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

September 14, 2022

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

RE: **Notice of Exempt Modification for T-Mobile: CT11071E**
Crown Site#806953
69 Guinea Road, Stamford, CT 06903
Latitude: 41° 6′ 6.30″ / Longitude: -73° 35′ 40.00″

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 118` level of the 160` monopole located 69 Guinea Road, Stamford, CT. T-Mobile to remove all equipment at the 118` level of the monopole including the antenna mount. T-Mobile to replace the antenna equipment at the 158` level (Formally Sprint) with nine (9) antennas and ancillary equipment. The property is owned by Girl Scouts of Connecticut, Inc and the tower is owned by Crown Castle. 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:

Installed New @158` Tower Level:
(3) Ericsson – AIR6419 B41 Antennas
(3) RFS APXVAALL24_43-U-NA20 Antennas
(3) CommScope W-65A-R1 Antennas
(3) Ericsson-Radio 4480_B71+B85 RRU
(3) Ericsson- 4460 B25+B66 RRH
(3) Hybrid Cable 6x24 (1-5/8")

Remove: @158` Tower Level:"
(3) RFS – APXVTM14-ALU-120 Antennas
(3) RFS – APXVSPP18-C-A20 Antennas
(3) Argus – LLPX310R V Antennas
(9) RFS -ACU-A20-N- RRH
(3) Alcatel Lucent -TD-RRH8x20-25 RRH
(3) Nokia - FWHR
(6) 1-5/8" Coaxial Cables
(4) 17/64" Coaxial Cables
(1) 1/2" Coaxial Cable
(3) 6x12 - 1-5/8" Coaxial Cables

(1) 1/8" Coaxial Cable
(3) 1-1/4" Coaxial Cables
(1) 9x18 - 1-5/8" Coaxial Cable
(1) 7/8" Coaxial Cable
(1) 5/8" Coaxial Cable

Remove: @118' Tower Level
(3) RFS APXVAALL24_43-U-NA20 Antennas
(3) Ericsson AIR21 KRC118023-1_B2A_B4P Antennas
(3) Air32 KRD901146-1_B66A_B2A
(3) Ericsson-Radio 4449_B71+B85 RRU
(3) Generic Twin Style - 1B-AWS TMAs
(1) Antenna Mount

Ground:

Install New:
(1) 6160 Cabinet
(1.) B160 Battery Cabinet
(1) RP 6651
(2) PSU 4813 vR2A
(1) CRS IXRc V2

Remove:
(1) RBS 6131 Cabinet
(2.) DUW30
(6.) RU22 Radios
(1) S8000 Cabinet
(1) DUG20
(2) BB6630
(1) BB5216
(1) 66EC Cabinet

The facility was approved by the Connecticut Siting Council on April 13, 1998, in Docket No. 180. The approval was given with conditions which this proposed exempt modification complies with.

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 Caroline Simmons, Mayor, City of Stamford and James Lunney, Chief Zoning Enforcement Officer, City of Stamford. Crown Castle is the property and 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, T-Mobile 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
Site Acquisition Specialist
1800 W. Park Drive, STE 250
Westborough, MA 01581
(781) 970-0053
Jeff.Barbadora@crowncastle.com

Attachments
cc:

Caroline Simmons, Mayor
City of Stamford
888 Washington Boulevard, 10th Floor
Stamford, CT 06901
(203) 977-4150

James Lunney, Chief Zoning Enforcement Officer
City of Stamford
888 Washington Boulevard, 7th Floor
Stamford, CT 06901
(203) 977-5944

Girl Scouts of Connecticut, Inc
Director of Property Services
340 Washington Street
Hartford, CT 06106
860-522-0163

Crown Castle – Tower owner

Filing Guides
Meetings & Minutes
Public Participation
Audio Link to New Britain Hearing Rooms
Programs & Services
Telecommunications Database
Maps
Publications
Other Resources
Statutes & Regulations
Frequently Asked Questions

Melanie Bachman,
Executive Director

DOCKET NO. 180 - Cellco Partnership d/b/a Bell Atlantic Mobile application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telecommunications tower and associated equipment located immediately north of the Merritt Parkway off Guinea Road (prime and alternate one sites), or 141 Den Road (alternate two site) in Stamford, Connecticut.

Connecticut Siting Council

April 2, 1998

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 tower and equipment buildings at the proposed prime site in Stamford, Connecticut, 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 Bell Atlantic Mobile (BAM) for the construction, operation, and maintenance of a telecommunications tower, associated equipment, and buildings at the proposed prime site, located within a 28-acre parcel at Guinea Road, Stamford, Connecticut. We find the effects on scenic resources and adjacent land uses of the first alternate site and second alternate site to be significant, and therefore deny certification of these sites.

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 BAM, Springwich Cellular Limited Partnership (Springwich), Sprint PCS (Sprint), and Nextel Communications of the Mid-Atlantic, Inc. (Nextel); and such tower shall not exceed a height of 160 feet above ground level (AGL).

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: adjustment of the tower location within the leased parcel to protect a nearby stream and minimize grade; a final site plan(s) for site development to include the location and specifications for the tower foundation, antennas, equipment buildings, emergency generator and fuel tank, security fence, access road, and utility line; construction plans for site clearing, tree trimming, water drainage, and erosion and sedimentation controls consistent with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended; provisions for the tower finish that may include painting; and provisions for the prevention and containment of spills and/or other discharge into surface water and ground water bodies.

3. 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.

4. The Certificate Holder shall provide the Council a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels originally calculated and provided in the application.

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, or permanently ceases to provide cellular services following completion of construction, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapplication for any continued or new use shall be made 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 all construction authorized herein is not completed within three years of the effective date of this Decision and Order or within three years 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 and Stamford Advocate.

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	**ITS REPRESENTATIVE**
Bell Atlantic Mobile	Kenneth C. Baldwin, Esq. Brian C. S. Freeman, Esq. Robinson & Cole One Commercial Plaza Hartford, CT 06103-3597
	Mr. David S. Malko, P.E. Jennifer Young Gaudet Bell Atlantic Mobile 20 Alexander Drive Wallingford, CT 06492
INTERVENORS	**ITS REPRESENTATIVE**
Sprint Spectrum, L.P. d/b/a Sprint PCS	Elias A. Alexiades John W. Knuff Harris, Beach & Wilcox, LLP 147 North Broad Street Milford, CT 06460
Nextel Communications of the Mid-Atlantic, Inc.d/b/a Nextel Communications	Christopher B. Fisher, Esq. Cuddy, Feder & Worby, Esq. 90 Maple Avenue White Plains, NY 10601
Springwich Cellular Limited Partnership	Peter J. Tyrrell, Esq. General Counsel 500 Enterprise Drive Rocky Hill, CT 06067-3900
PARTIES	**ITS REPRESENTATIVE**
Charles H. Nobs, Maurice Lucas, and Ben and Myrna Raphan	Jeffrey J. Mirman, Esq. Levy & Droney, P.C. P.O. Box 887 Farmington, CT 06034

Property Location 69 GUINEA ROAD | Map ID 002/ 6848/ / / | Bldg Name | State Use 901
Vision ID 24323 | Account # 002-6848 | Bldg # 1 | Sec # 1 of 1 | Card # 1 of 1 | 2/18/2022 4:36:25 P

CURRENT OWNER

GIRL SCOUTS OF CONNECTICUT I

340 WASHINGTON STREET

HARTFORD CT 06106-3317

TOPO	UTILITIES	STRT / ROAD	LOCATION
	6 Septic	3 Unpaved	
	5 Well	1 Paved	
	7		

SUPPLEMENTAL DATA

Alt Prcl ID	73 396 1	DSSD	
Survey1	3273	Agent Nam	
Survey2		Roll	2
Census Tr	202	Common	
Census Bl	2007	Neighborh	N STAM:
Sewer Acct			
GIS ID	N 005 3576	Assoc Pid#	

CURRENT ASSESSMENT

Description	Code	Appraised Value	Assessed Value
EX RES LN	11	1,007,550	705,290
EX RS DWL	13	303,790	212,670
EX RS OTB	14	157,780	110,460
	Total	1,469,120	1,028,420

6135

STAMFORD, CT

VISION

RECORD OF OWNERSHIP

	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
GIRL SCOUTS OF CONNECTICUT INC	9322	0308	04-16-2008	U	I	0	25
GIRL SCOUT COUNCIL SW CT INC	4405	0321	05-12-1995	U	I	0	
SOUTHWESTERN CT GIRL SCT	1035	0131	12-29-1964	U	I	0	25

PREVIOUS ASSESSMENTS (HISTORY)

Year	Code	Assessed	Year	Code	Assessed V	Year	Code	Assessed
2021	11	705,290	2020	11	705,290	2020	11	705,290
	13	212,670		13	212,670		13	212,670
	14	110,460		14	110,460		14	110,460
	Total	1,028,420		Total	1,028,420		Total	1,028,420

EXEMPTIONS

Year	Code	Description	Amount
2013	DBAX	Educational	1028420.00
		Total	1,028,420.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

Nbhd	Nbhd Name	B	Tracing	Batch
1100				

NOTES

CAMP GROUND AREA USED BY

GIRL SCOUTS OF AMERICA

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	227,400
Appraised Xf (B) Value (Bldg)	76,390
Appraised Ob (B) Value (Bldg)	157,780
Appraised Land Value (Bldg)	1,007,550
Special Land Value	0
Total Appraised Parcel Value	1,469,120
Valuation Method	C
Total Appraised Parcel Value	1,469,120

BUILDING PERMIT RECORD

Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments
B-20-1127	09-22-2020	NV	No Value	0		0		AT&T PROPOSES TO SWAP
B-20-532	06-02-2020	NV	No Value	0		0		T-MOBILE PROPOSES TO M
B-19-910	08-16-2019	NV				0		REPLACING 3 ANTENNAS &
B-17-1995	11-20-2017	AI	Attached Impr			0		
B-17-382	03-01-2017	NV	No Value			100		ADD ADDITIONAL ANTENNA
B-16-757	11-07-2016	NV	No Value			0		ADD ADDITIONAL ANTENNA
2013-0093	02-19-2013	DI	Detached Impr	97,920		100		ADDED CELL TOWER WHIC

VISIT / CHANGE HISTORY

Date	Id	Type	Is	Cd	Purpost/Result
02-14-2018	RGB			15	Permit (measure & list)
08-07-2014	ROB			40	No change
09-12-2013	ROB			16	Permit (final inspection)
04-17-2013	ROB			40	No change
04-30-2012	ED			80	Walk Around, No one hom
11-17-2011	RGB			17	Permit (C.O.)
11-14-2011	ROB			16	Permit (final inspection)

LAND LINE VALUATION SECTION

B	Use Code	Description	Zone	Distri	District Desc.	Land	Land Units		Unit Price	Size Adj	Site Index	Cond.	Nbhd.	Nbhd. Adj	Notes	Location Adjustme		Adj Uni	Land Value
1	901	Exmpt Res MDL	RA3	3			3.000	AC	264,440.00	0.48530	5	1.00	1100	1.150			1.0000	147,58	442,750
1	901	Exmpt Res MDL	RA3	3			13.860	AC	264,440.00	0.26801	5	0.50	1100	1.150			1.0000	40,750.	564,800
		Total Card Land Units			16.86	AC	Parcel Total Land Area		16.86								Total Land Value		1,007,550

Property Location 69 GUINEA ROAD | Map ID 002/ 6848/ / / | Bldg Name | State Use 901
Vision ID 24323 | Account # 002-6848 | Bldg # 1 | Sec # 1 of 1 | Card # 1 of 1 | 2/18/2022 4:36:26 PM

CONSTRUCTION DETAIL

Element	Cd	Description
Style:	01	Ranch
Model	01	Residential
Grade:	05	C+
Stories:	1	1 Story
Occupancy	1	
Exterior Wall 1	36	Cement fiberbd
Exterior Wall 2		
Roof Structure:	03	Gable/Hip
Roof Cover	03	Asph/F Gls/Cmp
Interior Wall 1	05	Drywall
Interior Wall 2		
Interior Flr 1	12	Hardwood
Interior Flr 2		
Heat Fuel	04	Electric
Heat Type:	07	Electr Basebrd
AC Type:	03	Central
Total Bedrooms	00	
Total Bthrms:	1	
Total Half Baths	0	
Total Xtra Fixtrs	3	
Total Rooms:	4	
Bath Style:	02	Average
Kitchen Style:	02	Typical
Fireplace Msnry		
Fpl. Gas/Prefab	1	
Fpl. Outdoor		
Fpl. Addnl. Ope		
Bsmt. Garage		

CONSTRUCTION DETAIL (CONTINUED)

Element	Cd	Description

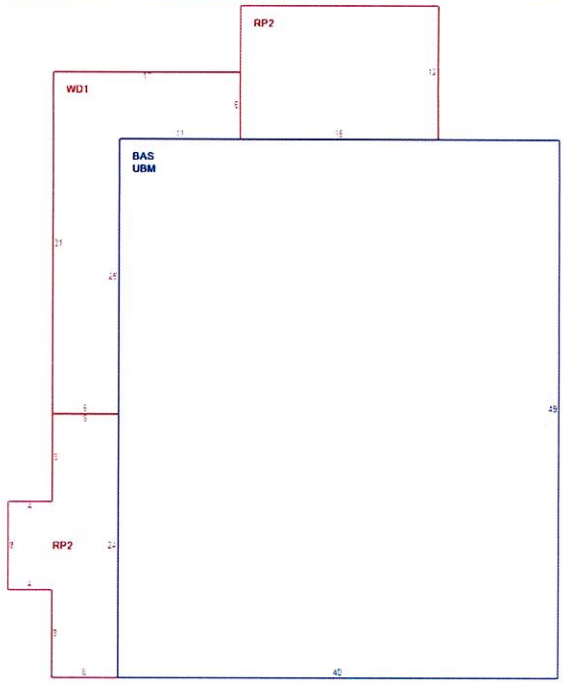
CONDO DATA

Parcel Id		C		Owne	
			B		S

Adjust Type	Code	Description	Factor%
Condo Flr			
Condo Unit			

COST / MARKET VALUATION

Building Value New	273,979
Year Built	1963
Effective Year Built	
Depreciation Code	E
Remodel Rating	MJ
Year Remodeled	2001
Depreciation %	17
Functional Obsol	
External Obsol	0
Trend Factor	1
Condition	
Condition %	
Percent Good	83
RCNLD	227,400
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	

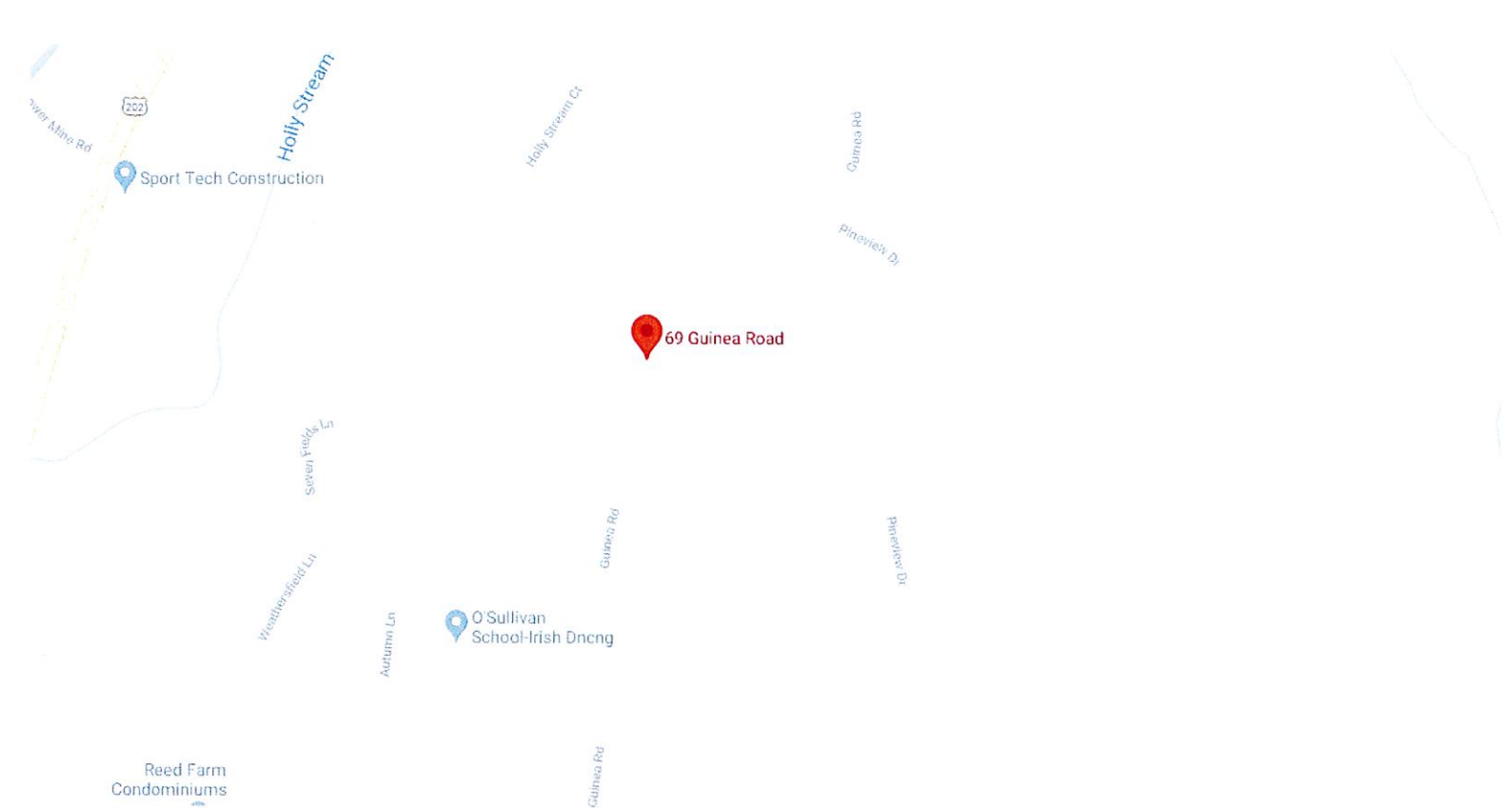


OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

Code	Description	L/B	Units	Unit Price	Yr Blt	Cond. Cd	% Gd	Grade	Grade Adj.	Appr. Value
FC1	Shed Wood	L	240	16.00	1969	A	75	C	1.00	2,880
MS1	Misc Structure	L	528	8.00	1969	A	75	C	1.00	3,170
RP2	Porch Coverd	B	1,056	32.00	2000	A	83	C	1.00	28,050
RP2	Porch Coverd	B	756	32.00	2000	A	83	C	1.00	20,080
RP2	Porch Coverd	B	672	32.00	2000	A	83	C	1.00	17,850
WD1	Wood Deck	L	252	29.00	2011	A	75	C	1.00	5,480
RP2	Porch Coverd	B	216	32.00	2000		83	C	1.00	5,740
RP2	Porch Coverd	B	176	32.00	2000		83	C	1.00	4,670
CEL1	Cell Tower	L	1	195000.0	1969	A	75		0.00	146,250

