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

April 26, 2024

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

RE: **Notice of Exempt Modification for Verizon Wireless: 5000244968**
Crown Site ID# 842858
49 South Road, Bolton, CT 06043
Latitude: 41° 47′ 20.43″ / Longitude: -72° 25′ 44.91″

Dear Ms. Bachman:

Verizon Wireless currently maintains twelve (12) antennas at the 107-foot mount on the existing 120-foot monopole tower located at 49 South Road, Bolton, CT. The property is owned Leonard & Cheryl Giglio and the tower is owned by Crown Castle. Verizon now intends to replace six (6) antennas, add three (3) new antennas and ancillary antenna equipment at the 107ft 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:

(3) Commscope NHH-65B-R2B Antennas
(3) Commscope-NHHSS-65B-R2BT4 Antennas
(3) Samsung-MT6413-77A Antennas
(3) Samsung- B2/B66A RRH
(3) Samsung- RF4461D-13A Radios
(3) Samsung RT4423-48A/B Radios
(2) RF/CELLWAVE – 6x12 Hyperflex Cables
(2) RRFDC-3315-PF-48 12OVP BOX
(3) Commscope – BSAMNT-SBS-1-2 Antennas Mount Brackets
Mount modifications per TES

Remove:

(4) Swedcom-SC-E6014 REV2 Antennas
(3) Swedcom – SLX 5512 Antennas
(2) Antel BXA 1711063 Antennas
(2) Antel BXA-70063-6CF Antennas
(3) Nokia UHBA B13 RRH Radios
(6) RFS/Celwave FD9R6004 Diplexers
(6) Andrew LDF7-50A 1 5/8" Coaxial Cables

Tower:
Ground:
Install New:

(19) Graybar – Rack
(3) RaycapINC-001 2260-ALM
(1) Raycap
(1) Commscope – RS485
(6) Commsope- PS-1600-73
(6) Commscope PS-Bypass
(1) Commscope PS-R-1600
(1) Commscope Pulsar Edge
(7) Samsung Kits
(3) Nokia Kits
(3) HP Kits

The facility was originally approved by the Connecticut Siting Council, Docket No. 240 on July 7, 2003.

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 Rodney Fournier, First Selectman, Town of Bolton and Mike D'Amato, ZEO, Town of Bolton. Leonard & Cheryl Giglio, Property Owner. 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:

Rodney Fournier, First Selectman
Town of Bolton
222 Bolton Center Road
Bolton, CT 06043
(860) 649-8066

Mike D'Amato, ZEO
Town of Bolton
222 Bolton Center Road
Bolton, CT 06043
(860) 649-8066

Leonard & Cheryl Giglio, Property Owner
49 South Road
Bolton, CT 06043

Crown Castle, Tower Owner

DOCKET NO. 240 – AT&T Wireless PCS, LLC d/b/a AT&T Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility in Bolton, Connecticut.	)))	Connecticut Siting Council

July 7, 2003

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to AT&T Wireless PCS, LLC (AT&T) for the construction, maintenance and operation of a wireless telecommunications facility at proposed Candidate A site (Giglio property) located at 49 South Road, Bolton, Connecticut. We deny certification of the proposed Candidate B site located at 299 Hop River Road (Route 6), Bolton, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of AT&T and other entities, both public and private, but such tower shall not exceed a height of 120 feet above ground level.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:

    a) a detailed site development plan that depicts the location of the access road, compound, tower, and utility line;
    b) specifications for the tower, tower foundation, antennas, equipment building, and security fence;
    c) construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power densities of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall provide a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new state or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

6. If the facility does not initially provide wireless services within one year of completion of construction or ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

7. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.

8. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The Hartford Courant.

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

The parties and intervenors to this proceeding are:

Applicant
AT&T Wireless PCS, LLC
d/b/a AT&T Wireless

Its Representative
Christopher B. Fisher, Esq.
Cuddy & Feder & Worby LLP
90 Maple Avenue
White Plains, NY 10601
(914) 761-1300
(914) 761-6405 - fax

CERTIFICATION

The undersigned members of the Connecticut Siting Council (Council) hereby certify that they have heard this case, or read the record thereof, in **DOCKET NO. 240 – AT&T Wireless PCS, LLC d/b/a AT&T Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility in Bolton, Connecticut, and voted as follows to approve the proposed Candidate A site located at 49 South Road (Giglio property), Bolton, Connecticut, and deny certification of the proposed Candidate B site located at 299 Hop River Road (Route 6), Bolton, Connecticut:**

Council Members	Vote Cast
Pamela B. Katz, P.E., Chairman	Yes
Commissioner Donald W. Downes Designee: Gerald J. Heffernan	Yes
Commissioner Arthur J. Rocque, Jr. Designee: Brian J. Emerick	Yes
Philip Ashton	Yes
Daniel P. Lynch, Jr.	No
James J. Murphy, Jr.	Abstain
Brian O'Neill	No
Colin C. Tait	No
Edward S. Wilensky	Abstain

Dated at New Britain, Connecticut July 8, 2003.

STATE OF CONNECTICUT)

ss. New Britain, Connecticut :

COUNTY OF HARTFORD)

I hereby certify that the foregoing is a true and correct copy of the Findings of Fact, Opinion, and Decision and Order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:

S. Derek Phelps
Executive Director
Connecticut Siting Council

I certify that a copy of the Findings of Fact, Opinion, and Decision and Order in Docket No. 240 has been forwarded by Certified First Class Return Receipt Requested mail on July 11, 2003, to all parties and intervenors of record as listed on the attached service list, dated January 21, 2003.

ATTEST:

Lisa Fontaine
Administrative Assistant
Connecticut Siting Council

49 SOUTH RD

Location	49 SOUTH RD	**Mblu**	05/ / 107/ /
UID	10001348	**Owner**	GIGLIO LEONARD W &
Taxable Status	Non-Exempt	**Assessment**	$531,360
Appraisal	$935,400	**PID**	1348
Building Count	1	**Legal Description**	
User Field 1	00022 00015 00031	**User Field 2**	
User Field 3		**User Field 4**	
User Field 5		**User Field 6**	
User Field 7		**User Field 8**	
User Field 9		**User Field 10**	
Location		**Street/Road**	

Current Value

Appraisal

Valuation Year	Improvements	Land	Total
2023	$418,900	$516,500	$935,400

Assessment

Valuation Year	Improvements	Land	Total
2023	$293,200	$238,160	$531,360

Parcel Addreses

Additional Addresses

No Additional Addresses available for this parcel

Owner of Record

Owner	GIGLIO LEONARD W &	**Sale Price**	$0
Co-Owner	GIGLIO CHERYL P	**Book & Page**	165/120
Care Of		**Sale Date**	04/15/2014
Address	49 SOUTH RD	**Instrument**	24
		Qualified	U
	BOLTON, CT 06043		

Ownership History

Ownership History

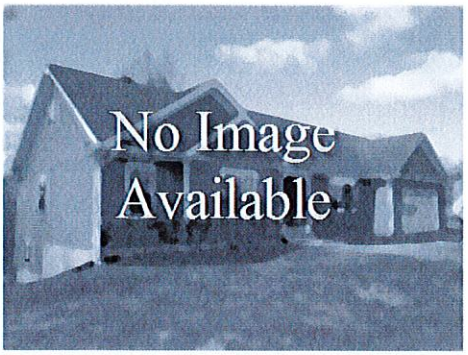
Owner	Sale Price	Book & Page	Instrument	Sale Date
GIGLIO LEONARD W &	$0	165/120	24	04/15/2014
GIGLIO LEONARD W &	$0	0087/0548		05/01/1996

Building Information

Building 1 : Section 1

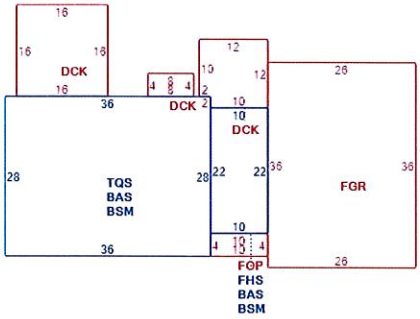
Replacement Cost: $402,044
Building Percent Good: 85
Replacement Cost Less Depreciation: $341,700

Building Attributes	
Field	**Description**
Style	Cape
Model:	Residential
Grade:	B-
Stories	1.75
Occupancy	1
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Arch Shingles
Interior Wall 1	Drywall
Interior Wall 2	
Interior Flr 1	Hardwood
Bath Floors	Ceramic Tile
Heat Fuel	Oil
Heat Type:	Hot Water
AC Percent	0
Total Bedrooms:	3 Bedrooms
Full Bthrms:	2
Half Baths:	0
Extra Fixtures	0
Total Rooms:	6
Num Kitchens	1
Fireplace(s)	1
Wood Stoves	
Foundation	Concrete
Bsmt Gar(s)	
SF Fin. Bsmt.	
Fin Bsmt Qual	



(https://images.vgsi.com/photos/BoltonCTPhotos//default.jpg)

Building Layout



(ParcelSketch.ashx?pid=1348&bid=1348)

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	1,228	1,228
TQS	Three Quarter Story	1,008	706
FHS	Finished Half Story	220	110
BSM	Basement	1,228	0
DCK	Deck	428	0
FGR	Garage	936	0
FOP	Open Porch	40	0
		5,088	2,044

Extra Features

Extra Features							Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Assessed Value**	**Bldg #**
SLR	Solar Panels			36.00 UNITS	$0	$0	1

Parcel Information

Use Code 101
Description Res Dwelling
Deeded Acres 29.00

Land

Land Use

Use Code 101
Description Res Dwelling
Zone R-1
Neighborhood

Special Land			
Land Use Code	**Land Use Description**	**Units**	**Unit Type**
712	490 Tillable C	6	AC
718	490 Woodland/Forest	20	AC

Land Line Valuation

Size (Acres) 29.00
Assessed Value $238,160
Appraised Value $516,500

Outbuildings

Legend

Code	Description	Sub Code	Sub Description	Size	Value	Assessed Value	Bldg #
FGR2	Garage W/ Loft	FR	Frame	1320.00 S.F.	$17,200	$12,000	1
FGR2	Garage W/ Loft	FR	Frame	2400.00 S.F.	$31,200	$21,800	1
FOP	Porch			960.00 S.F.	$6,700	$4,700	1
CELL	Cell Tower			120.00 FEET	$22,100	$15,500	1

Valuation History

Appraisal

Valuation Year	Improvements	Land	Total
2022	$278,700	$464,900	$743,600
2021	$278,700	$464,900	$743,600
2020	$278,700	$464,900	$743,600
2019	$278,700	$464,900	$743,600
2018	$278,700	$464,900	$743,600

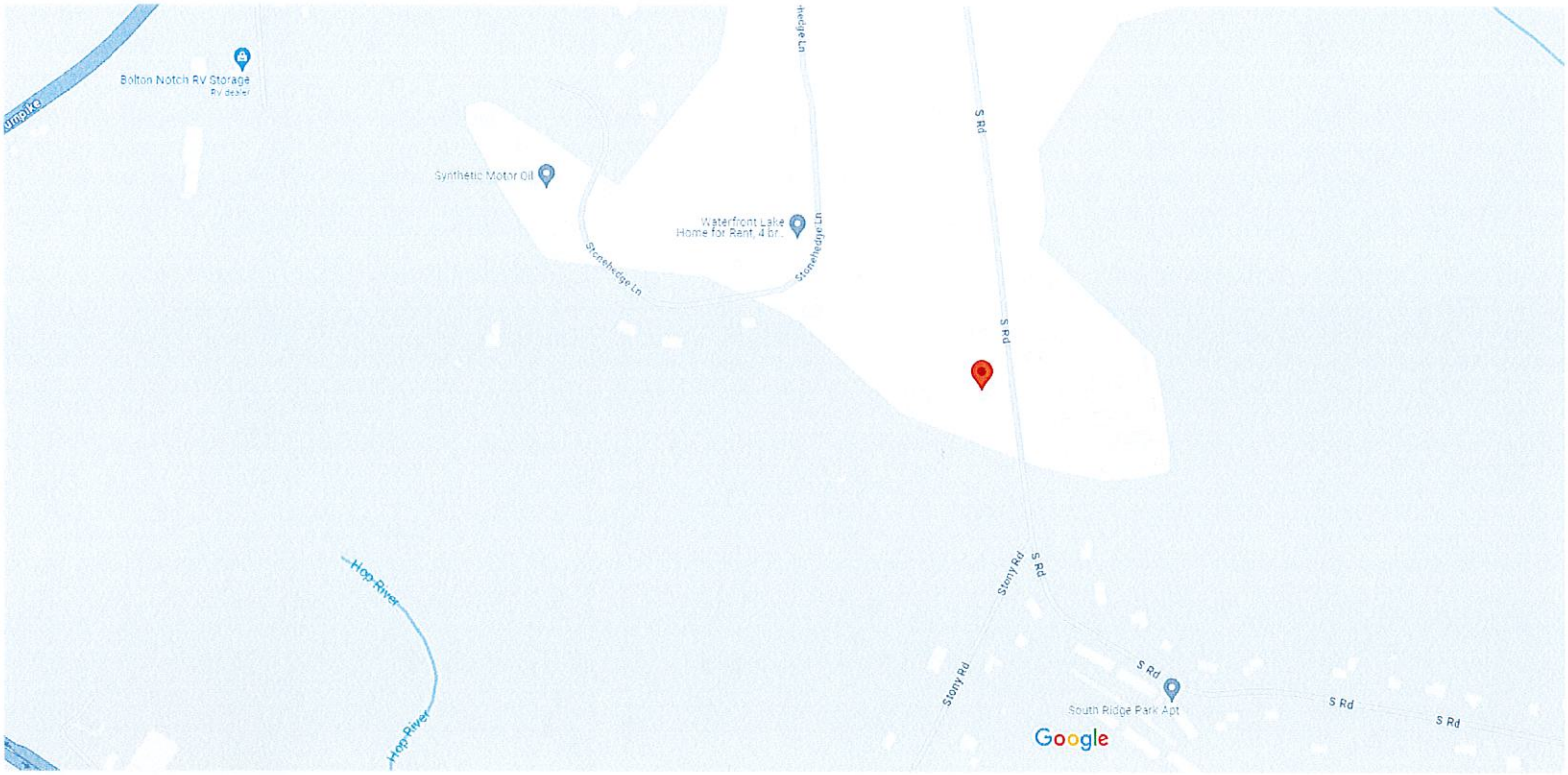
Assessment

Valuation Year	Improvements	Land	Total
2022	$195,100	$199,550	$394,650
2021	$195,100	$199,550	$394,650
2020	$195,100	$199,550	$394,650
2019	$195,100	$199,550	$394,650
2018	$195,100	$199,550	$394,650

Visit History

Visit History

Visit Date	Purpose of Visit	Notes
4/28/2023	Field Review	
8/27/2018	Field Review	
2/12/2014	Hearing - Change	
10/23/2013	Quality Control	



Map data ©2024 Google 200 ft

49 S Rd

Building

Directions Save Nearby Send to phone Copy link

49 S Rd, Bolton, CT 06043

Photos

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Monday, April 29, 2024 12:57 PM
To: Barbadora, Jeff
Subject: FedEx Shipment 776126995722: Your package has been delivered

Hi. Your package was delivered Mon, 04/29/2024 at 12:48pm.

Delivered to 222 BOLTON CENTER RD, BOLTON, CT 06043
Received by C.CHMIELOWUEC

OBTAIN PROOF OF DELIVERY

How was your delivery ?

TRACKING NUMBER	776126995722
FROM	Crown Castle 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	Town of Bolton Rodney Fournier, first Selectman 222 Bolton Center Road BOLTON, CT, US, 06043
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Fri 4/26/2024 06:06 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	BOLTON, CT, US, 06043
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Standard Overnight

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Monday, April 29, 2024 12:58 PM
To: Barbadora, Jeff
Subject: FedEx Shipment 776127020976: Your package has been delivered

Hi. Your package was delivered Mon, 04/29/2024 at 12:48pm.

Delivered to 222 BOLTON CENTER RD, BOLTON, CT 06043
Received by C.CHMIELOWUEC

OBTAIN PROOF OF DELIVERY

How was your delivery ?

TRACKING NUMBER	776127020976
FROM	Crown Castle 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	Town of Bolton Mike D 'Amato, ZEO 222 Bolton Center Road BOLTON, CT, US, 06043
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Fri 4/26/2024 06:06 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	BOLTON, CT, US, 06043
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Standard Overnight

Barbadora, Jeff

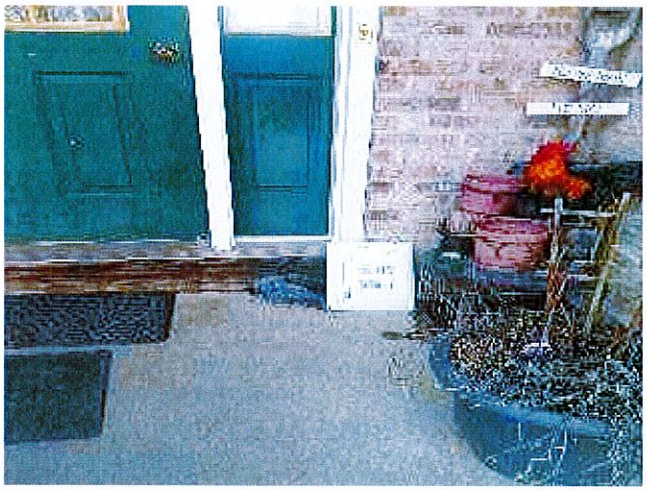
From: TrackingUpdates@fedex.com
Sent: Monday, April 29, 2024 4:48 PM
To: Barbadora, Jeff
Subject: FedEx Shipment 776127066794: Your package has been delivered
Attachments: DeliveryPicture.jpeg

FedEx

Hi. Your package was delivered Mon, 04/29/2024 at 4:41pm.

Delivered to 49 SOUTH RD, BOLTON, CT 06043

OBTAIN PROOF OF DELIVERY



Delivery picture not showing? View in browser.

How was your delivery ?

TRACKING NUMBER	776127066794
FROM	Crown Castle 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	Leonard & Cheryl Giglio Leonard & Cheryl giglio 49 South Road BOLTON, CT, US, 06043
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Fri 4/26/2024 06:06 PM
DELIVERED TO	Residence
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	BOLTON, CT, US, 06043

Date: **January 24, 2024**

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Subject:	**Structural Analysis Report**	
Carrier Designation:	***Verizon Wireless* Co-Locate**	
	Site Number:	5000244968
	Site Name:	BOLTON EAST CT
Crown Castle Designation:	**BU Number:**	842858
	Site Name:	BOLTON
	JDE Job Number:	2101355
	Work Order Number:	2279439
	Order Number:	656559 Rev. 0
Engineering Firm Designation:	**B+T Group Project Number:**	137088.010.01.0001
Site Data:	**49 South Road, Bolton, Tolland County, CT** **Latitude *41° 47' 20.43"*, Longitude *-72° 25' 44.91"*** **120 Foot - Monopole Tower**	

B+T Group is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower.

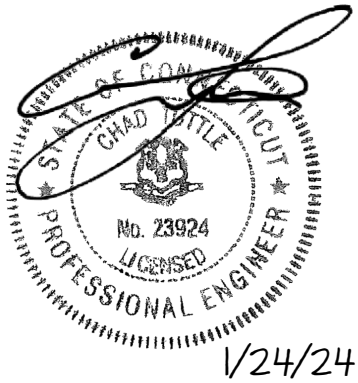
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC5: Proposed Equipment Configuration **Sufficient Capacity – 91.2%**

This analysis utilizes an ultimate 3-second gust wind speed of 119 mph as required by the 2022 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: John Landon

Respectfully submitted by: B+T Engineering, Inc.
COA: PEC.0001564; Expires: 01/02/2025



1/24/24

Chad E. Tuttle, P.E.

TABLE OF CONTENTS

1) INTRODUCTION

This is a 120 ft Monopole tower designed by PennSummit Tubular in August of 2003.

The tower has been modified multiple times to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	119 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
108.0	111.0	1	Site Pro1	VZWSMART-PLK1 Support Rail Kit	8	1-5/8
	108.0	2	--	36” x P2 STD OVP Pipes		
		1	--	Platform Mount [LP 303-1]		
	107.0	6	Antel	LPA-185063/8CFX2		
		3	Commscope	NHH-65B-R2B		
		3	Commscope	NHHSS-65B-R2BT4		
		2	Raycap	RRFDC-3315-PF-48		
		3	Samsung Telecom.	MT6413-77A		
		3	Samsung Telecom.	RF4439D-25A		
		3	Samsung Telecom.	RF4461D-13A		
		3	Samsung Telecom.	RT4423-48A/B		

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)
118.0	118.0	6	CCI Antennas	DMP65R-BU4D	12 4 2	1-1/4 1 3/8
		3	Ericsson	RRUS 4449 B5/B12		
		3	Ericsson	RRUS 4478 B14		
		3	Ericsson	RRUS 8843 B2/B66A		
		3	Powerwave Tech.	1001940		
		3	Powerwave Tech.	7770.00		
		6	Powerwave Tech.	LGP21401		
		1	Raycap	DC6-48-60-18-8C		
		1	Raycap	DC6-48-60-18-8F		
		1	--	Platform Mount [LP 303-1_HR-1]		
99.0	99.0	3	Ericsson	AIR 32 B2A/B66AA	9	1-5/8

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		3	Ericsson	KRY 112 144/1		
		3	Ericsson	RADIO 4449 B12/B71		
		3	RFS Celwave	APXVAALL24_43-U-NA20		
		1	--	Side Arm Mount [SO 103-3]		
86.0	88.0	3	Fujitsu	TA08025-B604	1	1-3/8
		3	Fujitsu	TA08025-B605		
		1	Raycap	RDIDC-9181-PF-48		
	87.0	3	JMA Wireless	MX08FRO665-21		
	86.0	1	Commscope	MC-K6MHDX-9-96 Frames		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Tower Manufacturer Drawing	4291644	CCI Sites
Tower Modification Drawing	4492167	CCI Sites
Post Modification Inspection	4497609	CCI Sites
Tower Modification Drawing	5096968	CCI Sites
Post Modification Inspection	5652677	CCI Sites
Foundation Drawing	4291646	CCI Sites
Geotech Report	5337356	CCI Sites
Crown CAD Package	Date: 01/23/2024	CCI Sites

3.1) Analysis Method

tnxTower (version 8.2.2.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. 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 pole and in the reinforcing elements. These calculations are presented in Appendix C.

3.2) Assumptions

1) The 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. B+T Group should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	120 - 115	Pole	TP19.75x19x0.1875	1	-3.415	--	4.3	Pass
L2	115 - 110	Pole	TP20.501x19.75x0.1875	2	-3.708	--	10.1	Pass
L3	110 - 105	Pole	TP21.251x20.501x0.1875	3	-7.208	--	18.6	Pass
L4	105 - 100	Pole	TP22.001x21.251x0.1875	4	-7.577	--	27.9	Pass
L5	100 - 95	Pole	TP22.751x22.001x0.1875	5	-9.705	--	38.9	Pass
L6	95 - 90	Pole	TP23.502x22.751x0.1875	6	-10.224	--	49.3	Pass
L7	90 - 86.25	Pole	TP24.552x23.502x0.1875	7	-10.631	--	56.5	Pass
L8	86.25 - 81.25	Pole	TP24.44x23.689x0.25	8	-13.764	--	48.7	Pass
L9	81.25 - 76.25	Pole	TP25.19x24.44x0.25	9	-14.456	--	56.0	Pass
L10	76.25 - 71.25	Pole	TP25.94x25.19x0.25	10	-15.167	--	62.6	Pass
L11	71.25 - 66.25	Pole	TP26.69x25.94x0.25	11	-15.903	--	68.7	Pass
L12	66.25 - 61.25	Pole	TP27.44x26.69x0.25	12	-16.662	--	74.4	Pass
L13	61.25 - 61	Pole	TP27.478x27.44x0.25	13	-16.710	--	74.7	Pass
L14	61 - 60.75	Pole	TP27.515x27.478x0.25	14	-16.749	--	74.9	Pass
L15	60.75 - 58.75	Pole	TP27.815x27.515x0.25	15	-17.050	--	77.0	Pass
L16	58.75 - 58.5	Pole	TP27.853x27.815x0.25	16	-17.099	--	77.3	Pass
L17	58.5 - 57.5	Pole	TP28.003x27.853x0.25	17	-17.246	--	78.3	Pass
L18	57.5 - 57.25	Pole	TP28.04x28.003x0.25	18	-17.296	--	78.6	Pass
L19	57.25 - 52.25	Pole	TP28.791x28.04x0.25	19	-18.084	--	83.5	Pass
L20	52.25 - 47.25	Pole	TP29.541x28.791x0.25	20	-18.904	--	88.1	Pass
L21	47.25 - 45	Pole	TP30.441x29.541x0.25	21	-19.277	--	90.1	Pass
L22	45 - 40.25	Pole + Reinf.	TP30.091x29.378x0.55	22	-20.826	--	72.3	Pass
L23	40.25 - 35.25	Pole + Reinf.	TP30.841x30.091x0.5375	23	-22.105	--	75.5	Pass
L24	35.25 - 32.75	Pole + Reinf.	TP31.216x30.841x0.5375	24	-22.750	--	77.0	Pass
L25	32.75 - 32.5	Pole	TP31.254x31.216x0.3125	25	-22.806	--	77.6	Pass
L26	32.5 - 31.25	Pole	TP31.441x31.254x0.3125	26	-23.037	--	78.2	Pass
L27	31.25 - 31	Pole	TP31.479x31.441x0.3125	27	-23.099	--	78.4	Pass
L28	31 - 26	Pole	TP32.229x31.479x0.3125	28	-24.081	--	80.9	Pass
L29	26 - 21	Pole	TP32.979x32.229x0.3125	29	-25.093	--	83.2	Pass
L30	21 - 19.75	Pole	TP33.167x32.979x0.3125	30	-25.346	--	83.7	Pass
L31	19.75 - 19.5	Pole	TP33.204x33.167x0.3125	31	-25.411	--	83.9	Pass
L32	19.5 - 18.5	Pole	TP33.354x33.204x0.3125	32	-25.606	--	84.3	Pass
L33	18.5 - 18.25	Pole	TP33.392x33.354x0.3125	33	-25.668	--	84.4	Pass
L34	18.25 - 13.25	Pole	TP34.142x33.392x0.3125	34	-26.699	--	86.5	Pass
L35	13.25 - 8.25	Pole	TP34.892x34.142x0.3125	35	-27.759	--	88.4	Pass
L36	8.25 - 3.25	Pole	TP35.642x34.892x0.3125	36	-28.836	--	90.2	Pass
L37	3.25 - 0	Pole	TP36.13x35.642x0.3125	37	-29.545	--	91.2	Pass
							Summary	
						Pole (L37)	91.2	Pass
						Reinforcement	77.0	Pass
						Rating =	91.2	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rod Brackets	Base	60.8	Pass
1,2	Anchor Rods	Base	72.6	Pass
1,2	Base Plate	Base	58.7	Pass
1,2	Base Foundation (Structure)	Base	59.7	Pass
1,2	Base Foundation (Soil Interaction)	Base	50.1	Pass

Structure Rating (max from all components) =	91.2%

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.

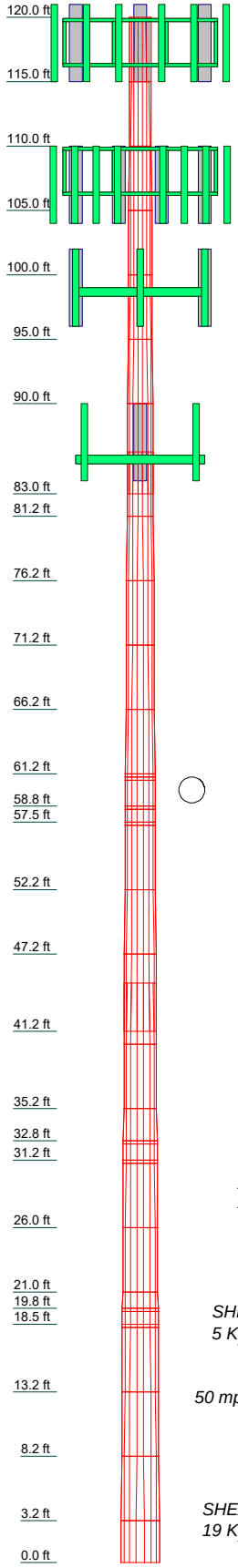
4.1) Recommendations

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

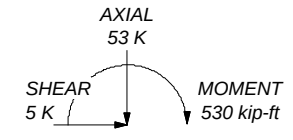
APPENDIX A

TNXTOWER OUTPUT

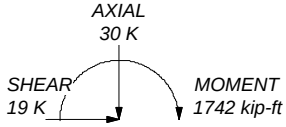
Section	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
Length (ft)	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	4.750	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	3.250
Number of Sides	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Thickness (in)	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.550	0.537	0.237	0.312	0.312	0.312	0.312	0.312	0.312	0.312	0.312	0.312	0.312	0.312	0.312	0.312
Socket Length (ft)							3.250											3.750																				
Top Dia (in)	19.000	19.750	20.501	21.251	22.001	22.751	23.502	23.689	24.440	25.190	25.940	26.690	27.440	28.190	28.940	29.690	30.441	31.191	28.041	28.791	29.541	29.378	30.091	30.841	31.591	31.479	32.229	32.979	33.392	33.392	33.392	33.392	33.392	34.142	34.892	35.642	35.642
Bot Dia (in)	19.750	20.501	21.251	22.001	22.751	23.502	24.552	24.440	25.190	25.940	26.690	27.440	28.190	28.940	29.690	30.441	31.191	31.941	28.791	29.541	30.441	30.091	30.841	31.591	32.341	32.229	32.979	33.729	33.392	33.392	33.392	33.392	34.142	34.892	35.642	36.130	
Grade	A607-65																																				
Weight (K)	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4	0.4	0.5	0.8	0.8	0.4	0.0	0.5	0.5	0.5	0.1	0.1	0.1	0.1	0.6	0.6	0.6	0.4	10.6



ALL REACTIONS ARE FACTORED



TORQUE 1 kip-ft
50 mph WIND - 1.500 in ICE



TORQUE 2 kip-ft
REACTIONS - 119 mph WIND

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Tolland County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 119 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 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 0.000 ft
8. TIA-222-H Annex S
9. TOWER RATING: 91.2%

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

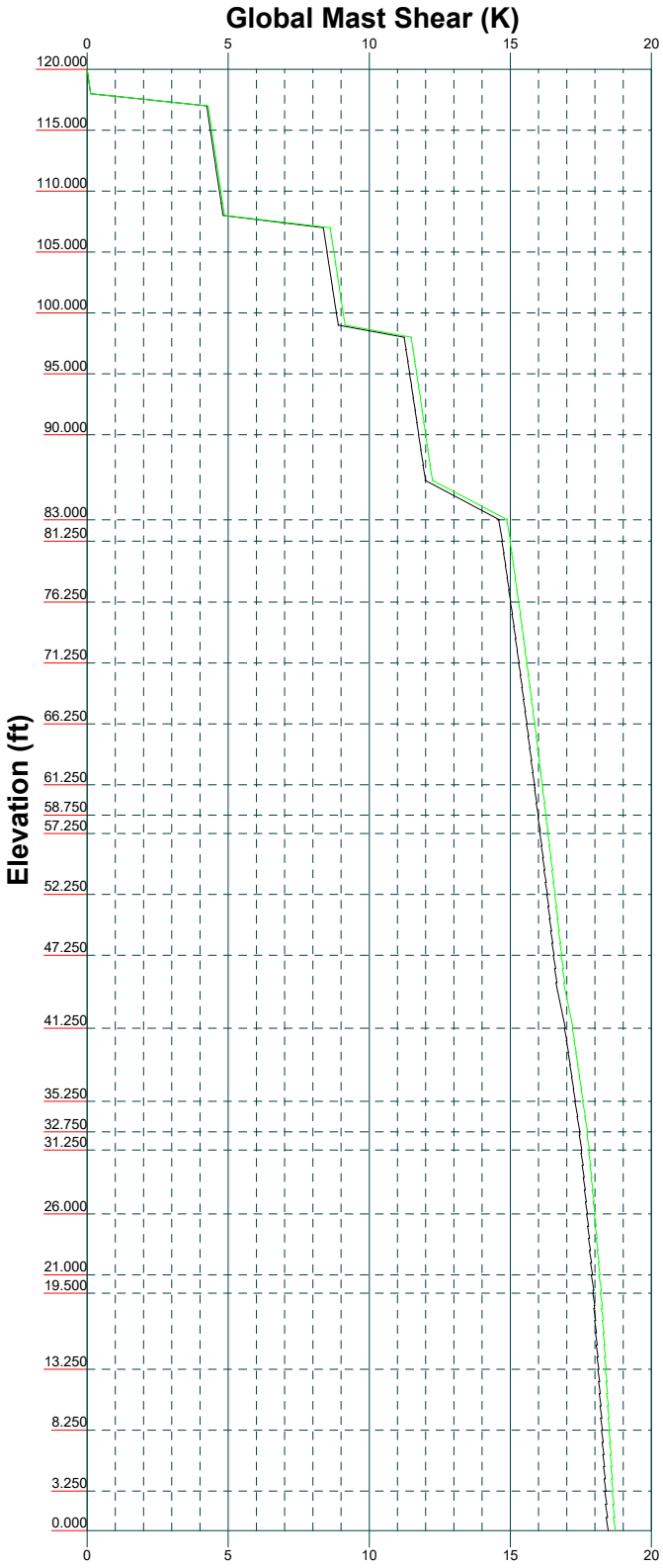
Job: 137088.010.01.0001 - BOLTON, CT (BU# 842858			
Project:			
Client: Crown Castle	Drawn by: Suhas Poojary	App'd:	
Code: TIA-222-H	Date: 01/24/24	Scale: NTS	
Path:		Dwg No. E-1	

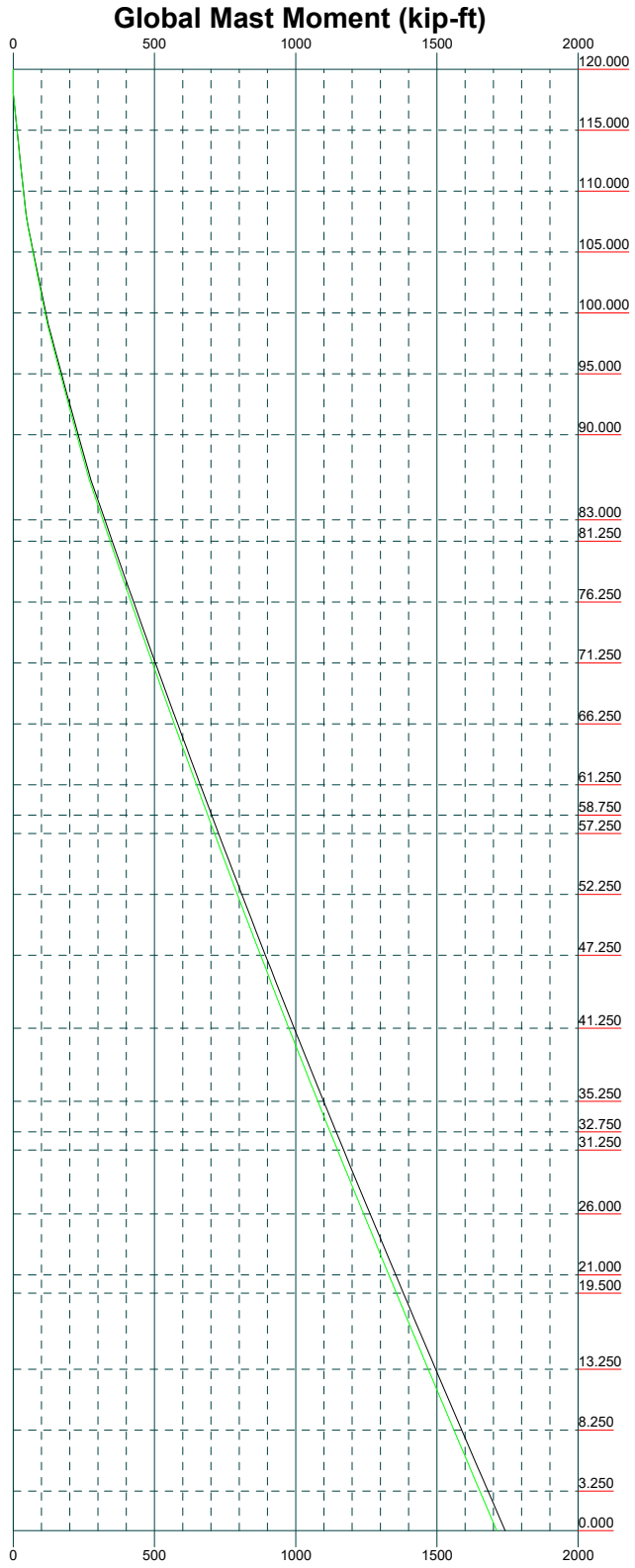
TIA-222-H - 119 mph/50 mph 1.500 in Ice Exposure C

Vx Vz

Maximum Values

Mx Mz



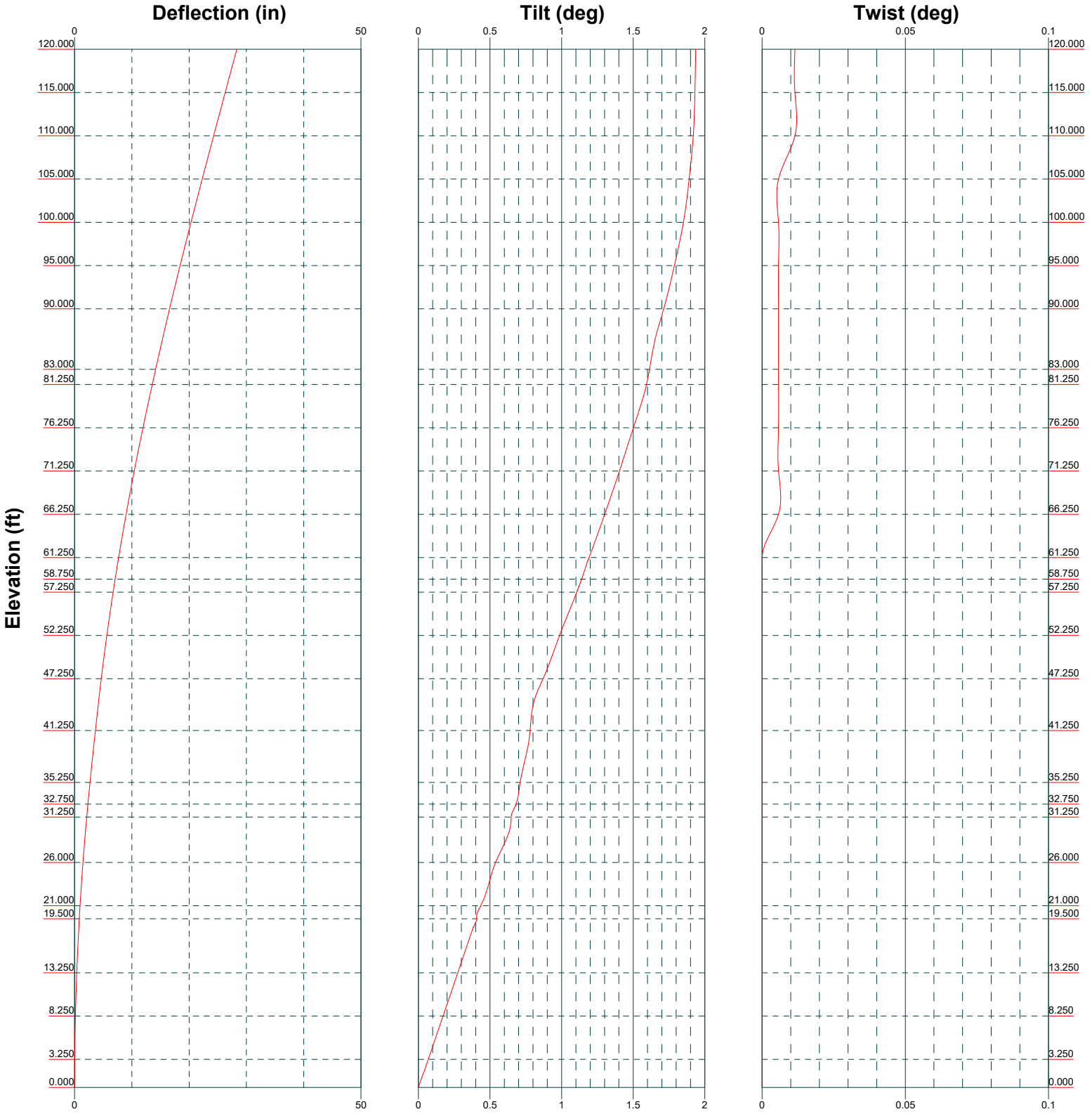


B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 137088.010.01.0001 - BOLTON, CT (BU# 842858			
Project:			
Client: Crown Castle	Drawn by: Suhas Poojary	App'd:	
Code: TIA-222-H	Date: 01/24/24	Scale: NTS	
Path:		Dwg No. E-4	

TIA-222-H - Service - 60 mph

Maximum Values



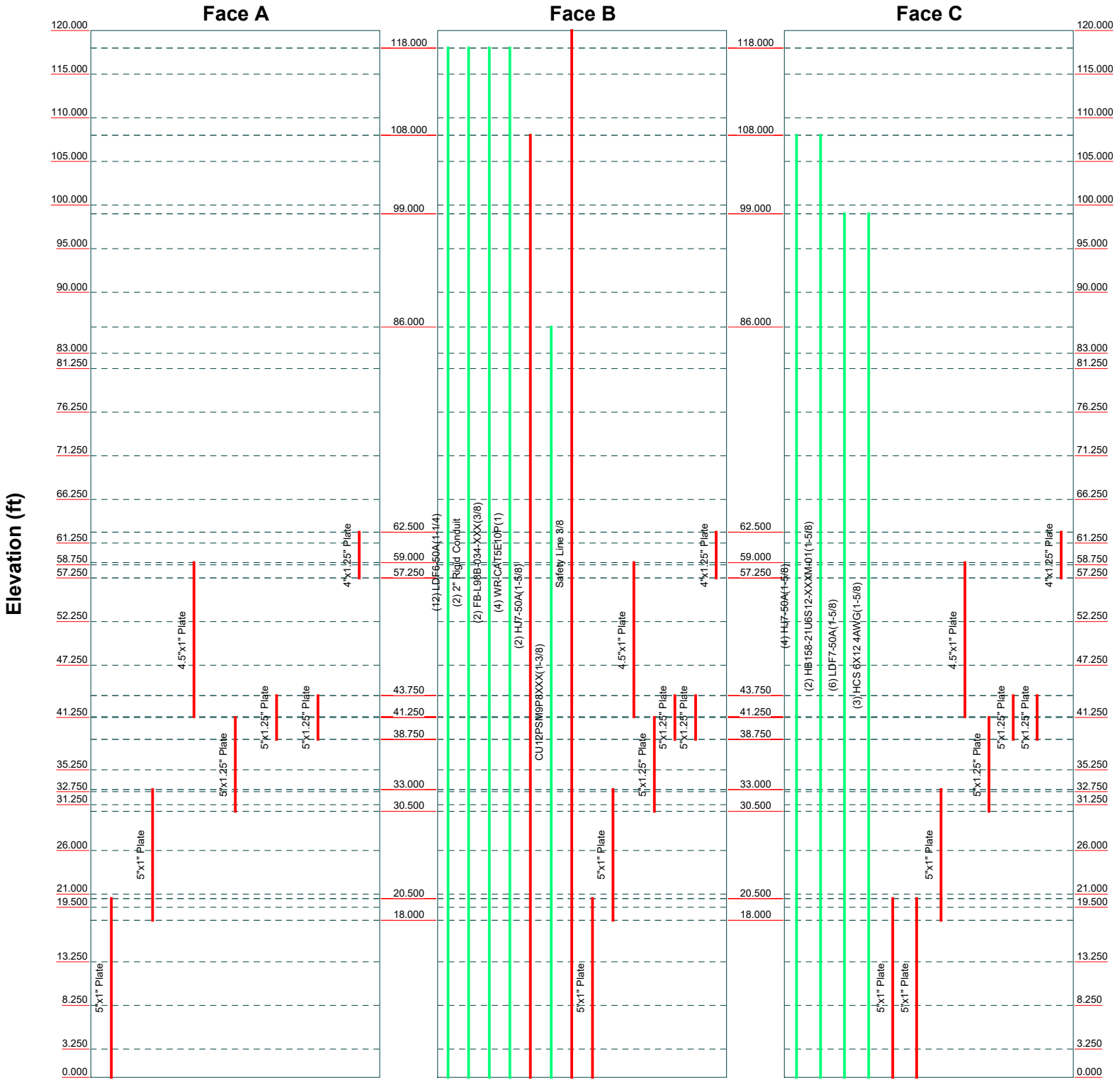
B+T GRP

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: *137088.010.01.0001 - BOLTON, CT (BU# 842858*			
Project:			
Client: Crown Castle	Drawn by: Suhas Poojary	App'd:	
Code: TIA-222-H	Date: 01/24/24	Scale: NTS	
Path:		Dwg No. E-5	

Feed Line Distribution Chart
0' - 120'

Round | Flat | App In Face | App Out Face | Truss Leg



B+T GRP

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: *137088.010.01.0001 - BOLTON, CT (BU# 842858*			
Project:			
Client: Crown Castle	Drawn by: Suhas Poojary	App'd:	
Code: TIA-222-H	Date: 01/24/24	Scale: NTS	
Path:		Dwg No. E-7	

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower is located in Tolland County, Connecticut.
Tower base elevation above sea level: 620.000 ft.
Basic wind speed of 119 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.000 ft.
Nominal ice thickness of 1.500 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
TIA-222-H Annex S.
TOWER RATING: 91.2%.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
Maximum demand-capacity ratio is: 1.05.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	120.000-115.000	5.000	0.000	18	19.000	19.750	0.188	0.750	A607-65 (65 ksi)
L2	115.000-110.000	5.000	0.000	18	19.750	20.501	0.188	0.750	A607-65 (65 ksi)
L3	110.000-105.000	5.000	0.000	18	20.501	21.251	0.188	0.750	A607-65 (65 ksi)
L4	105.000-100.000	5.000	0.000	18	21.251	22.001	0.188	0.750	A607-65 (65 ksi)
L5	100.000-95.000	5.000	0.000	18	22.001	22.751	0.188	0.750	A607-65 (65 ksi)
L6	95.000-90.000	5.000	0.000	18	22.751	23.502	0.188	0.750	A607-65 (65 ksi)
L7	90.000-83.000	7.000	3.250	18	23.502	24.552	0.188	0.750	A607-65 (65 ksi)
L8	83.000-81.250	5.000	0.000	18	23.689	24.440	0.250	1.000	A607-65 (65 ksi)
L9	81.250-76.250	5.000	0.000	18	24.440	25.190	0.250	1.000	A607-65 (65 ksi)
L10	76.250-71.250	5.000	0.000	18	25.190	25.940	0.250	1.000	A607-65 (65 ksi)
L11	71.250-66.250	5.000	0.000	18	25.940	26.690	0.250	1.000	A607-65 (65 ksi)
L12	66.250-61.250	5.000	0.000	18	26.690	27.440	0.250	1.000	A607-65 (65 ksi)
L13	61.250-61.000	0.250	0.000	18	27.440	27.478	0.250	1.000	A607-65 (65 ksi)
L14	61.000-60.750	0.250	0.000	18	27.478	27.515	0.250	1.000	A607-65 (65 ksi)
L15	60.750-58.750	2.000	0.000	18	27.515	27.815	0.250	1.000	A607-65 (65 ksi)
L16	58.750-58.500	0.250	0.000	18	27.815	27.853	0.250	1.000	A607-65 (65 ksi)
L17	58.500-57.500	1.000	0.000	18	27.853	28.003	0.250	1.000	A607-65 (65 ksi)
L18	57.500-57.250	0.250	0.000	18	28.003	28.040	0.250	1.000	A607-65 (65 ksi)
L19	57.250-52.250	5.000	0.000	18	28.040	28.791	0.250	1.000	A607-65 (65 ksi)
L20	52.250-47.250	5.000	0.000	18	28.791	29.541	0.250	1.000	A607-65 (65 ksi)
L21	47.250-41.250	6.000	3.750	18	29.541	30.441	0.250	1.000	A607-65 (65 ksi)
L22	41.250-40.250	4.750	0.000	18	29.378	30.091	0.550	2.200	A607-65 (65 ksi)
L23	40.250-35.250	5.000	0.000	18	30.091	30.841	0.537	2.150	A607-65 (65 ksi)
L24	35.250-32.750	2.500	0.000	18	30.841	31.216	0.537	2.150	A607-65 (65 ksi)
L25	32.750-32.500	0.250	0.000	18	31.216	31.254	0.312	1.250	A607-65 (65 ksi)
L26	32.500-31.250	1.250	0.000	18	31.254	31.441	0.312	1.250	A607-65 (65 ksi)
L27	31.250-31.000	0.250	0.000	18	31.441	31.479	0.312	1.250	A607-65 (65 ksi)
L28	31.000-26.000	5.000	0.000	18	31.479	32.229	0.312	1.250	A607-65 (65 ksi)
L29	26.000-21.000	5.000	0.000	18	32.229	32.979	0.312	1.250	A607-65 (65 ksi)
L30	21.000-19.750	1.250	0.000	18	32.979	33.167	0.312	1.250	A607-65 (65 ksi)
L31	19.750-19.500	0.250	0.000	18	33.167	33.204	0.312	1.250	A607-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L32	19.500-18.500	1.000	0.000	18	33.204	33.354	0.312	1.250	(65 ksi) A607-65
L33	18.500-18.250	0.250	0.000	18	33.354	33.392	0.312	1.250	(65 ksi) A607-65
L34	18.250-13.250	5.000	0.000	18	33.392	34.142	0.312	1.250	(65 ksi) A607-65
L35	13.250-8.250	5.000	0.000	18	34.142	34.892	0.312	1.250	(65 ksi) A607-65
L36	8.250-3.250	5.000	0.000	18	34.892	35.642	0.312	1.250	(65 ksi) A607-65
L37	3.250-0.000	3.250		18	35.642	36.130	0.312	1.250	(65 ksi) A607-65

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	19.264	11.196	500.593	6.678	9.652	51.864	1001.846	5.599	3.014	16.075
	20.026	11.642	562.907	6.945	10.033	56.105	1126.555	5.822	3.146	16.779
L2	20.026	11.642	562.907	6.945	10.033	56.105	1126.555	5.822	3.146	16.779
	20.788	12.089	630.188	7.211	10.414	60.512	1261.206	6.046	3.278	17.483
L3	20.788	12.089	630.188	7.211	10.414	60.512	1261.206	6.046	3.278	17.483
	21.550	12.535	702.628	7.477	10.795	65.086	1406.181	6.269	3.410	18.187
L4	21.550	12.535	702.628	7.477	10.795	65.086	1406.181	6.269	3.410	18.187
	22.312	12.982	780.417	7.744	11.177	69.826	1561.860	6.492	3.542	18.892
L5	22.312	12.982	780.417	7.744	11.177	69.826	1561.860	6.492	3.542	18.892
	23.073	13.428	863.745	8.010	11.558	74.733	1728.626	6.715	3.674	19.596
L6	23.073	13.428	863.745	8.010	11.558	74.733	1728.626	6.715	3.674	19.596
	23.835	13.875	952.802	8.277	11.939	79.807	1906.858	6.939	3.806	20.3
L7	23.835	13.875	952.802	8.277	11.939	79.807	1906.858	6.939	3.806	20.3
	24.902	14.500	1087.472	8.649	12.472	87.190	2176.375	7.251	3.991	21.286
L8	24.511	18.599	1290.980	8.321	12.034	107.276	2583.659	9.301	3.729	14.917
	24.778	19.194	1418.945	8.587	12.415	114.290	2839.757	9.599	3.861	15.445
L9	24.778	19.194	1418.945	8.587	12.415	114.290	2839.757	9.599	3.861	15.445
	25.540	19.790	1555.098	8.854	12.796	121.527	3112.243	9.897	3.993	15.974
L10	25.540	19.790	1555.098	8.854	12.796	121.527	3112.243	9.897	3.993	15.974
	26.301	20.385	1699.694	9.120	13.177	128.985	3401.625	10.194	4.125	16.502
L11	26.301	20.385	1699.694	9.120	13.177	128.985	3401.625	10.194	4.125	16.502
	27.063	20.980	1852.986	9.386	13.559	136.665	3708.410	10.492	4.257	17.03
L12	27.063	20.980	1852.986	9.386	13.559	136.665	3708.410	10.492	4.257	17.03
	27.825	21.575	2015.228	9.653	13.940	144.568	4033.108	10.790	4.389	17.558
L13	27.825	21.575	2015.228	9.653	13.940	144.568	4033.108	10.790	4.389	17.558
	27.863	21.605	2023.580	9.666	13.959	144.969	4049.822	10.805	4.396	17.584
L14	27.863	21.605	2023.580	9.666	13.959	144.969	4049.822	10.805	4.396	17.584
	27.901	21.635	2031.954	9.679	13.978	145.371	4066.583	10.820	4.403	17.611
L15	27.901	21.635	2031.954	9.679	13.978	145.371	4066.583	10.820	4.403	17.611
	28.206	21.873	2099.785	9.786	14.130	148.603	4202.333	10.939	4.456	17.822
L16	28.206	21.873	2099.785	9.786	14.130	148.603	4202.333	10.939	4.456	17.822
	28.244	21.903	2108.368	9.799	14.149	149.009	4219.511	10.954	4.462	17.848
L17	28.244	21.903	2108.368	9.799	14.149	149.009	4219.511	10.954	4.462	17.848
	28.396	22.022	2142.936	9.852	14.225	150.641	4288.692	11.013	4.489	17.954
L18	28.396	22.022	2142.936	9.852	14.225	150.641	4288.692	11.013	4.489	17.954
	28.434	22.052	2151.637	9.866	14.245	151.050	4306.105	11.028	4.495	17.98
L19	28.434	22.052	2151.637	9.866	14.245	151.050	4306.105	11.028	4.495	17.98
	29.196	22.647	2330.630	10.132	14.626	159.353	4664.326	11.326	4.627	18.509

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L20	29.196	22.647	2330.630	10.132	14.626	159.353	4664.326	11.326	4.627	18.509
	29.958	23.242	2519.283	10.398	15.007	167.877	5041.882	11.623	4.759	19.037
L21	29.958	23.242	2519.283	10.398	15.007	167.877	5041.882	11.623	4.759	19.037
	30.872	23.957	2758.779	10.718	15.464	178.400	5521.188	11.981	4.918	19.67
L22	30.318	50.326	5284.050	10.234	14.924	354.059	10575.052	25.168	4.203	7.641
	30.470	51.570	5685.702	10.487	15.286	371.949	11378.886	25.790	4.328	7.869
L23	30.472	50.419	5563.538	10.492	15.286	363.957	11134.397	25.214	4.350	8.093
	31.234	51.699	5998.056	10.758	15.667	382.838	12004.004	25.854	4.482	8.339
L24	31.234	51.699	5998.056	10.758	15.667	382.838	12004.004	25.854	4.482	8.339
	31.615	52.339	6223.551	10.891	15.858	392.458	12455.290	26.174	4.548	8.462
L25	31.650	30.653	3698.540	10.971	15.858	233.230	7401.947	15.329	4.944	15.821
	31.688	30.690	3712.024	10.984	15.877	233.800	7428.932	15.348	4.951	15.842
L26	31.688	30.690	3712.024	10.984	15.877	233.800	7428.932	15.348	4.951	15.842
	31.878	30.876	3779.933	11.051	15.972	236.657	7564.840	15.441	4.984	15.948
L27	31.878	30.876	3779.933	11.051	15.972	236.657	7564.840	15.441	4.984	15.948
	31.916	30.913	3793.613	11.064	15.991	237.230	7592.219	15.460	4.990	15.969
L28	31.916	30.913	3793.613	11.064	15.991	237.230	7592.219	15.460	4.990	15.969
	32.678	31.657	4074.200	11.330	16.372	248.846	8153.761	15.832	5.122	16.391
L29	32.678	31.657	4074.200	11.330	16.372	248.846	8153.761	15.832	5.122	16.391
	33.440	32.401	4368.291	11.597	16.753	260.740	8742.330	16.204	5.254	16.814
L30	33.440	32.401	4368.291	11.597	16.753	260.740	8742.330	16.204	5.254	16.814
	33.630	32.587	4443.961	11.663	16.849	263.757	8893.770	16.297	5.287	16.92
L31	33.630	32.587	4443.961	11.663	16.849	263.757	8893.770	16.297	5.287	16.92
	33.668	32.625	4459.199	11.677	16.868	264.362	8924.266	16.315	5.294	16.941
L32	33.668	32.625	4459.199	11.677	16.868	264.362	8924.266	16.315	5.294	16.941
	33.821	32.773	4520.500	11.730	16.944	266.791	9046.949	16.390	5.320	17.025
L33	33.821	32.773	4520.500	11.730	16.944	266.791	9046.949	16.390	5.320	17.025
	33.859	32.811	4535.913	11.743	16.963	267.400	9077.794	16.408	5.327	17.046
L34	33.859	32.811	4535.913	11.743	16.963	267.400	9077.794	16.408	5.327	17.046
	34.621	33.555	4851.564	12.009	17.344	279.723	9709.512	16.781	5.459	17.469
L35	34.621	33.555	4851.564	12.009	17.344	279.723	9709.512	16.781	5.459	17.469
	35.382	34.299	5181.530	12.276	17.725	292.325	10369.878	17.153	5.591	17.891
L36	35.382	34.299	5181.530	12.276	17.725	292.325	10369.878	17.153	5.591	17.891
	36.144	35.043	5526.128	12.542	18.106	305.204	11059.527	17.525	5.723	18.314
L37	36.144	35.043	5526.128	12.542	18.106	305.204	11059.527	17.525	5.723	18.314
	36.639	35.526	5758.113	12.715	18.354	313.725	11523.803	17.767	5.809	18.588

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
L1 120.000-115.000				1	1	1			
L2 115.000-110.000				1	1	1			
L3 110.000-105.000				1	1	1			
L4 105.000-100.000				1	1	1			
L5 100.000-95.000				1	1	1			
L6 95.000-90.000				1	1	1			
L7 90.000-83.000				1	1	1			

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
L8 83.000-81.250				1	1	1			
L9 81.250-76.250				1	1	1			
L10 76.250-71.250				1	1	1			
L11 71.250-66.250				1	1	1			
L12 66.250-61.250				1	1	1			
L13 61.250-61.000				1	1	1			
L14 61.000-60.750				1	1	1			
L15 60.750-58.750				1	1	1			
L16 58.750-58.500				1	1	1			
L17 58.500-57.500				1	1	1			
L18 57.500-57.250				1	1	1			
L19 57.250-52.250				1	1	1			
L20 52.250-47.250				1	1	1			
L21 47.250-41.250				1	1	1			
L22 41.250-40.250				1	1	0.936348			
L23 40.250-35.250				1	1	0.948402			
L24 35.250-32.750				1	1	0.943915			
L25 32.750-32.500				1	1	1			
L26 32.500-31.250				1	1	1			
L27 31.250-31.000				1	1	1			
L28 31.000-26.000				1	1	1			
L29 26.000-21.000				1	1	1			
L30 21.000-19.750				1	1	1			
L31 19.750-19.500				1	1	1			
L32 19.500-18.500				1	1	1			
L33 18.500-18.250				1	1	1			
L34 18.250-13.250				1	1	1			
L35 13.250-8.250				1	1	1			
L36 8.250-3.250				1	1	1			
L37				1	1	1			

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
3.250-0.000									

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
HJ7-50A(1-5/8)	B	No	Surface Ar (CaAa)	108.000 - 0.000	2	2	-0.100 0.000	1.980		0.001
*										
Safety Line 3/8	B	No	Surface Ar (CaAa)	120.000 - 0.000	1	1	-0.450 -0.450	0.375		0.000
*										
*										
5"x1" Plate	A	No	Surface Af (CaAa)	20.500 - 0.000	1	1	0.050 0.100	5.000	12.000	0.000
5"x1" Plate	B	No	Surface Af (CaAa)	20.500 - 0.000	1	1	-0.250 -0.200	5.000	12.000	0.000
5"x1" Plate	C	No	Surface Af (CaAa)	20.500 - 0.000	1	1	0.250 0.300	5.000	12.000	0.000
5"x1" Plate	C	No	Surface Af (CaAa)	20.500 - 0.000	1	1	-0.250 -0.200	5.000	12.000	0.000
*										
5"x1" Plate	A	No	Surface Af (CaAa)	33.000 - 18.000	1	1	-0.500 -0.450	5.000	12.000	0.000
5"x1" Plate	B	No	Surface Af (CaAa)	33.000 - 18.000	1	1	-0.500 -0.450	5.000	12.000	0.000
5"x1" Plate	C	No	Surface Af (CaAa)	33.000 - 18.000	1	1	-0.500 -0.450	5.000	12.000	0.000
*										
4.5"x1" Plate	A	No	Surface Af (CaAa)	59.000 - 41.333	1	1	-0.250 -0.200	4.500	11.000	0.000
4.5"x1" Plate	B	No	Surface Af (CaAa)	59.000 - 41.333	1	1	-0.250 -0.200	4.500	11.000	0.000
4.5"x1" Plate	C	No	Surface Af (CaAa)	59.000 - 41.333	1	1	-0.250 -0.200	4.500	11.000	0.000
*										
5"x1.25" Plate	A	No	Surface Af (CaAa)	41.250 - 30.500	1	1	-0.250 -0.200	5.000	12.500	0.000
5"x1.25" Plate	B	No	Surface Af (CaAa)	41.250 - 30.500	1	1	-0.250 -0.200	5.000	12.500	0.000
5"x1.25" Plate	C	No	Surface Af (CaAa)	41.250 - 30.500	1	1	-0.250 -0.200	5.000	12.500	0.000
*										
5"x1.25" Plate	A	No	Surface Af (CaAa)	43.750 - 38.750	1	1	0.100 0.150	5.000	12.500	0.000
5"x1.25" Plate	A	No	Surface Af (CaAa)	43.750 - 38.750	1	1	0.400 0.450	5.000	12.500	0.000
5"x1.25" Plate	B	No	Surface Af (CaAa)	43.750 - 38.750	1	1	0.100 0.150	5.000	12.500	0.000
5"x1.25" Plate	B	No	Surface Af (CaAa)	43.750 - 38.750	1	1	0.400 0.450	5.000	12.500	0.000
5"x1.25" Plate	C	No	Surface Af (CaAa)	43.750 - 38.750	1	1	0.100 0.150	5.000	12.500	0.000

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
5"x1.25" Plate	C	No	Surface Af (CaAa)	43.750 - 38.750	1	1	0.400 0.450	5.000	12.500	0.000
*										
4"x1.25" Plate	A	No	Surface Af (CaAa)	62.500 - 57.250	1	1	0.100 0.150	4.000	9.500	0.000
4"x1.25" Plate	B	No	Surface Af (CaAa)	62.500 - 57.250	1	1	0.100 0.150	4.000	9.500	0.000
4"x1.25" Plate	C	No	Surface Af (CaAa)	62.500 - 57.250	1	1	0.100 0.150	4.000	9.500	0.000
*										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
LDF6-50A(1-1/4)	B	No	No	Inside Pole	118.000 - 0.000	12	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
2" Rigid Conduit	B	No	No	Inside Pole	118.000 - 0.000	2	No Ice	0.000	0.003
							1/2" Ice	0.000	0.003
							1" Ice	0.000	0.003
							2" Ice	0.000	0.003
FB-L98B-034-XXX(3/8)	B	No	No	Inside Pole	118.000 - 0.000	2	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
WR-CAT5E10P(1)	B	No	No	Inside Pole	118.000 - 0.000	4	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
*									
HJ7-50A(1-5/8)	C	No	No	Inside Pole	108.000 - 0.000	4	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
HB158-21U6S12-XXXM-01(1-5/8)	C	No	No	Inside Pole	108.000 - 0.000	2	No Ice	0.000	0.002
							1/2" Ice	0.000	0.002
							1" Ice	0.000	0.002
							2" Ice	0.000	0.002
*									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	99.000 - 0.000	6	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
HCS 6X12 4AWG(1-5/8)	C	No	No	Inside Pole	99.000 - 0.000	3	No Ice	0.000	0.002
							1/2" Ice	0.000	0.002
							1" Ice	0.000	0.002
							2" Ice	0.000	0.002
*									
CU12PSM9P8XXX(1-3/8)	B	No	No	Inside Pole	86.000 - 0.000	1	No Ice	0.000	0.002
							1/2" Ice	0.000	0.002
							1" Ice	0.000	0.002
							2" Ice	0.000	0.002
*									

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C_AA_A ft^2/ft	Weight klf
*								

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
L1	120.000-115.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.188	0.000	0.045
		C	0.000	0.000	0.000	0.000	0.000
L2	115.000-110.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.188	0.000	0.074
		C	0.000	0.000	0.000	0.000	0.000
L3	110.000-105.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	1.375	0.000	0.080
		C	0.000	0.000	0.000	0.000	0.024
L4	105.000-100.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	2.167	0.000	0.084
		C	0.000	0.000	0.000	0.000	0.040
L5	100.000-95.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	2.167	0.000	0.084
		C	0.000	0.000	0.000	0.000	0.088
L6	95.000-90.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	2.167	0.000	0.084
		C	0.000	0.000	0.000	0.000	0.100
L7	90.000-83.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	3.034	0.000	0.123
		C	0.000	0.000	0.000	0.000	0.141
L8	83.000-81.250	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.759	0.000	0.032
		C	0.000	0.000	0.000	0.000	0.035
L9	81.250-76.250	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	2.167	0.000	0.092
		C	0.000	0.000	0.000	0.000	0.100
L10	76.250-71.250	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	2.167	0.000	0.092
		C	0.000	0.000	0.000	0.000	0.100
L11	71.250-66.250	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	2.167	0.000	0.092
		C	0.000	0.000	0.000	0.000	0.100
L12	66.250-61.250	A	0.000	0.000	0.701	0.000	0.000
		B	0.000	0.000	2.869	0.000	0.092
		C	0.000	0.000	0.701	0.000	0.100
L13	61.250-61.000	A	0.000	0.000	0.140	0.000	0.000
		B	0.000	0.000	0.249	0.000	0.005
		C	0.000	0.000	0.140	0.000	0.005
L14	61.000-60.750	A	0.000	0.000	0.140	0.000	0.000
		B	0.000	0.000	0.249	0.000	0.005
		C	0.000	0.000	0.140	0.000	0.005
L15	60.750-58.750	A	0.000	0.000	1.309	0.000	0.000
		B	0.000	0.000	2.176	0.000	0.037
		C	0.000	0.000	1.309	0.000	0.040
L16	58.750-58.500	A	0.000	0.000	0.328	0.000	0.000
		B	0.000	0.000	0.436	0.000	0.005

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
		C	0.000	0.000	0.328	0.000	0.005
L17	58.500-57.500	A	0.000	0.000	1.311	0.000	0.000
		B	0.000	0.000	1.744	0.000	0.018
		C	0.000	0.000	1.311	0.000	0.020
L18	57.500-57.250	A	0.000	0.000	0.328	0.000	0.000
		B	0.000	0.000	0.436	0.000	0.005
		C	0.000	0.000	0.328	0.000	0.005
L19	57.250-52.250	A	0.000	0.000	3.750	0.000	0.000
		B	0.000	0.000	5.918	0.000	0.092
		C	0.000	0.000	3.750	0.000	0.100
L20	52.250-47.250	A	0.000	0.000	3.750	0.000	0.000
		B	0.000	0.000	5.918	0.000	0.092
		C	0.000	0.000	3.750	0.000	0.100
L21	47.250-41.250	A	0.000	0.000	7.677	0.000	0.000
		B	0.000	0.000	10.278	0.000	0.111
		C	0.000	0.000	7.677	0.000	0.120
L22	41.250-40.250	A	0.000	0.000	2.129	0.000	0.000
		B	0.000	0.000	2.562	0.000	0.018
		C	0.000	0.000	2.129	0.000	0.020
L23	40.250-35.250	A	0.000	0.000	6.110	0.000	0.000
		B	0.000	0.000	8.278	0.000	0.092
		C	0.000	0.000	6.110	0.000	0.100
L24	35.250-32.750	A	0.000	0.000	2.292	0.000	0.000
		B	0.000	0.000	3.375	0.000	0.046
		C	0.000	0.000	2.292	0.000	0.050
L25	32.750-32.500	A	0.000	0.000	0.417	0.000	0.000
		B	0.000	0.000	0.525	0.000	0.005
		C	0.000	0.000	0.417	0.000	0.005
L26	32.500-31.250	A	0.000	0.000	2.083	0.000	0.000
		B	0.000	0.000	2.625	0.000	0.023
		C	0.000	0.000	2.083	0.000	0.025
L27	31.250-31.000	A	0.000	0.000	0.417	0.000	0.000
		B	0.000	0.000	0.525	0.000	0.005
		C	0.000	0.000	0.417	0.000	0.005
L28	31.000-26.000	A	0.000	0.000	4.583	0.000	0.000
		B	0.000	0.000	6.751	0.000	0.092
		C	0.000	0.000	4.583	0.000	0.100
L29	26.000-21.000	A	0.000	0.000	4.167	0.000	0.000
		B	0.000	0.000	6.334	0.000	0.092
		C	0.000	0.000	4.167	0.000	0.100
L30	21.000-19.750	A	0.000	0.000	1.667	0.000	0.000
		B	0.000	0.000	2.209	0.000	0.023
		C	0.000	0.000	2.292	0.000	0.025
L31	19.750-19.500	A	0.000	0.000	0.417	0.000	0.000
		B	0.000	0.000	0.525	0.000	0.005
		C	0.000	0.000	0.625	0.000	0.005
L32	19.500-18.500	A	0.000	0.000	1.667	0.000	0.000
		B	0.000	0.000	2.100	0.000	0.018
		C	0.000	0.000	2.500	0.000	0.020
L33	18.500-18.250	A	0.000	0.000	0.417	0.000	0.000
		B	0.000	0.000	0.525	0.000	0.005
		C	0.000	0.000	0.625	0.000	0.005
L34	18.250-13.250	A	0.000	0.000	4.375	0.000	0.000
		B	0.000	0.000	6.543	0.000	0.092
		C	0.000	0.000	8.542	0.000	0.100
L35	13.250-8.250	A	0.000	0.000	4.167	0.000	0.000
		B	0.000	0.000	6.334	0.000	0.092
		C	0.000	0.000	8.333	0.000	0.100
L36	8.250-3.250	A	0.000	0.000	4.167	0.000	0.000
		B	0.000	0.000	6.334	0.000	0.092
		C	0.000	0.000	8.333	0.000	0.100

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
L37	3.250-0.000	A	0.000	0.000	2.708	0.000	0.000
		B	0.000	0.000	4.117	0.000	0.060
		C	0.000	0.000	5.417	0.000	0.065

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
L1	120.000-115.000	A	1.448	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	1.635	0.000	0.061
		C		0.000	0.000	0.000	0.000	0.000
L2	115.000-110.000	A	1.441	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	1.629	0.000	0.090
		C		0.000	0.000	0.000	0.000	0.000
L3	110.000-105.000	A	1.435	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	4.183	0.000	0.121
		C		0.000	0.000	0.000	0.000	0.024
L4	105.000-100.000	A	1.428	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	5.875	0.000	0.142
		C		0.000	0.000	0.000	0.000	0.040
L5	100.000-95.000	A	1.421	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	5.859	0.000	0.142
		C		0.000	0.000	0.000	0.000	0.088
L6	95.000-90.000	A	1.413	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	5.843	0.000	0.141
		C		0.000	0.000	0.000	0.000	0.100
L7	90.000-83.000	A	1.404	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	8.150	0.000	0.202
		C		0.000	0.000	0.000	0.000	0.141
L8	83.000-81.250	A	1.397	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	2.037	0.000	0.052
		C		0.000	0.000	0.000	0.000	0.035
L9	81.250-76.250	A	1.391	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	5.792	0.000	0.148
		C		0.000	0.000	0.000	0.000	0.100
L10	76.250-71.250	A	1.382	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	5.771	0.000	0.148
		C		0.000	0.000	0.000	0.000	0.100
L11	71.250-66.250	A	1.372	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	5.750	0.000	0.147
		C		0.000	0.000	0.000	0.000	0.100
L12	66.250-61.250	A	1.362	0.000	0.000	0.883	0.000	0.010
		B		0.000	0.000	6.609	0.000	0.157
		C		0.000	0.000	0.883	0.000	0.110
L13	61.250-61.000	A	1.356	0.000	0.000	0.176	0.000	0.002
		B		0.000	0.000	0.462	0.000	0.009
		C		0.000	0.000	0.176	0.000	0.007
L14	61.000-60.750	A	1.356	0.000	0.000	0.176	0.000	0.002
		B		0.000	0.000	0.462	0.000	0.009
		C		0.000	0.000	0.176	0.000	0.007
L15	60.750-58.750	A	1.353	0.000	0.000	1.666	0.000	0.018
		B		0.000	0.000	3.949	0.000	0.076
		C		0.000	0.000	1.666	0.000	0.058
L16	58.750-58.500	A	1.350	0.000	0.000	0.431	0.000	0.004
		B		0.000	0.000	0.716	0.000	0.011
		C		0.000	0.000	0.431	0.000	0.009
L17	58.500-57.500	A	1.349	0.000	0.000	1.725	0.000	0.016

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
		B		0.000	0.000	2.864	0.000	0.045
		C		0.000	0.000	1.725	0.000	0.036
L18	57.500-57.250	A	1.348	0.000	0.000	0.431	0.000	0.004
		B		0.000	0.000	0.716	0.000	0.011
		C		0.000	0.000	0.431	0.000	0.009
L19	57.250-52.250	A	1.341	0.000	0.000	5.091	0.000	0.042
		B		0.000	0.000	10.771	0.000	0.188
		C		0.000	0.000	5.091	0.000	0.142
L20	52.250-47.250	A	1.328	0.000	0.000	5.078	0.000	0.041
		B		0.000	0.000	10.730	0.000	0.186
		C		0.000	0.000	5.078	0.000	0.142
L21	47.250-41.250	A	1.313	0.000	0.000	9.944	0.000	0.093
		B		0.000	0.000	16.684	0.000	0.266
		C		0.000	0.000	9.944	0.000	0.213
L22	41.250-40.250	A	1.302	0.000	0.000	2.555	0.000	0.027
		B		0.000	0.000	3.678	0.000	0.056
		C		0.000	0.000	2.555	0.000	0.047
L23	40.250-35.250	A	1.292	0.000	0.000	7.216	0.000	0.070
		B		0.000	0.000	12.786	0.000	0.213
		C		0.000	0.000	7.216	0.000	0.170
L24	35.250-32.750	A	1.279	0.000	0.000	2.693	0.000	0.024
		B		0.000	0.000	5.463	0.000	0.095
		C		0.000	0.000	2.693	0.000	0.074
L25	32.750-32.500	A	1.274	0.000	0.000	0.513	0.000	0.004
		B		0.000	0.000	0.789	0.000	0.011
		C		0.000	0.000	0.513	0.000	0.009
L26	32.500-31.250	A	1.271	0.000	0.000	2.563	0.000	0.021
		B		0.000	0.000	3.943	0.000	0.057
		C		0.000	0.000	2.563	0.000	0.046
L27	31.250-31.000	A	1.268	0.000	0.000	0.512	0.000	0.004
		B		0.000	0.000	0.788	0.000	0.011
		C		0.000	0.000	0.512	0.000	0.009
L28	31.000-26.000	A	1.256	0.000	0.000	5.883	0.000	0.045
		B		0.000	0.000	11.372	0.000	0.186
		C		0.000	0.000	5.883	0.000	0.146
L29	26.000-21.000	A	1.232	0.000	0.000	5.379	0.000	0.040
		B		0.000	0.000	10.814	0.000	0.180
		C		0.000	0.000	5.379	0.000	0.140
L30	21.000-19.750	A	1.215	0.000	0.000	2.148	0.000	0.016
		B		0.000	0.000	3.497	0.000	0.050
		C		0.000	0.000	2.956	0.000	0.047
L31	19.750-19.500	A	1.210	0.000	0.000	0.537	0.000	0.004
		B		0.000	0.000	0.806	0.000	0.011
		C		0.000	0.000	0.806	0.000	0.011
L32	19.500-18.500	A	1.207	0.000	0.000	2.146	0.000	0.016
		B		0.000	0.000	3.222	0.000	0.043
		C		0.000	0.000	3.221	0.000	0.043
L33	18.500-18.250	A	1.202	0.000	0.000	0.536	0.000	0.004
		B		0.000	0.000	0.805	0.000	0.011
		C		0.000	0.000	0.805	0.000	0.011
L34	18.250-13.250	A	1.184	0.000	0.000	5.618	0.000	0.040
		B		0.000	0.000	10.944	0.000	0.177
		C		0.000	0.000	10.968	0.000	0.178
L35	13.250-8.250	A	1.140	0.000	0.000	5.306	0.000	0.036
		B		0.000	0.000	10.533	0.000	0.171
		C		0.000	0.000	10.613	0.000	0.173
L36	8.250-3.250	A	1.070	0.000	0.000	5.237	0.000	0.033
		B		0.000	0.000	10.308	0.000	0.165
		C		0.000	0.000	10.474	0.000	0.167
L37	3.250-0.000	A	0.943	0.000	0.000	3.321	0.000	0.019
		B		0.000	0.000	6.432	0.000	0.100

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
		C		0.000	0.000	6.643	0.000	0.102

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	120.000-115.000	0.031	-0.299	0.131	-1.244
L2	115.000-110.000	0.031	-0.299	0.131	-1.251
L3	110.000-105.000	1.441	-1.281	1.423	-1.912
L4	105.000-100.000	2.164	-1.786	1.998	-2.218
L5	100.000-95.000	2.175	-1.797	2.024	-2.247
L6	95.000-90.000	2.187	-1.806	2.049	-2.274
L7	90.000-83.000	2.199	-1.817	2.077	-2.305
L8	83.000-81.250	2.204	-1.821	2.087	-2.317
L9	81.250-76.250	2.211	-1.827	2.100	-2.329
L10	76.250-71.250	2.220	-1.835	2.121	-2.351
L11	71.250-66.250	2.229	-1.843	2.141	-2.372
L12	66.250-61.250	1.865	-1.542	1.943	-2.151
L13	61.250-61.000	1.252	-1.035	1.504	-1.665
L14	61.000-60.750	1.253	-1.036	1.505	-1.666
L15	60.750-58.750	1.170	-0.968	1.430	-1.583
L16	58.750-58.500	0.794	-0.657	1.050	-1.162
L17	58.500-57.500	0.796	-0.658	1.052	-1.164
L18	57.500-57.250	0.798	-0.660	1.054	-1.166
L19	57.250-52.250	1.110	-0.918	1.347	-1.489
L20	52.250-47.250	1.126	-0.931	1.364	-1.507
L21	47.250-41.250	0.846	-0.700	1.115	-1.230
L22	41.250-40.250	0.598	-0.495	0.879	-0.969
L23	40.250-35.250	0.880	-0.728	1.198	-1.319
L24	35.250-32.750	1.050	-0.869	1.368	-1.503
L25	32.750-32.500	0.731	-0.605	1.015	-1.114
L26	32.500-31.250	0.733	-0.607	1.017	-1.116
L27	31.250-31.000	0.735	-0.608	1.018	-1.118
L28	31.000-26.000	1.065	-0.882	1.333	-1.462
L29	26.000-21.000	1.133	-0.938	1.392	-1.522
L30	21.000-19.750	0.012	-1.382	0.416	-1.747
L31	19.750-19.500	-0.439	-1.559	-0.018	-1.846
L32	19.500-18.500	-0.440	-1.562	-0.019	-1.849
L33	18.500-18.250	-0.441	-1.565	-0.019	-1.851
L34	18.250-13.250	-0.622	-2.207	-0.030	-2.444
L35	13.250-8.250	-0.645	-2.285	-0.040	-2.501
L36	8.250-3.250	-0.655	-2.316	-0.055	-2.505
L37	3.250-0.000	-0.663	-2.341	-0.082	-2.474

