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

June 25, 2024

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

RE: **Notice of Exempt Modification for Verizon Wireless: 5000103257**
Crown Site ID# 841298
250 Meriden Waterbury Turnpike, Southington, CT 06489
Latitude: 41° 33′ 24.54″ / Longitude: -72° 51′ 10.84″

Dear Ms. Bachman:

Verizon Wireless currently maintains nine (9) antennas at the 60-foot mount on the existing 120-foot lattice tower located at 250 Meriden Waterbury Turnpike, Southington, CT. The property is owned John Rogus and the tower is owned by Crown Castle. Verizon now intends to add two (2) interference mitigation filters at the 60ft level. This modification/proposal includes hardware that is both 4G (LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

Panned Modification:

Tower:

Install New:
(2) Kaelus BSF0020F3V1- Interference Mitigation Filters

The facility was originally approved by the Connecticut Siting Council in 1999 to replace 2 existing towers (TS-SCLP-131-990317) with an 80' lattice tower. In 2018, Petition No. 1349 was approved by the Connecticut Siting Council to increase the tower height to 120'.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Mark Sciota, Town Manager, Town of Southington and Jeremy DeCarli, Director of Planning, Town of Southington. John Rogus is the landowner and Crown Castle is the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.

2. The proposed modifications will not require the extension of the site boundary.

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

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

6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

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

Attachments
cc:

Mark Sciota, Town Manager
Town of Southington
75 Main Street
Southington, CT 06489
860-276-6200

Jeremy DeCarli, Director of Planning
Town of Southington Municipal Center
196 North Main Street
Southington, CT 06489
860-276-6248

John Rogus, property owner
250 Meriden Waterbury Tpke
Southington, CT 06489

Crown Castle, Tower Owner

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

October 26, 2018

Lucia Chiocchio, Esq.
Cuddy & Feder, LLP
445 Hamilton Avenue, 14th Floor
White Plains, NY 10601

RE: **PETITION NO. 1349** – New Cingular Wireless PCS, LLC petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed extension of an existing wireless telecommunications facility located at 250 Meriden Waterbury Turnpike, Southington, Connecticut.

Dear Attorney Chiocchio:

At a public meeting held on October 25, 2018, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal would not have a substantial adverse environmental effect, and pursuant to Connecticut General Statutes § 16-50k, would not require a Certificate of Environmental Compatibility and Public Need with the following conditions:

1. Prior to AT&T's antenna installation the tower modification shall be carried out in accordance with the Structural Modification Report and Modification Drawings prepared by Paul J. Ford, dated March 16, 2018 and March 19, 2018 respectively, and stamped and signed by Joseph Pachicarah Jacobs;

2. Within 45 days following completion of proposed modifications, AT&T shall provide documentation that its installation complied with the recommendations of the Tower Modification Schedule;

3. Approval of any minor project changes be delegated to Council staff;

4. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed within three years from the date of the mailing of the Council's decision, this decision shall be void, and the facility owner/operator shall dismantle the facility and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The facility owner/operator shall provide written notice to the Executive Director of any schedule changes as soon as is practicable;

5. Any request for extension of the time period to fully construct the facility shall be filed with the Council not later than 60 days prior to the expiration date of this decision and shall be served on all parties and intervenors, if applicable, and the Town of Southington;

6. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;

7. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by the Petitioner shall be removed within 60 days of the date the antenna ceased to function;

8. The facility owner/operator shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v;

9. This Declaratory Ruling may be transferred, provided the facility owner/operator/transferor is current with payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v and the transferee provides written confirmation that the transferee agrees to comply with the terms, limitations and conditions contained in the Declaratory Ruling, including timely payments to the Council for annual assessments and invoices under Conn. Gen. Stat. §16-50v; and

10. If the facility owner/operator 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 facility within 30 days of the sale and/or transfer.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the petition received September 4, 2018 and additional information received on October 5, 2018 and October 11, 2018.

Enclosed for your information is a copy of the staff report on this project.

Sincerely,

Robert Stein

Robert Stein
Chairman

RS/IN/lm

Enclosure: Staff Report dated October 25, 2018

c: The Honorable Christopher Palmieri, Chairman, Town of Southington
Mark J. Sciota, Town Manager, Town of Southington
Robert Phillips, Director of Planning and Community Development, Town of Southington
John Rogus, property owner

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

Petition No. 1349
New Cingular Wireless PCS, LLC
Southington, Connecticut
Staff Report
October 25, 2018

On September 4, 2018, New Cingular Wireless PCS, LLC (AT&T) submitted a petition (Petition) to the Connecticut Siting Council (Council) for a declaratory ruling pursuant to Connecticut General Statutes (CGS) §4-176 and §16-50k for the proposed extension of an existing wireless telecommunications facility located at 250 Meriden Waterbury Turnpike, Southington, Connecticut. A field review of the proposed project was conducted on September 25, 2018. Council member Daniel Lynch and Fred Cunliffe and Ifeanyi Nwankwo of the Council staff attended the field review. Kristen Motel Esq., Mark Roberts and Brian Huff attended the field review as representatives of AT&T. At the request of the Council, AT&T attempted to fly a balloon during the field review to simulate the proposed extension of the facility, but it was unsuccessful due to weather conditions. AT&T conducted a second balloon float at the site on October 1, 2018. Two balloons were flown, one red (2-feet in diameter) and one white (3.5-feet in diameter) and flown at elevations of 110-feet and 120-feet above ground level, respectively.

The existing facility is located on a 1.2 acre parcel containing a commercial building, associated outbuildings and a parking area within a Business District Zone. The surrounding area consists of a mix of residential, commercial and retail uses to the north and west and residential uses to the south and east.

The existing facility consists of an 80-foot self-supporting lattice tower owned by Crown Castle. AT&T currently has nine antennas mounted at a center line height of 78-feet above ground level (agl) and Verizon has six antennas mounted at a center line height of 60-feet agl. AT&T and Verizon have associated equipment located at the base of the tower. The equipment shelter is locked and the tower is equipped with an anti-climbing shield.

AT&T proposes to extend the height of the existing self-supporting lattice tower to 120-feet agl. AT&T would remove its existing antennas and install three new 700/850 MHz antennas at the top of the lattice extension. Antennas would be installed at a centerline height of 120-feet agl. The height at the top of AT&T's antennas would be 123-feet agl. AT&T would also install six remote radio head units (RRU's), one surge arrestor, nine cables and an 11-foot lightning mast at the same 120-foot level. The proposed equipment is dual technology capable and compatible with 5G. Aside from minor equipment upgrades within AT&T's equipment shelter, there will be no changes to the existing equipment area at ground level. Existing access to the site would continue to be used. Verizon's existing antennas and equipment would not be affected.

AT&T has backup power batteries within its equipment shelter. These batteries can handle periods of commercial power outages of up to eight hours. For extended commercial power outages, AT&T would utilize a mobile diesel generator that would be transported to the site. This method of backup power has been successfully deployed several times during the sites existence.

AT&T states that in the event of a tower failure due to a catastrophic event, the tower's control section (40 – 60 foot along the legs of the tower) would cause it to collapse upon itself keeping it within the subject parcel.

The purpose of the proposed modification is to provide reliable wireless service in this area of Southington. The existing AT&T antennas are currently at or below the height of the surrounding tree canopy and as a result two of the three sectors of antennas are blocked by the tree line. AT&T dropped call data for this site indicates elevated voice and data drops, as well as substandard data service, that drive the need for the proposed height extension. The proposed height is the lowest height AT&T could locate antennas to gain the coverage necessary to provide reliable service, particularly north along State Route 120. Reducing the height to 100-feet would decrease coverage by one-half to the area.

The proposed extension would have a minimal impact on visibility. The proposed extension would be consistent with the existing tower in design, color and material. Views from the closest residential areas on Meriden Waterbury Turnpike and Orchard Lane are not expected to be substantial. The existing facility can be seen from West Peak and Castle Craig (0.5 miles and 0.9 miles northeast respectively, of the AT&T facility) within Hubbard Park in Meriden. The proposed extension would also be visible from these locations.

There are no schools or child day care centers within 1,000-feet of the tower. The nearest school is South End Elementary School located approximately 8,270-feet from the site. There are 72 residences within 1000-feet of the existing site. The closest residence is within approximately 10-feet and is located on the subject parcel. The closest off-site residence is within approximately 200-feet and is located at Orchard Lane.

The site is outside of the 100-year and 500-year flood zones. The nearest wetland is approximately 1,155-feet to the northwest of the site. No aviation marking or lighting is required. The nearest Important Bird Areas to the site (East Rock Park (11 miles away) and Naugatuck State Forest (12 miles away)) would not be adversely impacted by the proposed modification. Furthermore, the proposed modifications would comply with the recommended guidelines of the U.S. Fish and Wildlife Service for minimizing the potential for telecommunication towers to impact bird species.

There will be no ground disturbance or tree removal for the proposed extension.

A Professional Engineer duly licensed in the State of Connecticut has certified that the tower is structurally adequate to support the proposed loading with certain conditions. The maximum worst-case power density would be 25.2% of the applicable limit. AT&T's RF Tier rating for this facility is Tier 1 (level of priority to maintain network continuity) since it provides service to an interstate highway (I-691).

Notice was provided to the Town of Southington, the property owner and abutting property owners on August 29, 2018. No comments have been received to date.

AT&T contends that this proposal will not have a substantial adverse environmental effect. Staff recommends approval with the following conditions:

- Prior to AT&T's antenna installation the tower modification shall be carried out in accordance with the Structural Modification Report and Modification Drawings prepared by Paul J. Ford, dated March 16, 2018 and March 19, 2018 respectively, and stamped and signed by Joseph Pachicarah Jacobs;
- Within 45 days following completion of proposed modifications, AT&T shall provide documentation that its installation complied with the recommendations of the Tower Modification Schedule; and
- Approval of any minor project changes be delegated to Council staff.

<u>View of Balloon float from Commercial district on Meriden Avenue</u>

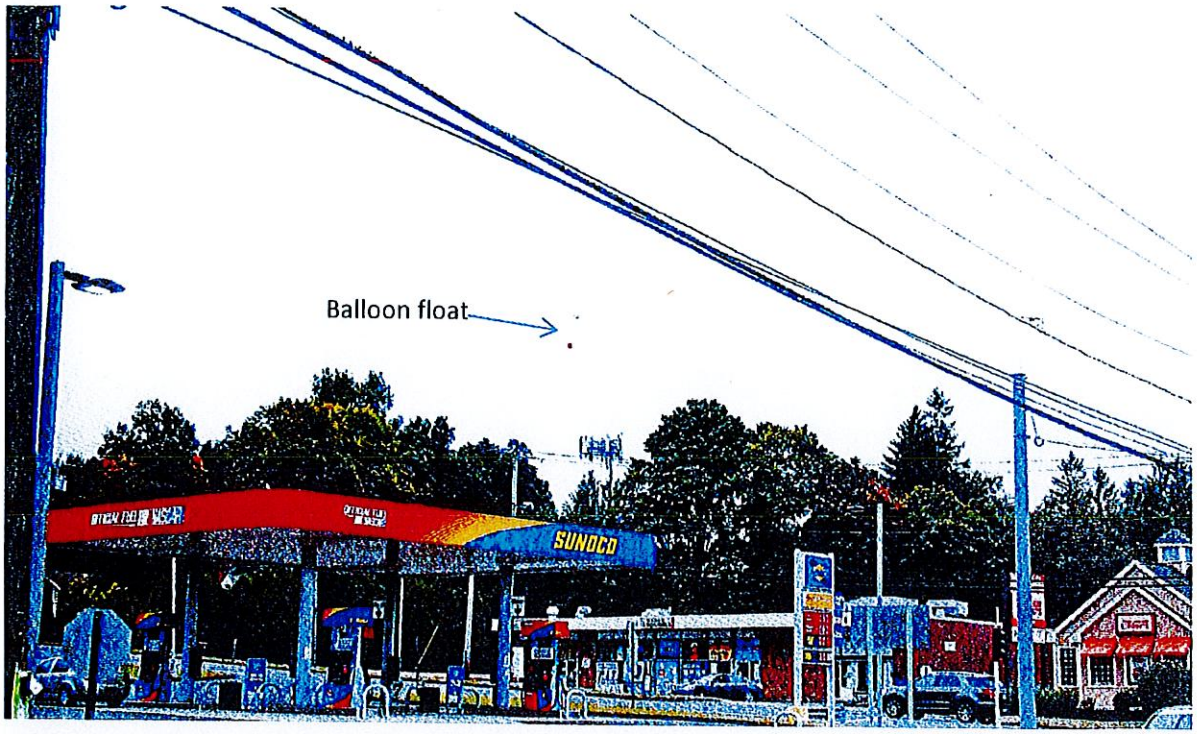
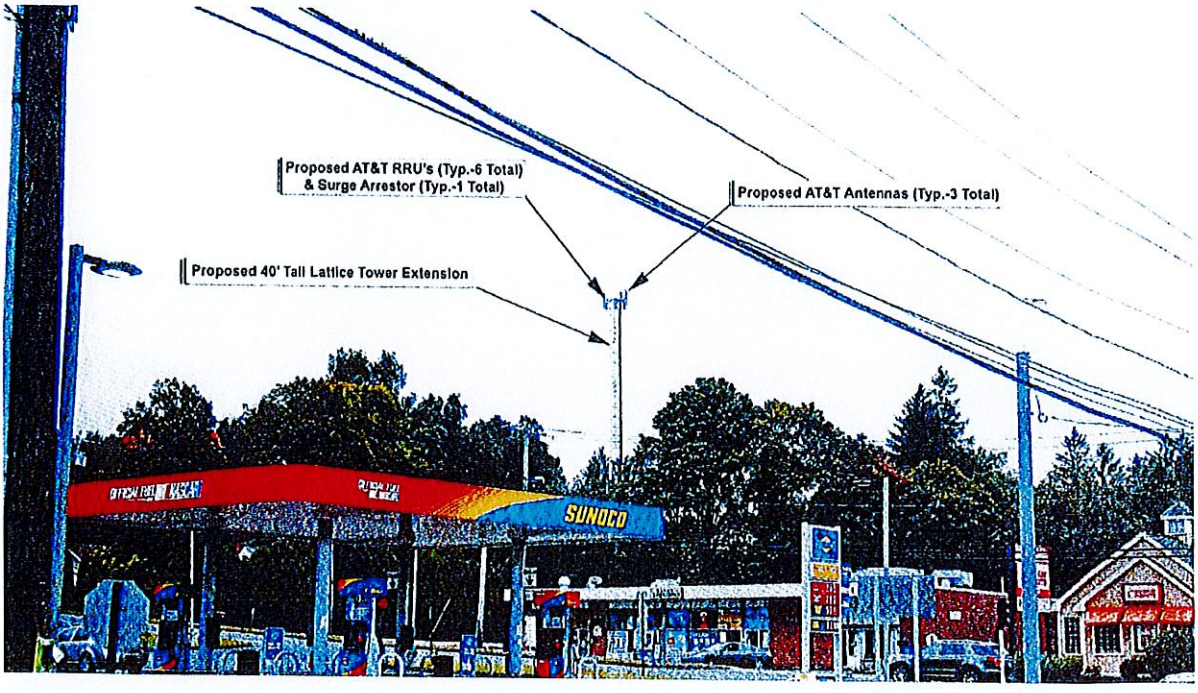


Photo-simulation showing proposed tower extension from commercial district on Meriden Avenue



View of Balloon float from nearby residential area on Orchard Lane

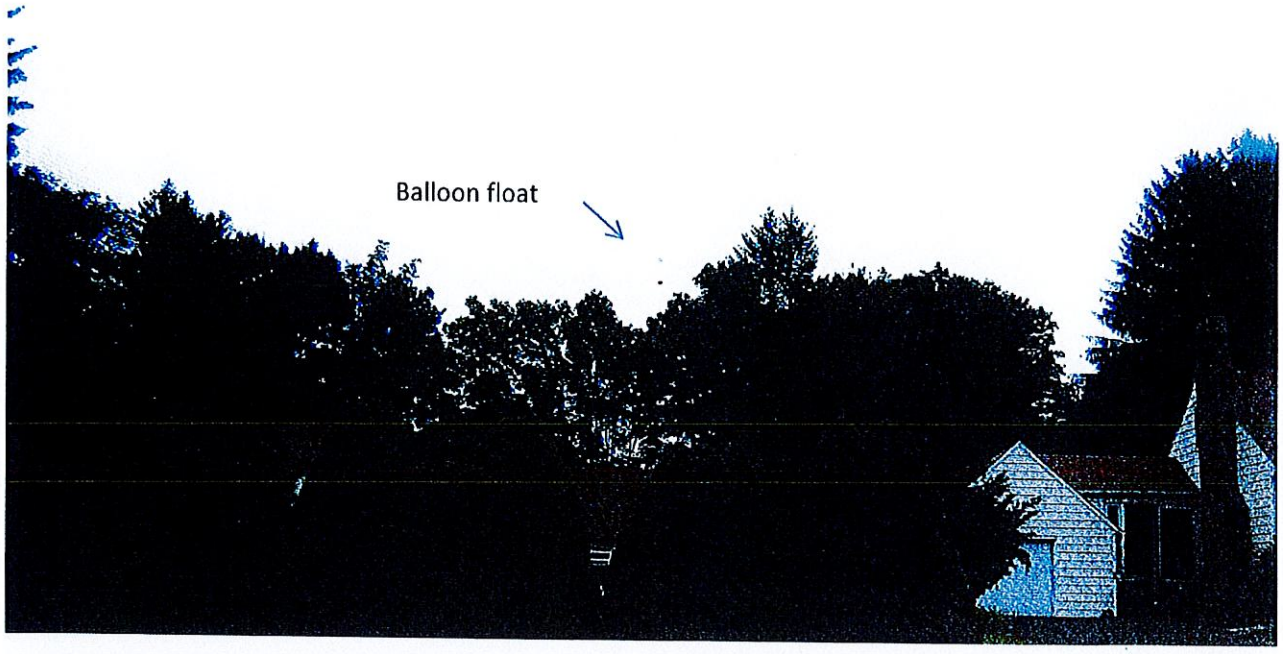
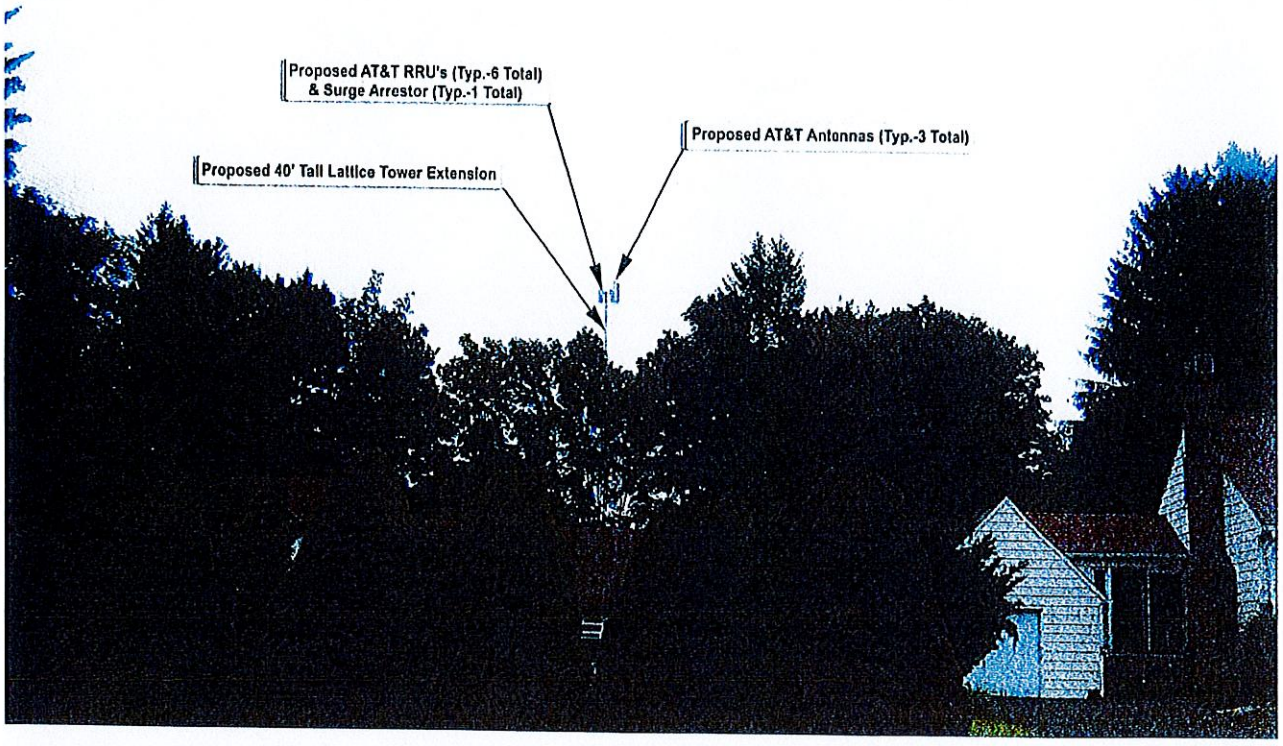


Photo-simulation showing proposed tower extension from nearby residential area on Orchard lane



View of Balloon float from the Tower Farm on West Peak

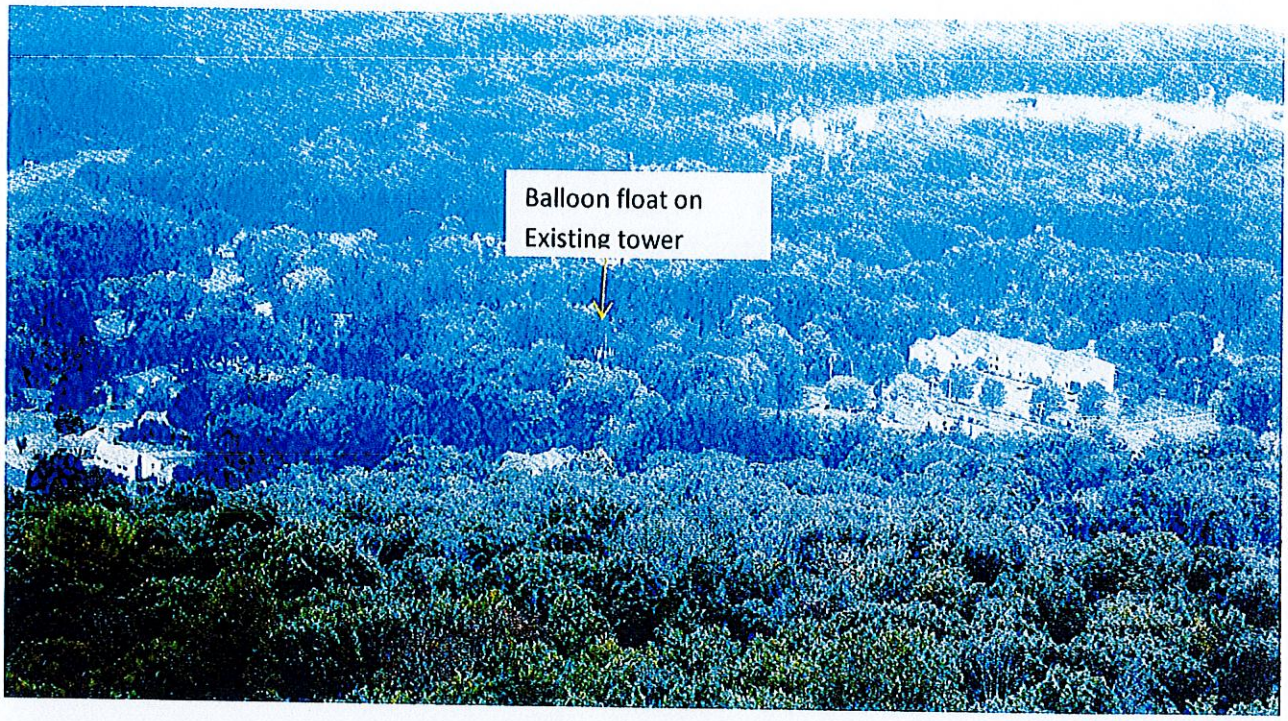
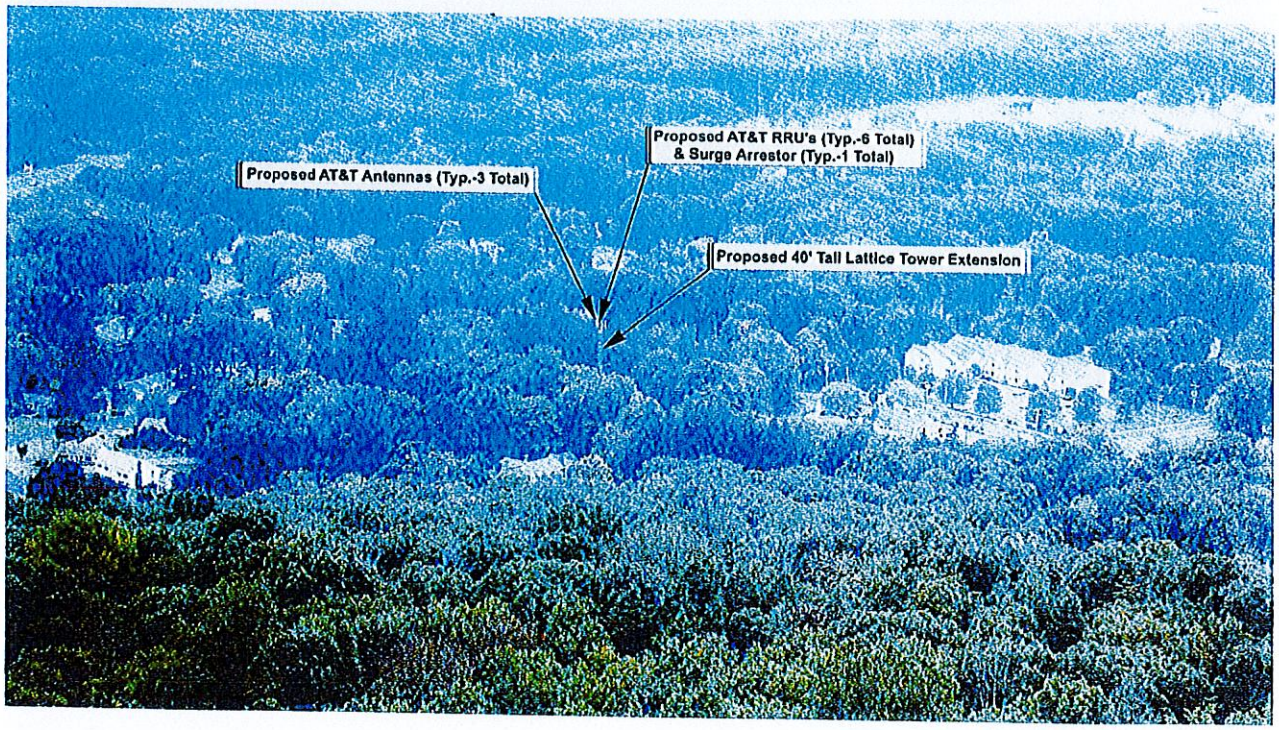


Photo-simulation showing proposed tower extension from the Tower Farm on West Peak



250 MERIDEN WATERBURY TPKE

Location	250 MERIDEN WATERBURY TPKE	**Mblu**	015/ / 080/ /
		Acct#	10848
Owner	ROGUS JOHN	**Assessment**	$350,310
Appraisal	$500,450	**PID**	398
Building Count	2		

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$173,720	$326,730	$500,450
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$121,600	$228,710	$350,310

Owner of Record

Owner	ROGUS JOHN	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	250 MERIDEN WATERBURY TPKE SOUTHINGTON, CT 06489	**Book & Page**	1267/0806
		Sale Date	12/28/2012
		Instrument	29

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
ROGUS JOHN	$0		1267/0806	29	12/28/2012
ROGUS JOHN JR & JAN	$0		0311/0085	29	07/10/1980

Building Information

Building 1 : Section 1

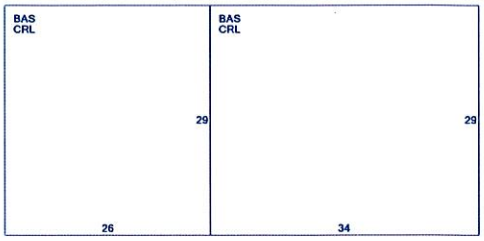
Year Built: 1936
Living Area: 1,740
Building Percent Good: 62

Building Attributes	
Field	**Description**
Style:	Retail
Model	Comm/Ind
Grade	C-
Stories:	1
Occupancy	1.00
Exterior Wall 1	Clapboard
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt / Arch Shingle
Interior Wall 1	Average
Interior Wall 2	
Interior Floor 1	Average
Interior Floor 2	

Building Photo

(https://images.vgsi.com/photos2/SouthingtonCTPhotos/\00\05\57\30.jpg)

Heating Type	Unit Heater
AC Type	None
Struct Class	
Bldg Use	Multi Use - Comm
Total Bedrooms	
Total Baths	
Wet Sprinkler	0
Dry Sprinkler	0
1st Floor Use:	
Heat/AC	Heat Only
Frame Type	Wood Frame
Baths/Plumbing	None
Ceiling/Wall	Typical
Rooms/Prtns	Average
Wall Height	9.00



(ParcelSketch.ashx?pid=398&bid=398)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	1,740	1,740
CRL	Crawl Space	1,740	0
		3,480	1,740

Building 2 : Section 1

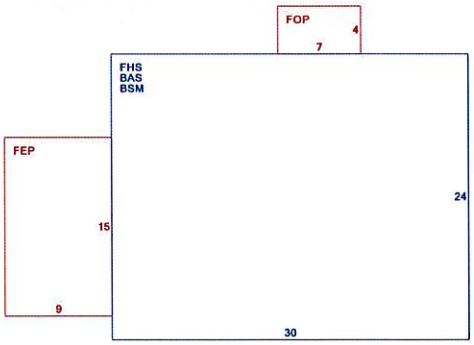
Year Built: 1936
Living Area: 1,188
Building Percent Good: 66

Building Attributes : Bldg 2 of 2	
Field	Description
Style	Cape
Model	Residential
Grade:	C
Stories	1.5
Occupancy	1
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt / Arch Shingle
Interior Wall 1	Average
Interior Wall 2	
Interior Flr 1	Average
Interior Flr 2	
Heat Fuel	Gas
Heat Type:	Forced Hot Air
AC Type:	None
Total Bedrooms:	2
Full Bthrms:	1
Half Baths:	1
Extra Fixtures	0
Total Rooms:	5
Bath Style:	Average
Kitchen Style:	Average
Total Kitchens	1
Fireplaces	1
Whirlpool Tubs	0
Fin Bsmt Area	None
Fin Bsmt Quality	
Bsmt Garages	0
Bsmt Type	Full
Attic Type	None
Cath Ceiling	No

Building Photo

(https://images.vgsi.com/photos2/SouthingtonCTPhotos/\00\01\72\06.JPG

Building Layout



(ParcelSketch.ashx?pid=398&bid=20002)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	720	720
FHS	Finished Half Story	720	468
BSM	Basement	720	0
FEP	Finished Enclosed Porch	135	0
FOP	Open Porch	28	0
		2,323	1,188

Extra Features

Extra Features	Legend

No Data for Extra Features

Land

Land Use

Use Code	031
Description	Multi Use - Comm
Zone	B
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	1.22
Depth	

Outbuildings

Outbuildings					Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Bldg #**
PAV1	Paving	AS	Asphalt	2625.00 S.F.	1
FGR1	Garage			520.00 S.F.	1
SHD1	Shed	FR	Frame	462.00 S.F.	1
SHD1	Shed	FR	Frame	414.00 S.F.	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2023	$173,720	$326,730	$500,450
2022	$173,720	$326,730	$500,450
2021	$173,720	$326,730	$500,450
2020	$173,720	$326,730	$500,450
2019	$165,770	$136,600	$302,370

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2023	$121,600	$228,710	$350,310
2022	$121,600	$228,710	$350,310
2021	$121,600	$228,710	$350,310
2020	$121,600	$228,710	$350,310
2019	$116,040	$95,620	$211,660

250 Meriden-Waterbury Turnpike

250 Meriden-Waterbury Turnpike

Building

Directions | Save | Nearby | Send to phone | Share

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Wednesday, June 26, 2024 3:43 PM
To: Barbadora, Jeff
Subject: FedEx Shipment 777057077916: Your package has been delivered

FedEx®

Hi. Your package was delivered Wed, 06/26/2024 at 3:31pm.

OBTAIN PROOF OF DELIVERY

How was your delivery ?

TRACKING NUMBER	777057077916
FROM	WESTBOROUGH, MA, US
TO	SOUTHINGTON, CT, US
SHIP DATE	Tue 6/25/2024 06:06 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US
DESTINATION	SOUTHINGTON, CT, US
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Standard Overnight

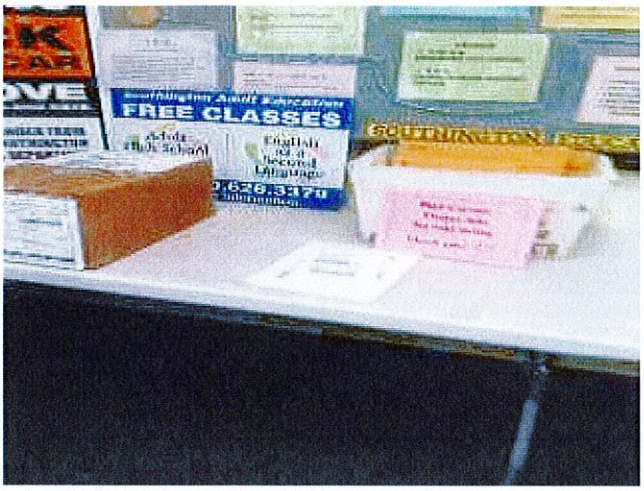
Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Wednesday, June 26, 2024 2:48 PM
To: Barbadora, Jeff
Subject: FedEx Shipment 777057115417: Your package has been delivered
Attachments: DeliveryPicture.jpeg

Hi. Your package was delivered Wed, 06/26/2024 at 2:42pm.

Delivered to 196 N MAIN ST, SOUTHINGTON, CT 06489

OBTAIN PROOF OF DELIVERY



Delivery picture not showing? View in browser.

How was your delivery ?

☆ ☆ ☆ ☆ ☆

TRACKING NUMBER	777057115417
FROM	Crown Castle 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	Town of Southington Jeremy DeCarli, Dir of Planning 196 North Main Street SOUTHINGTON, CT, US, 06489
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Tue 6/25/2024 06:06 PM
DELIVERED TO	Residence
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	SOUTHINGTON, CT, US, 06489

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Wednesday, June 26, 2024 11:40 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 777057163691: Your package has been delivered
Attachments: DeliveryPicture.jpeg

FedEx®

Hi. Your package was delivered Wed, 06/26/2024 at 11:33am.

Delivered to 250 MERIDEN WATERBURY TPK, SOUTHINGTON, CT 06489

OBTAIN PROOF OF DELIVERY

Delivery picture not showing? View in browser.

How was your delivery ?

☆ ☆ ☆ ☆ ☆

TRACKING NUMBER	777057163691
FROM	Crown Castle 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	John Rogus 250 Meriden Waterbury Turnpike SOUTHINGTON, CT, US, 06489
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Tue 6/25/2024 06:06 PM
DELIVERED TO	Residence
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	SOUTHINGTON, CT, US, 06489

Date: **May 31, 2024**

Morrison Hershfield
1455 Lincoln Parkway, Suite 500
Atlanta, GA 30346
(770) 379-8500

Subject:	**Structural Analysis Report**	
Carrier Designation:	***Verizon Wireless* Co-Locate**	
	Site Number:	5000103257
	Site Name:	Southington_I691_CT - A
Crown Castle Designation:	**BU Number:**	841298
	Site Name:	Southington Rogus
	JDE Job Number:	2107967
	Work Order Number:	2306332
	Order Number:	662922 Rev. 1
Engineering Firm Designation:	**Morrison Hershfield Project Number:** CN13-260R1 / 2400001	
Site Data:	**250 Meriden Waterbury Turnpike, Southington, Hartford County, CT 06489** **Latitude *41° 33' 24.54"*, Longitude *-72° 51' 10.84"*** **120 Foot - Self Support Tower**	

Morrison Hershfield is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower.

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

LC7: Proposed Equipment Configuration **Sufficient Capacity – 99.7%**

This analysis utilizes an ultimate 3-second gust wind speed of 118 mph as required by the 2022 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Respectfully submitted by:

G. Lance Cooke, P.E. (CT License No. PEN.0028133)
Senior Engineer

STATE OF CONNECTICUT
G. LANCE COOKE
No. 28133
LICENSED
PROFESSIONAL ENGINEER
EXP 1/31/25

Digitally signed by G. Lance Cooke
Date: 2024.05.31 16:31:12+05'30'

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 120 ft self-support tower mapped by GPD Group, Inc., in April of 2014.

The tower was modified multiple times in the past to accommodate additional loading. Modifications are incorporated in this analysis per the post modification inspection reports.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	118 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
59.0	60.0	6	commscope	NHH-65B-R2B w/ Mount Pipe	2	1-5/8
		3	commscope	NHHSS-65B-R2BT4 w/ Mount Pipe		
		3	samsung telecommunications	MT6407-77A w/ Mount Pipe		
		3	samsung telecommunications	CBRS RT4401-48A		
		3	samsung telecommunications	RF4439D-25A		
		3	samsung telecommunications	RF4440D-13A		
		2	kaelus	BSF0020F3V1		
		2	raycap	RVZDC-6627-PF-48		
	59.0	6	-	5' Face Horizontal [#P3STD]		
		3	-	6' Standoff Pipe [#4STD]		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
119.0	126.0	1	decibel	DB638-C	3	7/8
	123.0	1	pctel	MFB9157		
		1	scala	OGB6-900		
117.0	120.0	3	cci antennas	TPA65R-BU8DA-K w/ Mount Pipe	2	13/16
		3	ericsson	RRUS 4449 B5/B12	1	3/8
		3	ericsson	RRUS 8843 B2/B66A		
		1	raycap	DC6-48-60-18-8F		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
117.0	117.0	3	Site Pro 1	2' MD Standoff Mount [#USF-2U]	-	-
110.0	110.0	3	commscope	NNHHS4-65C-R5-V2 w/ Mount Pipe	2 1	13/16 3/8
		3	ericsson	8863 B77D		
		3	ericsson	RRUS 4478 B14_CCIV2		
		1	raycap	DC6-48-60-18-8F		
		3	Site Pro 1	2' MD Standoff Mount [#USF-2U]		
100.0	101.0	1	jma wireless	MX08FRO665-21 w/ Mount Pipe	1	1-1/2
	100.0	2	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		3	fujitsu	TA08025-B604		
		3	fujitsu	TA08025-B605		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MTC3975083 (3)		
64.0	71.0	1	scala	OGD6-905/945	2	7/8
	70.0	1	rfs/celwave	BA1012-0		
	64.0	2	-	Side Arm Mount [SO 701-1]		
50.0	61.0	1	decibel	DB638-C	1	7/8
	50.0	1	-	Side Arm Mount [SO 601-1]		
49.0	57.0	1	scala	OGD6-905/945	1	1/2
	49.0	1	-	Side Arm Mount [SO 601-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	5114302	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	5114267	CCISITES
4-TOWER MANUFACTURER DRAWINGS	5114299	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5388172	CCISITES
4-POST-MODIFICATION INSPECTION	5610335	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5964578	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	6175374	CCISITES
4-POST-MODIFICATION INSPECTION	6175357	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	7426751	CCISITES
4-POST-MODIFICATION INSPECTION	8266808	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	9168114	CCISITES
4-POST-MODIFICATION INSPECTION	9549096	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	10377449	CCISITES
4-POST-MODIFICATION INSPECTION	10944147	CCISITES

3.1) Analysis Method

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

tnxTower was used to determine the loads on the modified structure. Additional calculations were performed to determine the stresses in the reinforced leg sections. These calculations are presented in Appendix C.

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T1	120 - 100	Leg	1 1/2	3	-18.13	55.54	32.6	Pass
T2	100 - 80	Leg	1 1/2	89	-54.55	55.54	98.2	Pass
T3	80 - 60	Leg	SR 1.5in w/ 1/2HSS 2.375in x 0.34375in	175	-84.86	85.91	98.8*	Pass
T4	60 - 40	Leg	SR 1.75in w/ 1/2HSS 2.375in x 0.154in	256	-122.16	122.93	99.5*	Pass
T5	40 - 20	Leg	SR 2in w/ 1/2HSS 2.875in x 0.276in	336	-157.13	157.59	99.6*	Pass
T6	20 - 0	Leg	SR 2.25in w/ 1/2HSS 2.875in x 0.276in	393	-188.85	195.28	96.6*	Pass
T1	120 - 100	Diagonal	5/8	12	-1.95	4.53	43.0	Pass
T2	100 - 80	Diagonal	5/8	100	-2.93	4.53	64.6	Pass
T3	80 - 60	Diagonal	5/8	249	-3.49	4.55	76.8	Pass
T4	60 - 40	Diagonal	3/4	266	-3.92	6.47	60.6	Pass
T5	40 - 20	Diagonal	7/8	348	-3.12	9.80	31.8	Pass
T6	20 - 0	Diagonal	7/8	405	-3.27	8.47	38.6	Pass
T1	120 - 100	Horizontal	3/4	27	-0.40	6.28	6.4	Pass
T2	100 - 80	Horizontal	3/4	113	-1.30	6.28	20.7	Pass
T1	120 - 100	Secondary Horizontal	5/8	86	0.00	14.50	0.5	Pass
T2	100 - 80	Secondary Horizontal	5/8	172	0.00	14.50	0.5	Pass
T3	80 - 60	Secondary Horizontal	1x1	251	2.11	14.40	14.7 22.7 (b)	Pass
T4	60 - 40	Secondary Horizontal	1x1	270	-2.18	9.73	22.4 23.5 (b)	Pass
T1	120 - 100	Top Girt	1	5	-0.35	16.35	2.2	Pass
T2	100 - 80	Top Girt	1	91	-1.00	16.35	6.1	Pass
T3	80 - 60	Top Girt	1	176	-1.55	16.66	9.3	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T4	60 - 40	Top Girt	1	258	-2.18	13.88	15.7	Pass
T5	40 - 20	Top Girt	1	338	-2.77	11.44	24.2	Pass
T6	20 - 0	Top Girt	1	396	-3.32	9.02	36.8	Pass
T1	120 - 100	Bottom Girt	3/4	9	-1.10	6.28	17.6	Pass
T2	100 - 80	Bottom Girt	3/4	95	-1.92	6.28	30.5	Pass
T3	80 - 60	Bottom Girt	3/4	181	-1.61	4.84	33.2	Pass
T4	60 - 40	Bottom Girt	1	261	-2.18	11.40	19.1	Pass
T5	40 - 20	Bottom Girt	1	341	-2.77	9.16	30.2	Pass
T6	20 - 0	Bottom Girt	1	398	-3.32	7.33	45.3	Pass
							Summary	
						Leg (T5)	99.7	Pass
						Diagonal (T3)	76.8	Pass
						Horizontal (T2)	20.7	Pass
						Secondary Horizontal (T4)	23.5	Pass
						Top Girt (T6)	36.8	Pass
						Bottom Girt (T6)	45.3	Pass
						Bolt Checks	61.7	Pass
						Rating =	99.7	Pass

***Rating Per Leg-Reinforcement Tool**

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	63.4	Pass
1	Base Foundation (Structure)	0	13.6	Pass
1	Base Foundation (Soil Interaction)		63.4	Pass

Structure Rating (max from all components) =	99.7%*

Notes:
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity consumed.
2) *Rating per TIA-222-H, Section 15.5.