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Floor Area	Eff Area	Unit Cost	Undeprec Value
BAS	First Floor	1,960	1,960		107.53	210,749
RP2	Porch Covered	0	392		0.00	0
UBM	Basement, Unfinished	0	1,960		21.51	42,150
WD1	Deck, Wood	0	252		0.00	0
	Ttl Gross Liv / Lease Area	1,960	4,564			252,899


Holly Stream
Holly Stream Ct
Guinea Rd
Pineview Dr
Sport Tech Construction
69 Guinea Road
Seven Fields Ln
Guinea Rd
Pineview Dr
Weathersfield Ln
Autumn Ln
O'Sullivan
School-Irish Dncng
Reed Farm
Condominiums
Guinea Rd

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Friday, September 16, 2022 10:40 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 777934613525: Your package has been delivered

Hi. Your package was delivered Fri, 09/16/2022 at 10:30am.

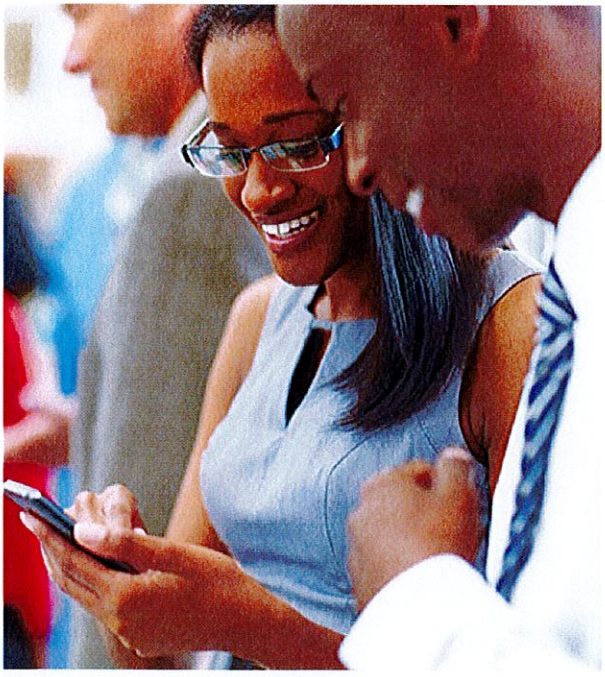
Delivered to 888 WASHINGTON BLVD, STAMFORD, CT 06901
Received by D.PESIRI

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 777934613525

FROM Jeff Barbadora
1800 W. Park Drive
WESTBOROUGH, MA, US, 01581

TO	City of Stamford Caroline Simmons, Mayor 888 Washington Boulevard 10th Floor STAMFORD, CT, US, 06901
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Thu 9/15/2022 06:07 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	STAMFORD, CT, US, 06901
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Priority Overnight



Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Friday, September 16, 2022 10:39 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 777934770123: Your package has been delivered

Hi. Your package was delivered Fri, 09/16/2022 at 10:30am.

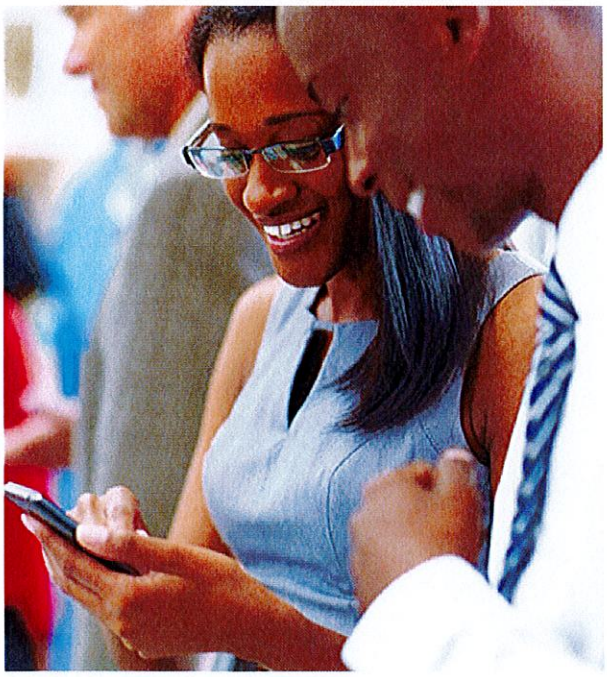
Delivered to 888 WASHINGTON BLVD, STAMFORD, CT 06901
Received by D.PESIRI

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 777934770123

FROM Jeff Barbadora
1800 W. Park Drive
WESTBOROUGH, MA, US, 01581

TO	City of Stamford James Lunney, Chief ZEO 888 Washington Boulevard 7th Floor STAMFORD, CT, US, 06901
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Thu 9/15/2022 06:07 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	STAMFORD, CT, US, 06901
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Priority Overnight



Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Friday, September 16, 2022 10:12 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 777934817331: Your package has been delivered

Hi. Your package was delivered Fri, 09/16/2022 at 10:04am.

Delivered to 340 WASHINGTON ST, HARTFORD, CT 06106

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 777934817331

FROM Jeff Barbadora
1800 W. Park Drive
WESTBOROUGH, MA, US, 01581

TO	Girls Scouts of Connecticut, Inc Director of Property Services 340 Washington Street HARTFORD, CT, US, 06106
REFERENCE	799001 7680
SHIPPER REFERENCE	799001 7680
SHIP DATE	Thu 9/15/2022 06:07 PM
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	HARTFORD, CT, US, 06106
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Priority Overnight

Date: **June 28, 2022**

Black & Veatch Corp.
11401 Lamar Avenue
Overland Park, KS 66211
(913) 458-6909

Subject:	**Structural Analysis Report**	
Carrier Designation:	**Site Number:**	CT11071E
	Site Name:	CT03XC344
Crown Castle Designation:	**BU Number:**	806953
	Site Name:	BRG 2044 (A) 943097
	JDE Job Number:	721030
	Work Order Number:	2130743
	Order Number:	621042 Rev. 0
Engineering Firm Designation:	**Black & Veatch Corp. Project Number:**	406642
Site Data:	**69 Guinea Rd(Camp Rocky Craig), Stamford, Fairfield County, CT 06903** **Latitude *41° 6' 6.3"*, Longitude *-73° 35' 40"*** **160 Foot - Monopole Tower**	

Black & Veatch Corp. is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower.

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

LC7: Proposed Equipment Configuration **Sufficient Capacity – 75.8%**

This analysis has been performed in accordance with the 2018 Connecticut Building Code. based upon an ultimate 3-second gust wind speed of 120 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Shreya Naphade

Respectfully submitted by:

Ping Jiang, P.E.
Professional Engineer

STATE OF CONNECTICUT
PING JIANG
30767
LICENSED
PROFESSIONAL ENGINEER

Jun 28, 2022

Digitally signed by Ping Jiang
Date: 2022.06.28 09:24:34-05'00'

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 160 ft Monopole tower designed by Valmont Microflect.

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

The tower has been modified per reinforcement drawings prepared by Aero Solutions LLC, in August of 2009. Reinforcement consists of addition of base plate stiffeners. This modification has not been considered due to a lack of a post modification inspection report.

The tower was later modified per reinforcement drawings prepared by Paul J. Ford & Company in October of 2012. Reinforcement consisted of addition of flat plate reinforcement from 1.75' to 16.75' and 77' to 82'. It also consists of the installation of transition stiffeners. Refer to Modification Inspection report by Tower Engineering Professionals, Inc. in August of 2013. These modifications were found to be ineffective.

The tower was later modified per reinforcement drawings prepared by Paul J. Ford & Company in April of 2014. Reinforcement consisted of addition of flat plate reinforcement from 12.25' to 32.25', 32.33' to 52.33', and 78.5' to 88.5'. Refer to Modification Inspection Report by Sinnott Gering and Schmitt Towers, Inc. in August of 2014. The 78.5' to 88.5' reinforcements were found to be effective, and all others were found to be ineffective.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	120 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Seismic Ss:	0.253
Seismic S1:	0.07
Service Wind Speed:	60 mph
Seismic Loading:	Does not control per engineering judgement

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)
157.0	158.0	3	commscope	VV-65B-R1_TMO w/ Mount Pipe	3	1 5/8
		3	ericsson	AIR 6419 B41_TMO w/ Mount Pipe		
		3	ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	ericsson	Radio 4480_TMOV2		
		3	rfs celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
	157.0	1	cci tower mounts (v2.1)	Platform Mount [13' LP 713-1]		
40.0	40.0	1	andrew	GPS-QBW-20N	-	-
		1	cci tower mounts (v2.1)	Pipe Mount [PM 601-1]		

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)
149.0	151.0	3	cci antennas	HPA-65R-BUU-H6 w/ Mount Pipe	4 2 6 2 1	5/8 3/8 1 5/8 3/4 2 conduit
		3	ericsson	RRUS 32 B30		
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 8843 B2/B66A		
		3	kmw communications	EPBQ-654L8H6-L2 w/ Mount Pipe		
		3	powerwave technologies	7770.00 w/ Mount Pipe		
	149.0	1	cci tower mounts (v2.1)	Platform Mount [13' LP 713-1]		
		3	ericsson	RRUS 11 B12		
		6	powerwave technologies	LGP21401		
		3	raycap	DC6-48-60-18-8F		
139.0	142.0	6	andrew	DB846F65ZAXY w/ Mount Pipe	7	1 5/8
		6	jma wireless	MX06FRO860-03 w/ Mount Pipe		
		1	raycap	RVZDC-6627-PF-48		
		6	rfs celwave	FD9R6004/2C-3L		
		3	samsung telecommunications	MT6407-77A w/ Mount Pipe		
		3	samsung telecommunications	RF4439D-25A		
		3	samsung telecommunications	RF4440D-13A		
	139.0	1	cci tower mounts (v2.1)	Platform Mount [LP 713-1]		
129.0	129.0	3	fujitsu	TA08025-B604	1	1 1/2
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MC-PK8-DSH		
116.0	118.0	3	ericsson	AIR 32 B2A/B66AA w/ Mount Pipe	10	1 5/8
		3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe		
		3	ericsson	KRY 112 144/1		
		3	ericsson	RADIO 4449 B12/B71		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
	116.0	1	cci tower mounts (v2.1)	Miscellaneous [NA 507-1]		
		1	cci tower mounts (v2.1)	Platform Mount [LP 712-1]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
84.0	84.0	1	cci tower mounts (v2.1)	Side Arm Mount [4' SO 702-1]	-	-
		1	gps	GPS_A		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	5749621	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1104113	CCISITES
4-TOWER MANUFACTURER DRAWINGS	823122	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	1251715	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3332716	CCISITES
4-POST-MODIFICATION INSPECTION	4015064	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	4837035	CCISITES
4-POST-MODIFICATION INSPECTION	5577141	CCISITES

3.1) Analysis Method

tnxTower (version 8.1.1.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. 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) 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. Black & Veatch Corp. should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary) (Monopole Tower)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
160 - 155	Pole	TP20.801x19.6x0.25	Pole	3.0%	Pass
155 - 150	Pole	TP22.002x20.801x0.25	Pole	7.4%	Pass
150 - 145	Pole	TP23.203x22.002x0.25	Pole	15.4%	Pass

145 - 140	Pole	TP24.404x23.203x0.25	Pole	22.1%	Pass
140 - 135	Pole	TP25.605x24.404x0.25	Pole	33.5%	Pass
135 - 130	Pole	TP26.806x25.605x0.25	Pole	42.5%	Pass
130 - 125	Pole	TP28.007x26.806x0.25	Pole	52.2%	Pass
125 - 120	Pole	TP29.208x28.007x0.25	Pole	60.8%	Pass
120 - 116	Pole	TP31.29x29.208x0.25	Pole	67.1%	Pass
116 - 111	Pole	TP30.867x29.669x0.3438	Pole	50.7%	Pass
111 - 106	Pole	TP32.065x30.867x0.3438	Pole	55.5%	Pass
106 - 101	Pole	TP33.263x32.065x0.3438	Pole	59.9%	Pass
101 - 96	Pole	TP34.461x33.263x0.3438	Pole	63.8%	Pass
96 - 91	Pole	TP35.659x34.461x0.3438	Pole	67.4%	Pass
91 - 86	Pole	TP36.857x35.659x0.3438	Pole	70.7%	Pass
86 - 85.75	Pole + Reinf.	TP36.917x36.857x0.5125	Reinf. 5 Tension Rupture	67.4%	Pass
85.75 - 81	Pole + Reinf.	TP38.055x36.917x0.5063	Reinf. 5 Tension Rupture	69.9%	Pass
81 - 80.75	Pole	TP38.115x38.055x0.3438	Pole	73.9%	Pass
80.75 - 80.5	Pole	TP38.175x38.115x0.3438	Pole	74.1%	Pass
80.5 - 79	Pole	TP39.912x38.175x0.3438	Pole	74.9%	Pass
79 - 72.25	Pole	TP39.467x37.847x0.4063	Pole	64.2%	Pass
72.25 - 67.25	Pole	TP40.667x39.467x0.4063	Pole	66.0%	Pass
67.25 - 62.25	Pole	TP41.867x40.667x0.4063	Pole	67.7%	Pass
62.25 - 57.25	Pole	TP43.067x41.867x0.4063	Pole	69.3%	Pass
57.25 - 52.25	Pole	TP44.268x43.067x0.4063	Pole	70.8%	Pass
52.25 - 49.83	Pole	TP44.848x44.268x0.4063	Pole	71.4%	Pass
49.83 - 49.58	Pole	TP44.908x44.848x0.4063	Pole	71.5%	Pass
49.58 - 44.58	Pole	TP46.109x44.908x0.4063	Pole	72.9%	Pass
44.58 - 43	Pole	TP48.088x46.109x0.4063	Pole	73.3%	Pass
43 - 35.33	Pole	TP47.516x45.675x0.4375	Pole	69.6%	Pass
35.33 - 32.25	Pole	TP48.256x47.516x0.4375	Pole	70.2%	Pass
32.25 - 32	Pole	TP48.317x48.256x0.4375	Pole	70.3%	Pass
32 - 27	Pole	TP49.517x48.317x0.4375	Pole	71.2%	Pass
27 - 22	Pole	TP50.718x49.517x0.4375	Pole	72.1%	Pass
22 - 17	Pole	TP51.918x50.718x0.4375	Pole	73.0%	Pass
17 - 15.5	Pole	TP52.278x51.918x0.4375	Pole	73.3%	Pass
15.5 - 15.25	Pole	TP52.338x52.278x0.4375	Pole	73.3%	Pass
15.25 - 14.75	Pole	TP52.458x52.338x0.4375	Pole	73.4%	Pass
14.75 - 14.5	Pole	TP52.518x52.458x0.4375	Pole	73.4%	Pass
14.5 - 9.5	Pole	TP53.719x52.518x0.4375	Pole	74.3%	Pass
9.5 - 4.5	Pole	TP54.92x53.719x0.4375	Pole	75.1%	Pass
4.5 - 0	Pole	TP56x54.92x0.4375	Pole	75.8%	Pass
				Summary	

