6.296	4.5
6	MP4A	Mx	-.0024	4.5
7	MP1A	X	2.234	1.5
8	MP1A	Z	-3.87	1.5
9	MP1A	Mx	-.000558	1.5
10	MP1A	X	2.234	3.5
11	MP1A	Z	-3.87	3.5
12	MP1A	Mx	-.000558	3.5
13	MP2A	X	7.253	.75
14	MP2A	Z	-12.562	.75
15	MP2A	Mx	-.0048	.75
16	MP2A	X	7.253	4.25
17	MP2A	Z	-12.562	4.25
18	MP2A	Mx	-.0048	4.25
19	MP3A	X	7.253	.75
20	MP3A	Z	-12.562	.75
21	MP3A	Mx	-.0048	.75
22	MP3A	X	7.253	4.25
23	MP3A	Z	-12.562	4.25
24	MP3A	Mx	-.0048	4.25
25	M49	X	1.822	2.5
26	M49	Z	-3.156	2.5
27	M49	Mx	0	2.5
28	M48	X	1.715	2.5
29	M48	Z	-2.971	2.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
30	M48	Mx	0	2.5
31	MP2A	X	1.079	4
32	MP2A	Z	-1.868	4
33	MP2A	Mx	.00045	4
34	MP3A	X	1.079	4
35	MP3A	Z	-1.868	4
36	MP3A	Mx	.00045	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	5.12	.5
2	MP4A	Z	-2.956	.5
3	MP4A	Mx	-.0034	.5
4	MP4A	X	5.12	4.5
5	MP4A	Z	-2.956	4.5
6	MP4A	Mx	-.0034	4.5
7	MP1A	X	2.352	1.5
8	MP1A	Z	-1.358	1.5
9	MP1A	Mx	-.000588	1.5
10	MP1A	X	2.352	3.5
11	MP1A	Z	-1.358	3.5
12	MP1A	Mx	-.000588	3.5
13	MP2A	X	8.713	.75
14	MP2A	Z	-5.031	.75
15	MP2A	Mx	-.0058	.75
16	MP2A	X	8.713	4.25
17	MP2A	Z	-5.031	4.25
18	MP2A	Mx	-.0058	4.25
19	MP3A	X	8.713	.75
20	MP3A	Z	-5.031	.75
21	MP3A	Mx	-.0058	.75
22	MP3A	X	8.713	4.25
23	MP3A	Z	-5.031	4.25
24	MP3A	Mx	-.0058	4.25
25	M49	X	2.591	2.5
26	M49	Z	-1.496	2.5
27	M49	Mx	0	2.5
28	M48	X	2.196	2.5
29	M48	Z	-1.268	2.5
30	M48	Mx	0	2.5
31	MP2A	X	1.08	4
32	MP2A	Z	-.624	4
33	MP2A	Mx	.00045	4
34	MP3A	X	1.08	4
35	MP3A	Z	-.624	4
36	MP3A	Mx	.00045	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	5.234	.5
2	MP4A	Z	0	.5
3	MP4A	Mx	-.0035	.5
4	MP4A	X	5.234	4.5
5	MP4A	Z	0	4.5
6	MP4A	Mx	-.0035	4.5
7	MP1A	X	1.84	1.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
8	MP1A	Z	0	1.5
9	MP1A	Mx	-0.0046	1.5
10	MP1A	X	1.84	3.5
11	MP1A	Z	0	3.5
12	MP1A	Mx	-0.0046	3.5
13	MP2A	X	7.839	.75
14	MP2A	Z	0	.75
15	MP2A	Mx	-0.0052	.75
16	MP2A	X	7.839	4.25
17	MP2A	Z	0	4.25
18	MP2A	Mx	-0.0052	4.25
19	MP3A	X	7.839	.75
20	MP3A	Z	0	.75
21	MP3A	Mx	-0.0052	.75
22	MP3A	X	7.839	4.25
23	MP3A	Z	0	4.25
24	MP3A	Mx	-0.0052	4.25
25	M49	X	2.872	2.5
26	M49	Z	0	2.5
27	M49	Mx	0	2.5
28	M48	X	2.37	2.5
29	M48	Z	0	2.5
30	M48	Mx	0	2.5
31	MP2A	X	.792	4
32	MP2A	Z	0	4
33	MP2A	Mx	.00033	4
34	MP3A	X	.792	4
35	MP3A	Z	0	4
36	MP3A	Mx	.00033	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	5.12	.5
2	MP4A	Z	2.956	.5
3	MP4A	Mx	-0.0034	.5
4	MP4A	X	5.12	4.5
5	MP4A	Z	2.956	4.5
6	MP4A	Mx	-0.0034	4.5
7	MP1A	X	2.352	1.5
8	MP1A	Z	1.358	1.5
9	MP1A	Mx	-0.00588	1.5
10	MP1A	X	2.352	3.5
11	MP1A	Z	1.358	3.5
12	MP1A	Mx	-0.00588	3.5
13	MP2A	X	8.713	.75
14	MP2A	Z	5.031	.75
15	MP2A	Mx	-0.0058	.75
16	MP2A	X	8.713	4.25
17	MP2A	Z	5.031	4.25
18	MP2A	Mx	-0.0058	4.25
19	MP3A	X	8.713	.75
20	MP3A	Z	5.031	.75
21	MP3A	Mx	-0.0058	.75
22	MP3A	X	8.713	4.25
23	MP3A	Z	5.031	4.25
24	MP3A	Mx	-0.0058	4.25



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
25	M49	X	2.947	2.5
26	M49	Z	1.702	2.5
27	M49	Mx	0	2.5
28	M48	X	2.685	2.5
29	M48	Z	1.55	2.5
30	M48	Mx	0	2.5
31	MP2A	X	1.08	4
32	MP2A	Z	.624	4
33	MP2A	Mx	.00045	4
34	MP3A	X	1.08	4
35	MP3A	Z	.624	4
36	MP3A	Mx	.00045	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	3.635	.5
2	MP4A	Z	6.296	.5
3	MP4A	Mx	-.0024	.5
4	MP4A	X	3.635	4.5
5	MP4A	Z	6.296	4.5
6	MP4A	Mx	-.0024	4.5
7	MP1A	X	2.234	1.5
8	MP1A	Z	3.87	1.5
9	MP1A	Mx	-.000558	1.5
10	MP1A	X	2.234	3.5
11	MP1A	Z	3.87	3.5
12	MP1A	Mx	-.000558	3.5
13	MP2A	X	7.253	.75
14	MP2A	Z	12.562	.75
15	MP2A	Mx	-.0048	.75
16	MP2A	X	7.253	4.25
17	MP2A	Z	12.562	4.25
18	MP2A	Mx	-.0048	4.25
19	MP3A	X	7.253	.75
20	MP3A	Z	12.562	.75
21	MP3A	Mx	-.0048	.75
22	MP3A	X	7.253	4.25
23	MP3A	Z	12.562	4.25
24	MP3A	Mx	-.0048	4.25
25	M49	X	2.028	2.5
26	M49	Z	3.512	2.5
27	M49	Mx	0	2.5
28	M48	X	1.997	2.5
29	M48	Z	3.46	2.5
30	M48	Mx	0	2.5
31	MP2A	X	1.079	4
32	MP2A	Z	1.868	4
33	MP2A	Mx	.00045	4
34	MP3A	X	1.079	4
35	MP3A	Z	1.868	4
36	MP3A	Mx	.00045	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	0	.5
2	MP4A	Z	7.948	.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
3	MP4A	Mx	0	.5
4	MP4A	X	0	4.5
5	MP4A	Z	7.948	4.5
6	MP4A	Mx	0	4.5
7	MP1A	X	0	1.5
8	MP1A	Z	5.344	1.5
9	MP1A	Mx	0	1.5
10	MP1A	X	0	3.5
11	MP1A	Z	5.344	3.5
12	MP1A	Mx	0	3.5
13	MP2A	X	0	.75
14	MP2A	Z	16.728	.75
15	MP2A	Mx	0	.75
16	MP2A	X	0	4.25
17	MP2A	Z	16.728	4.25
18	MP2A	Mx	0	4.25
19	MP3A	X	0	.75
20	MP3A	Z	16.728	.75
21	MP3A	Mx	0	.75
22	MP3A	X	0	4.25
23	MP3A	Z	16.728	4.25
24	MP3A	Mx	0	4.25
25	M49	X	0	2.5
26	M49	Z	4.176	2.5
27	M49	Mx	0	2.5
28	M48	X	0	2.5
29	M48	Z	4.16	2.5
30	M48	Mx	0	2.5
31	MP2A	X	0	4
32	MP2A	Z	2.612	4
33	MP2A	Mx	0	4
34	MP3A	X	0	4
35	MP3A	Z	2.612	4
36	MP3A	Mx	0	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-3.635	.5
2	MP4A	Z	6.296	.5
3	MP4A	Mx	.0024	.5
4	MP4A	X	-3.635	4.5
5	MP4A	Z	6.296	4.5
6	MP4A	Mx	.0024	4.5
7	MP1A	X	-2.234	1.5
8	MP1A	Z	3.87	1.5
9	MP1A	Mx	.000558	1.5
10	MP1A	X	-2.234	3.5
11	MP1A	Z	3.87	3.5
12	MP1A	Mx	.000558	3.5
13	MP2A	X	-7.253	.75
14	MP2A	Z	12.562	.75
15	MP2A	Mx	.0048	.75
16	MP2A	X	-7.253	4.25
17	MP2A	Z	12.562	4.25
18	MP2A	Mx	.0048	4.25
19	MP3A	X	-7.253	.75



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
20	MP3A	Z	12.562	.75
21	MP3A	Mx	.0048	.75
22	MP3A	X	-7.253	4.25
23	MP3A	Z	12.562	4.25
24	MP3A	Mx	.0048	4.25
25	M49	X	-1.822	2.5
26	M49	Z	3.156	2.5
27	M49	Mx	0	2.5
28	M48	X	-1.715	2.5
29	M48	Z	2.971	2.5
30	M48	Mx	0	2.5
31	MP2A	X	-1.079	4
32	MP2A	Z	1.868	4
33	MP2A	Mx	-.00045	4
34	MP3A	X	-1.079	4
35	MP3A	Z	1.868	4
36	MP3A	Mx	-.00045	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-5.12	.5
2	MP4A	Z	2.956	.5
3	MP4A	Mx	.0034	.5
4	MP4A	X	-5.12	4.5
5	MP4A	Z	2.956	4.5
6	MP4A	Mx	.0034	4.5
7	MP1A	X	-2.352	1.5
8	MP1A	Z	1.358	1.5
9	MP1A	Mx	.000588	1.5
10	MP1A	X	-2.352	3.5
11	MP1A	Z	1.358	3.5
12	MP1A	Mx	.000588	3.5
13	MP2A	X	-8.713	.75
14	MP2A	Z	5.031	.75
15	MP2A	Mx	.0058	.75
16	MP2A	X	-8.713	4.25
17	MP2A	Z	5.031	4.25
18	MP2A	Mx	.0058	4.25
19	MP3A	X	-8.713	.75
20	MP3A	Z	5.031	.75
21	MP3A	Mx	.0058	.75
22	MP3A	X	-8.713	4.25
23	MP3A	Z	5.031	4.25
24	MP3A	Mx	.0058	4.25
25	M49	X	-2.591	2.5
26	M49	Z	1.496	2.5
27	M49	Mx	0	2.5
28	M48	X	-2.196	2.5
29	M48	Z	1.268	2.5
30	M48	Mx	0	2.5
31	MP2A	X	-1.08	4
32	MP2A	Z	.624	4
33	MP2A	Mx	-.00045	4
34	MP3A	X	-1.08	4
35	MP3A	Z	.624	4
36	MP3A	Mx	-.00045	4



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-5.234	.5
2	MP4A	Z	0	.5
3	MP4A	Mx	.0035	.5
4	MP4A	X	-5.234	4.5
5	MP4A	Z	0	4.5
6	MP4A	Mx	.0035	4.5
7	MP1A	X	-1.84	1.5
8	MP1A	Z	0	1.5
9	MP1A	Mx	.00046	1.5
10	MP1A	X	-1.84	3.5
11	MP1A	Z	0	3.5
12	MP1A	Mx	.00046	3.5
13	MP2A	X	-7.839	.75
14	MP2A	Z	0	.75
15	MP2A	Mx	.0052	.75
16	MP2A	X	-7.839	4.25
17	MP2A	Z	0	4.25
18	MP2A	Mx	.0052	4.25
19	MP3A	X	-7.839	.75
20	MP3A	Z	0	.75
21	MP3A	Mx	.0052	.75
22	MP3A	X	-7.839	4.25
23	MP3A	Z	0	4.25
24	MP3A	Mx	.0052	4.25
25	M49	X	-2.872	2.5
26	M49	Z	0	2.5
27	M49	Mx	0	2.5
28	M48	X	-2.37	2.5
29	M48	Z	0	2.5
30	M48	Mx	0	2.5
31	MP2A	X	-.792	4
32	MP2A	Z	0	4
33	MP2A	Mx	-.00033	4
34	MP3A	X	-.792	4
35	MP3A	Z	0	4
36	MP3A	Mx	-.00033	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-5.12	.5
2	MP4A	Z	-2.956	.5
3	MP4A	Mx	.0034	.5
4	MP4A	X	-5.12	4.5
5	MP4A	Z	-2.956	4.5
6	MP4A	Mx	.0034	4.5
7	MP1A	X	-2.352	1.5
8	MP1A	Z	-1.358	1.5
9	MP1A	Mx	.000588	1.5
10	MP1A	X	-2.352	3.5
11	MP1A	Z	-1.358	3.5
12	MP1A	Mx	.000588	3.5
13	MP2A	X	-8.713	.75
14	MP2A	Z	-5.031	.75
15	MP2A	Mx	.0058	.75
16	MP2A	X	-8.713	4.25
17	MP2A	Z	-5.031	4.25



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
18	MP2A	Mx	.0058	4.25
19	MP3A	X	-8.713	.75
20	MP3A	Z	-5.031	.75
21	MP3A	Mx	.0058	.75
22	MP3A	X	-8.713	4.25
23	MP3A	Z	-5.031	4.25
24	MP3A	Mx	.0058	4.25
25	M49	X	-2.947	2.5
26	M49	Z	-1.702	2.5
27	M49	Mx	0	2.5
28	M48	X	-2.685	2.5
29	M48	Z	-1.55	2.5
30	M48	Mx	0	2.5
31	MP2A	X	-1.08	4
32	MP2A	Z	-.624	4
33	MP2A	Mx	-.00045	4
34	MP3A	X	-1.08	4
35	MP3A	Z	-.624	4
36	MP3A	Mx	-.00045	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-3.635	.5
2	MP4A	Z	-6.296	.5
3	MP4A	Mx	.0024	.5
4	MP4A	X	-3.635	4.5
5	MP4A	Z	-6.296	4.5
6	MP4A	Mx	.0024	4.5
7	MP1A	X	-2.234	1.5
8	MP1A	Z	-3.87	1.5
9	MP1A	Mx	.000558	1.5
10	MP1A	X	-2.234	3.5
11	MP1A	Z	-3.87	3.5
12	MP1A	Mx	.000558	3.5
13	MP2A	X	-7.253	.75
14	MP2A	Z	-12.562	.75
15	MP2A	Mx	.0048	.75
16	MP2A	X	-7.253	4.25
17	MP2A	Z	-12.562	4.25
18	MP2A	Mx	.0048	4.25
19	MP3A	X	-7.253	.75
20	MP3A	Z	-12.562	.75
21	MP3A	Mx	.0048	.75
22	MP3A	X	-7.253	4.25
23	MP3A	Z	-12.562	4.25
24	MP3A	Mx	.0048	4.25
25	M49	X	-2.028	2.5
26	M49	Z	-3.512	2.5
27	M49	Mx	0	2.5
28	M48	X	-1.997	2.5
29	M48	Z	-3.46	2.5
30	M48	Mx	0	2.5
31	MP2A	X	-1.079	4
32	MP2A	Z	-1.868	4
33	MP2A	Mx	-.00045	4
34	MP3A	X	-1.079	4



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
35	MP3A	Z	-1.868	4
36	MP3A	Mx	-0.0045	4

Member Point Loads (BLC 77 : Lm1)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	M6	Y	-500	0

Member Point Loads (BLC 78 : Lm2)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	M10	Y	-500	0

Member Point Loads (BLC 79 : Lv1)

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

Member Point Loads (BLC 80 : Lv2)

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

Member Point Loads (BLC 81 : Antenna Ev)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	Y	-5869	.5
2	MP4A	My	-0.00391	.5
3	MP4A	Mz	0	.5
4	MP4A	Y	-5869	4.5
5	MP4A	My	-0.00391	4.5
6	MP4A	Mz	0	4.5
7	MP1A	Y	-1.6816	1.5
8	MP1A	My	-0.0042	1.5
9	MP1A	Mz	0	1.5
10	MP1A	Y	-1.6816	3.5
11	MP1A	My	-0.0042	3.5
12	MP1A	Mz	0	3.5
13	MP2A	Y	-1.4943	.75
14	MP2A	My	-0.00996	.75
15	MP2A	Mz	0	.75
16	MP2A	Y	-1.4943	4.25
17	MP2A	My	-0.00996	4.25
18	MP2A	Mz	0	4.25
19	MP3A	Y	-1.4943	.75
20	MP3A	My	-0.00996	.75
21	MP3A	Mz	0	.75
22	MP3A	Y	-1.4943	4.25
23	MP3A	My	-0.00996	4.25
24	MP3A	Mz	0	4.25
25	M49	Y	-3.259	2.5
26	M49	My	0	2.5
27	M49	Mz	0	2.5
28	M48	Y	-2.7145	2.5
29	M48	My	0	2.5
30	M48	Mz	0	2.5
31	MP2A	Y	-6796	4
32	MP2A	My	.000283	4
33	MP2A	Mz	0	4