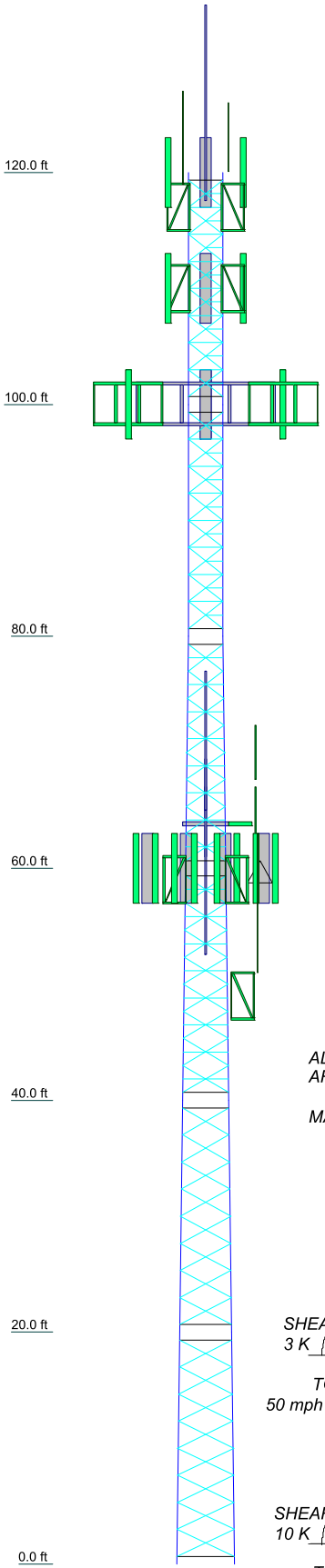
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	T6	T5	T4	T3	T2	T1
Legs	SR 2.25in w/ 1/2HSS 2.875in x 0.276in	SR 2in w/ 1/2HSS 2.875in x 0.276in	SR 1.75in w/ 1/2HSS 2.375in x 0.154in	A	SR 1 1/2	
Leg Grade		A572-50		A53-B-35	A572-50	
Diagonals	SR 7/8		SR 3/4		SR 5/8	
Diagonal Grade			A36			
Top Girts			SR 1			
Bottom Girts		SR 1		SR 3/4		
Horizontals		N.A.		SR 3/4		
Sec. Horizontals	N.A.		1x1	SR 5/8		
Face Width (ft)	4.5	4	3.5	3		
# Panels @ (ft)	5		54 @ 2.33333			
Weight (K)	6.8	1.4	1.3	1.1	0.7	0.7



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	SR 1.5in w/ 1/2HSS 2.375in x 0.34375in		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A53-B-35	35 ksi	63 ksi
A36	36 ksi	58 ksi			

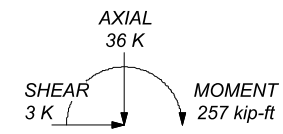
TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 118 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 99.7%

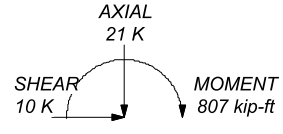
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 192 K
SHEAR: 4 K

UPLIFT: -178 K
SHEAR: 5 K



TORQUE 1 kip-ft
50 mph WIND - 1.0000 in ICE



TORQUE 1 kip-ft
REACTIONS - 118 mph WIND

Morrison Hershfield
Stantec
Consulting Engineers
Morrison Hershfield
1455 Lincoln Parkway, Suite 500
Atlanta, GA 30346
Phone: (770) 379-8500
FAX: (770) 379-8501

Job: CN13-260R1 / 2400001			
Project: 841298 / Southington Rogus			
Client: Crown Castle USA	Drawn by: RP	App'd:	
Code: TIA-222-H	Date: 05/31/24	Scale: NTS	
Path:		Dwg No. E-1	

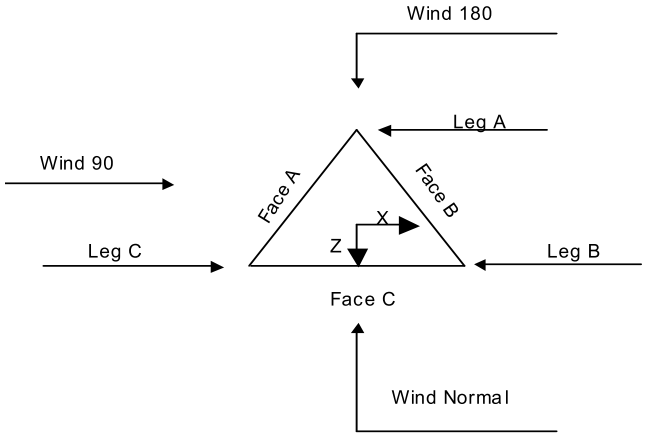
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 120.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 3.00 ft at the top and 5.00 ft at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower is located in Hartford County, Connecticut.
Tower base elevation above sea level: 343.00 ft.
Basic wind speed of 118 mph.
Risk Category II.
Exposure Category B.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
Maximum demand-capacity ratio is: 1.05.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	120.00-100.00			3.00	1	20.00
T2	100.00-80.00			3.00	1	20.00
T3	80.00-60.00			3.00	1	20.00
T4	60.00-40.00			3.50	1	20.00
T5	40.00-20.00			4.00	1	20.00
T6	20.00-0.00			4.50	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	120.00-100.00	2.33	X Brace	No	Yes+Steps	8.0000	8.0000
T2	100.00-80.00	2.33	X Brace	No	Yes+Steps	8.0000	8.0000
T3	80.00-60.00	2.33	X Brace	No	Yes	8.0000	8.0000
T4	60.00-40.00	2.33	X Brace	No	Yes	8.0000	8.0000
T5	40.00-20.00	2.33	X Brace	No	Yes	8.0000	8.0000
T6	20.00-0.00	2.33	X Brace	No	Yes	8.0000	8.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 120.00-100.00	Solid Round	1 1/2	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T2 100.00-80.00	Solid Round	1 1/2	A572-50 (50 ksi)	Solid Round	5/8	A36 (36 ksi)
T3 80.00-60.00	Arbitrary Shape	SR 1.5in w/ 1/2HSS 2.375in x 0.34375in	A53-B-35 (35 ksi)	Solid Round	5/8	A36 (36 ksi)
T4 60.00-40.00	Arbitrary Shape	SR 1.75in w/ 1/2HSS 2.375in x 0.154in	A572-50 (50 ksi)	Solid Round	3/4	A36 (36 ksi)
T5 40.00-20.00	Arbitrary Shape	SR 2in w/ 1/2HSS 2.875in x	A572-50	Solid Round	7/8	A36

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T6 20.00-0.00	Arbitrary Shape	0.276in SR 2.25in w/ 1/2HSS 2.875in x 0.276in	(50 ksi) A572-50 (50 ksi)	Solid Round	7/8	(36 ksi) A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 120.00-100.00	Solid Round	1	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T2 100.00-80.00	Solid Round	1	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T3 80.00-60.00	Solid Round	1	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T4 60.00-40.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T5 40.00-20.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)
T6 20.00-0.00	Solid Round	1	A36 (36 ksi)	Solid Round	1	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 120.00-100.00	None	Flat Bar		A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T2 100.00-80.00	None	Flat Bar		A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T1 120.00-100.00	Solid Round	5/8	A572-50 (50 ksi)	Solid Round		A572-50 (50 ksi)
T2 100.00-80.00	Solid Round	5/8	A572-50 (50 ksi)	Solid Round		A572-50 (50 ksi)
T3 80.00-60.00	Flat Bar	1x1	A572-50 (50 ksi)	Solid Round		A572-50 (50 ksi)
T4 60.00-40.00	Flat Bar	1x1	A572-50 (50 ksi)	Solid Round		A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

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 Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 120.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	0.0000	0.0000
T2 100.00-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	0.0000	0.0000
T3 80.00-60.00	0.00	0.2500	A36 (36 ksi)	1	1	1	0.0000	0.0000	0.0000
T4 60.00-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	0.0000	0.0000

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 Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T5 40.00-20.00	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	0.0000	0.0000
T6 20.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1	0.0000	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 120.00-100.00	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 100.00-80.00	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 80.00-60.00	No	Yes	1.3859	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 60.00-40.00	No	Yes	1.3741	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 40.00-20.00	No	Yes	1.1629	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 20.00-0.00	No	Yes	1.1994	1 1	1 1	1 1	1 1	1 1	1 1	1 1

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

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 120.00-100.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T2 100.00-80.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T3 80.00-60.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T4 60.00-40.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T5 40.00-20.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75
T6 20.00-0.00	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 120.00-100.00	0.0000 0.0000	0.75 (1) 0.75 (2)	0.0000 0.0000	0.75 (1) 0.75 (2)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000 0.0000	0.75 (1) 0.75 (2)	0.0000 0.0000	0.75 (1) 0.75 (2)

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T2 100.00-80.00	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T3 80.00-60.00	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T4 60.00-40.00	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T5 40.00-20.00	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)
T6 20.00-0.00	0.0000	0.75 (1)	0.0000	0.75 (1)	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75 (1)	0.0000	0.75 (1)
	0.0000	0.75 (2)	0.0000	0.75 (2)							0.0000	0.75 (2)	0.0000	0.75 (2)
	0.0000	0.75 (3)	0.0000	0.75 (3)							0.0000	0.75 (3)	0.0000	0.75 (3)
	0.0000	0.75 (4)	0.0000	0.75 (4)							0.0000	0.75 (4)	0.0000	0.75 (4)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 120.00-100.00	Flange	0.6250 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 100.00-80.00	Flange	0.6250 A325N	4	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 80.00-60.00	Sleeve DS	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.5000 A325N	1
T4 60.00-40.00	Sleeve DS	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.5000 A325N	1
T5 40.00-20.00	Sleeve DS	0.7500 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 20.00-0.00	Flange	0.7500 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
******													
Safety Line 3/8"	C	No	No	Ar (CaAa)	120.00 - 0.00	0.5000	0	1	1	0.3750	0.3750		0.22
T-Brackets (Af)	A	No	No	Af (CaAa)	120.00 - 0.00	0.5000	-0.3	1	1	1.0000	1.0000		8.40
Climb steps	C	No	No	Ar (CaAa)	20.00 - 0.00	0.0000	0	1	1	1.0000	1.4550		3.40
Climb steps	C	No	No	Ar (CaAa)	40.00 - 20.00	0.0000	0	1	1	1.0000	1.3020		3.04
Climb steps	C	No	No	Ar (CaAa)	60.00 - 40.00	0.0000	0	1	1	1.0000	0.9840		1.97
Climb steps	C	No	No	Ar (CaAa)	80.00 - 60.00	0.0000	0	1	1	1.0000	0.8530		1.71
******													
FLC 78-50J(7/8)	A	No	No	Ar (CaAa)	119.00 - 0.00	1.0000	-0.32	3	3	0.5000	1.1120		0.40
******													
FB-L98B-034-XXX(3/8)	A	No	No	Ar (CaAa)	117.00 - 0.00	2.5000	-0.35	1	1	0.5000	0.3937		0.06
***													
PWRT-608-S(13/16)	A	No	No	Ar (CaAa)	117.00 - 0.00	2.5000	-0.15	2	2	0.5000	0.8200		0.62
******													
FB-L98B-034-XXX(3/8)	A	No	No	Ar (CaAa)	110.00 - 0.00	2.5000	-0.37	1	1	0.5000	0.3937		0.06
***													
PWRT-608-S(13/16)	A	No	No	Ar (CaAa)	110.00 - 0.00	2.5000	-0.2	2	2	0.5000	0.8200		0.62
******													
CU12PSM9P6XXX(1-1/2)	A	No	No	Ar (CaAa)	100.00 - 0.00	2.5000	-0.3	1	1	0.5000	1.6000		2.35
******													
FLC 78-50J(7/8)	A	No	No	Ar (CaAa)	64.00 - 0.00	1.0000	-0.13	2	2	0.5000	1.1120		0.40
******													
***													
HB158-21U6S12-XXXM-01(1-5/8)	A	No	No	Ar (CaAa)	59.00 - 0.00	0.5000	-0.22	2	2	0.5000	1.9900		1.90
******													

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
FLC 78-50J(7/8) ******	A	No	No	Ar (CaAa)	50.00 - 0.00	1.0000	-0.38	1	1	0.5000	1.1120		0.40
FLC 12-50J(1/2) ******	A	No	No	Ar (CaAa)	49.00 - 0.00	1.0000	-0.4	1	1	0.5000	0.6400		0.17

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	120.00-100.00	A	0.000	0.000	15.163	0.000	0.23
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.750	0.000	0.00
T2	100.00-80.00	A	0.000	0.000	21.340	0.000	0.29
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.750	0.000	0.00
T3	80.00-60.00	A	0.000	0.000	22.230	0.000	0.29
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	2.456	0.000	0.04
T4	60.00-40.00	A	0.000	0.000	35.038	0.000	0.38
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	2.718	0.000	0.04
T5	40.00-20.00	A	0.000	0.000	37.252	0.000	0.39
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	3.354	0.000	0.07
T6	20.00-0.00	A	0.000	0.000	37.252	0.000	0.39
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	3.660	0.000	0.07

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	120.00-100.00	A	0.959	0.000	0.000	46.431	0.000	0.52
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	4.585	0.000	0.04
T2	100.00-80.00	A	0.940	0.000	0.000	64.597	0.000	0.70
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	4.509	0.000	0.03
T3	80.00-60.00	A	0.916	0.000	0.000	66.457	0.000	0.71
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	9.787	0.000	0.11
T4	60.00-40.00	A	0.886	0.000	0.000	98.376	0.000	0.98
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	9.807	0.000	0.11
T5	40.00-20.00	A	0.842	0.000	0.000	102.255	0.000	0.99
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	10.089	0.000	0.13
T6	20.00-0.00	A	0.754	0.000	0.000	97.157	0.000	0.92
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	9.695	0.000	0.13

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
T1	120.00-100.00	-4.7524	0.9967	-4.5797	1.1748
T2	100.00-80.00	-6.2688	1.0809	-6.0705	1.2588
T3	80.00-60.00	-5.3829	1.2681	-5.8093	1.6176
T4	60.00-40.00	-7.3922	1.4315	-7.8979	1.8419
T5	40.00-20.00	-8.8875	1.9690	-10.0593	2.5454
T6	20.00-0.00	-9.5402	2.2501	-10.7310	2.8118

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	2	Safety Line 3/8"	100.00 - 120.00	0.6000	0.5502
T1	3	T-Brackets (Af)	100.00 - 120.00	0.6000	0.5502
T1	9	FLC 78-50J(7/8)	100.00 - 119.00	0.6000	0.5502
T1	11	FB-L98B-034-XXX(3/8)	100.00 - 117.00	0.6000	0.5502
T1	15	PWRT-608-S(13/16)	100.00 - 117.00	0.6000	0.5502
T1	17	FB-L98B-034-XXX(3/8)	100.00 - 110.00	0.6000	0.5502
T1	20	PWRT-608-S(13/16)	100.00 - 110.00	0.6000	0.5502
T2	2	Safety Line 3/8"	80.00 - 100.00	0.6000	0.5558
T2	3	T-Brackets (Af)	80.00 - 100.00	0.6000	0.5558
T2	9	FLC 78-50J(7/8)	80.00 - 100.00	0.6000	0.5558
T2	11	FB-L98B-034-XXX(3/8)	80.00 - 100.00	0.6000	0.5558
T2	15	PWRT-608-S(13/16)	80.00 - 100.00	0.6000	0.5558
T2	17	FB-L98B-034-XXX(3/8)	80.00 - 100.00	0.6000	0.5558
T2	20	PWRT-608-S(13/16)	80.00 - 100.00	0.6000	0.5558
T2	22	CU12PSM9P6XXX(1-1/2)	80.00 - 100.00	0.6000	0.5558
T3	2	Safety Line 3/8"	60.00 - 80.00	0.6000	0.5284
T3	3	T-Brackets (Af)	60.00 - 80.00	0.6000	0.5284
T3	7	Climb steps	60.00 - 80.00	0.6000	0.5284
T3	9	FLC 78-50J(7/8)	60.00 - 80.00	0.6000	0.5284
T3	11	FB-L98B-034-XXX(3/8)	60.00 - 80.00	0.6000	0.5284
T3	15	PWRT-608-S(13/16)	60.00 - 80.00	0.6000	0.5284
T3	17	FB-L98B-034-XXX(3/8)	60.00 - 80.00	0.6000	0.5284
T3	20	PWRT-608-S(13/16)	60.00 - 80.00	0.6000	0.5284
T3	22	CU12PSM9P6XXX(1-1/2)	60.00 - 80.00	0.6000	0.5284
T3	24	FLC 78-50J(7/8)	60.00 - 64.00	0.6000	0.5284
T4	2	Safety Line 3/8"	40.00 - 60.00	0.6000	0.5546

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T4	3	T-Brackets (Af)	40.00 - 60.00	0.6000	0.5546
T4	6	Climb steps	40.00 - 60.00	0.6000	0.5546
T4	9	FLC 78-50J(7/8)	40.00 - 60.00	0.6000	0.5546
T4	11	FB-L98B-034-XXX(3/8)	40.00 - 60.00	0.6000	0.5546
T4	15	PWRT-608-S(13/16)	40.00 - 60.00	0.6000	0.5546
T4	17	FB-L98B-034-XXX(3/8)	40.00 - 60.00	0.6000	0.5546
T4	20	PWRT-608-S(13/16)	40.00 - 60.00	0.6000	0.5546
T4	22	CU12PSM9P6XXX(1-1/2)	40.00 - 60.00	0.6000	0.5546
T4	24	FLC 78-50J(7/8)	40.00 - 60.00	0.6000	0.5546
T4	28	HB158-21U6S12-XXXM-01(1-5/8)	40.00 - 59.00	0.6000	0.5546
T4	30	FLC 78-50J(7/8)	40.00 - 50.00	0.6000	0.5546
T4	32	FLC 12-50J(1/2)	40.00 - 49.00	0.6000	0.5546
T5	2	Safety Line 3/8"	20.00 - 40.00	0.6000	0.6000
T5	3	T-Brackets (Af)	20.00 - 40.00	0.6000	0.6000
T5	5	Climb steps	20.00 - 40.00	0.6000	0.6000
T5	9	FLC 78-50J(7/8)	20.00 - 40.00	0.6000	0.6000
T5	11	FB-L98B-034-XXX(3/8)	20.00 - 40.00	0.6000	0.6000
T5	15	PWRT-608-S(13/16)	20.00 - 40.00	0.6000	0.6000
T5	17	FB-L98B-034-XXX(3/8)	20.00 - 40.00	0.6000	0.6000
T5	20	PWRT-608-S(13/16)	20.00 - 40.00	0.6000	0.6000
T5	22	CU12PSM9P6XXX(1-1/2)	20.00 - 40.00	0.6000	0.6000
T5	24	FLC 78-50J(7/8)	20.00 - 40.00	0.6000	0.6000
T5	28	HB158-21U6S12-XXXM-01(1-5/8)	20.00 - 40.00	0.6000	0.6000
T5	30	FLC 78-50J(7/8)	20.00 - 40.00	0.6000	0.6000
T5	32	FLC 12-50J(1/2)	20.00 - 40.00	0.6000	0.6000
T6	2	Safety Line 3/8"	0.00 - 20.00	0.6000	0.6000
T6	3	T-Brackets (Af)	0.00 - 20.00	0.6000	0.6000
T6	4	Climb steps	0.00 - 20.00	0.6000	0.6000
T6	9	FLC 78-50J(7/8)	0.00 - 20.00	0.6000	0.6000
T6	11	FB-L98B-034-XXX(3/8)	0.00 - 20.00	0.6000	0.6000
T6	15	PWRT-608-S(13/16)	0.00 - 20.00	0.6000	0.6000
T6	17	FB-L98B-034-XXX(3/8)	0.00 - 20.00	0.6000	0.6000
T6	20	PWRT-608-S(13/16)	0.00 - 20.00	0.6000	0.6000
T6	22	CU12PSM9P6XXX(1-1/2)	0.00 - 20.00	0.6000	0.6000
T6	24	FLC 78-50J(7/8)	0.00 - 20.00	0.6000	0.6000
T6	28	HB158-21U6S12-XXXM-01(1-5/8)	0.00 - 20.00	0.6000	0.6000
T6	30	FLC 78-50J(7/8)	0.00 - 20.00	0.6000	0.6000
T6	32	FLC 12-50J(1/2)	0.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
******									
DB638-C	A	From Leg	0.50	0.0000	119.00	No Ice	4.02	4.02	0.04
			0.00			1/2" Ice	5.73	5.73	0.07
			7.00			1" Ice	7.45	7.45	0.11
OGB6-900	B	From Leg	0.50	0.0000	119.00	No Ice	1.18	1.18	0.01
			0.00			1/2" Ice	1.77	1.77	0.02
			4.00			1" Ice	2.13	2.13	0.03
MFB9157	C	From Leg	0.50	0.0000	119.00	No Ice	1.20	1.20	0.00
			0.00			1/2" Ice	2.02	2.02	0.01
			4.00			1" Ice	2.86	2.86	0.03
******									
RRUS 4449 B5/B12	A	From Leg	2.00	0.0000	117.00	No Ice	1.97	1.41	0.07
			0.00			1/2" Ice	2.14	1.56	0.09
			3.00			1" Ice	2.33	1.73	0.11
RRUS 4449 B5/B12	B	From Leg	2.00	0.0000	117.00	No Ice	1.97	1.41	0.07
			0.00			1/2" Ice	2.14	1.56	0.09
			3.00			1" Ice	2.33	1.73	0.11
RRUS 4449 B5/B12	C	From Leg	2.00	0.0000	117.00	No Ice	1.97	1.41	0.07
			0.00			1/2" Ice	2.14	1.56	0.09
			3.00			1" Ice	2.33	1.73	0.11
7'X2" Horizontal Pipe	A	From Leg	1.00	0.0000	117.00	No Ice	1.33	0.01	0.02
			0.00			1/2" Ice	2.05	0.04	0.29
			0.00			1" Ice	2.64	0.09	0.04
7'X2" Horizontal Pipe	B	From Leg	1.00	0.0000	117.00	No Ice	1.33	0.01	0.02
			0.00			1/2" Ice	2.05	0.04	0.29
			0.00			1" Ice	2.64	0.09	0.04
7'X2" Horizontal Pipe	C	From Leg	1.00	0.0000	117.00	No Ice	1.33	0.01	0.02
			0.00			1/2" Ice	2.05	0.04	0.29
			0.00			1" Ice	2.64	0.09	0.04
2' MD Standoff Mount [#USF-2U]	A	From Leg	1.00	15.0000	117.00	No Ice	2.50	4.04	0.13
			0.00			1/2" Ice	3.15	5.03	0.16
			0.00			1" Ice	3.89	6.06	0.21
2' MD Standoff Mount [#USF-2U]	B	From Leg	1.00	35.0000	117.00	No Ice	2.50	4.04	0.13
			0.00			1/2" Ice	3.15	5.03	0.16
			0.00			1" Ice	3.89	6.06	0.21
2' MD Standoff Mount [#USF-2U]	C	From Leg	1.00	35.0000	117.00	No Ice	2.50	4.04	0.13
			0.00			1/2" Ice	3.15	5.03	0.16
			0.00			1" Ice	3.89	6.06	0.21
***									
TPA65R-BU8DA-K w/ Mount Pipe	A	From Leg	2.00	15.0000	117.00	No Ice	17.16	10.13	0.14
			0.00			1/2" Ice	18.17	11.06	0.25
			3.00			1" Ice	19.19	12.01	0.38
TPA65R-BU8DA-K w/ Mount Pipe	B	From Leg	2.00	35.0000	117.00	No Ice	17.16	10.13	0.14
			0.00			1/2" Ice	18.17	11.06	0.25
			3.00			1" Ice	19.19	12.01	0.38
TPA65R-BU8DA-K w/ Mount Pipe	C	From Leg	2.00	35.0000	117.00	No Ice	17.16	10.13	0.14
			0.00			1/2" Ice	18.17	11.06	0.25
			3.00			1" Ice	19.19	12.01	0.38
RRUS 8843 B2/B66A	A	From Leg	2.00	0.0000	117.00	No Ice	1.64	1.35	0.07
			0.00			1/2" Ice	1.80	1.50	0.09
			3.00			1" Ice	1.97	1.65	0.11
RRUS 8843 B2/B66A	B	From Leg	2.00	0.0000	117.00	No Ice	1.64	1.35	0.07
			0.00			1/2" Ice	1.80	1.50	0.09
			3.00			1" Ice	1.97	1.65	0.11
RRUS 8843 B2/B66A	C	From Leg	2.00	0.0000	117.00	No Ice	1.64	1.35	0.07
			0.00			1/2" Ice	1.80	1.50	0.09
			3.00			1" Ice	1.97	1.65	0.11
DC6-48-60-18-8F	A	From Leg	2.00	0.0000	117.00	No Ice	0.92	0.92	0.02
			0.00			1/2" Ice	1.46	1.46	0.04
			3.00			1" Ice	1.64	1.64	0.06
******									
7'X2" Horizontal Pipe	A	From Leg	1.00	0.0000	110.00	No Ice	1.33	0.01	0.02

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2" Ice	2.05	0.04	0.29
			0.00			1" Ice	2.64	0.09	0.04
7'X2" Horizontal Pipe	B	From Leg	1.00	0.0000	110.00	No Ice	1.33	0.01	0.02
			0.00			1/2" Ice	2.05	0.04	0.29
			0.00			1" Ice	2.64	0.09	0.04
7'X2" Horizontal Pipe	C	From Leg	1.00	0.0000	110.00	No Ice	1.33	0.01	0.02
			0.00			1/2" Ice	2.05	0.04	0.29
			0.00			1" Ice	2.64	0.09	0.04
2' MD Standoff Mount [#USF-2U]	A	From Leg	1.00	15.0000	110.00	No Ice	2.50	4.04	0.13
			0.00			1/2" Ice	3.15	5.03	0.16
			0.00			1" Ice	3.89	6.06	0.21
2' MD Standoff Mount [#USF-2U]	B	From Leg	1.00	35.0000	110.00	No Ice	2.50	4.04	0.13
			0.00			1/2" Ice	3.15	5.03	0.16
			0.00			1" Ice	3.89	6.06	0.21
2' MD Standoff Mount [#USF-2U]	C	From Leg	1.00	35.0000	110.00	No Ice	2.50	4.04	0.13
			0.00			1/2" Ice	3.15	5.03	0.16
			0.00			1" Ice	3.89	6.06	0.21
***									
NNHHS4-65C-R5-V2 w/ Mount Pipe	A	From Leg	2.00	15.0000	110.00	No Ice	9.68	5.17	0.17
			0.00			1/2" Ice	10.27	5.71	0.28
			0.00			1" Ice	10.87	6.26	0.40
NNHHS4-65C-R5-V2 w/ Mount Pipe	B	From Leg	2.00	35.0000	110.00	No Ice	9.68	5.17	0.17
			0.00			1/2" Ice	10.27	5.71	0.28
			0.00			1" Ice	10.87	6.26	0.40
NNHHS4-65C-R5-V2 w/ Mount Pipe	C	From Leg	2.00	35.0000	110.00	No Ice	9.68	5.17	0.17
			0.00			1/2" Ice	10.27	5.71	0.28
			0.00			1" Ice	10.87	6.26	0.40
RRUS 4478 B14_CCIV2	A	From Leg	2.00	0.0000	110.00	No Ice	2.02	1.25	0.06
			0.00			1/2" Ice	2.20	1.40	0.08
			0.00			1" Ice	2.39	1.55	0.10
RRUS 4478 B14_CCIV2	B	From Leg	2.00	0.0000	110.00	No Ice	2.02	1.25	0.06
			0.00			1/2" Ice	2.20	1.40	0.08
			0.00			1" Ice	2.39	1.55	0.10
RRUS 4478 B14_CCIV2	C	From Leg	2.00	0.0000	110.00	No Ice	2.02	1.25	0.06
			0.00			1/2" Ice	2.20	1.40	0.08
			0.00			1" Ice	2.39	1.55	0.10
8863 B77D	A	From Leg	2.00	0.0000	110.00	No Ice	1.93	0.81	0.06
			0.00			1/2" Ice	2.11	0.93	0.07
			0.00			1" Ice	2.29	1.07	0.09
8863 B77D	B	From Leg	2.00	0.0000	110.00	No Ice	1.93	0.81	0.06
			0.00			1/2" Ice	2.11	0.93	0.07
			0.00			1" Ice	2.29	1.07	0.09
8863 B77D	C	From Leg	2.00	0.0000	110.00	No Ice	1.93	0.81	0.06
			0.00			1/2" Ice	2.11	0.93	0.07
			0.00			1" Ice	2.29	1.07	0.09
DC6-48-60-18-8F	A	From Leg	2.00	0.0000	110.00	No Ice	0.92	0.92	0.02
			0.00			1/2" Ice	1.46	1.46	0.04
			0.00			1" Ice	1.64	1.64	0.06
******									
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.00	15.0000	100.00	No Ice	8.01	4.23	0.11
			0.00			1/2" Ice	8.52	4.69	0.19
			0.00			1" Ice	9.04	5.16	0.29
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.00	15.0000	100.00	No Ice	8.01	4.23	0.11
			0.00			1/2" Ice	8.52	4.69	0.19
			0.00			1" Ice	9.04	5.16	0.29
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.00	15.0000	100.00	No Ice	8.01	4.23	0.11
			0.00			1/2" Ice	8.52	4.69	0.19
			1.00			1" Ice	9.04	5.16	0.29
TA08025-B605	A	From Leg	4.00	0.0000	100.00	No Ice	1.96	1.13	0.08
			0.00			1/2" Ice	2.14	1.27	0.09
			0.00			1" Ice	2.32	1.41	0.11
TA08025-B605	B	From Leg	4.00	0.0000	100.00	No Ice	1.96	1.13	0.08
			0.00			1/2" Ice	2.14	1.27	0.09
			0.00			1" Ice	2.32	1.41	0.11
TA08025-B605	C	From Leg	4.00	0.0000	100.00	No Ice	1.96	1.13	0.08

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2" Ice	2.14	1.27	0.09
			0.00			1" Ice	2.32	1.41	0.11
TA08025-B604	A	From Leg	4.00	0.0000	100.00	No Ice	1.96	0.98	0.06
			0.00			1/2" Ice	2.14	1.11	0.08
			0.00			1" Ice	2.32	1.25	0.10
TA08025-B604	B	From Leg	4.00	0.0000	100.00	No Ice	1.96	0.98	0.06
			0.00			1/2" Ice	2.14	1.11	0.08
			0.00			1" Ice	2.32	1.25	0.10
TA08025-B604	C	From Leg	4.00	0.0000	100.00	No Ice	1.96	0.98	0.06
			0.00			1/2" Ice	2.14	1.11	0.08
			0.00			1" Ice	2.32	1.25	0.10
RDIDC-9181-PF-48	A	From Leg	2.00	0.0000	100.00	No Ice	2.01	1.17	0.02
			0.00			1/2" Ice	2.19	1.31	0.04
			0.00			1" Ice	2.37	1.46	0.06
6' x 2" Mount Pipe	A	From Leg	2.00	0.0000	100.00	No Ice	1.43	1.43	0.02
			0.00			1/2" Ice	1.92	1.92	0.03
			0.00			1" Ice	2.29	2.29	0.05
Commscope MTC3975083 (3)	C	None		0.0000	100.00	No Ice	23.85	23.85	1.26
						1/2" Ice	34.12	34.12	1.80
						1" Ice	44.39	44.39	2.35
******									
OGD6-905/945	A	From Leg	3.00	0.0000	64.00	No Ice	2.51	2.51	0.03
			0.00			1/2" Ice	3.74	3.74	0.04
			7.00			1" Ice	4.98	4.98	0.07
BA1012-0	B	From Leg	3.00	0.0000	64.00	No Ice	0.47	0.47	0.00
			0.00			1/2" Ice	0.96	0.96	0.01
			6.00			1" Ice	1.31	1.31	0.01
4' x 2" Pipe Mount	A	From Leg	3.00	0.0000	64.00	No Ice	0.79	0.79	0.03
			0.00			1/2" Ice	1.03	1.03	0.04
			0.00			1" Ice	1.28	1.28	0.04
4' x 2" Pipe Mount	B	From Leg	3.00	0.0000	64.00	No Ice	0.79	0.79	0.03
			0.00			1/2" Ice	1.03	1.03	0.04
			0.00			1" Ice	1.28	1.28	0.04
Side Arm Mount [SO 701-1]	A	From Leg	1.50	0.0000	64.00	No Ice	0.85	1.67	0.07
			0.00			1/2" Ice	1.14	2.34	0.08
			0.00			1" Ice	1.43	3.01	0.09
Side Arm Mount [SO 701-1]	B	From Leg	1.50	0.0000	64.00	No Ice	0.85	1.67	0.07
			0.00			1/2" Ice	1.14	2.34	0.08
			0.00			1" Ice	1.43	3.01	0.09
******									
(2) 6' x 2" Horizontal Mount Pipe	A	From Leg	1.00	0.0000	59.00	No Ice	1.14	0.01	0.02
			0.00			1/2" Ice	1.76	0.04	0.03
			0.00			1" Ice	2.14	0.09	0.04
(2) 6' x 2" Horizontal Mount Pipe	B	From Leg	1.00	0.0000	59.00	No Ice	1.14	0.01	0.02
			0.00			1/2" Ice	1.76	0.04	0.03
			0.00			1" Ice	2.14	0.09	0.04
(2) 6' x 2" Horizontal Mount Pipe	C	From Leg	1.00	0.0000	59.00	No Ice	1.14	0.01	0.02
			0.00			1/2" Ice	1.76	0.04	0.03
			0.00			1" Ice	2.14	0.09	0.04
(2) 5' Face Horizontal [#P3STD]	A	From Leg	2.00	0.0000	59.00	No Ice	1.36	0.03	0.04
			0.00			1/2" Ice	1.67	0.07	0.05
			0.00			1" Ice	1.98	0.13	0.06
(2) 5' Face Horizontal [#P3STD]	B	From Leg	2.00	0.0000	59.00	No Ice	1.36	0.03	0.04
			0.00			1/2" Ice	1.67	0.07	0.05
			0.00			1" Ice	1.98	0.13	0.06
(2) 5' Face Horizontal [#P3STD]	C	From Leg	2.00	0.0000	59.00	No Ice	1.36	0.03	0.04
			0.00			1/2" Ice	1.67	0.07	0.05
			0.00			1" Ice	1.98	0.13	0.06
6' Standoff Pipe [#4STD]	A	From Leg	1.00	0.0000	59.00	No Ice	2.09	2.09	0.04
			0.00			1/2" Ice	2.46	2.46	0.06
			0.00			1" Ice	2.83	2.83	0.08
6' Standoff Pipe [#4STD]	B	From Leg	1.00	0.0000	59.00	No Ice	2.09	2.09	0.04
			0.00			1/2" Ice	2.46	2.46	0.06
			0.00			1" Ice	2.83	2.83	0.08
6' Standoff Pipe [#4STD]	C	From Leg	1.00	0.0000	59.00	No Ice	2.09	2.09	0.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2" Ice	2.46	2.46	0.06
			0.00			1" Ice	2.83	2.83	0.08
***									
MT6407-77A w/ Mount Pipe	A	From Leg	2.00	5.0000	59.00	No Ice	5.94	3.10	0.10
			0.00			1/2" Ice	6.47	3.55	0.13
			1.00			1" Ice	7.02	4.02	0.18
MT6407-77A w/ Mount Pipe	B	From Leg	2.00	15.0000	59.00	No Ice	5.94	3.10	0.10
			0.00			1/2" Ice	6.47	3.55	0.13
			1.00			1" Ice	7.02	4.02	0.18
MT6407-77A w/ Mount Pipe	C	From Leg	2.00	15.0000	59.00	No Ice	5.94	3.10	0.10
			0.00			1/2" Ice	6.47	3.55	0.13
			1.00			1" Ice	7.02	4.02	0.18
(2) NHH-65B-R2B w/ Mount Pipe	A	From Leg	2.00	5.0000	59.00	No Ice	4.09	3.29	0.07
			0.00			1/2" Ice	4.48	3.67	0.13
			1.00			1" Ice	4.88	4.06	0.21
(2) NHH-65B-R2B w/ Mount Pipe	B	From Leg	2.00	15.0000	59.00	No Ice	4.09	3.29	0.07
			0.00			1/2" Ice	4.48	3.67	0.13
			1.00			1" Ice	4.88	4.06	0.21
(2) NHH-65B-R2B w/ Mount Pipe	C	From Leg	2.00	15.0000	59.00	No Ice	4.09	3.29	0.07
			0.00			1/2" Ice	4.48	3.67	0.13
			1.00			1" Ice	4.88	4.06	0.21
NHHSS-65B-R2BT4 w/ Mount Pipe	A	From Leg	2.00	5.0000	59.00	No Ice	3.88	3.12	0.09
			0.00			1/2" Ice	4.25	3.49	0.15
			1.00			1" Ice	4.63	3.86	0.23
NHHSS-65B-R2BT4 w/ Mount Pipe	B	From Leg	2.00	15.0000	59.00	No Ice	3.88	3.12	0.09
			0.00			1/2" Ice	4.25	3.49	0.15
			1.00			1" Ice	4.63	3.86	0.23
NHHSS-65B-R2BT4 w/ Mount Pipe	C	From Leg	2.00	15.0000	59.00	No Ice	3.88	3.12	0.09
			0.00			1/2" Ice	4.25	3.49	0.15
			1.00			1" Ice	4.63	3.86	0.23
RVZDC-6627-PF-48	A	From Leg	2.00	0.0000	59.00	No Ice	3.79	2.51	0.03
			0.00			1/2" Ice	4.04	2.73	0.06
			1.00			1" Ice	4.30	2.95	0.10
RVZDC-6627-PF-48	B	From Leg	2.00	0.0000	59.00	No Ice	3.79	2.51	0.03
			0.00			1/2" Ice	4.04	2.73	0.06
			1.00			1" Ice	4.30	2.95	0.10
RF4440D-13A	A	From Leg	2.00	0.0000	59.00	No Ice	1.87	1.13	0.07
			0.00			1/2" Ice	2.03	1.27	0.09
			1.00			1" Ice	2.21	1.41	0.11
RF4440D-13A	B	From Leg	2.00	0.0000	59.00	No Ice	1.87	1.13	0.07
			0.00			1/2" Ice	2.03	1.27	0.09
			1.00			1" Ice	2.21	1.41	0.11
RF4440D-13A	C	From Leg	2.00	0.0000	59.00	No Ice	1.87	1.13	0.07
			0.00			1/2" Ice	2.03	1.27	0.09
			1.00			1" Ice	2.21	1.41	0.11
CBRS RT4401-48A	A	From Leg	2.00	0.0000	59.00	No Ice	0.99	0.50	0.02
			0.00			1/2" Ice	1.12	0.60	0.03
			1.00			1" Ice	1.26	0.70	0.04
CBRS RT4401-48A	B	From Leg	2.00	0.0000	59.00	No Ice	0.99	0.50	0.02
			0.00			1/2" Ice	1.12	0.60	0.03
			1.00			1" Ice	1.26	0.70	0.04
CBRS RT4401-48A	C	From Leg	2.00	0.0000	59.00	No Ice	0.99	0.50	0.02
			0.00			1/2" Ice	1.12	0.60	0.03
			1.00			1" Ice	1.26	0.70	0.04
RF4439D-25A	A	From Leg	2.00	0.0000	59.00	No Ice	1.87	1.25	0.07
			0.00			1/2" Ice	2.03	1.39	0.09
			1.00			1" Ice	2.21	1.54	0.11
RF4439D-25A	B	From Leg	2.00	0.0000	59.00	No Ice	1.87	1.25	0.07
			0.00			1/2" Ice	2.03	1.39	0.09
			1.00			1" Ice	2.21	1.54	0.11
RF4439D-25A	C	From Leg	2.00	0.0000	59.00	No Ice	1.87	1.25	0.07
			0.00			1/2" Ice	2.03	1.39	0.09
			1.00			1" Ice	2.21	1.54	0.11
BSF0020F3V1	B	From Leg	2.00	0.0000	59.00	No Ice	0.96	0.29	0.02
			0.00			1/2" Ice	1.09	0.36	0.02

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			1.00			1" Ice	1.22	0.45	0.03
BSF0020F3V1	C	From Leg	2.00	0.0000	59.00	No Ice	0.96	0.29	0.02
			0.00			1/2" Ice	1.09	0.36	0.02
			1.00			1" Ice	1.22	0.45	0.03
******									
DB638-C	A	From Leg	3.00	0.0000	50.00	No Ice	4.02	4.02	0.04
			0.00			1/2" Ice	5.73	5.73	0.07
			11.00			1" Ice	7.45	7.45	0.11
4' x 2.5" Mount Pipe	A	From Leg	3.00	0.0000	50.00	No Ice	0.89	0.89	0.00
			0.00			1/2" Ice	1.14	1.14	0.01
			0.00			1" Ice	1.39	1.39	0.02
Side Arm Mount [SO 601-1]	A	From Leg	1.50	39.0000	50.00	No Ice	1.04	5.32	0.16
			0.00			1/2" Ice	1.41	6.43	0.20
			0.00			1" Ice	1.78	7.67	0.24
******									
OGD6-905/945	B	From Leg	3.00	0.0000	49.00	No Ice	2.51	2.51	0.03
			0.00			1/2" Ice	3.74	3.74	0.04
			8.00			1" Ice	4.98	4.98	0.07
4' x 2.5" Mount Pipe	B	From Leg	3.00	0.0000	49.00	No Ice	0.89	0.89	0.00
			0.00			1/2" Ice	1.14	1.14	0.01
			0.00			1" Ice	1.39	1.39	0.02
Side Arm Mount [SO 601-1]	B	From Leg	1.50	15.0000	49.00	No Ice	1.04	5.32	0.16
			0.00			1/2" Ice	1.41	6.43	0.20
			0.00			1" Ice	1.78	7.67	0.24
******									
Bridge Stiffener (3"x0.5")	A	From Leg	0.50	0.0000	20.00	No Ice	2.10	2.10	0.12
			0.00			1/2" Ice	3.10	3.10	0.18
			0.00			1" Ice	4.10	4.10	0.24
Bridge Stiffener (3"x0.5")	B	From Leg	0.50	0.0000	20.00	No Ice	2.10	2.10	0.12
			0.00			1/2" Ice	3.10	3.10	0.18
			0.00			1" Ice	4.10	4.10	0.24
Bridge Stiffener (3"x0.5")	C	From Leg	0.50	0.0000	20.00	No Ice	2.10	2.10	0.12
			0.00			1/2" Ice	3.10	3.10	0.18
			0.00			1" Ice	4.10	4.10	0.24
******									
Jump Plate (4.5"x0.375")	A	From Leg	0.50	0.0000	40.00	No Ice	4.00	4.00	0.12
			0.00			1/2" Ice	5.00	5.00	0.18
			0.00			1" Ice	6.00	6.00	0.24
Jump Plate (4.5"x0.375")	B	From Leg	0.50	0.0000	40.00	No Ice	4.00	4.00	0.12
			0.00			1/2" Ice	5.00	5.00	0.18
			0.00			1" Ice	6.00	6.00	0.24
Jump Plate (4.5"x0.375")	C	From Leg	0.50	0.0000	40.00	No Ice	4.00	4.00	0.12
			0.00			1/2" Ice	5.00	5.00	0.18
			0.00			1" Ice	6.00	6.00	0.24
**									
Jump Plate (4.5"x0.375")	A	From Leg	0.50	0.0000	60.00	No Ice	4.00	4.00	0.12
			0.00			1/2" Ice	5.00	5.00	0.18
			0.00			1" Ice	6.00	6.00	0.24
Jump Plate (4.5"x0.375")	B	From Leg	0.50	0.0000	60.00	No Ice	4.00	4.00	0.12
			0.00			1/2" Ice	5.00	5.00	0.18
			0.00			1" Ice	6.00	6.00	0.24
Jump Plate (4.5"x0.375")	C	From Leg	0.50	0.0000	60.00	No Ice	4.00	4.00	0.12
			0.00			1/2" Ice	5.00	5.00	0.18
			0.00			1" Ice	6.00	6.00	0.24
******									

Load Combinations

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	120 - 100	Leg	Max Tension	23	17.58	-0.71	-0.44
			Max. Compression	2	-20.39	-0.00	-0.11
			Max. Mx	8	12.55	0.83	-0.00
			Max. My	14	15.26	0.01	0.85
			Max. Vy	8	1.11	0.09	-0.01
			Max. Vx	14	1.12	-0.00	0.10
		Diagonal	Max Tension	12	1.92	0.00	0.00
			Max. Compression	12	-1.95	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	2	0.26	-0.00	0.00
			Max. My	33	-0.19	-0.00	0.00
			Max. Vy	38	0.00	-0.00	0.00
			Max. Vx	33	-0.00	-0.00	0.00
		Horizontal	Max Tension	14	0.54	0.00	0.00
			Max. Compression	3	-0.40	0.00	0.00
			Max. Mx	26	0.17	0.00	0.00
			Max. My	18	-0.04	0.00	0.00
			Max. Vy	26	-0.01	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
		Secondary Horizontal	Max Tension	36	0.00	0.00	0.00
			Max. Compression	20	-0.00	0.00	0.00
			Max. Mx	14	-0.00	0.00	0.00
			Max. My	6	-0.00	0.00	-0.00
			Max. Vy	36	-0.04	0.00	0.00
			Max. Vx	27	0.00	0.00	0.00
		Top Girt	Max Tension	36	0.01	0.00	0.00
			Max. Compression	30	-0.02	0.00	0.00
			Max. Mx	26	-0.00	0.01	0.00
			Max. My	18	0.00	0.00	0.00
			Max. Vy	26	-0.01	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
		Bottom Girt	Max Tension	14	1.03	0.00	0.00
			Max. Compression	10	-1.10	0.00	0.00
			Max. Mx	26	0.10	0.00	0.00
			Max. My	18	0.69	0.00	0.00
			Max. Vy	26	-0.01	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
T2	100 - 80	Leg	Max Tension	22	52.70	-0.54	-0.32
			Max. Compression	2	-58.00	-0.03	0.64
			Max. Mx	8	-1.96	-0.92	-0.00
			Max. My	2	-21.29	-0.01	0.94
			Max. Vy	20	-1.79	0.60	-0.03
			Max. Vx	2	-1.91	-0.03	0.64
		Diagonal	Max Tension	14	2.74	0.00	0.00
			Max. Compression	2	-2.93	0.00	0.00
			Max. Mx	24	2.15	-0.00	0.00
			Max. My	33	-0.35	-0.00	0.00
			Max. Vy	27	0.00	-0.00	0.00
			Max. Vx	33	-0.00	-0.00	0.00
		Horizontal	Max Tension	22	1.59	0.00	0.00
			Max. Compression	3	-1.30	0.00	0.00
			Max. Mx	26	0.32	0.00	0.00
			Max. My	6	-0.40	0.00	-0.00
			Max. Vy	26	-0.01	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
		Secondary Horizontal	Max Tension	36	0.00	0.00	0.00
			Max. Compression	20	-0.00	0.00	0.00
			Max. Mx	33	0.00	0.00	0.00
			Max. My	6	-0.00	0.00	-0.00
			Max. Vy	36	-0.04	0.00	0.00
			Max. Vx	27	0.00	0.00	0.00
		Top Girt	Max Tension	10	0.87	0.00	0.00
			Max. Compression	13	-0.53	0.00	0.00
			Max. Mx	26	0.15	0.01	0.00
			Max. My	18	-0.41	0.00	0.00
			Max. Vy	26	-0.01	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
		Bottom Girt	Max Tension	14	1.84	0.00	0.00
			Max. Compression	10	-1.92	0.00	0.00
			Max. Mx	26	0.16	0.00	0.00
			Max. My	6	-0.64	0.00	-0.00
			Max. Vy	26	-0.01	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
T3	80 - 60	Leg	Max Tension	22	81.23	0.85	0.01
			Max. Compression	2	-87.92	0.04	-0.00
			Max. Mx	14	55.43	-1.26	-0.04