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	17	Safety Line 3/8	115.00 - 120.00	1.0000	1.0000
L2	17	Safety Line 3/8	110.00 - 115.00	1.0000	1.0000
L3	8	HJ7-50A(1-5/8)	105.00 - 108.00	1.0000	1.0000
L3	17	Safety Line 3/8	105.00 - 110.00	1.0000	1.0000
L4	8	HJ7-50A(1-5/8)	100.00 - 105.00	1.0000	1.0000
L4	17	Safety Line 3/8	100.00 - 105.00	1.0000	1.0000
L5	8	HJ7-50A(1-5/8)	95.00 - 100.00	1.0000	1.0000
L5	17	Safety Line 3/8	95.00 - 100.00	1.0000	1.0000
L6	8	HJ7-50A(1-5/8)	90.00 - 95.00	1.0000	1.0000
L6	17	Safety Line 3/8	90.00 - 95.00	1.0000	1.0000
L7	8	HJ7-50A(1-5/8)	83.00 - 90.00	1.0000	1.0000
L7	17	Safety Line 3/8	83.00 - 90.00	1.0000	1.0000
L8	8	HJ7-50A(1-5/8)	81.25 - 83.00	1.0000	1.0000
L8	17	Safety Line 3/8	81.25 - 83.00	1.0000	1.0000
L9	8	HJ7-50A(1-5/8)	76.25 - 81.25	1.0000	1.0000
L9	17	Safety Line 3/8	76.25 - 81.25	1.0000	1.0000
L10	8	HJ7-50A(1-5/8)	71.25 - 76.25	1.0000	1.0000
L10	17	Safety Line 3/8	71.25 - 76.25	1.0000	1.0000
L11	8	HJ7-50A(1-5/8)	66.25 - 71.25	1.0000	1.0000
L11	17	Safety Line 3/8	66.25 - 71.25	1.0000	1.0000
L12	8	HJ7-50A(1-5/8)	61.25 - 66.25	1.0000	1.0000
L12	17	Safety Line 3/8	61.25 - 66.25	1.0000	1.0000
L12	44	4"x1.25" Plate	61.25 - 62.50	1.0000	1.0000
L12	45	4"x1.25" Plate	61.25 - 62.50	1.0000	1.0000
L12	46	4"x1.25" Plate	61.25 - 62.50	1.0000	1.0000
L13	8	HJ7-50A(1-5/8)	61.00 - 61.25	1.0000	1.0000
L13	17	Safety Line 3/8	61.00 - 61.25	1.0000	1.0000
L13	44	4"x1.25" Plate	61.00 - 61.25	1.0000	1.0000
L13	45	4"x1.25" Plate	61.00 - 61.25	1.0000	1.0000
L13	46	4"x1.25" Plate	61.00 - 61.25	1.0000	1.0000
L14	8	HJ7-50A(1-5/8)	60.75 - 61.00	1.0000	1.0000
L14	17	Safety Line 3/8	60.75 - 61.00	1.0000	1.0000
L14	44	4"x1.25" Plate	60.75 - 61.00	1.0000	1.0000
L14	45	4"x1.25" Plate	60.75 - 61.00	1.0000	1.0000
L14	46	4"x1.25" Plate	60.75 - 61.00	1.0000	1.0000
L15	8	HJ7-50A(1-5/8)	58.75 - 60.75	1.0000	1.0000
L15	17	Safety Line 3/8	58.75 - 60.75	1.0000	1.0000
L15	29	4.5"x1" Plate	58.75 - 59.00	1.0000	1.0000
L15	30	4.5"x1" Plate	58.75 - 59.00	1.0000	1.0000
L15	31	4.5"x1" Plate	58.75 - 59.00	1.0000	1.0000
L15	44	4"x1.25" Plate	58.75 - 60.75	1.0000	1.0000
L15	45	4"x1.25" Plate	58.75 - 60.75	1.0000	1.0000
L15	46	4"x1.25" Plate	58.75 - 60.75	1.0000	1.0000
L16	8	HJ7-50A(1-5/8)	58.50 - 58.75	1.0000	1.0000
L16	17	Safety Line 3/8	58.50 - 58.75	1.0000	1.0000
L16	29	4.5"x1" Plate	58.50 - 58.75	1.0000	1.0000
L16	30	4.5"x1" Plate	58.50 - 58.75	1.0000	1.0000
L16	31	4.5"x1" Plate	58.50 - 58.75	1.0000	1.0000
L16	44	4"x1.25" Plate	58.50 - 58.75	1.0000	1.0000
L16	45	4"x1.25" Plate	58.50 - 58.75	1.0000	1.0000
L16	46	4"x1.25" Plate	58.50 - 58.75	1.0000	1.0000
L17	8	HJ7-50A(1-5/8)	57.50 - 58.50	1.0000	1.0000
L17	17	Safety Line 3/8	57.50 - 58.50	1.0000	1.0000
L17	29	4.5"x1" Plate	57.50 - 58.50	1.0000	1.0000
L17	30	4.5"x1" Plate	57.50 - 58.50	1.0000	1.0000
L17	31	4.5"x1" Plate	57.50 - 58.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L17	44	4"x1.25" Plate	57.50 - 58.50	1.0000	1.0000
L17	45	4"x1.25" Plate	57.50 - 58.50	1.0000	1.0000
L17	46	4"x1.25" Plate	57.50 - 58.50	1.0000	1.0000
L18	8	HJ7-50A(1-5/8)	57.25 - 57.50	1.0000	1.0000
L18	17	Safety Line 3/8	57.25 - 57.50	1.0000	1.0000
L18	29	4.5"x1" Plate	57.25 - 57.50	1.0000	1.0000
L18	30	4.5"x1" Plate	57.25 - 57.50	1.0000	1.0000
L18	31	4.5"x1" Plate	57.25 - 57.50	1.0000	1.0000
L18	44	4"x1.25" Plate	57.25 - 57.50	1.0000	1.0000
L18	45	4"x1.25" Plate	57.25 - 57.50	1.0000	1.0000
L18	46	4"x1.25" Plate	57.25 - 57.50	1.0000	1.0000
L19	8	HJ7-50A(1-5/8)	52.25 - 57.25	1.0000	1.0000
L19	17	Safety Line 3/8	52.25 - 57.25	1.0000	1.0000
L19	29	4.5"x1" Plate	52.25 - 57.25	1.0000	1.0000
L19	30	4.5"x1" Plate	52.25 - 57.25	1.0000	1.0000
L19	31	4.5"x1" Plate	52.25 - 57.25	1.0000	1.0000
L20	8	HJ7-50A(1-5/8)	47.25 - 52.25	1.0000	1.0000
L20	17	Safety Line 3/8	47.25 - 52.25	1.0000	1.0000
L20	29	4.5"x1" Plate	47.25 - 52.25	1.0000	1.0000
L20	30	4.5"x1" Plate	47.25 - 52.25	1.0000	1.0000
L20	31	4.5"x1" Plate	47.25 - 52.25	1.0000	1.0000
L21	8	HJ7-50A(1-5/8)	41.25 - 47.25	1.0000	1.0000
L21	17	Safety Line 3/8	41.25 - 47.25	1.0000	1.0000
L21	29	4.5"x1" Plate	41.33 - 47.25	1.0000	1.0000
L21	30	4.5"x1" Plate	41.33 - 47.25	1.0000	1.0000
L21	31	4.5"x1" Plate	41.33 - 47.25	1.0000	1.0000
L21	37	5"x1.25" Plate	41.25 - 43.75	1.0000	1.0000
L21	38	5"x1.25" Plate	41.25 - 43.75	1.0000	1.0000
L21	39	5"x1.25" Plate	41.25 - 43.75	1.0000	1.0000
L21	40	5"x1.25" Plate	41.25 - 43.75	1.0000	1.0000
L21	41	5"x1.25" Plate	41.25 - 43.75	1.0000	1.0000
L21	42	5"x1.25" Plate	41.25 - 43.75	1.0000	1.0000
L22	8	HJ7-50A(1-5/8)	40.25 - 41.25	1.0000	1.0000
L22	17	Safety Line 3/8	40.25 - 41.25	1.0000	1.0000
L22	33	5"x1.25" Plate	40.25 - 41.25	1.0000	1.0000
L22	34	5"x1.25" Plate	40.25 - 41.25	1.0000	1.0000
L22	35	5"x1.25" Plate	40.25 - 41.25	1.0000	1.0000
L22	37	5"x1.25" Plate	40.25 - 41.25	1.0000	1.0000
L22	38	5"x1.25" Plate	40.25 - 41.25	1.0000	1.0000
L22	39	5"x1.25" Plate	40.25 - 41.25	1.0000	1.0000
L22	40	5"x1.25" Plate	40.25 - 41.25	1.0000	1.0000
L22	41	5"x1.25" Plate	40.25 - 41.25	1.0000	1.0000
L22	42	5"x1.25" Plate	40.25 - 41.25	1.0000	1.0000
L23	8	HJ7-50A(1-5/8)	35.25 - 40.25	1.0000	1.0000
L23	17	Safety Line 3/8	35.25 - 40.25	1.0000	1.0000
L23	33	5"x1.25" Plate	35.25 - 40.25	1.0000	1.0000
L23	34	5"x1.25" Plate	35.25 - 40.25	1.0000	1.0000
L23	35	5"x1.25" Plate	35.25 - 40.25	1.0000	1.0000
L23	37	5"x1.25" Plate	38.75 - 40.25	1.0000	1.0000
L23	38	5"x1.25" Plate	38.75 - 40.25	1.0000	1.0000
L23	39	5"x1.25" Plate	38.75 - 40.25	1.0000	1.0000
L23	40	5"x1.25" Plate	38.75 - 40.25	1.0000	1.0000
L23	41	5"x1.25" Plate	38.75 - 40.25	1.0000	1.0000
L23	42	5"x1.25" Plate	38.75 - 40.25	1.0000	1.0000
L24	8	HJ7-50A(1-5/8)	32.75 - 35.25	1.0000	1.0000
L24	17	Safety Line 3/8	32.75 - 35.25	1.0000	1.0000
L24	25	5"x1" Plate	32.75 - 33.00	1.0000	1.0000
L24	26	5"x1" Plate	32.75 - 33.00	1.0000	1.0000
L24	27	5"x1" Plate	32.75 - 33.00	1.0000	1.0000
L24	33	5"x1.25" Plate	32.75 - 35.25	1.0000	1.0000
L24	34	5"x1.25" Plate	32.75 - 35.25	1.0000	1.0000
L24	35	5"x1.25" Plate	32.75 - 35.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L25	8	HJ7-50A(1-5/8)	32.50 - 32.75	1.0000	1.0000
L25	17	Safety Line 3/8	32.50 - 32.75	1.0000	1.0000
L25	25	5"x1" Plate	32.50 - 32.75	1.0000	1.0000
L25	26	5"x1" Plate	32.50 - 32.75	1.0000	1.0000
L25	27	5"x1" Plate	32.50 - 32.75	1.0000	1.0000
L25	33	5"x1.25" Plate	32.50 - 32.75	1.0000	1.0000
L25	34	5"x1.25" Plate	32.50 - 32.75	1.0000	1.0000
L25	35	5"x1.25" Plate	32.50 - 32.75	1.0000	1.0000
L26	8	HJ7-50A(1-5/8)	31.25 - 32.50	1.0000	1.0000
L26	17	Safety Line 3/8	31.25 - 32.50	1.0000	1.0000
L26	25	5"x1" Plate	31.25 - 32.50	1.0000	1.0000
L26	26	5"x1" Plate	31.25 - 32.50	1.0000	1.0000
L26	27	5"x1" Plate	31.25 - 32.50	1.0000	1.0000
L26	33	5"x1.25" Plate	31.25 - 32.50	1.0000	1.0000
L26	34	5"x1.25" Plate	31.25 - 32.50	1.0000	1.0000
L26	35	5"x1.25" Plate	31.25 - 32.50	1.0000	1.0000
L27	8	HJ7-50A(1-5/8)	31.00 - 31.25	1.0000	1.0000
L27	17	Safety Line 3/8	31.00 - 31.25	1.0000	1.0000
L27	25	5"x1" Plate	31.00 - 31.25	1.0000	1.0000
L27	26	5"x1" Plate	31.00 - 31.25	1.0000	1.0000
L27	27	5"x1" Plate	31.00 - 31.25	1.0000	1.0000
L27	33	5"x1.25" Plate	31.00 - 31.25	1.0000	1.0000
L27	34	5"x1.25" Plate	31.00 - 31.25	1.0000	1.0000
L27	35	5"x1.25" Plate	31.00 - 31.25	1.0000	1.0000
L28	8	HJ7-50A(1-5/8)	26.00 - 31.00	1.0000	1.0000
L28	17	Safety Line 3/8	26.00 - 31.00	1.0000	1.0000
L28	25	5"x1" Plate	26.00 - 31.00	1.0000	1.0000
L28	26	5"x1" Plate	26.00 - 31.00	1.0000	1.0000
L28	27	5"x1" Plate	26.00 - 31.00	1.0000	1.0000
L28	33	5"x1.25" Plate	30.50 - 31.00	1.0000	1.0000
L28	34	5"x1.25" Plate	30.50 - 31.00	1.0000	1.0000
L28	35	5"x1.25" Plate	30.50 - 31.00	1.0000	1.0000
L29	8	HJ7-50A(1-5/8)	21.00 - 26.00	1.0000	1.0000
L29	17	Safety Line 3/8	21.00 - 26.00	1.0000	1.0000
L29	25	5"x1" Plate	21.00 - 26.00	1.0000	1.0000
L29	26	5"x1" Plate	21.00 - 26.00	1.0000	1.0000
L29	27	5"x1" Plate	21.00 - 26.00	1.0000	1.0000
L30	8	HJ7-50A(1-5/8)	19.75 - 21.00	1.0000	1.0000
L30	17	Safety Line 3/8	19.75 - 21.00	1.0000	1.0000
L30	20	5"x1" Plate	19.75 - 20.50	1.0000	1.0000
L30	21	5"x1" Plate	19.75 - 20.50	1.0000	1.0000
L30	22	5"x1" Plate	19.75 - 20.50	1.0000	1.0000
L30	23	5"x1" Plate	19.75 - 20.50	1.0000	1.0000
L30	25	5"x1" Plate	19.75 - 21.00	1.0000	1.0000
L30	26	5"x1" Plate	19.75 - 21.00	1.0000	1.0000
L30	27	5"x1" Plate	19.75 - 21.00	1.0000	1.0000
L31	8	HJ7-50A(1-5/8)	19.50 - 19.75	1.0000	1.0000
L31	17	Safety Line 3/8	19.50 - 19.75	1.0000	1.0000
L31	20	5"x1" Plate	19.50 - 19.75	1.0000	1.0000
L31	21	5"x1" Plate	19.50 - 19.75	1.0000	1.0000
L31	22	5"x1" Plate	19.50 - 19.75	1.0000	1.0000
L31	23	5"x1" Plate	19.50 - 19.75	1.0000	1.0000
L31	25	5"x1" Plate	19.50 - 19.75	1.0000	1.0000
L31	26	5"x1" Plate	19.50 - 19.75	1.0000	1.0000
L31	27	5"x1" Plate	19.50 - 19.75	1.0000	1.0000
L32	8	HJ7-50A(1-5/8)	18.50 - 19.50	1.0000	1.0000
L32	17	Safety Line 3/8	18.50 - 19.50	1.0000	1.0000
L32	20	5"x1" Plate	18.50 - 19.50	1.0000	1.0000
L32	21	5"x1" Plate	18.50 - 19.50	1.0000	1.0000
L32	22	5"x1" Plate	18.50 - 19.50	1.0000	1.0000
L32	23	5"x1" Plate	18.50 - 19.50	1.0000	1.0000
L32	25	5"x1" Plate	18.50 - 19.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L32	26	5"x1" Plate	18.50 - 19.50	1.0000	1.0000
L32	27	5"x1" Plate	18.50 - 19.50	1.0000	1.0000
L33	8	HJ7-50A(1-5/8)	18.25 - 18.50	1.0000	1.0000
L33	17	Safety Line 3/8	18.25 - 18.50	1.0000	1.0000
L33	20	5"x1" Plate	18.25 - 18.50	1.0000	1.0000
L33	21	5"x1" Plate	18.25 - 18.50	1.0000	1.0000
L33	22	5"x1" Plate	18.25 - 18.50	1.0000	1.0000
L33	23	5"x1" Plate	18.25 - 18.50	1.0000	1.0000
L33	25	5"x1" Plate	18.25 - 18.50	1.0000	1.0000
L33	26	5"x1" Plate	18.25 - 18.50	1.0000	1.0000
L33	27	5"x1" Plate	18.25 - 18.50	1.0000	1.0000
L34	8	HJ7-50A(1-5/8)	13.25 - 18.25	1.0000	1.0000
L34	17	Safety Line 3/8	13.25 - 18.25	1.0000	1.0000
L34	20	5"x1" Plate	13.25 - 18.25	1.0000	1.0000
L34	21	5"x1" Plate	13.25 - 18.25	1.0000	1.0000
L34	22	5"x1" Plate	13.25 - 18.25	1.0000	1.0000
L34	23	5"x1" Plate	13.25 - 18.25	1.0000	1.0000
L34	25	5"x1" Plate	18.00 - 18.25	1.0000	1.0000
L34	26	5"x1" Plate	18.00 - 18.25	1.0000	1.0000
L34	27	5"x1" Plate	18.00 - 18.25	1.0000	1.0000
L35	8	HJ7-50A(1-5/8)	8.25 - 13.25	1.0000	1.0000
L35	17	Safety Line 3/8	8.25 - 13.25	1.0000	1.0000
L35	20	5"x1" Plate	8.25 - 13.25	1.0000	1.0000
L35	21	5"x1" Plate	8.25 - 13.25	1.0000	1.0000
L35	22	5"x1" Plate	8.25 - 13.25	1.0000	1.0000
L35	23	5"x1" Plate	8.25 - 13.25	1.0000	1.0000
L36	8	HJ7-50A(1-5/8)	3.25 - 8.25	1.0000	1.0000
L36	17	Safety Line 3/8	3.25 - 8.25	1.0000	1.0000
L36	20	5"x1" Plate	3.25 - 8.25	1.0000	1.0000
L36	21	5"x1" Plate	3.25 - 8.25	1.0000	1.0000
L36	22	5"x1" Plate	3.25 - 8.25	1.0000	1.0000
L36	23	5"x1" Plate	3.25 - 8.25	1.0000	1.0000
L37	8	HJ7-50A(1-5/8)	0.00 - 3.25	1.0000	1.0000
L37	17	Safety Line 3/8	0.00 - 3.25	1.0000	1.0000
L37	20	5"x1" Plate	0.00 - 3.25	1.0000	1.0000
L37	21	5"x1" Plate	0.00 - 3.25	1.0000	1.0000
L37	22	5"x1" Plate	0.00 - 3.25	1.0000	1.0000
L37	23	5"x1" Plate	0.00 - 3.25	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L12	44	4"x1.25" Plate	61.25 - 62.50	Auto	0.0000
L12	45	4"x1.25" Plate	61.25 - 62.50	Auto	0.0000
L12	46	4"x1.25" Plate	61.25 - 62.50	Auto	0.0000
L13	44	4"x1.25" Plate	61.00 - 61.25	Auto	0.0000
L13	45	4"x1.25" Plate	61.00 - 61.25	Auto	0.0000
L13	46	4"x1.25" Plate	61.00 - 61.25	Auto	0.0000
L14	44	4"x1.25" Plate	60.75 - 61.00	Auto	0.0000
L14	45	4"x1.25" Plate	60.75 - 61.00	Auto	0.0000
L14	46	4"x1.25" Plate	60.75 - 61.00	Auto	0.0000
L15	29	4.5"x1" Plate	58.75 - 59.00	Auto	0.0106

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L15	30	4.5"x1" Plate	58.75 - 59.00	Auto	0.0106
L15	31	4.5"x1" Plate	58.75 - 59.00	Auto	0.0106
L15	44	4"x1.25" Plate	58.75 - 60.75	Auto	0.0000
L15	45	4"x1.25" Plate	58.75 - 60.75	Auto	0.0000
L15	46	4"x1.25" Plate	58.75 - 60.75	Auto	0.0000
L16	29	4.5"x1" Plate	58.50 - 58.75	Auto	0.0092
L16	30	4.5"x1" Plate	58.50 - 58.75	Auto	0.0092
L16	31	4.5"x1" Plate	58.50 - 58.75	Auto	0.0092
L16	44	4"x1.25" Plate	58.50 - 58.75	Auto	0.0000
L16	45	4"x1.25" Plate	58.50 - 58.75	Auto	0.0000
L16	46	4"x1.25" Plate	58.50 - 58.75	Auto	0.0000
L17	29	4.5"x1" Plate	57.50 - 58.50	Auto	0.0055
L17	30	4.5"x1" Plate	57.50 - 58.50	Auto	0.0055
L17	31	4.5"x1" Plate	57.50 - 58.50	Auto	0.0055
L17	44	4"x1.25" Plate	57.50 - 58.50	Auto	0.0000
L17	45	4"x1.25" Plate	57.50 - 58.50	Auto	0.0000
L17	46	4"x1.25" Plate	57.50 - 58.50	Auto	0.0000
L18	29	4.5"x1" Plate	57.25 - 57.50	Auto	0.0018
L18	30	4.5"x1" Plate	57.25 - 57.50	Auto	0.0018
L18	31	4.5"x1" Plate	57.25 - 57.50	Auto	0.0018
L18	44	4"x1.25" Plate	57.25 - 57.50	Auto	0.0000
L18	45	4"x1.25" Plate	57.25 - 57.50	Auto	0.0000
L18	46	4"x1.25" Plate	57.25 - 57.50	Auto	0.0000
L19	29	4.5"x1" Plate	52.25 - 57.25	Auto	0.0000
L19	30	4.5"x1" Plate	52.25 - 57.25	Auto	0.0000
L19	31	4.5"x1" Plate	52.25 - 57.25	Auto	0.0000
L20	29	4.5"x1" Plate	47.25 - 52.25	Auto	0.0000
L20	30	4.5"x1" Plate	47.25 - 52.25	Auto	0.0000
L20	31	4.5"x1" Plate	47.25 - 52.25	Auto	0.0000
L21	29	4.5"x1" Plate	41.33 - 47.25	Auto	0.0000
L21	30	4.5"x1" Plate	41.33 - 47.25	Auto	0.0000
L21	31	4.5"x1" Plate	41.33 - 47.25	Auto	0.0000
L21	37	5"x1.25" Plate	41.25 - 43.75	Auto	0.0231
L21	38	5"x1.25" Plate	41.25 - 43.75	Auto	0.0231
L21	39	5"x1.25" Plate	41.25 - 43.75	Auto	0.0231
L21	40	5"x1.25" Plate	41.25 - 43.75	Auto	0.0231
L21	41	5"x1.25" Plate	41.25 - 43.75	Auto	0.0231
L21	42	5"x1.25" Plate	41.25 - 43.75	Auto	0.0231
L22	33	5"x1.25" Plate	40.25 - 41.25	Auto	0.1370
L22	34	5"x1.25" Plate	40.25 - 41.25	Auto	0.1370
L22	35	5"x1.25" Plate	40.25 - 41.25	Auto	0.1370
L22	37	5"x1.25" Plate	40.25 - 41.25	Auto	0.1370
L22	38	5"x1.25" Plate	40.25 - 41.25	Auto	0.1370
L22	39	5"x1.25" Plate	40.25 - 41.25	Auto	0.1370
L22	40	5"x1.25" Plate	40.25 - 41.25	Auto	0.1370
L22	41	5"x1.25" Plate	40.25 - 41.25	Auto	0.1370
L22	42	5"x1.25" Plate	40.25 - 41.25	Auto	0.1370
L23	33	5"x1.25" Plate	35.25 - 40.25	Auto	0.1168
L23	34	5"x1.25" Plate	35.25 - 40.25	Auto	0.1168
L23	35	5"x1.25" Plate	35.25 - 40.25	Auto	0.1168
L23	37	5"x1.25" Plate	38.75 - 40.25	Auto	0.1260
L23	38	5"x1.25" Plate	38.75 - 40.25	Auto	0.1260
L23	39	5"x1.25" Plate	38.75 - 40.25	Auto	0.1260
L23	40	5"x1.25" Plate	38.75 - 40.25	Auto	0.1260
L23	41	5"x1.25" Plate	38.75 - 40.25	Auto	0.1260
L23	42	5"x1.25" Plate	38.75 - 40.25	Auto	0.1260
L24	25	5"x1" Plate	32.75 - 33.00	Auto	0.0910
L24	26	5"x1" Plate	32.75 - 33.00	Auto	0.0910
L24	27	5"x1" Plate	32.75 - 33.00	Auto	0.0910
L24	33	5"x1.25" Plate	32.75 - 35.25	Auto	0.0970
L24	34	5"x1.25" Plate	32.75 - 35.25	Auto	0.0970

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L24	35	5"x1.25" Plate	32.75 - 35.25	Auto	0.0970
L25	25	5"x1" Plate	32.50 - 32.75	Auto	0.0105
L25	26	5"x1" Plate	32.50 - 32.75	Auto	0.0105
L25	27	5"x1" Plate	32.50 - 32.75	Auto	0.0105
L25	33	5"x1.25" Plate	32.50 - 32.75	Auto	0.0105
L25	34	5"x1.25" Plate	32.50 - 32.75	Auto	0.0105
L25	35	5"x1.25" Plate	32.50 - 32.75	Auto	0.0105
L26	25	5"x1" Plate	31.25 - 32.50	Auto	0.0066
L26	26	5"x1" Plate	31.25 - 32.50	Auto	0.0066
L26	27	5"x1" Plate	31.25 - 32.50	Auto	0.0066
L26	33	5"x1.25" Plate	31.25 - 32.50	Auto	0.0066
L26	34	5"x1.25" Plate	31.25 - 32.50	Auto	0.0066
L26	35	5"x1.25" Plate	31.25 - 32.50	Auto	0.0066
L27	25	5"x1" Plate	31.00 - 31.25	Auto	0.0026
L27	26	5"x1" Plate	31.00 - 31.25	Auto	0.0026
L27	27	5"x1" Plate	31.00 - 31.25	Auto	0.0026
L27	33	5"x1.25" Plate	31.00 - 31.25	Auto	0.0026
L27	34	5"x1.25" Plate	31.00 - 31.25	Auto	0.0026
L27	35	5"x1.25" Plate	31.00 - 31.25	Auto	0.0026
L28	25	5"x1" Plate	26.00 - 31.00	Auto	0.0001
L28	26	5"x1" Plate	26.00 - 31.00	Auto	0.0001
L28	27	5"x1" Plate	26.00 - 31.00	Auto	0.0001
L28	33	5"x1.25" Plate	30.50 - 31.00	Auto	0.0007
L28	34	5"x1.25" Plate	30.50 - 31.00	Auto	0.0007
L28	35	5"x1.25" Plate	30.50 - 31.00	Auto	0.0007
L29	25	5"x1" Plate	21.00 - 26.00	Auto	0.0000
L29	26	5"x1" Plate	21.00 - 26.00	Auto	0.0000
L29	27	5"x1" Plate	21.00 - 26.00	Auto	0.0000
L30	20	5"x1" Plate	19.75 - 20.50	Auto	0.0000
L30	21	5"x1" Plate	19.75 - 20.50	Auto	0.0000
L30	22	5"x1" Plate	19.75 - 20.50	Auto	0.0000
L30	23	5"x1" Plate	19.75 - 20.50	Auto	0.0000
L30	25	5"x1" Plate	19.75 - 21.00	Auto	0.0000
L30	26	5"x1" Plate	19.75 - 21.00	Auto	0.0000
L30	27	5"x1" Plate	19.75 - 21.00	Auto	0.0000
L31	20	5"x1" Plate	19.50 - 19.75	Auto	0.0000
L31	21	5"x1" Plate	19.50 - 19.75	Auto	0.0000
L31	22	5"x1" Plate	19.50 - 19.75	Auto	0.0000
L31	23	5"x1" Plate	19.50 - 19.75	Auto	0.0000
L31	25	5"x1" Plate	19.50 - 19.75	Auto	0.0000
L31	26	5"x1" Plate	19.50 - 19.75	Auto	0.0000
L31	27	5"x1" Plate	19.50 - 19.75	Auto	0.0000
L32	20	5"x1" Plate	18.50 - 19.50	Auto	0.0000
L32	21	5"x1" Plate	18.50 - 19.50	Auto	0.0000
L32	22	5"x1" Plate	18.50 - 19.50	Auto	0.0000
L32	23	5"x1" Plate	18.50 - 19.50	Auto	0.0000
L32	25	5"x1" Plate	18.50 - 19.50	Auto	0.0000
L32	26	5"x1" Plate	18.50 - 19.50	Auto	0.0000
L32	27	5"x1" Plate	18.50 - 19.50	Auto	0.0000
L33	20	5"x1" Plate	18.25 - 18.50	Auto	0.0000
L33	21	5"x1" Plate	18.25 - 18.50	Auto	0.0000
L33	22	5"x1" Plate	18.25 - 18.50	Auto	0.0000
L33	23	5"x1" Plate	18.25 - 18.50	Auto	0.0000
L33	25	5"x1" Plate	18.25 - 18.50	Auto	0.0000
L33	26	5"x1" Plate	18.25 - 18.50	Auto	0.0000
L33	27	5"x1" Plate	18.25 - 18.50	Auto	0.0000
L34	20	5"x1" Plate	13.25 - 18.25	Auto	0.0000
L34	21	5"x1" Plate	13.25 - 18.25	Auto	0.0000
L34	22	5"x1" Plate	13.25 - 18.25	Auto	0.0000
L34	23	5"x1" Plate	13.25 - 18.25	Auto	0.0000
L34	25	5"x1" Plate	18.00 - 18.25	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L34	26	5"x1" Plate	18.00 - 18.25	Auto	0.0000
L34	27	5"x1" Plate	18.00 - 18.25	Auto	0.0000
L35	20	5"x1" Plate	8.25 - 13.25	Auto	0.0000
L35	21	5"x1" Plate	8.25 - 13.25	Auto	0.0000
L35	22	5"x1" Plate	8.25 - 13.25	Auto	0.0000
L35	23	5"x1" Plate	8.25 - 13.25	Auto	0.0000
L36	20	5"x1" Plate	3.25 - 8.25	Auto	0.0000
L36	21	5"x1" Plate	3.25 - 8.25	Auto	0.0000
L36	22	5"x1" Plate	3.25 - 8.25	Auto	0.0000
L36	23	5"x1" Plate	3.25 - 8.25	Auto	0.0000
L37	20	5"x1" Plate	0.00 - 3.25	Auto	0.0000
L37	21	5"x1" Plate	0.00 - 3.25	Auto	0.0000
L37	22	5"x1" Plate	0.00 - 3.25	Auto	0.0000
L37	23	5"x1" Plate	0.00 - 3.25	Auto	0.0000

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
(2) DMP65R-BU4D w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	118.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.526 8.043 8.574 9.681	3.789 4.228 4.681 5.632	0.095 0.156 0.225 0.391
(2) DMP65R-BU4D w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	118.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.526 8.043 8.574 9.681	3.789 4.228 4.681 5.632	0.095 0.156 0.225 0.391
(2) DMP65R-BU4D w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	118.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.526 8.043 8.574 9.681	3.789 4.228 4.681 5.632	0.095 0.156 0.225 0.391
7770.00 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	118.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.385 3.746 4.117 4.891	2.323 2.664 3.016 3.751	0.055 0.098 0.149 0.279
7770.00 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	118.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.385 3.746 4.117 4.891	2.323 2.664 3.016 3.751	0.055 0.098 0.149 0.279
7770.00 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	118.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.385 3.746 4.117 4.891	2.323 2.664 3.016 3.751	0.055 0.098 0.149 0.279
(2) LGP21401	A	From Leg	4.000 0.000 0.000	0.000	118.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.104 1.239 1.381 1.688	0.207 0.274 0.348 0.521	0.014 0.021 0.030 0.055
(2) LGP21401	B	From Leg	4.000 0.000	0.000	118.000	No Ice 1/2" Ice	1.104 1.239	0.207 0.274	0.014 0.021

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1" Ice	1.381	0.348	0.030
						2" Ice	1.688	0.521	0.055
(2) LGP21401	C	From Leg	4.000	0.000	118.000	No Ice	1.104	0.207	0.014
			0.000			1/2" Ice	1.239	0.274	0.021
			0.000			1" Ice	1.381	0.348	0.030
						2" Ice	1.688	0.521	0.055
(3) RRUS 4478 B14	A	From Leg	4.000	0.000	118.000	No Ice	1.843	1.059	0.060
			0.000			1/2" Ice	2.012	1.197	0.076
			0.000			1" Ice	2.190	1.342	0.094
						2" Ice	2.566	1.656	0.140
(3) RRUS 8843 B2/B66A	B	From Leg	4.000	0.000	118.000	No Ice	1.639	1.353	0.072
			0.000			1/2" Ice	1.799	1.500	0.090
			0.000			1" Ice	1.966	1.655	0.110
						2" Ice	2.323	1.986	0.159
(3) RRUS 4449 B5/B12	C	From Leg	4.000	0.000	118.000	No Ice	1.968	1.408	0.071
			0.000			1/2" Ice	2.144	1.564	0.090
			0.000			1" Ice	2.328	1.727	0.111
						2" Ice	2.718	2.075	0.163
(2) 1001940	A	From Leg	4.000	0.000	118.000	No Ice	0.176	0.083	0.002
			0.000			1/2" Ice	0.232	0.126	0.004
			0.000			1" Ice	0.295	0.178	0.006
						2" Ice	0.444	0.304	0.015
1001940	B	From Leg	4.000	0.000	118.000	No Ice	0.176	0.083	0.002
			0.000			1/2" Ice	0.232	0.126	0.004
			0.000			1" Ice	0.295	0.178	0.006
						2" Ice	0.444	0.304	0.015
DC6-48-60-18-8C	A	From Leg	2.000	0.000	118.000	No Ice	1.145	1.145	0.026
			0.000			1/2" Ice	1.792	1.792	0.047
			0.000			1" Ice	2.002	2.002	0.070
						2" Ice	2.451	2.451	0.125
DC6-48-60-18-8F	B	From Leg	2.000	0.000	118.000	No Ice	0.850	0.850	0.019
			0.000			1/2" Ice	1.356	1.356	0.036
			0.000			1" Ice	1.532	1.532	0.055
						2" Ice	1.914	1.914	0.101
6' x 2" Mount Pipe	A	From Leg	4.000	0.000	118.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
6' x 2" Mount Pipe	B	From Leg	4.000	0.000	118.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
6' x 2" Mount Pipe	C	From Leg	4.000	0.000	118.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
3' x 2" Pipe Mount	A	From Leg	4.000	0.000	118.000	No Ice	0.583	0.583	0.011
			0.000			1/2" Ice	0.770	0.770	0.017
			1.000			1" Ice	0.967	0.967	0.024
						2" Ice	1.388	1.388	0.047
3' x 2" Pipe Mount	B	From Leg	4.000	0.000	118.000	No Ice	0.583	0.583	0.011
			0.000			1/2" Ice	0.770	0.770	0.017
			1.000			1" Ice	0.967	0.967	0.024
						2" Ice	1.388	1.388	0.047
3' x 2" Pipe Mount	C	From Leg	4.000	0.000	118.000	No Ice	0.583	0.583	0.011
			0.000			1/2" Ice	0.770	0.770	0.017
			1.000			1" Ice	0.967	0.967	0.024

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	1.388	1.388	0.047
3' x 2" Pipe Mount	A	From Leg	2.000 0.000 1.000	0.000	118.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.583 0.770 0.967 1.388	0.583 0.770 0.967 1.388	0.011 0.017 0.024 0.047
3' x 2" Pipe Mount	B	From Leg	2.000 0.000 1.000	0.000	118.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.583 0.770 0.967 1.388	0.583 0.770 0.967 1.388	0.011 0.017 0.024 0.047
Platform Mount [LP 303-1_HR-1]	C	None		0.000	118.000	No Ice 1/2" Ice 1" Ice 2" Ice	17.090 21.470 25.720 33.960	17.090 21.470 25.720 33.960	1.495 1.881 2.346 3.518
*									
(2) LPA-185063/8CFX2 w/ Mount Pipe	A	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.390 2.780 3.180 4.030	2.910 3.310 3.730 4.600	0.040 0.071 0.109 0.210
(2) LPA-185063/8CFX2 w/ Mount Pipe	B	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.390 2.780 3.180 4.030	2.910 3.310 3.730 4.600	0.040 0.071 0.109 0.210
(2) LPA-185063/8CFX2 w/ Mount Pipe	C	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.390 2.780 3.180 4.030	2.910 3.310 3.730 4.600	0.040 0.071 0.109 0.210
NHH-65B-R2B w/ Mount Pipe	A	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.095 4.483 4.880 5.701	3.295 3.672 4.058 4.857	0.069 0.132 0.205 0.385
NHH-65B-R2B w/ Mount Pipe	B	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.095 4.483 4.880 5.701	3.295 3.672 4.058 4.857	0.069 0.132 0.205 0.385
NHH-65B-R2B w/ Mount Pipe	C	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.095 4.483 4.880 5.701	3.295 3.672 4.058 4.857	0.069 0.132 0.205 0.385
NHHSS-65B-R2BT4 w/ Mount Pipe	A	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.880 4.250 4.630 5.420	3.120 3.490 3.860 4.630	0.090 0.153 0.226 0.406
NHHSS-65B-R2BT4 w/ Mount Pipe	B	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.880 4.250 4.630 5.420	3.120 3.490 3.860 4.630	0.090 0.153 0.226 0.406
NHHSS-65B-R2BT4 w/ Mount Pipe	C	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.880 4.250 4.630 5.420	3.120 3.490 3.860 4.630	0.090 0.153 0.226 0.406
(2) MT6413-77A w/ Mount Pipe	A	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.996 4.310 4.634 5.312	2.155 2.555 2.971 3.851	0.070 0.103 0.141 0.234
MT6413-77A w/ Mount Pipe	B	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice	3.996 4.310 4.634	2.155 2.555 2.971	0.070 0.103 0.141

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	5.312	3.851	0.234
(2) RF4439D-25A	A	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.865 2.035 2.212 2.589	1.252 1.394 1.544 1.866	0.075 0.093 0.114 0.165
RF4439D-25A	B	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.865 2.035 2.212 2.589	1.252 1.394 1.544 1.866	0.075 0.093 0.114 0.165
RF4461D-13A	A	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.865 2.035 2.212 2.589	1.275 1.419 1.570 1.894	0.079 0.098 0.119 0.171
RF4461D-13A	B	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.865 2.035 2.212 2.589	1.275 1.419 1.570 1.894	0.079 0.098 0.119 0.171
RF4461D-13A	C	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.865 2.035 2.212 2.589	1.275 1.419 1.570 1.894	0.079 0.098 0.119 0.171
(2) RT4423-48A/B	A	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.855 0.973 1.098 1.370	0.364 0.450 0.543 0.755	0.015 0.022 0.030 0.053
RT4423-48A/B	B	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.855 0.973 1.098 1.370	0.364 0.450 0.543 0.755	0.015 0.022 0.030 0.053
RRFDC-3315-PF-48	A	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.364 3.597 3.838 4.343	2.192 2.395 2.606 3.049	0.032 0.061 0.093 0.168
RRFDC-3315-PF-48	B	From Leg	4.000 0.000 -1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.364 3.597 3.838 4.343	2.192 2.395 2.606 3.049	0.032 0.061 0.093 0.168
3' x 2" Pipe Mount	A	From Leg	2.000 0.000 1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.583 0.770 0.967 1.388	0.583 0.770 0.967 1.388	0.011 0.017 0.024 0.047
3' x 2" Pipe Mount	B	From Leg	2.000 0.000 1.000	0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.583 0.770 0.967 1.388	0.583 0.770 0.967 1.388	0.011 0.017 0.024 0.047
Platform Mount [LP 303-1_HR-1]	C	None		0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice	17.090 21.470 25.720 33.960	17.090 21.470 25.720 33.960	1.495 1.881 2.346 3.518
*									
AIR 32 B2A/B66AA w/ Mount Pipe	A	From Leg	2.000 0.000 0.000	0.000	99.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.763 4.117 4.480 5.236	3.146 3.489 3.842 4.577	0.194 0.252 0.320 0.485
AIR 32 B2A/B66AA w/ Mount Pipe	B	From Leg	2.000 0.000 0.000	0.000	99.000	No Ice 1/2" Ice 1" Ice	3.763 4.117 4.480	3.146 3.489 3.842	0.194 0.252 0.320

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	5.236	4.577	0.485
AIR 32 B2A/B66AA w/ Mount Pipe	C	From Leg	2.000 0.000 0.000	0.000	99.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.763 4.117 4.480 5.236	3.146 3.489 3.842 4.577	0.194 0.252 0.320 0.485
APXVAALL24_43-U-NA20 w/ Mount Pipe	A	From Leg	2.000 0.000 0.000	0.000	99.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.694 15.455 16.230 17.816	6.873 7.554 8.247 9.670	0.183 0.311 0.453 0.782
APXVAALL24_43-U-NA20 w/ Mount Pipe	B	From Leg	2.000 0.000 0.000	0.000	99.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.694 15.455 16.230 17.816	6.873 7.554 8.247 9.670	0.183 0.311 0.453 0.782
APXVAALL24_43-U-NA20 w/ Mount Pipe	C	From Leg	2.000 0.000 0.000	0.000	99.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.694 15.455 16.230 17.816	6.873 7.554 8.247 9.670	0.183 0.311 0.453 0.782
KRY 112 144/1	A	From Leg	2.000 0.000 0.000	0.000	99.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.350 0.426 0.509 0.698	0.175 0.234 0.301 0.456	0.011 0.014 0.019 0.032
KRY 112 144/1	B	From Leg	2.000 0.000 0.000	0.000	99.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.350 0.426 0.509 0.698	0.175 0.234 0.301 0.456	0.011 0.014 0.019 0.032
KRY 112 144/1	C	From Leg	2.000 0.000 0.000	0.000	99.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.350 0.426 0.509 0.698	0.175 0.234 0.301 0.456	0.011 0.014 0.019 0.032
RADIO 4449 B12/B71	A	From Leg	2.000 0.000 0.000	0.000	99.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.650 1.810 1.978 2.336	1.163 1.301 1.447 1.762	0.074 0.090 0.109 0.155
RADIO 4449 B12/B71	B	From Leg	2.000 0.000 0.000	0.000	99.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.650 1.810 1.978 2.336	1.163 1.301 1.447 1.762	0.074 0.090 0.109 0.155
RADIO 4449 B12/B71	C	From Leg	2.000 0.000 0.000	0.000	99.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.650 1.810 1.978 2.336	1.163 1.301 1.447 1.762	0.074 0.090 0.109 0.155
Side Arm Mount [SO 103-3]	C	None		0.000	99.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.640 8.800 10.160 13.360	7.640 8.800 10.160 13.360	0.234 0.360 0.517 0.937
*									
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	86.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.009 8.518 9.038 10.109	4.233 4.689 5.156 6.122	0.108 0.194 0.292 0.522
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	86.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.009 8.518 9.038 10.109	4.233 4.689 5.156 6.122	0.108 0.194 0.292 0.522
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	86.000	No Ice 1/2" Ice 1" Ice	8.009 8.518 9.038	4.233 4.689 5.156	0.108 0.194 0.292

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	10.109	6.122	0.522
TA08025-B604	A	From Leg	4.000 0.000 2.000	0.000	86.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	0.981 1.112 1.250 1.548	0.064 0.081 0.100 0.148
TA08025-B604	B	From Leg	4.000 0.000 2.000	0.000	86.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	0.981 1.112 1.250 1.548	0.064 0.081 0.100 0.148
TA08025-B604	C	From Leg	4.000 0.000 2.000	0.000	86.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	0.981 1.112 1.250 1.548	0.064 0.081 0.100 0.148
TA08025-B605	A	From Leg	4.000 0.000 2.000	0.000	86.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	1.129 1.267 1.411 1.723	0.075 0.093 0.114 0.164
TA08025-B605	B	From Leg	4.000 0.000 2.000	0.000	86.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	1.129 1.267 1.411 1.723	0.075 0.093 0.114 0.164
TA08025-B605	C	From Leg	4.000 0.000 2.000	0.000	86.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	1.129 1.267 1.411 1.723	0.075 0.093 0.114 0.164
RDIDC-9181-PF-48	A	From Leg	2.000 0.000 2.000	0.000	86.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.012 2.189 2.373 2.763	1.168 1.311 1.461 1.784	0.022 0.040 0.060 0.110
4' x 2" Pipe Mount	A	From Leg	2.000 0.000 1.000	0.000	86.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.785 1.028 1.281 1.814	0.785 1.028 1.281 1.814	0.029 0.035 0.044 0.072
(2) 8' x 2" Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	86.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.900 2.728 3.401 4.396	1.900 2.728 3.401 4.396	0.029 0.044 0.063 0.119
(2) 8' x 2" Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	86.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.900 2.728 3.401 4.396	1.900 2.728 3.401 4.396	0.029 0.044 0.063 0.119
(2) 8' x 2" Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	86.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.900 2.728 3.401 4.396	1.900 2.728 3.401 4.396	0.029 0.044 0.063 0.119
Commscope MC-K6MHDX-9-96 (3)	C	None		0.000	86.000	No Ice 1/2" Ice 1" Ice 2" Ice	15.300 20.480 25.660 36.020	15.300 20.480 25.660 36.020	1.192 1.705 2.219 3.245
*									

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

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	120 - 115	Pole	Max Tension	26	0.000	0.000	-0.000
			Max. Compression	26	-8.361	-0.342	0.036
			Max. Mx	8	-3.429	-13.173	-0.060
			Max. My	14	-3.415	-0.075	-13.319
			Max. Vy	8	4.366	-13.173	-0.060
			Max. Vx	2	-4.420	-0.134	13.114
			Max. Torque	4			-0.147
L2	115 - 110	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-8.899	-0.400	0.098
			Max. Mx	8	-3.722	-35.808	0.008
			Max. My	14	-3.708	-0.043	-36.208
			Max. Vy	8	4.689	-35.808	0.008
			Max. Vx	2	-4.744	-0.199	36.021
			Max. Torque	4			-0.147
L3	110 - 105	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-17.472	-2.802	3.428
			Max. Mx	8	-7.240	-69.383	1.286
			Max. My	2	-7.186	-1.002	70.762
			Max. Vy	8	8.506	-69.383	1.286
			Max. Vx	2	-8.749	-1.002	70.762
			Max. Torque	10			1.804
L4	105 - 100	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-18.143	-2.945	3.563
			Max. Mx	8	-7.631	-112.734	1.041
			Max. My	2	-7.577	-0.755	115.327
			Max. Vy	8	8.835	-112.734	1.041
			Max. Vx	2	-9.079	-0.755	115.327
			Max. Torque	10			1.804
L5	100 - 95	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-23.306	-3.099	3.711
			Max. Mx	8	-9.764	-166.824	0.795
			Max. My	2	-9.705	-0.507	170.651
			Max. Vy	8	11.438	-166.824	0.795
			Max. Vx	2	-11.687	-0.507	170.651
			Max. Torque	10			1.803
L6	95 - 90	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-24.078	-3.252	3.855
			Max. Mx	8	-10.281	-224.802	0.545
			Max. My	2	-10.224	-0.255	229.868
			Max. Vy	8	11.758	-224.802	0.545
			Max. Vx	2	-12.008	-0.255	229.868
			Max. Torque	10			1.802
L7	90 - 83	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-24.670	-3.362	3.958
			Max. Mx	8	-10.686	-269.322	0.356
			Max. My	2	-10.631	-0.065	275.318
			Max. Vy	8	11.995	-269.322	0.356
			Max. Vx	2	-12.244	-0.065	275.318
			Max. Torque	10			1.800
L8	83 - 81.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-31.527	-3.524	4.551
			Max. Mx	8	-13.827	-342.798	0.263
			Max. My	2	-13.764	0.189	350.443
			Max. Vy	8	14.723	-342.798	0.263
			Max. Vx	2	-15.008	0.189	350.443
			Max. Torque	10			1.983
L9	81.25 - 76.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-32.437	-3.682	4.700
			Max. Mx	8	-14.516	-417.113	0.007
			Max. My	2	-14.456	0.447	426.173
			Max. Vy	8	15.021	-417.113	0.007

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	2	-15.305	0.447	426.173
			Max. Torque	10			1.982
L10	76.25 - 71.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-33.364	-3.834	4.840
			Max. Mx	8	-15.224	-492.913	-0.252
			Max. My	2	-15.167	0.706	503.385
			Max. Vy	8	15.313	-492.913	-0.252
			Max. Vx	2	-15.597	0.706	503.385
			Max. Torque	10			1.980
L11	71.25 - 66.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-34.307	-3.980	4.972
			Max. Mx	8	-15.956	-570.141	-0.512
			Max. My	2	-15.903	0.966	582.023
			Max. Vy	8	15.595	-570.141	-0.512
			Max. Vx	2	-15.878	0.966	582.023
			Max. Torque	10			1.978
L12	66.25 - 61.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-35.295	-4.121	5.095
			Max. Mx	8	-16.711	-648.744	-0.774
			Max. My	2	-16.662	1.227	662.029
			Max. Vy	8	15.865	-648.744	-0.774
			Max. Vx	2	-16.146	1.227	662.029
			Max. Torque	10			1.976
L13	61.25 - 61	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-35.350	-4.129	5.104
			Max. Mx	8	-16.759	-652.709	-0.787
			Max. My	2	-16.711	1.240	666.064
			Max. Vy	8	15.869	-652.709	-0.787
			Max. Vx	2	-16.150	1.240	666.064
			Max. Torque	10			1.973
L14	61 - 60.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-35.404	-4.136	5.109
			Max. Mx	8	-16.797	-656.677	-0.800
			Max. My	2	-16.749	1.253	670.103
			Max. Vy	8	15.882	-656.677	-0.800
			Max. Vx	2	-16.164	1.253	670.103
			Max. Torque	10			1.973
L15	60.75 - 58.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-35.845	-4.189	5.154
			Max. Mx	8	-17.096	-688.542	-0.906
			Max. My	2	-17.050	1.357	702.527
			Max. Vy	8	15.995	-688.542	-0.906
			Max. Vx	2	-16.276	1.357	702.527
			Max. Torque	10			1.973
L16	58.75 - 58.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-35.906	-4.197	5.162
			Max. Mx	8	-17.145	-692.540	-0.918
			Max. My	2	-17.099	1.370	706.595
			Max. Vy	8	15.999	-692.540	-0.918
			Max. Vx	2	-16.280	1.370	706.595
			Max. Torque	10			1.972
L17	58.5 - 57.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-36.150	-4.222	5.183
			Max. Mx	8	-17.291	-708.563	-0.971
			Max. My	2	-17.246	1.423	722.896
			Max. Vy	8	16.060	-708.563	-0.971
			Max. Vx	2	-16.340	1.423	722.896
			Max. Torque	10			1.972
L18	57.5 - 57.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-36.211	-4.231	5.191
			Max. Mx	8	-17.340	-712.577	-0.984

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	-17.296	1.436	726.980
			Max. Vy	8	16.063	-712.577	-0.984
			Max. Vx	2	-16.343	1.436	726.980
			Max. Torque	10			1.972
L19	57.25 - 52.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-37.324	-4.359	5.298
			Max. Mx	8	-18.125	-793.502	-1.248
			Max. My	2	-18.084	1.697	809.296
			Max. Vy	8	16.320	-793.502	-1.248
			Max. Vx	2	-16.599	1.697	809.296
			Max. Torque	10			1.971
L20	52.25 - 47.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-38.451	-4.483	5.399
			Max. Mx	8	-18.940	-875.628	-1.513
			Max. My	2	-18.904	1.958	892.803
			Max. Vy	8	16.555	-875.628	-1.513
			Max. Vx	2	-16.832	1.958	892.803
			Max. Torque	10			1.969
L21	47.25 - 41.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-39.011	-4.537	5.442
			Max. Mx	8	-19.311	-912.958	-1.632
			Max. My	2	-19.277	2.075	930.752
			Max. Vy	8	16.657	-912.958	-1.632
			Max. Vx	2	-16.932	2.075	930.752
			Max. Torque	10			1.967
L22	41.25 - 40.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-41.253	-4.650	5.531
			Max. Mx	8	-20.858	-992.872	-1.881
			Max. My	2	-20.826	2.321	1011.970
			Max. Vy	8	17.002	-992.872	-1.881
			Max. Vx	2	-17.278	2.321	1011.970
			Max. Torque	10			1.965
L23	40.25 - 35.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-42.986	-4.767	5.622
			Max. Mx	8	-22.134	-1078.626	-2.145
			Max. My	2	-22.105	2.580	1099.096
			Max. Vy	8	17.312	-1078.626	-2.145
			Max. Vx	2	-17.588	2.580	1099.096
			Max. Torque	10			1.965
L24	35.25 - 32.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-43.827	-4.824	5.667
			Max. Mx	8	-22.779	-1122.077	-2.276
			Max. My	2	-22.750	2.710	1143.233
			Max. Vy	8	17.465	-1122.077	-2.276
			Max. Vx	2	-17.741	2.710	1143.233
			Max. Torque	10			1.964
L25	32.75 - 32.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-43.898	-4.831	5.673
			Max. Mx	8	-22.834	-1126.443	-2.289
			Max. My	2	-22.806	2.723	1147.666
			Max. Vy	8	17.468	-1126.443	-2.289
			Max. Vx	2	-17.743	2.723	1147.666
			Max. Torque	10			1.964
L26	32.5 - 31.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-44.252	-4.858	5.693
			Max. Mx	8	-23.064	-1148.308	-2.356
			Max. My	2	-23.037	2.787	1169.873
			Max. Vy	8	17.536	-1148.308	-2.356
			Max. Vx	2	-17.811	2.787	1169.873
			Max. Torque	10			1.963
L27	31.25 - 31	Pole	Max Tension	1	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-44.323	-4.865	5.699
			Max. Mx	8	-23.126	-1152.689	-2.369
			Max. My	2	-23.099	2.801	1174.322
			Max. Vy	8	17.530	-1152.689	-2.369
			Max. Vx	2	-17.805	2.801	1174.322
			Max. Torque	10			1.963
L28	31 - 26	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.634	-4.973	5.780
			Max. Mx	8	-24.104	-1240.818	-2.633
			Max. My	2	-24.081	3.060	1263.811
			Max. Vy	8	17.738	-1240.818	-2.633
			Max. Vx	2	-18.010	3.060	1263.811
			Max. Torque	10			1.963
L29	26 - 21	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-46.944	-5.078	5.856
			Max. Mx	8	-25.112	-1329.872	-2.897
			Max. My	2	-25.093	3.317	1354.210
			Max. Vy	8	17.913	-1329.872	-2.897
			Max. Vx	2	-18.183	3.317	1354.210
			Max. Torque	10			1.962
L30	21 - 19.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-47.297	-5.100	5.869
			Max. Mx	8	-25.363	-1352.269	-2.962
			Max. My	2	-25.346	3.381	1376.942
			Max. Vy	8	17.959	-1352.269	-2.962
			Max. Vx	2	-18.228	3.381	1376.942
			Max. Torque	10			1.960
L31	19.75 - 19.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-47.370	-5.106	5.873
			Max. Mx	8	-25.428	-1356.755	-2.976
			Max. My	2	-25.411	3.394	1381.494
			Max. Vy	8	17.948	-1356.755	-2.976
			Max. Vx	2	-18.217	3.394	1381.494
			Max. Torque	10			1.960
L32	19.5 - 18.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-47.665	-5.122	5.880
			Max. Mx	8	-25.623	-1374.717	-3.028
			Max. My	2	-25.606	3.445	1399.723
			Max. Vy	8	17.993	-1374.717	-3.028
			Max. Vx	2	-18.261	3.445	1399.723
			Max. Torque	10			1.960
L33	18.5 - 18.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-47.739	-5.127	5.883
			Max. Mx	8	-25.684	-1379.212	-3.041
			Max. My	2	-25.668	3.458	1404.285
			Max. Vy	8	17.987	-1379.212	-3.041
			Max. Vx	2	-18.255	3.458	1404.285
			Max. Torque	10			1.960
L34	18.25 - 13.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-49.106	-5.207	5.920
			Max. Mx	8	-26.711	-1469.486	-3.303
			Max. My	2	-26.699	3.713	1495.882
			Max. Vy	8	18.140	-1469.486	-3.303
			Max. Vx	2	-18.405	3.713	1495.882
			Max. Torque	10			1.960
L35	13.25 - 8.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.468	-5.267	5.936
			Max. Mx	8	-27.767	-1560.428	-3.563
			Max. My	2	-27.759	3.966	1588.130
			Max. Vy	8	18.269	-1560.428	-3.563
			Max. Vx	2	-18.531	3.966	1588.130

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	10			1.959
L36	8.25 - 3.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-51.820	-5.326	5.951
			Max. Mx	8	-28.840	-1651.998	-3.822
			Max. My	2	-28.836	4.216	1680.990
			Max. Vy	8	18.392	-1651.998	-3.822
			Max. Vx	2	-18.650	4.216	1680.990
			Max. Torque	10			1.958
L37	3.25 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.674	-5.360	5.961
			Max. Mx	8	-29.545	-1711.841	-3.989
			Max. My	2	-29.545	4.378	1741.661
			Max. Vy	8	18.471	-1711.841	-3.989
			Max. Vx	2	-18.727	4.378	1741.661
			Max. Torque	10			1.958

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	52.674	0.009	5.269
	Max. H_x	20	29.560	18.447	0.053
	Max. H_z	2	29.560	0.053	18.702
	Max. M_x	2	1741.661	0.053	18.702
	Max. M_z	8	1711.841	-18.447	-0.053
	Max. Torsion	10	1.958	-16.006	-9.399
	Min. Vert	23	22.170	16.006	9.399
	Min. H_x	8	29.560	-18.447	-0.053
	Min. H_z	14	29.560	-0.053	-18.702
	Min. M_x	14	-1737.609	-0.053	-18.702
	Min. M_z	20	-1708.570	18.447	0.053
	Min. Torsion	22	-1.937	16.006	9.399

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	24.633	0.000	-0.000	-1.634	-1.320	-0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	29.560	-0.053	-18.702	-1741.661	4.378	1.218
0.9 Dead+1.0 Wind 0 deg - No Ice	22.170	-0.053	-18.702	-1704.559	4.691	1.177
1.2 Dead+1.0 Wind 30 deg - No Ice	29.560	9.178	-16.170	-1505.681	-851.474	0.284
0.9 Dead+1.0 Wind 30 deg - No Ice	22.170	9.178	-16.170	-1473.532	-833.200	0.276
1.2 Dead+1.0 Wind 60 deg - No Ice	29.560	15.949	-9.305	-866.748	-1479.706	-0.734
0.9 Dead+1.0 Wind 60 deg - No Ice	22.170	15.949	-9.305	-848.024	-1448.238	-0.708
1.2 Dead+1.0 Wind 90 deg - No	29.560	18.447	0.053	3.989	-1711.841	-1.558

Load Combination	Vertical K	Shear$_x$ K	Shear$_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Ice						
0.9 Dead+1.0 Wind 90 deg - No Ice	22.170	18.447	0.053	4.412	-1675.498	-1.505
1.2 Dead+1.0 Wind 120 deg - No Ice	29.560	16.006	9.399	873.178	-1485.808	-1.958
0.9 Dead+1.0 Wind 120 deg - No Ice	22.170	16.006	9.399	855.339	-1454.216	-1.892
1.2 Dead+1.0 Wind 150 deg - No Ice	29.560	9.273	16.229	1507.813	-861.953	-1.826
0.9 Dead+1.0 Wind 150 deg - No Ice	22.170	9.273	16.229	1476.654	-843.455	-1.764
1.2 Dead+1.0 Wind 180 deg - No Ice	29.560	0.053	18.702	1737.609	-7.620	-1.202
0.9 Dead+1.0 Wind 180 deg - No Ice	22.170	0.053	18.702	1701.629	-7.040	-1.162
1.2 Dead+1.0 Wind 210 deg - No Ice	29.560	-9.178	16.170	1501.625	848.210	-0.263
0.9 Dead+1.0 Wind 210 deg - No Ice	22.170	-9.178	16.170	1470.599	830.836	-0.255
1.2 Dead+1.0 Wind 240 deg - No Ice	29.560	-15.949	9.305	862.707	1476.427	0.740
0.9 Dead+1.0 Wind 240 deg - No Ice	22.170	-15.949	9.305	845.101	1445.864	0.714
1.2 Dead+1.0 Wind 270 deg - No Ice	29.560	-18.447	-0.053	-8.011	1708.570	1.543
0.9 Dead+1.0 Wind 270 deg - No Ice	22.170	-18.447	-0.053	-7.321	1673.129	1.490
1.2 Dead+1.0 Wind 300 deg - No Ice	29.560	-16.006	-9.399	-877.195	1482.559	1.937
0.9 Dead+1.0 Wind 300 deg - No Ice	22.170	-16.006	-9.399	-858.245	1451.862	1.871
1.2 Dead+1.0 Wind 330 deg - No Ice	29.560	-9.273	-16.229	-1511.846	858.719	1.820
0.9 Dead+1.0 Wind 330 deg - No Ice	22.170	-9.273	-16.229	-1479.571	841.111	1.758
1.2 Dead+1.0 Ice+1.0 Temp	52.674	0.000	-0.000	-5.961	-5.360	-0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	52.674	-0.009	-5.269	-529.551	-4.222	0.405
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	52.674	2.604	-4.559	-458.831	-263.190	0.084
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	52.674	4.519	-2.627	-266.768	-453.079	-0.260
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	52.674	5.223	0.009	-4.824	-523.005	-0.535
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	52.674	4.528	2.643	256.809	-454.229	-0.666
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	52.674	2.620	4.568	448.024	-265.186	-0.619
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	52.674	0.009	5.269	517.591	-6.529	-0.405
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	52.674	-2.604	4.559	446.871	252.436	-0.083
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	52.674	-4.519	2.627	254.810	442.323	0.260
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	52.674	-5.223	-0.009	-7.131	512.250	0.534
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	52.674	-4.528	-2.643	-268.764	443.478	0.665
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	52.674	-2.620	-4.568	-459.982	254.436	0.618
Dead+Wind 0 deg - Service	24.633	-0.013	-4.480	-413.932	0.072	0.293

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+Wind 30 deg - Service	24.633	2.199	-3.874	-357.992	-202.742	0.067
Dead+Wind 60 deg - Service	24.633	3.821	-2.229	-206.573	-351.594	-0.177
Dead+Wind 90 deg - Service	24.633	4.419	0.013	-0.249	-406.596	-0.374
Dead+Wind 120 deg - Service	24.633	3.835	2.252	205.718	-353.056	-0.470
Dead+Wind 150 deg - Service	24.633	2.221	3.888	356.130	-205.234	-0.440
Dead+Wind 180 deg - Service	24.633	0.013	4.480	410.592	-2.767	-0.292
Dead+Wind 210 deg - Service	24.633	-2.199	3.874	354.652	200.046	-0.065
Dead+Wind 240 deg - Service	24.633	-3.821	2.229	203.234	348.897	0.178
Dead+Wind 270 deg - Service	24.633	-4.419	-0.013	-3.089	403.900	0.373
Dead+Wind 300 deg - Service	24.633	-3.835	-2.252	-209.057	350.361	0.469
Dead+Wind 330 deg - Service	24.633	-2.221	-3.888	-359.469	202.539	0.440

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	0.000	-24.633	0.000	-0.000	24.633	0.000	0.000%
2	-0.053	-29.560	-18.702	0.053	29.560	18.702	0.000%
3	-0.053	-22.170	-18.702	0.053	22.170	18.702	0.000%
4	9.178	-29.560	-16.170	-9.178	29.560	16.170	0.000%
5	9.178	-22.170	-16.170	-9.178	22.170	16.170	0.000%
6	15.949	-29.560	-9.305	-15.949	29.560	9.305	0.000%
7	15.949	-22.170	-9.305	-15.949	22.170	9.305	0.000%
8	18.447	-29.560	0.053	-18.447	29.560	-0.053	0.000%
9	18.447	-22.170	0.053	-18.447	22.170	-0.053	0.000%
10	16.006	-29.560	9.399	-16.006	29.560	-9.399	0.000%
11	16.006	-22.170	9.399	-16.006	22.170	-9.399	0.000%
12	9.273	-29.560	16.229	-9.273	29.560	-16.229	0.000%
13	9.273	-22.170	16.229	-9.273	22.170	-16.229	0.000%
14	0.053	-29.560	18.702	-0.053	29.560	-18.702	0.000%
15	0.053	-22.170	18.702	-0.053	22.170	-18.702	0.000%
16	-9.178	-29.560	16.170	9.178	29.560	-16.170	0.000%
17	-9.178	-22.170	16.170	9.178	22.170	-16.170	0.000%
18	-15.949	-29.560	9.305	15.949	29.560	-9.305	0.000%
19	-15.949	-22.170	9.305	15.949	22.170	-9.305	0.000%
20	-18.447	-29.560	-0.053	18.447	29.560	0.053	0.000%
21	-18.447	-22.170	-0.053	18.447	22.170	0.053	0.000%
22	-16.006	-29.560	-9.399	16.006	29.560	9.399	0.000%
23	-16.006	-22.170	-9.399	16.006	22.170	9.399	0.000%
24	-9.273	-29.560	-16.229	9.273	29.560	16.229	0.000%
25	-9.273	-22.170	-16.229	9.273	22.170	16.229	0.000%
26	0.000	-52.674	0.000	-0.000	52.674	0.000	0.000%
27	-0.009	-52.674	-5.269	0.009	52.674	5.269	0.000%
28	2.604	-52.674	-4.559	-2.604	52.674	4.559	0.000%
29	4.519	-52.674	-2.627	-4.519	52.674	2.627	0.000%
30	5.223	-52.674	0.009	-5.223	52.674	-0.009	0.000%
31	4.528	-52.674	2.643	-4.528	52.674	-2.643	0.000%
32	2.620	-52.674	4.568	-2.620	52.674	-4.568	0.000%
33	0.009	-52.674	5.269	-0.009	52.674	-5.269	0.000%
34	-2.604	-52.674	4.559	2.604	52.674	-4.559	0.000%
35	-4.519	-52.674	2.627	4.519	52.674	-2.627	0.000%
36	-5.223	-52.674	-0.009	5.223	52.674	0.009	0.000%
37	-4.528	-52.674	-2.643	4.528	52.674	2.643	0.000%
38	-2.620	-52.674	-4.568	2.620	52.674	4.568	0.000%
39	-0.013	-24.633	-4.480	0.013	24.633	4.480	0.000%
40	2.199	-24.633	-3.874	-2.199	24.633	3.874	0.000%
41	3.821	-24.633	-2.229	-3.821	24.633	2.229	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
42	4.419	-24.633	0.013	-4.419	24.633	-0.013	0.000%
43	3.835	-24.633	2.252	-3.835	24.633	-2.252	0.000%
44	2.221	-24.633	3.888	-2.221	24.633	-3.888	0.000%
45	0.013	-24.633	4.480	-0.013	24.633	-4.480	0.000%
46	-2.199	-24.633	3.874	2.199	24.633	-3.874	0.000%
47	-3.821	-24.633	2.229	3.821	24.633	-2.229	0.000%
48	-4.419	-24.633	-0.013	4.419	24.633	0.013	0.000%
49	-3.835	-24.633	-2.252	3.835	24.633	2.252	0.000%
50	-2.221	-24.633	-3.888	2.221	24.633	3.888	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00003262
2	Yes	6	0.00000001	0.00040372
3	Yes	6	0.00000001	0.00013179
4	Yes	7	0.00000001	0.00089575
5	Yes	7	0.00000001	0.00020532
6	Yes	7	0.00000001	0.00090247
7	Yes	7	0.00000001	0.00020754
8	Yes	6	0.00000001	0.00053111
9	Yes	6	0.00000001	0.00017553
10	Yes	7	0.00000001	0.00085800
11	Yes	7	0.00000001	0.00019530
12	Yes	7	0.00000001	0.00093416
13	Yes	7	0.00000001	0.00021484
14	Yes	6	0.00000001	0.00057680
15	Yes	6	0.00000001	0.00018975
16	Yes	7	0.00000001	0.00087504
17	Yes	7	0.00000001	0.00020093
18	Yes	7	0.00000001	0.00086477
19	Yes	7	0.00000001	0.00019869
20	Yes	6	0.00000001	0.00070291
21	Yes	6	0.00000001	0.00023319
22	Yes	7	0.00000001	0.00093395
23	Yes	7	0.00000001	0.00021516
24	Yes	7	0.00000001	0.00086123
25	Yes	7	0.00000001	0.00019560
26	Yes	5	0.00000001	0.00076271
27	Yes	8	0.00000001	0.00024930
28	Yes	8	0.00000001	0.00038702
29	Yes	8	0.00000001	0.00038797
30	Yes	8	0.00000001	0.00024659
31	Yes	8	0.00000001	0.00036232
32	Yes	8	0.00000001	0.00037993
33	Yes	8	0.00000001	0.00023968
34	Yes	8	0.00000001	0.00035220
35	Yes	8	0.00000001	0.00034921
36	Yes	8	0.00000001	0.00023862
37	Yes	8	0.00000001	0.00038184
38	Yes	8	0.00000001	0.00036638
39	Yes	5	0.00000001	0.00039993
40	Yes	6	0.00000001	0.00016330
41	Yes	6	0.00000001	0.00016637
42	Yes	5	0.00000001	0.00045662

43	Yes	6	0.00000001	0.00014513
44	Yes	6	0.00000001	0.00017920
45	Yes	5	0.00000001	0.00041407
46	Yes	6	0.00000001	0.00015038
47	Yes	6	0.00000001	0.00014590
48	Yes	5	0.00000001	0.00047257
49	Yes	6	0.00000001	0.00017936
50	Yes	6	0.00000001	0.00014668

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	120 - 115	28.321	39	1.935	0.009
L2	115 - 110	26.296	39	1.932	0.009
L3	110 - 105	24.279	39	1.919	0.009
L4	105 - 100	22.283	39	1.892	0.008
L5	100 - 95	20.323	39	1.848	0.007
L6	95 - 90	18.418	39	1.789	0.007
L7	90 - 83	16.583	39	1.714	0.006
L8	86.25 - 81.25	15.263	39	1.648	0.005
L9	81.25 - 76.25	13.562	39	1.592	0.005
L10	76.25 - 71.25	11.941	39	1.503	0.004
L11	71.25 - 66.25	10.417	39	1.406	0.004
L12	66.25 - 61.25	8.998	39	1.303	0.003
L13	61.25 - 61	7.691	39	1.194	0.003
L14	61 - 60.75	7.628	39	1.188	0.003
L15	60.75 - 58.75	7.566	39	1.183	0.003
L16	58.75 - 58.5	7.080	39	1.138	0.003
L17	58.5 - 57.5	7.021	39	1.132	0.003
L18	57.5 - 57.25	6.786	39	1.110	0.002
L19	57.25 - 52.25	6.728	39	1.104	0.002
L20	52.25 - 47.25	5.632	39	0.988	0.002
L21	47.25 - 41.25	4.660	39	0.870	0.002
L22	45 - 40.25	4.262	39	0.816	0.002
L23	40.25 - 35.25	3.470	39	0.774	0.001
L24	35.25 - 32.75	2.693	39	0.712	0.001
L25	32.75 - 32.5	2.328	39	0.681	0.001
L26	32.5 - 31.25	2.292	39	0.676	0.001
L27	31.25 - 31	2.119	39	0.650	0.001
L28	31 - 26	2.085	39	0.645	0.001
L29	26 - 21	1.465	39	0.540	0.001
L30	21 - 19.75	0.954	39	0.435	0.001
L31	19.75 - 19.5	0.844	39	0.409	0.001
L32	19.5 - 18.5	0.822	39	0.404	0.001
L33	18.5 - 18.25	0.740	39	0.383	0.001
L34	18.25 - 13.25	0.720	39	0.378	0.001
L35	13.25 - 8.25	0.379	39	0.274	0.000
L36	8.25 - 3.25	0.146	39	0.170	0.000
L37	3.25 - 0	0.023	39	0.067	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
118.000	(2) DMP65R-BU4D w/ Mount Pipe	39	27.511	1.934	0.009	35316
108.000	(2) LPA-185063/8CFX2 w/ Mount Pipe	39	23.477	1.910	0.009	11086
99.000	AIR 32 B2A/B66AA w/ Mount Pipe	39	19.938	1.838	0.007	5259
86.000	MX08FRO665-21 w/ Mount Pipe	39	15.176	1.645	0.005	4312

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	120 - 115	118.867	2	8.119	0.037
L2	115 - 110	110.396	2	8.108	0.037
L3	110 - 105	101.959	2	8.051	0.037
L4	105 - 100	93.607	2	7.942	0.034
L5	100 - 95	85.403	2	7.765	0.030
L6	95 - 90	77.418	2	7.519	0.027
L7	90 - 83	69.724	2	7.206	0.023
L8	86.25 - 81.25	64.183	2	6.934	0.021
L9	81.25 - 76.25	57.042	2	6.697	0.019
L10	76.25 - 71.25	50.234	2	6.326	0.017
L11	71.25 - 66.25	43.832	2	5.920	0.015
L12	66.25 - 61.25	37.868	2	5.485	0.013
L13	61.25 - 61	32.369	2	5.028	0.011
L14	61 - 60.75	32.107	2	5.005	0.011
L15	60.75 - 58.75	31.846	2	4.981	0.011
L16	58.75 - 58.5	29.801	2	4.792	0.010
L17	58.5 - 57.5	29.551	2	4.768	0.010
L18	57.5 - 57.25	28.564	2	4.673	0.010
L19	57.25 - 52.25	28.320	2	4.649	0.010
L20	52.25 - 47.25	23.710	2	4.162	0.008
L21	47.25 - 41.25	19.615	2	3.663	0.007
L22	45 - 40.25	17.944	2	3.435	0.006
L23	40.25 - 35.25	14.609	2	3.258	0.006
L24	35.25 - 32.75	11.335	2	2.998	0.005
L25	32.75 - 32.5	9.800	2	2.868	0.005
L26	32.5 - 31.25	9.651	2	2.846	0.005
L27	31.25 - 31	8.920	2	2.737	0.005
L28	31 - 26	8.777	2	2.715	0.005
L29	26 - 21	6.166	2	2.274	0.004
L30	21 - 19.75	4.016	2	1.833	0.003
L31	19.75 - 19.5	3.551	2	1.723	0.003
L32	19.5 - 18.5	3.461	2	1.701	0.003
L33	18.5 - 18.25	3.114	2	1.614	0.003
L34	18.25 - 13.25	3.030	2	1.592	0.003
L35	13.25 - 8.25	1.594	2	1.152	0.002
L36	8.25 - 3.25	0.616	2	0.715	0.001
L37	3.25 - 0	0.095	2	0.280	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
118.000	(2) DMP65R-BU4D w/ Mount Pipe	2	115.477	8.118	0.038	8874
108.000	(2) LPA-185063/8CFX2 w/ Mount Pipe	2	98.605	8.014	0.037	2838
99.000	AIR 32 B2A/B66AA w/ Mount Pipe	2	83.786	7.720	0.031	1326
86.000	MX08FRO665-21 w/ Mount Pipe	2	63.819	6.919	0.022	1062

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	120 - 115 (1)	TP19.75x19x0.188	5.000	0.000	0.0	11.642	-3.415	681.074	0.005
L2	115 - 110 (2)	TP20.501x19.75x0.188	5.000	0.000	0.0	12.089	-3.708	707.195	0.005
L3	110 - 105 (3)	TP21.251x20.501x0.188	5.000	0.000	0.0	12.535	-7.208	733.315	0.010
L4	105 - 100 (4)	TP22.001x21.251x0.188	5.000	0.000	0.0	12.982	-7.577	759.436	0.010
L5	100 - 95 (5)	TP22.751x22.001x0.188	5.000	0.000	0.0	13.428	-9.705	785.556	0.012
L6	95 - 90 (6)	TP23.502x22.751x0.188	5.000	0.000	0.0	13.875	-10.224	811.677	0.013
L7	90 - 83 (7)	TP24.552x23.502x0.188	7.000	0.000	0.0	14.210	-10.631	831.267	0.013
L8	83 - 81.25 (8)	TP24.44x23.689x0.25	5.000	0.000	0.0	19.194	-13.764	1122.870	0.012
L9	81.25 - 76.25 (9)	TP25.19x24.44x0.25	5.000	0.000	0.0	19.790	-14.456	1157.690	0.012
L10	76.25 - 71.25 (10)	TP25.94x25.19x0.25	5.000	0.000	0.0	20.385	-15.167	1192.520	0.013
L11	71.25 - 66.25 (11)	TP26.69x25.94x0.25	5.000	0.000	0.0	20.980	-15.903	1227.340	0.013
L12	66.25 - 61.25 (12)	TP27.44x26.69x0.25	5.000	0.000	0.0	21.576	-16.662	1262.160	0.013
L13	61.25 - 61 (13)	TP27.478x27.44x0.25	0.250	0.000	0.0	21.605	-16.710	1263.910	0.013
L14	61 - 60.75 (14)	TP27.515x27.478x0.25	0.250	0.000	0.0	21.635	-16.749	1265.650	0.013
L15	60.75 - 58.75 (15)	TP27.815x27.515x0.25	2.000	0.000	0.0	21.873	-17.050	1279.580	0.013
L16	58.75 - 58.5 (16)	TP27.853x27.815x0.25	0.250	0.000	0.0	21.903	-17.099	1281.320	0.013
L17	58.5 - 57.5 (17)	TP28.003x27.853x0.25	1.000	0.000	0.0	22.022	-17.246	1288.280	0.013
L18	57.5 - 57.25 (18)	TP28.04x28.003x0.25	0.250	0.000	0.0	22.052	-17.296	1290.020	0.013
L19	57.25 - 52.25 (19)	TP28.791x28.04x0.25	5.000	0.000	0.0	22.647	-18.084	1324.850	0.014
L20	52.25 - 47.25 (20)	TP29.541x28.791x0.25	5.000	0.000	0.0	23.242	-18.904	1359.670	0.014
L21	47.25 - 41.25 (21)	TP30.441x29.541x0.25	6.000	0.000	0.0	23.510	-19.277	1375.340	0.014
L22	41.25 - 40.25 (22)	TP30.091x29.378x0.55	4.750	0.000	0.0	51.570	-20.826	3016.830	0.007
L23	40.25 - 35.25 (23)	TP30.841x30.091x0.538	5.000	0.000	0.0	51.699	-22.105	3024.390	0.007
L24	35.25 - 32.75 (24)	TP31.216x30.841x0.538	2.500	0.000	0.0	52.339	-22.750	3061.820	0.007
L25	32.75 - 32.5 (25)	TP31.254x31.216x0.313	0.250	0.000	0.0	30.690	-22.806	1795.360	0.013
L26	32.5 - 31.25 (26)	TP31.441x31.254x0.313	1.250	0.000	0.0	30.876	-23.037	1806.240	0.013

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L27	31.25 - 31 (27)	TP31.479x31.441x0.313	0.250	0.000	0.0	30.913	-23.099	1808.420	0.013
L28	31 - 26 (28)	TP32.229x31.479x0.313	5.000	0.000	0.0	31.657	-24.081	1851.950	0.013
L29	26 - 21 (29)	TP32.979x32.229x0.313	5.000	0.000	0.0	32.401	-25.093	1895.480	0.013
L30	21 - 19.75 (30)	TP33.167x32.979x0.313	1.250	0.000	0.0	32.587	-25.346	1906.360	0.013
L31	19.75 - 19.5 (31)	TP33.204x33.167x0.313	0.250	0.000	0.0	32.625	-25.411	1908.540	0.013
L32	19.5 - 18.5 (32)	TP33.354x33.204x0.313	1.000	0.000	0.0	32.773	-25.606	1917.240	0.013
L33	18.5 - 18.25 (33)	TP33.392x33.354x0.313	0.250	0.000	0.0	32.811	-25.668	1919.420	0.013
L34	18.25 - 13.25 (34)	TP34.142x33.392x0.313	5.000	0.000	0.0	33.555	-26.699	1962.950	0.014
L35	13.25 - 8.25 (35)	TP34.892x34.142x0.313	5.000	0.000	0.0	34.299	-27.759	2006.480	0.014
L36	8.25 - 3.25 (36)	TP35.642x34.892x0.313	5.000	0.000	0.0	35.043	-28.836	2050.010	0.014
L37	3.25 - 0 (37)	TP36.13x35.642x0.313	3.250	0.000	0.0	35.527	-29.545	2078.300	0.014

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	120 - 115 (1)	TP19.75x19x0.188	13.319	339.282	0.039	0.000	339.282	0.000
L2	115 - 110 (2)	TP20.501x19.75x0.188	36.208	362.174	0.100	0.000	362.174	0.000
L3	110 - 105 (3)	TP21.251x20.501x0.188	70.868	385.506	0.184	0.000	385.506	0.000
L4	105 - 100 (4)	TP22.001x21.251x0.188	115.329	409.246	0.282	0.000	409.246	0.000
L5	100 - 95 (5)	TP22.751x22.001x0.188	170.652	433.363	0.394	0.000	433.363	0.000
L6	95 - 90 (6)	TP23.502x22.751x0.188	229.868	457.827	0.502	0.000	457.827	0.000
L7	90 - 83 (7)	TP24.552x23.502x0.188	275.318	476.383	0.578	0.000	476.383	0.000
L8	83 - 81.25 (8)	TP24.44x23.689x0.25	350.442	704.590	0.497	0.000	704.590	0.000
L9	81.25 - 76.25 (9)	TP25.19x24.44x0.25	426.173	743.540	0.573	0.000	743.540	0.000
L10	76.25 - 71.25 (10)	TP25.94x25.19x0.25	503.385	783.163	0.643	0.000	783.163	0.000
L11	71.25 - 66.25 (11)	TP26.69x25.94x0.25	582.023	823.431	0.707	0.000	823.431	0.000
L12	66.25 - 61.25 (12)	TP27.44x26.69x0.25	662.030	864.308	0.766	0.000	864.308	0.000
L13	61.25 - 61 (13)	TP27.478x27.44x0.25	666.065	866.367	0.769	0.000	866.367	0.000
L14	61 - 60.75 (14)	TP27.515x27.478x0.25	670.103	868.433	0.772	0.000	868.433	0.000
L15	60.75 - 58.75 (15)	TP27.815x27.515x0.25	702.528	884.967	0.794	0.000	884.967	0.000
L16	58.75 - 58.5 (16)	TP27.853x27.815x0.25	706.596	887.042	0.797	0.000	887.042	0.000
L17	58.5 - 57.5 (17)	TP28.003x27.853x0.25	722.898	895.350	0.807	0.000	895.350	0.000
L18	57.5 - 57.25 (18)	TP28.04x28.003x0.25	726.982	897.433	0.810	0.000	897.433	0.000
L19	57.25 - 52.25 (19)	TP28.791x28.04x0.25	809.298	939.333	0.862	0.000	939.333	0.000
L20	52.25 - 47.25 (20)	TP29.541x28.791x0.25	892.808	981.767	0.909	0.000	981.767	0.000
L21	47.25 - 41.25 (21)	TP30.441x29.541x0.25	930.758	1001.025	0.930	0.000	1001.025	0.000
L22	41.25 - 40.25 (22)	TP30.091x29.378x0.55	1011.975	2302.825	0.439	0.000	2302.825	0.000
L23	40.25 - 35.25 (23)	TP30.841x30.091x0.538	1099.100	2370.250	0.464	0.000	2370.250	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L24	35.25 - 32.75 (24)	TP31.216x30.841x0.538	1143.233	2429.808	0.471	0.000	2429.808	0.000
L25	32.75 - 32.5 (25)	TP31.254x31.216x0.313	1147.667	1433.175	0.801	0.000	1433.175	0.000
L26	32.5 - 31.25 (26)	TP31.441x31.254x0.313	1169.875	1448.483	0.808	0.000	1448.483	0.000
L27	31.25 - 31 (27)	TP31.479x31.441x0.313	1174.325	1451.550	0.809	0.000	1451.550	0.000
L28	31 - 26 (28)	TP32.229x31.479x0.313	1263.817	1513.350	0.835	0.000	1513.350	0.000
L29	26 - 21 (29)	TP32.979x32.229x0.313	1354.217	1575.967	0.859	0.000	1575.967	0.000
L30	21 - 19.75 (30)	TP33.167x32.979x0.313	1376.950	1591.742	0.865	0.000	1591.742	0.000
L31	19.75 - 19.5 (31)	TP33.204x33.167x0.313	1381.500	1594.900	0.866	0.000	1594.900	0.000
L32	19.5 - 18.5 (32)	TP33.354x33.204x0.313	1399.725	1607.567	0.871	0.000	1607.567	0.000
L33	18.5 - 18.25 (33)	TP33.392x33.354x0.313	1404.292	1610.733	0.872	0.000	1610.733	0.000
L34	18.25 - 13.25 (34)	TP34.142x33.392x0.313	1495.883	1674.550	0.893	0.000	1674.550	0.000
L35	13.25 - 8.25 (35)	TP34.892x34.142x0.313	1588.133	1739.092	0.913	0.000	1739.092	0.000
L36	8.25 - 3.25 (36)	TP35.642x34.892x0.313	1680.992	1804.333	0.932	0.000	1804.333	0.000
L37	3.25 - 0 (37)	TP36.13x35.642x0.313	1741.667	1847.108	0.943	0.000	1847.108	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	120 - 115 (1)	TP19.75x19x0.188	4.417	202.755	0.022	0.137	350.047	0.000
L2	115 - 110 (2)	TP20.501x19.75x0.188	4.741	210.591	0.023	0.137	377.412	0.000
L3	110 - 105 (3)	TP21.251x20.501x0.188	8.642	219.995	0.039	0.398	405.806	0.001
L4	105 - 100 (4)	TP22.001x21.251x0.188	9.079	226.263	0.040	1.237	435.231	0.003
L5	100 - 95 (5)	TP22.751x22.001x0.188	11.687	235.667	0.050	1.236	465.684	0.003
L6	95 - 90 (6)	TP23.502x22.751x0.188	12.008	243.503	0.049	1.235	497.168	0.002
L7	90 - 83 (7)	TP24.552x23.502x0.188	12.244	249.380	0.049	1.234	521.457	0.002
L8	83 - 81.25 (8)	TP24.44x23.689x0.25	15.008	336.861	0.045	1.234	713.606	0.002
L9	81.25 - 76.25 (9)	TP25.19x24.44x0.25	15.305	347.308	0.044	1.232	758.554	0.002
L10	76.25 - 71.25 (10)	TP25.94x25.19x0.25	15.597	357.755	0.044	1.231	804.875	0.002
L11	71.25 - 66.25 (11)	TP26.69x25.94x0.25	15.878	368.202	0.043	1.229	852.567	0.001
L12	66.25 - 61.25 (12)	TP27.44x26.69x0.25	16.146	378.649	0.043	1.228	901.633	0.001
L13	61.25 - 61 (13)	TP27.478x27.44x0.25	16.151	379.172	0.043	1.228	904.125	0.001
L14	61 - 60.75 (14)	TP27.515x27.478x0.25	16.164	379.694	0.043	1.227	906.617	0.001
L15	60.75 - 58.75 (15)	TP27.815x27.515x0.25	16.276	383.873	0.042	1.227	926.683	0.001
L16	58.75 - 58.5 (16)	TP27.853x27.815x0.25	16.280	384.395	0.042	1.227	929.208	0.001
L17	58.5 - 57.5 (17)	TP28.003x27.853x0.25	16.340	386.485	0.042	1.227	939.333	0.001
L18	57.5 - 57.25 (18)	TP28.04x28.003x0.25	16.343	387.007	0.042	1.226	941.875	0.001
L19	57.25 - 52.25 (19)	TP28.791x28.04x0.25	16.599	397.454	0.042	1.225	993.417	0.001
L20	52.25 - 47.25 (20)	TP29.541x28.791x0.25	16.832	407.901	0.041	1.224	1046.325	0.001

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L21	47.25 - 41.25 (21)	TP30.441x29.541x0.25	16.933	412.602	0.041	1.223	1070.583	0.001
L22	41.25 - 40.25 (22)	TP30.091x29.378x0.55	17.278	905.050	0.019	1.222	2341.417	0.001
L23	40.25 - 35.25 (23)	TP30.841x30.091x0.538	17.588	907.316	0.019	1.222	2407.875	0.001
L24	35.25 - 32.75 (24)	TP31.216x30.841x0.538	17.741	918.546	0.019	1.222	2467.850	0.000
L25	32.75 - 32.5 (25)	TP31.254x31.216x0.313	17.743	538.608	0.033	1.221	1459.458	0.001
L26	32.5 - 31.25 (26)	TP31.441x31.254x0.313	17.811	541.873	0.033	1.221	1477.200	0.001
L27	31.25 - 31 (27)	TP31.479x31.441x0.313	17.805	542.526	0.033	1.221	1480.767	0.001
L28	31 - 26 (28)	TP32.229x31.479x0.313	18.010	555.584	0.032	1.220	1552.908	0.001
L29	26 - 21 (29)	TP32.979x32.229x0.313	18.183	568.643	0.032	1.219	1626.767	0.001
L30	21 - 19.75 (30)	TP33.167x32.979x0.313	18.228	571.908	0.032	1.219	1645.500	0.001
L31	19.75 - 19.5 (31)	TP33.204x33.167x0.313	18.217	572.561	0.032	1.219	1649.258	0.001
L32	19.5 - 18.5 (32)	TP33.354x33.204x0.313	18.262	575.172	0.032	1.219	1664.342	0.001
L33	18.5 - 18.25 (33)	TP33.392x33.354x0.313	18.255	575.825	0.032	1.219	1668.125	0.001
L34	18.25 - 13.25 (34)	TP34.142x33.392x0.313	18.405	588.884	0.031	1.219	1744.642	0.001
L35	13.25 - 8.25 (35)	TP34.892x34.142x0.313	18.531	601.943	0.031	1.218	1822.875	0.001
L36	8.25 - 3.25 (36)	TP35.642x34.892x0.313	18.651	615.002	0.030	1.218	1902.825	0.001
L37	3.25 - 0 (37)	TP36.13x35.642x0.313	18.727	623.490	0.030	1.218	1955.708	0.001

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	120 - 115 (1)	0.005	0.039	0.000	0.022	0.000	0.045 ✔	1.050	✔
L2	115 - 110 (2)	0.005	0.100	0.000	0.023	0.000	0.106 ✔	1.050	✔
L3	110 - 105 (3)	0.010	0.184	0.000	0.039	0.001	0.195 ✔	1.050	✔
L4	105 - 100 (4)	0.010	0.282	0.000	0.040	0.003	0.294 ✔	1.050	✔
L5	100 - 95 (5)	0.012	0.394	0.000	0.050	0.003	0.409 ✔	1.050	✔
L6	95 - 90 (6)	0.013	0.502	0.000	0.049	0.002	0.517 ✔	1.050	✔
L7	90 - 83 (7)	0.013	0.578	0.000	0.049	0.002	0.593 ✔	1.050	✔
L8	83 - 81.25 (8)	0.012	0.497	0.000	0.045	0.002	0.512 ✔	1.050	✔
L9	81.25 - 76.25 (9)	0.012	0.573	0.000	0.044	0.002	0.588 ✔	1.050	✔
L10	76.25 - 71.25	0.013	0.643	0.000	0.044	0.002	0.658	1.050	✔

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	(10)						✔		
L11	71.25 - 66.25	0.013	0.707	0.000	0.043	0.001	0.722	1.050	✔
	(11)						✔		
L12	66.25 - 61.25	0.013	0.766	0.000	0.043	0.001	0.781	1.050	✔
	(12)						✔		
L13	61.25 - 61 (13)	0.013	0.769	0.000	0.043	0.001	0.784	1.050	✔
							✔		
L14	61 - 60.75 (14)	0.013	0.772	0.000	0.043	0.001	0.787	1.050	✔
							✔		
L15	60.75 - 58.75	0.013	0.794	0.000	0.042	0.001	0.809	1.050	✔
	(15)						✔		
L16	58.75 - 58.5	0.013	0.797	0.000	0.042	0.001	0.812	1.050	✔
	(16)						✔		
L17	58.5 - 57.5 (17)	0.013	0.807	0.000	0.042	0.001	0.823	1.050	✔
							✔		
L18	57.5 - 57.25	0.013	0.810	0.000	0.042	0.001	0.825	1.050	✔
	(18)						✔		
L19	57.25 - 52.25	0.014	0.862	0.000	0.042	0.001	0.877	1.050	✔
	(19)						✔		
L20	52.25 - 47.25	0.014	0.909	0.000	0.041	0.001	0.925	1.050	✔
	(20)						✔		
L21	47.25 - 41.25	0.014	0.930	0.000	0.041	0.001	0.946	1.050	✔
	(21)						✔		
L22	41.25 - 40.25	0.007	0.439	0.000	0.019	0.001	0.447	1.050	✔
	(22)						✔		
L23	40.25 - 35.25	0.007	0.464	0.000	0.019	0.001	0.471	1.050	✔
	(23)						✔		
L24	35.25 - 32.75	0.007	0.471	0.000	0.019	0.000	0.478	1.050	✔
	(24)						✔		
L25	32.75 - 32.5	0.013	0.801	0.000	0.033	0.001	0.815	1.050	✔
	(25)						✔		
L26	32.5 - 31.25	0.013	0.808	0.000	0.033	0.001	0.822	1.050	✔
	(26)						✔		
L27	31.25 - 31 (27)	0.013	0.809	0.000	0.033	0.001	0.823	1.050	✔
							✔		
L28	31 - 26 (28)	0.013	0.835	0.000	0.032	0.001	0.849	1.050	✔
							✔		
L29	26 - 21 (29)	0.013	0.859	0.000	0.032	0.001	0.874	1.050	✔
							✔		
L30	21 - 19.75 (30)	0.013	0.865	0.000	0.032	0.001	0.879	1.050	✔
							✔		
L31	19.75 - 19.5	0.013	0.866	0.000	0.032	0.001	0.881	1.050	✔
	(31)						✔		
L32	19.5 - 18.5 (32)	0.013	0.871	0.000	0.032	0.001	0.885	1.050	✔
							✔		
L33	18.5 - 18.25	0.013	0.872	0.000	0.032	0.001	0.886	1.050	✔
	(33)						✔		
L34	18.25 - 13.25	0.014	0.893	0.000	0.031	0.001	0.908	1.050	✔
	(34)						✔		
L35	13.25 - 8.25	0.014	0.913	0.000	0.031	0.001	0.928	1.050	✔
	(35)						✔		
L36	8.25 - 3.25 (36)	0.014	0.932	0.000	0.030	0.001	0.947	1.050	✔

