

January 11, 2024

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
1542 Boston Post Road, Westbrook, Connecticut**

Dear Attorney Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains a wireless telecommunications facility at the above-referenced address (the “Property”). Cellco’s facility consists of antennas and remote radio heads attached to a tower. Equipment associated with the facility is located on the ground adjacent to the tower. The tower and Cellco’s use of the tower were approved by the Siting Council (“Council”) in August of 2019 (Docket No. 485). A copy of the Council’s Docket No. 485 Decision and Order is included in Attachment 1.

Cellco’s proposed modification involves the installation of two (2) interference mitigation filters (“Filters”) on its existing antenna platform and antenna mounting assembly. The specification sheet for the new Filters 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 Westbrook’s Chief Elected Official and Land Use Officer and the owner of the Property.

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

1. The proposed modifications will not result in an increase in the height of the existing tower. The Filters will be installed on Cellco’s existing antenna platform.

28547826-v1

Robinson+Cole

Melanie A. Bachman, Esq.

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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 MA¹ 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:

John Hall, First Selectman
Peter Gillespie, Town Planner
Connecticut Water Company, Property Owner
Aleksy Tyurin, Verizon Wireless

¹ Note the model number listed for the Filters in the SA (BSF0020F3V1) and MA (KA-6030) are the same filter. See correspondence from Kaelus included in Attachment 2.

ATTACHMENT 1

DOCKET NO. 485 – MCM Holdings, LLC and Cellco Partnership d/b/a Verizon Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a telecommunications facility at one of two sites: 1542 Boston Post Road or at the end of Kirtland Street, Westbrook, Connecticut. } Connecticut
} Siting
} Council

August 15, 2019

Decision and Order

Pursuant to Connecticut General Statutes §16-50p, and the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, maintenance, and operation of a telecommunications facility, including effects on the natural environment, ecological balance, public health and safety, scenic, historic, and recreational values, agriculture, forests and parks, air and water purity, and fish, aquaculture and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to MCM Holdings, LLC, hereinafter referred to as the Certificate Holder, for a telecommunications facility at Site A, located at 1542 Boston Post Road, Westbrook, Connecticut. The Council denies certification of Site B, located at the end of Kirtland Street, Westbrook, Connecticut.

Unless otherwise approved by the Council, the Site A facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole at a height of 130 feet above ground level to provide the proposed wireless services, sufficient to accommodate the antennas of Cellco Partnership d/b/a Verizon Wireless and other entities, both public and private. The height of the tower may be extended after the date of this Decision and Order pursuant to regulations of the Federal Communications Commission.
2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a) final site plan(s) for development of the facility that employ the governing standard in the State of Connecticut for tower design in accordance with the currently adopted International Building Code and include specifications for the tower, tower foundation, antennas and any modifications to the equipment compound including, but not limited to, fencing, radio equipment, access road, utility installation and emergency backup generator;
 - b) the tower shall be designed with a yield point to ensure that the tower setback radius remains within the boundaries of the subject property;
 - c) construction plans for site clearing, grading, water drainage and stormwater control, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended;
 - d) provisions for landscaping;
 - e) proposed hours and days of the week for construction activities; and
 - f) a schedule for the removal of the existing temporary tower.

13. This Certificate may be transferred in accordance with Conn. Gen. Stat. §16-50k(b), provided both the Certificate Holder/transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. In addition, both the Certificate Holder/transferor and the transferee shall provide the Council a written agreement as to the entity responsible for any quarterly assessment charges under Conn. Gen. Stat. §16-50v(b)(2) that may be associated with this facility.
14. The Certificate Holder shall maintain the facility and associated equipment, including but not limited to, the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line and landscaping in a reasonable physical and operational condition that is consistent with this Decision and Order and a Development and Management Plan to be approved by the Council.
15. If the Certificate Holder is a wholly-owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the Certificate Holder within 30 days of the sale and/or transfer.
16. This Certificate may be surrendered by the Certificate Holder upon written notification and acknowledgment by the Council.

We hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed in the Service List, dated April 4, 2019, and notice of issuance published in the *Harbor News*.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

ATTACHMENT 2



January 4, 2024

SAI Communication LLC
c/o Edward Onessimo
68 Avalon Road
Milton, MA 02186

Ref: 900 MHz Interference Mitigation Filter Part Numbers

Mr, Onessimo,

Thank you very much for reaching out to us regarding your question related to Kaelus 900 MHz Interference Mitigation Filter Part Numbers: KA-6030-2032 & BSF0020F3V1-1.

The respective part numbers are the same product only marked/labeled with difference model numbers. Kaelus developed part number: BSF0020F3V1-1 at the request of Verizon Wireless for mitigating interference associated with 900 MHz Up Link Band while allowing the 700 & 850 Up Link & Down Link to pass thru the filter. Kaelus part number BSF0020F3V1-1 was marked/labeled with part number KA-6030-2032 at the request of Verizon Wireless for inventory management & accounting purposes related to 900 MHz Interference Issues at the low end of the frequency band with Electric Companies related to deployment of certain Samsung Radios.

Attached, please find the data sheets for both Kaelus Part Numbers: KA-6030-2032 & BSF0020F3V1-1. Please review the information and contact me with any additional questions.

Again, thank you very much for contacting Kaelus.

Sincerely,

Steve Graham
Regional Sales Manager
(717) 714-4499
Steve.Graham@kaelus.com

KA-6030

TWIN BANDSTOP 900MHZ INTERFERENCE MITIGATION FILTER

The KA-6030 is ideal for co-located 700, 850 and 900 networks. Utilising a 2.6MHz guardband the KA-6030 provides rejection of the 900 UL band while passing 700/850 UL and DL bands. Capable of being used in an outdoor environment the KA-6030 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

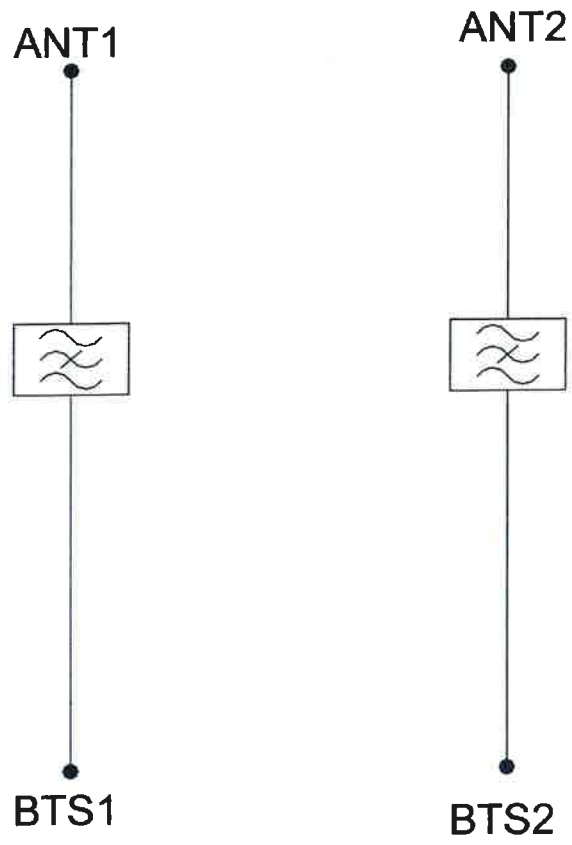
BAND NAME	700 PATH / 850 UPLINK PATH	850 DOWNLINK PATH
Passband	698 - 849MHz	869 - 891.5MHz
Insertion loss	0.1dB typical / 0.3dB maximum	0.5dB typical, 1.45dB maximum
Return loss	24dB typical, 18dB minimum	
Maximum input power (Per Port)	100W average	200W average and 66W per 5MHz
Rejection	53dB minimum @ 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.

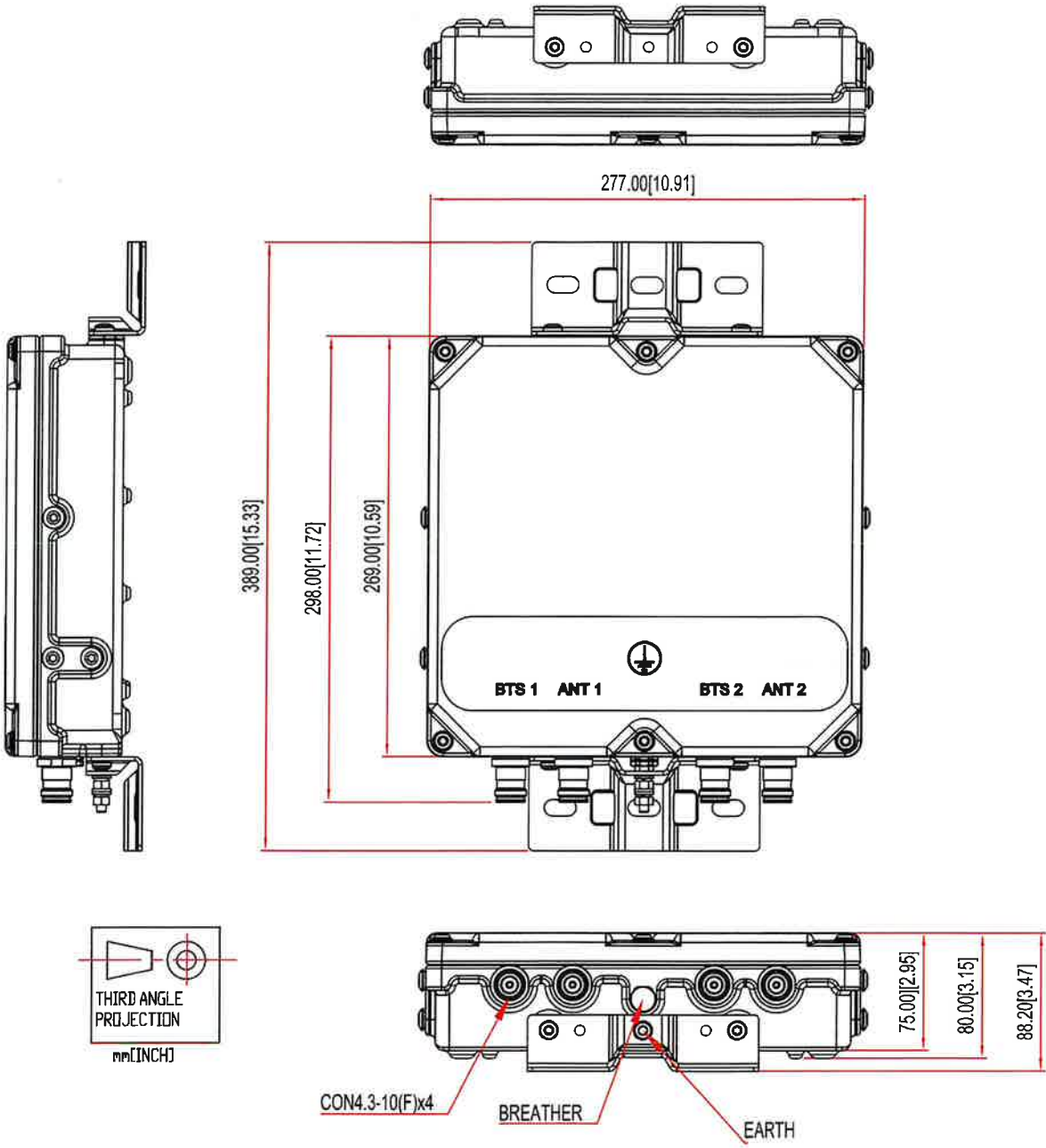
ORDERING INFORMATION

PART NUMBER	CONFIGURATION	OPTIONAL FEATURES	CONNECTORS
KA-6030-2032	TWIN, 2 in / 2 out	DC/AISG PASS	4.3-10 (F)

ELECTRICAL BLOCK DIAGRAM



MECHANICAL BLOCK DIAGRAM



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



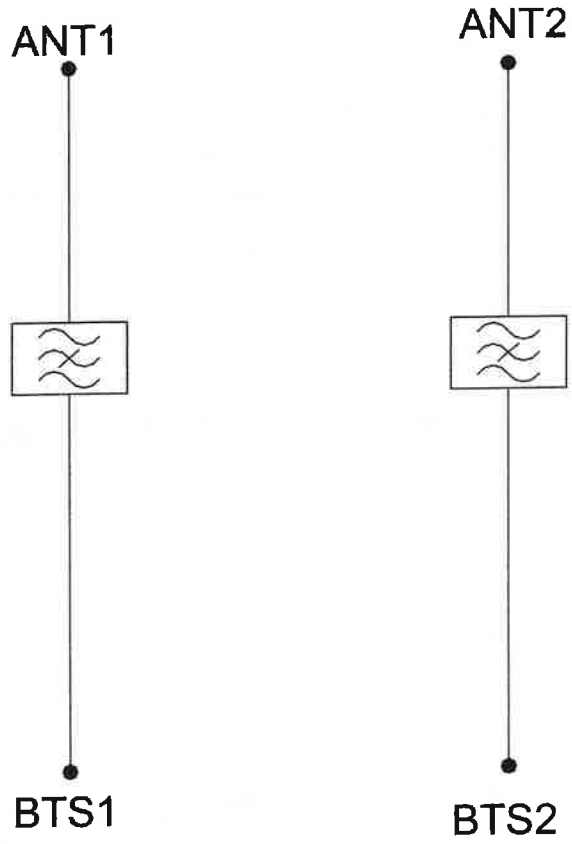
TECHNICAL SPECIFICATIONS

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
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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)	
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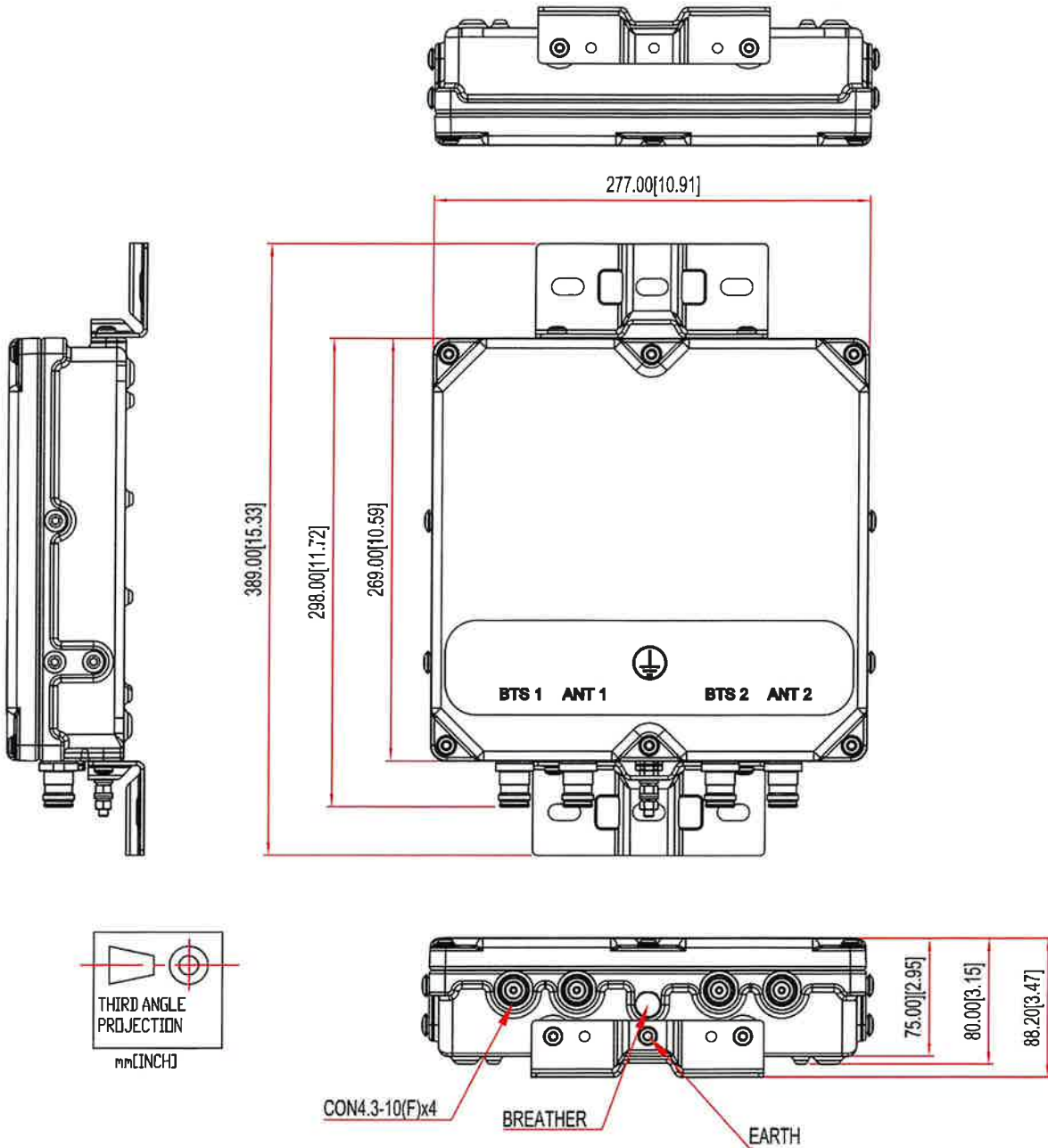
ORDERING INFORMATION

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

Structural Analysis Report

130-ft Rohn Monopole

*Proposed Verizon
Equipment Upgrade*

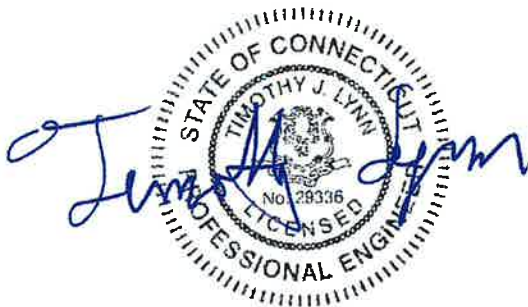
Site Ref: Westbrook

*1542 Boston Post Road
Westbrook, CT*

Centek Project No. 23032.04

Date: July 31, 2023

Max Stress Ratio = 54%



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

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- PRIMARY ASSUMPTIONS USED IN THE ANALYSIS
- ANALYSIS
- TOWER LOADING
- TOWER CAPACITY
- FOUNDATION AND ANCHORS
- CONCLUSION

SECTION 2 – CONDITIONS & SOFTWARE

- STANDARD ENGINEERING CONDITIONS
- GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM

SECTION 3 – CALCULATIONS

- tnxTower INPUT/OUTPUT SUMMARY
- tnxTower DETAILED OUTPUT
- ANCHOR BOLT AND BASE PLATE ANALYSIS
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Introduction

The purpose of this report is to summarize the results of the non-linear, P- Δ structural analysis of the equipment upgrade proposed by Verizon on the monopole (tower) located in Westbrook, CT.

The host tower is a 130-ft tall, three-section, eighteen sided, tapered monopole, originally designed and manufactured by Rohn job no; 231452, dated November 18, 2019. The tower geometry, structure member sizes and foundation system information were obtained from the original design documents.

Antenna and appurtenance information were obtained from a previous structural analysis report prepared by Centek job no; 22022.15 dated May 26, 2022.

The tower is made up of three (3) tapered vertical sections consisting of A572-65 pole sections. The vertical tower sections are slip joint connected. The diameter of the pole (flat-flat) is 28.0-in at the top and 65.0-in at the base.

Antenna and Appurtenance Summary

- **AT&T (Existing):**
Antennas: Six (6) KMW EPBQ-654L8H8-L2 panel antennas, three (3) CCI HPA-65R-BU8A panel antennas, three (3) Ericsson 4415 B25 remote radio heads, three (3) Ericsson 4449 B5 remote radio heads, three (3) Ericsson 4426 B66 remote radio heads, three (3) Ericsson 4415 B30 remote radio heads, three (3) Ericsson 4478 remote radio heads, three (3) Ericsson RRUS-E2 remote radio heads and three (3) surge arrestors mounted on (3) 12-ft V-frames with a RAD center elevation of 115-ft above grade.
Coax Cables: Two (2) fiber trunk and six (6) DC trunks running on the inside of the existing tower.
- **T-MOBILE (Existing):**
Antennas: Three (3) RFS APXVAARR24_43 panel antennas, three (3) Ericsson AIR6419 panel antennas, three (3) Ericsson 4460 remote radio heads and three (3) Ericsson 4449 B71 B12 remote radio heads mounted on a 14-ft platform with rails with a RAD center elevation of 104-ft above the existing tower base plate.
Coax Cables: Two (2) 6x12 fiber cables and one (1) 6x24 fiber cable running on the inside of the existing tower.
- **VERIZON (Existing to Remain):**
Antennas: Three (3) Samsung MT6407-77A panel antennas and nine (9) JMA MX06FRO660-03 panel antennas, three (3) Samsung B2/B66 Remote Radio Heads, three (3) Samsung B5/B13 Remote Radio Heads and one (1) OVP box mounted on a 13-ft platform with rails with a RAD center elevation of 126-ft above the existing tower base plate.
Coax Cables: Six (6) 1-5/8" \varnothing coax cables and two (2) 6x12 fiber cables running on the inside of the existing tower.
- **VERIZON (Proposed):**
Antennas: Two (2) Kaelus BSF0020F3V1-1 filters mounted on a 13-ft platform with rails with a RAD center elevation of 126-ft above the existing tower base plate.

Primary Assumptions Used in the Analysis

- The tower structure's theoretical capacity not including any assessment of the condition of the tower.
- The tower carries the horizontal and vertical loads due to the weight of antennas, ice load and wind.
- Tower is properly installed and maintained.
- Tower is in plumb condition.
- Tower loading for antennas and mounts as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds are fabricated with ER-70S-6 electrodes.
- All members are assumed to be as specified in the original tower design documents or reinforcement drawings.
- All members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- All member protective coatings are in good condition.
- All tower members were properly designed, detailed, fabricated, installed and have been properly maintained since erection.
- Any deviation from the analyzed antenna loading will require a new analysis for verification of structural adequacy.
- All existing coax cables to be installed as indicated in this report.

Analysis

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

The existing tower was analyzed for the controlling basic wind speed (3-second gust) with no ice and the applicable wind and ice combination to determine stresses in members as per guidelines of TIA-222-H entitled "Structural Standard for Antenna Support Structures and Antennas", the American Institute of Steel Construction (AISC) and the Manual of Steel Construction; Load and Resistance Factor Design (LRFD).

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

Tower Loading

Tower loading was determined by the basic wind speed as applied to projected surface areas with modification factors per TIA-222-H, gravity loads of the tower structure and its components, and the application of 1.00" radial ice on the tower structure and its components.

Load Cases:	<u>Load Case 1</u> ; 125 mph (Ultimate) wind speed w/ no ice plus gravity load – used in calculation of tower stresses and rotation.	<i>[Appendix P of the 2022 CT Building Code]</i>
	<u>Load Case 2</u> ; 50 mph wind speed w/ 1.00" radial ice plus gravity load – used in calculation of tower stresses.	<i>[Annex B of TIA-222-H]</i>
	<u>Load Case 3</u> ; 60 mph wind speed used for deflection calculation.	

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

Tower Capacity

- Calculated stresses were found to be within allowable limits. This tower was found to be at **31.5%** of its total capacity.

Tower Section	Elevation	Stress Ratio (percentage of capacity)	Result
Pole Shaft (L1)	83.71'-130.00'	32.5%	PASS

Foundation and Anchors

The foundation consists of an 8.25-ft diameter x 4.5-ft long reinforced concrete pier on a 32.0-ft x 2.0-ft thick reinforce concrete pad. The sub-grade conditions used in the analysis of the foundation were obtained from the aforementioned original design documents. The base of the tower is connected to the foundation by means of (22) 2.25"Ø, ASTM A615-75 anchor bolts embedded approximately 6-ft into the concrete foundation structure.

- The tower base reactions developed from the governing Load Case 1 were used in the verification of the foundation and its anchors:

Location	Vector	Proposed Reactions
Base	Shear	41 kips
	Compression	65 kips
	Moment	3745 kip-ft

- The foundation was found to be within allowable limits.

Foundation	Design Limit	TIA-222-H (FS) ⁽¹⁾	Proposed Loading (FS) ⁽¹⁾	Result
Reinforced Concrete Pad and Pier	OTM ⁽²⁾	1.0	3.02	PASS

Note 1: FS denotes Factor of Safety.

Note 2: OTM denotes Overturning Moment.

CEN TEK Engineering, Inc.
Structural Analysis – 130-ft Rohn Monopole
Verizon Equipment Upgrade – Westbrook
Westbrook, CT
July 31, 2023

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

Tower Component	Design Limit	Stress Ratio (percentage of capacity)	Result
Anchor Bolts	Combined Axial and Shear	35.6%	PASS
Base Plate	Bending	54.0%	PASS

Conclusion

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

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

Please feel free to call with any questions or comments.

Respectfully Submitted by:



Timothy J. Lynn, PE
Structural Engineer



CENTEK Engineering, Inc.
Structural Analysis – 130-ft Rohn Monopole
Verizon Equipment Upgrade – Westbrook
Westbrook, CT
July 31, 2023

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

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

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

CENTEK Engineering, Inc.
Structural Analysis – 130-ft Rohn Monopole
Verizon Equipment Upgrade – Westbrook
Westbrook, CT
July 31, 2023

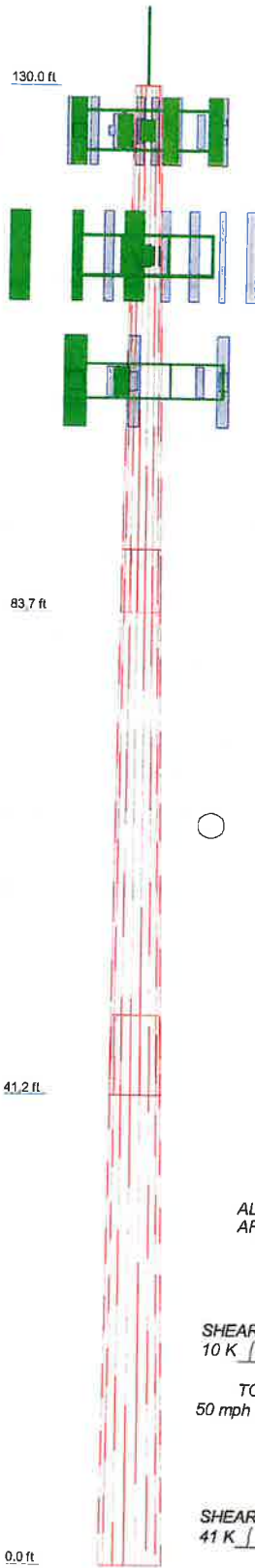
GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM

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

TnxTower Features:

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

Section	1	2	3
Length (ft)	46,280	48,000	48,210
Number of Sides	18	18	18
Thickness (in)	0.313	0.625	0.750
Socket Length (ft)	5.500	7.000	50.416
Top Dia (in)	28.000	39.297	65.000
Bot Dia (in)	41.530	53.780	22.2
Grade	A572-65	A572-65	A572-65
Weight (K)	5.4	14.9	42.5



DESIGNED APPURTENANCE LOADING

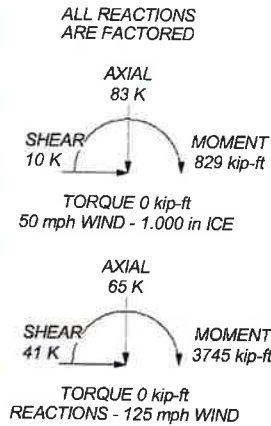
TYPE	ELEVATION	TYPE	ELEVATION
BOA4357	130	4426 B66 (ATI)	115
MX06FRO660 (Verizon)	126	4426 B66 (ATI)	115
MX06FRO660 (Verizon)	126	4426 B66 (ATI)	115
MT6407-77A (Verizon)	126	4415 B30 (ATI)	115
MX06FRO660 (Verizon)	126	4415 B30 (ATI)	115
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MX06FRO660 (Verizon)	126	4415 B30 (ATI)	115
MT6407-77A (Verizon)	126	4478 B14 (ATI)	115
MX06FRO660 (Verizon)	126	4478 B14 (ATI)	115
MX06FRO660 (Verizon)	126	RRUS-E2 (ATI)	115
MX06FRO660 (Verizon)	126	RRUS-E2 (ATI)	115
MT6407-77A (Verizon)	126	RRUS-E2 (ATI)	115
MX06FRO660 (Verizon)	126	DC6-48-60-18-8F Surge Arrestor (ATI)	115
B2/B66A RRH (Verizon)	126	DC6-48-60-18-8F Surge Arrestor (ATI)	115
B2/B66A RRH (Verizon)	126	DC6-48-60-18-8F Surge Arrestor (ATI)	115
B2/B66A RRH (Verizon)	126	12' V-Frame (ATI)	115
B5/B13 RRH (Verizon)	126	12' V-Frame (ATI)	115
B5/B13 RRH (Verizon)	126	12' V-Frame (ATI)	115
B5/B13 RRH (Verizon)	126	(2) EPBQ-654L8H8-L2 (ATI)	115
RC2DC-3315-PF-48 (Verizon)	126	APXVAARR24-43 (T-Mobile)	104
13' Platform w/Rails (Verizon)	126	AIR6419 (T-Mobile)	104
(2) BSF0020F3V1-1 (Verizon-Proposed)	126	APXVAARR24-43 (T-Mobile)	104
(2) EPBQ-654L8H8-L2 (ATI)	115	AIR6419 (T-Mobile)	104
(2) EPBQ-654L8H8-L2 (ATI)	115	APXVAARR24-43 (T-Mobile)	104
HPA65R-BU8A (ATI)	115	Radio 4449 B71 B12 (T-Mobile)	104
HPA65R-BU8A (ATI)	115	Radio 4449 B71 B12 (T-Mobile)	104
HPA65R-BU8A (ATI)	115	Radio 4449 B71 B12 (T-Mobile)	104
4449 B5/B12 (ATI)	115	4460 B25+B66 (T-Mobile)	104
4449 B5/B12 (ATI)	115	4460 B25+B66 (T-Mobile)	104
4449 B5/B12 (ATI)	115	4460 B25+B66 (T-Mobile)	104
4415 B25 (ATI)	115	F4P-12W Quad Platform w/ Handrail (T-Mobile)	104
4415 B25 (ATI)	115	AIR6419 (T-Mobile)	104
4415 B25 (ATI)	115		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower designed for Exposure D to the TIA 222 H Standard.
2. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.000 ft
7. TOWER RATING: 32.5%



Centek Engineering Inc.		Job: 23032.04 - Westbrook	
63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587		Project: 130-ft Rohn Monopole - Westbrook, CT	
Client: Verizon	Drawn by: T.JL	App'd:	
Code: TIA-222-H	Date: 07/31/23	Scale: NTS	
Path:		Dwg No. E-1	

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Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	130.000-83.710	46.290	5.500	18	28.000	41.530	0.313	1.250	A572-65 (65 ksi)
L2	83.710-41.210	48.000	7.000	18	39.297	53.780	0.625	2.500	A572-65 (65 ksi)
L3	41.210-0.000	48.210		18	50.418	65.000	0.750	3.000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
L1	28.384	27.463	2659.779	9.829	14.224	186.992	5323.059	13.734	4.378	14.01
	42.122	40.883	8774.843	14.632	21.097	415.924	17561.231	20.445	6.759	21.63
L2	41.492	76.716	14495.338	13.729	19.963	726.107	29009.749	38.365	5.816	9.306
	54.513	105.446	37640.619	18.870	27.320	1377.756	75330.767	52.733	8.365	13.384
L3	53.230	118.235	36849.748	17.632	25.612	1438.751	73747.984	59.129	7.554	10.071
	65.887	152.947	79767.326	22.809	33.020	2415.728	159639.611	76.488	10.120	13.493

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontal in	Double Angle Stitch Bolt Spacing Redundants in
L1 130.000-83.710				1	1	1			
L2 83.710-41.210				1	1	1			
L3 41.210-0.000				1	1	1			

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C _A A _A ft ² /ft	Weight klf
7/8	C	No	Yes	Inside Pole	130.000 - 0.000	1	No Ice	0.000
							1/2" Ice	0.000
							1" Ice	0.000
1 5/8 (Verizon)	B	No	Yes	Inside Pole	126.000 - 3.000	8	No Ice	0.000
							1/2" Ice	0.000
							1" Ice	0.000
RG6-Fiber (AT&T)	C	No	Yes	Inside Pole	116.000 - 3.000	2	No Ice	0.000
							1/2" Ice	0.000
							1" Ice	0.000
#8 AWG Copper Wire (AT&T)	C	No	Yes	Inside Pole	116.000 - 3.000	6	No Ice	0.000
							1/2" Ice	0.000
							1" Ice	0.000
HYBRIFLEX 1-5/8" (T-Mobile)	A	No	Yes	Inside Pole	104.000 - 3.000	3	No Ice	0.000
							1/2" Ice	0.000
							1" Ice	0.000

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Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_{AA} In Face ft^2	C_{AA} Out Face ft^2	Weight K
L1	130.000-83.710	A	0.000	0.000	0.000	0.000	0.116
		B	0.000	0.000	0.000	0.000	0.352
		C	0.000	0.000	0.000	0.000	0.099
L2	83.710-41.210	A	0.000	0.000	0.000	0.000	0.242
		B	0.000	0.000	0.000	0.000	0.354
		C	0.000	0.000	0.000	0.000	0.121
L3	41.210-0.000	A	0.000	0.000	0.000	0.000	0.218
		B	0.000	0.000	0.000	0.000	0.318
		C	0.000	0.000	0.000	0.000	0.110

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_{AA} In Face ft^2	C_{AA} Out Face ft^2	Weight K
L1	130.000-83.710	A	1.123	0.000	0.000	0.000	0.000	0.116
		B		0.000	0.000	0.000	0.000	0.352
		C		0.000	0.000	0.000	0.000	0.099
L2	83.710-41.210	A	1.065	0.000	0.000	0.000	0.000	0.242
		B		0.000	0.000	0.000	0.000	0.354
		C		0.000	0.000	0.000	0.000	0.121
L3	41.210-0.000	A	0.954	0.000	0.000	0.000	0.000	0.218
		B		0.000	0.000	0.000	0.000	0.318
		C		0.000	0.000	0.000	0.000	0.110

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment	Placement ft	C_{AA} Front ft^2	C_{AA} Side ft^2	Weight K	
BOA4357	C	From Face	1.000	0.000	130.000	No Ice	1.383	1.383	0.007
			0.000			1/2" Ice	2.100	2.100	0.018
			3.500			1" Ice	2.637	2.637	0.033
MX06FRO660 (Verizon)	A	From Face	3.000	0.000	126.000	No Ice	9.872	7.338	0.057
			-6.000			1/2" Ice	10.342	7.784	0.126
			0.000			1" Ice	10.819	8.237	0.201
MX06FRO660 (Verizon)	A	From Face	3.000	0.000	126.000	No Ice	9.872	7.338	0.057
			-2.000			1/2" Ice	10.342	7.784	0.126
			0.000			1" Ice	10.819	8.237	0.201
MT6407-77A (Verizon)	A	From Face	3.000	0.000	126.000	No Ice	4.709	1.840	0.087
			2.000			1/2" Ice	4.997	2.063	0.116

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A _{Front}	C _A A _{Side}	Weight
			Horz	Lateral					
MX06FRO660 (Verizon)	A	From Face	0.000		0.000	126.000	1" Ice	2.292	0.149
			3.000				No Ice	7.338	0.057
			6.000				1/2" Ice	7.784	0.126
MX06FRO660 (Verizon)	B	From Face	0.000		0.000	126.000	1" Ice	8.237	0.201
			3.000				No Ice	7.338	0.057
			-6.000				1/2" Ice	7.784	0.126
MX06FRO660 (Verizon)	B	From Face	0.000		0.000	126.000	1" Ice	8.237	0.201
			3.000				No Ice	7.338	0.057
			-2.000				1/2" Ice	7.784	0.126
MT6407-77A (Verizon)	B	From Face	0.000		0.000	126.000	1" Ice	8.237	0.201
			3.000				No Ice	7.338	0.057
			2.000				1/2" Ice	2.063	0.116
MX06FRO660 (Verizon)	B	From Face	0.000		0.000	126.000	1" Ice	2.292	0.149
			3.000				No Ice	7.338	0.057
			6.000				1/2" Ice	7.784	0.126
MX06FRO660 (Verizon)	C	From Face	0.000		0.000	126.000	1" Ice	8.237	0.201
			3.000				No Ice	7.338	0.057
			-6.000				1/2" Ice	7.784	0.126
MX06FRO660 (Verizon)	C	From Face	0.000		0.000	126.000	1" Ice	8.237	0.201
			3.000				No Ice	7.338	0.057
			-2.000				1/2" Ice	7.784	0.126
MT6407-77A (Verizon)	C	From Face	0.000		0.000	126.000	1" Ice	8.237	0.201
			3.000				No Ice	1.840	0.087
			2.000				1/2" Ice	2.063	0.116
MX06FRO660 (Verizon)	C	From Face	0.000		0.000	126.000	1" Ice	2.292	0.149
			3.000				No Ice	7.338	0.057
			6.000				1/2" Ice	7.784	0.126
B2/B66A RRH (Verizon)	A	From Face	0.000		0.000	126.000	1" Ice	8.237	0.201
			3.000				No Ice	1.610	0.060
			6.000				1/2" Ice	1.791	0.080
B2/B66A RRH (Verizon)	B	From Face	0.000		0.000	126.000	1" Ice	1.978	0.103
			3.000				No Ice	1.610	0.060
			6.000				1/2" Ice	1.791	0.080
B2/B66A RRH (Verizon)	C	From Face	0.000		0.000	126.000	1" Ice	1.978	0.103
			3.000				No Ice	1.610	0.060
			6.000				1/2" Ice	1.791	0.080
B5/B13 RRH (Verizon)	A	From Face	0.000		0.000	126.000	1" Ice	1.978	0.103
			3.000				No Ice	1.016	0.070
			6.000				1/2" Ice	1.148	0.086
B5/B13 RRH (Verizon)	B	From Face	0.000		0.000	126.000	1" Ice	1.288	0.106
			3.000				No Ice	1.016	0.070
			6.000				1/2" Ice	1.148	0.086
B5/B13 RRH (Verizon)	C	From Face	0.000		0.000	126.000	1" Ice	1.288	0.106
			3.000				No Ice	1.016	0.070
			6.000				1/2" Ice	1.148	0.086
RC2DC-3315-PF-48 (Verizon)	C	From Face	0.000		0.000	126.000	1" Ice	1.288	0.106
			3.000				No Ice	1.965	0.025
			0.000				1/2" Ice	2.153	0.051
13' Platform w/Rails (Verizon)	C	None	0.000		0.000	126.000	1" Ice	2.349	0.081
							No Ice	31.300	1.822
							1/2" Ice	40.200	2.452
(2) EPBQ-654L8H8-L2 (AT&T)	A	From Face	3.000		0.000	115.000	1" Ice	49.100	3.082
			6.000				No Ice	18.089	0.095
			0.000				1/2" Ice	18.722	0.188
(2) EPBQ-654L8H8-L2 (AT&T)	B	From Face	3.000		0.000	115.000	1" Ice	8.213	0.290
			6.000				No Ice	18.089	0.095
							1/2" Ice	18.722	0.188

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	Client		Verizon		Designed by	TJL

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
			0.000						0.290
(2) EPBQ-654L8H8-L2 (AT&T)	C	From Face	3.000	0.000	115.000	1" Ice	19.362	8.213	0.095
			6.000			No Ice	18.089	7.033	0.188
			0.000			1/2" Ice	18.722	7.619	0.290
HPA65R-BU8A (AT&T)	A	From Face	3.000	0.000	115.000	1" Ice	19.362	8.213	0.088
			6.000			No Ice	11.233	10.022	0.176
			0.000			1/2" Ice	11.848	11.444	0.274
HPA65R-BU8A (AT&T)	B	From Face	3.000	0.000	115.000	1" Ice	12.471	12.717	0.088
			6.000			No Ice	11.233	10.022	0.176
			0.000			1/2" Ice	11.848	11.444	0.274
HPA65R-BU8A (AT&T)	C	From Face	3.000	0.000	115.000	1" Ice	12.471	12.717	0.088
			6.000			No Ice	11.233	10.022	0.176
			0.000			1/2" Ice	11.848	11.444	0.274
4449 B5/B12 (AT&T)	A	From Face	0.500	0.000	115.000	1" Ice	12.471	12.717	0.071
			0.000			No Ice	1.968	1.408	0.090
			0.000			1/2" Ice	2.144	1.564	0.111
4449 B5/B12 (AT&T)	B	From Face	0.500	0.000	115.000	1" Ice	2.328	1.727	0.071
			0.000			No Ice	1.968	1.408	0.090
			0.000			1/2" Ice	2.144	1.564	0.111
4449 B5/B12 (AT&T)	C	From Face	0.500	0.000	115.000	1" Ice	2.328	1.727	0.071
			0.000			No Ice	1.968	1.408	0.090
			0.000			1/2" Ice	2.144	1.564	0.111
4415 B25 (AT&T)	A	From Face	0.500	0.000	115.000	1" Ice	2.328	1.727	0.046
			0.000			No Ice	1.843	0.820	0.060
			0.000			1/2" Ice	2.012	0.943	0.077
4415 B25 (AT&T)	B	From Face	0.500	0.000	115.000	1" Ice	2.190	1.075	0.046
			0.000			No Ice	1.843	0.820	0.060
			0.000			1/2" Ice	2.012	0.943	0.077
4415 B25 (AT&T)	C	From Face	0.500	0.000	115.000	1" Ice	2.190	1.075	0.046
			0.000			No Ice	1.843	0.820	0.060
			0.000			1/2" Ice	2.012	0.943	0.077
4426 B66 (AT&T)	A	From Face	0.500	0.000	115.000	1" Ice	2.190	1.075	0.049
			0.000			No Ice	1.650	0.727	0.062
			0.000			1/2" Ice	1.810	0.844	0.077
4426 B66 (AT&T)	B	From Face	0.500	0.000	115.000	1" Ice	1.978	0.971	0.049
			0.000			No Ice	1.650	0.727	0.062
			0.000			1/2" Ice	1.810	0.844	0.077
4426 B66 (AT&T)	C	From Face	0.500	0.000	115.000	1" Ice	1.978	0.971	0.046
			0.000			No Ice	1.650	0.727	0.060
			0.000			1/2" Ice	1.810	0.844	0.077
4415 B30 (AT&T)	A	From Face	0.500	0.000	115.000	1" Ice	1.978	0.971	0.046
			0.000			No Ice	1.843	0.820	0.060
			0.000			1/2" Ice	2.012	0.943	0.077
4415 B30 (AT&T)	B	From Face	0.500	0.000	115.000	1" Ice	2.190	1.075	0.046
			0.000			No Ice	1.843	0.820	0.060
			0.000			1/2" Ice	2.012	0.943	0.077
4415 B30 (AT&T)	C	From Face	0.500	0.000	115.000	1" Ice	2.190	1.075	0.046
			0.000			No Ice	1.843	0.820	0.060
			0.000			1/2" Ice	2.012	0.943	0.077
4478 B14 (AT&T)	A	From Face	0.500	0.000	115.000	1" Ice	2.190	1.075	0.060
			0.000			No Ice	1.843	1.059	0.076
			0.000			1/2" Ice	2.012	1.197	0.094
4478 B14 (AT&T)	B	From Face	0.500	0.000	115.000	1" Ice	2.190	1.342	0.060
			0.000			No Ice	1.843	1.059	0.076
			0.000			1/2" Ice	2.012	1.197	0.094
4478 B14 (AT&T)	C	From Face	0.500	0.000	115.000	1" Ice	2.190	1.342	0.060
			0.000			No Ice	1.843	1.059	0.076
			0.000			1/2" Ice	2.012	1.197	0.094

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	Client	Verizon	Designed by	TJL

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A _{Front}	C _A A _{Side}	Weight	
			Horz	Lateral						Vert
RRUS-E2 (AT&T)	A	From Face	0.000		0.000	115.000	1" Ice	2.190	1.342	0.094
			0.500				No Ice	3.145	1.285	0.058
			0.000				1/2" Ice	3.365	1.438	0.081
RRUS-E2 (AT&T)	B	From Face	0.000		0.000	115.000	1" Ice	3.592	1.600	0.108
			0.500				No Ice	3.145	1.285	0.058
			0.000				1/2" Ice	3.365	1.438	0.081
RRUS-E2 (AT&T)	C	From Face	0.000		0.000	115.000	1" Ice	3.592	1.600	0.108
			0.500				No Ice	3.145	1.285	0.058
			0.000				1/2" Ice	3.365	1.438	0.081
DC6-48-60-18-8F Surge Arrestor (AT&T)	A	From Face	0.000		0.000	115.000	1" Ice	3.592	1.600	0.108
			0.500				No Ice	1.909	1.909	0.026
			0.000				1/2" Ice	2.098	2.098	0.045
DC6-48-60-18-8F Surge Arrestor (AT&T)	B	From Face	0.000		0.000	115.000	1" Ice	2.294	2.294	0.068
			0.500				No Ice	1.909	1.909	0.026
			0.000				1/2" Ice	2.098	2.098	0.045
DC6-48-60-18-8F Surge Arrestor (AT&T)	C	From Face	0.000		0.000	115.000	1" Ice	2.294	2.294	0.068
			0.500				No Ice	1.909	1.909	0.026
			0.000				1/2" Ice	2.098	2.098	0.045
12' V-Frame (AT&T)	A	None			0.000	115.000	1" Ice	2.294	2.294	0.068
							No Ice	9.220	12.970	0.300
							1/2" Ice	9.220	12.970	0.400
12' V-Frame (AT&T)	B	None			0.000	115.000	1" Ice	9.220	12.970	0.500
							No Ice	9.220	12.970	0.300
							1/2" Ice	9.220	12.970	0.400
12' V-Frame (AT&T)	C	None			0.000	115.000	1" Ice	9.220	12.970	0.500
							No Ice	9.220	12.970	0.300
							1/2" Ice	9.220	12.970	0.400
AIR6419 (T-Mobile)	A	From Face	3.000		0.000	104.000	1" Ice	9.220	12.970	0.500
			2.000				No Ice	4.173	2.015	0.056
			0.000				1/2" Ice	4.439	2.225	0.085
APXVAARR24-43 (T-Mobile)	A	From Face	3.000		0.000	104.000	1" Ice	4.712	2.442	0.118
			6.000				No Ice	20.243	8.889	0.153
			0.000				1/2" Ice	20.890	9.487	0.266
AIR6419 (T-Mobile)	B	From Face	3.000		0.000	104.000	1" Ice	21.544	10.092	0.387
			2.000				No Ice	4.173	2.015	0.056
			0.000				1/2" Ice	4.439	2.225	0.085
APXVAARR24-43 (T-Mobile)	B	From Face	3.000		0.000	104.000	1" Ice	4.712	2.442	0.118
			6.000				No Ice	20.243	8.889	0.153
			0.000				1/2" Ice	20.890	9.487	0.266
AIR6419 (T-Mobile)	C	From Face	3.000		0.000	104.000	1" Ice	21.544	10.092	0.387
			2.000				No Ice	4.173	2.015	0.056
			0.000				1/2" Ice	4.439	2.225	0.085
APXVAARR24-43 (T-Mobile)	C	From Face	3.000		0.000	104.000	1" Ice	4.712	2.442	0.118
			6.000				No Ice	20.243	8.889	0.153
			0.000				1/2" Ice	20.890	9.487	0.266
Radio 4449 B71 B12 (T-Mobile)	A	From Face	3.000		0.000	104.000	1" Ice	21.544	10.092	0.387
			6.000				No Ice	1.639	1.291	0.074
			0.000				1/2" Ice	1.799	1.436	0.091
Radio 4449 B71 B12 (T-Mobile)	B	From Face	3.000		0.000	104.000	1" Ice	1.966	1.587	0.111
			6.000				No Ice	1.639	1.291	0.074
			0.000				1/2" Ice	1.799	1.436	0.091
Radio 4449 B71 B12 (T-Mobile)	C	From Face	3.000		0.000	104.000	1" Ice	1.966	1.587	0.111
			6.000				No Ice	1.639	1.291	0.074
			0.000				1/2" Ice	1.799	1.436	0.091
4460 B25+B66 (T-Mobile)	A	From Face	3.000		0.000	104.000	1" Ice	1.966	1.587	0.111
			6.000				No Ice	2.564	1.976	0.109
							1/2" Ice	2.764	2.156	0.134

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
4460 B25+B66 (T-Mobile)	B	From Face	0.000	0.000	104.000	1" Ice	2.971	2.343	0.163
			3.000			No Ice	2.564	1.976	0.109
			6.000			1/2" Ice	2.764	2.156	0.134
4460 B25+B66 (T-Mobile)	C	From Face	0.000	0.000	104.000	1" Ice	2.971	2.343	0.163
			3.000			No Ice	2.564	1.976	0.109
			6.000			1/2" Ice	2.764	2.156	0.134
F4P-12W Quad Platform w/ Handrail (T-Mobile)	C	None	0.000	0.000	104.000	No Ice	35.000	35.000	2.500
			6.000			1/2" Ice	41.000	41.000	3.100
			0.000			1" Ice	47.000	47.000	3.700
(2) BSF0020F3V1-1 (Verizon - Proposed)	A	From Face	3.000	0.000	126.000	No Ice	0.963	0.287	0.020
			6.000			1/2" Ice	1.086	0.364	0.027
			0.000			1" Ice	1.217	0.449	0.035

Tower Pressures - No Ice

$G_H = 1.100$

Section Elevation ft	z ft	K _Z	q _z ksf	A _G ft ²	F a c e ft ²	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _{AA} In Face ft ²	C _{AA} Out Face ft ²
130.000-83.710	105.568	1.446	0.055	135.989	A	0.000	135.989	135.989	100.00	0.000	0.000
					B	0.000	135.989		100.00	0.000	0.000
					C	0.000	135.989		100.00	0.000	0.000
83.710-41.210	61.816	1.318	0.050	170.010	A	0.000	170.010	170.010	100.00	0.000	0.000
					B	0.000	170.010		100.00	0.000	0.000
					C	0.000	170.010		100.00	0.000	0.000
41.210-0.000	20.517	1.088	0.042	204.534	A	0.000	204.534	204.534	100.00	0.000	0.000
					B	0.000	204.534		100.00	0.000	0.000
					C	0.000	204.534		100.00	0.000	0.000

Tower Pressure - With Ice

$G_H = 1.100$

Section Elevation ft	z ft	K _Z	q _z ksf	t _z in	A _G ft ²	F a c e ft ²	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _{AA} In Face ft ²	C _{AA} Out Face ft ²
130.000-83.710	105.568	1.446	0.009	1.123	144.655	A	0.000	144.655	144.655	100.00	0.000	0.000
						B	0.000	144.655		100.00	0.000	0.000
						C	0.000	144.655		100.00	0.000	0.000
83.710-41.210	61.816	1.318	0.008	1.065	177.967	A	0.000	177.967	177.967	100.00	0.000	0.000
						B	0.000	177.967		100.00	0.000	0.000
						C	0.000	177.967		100.00	0.000	0.000
L3 41.210-0.000	20.517	1.088	0.007	0.954	211.847	A	0.000	211.847	211.847	100.00	0.000	0.000

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Section Elevation	z	K _Z	q _z	t _z	A _G	F _{a c e}	A _F	A _R	A _{leg}	Leg %	C _{A A} In Face	C _{A A} Out Face
ft	ft		ksf	in	ft ²		ft ²	ft ²	ft ²		ft ²	ft ²
						B	0.000	211.847		100.00	0.000	0.000
						C	0.000	211.847		100.00	0.000	0.000

Tower Pressure - Service

$G_H = 1.100$

Section Elevation	z	K _Z	q _z	A _G	F _{a c e}	A _F	A _R	A _{leg}	Leg %	C _{A A} In Face	C _{A A} Out Face
ft	ft		ksf	ft ²		ft ²	ft ²	ft ²		ft ²	ft ²
L1 130.000-83.710	105.568	1.446	0.011	135.989	A	0.000	135.989	135.989	100.00	0.000	0.000
					B	0.000	135.989		100.00	0.000	0.000
					C	0.000	135.989		100.00	0.000	0.000
L2 83.710-41.210	61.816	1.318	0.010	170.010	A	0.000	170.010	170.010	100.00	0.000	0.000
					B	0.000	170.010		100.00	0.000	0.000
					C	0.000	170.010		100.00	0.000	0.000
L3 41.210-0.000	20.517	1.088	0.009	204.534	A	0.000	204.534	204.534	100.00	0.000	0.000
					B	0.000	204.534		100.00	0.000	0.000
					C	0.000	204.534		100.00	0.000	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F _{a c e}	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
L1 130.000-83.710	0.567	5.383	A	1	0.73	0.055	1	1	135.989	5.995	0.130	C
			B	1	0.73		1	1	135.989			
			C	1	0.73		1	1	135.989			
L2 83.710-41.210	0.717	14.877	A	1	0.73	0.050	1	1	170.010	6.816	0.160	C
			B	1	0.73		1	1	170.010			
			C	1	0.73		1	1	170.010			
L3 41.210-0.000	0.646	22.243	A	1	0.73	0.042	1	1	204.534	6.833	0.166	C
			B	1	0.73		1	1	204.534			
			C	1	0.73		1	1	204.534			
Sum Weight:	1.929	42.503						OTM	1194.449 kip-ft	19.645		