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	12	-3.32	0.00	-1.77
			Max. Vy	10	-1.43	0.04	0.00
			Max. Vx	12	1.77	0.00	-1.77
		Diagonal	Max Tension	14	3.36	0.00	0.00
			Max. Compression	2	-3.49	0.00	-0.00
			Max. Mx	4	1.14	-0.00	0.00
			Max. My	12	-2.47	0.00	0.00
			Max. Vy	27	0.00	-0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
		Secondary Horizontal	Max Tension	12	2.11	0.00	0.00
			Max. Compression	14	-2.09	0.00	0.00
			Max. Mx	2	-1.28	-0.01	-0.00
			Max. My	12	-0.40	-0.01	-0.00
			Max. Vy	2	0.01	-0.01	-0.00
			Max. Vx	12	-0.00	0.00	0.00
		Top Girt	Max Tension	10	1.85	0.00	0.00
			Max. Compression	14	-1.55	0.00	0.00
			Max. Mx	26	-0.00	0.01	0.00
			Max. My	18	-1.07	0.00	0.00
			Max. Vy	26	-0.01	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
		Bottom Girt	Max Tension	22	1.52	0.00	0.00
			Max. Compression	10	-1.61	0.00	0.00
			Max. Mx	26	0.04	0.01	0.00
			Max. My	6	-0.61	0.00	-0.00
			Max. Vy	26	-0.01	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
T4	60 - 40	Leg	Max Tension	22	115.81	1.16	0.04
			Max. Compression	2	-125.93	0.24	0.00
			Max. Mx	10	-125.51	-1.25	-0.05
			Max. My	8	-4.31	0.02	-1.11
			Max. Vy	10	-2.24	0.24	0.01
			Max. Vx	8	-2.05	-0.00	0.26
		Diagonal	Max Tension	12	3.81	-0.00	-0.00
			Max. Compression	24	-3.92	0.00	0.00
			Max. Mx	2	1.39	-0.00	0.00
			Max. My	20	-2.47	0.00	0.00
			Max. Vy	27	0.01	-0.00	0.00
			Max. Vx	20	-0.00	0.00	0.00
		Secondary Horizontal	Max Tension	24	1.57	-0.00	0.00
			Max. Compression	12	-1.61	-0.00	-0.00
			Max. Mx	2	-0.85	-0.01	-0.00
			Max. My	12	-0.37	-0.01	-0.00
			Max. Vy	37	0.01	-0.01	0.00
			Max. Vx	12	-0.00	0.00	0.00
		Top Girt	Max Tension	10	1.05	0.00	0.00
			Max. Compression	22	-0.92	0.00	0.00
			Max. Mx	26	0.04	0.01	0.00
			Max. My	18	-0.64	0.00	0.00
			Max. Vy	26	-0.01	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
		Bottom Girt	Max Tension	22	1.91	0.00	0.00
			Max. Compression	10	-2.12	0.00	0.00
			Max. Mx	26	0.05	0.01	0.00
			Max. My	6	-0.72	0.00	-0.00
			Max. Vy	26	-0.01	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
T5	40 - 20	Leg	Max Tension	22	148.52	1.04	0.01
			Max. Compression	10	-160.02	0.42	0.00
			Max. Mx	10	-125.66	1.74	0.07
			Max. My	8	-4.49	-0.02	1.65
			Max. Vy	10	-2.34	0.42	0.00
			Max. Vx	8	-2.09	-0.02	1.65
		Diagonal	Max Tension	12	3.11	0.00	0.00
			Max. Compression	12	-3.45	0.00	0.00
			Max. Mx	24	1.93	-0.01	-0.00
			Max. My	24	-3.43	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	27	0.01	-0.00	0.00
			Max. Vx	24	-0.00	0.00	0.00
		Top Girt	Max Tension	10	1.22	0.00	0.00
			Max. Compression	23	-1.00	0.00	0.00
			Max. Mx	26	0.05	0.01	0.00
			Max. My	18	-0.79	0.00	0.00
			Max. Vy	26	-0.01	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
		Bottom Girt	Max Tension	22	1.95	0.00	0.00
			Max. Compression	10	-2.07	0.00	0.00
			Max. Mx	26	0.06	0.01	0.00
			Max. My	12	0.35	0.00	-0.00
			Max. Vy	26	-0.01	0.00	0.00
			Max. Vx	12	0.00	0.00	0.00
T6	20 - 0	Leg	Max Tension	22	178.08	1.43	-0.02
			Max. Compression	10	-191.57	0.00	-0.00
			Max. Mx	10	-160.17	1.93	0.00
			Max. My	12	-7.11	-0.02	-1.53
			Max. Vy	11	-2.37	0.00	-0.00
			Max. Vx	13	2.15	-0.00	0.00
		Diagonal	Max Tension	15	3.19	0.00	0.00
			Max. Compression	4	-3.29	0.00	0.00
			Max. Mx	24	2.07	-0.01	-0.00
			Max. My	4	-3.27	0.00	-0.00
			Max. Vy	27	0.01	-0.01	-0.00
			Max. Vx	4	0.00	0.00	-0.00
		Top Girt	Max Tension	10	1.00	0.00	0.00
			Max. Compression	23	-0.84	0.00	0.00
			Max. Mx	26	0.04	0.01	0.00
			Max. My	2	-0.69	0.00	0.00
			Max. Vy	26	0.01	0.00	0.00
			Max. Vx	2	-0.00	0.00	0.00
		Bottom Girt	Max Tension	22	1.90	0.00	0.00
			Max. Compression	11	-2.00	0.00	0.00
			Max. Mx	26	0.73	0.01	0.00
			Max. Vy	26	-0.01	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	186.67	3.53	-2.16
	Max. H_x	20	164.87	3.56	-1.30
	Max. H_z	5	-145.00	-3.13	3.31
	Min. Vert	7	-172.27	-4.50	2.76
	Min. H_x	9	-151.25	-4.61	1.26
	Min. H_z	14	97.23	1.18	-2.44
Leg B	Max. Vert	10	191.54	-3.70	-2.09
	Max. H_x	23	-177.94	4.77	2.69
	Max. H_z	25	-154.62	3.51	3.30
	Min. Vert	22	-178.00	4.76	2.69
	Min. H_x	10	191.54	-3.70	-2.09
	Min. H_z	12	167.28	-3.00	-2.38
Leg A	Max. Vert	2	190.65	-0.13	4.20
	Max. H_x	19	-84.05	2.04	-2.52
	Max. H_z	2	190.65	-0.13	4.20
	Min. Vert	15	-175.11	0.16	-5.34
	Min. H_x	9	3.94	-2.01	-0.02
	Min. H_z	15	-175.11	0.16	-5.34

Tower Mast Reaction Summary

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead Only	17.43	0.00	0.00	-0.26	1.99	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	20.92	-0.06	-10.06	-795.33	8.53	-1.37
0.9 Dead+1.0 Wind 0 deg - No Ice	15.69	-0.06	-10.06	-788.03	7.84	-1.35
1.2 Dead+1.0 Wind 30 deg - No Ice	20.92	4.74	-8.36	-666.73	-372.57	-1.00
0.9 Dead+1.0 Wind 30 deg - No Ice	15.69	4.74	-8.36	-660.57	-369.79	-0.98
1.2 Dead+1.0 Wind 60 deg - No Ice	20.92	8.56	-4.96	-391.09	-669.25	-1.10
0.9 Dead+1.0 Wind 60 deg - No Ice	15.69	8.56	-4.96	-387.45	-663.81	-1.09
1.2 Dead+1.0 Wind 90 deg - No Ice	20.92	10.19	0.06	5.52	-792.17	-0.43
0.9 Dead+1.0 Wind 90 deg - No Ice	15.69	10.19	0.06	5.57	-785.64	-0.43
1.2 Dead+1.0 Wind 120 deg - No Ice	20.92	8.85	5.19	407.95	-687.30	0.51
0.9 Dead+1.0 Wind 120 deg - No Ice	15.69	8.85	5.19	404.35	-681.72	0.51
1.2 Dead+1.0 Wind 150 deg - No Ice	20.92	5.13	8.91	698.98	-397.97	1.31
0.9 Dead+1.0 Wind 150 deg - No Ice	15.69	5.13	8.91	692.73	-395.00	1.31
1.2 Dead+1.0 Wind 180 deg - No Ice	20.92	0.06	9.98	787.96	-3.64	1.36
0.9 Dead+1.0 Wind 180 deg - No Ice	15.69	0.06	9.98	780.90	-4.20	1.35
1.2 Dead+1.0 Wind 210 deg - No Ice	20.92	-4.72	8.33	663.00	375.12	0.99
0.9 Dead+1.0 Wind 210 deg - No Ice	15.69	-4.72	8.32	657.04	371.13	0.98
1.2 Dead+1.0 Wind 240 deg - No Ice	20.92	-8.57	4.96	390.02	673.31	1.10
0.9 Dead+1.0 Wind 240 deg - No Ice	15.69	-8.57	4.96	386.58	666.63	1.09
1.2 Dead+1.0 Wind 270 deg - No Ice	20.92	-10.15	-0.06	-6.66	793.31	0.44
0.9 Dead+1.0 Wind 270 deg - No Ice	15.69	-10.15	-0.06	-6.48	785.55	0.43
1.2 Dead+1.0 Wind 300 deg - No Ice	20.92	-8.81	-5.17	-407.17	689.81	-0.51
0.9 Dead+1.0 Wind 300 deg - No Ice	15.69	-8.81	-5.17	-403.39	682.98	-0.50
1.2 Dead+1.0 Wind 330 deg - No Ice	20.92	-5.13	-8.91	-699.41	403.40	-1.31
0.9 Dead+1.0 Wind 330 deg - No Ice	15.69	-5.13	-8.91	-693.00	399.14	-1.31
1.2 Dead+1.0 Ice+1.0 Temp	36.09	0.00	0.00	-0.69	6.29	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	36.09	-0.01	-3.14	-246.91	7.36	-0.74
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	36.09	1.52	-2.66	-210.24	-112.47	-0.60
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	36.09	2.69	-1.56	-122.74	-203.26	-0.41
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	36.09	3.23	0.01	0.27	-243.05	-0.03
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	36.09	2.84	1.65	126.83	-210.80	0.48
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	36.09	1.61	2.79	216.04	-117.76	0.78
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	36.09	0.01	3.10	242.19	5.39	0.75
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	36.09	-1.51	2.63	206.33	123.79	0.60

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	36.09	-2.68	1.55	120.08	213.89	0.41
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	36.09	-3.21	-0.01	-1.71	252.95	0.03
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	36.09	-2.83	-1.65	-128.06	223.22	-0.48
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	36.09	-1.61	-2.79	-217.46	130.52	-0.77
Dead+Wind 0 deg - Service	17.43	-0.02	-2.74	-215.64	3.70	-0.37
Dead+Wind 30 deg - Service	17.43	1.29	-2.28	-180.84	-99.48	-0.27
Dead+Wind 60 deg - Service	17.43	2.33	-1.35	-106.15	-179.90	-0.31
Dead+Wind 90 deg - Service	17.43	2.77	0.02	1.35	-213.21	-0.12
Dead+Wind 120 deg - Service	17.43	2.41	1.41	110.30	-184.81	0.13
Dead+Wind 150 deg - Service	17.43	1.40	2.43	189.10	-106.49	0.35
Dead+Wind 180 deg - Service	17.43	0.02	2.72	213.24	0.41	0.37
Dead+Wind 210 deg - Service	17.43	-1.29	2.27	179.36	103.07	0.27
Dead+Wind 240 deg - Service	17.43	-2.33	1.35	105.44	183.79	0.31
Dead+Wind 270 deg - Service	17.43	-2.76	-0.02	-1.94	216.29	0.12
Dead+Wind 300 deg - Service	17.43	-2.40	-1.41	-110.50	188.24	-0.13
Dead+Wind 330 deg - Service	17.43	-1.40	-2.43	-189.69	110.60	-0.35

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-17.43	0.00	-0.00	17.43	-0.00	0.002%
2	-0.06	-20.92	-10.07	0.06	20.92	10.06	0.014%
3	-0.06	-15.69	-10.07	0.06	15.69	10.06	0.021%
4	4.74	-20.92	-8.36	-4.74	20.92	8.36	0.014%
5	4.74	-15.69	-8.36	-4.74	15.69	8.36	0.020%
6	8.56	-20.92	-4.96	-8.56	20.92	4.96	0.014%
7	8.56	-15.69	-4.96	-8.56	15.69	4.96	0.020%
8	10.19	-20.92	0.06	-10.19	20.92	-0.06	0.014%
9	10.19	-15.69	0.06	-10.19	15.69	-0.06	0.021%
10	8.85	-20.92	5.19	-8.85	20.92	-5.19	0.014%
11	8.85	-15.69	5.19	-8.85	15.69	-5.19	0.021%
12	5.13	-20.92	8.91	-5.13	20.92	-8.91	0.014%
13	5.13	-15.69	8.91	-5.13	15.69	-8.91	0.021%
14	0.06	-20.92	9.98	-0.06	20.92	-9.98	0.014%
15	0.06	-15.69	9.98	-0.06	15.69	-9.98	0.021%
16	-4.72	-20.92	8.33	4.72	20.92	-8.33	0.014%
17	-4.72	-15.69	8.33	4.72	15.69	-8.32	0.020%
18	-8.57	-20.92	4.96	8.57	20.92	-4.96	0.014%
19	-8.57	-15.69	4.96	8.57	15.69	-4.96	0.020%
20	-10.15	-20.92	-0.06	10.15	20.92	0.06	0.014%
21	-10.15	-15.69	-0.06	10.15	15.69	0.06	0.020%
22	-8.81	-20.92	-5.17	8.81	20.92	5.17	0.014%
23	-8.81	-15.69	-5.17	8.81	15.69	5.17	0.021%
24	-5.13	-20.92	-8.91	5.13	20.92	8.91	0.014%
25	-5.13	-15.69	-8.91	5.13	15.69	8.91	0.021%
26	0.00	-36.09	0.00	-0.00	36.09	-0.00	0.001%
27	-0.01	-36.09	-3.14	0.01	36.09	3.14	0.003%
28	1.52	-36.09	-2.66	-1.52	36.09	2.66	0.004%
29	2.69	-36.09	-1.56	-2.69	36.09	1.56	0.003%
30	3.24	-36.09	0.01	-3.23	36.09	-0.01	0.003%
31	2.84	-36.09	1.65	-2.84	36.09	-1.65	0.003%
32	1.61	-36.09	2.80	-1.61	36.09	-2.79	0.004%
33	0.01	-36.09	3.10	-0.01	36.09	-3.10	0.004%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
34	-1.51	-36.09	2.63	1.51	36.09	-2.63	0.003%
35	-2.68	-36.09	1.55	2.68	36.09	-1.55	0.003%
36	-3.21	-36.09	-0.01	3.21	36.09	0.01	0.003%
37	-2.83	-36.09	-1.65	2.83	36.09	1.65	0.003%
38	-1.61	-36.09	-2.80	1.61	36.09	2.79	0.004%
39	-0.02	-17.43	-2.74	0.02	17.43	2.74	0.005%
40	1.29	-17.43	-2.28	-1.29	17.43	2.28	0.005%
41	2.33	-17.43	-1.35	-2.33	17.43	1.35	0.005%
42	2.78	-17.43	0.02	-2.77	17.43	-0.02	0.005%
43	2.41	-17.43	1.41	-2.41	17.43	-1.41	0.005%
44	1.40	-17.43	2.43	-1.40	17.43	-2.43	0.005%
45	0.02	-17.43	2.72	-0.02	17.43	-2.72	0.005%
46	-1.29	-17.43	2.27	1.29	17.43	-2.27	0.005%
47	-2.33	-17.43	1.35	2.33	17.43	-1.35	0.005%
48	-2.77	-17.43	-0.02	2.76	17.43	0.02	0.005%
49	-2.40	-17.43	-1.41	2.40	17.43	1.41	0.005%
50	-1.40	-17.43	-2.43	1.40	17.43	2.43	0.005%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	7	0.00000001	0.00013110
2	Yes	28	0.00009043	0.00011657
3	Yes	26	0.00010711	0.00013831
4	Yes	28	0.00009133	0.00011761
5	Yes	26	0.00010826	0.00013971
6	Yes	28	0.00009216	0.00011836
7	Yes	26	0.00010929	0.00014076
8	Yes	28	0.00009167	0.00011783
9	Yes	26	0.00010876	0.00014011
10	Yes	28	0.00009116	0.00011726
11	Yes	26	0.00010812	0.00013936
12	Yes	28	0.00009176	0.00011794
13	Yes	26	0.00010886	0.00014024
14	Yes	28	0.00009228	0.00011846
15	Yes	26	0.00010941	0.00014088
16	Yes	28	0.00009141	0.00011768
17	Yes	26	0.00010837	0.00013981
18	Yes	28	0.00009045	0.00011654
19	Yes	26	0.00010713	0.00013830
20	Yes	28	0.00009088	0.00011701
21	Yes	26	0.00010768	0.00013891
22	Yes	28	0.00009152	0.00011759
23	Yes	26	0.00010839	0.00013967
24	Yes	28	0.00009089	0.00011705
25	Yes	26	0.00010767	0.00013894
26	Yes	19	0.00000001	0.00014809
27	Yes	31	0.00009780	0.00011616
28	Yes	30	0.00012075	0.00014626
29	Yes	30	0.00011239	0.00013547
30	Yes	30	0.00010754	0.00012974
31	Yes	30	0.00011144	0.00013452
32	Yes	30	0.00011924	0.00014383
33	Yes	30	0.00012277	0.00014793
34	Yes	30	0.00011889	0.00014338
35	Yes	30	0.00011116	0.00013457
36	Yes	30	0.00010745	0.00013071
37	Yes	30	0.00011173	0.00013646
38	Yes	30	0.00011991	0.00014668
39	Yes	27	0.00000001	0.00012124
40	Yes	27	0.00000001	0.00012131
41	Yes	27	0.00000001	0.00012129
42	Yes	27	0.00000001	0.00012094
43	Yes	27	0.00000001	0.00012076
44	Yes	27	0.00000001	0.00012111
45	Yes	27	0.00000001	0.00012138

46	Yes	27	0.00000001	0.00012124
47	Yes	27	0.00000001	0.00012097
48	Yes	27	0.00000001	0.00012116
49	Yes	27	0.00000001	0.00012143
50	Yes	27	0.00000001	0.00012137

Maximum Tower Deflections - Service Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
T1	120 - 100	10.974	50	0.7438	0.0538
T2	100 - 80	7.847	50	0.7150	0.0494
T3	80 - 60	4.991	50	0.5844	0.0360
T4	60 - 40	2.769	50	0.4449	0.0230
T5	40 - 20	1.207	50	0.2720	0.0132
T6	20 - 0	0.316	50	0.1305	0.0064

Critical Deflections and Radius of Curvature - Service Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
119.00	DB638-C	50	10.816	0.7438	0.0537	86178
117.00	RRUS 4449 B5/B12	50	10.500	0.7435	0.0535	86178
110.00	7'X2" Horizontal Pipe	50	9.397	0.7397	0.0525	43089
100.00	MX08FRO665-21 w/ Mount Pipe	50	7.847	0.7150	0.0494	20427
64.00	OGD6-905/945	50	3.160	0.4751	0.0254	7323
60.00	Jump Plate (4.5"x0.375")	50	2.769	0.4449	0.0230	7492
59.00	(2) 6' x 2" Horizontal Mount Pipe	50	2.676	0.4369	0.0225	7502
50.00	DB638-C	50	1.906	0.3592	0.0177	7328
49.00	OGD6-905/945	50	1.829	0.3503	0.0172	7305
40.00	Jump Plate (4.5"x0.375")	50	1.207	0.2720	0.0132	7118
20.00	Bridge Stiffener (3"x0.5")	50	0.316	0.1305	0.0064	7238

Maximum Tower Deflections - Design Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
T1	120 - 100	40.344	24	2.7312	0.1953
T2	100 - 80	28.860	24	2.6273	0.1796
T3	80 - 60	18.361	24	2.1496	0.1302
T4	60 - 40	10.191	24	1.6369	0.0837
T5	40 - 20	4.442	24	1.0009	0.0480
T6	20 - 0	1.164	24	0.4800	0.0241

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
119.00	DB638-C	24	39.763	2.7310	0.1950	24058
117.00	RRUS 4449 B5/B12	24	38.601	2.7303	0.1943	24058
110.00	7'X2" Horizontal Pipe	24	34.552	2.7169	0.1908	12028
100.00	MX08FRO665-21 w/ Mount Pipe	24	28.860	2.6273	0.1796	5686
64.00	OGD6-905/945	24	11.626	1.7478	0.0922	1995
60.00	Jump Plate (4.5"x0.375")	24	10.191	1.6369	0.0837	2040
59.00	(2) 6' x 2" Horizontal Mount Pipe	24	9.846	1.6075	0.0816	2042
50.00	DB638-C	24	7.015	1.3217	0.0643	1994

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
49.00	OGD6-905/945	24	6.730	1.2888	0.0625	1987
40.00	Jump Plate (4.5"x0.375")	24	4.442	1.0009	0.0480	1935
20.00	Bridge Stiffener (3"x0.5")	24	1.164	0.4800	0.0241	1967

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	120	Leg	A325N	0.6250	4	4.40	20.34	0.216	1.05	Bolt Tension
T2	100	Leg	A325N	0.6250	4	13.17	20.34	0.648	1.05	Bolt Tension
T3	80	Secondary Horizontal	A325N	0.5000	1	2.11	8.84	0.239	1.05	Bolt Shear
T4	60	Secondary Horizontal	A325N	0.5000	1	2.18	8.84	0.247	1.05	Bolt Shear

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 100	1 1/2	20.00	2.33	74.7 K=1.00	1.7672	-18.13	52.90	0.343 [1]
T2	100 - 80	1 1/2	20.00	2.33	74.7 K=1.00	1.7672	-54.55	52.90	1.031 [1]
T3	80 - 60	SR 1.5in w/ 1/2HSS 2.375in x 0.34375in	20.00	1.18	43.7 K=1.39	2.8639	-84.86	81.82	1.037 [1]
T4	60 - 40	SR 1.75in w/ 1/2HSS 2.375in x 0.154in	20.00	1.18	41.0 K=1.37	2.9425	-122.16	117.08	1.043 [1]
T5	40 - 20	SR 2in w/ 1/2HSS 2.875in x 0.276in	20.00	2.33	58.1 K=1.16	4.2684	-157.13	150.09	1.047 [1]
T6	20 - 0	SR 2.25in w/ 1/2HSS 2.875in x 0.276in	20.00	2.33	53.7 K=1.20	5.1028	-188.85	185.98	1.015 [1]

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 100	5/8	3.80	1.82	125.9 K=0.90	0.3068	-1.95	4.32	0.452 [1]
T2	100 - 80	5/8	3.80	1.82	125.9 K=0.90	0.3068	-2.93	4.32	0.678 [1]
T3	80 - 60	5/8	3.84	1.82	125.6 K=0.90	0.3068	-3.49	4.33	0.807 [1]
T4	60 - 40	3/4	4.59	2.20	126.6 K=0.90	0.4418	-3.92	6.16	0.636 [1]
T5	40 - 20	7/8	5.03	2.40	118.3 K=0.90	0.6013	-3.12	9.33	0.334 [1]
T6	20 - 0	7/8	5.48	2.62	129.4 K=0.90	0.6013	-3.27	8.06	0.405 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 100	3/4	3.00	2.88	128.8 K=0.70	0.4418	-0.40	5.98	0.067 [1]
T2	100 - 80	3/4	3.00	2.88	128.8 K=0.70	0.4418	-1.30	5.98	0.217 [1]

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 100	5/8	1.50	1.44	87.9 K=0.80	0.3068	-0.00	7.85	0.000 [1]
T2	100 - 80	5/8	1.50	1.44	87.9 K=0.80	0.3068	-0.00	7.85	0.000 [1]
T3	80 - 60	1x1	3.05	2.85	118.4 K=1.00	1.0000	-2.09	16.12	0.130 [1]
T4	60 - 40	1x1	3.95	3.76	156.1 K=1.00	1.0000	-2.18	9.27	0.235 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 100	1	3.00	2.88	96.6 K=0.70	0.7854	-0.35	15.57	0.023 [1]
T2	100 - 80	1	3.00	2.88	96.6 K=0.70	0.7854	-1.00	15.57	0.065 [1]
T3	80 - 60	1	3.02	2.82	94.7 K=0.70	0.7854	-1.55	15.87	0.098 [1]
T4	60 - 40	1	3.52	3.32	111.5 K=0.70	0.7854	-2.18	13.22	0.165 [1]
T5	40 - 20	1	4.02	3.78	126.9 K=0.70	0.7854	-2.77	10.90	0.254 [1]
T6	20 - 0	1	4.52	4.28	143.7 K=0.70	0.7854	-3.32	8.59	0.386 [1]

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 100	3/4	3.00	2.88	128.8 K=0.70	0.4418	-1.10	5.98	0.185 [1]
T2	100 - 80	3/4	3.00	2.88	128.8 K=0.70	0.4418	-1.92	5.98	0.321 [1]
T3	80 - 60	3/4	3.48	3.29	147.2	0.4418	-1.61	4.61	0.348 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T4	60 - 40	1	3.98	3.79	K=0.70 127.2	0.7854	-2.18	10.86	0.201 [1]
T5	40 - 20	1	4.48	4.24	K=0.70 142.6	0.7854	-2.77	8.73	0.318 [1]
T6	20 - 0	1	4.98	4.74	K=0.70 159.4	0.7854	-3.32	6.98	0.475 [1]

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 100	1 1/2	20.00	0.67	21.3	1.7672	17.58	79.52	0.221 [1]
T2	100 - 80	1 1/2	20.00	0.67	21.3	1.7672	52.70	79.52	0.663 [1]
T3	80 - 60	SR 1.5in w/ 1/2HSS 2.375in x 0.34375in	20.00	0.67	17.9	2.8639	81.23	90.21	0.900 [1]
T4	60 - 40	SR 1.75in w/ 1/2HSS 2.375in x 0.154in	20.00	0.67	16.9	2.9425	115.81	132.41	0.875 [1]
T5	40 - 20	SR 2in w/ 1/2HSS 2.875in x 0.276in	20.00	0.67	14.3	4.2684	148.52	192.08	0.773 [1]
T6	20 - 0	SR 2.25in w/ 1/2HSS 2.875in x 0.276in	20.00	0.67	12.8	5.1028	178.08	229.63	0.776 [1]

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 100	5/8	3.80	1.82	139.9	0.3068	1.92	9.94	0.193 [1]
T2	100 - 80	5/8	3.80	1.82	139.9	0.3068	2.74	9.94	0.276 [1]
T3	80 - 60	5/8	3.84	1.82	139.6	0.3068	3.36	9.94	0.338 [1]
T4	60 - 40	3/4	4.59	2.20	140.7	0.4418	3.81	14.31	0.266 [1]
T5	40 - 20	7/8	4.67	2.22	121.6	0.6013	3.11	19.48	0.159 [1]
T6	20 - 0	7/8	5.48	2.62	143.8	0.6013	3.19	19.48	0.164 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 100	3/4	3.00	2.88	184.0	0.4418	0.54	14.31	0.038 [1]
T2	100 - 80	3/4	3.00	2.88	184.0	0.4418	1.59	14.31	0.111 [1]

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 100	5/8	1.50	1.44	110.4	0.3068	0.00	13.81	0.000 [1]
T2	100 - 80	5/8	1.50	1.44	110.4	0.3068	0.00	13.81	0.000 [1]
T3	80 - 60	1x1	3.05	2.85	118.4	0.2812	2.11	13.71	0.154 [1]
T4	60 - 40	1x1	3.95	3.76	156.1	0.2812	2.18	13.71	0.159 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 100	1	3.00	2.88	138.0	0.7854	0.35	25.45	0.014 [1]
T2	100 - 80	1	3.00	2.88	138.0	0.7854	1.00	25.45	0.039 [1]
T3	80 - 60	1	3.02	2.82	135.3	0.7854	1.85	25.45	0.073 [1]
T4	60 - 40	1	3.52	3.32	159.3	0.7854	2.18	25.45	0.086 [1]
T5	40 - 20	1	4.02	3.78	181.3	0.7854	2.77	25.45	0.109 [1]
T6	20 - 0	1	4.52	4.28	205.3	0.7854	3.32	25.45	0.130 [1]

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	120 - 100	3/4	3.00	2.88	184.0	0.4418	1.03	14.31	0.072 [1]
T2	100 - 80	3/4	3.00	2.88	184.0	0.4418	1.84	14.31	0.129 [1]
T3	80 - 60	3/4	3.48	3.29	210.3	0.4418	1.52	14.31	0.106 [1]
T4	60 - 40	1	3.98	3.79	181.7	0.7854	2.18	25.45	0.086 [1]
T5	40 - 20	1	4.48	4.24	203.7	0.7854	2.77	25.45	0.109 [1]
T6	20 - 0	1	4.98	4.74	227.7	0.7854	3.32	25.45	0.130 [1]

[1] P_u / ϕP_n controls

Section Capacity Table

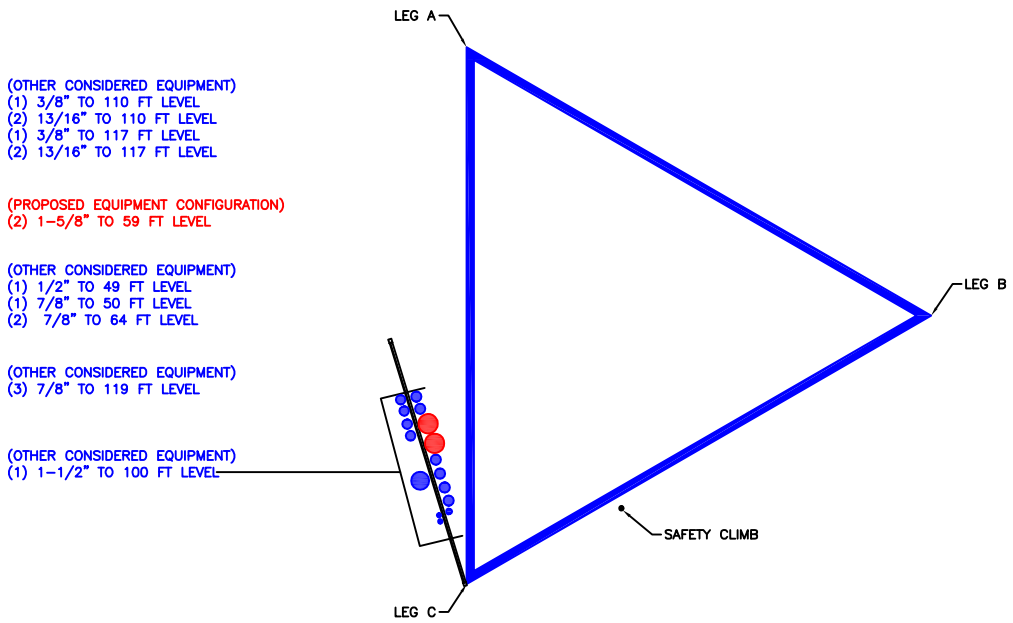
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	120 - 100	Leg	1 1/2	3	-18.13	55.54	32.6	Pass
T2	100 - 80	Leg	1 1/2	89	-54.55	55.54	98.2	Pass
T3	80 - 60	Leg	SR 1.5in w/ 1/2HSS 2.375in x 0.34375in	175	-84.86	85.91	98.8	Pass
T4	60 - 40	Leg	SR 1.75in w/ 1/2HSS 2.375in x 0.154in	256	-122.16	122.93	99.4	Pass
T5	40 - 20	Leg	SR 2in w/ 1/2HSS 2.875in x 0.276in	336	-157.13	157.59	99.7	Pass
T6	20 - 0	Leg	SR 2.25in w/ 1/2HSS 2.875in x 0.276in	393	-188.85	195.28	96.7	Pass
T1	120 - 100	Diagonal	5/8	12	-1.95	4.53	43.0	Pass
T2	100 - 80	Diagonal	5/8	100	-2.93	4.53	64.6	Pass
T3	80 - 60	Diagonal	5/8	249	-3.49	4.55	76.8	Pass
T4	60 - 40	Diagonal	3/4	266	-3.92	6.47	60.6	Pass
T5	40 - 20	Diagonal	7/8	348	-3.12	9.80	31.8	Pass
T6	20 - 0	Diagonal	7/8	405	-3.27	8.47	38.6	Pass
T1	120 - 100	Horizontal	3/4	27	-0.40	6.28	6.4	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T2	100 - 80	Horizontal	3/4	113	-1.30	6.28	20.7	Pass
T1	120 - 100	Secondary Horizontal	5/8	86	0.00	14.50	0.5	Pass
T2	100 - 80	Secondary Horizontal	5/8	172	0.00	14.50	0.5	Pass
T3	80 - 60	Secondary Horizontal	1x1	251	2.11	14.40	14.7 22.7 (b)	Pass
T4	60 - 40	Secondary Horizontal	1x1	270	-2.18	9.73	22.4 23.5 (b)	Pass
T1	120 - 100	Top Girt	1	5	-0.35	16.35	2.2	Pass
T2	100 - 80	Top Girt	1	91	-1.00	16.35	6.1	Pass
T3	80 - 60	Top Girt	1	176	-1.55	16.66	9.3	Pass
T4	60 - 40	Top Girt	1	258	-2.18	13.88	15.7	Pass
T5	40 - 20	Top Girt	1	338	-2.77	11.44	24.2	Pass
T6	20 - 0	Top Girt	1	396	-3.32	9.02	36.8	Pass
T1	120 - 100	Bottom Girt	3/4	9	-1.10	6.28	17.6	Pass
T2	100 - 80	Bottom Girt	3/4	95	-1.92	6.28	30.5	Pass
T3	80 - 60	Bottom Girt	3/4	181	-1.61	4.84	33.2	Pass
T4	60 - 40	Bottom Girt	1	261	-2.18	11.40	19.1	Pass
T5	40 - 20	Bottom Girt	1	341	-2.77	9.16	30.2	Pass
T6	20 - 0	Bottom Girt	1	398	-3.32	7.33	45.3	Pass
							Summary	
						Leg (T5)	99.7	Pass
						Diagonal (T3)	76.8	Pass
						Horizontal (T2)	20.7	Pass
						Secondary Horizontal (T4)	23.5	Pass
						Top Girt (T6)	36.8	Pass
						Bottom Girt (T6)	45.3	Pass
						Bolt Checks	61.7	Pass
						RATING =	**99.7**	**Pass**

***NOTE: Above stress ratios for reinforced sections are approximate. More exact calculations are presented in Appendix C.**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 841298 TOWER ID: C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

Built-Up Leg Reinforcement Tool

Site Data	
BU#:	841298
Site Name:	Southington Rogus
Order #:	662922 Rev. 1
Section:	80ft - 60ft

Reinforcement Type
Split Pipe

Connection and Analysis Options		
TIA-222 Revision:	H	
Tower Type:	Self Support	
Consider Leg Load at Time of Modification:		
End Connections:	Fixed	
Leg Crushing Check:	No	
Applied Load:	Axial	
Slenderness Ratio:	KL/r Modified	
Intermediate Connection:	Bolted	
Intermediate Spacing:	9	in
Split Pipe K_l Factor Override:		

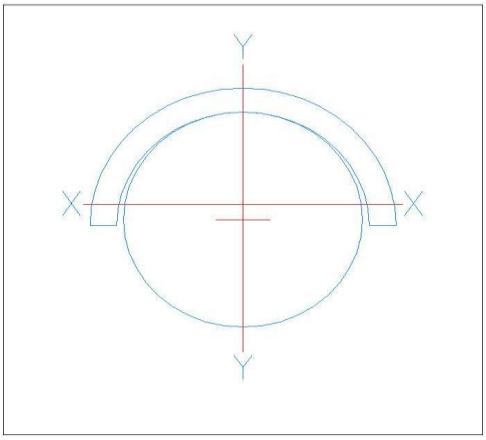
Leg Data		
Diameter:	1.5	in
Thickness:	0.75	in
Yield (Fy):	50	ksi
Unbraced Length:	14.16	in

Split Pipe Data		
Outside Diameter:	2.375	in
Thickness:	0.34375	in
Yield (Fy):	35	ksi

Leg Axial Load		
Compression, Pu:	84.86	kips

Ratings (per TIA-222-H Section 15.5)		
Spacing Req.:	**Exceeded**	
Reinforced Leg:	98.8%	**Pass**

Check Limitation	
Apply TIA-222-H Section 15.5:	☑
N/A	☐



TNX K Factor Adjustment	1.386

Built-Up Section Properties					
Area:	2.8639	in^2	Polar Moment of Inertia, J:	0.4970	in^4
Moment of Intertia, I_{xx}:	0.5745	in^4	Moment of Intertia, I_{yy}:	0.8304	in^4
Eccentricty, e:	0.2141	in	Plastic Neutral Axis:	0.1693	in

Built-Up Leg Reinforcement Tool

Site Data	
BU#:	841298
Site Name:	Southington Rogus
Order #:	662922 Rev. 1
Section:	60ft - 40ft

Reinforcement Type
Split Pipe

Connection and Analysis Options		
TIA-222 Revision:	H	
Tower Type:	Self Support	
Consider Leg Load at Time of Modification:		
End Connections:	Fixed	
Leg Crushing Check:	No	
Applied Load:	Axial	
Slenderness Ratio:	KL/r Modified	
Intermediate Connection:	Bolted	
Intermediate Spacing:	9	in
Split Pipe K_l Factor Override:		

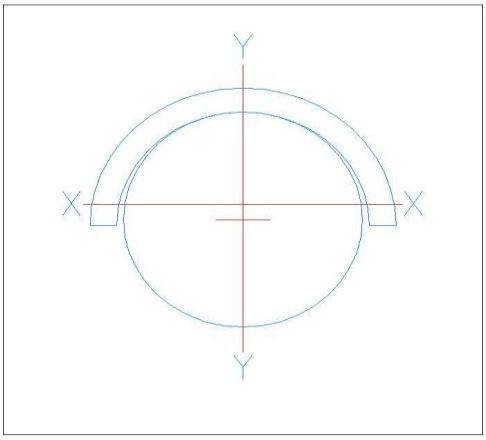
Leg Data		
Diameter:	1.75	in
Thickness:	0.875	in
Yield (Fy):	50	ksi
Unbraced Length:	14.16	in

Split Pipe Data		
Outside Diameter:	2.375	in
Thickness:	0.154	in
Yield (Fy):	50	ksi

Leg Axial Load		
Compression, Pu:	122.16	kips

Ratings (per TIA-222-H Section 15.5)		
Spacing Req.:	**Exceeded**	
Reinforced Leg:	99.5%	**Pass**

Check Limitation	
Apply TIA-222-H Section 15.5:	☑
N/A	☐



TNX K Factor Adjustment	1.374

Built-Up Section Properties					
Area:	2.9425	in^2	Polar Moment of Inertia, J:	0.9208	in^4
Moment of Intertia, I_{xx}:	0.6565	in^4	Moment of Intertia, I_{yy}:	0.7933	in^4
Eccentricty, e:	0.1003	in	Plastic Neutral Axis:	0.1003	in

Built-Up Leg Reinforcement Tool

Site Data	
BU#:	841298
Site Name:	Southington Rogus
Order #:	662922 Rev. 1
Section:	40ft - 20ft

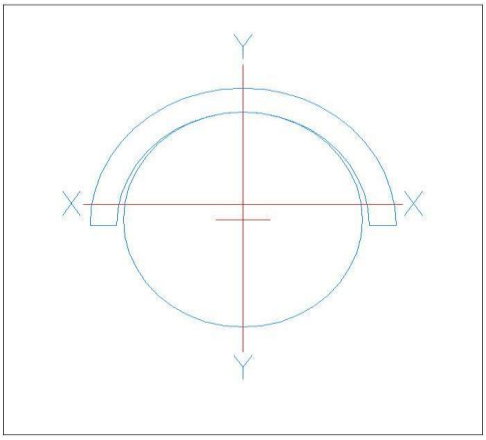
Leg Axial Load		
Compression, Pu:	157.13	kips

Reinforcement Type
Split Pipe

Ratings (per TIA-222-H Section 15.5)		
Spacing Req.:	**O.K.**	
Reinforced Leg:	99.6%	**Pass**

Connection and Analysis Options		
TIA-222 Revision:	H	
Tower Type:	Self Support	
Consider Leg Load at Time of Modification:		
End Connections:	Fixed	
Leg Crushing Check:	No	
Applied Load:	Axial	
Slenderness Ratio:	KL/r Modified	
Intermediate Connection:	Bolted	
Intermediate Spacing:	12	in
Split Pipe K_l Factor Override:		

Check Limitation	
Apply TIA-222-H Section 15.5:	☑
N/A	☐



Leg Data		
Diameter:	2	in
Thickness:	1	in
Yield (Fy):	50	ksi
Unbraced Length:	27.96	in

Split Pipe Data		
Outside Diameter:	2.875	in
Thickness:	0.276	in
Yield (Fy):	50	ksi

TNX K Factor Adjustment	1.163

Built-Up Section Properties					
Area:	4.2684	in^2	Polar Moment of Inertia, J:	1.5708	in^4
Moment of Intertia, I_{xx}:	1.3416	in^4	Moment of Intertia, I_{yy}:	1.7475	in^4
Eccentricty, e:	0.1766	in	Plastic Neutral Axis:	0.1766	in

Built-Up Leg Reinforcement Tool

Site Data	
BU#:	841298
Site Name:	Southington Rogus
Order #:	662922 Rev. 1
Section:	20ft - 0ft

Reinforcement Type
Split Pipe

Connection and Analysis Options		
TIA-222 Revision:	H	
Tower Type:	Self Support	
Consider Leg Load at Time of Modification:		
End Connections:	Fixed	
Leg Crushing Check:	No	
Applied Load:	Axial	
Slenderness Ratio:	KL/r Modified	
Intermediate Connection:	Bolted	
Intermediate Spacing:	12	in
Split Pipe K_l Factor Override:		

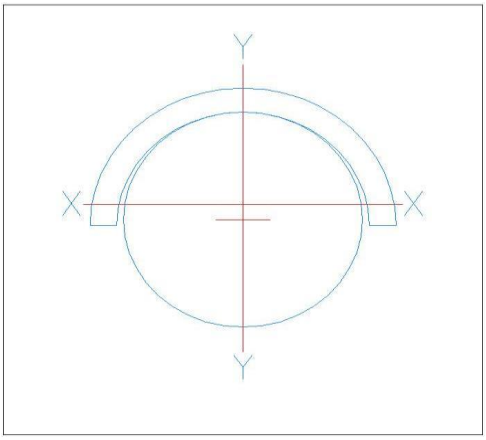
Leg Data		
Diameter:	2.25	in
Thickness:	1.125	in
Yield (Fy):	50	ksi
Unbraced Length:	27.96	in

Split Pipe Data		
Outside Diameter:	2.875	in
Thickness:	0.276	in
Yield (Fy):	50	ksi

Leg Axial Load		
Compression, Pu:	188.85	kips

Ratings (per TIA-222-H Section 15.5)		
Spacing Req.:	O.K.	
Reinforced Leg:	96.6%	Pass

Check Limitation	
Apply TIA-222-H Section 15.5:	☑
N/A	☐



TNX K Factor Adjustment	1.199

Built-Up Section Properties					
Area:	5.1028	in^2	Polar Moment of Inertia, J:	2.5161	in^4
Moment of Intertia, I_{xx}:	1.9966	in^4	Moment of Intertia, I_{yy}:	2.2202	in^4
Eccentricty, e:	0.1753	in	Plastic Neutral Axis:	0.1753	in