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L37	3.25 - 0 (37)	0.014	0.943	0.000	0.030	0.001	0.958 ✔	1.050	✔

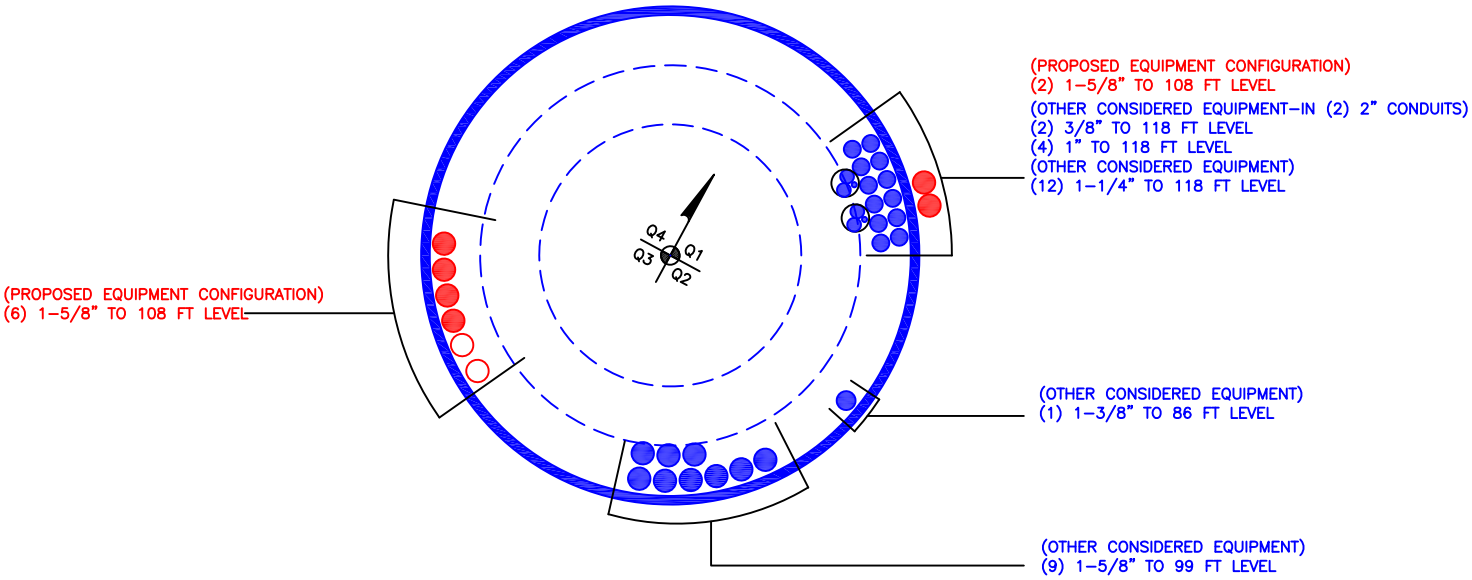
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	120 - 115	Pole	TP19.75x19x0.188	1	-3.415	715.128	**	**
L2	115 - 110	Pole	TP20.501x19.75x0.188	2	-3.708	742.555	**	**
L3	110 - 105	Pole	TP21.251x20.501x0.188	3	-7.208	769.981	**	**
L4	105 - 100	Pole	TP22.001x21.251x0.188	4	-7.577	797.408	**	**
L5	100 - 95	Pole	TP22.751x22.001x0.188	5	-9.705	824.834	**	**
L6	95 - 90	Pole	TP23.502x22.751x0.188	6	-10.224	852.261	**	**
L7	90 - 83	Pole	TP24.552x23.502x0.188	7	-10.631	872.830	**	**
L8	83 - 81.25	Pole	TP24.44x23.689x0.25	8	-13.764	1179.014	**	**
L9	81.25 - 76.25	Pole	TP25.19x24.44x0.25	9	-14.456	1215.574	**	**
L10	76.25 - 71.25	Pole	TP25.94x25.19x0.25	10	-15.167	1252.146	**	**
L11	71.25 - 66.25	Pole	TP26.69x25.94x0.25	11	-15.903	1288.707	**	**
L12	66.25 - 61.25	Pole	TP27.44x26.69x0.25	12	-16.662	1325.268	**	**
L13	61.25 - 61	Pole	TP27.478x27.44x0.25	13	-16.710	1327.105	**	**
L14	61 - 60.75	Pole	TP27.515x27.478x0.25	14	-16.749	1328.932	**	**
L15	60.75 - 58.75	Pole	TP27.815x27.515x0.25	15	-17.050	1343.559	**	**
L16	58.75 - 58.5	Pole	TP27.853x27.815x0.25	16	-17.099	1345.386	**	**
L17	58.5 - 57.5	Pole	TP28.003x27.853x0.25	17	-17.246	1352.694	**	**
L18	57.5 - 57.25	Pole	TP28.04x28.003x0.25	18	-17.296	1354.521	**	**
L19	57.25 - 52.25	Pole	TP28.791x28.04x0.25	19	-18.084	1391.092	**	**
L20	52.25 - 47.25	Pole	TP29.541x28.791x0.25	20	-18.904	1427.653	**	**
L21	47.25 - 41.25	Pole	TP30.441x29.541x0.25	21	-19.277	1444.107	**	**
L22	41.25 - 40.25	Pole	TP30.091x29.378x0.55	22	-20.826	3167.671	**	**
L23	40.25 - 35.25	Pole	TP30.841x30.091x0.538	23	-22.105	3175.609	**	**
L24	35.25 - 32.75	Pole	TP31.216x30.841x0.538	24	-22.750	3214.911	**	**
L25	32.75 - 32.5	Pole	TP31.254x31.216x0.313	25	-22.806	1885.128	**	**
L26	32.5 - 31.25	Pole	TP31.441x31.254x0.313	26	-23.037	1896.552	**	**
L27	31.25 - 31	Pole	TP31.479x31.441x0.313	27	-23.099	1898.841	**	**
L28	31 - 26	Pole	TP32.229x31.479x0.313	28	-24.081	1944.547	**	**
L29	26 - 21	Pole	TP32.979x32.229x0.313	29	-25.093	1990.254	**	**
L30	21 - 19.75	Pole	TP33.167x32.979x0.313	30	-25.346	2001.678	**	**
L31	19.75 - 19.5	Pole	TP33.204x33.167x0.313	31	-25.411	2003.967	**	**
L32	19.5 - 18.5	Pole	TP33.354x33.204x0.313	32	-25.606	2013.102	**	**
L33	18.5 - 18.25	Pole	TP33.392x33.354x0.313	33	-25.668	2015.391	**	**
L34	18.25 - 13.25	Pole	TP34.142x33.392x0.313	34	-26.699	2061.097	**	**
L35	13.25 - 8.25	Pole	TP34.892x34.142x0.313	35	-27.759	2106.804	**	**
L36	8.25 - 3.25	Pole	TP35.642x34.892x0.313	36	-28.836	2152.510	**	**
L37	3.25 - 0	Pole	TP36.13x35.642x0.313	37	-29.545	2182.215	**	**
							Summary	
						Pole (L37)	**	**
						RATING =	**	**

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

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 842858

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 842858

Work Order: 2279439

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	120	37	3.25	18	19	24.552	0.1875	Auto	A607-65
2	86.25	45	3.75	18	23.69	30.441	0.25	Auto	A607-65
3	45	45	0	18	29.38	36.13	0.3125	Auto	A607-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	18.5	plate	x1" Plate (Base Welde	4				E1					E1			E1						E1
2	19.75	31.25	plate	5"X1" Plate	3	E1						E1						E1					
3	41.25	57.5	plate	4.5"x1" Plate	3						E1						E1						E1
4	32.75	41.25	plate	5"x1.25" Plate	3						E2						E2						E2
5	58.75	61	plate	4"x1.25" Plate	3				E2						E2						E2		
6																							
7																							
8																							
9																							
10																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in2)	Bolt Hole Size (in)	Reinforcement Material
1	5	1	5	0.5	Welded	0	PC 8.8 - M20 (100)	24.000	18.000	3.750	1.1875	A572-65
2	5	1	5	0.5	PC 8.8 - M20 (100)	21	PC 8.8 - M20 (100)	21.000	18.000	3.750	1.1875	A572-65
3	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	18.000	3.250	1.1875	A572-65
4	5	1.25	6.25	0.625	PC 8.8 - M20 (100)	27	PC 8.8 - M20 (100)	27.000	15.000	4.688	1.1875	A572-65
5	4	1.25	5	0.625	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	13.500	3.438	1.1875	A572-65

Connection Details for Custom Reinforcements

Reinforcement	End	# Bolts	N or X	Bolt Spacing (in)	Edge Dist (in)	Weld Grade (ksi)	Transverse (Horiz.) Weld Type	Horiz. Weld Length (in)	Horiz. Groove Depth (in)	Horiz. Groove Angle (deg)	Horiz. Fillet Size (in)	Vertical Weld Length (in)	Vertical Fillet Size (in)	Rev H Connection Capacity (kip)
5"x1" Plate (Base Welded)	Top	8	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	0	-	0	0	70	None	-	-	-	-	18	0.313	-
5"X1" Plate	Top	7	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	7	N	3	3	-	-	-	-	-	-	-	-	-
4.5"x1" Plate	Top	6	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	6	N	3	3	-	-	-	-	-	-	-	-	-
5"x1.25" Plate	Top	9	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	9	N	3	3	-	-	-	-	-	-	-	-	-
4"x1.25" Plate	Top	6	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	6	N	3	3	-	-	-	-	-	-	-	-	-

TNX Geometry Input

Increment (ft): 5 Export to TNX

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	120 - 115	5		18	19.000	19.750	0.1875	A607-65	1.000
2	115 - 110	5		18	19.750	20.501	0.1875	A607-65	1.000
3	110 - 105	5		18	20.501	21.251	0.1875	A607-65	1.000
4	105 - 100	5		18	21.251	22.001	0.1875	A607-65	1.000
5	100 - 95	5		18	22.001	22.751	0.1875	A607-65	1.000
6	95 - 90	5		18	22.751	23.502	0.1875	A607-65	1.000
7	90 - 86.25	7	3.25	18	23.502	24.552	0.1875	A607-65	1.000
8	86.25 - 81.25	5		18	23.689	24.440	0.25	A607-65	1.000
9	81.25 - 76.25	5		18	24.440	25.190	0.25	A607-65	1.000
10	76.25 - 71.25	5		18	25.190	25.940	0.25	A607-65	1.000
11	71.25 - 66.25	5		18	25.940	26.690	0.25	A607-65	1.000
12	66.25 - 61.25	5		18	26.690	27.440	0.25	A607-65	1.000
13	61.25 - 61	0.25		18	27.440	27.478	0.25	A607-65	1.000
14	61 - 60.75	0.25		18	27.478	27.515	0.25	A607-65	1.000
15	60.75 - 58.75	2		18	27.515	27.815	0.25	A607-65	1.000
16	58.75 - 58.5	0.25		18	27.815	27.853	0.25	A607-65	1.000
17	58.5 - 57.5	1		18	27.853	28.003	0.25	A607-65	1.000
18	57.5 - 57.25	0.25		18	28.003	28.040	0.25	A607-65	1.000
19	57.25 - 52.25	5		18	28.040	28.791	0.25	A607-65	1.000
20	52.25 - 47.25	5		18	28.791	29.541	0.25	A607-65	1.000
21	47.25 - 45	6	3.75	18	29.541	30.441	0.25	A607-65	1.000
22	45 - 40.25	4.75		18	29.378	30.091	0.55	A607-65	0.936
23	40.25 - 35.25	5		18	30.091	30.841	0.5375	A607-65	0.948
24	35.25 - 32.75	2.5		18	30.841	31.216	0.5375	A607-65	0.944
25	32.75 - 32.5	0.25		18	31.216	31.254	0.3125	A607-65	1.000
26	32.5 - 31.25	1.25		18	31.254	31.441	0.3125	A607-65	1.000
27	31.25 - 31	0.25		18	31.441	31.479	0.3125	A607-65	1.000
28	31 - 26	5		18	31.479	32.229	0.3125	A607-65	1.000
29	26 - 21	5		18	32.229	32.979	0.3125	A607-65	1.000
30	21 - 19.75	1.25		18	32.979	33.167	0.3125	A607-65	1.000
31	19.75 - 19.5	0.25		18	33.167	33.204	0.3125	A607-65	1.000
32	19.5 - 18.5	1		18	33.204	33.354	0.3125	A607-65	1.000
33	18.5 - 18.25	0.25		18	33.354	33.392	0.3125	A607-65	1.000
34	18.25 - 13.25	5		18	33.392	34.142	0.3125	A607-65	1.000
35	13.25 - 8.25	5		18	34.142	34.892	0.3125	A607-65	1.000
36	8.25 - 3.25	5		18	34.892	35.642	0.3125	A607-65	1.000
37	3.25 - 0	3.25		18	35.642	36.130	0.3125	A607-65	1.000

TNX Section Forces

Increment (ft): 5

	Section Height (ft)	TNX Output		
		P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	120 - 115	3.42	13.32	4.42
2	115 - 110	3.71	36.21	4.74
3	110 - 105	7.21	70.87	8.64
4	105 - 100	7.58	115.33	9.08
5	100 - 95	9.70	170.65	11.69
6	95 - 90	10.22	229.87	12.01
7	90 - 86.25	10.63	275.32	12.24
8	86.25 - 81.25	13.76	350.44	15.01
9	81.25 - 76.25	14.46	426.17	15.30
10	76.25 - 71.25	15.17	503.39	15.60
11	71.25 - 66.25	15.90	582.02	15.88
12	66.25 - 61.25	16.66	662.03	16.15
13	61.25 - 61	16.71	666.07	16.15
14	61 - 60.75	16.75	670.10	16.16
15	60.75 - 58.75	17.05	702.53	16.28
16	58.75 - 58.5	17.10	706.60	16.28
17	58.5 - 57.5	17.25	722.90	16.34
18	57.5 - 57.25	17.30	726.98	16.34
19	57.25 - 52.25	18.08	809.30	16.60
20	52.25 - 47.25	18.90	892.81	16.83
21	47.25 - 45	19.28	930.75	16.93
22	45 - 40.25	20.83	1011.97	17.28
23	40.25 - 35.25	22.10	1099.10	17.59
24	35.25 - 32.75	22.75	1143.24	17.74
25	32.75 - 32.5	22.81	1147.67	17.74
26	32.5 - 31.25	23.04	1169.88	17.81
27	31.25 - 31	23.10	1174.33	17.80
28	31 - 26	24.08	1263.81	18.01
29	26 - 21	25.09	1354.21	18.18
30	21 - 19.75	25.35	1376.95	18.23
31	19.75 - 19.5	25.41	1381.50	18.22
32	19.5 - 18.5	25.61	1399.73	18.26
33	18.5 - 18.25	25.67	1404.29	18.25
34	18.25 - 13.25	26.70	1495.89	18.40
35	13.25 - 8.25	27.76	1588.14	18.53
36	8.25 - 3.25	28.84	1681.00	18.65
37	3.25 - 0	29.54	1741.67	18.73

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
120 - 115	Pole	TP19.75x19x0.1875	Pole	4.3%	Pass
115 - 110	Pole	TP20.501x19.75x0.1875	Pole	10.1%	Pass
110 - 105	Pole	TP21.251x20.501x0.1875	Pole	18.6%	Pass
105 - 100	Pole	TP22.001x21.251x0.1875	Pole	27.9%	Pass
100 - 95	Pole	TP22.751x22.001x0.1875	Pole	38.9%	Pass
95 - 90	Pole	TP23.502x22.751x0.1875	Pole	49.3%	Pass
90 - 86.25	Pole	TP24.552x23.502x0.1875	Pole	56.5%	Pass
86.25 - 81.25	Pole	TP24.44x23.689x0.25	Pole	48.7%	Pass
81.25 - 76.25	Pole	TP25.19x24.44x0.25	Pole	56.0%	Pass
76.25 - 71.25	Pole	TP25.94x25.19x0.25	Pole	62.6%	Pass
71.25 - 66.25	Pole	TP26.69x25.94x0.25	Pole	68.7%	Pass
66.25 - 61.25	Pole	TP27.44x26.69x0.25	Pole	74.4%	Pass
61.25 - 61	Pole	TP27.478x27.44x0.25	Pole	74.7%	Pass
61 - 60.75	Pole	TP27.515x27.478x0.25	Pole	74.9%	Pass
60.75 - 58.75	Pole	TP27.815x27.515x0.25	Pole	77.0%	Pass
58.75 - 58.5	Pole	TP27.853x27.815x0.25	Pole	77.3%	Pass
58.5 - 57.5	Pole	TP28.003x27.853x0.25	Pole	78.3%	Pass
57.5 - 57.25	Pole	TP28.04x28.003x0.25	Pole	78.6%	Pass
57.25 - 52.25	Pole	TP28.791x28.04x0.25	Pole	83.5%	Pass
52.25 - 47.25	Pole	TP29.541x28.791x0.25	Pole	88.1%	Pass
47.25 - 45	Pole	TP30.441x29.541x0.25	Pole	90.1%	Pass
45 - 40.25	Pole + Reinf.	TP30.091x29.378x0.55	Reinf. 4 Tension Rupture	72.3%	Pass
40.25 - 35.25	Pole + Reinf.	TP30.841x30.091x0.5375	Reinf. 4 Tension Rupture	75.5%	Pass
35.25 - 32.75	Pole + Reinf.	TP31.216x30.841x0.5375	Reinf. 4 Tension Rupture	77.0%	Pass
32.75 - 32.5	Pole	TP31.254x31.216x0.3125	Pole	77.6%	Pass
32.5 - 31.25	Pole	TP31.441x31.254x0.3125	Pole	78.2%	Pass
31.25 - 31	Pole	TP31.479x31.441x0.3125	Pole	78.4%	Pass
31 - 26	Pole	TP32.229x31.479x0.3125	Pole	80.9%	Pass
26 - 21	Pole	TP32.979x32.229x0.3125	Pole	83.2%	Pass
21 - 19.75	Pole	TP33.167x32.979x0.3125	Pole	83.7%	Pass
19.75 - 19.5	Pole	TP33.204x33.167x0.3125	Pole	83.9%	Pass
19.5 - 18.5	Pole	TP33.354x33.204x0.3125	Pole	84.3%	Pass
18.5 - 18.25	Pole	TP33.392x33.354x0.3125	Pole	84.4%	Pass
18.25 - 13.25	Pole	TP34.142x33.392x0.3125	Pole	86.5%	Pass
13.25 - 8.25	Pole	TP34.892x34.142x0.3125	Pole	88.4%	Pass
8.25 - 3.25	Pole	TP35.642x34.892x0.3125	Pole	90.2%	Pass
3.25 - 0	Pole	TP36.13x35.642x0.3125	Pole	91.2%	Pass
				Summary	
			Pole	91.2%	Pass
			Reinforcement	77.0%	Pass
			Overall	91.2%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*					
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5
120 - 115	563	n/a	563	11.64	n/a	11.64	4.3%					
115 - 110	630	n/a	630	12.09	n/a	12.09	10.1%					
110 - 105	702	n/a	702	12.53	n/a	12.53	18.6%					
105 - 100	780	n/a	780	12.98	n/a	12.98	27.9%					
100 - 95	863	n/a	863	13.43	n/a	13.43	38.9%					
95 - 90	952	n/a	952	13.87	n/a	13.87	49.3%					
90 - 86.25	1023	n/a	1023	14.21	n/a	14.21	56.5%					
86.25 - 81.25	1418	n/a	1418	19.19	n/a	19.19	48.7%					
81.25 - 76.25	1555	n/a	1555	19.79	n/a	19.79	56.0%					
76.25 - 71.25	1699	n/a	1699	20.38	n/a	20.38	62.6%					
71.25 - 66.25	1852	n/a	1852	20.98	n/a	20.98	68.7%					
66.25 - 61.25	2015	n/a	2015	21.57	n/a	21.57	74.4%					
61.25 - 61	2023	n/a	2023	21.60	n/a	21.60	74.7%					
61 - 60.75	2031	n/a	2031	21.63	n/a	21.63	74.9%					
60.75 - 58.75	2099	n/a	2099	21.87	n/a	21.87	77.0%					
58.75 - 58.5	2108	n/a	2108	21.90	n/a	21.90	77.3%					
58.5 - 57.5	2142	n/a	2142	22.02	n/a	22.02	78.3%					
57.5 - 57.25	2151	n/a	2151	22.05	n/a	22.05	78.6%					
57.25 - 52.25	2330	n/a	2330	22.65	n/a	22.65	83.5%					
52.25 - 47.25	2518	n/a	2518	23.24	n/a	23.24	88.1%					
47.25 - 45	2606	n/a	2606	23.51	n/a	23.51	90.1%					
45 - 40.25	3308	2323	5631	29.54	18.75	48.29	42.4%				72.3%	
40.25 - 35.25	3564	2434	5999	30.28	18.75	49.03	44.6%				75.5%	
35.25 - 32.75	3697	2491	6188	30.65	18.75	49.40	45.6%				77.0%	
32.75 - 32.5	3711	n/a	3711	30.69	n/a	30.69	77.6%					
32.5 - 31.25	3779	n/a	3779	30.87	n/a	30.87	78.2%					
31.25 - 31	3792	n/a	3792	30.91	n/a	30.91	78.4%					
31 - 26	4073	n/a	4073	31.66	n/a	31.66	80.9%					
26 - 21	4367	n/a	4367	32.40	n/a	32.40	83.2%					
21 - 19.75	4442	n/a	4442	32.59	n/a	32.59	83.7%					
19.75 - 19.5	4458	n/a	4458	32.62	n/a	32.62	83.9%					
19.5 - 18.5	4519	n/a	4519	32.77	n/a	32.77	84.3%					
18.5 - 18.25	4534	n/a	4534	32.81	n/a	32.81	84.4%					
18.25 - 13.25	4850	n/a	4850	33.55	n/a	33.55	86.5%					
13.25 - 8.25	5180	n/a	5180	34.30	n/a	34.30	88.4%					
8.25 - 3.25	5524	n/a	5524	35.04	n/a	35.04	90.2%					
3.25 - 0	5756	n/a	5756	35.53	n/a	35.53	91.2%					

Note: Section capacity checked using 5 degree increments.
Rating per TIA-222-H Section 15.5.

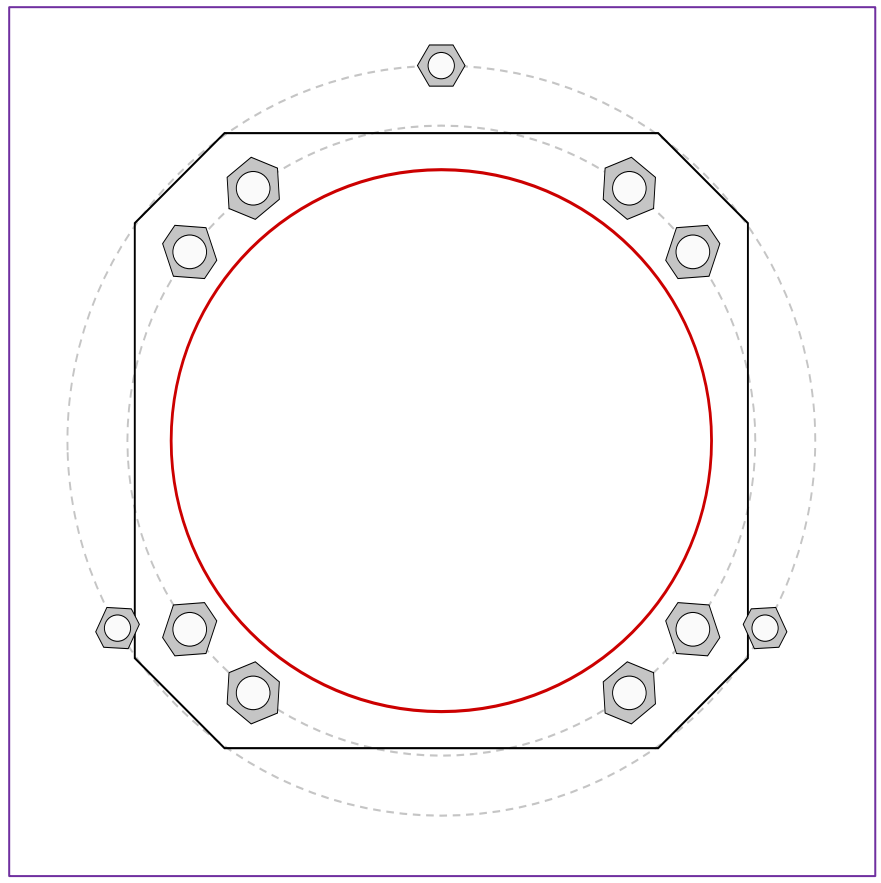
Monopole Base Plate Connection

Site Info	
BU #	842858
Site Name	BOLTON, CT
Order #	656559, Rev# 0

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

Applied Loads	
Moment (kip-ft)	1741.67
Axial Force (kips)	29.54
Shear Force (kips)	18.73

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (8) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 42" BC

Anchor Spacing: 6 in

GROUP 2: (3) 1-3/4" ø bolts (F1554-105 N; Fy=105 ksi, Fu=125 ksi) on 50" BC

Base Plate Data

41" W x 2.5" Plate (A572-55; Fy=55 ksi, Fu=70 ksi); Clip: 6 in

Stiffener Data

N/A

Pole Data

36.13" x 0.3125" 18-sided pole (A607-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

GROUP 1:

Pu_t = 185.85	ϕPn_t = 243.75	**Stress Rating**
Vu = 2.34	ϕVn = 149.1	**72.6%**
Mu = n/a	ϕMn = n/a	**Pass**

GROUP 2:

Pu_t = 131.98	ϕPn_t = 178.13	**Stress Rating**
Vu = 0	ϕVn = 112.75	**70.6%**
Mu = 0	ϕMn = 84.41	**Pass**

Base Plate Summary

Max Stress (ksi):	30.49	(Flexural)
Allowable Stress (ksi):	49.5	
Stress Rating:	**58.7%**	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

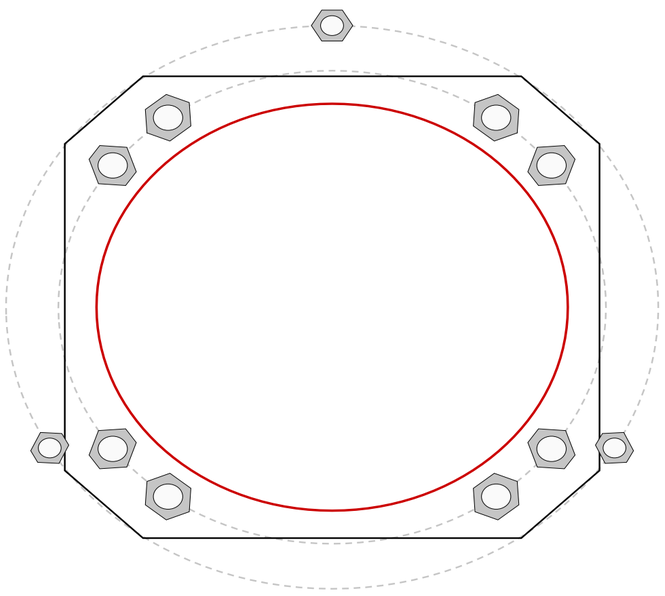
note: Bending interaction not considered when Grout Considered = "Yes"

Bolt Group	Resist Axial	Resist Shear	Induce Plate Bending	Grout Considered	Apply at BARB Elevation	BARB CL Elevation (ft)
1	Yes	Yes	Yes	No	No	
2	No	No	No	No	No	

Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η:	l_{ar} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	36.7867893	2.25	A615-75	42	0.5	0.875	N-Included		No
2	1	53.2132107	2.25	A615-75	42	0.5	0.875	N-Included		No
3	1	126.786789	2.25	A615-75	42	0.5	0.875	N-Included		No
4	1	143.213211	2.25	A615-75	42	0.5	0.875	N-Included		No
5	1	216.786789	2.25	A615-75	42	0.5	0.875	N-Included		No
6	1	233.213211	2.25	A615-75	42	0.5	0.875	N-Included		No
7	1	306.786789	2.25	A615-75	42	0.5	0.875	N-Included		No
8	1	323.213211	2.25	A615-75	42	0.5	0.875	N-Included		No
9	2	90	1.75	F1554-105	50	0.5	3.375	N-Included		No
10	2	210	1.75	F1554-105	50	0.5	3.375	N-Included		No
11	2	330	1.75	F1554-105	50	0.5	3.375	N-Included		No

Plot Graphic



PROJECT	**137088.010.01.0001 - BOLTON, CT**
SUBJECT	**Anchor Rod Bracket Analysis**
DATE	**01/24/24**

v4.6.1

TIA-222 Rev.	H
Apply TIA-222-H Section 15.5?	Yes

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Analysis Criteria		
Design/Analysis	Analysis	
Load Type	Current Load	
Current load	131.98	kips
AR Capacity	227.3	kips

Tower Type	Monopole

Manufacturers Tower Prop.		
Pole Thickness	0.3125	in
Pole Grade	A572-65	
Fy	65	ksi
Fu	80	ksi
Base Plate Gr.	Custom	
Fy	55	55 ksi
Fu	70	70 ksi

Post-Installed Adhesive AR Mod.		
ARB Type	Welded	
Size	1.75	in
Grade	F1554-105	
Fy	105	ksi
Fu	125	ksi

Anchor Rod Bracket Analysis Checks		
Tube Bearing	40.6%	-
Tube Compression	60.8%	-
Gusset Shear	23.3%	-
Gusset Flexure	N/A	-
Welds: Gusset to Tower and BP	57.0%	-
Welds: Gusset to Tube	47.5%	-
Welds: Geometry	N/A	
Tower Punching	39.3%	-
Tube Punching	30.3%	-
Utilization	**60.8%**	

Bracket Properties

Gusset			Pipe/Tube			Weld - Gusset to Pipe/Tube		
Thickness	1.25	in	Size	3 XXS Pipe		FEXX	70	ksi
Width at Tube	5	in	Total Length	12	in	Weld Type	PJP - Double Bevel	
Height at Pole	24	in	Length above Gusset	0	in	Fillet Size	3/8	in
Height at Tube	12	in	Length below Gusset	0	in	Bevel Depth	3/8	in
Grade	A572-65		Grade	Custom				
Fy	65	ksi	Fy	42	42 ksi			
Fu	80	ksi	Fu	58	58 ksi			

Weld - Gusset to Tower			Weld - Gusset to Base Plate		
FEXX	70	ksi	FEXX	70	ksi
Weld Type	Double Fillet		Weld Type	CJP - Double Bevel	
Fillet Size	5/16	in	Fillet Size	7/16	in
			Bevel Depth	9/16	in
			Gap	1	in
			Notch (horiz)	1/2	in
			Notch (vert)	1/2	in
			Pipe/Tube Welded to Base/Footpad?	No	

Drilled Pier Foundation

BU # :	842858
Site Name:	BOLTON, CT
Order Number:	656559, Rev. 0
TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	1741.67	
Axial Force (kips)	29.54	
Shear Force (kips)	18.73	

Material Properties		
Concrete Strength, f'c:	3	ksi
Rebar Strength, Fy:	60	ksi
Tie Yield Strength, Fyt:	40	ksi

Pier Design Data		
Depth	19.5	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 19.5' below grade		
Pier Diameter	6	ft
Rebar Quantity	16	
Rebar Size	11	
Clear Cover to Ties	4	in
Tie Size	5	
Tie Spacing	18	in

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Analysis Results		
Soil Lateral Check	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	5.28	-
Soil Safety Factor	2.53	-
Max Moment (kip-ft)	1829.71	-
Rating*	*50.1%*	-
Soil Vertical Check	*Compression*	*Uplift*
Skin Friction (kips)	98.82	-
End Bearing (kips)	1121.55	-
Weight of Concrete (kips)	72.15	-
Total Capacity (kips)	1220.38	-
Axial (kips)	101.69	-
Rating*	*7.9%*	-
Reinforced Concrete Flexure	*Compression*	*Uplift*
Critical Depth (ft from TOC)	5.03	-
Critical Moment (kip-ft)	1829.26	-
Critical Moment Capacity	3337.07	-
Rating*	*52.2%*	-
Reinforced Concrete Shear	*Compression*	*Uplift*
Critical Depth (ft from TOC)	14.59	-
Critical Shear (kip)	269.25	-
Critical Shear Capacity	429.85	-
Rating*	*59.7%*	-

Structural Foundation Rating*	**59.7%**
Soil Interaction Rating*	**50.1%**

*Rating per TIA-222-H Section 15.5

Check Limitation	
Apply TIA-222-H Section 15.5:	☑
N/A	☐
Design Options	
Input Effective Depths (else Actual):	☐
Consider non-tapered moment capacity:	☐
Check Shear along Depth of Pier:	☑
Utilize Shear-Friction Methodology:	☐
Override Critical Depth:	☐

Go to Soil Calculations

Soil Profile

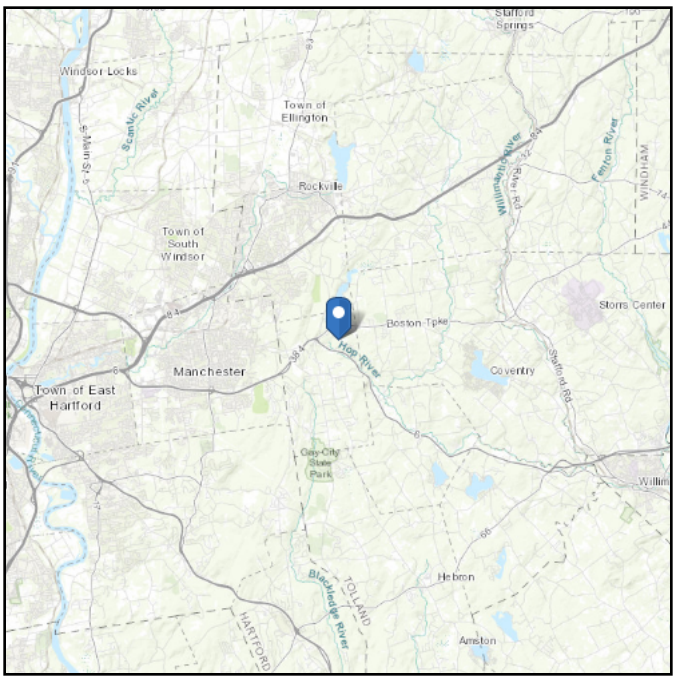
Groundwater Depth	5.5
# of Layers	12

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Net Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	0.5	0.5	100	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	0.5	2	1.5	102	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
3	2	3	1	115	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
4	3	3.33	0.33	115	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
5	3.33	4	0.67	115	150	0	40	0.000	0.000	0.12	0.12			Cohesionless
6	4	5.5	1.5	115	150	0	37	0.000	0.000	0.20	0.20			Cohesionless
7	5.5	6	0.5	53	87.6	0	37	0.00	0.00	0.24	0.24			Cohesionless
8	6	8	2	53	87.6	0	37	0.00	0.00	0.26	0.26			Cohesionless
9	8	10	2	53	87.6	0	41	0.00	0.00	0.34	0.34			Cohesionless
10	10	12	2	55	87.6	0	45	0.00	0.00	0.44	0.44			Cohesionless
11	12	14	2	58	87.6	0	45	0.00	0.00	0.50	0.50			Cohesionless
12	14	19.5	5.5	58	87.6	0	45	0.00	0.00	0.62	0.62	51.5		Cohesionless

ASCE Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Latitude:**	41.789008
Risk Category:	II	**Longitude:**	-72.429142
Soil Class:	D - Default (see Section 11.4.3)	**Elevation:**	620.413572284336 ft (NAVD 88)



Wind

Results:

Wind Speed	119 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:	Tue Jan 23 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.

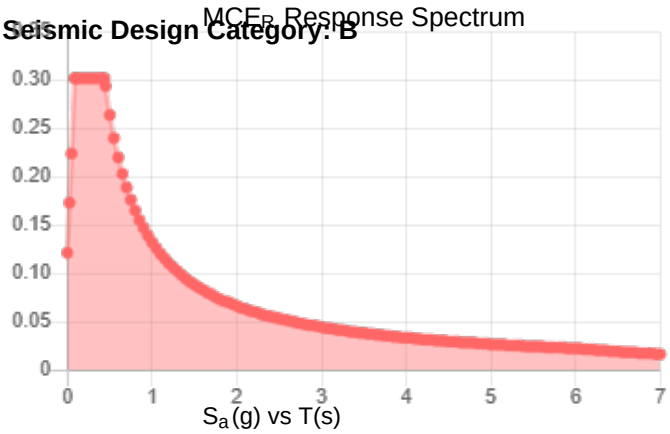
Seismic

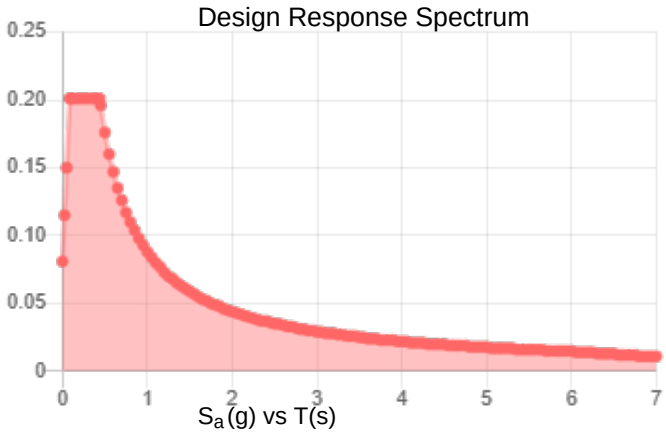
Site Soil Class: D - Default (see Section 11.4.3)

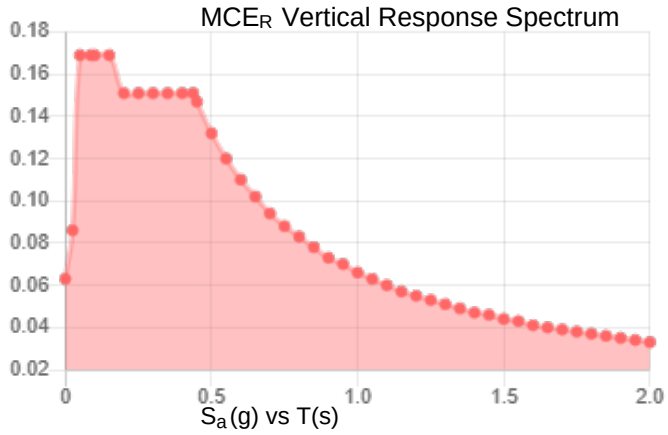
Results:

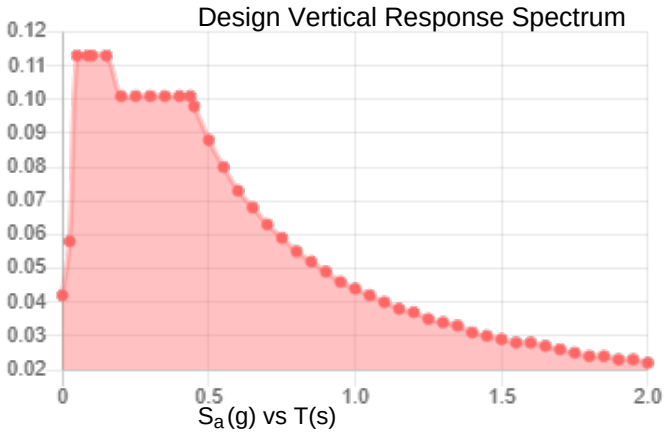
S_S :	0.189	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.102
F_v :	2.4	PGA_M :	0.162
S_{MS} :	0.302	F_{PGA} :	1.597
S_{M1} :	0.132	I_e :	1
S_{DS} :	0.201	C_v :	0.7

Seismic Design Category: B









Data Accessed: **Tue Jan 23 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:	1.50 in.
Concurrent Temperature:	5 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Tue Jan 23 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

Post-Modification Antenna Mount Analysis Report and PMI Requirements

Mount Fix

SMART Tool Project #: 10215321
Colliers Engineering & Design Project #: 21777985 (Rev. 1)

December 14, 2023

Site Information	*Site ID:*	*5000244968-VZW / BOLTON EAST CT*
	Site Name:	*BOLTON EAST CT*
	Carrier Name:	*Verizon Wireless*
	Address:	*49 South Street* *Bolton, Connecticut 06043* *Tolland County*
	Latitude:	*41.789028°*
	Longitude:	*-72.429139°*
Structure Information	*Tower Type:*	*120-Ft Monopole*
	Mount Type:	*12.50-Ft Platform*

FUZE ID # 16272381

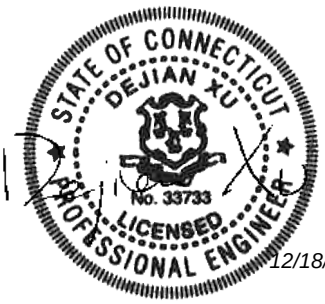
Analysis Results

Platform: **63.2% Pass w/ Modifications***

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

******Contractor PMI Requirements***:
Included at the end of this MA report
Available & Submitted via portal at https://pmi.vzwsmart.com
For additional questions and support, please reach out to:
pmisupport@colliersengineering.com

Report Prepared By: Prasanna Dhakal



12/18/2023

Executive Summary:

The objective of this report is to summarize the analysis results of the antenna support mount including the proposed modifications at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards.

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: 674848, dated September 19, 2023*
Mount Mapping Report	*Hudson Design Group, LLC, Site ID: 468392, dated June 10, 2021*
Previous Mount Analysis	*Colliers Engineering & Design, Project #: 21777985 (Rev. 1), dated November 21, 2023*
Mount Modification Drawings	*Colliers Engineering & Design, Project #: 21777985 (Rev. 1), dated December 14, 2023*

Analysis Criteria:

Codes and Standards:	ANSI/TIA-222-H 2022 Connecticut State Building Code (CSBC), Effective October 1, 2022	
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT}:	120 mph
	Ice Wind Speed (3-sec. Gust):	50 mph
	Design Ice Thickness:	1.50 in
	Risk Category:	II
	Exposure Category:	C
	Topographic Category:	1
	Topographic Feature Considered:	N/A
	Topographic Method:	N/A
	Ground Elevation Factor, K_e:	0.978
Seismic Parameters:	S_S:	0.191 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 mount:

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
105.50	107.00	3	Commscope	NHH-65B-R2B	Added
		3	Commscope	NHHSS-65B-R2BT4	
		3	Samsung	MT6413-77A	
		2	Raycap	RVZDC-3315-PF-48	
		3	Samsung	RF4439d-25A	
		3	Samsung	RF4461d-13A	
		3	Samsung	RT4423-48	
		6	Amphenol Antel	LPA-80063-4CF-EDIN-0	Retained

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. Any mount modifications listed under Sources of Information are assumed to 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	*20.1%*	*Pass*
Standoff Horizontal	*54.0%*	*Pass*
Platform Crossmember	*28.7%*	*Pass*
Mount Pipe	*53.6%*	*Pass*
Corner Plate	*21.6%*	*Pass*
Grating Support	*15.5%*	*Pass*
Cross Arm Plate	*47.0%*	*Pass*
Mod Support Rail	*24.5%*	*Pass*
Mod Support Rail Corner	*45.5%*	*Pass*
Mount Connection (Bolt)	*25.1%*	*Pass*
Mount Connection (Plate)	*63.2%*	*Pass*

Structure Rating – *(Controlling Utilization of all Components)*	**63.2%**

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 Standoff	105.5	N3	2116	2704	5.619	1.397	3163	1107	6.587	0.414
Sector B Standoff	105.5	N142 B	2163	2819	5.704	1.503	3374	1141	6.770	0.444
Sector A Standoff	105.5	N145	2163	2841	5.714	1.480	3369	1146	6.764	0.439

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

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

Ice Thickness (In)	Mount Pipes Excluded		Mount Pipes Included	
	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)
0	25.6	25.6	38.4	38.4
0.5	33.3	33.2	51.5	51.5
1	40.2	40.2	63.9	63.9

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

Requirements:

The existing mount will be **SUFFICIENT** for the final loading configuration (attachment 2) after the modifications detailed in attachment 3 are successfully completed.

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

Attachments:

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

Mount Desktop – Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor – Mount Modification

Electronic pdf version of this can be downloaded at https://pmi.vzwsmart.com
For additional questions and support, please reach out to pmisupport@colliersengineering.com

---

MDG #: 5000244968 SMART Project #: 10215321 Fuze Project ID: 16272381

Purpose – to upload the proper documentation to the SMART Tool in order to allow the SMART Tool engineering vendor 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 modification was completed in accordance with the modification drawings.
- Contractor shall relay any data that can impact the performance of the mount or the mount modification, this includes safety issues.

Base Requirements:

- If installation of the modification 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 drawings" showing contractor's name, 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 post-modification passing mount analysis (MA) contact the SMART Tool vendor immediately.
- Each photo shall be time and date stamped.
- Photos should be high resolution.
- Contractor shall ensure that the safety climb wire rope is 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 of the modifications.
  - Photos of the mount after installation of the modifications; if the mounts are at different rad elevations, pictures must be provided for all elevations that the modifications were installed

- *Photos taken at Mount Elevation*
  - Photos showing the safety climb wire rope above and below the mount prior to modification.
  - Photos showing the climbing facility and safety climb if present.

- Photos showing each individual sector after installation of modifications. Each entire sector must 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.
- Photos of each installed modification per the modification drawings; pictures shall also include connection hardware (U-bolts, bolts, nuts, all-threaded rods, etc.)
- Photos showing the distances (relative distance between collars) of the installed modifications from the appropriate reference locations shown in the modification drawings.
- Photos showing the installed modifications onto the tower (i.e. ring/collar mounts, tie-backs, V-bracing kits, etc.); if the existing mount elevation needs to be changed according to the modification drawings, an elevation measurement shall be provided before the elevation change.

Material Certification:

- Materials utilized must be as per specification on the drawings or the equivalent as validated by the SMART Tool vendor.
  - If the materials are as specified on the drawings
    - The contractor shall provide the packing list, or the materials certifications for the materials utilized to perform the mount modification
    - Commscope, Metrosite, Perfect Vision, Sabre, and Site Pro have all agreed to support Verizon vendors with the necessary material certifications
  - If seeking permission to use an equivalent
    - It is required that the SMART Tool engineering vendor approval of such is included in the contractor submission package. There may be an additional charge for approval if the equivalent submission doesn't meet specifications as prescribed in the drawings.

☐ All hardware has been properly installed, and the existing hardware was inspected.

☐ The material utilized was as specified on the SMART Tool engineering vendor Mount Modification Drawings 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.

Antenna & Equipment Placement and Geometry Confirmation:

☐ 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.

Comments:

Was the mount modification completed in conjunction with the equipment change / installation?

☐ Yes ☐ No

Special Instructions / Validation as required from the MA or Mod Drawings:

Issue:

1. Contractor shall install proposed OVPs on a new OVP pipe as proposed Mount Modification Drawings.

Response:

Special Instruction Confirmation:

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

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

Comments:

Certifying Individual:

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

Structure: 2 68-VZW - BOLTON EAST CT

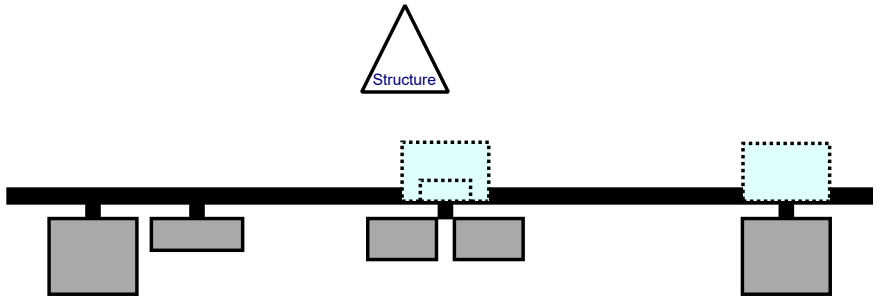
Sector: **A** 12/14/2023

Structure Type: Monopole 10215321

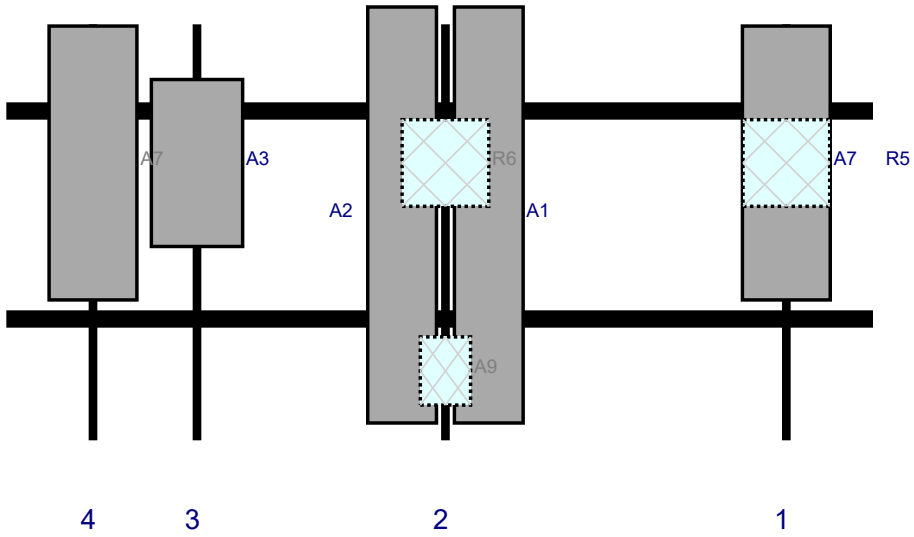
Mount Elev: 105.50 Page: 1

Colliers Engineering & Design

Plan View

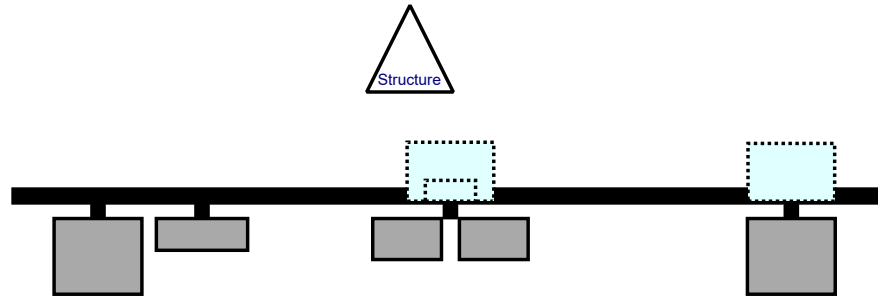


Front View - Looking at Structure

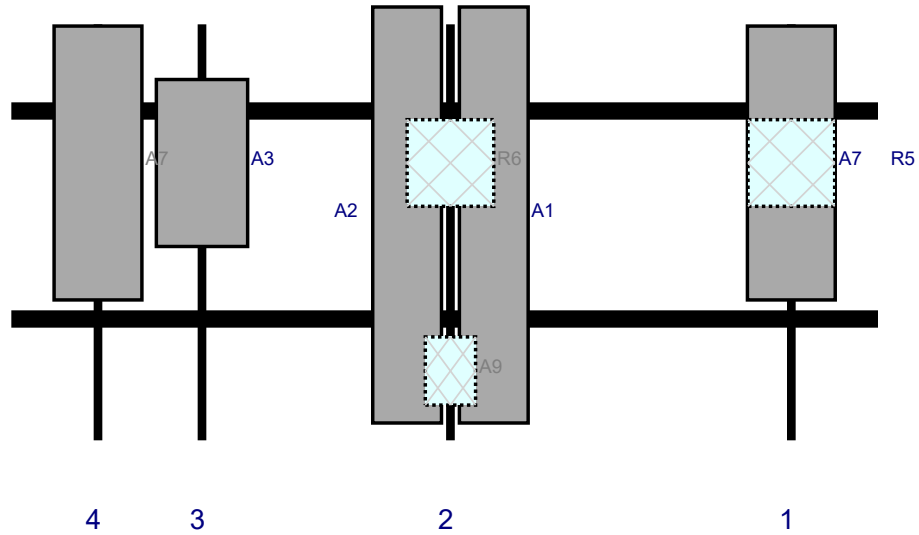


Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A7	LPA-80063-4CF-EDIN-0	47.4	15.2	135	1	a	Front	24	0	Retained	06/10/2021
R5	RF4439d-25A	15	15	135	1	a	Behind	24	0	Added	
A1	NHH-65B-R2B	72	11.9	76	2	a	Front	33	7.5	Added	
A2	NHHSS-65B-R2BT4	72	11.9	76	2	a	Front	33	-7.5	Added	
A9	RT4423-48A	11.8	8.7	76	2	a	Behind	60	0	Added	
R6	RF4461d-13A	15	15	76	2	a	Behind	24	0	Added	
A3	MT6413-77A	28.9	15.8	33	3	a	Front	24	0	Added	
A7	LPA-80063-4CF-EDIN-0	47.4	15.2	15	4	a	Front	24	0	Retained	06/10/2021
M135	RVZDC-3315-PF-48	29.5	16.5		Member					Added	
M103	RVZDC-3315-PF-48	29.5	16.5		Member					Added	

Plan View

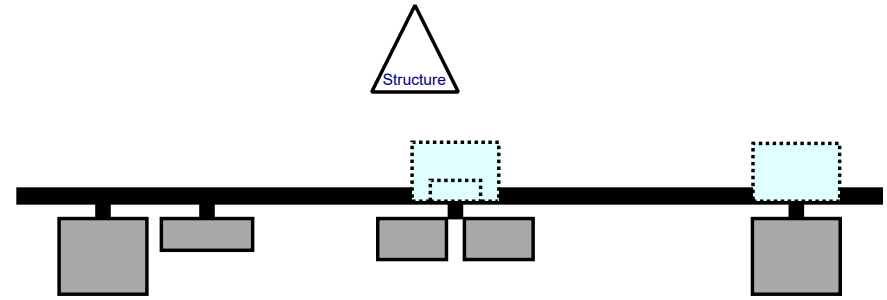


Front View - Looking at Structure

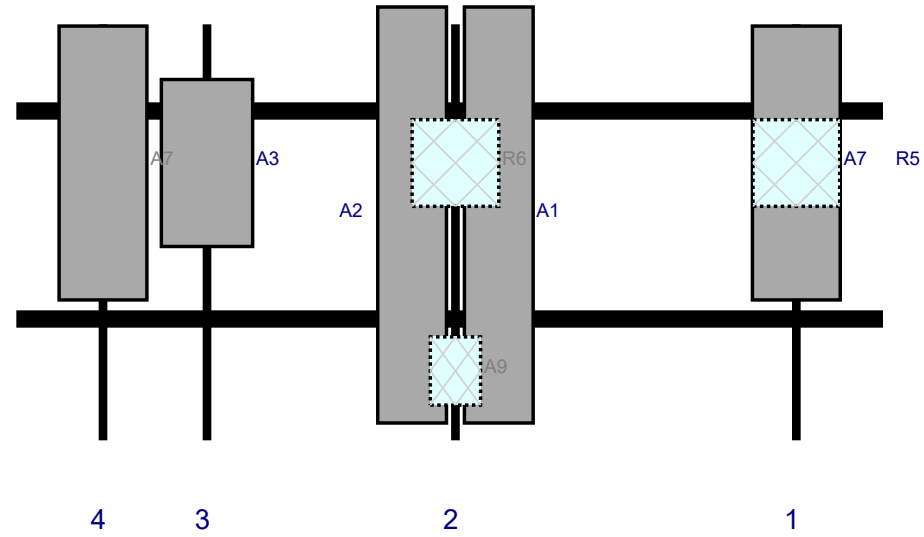


Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A7	LPA-80063-4CF-EDIN-0	47.4	15.2	135	1	a	Front	24	0	Retained	06/10/2021
R5	RF4439d-25A	15	15	135	1	a	Behind	24	0	Added	
A1	NHH-65B-R2B	72	11.9	76	2	a	Front	33	7.5	Added	
A2	NHHSS-65B-R2BT4	72	11.9	76	2	a	Front	33	-7.5	Added	
A9	RT4423-48A	11.8	8.7	76	2	a	Behind	60	0	Added	
R6	RF4461d-13A	15	15	76	2	a	Behind	24	0	Added	
A3	MT6413-77A	28.9	15.8	33	3	a	Front	24	0	Added	
A7	LPA-80063-4CF-EDIN-0	47.4	15.2	15	4	a	Front	24	0	Retained	06/10/2021

Plan View



Front View - Looking at Structure



Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A7	LPA-80063-4CF-EDIN-0	47.4	15.2	135	1	a	Front	24	0	Retained	06/10/2021
R5	RF4439d-25A	15	15	135	1	a	Behind	24	0	Added	
A1	NHH-65B-R2B	72	11.9	76	2	a	Front	33	7.5	Added	
A2	NHHSS-65B-R2BT4	72	11.9	76	2	a	Front	33	-7.5	Added	
A9	RT4423-48A	11.8	8.7	76	2	a	Behind	60	0	Added	
R6	RF4461d-13A	15	15	76	2	a	Behind	24	0	Added	
A3	MT6413-77A	28.9	15.8	33	3	a	Front	24	0	Added	
A7	LPA-80063-4CF-EDIN-0	47.4	15.2	15	4	a	Front	24	0	Retained	06/10/2021

MOUNT MODIFICATION DRAWINGS
EXISTING 12.50' PLATFORM

TOWER OWNER: CROWN CASTLE
TOWER OWNER SITE NUMBER: 842858

CARRIER SITE NAME: BOLTON EAST CT
CARRIER SITE NUMBER: 5000244968
FUZE ID: 16272381

49 SOUTH STREET
BOLTON, CT 06043
TOLLAND COUNTY

LATITUDE: 41.789028° N
LONGITUDE: 72.429139° W

DESIGN CRITERIA

WIND LOADS

BASIC WIND SPEED (3 SECOND GUST), V = 120 MPH
EXPOSURE CATEGORY C
TOPOGRAPHIC CATEGORY: 1
TOPOGRAPHIC CONSIDERED: N/A
TOPOGRAPHIC METHOD: N/A
MEAN BASE ELEVATION (AMSL) = 621.52'

ICE LOADS

ICE WIND SPEED (3 SECOND GUST), V = 50 MPH
ICE THICKNESS = 1.50 IN

SEISMIC LOADS

SEISMIC DESIGN CATEGORY B
SHORT TERM MCER GROUND MOTION, S_S = .191
LONG TERM MCER GROUND MOTION, S_1 = .055

PROJECT INFORMATION

APPLICANT/LESSEE

COMPANY: VERIZON WIRELESS

CLIENT REPRESENTATIVE

COMPANY: VERIZON WIRELESS

PROJECT MANAGER

COMPANY: COLLIERS ENGINEERING & DESIGN
CONTACT: PETER ALBANO
PHONE: 856.797.0412
E-MAIL: PETER.ALBANO@COLLIERSENG.COM

CONTRACTOR PMI REQUIREMENTS

PMI LOCATION: HTTPS://PMI.VZWSMART.COM
SMART TOOL PROJECT #: 10215321
VZW MDG #: 5000244968
ANALYSIS DATE: 12/14/2023

PMI REQUIREMENTS EMBEDDED WITHIN MOUNT MODIFICATION REPORT

SHEET INDEX

Colliers Engineering & Design

www.colliersengineering.com

verizon

811 Know what's below. Call before you dig.

PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE: AS SHOWN

JOB NUMBER: 21777985

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	08/16/21	ISSUED FOR CONSTRUCTION	MC	DX
1	12/14/23	ISSUED FOR CONSTRUCTION	PD	DX

COLLIERS ENGINEERING & DESIGN CT, P.C.
C.T. JPC.0000131

SITE NAME:

BOLTON EAST CT
5000244968

49 SOUTH STREET
BOLTON, CT 06043
TOLLAND COUNTY

Colliers Engineering & Design

STAMFORD
1055 Washington Boulevard
Stamford, CT 06901
Phone: 203.324.0800
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

SHEET TITLE: TITLE SHEET

SHEET NUMBER: ST-1

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.

BILL OF MATERIALS

SECTION 1 - VZWSMART KITS

QUANTITY	MANUFACTURER	PART NUMBER	DESCRIPTION	NOTES	UNIT WEIGHT (LBS.)	WEIGHT (LBS.)
1	VZWSMART	VZWSMART-PLK1	SUPPORT RAIL KIT	CONTRACTOR TO VERIFY THE LENGTH REQUIRED AND TRIM AS NECESSARY IN ACCORDANCE WITH THE 'STRUCTURAL STEEL' NOTES ON SHEET SGN-1.	504	504

SECTION 2 - OTHER REQUIRED PARTS

QUANTITY	MANUFACTURER	PART NUMBER	DESCRIPTION	NOTES	UNIT WEIGHT (LBS.)	WEIGHT (LBS.)
2	-	-	36" LONG, PIPE 2 SCH40	GALVANIZED	11	22
2	SITE PRO 1	SQCX4-K	CROSSOVER PLATE KIT W/ SQUARE U-BOLTS AND STD. U-BOLTS	OR EOR APPROVED EQUAL, CONTACT COLLIERS ENGINEERING & DESIGN FOR APPROVAL OF SUBSTITUTION	11	23

SECTION 3 - REQUIRED SAFETY CLIMB PARTS

QUANTITY	MANUFACTURER	PART NUMBER	DESCRIPTION	NOTES	UNIT WEIGHT (LBS.)	WEIGHT (LBS.)
1	PERFECT VISON	H42-0501-06	STANDOFF CLAMP BRACKET	OR EOR APPROVED EQUIVALENT	-	-
1	PERFECT VISION	PV-CMX-CG-BO	WIRE ROPE GUIDE	OR EOR APPROVED EQUIVALENT	-	-
					TOTAL:	549

NOTES:

1. THE MANUFACTURERS LISTED ARE THE APPROVED VENDORS FOR THE VZW MOUNT KITS. EACH MANUFACTURER WILL BE AWARE OF WHICH KITS HAVE BEEN THROUGH THE VZW APPROVAL PROCESS AND THEY ARE IN TURN APPROVED TO SELL. PLEASE NOTE THAT THE MATERIAL UTILIZED ON THE MOUNT MODIFICATIONS WILL BE REVIEWED AS A PART OF THE DESKTOP PMI COMPLETED BY THE SMART TOOL VENDOR. IT WILL BE REQUIRED THAT THE VZW KITS SPECIFIED ARE UTILIZED IN THE MODIFICATIONS.
2. ALL MATERIALS REQUIRED FOR THE DESIGNED MODIFICATIONS BUT NOT LISTED IN THIS SHEET ARE ASSUMED TO BE PROVIDED BY THE CONTRACTOR.

VZWSMART KITS - APPROVED VENDORS

COMMSCOPE	
CONTACT	SALVADOR ANGUIANO
PHONE	(817) 304-7492
EMAIL	SALVADOR.ANGUIANO@COMMSCOPE.COM
WEBSITE	WWW.COMMSCOPE.COM

METROSITE FABRICATORS, LLC	
CONTACT	KENT RAMEY
PHONE	(706) 335-7045 (O), (706) 982-9788 (M)
EMAIL	KENT@METROSITELLC.COM
WEBSITE	METROSITEFABRICATORS.COM

PERFECTVISION	
CONTACT	WIRELESS SALES
PHONE	(844) 887-6723
EMAIL	WWW.PERFECT-VISION.COM
WEBSITE	WIRELESSSALES@PERFECT-VISION.COM

SABRE INDUSTRIES, INC.	
CONTACT	ANGIE WELCH
PHONE	(866) 428-6937
EMAIL	AKWELCH@SABREINDUSTRIES.COM
WEBSITE	WWW.SABRESITESOLUTIONS.COM

SITE PRO 1	
CONTACT	PAULA BOSWELL
PHONE	(972) 236-9843
EMAIL	PAULA.BOSWELL@VALMONT.COM
WEBSITE	WWW.SITEPRO1.COM

Colliers Engineering & Design

www.colliersengineering.com

verizon

811 Know what's below. Call before you dig.

PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE: AS SHOWN

JOB NUMBER: 21777985

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	08/16/21	ISSUED FOR CONSTRUCTION	MC	DX
1	12/14/23	ISSUED FOR CONSTRUCTION	PD	DX

COLLIERS ENGINEERING & DESIGN CT, P.C.
C.T. JPC.0000131

SITE NAME:

BOLTON EAST CT
5000244968

49 SOUTH STREET
BOLTON, CT 06043
TOLLAND COUNTY

Colliers Engineering & Design

STAMFORD
1055 Washington Boulevard
Stamford, CT 06901
Phone: 203.324.0800
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

SHEET TITLE: BILL OF MATERIALS

SHEET NUMBER: SBOM-1

GENERAL NOTES

1. THESE MODIFICATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF THE TELECOMMUNICATIONS INDUSTRY STANDARD TIA-222-H. MATERIALS AND SERVICES PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE ABOVE MENTIONED CODES.
2. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE TO EXISTING STRUCTURES. ANY DAMAGE TO EXISTING STRUCTURES AS A RESULT OF THE CONTRACTOR'S WORK OR FROM DAMAGE DUE TO OTHER CAUSES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS BEFORE BEGINNING WORK, ORDERING MATERIAL, AND PREPARING OF SHOP DRAWINGS. ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER. IF THE CONTRACTOR DISCOVERS ANY EXISTING CONDITIONS THAT ARE NOT REPRESENTED ON THESE DRAWINGS, OR ANY CONDITIONS THAT WOULD INTERFERE WITH THE INSTALLATION OF THE MODIFICATIONS, NOTIFY THE ENGINEER IMMEDIATELY.
4. IT IS ASSUMED THAT ANY STRUCTURAL MODIFICATION WORK SPECIFIED ON THESE PLANS WILL BE ACCOMPLISHED BY KNOWLEDGEABLE WORKMEN WITH TOWER CONSTRUCTION EXPERIENCE.
5. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES, AND PROCEDURES.
6. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN AND SHALL MEET ANSI/TIA-322 (LATEST EDITION), OSHA, AND GENERAL INDUSTRY STANDARDS. ALL RIGGING PLANS SHALL ADHERE TO ANSI/TIA-322 (LATEST EDITION) INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION.
7. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PROGRAMS IN ACCORDANCE WITH APPLICABLE SAFETY CODES.
8. WORK SHALL ONLY BE PERFORMED DURING CALM DRY DAYS (WINDS LESS THAN 30-MPH). THE STRUCTURE SHOWN ON THE DRAWINGS IS STRUCTURALLY SOUND ONLY IN THE COMPLETED FORM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STRENGTH AND STABILITY OF THE STRUCTURE DURING ERECTION. CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT, SHORING, BRACING AND ANY OTHER STRUCTURAL SYSTEMS AS REQUIRED TO RESIST ALL FORCES THAT MAY OCCUR DURING HANDLING AND ERECTION UNTIL THE STRUCTURE IS FULLY COMPLETED. TEMPORARY SUPPORTS, BRACING AND OTHER STRUCTURAL SYSTEMS REQUIRED DURING CONSTRUCTION SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER THEIR USE.
9. ALL INSTALLATIONS PERFORMED ON THIS STRUCTURE SHALL BE COMPLETED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF THE STANDARD FOR INSTALLATION, ALTERATION AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS, ANSI/TIA-322.
10. CONTRACTOR SHALL SECURE SITE BACK TO EXISTING CONDITION UNDER SUPERVISION OF OWNER. ALL FENCE, STONE, GEOFABRIC, GROUNDING, AND SURROUNDING GRADE SHALL BE REPLACED AND REPAIRED AS REQUIRED TO ACHIEVE OWNER APPROVAL. POSITIVE DRAINAGE AWAY FROM TOWER SITE SHALL BE MAINTAINED.
11. CONNECTIONS BETWEEN ITEMS SUPPORTED BY THE STRUCTURE AND THE STRUCTURE NOT SPECIFICALLY DETAILED IN THE CONTRACT DOCUMENTS ARE THE RESPONSIBILITY OF THE CONTRACTOR. SUCH CONNECTIONS SHALL BE DESIGNED, COORDINATED AND INSPECTED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF THE PROJECT. SUBMIT SIGNED AND SEALED CALCULATIONS DURING SHOP DRAWING REVIEW.
12. DO NOT SCALE DRAWINGS.
13. DO NOT USE THESE DRAWINGS FOR ANY OTHER SITE.
14. ALL MATERIAL UTILIZED FOR THIS PROJECT MUST BE NEW AND FREE OF ANY DEFECTS. ANY MATERIAL SUBSTITUTIONS, INCLUDING BUT NOT LIMITED TO ALTERED SIZE AND/OR STRENGTHS, MUST BE APPROVED BY THE OWNER AND ENGINEER IN WRITING.
15. THE MOUNT UNDER NO CIRCUMSTANCES SHOULD BE USED AS A TIE OFF POINT.

STRUCTURAL STEEL

1. DESIGN, DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING PUBLICATIONS EXCEPT AS SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS.
   a. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION (15TH EDITION)
   b. SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS
   c. AISC CODE OF STANDARD PRACTICE
2. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING UNLESS OTHERWISE SHOWN:

CHANNELS, ANGLES, PLATES, ETC.	ASTM A36 (GR 36)
STEEL PIPE	ASTM A53 (GR 35)
BOLTS	ASTM A325
NUTS	ASTM A563
LOCK WASHERS	LOCKING STRUCTURAL GRADE

3. ALL SUBSTITUTIONS PROPOSED BY THE CONTRACTOR SHALL BE APPROVED IN WRITING BY THE ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER FOR VERIFYING THE SUBSTITUTE IS SUITABLE FOR USE AND MEETS ORIGINAL DESIGN CRITERIA. DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT, SHALL BE NOTED. ESTIMATES OF COSTS/CREDITS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING RE-DESIGN COSTS AND COSTS TO SUB-CONTRACTORS) SHALL BE PROVIDED TO THE ENGINEER. CONTRACTOR SHALL PROVIDE ADDITIONAL DOCUMENTATION AND/OR SPECIFICATIONS TO THE ENGINEER AS REQUESTED.
4. PROVIDE STRUCTURAL STEEL SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
   a. SUBMIT SHOP DRAWINGS TO

      PETER.ALBANO@COLLIERSENG.COM

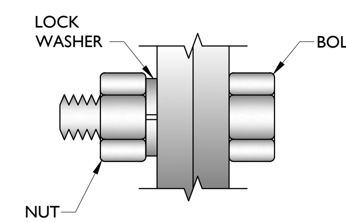
   b. PROVIDE COLLIERS ENGINEERING & DESIGN PROJECT # AND COLLIERS ENGINEERING & DESIGN PROJECT ENGINEER CONTACT IN THE BODY OF THE EMAIL.
5. DRILL NO HOLES IN ANY NEW OR EXISTING STRUCTURAL STEEL MEMBERS OTHER THAN THOSE SHOWN ON STRUCTURAL DRAWINGS WITHOUT THE APPROVAL OF THE ENGINEER OF RECORD.
6. GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
7. ALL NEW STEEL SHALL BE HOT BE DIPPED GALVANIZED FOR FULL WEATHER PROTECTION. IN ADDITION ALL NEW STEEL SHALL BE PAINTED TO MATCH EXISTING STEEL. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
8. ALL BOLT ASSEMBLIES FOR STRUCTURAL MEMBERS REPRESENTED IN THIS DRAWING REQUIRE LOCKING DEVICES TO BE INSTALLED IN ACCORDANCE WITH TIA-222-H SECTION 4.9.2 REQUIREMENTS.
9. WHERE CONNECTIONS ARE NOT FULLY DETAILED ON THESE DRAWINGS, FABRICATOR SHALL DESIGN CONNECTIONS TO RESIST LOADS AND FORCES WHERE SHOWN ON DRAWINGS AND AS OUTLINED IN SPECIFICATIONS.
10. FOR MEMBERS BEING REPLACED, PROVIDE NEW BOLTS AND MATCH EXISTING SIZE AND GRADE. MAINTAIN AISC REQUIREMENTS FOR MINIMUM BOLT DISTANCE AND SPACING.
11. ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH SUCH THAT THE END OF THE BOLT IS AT LEAST FLUSH WITH THE FACE OF THE NUT. IT IS NOT PERMITTED FOR THE BOLT END TO BE BELOW THE FACE OF THE NUT AFTER TIGHTENING IS COMPLETED.
12. GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
13. ALL NEW STEEL SHALL BE HOT BE DIPPED GALVANIZED FOR FULL WEATHER PROTECTION. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
14. ALL EXISTING PAINTED/GALVANIZED SURFACES DAMAGED DURING REHAB INCLUDING AREAS UNDER STIFFENER PLATES SHALL BE WIRE BRUSHED CLEAN, REPAIRED BY COLD GALVANIZING (ZINC COTE, OR EOR APPROVED EQUAL), AND REPAINTED TO MATCH THE EXISTING FINISH (IF APPLICABLE).
15. ALL HOLES IN STEEL MEMBERS SHALL BE SIZED 1/16" LARGER THAN THE BOLT DIAMETER. STANDARD HOLES SHALL BE USED UNLESS NOTED OTHERWISE.

BOLT SCHEDULE (IN.)

BOLT DIAMETER	STANDARD HOLE	SHORT SLOT	MIN. EDGE DISTANCE	SPACING
1/2	9/16	9/16 x 11/16	7/8	1 1/2
5/8	11/16	11/16 x 7/8	1 1/8	1 7/8
3/4	13/16	13/16 x 1	1 1/4	2 1/4
7/8	15/16	15/16 x 1 1/8	1 1/2	2 5/8
1	1 1/16	1 1/16 x 1 5/16	1 3/4	3

WORKABLE GAGES (IN.)

LEG	GAGE
4	2 1/2
3 1/2	2
3	1 3/4
2 1/2	1 3/8
2	1 1/8

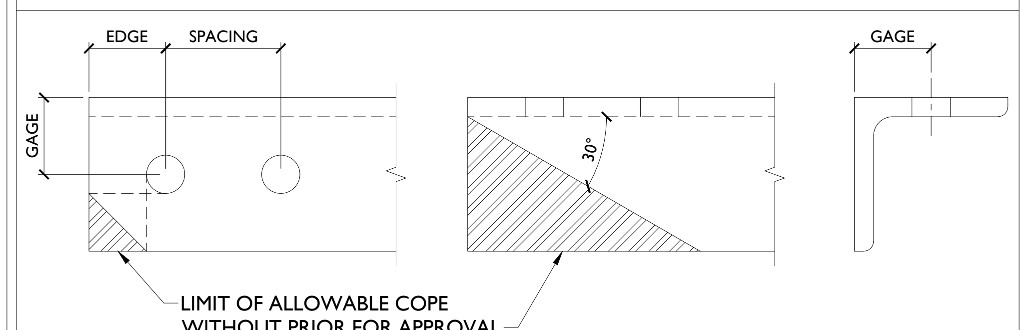


TYP. BOLT ASSEMBLY

NOTES:

1. ALL DIMENSIONS REPRESENTED IN THE ABOVE TABLES ARE AISC MINIMUM REQUIREMENTS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ENGINEER IF DISTANCES ARE LESS THAN THOSE PROVIDED.
2. THE DIMENSIONS PROVIDED ARE MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS OF PROPOSED MEMBERS WITHIN THESE DRAWINGS MAY VARY FROM THE AISC MINIMUM REQUIREMENTS.
3. SHORT SLOT HOLES SHALL ONLY BE USED WHEN DEPICTED IN THE DRAWINGS
4. MATCH EXISTING GAGES WHEN APPLICABLE, UNLESS MINIMUM EDGE DISTANCES ARE COMPROMISED.

ALLOWABLE COPING



Colliers Engineering & Design

www.colliersengineering.com

verizon

PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

811 Know what's below. Call before you dig.

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE : AS SHOWN | JOB NUMBER : 21777985

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
.	.	.	.	.
.	.	.	.	.
0	08/16/21	ISSUED FOR CONSTRUCTION	MC	DX
1	12/14/23	ISSUED FOR CONSTRUCTION	PD	DX

COLLIERS ENGINEERING & DESIGN CT, P.C.
C.T. JPC.0000131

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

SITE NAME:

BOLTON EAST CT
5000244968

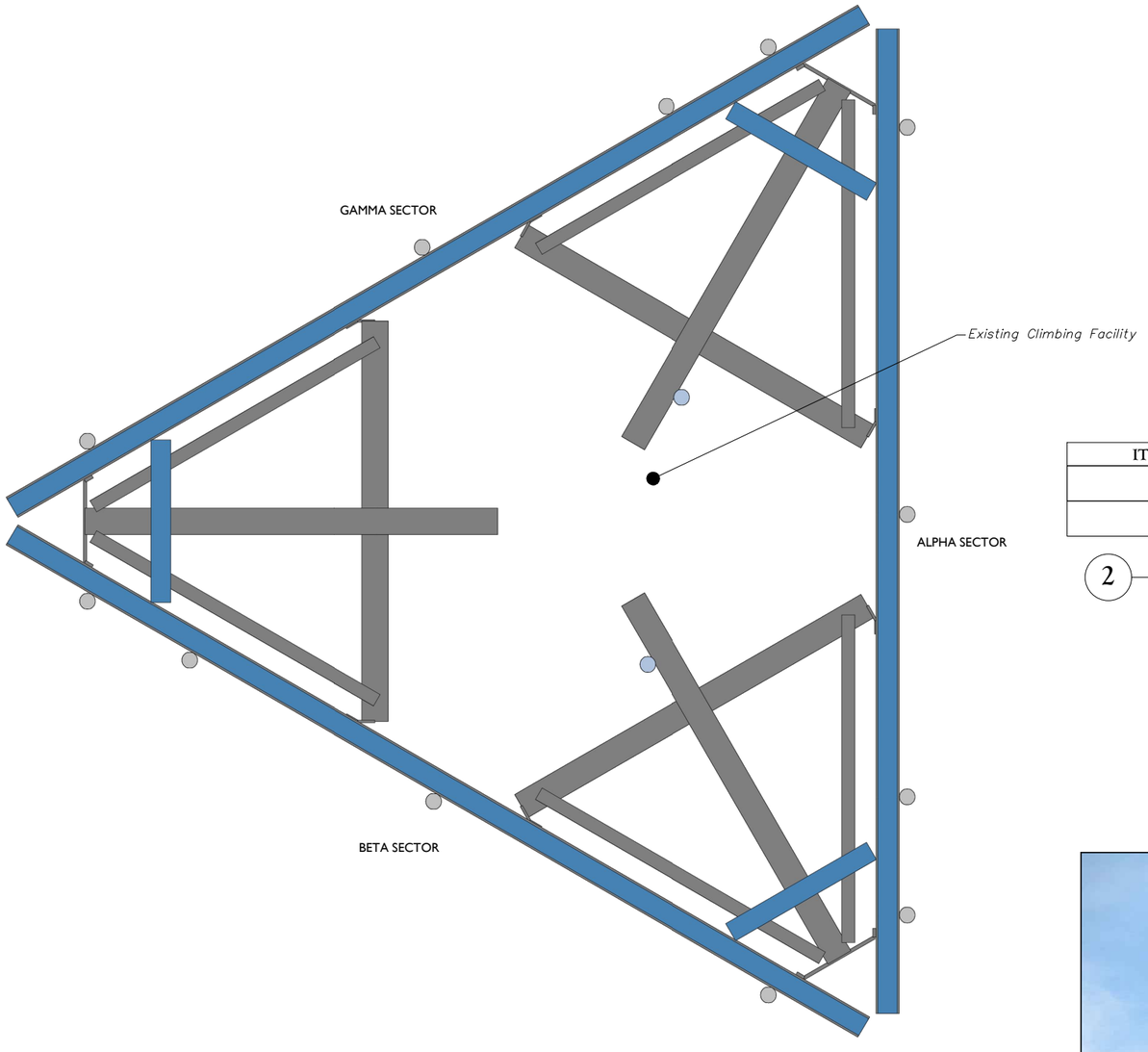
49 SOUTH STREET
BOLTON, CT 06043
TOLLAND COUNTY

Colliers Engineering & Design
STAMFORD
1055 Washington Boulevard
Stamford, CT 06901
Phone: 203.324.0800
COLLIERS ENGINEERING & DESIGN CT, P.C. DOING BUSINESS AS MASER CONSULTING

SHEET TITLE : GENERAL NOTES

SHEET NUMBER : SGN-1

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.



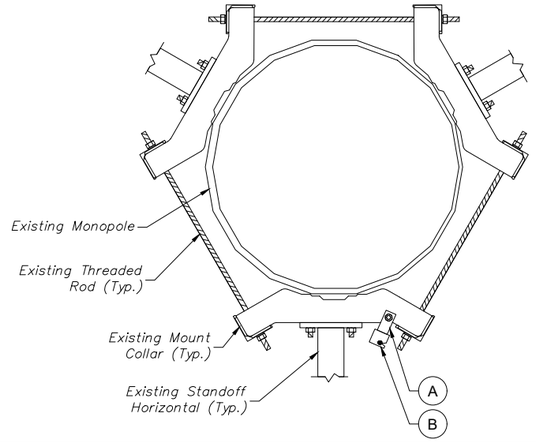
1 CLIMBING FACILITY LOCATION

SCALE : N.T.S.

STRUCTURAL NOTES:

1. PER THE MOUNT MAPPING COMPLETED BY HUDSON DESIGN GROUP, LLC ON 6/10/2021, THE SAFETY CLIMB AND CLIMBING FACILITIES UP TO THE VERIZON MOUNT ELEVATION (105'-6") ARE IN GOOD CONDITION. COLLIERS ENGINEERING & DESIGN DOES NOT WARRANT THIS INFORMATION.

2. INSTALL SHALL NOT CAUSE HARM TO THE STRUCTURE, CLIMBING FACILITY, SAFETY CLIMB, OR ANY SYSTEM INSTALLED ON THE STRUCTURE. TIMELY NOTICE AND DOCUMENTATION SHALL BE PROVIDED BY CONTRACTORS TO THE EOR (OF STRUCTURAL DESIGN) IF AN OBSTRUCTION WAS REQUIRED TO MEET THE RF SYSTEM DESIGN REQUIREMENTS AND PERFORMANCES.

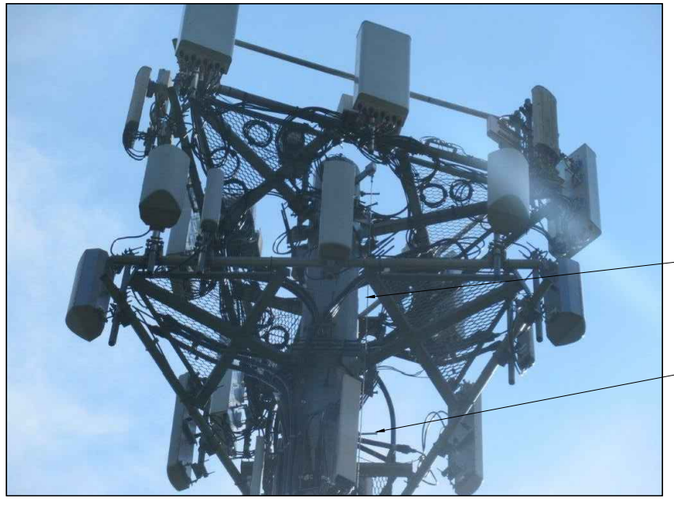


ITEM #	QTY	PART NUMBER	DESCRIPTIONS
A	1	H42-0501-06	STANDOFF CLAMP BRACKET (PERFECT VISION OR EOR APPROVED EQ.)
B	1	PV-CMX-CG-BO	WIRE ROPE GUIDE (PERFECT VISION OR EOR APPROVED EQ.)

2 PROPOSED WIRE ROPE GUIDE ATTACHMENT - PLAN VIEW

SCALE : N.T.S.

NOTE: CONTRACTOR SHALL ENSURE THAT WIRE ROPE GUIDE DOES NOT PUSH THE WIRE ROPE OUTSIDE OF THE VERTICAL PLANE OF THE SAFETY CLIMB. CONTRACT EOR WITH PHOTOS OF SAFETY CLIMB AND COLLAR FOR FURTHER DIRECTION IF NEEDED.



CLIMBING FACILITY PHOTO

Colliers Engineering & Design
www.colliersengineering.com

verizon

811 Know what's below. Call before you dig.

PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE : AS SHOWN

JOB NUMBER : 21777985

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	08/16/21	ISSUED FOR CONSTRUCTION	MC	DX
1	12/14/23	ISSUED FOR CONSTRUCTION	PD	DX

COLLIERS ENGINEERING & DESIGN CT, P.C.
C.T. JPC.0000131

SITE NAME:

BOLTON EAST CT
5000244968

49 SOUTH STREET
BOLTON, CT 06043
TOLLAND COUNTY

Colliers Engineering & Design
STAMFORD
1055 Washington Boulevard
Stamford, CT 06901
Phone: 203.324.0800
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

SHEET TITLE :
CLIMBING FACILITY DETAIL

SHEET NUMBER :
SCF-1

LEGEND:

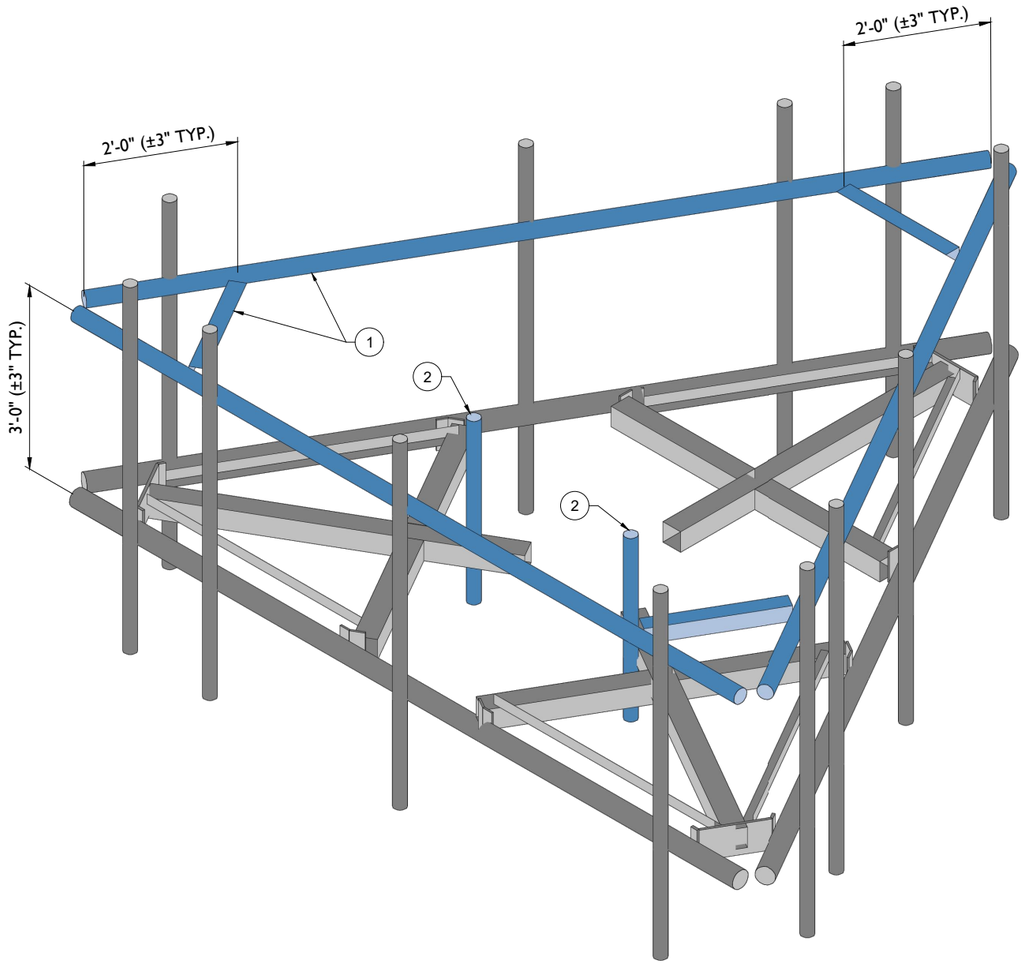
- PROPOSED
- RELOCATED
- EXISTING

MOUNT MODIFICATION SCHEDULE

NO.	ELEVATION	QUANTITY	DESCRIPTION	NOTES
1	105'-6"	1	PROPOSED SUPPORT RAIL KIT (PART #: VZWSMART-PLK1)	CONTRACTOR TO VERIFY THE LENGTH REQUIRED AND TRIM AS NECESSARY IN ACCORDANCE WITH THE 'STRUCTURAL STEEL' NOTES ON SHEET SGN-1. RADIO AND/OR TME POSITIONS SHALL BE ADJUSTED VERTICALLY AS NEEDED IN ORDER TO ACHIEVE INSTALLATION OF HORIZONTAL AS SHOWN. EOR SHALL BE NOTIFIED IF EQUIPMENT NEEDS TO BE RELOCATED TO ANOTHER MOUNT PIPE. SEE GENERAL NOTE B.
2		2	PROPOSED 36" LONG, PIPE 2 SCH40 OVP PIPE	CONNECT NEW OVP PIPE TO EXISTING STANDOFF HORIZONTAL BETWEEN ALPHA & BETA AND ALPHA & GAMMA SECTORS WITH CROSSOVER PLATES (SITE PRO 1, PART #: SQCX4-K, OR EOR APPROVED EQUAL).