			Pole	75.8%	Pass
			Reinforcement	69.9%	Pass
			Overall	75.8%	Pass

Table 5 - Tower Component Stresses vs. Capacity (Monopole Tower) – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	61.2	Pass
1	Base Plate	0	44.3	Pass
1	Base Foundation (Structure)	0	26.2	Pass
1	Base Foundation (Soil Interaction)	0	70.3	Pass

Structure Rating (max from all components) =	75.8%

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

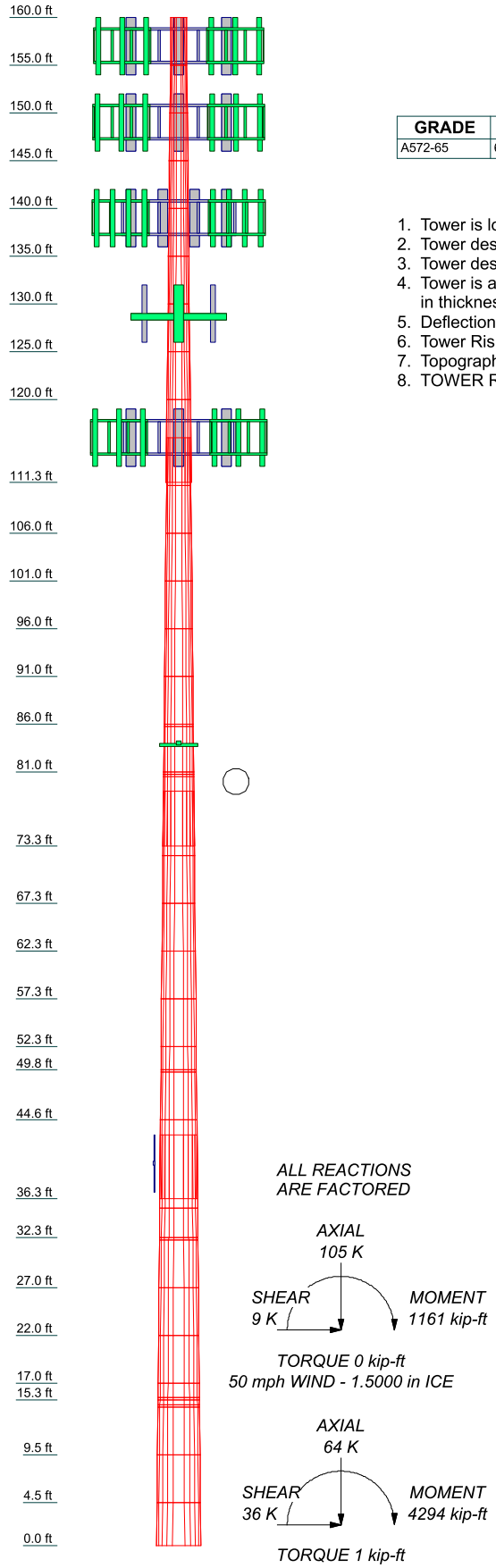
4.1) Recommendations

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	38	39	40	41	42
Length (ft)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	4.750	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.000	7.6625	5.00	5.08	5.000	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.000	5.00	4.50
Number of Sides	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Thickness (in)	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.3438	0.3438	0.3438	0.3438	0.3438	0.3438	0.3438	0.3438	0.3438	0.3438	0.3438	0.4063	0.4063	0.4063	0.4063	0.4063	0.4063	0.4063	0.4063	0.4063	0.4063	0.4063	0.4063	0.4063	0.4375	0.4375	0.4375	0.4375	0.4375	0.4375	0.4375	0.4375	0.4375
Socket Length (ft)									4.67												5.75								6.67															
Top Dia (in)	19.6000	20.8010	22.0021	23.2031	24.4041	25.6051	26.8062	28.0072	29.2082	30.4092	31.6102	32.8113	34.0123	35.2133	36.4143	37.6153	38.8164	40.0174	41.2184	42.4194	43.6204	44.8215	46.0225	47.2235	48.4245	49.6255	50.8266	52.0276	53.2286	54.4296	55.6306	56.8317	58.0327	59.2337	60.4347	61.6357	62.8368	64.0378	65.2388	66.4398	67.6408	68.8419
Bot Dia (in)	20.8010	22.0021	23.2031	24.4041	25.6051	26.8062	28.0072	29.2082	31.2900	32.0663	32.8650	33.2631	34.4611	35.6591	36.8571	38.0551	39.2531	40.4511	41.6491	42.8471	44.0451	45.2431	46.4411	47.6391	48.8371	50.0351	51.2331	52.4311	53.6291	54.8271	56.0251	57.2231	58.4211	59.6191	60.8171	62.0151	63.2131	64.4111	65.6091	66.8071	68.0051	69.2031
Grade	A572-65																																									
Weight (K)	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.7	0.6	0.6	0.6	0.6	0.7	0.7	0.0	1.0	0.0	1.1	1.1	1.1	0.9	0.9	0.9	1.0	0.5	0.0	1.0	1.7	1.7	0.7	0.0	1.2	1.2	1.2	1.4	0.0	1.3	1.3	1.3	1.3	1.2



ALL REACTIONS ARE FACTORED

AXIAL 105 K

SHEAR 9 K *MOMENT 1161 kip-ft*

TORQUE 0 kip-ft
50 mph WIND - 1.5000 in ICE

AXIAL 64 K

SHEAR 36 K *MOMENT 4294 kip-ft*

TORQUE 1 kip-ft
REACTIONS - 120 mph WIND

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 120 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 0.00 ft
8. TOWER RATING: 75.8%

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Job:	***BRG 2044 (A) 943097 (BU #806953)***		
Project:	***406642 (806953.2130743)***		
Client: Crown Castle	Drawn by: Shreya Naphade	App'd:	
Code: TIA-222-H	Date: 06/28/22	Scale: NTS	
Path:		Dwg No. E-1	

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 Fairfield County, Connecticut.
- Tower base elevation above sea level: 247.00 ft.
- Basic wind speed of 120 mph.
- Risk Category II.
- Exposure Category B.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.5000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in 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		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-H Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-H Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known

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	160.00-155.00	5.00	0.00	12	19.6000	20.8010	0.2500	1.0000	A572-65 (65 ksi)
L2	155.00-150.00	5.00	0.00	12	20.8010	22.0021	0.2500	1.0000	A572-65 (65 ksi)
L3	150.00-145.00	5.00	0.00	12	22.0021	23.2031	0.2500	1.0000	A572-65 (65 ksi)
L4	145.00-140.00	5.00	0.00	12	23.2031	24.4041	0.2500	1.0000	A572-65 (65 ksi)
L5	140.00-135.00	5.00	0.00	12	24.4041	25.6051	0.2500	1.0000	A572-65 (65 ksi)
L6	135.00-130.00	5.00	0.00	12	25.6051	26.8062	0.2500	1.0000	A572-65 (65 ksi)
L7	130.00-125.00	5.00	0.00	12	26.8062	28.0072	0.2500	1.0000	A572-65 (65 ksi)
L8	125.00-120.00	5.00	0.00	12	28.0072	29.2082	0.2500	1.0000	A572-65 (65 ksi)
L9	120.00-111.33	8.67	4.67	12	29.2082	31.2900	0.2500	1.0000	A572-65 (65 ksi)
L10	111.33-111.00	5.00	0.00	12	29.6690	30.8670	0.3438	1.3750	A572-65 (65 ksi)
L11	111.00-106.00	5.00	0.00	12	30.8670	32.0650	0.3438	1.3750	A572-65 (65 ksi)
L12	106.00-101.00	5.00	0.00	12	32.0650	33.2631	0.3438	1.3750	A572-65 (65 ksi)
L13	101.00-96.00	5.00	0.00	12	33.2631	34.4611	0.3438	1.3750	A572-65 (65 ksi)
L14	96.00-91.00	5.00	0.00	12	34.4611	35.6591	0.3438	1.3750	A572-65 (65 ksi)
L15	91.00-86.00	5.00	0.00	12	35.6591	36.8571	0.3438	1.3750	A572-65 (65 ksi)
L16	86.00-85.75	0.25	0.00	12	36.8571	36.9170	0.5125	2.0500	A572-65 (65 ksi)
L17	85.75-81.00	4.75	0.00	12	36.9170	38.0551	0.5062	2.0250	A572-65 (65 ksi)
L18	81.00-80.75	0.25	0.00	12	38.0551	38.1150	0.3438	1.3750	A572-65 (65 ksi)
L19	80.75-80.50	0.25	0.00	12	38.1150	38.1749	0.3438	1.3750	A572-65 (65 ksi)
L20	80.50-73.25	7.25	5.75	12	38.1749	39.9120	0.3438	1.3750	A572-65 (65 ksi)
L21	73.25-72.25	6.75	0.00	12	37.8468	39.4670	0.4063	1.6250	A572-65 (65 ksi)
L22	72.25-67.25	5.00	0.00	12	39.4670	40.6671	0.4063	1.6250	A572-65 (65 ksi)
L23	67.25-62.25	5.00	0.00	12	40.6671	41.8673	0.4063	1.6250	A572-65 (65 ksi)
L24	62.25-57.25	5.00	0.00	12	41.8673	43.0674	0.4063	1.6250	A572-65 (65 ksi)
L25	57.25-52.25	5.00	0.00	12	43.0674	44.2675	0.4063	1.6250	A572-65 (65 ksi)
L26	52.25-49.83	2.42	0.00	12	44.2675	44.8484	0.4063	1.6250	A572-65 (65 ksi)
L27	49.83-49.58	0.25	0.00	12	44.8484	44.9084	0.4063	1.6250	A572-65 (65 ksi)
L28	49.58-44.58	5.00	0.00	12	44.9084	46.1086	0.4063	1.6250	A572-65 (65 ksi)
L29	44.58-36.33	8.25	6.67	12	46.1086	48.0880	0.4063	1.6250	A572-65 (65 ksi)
L30	36.33-35.33	7.67	0.00	12	45.6753	47.5161	0.4375	1.7500	A572-65 (65 ksi)
L31	35.33-32.25	3.08	0.00	12	47.5161	48.2565	0.4375	1.7500	A572-65 (65 ksi)
L32	32.25-32.00	0.25	0.00	12	48.2565	48.3165	0.4375	1.7500	A572-65 (65 ksi)
L33	32.00-27.00	5.00	0.00	12	48.3165	49.5171	0.4375	1.7500	A572-65 (65 ksi)

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
L34	27.00-22.00	5.00	0.00	12	49.5171	50.7176	0.4375	1.7500	A572-65 (65 ksi)
L35	22.00-17.00	5.00	0.00	12	50.7176	51.9181	0.4375	1.7500	A572-65 (65 ksi)
L36	17.00-15.50	1.50	0.00	12	51.9181	52.2783	0.4375	1.7500	A572-65 (65 ksi)
L37	15.50-15.25	0.25	0.00	12	52.2783	52.3383	0.4375	1.7500	A572-65 (65 ksi)
L38	15.25-14.75	0.50	0.00	12	52.3383	52.4584	0.4375	1.7500	A572-65 (65 ksi)
L39	14.75-14.50	0.25	0.00	12	52.4584	52.5184	0.4375	1.7500	A572-65 (65 ksi)
L40	14.50-9.50	5.00	0.00	12	52.5184	53.7190	0.4375	1.7500	A572-65 (65 ksi)
L41	9.50-4.50	5.00	0.00	12	53.7190	54.9195	0.4375	1.7500	A572-65 (65 ksi)
L42	4.50-0.00	4.50		12	54.9195	56.0000	0.4375	1.7500	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	20.2032	15.5768	744.4315	6.9273	10.1528	73.3228	1508.4200	7.6664	4.5828	18.331
	21.4466	16.5436	891.8306	7.3573	10.7749	82.7690	1807.0907	8.1422	4.9047	19.619
L2	21.4466	16.5436	891.8306	7.3573	10.7749	82.7690	1807.0907	8.1422	4.9047	19.619
	22.6900	17.5104	1057.5054	7.7872	11.3971	92.7875	2142.7927	8.6181	5.2266	20.906
L3	22.6900	17.5104	1057.5054	7.7872	11.3971	92.7875	2142.7927	8.6181	5.2266	20.906
	23.9334	18.4772	1242.5238	8.2172	12.0192	103.3783	2517.6901	9.0939	5.5484	22.194
L4	23.9334	18.4772	1242.5238	8.2172	12.0192	103.3783	2517.6901	9.0939	5.5484	22.194
	25.1768	19.4441	1447.9540	8.6472	12.6413	114.5413	2933.9473	9.5698	5.8703	23.481
L5	25.1768	19.4441	1447.9540	8.6472	12.6413	114.5413	2933.9473	9.5698	5.8703	23.481
	26.4202	20.4109	1674.8638	9.0771	13.2635	126.2766	3393.7282	10.0456	6.1922	24.769
L6	26.4202	20.4109	1674.8638	9.0771	13.2635	126.2766	3393.7282	10.0456	6.1922	24.769
	27.6636	21.3777	1924.3215	9.5071	13.8856	138.5841	3899.1971	10.5215	6.5141	26.056
L7	27.6636	21.3777	1924.3215	9.5071	13.8856	138.5841	3899.1971	10.5215	6.5141	26.056
	28.9070	22.3445	2197.3950	9.9371	14.5077	151.4638	4452.5181	10.9973	6.8359	27.344
L8	28.9070	22.3445	2197.3950	9.9371	14.5077	151.4638	4452.5181	10.9973	6.8359	27.344
	30.1504	23.3114	2495.1525	10.3670	15.1299	164.9158	5055.8554	11.4731	7.1578	28.631
L9	30.1504	23.3114	2495.1525	10.3670	15.1299	164.9158	5055.8554	11.4731	7.1578	28.631
	32.3056	24.9872	3072.8897	11.1123	16.2082	189.5883	6226.5076	12.2979	7.7157	30.863
L10	31.7520	32.4594	3562.9621	10.4985	15.3686	231.8345	7219.5272	15.9755	7.0301	20.451
	31.8347	33.7855	4017.7104	10.9273	15.9891	251.2776	8140.9705	16.6282	7.3511	21.385
L11	31.8347	33.7855	4017.7104	10.9273	15.9891	251.2776	8140.9705	16.6282	7.3511	21.385
	33.0749	35.1115	4509.5939	11.3562	16.6097	271.5037	9137.6598	17.2808	7.6722	22.319
L12	33.0749	35.1115	4509.5939	11.3562	16.6097	271.5037	9137.6598	17.2808	7.6722	22.319
	34.3152	36.4376	5040.0702	11.7851	17.2303	292.5127	10212.5486	17.9335	7.9932	23.253
L13	34.3152	36.4376	5040.0702	11.7851	17.2303	292.5127	10212.5486	17.9335	7.9932	23.253
	35.5555	37.7636	5610.5968	12.2140	17.8508	314.3045	11368.5902	18.5861	8.3143	24.187
L14	35.5555	37.7636	5610.5968	12.2140	17.8508	314.3045	11368.5902	18.5861	8.3143	24.187
	36.7957	39.0896	6222.6312	12.6429	18.4714	336.8792	12608.7378	19.2387	8.6354	25.121
L15	36.7957	39.0896	6222.6312	12.6429	18.4714	336.8792	12608.7378	19.2387	8.6354	25.121
	38.0360	40.4157	6877.6309	13.0718	19.0920	360.2369	13935.9448	19.8914	8.9564	26.055
L16	37.9765	59.9776	10112.4099	13.0114	19.0920	529.6683	20490.4841	29.5192	8.5042	16.594
	38.0385	60.0765	10162.4919	13.0328	19.1230	531.4278	20591.9637	29.5678	8.5203	16.625
L17	38.0407	59.3540	10043.730	13.0350	19.1230	525.2174	20351.320	29.2123	8.5370	16.863