THREADED ROD BYPASS BRACKET FOR SST AND GUYED TOWER

MORRISON HERSHFIELD

Stantec

Site Information

Project No.	:	CN13-260R1 / 2400001
Site ID	:	841298
Site Name	:	Southington Rogus
Date	:	5/31/2024
TIA-222 Revision	:	H
Tower Type	:	Self Support Tower

Section Data

Elevation	:	40.0	ft
Tensile Load	:	115.81	kips
Compresive Load	:	122.16	kips
Number of Threaded Rod Bypass	:	2	
Number of Flange Bolts	:	5	
Flange Bolt Diameter	:	0.625	in
Flange Bolt Grade	:	A325	

Threaded Rod Properties

Unbraced Length [Lu]	:	6.0	in
Threaded Bar Diameter	:	1	in
Net Area [A_n]	:	0.61	in^2
Flange Bolt Area		0.23	in^2
Weld Length [L_w]	:	12.00	in
Weld Size [D]	:	5	n/16th
Eccentricity [e]	:	6.00	in
Radius of Gyration [r]	:	0.25	in
Effective Length Factor [k]	:	1.00	
Slenderness Ratio	:	24.00	
Yield Strength Threaded Rod [F_y]	:	105.00	ksi
Ultimate Strength Threaded Rod [F_u]	:	125.00	ksi
Modulus of Elasticity [E]	:	29000	ksi

Threaded Rod Bypass Capacities

Tension Check

Resistance Factor [ϕ_t]	:	0.75	
Design Strength [ϕP_{tn}]	:	113.63	kips
***Capacity**	:	**50.2%**	**PASS**

*Rating per TIA-222-H, Section 15.5

Compression Check

Resistance Factor [ϕ_c]	:	0.90	
Critical Compression Stress [F_{cr}]	:	96.11	ksi
Design Compressive Strength [ϕP_c]	:	114.53	ksi
*Capacity	:	**52.6%**	**PASS**

Weld Connection Check

Electrode Grade	:	E70	
Electrode Strength Coefficient [C1]	:	1.000	
Eccentricity [e]	:	6.00	in
Weld Coefficient [C]	:	2.30	
Resistance Factor for Weld [ϕ]	:	0.75	
Design Weld Strength [ϕR_n]	:	103.50	kips
***Weld Capacity**	:	**29.1%**	**PASS**

*Rating per TIA-222-H, Section 15.5

Splice Bolt Check

Allowable Load Per Bolt	:	39.76	kips
***Bolt Capacity**	:	**28.2%**	**PASS**

*Rating per TIA-222-H, Section 15.5

THREADED ROD BYPASS BRACKET FOR SST AND GUYED TOWER

MORRISON HERSHFIELD

Stantec

Site Information		
Project No.	:	CN13-260R1 / 2400001
Site ID	:	841298
Site Name	:	Southington Rogus
Date	:	5/31/2024
TIA-222 Revision	:	H
Tower Type	:	Self Support Tower

Section Data			
Elevation	:	60.0	ft
Tensile Load	:	81.23	kips
Compresive Load	:	84.86	kips
Number of Threaded Rod Bypass	:	2	
Number of Flange Bolts	:	4	
Flange Bolt Diameter	:	0.625	in
Flange Bolt Grade	:	A325	

Threaded Rod Properties			
Unbraced Length [Lu]	:	6.0	in
Threaded Bar Diameter	:	1	in
Net Area [A_n]	:	0.61	in^2
Flange Bolt Area		0.23	in^2
Weld Length [L_w]	:	12.00	in
Weld Size [D]	:	5	n/16th
Eccentricity [e]	:	6.00	in
Radius of Gyration [r]	:	0.25	in
Effective Length Factor [k]	:	1.00	
Slenderness Ratio	:	24.00	
Yield Strength Threaded Rod [F_y]	:	105.00	ksi
Ultimate Strength Threaded Rod [F_u]	:	125.00	ksi
Modulus of Elasticity [E]	:	29000	ksi

Threaded Rod Bypass Capacities			
Tension Check			
Resistance Factor [ϕ_t]	:	0.75	
Design Strength [ϕP_{tn}]	:	113.63	kips
***Capacity**	:	**39.0%**	**PASS**
		*Rating per TIA-222-H, Section 15.5	
Compression Check			
Resistance Factor [ϕ_c]	:	0.90	
Critical Compression Stress [F_{cr}]	:	96.11	ksi
Design Compressive Strength [ϕP_c]	:	114.53	ksi
*Capacity	:	**40.4%**	**PASS**
Weld Connection Check			
Electrode Grade	:	E70	
Electrode Strength Coefficient [C1]	:	1.000	
Eccentricity [e]	:	6.00	in
Weld Coefficient [C]	:	2.30	
Resistance Factor for Weld [ϕ]	:	0.75	
Design Weld Strength [ϕR_n]	:	103.50	kips
***Weld Capacity**	:	**22.4%**	**PASS**
		*Rating per TIA-222-H, Section 15.5	
Splice Bolt Check			
Allowable Load Per Bolt	:	27.61	kips
***Bolt Capacity**	:	**31.3%**	**PASS**
		*Rating per TIA-222-H, Section 15.5	

WELDED BYPASS STIFFENER FOR SST AND GUYED TOWER

Site Information

Project No.	:	CN13-260R1 / 2400001
Site ID	:	841298
Site Name	:	Southington Rogus
Date	:	5/31/2024
TIA-222 Revision	:	H
Tower Type	:	Self Support Tower

Section Data

Elevation	:	20.00	ft
Tension Load on Leg	:	148.52	kips
Compressive Load in Leg	:	157.13	kips
Number of Bypass Plates [Np]	:	3	
Number of Flange Bolts [Nb]	:	5	
Flange Bolt Diameter	:	0.75	in
Flange Bolt Grade	:	A325	
Leg Type	:	2 SR	
Leg Grade	:	A572-50	
Bypass Plate on Leg Reinforcement	:	Yes	
Thickness of Reinforcement	:	0.28	in
Leg Reinforcement Grade	:	A572-50	

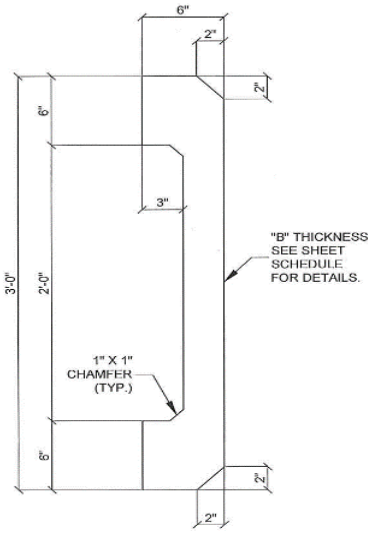
Bypass Plate Stiffener Properties

Unbraced Length [Lu]	:	24.00	in
Thickness [T]	:	1	in
Critical Width [w]	:	3.00	in
Cross Sectional Area [Ag]	:	3.00	in^2
Weld Length [Lw]	:	6.00	in
Weld Size [D]	:	8	n/16th
Eccentricity [e]	:	4.50	in
Radius of Gyration [r]	:	0.29	in
Effective Length Factor [k]	:	1.00	
Slenderness Ratio [Lcr]	:	83.14	
Plate Grade		A572-50	

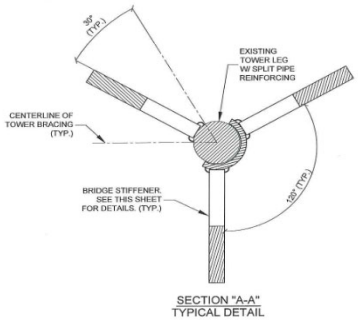
Bypass Plate Stiffener Capacities

Tension Check			
Splice/Flange Bolts Resist Tension	:	No	
Tension Load on Bypass Plates [P_t]	:	148.52	kips
Resistance Factor for Yielding [ϕ_{ty}]	:	0.90	
Resistance Factor for Rupture [ϕ_{tr}]	:	0.75	
Design Tensile Strength - Yielding [ϕR_{n_ty}]	:	135.00	kips
Design Tensile Strength - Rupture [ϕR_{n_tr}]	:	146.25	kips
***Capacity**	:	**34.9%**	**PASS**
Compression Check			
Compressive Load on Bypass Plates [P_c]	:	116.47	kips
Resistance Factor for [ϕ_c]	:	0.90	
Design Compression Strength [ϕP_{n_Comp}]	:	81.44	kips
***Capacity**	:	**45.4%**	**PASS**
Weld Connection Check			
Electrode Grade	:	E70	
Electrode Strength Coefficient [C_1]	:	1.000	
Weld Coefficient [C]	:	1.67	
Resistance Factor for Weld [ϕ_w]	:	0.75	
Design Weld Strength [ϕR_{nw}]	:	59.94	kips
***Weld Capacity**	:	**78.7%**	**PASS**

**Rating per TIA-222-H, Section 15.5*



BRIDGE STIFFENER DETAIL



SECTION "A-A" TYPICAL DETAIL

Self Support Anchor Rod Capacity

Site Info	
BU #	841298
Site Name	Southington Rogus
Order #	662922 Rev. 1

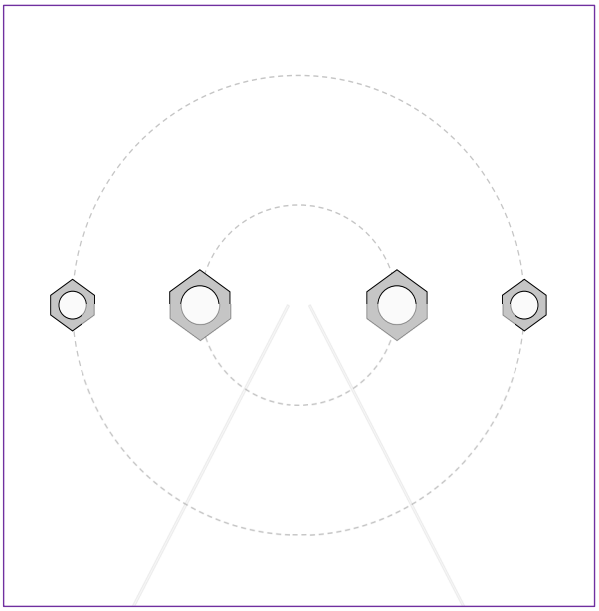
Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	See Custom Sheet
l_{ar} (in)	See Custom Sheet

Applied Loads		
	Comp.	Uplift
Axial Force (kips)	191.54	178.00
Shear Force (kips)	4.25	5.47

**TIA-222-H Section 15.5 Applied*

Considered Eccentricity	
Leg Mod Eccentricity (in)	0.175
Anchor Rod N.A Shift (in)	0.000
Total Eccentricity (in)	-0.175

**Anchor Rod Eccentricity Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (2) 1-3/4" ø bolts (A572-50 N; Fy=50 ksi, Fu=65 ksi) on 9" BC
pos. (deg): 0, 180
l_{ar} (in): 2.25

GROUP 2: (2) 1-1/4" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 20.625" BC
pos. (deg): 0, 180
l_{ar} (in): 1.25

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

GROUP 1:

Pu_c = 63.42	ϕPn_c = 108.24	**Stress Rating**
Vu = 2.13	ϕVn = 48.71	**63.4%**
Mu = 3.11	ϕMn = 40.2	**Pass**

GROUP 2:

Pu_t = 30.06	ϕPn_t = 90.84	**Stress Rating**
Vu = 0	ϕVn = 57.52	**31.5%**
Mu = n/a	ϕMn = n/a	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

note: Bending interaction not considered when Grout Considered = "Yes"

Bolt Group	Resist Axial	Resist Shear		Grout Considered
1	Yes	Yes		No
2	Yes	No		No

Leg Mod Eccentricity (in)
0.1753

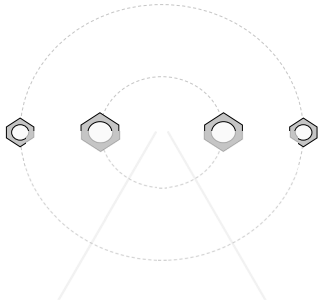
☑ Consider Anchor Rod Eccentricity

Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, n:	I_{ar} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	0	1.75	A572-50	9	0.5	2.25	N-Included		No
2	1	180	1.75	A572-50	9	0.5	2.25	N-Included		No
3	2	0	1.25	A193 Gr. B7	20.625	0.5	1.25	N-Included		No
4	2	180	1.25	A193 Gr. B7	20.625	0.5	1.25	N-Included		No

note: For Self-Support towers, only one direction is checked (in+out of the tower) so please use the Plot Graphic button to confirm Anchor Rod placement.

Plot Graphic



Pier and Pad Foundation

BU # :	841298
Site Name:	Southington Rogus
App. Number:	662922 Rev. 1

TIA-222 Revision:	H
Tower Type:	Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp}:	21	kips
Base Shear, Vu_comp:	4.25	kips
Moment, M_u:	807	ft-kips
Tower Height, **H**:	120	ft
BP Dist. Above Fdn, bp_{dist}:	4	in

Pier Properties		
Pier Shape:	Square	
Pier Diameter, **dpier**:	8	ft
Ext. Above Grade, **E**:	0.5	ft
Pier Rebar Size, **Sc**:	9	
Pier Rebar Quantity, **mc**:	46	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	5	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties		
Depth, **D**:	5.5	ft
Pad Width, W_1:	16	ft
Pad Thickness, **T**:	3	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	6	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	28	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties		
Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	3	ksi
Dry Concrete Density, δc:	150	pcf

Soil Properties		
Total Soil Unit Weight, γ:	110	pcf
Ultimate Net Bearing, Qnet:	5.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	30	degrees
SPT Blow Count, N_{blows}:	7	
Base Friction, μ:	0.35	
Neglected Depth, **N**:	3.50	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	N/A	ft

<--Toggle between Gross and Net

Foundation Analysis Checks	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	86.27	4.25	**4.7%**	**Pass**
Bearing Pressure (ksf)	4.20	1.93	**45.9%**	**Pass**
*Overturning (kip*ft)*	1315.60	833.92	**63.4%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	8280.67	819.75	**9.4%**	**Pass**
Pier Compression (kip)	30551.04	55.56	**0.2%**	**Pass**
*Pad Flexure (kip*ft)*	1725.30	162.46	**9.0%**	**Pass**
Pad Shear - 1-way (kips)	502.81	30.11	**5.7%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.009	**5.1%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	3450.60	491.85	**13.6%**	**Pass**

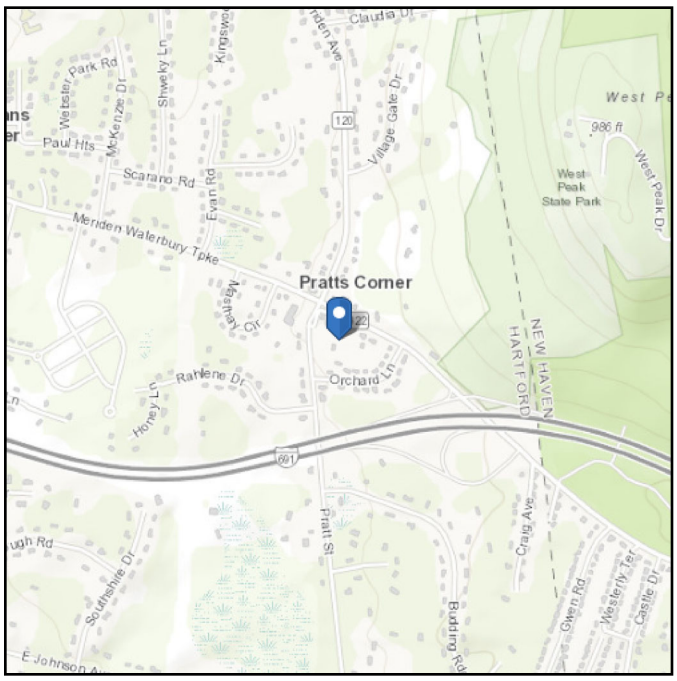
**Rating per TIA-222-H Section 15.5*

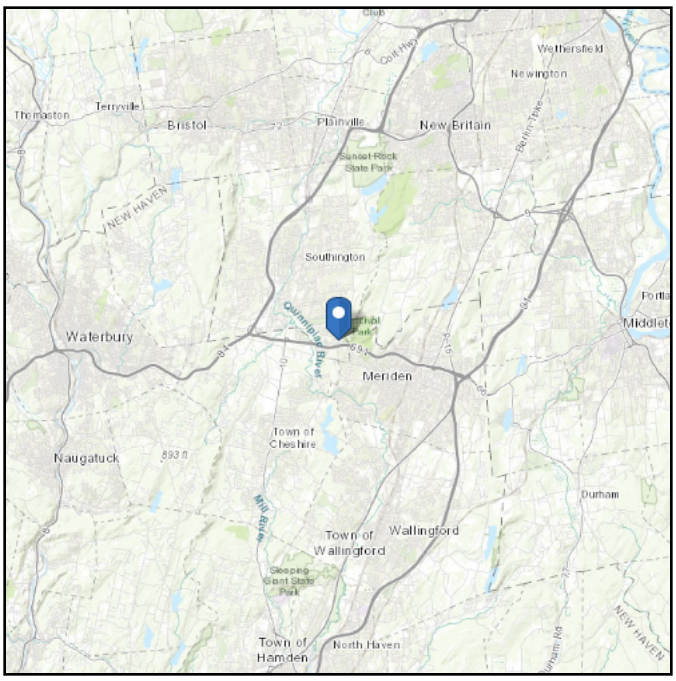
Structural Rating*:	**13.6%**
Soil Rating*:	**63.4%**

ASCE Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Latitude:**	41.556817
Risk Category:	II	**Longitude:**	-72.853011
Soil Class:	D - Default (see Section 11.4.3)	**Elevation:**	342.91996889338617 ft (NAVD 88)





Wind

Results:

Wind Speed	118 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

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

Date Accessed: Fri May 31 2024

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

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

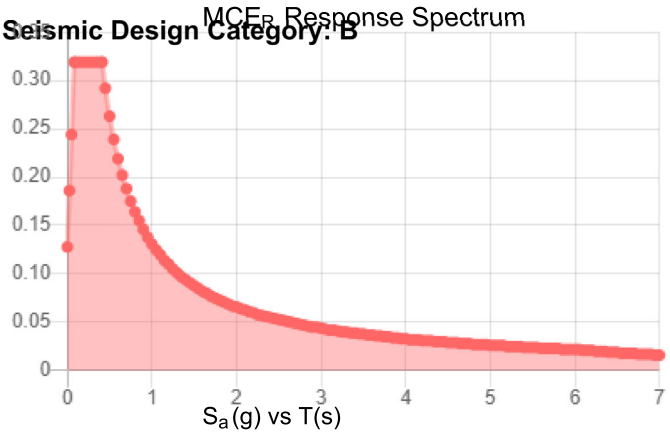
Seismic

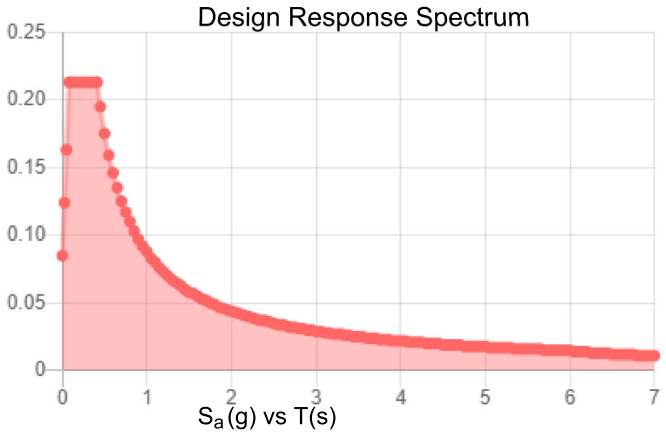
Site Soil Class: D - Default (see Section 11.4.3)

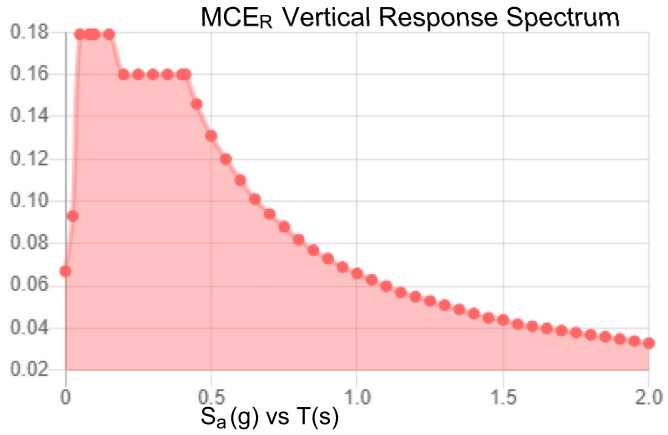
Results:

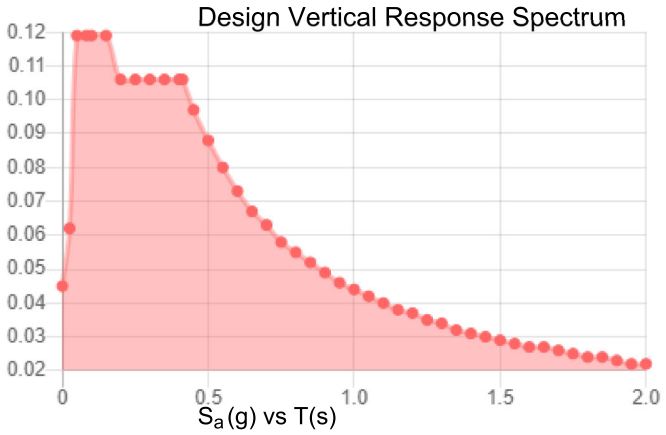
S_S :	0.2	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.11
F_v :	2.4	PGA_M :	0.174
S_{MS} :	0.319	F_{PGA} :	1.58
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.213	C_v :	0.7

Seismic Design Category: B









Data Accessed: **Fri May 31 2024**

Date Source:

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Fri May 31 2024

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

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

Colliers Engineering & Design, Architecture, Landscape
Architecture, Surveying, CT P.C.
1055 Washington Boulevard
Stamford, CT 06901
203.324.0800
peter.albano@collierseng.com

Antenna Mount Analysis Report and PMI Requirements

Mount ReAnalysis

SMART Tool Project #: 10220908
Colliers Engineering & Design Project #:24777010

January 30, 2024

Site Information	*Site ID:*	*5000103257-VZW / SOUTHINGTON_I691_CT - A*
	Site Name:	*SOUTHINGTON_I691_CT - A*
	Carrier Name:	*Verizon Wireless*
	Address:	*250 Meriden Waterbury Tpk* *Southington, Connecticut 06489* *Hartford County*
	Latitude:	*41.556831°*
	Longitude:	*-72.853017°*
Structure Information	*Tower Type:*	*120-Ft Self Support*
	Mount Type:	*5.00-Ft T-Frame*

FUZE ID # 17226147

Analysis Results

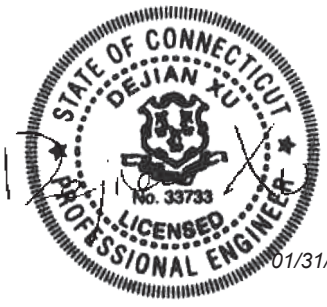
T-Frame: **39.5% Pass***

***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: Jared Adkins



01/31/2024

Executive Summary:

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

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

Sources of Information:

Document Type	Remarks
Radio Frequency Data Sheet (RFDS)	*Verizon RFDS, Site ID: 5008563, Dated January 18, 2024*
Mount Mapping	*Onsight Services LLC, Site ID: 468179, Dated April 10, 2022*
Previous Mount Modification Report	*Maser Consulting Connecticut, Project #: 22777028, Dated April 29, 2022*

Analysis Criteria:

Codes and Standards:	ANSI/TIA-222-H 2022 Connecticut State Building Code (CSBC), Effective October 1, 2022	
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT}:	120 mph
	Ice Wind Speed (3-sec. Gust):	50 mph
	Design Ice Thickness:	1.00 in
	Risk Category:	II
	Exposure Category:	B
	Topographic Feature Considered:	N/A
	Topographic Method:	N/A
	Ground Elevation Factor, K_e:	0.988
Seismic Parameters:	S_S:	0.196 g
	S_1:	0.055 g
Maintenance Parameters:	Wind Speed (3-sec. Gust):	30 mph
	Maintenance Load, Lv:	250 lbs.
	Maintenance Load, Lm:	500 lbs.
Analysis Software:	RISA-3D (V17)	

Final Loading Configuration:

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

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
58.00	60.00	2	KAelus	BSF0020F3V1-1	Added
		3	Commscope	NHH-65B-R2B	Retained
		3	Commscope	NHHSS-65B-R2BT4	
		3	Samsung	MT6407-77A	
		3	Samsung	RF4440d-13A	
		3	Samsung	RF4439d-25A	
		3	Samsung	CBRS RRH - RT4401-48A	
		1	Raycap	RVZDC-6627-PF-48	

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

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

Standard Conditions:

1. All engineering services are performed on the basis that the information provided to Colliers Engineering & Design and used in this analysis is current and correct. The existing equipment loading has been applied at locations determined from the supplied documentation. Any deviation from the loading locations specified in this report shall be communicated to Colliers Engineering & Design to verify deviation will not adversely impact the analysis.

2. Mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.

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

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

3. For mount analyses completed from other data sources (including new replacement mounts) and not specifically mapped in accordance with the NSTD-446 Standard, the mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.

4. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.

5. The mount was checked up to, and including, the bolts that fasten it to the mount collar/attachment and threaded rod connections in collar members if applicable. Local deformation and interaction between the mount collar/attachment and the supporting tower structure are outside the scope of this analysis.

6. All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Colliers Engineering & Design is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.

7. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
   - Channel, Solid Round, Angle, Plate — ASTM A36 (Gr. 36)
   - HSS (Rectangular) — ASTM 500 (Gr. B-46)
   - Pipe — ASTM A53 (Gr. B-35)
   - Threaded Rod — F1554 (Gr. 36)
   - Bolts — ASTM A325

8. It is assumed that the mount modifications listed under Sources of Information have been installed per the design specifications.

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

Analysis Results:

Component	Utilization %	Pass/Fail
Face Horizontal	*39.5 %*	*Pass*
Standoff Vertical	*11.7 %*	*Pass*
Antenna Mount	*27.9 %*	*Pass*
Face Horizontal Support	*19.4 %*	*Pass*
Tieback	*1.6 %*	*Pass*
Mount Connection	*12.4 %*	*Pass*

Structure Rating – *(Controlling Utilization of all Components)*	**39.5%**

Mount Connection Envelope Reactions:

Connection Description	Elev. AGL (Ft)	Node Label	Envelope Wind Reactions				Envelope Wind + Ice Reactions			
			Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)	Axial (Lbs)	Lateral (Lbs)	Moment (K-Ft)	Torsion (K-Ft)
Sector C Top Standoff	55.5	N1	286	416	0.448	0.000	558	205	0.452	0.000
Sector C Bottom Standoff	60.5	N2	429	430	0.613	0.000	816	275	0.578	0.000

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

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

Ice Thickness (In)	Mount Pipes Excluded		Mount Pipes Included	
	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)
0	6.5	5.3	9.9	8.7
0.5	8.7	7.3	13.6	12.2
1	10.9	9.2	17.2	15.5

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

Requirements:

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

Contractor shall confirm that the proposed modifications listed in the Maser Consulting Connecticut Mount Modification Drawings dated April 29, 2022 have been installed as designed.

Contractor shall install the proposed filter units on new Rosenberger D218RRUDSM (or EOR approved equivalent) back to back RRU mounting kits in the location shown in the placement diagrams.

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

Attachments:

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

Mount Desktop – Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor – Passing Mount Analysis

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

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

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

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MDG #: 5000103257 SMART Project #: 10220908 Fuze Project ID: 17226147

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

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

Base Requirements:

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

Photo Requirements:

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

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

Antenna & equipment placement and Geometry Confirmation:

- The contractor shall certify that the antenna & equipment placement and geometry is in accordance with the sketch and table as included in the mount analysis and noted below.

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

OR

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

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

Issue:

Contractor shall confirm that the proposed modifications listed in the Maser Consulting Connecticut Mount Modification Drawings dated April 29, 2022 have been installed as designed. Contractor shall install the proposed filter units on new Rosenberger D218RRUDSM (or EOR approved equivalent) back to back RRU mounting kits in the location shown in the placement diagrams.

Response:

Special Instruction Confirmation:

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

☐ All hardware listed in the Special Instructions above (if applicable) has been properly installed, and the existing hardware was inspected.

☐ The material utilized was as specified in the SMART Tool engineering vendor Special Instructions above (if applicable) and included in the material certification folder is a packing list or invoice for these materials.

OR

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

Comments:

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

☐ Yes ☐ No

Contractor certifies no new damage created during the current installation:

☐ Yes ☐ No

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

☐ Safety Climb in Good Condition ☐ Safety Climb Damaged

Certifying Individual:

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

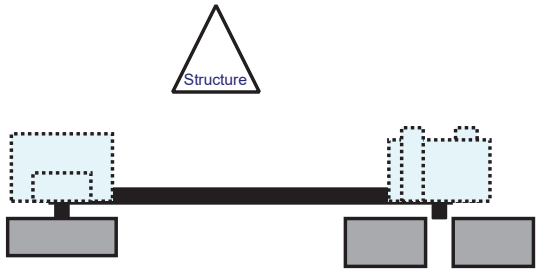
Structure: 5000103257-VZW - SOUTHINGTON_I691_CT - A

Sector: **A** 1/30/2024

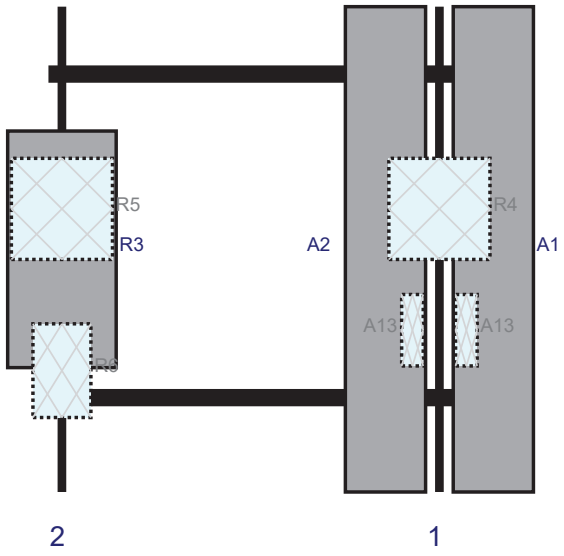
Structure Type: Self Support 10220908

Mount Elev: 58.00 Page: 1

Plan View

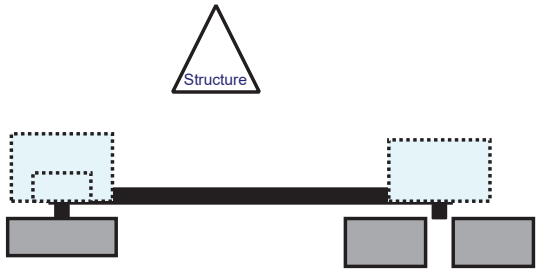


Front View - Looking at Structure

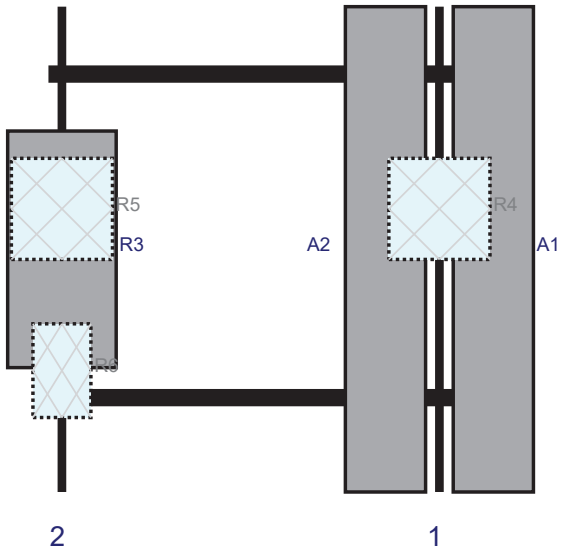


Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A1	NHH-65B-R2B	72	11.9	58	1	a	Front	36	8	Retained	
A2	NHHSS-65B-R2BT4	72	11.9	58	1	a	Front	36	-8	Retained	
R4	RF4440d-13A	15	15	58	1	a	Behind	30	0	Retained	
A13	BSF0020F3V1-1	10.6	3.2	58	1	a	Behind	48	-4	Added	
A13	BSF0020F3V1-1	10.6	3.2	58	1	b	Behind	48	4	Added	
R3	MT6407-77A	35.1	16.1	2	2	a	Front	36	0	Retained	
R5	RF4439d-25A	15	15	2	2	a	Behind	30	0	Retained	
R6	CBRS RRH - RT4401-48A	13.9	8.6	2	2	a	Behind	54	0	Retained	
OVP	RVZDC-6627-PF-48	29.5	16.5		Member					Retained	

Plan View

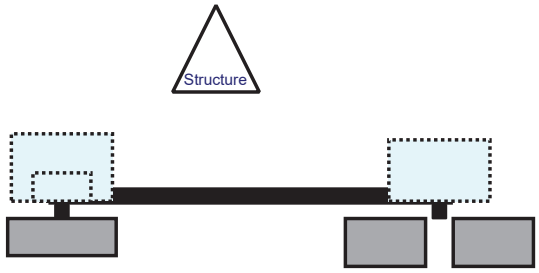


Front View - Looking at Structure

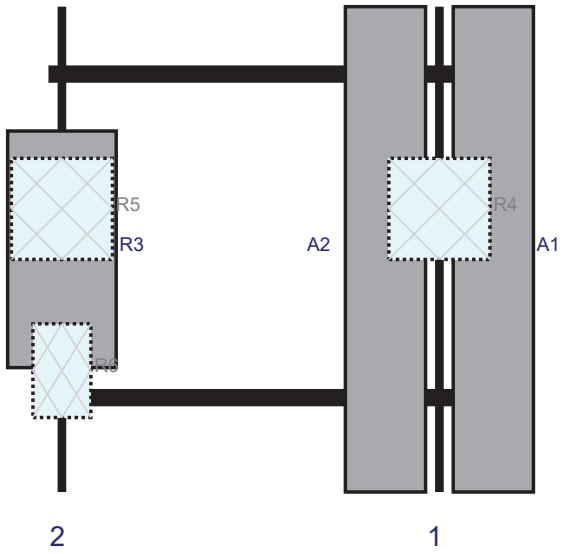


Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A1	NHH-65B-R2B	72	11.9	58	1	a	Front	36	8	Retained	
A2	NHHSS-65B-R2BT4	72	11.9	58	1	a	Front	36	-8	Retained	
R4	RF4440d-13A	15	15	58	1	a	Behind	30	0	Retained	
R3	MT6407-77A	35.1	16.1	2	2	a	Front	36	0	Retained	
R5	RF4439d-25A	15	15	2	2	a	Behind	30	0	Retained	
R6	CBRS RRH - RT4401-48A	13.9	8.6	2	2	a	Behind	54	0	Retained	

Plan View



Front View - Looking at Structure



Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A1	NHH-65B-R2B	72	11.9	58	1	a	Front	36	8	Retained	
A2	NHHSS-65B-R2BT4	72	11.9	58	1	a	Front	36	-8	Retained	
R4	RF4440d-13A	15	15	58	1	a	Behind	30	0	Retained	
R3	MT6407-77A	35.1	16.1	2	2	a	Front	36	0	Retained	
R5	RF4439d-25A	15	15	2	2	a	Behind	30	0	Retained	
R6	CBRS RRH - RT4401-48A	13.9	8.6	2	2	a	Behind	54	0	Retained	

V4.1 Updated on 12-17-2021

Antenna Mount Mapping Form (PATENT PENDING)

FCC #

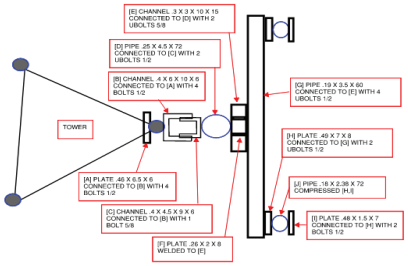
Colliers Engineering & Design

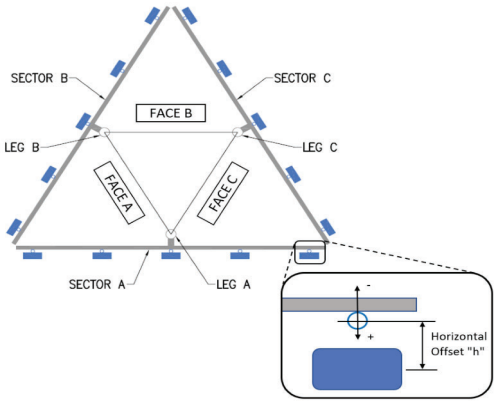
Tower Owner:	CROWN CASTLE	**Mapping Date:**	4/10/2022
Site Name:	SOUTHINGTON_I691_CT-A	**Tower Type:**	SELF SUPPORT
Site Number or ID:	468179	**Tower Height (Ft.):**	120
Mapping Contractor:	Onsight Services LLC	**Mount Elevation (Ft.):**	57.5

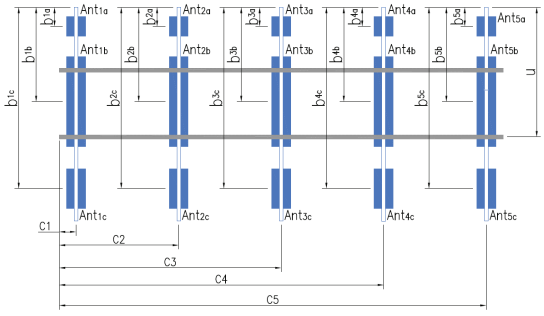
Site Number:

All measurements / offsets given in inches

TOP VIEW







Antenna Layout (Looking Out From Tower)

Mount Pipe Configuration and Geometries [Unit = Inches]

Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."	Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."
A1	.18 X 2.38 OD X 72	58.00	2.00	C1	.18 X 2.38 OD X 72	58.00	2.00
A2	.18 X 2.38 OD X 72	58.00	58.00	C2	.18 X 2.38 OD X 72	58.00	58.00
A3				C3			
A4				C4			
A5				C5			
A6				C6			
B1	.18 X 2.38 OD X 72	58.00	2.00	D1			
B2	.18 X 2.38 OD X 72	58.00	58.00	D2			
B3				D3			
B4				D4			
B5				D5			
B6				D6			

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

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

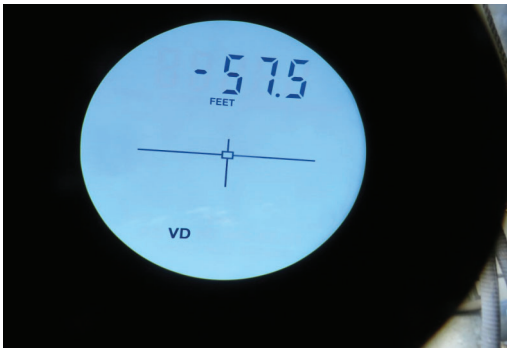
Please enter additional infomation or comments below.

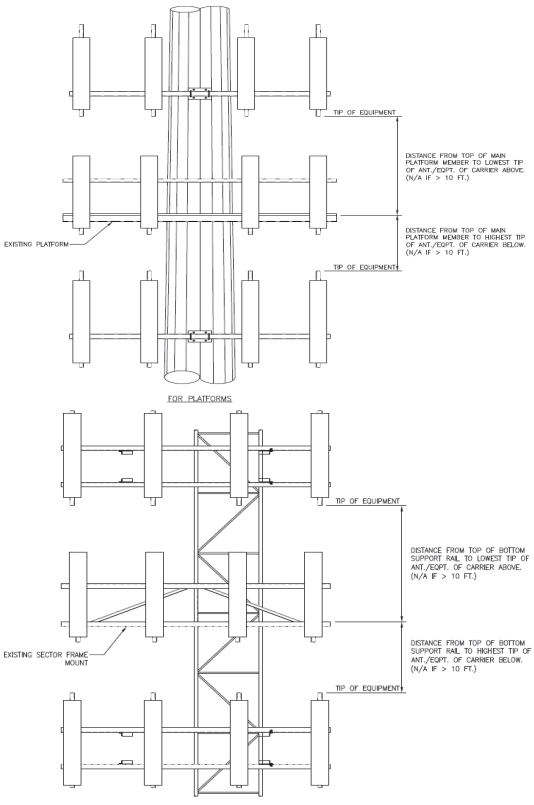
Tower Face Width at Mount Elev. (ft.):	3.6	Tower Leg Size or Pole Shaft Diameter at Mount Elev. (in.):	1.73

Ants. Items	Enter antenna model. If not labeled, enter "Unknown". Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Antenna Center-line (Ft.)	Mounting Locations [Units are inches and degrees] Vertical Distances"b_{1a}, b_{2a}, b_{3a}, b_{1b}...." (Inches)	Horiz. Offset "h" (Use "-" if Ant. is behind)	Antenna Azimuth (Degrees)	Photos of antennas Photo Numbers
Sector A										
Ant_{1a}	SBNHH-1D65B					59.3	36.00	9.00		132
Ant_{1b}	B13RRH4X30					59.7	31.00	8.00		132
Ant_{1c}										
Ant_{2a}	SBNHH-1D65B					59.3	36.00	9.00		132
Ant_{2b}	B66A RRH 4X45					59.5	34.00	7.00		146
Ant_{2c}										
Ant_{3a}										
Ant_{3b}										
Ant_{3c}										
Ant_{4a}										
Ant_{4b}										
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff	RRFDC-3315-PF-48					59.7	20.00	9.00		175
Ant on Standoff	RRFDC-3315-PF-48					59.7	20.00	9.00		175
Ant on Tower										
Ant on Tower										

Mount Azimuth (Degree) for Each Sector				Tower Leg Azimuth (Degree) for Each Sector	
Sector A:	0.00	Deg	Leg A:	350.00	Deg
Sector B:	120.00	Deg	Leg B:	110.00	Deg
Sector C:	240.00	Deg	Leg C:	230.00	Deg
Sector D:		Deg	Leg D:		Deg

Climbing Facility Information			
Location:	170.00	Deg	Outside Face B
Climbing Facility	Corrosion Type:		Good condition.
	Access:		Climbing path was unobstructed.
	Condition:		Good condition.