Tower Forces - No Ice - Wind 45 To Face

Section Elevation	Add Weight	Self Weight	F _{a c e}	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
L1 130.000-83.710	0.567	5.383	A	1	0.73	0.055	1	1	135.989	5.995	0.130	C
			B	1	0.73		1	1	135.989			

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Section Elevation	Add Weight	Self Weight	Face	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
0			C	1	0.73		1	1	135.989			
L2	0.717	14.877	A	1	0.73	0.050	1	1	170.010	6.816	0.160	C
83.710-41.210			B	1	0.73		1	1	170.010			
			C	1	0.73		1	1	170.010			
L3	0.646	22.243	A	1	0.73	0.042	1	1	204.534	6.833	0.166	C
41.210-0.000			B	1	0.73		1	1	204.534			
			C	1	0.73		1	1	204.534			
Sum Weight:	1.929	42.503						OTM	1194.449 kip-ft	19.645		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	Face	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
L1	0.567	5.383	A	1	0.73	0.055	1	1	135.989	5.995	0.130	C
130.000-83.71			B	1	0.73		1	1	135.989			
			C	1	0.73		1	1	135.989			
0			A	1	0.73	0.050	1	1	170.010	6.816	0.160	C
L2	0.717	14.877	B	1	0.73		1	1	170.010			
83.710-41.210			C	1	0.73		1	1	170.010			
L3	0.646	22.243	A	1	0.73	0.042	1	1	204.534	6.833	0.166	C
41.210-0.000			B	1	0.73		1	1	204.534			
			C	1	0.73		1	1	204.534			
Sum Weight:	1.929	42.503						OTM	1194.449 kip-ft	19.645		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	Face	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
L1	0.567	5.383	A	1	0.73	0.055	1	1	135.989	5.995	0.130	C
130.000-83.71			B	1	0.73		1	1	135.989			
			C	1	0.73		1	1	135.989			
0			A	1	0.73	0.050	1	1	170.010	6.816	0.160	C
L2	0.717	14.877	B	1	0.73		1	1	170.010			
83.710-41.210			C	1	0.73		1	1	170.010			
L3	0.646	22.243	A	1	0.73	0.042	1	1	204.534	6.833	0.166	C
41.210-0.000			B	1	0.73		1	1	204.534			
			C	1	0.73		1	1	204.534			
Sum Weight:	1.929	42.503						OTM	1194.449 kip-ft	19.645		

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Tower Forces - With Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
L1 130.000-83.710	0.567	7.686	A	1	1.2	0.009	1	1	144.655	1.677	0.036	C
			B	1	1.2		1	1	144.655			
			C	1	1.2		1	1	144.655			
L2 83.710-41.210	0.717	17.582	A	1	1.2	0.008	1	1	177.552	1.872	0.044	C
			B	1	1.2		1	1	177.552			
			C	1	1.2		1	1	177.552			
L3 41.210-0.000	0.646	25.140	A	1	1.2	0.007	1	1	211.083	1.855	0.045	C
			B	1	1.2		1	1	211.083			
			C	1	1.2		1	1	211.083			
Sum Weight:	1.929	50.408						OTM	330.862 kip-ft	5.404		

Tower Forces - With Ice - Wind 45 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
L1 130.000-83.710	0.567	7.686	A	1	1.2	0.009	1	1	144.655	1.677	0.036	C
			B	1	1.2		1	1	144.655			
			C	1	1.2		1	1	144.655			
L2 83.710-41.210	0.717	17.582	A	1	1.2	0.008	1	1	177.552	1.872	0.044	C
			B	1	1.2		1	1	177.552			
			C	1	1.2		1	1	177.552			
L3 41.210-0.000	0.646	25.140	A	1	1.2	0.007	1	1	211.083	1.855	0.045	C
			B	1	1.2		1	1	211.083			
			C	1	1.2		1	1	211.083			
Sum Weight:	1.929	50.408						OTM	330.862 kip-ft	5.404		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
L1 130.000-83.710	0.567	7.686	A	1	1.2	0.009	1	1	144.655	1.677	0.036	C
			B	1	1.2		1	1	144.655			
			C	1	1.2		1	1	144.655			
L2 83.710-41.210	0.717	17.582	A	1	1.2	0.008	1	1	177.552	1.872	0.044	C
			B	1	1.2		1	1	177.552			
			C	1	1.2		1	1	177.552			
L3 41.210-0.000	0.646	25.140	A	1	1.2	0.007	1	1	211.083	1.855	0.045	C
			B	1	1.2		1	1	211.083			
			C	1	1.2		1	1	211.083			

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
Sum Weight:	1.929	50.408						OTM	330.862 kip-ft	5.404		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
L1 130.000-83.710	0.567	7.686	A	1	1.2	0.009	1	1	144.655	1.677	0.036	C
			B	1	1.2		1	1	144.655			
			C	1	1.2		1	1	144.655			
L2 83.710-41.210	0.717	17.582	A	1	1.2	0.008	1	1	177.552	1.872	0.044	C
			B	1	1.2		1	1	177.552			
			C	1	1.2		1	1	177.552			
L3 41.210-0.000	0.646	25.140	A	1	1.2	0.007	1	1	211.083	1.855	0.045	C
			B	1	1.2		1	1	211.083			
			C	1	1.2		1	1	211.083			
Sum Weight:	1.929	50.408						OTM	330.862 kip-ft	5.404		

Tower Forces - Service - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				ksf			ft ²	K	klf	
L1 130.000-83.710	0.567	5.383	A	1	0.73	0.011	1	1	135.989	1.236	0.027	C
			B	1	0.73		1	1	135.989			
			C	1	0.73		1	1	135.989			
L2 83.710-41.210	0.717	14.877	A	1	0.73	0.010	1	1	170.010	1.405	0.033	C
			B	1	0.73		1	1	170.010			
			C	1	0.73		1	1	170.010			
L3 41.210-0.000	0.646	22.243	A	1	0.73	0.009	1	1	204.534	1.409	0.034	C
			B	1	0.73		1	1	204.534			
			C	1	0.73		1	1	204.534			
Sum Weight:	1.929	42.503						OTM	246.232 kip-ft	4.050		

Tower Forces - Service - Wind 45 To Face

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Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z ksf	D _F	D _R	A _E ft ²	F K	w klf	Ctrl. Face
L1 130.000-83.710	0.567	5.383	A	1	0.73	0.011	1	1	135.989	1.236	0.027	C
			B	1	0.73		1	1	135.989			
			C	1	0.73		1	1	135.989			
L2 83.710-41.210	0.717	14.877	A	1	0.73	0.010	1	1	170.010	1.405	0.033	C
			B	1	0.73		1	1	170.010			
			C	1	0.73		1	1	170.010			
L3 41.210-0.000	0.646	22.243	A	1	0.73	0.009	1	1	204.534	1.409	0.034	C
			B	1	0.73		1	1	204.534			
			C	1	0.73		1	1	204.534			
Sum Weight:	1.929	42.503						OTM	246.232 kip-ft	4.050		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z ksf	D _F	D _R	A _E ft ²	F K	w klf	Ctrl. Face
L1 130.000-83.710	0.567	5.383	A	1	0.73	0.011	1	1	135.989	1.236	0.027	C
			B	1	0.73		1	1	135.989			
			C	1	0.73		1	1	135.989			
L2 83.710-41.210	0.717	14.877	A	1	0.73	0.010	1	1	170.010	1.405	0.033	C
			B	1	0.73		1	1	170.010			
			C	1	0.73		1	1	170.010			
L3 41.210-0.000	0.646	22.243	A	1	0.73	0.009	1	1	204.534	1.409	0.034	C
			B	1	0.73		1	1	204.534			
			C	1	0.73		1	1	204.534			
Sum Weight:	1.929	42.503						OTM	246.232 kip-ft	4.050		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z ksf	D _F	D _R	A _E ft ²	F K	w klf	Ctrl. Face
L1 130.000-83.710	0.567	5.383	A	1	0.73	0.011	1	1	135.989	1.236	0.027	C
			B	1	0.73		1	1	135.989			
			C	1	0.73		1	1	135.989			
L2 83.710-41.210	0.717	14.877	A	1	0.73	0.010	1	1	170.010	1.405	0.033	C
			B	1	0.73		1	1	170.010			
			C	1	0.73		1	1	170.010			
L3 41.210-0.000	0.646	22.243	A	1	0.73	0.009	1	1	204.534	1.409	0.034	C
			B	1	0.73		1	1	204.534			
			C	1	0.73		1	1	204.534			
Sum Weight:	1.929	42.503						OTM	246.232 kip-ft	4.050		

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Force Totals

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Leg Weight	42.503					
Bracing Weight	0.000					
Total Member Self-Weight	42.503			-0.172	0.026	
Total Weight	53.968			-0.172	0.026	
Wind 0 deg - No Ice		-0.029	-41.256	-3701.555	3.704	0.184
Wind 30 deg - No Ice		20.593	-35.714	-3203.825	-1846.303	0.180
Wind 45 deg - No Ice		29.139	-29.152	-2614.844	-2612.981	0.160
Wind 60 deg - No Ice		35.698	-20.603	-1847.678	-3201.588	0.128
Wind 90 deg - No Ice		41.237	0.029	3.506	-3699.002	0.042
Wind 120 deg - No Ice		35.727	20.653	1853.705	-3205.265	-0.055
Wind 135 deg - No Ice		29.180	29.193	2619.702	-2618.182	-0.100
Wind 150 deg - No Ice		20.644	35.743	3207.159	-1852.673	-0.138
Wind 180 deg - No Ice		0.029	41.256	3701.211	-3.652	-0.184
Wind 210 deg - No Ice		-20.593	35.714	3203.481	1846.355	-0.180
Wind 225 deg - No Ice		-29.139	29.152	2614.501	2613.033	-0.160
Wind 240 deg - No Ice		-35.698	20.603	1847.335	3201.640	-0.128
Wind 270 deg - No Ice		-41.237	-0.029	-3.849	3699.054	-0.042
Wind 300 deg - No Ice		-35.727	-20.653	-1854.048	3205.317	0.055
Wind 315 deg - No Ice		-29.180	-29.193	-2620.045	2618.235	0.100
Wind 330 deg - No Ice		-20.644	-35.743	-3207.502	1852.725	0.138
Member Ice	7.906			-0.095	0.050	
Total Weight Ice	71.726			-0.095	0.050	
Wind 0 deg - Ice		-0.005	-9.570	-815.107	0.730	0.032
Wind 30 deg - Ice		4.779	-8.285	-705.576	-406.696	0.039
Wind 45 deg - Ice		6.761	-6.763	-575.915	-575.528	0.038
Wind 60 deg - Ice		8.283	-4.780	-407.013	-705.135	0.035
Wind 90 deg - Ice		9.567	0.005	0.584	-814.620	0.021
Wind 120 deg - Ice		8.288	4.790	407.999	-705.815	0.002
Wind 135 deg - Ice		6.769	6.771	576.686	-576.490	-0.008
Wind 150 deg - Ice		4.788	8.290	706.065	-407.874	-0.018
Wind 180 deg - Ice		0.005	9.570	814.916	-0.630	-0.032
Wind 210 deg - Ice		-4.779	8.285	705.386	406.797	-0.039
Wind 225 deg - Ice		-6.761	6.763	575.724	575.629	-0.038
Wind 240 deg - Ice		-8.283	4.780	406.822	705.236	-0.035
Wind 270 deg - Ice		-9.567	-0.005	-0.775	814.721	-0.021
Wind 300 deg - Ice		-8.288	-4.790	-408.190	705.916	-0.002
Wind 315 deg - Ice		-6.769	-6.771	-576.877	576.590	0.008
Wind 330 deg - Ice		-4.788	-8.290	-706.256	407.975	0.018
Total Weight	53.968			-0.172	0.026	
Wind 0 deg - Service		-0.006	-8.505	-763.202	0.784	0.038
Wind 30 deg - Service		4.245	-7.362	-660.596	-380.590	0.037
Wind 45 deg - Service		6.007	-6.010	-539.179	-538.639	0.033
Wind 60 deg - Service		7.359	-4.247	-381.030	-659.978	0.026
Wind 90 deg - Service		8.501	0.006	0.587	-762.519	0.009
Wind 120 deg - Service		7.365	4.258	382.000	-660.736	-0.011
Wind 135 deg - Service		6.015	6.018	539.908	-539.711	-0.021
Wind 150 deg - Service		4.256	7.368	661.011	-381.903	-0.028
Wind 180 deg - Service		0.006	8.505	762.859	-0.732	-0.038
Wind 210 deg - Service		-4.245	7.362	660.253	380.642	-0.037
Wind 225 deg - Service		-6.007	6.010	538.836	538.691	-0.033
Wind 240 deg - Service		-7.359	4.247	380.687	660.030	-0.026
Wind 270 deg - Service		-8.501	-0.006	-0.930	762.571	-0.009
Wind 300 deg - Service		-7.365	-4.258	-382.343	660.788	0.011

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Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M ₁ kip-ft	Sum of Overturning Moments, M ₂ kip-ft	Sum of Torques kip-ft
Wind 315 deg - Service		-6.015	-6.018	-540.252	539.763	0.021
Wind 330 deg - Service		-4.256	-7.368	-661.354	381.955	0.028

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 45 deg - No Ice
7	0.9 Dead+1.0 Wind 45 deg - No Ice
8	1.2 Dead+1.0 Wind 60 deg - No Ice
9	0.9 Dead+1.0 Wind 60 deg - No Ice
10	1.2 Dead+1.0 Wind 90 deg - No Ice
11	0.9 Dead+1.0 Wind 90 deg - No Ice
12	1.2 Dead+1.0 Wind 120 deg - No Ice
13	0.9 Dead+1.0 Wind 120 deg - No Ice
14	1.2 Dead+1.0 Wind 135 deg - No Ice
15	0.9 Dead+1.0 Wind 135 deg - No Ice
16	1.2 Dead+1.0 Wind 150 deg - No Ice
17	0.9 Dead+1.0 Wind 150 deg - No Ice
18	1.2 Dead+1.0 Wind 180 deg - No Ice
19	0.9 Dead+1.0 Wind 180 deg - No Ice
20	1.2 Dead+1.0 Wind 210 deg - No Ice
21	0.9 Dead+1.0 Wind 210 deg - No Ice
22	1.2 Dead+1.0 Wind 225 deg - No Ice
23	0.9 Dead+1.0 Wind 225 deg - No Ice
24	1.2 Dead+1.0 Wind 240 deg - No Ice
25	0.9 Dead+1.0 Wind 240 deg - No Ice
26	1.2 Dead+1.0 Wind 270 deg - No Ice
27	0.9 Dead+1.0 Wind 270 deg - No Ice
28	1.2 Dead+1.0 Wind 300 deg - No Ice
29	0.9 Dead+1.0 Wind 300 deg - No Ice
30	1.2 Dead+1.0 Wind 315 deg - No Ice
31	0.9 Dead+1.0 Wind 315 deg - No Ice
32	1.2 Dead+1.0 Wind 330 deg - No Ice
33	0.9 Dead+1.0 Wind 330 deg - No Ice
34	1.2 Dead+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
39	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
40	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
41	1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp
42	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
43	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
44	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
45	1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp
46	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
47	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
48	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
49	1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp

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Comb. No.	Description
50	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
51	Dead+ Wind 0 deg - Service
52	Dead+ Wind 30 deg - Service
53	Dead+ Wind 45 deg - Service
54	Dead+ Wind 60 deg - Service
55	Dead+ Wind 90 deg - Service
56	Dead+ Wind 120 deg - Service
57	Dead+ Wind 135 deg - Service
58	Dead+ Wind 150 deg - Service
59	Dead+ Wind 180 deg - Service
60	Dead+ Wind 210 deg - Service
61	Dead+ Wind 225 deg - Service
62	Dead+ Wind 240 deg - Service
63	Dead+ Wind 270 deg - Service
64	Dead+ Wind 300 deg - Service
65	Dead+ Wind 315 deg - Service
66	Dead+ Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	130 - 83.71	Pole	Max Tension	34	0.000	0.000	0.000
			Max. Compression	34	-29.483	0.056	0.130
			Max. Mx	26	-16.998	689.154	1.296
			Max. My	2	-16.997	1.121	690.026
			Max. Vy	26	-27.158	689.154	1.296
			Max. Vx	2	-27.177	1.121	690.026
			Max. Torque	26			0.189
L2	83.71 - 41.21	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	34	-48.964	0.056	0.130
			Max. Mx	26	-33.818	1932.136	2.514
			Max. My	2	-33.818	2.336	1933.788
			Max. Vy	26	-33.584	1932.136	2.514
			Max. Vx	2	-33.603	2.336	1933.788
			Max. Torque	19			0.183
L3	41.21 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	34	-83.361	0.056	0.130
			Max. Mx	26	-64.751	3739.395	3.935
			Max. My	2	-64.751	3.756	3741.957
			Max. Vy	26	-41.254	3739.395	3.935
			Max. Vx	2	-41.272	3.756	3741.957
			Max. Torque	19			0.183

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	34	83.361	0.000	0.000
	Max. H _x	26	64.762	41.237	0.029
	Max. H _z	2	64.762	0.029	41.256
	Max. M _x	2	3741.957	0.029	41.256
	Max. M _z	10	3739.331	-41.237	-0.029

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Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Max. Torsion	19	0.183	-0.029	-41.256
	Min. Vert	23	48.571	29.139	-29.152
	Min. H _x	10	64.762	-41.237	-0.029
	Min. H _z	18	64.762	-0.029	-41.256
	Min. M _x	18	-3741.537	-0.029	-41.256
	Min. M _z	26	-3739.395	41.237	0.029
	Min. Torsion	3	-0.183	0.029	41.256

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	53.968	0.000	0.000	-0.172	0.026	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	64.762	-0.029	-41.256	-3741.957	3.756	0.183
0.9 Dead+1.0 Wind 0 deg - No Ice	48.571	-0.029	-41.256	-3731.598	3.736	0.183
1.2 Dead+1.0 Wind 30 deg - No Ice	64.762	20.593	-35.714	-3238.797	-1866.424	0.179
0.9 Dead+1.0 Wind 30 deg - No Ice	48.571	20.593	-35.714	-3229.824	-1861.293	0.179
1.2 Dead+1.0 Wind 45 deg - No Ice	64.762	29.139	-29.152	-2643.393	-2641.464	0.158
0.9 Dead+1.0 Wind 45 deg - No Ice	48.571	29.139	-29.152	-2636.060	-2634.198	0.159
1.2 Dead+1.0 Wind 60 deg - No Ice	64.762	35.698	-20.603	-1867.859	-3236.490	0.127
0.9 Dead+1.0 Wind 60 deg - No Ice	48.571	35.698	-20.603	-1862.663	-3227.585	0.127
1.2 Dead+1.0 Wind 90 deg - No Ice	64.762	41.237	0.029	3.514	-3739.331	0.041
0.9 Dead+1.0 Wind 90 deg - No Ice	48.571	41.237	0.029	3.555	-3729.041	0.041
1.2 Dead+1.0 Wind 120 deg - No Ice	64.762	35.727	20.653	1873.888	-3240.213	-0.056
0.9 Dead+1.0 Wind 120 deg - No Ice	48.571	35.727	20.653	1868.778	-3231.296	-0.056
1.2 Dead+1.0 Wind 135 deg - No Ice	64.762	29.180	29.193	2648.237	-2646.729	-0.101
0.9 Dead+1.0 Wind 135 deg - No Ice	48.571	29.180	29.193	2640.995	-2639.447	-0.100
1.2 Dead+1.0 Wind 150 deg - No Ice	64.762	20.644	35.743	3242.099	-1872.874	-0.138
0.9 Dead+1.0 Wind 150 deg - No Ice	48.571	20.644	35.743	3233.221	-1867.723	-0.138
1.2 Dead+1.0 Wind 180 deg - No Ice	64.762	0.029	41.256	3741.537	-3.692	-0.183
0.9 Dead+1.0 Wind 180 deg - No Ice	48.571	0.029	41.256	3731.284	-3.689	-0.183
1.2 Dead+1.0 Wind 210 deg - No Ice	64.762	-20.593	35.714	3238.376	1866.488	-0.179
0.9 Dead+1.0 Wind 210 deg - No Ice	48.571	-20.593	35.714	3229.510	1861.341	-0.179
1.2 Dead+1.0 Wind 225 deg - No Ice	64.762	-29.139	29.152	2642.972	2641.528	-0.158
0.9 Dead+1.0 Wind 225 deg - No Ice	48.571	-29.139	29.152	2635.746	2634.246	-0.159

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Load Combination	Vertical K	Shear _x K	Shear _y K	Overturning Moment, M _x kip-ft	Overturning Moment, M _y kip-ft	Torque kip-ft
No Ice						
1.2 Dead+1.0 Wind 240 deg - No Ice	64.762	-35.698	20.603	1867.438	3236.554	-0.127
0.9 Dead+1.0 Wind 240 deg - No Ice	48.571	-35.698	20.603	1862.349	3227.633	-0.127
1.2 Dead+1.0 Wind 270 deg - No Ice	64.762	-41.237	-0.029	-3.935	3739.395	-0.041
0.9 Dead+1.0 Wind 270 deg - No Ice	48.571	-41.237	-0.029	-3.869	3729.088	-0.041
1.2 Dead+1.0 Wind 300 deg - No Ice	64.762	-35.727	-20.653	-1874.309	3240.276	0.056
0.9 Dead+1.0 Wind 300 deg - No Ice	48.571	-35.727	-20.653	-1869.092	3231.343	0.056
1.2 Dead+1.0 Wind 315 deg - No Ice	64.762	-29.180	-29.193	-2648.658	2646.793	0.101
0.9 Dead+1.0 Wind 315 deg - No Ice	48.571	-29.180	-29.193	-2641.308	2639.495	0.100
1.2 Dead+1.0 Wind 330 deg - No Ice	64.762	-20.644	-35.743	-3242.520	1872.938	0.138
0.9 Dead+1.0 Wind 330 deg - No Ice	48.571	-20.644	-35.743	-3233.535	1867.770	0.138
1.2 Dead+1.0 Ice+1.0 Temp	83.361	0.000	0.000	-0.130	0.056	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	83.361	-0.005	-9.570	-828.744	0.751	0.032
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	83.361	4.779	-8.285	-717.385	-413.472	0.039
1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp	83.361	6.761	-6.763	-585.559	-585.121	0.038
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	83.361	8.283	-4.780	-413.839	-716.891	0.035
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	83.361	9.567	0.005	0.559	-828.204	0.021
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	83.361	8.288	4.790	414.771	-717.585	0.002
1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp	83.361	6.769	6.771	586.271	-586.102	-0.008
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	83.361	4.788	8.290	717.809	-414.674	-0.017
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	83.361	0.005	9.570	828.475	-0.636	-0.032
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	83.361	-4.779	8.285	717.115	413.588	-0.039
1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp	83.361	-6.761	6.763	585.290	585.236	-0.038
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	83.361	-8.283	4.780	413.569	717.006	-0.035
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	83.361	-9.567	-0.005	-0.828	828.319	-0.021
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	83.361	-8.288	-4.790	-415.040	717.700	-0.002
1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp	83.361	-6.769	-6.771	-586.540	586.217	0.008
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	83.361	-4.788	-8.290	-718.078	414.789	0.017
Dead+ Wind 0 deg - Service	53.968	-0.006	-8.505	-770.194	0.793	0.038
Dead+ Wind 30 deg - Service	53.968	4.245	-7.362	-666.648	-384.074	0.037
Dead+ Wind 45 deg - Service	53.968	6.007	-6.010	-544.119	-543.570	0.033
Dead+ Wind 60 deg - Service	53.968	7.359	-4.247	-384.521	-666.021	0.026
Dead+ Wind 90 deg - Service	53.968	8.501	0.006	0.591	-769.502	0.008
Dead+ Wind 120 deg - Service	53.968	7.365	4.258	385.498	-666.788	-0.012
Dead+ Wind 135 deg - Service	53.968	6.015	6.018	544.853	-544.654	-0.021

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Load Combination	Vertical	Shear _x	Shear _y	Overtuning Moment, M _x	Overtuning Moment, M _y	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+ Wind 150 deg - Service	53.968	4.256	7.368	667.064	-385.401	-0.028
Dead+ Wind 180 deg - Service	53.968	0.006	8.505	769.844	-0.740	-0.038
Dead+ Wind 210 deg - Service	53.968	-4.245	7.362	666.298	384.127	-0.037
Dead+ Wind 225 deg - Service	53.968	-6.007	6.010	543.769	543.623	-0.033
Dead+ Wind 240 deg - Service	53.968	-7.359	4.247	384.171	666.074	-0.026
Dead+ Wind 270 deg - Service	53.968	-8.501	-0.006	-0.941	769.555	-0.008
Dead+ Wind 300 deg - Service	53.968	-7.365	-4.258	-385.848	666.841	0.012
Dead+ Wind 315 deg - Service	53.968	-6.015	-6.018	-545.202	544.707	0.021
Dead+ Wind 330 deg - Service	53.968	-4.256	-7.368	-667.414	385.454	0.028

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-53.968	0.000	0.000	53.968	0.000	0.000%
2	-0.029	-64.762	-41.256	0.029	64.762	41.256	0.000%
3	-0.029	-48.571	-41.256	0.029	48.571	41.256	0.000%
4	20.593	-64.762	-35.714	-20.593	64.762	35.714	0.000%
5	20.593	-48.571	-35.714	-20.593	48.571	35.714	0.000%
6	29.139	-64.762	-29.152	-29.139	64.762	29.152	0.000%
7	29.139	-48.571	-29.152	-29.139	48.571	29.152	0.000%
8	35.698	-64.762	-20.603	-35.698	64.762	20.603	0.000%
9	35.698	-48.571	-20.603	-35.698	48.571	20.603	0.000%
10	41.237	-64.762	0.029	-41.237	64.762	-0.029	0.000%
11	41.237	-48.571	0.029	-41.237	48.571	-0.029	0.000%
12	35.727	-64.762	20.653	-35.727	64.762	-20.653	0.000%
13	35.727	-48.571	20.653	-35.727	48.571	-20.653	0.000%
14	29.180	-64.762	29.193	-29.180	64.762	-29.193	0.000%
15	29.180	-48.571	29.193	-29.180	48.571	-29.193	0.000%
16	20.644	-64.762	35.743	-20.644	64.762	-35.743	0.000%
17	20.644	-48.571	35.743	-20.644	48.571	-35.743	0.000%
18	0.029	-64.762	41.256	-0.029	64.762	-41.256	0.000%
19	0.029	-48.571	41.256	-0.029	48.571	-41.256	0.000%
20	-20.593	-64.762	35.714	20.593	64.762	-35.714	0.000%
21	-20.593	-48.571	35.714	20.593	48.571	-35.714	0.000%
22	-29.139	-64.762	29.152	29.139	64.762	-29.152	0.000%
23	-29.139	-48.571	29.152	29.139	48.571	-29.152	0.000%
24	-35.698	-64.762	20.603	35.698	64.762	-20.603	0.000%
25	-35.698	-48.571	20.603	35.698	48.571	-20.603	0.000%
26	-41.237	-64.762	-0.029	41.237	64.762	0.029	0.000%
27	-41.237	-48.571	-0.029	41.237	48.571	0.029	0.000%
28	-35.727	-64.762	-20.653	35.727	64.762	20.653	0.000%
29	-35.727	-48.571	-20.653	35.727	48.571	20.653	0.000%
30	-29.180	-64.762	-29.193	29.180	64.762	29.193	0.000%
31	-29.180	-48.571	-29.193	29.180	48.571	29.193	0.000%
32	-20.644	-64.762	-35.743	20.644	64.762	35.743	0.000%
33	-20.644	-48.571	-35.743	20.644	48.571	35.743	0.000%
34	0.000	-83.361	0.000	0.000	83.361	0.000	0.000%
35	-0.005	-83.361	-9.570	0.005	83.361	9.570	0.000%
36	4.779	-83.361	-8.285	-4.779	83.361	8.285	0.000%
37	6.761	-83.361	-6.763	-6.761	83.361	6.763	0.000%
38	8.283	-83.361	-4.780	-8.283	83.361	4.780	0.000%
39	9.567	-83.361	0.005	-9.567	83.361	-0.005	0.000%
40	8.288	-83.361	4.790	-8.288	83.361	-4.790	0.000%
41	6.769	-83.361	6.771	-6.769	83.361	-6.771	0.000%
42	4.788	-83.361	8.290	-4.788	83.361	-8.290	0.000%
43	0.005	-83.361	9.570	-0.005	83.361	-9.570	0.000%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
44	-4.779	-83.361	8.285	4.779	83.361	-8.285	0.000%
45	-6.761	-83.361	6.763	6.761	83.361	-6.763	0.000%
46	-8.283	-83.361	4.780	8.283	83.361	-4.780	0.000%
47	-9.567	-83.361	-0.005	9.567	83.361	0.005	0.000%
48	-8.288	-83.361	-4.790	8.288	83.361	4.790	0.000%
49	-6.769	-83.361	-6.771	6.769	83.361	6.771	0.000%
50	-4.788	-83.361	-8.290	4.788	83.361	8.290	0.000%
51	-0.006	-53.968	-8.505	0.006	53.968	8.505	0.000%
52	4.245	-53.968	-7.362	-4.245	53.968	7.362	0.000%
53	6.007	-53.968	-6.010	-6.007	53.968	6.010	0.000%
54	7.359	-53.968	-4.247	-7.359	53.968	4.247	0.000%
55	8.501	-53.968	0.006	-8.501	53.968	-0.006	0.000%
56	7.365	-53.968	4.258	-7.365	53.968	-4.258	0.000%
57	6.015	-53.968	6.018	-6.015	53.968	-6.018	0.000%
58	4.256	-53.968	7.368	-4.256	53.968	-7.368	0.000%
59	0.006	-53.968	8.505	-0.006	53.968	-8.505	0.000%
60	-4.245	-53.968	7.362	4.245	53.968	-7.362	0.000%
61	-6.007	-53.968	6.010	6.007	53.968	-6.010	0.000%
62	-7.359	-53.968	4.247	7.359	53.968	-4.247	0.000%
63	-8.501	-53.968	-0.006	8.501	53.968	0.006	0.000%
64	-7.365	-53.968	-4.258	7.365	53.968	4.258	0.000%
65	-6.015	-53.968	-6.018	6.015	53.968	6.018	0.000%
66	-4.256	-53.968	-7.368	4.256	53.968	7.368	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00000569
3	Yes	4	0.00000001	0.00000289
4	Yes	4	0.00000001	0.00008491
5	Yes	4	0.00000001	0.00005349
6	Yes	4	0.00000001	0.00009666
7	Yes	4	0.00000001	0.00006075
8	Yes	4	0.00000001	0.00008371
9	Yes	4	0.00000001	0.00005270
10	Yes	4	0.00000001	0.00000558
11	Yes	4	0.00000001	0.00000279
12	Yes	4	0.00000001	0.00008448
13	Yes	4	0.00000001	0.00005319
14	Yes	4	0.00000001	0.00009718
15	Yes	4	0.00000001	0.00006107
16	Yes	4	0.00000001	0.00008524
17	Yes	4	0.00000001	0.00005368
18	Yes	4	0.00000001	0.00000580
19	Yes	4	0.00000001	0.00000297
20	Yes	4	0.00000001	0.00008349
21	Yes	4	0.00000001	0.00005257
22	Yes	4	0.00000001	0.00009661
23	Yes	4	0.00000001	0.00006073
24	Yes	4	0.00000001	0.00008464
25	Yes	4	0.00000001	0.00005332
26	Yes	4	0.00000001	0.00000555
27	Yes	4	0.00000001	0.00000277
28	Yes	4	0.00000001	0.00008496

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29	Yes	4	0.0000001	0.00005349
30	Yes	4	0.0000001	0.00009724
31	Yes	4	0.0000001	0.00006110
32	Yes	4	0.0000001	0.00008425
33	Yes	4	0.0000001	0.00005302
34	Yes	4	0.0000001	0.00000001
35	Yes	4	0.0000001	0.00010687
36	Yes	4	0.0000001	0.00010817
37	Yes	4	0.0000001	0.00010861
38	Yes	4	0.0000001	0.00010812
39	Yes	4	0.0000001	0.00010675
40	Yes	4	0.0000001	0.00010828
41	Yes	4	0.0000001	0.00010878
42	Yes	4	0.0000001	0.00010830
43	Yes	4	0.0000001	0.00010678
44	Yes	4	0.0000001	0.00010811
45	Yes	4	0.0000001	0.00010857
46	Yes	4	0.0000001	0.00010811
47	Yes	4	0.0000001	0.00010679
48	Yes	4	0.0000001	0.00010836
49	Yes	4	0.0000001	0.00010887
50	Yes	4	0.0000001	0.00010840
51	Yes	4	0.0000001	0.00000001
52	Yes	4	0.0000001	0.00000001
53	Yes	4	0.0000001	0.00000001
54	Yes	4	0.0000001	0.00000001
55	Yes	4	0.0000001	0.00000001
56	Yes	4	0.0000001	0.00000001
57	Yes	4	0.0000001	0.00000001
58	Yes	4	0.0000001	0.00000001
59	Yes	4	0.0000001	0.00000001
60	Yes	4	0.0000001	0.00000001
61	Yes	4	0.0000001	0.00000001
62	Yes	4	0.0000001	0.00000001
63	Yes	4	0.0000001	0.00000001
64	Yes	4	0.0000001	0.00000001
65	Yes	4	0.0000001	0.00000001
66	Yes	4	0.0000001	0.00000001

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	130 - 83.71	5.204	66	0.357	0.000
L2	89.21 - 41.21	2.404	66	0.259	0.000
L3	48.21 - 0	0.693	66	0.131	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
130.000	BOA4357	66	5.204	0.357	0.000	121897
126.000	MX06FRO660	66	4.908	0.348	0.000	121897
115.000	(2) EPBQ-654L8H8-L2	66	4.103	0.324	0.000	40632

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Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
104.000	AIR6419	66	3.335	0.297	0.000	23442

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	130 - 83.71	25.282	32	1.734	0.001
L2	89.21 - 41.21	11.681	32	1.257	0.000
L3	48.21 - 0	3.368	32	0.638	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
130.000	BOA4357	32	25.282	1.734	0.001	25154
126.000	MX06FRO660	32	23.844	1.691	0.001	25154
115.000	(2) EPBQ-654L8H8-L2	32	19.937	1.572	0.000	8384
104.000	AIR6419	32	16.204	1.445	0.000	4836

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio P _n / φP _n
L1	130 - 83.71 (1)	TP41.53x28x0.313	46.290	0.000	0.0	39.288	-16.997	2298.350	0.007
L2	83.71 - 41.21 (2)	TP53.78x39.297x0.625	48.000	0.000	0.0	101.256	-33.817	5923.500	0.006
L3	41.21 - 0 (3)	TP65x50.418x0.75	48.210	0.000	0.0	152.947	-64.751	8947.410	0.007

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{ux} kip-ft	Ratio M _{ux} / φM _{ux}	M _{uy} kip-ft	φM _{uy} kip-ft	Ratio M _{uy} / φM _{uy}
L1	130 - 83.71 (1)	TP41.53x28x0.313	690.781	2188.492	0.316	0.000	2188.492	0.000
L2	83.71 - 41.21 (2)	TP53.78x39.297x0.625	1935.400	7861.858	0.246	0.000	7861.858	0.000

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Section No.	Elevation ft	Size	M_{ix} kip-ft	ϕM_{ix} kip-ft	Ratio $\frac{M_{ix}}{\phi M_{ix}}$	M_{iy} kip-ft	ϕM_{iy} kip-ft	Ratio $\frac{M_{iy}}{\phi M_{iy}}$
L3	41.21 - 0 (3)	TP65x50.418x0.75	3744.575	14956.333	0.250	0.000	14956.333	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_u K	Ratio $\frac{V_u}{\phi V_u}$	Actual T_u kip-ft	ϕT_u kip-ft	Ratio $\frac{T_u}{\phi T_u}$
L1	130 - 83.71 (1)	TP41.53x28x0.313	27.198	689.506	0.039	0.138	2391.783	0.000
L2	83.71 - 41.21 (2)	TP53.78x39.297x0.625	33.624	1777.050	0.019	0.138	7943.567	0.000
L3	41.21 - 0 (3)	TP65x50.418x0.75	41.293	2684.220	0.015	0.138	15103.249	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u ϕP_u	Ratio M_{ix} ϕM_{ix}	Ratio M_{iy} ϕM_{iy}	Ratio V_u ϕV_u	Ratio T_u ϕT_u	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	130 - 83.71 (1)	0.007	0.316	0.000	0.039	0.000	0.325	1.000	4.8.2 ✓
L2	83.71 - 41.21 (2)	0.006	0.246	0.000	0.019	0.000	0.252	1.000	4.8.2 ✓
L3	41.21 - 0 (3)	0.007	0.250	0.000	0.015	0.000	0.258	1.000	4.8.2 ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	130 - 83.71	Pole	TP41.53x28x0.313	1	-16.997	2298.350	32.5	Pass
L2	83.71 - 41.21	Pole	TP53.78x39.297x0.625	2	-33.817	5923.500	25.2	Pass
L3	41.21 - 0	Pole	TP65x50.418x0.75	3	-64.751	8947.410	25.8	Pass
Summary								
Pole (L1)							32.5	Pass
RATING =							32.5	Pass

Anchor Bolt and Base Plate Analysis:

Input Data:

Tower Reactions:

Overturing Moment = $M_U := 3745$ -ft-kips (Input From $tnxTower$)
 Shear Force = Shear := 41-kips (Input From $tnxTower$)
 Axial Force = $R_U := 65$ -kips (Input From $tnxTower$)

Anchor Bolt Data:

ASTMA615 Grade 75
 Number of Anchor Bolts = $N := 22$ (User Input)
 Diameter of Bolt Circle = $D_{BC} := 71.5$ -in (User Input)
 Bolt Ultimate Strength = $F_U := 100$ -ksi (User Input)
 Bolt Yield Strength = $F_y := 75$ -ksi (User Input)
 Bolt Modulus = $E := 29000$ -ksi (User Input)
 Diameter of Anchor Bolts = $D := 2.25$ -in (User Input)
 Threads per Inch = $n := 4.5$ (User Input)
 Top of Concrete to Bot Leveling Nut = $l_{ar} := 2$ -in (User Input)
 Anchor Rod Force Correction Factor = $n_c = 1$ Table 2-1 Addendum 3

Base Plate Data:

ASTMA572 Grade 60
 Plate Yield Strength = $F_{yf} := 60$ -ksi (User Input)
 Base Plate Thickness = $t_{TP} := 2.5$ -in (User Input)
 Base Plate Diameter = $D_{OD} := 76.5$ -in (User Input)
 Outer Pole Diameter = $D_T := 65$ -in (User Input)
 Pole Wall Thickness = $t_T := 0.75$ -in (User Input)
 Pole Design Yield Strength = $F_{yp} := 65$ -ksi (User Input)

Anchor Bolt Analysis:

Gross Area of Bolt =	$A_g := \frac{\pi}{4} \cdot D^2 = 3.976 \cdot \text{in}^2$	
Net Area of Bolt =	$A_n := \frac{\pi}{4} \cdot \left(D - \frac{0.9743 \cdot \text{in}}{n} \right)^2 = 3.248 \cdot \text{in}^2$	
Tensile Root Diameter =	$d_{rt} := D - \frac{0.9743 \cdot \text{in}}{n} = 2.033 \cdot \text{in}$	
Plastic Section Modulus =	$Z := \frac{d_{rt}^3}{6} = 1.401 \cdot \text{in}^3$	
Maximum Anchor Rod Force =	$P_{ut} := \frac{n_c \cdot \pi \cdot M_u}{N \cdot D_{BC}} - \frac{R_u}{N} = 86.8 \cdot \text{kips}$	
Maximum Anchor Rod Force =	$P_{uc} := \frac{n_c \cdot \pi \cdot M_u}{N \cdot D_{BC}} + \frac{R_u}{N} = 92.7 \cdot \text{kips}$	
Maximum Shear Force =	$V_u := \frac{\text{Shear}}{N} = 1.9 \cdot \text{kips}$	
	$\Phi_t := 0.75 \quad \Phi_v := 0.75 \quad \Phi_c := 1.0$	
Design Tensile Strength =	$\Phi R_{nt} := \Phi_t \cdot F_u \cdot A_n = 243.576 \cdot \text{k}$	
Design Compression Strength =	$\Phi R_{nc} := \Phi_c \cdot F_y \cdot A_n = 243.576 \cdot \text{k}$	
Design Shear Rupture Strength =	$\Phi R_{nv} := \Phi_v \cdot 0.5 \cdot F_u \cdot A_g = 149.103 \cdot \text{k}$	
Design Shear Yield Strength =	$\Phi R_{nvc} := \Phi_c \cdot 0.6 \cdot F_y \cdot \frac{A_n}{2} = 73.073 \cdot \text{k}$	
Bolt % of Capacity =	$\left[\left(\frac{P_{ut}}{\Phi R_{nt}} \right)^2 + \left(\frac{V_u}{\Phi R_{nv}} \right)^2 \right] \cdot 100 = 12.7$	$\frac{P_{ut}}{\Phi R_{nt}} = 0.356$
Condition1 =	Condition1 := if $\left[\left(\frac{P_{ut}}{\Phi R_{nt}} \right)^2 + \left(\frac{V_u}{\Phi R_{nv}} \right)^2 \right] \leq 1.00$, "OK", "Overstressed"	
	Condition1 = "OK"	
Bolt % of Capacity =	$\left[\left(\frac{P_{uc}}{\Phi R_{nc}} \right)^2 + \left(\frac{V_u}{\Phi R_{nvc}} \right)^2 \right] \cdot 100 = 14.6$	
Condition2 =	Condition2 := if $\left[\left(\frac{P_{uc}}{\Phi R_{nc}} \right)^2 + \left(\frac{V_u}{\Phi R_{nvc}} \right)^2 \right] \leq 1.00$, "OK", "Overstressed"	
	Condition2 = "OK"	

Base Plate Analysis:

Strength Resistance Factor for Yielding due to Bending =

$$\phi_b := 0.9$$

Strength Resistance Factor for Yielding due to Shear =

$$\phi_v := 1.0$$

Outside Fillet Horizontal Leg Dimension =

$$w_1 := 0.25 \text{ in}$$

Effective Pole Outside Diameter =

$$D_e := D_T + w_1 = 65.25 \text{ in}$$

Effective Base Plate Outside Diameter =

$$D_{oe} := \begin{cases} D_{OD} & \text{if } D_{OD} \leq (D_{BC} + 6 \cdot t_{TP}) \\ (D_{BC} + 6 \cdot t_{TP}) & \text{otherwise} \end{cases} = 76.5 \text{ in}$$

Half-Angle Between Radial Lines Extending from Pole
 Centerline Through Midpoints Between Adjacent Anchor
 Rods =

$$\theta_1 := \frac{\pi}{N} = 0.143$$

Angle Defining Limiting Effective Base Plate Width
 Based on Plate Thickness =

$$\theta_2 := \arcsin\left(\frac{12 \cdot t_{TP}}{D_{BC}}\right) = 0.433$$

Angle Defining Limiting Effective Base Plate Width
 Based on Distance Between Anchor Rod Bolt Circle and
 Effective Pole Outside Diameter =

$$\theta_3 := \arcsin\left(\frac{D_{BC} + D_e}{2 \cdot D_{BC}}\right) = 0.297$$

Governing Angle Defining Effective Base Plate Width
 Resisting Bending =

$$\theta := \min(\theta_1, \theta_2, \theta_3) = 0.143$$

Effective Moment Arm of Anchor Rod Force =

$$x := 0.5 \cdot (D_{BC} - D_e) = 3.125 \text{ in}$$

Effective Base Plate Width Resisting Bending from
 Transverse Bend Line =

$$B_{et} := D_{BC} \cdot \sin(\theta) = 10.176 \text{ in}$$

Effective Base Plate Width Resisting Bending from
 Radial Bend Lines =

$$B_{er} := (D_{oe} - D_e) \cdot \sin(\theta) = 1.601 \text{ in}$$

Total Effective Base Plate Width Resisting Bending =

$$B_{eff} := B_{et} + B_{er} = 11.777 \text{ in}$$

Required Base Plate Thickness =

$$t_{TP,Req} := \sqrt{\frac{4 \cdot P_{uc} \cdot x}{\phi_b \cdot F_{yf} \cdot B_{eff}}} = 1.35 \text{ in}$$

Plate Bending Stress % of Capacity =

$$\frac{t_{TP,Req}}{t_{TP}} = 54.0\%$$

Condition2 =

$$\text{Condition3} := \text{if}\left(\frac{t_{TP,Req}}{t_{TP}} < 1.00, \text{"Ok"}, \text{"Overstressed"}\right)$$

Condition3 = "Ok"

Required Base Plate Thickness =

$$t_{TP,Req} := \frac{\phi_b \cdot t_T \cdot F_{yp}}{\phi_v \cdot 0.6 \cdot F_{yf}} = 1.219 \text{ in}$$

Plate Bending Stress % of Capacity =

$$\frac{t_{TP,Req}}{t_{TP}} = 48.7\%$$

Condition2 =

$$\text{Condition4} := \text{if}\left(\frac{t_{TP,Req}}{t_{TP}} < 1.00, \text{"Ok"}, \text{"Overstressed"}\right)$$

Condition4 = "Ok"

Standard Monopole Foundation:

Input Data:

Tower Data

Overturning Moment = OM := 3745-ft-kips (User Input)
 Shear Force = Shear := 41-kip (User Input)
 Axial Force = Axial := 65-kip (User Input)
 Tower Height = $H_t := 130$ -ft (User Input)

Footing Data:

Overall Depth of Footing = $D_f := 6$ -ft (User Input)
 Length of Pier = $L_p := 4.5$ -ft (User Input)
 Extension of Pier Above Grade = $L_{pag} := 0.5$ -ft (User Input)
 Diameter of Pier = $d_p := 8.25$ -ft (User Input)
 Thickness of Footing = $T_f := 2$ -ft (User Input)
 Width of Footing = $W_f := 32$ -ft (User Input)

Anchor Bolt Data:

Length of Anchor Bolts = $L_{st} := 84$ -in (User Input)
 Projection of Anchor Bolts Above Pier = $A_{BP} := 12$ -in (User Input)
 Anchor Bolt Diameter = $d_{anchor} := 2.25$ -in (User Input)
 Base Plate Bolt Circle = $MP := 71.5$ -in (User Input)

Material Properties:

Concrete Compressive Strength = $f_c := 4500$ -psi (User Input)
 Steel Reinforcement Yield Strength = $f_y := 60000$ -psi (User Input)
 Anchor Bolt Yield Strength = $f_{ya} := 75000$ -psi (User Input)
 Internal Friction Angle of Soil = $\Phi_s := 30$ -deg (User Input)
 Ultimate Soil Bearing Capacity = $q_u := 12000$ -psf (User Input)
 Allowable Soil Bearing Capacity = $q_a := \frac{q_u}{2} = 6000$ -psf (User Input)
 Unit Weight of Soil = $\gamma_{soil} := 110$ -pcf (User Input)
 Unit Weight of Concrete = $\gamma_{conc} := 150$ -pcf (User Input)
 Foundation Bouyancy = Bouyancy := 0 (User Input) (Yes=1 / No=0)
 Depth to Neglect = $n := 0$ -ft (User Input)
 Cohesion of Clay Type Soil = $c := 0$ -ksf (User Input) (Use 0 for Sandy Soil)
 Seismic Zone Factor = $Z := 2$ (User Input) (UBC-1997 Fig 23-2)
 Coefficient of Friction Between Concrete = $\mu := 0.45$ (User Input)

Pier Reinforcement:

Bar Size =	BS _{pier} := 11	(User Input)	
Bar Diameter =	d _b pie _r := 1.41-in	(User Input)	
Number of Bars =	NB _{pie_r} := 38	(User Input)	
Clear Cover of Reinforcement =	Cv _r pie _r := 3-in	(User Input)	
Reinforcement Location Factor =	α _{pie_r} := 1.0	(User Input)	(ACI-2008 12.2.4)
Coating Factor =	β _{pie_r} := 1.0	(User Input)	(ACI-2008 12.2.4)
Concrete Strength Factor =	λ _{pie_r} := 1.0	(User Input)	(ACI-2008 12.2.4)
Reinforcement Size Factor =	γ _{pie_r} := 1.0	(User Input)	(ACI-2008 12.2.4)
Diameter of Tie =	d _{Tie} := 3-in	(User Input)	

Pad Reinforcement:

Bar Size =	BS _{top} := 10	(User Input)	(Top of Pad)
Bar Diameter =	d _b to _p := 1.27-in	(User Input)	(Top of Pad)
Number of Bars =	NB _{to_p} := 62	(User Input)	(Top of Pad)
Bar Size =	BS _{bot} := 10	(User Input)	(Bottom of Pad)
Bar Diameter =	d _b bo _t := 1.27-in	(User Input)	(Bottom of Pad)
Number of Bars =	NB _{bo_t} := 62	(User Input)	(Bottom of Pad)
Clear Cover of Reinforcement =	Cv _r pa _d := 3.0-in	(User Input)	
Reinforcement Location Factor =	α _{pa_d} := 1.0	(User Input)	(ACI-2008 12.2.4)
Coating Factor =	β _{pa_d} := 1.0	(User Input)	(ACI-2008 12.2.4)
Concrete Strength Factor =	λ _{pa_d} := 1.0	(User Input)	(ACI-2008 12.2.4)
Reinforcement Size Factor =	γ _{pa_d} := 1.0	(User Input)	(ACI-2008 12.2.4)

Calculated Factors:

Pier Reinforcement Bar Area =	$A_{b\text{pier}} := \frac{\pi \cdot d_{b\text{pier}}^2}{4} = 1.561 \cdot \text{in}^2$
Pad Top Reinforcement Bar Area =	$A_{b\text{top}} := \frac{\pi \cdot d_{b\text{top}}^2}{4} = 1.267 \cdot \text{in}^2$
Pad Bottom Reinforcement Bar Area =	$A_{b\text{bot}} := \frac{\pi \cdot d_{b\text{bot}}^2}{4} = 1.267 \cdot \text{in}^2$
Coefficient of Lateral Soil Pressure =	$K_p := \frac{1 + \sin(\Phi_s)}{1 - \sin(\Phi_s)} = 3$

Stability of Footing:

Adjusted Concrete Unit Weight =

$$\gamma_c := \text{if}(\text{Bouyancy} = 1, \gamma_{\text{conc}} - 62.4 \text{pcf}, \gamma_{\text{conc}}) = 150 \text{pcf}$$

Adjusted Soil Unit Weight =

$$\gamma_s := \text{if}(\text{Bouyancy} = 1, \gamma_{\text{soil}} - 62.4 \text{pcf}, \gamma_{\text{soil}}) = 110 \text{pcf}$$

Passive Pressure =

$$P_{pn} := K_p \cdot \gamma_s \cdot n + c \cdot 2 \cdot \sqrt{K_p} = 0 \text{ksf}$$

$$P_{pt} := K_p \cdot \gamma_s \cdot (D_f - T_f) + c \cdot 2 \cdot \sqrt{K_p} = 1.32 \text{ksf}$$

$$P_{top} := \text{if}[n < (D_f - T_f), P_{pt}, P_{pn}] = 1.32 \text{ksf}$$

$$P_{bot} := K_p \cdot \gamma_s \cdot D_f + c \cdot 2 \cdot \sqrt{K_p} = 1.98 \text{ksf}$$

$$P_{ave} := \frac{P_{top} + P_{bot}}{2} = 1.65 \text{ksf}$$

$$T_p := \text{if}[n < (D_f - T_f), T_f, (D_f - n)] = 2$$

$$A_p := W_f \cdot T_p = 64$$

Ultimate Shear =

$$S_u := P_{ave} \cdot A_p = 105.6 \text{kip}$$

Weight of Concrete Pad =

$$WT_c := \left[(W_f^2 \cdot T_f) + d_p^2 \cdot L_p \right] \cdot \gamma_c = 353.142 \text{kip}$$

Weight of Soil Above Footing =

$$WT_{s1} := \left[(W_f^2 - d_p^2) \cdot (L_p - L_{pag} - n) \right] \cdot \gamma_s = 420.61 \text{kip}$$

Weight of Soil Wedge at Back Face =

$$WT_{s2} := \left(\frac{D_f^2 \cdot \tan(\Phi_s)}{2} \cdot W_f \right) \cdot \gamma_s = 36.581 \text{kip}$$

Weight of Soil Wedge at back face Corners =

$$WT_{s3} := 2 \cdot \left[(D_f)^3 \cdot \frac{\tan(\Phi_s)}{3} \right] \cdot \gamma_s = 9.145 \text{kips}$$

Total Weight =

$$WT_{tot} := WT_c + WT_{s1} + \text{Axial} = 838.755 \text{kip}$$

Resisting Weight =

$$WT_R := 0.9 \cdot WT_c + 0.75 \cdot WT_{s1} + 0.75 \cdot \text{Axial} = 682.037 \text{kip}$$

Resisting Moment =

$$M_r := (WT_R) \cdot \frac{W_f}{2} + 0.75 \cdot S_u \cdot \frac{T_f}{3} + 0.75 \cdot \left[(WT_{s2} + WT_{s3}) \cdot \left(W_f + \frac{D_f \cdot \tan(\Phi_s)}{3} \right) \right] = 12102 \text{kip} \cdot \text{ft}$$

Overtuning Moment =

$$M_{ot} := \text{OM} + \text{Shear} \cdot (L_p + T_f) = 4012 \text{kip} \cdot \text{ft}$$

Factor of Safety Actual =

$$FS := \frac{M_r}{M_{ot}} = 3.02$$

Factor of Safety Required =

$$FS_{req} := 1$$

$$\text{OverTurning_Moment_Check} := \text{if}(FS \geq FS_{req}, \text{"Okay"}, \text{"No Good"})$$

$$\text{OverTurning_Moment_Check} = \text{"Okay"}$$

Shear Capacity in Pier:

Shear Resistance of Pier =

$$S_p := \frac{P_{ave} \cdot A_p + \mu \cdot WT_{tot}}{FS_{req}} = 483.04 \cdot \text{kips}$$

$$\text{Shear_Check} := \text{if}(S_p > \text{Shear}, \text{"Okay"}, \text{"No Good"})$$

Shear_Check = "Okay"

Bearing Pressure Caused by Footing:

Area of the Mat =

$$A_{mat} := W_f^2 = 1.024 \times 10^3$$

Section Modulus of Mat =

$$S := \frac{W_f^3}{6} = 5461.33 \cdot \text{ft}^3$$

Maximum Pressure in Mat =

$$P_{max} := \frac{WT_{tot}}{A_{mat}} + \frac{M_{ot}}{S} = 1.554 \cdot \text{ksf}$$

$$\text{Max_Pressure_Check} := \text{if}(P_{max} < .75 \cdot q_u, \text{"Okay"}, \text{"No Good"})$$

Max_Pressure_Check = "Okay"

Minimum Pressure in Mat =

$$P_{min} := \frac{WT_{tot}}{A_{mat}} - \frac{M_{ot}}{S} = 0.085 \cdot \text{ksf}$$

$$\text{Min_Pressure_Check} := \text{if}([P_{min} \geq 0] \cdot [P_{min} < .75 \cdot q_u], \text{"Okay"}, \text{"No Good"})$$

Min_Pressure_Check = "Okay"

Distance to Resultant of Pressure Distribution =

$$X_p := \frac{P_{max}}{P_{max} - P_{min}} \cdot \frac{1}{3} = 11.281$$

Distance to Kern =

$$X_k := \frac{W_f}{6} = 5.333$$

Since Resultant Force is Not in Kern, Area to which Pressure is Applied Must be Reduced.