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
34	MP3A	Y	- .6796	4
35	MP3A	My	.000283	4
36	MP3A	Mz	0	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	Z	-1.4673	.5
2	MP4A	Mx	0	.5
3	MP4A	Z	-1.4673	4.5
4	MP4A	Mx	0	4.5
5	MP1A	Z	-4.204	1.5
6	MP1A	Mx	0	1.5
7	MP1A	Z	-4.204	3.5
8	MP1A	Mx	0	3.5
9	MP2A	Z	-3.7358	.75
10	MP2A	Mx	0	.75
11	MP2A	Z	-3.7358	4.25
12	MP2A	Mx	0	4.25
13	MP3A	Z	-3.7358	.75
14	MP3A	Mx	0	.75
15	MP3A	Z	-3.7358	4.25
16	MP3A	Mx	0	4.25
17	M49	Z	-8.1474	2.5
18	M49	Mx	0	2.5
19	M48	Z	-6.7863	2.5
20	M48	Mx	0	2.5
21	MP2A	Z	-1.699	4
22	MP2A	Mx	0	4
23	MP3A	Z	-1.699	4
24	MP3A	Mx	0	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	1.4673	.5
2	MP4A	Mx	-.000978	.5
3	MP4A	X	1.4673	4.5
4	MP4A	Mx	-.000978	4.5
5	MP1A	X	4.204	1.5
6	MP1A	Mx	-.0011	1.5
7	MP1A	X	4.204	3.5
8	MP1A	Mx	-.0011	3.5
9	MP2A	X	3.7358	.75
10	MP2A	Mx	-.0025	.75
11	MP2A	X	3.7358	4.25
12	MP2A	Mx	-.0025	4.25
13	MP3A	X	3.7358	.75
14	MP3A	Mx	-.0025	.75
15	MP3A	X	3.7358	4.25
16	MP3A	Mx	-.0025	4.25
17	M49	X	8.1474	2.5
18	M49	Mx	0	2.5
19	M48	X	6.7863	2.5
20	M48	Mx	0	2.5
21	MP2A	X	1.699	4
22	MP2A	Mx	.000708	4
23	MP3A	X	1.699	4



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

	Member Label	Direction	Magnitude[lb, k-ft]	Location[ft, %]
24	MP3A	Mx	.000708	4

Member Distributed Loads (BLC 40 : Structure Di)

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft, %]	End Location[ft, %]
1	M1	Y	-9.9045	-9.9045	0	%100
2	M2	Y	-9.9045	-9.9045	0	%100
3	M13	Y	-11.3609	-11.3609	0	%100
4	M14	Y	-11.3609	-11.3609	0	%100
5	M15	Y	-11.3609	-11.3609	0	%100
6	M16	Y	-11.3609	-11.3609	0	%100
7	M17	Y	-8.8343	-8.8343	0	%100
8	M18	Y	-8.8343	-8.8343	0	%100
9	M19	Y	-8.8343	-8.8343	0	%100
10	M20	Y	-8.8343	-8.8343	0	%100
11	M21	Y	-11.3609	-11.3609	0	%100
12	M22	Y	-11.3609	-11.3609	0	%100
13	M23	Y	-11.3609	-11.3609	0	%100
14	M24	Y	-11.3609	-11.3609	0	%100
15	M25	Y	-5.3558	-5.3558	0	%100
16	M26	Y	-5.3558	-5.3558	0	%100
17	M27	Y	-5.3558	-5.3558	0	%100
18	M28	Y	-5.3558	-5.3558	0	%100
19	M31	Y	-8.8343	-8.8343	0	%100
20	MP4A	Y	-8.8343	-8.8343	0	%100
21	MP3A	Y	-8.8343	-8.8343	0	%100
22	MP2A	Y	-8.8343	-8.8343	0	%100
23	MP1A	Y	-8.8343	-8.8343	0	%100
24	M44	Y	-5.0883	-5.0883	0	%100
25	M45	Y	-5.0883	-5.0883	0	%100
26	M46	Y	-5.0883	-5.0883	0	%100
27	M47	Y	-5.0883	-5.0883	0	%100
28	M48	Y	-8.8343	-8.8343	0	%100
29	M49	Y	-8.8343	-8.8343	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft, %]	End Location[ft, %]
1	M1	X	0	0	0	%100
2	M1	Z	-12.5171	-12.5171	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	-12.5171	-12.5171	0	%100
5	M13	X	0	0	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	0	0	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	0	0	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	0	0	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	0	0	0	%100
14	M17	Z	-4.942	-4.942	0	%100
15	M18	X	0	0	0	%100
16	M18	Z	-4.942	-4.942	0	%100
17	M19	X	0	0	0	%100
18	M19	Z	-4.942	-4.942	0	%100
19	M20	X	0	0	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
20	M20	Z	-4.942	-4.942	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	-2.7211	-2.7211	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	-2.7211	-2.7211	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	-2.7211	-2.7211	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	-2.7211	-2.7211	0	%100
29	M25	X	0	0	0	%100
30	M25	Z	-2.8184	-2.8184	0	%100
31	M26	X	0	0	0	%100
32	M26	Z	-2.8184	-2.8184	0	%100
33	M27	X	0	0	0	%100
34	M27	Z	-2.8184	-2.8184	0	%100
35	M28	X	0	0	0	%100
36	M28	Z	-2.8184	-2.8184	0	%100
37	M31	X	0	0	0	%100
38	M31	Z	-0.364	-0.364	0	%100
39	MP4A	X	0	0	0	%100
40	MP4A	Z	-10.3402	-10.3402	0	%100
41	MP3A	X	0	0	0	%100
42	MP3A	Z	-10.3402	-10.3402	0	%100
43	MP2A	X	0	0	0	%100
44	MP2A	Z	-10.3402	-10.3402	0	%100
45	MP1A	X	0	0	0	%100
46	MP1A	Z	-10.3402	-10.3402	0	%100
47	M44	X	0	0	0	%100
48	M44	Z	-2.7211	-2.7211	0	%100
49	M45	X	0	0	0	%100
50	M45	Z	-2.7211	-2.7211	0	%100
51	M46	X	0	0	0	%100
52	M46	Z	-2.7211	-2.7211	0	%100
53	M47	X	0	0	0	%100
54	M47	Z	-2.7211	-2.7211	0	%100
55	M48	X	0	0	0	%100
56	M48	Z	-10.3402	-10.3402	0	%100
57	M49	X	0	0	0	%100
58	M49	Z	-10.3402	-10.3402	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
1	M1	X	4.6939	4.6939	0	%100
2	M1	Z	-8.1301	-8.1301	0	%100
3	M2	X	4.6939	4.6939	0	%100
4	M2	Z	-8.1301	-8.1301	0	%100
5	M13	X	.3401	.3401	0	%100
6	M13	Z	-.5891	-.5891	0	%100
7	M14	X	.3401	.3401	0	%100
8	M14	Z	-.5891	-.5891	0	%100
9	M15	X	.3401	.3401	0	%100
10	M15	Z	-.5891	-.5891	0	%100
11	M16	X	.3401	.3401	0	%100
12	M16	Z	-.5891	-.5891	0	%100
13	M17	X	.5563	.5563	0	%100
14	M17	Z	-.9636	-.9636	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
15	M18	X	.5563	.5563	0	%100
16	M18	Z	-.9636	-.9636	0	%100
17	M19	X	3.9078	3.9078	0	%100
18	M19	Z	-6.7684	-6.7684	0	%100
19	M20	X	3.9078	3.9078	0	%100
20	M20	Z	-6.7684	-6.7684	0	%100
21	M21	X	1.0204	1.0204	0	%100
22	M21	Z	-1.7674	-1.7674	0	%100
23	M22	X	1.0204	1.0204	0	%100
24	M22	Z	-1.7674	-1.7674	0	%100
25	M23	X	1.0204	1.0204	0	%100
26	M23	Z	-1.7674	-1.7674	0	%100
27	M24	X	1.0204	1.0204	0	%100
28	M24	Z	-1.7674	-1.7674	0	%100
29	M25	X	1.1268	1.1268	0	%100
30	M25	Z	-1.9517	-1.9517	0	%100
31	M26	X	1.1268	1.1268	0	%100
32	M26	Z	-1.9517	-1.9517	0	%100
33	M27	X	1.6211	1.6211	0	%100
34	M27	Z	-2.8078	-2.8078	0	%100
35	M28	X	1.6211	1.6211	0	%100
36	M28	Z	-2.8078	-2.8078	0	%100
37	M31	X	1.0863	1.0863	0	%100
38	M31	Z	-1.8815	-1.8815	0	%100
39	MP4A	X	5.1701	5.1701	0	%100
40	MP4A	Z	-8.9549	-8.9549	0	%100
41	MP3A	X	5.1701	5.1701	0	%100
42	MP3A	Z	-8.9549	-8.9549	0	%100
43	MP2A	X	5.1701	5.1701	0	%100
44	MP2A	Z	-8.9549	-8.9549	0	%100
45	MP1A	X	5.1701	5.1701	0	%100
46	MP1A	Z	-8.9549	-8.9549	0	%100
47	M44	X	1.3606	1.3606	0	%100
48	M44	Z	-2.3565	-2.3565	0	%100
49	M45	X	1.3606	1.3606	0	%100
50	M45	Z	-2.3565	-2.3565	0	%100
51	M46	X	1.3606	1.3606	0	%100
52	M46	Z	-2.3565	-2.3565	0	%100
53	M47	X	1.3606	1.3606	0	%100
54	M47	Z	-2.3565	-2.3565	0	%100
55	M48	X	5.1701	5.1701	0	%100
56	M48	Z	-8.9549	-8.9549	0	%100
57	M49	X	5.1701	5.1701	0	%100
58	M49	Z	-8.9549	-8.9549	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	2.71	2.71	0	%100
2	M1	Z	-1.5646	-1.5646	0	%100
3	M2	X	2.71	2.71	0	%100
4	M2	Z	-1.5646	-1.5646	0	%100
5	M13	X	1.7674	1.7674	0	%100
6	M13	Z	-1.0204	-1.0204	0	%100
7	M14	X	1.7674	1.7674	0	%100
8	M14	Z	-1.0204	-1.0204	0	%100
9	M15	X	1.7674	1.7674	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)
10	M15	Z	-1.0204	-1.0204	0	%100
11	M16	X	1.7674	1.7674	0	%100
12	M16	Z	-1.0204	-1.0204	0	%100
13	M17	X	.1358	.1358	0	%100
14	M17	Z	-.0784	-.0784	0	%100
15	M18	X	.1358	.1358	0	%100
16	M18	Z	-.0784	-.0784	0	%100
17	M19	X	5.9407	5.9407	0	%100
18	M19	Z	-3.4299	-3.4299	0	%100
19	M20	X	5.9407	5.9407	0	%100
20	M20	Z	-3.4299	-3.4299	0	%100
21	M21	X	.5891	.5891	0	%100
22	M21	Z	-.3401	-.3401	0	%100
23	M22	X	.5891	.5891	0	%100
24	M22	Z	-.3401	-.3401	0	%100
25	M23	X	.5891	.5891	0	%100
26	M23	Z	-.3401	-.3401	0	%100
27	M24	X	.5891	.5891	0	%100
28	M24	Z	-.3401	-.3401	0	%100
29	M25	X	1.8296	1.8296	0	%100
30	M25	Z	-1.0563	-1.0563	0	%100
31	M26	X	1.8296	1.8296	0	%100
32	M26	Z	-1.0563	-1.0563	0	%100
33	M27	X	2.6857	2.6857	0	%100
34	M27	Z	-1.5506	-1.5506	0	%100
35	M28	X	2.6857	2.6857	0	%100
36	M28	Z	-1.5506	-1.5506	0	%100
37	M31	X	6.3326	6.3326	0	%100
38	M31	Z	-3.6562	-3.6562	0	%100
39	MP4A	X	8.9549	8.9549	0	%100
40	MP4A	Z	-5.1701	-5.1701	0	%100
41	MP3A	X	8.9549	8.9549	0	%100
42	MP3A	Z	-5.1701	-5.1701	0	%100
43	MP2A	X	8.9549	8.9549	0	%100
44	MP2A	Z	-5.1701	-5.1701	0	%100
45	MP1A	X	8.9549	8.9549	0	%100
46	MP1A	Z	-5.1701	-5.1701	0	%100
47	M44	X	2.3565	2.3565	0	%100
48	M44	Z	-1.3606	-1.3606	0	%100
49	M45	X	2.3565	2.3565	0	%100
50	M45	Z	-1.3606	-1.3606	0	%100
51	M46	X	2.3565	2.3565	0	%100
52	M46	Z	-1.3606	-1.3606	0	%100
53	M47	X	2.3565	2.3565	0	%100
54	M47	Z	-1.3606	-1.3606	0	%100
55	M48	X	8.9549	8.9549	0	%100
56	M48	Z	-5.1701	-5.1701	0	%100
57	M49	X	8.9549	8.9549	0	%100
58	M49	Z	-5.1701	-5.1701	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	0	0	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
5	M13	X	2.7211	2.7211	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	2.7211	2.7211	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	2.7211	2.7211	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	2.7211	2.7211	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	3.0304	3.0304	0	%100
14	M17	Z	0	0	0	%100
15	M18	X	3.0304	3.0304	0	%100
16	M18	Z	0	0	0	%100
17	M19	X	3.0304	3.0304	0	%100
18	M19	Z	0	0	0	%100
19	M20	X	3.0304	3.0304	0	%100
20	M20	Z	0	0	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	0	0	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	0	0	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	0	0	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	0	0	0	%100
29	M25	X	2.5364	2.5364	0	%100
30	M25	Z	0	0	0	%100
31	M26	X	2.5364	2.5364	0	%100
32	M26	Z	0	0	0	%100
33	M27	X	2.5364	2.5364	0	%100
34	M27	Z	0	0	0	%100
35	M28	X	2.5364	2.5364	0	%100
36	M28	Z	0	0	0	%100
37	M31	X	10.3159	10.3159	0	%100
38	M31	Z	0	0	0	%100
39	MP4A	X	10.3402	10.3402	0	%100
40	MP4A	Z	0	0	0	%100
41	MP3A	X	10.3402	10.3402	0	%100
42	MP3A	Z	0	0	0	%100
43	MP2A	X	10.3402	10.3402	0	%100
44	MP2A	Z	0	0	0	%100
45	MP1A	X	10.3402	10.3402	0	%100
46	MP1A	Z	0	0	0	%100
47	M44	X	2.7211	2.7211	0	%100
48	M44	Z	0	0	0	%100
49	M45	X	2.7211	2.7211	0	%100
50	M45	Z	0	0	0	%100
51	M46	X	2.7211	2.7211	0	%100
52	M46	Z	0	0	0	%100
53	M47	X	2.7211	2.7211	0	%100
54	M47	Z	0	0	0	%100
55	M48	X	10.3402	10.3402	0	%100
56	M48	Z	0	0	0	%100
57	M49	X	10.3402	10.3402	0	%100
58	M49	Z	0	0	0	%100