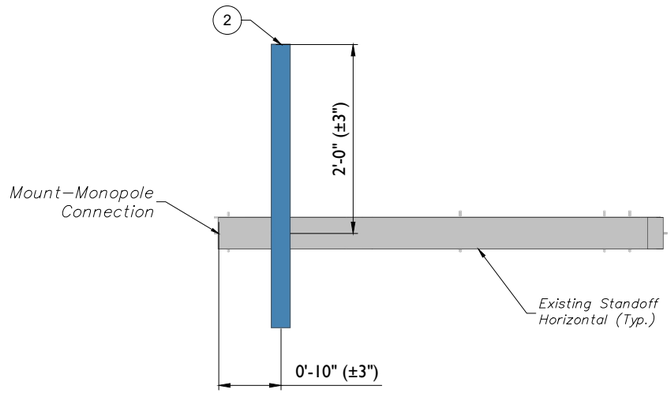
GENERAL NOTES:

A. CONTRACTOR SHALL VERIFY THAT NEW & EXISTING STEEL IS FREE OF CORROSION. VISIBLE MINOR CORROSION SHALL BE WIRE BRUSHED CLEAN AND TREATED WITH COLD GALVANIZATION. REPORT ANY SIGNIFICANT CORROSION TO EOR
B. THREADED ROD FROM PROPOSED KITS SHALL BE TRIMMED TO EXTEND NO MORE THAN 3" BEYOND THE LOCK NUT. TREAT ALL CUT ENDS WITH (2) COATS OF COLD GALVANIZATION (ZINC KOTE, OR EOR APPROVED EQUAL).
C. MOUNT MEMBERS NOT SHOWN FOR CLARITY U.N.O.



1 PROPOSED ISOMETRIC VIEW

SCALE : N.T.S.



2 PROPOSED OVP PIPE (SIDE ELEVATION VIEW)

SCALE : N.T.S.

Colliers Engineering & Design
www.colliersengineering.com

verizon

811 Know what's below. Call before you dig.

PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE : AS SHOWN

JOB NUMBER : 21777985

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	08/16/21	ISSUED FOR CONSTRUCTION	MC	DX
1	12/14/23	ISSUED FOR CONSTRUCTION	PD	DX

COLLIERS ENGINEERING & DESIGN CT, P.C.
C.T. JPC.0000131

SITE NAME:

BOLTON EAST CT
5000244968

49 SOUTH STREET
BOLTON, CT 06043
TOLLAND COUNTY

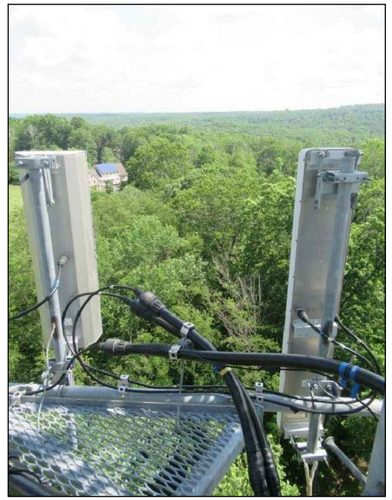
Colliers Engineering & Design

STAMFORD
1055 Washington Boulevard
Stamford, CT 06901
Phone: 203.324.0800
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

SHEET TITLE : MODIFICATION DETAILS

SHEET NUMBER : SS-1

MOUNT PHOTO 1



MOUNT PHOTO 2

MOUNT PHOTO 3

MOUNT PHOTO 4

Colliers Engineering & Design

www.colliersengineering.com

verizon

811 Know what's below. Call before you dig.

PROTECT YOURSELF

ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE : AS SHOWN

JOB NUMBER : 21777985

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	08/16/21	ISSUED FOR CONSTRUCTION	MC	DX
1	12/14/23	ISSUED FOR CONSTRUCTION	PD	DX

COLLIERS ENGINEERING & DESIGN CT, P.C.
C.T. JPC.0000131

SITE NAME:

BOLTON EAST CT
5000244968

49 SOUTH STREET
BOLTON, CT 06043
TOLLAND COUNTY

Colliers Engineering & Design

STAMFORD
1055 Washington Boulevard

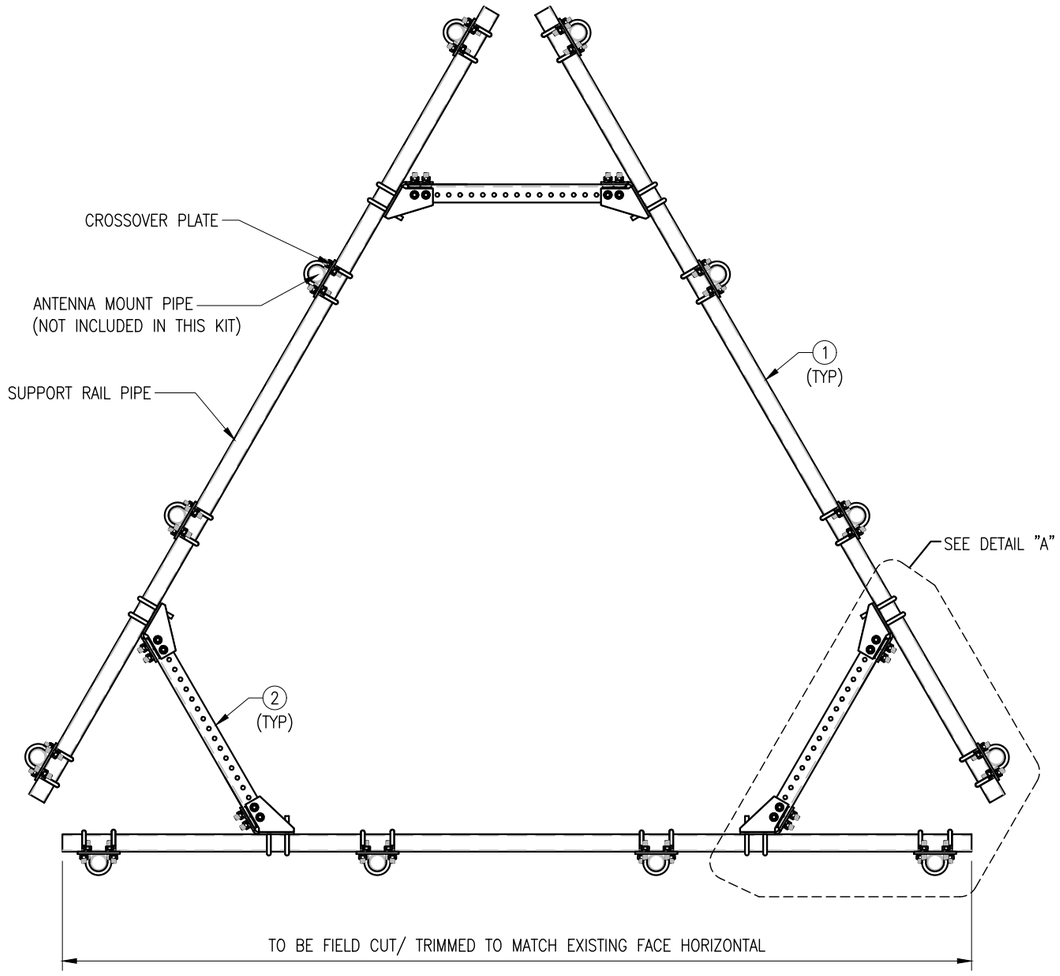
Stamford, CT 06901
Phone: 203.324.0800
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

SHEET TITLE :

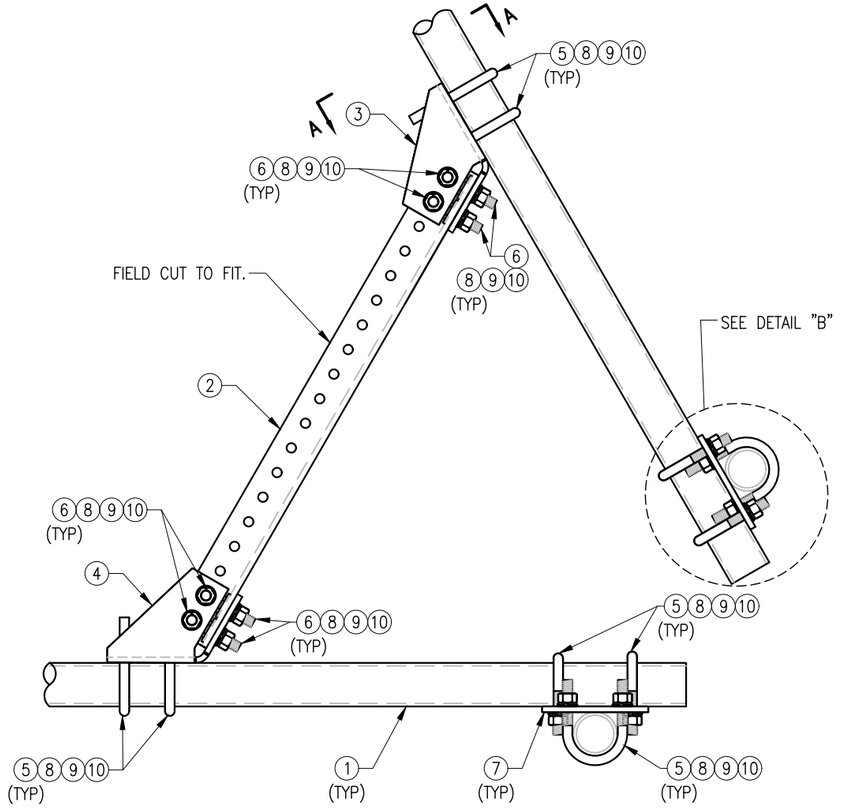
MOUNT PHOTOS

SHEET NUMBER :

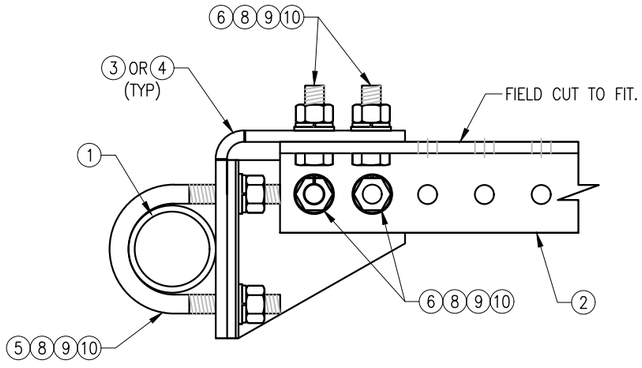
SS-2



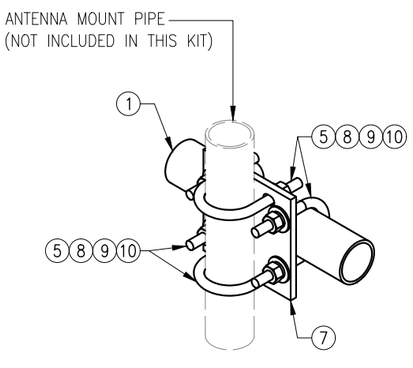
PLAN VIEW



DETAIL "A"



SECTION "A–A"



DETAIL "B"

NOTES:
1. HOT–DIPPED GALVANIZED PER ASTM A123.

VZW SMART–PLK1 (SUPPORT RAIL KIT)

ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	3	PST2875–12.5	2.5" PST (2.875" O.D. X 0.203" THK.) X 12'–6" A53 GR–B	PLK1–F1	292
2	3	L33375–3	L 3" X 3" X 3/8" X 3'–0" A36	PLK1–F1	66
3	3	CBP–L	CORNER BENT PLATE BRACKET	PLK1–F2	28
4	3	CBP–R	CORNER BENT PLATE BRACKET	PLK1–F2	28
5	60	MS02–625–300–500	RU–BOLT 5/8" X 3" I.W. X 5" I.L. A36 (OR EQUIV.)	RBC–1	82
6	24	---	BOLT 5/8" X 2" A325	---	9
7	12	PL375–857	PL 3/8" X 8 1/2" X 7'–0" A36	PLK1–F3	77
8	144	FW–625	5/8" HDG USS FLAT WASHER	---	12
9	144	LW–625	5/8" HDG LOCK WASHER	---	3
10	144	NUT–625	5/8" HDG HEX NUT	---	17
				GALVANIZED WT	504

VzW SMART Tool© Vendor

verizon

FOR REFERENCE ONLY

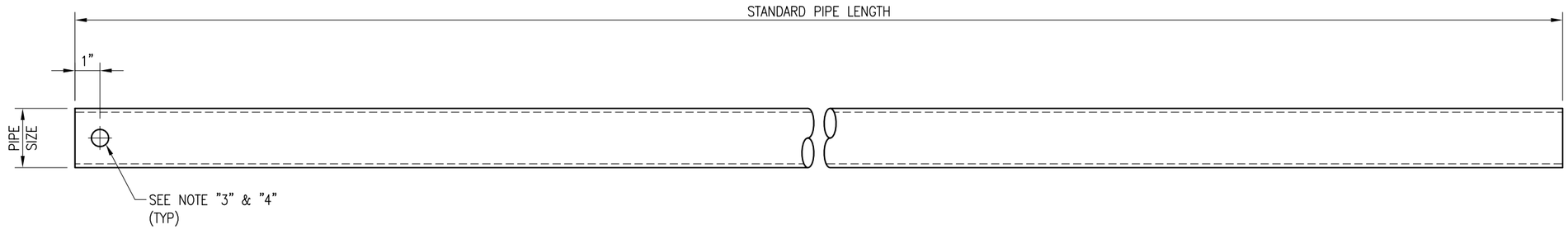
DRAWN BY: H.R | CHECKED BY: HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	H.R	05/08/20

SHEET TITLE:
VZWSMART–PLK1
SUPPORT RAIL KIT

SHEET NUMBER: VZWSMART–PLK1

REV #: 0



VZWSMART Standard Pipe		
VZWSMART Number	Size	Length
P40-238X048	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	48"
P40-238X072	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	72"
P40-238X096	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	96"
P40-238X120	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	120"
P40-238X126	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	126"
P40-238X150	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	150"
P40-238X174	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	174"
P40-278X048	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	48"
P40-278X072	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	72"
P40-278X096	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	96"
P40-278X120	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	120"
P40-278X126	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	126"
P40-278X150	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	150"
P40-278X174	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	174"
P40-312X048	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	48"
P40-312X072	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	72"
P40-312X126	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	126"
P40-312X150	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	150"
P40-312X174	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	174"

NOTE:
APPROVED SMART KIT VENDORS ARE ALLOWED TO SUBSTITUTE AT THEIR DISCRETION PIPES LISTED ON THIS PAGE FOR CUSTOM LENGTH COMPONENTS OF MATCHING SIZE. SUBSTITUTIONS SHALL MEET THE ORIGINAL STRUCTURAL INTENT.

NOTES:
1. ALL PIPE GRADE A53-B OR BETTER.
2. HOT-DIPPED GALVANIZED PER ASTM A123.
3. ALL HOLES ARE 11/16" DIA. U.N.O
4. HOLES MAY OR MAY NOT BE PRESENT, DEPEND UPON MANUFACTURE DISCRETION.
5. ALL FIELD CUT AND DRILLED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATS OF ZINGA OR ZINC COTE PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

VzW SMART Tool© Vendor

verizon

FOR REFERENCE ONLY

DRAWN BY: BT | CHECKED BY: HMA/KW

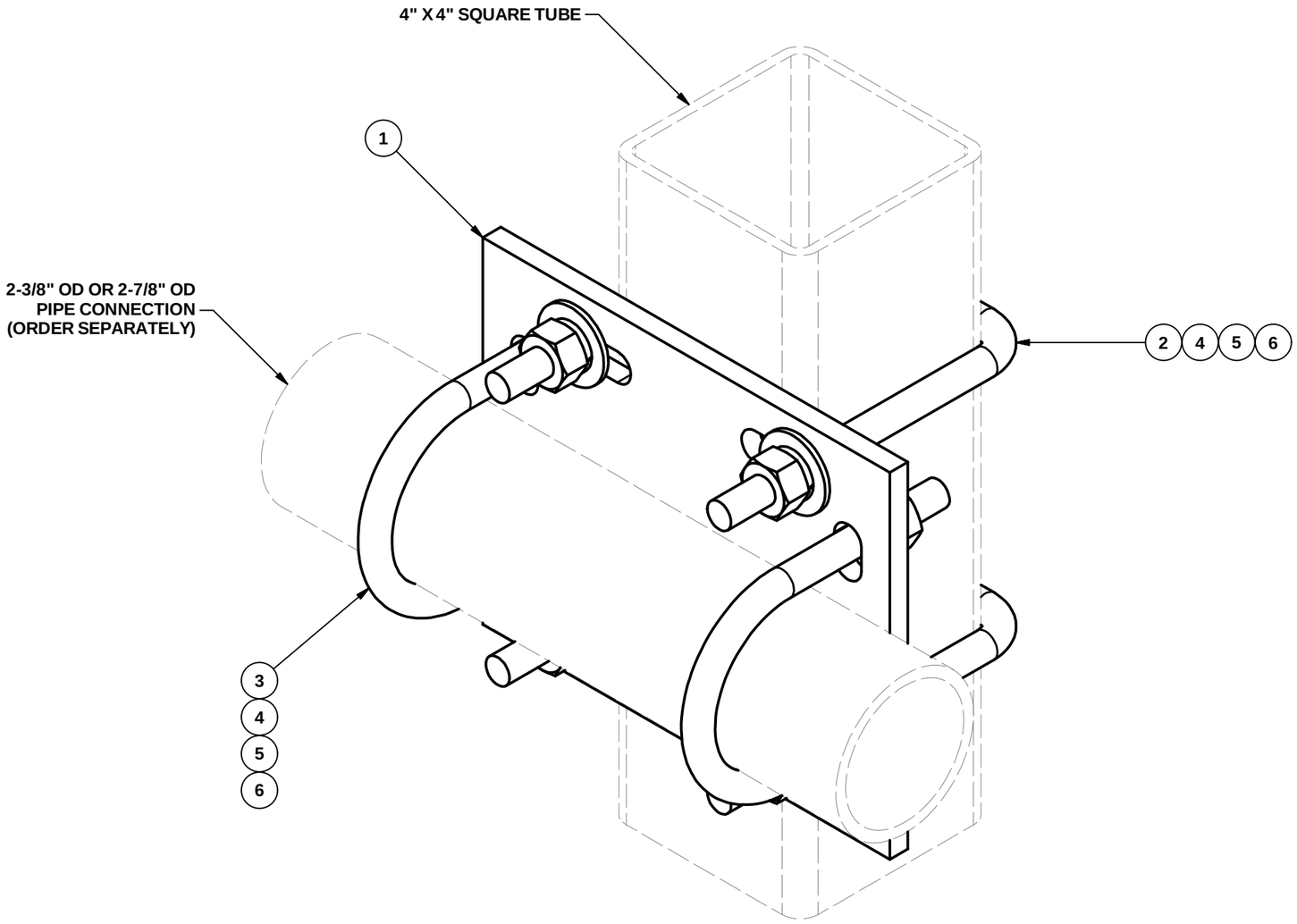
REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	BT	08/04/21

SHEET TITLE:
VZWSMART STANDARD PIPE

SHEET NUMBER: VZWSMART-PIPE

REV #: 0

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	6.02
2	2	X-SUB1418	SQUARE U-BOLT 0.5" DIA. X 4.125" IW X 6" IL X 3" TR		0.98	1.95
3	2	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.60	1.19
3	2	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.67	1.34
4	8	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	0.27
5	8	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.11
6	8	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.57
					TOTAL WT. #	11.35



FOR REFERENCE ONLY

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES (Ñ0.030")
DRILLED AND GAS CUT HOLES (Ñ0.030") - NO CONING OF HOLES
LASER CUT EDGES AND HOLES (Ñ0.010") - NO CONING OF HOLES
BENDS ARE Ñ1/2 DEGREE
ALL OTHER MACHINING (Ñ0.030")
ALL OTHER ASSEMBLY (Ñ0.060")

DESCRIPTION
CROSSOVER PLATE KIT
W/ SQUARE U-BOLTS AND STD. U-BOLTS

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.
	CSL 9/18/2018	3RD PARTY	SQCX4-K

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
87	02	CUSTOMER	BMC 11/12/2018	SQCX4-K

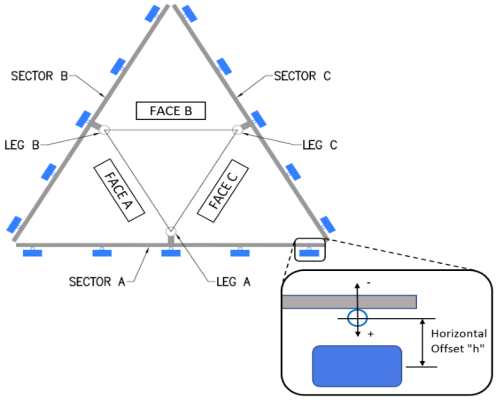
V4.0 Updated on 3-31-2021

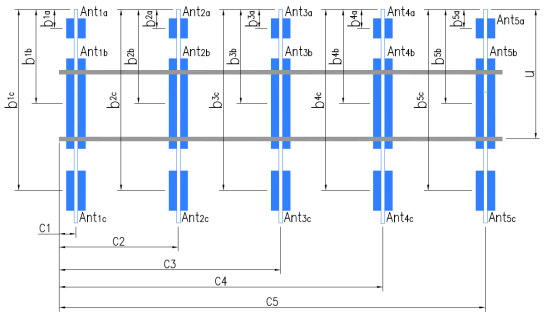
Antenna Mount Mapping Form (PATENT PENDING)

FCC #

Tower Owner:	CROWN CASTLE	**Mapping Date:**	6/10/2021
Site Name:	BOLTON EAST CT	**Tower Type:**	Monopole
Site Number or ID:	468392	**Tower Height (Ft.):**	120
Mapping Contractor:	HUDSON DESIGN GROUP,LLC.	**Mount Elevation (Ft.):**	105.5

Please insert the sketches of the antenna mount from the "Sketches" tab with dimensions and members here.





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	2" STD. PIPE X 72" LONG	51.00	15.00	C1	2" STD. PIPE X 72" LONG	51.00	15.00
A2	2" STD. PIPE X 72" LONG	51.00	74.00	C2	2" STD. PIPE X 72" LONG	51.00	74.00
A3	2" STD. PIPE X 72" LONG	51.00	117.00	C3	2" STD. PIPE X 72" LONG	51.00	117.00
A4	2" STD. PIPE X 72" LONG	51.00	135.00	C4	2" STD. PIPE X 72" LONG	51.00	135.00
A5				C5			
A6				C6			
B1	2" STD. PIPE X 72" LONG	51.00	15.00	D1			
B2	2" STD. PIPE X 72" LONG	51.00	74.00	D2			
B3	2" STD. PIPE X 72" LONG	51.00	117.00	D3			
B4	2" STD. PIPE X 72" LONG	51.00	135.00	D4			
B5				D5			
B6				D6			

Distance between bottom rail and mount CL elevation (dim d). Unit is inches. See 'Mount Elev Ref' tab for details. :	
Distance from top of bottom support rail to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.) :	7
Distance from top of bottom support rail to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.) :	2.5
Please enter additional infomation or comments below.	

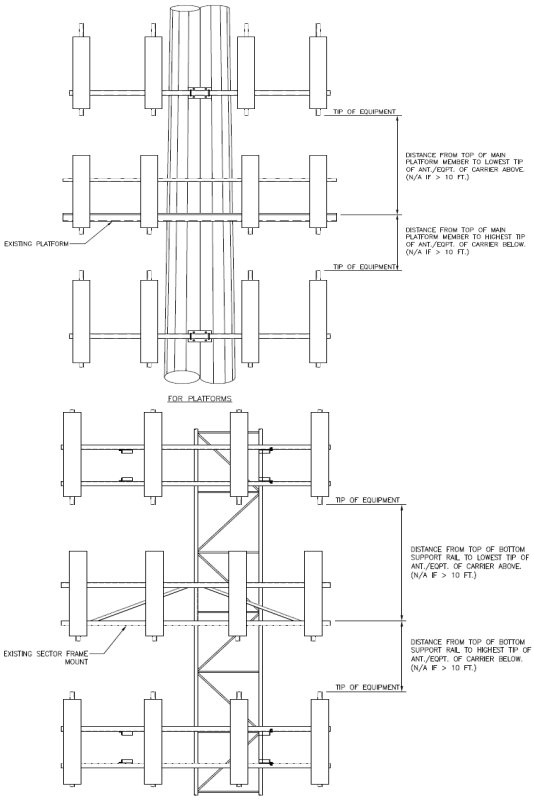
Tower Face Width at Mount Elev. (ft.):		Tower Leg Size or Pole Shaft Diameter at Mount Elev. (in.):	20
For T-Arms/Platforms on monopoles, report the weld size from the main standoff to the plate bolting into the collar mount.			0.375

	Enter antenna model. If not labeled, enter "Unknown".						Mounting Locations [Units are inches and degrees]			Photos of antennas
Ants. Items	Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Antenna Center-line (Ft.)	Vertical Distances"b_{1a}, b_{2a}, b_{3a}, b_{1b}...." (Inches)	Horiz. Offset "h" (Use "-" if Ant. is behind)	Antenna Azimuth (Degrees)	Photo Numbers
Sector A										
Ant_{1a}										
Ant_{1b}	LPA-80063-4CF	13.00	15.00	47.50		107.75	24.00	14.00	50.00	2,67
Ant_{1c}										
Ant_{2a}										
Ant_{2b}	BXA-70063/6CF	5.50	11.00	71.50		106.917	34.00	9.00	50.00	3,68
Ant_{2c}										
Ant_{3a}										
Ant_{3b}	BXA-171063-8BF	4.00	6.00	48.00		107.75	24.00	7.50	50.00	4,69
Ant_{3c}										
Ant_{4a}										
Ant_{4b}	LPA-80063-4CF	13.00	15.00	47.50		107.75	24.00	14.00	50.00	4,69
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										

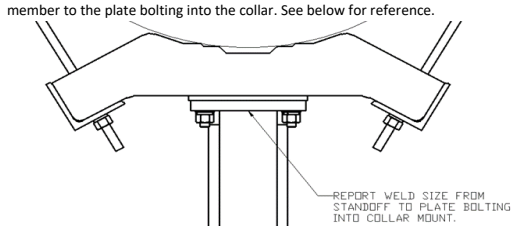
Mount Azimuth (Degree) for Each Sector			Tower Leg Azimuth (Degree) for Each Sector		
Sector A:	50.00	Deg	Leg A:		Deg
Sector B:	170.00	Deg	Leg B:		Deg
Sector C:	290.00	Deg	Leg C:		Deg
Sector D:		Deg	Leg D:		Deg

Climbing Facility Information			
Location:	5.00	Deg	
Climbing Facility	Corrosion Type:		Good condition.
	Access:		Climbing path was unobstructed.
	Condition:		Good condition.

Please insert a photo of the mount centerline measurement here.



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



Sector B										
Ant_{1a}										
Ant_{1b}	LPA-80063-4CF	13.00	15.00	47.50		107.75	24.00	14.00	170.00	5,74
Ant_{1c}										
Ant_{2a}										
Ant_{2b}	BXA-70063/6CF	5.50	11.00	71.50		106.917	34.00	9.00	170.00	5,75
Ant_{2c}										
Ant_{3a}										
Ant_{3b}	BXA-171063-8BF	4.00	6.00	48.00		107.75	24.00	7.50	170.00	6,76
Ant_{3c}										
Ant_{4a}										
Ant_{4b}	LPA-80063-4CF	13.00	15.00	47.50		107.75	24.00	14.00	170.00	6,76
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										
Sector C										
Ant_{1a}										
Ant_{1b}	LPA-80063-4CF	13.00	15.00	47.50		107.75	24.00	14.00	290.00	7,81
Ant_{1c}										
Ant_{2a}										
Ant_{2b}	BXA-70063/6CF	5.50	11.00	71.50		106.917	34.00	9.00	290.00	7,82
Ant_{2c}										
Ant_{3a}										
Ant_{3b}	BXA-171063-8BF	4.00	6.00	48.00		107.75	24.00	7.50	290.00	8,84
Ant_{3c}										
Ant_{4a}										
Ant_{4b}	LPA-80063-4CF	13.00	15.00	47.50		107.75	24.00	14.00	290.00	8,84
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		

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

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

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

Antenna Mount Mapping Form (PATENT PENDING)

FCC #

Tower Owner:	CROWN CASTLE	**Mapping Date:**	6/10/2021
Site Name:	BOLTON EAST CT	**Tower Type:**	Monopole
Site Number or ID:	468392	**Tower Height (Ft.):**	120
Mapping Contractor:	HUDSON DESIGN GROUP,LLC.	**Mount Elevation (Ft.):**	105.5

Please Insert Sketches of the Antenna Mount

6/15/2021

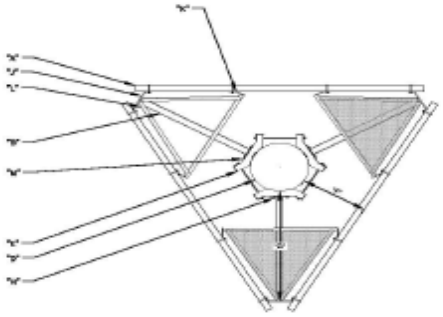
HDG HUDSON Design Group LLC
45 BEECHWOOD DRIVE NORTH ANDOVER MA 01845 TEL: (978) 557-5553 FAX: (978) 688-6888

MOUNT MAPPING CHECKLIST

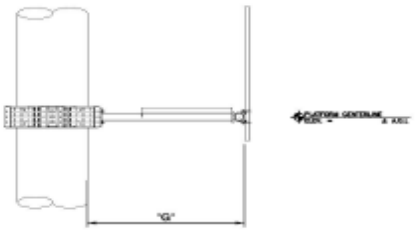
CARRIER:	COLLIER	SITE #:	Bolton East CT	SITE NAME:	
DATE:	6/10/2021	MAPPED BY:	JC	SITE OWNER:	CROWN CASTLE

DESCRIPTION	STATUS	Value
A: FACE PIPE CONFIG.	☐	
SIZE		3-1/2"
LENGTH		12'6"
B: STAND OFF SIZE	☐	4x4
C: ANTENNA PIPE MAST	☐	1/8"
DIA.		2-3/8"
LENGTH		72"
D: MONOPOLE DIA.	☐	20"
E: RINGMOUNT	☐	10"x 3/8"-1/2"
F: TOWER TO FACE	☐	38.5"
G: TOWER TO APEX	☐	70"
H: HARDWARE	☐	5/8"Ø
I: U-BOLTS	☐	1/2"Ø
J: A PLATE	☐	6"x3.5"x12.5"x1/2"
K: B PLATE	☐	6"x3.5"x5.5"x 3/8"
L: ANGLE	☐	2"X2"X3/16"
M: MOUNTING PLATE	☐	10"x 10"x 5/8"
N: ALPHA POS 1	☐	LPA-80063-4CF
ALPHA POS 2	☐	BXA-70063/6CF
ALPHA POS 3	☐	BXA-171063-8BF
ALPHA POS 4	☐	LPA-80063-4CF
ALPHA POS 5		
O: BETA POS 1	☐	Same
BETA POS 2	☐	
BETA POS 3	☐	
BETA POS 4	☐	
BETA POS 5		Same
P: GAMMA POS 1	☐	
GAMMA POS 2	☐	
GAMMA POS 3	☐	
GAMMA POS 4	☐	
GAMMA POS 5		
Q: TMA	☐	None
R: RADIOS	☐	None
S: SURGE	☐	None
T: SECOND MOUNT	☐	None
COMMENTS:		

Legend



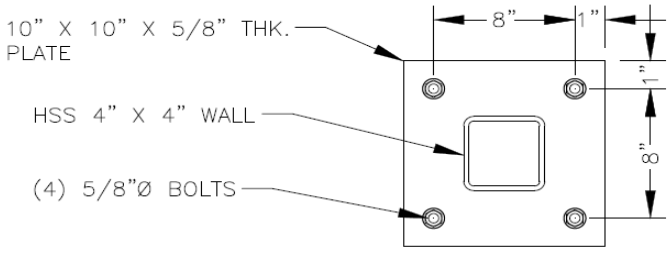
PLAN



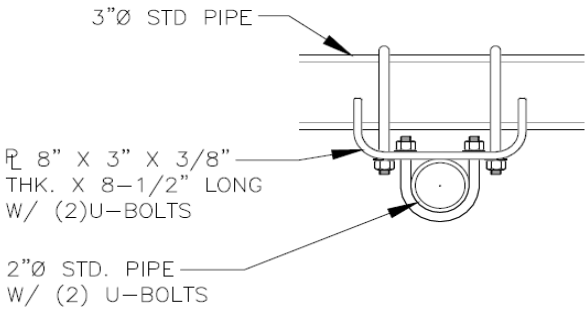
ELEVATION

FACE SKETCH

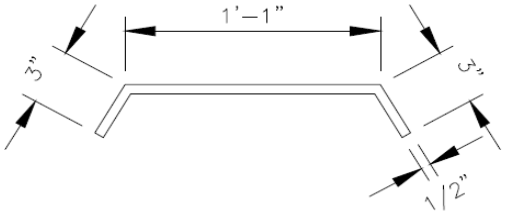
Please Insert Sketches of the Antenna Mount, cont'd



STANDOFF TO RING MOUNT CONNECTION

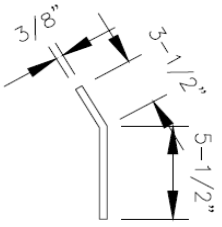


ANTENNA PIPE MAST MOUNT CONNECTION



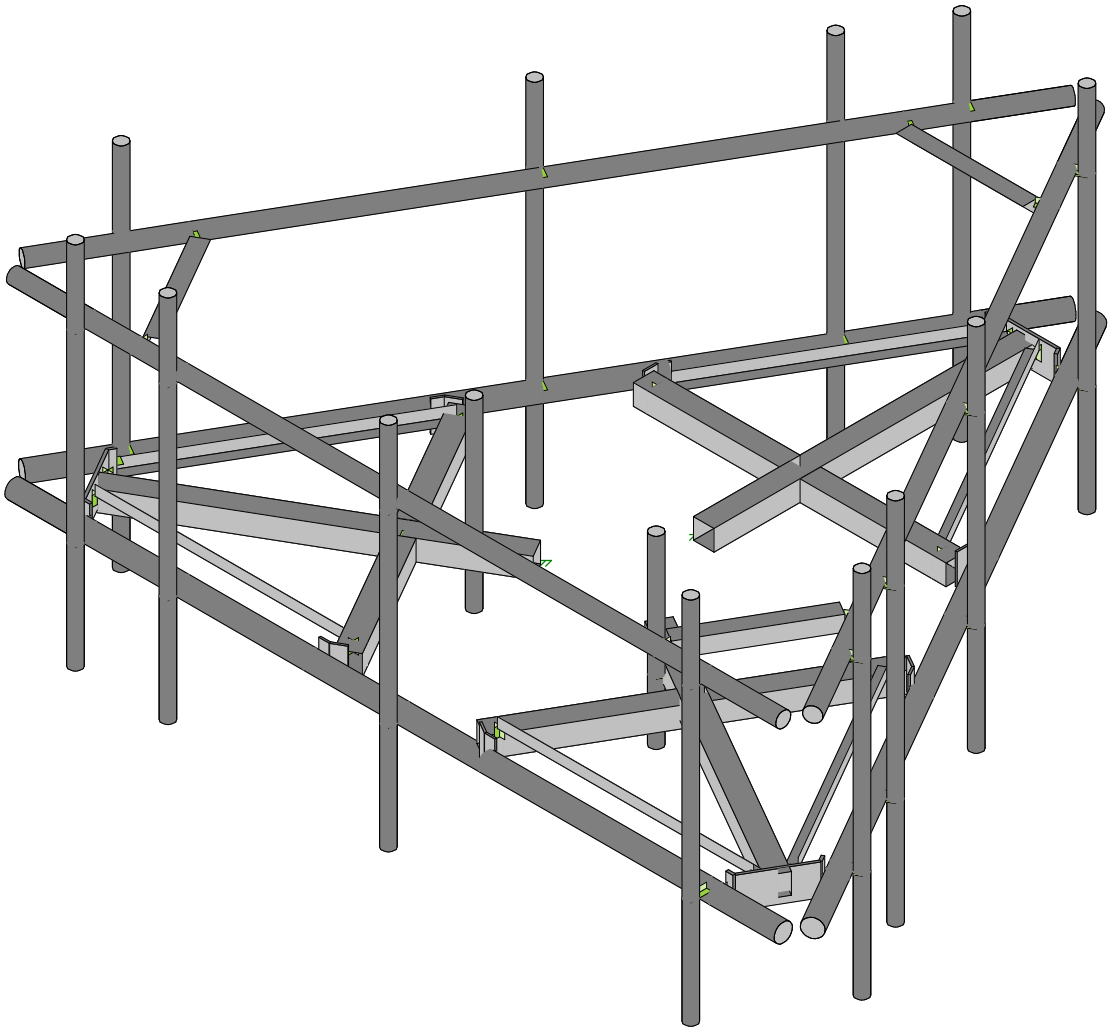
DETAIL J

APEX "A" PLATE DETAIL



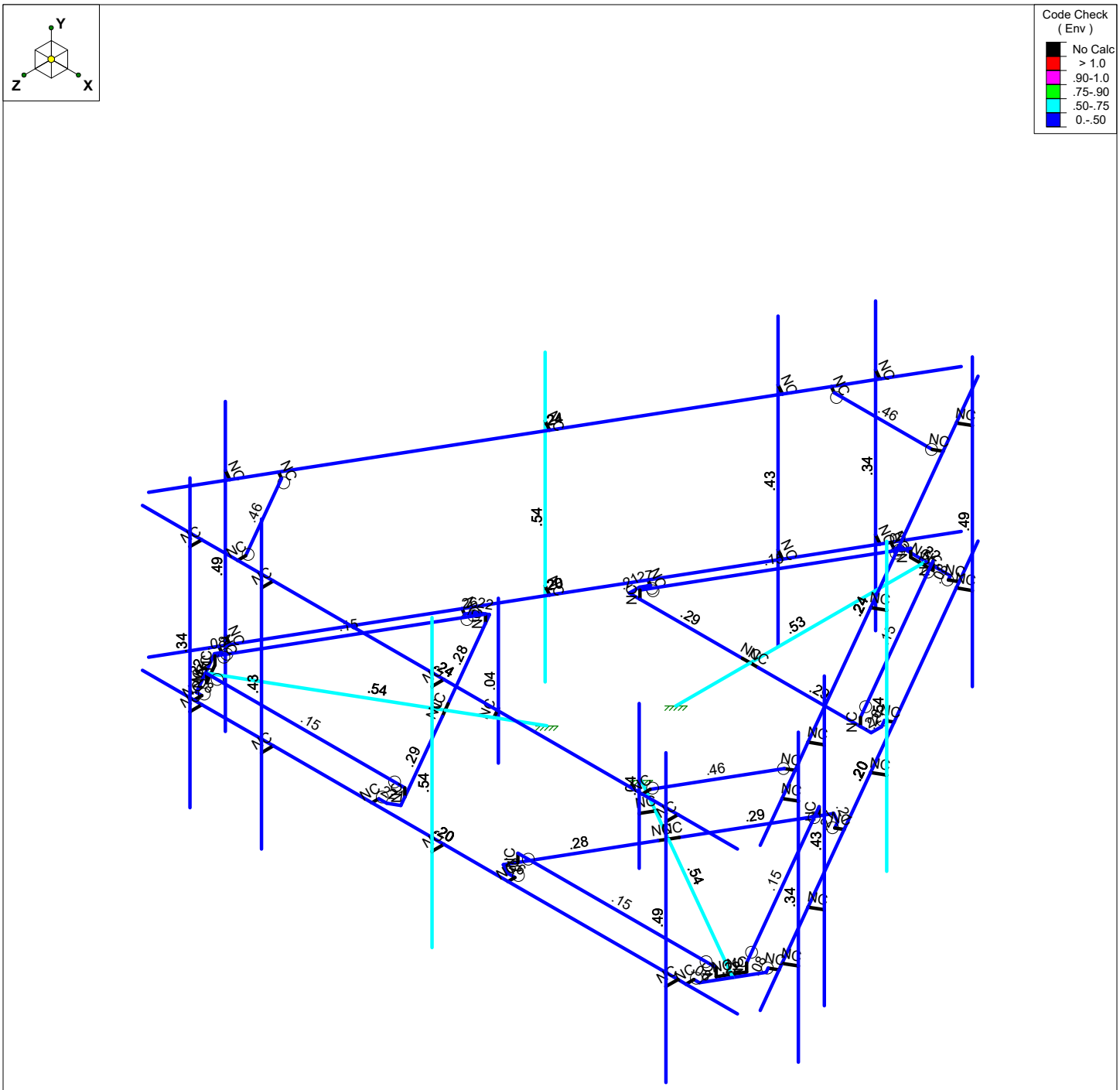
DETAIL K

"B" PLATE DETAIL



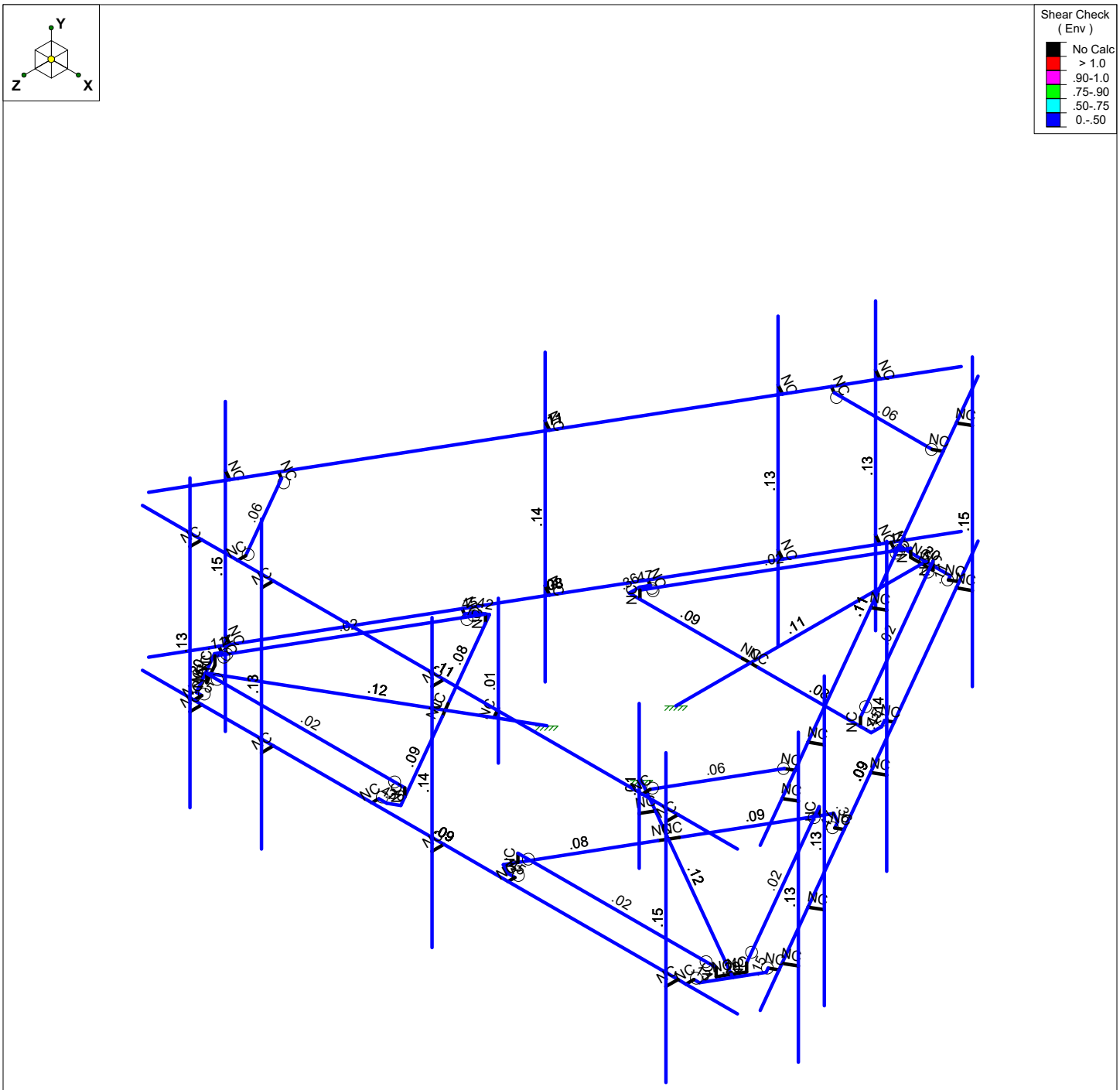
Envelope Only Solution

Colliers Engineering & De...	Antenna Mount Analysis	SK - 1
		Dec 14, 2023 at 1:38 PM
Project # 21777985		5000244968-VZW_MT_LO_H.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Colliers Engineering & De...	Antenna Mount Analysis	SK - 2
		Dec 14, 2023 at 1:38 PM
Project # 21777985		5000244968-VZW_MT_LO_H.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Colliers Engineering & De...	Antenna Mount Analysis	SK - 3
		Dec 14, 2023 at 1:39 PM
Project # 21777985		5000244968-VZW_MT_LO_H.r3d

Basic Load Cases

	BLC Description	Category	X Gr...	Y Gr...	Z Gr...	Joint	Point	Distributed	Area(Member)	Surfa...
1	Antenna D	None					123			
2	Antenna Di	None					123			
3	Antenna Wo (0 Deg)	None					123			
4	Antenna Wo (30 Deg)	None					123			
5	Antenna Wo (60 Deg)	None					123			
6	Antenna Wo (90 Deg)	None					123			
7	Antenna Wo (120 Deg)	None					123			
8	Antenna Wo (150 Deg)	None					123			
9	Antenna Wo (180 Deg)	None					123			
10	Antenna Wo (210 Deg)	None					123			
11	Antenna Wo (240 Deg)	None					123			
12	Antenna Wo (270 Deg)	None					123			
13	Antenna Wo (300 Deg)	None					123			
14	Antenna Wo (330 Deg)	None					123			
15	Antenna Wi (0 Deg)	None					123			
16	Antenna Wi (30 Deg)	None					123			
17	Antenna Wi (60 Deg)	None					123			
18	Antenna Wi (90 Deg)	None					123			
19	Antenna Wi (120 Deg)	None					123			
20	Antenna Wi (150 Deg)	None					123			
21	Antenna Wi (180 Deg)	None					123			
22	Antenna Wi (210 Deg)	None					123			
23	Antenna Wi (240 Deg)	None					123			
24	Antenna Wi (270 Deg)	None					123			
25	Antenna Wi (300 Deg)	None					123			
26	Antenna Wi (330 Deg)	None					123			
27	Antenna Wm (0 Deg)	None					123			
28	Antenna Wm (30 Deg)	None					123			
29	Antenna Wm (60 Deg)	None					123			
30	Antenna Wm (90 Deg)	None					123			
31	Antenna Wm (120 Deg)	None					123			
32	Antenna Wm (150 Deg)	None					123			
33	Antenna Wm (180 Deg)	None					123			
34	Antenna Wm (210 Deg)	None					123			
35	Antenna Wm (240 Deg)	None					123			
36	Antenna Wm (270 Deg)	None					123			
37	Antenna Wm (300 Deg)	None					123			
38	Antenna Wm (330 Deg)	None					123			
39	Structure D	None		-1					3	
40	Structure Di	None						59	3	
41	Structure Wo (0 Deg)	None						118		
42	Structure Wo (30 Deg)	None						118		
43	Structure Wo (60 Deg)	None						118		
44	Structure Wo (90 Deg)	None						118		
45	Structure Wo (120 Deg)	None						118		
46	Structure Wo (150 Deg)	None						118		
47	Structure Wo (180 Deg)	None						118		
48	Structure Wo (210 Deg)	None						118		
49	Structure Wo (240 Deg)	None						118		
50	Structure Wo (270 Deg)	None						118		
51	Structure Wo (300 Deg)	None						118		
52	Structure Wo (330 Deg)	None						118		
53	Structure Wi (0 Deg)	None						118		
54	Structure Wi (30 Deg)	None						118		
55	Structure Wi (60 Deg)	None						118		
56	Structure Wi (90 Deg)	None						118		

Basic Load Cases (Continued)

	BLC Description	Category	X Gr...	Y Gr...	Z Gr...	Joint	Point	Distributed	Area(Member)	Surfa...
57	Structure Wi (120 Deg)	None						118		
58	Structure Wi (150 Deg)	None						118		
59	Structure Wi (180 Deg)	None						118		
60	Structure Wi (210 Deg)	None						118		
61	Structure Wi (240 Deg)	None						118		
62	Structure Wi (270 Deg)	None						118		
63	Structure Wi (300 Deg)	None						118		
64	Structure Wi (330 Deg)	None						118		
65	Structure Wm (0 Deg)	None						118		
66	Structure Wm (30 Deg)	None						118		
67	Structure Wm (60 Deg)	None						118		
68	Structure Wm (90 Deg)	None						118		
69	Structure Wm (120 Deg)	None						118		
70	Structure Wm (150 Deg)	None						118		
71	Structure Wm (180 Deg)	None						118		
72	Structure Wm (210 Deg)	None						118		
73	Structure Wm (240 Deg)	None						118		
74	Structure Wm (270 Deg)	None						118		
75	Structure Wm (300 Deg)	None						118		
76	Structure Wm (330 Deg)	None						118		
77	Lm1	None					1			
78	Lm2	None					1			
79	Lv1	None					1			
80	Lv2	None					1			
81	Antenna Ev	None					123			
82	Antenna Eh (0 Deg)	None					82			
83	Antenna Eh (90 Deg)	None					82			
84	Structure Ev	ELY		-.0407					3	
85	Structure Eh (0 Deg)	ELZ			-.1019				3	
86	Structure Eh (90 Deg)	ELX	.1019						3	
87	BLC 39 Transient Area Loads	None						30		
88	BLC 40 Transient Area Loads	None						30		
89	BLC 84 Transient Area Loads	None						30		
90	BLC 85 Transient Area Loads	None						30		
91	BLC 86 Transient Area Loads	None						30		

Load Combinations

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

Load Combinations (Continued)

	Description	S...	PDel...	SR...	BLC	Fa...	BLC	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
18	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	20	1	58	1								
19	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	21	1	59	1								
20	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	22	1	60	1								
21	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	23	1	61	1								
22	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	24	1	62	1								
23	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	25	1	63	1								
24	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	26	1	64	1								
25	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	27	1	65	1										
26	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	28	1	66	1										
27	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	29	1	67	1										
28	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	30	1	68	1										
29	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	31	1	69	1										
30	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	32	1	70	1										
31	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	33	1	71	1										
32	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	34	1	72	1										
33	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	35	1	73	1										
34	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	36	1	74	1										
35	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	37	1	75	1										
36	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	38	1	76	1										
37	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	27	1	65	1										
38	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	28	1	66	1										
39	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	29	1	67	1										
40	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	30	1	68	1										
41	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	31	1	69	1										
42	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	32	1	70	1										
43	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	33	1	71	1										
44	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	34	1	72	1										
45	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	35	1	73	1										
46	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	36	1	74	1										
47	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	37	1	75	1										
48	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	38	1	76	1										
49	1.2D + 1.5Lv1	Yes	Y		1	1.2	39	1.2	79	1.5														
50	1.2D + 1.5Lv2	Yes	Y		1	1.2	39	1.2	80	1.5														
51	1.4D	Yes	Y		1	1.4	39	1.4																
52	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	1	83		ELZ	1	E...					
53	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.866	83	.5	ELZ	.866	E...	.5				
54	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.5	83	.866	ELZ	.5	E...	.866				
55	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82		83	1	ELZ		E...	1				
56	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.5	83	.866	ELZ	-.5	E...	.866				
57	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.8...	83	.5	ELZ	-.8...	E...	.5				
58	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-1	83		ELZ	-1	E...					
59	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.8...	83	-.5	ELZ	-.8...	E...	-.5				
60	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.5	83	-.8...	ELZ	-.5	E...	-.8...				
61	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82		83	-1	ELZ		E...	-1				
62	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.5	83	-.8...	ELZ	.5	E...	-.8...				
63	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.866	83	-.5	ELZ	.866	E...	-.5				
64	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	1	83		ELZ	1	E...					
65	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.866	83	.5	ELZ	.866	E...	.5				
66	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.5	83	.866	ELZ	.5	E...	.866				
67	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82		83	1	ELZ		E...	1				
68	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.5	83	.866	ELZ	-.5	E...	.866				
69	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.8...	83	.5	ELZ	-.8...	E...	.5				
70	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-1	83		ELZ	-1	E...					
71	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.8...	83	-.5	ELZ	-.8...	E...	-.5				
72	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.5	83	-.8...	ELZ	-.5	E...	-.8...				
73	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82		83	-1	ELZ		E...	-1				
74	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.5	83	-.8...	ELZ	.5	E...	-.8...				

Load Combinations (Continued)

	Description	S...	PDel...	SR...	BLC	Fa...	BLC	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
75	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.866	83	-.5	ELZ	.866	E...	-.5				

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Desig...	A [in2]	Iyy [i...	Izz [i...	J [in4]
1	Face Horizontal	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	Standoff Horizontal	HSS4X4X3	Beam	SquareTube	A500 Gr.B Rect	Typical	2.58	6.21	6.21	10
3	Corner Plate	PL1/2x6	Beam	BAR	A36 Gr.36	Typical	3	.0625	9	.2369
4	Platform Crossmember	HSS4X4X3	Beam	SquareTube	A500 Gr.B Rect	Typical	2.58	6.21	6.21	10
5	Grating Support	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.0092
6	Mount Pipe	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
7	Cross Arm Plate	PL3/8x6	Beam	RECT	A36 Gr.36	Typical	2.25	.026	6.75	.101
8	Top Corner Plate	PL1/4X6	Beam	RECT	A36 Gr.36	Typical	1.5	.0078	4.5	.0304
9	Mod Support Rail	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
10	Mod Support Rail Corner	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	.0313

Hot Rolled Steel Properties

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

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
1	M1	N1	N2			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical
2	M4	N3	N27			Standoff Horizontal	Beam	SquareTube	A500 Gr...	Typical
3	M10	N101	N103A			Platform Crossme...	Beam	SquareTube	A500 Gr...	Typical
4	M19	N8	N9			RIGID	None	None	RIGID	Typical
5	M20	N10	N11			RIGID	None	None	RIGID	Typical
6	M21	N12	N13			RIGID	None	None	RIGID	Typical
7	M22	N14	N15			RIGID	None	None	RIGID	Typical
8	MP3A	N17	N16			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
9	MP4A	N19	N18			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
10	MP2A	N21	N20			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
11	MP1A	N23	N22			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
12	M43	N102	N5			Platform Crossme...	Beam	SquareTube	A500 Gr...	Typical
13	M46	N86C	N87A			Corner Plate	Beam	BAR	A36 Gr.36	Typical
14	M35A	N7	N30			RIGID	None	None	RIGID	Typical
15	M36A	N6	N29			RIGID	None	None	RIGID	Typical
16	M51B	N87C	N6			Grating Support	Beam	Single Angle	A36 Gr.36	Typical
17	M52B	N7	N87B			Grating Support	Beam	Single Angle	A36 Gr.36	Typical
18	M52	N87B	N88C			RIGID	None	None	RIGID	Typical
19	M58	N102	N24			RIGID	None	None	RIGID	Typical
20	M59	N24	N103A			RIGID	None	None	RIGID	Typical
21	M76	N101	N105			Cross Arm Plate	Beam	RECT	A36 Gr.36	Typical
22	M77	N105	N131			Cross Arm Plate	Beam	RECT	A36 Gr.36	Typical
23	M79	N131	N86A			RIGID	None	None	RIGID	Typical
24	M80	N87A	N135			Corner Plate	Beam	BAR	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
25	M83	N135	N86D			RIGID	None	None	RIGID	Typical
26	M84	N5	N104A			Cross Arm Plate	Beam	RECT	A36 Gr.36	Typical
27	M85	N104A	N144			Cross Arm Plate	Beam	RECT	A36 Gr.36	Typical
28	M88	N144	N86B			RIGID	None	None	RIGID	Typical
29	M91	N86C	N148			Corner Plate	Beam	BAR	A36 Gr.36	Typical
30	M92	N148	N86E			RIGID	None	None	RIGID	Typical
31	M50	N88C	N88A			RIGID	None	None	RIGID	Typical
32	M51	N88A	N86G			RIGID	None	None	RIGID	Typical
33	M51A	N87C	N86G			RIGID	None	None	RIGID	Typical
34	M53	N95	N97			Platform Crossme...	Beam	SquareTube	A500 Gr...	Typical
35	M54	N96	N88B			Platform Crossme...	Beam	SquareTube	A500 Gr...	Typical
36	M55	N106	N107			Corner Plate	Beam	BAR	A36 Gr.36	Typical
37	M56	N90	N94			RIGID	None	None	RIGID	Typical
38	M57	N89	N93			RIGID	None	None	RIGID	Typical
39	M58A	N111	N89			Grating Support	Beam	Single Angle	A36 Gr.36	Typical
40	M59A	N90	N113			Grating Support	Beam	Single Angle	A36 Gr.36	Typical
41	M60	N113	N114			RIGID	None	None	RIGID	Typical
42	M61	N96	N91			RIGID	None	None	RIGID	Typical
43	M62	N91	N97			RIGID	None	None	RIGID	Typical
44	M63	N95	N99			Cross Arm Plate	Beam	RECT	A36 Gr.36	Typical
45	M64	N99	N100			Cross Arm Plate	Beam	RECT	A36 Gr.36	Typical
46	M65	N100	N104			RIGID	None	None	RIGID	Typical
47	M66	N107	N101A			Corner Plate	Beam	BAR	A36 Gr.36	Typical
48	M67	N101A	N108			RIGID	None	None	RIGID	Typical
49	M68	N88B	N98			Cross Arm Plate	Beam	RECT	A36 Gr.36	Typical
50	M69	N98	N102A			Cross Arm Plate	Beam	RECT	A36 Gr.36	Typical
51	M70	N102A	N105A			RIGID	None	None	RIGID	Typical
52	M71	N106	N103			Corner Plate	Beam	BAR	A36 Gr.36	Typical
53	M72	N103	N109			RIGID	None	None	RIGID	Typical
54	M73	N114	N110			RIGID	None	None	RIGID	Typical
55	M74	N110	N112			RIGID	None	None	RIGID	Typical
56	M75	N111	N112			RIGID	None	None	RIGID	Typical
57	M77A	N123	N125			Platform Crossme...	Beam	SquareTube	A500 Gr...	Typical
58	M78	N124	N116			Platform Crossme...	Beam	SquareTube	A500 Gr...	Typical
59	M79A	N134	N135A			Corner Plate	Beam	BAR	A36 Gr.36	Typical
60	M80A	N118	N122			RIGID	None	None	RIGID	Typical
61	M81	N117	N121			RIGID	None	None	RIGID	Typical
62	M82	N139	N117			Grating Support	Beam	Single Angle	A36 Gr.36	Typical
63	M83A	N118	N141			Grating Support	Beam	Single Angle	A36 Gr.36	Typical
64	M84A	N141	N142			RIGID	None	None	RIGID	Typical
65	M85A	N124	N119			RIGID	None	None	RIGID	Typical
66	M86	N119	N125			RIGID	None	None	RIGID	Typical
67	M87	N123	N127			Cross Arm Plate	Beam	RECT	A36 Gr.36	Typical
68	M88A	N127	N128			Cross Arm Plate	Beam	RECT	A36 Gr.36	Typical
69	M89	N128	N132			RIGID	None	None	RIGID	Typical
70	M90	N135A	N129			Corner Plate	Beam	BAR	A36 Gr.36	Typical
71	M91A	N129	N136			RIGID	None	None	RIGID	Typical
72	M92A	N116	N126			Cross Arm Plate	Beam	RECT	A36 Gr.36	Typical
73	M93	N126	N130			Cross Arm Plate	Beam	RECT	A36 Gr.36	Typical
74	M94	N130	N133			RIGID	None	None	RIGID	Typical
75	M95	N134	N131A			Corner Plate	Beam	BAR	A36 Gr.36	Typical
76	M96	N131A	N137			RIGID	None	None	RIGID	Typical
77	M97	N142	N138			RIGID	None	None	RIGID	Typical
78	M98	N138	N140			RIGID	None	None	RIGID	Typical
79	M99	N139	N140			RIGID	None	None	RIGID	Typical
80	M82A	N104B	N105B			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical
81	M91B	N124A	N125A			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Ru...
82	M134	N198	N199			RIGID	None	None	RIGID	Typical
83	M135	N200	N201			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
84	M100	N142B	N92			Standoff Horizontal	Beam	SquareTube	A500 Gr...	Typical
85	M101	N145	N120			Standoff Horizontal	Beam	SquareTube	A500 Gr...	Typical
86	M86A	N112A	N113A			RIGID	None	None	RIGID	Typical
87	M87A	N114A	N115			RIGID	None	None	RIGID	Typical
88	M88B	N116A	N117A			RIGID	None	None	RIGID	Typical
89	M89A	N118A	N119A			RIGID	None	None	RIGID	Typical
90	MP3C	N121A	N120A			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
91	MP4C	N123A	N122A			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
92	MP2C	N125B	N124B			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
93	MP1C	N127A	N126A			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
94	M94A	N129A	N130A			RIGID	None	None	RIGID	Typical
95	M95A	N131B	N132A			RIGID	None	None	RIGID	Typical
96	M96A	N133A	N134A			RIGID	None	None	RIGID	Typical
97	M97A	N135B	N136A			RIGID	None	None	RIGID	Typical
98	MP3B	N138A	N137A			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
99	MP4B	N140A	N139A			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
100	MP2B	N142A	N141A			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
101	MP1B	N144A	N143			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
102	M102	N145A	N146			RIGID	None	None	RIGID	Typical
103	M103	N147	N148A			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
104	M104	N148B	N149			Mod Support Rail	Beam	Pipe	A53 Gr.B	Typical
105	M105	N150	N151			RIGID	None	None	RIGID	Typical
106	M106	N152	N153			RIGID	None	None	RIGID	Typical
107	M107	N154	N155			RIGID	None	None	RIGID	Typical
108	M108	N156	N157			RIGID	None	None	RIGID	Typical
109	M109	N159	N160			Mod Support Rail	Beam	Pipe	A53 Gr.B	Typical
110	M110	N161	N162			RIGID	None	None	RIGID	Typical
111	M111	N163	N164			RIGID	None	None	RIGID	Typical
112	M112	N165	N166			RIGID	None	None	RIGID	Typical
113	M113	N167	N168			RIGID	None	None	RIGID	Typical
114	M114	N170	N171			Mod Support Rail	Beam	Pipe	A53 Gr.B	Typical
115	M115	N172	N173			RIGID	None	None	RIGID	Typical
116	M116	N174	N175			RIGID	None	None	RIGID	Typical
117	M117	N176	N177			RIGID	None	None	RIGID	Typical
118	M118	N178	N179			RIGID	None	None	RIGID	Typical
119	M119	N184	N178A			RIGID	None	None	RIGID	Typical
120	M120	N186A	N183			RIGID	None	None	RIGID	Typical
121	M121	N184	N186A		180	Mod Support Rail ...	Beam	Single Angle	A36 Gr.36	Typical
122	M122	N191	N180			RIGID	None	None	RIGID	Typical
123	M123	N192	N185			RIGID	None	None	RIGID	Typical
124	M124	N191	N192		180	Mod Support Rail ...	Beam	Single Angle	A36 Gr.36	Typical
125	M125	N196	N182			RIGID	None	None	RIGID	Typical
126	M126	N197	N181			RIGID	None	None	RIGID	Typical
127	M127	N196	N197		180	Mod Support Rail ...	Beam	Single Angle	A36 Gr.36	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ratio Opti...	Analysis ...	Inactive	Seismi...
1	M1						Yes	Default			None
2	M4						Yes				None
3	M10						Yes	Default			None
4	M19						Yes	** NA **			None
5	M20						Yes	** NA **			None
6	M21						Yes	** NA **			None

Member Advanced Data (Continued)

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

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ratio Opti...	Analysis ...	Inactive	Seismi...
64	M84A						Yes	** NA **			None
65	M85A						Yes	** NA **			None
66	M86						Yes	** NA **			None
67	M87						Yes				None
68	M88A						Yes				None
69	M89		BenPIN				Yes	** NA **			None
70	M90						Yes				None
71	M91A		BenPIN				Yes	** NA **			None
72	M92A						Yes				None
73	M93						Yes				None
74	M94		BenPIN				Yes	** NA **			None
75	M95						Yes				None
76	M96		BenPIN				Yes	** NA **			None
77	M97						Yes	** NA **			None
78	M98						Yes	** NA **			None
79	M99						Yes	** NA **			None
80	M82A						Yes	Default			None
81	M91B						Yes	Default			None
82	M134						Yes	** NA **			None
83	M135						Yes	** NA **			None
84	M100						Yes				None
85	M101						Yes				None
86	M86A						Yes	** NA **			None
87	M87A						Yes	** NA **			None
88	M88B						Yes	** NA **			None
89	M89A						Yes	** NA **			None
90	MP3C						Yes	** NA **			None
91	MP4C						Yes	** NA **			None
92	MP2C						Yes	** NA **			None
93	MP1C						Yes	** NA **			None
94	M94A						Yes	** NA **			None
95	M95A						Yes	** NA **			None
96	M96A						Yes	** NA **			None
97	M97A						Yes	** NA **			None
98	MP3B						Yes	** NA **			None
99	MP4B						Yes	** NA **			None
100	MP2B						Yes	** NA **			None
101	MP1B						Yes	** NA **			None
102	M102						Yes	** NA **			None
103	M103						Yes	** NA **			None
104	M104						Yes	Default			None
105	M105						Yes	** NA **			None
106	M106						Yes	** NA **			None
107	M107						Yes	** NA **			None
108	M108						Yes	** NA **			None
109	M109						Yes	Default			None
110	M110						Yes	** NA **			None
111	M111						Yes	** NA **			None
112	M112						Yes	** NA **			None
113	M113						Yes	** NA **			None
114	M114						Yes	Default			None
115	M115						Yes	** NA **			None
116	M116						Yes	** NA **			None
117	M117						Yes	** NA **			None
118	M118						Yes	** NA **			None
119	M119		OOOOOO				Yes	** NA **			None
120	M120		OOOOOO				Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ratio Opti...	Analysis ...	Inactive	Seismi...
121	M121						Yes				None
122	M122		OOOOOO				Yes	** NA **			None
123	M123		OOOOOO				Yes	** NA **			None
124	M124						Yes				None
125	M125		OOOOOO				Yes	** NA **			None
126	M126		OOOOOO				Yes	** NA **			None
127	M127						Yes				None

Member Point Loads (BLC 1 : Antenna D)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	Y	-15.4	5
2	MP2A	My	.0077	5
3	MP2A	Mz	0	5
4	MP2B	Y	-15.4	5
5	MP2B	My	-.0039	5
6	MP2B	Mz	.0067	5
7	MP2C	Y	-15.4	5
8	MP2C	My	-.0039	5
9	MP2C	Mz	-.0067	5
10	MP2A	Y	-21.85	.5
11	MP2A	My	-.0182	.5
12	MP2A	Mz	.0137	.5
13	MP2A	Y	-21.85	5
14	MP2A	My	-.0182	5
15	MP2A	Mz	.0137	5
16	MP2B	Y	-21.85	.5
17	MP2B	My	-.0027	.5
18	MP2B	Mz	-.0226	.5
19	MP2B	Y	-21.85	5
20	MP2B	My	-.0027	5
21	MP2B	Mz	-.0226	5
22	MP2C	Y	-21.85	.5
23	MP2C	My	.0209	.5
24	MP2C	Mz	.0089	.5
25	MP2C	Y	-21.85	5
26	MP2C	My	.0209	5
27	MP2C	Mz	.0089	5
28	MP2A	Y	-32.3	.5
29	MP2A	My	-.0269	.5
30	MP2A	Mz	-.0202	.5
31	MP2A	Y	-32.3	5
32	MP2A	My	-.0269	5
33	MP2A	Mz	-.0202	5
34	MP2B	Y	-32.3	.5
35	MP2B	My	.0309	.5
36	MP2B	Mz	-.0132	.5
37	MP2B	Y	-32.3	5
38	MP2B	My	.0309	5
39	MP2B	Mz	-.0132	5
40	MP2C	Y	-32.3	.5
41	MP2C	My	-.004	.5
42	MP2C	Mz	.0334	.5
43	MP2C	Y	-32.3	5
44	MP2C	My	-.004	5
45	MP2C	Mz	.0334	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
46	MP3A	Y	-28.65	1
47	MP3A	My	-.0239	1
48	MP3A	Mz	0	1
49	MP3A	Y	-28.65	3
50	MP3A	My	-.0239	3
51	MP3A	Mz	0	3
52	MP3B	Y	-28.65	1
53	MP3B	My	.0119	1
54	MP3B	Mz	-.0207	1
55	MP3B	Y	-28.65	3
56	MP3B	My	.0119	3
57	MP3B	Mz	-.0207	3
58	MP3C	Y	-28.65	1
59	MP3C	My	.0119	1
60	MP3C	Mz	.0207	1
61	MP3C	Y	-28.65	3
62	MP3C	My	.0119	3
63	MP3C	Mz	.0207	3
64	M135	Y	-32	1.5
65	M135	My	0	1.5
66	M135	Mz	0	1.5
67	MP1A	Y	-74.7	2
68	MP1A	My	.0374	2
69	MP1A	Mz	0	2
70	MP1B	Y	-74.7	2
71	MP1B	My	-.0187	2
72	MP1B	Mz	.0323	2
73	MP1C	Y	-74.7	2
74	MP1C	My	-.0187	2
75	MP1C	Mz	-.0323	2
76	MP2A	Y	-79.1	2
77	MP2A	My	-.0659	2
78	MP2A	Mz	0	2
79	MP2B	Y	-79.1	2
80	MP2B	My	.033	2
81	MP2B	Mz	-.0571	2
82	MP2C	Y	-79.1	2
83	MP2C	My	.033	2
84	MP2C	Mz	.0571	2
85	MP1A	Y	-10	.25
86	MP1A	My	-.0083	.25
87	MP1A	Mz	0	.25
88	MP1A	Y	-10	3.75
89	MP1A	My	-.0083	3.75
90	MP1A	Mz	0	3.75
91	MP1B	Y	-10	.25
92	MP1B	My	.0042	.25
93	MP1B	Mz	-.0072	.25
94	MP1B	Y	-10	3.75
95	MP1B	My	.0042	3.75
96	MP1B	Mz	-.0072	3.75
97	MP1C	Y	-10	.25
98	MP1C	My	.0042	.25
99	MP1C	Mz	.0072	.25
100	MP1C	Y	-10	3.75
101	MP1C	My	.0042	3.75
102	MP1C	Mz	.0072	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
103	MP4A	Y	-10	.25
104	MP4A	My	-.0083	.25
105	MP4A	Mz	0	.25
106	MP4A	Y	-10	3.75
107	MP4A	My	-.0083	3.75
108	MP4A	Mz	0	3.75
109	MP4B	Y	-10	.25
110	MP4B	My	.0042	.25
111	MP4B	Mz	-.0072	.25
112	MP4B	Y	-10	3.75
113	MP4B	My	.0042	3.75
114	MP4B	Mz	-.0072	3.75
115	MP4C	Y	-10	.25
116	MP4C	My	.0042	.25
117	MP4C	Mz	.0072	.25
118	MP4C	Y	-10	3.75
119	MP4C	My	.0042	3.75
120	MP4C	Mz	.0072	3.75
121	M103	Y	-32	1.5
122	M103	My	0	1.5
123	M103	Mz	0	1.5

Member Point Loads (BLC 2 : Antenna Di)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	Y	-26.8848	5
2	MP2A	My	.0134	5
3	MP2A	Mz	0	5
4	MP2B	Y	-26.8848	5
5	MP2B	My	-.0067	5
6	MP2B	Mz	.0116	5
7	MP2C	Y	-26.8848	5
8	MP2C	My	-.0067	5
9	MP2C	Mz	-.0116	5
10	MP2A	Y	-92.784	.5
11	MP2A	My	-.0773	.5
12	MP2A	Mz	.058	.5
13	MP2A	Y	-92.784	5
14	MP2A	My	-.0773	5
15	MP2A	Mz	.058	5
16	MP2B	Y	-92.784	.5
17	MP2B	My	-.0116	.5
18	MP2B	Mz	-.096	.5
19	MP2B	Y	-92.784	5
20	MP2B	My	-.0116	5
21	MP2B	Mz	-.096	5
22	MP2C	Y	-92.784	.5
23	MP2C	My	.0889	.5
24	MP2C	Mz	.038	.5
25	MP2C	Y	-92.784	5
26	MP2C	My	.0889	5
27	MP2C	Mz	.038	5
28	MP2A	Y	-92.784	.5
29	MP2A	My	-.0773	.5
30	MP2A	Mz	-.058	.5
31	MP2A	Y	-92.784	5
32	MP2A	My	-.0773	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
33	MP2A	Mz	-.058	5
34	MP2B	Y	-92.784	.5
35	MP2B	My	.0889	.5
36	MP2B	Mz	-.038	.5
37	MP2B	Y	-92.784	5
38	MP2B	My	.0889	5
39	MP2B	Mz	-.038	5
40	MP2C	Y	-92.784	.5
41	MP2C	My	-.0116	.5
42	MP2C	Mz	.096	.5
43	MP2C	Y	-92.784	5
44	MP2C	My	-.0116	5
45	MP2C	Mz	.096	5
46	MP3A	Y	-45.9353	1
47	MP3A	My	-.0383	1
48	MP3A	Mz	0	1
49	MP3A	Y	-45.9353	3
50	MP3A	My	-.0383	3
51	MP3A	Mz	0	3
52	MP3B	Y	-45.9353	1
53	MP3B	My	.0191	1
54	MP3B	Mz	-.0332	1
55	MP3B	Y	-45.9353	3
56	MP3B	My	.0191	3
57	MP3B	Mz	-.0332	3
58	MP3C	Y	-45.9353	1
59	MP3C	My	.0191	1
60	MP3C	Mz	.0332	1
61	MP3C	Y	-45.9353	3
62	MP3C	My	.0191	3
63	MP3C	Mz	.0332	3
64	M135	Y	-134.0356	1.5
65	M135	My	0	1.5
66	M135	Mz	0	1.5
67	MP1A	Y	-69.5422	2
68	MP1A	My	.0348	2
69	MP1A	Mz	0	2
70	MP1B	Y	-69.5422	2
71	MP1B	My	-.0174	2
72	MP1B	Mz	.0301	2
73	MP1C	Y	-69.5422	2
74	MP1C	My	-.0174	2
75	MP1C	Mz	-.0301	2
76	MP2A	Y	-70.2552	2
77	MP2A	My	-.0585	2
78	MP2A	Mz	0	2
79	MP2B	Y	-70.2552	2
80	MP2B	My	.0293	2
81	MP2B	Mz	-.0507	2
82	MP2C	Y	-70.2552	2
83	MP2C	My	.0293	2
84	MP2C	Mz	.0507	2
85	MP1A	Y	-95.3807	.25
86	MP1A	My	-.0795	.25
87	MP1A	Mz	0	.25
88	MP1A	Y	-95.3807	3.75
89	MP1A	My	-.0795	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
90	MP1A	Mz	0	3.75
91	MP1B	Y	-95.3807	.25
92	MP1B	My	.0397	.25
93	MP1B	Mz	-.0688	.25
94	MP1B	Y	-95.3807	3.75
95	MP1B	My	.0397	3.75
96	MP1B	Mz	-.0688	3.75
97	MP1C	Y	-95.3807	.25
98	MP1C	My	.0397	.25
99	MP1C	Mz	.0688	.25
100	MP1C	Y	-95.3807	3.75
101	MP1C	My	.0397	3.75
102	MP1C	Mz	.0688	3.75
103	MP4A	Y	-95.3807	.25
104	MP4A	My	-.0795	.25
105	MP4A	Mz	0	.25
106	MP4A	Y	-95.3807	3.75
107	MP4A	My	-.0795	3.75
108	MP4A	Mz	0	3.75
109	MP4B	Y	-95.3807	.25
110	MP4B	My	.0397	.25
111	MP4B	Mz	-.0688	.25
112	MP4B	Y	-95.3807	3.75
113	MP4B	My	.0397	3.75
114	MP4B	Mz	-.0688	3.75
115	MP4C	Y	-95.3807	.25
116	MP4C	My	.0397	.25
117	MP4C	Mz	.0688	.25
118	MP4C	Y	-95.3807	3.75
119	MP4C	My	.0397	3.75
120	MP4C	Mz	.0688	3.75
121	M103	Y	-134.0356	1.5
122	M103	My	0	1.5
123	M103	Mz	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	0	5
2	MP2A	Z	-33.923	5
3	MP2A	Mx	0	5
4	MP2B	X	0	5
5	MP2B	Z	-19.255	5
6	MP2B	Mx	-.0083	5
7	MP2C	X	0	5
8	MP2C	Z	-19.255	5
9	MP2C	Mx	.0083	5
10	MP2A	X	0	.5
11	MP2A	Z	-107.094	.5
12	MP2A	Mx	-.0669	.5
13	MP2A	X	0	5
14	MP2A	Z	-107.094	5
15	MP2A	Mx	-.0669	5
16	MP2B	X	0	.5
17	MP2B	Z	-61.239	.5
18	MP2B	Mx	.0633	.5
19	MP2B	X	0	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
20	MP2B	Z	-61.239	5
21	MP2B	Mx	.0633	5
22	MP2C	X	0	.5
23	MP2C	Z	-61.239	.5
24	MP2C	Mx	-.0251	.5
25	MP2C	X	0	5
26	MP2C	Z	-61.239	5
27	MP2C	Mx	-.0251	5
28	MP2A	X	0	.5
29	MP2A	Z	-158.767	.5
30	MP2A	Mx	.0992	.5
31	MP2A	X	0	5
32	MP2A	Z	-158.767	5
33	MP2A	Mx	.0992	5
34	MP2B	X	0	.5
35	MP2B	Z	-118.706	.5
36	MP2B	Mx	.0486	.5
37	MP2B	X	0	5
38	MP2B	Z	-118.706	5
39	MP2B	Mx	.0486	5
40	MP2C	X	0	.5
41	MP2C	Z	-118.706	.5
42	MP2C	Mx	-.1228	.5
43	MP2C	X	0	5
44	MP2C	Z	-118.706	5
45	MP2C	Mx	-.1228	5
46	MP3A	X	0	1
47	MP3A	Z	-74.749	1
48	MP3A	Mx	0	1
49	MP3A	X	0	3
50	MP3A	Z	-74.749	3
51	MP3A	Mx	0	3
52	MP3B	X	0	1
53	MP3B	Z	-40.279	1
54	MP3B	Mx	.0291	1
55	MP3B	X	0	3
56	MP3B	Z	-40.279	3
57	MP3B	Mx	.0291	3
58	MP3C	X	0	1
59	MP3C	Z	-40.279	1
60	MP3C	Mx	-.0291	1
61	MP3C	X	0	3
62	MP3C	Z	-40.279	3
63	MP3C	Mx	-.0291	3
64	M135	X	0	1.5
65	M135	Z	-117.547	1.5
66	M135	Mx	0	1.5
67	MP1A	X	0	2
68	MP1A	Z	-61.14	2
69	MP1A	Mx	0	2
70	MP1B	X	0	2
71	MP1B	Z	-46.052	2
72	MP1B	Mx	-.0199	2
73	MP1C	X	0	2
74	MP1C	Z	-46.052	2
75	MP1C	Mx	.0199	2
76	MP2A	X	0	2