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
	39.2189	61.2093	11015.3003	13.4425	19.7125	558.7968	22319.9859	30.1254	8.8420	17.466
L18	39.2763	41.7417	7577.0535	13.5007	19.7125	384.3774	15353.1646	20.5440	9.2775	26.989
	39.3383	41.8080	7613.2169	13.5221	19.7436	385.6050	15426.4414	20.5766	9.2936	27.036
L19	39.3383	41.8080	7613.2169	13.5221	19.7436	385.6050	15426.4414	20.5766	9.2936	27.036
	39.4003	41.8743	7649.4951	13.5435	19.7746	386.8345	15499.9510	20.6093	9.3096	27.083
L20	39.4003	41.8743	7649.4951	13.5435	19.7746	386.8345	15499.9510	20.6093	9.3096	27.083
	41.1987	43.7971	8752.3577	14.1654	20.6744	423.3424	17734.6495	21.5556	9.7752	28.437
L21	40.4674	48.9769	8763.1762	13.4037	19.6046	446.9951	17756.5709	24.1049	9.0542	22.287
	40.7159	51.0963	9950.7611	13.9837	20.4439	486.7351	20162.9397	25.1481	9.4884	23.356
L22	40.7159	51.0963	9950.7611	13.9837	20.4439	486.7351	20162.9397	25.1481	9.4884	23.356
	41.9584	52.6663	10896.4422	14.4134	21.0656	517.2631	22079.1461	25.9207	9.8100	24.148
L23	41.9584	52.6663	10896.4422	14.4134	21.0656	517.2631	22079.1461	25.9207	9.8100	24.148
	43.2009	54.2362	11900.2177	14.8430	21.6872	548.7197	24113.0675	26.6934	10.1317	24.94
L24	43.2009	54.2362	11900.2177	14.8430	21.6872	548.7197	24113.0675	26.6934	10.1317	24.94
	44.4433	55.8061	12963.8194	15.2727	22.3089	581.1049	26268.2127	27.4661	10.4533	25.731
L25	44.4433	55.8061	12963.8194	15.2727	22.3089	581.1049	26268.2127	27.4661	10.4533	25.731
	45.6858	57.3761	14088.9788	15.7023	22.9306	614.4186	28548.0908	28.2387	10.7750	26.523
L26	45.6858	57.3761	14088.9788	15.7023	22.9306	614.4186	28548.0908	28.2387	10.7750	26.523
	46.2872	58.1359	14656.1781	15.9103	23.2315	630.8758	29697.3903	28.6127	10.9306	26.906
L27	46.2872	58.1359	14656.1781	15.9103	23.2315	630.8758	29697.3903	28.6127	10.9306	26.906
	46.3493	58.2144	14715.6258	15.9318	23.2626	632.5884	29817.8475	28.6514	10.9467	26.946
L28	46.3493	58.2144	14715.6258	15.9318	23.2626	632.5884	29817.8475	28.6514	10.9467	26.946
	47.5918	59.7843	15938.5808	16.3614	23.8842	667.3264	32295.8858	29.4240	11.2683	27.737
L29	47.5918	59.7843	15938.5808	16.3614	23.8842	667.3264	32295.8858	29.4240	11.2683	27.737
	49.6411	62.3737	18100.5493	17.0701	24.9096	726.6500	36676.6202	30.6984	11.7988	29.043
L30	48.7894	63.7288	16646.5574	16.1951	23.6598	703.5796	33730.4385	31.3654	11.0685	25.299
	49.0380	66.3220	18762.5503	16.8542	24.6134	762.2911	38018.0137	32.6417	11.5618	26.427
L31	49.0380	66.3220	18762.5503	16.8542	24.6134	762.2911	38018.0137	32.6417	11.5618	26.427
	49.8044	67.3650	19661.6860	17.1192	24.9969	786.5664	39839.9064	33.1550	11.7602	26.881
L32	49.8044	67.3650	19661.6860	17.1192	24.9969	786.5664	39839.9064	33.1550	11.7602	26.881
	49.8666	67.4495	19735.8231	17.1407	25.0279	788.5513	39990.1283	33.1966	11.7763	26.917
L33	49.8666	67.4495	19735.8231	17.1407	25.0279	788.5513	39990.1283	33.1966	11.7763	26.917
	51.1095	69.1408	21257.9625	17.5705	25.6498	828.7759	43074.3954	34.0290	12.0981	27.653
L34	51.1095	69.1408	21257.9625	17.5705	25.6498	828.7759	43074.3954	34.0290	12.0981	27.653
	52.3524	70.8321	22856.420	18.0003	26.2717	870.0011	46313.304	34.8614	12.4198	28.388

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
			4				3			
L35	52.3524	70.8321	22856.420	18.0003	26.2717	870.0011	46313.304	34.8614	12.4198	28.388
			4				3			
	53.5953	72.5234	24533.063	18.4301	26.8936	912.2269	49710.637	35.6938	12.7416	29.124
			4				8			
L36	53.5953	72.5234	24533.063	18.4301	26.8936	912.2269	49710.637	35.6938	12.7416	29.124
			4				8			
	53.9682	73.0307	25051.581	18.5590	27.0802	925.0898	50761.296	35.9435	12.8381	29.344
			6				1			
L37	53.9682	73.0307	25051.581	18.5590	27.0802	925.0898	50761.296	35.9435	12.8381	29.344
			6				1			
	54.0303	73.1153	25138.705	18.5805	27.1113	927.2423	50937.832	35.9851	12.8542	29.381
			3				3			
L38	54.0303	73.1153	25138.705	18.5805	27.1113	927.2423	50937.832	35.9851	12.8542	29.381
			3				3			
	54.1546	73.2844	25313.558	18.6235	27.1734	931.5550	51292.131	36.0684	12.8863	29.455
			2				7			
L39	54.1546	73.2844	25313.558	18.6235	27.1734	931.5550	51292.131	36.0684	12.8863	29.455
			2				7			
	54.2167	73.3690	25401.287	18.6450	27.2045	933.7150	51469.895	36.1100	12.9024	29.491
			8				8			
L40	54.2167	73.3690	25401.287	18.6450	27.2045	933.7150	51469.895	36.1100	12.9024	29.491
			8				8			
	55.4596	75.0603	27198.709	19.0748	27.8264	977.4418	55111.958	36.9424	13.2242	30.227
			1				7			
L41	55.4596	75.0603	27198.709	19.0748	27.8264	977.4418	55111.958	36.9424	13.2242	30.227
			1				7			
	56.7025	76.7515	29078.982	19.5046	28.4483	1022.1692	58921.902	37.7748	13.5459	30.962
			8				8			
L42	56.7025	76.7515	29078.982	19.5046	28.4483	1022.1692	58921.902	37.7748	13.5459	30.962
			8				8			
	57.8211	78.2737	30843.610	19.8914	29.0080	1063.2795	62497.517	38.5239	13.8355	31.624
			8				6			

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 160.00-155.00				1	1	1			
L2 155.00-150.00				1	1	1			
L3 150.00-145.00				1	1	1			
L4 145.00-140.00				1	1	1			
L5 140.00-135.00				1	1	1			
L6 135.00-130.00				1	1	1			
L7 130.00-125.00				1	1	1			
L8 125.00-120.00				1	1	1			
L9 120.00-111.33				1	1	1			
L10 111.33-111.00				1	1	1			
L11 111.00-106.00				1	1	1			
L12 106.00-101.00				1	1	1			
L13 101.00-96.00				1	1	1			
L14 96.00-91.00				1	1	1			
L15 91.00-86.00				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
L16 86.00-85.75				1	1	0.973888			
L17 85.75-81.00				1	1	0.976445			
L18 81.00-80.75				1	1	1			
L19 80.75-80.50				1	1	1			
L20 80.50-73.25				1	1	1			
L21 73.25-72.25				1	1	1			
L22 72.25-67.25				1	1	1			
L23 67.25-62.25				1	1	1			
L24 62.25-57.25				1	1	1			
L25 57.25-52.25				1	1	1			
L26 52.25-49.83				1	1	1			
L27 49.83-49.58				1	1	1			
L28 49.58-44.58				1	1	1			
L29 44.58-36.33				1	1	1			
L30 36.33-35.33				1	1	1			
L31 35.33-32.25				1	1	1			
L32 32.25-32.00				1	1	1			
L33 32.00-27.00				1	1	1			
L34 27.00-22.00				1	1	1			
L35 22.00-17.00				1	1	1			
L36 17.00-15.50				1	1	1			
L37 15.50-15.25				1	1	1			
L38 15.25-14.75				1	1	1			
L39 14.75-14.50				1	1	1			
L40 14.50-9.50				1	1	1			
L41 9.50-4.50				1	1	1			
L42 4.50-0.00				1	1	1			

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 plf
Safety Line 3/8	C	No	Surface Ar (CaAa)	160.00 - 10.00	1	1	-0.390 -0.380	0.3750		0.22
***										
MK SR 1	A	No	Surface Af	16.75 -	1	1	0.000	4.0000	9.5000	10.21

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 plf
			(CaAa)	1.75			0.000			
MK SR 1	B	No	Surface Af (CaAa)	16.75 - 1.75	1	1	0.000 0.000	4.0000	9.5000	10.21
MK SR 1	C	No	Surface Af (CaAa)	16.75 - 1.75	1	1	0.000 0.000	4.0000	9.5000	10.21
MK SR 2	A	No	Surface Af (CaAa)	82.00 - 77.00	1	1	0.000 0.000	4.0000	9.5000	10.21
MK SR 2	B	No	Surface Af (CaAa)	82.00 - 77.00	1	1	0.000 0.000	4.0000	9.5000	10.21
MK SR 2	C	No	Surface Af (CaAa)	82.00 - 77.00	1	1	0.000 0.000	4.0000	9.5000	10.21
CCI-AFP-060100	A	No	Surface Af (CaAa)	32.25 - 12.25	1	1	0.000 0.000	6.0000	14.0000	20.42
CCI-AFP-060100	B	No	Surface Af (CaAa)	32.25 - 12.25	1	1	0.000 0.000	6.0000	14.0000	20.42
CCI-AFP-060100	C	No	Surface Af (CaAa)	32.25 - 12.25	1	1	0.000 0.000	6.0000	14.0000	20.42
CCI-AFP-060100	A	No	Surface Af (CaAa)	52.33 - 32.33	1	1	0.000 0.000	6.0000	14.0000	20.42
CCI-AFP-060100	B	No	Surface Af (CaAa)	52.33 - 32.33	1	1	0.000 0.000	6.0000	14.0000	20.42
CCI-AFP-060100	C	No	Surface Af (CaAa)	52.33 - 32.33	1	1	0.000 0.000	6.0000	14.0000	20.42
CCI-AFP-060100	A	No	Surface Af (CaAa)	88.50 - 78.50	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-AFP-060100	B	No	Surface Af (CaAa)	88.50 - 78.50	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-AFP-060100	C	No	Surface Af (CaAa)	88.50 - 78.50	1	1	0.000 0.000	6.0000	14.0000	0.00
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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 plf
157									
HB158-21U6S24-xxM_TMO(1-5/8)	C	No	No	Inside Pole	157.00 - 0.00	3	No Ice	0.00	2.50
							1/2" Ice	0.00	2.50
							1" Ice	0.00	2.50
							2" Ice	0.00	2.50
149									
FB-L98B-002-75000(3/8)	C	No	No	Inside Pole	149.00 - 0.00	1	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
							2" Ice	0.00	0.06
WR-VG82ST-BRDA(5/8)	C	No	No	Inside Pole	149.00 - 0.00	2	No Ice	0.00	0.31
							1/2" Ice	0.00	0.31
							1" Ice	0.00	0.31
							2" Ice	0.00	0.31
FB-L98B-002-75000(3/8)	C	No	No	Inside Pole	149.00 - 0.00	1	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
							2" Ice	0.00	0.06
WR-VG82ST-BRDA(5/8)	C	No	No	Inside Pole	149.00 - 0.00	2	No Ice	0.00	0.31
							1/2" Ice	0.00	0.31
							1" Ice	0.00	0.31
							2" Ice	0.00	0.31
2" innerduct conduit	C	No	No	Inside Pole	149.00 - 0.00	1	No Ice	0.00	0.20
							1/2" Ice	0.00	0.20

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
							1" Ice	0.00	0.20
							2" Ice	0.00	0.20
LCF158-50JA-A0(1-5/8)	C	No	No	Inside Pole	149.00 - 0.00	6	No Ice	0.00	0.80
							1/2" Ice	0.00	0.80
							1" Ice	0.00	0.80
							2" Ice	0.00	0.80
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	149.00 - 0.00	2	No Ice	0.00	0.58
							1/2" Ice	0.00	0.58
							1" Ice	0.00	0.58
							2" Ice	0.00	0.58
139 561(1-5/8)	C	No	No	Inside Pole	139.00 - 0.00	6	No Ice	0.00	1.35
							1/2" Ice	0.00	1.35
							1" Ice	0.00	1.35
							2" Ice	0.00	1.35
HB158-U12S24-XXX-LI(1-5/8)	C	No	No	Inside Pole	139.00 - 0.00	1	No Ice	0.00	3.20
							1/2" Ice	0.00	3.20
							1" Ice	0.00	3.20
							2" Ice	0.00	3.20
129 CU12PSM9P6XXX (1-1/2)	C	No	No	Inside Pole	129.00 - 0.00	1	No Ice	0.00	2.35
							1/2" Ice	0.00	2.35
							1" Ice	0.00	2.35
							2" Ice	0.00	2.35
116 LDF7-50A(1-5/8)	C	No	No	Inside Pole	116.00 - 0.00	6	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
MLE Hybrid 9Power/18Fiber RL 2(1-5/8)	C	No	No	Inside Pole	116.00 - 0.00	1	No Ice	0.00	1.07
							1/2" Ice	0.00	1.07
							1" Ice	0.00	1.07
							2" Ice	0.00	1.07
HCS 6X12 4AWG(1-5/8)	C	No	No	Inside Pole	116.00 - 0.00	3	No Ice	0.00	2.40
							1/2" Ice	0.00	2.40
							1" Ice	0.00	2.40
							2" Ice	0.00	2.40
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Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	160.00-155.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.02
L2	155.00-150.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.04
L3	150.00-145.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.07
L4	145.00-140.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.08
L5	140.00-135.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00

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	0.188	0.000	0.12
L6	135.00-130.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.13
L7	130.00-125.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.14
L8	125.00-120.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.14
L9	120.00-111.33	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.325	0.000	0.31
L10	111.33-111.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.012	0.000	0.01
L11	111.00-106.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.21
L12	106.00-101.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.21
L13	101.00-96.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.21
L14	96.00-91.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.21
L15	91.00-86.00	A	0.000	0.000	2.280	0.000	0.00
		B	0.000	0.000	2.280	0.000	0.00
		C	0.000	0.000	2.468	0.000	0.21
L16	86.00-85.75	A	0.000	0.000	0.228	0.000	0.00
		B	0.000	0.000	0.228	0.000	0.00
		C	0.000	0.000	0.237	0.000	0.01
L17	85.75-81.00	A	0.000	0.000	4.885	0.000	0.01
		B	0.000	0.000	4.885	0.000	0.01
		C	0.000	0.000	5.063	0.000	0.21
L18	81.00-80.75	A	0.000	0.000	0.366	0.000	0.00
		B	0.000	0.000	0.366	0.000	0.00
		C	0.000	0.000	0.376	0.000	0.01
L19	80.75-80.50	A	0.000	0.000	0.366	0.000	0.00
		B	0.000	0.000	0.366	0.000	0.00
		C	0.000	0.000	0.376	0.000	0.01
L20	80.50-73.25	A	0.000	0.000	3.759	0.000	0.04
		B	0.000	0.000	3.759	0.000	0.04
		C	0.000	0.000	4.031	0.000	0.34
L21	73.25-72.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.037	0.000	0.04
L22	72.25-67.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.21
L23	67.25-62.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.21
L24	62.25-57.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.21
L25	57.25-52.25	A	0.000	0.000	0.080	0.000	0.00
		B	0.000	0.000	0.080	0.000	0.00
		C	0.000	0.000	0.268	0.000	0.21
L26	52.25-49.83	A	0.000	0.000	2.420	0.000	0.05
		B	0.000	0.000	2.420	0.000	0.05
		C	0.000	0.000	2.511	0.000	0.15
L27	49.83-49.58	A	0.000	0.000	0.250	0.000	0.01
		B	0.000	0.000	0.250	0.000	0.01
		C	0.000	0.000	0.259	0.000	0.02
L28	49.58-44.58	A	0.000	0.000	5.000	0.000	0.10
		B	0.000	0.000	5.000	0.000	0.10

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	5.188	0.000	0.31
L29	44.58-36.33	A	0.000	0.000	8.247	0.000	0.17
		B	0.000	0.000	8.247	0.000	0.17
		C	0.000	0.000	8.556	0.000	0.52
L30	36.33-35.33	A	0.000	0.000	1.000	0.000	0.02
		B	0.000	0.000	1.000	0.000	0.02
		C	0.000	0.000	1.038	0.000	0.06
L31	35.33-32.25	A	0.000	0.000	3.003	0.000	0.06
		B	0.000	0.000	3.003	0.000	0.06
		C	0.000	0.000	3.119	0.000	0.19
L32	32.25-32.00	A	0.000	0.000	0.250	0.000	0.01
		B	0.000	0.000	0.250	0.000	0.01
		C	0.000	0.000	0.259	0.000	0.02
L33	32.00-27.00	A	0.000	0.000	5.000	0.000	0.10
		B	0.000	0.000	5.000	0.000	0.10
		C	0.000	0.000	5.188	0.000	0.31
L34	27.00-22.00	A	0.000	0.000	5.000	0.000	0.10
		B	0.000	0.000	5.000	0.000	0.10
		C	0.000	0.000	5.188	0.000	0.31
L35	22.00-17.00	A	0.000	0.000	5.000	0.000	0.10
		B	0.000	0.000	5.000	0.000	0.10
		C	0.000	0.000	5.188	0.000	0.31
L36	17.00-15.50	A	0.000	0.000	2.333	0.000	0.04
		B	0.000	0.000	2.333	0.000	0.04
		C	0.000	0.000	2.390	0.000	0.11
L37	15.50-15.25	A	0.000	0.000	0.417	0.000	0.01
		B	0.000	0.000	0.417	0.000	0.01
		C	0.000	0.000	0.426	0.000	0.02
L38	15.25-14.75	A	0.000	0.000	0.833	0.000	0.02
		B	0.000	0.000	0.833	0.000	0.02
		C	0.000	0.000	0.852	0.000	0.04
L39	14.75-14.50	A	0.000	0.000	0.417	0.000	0.01
		B	0.000	0.000	0.417	0.000	0.01
		C	0.000	0.000	0.426	0.000	0.02
L40	14.50-9.50	A	0.000	0.000	5.583	0.000	0.10
		B	0.000	0.000	5.583	0.000	0.10
		C	0.000	0.000	5.752	0.000	0.31
L41	9.50-4.50	A	0.000	0.000	3.333	0.000	0.05
		B	0.000	0.000	3.333	0.000	0.05
		C	0.000	0.000	3.333	0.000	0.26
L42	4.50-0.00	A	0.000	0.000	1.833	0.000	0.03
		B	0.000	0.000	1.833	0.000	0.03
		C	0.000	0.000	1.833	0.000	0.22