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

Member Label Direction Start Magnitude End Magnitude Start Location End Location



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft...]	End Location[ft...]
1	M1	X	2.71	2.71	0	%100
2	M1	Z	1.5646	1.5646	0	%100
3	M2	X	2.71	2.71	0	%100
4	M2	Z	1.5646	1.5646	0	%100
5	M13	X	1.7674	1.7674	0	%100
6	M13	Z	1.0204	1.0204	0	%100
7	M14	X	1.7674	1.7674	0	%100
8	M14	Z	1.0204	1.0204	0	%100
9	M15	X	1.7674	1.7674	0	%100
10	M15	Z	1.0204	1.0204	0	%100
11	M16	X	1.7674	1.7674	0	%100
12	M16	Z	1.0204	1.0204	0	%100
13	M17	X	5.9407	5.9407	0	%100
14	M17	Z	3.4299	3.4299	0	%100
15	M18	X	5.9407	5.9407	0	%100
16	M18	Z	3.4299	3.4299	0	%100
17	M19	X	.1358	.1358	0	%100
18	M19	Z	.0784	.0784	0	%100
19	M20	X	.1358	.1358	0	%100
20	M20	Z	.0784	.0784	0	%100
21	M21	X	.5891	.5891	0	%100
22	M21	Z	.3401	.3401	0	%100
23	M22	X	.5891	.5891	0	%100
24	M22	Z	.3401	.3401	0	%100
25	M23	X	.5891	.5891	0	%100
26	M23	Z	.3401	.3401	0	%100
27	M24	X	.5891	.5891	0	%100
28	M24	Z	.3401	.3401	0	%100
29	M25	X	2.6857	2.6857	0	%100
30	M25	Z	1.5506	1.5506	0	%100
31	M26	X	2.6857	2.6857	0	%100
32	M26	Z	1.5506	1.5506	0	%100
33	M27	X	1.8296	1.8296	0	%100
34	M27	Z	1.0563	1.0563	0	%100
35	M28	X	1.8296	1.8296	0	%100
36	M28	Z	1.0563	1.0563	0	%100
37	M31	X	7.0838	7.0838	0	%100
38	M31	Z	4.0899	4.0899	0	%100
39	MP4A	X	8.9549	8.9549	0	%100
40	MP4A	Z	5.1701	5.1701	0	%100
41	MP3A	X	8.9549	8.9549	0	%100
42	MP3A	Z	5.1701	5.1701	0	%100
43	MP2A	X	8.9549	8.9549	0	%100
44	MP2A	Z	5.1701	5.1701	0	%100
45	MP1A	X	8.9549	8.9549	0	%100
46	MP1A	Z	5.1701	5.1701	0	%100
47	M44	X	2.3565	2.3565	0	%100
48	M44	Z	1.3606	1.3606	0	%100
49	M45	X	2.3565	2.3565	0	%100
50	M45	Z	1.3606	1.3606	0	%100
51	M46	X	2.3565	2.3565	0	%100
52	M46	Z	1.3606	1.3606	0	%100
53	M47	X	2.3565	2.3565	0	%100
54	M47	Z	1.3606	1.3606	0	%100
55	M48	X	8.9549	8.9549	0	%100
56	M48	Z	5.1701	5.1701	0	%100
57	M49	X	8.9549	8.9549	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
58	M49	Z	5.1701	5.1701	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	4.6939	4.6939	0	%100
2	M1	Z	8.1301	8.1301	0	%100
3	M2	X	4.6939	4.6939	0	%100
4	M2	Z	8.1301	8.1301	0	%100
5	M13	X	.3401	.3401	0	%100
6	M13	Z	.5891	.5891	0	%100
7	M14	X	.3401	.3401	0	%100
8	M14	Z	.5891	.5891	0	%100
9	M15	X	.3401	.3401	0	%100
10	M15	Z	.5891	.5891	0	%100
11	M16	X	.3401	.3401	0	%100
12	M16	Z	.5891	.5891	0	%100
13	M17	X	3.9078	3.9078	0	%100
14	M17	Z	6.7684	6.7684	0	%100
15	M18	X	3.9078	3.9078	0	%100
16	M18	Z	6.7684	6.7684	0	%100
17	M19	X	.5563	.5563	0	%100
18	M19	Z	.9636	.9636	0	%100
19	M20	X	.5563	.5563	0	%100
20	M20	Z	.9636	.9636	0	%100
21	M21	X	1.0204	1.0204	0	%100
22	M21	Z	1.7674	1.7674	0	%100
23	M22	X	1.0204	1.0204	0	%100
24	M22	Z	1.7674	1.7674	0	%100
25	M23	X	1.0204	1.0204	0	%100
26	M23	Z	1.7674	1.7674	0	%100
27	M24	X	1.0204	1.0204	0	%100
28	M24	Z	1.7674	1.7674	0	%100
29	M25	X	1.6211	1.6211	0	%100
30	M25	Z	2.8078	2.8078	0	%100
31	M26	X	1.6211	1.6211	0	%100
32	M26	Z	2.8078	2.8078	0	%100
33	M27	X	1.1268	1.1268	0	%100
34	M27	Z	1.9517	1.9517	0	%100
35	M28	X	1.1268	1.1268	0	%100
36	M28	Z	1.9517	1.9517	0	%100
37	M31	X	1.52	1.52	0	%100
38	M31	Z	2.6327	2.6327	0	%100
39	MP4A	X	5.1701	5.1701	0	%100
40	MP4A	Z	8.9549	8.9549	0	%100
41	MP3A	X	5.1701	5.1701	0	%100
42	MP3A	Z	8.9549	8.9549	0	%100
43	MP2A	X	5.1701	5.1701	0	%100
44	MP2A	Z	8.9549	8.9549	0	%100
45	MP1A	X	5.1701	5.1701	0	%100
46	MP1A	Z	8.9549	8.9549	0	%100
47	M44	X	1.3606	1.3606	0	%100
48	M44	Z	2.3565	2.3565	0	%100
49	M45	X	1.3606	1.3606	0	%100
50	M45	Z	2.3565	2.3565	0	%100
51	M46	X	1.3606	1.3606	0	%100
52	M46	Z	2.3565	2.3565	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
53	M47	X	1.3606	1.3606	0	%100
54	M47	Z	2.3565	2.3565	0	%100
55	M48	X	5.1701	5.1701	0	%100
56	M48	Z	8.9549	8.9549	0	%100
57	M49	X	5.1701	5.1701	0	%100
58	M49	Z	8.9549	8.9549	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	0	0	0	%100
2	M1	Z	12.5171	12.5171	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	12.5171	12.5171	0	%100
5	M13	X	0	0	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	0	0	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	0	0	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	0	0	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	0	0	0	%100
14	M17	Z	4.942	4.942	0	%100
15	M18	X	0	0	0	%100
16	M18	Z	4.942	4.942	0	%100
17	M19	X	0	0	0	%100
18	M19	Z	4.942	4.942	0	%100
19	M20	X	0	0	0	%100
20	M20	Z	4.942	4.942	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	2.7211	2.7211	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	2.7211	2.7211	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	2.7211	2.7211	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	2.7211	2.7211	0	%100
29	M25	X	0	0	0	%100
30	M25	Z	2.8184	2.8184	0	%100
31	M26	X	0	0	0	%100
32	M26	Z	2.8184	2.8184	0	%100
33	M27	X	0	0	0	%100
34	M27	Z	2.8184	2.8184	0	%100
35	M28	X	0	0	0	%100
36	M28	Z	2.8184	2.8184	0	%100
37	M31	X	0	0	0	%100
38	M31	Z	.0364	.0364	0	%100
39	MP4A	X	0	0	0	%100
40	MP4A	Z	10.3402	10.3402	0	%100
41	MP3A	X	0	0	0	%100
42	MP3A	Z	10.3402	10.3402	0	%100
43	MP2A	X	0	0	0	%100
44	MP2A	Z	10.3402	10.3402	0	%100
45	MP1A	X	0	0	0	%100
46	MP1A	Z	10.3402	10.3402	0	%100
47	M44	X	0	0	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
48	M44	Z	2.7211	2.7211	0	%100
49	M45	X	0	0	0	%100
50	M45	Z	2.7211	2.7211	0	%100
51	M46	X	0	0	0	%100
52	M46	Z	2.7211	2.7211	0	%100
53	M47	X	0	0	0	%100
54	M47	Z	2.7211	2.7211	0	%100
55	M48	X	0	0	0	%100
56	M48	Z	10.3402	10.3402	0	%100
57	M49	X	0	0	0	%100
58	M49	Z	10.3402	10.3402	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	-4.6939	-4.6939	0	%100
2	M1	Z	8.1301	8.1301	0	%100
3	M2	X	-4.6939	-4.6939	0	%100
4	M2	Z	8.1301	8.1301	0	%100
5	M13	X	-.3401	-.3401	0	%100
6	M13	Z	.5891	.5891	0	%100
7	M14	X	-.3401	-.3401	0	%100
8	M14	Z	.5891	.5891	0	%100
9	M15	X	-.3401	-.3401	0	%100
10	M15	Z	.5891	.5891	0	%100
11	M16	X	-.3401	-.3401	0	%100
12	M16	Z	.5891	.5891	0	%100
13	M17	X	-.5563	-.5563	0	%100
14	M17	Z	.9636	.9636	0	%100
15	M18	X	-.5563	-.5563	0	%100
16	M18	Z	.9636	.9636	0	%100
17	M19	X	-3.9078	-3.9078	0	%100
18	M19	Z	6.7684	6.7684	0	%100
19	M20	X	-3.9078	-3.9078	0	%100
20	M20	Z	6.7684	6.7684	0	%100
21	M21	X	-1.0204	-1.0204	0	%100
22	M21	Z	1.7674	1.7674	0	%100
23	M22	X	-1.0204	-1.0204	0	%100
24	M22	Z	1.7674	1.7674	0	%100
25	M23	X	-1.0204	-1.0204	0	%100
26	M23	Z	1.7674	1.7674	0	%100
27	M24	X	-1.0204	-1.0204	0	%100
28	M24	Z	1.7674	1.7674	0	%100
29	M25	X	-1.1268	-1.1268	0	%100
30	M25	Z	1.9517	1.9517	0	%100
31	M26	X	-1.1268	-1.1268	0	%100
32	M26	Z	1.9517	1.9517	0	%100
33	M27	X	-1.6211	-1.6211	0	%100
34	M27	Z	2.8078	2.8078	0	%100
35	M28	X	-1.6211	-1.6211	0	%100
36	M28	Z	2.8078	2.8078	0	%100
37	M31	X	-1.0863	-1.0863	0	%100
38	M31	Z	1.8815	1.8815	0	%100
39	MP4A	X	-5.1701	-5.1701	0	%100
40	MP4A	Z	8.9549	8.9549	0	%100
41	MP3A	X	-5.1701	-5.1701	0	%100
42	MP3A	Z	8.9549	8.9549	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)
43	MP2A	X	-5.1701	-5.1701	0	%100
44	MP2A	Z	8.9549	8.9549	0	%100
45	MP1A	X	-5.1701	-5.1701	0	%100
46	MP1A	Z	8.9549	8.9549	0	%100
47	M44	X	-1.3606	-1.3606	0	%100
48	M44	Z	2.3565	2.3565	0	%100
49	M45	X	-1.3606	-1.3606	0	%100
50	M45	Z	2.3565	2.3565	0	%100
51	M46	X	-1.3606	-1.3606	0	%100
52	M46	Z	2.3565	2.3565	0	%100
53	M47	X	-1.3606	-1.3606	0	%100
54	M47	Z	2.3565	2.3565	0	%100
55	M48	X	-5.1701	-5.1701	0	%100
56	M48	Z	8.9549	8.9549	0	%100
57	M49	X	-5.1701	-5.1701	0	%100
58	M49	Z	8.9549	8.9549	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)
1	M1	X	-2.71	-2.71	0	%100
2	M1	Z	1.5646	1.5646	0	%100
3	M2	X	-2.71	-2.71	0	%100
4	M2	Z	1.5646	1.5646	0	%100
5	M13	X	-1.7674	-1.7674	0	%100
6	M13	Z	1.0204	1.0204	0	%100
7	M14	X	-1.7674	-1.7674	0	%100
8	M14	Z	1.0204	1.0204	0	%100
9	M15	X	-1.7674	-1.7674	0	%100
10	M15	Z	1.0204	1.0204	0	%100
11	M16	X	-1.7674	-1.7674	0	%100
12	M16	Z	1.0204	1.0204	0	%100
13	M17	X	-.1358	-.1358	0	%100
14	M17	Z	.0784	.0784	0	%100
15	M18	X	-.1358	-.1358	0	%100
16	M18	Z	.0784	.0784	0	%100
17	M19	X	-5.9407	-5.9407	0	%100
18	M19	Z	3.4299	3.4299	0	%100
19	M20	X	-5.9407	-5.9407	0	%100
20	M20	Z	3.4299	3.4299	0	%100
21	M21	X	-.5891	-.5891	0	%100
22	M21	Z	.3401	.3401	0	%100
23	M22	X	-.5891	-.5891	0	%100
24	M22	Z	.3401	.3401	0	%100
25	M23	X	-.5891	-.5891	0	%100
26	M23	Z	.3401	.3401	0	%100
27	M24	X	-.5891	-.5891	0	%100
28	M24	Z	.3401	.3401	0	%100
29	M25	X	-1.8296	-1.8296	0	%100
30	M25	Z	1.0563	1.0563	0	%100
31	M26	X	-1.8296	-1.8296	0	%100
32	M26	Z	1.0563	1.0563	0	%100
33	M27	X	-2.6857	-2.6857	0	%100
34	M27	Z	1.5506	1.5506	0	%100
35	M28	X	-2.6857	-2.6857	0	%100
36	M28	Z	1.5506	1.5506	0	%100
37	M31	X	-6.3326	-6.3326	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
38	M31	Z	3.6562	3.6562	0	%100
39	MP4A	X	-8.9549	-8.9549	0	%100
40	MP4A	Z	5.1701	5.1701	0	%100
41	MP3A	X	-8.9549	-8.9549	0	%100
42	MP3A	Z	5.1701	5.1701	0	%100
43	MP2A	X	-8.9549	-8.9549	0	%100
44	MP2A	Z	5.1701	5.1701	0	%100
45	MP1A	X	-8.9549	-8.9549	0	%100
46	MP1A	Z	5.1701	5.1701	0	%100
47	M44	X	-2.3565	-2.3565	0	%100
48	M44	Z	1.3606	1.3606	0	%100
49	M45	X	-2.3565	-2.3565	0	%100
50	M45	Z	1.3606	1.3606	0	%100
51	M46	X	-2.3565	-2.3565	0	%100
52	M46	Z	1.3606	1.3606	0	%100
53	M47	X	-2.3565	-2.3565	0	%100
54	M47	Z	1.3606	1.3606	0	%100
55	M48	X	-8.9549	-8.9549	0	%100
56	M48	Z	5.1701	5.1701	0	%100
57	M49	X	-8.9549	-8.9549	0	%100
58	M49	Z	5.1701	5.1701	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	0	0	0	%100
5	M13	X	-2.7211	-2.7211	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	-2.7211	-2.7211	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	-2.7211	-2.7211	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	-2.7211	-2.7211	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	-3.0304	-3.0304	0	%100
14	M17	Z	0	0	0	%100
15	M18	X	-3.0304	-3.0304	0	%100
16	M18	Z	0	0	0	%100
17	M19	X	-3.0304	-3.0304	0	%100
18	M19	Z	0	0	0	%100
19	M20	X	-3.0304	-3.0304	0	%100
20	M20	Z	0	0	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	0	0	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	0	0	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	0	0	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	0	0	0	%100
29	M25	X	-2.5364	-2.5364	0	%100
30	M25	Z	0	0	0	%100
31	M26	X	-2.5364	-2.5364	0	%100
32	M26	Z	0	0	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)
33	M27	X	-2.5364	-2.5364	0	%100
34	M27	Z	0	0	0	%100
35	M28	X	-2.5364	-2.5364	0	%100
36	M28	Z	0	0	0	%100
37	M31	X	-10.3159	-10.3159	0	%100
38	M31	Z	0	0	0	%100
39	MP4A	X	-10.3402	-10.3402	0	%100
40	MP4A	Z	0	0	0	%100
41	MP3A	X	-10.3402	-10.3402	0	%100
42	MP3A	Z	0	0	0	%100
43	MP2A	X	-10.3402	-10.3402	0	%100
44	MP2A	Z	0	0	0	%100
45	MP1A	X	-10.3402	-10.3402	0	%100
46	MP1A	Z	0	0	0	%100
47	M44	X	-2.7211	-2.7211	0	%100
48	M44	Z	0	0	0	%100
49	M45	X	-2.7211	-2.7211	0	%100
50	M45	Z	0	0	0	%100
51	M46	X	-2.7211	-2.7211	0	%100
52	M46	Z	0	0	0	%100
53	M47	X	-2.7211	-2.7211	0	%100
54	M47	Z	0	0	0	%100
55	M48	X	-10.3402	-10.3402	0	%100
56	M48	Z	0	0	0	%100
57	M49	X	-10.3402	-10.3402	0	%100
58	M49	Z	0	0	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)
1	M1	X	-2.71	-2.71	0	%100
2	M1	Z	-1.5646	-1.5646	0	%100
3	M2	X	-2.71	-2.71	0	%100
4	M2	Z	-1.5646	-1.5646	0	%100
5	M13	X	-1.7674	-1.7674	0	%100
6	M13	Z	-1.0204	-1.0204	0	%100
7	M14	X	-1.7674	-1.7674	0	%100
8	M14	Z	-1.0204	-1.0204	0	%100
9	M15	X	-1.7674	-1.7674	0	%100
10	M15	Z	-1.0204	-1.0204	0	%100
11	M16	X	-1.7674	-1.7674	0	%100
12	M16	Z	-1.0204	-1.0204	0	%100
13	M17	X	-5.9407	-5.9407	0	%100
14	M17	Z	-3.4299	-3.4299	0	%100
15	M18	X	-5.9407	-5.9407	0	%100
16	M18	Z	-3.4299	-3.4299	0	%100
17	M19	X	-1.358	-1.358	0	%100
18	M19	Z	-0.784	-0.784	0	%100
19	M20	X	-1.358	-1.358	0	%100
20	M20	Z	-0.784	-0.784	0	%100
21	M21	X	-5.891	-5.891	0	%100
22	M21	Z	-3.401	-3.401	0	%100
23	M22	X	-5.891	-5.891	0	%100
24	M22	Z	-3.401	-3.401	0	%100
25	M23	X	-5.891	-5.891	0	%100
26	M23	Z	-3.401	-3.401	0	%100
27	M24	X	-5.891	-5.891	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)	
28	M24	Z	-3401	-3401	0		%100
29	M25	X	-2.6857	-2.6857	0		%100
30	M25	Z	-1.5506	-1.5506	0		%100
31	M26	X	-2.6857	-2.6857	0		%100
32	M26	Z	-1.5506	-1.5506	0		%100
33	M27	X	-1.8296	-1.8296	0		%100
34	M27	Z	-1.0563	-1.0563	0		%100