Sector B										
Ant_{1a}	SBNHH-1D65B					59.3	36.00	9.00		132
Ant_{1b}	B13RRH4X30					59.7	31.00	8.00		132
Ant_{1c}										
Ant_{2a}	SBNHH-1D65B					59.3	36.00	9.00		132
Ant_{2b}	B66A RRH 4X45					59.5	34.00	7.00		146
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										
Sector C										
Ant_{1a}	SBNHH-1D65B					59.3	36.00	9.00		132
Ant_{1b}	B13RRH4X30					59.7	31.00	8.00		132
Ant_{1c}										
Ant_{2a}	SBNHH-1D65B					59.3	36.00	9.00		132
Ant_{2b}	B66A RRH 4X45					59.5	34.00	7.00		146
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										
Sector D										
Ant_{1a}										
Ant_{1b}										
Ant_{1c}										
Ant_{2a}										
Ant_{2b}										
Ant_{2c}										
Ant_{3a}										
Ant_{3b}										
Ant_{3c}										
Ant_{4a}										
Ant_{4b}										
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										

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

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

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

V4.1 Updated on 12-17-2021

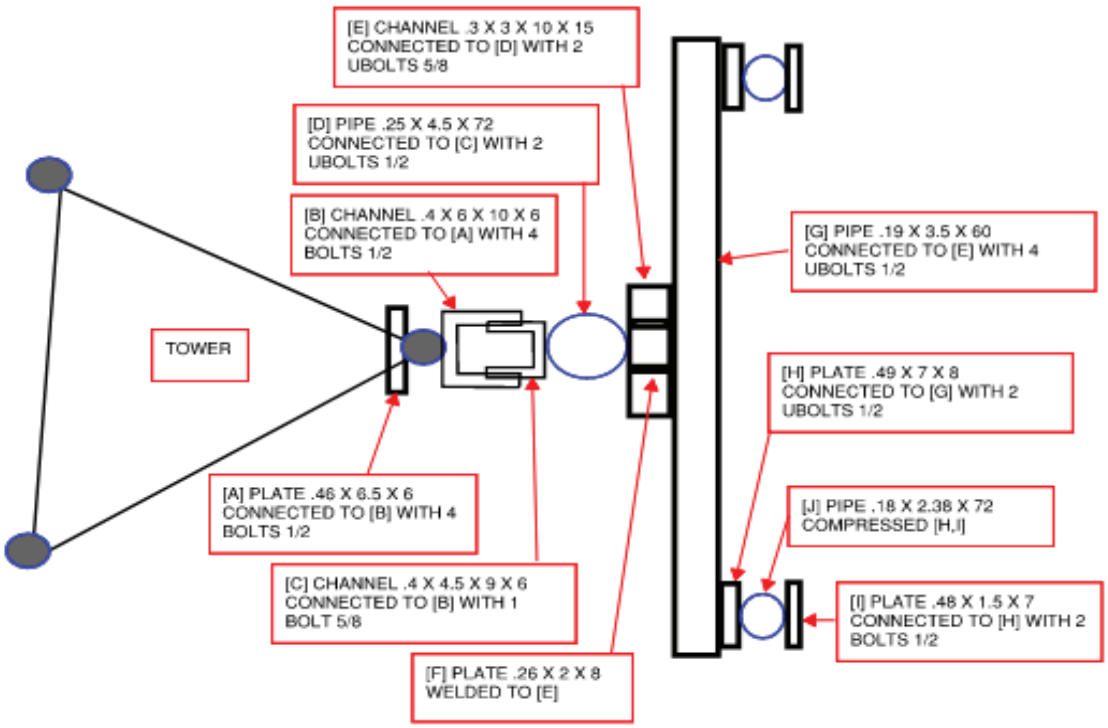
SMART Tool© Vendor	Antenna Mount Mapping Form (PATENT PENDING)		FCC #
	Tower Owner: CROWN CASTLE	**Mapping Date:**	4/10/2022
	Site Name: SOUTHINGTON_I691_CT-A	**Tower Type:**	SELF SUPPORT
	Site Number or ID: 468179	**Tower Height (Ft.):**	120
	Mapping Contractor: Onsight Services LLC	**Mount Elevation (Ft.):**	57.5

Please Insert Sketches of the Antenna Mount

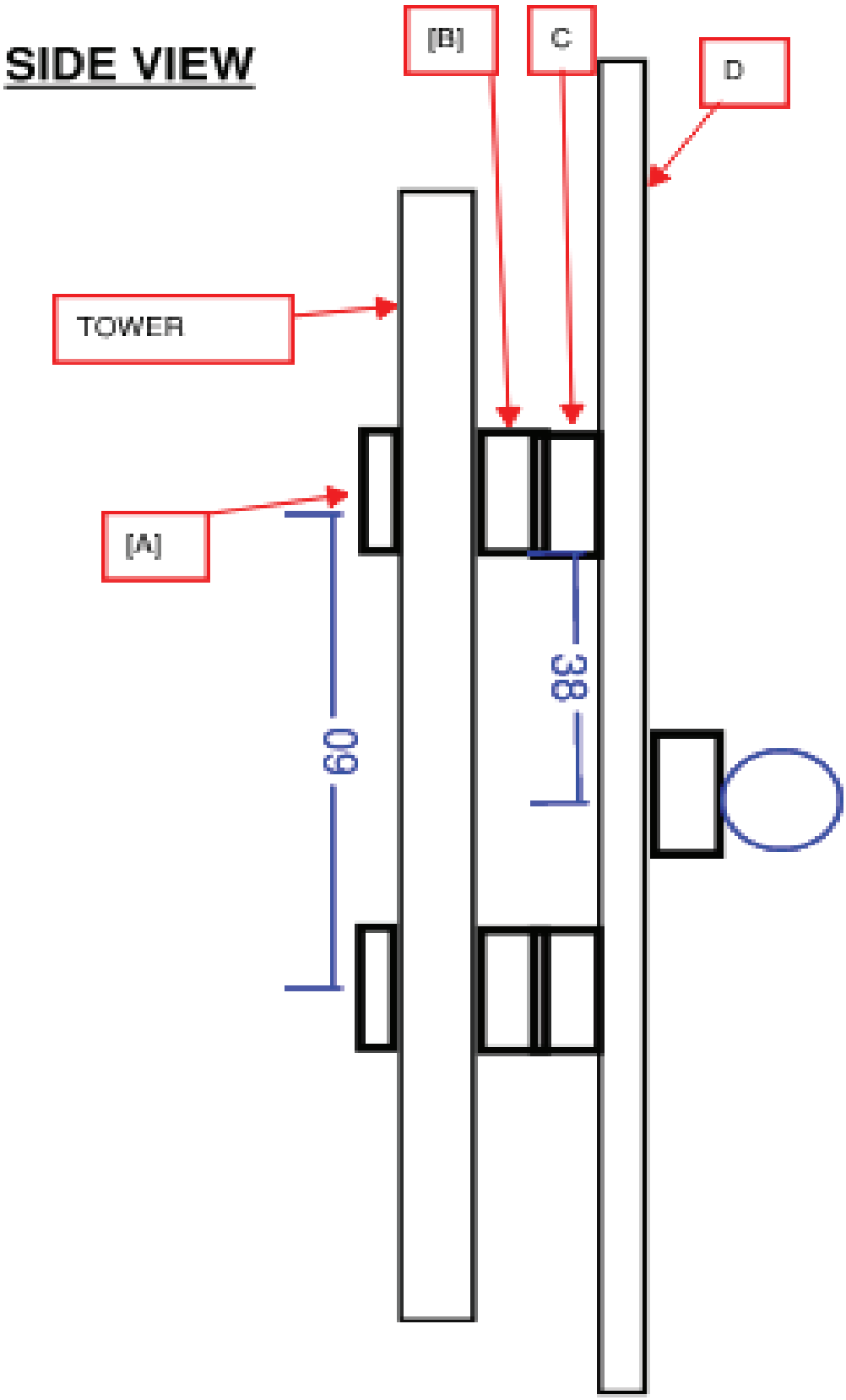
Site Number:

All measurements / offsets given in inches

TOP VIEW

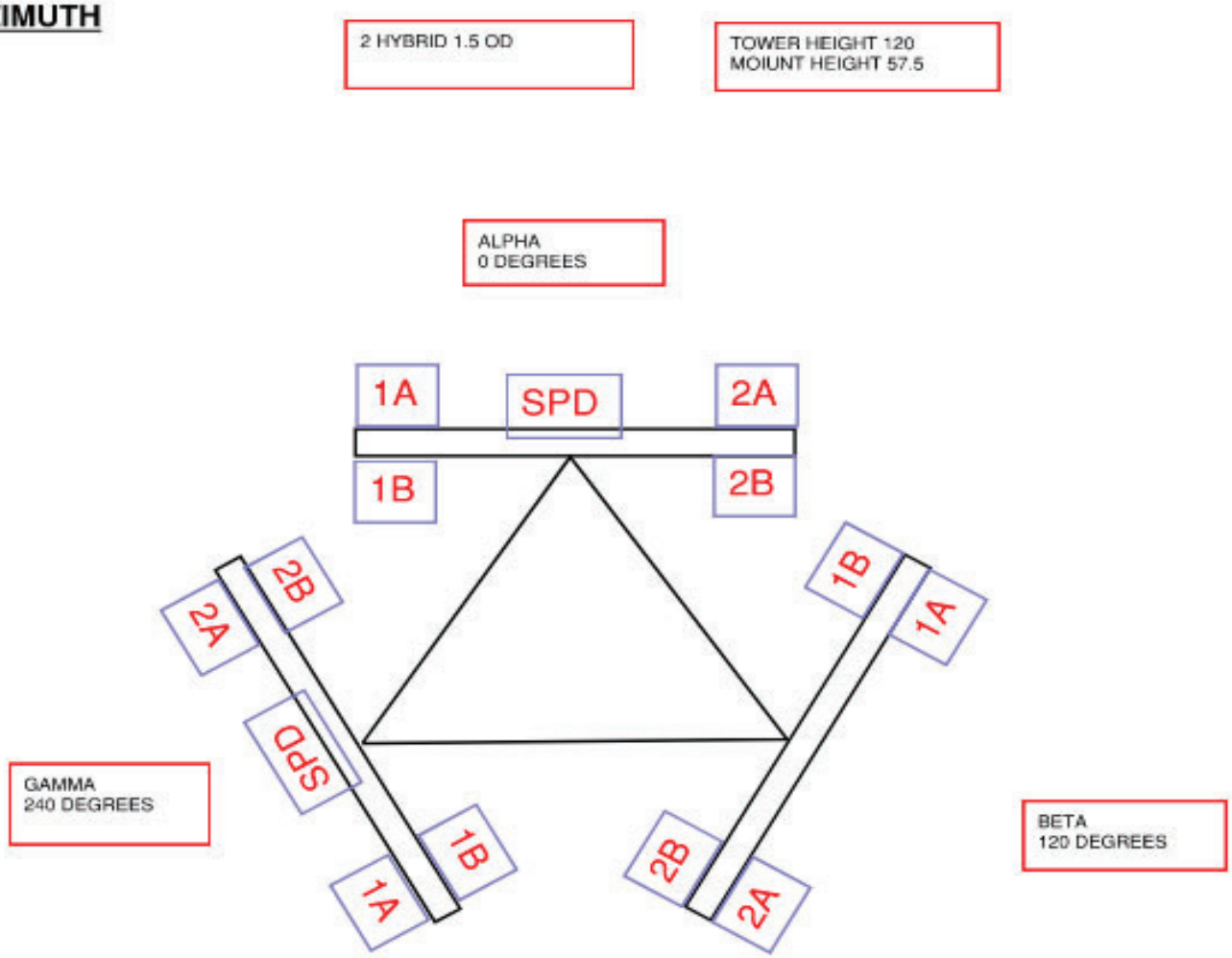


Please Insert Sketches of the Antenna Mount, cont'd



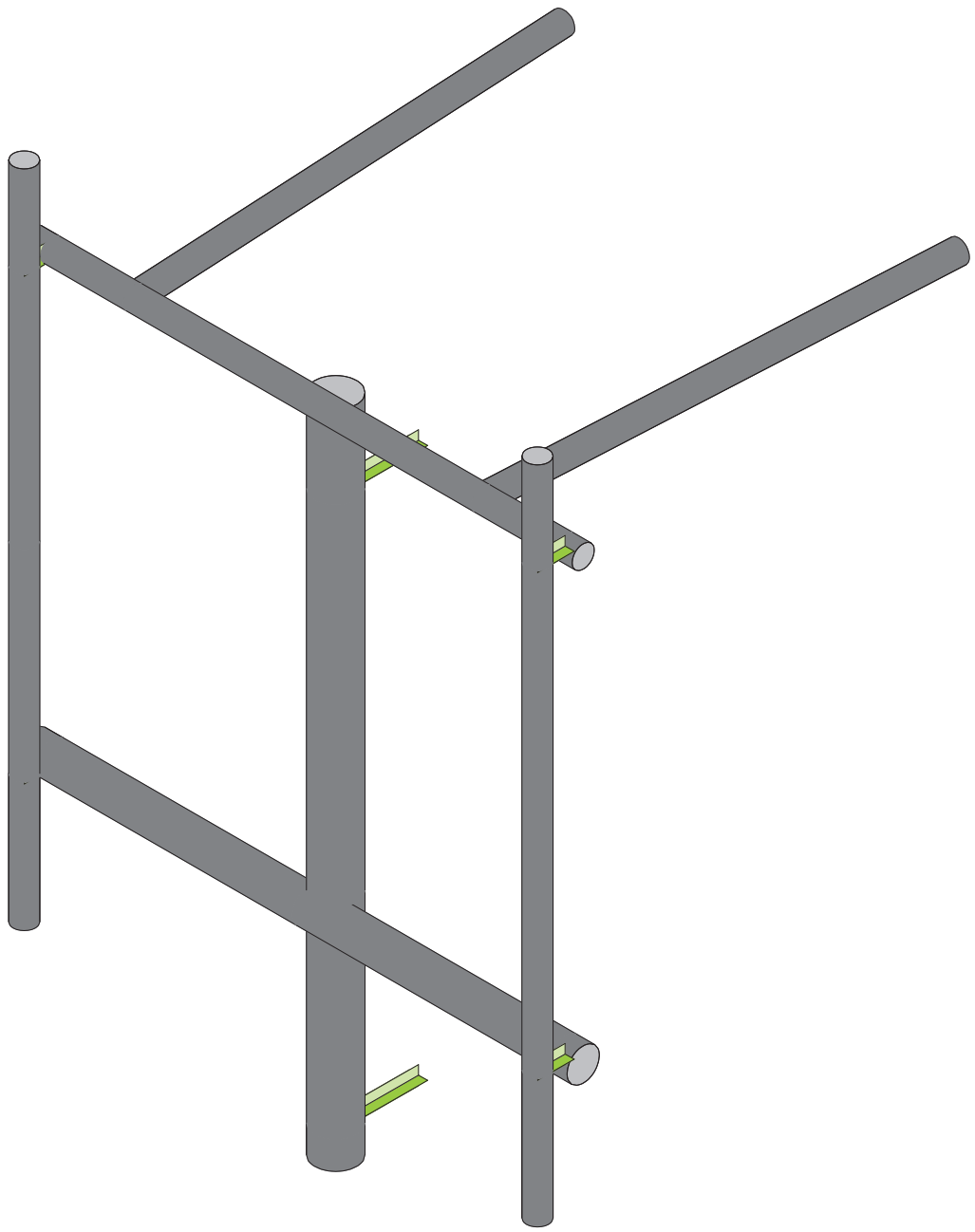
Please Insert Sketches of the Antenna Mount, cont'd

AZIMUTH

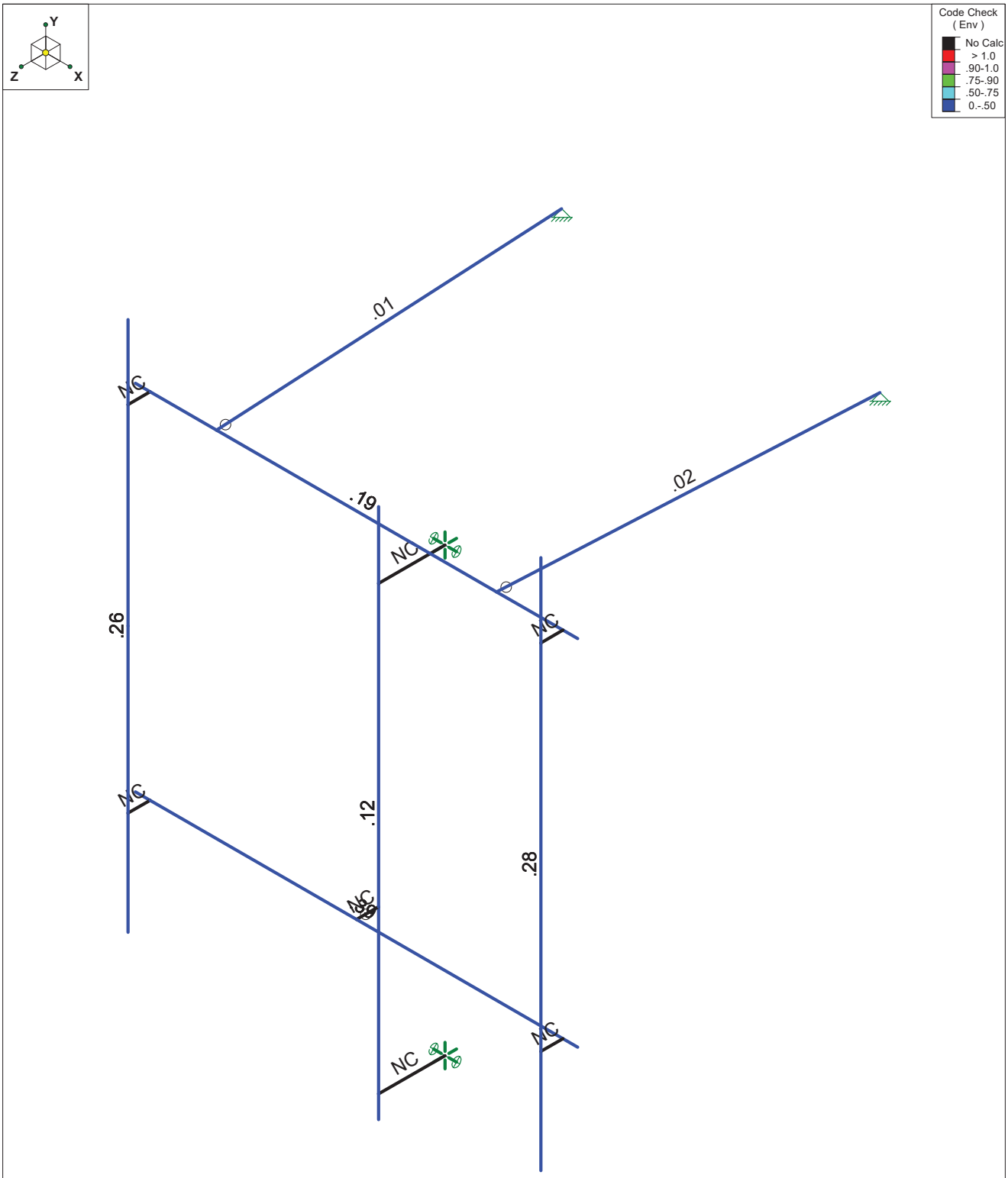


Please Insert Sketches of the Antenna Mount, cont'd

Please Insert Sketches of the Antenna Mount, cont'd

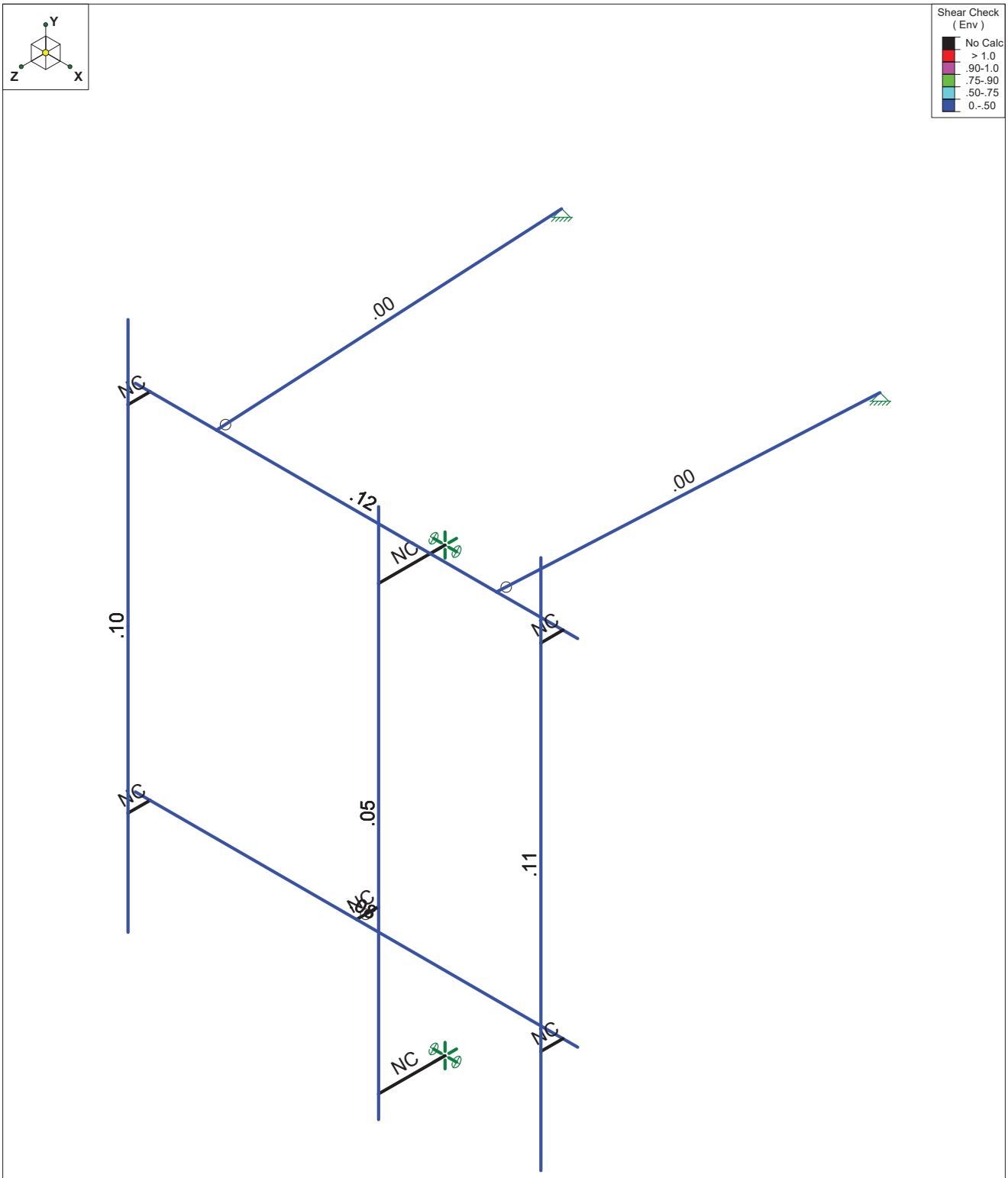


Colliers Engineering & De...	5000103257-VZW_MT_LOT_SectorC_H	SK - 1
		Jan 26, 2024 at 3:54 PM
		5000103257-VZW_MT_LOT_C_...



Member Code Checks Displayed (Enveloped)
Results for LC 1, 1.2D+1.0Wo (0 Deg)

Colliers Engineering & De...	5000103257-VZW_MT_LOT_SectorC_H	SK - 2
		Jan 26, 2024 at 3:54 PM
		5000103257-VZW_MT_LOT_C_...



Member Shear Checks Displayed (Enveloped)
Results for LC 1, 1.2D+1.0Wo (0 Deg)

Colliers Engineering & De...	5000103257-VZW_MT_LOT_SectorC_H	SK - 3
		Jan 26, 2024 at 3:54 PM
		5000103257-VZW_MT_LOT_C_...

Basic Load Cases

	AKB Cdrbqhosmm	B`sdfnqx	WFq`uhsx	X Fq`uhsx	Y Fq`uhsx	Inhms	Onhms	Chrsqhat sdc @qp` 'L d--	Rtqèbd' O--	
0	@rsdmm` C	Mnmd					31			
1	@rsdmm` Ch	Mnmd					31			
2	@rsdmm` V n'/ Cdf(	Mnmd					31			
3	@rsdmm` V n'2/ Cdf(	Mnmd					31			
4	@rsdmm` V n'5/ Cdf(	Mnmd					31			
5	@rsdmm` V n'8/ Cdf(	Mnmd					31			
6	@rsdmm` V n'01/ Cdf(	Mnmd					31			
7	@rsdmm` V n'04/ Cdf(	Mnmd					31			
8	@rsdmm` V n'07/ Cdf(	Mnmd					31			
0/	@rsdmm` V n'10/ Cdf(	Mnmd					31			
00	@rsdmm` V n'13/ Cdf(	Mnmd					31			
01	@rsdmm` V n'16/ Cdf(	Mnmd					31			
02	@rsdmm` V n'2// Cdf(	Mnmd					31			
03	@rsdmm` V n'22/ Cdf(	Mnmd					31			
04	@rsdmm` V h'/ Cdf(	Mnmd					31			
05	@rsdmm` V h'2/ Cdf(	Mnmd					31			
06	@rsdmm` V h'5/ Cdf(	Mnmd					31			
07	@rsdmm` V h'8/ Cdf(	Mnmd					31			
08	@rsdmm` V h'01/ Cdf(	Mnmd					31			
1/	@rsdmm` V h'04/ Cdf(	Mnmd					31			
10	@rsdmm` V h'07/ Cdf(	Mnmd					31			
11	@rsdmm` V h'10/ Cdf(	Mnmd					31			
12	@rsdmm` V h'13/ Cdf(	Mnmd					31			
13	@rsdmm` V h'16/ Cdf(	Mnmd					31			
14	@rsdmm` V h'2// Cdf(	Mnmd					31			
15	@rsdmm` V h'22/ Cdf(	Mnmd					31			
16	@rsdmm` V l '/ Cdf(	Mnmd					31			
17	@rsdmm` V l '2/ Cdf(	Mnmd					31			
18	@rsdmm` V l '5/ Cdf(	Mnmd					31			
2/	@rsdmm` V l '8/ Cdf(	Mnmd					31			
20	@rsdmm` V l '01/ Cd---	Mnmd					31			
21	@rsdmm` V l '04/ Cd---	Mnmd					31			
22	@rsdmm` V l '07/ Cd---	Mnmd					31			
23	@rsdmm` V l '10/ Cd---	Mnmd					31			
24	@rsdmm` V l '13/ Cd---	Mnmd					31			
25	@rsdmm` V l '16/ Cd---	Mnmd					31			
26	@rsdmm` V l '2// Cd---	Mnmd					31			
27	@rsdmm` V l '22/ Cd---	Mnmd					31			
28	Rsqbstqd C	Mnmd		,0						
3/	Rsqbstqd Ch	Mnmd						7		
30	Rsqbstqd V n '/ Cdf(	Mnmd						05		
31	Rsqbstqd V n '2/ Cdf(	Mnmd						05		
32	Rsqbstqd V n '5/ Cdf(	Mnmd						05		
33	Rsqbstqd V n '8/ Cdf(	Mnmd						05		
34	Rsqbstqd V n '01/ C---	Mnmd						05		
35	Rsqbstqd V n '04/ C---	Mnmd						05		
36	Rsqbstqd V n '07/ C---	Mnmd						05		
37	Rsqbstqd V n '10/ C---	Mnmd						05		
38	Rsqbstqd V n '13/ C---	Mnmd						05		
4/	Rsqbstqd V n '16/ C---	Mnmd						05		
40	Rsqbstqd V n '2// C---	Mnmd						05		

Basic Load Cases (Continued)

	AKB Cdrbqhosmm	B`sdfnqx	WFq`uhsx	X Fq`uhsx	Y Fq`uhsx	Inhms	Onhms	Chrsqhat sdc @qd`'Ld--	Rtqèbd'O--
41	Rsqtbstqd V n '22/ C---	Mnmd						05		
42	Rsqtbstqd V h'/ Cdf (	Mnmd						05		
43	Rsqtbstqd V h'2/ Cdf (	Mnmd						05		
44	Rsqtbstqd V h'5/ Cdf (	Mnmd						05		
45	Rsqtbstqd V h'8/ Cdf (	Mnmd						05		
46	Rsqtbstqd V h'01/ Cd---	Mnmd						05		
47	Rsqtbstqd V h'04/ Cd---	Mnmd						05		
48	Rsqtbstqd V h'07/ Cd---	Mnmd						05		
5/	Rsqtbstqd V h'10/ Cd---	Mnmd						05		
50	Rsqtbstqd V h'13/ Cd---	Mnmd						05		
51	Rsqtbstqd V h'16/ Cd---	Mnmd						05		
52	Rsqtbstqd V h'2// Cd---	Mnmd						05		
53	Rsqtbstqd V h'22/ Cd---	Mnmd						05		
54	Rsqtbstqd V l '/ Cdf (	Mnmd						05		
55	Rsqtbstqd V l '2/ C---	Mnmd						05		
56	Rsqtbstqd V l '5/ C---	Mnmd						05		
57	Rsqtbstqd V l '8/ C---	Mnmd						05		
58	Rsqtbstqd V l '01/ ---	Mnmd						05		
6/	Rsqtbstqd V l '04/ ---	Mnmd						05		
60	Rsqtbstqd V l '07/ ---	Mnmd						05		
61	Rsqtbstqd V l '10/ ---	Mnmd						05		
62	Rsqtbstqd V l '13/ ---	Mnmd						05		
63	Rsqtbstqd V l '16/ ---	Mnmd						05		
64	Rsqtbstqd V l '2// ---	Mnmd						05		
65	Rsqtbstqd V l '22/ ---	Mnmd						05		
66	Kl 0	Mnmd					0			
67	Kl 1	Mnmd					0			
68	Ku0	Mnmd					0			
7/	Ku1	Mnmd					0			
70	@qsdmm` Du	Mnmd					31			
71	@qsdmm` Dg '/ Cdf (	Mnmd					17			
72	@qsdmm` Dg '8/ Cdf (	Mnmd					17			
73	Rsqtbstqd Du	DKX		,-/ 31						
74	Rsqtbstqd Dg '/ Cdf (	DKY			,-0/ 4					
75	Rsqtbstqd Dg '8/ Cdf (	DKW	-0/ 4							

Load Combinations

	Cdrbqhosmm	Rn--O--	R--	AKB E`b--	AKB E`b--	AKB E`b--	AKB E`b--	AKB E`b--	AKB E`b--	AKB E`b--	AKB E`b--	AKB E`b--	AKB E`b--	AKB E`b--	AKB E`b--	AKB E`b--
0	0-1C* 0-/ V n '/ Cdf (	Xdr	X	0	0-1	28	0-1	2	0	30	0					
1	0-1C* 0-/ V n '2/ Cdf (	Xdr	X	0	0-1	28	0-1	3	0	31	0					
2	0-1C* 0-/ V n '5/ Cdf (	Xdr	X	0	0-1	28	0-1	4	0	32	0					
3	0-1C* 0-/ V n '8/ Cdf (	Xdr	X	0	0-1	28	0-1	5	0	33	0					
4	0-1C* 0-/ V n '01/ C---	Xdr	X	0	0-1	28	0-1	6	0	34	0					
5	0-1C* 0-/ V n '04/ C---	Xdr	X	0	0-1	28	0-1	7	0	35	0					
6	0-1C* 0-/ V n '07/ C---	Xdr	X	0	0-1	28	0-1	8	0	36	0					
7	0-1C* 0-/ V n '10/ C---	Xdr	X	0	0-1	28	0-1	0/	0	37	0					
8	0-1C* 0-/ V n '13/ C---	Xdr	X	0	0-1	28	0-1	00	0	38	0					
0/	0-1C* 0-/ V n '16/ C---	Xdr	X	0	0-1	28	0-1	01	0	4/	0					
00	0-1C* 0-/ V n '2// C---	Xdr	X	0	0-1	28	0-1	02	0	40	0					
01	0-1C* 0-/ V n '22/ C---	Xdr	X	0	0-1	28	0-1	03	0	41	0					

Load Combinations (Continued)

	Cdrbdqdshmm	Rn--O--	R--	AKBE`b-	AKBE`b-	AKBE`b-	AKBE`b-	AKBE`b-	AKBE`b-	AKBE`b-	AKBE`b-	AKBE`b-	AKBE`b-	AKBE`b-	AKBE`b-	AKBE`b-	AKBE`b-	AKBE`b-	AKBE`b-	AKBE`b-	AKBE`b-	AKBE`b-	AKBE`b-
02	0-1C * 0-/ Ch* 0-/ ---	Xdr	X	0	0-1	28	0-1	1	0	3/	0	04	0	42	0								
03	0-1C * 0-/ Ch* 0-/ ---	Xdr	X	0	0-1	28	0-1	1	0	3/	0	05	0	43	0								
04	0-1C * 0-/ Ch* 0-/ ---	Xdr	X	0	0-1	28	0-1	1	0	3/	0	06	0	44	0								
05	0-1C * 0-/ Ch* 0-/ ---	Xdr	X	0	0-1	28	0-1	1	0	3/	0	07	0	45	0								
06	0-1C * 0-/ Ch* 0-/ ---	Xdr	X	0	0-1	28	0-1	1	0	3/	0	08	0	46	0								
07	0-1C * 0-/ Ch* 0-/ ---	Xdr	X	0	0-1	28	0-1	1	0	3/	0	1/	0	47	0								
08	0-1C * 0-/ Ch* 0-/ ---	Xdr	X	0	0-1	28	0-1	1	0	3/	0	10	0	48	0								
1/	0-1C * 0-/ Ch* 0-/ ---	Xdr	X	0	0-1	28	0-1	1	0	3/	0	11	0	5/	0								
10	0-1C * 0-/ Ch* 0-/ ---	Xdr	X	0	0-1	28	0-1	1	0	3/	0	12	0	50	0								
11	0-1C * 0-/ Ch* 0-/ ---	Xdr	X	0	0-1	28	0-1	1	0	3/	0	13	0	51	0								
12	0-1C * 0-/ Ch* 0-/ ---	Xdr	X	0	0-1	28	0-1	1	0	3/	0	14	0	52	0								
13	0-1C * 0-/ Ch* 0-/ ---	Xdr	X	0	0-1	28	0-1	1	0	3/	0	15	0	53	0								
14	0-1C * 0-4Kl 0 * 0-/ ---	Xdr	X	0	0-1	28	0-1	66	0-4	16	0	54	0										
15	0-1C * 0-4Kl 0 * 0-/ ---	Xdr	X	0	0-1	28	0-1	66	0-4	17	0	55	0										
16	0-1C * 0-4Kl 0 * 0-/ ---	Xdr	X	0	0-1	28	0-1	66	0-4	18	0	56	0										
17	0-1C * 0-4Kl 0 * 0-/ ---	Xdr	X	0	0-1	28	0-1	66	0-4	2/	0	57	0										
18	0-1C * 0-4Kl 0 * 0-/ ---	Xdr	X	0	0-1	28	0-1	66	0-4	20	0	58	0										
2/	0-1C * 0-4Kl 0 * 0-/ ---	Xdr	X	0	0-1	28	0-1	66	0-4	21	0	6/	0										
20	0-1C * 0-4Kl 0 * 0-/ ---	Xdr	X	0	0-1	28	0-1	66	0-4	22	0	60	0										
21	0-1C * 0-4Kl 0 * 0-/ ---	Xdr	X	0	0-1	28	0-1	66	0-4	23	0	61	0										
22	0-1C * 0-4Kl 0 * 0-/ ---	Xdr	X	0	0-1	28	0-1	66	0-4	24	0	62	0										
23	0-1C * 0-4Kl 0 * 0-/ ---	Xdr	X	0	0-1	28	0-1	66	0-4	25	0	63	0										
24	0-1C * 0-4Kl 0 * 0-/ ---	Xdr	X	0	0-1	28	0-1	66	0-4	26	0	64	0										
25	0-1C * 0-4Kl 0 * 0-/ ---	Xdr	X	0	0-1	28	0-1	66	0-4	27	0	65	0										
26	0-1C * 0-4Kl 1 * 0-/ ---	Xdr	X	0	0-1	28	0-1	67	0-4	16	0	54	0										
27	0-1C * 0-4Kl 1 * 0-/ ---	Xdr	X	0	0-1	28	0-1	67	0-4	17	0	55	0										
28	0-1C * 0-4Kl 1 * 0-/ ---	Xdr	X	0	0-1	28	0-1	67	0-4	18	0	56	0										
3/	0-1C * 0-4Kl 1 * 0-/ ---	Xdr	X	0	0-1	28	0-1	67	0-4	2/	0	57	0										
30	0-1C * 0-4Kl 1 * 0-/ ---	Xdr	X	0	0-1	28	0-1	67	0-4	20	0	58	0										
31	0-1C * 0-4Kl 1 * 0-/ ---	Xdr	X	0	0-1	28	0-1	67	0-4	21	0	6/	0										
32	0-1C * 0-4Kl 1 * 0-/ ---	Xdr	X	0	0-1	28	0-1	67	0-4	22	0	60	0										
33	0-1C * 0-4Kl 1 * 0-/ ---	Xdr	X	0	0-1	28	0-1	67	0-4	23	0	61	0										
34	0-1C * 0-4Kl 1 * 0-/ ---	Xdr	X	0	0-1	28	0-1	67	0-4	24	0	62	0										
35	0-1C * 0-4Kl 1 * 0-/ ---	Xdr	X	0	0-1	28	0-1	67	0-4	25	0	63	0										
36	0-1C * 0-4Kl 1 * 0-/ ---	Xdr	X	0	0-1	28	0-1	67	0-4	26	0	64	0										
37	0-1C * 0-4Kl 1 * 0-/ ---	Xdr	X	0	0-1	28	0-1	67	0-4	27	0	65	0										
38	0-1C * 0-4Ku0	Xdr	X	0	0-1	28	0-1	68	0-4														
4/	0-1C * 0-4Ku1	Xdr	X	0	0-1	28	0-1	7/	0-4														
40	0-3C	Xdr	X	0	0-3	28	0-3																
41	0-1C * 0-/ Du * 0-/ D---	Xdr	X	0	0-1	28	0-1	70	0	DKX	0	71	0	72		DKY	0	DKW					
42	0-1C * 0-/ Du * 0-/ D---	Xdr	X	0	0-1	28	0-1	70	0	DKX	0	71	-755	72	-4	DKY	-755	DKW	-4				
43	0-1C * 0-/ Du * 0-/ D---	Xdr	X	0	0-1	28	0-1	70	0	DKX	0	71	-4	72	-755	DKY	-4	DKW	-755				
44	0-1C * 0-/ Du * 0-/ D---	Xdr	X	0	0-1	28	0-1	70	0	DKX	0	71		72	0	DKY		DKW	0				
45	0-1C * 0-/ Du * 0-/ D---	Xdr	X	0	0-1	28	0-1	70	0	DKX	0	71	,-4	72	-755	DKY	,-4	DKW	-755				
46	0-1C * 0-/ Du * 0-/ D---	Xdr	X	0	0-1	28	0-1	70	0	DKX	0	71	,-755	72	-4	DKY	,-755	DKW	-4				
47	0-1C * 0-/ Du * 0-/ D---	Xdr	X	0	0-1	28	0-1	70	0	DKX	0	71	,0	72		DKY	,0	DKW					
48	0-1C * 0-/ Du * 0-/ D---	Xdr	X	0	0-1	28	0-1	70	0	DKX	0	71	,-755	72	,-4	DKY	,-755	DKW	,-4				
5/	0-1C * 0-/ Du * 0-/ D---	Xdr	X	0	0-1	28	0-1	70	0	DKX	0	71	,-4	72	,-755	DKY	,-4	DKW	-755				
50	0-1C * 0-/ Du * 0-/ D---	Xdr	X	0	0-1	28	0-1	70	0	DKX	0	71		72	,0	DKY		DKW	,0				
51	0-1C * 0-/ Du * 0-/ D---	Xdr	X	0	0-1	28	0-1	70	0	DKX	0	71	-4	72	,-755	DKY	-4	DKW	-755				
52	0-1C * 0-/ Du * 0-/ D---	Xdr	X	0	0-1	28	0-1	70	0	DKX	0	71	-755	72	,-4	DKY	-755	DKW	,-4				
53	/-8C , 0-/ Du * 0-/ D---	Xdr	X	0	-8	28	-8	70	,0	DKX	,0	71	0	72		DKY	0	DKW					

Load Combinations (Continued)

	Cdrbdqoshmm	Rn--O--	R---	AKBE`b---	AKBE`b---	AKBE`b---	AKBE`b---	AKBE`b---	AKBE`b---	AKBE`b---	AKBE`b---	AKBE`b---	AKBE`b---	AKBE`b---	AKBE`b---	AKBE`b---	AKBE`b---	AKBE`b---	AKBE`b---	AKBE`b---	AKBE`b---
54	/-8C , 0-/ Du * 0-/ D---	Xdr	X		0	-8	28	-8	70	,0	DKX	,0	71	-755	72	-4	DKY	-755	DKW	-4				
55	/-8C , 0-/ Du * 0-/ D---	Xdr	X		0	-8	28	-8	70	,0	DKX	,0	71	-4	72	-755	DKY	-4	DKW	-755				
56	/-8C , 0-/ Du * 0-/ D---	Xdr	X		0	-8	28	-8	70	,0	DKX	,0	71		72	0	DKY		DKW	0				
57	/-8C , 0-/ Du * 0-/ D---	Xdr	X		0	-8	28	-8	70	,0	DKX	,0	71	,-4	72	-755	DKY	,-4	DKW	-755				
58	/-8C , 0-/ Du * 0-/ D---	Xdr	X		0	-8	28	-8	70	,0	DKX	,0	71	,-755	72	-4	DKY	,-755	DKW	-4				
6/	/-8C , 0-/ Du * 0-/ D---	Xdr	X		0	-8	28	-8	70	,0	DKX	,0	71	,0	72		DKY	,0	DKW					
60	/-8C , 0-/ Du * 0-/ D---	Xdr	X		0	-8	28	-8	70	,0	DKX	,0	71	,-755	72	,-4	DKY	,-755	DKW	,-4				
61	/-8C , 0-/ Du * 0-/ D---	Xdr	X		0	-8	28	-8	70	,0	DKX	,0	71	,-4	72	,-755	DKY	,-4	DKW	,-755				
62	/-8C , 0-/ Du * 0-/ D---	Xdr	X		0	-8	28	-8	70	,0	DKX	,0	71		72	,0	DKY		DKW	,0				
63	/-8C , 0-/ Du * 0-/ D---	Xdr	X		0	-8	28	-8	70	,0	DKX	,0	71	-4	72	,-755	DKY	-4	DKW	,-755				
64	/-8C , 0-/ Du * 0-/ D---	Xdr	X		0	-8	28	-8	70	,0	DKX	,0	71	-755	72	,-4	DKY	-755	DKW	,-4				

Hot Rolled Steel Section Sets

	K`adk	Rg`od	Sxod	Cdrhfimkmrs	L`sldqhk	Cdrhfimqt---	@Zfm1\	Hxxzfm3\	Hyyzfm3\	I zfm3\
0	@rsdmm`L nt ms	OHDD^1-/	Bnkt l m	Ohod	@42 Fq-A	Sxohb`k	0-/ 1	-516	-516	0-14
1	E`bd Gndqynms`k	OHDD^2-/	Ad`l	Ohod	@42 Fq-A	Sxohb`k	1-/ 6	1-74	1-74	4-58
2	Rs`mcnee Udqshb`k	OHDD^3-/	Ad`l	Ohod	@42 Fq-A	Sxohb`k	1-85	5-71	5-71	02-5
3	E`bd Gndqynms`kRtoonqs	OHDD^1-/	Ad`l	Ohod	@42 Fq-A	Sxohb`k	0-/ 1	-516	-516	0-14
4	Sldla`bj	OHDD^1-/	Ad`l	Ohod	@42 Fq-A	Sxohb`k	0-/ 1	-516	-516	0-14

Hot Rolled Steel Properties

	K`adk	D Zfrh	F Zfrh	Mt	Sgdq '.---	Cdmrhsxz--	Xhdkc Zfrh	Qx	Et Zfrh	Qs
0	@25 Fq-25	18/ / /	00043	-2	-54	-38	25	0-4	47	0-1
1	@42 Fq-A	18/ / /	00043	-2	-54	-38	24	0-4	5/	0-1
2	@461 Fq-4/	18/ / /	00043	-2	-54	-38	4/	0-0	54	0-0
3	@881	18/ / /	00043	-2	-54	-38	4/	0-0	54	0-0
4	@4/ / Fq-A 31	18/ / /	00043	-2	-54	-38	31	0-3	47	0-2
5	@4/ / Fq-A 35	18/ / /	00043	-2	-54	-38	35	0-3	47	0-2

Member Primary Data

	K`adk	Hlnhms	I lnhms	J lnhms	Qns`sd'cdf(	Rdbshmm Rg`od	Sxod	Cdrhfimkmrs	L`sldqhk	Cdrhfimqtkdr
0	L 0	M0/ @	M02			QHFFHC	Mnmd	Mnmd	QHFFHC	Sxohb`k
1	L 1	M8@	L BK			QHFFHC	Mnmd	Mnmd	QHFFHC	Sxohb`k
2	L 2	M0/	M8			E`bd Gndqynms`k	Ad`l	Ohod	@42 Fq-A	Sxohb`k
3	L 6	M1	M05@			QHFFHC	Mnmd	Mnmd	QHFFHC	Sxohb`k
4	L 7A	M0	M04			QHFFHC	Mnmd	Mnmd	QHFFHC	Sxohb`k
5	NUO	M14	M15			Rs`mcnee Udqshb`k	Ad`l	Ohod	@42 Fq-A	Sxohb`k
6	L 05	M13	M2			QHFFHC	Mnmd	Mnmd	QHFFHC	Sxohb`k
7	L O0@	M07	M05			@rsdmm`L nt ms	Bnkt l m	Ohod	@42 Fq-A	Sxohb`k
8	L O1@	M08	M06			@rsdmm`L nt ms	Bnkt l m	Ohod	@42 Fq-A	Sxohb`k
0/	L 0/	M12	M10			QHFFHC	Mnmd	Mnmd	QHFFHC	Sxohb`k
00	L 00	M11	M1/			QHFFHC	Mnmd	Mnmd	QHFFHC	Sxohb`k
01	L 01	M13@	M14@			E`bd Gndqynms`---	Ad`l	Ohod	@42 Fq-A	Sxohb`k
02	L 03	M22	M18			Sldla`bj	Ad`l	Ohod	@42 Fq-A	Sxohb`k
03	L 04	M1/	M20			Sldla`bj	Ad`l	Ohod	@42 Fq-A	Sxohb`k
04	L 05@	M22@	M20			Sldla`bj	Ad`l	Ohod	@42 Fq-A	Sxohb`k

Member Point Loads (BLC 1 : Antenna D)