Eccentricity =

$$e := \frac{M_{ot}}{WT_{tot}} = 2.989$$

Adjusted Soil Pressure =

$$P_a := \frac{2 \cdot WT_{tot}}{3 \cdot W_f \left(\frac{W_f}{2} - e \right)} = 1.343 \cdot \text{ksf}$$

$$q_{adj} := \text{if}(P_{min} < 0, P_a, P_{max}) = 1.554 \cdot \text{ksf}$$

$$\text{Pressure_Check} := \text{if}(q_{adj} < q_a, \text{"Okay"}, \text{"No Good"})$$

Pressure_Check = "Okay"

Concrete Bearing Capacity:

Strength Reduction Factor = $\Phi_c := 0.65$ (ACI-2008 9.3.2.2)

Bearing Strength Between Pier and Pad = $P_b := \Phi_c \cdot 0.85 \cdot f_c \cdot \frac{\pi \cdot d_p^2}{4} = 1.914 \times 10^4 \text{ kips}$ (ACI-2008 10.14)

Bearing_Check := if($P_b >$ Axial, "Okay", "No Good")

Bearing_Check = "Okay"

Shear Strength of Concrete:

Beam Shear:

(Critical section located at a distance d from the face of Pier) (ACI 11.3.1.1)

$\Phi_c := 0.85$ (ACI 9.3.2.5)

$d := T_f - C_{vr_pad} - d_{bbot} = 1.644$

$d_1 := \frac{W_f}{2} - \frac{d_p}{2}$

$d_2 := d_1 - d$

$L := \left(\frac{W_f}{2} - e \right) \cdot 3$

Slope := if($L > W_f, \frac{P_{max} - P_{min}}{W_f}, \frac{q_{adj}}{L}$)

$V_{req} := \left[(q_{adj} - Slope \cdot d_1) + \left(\frac{Slope \cdot d_1}{2} \right) \right] \cdot W_f \cdot d_1$

$V_{Avail} := \Phi_c \cdot 2 \cdot \sqrt{f_c \cdot \psi} \cdot W_f \cdot d$ (ACI-2008 11.2.1.1)

Beam_Shear_Check := if($V_{req} < V_{Avail}$, "Okay", "No Good")

Beam_Shear_Check = "Okay"

Punching Shear:

(Critical Section Located at a distance of d/2 from the face of pier) (ACI 11.11.1.2)

Critical Perimeter of Punching Shear = $b_o := (d_p + d) \cdot \pi = 31.1$

Area Included Inside Perimeter = $A_{bo} := \frac{\pi \cdot (d_p + d)^2}{4} = 76.9$

Area Outside of Perimeter = $A_{out} := A_{mat} - A_{bo} = 947.1$

Guess Value =

$$v_u := 1 \text{ksf}$$

(From "Foundation Analysis and design", By Joseph Bowles, Eq. 8-9)

Given

$$d^2 + d_p \cdot d = \frac{WT_{tot}}{\pi \cdot v_u}$$

$$v_u := \text{Find}(v_u) = 16.4 \text{ksf}$$

$$V_u := v_u \cdot d \cdot W_f = 863.5 \text{kips}$$

Required Shear Strength =

$$V_{req} := V_u = 863.5 \text{kips}$$

Available Shear Strength =

$$V_{Avail} := \phi_c \cdot 4 \cdot \sqrt{f_c} \cdot \text{psi} \cdot b_o \cdot d = 1678.5 \text{kip} \quad (\text{ACI-2008 11.11.2.1})$$

$$\text{Punching_Shear_Check} := \text{if}(V_{req} < V_{Avail}, \text{"Okay"}, \text{"No Good"})$$

$$\text{Punching_Shear_Check} = \text{"Okay"}$$

Steel Reinforcement in Pad:

Required Reinforcement for Bending:

Strength Reduction Factor =

$$\phi_m := .90 \quad (\text{ACI-2008 9.3.2.1})$$

$$q_b := q_{adj} - d_1 \cdot \text{Slope} = 1.008 \text{ksf}$$

Maximum Bending at Face of Pier =

$$M_n := \frac{1}{\phi_m} \cdot \left[(q_{adj} - q_b) \cdot \frac{d_1^2}{3} + q_b \cdot \frac{d_1^2}{2} \right] \cdot W_f = 3439.3 \text{kip-ft}$$

$$\beta := \begin{cases} 0.85 & \text{if } 2500 \cdot \text{psi} \leq f_c \leq 4000 \cdot \text{psi} \\ 0.65 & \text{if } f_c > 8000 \cdot \text{psi} \\ \left[0.85 - \left[\frac{\left(\frac{f_c}{\text{psi}} - 4000 \right)}{1000} \right] \cdot 0.5 \right] & \text{otherwise} \end{cases} = 0.6 \quad (\text{ACI-2008 10.2.7.3})$$

$$R_n := \frac{M_n}{W_f \cdot d^2} = 276.1 \cdot \text{psi}$$

$$\rho := \frac{0.85 \cdot f_c}{f_y} \left(1 - \sqrt{1 - \frac{2 \cdot R_n}{0.85 \cdot f_c}} \right) = 0.0048$$

$$\rho_{min} := \rho = 0.00478$$

Required Reinforcement for Temperature and Shrinkage:

$$\rho_{sh} := \begin{cases} .0018 & \text{if } f_y \geq 60000 \text{ psi} \\ .0020 & \text{otherwise} \end{cases} \quad (\text{ACI-2008 7.12.2.1})$$

Check Bottom Bars:

$$A_s := \begin{cases} \rho_{min} \cdot W_f \cdot d & \text{if } \rho_{min} > \frac{\rho_{sh}}{2} = 36.222 \cdot \text{in}^2 \\ \rho_{sh} \cdot W_f \cdot \frac{d}{2} & \text{otherwise} \end{cases}$$

$$A_{s_{prov.bot}} := A_{bot} \cdot NB_{bot} = 78.5 \cdot \text{in}^2$$

$$Pad_Reinforcement_Bot := \text{if}(A_{s_{prov.bot}} > A_s, \text{"Okay"}, \text{"No Good"})$$

Pad_Reinforcement_Bot = "Okay"

Check Temp Shrinkage Reinforcement:

$$A_s := \rho_{sh} \cdot (W_f T_f) = 16.6 \cdot \text{in}^2$$

$$A_{s_{prov.top}} := A_{top} \cdot NB_{top} = 78.5 \cdot \text{in}^2$$

$$A_{s_{prov.tot}} := A_{s_{prov.bot}} + A_{s_{prov.top}} = 157.1 \cdot \text{in}^2$$

$$Pad_Reinforcement_Temp := \text{if}(A_{s_{prov.tot}} > A_s, \text{"Okay"}, \text{"No Good"})$$

Pad_Reinforcement_Temp = "Okay"

Development Length Pad Reinforcement:

Bar Spacing =

$$B_{sPad} := \frac{W_f - 2 \cdot C_{vr_pad} - NB_{bot} \cdot d_{bbot}}{NB_{bot} - 1} = 4.91 \cdot \text{in}$$

Spacing or Cover Dimension =

$$c := \text{if}\left(C_{vr_pad} < \frac{B_{sPad}}{2}, C_{vr_pad}, \frac{B_{sPad}}{2}\right) = 2.453 \cdot \text{in}$$

Transverse Reinforcement Index =

$$k_{tr} := 0 \quad (\text{ACI-2008 12.2.3})$$

$$L_{dbt} := \frac{3 \cdot f_y \cdot \alpha_{pad} \cdot \beta_{pad} \cdot \gamma_{pad} \cdot \lambda_{pad}}{40 \cdot \sqrt{f_c \cdot \text{psi}} \cdot \frac{c + k_{tr}}{d_{bbot}}} \cdot d_{bbot} = 44.1 \cdot \text{in}$$

Minimum Development Length =

$$L_{dbmin} := 12 \cdot \text{in} \quad (\text{ACI-2008 12.2.1})$$

$$L_{dbtCheck} := \text{if}(L_{dbt} \geq L_{dbmin}, \text{"Use L.dbt"}, \text{"Use L.dbmin"})$$

Available Length in Pad =

$$L_{Pad} := \frac{W_f}{2} - \frac{d_p}{2} - C_{vr_pad} = 139.5 \cdot \text{in}$$

$$L_{pad_Check} := \text{if}(L_{Pad} > L_{dbt}, \text{"Okay"}, \text{"No Good"})$$

Lpad_Check = "Okay"

Steel Reinforcement in Pier:

Area of Pier =

$$A_p := d_p^2 = 9801 \cdot \text{in}^2$$

$$A_{smin} := 0.01 \cdot 0.5 \cdot A_p = 49.01 \cdot \text{in}^2 \quad (\text{ACI-2008 10.8.4 \& 10.9.1})$$

$$A_{sprov} := N_{B_{pier}} \cdot A_{B_{pier}} = 59.34 \cdot \text{in}^2$$

$$\text{Steel_Area_Check} := \text{if}(A_{sprov} > A_{smin}, \text{"Okay"}, \text{"No Good"})$$

Steel_Area_Check = "Okay"

NOTE: Anchor Bolts are not accounted for in reinforcement calculation and will provide additional reinforcement to satisfy minimum requirement of steel.

Bar Spacing In Pier =

$$B_{sPier} := \frac{d_p \cdot \pi}{N_{B_{pier}}} - d_{B_{pier}} = 6.775 \cdot \text{in}$$

Diameter of Reinforcement Cage =

$$\text{Diam}_{cage} := d_p - 2 \cdot C_{vr_{pier}} = 93 \cdot \text{in}$$

Maximum Moment in Pier =

$$M_p := \left[OM + \text{Shear} \cdot \left(L_p + \frac{A_{BP}}{2} \right) \right] = 47400 \cdot \text{in} \cdot \text{kips}$$

Pier Check evaluated from outside program and results are listed below;

$$(D \ N \ n \ P_u \ M_{xu}) := \left(d_p \cdot 12 \ N_{B_{pier}} \ B_{s_{pier}} \ \frac{\text{Axial} \cdot 1.333}{\text{kips}} \ \frac{M_p}{\text{in} \cdot \text{kips}} \right)$$

$$(D \ N \ n \ P_u \ M_{xu}) = (99 \ 38 \ 11 \ 86.6 \ 47400)$$

$$(\phi P_n \ \phi M_{xn} \ f_{sp} \ \rho) := (0 \ 0 \ 0 \ 0)$$

$$(\phi P_n \ \phi M_{xn} \ f_{sp} \ \rho) := \phi P'_n (D, N, n, P_u, M_{xu})^T$$

$$(\phi P_n \ \phi M_{xn} \ f_{sp} \ \rho) = (248.1 \ 1.4 \times 10^5 \ -60 \ 0)$$

$$\text{Axial_Load_Check} := \text{if}(\phi P_n \geq P_u, \text{"Okay"}, \text{"No Good"})$$

Axial_Load_Check = "Okay"

$$\text{Bending_Check} := \text{if}(\phi M_{xn} \geq M_{xu}, \text{"Okay"}, \text{"No Good"})$$

Bending_Check = "Okay"

Development Length Pier Reinforcement:

Available Length in Foundation:

$$L_{\text{pier}} := L_p - C_{\text{vr}}_{\text{pier}} = 51 \cdot \text{in}$$

$$L_{\text{pad}} := T_f - C_{\text{vr}}_{\text{pad}} = 21 \cdot \text{in}$$

Tension:

(ACI-2008 12.2.3)

Spacing or Cover Dimension =

$$c := \text{if} \left(C_{\text{vr}}_{\text{pier}} < \frac{B_{\text{sPier}}}{2}, C_{\text{vr}}_{\text{pier}}, \frac{B_{\text{sPier}}}{2} \right) = 3 \cdot \text{in}$$

Transverse Reinforcement =

$$k_{\text{tr}} := 0 \quad (\text{ACI-2008 12.2.3})$$

$$L_{\text{dbt}} := \frac{3 \cdot f_y \alpha_{\text{pier}} \beta_{\text{pier}} \gamma_{\text{pier}} \lambda_{\text{pier}}}{40 \cdot \sqrt{f_c} \cdot \text{psi}} \cdot \left(\frac{c + k_{\text{tr}}}{d_{\text{bpier}}} \right) \cdot d_{\text{bpier}} = 44.46 \cdot \text{in}$$

Minimum Development Length =

$$L_{\text{dh}} := \frac{1200 \cdot d_{\text{bpier}}}{\sqrt{\frac{f_c}{\text{psi}}}} \cdot .7 = 17.656 \cdot \text{in} \quad (\text{ACI 12.2.1})$$

Pier reinforcement bars are standard 90 degree hooks and therefore development in the pad is computed as follows:

$$L_{\text{db}} := \max(L_{\text{dbt}}, L_{\text{dbmin}})$$

$$L_{\text{tension_check}} := \text{if}(L_{\text{pier}} + L_{\text{pad}} > L_{\text{db}}, \text{"Okay"}, \text{"No Good"})$$

$$L_{\text{tension_check}} = \text{"Okay"}$$

Compression:

(ACI-2008 12.3.2)

$$L_{\text{dbc1}} := \frac{.02 \cdot d_{\text{bpier}} \cdot f_y}{\sqrt{f_c} \cdot \text{psi}} = 25.223 \cdot \text{in}$$

$$L_{\text{dbmin}} := 0.0003 \cdot \frac{\text{in}^2}{\text{lb}} \cdot (d_{\text{bpier}} \cdot f_y) = 25.38 \cdot \text{in}$$

$$L_{\text{dbc}} := \text{if}(L_{\text{dbc1}} \geq L_{\text{dbmin}}, L_{\text{dbc1}}, L_{\text{dbmin}}) = 25.38 \cdot \text{in}$$

$$L_{\text{compression_check}} := \text{if}(L_{\text{pier}} + L_{\text{pad}} > L_{\text{dbc}}, \text{"Okay"}, \text{"No Good"})$$

$$L_{\text{compression_check}} = \text{"Okay"}$$

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



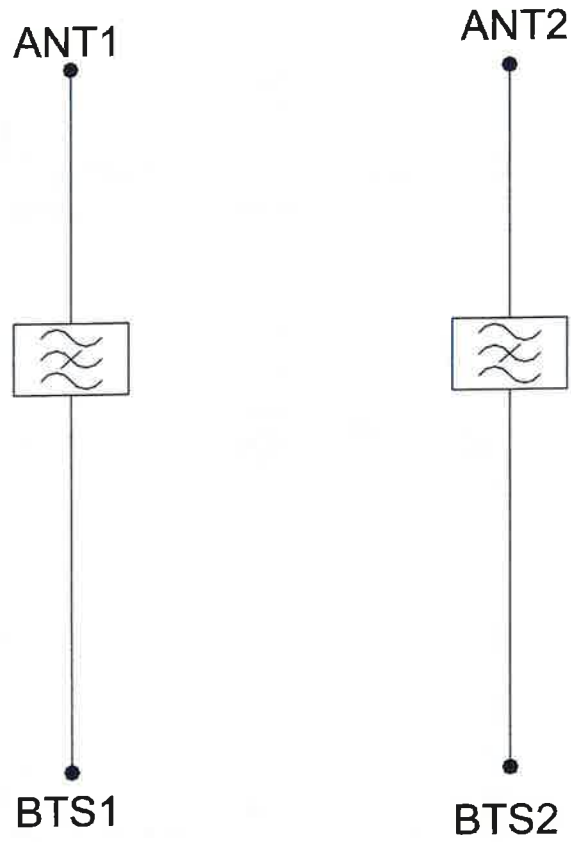
TECHNICAL SPECIFICATIONS

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.	

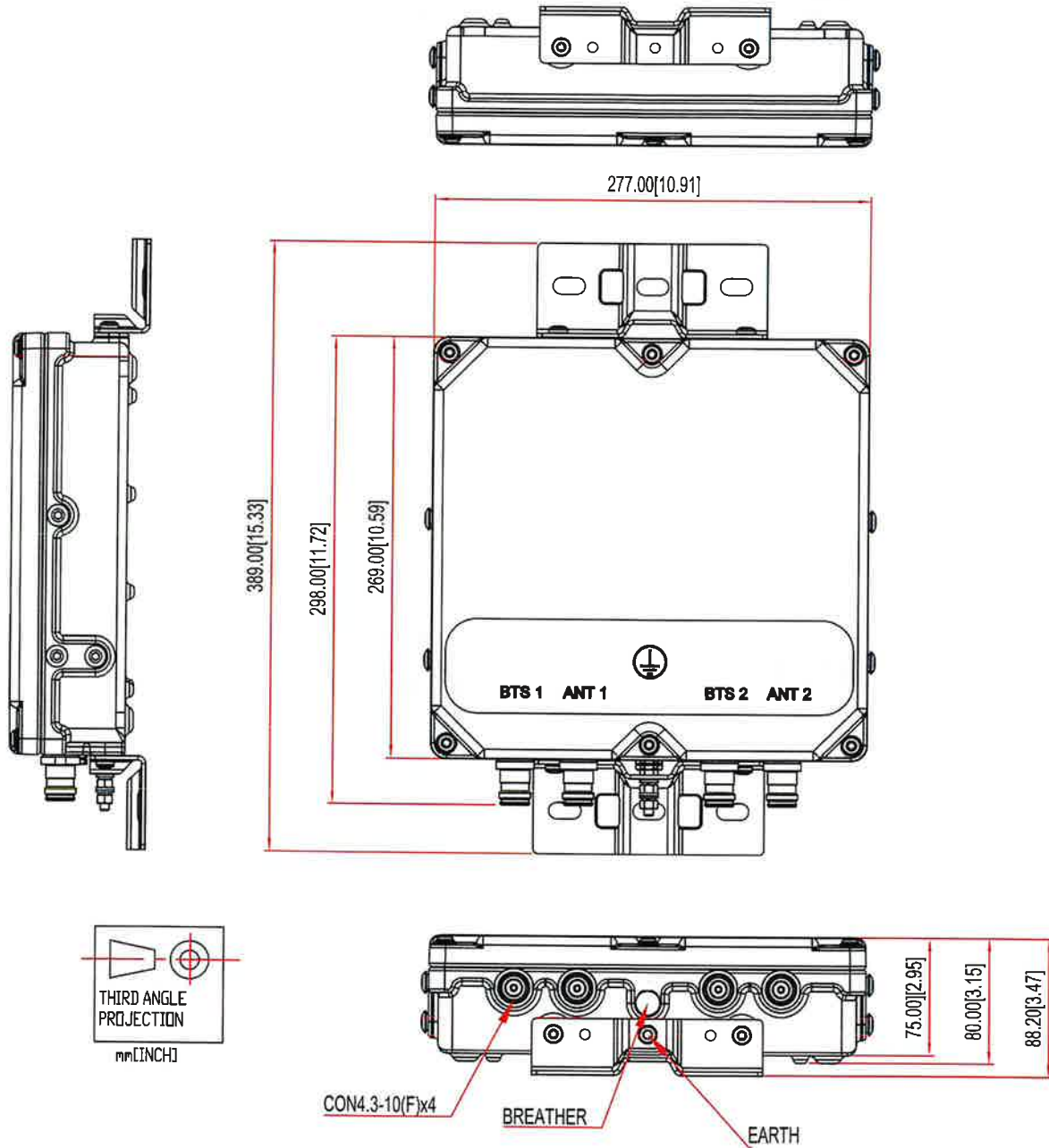
ORDERING INFORMATION

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





Colliers Engineering & Design CT, PC
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 Stamford, CT 06901
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Antenna Mount Analysis Report and PMI Requirements

Mount ReAnalysis

SMART Tool Project #: 10207532
 Colliers Engineering & Design CT, PC Project #: 23777195

July 24, 2023

Site Information

Site ID: 5000247305-VZW / WESTBROOK CT
 Site Name: WESTBROOK CT
 Carrier Name: Verizon Wireless
 Address: 1542 Boston Post Road
 Westbrook, Connecticut 06498
 Middlesex County
 Latitude: 41.281783°
 Longitude: -72.437406°

Structure Information

Tower Type: 135-Ft Monopole
 Mount Type: 12.54-Ft Platform

FUZE ID # 17123841

Analysis Results

Platform: 88.0% 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: Lauren Luzier



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
<i>Radio Frequency Data Sheet (RFDS)</i>	<i>Verizon RFDS, Site ID: 325101, dated September 2, 2021</i>
<i>Mount Mapping Report</i>	<i>Elite ICT, Site ID: 77, dated April 20, 2021</i>
<i>Post Modification Inspection Report</i>	<i>Colliers Engineering & Design Project #: 21777735, dated June 26, 2023</i>
<i>Filter Add Scope</i>	<i>Provided by Verizon Wireless</i>

Analysis Criteria:

Codes and Standards:	ANSI/TIA-222-H 2022 Connecticut State Building Code (DSBC), Effective October 1, 2022
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT} : 125 mph Ice Wind Speed (3-sec. Gust): 50 mph Design Ice Thickness: 1.00 in Risk Category: II Exposure Category: D Topographic Category: 1 Topographic Feature Considered: N/A Topographic Method: N/A Ground Elevation Factor, K_e : 0.998
Seismic Parameters:	S_s : 0.204 g S_1 : 0.054 g
Maintenance Parameters:	Wind Speed (3-sec. Gust): 30 mph Maintenance Live Load, L_v : 250 lbs. Maintenance Live Load, L_m : 500 lbs.
Analysis Software:	RISA-3D (V17)

Final Loading Configuration:

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

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
124.00	126.00	2	KAelus	KA-6030	Added
		3	Samsung	MT6407-77A	Retained
		9	JMA Wireless	MX06FRO660-03	
		1	Raycap	RRFDC-6627-PF-48	
		3	Samsung	B2/B66A RRH-BR049	
		3	Samsung	B5/B13 RRH-BR04C	

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

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

Standard Conditions:

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

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

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

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

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

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

Analysis Results:

Component	Utilization %	Pass/Fail
Top Corner Bracing	7.6 %	Pass
Support Rail	20.4 %	Pass
Standoff Horizontal	14.3 %	Pass
Secondary Standoff	29.0 %	Pass
RRH Mount Rail	88.0 %	Pass
Mount Pipe	39.8 %	Pass
Lower Standoff	17.3 %	Pass
Grating Support	59.5 %	Pass
Grating Pipe	16.1 %	Pass
Grating Bracing	26.8 %	Pass
Face Horizontal	42.8 %	Pass
Bracing	21.4 %	Pass
Mount Connection	14.9 %	Pass

Structure Rating – (Controlling Utilization of all Components)	88.0%
---	--------------

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

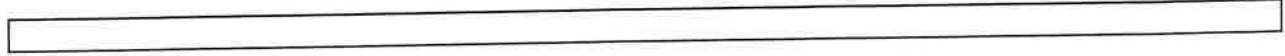
Ice Thickness (In)	Mount Pipes Excluded		Mount Pipes Included	
	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)
0	40.4	40.3	61.1	61.0
0.5	57.0	57.1	85.0	84.9
1	71.9	72.0	107.1	107.0

Notes:

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

Requirements:

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



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 #: 5000247305

SMART Project #: 10207532

Fuze Project ID: 17123841

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:	

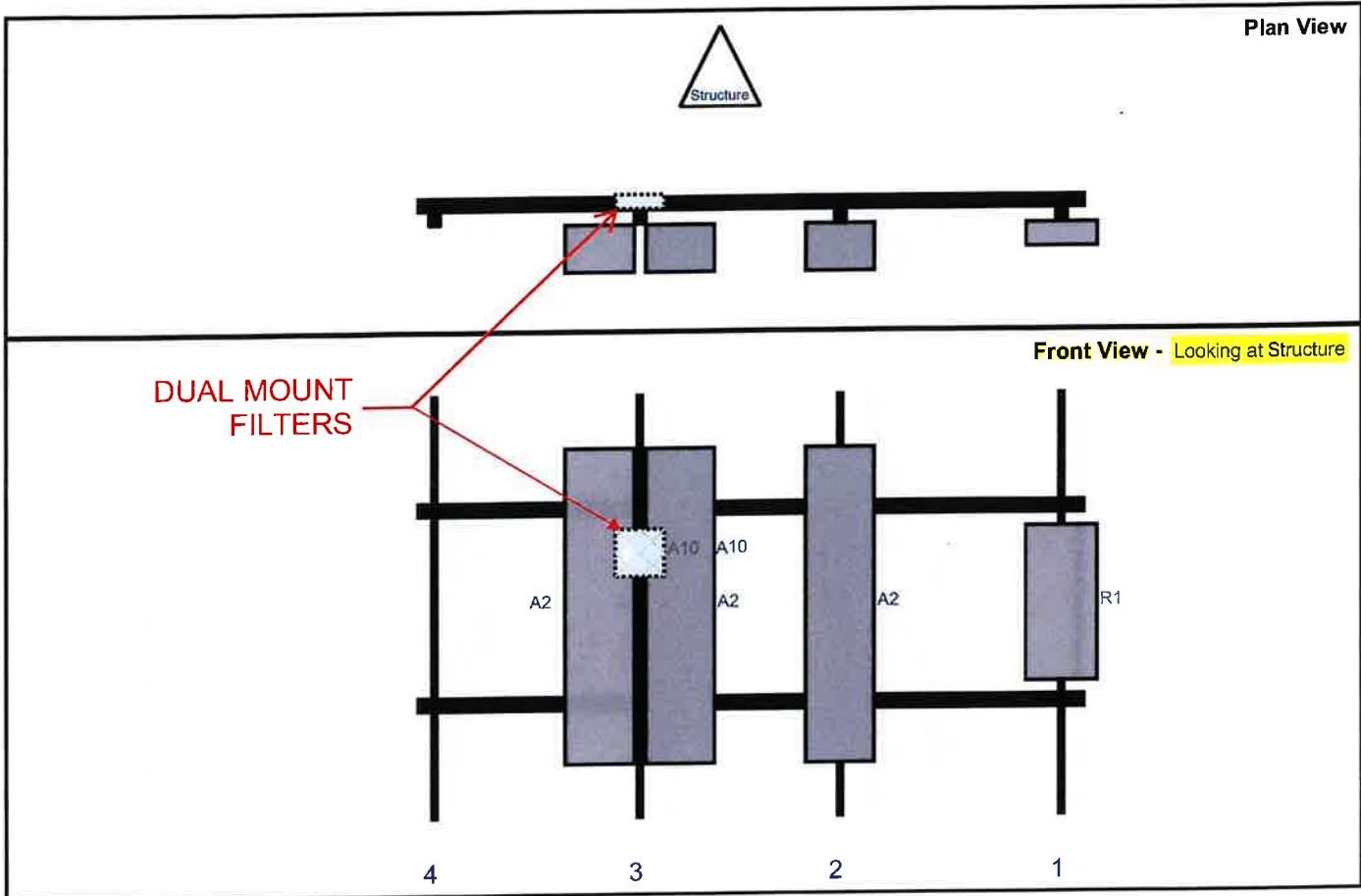
Sector: **A**
 Structure Type: Monopole
 Mount Elev: 124.00

10207532

7/20/2023



Page: 1



Reff#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
R1	MT6407-77A	35.1	16.1	145	1	a	Front	48	0	Retained	07/06/2022
A2	MX06FRO660-02	71.3	15.4	95	2	a	Front	48	0	Retained	07/06/2022
A2	MX06FRO660-02	71.3	15.4	50	3	a	Front	48	-9	Retained	07/06/2022
A2	MX06FRO660-02	71.3	15.4	50	3	b	Front	48	9	Retained	07/06/2022
A10	KA-6030	10.6	10.9	50	3	a	Behind	36	0	Added	
A10	KA-6030	10.6	10.9	50	3	b	Behind	36	0	Added	
M410	RVZDC-6627-PF-48	29.5	16.5							Retained	07/06/2022
M287	RFV01U-D1A	15	15							Retained	07/06/2022
M412	RFV01U-D2A	15	15							Retained	07/06/2022
M415	RFV01U-D1A	15	15							Retained	07/06/2022
M413	RFV01U-D1A	15	15							Retained	07/06/2022
M416	RFV01U-D2A	15	15							Retained	07/06/2022
M414	RFV01U-D2A	15	15							Retained	07/06/2022

Structure: 5000247305-VZW - WESTBROOK CT

Sector: B

7/20/2023

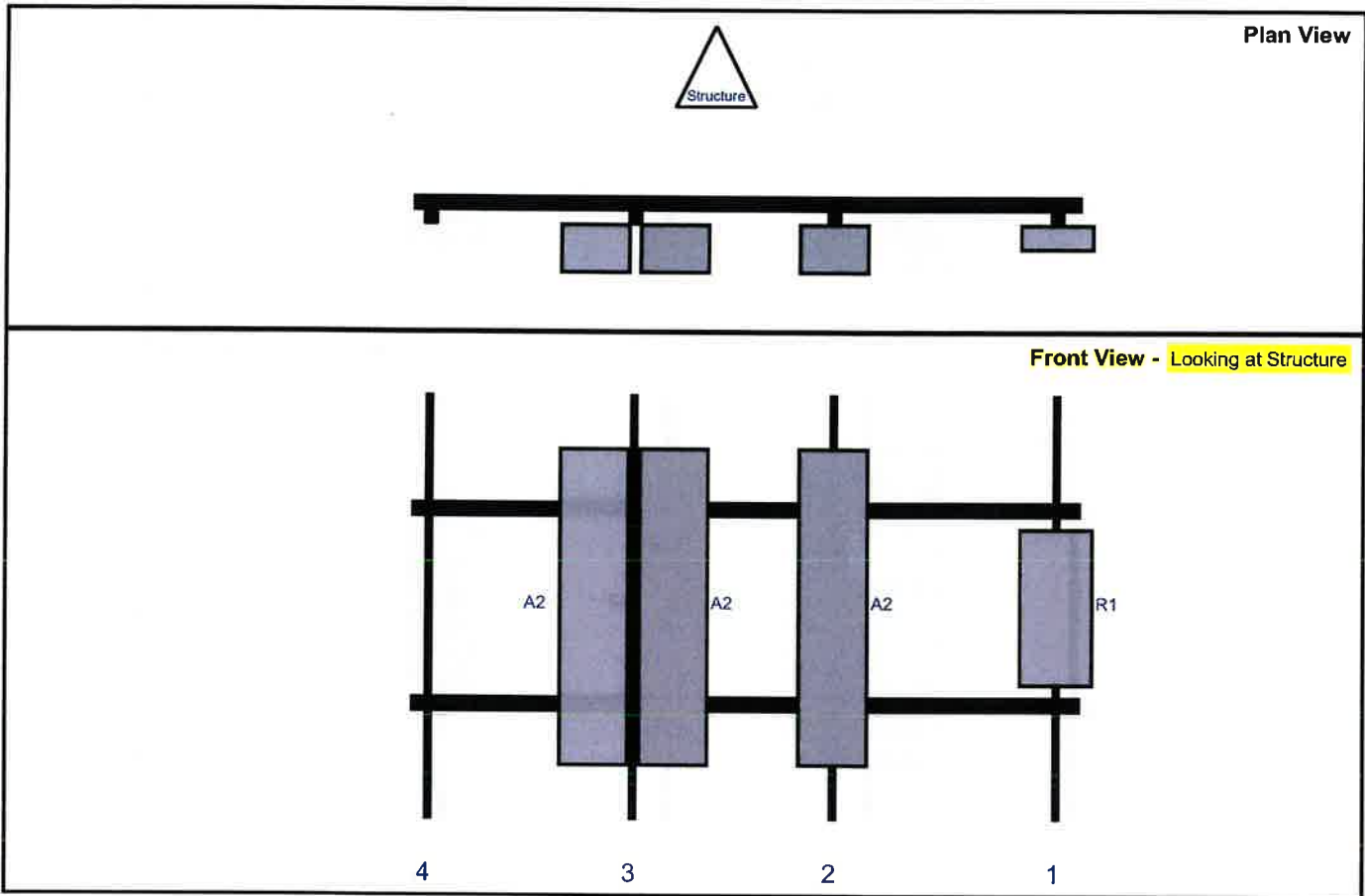
Structure Type: Monopole

10207532



Mount Elev: 124.00

Page: 2



Ref#	Model	Height (in)	Width (in)	H Dist Fm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Fm T.	Ant H Off	Status	Validation
R1	MT6407-77A	35.1	16.1	145	1	a	Front	48	0	Retained	07/06/2022
A2	MX06FRO660-02	71.3	15.4	95	2	a	Front	48	0	Retained	07/06/2022
A2	MX06FRO660-02	71.3	15.4	50	3	a	Front	48	9	Retained	07/06/2022
A2	MX06FRO660-02	71.3	15.4	50	3	b	Front	48	-9	Retained	07/06/2022

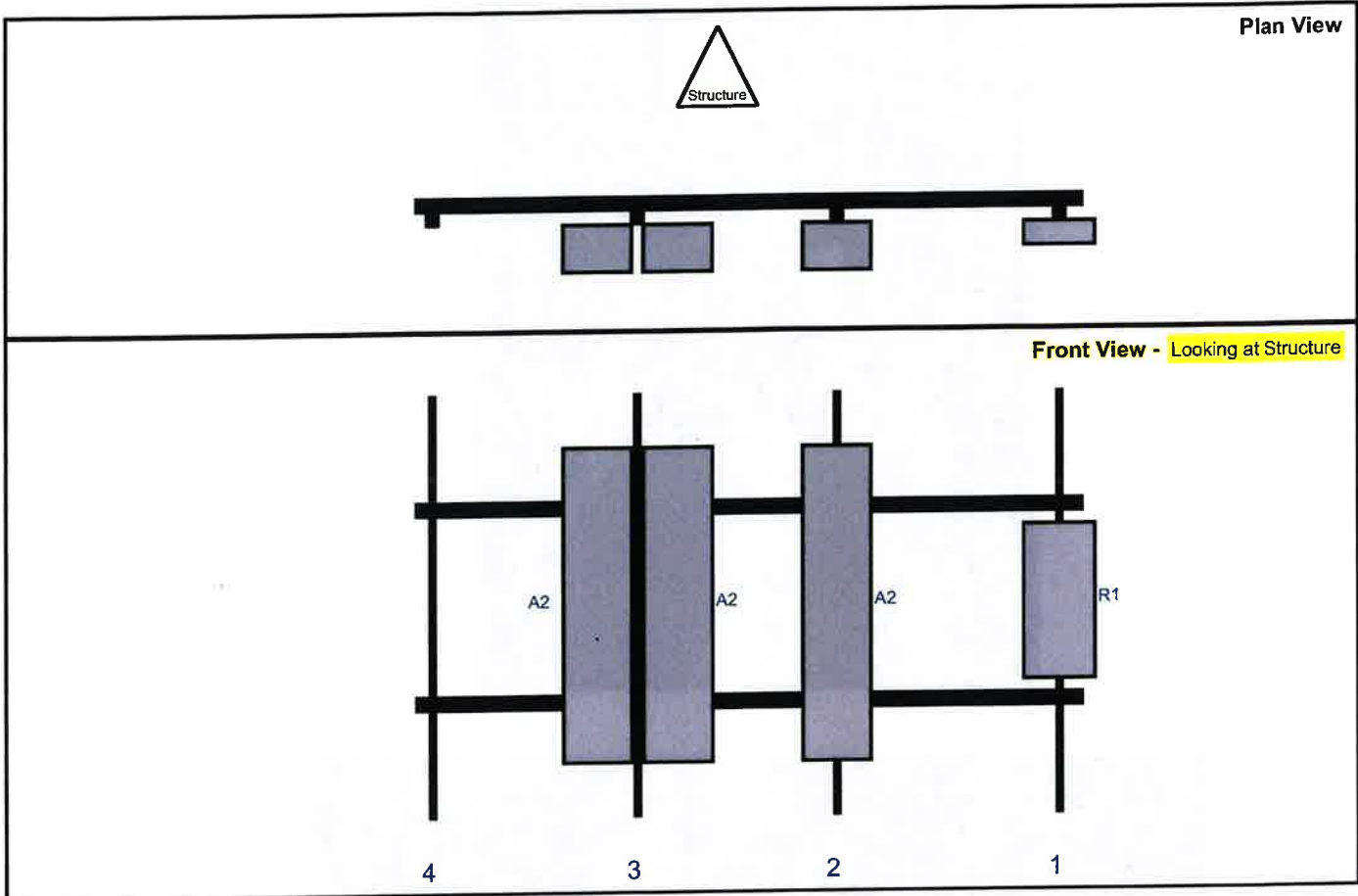
Sector: C
 Structure Type: Monopole
 Mount Elev: 124.00

10207532

7/20/2023



Page: 3

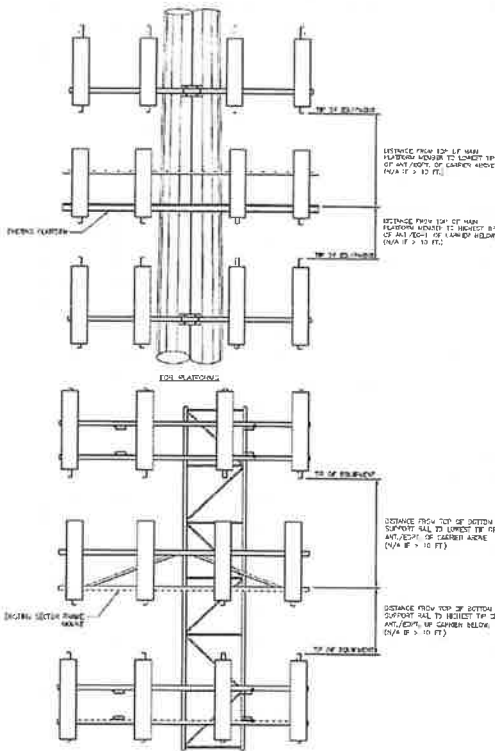


Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
R1	MT6407-77A	35.1	16.1	145	1	a	Front	48	0	Retained	07/06/2022
A2	MX06FRO660-02	71.3	15.4	95	2	a	Front	48	0	Retained	07/06/2022
A2	MX06FRO660-02	71.3	15.4	50	3	a	Front	48	9	Retained	07/06/2022
A2	MX06FRO660-02	71.3	15.4	50	3	b	Front	48	-9	Retained	07/06/2022

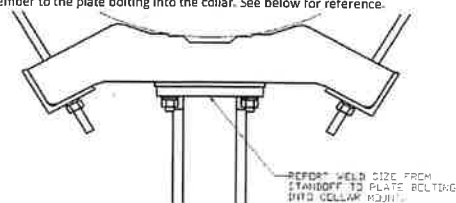


Mount Azimuth (Degree) for Each Sector				Tower Leg Azimuth (Degree) for Each Sector				Sector B										
Sector A:	30.00	Deg	Leg A:		Deg	Ant _{1a}												
Sector B:	170.00	Deg	Leg B:		Deg	Ant _{1b}												
Sector C:	220.00	Deg	Leg C:		Deg	Ant _{1c}												
Sector D:		Deg	Leg D:		Deg	Ant _{1d}	MX06FR0660-03	15.00	10.50	96.00		130.917	47.00	14.00	150.00	197		
Climbing Facility Information						Ant _{2a}												
Location:	30.00	Deg	Sector A			Ant _{3a}	MX06FR0660-03	15.00	10.50	96.00		130.917	47.00	12.50	160.00	198		
Climbing Facility	Corrosion Type:			Good condition.				Ant _{3b}	MX06FR0660-03	15.00	10.50	96.00		130.917	47.00	13.00	160.00	198
	Access:			Climbing path was unobstructed.				Ant _{3c}										
	Condition:			Good condition.				Ant _{4a}										
						Ant _{4b}												
						Ant _{4c}												
						Ant _{5a}												
						Ant _{5b}												
						Ant _{5c}												
						Ant on Standoff	RFV01U-D1A	15.50	12.00	15.50							85	
						Ant on Standoff	RFV01U-D2A	15.50	10.00	15.50							73	
						Ant on Tower												
						Ant on Tower												
						Sector C												
						Ant _{1a}												
						Ant _{1b}												
						Ant _{1c}												
						Ant _{2a}	MX06FR0660-03	15.00	10.50	96.00		130.917	47.00	13.50	260.00	201		
						Ant _{2b}												
						Ant _{2c}												
						Ant _{3a}	MX06FR0660-03	15.00	10.50	96.00		130.917	47.00	13.50	210.00	202		
						Ant _{3b}	MX06FR0660-03	15.00	10.50	96.00		130.917	47.00	13.50	190.00	202		
						Ant _{3c}												
						Ant _{4a}												
						Ant _{4b}												
						Ant _{4c}												
						Ant _{5a}												
						Ant _{5b}												
						Ant _{5c}												
						Ant on Standoff	RFV01U-D1A	15.50	12.00	15.50							135	
						Ant on Standoff	RFV01U-D2A	15.50	10.00	15.50							129	
						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												

Please insert a photo of the mount centerline measurement here.



For T-Arms/Platforms on monopoles, record the weld size from the main standoff member to the plate bolting into the collar. See below for reference.



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

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

Mapping Notes
<p>1. Please report any visible structural or safety issues observed on the antenna mounts (Damaged members, loose connections, tilting mounts, safety climb issues, etc.)</p> <p>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.</p> <p>3. Please create all required detail sketches of the mounts and insert them into the "Sketches" tab.</p> <p>4. Please measure and enter the bolt sizes and types under the Members Box in the spreadsheet of the mount type.</p> <p>5. Take and label the photos of the tower, mounts, connections, antennas and all measurements. Minimum 50 photos are required.</p> <p>6. Please measure and report the size and length of all existing antenna mounting pipes.</p> <p>7. Please measure and report the antenna information for all sectors.</p> <p>8. Don't delete or rearrange any sheet or contents of any sheet from this mapping form.</p>

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.



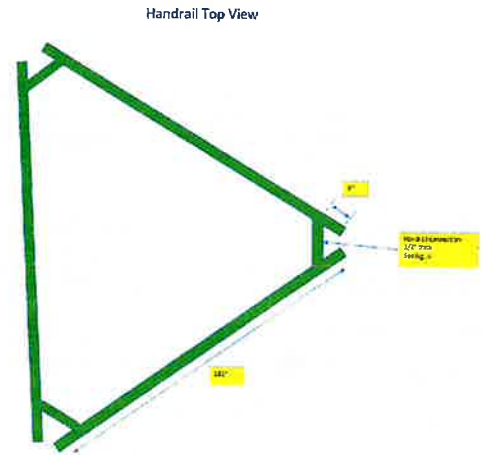
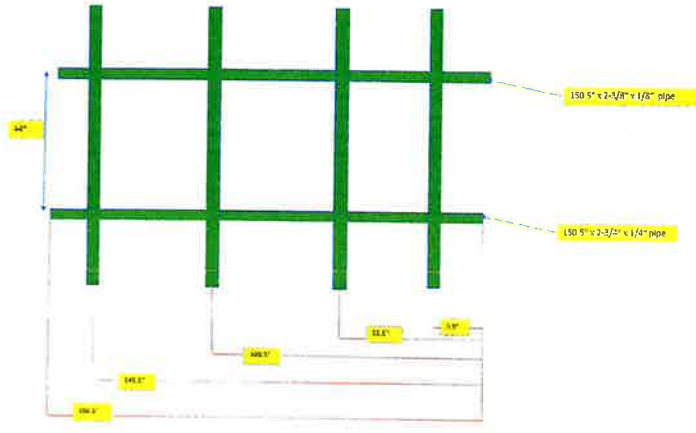
Antenna Mount Mapping Form (PATENT PENDING)

FCC #
N/A

Tower Owner:	VERIZON	Mapping Date:	4/20/2021
Site Name:	WESTBROOK	Tower Type:	Monopole
Site Number or ID:	77	Tower Height (Ft.):	135
Mapping Contractor:	ELITE ICT	Mount Elevation (Ft.):	129

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 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



Handrail Top View

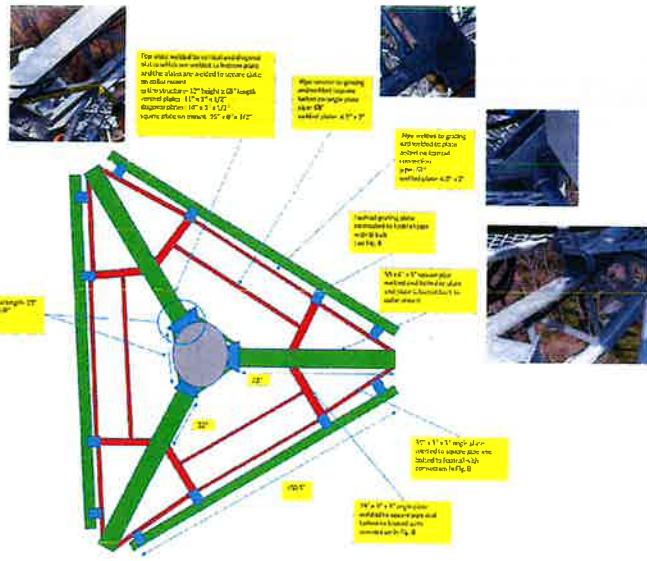
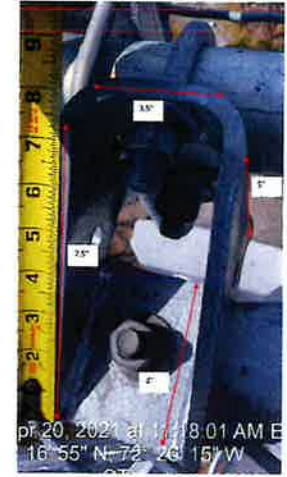


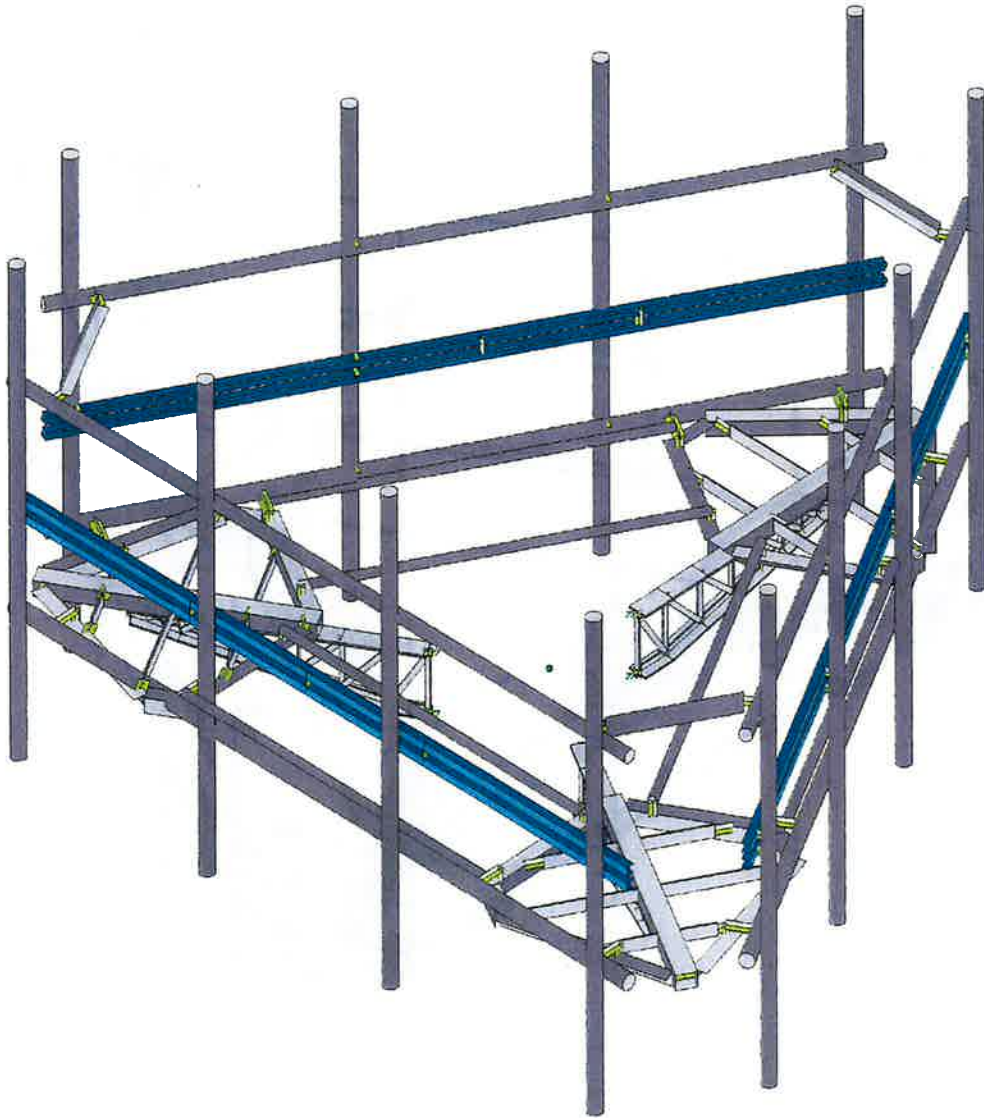
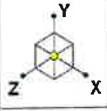
Figure A



Figure B



APR 20, 2021 at 11:18:01 AM EST
16° 55' N - 72° 26' 15\"/>



Envelope Only Solution

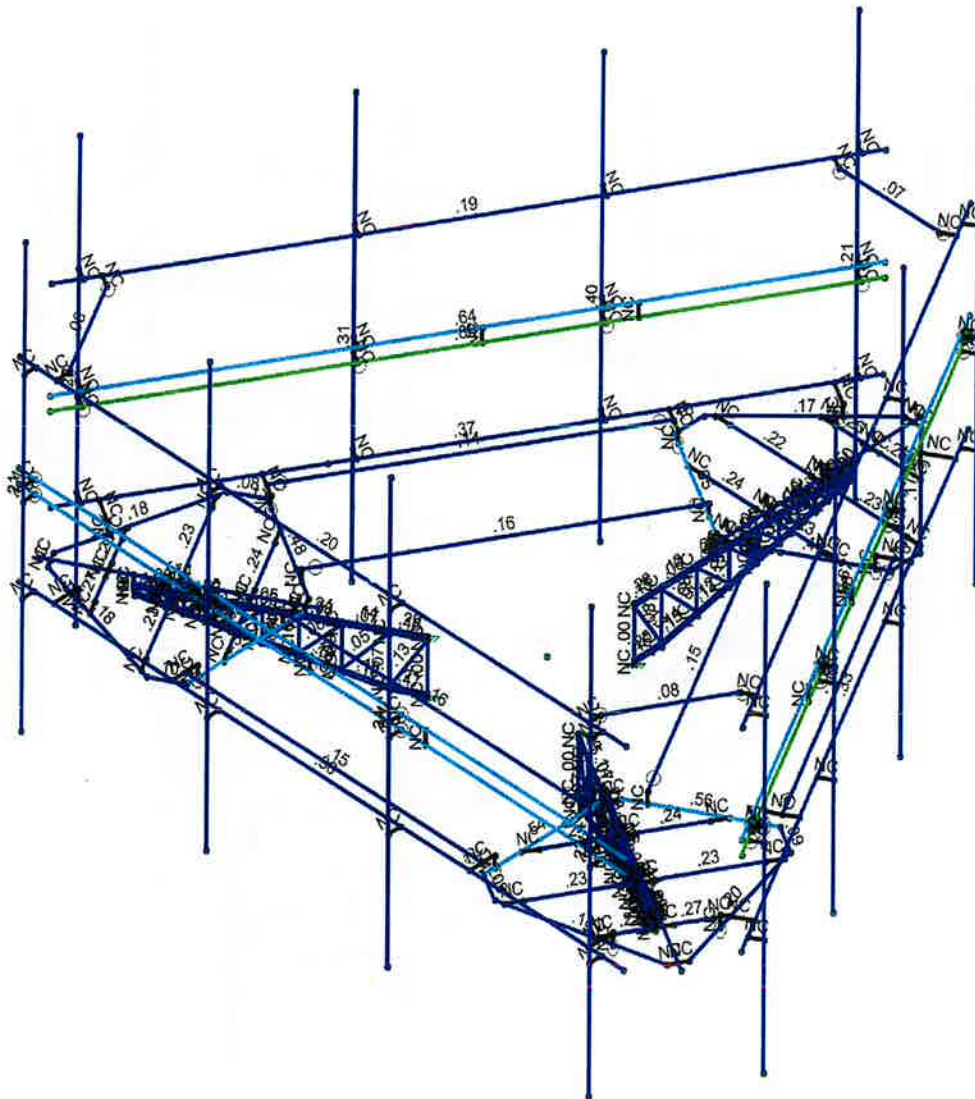
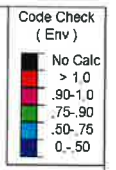
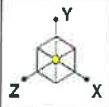
Colliers Engineering & Des...