35	M28	X	-1.8296	-1.8296	0		%100
36	M28	Z	-1.0563	-1.0563	0		%100
37	M31	X	-7.0838	-7.0838	0		%100
38	M31	Z	-4.0899	-4.0899	0		%100
39	MP4A	X	-8.9549	-8.9549	0		%100
40	MP4A	Z	-5.1701	-5.1701	0		%100
41	MP3A	X	-8.9549	-8.9549	0		%100
42	MP3A	Z	-5.1701	-5.1701	0		%100
43	MP2A	X	-8.9549	-8.9549	0		%100
44	MP2A	Z	-5.1701	-5.1701	0		%100
45	MP1A	X	-8.9549	-8.9549	0		%100
46	MP1A	Z	-5.1701	-5.1701	0		%100
47	M44	X	-2.3565	-2.3565	0		%100
48	M44	Z	-1.3606	-1.3606	0		%100
49	M45	X	-2.3565	-2.3565	0		%100
50	M45	Z	-1.3606	-1.3606	0		%100
51	M46	X	-2.3565	-2.3565	0		%100
52	M46	Z	-1.3606	-1.3606	0		%100
53	M47	X	-2.3565	-2.3565	0		%100
54	M47	Z	-1.3606	-1.3606	0		%100
55	M48	X	-8.9549	-8.9549	0		%100
56	M48	Z	-5.1701	-5.1701	0		%100
57	M49	X	-8.9549	-8.9549	0		%100
58	M49	Z	-5.1701	-5.1701	0		%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)	
1	M1	X	-4.6939	-4.6939	0		%100
2	M1	Z	-8.1301	-8.1301	0		%100
3	M2	X	-4.6939	-4.6939	0		%100
4	M2	Z	-8.1301	-8.1301	0		%100
5	M13	X	-3401	-3401	0		%100
6	M13	Z	-5891	-5891	0		%100
7	M14	X	-3401	-3401	0		%100
8	M14	Z	-5891	-5891	0		%100
9	M15	X	-3401	-3401	0		%100
10	M15	Z	-5891	-5891	0		%100
11	M16	X	-3401	-3401	0		%100
12	M16	Z	-5891	-5891	0		%100
13	M17	X	-3.9078	-3.9078	0		%100
14	M17	Z	-6.7684	-6.7684	0		%100
15	M18	X	-3.9078	-3.9078	0		%100
16	M18	Z	-6.7684	-6.7684	0		%100
17	M19	X	-5563	-5563	0		%100
18	M19	Z	-9636	-9636	0		%100
19	M20	X	-5563	-5563	0		%100
20	M20	Z	-9636	-9636	0		%100
21	M21	X	-1.0204	-1.0204	0		%100
22	M21	Z	-1.7674	-1.7674	0		%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
23	M22	X	-1.0204	-1.0204	0	%100
24	M22	Z	-1.7674	-1.7674	0	%100
25	M23	X	-1.0204	-1.0204	0	%100
26	M23	Z	-1.7674	-1.7674	0	%100
27	M24	X	-1.0204	-1.0204	0	%100
28	M24	Z	-1.7674	-1.7674	0	%100
29	M25	X	-1.6211	-1.6211	0	%100
30	M25	Z	-2.8078	-2.8078	0	%100
31	M26	X	-1.6211	-1.6211	0	%100
32	M26	Z	-2.8078	-2.8078	0	%100
33	M27	X	-1.1268	-1.1268	0	%100
34	M27	Z	-1.9517	-1.9517	0	%100
35	M28	X	-1.1268	-1.1268	0	%100
36	M28	Z	-1.9517	-1.9517	0	%100
37	M31	X	-1.52	-1.52	0	%100
38	M31	Z	-2.6327	-2.6327	0	%100
39	MP4A	X	-5.1701	-5.1701	0	%100
40	MP4A	Z	-8.9549	-8.9549	0	%100
41	MP3A	X	-5.1701	-5.1701	0	%100
42	MP3A	Z	-8.9549	-8.9549	0	%100
43	MP2A	X	-5.1701	-5.1701	0	%100
44	MP2A	Z	-8.9549	-8.9549	0	%100
45	MP1A	X	-5.1701	-5.1701	0	%100
46	MP1A	Z	-8.9549	-8.9549	0	%100
47	M44	X	-1.3606	-1.3606	0	%100
48	M44	Z	-2.3565	-2.3565	0	%100
49	M45	X	-1.3606	-1.3606	0	%100
50	M45	Z	-2.3565	-2.3565	0	%100
51	M46	X	-1.3606	-1.3606	0	%100
52	M46	Z	-2.3565	-2.3565	0	%100
53	M47	X	-1.3606	-1.3606	0	%100
54	M47	Z	-2.3565	-2.3565	0	%100
55	M48	X	-5.1701	-5.1701	0	%100
56	M48	Z	-8.9549	-8.9549	0	%100
57	M49	X	-5.1701	-5.1701	0	%100
58	M49	Z	-8.9549	-8.9549	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
1	M1	X	0	0	0	%100
2	M1	Z	-4.8218	-4.8218	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	-4.8218	-4.8218	0	%100
5	M13	X	0	0	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	0	0	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	0	0	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	0	0	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	0	0	0	%100
14	M17	Z	-2.0001	-2.0001	0	%100
15	M18	X	0	0	0	%100
16	M18	Z	-2.0001	-2.0001	0	%100
17	M19	X	0	0	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Locationft	End Locationft
18	M19	Z	-2.0001	-2.0001	0	%100
19	M20	X	0	0	0	%100
20	M20	Z	-2.0001	-2.0001	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	-2.0175	-2.0175	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	-2.0175	-2.0175	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	-2.0175	-2.0175	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	-2.0175	-2.0175	0	%100
29	M25	X	0	0	0	%100
30	M25	Z	-2.3212	-2.3212	0	%100
31	M26	X	0	0	0	%100
32	M26	Z	-2.3212	-2.3212	0	%100
33	M27	X	0	0	0	%100
34	M27	Z	-2.3212	-2.3212	0	%100
35	M28	X	0	0	0	%100
36	M28	Z	-2.3212	-2.3212	0	%100
37	M31	X	0	0	0	%100
38	M31	Z	-.0156	-.0156	0	%100
39	MP4A	X	0	0	0	%100
40	MP4A	Z	-4.3934	-4.3934	0	%100
41	MP3A	X	0	0	0	%100
42	MP3A	Z	-4.3934	-4.3934	0	%100
43	MP2A	X	0	0	0	%100
44	MP2A	Z	-4.3934	-4.3934	0	%100
45	MP1A	X	0	0	0	%100
46	MP1A	Z	-4.3934	-4.3934	0	%100
47	M44	X	0	0	0	%100
48	M44	Z	-2.4547	-2.4547	0	%100
49	M45	X	0	0	0	%100
50	M45	Z	-2.4547	-2.4547	0	%100
51	M46	X	0	0	0	%100
52	M46	Z	-2.4547	-2.4547	0	%100
53	M47	X	0	0	0	%100
54	M47	Z	-2.4547	-2.4547	0	%100
55	M48	X	0	0	0	%100
56	M48	Z	-4.0575	-4.0575	0	%100
57	M49	X	0	0	0	%100
58	M49	Z	-4.0575	-4.0575	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Locationft	End Locationft
1	M1	X	1.8082	1.8082	0	%100
2	M1	Z	-3.1318	-3.1318	0	%100
3	M2	X	1.8082	1.8082	0	%100
4	M2	Z	-3.1318	-3.1318	0	%100
5	M13	X	.2522	.2522	0	%100
6	M13	Z	-.4368	-.4368	0	%100
7	M14	X	.2522	.2522	0	%100
8	M14	Z	-.4368	-.4368	0	%100
9	M15	X	.2522	.2522	0	%100
10	M15	Z	-.4368	-.4368	0	%100
11	M16	X	.2522	.2522	0	%100
12	M16	Z	-.4368	-.4368	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)
13	M17	X	.2252	.2252	0	%100
14	M17	Z	-.39	-.39	0	%100
15	M18	X	.2252	.2252	0	%100
16	M18	Z	-.39	-.39	0	%100
17	M19	X	1.5815	1.5815	0	%100
18	M19	Z	-2.7393	-2.7393	0	%100
19	M20	X	1.5815	1.5815	0	%100
20	M20	Z	-2.7393	-2.7393	0	%100
21	M21	X	.7565	.7565	0	%100
22	M21	Z	-1.3104	-1.3104	0	%100
23	M22	X	.7565	.7565	0	%100
24	M22	Z	-1.3104	-1.3104	0	%100
25	M23	X	.7565	.7565	0	%100
26	M23	Z	-1.3104	-1.3104	0	%100
27	M24	X	.7565	.7565	0	%100
28	M24	Z	-1.3104	-1.3104	0	%100
29	M25	X	.928	.928	0	%100
30	M25	Z	-1.6073	-1.6073	0	%100
31	M26	X	.928	.928	0	%100
32	M26	Z	-1.6073	-1.6073	0	%100
33	M27	X	1.3351	1.3351	0	%100
34	M27	Z	-2.3125	-2.3125	0	%100
35	M28	X	1.3351	1.3351	0	%100
36	M28	Z	-2.3125	-2.3125	0	%100
37	M31	X	.4668	.4668	0	%100
38	M31	Z	-.8086	-.8086	0	%100
39	MP4A	X	2.1967	2.1967	0	%100
40	MP4A	Z	-3.8048	-3.8048	0	%100
41	MP3A	X	2.1967	2.1967	0	%100
42	MP3A	Z	-3.8048	-3.8048	0	%100
43	MP2A	X	2.1967	2.1967	0	%100
44	MP2A	Z	-3.8048	-3.8048	0	%100
45	MP1A	X	2.1967	2.1967	0	%100
46	MP1A	Z	-3.8048	-3.8048	0	%100
47	M44	X	1.2274	1.2274	0	%100
48	M44	Z	-2.1259	-2.1259	0	%100
49	M45	X	1.2274	1.2274	0	%100
50	M45	Z	-2.1259	-2.1259	0	%100
51	M46	X	1.2274	1.2274	0	%100
52	M46	Z	-2.1259	-2.1259	0	%100
53	M47	X	1.2274	1.2274	0	%100
54	M47	Z	-2.1259	-2.1259	0	%100
55	M48	X	2.0287	2.0287	0	%100
56	M48	Z	-3.5139	-3.5139	0	%100
57	M49	X	2.0287	2.0287	0	%100
58	M49	Z	-3.5139	-3.5139	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)
1	M1	X	1.0439	1.0439	0	%100
2	M1	Z	-.6027	-.6027	0	%100
3	M2	X	1.0439	1.0439	0	%100
4	M2	Z	-.6027	-.6027	0	%100
5	M13	X	1.3104	1.3104	0	%100
6	M13	Z	-.7565	-.7565	0	%100
7	M14	X	1.3104	1.3104	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
8	M14	Z	-7565	-7565	0	%100
9	M15	X	1.3104	1.3104	0	%100
10	M15	Z	-7565	-7565	0	%100
11	M16	X	1.3104	1.3104	0	%100
12	M16	Z	-7565	-7565	0	%100
13	M17	X	.055	.055	0	%100
14	M17	Z	-.0317	-.0317	0	%100
15	M18	X	.055	.055	0	%100
16	M18	Z	-.0317	-.0317	0	%100
17	M19	X	2.4043	2.4043	0	%100
18	M19	Z	-1.3881	-1.3881	0	%100
19	M20	X	2.4043	2.4043	0	%100
20	M20	Z	-1.3881	-1.3881	0	%100
21	M21	X	.4368	.4368	0	%100
22	M21	Z	-.2522	-.2522	0	%100
23	M22	X	.4368	.4368	0	%100
24	M22	Z	-.2522	-.2522	0	%100
25	M23	X	.4368	.4368	0	%100
26	M23	Z	-.2522	-.2522	0	%100
27	M24	X	.4368	.4368	0	%100
28	M24	Z	-.2522	-.2522	0	%100
29	M25	X	1.5068	1.5068	0	%100
30	M25	Z	-.87	-.87	0	%100
31	M26	X	1.5068	1.5068	0	%100
32	M26	Z	-.87	-.87	0	%100
33	M27	X	2.2119	2.2119	0	%100
34	M27	Z	-1.2771	-1.2771	0	%100
35	M28	X	2.2119	2.2119	0	%100
36	M28	Z	-1.2771	-1.2771	0	%100
37	M31	X	2.7215	2.7215	0	%100
38	M31	Z	-1.5713	-1.5713	0	%100
39	MP4A	X	3.8048	3.8048	0	%100
40	MP4A	Z	-2.1967	-2.1967	0	%100
41	MP3A	X	3.8048	3.8048	0	%100
42	MP3A	Z	-2.1967	-2.1967	0	%100
43	MP2A	X	3.8048	3.8048	0	%100
44	MP2A	Z	-2.1967	-2.1967	0	%100
45	MP1A	X	3.8048	3.8048	0	%100
46	MP1A	Z	-2.1967	-2.1967	0	%100
47	M44	X	2.1259	2.1259	0	%100
48	M44	Z	-1.2274	-1.2274	0	%100
49	M45	X	2.1259	2.1259	0	%100
50	M45	Z	-1.2274	-1.2274	0	%100
51	M46	X	2.1259	2.1259	0	%100
52	M46	Z	-1.2274	-1.2274	0	%100
53	M47	X	2.1259	2.1259	0	%100
54	M47	Z	-1.2274	-1.2274	0	%100
55	M48	X	3.5139	3.5139	0	%100
56	M48	Z	-2.0287	-2.0287	0	%100
57	M49	X	3.5139	3.5139	0	%100
58	M49	Z	-2.0287	-2.0287	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft...	End Location[ft...
3	M2	X	0	0	0	%100
4	M2	Z	0	0	0	%100
5	M13	X	2.0175	2.0175	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	2.0175	2.0175	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	2.0175	2.0175	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	2.0175	2.0175	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	1.2264	1.2264	0	%100
14	M17	Z	0	0	0	%100
15	M18	X	1.2264	1.2264	0	%100
16	M18	Z	0	0	0	%100
17	M19	X	1.2264	1.2264	0	%100
18	M19	Z	0	0	0	%100
19	M20	X	1.2264	1.2264	0	%100
20	M20	Z	0	0	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	0	0	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	0	0	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	0	0	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	0	0	0	%100
29	M25	X	2.089	2.089	0	%100
30	M25	Z	0	0	0	%100
31	M26	X	2.089	2.089	0	%100
32	M26	Z	0	0	0	%100
33	M27	X	2.089	2.089	0	%100
34	M27	Z	0	0	0	%100
35	M28	X	2.089	2.089	0	%100
36	M28	Z	0	0	0	%100
37	M31	X	4.4334	4.4334	0	%100
38	M31	Z	0	0	0	%100
39	MP4A	X	4.3934	4.3934	0	%100
40	MP4A	Z	0	0	0	%100
41	MP3A	X	4.3934	4.3934	0	%100
42	MP3A	Z	0	0	0	%100
43	MP2A	X	4.3934	4.3934	0	%100
44	MP2A	Z	0	0	0	%100
45	MP1A	X	4.3934	4.3934	0	%100
46	MP1A	Z	0	0	0	%100
47	M44	X	2.4547	2.4547	0	%100
48	M44	Z	0	0	0	%100
49	M45	X	2.4547	2.4547	0	%100
50	M45	Z	0	0	0	%100
51	M46	X	2.4547	2.4547	0	%100
52	M46	Z	0	0	0	%100
53	M47	X	2.4547	2.4547	0	%100
54	M47	Z	0	0	0	%100
55	M48	X	4.0575	4.0575	0	%100
56	M48	Z	0	0	0	%100
57	M49	X	4.0575	4.0575	0	%100
58	M49	Z	0	0	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	1.0439	1.0439	0	%100
2	M1	Z	.6027	.6027	0	%100
3	M2	X	1.0439	1.0439	0	%100
4	M2	Z	.6027	.6027	0	%100
5	M13	X	1.3104	1.3104	0	%100
6	M13	Z	.7565	.7565	0	%100
7	M14	X	1.3104	1.3104	0	%100
8	M14	Z	.7565	.7565	0	%100
9	M15	X	1.3104	1.3104	0	%100
10	M15	Z	.7565	.7565	0	%100
11	M16	X	1.3104	1.3104	0	%100
12	M16	Z	.7565	.7565	0	%100
13	M17	X	2.4043	2.4043	0	%100
14	M17	Z	1.3881	1.3881	0	%100
15	M18	X	2.4043	2.4043	0	%100
16	M18	Z	1.3881	1.3881	0	%100
17	M19	X	.055	.055	0	%100
18	M19	Z	.0317	.0317	0	%100
19	M20	X	.055	.055	0	%100
20	M20	Z	.0317	.0317	0	%100
21	M21	X	.4368	.4368	0	%100
22	M21	Z	.2522	.2522	0	%100
23	M22	X	.4368	.4368	0	%100
24	M22	Z	.2522	.2522	0	%100
25	M23	X	.4368	.4368	0	%100
26	M23	Z	.2522	.2522	0	%100
27	M24	X	.4368	.4368	0	%100
28	M24	Z	.2522	.2522	0	%100
29	M25	X	2.2119	2.2119	0	%100
30	M25	Z	1.2771	1.2771	0	%100
31	M26	X	2.2119	2.2119	0	%100
32	M26	Z	1.2771	1.2771	0	%100
33	M27	X	1.5068	1.5068	0	%100
34	M27	Z	.87	.87	0	%100
35	M28	X	1.5068	1.5068	0	%100
36	M28	Z	.87	.87	0	%100
37	M31	X	3.0444	3.0444	0	%100
38	M31	Z	1.7577	1.7577	0	%100
39	MP4A	X	3.8048	3.8048	0	%100
40	MP4A	Z	2.1967	2.1967	0	%100
41	MP3A	X	3.8048	3.8048	0	%100
42	MP3A	Z	2.1967	2.1967	0	%100
43	MP2A	X	3.8048	3.8048	0	%100
44	MP2A	Z	2.1967	2.1967	0	%100
45	MP1A	X	3.8048	3.8048	0	%100
46	MP1A	Z	2.1967	2.1967	0	%100
47	M44	X	2.1259	2.1259	0	%100
48	M44	Z	1.2274	1.2274	0	%100
49	M45	X	2.1259	2.1259	0	%100
50	M45	Z	1.2274	1.2274	0	%100
51	M46	X	2.1259	2.1259	0	%100
52	M46	Z	1.2274	1.2274	0	%100
53	M47	X	2.1259	2.1259	0	%100
54	M47	Z	1.2274	1.2274	0	%100
55	M48	X	3.5139	3.5139	0	%100
56	M48	Z	2.0287	2.0287	0	%100
57	M49	X	3.5139	3.5139	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)
58	M49	Z	2.0287	2.0287	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)
1	M1	X	1.8082	1.8082	0	%100
2	M1	Z	3.1318	3.1318	0	%100
3	M2	X	1.8082	1.8082	0	%100
4	M2	Z	3.1318	3.1318	0	%100
5	M13	X	.2522	.2522	0	%100
6	M13	Z	.4368	.4368	0	%100
7	M14	X	.2522	.2522	0	%100
8	M14	Z	.4368	.4368	0	%100
9	M15	X	.2522	.2522	0	%100
10	M15	Z	.4368	.4368	0	%100
11	M16	X	.2522	.2522	0	%100
12	M16	Z	.4368	.4368	0	%100
13	M17	X	1.5815	1.5815	0	%100