	Ldl adqK`adk	Chqdbsmm	L`fmstcdZe+j,e\	Knb`smmZe+$\
0	L O0@	X	,10-74	0
1	L O0@	L x	,-/ 00	0
2	L O0@	L y	-/ 04	0
3	L O0@	X	,10-74	4
4	L O0@	L x	,-/ 00	4
5	L O0@	L y	-/ 04	4
6	L O0@	X	,21-2	0
7	L O0@	L x	,-/ 05	0
8	L O0@	L y	,-/ 11	0
0/	L O0@	X	,21-2	4
00	L O0@	L x	,-/ 05	4
01	L O0@	L y	,-/ 11	4
02	L O1@	X	,32-44	1
03	L O1@	L x	,-/ 11	1
04	L O1@	L y	/	1
05	L O1@	X	,32-44	3
06	L O1@	L x	,-/ 11	3
07	L O1@	L y	/	3
08	L O0@	X	,6/ -2	1-4
1/	L O0@	L x	,-/ 24	1-4
10	L O0@	L y	/	1-4
11	L O1@	X	,63-6	1-4
12	L O1@	L x	,-/ 26	1-4
13	L O1@	L y	/	1-4
14	L O1@	X	,07-6	3-4
15	L O1@	L x	,-/ / 8	3-4
16	L O1@	L y	/	3-4
17	NUO	X	,21	1-4
18	NUO	L x	/	1-4
2/	NUO	L y	/	1-4
20	L O0@	X	,7-7	2-4
21	L O0@	L x	-/ / 8	2-4
22	L O0@	L y	,-/ / 2	2-4
23	L O0@	X	,7-7	3-4
24	L O0@	L x	-/ / 8	3-4
25	L O0@	L y	,-/ / 2	3-4
26	L O0@	X	,7-7	2-4
27	L O0@	L x	-/ / 8	2-4
28	L O0@	L y	-/ / 2	2-4
3/	L O0@	X	,7-7	3-4
30	L O0@	L x	-/ / 8	3-4
31	L O0@	L y	-/ / 2	3-4

Member Point Loads (BLC 2 : Antenna Di)

	Ldl adqK`adk	Chqdbsmm	L`fmstcdZe+j,e\	Knb`smmZe+$\
0	L O0@	X	,44-/ 57	0
1	L O0@	L x	,-/ 17	0
2	L O0@	L y	-/ 26	0
3	L O0@	X	,44-/ 57	4
4	L O0@	L x	,-/ 17	4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes+$ \
5	L O0@	L y	-/ 26	4
6	L O0@	X	,44-/ 57	0
7	L O0@	L x	,-/ 17	0
8	L O0@	L y	,-/ 26	0
0/	L O0@	X	,44-/ 57	4
00	L O0@	L x	,-/ 17	4
01	L O0@	L y	,-/ 26	4
02	L O1@	X	,21-232	1
03	L O1@	L x	,-/ 05	1
04	L O1@	L y	/	1
05	L O1@	X	,21-232	3
06	L O1@	L x	,-/ 05	3
07	L O1@	L y	/	3
08	L O0@	X	,27-656	1-4
1/	L O0@	L x	,-/ 08	1-4
10	L O0@	L y	/	1-4
11	L O1@	X	,3/ -610	1-4
12	L O1@	L x	,-/ 1	1-4
13	L O1@	L y	/	1-4
14	L O1@	X	,06-770	3-4
15	L O1@	L x	,-/ / 8	3-4
16	L O1@	L y	/	3-4
17	NUO	X	,68-853	1-4
18	NUO	L x	/	1-4
2/	NUO	L y	/	1-4
20	L O0@	X	,6-7/ 7	2-4
21	L O0@	L x	-/ / 7	2-4
22	L O0@	L y	,-/ / 2	2-4
23	L O0@	X	,6-7/ 7	3-4
24	L O0@	L x	-/ / 7	3-4
25	L O0@	L y	,-/ / 2	3-4
26	L O0@	X	,6-7/ 7	2-4
27	L O0@	L x	-/ / 7	2-4
28	L O0@	L y	-/ / 2	2-4
3/	L O0@	X	,6-7/ 7	3-4
30	L O0@	L x	-/ / 7	3-4
31	L O0@	L y	-/ / 2	3-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes+$ \
0	L O0@	W	/	0
1	L O0@	Y	,60-373	0
2	L O0@	L w	,-/ 37	0
3	L O0@	W	/	4
4	L O0@	Y	,60-373	4
5	L O0@	L w	,-/ 37	4
6	L O0@	W	/	0
7	L O0@	Y	,0/ 4-864	0
8	L O0@	L w	-/ 60	0
0/	L O0@	W	/	4
00	L O0@	Y	,0/ 4-864	4

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

	L dl adqK`adk	Cldbsmm	L`fmtstcdZa+j,es\	Knb`smmZes$\
01	L O0@	L w	-/ 60	4
02	L O1@	W	/	1
03	L O1@	Y	,40-5/ 4	1
04	L O1@	L w	/	1
05	L O1@	W	/	3
06	L O1@	Y	,40-5/ 4	3
07	L O1@	L w	/	3
08	L O0@	W	/	1-4
1/	L O0@	Y	,3/ -70	1-4
10	L O0@	L w	/	1-4
11	L O1@	W	/	1-4
12	L O1@	Y	,3/ -70	1-4
13	L O1@	L w	/	1-4
14	L O1@	W	/	3-4
15	L O1@	Y	,07-846	3-4
16	L O1@	L w	/	3-4
17	NUO	W	/	1-4
18	NUO	Y	,57-345	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	/	2-4
21	L O0@	Y	,01-527	2-4
22	L O0@	L w	-/ / 3	2-4
23	L O0@	W	/	3-4
24	L O0@	Y	,01-527	3-4
25	L O0@	L w	-/ / 3	3-4
26	L O0@	W	/	2-4
27	L O0@	Y	,01-527	2-4
28	L O0@	L w	,-/ / 3	2-4
3/	L O0@	W	/	3-4
30	L O0@	Y	,01-527	3-4
31	L O0@	L w	,-/ / 3	3-4

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

	L dl adqK`adk	Cldbsmm	L`fmtstcdZa+j,es\	Knb`smmZes$\
0	L O0@	W	2/ -530	0
1	L O0@	Y	,42-/ 60	0
2	L O0@	L w	,-/ 40	0
3	L O0@	W	2/ -530	4
4	L O0@	Y	,42-/ 60	4
5	L O0@	L w	,-/ 40	4
6	L O0@	W	37-420	0
7	L O0@	Y	,73-/ 47	0
8	L O0@	L w	-/ 21	0
0/	L O0@	W	37-420	4
00	L O0@	Y	,73-/ 47	4
01	L O0@	L w	-/ 21	4
02	L O1@	W	10-462	1
03	L O1@	Y	,26-255	1
04	L O1@	L w	,-/ 00	1
05	L O1@	W	10-462	3
06	L O1@	Y	,26-255	3

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

	L dl adqK`adk	Clqdbsnm	L`fmtstcdZa+j,es\	Knb`snmZs+$ \
07	L O1@	L w	,-/ 00	3
08	L O0@	W	07-287	1-4
1/	L O0@	Y	,20-754	1-4
10	L O0@	L w	,-/ / 8	1-4
11	L O1@	W	07-616	1-4
12	L O1@	Y	,21-324	1-4
13	L O1@	L w	,-/ / 8	1-4
14	L O1@	W	7-117	3-4
15	L O1@	Y	,03-140	3-4
16	L O1@	L w	,-/ / 3	3-4
17	NUO	W	20-616	1-4
18	NUO	Y	,43-841	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	5-213	2-4
21	L O0@	Y	,0/ -842	2-4
22	L O0@	L w	-/ 0	2-4
23	L O0@	W	5-213	3-4
24	L O0@	Y	,0/ -842	3-4
25	L O0@	L w	-/ 0	3-4
26	L O0@	W	5-213	2-4
27	L O0@	Y	,0/ -842	2-4
28	L O0@	L w	-/ / 2	2-4
3/	L O0@	W	5-213	3-4
30	L O0@	Y	,0/ -842	3-4
31	L O0@	L w	-/ / 2	3-4

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

	L dl adqK`adk	Clqdbsnm	L`fmtstcdZa+j,es\	Knb`snmZs+$ \
0	L O0@	W	24-3	0
1	L O0@	Y	,1/ -327	0
2	L O0@	L w	,-/ 20	0
3	L O0@	W	24-3	4
4	L O0@	Y	,1/ -327	4
5	L O0@	L w	,-/ 20	4
6	L O0@	W	57-508	0
7	L O0@	Y	,28-506	0
8	L O0@	L w	,-/ / 7	0
0/	L O0@	W	57-508	4
00	L O0@	Y	,28-506	4
01	L O0@	L w	,-/ / 7	4
02	L O1@	W	11-605	1
03	L O1@	Y	,02-004	1
04	L O1@	L w	,-/ 00	1
05	L O1@	W	11-605	3
06	L O1@	Y	,02-004	3
07	L O1@	L w	,-/ 00	3
08	L O0@	W	13-800	1-4
1/	L O0@	Y	,03-271	1-4
10	L O0@	L w	,-/ 01	1-4
11	L O1@	W	15-510	1-4
12	L O1@	Y	,04-26	1-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes6\
13	L O1@	L w	,-/ 02	1-4
14	L O1@	W	8-808	3-4
15	L O1@	Y	,4-616	3-4
16	L O1@	L w	,-/ / 4	3-4
17	NUO	W	48-173	1-4
18	NUO	Y	,23-117	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	0/ -858	2-4
21	L O0@	Y	,5-222	2-4
22	L O0@	L w	-/ 02	2-4
23	L O0@	W	0/ -858	3-4
24	L O0@	Y	,5-222	3-4
25	L O0@	L w	-/ 02	3-4
26	L O0@	W	0/ -858	2-4
27	L O0@	Y	,5-222	2-4
28	L O0@	L w	-/ / 8	2-4
3/	L O0@	W	0/ -858	3-4
30	L O0@	Y	,5-222	3-4
31	L O0@	L w	-/ / 8	3-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes6\
0	L O0@	W	2/ -562	0
1	L O0@	Y	/	0
2	L O0@	L w	,-/ 04	0
3	L O0@	W	2/ -562	4
4	L O0@	Y	/	4
5	L O0@	L w	,-/ 04	4
6	L O0@	W	6/ -210	0
7	L O0@	Y	/	0
8	L O0@	L w	,-/ 24	0
0/	L O0@	W	6/ -210	4
00	L O0@	Y	/	4
01	L O0@	L w	,-/ 24	4
02	L O1@	W	06-661	1
03	L O1@	Y	/	1
04	L O1@	L w	,-/ / 8	1
05	L O1@	W	06-661	3
06	L O1@	Y	/	3
07	L O1@	L w	,-/ / 8	3
08	L O0@	W	13-638	1-4
1/	L O0@	Y	/	1-4
10	L O0@	L w	,-/ 01	1-4
11	L O1@	W	16-271	1-4
12	L O1@	Y	/	1-4
13	L O1@	L w	,-/ 03	1-4
14	L O1@	W	7-841	3-4
15	L O1@	Y	/	3-4
16	L O1@	L w	,-/ / 3	3-4
17	NUO	W	67-350	1-4
18	NUO	Y	/	1-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes6$\
2/	NUO	L w	/	1-4
20	L O0@	W	01-564	2-4
21	L O0@	Y	/	2-4
22	L O0@	L w	-/ 02	2-4
23	L O0@	W	01-564	3-4
24	L O0@	Y	/	3-4
25	L O0@	L w	-/ 02	3-4
26	L O0@	W	01-564	2-4
27	L O0@	Y	/	2-4
28	L O0@	L w	-/ 02	2-4
3/	L O0@	W	01-564	3-4
30	L O0@	Y	/	3-4
31	L O0@	L w	-/ 02	3-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes6$\
0	L O0@	W	24-3	0
1	L O0@	Y	1/ -327	0
2	L O0@	L w	,-/ / 3	0
3	L O0@	W	24-3	4
4	L O0@	Y	1/ -327	4
5	L O0@	L w	,-/ / 3	4
6	L O0@	W	57-508	0
7	L O0@	Y	28-506	0
8	L O0@	L w	,-/ 50	0
0/	L O0@	W	57-508	4
00	L O0@	Y	28-506	4
01	L O0@	L w	,-/ 50	4
02	L O1@	W	11-605	1
03	L O1@	Y	02-004	1
04	L O1@	L w	,-/ 00	1
05	L O1@	W	11-605	3
06	L O1@	Y	02-004	3
07	L O1@	L w	,-/ 00	3
08	L O0@	W	13-800	1-4
1/	L O0@	Y	03-271	1-4
10	L O0@	L w	,-/ 01	1-4
11	L O1@	W	15-510	1-4
12	L O1@	Y	04-26	1-4
13	L O1@	L w	,-/ 02	1-4
14	L O1@	W	8-808	3-4
15	L O1@	Y	4-616	3-4
16	L O1@	L w	,-/ / 4	3-4
17	NUO	W	61-170	1-4
18	NUO	Y	30-621	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	0/ -858	2-4
21	L O0@	Y	5-222	2-4
22	L O0@	L w	-/ / 8	2-4
23	L O0@	W	0/ -858	3-4
24	L O0@	Y	5-222	3-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes$ \
25	L O0@	L w	-/ / 8	3-4
26	L O0@	W	0/ -858	2-4
27	L O0@	Y	5-222	2-4
28	L O0@	L w	-/ 02	2-4
3/	L O0@	W	0/ -858	3-4
30	L O0@	Y	5-222	3-4
31	L O0@	L w	-/ 02	3-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes$ \
0	L O0@	W	2/ -530	0
1	L O0@	Y	42-/ 60	0
2	L O0@	L w	-/ 1	0
3	L O0@	W	2/ -530	4
4	L O0@	Y	42-/ 60	4
5	L O0@	L w	-/ 1	4
6	L O0@	W	37-420	0
7	L O0@	Y	73-/ 47	0
8	L O0@	L w	,-/ 7	0
0/	L O0@	W	37-420	4
00	L O0@	Y	73-/ 47	4
01	L O0@	L w	,-/ 7	4
02	L O1@	W	10-462	1
03	L O1@	Y	26-255	1
04	L O1@	L w	,-/ 00	1
05	L O1@	W	10-462	3
06	L O1@	Y	26-255	3
07	L O1@	L w	,-/ 00	3
08	L O0@	W	07-287	1-4
1/	L O0@	Y	20-754	1-4
10	L O0@	L w	,-/ / 8	1-4
11	L O1@	W	07-616	1-4
12	L O1@	Y	21-324	1-4
13	L O1@	L w	,-/ / 8	1-4
14	L O1@	W	7-117	3-4
15	L O1@	Y	03-140	3-4
16	L O1@	L w	,-/ / 3	3-4
17	NUO	W	28-12	1-4
18	NUO	Y	56-838	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	5-213	2-4
21	L O0@	Y	0/ -842	2-4
22	L O0@	L w	-/ / 2	2-4
23	L O0@	W	5-213	3-4
24	L O0@	Y	0/ -842	3-4
25	L O0@	L w	-/ / 2	3-4
26	L O0@	W	5-213	2-4
27	L O0@	Y	0/ -842	2-4
28	L O0@	L w	-/ 0	2-4
3/	L O0@	W	5-213	3-4
30	L O0@	Y	0/ -842	3-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZs+$\
31	L O0@	L w	-/ 0	3-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZs+$\
0	L O0@	W	/	0
1	L O0@	Y	60-373	0
2	L O0@	L w	-/ 37	0
3	L O0@	W	/	4
4	L O0@	Y	60-373	4
5	L O0@	L w	-/ 37	4
6	L O0@	W	/	0
7	L O0@	Y	0/ 4-864	0
8	L O0@	L w	,-/ 60	0
0/	L O0@	W	/	4
00	L O0@	Y	0/ 4-864	4
01	L O0@	L w	,-/ 60	4
02	L O1@	W	/	1
03	L O1@	Y	40-5/ 4	1
04	L O1@	L w	/	1
05	L O1@	W	/	3
06	L O1@	Y	40-5/ 4	3
07	L O1@	L w	/	3
08	L O0@	W	/	1-4
1/	L O0@	Y	3/ -70	1-4
10	L O0@	L w	/	1-4
11	L O1@	W	/	1-4
12	L O1@	Y	3/ -70	1-4
13	L O1@	L w	/	1-4
14	L O1@	W	/	3-4
15	L O1@	Y	07-846	3-4
16	L O1@	L w	/	3-4
17	NUO	W	/	1-4
18	NUO	Y	57-345	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	/	2-4
21	L O0@	Y	01-527	2-4
22	L O0@	L w	,-/ / 3	2-4
23	L O0@	W	/	3-4
24	L O0@	Y	01-527	3-4
25	L O0@	L w	,-/ / 3	3-4
26	L O0@	W	/	2-4
27	L O0@	Y	01-527	2-4
28	L O0@	L w	-/ / 3	2-4
3/	L O0@	W	/	3-4
30	L O0@	Y	01-527	3-4
31	L O0@	L w	-/ / 3	3-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZs+$\
0	L O0@	W	,2/ -530	0
1	L O0@	Y	42-/ 60	0

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes$ \
2	L O0@	L w	-/ 40	0
3	L O0@	W	,2/ -530	4
4	L O0@	Y	42-/ 60	4
5	L O0@	L w	-/ 40	4
6	L O0@	W	,37-420	0
7	L O0@	Y	73-/ 47	0
8	L O0@	L w	,-/ 21	0
0/	L O0@	W	,37-420	4
00	L O0@	Y	73-/ 47	4
01	L O0@	L w	,-/ 21	4
02	L O1@	W	,10-462	1
03	L O1@	Y	26-255	1
04	L O1@	L w	-/ 00	1
05	L O1@	W	,10-462	3
06	L O1@	Y	26-255	3
07	L O1@	L w	-/ 00	3
08	L O0@	W	,07-287	1-4
1/	L O0@	Y	20-754	1-4
10	L O0@	L w	-/ / 8	1-4
11	L O1@	W	,07-616	1-4
12	L O1@	Y	21-324	1-4
13	L O1@	L w	-/ / 8	1-4
14	L O1@	W	,7-117	3-4
15	L O1@	Y	03-140	3-4
16	L O1@	L w	-/ / 3	3-4
17	NUO	W	,20-616	1-4
18	NUO	Y	43-841	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	,5-213	2-4
21	L O0@	Y	0/ -842	2-4
22	L O0@	L w	,-/ 0	2-4
23	L O0@	W	,5-213	3-4
24	L O0@	Y	0/ -842	3-4
25	L O0@	L w	,-/ 0	3-4
26	L O0@	W	,5-213	2-4
27	L O0@	Y	0/ -842	2-4
28	L O0@	L w	,-/ / 2	2-4
3/	L O0@	W	,5-213	3-4
30	L O0@	Y	0/ -842	3-4
31	L O0@	L w	,-/ / 2	3-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes$ \
0	L O0@	W	,24-3	0
1	L O0@	Y	1/ -327	0
2	L O0@	L w	-/ 20	0
3	L O0@	W	,24-3	4
4	L O0@	Y	1/ -327	4
5	L O0@	L w	-/ 20	4
6	L O0@	W	,57-508	0
7	L O0@	Y	28-506	0

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

	L dl adqK`adk	Cldbsnm	L`fmstcdZa+j,es\	Knb`snmZes$\
8	L O0@	L w	-/ / 7	0
0/	L O0@	W	,57-508	4
00	L O0@	Y	28-506	4
01	L O0@	L w	-/ / 7	4
02	L O1@	W	,11-605	1
03	L O1@	Y	02-004	1
04	L O1@	L w	-/ 00	1
05	L O1@	W	,11-605	3
06	L O1@	Y	02-004	3
07	L O1@	L w	-/ 00	3
08	L O0@	W	,13-800	1-4
1/	L O0@	Y	03-271	1-4
10	L O0@	L w	-/ 01	1-4
11	L O1@	W	,15-510	1-4
12	L O1@	Y	04-26	1-4
13	L O1@	L w	-/ 02	1-4
14	L O1@	W	,8-808	3-4
15	L O1@	Y	4-616	3-4
16	L O1@	L w	-/ / 4	3-4
17	NUO	W	,48-173	1-4
18	NUO	Y	23-117	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	,0/ -858	2-4
21	L O0@	Y	5-222	2-4
22	L O0@	L w	,-/ 02	2-4
23	L O0@	W	,0/ -858	3-4
24	L O0@	Y	5-222	3-4
25	L O0@	L w	,-/ 02	3-4
26	L O0@	W	,0/ -858	2-4
27	L O0@	Y	5-222	2-4
28	L O0@	L w	,-/ / 8	2-4
3/	L O0@	W	,0/ -858	3-4
30	L O0@	Y	5-222	3-4
31	L O0@	L w	,-/ / 8	3-4

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

	L dl adqK`adk	Cldbsnm	L`fmstcdZa+j,es\	Knb`snmZes$\
0	L O0@	W	,2/ -562	0
1	L O0@	Y	/	0
2	L O0@	L w	-/ 04	0
3	L O0@	W	,2/ -562	4
4	L O0@	Y	/	4
5	L O0@	L w	-/ 04	4
6	L O0@	W	,6/ -210	0
7	L O0@	Y	/	0
8	L O0@	L w	-/ 24	0
0/	L O0@	W	,6/ -210	4
00	L O0@	Y	/	4
01	L O0@	L w	-/ 24	4
02	L O1@	W	,06-661	1
03	L O1@	Y	/	1

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZs+$\
04	L O1@	L w	-/ / 8	1
05	L O1@	W	,06-661	3
06	L O1@	Y	/	3
07	L O1@	L w	-/ / 8	3
08	L O0@	W	,13-638	1-4
1/	L O0@	Y	/	1-4
10	L O0@	L w	-/ 01	1-4
11	L O1@	W	,16-271	1-4
12	L O1@	Y	/	1-4
13	L O1@	L w	-/ 03	1-4
14	L O1@	W	,7-841	3-4
15	L O1@	Y	/	3-4
16	L O1@	L w	-/ / 3	3-4
17	NUO	W	,67-350	1-4
18	NUO	Y	/	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	,01-564	2-4
21	L O0@	Y	/	2-4
22	L O0@	L w	,-/ 02	2-4
23	L O0@	W	,01-564	3-4
24	L O0@	Y	/	3-4
25	L O0@	L w	,-/ 02	3-4
26	L O0@	W	,01-564	2-4
27	L O0@	Y	/	2-4
28	L O0@	L w	,-/ 02	2-4
3/	L O0@	W	,01-564	3-4
30	L O0@	Y	/	3-4
31	L O0@	L w	,-/ 02	3-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZs+$\
0	L O0@	W	,24-3	0
1	L O0@	Y	,1/ -327	0
2	L O0@	L w	-/ / 3	0
3	L O0@	W	,24-3	4
4	L O0@	Y	,1/ -327	4
5	L O0@	L w	-/ / 3	4
6	L O0@	W	,57-508	0
7	L O0@	Y	,28-506	0
8	L O0@	L w	-/ 50	0
0/	L O0@	W	,57-508	4
00	L O0@	Y	,28-506	4
01	L O0@	L w	-/ 50	4
02	L O1@	W	,11-605	1
03	L O1@	Y	,02-004	1
04	L O1@	L w	-/ 00	1
05	L O1@	W	,11-605	3
06	L O1@	Y	,02-004	3
07	L O1@	L w	-/ 00	3
08	L O0@	W	,13-800	1-4
1/	L O0@	Y	,03-271	1-4

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

	L dl adqK`adk	Chqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes+$ \
10	L O0@	L w	-/ 01	1-4
11	L O1@	W	,15-510	1-4
12	L O1@	Y	,04-26	1-4
13	L O1@	L w	-/ 02	1-4
14	L O1@	W	,8-808	3-4
15	L O1@	Y	,4-616	3-4
16	L O1@	L w	-/ / 4	3-4
17	NUO	W	,61-170	1-4
18	NUO	Y	,30-621	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	,0/ -858	2-4
21	L O0@	Y	,5-222	2-4
22	L O0@	L w	,-/ / 8	2-4
23	L O0@	W	,0/ -858	3-4
24	L O0@	Y	,5-222	3-4
25	L O0@	L w	,-/ / 8	3-4
26	L O0@	W	,0/ -858	2-4
27	L O0@	Y	,5-222	2-4
28	L O0@	L w	,-/ 02	2-4
3/	L O0@	W	,0/ -858	3-4
30	L O0@	Y	,5-222	3-4
31	L O0@	L w	,-/ 02	3-4

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

	L dl adqK`adk	Chqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes+$ \
0	L O0@	W	,2/ -530	0
1	L O0@	Y	,42-/ 60	0
2	L O0@	L w	,-/ 1	0
3	L O0@	W	,2/ -530	4
4	L O0@	Y	,42-/ 60	4
5	L O0@	L w	,-/ 1	4
6	L O0@	W	,37-420	0
7	L O0@	Y	,73-/ 47	0
8	L O0@	L w	-/ 7	0
0/	L O0@	W	,37-420	4
00	L O0@	Y	,73-/ 47	4
01	L O0@	L w	-/ 7	4
02	L O1@	W	,10-462	1
03	L O1@	Y	,26-255	1
04	L O1@	L w	-/ 00	1
05	L O1@	W	,10-462	3
06	L O1@	Y	,26-255	3
07	L O1@	L w	-/ 00	3
08	L O0@	W	,07-287	1-4
1/	L O0@	Y	,20-754	1-4
10	L O0@	L w	-/ / 8	1-4
11	L O1@	W	,07-616	1-4
12	L O1@	Y	,21-324	1-4
13	L O1@	L w	-/ / 8	1-4
14	L O1@	W	,7-117	3-4
15	L O1@	Y	,03-140	3-4

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

	L dl adqK`adk	Chqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZs+$ \
16	L O1@	L w	-/ / 3	3-4
17	NUO	W	,28-12	1-4
18	NUO	Y	,56-838	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	,5-213	2-4
21	L O0@	Y	,0/ -842	2-4
22	L O0@	L w	,-/ / 2	2-4
23	L O0@	W	,5-213	3-4
24	L O0@	Y	,0/ -842	3-4
25	L O0@	L w	,-/ / 2	3-4
26	L O0@	W	,5-213	2-4
27	L O0@	Y	,0/ -842	2-4
28	L O0@	L w	,-/ 0	2-4
3/	L O0@	W	,5-213	3-4
30	L O0@	Y	,0/ -842	3-4
31	L O0@	L w	,-/ 0	3-4

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

	L dl adqK`adk	Chqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZs+$ \
0	L O0@	W	/	0
1	L O0@	Y	,1/ -1/ 4	0
2	L O0@	L w	,-/ 02	0
3	L O0@	W	/	4
4	L O0@	Y	,1/ -1/ 4	4
5	L O0@	L w	,-/ 02	4
6	L O0@	W	/	0
7	L O0@	Y	,1/ -1/ 4	0
8	L O0@	L w	-/ 02	0
0/	L O0@	W	/	4
00	L O0@	Y	,1/ -1/ 4	4
01	L O0@	L w	-/ 02	4
02	L O1@	W	/	1
03	L O1@	Y	,01-/ 06	1
04	L O1@	L w	/	1
05	L O1@	W	/	3
06	L O1@	Y	,01-/ 06	3
07	L O1@	L w	/	3
08	L O0@	W	/	1-4
1/	L O0@	Y	,0/ -/ 70	1-4
10	L O0@	L w	/	1-4
11	L O1@	W	/	1-4
12	L O1@	Y	,0/ -/ 70	1-4
13	L O1@	L w	/	1-4
14	L O1@	W	/	3-4
15	L O1@	Y	,4-600	3-4
16	L O1@	L w	/	3-4
17	NUO	W	/	1-4
18	NUO	Y	,06-268	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	/	2-4
21	L O0@	Y	,0-/ 1	2-4

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

	L dl adqK adk	Clqdbsmm	L ` f mhstcdZa+j ,es\	Knb`shmmZes+$ \
22	L O0@	L w	-/ / / 23	2-4
23	L O0@	W	/	3-4
24	L O0@	Y	,0-/ 1	3-4
25	L O0@	L w	-/ / / 23	3-4
26	L O0@	W	/	2-4
27	L O0@	Y	,0-/ 1	2-4
28	L O0@	L w	,-/ / / 23	2-4
3/	L O0@	W	/	3-4
30	L O0@	Y	,0-/ 1	3-4
31	L O0@	L w	,-/ / / 23	3-4

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

	L dl adqK adk	Clqdbsmm	L ` f mhstcdZa+j ,es\	Knb`shmmZes+$ \
0	L O0@	W	8-202	0
1	L O0@	Y	,05-02	0
2	L O0@	L w	,-/ 04	0
3	L O0@	W	8-202	4
4	L O0@	Y	,05-02	4
5	L O0@	L w	,-/ 04	4
6	L O0@	W	8-202	0
7	L O0@	Y	,05-02	0
8	L O0@	L w	-/ / 5	0
0/	L O0@	W	8-202	4
00	L O0@	Y	,05-02	4
01	L O0@	L w	-/ / 5	4
02	L O1@	W	4-030	1
03	L O1@	Y	,7-8/ 4	1
04	L O1@	L w	,-/ / 2	1
05	L O1@	W	4-030	3
06	L O1@	Y	,7-8/ 4	3
07	L O1@	L w	,-/ / 2	3
08	L O0@	W	3-473	1-4
1/	L O0@	Y	,6-83	1-4
10	L O0@	L w	,-/ / 1	1-4
11	L O1@	W	3-543	1-4
12	L O1@	Y	,7-/ 50	1-4
13	L O1@	L w	,-/ / 1	1-4
14	L O1@	W	1-428	3-4
15	L O1@	Y	,3-286	3-4
16	L O1@	L w	,-/ / 0	3-4
17	NUO	W	7-008	1-4
18	NUO	Y	,03-/ 51	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	-616	2-4
21	L O0@	Y	,0-148	2-4
22	L O0@	L w	-/ / 0	2-4
23	L O0@	W	-616	3-4
24	L O0@	Y	,0-148	3-4
25	L O0@	L w	-/ / 0	3-4
26	L O0@	W	-616	2-4
27	L O0@	Y	,0-148	2-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZs+$\
28	L O0@	L w	-/ / / 2/ 6	2-4
3/	L O0@	W	-616	3-4
30	L O0@	Y	,0-148	3-4
31	L O0@	L w	-/ / / 2/ 6	3-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZs+$\
0	L O0@	W	02-283	0
1	L O0@	Y	,6-622	0
2	L O0@	L w	,-/ 01	0
3	L O0@	W	02-283	4
4	L O0@	Y	,6-622	4
5	L O0@	L w	,-/ 01	4
6	L O0@	W	02-283	0
7	L O0@	Y	,6-622	0
8	L O0@	L w	,-/ / 1	0
0/	L O0@	W	02-283	4
00	L O0@	Y	,6-622	4
01	L O0@	L w	,-/ / 1	4
02	L O1@	W	4-8/ 2	1
03	L O1@	Y	,2-3/ 7	1
04	L O1@	L w	,-/ / 2	1
05	L O1@	W	4-8/ 2	3
06	L O1@	Y	,2-3/ 7	3
07	L O1@	L w	,-/ / 2	3
08	L O0@	W	5-25	1-4
1/	L O0@	Y	,2-561	1-4
10	L O0@	L w	,-/ / 2	1-4
11	L O1@	W	5-611	1-4
12	L O1@	Y	,2-770	1-4
13	L O1@	L w	,-/ / 2	1-4
14	L O1@	W	2-2/ 0	3-4
15	L O1@	Y	,0-8/ 5	3-4
16	L O1@	L w	,-/ / 1	3-4
17	NUO	W	04-/ 40	1-4
18	NUO	Y	,7-58	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	1-/ 00	2-4
21	L O0@	Y	,0-050	2-4
22	L O0@	L w	-/ / 1	2-4
23	L O0@	W	1-/ 00	3-4
24	L O0@	Y	,0-050	3-4
25	L O0@	L w	-/ / 1	3-4
26	L O0@	W	1-/ 00	2-4
27	L O0@	Y	,0-050	2-4
28	L O0@	L w	-/ / 1	2-4
3/	L O0@	W	1-/ 00	3-4
30	L O0@	Y	,0-050	3-4
31	L O0@	L w	-/ / 1	3-4

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

	L dl adqK`adk	Clqdbsnnm	L`fmhstcdZa+j,es\	Knb`snmZes4$ \
0	L O0@	W	02-775	0
1	L O0@	Y	/	0
2	L O0@	L w	,-/ / 6	0
3	L O0@	W	02-775	4
4	L O0@	Y	/	4
5	L O0@	L w	,-/ / 6	4
6	L O0@	W	02-775	0
7	L O0@	Y	/	0
8	L O0@	L w	,-/ / 6	0
0/	L O0@	W	02-775	4
00	L O0@	Y	/	4
01	L O0@	L w	,-/ / 6	4
02	L O1@	W	4-/ 71	1
03	L O1@	Y	/	1
04	L O1@	L w	,-/ / 2	1
05	L O1@	W	4-/ 71	3
06	L O1@	Y	/	3
07	L O1@	L w	,-/ / 2	3
08	L O0@	W	5-321	1-4
1/	L O0@	Y	/	1-4
10	L O0@	L w	,-/ / 2	1-4
11	L O1@	W	5-878	1-4
12	L O1@	Y	/	1-4
13	L O1@	L w	,-/ / 2	1-4
14	L O1@	W	2-067	3-4
15	L O1@	Y	/	3-4
16	L O1@	L w	,-/ / 1	3-4
17	NUO	W	08-551	1-4
18	NUO	Y	/	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	1-645	2-4
21	L O0@	Y	/	2-4
22	L O0@	L w	-/ / 2	2-4
23	L O0@	W	1-645	3-4
24	L O0@	Y	/	3-4
25	L O0@	L w	-/ / 2	3-4
26	L O0@	W	1-645	2-4
27	L O0@	Y	/	2-4
28	L O0@	L w	-/ / 2	2-4
3/	L O0@	W	1-645	3-4
30	L O0@	Y	/	3-4
31	L O0@	L w	-/ / 2	3-4

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

	L dl adqK`adk	Clqdbsnnm	L`fmhstcdZa+j,es\	Knb`snmZes4$ \
0	L O0@	W	02-283	0
1	L O0@	Y	6-622	0
2	L O0@	L w	,-/ / 1	0
3	L O0@	W	02-283	4
4	L O0@	Y	6-622	4
5	L O0@	L w	,-/ / 1	4

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

	Ldl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes$ \
6	L O0@	W	02-283	0
7	L O0@	Y	6-622	0
8	L O0@	L w	,-/ 01	0
0/	L O0@	W	02-283	4
00	L O0@	Y	6-622	4
01	L O0@	L w	,-/ 01	4
02	L O1@	W	4-8/ 2	1
03	L O1@	Y	2-3/ 7	1
04	L O1@	L w	,-/ / 2	1
05	L O1@	W	4-8/ 2	3
06	L O1@	Y	2-3/ 7	3
07	L O1@	L w	,-/ / 2	3
08	L O0@	W	5-25	1-4
1/	L O0@	Y	2-561	1-4
10	L O0@	L w	,-/ / 2	1-4
11	L O1@	W	5-611	1-4
12	L O1@	Y	2-770	1-4
13	L O1@	L w	,-/ / 2	1-4
14	L O1@	W	2-2/ 0	3-4
15	L O1@	Y	0-8/ 5	3-4
16	L O1@	L w	,-/ / 1	3-4
17	NUO	W	07-/ 05	1-4
18	NUO	Y	0/ -3/ 1	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	1-/ 00	2-4
21	L O0@	Y	0-050	2-4
22	L O0@	L w	-/ / 1	2-4
23	L O0@	W	1-/ 00	3-4
24	L O0@	Y	0-050	3-4
25	L O0@	L w	-/ / 1	3-4
26	L O0@	W	1-/ 00	2-4
27	L O0@	Y	0-050	2-4
28	L O0@	L w	-/ / 1	2-4
3/	L O0@	W	1-/ 00	3-4
30	L O0@	Y	0-050	3-4
31	L O0@	L w	-/ / 1	3-4

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

	Ldl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes$ \
0	L O0@	W	8-202	0
1	L O0@	Y	05-02	0
2	L O0@	L w	-/ / 5	0
3	L O0@	W	8-202	4
4	L O0@	Y	05-02	4
5	L O0@	L w	-/ / 5	4
6	L O0@	W	8-202	0
7	L O0@	Y	05-02	0
8	L O0@	L w	,-/ 04	0
0/	L O0@	W	8-202	4
00	L O0@	Y	05-02	4
01	L O0@	L w	,-/ 04	4

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

	L dl adqK`adk	Chqdbsmm	L`fmstcdZa+j,es\	Knb`smmZs+$\
02	L O1@	W	4-030	1
03	L O1@	Y	7-8/4	1
04	L O1@	L w	,-//2	1
05	L O1@	W	4-030	3
06	L O1@	Y	7-8/4	3
07	L O1@	L w	,-//2	3
08	L O0@	W	3-473	1-4
1/	L O0@	Y	6-83	1-4
10	L O0@	L w	,-//1	1-4
11	L O1@	W	3-543	1-4
12	L O1@	Y	7-/50	1-4
13	L O1@	L w	,-//1	1-4
14	L O1@	W	1-428	3-4
15	L O1@	Y	3-286	3-4
16	L O1@	L w	,-//0	3-4
17	NUO	W	8-720	1-4
18	NUO	Y	06-/17	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	-616	2-4
21	L O0@	Y	0-148	2-4
22	L O0@	L w	-///2/6	2-4
23	L O0@	W	-616	3-4
24	L O0@	Y	0-148	3-4
25	L O0@	L w	-///2/6	3-4
26	L O0@	W	-616	2-4
27	L O0@	Y	0-148	2-4
28	L O0@	L w	-//0	2-4
3/	L O0@	W	-616	3-4
30	L O0@	Y	0-148	3-4
31	L O0@	L w	-//0	3-4

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

	L dl adqK`adk	Chqdbsmm	L`fmstcdZa+j,es\	Knb`smmZs+$\
0	L O0@	W	/	0
1	L O0@	Y	1/-1/4	0
2	L O0@	L w	-/02	0
3	L O0@	W	/	4
4	L O0@	Y	1/-1/4	4
5	L O0@	L w	-/02	4
6	L O0@	W	/	0
7	L O0@	Y	1/-1/4	0
8	L O0@	L w	,-/02	0
0/	L O0@	W	/	4
00	L O0@	Y	1/-1/4	4
01	L O0@	L w	,-/02	4
02	L O1@	W	/	1
03	L O1@	Y	01-/06	1
04	L O1@	L w	/	1
05	L O1@	W	/	3
06	L O1@	Y	01-/06	3
07	L O1@	L w	/	3

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

	L dl adqK`adk	Chqdbsnm	L`fmhstcdZa+j,es\	Knb`snmZes$\
08	L O0@	W	/	1-4
1/	L O0@	Y	0/-/70	1-4
10	L O0@	L w	/	1-4
11	L O1@	W	/	1-4
12	L O1@	Y	0/-/70	1-4
13	L O1@	L w	/	1-4
14	L O1@	W	/	3-4
15	L O1@	Y	4-600	3-4
16	L O1@	L w	/	3-4
17	NUO	W	/	1-4
18	NUO	Y	06-268	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	/	2-4
21	L O0@	Y	0-/1	2-4
22	L O0@	L w	,-///23	2-4
23	L O0@	W	/	3-4
24	L O0@	Y	0-/1	3-4
25	L O0@	L w	,-///23	3-4
26	L O0@	W	/	2-4
27	L O0@	Y	0-/1	2-4
28	L O0@	L w	-///23	2-4
3/	L O0@	W	/	3-4
30	L O0@	Y	0-/1	3-4
31	L O0@	L w	-///23	3-4

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

	L dl adqK`adk	Chqdbsnm	L`fmhstcdZa+j,es\	Knb`snmZes$\
0	L O0@	W	,8-202	0
1	L O0@	Y	05-02	0
2	L O0@	L w	-/04	0
3	L O0@	W	,8-202	4
4	L O0@	Y	05-02	4
5	L O0@	L w	-/04	4
6	L O0@	W	,8-202	0
7	L O0@	Y	05-02	0
8	L O0@	L w	,-//5	0
0/	L O0@	W	,8-202	4
00	L O0@	Y	05-02	4
01	L O0@	L w	,-//5	4
02	L O1@	W	,4-030	1
03	L O1@	Y	7-8/4	1
04	L O1@	L w	-//2	1
05	L O1@	W	,4-030	3
06	L O1@	Y	7-8/4	3
07	L O1@	L w	-//2	3
08	L O0@	W	,3-473	1-4
1/	L O0@	Y	6-83	1-4
10	L O0@	L w	-//1	1-4
11	L O1@	W	,3-543	1-4
12	L O1@	Y	7-/50	1-4
13	L O1@	L w	-//1	1-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes+$ \
14	L O1@	W	,1-428	3-4
15	L O1@	Y	3-286	3-4
16	L O1@	L w	-/ / 0	3-4
17	NUO	W	,7-008	1-4
18	NUO	Y	03-/ 51	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	,-616	2-4
21	L O0@	Y	0-148	2-4
22	L O0@	L w	,-/ / 0	2-4
23	L O0@	W	,-616	3-4
24	L O0@	Y	0-148	3-4
25	L O0@	L w	,-/ / 0	3-4
26	L O0@	W	,-616	2-4
27	L O0@	Y	0-148	2-4
28	L O0@	L w	,-/ / / 2/ 6	2-4
3/	L O0@	W	,-616	3-4
30	L O0@	Y	0-148	3-4
31	L O0@	L w	,-/ / / 2/ 6	3-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes+$ \
0	L O0@	W	,02-283	0
1	L O0@	Y	6-622	0
2	L O0@	L w	-/ 01	0
3	L O0@	W	,02-283	4
4	L O0@	Y	6-622	4
5	L O0@	L w	-/ 01	4
6	L O0@	W	,02-283	0
7	L O0@	Y	6-622	0
8	L O0@	L w	-/ / 1	0
0/	L O0@	W	,02-283	4
00	L O0@	Y	6-622	4
01	L O0@	L w	-/ / 1	4
02	L O1@	W	,4-8/ 2	1
03	L O1@	Y	2-3/ 7	1
04	L O1@	L w	-/ / 2	1
05	L O1@	W	,4-8/ 2	3
06	L O1@	Y	2-3/ 7	3
07	L O1@	L w	-/ / 2	3
08	L O0@	W	,5-25	1-4
1/	L O0@	Y	2-561	1-4
10	L O0@	L w	-/ / 2	1-4
11	L O1@	W	,5-611	1-4
12	L O1@	Y	2-770	1-4
13	L O1@	L w	-/ / 2	1-4
14	L O1@	W	,2-2/ 0	3-4
15	L O1@	Y	0-8/ 5	3-4
16	L O1@	L w	-/ / 1	3-4
17	NUO	W	,04-/ 40	1-4
18	NUO	Y	7-58	1-4
2/	NUO	L w	/	1-4

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

	L dl adqK`adk	Cldqbsnm	L`fmhstcdZa+j,es\	Knb`snmZes$ \
20	L O0@	W	,1-/ 00	2-4
21	L O0@	Y	0-050	2-4
22	L O0@	L w	,-/ / 1	2-4
23	L O0@	W	,1-/ 00	3-4
24	L O0@	Y	0-050	3-4
25	L O0@	L w	,-/ / 1	3-4
26	L O0@	W	,1-/ 00	2-4
27	L O0@	Y	0-050	2-4
28	L O0@	L w	,-/ / 1	2-4
3/	L O0@	W	,1-/ 00	3-4
30	L O0@	Y	0-050	3-4
31	L O0@	L w	,-/ / 1	3-4

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

	L dl adqK`adk	Cldqbsnm	L`fmhstcdZa+j,es\	Knb`snmZes$ \
0	L O0@	W	,02-775	0
1	L O0@	Y	/	0
2	L O0@	L w	-/ / 6	0
3	L O0@	W	,02-775	4
4	L O0@	Y	/	4
5	L O0@	L w	-/ / 6	4
6	L O0@	W	,02-775	0
7	L O0@	Y	/	0
8	L O0@	L w	-/ / 6	0
0/	L O0@	W	,02-775	4
00	L O0@	Y	/	4
01	L O0@	L w	-/ / 6	4
02	L O1@	W	,4-/ 71	1
03	L O1@	Y	/	1
04	L O1@	L w	-/ / 2	1
05	L O1@	W	,4-/ 71	3
06	L O1@	Y	/	3
07	L O1@	L w	-/ / 2	3
08	L O0@	W	,5-321	1-4
1/	L O0@	Y	/	1-4
10	L O0@	L w	-/ / 2	1-4
11	L O1@	W	,5-878	1-4
12	L O1@	Y	/	1-4
13	L O1@	L w	-/ / 2	1-4
14	L O1@	W	,2-067	3-4
15	L O1@	Y	/	3-4
16	L O1@	L w	-/ / 1	3-4
17	NUO	W	,08-551	1-4
18	NUO	Y	/	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	,1-645	2-4
21	L O0@	Y	/	2-4
22	L O0@	L w	,-/ / 2	2-4
23	L O0@	W	,1-645	3-4
24	L O0@	Y	/	3-4
25	L O0@	L w	,-/ / 2	3-4

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

	Ldl adqK`adk	Clqdbsmm	L`fmstcdZa+j,es\	Knb`smmZs+$\
26	LO0@	W	,1-645	2-4
27	LO0@	Y	/	2-4
28	LO0@	Lw	,-/ / 2	2-4
3/	LO0@	W	,1-645	3-4
30	LO0@	Y	/	3-4
31	LO0@	Lw	,-/ / 2	3-4