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	160.00-155.00	A	1.491	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	1.678	0.000	0.03
L2	155.00-150.00	A	1.486	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	1.673	0.000	0.06
L3	150.00-145.00	A	1.481	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	1.668	0.000	0.09
L4	145.00-140.00	A	1.476	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	1.663	0.000	0.09
L5	140.00-135.00	A	1.471	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	1.658	0.000	0.14
L6	135.00-130.00	A	1.465	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00

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	1.653	0.000	0.15
L7	130.00-125.00	A	1.459	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	1.647	0.000	0.16
L8	125.00-120.00	A	1.454	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	1.641	0.000	0.16
L9	120.00-111.33	A	1.445	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	2.830	0.000	0.34
L10	111.33-111.00	A	1.440	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.109	0.000	0.02
L11	111.00-106.00	A	1.436	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	1.624	0.000	0.23
L12	106.00-101.00	A	1.429	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	1.617	0.000	0.23
L13	101.00-96.00	A	1.422	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	1.610	0.000	0.23
L14	96.00-91.00	A	1.415	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	1.602	0.000	0.23
L15	91.00-86.00	A	1.407	0.000	0.000	2.654	0.000	0.03
		B		0.000	0.000	2.654	0.000	0.03
		C		0.000	0.000	4.249	0.000	0.25
L16	86.00-85.75	A	1.403	0.000	0.000	0.265	0.000	0.00
		B		0.000	0.000	0.265	0.000	0.00
		C		0.000	0.000	0.345	0.000	0.01
L17	85.75-81.00	A	1.399	0.000	0.000	5.741	0.000	0.07
		B		0.000	0.000	5.741	0.000	0.07
		C		0.000	0.000	7.248	0.000	0.28
L18	81.00-80.75	A	1.395	0.000	0.000	0.441	0.000	0.01
		B		0.000	0.000	0.441	0.000	0.01
		C		0.000	0.000	0.520	0.000	0.02
L19	80.75-80.50	A	1.394	0.000	0.000	0.441	0.000	0.01
		B		0.000	0.000	0.441	0.000	0.01
		C		0.000	0.000	0.520	0.000	0.02
L20	80.50-73.25	A	1.387	0.000	0.000	4.573	0.000	0.08
		B		0.000	0.000	4.573	0.000	0.08
		C		0.000	0.000	6.857	0.000	0.41
L21	73.25-72.25	A	1.380	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.315	0.000	0.05
L22	72.25-67.25	A	1.374	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	1.562	0.000	0.23
L23	67.25-62.25	A	1.364	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	1.551	0.000	0.22
L24	62.25-57.25	A	1.353	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	1.540	0.000	0.22
L25	57.25-52.25	A	1.341	0.000	0.000	0.101	0.000	0.00
		B		0.000	0.000	0.101	0.000	0.00
		C		0.000	0.000	1.630	0.000	0.23
L26	52.25-49.83	A	1.332	0.000	0.000	3.065	0.000	0.07
		B		0.000	0.000	3.065	0.000	0.07
		C		0.000	0.000	3.800	0.000	0.18
L27	49.83-49.58	A	1.328	0.000	0.000	0.316	0.000	0.01
		B		0.000	0.000	0.316	0.000	0.01
		C		0.000	0.000	0.392	0.000	0.02
L28	49.58-44.58	A	1.321	0.000	0.000	6.321	0.000	0.15
		B		0.000	0.000	6.321	0.000	0.15
		C		0.000	0.000	7.830	0.000	0.38
L29	44.58-36.33	A	1.301	0.000	0.000	10.393	0.000	0.25
		B		0.000	0.000	10.393	0.000	0.25

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	12.848	0.000	0.62
L30	36.33-35.33	A	1.286	0.000	0.000	1.260	0.000	0.03
		B		0.000	0.000	1.260	0.000	0.03
		C		0.000	0.000	1.558	0.000	0.07
L31	35.33-32.25	A	1.278	0.000	0.000	3.771	0.000	0.09
		B		0.000	0.000	3.771	0.000	0.09
		C		0.000	0.000	4.675	0.000	0.23
L32	32.25-32.00	A	1.272	0.000	0.000	0.314	0.000	0.01
		B		0.000	0.000	0.314	0.000	0.01
		C		0.000	0.000	0.387	0.000	0.02
L33	32.00-27.00	A	1.261	0.000	0.000	6.261	0.000	0.15
		B		0.000	0.000	6.261	0.000	0.15
		C		0.000	0.000	7.709	0.000	0.37
L34	27.00-22.00	A	1.238	0.000	0.000	6.238	0.000	0.15
		B		0.000	0.000	6.238	0.000	0.15
		C		0.000	0.000	7.663	0.000	0.37
L35	22.00-17.00	A	1.210	0.000	0.000	6.210	0.000	0.15
		B		0.000	0.000	6.210	0.000	0.15
		C		0.000	0.000	7.607	0.000	0.37
L36	17.00-15.50	A	1.188	0.000	0.000	2.987	0.000	0.06
		B		0.000	0.000	2.987	0.000	0.06
		C		0.000	0.000	3.399	0.000	0.13
L37	15.50-15.25	A	1.181	0.000	0.000	0.535	0.000	0.01
		B		0.000	0.000	0.535	0.000	0.01
		C		0.000	0.000	0.603	0.000	0.02
L38	15.25-14.75	A	1.178	0.000	0.000	1.069	0.000	0.02
		B		0.000	0.000	1.069	0.000	0.02
		C		0.000	0.000	1.206	0.000	0.04
L39	14.75-14.50	A	1.175	0.000	0.000	0.534	0.000	0.01
		B		0.000	0.000	0.534	0.000	0.01
		C		0.000	0.000	0.602	0.000	0.02
L40	14.50-9.50	A	1.152	0.000	0.000	7.254	0.000	0.15
		B		0.000	0.000	7.254	0.000	0.15
		C		0.000	0.000	8.460	0.000	0.37
L41	9.50-4.50	A	1.092	0.000	0.000	4.425	0.000	0.08
		B		0.000	0.000	4.425	0.000	0.08
		C		0.000	0.000	4.425	0.000	0.29
L42	4.50-0.00	A	0.974	0.000	0.000	2.369	0.000	0.04
		B		0.000	0.000	2.369	0.000	0.04
		C		0.000	0.000	2.369	0.000	0.23

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	160.00-155.00	0.1651	0.1584	0.9175	0.8799
L2	155.00-150.00	0.1651	0.1584	0.9265	0.8885
L3	150.00-145.00	0.1651	0.1584	0.9345	0.8961
L4	145.00-140.00	0.1651	0.1584	0.9414	0.9028
L5	140.00-135.00	0.1651	0.1584	0.9475	0.9086
L6	135.00-130.00	0.1651	0.1584	0.9528	0.9137
L7	130.00-125.00	0.1651	0.1584	0.9573	0.9180
L8	125.00-120.00	0.1651	0.1584	0.9612	0.9217
L9	120.00-111.33	0.1651	0.1584	0.9654	0.9258
L10	111.33-111.00	0.1653	0.1585	0.9692	0.9295
L11	111.00-106.00	0.1653	0.1585	0.9673	0.9276
L12	106.00-101.00	0.1653	0.1585	0.9691	0.9293
L13	101.00-96.00	0.1653	0.1585	0.9703	0.9304
L14	96.00-91.00	0.1653	0.1585	0.9709	0.9311
L15	91.00-86.00	0.1135	0.1088	0.7105	0.6813
L16	86.00-85.75	0.0872	0.0836	0.5641	0.5409
L17	85.75-81.00	0.0829	0.0795	0.5361	0.5141
L18	81.00-80.75	0.0690	0.0662	0.4475	0.4292
L19	80.75-80.50	0.0691	0.0662	0.4479	0.4295

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L20	80.50-73.25	0.1115	0.1069	0.6878	0.6596
L21	73.25-72.25	0.1654	0.1586	0.9710	0.9312
L22	72.25-67.25	0.1653	0.1586	0.9655	0.9259
L23	67.25-62.25	0.1653	0.1586	0.9632	0.9237
L24	62.25-57.25	0.1653	0.1585	0.9602	0.9208
L25	57.25-52.25	0.1632	0.1565	0.9452	0.9064
L26	52.25-49.83	0.0911	0.0873	0.5494	0.5269
L27	49.83-49.58	0.0913	0.0876	0.5503	0.5277
L28	49.58-44.58	0.0919	0.0881	0.5517	0.5291
L29	44.58-36.33	0.0933	0.0895	0.5544	0.5317
L30	36.33-35.33	0.0936	0.0897	0.5563	0.5335
L31	35.33-32.25	0.0950	0.0911	0.5573	0.5344
L32	32.25-32.00	0.0943	0.0904	0.5515	0.5288
L33	32.00-27.00	0.0948	0.0909	0.5512	0.5286
L34	27.00-22.00	0.0958	0.0919	0.5497	0.5271
L35	22.00-17.00	0.0967	0.0928	0.5461	0.5237
L36	17.00-15.50	0.0792	0.0760	0.4390	0.4210
L37	15.50-15.25	0.0766	0.0734	0.4222	0.4049
L38	15.25-14.75	0.0766	0.0735	0.4219	0.4045
L39	14.75-14.50	0.0767	0.0736	0.4215	0.4042
L40	14.50-9.50	0.0842	0.0808	0.4511	0.4326
L41	9.50-4.50	0.0000	0.0000	0.0000	0.0000
L42	4.50-0.00	0.0000	0.0000	0.0000	0.0000