5000247305-VZW_MT_LO_H

SK - 1

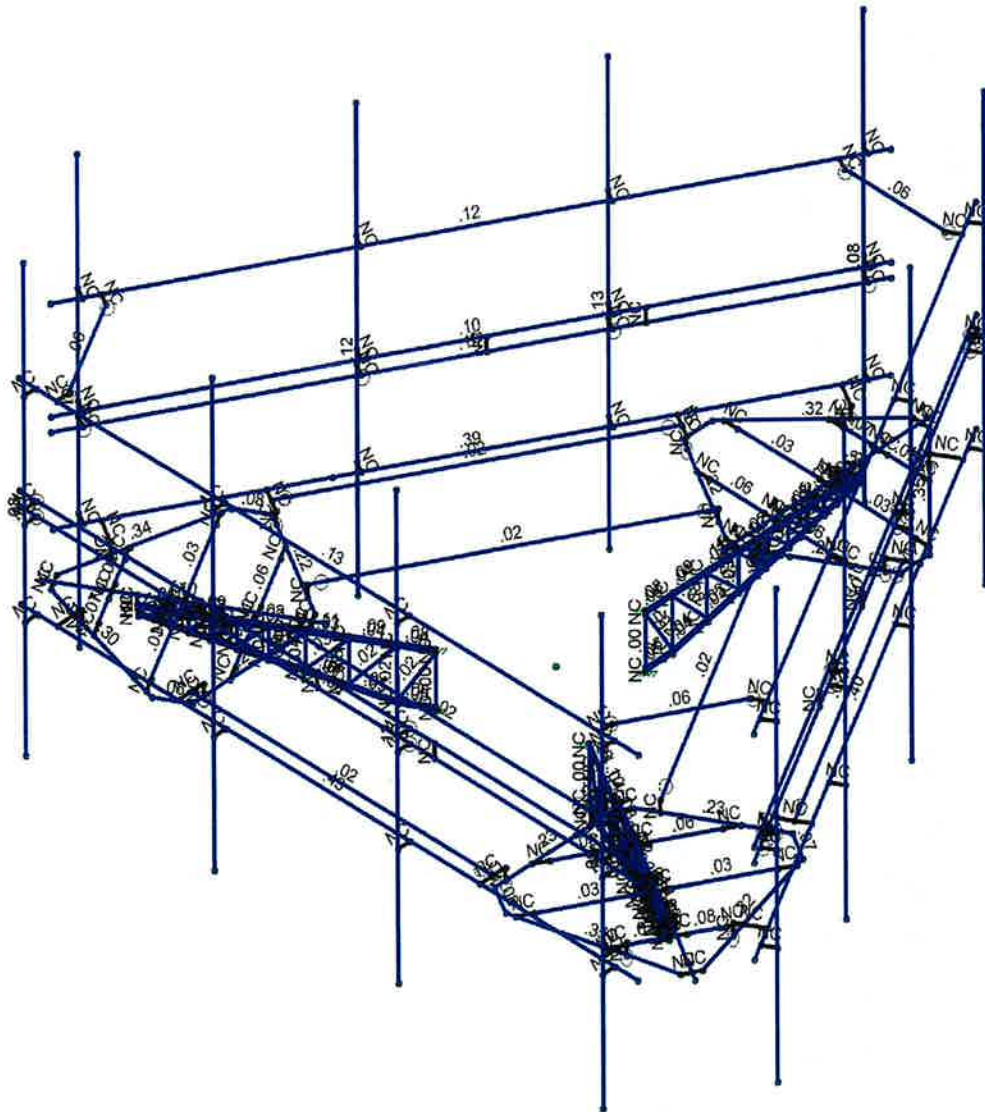
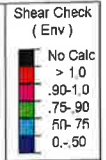
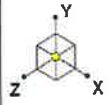
July 20, 2023 at 3:50 PM

5000247305-VZW_MT_LO_H.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Colliers Engineering & Des...		SK - 2
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		5000247305-VZW_MT_LO_H.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Colliers Engineering & Des...

5000247305-VZW_MT_LO_H

SK - 3

July 20, 2023 at 3:52 PM

5000247305-VZW_MT_LO_H.r3d



Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
1	Antenna D	None					90			
2	Antenna Di	None					90			
3	Antenna Wo (0 Deg)	None					90			
4	Antenna Wo (30 Deg)	None					90			
5	Antenna Wo (60 Deg)	None					90			
6	Antenna Wo (90 Deg)	None					90			
7	Antenna Wo (120 Deg)	None					90			
8	Antenna Wo (150 Deg)	None					90			
9	Antenna Wo (180 Deg)	None					90			
10	Antenna Wo (210 Deg)	None					90			
11	Antenna Wo (240 Deg)	None					90			
12	Antenna Wo (270 Deg)	None					90			
13	Antenna Wo (300 Deg)	None					90			
14	Antenna Wo (330 Deg)	None					90			
15	Antenna Wi (0 Deg)	None					90			
16	Antenna Wi (30 Deg)	None					90			
17	Antenna Wi (60 Deg)	None					90			
18	Antenna Wi (90 Deg)	None					90			
19	Antenna Wi (120 Deg)	None					90			
20	Antenna Wi (150 Deg)	None					90			
21	Antenna Wi (180 Deg)	None					90			
22	Antenna Wi (210 Deg)	None					90			
23	Antenna Wi (240 Deg)	None					90			
24	Antenna Wi (270 Deg)	None					90			
25	Antenna Wi (300 Deg)	None					90			
26	Antenna Wi (330 Deg)	None					90			
27	Antenna Wm (0 Deg)	None					90			
28	Antenna Wm (30 Deg)	None					90			
29	Antenna Wm (60 Deg)	None					90			
30	Antenna Wm (90 Deg)	None					90			
31	Antenna Wm (120 Deg)	None					90			
32	Antenna Wm (150 Deg)	None					90			
33	Antenna Wm (180 Deg)	None					90			
34	Antenna Wm (210 Deg)	None					90			
35	Antenna Wm (240 Deg)	None					90			
36	Antenna Wm (270 Deg)	None					90			
37	Antenna Wm (300 Deg)	None					90			
38	Antenna Wm (330 Deg)	None					90			
39	Structure D	None								
40	Structure Di	None		-1					9	
41	Structure Wo (0 Deg)	None						200	9	
42	Structure Wo (30 Deg)	None						400		
43	Structure Wo (60 Deg)	None						400		
44	Structure Wo (90 Deg)	None						400		
45	Structure Wo (120 Deg)	None						400		
46	Structure Wo (150 Deg)	None						400		
47	Structure Wo (180 Deg)	None						400		
48	Structure Wo (210 Deg)	None						400		
49	Structure Wo (240 Deg)	None						400		
50	Structure Wo (270 Deg)	None						400		
51	Structure Wo (300 Deg)	None						400		
52	Structure Wo (330 Deg)	None						400		
53	Structure Wi (0 Deg)	None						400		
54	Structure Wi (30 Deg)	None						400		
55	Structure Wi (60 Deg)	None						400		



Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distrib	Area(Me..Surface)
56	Structure Wi (90 Deg)	None						400	
57	Structure Wi (120 Deg)	None						400	
58	Structure Wi (150 Deg)	None						400	
59	Structure Wi (180 Deg)	None						400	
60	Structure Wi (210 Deg)	None						400	
61	Structure Wi (240 Deg)	None						400	
62	Structure Wi (270 Deg)	None						400	
63	Structure Wi (300 Deg)	None						400	
64	Structure Wi (330 Deg)	None						400	
65	Structure Wm (0 Deg)	None						400	
66	Structure Wm (30 Deg)	None						400	
67	Structure Wm (60 Deg)	None						400	
68	Structure Wm (90 Deg)	None						400	
69	Structure Wm (120 Deg)	None						400	
70	Structure Wm (150 Deg)	None						400	
71	Structure Wm (180 Deg)	None						400	
72	Structure Wm (210 Deg)	None						400	
73	Structure Wm (240 Deg)	None						400	
74	Structure Wm (270 Deg)	None						400	
75	Structure Wm (300 Deg)	None						400	
76	Structure Wm (330 Deg)	None						400	
77	Lm1	None					1		
78	Lm2	None					1		
79	Lv1	None					1		
80	Lv2	None					1		
81	Antenna Ev	None					90		
82	Antenna Eh (0 Deg)	None					60		
83	Antenna Eh (90 Deg)	None					60		
84	Structure Ev	ELY		-044					9
85	Structure Eh (0 Deg)	ELZ			-109				9
86	Structure Eh (90 Deg)	ELX	.109						9
87	BLC 39 Transient Area Loads	None						258	
88	BLC 40 Transient Area Loads	None						257	
89	BLC 84 Transient Area Loads	None						258	
90	BLC 85 Transient Area Loads	None						258	
91	BLC 86 Transient Area Loads	None						258	

Load Combinations

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



Load Combinations (Continued)

Description	S	PDelta	S	B	Fa	BLC	Fa	BLC	Fa	BLC	Fa	BLC	Fa	B	Fa	B	Fa	B	Fa	B	Fa	B	Fa	B
19	1.2D + 1.0Di + 1.0.Y...	Y	1	1.2	39	1.2	2	1	40	1	21	1	59	1										
20	1.2D + 1.0Di + 1.0.Y...	Y	1	1.2	39	1.2	2	1	40	1	22	1	60	1										
21	1.2D + 1.0Di + 1.0.Y...	Y	1	1.2	39	1.2	2	1	40	1	23	1	61	1										
22	1.2D + 1.0Di + 1.0.Y...	Y	1	1.2	39	1.2	2	1	40	1	24	1	62	1										
23	1.2D + 1.0Di + 1.0.Y...	Y	1	1.2	39	1.2	2	1	40	1	25	1	63	1										
24	1.2D + 1.0Di + 1.0.Y...	Y	1	1.2	39	1.2	2	1	40	1	26	1	64	1										
25	1.2D + 1.5Lm1 + ...Y...	Y	1	1.2	39	1.2	77	1.5	27	1	65	1												
26	1.2D + 1.5Lm1 + ...Y...	Y	1	1.2	39	1.2	77	1.5	28	1	66	1												
27	1.2D + 1.5Lm1 + ...Y...	Y	1	1.2	39	1.2	77	1.5	29	1	67	1												
28	1.2D + 1.5Lm1 + ...Y...	Y	1	1.2	39	1.2	77	1.5	30	1	68	1												
29	1.2D + 1.5Lm1 + ...Y...	Y	1	1.2	39	1.2	77	1.5	31	1	69	1												
30	1.2D + 1.5Lm1 + ...Y...	Y	1	1.2	39	1.2	77	1.5	32	1	70	1												
31	1.2D + 1.5Lm1 + ...Y...	Y	1	1.2	39	1.2	77	1.5	33	1	71	1												
32	1.2D + 1.5Lm1 + ...Y...	Y	1	1.2	39	1.2	77	1.5	34	1	72	1												
33	1.2D + 1.5Lm1 + ...Y...	Y	1	1.2	39	1.2	77	1.5	35	1	73	1												
34	1.2D + 1.5Lm1 + ...Y...	Y	1	1.2	39	1.2	77	1.5	36	1	74	1												
35	1.2D + 1.5Lm1 + ...Y...	Y	1	1.2	39	1.2	77	1.5	37	1	75	1												
36	1.2D + 1.5Lm1 + ...Y...	Y	1	1.2	39	1.2	77	1.5	38	1	76	1												
37	1.2D + 1.5Lm2 + ...Y...	Y	1	1.2	39	1.2	78	1.5	27	1	65	1												
38	1.2D + 1.5Lm2 + ...Y...	Y	1	1.2	39	1.2	78	1.5	28	1	66	1												
39	1.2D + 1.5Lm2 + ...Y...	Y	1	1.2	39	1.2	78	1.5	29	1	67	1												
40	1.2D + 1.5Lm2 + ...Y...	Y	1	1.2	39	1.2	78	1.5	30	1	68	1												
41	1.2D + 1.5Lm2 + ...Y...	Y	1	1.2	39	1.2	78	1.5	31	1	69	1												
42	1.2D + 1.5Lm2 + ...Y...	Y	1	1.2	39	1.2	78	1.5	32	1	70	1												
43	1.2D + 1.5Lm2 + ...Y...	Y	1	1.2	39	1.2	78	1.5	33	1	71	1												
44	1.2D + 1.5Lm2 + ...Y...	Y	1	1.2	39	1.2	78	1.5	34	1	72	1												
45	1.2D + 1.5Lm2 + ...Y...	Y	1	1.2	39	1.2	78	1.5	35	1	73	1												
46	1.2D + 1.5Lm2 + ...Y...	Y	1	1.2	39	1.2	78	1.5	36	1	74	1												
47	1.2D + 1.5Lm2 + ...Y...	Y	1	1.2	39	1.2	78	1.5	37	1	75	1												
48	1.2D + 1.5Lm2 + ...Y...	Y	1	1.2	39	1.2	78	1.5	38	1	76	1												
49	1.2D + 1.5Lv1	Y	1	1.2	39	1.2	79	1.5																
50	1.2D + 1.5Lv2	Y	1	1.2	39	1.2	80	1.5																
51	1.4D	Y	1	1.4	39	1.4																		
52	1.2D + 1.0Ev + 1....Y...	Y	1	1.2	39	1.2	81	1	ELY	1	82	1	83	E	1	E								
53	1.2D + 1.0Ev + 1....Y...	Y	1	1.2	39	1.2	81	1	ELY	1	82	.866	83	.5	E	.866	E	.5						
54	1.2D + 1.0Ev + 1....Y...	Y	1	1.2	39	1.2	81	1	ELY	1	82	.5	83	.866	E	.5	E	.866						
55	1.2D + 1.0Ev + 1....Y...	Y	1	1.2	39	1.2	81	1	ELY	1	82		83	1	E		E	1						
56	1.2D + 1.0Ev + 1....Y...	Y	1	1.2	39	1.2	81	1	ELY	1	82	-5	83	.866	E	-5	E	.866						
57	1.2D + 1.0Ev + 1....Y...	Y	1	1.2	39	1.2	81	1	ELY	1	82	-8	.83	.5	E	-8	E	.5						
58	1.2D + 1.0Ev + 1....Y...	Y	1	1.2	39	1.2	81	1	ELY	1	82	-1	83		E	-1	E							
59	1.2D + 1.0Ev + 1....Y...	Y	1	1.2	39	1.2	81	1	ELY	1	82	-8	.83	.5	E	-8	E	.5						
60	1.2D + 1.0Ev + 1....Y...	Y	1	1.2	39	1.2	81	1	ELY	1	82	-5	83	.8	E	-5	E	.8						
61	1.2D + 1.0Ev + 1....Y...	Y	1	1.2	39	1.2	81	1	ELY	1	82		83	-1	E		E	-1						
62	1.2D + 1.0Ev + 1....Y...	Y	1	1.2	39	1.2	81	1	ELY	1	82	.5	83	.8	E	.5	E	.8						
63	1.2D + 1.0Ev + 1....Y...	Y	1	1.2	39	1.2	81	1	ELY	1	82	.866	83	.5	E	.866	E	.5						
64	0.9D - 1.0Ev + 1.0.Y...	Y	1	.9	39	.9	81	-1	ELY	-1	82	1	83		E	1	E							
65	0.9D - 1.0Ev + 1.0.Y...	Y	1	.9	39	.9	81	-1	ELY	-1	82	.866	83	.5	E	.866	E	.5						
66	0.9D - 1.0Ev + 1.0.Y...	Y	1	.9	39	.9	81	-1	ELY	-1	82	.5	83	.866	E	.5	E	.866						
67	0.9D - 1.0Ev + 1.0.Y...	Y	1	.9	39	.9	81	-1	ELY	-1	82		83	1	E		E	1						
68	0.9D - 1.0Ev + 1.0.Y...	Y	1	.9	39	.9	81	-1	ELY	-1	82	-5	83	.866	E	-5	E	.866						
69	0.9D - 1.0Ev + 1.0.Y...	Y	1	.9	39	.9	81	-1	ELY	-1	82	-8	.83	.5	E	-8	E	.5						
70	0.9D - 1.0Ev + 1.0.Y...	Y	1	.9	39	.9	81	-1	ELY	-1	82	-1	83		E	-1	E							
71	0.9D - 1.0Ev + 1.0.Y...	Y	1	.9	39	.9	81	-1	ELY	-1	82	-8	.83	.5	E	-8	E	.5						
72	0.9D - 1.0Ev + 1.0.Y...	Y	1	.9	39	.9	81	-1	ELY	-1	82	-5	83	.8	E	-5	E	.8						
73	0.9D - 1.0Ev + 1.0.Y...	Y	1	.9	39	.9	81	-1	ELY	-1	82		83	-1	E		E	-1						
74	0.9D - 1.0Ev + 1.0.Y...	Y	1	.9	39	.9	81	-1	ELY	-1	82	.5	83	.8	E	.5	E	.8						
75	0.9D - 1.0Ev + 1.0.Y...	Y	1	.9	39	.9	81	-1	ELY	-1	82	.866	83	.5	E	.866	E	.5						



Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N74A	6.642198	.125	3.834875	0	
2	N75A	2.966498	.125	1.712708	0	
3	N77	5.744599	.125	3.316646	0	
4	N79	5.369599	.125	3.966165	0	
5	N27	4.813622	.125	2.779146	0	
6	N28	3.854563	.125	2.225433	0	
7	N29	3.90083	.125	4.360147	0	
8	N31	3.213434	.125	3.345418	0	
9	N35	5.661266	.125	3.460983	0	
10	N38	4.730288	.125	2.923483	0	
11	N39	3.775351	.125	2.37215	0	
12	N41	5.227341	.125	4.212564	0	
13	N41A	3.758747	.125	4.606243	0	
14	N42	3.071176	.125	3.591818	0	
15	N47	6.49618	.125	3.750571	0	
16	N49	3.154519	.125	1.821263	0	
17	N50	6.412847	.125	3.894909	0	
18	N52	3.597763	.125	4.649373	0	
19	N52A	3.071186	.125	1.9656	0	
20	N64	6.119599	.125	2.667127	0	
21	N67	5.726413	.125	1.198144	0	
22	N68	4.503934	.125	1.110207	0	
23	N69	5.827932	.125	3.172308	0	
24	N70	4.896955	.125	2.634808	0	
25	N71	3.942018	.125	2.083475	0	
26	N72	6.261857	.125	2.420728	0	
27	N73	5.868497	.125	0.952049	0	
28	N74	4.646193	.125	0.863807	0	
29	N78	6.579513	.125	3.606234	0	
30	N79A	5.825357	.125	0.791068	0	
31	N80	3.237853	.125	1.676925	0	
32	N60	5.304012	.125	0.484016	0	
33	N62	3.071176	.125	4.351401	0	
34	N52C	6.346324	.125	2.735769	0	
35	N60A	-6.642192	.125	3.834871	0	
36	N61	-2.966491	.125	1.712704	0	
37	N63	-5.744592	.125	3.316642	0	
38	N64A	-6.119595	.125	2.667119	0	
39	N65	-4.813615	.125	2.779142	0	
40	N66	-3.858678	.125	2.227809	0	
41	N67A	-5.726409	.125	1.198136	0	
42	N68A	-4.50393	.125	1.110199	0	
43	N69A	-5.827928	.125	3.1723	0	
44	N70A	-4.896951	.125	2.6348	0	
45	N71A	-3.942013	.125	2.083467	0	
46	N72A	-6.261853	.125	2.42072	0	
47	N73B	-5.868492	.125	0.952041	0	
48	N74B	-4.646189	.125	0.863799	0	
49	N75	-6.496173	.125	3.750567	0	
50	N76A	-3.154512	.125	1.821259	0	
51	N77A	-6.579509	.125	3.606226	0	
52	N78A	-5.825352	.125	0.79106	0	
53	N79B	-3.237848	.125	1.676917	0	
54	N80A	-5.369595	.125	3.966157	0	
55	N81	-3.900826	.125	4.360139	0	
56	N82	-3.21343	.125	3.34541	0	
57	N83	-5.661261	.125	3.460975	0	
58	N84	-4.730284	.125	2.923475	0	



Joint Coordinates and Temperatures (Continued)

	Label	X (ft)	Y (ft)	Z (ft)	Temp (F)	Detach From Diap...
59	N85	-3.775347	.125	2.372142	0	
60	N86	-5.227336	.125	4.212555	0	
61	N87	-3.758742	.125	4.606235	0	
62	N88	-3.071171	.125	3.59181	0	
63	N89	-6.412842	.125	3.894901	0	
64	N90	-3.597759	.125	4.649365	0	
65	N91	-3.071182	.125	1.965592	0	
66	N93	-3.071171	.125	4.351393	0	
67	N94	-5.304007	.125	0.484008	0	
68	N109	-5.103768	0.33325	0.599617	0	
69	N110	-6.34632	0.33325	2.735761	0	
70	N111	-5.103768	.125	0.599617	0	
71	N112	-5.554849	0.33325	0.339185	0	
72	N113	-6.34632	.125	2.735761	0	
73	N114	-6.790464	0.33325	2.479334	0	
74	N117	0.000015	.125	-7.669731	0	
75	N118	0.000015	.125	-3.425398	0	
76	N120	0.000015	.125	-6.633273	0	
77	N121	0.750015	.125	-6.633273	0	
78	N122	0.000015	.125	-5.558273	0	
79	N123	0.000015	.125	-4.455606	0	
80	N124	1.825598	.125	-5.558273	0	
81	N125	1.290515	.125	-4.455606	0	
82	N126	0.166681	.125	-6.633273	0	
83	N127	0.166681	.125	-5.558273	0	
84	N128	0.166681	.125	-4.455606	0	
85	N129	1.034531	.125	-6.633273	0	
86	N130	2.109765	.125	-5.558273	0	
87	N131	1.575032	.125	-4.455606	0	
88	N132	0.000015	.125	-7.501123	0	
89	N133	0.000015	.125	-3.642506	0	
90	N134	0.166681	.125	-7.501123	0	
91	N135	2.227608	.125	-5.440422	0	
92	N136	0.166681	.125	-3.642506	0	
93	N137	-0.749985	.125	-6.633273	0	
94	N138	-1.825569	.125	-5.558273	0	
95	N139	-1.290485	.125	-4.455606	0	
96	N140	-0.166652	.125	-6.633273	0	
97	N141	-0.166652	.125	-5.558273	0	
98	N142	-0.166652	.125	-4.455606	0	
99	N143	-1.034502	.125	-6.633273	0	
100	N144	-2.109735	.125	-5.558273	0	
101	N145	-1.575003	.125	-4.455606	0	
102	N146	-0.166652	.125	-7.501123	0	
103	N147	-2.227579	.125	-5.440422	0	
104	N148	-0.166652	.125	-3.642506	0	
105	N149	-2.03258	0.33325	-4.71979	0	
106	N150	-2.232821	.125	-4.835398	0	
107	N151	2.232851	.125	-4.835398	0	
108	N152	-0.803902	0.33325	-6.863943	0	
109	N162	-2.03258	.125	-4.71979	0	
110	N163	-2.483662	0.33325	-4.980222	0	
111	N164	-0.803902	.125	-6.863943	0	
112	N165	-1.248047	0.33325	-7.12037	0	
113	N167	0.803931	0.33325	-6.863943	0	
114	N152A	3.071177	0.33325	4.120183	0	
115	N153A	5.542407	0.33325	4.128193	0	
116	N154A	3.071177	.125	4.120183	0	
117	N155A	3.071177	0.33325	4.641047	0	



Joint Coordinates and Temperatures (Continued)

	Label	X (ft)	Y (ft)	Z (ft)	Temp (F)	Detach From Dia...
118	N156A	5.542407	.125	4.128193	0	
119	N157A	5.542398	0.33325	4.641047	0	
120	N158A	-3.071172	0.33325	4.120175	0	
121	N159A	-5.542403	0.33325	4.128185	0	
122	N160A	-3.071173	.125	4.120175	0	
123	N161A	-3.071172	0.33325	4.641039	0	
124	N162A	-5.542403	.125	4.128185	0	
125	N163A	-5.542398	0.33325	4.641039	0	
126	N166	2.03261	0.33325	-4.71979	0	
127	N168	2.03261	.125	-4.71979	0	
128	N169	2.483691	0.33325	-4.980222	0	
129	N170	0.803931	.125	-6.863943	0	
130	N171	1.248069	0.33325	-7.120383	0	
131	N172A	5.103772	0.33325	0.599625	0	
132	N173A	6.346324	0.33325	2.735769	0	
133	N174	5.103772	.125	0.599625	0	
134	N175	5.554853	0.33325	0.339193	0	
135	N177	6.790464	0.33325	2.479334	0	
136	N195	-6.270847	0.33325	4.641039	0	
137	N196A	6.270851	0.33325	4.641047	0	
138	N212	4.618802	.125	2.666667	0	
139	N260	-0.	.125	-5.333333	0	
140	N307	-4.618802	.125	2.666667	0	
141	N261A	-2.056783	-0.020833	1.187484	0	
142	N262	-3.154519	-0.020833	1.821263	0	
143	N263	-4.466634	-0.020833	2.578812	0	
144	N264	-5.412659	-0.020833	3.125	0	
145	N265	-2.056783	-1.0155	1.187484	0	
146	N266	-2.056783	-0.083333	1.187484	0	
147	N267	-2.678824	-0.020833	1.54662	0	
148	N268	-3.24	-0.020833	1.870615	0	
149	N269	-3.721981	-0.020833	2.148887	0	
150	N270	-4.126116	-0.020833	2.382214	0	
151	N271	-4.753912	-0.020833	2.744672	0	
152	N272	-4.978598	-0.020833	2.874395	0	
153	N273	-2.678824	-0.083333	1.54662	0	
154	N274	-3.24	-0.083333	1.870615	0	
155	N275	-3.721981	-0.083333	2.148887	0	
156	N276	-4.126116	-0.083333	2.382214	0	
157	N277	-4.466634	-0.083333	2.578812	0	
158	N278	-4.753912	-0.083333	2.744672	0	
159	N279	-4.978598	-0.083333	2.874395	0	
160	N280	-2.055613	-0.95406	1.186809	0	
161	N281	-3.24	-0.666612	1.870615	0	
162	N282	-2.685971	-0.863854	1.550746	0	
163	N283	-3.733005	-0.611498	2.155251	0	
164	N284	-3.251033	-0.727663	1.876985	0	
165	N285	-4.137142	-0.514094	2.38858	0	
166	N286	-4.477657	-0.432023	2.585176	0	
167	N287	-4.764932	-0.362784	2.751035	0	
168	N288	-4.989615	-0.308631	2.880756	0	
169	N289	-2.674921	-0.802709	1.544367	0	
170	N290	-3.721981	-0.550497	2.148887	0	
171	N291	-4.126116	-0.453078	2.382214	0	
172	N292	-4.466634	-0.371028	2.578812	0	
173	N293	-4.753912	-0.301807	2.744672	0	
174	N294	-4.978598	-0.247667	2.874395	0	
175	N295A	-5.412659	-0.083333	3.125	0	
176	N296A	-5.39691	-0.146105	3.115908	0	



Joint Coordinates and Temperatures (Continued)

	Label	X (ft)	Y (ft)	Z (ft)	Temp (F)	Detach From Diap...
177	N297A	-5.398892	-0.209988	3.117052	0	
178	N306	-4.618802	-0.020833	2.666667	0	
179	N307B	-5.206291	-0.192151	3.005854	0	
180	N308A	-5.206291	-0.083333	3.005854	0	
181	N213	2.056783	-0.020833	1.187484	0	
182	N214	3.154519	-0.020833	1.821263	0	
183	N215	4.466634	-0.020833	2.578812	0	
184	N216	5.412659	-0.020833	3.125	0	
185	N217	2.056783	-1.0155	1.187484	0	
186	N218	2.056783	-0.083333	1.187484	0	
187	N219	2.678824	-0.020833	1.54662	0	
188	N220	3.24	-0.020833	1.870615	0	
189	N221	3.721981	-0.020833	2.148887	0	
190	N222	4.126116	-0.020833	2.382214	0	
191	N223	4.753912	-0.020833	2.744672	0	
192	N224	4.978598	-0.020833	2.874395	0	
193	N225	2.678824	-0.083333	1.54662	0	
194	N226	3.24	-0.083333	1.870615	0	
195	N227	3.721981	-0.083333	2.148887	0	
196	N228	4.126116	-0.083333	2.382214	0	
197	N229	4.466634	-0.083333	2.578812	0	
198	N230	4.753912	-0.083333	2.744672	0	
199	N231	4.978598	-0.083333	2.874395	0	
200	N232	2.055613	-0.95406	1.186809	0	
201	N233	3.24	-0.666612	1.870615	0	
202	N234	2.685971	-0.863854	1.550746	0	
203	N235	3.733005	-0.611498	2.155251	0	
204	N236	3.251033	-0.727663	1.876985	0	
205	N237	4.137142	-0.514094	2.38858	0	
206	N238	4.477657	-0.432023	2.585176	0	
207	N239	4.764932	-0.362784	2.751035	0	
208	N240	4.989615	-0.308631	2.880756	0	
209	N241	2.674921	-0.802709	1.544367	0	
210	N242	3.721981	-0.550497	2.148887	0	
211	N243	4.126116	-0.453078	2.382214	0	
212	N244	4.466634	-0.371028	2.578812	0	
213	N245	4.753912	-0.301807	2.744672	0	
214	N246	4.978598	-0.247667	2.874395	0	
215	N247	5.412659	-0.083333	3.125	0	
216	N248	5.39691	-0.146105	3.115908	0	
217	N249	5.398892	-0.209988	3.117052	0	
218	N258	4.618802	-0.020833	2.666667	0	
219	N259	5.206291	-0.192151	3.005854	0	
220	N260A	5.206291	-0.083333	3.005854	0	
221	N261	-0.	-0.020833	-2.374968	0	
222	N262A	-0.	-0.020833	-3.642525	0	
223	N263A	-0.	-0.020833	-5.157624	0	
224	N264A	-0.	-0.020833	-6.25	0	
225	N265A	-0.	-1.0155	-2.374968	0	
226	N266A	-0.	-0.083333	-2.374968	0	
227	N267A	-0.	-0.020833	-3.09324	0	
228	N268A	-0.	-0.020833	-3.74123	0	
229	N269A	-0.	-0.020833	-4.297774	0	
230	N270A	-0.	-0.020833	-4.764428	0	
231	N271A	-0.	-0.020833	-5.489345	0	
232	N272A	-0.	-0.020833	-5.74879	0	
233	N273A	-0.	-0.083333	-3.09324	0	
234	N274A	-0.	-0.083333	-3.74123	0	
235	N275A	-0.	-0.083333	-4.297774	0	



Joint Coordinates and Temperatures (Continued)

	Label	X (ft)	Y (ft)	Z (ft)	Temp (F)	Detach From Diap...
236	N276A	-0.	-0.083333	-4.764428	0	
237	N277A	-0.	-0.083333	-5.157624	0	
238	N278A	-0.	-0.083333	-5.489345	0	
239	N279A	-0.	-0.083333	-5.74879	0	
240	N280A	-0.	-0.95406	-2.373617	0	
241	N281A	-0.	-0.666612	-3.74123	0	
242	N282A	-0.	-0.863854	-3.101492	0	
243	N283A	-0.	-0.611498	-4.310503	0	
244	N284A	-0.	-0.727663	-3.75397	0	
245	N285A	-0.	-0.514094	-4.77716	0	
246	N286A	-0.	-0.432023	-5.170352	0	
247	N287A	-0.	-0.362784	-5.502069	0	
248	N288A	-0.	-0.308631	-5.761511	0	
249	N289A	-0.	-0.802709	-3.088733	0	
250	N290A	-0.	-0.550497	-4.297774	0	
251	N291A	-0.	-0.453078	-4.764428	0	
252	N292A	-0.	-0.371028	-5.157624	0	
253	N293A	-0.	-0.301807	-5.489345	0	
254	N294A	-0.	-0.247667	-5.74879	0	
255	N295	-0.	-0.083333	-6.25	0	
256	N296	-0.	-0.146105	-6.231815	0	
257	N297	-0.	-0.209988	-6.234103	0	
258	N298	-0.	-0.020833	-1.809193	0	
259	N299	-0.	-1.0155	-1.809193	0	
260	N300A	-0.	-0.083333	-1.809193	0	
261	N301	-0.	-0.954046	-1.809193	0	
262	N306A	-0.	-0.020833	-5.333333	0	
263	N307C	-0.	-0.192151	-6.011707	0	
264	N308B	-0.	-0.083333	-6.011707	0	
265	N307D	0	0	0	0	
266	N308C	3.860668	.125	1.317339	0	
267	N309A	3.071183	.125	2.684767	0	
268	N310A	-3.071178	.125	2.684759	0	
269	N311A	-3.860663	.125	1.317331	0	
270	N312A	-0.78947	.125	-4.002087	0	
271	N313	0.789499	.125	-4.002087	0	
272	N344A	-5.412659	.125	3.125	0	
273	N345A	5.412659	.125	3.125	0	
274	N346A	-0.	.125	-6.25	0	
275	N452	-5.060941	0.33325	-0.516288	0	
276	N299B	7.154681	0.33325	3.110193	0	
277	N300B	0.883839	0.33325	-7.75124	0	
278	N302B	-0.883834	0.33325	-7.751233	0	
279	N303B	-7.154691	0.33325	3.110193	0	
280	N287B	-1.566808	-0.020833	0.904597	0	
281	N288B	-1.566808	-1.0155	0.904597	0	
282	N289B	-1.566808	-0.083333	0.904597	0	
283	N290B	-1.566808	-0.954046	0.904597	0	
284	N296B	1.566808	-0.020833	0.904597	0	
285	N297B	1.566808	-1.0155	0.904597	0	
286	N298A	1.566808	-0.083333	0.904597	0	
287	N299A	1.566808	-0.954046	0.904597	0	
288	N291B	2.25815	0.33325	-4.850006	0	
289	N292B	5.329313	0.33325	0.469409	0	
290	N294B	-5.329303	0.33325	0.469387	0	
291	N295B	-2.258136	0.33325	-4.850025	0	
292	N297C	3.071153	0.33325	4.380619	0	
293	N298B	-3.071177	0.33325	4.380615	0	
294	N297D	3.071177	0.33325	2.370183	0	



Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
295	N298C	3.071177	.125	2.370183	0	
296	N299C	-3.071172	0.33325	2.370175	0	
297	N300	-3.071173	.125	2.370175	0	
298	N301A	0.517051	0.33325	-3.844809	0	
299	N302	0.517051	.125	-3.844809	0	
300	N303	3.588218	0.33325	1.474626	0	
301	N304	3.588218	.125	1.474626	0	
302	N305	-3.588227	0.33325	1.474625	0	
303	N306B	-3.588227	.125	1.474625	0	
304	N307A	-0.517046	0.33325	-3.844801	0	
305	N308	-0.517046	.125	-3.844801	0	
306	N306C	5.812518	0.33325	4.641047	0	
307	N307E	5.812518	0.33325	4.891047	0	
308	N308D	5.812518	6.166583	4.891047	0	
309	N309	5.812518	-1.833417	4.891047	0	
310	N310	1.645851	0.33325	4.641047	0	
311	N311	1.645851	0.33325	4.891047	0	
312	N312	1.645851	6.166583	4.891047	0	
313	N313A	1.645851	-1.833417	4.891047	0	
314	N314	-2.104149	0.33325	4.641047	0	
315	N315	-2.104149	0.33325	4.891047	0	
316	N316	-2.104149	6.166583	4.891047	0	
317	N317	-2.104149	-1.833417	4.891047	0	
318	N318	-5.937482	0.33325	4.641047	0	
319	N319	-5.937482	0.33325	4.891047	0	
320	N320	-5.937482	6.166583	4.891047	0	
321	N321	-5.937482	-1.833417	4.891047	0	
322	N322	-6.29168	3.999917	4.641039	0	
323	N323	6.291685	3.999917	4.641047	0	
324	N324	5.812518	3.999917	4.641047	0	
325	N325	5.812518	3.999917	4.891047	0	
326	N326	1.645851	3.999917	4.641047	0	
327	N327	1.645851	3.999917	4.891047	0	
328	N328	-2.104149	3.999917	4.641047	0	
329	N329	-2.104149	3.999917	4.891047	0	
330	N330	-5.937482	3.999917	4.641047	0	
331	N331	-5.937482	3.999917	4.891047	0	
332	N332	5.520851	3.999917	4.641047	0	
333	N333	-5.520847	3.999917	4.641039	0	
334	N339	1.113006	0.33325	-7.354312	0	
335	N340	1.329512	0.33325	-7.479312	0	
336	N341	1.329512	6.166583	-7.479312	0	
337	N342	1.329512	-1.833417	-7.479312	0	
338	N343	3.196339	0.33325	-3.745873	0	
339	N344	3.412846	0.33325	-3.870873	0	
340	N345	3.412846	6.166583	-3.870873	0	
341	N346	3.412846	-1.833417	-3.870873	0	
342	N347	5.071339	0.33325	-0.498278	0	
343	N348	5.287846	0.33325	-0.623278	0	
344	N349	5.287846	6.166583	-0.623278	0	
345	N350	5.287846	-1.833417	-0.623278	0	
346	N351	6.988006	0.33325	2.821486	0	
347	N352	7.204512	0.33325	2.696486	0	
348	N353	7.204512	6.166583	2.696486	0	
349	N354	7.204512	-1.833417	2.696486	0	
350	N357	1.113006	3.999917	-7.354312	0	
351	N358	1.329512	3.999917	-7.479312	0	
352	N359	3.196339	3.999917	-3.745873	0	
353	N360	3.412846	3.999917	-3.870873	0	



Joint Coordinates and Temperatures (Continued)

	Label	X (ft)	Y (ft)	Z (ft)	Temp (F)	Detach From Diap...
354	N361	5.071339	3.999917	-0.498278	0	
355	N362	5.287846	3.999917	-0.623278	0	
356	N363	6.988006	3.999917	2.821486	0	
357	N364	7.204512	3.999917	2.696486	0	
358	N365	1.258839	3.999917	-7.101721	0	
359	N366	6.779681	3.999917	2.460674	0	
360	N372	-6.925524	0.33325	2.713265	0	
361	N373	-7.14203	0.33325	2.588265	0	
362	N374	-7.14203	6.166583	2.588265	0	
363	N375	-7.14203	-1.833417	2.588265	0	
364	N376	-4.842191	0.33325	-0.895175	0	
365	N377	-5.058697	0.33325	-1.020175	0	
366	N378	-5.058697	6.166583	-1.020175	0	
367	N379	-5.058697	-1.833417	-1.020175	0	
368	N380	-2.967191	0.33325	-4.14277	0	
369	N381	-3.183697	0.33325	-4.26777	0	
370	N382	-3.183697	6.166583	-4.26777	0	
371	N383	-3.183697	-1.833417	-4.26777	0	
372	N384	-1.050524	0.33325	-7.462534	0	
373	N385	-1.26703	0.33325	-7.587534	0	
374	N386	-1.26703	6.166583	-7.587534	0	
375	N387	-1.26703	-1.833417	-7.587534	0	
376	N390	-6.925524	3.999917	2.713265	0	
377	N391	-7.14203	3.999917	2.588265	0	
378	N392	-4.842191	3.999917	-0.895175	0	
379	N393	-5.058697	3.999917	-1.020175	0	
380	N394	-2.967191	3.999917	-4.14277	0	
381	N395	-3.183697	3.999917	-4.26777	0	
382	N396	-1.050524	3.999917	-7.462534	0	
383	N397	-1.26703	3.999917	-7.587534	0	
384	N398	-6.779691	3.999917	2.460674	0	
385	N399	-1.258834	3.999917	-7.101713	0	
386	N390A	5.520851	3.999917	4.391047	0	
387	N391A	-5.520847	3.999917	4.391039	0	
388	N394A	1.042333	3.999917	-6.976721	0	
389	N395A	6.563175	3.999917	2.585674	0	
390	N398A	-6.563184	3.999917	2.585674	0	
391	N399A	-1.042328	3.999917	-6.976713	0	
392	N392A	7.165098	3.999917	3.128235	0	
393	N393A	0.873423	3.999917	-7.769283	0	
394	N394B	-0.873418	3.999917	-7.769275	0	
395	N395B	-7.165107	3.999917	3.128235	0	
396	N396A	-6.29168	2.166583	4.641039	0	
397	N397A	6.291685	2.166583	4.641047	0	
398	N398B	5.812518	2.166583	4.641047	0	
399	N399B	5.812518	2.166583	4.891047	0	
400	N400	1.645851	2.166583	4.641047	0	
401	N401	1.645851	2.166583	4.891047	0	
402	N402	-2.104149	2.166583	4.641047	0	
403	N403	-2.104149	2.166583	4.891047	0	
404	N404	-5.937482	2.166583	4.641047	0	
405	N405	-5.937482	2.166583	4.891047	0	
406	N406	7.165098	2.166583	3.128235	0	
407	N407	0.873423	2.166583	-7.769283	0	
408	N408	1.113006	2.166583	-7.354312	0	
409	N409	1.329512	2.166583	-7.479312	0	
410	N410	3.196339	2.166583	-3.745873	0	
411	N411	3.412846	2.166583	-3.870873	0	
412	N412	5.071339	2.166583	-0.498278	0	



Joint Coordinates and Temperatures (Continued)

	Label	X (ft)	Y (ft)	Z (ft)	Temp (F)	Detach From Diap...
413	N413	5.287846	2.166583	-0.623278	0	
414	N414	6.988006	2.166583	2.821486	0	
415	N415	7.204512	2.166583	2.696486	0	
416	N416	-0.873418	2.166583	-7.769275	0	
417	N417	-7.165107	2.166583	3.128235	0	
418	N418	-6.925524	2.166583	2.713265	0	
419	N419	-7.14203	2.166583	2.588265	0	
420	N420	-4.842191	2.166583	-0.895175	0	
421	N421	-5.058697	2.166583	-1.020175	0	
422	N422	-2.967191	2.166583	-4.14277	0	
423	N423	-3.183697	2.166583	-4.26777	0	
424	N424	-1.050524	2.166583	-7.462534	0	
425	N425	-1.26703	2.166583	-7.587534	0	
426	N426	-6.29168	1.916583	4.641039	0	
427	N427	6.291685	1.916583	4.641047	0	
428	N428	5.812518	1.916583	4.641047	0	
429	N429	5.812518	1.916583	4.891047	0	
430	N430	1.645851	1.916583	4.641047	0	
431	N431	1.645851	1.916583	4.891047	0	
432	N432	-2.104149	1.916583	4.641047	0	
433	N433	-2.104149	1.916583	4.891047	0	
434	N434	-5.937482	1.916583	4.641047	0	
435	N435	-5.937482	1.916583	4.891047	0	
436	N436	7.165098	1.916583	3.128235	0	
437	N437	0.873423	1.916583	-7.769283	0	
438	N438	1.113006	1.916583	-7.354312	0	
439	N439	1.329512	1.916583	-7.479312	0	
440	N440	3.196339	1.916583	-3.745873	0	
441	N441	3.412846	1.916583	-3.870873	0	
442	N442	5.071339	1.916583	-0.498278	0	
443	N443	5.287846	1.916583	-0.623278	0	
444	N444	6.988006	1.916583	2.821486	0	
445	N445	7.204512	1.916583	2.696486	0	
446	N446	-0.873418	1.916583	-7.769275	0	
447	N447	-7.165107	1.916583	3.128235	0	
448	N448	-6.925524	1.916583	2.713265	0	
449	N449	-7.14203	1.916583	2.588265	0	
450	N450	-4.842191	1.916583	-0.895175	0	
451	N451	-5.058697	1.916583	-1.020175	0	
452	N452A	-2.967191	1.916583	-4.14277	0	
453	N453	-3.183697	1.916583	-4.26777	0	
454	N454	-1.050524	1.916583	-7.462534	0	
455	N455	-1.26703	1.916583	-7.587534	0	
456	N458	2.145851	2.166583	4.641047	0	
457	N459	2.145851	1.916583	4.641047	0	
458	N460	-0.229149	2.166583	4.641047	0	
459	N461	-0.229149	1.916583	4.641047	0	
460	N462	-2.604149	2.166583	4.641047	0	
461	N463	-2.604149	1.916583	4.641047	0	
462	N465	4.133839	2.166583	-2.122075	0	
463	N466	4.133839	1.916583	-2.122075	0	
464	N467	5.321339	2.166583	-0.065265	0	
465	N468	5.321339	1.916583	-0.065265	0	
466	N470	-3.904691	2.166583	-2.518972	0	
467	N471	-3.904691	1.916583	-2.518972	0	
468	N472	-2.717191	2.166583	-4.575783	0	
469	N473	-2.717191	1.916583	-4.575783	0	



Hot Rolled Steel Section Sets

	Label	Shape	Type	Design L...	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Face Horizontal	PIPE 2.5	None	None	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
2	Mount Pipe	PIPE 2.5	None	None	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
3	Standoff Horizontal	HSS4X3X4	None	None	A53 Gr.B	Typical	2.91	3.91	6.15	7.96
4	Grating Support	L3X3X6	None	None	A53 Gr.B	Typical	2.11	1.75	1.75	.101
5	Secondary Standoff	PL1/2X4	None	None	A572 Gr.50	Typical	2	.042	2.667	.154
6	Lower Standoff	PL3/8x4	None	None	A572 Gr.50	Typical	1.5	.018	2	.066
7	Bracing	PL3/8X1	None	None	A572 Gr.50	Typical	.375	.004	.031	.013
8	Grating Bracing	PL3/8x2.375	None	None	A36 Gr.36	Typical	.891	.01	.419	.038
9	Grating Pipe	PIPE 1.25	None	None	A53 Gr.B	Typical	.625	.184	.184	.368
10	Support Rail	PIPE 2.0	None	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
11	Top Corner Bracing	WT2X6.5	None	None	A36 Gr.36	Typical	1.91	1.93	.526	.075
12	TES Corner bracing	L2x2x2	None	None	A36 Gr.36	Typical	.491	.189	.189	.003

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rul...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	RRH Moun...	P1000	Beam	CU	A653 SS G..	Typical	.472	.129	.21	.002

Hot Rolled Steel Properties

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

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E5 F)	Density[k/ft^3]	Yield[ksi]	Fu[ksi]
1	A653 SS Gr33	29500	11346	.3	.65	.49	33	45
2	A653 SS Gr50/1	29500	11346	.3	.65	.49	50	65

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(de...	Section/Shape	Type	Design List	Material	Design Rules
1	M378	N395A	N390A		270	Top Corner B...	None	None	A36 Gr.36	Typical
2	M379	N399A	N394A		270	Top Corner B...	None	None	A36 Gr.36	Typical
3	M380	N391A	N398A		270	Top Corner B...	None	None	A36 Gr.36	Typical
4	M339A	N323	N322			Support Rail	None	None	A53 Gr.B	Typical
5	M379A	N393A	N392A			Support Rail	None	None	A53 Gr.B	Typical
6	M380A	N395B	N394B			Support Rail	None	None	A53 Gr.B	Typical
7	M54	N74A	N75A		90	Standoff Hori...	None	None	A53 Gr.B	Typical
8	M77	N60A	N61		90	Standoff Hori...	None	None	A53 Gr.B	Typical
9	M126	N117	N118		90	Standoff Hori...	None	None	A53 Gr.B	Typical
10	M283	N270	N268		90	Secondary St...	None	None	A572 Gr.50	Typical
11	M284	N268	N267		90	Secondary St...	None	None	A572 Gr.50	Typical
12	M285	N267	N261A		90	Secondary St...	None	None	A572 Gr.50	Typical
13	M330	N264	N271		90	Secondary St...	None	None	A572 Gr.50	Typical
14	M332A	N271	N270		90	Secondary St...	None	None	A572 Gr.50	Typical
15	M216	N222	N220		90	Secondary St...	None	None	A572 Gr.50	Typical
16	M217	N220	N219		90	Secondary St...	None	None	A572 Gr.50	Typical
17	M218	N219	N213		90	Secondary St...	None	None	A572 Gr.50	Typical



Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(de..	Section/Shape	Type	Design List	Material	Design Rules
18	M262	N216	N223		90	Secondary St..	None	None	A572 Gr.50	Typical
19	M265A	N223	N222		90	Secondary St..	None	None	A572 Gr.50	Typical
20	M287A	N270A	N268A		90	Secondary St..	None	None	A572 Gr.50	Typical
21	M288A	N268A	N267A		90	Secondary St..	None	None	A572 Gr.50	Typical
22	M289A	N267A	N261		90	Secondary St..	None	None	A572 Gr.50	Typical
23	M326A	N261	N298		90	Secondary St..	None	None	A572 Gr.50	Typical
24	M333A	N264A	N271A		90	Secondary St..	None	None	A572 Gr.50	Typical
25	M336	N271A	N270A		90	Secondary St..	None	None	A572 Gr.50	Typical
26	M305B	N261A	N287B		90	Secondary St..	None	None	A572 Gr.50	Typical
27	M316A	N213	N296B		90	Secondary St..	None	None	A572 Gr.50	Typical
28	M381	N397A	N396A			RRH Mount R.	Beam	CU	A653 SS Gr33	Typical
29	M386	N407	N406			RRH Mount R.	Beam	CU	A653 SS Gr33	Typical
30	M391	N417	N416			RRH Mount R.	Beam	CU	A653 SS Gr33	Typical
31	R3	N77	N35			RIGID	None	None	RIGID	Typical
32	R4	N27	N38			RIGID	None	None	RIGID	Typical
33	R5	N28	N39			RIGID	None	None	RIGID	Typical
34	R6	N79	N41			RIGID	None	None	RIGID	Typical
35	R7	N29	N41A			RIGID	None	None	RIGID	Typical
36	R8	N31	N42			RIGID	None	None	RIGID	Typical
37	R9	N47	N50			RIGID	None	None	RIGID	Typical
38	R10	N49	N52A			RIGID	None	None	RIGID	Typical
39	M57	N77	N69			RIGID	None	None	RIGID	Typical
40	M58	N27	N70			RIGID	None	None	RIGID	Typical
41	M59	N28	N71			RIGID	None	None	RIGID	Typical
42	M63	N64	N72			RIGID	None	None	RIGID	Typical
43	M64	N67	N73			RIGID	None	None	RIGID	Typical
44	M65	N68	N74			RIGID	None	None	RIGID	Typical
45	M67	N47	N78			RIGID	None	None	RIGID	Typical
46	M70	N49	N80			RIGID	None	None	RIGID	Typical
47	M50	N63	N69A			RIGID	None	None	RIGID	Typical
48	M51	N65	N70A			RIGID	None	None	RIGID	Typical
49	M52	N66	N71A			RIGID	None	None	RIGID	Typical
50	M53	N64A	N72A			RIGID	None	None	RIGID	Typical
51	M54A	N67A	N73B			RIGID	None	None	RIGID	Typical
52	M55	N68A	N74B			RIGID	None	None	RIGID	Typical
53	M56	N75	N77A			RIGID	None	None	RIGID	Typical
54	M57A	N76A	N79B			RIGID	None	None	RIGID	Typical
55	M59A	N63	N83			RIGID	None	None	RIGID	Typical
56	M60A	N65	N84			RIGID	None	None	RIGID	Typical
57	M61A	N66	N85			RIGID	None	None	RIGID	Typical
58	M62A	N80A	N86			RIGID	None	None	RIGID	Typical
59	M63A	N81	N87			RIGID	None	None	RIGID	Typical
60	M64A	N82	N88			RIGID	None	None	RIGID	Typical
61	M65A	N75	N89			RIGID	None	None	RIGID	Typical
62	M66A	N76A	N91			RIGID	None	None	RIGID	Typical
63	M94	N111	N109			RIGID	None	None	RIGID	Typical
64	M95	N109	N112			RIGID	None	None	RIGID	Typical
65	M96	N113	N110			RIGID	None	None	RIGID	Typical
66	M97	N110	N114			RIGID	None	None	RIGID	Typical
67	M99	N120	N126			RIGID	None	None	RIGID	Typical
68	M100	N122	N127			RIGID	None	None	RIGID	Typical
69	M101	N123	N128			RIGID	None	None	RIGID	Typical
70	M102	N121	N129			RIGID	None	None	RIGID	Typical
71	M103	N124	N130			RIGID	None	None	RIGID	Typical
72	M104	N125	N131			RIGID	None	None	RIGID	Typical
73	M105	N132	N134			RIGID	None	None	RIGID	Typical
74	M106	N133	N136			RIGID	None	None	RIGID	Typical
75	M108	N120	N140			RIGID	None	None	RIGID	Typical
76	M109	N122	N141			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(de..	Section/Shape	Type	Design List	Material	Design Rules
77	M110	N123	N142			RIGID	None	None	RIGID	Typical
78	M111	N137	N143			RIGID	None	None	RIGID	Typical
79	M112	N138	N144			RIGID	None	None	RIGID	Typical
80	M113	N139	N145			RIGID	None	None	RIGID	Typical
81	M114	N132	N146			RIGID	None	None	RIGID	Typical
82	M115	N133	N148			RIGID	None	None	RIGID	Typical
83	M116	N162	N149			RIGID	None	None	RIGID	Typical
84	M117	N149	N163			RIGID	None	None	RIGID	Typical
85	M118	N164	N152			RIGID	None	None	RIGID	Typical
86	M119	N152	N165			RIGID	None	None	RIGID	Typical
87	M127A	N154A	N152A			RIGID	None	None	RIGID	Typical
88	M128A	N152A	N155A			RIGID	None	None	RIGID	Typical
89	M129A	N156A	N153A			RIGID	None	None	RIGID	Typical
90	M130A	N153A	N157A			RIGID	None	None	RIGID	Typical
91	M131A	N160A	N158A			RIGID	None	None	RIGID	Typical
92	M132A	N158A	N161A			RIGID	None	None	RIGID	Typical
93	M133A	N162A	N159A			RIGID	None	None	RIGID	Typical
94	M134A	N159A	N163A			RIGID	None	None	RIGID	Typical
95	M136A	N168	N166			RIGID	None	None	RIGID	Typical
96	M137A	N166	N169			RIGID	None	None	RIGID	Typical
97	M138A	N170	N167			RIGID	None	None	RIGID	Typical
98	M139A	N167	N171			RIGID	None	None	RIGID	Typical
99	M140A	N174	N172A			RIGID	None	None	RIGID	Typical
100	M141A	N172A	N175			RIGID	None	None	RIGID	Typical
101	M142	N52C	N173A			RIGID	None	None	RIGID	Typical
102	M143	N173A	N177			RIGID	None	None	RIGID	Typical
103	M265	N266	N261A			RIGID	None	None	RIGID	Typical
104	M266	N273	N267			RIGID	None	None	RIGID	Typical
105	M267	N274	N268			RIGID	None	None	RIGID	Typical
106	M268	N275	N269			RIGID	None	None	RIGID	Typical
107	M269	N276	N270			RIGID	None	None	RIGID	Typical
108	M270	N277	N263			RIGID	None	None	RIGID	Typical
109	M271	N278	N271			RIGID	None	None	RIGID	Typical
110	M272	N279	N272			RIGID	None	None	RIGID	Typical
111	M273	N295A	N264			RIGID	None	None	RIGID	Typical
112	M274	N297A	N296A			RIGID	None	None	RIGID	Typical
113	M275	N288	N294			RIGID	None	None	RIGID	Typical
114	M276	N287	N293			RIGID	None	None	RIGID	Typical
115	M277	N286	N292			RIGID	None	None	RIGID	Typical
116	M278	N285	N291			RIGID	None	None	RIGID	Typical
117	M279	N283	N290			RIGID	None	None	RIGID	Typical
118	M280	N284	N281			RIGID	None	None	RIGID	Typical
119	M281	N282	N289			RIGID	None	None	RIGID	Typical
120	M282	N265	N280			RIGID	None	None	RIGID	Typical
121	M296	N296A	N295A			RIGID	None	None	RIGID	Typical
122	M311A	N306	N307			RIGID	None	None	RIGID	Typical
123	M312A	N262	N76A			RIGID	None	None	RIGID	Typical
124	M198	N218	N213			RIGID	None	None	RIGID	Typical
125	M199	N225	N219			RIGID	None	None	RIGID	Typical
126	M200	N226	N220			RIGID	None	None	RIGID	Typical
127	M201	N227	N221			RIGID	None	None	RIGID	Typical
128	M202	N228	N222			RIGID	None	None	RIGID	Typical
129	M203	N229	N215			RIGID	None	None	RIGID	Typical
130	M204	N230	N223			RIGID	None	None	RIGID	Typical
131	M205	N231	N224			RIGID	None	None	RIGID	Typical
132	M206	N247	N216			RIGID	None	None	RIGID	Typical
133	M207	N249	N248			RIGID	None	None	RIGID	Typical
134	M208	N240	N246			RIGID	None	None	RIGID	Typical
135	M209	N239	N245			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(de...)	Section/Shape	Type	Design List	Material	Design Rules
136	M210	N238	N244			RIGID	None	None	RIGID	Typical
137	M211	N237	N243			RIGID	None	None	RIGID	Typical
138	M212	N235	N242			RIGID	None	None	RIGID	Typical
139	M213	N236	N233			RIGID	None	None	RIGID	Typical
140	M214	N234	N241			RIGID	None	None	RIGID	Typical
141	M215	N217	N232			RIGID	None	None	RIGID	Typical
142	M229	N248	N247			RIGID	None	None	RIGID	Typical
143	M243	N258	N212			RIGID	None	None	RIGID	Typical
144	M244	N214	N49			RIGID	None	None	RIGID	Typical
145	M269A	N266A	N261			RIGID	None	None	RIGID	Typical
146	M270A	N273A	N267A			RIGID	None	None	RIGID	Typical
147	M271A	N274A	N268A			RIGID	None	None	RIGID	Typical
148	M272A	N275A	N269A			RIGID	None	None	RIGID	Typical
149	M273A	N276A	N270A			RIGID	None	None	RIGID	Typical
150	M274A	N277A	N263A			RIGID	None	None	RIGID	Typical
151	M275A	N278A	N271A			RIGID	None	None	RIGID	Typical
152	M276A	N279A	N272A			RIGID	None	None	RIGID	Typical
153	M277A	N295	N264A			RIGID	None	None	RIGID	Typical
154	M278A	N297	N296			RIGID	None	None	RIGID	Typical
155	M279A	N288A	N294A			RIGID	None	None	RIGID	Typical
156	M280A	N287A	N293A			RIGID	None	None	RIGID	Typical
157	M281A	N286A	N292A			RIGID	None	None	RIGID	Typical
158	M282A	N285A	N291A			RIGID	None	None	RIGID	Typical
159	M283A	N283A	N290A			RIGID	None	None	RIGID	Typical
160	M284A	N284A	N281A			RIGID	None	None	RIGID	Typical
161	M285A	N282A	N289A			RIGID	None	None	RIGID	Typical
162	M286A	N265A	N280A			RIGID	None	None	RIGID	Typical
163	M300A	N296	N295			RIGID	None	None	RIGID	Typical
164	M314	N306A	N260			RIGID	None	None	RIGID	Typical
165	M315	N262A	N133			RIGID	None	None	RIGID	Typical
166	M328A	N300A	N298		90	RIGID	None	None	RIGID	Typical
167	M331A	N299	N301		90	RIGID	None	None	RIGID	Typical
168	M367	N264A	N346A			RIGID	None	None	RIGID	Typical
169	M368	N216	N345A			RIGID	None	None	RIGID	Typical
170	M369	N264	N344A			RIGID	None	None	RIGID	Typical
171	M297B	N266	N261A			RIGID	None	None	RIGID	Typical
172	M298B	N265	N280			RIGID	None	None	RIGID	Typical
173	M306B	N289B	N287B		90	RIGID	None	None	RIGID	Typical
174	M307B	N288B	N290B		90	RIGID	None	None	RIGID	Typical
175	M308B	N218	N213			RIGID	None	None	RIGID	Typical
176	M309A	N217	N232			RIGID	None	None	RIGID	Typical
177	M317	N298A	N296B		90	RIGID	None	None	RIGID	Typical
178	M318A	N297B	N299A		90	RIGID	None	None	RIGID	Typical
179	M322A	N298C	N297D			RIGID	None	None	RIGID	Typical
180	M323	N300	N299C			RIGID	None	None	RIGID	Typical
181	M325	N302	N301A			RIGID	None	None	RIGID	Typical
182	M326	N304	N303			RIGID	None	None	RIGID	Typical
183	M328	N306B	N305			RIGID	None	None	RIGID	Typical
184	M329A	N308	N307A			RIGID	None	None	RIGID	Typical
185	M331B	N306C	N307E			RIGID	None	None	RIGID	Typical
186	M333B	N310	N311			RIGID	None	None	RIGID	Typical
187	M335C	N314	N315			RIGID	None	None	RIGID	Typical
188	M337A	N318	N319			RIGID	None	None	RIGID	Typical
189	M340A	N324	N325			RIGID	None	None	RIGID	Typical
190	M341A	N326	N327			RIGID	None	None	RIGID	Typical
191	M342A	N328	N329			RIGID	None	None	RIGID	Typical
192	M343A	N330	N331			RIGID	None	None	RIGID	Typical
193	M345A	N339	N340			RIGID	None	None	RIGID	Typical
194	M347	N343	N344			RIGID	None	None	RIGID	Typical



Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(de..	Section/Shape	Type	Design List	Material	Design Rules
195	M349	N347	N348			RIGID	None	None	RIGID	Typical
196	M351	N351	N352			RIGID	None	None	RIGID	Typical
197	M354	N357	N358			RIGID	None	None	RIGID	Typical
198	M355	N359	N360			RIGID	None	None	RIGID	Typical
199	M356	N361	N362			RIGID	None	None	RIGID	Typical
200	M357	N363	N364			RIGID	None	None	RIGID	Typical
201	M359	N372	N373			RIGID	None	None	RIGID	Typical
202	M361	N376	N377			RIGID	None	None	RIGID	Typical
203	M363	N380	N381			RIGID	None	None	RIGID	Typical
204	M365	N384	N385			RIGID	None	None	RIGID	Typical
205	M368A	N390	N391			RIGID	None	None	RIGID	Typical
206	M369A	N392	N393			RIGID	None	None	RIGID	Typical
207	M370	N394	N395			RIGID	None	None	RIGID	Typical
208	M371	N396	N397			RIGID	None	None	RIGID	Typical
209	M372	N390A	N332			RIGID	None	None	RIGID	Typical
210	M373	N391A	N333			RIGID	None	None	RIGID	Typical
211	M374	N394A	N365			RIGID	None	None	RIGID	Typical
212	M375	N395A	N366			RIGID	None	None	RIGID	Typical
213	M376	N398A	N398			RIGID	None	None	RIGID	Typical
214	M377	N399A	N399			RIGID	None	None	RIGID	Typical
215	M382	N398B	N399B			RIGID	None	None	RIGID	Typical
216	M383	N400	N401			RIGID	None	None	RIGID	Typical
217	M384	N402	N403			RIGID	None	None	RIGID	Typical
218	M385	N404	N405			RIGID	None	None	RIGID	Typical
219	M387	N408	N409			RIGID	None	None	RIGID	Typical
220	M388	N410	N411			RIGID	None	None	RIGID	Typical
221	M389	N412	N413			RIGID	None	None	RIGID	Typical
222	M390	N414	N415			RIGID	None	None	RIGID	Typical
223	M392	N418	N419			RIGID	None	None	RIGID	Typical
224	M393	N420	N421			RIGID	None	None	RIGID	Typical
225	M394	N422	N423			RIGID	None	None	RIGID	Typical
226	M395	N424	N425			RIGID	None	None	RIGID	Typical
227	MP1A	N308D	N309			Mount Pipe	None	None	A53 Gr.B	Typical
228	MP2A	N312	N313A			Mount Pipe	None	None	A53 Gr.B	Typical
229	MP3A	N316	N317			Mount Pipe	None	None	A53 Gr.B	Typical
230	MP4A	N320	N321			Mount Pipe	None	None	A53 Gr.B	Typical
231	MP1C	N341	N342			Mount Pipe	None	None	A53 Gr.B	Typical
232	MP2C	N345	N346			Mount Pipe	None	None	A53 Gr.B	Typical
233	MP3C	N349	N350			Mount Pipe	None	None	A53 Gr.B	Typical
234	MP4C	N353	N354			Mount Pipe	None	None	A53 Gr.B	Typical
235	MP1B	N374	N375			Mount Pipe	None	None	A53 Gr.B	Typical
236	MP2B	N378	N379			Mount Pipe	None	None	A53 Gr.B	Typical
237	MP3B	N382	N383			Mount Pipe	None	None	A53 Gr.B	Typical
238	MP4B	N386	N387			Mount Pipe	None	None	A53 Gr.B	Typical
239	M286	N285	N284		90	Lower Standoff	None	None	A572 Gr.50	Typical
240	M287	N284	N282		90	Lower Standoff	None	None	A572 Gr.50	Typical
241	M288	N282	N265		90	Lower Standoff	None	None	A572 Gr.50	Typical
242	M329	N297A	N287		90	Lower Standoff	None	None	A572 Gr.50	Typical
243	M335	N287	N285		90	Lower Standoff	None	None	A572 Gr.50	Typical
244	M219	N237	N236		90	Lower Standoff	None	None	A572 Gr.50	Typical
245	M220	N236	N234		90	Lower Standoff	None	None	A572 Gr.50	Typical
246	M221	N234	N217		90	Lower Standoff	None	None	A572 Gr.50	Typical
247	M261	N249	N239		90	Lower Standoff	None	None	A572 Gr.50	Typical
248	M268A	N239	N237		90	Lower Standoff	None	None	A572 Gr.50	Typical
249	M290A	N285A	N284A		90	Lower Standoff	None	None	A572 Gr.50	Typical
250	M291A	N284A	N282A		90	Lower Standoff	None	None	A572 Gr.50	Typical
251	M292A	N282A	N265A		90	Lower Standoff	None	None	A572 Gr.50	Typical
252	M316	N265A	N299		90	Lower Standoff	None	None	A572 Gr.50	Typical
253	M332B	N297	N287A		90	Lower Standoff	None	None	A572 Gr.50	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(de..	Section/Shape	Type	Design List	Material	Design Rules
254	M339	N287A	N285A		90	Lower Standoff	None	None	A572 Gr.50	Typical
255	M300B	N265	N288B		90	Lower Standoff	None	None	A572 Gr.50	Typical
256	M311B	N217	N297B		90	Lower Standoff	None	None	A572 Gr.50	Typical
257	M45A	N50	N52		180	Grating Supp...	None	None	A53 Gr.B	Typical
258	M68	N78	N79A		90	Grating Supp...	None	None	A53 Gr.B	Typical
259	M74B	N80	N60		180	Grating Supp...	None	None	A53 Gr.B	Typical
260	M75B	N52A	N62		90	Grating Supp...	None	None	A53 Gr.B	Typical
261	M66	N79A	N60		180	Grating Supp...	None	None	A53 Gr.B	Typical
262	M74C	N52	N62		90	Grating Supp...	None	None	A53 Gr.B	Typical
263	M73	N77A	N78A		180	Grating Supp...	None	None	A53 Gr.B	Typical
264	M74	N89	N90		90	Grating Supp...	None	None	A53 Gr.B	Typical
265	M75	N91	N93		180	Grating Supp...	None	None	A53 Gr.B	Typical
266	M76	N79B	N94		90	Grating Supp...	None	None	A53 Gr.B	Typical
267	M78	N90	N93		180	Grating Supp...	None	None	A53 Gr.B	Typical
268	M79	N78A	N94		90	Grating Supp...	None	None	A53 Gr.B	Typical
269	M122	N134	N135		180	Grating Supp...	None	None	A53 Gr.B	Typical
270	M123	N146	N147		90	Grating Supp...	None	None	A53 Gr.B	Typical
271	M124	N148	N150		180	Grating Supp...	None	None	A53 Gr.B	Typical
272	M125	N136	N151		90	Grating Supp...	None	None	A53 Gr.B	Typical
273	M127	N147	N150		180	Grating Supp...	None	None	A53 Gr.B	Typical
274	M128	N135	N151		90	Grating Supp...	None	None	A53 Gr.B	Typical
275	M319	N291B	N292B			Grating Pipe	None	None	A53 Gr.B	Typical
276	M320A	N294B	N295B			Grating Pipe	None	None	A53 Gr.B	Typical
277	M321	N297C	N298B			Grating Pipe	None	None	A53 Gr.B	Typical
278	M324	N297D	N299C			Grating Pipe	None	None	A53 Gr.B	Typical
279	M327	N301A	N303			Grating Pipe	None	None	A53 Gr.B	Typical
280	M330A	N305	N307A			Grating Pipe	None	None	A53 Gr.B	Typical
281	M31	N38	N29			Grating Bracing	None	None	A36 Gr.36	Typical
282	M33	N39	N31			Grating Bracing	None	None	A36 Gr.36	Typical
283	M34A	N35	N79			Grating Bracing	None	None	A36 Gr.36	Typical
284	M60	N70	N67			Grating Bracing	None	None	A36 Gr.36	Typical
285	M61	N71	N68			Grating Bracing	None	None	A36 Gr.36	Typical
286	M62	N69	N64			Grating Bracing	None	None	A36 Gr.36	Typical
287	M80	N70A	N67A			Grating Bracing	None	None	A36 Gr.36	Typical
288	M81	N71A	N68A			Grating Bracing	None	None	A36 Gr.36	Typical
289	M82	N69A	N64A			Grating Bracing	None	None	A36 Gr.36	Typical
290	M83	N84	N81			Grating Bracing	None	None	A36 Gr.36	Typical
291	M84	N85	N82			Grating Bracing	None	None	A36 Gr.36	Typical
292	M85	N83	N80A			Grating Bracing	None	None	A36 Gr.36	Typical
293	M129	N127	N124			Grating Bracing	None	None	A36 Gr.36	Typical
294	M130	N128	N125			Grating Bracing	None	None	A36 Gr.36	Typical
295	M131	N126	N121			Grating Bracing	None	None	A36 Gr.36	Typical
296	M132	N141	N138			Grating Bracing	None	None	A36 Gr.36	Typical
297	M133	N142	N139			Grating Bracing	None	None	A36 Gr.36	Typical
298	M134	N140	N137			Grating Bracing	None	None	A36 Gr.36	Typical
299	M177	N196A	N195			Face Horizont...	None	None	A53 Gr.B	Typical
300	M344A	N300B	N299B			Face Horizont...	None	None	A53 Gr.B	Typical
301	M358	N303B	N302B			Face Horizont...	None	None	A53 Gr.B	Typical
302	M289	N276	N274			Bracing	None	None	A572 Gr.50	Typical
303	M290	N274	N273			Bracing	None	None	A572 Gr.50	Typical
304	M291	N273	N266			Bracing	None	None	A572 Gr.50	Typical
305	M292	N291	N281			Bracing	None	None	A572 Gr.50	Typical
306	M293	N281	N289			Bracing	None	None	A572 Gr.50	Typical
307	M294	N289	N280			Bracing	None	None	A572 Gr.50	Typical
308	M295	N280	N266			Bracing	None	None	A572 Gr.50	Typical
309	M297	N266	N289			Bracing	None	None	A572 Gr.50	Typical
310	M298	N289	N273			Bracing	None	None	A572 Gr.50	Typical
311	M299	N273	N281			Bracing	None	None	A572 Gr.50	Typical
312	M300	N281	N274		120	Bracing	None	None	A572 Gr.50	Typical



Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(de...)	Section/Shape	Type	Design List	Material	Design Rules
372	M322	N280A	N300A			Bracing	None	None	A572 Gr.50	Typical
373	M323A	N301	N300A		180	Bracing	None	None	A572 Gr.50	Typical
374	M334A	N295	N278A			Bracing	None	None	A572 Gr.50	Typical
375	M335A	N296	N293A			Bracing	None	None	A572 Gr.50	Typical
376	M337	N278A	N276A			Bracing	None	None	A572 Gr.50	Typical
377	M338	N293A	N291A			Bracing	None	None	A572 Gr.50	Typical
378	M340	N230	N246			Bracing	None	None	A572 Gr.50	Typical
379	M341	N231	N259			Bracing	None	None	A572 Gr.50	Typical
380	M342	N278	N294			Bracing	None	None	A572 Gr.50	Typical
381	M343	N279	N307B			Bracing	None	None	A572 Gr.50	Typical
382	M344	N278A	N294A			Bracing	None	None	A572 Gr.50	Typical
383	M345	N279A	N307C			Bracing	None	None	A572 Gr.50	Typical
384	M299B	N280	N266			Bracing	None	None	A572 Gr.50	Typical
385	M301B	N280	N290B			Bracing	None	None	A572 Gr.50	Typical
386	M302B	N266	N289B			Bracing	None	None	A572 Gr.50	Typical
387	M303B	N280	N289B			Bracing	None	None	A572 Gr.50	Typical
388	M304B	N290B	N289B		180	Bracing	None	None	A572 Gr.50	Typical
389	M310B	N232	N218			Bracing	None	None	A572 Gr.50	Typical
390	M312B	N232	N299A			Bracing	None	None	A572 Gr.50	Typical
391	M313A	N218	N298A			Bracing	None	None	A572 Gr.50	Typical
392	M314A	N232	N298A			Bracing	None	None	A572 Gr.50	Typical
393	M315A	N299A	N298A		180	Bracing	None	None	A572 Gr.50	Typical
394	M394A	N427	N426			RRH Mount R...	Beam	CU	A653 SS Gr33	Typical
395	M395A	N437	N436			RRH Mount R...	Beam	CU	A653 SS Gr33	Typical
396	M396	N447	N446			RRH Mount R...	Beam	CU	A653 SS Gr33	Typical
397	M397	N428	N429			RIGID	None	None	RIGID	Typical
398	M398	N430	N431			RIGID	None	None	RIGID	Typical
399	M399	N432	N433			RIGID	None	None	RIGID	Typical
400	M400	N434	N435			RIGID	None	None	RIGID	Typical
401	M401	N438	N439			RIGID	None	None	RIGID	Typical
402	M402	N440	N441			RIGID	None	None	RIGID	Typical
403	M403	N442	N443			RIGID	None	None	RIGID	Typical
404	M404	N444	N445			RIGID	None	None	RIGID	Typical
405	M405	N448	N449			RIGID	None	None	RIGID	Typical
406	M406	N450	N451			RIGID	None	None	RIGID	Typical
407	M407	N452A	N453			RIGID	None	None	RIGID	Typical
408	M408	N454	N455			RIGID	None	None	RIGID	Typical
409	M410	N458	N459			RIGID	None	None	RIGID	Typical
410	M411	N460	N461			RIGID	None	None	RIGID	Typical
411	M412	N462	N463			RIGID	None	None	RIGID	Typical
412	M413	N465	N466			RIGID	None	None	RIGID	Typical
413	M414	N467	N468			RIGID	None	None	RIGID	Typical
414	M415	N470	N471			RIGID	None	None	RIGID	Typical
415	M416	N472	N473			RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset(in)	J Offset(in)	T/C Only	Physical	Defl Ratio Options	Analysis ...	Inactive	Seismi...
1	M378						Yes	** NA **			None
2	M379						Yes	** NA **			None
3	M380						Yes	** NA **			None
4	M339A						Yes	** NA **			None
5	M379A						Yes	** NA **			None
6	M380A						Yes	** NA **			None
7	M54						Yes	** NA **			None
8	M77						Yes	** NA **			None
9	M126						Yes	** NA **			None
10	M283						Yes	** NA **			None



Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ratio	Options	Analysis ...	Inactive	Seismi...
11	M284						Yes	** NA **				None
12	M285						Yes	** NA **				None
13	M330						Yes	** NA **				None
14	M332A						Yes	** NA **				None
15	M216						Yes	** NA **				None
16	M217						Yes	** NA **				None
17	M218						Yes	** NA **				None
18	M262						Yes	** NA **				None
19	M265A						Yes	** NA **				None
20	M287A						Yes	** NA **				None
21	M288A						Yes	** NA **				None
22	M289A						Yes	** NA **				None
23	M326A						Yes	** NA **				None
24	M333A						Yes	** NA **				None
25	M336						Yes	** NA **				None
26	M305B						Yes	** NA **				None
27	M316A						Yes	** NA **				None
28	M381						Yes					None
29	M386						Yes					None
30	M391						Yes					None
31	R3						Yes	** NA **				None
32	R4						Yes	** NA **				None
33	R5						Yes	** NA **				None
34	R6						Yes	** NA **				None
35	R7						Yes	** NA **				None
36	R8						Yes	** NA **				None
37	R9						Yes	** NA **				None
38	R10						Yes	** NA **				None
39	M57						Yes	** NA **				None
40	M58						Yes	** NA **				None
41	M59						Yes	** NA **				None
42	M63						Yes	** NA **				None
43	M64						Yes	** NA **				None
44	M65						Yes	** NA **				None
45	M67						Yes	** NA **				None
46	M70						Yes	** NA **				None
47	M50						Yes	** NA **				None
48	M51						Yes	** NA **				None
49	M52						Yes	** NA **				None
50	M53						Yes	** NA **				None
51	M54A						Yes	** NA **				None
52	M55						Yes	** NA **				None
53	M56						Yes	** NA **				None
54	M57A						Yes	** NA **				None
55	M59A						Yes	** NA **				None
56	M60A						Yes	** NA **				None
57	M61A						Yes	** NA **				None
58	M62A						Yes	** NA **				None
59	M63A						Yes	** NA **				None
60	M64A						Yes	** NA **				None
61	M65A						Yes	** NA **				None
62	M66A						Yes	** NA **				None
63	M94		000X00				Yes	** NA **				None
64	M95						Yes	** NA **				None
65	M96		000X00				Yes	** NA **				None
66	M97						Yes	** NA **				None
67	M99						Yes	** NA **				None
68	M100						Yes	** NA **				None
69	M101						Yes	** NA **				None



Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset(in)	J Offset(in)	T/C Only	Physical	Defl Ratio	Options	Analysis...	Inactive	Seismi...
70	M102						Yes	** NA **				None
71	M103						Yes	** NA **				None
72	M104						Yes	** NA **				None
73	M105						Yes	** NA **				None
74	M106						Yes	** NA **				None
75	M108						Yes	** NA **				None
76	M109						Yes	** NA **				None
77	M110						Yes	** NA **				None
78	M111						Yes	** NA **				None
79	M112						Yes	** NA **				None
80	M113						Yes	** NA **				None
81	M114						Yes	** NA **				None
82	M115						Yes	** NA **				None
83	M116		OOOXOO				Yes	** NA **				None
84	M117						Yes	** NA **				None
85	M118		OOOXOO				Yes	** NA **				None
86	M119						Yes	** NA **				None
87	M127A		OOOXOO				Yes	** NA **				None
88	M128A						Yes	** NA **				None
89	M129A		OOOXOO				Yes	** NA **				None
90	M130A						Yes	** NA **				None
91	M131A		OOOXOO				Yes	** NA **				None
92	M132A						Yes	** NA **				None
93	M133A		OOOXOO				Yes	** NA **				None
94	M134A						Yes	** NA **				None
95	M136A		OOOXOO				Yes	** NA **				None
96	M137A						Yes	** NA **				None
97	M138A		OOOXOO				Yes	** NA **				None
98	M139A						Yes	** NA **				None
99	M140A		OOOXOO				Yes	** NA **				None
100	M141A						Yes	** NA **				None
101	M142		OOOXOO				Yes	** NA **				None
102	M143						Yes	** NA **				None
103	M265						Yes	** NA **				None
104	M266						Yes	** NA **				None
105	M267						Yes	** NA **				None
106	M268						Yes	** NA **				None
107	M269						Yes	** NA **				None
108	M270						Yes	** NA **				None
109	M271						Yes	** NA **				None
110	M272						Yes	** NA **				None
111	M273						Yes	** NA **				None
112	M274						Yes	** NA **				None
113	M275						Yes	** NA **				None
114	M276						Yes	** NA **				None
115	M277						Yes	** NA **				None
116	M278						Yes	** NA **				None
117	M279						Yes	** NA **				None
118	M280						Yes	** NA **				None
119	M281						Yes	** NA **				None
120	M282						Yes	** NA **				None
121	M296						Yes	** NA **				None
122	M311A						Yes	** NA **				None
123	M312A						Yes	** NA **				None
124	M198						Yes	** NA **				None
125	M199						Yes	** NA **				None
126	M200						Yes	** NA **				None
127	M201						Yes	** NA **				None
128	M202						Yes	** NA **				None



Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ratio	Options	Analysis	Inactive	Seismi...
129	M203						Yes	** NA **				None
130	M204						Yes	** NA **				None
131	M205						Yes	** NA **				None
132	M206						Yes	** NA **				None
133	M207						Yes	** NA **				None
134	M208						Yes	** NA **				None
135	M209						Yes	** NA **				None
136	M210						Yes	** NA **				None
137	M211						Yes	** NA **				None
138	M212						Yes	** NA **				None
139	M213						Yes	** NA **				None
140	M214						Yes	** NA **				None
141	M215						Yes	** NA **				None
142	M229						Yes	** NA **				None
143	M243						Yes	** NA **				None
144	M244						Yes	** NA **				None
145	M269A						Yes	** NA **				None
146	M270A						Yes	** NA **				None
147	M271A						Yes	** NA **				None
148	M272A						Yes	** NA **				None
149	M273A						Yes	** NA **				None
150	M274A						Yes	** NA **				None
151	M275A						Yes	** NA **				None
152	M276A						Yes	** NA **				None
153	M277A						Yes	** NA **				None
154	M278A						Yes	** NA **				None
155	M279A						Yes	** NA **				None
156	M280A						Yes	** NA **				None
157	M281A						Yes	** NA **				None
158	M282A						Yes	** NA **				None
159	M283A						Yes	** NA **				None
160	M284A						Yes	** NA **				None
161	M285A						Yes	** NA **				None
162	M286A						Yes	** NA **				None
163	M300A						Yes	** NA **				None
164	M314						Yes	** NA **				None
165	M315						Yes	** NA **				None
166	M328A						Yes	** NA **				None
167	M331A						Yes	** NA **				None
168	M367					Compre...	Yes	** NA **				None
169	M368					Compre...	Yes	** NA **				None
170	M369					Compre...	Yes	** NA **				None
171	M297B						Yes	** NA **				None
172	M298B						Yes	** NA **				None
173	M306B						Yes	** NA **				None
174	M307B						Yes	** NA **				None
175	M308B						Yes	** NA **				None
176	M309A						Yes	** NA **				None
177	M317						Yes	** NA **				None
178	M318A						Yes	** NA **				None
179	M322A						Yes	** NA **				None
180	M323						Yes	** NA **				None
181	M325						Yes	** NA **				None
182	M326						Yes	** NA **				None
183	M328						Yes	** NA **				None
184	M329A						Yes	** NA **				None
185	M331B						Yes	** NA **				None
186	M333B						Yes	** NA **				None
187	M335C						Yes	** NA **				None



Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset(in)	J Offset(in)	T/C Only	Physical	Defl Ratio	Options	Analysis ...	Inactive	Seismi...
188	M337A						Yes	** NA **				None
189	M340A						Yes	** NA **				None
190	M341A						Yes	** NA **				None
191	M342A						Yes	** NA **				None
192	M343A						Yes	** NA **				None
193	M345A						Yes	** NA **				None
194	M347						Yes	** NA **				None
195	M349						Yes	** NA **				None
196	M351						Yes	** NA **				None
197	M354						Yes	** NA **				None
198	M355						Yes	** NA **				None
199	M356						Yes	** NA **				None
200	M357						Yes	** NA **				None
201	M359						Yes	** NA **				None
202	M361						Yes	** NA **				None
203	M363						Yes	** NA **				None
204	M365						Yes	** NA **				None
205	M368A						Yes	** NA **				None
206	M369A						Yes	** NA **				None
207	M370						Yes	** NA **				None
208	M371						Yes	** NA **				None
209	M372		BenPIN				Yes	** NA **				None
210	M373		BenPIN				Yes	** NA **				None
211	M374		BenPIN				Yes	** NA **				None
212	M375		BenPIN				Yes	** NA **				None
213	M376		BenPIN				Yes	** NA **				None
214	M377		BenPIN				Yes	** NA **				None
215	M382		000000				Yes	** NA **				None
216	M383		000000				Yes	** NA **				None
217	M384		000000				Yes	** NA **				None
218	M385		000000				Yes	** NA **				None
219	M387		000000				Yes	** NA **				None
220	M388		000000				Yes	** NA **				None
221	M389		000000				Yes	** NA **				None
222	M390		000000				Yes	** NA **				None
223	M392		000000				Yes	** NA **				None
224	M393		000000				Yes	** NA **				None
225	M394		000000				Yes	** NA **				None
226	M395		000000				Yes	** NA **				None
227	MP1A						Yes	** NA **				None
228	MP2A						Yes	** NA **				None
229	MP3A						Yes	** NA **				None
230	MP4A						Yes	** NA **				None
231	MP1C						Yes	** NA **				None
232	MP2C						Yes	** NA **				None
233	MP3C						Yes	** NA **				None
234	MP4C						Yes	** NA **				None
235	MP1B						Yes	** NA **				None
236	MP2B						Yes	** NA **				None
237	MP3B						Yes	** NA **				None
238	MP4B						Yes	** NA **				None
239	M286						Yes	** NA **				None
240	M287						Yes	** NA **				None
241	M288						Yes	** NA **				None
242	M329						Yes	** NA **				None
243	M335						Yes	** NA **				None
244	M219						Yes	** NA **				None
245	M220						Yes	** NA **				None
246	M221						Yes	** NA **				None



Company : Colliers Engineering & Design
 Designer :
 Job Number :
 Model Name : 5000247305-VZW_MT_LO_H

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 3:52 PM
 Checked By: _____

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ratio	Options	Analysis	Inactive	Seismi...
247	M261						Yes	** NA **				None
248	M268A						Yes	** NA **				None
249	M290A						Yes	** NA **				None
250	M291A						Yes	** NA **				None
251	M292A						Yes	** NA **				None
252	M316						Yes	** NA **				None
253	M332B						Yes	** NA **				None
254	M339						Yes	** NA **				None
255	M300B						Yes	** NA **				None
256	M311B						Yes	** NA **				None
257	M45A						Yes	** NA **				None
258	M68						Yes	** NA **				None
259	M74B						Yes	** NA **				None
260	M75B						Yes	** NA **				None
261	M66						Yes	** NA **				None
262	M74C						Yes	** NA **				None
263	M73						Yes	** NA **				None
264	M74						Yes	** NA **				None
265	M75						Yes	** NA **				None
266	M76						Yes	** NA **				None
267	M78						Yes	** NA **				None
268	M79						Yes	** NA **				None
269	M122						Yes	** NA **				None
270	M123						Yes	** NA **				None
271	M124						Yes	** NA **				None
272	M125						Yes	** NA **				None
273	M127						Yes	** NA **				None
274	M128						Yes	** NA **				None
275	M319	BenPIN	BenPIN				Yes	** NA **				None
276	M320A	BenPIN	BenPIN				Yes	** NA **				None
277	M321	BenPIN	BenPIN				Yes	** NA **				None
278	M324	BenPIN	BenPIN				Yes	** NA **				None
279	M327	BenPIN	BenPIN				Yes	** NA **				None
280	M330A	BenPIN	BenPIN				Yes	** NA **				None
281	M31						Yes	** NA **				None
282	M33						Yes	** NA **				None
283	M34A						Yes	** NA **				None
284	M60						Yes	** NA **				None
285	M61						Yes	** NA **				None
286	M62						Yes	** NA **				None
287	M80						Yes	** NA **				None
288	M81						Yes	** NA **				None
289	M82						Yes	** NA **				None
290	M83						Yes	** NA **				None
291	M84						Yes	** NA **				None
292	M85						Yes	** NA **				None
293	M129						Yes	** NA **				None
294	M130						Yes	** NA **				None
295	M131						Yes	** NA **				None
296	M132						Yes	** NA **				None
297	M133						Yes	** NA **				None
298	M134						Yes	** NA **				None
299	M177						Yes	** NA **				None
300	M344A						Yes	** NA **				None
301	M358						Yes	** NA **				None
302	M289						Yes	** NA **				None
303	M290						Yes	** NA **				None
304	M291						Yes	** NA **				None
305	M292						Yes	** NA **				None



Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset(in)	J Offset(in)	T/C Only	Physical	Defl Ratio	Options	Analysis	Inactive	Seismi...
306	M293						Yes	** NA **				None
307	M294						Yes	** NA **				None
308	M295						Yes	** NA **				None
309	M297						Yes	** NA **				None
310	M298						Yes	** NA **				None
311	M299						Yes	** NA **				None
312	M300						Yes	** NA **				None
313	M301						Yes	** NA **				None
314	M302						Yes	** NA **				None
315	M303						Yes	** NA **				None
316	M304						Yes	** NA **				None
317	M305						Yes	** NA **				None
318	M306						Yes	** NA **				None
319	M307A						Yes	** NA **				None
320	M308A						Yes	** NA **				None
321	M310A						Yes	** NA **				None
322	M331						Yes	** NA **				None
323	M332						Yes	** NA **				None
324	M333						Yes	** NA **				None
325	M334						Yes	** NA **				None
326	M222						Yes	** NA **				None
327	M223						Yes	** NA **				None
328	M224						Yes	** NA **				None
329	M225						Yes	** NA **				None
330	M226						Yes	** NA **				None
331	M227						Yes	** NA **				None
332	M228						Yes	** NA **				None
333	M230						Yes	** NA **				None
334	M231						Yes	** NA **				None
335	M232						Yes	** NA **				None
336	M233						Yes	** NA **				None
337	M234						Yes	** NA **				None
338	M235						Yes	** NA **				None
339	M236						Yes	** NA **				None
340	M237						Yes	** NA **				None
341	M238						Yes	** NA **				None
342	M239						Yes	** NA **				None
343	M240						Yes	** NA **				None
344	M241						Yes	** NA **				None
345	M242						Yes	** NA **				None
346	M263						Yes	** NA **				None
347	M264						Yes	** NA **				None
348	M266A						Yes	** NA **				None
349	M267A						Yes	** NA **				None
350	M293A						Yes	** NA **				None
351	M294A						Yes	** NA **				None
352	M295A						Yes	** NA **				None
353	M296A						Yes	** NA **				None
354	M297A						Yes	** NA **				None
355	M298A						Yes	** NA **				None
356	M299A						Yes	** NA **				None
357	M301A						Yes	** NA **				None
358	M302A						Yes	** NA **				None
359	M303A						Yes	** NA **				None
360	M304A						Yes	** NA **				None
361	M305A						Yes	** NA **				None
362	M306A						Yes	** NA **				None
363	M307						Yes	** NA **				None
364	M308						Yes	** NA **				None



Member Advanced Data (Continued)

	Label	I Release	J Release	Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ratio	Options	Analysis...	Inactive	Seismi...
365	M309						Yes	** NA **				None
366	M310						Yes	** NA **				None
367	M311						Yes	** NA **				None
368	M312						Yes	** NA **				None
369	M313						Yes	** NA **				None
370	M318						Yes	** NA **				None
371	M320						Yes	** NA **				None
372	M322						Yes	** NA **				None
373	M323A						Yes	** NA **				None
374	M334A						Yes	** NA **				None
375	M335A						Yes	** NA **				None
376	M337						Yes	** NA **				None
377	M338						Yes	** NA **				None
378	M340						Yes	** NA **				None
379	M341						Yes	** NA **				None
380	M342						Yes	** NA **				None
381	M343						Yes	** NA **				None
382	M344						Yes	** NA **				None
383	M345						Yes	** NA **				None
384	M299B						Yes	** NA **				None
385	M301B						Yes	** NA **				None
386	M302B						Yes	** NA **				None
387	M303B						Yes	** NA **				None
388	M304B						Yes	** NA **				None
389	M310B						Yes	** NA **				None
390	M312B						Yes	** NA **				None
391	M313A						Yes	** NA **				None
392	M314A						Yes	** NA **				None
393	M315A						Yes	** NA **				None
394	M394A						Yes					None
395	M395A						Yes					None
396	M396						Yes					None
397	M397		000000				Yes	** NA **				None
398	M398		000000				Yes	** NA **				None
399	M399		000000				Yes	** NA **				None
400	M400		000000				Yes	** NA **				None
401	M401		000000				Yes	** NA **				None
402	M402		000000				Yes	** NA **				None
403	M403		000000				Yes	** NA **				None
404	M404		000000				Yes	** NA **				None
405	M405		000000				Yes	** NA **				None
406	M406		000000				Yes	** NA **				None
407	M407		000000				Yes	** NA **				None
408	M408		000000				Yes	** NA **				None
409	M410						Yes	** NA **				None
410	M411						Yes	** NA **				None
411	M412						Yes	** NA **				None
412	M413						Yes	** NA **				None
413	M414						Yes	** NA **				None
414	M415						Yes	** NA **				None
415	M416						Yes	** NA **				None

Member Point Loads (BLC 1 : Antenna D)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	Y	-87.1	4
2	MP1A	My	-0.73	4
3	MP1A	Mz	0	4

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
4	MP1B	Y	-87.1	4
5	MP1B	My	0	4
6	MP1B	Mz	-0.73	4
7	MP1C	Y	-87.1	4
8	MP1C	My	.013	4
9	MP1C	Mz	.071	4
10	MP2A	Y	-23	1.5
11	MP2A	My	-0.19	1.5
12	MP2A	Mz	0	1.5
13	MP2A	Y	-23	6.5
14	MP2A	My	-0.19	6.5
15	MP2A	Mz	0	6.5
16	MP2B	Y	-23	1.5
17	MP2B	My	0	1.5
18	MP2B	Mz	-0.19	1.5
19	MP2B	Y	-23	6.5
20	MP2B	My	0	6.5
21	MP2B	Mz	-0.19	6.5
22	MP2C	Y	-23	1.5
23	MP2C	My	.003	1.5
24	MP2C	Mz	.019	1.5
25	MP2C	Y	-23	6.5
26	MP2C	My	.003	6.5
27	MP2C	Mz	.019	6.5
28	MP3A	Y	-23	1.5
29	MP3A	My	-0.19	1.5
30	MP3A	Mz	-0.17	1.5
31	MP3A	Y	-23	6.5
32	MP3A	My	-0.19	6.5
33	MP3A	Mz	-0.17	6.5
34	MP3B	Y	-23	1.5
35	MP3B	My	-0.17	1.5
36	MP3B	Mz	-0.19	1.5
37	MP3B	Y	-23	6.5
38	MP3B	My	-0.17	6.5
39	MP3B	Mz	-0.19	6.5
40	MP3C	Y	-23	1.5
41	MP3C	My	.02	1.5
42	MP3C	Mz	.016	1.5
43	MP3C	Y	-23	6.5
44	MP3C	My	.02	6.5
45	MP3C	Mz	.016	6.5
46	MP3A	Y	-23	1.5
47	MP3A	My	-0.19	1.5
48	MP3A	Mz	.017	1.5
49	MP3A	Y	-23	6.5
50	MP3A	My	-0.19	6.5
51	MP3A	Mz	.017	6.5
52	MP3B	Y	-23	1.5
53	MP3B	My	.017	1.5
54	MP3B	Mz	-0.19	1.5
55	MP3B	Y	-23	6.5
56	MP3B	My	.017	6.5
57	MP3B	Mz	-0.19	6.5
58	MP3C	Y	-23	1.5
59	MP3C	My	-0.14	1.5
60	MP3C	Mz	.022	1.5
61	MP3C	Y	-23	6.5
62	MP3C	My	-0.14	6.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
63	MP3C	Mz	.022	6.5
64	M410	Y	-32	.13
65	M410	My	.016	.13
66	M410	Mz	0	.13
67	M287	Y	-84.4	.13
68	M287	My	.042	.13
69	M287	Mz	0	.13
70	M412	Y	-70.3	.13
71	M412	My	.035	.13
72	M412	Mz	0	.13
73	M415	Y	-84.4	.13
74	M415	My	0	.13
75	M415	Mz	.042	.13
76	M413	Y	-84.4	.13
77	M413	My	-.007	.13
78	M413	Mz	-.042	.13
79	M416	Y	-70.3	.13
80	M416	My	0	.13
81	M416	Mz	.035	.13
82	M414	Y	-70.3	.13
83	M414	My	-.006	.13
84	M414	Mz	-.035	.13
85	MP3A	Y	-17.6	3
86	MP3A	My	.004	3
87	MP3A	Mz	0	3
88	MP3A	Y	-17.6	3
89	MP3A	My	-.004	3
90	MP3A	Mz	0	3

Member Point Loads (BLC 2 : Antenna Di)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	Y	-70.371	4
2	MP1A	My	-.059	4
3	MP1A	Mz	0	4
4	MP1B	Y	-70.371	4
5	MP1B	My	0	4
6	MP1B	Mz	-.059	4
7	MP1C	Y	-70.371	4
8	MP1C	My	.01	4
9	MP1C	Mz	.058	4
10	MP2A	Y	-81.502	1.5
11	MP2A	My	-.068	1.5
12	MP2A	Mz	0	1.5
13	MP2A	Y	-81.502	6.5
14	MP2A	My	-.068	6.5
15	MP2A	Mz	0	6.5
16	MP2B	Y	-81.502	1.5
17	MP2B	My	0	1.5
18	MP2B	Mz	-.068	1.5
19	MP2B	Y	-81.502	6.5
20	MP2B	My	0	6.5
21	MP2B	Mz	-.068	6.5
22	MP2C	Y	-81.502	1.5
23	MP2C	My	.012	1.5
24	MP2C	Mz	.067	1.5
25	MP2C	Y	-81.502	6.5
26	MP2C	My	.012	6.5
27	MP2C	Mz	.067	6.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
28	MP3A	Y	-81.502	1.5
29	MP3A	My	-.068	1.5
30	MP3A	Mz	-.061	1.5
31	MP3A	Y	-81.502	6.5
32	MP3A	My	-.068	6.5
33	MP3A	Mz	-.061	6.5
34	MP3B	Y	-81.502	1.5
35	MP3B	My	-.061	1.5
36	MP3B	Mz	-.068	1.5
37	MP3B	Y	-81.502	6.5
38	MP3B	My	-.061	6.5
39	MP3B	Mz	-.068	6.5
40	MP3C	Y	-81.502	1.5
41	MP3C	My	.072	1.5
42	MP3C	Mz	.056	1.5
43	MP3C	Y	-81.502	6.5
44	MP3C	My	.072	6.5
45	MP3C	Mz	.056	6.5
46	MP3A	Y	-81.502	1.5
47	MP3A	My	-.068	1.5
48	MP3A	Mz	.061	1.5
49	MP3A	Y	-81.502	6.5
50	MP3A	My	-.068	6.5
51	MP3A	Mz	.061	6.5
52	MP3B	Y	-81.502	1.5
53	MP3B	My	.061	1.5
54	MP3B	Mz	-.068	1.5
55	MP3B	Y	-81.502	6.5
56	MP3B	My	.061	6.5
57	MP3B	Mz	-.068	6.5
58	MP3C	Y	-81.502	1.5
59	MP3C	My	-.048	1.5
60	MP3C	Mz	.078	1.5
61	MP3C	Y	-81.502	6.5
62	MP3C	My	-.048	6.5
63	MP3C	Mz	.078	6.5
64	M410	Y	-86.874	.13
65	M410	My	.043	.13
66	M410	Mz	0	.13
67	M287	Y	-44.353	.13
68	M287	My	.022	.13
69	M287	Mz	0	.13
70	M412	Y	-39.883	.13
71	M412	My	.02	.13
72	M412	Mz	0	.13
73	M415	Y	-44.353	.13
74	M415	My	0	.13
75	M415	Mz	.022	.13
76	M413	Y	-44.353	.13
77	M413	My	-.004	.13
78	M413	Mz	-.022	.13
79	M416	Y	-39.883	.13
80	M416	My	0	.13
81	M416	Mz	.02	.13
82	M414	Y	-39.883	.13
83	M414	My	-.003	.13
84	M414	Mz	-.02	.13
85	MP3A	Y	6.6	3
86	MP3A	My	-.002	3



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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft.%]
87	MP3A	Mz	0	3
88	MP3A	Y	6.6	3
89	MP3A	My	.002	3
90	MP3A	Mz	0	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft.%]
1	MP1A	X	0	4
2	MP1A	Z	-199.086	4
3	MP1A	Mx	0	4
4	MP1B	X	0	4
5	MP1B	Z	-68.563	4
6	MP1B	Mx	.057	4
7	MP1C	X	0	4
8	MP1C	Z	-72.499	4
9	MP1C	Mx	-.059	4
10	MP2A	X	0	1.5
11	MP2A	Z	-120.112	1.5
12	MP2A	Mx	0	1.5
13	MP2A	X	0	6.5
14	MP2A	Z	-120.112	6.5
15	MP2A	Mx	0	6.5
16	MP2B	X	0	1.5
17	MP2B	Z	-89.894	1.5
18	MP2B	Mx	.075	1.5
19	MP2B	X	0	6.5
20	MP2B	Z	-89.894	6.5
21	MP2B	Mx	.075	6.5
22	MP2C	X	0	1.5
23	MP2C	Z	-90.805	1.5
24	MP2C	Mx	-.075	1.5
25	MP2C	X	0	6.5
26	MP2C	Z	-90.805	6.5
27	MP2C	Mx	-.075	6.5
28	MP3A	X	0	1.5
29	MP3A	Z	-120.112	1.5
30	MP3A	Mx	.09	1.5
31	MP3A	X	0	6.5
32	MP3A	Z	-120.112	6.5
33	MP3A	Mx	.09	6.5
34	MP3B	X	0	1.5
35	MP3B	Z	-89.894	1.5
36	MP3B	Mx	.075	1.5
37	MP3B	X	0	6.5
38	MP3B	Z	-89.894	6.5
39	MP3B	Mx	.075	6.5
40	MP3C	X	0	1.5
41	MP3C	Z	-90.805	1.5
42	MP3C	Mx	-.063	1.5
43	MP3C	X	0	6.5
44	MP3C	Z	-90.805	6.5
45	MP3C	Mx	-.063	6.5
46	MP3A	X	0	1.5
47	MP3A	Z	-120.112	1.5
48	MP3A	Mx	-.09	1.5
49	MP3A	X	0	6.5
50	MP3A	Z	-120.112	6.5
51	MP3A	Mx	-.09	6.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
52	MP3B	X	0	1.5
53	MP3B	Z	-89.894	1.5
54	MP3B	Mx	.075	1.5
55	MP3B	X	0	6.5
56	MP3B	Z	-89.894	6.5
57	MP3B	Mx	.075	6.5
58	MP3C	X	0	1.5
59	MP3C	Z	-90.805	1.5
60	MP3C	Mx	-.086	1.5
61	MP3C	X	0	6.5
62	MP3C	Z	-90.805	6.5
63	MP3C	Mx	-.086	6.5
64	M410	X	0	.13
65	M410	Z	-160.996	.13
66	M410	Mx	0	.13
67	M287	X	0	.13
68	M287	Z	-78.72	.13
69	M287	Mx	0	.13
70	M412	X	0	.13
71	M412	Z	-78.72	.13
72	M412	Mx	0	.13
73	M415	X	0	.13
74	M415	Z	-52.819	.13
75	M415	Mx	-.026	.13
76	M413	X	0	.13
77	M413	Z	-53.6	.13
78	M413	Mx	.026	.13
79	M416	X	0	.13
80	M416	Z	-43.169	.13
81	M416	Mx	-.022	.13
82	M414	X	0	.13
83	M414	Z	-44.241	.13
84	M414	Mx	.022	.13
85	MP3A	X	0	3
86	MP3A	Z	-48.756	3
87	MP3A	Mx	0	3
88	MP3A	X	0	3
89	MP3A	Z	-48.756	3
90	MP3A	Mx	0	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	83.228	4
2	MP1A	Z	-144.155	4
3	MP1A	Mx	-.069	4
4	MP1B	X	50.597	4
5	MP1B	Z	-87.636	4
6	MP1B	Mx	.073	4
7	MP1C	X	61.246	4
8	MP1C	Z	-106.081	4
9	MP1C	Mx	-.078	4
10	MP2A	X	56.279	1.5
11	MP2A	Z	-97.478	1.5
12	MP2A	Mx	-.047	1.5
13	MP2A	X	56.279	6.5
14	MP2A	Z	-97.478	6.5
15	MP2A	Mx	-.047	6.5
16	MP2B	X	48.724	1.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
17	MP2B	Z	-84.393	1.5
18	MP2B	Mx	.07	1.5
19	MP2B	X	48.724	6.5
20	MP2B	Z	-84.393	6.5
21	MP2B	Mx	.07	6.5
22	MP2C	X	51.19	1.5
23	MP2C	Z	-88.663	1.5
24	MP2C	Mx	-.065	1.5
25	MP2C	X	51.19	6.5
26	MP2C	Z	-88.663	6.5
27	MP2C	Mx	-.065	6.5
28	MP3A	X	56.279	1.5
29	MP3A	Z	-97.478	1.5
30	MP3A	Mx	.026	1.5
31	MP3A	X	56.279	6.5
32	MP3A	Z	-97.478	6.5
33	MP3A	Mx	.026	6.5
34	MP3B	X	48.724	1.5
35	MP3B	Z	-84.393	1.5
36	MP3B	Mx	.034	1.5
37	MP3B	X	48.724	6.5
38	MP3B	Z	-84.393	6.5
39	MP3B	Mx	.034	6.5
40	MP3C	X	51.19	1.5
41	MP3C	Z	-88.663	1.5
42	MP3C	Mx	-.016	1.5
43	MP3C	X	51.19	6.5
44	MP3C	Z	-88.663	6.5
45	MP3C	Mx	-.016	6.5
46	MP3A	X	56.279	1.5
47	MP3A	Z	-97.478	1.5
48	MP3A	Mx	-.12	1.5
49	MP3A	X	56.279	6.5
50	MP3A	Z	-97.478	6.5
51	MP3A	Mx	-.12	6.5
52	MP3B	X	48.724	1.5
53	MP3B	Z	-84.393	1.5
54	MP3B	Mx	.107	1.5
55	MP3B	X	48.724	6.5
56	MP3B	Z	-84.393	6.5
57	MP3B	Mx	.107	6.5
58	MP3C	X	51.19	1.5
59	MP3C	Z	-88.663	1.5
60	MP3C	Mx	-.115	1.5
61	MP3C	X	51.19	6.5
62	MP3C	Z	-88.663	6.5
63	MP3C	Mx	-.115	6.5
64	M410	X	75.673	.13
65	M410	Z	-131.07	.13
66	M410	Mx	.038	.13
67	M287	X	36.122	.13
68	M287	Z	-62.566	.13
69	M287	Mx	.018	.13
70	M412	X	34.916	.13
71	M412	Z	-60.477	.13
72	M412	Mx	.017	.13
73	M415	X	29.647	.13
74	M415	Z	-51.35	.13
75	M415	Mx	-.026	.13