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

	Ldl adqK`adk	Clqdbsmm	L`fmstcdZa+j,es\	Knb`smmZs+$\
0	LO0@	W	,02-283	0
1	LO0@	Y	,6-622	0
2	LO0@	Lw	-/ / 1	0
3	LO0@	W	,02-283	4
4	LO0@	Y	,6-622	4
5	LO0@	Lw	-/ / 1	4
6	LO0@	W	,02-283	0
7	LO0@	Y	,6-622	0
8	LO0@	Lw	-/ 01	0
0/	LO0@	W	,02-283	4
00	LO0@	Y	,6-622	4
01	LO0@	Lw	-/ 01	4
02	LO1@	W	,4-8/ 2	1
03	LO1@	Y	,2-3/ 7	1
04	LO1@	Lw	-/ / 2	1
05	LO1@	W	,4-8/ 2	3
06	LO1@	Y	,2-3/ 7	3
07	LO1@	Lw	-/ / 2	3
08	LO0@	W	,5-25	1-4
1/	LO0@	Y	,2-561	1-4
10	LO0@	Lw	-/ / 2	1-4
11	LO1@	W	,5-611	1-4
12	LO1@	Y	,2-770	1-4
13	LO1@	Lw	-/ / 2	1-4
14	LO1@	W	,2-2/ 0	3-4
15	LO1@	Y	,0-8/ 5	3-4
16	LO1@	Lw	-/ / 1	3-4
17	NUO	W	,07-/ 05	1-4
18	NUO	Y	,0/ -3/ 1	1-4
2/	NUO	Lw	/	1-4
20	LO0@	W	,1-/ 00	2-4
21	LO0@	Y	,0-050	2-4
22	LO0@	Lw	,-/ / 1	2-4
23	LO0@	W	,1-/ 00	3-4
24	LO0@	Y	,0-050	3-4
25	LO0@	Lw	,-/ / 1	3-4
26	LO0@	W	,1-/ 00	2-4
27	LO0@	Y	,0-050	2-4
28	LO0@	Lw	,-/ / 1	2-4
3/	LO0@	W	,1-/ 00	3-4
30	LO0@	Y	,0-050	3-4
31	LO0@	Lw	,-/ / 1	3-4

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

	L dl adqK`adk	Cldqbsnm	L`fmhstcdZa+j,es\	Knb`snmZes+$ \
0	L O0@	W	,8-202	0
1	L O0@	Y	,05-02	0
2	L O0@	L w	,-/ / 5	0
3	L O0@	W	,8-202	4
4	L O0@	Y	,05-02	4
5	L O0@	L w	,-/ / 5	4
6	L O0@	W	,8-202	0
7	L O0@	Y	,05-02	0
8	L O0@	L w	-/ 04	0
9	L O0@	W	,8-202	4
10	L O0@	Y	,05-02	4
11	L O0@	L w	-/ 04	4
12	L O1@	W	,4-030	1
13	L O1@	Y	,7-8/ 4	1
14	L O1@	L w	-/ / 2	1
15	L O1@	W	,4-030	3
16	L O1@	Y	,7-8/ 4	3
17	L O1@	L w	-/ / 2	3
18	L O0@	W	,3-473	1-4
19	L O0@	Y	,6-83	1-4
20	L O0@	L w	-/ / 1	1-4
21	L O1@	W	,3-543	1-4
22	L O1@	Y	,7-/ 50	1-4
23	L O1@	L w	-/ / 1	1-4
24	L O1@	W	,1-428	3-4
25	L O1@	Y	,3-286	3-4
26	L O1@	L w	-/ / 0	3-4
27	NUO	W	,8-720	1-4
28	NUO	Y	,06-/ 17	1-4
29	NUO	L w	/	1-4
30	L O0@	W	,-616	2-4
31	L O0@	Y	,0-148	2-4
32	L O0@	L w	,-/ / / 2/ 6	2-4
33	L O0@	W	,-616	3-4
34	L O0@	Y	,0-148	3-4
35	L O0@	L w	,-/ / / 2/ 6	3-4
36	L O0@	W	,-616	2-4
37	L O0@	Y	,0-148	2-4
38	L O0@	L w	,-/ / 0	2-4
39	L O0@	W	,-616	3-4
40	L O0@	Y	,0-148	3-4
41	L O0@	L w	,-/ / 0	3-4

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

	L dl adqK`adk	Cldqbsnm	L`fmhstcdZa+j,es\	Knb`snmZes+$ \
0	L O0@	W	/	0
1	L O0@	Y	,3-357	0
2	L O0@	L w	,-/ / 2	0
3	L O0@	W	/	4
4	L O0@	Y	,3-357	4
5	L O0@	L w	,-/ / 2	4

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

	L dl adqK`adk	Chqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes$ \
6	L O0@	W	/	0
7	L O0@	Y	,5-512	0
8	L O0@	L w	-/ / 3	0
0/	L O0@	W	/	4
00	L O0@	Y	,5-512	4
01	L O0@	L w	-/ / 3	4
02	L O1@	W	/	1
03	L O1@	Y	,2-114	1
04	L O1@	L w	/	1
05	L O1@	W	/	3
06	L O1@	Y	,2-114	3
07	L O1@	L w	/	3
08	L O0@	W	/	1-4
1/	L O0@	Y	,1-440	1-4
10	L O0@	L w	/	1-4
11	L O1@	W	/	1-4
12	L O1@	Y	,1-440	1-4
13	L O1@	L w	/	1-4
14	L O1@	W	/	3-4
15	L O1@	Y	,0-074	3-4
16	L O1@	L w	/	3-4
17	NUO	W	/	1-4
18	NUO	Y	,3-167	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	/	2-4
21	L O0@	Y	,-68	2-4
22	L O0@	L w	-/ / / 152	2-4
23	L O0@	W	/	3-4
24	L O0@	Y	,-68	3-4
25	L O0@	L w	-/ / / 152	3-4
26	L O0@	W	/	2-4
27	L O0@	Y	,-68	2-4
28	L O0@	L w	,-/ / / 152	2-4
3/	L O0@	W	/	3-4
30	L O0@	Y	,-68	3-4
31	L O0@	L w	,-/ / / 152	3-4

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

	L dl adqK`adk	Chqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes$ \
0	L O0@	W	0-804	0
1	L O0@	Y	,2-206	0
2	L O0@	L w	,-/ / 2	0
3	L O0@	W	0-804	4
4	L O0@	Y	,2-206	4
5	L O0@	L w	,-/ / 2	4
6	L O0@	W	2-/ 22	0
7	L O0@	Y	,4-143	0
8	L O0@	L w	-/ / 1	0
0/	L O0@	W	2-/ 22	4
00	L O0@	Y	,4-143	4
01	L O0@	L w	-/ / 1	4

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

	L dl adqK adk	Clqdbsmm	L `f mtstcdZa+j,es\	Knb`smmZes+$ \
02	L O1@	W	0-237	1
03	L O1@	Y	,1-224	1
04	L O1@	L w	,-/ / / 563	1
05	L O1@	W	0-237	3
06	L O1@	Y	,1-224	3
07	L O1@	L w	,-/ / / 563	3
08	L O0@	W	0-04	1-4
1/	L O0@	Y	,0-881	1-4
10	L O0@	L w	,-/ / / 464	1-4
11	L O1@	W	0-06	1-4
12	L O1@	Y	,1-/ 16	1-4
13	L O1@	L w	,-/ / / 474	1-4
14	L O1@	W	-403	3-4
15	L O1@	Y	,-780	3-4
16	L O1@	L w	,-/ / / 146	3-4
17	NUO	W	0-872	1-4
18	NUO	Y	,2-324	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	-284	2-4
21	L O0@	Y	,-574	2-4
22	L O0@	L w	-/ / / 512	2-4
23	L O0@	W	-284	3-4
24	L O0@	Y	,-574	3-4
25	L O0@	L w	-/ / / 512	3-4
26	L O0@	W	-284	2-4
27	L O0@	Y	,-574	2-4
28	L O0@	L w	-/ / / 056	2-4
3/	L O0@	W	-284	3-4
30	L O0@	Y	,-574	3-4
31	L O0@	L w	-/ / / 056	3-4

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

	L dl adqK adk	Clqdbsmm	L `f mtstcdZa+j,es\	Knb`smmZes+$ \
0	L O0@	W	1-101	0
1	L O0@	Y	,0-166	0
2	L O0@	L w	,-/ / 1	0
3	L O0@	W	1-101	4
4	L O0@	Y	,0-166	4
5	L O0@	L w	,-/ / 1	4
6	L O0@	W	3-178	0
7	L O0@	Y	,1-365	0
8	L O0@	L w	,-/ / / 383	0
0/	L O0@	W	3-178	4
00	L O0@	Y	,1-365	4
01	L O0@	L w	,-/ / / 383	4
02	L O1@	W	0-31	1
03	L O1@	Y	,-71	1
04	L O1@	L w	,-/ / / 60	1
05	L O1@	W	0-31	3
06	L O1@	Y	,-71	3
07	L O1@	L w	,-/ / / 60	3

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

	L dl adqK adk	Chqdbsmm	L `fmtstcdZa+j,es\	Knb`smmZes$ \
08	L O0@	W	0-446	1-4
1/	L O0@	Y	,-788	1-4
10	L O0@	L w	,-/ / / 667	1-4
11	L O1@	W	0-553	1-4
12	L O1@	Y	,-850	1-4
13	L O1@	L w	,-/ / / 721	1-4
14	L O1@	W	-51	3-4
15	L O1@	Y	,-247	3-4
16	L O1@	L w	,-/ / / 20	3-4
17	NUO	W	2-6/ 4	1-4
18	NUO	Y	,1-028	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	-575	2-4
21	L O0@	Y	,-285	2-4
22	L O0@	L w	-/ / / 707	2-4
23	L O0@	W	-575	3-4
24	L O0@	Y	,-285	3-4
25	L O0@	L w	-/ / / 707	3-4
26	L O0@	W	-575	2-4
27	L O0@	Y	,-285	2-4
28	L O0@	L w	-/ / / 443	2-4
3/	L O0@	W	-575	3-4
30	L O0@	Y	,-285	3-4
31	L O0@	L w	-/ / / 443	3-4

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

	L dl adqK adk	Chqdbsmm	L `fmtstcdZa+j,es\	Knb`smmZes$ \
0	L O0@	W	0-806	0
1	L O0@	Y	/	0
2	L O0@	L w	,-/ / / 847	0
3	L O0@	W	0-806	4
4	L O0@	Y	/	4
5	L O0@	L w	,-/ / / 847	4
6	L O0@	W	3-284	0
7	L O0@	Y	/	0
8	L O0@	L w	,-/ / 1	0
0/	L O0@	W	3-284	4
00	L O0@	Y	/	4
01	L O0@	L w	,-/ / 1	4
02	L O1@	W	0-000	1
03	L O1@	Y	/	1
04	L O1@	L w	,-/ / / 445	1
05	L O1@	W	0-000	3
06	L O1@	Y	/	3
07	L O1@	L w	,-/ / / 445	3
08	L O0@	W	0-436	1-4
1/	L O0@	Y	/	1-4
10	L O0@	L w	,-/ / / 663	1-4
11	L O1@	W	0-600	1-4
12	L O1@	Y	/	1-4
13	L O1@	L w	,-/ / / 745	1-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes+$ \
14	L O1@	W	-448	3-4
15	L O1@	Y	/	3-4
16	L O1@	L w	,-/ / / 17	3-4
17	NUO	W	3-8/ 3	1-4
18	NUO	Y	/	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	-681	2-4
21	L O0@	Y	/	2-4
22	L O0@	L w	-/ / / 681	2-4
23	L O0@	W	-681	3-4
24	L O0@	Y	/	3-4
25	L O0@	L w	-/ / / 681	3-4
26	L O0@	W	-681	2-4
27	L O0@	Y	/	2-4
28	L O0@	L w	-/ / / 681	2-4
3/	L O0@	W	-681	3-4
30	L O0@	Y	/	3-4
31	L O0@	L w	-/ / / 681	3-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes+$ \
0	L O0@	W	1-101	0
1	L O0@	Y	0-166	0
2	L O0@	L w	,-/ / / 144	0
3	L O0@	W	1-101	4
4	L O0@	Y	0-166	4
5	L O0@	L w	,-/ / / 144	4
6	L O0@	W	3-178	0
7	L O0@	Y	1-365	0
8	L O0@	L w	,-/ / 3	0
0/	L O0@	W	3-178	4
00	L O0@	Y	1-365	4
01	L O0@	L w	,-/ / 3	4
02	L O1@	W	0-31	1
03	L O1@	Y	-71	1
04	L O1@	L w	,-/ / / 60	1
05	L O1@	W	0-31	3
06	L O1@	Y	-71	3
07	L O1@	L w	,-/ / / 60	3
08	L O0@	W	0-446	1-4
1/	L O0@	Y	-788	1-4
10	L O0@	L w	,-/ / / 667	1-4
11	L O1@	W	0-553	1-4
12	L O1@	Y	-850	1-4
13	L O1@	L w	,-/ / / 721	1-4
14	L O1@	W	-51	3-4
15	L O1@	Y	-247	3-4
16	L O1@	L w	,-/ / / 20	3-4
17	NUO	W	3-407	1-4
18	NUO	Y	1-5/ 7	1-4
2/	NUO	L w	/	1-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZs+$ \
20	L O0@	W	-575	2-4
21	L O0@	Y	-285	2-4
22	L O0@	L w	-/ / / 443	2-4
23	L O0@	W	-575	3-4
24	L O0@	Y	-285	3-4
25	L O0@	L w	-/ / / 443	3-4
26	L O0@	W	-575	2-4
27	L O0@	Y	-285	2-4
28	L O0@	L w	-/ / / 707	2-4
3/	L O0@	W	-575	3-4
30	L O0@	Y	-285	3-4
31	L O0@	L w	-/ / / 707	3-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZs+$ \
0	L O0@	W	0-804	0
1	L O0@	Y	2-206	0
2	L O0@	L w	-/ / 0	0
3	L O0@	W	0-804	4
4	L O0@	Y	2-206	4
5	L O0@	L w	-/ / 0	4
6	L O0@	W	2-/ 22	0
7	L O0@	Y	4-143	0
8	L O0@	L w	,-/ / 4	0
0/	L O0@	W	2-/ 22	4
00	L O0@	Y	4-143	4
01	L O0@	L w	,-/ / 4	4
02	L O1@	W	0-237	1
03	L O1@	Y	1-224	1
04	L O1@	L w	,-/ / / 563	1
05	L O1@	W	0-237	3
06	L O1@	Y	1-224	3
07	L O1@	L w	,-/ / / 563	3
08	L O0@	W	0-04	1-4
1/	L O0@	Y	0-881	1-4
10	L O0@	L w	,-/ / / 464	1-4
11	L O1@	W	0-06	1-4
12	L O1@	Y	1-/ 16	1-4
13	L O1@	L w	,-/ / / 474	1-4
14	L O1@	W	-403	3-4
15	L O1@	Y	-780	3-4
16	L O1@	L w	,-/ / / 146	3-4
17	N UO	W	1-341	1-4
18	N UO	Y	3-136	1-4
2/	N UO	L w	/	1-4
20	L O0@	W	-284	2-4
21	L O0@	Y	-574	2-4
22	L O0@	L w	-/ / / 056	2-4
23	L O0@	W	-284	3-4
24	L O0@	Y	-574	3-4
25	L O0@	L w	-/ / / 056	3-4

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

	L dl adqK`adk	Clqdbsnm	L`fmrstcdZa+j,es\	Knb`snmZs=$\
26	L O0@	W	-284	2-4
27	L O0@	Y	-574	2-4
28	L O0@	L w	-/ / / 512	2-4
3/	L O0@	W	-284	3-4
30	L O0@	Y	-574	3-4
31	L O0@	L w	-/ / / 512	3-4

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

	L dl adqK`adk	Clqdbsnm	L`fmrstcdZa+j,es\	Knb`snmZs=$\
0	L O0@	W	/	0
1	L O0@	Y	3-357	0
2	L O0@	L w	-/ / 2	0
3	L O0@	W	/	4
4	L O0@	Y	3-357	4
5	L O0@	L w	-/ / 2	4
6	L O0@	W	/	0
7	L O0@	Y	5-512	0
8	L O0@	L w	,-/ / 3	0
0/	L O0@	W	/	4
00	L O0@	Y	5-512	4
01	L O0@	L w	,-/ / 3	4
02	L O1@	W	/	1
03	L O1@	Y	2-114	1
04	L O1@	L w	/	1
05	L O1@	W	/	3
06	L O1@	Y	2-114	3
07	L O1@	L w	/	3
08	L O0@	W	/	1-4
1/	L O0@	Y	1-440	1-4
10	L O0@	L w	/	1-4
11	L O1@	W	/	1-4
12	L O1@	Y	1-440	1-4
13	L O1@	L w	/	1-4
14	L O1@	W	/	3-4
15	L O1@	Y	0-074	3-4
16	L O1@	L w	/	3-4
17	NUO	W	/	1-4
18	NUO	Y	3-167	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	/	2-4
21	L O0@	Y	-68	2-4
22	L O0@	L w	,-/ / / 152	2-4
23	L O0@	W	/	3-4
24	L O0@	Y	-68	3-4
25	L O0@	L w	,-/ / / 152	3-4
26	L O0@	W	/	2-4
27	L O0@	Y	-68	2-4
28	L O0@	L w	-/ / / 152	2-4
3/	L O0@	W	/	3-4
30	L O0@	Y	-68	3-4
31	L O0@	L w	-/ / / 152	3-4

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

	L dl adqK`adk	Clqdbsnm	L`fmhstcdZa+j,es\	Knb`snmZs+$\
0	L O0@	W	,0-804	0
1	L O0@	Y	2-206	0
2	L O0@	L w	-/ / 2	0
3	L O0@	W	,0-804	4
4	L O0@	Y	2-206	4
5	L O0@	L w	-/ / 2	4
6	L O0@	W	,2-/ 22	0
7	L O0@	Y	4-143	0
8	L O0@	L w	,-/ / 1	0
9	L O0@	W	,2-/ 22	4
10	L O0@	Y	4-143	4
11	L O0@	L w	,-/ / 1	4
12	L O1@	W	,0-237	1
13	L O1@	Y	1-224	1
14	L O1@	L w	-/ / / 563	1
15	L O1@	W	,0-237	3
16	L O1@	Y	1-224	3
17	L O1@	L w	-/ / / 563	3
18	L O0@	W	,0-04	1-4
19	L O0@	Y	0-881	1-4
20	L O0@	L w	-/ / / 464	1-4
21	L O1@	W	,0-06	1-4
22	L O1@	Y	1-/ 16	1-4
23	L O1@	L w	-/ / / 474	1-4
24	L O1@	W	,-403	3-4
25	L O1@	Y	-780	3-4
26	L O1@	L w	-/ / / 146	3-4
27	NUO	W	,0-872	1-4
28	NUO	Y	2-324	1-4
29	NUO	L w	/	1-4
30	L O0@	W	,-284	2-4
31	L O0@	Y	-574	2-4
32	L O0@	L w	,-/ / / 512	2-4
33	L O0@	W	,-284	3-4
34	L O0@	Y	-574	3-4
35	L O0@	L w	,-/ / / 512	3-4
36	L O0@	W	,-284	2-4
37	L O0@	Y	-574	2-4
38	L O0@	L w	,-/ / / 056	2-4
39	L O0@	W	,-284	3-4
40	L O0@	Y	-574	3-4
41	L O0@	L w	,-/ / / 056	3-4

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

	L dl adqK`adk	Clqdbsnm	L`fmhstcdZa+j,es\	Knb`snmZs+$\
0	L O0@	W	,1-101	0
1	L O0@	Y	0-166	0
2	L O0@	L w	-/ / 1	0
3	L O0@	W	,1-101	4
4	L O0@	Y	0-166	4
5	L O0@	L w	-/ / 1	4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes$\
6	L O0@	W	,3-178	0
7	L O0@	Y	1-365	0
8	L O0@	L w	-///383	0
0/	L O0@	W	,3-178	4
00	L O0@	Y	1-365	4
01	L O0@	L w	-///383	4
02	L O1@	W	,0-31	1
03	L O1@	Y	-71	1
04	L O1@	L w	-///60	1
05	L O1@	W	,0-31	3
06	L O1@	Y	-71	3
07	L O1@	L w	-///60	3
08	L O0@	W	,0-446	1-4
1/	L O0@	Y	-788	1-4
10	L O0@	L w	-///667	1-4
11	L O1@	W	,0-553	1-4
12	L O1@	Y	-850	1-4
13	L O1@	L w	-///721	1-4
14	L O1@	W	,-51	3-4
15	L O1@	Y	-247	3-4
16	L O1@	L w	-///20	3-4
17	NUO	W	,2-6/4	1-4
18	NUO	Y	1-028	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	,-575	2-4
21	L O0@	Y	-285	2-4
22	L O0@	L w	,-///707	2-4
23	L O0@	W	,-575	3-4
24	L O0@	Y	-285	3-4
25	L O0@	L w	,-///707	3-4
26	L O0@	W	,-575	2-4
27	L O0@	Y	-285	2-4
28	L O0@	L w	,-///443	2-4
3/	L O0@	W	,-575	3-4
30	L O0@	Y	-285	3-4
31	L O0@	L w	,-///443	3-4

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

	L dl adqK`adk	Clqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes$\
0	L O0@	W	,0-806	0
1	L O0@	Y	/	0
2	L O0@	L w	-///847	0
3	L O0@	W	,0-806	4
4	L O0@	Y	/	4
5	L O0@	L w	-///847	4
6	L O0@	W	,3-284	0
7	L O0@	Y	/	0
8	L O0@	L w	-//1	0
0/	L O0@	W	,3-284	4
00	L O0@	Y	/	4
01	L O0@	L w	-//1	4

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

	L dl adqK`adk	Chqdbsmm	L`fmstcdZa+j,es\	Knb`smmZs+$\
02	L O1@	W	,0-000	1
03	L O1@	Y	/	1
04	L O1@	L w	-/ / / 445	1
05	L O1@	W	,0-000	3
06	L O1@	Y	/	3
07	L O1@	L w	-/ / / 445	3
08	L O0@	W	,0-436	1-4
1/	L O0@	Y	/	1-4
10	L O0@	L w	-/ / / 663	1-4
11	L O1@	W	,0-600	1-4
12	L O1@	Y	/	1-4
13	L O1@	L w	-/ / / 745	1-4
14	L O1@	W	,-448	3-4
15	L O1@	Y	/	3-4
16	L O1@	L w	-/ / / 17	3-4
17	NUO	W	,3-8/ 3	1-4
18	NUO	Y	/	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	,-681	2-4
21	L O0@	Y	/	2-4
22	L O0@	L w	,-/ / / 681	2-4
23	L O0@	W	,-681	3-4
24	L O0@	Y	/	3-4
25	L O0@	L w	,-/ / / 681	3-4
26	L O0@	W	,-681	2-4
27	L O0@	Y	/	2-4
28	L O0@	L w	,-/ / / 681	2-4
3/	L O0@	W	,-681	3-4
30	L O0@	Y	/	3-4
31	L O0@	L w	,-/ / / 681	3-4

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

	L dl adqK`adk	Chqdbsmm	L`fmstcdZa+j,es\	Knb`smmZs+$\
0	L O0@	W	,1-101	0
1	L O0@	Y	,0-166	0
2	L O0@	L w	-/ / / 144	0
3	L O0@	W	,1-101	4
4	L O0@	Y	,0-166	4
5	L O0@	L w	-/ / / 144	4
6	L O0@	W	,3-178	0
7	L O0@	Y	,1-365	0
8	L O0@	L w	-/ / 3	0
0/	L O0@	W	,3-178	4
00	L O0@	Y	,1-365	4
01	L O0@	L w	-/ / 3	4
02	L O1@	W	,0-31	1
03	L O1@	Y	,-71	1
04	L O1@	L w	-/ / / 60	1
05	L O1@	W	,0-31	3
06	L O1@	Y	,-71	3
07	L O1@	L w	-/ / / 60	3

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

	L dl adqK`adk	Chqdbsbmm	L`fmhstcdZa+j,es\	Knb`sbmmZes+$ \
08	L O0@	W	,0-446	1-4
1/	L O0@	Y	,-788	1-4
10	L O0@	L w	-/ / / 667	1-4
11	L O1@	W	,0-553	1-4
12	L O1@	Y	,-850	1-4
13	L O1@	L w	-/ / / 721	1-4
14	L O1@	W	,-51	3-4
15	L O1@	Y	,-247	3-4
16	L O1@	L w	-/ / / 20	3-4
17	NUO	W	,3-407	1-4
18	NUO	Y	,1-5/ 7	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	,-575	2-4
21	L O0@	Y	,-285	2-4
22	L O0@	L w	,-/ / / 443	2-4
23	L O0@	W	,-575	3-4
24	L O0@	Y	,-285	3-4
25	L O0@	L w	,-/ / / 443	3-4
26	L O0@	W	,-575	2-4
27	L O0@	Y	,-285	2-4
28	L O0@	L w	,-/ / / 707	2-4
3/	L O0@	W	,-575	3-4
30	L O0@	Y	,-285	3-4
31	L O0@	L w	,-/ / / 707	3-4

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

	L dl adqK`adk	Chqdbsbmm	L`fmhstcdZa+j,es\	Knb`sbmmZes+$ \
0	L O0@	W	,0-804	0
1	L O0@	Y	,2-206	0
2	L O0@	L w	,-/ / 0	0
3	L O0@	W	,0-804	4
4	L O0@	Y	,2-206	4
5	L O0@	L w	,-/ / 0	4
6	L O0@	W	,2-/ 22	0
7	L O0@	Y	,4-143	0
8	L O0@	L w	-/ / 4	0
0/	L O0@	W	,2-/ 22	4
00	L O0@	Y	,4-143	4
01	L O0@	L w	-/ / 4	4
02	L O1@	W	,0-237	1
03	L O1@	Y	,1-224	1
04	L O1@	L w	-/ / / 563	1
05	L O1@	W	,0-237	3
06	L O1@	Y	,1-224	3
07	L O1@	L w	-/ / / 563	3
08	L O0@	W	,0-04	1-4
1/	L O0@	Y	,0-881	1-4
10	L O0@	L w	-/ / / 464	1-4
11	L O1@	W	,0-06	1-4
12	L O1@	Y	,1-/ 16	1-4
13	L O1@	L w	-/ / / 474	1-4

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

	L dl adqK adk	Chqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes$\
14	L O1@	W	,-403	3-4
15	L O1@	Y	,-780	3-4
16	L O1@	L w	-/ / / 146	3-4
17	NUO	W	,1-341	1-4
18	NUO	Y	,3-136	1-4
2/	NUO	L w	/	1-4
20	L O0@	W	,-284	2-4
21	L O0@	Y	,-574	2-4
22	L O0@	L w	,-/ / / 056	2-4
23	L O0@	W	,-284	3-4
24	L O0@	Y	,-574	3-4
25	L O0@	L w	,-/ / / 056	3-4
26	L O0@	W	,-284	2-4
27	L O0@	Y	,-574	2-4
28	L O0@	L w	,-/ / / 512	2-4
3/	L O0@	W	,-284	3-4
30	L O0@	Y	,-574	3-4
31	L O0@	L w	,-/ / / 512	3-4

Member Point Loads (BLC 77 : Lm1)

	L dl adqK adk	Chqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes$\
0	L 0	X	,4/ /	/

Member Point Loads (BLC 78 : Lm2)

	L dl adqK adk	Chqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes$\
0	L 1	X	,4/ /	/

Member Point Loads (BLC 79 : Lv1)

	L dl adqK adk	Chqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes$\
0	L 2	X	,14/	$ 4/

Member Point Loads (BLC 80 : Lv2)

	L dl adqK adk	Chqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes$\
0	L 2	X	,14/	$ 0/ /

Member Point Loads (BLC 81 : Antenna Ev)

	L dl adqK adk	Chqdbsmm	L`fmtstcdZa+j,es\	Knb`smmZes$\
0	L O0@	X	,-803	0
1	L O0@	L x	,-/ / / 346	0
2	L O0@	L y	-/ / / 5/ 8	0
3	L O0@	X	,-803	4
4	L O0@	L x	,-/ / / 346	4
5	L O0@	L y	-/ / / 5/ 8	4
6	L O0@	X	,0-240	0
7	L O0@	L x	,-/ / / 564	0
8	L O0@	L y	,-/ / / 8	0
0/	L O0@	X	,0-240	4
00	L O0@	L x	,-/ / / 564	4
01	L O0@	L y	,-/ / / 8	4

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

	L dl adqK`adk	Chqdbsmm	L`fmrstcdZa+j,es\	Knb`smmZs+$\
02	L O1@	X	,0-710	1
03	L O1@	L x	,-/ / / 80	1
04	L O1@	L y	/	1
05	L O1@	X	,0-710	3
06	L O1@	L x	,-/ / / 80	3
07	L O1@	L y	/	3
08	L O0@	X	,1-828	1-4
1/	L O0@	L x	,-/ / 0	1-4
10	L O0@	L y	/	1-4
11	L O1@	X	,2-012	1-4
12	L O1@	L x	,-/ / 1	1-4
13	L O1@	L y	/	1-4
14	L O1@	X	,-671	3-4
15	L O1@	L x	,-/ / / 280	3-4
16	L O1@	L y	/	3-4
17	NUO	X	,0-227	1-4
18	NUO	L x	/	1-4
2/	NUO	L y	/	1-4
20	L O0@	X	,-257	2-4
21	L O0@	L x	-/ / / 257	2-4
22	L O0@	L y	,-/ / / 012	2-4
23	L O0@	X	,-257	3-4
24	L O0@	L x	-/ / / 257	3-4
25	L O0@	L y	,-/ / / 012	3-4
26	L O0@	X	,-257	2-4
27	L O0@	L x	-/ / / 257	2-4
28	L O0@	L y	-/ / / 012	2-4
3/	L O0@	X	,-257	3-4
30	L O0@	L x	-/ / / 257	3-4
31	L O0@	L y	-/ / / 012	3-4

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

	L dl adqK`adk	Chqdbsmm	L`fmrstcdZa+j,es\	Knb`smmZs+$\
0	L O0@	Y	,1-173	0
1	L O0@	L w	,-/ / 1	0
2	L O0@	Y	,1-173	4
3	L O0@	L w	,-/ / 1	4
4	L O0@	Y	,2-265	0
5	L O0@	L w	-/ / 1	0
6	L O0@	Y	,2-265	4
7	L O0@	L w	-/ / 1	4
8	L O1@	Y	,3-441	1
0/	L O1@	L w	/	1
00	L O1@	Y	,3-441	3
01	L O1@	L w	/	3
02	L O0@	Y	,6-238	1-4
03	L O0@	L w	/	1-4
04	L O1@	Y	,6-7/ 8	1-4
05	L O1@	L w	/	1-4
06	L O1@	Y	,0-844	3-4
07	L O1@	L w	/	3-4

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

	LdladqK`adk	Chqdbsmm	L`fmrstcdZa~j,es\	Knb`smmZes~$\
08	NUO	Y	,2-234	1-4
1/	NUO	Lw	/	1-4
10	LO0@	Y	,-81	2-4
11	LO0@	Lw	-/ / / 2/ 6	2-4
12	LO0@	Y	,-81	3-4
13	LO0@	Lw	-/ / / 2/ 6	3-4
14	LO0@	Y	,-81	2-4
15	LO0@	Lw	,-/ / / 2/ 6	2-4
16	LO0@	Y	,-81	3-4
17	LO0@	Lw	,-/ / / 2/ 6	3-4

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

	LdladqK`adk	Chqdbsmm	L`fmrstcdZa~j,es\	Knb`smmZes~$\
0	LO0@	W	1-173	0
1	LO0@	Lw	,-/ / 0	0
2	LO0@	W	1-173	4
3	LO0@	Lw	,-/ / 0	4
4	LO0@	W	2-265	0
5	LO0@	Lw	,-/ / 1	0
6	LO0@	W	2-265	4
7	LO0@	Lw	,-/ / 1	4
8	LO1@	W	3-441	1
0/	LO1@	Lw	,-/ / 1	1
00	LO1@	W	3-441	3
01	LO1@	Lw	,-/ / 1	3
02	LO0@	W	6-238	1-4
03	LO0@	Lw	,-/ / 3	1-4
04	LO1@	W	6-7/ 8	1-4
05	LO1@	Lw	,-/ / 3	1-4
06	LO1@	W	0-844	3-4
07	LO1@	Lw	,-/ / / 866	3-4
08	NUO	W	2-234	1-4
1/	NUO	Lw	/	1-4
10	LO0@	W	-81	2-4
11	LO0@	Lw	-/ / / 81	2-4
12	LO0@	W	-81	3-4
13	LO0@	Lw	-/ / / 81	3-4
14	LO0@	W	-81	2-4
15	LO0@	Lw	-/ / / 81	2-4
16	LO0@	W	-81	3-4
17	LO0@	Lw	-/ / / 81	3-4

Member Area Loads

Inhms@	InhmsA	InhmsB	InhmsC	Chqdbsmm	Chrsqhatsmm	L`fmrstcdZ,re\
Mn C`s` sn Ochms--						

Envelope Joint Reactions

	Inhmns		WZka\	KB	X Zka\	KB	Y Zka\	KB	L WZ[,es\	KB	L X Z[,es\	KB	L Y Z[,es\	KB
0	M0	l`w	262-258	00	45/ -361	15	08/ -855	0	-/ 37	6	/	64	/	64
1		lhm	,3/ 1-204	4	1/ 3-043	6/	,114-825	6	,-341	02	/	0	/	0
2	M1	l`w	265-786	23	8/ 2-7/ 3	15	32/ -/ 16	0	-/ 83	0	/	64	/	64
3		lhm	,235-221	3/	2/ 5-546	6/	,131-827	6	,-52	32	/	0	/	0
4	M18	l`w	1/ -8	0/	06-758	04	1/ / -/ 65	8	/	64	/	64	/	64
5		lhm	,16-452	3	5-030	63	,165-784	2	/	0	/	0	/	0
6	M20	l`w	2/ -663	8	07-/ 1	1/	306-64	1	/	64	/	64	/	64
7		lhm	,11-3	2	5-028	55	,381-085	7	/	0	/	0	/	0
8	Sns`kr9	l`w	5/ 6-062	0/	0370-387	34	77/ -308	0						
0/		lhm	,5/ 6-061	3	412-023	56	,77/ -310	6						

Joint Reactions (By Combination)

	KB	InhmsK`adk	WZka\	X Zka\	Y Zka\	L WZ[,es\	L X Z[,es\	L Y Z[,es\
0	0	M0	6-640	174-426	08/ -855	,-337	/	/
1	0	M1	00-874	317-806	32/ -/ 16	-/ 83	/	/
2	0	M18	,2-031	7-511	,48-0/ 2	/	/	/
3	0	M20	,05-486	7-31	207-42	/	/	/
4	0	Sns`kr9	,-/ / 1	620-385	77/ -308			
5	0	BNF 'es(9	W9-016	X90-682	Y93-558			
6	1	M0	,148-342	174-478	037-/ 51	,-284	/	/
7	1	M1	,0/ 5-708	318-/ / 6	245-8/ 1	-/ 06	/	/
8	1	M18	,03-770	7-55	,114-782	/	/	/
0/	1	M20	,10-046	7-13	306-64	/	/	/
00	1	Sns`kr9	,3/ 1-20	620-385	585-710			
01	1	BNF 'es(9	W9-016	X90-682	Y93-558			
02	2	M0	,266-836	174-477	55-036	,-184	/	/
03	2	M1	,042-335	318-/ / 2	104-17	,-021	/	/
04	2	M18	,13-587	7-544	,165-784	/	/	/
05	2	M20	,11-3	7-14	218-366	/	/	/
06	2	Sns`kr9	,467-381	620-384	223-/ / 8			
07	2	BNF 'es(9	W9-016	X90-682	Y93-558			
08	3	M0	,3/ / -701	174-432	,06-277	,-1	/	/
1/	3	M1	,046-841	317-815	82-721	,-148	/	/
10	3	M18	,16-452	7-545	,157-360	/	/	/
11	3	M20	,1/ -735	7-26	081-/ 35	/	/	/
12	3	Sns`kr9	,5/ 6-061	620-384	-/ 08			
13	3	BNF 'es(9	W9-016	X90-682	Y93-558			
14	4	M0	,3/ 1-204	174-380	,0/ 5-181	,-0	/	/
15	4	M1	,044-638	317-724	,18-638	,-28	/	/
16	4	M18	,11-206	7-546	,151-826	/	/	/
17	4	M20	,00-0/ 5	7-401	46-4/ 2	/	/	/
18	4	Sns`kr9	,480-376	620-385	,230-364			
2/	4	BNF 'es(9	W9-016	X90-682	Y93-558			
20	5	M0	,187-556	174-286	,081-128	-/ / 3	/	/
21	5	M1	,0/ 3-474	317-563	,062-11	,-430	/	/
22	5	M18	,01-/ 02	7-553	,082-074	/	/	/
23	5	M20	4-346	7-65	,040-035	/	/	/
24	5	Sns`kr9	,3/ 8-7/ 8	620-385	,6/ 8-68			
25	5	BNF 'es(9	W9-016	X90-682	Y93-558			

Joint Reactions (By Combination) (Continued)

	KB	Inhmsk adk	WZa\	XZa\	YZa\	LWZ,es\	LXZ,es\	LYZ,es\
26	6	M0	,27-385	174-237	,114-825	-/ 37	/	/
27	6	M1	07-481	317-478	,131-827	,-502	/	/
28	6	M18	,-844	7-5	,07-232	/	/	/
3/	6	M20	1/ -750	7-848	,282-1/ 3	/	/	/
30	6	Sns`kr9	-/ / 1	620-385	,77/ -310			
31	6	BNF 'es(9	W9-016	X90-682	Y93-558			
32	7	M0	115-267	174-318	,071-711	,-/ / 5	/	/
33	7	M1	026-578	317-618	,058-141	,-424	/	/
34	7	M18	8-/ / 0	7-327	036-337	/	/	/
35	7	M20	18-131	7-8	,381-085	/	/	/
36	7	Sns`kr9	3/ 1-20	620-386	,585-712			
37	7	BNF 'es(9	W9-016	X90-682	Y93-558			
38	8	M0	234-807	174-4/ 4	,0/ / -703	,-0/ 5	/	/
4/	8	M1	073-/ 5	317-750	,16-256	,-276	/	/
40	8	M18	06-63	7-258	1/ / -/ 65	/	/	/
41	8	M20	2/ -663	7-651	,3/ 4-8/ 5	/	/	/
42	8	Sns`kr9	467-381	620-386	,223-/ 00			
43	8	BNF 'es(9	W9-016	X90-682	Y93-558			
44	0/	M0	26/ -243	174-42	,06-220	,-1	/	/
45	0/	M1	077-187	317-8/ 3	82-843	,-148	/	/
46	0/	M18	1/ -8	7-273	082-/ 11	/	/	/
47	0/	M20	16-510	7-568	,158-554	/	/	/
48	0/	Sns`kr9	5/ 6-062	620-386	,-/ 10			
5/	0/	BNF 'es(9	W9-016	X90-682	Y93-558			
50	00	M0	262-258	174-435	60-415	,-2/ 0	/	/
51	00	M1	074-743	317-820	106-3/ 3	,-018	/	/
52	00	M18	04-8	7-284	077-218	/	/	/
53	00	M20	05-254	7-514	,024-675	/	/	/
54	00	Sns`kr9	480-377	620-386	230-362			
55	00	BNF 'es(9	W9-016	X90-682	Y93-558			
56	01	M0	16/ -377	174-424	046-222	,-3/ 3	/	/
57	01	M1	023-546	317-803	25/ -38	-/ 11	/	/
58	01	M18	5-778	7-370	007-133	/	/	/
6/	01	M20	,1-113	7-455	62-610	/	/	/
60	01	Sns`kr9	3/ 8-70	620-386	6/ 8-677			
61	01	BNF 'es(9	W9-016	X90-682	Y93-558			
62	02	M0	,77-45	446-5/ 2	07-743	,-341	/	/
63	02	M1	81-643	705-373	147-5/ 1	,-3/ 8	/	/
64	02	M18	,2-665	06-700	,6/ -556	/	/	/
65	02	M20	,-308	06-612	7-0	/	/	/
66	02	Sns`kr9	,-/ / 0	03/ 8-510	103-78			
67	02	BNF 'es(9	W9-232	X90-7	Y93-544			
68	03	M0	,044-228	446-5/ 4	8-0/ 4	,-330	/	/
7/	03	M1	52-530	705-378	131-531	,-315	/	/
70	03	M18	,5-814	06-740	,004-058	/	/	/
71	03	M20	,1-206	06-564	27-14	/	/	/
72	03	Sns`kr9	,0/ / -828	03/ 8-510	063-717			
73	03	BNF 'es(9	W9-232	X90-7	Y93-544			
74	04	M0	,08/ -703	446-481	,0/ -47	,-306	/	/
75	04	M1	38-447	705-354	1/ 8-7/ 8	,-35	/	/
76	04	M18	,0/ -2/ 7	06-758	,024-81	/	/	/
77	04	M20	,2-578	06-583	15-22	/	/	/

Joint Reactions (By Combination) (Continued)

	KB	InhmsK`adk	WZa\	XZa\	YZa\	LWZ,es\	LXZ,es\	LYZ,es\
78	04	Sns`kr9	,044-142	03/8-510	78-528			
8/	04	BNF'es(9	W9-232	X90-7	Y93-544			
80	05	M0	,1/0-018	446-461	,21-440	,-281	/	/
81	05	M1	35-501	705-320	066-774	,-383	/	/
82	05	M18	,00-446	06-758	,026-502	/	/	/
83	05	M20	,2-5/0	06-638	,6-605	/	/	/
84	05	Sns`kr9	,058-564	03/8-510	-//3			
85	05	BNF'es(9	W9-232	X90-7	Y93-544			
86	06	M0	,086-063	446-44	,44-64	,-255	/	/
87	06	M1	38-035	705-281	034-357	,-417	/	/
88	06	M18	,8-610	06-754	,023-07	/	/	/
0//	06	M20	,-358	06-702	,35-770	/	/	/
0/0	06	Sns`kr9	,047-107	03/8-510	,80-231			
0/1	06	BNF'es(9	W9-232	X90-7	Y93-544			
0/2	07	M0	,053-322	446-412	,65-232	,-231	/	/
0/3	07	M1	53-056	705-235	001-138	,-452	/	/
0/4	07	M18	,5-583	06-743	,005-238	/	/	/
0/5	07	M20	3-2/8	06-787	,86-235	/	/	/
0/6	07	Sns`kr9	,0/1-540	03/8-510	,066-678			
0/7	07	BNF'es(9	W9-232	X90-7	Y93-544			
0/8	08	M0	,87-0/7	446-4/3	,72-866	,-221	/	/
00/	08	M1	83-0/1	705-203	86-/88	,-467	/	/
000	08	M18	,2-86	06-707	,63-462	/	/	/
001	08	M20	6-865	06-874	,042-330	/	/	/
002	08	Sns`kr9	/	03/8-510	,103-781			
003	08	BNF'es(9	W9-232	X90-7	Y93-544			
004	1/	M0	,20-370	446-4/8	,63-104	,-233	/	/
005	1/	M1	012-124	705-211	002-/83	,-451	/	/
006	1/	M18	,-816	06-66	,2/-05	/	/	/
007	1/	M20	0/-00	07-/1	,072-438	/	/	/
008	1/	Sns`kr9	0//-827	03/8-510	,063-720			
01/	1/	BNF'es(9	W9-232	X90-7	Y93-544			
010	10	M0	3-/34	446-418	,43-408	,-257	/	/
011	10	M1	026-2/2	705-245	034-842	,-416	/	/
012	10	M18	1-240	06-634	,8-214	/	/	/
013	10	M20	00-442	06-880	,060-64	/	/	/
014	10	Sns`kr9	044-141	03/8-510	,78-530			
015	10	BNF'es(9	W9-232	X90-7	Y93-544			
016	11	M0	03-366	446-437	,21-44	,-281	/	/
017	11	M1	03/-115	705-28	066-763	,-383	/	/
018	11	M18	2-5	06-634	,6-416	/	/	/
02/	11	M20	00-26	06-827	,026-7/3	/	/	/
020	11	Sns`kr9	058-563	03/8-510	,-//6			
021	11	BNF'es(9	W9-232	X90-7	Y93-544			
022	12	M0	0/-522	446-456	,8-246	,-307	/	/
023	12	M1	026-565	705-311	10/-165	,-35	/	/
024	12	M18	0-687	06-64	,0/-8/1	/	/	/
025	12	M20	7-0/7	06-771	,87-566	/	/	/
026	12	Sns`kr9	047-105	03/8-510	80-23			
027	12	BNF'es(9	W9-232	X90-7	Y93-544			
028	13	M0	,11-/63	446-476	00-115	,-332	/	/
03/	13	M1	011-547	705-345	132-356	,-314	/	/

Joint Reactions (By Combination) (Continued)