14	M17	Z	2.7393	2.7393	0	%100
15	M18	X	1.5815	1.5815	0	%100
16	M18	Z	2.7393	2.7393	0	%100
17	M19	X	.2252	.2252	0	%100
18	M19	Z	.39	.39	0	%100
19	M20	X	.2252	.2252	0	%100
20	M20	Z	.39	.39	0	%100
21	M21	X	.7565	.7565	0	%100
22	M21	Z	1.3104	1.3104	0	%100
23	M22	X	.7565	.7565	0	%100
24	M22	Z	1.3104	1.3104	0	%100
25	M23	X	.7565	.7565	0	%100
26	M23	Z	1.3104	1.3104	0	%100
27	M24	X	.7565	.7565	0	%100
28	M24	Z	1.3104	1.3104	0	%100
29	M25	X	1.3351	1.3351	0	%100
30	M25	Z	2.3125	2.3125	0	%100
31	M26	X	1.3351	1.3351	0	%100
32	M26	Z	2.3125	2.3125	0	%100
33	M27	X	.928	.928	0	%100
34	M27	Z	1.6073	1.6073	0	%100
35	M28	X	.928	.928	0	%100
36	M28	Z	1.6073	1.6073	0	%100
37	M31	X	.6532	.6532	0	%100
38	M31	Z	1.1314	1.1314	0	%100
39	MP4A	X	2.1967	2.1967	0	%100
40	MP4A	Z	3.8048	3.8048	0	%100
41	MP3A	X	2.1967	2.1967	0	%100
42	MP3A	Z	3.8048	3.8048	0	%100
43	MP2A	X	2.1967	2.1967	0	%100
44	MP2A	Z	3.8048	3.8048	0	%100
45	MP1A	X	2.1967	2.1967	0	%100
46	MP1A	Z	3.8048	3.8048	0	%100
47	M44	X	1.2274	1.2274	0	%100
48	M44	Z	2.1259	2.1259	0	%100
49	M45	X	1.2274	1.2274	0	%100
50	M45	Z	2.1259	2.1259	0	%100
51	M46	X	1.2274	1.2274	0	%100
52	M46	Z	2.1259	2.1259	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
53	M47	X	1.2274	1.2274	0	%100
54	M47	Z	2.1259	2.1259	0	%100
55	M48	X	2.0287	2.0287	0	%100
56	M48	Z	3.5139	3.5139	0	%100
57	M49	X	2.0287	2.0287	0	%100
58	M49	Z	3.5139	3.5139	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	0	0	0	%100
2	M1	Z	4.8218	4.8218	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	4.8218	4.8218	0	%100
5	M13	X	0	0	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	0	0	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	0	0	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	0	0	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	0	0	0	%100
14	M17	Z	2.0001	2.0001	0	%100
15	M18	X	0	0	0	%100
16	M18	Z	2.0001	2.0001	0	%100
17	M19	X	0	0	0	%100
18	M19	Z	2.0001	2.0001	0	%100
19	M20	X	0	0	0	%100
20	M20	Z	2.0001	2.0001	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	2.0175	2.0175	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	2.0175	2.0175	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	2.0175	2.0175	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	2.0175	2.0175	0	%100
29	M25	X	0	0	0	%100
30	M25	Z	2.3212	2.3212	0	%100
31	M26	X	0	0	0	%100
32	M26	Z	2.3212	2.3212	0	%100
33	M27	X	0	0	0	%100
34	M27	Z	2.3212	2.3212	0	%100
35	M28	X	0	0	0	%100
36	M28	Z	2.3212	2.3212	0	%100
37	M31	X	0	0	0	%100
38	M31	Z	.0156	.0156	0	%100
39	MP4A	X	0	0	0	%100
40	MP4A	Z	4.3934	4.3934	0	%100
41	MP3A	X	0	0	0	%100
42	MP3A	Z	4.3934	4.3934	0	%100
43	MP2A	X	0	0	0	%100
44	MP2A	Z	4.3934	4.3934	0	%100
45	MP1A	X	0	0	0	%100
46	MP1A	Z	4.3934	4.3934	0	%100
47	M44	X	0	0	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Locationft	End Locationft
48	M44	Z	2.4547	2.4547	0	%100
49	M45	X	0	0	0	%100
50	M45	Z	2.4547	2.4547	0	%100
51	M46	X	0	0	0	%100
52	M46	Z	2.4547	2.4547	0	%100
53	M47	X	0	0	0	%100
54	M47	Z	2.4547	2.4547	0	%100
55	M48	X	0	0	0	%100
56	M48	Z	4.0575	4.0575	0	%100
57	M49	X	0	0	0	%100
58	M49	Z	4.0575	4.0575	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Locationft	End Locationft
1	M1	X	-1.8082	-1.8082	0	%100
2	M1	Z	3.1318	3.1318	0	%100
3	M2	X	-1.8082	-1.8082	0	%100
4	M2	Z	3.1318	3.1318	0	%100
5	M13	X	-.2522	-.2522	0	%100
6	M13	Z	.4368	.4368	0	%100
7	M14	X	-.2522	-.2522	0	%100
8	M14	Z	.4368	.4368	0	%100
9	M15	X	-.2522	-.2522	0	%100
10	M15	Z	.4368	.4368	0	%100
11	M16	X	-.2522	-.2522	0	%100
12	M16	Z	.4368	.4368	0	%100
13	M17	X	-.2252	-.2252	0	%100
14	M17	Z	.39	.39	0	%100
15	M18	X	-.2252	-.2252	0	%100
16	M18	Z	.39	.39	0	%100
17	M19	X	-1.5815	-1.5815	0	%100
18	M19	Z	2.7393	2.7393	0	%100
19	M20	X	-1.5815	-1.5815	0	%100
20	M20	Z	2.7393	2.7393	0	%100
21	M21	X	-.7565	-.7565	0	%100
22	M21	Z	1.3104	1.3104	0	%100
23	M22	X	-.7565	-.7565	0	%100
24	M22	Z	1.3104	1.3104	0	%100
25	M23	X	-.7565	-.7565	0	%100
26	M23	Z	1.3104	1.3104	0	%100
27	M24	X	-.7565	-.7565	0	%100
28	M24	Z	1.3104	1.3104	0	%100
29	M25	X	-.928	-.928	0	%100
30	M25	Z	1.6073	1.6073	0	%100
31	M26	X	-.928	-.928	0	%100
32	M26	Z	1.6073	1.6073	0	%100
33	M27	X	-1.3351	-1.3351	0	%100
34	M27	Z	2.3125	2.3125	0	%100
35	M28	X	-1.3351	-1.3351	0	%100
36	M28	Z	2.3125	2.3125	0	%100
37	M31	X	-.4668	-.4668	0	%100
38	M31	Z	.8086	.8086	0	%100
39	MP4A	X	-2.1967	-2.1967	0	%100
40	MP4A	Z	3.8048	3.8048	0	%100
41	MP3A	X	-2.1967	-2.1967	0	%100
42	MP3A	Z	3.8048	3.8048	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
43	MP2A	X	-2.1967	-2.1967	0	%100
44	MP2A	Z	3.8048	3.8048	0	%100
45	MP1A	X	-2.1967	-2.1967	0	%100
46	MP1A	Z	3.8048	3.8048	0	%100
47	M44	X	-1.2274	-1.2274	0	%100
48	M44	Z	2.1259	2.1259	0	%100
49	M45	X	-1.2274	-1.2274	0	%100
50	M45	Z	2.1259	2.1259	0	%100
51	M46	X	-1.2274	-1.2274	0	%100
52	M46	Z	2.1259	2.1259	0	%100
53	M47	X	-1.2274	-1.2274	0	%100
54	M47	Z	2.1259	2.1259	0	%100
55	M48	X	-2.0287	-2.0287	0	%100
56	M48	Z	3.5139	3.5139	0	%100
57	M49	X	-2.0287	-2.0287	0	%100
58	M49	Z	3.5139	3.5139	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	-1.0439	-1.0439	0	%100
2	M1	Z	.6027	.6027	0	%100
3	M2	X	-1.0439	-1.0439	0	%100
4	M2	Z	.6027	.6027	0	%100
5	M13	X	-1.3104	-1.3104	0	%100
6	M13	Z	.7565	.7565	0	%100
7	M14	X	-1.3104	-1.3104	0	%100
8	M14	Z	.7565	.7565	0	%100
9	M15	X	-1.3104	-1.3104	0	%100
10	M15	Z	.7565	.7565	0	%100
11	M16	X	-1.3104	-1.3104	0	%100
12	M16	Z	.7565	.7565	0	%100
13	M17	X	-.055	-.055	0	%100
14	M17	Z	.0317	.0317	0	%100
15	M18	X	-.055	-.055	0	%100
16	M18	Z	.0317	.0317	0	%100
17	M19	X	-2.4043	-2.4043	0	%100
18	M19	Z	1.3881	1.3881	0	%100
19	M20	X	-2.4043	-2.4043	0	%100
20	M20	Z	1.3881	1.3881	0	%100
21	M21	X	-.4368	-.4368	0	%100
22	M21	Z	.2522	.2522	0	%100
23	M22	X	-.4368	-.4368	0	%100
24	M22	Z	.2522	.2522	0	%100
25	M23	X	-.4368	-.4368	0	%100
26	M23	Z	.2522	.2522	0	%100
27	M24	X	-.4368	-.4368	0	%100
28	M24	Z	.2522	.2522	0	%100
29	M25	X	-1.5068	-1.5068	0	%100
30	M25	Z	.87	.87	0	%100
31	M26	X	-1.5068	-1.5068	0	%100
32	M26	Z	.87	.87	0	%100
33	M27	X	-2.2119	-2.2119	0	%100
34	M27	Z	1.2771	1.2771	0	%100
35	M28	X	-2.2119	-2.2119	0	%100
36	M28	Z	1.2771	1.2771	0	%100
37	M31	X	-2.7215	-2.7215	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Locationft.	End Locationft.
38	M31	Z	1.5713	1.5713	0	%100
39	MP4A	X	-3.8048	-3.8048	0	%100
40	MP4A	Z	2.1967	2.1967	0	%100
41	MP3A	X	-3.8048	-3.8048	0	%100
42	MP3A	Z	2.1967	2.1967	0	%100
43	MP2A	X	-3.8048	-3.8048	0	%100
44	MP2A	Z	2.1967	2.1967	0	%100
45	MP1A	X	-3.8048	-3.8048	0	%100
46	MP1A	Z	2.1967	2.1967	0	%100
47	M44	X	-2.1259	-2.1259	0	%100
48	M44	Z	1.2274	1.2274	0	%100
49	M45	X	-2.1259	-2.1259	0	%100
50	M45	Z	1.2274	1.2274	0	%100
51	M46	X	-2.1259	-2.1259	0	%100
52	M46	Z	1.2274	1.2274	0	%100
53	M47	X	-2.1259	-2.1259	0	%100
54	M47	Z	1.2274	1.2274	0	%100
55	M48	X	-3.5139	-3.5139	0	%100
56	M48	Z	2.0287	2.0287	0	%100
57	M49	X	-3.5139	-3.5139	0	%100
58	M49	Z	2.0287	2.0287	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Locationft.	End Locationft.
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	0	0	0	%100
5	M13	X	-2.0175	-2.0175	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	-2.0175	-2.0175	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	-2.0175	-2.0175	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	-2.0175	-2.0175	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	-1.2264	-1.2264	0	%100
14	M17	Z	0	0	0	%100
15	M18	X	-1.2264	-1.2264	0	%100
16	M18	Z	0	0	0	%100
17	M19	X	-1.2264	-1.2264	0	%100
18	M19	Z	0	0	0	%100
19	M20	X	-1.2264	-1.2264	0	%100
20	M20	Z	0	0	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	0	0	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	0	0	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	0	0	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	0	0	0	%100
29	M25	X	-2.089	-2.089	0	%100
30	M25	Z	0	0	0	%100
31	M26	X	-2.089	-2.089	0	%100
32	M26	Z	0	0	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
33	M27	X	-2.089	-2.089	0	%100
34	M27	Z	0	0	0	%100
35	M28	X	-2.089	-2.089	0	%100
36	M28	Z	0	0	0	%100
37	M31	X	-4.4334	-4.4334	0	%100
38	M31	Z	0	0	0	%100
39	MP4A	X	-4.3934	-4.3934	0	%100
40	MP4A	Z	0	0	0	%100
41	MP3A	X	-4.3934	-4.3934	0	%100
42	MP3A	Z	0	0	0	%100
43	MP2A	X	-4.3934	-4.3934	0	%100
44	MP2A	Z	0	0	0	%100
45	MP1A	X	-4.3934	-4.3934	0	%100
46	MP1A	Z	0	0	0	%100
47	M44	X	-2.4547	-2.4547	0	%100
48	M44	Z	0	0	0	%100
49	M45	X	-2.4547	-2.4547	0	%100
50	M45	Z	0	0	0	%100
51	M46	X	-2.4547	-2.4547	0	%100
52	M46	Z	0	0	0	%100
53	M47	X	-2.4547	-2.4547	0	%100
54	M47	Z	0	0	0	%100
55	M48	X	-4.0575	-4.0575	0	%100
56	M48	Z	0	0	0	%100
57	M49	X	-4.0575	-4.0575	0	%100
58	M49	Z	0	0	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	-1.0439	-1.0439	0	%100
2	M1	Z	-.6027	-.6027	0	%100
3	M2	X	-1.0439	-1.0439	0	%100
4	M2	Z	-.6027	-.6027	0	%100
5	M13	X	-1.3104	-1.3104	0	%100
6	M13	Z	-.7565	-.7565	0	%100
7	M14	X	-1.3104	-1.3104	0	%100
8	M14	Z	-.7565	-.7565	0	%100
9	M15	X	-1.3104	-1.3104	0	%100
10	M15	Z	-.7565	-.7565	0	%100
11	M16	X	-1.3104	-1.3104	0	%100
12	M16	Z	-.7565	-.7565	0	%100
13	M17	X	-2.4043	-2.4043	0	%100
14	M17	Z	-1.3881	-1.3881	0	%100
15	M18	X	-2.4043	-2.4043	0	%100
16	M18	Z	-1.3881	-1.3881	0	%100
17	M19	X	-.055	-.055	0	%100
18	M19	Z	-.0317	-.0317	0	%100
19	M20	X	-.055	-.055	0	%100
20	M20	Z	-.0317	-.0317	0	%100
21	M21	X	-.4368	-.4368	0	%100
22	M21	Z	-.2522	-.2522	0	%100
23	M22	X	-.4368	-.4368	0	%100
24	M22	Z	-.2522	-.2522	0	%100
25	M23	X	-.4368	-.4368	0	%100
26	M23	Z	-.2522	-.2522	0	%100
27	M24	X	-.4368	-.4368	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Locationft	End Locationft
28	M24	Z	-2522	-2522	0	%100
29	M25	X	-2.2119	-2.2119	0	%100
30	M25	Z	-1.2771	-1.2771	0	%100
31	M26	X	-2.2119	-2.2119	0	%100
32	M26	Z	-1.2771	-1.2771	0	%100
33	M27	X	-1.5068	-1.5068	0	%100
34	M27	Z	-.87	-.87	0	%100
35	M28	X	-1.5068	-1.5068	0	%100
36	M28	Z	-.87	-.87	0	%100
37	M31	X	-3.0444	-3.0444	0	%100
38	M31	Z	-1.7577	-1.7577	0	%100
39	MP4A	X	-3.8048	-3.8048	0	%100
40	MP4A	Z	-2.1967	-2.1967	0	%100
41	MP3A	X	-3.8048	-3.8048	0	%100
42	MP3A	Z	-2.1967	-2.1967	0	%100
43	MP2A	X	-3.8048	-3.8048	0	%100
44	MP2A	Z	-2.1967	-2.1967	0	%100
45	MP1A	X	-3.8048	-3.8048	0	%100
46	MP1A	Z	-2.1967	-2.1967	0	%100
47	M44	X	-2.1259	-2.1259	0	%100
48	M44	Z	-1.2274	-1.2274	0	%100
49	M45	X	-2.1259	-2.1259	0	%100
50	M45	Z	-1.2274	-1.2274	0	%100
51	M46	X	-2.1259	-2.1259	0	%100
52	M46	Z	-1.2274	-1.2274	0	%100
53	M47	X	-2.1259	-2.1259	0	%100
54	M47	Z	-1.2274	-1.2274	0	%100
55	M48	X	-3.5139	-3.5139	0	%100
56	M48	Z	-2.0287	-2.0287	0	%100
57	M49	X	-3.5139	-3.5139	0	%100
58	M49	Z	-2.0287	-2.0287	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Locationft	End Locationft
1	M1	X	-1.8082	-1.8082	0	%100
2	M1	Z	-3.1318	-3.1318	0	%100
3	M2	X	-1.8082	-1.8082	0	%100
4	M2	Z	-3.1318	-3.1318	0	%100
5	M13	X	-.2522	-.2522	0	%100
6	M13	Z	-.4368	-.4368	0	%100
7	M14	X	-.2522	-.2522	0	%100
8	M14	Z	-.4368	-.4368	0	%100
9	M15	X	-.2522	-.2522	0	%100
10	M15	Z	-.4368	-.4368	0	%100
11	M16	X	-.2522	-.2522	0	%100
12	M16	Z	-.4368	-.4368	0	%100
13	M17	X	-1.5815	-1.5815	0	%100
14	M17	Z	-2.7393	-2.7393	0	%100
15	M18	X	-1.5815	-1.5815	0	%100
16	M18	Z	-2.7393	-2.7393	0	%100
17	M19	X	-.2252	-.2252	0	%100
18	M19	Z	-.39	-.39	0	%100
19	M20	X	-.2252	-.2252	0	%100
20	M20	Z	-.39	-.39	0	%100
21	M21	X	-.7565	-.7565	0	%100
22	M21	Z	-1.3104	-1.3104	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
23	M22	X	-0.7565	-0.7565	0	%100
24	M22	Z	-1.3104	-1.3104	0	%100
25	M23	X	-0.7565	-0.7565	0	%100
26	M23	Z	-1.3104	-1.3104	0	%100
27	M24	X	-0.7565	-0.7565	0	%100
28	M24	Z	-1.3104	-1.3104	0	%100
29	M25	X	-1.3351	-1.3351	0	%100
30	M25	Z	-2.3125	-2.3125	0	%100
31	M26	X	-1.3351	-1.3351	0	%100
32	M26	Z	-2.3125	-2.3125	0	%100
33	M27	X	-0.928	-0.928	0	%100
34	M27	Z	-1.6073	-1.6073	0	%100
35	M28	X	-0.928	-0.928	0	%100
36	M28	Z	-1.6073	-1.6073	0	%100
37	M31	X	-0.6532	-0.6532	0	%100
38	M31	Z	-1.1314	-1.1314	0	%100
39	MP4A	X	-2.1967	-2.1967	0	%100
40	MP4A	Z	-3.8048	-3.8048	0	%100
41	MP3A	X	-2.1967	-2.1967	0	%100
42	MP3A	Z	-3.8048	-3.8048	0	%100
43	MP2A	X	-2.1967	-2.1967	0	%100
44	MP2A	Z	-3.8048	-3.8048	0	%100
45	MP1A	X	-2.1967	-2.1967	0	%100
46	MP1A	Z	-3.8048	-3.8048	0	%100