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
76	M413	X	31.76	.13
77	M413	Z	-55.011	.13
78	M413	Mx	.024	.13
79	M416	X	26.029	.13
80	M416	Z	-45.083	.13
81	M416	Mx	-.023	.13
82	M414	X	28.929	.13
83	M414	Z	-50.107	.13
84	M414	Mx	.022	.13
85	MP3A	X	20.132	3
86	MP3A	Z	-34.87	3
87	MP3A	Mx	.005	3
88	MP3A	X	20.132	3
89	MP3A	Z	-34.87	3
90	MP3A	Mx	-.005	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	87.636	4
2	MP1A	Z	-50.597	4
3	MP1A	Mx	-.073	4
4	MP1B	X	144.155	4
5	MP1B	Z	-83.228	4
6	MP1B	Mx	.069	4
7	MP1C	X	159.191	4
8	MP1C	Z	-91.909	4
9	MP1C	Mx	-.052	4
10	MP2A	X	84.393	1.5
11	MP2A	Z	-48.724	1.5
12	MP2A	Mx	-.07	1.5
13	MP2A	X	84.393	6.5
14	MP2A	Z	-48.724	6.5
15	MP2A	Mx	-.07	6.5
16	MP2B	X	97.478	1.5
17	MP2B	Z	-56.279	1.5
18	MP2B	Mx	.047	1.5
19	MP2B	X	97.478	6.5
20	MP2B	Z	-56.279	6.5
21	MP2B	Mx	.047	6.5
22	MP2C	X	100.959	1.5
23	MP2C	Z	-58.289	1.5
24	MP2C	Mx	-.033	1.5
25	MP2C	X	100.959	6.5
26	MP2C	Z	-58.289	6.5
27	MP2C	Mx	-.033	6.5
28	MP3A	X	84.393	1.5
29	MP3A	Z	-48.724	1.5
30	MP3A	Mx	-.034	1.5
31	MP3A	X	84.393	6.5
32	MP3A	Z	-48.724	6.5
33	MP3A	Mx	-.034	6.5
34	MP3B	X	97.478	1.5
35	MP3B	Z	-56.279	1.5
36	MP3B	Mx	-.026	1.5
37	MP3B	X	97.478	6.5
38	MP3B	Z	-56.279	6.5
39	MP3B	Mx	-.026	6.5
40	MP3C	X	100.959	1.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
41	MP3C	Z	-58.289	1.5
42	MP3C	Mx	.049	1.5
43	MP3C	X	100.959	6.5
44	MP3C	Z	-58.289	6.5
45	MP3C	Mx	.049	6.5
46	MP3A	X	84.393	1.5
47	MP3A	Z	-48.724	1.5
48	MP3A	Mx	-.107	1.5
49	MP3A	X	84.393	6.5
50	MP3A	Z	-48.724	6.5
51	MP3A	Mx	-.107	6.5
52	MP3B	X	97.478	1.5
53	MP3B	Z	-56.279	1.5
54	MP3B	Mx	.12	1.5
55	MP3B	X	97.478	6.5
56	MP3B	Z	-56.279	6.5
57	MP3B	Mx	.12	6.5
58	MP3C	X	100.959	1.5
59	MP3C	Z	-58.289	1.5
60	MP3C	Mx	-.115	1.5
61	MP3C	X	100.959	6.5
62	MP3C	Z	-58.289	6.5
63	MP3C	Mx	-.115	6.5
64	M410	X	114.356	.13
65	M410	Z	-66.024	.13
66	M410	Mx	.057	.13
67	M287	X	51.35	.13
68	M287	Z	-29.647	.13
69	M287	Mx	.026	.13
70	M412	X	45.083	.13
71	M412	Z	-26.029	.13
72	M412	Mx	.023	.13
73	M415	X	62.566	.13
74	M415	Z	-36.122	.13
75	M415	Mx	-.018	.13
76	M413	X	65.55	.13
77	M413	Z	-37.845	.13
78	M413	Mx	.013	.13
79	M416	X	60.477	.13
80	M416	Z	-34.916	.13
81	M416	Mx	-.017	.13
82	M414	X	64.572	.13
83	M414	Z	-37.281	.13
84	M414	Mx	.013	.13
85	MP3A	X	20.161	3
86	MP3A	Z	-11.64	3
87	MP3A	Mx	.005	3
88	MP3A	X	20.161	3
89	MP3A	Z	-11.64	3
90	MP3A	Mx	-.005	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	68.563	4
2	MP1A	Z	0	4
3	MP1A	Mx	-.057	4
4	MP1B	X	199.086	4
5	MP1B	Z	0	4

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

	Member Label	Direction	Magnitude(lb.k-ft)	Location(ft.%)
6	MP1B	Mx	0	4
7	MP1C	X	195.151	4
8	MP1C	Z	0	4
9	MP1C	Mx	.028	4
10	MP2A	X	89.894	1.5
11	MP2A	Z	0	1.5
12	MP2A	Mx	-.075	1.5
13	MP2A	X	89.894	6.5
14	MP2A	Z	0	6.5
15	MP2A	Mx	-.075	6.5
16	MP2B	X	120.112	1.5
17	MP2B	Z	0	1.5
18	MP2B	Mx	0	1.5
19	MP2B	X	120.112	6.5
20	MP2B	Z	0	6.5
21	MP2B	Mx	0	6.5
22	MP2C	X	119.201	1.5
23	MP2C	Z	0	1.5
24	MP2C	Mx	.017	1.5
25	MP2C	X	119.201	6.5
26	MP2C	Z	0	6.5
27	MP2C	Mx	.017	6.5
28	MP3A	X	89.894	1.5
29	MP3A	Z	0	1.5
30	MP3A	Mx	-.075	1.5
31	MP3A	X	89.894	6.5
32	MP3A	Z	0	6.5
33	MP3A	Mx	-.075	6.5
34	MP3B	X	120.112	1.5
35	MP3B	Z	0	1.5
36	MP3B	Mx	-.09	1.5
37	MP3B	X	120.112	6.5
38	MP3B	Z	0	6.5
39	MP3B	Mx	-.09	6.5
40	MP3C	X	119.201	1.5
41	MP3C	Z	0	1.5
42	MP3C	Mx	.105	1.5
43	MP3C	X	119.201	6.5
44	MP3C	Z	0	6.5
45	MP3C	Mx	.105	6.5
46	MP3A	X	89.894	1.5
47	MP3A	Z	0	1.5
48	MP3A	Mx	-.075	1.5
49	MP3A	X	89.894	6.5
50	MP3A	Z	0	6.5
51	MP3A	Mx	-.075	6.5
52	MP3B	X	120.112	1.5
53	MP3B	Z	0	1.5
54	MP3B	Mx	.09	1.5
55	MP3B	X	120.112	6.5
56	MP3B	Z	0	6.5
57	MP3B	Mx	.09	6.5
58	MP3C	X	119.201	1.5
59	MP3C	Z	0	1.5
60	MP3C	Mx	-.071	1.5
61	MP3C	X	119.201	6.5
62	MP3C	Z	0	6.5
63	MP3C	Mx	-.071	6.5
64	M410	X	122.398	.13



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
65	M410	Z	0	.13
66	M410	Mx	.061	.13
67	M287	X	52.819	.13
68	M287	Z	0	.13
69	M287	Mx	.026	.13
70	M412	X	43.169	.13
71	M412	Z	0	.13
72	M412	Mx	.022	.13
73	M415	X	78.72	.13
74	M415	Z	0	.13
75	M415	Mx	0	.13
76	M413	X	77.939	.13
77	M413	Z	0	.13
78	M413	Mx	-.007	.13
79	M416	X	78.72	.13
80	M416	Z	0	.13
81	M416	Mx	0	.13
82	M414	X	77.648	.13
83	M414	Z	0	.13
84	M414	Mx	-.007	.13
85	MP3A	X	14.788	3
86	MP3A	Z	0	3
87	MP3A	Mx	.004	3
88	MP3A	X	14.788	3
89	MP3A	Z	0	3
90	MP3A	Mx	-.004	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	87.636	4
2	MP1A	Z	50.597	4
3	MP1A	Mx	-.073	4
4	MP1B	X	144.155	4
5	MP1B	Z	83.228	4
6	MP1B	Mx	-.069	4
7	MP1C	X	125.71	4
8	MP1C	Z	72.579	4
9	MP1C	Mx	.078	4
10	MP2A	X	84.393	1.5
11	MP2A	Z	48.724	1.5
12	MP2A	Mx	-.07	1.5
13	MP2A	X	84.393	6.5
14	MP2A	Z	48.724	6.5
15	MP2A	Mx	-.07	6.5
16	MP2B	X	97.478	1.5
17	MP2B	Z	56.279	1.5
18	MP2B	Mx	-.047	1.5
19	MP2B	X	97.478	6.5
20	MP2B	Z	56.279	6.5
21	MP2B	Mx	-.047	6.5
22	MP2C	X	93.207	1.5
23	MP2C	Z	53.813	1.5
24	MP2C	Mx	.058	1.5
25	MP2C	X	93.207	6.5
26	MP2C	Z	53.813	6.5
27	MP2C	Mx	.058	6.5
28	MP3A	X	84.393	1.5
29	MP3A	Z	48.724	1.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
30	MP3A	Mx	-.107	1.5
31	MP3A	X	84.393	6.5
32	MP3A	Z	48.724	6.5
33	MP3A	Mx	-.107	6.5
34	MP3B	X	97.478	1.5
35	MP3B	Z	56.279	1.5
36	MP3B	Mx	-.12	1.5
37	MP3B	X	97.478	6.5
38	MP3B	Z	56.279	6.5
39	MP3B	Mx	-.12	6.5
40	MP3C	X	93.207	1.5
41	MP3C	Z	53.813	1.5
42	MP3C	Mx	.119	1.5
43	MP3C	X	93.207	6.5
44	MP3C	Z	53.813	6.5
45	MP3C	Mx	.119	6.5
46	MP3A	X	84.393	1.5
47	MP3A	Z	48.724	1.5
48	MP3A	Mx	-.034	1.5
49	MP3A	X	84.393	6.5
50	MP3A	Z	48.724	6.5
51	MP3A	Mx	-.034	6.5
52	MP3B	X	97.478	1.5
53	MP3B	Z	56.279	1.5
54	MP3B	Mx	.026	1.5
55	MP3B	X	97.478	6.5
56	MP3B	Z	56.279	6.5
57	MP3B	Mx	.026	6.5
58	MP3C	X	93.207	1.5
59	MP3C	Z	53.813	1.5
60	MP3C	Mx	-.004	1.5
61	MP3C	X	93.207	6.5
62	MP3C	Z	53.813	6.5
63	MP3C	Mx	-.004	6.5
64	M410	X	114.356	.13
65	M410	Z	66.024	.13
66	M410	Mx	.057	.13
67	M287	X	51.35	.13
68	M287	Z	29.647	.13
69	M287	Mx	.026	.13
70	M412	X	45.083	.13
71	M412	Z	26.029	.13
72	M412	Mx	.023	.13
73	M415	X	62.566	.13
74	M415	Z	36.122	.13
75	M415	Mx	.018	.13
76	M413	X	58.906	.13
77	M413	Z	34.009	.13
78	M413	Mx	-.022	.13
79	M416	X	60.477	.13
80	M416	Z	34.916	.13
81	M416	Mx	.017	.13
82	M414	X	55.453	.13
83	M414	Z	32.016	.13
84	M414	Mx	-.021	.13
85	MP3A	X	20.161	3
86	MP3A	Z	11.64	3
87	MP3A	Mx	.005	3
88	MP3A	X	20.161	3



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
89	MP3A	Z	11.64	3
90	MP3A	Mx	-.005	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	83.228	4
2	MP1A	Z	144.155	4
3	MP1A	Mx	-.069	4
4	MP1B	X	50.597	4
5	MP1B	Z	87.636	4
6	MP1B	Mx	-.073	4
7	MP1C	X	41.916	4
8	MP1C	Z	72.6	4
9	MP1C	Mx	.066	4
10	MP2A	X	56.279	1.5
11	MP2A	Z	97.478	1.5
12	MP2A	Mx	-.047	1.5
13	MP2A	X	56.279	6.5
14	MP2A	Z	97.478	6.5
15	MP2A	Mx	-.047	6.5
16	MP2B	X	48.724	1.5
17	MP2B	Z	84.393	1.5
18	MP2B	Mx	-.07	1.5
19	MP2B	X	48.724	6.5
20	MP2B	Z	84.393	6.5
21	MP2B	Mx	-.07	6.5
22	MP2C	X	46.714	1.5
23	MP2C	Z	80.911	1.5
24	MP2C	Mx	.073	1.5
25	MP2C	X	46.714	6.5
26	MP2C	Z	80.911	6.5
27	MP2C	Mx	.073	6.5
28	MP3A	X	56.279	1.5
29	MP3A	Z	97.478	1.5
30	MP3A	Mx	-.12	1.5
31	MP3A	X	56.279	6.5
32	MP3A	Z	97.478	6.5
33	MP3A	Mx	-.12	6.5
34	MP3B	X	48.724	1.5
35	MP3B	Z	84.393	1.5
36	MP3B	Mx	-.107	1.5
37	MP3B	X	48.724	6.5
38	MP3B	Z	84.393	6.5
39	MP3B	Mx	-.107	6.5
40	MP3C	X	46.714	1.5
41	MP3C	Z	80.911	1.5
42	MP3C	Mx	.097	1.5
43	MP3C	X	46.714	6.5
44	MP3C	Z	80.911	6.5
45	MP3C	Mx	.097	6.5
46	MP3A	X	56.279	1.5
47	MP3A	Z	97.478	1.5
48	MP3A	Mx	.026	1.5
49	MP3A	X	56.279	6.5
50	MP3A	Z	97.478	6.5
51	MP3A	Mx	.026	6.5
52	MP3B	X	48.724	1.5
53	MP3B	Z	84.393	1.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
54	MP3B	Mx	-.034	1.5
55	MP3B	X	48.724	6.5
56	MP3B	Z	84.393	6.5
57	MP3B	Mx	-.034	6.5
58	MP3C	X	46.714	1.5
59	MP3C	Z	80.911	1.5
60	MP3C	Mx	.049	1.5
61	MP3C	X	46.714	6.5
62	MP3C	Z	80.911	6.5
63	MP3C	Mx	.049	6.5
64	M410	X	75.673	.13
65	M410	Z	131.07	.13
66	M410	Mx	.038	.13
67	M287	X	36.122	.13
68	M287	Z	62.566	.13
69	M287	Mx	.018	.13
70	M412	X	34.916	.13
71	M412	Z	60.477	.13
72	M412	Mx	.017	.13
73	M415	X	29.647	.13
74	M415	Z	51.35	.13
75	M415	Mx	.026	.13
76	M413	X	27.924	.13
77	M413	Z	48.366	.13
78	M413	Mx	-.026	.13
79	M416	X	26.029	.13
80	M416	Z	45.083	.13
81	M416	Mx	.023	.13
82	M414	X	23.664	.13
83	M414	Z	40.987	.13
84	M414	Mx	-.022	.13
85	MP3A	X	20.132	3
86	MP3A	Z	34.87	3
87	MP3A	Mx	.005	3
88	MP3A	X	20.132	3
89	MP3A	Z	34.87	3
90	MP3A	Mx	-.005	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	0	4
2	MP1A	Z	199.086	4
3	MP1A	Mx	0	4
4	MP1B	X	0	4
5	MP1B	Z	68.563	4
6	MP1B	Mx	-.057	4
7	MP1C	X	0	4
8	MP1C	Z	72.499	4
9	MP1C	Mx	.059	4
10	MP2A	X	0	1.5
11	MP2A	Z	120.112	1.5
12	MP2A	Mx	0	1.5
13	MP2A	X	0	6.5
14	MP2A	Z	120.112	6.5
15	MP2A	Mx	0	6.5
16	MP2B	X	0	1.5
17	MP2B	Z	89.894	1.5
18	MP2B	Mx	-.075	1.5



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

Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]	
19	MP2B	X	0	6.5
20	MP2B	Z	89.894	6.5
21	MP2B	Mx	-.075	6.5
22	MP2C	X	0	1.5
23	MP2C	Z	90.805	1.5
24	MP2C	Mx	.075	1.5
25	MP2C	X	0	6.5
26	MP2C	Z	90.805	6.5
27	MP2C	Mx	.075	6.5
28	MP3A	X	0	1.5
29	MP3A	Z	120.112	1.5
30	MP3A	Mx	-.09	1.5
31	MP3A	X	0	6.5
32	MP3A	Z	120.112	6.5
33	MP3A	Mx	-.09	6.5
34	MP3B	X	0	1.5
35	MP3B	Z	89.894	1.5
36	MP3B	Mx	-.075	1.5
37	MP3B	X	0	6.5
38	MP3B	Z	89.894	6.5
39	MP3B	Mx	-.075	6.5
40	MP3C	X	0	1.5
41	MP3C	Z	90.805	1.5
42	MP3C	Mx	.063	1.5
43	MP3C	X	0	6.5
44	MP3C	Z	90.805	6.5
45	MP3C	Mx	.063	6.5
46	MP3A	X	0	1.5
47	MP3A	Z	120.112	1.5
48	MP3A	Mx	.09	1.5
49	MP3A	X	0	6.5
50	MP3A	Z	120.112	6.5
51	MP3A	Mx	.09	6.5
52	MP3B	X	0	1.5
53	MP3B	Z	89.894	1.5
54	MP3B	Mx	-.075	1.5
55	MP3B	X	0	6.5
56	MP3B	Z	89.894	6.5
57	MP3B	Mx	-.075	6.5
58	MP3C	X	0	1.5
59	MP3C	Z	90.805	1.5
60	MP3C	Mx	.086	1.5
61	MP3C	X	0	6.5
62	MP3C	Z	90.805	6.5
63	MP3C	Mx	.086	6.5
64	M410	X	0	.13
65	M410	Z	160.996	.13
66	M410	Mx	0	.13
67	M287	X	0	.13
68	M287	Z	78.72	.13
69	M287	Mx	0	.13
70	M412	X	0	.13
71	M412	Z	78.72	.13
72	M412	Mx	0	.13
73	M415	X	0	.13
74	M415	Z	52.819	.13
75	M415	Mx	.026	.13
76	M413	X	0	.13
77	M413	Z	53.6	.13



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
78	M413	Mx	-.026	.13
79	M416	X	0	.13
80	M416	Z	43.169	.13
81	M416	Mx	.022	.13
82	M414	X	0	.13
83	M414	Z	44.241	.13
84	M414	Mx	-.022	.13
85	MP3A	X	0	3
86	MP3A	Z	48.756	3
87	MP3A	Mx	0	3
88	MP3A	X	0	3
89	MP3A	Z	48.756	3
90	MP3A	Mx	0	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	-83.228	4
2	MP1A	Z	144.155	4
3	MP1A	Mx	.069	4
4	MP1B	X	-50.597	4
5	MP1B	Z	87.636	4
6	MP1B	Mx	-.073	4
7	MP1C	X	-61.246	4
8	MP1C	Z	106.081	4
9	MP1C	Mx	.078	4
10	MP2A	X	-56.279	1.5
11	MP2A	Z	97.478	1.5
12	MP2A	Mx	.047	1.5
13	MP2A	X	-56.279	6.5
14	MP2A	Z	97.478	6.5
15	MP2A	Mx	.047	6.5
16	MP2B	X	-48.724	1.5
17	MP2B	Z	84.393	1.5
18	MP2B	Mx	-.07	1.5
19	MP2B	X	-48.724	6.5
20	MP2B	Z	84.393	6.5
21	MP2B	Mx	-.07	6.5
22	MP2C	X	-51.19	1.5
23	MP2C	Z	88.663	1.5
24	MP2C	Mx	.065	1.5
25	MP2C	X	-51.19	6.5
26	MP2C	Z	88.663	6.5
27	MP2C	Mx	.065	6.5
28	MP3A	X	-56.279	1.5
29	MP3A	Z	97.478	1.5
30	MP3A	Mx	-.026	1.5
31	MP3A	X	-56.279	6.5
32	MP3A	Z	97.478	6.5
33	MP3A	Mx	-.026	6.5
34	MP3B	X	-48.724	1.5
35	MP3B	Z	84.393	1.5
36	MP3B	Mx	-.034	1.5
37	MP3B	X	-48.724	6.5
38	MP3B	Z	84.393	6.5
39	MP3B	Mx	-.034	6.5
40	MP3C	X	-51.19	1.5
41	MP3C	Z	88.663	1.5
42	MP3C	Mx	.016	1.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
43	MP3C	X	-51.19	6.5
44	MP3C	Z	88.663	6.5
45	MP3C	Mx	.016	6.5
46	MP3A	X	-56.279	1.5
47	MP3A	Z	97.478	1.5
48	MP3A	Mx	.12	1.5
49	MP3A	X	-56.279	6.5
50	MP3A	Z	97.478	6.5
51	MP3A	Mx	.12	6.5
52	MP3B	X	-48.724	1.5
53	MP3B	Z	84.393	1.5
54	MP3B	Mx	-.107	1.5
55	MP3B	X	-48.724	6.5
56	MP3B	Z	84.393	6.5
57	MP3B	Mx	-.107	6.5
58	MP3C	X	-51.19	1.5
59	MP3C	Z	88.663	1.5
60	MP3C	Mx	.115	1.5
61	MP3C	X	-51.19	6.5
62	MP3C	Z	88.663	6.5
63	MP3C	Mx	.115	6.5
64	M410	X	-75.673	.13
65	M410	Z	131.07	.13
66	M410	Mx	-.038	.13
67	M287	X	-36.122	.13
68	M287	Z	62.566	.13
69	M287	Mx	-.018	.13
70	M412	X	-34.916	.13
71	M412	Z	60.477	.13
72	M412	Mx	-.017	.13
73	M415	X	-29.647	.13
74	M415	Z	51.35	.13
75	M415	Mx	.026	.13
76	M413	X	-31.76	.13
77	M413	Z	55.011	.13
78	M413	Mx	-.024	.13
79	M416	X	-26.029	.13
80	M416	Z	45.083	.13
81	M416	Mx	.023	.13
82	M414	X	-28.929	.13
83	M414	Z	50.107	.13
84	M414	Mx	-.022	.13
85	MP3A	X	-20.132	3
86	MP3A	Z	34.87	3
87	MP3A	Mx	-.005	3
88	MP3A	X	-20.132	3
89	MP3A	Z	34.87	3
90	MP3A	Mx	.005	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	-87.636	4
2	MP1A	Z	50.597	4
3	MP1A	Mx	.073	4
4	MP1B	X	-144.155	4
5	MP1B	Z	83.228	4
6	MP1B	Mx	-.069	4
7	MP1C	X	-159.191	4



Company : Colliers Engineering & Design
 Designer :
 Job Number :
 Model Name : 5000247305-VZW_MT_LO_H

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

	Member Label	Direction	Magnitude(lb.k-ft)	Location(ft.%)
8	MP1C	Z	91.909	4
9	MP1C	Mx	.052	4
10	MP2A	X	-84.393	1.5
11	MP2A	Z	48.724	1.5
12	MP2A	Mx	.07	1.5
13	MP2A	X	-84.393	6.5
14	MP2A	Z	48.724	6.5
15	MP2A	Mx	.07	6.5
16	MP2B	X	-97.478	1.5
17	MP2B	Z	56.279	1.5
18	MP2B	Mx	-.047	1.5
19	MP2B	X	-97.478	6.5
20	MP2B	Z	56.279	6.5
21	MP2B	Mx	-.047	6.5
22	MP2C	X	-100.959	1.5
23	MP2C	Z	58.289	1.5
24	MP2C	Mx	.033	1.5
25	MP2C	X	-100.959	6.5
26	MP2C	Z	58.289	6.5
27	MP2C	Mx	.033	6.5
28	MP3A	X	-84.393	1.5
29	MP3A	Z	48.724	1.5
30	MP3A	Mx	.034	1.5
31	MP3A	X	-84.393	6.5
32	MP3A	Z	48.724	6.5
33	MP3A	Mx	.034	6.5
34	MP3B	X	-97.478	1.5
35	MP3B	Z	56.279	1.5
36	MP3B	Mx	.026	1.5
37	MP3B	X	-97.478	6.5
38	MP3B	Z	56.279	6.5
39	MP3B	Mx	.026	6.5
40	MP3C	X	-100.959	1.5
41	MP3C	Z	58.289	1.5
42	MP3C	Mx	-.049	1.5
43	MP3C	X	-100.959	6.5
44	MP3C	Z	58.289	6.5
45	MP3C	Mx	-.049	6.5
46	MP3A	X	-84.393	1.5
47	MP3A	Z	48.724	1.5
48	MP3A	Mx	.107	1.5
49	MP3A	X	-84.393	6.5
50	MP3A	Z	48.724	6.5
51	MP3A	Mx	.107	6.5
52	MP3B	X	-97.478	1.5
53	MP3B	Z	56.279	1.5
54	MP3B	Mx	-.12	1.5
55	MP3B	X	-97.478	6.5
56	MP3B	Z	56.279	6.5
57	MP3B	Mx	-.12	6.5
58	MP3C	X	-100.959	1.5
59	MP3C	Z	58.289	1.5
60	MP3C	Mx	.115	1.5
61	MP3C	X	-100.959	6.5
62	MP3C	Z	58.289	6.5
63	MP3C	Mx	.115	6.5
64	M410	X	-114.356	.13
65	M410	Z	66.024	.13
66	M410	Mx	-.057	.13



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

	Member Label	Direction	Magnitude(lb.k-ft)	Location(fft.%)
32	MP3A	Z	0	6.5
33	MP3A	Mx	.075	6.5
34	MP3B	X	-120.112	1.5
35	MP3B	Z	0	1.5
36	MP3B	Mx	.09	1.5
37	MP3B	X	-120.112	6.5
38	MP3B	Z	0	6.5
39	MP3B	Mx	.09	6.5
40	MP3C	X	-119.201	1.5
41	MP3C	Z	0	1.5
42	MP3C	Mx	-.105	1.5
43	MP3C	X	-119.201	6.5
44	MP3C	Z	0	6.5
45	MP3C	Mx	-.105	6.5
46	MP3A	X	-89.894	1.5
47	MP3A	Z	0	1.5
48	MP3A	Mx	.075	1.5
49	MP3A	X	-89.894	6.5
50	MP3A	Z	0	6.5
51	MP3A	Mx	.075	6.5
52	MP3B	X	-120.112	1.5
53	MP3B	Z	0	1.5
54	MP3B	Mx	-.09	1.5
55	MP3B	X	-120.112	6.5
56	MP3B	Z	0	6.5
57	MP3B	Mx	-.09	6.5
58	MP3C	X	-119.201	1.5
59	MP3C	Z	0	1.5
60	MP3C	Mx	.071	1.5
61	MP3C	X	-119.201	6.5
62	MP3C	Z	0	6.5
63	MP3C	Mx	.071	6.5
64	M410	X	-122.398	.13
65	M410	Z	0	.13
66	M410	Mx	-.061	.13
67	M287	X	-52.819	.13
68	M287	Z	0	.13
69	M287	Mx	-.026	.13
70	M412	X	-43.169	.13
71	M412	Z	0	.13
72	M412	Mx	-.022	.13
73	M415	X	-78.72	.13
74	M415	Z	0	.13
75	M415	Mx	0	.13
76	M413	X	-77.939	.13
77	M413	Z	0	.13
78	M413	Mx	.007	.13
79	M416	X	-78.72	.13
80	M416	Z	0	.13
81	M416	Mx	0	.13
82	M414	X	-77.648	.13
83	M414	Z	0	.13
84	M414	Mx	.007	.13
85	MP3A	X	-14.788	3
86	MP3A	Z	0	3
87	MP3A	Mx	-.004	3
88	MP3A	X	-14.788	3
89	MP3A	Z	0	3
90	MP3A	Mx	.004	3



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	-87.636	4
2	MP1A	Z	-50.597	4
3	MP1A	Mx	.073	4
4	MP1B	X	-144.155	4
5	MP1B	Z	-83.228	4
6	MP1B	Mx	.069	4
7	MP1C	X	-125.71	4
8	MP1C	Z	-72.579	4
9	MP1C	Mx	-.078	4
10	MP2A	X	-84.393	1.5
11	MP2A	Z	-48.724	1.5
12	MP2A	Mx	.07	1.5
13	MP2A	X	-84.393	6.5
14	MP2A	Z	-48.724	6.5
15	MP2A	Mx	.07	6.5
16	MP2B	X	-97.478	1.5
17	MP2B	Z	-56.279	1.5
18	MP2B	Mx	.047	1.5
19	MP2B	X	-97.478	6.5
20	MP2B	Z	-56.279	6.5
21	MP2B	Mx	.047	6.5
22	MP2C	X	-93.207	1.5
23	MP2C	Z	-53.813	1.5
24	MP2C	Mx	-.058	1.5
25	MP2C	X	-93.207	6.5
26	MP2C	Z	-53.813	6.5
27	MP2C	Mx	-.058	6.5
28	MP3A	X	-84.393	1.5
29	MP3A	Z	-48.724	1.5
30	MP3A	Mx	.107	1.5
31	MP3A	X	-84.393	6.5
32	MP3A	Z	-48.724	6.5
33	MP3A	Mx	.107	6.5
34	MP3B	X	-97.478	1.5
35	MP3B	Z	-56.279	1.5
36	MP3B	Mx	.12	1.5
37	MP3B	X	-97.478	6.5
38	MP3B	Z	-56.279	6.5
39	MP3B	Mx	.12	6.5
40	MP3C	X	-93.207	1.5
41	MP3C	Z	-53.813	1.5
42	MP3C	Mx	-.119	1.5
43	MP3C	X	-93.207	6.5
44	MP3C	Z	-53.813	6.5
45	MP3C	Mx	-.119	6.5
46	MP3A	X	-84.393	1.5
47	MP3A	Z	-48.724	1.5
48	MP3A	Mx	.034	1.5
49	MP3A	X	-84.393	6.5
50	MP3A	Z	-48.724	6.5
51	MP3A	Mx	.034	6.5
52	MP3B	X	-97.478	1.5
53	MP3B	Z	-56.279	1.5
54	MP3B	Mx	-.026	1.5
55	MP3B	X	-97.478	6.5
56	MP3B	Z	-56.279	6.5
57	MP3B	Mx	-.026	6.5
58	MP3C	X	-93.207	1.5
59	MP3C	Z	-53.813	1.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
60	MP3C	Mx	.004	1.5
61	MP3C	X	-93.207	6.5
62	MP3C	Z	-53.813	6.5
63	MP3C	Mx	.004	6.5
64	M410	X	-114.356	.13
65	M410	Z	-66.024	.13
66	M410	Mx	-.057	.13
67	M287	X	-51.35	.13
68	M287	Z	-29.647	.13
69	M287	Mx	-.026	.13
70	M412	X	-45.083	.13
71	M412	Z	-26.029	.13
72	M412	Mx	-.023	.13
73	M415	X	-62.566	.13
74	M415	Z	-36.122	.13
75	M415	Mx	-.018	.13
76	M413	X	-58.906	.13
77	M413	Z	-34.009	.13
78	M413	Mx	.022	.13
79	M416	X	-60.477	.13
80	M416	Z	-34.916	.13
81	M416	Mx	-.017	.13
82	M414	X	-55.453	.13
83	M414	Z	-32.016	.13
84	M414	Mx	.021	.13
85	MP3A	X	-20.161	3
86	MP3A	Z	-11.64	3
87	MP3A	Mx	-.005	3
88	MP3A	X	-20.161	3
89	MP3A	Z	-11.64	3
90	MP3A	Mx	.005	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	-83.228	4
2	MP1A	Z	-144.155	4
3	MP1A	Mx	.069	4
4	MP1B	X	-50.597	4
5	MP1B	Z	-87.636	4
6	MP1B	Mx	.073	4
7	MP1C	X	-41.916	4
8	MP1C	Z	-72.6	4
9	MP1C	Mx	-.066	4
10	MP2A	X	-56.279	1.5
11	MP2A	Z	-97.478	1.5
12	MP2A	Mx	.047	1.5
13	MP2A	X	-56.279	6.5
14	MP2A	Z	-97.478	6.5
15	MP2A	Mx	.047	6.5
16	MP2B	X	-48.724	1.5
17	MP2B	Z	-84.393	1.5
18	MP2B	Mx	.07	1.5
19	MP2B	X	-48.724	6.5
20	MP2B	Z	-84.393	6.5
21	MP2B	Mx	.07	6.5
22	MP2C	X	-46.714	1.5
23	MP2C	Z	-80.911	1.5
24	MP2C	Mx	-.073	1.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
25	MP2C	X	-46.714	6.5
26	MP2C	Z	-80.911	6.5
27	MP2C	Mx	-.073	6.5
28	MP3A	X	-56.279	1.5
29	MP3A	Z	-97.478	1.5
30	MP3A	Mx	.12	1.5
31	MP3A	X	-56.279	6.5
32	MP3A	Z	-97.478	6.5
33	MP3A	Mx	.12	6.5
34	MP3B	X	-48.724	1.5
35	MP3B	Z	-84.393	1.5
36	MP3B	Mx	.107	1.5
37	MP3B	X	-48.724	6.5
38	MP3B	Z	-84.393	6.5
39	MP3B	Mx	.107	6.5
40	MP3C	X	-46.714	1.5
41	MP3C	Z	-80.911	1.5
42	MP3C	Mx	-.097	1.5
43	MP3C	X	-46.714	6.5
44	MP3C	Z	-80.911	6.5
45	MP3C	Mx	-.097	6.5
46	MP3A	X	-56.279	1.5
47	MP3A	Z	-97.478	1.5
48	MP3A	Mx	-.026	1.5
49	MP3A	X	-56.279	6.5
50	MP3A	Z	-97.478	6.5
51	MP3A	Mx	-.026	6.5
52	MP3B	X	-48.724	1.5
53	MP3B	Z	-84.393	1.5
54	MP3B	Mx	.034	1.5
55	MP3B	X	-48.724	6.5
56	MP3B	Z	-84.393	6.5
57	MP3B	Mx	.034	6.5
58	MP3C	X	-46.714	1.5
59	MP3C	Z	-80.911	1.5
60	MP3C	Mx	-.049	1.5
61	MP3C	X	-46.714	6.5
62	MP3C	Z	-80.911	6.5
63	MP3C	Mx	-.049	6.5
64	M410	X	-75.673	.13
65	M410	Z	-131.07	.13
66	M410	Mx	-.038	.13
67	M287	X	-36.122	.13
68	M287	Z	-62.566	.13
69	M287	Mx	-.018	.13
70	M412	X	-34.916	.13
71	M412	Z	-60.477	.13
72	M412	Mx	-.017	.13
73	M415	X	-29.647	.13
74	M415	Z	-51.35	.13
75	M415	Mx	-.026	.13
76	M413	X	-27.924	.13
77	M413	Z	-48.366	.13
78	M413	Mx	.026	.13
79	M416	X	-26.029	.13
80	M416	Z	-45.083	.13
81	M416	Mx	-.023	.13
82	M414	X	-23.664	.13
83	M414	Z	-40.987	.13



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
84	M414	Mx	.022	.13
85	MP3A	X	-20.132	3
86	MP3A	Z	-34.87	3
87	MP3A	Mx	-0.005	3
88	MP3A	X	-20.132	3
89	MP3A	Z	-34.87	3
90	MP3A	Mx	.005	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	0	4
2	MP1A	Z	-43.091	4
3	MP1A	Mx	0	4
4	MP1B	X	0	4
5	MP1B	Z	-18.338	4
6	MP1B	Mx	.015	4
7	MP1C	X	0	4
8	MP1C	Z	-19.084	4
9	MP1C	Mx	-.016	4
10	MP2A	X	0	1.5
11	MP2A	Z	-43.688	1.5
12	MP2A	Mx	0	1.5
13	MP2A	X	0	6.5
14	MP2A	Z	-43.688	6.5
15	MP2A	Mx	0	6.5
16	MP2B	X	0	1.5
17	MP2B	Z	-33.044	1.5
18	MP2B	Mx	.028	1.5
19	MP2B	X	0	6.5
20	MP2B	Z	-33.044	6.5
21	MP2B	Mx	.028	6.5
22	MP2C	X	0	1.5
23	MP2C	Z	-33.365	1.5
24	MP2C	Mx	-.027	1.5
25	MP2C	X	0	6.5
26	MP2C	Z	-33.365	6.5
27	MP2C	Mx	-.027	6.5
28	MP3A	X	0	1.5
29	MP3A	Z	-43.688	1.5
30	MP3A	Mx	.033	1.5
31	MP3A	X	0	6.5
32	MP3A	Z	-43.688	6.5
33	MP3A	Mx	.033	6.5
34	MP3B	X	0	1.5
35	MP3B	Z	-33.044	1.5
36	MP3B	Mx	.028	1.5
37	MP3B	X	0	6.5
38	MP3B	Z	-33.044	6.5
39	MP3B	Mx	.028	6.5
40	MP3C	X	0	1.5
41	MP3C	Z	-33.365	1.5
42	MP3C	Mx	-.023	1.5
43	MP3C	X	0	6.5
44	MP3C	Z	-33.365	6.5
45	MP3C	Mx	-.023	6.5
46	MP3A	X	0	1.5
47	MP3A	Z	-43.688	1.5
48	MP3A	Mx	-.033	1.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
49	MP3A	X	0	6.5
50	MP3A	Z	-43.688	6.5
51	MP3A	Mx	-.033	6.5
52	MP3B	X	0	1.5
53	MP3B	Z	-33.044	1.5
54	MP3B	Mx	.028	1.5
55	MP3B	X	0	6.5
56	MP3B	Z	-33.044	6.5
57	MP3B	Mx	.028	6.5
58	MP3C	X	0	1.5
59	MP3C	Z	-33.365	1.5
60	MP3C	Mx	-.032	1.5
61	MP3C	X	0	6.5
62	MP3C	Z	-33.365	6.5
63	MP3C	Mx	-.032	6.5
64	M410	X	0	.13
65	M410	Z	-37.315	.13
66	M410	Mx	0	.13
67	M287	X	0	.13
68	M287	Z	-18.148	.13
69	M287	Mx	0	.13
70	M412	X	0	.13
71	M412	Z	-18.148	.13
72	M412	Mx	0	.13
73	M415	X	0	.13
74	M415	Z	-12.618	.13
75	M415	Mx	-.006	.13
76	M413	X	0	.13
77	M413	Z	-12.785	.13
78	M413	Mx	.006	.13
79	M416	X	0	.13
80	M416	Z	-10.517	.13
81	M416	Mx	-.005	.13
82	M414	X	0	.13
83	M414	Z	-10.747	.13
84	M414	Mx	.005	.13
85	MP3A	X	0	3
86	MP3A	Z	-9.969	3
87	MP3A	Mx	0	3
88	MP3A	X	0	3
89	MP3A	Z	-9.969	3
90	MP3A	Mx	0	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	18.451	4
2	MP1A	Z	-31.958	4
3	MP1A	Mx	-.015	4
4	MP1B	X	12.263	4
5	MP1B	Z	-21.24	4
6	MP1B	Mx	.018	4
7	MP1C	X	14.283	4
8	MP1C	Z	-24.738	4
9	MP1C	Mx	-.018	4
10	MP2A	X	20.514	1.5
11	MP2A	Z	-35.531	1.5
12	MP2A	Mx	-.017	1.5
13	MP2A	X	20.514	6.5

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

	Member Label	Direction	Magnitude(lb.k-ft)	Location(ft.%)
14	MP2A	Z	-35.531	6.5
15	MP2A	Mx	-.017	6.5
16	MP2B	X	17.853	1.5
17	MP2B	Z	-30.921	1.5
18	MP2B	Mx	.026	1.5
19	MP2B	X	17.853	6.5
20	MP2B	Z	-30.921	6.5
21	MP2B	Mx	.026	6.5
22	MP2C	X	18.721	1.5
23	MP2C	Z	-32.426	1.5
24	MP2C	Mx	-.024	1.5
25	MP2C	X	18.721	6.5
26	MP2C	Z	-32.426	6.5
27	MP2C	Mx	-.024	6.5
28	MP3A	X	20.514	1.5
29	MP3A	Z	-35.531	1.5
30	MP3A	Mx	.01	1.5
31	MP3A	X	20.514	6.5
32	MP3A	Z	-35.531	6.5
33	MP3A	Mx	.01	6.5
34	MP3B	X	17.853	1.5
35	MP3B	Z	-30.921	1.5
36	MP3B	Mx	.012	1.5
37	MP3B	X	17.853	6.5
38	MP3B	Z	-30.921	6.5
39	MP3B	Mx	.012	6.5
40	MP3C	X	18.721	1.5
41	MP3C	Z	-32.426	1.5
42	MP3C	Mx	-.006	1.5
43	MP3C	X	18.721	6.5
44	MP3C	Z	-32.426	6.5
45	MP3C	Mx	-.006	6.5
46	MP3A	X	20.514	1.5
47	MP3A	Z	-35.531	1.5
48	MP3A	Mx	-.044	1.5
49	MP3A	X	20.514	6.5
50	MP3A	Z	-35.531	6.5
51	MP3A	Mx	-.044	6.5
52	MP3B	X	17.853	1.5
53	MP3B	Z	-30.921	1.5
54	MP3B	Mx	.039	1.5
55	MP3B	X	17.853	6.5
56	MP3B	Z	-30.921	6.5
57	MP3B	Mx	.039	6.5
58	MP3C	X	18.721	1.5
59	MP3C	Z	-32.426	1.5
60	MP3C	Mx	-.042	1.5
61	MP3C	X	18.721	6.5
62	MP3C	Z	-32.426	6.5
63	MP3C	Mx	-.042	6.5
64	M410	X	17.64	.13
65	M410	Z	-30.553	.13
66	M410	Mx	.009	.13
67	M287	X	8.383	.13
68	M287	Z	-14.519	.13
69	M287	Mx	.004	.13
70	M412	X	8.12	.13
71	M412	Z	-14.064	.13
72	M412	Mx	.004	.13



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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
73	M415	X	7	.13
74	M415	Z	-12.125	.13
75	M415	Mx	-.006	.13
76	M413	X	7.451	.13
77	M413	Z	-12.906	.13
78	M413	Mx	.006	.13
79	M416	X	6.212	.13
80	M416	Z	-10.76	.13
81	M416	Mx	-.005	.13
82	M414	X	6.835	.13
83	M414	Z	-11.838	.13
84	M414	Mx	.005	.13
85	MP3A	X	4.207	3
86	MP3A	Z	-7.286	3
87	MP3A	Mx	.001	3
88	MP3A	X	4.207	3
89	MP3A	Z	-7.286	3
90	MP3A	Mx	-.001	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP1A	X	21.24	4
2	MP1A	Z	-12.263	4
3	MP1A	Mx	-.018	4
4	MP1B	X	31.958	4
5	MP1B	Z	-18.451	4
6	MP1B	Mx	.015	4
7	MP1C	X	34.81	4
8	MP1C	Z	-20.098	4
9	MP1C	Mx	-.011	4
10	MP2A	X	30.921	1.5
11	MP2A	Z	-17.853	1.5
12	MP2A	Mx	-.026	1.5
13	MP2A	X	30.921	6.5
14	MP2A	Z	-17.853	6.5
15	MP2A	Mx	-.026	6.5
16	MP2B	X	35.531	1.5
17	MP2B	Z	-20.514	1.5
18	MP2B	Mx	.017	1.5
19	MP2B	X	35.531	6.5
20	MP2B	Z	-20.514	6.5
21	MP2B	Mx	.017	6.5
22	MP2C	X	36.757	1.5
23	MP2C	Z	-21.222	1.5
24	MP2C	Mx	-.012	1.5
25	MP2C	X	36.757	6.5
26	MP2C	Z	-21.222	6.5
27	MP2C	Mx	-.012	6.5
28	MP3A	X	30.921	1.5
29	MP3A	Z	-17.853	1.5
30	MP3A	Mx	-.012	1.5
31	MP3A	X	30.921	6.5
32	MP3A	Z	-17.853	6.5
33	MP3A	Mx	-.012	6.5
34	MP3B	X	35.531	1.5
35	MP3B	Z	-20.514	1.5
36	MP3B	Mx	-.01	1.5
37	MP3B	X	35.531	6.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
38	MP3B	Z	-20.514	6.5
39	MP3B	Mx	-.01	6.5
40	MP3C	X	36.757	1.5
41	MP3C	Z	-21.222	1.5
42	MP3C	Mx	.018	1.5
43	MP3C	X	36.757	6.5
44	MP3C	Z	-21.222	6.5
45	MP3C	Mx	.018	6.5
46	MP3A	X	30.921	1.5
47	MP3A	Z	-17.853	1.5
48	MP3A	Mx	-.039	1.5
49	MP3A	X	30.921	6.5
50	MP3A	Z	-17.853	6.5
51	MP3A	Mx	-.039	6.5
52	MP3B	X	35.531	1.5
53	MP3B	Z	-20.514	1.5
54	MP3B	Mx	.044	1.5
55	MP3B	X	35.531	6.5
56	MP3B	Z	-20.514	6.5
57	MP3B	Mx	.044	6.5
58	MP3C	X	36.757	1.5
59	MP3C	Z	-21.222	1.5
60	MP3C	Mx	-.042	1.5
61	MP3C	X	36.757	6.5
62	MP3C	Z	-21.222	6.5
63	MP3C	Mx	-.042	6.5
64	M410	X	27.027	.13
65	M410	Z	-15.604	.13
66	M410	Mx	.014	.13
67	M287	X	12.125	.13
68	M287	Z	-7	.13
69	M287	Mx	.006	.13
70	M412	X	10.76	.13
71	M412	Z	-6.212	.13
72	M412	Mx	.005	.13
73	M415	X	14.519	.13
74	M415	Z	-8.383	.13
75	M415	Mx	-.004	.13
76	M413	X	15.156	.13
77	M413	Z	-8.75	.13
78	M413	Mx	.003	.13
79	M416	X	14.064	.13
80	M416	Z	-8.12	.13
81	M416	Mx	-.004	.13
82	M414	X	14.943	.13
83	M414	Z	-8.627	.13
84	M414	Mx	.003	.13
85	MP3A	X	4.592	3
86	MP3A	Z	-2.651	3
87	MP3A	Mx	.001	3
88	MP3A	X	4.592	3
89	MP3A	Z	-2.651	3
90	MP3A	Mx	-.001	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	18.338	4
2	MP1A	Z	0	4



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
3	MP1A	Mx	-.015	4
4	MP1B	X	43.091	4
5	MP1B	Z	0	4
6	MP1B	Mx	0	4
7	MP1C	X	42.344	4
8	MP1C	Z	0	4
9	MP1C	Mx	.006	4
10	MP2A	X	33.044	1.5
11	MP2A	Z	0	1.5
12	MP2A	Mx	-.028	1.5
13	MP2A	X	33.044	6.5
14	MP2A	Z	0	6.5
15	MP2A	Mx	-.028	6.5
16	MP2B	X	43.688	1.5
17	MP2B	Z	0	1.5
18	MP2B	Mx	0	1.5
19	MP2B	X	43.688	6.5
20	MP2B	Z	0	6.5
21	MP2B	Mx	0	6.5
22	MP2C	X	43.367	1.5
23	MP2C	Z	0	1.5
24	MP2C	Mx	.006	1.5
25	MP2C	X	43.367	6.5
26	MP2C	Z	0	6.5
27	MP2C	Mx	.006	6.5
28	MP3A	X	33.044	1.5
29	MP3A	Z	0	1.5
30	MP3A	Mx	-.028	1.5
31	MP3A	X	33.044	6.5
32	MP3A	Z	0	6.5
33	MP3A	Mx	-.028	6.5
34	MP3B	X	43.688	1.5
35	MP3B	Z	0	1.5
36	MP3B	Mx	-.033	1.5
37	MP3B	X	43.688	6.5
38	MP3B	Z	0	6.5
39	MP3B	Mx	-.033	6.5
40	MP3C	X	43.367	1.5
41	MP3C	Z	0	1.5
42	MP3C	Mx	.038	1.5
43	MP3C	X	43.367	6.5
44	MP3C	Z	0	6.5
45	MP3C	Mx	.038	6.5
46	MP3A	X	33.044	1.5
47	MP3A	Z	0	1.5
48	MP3A	Mx	-.028	1.5
49	MP3A	X	33.044	6.5
50	MP3A	Z	0	6.5
51	MP3A	Mx	-.028	6.5
52	MP3B	X	43.688	1.5
53	MP3B	Z	0	1.5
54	MP3B	Mx	.033	1.5
55	MP3B	X	43.688	6.5
56	MP3B	Z	0	6.5
57	MP3B	Mx	.033	6.5
58	MP3C	X	43.367	1.5
59	MP3C	Z	0	1.5
60	MP3C	Mx	-.026	1.5
61	MP3C	X	43.367	6.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
62	MP3C	Z	0	6.5
63	MP3C	Mx	-0.026	6.5
64	M410	X	29.173	.13
65	M410	Z	0	.13
66	M410	Mx	.015	.13
67	M287	X	12.618	.13
68	M287	Z	0	.13
69	M287	Mx	.006	.13
70	M412	X	10.517	.13
71	M412	Z	0	.13
72	M412	Mx	.005	.13
73	M415	X	18.148	.13
74	M415	Z	0	.13
75	M415	Mx	0	.13
76	M413	X	17.981	.13
77	M413	Z	0	.13
78	M413	Mx	-.002	.13
79	M416	X	18.148	.13
80	M416	Z	0	.13
81	M416	Mx	0	.13
82	M414	X	17.918	.13
83	M414	Z	0	.13
84	M414	Mx	-.002	.13
85	MP3A	X	3.747	3
86	MP3A	Z	0	3
87	MP3A	Mx	.000937	3
88	MP3A	X	3.747	3
89	MP3A	Z	0	3
90	MP3A	Mx	-.000937	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	21.24	4
2	MP1A	Z	12.263	4
3	MP1A	Mx	-.018	4
4	MP1B	X	31.958	4
5	MP1B	Z	18.451	4
6	MP1B	Mx	-.015	4
7	MP1C	X	28.461	4
8	MP1C	Z	16.432	4
9	MP1C	Mx	.018	4
10	MP2A	X	30.921	1.5
11	MP2A	Z	17.853	1.5
12	MP2A	Mx	-.026	1.5
13	MP2A	X	30.921	6.5
14	MP2A	Z	17.853	6.5
15	MP2A	Mx	-.026	6.5
16	MP2B	X	35.531	1.5
17	MP2B	Z	20.514	1.5
18	MP2B	Mx	-.017	1.5
19	MP2B	X	35.531	6.5
20	MP2B	Z	20.514	6.5
21	MP2B	Mx	-.017	6.5
22	MP2C	X	34.026	1.5
23	MP2C	Z	19.645	1.5
24	MP2C	Mx	.021	1.5
25	MP2C	X	34.026	6.5
26	MP2C	Z	19.645	6.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
27	MP2C	Mx	.021	6.5
28	MP3A	X	30.921	1.5
29	MP3A	Z	17.853	1.5
30	MP3A	Mx	-.039	1.5
31	MP3A	X	30.921	6.5
32	MP3A	Z	17.853	6.5
33	MP3A	Mx	-.039	6.5
34	MP3B	X	35.531	1.5
35	MP3B	Z	20.514	1.5
36	MP3B	Mx	-.044	1.5
37	MP3B	X	35.531	6.5
38	MP3B	Z	20.514	6.5
39	MP3B	Mx	-.044	6.5
40	MP3C	X	34.026	1.5
41	MP3C	Z	19.645	1.5
42	MP3C	Mx	.044	1.5
43	MP3C	X	34.026	6.5
44	MP3C	Z	19.645	6.5
45	MP3C	Mx	.044	6.5
46	MP3A	X	30.921	1.5
47	MP3A	Z	17.853	1.5
48	MP3A	Mx	-.012	1.5
49	MP3A	X	30.921	6.5
50	MP3A	Z	17.853	6.5
51	MP3A	Mx	-.012	6.5
52	MP3B	X	35.531	1.5
53	MP3B	Z	20.514	1.5
54	MP3B	Mx	.01	1.5
55	MP3B	X	35.531	6.5
56	MP3B	Z	20.514	6.5
57	MP3B	Mx	.01	6.5
58	MP3C	X	34.026	1.5
59	MP3C	Z	19.645	1.5
60	MP3C	Mx	-.002	1.5
61	MP3C	X	34.026	6.5
62	MP3C	Z	19.645	6.5
63	MP3C	Mx	-.002	6.5
64	M410	X	27.027	.13
65	M410	Z	15.604	.13
66	M410	Mx	.014	.13
67	M287	X	12.125	.13
68	M287	Z	7	.13
69	M287	Mx	.006	.13
70	M412	X	10.76	.13
71	M412	Z	6.212	.13
72	M412	Mx	.005	.13
73	M415	X	14.519	.13
74	M415	Z	8.383	.13
75	M415	Mx	.004	.13
76	M413	X	13.738	.13
77	M413	Z	7.931	.13
78	M413	Mx	-.005	.13
79	M416	X	14.064	.13
80	M416	Z	8.12	.13
81	M416	Mx	.004	.13
82	M414	X	12.986	.13
83	M414	Z	7.497	.13
84	M414	Mx	-.005	.13
85	MP3A	X	4.592	3