	KB	InhmsK adk	WZa\	XZa\	YZa\	LWZ,es\	LXZ,es\	LYZ,es\
030	13	M18	,0-02	06-66	,17-638	/	/	/
031	13	M20	2-084	06-7/ 7	,37-045	/	/	/
032	13	Sns`kr9	0/ 1-538	03/ 8-510	066-676			
033	13	BNF 'es(9	W9-232	X90-7	Y93-544			
034	14	M0	,253-387	45/ -357	,44-1/ 2	,-253	/	/
035	14	M1	254-775	8/ 2-686	054-188	,-475	/	/
036	14	M18	,1-07	7-5/ 4	,28-074	/	/	/
037	14	M20	-677	7-515	,04-778	/	/	/
038	14	Sns`kr9	,-/ / 3	0370-385	44-/ 11			
04/	14	BNF 'es(9	W90-133	X9-774	Y93-536			
040	15	M0	,270-0/ 2	45/ -361	,46-78	,-25	/	/
041	15	M1	247-331	8/ 2-7/ 3	05/ -604	,-48	/	/
042	15	M18	,1-781	7-5/ 8	,38-483	/	/	/
043	15	M20	-3/ 7	7-500	,8-570	/	/	/
044	15	Sns`kr9	,14-034	0370-385	32-44			
045	15	BNF 'es(9	W90-133	X9-774	Y93-536			
046	16	M0	,277-4/ 3	45/ -356	,52-/ 03	,-243	/	/
047	16	M1	244-410	8/ 2-683	040-745	,-5	/	/
048	16	M18	,2-373	7-50	,41-713	/	/	/
05/	16	M20	-2/ 5	7-514	,04-035	/	/	/
050	16	Sns`kr9	,25-050	0370-385	1/ -761			
051	16	BNF 'es(9	W90-133	X9-774	Y93-536			
052	17	M0	,278-836	45/ -348	,57-122	,-237	/	/
053	17	M1	244-128	8/ 2-671	033-157	,-5/ 7	/	/
054	17	M18	,2-56	7-50	,41-220	/	/	/
055	17	M20	-316	7-535	,12-6/ 7	/	/	/
056	17	Sns`kr9	,26-840	0370-385	,-/ / 2			
057	17	BNF 'es(9	W90-133	X9-774	Y93-536			
058	18	M0	,28/ -/ 47	45/ -341	,62-677	,-231	/	/
06/	18	M1	244-264	8/ 2-658	025-437	,-505	/	/
060	18	M18	,2-236	7-5/ 8	,41-/ / 0	/	/	/
061	18	M20	0-/ 46	7-555	,21-0/ 5	/	/	/
062	18	Sns`kr9	,25-863	0370-385	,10-236			
063	18	BNF 'es(9	W90-133	X9-774	Y93-536			
064	2/	M0	,272-457	45/ -330	,68-045	,-224	/	/
065	2/	M1	247-457	8/ 2-638	016-48	,-514	/	/
066	2/	M18	,1-616	7-5/ 7	,36-50	/	/	/
067	2/	M20	1-002	7-588	,34-082	/	/	/
068	2/	Sns`kr9	,14-503	0370-385	,33-258			
07/	2/	BNF 'es(9	W90-133	X9-774	Y93-536			
070	20	M0	,256-113	45/ -317	,70-148	,-222	/	/
071	20	M1	255-141	8/ 2-617	012-125	,-52	/	/
072	20	M18	,1-/ 22	7-5/ 3	,25-477	/	/	/
073	20	M20	2-/ / 0	7-625	,5/ -31	/	/	/
074	20	Sns`kr9	,-/ / 2	0370-385	,44-/ 20			
075	20	BNF 'es(9	W90-133	X9-774	Y93-536			
076	21	M0	,24/ -517	45/ -314	,67-46	,-225	/	/
077	21	M1	262-586	8/ 2-611	016-710	,-514	/	/
078	21	M18	,0-216	7-488	,15-071	/	/	/
08/	21	M20	2-286	7-64	,55-516	/	/	/
080	21	Sns`kr9	14-027	0370-385	,32-448			
081	21	BNF 'es(9	W90-133	X9-774	Y93-536			

Joint Reactions (By Combination) (Continued)

	KB	InhmsK adk	WZa\	XZa\	YZa\	LWZ,es\	LXZ,es\	LYZ,es\
082	22	M0	,232-112	45/ -320	,62-336	,-231	/	/
083	22	M1	265-506	8/ 2-621	025-570	,-505	/	/
084	22	M18	,-628	7-487	,11-834	/	/	/
085	22	M20	2-388	7-624	,50-06	/	/	/
086	22	Sns`kr9	25-043	0370-385	,1/ -770			
087	22	BNF 'es(9	W90-133	X9-774	Y93-536			
088	23	M0	,230-663	45/ -327	,57-116	,-237	/	/
1/ /	23	M1	265-786	8/ 2-634	033-157	,-5/ 7	/	/
1/ 0	23	M18	,-442	7-487	,12-323	/	/	/
1/ 1	23	M20	2-262	7-604	,41-502	/	/	/
1/ 2	23	Sns`kr9	26-833	0370-385	,-/ / 5			
1/ 3	23	BNF 'es(9	W90-133	X9-774	Y93-536			
1/ 4	24	M0	,230-546	45/ -334	,51-561	,-244	/	/
1/ 5	24	M1	265-650	8/ 2-646	040-878	,-5	/	/
1/ 6	24	M18	,-763	7-488	,12-65	/	/	/
1/ 7	24	M20	1-626	7-584	,33-107	/	/	/
1/ 8	24	Sns`kr9	25-856	0370-385	10-228			
10/	24	BNF 'es(9	W90-133	X9-774	Y93-536			
100	25	M0	,237-033	45/ -345	,46-2/ 4	,-250	/	/
101	25	M1	262-456	8/ 2-666	05/ -834	,-48	/	/
102	25	M18	,0-378	7-5	,17-042	/	/	/
103	25	M20	0-562	7-552	,20-016	/	/	/
104	25	Sns`kr9	14-5/ 6	0370-385	33-25			
105	25	BNF 'es(9	W90-133	X9-774	Y93-536			
106	26	M0	225-730	45/ -342	,44-087	,-253	/	/
107	26	M1	,224-640	8/ 2-66	054-188	,-475	/	/
108	26	M18	,0-847	7-57	,28-255	/	/	/
11/	26	M20	-761	7-484	,04-6/ 5	/	/	/
110	26	Sns`kr9	-/ / 3	0370-387	44-/ 18			
111	26	BNF 'es(9	W9,0-007	X9-774	Y93-536			
112	27	M0	21/ -071	45/ -334	,46-774	,-25	/	/
113	27	M1	,232-057	8/ 2-646	05/ -600	,-48	/	/
114	27	M18	,1-5/ 7	7-6/ 3	,38-664	/	/	/
115	27	M20	-344	7-481	,8-384	/	/	/
116	27	Sns`kr9	,14-027	0370-387	32-446			
117	27	BNF 'es(9	W9,0-007	X9-774	Y93-536			
118	28	M0	201-6/ 4	45/ -330	,52-/ / 8	,-243	/	/
12/	28	M1	,235-/ 54	8/ 2-64	040-741	,-5	/	/
120	28	M18	,2-070	7-601	,42-/ 03	/	/	/
121	28	M20	-275	7-484	,03-840	/	/	/
122	28	Sns`kr9	,25-043	0370-387	1/ -768			
123	28	BNF 'es(9	W9,0-007	X9-774	Y93-536			
124	3/	M0	200-1/ 3	45/ -33	,57-118	,-237	/	/
125	3/	M1	,235-221	8/ 2-637	033-155	,-5/ 7	/	/
126	3/	M18	,2-260	7-60	,41-42	/	/	/
127	3/	M20	-444	7-5	,12-4/ 3	/	/	/
128	3/	Sns`kr9	,26-833	0370-387	-/ / 3			
13/	3/	BNF 'es(9	W9,0-007	X9-774	Y93-536			
130	30	M0	200-/ 28	45/ -328	,62-674	,-231	/	/
131	30	M1	,235-075	8/ 2-635	025-436	,-505	/	/
132	30	M18	,2-/ 42	7-6/ 8	,41-100	/	/	/
133	30	M20	0-121	7-5/ 4	,20-781	/	/	/

Joint Reactions (By Combination) (Continued)

	KB	InhmsK`adk	WZka\	XZka\	YZka\	LWZj,es\	LXZj,es\	LYZj,es\
134	30	Sns`kr9	,25-856	0370-387	,10-230			
135	30	BNF 'es(9	W9,0-007	X9-774	Y93-536			
136	31	M0	206-361	45/ -328	,68-043	,-224	/	/
137	31	M1	,231-875	8/ 2-636	016-482	,-514	/	/
138	31	M18	,1-348	7-588	,36-723	/	/	/
14/	31	M20	1-255	7-501	,33-855	/	/	/
140	31	Sns`kr9	,14-5/ 6	0370-387	,33-251			
141	31	BNF 'es(9	W9,0-007	X9-774	Y93-536			
142	32	M0	222-7/ 2	45/ -335	,70-148	,-222	/	/
143	32	M1	,224-203	8/ 2-647	012-135	,-52	/	/
144	32	M18	,0-718	7-563	,25-714	/	/	/
145	32	M20	2-233	7-51	,5/ -075	/	/	/
146	32	Sns`kr9	-/ / 3	0370-387	,44-/ 13			
147	32	BNF 'es(9	W9,0-007	X9-774	Y93-536			
148	33	M0	24/ -341	45/ -343	,67-461	,-225	/	/
15/	33	M1	,216-786	8/ 2-661	016-724	,-514	/	/
150	33	M18	,0-075	7-54	,15-310	/	/	/
151	33	M20	2-665	7-511	,55-284	/	/	/
152	33	Sns`kr9	14-034	0370-387	,32-441			
153	33	BNF 'es(9	W9,0-007	X9-774	Y93-536			
154	34	M0	246-822	45/ -347	,62-336	,-231	/	/
155	34	M1	,214-/ / 0	8/ 2-67	025-585	,-505	/	/
156	34	M18	,-506	7-531	,12-064	/	/	/
157	34	M20	2-735	7-508	,5/ -836	/	/	/
158	34	Sns`kr9	25-050	0370-387	,1/ -763			
16/	34	BNF 'es(9	W9,0-007	X9-774	Y93-536			
160	35	M0	248-33	45/ -348	,57-116	,-237	/	/
161	35	M1	,213-624	8/ 2-670	033-170	,-5/ 7	/	/
162	35	M18	,-314	7-533	,12-543	/	/	/
163	35	M20	2-560	7-503	,41-288	/	/	/
164	35	Sns`kr9	26-840	0370-387	-/ / 0			
165	35	BNF 'es(9	W9,0-007	X9-774	Y93-536			
166	36	M0	248-500	45/ -35	,51-561	,-244	/	/
167	36	M1	,213-771	8/ 2-672	040-888	,-5	/	/
168	36	M18	,-632	7-534	,12-858	/	/	/
17/	36	M20	1-877	7-50	,33-/ 02	/	/	/
170	36	Sns`kr9	25-863	0370-387	10-234			
171	36	BNF 'es(9	W9,0-007	X9-774	Y93-536			
172	37	M0	242-070	45/ -348	,46-2/ 2	,-250	/	/
173	37	M1	,217-/ 71	8/ 2-670	05/ -841	,-48	/	/
174	37	M18	,0-221	7-544	,17-236	/	/	/
175	37	M20	0-736	7-5/ 2	,2/ -825	/	/	/
176	37	Sns`kr9	14-503	0370-387	33-256			
177	37	BNF 'es(9	W9,0-007	X9-774	Y93-536			
178	38	M0	,04-2/ 2	311-86	,31-751	,-163	/	/
18/	38	M1	04-2/ 2	555-188	007-800	,-323	/	/
180	38	M18	,1-/ / 0	7-501	,27-/ / 5	/	/	/
181	38	M20	1-/ / 0	7-504	,27-/ 32	/	/	/
182	38	Sns`kr9	/	00/ 5-385	/			
183	38	BNF 'es(9	W9-/ 73	X90-075	Y93-543			
184	4/	M0	,1/ 2-/ 62	311-847	,31-751	,-163	/	/
185	4/	M1	1/ 2-077	555-168	007-8/ 3	,-323	/	/

Joint Reactions (By Combination) (Continued)

	KB	InhmsK adk	WZa\	XZa\	YZa\	LWZ[,es\	LXZ[,es\	LYZ[,es\
186	4/	M18	,1-/ 48	7-5/ 7	,26-832	/	/	/
187	4/	M20	0-831	7-540	,27-0/ 1	/	/	/
188	4/	Sns`kr9	,-/ / 1	00/ 5-385	,-/ / 2			
2/ /	4/	BNF 'es(9	W9-821	X90-075	Y93-543			
2/ 0	40	M0	,06-738	222-/ 33	,1/ -3/ 6	,-122	/	/
2/ 1	40	M1	06-738	4/ / -15	0/ 8-031	,-2/ 2	/	/
2/ 2	40	M18	,1-224	0/ -/ 41	,33-232	/	/	/
2/ 3	40	M20	1-223	0/ -/ 45	,33-281	/	/	/
2/ 4	40	Sns`kr9	/	742-301	,-/ / 0			
2/ 5	40	BNF 'es(9	W9-016	X90-682	Y93-558			
2/ 6	41	M0	,04-473	184-312	,2-555	,-113	/	/
2/ 7	41	M1	04-687	332-640	01/ -043	,-134	/	/
2/ 8	41	M18	,0-424	7-8/ 4	,17-3/ 0	/	/	/
20/	41	M20	0-210	7-8/ 4	,13-255	/	/	/
200	41	Sns`kr9	/	645-874	52-61			
201	41	BNF 'es(9	W9-016	X90-682	Y93-558			
202	42	M0	,25-152	184-312	,4-5/ 1	,-110	/	/
203	42	M1	5-633	332-640	006-/ 12	,-137	/	/
204	42	M18	,1-58	7-803	,32-/ 58	/	/	/
205	42	M20	-237	7-786	,02-058	/	/	/
206	42	Sns`kr9	,20-750	645-874	44-072			
207	42	BNF 'es(9	W9-016	X90-682	Y93-558			
208	43	M0	,40-351	184-310	,0/ -776	,-104	/	/
21/	43	M1	-014	332-637	0/ 7-366	,-146	/	/
210	43	M18	,2-576	7-811	,45-620	/	/	/
211	43	M20	,-05	7-783	,7-887	/	/	/
212	43	Sns`kr9	,44-073	645-874	20-751			
213	43	BNF 'es(9	W9-016	X90-682	Y93-558			
214	44	M0	,46-00	184-307	,07-0/ 5	,-1/ 6	/	/
215	44	M1	,1-175	332-632	85-7/ 2	,-158	/	/
216	44	M18	,3-141	7-816	,54-618	/	/	/
217	44	M20	,-/ 64	7-786	,01-857	/	/	/
218	44	Sns`kr9	,52-611	645-874	-/ / 0			
22/	44	BNF 'es(9	W9-016	X90-682	Y93-558			
220	45	M0	,40-585	184-303	,14-214	,-088	/	/
221	45	M1	-047	332-625	74-018	,-170	/	/
222	45	M18	,3-117	7-818	,56-540	/	/	/
223	45	M20	-471	7-8/ 4	,13-/ 01	/	/	/
224	45	Sns`kr9	,44-073	645-874	,20-75			
225	45	BNF 'es(9	W9-016	X90-682	Y93-558			
226	46	M0	,25-57	184-300	,2/ -5/ 8	,-082	/	/
227	46	M1	5-7/ 2	332-62	65-473	,-178	/	/
228	46	M18	,2-513	7-816	,50-880	/	/	/
23/	46	M20	0-528	7-806	,28-056	/	/	/
230	46	Sns`kr9	,20-750	645-874	,44-072			
231	46	BNF 'es(9	W9-016	X90-682	Y93-558			
232	47	M0	,05-/ 71	184-3/ 8	,21-432	,-080	/	/
233	47	M1	04-757	332-616	62-347	,-182	/	/
234	47	M18	,1-5/ 6	7-810	,4/ -153	/	/	/
235	47	M20	1-71	7-817	,43-263	/	/	/
236	47	Sns`kr9	/	645-874	,52-611			
237	47	BNF 'es(9	W9-016	X90-682	Y93-558			

Joint Reactions (By Combination) (Continued)

	KB	InhmsK adk	WZa\	X Za\	Y Za\	L WZ4,es\	L X Z4,es\	L Y Z4,es\
238	48	M0	3-471	184-30	,2/ -5/ 5	,-082	/	/
24/	48	M1	13-813	332-618	65-480	,-178	/	/
240	48	M18	,0-344	7-800	,24-5/ 7	/	/	/
241	48	M20	2-70	7-824	,54-451	/	/	/
242	48	Sns`kr9	20-750	645-874	,44-074			
243	48	BNF 'es(9	W9-016	X90-682	Y93-558			
244	5/	M0	08-670	184-301	,14-21	,-088	/	/
245	5/	M1	20-431	332-622	74-030	,-170	/	/
246	5/	M18	,-365	7-8/ 1	,10-836	/	/	/
247	5/	M20	3-225	7-826	,58-626	/	/	/
248	5/	Sns`kr9	44-073	645-874	,20-753			
25/	5/	BNF 'es(9	W9-016	X90-682	Y93-558			
250	50	M0	14-334	184-305	,07-0	,-1/ 6	/	/
251	50	M1	22-841	332-63	85-705	,-158	/	/
252	50	M18	-/ 64	7-785	,01-828	/	/	/
253	50	M20	3-140	7-822	,54-67	/	/	/
254	50	Sns`kr9	52-612	645-874	,-/ / 2			
255	50	BNF 'es(9	W9-016	X90-682	Y93-558			
256	51	M0	1/ -/ 35	184-308	,0/ -770	,-104	/	/
257	51	M1	20-4/ 4	332-634	0/ 7-377	,-146	/	/
258	51	M18	-/ 44	7-783	,00-/ / 3	/	/	/
26/	51	M20	2-467	7-815	,43-634	/	/	/
260	51	Sns`kr9	44-073	645-874	20-747			
261	51	BNF 'es(9	W9-016	X90-682	Y93-558			
262	52	M0	4-/ 18	184-311	,4-488	,-110	/	/
263	52	M1	13-750	332-638	006-/ 18	,-137	/	/
264	52	M18	,-421	7-787	,05-552	/	/	/
265	52	M20	1-4/ 2	7-804	,28-476	/	/	/
266	52	Sns`kr9	20-750	645-874	44-070			
267	52	BNF 'es(9	W9-016	X90-682	Y93-558			
268	53	M0	,0/ -582	1/ 3-053	0-811	,-05	/	/
27/	53	M1	0/ -8/ 6	2/ 5-562	8/ -131	,-051	/	/
270	53	M18	,-784	5-038	,05-138	/	/	/
271	53	M20	-570	5-037	,01-083	/	/	/
272	53	Sns`kr9	/	412-023	52-610			
273	53	BNF 'es(9	W9-016	X90-682	Y93-558			
274	54	M0	,20-255	1/ 3-053	,-/ 02	,-046	/	/
275	54	M1	0-728	2/ 5-562	76-001	,-054	/	/
276	54	M18	,1-/ 35	5-044	,2/ -803	/	/	/
277	54	M20	,-177	5-031	,0-/ / 1	/	/	/
278	54	Sns`kr9	,20-750	412-023	44-072			
28/	54	BNF 'es(9	W9-016	X90-682	Y93-558			
280	55	M0	,35-45	1/ 3-052	,4-187	,-040	/	/
281	55	M1	,3-680	2/ 5-560	67-456	,-063	/	/
282	55	M18	,2-/ 3	5-05	,33-463	/	/	/
283	55	M20	,-682	5-028	2-055	/	/	/
284	55	Sns`kr9	,44-073	412-023	20-751			
285	55	BNF 'es(9	W9-016	X90-682	Y93-558			
286	56	M0	,41-1/ 6	1/ 3-050	,01-406	,-032	/	/
287	56	M1	,6-1/ 5	2/ 5-557	55-783	,-075	/	/
288	56	M18	,2-5/ 2	5-052	,42-46	/	/	/
3/ /	56	M20	,-6/ 5	5-030	,-7/ 5	/	/	/

Joint Reactions (By Combination) (Continued)

	KB	InhmsK`adk	WZka\	XZka\	YZka\	LWZj,es\	LXZj,es\	LYZj,es\
3/0	56	Sns`kr9	,52-611	412-023	-/ / 1			
3/1	56	BNF 'es(9	W9-016	X90-682	Y93-558			
3/2	57	M0	,35-684	1/3-047	,08-625	,-024	/	/
3/3	57	M1	,3-647	2/5-552	44-108	,-087	/	/
3/4	57	M18	,2-470	5-054	,44-382	/	/	/
3/5	57	M20	,-/40	5-037	,00-738	/	/	/
3/6	57	Sns`kr9	,44-073	412-023	,20-748			
3/7	57	BNF 'es(9	W9-016	X90-682	Y93-558			
3/8	58	M0	,20-672	1/3-044	,14-/1	,-018	/	/
30/	58	M1	0-787	2/5-548	35-562	,-1/5	/	/
300	58	M18	,1-868	5-052	,38-724	/	/	/
301	58	M20	0-/ / 2	5-045	,16	/	/	/
302	58	Sns`kr9	,20-750	412-023	,44-071			
303	58	BNF 'es(9	W9-016	X90-682	Y93-558			
304	6/	M0	,00-081	1/3-043	,15-843	,-016	/	/
305	6/	M1	0/-867	2/5-546	32-434	,-10	/	/
306	6/	M18	,0-856	5-048	,27-000	/	/	/
307	6/	M20	1-070	5-052	,31-1/1	/	/	/
308	6/	Sns`kr9	/	412-023	,52-611			
31/	6/	BNF 'es(9	W9-016	X90-682	Y93-558			
310	60	M0	8-355	1/3-044	,14-/07	,-018	/	/
311	60	M1	1/-/38	2/5-547	35-566	,-1/5	/	/
312	60	M18	,-708	5-042	,12-348	/	/	/
313	60	M20	2-055	5-057	,42-274	/	/	/
314	60	Sns`kr9	20-750	412-023	,44-073			
315	60	BNF 'es(9	W9-016	X90-682	Y93-558			
316	61	M0	13-55	1/3-046	,08-621	,-024	/	/
317	61	M1	15-567	2/5-550	44-115	,-087	/	/
318	61	M18	-046	5-035	,8-7/0	/	/	/
32/	61	M20	2-577	5-058	,46-445	/	/	/
320	61	Sns`kr9	44-073	412-023	,20-752			
321	61	BNF 'es(9	W9-016	X90-682	Y93-558			
322	62	M0	2/-211	1/3-05	,01-402	,-032	/	/
323	62	M1	18-/80	2/5-555	55-8/1	,-075	/	/
324	62	M18	-6/6	5-030	,-683	/	/	/
325	62	M20	2-5/2	5-056	,42-487	/	/	/
326	62	Sns`kr9	52-612	412-023	,-/ / 2			
327	62	BNF 'es(9	W9-016	X90-682	Y93-558			
328	63	M0	13-814	1/3-051	,4-183	,-040	/	/
33/	63	M1	15-53	2/5-56	67-463	,-063	/	/
330	63	M18	-577	5-030	0-030	/	/	/
331	63	M20	1-820	5-051	,31-452	/	/	/
332	63	Sns`kr9	44-073	412-023	20-747			
333	63	BNF 'es(9	W9-016	X90-682	Y93-558			
334	64	M0	8-802	1/3-052	,-/00	,-046	/	/
335	64	M1	08-874	2/5-561	76-005	,-054	/	/
336	64	M18	-0/3	5-032	,3-404	/	/	/
337	64	M20	0-748	5-044	,16-3/8	/	/	/
338	64	Sns`kr9	20-750	412-023	44-070			
34/	64	BNF 'es(9	W9-016	X90-682	Y93-558			

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

	Ldl adq	Rg`od	Bncd	Knbzes	KB	Rgd`q	Knbzes	Chq	KB	ogh)Omb Zea\	ogh)Oms	ogh)Lm	ogh)Lm	Ba	Dpm
0	L 2	OHDD^2-/	-284	1-4	18	-/ 70	1-4		8	46/ 26-361	541/ 4	4-638	4-638	0	G0,0a
1	NUO	OHDD^3-/	-006	2-764	18	-/ 35	-64		4	72/ 86-821	8213/	0/ -520	0/ -520	0	G0,0a
2	L O0@	OHDD^1-/	-168	3-702	8	-00/	-764		8	1/ 755-622	2102/	0-761	0-761	0	G0,0a
3	L O1@	OHDD^1-/	-145	3-702	2	-0/ 4	0-827		8	1/ 755-622	2102/	0-761	0-761	0	G0,0a
4	L 01	OHDD^1-/	-083	3-/ 52	7	-013	3-004		7	127/ 7-43	2102/	0-761	0-761	0	G0,0a
5	L 03	OHDD^1-/	-/ 01	1-/ 51	3	-/ / 1	/		11	151/ 3-5/ 4	2102/	0-761	0-761	0	G0,0a
6	L 05@	OHDD^1-/	-/ 05	3-012	1	-/ / 1	/		11	151/ 3-5/ 4	2102/	0-761	0-761	0	G0,0a)

VzW SMART Tool© Vendor

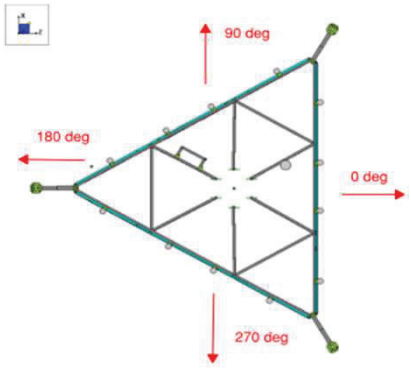
Client:	Verizon Wireless	Date:	1/28/2024
Site Name:	SOUTHINGTON_I691_CT - A		
MDG #:	5000103257		
Fuze ID #:	17226147	Page:	1

Version 2.00

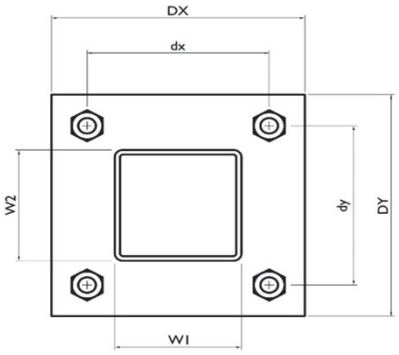
I. Mount-to-Tower Connection Check

Custom Orientation Required	Yes

Nodes (labeled per Risa)	Orientation (per graphic of typical platform)
N1	0
N2	0



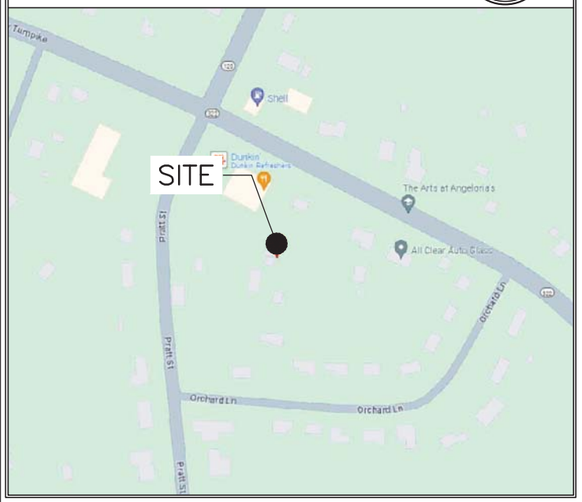
Tower Connection Bolt Checks	Yes
Bolt Orientation	Parallel
Bolt Quantity per Reaction:	4
d_x (in) *(Delta X of typ. bolt config. sketch)* :	5
d_y (in) *(Delta Y of typ. bolt config. sketch)* :	5
Bolt Type:	F1554 Gr.36
Bolt Diameter (in):	0.5
Required Tensile Strength / bolt (kips):	0.7
Required Shear Strength / bolt (kips):	0.2
Tensile Capacity / bolt (kips):	6.4
Shear Capacity / bolt (kips):	3.8
Bolt Overall Utilization:	**12.4%**
Tower Connection Baseplate Checks	No



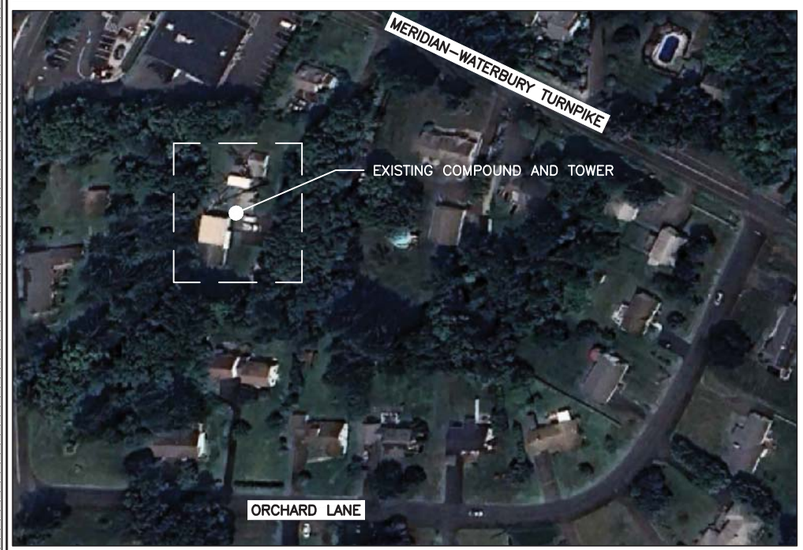
NOTE:
AN ANALYSIS OF THE CAPACITY OF THE STRUCTURE TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY MORRISON HERSHIELD DATED MAY 31, 2024.

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

LOCATION MAP
N.T.S

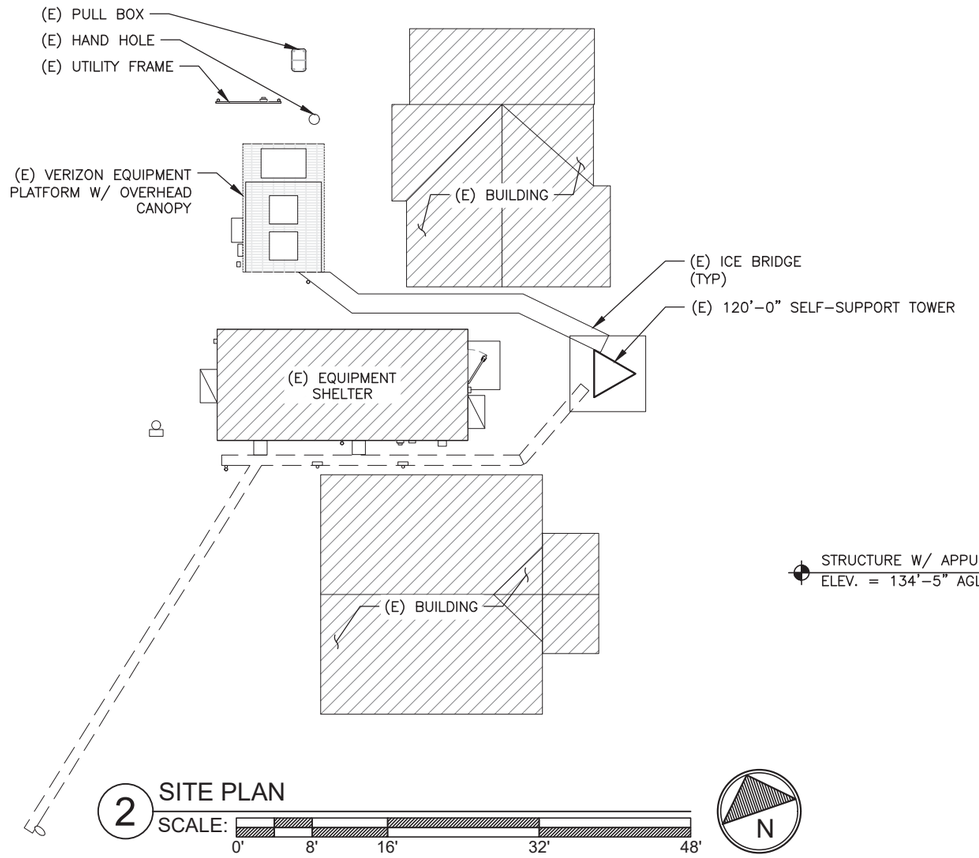


APPROXIMATE COORDINATES:	LATITUDE:	41° 33' 24.54" N	41.556806° N
	LONGITUDE:	72° 51' 10.84" W	72.853000° W



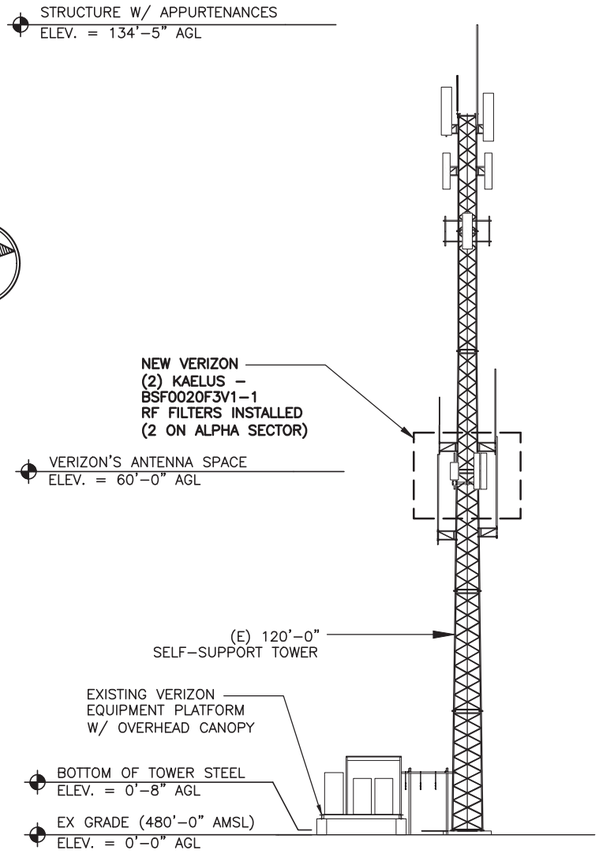
N

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



2 SITE PLAN
SCALE: 0' 8' 16' 32' 48'

N



3 TOWER ELEVATION
SCALE: N.T.S

verizon
20 ALEXANDER DRIVE
WALLINGFORD, CT 06492

B+T GRP
MTS ENGINEERING, P.L.L.C.
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
btwo@btgrp.com

SOUTHINGTON_1691_CT - A

250 MERIDIAN WATERBURY TURNPIKE
SOUTHINGTON, CT 06489

EXISTING SELF-SUPPORT TOWER

PROJECT NO:	G0164844.003.01
CHECKED BY:	TDG

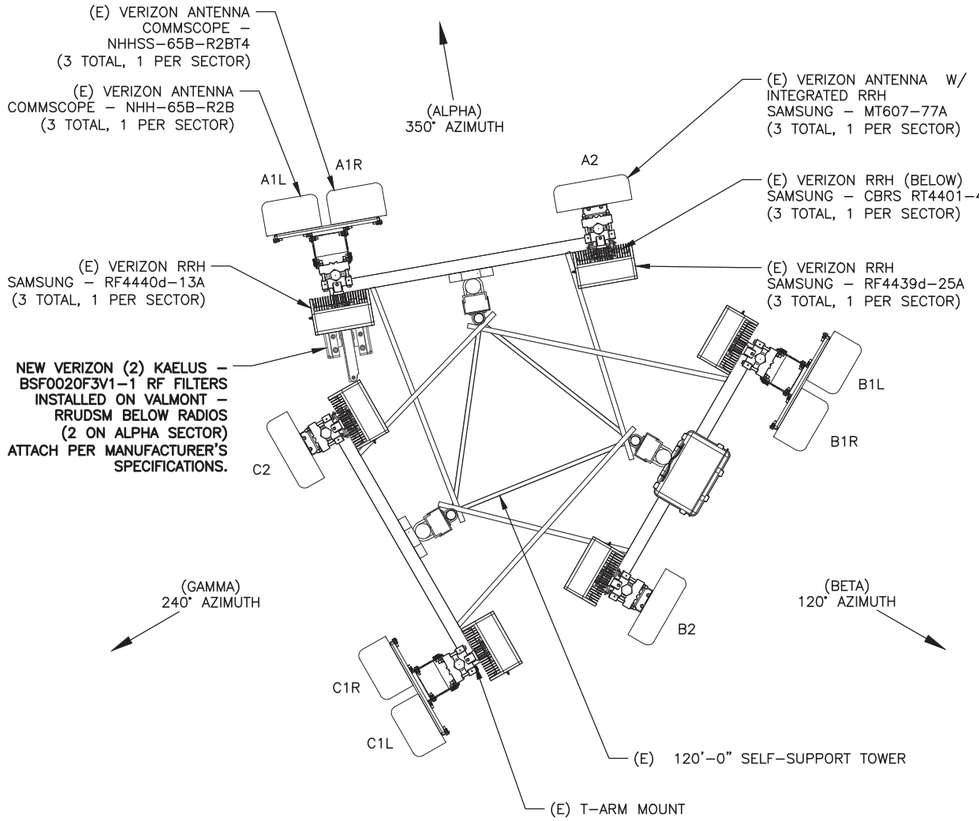
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
A	6/10/24	JDB	ISSUED FOR REVIEW

MTS ENGINEERING P.L.L.C.
PEC.0001564
Expires 2/10/25

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT

SHEET NUMBER:	REVISION:
LE-1	A

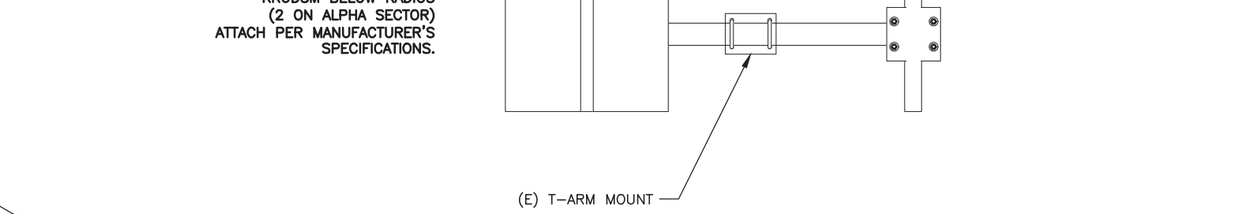


NOTE:

ANTENNA POSITIONS LABELED PER MOUNT ANALYSIS

1 NEW RF FILTER PLAN

SCALE: 0' 1' 2' 4' 8'



NOTE:

ELEVATION VIEW FROM BEHIND ANTENNAS

2 NEW RF FILTER ELEVATION

SCALE: 0' 1' 2' 3' 4' 5'

N

verizon

20 ALEXANDER DRIVE
WALLINGFORD, CT 06492

B+T GRP

MTS ENGINEERING, P.L.L.C.
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
btwo@btgrp.com

SOUTHINGTON
I691_CT - A

250 MERIDAN WATERBURY TURNPIKE
SOUTHINGTON, CT 06489

EXISTING SELF-SUPPORT TOWER

PROJECT NO:	G0164844.003.01
CHECKED BY:	TDG

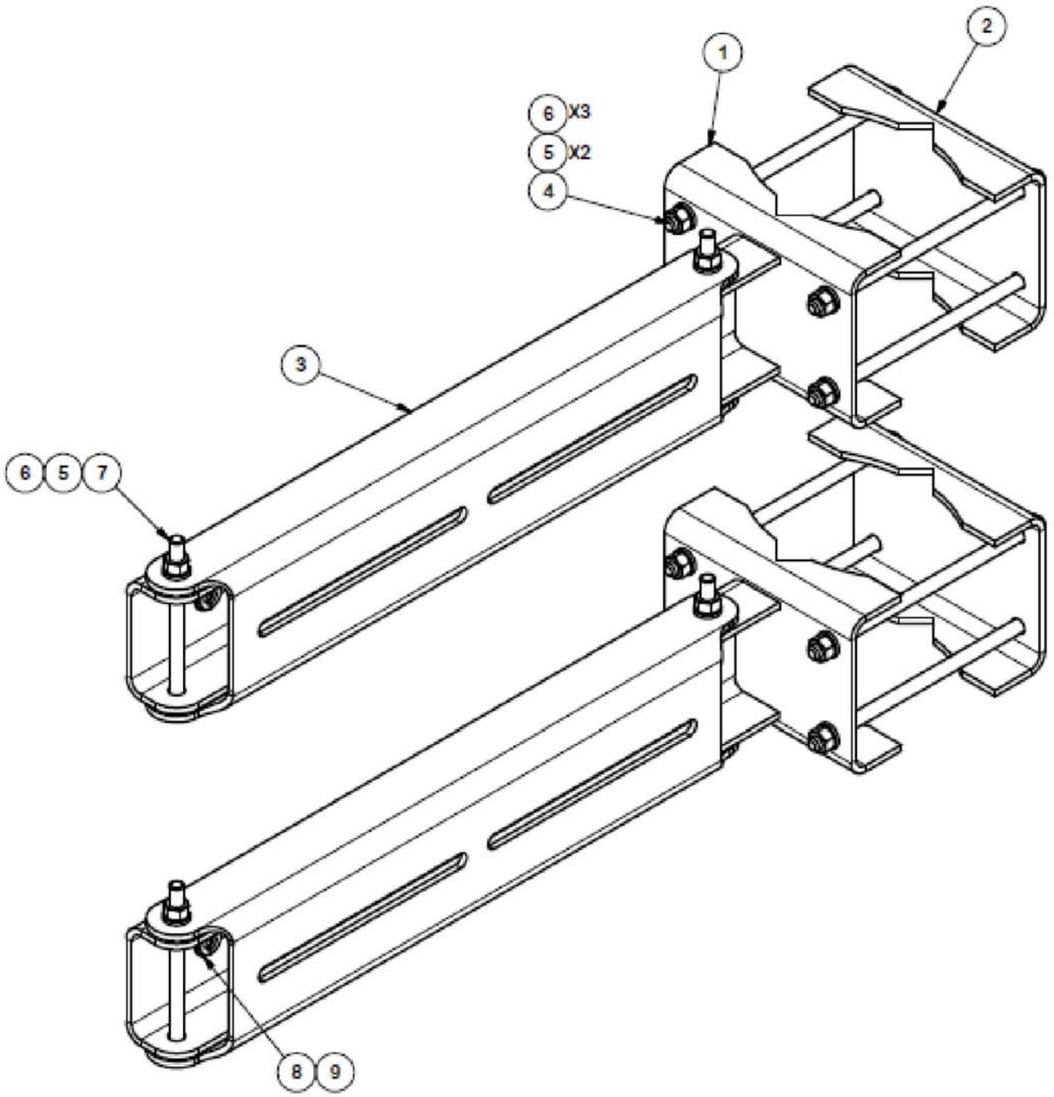
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
A	6/10/24	JDB	ISSUED FOR REVIEW

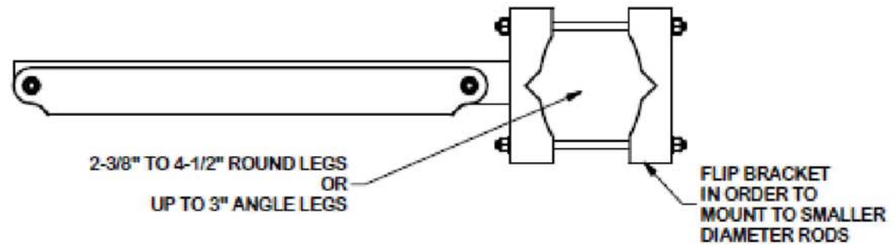
MTS ENGINEERING P.L.L.C.
PEC.0001564
Expires 2/10/25

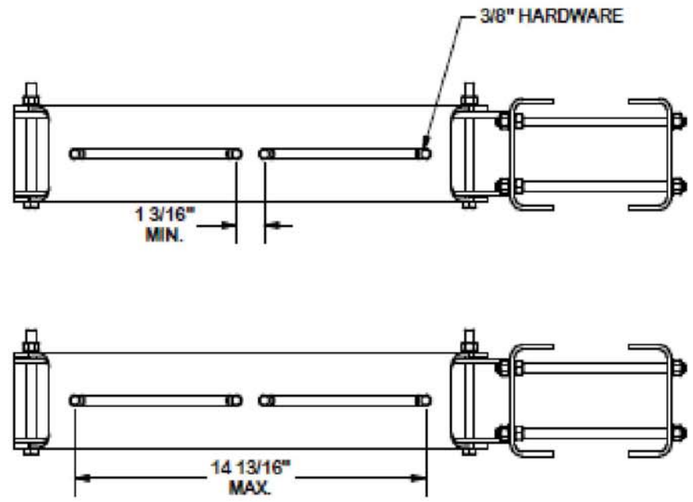
THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT

SHEET NUMBER:	REVISION:
LE-2	A



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





TOLERANCE NOTES

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

DESCRIPTION: RRU DUAL SWIVEL MOUNT

SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446
Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
	CEK 1/12/2015		RRUDSM	1 OF 1

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	SHOP	BMC 2/3/2015	RRUDSM