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
77	MP2A	Z	-73.763	2
78	MP2A	Mx	0	2
79	MP2B	X	0	2
80	MP2B	Z	-56.16	2
81	MP2B	Mx	.0405	2
82	MP2C	X	0	2
83	MP2C	Z	-56.16	2
84	MP2C	Mx	-.0405	2
85	MP1A	X	0	.25
86	MP1A	Z	-121.294	.25
87	MP1A	Mx	0	.25
88	MP1A	X	0	3.75
89	MP1A	Z	-121.294	3.75
90	MP1A	Mx	0	3.75
91	MP1B	X	0	.25
92	MP1B	Z	-110.035	.25
93	MP1B	Mx	.0794	.25
94	MP1B	X	0	3.75
95	MP1B	Z	-110.035	3.75
96	MP1B	Mx	.0794	3.75
97	MP1C	X	0	.25
98	MP1C	Z	-110.035	.25
99	MP1C	Mx	-.0794	.25
100	MP1C	X	0	3.75
101	MP1C	Z	-110.035	3.75
102	MP1C	Mx	-.0794	3.75
103	MP4A	X	0	.25
104	MP4A	Z	-121.294	.25
105	MP4A	Mx	0	.25
106	MP4A	X	0	3.75
107	MP4A	Z	-121.294	3.75
108	MP4A	Mx	0	3.75
109	MP4B	X	0	.25
110	MP4B	Z	-110.035	.25
111	MP4B	Mx	.0794	.25
112	MP4B	X	0	3.75
113	MP4B	Z	-110.035	3.75
114	MP4B	Mx	.0794	3.75
115	MP4C	X	0	.25
116	MP4C	Z	-110.035	.25
117	MP4C	Mx	-.0794	.25
118	MP4C	X	0	3.75
119	MP4C	Z	-110.035	3.75
120	MP4C	Mx	-.0794	3.75
121	M103	X	0	1.5
122	M103	Z	-117.547	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	14.517	5
2	MP2A	Z	-25.144	5
3	MP2A	Mx	.0073	5
4	MP2B	X	7.183	5
5	MP2B	Z	-12.441	5
6	MP2B	Mx	-.0072	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
7	MP2C	X	14.517	5
8	MP2C	Z	-25.144	5
9	MP2C	Mx	.0073	5
10	MP2A	X	45.904	.5
11	MP2A	Z	-79.509	.5
12	MP2A	Mx	-.0879	.5
13	MP2A	X	45.904	5
14	MP2A	Z	-79.509	5
15	MP2A	Mx	-.0879	5
16	MP2B	X	22.977	.5
17	MP2B	Z	-39.797	.5
18	MP2B	Mx	.0383	.5
19	MP2B	X	22.977	5
20	MP2B	Z	-39.797	5
21	MP2B	Mx	.0383	5
22	MP2C	X	45.904	.5
23	MP2C	Z	-79.509	.5
24	MP2C	Mx	.0114	.5
25	MP2C	X	45.904	5
26	MP2C	Z	-79.509	5
27	MP2C	Mx	.0114	5
28	MP2A	X	72.707	.5
29	MP2A	Z	-125.932	.5
30	MP2A	Mx	.0181	.5
31	MP2A	X	72.707	5
32	MP2A	Z	-125.932	5
33	MP2A	Mx	.0181	5
34	MP2B	X	52.676	.5
35	MP2B	Z	-91.237	.5
36	MP2B	Mx	.0878	.5
37	MP2B	X	52.676	5
38	MP2B	Z	-91.237	5
39	MP2B	Mx	.0878	5
40	MP2C	X	72.707	.5
41	MP2C	Z	-125.932	.5
42	MP2C	Mx	-.1393	.5
43	MP2C	X	72.707	5
44	MP2C	Z	-125.932	5
45	MP2C	Mx	-.1393	5
46	MP3A	X	31.63	1
47	MP3A	Z	-54.784	1
48	MP3A	Mx	-.0264	1
49	MP3A	X	31.63	3
50	MP3A	Z	-54.784	3
51	MP3A	Mx	-.0264	3
52	MP3B	X	14.395	1
53	MP3B	Z	-24.932	1
54	MP3B	Mx	.024	1
55	MP3B	X	14.395	3
56	MP3B	Z	-24.932	3
57	MP3B	Mx	.024	3
58	MP3C	X	31.63	1
59	MP3C	Z	-54.784	1
60	MP3C	Mx	-.0264	1
61	MP3C	X	31.63	3
62	MP3C	Z	-54.784	3
63	MP3C	Mx	-.0264	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
64	M135	X	51.279	1.5
65	M135	Z	-88.818	1.5
66	M135	Mx	0	1.5
67	MP1A	X	28.055	2
68	MP1A	Z	-48.594	2
69	MP1A	Mx	.014	2
70	MP1B	X	20.512	2
71	MP1B	Z	-35.527	2
72	MP1B	Mx	-.0205	2
73	MP1C	X	28.055	2
74	MP1C	Z	-48.594	2
75	MP1C	Mx	.014	2
76	MP2A	X	33.948	2
77	MP2A	Z	-58.799	2
78	MP2A	Mx	-.0283	2
79	MP2B	X	25.146	2
80	MP2B	Z	-43.555	2
81	MP2B	Mx	.0419	2
82	MP2C	X	33.948	2
83	MP2C	Z	-58.799	2
84	MP2C	Mx	-.0283	2
85	MP1A	X	58.771	.25
86	MP1A	Z	-101.794	.25
87	MP1A	Mx	-.049	.25
88	MP1A	X	58.771	3.75
89	MP1A	Z	-101.794	3.75
90	MP1A	Mx	-.049	3.75
91	MP1B	X	53.141	.25
92	MP1B	Z	-92.043	.25
93	MP1B	Mx	.0886	.25
94	MP1B	X	53.141	3.75
95	MP1B	Z	-92.043	3.75
96	MP1B	Mx	.0886	3.75
97	MP1C	X	58.771	.25
98	MP1C	Z	-101.794	.25
99	MP1C	Mx	-.049	.25
100	MP1C	X	58.771	3.75
101	MP1C	Z	-101.794	3.75
102	MP1C	Mx	-.049	3.75
103	MP4A	X	58.771	.25
104	MP4A	Z	-101.794	.25
105	MP4A	Mx	-.049	.25
106	MP4A	X	58.771	3.75
107	MP4A	Z	-101.794	3.75
108	MP4A	Mx	-.049	3.75
109	MP4B	X	53.141	.25
110	MP4B	Z	-92.043	.25
111	MP4B	Mx	.0886	.25
112	MP4B	X	53.141	3.75
113	MP4B	Z	-92.043	3.75
114	MP4B	Mx	.0886	3.75
115	MP4C	X	58.771	.25
116	MP4C	Z	-101.794	.25
117	MP4C	Mx	-.049	.25
118	MP4C	X	58.771	3.75
119	MP4C	Z	-101.794	3.75
120	MP4C	Mx	-.049	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
121	M103	X	51.279	1.5
122	M103	Z	-88.818	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	16.675	5
2	MP2A	Z	-9.628	5
3	MP2A	Mx	.0083	5
4	MP2B	X	16.675	5
5	MP2B	Z	-9.628	5
6	MP2B	Mx	-.0083	5
7	MP2C	X	29.378	5
8	MP2C	Z	-16.961	5
9	MP2C	Mx	0	5
10	MP2A	X	53.034	.5
11	MP2A	Z	-30.619	.5
12	MP2A	Mx	-.0633	.5
13	MP2A	X	53.034	5
14	MP2A	Z	-30.619	5
15	MP2A	Mx	-.0633	5
16	MP2B	X	53.034	.5
17	MP2B	Z	-30.619	.5
18	MP2B	Mx	.0251	.5
19	MP2B	X	53.034	5
20	MP2B	Z	-30.619	5
21	MP2B	Mx	.0251	5
22	MP2C	X	92.746	.5
23	MP2C	Z	-53.547	.5
24	MP2C	Mx	.0669	.5
25	MP2C	X	92.746	5
26	MP2C	Z	-53.547	5
27	MP2C	Mx	.0669	5
28	MP2A	X	102.802	.5
29	MP2A	Z	-59.353	.5
30	MP2A	Mx	-.0486	.5
31	MP2A	X	102.802	5
32	MP2A	Z	-59.353	5
33	MP2A	Mx	-.0486	5
34	MP2B	X	102.802	.5
35	MP2B	Z	-59.353	.5
36	MP2B	Mx	.1228	.5
37	MP2B	X	102.802	5
38	MP2B	Z	-59.353	5
39	MP2B	Mx	.1228	5
40	MP2C	X	137.497	.5
41	MP2C	Z	-79.384	.5
42	MP2C	Mx	-.0992	.5
43	MP2C	X	137.497	5
44	MP2C	Z	-79.384	5
45	MP2C	Mx	-.0992	5
46	MP3A	X	34.883	1
47	MP3A	Z	-20.14	1
48	MP3A	Mx	-.0291	1
49	MP3A	X	34.883	3
50	MP3A	Z	-20.14	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
51	MP3A	Mx	-.0291	3
52	MP3B	X	34.883	1
53	MP3B	Z	-20.14	1
54	MP3B	Mx	.0291	1
55	MP3B	X	34.883	3
56	MP3B	Z	-20.14	3
57	MP3B	Mx	.0291	3
58	MP3C	X	64.734	1
59	MP3C	Z	-37.374	1
60	MP3C	Mx	0	1
61	MP3C	X	64.734	3
62	MP3C	Z	-37.374	3
63	MP3C	Mx	0	3
64	M135	X	82.327	1.5
65	M135	Z	-47.532	1.5
66	M135	Mx	0	1.5
67	MP1A	X	39.883	2
68	MP1A	Z	-23.026	2
69	MP1A	Mx	.0199	2
70	MP1B	X	39.883	2
71	MP1B	Z	-23.026	2
72	MP1B	Mx	-.0199	2
73	MP1C	X	52.949	2
74	MP1C	Z	-30.57	2
75	MP1C	Mx	0	2
76	MP2A	X	48.636	2
77	MP2A	Z	-28.08	2
78	MP2A	Mx	-.0405	2
79	MP2B	X	48.636	2
80	MP2B	Z	-28.08	2
81	MP2B	Mx	.0405	2
82	MP2C	X	63.88	2
83	MP2C	Z	-36.881	2
84	MP2C	Mx	0	2
85	MP1A	X	95.293	.25
86	MP1A	Z	-55.018	.25
87	MP1A	Mx	-.0794	.25
88	MP1A	X	95.293	3.75
89	MP1A	Z	-55.018	3.75
90	MP1A	Mx	-.0794	3.75
91	MP1B	X	95.293	.25
92	MP1B	Z	-55.018	.25
93	MP1B	Mx	.0794	.25
94	MP1B	X	95.293	3.75
95	MP1B	Z	-55.018	3.75
96	MP1B	Mx	.0794	3.75
97	MP1C	X	105.044	.25
98	MP1C	Z	-60.647	.25
99	MP1C	Mx	0	.25
100	MP1C	X	105.044	3.75
101	MP1C	Z	-60.647	3.75
102	MP1C	Mx	0	3.75
103	MP4A	X	95.293	.25
104	MP4A	Z	-55.018	.25
105	MP4A	Mx	-.0794	.25
106	MP4A	X	95.293	3.75
107	MP4A	Z	-55.018	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
108	MP4A	Mx	-.0794	3.75
109	MP4B	X	95.293	.25
110	MP4B	Z	-55.018	.25
111	MP4B	Mx	.0794	.25
112	MP4B	X	95.293	3.75
113	MP4B	Z	-55.018	3.75
114	MP4B	Mx	.0794	3.75
115	MP4C	X	105.044	.25
116	MP4C	Z	-60.647	.25
117	MP4C	Mx	0	.25
118	MP4C	X	105.044	3.75
119	MP4C	Z	-60.647	3.75
120	MP4C	Mx	0	3.75
121	M103	X	82.327	1.5
122	M103	Z	-47.532	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	14.366	5
2	MP2A	Z	0	5
3	MP2A	Mx	.0072	5
4	MP2B	X	29.034	5
5	MP2B	Z	0	5
6	MP2B	Mx	-.0073	5
7	MP2C	X	29.034	5
8	MP2C	Z	0	5
9	MP2C	Mx	-.0073	5
10	MP2A	X	45.954	.5
11	MP2A	Z	0	.5
12	MP2A	Mx	-.0383	.5
13	MP2A	X	45.954	5
14	MP2A	Z	0	5
15	MP2A	Mx	-.0383	5
16	MP2B	X	91.809	.5
17	MP2B	Z	0	.5
18	MP2B	Mx	-.0114	.5
19	MP2B	X	91.809	5
20	MP2B	Z	0	5
21	MP2B	Mx	-.0114	5
22	MP2C	X	91.809	.5
23	MP2C	Z	0	.5
24	MP2C	Mx	.0879	.5
25	MP2C	X	91.809	5
26	MP2C	Z	0	5
27	MP2C	Mx	.0879	5
28	MP2A	X	105.352	.5
29	MP2A	Z	0	.5
30	MP2A	Mx	-.0878	.5
31	MP2A	X	105.352	5
32	MP2A	Z	0	5
33	MP2A	Mx	-.0878	5
34	MP2B	X	145.414	.5
35	MP2B	Z	0	.5
36	MP2B	Mx	.1393	.5
37	MP2B	X	145.414	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
38	MP2B	Z	0	5
39	MP2B	Mx	.1393	5
40	MP2C	X	145.414	.5
41	MP2C	Z	0	.5
42	MP2C	Mx	-.0181	.5
43	MP2C	X	145.414	5
44	MP2C	Z	0	5
45	MP2C	Mx	-.0181	5
46	MP3A	X	28.79	1
47	MP3A	Z	0	1
48	MP3A	Mx	-.024	1
49	MP3A	X	28.79	3
50	MP3A	Z	0	3
51	MP3A	Mx	-.024	3
52	MP3B	X	63.259	1
53	MP3B	Z	0	1
54	MP3B	Mx	.0264	1
55	MP3B	X	63.259	3
56	MP3B	Z	0	3
57	MP3B	Mx	.0264	3
58	MP3C	X	63.259	1
59	MP3C	Z	0	1
60	MP3C	Mx	.0264	1
61	MP3C	X	63.259	3
62	MP3C	Z	0	3
63	MP3C	Mx	.0264	3
64	M135	X	102.558	1.5
65	M135	Z	0	1.5
66	M135	Mx	0	1.5
67	MP1A	X	41.023	2
68	MP1A	Z	0	2
69	MP1A	Mx	.0205	2
70	MP1B	X	56.111	2
71	MP1B	Z	0	2
72	MP1B	Mx	-.014	2
73	MP1C	X	56.111	2
74	MP1C	Z	0	2
75	MP1C	Mx	-.014	2
76	MP2A	X	50.293	2
77	MP2A	Z	0	2
78	MP2A	Mx	-.0419	2
79	MP2B	X	67.895	2
80	MP2B	Z	0	2
81	MP2B	Mx	.0283	2
82	MP2C	X	67.895	2
83	MP2C	Z	0	2
84	MP2C	Mx	.0283	2
85	MP1A	X	106.282	.25
86	MP1A	Z	0	.25
87	MP1A	Mx	-.0886	.25
88	MP1A	X	106.282	3.75
89	MP1A	Z	0	3.75
90	MP1A	Mx	-.0886	3.75
91	MP1B	X	117.541	.25
92	MP1B	Z	0	.25
93	MP1B	Mx	.049	.25
94	MP1B	X	117.541	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
95	MP1B	Z	0	3.75
96	MP1B	Mx	.049	3.75
97	MP1C	X	117.541	.25
98	MP1C	Z	0	.25
99	MP1C	Mx	.049	.25
100	MP1C	X	117.541	3.75
101	MP1C	Z	0	3.75
102	MP1C	Mx	.049	3.75
103	MP4A	X	106.282	.25
104	MP4A	Z	0	.25
105	MP4A	Mx	-.0886	.25
106	MP4A	X	106.282	3.75
107	MP4A	Z	0	3.75
108	MP4A	Mx	-.0886	3.75
109	MP4B	X	117.541	.25
110	MP4B	Z	0	.25
111	MP4B	Mx	.049	.25
112	MP4B	X	117.541	3.75
113	MP4B	Z	0	3.75
114	MP4B	Mx	.049	3.75
115	MP4C	X	117.541	.25
116	MP4C	Z	0	.25
117	MP4C	Mx	.049	.25
118	MP4C	X	117.541	3.75
119	MP4C	Z	0	3.75
120	MP4C	Mx	.049	3.75
121	M103	X	102.558	1.5
122	M103	Z	0	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	16.675	5
2	MP2A	Z	9.628	5
3	MP2A	Mx	.0083	5
4	MP2B	X	29.378	5
5	MP2B	Z	16.961	5
6	MP2B	Mx	0	5
7	MP2C	X	16.675	5
8	MP2C	Z	9.628	5
9	MP2C	Mx	-.0083	5
10	MP2A	X	53.034	.5
11	MP2A	Z	30.619	.5
12	MP2A	Mx	-.0251	.5
13	MP2A	X	53.034	5
14	MP2A	Z	30.619	5
15	MP2A	Mx	-.0251	5
16	MP2B	X	92.746	.5
17	MP2B	Z	53.547	.5
18	MP2B	Mx	-.0669	.5
19	MP2B	X	92.746	5
20	MP2B	Z	53.547	5
21	MP2B	Mx	-.0669	5
22	MP2C	X	53.034	.5
23	MP2C	Z	30.619	.5
24	MP2C	Mx	.0633	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
25	MP2C	X	53.034	5
26	MP2C	Z	30.619	5
27	MP2C	Mx	.0633	5
28	MP2A	X	102.802	.5
29	MP2A	Z	59.353	.5
30	MP2A	Mx	-.1228	.5
31	MP2A	X	102.802	5
32	MP2A	Z	59.353	5
33	MP2A	Mx	-.1228	5
34	MP2B	X	137.497	.5
35	MP2B	Z	79.384	.5
36	MP2B	Mx	.0992	.5
37	MP2B	X	137.497	5
38	MP2B	Z	79.384	5
39	MP2B	Mx	.0992	5
40	MP2C	X	102.802	.5
41	MP2C	Z	59.353	.5
42	MP2C	Mx	.0486	.5
43	MP2C	X	102.802	5
44	MP2C	Z	59.353	5
45	MP2C	Mx	.0486	5
46	MP3A	X	34.883	1
47	MP3A	Z	20.14	1
48	MP3A	Mx	-.0291	1
49	MP3A	X	34.883	3
50	MP3A	Z	20.14	3
51	MP3A	Mx	-.0291	3
52	MP3B	X	64.734	1
53	MP3B	Z	37.374	1
54	MP3B	Mx	0	1
55	MP3B	X	64.734	3
56	MP3B	Z	37.374	3
57	MP3B	Mx	0	3
58	MP3C	X	34.883	1
59	MP3C	Z	20.14	1
60	MP3C	Mx	.0291	1
61	MP3C	X	34.883	3
62	MP3C	Z	20.14	3
63	MP3C	Mx	.0291	3
64	M135	X	101.799	1.5
65	M135	Z	58.774	1.5
66	M135	Mx	0	1.5
67	MP1A	X	39.883	2
68	MP1A	Z	23.026	2
69	MP1A	Mx	.0199	2
70	MP1B	X	52.949	2
71	MP1B	Z	30.57	2
72	MP1B	Mx	0	2
73	MP1C	X	39.883	2
74	MP1C	Z	23.026	2
75	MP1C	Mx	-.0199	2
76	MP2A	X	48.636	2
77	MP2A	Z	28.08	2
78	MP2A	Mx	-.0405	2
79	MP2B	X	63.88	2
80	MP2B	Z	36.881	2
81	MP2B	Mx	0	2

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
82	MP2C	X	48.636	2
83	MP2C	Z	28.08	2
84	MP2C	Mx	.0405	2
85	MP1A	X	95.293	.25
86	MP1A	Z	55.018	.25
87	MP1A	Mx	-.0794	.25
88	MP1A	X	95.293	3.75
89	MP1A	Z	55.018	3.75
90	MP1A	Mx	-.0794	3.75
91	MP1B	X	105.044	.25
92	MP1B	Z	60.647	.25
93	MP1B	Mx	0	.25
94	MP1B	X	105.044	3.75
95	MP1B	Z	60.647	3.75
96	MP1B	Mx	0	3.75
97	MP1C	X	95.293	.25
98	MP1C	Z	55.018	.25
99	MP1C	Mx	.0794	.25
100	MP1C	X	95.293	3.75
101	MP1C	Z	55.018	3.75
102	MP1C	Mx	.0794	3.75
103	MP4A	X	95.293	.25
104	MP4A	Z	55.018	.25
105	MP4A	Mx	-.0794	.25
106	MP4A	X	95.293	3.75
107	MP4A	Z	55.018	3.75
108	MP4A	Mx	-.0794	3.75
109	MP4B	X	105.044	.25
110	MP4B	Z	60.647	.25
111	MP4B	Mx	0	.25
112	MP4B	X	105.044	3.75
113	MP4B	Z	60.647	3.75
114	MP4B	Mx	0	3.75
115	MP4C	X	95.293	.25
116	MP4C	Z	55.018	.25
117	MP4C	Mx	.0794	.25
118	MP4C	X	95.293	3.75
119	MP4C	Z	55.018	3.75
120	MP4C	Mx	.0794	3.75
121	M103	X	101.799	1.5
122	M103	Z	58.774	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	14.517	5
2	MP2A	Z	25.144	5
3	MP2A	Mx	.0073	5
4	MP2B	X	14.517	5
5	MP2B	Z	25.144	5
6	MP2B	Mx	.0073	5
7	MP2C	X	7.183	5
8	MP2C	Z	12.441	5
9	MP2C	Mx	-.0072	5
10	MP2A	X	45.904	.5
11	MP2A	Z	79.509	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
12	MP2A	Mx	.0114	.5
13	MP2A	X	45.904	5
14	MP2A	Z	79.509	5
15	MP2A	Mx	.0114	5
16	MP2B	X	45.904	.5
17	MP2B	Z	79.509	.5
18	MP2B	Mx	-.0879	.5
19	MP2B	X	45.904	5
20	MP2B	Z	79.509	5
21	MP2B	Mx	-.0879	5
22	MP2C	X	22.977	.5
23	MP2C	Z	39.797	.5
24	MP2C	Mx	.0383	.5
25	MP2C	X	22.977	5
26	MP2C	Z	39.797	5
27	MP2C	Mx	.0383	5
28	MP2A	X	72.707	.5
29	MP2A	Z	125.932	.5
30	MP2A	Mx	-.1393	.5
31	MP2A	X	72.707	5
32	MP2A	Z	125.932	5
33	MP2A	Mx	-.1393	5
34	MP2B	X	72.707	.5
35	MP2B	Z	125.932	.5
36	MP2B	Mx	.0181	.5
37	MP2B	X	72.707	5
38	MP2B	Z	125.932	5
39	MP2B	Mx	.0181	5
40	MP2C	X	52.676	.5
41	MP2C	Z	91.237	.5
42	MP2C	Mx	.0878	.5
43	MP2C	X	52.676	5
44	MP2C	Z	91.237	5
45	MP2C	Mx	.0878	5
46	MP3A	X	31.63	1
47	MP3A	Z	54.784	1
48	MP3A	Mx	-.0264	1
49	MP3A	X	31.63	3
50	MP3A	Z	54.784	3
51	MP3A	Mx	-.0264	3
52	MP3B	X	31.63	1
53	MP3B	Z	54.784	1
54	MP3B	Mx	-.0264	1
55	MP3B	X	31.63	3
56	MP3B	Z	54.784	3
57	MP3B	Mx	-.0264	3
58	MP3C	X	14.395	1
59	MP3C	Z	24.932	1
60	MP3C	Mx	.024	1
61	MP3C	X	14.395	3
62	MP3C	Z	24.932	3
63	MP3C	Mx	.024	3
64	M135	X	62.521	1.5
65	M135	Z	108.289	1.5
66	M135	Mx	0	1.5
67	MP1A	X	28.055	2
68	MP1A	Z	48.594	2

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
69	MP1A	Mx	.014	2
70	MP1B	X	28.055	2
71	MP1B	Z	48.594	2
72	MP1B	Mx	.014	2
73	MP1C	X	20.512	2
74	MP1C	Z	35.527	2
75	MP1C	Mx	-.0205	2
76	MP2A	X	33.948	2
77	MP2A	Z	58.799	2
78	MP2A	Mx	-.0283	2
79	MP2B	X	33.948	2
80	MP2B	Z	58.799	2
81	MP2B	Mx	-.0283	2
82	MP2C	X	25.146	2
83	MP2C	Z	43.555	2
84	MP2C	Mx	.0419	2
85	MP1A	X	58.771	.25
86	MP1A	Z	101.794	.25
87	MP1A	Mx	-.049	.25
88	MP1A	X	58.771	3.75
89	MP1A	Z	101.794	3.75
90	MP1A	Mx	-.049	3.75
91	MP1B	X	58.771	.25
92	MP1B	Z	101.794	.25
93	MP1B	Mx	-.049	.25
94	MP1B	X	58.771	3.75
95	MP1B	Z	101.794	3.75
96	MP1B	Mx	-.049	3.75
97	MP1C	X	53.141	.25
98	MP1C	Z	92.043	.25
99	MP1C	Mx	.0886	.25
100	MP1C	X	53.141	3.75
101	MP1C	Z	92.043	3.75
102	MP1C	Mx	.0886	3.75
103	MP4A	X	58.771	.25
104	MP4A	Z	101.794	.25
105	MP4A	Mx	-.049	.25
106	MP4A	X	58.771	3.75
107	MP4A	Z	101.794	3.75
108	MP4A	Mx	-.049	3.75
109	MP4B	X	58.771	.25
110	MP4B	Z	101.794	.25
111	MP4B	Mx	-.049	.25
112	MP4B	X	58.771	3.75
113	MP4B	Z	101.794	3.75
114	MP4B	Mx	-.049	3.75
115	MP4C	X	53.141	.25
116	MP4C	Z	92.043	.25
117	MP4C	Mx	.0886	.25
118	MP4C	X	53.141	3.75
119	MP4C	Z	92.043	3.75
120	MP4C	Mx	.0886	3.75
121	M103	X	62.521	1.5
122	M103	Z	108.289	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	0	5
2	MP2A	Z	33.923	5
3	MP2A	Mx	0	5
4	MP2B	X	0	5
5	MP2B	Z	19.255	5
6	MP2B	Mx	.0083	5
7	MP2C	X	0	5
8	MP2C	Z	19.255	5
9	MP2C	Mx	-.0083	5
10	MP2A	X	0	.5
11	MP2A	Z	107.094	.5
12	MP2A	Mx	.0669	.5
13	MP2A	X	0	5
14	MP2A	Z	107.094	5
15	MP2A	Mx	.0669	5
16	MP2B	X	0	.5
17	MP2B	Z	61.239	.5
18	MP2B	Mx	-.0633	.5
19	MP2B	X	0	5
20	MP2B	Z	61.239	5
21	MP2B	Mx	-.0633	5
22	MP2C	X	0	.5
23	MP2C	Z	61.239	.5
24	MP2C	Mx	.0251	.5
25	MP2C	X	0	5
26	MP2C	Z	61.239	5
27	MP2C	Mx	.0251	5
28	MP2A	X	0	.5
29	MP2A	Z	158.767	.5
30	MP2A	Mx	-.0992	.5
31	MP2A	X	0	5
32	MP2A	Z	158.767	5
33	MP2A	Mx	-.0992	5
34	MP2B	X	0	.5
35	MP2B	Z	118.706	.5
36	MP2B	Mx	-.0486	.5
37	MP2B	X	0	5
38	MP2B	Z	118.706	5
39	MP2B	Mx	-.0486	5
40	MP2C	X	0	.5
41	MP2C	Z	118.706	.5
42	MP2C	Mx	.1228	.5
43	MP2C	X	0	5
44	MP2C	Z	118.706	5
45	MP2C	Mx	.1228	5
46	MP3A	X	0	1
47	MP3A	Z	74.749	1
48	MP3A	Mx	0	1
49	MP3A	X	0	3
50	MP3A	Z	74.749	3
51	MP3A	Mx	0	3
52	MP3B	X	0	1
53	MP3B	Z	40.279	1
54	MP3B	Mx	-.0291	1
55	MP3B	X	0	3
56	MP3B	Z	40.279	3
57	MP3B	Mx	-.0291	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
58	MP3C	X	0	1
59	MP3C	Z	40.279	1
60	MP3C	Mx	.0291	1
61	MP3C	X	0	3
62	MP3C	Z	40.279	3
63	MP3C	Mx	.0291	3
64	M135	X	0	1.5
65	M135	Z	117.547	1.5
66	M135	Mx	0	1.5
67	MP1A	X	0	2
68	MP1A	Z	61.14	2
69	MP1A	Mx	0	2
70	MP1B	X	0	2
71	MP1B	Z	46.052	2
72	MP1B	Mx	.0199	2
73	MP1C	X	0	2
74	MP1C	Z	46.052	2
75	MP1C	Mx	-.0199	2
76	MP2A	X	0	2
77	MP2A	Z	73.763	2
78	MP2A	Mx	0	2
79	MP2B	X	0	2
80	MP2B	Z	56.16	2
81	MP2B	Mx	-.0405	2
82	MP2C	X	0	2
83	MP2C	Z	56.16	2
84	MP2C	Mx	.0405	2
85	MP1A	X	0	.25
86	MP1A	Z	121.294	.25
87	MP1A	Mx	0	.25
88	MP1A	X	0	3.75
89	MP1A	Z	121.294	3.75
90	MP1A	Mx	0	3.75
91	MP1B	X	0	.25
92	MP1B	Z	110.035	.25
93	MP1B	Mx	-.0794	.25
94	MP1B	X	0	3.75
95	MP1B	Z	110.035	3.75
96	MP1B	Mx	-.0794	3.75
97	MP1C	X	0	.25
98	MP1C	Z	110.035	.25
99	MP1C	Mx	.0794	.25
100	MP1C	X	0	3.75
101	MP1C	Z	110.035	3.75
102	MP1C	Mx	.0794	3.75
103	MP4A	X	0	.25
104	MP4A	Z	121.294	.25
105	MP4A	Mx	0	.25
106	MP4A	X	0	3.75
107	MP4A	Z	121.294	3.75
108	MP4A	Mx	0	3.75
109	MP4B	X	0	.25
110	MP4B	Z	110.035	.25
111	MP4B	Mx	-.0794	.25
112	MP4B	X	0	3.75
113	MP4B	Z	110.035	3.75
114	MP4B	Mx	-.0794	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
115	MP4C	X	0	.25
116	MP4C	Z	110.035	.25
117	MP4C	Mx	.0794	.25
118	MP4C	X	0	3.75
119	MP4C	Z	110.035	3.75
120	MP4C	Mx	.0794	3.75
121	M103	X	0	1.5
122	M103	Z	117.547	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-14.517	5
2	MP2A	Z	25.144	5
3	MP2A	Mx	-.0073	5
4	MP2B	X	-7.183	5
5	MP2B	Z	12.441	5
6	MP2B	Mx	.0072	5
7	MP2C	X	-14.517	5
8	MP2C	Z	25.144	5
9	MP2C	Mx	-.0073	5
10	MP2A	X	-45.904	.5
11	MP2A	Z	79.509	.5
12	MP2A	Mx	.0879	.5
13	MP2A	X	-45.904	5
14	MP2A	Z	79.509	5
15	MP2A	Mx	.0879	5
16	MP2B	X	-22.977	.5
17	MP2B	Z	39.797	.5
18	MP2B	Mx	-.0383	.5
19	MP2B	X	-22.977	5
20	MP2B	Z	39.797	5
21	MP2B	Mx	-.0383	5
22	MP2C	X	-45.904	.5
23	MP2C	Z	79.509	.5
24	MP2C	Mx	-.0114	.5
25	MP2C	X	-45.904	5
26	MP2C	Z	79.509	5
27	MP2C	Mx	-.0114	5
28	MP2A	X	-72.707	.5
29	MP2A	Z	125.932	.5
30	MP2A	Mx	-.0181	.5
31	MP2A	X	-72.707	5
32	MP2A	Z	125.932	5
33	MP2A	Mx	-.0181	5
34	MP2B	X	-52.676	.5
35	MP2B	Z	91.237	.5
36	MP2B	Mx	-.0878	.5
37	MP2B	X	-52.676	5
38	MP2B	Z	91.237	5
39	MP2B	Mx	-.0878	5
40	MP2C	X	-72.707	.5
41	MP2C	Z	125.932	.5
42	MP2C	Mx	.1393	.5
43	MP2C	X	-72.707	5
44	MP2C	Z	125.932	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
45	MP2C	Mx	.1393	5
46	MP3A	X	-31.63	1
47	MP3A	Z	54.784	1
48	MP3A	Mx	.0264	1
49	MP3A	X	-31.63	3
50	MP3A	Z	54.784	3
51	MP3A	Mx	.0264	3
52	MP3B	X	-14.395	1
53	MP3B	Z	24.932	1
54	MP3B	Mx	-.024	1
55	MP3B	X	-14.395	3
56	MP3B	Z	24.932	3
57	MP3B	Mx	-.024	3
58	MP3C	X	-31.63	1
59	MP3C	Z	54.784	1
60	MP3C	Mx	.0264	1
61	MP3C	X	-31.63	3
62	MP3C	Z	54.784	3
63	MP3C	Mx	.0264	3
64	M135	X	-51.279	1.5
65	M135	Z	88.818	1.5
66	M135	Mx	0	1.5
67	MP1A	X	-28.055	2
68	MP1A	Z	48.594	2
69	MP1A	Mx	-.014	2
70	MP1B	X	-20.512	2
71	MP1B	Z	35.527	2
72	MP1B	Mx	.0205	2
73	MP1C	X	-28.055	2
74	MP1C	Z	48.594	2
75	MP1C	Mx	-.014	2
76	MP2A	X	-33.948	2
77	MP2A	Z	58.799	2
78	MP2A	Mx	.0283	2
79	MP2B	X	-25.146	2
80	MP2B	Z	43.555	2
81	MP2B	Mx	-.0419	2
82	MP2C	X	-33.948	2
83	MP2C	Z	58.799	2
84	MP2C	Mx	.0283	2
85	MP1A	X	-58.771	.25
86	MP1A	Z	101.794	.25
87	MP1A	Mx	.049	.25
88	MP1A	X	-58.771	3.75
89	MP1A	Z	101.794	3.75
90	MP1A	Mx	.049	3.75
91	MP1B	X	-53.141	.25
92	MP1B	Z	92.043	.25
93	MP1B	Mx	-.0886	.25
94	MP1B	X	-53.141	3.75
95	MP1B	Z	92.043	3.75
96	MP1B	Mx	-.0886	3.75
97	MP1C	X	-58.771	.25
98	MP1C	Z	101.794	.25
99	MP1C	Mx	.049	.25
100	MP1C	X	-58.771	3.75
101	MP1C	Z	101.794	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
102	MP1C	Mx	.049	3.75
103	MP4A	X	-58.771	.25
104	MP4A	Z	101.794	.25
105	MP4A	Mx	.049	.25
106	MP4A	X	-58.771	3.75
107	MP4A	Z	101.794	3.75
108	MP4A	Mx	.049	3.75
109	MP4B	X	-53.141	.25
110	MP4B	Z	92.043	.25
111	MP4B	Mx	-.0886	.25
112	MP4B	X	-53.141	3.75
113	MP4B	Z	92.043	3.75
114	MP4B	Mx	-.0886	3.75
115	MP4C	X	-58.771	.25
116	MP4C	Z	101.794	.25
117	MP4C	Mx	.049	.25
118	MP4C	X	-58.771	3.75
119	MP4C	Z	101.794	3.75
120	MP4C	Mx	.049	3.75
121	M103	X	-51.279	1.5
122	M103	Z	88.818	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-16.675	5
2	MP2A	Z	9.628	5
3	MP2A	Mx	-.0083	5
4	MP2B	X	-16.675	5
5	MP2B	Z	9.628	5
6	MP2B	Mx	.0083	5
7	MP2C	X	-29.378	5
8	MP2C	Z	16.961	5
9	MP2C	Mx	0	5
10	MP2A	X	-53.034	.5
11	MP2A	Z	30.619	.5
12	MP2A	Mx	.0633	.5
13	MP2A	X	-53.034	5
14	MP2A	Z	30.619	5
15	MP2A	Mx	.0633	5
16	MP2B	X	-53.034	.5
17	MP2B	Z	30.619	.5
18	MP2B	Mx	-.0251	.5
19	MP2B	X	-53.034	5
20	MP2B	Z	30.619	5
21	MP2B	Mx	-.0251	5
22	MP2C	X	-92.746	.5
23	MP2C	Z	53.547	.5
24	MP2C	Mx	-.0669	.5
25	MP2C	X	-92.746	5
26	MP2C	Z	53.547	5
27	MP2C	Mx	-.0669	5
28	MP2A	X	-102.802	.5
29	MP2A	Z	59.353	.5
30	MP2A	Mx	.0486	.5
31	MP2A	X	-102.802	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
32	MP2A	Z	59.353	5
33	MP2A	Mx	.0486	5
34	MP2B	X	-102.802	.5
35	MP2B	Z	59.353	.5
36	MP2B	Mx	-.1228	.5
37	MP2B	X	-102.802	5
38	MP2B	Z	59.353	5
39	MP2B	Mx	-.1228	5
40	MP2C	X	-137.497	.5
41	MP2C	Z	79.384	.5
42	MP2C	Mx	.0992	.5
43	MP2C	X	-137.497	5
44	MP2C	Z	79.384	5
45	MP2C	Mx	.0992	5
46	MP3A	X	-34.883	1
47	MP3A	Z	20.14	1
48	MP3A	Mx	.0291	1
49	MP3A	X	-34.883	3
50	MP3A	Z	20.14	3
51	MP3A	Mx	.0291	3
52	MP3B	X	-34.883	1
53	MP3B	Z	20.14	1
54	MP3B	Mx	-.0291	1
55	MP3B	X	-34.883	3
56	MP3B	Z	20.14	3
57	MP3B	Mx	-.0291	3
58	MP3C	X	-64.734	1
59	MP3C	Z	37.374	1
60	MP3C	Mx	0	1
61	MP3C	X	-64.734	3
62	MP3C	Z	37.374	3
63	MP3C	Mx	0	3
64	M135	X	-82.327	1.5
65	M135	Z	47.532	1.5
66	M135	Mx	0	1.5
67	MP1A	X	-39.883	2
68	MP1A	Z	23.026	2
69	MP1A	Mx	-.0199	2
70	MP1B	X	-39.883	2
71	MP1B	Z	23.026	2
72	MP1B	Mx	.0199	2
73	MP1C	X	-52.949	2
74	MP1C	Z	30.57	2
75	MP1C	Mx	0	2
76	MP2A	X	-48.636	2
77	MP2A	Z	28.08	2
78	MP2A	Mx	.0405	2
79	MP2B	X	-48.636	2
80	MP2B	Z	28.08	2
81	MP2B	Mx	-.0405	2
82	MP2C	X	-63.88	2
83	MP2C	Z	36.881	2
84	MP2C	Mx	0	2
85	MP1A	X	-95.293	.25
86	MP1A	Z	55.018	.25
87	MP1A	Mx	.0794	.25
88	MP1A	X	-95.293	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
89	MP1A	Z	55.018	3.75
90	MP1A	Mx	.0794	3.75
91	MP1B	X	-95.293	.25
92	MP1B	Z	55.018	.25
93	MP1B	Mx	-.0794	.25
94	MP1B	X	-95.293	3.75
95	MP1B	Z	55.018	3.75
96	MP1B	Mx	-.0794	3.75
97	MP1C	X	-105.044	.25
98	MP1C	Z	60.647	.25
99	MP1C	Mx	0	.25
100	MP1C	X	-105.044	3.75
101	MP1C	Z	60.647	3.75
102	MP1C	Mx	0	3.75
103	MP4A	X	-95.293	.25
104	MP4A	Z	55.018	.25
105	MP4A	Mx	.0794	.25
106	MP4A	X	-95.293	3.75
107	MP4A	Z	55.018	3.75
108	MP4A	Mx	.0794	3.75
109	MP4B	X	-95.293	.25
110	MP4B	Z	55.018	.25
111	MP4B	Mx	-.0794	.25
112	MP4B	X	-95.293	3.75
113	MP4B	Z	55.018	3.75
114	MP4B	Mx	-.0794	3.75
115	MP4C	X	-105.044	.25
116	MP4C	Z	60.647	.25
117	MP4C	Mx	0	.25
118	MP4C	X	-105.044	3.75
119	MP4C	Z	60.647	3.75
120	MP4C	Mx	0	3.75
121	M103	X	-82.327	1.5
122	M103	Z	47.532	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-14.366	5
2	MP2A	Z	0	5
3	MP2A	Mx	-.0072	5
4	MP2B	X	-29.034	5
5	MP2B	Z	0	5
6	MP2B	Mx	.0073	5
7	MP2C	X	-29.034	5
8	MP2C	Z	0	5
9	MP2C	Mx	.0073	5
10	MP2A	X	-45.954	.5
11	MP2A	Z	0	.5
12	MP2A	Mx	.0383	.5
13	MP2A	X	-45.954	5
14	MP2A	Z	0	5
15	MP2A	Mx	.0383	5
16	MP2B	X	-91.809	.5
17	MP2B	Z	0	.5
18	MP2B	Mx	.0114	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
19	MP2B	X	-91.809	5
20	MP2B	Z	0	5
21	MP2B	Mx	.0114	5
22	MP2C	X	-91.809	.5
23	MP2C	Z	0	.5
24	MP2C	Mx	-.0879	.5
25	MP2C	X	-91.809	5
26	MP2C	Z	0	5
27	MP2C	Mx	-.0879	5
28	MP2A	X	-105.352	.5
29	MP2A	Z	0	.5
30	MP2A	Mx	.0878	.5
31	MP2A	X	-105.352	5
32	MP2A	Z	0	5
33	MP2A	Mx	.0878	5
34	MP2B	X	-145.414	.5
35	MP2B	Z	0	.5
36	MP2B	Mx	-.1393	.5
37	MP2B	X	-145.414	5
38	MP2B	Z	0	5
39	MP2B	Mx	-.1393	5
40	MP2C	X	-145.414	.5
41	MP2C	Z	0	.5
42	MP2C	Mx	.0181	.5
43	MP2C	X	-145.414	5
44	MP2C	Z	0	5
45	MP2C	Mx	.0181	5
46	MP3A	X	-28.79	1
47	MP3A	Z	0	1
48	MP3A	Mx	.024	1
49	MP3A	X	-28.79	3
50	MP3A	Z	0	3
51	MP3A	Mx	.024	3
52	MP3B	X	-63.259	1
53	MP3B	Z	0	1
54	MP3B	Mx	-.0264	1
55	MP3B	X	-63.259	3
56	MP3B	Z	0	3
57	MP3B	Mx	-.0264	3
58	MP3C	X	-63.259	1
59	MP3C	Z	0	1
60	MP3C	Mx	-.0264	1
61	MP3C	X	-63.259	3
62	MP3C	Z	0	3
63	MP3C	Mx	-.0264	3
64	M135	X	-102.558	1.5
65	M135	Z	0	1.5
66	M135	Mx	0	1.5
67	MP1A	X	-41.023	2
68	MP1A	Z	0	2
69	MP1A	Mx	-.0205	2
70	MP1B	X	-56.111	2
71	MP1B	Z	0	2
72	MP1B	Mx	.014	2
73	MP1C	X	-56.111	2
74	MP1C	Z	0	2
75	MP1C	Mx	.014	2

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
76	MP2A	X	-50.293	2
77	MP2A	Z	0	2
78	MP2A	Mx	.0419	2
79	MP2B	X	-67.895	2
80	MP2B	Z	0	2
81	MP2B	Mx	-.0283	2
82	MP2C	X	-67.895	2
83	MP2C	Z	0	2
84	MP2C	Mx	-.0283	2
85	MP1A	X	-106.282	.25
86	MP1A	Z	0	.25
87	MP1A	Mx	.0886	.25
88	MP1A	X	-106.282	3.75
89	MP1A	Z	0	3.75
90	MP1A	Mx	.0886	3.75
91	MP1B	X	-117.541	.25
92	MP1B	Z	0	.25
93	MP1B	Mx	-.049	.25
94	MP1B	X	-117.541	3.75
95	MP1B	Z	0	3.75
96	MP1B	Mx	-.049	3.75
97	MP1C	X	-117.541	.25
98	MP1C	Z	0	.25
99	MP1C	Mx	-.049	.25
100	MP1C	X	-117.541	3.75
101	MP1C	Z	0	3.75
102	MP1C	Mx	-.049	3.75
103	MP4A	X	-106.282	.25
104	MP4A	Z	0	.25
105	MP4A	Mx	.0886	.25
106	MP4A	X	-106.282	3.75
107	MP4A	Z	0	3.75
108	MP4A	Mx	.0886	3.75
109	MP4B	X	-117.541	.25
110	MP4B	Z	0	.25
111	MP4B	Mx	-.049	.25
112	MP4B	X	-117.541	3.75
113	MP4B	Z	0	3.75
114	MP4B	Mx	-.049	3.75
115	MP4C	X	-117.541	.25
116	MP4C	Z	0	.25
117	MP4C	Mx	-.049	.25
118	MP4C	X	-117.541	3.75
119	MP4C	Z	0	3.75
120	MP4C	Mx	-.049	3.75
121	M103	X	-102.558	1.5
122	M103	Z	0	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-16.675	5
2	MP2A	Z	-9.628	5
3	MP2A	Mx	-.0083	5
4	MP2B	X	-29.378	5
5	MP2B	Z	-16.961	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
6	MP2B	Mx	0	5
7	MP2C	X	-16.675	5
8	MP2C	Z	-9.628	5
9	MP2C	Mx	.0083	5
10	MP2A	X	-53.034	.5
11	MP2A	Z	-30.619	.5
12	MP2A	Mx	.0251	.5
13	MP2A	X	-53.034	5
14	MP2A	Z	-30.619	5
15	MP2A	Mx	.0251	5
16	MP2B	X	-92.746	.5
17	MP2B	Z	-53.547	.5
18	MP2B	Mx	.0669	.5
19	MP2B	X	-92.746	5
20	MP2B	Z	-53.547	5
21	MP2B	Mx	.0669	5
22	MP2C	X	-53.034	.5
23	MP2C	Z	-30.619	.5
24	MP2C	Mx	-.0633	.5
25	MP2C	X	-53.034	5
26	MP2C	Z	-30.619	5
27	MP2C	Mx	-.0633	5
28	MP2A	X	-102.802	.5
29	MP2A	Z	-59.353	.5
30	MP2A	Mx	.1228	.5
31	MP2A	X	-102.802	5
32	MP2A	Z	-59.353	5
33	MP2A	Mx	.1228	5
34	MP2B	X	-137.497	.5
35	MP2B	Z	-79.384	.5
36	MP2B	Mx	-.0992	.5
37	MP2B	X	-137.497	5
38	MP2B	Z	-79.384	5
39	MP2B	Mx	-.0992	5
40	MP2C	X	-102.802	.5
41	MP2C	Z	-59.353	.5
42	MP2C	Mx	-.0486	.5
43	MP2C	X	-102.802	5
44	MP2C	Z	-59.353	5
45	MP2C	Mx	-.0486	5
46	MP3A	X	-34.883	1
47	MP3A	Z	-20.14	1
48	MP3A	Mx	.0291	1
49	MP3A	X	-34.883	3
50	MP3A	Z	-20.14	3
51	MP3A	Mx	.0291	3
52	MP3B	X	-64.734	1
53	MP3B	Z	-37.374	1
54	MP3B	Mx	0	1
55	MP3B	X	-64.734	3
56	MP3B	Z	-37.374	3
57	MP3B	Mx	0	3
58	MP3C	X	-34.883	1
59	MP3C	Z	-20.14	1
60	MP3C	Mx	-.0291	1
61	MP3C	X	-34.883	3
62	MP3C	Z	-20.14	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
63	MP3C	Mx	-.0291	3
64	M135	X	-101.799	1.5
65	M135	Z	-58.774	1.5
66	M135	Mx	0	1.5
67	MP1A	X	-39.883	2
68	MP1A	Z	-23.026	2
69	MP1A	Mx	-.0199	2
70	MP1B	X	-52.949	2
71	MP1B	Z	-30.57	2
72	MP1B	Mx	0	2
73	MP1C	X	-39.883	2
74	MP1C	Z	-23.026	2
75	MP1C	Mx	.0199	2
76	MP2A	X	-48.636	2
77	MP2A	Z	-28.08	2
78	MP2A	Mx	.0405	2
79	MP2B	X	-63.88	2
80	MP2B	Z	-36.881	2
81	MP2B	Mx	0	2
82	MP2C	X	-48.636	2
83	MP2C	Z	-28.08	2
84	MP2C	Mx	-.0405	2
85	MP1A	X	-95.293	.25
86	MP1A	Z	-55.018	.25
87	MP1A	Mx	.0794	.25
88	MP1A	X	-95.293	3.75
89	MP1A	Z	-55.018	3.75
90	MP1A	Mx	.0794	3.75
91	MP1B	X	-105.044	.25
92	MP1B	Z	-60.647	.25
93	MP1B	Mx	0	.25
94	MP1B	X	-105.044	3.75
95	MP1B	Z	-60.647	3.75
96	MP1B	Mx	0	3.75
97	MP1C	X	-95.293	.25
98	MP1C	Z	-55.018	.25
99	MP1C	Mx	-.0794	.25
100	MP1C	X	-95.293	3.75
101	MP1C	Z	-55.018	3.75
102	MP1C	Mx	-.0794	3.75
103	MP4A	X	-95.293	.25
104	MP4A	Z	-55.018	.25
105	MP4A	Mx	.0794	.25
106	MP4A	X	-95.293	3.75
107	MP4A	Z	-55.018	3.75
108	MP4A	Mx	.0794	3.75
109	MP4B	X	-105.044	.25
110	MP4B	Z	-60.647	.25
111	MP4B	Mx	0	.25
112	MP4B	X	-105.044	3.75
113	MP4B	Z	-60.647	3.75
114	MP4B	Mx	0	3.75
115	MP4C	X	-95.293	.25
116	MP4C	Z	-55.018	.25
117	MP4C	Mx	-.0794	.25
118	MP4C	X	-95.293	3.75
119	MP4C	Z	-55.018	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
120	MP4C	Mx	-.0794	3.75
121	M103	X	-101.799	1.5
122	M103	Z	-58.774	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-14.517	5
2	MP2A	Z	-25.144	5
3	MP2A	Mx	-.0073	5
4	MP2B	X	-14.517	5
5	MP2B	Z	-25.144	5
6	MP2B	Mx	-.0073	5
7	MP2C	X	-7.183	5
8	MP2C	Z	-12.441	5
9	MP2C	Mx	.0072	5
10	MP2A	X	-45.904	.5
11	MP2A	Z	-79.509	.5
12	MP2A	Mx	-.0114	.5
13	MP2A	X	-45.904	5
14	MP2A	Z	-79.509	5
15	MP2A	Mx	-.0114	5
16	MP2B	X	-45.904	.5
17	MP2B	Z	-79.509	.5
18	MP2B	Mx	.0879	.5
19	MP2B	X	-45.904	5
20	MP2B	Z	-79.509	5
21	MP2B	Mx	.0879	5
22	MP2C	X	-22.977	.5
23	MP2C	Z	-39.797	.5
24	MP2C	Mx	-.0383	.5
25	MP2C	X	-22.977	5
26	MP2C	Z	-39.797	5
27	MP2C	Mx	-.0383	5
28	MP2A	X	-72.707	.5
29	MP2A	Z	-125.932	.5
30	MP2A	Mx	.1393	.5
31	MP2A	X	-72.707	5
32	MP2A	Z	-125.932	5
33	MP2A	Mx	.1393	5
34	MP2B	X	-72.707	.5
35	MP2B	Z	-125.932	.5
36	MP2B	Mx	-.0181	.5
37	MP2B	X	-72.707	5
38	MP2B	Z	-125.932	5
39	MP2B	Mx	-.0181	5
40	MP2C	X	-52.676	.5
41	MP2C	Z	-91.237	.5
42	MP2C	Mx	-.0878	.5
43	MP2C	X	-52.676	5
44	MP2C	Z	-91.237	5
45	MP2C	Mx	-.0878	5
46	MP3A	X	-31.63	1
47	MP3A	Z	-54.784	1
48	MP3A	Mx	.0264	1
49	MP3A	X	-31.63	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
50	MP3A	Z	-54.784	3
51	MP3A	Mx	.0264	3
52	MP3B	X	-31.63	1
53	MP3B	Z	-54.784	1
54	MP3B	Mx	.0264	1
55	MP3B	X	-31.63	3
56	MP3B	Z	-54.784	3
57	MP3B	Mx	.0264	3
58	MP3C	X	-14.395	1
59	MP3C	Z	-24.932	1
60	MP3C	Mx	-.024	1
61	MP3C	X	-14.395	3
62	MP3C	Z	-24.932	3
63	MP3C	Mx	-.024	3
64	M135	X	-62.521	1.5
65	M135	Z	-108.289	1.5
66	M135	Mx	0	1.5
67	MP1A	X	-28.055	2
68	MP1A	Z	-48.594	2
69	MP1A	Mx	-.014	2
70	MP1B	X	-28.055	2
71	MP1B	Z	-48.594	2
72	MP1B	Mx	-.014	2
73	MP1C	X	-20.512	2
74	MP1C	Z	-35.527	2
75	MP1C	Mx	.0205	2
76	MP2A	X	-33.948	2
77	MP2A	Z	-58.799	2
78	MP2A	Mx	.0283	2
79	MP2B	X	-33.948	2
80	MP2B	Z	-58.799	2
81	MP2B	Mx	.0283	2
82	MP2C	X	-25.146	2
83	MP2C	Z	-43.555	2
84	MP2C	Mx	-.0419	2
85	MP1A	X	-58.771	.25
86	MP1A	Z	-101.794	.25
87	MP1A	Mx	.049	.25
88	MP1A	X	-58.771	3.75
89	MP1A	Z	-101.794	3.75
90	MP1A	Mx	.049	3.75
91	MP1B	X	-58.771	.25
92	MP1B	Z	-101.794	.25
93	MP1B	Mx	.049	.25
94	MP1B	X	-58.771	3.75
95	MP1B	Z	-101.794	3.75
96	MP1B	Mx	.049	3.75
97	MP1C	X	-53.141	.25
98	MP1C	Z	-92.043	.25
99	MP1C	Mx	-.0886	.25
100	MP1C	X	-53.141	3.75
101	MP1C	Z	-92.043	3.75
102	MP1C	Mx	-.0886	3.75
103	MP4A	X	-58.771	.25
104	MP4A	Z	-101.794	.25
105	MP4A	Mx	.049	.25
106	MP4A	X	-58.771	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
107	MP4A	Z	-101.794	3.75
108	MP4A	Mx	.049	3.75
109	MP4B	X	-58.771	.25
110	MP4B	Z	-101.794	.25
111	MP4B	Mx	.049	.25
112	MP4B	X	-58.771	3.75
113	MP4B	Z	-101.794	3.75
114	MP4B	Mx	.049	3.75
115	MP4C	X	-53.141	.25
116	MP4C	Z	-92.043	.25
117	MP4C	Mx	-.0886	.25
118	MP4C	X	-53.141	3.75
119	MP4C	Z	-92.043	3.75
120	MP4C	Mx	-.0886	3.75
121	M103	X	-62.521	1.5
122	M103	Z	-108.289	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	0	5
2	MP2A	Z	-8.536	5
3	MP2A	Mx	0	5
4	MP2B	X	0	5
5	MP2B	Z	-5.531	5
6	MP2B	Mx	-.0024	5
7	MP2C	X	0	5
8	MP2C	Z	-5.531	5
9	MP2C	Mx	.0024	5
10	MP2A	X	0	.5
11	MP2A	Z	-31.927	.5
12	MP2A	Mx	-.02	.5
13	MP2A	X	0	5
14	MP2A	Z	-31.927	5
15	MP2A	Mx	-.02	5
16	MP2B	X	0	.5
17	MP2B	Z	-24.792	.5
18	MP2B	Mx	.0256	.5
19	MP2B	X	0	5
20	MP2B	Z	-24.792	5
21	MP2B	Mx	.0256	5
22	MP2C	X	0	.5
23	MP2C	Z	-24.792	.5
24	MP2C	Mx	-.0101	.5
25	MP2C	X	0	5
26	MP2C	Z	-24.792	5
27	MP2C	Mx	-.0101	5
28	MP2A	X	0	.5
29	MP2A	Z	-31.927	.5
30	MP2A	Mx	.02	.5
31	MP2A	X	0	5
32	MP2A	Z	-31.927	5
33	MP2A	Mx	.02	5
34	MP2B	X	0	.5
35	MP2B	Z	-24.792	.5
36	MP2B	Mx	.0101	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
37	MP2B	X	0	5
38	MP2B	Z	-24.792	5
39	MP2B	Mx	.0101	5
40	MP2C	X	0	.5
41	MP2C	Z	-24.792	.5
42	MP2C	Mx	-.0256	.5
43	MP2C	X	0	5
44	MP2C	Z	-24.792	5
45	MP2C	Mx	-.0256	5
46	MP3A	X	0	1
47	MP3A	Z	-15.725	1
48	MP3A	Mx	0	1
49	MP3A	X	0	3
50	MP3A	Z	-15.725	3
51	MP3A	Mx	0	3
52	MP3B	X	0	1
53	MP3B	Z	-9.123	1
54	MP3B	Mx	.0066	1
55	MP3B	X	0	3
56	MP3B	Z	-9.123	3
57	MP3B	Mx	.0066	3
58	MP3C	X	0	1
59	MP3C	Z	-9.123	1
60	MP3C	Mx	-.0066	1
61	MP3C	X	0	3
62	MP3C	Z	-9.123	3
63	MP3C	Mx	-.0066	3
64	M135	X	0	1.5
65	M135	Z	-31.565	1.5
66	M135	Mx	0	1.5
67	MP1A	X	0	2
68	MP1A	Z	-16.584	2
69	MP1A	Mx	0	2
70	MP1B	X	0	2
71	MP1B	Z	-12.953	2
72	MP1B	Mx	-.0056	2
73	MP1C	X	0	2
74	MP1C	Z	-12.953	2
75	MP1C	Mx	.0056	2
76	MP2A	X	0	2
77	MP2A	Z	-16.584	2
78	MP2A	Mx	0	2
79	MP2B	X	0	2
80	MP2B	Z	-13.098	2
81	MP2B	Mx	.0095	2
82	MP2C	X	0	2
83	MP2C	Z	-13.098	2
84	MP2C	Mx	-.0095	2
85	MP1A	X	0	.25
86	MP1A	Z	-24.464	.25
87	MP1A	Mx	0	.25
88	MP1A	X	0	3.75
89	MP1A	Z	-24.464	3.75
90	MP1A	Mx	0	3.75
91	MP1B	X	0	.25
92	MP1B	Z	-22.428	.25
93	MP1B	Mx	.0162	.25

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
94	MP1B	X	0	3.75
95	MP1B	Z	-22.428	3.75
96	MP1B	Mx	.0162	3.75
97	MP1C	X	0	.25
98	MP1C	Z	-22.428	.25
99	MP1C	Mx	-.0162	.25
100	MP1C	X	0	3.75
101	MP1C	Z	-22.428	3.75
102	MP1C	Mx	-.0162	3.75
103	MP4A	X	0	.25
104	MP4A	Z	-24.464	.25
105	MP4A	Mx	0	.25
106	MP4A	X	0	3.75
107	MP4A	Z	-24.464	3.75
108	MP4A	Mx	0	3.75
109	MP4B	X	0	.25
110	MP4B	Z	-22.428	.25
111	MP4B	Mx	.0162	.25
112	MP4B	X	0	3.75
113	MP4B	Z	-22.428	3.75
114	MP4B	Mx	.0162	3.75
115	MP4C	X	0	.25
116	MP4C	Z	-22.428	.25
117	MP4C	Mx	-.0162	.25
118	MP4C	X	0	3.75
119	MP4C	Z	-22.428	3.75
120	MP4C	Mx	-.0162	3.75
121	M103	X	0	1.5
122	M103	Z	-31.565	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	3.767	5
2	MP2A	Z	-6.525	5
3	MP2A	Mx	.0019	5
4	MP2B	X	2.265	5
5	MP2B	Z	-3.923	5
6	MP2B	Mx	-.0023	5
7	MP2C	X	3.767	5
8	MP2C	Z	-6.525	5
9	MP2C	Mx	.0019	5
10	MP2A	X	14.774	.5
11	MP2A	Z	-25.59	.5
12	MP2A	Mx	-.0283	.5
13	MP2A	X	14.774	5
14	MP2A	Z	-25.59	5
15	MP2A	Mx	-.0283	5
16	MP2B	X	11.207	.5
17	MP2B	Z	-19.411	.5
18	MP2B	Mx	.0187	.5
19	MP2B	X	11.207	5
20	MP2B	Z	-19.411	5
21	MP2B	Mx	.0187	5
22	MP2C	X	14.774	.5
23	MP2C	Z	-25.59	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
24	MP2C	Mx	.0037	.5
25	MP2C	X	14.774	5
26	MP2C	Z	-25.59	5
27	MP2C	Mx	.0037	5
28	MP2A	X	14.774	.5
29	MP2A	Z	-25.59	.5
30	MP2A	Mx	.0037	.5
31	MP2A	X	14.774	5
32	MP2A	Z	-25.59	5
33	MP2A	Mx	.0037	5
34	MP2B	X	11.207	.5
35	MP2B	Z	-19.411	.5
36	MP2B	Mx	.0187	.5
37	MP2B	X	11.207	5
38	MP2B	Z	-19.411	5
39	MP2B	Mx	.0187	5
40	MP2C	X	14.774	.5
41	MP2C	Z	-25.59	.5
42	MP2C	Mx	-.0283	.5
43	MP2C	X	14.774	5
44	MP2C	Z	-25.59	5
45	MP2C	Mx	-.0283	5
46	MP3A	X	6.762	1
47	MP3A	Z	-11.712	1
48	MP3A	Mx	-.0056	1
49	MP3A	X	6.762	3
50	MP3A	Z	-11.712	3
51	MP3A	Mx	-.0056	3
52	MP3B	X	3.461	1
53	MP3B	Z	-5.994	1
54	MP3B	Mx	.0058	1
55	MP3B	X	3.461	3
56	MP3B	Z	-5.994	3
57	MP3B	Mx	.0058	3
58	MP3C	X	6.762	1
59	MP3C	Z	-11.712	1
60	MP3C	Mx	-.0056	1
61	MP3C	X	6.762	3
62	MP3C	Z	-11.712	3
63	MP3C	Mx	-.0056	3
64	M135	X	14.032	1.5
65	M135	Z	-24.304	1.5
66	M135	Mx	0	1.5
67	MP1A	X	7.687	2
68	MP1A	Z	-13.314	2
69	MP1A	Mx	.0038	2
70	MP1B	X	5.871	2
71	MP1B	Z	-10.169	2
72	MP1B	Mx	-.0059	2
73	MP1C	X	7.687	2
74	MP1C	Z	-13.314	2
75	MP1C	Mx	.0038	2
76	MP2A	X	7.711	2
77	MP2A	Z	-13.356	2
78	MP2A	Mx	-.0064	2
79	MP2B	X	5.968	2
80	MP2B	Z	-10.337	2

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
81	MP2B	Mx	.0099	2
82	MP2C	X	7.711	2
83	MP2C	Z	-13.356	2
84	MP2C	Mx	-.0064	2
85	MP1A	X	11.893	.25
86	MP1A	Z	-20.599	.25
87	MP1A	Mx	-.0099	.25
88	MP1A	X	11.893	3.75
89	MP1A	Z	-20.599	3.75
90	MP1A	Mx	-.0099	3.75
91	MP1B	X	10.874	.25
92	MP1B	Z	-18.835	.25
93	MP1B	Mx	.0181	.25
94	MP1B	X	10.874	3.75
95	MP1B	Z	-18.835	3.75
96	MP1B	Mx	.0181	3.75
97	MP1C	X	11.893	.25
98	MP1C	Z	-20.599	.25
99	MP1C	Mx	-.0099	.25
100	MP1C	X	11.893	3.75
101	MP1C	Z	-20.599	3.75
102	MP1C	Mx	-.0099	3.75
103	MP4A	X	11.893	.25
104	MP4A	Z	-20.599	.25
105	MP4A	Mx	-.0099	.25
106	MP4A	X	11.893	3.75
107	MP4A	Z	-20.599	3.75
108	MP4A	Mx	-.0099	3.75
109	MP4B	X	10.874	.25
110	MP4B	Z	-18.835	.25
111	MP4B	Mx	.0181	.25
112	MP4B	X	10.874	3.75
113	MP4B	Z	-18.835	3.75
114	MP4B	Mx	.0181	3.75
115	MP4C	X	11.893	.25
116	MP4C	Z	-20.599	.25
117	MP4C	Mx	-.0099	.25
118	MP4C	X	11.893	3.75
119	MP4C	Z	-20.599	3.75
120	MP4C	Mx	-.0099	3.75
121	M103	X	14.032	1.5
122	M103	Z	-24.304	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	4.79	5
2	MP2A	Z	-2.766	5
3	MP2A	Mx	.0024	5
4	MP2B	X	4.79	5
5	MP2B	Z	-2.766	5
6	MP2B	Mx	-.0024	5
7	MP2C	X	7.393	5
8	MP2C	Z	-4.268	5
9	MP2C	Mx	0	5
10	MP2A	X	21.471	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
11	MP2A	Z	-12.396	.5
12	MP2A	Mx	-.0256	.5
13	MP2A	X	21.471	5
14	MP2A	Z	-12.396	5
15	MP2A	Mx	-.0256	5
16	MP2B	X	21.471	.5
17	MP2B	Z	-12.396	.5
18	MP2B	Mx	.0101	.5
19	MP2B	X	21.471	5
20	MP2B	Z	-12.396	5
21	MP2B	Mx	.0101	5
22	MP2C	X	27.649	.5
23	MP2C	Z	-15.963	.5
24	MP2C	Mx	.02	.5
25	MP2C	X	27.649	5
26	MP2C	Z	-15.963	5
27	MP2C	Mx	.02	5
28	MP2A	X	21.471	.5
29	MP2A	Z	-12.396	.5
30	MP2A	Mx	-.0101	.5
31	MP2A	X	21.471	5
32	MP2A	Z	-12.396	5
33	MP2A	Mx	-.0101	5
34	MP2B	X	21.471	.5
35	MP2B	Z	-12.396	.5
36	MP2B	Mx	.0256	.5
37	MP2B	X	21.471	5
38	MP2B	Z	-12.396	5
39	MP2B	Mx	.0256	5
40	MP2C	X	27.649	.5
41	MP2C	Z	-15.963	.5
42	MP2C	Mx	-.02	.5
43	MP2C	X	27.649	5
44	MP2C	Z	-15.963	5
45	MP2C	Mx	-.02	5
46	MP3A	X	7.9	1
47	MP3A	Z	-4.561	1
48	MP3A	Mx	-.0066	1
49	MP3A	X	7.9	3
50	MP3A	Z	-4.561	3
51	MP3A	Mx	-.0066	3
52	MP3B	X	7.9	1
53	MP3B	Z	-4.561	1
54	MP3B	Mx	.0066	1
55	MP3B	X	7.9	3
56	MP3B	Z	-4.561	3
57	MP3B	Mx	.0066	3
58	MP3C	X	13.619	1
59	MP3C	Z	-7.863	1
60	MP3C	Mx	0	1
61	MP3C	X	13.619	3
62	MP3C	Z	-7.863	3
63	MP3C	Mx	0	3
64	M135	X	22.788	1.5
65	M135	Z	-13.156	1.5
66	M135	Mx	0	1.5
67	MP1A	X	11.218	2

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
68	MP1A	Z	-6.476	2
69	MP1A	Mx	.0056	2
70	MP1B	X	11.218	2
71	MP1B	Z	-6.476	2
72	MP1B	Mx	-.0056	2
73	MP1C	X	14.362	2
74	MP1C	Z	-8.292	2
75	MP1C	Mx	0	2
76	MP2A	X	11.343	2
77	MP2A	Z	-6.549	2
78	MP2A	Mx	-.0095	2
79	MP2B	X	11.343	2
80	MP2B	Z	-6.549	2
81	MP2B	Mx	.0095	2
82	MP2C	X	14.362	2
83	MP2C	Z	-8.292	2
84	MP2C	Mx	0	2
85	MP1A	X	19.423	.25
86	MP1A	Z	-11.214	.25
87	MP1A	Mx	-.0162	.25
88	MP1A	X	19.423	3.75
89	MP1A	Z	-11.214	3.75
90	MP1A	Mx	-.0162	3.75
91	MP1B	X	19.423	.25
92	MP1B	Z	-11.214	.25
93	MP1B	Mx	.0162	.25
94	MP1B	X	19.423	3.75
95	MP1B	Z	-11.214	3.75
96	MP1B	Mx	.0162	3.75
97	MP1C	X	21.186	.25
98	MP1C	Z	-12.232	.25
99	MP1C	Mx	0	.25
100	MP1C	X	21.186	3.75
101	MP1C	Z	-12.232	3.75
102	MP1C	Mx	0	3.75
103	MP4A	X	19.423	.25
104	MP4A	Z	-11.214	.25
105	MP4A	Mx	-.0162	.25
106	MP4A	X	19.423	3.75
107	MP4A	Z	-11.214	3.75
108	MP4A	Mx	-.0162	3.75
109	MP4B	X	19.423	.25
110	MP4B	Z	-11.214	.25
111	MP4B	Mx	.0162	.25
112	MP4B	X	19.423	3.75
113	MP4B	Z	-11.214	3.75
114	MP4B	Mx	.0162	3.75
115	MP4C	X	21.186	.25
116	MP4C	Z	-12.232	.25
117	MP4C	Mx	0	.25
118	MP4C	X	21.186	3.75
119	MP4C	Z	-12.232	3.75
120	MP4C	Mx	0	3.75
121	M103	X	22.788	1.5
122	M103	Z	-13.156	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	4.53	5
2	MP2A	Z	0	5
3	MP2A	Mx	.0023	5
4	MP2B	X	7.535	5
5	MP2B	Z	0	5
6	MP2B	Mx	-.0019	5
7	MP2C	X	7.535	5
8	MP2C	Z	0	5
9	MP2C	Mx	-.0019	5
10	MP2A	X	22.414	.5
11	MP2A	Z	0	.5
12	MP2A	Mx	-.0187	.5
13	MP2A	X	22.414	5
14	MP2A	Z	0	5
15	MP2A	Mx	-.0187	5
16	MP2B	X	29.549	.5
17	MP2B	Z	0	.5
18	MP2B	Mx	-.0037	.5
19	MP2B	X	29.549	5
20	MP2B	Z	0	5
21	MP2B	Mx	-.0037	5
22	MP2C	X	29.549	.5
23	MP2C	Z	0	.5
24	MP2C	Mx	.0283	.5
25	MP2C	X	29.549	5
26	MP2C	Z	0	5
27	MP2C	Mx	.0283	5
28	MP2A	X	22.414	.5
29	MP2A	Z	0	.5
30	MP2A	Mx	-.0187	.5
31	MP2A	X	22.414	5
32	MP2A	Z	0	5
33	MP2A	Mx	-.0187	5
34	MP2B	X	29.549	.5
35	MP2B	Z	0	.5
36	MP2B	Mx	.0283	.5
37	MP2B	X	29.549	5
38	MP2B	Z	0	5
39	MP2B	Mx	.0283	5
40	MP2C	X	29.549	.5
41	MP2C	Z	0	.5
42	MP2C	Mx	-.0037	.5
43	MP2C	X	29.549	5
44	MP2C	Z	0	5
45	MP2C	Mx	-.0037	5
46	MP3A	X	6.922	1
47	MP3A	Z	0	1
48	MP3A	Mx	-.0058	1
49	MP3A	X	6.922	3
50	MP3A	Z	0	3
51	MP3A	Mx	-.0058	3
52	MP3B	X	13.524	1
53	MP3B	Z	0	1
54	MP3B	Mx	.0056	1
55	MP3B	X	13.524	3
56	MP3B	Z	0	3
57	MP3B	Mx	.0056	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
58	MP3C	X	13.524	1
59	MP3C	Z	0	1
60	MP3C	Mx	.0056	1
61	MP3C	X	13.524	3
62	MP3C	Z	0	3
63	MP3C	Mx	.0056	3
64	M135	X	28.064	1.5
65	M135	Z	0	1.5
66	M135	Mx	0	1.5
67	MP1A	X	11.743	2
68	MP1A	Z	0	2
69	MP1A	Mx	.0059	2
70	MP1B	X	15.373	2
71	MP1B	Z	0	2
72	MP1B	Mx	-.0038	2
73	MP1C	X	15.373	2
74	MP1C	Z	0	2
75	MP1C	Mx	-.0038	2
76	MP2A	X	11.936	2
77	MP2A	Z	0	2
78	MP2A	Mx	-.0099	2
79	MP2B	X	15.422	2
80	MP2B	Z	0	2
81	MP2B	Mx	.0064	2
82	MP2C	X	15.422	2
83	MP2C	Z	0	2
84	MP2C	Mx	.0064	2
85	MP1A	X	21.749	.25
86	MP1A	Z	0	.25
87	MP1A	Mx	-.0181	.25
88	MP1A	X	21.749	3.75
89	MP1A	Z	0	3.75
90	MP1A	Mx	-.0181	3.75
91	MP1B	X	23.785	.25
92	MP1B	Z	0	.25
93	MP1B	Mx	.0099	.25
94	MP1B	X	23.785	3.75
95	MP1B	Z	0	3.75
96	MP1B	Mx	.0099	3.75
97	MP1C	X	23.785	.25
98	MP1C	Z	0	.25
99	MP1C	Mx	.0099	.25
100	MP1C	X	23.785	3.75
101	MP1C	Z	0	3.75
102	MP1C	Mx	.0099	3.75
103	MP4A	X	21.749	.25
104	MP4A	Z	0	.25
105	MP4A	Mx	-.0181	.25
106	MP4A	X	21.749	3.75
107	MP4A	Z	0	3.75
108	MP4A	Mx	-.0181	3.75
109	MP4B	X	23.785	.25
110	MP4B	Z	0	.25
111	MP4B	Mx	.0099	.25
112	MP4B	X	23.785	3.75
113	MP4B	Z	0	3.75
114	MP4B	Mx	.0099	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
115	MP4C	X	23.785	.25
116	MP4C	Z	0	.25
117	MP4C	Mx	.0099	.25
118	MP4C	X	23.785	3.75
119	MP4C	Z	0	3.75
120	MP4C	Mx	.0099	3.75
121	M103	X	28.064	1.5
122	M103	Z	0	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	4.79	5
2	MP2A	Z	2.766	5
3	MP2A	Mx	.0024	5
4	MP2B	X	7.393	5
5	MP2B	Z	4.268	5
6	MP2B	Mx	0	5
7	MP2C	X	4.79	5
8	MP2C	Z	2.766	5
9	MP2C	Mx	-.0024	5
10	MP2A	X	21.471	.5
11	MP2A	Z	12.396	.5
12	MP2A	Mx	-.0101	.5
13	MP2A	X	21.471	5
14	MP2A	Z	12.396	5
15	MP2A	Mx	-.0101	5
16	MP2B	X	27.649	.5
17	MP2B	Z	15.963	.5
18	MP2B	Mx	-.02	.5
19	MP2B	X	27.649	5
20	MP2B	Z	15.963	5
21	MP2B	Mx	-.02	5
22	MP2C	X	21.471	.5
23	MP2C	Z	12.396	.5
24	MP2C	Mx	.0256	.5
25	MP2C	X	21.471	5
26	MP2C	Z	12.396	5
27	MP2C	Mx	.0256	5
28	MP2A	X	21.471	.5
29	MP2A	Z	12.396	.5
30	MP2A	Mx	-.0256	.5
31	MP2A	X	21.471	5
32	MP2A	Z	12.396	5
33	MP2A	Mx	-.0256	5
34	MP2B	X	27.649	.5
35	MP2B	Z	15.963	.5
36	MP2B	Mx	.02	.5
37	MP2B	X	27.649	5
38	MP2B	Z	15.963	5
39	MP2B	Mx	.02	5
40	MP2C	X	21.471	.5
41	MP2C	Z	12.396	.5
42	MP2C	Mx	.0101	.5
43	MP2C	X	21.471	5
44	MP2C	Z	12.396	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
45	MP2C	Mx	.0101	5
46	MP3A	X	7.9	1
47	MP3A	Z	4.561	1
48	MP3A	Mx	-.0066	1
49	MP3A	X	7.9	3
50	MP3A	Z	4.561	3
51	MP3A	Mx	-.0066	3
52	MP3B	X	13.619	1
53	MP3B	Z	7.863	1
54	MP3B	Mx	0	1
55	MP3B	X	13.619	3
56	MP3B	Z	7.863	3
57	MP3B	Mx	0	3
58	MP3C	X	7.9	1
59	MP3C	Z	4.561	1
60	MP3C	Mx	.0066	1
61	MP3C	X	7.9	3
62	MP3C	Z	4.561	3
63	MP3C	Mx	.0066	3
64	M135	X	27.336	1.5
65	M135	Z	15.783	1.5
66	M135	Mx	0	1.5
67	MP1A	X	11.218	2
68	MP1A	Z	6.476	2
69	MP1A	Mx	.0056	2
70	MP1B	X	14.362	2
71	MP1B	Z	8.292	2
72	MP1B	Mx	0	2
73	MP1C	X	11.218	2
74	MP1C	Z	6.476	2
75	MP1C	Mx	-.0056	2
76	MP2A	X	11.343	2
77	MP2A	Z	6.549	2
78	MP2A	Mx	-.0095	2
79	MP2B	X	14.362	2
80	MP2B	Z	8.292	2
81	MP2B	Mx	0	2
82	MP2C	X	11.343	2
83	MP2C	Z	6.549	2
84	MP2C	Mx	.0095	2
85	MP1A	X	19.423	.25
86	MP1A	Z	11.214	.25
87	MP1A	Mx	-.0162	.25
88	MP1A	X	19.423	3.75
89	MP1A	Z	11.214	3.75
90	MP1A	Mx	-.0162	3.75
91	MP1B	X	21.186	.25
92	MP1B	Z	12.232	.25
93	MP1B	Mx	0	.25
94	MP1B	X	21.186	3.75
95	MP1B	Z	12.232	3.75
96	MP1B	Mx	0	3.75
97	MP1C	X	19.423	.25
98	MP1C	Z	11.214	.25
99	MP1C	Mx	.0162	.25
100	MP1C	X	19.423	3.75
101	MP1C	Z	11.214	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
102	MP1C	Mx	.0162	3.75
103	MP4A	X	19.423	.25
104	MP4A	Z	11.214	.25
105	MP4A	Mx	-.0162	.25
106	MP4A	X	19.423	3.75
107	MP4A	Z	11.214	3.75
108	MP4A	Mx	-.0162	3.75
109	MP4B	X	21.186	.25
110	MP4B	Z	12.232	.25
111	MP4B	Mx	0	.25
112	MP4B	X	21.186	3.75
113	MP4B	Z	12.232	3.75
114	MP4B	Mx	0	3.75
115	MP4C	X	19.423	.25
116	MP4C	Z	11.214	.25
117	MP4C	Mx	.0162	.25
118	MP4C	X	19.423	3.75
119	MP4C	Z	11.214	3.75
120	MP4C	Mx	.0162	3.75
121	M103	X	27.336	1.5
122	M103	Z	15.783	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	3.767	5
2	MP2A	Z	6.525	5
3	MP2A	Mx	.0019	5
4	MP2B	X	3.767	5
5	MP2B	Z	6.525	5
6	MP2B	Mx	.0019	5
7	MP2C	X	2.265	5
8	MP2C	Z	3.923	5
9	MP2C	Mx	-.0023	5
10	MP2A	X	14.774	.5
11	MP2A	Z	25.59	.5
12	MP2A	Mx	.0037	.5
13	MP2A	X	14.774	5
14	MP2A	Z	25.59	5
15	MP2A	Mx	.0037	5
16	MP2B	X	14.774	.5
17	MP2B	Z	25.59	.5
18	MP2B	Mx	-.0283	.5
19	MP2B	X	14.774	5
20	MP2B	Z	25.59	5
21	MP2B	Mx	-.0283	5
22	MP2C	X	11.207	.5
23	MP2C	Z	19.411	.5
24	MP2C	Mx	.0187	.5
25	MP2C	X	11.207	5
26	MP2C	Z	19.411	5
27	MP2C	Mx	.0187	5
28	MP2A	X	14.774	.5
29	MP2A	Z	25.59	.5
30	MP2A	Mx	-.0283	.5
31	MP2A	X	14.774	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
32	MP2A	Z	25.59	5
33	MP2A	Mx	-.0283	5
34	MP2B	X	14.774	.5
35	MP2B	Z	25.59	.5
36	MP2B	Mx	.0037	.5
37	MP2B	X	14.774	5
38	MP2B	Z	25.59	5
39	MP2B	Mx	.0037	5
40	MP2C	X	11.207	.5
41	MP2C	Z	19.411	.5
42	MP2C	Mx	.0187	.5
43	MP2C	X	11.207	5
44	MP2C	Z	19.411	5
45	MP2C	Mx	.0187	5
46	MP3A	X	6.762	1
47	MP3A	Z	11.712	1
48	MP3A	Mx	-.0056	1
49	MP3A	X	6.762	3
50	MP3A	Z	11.712	3
51	MP3A	Mx	-.0056	3
52	MP3B	X	6.762	1
53	MP3B	Z	11.712	1
54	MP3B	Mx	-.0056	1
55	MP3B	X	6.762	3
56	MP3B	Z	11.712	3
57	MP3B	Mx	-.0056	3
58	MP3C	X	3.461	1
59	MP3C	Z	5.994	1
60	MP3C	Mx	.0058	1
61	MP3C	X	3.461	3
62	MP3C	Z	5.994	3
63	MP3C	Mx	.0058	3
64	M135	X	16.658	1.5
65	M135	Z	28.852	1.5
66	M135	Mx	0	1.5
67	MP1A	X	7.687	2
68	MP1A	Z	13.314	2
69	MP1A	Mx	.0038	2
70	MP1B	X	7.687	2
71	MP1B	Z	13.314	2
72	MP1B	Mx	.0038	2
73	MP1C	X	5.871	2
74	MP1C	Z	10.169	2
75	MP1C	Mx	-.0059	2
76	MP2A	X	7.711	2
77	MP2A	Z	13.356	2
78	MP2A	Mx	-.0064	2
79	MP2B	X	7.711	2
80	MP2B	Z	13.356	2
81	MP2B	Mx	-.0064	2
82	MP2C	X	5.968	2
83	MP2C	Z	10.337	2
84	MP2C	Mx	.0099	2
85	MP1A	X	11.893	.25
86	MP1A	Z	20.599	.25
87	MP1A	Mx	-.0099	.25
88	MP1A	X	11.893	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
89	MP1A	Z	20.599	3.75
90	MP1A	Mx	-.0099	3.75
91	MP1B	X	11.893	.25
92	MP1B	Z	20.599	.25
93	MP1B	Mx	-.0099	.25
94	MP1B	X	11.893	3.75
95	MP1B	Z	20.599	3.75
96	MP1B	Mx	-.0099	3.75
97	MP1C	X	10.874	.25
98	MP1C	Z	18.835	.25
99	MP1C	Mx	.0181	.25
100	MP1C	X	10.874	3.75
101	MP1C	Z	18.835	3.75
102	MP1C	Mx	.0181	3.75
103	MP4A	X	11.893	.25
104	MP4A	Z	20.599	.25
105	MP4A	Mx	-.0099	.25
106	MP4A	X	11.893	3.75
107	MP4A	Z	20.599	3.75
108	MP4A	Mx	-.0099	3.75
109	MP4B	X	11.893	.25
110	MP4B	Z	20.599	.25
111	MP4B	Mx	-.0099	.25
112	MP4B	X	11.893	3.75
113	MP4B	Z	20.599	3.75
114	MP4B	Mx	-.0099	3.75
115	MP4C	X	10.874	.25
116	MP4C	Z	18.835	.25
117	MP4C	Mx	.0181	.25
118	MP4C	X	10.874	3.75
119	MP4C	Z	18.835	3.75
120	MP4C	Mx	.0181	3.75
121	M103	X	16.658	1.5
122	M103	Z	28.852	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	0	5
2	MP2A	Z	8.536	5
3	MP2A	Mx	0	5
4	MP2B	X	0	5
5	MP2B	Z	5.531	5
6	MP2B	Mx	.0024	5
7	MP2C	X	0	5
8	MP2C	Z	5.531	5
9	MP2C	Mx	-.0024	5
10	MP2A	X	0	.5
11	MP2A	Z	31.927	.5
12	MP2A	Mx	.02	.5
13	MP2A	X	0	5
14	MP2A	Z	31.927	5
15	MP2A	Mx	.02	5
16	MP2B	X	0	.5
17	MP2B	Z	24.792	.5
18	MP2B	Mx	-.0256	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
19	MP2B	X	0	5
20	MP2B	Z	24.792	5
21	MP2B	Mx	-.0256	5
22	MP2C	X	0	.5
23	MP2C	Z	24.792	.5
24	MP2C	Mx	.0101	.5
25	MP2C	X	0	5
26	MP2C	Z	24.792	5
27	MP2C	Mx	.0101	5
28	MP2A	X	0	.5
29	MP2A	Z	31.927	.5
30	MP2A	Mx	-.02	.5
31	MP2A	X	0	5
32	MP2A	Z	31.927	5
33	MP2A	Mx	-.02	5
34	MP2B	X	0	.5
35	MP2B	Z	24.792	.5
36	MP2B	Mx	-.0101	.5
37	MP2B	X	0	5
38	MP2B	Z	24.792	5
39	MP2B	Mx	-.0101	5
40	MP2C	X	0	.5
41	MP2C	Z	24.792	.5
42	MP2C	Mx	.0256	.5
43	MP2C	X	0	5
44	MP2C	Z	24.792	5
45	MP2C	Mx	.0256	5
46	MP3A	X	0	1
47	MP3A	Z	15.725	1
48	MP3A	Mx	0	1
49	MP3A	X	0	3
50	MP3A	Z	15.725	3
51	MP3A	Mx	0	3
52	MP3B	X	0	1
53	MP3B	Z	9.123	1
54	MP3B	Mx	-.0066	1
55	MP3B	X	0	3
56	MP3B	Z	9.123	3
57	MP3B	Mx	-.0066	3
58	MP3C	X	0	1
59	MP3C	Z	9.123	1
60	MP3C	Mx	.0066	1
61	MP3C	X	0	3
62	MP3C	Z	9.123	3
63	MP3C	Mx	.0066	3
64	M135	X	0	1.5
65	M135	Z	31.565	1.5
66	M135	Mx	0	1.5
67	MP1A	X	0	2
68	MP1A	Z	16.584	2
69	MP1A	Mx	0	2
70	MP1B	X	0	2
71	MP1B	Z	12.953	2
72	MP1B	Mx	.0056	2
73	MP1C	X	0	2
74	MP1C	Z	12.953	2
75	MP1C	Mx	-.0056	2