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	1	Safety Line 3/8	155.00 - 160.00	1.0000	1.0000
L2	1	Safety Line 3/8	150.00 - 155.00	1.0000	1.0000
L3	1	Safety Line 3/8	145.00 - 150.00	1.0000	1.0000
L4	1	Safety Line 3/8	140.00 - 145.00	1.0000	1.0000
L5	1	Safety Line 3/8	135.00 - 140.00	1.0000	1.0000
L6	1	Safety Line 3/8	130.00 - 135.00	1.0000	1.0000
L7	1	Safety Line 3/8	125.00 - 130.00	1.0000	1.0000
L8	1	Safety Line 3/8	120.00 - 125.00	1.0000	1.0000
L9	1	Safety Line 3/8	111.33 - 120.00	1.0000	1.0000
L10	1	Safety Line 3/8	111.00 - 111.33	1.0000	1.0000
L11	1	Safety Line 3/8	106.00 - 111.00	1.0000	1.0000
L12	1	Safety Line 3/8	101.00 - 106.00	1.0000	1.0000
L13	1	Safety Line 3/8	96.00 - 101.00	1.0000	1.0000
L14	1	Safety Line 3/8	91.00 - 96.00	1.0000	1.0000
L15	1	Safety Line 3/8	86.00 - 91.00	1.0000	1.0000
L15	46	CCI-AFP-060100	86.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L15	47	CCI-AFP-060100	88.50 86.00 - 88.50	1.0000	1.0000
L15	48	CCI-AFP-060100	86.00 - 88.50	1.0000	1.0000
L16	1	Safety Line 3/8	85.75 - 86.00	1.0000	1.0000
L16	46	CCI-AFP-060100	85.75 - 86.00	1.0000	1.0000
L16	47	CCI-AFP-060100	85.75 - 86.00	1.0000	1.0000
L16	48	CCI-AFP-060100	85.75 - 86.00	1.0000	1.0000
L17	1	Safety Line 3/8	81.00 - 85.75	1.0000	1.0000
L17	37	MK SR 2	81.00 - 82.00	1.0000	1.0000
L17	38	MK SR 2	81.00 - 82.00	1.0000	1.0000
L17	39	MK SR 2	81.00 - 82.00	1.0000	1.0000
L17	46	CCI-AFP-060100	81.00 - 85.75	1.0000	1.0000
L17	47	CCI-AFP-060100	81.00 - 85.75	1.0000	1.0000
L17	48	CCI-AFP-060100	81.00 - 85.75	1.0000	1.0000
L18	1	Safety Line 3/8	80.75 - 81.00	1.0000	1.0000
L18	37	MK SR 2	80.75 - 81.00	1.0000	1.0000
L18	38	MK SR 2	80.75 - 81.00	1.0000	1.0000
L18	39	MK SR 2	80.75 - 81.00	1.0000	1.0000
L18	46	CCI-AFP-060100	80.75 - 81.00	1.0000	1.0000
L18	47	CCI-AFP-060100	80.75 - 81.00	1.0000	1.0000
L18	48	CCI-AFP-060100	80.75 - 81.00	1.0000	1.0000
L19	1	Safety Line 3/8	80.50 - 80.75	1.0000	1.0000
L19	37	MK SR 2	80.50 - 80.75	1.0000	1.0000
L19	38	MK SR 2	80.50 - 80.75	1.0000	1.0000
L19	39	MK SR 2	80.50 - 80.75	1.0000	1.0000
L19	46	CCI-AFP-060100	80.50 - 80.75	1.0000	1.0000
L19	47	CCI-AFP-060100	80.50 - 80.75	1.0000	1.0000
L19	48	CCI-AFP-060100	80.50 - 80.75	1.0000	1.0000
L20	1	Safety Line 3/8	73.25 - 80.50	1.0000	1.0000
L20	37	MK SR 2	77.00 - 80.50	1.0000	1.0000
L20	38	MK SR 2	77.00 - 80.50	1.0000	1.0000
L20	39	MK SR 2	77.00 - 80.50	1.0000	1.0000
L20	46	CCI-AFP-060100	78.50 - 80.50	1.0000	1.0000
L20	47	CCI-AFP-060100	78.50 - 80.50	1.0000	1.0000
L20	48	CCI-AFP-060100	78.50 - 80.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L21	1	Safety Line 3/8	72.25 - 73.25	1.0000	1.0000
L22	1	Safety Line 3/8	67.25 - 72.25	1.0000	1.0000
L23	1	Safety Line 3/8	62.25 - 67.25	1.0000	1.0000
L24	1	Safety Line 3/8	57.25 - 62.25	1.0000	1.0000
L25	1	Safety Line 3/8	52.25 - 57.25	1.0000	1.0000
L25	43	CCI-AFP-060100	52.25 - 52.33	1.0000	1.0000
L25	44	CCI-AFP-060100	52.25 - 52.33	1.0000	1.0000
L25	45	CCI-AFP-060100	52.25 - 52.33	1.0000	1.0000
L26	1	Safety Line 3/8	49.83 - 52.25	1.0000	1.0000
L26	43	CCI-AFP-060100	49.83 - 52.25	1.0000	1.0000
L26	44	CCI-AFP-060100	49.83 - 52.25	1.0000	1.0000
L26	45	CCI-AFP-060100	49.83 - 52.25	1.0000	1.0000
L27	1	Safety Line 3/8	49.58 - 49.83	1.0000	1.0000
L27	43	CCI-AFP-060100	49.58 - 49.83	1.0000	1.0000
L27	44	CCI-AFP-060100	49.58 - 49.83	1.0000	1.0000
L27	45	CCI-AFP-060100	49.58 - 49.83	1.0000	1.0000
L28	1	Safety Line 3/8	44.58 - 49.58	1.0000	1.0000
L28	43	CCI-AFP-060100	44.58 - 49.58	1.0000	1.0000
L28	44	CCI-AFP-060100	44.58 - 49.58	1.0000	1.0000
L28	45	CCI-AFP-060100	44.58 - 49.58	1.0000	1.0000
L29	1	Safety Line 3/8	36.33 - 44.58	1.0000	1.0000
L29	43	CCI-AFP-060100	36.33 - 44.58	1.0000	1.0000
L29	44	CCI-AFP-060100	36.33 - 44.58	1.0000	1.0000
L29	45	CCI-AFP-060100	36.33 - 44.58	1.0000	1.0000
L30	1	Safety Line 3/8	35.33 - 36.33	1.0000	1.0000
L30	43	CCI-AFP-060100	35.33 - 36.33	1.0000	1.0000
L30	44	CCI-AFP-060100	35.33 - 36.33	1.0000	1.0000
L30	45	CCI-AFP-060100	35.33 - 36.33	1.0000	1.0000
L31	1	Safety Line 3/8	32.25 - 35.33	1.0000	1.0000
L31	43	CCI-AFP-060100	32.33 - 35.33	1.0000	1.0000
L31	44	CCI-AFP-060100	32.33 - 35.33	1.0000	1.0000
L31	45	CCI-AFP-060100	32.33 - 35.33	1.0000	1.0000
L32	1	Safety Line 3/8	32.00 - 32.25	1.0000	1.0000
L32	40	CCI-AFP-060100	32.00 - 32.25	1.0000	1.0000
L32	41	CCI-AFP-060100	32.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			32.25		
L32	42	CCI-AFP-060100	32.00 - 32.25	1.0000	1.0000
L33	1	Safety Line 3/8	27.00 - 32.00	1.0000	1.0000
L33	40	CCI-AFP-060100	27.00 - 32.00	1.0000	1.0000
L33	41	CCI-AFP-060100	27.00 - 32.00	1.0000	1.0000
L33	42	CCI-AFP-060100	27.00 - 32.00	1.0000	1.0000
L34	1	Safety Line 3/8	22.00 - 27.00	1.0000	1.0000
L34	40	CCI-AFP-060100	22.00 - 27.00	1.0000	1.0000
L34	41	CCI-AFP-060100	22.00 - 27.00	1.0000	1.0000
L34	42	CCI-AFP-060100	22.00 - 27.00	1.0000	1.0000
L35	1	Safety Line 3/8	17.00 - 22.00	1.0000	1.0000
L35	40	CCI-AFP-060100	17.00 - 22.00	1.0000	1.0000
L35	41	CCI-AFP-060100	17.00 - 22.00	1.0000	1.0000
L35	42	CCI-AFP-060100	17.00 - 22.00	1.0000	1.0000
L36	1	Safety Line 3/8	15.50 - 17.00	1.0000	1.0000
L36	34	MK SR 1	15.50 - 16.75	1.0000	1.0000
L36	35	MK SR 1	15.50 - 16.75	1.0000	1.0000
L36	36	MK SR 1	15.50 - 16.75	1.0000	1.0000
L36	40	CCI-AFP-060100	15.50 - 17.00	1.0000	1.0000
L36	41	CCI-AFP-060100	15.50 - 17.00	1.0000	1.0000
L36	42	CCI-AFP-060100	15.50 - 17.00	1.0000	1.0000
L37	1	Safety Line 3/8	15.25 - 15.50	1.0000	1.0000
L37	34	MK SR 1	15.25 - 15.50	1.0000	1.0000
L37	35	MK SR 1	15.25 - 15.50	1.0000	1.0000
L37	36	MK SR 1	15.25 - 15.50	1.0000	1.0000
L37	40	CCI-AFP-060100	15.25 - 15.50	1.0000	1.0000
L37	41	CCI-AFP-060100	15.25 - 15.50	1.0000	1.0000
L37	42	CCI-AFP-060100	15.25 - 15.50	1.0000	1.0000
L38	1	Safety Line 3/8	14.75 - 15.25	1.0000	1.0000
L38	34	MK SR 1	14.75 - 15.25	1.0000	1.0000
L38	35	MK SR 1	14.75 - 15.25	1.0000	1.0000
L38	36	MK SR 1	14.75 - 15.25	1.0000	1.0000
L38	40	CCI-AFP-060100	14.75 - 15.25	1.0000	1.0000
L38	41	CCI-AFP-060100	14.75 - 15.25	1.0000	1.0000
L38	42	CCI-AFP-060100	14.75 - 15.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L39	1	Safety Line 3/8	14.50 - 14.75	1.0000	1.0000
L39	34	MK SR 1	14.50 - 14.75	1.0000	1.0000
L39	35	MK SR 1	14.50 - 14.75	1.0000	1.0000
L39	36	MK SR 1	14.50 - 14.75	1.0000	1.0000
L39	40	CCI-AFP-060100	14.50 - 14.75	1.0000	1.0000
L39	41	CCI-AFP-060100	14.50 - 14.75	1.0000	1.0000
L39	42	CCI-AFP-060100	14.50 - 14.75	1.0000	1.0000
L40	1	Safety Line 3/8	10.00 - 14.50	1.0000	1.0000
L40	34	MK SR 1	9.50 - 14.50	1.0000	1.0000
L40	35	MK SR 1	9.50 - 14.50	1.0000	1.0000
L40	36	MK SR 1	9.50 - 14.50	1.0000	1.0000
L40	40	CCI-AFP-060100	12.25 - 14.50	1.0000	1.0000
L40	41	CCI-AFP-060100	12.25 - 14.50	1.0000	1.0000
L40	42	CCI-AFP-060100	12.25 - 14.50	1.0000	1.0000
L41	34	MK SR 1	4.50 - 9.50	1.0000	1.0000
L41	35	MK SR 1	4.50 - 9.50	1.0000	1.0000
L41	36	MK SR 1	4.50 - 9.50	1.0000	1.0000
L42	34	MK SR 1	1.75 - 4.50	1.0000	1.0000
L42	35	MK SR 1	1.75 - 4.50	1.0000	1.0000
L42	36	MK SR 1	1.75 - 4.50	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
L15	46	CCI-AFP-060100	86.00 - 88.50	Auto	0.0000
L15	47	CCI-AFP-060100	86.00 - 88.50	Auto	0.0000
L15	48	CCI-AFP-060100	86.00 - 88.50	Auto	0.0000
L16	46	CCI-AFP-060100	85.75 - 86.00	Auto	0.0000
L16	47	CCI-AFP-060100	85.75 - 86.00	Auto	0.0000
L16	48	CCI-AFP-060100	85.75 - 86.00	Auto	0.0000
L17	37	MK SR 2	81.00 - 82.00	Manual	1.0000
L17	38	MK SR 2	81.00 - 82.00	Manual	1.0000
L17	39	MK SR 2	81.00 - 82.00	Manual	1.0000
L17	46	CCI-AFP-060100	81.00 - 85.75	Auto	0.0000
L17	47	CCI-AFP-060100	81.00 - 85.75	Auto	0.0000
L17	48	CCI-AFP-060100	81.00 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L18	37	MK SR 2	85.75 80.75 - 81.00	Manual	1.0000
L18	38	MK SR 2	80.75 - 81.00	Manual	1.0000
L18	39	MK SR 2	80.75 - 81.00	Manual	1.0000
L18	46	CCI-AFP-060100	80.75 - 81.00	Auto	0.0000
L18	47	CCI-AFP-060100	80.75 - 81.00	Auto	0.0000
L18	48	CCI-AFP-060100	80.75 - 81.00	Auto	0.0000
L19	37	MK SR 2	80.50 - 80.75	Manual	1.0000
L19	38	MK SR 2	80.50 - 80.75	Manual	1.0000
L19	39	MK SR 2	80.50 - 80.75	Manual	1.0000
L19	46	CCI-AFP-060100	80.50 - 80.75	Auto	0.0000
L19	47	CCI-AFP-060100	80.50 - 80.75	Auto	0.0000
L19	48	CCI-AFP-060100	80.50 - 80.75	Auto	0.0000
L20	37	MK SR 2	77.00 - 80.50	Manual	1.0000
L20	38	MK SR 2	77.00 - 80.50	Manual	1.0000
L20	39	MK SR 2	77.00 - 80.50	Manual	1.0000
L20	46	CCI-AFP-060100	78.50 - 80.50	Auto	0.0000
L20	47	CCI-AFP-060100	78.50 - 80.50	Auto	0.0000
L20	48	CCI-AFP-060100	78.50 - 80.50	Auto	0.0000
L25	43	CCI-AFP-060100	52.25 - 52.33	Auto	0.0000
L25	44	CCI-AFP-060100	52.25 - 52.33	Auto	0.0000
L25	45	CCI-AFP-060100	52.25 - 52.33	Auto	0.0000
L26	43	CCI-AFP-060100	49.83 - 52.25	Auto	0.0000
L26	44	CCI-AFP-060100	49.83 - 52.25	Auto	0.0000
L26	45	CCI-AFP-060100	49.83 - 52.25	Auto	0.0000
L27	43	CCI-AFP-060100	49.58 - 49.83	Auto	0.0000
L27	44	CCI-AFP-060100	49.58 - 49.83	Auto	0.0000
L27	45	CCI-AFP-060100	49.58 - 49.83	Auto	0.0000
L28	43	CCI-AFP-060100	44.58 - 49.58	Auto	0.0000
L28	44	CCI-AFP-060100	44.58 - 49.58	Auto	0.0000
L28	45	CCI-AFP-060100	44.58 - 49.58	Auto	0.0000
L29	43	CCI-AFP-060100	36.33 - 44.58	Auto	0.0000
L29	44	CCI-AFP-060100	36.33 - 44.58	Auto	0.0000
L29	45	CCI-AFP-060100	36.33 - 44.58	Auto	0.0000
L30	43	CCI-AFP-060100	35.33 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L30	44	CCI-AFP-060100	36.33 - 35.33	Auto	0.0000
L30	45	CCI-AFP-060100	36.33 - 35.33	Auto	0.0000
L31	43	CCI-AFP-060100	36.33 - 32.33	Auto	0.0000
L31	44	CCI-AFP-060100	35.33 - 32.33	Auto	0.0000
L31	45	CCI-AFP-060100	35.33 - 32.33	Auto	0.0000
L32	40	CCI-AFP-060100	35.33 - 32.00	Auto	0.0000
L32	41	CCI-AFP-060100	32.25 - 32.00	Auto	0.0000
L32	42	CCI-AFP-060100	32.25 - 32.00	Auto	0.0000
L33	40	CCI-AFP-060100	32.25 - 27.00	Auto	0.0000
L33	41	CCI-AFP-060100	32.00 - 27.00	Auto	0.0000
L33	42	CCI-AFP-060100	32.00 - 27.00	Auto	0.0000
L34	40	CCI-AFP-060100	32.00 - 22.00	Auto	0.0000
L34	41	CCI-AFP-060100	27.00 - 22.00	Auto	0.0000
L34	42	CCI-AFP-060100	27.00 - 22.00	Auto	0.0000
L35	40	CCI-AFP-060100	27.00 - 17.00	Auto	0.0000
L35	41	CCI-AFP-060100	22.00 - 17.00	Auto	0.0000
L35	42	CCI-AFP-060100	22.00 - 17.00	Auto	0.0000
L36	34	MK SR 1	22.00 - 15.50	Manual	1.0000
L36	35	MK SR 1	16.75 - 15.50	Manual	1.0000
L36	36	MK SR 1	16.75 - 15.50	Manual	1.0000
L36	40	CCI-AFP-060100	16.75 - 15.50	Auto	0.0000
L36	41	CCI-AFP-060100	17.00 - 15.50	Auto	0.0000
L36	42	CCI-AFP-060100	17.00 - 15.50	Auto	0.0000
L37	34	MK SR 1	17.00 - 15.25	Manual	1.0000
L37	35	MK SR 1	15.50 - 15.25	Manual	1.0000
L37	36	MK SR 1	15.50 - 15.25	Manual	1.0000
L37	40	CCI-AFP-060100	15.50 - 15.25	Auto	0.0000
L37	41	CCI-AFP-060100	15.50 - 15.25	Auto	0.0000
L37	42	CCI-AFP-060100	15.50 - 15.25	Auto	0.0000
L38	34	MK SR 1	15.25 - 14.75	Manual	1.0000
L38	35	MK SR 1	15.25 - 14.75	Manual	1.0000
L38	36	MK SR 1	15.25 - 14.75	Manual	1.0000
L38	40	CCI-AFP-060100	15.25 - 14.75	Auto	0.0000
L38	41	CCI-AFP-060100	15.25 - 14.75	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L38	42	CCI-AFP-060100	15.25 14.75 - 15.25	Auto	0.0000
L39	34	MK SR 1	14.50 - 14.75	Manual	1.0000
L39	35	MK SR 1	14.50 - 14.75	Manual	1.0000
L39	36	MK SR 1	14.50 - 14.75	Manual	1.0000
L39	40	CCI-AFP-060100	14.50 - 14.75	Auto	0.0000
L39	41	CCI-AFP-060100	14.50 - 14.75	Auto	0.0000
L39	42	CCI-AFP-060100	14.50 - 14.75	Auto	0.0000
L40	34	MK SR 1	9.50 - 14.50	Manual	1.0000
L40	35	MK SR 1	9.50 - 14.50	Manual	1.0000
L40	36	MK SR 1	9.50 - 14.50	Manual	1.0000
L40	40	CCI-AFP-060100	12.25 - 14.50	Auto	0.0000
L40	41	CCI-AFP-060100	12.25 - 14.50	Auto	0.0000
L40	42	CCI-AFP-060100	12.25 - 14.50	Auto	0.0000
L41	34	MK SR 1	4.50 - 9.50	Manual	1.0000
L41	35	MK SR 1	4.50 - 9.50	Manual	1.0000
L41	36	MK SR 1	4.50 - 9.50	Manual	1.0000
L42	34	MK SR 1	1.75 - 4.50	Manual	1.0000
L42	35	MK SR 1	1.75 - 4.50	Manual	1.0000
L42	36	MK SR 1	1.75 - 4.50	Manual	1.0000

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
157									
Platform Mount [13' LP 713-1]	C	None		0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	35.63 38.74 41.99 49.03	35.63 38.74 41.99 49.03	1.64 2.41 3.28 5.27
3'x3"x3"x1/4" Horizontal Angle	A	From Face	4.00 0.00 2.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.90 1.12 1.35 1.83	0.07 0.11 0.16 0.27	0.01 0.02 0.03 0.07
3'x3"x3"x1/4" Horizontal Angle	B	From Face	4.00 0.00 2.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.90 1.12 1.35 1.83	0.07 0.11 0.16 0.27	0.01 0.02 0.03 0.07
3'x3"x3"x1/4" Horizontal Angle	C	From Face	4.00 0.00 2.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.90 1.12 1.35 1.83	0.07 0.11 0.16 0.27	0.01 0.02 0.03 0.07

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
5'x2" Mount Pipe	A	From Face	4.00 0.00 0.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.19 1.50 1.81 2.46	1.19 1.50 1.81 2.46	0.02 0.03 0.04 0.08
5'x2" Mount Pipe	B	From Face	4.00 0.00 0.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.19 1.50 1.81 2.46	1.19 1.50 1.81 2.46	0.02 0.03 0.04 0.08
5'x2" Mount Pipe	C	From Face	4.00 0.00 0.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.19 1.50 1.81 2.46	1.19 1.50 1.81 2.46	0.02 0.03 0.04 0.08
VV-65B-R1_TMO w/ Mount Pipe	A	From Face	4.00 0.00 1.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.15 8.70 9.22 10.27	5.42 6.56 7.41 9.17	0.07 0.13 0.20 0.36
VV-65B-R1_TMO w/ Mount Pipe	B	From Face	4.00 0.00 1.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.15 8.70 9.22 10.27	5.42 6.56 7.41 9.17	0.07 0.13 0.20 0.36
VV-65B-R1_TMO w/ Mount Pipe	C	From Face	4.00 0.00 1.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.15 8.70 9.22 10.27	5.42 6.56 7.41 9.17	0.07 0.13 0.20 0.36
AIR 6419 B41_TMO w/ Mount Pipe	A	From Face	4.00 0.00 1.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.58 7.06 7.57 8.62	3.50 3.90 4.32 5.20	0.11 0.16 0.22 0.36
AIR 6419 B41_TMO w/ Mount Pipe	B	From Face	4.00 0.00 1.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.58 7.06 7.57 8.62	3.50 3.90 4.32 5.20	0.11 0.16 0.22 0.36
AIR 6419 B41_TMO w/ Mount Pipe	C	From Face	4.00 0.00 1.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.58 7.06 7.57 8.62	3.50 3.90 4.32 5.20	0.11 0.16 0.22 0.36
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	A	From Face	4.00 0.00 1.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.18 0.31 0.45 0.78
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	B	From Face	4.00 0.00 1.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.18 0.31 0.45 0.78
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	C	From Face	4.00 0.00 1.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.18 0.31 0.45 0.78
RADIO 4460 B2/B25 B66_TMO	A	From Face	4.00 0.00 1.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.14 2.32 2.51 2.91	1.69 1.85 2.02 2.39	0.11 0.13 0.16 0.22