47	M44	X	-1.2274	-1.2274	0	%100
48	M44	Z	-2.1259	-2.1259	0	%100
49	M45	X	-1.2274	-1.2274	0	%100
50	M45	Z	-2.1259	-2.1259	0	%100
51	M46	X	-1.2274	-1.2274	0	%100
52	M46	Z	-2.1259	-2.1259	0	%100
53	M47	X	-1.2274	-1.2274	0	%100
54	M47	Z	-2.1259	-2.1259	0	%100
55	M48	X	-2.0287	-2.0287	0	%100
56	M48	Z	-3.5139	-3.5139	0	%100
57	M49	X	-2.0287	-2.0287	0	%100
58	M49	Z	-3.5139	-3.5139	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	0	0	0	%100
2	M1	Z	-0.7823	-0.7823	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	-0.7823	-0.7823	0	%100
5	M13	X	0	0	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	0	0	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	0	0	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	0	0	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	0	0	0	%100
14	M17	Z	-0.3089	-0.3089	0	%100
15	M18	X	0	0	0	%100
16	M18	Z	-0.3089	-0.3089	0	%100
17	M19	X	0	0	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Locationft.	End Locationft.
18	M19	Z	-.3089	-.3089	0	%100
19	M20	X	0	0	0	%100
20	M20	Z	-.3089	-.3089	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	-.1701	-.1701	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	-.1701	-.1701	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	-.1701	-.1701	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	-.1701	-.1701	0	%100
29	M25	X	0	0	0	%100
30	M25	Z	-.1761	-.1761	0	%100
31	M26	X	0	0	0	%100
32	M26	Z	-.1761	-.1761	0	%100
33	M27	X	0	0	0	%100
34	M27	Z	-.1761	-.1761	0	%100
35	M28	X	0	0	0	%100
36	M28	Z	-.1761	-.1761	0	%100
37	M31	X	0	0	0	%100
38	M31	Z	-.0023	-.0023	0	%100
39	MP4A	X	0	0	0	%100
40	MP4A	Z	-.6463	-.6463	0	%100
41	MP3A	X	0	0	0	%100
42	MP3A	Z	-.6463	-.6463	0	%100
43	MP2A	X	0	0	0	%100
44	MP2A	Z	-.6463	-.6463	0	%100
45	MP1A	X	0	0	0	%100
46	MP1A	Z	-.6463	-.6463	0	%100
47	M44	X	0	0	0	%100
48	M44	Z	-.1701	-.1701	0	%100
49	M45	X	0	0	0	%100
50	M45	Z	-.1701	-.1701	0	%100
51	M46	X	0	0	0	%100
52	M46	Z	-.1701	-.1701	0	%100
53	M47	X	0	0	0	%100
54	M47	Z	-.1701	-.1701	0	%100
55	M48	X	0	0	0	%100
56	M48	Z	-.6463	-.6463	0	%100
57	M49	X	0	0	0	%100
58	M49	Z	-.6463	-.6463	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Locationft.	End Locationft.
1	M1	X	.2934	.2934	0	%100
2	M1	Z	-.5081	-.5081	0	%100
3	M2	X	.2934	.2934	0	%100
4	M2	Z	-.5081	-.5081	0	%100
5	M13	X	.0213	.0213	0	%100
6	M13	Z	-.0368	-.0368	0	%100
7	M14	X	.0213	.0213	0	%100
8	M14	Z	-.0368	-.0368	0	%100
9	M15	X	.0213	.0213	0	%100
10	M15	Z	-.0368	-.0368	0	%100
11	M16	X	.0213	.0213	0	%100
12	M16	Z	-.0368	-.0368	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
13	M17	X	.0348	.0348	0	%100
14	M17	Z	-.0602	-.0602	0	%100
15	M18	X	.0348	.0348	0	%100
16	M18	Z	-.0602	-.0602	0	%100
17	M19	X	.2442	.2442	0	%100
18	M19	Z	-.423	-.423	0	%100
19	M20	X	.2442	.2442	0	%100
20	M20	Z	-.423	-.423	0	%100
21	M21	X	.0638	.0638	0	%100
22	M21	Z	-.1105	-.1105	0	%100
23	M22	X	.0638	.0638	0	%100
24	M22	Z	-.1105	-.1105	0	%100
25	M23	X	.0638	.0638	0	%100
26	M23	Z	-.1105	-.1105	0	%100
27	M24	X	.0638	.0638	0	%100
28	M24	Z	-.1105	-.1105	0	%100
29	M25	X	.0704	.0704	0	%100
30	M25	Z	-.122	-.122	0	%100
31	M26	X	.0704	.0704	0	%100
32	M26	Z	-.122	-.122	0	%100
33	M27	X	.1013	.1013	0	%100
34	M27	Z	-.1755	-.1755	0	%100
35	M28	X	.1013	.1013	0	%100
36	M28	Z	-.1755	-.1755	0	%100
37	M31	X	.0679	.0679	0	%100
38	M31	Z	-.1176	-.1176	0	%100
39	MP4A	X	.3231	.3231	0	%100
40	MP4A	Z	-.5597	-.5597	0	%100
41	MP3A	X	.3231	.3231	0	%100
42	MP3A	Z	-.5597	-.5597	0	%100
43	MP2A	X	.3231	.3231	0	%100
44	MP2A	Z	-.5597	-.5597	0	%100
45	MP1A	X	.3231	.3231	0	%100
46	MP1A	Z	-.5597	-.5597	0	%100
47	M44	X	.085	.085	0	%100
48	M44	Z	-.1473	-.1473	0	%100
49	M45	X	.085	.085	0	%100
50	M45	Z	-.1473	-.1473	0	%100
51	M46	X	.085	.085	0	%100
52	M46	Z	-.1473	-.1473	0	%100
53	M47	X	.085	.085	0	%100
54	M47	Z	-.1473	-.1473	0	%100
55	M48	X	.3231	.3231	0	%100
56	M48	Z	-.5597	-.5597	0	%100
57	M49	X	.3231	.3231	0	%100
58	M49	Z	-.5597	-.5597	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
1	M1	X	.1694	.1694	0	%100
2	M1	Z	-.0978	-.0978	0	%100
3	M2	X	.1694	.1694	0	%100
4	M2	Z	-.0978	-.0978	0	%100
5	M13	X	.1105	.1105	0	%100
6	M13	Z	-.0638	-.0638	0	%100
7	M14	X	.1105	.1105	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Locationft	End Locationft
8	M14	Z	-.0638	-.0638	0	%100
9	M15	X	.1105	.1105	0	%100
10	M15	Z	-.0638	-.0638	0	%100
11	M16	X	.1105	.1105	0	%100
12	M16	Z	-.0638	-.0638	0	%100
13	M17	X	.0085	.0085	0	%100
14	M17	Z	-.0049	-.0049	0	%100
15	M18	X	.0085	.0085	0	%100
16	M18	Z	-.0049	-.0049	0	%100
17	M19	X	.3713	.3713	0	%100
18	M19	Z	-.2144	-.2144	0	%100
19	M20	X	.3713	.3713	0	%100
20	M20	Z	-.2144	-.2144	0	%100
21	M21	X	.0368	.0368	0	%100
22	M21	Z	-.0213	-.0213	0	%100
23	M22	X	.0368	.0368	0	%100
24	M22	Z	-.0213	-.0213	0	%100
25	M23	X	.0368	.0368	0	%100
26	M23	Z	-.0213	-.0213	0	%100
27	M24	X	.0368	.0368	0	%100
28	M24	Z	-.0213	-.0213	0	%100
29	M25	X	.1143	.1143	0	%100
30	M25	Z	-.066	-.066	0	%100
31	M26	X	.1143	.1143	0	%100
32	M26	Z	-.066	-.066	0	%100
33	M27	X	.1679	.1679	0	%100
34	M27	Z	-.0969	-.0969	0	%100
35	M28	X	.1679	.1679	0	%100
36	M28	Z	-.0969	-.0969	0	%100
37	M31	X	.3958	.3958	0	%100
38	M31	Z	-.2285	-.2285	0	%100
39	MP4A	X	.5597	.5597	0	%100
40	MP4A	Z	-.3231	-.3231	0	%100
41	MP3A	X	.5597	.5597	0	%100
42	MP3A	Z	-.3231	-.3231	0	%100
43	MP2A	X	.5597	.5597	0	%100
44	MP2A	Z	-.3231	-.3231	0	%100
45	MP1A	X	.5597	.5597	0	%100
46	MP1A	Z	-.3231	-.3231	0	%100
47	M44	X	.1473	.1473	0	%100
48	M44	Z	-.085	-.085	0	%100
49	M45	X	.1473	.1473	0	%100
50	M45	Z	-.085	-.085	0	%100
51	M46	X	.1473	.1473	0	%100
52	M46	Z	-.085	-.085	0	%100
53	M47	X	.1473	.1473	0	%100
54	M47	Z	-.085	-.085	0	%100
55	M48	X	.5597	.5597	0	%100
56	M48	Z	-.3231	-.3231	0	%100
57	M49	X	.5597	.5597	0	%100
58	M49	Z	-.3231	-.3231	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Locationft	End Locationft
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
3	M2	X	0	0	0	%100
4	M2	Z	0	0	0	%100
5	M13	X	.1701	.1701	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	.1701	.1701	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	.1701	.1701	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	.1701	.1701	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	.1894	.1894	0	%100
14	M17	Z	0	0	0	%100
15	M18	X	.1894	.1894	0	%100
16	M18	Z	0	0	0	%100
17	M19	X	.1894	.1894	0	%100
18	M19	Z	0	0	0	%100
19	M20	X	.1894	.1894	0	%100
20	M20	Z	0	0	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	0	0	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	0	0	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	0	0	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	0	0	0	%100
29	M25	X	.1585	.1585	0	%100
30	M25	Z	0	0	0	%100
31	M26	X	.1585	.1585	0	%100
32	M26	Z	0	0	0	%100
33	M27	X	.1585	.1585	0	%100
34	M27	Z	0	0	0	%100
35	M28	X	.1585	.1585	0	%100
36	M28	Z	0	0	0	%100
37	M31	X	.6447	.6447	0	%100
38	M31	Z	0	0	0	%100
39	MP4A	X	.6463	.6463	0	%100
40	MP4A	Z	0	0	0	%100
41	MP3A	X	.6463	.6463	0	%100
42	MP3A	Z	0	0	0	%100
43	MP2A	X	.6463	.6463	0	%100
44	MP2A	Z	0	0	0	%100
45	MP1A	X	.6463	.6463	0	%100
46	MP1A	Z	0	0	0	%100
47	M44	X	.1701	.1701	0	%100
48	M44	Z	0	0	0	%100
49	M45	X	.1701	.1701	0	%100
50	M45	Z	0	0	0	%100
51	M46	X	.1701	.1701	0	%100
52	M46	Z	0	0	0	%100
53	M47	X	.1701	.1701	0	%100
54	M47	Z	0	0	0	%100
55	M48	X	.6463	.6463	0	%100
56	M48	Z	0	0	0	%100
57	M49	X	.6463	.6463	0	%100
58	M49	Z	0	0	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
1	M1	X	.1694	.1694	0	%100
2	M1	Z	.0978	.0978	0	%100
3	M2	X	.1694	.1694	0	%100
4	M2	Z	.0978	.0978	0	%100
5	M13	X	.1105	.1105	0	%100
6	M13	Z	.0638	.0638	0	%100
7	M14	X	.1105	.1105	0	%100
8	M14	Z	.0638	.0638	0	%100
9	M15	X	.1105	.1105	0	%100
10	M15	Z	.0638	.0638	0	%100
11	M16	X	.1105	.1105	0	%100
12	M16	Z	.0638	.0638	0	%100
13	M17	X	.3713	.3713	0	%100
14	M17	Z	.2144	.2144	0	%100
15	M18	X	.3713	.3713	0	%100
16	M18	Z	.2144	.2144	0	%100
17	M19	X	.0085	.0085	0	%100
18	M19	Z	.0049	.0049	0	%100
19	M20	X	.0085	.0085	0	%100
20	M20	Z	.0049	.0049	0	%100
21	M21	X	.0368	.0368	0	%100
22	M21	Z	.0213	.0213	0	%100
23	M22	X	.0368	.0368	0	%100
24	M22	Z	.0213	.0213	0	%100
25	M23	X	.0368	.0368	0	%100
26	M23	Z	.0213	.0213	0	%100
27	M24	X	.0368	.0368	0	%100
28	M24	Z	.0213	.0213	0	%100
29	M25	X	.1679	.1679	0	%100
30	M25	Z	.0969	.0969	0	%100
31	M26	X	.1679	.1679	0	%100
32	M26	Z	.0969	.0969	0	%100
33	M27	X	.1143	.1143	0	%100
34	M27	Z	.066	.066	0	%100
35	M28	X	.1143	.1143	0	%100
36	M28	Z	.066	.066	0	%100
37	M31	X	.4427	.4427	0	%100
38	M31	Z	.2556	.2556	0	%100
39	MP4A	X	.5597	.5597	0	%100
40	MP4A	Z	.3231	.3231	0	%100
41	MP3A	X	.5597	.5597	0	%100
42	MP3A	Z	.3231	.3231	0	%100
43	MP2A	X	.5597	.5597	0	%100
44	MP2A	Z	.3231	.3231	0	%100
45	MP1A	X	.5597	.5597	0	%100
46	MP1A	Z	.3231	.3231	0	%100
47	M44	X	.1473	.1473	0	%100
48	M44	Z	.085	.085	0	%100
49	M45	X	.1473	.1473	0	%100
50	M45	Z	.085	.085	0	%100
51	M46	X	.1473	.1473	0	%100
52	M46	Z	.085	.085	0	%100
53	M47	X	.1473	.1473	0	%100
54	M47	Z	.085	.085	0	%100
55	M48	X	.5597	.5597	0	%100
56	M48	Z	.3231	.3231	0	%100
57	M49	X	.5597	.5597	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
58	M49	Z	.3231	.3231	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	.2934	.2934	0	%100
2	M1	Z	.5081	.5081	0	%100
3	M2	X	.2934	.2934	0	%100
4	M2	Z	.5081	.5081	0	%100
5	M13	X	.0213	.0213	0	%100
6	M13	Z	.0368	.0368	0	%100
7	M14	X	.0213	.0213	0	%100
8	M14	Z	.0368	.0368	0	%100
9	M15	X	.0213	.0213	0	%100
10	M15	Z	.0368	.0368	0	%100
11	M16	X	.0213	.0213	0	%100
12	M16	Z	.0368	.0368	0	%100
13	M17	X	.2442	.2442	0	%100
14	M17	Z	.423	.423	0	%100
15	M18	X	.2442	.2442	0	%100
16	M18	Z	.423	.423	0	%100
17	M19	X	.0348	.0348	0	%100
18	M19	Z	.0602	.0602	0	%100
19	M20	X	.0348	.0348	0	%100
20	M20	Z	.0602	.0602	0	%100
21	M21	X	.0638	.0638	0	%100
22	M21	Z	.1105	.1105	0	%100
23	M22	X	.0638	.0638	0	%100
24	M22	Z	.1105	.1105	0	%100
25	M23	X	.0638	.0638	0	%100
26	M23	Z	.1105	.1105	0	%100
27	M24	X	.0638	.0638	0	%100
28	M24	Z	.1105	.1105	0	%100
29	M25	X	.1013	.1013	0	%100
30	M25	Z	.1755	.1755	0	%100
31	M26	X	.1013	.1013	0	%100
32	M26	Z	.1755	.1755	0	%100
33	M27	X	.0704	.0704	0	%100
34	M27	Z	.122	.122	0	%100
35	M28	X	.0704	.0704	0	%100
36	M28	Z	.122	.122	0	%100
37	M31	X	.095	.095	0	%100
38	M31	Z	.1645	.1645	0	%100
39	MP4A	X	.3231	.3231	0	%100
40	MP4A	Z	.5597	.5597	0	%100
41	MP3A	X	.3231	.3231	0	%100
42	MP3A	Z	.5597	.5597	0	%100
43	MP2A	X	.3231	.3231	0	%100
44	MP2A	Z	.5597	.5597	0	%100
45	MP1A	X	.3231	.3231	0	%100
46	MP1A	Z	.5597	.5597	0	%100
47	M44	X	.085	.085	0	%100
48	M44	Z	.1473	.1473	0	%100
49	M45	X	.085	.085	0	%100
50	M45	Z	.1473	.1473	0	%100
51	M46	X	.085	.085	0	%100
52	M46	Z	.1473	.1473	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
53	M47	X	.085	.085	0	%100
54	M47	Z	.1473	.1473	0	%100
55	M48	X	.3231	.3231	0	%100
56	M48	Z	.5597	.5597	0	%100
57	M49	X	.3231	.3231	0	%100
58	M49	Z	.5597	.5597	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	0	0	0	%100
2	M1	Z	.7823	.7823	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	.7823	.7823	0	%100
5	M13	X	0	0	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	0	0	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	0	0	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	0	0	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	0	0	0	%100
14	M17	Z	.3089	.3089	0	%100
15	M18	X	0	0	0	%100
16	M18	Z	.3089	.3089	0	%100
17	M19	X	0	0	0	%100
18	M19	Z	.3089	.3089	0	%100
19	M20	X	0	0	0	%100
20	M20	Z	.3089	.3089	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	.1701	.1701	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	.1701	.1701	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	.1701	.1701	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	.1701	.1701	0	%100
29	M25	X	0	0	0	%100
30	M25	Z	.1761	.1761	0	%100
31	M26	X	0	0	0	%100
32	M26	Z	.1761	.1761	0	%100
33	M27	X	0	0	0	%100
34	M27	Z	.1761	.1761	0	%100
35	M28	X	0	0	0	%100
36	M28	Z	.1761	.1761	0	%100
37	M31	X	0	0	0	%100
38	M31	Z	.0023	.0023	0	%100
39	MP4A	X	0	0	0	%100
40	MP4A	Z	.6463	.6463	0	%100
41	MP3A	X	0	0	0	%100
42	MP3A	Z	.6463	.6463	0	%100
43	MP2A	X	0	0	0	%100
44	MP2A	Z	.6463	.6463	0	%100
45	MP1A	X	0	0	0	%100
46	MP1A	Z	.6463	.6463	0	%100
47	M44	X	0	0	0	%100