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
86	MP3A	Z	2.651	3
87	MP3A	Mx	.001	3
88	MP3A	X	4.592	3
89	MP3A	Z	2.651	3
90	MP3A	Mx	-.001	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	18.451	4
2	MP1A	Z	31.958	4
3	MP1A	Mx	-.015	4
4	MP1B	X	12.263	4
5	MP1B	Z	21.24	4
6	MP1B	Mx	-.018	4
7	MP1C	X	10.617	4
8	MP1C	Z	18.389	4
9	MP1C	Mx	.017	4
10	MP2A	X	20.514	1.5
11	MP2A	Z	35.531	1.5
12	MP2A	Mx	-.017	1.5
13	MP2A	X	20.514	6.5
14	MP2A	Z	35.531	6.5
15	MP2A	Mx	-.017	6.5
16	MP2B	X	17.853	1.5
17	MP2B	Z	30.921	1.5
18	MP2B	Mx	-.026	1.5
19	MP2B	X	17.853	6.5
20	MP2B	Z	30.921	6.5
21	MP2B	Mx	-.026	6.5
22	MP2C	X	17.145	1.5
23	MP2C	Z	29.695	1.5
24	MP2C	Mx	.027	1.5
25	MP2C	X	17.145	6.5
26	MP2C	Z	29.695	6.5
27	MP2C	Mx	.027	6.5
28	MP3A	X	20.514	1.5
29	MP3A	Z	35.531	1.5
30	MP3A	Mx	-.044	1.5
31	MP3A	X	20.514	6.5
32	MP3A	Z	35.531	6.5
33	MP3A	Mx	-.044	6.5
34	MP3B	X	17.853	1.5
35	MP3B	Z	30.921	1.5
36	MP3B	Mx	-.039	1.5
37	MP3B	X	17.853	6.5
38	MP3B	Z	30.921	6.5
39	MP3B	Mx	-.039	6.5
40	MP3C	X	17.145	1.5
41	MP3C	Z	29.695	1.5
42	MP3C	Mx	.036	1.5
43	MP3C	X	17.145	6.5
44	MP3C	Z	29.695	6.5
45	MP3C	Mx	.036	6.5
46	MP3A	X	20.514	1.5
47	MP3A	Z	35.531	1.5
48	MP3A	Mx	.01	1.5
49	MP3A	X	20.514	6.5
50	MP3A	Z	35.531	6.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
51	MP3A	Mx	.01	6.5
52	MP3B	X	17.853	1.5
53	MP3B	Z	30.921	1.5
54	MP3B	Mx	-.012	1.5
55	MP3B	X	17.853	6.5
56	MP3B	Z	30.921	6.5
57	MP3B	Mx	-.012	6.5
58	MP3C	X	17.145	1.5
59	MP3C	Z	29.695	1.5
60	MP3C	Mx	.018	1.5
61	MP3C	X	17.145	6.5
62	MP3C	Z	29.695	6.5
63	MP3C	Mx	.018	6.5
64	M410	X	17.64	.13
65	M410	Z	30.553	.13
66	M410	Mx	.009	.13
67	M287	X	8.383	.13
68	M287	Z	14.519	.13
69	M287	Mx	.004	.13
70	M412	X	8.12	.13
71	M412	Z	14.064	.13
72	M412	Mx	.004	.13
73	M415	X	7	.13
74	M415	Z	12.125	.13
75	M415	Mx	.006	.13
76	M413	X	6.632	.13
77	M413	Z	11.488	.13
78	M413	Mx	-.006	.13
79	M416	X	6.212	.13
80	M416	Z	10.76	.13
81	M416	Mx	.005	.13
82	M414	X	5.705	.13
83	M414	Z	9.881	.13
84	M414	Mx	-.005	.13
85	MP3A	X	4.207	3
86	MP3A	Z	7.286	3
87	MP3A	Mx	.001	3
88	MP3A	X	4.207	3
89	MP3A	Z	7.286	3
90	MP3A	Mx	-.001	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	0	4
2	MP1A	Z	43.091	4
3	MP1A	Mx	0	4
4	MP1B	X	0	4
5	MP1B	Z	18.338	4
6	MP1B	Mx	-.015	4
7	MP1C	X	0	4
8	MP1C	Z	19.084	4
9	MP1C	Mx	.016	4
10	MP2A	X	0	1.5
11	MP2A	Z	43.688	1.5
12	MP2A	Mx	0	1.5
13	MP2A	X	0	6.5
14	MP2A	Z	43.688	6.5
15	MP2A	Mx	0	6.5



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

	Member Label	Direction	Magnitude(lb.k-ft)	Location(ft.%)
16	MP2B	X	0	1.5
17	MP2B	Z	33.044	1.5
18	MP2B	Mx	-.028	1.5
19	MP2B	X	0	6.5
20	MP2B	Z	33.044	6.5
21	MP2B	Mx	-.028	6.5
22	MP2C	X	0	1.5
23	MP2C	Z	33.365	1.5
24	MP2C	Mx	.027	1.5
25	MP2C	X	0	6.5
26	MP2C	Z	33.365	6.5
27	MP2C	Mx	.027	6.5
28	MP3A	X	0	1.5
29	MP3A	Z	43.688	1.5
30	MP3A	Mx	-.033	1.5
31	MP3A	X	0	6.5
32	MP3A	Z	43.688	6.5
33	MP3A	Mx	-.033	6.5
34	MP3B	X	0	1.5
35	MP3B	Z	33.044	1.5
36	MP3B	Mx	-.028	1.5
37	MP3B	X	0	6.5
38	MP3B	Z	33.044	6.5
39	MP3B	Mx	-.028	6.5
40	MP3C	X	0	1.5
41	MP3C	Z	33.365	1.5
42	MP3C	Mx	.023	1.5
43	MP3C	X	0	6.5
44	MP3C	Z	33.365	6.5
45	MP3C	Mx	.023	6.5
46	MP3A	X	0	1.5
47	MP3A	Z	43.688	1.5
48	MP3A	Mx	.033	1.5
49	MP3A	X	0	6.5
50	MP3A	Z	43.688	6.5
51	MP3A	Mx	.033	6.5
52	MP3B	X	0	1.5
53	MP3B	Z	33.044	1.5
54	MP3B	Mx	-.028	1.5
55	MP3B	X	0	6.5
56	MP3B	Z	33.044	6.5
57	MP3B	Mx	-.028	6.5
58	MP3C	X	0	1.5
59	MP3C	Z	33.365	1.5
60	MP3C	Mx	.032	1.5
61	MP3C	X	0	6.5
62	MP3C	Z	33.365	6.5
63	MP3C	Mx	.032	6.5
64	M410	X	0	.13
65	M410	Z	37.315	.13
66	M410	Mx	0	.13
67	M287	X	0	.13
68	M287	Z	18.148	.13
69	M287	Mx	0	.13
70	M412	X	0	.13
71	M412	Z	18.148	.13
72	M412	Mx	0	.13
73	M415	X	0	.13
74	M415	Z	12.618	.13



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
75	M415	Mx	.006	.13
76	M413	X	0	.13
77	M413	Z	12.785	.13
78	M413	Mx	-.006	.13
79	M416	X	0	.13
80	M416	Z	10.517	.13
81	M416	Mx	.005	.13
82	M414	X	0	.13
83	M414	Z	10.747	.13
84	M414	Mx	-.005	.13
85	MP3A	X	0	3
86	MP3A	Z	9.969	3
87	MP3A	Mx	0	3
88	MP3A	X	0	3
89	MP3A	Z	9.969	3
90	MP3A	Mx	0	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	-18.451	4
2	MP1A	Z	31.958	4
3	MP1A	Mx	.015	4
4	MP1B	X	-12.263	4
5	MP1B	Z	21.24	4
6	MP1B	Mx	-.018	4
7	MP1C	X	-14.283	4
8	MP1C	Z	24.738	4
9	MP1C	Mx	.018	4
10	MP2A	X	-20.514	1.5
11	MP2A	Z	35.531	1.5
12	MP2A	Mx	.017	1.5
13	MP2A	X	-20.514	6.5
14	MP2A	Z	35.531	6.5
15	MP2A	Mx	.017	6.5
16	MP2B	X	-17.853	1.5
17	MP2B	Z	30.921	1.5
18	MP2B	Mx	-.026	1.5
19	MP2B	X	-17.853	6.5
20	MP2B	Z	30.921	6.5
21	MP2B	Mx	-.026	6.5
22	MP2C	X	-18.721	1.5
23	MP2C	Z	32.426	1.5
24	MP2C	Mx	.024	1.5
25	MP2C	X	-18.721	6.5
26	MP2C	Z	32.426	6.5
27	MP2C	Mx	.024	6.5
28	MP3A	X	-20.514	1.5
29	MP3A	Z	35.531	1.5
30	MP3A	Mx	-.01	1.5
31	MP3A	X	-20.514	6.5
32	MP3A	Z	35.531	6.5
33	MP3A	Mx	-.01	6.5
34	MP3B	X	-17.853	1.5
35	MP3B	Z	30.921	1.5
36	MP3B	Mx	-.012	1.5
37	MP3B	X	-17.853	6.5
38	MP3B	Z	30.921	6.5
39	MP3B	Mx	-.012	6.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
5	MP1B	Z	18.451	4
6	MP1B	Mx	-.015	4
7	MP1C	X	-34.81	4
8	MP1C	Z	20.098	4
9	MP1C	Mx	.011	4
10	MP2A	X	-30.921	1.5
11	MP2A	Z	17.853	1.5
12	MP2A	Mx	.026	1.5
13	MP2A	X	-30.921	6.5
14	MP2A	Z	17.853	6.5
15	MP2A	Mx	.026	6.5
16	MP2B	X	-35.531	1.5
17	MP2B	Z	20.514	1.5
18	MP2B	Mx	-.017	1.5
19	MP2B	X	-35.531	6.5
20	MP2B	Z	20.514	6.5
21	MP2B	Mx	-.017	6.5
22	MP2C	X	-36.757	1.5
23	MP2C	Z	21.222	1.5
24	MP2C	Mx	.012	1.5
25	MP2C	X	-36.757	6.5
26	MP2C	Z	21.222	6.5
27	MP2C	Mx	.012	6.5
28	MP3A	X	-30.921	1.5
29	MP3A	Z	17.853	1.5
30	MP3A	Mx	.012	1.5
31	MP3A	X	-30.921	6.5
32	MP3A	Z	17.853	6.5
33	MP3A	Mx	.012	6.5
34	MP3B	X	-35.531	1.5
35	MP3B	Z	20.514	1.5
36	MP3B	Mx	.01	1.5
37	MP3B	X	-35.531	6.5
38	MP3B	Z	20.514	6.5
39	MP3B	Mx	.01	6.5
40	MP3C	X	-36.757	1.5
41	MP3C	Z	21.222	1.5
42	MP3C	Mx	-.018	1.5
43	MP3C	X	-36.757	6.5
44	MP3C	Z	21.222	6.5
45	MP3C	Mx	-.018	6.5
46	MP3A	X	-30.921	1.5
47	MP3A	Z	17.853	1.5
48	MP3A	Mx	.039	1.5
49	MP3A	X	-30.921	6.5
50	MP3A	Z	17.853	6.5
51	MP3A	Mx	.039	6.5
52	MP3B	X	-35.531	1.5
53	MP3B	Z	20.514	1.5
54	MP3B	Mx	-.044	1.5
55	MP3B	X	-35.531	6.5
56	MP3B	Z	20.514	6.5
57	MP3B	Mx	-.044	6.5
58	MP3C	X	-36.757	1.5
59	MP3C	Z	21.222	1.5
60	MP3C	Mx	.042	1.5
61	MP3C	X	-36.757	6.5
62	MP3C	Z	21.222	6.5
63	MP3C	Mx	.042	6.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
64	M410	X	-27.027	.13
65	M410	Z	15.604	.13
66	M410	Mx	-.014	.13
67	M287	X	-12.125	.13
68	M287	Z	7	.13
69	M287	Mx	-.006	.13
70	M412	X	-10.76	.13
71	M412	Z	6.212	.13
72	M412	Mx	-.005	.13
73	M415	X	-14.519	.13
74	M415	Z	8.383	.13
75	M415	Mx	.004	.13
76	M413	X	-15.156	.13
77	M413	Z	8.75	.13
78	M413	Mx	-.003	.13
79	M416	X	-14.064	.13
80	M416	Z	8.12	.13
81	M416	Mx	.004	.13
82	M414	X	-14.943	.13
83	M414	Z	8.627	.13
84	M414	Mx	-.003	.13
85	MP3A	X	-4.592	3
86	MP3A	Z	2.651	3
87	MP3A	Mx	-.001	3
88	MP3A	X	-4.592	3
89	MP3A	Z	2.651	3
90	MP3A	Mx	.001	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	-18.338	4
2	MP1A	Z	0	4
3	MP1A	Mx	.015	4
4	MP1B	X	-43.091	4
5	MP1B	Z	0	4
6	MP1B	Mx	0	4
7	MP1C	X	-42.344	4
8	MP1C	Z	0	4
9	MP1C	Mx	-.006	4
10	MP2A	X	-33.044	1.5
11	MP2A	Z	0	1.5
12	MP2A	Mx	.028	1.5
13	MP2A	X	-33.044	6.5
14	MP2A	Z	0	6.5
15	MP2A	Mx	.028	6.5
16	MP2B	X	-43.688	1.5
17	MP2B	Z	0	1.5
18	MP2B	Mx	0	1.5
19	MP2B	X	-43.688	6.5
20	MP2B	Z	0	6.5
21	MP2B	Mx	0	6.5
22	MP2C	X	-43.367	1.5
23	MP2C	Z	0	1.5
24	MP2C	Mx	-.006	1.5
25	MP2C	X	-43.367	6.5
26	MP2C	Z	0	6.5
27	MP2C	Mx	-.006	6.5
28	MP3A	X	-33.044	1.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
29	MP3A	Z	0	1.5
30	MP3A	Mx	.028	1.5
31	MP3A	X	-33.044	6.5
32	MP3A	Z	0	6.5
33	MP3A	Mx	.028	6.5
34	MP3B	X	-43.688	1.5
35	MP3B	Z	0	1.5
36	MP3B	Mx	.033	1.5
37	MP3B	X	-43.688	6.5
38	MP3B	Z	0	6.5
39	MP3B	Mx	.033	6.5
40	MP3C	X	-43.367	1.5
41	MP3C	Z	0	1.5
42	MP3C	Mx	-.038	1.5
43	MP3C	X	-43.367	6.5
44	MP3C	Z	0	6.5
45	MP3C	Mx	-.038	6.5
46	MP3A	X	-33.044	1.5
47	MP3A	Z	0	1.5
48	MP3A	Mx	.028	1.5
49	MP3A	X	-33.044	6.5
50	MP3A	Z	0	6.5
51	MP3A	Mx	.028	6.5
52	MP3B	X	-43.688	1.5
53	MP3B	Z	0	1.5
54	MP3B	Mx	-.033	1.5
55	MP3B	X	-43.688	6.5
56	MP3B	Z	0	6.5
57	MP3B	Mx	-.033	6.5
58	MP3C	X	-43.367	1.5
59	MP3C	Z	0	1.5
60	MP3C	Mx	.026	1.5
61	MP3C	X	-43.367	6.5
62	MP3C	Z	0	6.5
63	MP3C	Mx	.026	6.5
64	M410	X	-29.173	.13
65	M410	Z	0	.13
66	M410	Mx	-.015	.13
67	M287	X	-12.618	.13
68	M287	Z	0	.13
69	M287	Mx	-.006	.13
70	M412	X	-10.517	.13
71	M412	Z	0	.13
72	M412	Mx	-.005	.13
73	M415	X	-18.148	.13
74	M415	Z	0	.13
75	M415	Mx	0	.13
76	M413	X	-17.981	.13
77	M413	Z	0	.13
78	M413	Mx	.002	.13
79	M416	X	-18.148	.13
80	M416	Z	0	.13
81	M416	Mx	0	.13
82	M414	X	-17.918	.13
83	M414	Z	0	.13
84	M414	Mx	.002	.13
85	MP3A	X	-3.747	3
86	MP3A	Z	0	3
87	MP3A	Mx	-.000937	3



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
88	MP3A	X	-3.747	3
89	MP3A	Z	0	3
90	MP3A	Mx	.000937	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	-21.24	4
2	MP1A	Z	-12.263	4
3	MP1A	Mx	.018	4
4	MP1B	X	-31.958	4
5	MP1B	Z	-18.451	4
6	MP1B	Mx	.015	4
7	MP1C	X	-28.461	4
8	MP1C	Z	-16.432	4
9	MP1C	Mx	-.018	4
10	MP2A	X	-30.921	1.5
11	MP2A	Z	-17.853	1.5
12	MP2A	Mx	.026	1.5
13	MP2A	X	-30.921	6.5
14	MP2A	Z	-17.853	6.5
15	MP2A	Mx	.026	6.5
16	MP2B	X	-35.531	1.5
17	MP2B	Z	-20.514	1.5
18	MP2B	Mx	.017	1.5
19	MP2B	X	-35.531	6.5
20	MP2B	Z	-20.514	6.5
21	MP2B	Mx	.017	6.5
22	MP2C	X	-34.026	1.5
23	MP2C	Z	-19.645	1.5
24	MP2C	Mx	-.021	1.5
25	MP2C	X	-34.026	6.5
26	MP2C	Z	-19.645	6.5
27	MP2C	Mx	-.021	6.5
28	MP3A	X	-30.921	1.5
29	MP3A	Z	-17.853	1.5
30	MP3A	Mx	.039	1.5
31	MP3A	X	-30.921	6.5
32	MP3A	Z	-17.853	6.5
33	MP3A	Mx	.039	6.5
34	MP3B	X	-35.531	1.5
35	MP3B	Z	-20.514	1.5
36	MP3B	Mx	.044	1.5
37	MP3B	X	-35.531	6.5
38	MP3B	Z	-20.514	6.5
39	MP3B	Mx	.044	6.5
40	MP3C	X	-34.026	1.5
41	MP3C	Z	-19.645	1.5
42	MP3C	Mx	-.044	1.5
43	MP3C	X	-34.026	6.5
44	MP3C	Z	-19.645	6.5
45	MP3C	Mx	-.044	6.5
46	MP3A	X	-30.921	1.5
47	MP3A	Z	-17.853	1.5
48	MP3A	Mx	.012	1.5
49	MP3A	X	-30.921	6.5
50	MP3A	Z	-17.853	6.5
51	MP3A	Mx	.012	6.5
52	MP3B	X	-35.531	1.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
53	MP3B	Z	-20.514	1.5
54	MP3B	Mx	-.01	1.5
55	MP3B	X	-35.531	6.5
56	MP3B	Z	-20.514	6.5
57	MP3B	Mx	-.01	6.5
58	MP3C	X	-34.026	1.5
59	MP3C	Z	-19.645	1.5
60	MP3C	Mx	.002	1.5
61	MP3C	X	-34.026	6.5
62	MP3C	Z	-19.645	6.5
63	MP3C	Mx	.002	6.5
64	M410	X	-27.027	.13
65	M410	Z	-15.604	.13
66	M410	Mx	-.014	.13
67	M287	X	-12.125	.13
68	M287	Z	-.7	.13
69	M287	Mx	-.006	.13
70	M412	X	-10.76	.13
71	M412	Z	-6.212	.13
72	M412	Mx	-.005	.13
73	M415	X	-14.519	.13
74	M415	Z	-8.383	.13
75	M415	Mx	-.004	.13
76	M413	X	-13.738	.13
77	M413	Z	-7.931	.13
78	M413	Mx	.005	.13
79	M416	X	-14.064	.13
80	M416	Z	-8.12	.13
81	M416	Mx	-.004	.13
82	M414	X	-12.986	.13
83	M414	Z	-7.497	.13
84	M414	Mx	.005	.13
85	MP3A	X	-4.592	3
86	MP3A	Z	-2.651	3
87	MP3A	Mx	-.001	3
88	MP3A	X	-4.592	3
89	MP3A	Z	-2.651	3
90	MP3A	Mx	.001	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	-18.451	4
2	MP1A	Z	-31.958	4
3	MP1A	Mx	.015	4
4	MP1B	X	-12.263	4
5	MP1B	Z	-21.24	4
6	MP1B	Mx	.018	4
7	MP1C	X	-10.617	4
8	MP1C	Z	-18.389	4
9	MP1C	Mx	-.017	4
10	MP2A	X	-20.514	1.5
11	MP2A	Z	-35.531	1.5
12	MP2A	Mx	.017	1.5
13	MP2A	X	-20.514	6.5
14	MP2A	Z	-35.531	6.5
15	MP2A	Mx	.017	6.5
16	MP2B	X	-17.853	1.5
17	MP2B	Z	-30.921	1.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
18	MP2B	Mx	.026	1.5
19	MP2B	X	-17.853	6.5
20	MP2B	Z	-30.921	6.5
21	MP2B	Mx	.026	6.5
22	MP2C	X	-17.145	1.5
23	MP2C	Z	-29.695	1.5
24	MP2C	Mx	-.027	1.5
25	MP2C	X	-17.145	6.5
26	MP2C	Z	-29.695	6.5
27	MP2C	Mx	-.027	6.5
28	MP3A	X	-20.514	1.5
29	MP3A	Z	-35.531	1.5
30	MP3A	Mx	.044	1.5
31	MP3A	X	-20.514	6.5
32	MP3A	Z	-35.531	6.5
33	MP3A	Mx	.044	6.5
34	MP3B	X	-17.853	1.5
35	MP3B	Z	-30.921	1.5
36	MP3B	Mx	.039	1.5
37	MP3B	X	-17.853	6.5
38	MP3B	Z	-30.921	6.5
39	MP3B	Mx	.039	6.5
40	MP3C	X	-17.145	1.5
41	MP3C	Z	-29.695	1.5
42	MP3C	Mx	-.036	1.5
43	MP3C	X	-17.145	6.5
44	MP3C	Z	-29.695	6.5
45	MP3C	Mx	-.036	6.5
46	MP3A	X	-20.514	1.5
47	MP3A	Z	-35.531	1.5
48	MP3A	Mx	-.01	1.5
49	MP3A	X	-20.514	6.5
50	MP3A	Z	-35.531	6.5
51	MP3A	Mx	-.01	6.5
52	MP3B	X	-17.853	1.5
53	MP3B	Z	-30.921	1.5
54	MP3B	Mx	.012	1.5
55	MP3B	X	-17.853	6.5
56	MP3B	Z	-30.921	6.5
57	MP3B	Mx	.012	6.5
58	MP3C	X	-17.145	1.5
59	MP3C	Z	-29.695	1.5
60	MP3C	Mx	-.018	1.5
61	MP3C	X	-17.145	6.5
62	MP3C	Z	-29.695	6.5
63	MP3C	Mx	-.018	6.5
64	M410	X	-17.64	.13
65	M410	Z	-30.553	.13
66	M410	Mx	-.009	.13
67	M287	X	-8.383	.13
68	M287	Z	-14.519	.13
69	M287	Mx	-.004	.13
70	M412	X	-8.12	.13
71	M412	Z	-14.064	.13
72	M412	Mx	-.004	.13
73	M415	X	-7	.13
74	M415	Z	-12.125	.13
75	M415	Mx	-.006	.13
76	M413	X	-6.632	.13



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
77	M413	Z	-11.488	.13
78	M413	Mx	.006	.13
79	M416	X	-6.212	.13
80	M416	Z	-10.76	.13
81	M416	Mx	-.005	.13
82	M414	X	-5.705	.13
83	M414	Z	-9.881	.13
84	M414	Mx	.005	.13
85	MP3A	X	-4.207	3
86	MP3A	Z	-7.286	3
87	MP3A	Mx	-.001	3
88	MP3A	X	-4.207	3
89	MP3A	Z	-7.286	3
90	MP3A	Mx	.001	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	0	4
2	MP1A	Z	-11.467	4
3	MP1A	Mx	0	4
4	MP1B	X	0	4
5	MP1B	Z	-3.949	4
6	MP1B	Mx	.003	4
7	MP1C	X	0	4
8	MP1C	Z	-4.176	4
9	MP1C	Mx	-.003	4
10	MP2A	X	0	1.5
11	MP2A	Z	-6.918	1.5
12	MP2A	Mx	0	1.5
13	MP2A	X	0	6.5
14	MP2A	Z	-6.918	6.5
15	MP2A	Mx	0	6.5
16	MP2B	X	0	1.5
17	MP2B	Z	-5.178	1.5
18	MP2B	Mx	.004	1.5
19	MP2B	X	0	6.5
20	MP2B	Z	-5.178	6.5
21	MP2B	Mx	.004	6.5
22	MP2C	X	0	1.5
23	MP2C	Z	-5.23	1.5
24	MP2C	Mx	-.004	1.5
25	MP2C	X	0	6.5
26	MP2C	Z	-5.23	6.5
27	MP2C	Mx	-.004	6.5
28	MP3A	X	0	1.5
29	MP3A	Z	-6.918	1.5
30	MP3A	Mx	.005	1.5
31	MP3A	X	0	6.5
32	MP3A	Z	-6.918	6.5
33	MP3A	Mx	.005	6.5
34	MP3B	X	0	1.5
35	MP3B	Z	-5.178	1.5
36	MP3B	Mx	.004	1.5
37	MP3B	X	0	6.5
38	MP3B	Z	-5.178	6.5
39	MP3B	Mx	.004	6.5
40	MP3C	X	0	1.5
41	MP3C	Z	-5.23	1.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
42	MP3C	Mx	-.004	1.5
43	MP3C	X	0	6.5
44	MP3C	Z	-5.23	6.5
45	MP3C	Mx	-.004	6.5
46	MP3A	X	0	1.5
47	MP3A	Z	-6.918	1.5
48	MP3A	Mx	-.005	1.5
49	MP3A	X	0	6.5
50	MP3A	Z	-6.918	6.5
51	MP3A	Mx	-.005	6.5
52	MP3B	X	0	1.5
53	MP3B	Z	-5.178	1.5
54	MP3B	Mx	.004	1.5
55	MP3B	X	0	6.5
56	MP3B	Z	-5.178	6.5
57	MP3B	Mx	.004	6.5
58	MP3C	X	0	1.5
59	MP3C	Z	-5.23	1.5
60	MP3C	Mx	-.005	1.5
61	MP3C	X	0	6.5
62	MP3C	Z	-5.23	6.5
63	MP3C	Mx	-.005	6.5
64	M410	X	0	.13
65	M410	Z	-9.273	.13
66	M410	Mx	0	.13
67	M287	X	0	.13
68	M287	Z	-4.534	.13
69	M287	Mx	0	.13
70	M412	X	0	.13
71	M412	Z	-4.534	.13
72	M412	Mx	0	.13
73	M415	X	0	.13
74	M415	Z	-3.042	.13
75	M415	Mx	-.002	.13
76	M413	X	0	.13
77	M413	Z	-3.087	.13
78	M413	Mx	.002	.13
79	M416	X	0	.13
80	M416	Z	-2.487	.13
81	M416	Mx	-.001	.13
82	M414	X	0	.13
83	M414	Z	-2.548	.13
84	M414	Mx	.001	.13
85	MP3A	X	0	3
86	MP3A	Z	-2.808	3
87	MP3A	Mx	0	3
88	MP3A	X	0	3
89	MP3A	Z	-2.808	3
90	MP3A	Mx	0	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	4.794	4
2	MP1A	Z	-8.303	4
3	MP1A	Mx	-.004	4
4	MP1B	X	2.914	4
5	MP1B	Z	-5.048	4
6	MP1B	Mx	.004	4



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
7	MP1C	X	3.528	4
8	MP1C	Z	-6.11	4
9	MP1C	Mx	-.005	4
10	MP2A	X	3.242	1.5
11	MP2A	Z	-5.615	1.5
12	MP2A	Mx	-.003	1.5
13	MP2A	X	3.242	6.5
14	MP2A	Z	-5.615	6.5
15	MP2A	Mx	-.003	6.5
16	MP2B	X	2.807	1.5
17	MP2B	Z	-4.861	1.5
18	MP2B	Mx	.004	1.5
19	MP2B	X	2.807	6.5
20	MP2B	Z	-4.861	6.5
21	MP2B	Mx	.004	6.5
22	MP2C	X	2.949	1.5
23	MP2C	Z	-5.107	1.5
24	MP2C	Mx	-.004	1.5
25	MP2C	X	2.949	6.5
26	MP2C	Z	-5.107	6.5
27	MP2C	Mx	-.004	6.5
28	MP3A	X	3.242	1.5
29	MP3A	Z	-5.615	1.5
30	MP3A	Mx	.002	1.5
31	MP3A	X	3.242	6.5
32	MP3A	Z	-5.615	6.5
33	MP3A	Mx	.002	6.5
34	MP3B	X	2.807	1.5
35	MP3B	Z	-4.861	1.5
36	MP3B	Mx	.002	1.5
37	MP3B	X	2.807	6.5
38	MP3B	Z	-4.861	6.5
39	MP3B	Mx	.002	6.5
40	MP3C	X	2.949	1.5
41	MP3C	Z	-5.107	1.5
42	MP3C	Mx	-.000921	1.5
43	MP3C	X	2.949	6.5
44	MP3C	Z	-5.107	6.5
45	MP3C	Mx	-.000921	6.5
46	MP3A	X	3.242	1.5
47	MP3A	Z	-5.615	1.5
48	MP3A	Mx	-.007	1.5
49	MP3A	X	3.242	6.5
50	MP3A	Z	-5.615	6.5
51	MP3A	Mx	-.007	6.5
52	MP3B	X	2.807	1.5
53	MP3B	Z	-4.861	1.5
54	MP3B	Mx	.006	1.5
55	MP3B	X	2.807	6.5
56	MP3B	Z	-4.861	6.5
57	MP3B	Mx	.006	6.5
58	MP3C	X	2.949	1.5
59	MP3C	Z	-5.107	1.5
60	MP3C	Mx	-.007	1.5
61	MP3C	X	2.949	6.5
62	MP3C	Z	-5.107	6.5
63	MP3C	Mx	-.007	6.5
64	M410	X	4.359	.13
65	M410	Z	-7.55	.13

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
66	M410	Mx	.002	.13
67	M287	X	2.081	.13
68	M287	Z	-3.604	.13
69	M287	Mx	.001	.13
70	M412	X	2.011	.13
71	M412	Z	-3.483	.13
72	M412	Mx	.001	.13
73	M415	X	1.708	.13
74	M415	Z	-2.958	.13
75	M415	Mx	-.001	.13
76	M413	X	1.829	.13
77	M413	Z	-3.169	.13
78	M413	Mx	.001	.13
79	M416	X	1.499	.13
80	M416	Z	-2.597	.13
81	M416	Mx	-.001	.13
82	M414	X	1.666	.13
83	M414	Z	-2.886	.13
84	M414	Mx	.001	.13
85	MP3A	X	1.16	3
86	MP3A	Z	-2.008	3
87	MP3A	Mx	.00029	3
88	MP3A	X	1.16	3
89	MP3A	Z	-2.008	3
90	MP3A	Mx	-.00029	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	5.048	4
2	MP1A	Z	-2.914	4
3	MP1A	Mx	-.004	4
4	MP1B	X	8.303	4
5	MP1B	Z	-4.794	4
6	MP1B	Mx	.004	4
7	MP1C	X	9.169	4
8	MP1C	Z	-5.294	4
9	MP1C	Mx	-.003	4
10	MP2A	X	4.861	1.5
11	MP2A	Z	-2.807	1.5
12	MP2A	Mx	-.004	1.5
13	MP2A	X	4.861	6.5
14	MP2A	Z	-2.807	6.5
15	MP2A	Mx	-.004	6.5
16	MP2B	X	5.615	1.5
17	MP2B	Z	-3.242	1.5
18	MP2B	Mx	.003	1.5
19	MP2B	X	5.615	6.5
20	MP2B	Z	-3.242	6.5
21	MP2B	Mx	.003	6.5
22	MP2C	X	5.815	1.5
23	MP2C	Z	-3.357	1.5
24	MP2C	Mx	-.002	1.5
25	MP2C	X	5.815	6.5
26	MP2C	Z	-3.357	6.5
27	MP2C	Mx	-.002	6.5
28	MP3A	X	4.861	1.5
29	MP3A	Z	-2.807	1.5
30	MP3A	Mx	-.002	1.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
31	MP3A	X	4.861	6.5
32	MP3A	Z	-2.807	6.5
33	MP3A	Mx	-.002	6.5
34	MP3B	X	5.615	1.5
35	MP3B	Z	-3.242	1.5
36	MP3B	Mx	-.002	1.5
37	MP3B	X	5.615	6.5
38	MP3B	Z	-3.242	6.5
39	MP3B	Mx	-.002	6.5
40	MP3C	X	5.815	1.5
41	MP3C	Z	-3.357	1.5
42	MP3C	Mx	.003	1.5
43	MP3C	X	5.815	6.5
44	MP3C	Z	-3.357	6.5
45	MP3C	Mx	.003	6.5
46	MP3A	X	4.861	1.5
47	MP3A	Z	-2.807	1.5
48	MP3A	Mx	-.006	1.5
49	MP3A	X	4.861	6.5
50	MP3A	Z	-2.807	6.5
51	MP3A	Mx	-.006	6.5
52	MP3B	X	5.615	1.5
53	MP3B	Z	-3.242	1.5
54	MP3B	Mx	.007	1.5
55	MP3B	X	5.615	6.5
56	MP3B	Z	-3.242	6.5
57	MP3B	Mx	.007	6.5
58	MP3C	X	5.815	1.5
59	MP3C	Z	-3.357	1.5
60	MP3C	Mx	-.007	1.5
61	MP3C	X	5.815	6.5
62	MP3C	Z	-3.357	6.5
63	MP3C	Mx	-.007	6.5
64	M410	X	6.587	.13
65	M410	Z	-3.803	.13
66	M410	Mx	.003	.13
67	M287	X	2.958	.13
68	M287	Z	-1.708	.13
69	M287	Mx	.001	.13
70	M412	X	2.597	.13
71	M412	Z	-1.499	.13
72	M412	Mx	.001	.13
73	M415	X	3.604	.13
74	M415	Z	-2.081	.13
75	M415	Mx	-.001	.13
76	M413	X	3.776	.13
77	M413	Z	-2.18	.13
78	M413	Mx	.000746	.13
79	M416	X	3.483	.13
80	M416	Z	-2.011	.13
81	M416	Mx	-.001	.13
82	M414	X	3.719	.13
83	M414	Z	-2.147	.13
84	M414	Mx	.000734	.13
85	MP3A	X	1.161	3
86	MP3A	Z	-.67	3
87	MP3A	Mx	.00029	3
88	MP3A	X	1.161	3
89	MP3A	Z	-.67	3



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

Member Label	Direction	Magnitude[lb.k-ft]	Location(ft.%)
90 MP3A	Mx	-.00029	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location(ft.%)
1	MP1A	X	3.949	4
2	MP1A	Z	0	4
3	MP1A	Mx	-.003	4
4	MP1B	X	11.467	4
5	MP1B	Z	0	4
6	MP1B	Mx	0	4
7	MP1C	X	11.241	4
8	MP1C	Z	0	4
9	MP1C	Mx	.002	4
10	MP2A	X	5.178	1.5
11	MP2A	Z	0	1.5
12	MP2A	Mx	-.004	1.5
13	MP2A	X	5.178	6.5
14	MP2A	Z	0	6.5
15	MP2A	Mx	-.004	6.5
16	MP2B	X	6.918	1.5
17	MP2B	Z	0	1.5
18	MP2B	Mx	0	1.5
19	MP2B	X	6.918	6.5
20	MP2B	Z	0	6.5
21	MP2B	Mx	0	6.5
22	MP2C	X	6.866	1.5
23	MP2C	Z	0	1.5
24	MP2C	Mx	.000994	1.5
25	MP2C	X	6.866	6.5
26	MP2C	Z	0	6.5
27	MP2C	Mx	.000994	6.5
28	MP3A	X	5.178	1.5
29	MP3A	Z	0	1.5
30	MP3A	Mx	-.004	1.5
31	MP3A	X	5.178	6.5
32	MP3A	Z	0	6.5
33	MP3A	Mx	-.004	6.5
34	MP3B	X	6.918	1.5
35	MP3B	Z	0	1.5
36	MP3B	Mx	-.005	1.5
37	MP3B	X	6.918	6.5
38	MP3B	Z	0	6.5
39	MP3B	Mx	-.005	6.5
40	MP3C	X	6.866	1.5
41	MP3C	Z	0	1.5
42	MP3C	Mx	.006	1.5
43	MP3C	X	6.866	6.5
44	MP3C	Z	0	6.5
45	MP3C	Mx	.006	6.5
46	MP3A	X	5.178	1.5
47	MP3A	Z	0	1.5
48	MP3A	Mx	-.004	1.5
49	MP3A	X	5.178	6.5
50	MP3A	Z	0	6.5
51	MP3A	Mx	-.004	6.5
52	MP3B	X	6.918	1.5
53	MP3B	Z	0	1.5
54	MP3B	Mx	.005	1.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
55	MP3B	X	6.918	6.5
56	MP3B	Z	0	6.5
57	MP3B	Mx	.005	6.5
58	MP3C	X	6.866	1.5
59	MP3C	Z	0	1.5
60	MP3C	Mx	-.004	1.5
61	MP3C	X	6.866	6.5
62	MP3C	Z	0	6.5
63	MP3C	Mx	-.004	6.5
64	M410	X	7.05	.13
65	M410	Z	0	.13
66	M410	Mx	.004	.13
67	M287	X	3.042	.13
68	M287	Z	0	.13
69	M287	Mx	.002	.13
70	M412	X	2.487	.13
71	M412	Z	0	.13
72	M412	Mx	.001	.13
73	M415	X	4.534	.13
74	M415	Z	0	.13
75	M415	Mx	0	.13
76	M413	X	4.489	.13
77	M413	Z	0	.13
78	M413	Mx	-.00039	.13
79	M416	X	4.534	.13
80	M416	Z	0	.13
81	M416	Mx	0	.13
82	M414	X	4.473	.13
83	M414	Z	0	.13
84	M414	Mx	-.000388	.13
85	MP3A	X	.852	3
86	MP3A	Z	0	3
87	MP3A	Mx	.000213	3
88	MP3A	X	.852	3
89	MP3A	Z	0	3
90	MP3A	Mx	-.000213	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	5.048	4
2	MP1A	Z	2.914	4
3	MP1A	Mx	-.004	4
4	MP1B	X	8.303	4
5	MP1B	Z	4.794	4
6	MP1B	Mx	-.004	4
7	MP1C	X	7.241	4
8	MP1C	Z	4.181	4
9	MP1C	Mx	.004	4
10	MP2A	X	4.861	1.5
11	MP2A	Z	2.807	1.5
12	MP2A	Mx	-.004	1.5
13	MP2A	X	4.861	6.5
14	MP2A	Z	2.807	6.5
15	MP2A	Mx	-.004	6.5
16	MP2B	X	5.615	1.5
17	MP2B	Z	3.242	1.5
18	MP2B	Mx	-.003	1.5
19	MP2B	X	5.615	6.5



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

	Member Label	Direction	Magnitude(lb.k-ft)	Location(ft. %)
20	MP2B	Z	3.242	6.5
21	MP2B	Mx	-.003	6.5
22	MP2C	X	5.369	1.5
23	MP2C	Z	3.1	1.5
24	MP2C	Mx	.003	1.5
25	MP2C	X	5.369	6.5
26	MP2C	Z	3.1	6.5
27	MP2C	Mx	.003	6.5
28	MP3A	X	4.861	1.5
29	MP3A	Z	2.807	1.5
30	MP3A	Mx	-.006	1.5
31	MP3A	X	4.861	6.5
32	MP3A	Z	2.807	6.5
33	MP3A	Mx	-.006	6.5
34	MP3B	X	5.615	1.5
35	MP3B	Z	3.242	1.5
36	MP3B	Mx	-.007	1.5
37	MP3B	X	5.615	6.5
38	MP3B	Z	3.242	6.5
39	MP3B	Mx	-.007	6.5
40	MP3C	X	5.369	1.5
41	MP3C	Z	3.1	1.5
42	MP3C	Mx	.007	1.5
43	MP3C	X	5.369	6.5
44	MP3C	Z	3.1	6.5
45	MP3C	Mx	.007	6.5
46	MP3A	X	4.861	1.5
47	MP3A	Z	2.807	1.5
48	MP3A	Mx	-.002	1.5
49	MP3A	X	4.861	6.5
50	MP3A	Z	2.807	6.5
51	MP3A	Mx	-.002	6.5
52	MP3B	X	5.615	1.5
53	MP3B	Z	3.242	1.5
54	MP3B	Mx	.002	1.5
55	MP3B	X	5.615	6.5
56	MP3B	Z	3.242	6.5
57	MP3B	Mx	.002	6.5
58	MP3C	X	5.369	1.5
59	MP3C	Z	3.1	1.5
60	MP3C	Mx	-.000241	1.5
61	MP3C	X	5.369	6.5
62	MP3C	Z	3.1	6.5
63	MP3C	Mx	-.000241	6.5
64	M410	X	6.587	.13
65	M410	Z	3.803	.13
66	M410	Mx	.003	.13
67	M287	X	2.958	.13
68	M287	Z	1.708	.13
69	M287	Mx	.001	.13
70	M412	X	2.597	.13
71	M412	Z	1.499	.13
72	M412	Mx	.001	.13
73	M415	X	3.604	.13
74	M415	Z	2.081	.13
75	M415	Mx	.001	.13
76	M413	X	3.393	.13
77	M413	Z	1.959	.13
78	M413	Mx	-.001	.13



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
79	M416	X	3.483	.13
80	M416	Z	2.011	.13
81	M416	Mx	.001	.13
82	M414	X	3.194	.13
83	M414	Z	1.844	.13
84	M414	Mx	-.001	.13
85	MP3A	X	1.161	3
86	MP3A	Z	.67	3
87	MP3A	Mx	.00029	3
88	MP3A	X	1.161	3
89	MP3A	Z	.67	3
90	MP3A	Mx	-.00029	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	4.794	4
2	MP1A	Z	8.303	4
3	MP1A	Mx	-.004	4
4	MP1B	X	2.914	4
5	MP1B	Z	5.048	4
6	MP1B	Mx	-.004	4
7	MP1C	X	2.414	4
8	MP1C	Z	4.182	4
9	MP1C	Mx	.004	4
10	MP2A	X	3.242	1.5
11	MP2A	Z	5.615	1.5
12	MP2A	Mx	-.003	1.5
13	MP2A	X	3.242	6.5
14	MP2A	Z	5.615	6.5
15	MP2A	Mx	-.003	6.5
16	MP2B	X	2.807	1.5
17	MP2B	Z	4.861	1.5
18	MP2B	Mx	-.004	1.5
19	MP2B	X	2.807	6.5
20	MP2B	Z	4.861	6.5
21	MP2B	Mx	-.004	6.5
22	MP2C	X	2.691	1.5
23	MP2C	Z	4.66	1.5
24	MP2C	Mx	.004	1.5
25	MP2C	X	2.691	6.5
26	MP2C	Z	4.66	6.5
27	MP2C	Mx	.004	6.5
28	MP3A	X	3.242	1.5
29	MP3A	Z	5.615	1.5
30	MP3A	Mx	-.007	1.5
31	MP3A	X	3.242	6.5
32	MP3A	Z	5.615	6.5
33	MP3A	Mx	-.007	6.5
34	MP3B	X	2.807	1.5
35	MP3B	Z	4.861	1.5
36	MP3B	Mx	-.006	1.5
37	MP3B	X	2.807	6.5
38	MP3B	Z	4.861	6.5
39	MP3B	Mx	-.006	6.5
40	MP3C	X	2.691	1.5
41	MP3C	Z	4.66	1.5
42	MP3C	Mx	.006	1.5
43	MP3C	X	2.691	6.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
9	MP1C	Mx	.003	4
10	MP2A	X	0	1.5
11	MP2A	Z	6.918	1.5
12	MP2A	Mx	0	1.5
13	MP2A	X	0	6.5
14	MP2A	Z	6.918	6.5
15	MP2A	Mx	0	6.5
16	MP2B	X	0	1.5
17	MP2B	Z	5.178	1.5
18	MP2B	Mx	-.004	1.5
19	MP2B	X	0	6.5
20	MP2B	Z	5.178	6.5
21	MP2B	Mx	-.004	6.5
22	MP2C	X	0	1.5
23	MP2C	Z	5.23	1.5
24	MP2C	Mx	.004	1.5
25	MP2C	X	0	6.5
26	MP2C	Z	5.23	6.5
27	MP2C	Mx	.004	6.5
28	MP3A	X	0	1.5
29	MP3A	Z	6.918	1.5
30	MP3A	Mx	-.005	1.5
31	MP3A	X	0	6.5
32	MP3A	Z	6.918	6.5
33	MP3A	Mx	-.005	6.5
34	MP3B	X	0	1.5
35	MP3B	Z	5.178	1.5
36	MP3B	Mx	-.004	1.5
37	MP3B	X	0	6.5
38	MP3B	Z	5.178	6.5
39	MP3B	Mx	-.004	6.5
40	MP3C	X	0	1.5
41	MP3C	Z	5.23	1.5
42	MP3C	Mx	.004	1.5
43	MP3C	X	0	6.5
44	MP3C	Z	5.23	6.5
45	MP3C	Mx	.004	6.5
46	MP3A	X	0	1.5
47	MP3A	Z	6.918	1.5
48	MP3A	Mx	.005	1.5
49	MP3A	X	0	6.5
50	MP3A	Z	6.918	6.5
51	MP3A	Mx	.005	6.5
52	MP3B	X	0	1.5
53	MP3B	Z	5.178	1.5
54	MP3B	Mx	-.004	1.5
55	MP3B	X	0	6.5
56	MP3B	Z	5.178	6.5
57	MP3B	Mx	-.004	6.5
58	MP3C	X	0	1.5
59	MP3C	Z	5.23	1.5
60	MP3C	Mx	.005	1.5
61	MP3C	X	0	6.5
62	MP3C	Z	5.23	6.5
63	MP3C	Mx	.005	6.5
64	M410	X	0	.13
65	M410	Z	9.273	.13
66	M410	Mx	0	.13
67	M287	X	0	.13



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
68	M287	Z	4.534	.13
69	M287	Mx	0	.13
70	M412	X	0	.13
71	M412	Z	4.534	.13
72	M412	Mx	0	.13
73	M415	X	0	.13
74	M415	Z	3.042	.13
75	M415	Mx	.002	.13
76	M413	X	0	.13
77	M413	Z	3.087	.13
78	M413	Mx	-.002	.13
79	M416	X	0	.13
80	M416	Z	2.487	.13
81	M416	Mx	.001	.13
82	M414	X	0	.13
83	M414	Z	2.548	.13
84	M414	Mx	-.001	.13
85	MP3A	X	0	3
86	MP3A	Z	2.808	3
87	MP3A	Mx	0	3
88	MP3A	X	0	3
89	MP3A	Z	2.808	3
90	MP3A	Mx	0	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	-4.794	4
2	MP1A	Z	8.303	4
3	MP1A	Mx	.004	4
4	MP1B	X	-2.914	4
5	MP1B	Z	5.048	4
6	MP1B	Mx	-.004	4
7	MP1C	X	-3.528	4
8	MP1C	Z	6.11	4
9	MP1C	Mx	.005	4
10	MP2A	X	-3.242	1.5
11	MP2A	Z	5.615	1.5
12	MP2A	Mx	.003	1.5
13	MP2A	X	-3.242	6.5
14	MP2A	Z	5.615	6.5
15	MP2A	Mx	.003	6.5
16	MP2B	X	-2.807	1.5
17	MP2B	Z	4.861	1.5
18	MP2B	Mx	-.004	1.5
19	MP2B	X	-2.807	6.5
20	MP2B	Z	4.861	6.5
21	MP2B	Mx	-.004	6.5
22	MP2C	X	-2.949	1.5
23	MP2C	Z	5.107	1.5
24	MP2C	Mx	.004	1.5
25	MP2C	X	-2.949	6.5
26	MP2C	Z	5.107	6.5
27	MP2C	Mx	.004	6.5
28	MP3A	X	-3.242	1.5
29	MP3A	Z	5.615	1.5
30	MP3A	Mx	-.002	1.5
31	MP3A	X	-3.242	6.5
32	MP3A	Z	5.615	6.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
33	MP3A	Mx	-.002	6.5
34	MP3B	X	-2.807	1.5
35	MP3B	Z	4.861	1.5
36	MP3B	Mx	-.002	1.5
37	MP3B	X	-2.807	6.5
38	MP3B	Z	4.861	6.5
39	MP3B	Mx	-.002	6.5
40	MP3C	X	-2.949	1.5
41	MP3C	Z	5.107	1.5
42	MP3C	Mx	.000921	1.5
43	MP3C	X	-2.949	6.5
44	MP3C	Z	5.107	6.5
45	MP3C	Mx	.000921	6.5
46	MP3A	X	-3.242	1.5
47	MP3A	Z	5.615	1.5
48	MP3A	Mx	.007	1.5
49	MP3A	X	-3.242	6.5
50	MP3A	Z	5.615	6.5
51	MP3A	Mx	.007	6.5
52	MP3B	X	-2.807	1.5
53	MP3B	Z	4.861	1.5
54	MP3B	Mx	-.006	1.5
55	MP3B	X	-2.807	6.5
56	MP3B	Z	4.861	6.5
57	MP3B	Mx	-.006	6.5
58	MP3C	X	-2.949	1.5
59	MP3C	Z	5.107	1.5
60	MP3C	Mx	.007	1.5
61	MP3C	X	-2.949	6.5
62	MP3C	Z	5.107	6.5
63	MP3C	Mx	.007	6.5
64	M410	X	-4.359	.13
65	M410	Z	7.55	.13
66	M410	Mx	-.002	.13
67	M287	X	-2.081	.13
68	M287	Z	3.604	.13
69	M287	Mx	-.001	.13
70	M412	X	-2.011	.13
71	M412	Z	3.483	.13
72	M412	Mx	-.001	.13
73	M415	X	-1.708	.13
74	M415	Z	2.958	.13
75	M415	Mx	.001	.13
76	M413	X	-1.829	.13
77	M413	Z	3.169	.13
78	M413	Mx	-.001	.13
79	M416	X	-1.499	.13
80	M416	Z	2.597	.13
81	M416	Mx	.001	.13
82	M414	X	-1.666	.13
83	M414	Z	2.886	.13
84	M414	Mx	-.001	.13
85	MP3A	X	-1.16	3
86	MP3A	Z	2.008	3
87	MP3A	Mx	-.00029	3
88	MP3A	X	-1.16	3
89	MP3A	Z	2.008	3
90	MP3A	Mx	.00029	3