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
RADIO 4460 B2/B25 B66_TMO	B	From Face	4.00 0.00 1.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.14 2.32 2.51 2.91	1.69 1.85 2.02 2.39	0.11 0.13 0.16 0.22
RADIO 4460 B2/B25 B66_TMO	C	From Face	4.00 0.00 1.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.14 2.32 2.51 2.91	1.69 1.85 2.02 2.39	0.11 0.13 0.16 0.22
Radio 4480_TMOV2	A	From Face	4.00 0.00 1.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.88 3.09 3.31 3.78	1.40 1.56 1.73 2.09	0.08 0.10 0.13 0.19
Radio 4480_TMOV2	B	From Face	4.00 0.00 1.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.88 3.09 3.31 3.78	1.40 1.56 1.73 2.09	0.08 0.10 0.13 0.19
Radio 4480_TMOV2	C	From Face	4.00 0.00 1.00	0.0000	157.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.88 3.09 3.31 3.78	1.40 1.56 1.73 2.09	0.08 0.10 0.13 0.19
**** ***149*** Platform Mount [13' LP 713-1]	C	None		0.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice	35.63 38.74 41.99 49.03	35.63 38.74 41.99 49.03	1.64 2.41 3.28 5.27
(2) 4'x2" Mount Pipe	A	From Face	4.00 0.00 0.00	0.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.87 1.11 1.36 1.90	0.87 1.11 1.36 1.90	0.01 0.02 0.03 0.06
(2) 4'x2" Mount Pipe	B	From Face	4.00 0.00 0.00	0.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.87 1.11 1.36 1.90	0.87 1.11 1.36 1.90	0.01 0.02 0.03 0.06
(2) 4'x2" Mount Pipe	C	From Face	4.00 0.00 0.00	0.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.87 1.11 1.36 1.90	0.87 1.11 1.36 1.90	0.01 0.02 0.03 0.06
7770.00 w/ Mount Pipe	A	From Face	4.00 0.00 2.00	0.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.39 3.75 4.12 4.89	2.32 2.66 3.02 3.75	0.06 0.10 0.15 0.28
7770.00 w/ Mount Pipe	B	From Face	4.00 0.00 2.00	0.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.39 3.75 4.12 4.89	2.32 2.66 3.02 3.75	0.06 0.10 0.15 0.28
7770.00 w/ Mount Pipe	C	From Face	4.00 0.00 2.00	0.0000	149.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.39 3.75 4.12 4.89	2.32 2.66 3.02 3.75	0.06 0.10 0.15 0.28
EPBQ-654L8H6-L2 w/ Mount Pipe	A	From Face	4.00 0.00 2.00	0.0000	149.00	No Ice 1/2" Ice	11.09 11.77 12.46	4.69 5.28 5.89	0.11 0.19 0.29

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice	13.88	7.13	0.52
						2" Ice			
EPBQ-654L8H6-L2 w/ Mount Pipe	B	From Face	4.00 0.00 2.00	0.0000	149.00	No Ice	11.09	4.69	0.11
						1/2" Ice	11.77	5.28	0.19
						1" Ice	12.46	5.89	0.29
						2" Ice	13.88	7.13	0.52
EPBQ-654L8H6-L2 w/ Mount Pipe	C	From Face	4.00 0.00 2.00	0.0000	149.00	No Ice	11.09	4.69	0.11
						1/2" Ice	11.77	5.28	0.19
						1" Ice	12.46	5.89	0.29
						2" Ice	13.88	7.13	0.52
HPA-65R-BUU-H6 w/ Mount Pipe	A	From Face	4.00 0.00 2.00	0.0000	149.00	No Ice	9.22	6.25	0.07
						1/2" Ice	9.98	6.96	0.14
						1" Ice	10.76	7.70	0.22
						2" Ice	12.36	9.22	0.42
HPA-65R-BUU-H6 w/ Mount Pipe	B	From Face	4.00 0.00 2.00	0.0000	149.00	No Ice	9.22	6.25	0.07
						1/2" Ice	9.98	6.96	0.14
						1" Ice	10.76	7.70	0.22
						2" Ice	12.36	9.22	0.42
HPA-65R-BUU-H6 w/ Mount Pipe	C	From Face	4.00 0.00 2.00	0.0000	149.00	No Ice	9.22	6.25	0.07
						1/2" Ice	9.98	6.96	0.14
						1" Ice	10.76	7.70	0.22
						2" Ice	12.36	9.22	0.42
(2) LGP21401	A	From Face	4.00 0.00 0.00	0.0000	149.00	No Ice	1.10	0.35	0.01
						1/2" Ice	1.24	0.44	0.02
						1" Ice	1.38	0.54	0.03
						2" Ice	1.69	0.77	0.05
(2) LGP21401	B	From Face	4.00 0.00 0.00	0.0000	149.00	No Ice	1.10	0.35	0.01
						1/2" Ice	1.24	0.44	0.02
						1" Ice	1.38	0.54	0.03
						2" Ice	1.69	0.77	0.05
(2) LGP21401	C	From Face	4.00 0.00 0.00	0.0000	149.00	No Ice	1.10	0.35	0.01
						1/2" Ice	1.24	0.44	0.02
						1" Ice	1.38	0.54	0.03
						2" Ice	1.69	0.77	0.05
RRUS 11 B12	A	From Face	4.00 0.00 0.00	0.0000	149.00	No Ice	2.83	1.18	0.05
						1/2" Ice	3.04	1.33	0.07
						1" Ice	3.26	1.48	0.10
						2" Ice	3.71	1.83	0.15
RRUS 11 B12	B	From Face	4.00 0.00 0.00	0.0000	149.00	No Ice	2.83	1.18	0.05
						1/2" Ice	3.04	1.33	0.07
						1" Ice	3.26	1.48	0.10
						2" Ice	3.71	1.83	0.15
RRUS 11 B12	C	From Face	4.00 0.00 0.00	0.0000	149.00	No Ice	2.83	1.18	0.05
						1/2" Ice	3.04	1.33	0.07
						1" Ice	3.26	1.48	0.10
						2" Ice	3.71	1.83	0.15
RRUS 32 B30	A	From Face	4.00 0.00 2.00	0.0000	149.00	No Ice	2.69	1.57	0.06
						1/2" Ice	2.91	1.76	0.08
						1" Ice	3.14	1.95	0.10
						2" Ice	3.61	2.35	0.16
RRUS 32 B30	B	From Face	4.00 0.00 2.00	0.0000	149.00	No Ice	2.69	1.57	0.06
						1/2" Ice	2.91	1.76	0.08
						1" Ice	3.14	1.95	0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice	3.61	2.35	0.16
						2" Ice			
RRUS 32 B30	C	From Face	4.00	0.0000	149.00	No Ice	2.69	1.57	0.06
			0.00			1/2"	2.91	1.76	0.08
			2.00			Ice	3.14	1.95	0.10
						1" Ice	3.61	2.35	0.16
						2" Ice			
DC6-48-60-18-8F	A	From Face	4.00	0.0000	149.00	No Ice	0.92	0.92	0.02
			0.00			1/2"	1.46	1.46	0.04
			0.00			Ice	1.64	1.64	0.06
						1" Ice	2.04	2.04	0.11
						2" Ice			
DC6-48-60-18-8F	B	From Face	4.00	0.0000	149.00	No Ice	0.92	0.92	0.02
			0.00			1/2"	1.46	1.46	0.04
			0.00			Ice	1.64	1.64	0.06
						1" Ice	2.04	2.04	0.11
						2" Ice			
DC6-48-60-18-8F	C	From Face	4.00	0.0000	149.00	No Ice	0.92	0.92	0.02
			0.00			1/2"	1.46	1.46	0.04
			0.00			Ice	1.64	1.64	0.06
						1" Ice	2.04	2.04	0.11
						2" Ice			
RRUS 4449 B5/B12	A	From Face	4.00	0.0000	149.00	No Ice	1.97	1.41	0.07
			0.00			1/2"	2.14	1.56	0.09
			2.00			Ice	2.33	1.73	0.11
						1" Ice	2.72	2.07	0.16
						2" Ice			
RRUS 4449 B5/B12	B	From Face	4.00	0.0000	149.00	No Ice	1.97	1.41	0.07
			0.00			1/2"	2.14	1.56	0.09
			2.00			Ice	2.33	1.73	0.11
						1" Ice	2.72	2.07	0.16
						2" Ice			
RRUS 4449 B5/B12	C	From Face	4.00	0.0000	149.00	No Ice	1.97	1.41	0.07
			0.00			1/2"	2.14	1.56	0.09
			2.00			Ice	2.33	1.73	0.11
						1" Ice	2.72	2.07	0.16
						2" Ice			
RRUS 8843 B2/B66A	A	From Face	4.00	0.0000	149.00	No Ice	1.64	1.35	0.07
			0.00			1/2"	1.80	1.50	0.09
			2.00			Ice	1.97	1.65	0.11
						1" Ice	2.32	1.99	0.16
						2" Ice			
RRUS 8843 B2/B66A	B	From Face	4.00	0.0000	149.00	No Ice	1.64	1.35	0.07
			0.00			1/2"	1.80	1.50	0.09
			2.00			Ice	1.97	1.65	0.11
						1" Ice	2.32	1.99	0.16
						2" Ice			
RRUS 8843 B2/B66A	C	From Face	4.00	0.0000	149.00	No Ice	1.64	1.35	0.07
			0.00			1/2"	1.80	1.50	0.09
			2.00			Ice	1.97	1.65	0.11
						1" Ice	2.32	1.99	0.16
						2" Ice			
139									
Platform Mount [LP 713-1]	C	None		0.0000	139.00	No Ice	32.89	32.89	1.51
						1/2"	35.76	35.76	2.23
						Ice	38.76	38.76	3.03
						1" Ice	45.26	45.26	4.86
						2" Ice			
Mount Reinforcement Specifications	C	None		0.0000	139.00	No Ice	28.63	28.63	0.28
						1/2"	37.31	37.31	0.67
						Ice	45.80	45.80	0.94
						1" Ice	62.38	62.38	1.63
						2" Ice			
BSAMNT-SBS-2-2 Side By Side Bracket	A	From Face	3.00	0.0000	139.00	No Ice	0.00	0.00	0.07
			0.00			1/2"	0.00	0.00	0.09

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			Ice	0.00	0.00	0.11
						1" Ice	0.00	0.00	0.15
						2" Ice			
BSAMNT-SBS-2-2 Side By Side Bracket	B	From Face	3.00 0.00 0.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.07 0.09 0.11 0.15
BSAMNT-SBS-2-2 Side By Side Bracket	C	From Face	3.00 0.00 0.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.07 0.09 0.11 0.15
(2) 4'x2" Mount Pipe	A	From Face	3.00 0.00 0.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.87 1.11 1.36 1.90	0.87 1.11 1.36 1.90	0.01 0.02 0.03 0.06
(2) 4'x2" Mount Pipe	B	From Face	3.00 0.00 0.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.87 1.11 1.36 1.90	0.87 1.11 1.36 1.90	0.01 0.02 0.03 0.06
(2) 4'x2" Mount Pipe	C	From Face	3.00 0.00 0.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.87 1.11 1.36 1.90	0.87 1.11 1.36 1.90	0.01 0.02 0.03 0.06
(2) DB846F65ZAXY w/ Mount Pipe	A	From Face	3.00 0.00 3.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.10 6.80 7.51 8.98	6.81 7.52 8.24 9.73	0.06 0.12 0.19 0.37
(2) DB846F65ZAXY w/ Mount Pipe	B	From Face	3.00 0.00 3.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.10 6.80 7.51 8.98	6.81 7.52 8.24 9.73	0.06 0.12 0.19 0.37
(2) DB846F65ZAXY w/ Mount Pipe	C	From Face	3.00 0.00 3.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.10 6.80 7.51 8.98	6.81 7.52 8.24 9.73	0.06 0.12 0.19 0.37
(2) MX06FRO860-03 w/ Mount Pipe	A	From Face	3.00 0.00 3.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.84 9.51 10.20 11.61	7.49 8.15 8.82 10.20	0.12 0.22 0.34 0.63
(2) MX06FRO860-03 w/ Mount Pipe	B	From Face	3.00 0.00 3.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.84 9.51 10.20 11.61	7.49 8.15 8.82 10.20	0.12 0.22 0.34 0.63
(2) MX06FRO860-03 w/ Mount Pipe	C	From Face	3.00 0.00 3.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.84 9.51 10.20 11.61	7.49 8.15 8.82 10.20	0.12 0.22 0.34 0.63
MT6407-77A w/ Mount Pipe	A	From Face	3.00 0.00 3.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.91 5.26 5.61 6.36	2.68 3.14 3.62 4.63	0.10 0.14 0.18 0.29
MT6407-77A w/ Mount Pipe	B	From Face	3.00 0.00	0.0000	139.00	No Ice 1/2"	4.91 5.26	2.68 3.14	0.10 0.14

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
			3.00			Ice	5.61	3.62	0.18
						1" Ice	6.36	4.63	0.29
						2" Ice			
MT6407-77A w/ Mount Pipe	C	From Face	3.00 0.00 3.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.91 5.26 5.61 6.36	2.68 3.14 3.62 4.63	0.10 0.14 0.18 0.29
(2) FD9R6004/2C-3L	A	From Face	3.00 0.00 3.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.31 0.39 0.47 0.65	0.08 0.12 0.17 0.29	0.00 0.01 0.01 0.02
(2) FD9R6004/2C-3L	B	From Face	3.00 0.00 3.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.31 0.39 0.47 0.65	0.08 0.12 0.17 0.29	0.00 0.01 0.01 0.02
(2) FD9R6004/2C-3L	C	From Face	3.00 0.00 3.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.31 0.39 0.47 0.65	0.08 0.12 0.17 0.29	0.00 0.01 0.01 0.02
RVZDC-6627-PF-48	A	From Face	3.00 0.00 3.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.79 4.04 4.30 4.84	2.51 2.73 2.95 3.42	0.03 0.06 0.10 0.18
RF4440D-13A	A	From Face	3.00 0.00 3.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.87 2.03 2.21 2.59	1.13 1.27 1.41 1.72	0.07 0.09 0.11 0.16
RF4440D-13A	C	From Face	3.00 0.00 3.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.87 2.03 2.21 2.59	1.13 1.27 1.41 1.72	0.07 0.09 0.11 0.16
RF4440D-13A	C	From Face	3.00 0.00 3.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.87 2.03 2.21 2.59	1.13 1.27 1.41 1.72	0.07 0.09 0.11 0.16
RF4439D-25A	B	From Face	3.00 0.00 3.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.87 2.03 2.21 2.59	1.25 1.39 1.54 1.87	0.07 0.09 0.11 0.17
RF4439D-25A	C	From Face	3.00 0.00 3.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.87 2.03 2.21 2.59	1.25 1.39 1.54 1.87	0.07 0.09 0.11 0.17
RF4439D-25A	C	From Face	3.00 0.00 3.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.87 2.03 2.21 2.59	1.25 1.39 1.54 1.87	0.07 0.09 0.11 0.17
129 Commscope MC-PK8-DSH	C	None		0.0000	129.00	No Ice 1/2" Ice 1" Ice 2" Ice	34.24 62.95 91.66 149.08	34.24 62.95 91.66 149.08	1.75 2.10 2.45 3.15
(2) 8'x2" Mount Pipe	A	From Face	3.00	0.0000	129.00	No Ice	1.90	1.90	0.03

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
			0.00			1/2"	2.73	2.73	0.04
			0.00			Ice	3.40	3.40	0.06
						1" Ice	4.40	4.40	0.12
						2" Ice			
(2) 8'x2" Mount Pipe	B	From Face	3.00	0.0000	129.00	No Ice	1.90	1.90	0.03
			0.00			1/2"	2.73	2.73	0.04
			0.00			Ice	3.40	3.40	0.06
						1" Ice	4.40	4.40	0.12
						2" Ice			
(2) 8'x2" Mount Pipe	C	From Face	3.00	0.0000	129.00	No Ice	1.90	1.90	0.03
			0.00			1/2"	2.73	2.73	0.04
			0.00			Ice	3.40	3.40	0.06
						1" Ice	4.40	4.40	0.12
						2" Ice			
MX08FRO665-21 w/ Mount Pipe	A	From Face	3.00	0.0000	129.00	No Ice	8.01	4.23	0.11
			0.00			1/2"	8.52	4.69	0.19
			0.00			Ice	9.04	5.16	0.29
						1" Ice	10.11	6.12	0.52
						2" Ice			
MX08FRO665-21 w/ Mount Pipe	B	From Face	3.00	0.0000	129.00	No Ice	8.01	4.23	0.11
			0.00			1/2"	8.52	4.69	0.19
			0.00			Ice	9.04	5.16	0.29
						1" Ice	10.11	6.12	0.52
						2" Ice			
MX08FRO665-21 w/ Mount Pipe	C	From Face	3.00	0.0000	129.00	No Ice	8.01	4.23	0.11
			0.00			1/2"	8.52	4.69	0.19
			0.00			Ice	9.04	5.16	0.29
						1" Ice	10.11	6.12	0.52
						2" Ice			
TA08025-B604	A	From Face	3.00	0.0000	129.00	No Ice	1.96	0.98	0.06
			0.00			1/2"	2.14	1.11	0.08
			0.00			Ice	2.32	1.25	0.10
						1" Ice	2.71	1.55	0.15
						2" Ice			
TA08025-B604	B	From Face	3.00	0.0000	129.00	No Ice	1.96	0.98	0.06
			0.00			1/2"	2.14	1.11	0.08
			0.00			Ice	2.32	1.25	0.10
						1" Ice	2.71	1.55	0.15
						2" Ice			
TA08025-B604	C	From Face	3.00	0.0000	129.00	No Ice	1.96	0.98	0.06
			0.00			1/2"	2.14	1.11	0.08
			0.00			Ice	2.32	1.25	0.10
						1" Ice	2.71	1.55	0.15
						2" Ice			
TA08025-B605	A	From Face	3.00	0.0000	129.00	No Ice	1.96	1.13	0.08
			0.00			1/2"	2.14	1.27	0.09
			0.00			Ice	2.32	1.41	0.11
						1" Ice	2.71	1.72	0.16
						2" Ice			
TA08025-B605	B	From Face	3.00	0.0000	129.00	No Ice	1.96	1.13	0.08
			0.00			1/2"	2.14	1.27	0.09
			0.00			Ice	2.32	1.41	0.11
						1" Ice	2.71	1.72	0.16
						2" Ice			
TA08025-B605	C	From Face	3.00	0.0000	129.00	No Ice	1.96	1.13	0.08
			0.00			1/2"	2.14	1.27	0.09
			0.00			Ice	2.32	1.41	0.11
						1" Ice	2.71	1.72	0.16
						2" Ice			
RDIDC-9181-PF-48	A	From Face	3.00	0.0000	129.00	No Ice	2.01	1.17	0.02
			0.00			1/2"	2.19	1.31	0.04
			0.00			Ice	2.37	1.46	0.06
						1" Ice	2.76	1.78	0.11
						2" Ice			