Company : Colliers Engineering & Design
 Designer :
 Job Number : Project # 23777087
 Model Name : Antenna Mount Analysis

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
48	M44	Z	.1701	.1701	0	%100
49	M45	X	0	0	0	%100
50	M45	Z	.1701	.1701	0	%100
51	M46	X	0	0	0	%100
52	M46	Z	.1701	.1701	0	%100
53	M47	X	0	0	0	%100
54	M47	Z	.1701	.1701	0	%100
55	M48	X	0	0	0	%100
56	M48	Z	.6463	.6463	0	%100
57	M49	X	0	0	0	%100
58	M49	Z	.6463	.6463	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	-.2934	-.2934	0	%100
2	M1	Z	.5081	.5081	0	%100
3	M2	X	-.2934	-.2934	0	%100
4	M2	Z	.5081	.5081	0	%100
5	M13	X	-.0213	-.0213	0	%100
6	M13	Z	.0368	.0368	0	%100
7	M14	X	-.0213	-.0213	0	%100
8	M14	Z	.0368	.0368	0	%100
9	M15	X	-.0213	-.0213	0	%100
10	M15	Z	.0368	.0368	0	%100
11	M16	X	-.0213	-.0213	0	%100
12	M16	Z	.0368	.0368	0	%100
13	M17	X	-.0348	-.0348	0	%100
14	M17	Z	.0602	.0602	0	%100
15	M18	X	-.0348	-.0348	0	%100
16	M18	Z	.0602	.0602	0	%100
17	M19	X	-.2442	-.2442	0	%100
18	M19	Z	.423	.423	0	%100
19	M20	X	-.2442	-.2442	0	%100
20	M20	Z	.423	.423	0	%100
21	M21	X	-.0638	-.0638	0	%100
22	M21	Z	.1105	.1105	0	%100
23	M22	X	-.0638	-.0638	0	%100
24	M22	Z	.1105	.1105	0	%100
25	M23	X	-.0638	-.0638	0	%100
26	M23	Z	.1105	.1105	0	%100
27	M24	X	-.0638	-.0638	0	%100
28	M24	Z	.1105	.1105	0	%100
29	M25	X	-.0704	-.0704	0	%100
30	M25	Z	.122	.122	0	%100
31	M26	X	-.0704	-.0704	0	%100
32	M26	Z	.122	.122	0	%100
33	M27	X	-.1013	-.1013	0	%100
34	M27	Z	.1755	.1755	0	%100
35	M28	X	-.1013	-.1013	0	%100
36	M28	Z	.1755	.1755	0	%100
37	M31	X	-.0679	-.0679	0	%100
38	M31	Z	.1176	.1176	0	%100
39	MP4A	X	-.3231	-.3231	0	%100
40	MP4A	Z	.5597	.5597	0	%100
41	MP3A	X	-.3231	-.3231	0	%100
42	MP3A	Z	.5597	.5597	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
43	MP2A	X	-.3231	-.3231	0	%100
44	MP2A	Z	.5597	.5597	0	%100
45	MP1A	X	-.3231	-.3231	0	%100
46	MP1A	Z	.5597	.5597	0	%100
47	M44	X	-.085	-.085	0	%100
48	M44	Z	.1473	.1473	0	%100
49	M45	X	-.085	-.085	0	%100
50	M45	Z	.1473	.1473	0	%100
51	M46	X	-.085	-.085	0	%100
52	M46	Z	.1473	.1473	0	%100
53	M47	X	-.085	-.085	0	%100
54	M47	Z	.1473	.1473	0	%100
55	M48	X	-.3231	-.3231	0	%100
56	M48	Z	.5597	.5597	0	%100
57	M49	X	-.3231	-.3231	0	%100
58	M49	Z	.5597	.5597	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
1	M1	X	-.1694	-.1694	0	%100
2	M1	Z	.0978	.0978	0	%100
3	M2	X	-.1694	-.1694	0	%100
4	M2	Z	.0978	.0978	0	%100
5	M13	X	-.1105	-.1105	0	%100
6	M13	Z	.0638	.0638	0	%100
7	M14	X	-.1105	-.1105	0	%100
8	M14	Z	.0638	.0638	0	%100
9	M15	X	-.1105	-.1105	0	%100
10	M15	Z	.0638	.0638	0	%100
11	M16	X	-.1105	-.1105	0	%100
12	M16	Z	.0638	.0638	0	%100
13	M17	X	-.0085	-.0085	0	%100
14	M17	Z	.0049	.0049	0	%100
15	M18	X	-.0085	-.0085	0	%100
16	M18	Z	.0049	.0049	0	%100
17	M19	X	-.3713	-.3713	0	%100
18	M19	Z	.2144	.2144	0	%100
19	M20	X	-.3713	-.3713	0	%100
20	M20	Z	.2144	.2144	0	%100
21	M21	X	-.0368	-.0368	0	%100
22	M21	Z	.0213	.0213	0	%100
23	M22	X	-.0368	-.0368	0	%100
24	M22	Z	.0213	.0213	0	%100
25	M23	X	-.0368	-.0368	0	%100
26	M23	Z	.0213	.0213	0	%100
27	M24	X	-.0368	-.0368	0	%100
28	M24	Z	.0213	.0213	0	%100
29	M25	X	-.1143	-.1143	0	%100
30	M25	Z	.066	.066	0	%100
31	M26	X	-.1143	-.1143	0	%100
32	M26	Z	.066	.066	0	%100
33	M27	X	-.1679	-.1679	0	%100
34	M27	Z	.0969	.0969	0	%100
35	M28	X	-.1679	-.1679	0	%100
36	M28	Z	.0969	.0969	0	%100
37	M31	X	-.3958	-.3958	0	%100



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 Model Name : Antenna Mount Analysis

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
38	M31	Z	.2285	.2285	0	%100
39	MP4A	X	-.5597	-.5597	0	%100
40	MP4A	Z	.3231	.3231	0	%100
41	MP3A	X	-.5597	-.5597	0	%100
42	MP3A	Z	.3231	.3231	0	%100
43	MP2A	X	-.5597	-.5597	0	%100
44	MP2A	Z	.3231	.3231	0	%100
45	MP1A	X	-.5597	-.5597	0	%100
46	MP1A	Z	.3231	.3231	0	%100
47	M44	X	-.1473	-.1473	0	%100
48	M44	Z	.085	.085	0	%100
49	M45	X	-.1473	-.1473	0	%100
50	M45	Z	.085	.085	0	%100
51	M46	X	-.1473	-.1473	0	%100
52	M46	Z	.085	.085	0	%100
53	M47	X	-.1473	-.1473	0	%100
54	M47	Z	.085	.085	0	%100
55	M48	X	-.5597	-.5597	0	%100
56	M48	Z	.3231	.3231	0	%100
57	M49	X	-.5597	-.5597	0	%100
58	M49	Z	.3231	.3231	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100
3	M2	X	0	0	0	%100
4	M2	Z	0	0	0	%100
5	M13	X	-.1701	-.1701	0	%100
6	M13	Z	0	0	0	%100
7	M14	X	-.1701	-.1701	0	%100
8	M14	Z	0	0	0	%100
9	M15	X	-.1701	-.1701	0	%100
10	M15	Z	0	0	0	%100
11	M16	X	-.1701	-.1701	0	%100
12	M16	Z	0	0	0	%100
13	M17	X	-.1894	-.1894	0	%100
14	M17	Z	0	0	0	%100
15	M18	X	-.1894	-.1894	0	%100
16	M18	Z	0	0	0	%100
17	M19	X	-.1894	-.1894	0	%100
18	M19	Z	0	0	0	%100
19	M20	X	-.1894	-.1894	0	%100
20	M20	Z	0	0	0	%100
21	M21	X	0	0	0	%100
22	M21	Z	0	0	0	%100
23	M22	X	0	0	0	%100
24	M22	Z	0	0	0	%100
25	M23	X	0	0	0	%100
26	M23	Z	0	0	0	%100
27	M24	X	0	0	0	%100
28	M24	Z	0	0	0	%100
29	M25	X	-.1585	-.1585	0	%100
30	M25	Z	0	0	0	%100
31	M26	X	-.1585	-.1585	0	%100
32	M26	Z	0	0	0	%100



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 Model Name : Antenna Mount Analysis

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)
28	M24	Z	-0.213	-0.213	0	%100
29	M25	X	-1.679	-1.679	0	%100
30	M25	Z	-0.969	-0.969	0	%100
31	M26	X	-1.679	-1.679	0	%100
32	M26	Z	-0.969	-0.969	0	%100
33	M27	X	-1.143	-1.143	0	%100
34	M27	Z	-0.066	-0.066	0	%100
35	M28	X	-1.143	-1.143	0	%100
36	M28	Z	-0.066	-0.066	0	%100
37	M31	X	-4.427	-4.427	0	%100
38	M31	Z	-2.556	-2.556	0	%100
39	MP4A	X	-5.597	-5.597	0	%100
40	MP4A	Z	-3.231	-3.231	0	%100
41	MP3A	X	-5.597	-5.597	0	%100
42	MP3A	Z	-3.231	-3.231	0	%100
43	MP2A	X	-5.597	-5.597	0	%100
44	MP2A	Z	-3.231	-3.231	0	%100
45	MP1A	X	-5.597	-5.597	0	%100
46	MP1A	Z	-3.231	-3.231	0	%100
47	M44	X	-1.473	-1.473	0	%100
48	M44	Z	-0.085	-0.085	0	%100
49	M45	X	-1.473	-1.473	0	%100
50	M45	Z	-0.085	-0.085	0	%100
51	M46	X	-1.473	-1.473	0	%100
52	M46	Z	-0.085	-0.085	0	%100
53	M47	X	-1.473	-1.473	0	%100
54	M47	Z	-0.085	-0.085	0	%100
55	M48	X	-5.597	-5.597	0	%100
56	M48	Z	-3.231	-3.231	0	%100
57	M49	X	-5.597	-5.597	0	%100
58	M49	Z	-3.231	-3.231	0	%100

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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)
1	M1	X	-2.934	-2.934	0	%100
2	M1	Z	-5.081	-5.081	0	%100
3	M2	X	-2.934	-2.934	0	%100
4	M2	Z	-5.081	-5.081	0	%100
5	M13	X	-0.213	-0.213	0	%100
6	M13	Z	-0.368	-0.368	0	%100
7	M14	X	-0.213	-0.213	0	%100
8	M14	Z	-0.368	-0.368	0	%100
9	M15	X	-0.213	-0.213	0	%100
10	M15	Z	-0.368	-0.368	0	%100
11	M16	X	-0.213	-0.213	0	%100
12	M16	Z	-0.368	-0.368	0	%100
13	M17	X	-2.442	-2.442	0	%100
14	M17	Z	-0.423	-0.423	0	%100
15	M18	X	-2.442	-2.442	0	%100
16	M18	Z	-0.423	-0.423	0	%100
17	M19	X	-0.348	-0.348	0	%100
18	M19	Z	-0.602	-0.602	0	%100
19	M20	X	-0.348	-0.348	0	%100
20	M20	Z	-0.602	-0.602	0	%100
21	M21	X	-0.638	-0.638	0	%100
22	M21	Z	-1.105	-1.105	0	%100