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	-5.048	4
2	MP1A	Z	2.914	4
3	MP1A	Mx	.004	4
4	MP1B	X	-8.303	4
5	MP1B	Z	4.794	4
6	MP1B	Mx	-.004	4
7	MP1C	X	-9.169	4
8	MP1C	Z	5.294	4
9	MP1C	Mx	.003	4
10	MP2A	X	-4.861	1.5
11	MP2A	Z	2.807	1.5
12	MP2A	Mx	.004	1.5
13	MP2A	X	-4.861	6.5
14	MP2A	Z	2.807	6.5
15	MP2A	Mx	.004	6.5
16	MP2B	X	-5.615	1.5
17	MP2B	Z	3.242	1.5
18	MP2B	Mx	-.003	1.5
19	MP2B	X	-5.615	6.5
20	MP2B	Z	3.242	6.5
21	MP2B	Mx	-.003	6.5
22	MP2C	X	-5.815	1.5
23	MP2C	Z	3.357	1.5
24	MP2C	Mx	.002	1.5
25	MP2C	X	-5.815	6.5
26	MP2C	Z	3.357	6.5
27	MP2C	Mx	.002	6.5
28	MP3A	X	-4.861	1.5
29	MP3A	Z	2.807	1.5
30	MP3A	Mx	.002	1.5
31	MP3A	X	-4.861	6.5
32	MP3A	Z	2.807	6.5
33	MP3A	Mx	.002	6.5
34	MP3B	X	-5.615	1.5
35	MP3B	Z	3.242	1.5
36	MP3B	Mx	.002	1.5
37	MP3B	X	-5.615	6.5
38	MP3B	Z	3.242	6.5
39	MP3B	Mx	.002	6.5
40	MP3C	X	-5.815	1.5
41	MP3C	Z	3.357	1.5
42	MP3C	Mx	-.003	1.5
43	MP3C	X	-5.815	6.5
44	MP3C	Z	3.357	6.5
45	MP3C	Mx	-.003	6.5
46	MP3A	X	-4.861	1.5
47	MP3A	Z	2.807	1.5
48	MP3A	Mx	.006	1.5
49	MP3A	X	-4.861	6.5
50	MP3A	Z	2.807	6.5
51	MP3A	Mx	.006	6.5
52	MP3B	X	-5.615	1.5
53	MP3B	Z	3.242	1.5
54	MP3B	Mx	-.007	1.5
55	MP3B	X	-5.615	6.5
56	MP3B	Z	3.242	6.5
57	MP3B	Mx	-.007	6.5
58	MP3C	X	-5.815	1.5
59	MP3C	Z	3.357	1.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
60	MP3C	Mx	.007	1.5
61	MP3C	X	-5.815	6.5
62	MP3C	Z	3.357	6.5
63	MP3C	Mx	.007	6.5
64	M410	X	-6.587	.13
65	M410	Z	3.803	.13
66	M410	Mx	-.003	.13
67	M287	X	-2.958	.13
68	M287	Z	1.708	.13
69	M287	Mx	-.001	.13
70	M412	X	-2.597	.13
71	M412	Z	1.499	.13
72	M412	Mx	-.001	.13
73	M415	X	-3.604	.13
74	M415	Z	2.081	.13
75	M415	Mx	.001	.13
76	M413	X	-3.776	.13
77	M413	Z	2.18	.13
78	M413	Mx	-.000746	.13
79	M416	X	-3.483	.13
80	M416	Z	2.011	.13
81	M416	Mx	.001	.13
82	M414	X	-3.719	.13
83	M414	Z	2.147	.13
84	M414	Mx	-.000734	.13
85	MP3A	X	-1.161	3
86	MP3A	Z	.67	3
87	MP3A	Mx	-.00029	3
88	MP3A	X	-1.161	3
89	MP3A	Z	.67	3
90	MP3A	Mx	.00029	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	-3.949	4
2	MP1A	Z	0	4
3	MP1A	Mx	.003	4
4	MP1B	X	-11.467	4
5	MP1B	Z	0	4
6	MP1B	Mx	0	4
7	MP1C	X	-11.241	4
8	MP1C	Z	0	4
9	MP1C	Mx	-.002	4
10	MP2A	X	-5.178	1.5
11	MP2A	Z	0	1.5
12	MP2A	Mx	.004	1.5
13	MP2A	X	-5.178	6.5
14	MP2A	Z	0	6.5
15	MP2A	Mx	.004	6.5
16	MP2B	X	-6.918	1.5
17	MP2B	Z	0	1.5
18	MP2B	Mx	0	1.5
19	MP2B	X	-6.918	6.5
20	MP2B	Z	0	6.5
21	MP2B	Mx	0	6.5
22	MP2C	X	-6.866	1.5
23	MP2C	Z	0	1.5
24	MP2C	Mx	-.000994	1.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
25	MP2C	X	-6.866	6.5
26	MP2C	Z	0	6.5
27	MP2C	Mx	-0.000994	6.5
28	MP3A	X	-5.178	1.5
29	MP3A	Z	0	1.5
30	MP3A	Mx	.004	1.5
31	MP3A	X	-5.178	6.5
32	MP3A	Z	0	6.5
33	MP3A	Mx	.004	6.5
34	MP3B	X	-6.918	1.5
35	MP3B	Z	0	1.5
36	MP3B	Mx	.005	1.5
37	MP3B	X	-6.918	6.5
38	MP3B	Z	0	6.5
39	MP3B	Mx	.005	6.5
40	MP3C	X	-6.866	1.5
41	MP3C	Z	0	1.5
42	MP3C	Mx	-.006	1.5
43	MP3C	X	-6.866	6.5
44	MP3C	Z	0	6.5
45	MP3C	Mx	-.006	6.5
46	MP3A	X	-5.178	1.5
47	MP3A	Z	0	1.5
48	MP3A	Mx	.004	1.5
49	MP3A	X	-5.178	6.5
50	MP3A	Z	0	6.5
51	MP3A	Mx	.004	6.5
52	MP3B	X	-6.918	1.5
53	MP3B	Z	0	1.5
54	MP3B	Mx	-.005	1.5
55	MP3B	X	-6.918	6.5
56	MP3B	Z	0	6.5
57	MP3B	Mx	-.005	6.5
58	MP3C	X	-6.866	1.5
59	MP3C	Z	0	1.5
60	MP3C	Mx	.004	1.5
61	MP3C	X	-6.866	6.5
62	MP3C	Z	0	6.5
63	MP3C	Mx	.004	6.5
64	M410	X	-7.05	.13
65	M410	Z	0	.13
66	M410	Mx	-.004	.13
67	M287	X	-3.042	.13
68	M287	Z	0	.13
69	M287	Mx	-.002	.13
70	M412	X	-2.487	.13
71	M412	Z	0	.13
72	M412	Mx	-.001	.13
73	M415	X	-4.534	.13
74	M415	Z	0	.13
75	M415	Mx	0	.13
76	M413	X	-4.489	.13
77	M413	Z	0	.13
78	M413	Mx	.00039	.13
79	M416	X	-4.534	.13
80	M416	Z	0	.13
81	M416	Mx	0	.13
82	M414	X	-4.473	.13
83	M414	Z	0	.13



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
84	M414	Mx	.000388	.13
85	MP3A	X	-.852	3
86	MP3A	Z	0	3
87	MP3A	Mx	-.000213	3
88	MP3A	X	-.852	3
89	MP3A	Z	0	3
90	MP3A	Mx	.000213	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	-5.048	4
2	MP1A	Z	-2.914	4
3	MP1A	Mx	.004	4
4	MP1B	X	-8.303	4
5	MP1B	Z	-4.794	4
6	MP1B	Mx	.004	4
7	MP1C	X	-7.241	4
8	MP1C	Z	-4.181	4
9	MP1C	Mx	-.004	4
10	MP2A	X	-4.861	1.5
11	MP2A	Z	-2.807	1.5
12	MP2A	Mx	.004	1.5
13	MP2A	X	-4.861	6.5
14	MP2A	Z	-2.807	6.5
15	MP2A	Mx	.004	6.5
16	MP2B	X	-5.615	1.5
17	MP2B	Z	-3.242	1.5
18	MP2B	Mx	.003	1.5
19	MP2B	X	-5.615	6.5
20	MP2B	Z	-3.242	6.5
21	MP2B	Mx	.003	6.5
22	MP2C	X	-5.369	1.5
23	MP2C	Z	-3.1	1.5
24	MP2C	Mx	-.003	1.5
25	MP2C	X	-5.369	6.5
26	MP2C	Z	-3.1	6.5
27	MP2C	Mx	-.003	6.5
28	MP3A	X	-4.861	1.5
29	MP3A	Z	-2.807	1.5
30	MP3A	Mx	.006	1.5
31	MP3A	X	-4.861	6.5
32	MP3A	Z	-2.807	6.5
33	MP3A	Mx	.006	6.5
34	MP3B	X	-5.615	1.5
35	MP3B	Z	-3.242	1.5
36	MP3B	Mx	.007	1.5
37	MP3B	X	-5.615	6.5
38	MP3B	Z	-3.242	6.5
39	MP3B	Mx	.007	6.5
40	MP3C	X	-5.369	1.5
41	MP3C	Z	-3.1	1.5
42	MP3C	Mx	-.007	1.5
43	MP3C	X	-5.369	6.5
44	MP3C	Z	-3.1	6.5
45	MP3C	Mx	-.007	6.5
46	MP3A	X	-4.861	1.5
47	MP3A	Z	-2.807	1.5
48	MP3A	Mx	.002	1.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
49	MP3A	X	-4.861	6.5
50	MP3A	Z	-2.807	6.5
51	MP3A	Mx	.002	6.5
52	MP3B	X	-5.615	1.5
53	MP3B	Z	-3.242	1.5
54	MP3B	Mx	-.002	1.5
55	MP3B	X	-5.615	6.5
56	MP3B	Z	-3.242	6.5
57	MP3B	Mx	-.002	6.5
58	MP3C	X	-5.369	1.5
59	MP3C	Z	-3.1	1.5
60	MP3C	Mx	.000241	1.5
61	MP3C	X	-5.369	6.5
62	MP3C	Z	-3.1	6.5
63	MP3C	Mx	.000241	6.5
64	M410	X	-6.587	.13
65	M410	Z	-3.803	.13
66	M410	Mx	-.003	.13
67	M287	X	-2.958	.13
68	M287	Z	-1.708	.13
69	M287	Mx	-.001	.13
70	M412	X	-2.597	.13
71	M412	Z	-1.499	.13
72	M412	Mx	-.001	.13
73	M415	X	-3.604	.13
74	M415	Z	-2.081	.13
75	M415	Mx	-.001	.13
76	M413	X	-3.393	.13
77	M413	Z	-1.959	.13
78	M413	Mx	.001	.13
79	M416	X	-3.483	.13
80	M416	Z	-2.011	.13
81	M416	Mx	-.001	.13
82	M414	X	-3.194	.13
83	M414	Z	-1.844	.13
84	M414	Mx	.001	.13
85	MP3A	X	-1.161	3
86	MP3A	Z	-.67	3
87	MP3A	Mx	-.00029	3
88	MP3A	X	-1.161	3
89	MP3A	Z	-.67	3
90	MP3A	Mx	.00029	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	-4.794	4
2	MP1A	Z	-8.303	4
3	MP1A	Mx	.004	4
4	MP1B	X	-2.914	4
5	MP1B	Z	-5.048	4
6	MP1B	Mx	.004	4
7	MP1C	X	-2.414	4
8	MP1C	Z	-4.182	4
9	MP1C	Mx	-.004	4
10	MP2A	X	-3.242	1.5
11	MP2A	Z	-5.615	1.5
12	MP2A	Mx	.003	1.5
13	MP2A	X	-3.242	6.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
73	M415	X	-1.708	.13
74	M415	Z	-2.958	.13
75	M415	Mx	-0.001	.13
76	M413	X	-1.608	.13
77	M413	Z	-2.786	.13
78	M413	Mx	.002	.13
79	M416	X	-1.499	.13
80	M416	Z	-2.597	.13
81	M416	Mx	-0.001	.13
82	M414	X	-1.363	.13
83	M414	Z	-2.361	.13
84	M414	Mx	.001	.13
85	MP3A	X	-1.16	3
86	MP3A	Z	-2.008	3
87	MP3A	Mx	-0.0029	3
88	MP3A	X	-1.16	3
89	MP3A	Z	-2.008	3
90	MP3A	Mx	.00029	3

Member Point Loads (BLC 77 : Lm1)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	M331B	Y	-500	0

Member Point Loads (BLC 78 : Lm2)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	M335C	Y	-500	0

Member Point Loads (BLC 79 : Lv1)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	M177	Y	-250	%100

Member Point Loads (BLC 80 : Lv2)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	M177	Y	-250	%50

Member Point Loads (BLC 81 : Antenna Ev)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	Y	-3.791	4
2	MP1A	My	-0.003	4
3	MP1A	Mz	0	4
4	MP1B	Y	-3.791	4
5	MP1B	My	0	4
6	MP1B	Mz	-0.003	4
7	MP1C	Y	-3.791	4
8	MP1C	My	.000549	4
9	MP1C	Mz	.003	4
10	MP2A	Y	-1.001	1.5
11	MP2A	My	-0.000834	1.5
12	MP2A	Mz	0	1.5
13	MP2A	Y	-1.001	6.5
14	MP2A	My	-0.000834	6.5
15	MP2A	Mz	0	6.5
16	MP2B	Y	-1.001	1.5
17	MP2B	My	0	1.5
18	MP2B	Mz	-0.000834	1.5
19	MP2B	Y	-1.001	6.5



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
20	MP2B	My	0	6.5
21	MP2B	Mz	-.000834	6.5
22	MP2C	Y	-1.001	1.5
23	MP2C	My	.000145	1.5
24	MP2C	Mz	.000821	1.5
25	MP2C	Y	-1.001	6.5
26	MP2C	My	.000145	6.5
27	MP2C	Mz	.000821	6.5
28	MP3A	Y	-1.001	1.5
29	MP3A	My	-.000834	1.5
30	MP3A	Mz	-.000751	1.5
31	MP3A	Y	-1.001	6.5
32	MP3A	My	-.000834	6.5
33	MP3A	Mz	-.000751	6.5
34	MP3B	Y	-1.001	1.5
35	MP3B	My	-.000751	1.5
36	MP3B	Mz	-.000834	1.5
37	MP3B	Y	-1.001	6.5
38	MP3B	My	-.000751	6.5
39	MP3B	Mz	-.000834	6.5
40	MP3C	Y	-1.001	1.5
41	MP3C	My	.000884	1.5
42	MP3C	Mz	.000691	1.5
43	MP3C	Y	-1.001	6.5
44	MP3C	My	.000884	6.5
45	MP3C	Mz	.000691	6.5
46	MP3A	Y	-1.001	1.5
47	MP3A	My	-.000834	1.5
48	MP3A	Mz	.000751	1.5
49	MP3A	Y	-1.001	6.5
50	MP3A	My	-.000834	6.5
51	MP3A	Mz	.000751	6.5
52	MP3B	Y	-1.001	1.5
53	MP3B	My	.000751	1.5
54	MP3B	Mz	-.000834	1.5
55	MP3B	Y	-1.001	6.5
56	MP3B	My	.000751	6.5
57	MP3B	Mz	-.000834	6.5
58	MP3C	Y	-1.001	1.5
59	MP3C	My	-.000594	1.5
60	MP3C	Mz	.000952	1.5
61	MP3C	Y	-1.001	6.5
62	MP3C	My	-.000594	6.5
63	MP3C	Mz	.000952	6.5
64	M410	Y	-1.393	.13
65	M410	My	.000696	.13
66	M410	Mz	0	.13
67	M287	Y	-3.673	.13
68	M287	My	.002	.13
69	M287	Mz	0	.13
70	M412	Y	-3.059	.13
71	M412	My	.002	.13
72	M412	Mz	0	.13
73	M415	Y	-3.673	.13
74	M415	My	0	.13
75	M415	Mz	.002	.13
76	M413	Y	-3.673	.13
77	M413	My	-.000319	.13
78	M413	Mz	-.002	.13



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
79	M416	Y	-3.059	.13
80	M416	My	0	.13
81	M416	Mz	.002	.13
82	M414	Y	-3.059	.13
83	M414	My	-.000266	.13
84	M414	Mz	-.002	.13
85	MP3A	Y	-.766	3
86	MP3A	My	.000191	3
87	MP3A	Mz	0	3
88	MP3A	Y	-.766	3
89	MP3A	My	-.000191	3
90	MP3A	Mz	0	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	Z	-9.476	4
2	MP1A	Mx	0	4
3	MP1B	Z	-9.476	4
4	MP1B	Mx	.008	4
5	MP1C	Z	-9.476	4
6	MP1C	Mx	-.008	4
7	MP2A	Z	-2.502	1.5
8	MP2A	Mx	0	1.5
9	MP2A	Z	-2.502	6.5
10	MP2A	Mx	0	6.5
11	MP2B	Z	-2.502	1.5
12	MP2B	Mx	.002	1.5
13	MP2B	Z	-2.502	6.5
14	MP2B	Mx	.002	6.5
15	MP2C	Z	-2.502	1.5
16	MP2C	Mx	-.002	1.5
17	MP2C	Z	-2.502	6.5
18	MP2C	Mx	-.002	6.5
19	MP3A	Z	-2.502	1.5
20	MP3A	Mx	.002	1.5
21	MP3A	Z	-2.502	6.5
22	MP3A	Mx	.002	6.5
23	MP3B	Z	-2.502	1.5
24	MP3B	Mx	.002	1.5
25	MP3B	Z	-2.502	6.5
26	MP3B	Mx	.002	6.5
27	MP3C	Z	-2.502	1.5
28	MP3C	Mx	-.002	1.5
29	MP3C	Z	-2.502	6.5
30	MP3C	Mx	-.002	6.5
31	MP3A	Z	-2.502	1.5
32	MP3A	Mx	-.002	1.5
33	MP3A	Z	-2.502	6.5
34	MP3A	Mx	-.002	6.5
35	MP3B	Z	-2.502	1.5
36	MP3B	Mx	.002	1.5
37	MP3B	Z	-2.502	6.5
38	MP3B	Mx	.002	6.5
39	MP3C	Z	-2.502	1.5
40	MP3C	Mx	-.002	1.5
41	MP3C	Z	-2.502	6.5
42	MP3C	Mx	-.002	6.5
43	M410	Z	-3.482	.13



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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
44	M410	Mx	0	.13
45	M287	Z	-9.183	.13
46	M287	Mx	0	.13
47	M412	Z	-7.649	.13
48	M412	Mx	0	.13
49	M415	Z	-9.183	.13
50	M415	Mx	-.005	.13
51	M413	Z	-9.183	.13
52	M413	Mx	.005	.13
53	M416	Z	-7.649	.13
54	M416	Mx	-.004	.13
55	M414	Z	-7.649	.13
56	M414	Mx	.004	.13
57	MP3A	Z	-1.915	3
58	MP3A	Mx	0	3
59	MP3A	Z	-1.915	3
60	MP3A	Mx	0	3

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP1A	X	9.476	4
2	MP1A	Mx	-.008	4
3	MP1B	X	9.476	4
4	MP1B	Mx	0	4
5	MP1C	X	9.476	4
6	MP1C	Mx	.001	4
7	MP2A	X	2.502	1.5
8	MP2A	Mx	-.002	1.5
9	MP2A	X	2.502	6.5
10	MP2A	Mx	-.002	6.5
11	MP2B	X	2.502	1.5
12	MP2B	Mx	0	1.5
13	MP2B	X	2.502	6.5
14	MP2B	Mx	0	6.5
15	MP2C	X	2.502	1.5
16	MP2C	Mx	.000362	1.5
17	MP2C	X	2.502	6.5
18	MP2C	Mx	.000362	6.5
19	MP3A	X	2.502	1.5
20	MP3A	Mx	-.002	1.5
21	MP3A	X	2.502	6.5
22	MP3A	Mx	-.002	6.5
23	MP3B	X	2.502	1.5
24	MP3B	Mx	-.002	1.5
25	MP3B	X	2.502	6.5
26	MP3B	Mx	-.002	6.5
27	MP3C	X	2.502	1.5
28	MP3C	Mx	.002	1.5
29	MP3C	X	2.502	6.5
30	MP3C	Mx	.002	6.5
31	MP3A	X	2.502	1.5
32	MP3A	Mx	-.002	1.5
33	MP3A	X	2.502	6.5
34	MP3A	Mx	-.002	6.5
35	MP3B	X	2.502	1.5
36	MP3B	Mx	.002	1.5
37	MP3B	X	2.502	6.5
38	MP3B	Mx	.002	6.5

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

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
39	MP3C	X	2.502	1.5
40	MP3C	Mx	-.001	1.5
41	MP3C	X	2.502	6.5
42	MP3C	Mx	-.001	6.5
43	M410	X	3.482	.13
44	M410	Mx	.002	.13
45	M287	X	9.183	.13
46	M287	Mx	.005	.13
47	M412	X	7.649	.13
48	M412	Mx	.004	.13
49	M415	X	9.183	.13
50	M415	Mx	0	.13
51	M413	X	9.183	.13
52	M413	Mx	-.000797	.13
53	M416	X	7.649	.13
54	M416	Mx	0	.13
55	M414	X	7.649	.13
56	M414	Mx	-.000664	.13
57	MP3A	X	1.915	3
58	MP3A	Mx	.000479	3
59	MP3A	X	1.915	3
60	MP3A	Mx	-.000479	3

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	N298	max	1679.421	10	2981.157	13	11977.922	1	.051	7	1.807	4	.027	5
2		min	-1685.752	4	212.813	7	-4482.499	7	-.08	1	-1.817	10	-.027	9
3	N299	max	152.828	3	229.69	13	852.391	7	.013	7	.329	8	.022	8
4		min	-156.185	9	15.757	7	-11656.571	13	-.062	13	-.355	2	-.024	2
5	N287B	max	11033.248	9	3181.711	21	2355.508	3	.059	10	1.815	12	.08	8
6		min	-4030.564	3	258.536	3	-6392.357	9	-.04	4	-1.821	6	-.048	2
7	N288B	max	777.01	3	250.239	21	6190.687	21	.047	8	.363	4	.06	10
8		min	-10717.166	21	22.066	3	-408.299	3	-.023	2	-.388	10	-.018	4
9	N296B	max	4140.026	11	3080.783	17	2300.256	11	.058	4	1.863	8	.046	12
10		min	-10753.983	5	193.758	11	-6128.542	5	-.04	10	-1.872	2	-.077	6
11	N297B	max	10578.023	17	242.511	17	6103.202	17	.047	6	.359	12	.019	10
12		min	-869.853	11	16.583	11	-520.428	11	-.022	12	-.383	6	-.06	4
13	Totals:	max	6435.005	10	8964.811	18	6185.412	1						
14		min	-6435.001	4	2846.389	74	-6185.382	7						

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

Member	Shape	Code Check	Lo...	LC	Shear Check	Lo...	phi*P...	phi*P...	phi*M...	phi*M...	Egn	
1	M75	L3X3X6	.595	2.1...	1	.238	0 y 1	6629...	66465	2.243	5.174	H2-1
2	M74B	L3X3X6	.565	2.1...	9	.227	0 y 9	6629...	66465	2.243	5.174	H2-1
3	M124	L3X3X6	.548	2.1...	5	.224	0 y 5	6629...	66465	2.243	5.174	H2-1
4	M75B	L3X3X6	.536	2.1...	7	.232	0 z 1	6629...	66465	2.243	5.174	H2-1
5	M76	L3X3X6	.484	2.1...	5	.218	0 z 5	6629...	66465	2.243	5.174	H2-1
6	M125	L3X3X6	.484	2.1...	9	.220	0 z 9	6629...	66465	2.243	5.174	H2-1
7	MP3B	PIPE 2.5	.398	5.6..	4	.132	5.6..	2 3003...	50715	3.596	3.596	H1-1b
8	MP3A	PIPE 2.5	.393	5.6..	12	.140	5.6..	10 3003...	50715	3.596	3.596	H1-1b
9	MP3C	PIPE 2.5	.383	5.6..	8	.136	5.6..	6 3003...	50715	3.596	3.596	H1-1b
10	M358	PIPE 2.5	.366	9.2..	4	.389	9.2..	5 2944...	50715	3.596	3.596	H3-6
11	M177	PIPE 2.5	.362	9.2..	12	.428	9.2..	1 2944...	50715	3.596	3.596	H3-6
12	MP2A	PIPE 2.5	.337	5.6..	2	.124	5.6..	4 3003...	50715	3.596	3.596	H1-1b
13	M344A	PIPE 2.5	.327	9.2..	8	.399	9.2..	9 2944...	50715	3.596	3.596	H3-6
14	MP2C	PIPE 2.5	.322	5.6..	10	.119	5.6..	12 3003...	50715	3.596	3.596	H1-1b



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

Member	Shape	Code Check	Lo...	LC	Shear Check	Lo...	phi*P...	phi*P...	phi*M...	phi*M...	Eqn...	
15	MP2B	PIPE 2.5	.308	5.6..	6	.122	5.6..	8 3003...	50715	3.596	3.596	H1-1b
16	M316A	PL1/2X4	.290	.566	2	.082	.566	y 2 8405...	90000	.938	7.5	H1-1b
17	M305B	PL1/2X4	.286	.566	12	.080	.566	y 128405...	90000	.938	7.5	H1-1b
18	M326A	PL1/2X4	.283	.566	10	.085	.566	y 4 8405...	90000	.938	7.5	H1-1b
19	M62	PL3/8x2...	.268	0	16	.077	0	y 7 2695...	2885...	.225	1.428	H1-1b
20	M34A	PL3/8x2...	.268	0	18	.070	0	y 3 2695...	2885...	.225	1.428	H1-1b
21	M85	PL3/8x2...	.265	0	21	.071	0	y 11 2695...	2885...	.225	1.428	H1-1b
22	M82	PL3/8x2...	.265	0	22	.073	0	y 7 2695...	2885...	.225	1.428	H1-1b
23	M131	PL3/8x2...	.258	0	14	.068	0	y 11 2695...	2885...	.225	1.428	H1-1b
24	M134	PL3/8x2...	.257	0	13	.071	0	y 3 2695...	2885...	.225	1.428	H1-1b
25	M61	PL3/8x2...	.243	0	17	.058	0	y 3 2695...	2885...	.225	1.428	H1-1b
26	M84	PL3/8x2...	.242	0	21	.061	0	y 7 2695...	2885...	.225	1.428	H1-1b
27	M33	PL3/8x2...	.241	0	17	.061	0	y 7 2695...	2885...	.225	1.428	H1-1b
28	M284	PL1/2X4	.239	.102	7	.106	.648	y 6 8228...	90000	.938	7.5	H1-1b
29	M217	PL1/2X4	.238	.102	3	.107	.648	y 2 8228...	90000	.938	7.5	H1-1b
30	M81	PL3/8x2...	.238	0	21	.057	0	y 11 2695...	2885...	.225	1.428	H1-1b
31	M133	PL3/8x2...	.236	0	13	.056	0	y 11 2695...	2885...	.225	1.428	H1-1b
32	M130	PL3/8x2...	.234	0	13	.057	0	y 3 2695...	2885...	.225	1.428	H1-1b
33	M83	PL3/8x2...	.233	0	8	.028	0	y 10 2695...	2885...	.225	1.428	H1-1b
34	M60	PL3/8x2...	.232	0	4	.028	0	y 6 2695...	2885...	.225	1.428	H1-1b
35	M80	PL3/8x2...	.230	0	10	.027	0	y 8 2695...	2885...	.225	1.428	H1-1b
36	M31	PL3/8x2...	.230	0	18	.027	0	y 4 2695...	2885...	.225	1.428	H1-1b
37	M288A	PL1/2X4	.229	.102	11	.106	.648	y 10 8228...	90000	.938	7.5	H1-1b
38	M129	PL3/8x2...	.227	0	2	.025	0	y 12 2695...	2885...	.225	1.428	H1-1b
39	MP1B	PIPE 2.5	.225	5.6..	7	.096	5.6..	8 3003...	50715	3.596	3.596	H1-1b
40	M132	PL3/8x2...	.224	0	12	.027	0	y 2 2695...	2885...	.225	1.428	H1-1b
41	MP4C	PIPE 2.5	.219	5.6..	7	.081	4	6 3003...	50715	3.596	3.596	H1-1b
42	MP1A	PIPE 2.5	.215	5.6..	3	.093	5.6..	4 3003...	50715	3.596	3.596	H1-1b
43	M301B	PL3/8X1	.214	.564	22	.059	.564	y 8 1495...	16875	.132	.352	H1-1b
44	MP1C	PIPE 2.5	.213	5.6..	11	.089	5.6..	12 3003...	50715	3.596	3.596	H1-1b
45	M312B	PL3/8X1	.209	.564	18	.059	.564	y 6 1495...	16875	.132	.352	H1-1b
46	MP4B	PIPE 2.5	.207	5.6..	3	.076	4	2 3003...	50715	3.596	3.596	H1-1b
47	MP4A	PIPE 2.5	.207	5.6..	11	.084	4	10 3003...	50715	3.596	3.596	H1-1b
48	M379A	PIPE 2.0	.204	8.61	4	.127	11...	4 1440...	32130	1.872	1.872	H1-1b
49	M339A	PIPE 2.0	.203	8.61	8	.131	11...	9 1440...	32130	1.872	1.872	H1-1b
50	M318	PL3/8X1	.200	.564	14	.063	.564	y 2 1495...	16875	.132	.352	H1-1b
51	M68	L3X3X6	.197	.844	7	.324	1.2..z	8 6596...	66465	2.243	5.174	H2-1
52	M380A	PIPE 2.0	.190	4.6..	10	.123	11...	1 1440...	32130	1.872	1.872	H1-1b
53	M45A	L3X3X6	.185	0	18	.349	1.2..z	8 6596...	66465	2.243	5.174	H2-1
54	M73	L3X3X6	.184	0	10	.337	1.2..z	12 6596...	66465	2.243	5.174	H2-1
55	M74	L3X3X6	.179	0	8	.304	1.2..z	12 6596...	66465	2.243	5.174	H2-1
56	M122	L3X3X6	.174	0	14	.349	1.2..z	4 6596...	66465	2.243	5.174	H2-1
57	M300B	PL3/8x4	.173	.566	10	.048	0	y 10 5977...	67500	.527	5.625	H1-1b
58	M123	L3X3X6	.170	0	24	.316	1.2..z	4 6596...	66465	2.243	5.174	H2-1
59	M311B	PL3/8x4	.167	.566	6	.050	0	y 6 5977...	67500	.527	5.625	H1-1b
60	M287	PL3/8x4	.164	.123	22	.065	0	y 8 5702...	67500	.527	5.625	H1-1b
61	M300	PL3/8X1	.163	.583	11	.036	.583	y 6 1483...	16875	.132	.352	H1-1b
62	M316	PL3/8x4	.161	.566	2	.054	0	y 2 5977...	67500	.527	5.625	H1-1b
63	M330A	PIPE 1.25	.161	3.0..	17	.023	6.1..	8 7651...	1968...	.801	.801	H1-1b
64	M288	PL3/8x4	.159	.742	21	.045	0	y 10 5476...	67500	.527	5.4	H1-1b
65	M221	PL3/8x4	.158	.742	17	.040	0	y 6 5476...	67500	.527	5.396	H1-1b
66	M302B	PL3/8X1	.158	.566	21	.038	.566	y 7 1494...	16875	.132	.352	H1-1b
67	M324	PIPE 1.25	.155	3.0..	13	.024	6.1..	4 7651...	1968...	.801	.801	H1-1b
68	M313A	PL3/8X1	.154	.566	17	.037	.566	y 7 1494...	16875	.132	.352	H1-1b
69	M219	PL3/8x4	.154	1.0..	17	.032	.495	y 1 4458...	67500	.527	5.625	H1-1b
70	M320	PL3/8X1	.153	.566	13	.037	.566	y 3 1494...	16875	.132	.352	H1-1b
71	M233	PL3/8X1	.152	.583	7	.032	.583	y 2 1483...	16875	.132	.352	H1-1b
72	M327	PIPE 1.25	.151	3.0..	21	.023	6.1..	12 7651...	1968...	.801	.801	H1-1b
73	M292A	PL3/8x4	.151	.742	13	.040	0	y 2 5476...	67500	.527	5.625	H1-1b



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

Member	Shape	Code Check	Lo...	LC	Shear Check	Lo...	phi*P...	phi*P...	phi*M...	phi*M...	Eqn	
74	M286	PL3/8x4	.151	1.0...	21	.033	495 y 1	4458...	67500	.527	5.193	H1-1b
75	M304A	PL3/8X1	.150	.583	10	.032	.583 y	101483...	16875	.132	.352	H1-1b
76	M294	PL3/8X1	.149	.731	21	.040	.731 y	101377...	16875	.132	.352	H1-1b
77	M319	PIPE_1.25	.147	3.0...	15	.023	0	6 7651...	1968...	.801	.801	H1-1b
78	M321	PIPE_1.25	.146	3.0...	19	.023	6.1...	107651...	1968...	.801	.801	H1-1b
79	M290A	PL3/8x4	.145	1.0...	13	.031	495 y 4	4458...	67500	.527	5.604	H1-1b
80	M227	PL3/8X1	.144	.731	17	.035	.731 y 6	1377...	16875	.132	.352	H1-1b
81	M320A	PIPE_1.25	.144	3.0...	23	.023	0	2 7651...	1968...	.801	.801	H1-1b
82	M54	HSS4X3...	.143	4.0...	4	.097	1.34 z 7	8304...	91665	8.19	10.001	H1-1b
83	M77	HSS4X3...	.141	4.0...	10	.096	1.34 z 7	8304...	91665	8.19	10.001	H1-1b
84	M218	PL1/2X4	.140	.718	2	.096	.718 y 2	8061...	90000	.938	7.5	H1-1b
85	M298A	PL3/8X1	.139	.731	13	.036	.731 y 2	1377...	16875	.132	.352	H1-1b
86	M220	PL3/8x4	.138	.667	17	.032	0 y 1	5702...	67500	.527	5.313	H1-1b
87	M285	PL1/2X4	.137	.718	6	.093	.718 y 6	8061...	90000	.938	7.5	H1-1b
88	M293	PL3/8X1	.135	.667	21	.030	.667 y 1	1425...	16875	.132	.352	H1-1b
89	M126	HSS4X3...	.135	4.0...	12	.092	1.34 z 3	8304...	91665	8.19	10.001	H1-1b
90	M292	PL3/8X1	.135	1.0...	21	.031	1.0... y 7	1114...	16875	.132	.352	H1-1b
91	M289A	PL1/2X4	.134	.718	10	.093	.718 y	108061...	90000	.938	7.5	H1-1b
92	M303B	PL3/8X1	.134	1.0...	22	.019	0 y	101121...	16875	.132	.352	H1-1b
93	M225	PL3/8X1	.134	1.0...	17	.031	1.0... y 7	1114...	16875	.132	.352	H1-1b
94	M291A	PL3/8x4	.131	.667	13	.032	0 y 5	5702...	67500	.527	5.605	H1-1b
95	M314A	PL3/8X1	.130	1.0...	18	.020	0 y 6	1121...	16875	.132	.352	H1-1b
96	M322	PL3/8X1	.130	0	2	.020	0 y 2	1121...	16875	.132	.352	H1-1b
97	M296A	PL3/8X1	.126	1.0...	13	.031	1.0... y	101114...	16875	.132	.352	H1-1b
98	M226	PL3/8X1	.126	.667	17	.028	.667 y 9	1425...	16875	.132	.352	H1-1b
99	M308A	PL3/8X1	.123	.218	2	.032	.218 y 7	1657...	16875	.132	.352	H1-1b
100	M297A	PL3/8X1	.121	.667	13	.029	.667 y 5	1425...	16875	.132	.352	H1-1b
101	M267A	PL3/8X1	.119	.741	17	.029	.331 y 7	1370...	16875	.132	.352	H1-1b
102	M334	PL3/8X1	.118	.741	21	.029	.331 y 7	1370...	16875	.132	.352	H1-1b
103	M264	PL3/8X1	.116	0	17	.038	.22 y 16	1356...	16875	.132	.352	H1-1b
104	M332	PL3/8X1	.114	0	21	.039	.22 y 8	1356...	16875	.132	.352	H1-1b
105	M338	PL3/8X1	.114	.741	13	.028	.331 y 3	1370...	16875	.132	.352	H1-1b
106	M241	PL3/8X1	.112	.218	12	.030	0 y 1	1657...	16875	.132	.352	H1-1b
107	M306	PL3/8X1	.112	.288	8	.032	.288 y 1	1635...	16875	.132	.352	H1-1b
108	M335A	PL3/8X1	.111	0	13	.036	.22 y 24	1356...	16875	.132	.352	H1-1b
109	M239	PL3/8X1	.107	.288	6	.031	.288 y 1	1635...	16875	.132	.352	H1-1b
110	M310	PL3/8X1	.103	.288	2	.029	.288 y 4	1635...	16875	.132	.352	H1-1b
111	M332A	PL1/2X4	.099	.172	10	.086	.172 y 2	8044...	90000	.938	7.5	H1-1b
112	M78	L3X3X6	.099	.605	12	.076	0 y 9	6624...	66465	2.243	5.174	H2-1
113	M127	L3X3X6	.098	.605	4	.074	0 y 1	6624...	66465	2.243	5.174	H2-1
114	M265A	PL1/2X4	.097	.172	6	.080	.172 y 12	8044...	90000	.938	7.5	H1-1b
115	M336	PL1/2X4	.096	.172	2	.068	.172 y 8	8044...	90000	.938	7.5	H1-1b
116	M335	PL3/8x4	.095	.351	7	.022	0 y 1	5481...	67500	.527	5.625	H1-1b
117	M268A	PL3/8x4	.095	.351	7	.020	.351 y 1	5481...	67500	.527	5.613	H1-1b
118	M312	PL3/8X1	.095	.218	8	.029	.218 y 10	1657...	16875	.132	.352	H1-1b
119	M298	PL3/8X1	.093	0	13	.032	0 y 12	1386...	16875	.132	.352	H1-1b
120	M66	L3X3X6	.092	.605	8	.074	0 y 5	6624...	66465	2.243	5.174	H2-1
121	M339	PL3/8x4	.092	.351	3	.019	0 y 3	5481...	67500	.527	5.619	H1-1b
122	M74C	L3X3X6	.090	.605	8	.076	0 z 5	6624...	66465	2.243	5.174	H2-1
123	M329	PL3/8x4	.088	0	7	.022	.492 y 1	5458...	67500	.527	5.625	H1-1b
124	M261	PL3/8x4	.085	0	7	.020	.492 y 1	5458...	67500	.527	5.58	H1-1b
125	M290	PL3/8X1	.085	.648	22	.032	.648 y 12	1438...	16875	.132	.352	H1-1b
126	M299A	PL3/8X1	.084	0	2	.022	.871 y 4	1265...	16875	.132	.352	H1-1b
127	M128	L3X3X6	.083	.605	4	.074	0 z 1	6624...	66465	2.243	5.174	H2-1
128	M231	PL3/8X1	.081	0	21	.032	.719 y 8	1386...	16875	.132	.352	H1-1b
129	M302A	PL3/8X1	.081	0	13	.032	.719 y 4	1386...	16875	.132	.352	H1-1b
130	M332B	PL3/8x4	.081	0	3	.020	.492 y 5	5458...	67500	.527	5.558	H1-1b
131	M223	PL3/8X1	.080	.648	18	.032	.648 y 8	1438...	16875	.132	.352	H1-1b
132	M299	PL3/8X1	.079	0	21	.027	.872 y 7	1264...	16875	.132	.352	H1-1b



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

Member	Shape	Code Check	Lo...	LC	Shear Check	Lo...	phi*P...	phi*P...	phi*M...	phi*M...	Egn	
133	M294A	PL3/8X1	.079	.648	14	.032	.648 y 4	1438...	16875	.132	.352	H1-1b
134	M79	L3X3X6	.076	.605	12	.075	0 z 9	6624...	66465	2.243	5.174	H2-1
135	M380	WT2X6.5	.076	1.0...	9	.056	0 z 12	5490...	61884	3.942	.866	H1-1b
136	M378	WT2X6.5	.075	1.0...	5	.059	0 z 8	5490...	61884	3.942	.866	H1-1b
137	M237	PL3/8X1	.074	0	17	.023	.37 y 1	1602...	16875	.132	.352	H1-...
138	M302	PL3/8X1	.074	.467	8	.024	.467 y 12	1553...	16875	.132	.352	H1-1b
139	M304	PL3/8X1	.073	0	21	.023	.37 y 1	1602...	16875	.132	.352	H1-...
140	M301	PL3/8X1	.073	.727	8	.023	.727 y 7	1381...	16875	.132	.352	H1-1b
141	M232	PL3/8X1	.073	0	17	.027	0 y 1	1264...	16875	.132	.352	H1-1b
142	M238	PL3/8X1	.073	0	17	.009	0 y 12	1542...	16875	.132	.352	H1-1b
143	M235	PL3/8X1	.072	0	17	.023	.467 y 2	1553...	16875	.132	.352	H1-...
144	M379	WT2X6.5	.072	1.0...	1	.058	0 z 4	5490...	61884	3.942	.866	H1-1b
145	M305	PL3/8X1	.072	0	21	.010	0 y 2	1542...	16875	.132	.352	H1-1b
146	M303A	PL3/8X1	.071	0	13	.025	0 y 9	1264...	16875	.132	.352	H1-1b
147	M291	PL3/8X1	.071	0	21	.037	.718 y 12	1387...	16875	.132	.352	H1-1b
148	M308	PL3/8X1	.071	0	13	.024	.37 y 4	1602...	16875	.132	.352	H1-...
149	M309	PL3/8X1	.070	0	13	.008	0 y 8	1542...	16875	.132	.352	H1-1b
150	M306A	PL3/8X1	.069	0	13	.024	.467 y 4	1553...	16875	.132	.352	H1-...
151	M228	PL3/8X1	.069	0	6	.022	.871 y 8	1265...	16875	.132	.352	H1-1b
152	M310B	PL3/8X1	.069	0	6	.022	.871 y 8	1265...	16875	.132	.352	H1-1b
153	M234	PL3/8X1	.069	.727	6	.022	.727 y 1	1381...	16875	.132	.352	H1-1b
154	M295	PL3/8X1	.069	0	10	.021	.871 y 12	1265...	16875	.132	.352	H1-1b
155	M299B	PL3/8X1	.069	0	10	.021	.871 y 12	1265...	16875	.132	.352	H1-1b
156	M224	PL3/8X1	.068	.718	17	.038	.718 y 2	1387...	16875	.132	.352	H1-1b
157	M305A	PL3/8X1	.067	.727	2	.021	.727 y 9	1381...	16875	.132	.352	H1-1b
158	M295A	PL3/8X1	.064	0	13	.036	.718 y 4	1387...	16875	.132	.352	H1-1b
159	M240	PL3/8X1	.062	.397	17	.016	.397 y 12	1589...	16875	.132	.352	H1-1b
160	M307A	PL3/8X1	.061	.397	21	.018	.397 y 2	1589...	16875	.132	.352	H1-1b
161	M289	PL3/8X1	.061	.458	9	.016	.458 y 7	1134...	16875	.132	.352	H1-1b
162	M222	PL3/8X1	.061	.458	17	.017	.458 y 7	1134...	16875	.132	.352	H1-1b
163	M311	PL3/8X1	.060	.397	13	.014	.397 y 8	1589...	16875	.132	.352	H1-1b
164	M333	PL3/8X1	.060	.725	8	.026	.725 y 7	1382...	16875	.132	.352	H1-1b
165	M266A	PL3/8X1	.059	.725	4	.026	.725 y 7	1382...	16875	.132	.352	H1-1b
166	M293A	PL3/8X1	.059	.458	1	.016	.458 y 3	1134...	16875	.132	.352	H1-1b
167	M337	PL3/8X1	.057	.725	2	.025	.725 y 3	1382...	16875	.132	.352	H1-1b
168	M236	PL3/8X1	.056	.595	17	.008	0 y 12	1475...	16875	.132	.352	H1-1b
169	M303	PL3/8X1	.056	.595	21	.009	0 y 2	1475...	16875	.132	.352	H1-1b
170	M307	PL3/8X1	.054	.595	13	.007	0 y 8	1475...	16875	.132	.352	H1-1b
171	M263	PL3/8X1	.054	0	16	.014	.5 y 4	1354...	16875	.132	.352	H1-1b
172	M331	PL3/8X1	.053	0	21	.014	.5 y 10	1354...	16875	.132	.352	H1-1b
173	M297	PL3/8X1	.053	.96	24	.023	0 y 2	1142...	16875	.132	.352	H1-1b
174	M334A	PL3/8X1	.051	0	13	.013	.5 y 3	1354...	16875	.132	.352	H1-1b
175	M301A	PL3/8X1	.050	0	14	.020	0 y 2	1142...	16875	.132	.352	H1-1b
176	M216	PL1/2X4	.049	.458	4	.022	0 y 8	7197...	90000	.938	7.5	H1-1b
177	M283	PL1/2X4	.048	.458	9	.023	0 y 12	7197...	90000	.938	7.5	H1-1b
178	M287A	PL1/2X4	.047	.458	1	.023	0 y 4	7197...	90000	.938	7.5	H1-1b
179	M230	PL3/8X1	.046	.64	20	.021	0 y 6	1142...	16875	.132	.352	H1-1b
180	M341	PL3/8X1	.045	.285	16	.007	.285 y 10	1569...	16875	.132	.352	H1-1b
181	M343	PL3/8X1	.044	.285	21	.007	0 y 2	1569...	16875	.132	.352	H1-1b
182	M310A	PL3/8X1	.043	.164	2	.032	0 y 7	1647...	16875	.132	.352	H1-1b
183	M345	PL3/8X1	.042	.285	13	.006	.285 y 3	1569...	16875	.132	.352	H1-1b
184	M242	PL3/8X1	.037	.164	12	.032	0 y 7	1647...	16875	.132	.352	H1-1b
185	M330	PL1/2X4	.033	.5	10	.015	.52 y 12	7954...	90000	.938	7.5	H1-1b
186	M262	PL1/2X4	.032	.5	6	.016	.52 y 8	7954...	90000	.938	7.5	H1-1b
187	M333A	PL1/2X4	.031	.5	2	.015	.52 y 4	7954...	90000	.938	7.5	H1-1b
188	M342	PL3/8X1	.030	0	2	.025	.307 y 2	1550...	16875	.132	.352	H1-1b
189	M313	PL3/8X1	.029	0	2	.027	0 y 4	1647...	16875	.132	.352	H1-1b
190	M340	PL3/8X1	.023	0	12	.023	0 y 12	1550...	16875	.132	.352	H1-1b
191	M344	PL3/8X1	.022	0	8	.018	0 y 8	1550...	16875	.132	.352	H1-1b



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

Member	Shape	Code Check	Lo...	LC	Shear Check	Lo...	phi*P	phi*P	phi*M	phi*M	Eqn	
192	M304B	PL3/8X1	.002	0	11	.000	0	y	101265...	16875	.132 .352 ...	H1-1b
193	M323A	PL3/8X1	.002	0	11	.000	.871	y	101265...	16875	.132 .352 ...	H1-1b
194	M315A	PL3/8X1	.002	0	11	.000	0	y	101265...	16875	.132 .352 ...	H1-1b

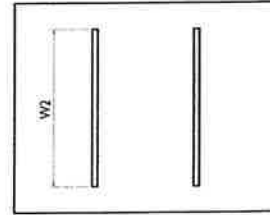
Envelope AISI S100-16: LRFD Cold Formed Steel Code Checks

Mem.	Shape	Code Check	Lo...	LC	Sh...	Lo...	phi*	phi*	phi*	phi*	ph...	ph...	Cb	Eqn
1	M381P1000	.507	4.6	10	.068	4...	y	4	289...	140...	.273 .631	22..54..2...	H1...	
2	M386P1000	.668	8.2	12	.100	4...	y	...	289...	140...	.273 .625	22..54..2...	H1...	
3	M391P1000	.643	8.2	8	.096	8...	y	2	289...	140...	.273 .629	22..54..2...	H1...	
4	M39...P1000	.530	8.2	10	.075	8.61	y	1	289...	140...	.312 .631	22..54..2...	H1...	
5	M39...P1000	.880	8.2	6	.100	4...	y	...	289...	140...	.312 .631	22..54..3...	H1...	
6	M396P1000	.861	8.2	2	.097	8...	y	3	289...	140...	.312 .631	22..54..3...	H1...	

Tower Connection Weld Checks

Weld Shape:
 Weld Stiffener Configuration:
 Stiffener Notch Length, n (in):
 Weld Size (1/16 in):
 W1 (in):
 W2 (in):
 Weld Total Length (in):
 Z_x (in³/in):
 Z_y (in³/in):
 J_p (in⁴/in):
 c_x (in)
 c_y (in)
 Required combined strength (kip/in):
 Weld Capacity (kip/in):
 Weld Utilization:

Yes
Two Vertical Fillet Welds
None
4
6
6
12.00
12.00
36.00
144.00
3
3
0.83
5.57
14.9%



ATTACHMENT 4

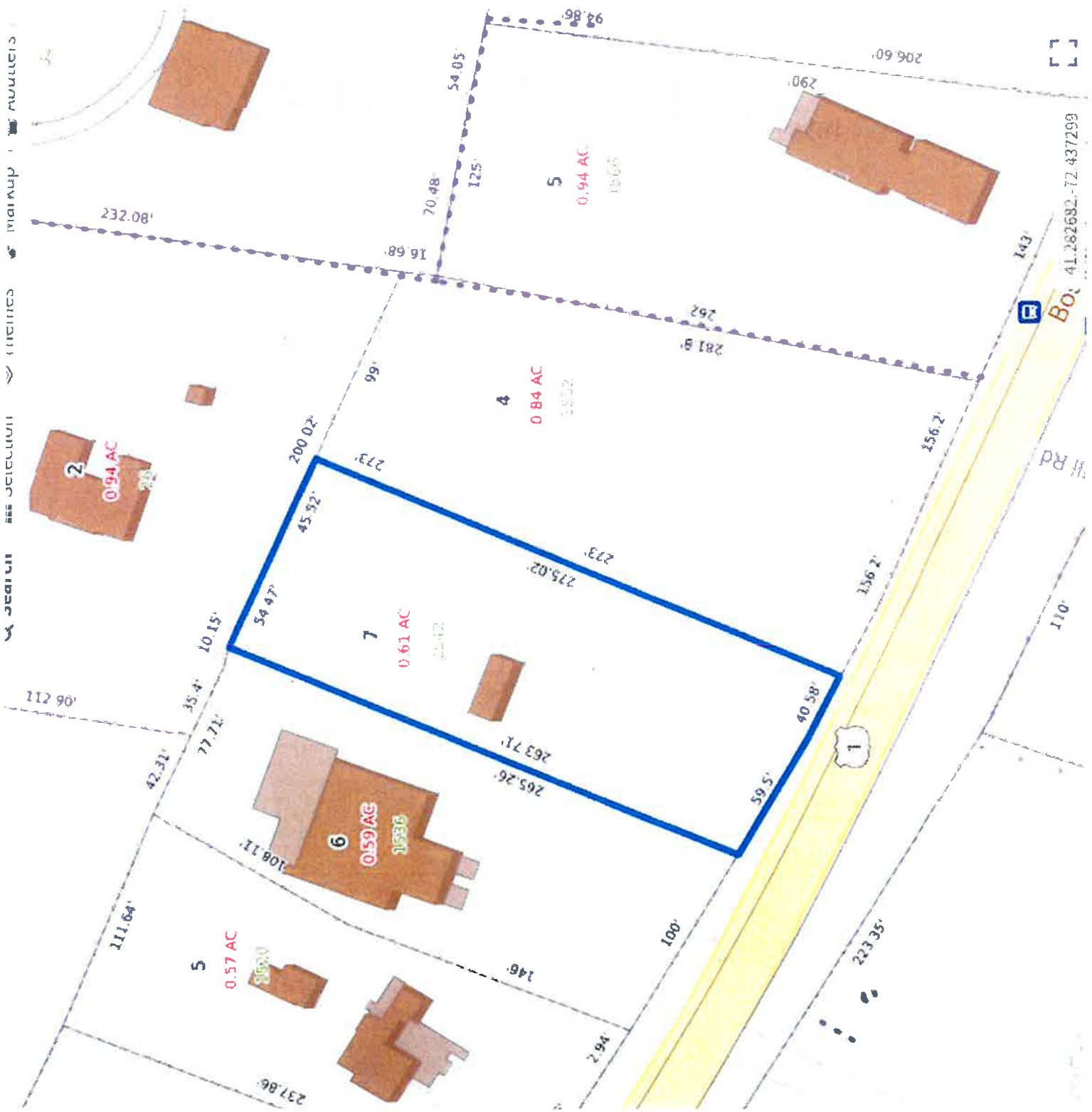
Advanced Search

Download Results



Showing 1-1 results. Scroll to see more

1542 BOSTON POST RD
CONN WATER CO
182-007





WESTBROOK, CT

1542 BOSTON POST RD

Location

1542 BOSTON POST RD

Mblu

182 / / 007 / /

Acct#

C0071600

Owner

CONN WATER CO

Assessment

\$462,160

Appraisal

\$660,210

PID

770

Building Count

1

Current Value

Appraisal

Valuation Year	Improvements	Land	Total
2021	\$114,670	\$545,540	\$660,210

Assessment

Valuation Year	Improvements	Land	Total
----------------	--------------	------	-------

2021	\$80,280	\$381,880	\$462,160
------	----------	-----------	-----------

Owner of Record

Owner CONN WATER CO
Co-Owner
Address 93 W MAIN ST
CLINTON, CT 06413
Sale Price \$0
Certificate
Book & Page 15/287
Sale Date 09/17/1932
Instrument 25

Ownership History

Ownership History

Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
CONN WATER CO	\$0		15/287	25	09/17/1932

Building Information

Building 1 : Section 1

Year Built:

Living Area: 0

Replacement Cost: \$0

Building Percent Good:

Replacement Cost

Less Depreciation: \$0

Building Attributes

Field	Description
Style	Vacant Commercial
Model	
Grade:	
Stories	
Occupancy	

ATTACHMENT 5

Certificate of Mailing — Firm



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

3

TOTAL NO. of Pieces Received at Post Office™

3

Affix Stamp Here
 Postmark with Date of Receipt.

neopost™
 01/11/2024
U.S. POSTAGE \$003.90
 ZIP 06103
 0111 10003907

Postmaster, per (name of receiving employee)

[Signature]

USPS® Tracking Number
 Firm-specific Identifier

Address
 (Name, Street, City, State, and ZIP Code™)

1. John Hall, First Selectman
 Town of Westbrook
 866 Boston Post Road
 Westbrook, CT 06498
 2. Peter Gillespie, Town Planner
 Town of Westbrook
 866 Boston Post Road
 Westbrook, CT 06498
 3. Connecticut Water Company
 93 West Main Street
 Clinton, CT 06413

Parcel Airlift

Special Handling

Fee

Postage