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
76	MP2A	X	0	2
77	MP2A	Z	16.584	2
78	MP2A	Mx	0	2
79	MP2B	X	0	2
80	MP2B	Z	13.098	2
81	MP2B	Mx	-.0095	2
82	MP2C	X	0	2
83	MP2C	Z	13.098	2
84	MP2C	Mx	.0095	2
85	MP1A	X	0	.25
86	MP1A	Z	24.464	.25
87	MP1A	Mx	0	.25
88	MP1A	X	0	3.75
89	MP1A	Z	24.464	3.75
90	MP1A	Mx	0	3.75
91	MP1B	X	0	.25
92	MP1B	Z	22.428	.25
93	MP1B	Mx	-.0162	.25
94	MP1B	X	0	3.75
95	MP1B	Z	22.428	3.75
96	MP1B	Mx	-.0162	3.75
97	MP1C	X	0	.25
98	MP1C	Z	22.428	.25
99	MP1C	Mx	.0162	.25
100	MP1C	X	0	3.75
101	MP1C	Z	22.428	3.75
102	MP1C	Mx	.0162	3.75
103	MP4A	X	0	.25
104	MP4A	Z	24.464	.25
105	MP4A	Mx	0	.25
106	MP4A	X	0	3.75
107	MP4A	Z	24.464	3.75
108	MP4A	Mx	0	3.75
109	MP4B	X	0	.25
110	MP4B	Z	22.428	.25
111	MP4B	Mx	-.0162	.25
112	MP4B	X	0	3.75
113	MP4B	Z	22.428	3.75
114	MP4B	Mx	-.0162	3.75
115	MP4C	X	0	.25
116	MP4C	Z	22.428	.25
117	MP4C	Mx	.0162	.25
118	MP4C	X	0	3.75
119	MP4C	Z	22.428	3.75
120	MP4C	Mx	.0162	3.75
121	M103	X	0	1.5
122	M103	Z	31.565	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-3.767	5
2	MP2A	Z	6.525	5
3	MP2A	Mx	-.0019	5
4	MP2B	X	-2.265	5
5	MP2B	Z	3.923	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
6	MP2B	Mx	.0023	5
7	MP2C	X	-3.767	5
8	MP2C	Z	6.525	5
9	MP2C	Mx	-.0019	5
10	MP2A	X	-14.774	.5
11	MP2A	Z	25.59	.5
12	MP2A	Mx	.0283	.5
13	MP2A	X	-14.774	5
14	MP2A	Z	25.59	5
15	MP2A	Mx	.0283	5
16	MP2B	X	-11.207	.5
17	MP2B	Z	19.411	.5
18	MP2B	Mx	-.0187	.5
19	MP2B	X	-11.207	5
20	MP2B	Z	19.411	5
21	MP2B	Mx	-.0187	5
22	MP2C	X	-14.774	.5
23	MP2C	Z	25.59	.5
24	MP2C	Mx	-.0037	.5
25	MP2C	X	-14.774	5
26	MP2C	Z	25.59	5
27	MP2C	Mx	-.0037	5
28	MP2A	X	-14.774	.5
29	MP2A	Z	25.59	.5
30	MP2A	Mx	-.0037	.5
31	MP2A	X	-14.774	5
32	MP2A	Z	25.59	5
33	MP2A	Mx	-.0037	5
34	MP2B	X	-11.207	.5
35	MP2B	Z	19.411	.5
36	MP2B	Mx	-.0187	.5
37	MP2B	X	-11.207	5
38	MP2B	Z	19.411	5
39	MP2B	Mx	-.0187	5
40	MP2C	X	-14.774	.5
41	MP2C	Z	25.59	.5
42	MP2C	Mx	.0283	.5
43	MP2C	X	-14.774	5
44	MP2C	Z	25.59	5
45	MP2C	Mx	.0283	5
46	MP3A	X	-6.762	1
47	MP3A	Z	11.712	1
48	MP3A	Mx	.0056	1
49	MP3A	X	-6.762	3
50	MP3A	Z	11.712	3
51	MP3A	Mx	.0056	3
52	MP3B	X	-3.461	1
53	MP3B	Z	5.994	1
54	MP3B	Mx	-.0058	1
55	MP3B	X	-3.461	3
56	MP3B	Z	5.994	3
57	MP3B	Mx	-.0058	3
58	MP3C	X	-6.762	1
59	MP3C	Z	11.712	1
60	MP3C	Mx	.0056	1
61	MP3C	X	-6.762	3
62	MP3C	Z	11.712	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
63	MP3C	Mx	.0056	3
64	M135	X	-14.032	1.5
65	M135	Z	24.304	1.5
66	M135	Mx	0	1.5
67	MP1A	X	-7.687	2
68	MP1A	Z	13.314	2
69	MP1A	Mx	-.0038	2
70	MP1B	X	-5.871	2
71	MP1B	Z	10.169	2
72	MP1B	Mx	.0059	2
73	MP1C	X	-7.687	2
74	MP1C	Z	13.314	2
75	MP1C	Mx	-.0038	2
76	MP2A	X	-7.711	2
77	MP2A	Z	13.356	2
78	MP2A	Mx	.0064	2
79	MP2B	X	-5.968	2
80	MP2B	Z	10.337	2
81	MP2B	Mx	-.0099	2
82	MP2C	X	-7.711	2
83	MP2C	Z	13.356	2
84	MP2C	Mx	.0064	2
85	MP1A	X	-11.893	.25
86	MP1A	Z	20.599	.25
87	MP1A	Mx	.0099	.25
88	MP1A	X	-11.893	3.75
89	MP1A	Z	20.599	3.75
90	MP1A	Mx	.0099	3.75
91	MP1B	X	-10.874	.25
92	MP1B	Z	18.835	.25
93	MP1B	Mx	-.0181	.25
94	MP1B	X	-10.874	3.75
95	MP1B	Z	18.835	3.75
96	MP1B	Mx	-.0181	3.75
97	MP1C	X	-11.893	.25
98	MP1C	Z	20.599	.25
99	MP1C	Mx	.0099	.25
100	MP1C	X	-11.893	3.75
101	MP1C	Z	20.599	3.75
102	MP1C	Mx	.0099	3.75
103	MP4A	X	-11.893	.25
104	MP4A	Z	20.599	.25
105	MP4A	Mx	.0099	.25
106	MP4A	X	-11.893	3.75
107	MP4A	Z	20.599	3.75
108	MP4A	Mx	.0099	3.75
109	MP4B	X	-10.874	.25
110	MP4B	Z	18.835	.25
111	MP4B	Mx	-.0181	.25
112	MP4B	X	-10.874	3.75
113	MP4B	Z	18.835	3.75
114	MP4B	Mx	-.0181	3.75
115	MP4C	X	-11.893	.25
116	MP4C	Z	20.599	.25
117	MP4C	Mx	.0099	.25
118	MP4C	X	-11.893	3.75
119	MP4C	Z	20.599	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
120	MP4C	Mx	.0099	3.75
121	M103	X	-14.032	1.5
122	M103	Z	24.304	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-4.79	5
2	MP2A	Z	2.766	5
3	MP2A	Mx	-.0024	5
4	MP2B	X	-4.79	5
5	MP2B	Z	2.766	5
6	MP2B	Mx	.0024	5
7	MP2C	X	-7.393	5
8	MP2C	Z	4.268	5
9	MP2C	Mx	0	5
10	MP2A	X	-21.471	.5
11	MP2A	Z	12.396	.5
12	MP2A	Mx	.0256	.5
13	MP2A	X	-21.471	5
14	MP2A	Z	12.396	5
15	MP2A	Mx	.0256	5
16	MP2B	X	-21.471	.5
17	MP2B	Z	12.396	.5
18	MP2B	Mx	-.0101	.5
19	MP2B	X	-21.471	5
20	MP2B	Z	12.396	5
21	MP2B	Mx	-.0101	5
22	MP2C	X	-27.649	.5
23	MP2C	Z	15.963	.5
24	MP2C	Mx	-.02	.5
25	MP2C	X	-27.649	5
26	MP2C	Z	15.963	5
27	MP2C	Mx	-.02	5
28	MP2A	X	-21.471	.5
29	MP2A	Z	12.396	.5
30	MP2A	Mx	.0101	.5
31	MP2A	X	-21.471	5
32	MP2A	Z	12.396	5
33	MP2A	Mx	.0101	5
34	MP2B	X	-21.471	.5
35	MP2B	Z	12.396	.5
36	MP2B	Mx	-.0256	.5
37	MP2B	X	-21.471	5
38	MP2B	Z	12.396	5
39	MP2B	Mx	-.0256	5
40	MP2C	X	-27.649	.5
41	MP2C	Z	15.963	.5
42	MP2C	Mx	.02	.5
43	MP2C	X	-27.649	5
44	MP2C	Z	15.963	5
45	MP2C	Mx	.02	5
46	MP3A	X	-7.9	1
47	MP3A	Z	4.561	1
48	MP3A	Mx	.0066	1
49	MP3A	X	-7.9	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
50	MP3A	Z	4.561	3
51	MP3A	Mx	.0066	3
52	MP3B	X	-7.9	1
53	MP3B	Z	4.561	1
54	MP3B	Mx	-.0066	1
55	MP3B	X	-7.9	3
56	MP3B	Z	4.561	3
57	MP3B	Mx	-.0066	3
58	MP3C	X	-13.619	1
59	MP3C	Z	7.863	1
60	MP3C	Mx	0	1
61	MP3C	X	-13.619	3
62	MP3C	Z	7.863	3
63	MP3C	Mx	0	3
64	M135	X	-22.788	1.5
65	M135	Z	13.156	1.5
66	M135	Mx	0	1.5
67	MP1A	X	-11.218	2
68	MP1A	Z	6.476	2
69	MP1A	Mx	-.0056	2
70	MP1B	X	-11.218	2
71	MP1B	Z	6.476	2
72	MP1B	Mx	.0056	2
73	MP1C	X	-14.362	2
74	MP1C	Z	8.292	2
75	MP1C	Mx	0	2
76	MP2A	X	-11.343	2
77	MP2A	Z	6.549	2
78	MP2A	Mx	.0095	2
79	MP2B	X	-11.343	2
80	MP2B	Z	6.549	2
81	MP2B	Mx	-.0095	2
82	MP2C	X	-14.362	2
83	MP2C	Z	8.292	2
84	MP2C	Mx	0	2
85	MP1A	X	-19.423	.25
86	MP1A	Z	11.214	.25
87	MP1A	Mx	.0162	.25
88	MP1A	X	-19.423	3.75
89	MP1A	Z	11.214	3.75
90	MP1A	Mx	.0162	3.75
91	MP1B	X	-19.423	.25
92	MP1B	Z	11.214	.25
93	MP1B	Mx	-.0162	.25
94	MP1B	X	-19.423	3.75
95	MP1B	Z	11.214	3.75
96	MP1B	Mx	-.0162	3.75
97	MP1C	X	-21.186	.25
98	MP1C	Z	12.232	.25
99	MP1C	Mx	0	.25
100	MP1C	X	-21.186	3.75
101	MP1C	Z	12.232	3.75
102	MP1C	Mx	0	3.75
103	MP4A	X	-19.423	.25
104	MP4A	Z	11.214	.25
105	MP4A	Mx	.0162	.25
106	MP4A	X	-19.423	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
107	MP4A	Z	11.214	3.75
108	MP4A	Mx	.0162	3.75
109	MP4B	X	-19.423	.25
110	MP4B	Z	11.214	.25
111	MP4B	Mx	-.0162	.25
112	MP4B	X	-19.423	3.75
113	MP4B	Z	11.214	3.75
114	MP4B	Mx	-.0162	3.75
115	MP4C	X	-21.186	.25
116	MP4C	Z	12.232	.25
117	MP4C	Mx	0	.25
118	MP4C	X	-21.186	3.75
119	MP4C	Z	12.232	3.75
120	MP4C	Mx	0	3.75
121	M103	X	-22.788	1.5
122	M103	Z	13.156	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-4.53	5
2	MP2A	Z	0	5
3	MP2A	Mx	-.0023	5
4	MP2B	X	-7.535	5
5	MP2B	Z	0	5
6	MP2B	Mx	.0019	5
7	MP2C	X	-7.535	5
8	MP2C	Z	0	5
9	MP2C	Mx	.0019	5
10	MP2A	X	-22.414	.5
11	MP2A	Z	0	.5
12	MP2A	Mx	.0187	.5
13	MP2A	X	-22.414	5
14	MP2A	Z	0	5
15	MP2A	Mx	.0187	5
16	MP2B	X	-29.549	.5
17	MP2B	Z	0	.5
18	MP2B	Mx	.0037	.5
19	MP2B	X	-29.549	5
20	MP2B	Z	0	5
21	MP2B	Mx	.0037	5
22	MP2C	X	-29.549	.5
23	MP2C	Z	0	.5
24	MP2C	Mx	-.0283	.5
25	MP2C	X	-29.549	5
26	MP2C	Z	0	5
27	MP2C	Mx	-.0283	5
28	MP2A	X	-22.414	.5
29	MP2A	Z	0	.5
30	MP2A	Mx	.0187	.5
31	MP2A	X	-22.414	5
32	MP2A	Z	0	5
33	MP2A	Mx	.0187	5
34	MP2B	X	-29.549	.5
35	MP2B	Z	0	.5
36	MP2B	Mx	-.0283	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
37	MP2B	X	-29.549	5
38	MP2B	Z	0	5
39	MP2B	Mx	-.0283	5
40	MP2C	X	-29.549	.5
41	MP2C	Z	0	.5
42	MP2C	Mx	.0037	.5
43	MP2C	X	-29.549	5
44	MP2C	Z	0	5
45	MP2C	Mx	.0037	5
46	MP3A	X	-6.922	1
47	MP3A	Z	0	1
48	MP3A	Mx	.0058	1
49	MP3A	X	-6.922	3
50	MP3A	Z	0	3
51	MP3A	Mx	.0058	3
52	MP3B	X	-13.524	1
53	MP3B	Z	0	1
54	MP3B	Mx	-.0056	1
55	MP3B	X	-13.524	3
56	MP3B	Z	0	3
57	MP3B	Mx	-.0056	3
58	MP3C	X	-13.524	1
59	MP3C	Z	0	1
60	MP3C	Mx	-.0056	1
61	MP3C	X	-13.524	3
62	MP3C	Z	0	3
63	MP3C	Mx	-.0056	3
64	M135	X	-28.064	1.5
65	M135	Z	0	1.5
66	M135	Mx	0	1.5
67	MP1A	X	-11.743	2
68	MP1A	Z	0	2
69	MP1A	Mx	-.0059	2
70	MP1B	X	-15.373	2
71	MP1B	Z	0	2
72	MP1B	Mx	.0038	2
73	MP1C	X	-15.373	2
74	MP1C	Z	0	2
75	MP1C	Mx	.0038	2
76	MP2A	X	-11.936	2
77	MP2A	Z	0	2
78	MP2A	Mx	.0099	2
79	MP2B	X	-15.422	2
80	MP2B	Z	0	2
81	MP2B	Mx	-.0064	2
82	MP2C	X	-15.422	2
83	MP2C	Z	0	2
84	MP2C	Mx	-.0064	2
85	MP1A	X	-21.749	.25
86	MP1A	Z	0	.25
87	MP1A	Mx	.0181	.25
88	MP1A	X	-21.749	3.75
89	MP1A	Z	0	3.75
90	MP1A	Mx	.0181	3.75
91	MP1B	X	-23.785	.25
92	MP1B	Z	0	.25
93	MP1B	Mx	-.0099	.25

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
94	MP1B	X	-23.785	3.75
95	MP1B	Z	0	3.75
96	MP1B	Mx	-.0099	3.75
97	MP1C	X	-23.785	.25
98	MP1C	Z	0	.25
99	MP1C	Mx	-.0099	.25
100	MP1C	X	-23.785	3.75
101	MP1C	Z	0	3.75
102	MP1C	Mx	-.0099	3.75
103	MP4A	X	-21.749	.25
104	MP4A	Z	0	.25
105	MP4A	Mx	.0181	.25
106	MP4A	X	-21.749	3.75
107	MP4A	Z	0	3.75
108	MP4A	Mx	.0181	3.75
109	MP4B	X	-23.785	.25
110	MP4B	Z	0	.25
111	MP4B	Mx	-.0099	.25
112	MP4B	X	-23.785	3.75
113	MP4B	Z	0	3.75
114	MP4B	Mx	-.0099	3.75
115	MP4C	X	-23.785	.25
116	MP4C	Z	0	.25
117	MP4C	Mx	-.0099	.25
118	MP4C	X	-23.785	3.75
119	MP4C	Z	0	3.75
120	MP4C	Mx	-.0099	3.75
121	M103	X	-28.064	1.5
122	M103	Z	0	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-4.79	5
2	MP2A	Z	-2.766	5
3	MP2A	Mx	-.0024	5
4	MP2B	X	-7.393	5
5	MP2B	Z	-4.268	5
6	MP2B	Mx	0	5
7	MP2C	X	-4.79	5
8	MP2C	Z	-2.766	5
9	MP2C	Mx	.0024	5
10	MP2A	X	-21.471	.5
11	MP2A	Z	-12.396	.5
12	MP2A	Mx	.0101	.5
13	MP2A	X	-21.471	5
14	MP2A	Z	-12.396	5
15	MP2A	Mx	.0101	5
16	MP2B	X	-27.649	.5
17	MP2B	Z	-15.963	.5
18	MP2B	Mx	.02	.5
19	MP2B	X	-27.649	5
20	MP2B	Z	-15.963	5
21	MP2B	Mx	.02	5
22	MP2C	X	-21.471	.5
23	MP2C	Z	-12.396	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
24	MP2C	Mx	-.0256	.5
25	MP2C	X	-21.471	5
26	MP2C	Z	-12.396	5
27	MP2C	Mx	-.0256	5
28	MP2A	X	-21.471	.5
29	MP2A	Z	-12.396	.5
30	MP2A	Mx	.0256	.5
31	MP2A	X	-21.471	5
32	MP2A	Z	-12.396	5
33	MP2A	Mx	.0256	5
34	MP2B	X	-27.649	.5
35	MP2B	Z	-15.963	.5
36	MP2B	Mx	-.02	.5
37	MP2B	X	-27.649	5
38	MP2B	Z	-15.963	5
39	MP2B	Mx	-.02	5
40	MP2C	X	-21.471	.5
41	MP2C	Z	-12.396	.5
42	MP2C	Mx	-.0101	.5
43	MP2C	X	-21.471	5
44	MP2C	Z	-12.396	5
45	MP2C	Mx	-.0101	5
46	MP3A	X	-7.9	1
47	MP3A	Z	-4.561	1
48	MP3A	Mx	.0066	1
49	MP3A	X	-7.9	3
50	MP3A	Z	-4.561	3
51	MP3A	Mx	.0066	3
52	MP3B	X	-13.619	1
53	MP3B	Z	-7.863	1
54	MP3B	Mx	0	1
55	MP3B	X	-13.619	3
56	MP3B	Z	-7.863	3
57	MP3B	Mx	0	3
58	MP3C	X	-7.9	1
59	MP3C	Z	-4.561	1
60	MP3C	Mx	-.0066	1
61	MP3C	X	-7.9	3
62	MP3C	Z	-4.561	3
63	MP3C	Mx	-.0066	3
64	M135	X	-27.336	1.5
65	M135	Z	-15.783	1.5
66	M135	Mx	0	1.5
67	MP1A	X	-11.218	2
68	MP1A	Z	-6.476	2
69	MP1A	Mx	-.0056	2
70	MP1B	X	-14.362	2
71	MP1B	Z	-8.292	2
72	MP1B	Mx	0	2
73	MP1C	X	-11.218	2
74	MP1C	Z	-6.476	2
75	MP1C	Mx	.0056	2
76	MP2A	X	-11.343	2
77	MP2A	Z	-6.549	2
78	MP2A	Mx	.0095	2
79	MP2B	X	-14.362	2
80	MP2B	Z	-8.292	2

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
81	MP2B	Mx	0	2
82	MP2C	X	-11.343	2
83	MP2C	Z	-6.549	2
84	MP2C	Mx	-.0095	2
85	MP1A	X	-19.423	.25
86	MP1A	Z	-11.214	.25
87	MP1A	Mx	.0162	.25
88	MP1A	X	-19.423	3.75
89	MP1A	Z	-11.214	3.75
90	MP1A	Mx	.0162	3.75
91	MP1B	X	-21.186	.25
92	MP1B	Z	-12.232	.25
93	MP1B	Mx	0	.25
94	MP1B	X	-21.186	3.75
95	MP1B	Z	-12.232	3.75
96	MP1B	Mx	0	3.75
97	MP1C	X	-19.423	.25
98	MP1C	Z	-11.214	.25
99	MP1C	Mx	-.0162	.25
100	MP1C	X	-19.423	3.75
101	MP1C	Z	-11.214	3.75
102	MP1C	Mx	-.0162	3.75
103	MP4A	X	-19.423	.25
104	MP4A	Z	-11.214	.25
105	MP4A	Mx	.0162	.25
106	MP4A	X	-19.423	3.75
107	MP4A	Z	-11.214	3.75
108	MP4A	Mx	.0162	3.75
109	MP4B	X	-21.186	.25
110	MP4B	Z	-12.232	.25
111	MP4B	Mx	0	.25
112	MP4B	X	-21.186	3.75
113	MP4B	Z	-12.232	3.75
114	MP4B	Mx	0	3.75
115	MP4C	X	-19.423	.25
116	MP4C	Z	-11.214	.25
117	MP4C	Mx	-.0162	.25
118	MP4C	X	-19.423	3.75
119	MP4C	Z	-11.214	3.75
120	MP4C	Mx	-.0162	3.75
121	M103	X	-27.336	1.5
122	M103	Z	-15.783	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-3.767	5
2	MP2A	Z	-6.525	5
3	MP2A	Mx	-.0019	5
4	MP2B	X	-3.767	5
5	MP2B	Z	-6.525	5
6	MP2B	Mx	-.0019	5
7	MP2C	X	-2.265	5
8	MP2C	Z	-3.923	5
9	MP2C	Mx	.0023	5
10	MP2A	X	-14.774	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
11	MP2A	Z	-25.59	.5
12	MP2A	Mx	-.0037	.5
13	MP2A	X	-14.774	5
14	MP2A	Z	-25.59	5
15	MP2A	Mx	-.0037	5
16	MP2B	X	-14.774	.5
17	MP2B	Z	-25.59	.5
18	MP2B	Mx	.0283	.5
19	MP2B	X	-14.774	5
20	MP2B	Z	-25.59	5
21	MP2B	Mx	.0283	5
22	MP2C	X	-11.207	.5
23	MP2C	Z	-19.411	.5
24	MP2C	Mx	-.0187	.5
25	MP2C	X	-11.207	5
26	MP2C	Z	-19.411	5
27	MP2C	Mx	-.0187	5
28	MP2A	X	-14.774	.5
29	MP2A	Z	-25.59	.5
30	MP2A	Mx	.0283	.5
31	MP2A	X	-14.774	5
32	MP2A	Z	-25.59	5
33	MP2A	Mx	.0283	5
34	MP2B	X	-14.774	.5
35	MP2B	Z	-25.59	.5
36	MP2B	Mx	-.0037	.5
37	MP2B	X	-14.774	5
38	MP2B	Z	-25.59	5
39	MP2B	Mx	-.0037	5
40	MP2C	X	-11.207	.5
41	MP2C	Z	-19.411	.5
42	MP2C	Mx	-.0187	.5
43	MP2C	X	-11.207	5
44	MP2C	Z	-19.411	5
45	MP2C	Mx	-.0187	5
46	MP3A	X	-6.762	1
47	MP3A	Z	-11.712	1
48	MP3A	Mx	.0056	1
49	MP3A	X	-6.762	3
50	MP3A	Z	-11.712	3
51	MP3A	Mx	.0056	3
52	MP3B	X	-6.762	1
53	MP3B	Z	-11.712	1
54	MP3B	Mx	.0056	1
55	MP3B	X	-6.762	3
56	MP3B	Z	-11.712	3
57	MP3B	Mx	.0056	3
58	MP3C	X	-3.461	1
59	MP3C	Z	-5.994	1
60	MP3C	Mx	-.0058	1
61	MP3C	X	-3.461	3
62	MP3C	Z	-5.994	3
63	MP3C	Mx	-.0058	3
64	M135	X	-16.658	1.5
65	M135	Z	-28.852	1.5
66	M135	Mx	0	1.5
67	MP1A	X	-7.687	2

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
68	MP1A	Z	-13.314	2
69	MP1A	Mx	-.0038	2
70	MP1B	X	-7.687	2
71	MP1B	Z	-13.314	2
72	MP1B	Mx	-.0038	2
73	MP1C	X	-5.871	2
74	MP1C	Z	-10.169	2
75	MP1C	Mx	.0059	2
76	MP2A	X	-7.711	2
77	MP2A	Z	-13.356	2
78	MP2A	Mx	.0064	2
79	MP2B	X	-7.711	2
80	MP2B	Z	-13.356	2
81	MP2B	Mx	.0064	2
82	MP2C	X	-5.968	2
83	MP2C	Z	-10.337	2
84	MP2C	Mx	-.0099	2
85	MP1A	X	-11.893	.25
86	MP1A	Z	-20.599	.25
87	MP1A	Mx	.0099	.25
88	MP1A	X	-11.893	3.75
89	MP1A	Z	-20.599	3.75
90	MP1A	Mx	.0099	3.75
91	MP1B	X	-11.893	.25
92	MP1B	Z	-20.599	.25
93	MP1B	Mx	.0099	.25
94	MP1B	X	-11.893	3.75
95	MP1B	Z	-20.599	3.75
96	MP1B	Mx	.0099	3.75
97	MP1C	X	-10.874	.25
98	MP1C	Z	-18.835	.25
99	MP1C	Mx	-.0181	.25
100	MP1C	X	-10.874	3.75
101	MP1C	Z	-18.835	3.75
102	MP1C	Mx	-.0181	3.75
103	MP4A	X	-11.893	.25
104	MP4A	Z	-20.599	.25
105	MP4A	Mx	.0099	.25
106	MP4A	X	-11.893	3.75
107	MP4A	Z	-20.599	3.75
108	MP4A	Mx	.0099	3.75
109	MP4B	X	-11.893	.25
110	MP4B	Z	-20.599	.25
111	MP4B	Mx	.0099	.25
112	MP4B	X	-11.893	3.75
113	MP4B	Z	-20.599	3.75
114	MP4B	Mx	.0099	3.75
115	MP4C	X	-10.874	.25
116	MP4C	Z	-18.835	.25
117	MP4C	Mx	-.0181	.25
118	MP4C	X	-10.874	3.75
119	MP4C	Z	-18.835	3.75
120	MP4C	Mx	-.0181	3.75
121	M103	X	-16.658	1.5
122	M103	Z	-28.852	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	0	5
2	MP2A	Z	-2.12	5
3	MP2A	Mx	0	5
4	MP2B	X	0	5
5	MP2B	Z	-1.203	5
6	MP2B	Mx	-.000521	5
7	MP2C	X	0	5
8	MP2C	Z	-1.203	5
9	MP2C	Mx	.000521	5
10	MP2A	X	0	.5
11	MP2A	Z	-6.693	.5
12	MP2A	Mx	-.0042	.5
13	MP2A	X	0	5
14	MP2A	Z	-6.693	5
15	MP2A	Mx	-.0042	5
16	MP2B	X	0	.5
17	MP2B	Z	-3.827	.5
18	MP2B	Mx	.004	.5
19	MP2B	X	0	5
20	MP2B	Z	-3.827	5
21	MP2B	Mx	.004	5
22	MP2C	X	0	.5
23	MP2C	Z	-3.827	.5
24	MP2C	Mx	-.0016	.5
25	MP2C	X	0	5
26	MP2C	Z	-3.827	5
27	MP2C	Mx	-.0016	5
28	MP2A	X	0	.5
29	MP2A	Z	-9.923	.5
30	MP2A	Mx	.0062	.5
31	MP2A	X	0	5
32	MP2A	Z	-9.923	5
33	MP2A	Mx	.0062	5
34	MP2B	X	0	.5
35	MP2B	Z	-7.419	.5
36	MP2B	Mx	.003	.5
37	MP2B	X	0	5
38	MP2B	Z	-7.419	5
39	MP2B	Mx	.003	5
40	MP2C	X	0	.5
41	MP2C	Z	-7.419	.5
42	MP2C	Mx	-.0077	.5
43	MP2C	X	0	5
44	MP2C	Z	-7.419	5
45	MP2C	Mx	-.0077	5
46	MP3A	X	0	1
47	MP3A	Z	-4.672	1
48	MP3A	Mx	0	1
49	MP3A	X	0	3
50	MP3A	Z	-4.672	3
51	MP3A	Mx	0	3
52	MP3B	X	0	1
53	MP3B	Z	-2.517	1
54	MP3B	Mx	.0018	1
55	MP3B	X	0	3
56	MP3B	Z	-2.517	3
57	MP3B	Mx	.0018	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
58	MP3C	X	0	1
59	MP3C	Z	-2.517	1
60	MP3C	Mx	-.0018	1
61	MP3C	X	0	3
62	MP3C	Z	-2.517	3
63	MP3C	Mx	-.0018	3
64	M135	X	0	1.5
65	M135	Z	-7.347	1.5
66	M135	Mx	0	1.5
67	MP1A	X	0	2
68	MP1A	Z	-3.821	2
69	MP1A	Mx	0	2
70	MP1B	X	0	2
71	MP1B	Z	-2.878	2
72	MP1B	Mx	-.0012	2
73	MP1C	X	0	2
74	MP1C	Z	-2.878	2
75	MP1C	Mx	.0012	2
76	MP2A	X	0	2
77	MP2A	Z	-4.61	2
78	MP2A	Mx	0	2
79	MP2B	X	0	2
80	MP2B	Z	-3.51	2
81	MP2B	Mx	.0025	2
82	MP2C	X	0	2
83	MP2C	Z	-3.51	2
84	MP2C	Mx	-.0025	2
85	MP1A	X	0	.25
86	MP1A	Z	-7.581	.25
87	MP1A	Mx	0	.25
88	MP1A	X	0	3.75
89	MP1A	Z	-7.581	3.75
90	MP1A	Mx	0	3.75
91	MP1B	X	0	.25
92	MP1B	Z	-6.877	.25
93	MP1B	Mx	.005	.25
94	MP1B	X	0	3.75
95	MP1B	Z	-6.877	3.75
96	MP1B	Mx	.005	3.75
97	MP1C	X	0	.25
98	MP1C	Z	-6.877	.25
99	MP1C	Mx	-.005	.25
100	MP1C	X	0	3.75
101	MP1C	Z	-6.877	3.75
102	MP1C	Mx	-.005	3.75
103	MP4A	X	0	.25
104	MP4A	Z	-7.581	.25
105	MP4A	Mx	0	.25
106	MP4A	X	0	3.75
107	MP4A	Z	-7.581	3.75
108	MP4A	Mx	0	3.75
109	MP4B	X	0	.25
110	MP4B	Z	-6.877	.25
111	MP4B	Mx	.005	.25
112	MP4B	X	0	3.75
113	MP4B	Z	-6.877	3.75
114	MP4B	Mx	.005	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
115	MP4C	X	0	.25
116	MP4C	Z	-6.877	.25
117	MP4C	Mx	-.005	.25
118	MP4C	X	0	3.75
119	MP4C	Z	-6.877	3.75
120	MP4C	Mx	-.005	3.75
121	M103	X	0	1.5
122	M103	Z	-7.347	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	.907	5
2	MP2A	Z	-1.571	5
3	MP2A	Mx	.000454	5
4	MP2B	X	.449	5
5	MP2B	Z	-.778	5
6	MP2B	Mx	-.000449	5
7	MP2C	X	.907	5
8	MP2C	Z	-1.571	5
9	MP2C	Mx	.000454	5
10	MP2A	X	2.869	.5
11	MP2A	Z	-4.969	.5
12	MP2A	Mx	-.0055	.5
13	MP2A	X	2.869	5
14	MP2A	Z	-4.969	5
15	MP2A	Mx	-.0055	5
16	MP2B	X	1.436	.5
17	MP2B	Z	-2.487	.5
18	MP2B	Mx	.0024	.5
19	MP2B	X	1.436	5
20	MP2B	Z	-2.487	5
21	MP2B	Mx	.0024	5
22	MP2C	X	2.869	.5
23	MP2C	Z	-4.969	.5
24	MP2C	Mx	.000715	.5
25	MP2C	X	2.869	5
26	MP2C	Z	-4.969	5
27	MP2C	Mx	.000715	5
28	MP2A	X	4.544	.5
29	MP2A	Z	-7.871	.5
30	MP2A	Mx	.0011	.5
31	MP2A	X	4.544	5
32	MP2A	Z	-7.871	5
33	MP2A	Mx	.0011	5
34	MP2B	X	3.292	.5
35	MP2B	Z	-5.702	.5
36	MP2B	Mx	.0055	.5
37	MP2B	X	3.292	5
38	MP2B	Z	-5.702	5
39	MP2B	Mx	.0055	5
40	MP2C	X	4.544	.5
41	MP2C	Z	-7.871	.5
42	MP2C	Mx	-.0087	.5
43	MP2C	X	4.544	5
44	MP2C	Z	-7.871	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
45	MP2C	Mx	-.0087	5
46	MP3A	X	1.977	1
47	MP3A	Z	-3.424	1
48	MP3A	Mx	-.0016	1
49	MP3A	X	1.977	3
50	MP3A	Z	-3.424	3
51	MP3A	Mx	-.0016	3
52	MP3B	X	.9	1
53	MP3B	Z	-1.558	1
54	MP3B	Mx	.0015	1
55	MP3B	X	.9	3
56	MP3B	Z	-1.558	3
57	MP3B	Mx	.0015	3
58	MP3C	X	1.977	1
59	MP3C	Z	-3.424	1
60	MP3C	Mx	-.0016	1
61	MP3C	X	1.977	3
62	MP3C	Z	-3.424	3
63	MP3C	Mx	-.0016	3
64	M135	X	3.205	1.5
65	M135	Z	-5.551	1.5
66	M135	Mx	0	1.5
67	MP1A	X	1.753	2
68	MP1A	Z	-3.037	2
69	MP1A	Mx	.000876	2
70	MP1B	X	1.282	2
71	MP1B	Z	-2.22	2
72	MP1B	Mx	-.0013	2
73	MP1C	X	1.753	2
74	MP1C	Z	-3.037	2
75	MP1C	Mx	.000877	2
76	MP2A	X	2.122	2
77	MP2A	Z	-3.675	2
78	MP2A	Mx	-.0018	2
79	MP2B	X	1.572	2
80	MP2B	Z	-2.722	2
81	MP2B	Mx	.0026	2
82	MP2C	X	2.122	2
83	MP2C	Z	-3.675	2
84	MP2C	Mx	-.0018	2
85	MP1A	X	3.673	.25
86	MP1A	Z	-6.362	.25
87	MP1A	Mx	-.0031	.25
88	MP1A	X	3.673	3.75
89	MP1A	Z	-6.362	3.75
90	MP1A	Mx	-.0031	3.75
91	MP1B	X	3.321	.25
92	MP1B	Z	-5.753	.25
93	MP1B	Mx	.0055	.25
94	MP1B	X	3.321	3.75
95	MP1B	Z	-5.753	3.75
96	MP1B	Mx	.0055	3.75
97	MP1C	X	3.673	.25
98	MP1C	Z	-6.362	.25
99	MP1C	Mx	-.0031	.25
100	MP1C	X	3.673	3.75
101	MP1C	Z	-6.362	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
102	MP1C	Mx	-.0031	3.75
103	MP4A	X	3.673	.25
104	MP4A	Z	-6.362	.25
105	MP4A	Mx	-.0031	.25
106	MP4A	X	3.673	3.75
107	MP4A	Z	-6.362	3.75
108	MP4A	Mx	-.0031	3.75
109	MP4B	X	3.321	.25
110	MP4B	Z	-5.753	.25
111	MP4B	Mx	.0055	.25
112	MP4B	X	3.321	3.75
113	MP4B	Z	-5.753	3.75
114	MP4B	Mx	.0055	3.75
115	MP4C	X	3.673	.25
116	MP4C	Z	-6.362	.25
117	MP4C	Mx	-.0031	.25
118	MP4C	X	3.673	3.75
119	MP4C	Z	-6.362	3.75
120	MP4C	Mx	-.0031	3.75
121	M103	X	3.205	1.5
122	M103	Z	-5.551	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	1.042	5
2	MP2A	Z	-.602	5
3	MP2A	Mx	.000521	5
4	MP2B	X	1.042	5
5	MP2B	Z	-.602	5
6	MP2B	Mx	-.000521	5
7	MP2C	X	1.836	5
8	MP2C	Z	-1.06	5
9	MP2C	Mx	0	5
10	MP2A	X	3.315	.5
11	MP2A	Z	-1.914	.5
12	MP2A	Mx	-.004	.5
13	MP2A	X	3.315	5
14	MP2A	Z	-1.914	5
15	MP2A	Mx	-.004	5
16	MP2B	X	3.315	.5
17	MP2B	Z	-1.914	.5
18	MP2B	Mx	.0016	.5
19	MP2B	X	3.315	5
20	MP2B	Z	-1.914	5
21	MP2B	Mx	.0016	5
22	MP2C	X	5.797	.5
23	MP2C	Z	-3.347	.5
24	MP2C	Mx	.0042	.5
25	MP2C	X	5.797	5
26	MP2C	Z	-3.347	5
27	MP2C	Mx	.0042	5
28	MP2A	X	6.425	.5
29	MP2A	Z	-3.71	.5
30	MP2A	Mx	-.003	.5
31	MP2A	X	6.425	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
32	MP2A	Z	-3.71	5
33	MP2A	Mx	-.003	5
34	MP2B	X	6.425	.5
35	MP2B	Z	-3.71	.5
36	MP2B	Mx	.0077	.5
37	MP2B	X	6.425	5
38	MP2B	Z	-3.71	5
39	MP2B	Mx	.0077	5
40	MP2C	X	8.594	.5
41	MP2C	Z	-4.961	.5
42	MP2C	Mx	-.0062	.5
43	MP2C	X	8.594	5
44	MP2C	Z	-4.961	5
45	MP2C	Mx	-.0062	5
46	MP3A	X	2.18	1
47	MP3A	Z	-1.259	1
48	MP3A	Mx	-.0018	1
49	MP3A	X	2.18	3
50	MP3A	Z	-1.259	3
51	MP3A	Mx	-.0018	3
52	MP3B	X	2.18	1
53	MP3B	Z	-1.259	1
54	MP3B	Mx	.0018	1
55	MP3B	X	2.18	3
56	MP3B	Z	-1.259	3
57	MP3B	Mx	.0018	3
58	MP3C	X	4.046	1
59	MP3C	Z	-2.336	1
60	MP3C	Mx	0	1
61	MP3C	X	4.046	3
62	MP3C	Z	-2.336	3
63	MP3C	Mx	0	3
64	M135	X	5.145	1.5
65	M135	Z	-2.971	1.5
66	M135	Mx	0	1.5
67	MP1A	X	2.493	2
68	MP1A	Z	-1.439	2
69	MP1A	Mx	.0012	2
70	MP1B	X	2.493	2
71	MP1B	Z	-1.439	2
72	MP1B	Mx	-.0012	2
73	MP1C	X	3.309	2
74	MP1C	Z	-1.911	2
75	MP1C	Mx	0	2
76	MP2A	X	3.04	2
77	MP2A	Z	-1.755	2
78	MP2A	Mx	-.0025	2
79	MP2B	X	3.04	2
80	MP2B	Z	-1.755	2
81	MP2B	Mx	.0025	2
82	MP2C	X	3.993	2
83	MP2C	Z	-2.305	2
84	MP2C	Mx	0	2
85	MP1A	X	5.956	.25
86	MP1A	Z	-3.439	.25
87	MP1A	Mx	-.005	.25
88	MP1A	X	5.956	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
89	MP1A	Z	-3.439	3.75
90	MP1A	Mx	-.005	3.75
91	MP1B	X	5.956	.25
92	MP1B	Z	-3.439	.25
93	MP1B	Mx	.005	.25
94	MP1B	X	5.956	3.75
95	MP1B	Z	-3.439	3.75
96	MP1B	Mx	.005	3.75
97	MP1C	X	6.565	.25
98	MP1C	Z	-3.79	.25
99	MP1C	Mx	0	.25
100	MP1C	X	6.565	3.75
101	MP1C	Z	-3.79	3.75
102	MP1C	Mx	0	3.75
103	MP4A	X	5.956	.25
104	MP4A	Z	-3.439	.25
105	MP4A	Mx	-.005	.25
106	MP4A	X	5.956	3.75
107	MP4A	Z	-3.439	3.75
108	MP4A	Mx	-.005	3.75
109	MP4B	X	5.956	.25
110	MP4B	Z	-3.439	.25
111	MP4B	Mx	.005	.25
112	MP4B	X	5.956	3.75
113	MP4B	Z	-3.439	3.75
114	MP4B	Mx	.005	3.75
115	MP4C	X	6.565	.25
116	MP4C	Z	-3.79	.25
117	MP4C	Mx	0	.25
118	MP4C	X	6.565	3.75
119	MP4C	Z	-3.79	3.75
120	MP4C	Mx	0	3.75
121	M103	X	5.145	1.5
122	M103	Z	-2.971	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	.898	5
2	MP2A	Z	0	5
3	MP2A	Mx	.000449	5
4	MP2B	X	1.815	5
5	MP2B	Z	0	5
6	MP2B	Mx	-.000454	5
7	MP2C	X	1.815	5
8	MP2C	Z	0	5
9	MP2C	Mx	-.000454	5
10	MP2A	X	2.872	.5
11	MP2A	Z	0	.5
12	MP2A	Mx	-.0024	.5
13	MP2A	X	2.872	5
14	MP2A	Z	0	5
15	MP2A	Mx	-.0024	5
16	MP2B	X	5.738	.5
17	MP2B	Z	0	.5
18	MP2B	Mx	-.000715	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
19	MP2B	X	5.738	5
20	MP2B	Z	0	5
21	MP2B	Mx	-.000715	5
22	MP2C	X	5.738	.5
23	MP2C	Z	0	.5
24	MP2C	Mx	.0055	.5
25	MP2C	X	5.738	5
26	MP2C	Z	0	5
27	MP2C	Mx	.0055	5
28	MP2A	X	6.584	.5
29	MP2A	Z	0	.5
30	MP2A	Mx	-.0055	.5
31	MP2A	X	6.584	5
32	MP2A	Z	0	5
33	MP2A	Mx	-.0055	5
34	MP2B	X	9.088	.5
35	MP2B	Z	0	.5
36	MP2B	Mx	.0087	.5
37	MP2B	X	9.088	5
38	MP2B	Z	0	5
39	MP2B	Mx	.0087	5
40	MP2C	X	9.088	.5
41	MP2C	Z	0	.5
42	MP2C	Mx	-.0011	.5
43	MP2C	X	9.088	5
44	MP2C	Z	0	5
45	MP2C	Mx	-.0011	5
46	MP3A	X	1.799	1
47	MP3A	Z	0	1
48	MP3A	Mx	-.0015	1
49	MP3A	X	1.799	3
50	MP3A	Z	0	3
51	MP3A	Mx	-.0015	3
52	MP3B	X	3.954	1
53	MP3B	Z	0	1
54	MP3B	Mx	.0016	1
55	MP3B	X	3.954	3
56	MP3B	Z	0	3
57	MP3B	Mx	.0016	3
58	MP3C	X	3.954	1
59	MP3C	Z	0	1
60	MP3C	Mx	.0016	1
61	MP3C	X	3.954	3
62	MP3C	Z	0	3
63	MP3C	Mx	.0016	3
64	M135	X	6.41	1.5
65	M135	Z	0	1.5
66	M135	Mx	0	1.5
67	MP1A	X	2.564	2
68	MP1A	Z	0	2
69	MP1A	Mx	.0013	2
70	MP1B	X	3.507	2
71	MP1B	Z	0	2
72	MP1B	Mx	-.000877	2
73	MP1C	X	3.507	2
74	MP1C	Z	0	2
75	MP1C	Mx	-.000877	2

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
76	MP2A	X	3.143	2
77	MP2A	Z	0	2
78	MP2A	Mx	-.0026	2
79	MP2B	X	4.243	2
80	MP2B	Z	0	2
81	MP2B	Mx	.0018	2
82	MP2C	X	4.243	2
83	MP2C	Z	0	2
84	MP2C	Mx	.0018	2
85	MP1A	X	6.643	.25
86	MP1A	Z	0	.25
87	MP1A	Mx	-.0055	.25
88	MP1A	X	6.643	3.75
89	MP1A	Z	0	3.75
90	MP1A	Mx	-.0055	3.75
91	MP1B	X	7.346	.25
92	MP1B	Z	0	.25
93	MP1B	Mx	.0031	.25
94	MP1B	X	7.346	3.75
95	MP1B	Z	0	3.75
96	MP1B	Mx	.0031	3.75
97	MP1C	X	7.346	.25
98	MP1C	Z	0	.25
99	MP1C	Mx	.0031	.25
100	MP1C	X	7.346	3.75
101	MP1C	Z	0	3.75
102	MP1C	Mx	.0031	3.75
103	MP4A	X	6.643	.25
104	MP4A	Z	0	.25
105	MP4A	Mx	-.0055	.25
106	MP4A	X	6.643	3.75
107	MP4A	Z	0	3.75
108	MP4A	Mx	-.0055	3.75
109	MP4B	X	7.346	.25
110	MP4B	Z	0	.25
111	MP4B	Mx	.0031	.25
112	MP4B	X	7.346	3.75
113	MP4B	Z	0	3.75
114	MP4B	Mx	.0031	3.75
115	MP4C	X	7.346	.25
116	MP4C	Z	0	.25
117	MP4C	Mx	.0031	.25
118	MP4C	X	7.346	3.75
119	MP4C	Z	0	3.75
120	MP4C	Mx	.0031	3.75
121	M103	X	6.41	1.5
122	M103	Z	0	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	1.042	5
2	MP2A	Z	.602	5
3	MP2A	Mx	.000521	5
4	MP2B	X	1.836	5
5	MP2B	Z	1.06	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
6	MP2B	Mx	0	5
7	MP2C	X	1.042	5
8	MP2C	Z	.602	5
9	MP2C	Mx	-.000521	5
10	MP2A	X	3.315	.5
11	MP2A	Z	1.914	.5
12	MP2A	Mx	-.0016	.5
13	MP2A	X	3.315	5
14	MP2A	Z	1.914	5
15	MP2A	Mx	-.0016	5
16	MP2B	X	5.797	.5
17	MP2B	Z	3.347	.5
18	MP2B	Mx	-.0042	.5
19	MP2B	X	5.797	5
20	MP2B	Z	3.347	5
21	MP2B	Mx	-.0042	5
22	MP2C	X	3.315	.5
23	MP2C	Z	1.914	.5
24	MP2C	Mx	.004	.5
25	MP2C	X	3.315	5
26	MP2C	Z	1.914	5
27	MP2C	Mx	.004	5
28	MP2A	X	6.425	.5
29	MP2A	Z	3.71	.5
30	MP2A	Mx	-.0077	.5
31	MP2A	X	6.425	5
32	MP2A	Z	3.71	5
33	MP2A	Mx	-.0077	5
34	MP2B	X	8.594	.5
35	MP2B	Z	4.961	.5
36	MP2B	Mx	.0062	.5
37	MP2B	X	8.594	5
38	MP2B	Z	4.961	5
39	MP2B	Mx	.0062	5
40	MP2C	X	6.425	.5
41	MP2C	Z	3.71	.5
42	MP2C	Mx	.003	.5
43	MP2C	X	6.425	5
44	MP2C	Z	3.71	5
45	MP2C	Mx	.003	5
46	MP3A	X	2.18	1
47	MP3A	Z	1.259	1
48	MP3A	Mx	-.0018	1
49	MP3A	X	2.18	3
50	MP3A	Z	1.259	3
51	MP3A	Mx	-.0018	3
52	MP3B	X	4.046	1
53	MP3B	Z	2.336	1
54	MP3B	Mx	0	1
55	MP3B	X	4.046	3
56	MP3B	Z	2.336	3
57	MP3B	Mx	0	3
58	MP3C	X	2.18	1
59	MP3C	Z	1.259	1
60	MP3C	Mx	.0018	1
61	MP3C	X	2.18	3
62	MP3C	Z	1.259	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
63	MP3C	Mx	.0018	3
64	M135	X	6.362	1.5
65	M135	Z	3.673	1.5
66	M135	Mx	0	1.5
67	MP1A	X	2.493	2
68	MP1A	Z	1.439	2
69	MP1A	Mx	.0012	2
70	MP1B	X	3.309	2
71	MP1B	Z	1.911	2
72	MP1B	Mx	0	2
73	MP1C	X	2.493	2
74	MP1C	Z	1.439	2
75	MP1C	Mx	-.0012	2
76	MP2A	X	3.04	2
77	MP2A	Z	1.755	2
78	MP2A	Mx	-.0025	2
79	MP2B	X	3.993	2
80	MP2B	Z	2.305	2
81	MP2B	Mx	0	2
82	MP2C	X	3.04	2
83	MP2C	Z	1.755	2
84	MP2C	Mx	.0025	2
85	MP1A	X	5.956	.25
86	MP1A	Z	3.439	.25
87	MP1A	Mx	-.005	.25
88	MP1A	X	5.956	3.75
89	MP1A	Z	3.439	3.75
90	MP1A	Mx	-.005	3.75
91	MP1B	X	6.565	.25
92	MP1B	Z	3.79	.25
93	MP1B	Mx	0	.25
94	MP1B	X	6.565	3.75
95	MP1B	Z	3.79	3.75
96	MP1B	Mx	0	3.75
97	MP1C	X	5.956	.25
98	MP1C	Z	3.439	.25
99	MP1C	Mx	.005	.25
100	MP1C	X	5.956	3.75
101	MP1C	Z	3.439	3.75
102	MP1C	Mx	.005	3.75
103	MP4A	X	5.956	.25
104	MP4A	Z	3.439	.25
105	MP4A	Mx	-.005	.25
106	MP4A	X	5.956	3.75
107	MP4A	Z	3.439	3.75
108	MP4A	Mx	-.005	3.75
109	MP4B	X	6.565	.25
110	MP4B	Z	3.79	.25
111	MP4B	Mx	0	.25
112	MP4B	X	6.565	3.75
113	MP4B	Z	3.79	3.75
114	MP4B	Mx	0	3.75
115	MP4C	X	5.956	.25
116	MP4C	Z	3.439	.25
117	MP4C	Mx	.005	.25
118	MP4C	X	5.956	3.75
119	MP4C	Z	3.439	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
120	MP4C	Mx	.005	3.75
121	M103	X	6.362	1.5
122	M103	Z	3.673	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	.907	5
2	MP2A	Z	1.571	5
3	MP2A	Mx	.000454	5
4	MP2B	X	.907	5
5	MP2B	Z	1.571	5
6	MP2B	Mx	.000454	5
7	MP2C	X	.449	5
8	MP2C	Z	.778	5
9	MP2C	Mx	-.000449	5
10	MP2A	X	2.869	.5
11	MP2A	Z	4.969	.5
12	MP2A	Mx	.000715	.5
13	MP2A	X	2.869	5
14	MP2A	Z	4.969	5
15	MP2A	Mx	.000715	5
16	MP2B	X	2.869	.5
17	MP2B	Z	4.969	.5
18	MP2B	Mx	-.0055	.5
19	MP2B	X	2.869	5
20	MP2B	Z	4.969	5
21	MP2B	Mx	-.0055	5
22	MP2C	X	1.436	.5
23	MP2C	Z	2.487	.5
24	MP2C	Mx	.0024	.5
25	MP2C	X	1.436	5
26	MP2C	Z	2.487	5
27	MP2C	Mx	.0024	5
28	MP2A	X	4.544	.5
29	MP2A	Z	7.871	.5
30	MP2A	Mx	-.0087	.5
31	MP2A	X	4.544	5
32	MP2A	Z	7.871	5
33	MP2A	Mx	-.0087	5
34	MP2B	X	4.544	.5
35	MP2B	Z	7.871	.5
36	MP2B	Mx	.0011	.5
37	MP2B	X	4.544	5
38	MP2B	Z	7.871	5
39	MP2B	Mx	.0011	5
40	MP2C	X	3.292	.5
41	MP2C	Z	5.702	.5
42	MP2C	Mx	.0055	.5
43	MP2C	X	3.292	5
44	MP2C	Z	5.702	5
45	MP2C	Mx	.0055	5
46	MP3A	X	1.977	1
47	MP3A	Z	3.424	1
48	MP3A	Mx	-.0016	1
49	MP3A	X	1.977	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
50	MP3A	Z	3.424	3
51	MP3A	Mx	-.0016	3
52	MP3B	X	1.977	1
53	MP3B	Z	3.424	1
54	MP3B	Mx	-.0016	1
55	MP3B	X	1.977	3
56	MP3B	Z	3.424	3
57	MP3B	Mx	-.0016	3
58	MP3C	X	.9	1
59	MP3C	Z	1.558	1
60	MP3C	Mx	.0015	1
61	MP3C	X	.9	3
62	MP3C	Z	1.558	3
63	MP3C	Mx	.0015	3
64	M135	X	3.908	1.5
65	M135	Z	6.768	1.5
66	M135	Mx	0	1.5
67	MP1A	X	1.753	2
68	MP1A	Z	3.037	2
69	MP1A	Mx	.000876	2
70	MP1B	X	1.753	2
71	MP1B	Z	3.037	2
72	MP1B	Mx	.000877	2
73	MP1C	X	1.282	2
74	MP1C	Z	2.22	2
75	MP1C	Mx	-.0013	2
76	MP2A	X	2.122	2
77	MP2A	Z	3.675	2
78	MP2A	Mx	-.0018	2
79	MP2B	X	2.122	2
80	MP2B	Z	3.675	2
81	MP2B	Mx	-.0018	2
82	MP2C	X	1.572	2
83	MP2C	Z	2.722	2
84	MP2C	Mx	.0026	2
85	MP1A	X	3.673	.25
86	MP1A	Z	6.362	.25
87	MP1A	Mx	-.0031	.25
88	MP1A	X	3.673	3.75
89	MP1A	Z	6.362	3.75
90	MP1A	Mx	-.0031	3.75
91	MP1B	X	3.673	.25
92	MP1B	Z	6.362	.25
93	MP1B	Mx	-.0031	.25
94	MP1B	X	3.673	3.75
95	MP1B	Z	6.362	3.75
96	MP1B	Mx	-.0031	3.75
97	MP1C	X	3.321	.25
98	MP1C	Z	5.753	.25
99	MP1C	Mx	.0055	.25
100	MP1C	X	3.321	3.75
101	MP1C	Z	5.753	3.75
102	MP1C	Mx	.0055	3.75
103	MP4A	X	3.673	.25
104	MP4A	Z	6.362	.25
105	MP4A	Mx	-.0031	.25
106	MP4A	X	3.673	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
107	MP4A	Z	6.362	3.75
108	MP4A	Mx	-.0031	3.75
109	MP4B	X	3.673	.25
110	MP4B	Z	6.362	.25
111	MP4B	Mx	-.0031	.25
112	MP4B	X	3.673	3.75
113	MP4B	Z	6.362	3.75
114	MP4B	Mx	-.0031	3.75
115	MP4C	X	3.321	.25
116	MP4C	Z	5.753	.25
117	MP4C	Mx	.0055	.25
118	MP4C	X	3.321	3.75
119	MP4C	Z	5.753	3.75
120	MP4C	Mx	.0055	3.75
121	M103	X	3.908	1.5
122	M103	Z	6.768	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	0	5
2	MP2A	Z	2.12	5
3	MP2A	Mx	0	5
4	MP2B	X	0	5
5	MP2B	Z	1.203	5
6	MP2B	Mx	.000521	5
7	MP2C	X	0	5
8	MP2C	Z	1.203	5
9	MP2C	Mx	-.000521	5
10	MP2A	X	0	.5
11	MP2A	Z	6.693	.5
12	MP2A	Mx	.0042	.5
13	MP2A	X	0	5
14	MP2A	Z	6.693	5
15	MP2A	Mx	.0042	5
16	MP2B	X	0	.5
17	MP2B	Z	3.827	.5
18	MP2B	Mx	-.004	.5
19	MP2B	X	0	5
20	MP2B	Z	3.827	5
21	MP2B	Mx	-.004	5
22	MP2C	X	0	.5
23	MP2C	Z	3.827	.5
24	MP2C	Mx	.0016	.5
25	MP2C	X	0	5
26	MP2C	Z	3.827	5
27	MP2C	Mx	.0016	5
28	MP2A	X	0	.5
29	MP2A	Z	9.923	.5
30	MP2A	Mx	-.0062	.5
31	MP2A	X	0	5
32	MP2A	Z	9.923	5
33	MP2A	Mx	-.0062	5
34	MP2B	X	0	.5
35	MP2B	Z	7.419	.5
36	MP2B	Mx	-.003	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
37	MP2B	X	0	5
38	MP2B	Z	7.419	5
39	MP2B	Mx	-.003	5
40	MP2C	X	0	.5
41	MP2C	Z	7.419	.5
42	MP2C	Mx	.0077	.5
43	MP2C	X	0	5
44	MP2C	Z	7.419	5
45	MP2C	Mx	.0077	5
46	MP3A	X	0	1
47	MP3A	Z	4.672	1
48	MP3A	Mx	0	1
49	MP3A	X	0	3
50	MP3A	Z	4.672	3
51	MP3A	Mx	0	3
52	MP3B	X	0	1
53	MP3B	Z	2.517	1
54	MP3B	Mx	-.0018	1
55	MP3B	X	0	3
56	MP3B	Z	2.517	3
57	MP3B	Mx	-.0018	3
58	MP3C	X	0	1
59	MP3C	Z	2.517	1
60	MP3C	Mx	.0018	1
61	MP3C	X	0	3
62	MP3C	Z	2.517	3
63	MP3C	Mx	.0018	3
64	M135	X	0	1.5
65	M135	Z	7.347	1.5
66	M135	Mx	0	1.5
67	MP1A	X	0	2
68	MP1A	Z	3.821	2
69	MP1A	Mx	0	2
70	MP1B	X	0	2
71	MP1B	Z	2.878	2
72	MP1B	Mx	.0012	2
73	MP1C	X	0	2
74	MP1C	Z	2.878	2
75	MP1C	Mx	-.0012	2
76	MP2A	X	0	2
77	MP2A	Z	4.61	2
78	MP2A	Mx	0	2
79	MP2B	X	0	2
80	MP2B	Z	3.51	2
81	MP2B	Mx	-.0025	2
82	MP2C	X	0	2
83	MP2C	Z	3.51	2
84	MP2C	Mx	.0025	2
85	MP1A	X	0	.25
86	MP1A	Z	7.581	.25
87	MP1A	Mx	0	.25
88	MP1A	X	0	3.75
89	MP1A	Z	7.581	3.75
90	MP1A	Mx	0	3.75
91	MP1B	X	0	.25
92	MP1B	Z	6.877	.25
93	MP1B	Mx	-.005	.25

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
94	MP1B	X	0	3.75
95	MP1B	Z	6.877	3.75
96	MP1B	Mx	-.005	3.75
97	MP1C	X	0	.25
98	MP1C	Z	6.877	.25
99	MP1C	Mx	.005	.25
100	MP1C	X	0	3.75
101	MP1C	Z	6.877	3.75
102	MP1C	Mx	.005	3.75
103	MP4A	X	0	.25
104	MP4A	Z	7.581	.25
105	MP4A	Mx	0	.25
106	MP4A	X	0	3.75
107	MP4A	Z	7.581	3.75
108	MP4A	Mx	0	3.75
109	MP4B	X	0	.25
110	MP4B	Z	6.877	.25
111	MP4B	Mx	-.005	.25
112	MP4B	X	0	3.75
113	MP4B	Z	6.877	3.75
114	MP4B	Mx	-.005	3.75
115	MP4C	X	0	.25
116	MP4C	Z	6.877	.25
117	MP4C	Mx	.005	.25
118	MP4C	X	0	3.75
119	MP4C	Z	6.877	3.75
120	MP4C	Mx	.005	3.75
121	M103	X	0	1.5
122	M103	Z	7.347	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-.907	5
2	MP2A	Z	1.571	5
3	MP2A	Mx	-.000454	5
4	MP2B	X	-.449	5
5	MP2B	Z	.778	5
6	MP2B	Mx	.000449	5
7	MP2C	X	-.907	5
8	MP2C	Z	1.571	5
9	MP2C	Mx	-.000454	5
10	MP2A	X	-2.869	.5
11	MP2A	Z	4.969	.5
12	MP2A	Mx	.0055	.5
13	MP2A	X	-2.869	5
14	MP2A	Z	4.969	5
15	MP2A	Mx	.0055	5
16	MP2B	X	-1.436	.5
17	MP2B	Z	2.487	.5
18	MP2B	Mx	-.0024	.5
19	MP2B	X	-1.436	5
20	MP2B	Z	2.487	5
21	MP2B	Mx	-.0024	5
22	MP2C	X	-2.869	.5
23	MP2C	Z	4.969	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
24	MP2C	Mx	-.000715	.5
25	MP2C	X	-2.869	5
26	MP2C	Z	4.969	5
27	MP2C	Mx	-.000715	5
28	MP2A	X	-4.544	.5
29	MP2A	Z	7.871	.5
30	MP2A	Mx	-.0011	.5
31	MP2A	X	-4.544	5
32	MP2A	Z	7.871	5
33	MP2A	Mx	-.0011	5
34	MP2B	X	-3.292	.5
35	MP2B	Z	5.702	.5
36	MP2B	Mx	-.0055	.5
37	MP2B	X	-3.292	5
38	MP2B	Z	5.702	5
39	MP2B	Mx	-.0055	5
40	MP2C	X	-4.544	.5
41	MP2C	Z	7.871	.5
42	MP2C	Mx	.0087	.5
43	MP2C	X	-4.544	5
44	MP2C	Z	7.871	5
45	MP2C	Mx	.0087	5
46	MP3A	X	-1.977	1
47	MP3A	Z	3.424	1
48	MP3A	Mx	.0016	1
49	MP3A	X	-1.977	3
50	MP3A	Z	3.424	3
51	MP3A	Mx	.0016	3
52	MP3B	X	-.9	1
53	MP3B	Z	1.558	1
54	MP3B	Mx	-.0015	1
55	MP3B	X	-.9	3
56	MP3B	Z	1.558	3
57	MP3B	Mx	-.0015	3
58	MP3C	X	-1.977	1
59	MP3C	Z	3.424	1
60	MP3C	Mx	.0016	1
61	MP3C	X	-1.977	3
62	MP3C	Z	3.424	3
63	MP3C	Mx	.0016	3
64	M135	X	-3.205	1.5
65	M135	Z	5.551	1.5
66	M135	Mx	0	1.5
67	MP1A	X	-1.753	2
68	MP1A	Z	3.037	2
69	MP1A	Mx	-.000876	2
70	MP1B	X	-1.282	2
71	MP1B	Z	2.22	2
72	MP1B	Mx	.0013	2
73	MP1C	X	-1.753	2
74	MP1C	Z	3.037	2
75	MP1C	Mx	-.000877	2
76	MP2A	X	-2.122	2
77	MP2A	Z	3.675	2
78	MP2A	Mx	.0018	2
79	MP2B	X	-1.572	2
80	MP2B	Z	2.722	2

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
81	MP2B	Mx	-.0026	2
82	MP2C	X	-2.122	2
83	MP2C	Z	3.675	2
84	MP2C	Mx	.0018	2
85	MP1A	X	-3.673	.25
86	MP1A	Z	6.362	.25
87	MP1A	Mx	.0031	.25
88	MP1A	X	-3.673	3.75
89	MP1A	Z	6.362	3.75
90	MP1A	Mx	.0031	3.75
91	MP1B	X	-3.321	.25
92	MP1B	Z	5.753	.25
93	MP1B	Mx	-.0055	.25
94	MP1B	X	-3.321	3.75
95	MP1B	Z	5.753	3.75
96	MP1B	Mx	-.0055	3.75
97	MP1C	X	-3.673	.25
98	MP1C	Z	6.362	.25
99	MP1C	Mx	.0031	.25
100	MP1C	X	-3.673	3.75
101	MP1C	Z	6.362	3.75
102	MP1C	Mx	.0031	3.75
103	MP4A	X	-3.673	.25
104	MP4A	Z	6.362	.25
105	MP4A	Mx	.0031	.25
106	MP4A	X	-3.673	3.75
107	MP4A	Z	6.362	3.75
108	MP4A	Mx	.0031	3.75
109	MP4B	X	-3.321	.25
110	MP4B	Z	5.753	.25
111	MP4B	Mx	-.0055	.25
112	MP4B	X	-3.321	3.75
113	MP4B	Z	5.753	3.75
114	MP4B	Mx	-.0055	3.75
115	MP4C	X	-3.673	.25
116	MP4C	Z	6.362	.25
117	MP4C	Mx	.0031	.25
118	MP4C	X	-3.673	3.75
119	MP4C	Z	6.362	3.75
120	MP4C	Mx	.0031	3.75
121	M103	X	-3.205	1.5
122	M103	Z	5.551	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-1.042	5
2	MP2A	Z	.602	5
3	MP2A	Mx	-.000521	5
4	MP2B	X	-1.042	5
5	MP2B	Z	.602	5
6	MP2B	Mx	.000521	5
7	MP2C	X	-1.836	5
8	MP2C	Z	1.06	5
9	MP2C	Mx	0	5
10	MP2A	X	-3.315	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
11	MP2A	Z	1.914	.5
12	MP2A	Mx	.004	.5
13	MP2A	X	-3.315	5
14	MP2A	Z	1.914	5
15	MP2A	Mx	.004	5
16	MP2B	X	-3.315	.5
17	MP2B	Z	1.914	.5
18	MP2B	Mx	-.0016	.5
19	MP2B	X	-3.315	5
20	MP2B	Z	1.914	5
21	MP2B	Mx	-.0016	5
22	MP2C	X	-5.797	.5
23	MP2C	Z	3.347	.5
24	MP2C	Mx	-.0042	.5
25	MP2C	X	-5.797	5
26	MP2C	Z	3.347	5
27	MP2C	Mx	-.0042	5
28	MP2A	X	-6.425	.5
29	MP2A	Z	3.71	.5
30	MP2A	Mx	.003	.5
31	MP2A	X	-6.425	5
32	MP2A	Z	3.71	5
33	MP2A	Mx	.003	5
34	MP2B	X	-6.425	.5
35	MP2B	Z	3.71	.5
36	MP2B	Mx	-.0077	.5
37	MP2B	X	-6.425	5
38	MP2B	Z	3.71	5
39	MP2B	Mx	-.0077	5
40	MP2C	X	-8.594	.5
41	MP2C	Z	4.961	.5
42	MP2C	Mx	.0062	.5
43	MP2C	X	-8.594	5
44	MP2C	Z	4.961	5
45	MP2C	Mx	.0062	5
46	MP3A	X	-2.18	1
47	MP3A	Z	1.259	1
48	MP3A	Mx	.0018	1
49	MP3A	X	-2.18	3
50	MP3A	Z	1.259	3
51	MP3A	Mx	.0018	3
52	MP3B	X	-2.18	1
53	MP3B	Z	1.259	1
54	MP3B	Mx	-.0018	1
55	MP3B	X	-2.18	3
56	MP3B	Z	1.259	3
57	MP3B	Mx	-.0018	3
58	MP3C	X	-4.046	1
59	MP3C	Z	2.336	1
60	MP3C	Mx	0	1
61	MP3C	X	-4.046	3
62	MP3C	Z	2.336	3
63	MP3C	Mx	0	3
64	M135	X	-5.145	1.5
65	M135	Z	2.971	1.5
66	M135	Mx	0	1.5
67	MP1A	X	-2.493	2

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
68	MP1A	Z	1.439	2
69	MP1A	Mx	-.0012	2
70	MP1B	X	-2.493	2
71	MP1B	Z	1.439	2
72	MP1B	Mx	.0012	2
73	MP1C	X	-3.309	2
74	MP1C	Z	1.911	2
75	MP1C	Mx	0	2
76	MP2A	X	-3.04	2
77	MP2A	Z	1.755	2
78	MP2A	Mx	.0025	2
79	MP2B	X	-3.04	2
80	MP2B	Z	1.755	2
81	MP2B	Mx	-.0025	2
82	MP2C	X	-3.993	2
83	MP2C	Z	2.305	2
84	MP2C	Mx	0	2
85	MP1A	X	-5.956	.25
86	MP1A	Z	3.439	.25
87	MP1A	Mx	.005	.25
88	MP1A	X	-5.956	3.75
89	MP1A	Z	3.439	3.75
90	MP1A	Mx	.005	3.75
91	MP1B	X	-5.956	.25
92	MP1B	Z	3.439	.25
93	MP1B	Mx	-.005	.25
94	MP1B	X	-5.956	3.75
95	MP1B	Z	3.439	3.75
96	MP1B	Mx	-.005	3.75
97	MP1C	X	-6.565	.25
98	MP1C	Z	3.79	.25
99	MP1C	Mx	0	.25
100	MP1C	X	-6.565	3.75
101	MP1C	Z	3.79	3.75
102	MP1C	Mx	0	3.75
103	MP4A	X	-5.956	.25
104	MP4A	Z	3.439	.25
105	MP4A	Mx	.005	.25
106	MP4A	X	-5.956	3.75
107	MP4A	Z	3.439	3.75
108	MP4A	Mx	.005	3.75
109	MP4B	X	-5.956	.25
110	MP4B	Z	3.439	.25
111	MP4B	Mx	-.005	.25
112	MP4B	X	-5.956	3.75
113	MP4B	Z	3.439	3.75
114	MP4B	Mx	-.005	3.75
115	MP4C	X	-6.565	.25
116	MP4C	Z	3.79	.25
117	MP4C	Mx	0	.25
118	MP4C	X	-6.565	3.75
119	MP4C	Z	3.79	3.75
120	MP4C	Mx	0	3.75
121	M103	X	-5.145	1.5
122	M103	Z	2.971	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-.898	5
2	MP2A	Z	0	5
3	MP2A	Mx	-.000449	5
4	MP2B	X	-1.815	5
5	MP2B	Z	0	5
6	MP2B	Mx	.000454	5
7	MP2C	X	-1.815	5
8	MP2C	Z	0	5
9	MP2C	Mx	.000454	5
10	MP2A	X	-2.872	.5
11	MP2A	Z	0	.5
12	MP2A	Mx	.0024	.5
13	MP2A	X	-2.872	5
14	MP2A	Z	0	5
15	MP2A	Mx	.0024	5
16	MP2B	X	-5.738	.5
17	MP2B	Z	0	.5
18	MP2B	Mx	.000715	.5
19	MP2B	X	-5.738	5
20	MP2B	Z	0	5
21	MP2B	Mx	.000715	5
22	MP2C	X	-5.738	.5
23	MP2C	Z	0	.5
24	MP2C	Mx	-.0055	.5
25	MP2C	X	-5.738	5
26	MP2C	Z	0	5
27	MP2C	Mx	-.0055	5
28	MP2A	X	-6.584	.5
29	MP2A	Z	0	.5
30	MP2A	Mx	.0055	.5
31	MP2A	X	-6.584	5
32	MP2A	Z	0	5
33	MP2A	Mx	.0055	5
34	MP2B	X	-9.088	.5
35	MP2B	Z	0	.5
36	MP2B	Mx	-.0087	.5
37	MP2B	X	-9.088	5
38	MP2B	Z	0	5
39	MP2B	Mx	-.0087	5
40	MP2C	X	-9.088	.5
41	MP2C	Z	0	.5
42	MP2C	Mx	.0011	.5
43	MP2C	X	-9.088	5
44	MP2C	Z	0	5
45	MP2C	Mx	.0011	5
46	MP3A	X	-1.799	1
47	MP3A	Z	0	1
48	MP3A	Mx	.0015	1
49	MP3A	X	-1.799	3
50	MP3A	Z	0	3
51	MP3A	Mx	.0015	3
52	MP3B	X	-3.954	1
53	MP3B	Z	0	1
54	MP3B	Mx	-.0016	1
55	MP3B	X	-3.954	3
56	MP3B	Z	0	3
57	MP3B	Mx	-.0016	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
58	MP3C	X	-3.954	1
59	MP3C	Z	0	1
60	MP3C	Mx	-.0016	1
61	MP3C	X	-3.954	3
62	MP3C	Z	0	3
63	MP3C	Mx	-.0016	3
64	M135	X	-6.41	1.5
65	M135	Z	0	1.5
66	M135	Mx	0	1.5
67	MP1A	X	-2.564	2
68	MP1A	Z	0	2
69	MP1A	Mx	-.0013	2
70	MP1B	X	-3.507	2
71	MP1B	Z	0	2
72	MP1B	Mx	.000877	2
73	MP1C	X	-3.507	2
74	MP1C	Z	0	2
75	MP1C	Mx	.000877	2
76	MP2A	X	-3.143	2
77	MP2A	Z	0	2
78	MP2A	Mx	.0026	2
79	MP2B	X	-4.243	2
80	MP2B	Z	0	2
81	MP2B	Mx	-.0018	2
82	MP2C	X	-4.243	2
83	MP2C	Z	0	2
84	MP2C	Mx	-.0018	2
85	MP1A	X	-6.643	.25
86	MP1A	Z	0	.25
87	MP1A	Mx	.0055	.25
88	MP1A	X	-6.643	3.75
89	MP1A	Z	0	3.75
90	MP1A	Mx	.0055	3.75
91	MP1B	X	-7.346	.25
92	MP1B	Z	0	.25
93	MP1B	Mx	-.0031	.25
94	MP1B	X	-7.346	3.75
95	MP1B	Z	0	3.75
96	MP1B	Mx	-.0031	3.75
97	MP1C	X	-7.346	.25
98	MP1C	Z	0	.25
99	MP1C	Mx	-.0031	.25
100	MP1C	X	-7.346	3.75
101	MP1C	Z	0	3.75
102	MP1C	Mx	-.0031	3.75
103	MP4A	X	-6.643	.25
104	MP4A	Z	0	.25
105	MP4A	Mx	.0055	.25
106	MP4A	X	-6.643	3.75
107	MP4A	Z	0	3.75
108	MP4A	Mx	.0055	3.75
109	MP4B	X	-7.346	.25
110	MP4B	Z	0	.25
111	MP4B	Mx	-.0031	.25
112	MP4B	X	-7.346	3.75
113	MP4B	Z	0	3.75
114	MP4B	Mx	-.0031	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
115	MP4C	X	-7.346	.25
116	MP4C	Z	0	.25
117	MP4C	Mx	-.0031	.25
118	MP4C	X	-7.346	3.75
119	MP4C	Z	0	3.75
120	MP4C	Mx	-.0031	3.75
121	M103	X	-6.41	1.5
122	M103	Z	0	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-1.042	5
2	MP2A	Z	-.602	5
3	MP2A	Mx	-.000521	5
4	MP2B	X	-1.836	5
5	MP2B	Z	-1.06	5
6	MP2B	Mx	0	5
7	MP2C	X	-1.042	5
8	MP2C	Z	-.602	5
9	MP2C	Mx	.000521	5
10	MP2A	X	-3.315	.5
11	MP2A	Z	-1.914	.5
12	MP2A	Mx	.0016	.5
13	MP2A	X	-3.315	5
14	MP2A	Z	-1.914	5
15	MP2A	Mx	.0016	5
16	MP2B	X	-5.797	.5
17	MP2B	Z	-3.347	.5
18	MP2B	Mx	.0042	.5
19	MP2B	X	-5.797	5
20	MP2B	Z	-3.347	5
21	MP2B	Mx	.0042	5
22	MP2C	X	-3.315	.5
23	MP2C	Z	-1.914	.5
24	MP2C	Mx	-.004	.5
25	MP2C	X	-3.315	5
26	MP2C	Z	-1.914	5
27	MP2C	Mx	-.004	5
28	MP2A	X	-6.425	.5
29	MP2A	Z	-3.71	.5
30	MP2A	Mx	.0077	.5
31	MP2A	X	-6.425	5
32	MP2A	Z	-3.71	5
33	MP2A	Mx	.0077	5
34	MP2B	X	-8.594	.5
35	MP2B	Z	-4.961	.5
36	MP2B	Mx	-.0062	.5
37	MP2B	X	-8.594	5
38	MP2B	Z	-4.961	5
39	MP2B	Mx	-.0062	5
40	MP2C	X	-6.425	.5
41	MP2C	Z	-3.71	.5
42	MP2C	Mx	-.003	.5
43	MP2C	X	-6.425	5
44	MP2C	Z	-3.71	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
45	MP2C	Mx	-.003	5
46	MP3A	X	-2.18	1
47	MP3A	Z	-1.259	1
48	MP3A	Mx	.0018	1
49	MP3A	X	-2.18	3
50	MP3A	Z	-1.259	3
51	MP3A	Mx	.0018	3
52	MP3B	X	-4.046	1
53	MP3B	Z	-2.336	1
54	MP3B	Mx	0	1
55	MP3B	X	-4.046	3
56	MP3B	Z	-2.336	3
57	MP3B	Mx	0	3
58	MP3C	X	-2.18	1
59	MP3C	Z	-1.259	1
60	MP3C	Mx	-.0018	1
61	MP3C	X	-2.18	3
62	MP3C	Z	-1.259	3
63	MP3C	Mx	-.0018	3
64	M135	X	-6.362	1.5
65	M135	Z	-3.673	1.5
66	M135	Mx	0	1.5
67	MP1A	X	-2.493	2
68	MP1A	Z	-1.439	2
69	MP1A	Mx	-.0012	2
70	MP1B	X	-3.309	2
71	MP1B	Z	-1.911	2
72	MP1B	Mx	0	2
73	MP1C	X	-2.493	2
74	MP1C	Z	-1.439	2
75	MP1C	Mx	.0012	2
76	MP2A	X	-3.04	2
77	MP2A	Z	-1.755	2
78	MP2A	Mx	.0025	2
79	MP2B	X	-3.993	2
80	MP2B	Z	-2.305	2
81	MP2B	Mx	0	2
82	MP2C	X	-3.04	2
83	MP2C	Z	-1.755	2
84	MP2C	Mx	-.0025	2
85	MP1A	X	-5.956	.25
86	MP1A	Z	-3.439	.25
87	MP1A	Mx	.005	.25
88	MP1A	X	-5.956	3.75
89	MP1A	Z	-3.439	3.75
90	MP1A	Mx	.005	3.75
91	MP1B	X	-6.565	.25
92	MP1B	Z	-3.79	.25
93	MP1B	Mx	0	.25
94	MP1B	X	-6.565	3.75
95	MP1B	Z	-3.79	3.75
96	MP1B	Mx	0	3.75
97	MP1C	X	-5.956	.25
98	MP1C	Z	-3.439	.25
99	MP1C	Mx	-.005	.25
100	MP1C	X	-5.956	3.75
101	MP1C	Z	-3.439	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
102	MP1C	Mx	-.005	3.75
103	MP4A	X	-5.956	.25
104	MP4A	Z	-3.439	.25
105	MP4A	Mx	.005	.25
106	MP4A	X	-5.956	3.75
107	MP4A	Z	-3.439	3.75
108	MP4A	Mx	.005	3.75
109	MP4B	X	-6.565	.25
110	MP4B	Z	-3.79	.25
111	MP4B	Mx	0	.25
112	MP4B	X	-6.565	3.75
113	MP4B	Z	-3.79	3.75
114	MP4B	Mx	0	3.75
115	MP4C	X	-5.956	.25
116	MP4C	Z	-3.439	.25
117	MP4C	Mx	-.005	.25
118	MP4C	X	-5.956	3.75
119	MP4C	Z	-3.439	3.75
120	MP4C	Mx	-.005	3.75
121	M103	X	-6.362	1.5
122	M103	Z	-3.673	1.5
123	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-.907	5
2	MP2A	Z	-1.571	5
3	MP2A	Mx	-.000454	5
4	MP2B	X	-.907	5
5	MP2B	Z	-1.571	5
6	MP2B	Mx	-.000454	5
7	MP2C	X	-.449	5
8	MP2C	Z	-.778	5
9	MP2C	Mx	.000449	5
10	MP2A	X	-2.869	.5
11	MP2A	Z	-4.969	.5
12	MP2A	Mx	-.000715	.5
13	MP2A	X	-2.869	5
14	MP2A	Z	-4.969	5
15	MP2A	Mx	-.000715	5
16	MP2B	X	-2.869	.5
17	MP2B	Z	-4.969	.5
18	MP2B	Mx	.0055	.5
19	MP2B	X	-2.869	5
20	MP2B	Z	-4.969	5
21	MP2B	Mx	.0055	5
22	MP2C	X	-1.436	.5
23	MP2C	Z	-2.487	.5
24	MP2C	Mx	-.0024	.5
25	MP2C	X	-1.436	5
26	MP2C	Z	-2.487	5
27	MP2C	Mx	-.0024	5
28	MP2A	X	-4.544	.5
29	MP2A	Z	-7.871	.5
30	MP2A	Mx	.0087	.5
31	MP2A	X	-4.544	5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
32	MP2A	Z	-7.871	5
33	MP2A	Mx	.0087	5
34	MP2B	X	-4.544	.5
35	MP2B	Z	-7.871	.5
36	MP2B	Mx	-.0011	.5
37	MP2B	X	-4.544	5
38	MP2B	Z	-7.871	5
39	MP2B	Mx	-.0011	5
40	MP2C	X	-3.292	.5
41	MP2C	Z	-5.702	.5
42	MP2C	Mx	-.0055	.5
43	MP2C	X	-3.292	5
44	MP2C	Z	-5.702	5
45	MP2C	Mx	-.0055	5
46	MP3A	X	-1.977	1
47	MP3A	Z	-3.424	1
48	MP3A	Mx	.0016	1
49	MP3A	X	-1.977	3
50	MP3A	Z	-3.424	3
51	MP3A	Mx	.0016	3
52	MP3B	X	-1.977	1
53	MP3B	Z	-3.424	1
54	MP3B	Mx	.0016	1
55	MP3B	X	-1.977	3
56	MP3B	Z	-3.424	3
57	MP3B	Mx	.0016	3
58	MP3C	X	-.9	1
59	MP3C	Z	-1.558	1
60	MP3C	Mx	-.0015	1
61	MP3C	X	-.9	3
62	MP3C	Z	-1.558	3
63	MP3C	Mx	-.0015	3
64	M135	X	-3.908	1.5
65	M135	Z	-6.768	1.5
66	M135	Mx	0	1.5
67	MP1A	X	-1.753	2
68	MP1A	Z	-3.037	2
69	MP1A	Mx	-.000876	2
70	MP1B	X	-1.753	2
71	MP1B	Z	-3.037	2
72	MP1B	Mx	-.000877	2
73	MP1C	X	-1.282	2
74	MP1C	Z	-2.22	2
75	MP1C	Mx	.0013	2
76	MP2A	X	-2.122	2
77	MP2A	Z	-3.675	2
78	MP2A	Mx	.0018	2
79	MP2B	X	-2.122	2
80	MP2B	Z	-3.675	2
81	MP2B	Mx	.0018	2
82	MP2C	X	-1.572	2
83	MP2C	Z	-2.722	2
84	MP2C	Mx	-.0026	2
85	MP1A	X	-3.673	.25
86	MP1A	Z	-6.362	.25
87	MP1A	Mx	.0031	.25
88	MP1A	X	-3.673	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
89	MP1A	Z	-6.362	3.75
90	MP1A	Mx	.0031	3.75
91	MP1B	X	-3.673	.25
92	MP1B	Z	-6.362	.25
93	MP1B	Mx	.0031	.25
94	MP1B	X	-3.673	3.75
95	MP1B	Z	-6.362	3.75
96	MP1B	Mx	.0031	3.75
97	MP1C	X	-3.321	.25
98	MP1C	Z	-5.753	.25
99	MP1C	Mx	-.0055	.25
100	MP1C	X	-3.321	3.75
101	MP1C	Z	-5.753	3.75
102	MP1C	Mx	-.0055	3.75
103	MP4A	X	-3.673	.25
104	MP4A	Z	-6.362	.25
105	MP4A	Mx	.0031	.25
106	MP4A	X	-3.673	3.75
107	MP4A	Z	-6.362	3.75
108	MP4A	Mx	.0031	3.75
109	MP4B	X	-3.673	.25
110	MP4B	Z	-6.362	.25
111	MP4B	Mx	.0031	.25
112	MP4B	X	-3.673	3.75
113	MP4B	Z	-6.362	3.75
114	MP4B	Mx	.0031	3.75
115	MP4C	X	-3.321	.25
116	MP4C	Z	-5.753	.25
117	MP4C	Mx	-.0055	.25
118	MP4C	X	-3.321	3.75
119	MP4C	Z	-5.753	3.75
120	MP4C	Mx	-.0055	3.75
121	M103	X	-3.908	1.5
122	M103	Z	-6.768	1.5
123	M103	Mx	0	1.5

Member Point Loads (BLC 77 : Lm1)

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

Member Point Loads (BLC 78 : Lm2)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	M1	Y	-500	%10

Member Point Loads (BLC 79 : Lv1)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	M1	Y	-250	0

Member Point Loads (BLC 80 : Lv2)

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

Member Point Loads (BLC 81 : Antenna Ev)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	Y	-.6275	5
2	MP2A	My	.000314	5
3	MP2A	Mz	0	5
4	MP2B	Y	-.6275	5
5	MP2B	My	-.000157	5
6	MP2B	Mz	.000272	5
7	MP2C	Y	-.6275	5
8	MP2C	My	-.000157	5
9	MP2C	Mz	-.000272	5
10	MP2A	Y	-.8903	.5
11	MP2A	My	-.000742	.5
12	MP2A	Mz	.000556	.5
13	MP2A	Y	-.8903	5
14	MP2A	My	-.000742	5
15	MP2A	Mz	.000556	5
16	MP2B	Y	-.8903	.5
17	MP2B	My	-.000111	.5
18	MP2B	Mz	-.000921	.5
19	MP2B	Y	-.8903	5
20	MP2B	My	-.000111	5
21	MP2B	Mz	-.000921	5
22	MP2C	Y	-.8903	.5
23	MP2C	My	.000853	.5
24	MP2C	Mz	.000364	.5
25	MP2C	Y	-.8903	5
26	MP2C	My	.000853	5
27	MP2C	Mz	.000364	5
28	MP2A	Y	-1.3161	.5
29	MP2A	My	-.0011	.5
30	MP2A	Mz	-.000823	.5
31	MP2A	Y	-1.3161	5
32	MP2A	My	-.0011	5
33	MP2A	Mz	-.000823	5
34	MP2B	Y	-1.3161	.5
35	MP2B	My	.0013	.5
36	MP2B	Mz	-.000539	.5
37	MP2B	Y	-1.3161	5
38	MP2B	My	.0013	5
39	MP2B	Mz	-.000539	5
40	MP2C	Y	-1.3161	.5
41	MP2C	My	-.000164	.5
42	MP2C	Mz	.0014	.5
43	MP2C	Y	-1.3161	5
44	MP2C	My	-.000164	5
45	MP2C	Mz	.0014	5
46	MP3A	Y	-1.1674	1
47	MP3A	My	-.000973	1
48	MP3A	Mz	0	1
49	MP3A	Y	-1.1674	3
50	MP3A	My	-.000973	3
51	MP3A	Mz	0	3
52	MP3B	Y	-1.1674	1
53	MP3B	My	.000486	1
54	MP3B	Mz	-.000842	1
55	MP3B	Y	-1.1674	3
56	MP3B	My	.000486	3
57	MP3B	Mz	-.000842	3

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
58	MP3C	Y	-1.1674	1
59	MP3C	My	.000486	1
60	MP3C	Mz	.000842	1
61	MP3C	Y	-1.1674	3
62	MP3C	My	.000486	3
63	MP3C	Mz	.000842	3
64	M135	Y	-1.3039	1.5
65	M135	My	0	1.5
66	M135	Mz	0	1.5
67	MP1A	Y	-3.0438	2
68	MP1A	My	.0015	2
69	MP1A	Mz	0	2
70	MP1B	Y	-3.0438	2
71	MP1B	My	-.000761	2
72	MP1B	Mz	.0013	2
73	MP1C	Y	-3.0438	2
74	MP1C	My	-.000761	2
75	MP1C	Mz	-.0013	2
76	MP2A	Y	-3.2231	2
77	MP2A	My	-.0027	2
78	MP2A	Mz	0	2
79	MP2B	Y	-3.2231	2
80	MP2B	My	.0013	2
81	MP2B	Mz	-.0023	2
82	MP2C	Y	-3.2231	2
83	MP2C	My	.0013	2
84	MP2C	Mz	.0023	2
85	MP1A	Y	-.4075	.25
86	MP1A	My	-.00034	.25
87	MP1A	Mz	0	.25
88	MP1A	Y	-.4075	3.75
89	MP1A	My	-.00034	3.75
90	MP1A	Mz	0	3.75
91	MP1B	Y	-.4075	.25
92	MP1B	My	.00017	.25
93	MP1B	Mz	-.000294	.25
94	MP1B	Y	-.4075	3.75
95	MP1B	My	.00017	3.75
96	MP1B	Mz	-.000294	3.75
97	MP1C	Y	-.4075	.25
98	MP1C	My	.00017	.25
99	MP1C	Mz	.000294	.25
100	MP1C	Y	-.4075	3.75
101	MP1C	My	.00017	3.75
102	MP1C	Mz	.000294	3.75
103	MP4A	Y	-.4075	.25
104	MP4A	My	-.00034	.25
105	MP4A	Mz	0	.25
106	MP4A	Y	-.4075	3.75
107	MP4A	My	-.00034	3.75
108	MP4A	Mz	0	3.75
109	MP4B	Y	-.4075	.25
110	MP4B	My	.00017	.25
111	MP4B	Mz	-.000294	.25
112	MP4B	Y	-.4075	3.75
113	MP4B	My	.00017	3.75
114	MP4B	Mz	-.000294	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
115	MP4C	Y	-.4075	.25
116	MP4C	My	.00017	.25
117	MP4C	Mz	.000294	.25
118	MP4C	Y	-.4075	3.75
119	MP4C	My	.00017	3.75
120	MP4C	Mz	.000294	3.75
121	M103	Y	-1.3039	1.5
122	M103	My	0	1.5
123	M103	Mz	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	Z	-1.5687	5
2	MP2A	Mx	0	5
3	MP2B	Z	-1.5687	5
4	MP2B	Mx	-.000679	5
5	MP2C	Z	-1.5687	5
6	MP2C	Mx	.000679	5
7	MP2A	Z	-2.2258	.5
8	MP2A	Mx	-.0014	.5
9	MP2A	Z	-2.2258	5
10	MP2A	Mx	-.0014	5
11	MP2B	Z	-2.2258	.5
12	MP2B	Mx	.0023	.5
13	MP2B	Z	-2.2258	5
14	MP2B	Mx	.0023	5
15	MP2C	Z	-2.2258	.5
16	MP2C	Mx	-.000911	.5
17	MP2C	Z	-2.2258	5
18	MP2C	Mx	-.000911	5
19	MP2A	Z	-3.2903	.5
20	MP2A	Mx	.0021	.5
21	MP2A	Z	-3.2903	5
22	MP2A	Mx	.0021	5
23	MP2B	Z	-3.2903	.5
24	MP2B	Mx	.0013	.5
25	MP2B	Z	-3.2903	5
26	MP2B	Mx	.0013	5
27	MP2C	Z	-3.2903	.5
28	MP2C	Mx	-.0034	.5
29	MP2C	Z	-3.2903	5
30	MP2C	Mx	-.0034	5
31	MP3A	Z	-2.9185	1
32	MP3A	Mx	0	1
33	MP3A	Z	-2.9185	3
34	MP3A	Mx	0	3
35	MP3B	Z	-2.9185	1
36	MP3B	Mx	.0021	1
37	MP3B	Z	-2.9185	3
38	MP3B	Mx	.0021	3
39	MP3C	Z	-2.9185	1
40	MP3C	Mx	-.0021	1
41	MP3C	Z	-2.9185	3
42	MP3C	Mx	-.0021	3
43	M135	Z	-3.2597	1.5
44	M135	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
45	MP1A	Z	-7.6094	2
46	MP1A	Mx	0	2
47	MP1B	Z	-7.6094	2
48	MP1B	Mx	-.0033	2
49	MP1C	Z	-7.6094	2
50	MP1C	Mx	.0033	2
51	MP2A	Z	-8.0577	2
52	MP2A	Mx	0	2
53	MP2B	Z	-8.0577	2
54	MP2B	Mx	.0058	2
55	MP2C	Z	-8.0577	2
56	MP2C	Mx	-.0058	2
57	MP1A	Z	-1.0187	.25
58	MP1A	Mx	0	.25
59	MP1A	Z	-1.0187	3.75
60	MP1A	Mx	0	3.75
61	MP1B	Z	-1.0187	.25
62	MP1B	Mx	.000735	.25
63	MP1B	Z	-1.0187	3.75
64	MP1B	Mx	.000735	3.75
65	MP1C	Z	-1.0187	.25
66	MP1C	Mx	-.000735	.25
67	MP1C	Z	-1.0187	3.75
68	MP1C	Mx	-.000735	3.75
69	MP4A	Z	-1.0187	.25
70	MP4A	Mx	0	.25
71	MP4A	Z	-1.0187	3.75
72	MP4A	Mx	0	3.75
73	MP4B	Z	-1.0187	.25
74	MP4B	Mx	.000735	.25
75	MP4B	Z	-1.0187	3.75
76	MP4B	Mx	.000735	3.75
77	MP4C	Z	-1.0187	.25
78	MP4C	Mx	-.000735	.25
79	MP4C	Z	-1.0187	3.75
80	MP4C	Mx	-.000735	3.75
81	M103	Z	-3.2597	1.5
82	M103	Mx	0	1.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	1.5687	5
2	MP2A	Mx	.000784	5
3	MP2B	X	1.5687	5
4	MP2B	Mx	-.000392	5
5	MP2C	X	1.5687	5
6	MP2C	Mx	-.000392	5
7	MP2A	X	2.2258	.5
8	MP2A	Mx	-.0019	.5
9	MP2A	X	2.2258	5
10	MP2A	Mx	-.0019	5
11	MP2B	X	2.2258	.5
12	MP2B	Mx	-.000277	.5
13	MP2B	X	2.2258	5
14	MP2B	Mx	-.000277	5
15	MP2C	X	2.2258	.5