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

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
23	M22	X	-0.638	-0.638	0	%100
24	M22	Z	-1.105	-1.105	0	%100
25	M23	X	-0.638	-0.638	0	%100
26	M23	Z	-1.105	-1.105	0	%100
27	M24	X	-0.638	-0.638	0	%100
28	M24	Z	-1.105	-1.105	0	%100
29	M25	X	-1.013	-1.013	0	%100
30	M25	Z	-1.755	-1.755	0	%100
31	M26	X	-1.013	-1.013	0	%100
32	M26	Z	-1.755	-1.755	0	%100
33	M27	X	-0.704	-0.704	0	%100
34	M27	Z	-1.122	-1.122	0	%100
35	M28	X	-0.704	-0.704	0	%100
36	M28	Z	-1.122	-1.122	0	%100
37	M31	X	-0.095	-0.095	0	%100
38	M31	Z	-1.645	-1.645	0	%100
39	MP4A	X	-3.231	-3.231	0	%100
40	MP4A	Z	-5.597	-5.597	0	%100
41	MP3A	X	-3.231	-3.231	0	%100
42	MP3A	Z	-5.597	-5.597	0	%100
43	MP2A	X	-3.231	-3.231	0	%100
44	MP2A	Z	-5.597	-5.597	0	%100
45	MP1A	X	-3.231	-3.231	0	%100
46	MP1A	Z	-5.597	-5.597	0	%100
47	M44	X	-0.085	-0.085	0	%100
48	M44	Z	-1.473	-1.473	0	%100
49	M45	X	-0.085	-0.085	0	%100
50	M45	Z	-1.473	-1.473	0	%100
51	M46	X	-0.085	-0.085	0	%100
52	M46	Z	-1.473	-1.473	0	%100
53	M47	X	-0.085	-0.085	0	%100
54	M47	Z	-1.473	-1.473	0	%100
55	M48	X	-3.231	-3.231	0	%100
56	M48	Z	-5.597	-5.597	0	%100
57	M49	X	-3.231	-3.231	0	%100
58	M49	Z	-5.597	-5.597	0	%100

Member Area Loads

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

Envelope Joint Reactions

Joint	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1 N35	745.546	50	1464.715	17	1869.547	13	-0.344	73	0	75	0.059	50
2	-253.932	27	368.099	73	109.168	7	-1.402	17	0	1	-0.226	33
3 N36	1054.307	11	1427.776	13	2178.359	12	-0.331	69	0	75	0.059	50
4	-1330.837	5	363.021	70	-3260.624	6	-1.341	24	0	1	-0.225	35
5 N75	105.21	10	79.128	23	1151.692	5	0	75	0	75	0	75
6	-101.623	4	-19.23	5	-1160.475	11	0	1	0	1	0	1
7 Totals	1506.54	11	2945.296	19	2557.61	1						
8	-1506.544	5	748.636	64	-2557.612	7						



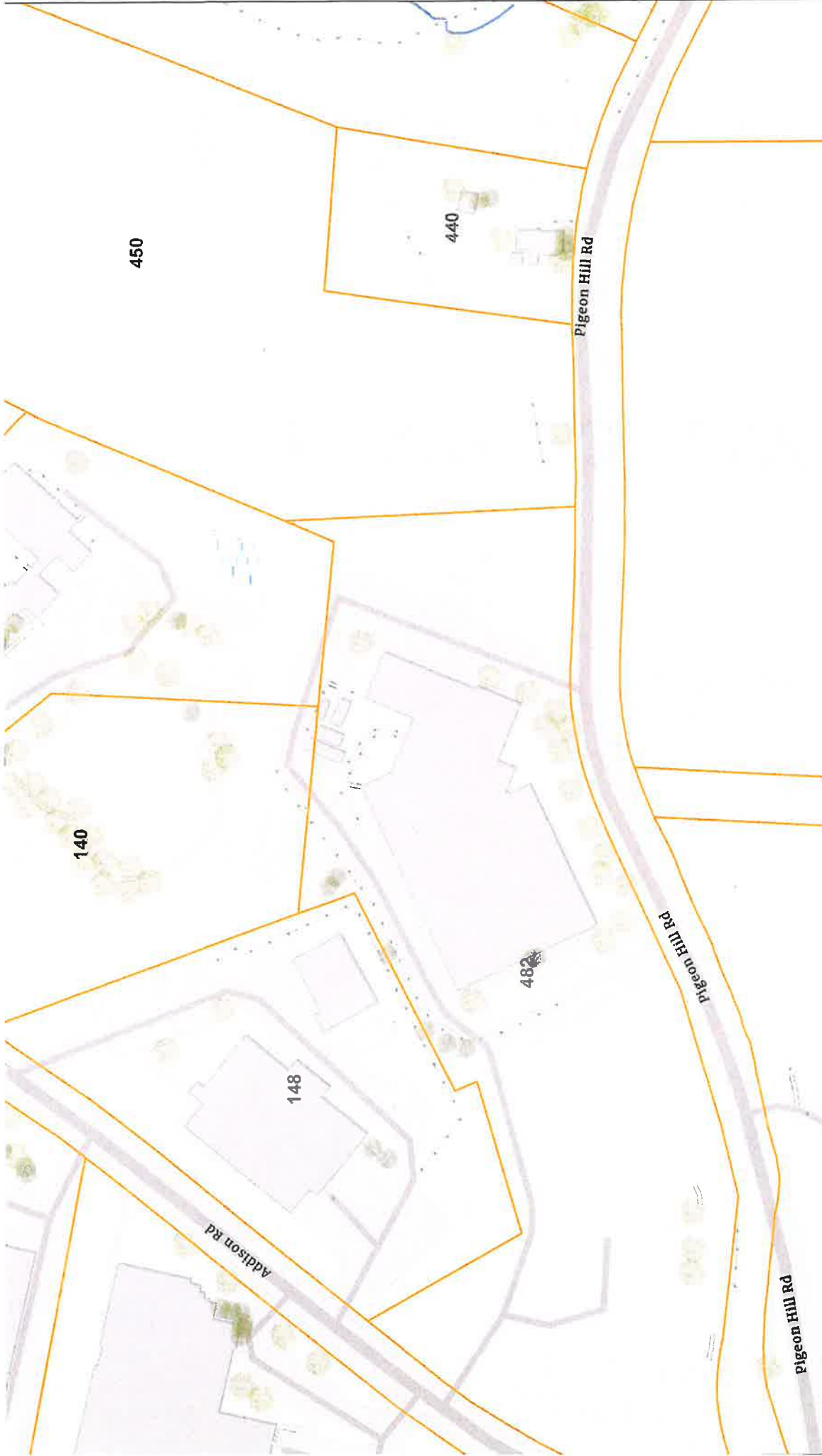
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 Designer :
 Job Number : Project # 23777087
 Model Name : Antenna Mount Analysis

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

Member	Shape	Code Check	Lo...	LC	Shear Check	Lo.....	LC	phi*Pnc	phi*Pnt	phi*Mn y	phi*Mn...	Cb	Eqn		
1	M1	PIPE 2.5	.236	8....	12	.114	8....	6	14558.7...	50715	3.596	3.596	2.128	H1-...	
2	M2	PIPE 2.5	.563	8....	6	.161	8....	6	14558.7...	50715	3.596	3.596	2.767	H1-...	
3	M13	PL5/8X3.5	.214	422	19	.257	378	y	7	66184.77	68906.25	.897	5.024	1.667	H1-...
4	M14	PL5/8X3.5	.175	422	19	.075	422	y	2	66184.77	68906.25	.897	5.024	1.667	H1-...
5	M15	PL5/8X3.5	.196	0	44	.071	422	y	12	66184.77	68906.25	.897	5.024	1.667	H1-...
6	M16	PL5/8X3.5	.321	422	6	.414	422	y	6	66184.77	68906.25	.897	5.024	1.667	H1-...
7	M17	PIPE 2.0	.261	0	7	.077	0		13	31128.25	32130	1.872	1.872	2.256	H1-...
8	M18	PIPE 2.0	.120	2....	21	.093	0		19	31128.25	32130	1.872	1.872	1.238	H1-...
9	M19	PIPE 2.0	.160	2....	24	.102	0		18	31128.25	32130	1.872	1.872	1.202	H1-...
10	M20	PIPE 2.0	.432	2....	6	.112	1.25		12	31128.25	32130	1.872	1.872	2.122	H1-...
11	M21	PL5/8X3.5	.314	531	20	.108	531	y	7	67591.76	68906.25	.897	5.024	1.931	H1-...
12	M22	PL5/8X3.5	.550	531	18	.176	531	y	6	67591.76	68906.25	.897	5.024	1.38	H1-...
13	M23	PL5/8X3.5	.302	531	14	.041	531	y	1	67591.76	68906.25	.897	5.024	1.388	H1-...
14	M24	PL5/8X3.5	.483	531	24	.065	531	y	12	67591.76	68906.25	.897	5.024	1.388	H1-...
15	M25	SR 0.75	.000	0	75	.012	4....		12	2863.854	13916.2...	.174	.174	1.136	H1-...
16	M26	SR 0.75	.061	0	19	.008	4....		24	2863.854	13916.2...	.174	.174	1.136	H1-...
17	M27	SR 0.75	.000	0	75	.012	4....		12	2863.854	13916.2...	.174	.174	1.136	H1-...
18	M28	SR 0.75	.076	4....	18	.014	4....		16	2863.854	13916.2...	.174	.174	1.136	H1-...
19	M31	PIPE 2.0	.136	5....	4	.007	0		16	9152.381	32130	1.872	1.872	1.136	H1-...
20	MP4A	PIPE 2.0	.172	2....	21	.074	5....		6	17855.0...	32130	1.872	1.872	2.061	H1-...
21	MP3A	PIPE 2.0	.293	2....	7	.082	2....		6	17855.0...	32130	1.872	1.872	2.292	H1-...
22	MP2A	PIPE 2.0	.359	2....	6	.126	2....		6	17855.0...	32130	1.872	1.872	2.104	H1-...
23	MP1A	PIPE 2.0	.247	5....	50	.110	2....		6	17855.0...	32130	1.872	1.872	2.158	H1-...
24	M44	SR 0.625	.051	1....	1	.015	0		6	2158.31	9664.079	.101	.101	1	H1-...
25	M45	SR 0.625	.053	1....	7	.023	0		50	2158.31	9664.079	.101	.101	1	H1-...
26	M46	SR 0.625	.058	1....	6	.020	0		50	2158.31	9664.079	.101	.101	1.136	H1-...
27	M47	SR 0.625	.056	1....	2	.006	0		38	2158.31	9664.079	.101	.101	1.136	H1-...
28	M48	PIPE 2.0	.037	2.5	7	.028	4....		8	23808.54	32130	1.872	1.872	1	H1-...
29	M49	PIPE 2.0	.037	2.5	7	.059	4....		6	23808.54	32130	1.872	1.872	1	H1-...

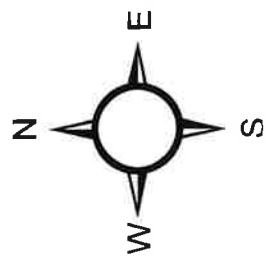
ATTACHMENT 4



NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community
 Intermap and the GIS user community, Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community, Sources: Esri, HERE, Garmin, FAO,
 Sources: Esri, Airbus DS, USGS, NGA, NASA, CGLAR, N Robinson, NCEAS, NLS, OS, NIMA, Geodatasysteisen, Rijkswaterstaat, GSA, Geoland, FEMA,

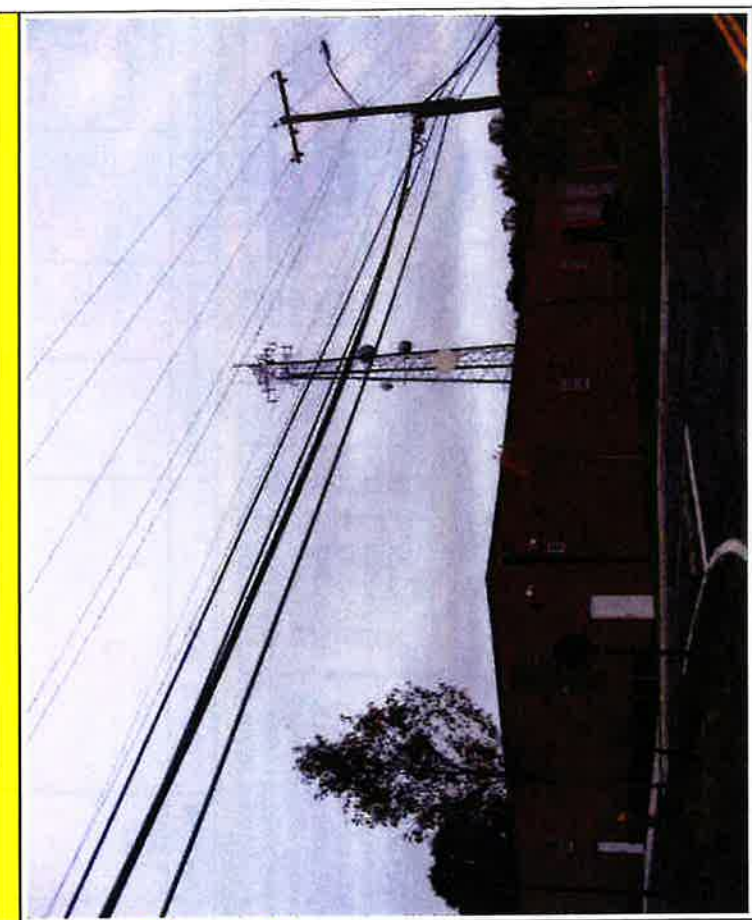
 Parcels

Town of Windsor, CT

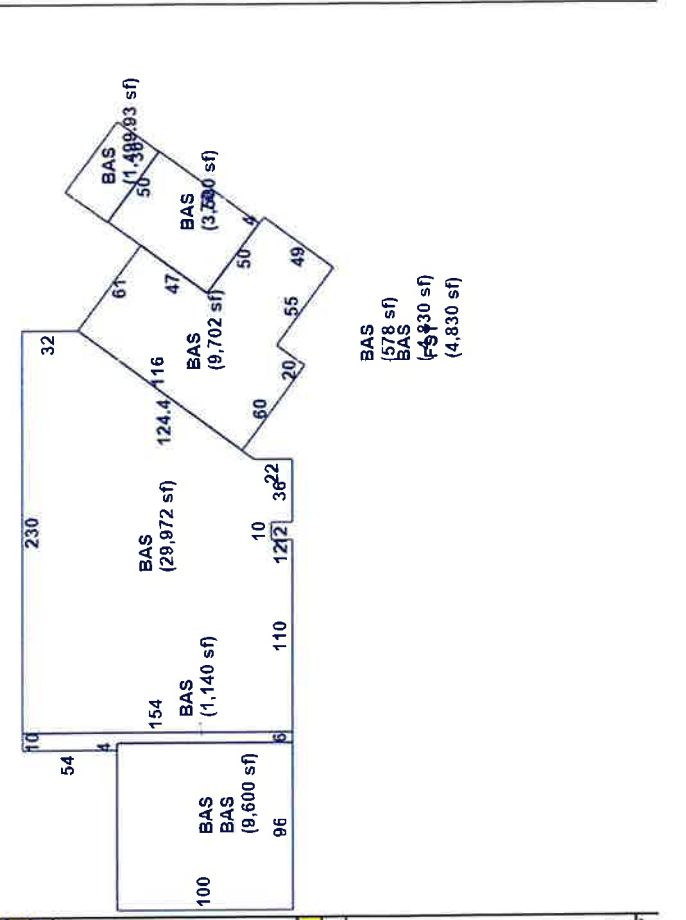


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CONSTRUCTION DETAIL		CONSTRUCTION DETAIL (CONTINUED)	
Element	Description	Element	Description
79	Telephone Bldg		
96	Ind/Comm		
15			
1			
19	Brick Veneer		
15	Concrete/Block		
01	Flat		
04	T&G/Rubber		
05	Drywall		
17	Precast Concr		
05	Vinyl		
04	Electric		
04	Forced Air		
03	Central		
4300	Tel X Station		
00	Total Rooms		
02	Total Bedrms		
02	Total Baths		
05	Heat/AC		
02	Frame Type		
02	Baths/Plumbing		
05	Ceiling/Wall		
02	Rooms/Prtns		
18.00	Wall Height		
0.00	% Comm Wall		
430C	1st Floor Use:		



OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)														
Code	Description	Sub	Sub Ty	L/B	Units	Unit Price	Yr	Blit	Cond.	Cd	% Gd	Grade	Ad	Appr. V
PAV1	PAVING-WORK	L	5,000		2.50	2003					99			12,400
SHP1	WORK	L	480		17.00	2003					100			8,200
SHP1	WORK	L	300		17.00	2003					100			5,100
MSC8	SPR1	B	1		8300.00	2001					98			8,100
MSC9	SPR4(2)	B	1		69600.00	2001					98			68,200
MSC9	SPR1(2)	B	1		32300.00	2001					98			31,700
MSC9	SPR4(2)	B	1		96800.00	2001					98			94,900
PAV1	PAVING-WORK	L	11,20		2.50	2005					100			28,000
MSC9	SPR4(2)	B	1		65000.00	2001					98			63,700
ELVF	FREIGH	B	1		75000.00	2019					98			73,500



BUILDING SUB-AREA SUMMARY SECTION				
Code	Description	Living Area	Floor Area	Eff Area
BAS	First Floor	60,762	60,762	287.67
FST	Utility, Storage	4,830	4,830	115.07
		65,592	65,592	18,035,447

ATTACHMENT 5



Name and Address of Sender Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	TOTAL NO. of Pieces Listed by Sender 2	TOTAL NO. of Pieces Received at Post Office™ 2	Affix Stamp Here <i>Postmark with Date of Receipt.</i> 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.	Peter Souza, Town Manager Town of Windsor 275 Broad Street Windsor, CT 06095				
2.	Eric Barz, AICP, Town Planner Town of Windsor 275 Broad Street Windsor, CT 06095				
3.					
4.					
5.					
6.					