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
16	MP2C	Mx	.0021	.5
17	MP2C	X	2.2258	5
18	MP2C	Mx	.0021	5
19	MP2A	X	3.2903	.5
20	MP2A	Mx	-.0027	.5
21	MP2A	X	3.2903	5
22	MP2A	Mx	-.0027	5
23	MP2B	X	3.2903	.5
24	MP2B	Mx	.0032	.5
25	MP2B	X	3.2903	5
26	MP2B	Mx	.0032	5
27	MP2C	X	3.2903	.5
28	MP2C	Mx	-.00041	.5
29	MP2C	X	3.2903	5
30	MP2C	Mx	-.00041	5
31	MP3A	X	2.9185	1
32	MP3A	Mx	-.0024	1
33	MP3A	X	2.9185	3
34	MP3A	Mx	-.0024	3
35	MP3B	X	2.9185	1
36	MP3B	Mx	.0012	1
37	MP3B	X	2.9185	3
38	MP3B	Mx	.0012	3
39	MP3C	X	2.9185	1
40	MP3C	Mx	.0012	1
41	MP3C	X	2.9185	3
42	MP3C	Mx	.0012	3
43	M135	X	3.2597	1.5
44	M135	Mx	0	1.5
45	MP1A	X	7.6094	2
46	MP1A	Mx	.0038	2
47	MP1B	X	7.6094	2
48	MP1B	Mx	-.0019	2
49	MP1C	X	7.6094	2
50	MP1C	Mx	-.0019	2
51	MP2A	X	8.0577	2
52	MP2A	Mx	-.0067	2
53	MP2B	X	8.0577	2
54	MP2B	Mx	.0034	2
55	MP2C	X	8.0577	2
56	MP2C	Mx	.0034	2
57	MP1A	X	1.0187	.25
58	MP1A	Mx	-.000849	.25
59	MP1A	X	1.0187	3.75
60	MP1A	Mx	-.000849	3.75
61	MP1B	X	1.0187	.25
62	MP1B	Mx	.000424	.25
63	MP1B	X	1.0187	3.75
64	MP1B	Mx	.000424	3.75
65	MP1C	X	1.0187	.25
66	MP1C	Mx	.000424	.25
67	MP1C	X	1.0187	3.75
68	MP1C	Mx	.000424	3.75
69	MP4A	X	1.0187	.25
70	MP4A	Mx	-.000849	.25
71	MP4A	X	1.0187	3.75
72	MP4A	Mx	-.000849	3.75

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

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
73	MP4B	X	1.0187	.25
74	MP4B	Mx	.000424	.25
75	MP4B	X	1.0187	3.75
76	MP4B	Mx	.000424	3.75
77	MP4C	X	1.0187	.25
78	MP4C	Mx	.000424	.25
79	MP4C	X	1.0187	3.75
80	MP4C	Mx	.000424	3.75
81	M103	X	3.2597	1.5
82	M103	Mx	0	1.5

Member Area Loads (BLC 39 : Structure D)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N113	N111	N89	N90	Y	Two Way	-.0052
2	N87B	N87C	N6	N7	Y	Two Way	-.0052
3	N141	N139	N117	N118	Y	Two Way	-.0052

Member Area Loads (BLC 40 : Structure Di)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N90	N113	N111	N89	Y	Two Way	-.016
2	N87B	N87C	N6	N7	Y	Two Way	-.016
3	N141	N139	N117	N118	Y	Two Way	-.016

Member Area Loads (BLC 84 : Structure Ev)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N113	N111	N89	N90	Y	Two Way	-.000212
2	N87B	N87C	N6	N7	Y	Two Way	-.000212
3	N141	N139	N117	N118	Y	Two Way	-.000212

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

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N113	N111	N89	N90	Z	Two Way	-.00053
2	N87B	N87C	N6	N7	Z	Two Way	-.00053
3	N141	N139	N117	N118	Z	Two Way	-.00053

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

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N113	N111	N89	N90	X	Two Way	.00053
2	N87B	N87C	N6	N7	X	Two Way	.00053
3	N141	N139	N117	N118	X	Two Way	.00053

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	L...	MZ [k-ft]	LC
1	N3	...	863.566	10	3163.137	13	2450.524	1	6.587	13	1.368	4	.315	3
2		...	-890.818	4	-173.405	7	-2703.497	7	-1.918	7	-1.397	10	-.353	9
3	N142B	...	2215.324	9	3373.923	21	1468.03	1	.826	3	1.473	12	1.741	3
4		...	-2420.992	3	-118.203	3	-1317.942	7	-3.388	21	-1.503	6	-5.861	21
5	N145	...	2482.577	11	3368.788	17	1381.097	11	1.1	11	1.45	8	5.853	17
6		...	-2250.118	5	-119.99	11	-1277.748	5	-3.39	17	-1.48	2	-1.598	11
7	Totals:	...	5228.984	10	9007.492	14	5258.917	1						
8		...	-5228.985	4	2150.742	71	-5258.918	7						

Joint Reactions

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
1	1	N3	16.155	2115.962	2450.524	5.618	.002	.126
2	1	N142B	-1098.643	403.281	1468.03	.105	.781	-.249
3	1	N145	1082.402	484.427	1340.364	.424	-.704	.03
4	1	Totals:	-.087	3003.671	5258.917			
5	1	COG (ft):	X: -.004	Y: 1.296	Z: .033			
6	2	N3	-47.502	1936.567	2173.712	5.201	-.264	.261
7	2	N142B	-2145.035	7.65	1458.862	.69	-.178	1.124
8	2	N145	-422.03	1059.461	895.877	-.543	-1.48	1.633
9	2	Totals:	-2614.567	3003.678	4528.451			
10	2	COG (ft):	X: -.004	Y: 1.296	Z: .033			
11	3	N3	-525.437	1496.599	1290.86	3.905	.609	.315
12	3	N142B	-2420.992	-118.203	1445.114	.826	-.016	1.741
13	3	N145	-1569.057	1625.28	-128.924	-1.613	-.795	3.247
14	3	Totals:	-4515.486	3003.676	2607.049			
15	3	COG (ft):	X: -.004	Y: 1.296	Z: .033			
16	4	N3	-890.818	916.489	-160.617	2.067	1.368	.279
17	4	N142B	-2239.188	57.242	1187.054	.482	.2	1.453
18	4	N145	-2098.979	2029.937	-1026.367	-2.502	.143	4.443
19	4	Totals:	-5228.985	3003.668	.07			
20	4	COG (ft):	X: -.004	Y: 1.296	Z: .033			
21	5	N3	-601.298	351.89	-1613.595	.15	.685	.168
22	5	N142B	-1702.928	489.077	261.946	-.242	-.719	.351
23	5	N145	-2250.118	2162.689	-1277.748	-2.975	-.031	4.878
24	5	Totals:	-4554.343	3003.656	-2629.397			
25	5	COG (ft):	X: -.004	Y: 1.296	Z: .033			
26	6	N3	-129.551	-46.341	-2478.967	-1.318	-.238	.008
27	6	N142B	-574.765	1064.474	-836.206	-1.155	-1.503	-1.284
28	6	N145	-1932.585	1985.51	-1252.124	-2.903	-.245	4.435
29	6	Totals:	-2636.9	3003.642	-4567.296			
30	6	COG (ft):	X: -.004	Y: 1.296	Z: .033			
31	7	N3	-42.965	-173.405	-2703.497	-1.918	-.032	-.164
32	7	N142B	899.362	1629.823	-1317.942	-2.02	-.809	-3.022
33	7	N145	-856.31	1547.212	-1237.479	-2.304	.672	3.257
34	7	Totals:	.086	3003.629	-5258.918			
35	7	COG (ft):	X: -.004	Y: 1.296	Z: .033			
36	8	N3	26.559	2.414	-2426.737	-1.498	.232	-.298
37	8	N142B	1942.003	2032.878	-1303.712	-2.601	.152	-4.389
38	8	N145	646.004	968.33	-798.001	-1.339	1.45	1.659
39	8	Totals:	2614.566	3003.622	-4528.451			
40	8	COG (ft):	X: -.004	Y: 1.296	Z: .033			
41	9	N3	501.475	434.883	-1538.224	-.196	-.64	-.353
42	9	N142B	2215.324	2163.409	-1295.338	-2.736	-.013	-5.005
43	9	N145	1798.687	405.332	226.513	-.265	.768	.04
44	9	Totals:	4515.486	3003.624	-2607.05			
45	9	COG (ft):	X: -.004	Y: 1.296	Z: .033			
46	10	N3	863.566	1011.119	-82.433	1.647	-1.397	-.318
47	10	N142B	2030.568	1984.421	-1042.333	-2.393	-.232	-4.72
48	10	N145	2334.849	8.092	1124.695	.628	-.17	-1.162
49	10	Totals:	5228.984	3003.632	-.071			
50	10	COG (ft):	X: -.004	Y: 1.296	Z: .033			
51	11	N3	570.978	1578.532	1365.808	3.559	-.713	-.206
52	11	N142B	1500.787	1545.102	-117.509	-1.673	.687	-3.623
53	11	N145	2482.577	-119.99	1381.097	1.1	0	-1.598
54	11	Totals:	4554.342	3003.644	2629.396			
55	11	COG (ft):	X: -.004	Y: 1.296	Z: .033			
56	12	N3	96.709	1984.212	2225.476	5.02	.211	-.046

Joint Reactions (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
57	12	N142B	378.052	965.828	981.307	-.763	1.473	-1.992
58	12	N145	2162.14	53.618	1360.512	1.026	.213	-1.153
59	12	Totals:	2636.9	3003.658	4567.295			
60	12	COG (ft):	X: -.004	Y: 1.296	Z: .033			
61	13	N3	-30.605	3163.137	300.382	6.587	-.042	-.035
62	13	N142B	-595.558	2913.911	616.171	-2.646	.175	-4.619
63	13	N145	626.139	2930.442	526.826	-2.502	-.241	4.586
64	13	Totals:	-.023	9007.49	1443.379			
65	13	COG (ft):	X: -.006	Y: 1.326	Z: .046			
66	14	N3	-57.888	3116.409	223.721	6.479	-.097	0
67	14	N142B	-881.861	2809.658	617.92	-2.493	-.074	-4.261
68	14	N145	221.539	3081.425	402.309	-2.754	-.439	5.005
69	14	Totals:	-718.21	9007.492	1243.95			
70	14	COG (ft):	X: -.006	Y: 1.326	Z: .046			
71	15	N3	-185.185	3001.806	-19.217	6.141	.133	.013
72	15	N142B	-965.003	2776.362	609.442	-2.458	-.042	-4.1
73	15	N145	-90.737	3229.324	126.226	-3.034	-.261	5.427
74	15	Totals:	-1240.925	9007.492	716.451			
75	15	COG (ft):	X: -.006	Y: 1.326	Z: .046			
76	16	N3	-277.597	2850.175	-411.567	5.661	.325	.004
77	16	N142B	-918.838	2822.771	529.291	-2.548	-.002	-4.174
78	16	N145	-239.953	3334.544	-117.707	-3.266	-.018	5.739
79	16	Totals:	-1436.388	9007.489	.017			
80	16	COG (ft):	X: -.006	Y: 1.326	Z: .046			
81	17	N3	-200.833	2702.021	-803.141	5.162	.147	-.025
82	17	N142B	-769.563	2936.677	277.436	-2.736	-.245	-4.461
83	17	N145	-279.602	3368.788	-195.968	-3.39	-.052	5.853
84	17	Totals:	-1249.998	9007.486	-721.672			
85	17	COG (ft):	X: -.006	Y: 1.326	Z: .046			
86	18	N3	-75.988	2597.054	-1040.739	4.78	-.092	-.066
87	18	N142B	-461.411	3087.774	-14.729	-2.974	-.444	-4.888
88	18	N145	-186.023	3322.655	-197.557	-3.371	-.092	5.737
89	18	Totals:	-723.422	9007.483	-1253.024			
90	18	COG (ft):	X: -.006	Y: 1.326	Z: .046			
91	19	N3	-45.812	2563.399	-1105.789	4.624	-.047	-.111
92	19	N142B	-63.017	3235.535	-147.177	-3.2	-.264	-5.342
93	19	N145	108.851	3208.546	-190.417	-3.215	.151	5.429
94	19	Totals:	.023	9007.479	-1443.382			
95	19	COG (ft):	X: -.006	Y: 1.326	Z: .046			
96	20	N3	-18.112	2609.873	-1029.112	4.732	.007	-.146
97	20	N142B	223.01	3340.302	-148.576	-3.353	-.015	-5.699
98	20	N145	513.313	3057.302	-66.266	-2.963	.349	5.011
99	20	Totals:	718.21	9007.477	-1243.954			
100	20	COG (ft):	X: -.006	Y: 1.326	Z: .046			
101	21	N3	108.974	2723.959	-785.763	5.071	-.223	-.159
102	21	N142B	305.948	3373.923	-140.48	-3.388	-.047	-5.861
103	21	N145	826.002	2909.596	209.789	-2.683	.171	4.589
104	21	Totals:	1240.924	9007.478	-716.454			
105	21	COG (ft):	X: -.006	Y: 1.326	Z: .046			
106	22	N3	201.138	2875.327	-393.112	5.551	-.414	-.15
107	22	N142B	259.591	3327.263	-60.698	-3.298	-.088	-5.787
108	22	N145	975.658	2804.889	453.789	-2.45	-.072	4.276
109	22	Totals:	1436.387	9007.48	-.02			
110	22	COG (ft):	X: -.006	Y: 1.326	Z: .046			
111	23	N3	124.144	3023.673	-1.881	6.05	-.236	-.121
112	23	N142B	110.781	3212.841	191.129	-3.11	.156	-5.499
113	23	N145	1015.072	2770.969	532.421	-2.326	-.038	4.163

Joint Reactions (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
114	23	Totals:	1249.997	9007.483	721.669			
115	23	COG (ft):	X: -.006	Y: 1.326	Z: .046			
116	24	N3	-.866	3129.156	235.308	6.431	.003	-.08
117	24	N142B	-196.981	3061.481	483.355	-2.872	.355	-5.073
118	24	N145	921.269	2816.85	534.357	-2.345	.002	4.278
119	24	Totals:	723.422	9007.487	1253.021			
120	24	COG (ft):	X: -.006	Y: 1.326	Z: .046			
121	25	N3	-11.658	844.689	35.923	1.677	-.014	-.01
122	25	N142B	-168.968	1434.817	161.299	-1.71	.032	-1.986
123	25	N145	180.623	1474.127	131.454	-1.719	-.056	2.039
124	25	Totals:	-.004	3753.633	328.675			
125	25	COG (ft):	X: .022	Y: 1.037	Z: .788			
126	26	N3	-15.8	833.595	18.63	1.651	-.031	-.001
127	26	N142B	-234.262	1409.861	160.575	-1.674	-.028	-1.901
128	26	N145	86.656	1510.177	103.819	-1.779	-.105	2.139
129	26	Totals:	-163.405	3753.634	283.024			
130	26	COG (ft):	X: .022	Y: 1.037	Z: .788			
131	27	N3	-45.577	806.344	-36.696	1.57	.024	.002
132	27	N142B	-251.432	1401.826	159.87	-1.665	-.018	-1.862
133	27	N145	14.79	1545.464	39.772	-1.846	-.062	2.24
134	27	Totals:	-282.219	3753.634	162.946			
135	27	COG (ft):	X: .022	Y: 1.037	Z: .788			
136	28	N3	-68.311	770.219	-127.52	1.455	.071	0
137	28	N142B	-239.965	1412.874	143.872	-1.686	-.004	-1.88
138	28	N145	-18.53	1570.54	-16.348	-1.902	-.003	2.315
139	28	Totals:	-326.806	3753.633	.004			
140	28	COG (ft):	X: .022	Y: 1.037	Z: .788			
141	29	N3	-50.129	734.866	-218.172	1.335	.028	-.007
142	29	N142B	-206.623	1440.084	86.054	-1.731	-.062	-1.949
143	29	N145	-27.896	1578.682	-32.225	-1.931	-.014	2.342
144	29	Totals:	-284.647	3753.632	-164.343			
145	29	COG (ft):	X: .022	Y: 1.037	Z: .788			
146	30	N3	-20.572	709.785	-272.07	1.244	-.029	-.017
147	30	N142B	-136.259	1476.166	17.393	-1.788	-.111	-2.05
148	30	N145	-7.971	1567.681	-30.776	-1.927	-.028	2.314
149	30	Totals:	-164.802	3753.632	-285.454			
150	30	COG (ft):	X: .022	Y: 1.037	Z: .788			
151	31	N3	-15.344	701.721	-286.109	1.206	-.016	-.028
152	31	N142B	-44.046	1511.415	-12.864	-1.842	-.068	-2.159
153	31	N145	59.397	1540.494	-29.704	-1.889	.03	2.24
154	31	Totals:	.007	3753.631	-328.677			
155	31	COG (ft):	X: .022	Y: 1.037	Z: .788			
156	32	N3	-11.18	712.801	-268.816	1.232	0	-.036
157	32	N142B	21.234	1536.399	-12.121	-1.879	-.008	-2.245
158	32	N145	153.355	1504.43	-2.089	-1.829	.078	2.141
159	32	Totals:	163.409	3753.63	-283.026			
160	32	COG (ft):	X: .022	Y: 1.037	Z: .788			
161	33	N3	18.586	740.024	-213.469	1.314	-.054	-.04
162	33	N142B	38.393	1544.453	-11.436	-1.887	-.018	-2.283
163	33	N145	225.243	1469.153	61.958	-1.762	.036	2.04
164	33	Totals:	282.222	3753.63	-162.948			
165	33	COG (ft):	X: .022	Y: 1.037	Z: .788			
166	34	N3	41.307	776.133	-122.628	1.429	-.102	-.038
167	34	N142B	26.915	1533.391	4.542	-1.866	-.031	-2.265
168	34	N145	258.588	1444.107	118.081	-1.706	-.023	1.965
169	34	Totals:	326.81	3753.631	-.005			
170	34	COG (ft):	X: .022	Y: 1.037	Z: .788			

Joint Reactions (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
171	35	N3	23.113	811.497	-31.994	1.548	-.059	-.031
172	35	N142B	-6.402	1506.152	62.359	-1.821	.026	-2.197
173	35	N145	267.94	1435.983	133.977	-1.677	-.012	1.938
174	35	Totals:	284.651	3753.632	164.341			
175	35	COG (ft):	X: .022	Y: 1.037	Z: .788			
176	36	N3	-6.454	836.607	21.882	1.64	-.001	-.021
177	36	N142B	-76.745	1470.055	131.022	-1.764	.075	-2.095
178	36	N145	248.004	1446.971	132.548	-1.682	.001	1.965
179	36	Totals:	164.805	3753.632	285.452			
180	36	COG (ft):	X: .022	Y: 1.037	Z: .788			
181	37	N3	-24.77	880.841	11.238	1.569	.005	.148
182	37	N142B	-190.083	961.901	165.975	-.946	.008	-1.097
183	37	N145	214.846	1910.876	151.472	-2.439	-.059	3.752
184	37	Totals:	-.007	3753.618	328.684			
185	37	COG (ft):	X: .996	Y: 1.037	Z: .788			
186	38	N3	-28.925	869.7	-6.11	1.543	-.011	.156
187	38	N142B	-255.413	936.95	165.284	-.91	-.052	-1.011
188	38	N145	120.93	1946.968	123.86	-2.499	-.108	3.852
189	38	Totals:	-163.408	3753.619	283.033			
190	38	COG (ft):	X: .996	Y: 1.037	Z: .788			
191	39	N3	-58.712	842.43	-61.517	1.462	.044	.16
192	39	N142B	-272.615	928.895	164.612	-.901	-.042	-.972
193	39	N145	49.105	1982.294	59.86	-2.566	-.065	3.953
194	39	Totals:	-282.222	3753.618	162.955			
195	39	COG (ft):	X: .996	Y: 1.037	Z: .788			
196	40	N3	-81.456	806.313	-152.418	1.346	.091	.158
197	40	N142B	-261.164	939.897	148.639	-.923	-.029	-.99
198	40	N145	15.811	2007.407	3.792	-2.622	-.007	4.027
199	40	Totals:	-326.809	3753.618	.013			
200	40	COG (ft):	X: .996	Y: 1.037	Z: .788			
201	41	N3	-63.287	770.977	-243.121	1.227	.048	.151
202	41	N142B	-227.812	967.051	90.834	-.968	-.086	-1.059
203	41	N145	6.449	2015.589	-12.047	-2.651	-.017	4.055
204	41	Totals:	-284.65	3753.617	-164.334			
205	41	COG (ft):	X: .996	Y: 1.037	Z: .788			
206	42	N3	-33.738	745.923	-297.042	1.135	-.01	.141
207	42	N142B	-157.42	1003.089	22.173	-1.025	-.135	-1.161
208	42	N145	26.354	2004.605	-10.576	-2.647	-.031	4.027
209	42	Totals:	-164.805	3753.616	-285.444			
210	42	COG (ft):	X: .996	Y: 1.037	Z: .788			
211	43	N3	-28.503	737.906	-311.067	1.098	.003	.13
212	43	N142B	-65.173	1038.314	-8.102	-1.079	-.092	-1.27
213	43	N145	93.681	1977.396	-9.498	-2.609	.027	3.953
214	43	Totals:	.004	3753.616	-328.667			
215	43	COG (ft):	X: .996	Y: 1.037	Z: .788			
216	44	N3	-24.326	749.033	-293.719	1.124	.02	.122
217	44	N142B	.142	1063.293	-7.391	-1.115	-.032	-1.355
218	44	N145	187.589	1941.289	18.094	-2.549	.075	3.854
219	44	Totals:	163.406	3753.615	-283.016			
220	44	COG (ft):	X: .996	Y: 1.037	Z: .788			
221	45	N3	5.45	776.274	-238.291	1.205	-.035	.118
222	45	N142B	17.334	1071.367	-6.741	-1.124	-.042	-1.394
223	45	N145	259.435	1905.975	82.093	-2.482	.032	3.753
224	45	Totals:	282.219	3753.615	-162.938			
225	45	COG (ft):	X: .996	Y: 1.037	Z: .788			
226	46	N3	28.181	812.375	-147.373	1.32	-.082	.121
227	46	N142B	5.871	1060.35	9.213	-1.102	-.056	-1.376

Joint Reactions (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
228	46	N145	292.755	1880.89	138.164	-2.427	-.026	3.678
229	46	Totals:	326.807	3753.616	.004			
230	46	COG (ft):	X: .996	Y: 1.037	Z: .788			
231	47	N3	10.001	847.723	-56.688	1.44	-.039	.127
232	47	N142B	-27.456	1033.168	67.017	-1.057	.002	-1.307
233	47	N145	302.103	1872.726	154.022	-2.397	-.015	3.651
234	47	Totals:	284.648	3753.616	164.351			
235	47	COG (ft):	X: .996	Y: 1.037	Z: .788			
236	48	N3	-19.558	872.806	-2.79	1.532	.018	.137
237	48	N142B	-97.826	997.115	135.68	-1	.051	-1.205
238	48	N145	282.187	1883.697	152.571	-2.402	-.002	3.679
239	48	Totals:	164.802	3753.617	285.461			
240	48	COG (ft):	X: .996	Y: 1.037	Z: .788			
241	49	N3	-22.692	892.625	-145.646	1.578	0	.092
242	49	N142B	-121.879	961.386	77.387	-.917	-.033	-1.299
243	49	N145	144.57	1524.62	68.265	-1.792	-.016	2.984
244	49	Totals:	-.001	3378.631	.006			
245	49	COG (ft):	X: .69	Y: 1.152	Z: .453			
246	50	N3	-13.471	870.433	-125.829	1.652	-.015	-.019
247	50	N142B	-104.714	1253.745	74.544	-1.383	-.017	-1.874
248	50	N145	118.186	1254.463	51.285	-1.36	-.014	1.88
249	50	Totals:	0	3378.641	0			
250	50	COG (ft):	X: -.004	Y: 1.152	Z: .453			
251	51	N3	-15.656	1128.637	-147.535	2.173	-.018	-.022
252	51	N142B	-119.914	1188.544	87.336	-1.122	-.018	-1.917
253	51	N145	135.569	1187.077	60.198	-1.101	-.018	1.926
254	51	Totals:	0	3504.258	0			
255	51	COG (ft):	X: -.004	Y: 1.296	Z: .033			
256	52	N3	-12.467	1046.972	-.187	2.079	-.016	-.014
257	52	N142B	-148.901	1028.235	140.869	-.952	.021	-1.642
258	52	N145	161.365	1030.437	114.31	-.92	-.052	1.641
259	52	Totals:	-.004	3105.644	254.993			
260	52	COG (ft):	X: -.004	Y: 1.296	Z: .033			
261	53	N3	-29.528	1039.699	-18.364	2.063	.004	-.008
262	53	N142B	-197.906	1011.944	153.619	-.928	.006	-1.587
263	53	N145	99.933	1054.002	85.571	-.959	-.059	1.706
264	53	Totals:	-127.501	3105.645	220.825			
265	53	COG (ft):	X: -.004	Y: 1.296	Z: .033			
266	54	N3	-42.396	1021.855	-66.643	2.01	.019	-.006
267	54	N142B	-222.351	1006.744	145.941	-.922	-.015	-1.561
268	54	N145	43.92	1077.045	48.201	-1.003	-.053	1.772
269	54	Totals:	-220.827	3105.645	127.499			
270	54	COG (ft):	X: -.004	Y: 1.296	Z: .033			
271	55	N3	-47.625	998.224	-132.1	1.934	.024	-.008
272	55	N142B	-215.69	1014.026	119.895	-.936	-.037	-1.573
273	55	N145	8.321	1093.394	12.208	-1.039	-.038	1.82
274	55	Totals:	-254.995	3105.644	.003			
275	55	COG (ft):	X: -.004	Y: 1.296	Z: .033			
276	56	N3	-43.808	975.142	-197.192	1.857	.018	-.012
277	56	N142B	-179.699	1031.843	82.459	-.965	-.053	-1.618
278	56	N145	2.683	1098.66	-12.761	-1.058	-.017	1.838
279	56	Totals:	-220.824	3105.644	-127.494			
280	56	COG (ft):	X: -.004	Y: 1.296	Z: .033			
281	57	N3	-31.97	958.791	-244.474	1.798	.004	-.019
282	57	N142B	-124.034	1055.42	43.671	-1.002	-.059	-1.684
283	57	N145	28.51	1091.432	-20.02	-1.055	.005	1.821
284	57	Totals:	-127.494	3105.643	-220.823			

Joint Reactions (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
285	57	COG (ft):	X: -.004	Y: 1.296	Z: .033			
286	58	N3	-15.279	953.546	-261.283	1.773	-.016	-.026
287	58	N142B	-63.604	1078.449	13.915	-1.037	-.053	-1.755
288	58	N145	78.886	1073.647	-7.626	-1.031	.021	1.773
289	58	Totals:	.003	3105.643	-254.993			
290	58	COG (ft):	X: -.004	Y: 1.296	Z: .033			
291	59	N3	1.787	960.815	-243.101	1.789	-.036	-.031
292	59	N142B	-14.606	1094.752	1.169	-1.061	-.038	-1.81
293	59	N145	140.319	1050.075	21.107	-.991	.027	1.707
294	59	Totals:	127.5	3105.643	-220.826			
295	59	COG (ft):	X: -.004	Y: 1.296	Z: .033			
296	60	N3	14.654	978.646	-194.815	1.842	-.05	-.033
297	60	N142B	9.834	1099.959	8.841	-1.066	-.016	-1.836
298	60	N145	196.338	1027.038	58.474	-.948	.021	1.642
299	60	Totals:	220.827	3105.643	-127.5			
300	60	COG (ft):	X: -.004	Y: 1.296	Z: .033			
301	61	N3	19.877	1002.269	-129.356	1.917	-.056	-.032
302	61	N142B	3.174	1092.673	34.88	-1.053	.005	-1.824
303	61	N145	231.944	1010.701	94.472	-.912	.006	1.594
304	61	Totals:	254.994	3105.643	-.003			
305	61	COG (ft):	X: -.004	Y: 1.296	Z: .033			
306	62	N3	16.054	1025.357	-64.268	1.995	-.05	-.027
307	62	N142B	-32.811	1074.844	72.314	-1.024	.021	-1.779
308	62	N145	237.58	1005.442	119.448	-.893	-.015	1.576
309	62	Totals:	220.823	3105.643	127.493			
310	62	COG (ft):	X: -.004	Y: 1.296	Z: .033			
311	63	N3	4.217	1041.72	-16.993	2.054	-.036	-.021
312	63	N142B	-88.47	1051.259	111.106	-.987	.027	-1.713
313	63	N145	211.747	1012.665	126.709	-.896	-.036	1.593
314	63	Totals:	127.494	3105.644	220.822			
315	63	COG (ft):	X: -.004	Y: 1.296	Z: .033			
316	64	N3	-8.201	739.351	39.989	1.487	-.011	-.008
317	64	N142B	-116.163	704.399	117.081	-.646	.026	-1.12
318	64	N145	124.361	706.995	97.923	-.62	-.048	1.116
319	64	Totals:	-.004	2150.744	254.993			
320	64	COG (ft):	X: -.004	Y: 1.296	Z: .033			
321	65	N3	-25.287	732.089	21.82	1.47	.009	-.002
322	65	N142B	-165.162	688.132	129.804	-.622	.011	-1.065
323	65	N145	62.948	730.523	69.201	-.659	-.054	1.182
324	65	Totals:	-127.5	2150.744	220.825			
325	65	COG (ft):	X: -.004	Y: 1.296	Z: .033			
326	66	N3	-38.172	714.274	-26.44	1.417	.023	0
327	66	N142B	-189.615	682.94	122.102	-.616	-.011	-1.039
328	66	N145	6.961	753.53	31.837	-.703	-.048	1.247
329	66	Totals:	-220.827	2150.744	127.499			
330	66	COG (ft):	X: -.004	Y: 1.296	Z: .033			
331	67	N3	-43.407	690.68	-91.871	1.342	.029	-.001
332	67	N142B	-182.973	690.209	96.039	-.63	-.032	-1.05
333	67	N145	-28.614	769.855	-4.164	-.739	-.033	1.295
334	67	Totals:	-254.995	2150.744	.003			
335	67	COG (ft):	X: -.004	Y: 1.296	Z: .033			
336	68	N3	-39.583	667.632	-156.939	1.264	.023	-.006
337	68	N142B	-147.007	707.998	58.597	-.659	-.048	-1.095
338	68	N145	-34.234	775.113	-29.152	-.758	-.012	1.313
339	68	Totals:	-220.823	2150.743	-127.494			
340	68	COG (ft):	X: -.004	Y: 1.296	Z: .033			
341	69	N3	-27.725	651.306	-204.203	1.205	.009	-.013

Joint Reactions (Continued)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
342	69	N142B	-91.367	731.539	19.817	-.696	-.054	-1.162
343	69	N145	-8.403	767.897	-36.436	-.755	.009	1.296
344	69	Totals:	-127.494	2150.743	-220.823			
345	69	COG (ft):	X: -.004	Y: 1.296	Z: .033			
346	70	N3	-11.009	646.069	-221.006	1.181	-.011	-.02
347	70	N142B	-30.954	754.532	-9.92	-.731	-.048	-1.232
348	70	N145	41.966	750.141	-24.067	-.731	.025	1.248
349	70	Totals:	.003	2150.742	-254.993			
350	70	COG (ft):	X: -.004	Y: 1.296	Z: .033			
351	71	N3	6.082	653.325	-202.832	1.197	-.031	-.025
352	71	N142B	18.038	770.811	-22.641	-.755	-.033	-1.288
353	71	N145	103.38	726.605	4.648	-.692	.032	1.182
354	71	Totals:	127.5	2150.742	-220.826			
355	71	COG (ft):	X: -.004	Y: 1.296	Z: .033			
356	72	N3	18.967	671.128	-154.565	1.25	-.046	-.027
357	72	N142B	42.486	776.011	-14.944	-.761	-.011	-1.313
358	72	N145	159.374	703.603	42.01	-.648	.026	1.117
359	72	Totals:	220.827	2150.742	-127.499			
360	72	COG (ft):	X: -.004	Y: 1.296	Z: .033			
361	73	N3	24.194	694.715	-89.131	1.325	-.051	-.026
362	73	N142B	35.845	768.736	11.113	-.747	.01	-1.302
363	73	N145	194.955	687.291	78.015	-.612	.011	1.069
364	73	Totals:	254.994	2150.742	-.003			
365	73	COG (ft):	X: -.004	Y: 1.296	Z: .033			
366	74	N3	20.364	717.768	-24.068	1.403	-.045	-.021
367	74	N142B	-.115	750.935	48.552	-.718	.026	-1.257
368	74	N145	200.574	682.04	103.01	-.593	-.01	1.051
369	74	Totals:	220.823	2150.743	127.494			
370	74	COG (ft):	X: -.004	Y: 1.296	Z: .033			
371	75	N3	8.508	734.106	23.189	1.462	-.031	-.015
372	75	N142B	-55.749	727.387	87.337	-.681	.032	-1.19
373	75	N145	174.735	689.25	110.297	-.596	-.032	1.068
374	75	Totals:	127.494	2150.743	220.822			
375	75	COG (ft):	X: -.004	Y: 1.296	Z: .033			

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

	Member	Shape	Code Check	Lo...	LC	Shear Check	Lo.....		LC	phi*Pnc...	phi*Pnt [...	phi*Mn y...	phi*Mn...	Cb	Eqn
1	M1	PIPE_3.0	.201	4....	19	.085	4....		6	28250.5...	65205	5.749	5.749	2.783	H1-...
2	M4	HSS4X4X3	.525	0	13	.112	0	y	23	95597.6...	106812	12.662	12.662	3.121	H1-...
3	M10	HSS4X4X3	.286	2....	14	.079	2....	y	13	104414....	106812	12.662	12.662	1.631	H1-...
4	MP3A	PIPE_2.0	.430	4.25	5	.130	4.25		7	20866.7...	32130	1.872	1.872	2.28	H1-...
5	MP4A	PIPE_2.0	.336	4.25	5	.133	1.25		7	20866.7...	32130	1.872	1.872	2.356	H1-...
6	MP2A	PIPE_2.0	.536	4.25	10	.142	4.25		11	20866.7...	32130	1.872	1.872	2.187	H1-...
7	MP1A	PIPE_2.0	.492	4.25	9	.151	3....		8	20866.7...	32130	1.872	1.872	2.365	H1-...
8	M43	HSS4X4X3	.286	0	24	.089	0	y	24	104414....	106812	12.662	12.662	1.643	H1-...
9	M46	PL1/2x6	.216	.516	2	.202	0	y	10	66009.2...	97200	1.012	12.15	1.448	H1-...
10	M51B	L2x2x3	.152	4....	1	.018	0	y	16	9823.122	23392.8	.558	1.078	1.153	H2-1
11	M52B	L2x2x3	.155	4....	11	.019	4....	y	21	9823.122	23392.8	.558	1.07	1.121	H2-1
12	M76	PL3/8x6	.219	0	1	.424	0	y	17	70647.0...	72900	.57	9.113	1.238	H1-...
13	M77	PL3/8x6	.261	.167	7	.448	0	y	13	71583.5...	72900	.57	9.113	1.014	H1-...
14	M80	PL1/2x6	.081	.112	1	.114	0	y	11	96757.5...	97200	1.012	12.15	1.143	H1-...
15	M84	PL3/8x6	.214	0	10	.360	0	y	21	70647.0...	72900	.57	9.113	1.466	H1-...
16	M85	PL3/8x6	.266	.167	7	.469	0	y	24	71583.5...	72900	.57	9.113	1.045	H1-...
17	M91	PL1/2x6	.080	.112	1	.151	.112	y	9	96757.5...	97200	1.012	12.15	1.206	H1-...
18	M53	HSS4X4X3	.285	2....	22	.079	2....	y	21	104414....	106812	12.662	12.662	1.631	H1-...

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

	Member	Shape	Code Check	Lo...	LC	Shear Check	Lo.....		LC	phi*Pnc...	phi*Pnt [...	phi*Mn y...	phi*Mn...	Cb	Eqn
19	M54	HSS4X4X3	.287	0	20	.089	0	y	20	104414....	106812	12.662	12.662	1.643	H1-...
20	M55	PL1/2x6	.215	.516	10	.202	0	y	6	66009.2...	97200	1.012	12.15	1.448	H1-...
21	M58A	L2x2x3	.152	4....	9	.018	4....	y	24	9823.122	23392.8	.558	1.078	1.154	H2-1
22	M59A	L2x2x3	.155	4....	7	.020	4....	y	17	9823.122	23392.8	.558	1.07	1.118	H2-1
23	M63	PL3/8x6	.219	0	9	.423	0	y	13	70647.0...	72900	.57	9.113	1.238	H1-...
24	M64	PL3/8x6	.260	.167	3	.447	0	y	21	71583.5...	72900	.57	9.113	1.014	H1-...
25	M66	PL1/2x6	.081	.112	9	.113	0	y	7	96757.5...	97200	1.012	12.15	1.143	H1-...
26	M68	PL3/8x6	.214	0	6	.362	0	y	17	70647.0...	72900	.57	9.113	1.467	H1-...
27	M69	PL3/8x6	.266	.167	3	.470	0	y	20	71583.5...	72900	.57	9.113	1.046	H1-...
28	M71	PL1/2x6	.080	.112	9	.150	.112	y	5	96757.5...	97200	1.012	12.15	1.205	H1-...
29	M77A	HSS4X4X3	.285	2....	18	.079	2....	y	17	104414....	106812	12.662	12.662	1.631	H1-...
30	M78	HSS4X4X3	.286	0	16	.089	0	y	16	104414....	106812	12.662	12.662	1.643	H1-...
31	M79A	PL1/2x6	.216	.516	6	.202	0	y	2	66009.2...	97200	1.012	12.15	1.448	H1-...
32	M82	L2x2x3	.152	4....	5	.018	0	y	20	9823.122	23392.8	.558	1.078	1.153	H2-1
33	M83A	L2x2x3	.154	4....	3	.019	4....	y	13	9823.122	23392.8	.558	1.07	1.121	H2-1
34	M87	PL3/8x6	.220	0	5	.423	0	y	21	70647.0...	72900	.57	9.113	1.238	H1-...
35	M88A	PL3/8x6	.260	.167	11	.447	0	y	17	71583.5...	72900	.57	9.113	1.014	H1-...
36	M90	PL1/2x6	.081	.112	5	.130	0	y	39	96757.5...	97200	1.012	12.15	1.144	H1-...
37	M92A	PL3/8x6	.213	0	2	.360	0	y	13	70647.0...	72900	.57	9.113	1.465	H1-...
38	M93	PL3/8x6	.266	.167	11	.469	0	y	16	71583.5...	72900	.57	9.113	1.045	H1-...
39	M95	PL1/2x6	.080	.112	5	.150	.112	y	1	96757.5...	97200	1.012	12.15	1.204	H1-...
40	M82A	PIPE_3.0	.201	4....	15	.085	4....		2	28250.5...	65205	5.749	5.749	2.784	H1-...
41	M91B	PIPE_3.0	.201	4....	23	.085	4....		10	28250.5...	65205	5.749	5.749	2.786	H1-...
42	M135	PIPE_2.0	.042	2	6	.015	2		6	28843.4...	32130	1.872	1.872	4.003	H1-...
43	M100	HSS4X4X3	.540	0	21	.117	0	y	19	95597.6...	106812	12.662	12.662	3.159	H1-...
44	M101	HSS4X4X3	.540	0	17	.116	0	y	15	95597.6...	106812	12.662	12.662	3.159	H1-...
45	MP3C	PIPE_2.0	.430	4.25	1	.130	4.25		3	20866.7...	32130	1.872	1.872	2.399	H1-...
46	MP4C	PIPE_2.0	.335	4.25	1	.133	1.25		3	20866.7...	32130	1.872	1.872	2.312	H1-...
47	MP2C	PIPE_2.0	.536	4.25	6	.142	4.25		7	20866.7...	32130	1.872	1.872	2.135	H1-...
48	MP1C	PIPE_2.0	.493	4.25	5	.151	3....		4	20866.7...	32130	1.872	1.872	2.678	H1-...
49	MP3B	PIPE_2.0	.431	4.25	9	.130	4.25		11	20866.7...	32130	1.872	1.872	2.324	H1-...
50	MP4B	PIPE_2.0	.336	4.25	9	.133	1.25		11	20866.7...	32130	1.872	1.872	2.776	H1-...
51	MP2B	PIPE_2.0	.535	4.25	2	.142	4.25		3	20866.7...	32130	1.872	1.872	2.237	H1-...
52	MP1B	PIPE_2.0	.491	4.25	1	.151	3....		12	20866.7...	32130	1.872	1.872	2.196	H1-...
53	M103	PIPE_2.0	.042	2	6	.015	2		6	28843.4...	32130	1.872	1.872	4.024	H1-...
54	M104	PIPE_2.5	.244	6.12	8	.106	1....		6	14558.7...	50715	3.596	3.596	2.691	H1-...
55	M109	PIPE_2.5	.245	6.12	4	.106	1....		2	14558.7...	50715	3.596	3.596	2.69	H1-...
56	M114	PIPE_2.5	.244	6.12	12	.106	1....		10	14558.7...	50715	3.596	3.596	2.692	H1-...
57	M121	L3X3X4	.455	0	3	.057	0	z	2	42460.7...	46656	1.688	3.756	2.214	H2-1
58	M124	L3X3X4	.455	0	11	.057	0	z	10	42460.7...	46656	1.688	3.756	2.214	H2-1
59	M127	L3X3X4	.455	0	7	.057	0	z	6	42460.7...	46656	1.688	3.756	2.214	H2-1

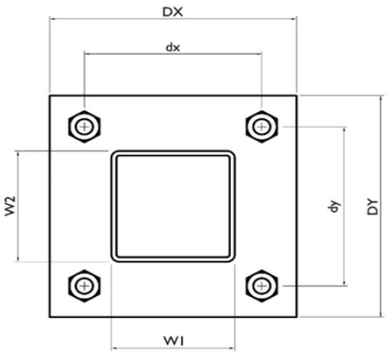
VzW SMART Tool© Vendor

Client:	Verizon Wireless	Date:	12/14/2023
Site Name:	BOLTON EAST CT		
MDG #:	5000244968		
Fuze ID #:	16272381	Page:	1

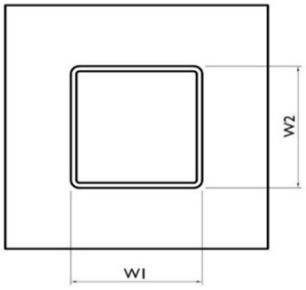
Version 2.00

I. Mount-to-Tower Connection Check

Custom Orientation Required	No
Tower Connection Bolt Checks	Yes
Bolt Orientation	Parallel
Bolt Quantity per Reaction:	4
d_x (in) *(Delta X of typ. bolt config. sketch)* :	8
d_y (in) *(Delta Y of typ. bolt config. sketch)* :	8
Bolt Type:	A325N
Bolt Diameter (in):	0.625
Required Tensile Strength / bolt (kips):	5.2
Required Shear Strength / bolt (kips):	0.8
Tensile Capacity / bolt (kips):	20.7
Shear Capacity / bolt (kips):	12.4
Bolt Overall Utilization:	**25.1%**



Tower Connection Baseplate Checks	Yes
Connecting Standoff Member Shape:	Rect Tube
Weld Stiffener Configuration:	No Stiffeners
Plate Width, D_x (in):	10
Plate Height, D_y (in):	10
W1(in):	4
W2 (in):	4
Member Thickness (in):	0.1875
Stiffener location a_1 (in):	
Stiffener location b_1 (in):	
Stiffener location a_2 (in):	
Stiffener location b_2 (in):	
F_y (ksi, plate):	36
Plate Thickness (in):	0.625
Length of Yield Line, L_y (in):	7.80
Bolt Eccentricity, e (in):	3.00
M_u (kip-in):	15.61
Phi*M_n (kip-in):	24.68
Plate Bending Utilization:	**63.2%**



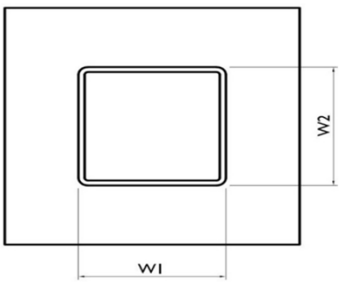
VzW SMART Tool© Vendor

Client:	Verizon Wireless	Date:	12/14/2023
Site Name:	BOLTON EAST CT		
MDG #:	5000244968		
Fuze ID #:	16272381	Page:	2

Version 2.00

Tower Connection Weld Checks	Yes

Weld Shape:	Rectangle
Weld Stiffener Configuration:	None
Weld Size (1/16 in):	6
W1 (in):	4
W2 (in):	4
Weld Total Length (in):	16.00
Z_x (in^3/in):	21.33
Z_y (in^3/in):	21.33
J_p (in^4/in):	85.33
c_x (in)	2.1875
c_y (in)	2.1875
Required combined strength (kip/in):	2.58
Weld Capacity (kip/in):	8.35
Weld Utilization:	**30.9%**



FOX HILL TELECOM

Radio Frequency Emissions Analysis Report

Prepared for:

CROWN CASTLE

verizon

Crown Site ID: 842858_Bolton

Verizon Wireless Site Name: Bolton East CT

Verizon Wireless FUZE ID: 16272381

Site Address:

49 South Road

Bolton, CT 06043

April 25, 2024

Fox Hill Telecom Project Number: 240102

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	24.08 %

Fox Hill Telecom, Inc Worcester MA 01609

FOX HILL TELECOM

April 25, 2024

Crown Castle
1800 W. Park Drive
Westborough, MA 01581

Emissions Analysis for:

Crown Castle Site: **842858 – Bolton**

Verizon Wireless Site: Bolton East CT

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed upgrades for Verizon Wireless to the Crown Castle facility located at **49 South Road, Bolton, CT**, for the purpose of determining whether the emissions from the Proposed Verizon Wireless Antenna Installation, in addition to all existing radio systems located on this property, are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

General population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 MHz band & the 850 MHz cellular band are approximately 497 $\mu W/cm^2$ and 586 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS), 3500 MHz (CBRS) and 3700 MHz (C Band) frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report the percentage of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed upgrades to the Crown Castle facility for Verizon Wireless located at **49 South Road, Bolton, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65 for far field modeling calculations.

In OET-65, plane wave power densities in the far field of an antenna are calculated by considering antenna gain and reflective waves that would contribute to exposure.

Since the radiation pattern of an antenna has developed in the **far field** region the power gain in specific directions needs to be considered in exposure predictions to yield an Effective Radiated Power (ERP) in each specific direction from the antenna. Also, since the vertical radiation pattern of the antenna is considered, the exposure calculations would most likely be reduced significantly at ground level, resulting in a more realistic estimate of the actual exposure levels. To determine a worst-case scenario at each point along the calculation radials, each point was calculated using the antenna gain value at each angle of incident and compared against the result using an isotropic radiator at the antenna height with the greater of the two used to yield the more pessimistic far field value for each point along the calculation radial.

Additionally, to model a truly "worst case" prediction of exposure levels at or near a surface, such as at ground-level or on a rooftop, reflection off the surface of antenna radiation power can be assumed, resulting in a potential 1.6 times increase in power density in calculating far field power density values.

With these factors considered, the worst case **far field prediction model** utilized in this analysis is determined by the following equation:

Equation 9 per FCC OET65 for Far Field Modeling

$$S = \frac{33.4\ ERP}{R^2}$$

S = Power Density (in μw/cm^2)
ERP = Effective Radiated Power from antenna (watts)
R = Distance from the antenna (meters)

Predicted far field power density values for all carriers identified in this report were calculated 6 feet above the ground level and are displayed as a percentage of the applicable FCC standards. All emissions values for other carriers were calculated using the same Far Field model outlined above, using industry standard radio configurations and frequency band selection based upon available licenses in this geographic area for emissions contribution estimates.

For each Verizon Wireless sector, the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
LTE	700 MHz	4	40
LTE / 5G	850 MHz	4	40
LTE	1900 MHz (PCS)	4	40
LTE	2100 MHz (AWS)	4	40
LTE	3500 MHz (CBRS)	4	25
5G	3700 MHz (C Band)	8	40

Table 1: Channel Data Table

The following **Verizon Wireless** antennas listed in *Table 2 – Antenna Data* were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS), 2100 MHz (AWS), 3500 MHz (CBRS) and 3700 MHz (C Band) frequency bands. This is based on feedback from Verizon Wireless regarding anticipated antenna selection. Maximum gain values for all antennas are listed in *Table 3 – Verizon Wireless Inventory and Power Data* below.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Commscope NHH-65B-R2B	107
A	2	Commscope NHHSS-65B-R2BT4	107
A	3	Samsung MT6413-77A	107
A	4	Antel LPA-80063-4CF-EDIN-0 (Dormant)	107
B	1	Commscope NHH-65B-R2B	107
B	2	Commscope NHHSS-65B-R2BT4	107
B	3	Samsung MT6413-77A	107
B	4	Antel LPA-80063-4CF-EDIN-0 (Dormant)	107
C	1	Commscope NHH-65B-R2B	107
C	2	Commscope NHHSS-65B-R2BT4	107
C	3	Samsung MT6413-77A	107
C	4	Antel LPA-80063-4CF-EDIN-0 (Dormant)	107

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.

RESULTS

Per the calculations completed for the proposed Verizon Wireless configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Commscope NHH-65B-R2B	700 MHz / 850 MHz / 1900 MHz (PCS)	12.75 / 12.85 / 15.75	12	480	12,111.28	2.76
Antenna A2	Commscope NHHSS-65B-R2BT4	2100 MHz (AWS) / 3500 MHz (CBRS)	15.85	8	260	6,253.47	0.91
Antenna A3	Samsung MT6413-77A	3700 MHz (C Band)	23.15	8	320	66,092.16	2.81
Antenna A4	Antel LPA-80063-4CF-EDIN-0 (Dormant)	NA	NA	0	0	0.00	0.00
						Sector A Composite MPE%	**6.48**
Antenna B1	Commscope NHH-65B-R2B	700 MHz / 850 MHz / 1900 MHz (PCS)	12.75 / 12.85 / 15.75	12	480	12,111.28	2.76
Antenna B2	Commscope NHHSS-65B-R2BT4	2100 MHz (AWS) / 3500 MHz (CBRS)	15.85	8	260	6,253.47	0.91
Antenna B3	Samsung MT6413-77A	3700 MHz (C Band)	23.15	8	320	66,092.16	2.81
Antenna B4	Antel LPA-80063-4CF-EDIN-0 (Dormant)	NA	NA	0	0	0.00	0.00
						Sector B Composite MPE%	**6.48**
Antenna C1	Commscope NHH-65B-R2B	700 MHz / 850 MHz / 1900 MHz (PCS)	12.75 / 12.85 / 15.75	12	480	12,111.28	2.76
Antenna C2	Commscope NHHSS-65B-R2BT4	2100 MHz (AWS) / 3500 MHz (CBRS)	15.85	8	260	6,253.47	0.91
Antenna C3	Samsung MT6413-77A	3700 MHz (C Band)	23.15	8	320	66,092.16	2.81
Antenna C4	Antel LPA-80063-4CF-EDIN-0 (Dormant)	NA	NA	0	0	0.00	0.00
						Sector C Composite MPE%	**6.48**

Table 3: Verizon Wireless Inventory and Power Data table

Table 4: All Carrier MPE Contributions shows all additional identified carriers on site and their emissions contribution estimates, along with the newly calculated maximum Verizon Wireless far field emissions contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas the highest recorded sector value be used for composite site emissions values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three Verizon Wireless sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each Verizon Wireless Sector as well as the composite estimated emissions value for the site.

Site Composite MPE%	
Carrier	**MPE%**
Verizon Wireless – Max Per Sector Value	**6.48 %**
AT&T	7.20 %
T-Mobile	5.22 %
Dish Wireless	5.18 %
Site Total MPE %:	**24.08 %**

Table 4: All Carrier MPE Contributions

Verizon Wireless Sector A Total:	6.48 %
Verizon Wireless Sector B Total:	6.48 %
Verizon Wireless Sector C Total:	6.48 %
Site Total:	24.08 %

Table 5: Site MPE Summary

Table 6 below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated Verizon sector(s). For this site, all three Verizon Wireless sectors have the same configuration yielding the same results for all three sectors.

Verizon Wireless _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
Verizon Wireless 700 MHz LTE	4	753.46	107	6.01	700 MHz	497	1.21%
Verizon Wireless 850 MHz LTE / 5G	4	771.01	107	5.80	850 MHz	586	0.99%
Verizon Wireless 1900 MHz (PCS) LTE	4	1,503.35	107	5.60	1900 MHz (PCS)	1000	0.56%
Verizon Wireless 2100 MHz (AWS) LTE	4	1,538.37	107	5.60	2100 MHz (AWS)	1000	0.56%
Verizon Wireless 3500 MHz (CBRS) LTE	4	25.00	107	3.50	3500 MHz (CBRS)	1000	0.35%
Verizon Wireless 3700 MHz (C Band) 5G	8	8,261.52	107	28.10	3700 MHz (C Band)	1000	2.81%
						Total:	**6.48 %**

Table 6: Verizon Wireless Maximum Sector MPE Power Values

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the Verizon Wireless facility as well as the site composite emissions estimates value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

Verizon Wireless Sector	Power Density Value (%)
Sector A:	6.48 %
Sector B:	6.48 %
Sector C:	6.48 %
Verizon Wireless Maximum Total (per sector):	6.48 %
Site Total:	24.08 %
Site Compliance Status:	**COMPLIANT**

The estimated composite emissions value for this site, assuming all carriers present, is **24.08 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon the far field calculations performed for all carriers identified in this report.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite estimated values calculated were well within the allowable 100% threshold standard per the federal government.

Scott Heffernan
Principal RF Engineer
Fox Hill Telecom, Inc
Worcester, MA 01609
(978)660-3998

verizon

VERIZON SITE NUMBER: 5000244968
VERIZON SITE NAME: BOLTON EAST CT
VERIZON PROJECT: 16272381
SITE TYPE: MONOPOLE
TOWER HEIGHT: 120'-0"

BUSINESS UNIT #: 842858
SITE ADDRESS: 49 SOUTH ROAD
BOLTON, CT 06043
COUNTY: TOLLAND
JURISDICTION: TOWN OF BOLTON

SITE INFORMATION

CROWN CASTLE USA INC.	
SITE NAME:	BOLTON
BU NUMBER:	842858
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	VERIZON WIRELESS 2000 CORPORATE DRIVE CANONSBURG, PA 15317
SITE ADDRESS:	49 SOUTH ROAD BOLTON,, CT 06043
COUNTY:	TOLLAND
LATITUDE:	41° 47' 20.43" / 41.789008°
LONGITUDE:	-72° 25' 44.91" / -72.429142°
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	629'+/- AMSL
AREA OF CONSTRUCTION:	EXISTING
CURRENT ZONING:	R1
MAP/PARCEL #:	1348
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	GIGLIO LEONARD W & GIGLIO CHERYL P 49 SOUTH RD BOLTON,CT 06043
JURISDICTION:	TOWN OF BOLTON 222 BOLTON CENTER ROAD BOLTON, CT 6043
ELECTRIC PROVIDER:	NORTHEAST UTILITIES (800) 286-2000
TELCO PROVIDER:	ATT

PROJECT TEAM

A&E FIRM:	TOWER ENGINEERING PROFFESIONALS 326 TRYON ROAD RALEIGH, NC 27603 (91) 661-6351
	JOSEPH T. CRESS - PROJECT MANAGER
	SCOTT C. BRANTLEY - CIVIL ENGINEER
CROWN CASTLE USA INC. DISTRICT CONTACTS:	6325 ARDREY KELL ROAD, SUITE 600 CHARLOTTE, NC 28277 PAIGE THOMSEN - A&E SPECIALIST PAIGE.THOMSEN@CROWN CASTLE.COM

NOTE:
PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1	SITE PLAN
C-2	TOWER ELEVATIONS
C-3	ANTENNA PLANS
C-4	FINAL EQUIPMENT SCHEDULE
C-5.1	EQUIPMENT DETAILS & SPECIFICATIONS
C-5.2	EQUIPMENT DETAILS & SPECIFICATIONS
C-6	COLOR CODE MATRIX
G-1	GROUNDING DETAILS
ATTACHED	MOUNT MODIFICATION DRAWINGS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 22X34. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CALL CONNECTICUT ONE CALL
(800) 922-4455 CBYD.COM
CALL 2 WORKING DAYS
BEFORE YOU DIG!

CONTRACTOR PMI REQUIREMENTS

PMI ACCESSED AT	https://pmi.vzwsmart.com
SMART TOOL VENDOR PROJECT NUMBER	10214351
VzW MDG LOCATION	5000244968

*** PMI AND REQUIREMENTS ALSO EMBEDDED IN MOUNT ANALYSIS REPORT

MOUNT MODIFICATION REQUIRED	**Y**

VzW APPROVED SMART KIT VENDORS

REFER TO MOUNT MODIFICATION DRAWINGS PAGE FOR VzW SMART KIT APPROVED VENDORS

APPROVALS

VERIZON SIGNATURE BLOCK

APPROVAL	SIGNATURE	DATE
SITE ACQUISITION		
CONSTRUCTION		
RADIO		
MICROWAVE		
TELCO		
EQUIPMENT		
PROJECT ADMINISTRATOR		
WO ADMINISTRATOR		

CROWN CASTLE USA INC. SINGNATURE BLOCK

APPROVAL		
SITE ACQUISITION		
PLANNER		
CONSTRUCTION		
PROJECT MANAGER		
UTILITY MANAGER		
LANDLORD		

LOCATION MAP

NO SCALE

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK:
- INSTALL MOUNT MODIFICATION BY TOWER ENGINEERING SOLUTIONS, LLC DATED 09/06/2023
- REMOVE (3) ANTEL - BXA-171063-8BF-EDIN-2 ANTENNA
- REMOVE (3) ANTEL - BXA-70063-6CF ANTENNA
- INSTALL (3) COMMSCOPE - NHH-65B-R2B ANTENNA
- INSTALL (3) COMMSCOPE - NHHSS-65B-R2BT4 ANTENNA
- INSTALL (3) SAMSUNG - MT6413-77A ANTENNA
- INSTALL (3) SAMSUNG - RF4461D-13A
- INSTALL (3) SAMSUNG - B2/B66A RRH ORAN (RF4439d-25A)
- INSTALL (3) SAMSUNG - RT4423-48A/B RADIO
- INSTALL (2) RFS/CELWAVE - 6x12 HYBRIFLEX CABLE
- INSTALL (2) RRFDC-3315-PF-48 12 OVP BOX
- INSTALL (3) COMMSCOPE - BSAMNT-SBS-1-2 SIDE BY SIDE ANTENNA MOUNT BRACKET

GROUND SCOPE OF WORK:
- INSTALL (19) GRAYBAR - RACK ANCILLARY OTHER
- INSTALL (3) RAYCAPINC-001 - 2260-ALM-RS485 OVP ALARM
- INSTALL (1) RAYCAP - RVZDC-4520-RM-48 12 OVP BOX
- INSTALL (1) COMMSCOPE - RS485-CARD UPCONVERTER
- INSTALL (6) COMMSCOPE - PS-1600-73-VZ UPCONVERTER
- INSTALL (6) COMMSCOPE - PS-BYPASS-1-VZ UPCONVERTER
- INSTALL (1) COMMSCOPE - PS-R-1600-VZ UPCONVERTER
- INSTALL (1) COMMSCOPE - PULSAR-EDGE-CNTRL UPCONVERTER
- INSTALL (7) SAMSUNG KIT
- INSTALL (3) NOKIA KITS
- INSTALL (3) HEWLETT PACKARD KITS

APPLICABLE CODES & REFERENCE DOCUMENTS

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

CODE TYPE	CODE
BUILDING	2020 IBC
MECHANICAL	2020 IMC
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	B+T GRP
DATED:	01/24/2024
MOUNT ANALYSIS:	COLLIER ENGINEERING & DESIGN
DATED:	12/14/2023
RFDS REVISION:	4
DATED:	09/19/2023
ORDER ID:	656559
REVISION:	0

INSTALLER NOTE:

NO PROPOSED LOADING TO BE ADDED UNTIL MOUNT MODIFICATIONS ARE INSTALLED PER MOUNT ANALYSIS BY COLLIER ENGINEERING & DESIGN DATED 12/14/2023.

verizon
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 55021.930870

VERIZON SITE NUMBER:
5000244968

BU #: **842858**
CROWN CASTLE SITE NAME
BOLTON

49 SOUTH ROAD
BOLTON, CT 06043

EXISTING 120'-0"
MONOPOLE TOWER

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	02/27/24	SKK	CONSTRUCTION	SBS
1	04/15/24	SKK	CONSTRUCTION	SBS

STATE OF CONNECTICUT
SCOTT C. BRANTLEY
65536
LICENSED PROFESSIONAL ENGINEER
04/15/24

SHEET NUMBER: T-1
REVISION: 1

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED– NO WORK SHALL COMMENCE PRIOR TO CROWN CASTLE USA INC. WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN CASTLE USA INC. NOC AT 800–788–7011 & THE CROWN CASTLE USA INC. CONSTRUCTION MANAGER.
2. "LOOK UP" – CROWN CASTLE USA INC. SAFETY CLIMB REQUIREMENT:
THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND CROWN CASTLE USA INC. STANDARD CED–STD–10253, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).
5. ALL SITE WORK TO COMPLY WITH QAS–STD–10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE USA INC. TOWER SITE," CED–STD–10294 "STANDARD FOR INSTALLATION OF MOUNTS AND APPURTENANCES," AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, TOWER OWNER, CROWN CASTLE USA INC., AND/OR LOCAL UTILITIES.
14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
CARRIER: VERIZON
TOWER OWNER: CROWN CASTLE USA INC.
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CROWN CASTLE.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION AND IS TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF CROWN CASTLE USA INC.
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE–THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER–TO–CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
#4 BARS AND SMALLER........................40 ksi
#5 BARS AND LARGER........................60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH........3"
CONCRETE EXPOSED TO EARTH OR WEATHER:
#6 BARS AND LARGER........................2"
#5 BARS AND SMALLER........................1–1/2"
CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
SLAB AND WALLS........................3/4"
BEAMS AND COLUMNS........................1–1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

GREENFIELD GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL–OF–POTENTAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON–ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON–METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON–METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD–WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY).

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERYIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI–CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT) OR METAL–CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC ON STRAIGHTS AND SCHEDULE 80 PVC UNDER ALL TRAFFIC EASEMENTS AND ALL ELBOWS/90s. ABOVE GRADE CONDUIT TO BE SCH 80 PVC OR IMC/RMC CONDUIT. EMT IS ALLOWED AT STUB UP LOCATIONS AND INDOORS ONLY.
18. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON–PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER–ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3R (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR CROWN CASTLE USA INC. BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "VERIZON".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

CONDUCTOR COLOR CODE		
SYSTEM	CONDUCTOR	COLOR
120/240V, 1Ø	A PHASE	BLACK
	B PHASE	RED
	NEUTRAL	WHITE
	GROUND	GREEN
120/208V, 3Ø	A PHASE	BLACK
	B PHASE	RED
	C PHASE	BLUE
	NEUTRAL	WHITE
	GROUND	GREEN
277/480V, 3Ø	A PHASE	BROWN
	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
	NEUTRAL	GREY
	GROUND	GREEN
DC VOLTAGE	POS (+)	RED**
	NEG (–)	BLACK**

* SEE NEC 210.5(C)(1) AND (2)
** POLARITY MARKED AT TERMINATION

APWA UNIFORM COLOR CODE:

WHITE	PROPOSED EXCAVATION
PINK	TEMPORARY SURVEY MARKINGS
RED	ELECTRIC POWER LINES, CABLES, CONDUIT, AND LIGHTING CABLES
YELLOW	GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS
ORANGE	COMMUNICATION, ALARM OR SIGNAL LINES, CABLES, OR CONDUIT AND TRAFFIC LOOPS
BLUE	POTABLE WATER
PURPLE	RECLAIMED WATER, IRRIGATION, AND SLURRY LINES
GREEN	SEWERS AND DRAIN LINES

ABBREVIATIONS:

ANT	ANTENNA
(E)	EXISTING
FIF	FACILITY INTERFACE FRAME
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GSM	GLOBAL SYSTEM FOR MOBILE
LTE	LONG TERM EVOLUTION
MGB	MASTER GROUND BAR
MW	MICROWAVE
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
(P)	PROPOSED
PP	POWER PLANT
QTY	QUANTITY
RECT	RECTIFIER
RBS	RADIO BASE STATION
RET	REMOTE ELECTRIC TILT
RFDS	RADIO FREQUENCY DATA SHEET
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
SIAD	SMART INTEGRATED DEVICE
TMA	TOWER MOUNTED AMPLIFIER
TYP	TYPICAL
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
W.P.	WORK POINT

verizon
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 55021.930870

VERIZON SITE NUMBER:
5000244968

BU #: **842858**
CROWN CASTLE SITE NAME
BOLTON

49 SOUTH ROAD
BOLTON, CT 06043

EXISTING 120'-0"
MONOPOLE TOWER

ISSUED FOR:

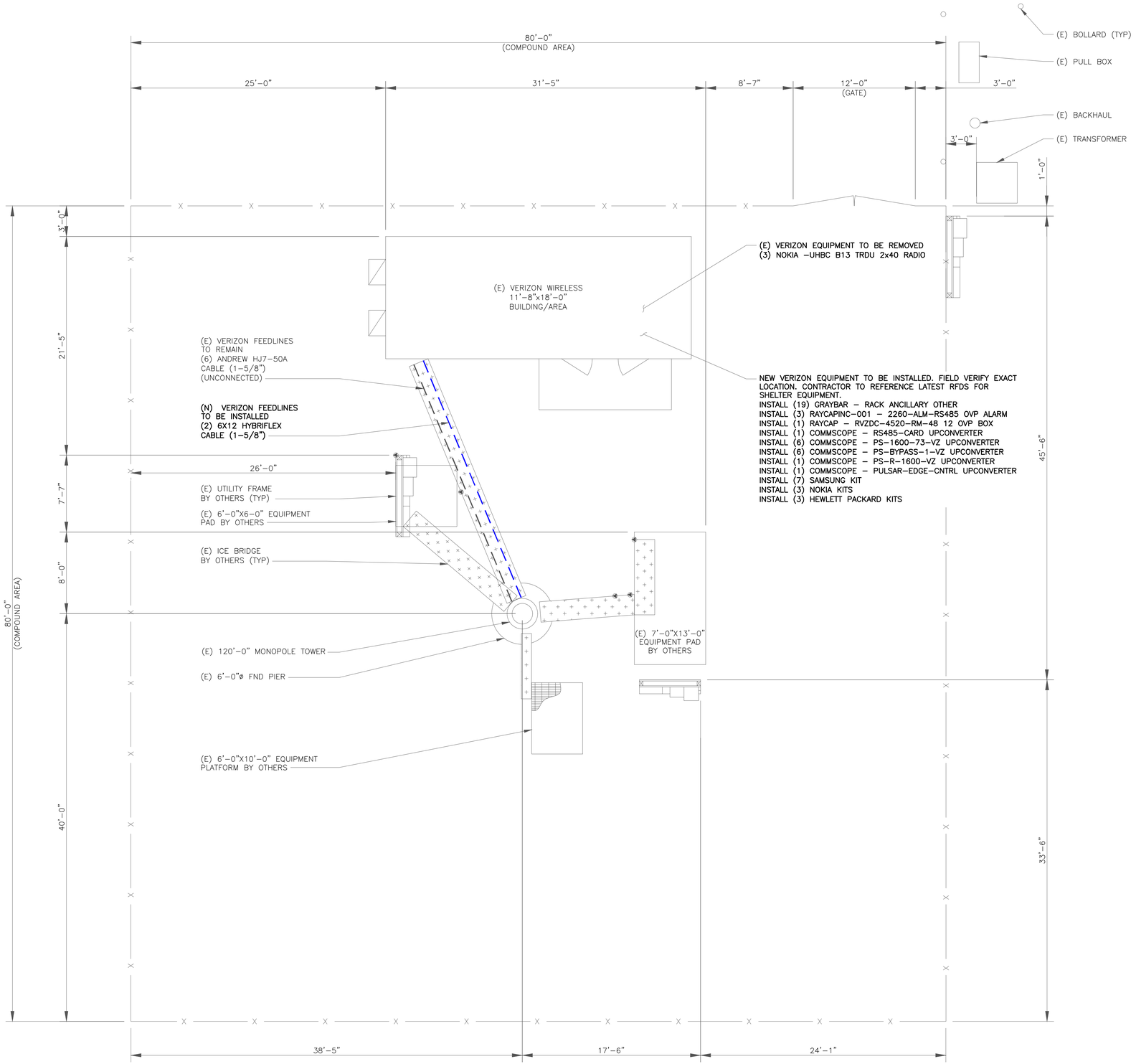
REV	DATE	DRWN	DESCRIPTION	DES./QA
0	02/27/24	SKK	CONSTRUCTION	SBS

02/27/24

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

NOTE:
SITE PLAN SHOWN BELOW WAS REPRODUCED FROM INFORMATION PROVIDED BY CROWN CASTLE. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION IS AS INDICATED ON SITE PLAN. CONTRACTOR IS TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES.

FLOODPLAIN NOTE:
THE TOWER IS LOCATED IN ZONE "X" AREAS OF MINIMAL FLOODING ACCORDING TO FEMA COMMUNITY PANEL #0901090001B, DATED 06/01/1981



1 SITE PLAN
SCALE: 4' 2' 0 4' 3/16"=1'-0" (FULL SIZE) 3/32"=1'-0" (11x17)

N

verizon
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 55021.930870

VERIZON SITE NUMBER:
5000244968

BU #: **842858**
CROWN CASTLE SITE NAME
BOLTON

49 SOUTH ROAD
BOLTON, CT 06043

EXISTING 120'-0"
MONOPOLE TOWER

ISSUED FOR:

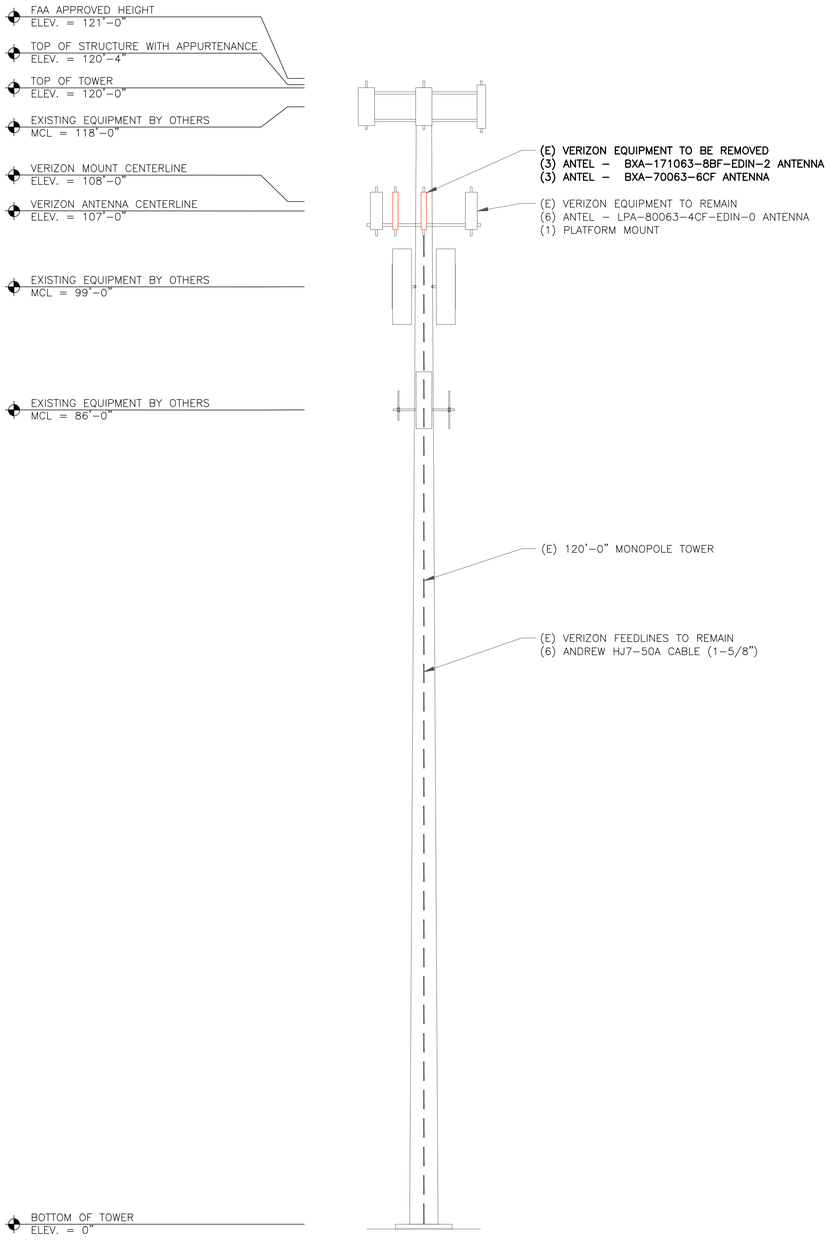
REV	DATE	DRWN	DESCRIPTION	DES./QA
0	02/27/24	SKK	CONSTRUCTION	SBS

STATE OF CONNECTICUT
SCOTT C. BRANTLEY
35580
LICENSED
PROFESSIONAL ENGINEER

02/27/24

SHEET NUMBER: C-1

REVISION: 0



1 EXISTING TOWER ELEVATION

SCALE: 16' 12' 8' 4' 0 16' 1/16"=1'-0" (FULL SIZE) 1/32"=1'-0" (11x17)

VERIZON EQUIPMENT

ANTENNA CL: 107'-0"
MOUNT CL: 108'-0"

FAA APPROVED HEIGHT: 121'-0"

INSTALLER NOTE:

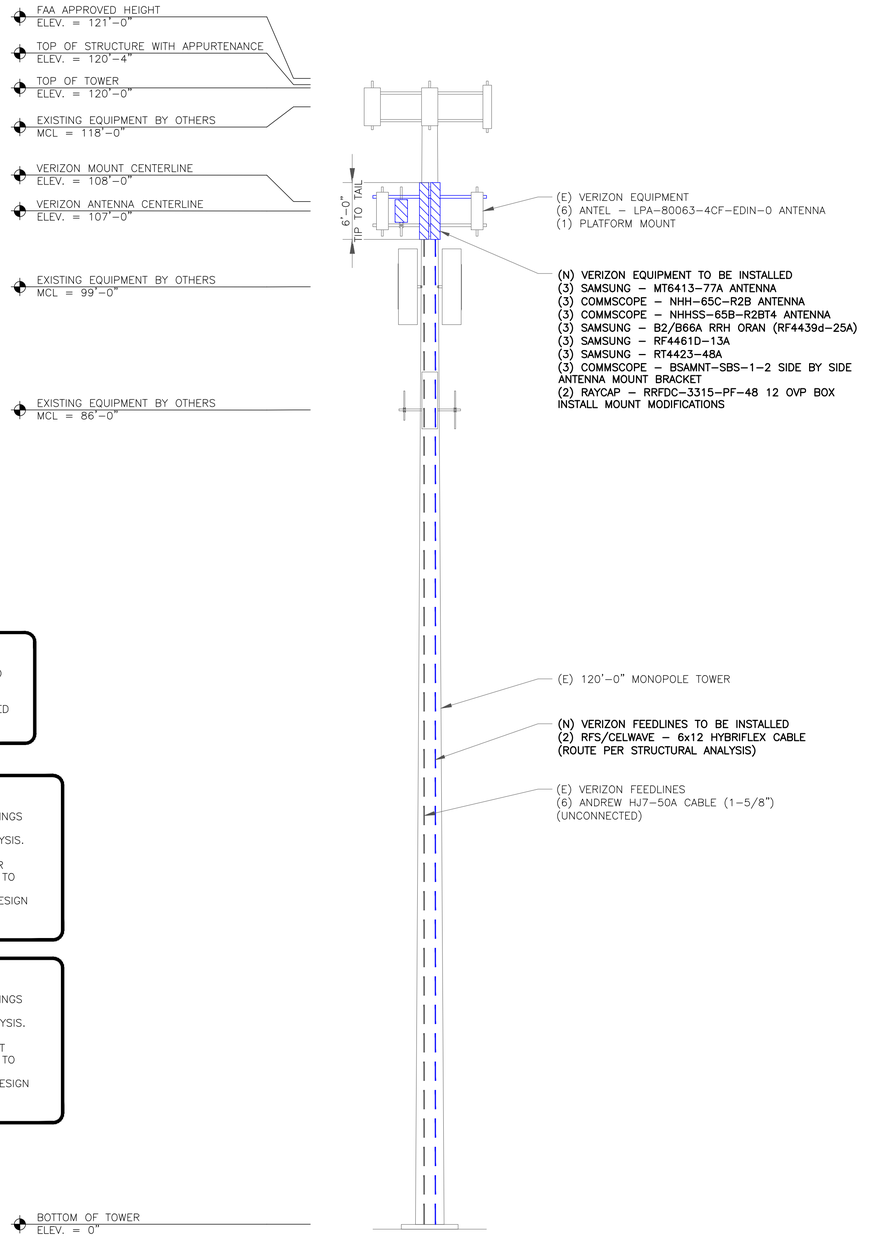
NO PROPOSED LOADING TO BE ADDED UNTIL MOUNT MODIFICATIONS ARE INSTALLED PER MOUNT ANALYSIS BY COLLIER ENGINEERING & DESIGN DATED 12/14/2023.

TOWER ANALYSIS NOTES:

1. THE DESIGN DEPICTED IN THESE DRAWINGS IS VALID WHEN ACCOMPANIED BY A CORRESPONDING PASSING TOWER ANALYSIS.
2. CONSTRUCTION MANAGER / GENERAL CONTRACTOR SHALL REVIEW THE TOWER ANALYSIS FOR ANY CONDITIONS PRIOR TO INSTALLATION.
3. ANY REQUIRED TOWER MODIFICATION DESIGN OR MOUNT REPLACEMENT SHALL BE APPROVED BY EOR.

MOUNT ANALYSIS NOTES:

1. THE DESIGN DEPICTED IN THESE DRAWINGS IS VALID WHEN ACCOMPANIED BY A CORRESPONDING PASSING MOUNT ANALYSIS.
2. CONSTRUCTION MANAGER / GENERAL CONTRACTOR SHALL REVIEW THE MOUNT ANALYSIS FOR ANY CONDITIONS PRIOR TO INSTALLATION.
3. ANY REQUIRED MOUNT MODIFICATION DESIGN OR MOUNT REPLACEMENT SHALL BE APPROVED BY EOR.



2 FINAL TOWER ELEVATION

SCALE: 16' 12' 8' 4' 0 16' 1/16"=1'-0" (FULL SIZE) 1/32"=1'-0" (11x17)

verizon
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 55021.930870

VERIZON SITE NUMBER:
5000244968

BU #: **842858**
CROWN CASTLE SITE NAME
BOLTON

49 SOUTH ROAD
BOLTON, CT 06043

EXISTING 120'-0"
MONOPOLE TOWER

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	02/27/24	SKK	CONSTRUCTION	SBS

STATE OF CONNECTICUT
SCOTT C. BRANT
35536
LICENSED PROFESSIONAL ENGINEER
02/27/24

SHEET NUMBER: C-2

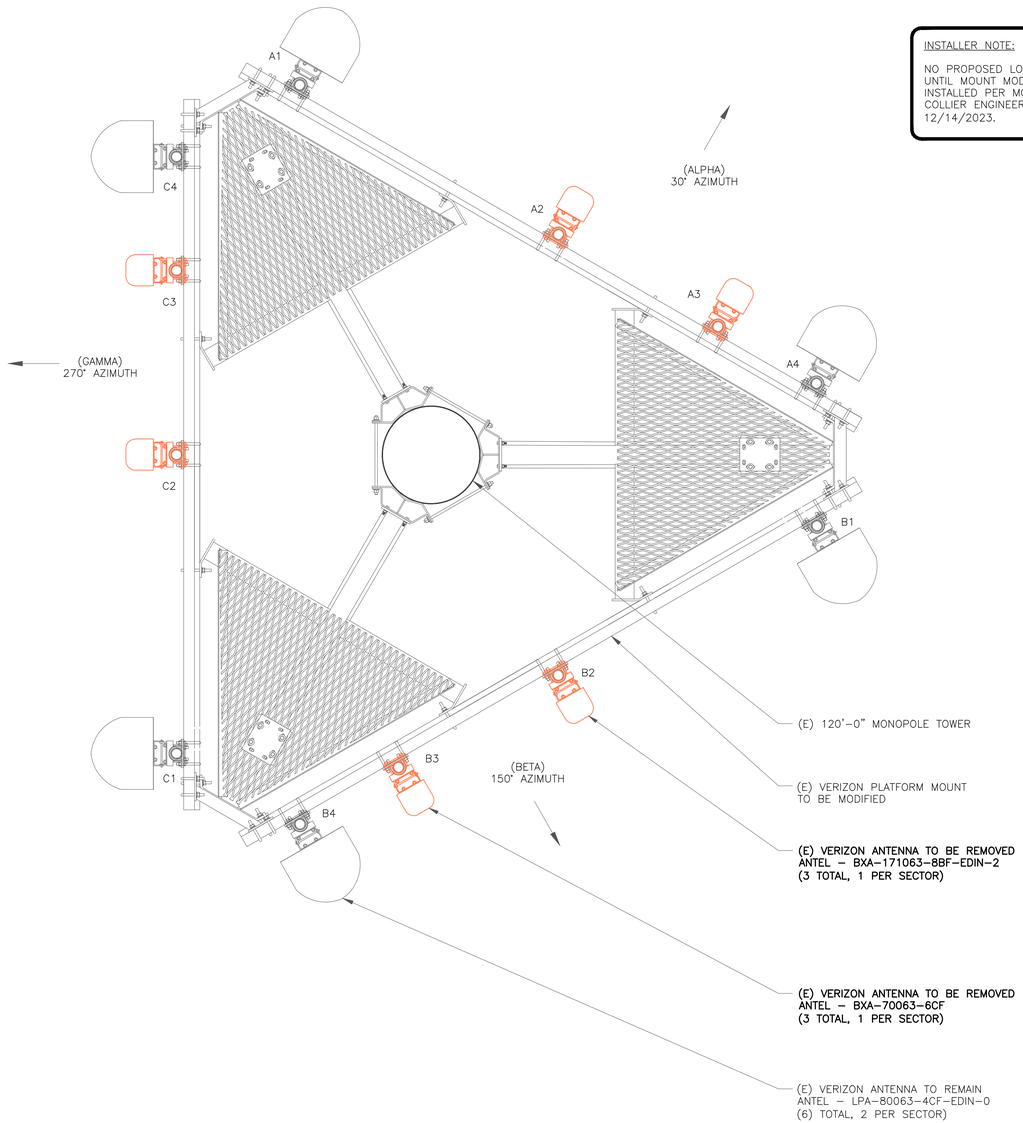
REVISION: 0

INSTALLER NOTE:

EXISTING AND PROPOSED ANTENNA /EQUIPMENT POSITIONING SHOWN PER MA. FIELD CONDITIONS MAY VARY.

INSTALLER NOTE:

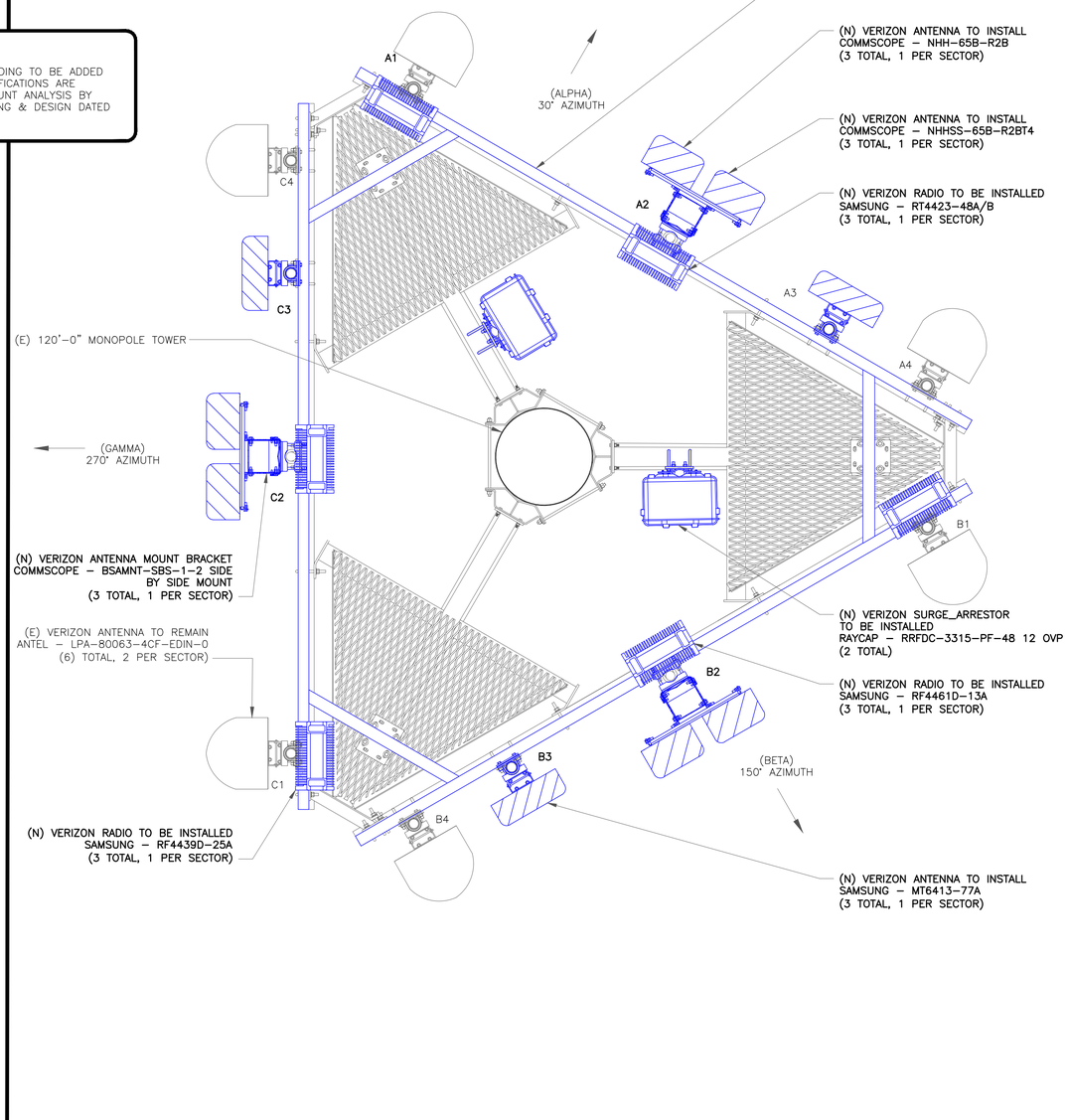
NO PROPOSED LOADING TO BE ADDED UNTIL MOUNT MODIFICATIONS ARE INSTALLED PER MOUNT ANALYSIS BY COLLIER ENGINEERING & DESIGN DATED 12/14/2023.



1 EXISTING ANTENNA PLAN

SCALE: 1' 6" 0 1' 3/4"=1'-0" (FULL SIZE) 3/8"=1'-0" (11x17)

N



2 FINAL ANTENNA PLAN

SCALE: 1' 6" 0 1' 3/4"=1'-0" (FULL SIZE) 3/8"=1'-0" (11x17)

N

verizon
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 55021.930870

VERIZON SITE NUMBER:
5000244968

BU #: **842858**
CROWN CASTLE SITE NAME
BOLTON

49 SOUTH ROAD
BOLTON, CT 06043

EXISTING 120'-0"
MONOPOLE TOWER

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	02/27/24	SKK	CONSTRUCTION	SBS

STATE OF CONNECTICUT
SCOTT C. BRANTLEY
35826
LICENSED PROFESSIONAL ENGINEER

02/27/24

SHEET NUMBER: C-3

REVISION: 0

FINAL EQUIPMENT SCHEDULE
(VERIFY WITH CURRENT RFDS)

POSITION	ANTENNA				RADIO			DIPLEXER			TMA		SURGE PROTECTION		CABLES			
	TECH	STATUS/MANUFACTURER MODEL	AZIMUTH	RAD CENTER	QTY.	STATUS/MODEL	LOCATION	QTY.	STATUS	LOCATION	QTY.	STATUS	QTY.	STATUS/MODEL	QTY.	STATUS/TYPE	SIZE	LENGTH
A1	*	ANTEL – LPA–80063–4CF–EDIN–0	30°	107'–0"	1	(N) SAMSUNG – RF4439D–25A	TOWER	–	–	–	–	–	–	–	–	–	–	–
A2	700/850/1900	(N) COMMSCOPE – NHH–65C–R2B	30°	107'–0"	1 1	(N) SAMSUNG – RF4461D–13A (N) SAMSUNG – RT4423–48A/B	TOWER TOWER	–	–	–	–	–	1	(N) RAYCAP – RVZDC–6627–PF–48	1	(N) HYBRIFLEX CABLE	1–5/8"	160'
	CBRS/AWS	(N) COMMSCOPE – NHHSS–65B–R2BT4	30°	107'–0"														
A3	L–SUB6	(N) SAMSUNG – MT6413–77A	30°	107'–0"	–	–	–	–	–	–	–	–	–	–	–	–	–	–
A4	–	ANTEL – LPA–80063–4CF–EDIN–0	30°	107'–0"	–	–	–	–	–	–	–	–	–	–	–	–	–	–
B1	–	ANTEL – LPA–80063–4CF–EDIN–0	150°	107'–0"	–	–	–	–	–	–	–	–	–	–	–	–	–	–
B2	700/850/1900	(N) COMMSCOPE – NHH–65C–R2B	150°	107'–0"	1 1	(N) SAMSUNG – RF4461D–13A (N) SAMSUNG – RT4423–48A/B	TOWER TOWER	–	–	–	–	–	1	(N) RAYCAP – RVZDC–6627–PF–48	1	(N) HYBRIFLEX CABLE	1–5/8"	160'
	CBRS/AWS	(N) COMMSCOPE – NHHSS–65B–R2BT4	150°	107'–0"														
B3	L–SUB6	(N) SAMSUNG – MT6413–77A	150°	107'–0"	–	–	–	–	–	–	–	–	–	–	–	–	–	–
B4	–	ANTEL – LPA–80063–4CF–EDIN–0	150°	107'–0"	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C1	–	ANTEL – LPA–80063–4CF–EDIN–0	270°	107'–0"	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C2	700/850/1900	(N) COMMSCOPE – NHH–65C–R2B	270°	107'–0"	1 1	(N) SAMSUNG – RF4461D–13A (N) SAMSUNG – RT4423–48A/B	TOWER TOWER	–	–	–	–	–	–	–	–	–	–	–
	CBRS/AWS	(N) COMMSCOPE – NHHSS–65B–R2BT4	270°	107'–0"														
C3	L–SUB6	(N) SAMSUNG – MT6413–77A	270°	107'–0"	–	–	–	–	–	–	–	–	–	–	–	–	–	–
C4	–	ANTEL – LPA–80063–4CF–EDIN–0	270°	107'–0"	–	–	–	–	–	–	–	–	–	–	–	–	–	–
														UNUSED FEEDLINES	6	(E) COAX	1–5/8"	160'
															–	–	–	–

NOTE – CONTRACTOR TO REFERENCE LATEST RFDS FOR ELECTRICAL AND MECHANICAL DOWNTILTS

1 FINAL EQUIPMENT SCHEDULE
SCALE: NOT TO SCALE

verizon
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 55021.930870

VERIZON SITE NUMBER:
5000244968

BU #: **842858**
CROWN CASTLE SITE NAME
BOLTON

49 SOUTH ROAD
BOLTON, CT 06043

EXISTING 120'-0"
MONOPOLE TOWER

ISSUED FOR:

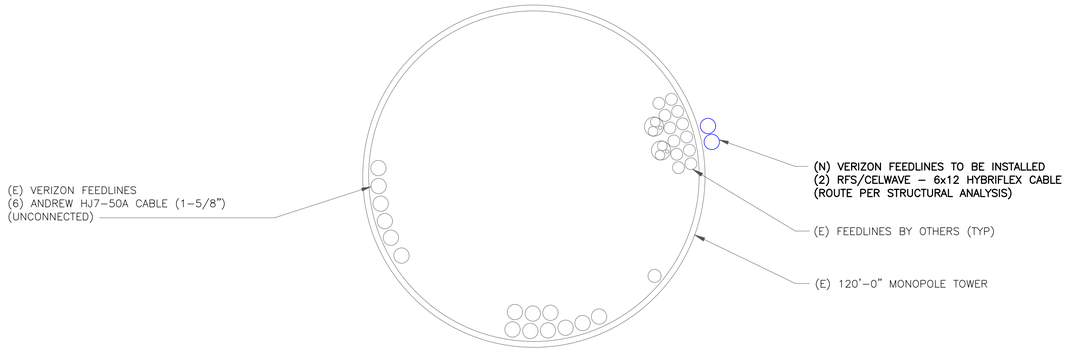
REV	DATE	DRWN	DESCRIPTION	DES./QA
0	02/27/24	SKK	CONSTRUCTION	SBS

STATE OF CONNECTICUT
SCOTT C. BRANTLEY
29306
LICENSED PROFESSIONAL ENGINEER

02/27/24

SHEET NUMBER: C-4

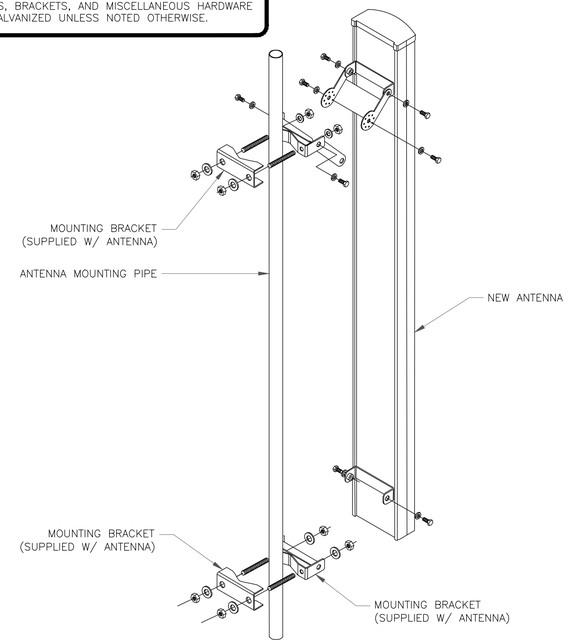
REVISION: 0



1 BASE LEVEL DETAIL
SCALE: NOT TO SCALE

INSTALLER NOTE:

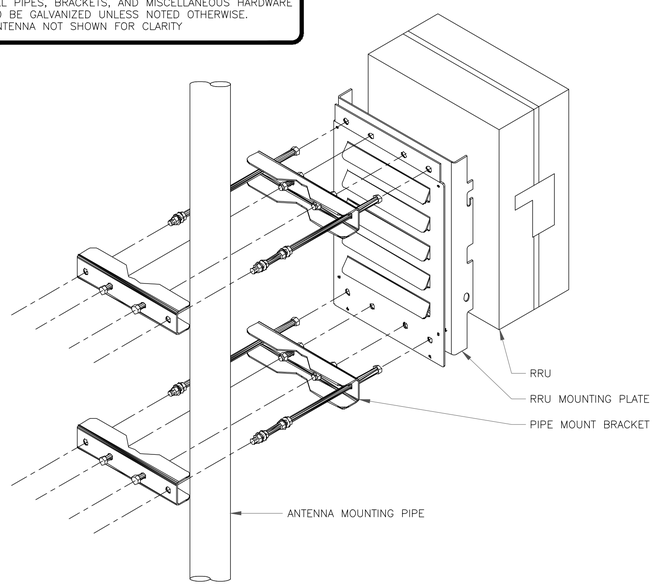
1. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.



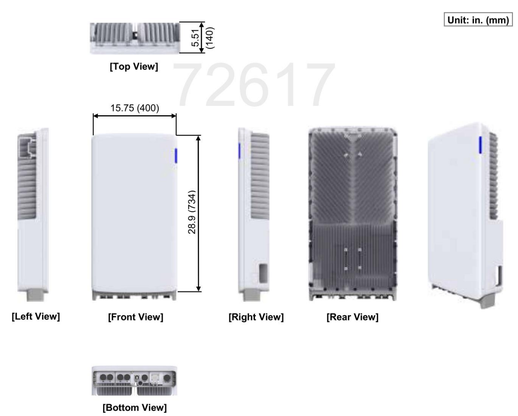
2 ANTENNA MOUNTING DETAIL
SCALE: NOT TO SCALE

INSTALLER NOTES:

1. COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRUs RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING.
2. DO NOT OPEN RRU PACKAGES IN THE RAIN.
3. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.
4. ANTENNA NOT SHOWN FOR CLARITY

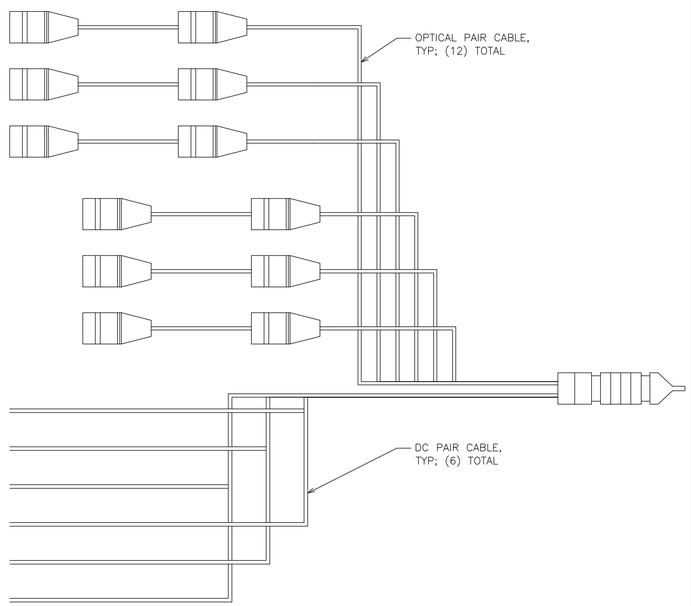


3 RRU MOUNTING DETAIL
SCALE: NOT TO SCALE



SAMSUNG TELECOMMUNICATIONS - MT6413-77A ANTENNA
WEIGHT: 57.30 LBS
SIZE (HxWxD): 28.90x15.75x5.51 IN.

4 SAMSUNG - MT6413-77A
SCALE: NOT TO SCALE



RFS/CELWAVE - HB158-21U6S12-XXXM-01
WEIGHT: 1.7 LBS/FT
DIAMETER: 1.99" (±.1")
COAX EQUIVALENT: 1⅝"

5 HCS DETAIL
SCALE: NOT TO SCALE

verizon
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 55021.930870

VERIZON SITE NUMBER:
5000244968

BU #: **842858**
CROWN CASTLE SITE NAME
BOLTON

49 SOUTH ROAD
BOLTON, CT 06043

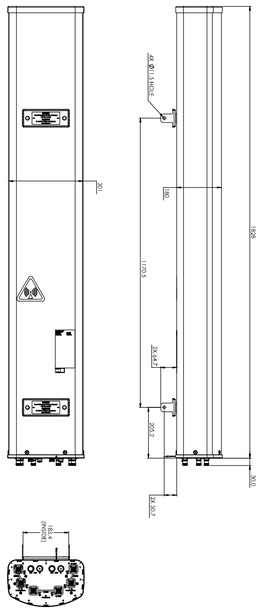
EXISTING 120'-0"
MONOPOLE TOWER

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	02/27/24	SKK	CONSTRUCTION	SBS

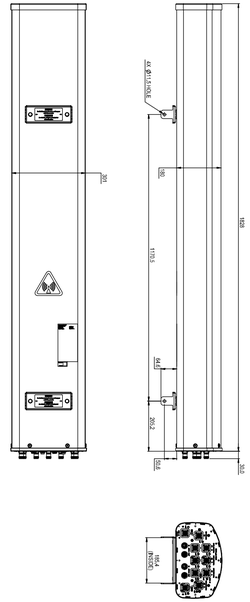
STATE OF CONNECTICUT
SCOTT C. BRANT
35536
LICENSED PROFESSIONAL ENGINEER
02/27/24

SHEET NUMBER:	REVISION:
C-5.1	0



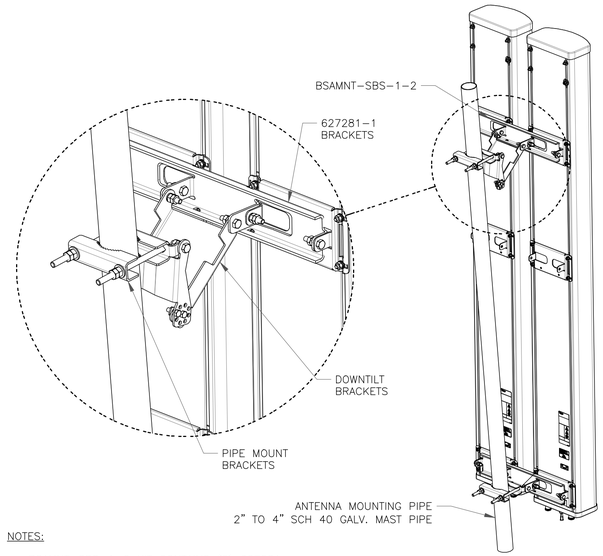
COMMSCOPE – NHH-65B-R2B ANTENNA
WEIGHT: 43.70 LBS
SIZE (HxWxD): 72.00x11.90x7.10 IN.

1 COMMSCOPE – NNH-65B-R2B
SCALE: NOT TO SCALE



COMMSCOPE – NHHSS-65B-R2BT4 ANTENNA
WEIGHT: 64.63 LBS
SIZE (HxWxD): 71.97x11.85x7.13 IN.

2 COMMSCOPE – NHHSS-65B-R2BT4
SCALE: NOT TO SCALE

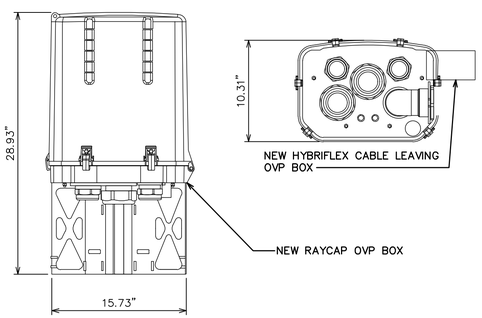


NOTES:

- BSAMNT-SBS-1-2 KIT CONTAINS (2) 627281 MOUNTING BRACKETS.
- TORQUE THE M10 BOLT ASSEMBLY TO 37 N.m. PER MANUFACTURE'S RECOMMENDATIONS.

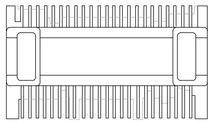
3 COMMSCOPE – BSAMNT-SBS-1-2
SCALE: NOT TO SCALE

FRONT **TOP**

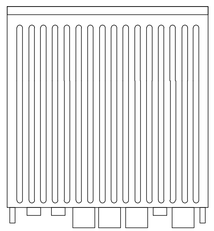


RAYCAP / RRFDC-3315-PF-48
WEIGHT: 32.00 LBS
SIZE (HxWxD): 25.66x15.73x10.25 IN.

4 RAYCAP – RRFDC-3315-PF-48
SCALE: NOT TO SCALE



PLAN

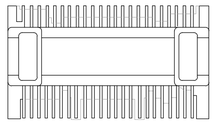


FRONT

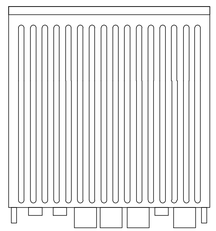
MECHANICAL SPECIFICATIONS
OVERALL HEIGHT: 14.96 IN.
WIDTH: 14.96 IN.
DEPTH: 10.04 IN.
WEIGHT WITHOUT BRACKETS: 74.70 LBS.

NOTE:
1. MOUNTING OF RRH TO PIPE MAST SHALL BE PER MANUFACTURER DIRECTION.

5 SAMSUNG – RF4439D-25A
SCALE: NOT TO SCALE



PLAN

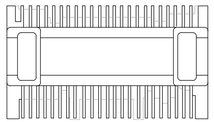


FRONT

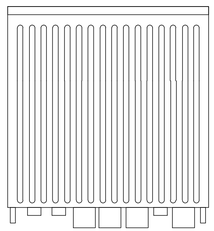
MECHANICAL SPECIFICATIONS
OVERALL HEIGHT: 14.96 IN.
WIDTH: 14.96 IN.
DEPTH: 10.23 IN.
WEIGHT WITHOUT BRACKETS: 79.10 LBS.

NOTE:
1. MOUNTING OF RRH TO PIPE MAST SHALL BE PER MANUFACTURER DIRECTION.

6 SAMSUNG – RF4461D-13A
SCALE: NOT TO SCALE



PLAN



FRONT

MECHANICAL SPECIFICATIONS
OVERALL HEIGHT: 11.80 IN.
WIDTH: 8.70 IN.
DEPTH: 3.60 IN.
WEIGHT WITHOUT BRACKETS: 17.40 LBS.

NOTE:
1. MOUNTING OF RRH TO PIPE MAST SHALL BE PER MANUFACTURER DIRECTION.

7 SAMSUNG – RT4423-48A/B
SCALE: NOT TO SCALE

verizon
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351

TEP JOB #: 55021.930870

VERIZON SITE NUMBER:
5000244968

BU #: **842858**
CROWN CASTLE SITE NAME
BOLTON

49 SOUTH ROAD
BOLTON, CT 06043

EXISTING 120'-0"
MONOPOLE TOWER

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	02/27/24	SKK	CONSTRUCTION	SBS

02/27/24

SHEET NUMBER: C-5.2

REVISION: 0

Azimuth (1) Alpha					
Cell (850 CDMA)	Red				
PCS2 (1900 LTE)	Pink	Red	Pink		
700 LTE	Lt. Green	Red	Lt. Green		
850 LTE	Purple	Red	Purple		
2100 LTE	Orange	Red	Orange		
High Band Dual Band (Shared Lines)	Orange	Pink	Red	Pink	Orange
Low Band Dual Band (Shared Lines)	Purple	Lt. Green	Red	Lt. Green	Purple
5G 28GHz	Brown	Red	Brown		
5G 39GHz	Blue	Red	Blue		
LAA	Gray	Red	Gray		
CBRS	White	Red	White		
L-Sub6 (C-Band)	Red	Red	Red		

Azimuth (2) Beta					
Cell (850 CDMA)	Blue				
PCS2 (1900 LTE)	Pink	Blue	Pink		
700 LTE	Lt. Green	Blue	Lt. Green		
850 LTE	Purple	Blue	Purple		
2100 LTE	Orange	Blue	Orange		
High Band Dual Band (Shared Lines)	Orange	Pink	Blue	Pink	Orange
Low Band Dual Band (Shared Lines)	Purple	Lt. Green	Blue	Lt. Green	Purple
5G 28GHz	Brown	Blue	Brown		
5G 39GHz	Blue	Blue	Blue		
LAA	Gray	Blue	Gray		
CBRS	White	Blue	White		
L-Sub6 (C-Band)	Red	Blue	Red		

Azimuth (3) Gamma					
Cell (850 CDMA)	Yellow				
PCS2 (1900 LTE)	Pink	Yellow	Pink		
700 LTE	Lt. Green	Yellow	Lt. Green		
850 LTE	Purple	Yellow	Purple		
2100 LTE	Orange	Yellow	Orange		
High Band Dual Band (Shared Lines)	Orange	Pink	Yellow	Pink	Orange
Low Band Dual Band (Shared Lines)	Purple	Lt. Green	Yellow	Lt. Green	Purple
5G 28GHz	Brown	Yellow	Brown		
5G 39GHz	Blue	Yellow	Blue		
LAA	Gray	Yellow	Gray		
CBRS	White	Yellow	White		
L-Sub6 (C-Band)	Red	Yellow	Red		

Azimuth (4) Delta					
Cell (850 CDMA)	Orange				
PCS2 (1900 LTE)	Pink	Orange	Pink		
700 LTE	Lt. Green	Orange	Lt. Green		
850 LTE	Purple	Orange	Purple		
2100 LTE	Orange	Orange	Orange		
High Band Dual Band (Shared Lines)	Orange	Pink	Orange	Pink	Orange
Low Band Dual Band (Shared Lines)	Purple	Lt. Green	Orange	Lt. Green	Purple
5G 28GHz	Brown	Orange	Brown		
5G 39GHz	Blue	Orange	Blue		
LAA	Gray	Orange	Gray		
CBRS	White	Orange	White		
L-Sub6 (C-Band)	Red	Orange	Red		

Azimuth (5) Epsilon					
Cell (850 CDMA)	White				
PCS2 (1900 LTE)	Pink	White	Pink		
700 LTE	Lt. Green	White	Lt. Green		
850 LTE	Purple	White	Purple		
2100 LTE	Orange	White	Orange		
High Band Dual Band (Shared Lines)	Orange	Pink	White	Pink	Orange
Low Band Dual Band (Shared Lines)	Purple	Lt. Green	White	Lt. Green	Purple
5G 28GHz	Brown	White	Brown		
5G 39GHz	Blue	White	Blue		
LAA	Gray	White	Gray		
CBRS	White	White	White		
L-Sub6 (C-Band)	Red	White	Red		

Azimuth (6) Zeta					
Cell (850 CDMA)	Gray				
PCS2 (1900 LTE)	Pink	Gray	Pink		
700 LTE	Lt. Green	Gray	Lt. Green		
850 LTE	Purple	Gray	Purple		
2100 LTE	Orange	Gray	Orange		
High Band Dual Band (Shared Lines)	Orange	Pink	Gray	Pink	Orange
Low Band Dual Band (Shared Lines)	Purple	Lt. Green	Gray	Lt. Green	Purple
5G 28GHz	Brown	Gray	Brown		
5G 39GHz	Blue	Gray	Blue		
LAA	Gray	Gray	Gray		
CBRS	White	Gray	White		
L-Sub6 (C-Band)	Red	Gray	Red		

1 COLOR CODE MATRIX
SCALE: NOT TO SCALE

verizon
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 55021.930870

VERIZON SITE NUMBER:
5000244968

BU #: **842858**
CROWN CASTLE SITE NAME
BOLTON

49 SOUTH ROAD
BOLTON, CT 06043

EXISTING 120'-0"
MONOPOLE TOWER

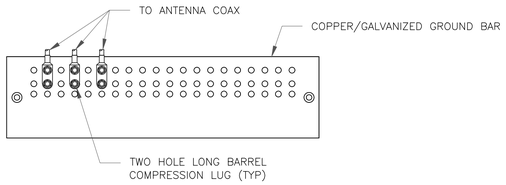
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	02/27/24	SKK	CONSTRUCTION	SBS

02/27/24

SHEET NUMBER: C-6

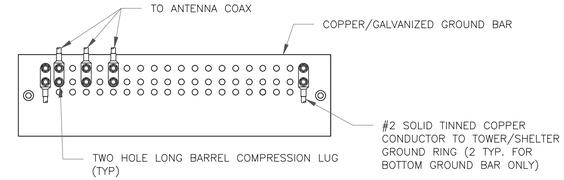
REVISION: 0



NOTES:

1. DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
3. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO ANTENNA MOUNT STEEL.

1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE

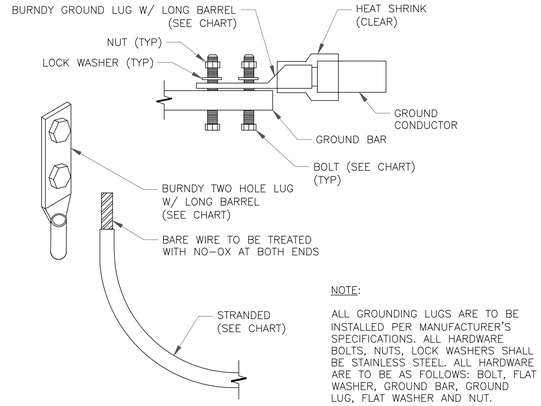


NOTES:

1. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
2. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
3. GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE

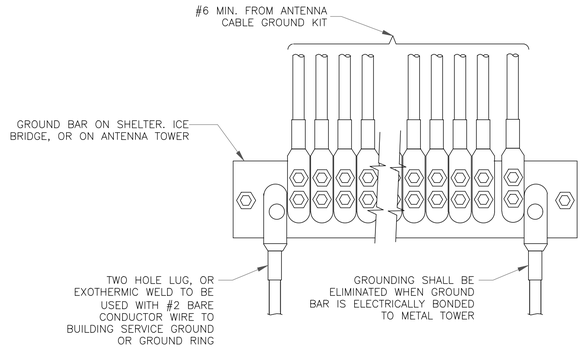
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 GREEN INSULATED	YA6C-2TC38	3/8" – 16 NC SS 2 BOLT
#2 SOLID TINNED	YA3C-2TC38	3/8" – 16 NC SS 2 BOLT
#2 STRANDED	YA2C-2TC38	3/8" – 16 NC SS 2 BOLT
#2/0 STRANDED	YA26-2TC38	3/8" – 16 NC SS 2 BOLT
#4/0 STRANDED	YA28-2N	1/2" – 16 NC SS 2 BOLT



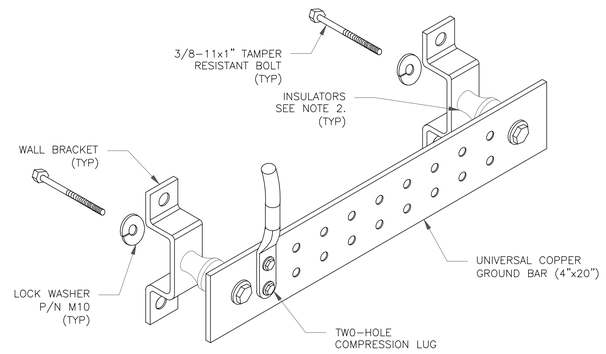
NOTE:

ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

3 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



4 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE

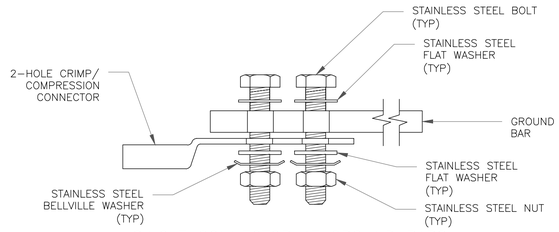


NOTES:

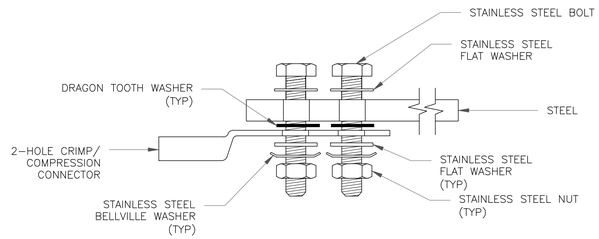
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.

2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

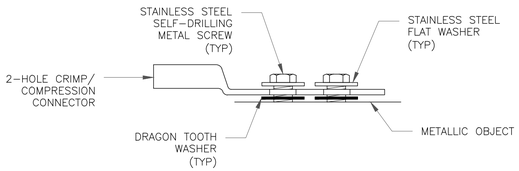
5 GROUND BAR DETAIL
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

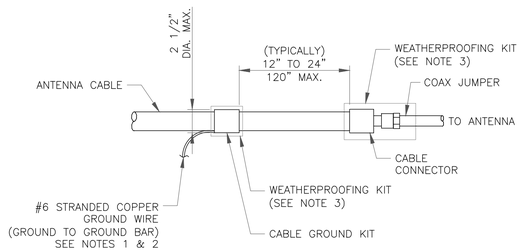


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

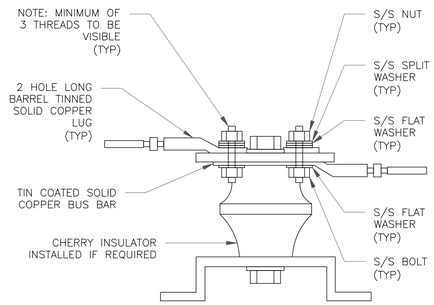
8 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

6 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE

verizon
20 ALEXANDER DRIVE, 2ND FLOOR
WALLINGFORD, CT 06492

CROWN CASTLE
1200 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351
TEP JOB #: 55021.930870

VERIZON SITE NUMBER:
5000244968

BU #: **842858**
CROWN CASTLE SITE NAME
BOLTON

49 SOUTH ROAD
BOLTON, CT 06043

EXISTING 120'-0"
MONOPOLE TOWER

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	02/27/24	SKK	CONSTRUCTION	SBS

02/27/24

SHEET NUMBER: G-1

REVISION: 0

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

Post-Modification Antenna Mount Analysis Report and PMI Requirements

Mount Fix

SMART Tool Project #: 10215321
Colliers Engineering & Design Project #: 21777985 (Rev. 1)

December 14, 2023

Site Information	*Site ID:*	*5000244968-VZW / BOLTON EAST CT*
	Site Name:	*BOLTON EAST CT*
	Carrier Name:	*Verizon Wireless*
	Address:	*49 South Street* *Bolton, Connecticut 06043* *Tolland County*
	Latitude:	*41.789028°*
	Longitude:	*-72.429139°*
Structure Information	*Tower Type:*	*120-Ft Monopole*
	Mount Type:	*12.50-Ft Platform*

FUZE ID # 16272381

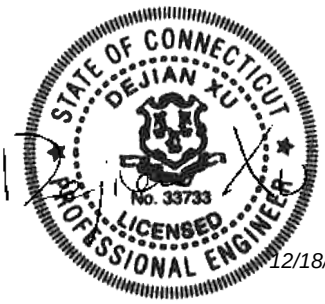
Analysis Results

Platform: **63.2% Pass w/ Modifications***

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

******Contractor PMI Requirements***:
Included at the end of this MA report
Available & Submitted via portal at https://pmi.vzwsmart.com
For additional questions and support, please reach out to:
pmisupport@colliersengineering.com

Report Prepared By: Prasanna Dhakal



12/18/2023

MOUNT MODIFICATION DRAWINGS
EXISTING 12.50' PLATFORM

TOWER OWNER: CROWN CASTLE
TOWER OWNER SITE NUMBER: 842858

CARRIER SITE NAME: BOLTON EAST CT
CARRIER SITE NUMBER: 5000244968
FUZE ID: 16272381

49 SOUTH STREET
BOLTON, CT 06043
TOLLAND COUNTY

LATITUDE: 41.789028° N
LONGITUDE: 72.429139° W

DESIGN CRITERIA

WIND LOADS

BASIC WIND SPEED (3 SECOND GUST), V = 120 MPH
EXPOSURE CATEGORY C
TOPOGRAPHIC CATEGORY: 1
TOPOGRAPHIC CONSIDERED: N/A
TOPOGRAPHIC METHOD: N/A
MEAN BASE ELEVATION (AMSL) = 621.52'

ICE LOADS

ICE WIND SPEED (3 SECOND GUST), V = 50 MPH
ICE THICKNESS = 1.50 IN

SEISMIC LOADS

SEISMIC DESIGN CATEGORY B
SHORT TERM MCER GROUND MOTION, S_S = .191
LONG TERM MCER GROUND MOTION, S_1 = .055

PROJECT INFORMATION

APPLICANT/LESSEE

COMPANY: VERIZON WIRELESS

CLIENT REPRESENTATIVE

COMPANY: VERIZON WIRELESS

PROJECT MANAGER

COMPANY: COLLIERS ENGINEERING & DESIGN
CONTACT: PETER ALBANO
PHONE: 856.797.0412
E-MAIL: PETER.ALBANO@COLLIERSENG.COM

CONTRACTOR PMI REQUIREMENTS

PMI LOCATION:	HTTPS://PMI.VZWSMART.COM
SMART TOOL PROJECT #:	10215321
VZW MDG #:	5000244968
ANALYSIS DATE:	12/14/2023

PMI REQUIREMENTS EMBEDDED WITHIN MOUNT MODIFICATION REPORT

SHEET INDEX

Colliers Engineering & Design
www.colliersengineering.com

verizon

811 Know what's below. Call before you dig.

PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE: AS SHOWN
JOB NUMBER: 21777985

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	08/16/21	ISSUED FOR CONSTRUCTION	MC	DX
1	12/14/23	ISSUED FOR CONSTRUCTION	PD	DX

STATE OF CONNECTICUT
DEJIAN XU
No. 33733
LICENSED PROFESSIONAL ENGINEER
12/18/2023
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

SITE NAME:

BOLTON EAST CT
5000244968

49 SOUTH STREET
BOLTON, CT 06043
TOLLAND COUNTY

Colliers Engineering & Design
STAMFORD
1055 Washington Boulevard
Stamford, CT 06901
Phone: 203.324.0800
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

SHEET TITLE: TITLE SHEET

SHEET NUMBER: ST-1

BILL OF MATERIALS

SECTION 1 - VZWSMART KITS

QUANTITY	MANUFACTURER	PART NUMBER	DESCRIPTION	NOTES	UNIT WEIGHT (LBS.)	WEIGHT (LBS.)
1	VZWSMART	VZWSMART-PLK1	SUPPORT RAIL KIT	CONTRACTOR TO VERIFY THE LENGTH REQUIRED AND TRIM AS NECESSARY IN ACCORDANCE WITH THE 'STRUCTURAL STEEL' NOTES ON SHEET SGN-1.	504	504

SECTION 2 - OTHER REQUIRED PARTS

QUANTITY	MANUFACTURER	PART NUMBER	DESCRIPTION	NOTES	UNIT WEIGHT (LBS.)	WEIGHT (LBS.)
2	-	-	36" LONG, PIPE 2 SCH40	GALVANIZED	11	22
2	SITE PRO 1	SQCX4-K	CROSSOVER PLATE KIT W/ SQUARE U-BOLTS AND STD. U-BOLTS	OR EOR APPROVED EQUAL, CONTACT COLLIERS ENGINEERING & DESIGN FOR APPROVAL OF SUBSTITUTION	11	23

SECTION 3 - REQUIRED SAFETY CLIMB PARTS

QUANTITY	MANUFACTURER	PART NUMBER	DESCRIPTION	NOTES	UNIT WEIGHT (LBS.)	WEIGHT (LBS.)
1	PERFECT VISON	H42-0501-06	STANDOFF CLAMP BRACKET	OR EOR APPROVED EQUIVALENT	-	-
1	PERFECT VISION	PV-CMX-CG-BO	WIRE ROPE GUIDE	OR EOR APPROVED EQUIVALENT	-	-
					TOTAL:	549

NOTES:

1. THE MANUFACTURERS LISTED ARE THE APPROVED VENDORS FOR THE VZW MOUNT KITS. EACH MANUFACTURER WILL BE AWARE OF WHICH KITS HAVE BEEN THROUGH THE VZW APPROVAL PROCESS AND THEY ARE IN TURN APPROVED TO SELL. PLEASE NOTE THAT THE MATERIAL UTILIZED ON THE MOUNT MODIFICATIONS WILL BE REVIEWED AS A PART OF THE DESKTOP PMI COMPLETED BY THE SMART TOOL VENDOR. IT WILL BE REQUIRED THAT THE VZW KITS SPECIFIED ARE UTILIZED IN THE MODIFICATIONS.
2. ALL MATERIALS REQUIRED FOR THE DESIGNED MODIFICATIONS BUT NOT LISTED IN THIS SHEET ARE ASSUMED TO BE PROVIDED BY THE CONTRACTOR.

VZWSMART KITS - APPROVED VENDORS

COMMSCOPE	
CONTACT	SALVADOR ANGUIANO
PHONE	(817) 304-7492
EMAIL	SALVADOR.ANGUIANO@COMMSCOPE.COM
WEBSITE	WWW.COMMSCOPE.COM

METROSITE FABRICATORS, LLC	
CONTACT	KENT RAMEY
PHONE	(706) 335-7045 (O), (706) 982-9788 (M)
EMAIL	KENT@METROSITELLC.COM
WEBSITE	METROSITEFABRICATORS.COM

PERFECTVISION	
CONTACT	WIRELESS SALES
PHONE	(844) 887-6723
EMAIL	WWW.PERFECT-VISION.COM
WEBSITE	WIRELESSSALES@PERFECT-VISION.COM

SABRE INDUSTRIES, INC.	
CONTACT	ANGIE WELCH
PHONE	(866) 428-6937
EMAIL	AKWELCH@SABREINDUSTRIES.COM
WEBSITE	WWW.SABRESITESOLUTIONS.COM

SITE PRO 1	
CONTACT	PAULA BOSWELL
PHONE	(972) 236-9843
EMAIL	PAULA.BOSWELL@VALMONT.COM
WEBSITE	WWW.SITEPRO1.COM

Colliers Engineering & Design

www.colliersengineering.com

verizon

811 Know what's below. Call before you dig.

PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE : AS SHOWN

JOB NUMBER : 21777985

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	08/16/21	ISSUED FOR CONSTRUCTION	MC	DX
1	12/14/23	ISSUED FOR CONSTRUCTION	PD	DX

STATE OF CONNECTICUT
DEJIAN XU
No. 33733
LICENSED PROFESSIONAL ENGINEER

12/18/2023

COLLIERS ENGINEERING & DESIGN CT, P.C.
DEJIAN XU 33733

SITE NAME:

BOLTON EAST CT
5000244968

49 SOUTH STREET
BOLTON, CT 06043
TOLLAND COUNTY

Colliers Engineering & Design

STAMFORD
1055 Washington Boulevard
Stamford, CT 06901
Phone: 203.324.0800
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

SHEET TITLE : BILL OF MATERIALS

SHEET NUMBER : SBOM-1

GENERAL NOTES

1. THESE MODIFICATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF THE TELECOMMUNICATIONS INDUSTRY STANDARD TIA-222-H. MATERIALS AND SERVICES PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE ABOVE MENTIONED CODES.
2. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE TO EXISTING STRUCTURES. ANY DAMAGE TO EXISTING STRUCTURES AS A RESULT OF THE CONTRACTOR'S WORK OR FROM DAMAGE DUE TO OTHER CAUSES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS BEFORE BEGINNING WORK, ORDERING MATERIAL, AND PREPARING OF SHOP DRAWINGS. ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER. IF THE CONTRACTOR DISCOVERS ANY EXISTING CONDITIONS THAT ARE NOT REPRESENTED ON THESE DRAWINGS, OR ANY CONDITIONS THAT WOULD INTERFERE WITH THE INSTALLATION OF THE MODIFICATIONS, NOTIFY THE ENGINEER IMMEDIATELY.
4. IT IS ASSUMED THAT ANY STRUCTURAL MODIFICATION WORK SPECIFIED ON THESE PLANS WILL BE ACCOMPLISHED BY KNOWLEDGEABLE WORKMEN WITH TOWER CONSTRUCTION EXPERIENCE.
5. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES, AND PROCEDURES.
6. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN AND SHALL MEET ANSI/TIA-322 (LATEST EDITION), OSHA, AND GENERAL INDUSTRY STANDARDS. ALL RIGGING PLANS SHALL ADHERE TO ANSI/TIA-322 (LATEST EDITION) INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION.
7. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PROGRAMS IN ACCORDANCE WITH APPLICABLE SAFETY CODES.
8. WORK SHALL ONLY BE PERFORMED DURING CALM DRY DAYS (WINDS LESS THAN 30-MPH). THE STRUCTURE SHOWN ON THE DRAWINGS IS STRUCTURALLY SOUND ONLY IN THE COMPLETED FORM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STRENGTH AND STABILITY OF THE STRUCTURE DURING ERECTION. CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT, SHORING, BRACING AND ANY OTHER STRUCTURAL SYSTEMS AS REQUIRED TO RESIST ALL FORCES THAT MAY OCCUR DURING HANDLING AND ERECTION UNTIL THE STRUCTURE IS FULLY COMPLETED. TEMPORARY SUPPORTS, BRACING AND OTHER STRUCTURAL SYSTEMS REQUIRED DURING CONSTRUCTION SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER THEIR USE.
9. ALL INSTALLATIONS PERFORMED ON THIS STRUCTURE SHALL BE COMPLETED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF THE STANDARD FOR INSTALLATION, ALTERATION AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS, ANSI/TIA-322.
10. CONTRACTOR SHALL SECURE SITE BACK TO EXISTING CONDITION UNDER SUPERVISION OF OWNER. ALL FENCE, STONE, GEOFABRIC, GROUNDING, AND SURROUNDING GRADE SHALL BE REPLACED AND REPAIRED AS REQUIRED TO ACHIEVE OWNER APPROVAL. POSITIVE DRAINAGE AWAY FROM TOWER SITE SHALL BE MAINTAINED.
11. CONNECTIONS BETWEEN ITEMS SUPPORTED BY THE STRUCTURE AND THE STRUCTURE NOT SPECIFICALLY DETAILED IN THE CONTRACT DOCUMENTS ARE THE RESPONSIBILITY OF THE CONTRACTOR. SUCH CONNECTIONS SHALL BE DESIGNED, COORDINATED AND INSPECTED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF THE PROJECT. SUBMIT SIGNED AND SEALED CALCULATIONS DURING SHOP DRAWING REVIEW.
12. DO NOT SCALE DRAWINGS.
13. DO NOT USE THESE DRAWINGS FOR ANY OTHER SITE.
14. ALL MATERIAL UTILIZED FOR THIS PROJECT MUST BE NEW AND FREE OF ANY DEFECTS. ANY MATERIAL SUBSTITUTIONS, INCLUDING BUT NOT LIMITED TO ALTERED SIZE AND/OR STRENGTHS, MUST BE APPROVED BY THE OWNER AND ENGINEER IN WRITING.
15. THE MOUNT UNDER NO CIRCUMSTANCES SHOULD BE USED AS A TIE OFF POINT.

STRUCTURAL STEEL

1. DESIGN, DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING PUBLICATIONS EXCEPT AS SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS.
   a. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION (15TH EDITION)
   b. SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS
   c. AISC CODE OF STANDARD PRACTICE
2. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING UNLESS OTHERWISE SHOWN:

CHANNELS, ANGLES, PLATES, ETC.	ASTM A36 (GR 36)
STEEL PIPE	ASTM A53 (GR 35)
BOLTS	ASTM A325
NUTS	ASTM A563
LOCK WASHERS	LOCKING STRUCTURAL GRADE

3. ALL SUBSTITUTIONS PROPOSED BY THE CONTRACTOR SHALL BE APPROVED IN WRITING BY THE ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER FOR VERIFYING THE SUBSTITUTE IS SUITABLE FOR USE AND MEETS ORIGINAL DESIGN CRITERIA. DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT, SHALL BE NOTED. ESTIMATES OF COSTS/CREDITS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING RE-DESIGN COSTS AND COSTS TO SUB-CONTRACTORS) SHALL BE PROVIDED TO THE ENGINEER. CONTRACTOR SHALL PROVIDE ADDITIONAL DOCUMENTATION AND/OR SPECIFICATIONS TO THE ENGINEER AS REQUESTED.
4. PROVIDE STRUCTURAL STEEL SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
   a. SUBMIT SHOP DRAWINGS TO

      PETER.ALBANO@COLLIERSENG.COM

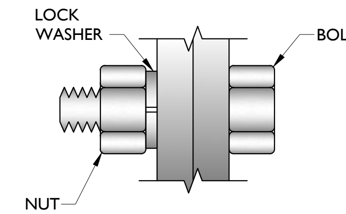
   b. PROVIDE COLLIERS ENGINEERING & DESIGN PROJECT # AND COLLIERS ENGINEERING & DESIGN PROJECT ENGINEER CONTACT IN THE BODY OF THE EMAIL.
5. DRILL NO HOLES IN ANY NEW OR EXISTING STRUCTURAL STEEL MEMBERS OTHER THAN THOSE SHOWN ON STRUCTURAL DRAWINGS WITHOUT THE APPROVAL OF THE ENGINEER OF RECORD.
6. GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
7. ALL NEW STEEL SHALL BE HOT BE DIPPED GALVANIZED FOR FULL WEATHER PROTECTION. IN ADDITION ALL NEW STEEL SHALL BE PAINTED TO MATCH EXISTING STEEL. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
8. ALL BOLT ASSEMBLIES FOR STRUCTURAL MEMBERS REPRESENTED IN THIS DRAWING REQUIRE LOCKING DEVICES TO BE INSTALLED IN ACCORDANCE WITH TIA-222-H SECTION 4.9.2 REQUIREMENTS.
9. WHERE CONNECTIONS ARE NOT FULLY DETAILED ON THESE DRAWINGS, FABRICATOR SHALL DESIGN CONNECTIONS TO RESIST LOADS AND FORCES WHERE SHOWN ON DRAWINGS AND AS OUTLINED IN SPECIFICATIONS.
10. FOR MEMBERS BEING REPLACED, PROVIDE NEW BOLTS AND MATCH EXISTING SIZE AND GRADE. MAINTAIN AISC REQUIREMENTS FOR MINIMUM BOLT DISTANCE AND SPACING.
11. ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH SUCH THAT THE END OF THE BOLT IS AT LEAST FLUSH WITH THE FACE OF THE NUT. IT IS NOT PERMITTED FOR THE BOLT END TO BE BELOW THE FACE OF THE NUT AFTER TIGHTENING IS COMPLETED.
12. GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
13. ALL NEW STEEL SHALL BE HOT BE DIPPED GALVANIZED FOR FULL WEATHER PROTECTION. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
14. ALL EXISTING PAINTED/GALVANIZED SURFACES DAMAGED DURING REHAB INCLUDING AREAS UNDER STIFFENER PLATES SHALL BE WIRE BRUSHED CLEAN, REPAIRED BY COLD GALVANIZING (ZINC COTE, OR EOR APPROVED EQUAL), AND REPAINTED TO MATCH THE EXISTING FINISH (IF APPLICABLE).
15. ALL HOLES IN STEEL MEMBERS SHALL BE SIZED 1/16" LARGER THAN THE BOLT DIAMETER. STANDARD HOLES SHALL BE USED UNLESS NOTED OTHERWISE.

BOLT SCHEDULE (IN.)

BOLT DIAMETER	STANDARD HOLE	SHORT SLOT	MIN. EDGE DISTANCE	SPACING
1/2	9/16	9/16 x 11/16	7/8	1 1/2
5/8	11/16	11/16 x 7/8	1 1/8	1 7/8
3/4	13/16	13/16 x 1	1 1/4	2 1/4
7/8	15/16	15/16 x 1 1/8	1 1/2	2 5/8
1	1 1/16	1 1/16 x 1 5/16	1 3/4	3

WORKABLE GAGES (IN.)

LEG	GAGE
4	2 1/2
3 1/2	2
3	1 3/4
2 1/2	1 3/8
2	1 1/8

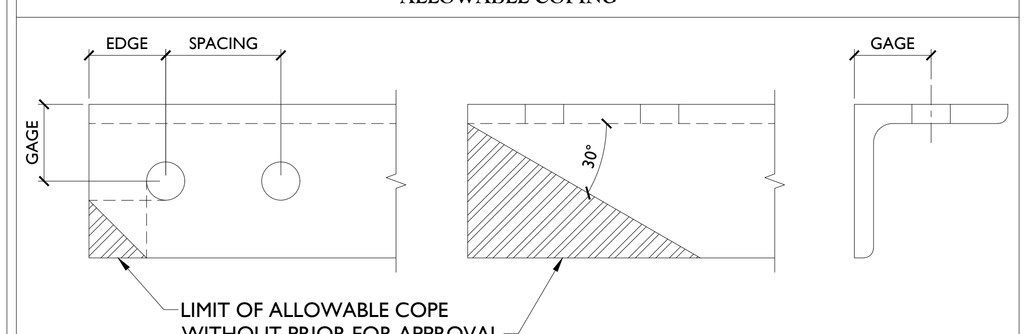


TYP. BOLT ASSEMBLY

NOTES:

1. ALL DIMENSIONS REPRESENTED IN THE ABOVE TABLES ARE AISC MINIMUM REQUIREMENTS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ENGINEER IF DISTANCES ARE LESS THAN THOSE PROVIDED.
2. THE DIMENSIONS PROVIDED ARE MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS OF PROPOSED MEMBERS WITHIN THESE DRAWINGS MAY VARY FROM THE AISC MINIMUM REQUIREMENTS.
3. SHORT SLOT HOLES SHALL ONLY BE USED WHEN DEPICTED IN THE DRAWINGS
4. MATCH EXISTING GAGES WHEN APPLICABLE, UNLESS MINIMUM EDGE DISTANCES ARE COMPROMISED.

ALLOWABLE COPING



Colliers Engineering & Design
www.colliersengineering.com

verizon

PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
811 Know what's below. Call before you dig.
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE : AS SHOWN
JOB NUMBER : 21777985

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
.	.	.	.	.
.	.	.	.	.
0	08/16/21	ISSUED FOR CONSTRUCTION	MC	DX
1	12/14/23	ISSUED FOR CONSTRUCTION	PD	DX

STATE OF CONNECTICUT
DEJIAN XU
No. 33733
LICENSED PROFESSIONAL ENGINEER
12/18/2023
COLLIERS ENGINEERING & DESIGN CT, P.C.

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

SITE NAME:

BOLTON EAST CT
5000244968

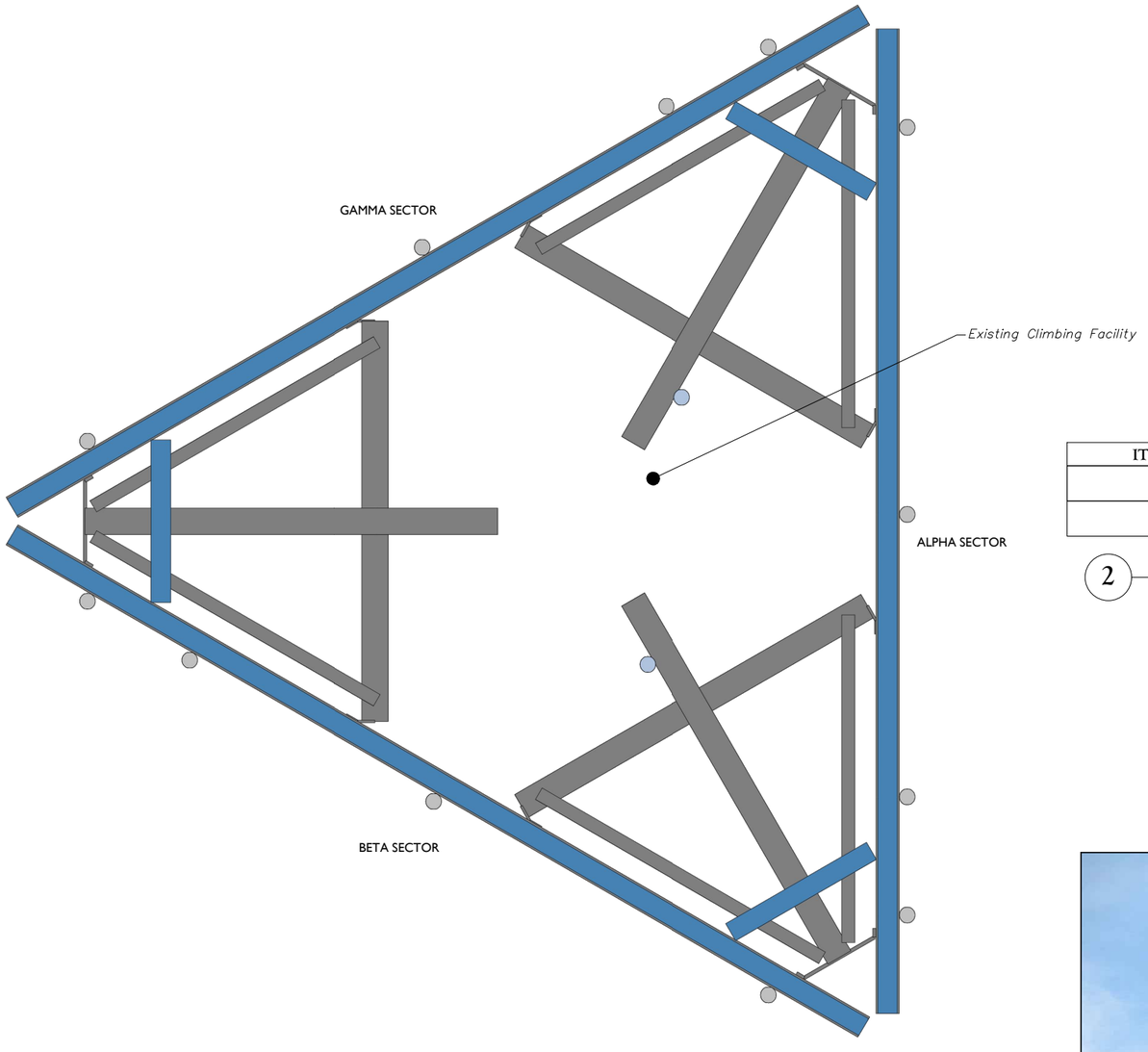
49 SOUTH STREET
BOLTON, CT 06043
TOLLAND COUNTY

Colliers Engineering & Design
STAMFORD
1055 Washington Boulevard
Stamford, CT 06901
Phone: 203.324.0800
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

SHEET TITLE : GENERAL NOTES

SHEET NUMBER : SGN-1

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.



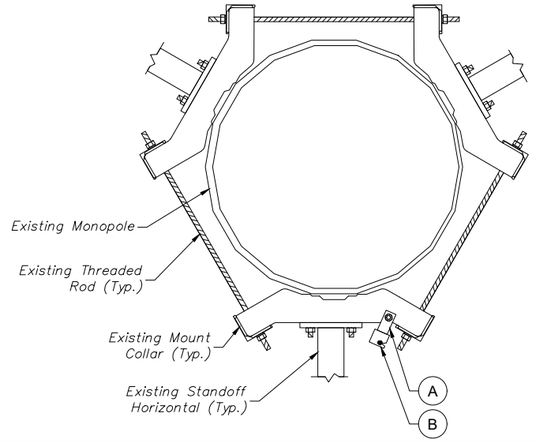
1 CLIMBING FACILITY LOCATION

SCALE : N.T.S.

STRUCTURAL NOTES:

1. PER THE MOUNT MAPPING COMPLETED BY HUDSON DESIGN GROUP, LLC ON 6/10/2021, THE SAFETY CLIMB AND CLIMBING FACILITIES UP TO THE VERIZON MOUNT ELEVATION (105'-6") ARE IN GOOD CONDITION. COLLIERS ENGINEERING & DESIGN DOES NOT WARRANT THIS INFORMATION.

2. INSTALL SHALL NOT CAUSE HARM TO THE STRUCTURE, CLIMBING FACILITY, SAFETY CLIMB, OR ANY SYSTEM INSTALLED ON THE STRUCTURE. TIMELY NOTICE AND DOCUMENTATION SHALL BE PROVIDED BY CONTRACTORS TO THE EOR (OF STRUCTURAL DESIGN) IF AN OBSTRUCTION WAS REQUIRED TO MEET THE RF SYSTEM DESIGN REQUIREMENTS AND PERFORMANCES.

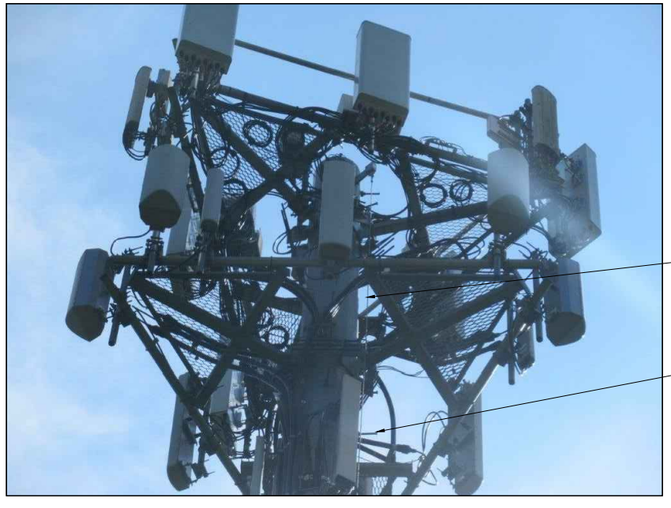


ITEM #	QTY	PART NUMBER	DESCRIPTIONS
A	1	H42-0501-06	STANDOFF CLAMP BRACKET (PERFECT VISION OR EOR APPROVED EQ.)
B	1	PV-CMX-CG-BO	WIRE ROPE GUIDE (PERFECT VISION OR EOR APPROVED EQ.)

2 PROPOSED WIRE ROPE GUIDE ATTACHMENT - PLAN VIEW

SCALE : N.T.S.

NOTE: CONTRACTOR SHALL ENSURE THAT WIRE ROPE GUIDE DOES NOT PUSH THE WIRE ROPE OUTSIDE OF THE VERTICAL PLANE OF THE SAFETY CLIMB. CONTRACT EOR WITH PHOTOS OF SAFETY CLIMB AND COLLAR FOR FURTHER DIRECTION IF NEEDED.



CLIMBING FACILITY PHOTO

Colliers Engineering & Design
www.colliersengineering.com

verizon

811 Know what's below. Call before you dig.

PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE : AS SHOWN

JOB NUMBER : 21777985

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	08/16/21	ISSUED FOR CONSTRUCTION	MC	DX
1	12/14/23	ISSUED FOR CONSTRUCTION	PD	DX

STATE OF CONNECTICUT
DEJIAN XU
No. 33733
LICENSED PROFESSIONAL ENGINEER

12/18/2023

COLLIERS ENGINEERING & DESIGN CT, P.C.
CT PEC.0000131

SITE NAME:

BOLTON EAST CT
5000244968

49 SOUTH STREET
BOLTON, CT 06043
TOLLAND COUNTY

Colliers Engineering & Design
STAMFORD
1055 Washington Boulevard
Stamford, CT 06901
Phone: 203.324.0800
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

SHEET TITLE :
CLIMBING FACILITY DETAIL

SHEET NUMBER :
SCF-1

LEGEND:

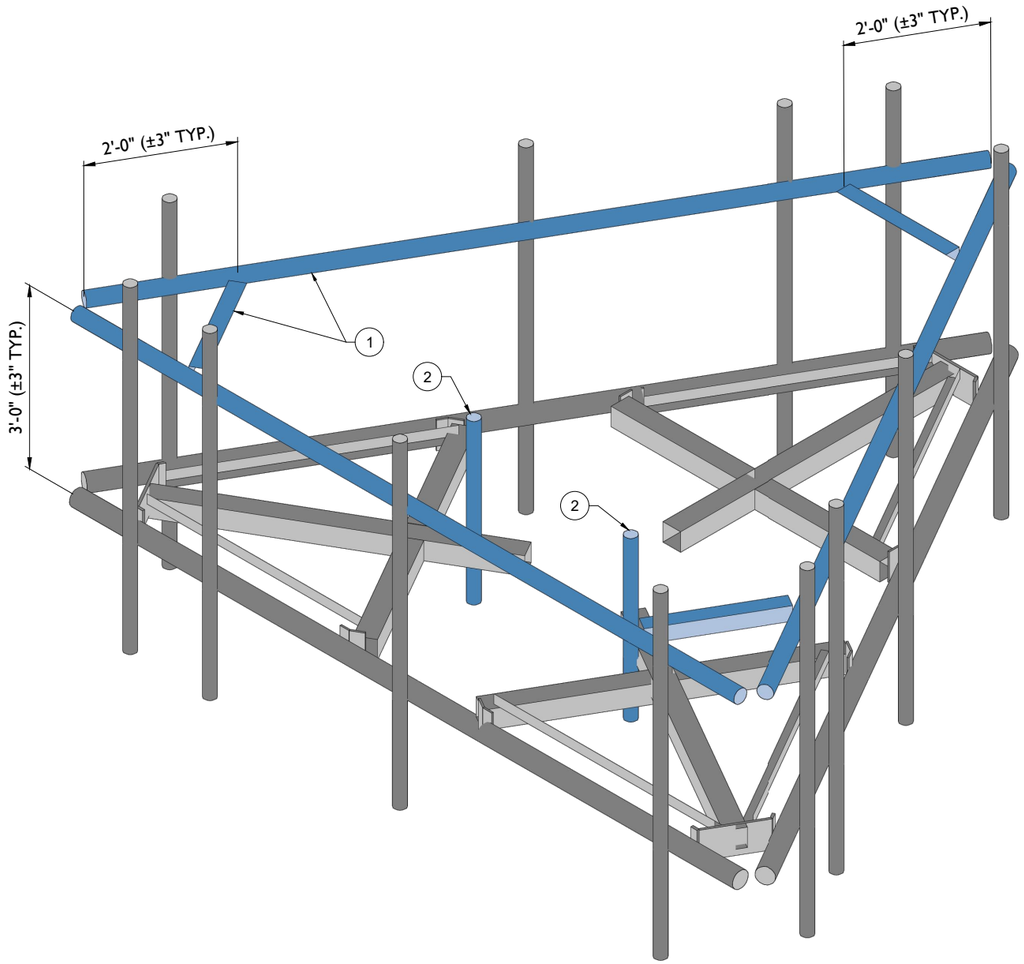
- PROPOSED
- RELOCATED
- EXISTING

MOUNT MODIFICATION SCHEDULE

NO.	ELEVATION	QUANTITY	DESCRIPTION	NOTES
1	105'-6"	1	PROPOSED SUPPORT RAIL KIT (PART #: VZWSMART-PLK1)	CONTRACTOR TO VERIFY THE LENGTH REQUIRED AND TRIM AS NECESSARY IN ACCORDANCE WITH THE 'STRUCTURAL STEEL' NOTES ON SHEET SGN-1. RADIO AND/OR TME POSITIONS SHALL BE ADJUSTED VERTICALLY AS NEEDED IN ORDER TO ACHIEVE INSTALLATION OF HORIZONTAL AS SHOWN. EOR SHALL BE NOTIFIED IF EQUIPMENT NEEDS TO BE RELOCATED TO ANOTHER MOUNT PIPE. SEE GENERAL NOTE B.
2		2	PROPOSED 36" LONG, PIPE 2 SCH40 OVP PIPE	CONNECT NEW OVP PIPE TO EXISTING STANDOFF HORIZONTAL BETWEEN ALPHA & BETA AND ALPHA & GAMMA SECTORS WITH CROSSOVER PLATES (SITE PRO 1, PART #: SQCX4-K, OR EOR APPROVED EQUAL).

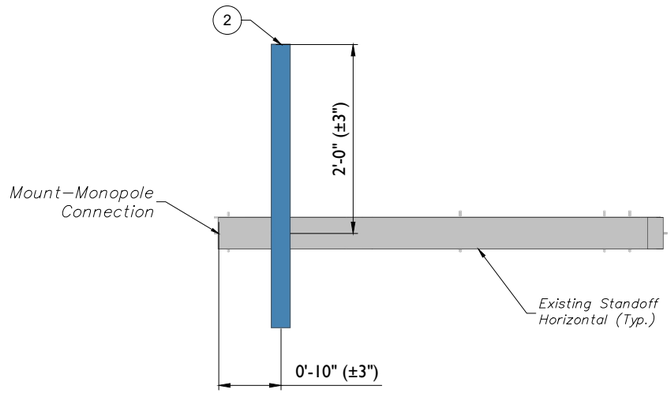
GENERAL NOTES:

A. CONTRACTOR SHALL VERIFY THAT NEW & EXISTING STEEL IS FREE OF CORROSION. VISIBLE MINOR CORROSION SHALL BE WIRE BRUSHED CLEAN AND TREATED WITH COLD GALVANIZATION. REPORT ANY SIGNIFICANT CORROSION TO EOR
B. THREADED ROD FROM PROPOSED KITS SHALL BE TRIMMED TO EXTEND NO MORE THAN 3" BEYOND THE LOCK NUT. TREAT ALL CUT ENDS WITH (2) COATS OF COLD GALVANIZATION (ZINC KOTE, OR EOR APPROVED EQUAL).
C. MOUNT MEMBERS NOT SHOWN FOR CLARITY U.N.O.



1 PROPOSED ISOMETRIC VIEW

SCALE : N.T.S.



2 PROPOSED OVP PIPE (SIDE ELEVATION VIEW)

SCALE : N.T.S.

Colliers Engineering & Design

www.colliersengineering.com

verizon

811 Know what's below. Call before you dig.

PROTECT YOURSELF

ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE : AS SHOWN

JOB NUMBER : 21777985

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
.	.	.	.	.
.	.	.	.	.
0	08/16/21	ISSUED FOR CONSTRUCTION	MC	DX
1	12/14/23	ISSUED FOR CONSTRUCTION	PD	DX

STATE OF CONNECTICUT
DEJIAN XU
No. 33733
LICENSED PROFESSIONAL ENGINEER
12/18/2023

COLLIERS ENGINEERING & DESIGN CT, P.C.
CT PEC.0000131

SITE NAME:

BOLTON EAST CT
5000244968

49 SOUTH STREET
BOLTON, CT 06043
TOLLAND COUNTY

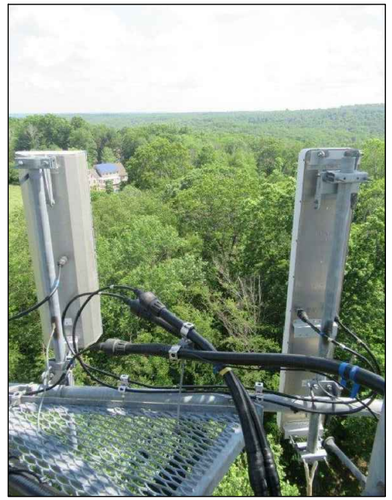
Colliers Engineering & Design

STAMFORD
1055 Washington Boulevard
Stamford, CT 06901
Phone: 203.324.0800
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

SHEET TITLE : MODIFICATION DETAILS

SHEET NUMBER : SS-1

MOUNT PHOTO 1



MOUNT PHOTO 2

MOUNT PHOTO 3

MOUNT PHOTO 4

Colliers Engineering & Design

www.colliersengineering.com

verizon

811 Know what's below. Call before you dig.

PROTECT YOURSELF

ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE : AS SHOWN

JOB NUMBER : 21777985

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	08/16/21	ISSUED FOR CONSTRUCTION	MC	DX
1	12/14/23	ISSUED FOR CONSTRUCTION	PD	DX

STATE OF CONNECTICUT
DEJIAN XU
No. 33733
LICENSED PROFESSIONAL ENGINEER

12/18/2023

COLLIERS ENGINEERING & DESIGN CT, P.C.

SITE NAME:

BOLTON EAST CT
5000244968

49 SOUTH STREET
BOLTON, CT 06043
TOLLAND COUNTY

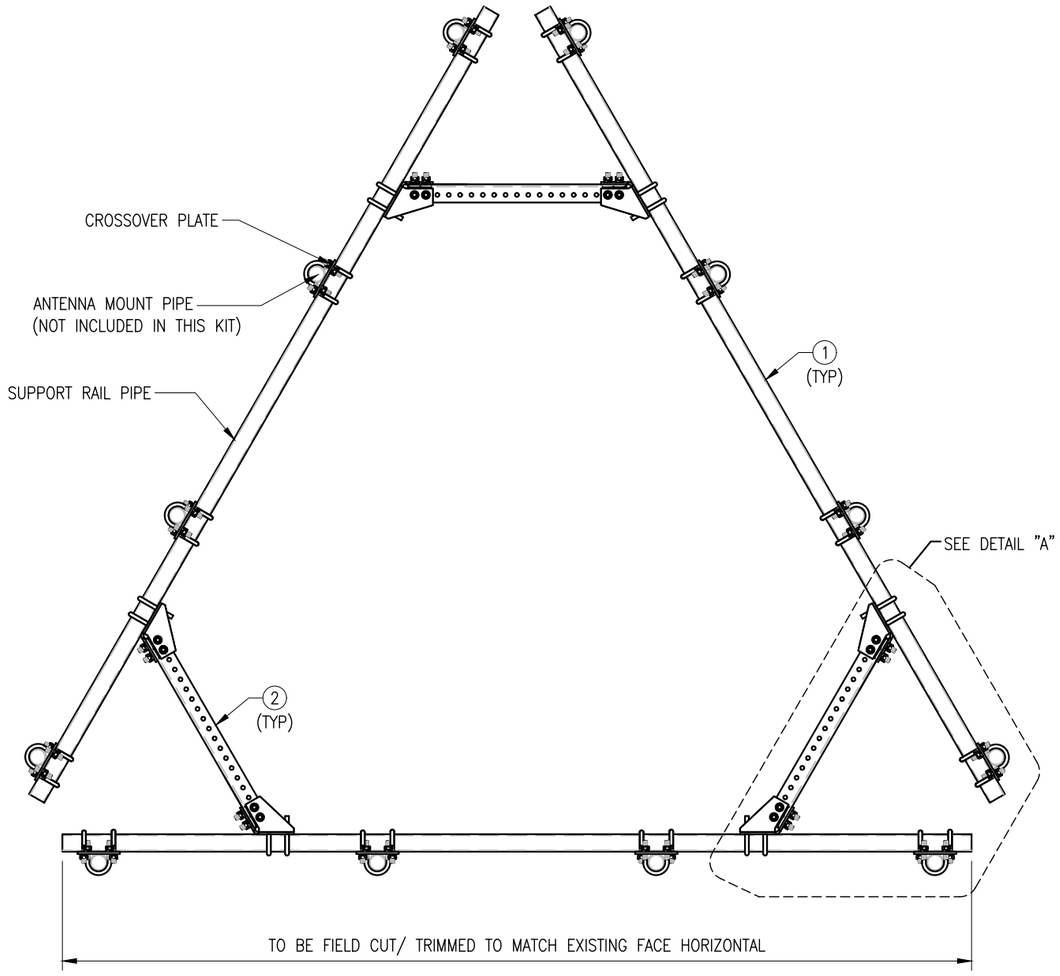
Colliers Engineering & Design

STAMFORD
1055 Washington Boulevard

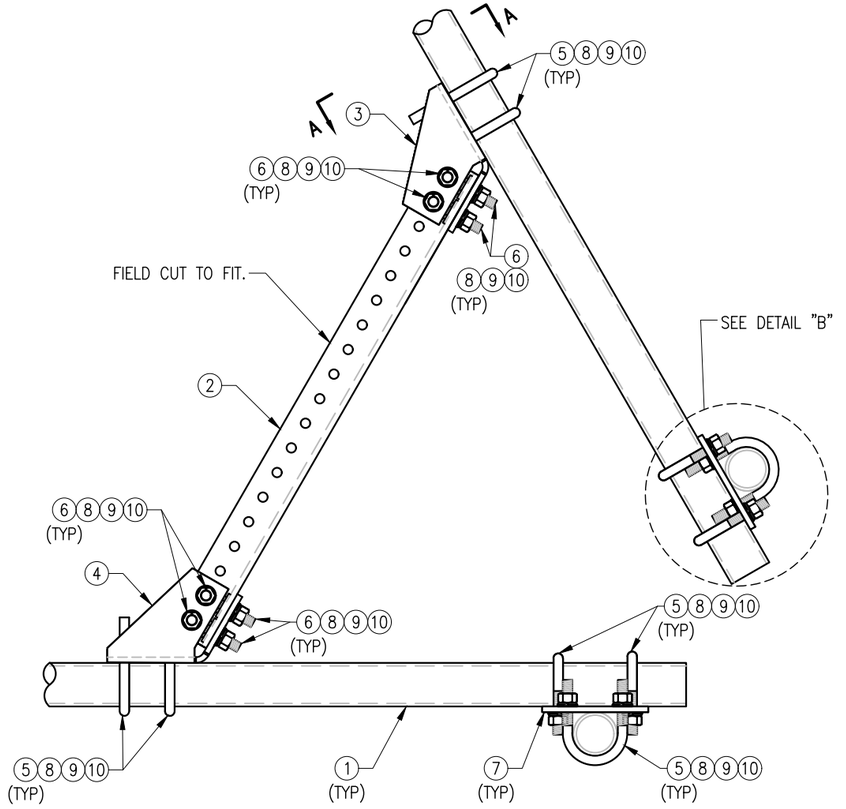
Stamford, CT 06901
Phone: 203.324.0800
COLLIERS ENGINEERING & DESIGN CT, P.C.
DOING BUSINESS AS MASER CONSULTING

SHEET TITLE : MOUNT PHOTOS

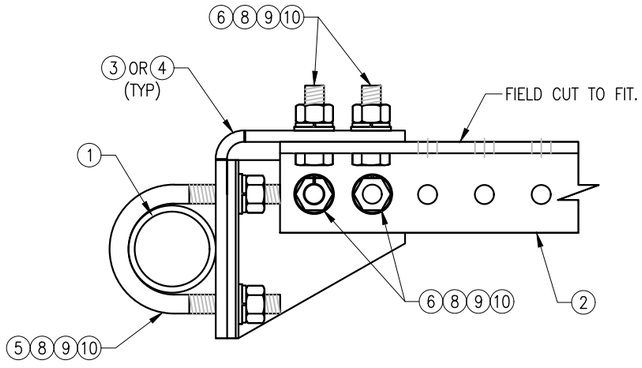
SHEET NUMBER : SS-2



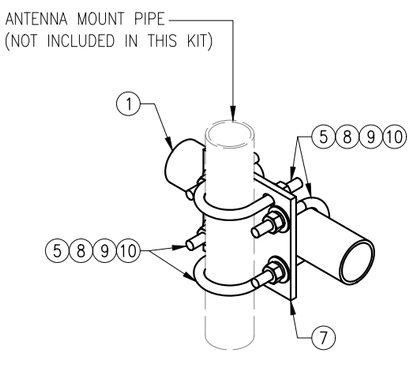
PLAN VIEW



DETAIL "A"



SECTION "A–A"



DETAIL "B"

NOTES:
1. HOT–DIPPED GALVANIZED PER ASTM A123.

VZW SMART–PLK1 (SUPPORT RAIL KIT)

ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	3	PST2875–12.5	2.5" PST (2.875" O.D. X 0.203" THK.) X 12'–6" A53 GR–B	PLK1–F1	292
2	3	L33375–3	L 3" X 3" X 3/8" X 3'–0" A36	PLK1–F1	66
3	3	CBP–L	CORNER BENT PLATE BRACKET	PLK1–F2	28
4	3	CBP–R	CORNER BENT PLATE BRACKET	PLK1–F2	28
5	60	MS02–625–300–500	RU–BOLT 5/8" X 3" I.W. X 5" I.L. A36 (OR EQUIV.)	RBC–1	82
6	24	---	BOLT 5/8" X 2" A325	---	9
7	12	PL375–857	PL 3/8" X 8 1/2" X 7'–0" A36	PLK1–F3	77
8	144	FW–625	5/8" HDG USS FLAT WASHER	---	12
9	144	LW–625	5/8" HDG LOCK WASHER	---	3
10	144	NUT–625	5/8" HDG HEX NUT	---	17
				GALVANIZED WT	504

VzW SMART Tool© Vendor

verizon

FOR REFERENCE ONLY

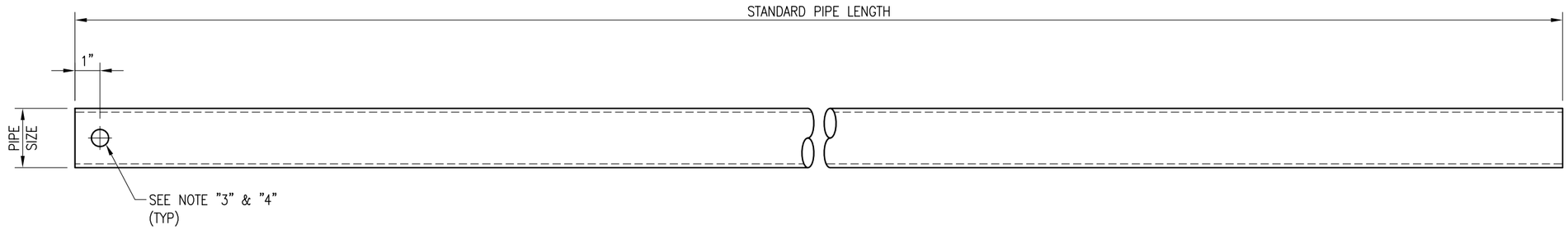
DRAWN BY: H.R | CHECKED BY: HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	H.R	05/08/20

SHEET TITLE:
VZWSMART–PLK1
SUPPORT RAIL KIT

SHEET NUMBER: VZWSMART–PLK1

REV #: 0



VZWSMART Standard Pipe		
VZWSMART Number	Size	Length
P40-238X048	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	48"
P40-238X072	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	72"
P40-238X096	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	96"
P40-238X120	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	120"
P40-238X126	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	126"
P40-238X150	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	150"
P40-238X174	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	174"
P40-278X048	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	48"
P40-278X072	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	72"
P40-278X096	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	96"
P40-278X120	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	120"
P40-278X126	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	126"
P40-278X150	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	150"
P40-278X174	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	174"
P40-312X048	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	48"
P40-312X072	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	72"
P40-312X126	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	126"
P40-312X150	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	150"
P40-312X174	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	174"

NOTE:
APPROVED SMART KIT VENDORS ARE ALLOWED TO SUBSTITUTE AT THEIR DISCRETION PIPES LISTED ON THIS PAGE FOR CUSTOM LENGTH COMPONENTS OF MATCHING SIZE. SUBSTITUTIONS SHALL MEET THE ORIGINAL STRUCTURAL INTENT.

NOTES:
1. ALL PIPE GRADE A53-B OR BETTER.
2. HOT-DIPPED GALVANIZED PER ASTM A123.
3. ALL HOLES ARE 11/16" DIA. U.N.O
4. HOLES MAY OR MAY NOT BE PRESENT, DEPEND UPON MANUFACTURE DISCRETION.
5. ALL FIELD CUT AND DRILLED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATS OF ZINGA OR ZINC COTE PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

VzW SMART Tool© Vendor

verizon

FOR REFERENCE ONLY

DRAWN BY: BT | CHECKED BY: HMA/KW

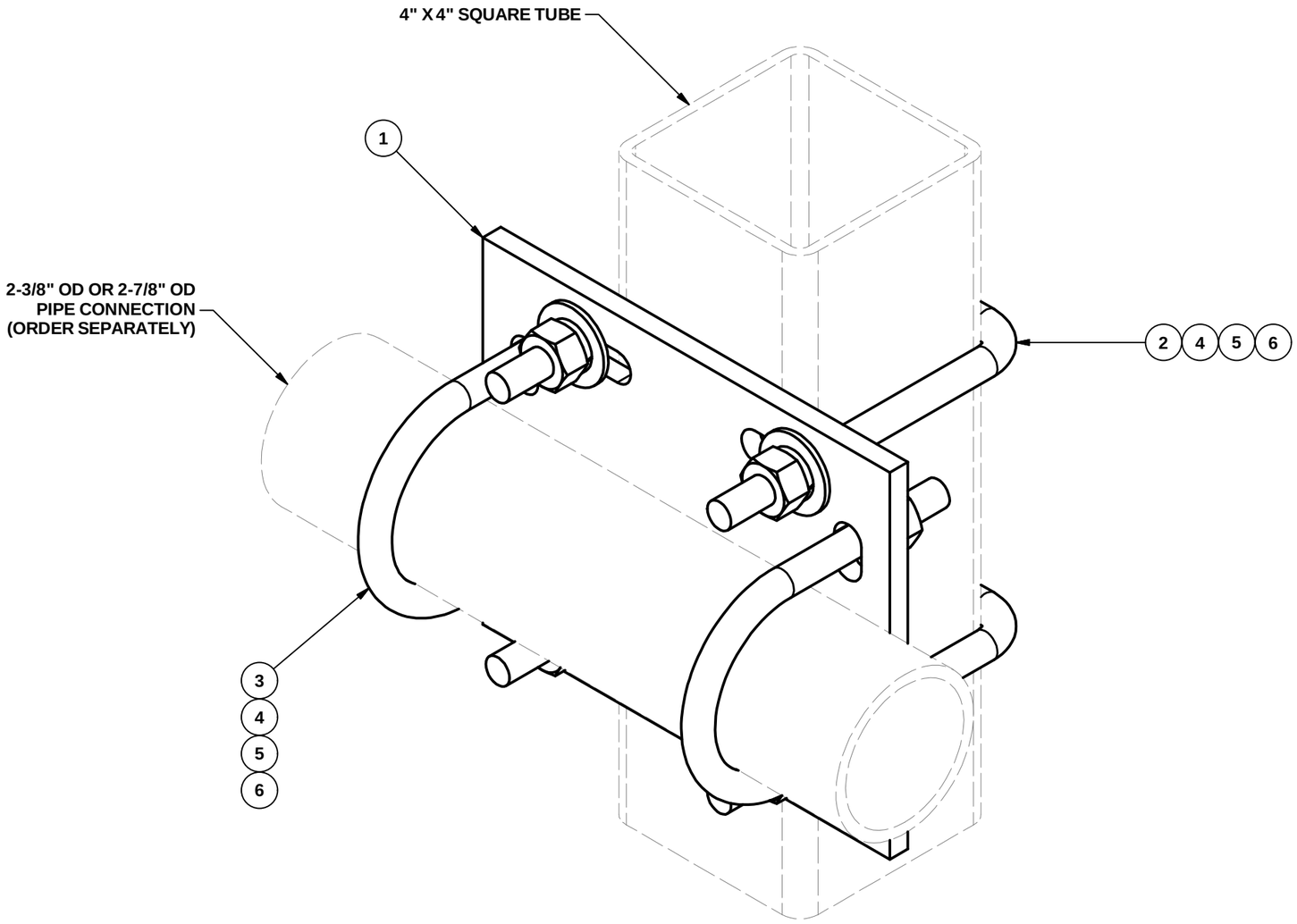
REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	BT	08/04/21

SHEET TITLE:
VZWSMART STANDARD PIPE

SHEET NUMBER: VZWSMART-PIPE

REV #: 0

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	1	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	6.02
2	2	X-SUB1418	SQUARE U-BOLT 0.5" DIA. X 4.125" IW X 6" IL X 3" TR		0.98	1.95
3	2	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.60	1.19
3	2	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.67	1.34
4	8	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	0.27
5	8	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.11
6	8	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.57
					TOTAL WT. #	11.35



FOR REFERENCE ONLY

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES (Ñ0.030")
DRILLED AND GAS CUT HOLES (Ñ0.030") - NO CONING OF HOLES
LASER CUT EDGES AND HOLES (Ñ0.010") - NO CONING OF HOLES
BENDS ARE Ñ1/2 DEGREE
ALL OTHER MACHINING (Ñ0.030")
ALL OTHER ASSEMBLY (Ñ0.060")

DESCRIPTION
CROSSOVER PLATE KIT
W/ SQUARE U-BOLTS AND STD. U-BOLTS

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.
	CSL 9/18/2018	3RD PARTY	SQCX4-K

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
87	02	CUSTOMER	BMC 11/12/2018	SQCX4-K

THIS CHECK PRINTED ON DOCUCHECK GHOST PAPER AND HAS A GRAPHIC WATERMARK ON REVERSE SIDE

CROWN CASTLE USA INC.
2000 CORPORATE DRIVE
CANONSBURG PA 15317
724-416-2000

JPMorgan Chase Bank, N.A.
DALLAS TX
32-61/1110

2951669

SIX HUNDRED TWENTY FIVE AND 00/100********** DATE 04/09/24 $*******625.00

Pay To Connecticut Siting Council
The Ten Franklin Square
Order Of New Britain CT 06051

2695915

Robert A. Cole VP and Controller
Assist. Comptroller

VOID AFTER 180 DAYS

⑈2951669⑈ ⑆111000614⑆ 1034104531⑈

Check No 2951669
Check Date 04/09/24

Stub 1 of 1

CKRQ 842858 656559 ZN	04/08/24	Invoice Summ	625.00	625.00
			625.00	625.00