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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
Platform Mount [LP 712-1]	C	None		0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	24.56 27.92 31.27 37.98	24.56 27.92 31.27 37.98	1.34 1.91 2.55 3.97
Miscellaneous [NA 507-1]	C	None		0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.56 6.39 8.18 11.66	4.56 6.39 8.18 11.66	0.25 0.31 0.40 0.66
6'x2" Mount Pipe	A	From Face	3.00 0.00 0.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.92 2.29 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09
6'x2" Mount Pipe	B	From Face	3.00 0.00 0.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.92 2.29 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09
6'x2" Mount Pipe	C	From Face	3.00 0.00 0.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.92 2.29 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Face	3.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Face	3.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Face	3.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
AIR 32 B2A/B66AA w/ Mount Pipe	A	From Face	3.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.76 4.12 4.48 5.24	3.15 3.49 3.84 4.58	0.19 0.25 0.32 0.48
AIR 32 B2A/B66AA w/ Mount Pipe	B	From Face	3.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.76 4.12 4.48 5.24	3.15 3.49 3.84 4.58	0.19 0.25 0.32 0.48
AIR 32 B2A/B66AA w/ Mount Pipe	C	From Face	3.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.76 4.12 4.48 5.24	3.15 3.49 3.84 4.58	0.19 0.25 0.32 0.48
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Face	3.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.14 3.45 3.77 4.43	2.59 2.88 3.19 3.84	0.11 0.16 0.23 0.38
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Face	3.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.14 3.45 3.77 4.43	2.59 2.88 3.19 3.84	0.11 0.16 0.23 0.38

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
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Face	3.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.14 3.45 3.77 4.43	2.59 2.88 3.19 3.84	0.11 0.16 0.23 0.38
RADIO 4449 B12/B71	A	From Face	3.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.65 1.81 1.98 2.34	1.30 1.44 1.60 1.92	0.08 0.09 0.11 0.16
RADIO 4449 B12/B71	B	From Face	3.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.65 1.81 1.98 2.34	1.30 1.44 1.60 1.92	0.08 0.09 0.11 0.16
RADIO 4449 B12/B71	C	From Face	3.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.65 1.81 1.98 2.34	1.30 1.44 1.60 1.92	0.08 0.09 0.11 0.16
KRY 112 144/1	A	From Face	3.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.17 0.23 0.30 0.46	0.01 0.01 0.02 0.03
KRY 112 144/1	B	From Face	3.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.17 0.23 0.30 0.46	0.01 0.01 0.02 0.03
KRY 112 144/1	C	From Face	3.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.17 0.23 0.30 0.46	0.01 0.01 0.02 0.03
84									
Side Arm Mount [4' SO 702-1]	C	From Face	1.50 0.00 0.00	0.0000	84.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.41 0.49 0.59 0.83	0.99 1.38 1.69 2.37	0.02 0.03 0.04 0.08
GPS_A	C	From Face	3.00 0.00 0.00	0.0000	84.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.26 0.32 0.39 0.56	0.26 0.32 0.39 0.56	0.00 0.00 0.01 0.02
40									
Pipe Mount [PM 601-1]	A	From Face	1.00 0.00 0.00	0.0000	40.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.32 1.58 1.84 2.40	1.32 1.58 1.84 2.40	0.07 0.08 0.09 0.13
GPS-QBW-20N	A	From Face	1.00 0.00 0.00	0.0000	40.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.13 0.18 0.23 0.37	0.13 0.18 0.23 0.37	0.00 0.00 0.00 0.01
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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
L1	160 - 155	Pole	Max Tension	14	0.00	-0.00	0.00
			Max. Compression	26	-10.39	0.00	-0.02
			Max. Mx	20	-3.81	13.66	-0.00
			Max. My	14	-3.80	-0.00	-13.66
			Max. Vy	20	-5.28	13.66	-0.00
			Max. Vx	14	5.28	-0.00	-13.66
			Max. Torque	8			0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L2	155 - 150	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-11.01	0.01	-0.05
			Max. Mx	20	-4.16	41.03	-0.00
			Max. My	14	-4.16	-0.00	-41.04
			Max. Vy	20	-5.67	41.03	-0.00
			Max. Vx	14	5.67	-0.00	-41.04
			Max. Torque	8			0.00
L3	150 - 145	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-21.74	0.02	-0.09
			Max. Mx	20	-7.97	94.07	-0.01
			Max. My	14	-7.97	-0.00	-94.08
			Max. Vy	20	-10.85	94.07	-0.01
			Max. Vx	14	10.85	-0.00	-94.08
			Max. Torque	8			0.00
L4	145 - 140	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-22.47	0.03	-0.13
			Max. Mx	20	-8.42	149.33	-0.01
			Max. My	14	-8.42	-0.00	-149.36
			Max. Vy	20	-11.27	149.33	-0.01
			Max. Vx	14	11.27	-0.00	-149.36
			Max. Torque	8			0.00
L5	140 - 135	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-36.13	0.52	-1.70
			Max. Mx	20	-12.88	244.00	-0.78
			Max. My	14	-12.87	-0.05	-245.16
			Max. Vy	20	-18.32	244.00	-0.78
			Max. Vx	14	18.37	-0.05	-245.16
			Max. Torque	10			-0.49
L6	135 - 130	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-36.99	0.54	-1.75
			Max. Mx	20	-13.49	336.64	-0.69
			Max. My	14	-13.48	-0.15	-338.04
			Max. Vy	20	-18.75	336.64	-0.69
			Max. Vx	14	18.79	-0.15	-338.04
			Max. Torque	10			-0.49
L7	130 - 125	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.78	0.86	-1.62
			Max. Mx	20	-17.09	443.11	-0.50
			Max. My	14	-17.08	-0.22	-444.56
			Max. Vy	20	-22.07	443.11	-0.50
			Max. Vx	14	22.11	-0.22	-444.56
			Max. Torque	12			-0.52
L8	125 - 120	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.71	0.88	-1.67
			Max. Mx	20	-17.79	554.48	-0.35
			Max. My	14	-17.79	-0.38	-556.09
			Max. Vy	20	-22.49	554.48	-0.35
			Max. Vx	14	22.52	-0.38	-556.09
			Max. Torque	12			-0.52
L9	120 - 111.333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.52	0.89	-1.71
			Max. Mx	20	-18.42	645.06	-0.23
			Max. My	14	-18.41	-0.51	-646.81
			Max. Vy	20	-22.82	645.06	-0.23
			Max. Vx	14	22.86	-0.51	-646.81
			Max. Torque	12			-0.52
L10	111.333 - 111	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.38	0.90	-1.76
			Max. Mx	20	-23.58	780.30	-0.08
			Max. My	14	-23.58	-0.67	-782.22
			Max. Vy	20	-26.64	780.30	-0.08
			Max. Vx	14	26.67	-0.67	-782.22
			Max. Torque	12			-0.52
L11	111 - 106	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.65	0.91	-1.81
			Max. Mx	20	-24.62	914.53	0.08
			Max. My	14	-24.61	-0.83	-916.63

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	20	-27.08	914.53	0.08
			Max. Vx	14	27.11	-0.83	-916.63
			Max. Torque	12			-0.52
L12	106 - 101	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.95	0.91	-1.84
			Max. Mx	20	-25.69	1050.94	0.24
			Max. My	14	-25.69	-0.99	-1053.21
			Max. Vy	20	-27.51	1050.94	0.24
			Max. Vx	14	27.55	-0.99	-1053.21
			Max. Torque	12			-0.52
L13	101 - 96	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.29	0.91	-1.86
			Max. Mx	20	-26.81	1189.53	0.39
			Max. My	14	-26.80	-1.15	-1191.96
			Max. Vy	20	-27.95	1189.53	0.39
			Max. Vx	14	27.98	-1.15	-1191.96
			Max. Torque	12			-0.52
L14	96 - 91	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.67	0.91	-1.88
			Max. Mx	20	-27.95	1330.28	0.55
			Max. My	14	-27.95	-1.31	-1332.88
			Max. Vy	20	-28.38	1330.28	0.55
			Max. Vx	14	28.42	-1.31	-1332.88
			Max. Torque	12			-0.52
L15	91 - 86	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.16	0.91	-1.91
			Max. Mx	20	-29.13	1473.20	0.70
			Max. My	14	-29.12	-1.47	-1475.97
			Max. Vy	20	-28.82	1473.20	0.70
			Max. Vx	14	28.85	-1.47	-1475.97
			Max. Torque	12			-0.52
L16	86 - 85.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.25	0.92	-1.91
			Max. Mx	20	-29.22	1480.41	0.71
			Max. My	14	-29.21	-1.48	-1483.19
			Max. Vy	20	-28.84	1480.41	0.71
			Max. Vx	14	28.87	-1.48	-1483.19
			Max. Torque	12			-0.52
L17	85.75 - 81	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65.26	0.91	-2.19
			Max. Mx	20	-30.71	1618.59	0.80
			Max. My	14	-30.71	-1.63	-1621.55
			Max. Vy	20	-29.36	1618.59	0.80
			Max. Vx	14	29.38	-1.63	-1621.55
			Max. Torque	10			-0.61
L18	81 - 80.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65.36	0.92	-2.20
			Max. Mx	20	-30.79	1625.94	0.80
			Max. My	14	-30.79	-1.64	-1628.89
			Max. Vy	20	-29.38	1625.94	0.80
			Max. Vx	14	29.40	-1.64	-1628.89
			Max. Torque	10			-0.61
L19	80.75 - 80.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65.45	0.92	-2.20
			Max. Mx	20	-30.86	1633.28	0.81
			Max. My	14	-30.86	-1.65	-1636.24
			Max. Vy	20	-29.41	1633.28	0.81
			Max. Vx	14	29.42	-1.65	-1636.24
			Max. Torque	10			-0.61
L20	80.5 - 73.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65.95	0.91	-2.20
			Max. Mx	20	-31.24	1677.47	0.86
			Max. My	14	-31.24	-1.70	-1680.44
			Max. Vy	20	-29.55	1677.47	0.86
			Max. Vx	14	29.56	-1.70	-1680.44
			Max. Torque	10			-0.61
L21	73.25 - 72.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.80	0.91	-2.24

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	20	-34.15	1879.38	1.07
			Max. My	14	-34.15	-1.91	-1882.45
			Max. Vy	20	-30.30	1879.38	1.07
			Max. Vx	14	30.31	-1.91	-1882.45
			Max. Torque	10			-0.61
L22	72.25 - 67.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.48	0.91	-2.27
			Max. Mx	20	-35.57	2031.86	1.23
			Max. My	14	-35.57	-2.08	-2035.00
			Max. Vy	20	-30.73	2031.86	1.23
			Max. Vx	14	30.75	-2.08	-2035.00
			Max. Torque	10			-0.61
L23	67.25 - 62.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-73.21	0.91	-2.30
			Max. Mx	20	-37.03	2186.51	1.38
			Max. My	14	-37.03	-2.24	-2189.72
			Max. Vy	20	-31.16	2186.51	1.38
			Max. Vx	14	31.18	-2.24	-2189.72
			Max. Torque	10			-0.61
L24	62.25 - 57.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.97	0.91	-2.32
			Max. Mx	20	-38.52	2343.31	1.54
			Max. My	14	-38.52	-2.40	-2346.59
			Max. Vy	20	-31.59	2343.31	1.54
			Max. Vx	14	31.60	-2.40	-2346.59
			Max. Torque	10			-0.61
L25	57.25 - 52.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-76.78	0.91	-2.35
			Max. Mx	20	-40.06	2502.23	1.69
			Max. My	14	-40.05	-2.56	-2505.57
			Max. Vy	20	-32.01	2502.23	1.69
			Max. Vx	14	32.02	-2.56	-2505.57
			Max. Torque	10			-0.61
L26	52.25 - 49.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-77.91	0.91	-2.37
			Max. Mx	20	-40.98	2579.90	1.77
			Max. My	14	-40.98	-2.63	-2583.27
			Max. Vy	20	-32.22	2579.90	1.77
			Max. Vx	14	32.23	-2.63	-2583.27
			Max. Torque	10			-0.61
L27	49.83 - 49.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-78.03	0.92	-2.37
			Max. Mx	20	-41.09	2587.96	1.78
			Max. My	14	-41.09	-2.64	-2591.33
			Max. Vy	20	-32.24	2587.96	1.78
			Max. Vx	14	32.25	-2.64	-2591.33
			Max. Torque	10			-0.61
L28	49.58 - 44.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-80.40	0.91	-2.40
			Max. Mx	20	-43.03	2750.10	1.93
			Max. My	14	-43.02	-2.80	-2753.54
			Max. Vy	20	-32.66	2750.10	1.93
			Max. Vx	14	32.67	-2.80	-2753.54
			Max. Torque	10			-0.61
L29	44.58 - 36.3333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.16	0.91	-2.40
			Max. Mx	20	-43.64	2801.77	1.98
			Max. My	14	-43.64	-2.85	-2805.23
			Max. Vy	20	-32.79	2801.77	1.98
			Max. Vx	14	32.80	-2.85	-2805.23
			Max. Torque	10			-0.61

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L30	36.3333 - 35.3333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-87.31	1.24	-2.26
			Max. Mx	20	-48.48	3056.46	2.33
			Max. My	14	-48.47	-2.89	-3059.70
			Max. Vy	20	-33.61	3056.46	2.33
			Max. Vx	14	33.62	-2.89	-3059.70
			Max. Torque	12			-0.64
L31	35.3333 - 32.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-88.86	1.24	-2.28
			Max. Mx	20	-49.77	3160.36	2.43
			Max. My	14	-49.77	-2.99	-3163.65
			Max. Vy	20	-33.83	3160.36	2.43
			Max. Vx	14	33.85	-2.99	-3163.65
			Max. Torque	12			-0.64
L32	32.25 - 32	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-88.99	1.24	-2.28
			Max. Mx	20	-49.89	3168.82	2.44
			Max. My	14	-49.88	-3.00	-3172.10
			Max. Vy	20	-33.84	3168.82	2.44
			Max. Vx	14	33.86	-3.00	-3172.10
			Max. Torque	12			-0.64
L33	32 - 27	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-91.55	1.24	-2.31
			Max. Mx	20	-52.01	3338.85	2.59
			Max. My	14	-52.01	-3.16	-3342.20
			Max. Vy	20	-34.20	3338.85	2.59
			Max. Vx	14	34.21	-3.16	-3342.20
			Max. Torque	12			-0.64
L34	27 - 22	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-94.14	1.24	-2.34
			Max. Mx	20	-54.18	3510.63	2.74
			Max. My	14	-54.18	-3.31	-3514.04
			Max. Vy	20	-34.55	3510.63	2.74
			Max. Vx	14	34.57	-3.31	-3514.04
			Max. Torque	12			-0.64
L35	22 - 17	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-96.77	1.24	-2.37
			Max. Mx	20	-56.39	3684.18	2.90
			Max. My	14	-56.39	-3.47	-3687.65
			Max. Vy	20	-34.91	3684.18	2.90
			Max. Vx	14	34.92	-3.47	-3687.65
			Max. Torque	12			-0.64
L36	17 - 15.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-97.63	1.24	-2.37
			Max. Mx	20	-57.10	3736.59	2.94
			Max. My	14	-57.10	-3.52	-3740.08
			Max. Vy	20	-35.02	3736.59	2.94
			Max. Vx	14	35.04	-3.52	-3740.08
			Max. Torque	12			-0.64
L37	15.5 - 15.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-97.77	1.24	-2.38
			Max. Mx	20	-57.24	3745.34	2.95
			Max. My	14	-57.24	-3.52	-3748.83
			Max. Vy	20	-35.02	3745.34	2.95
			Max. Vx	14	35.03	-3.52	-3748.83
			Max. Torque	12			-0.64
L38	15.25 - 14.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-98.07	1.24	-2.38
			Max. Mx	20	-57.48	3762.85	2.96
			Max. My	14	-57.47	-3.54	-3766.35
			Max. Vy	20	-35.06	3762.85	2.96
			Max. Vx	14	35.07	-3.54	-3766.35
			Max. Torque	12			-0.64
L39	14.75 - 14.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-98.21	1.24	-2.38
			Max. Mx	20	-57.60	3771.62	2.97

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	14	-57.60	-3.55	-3775.12
			Max. Vy	20	-35.07	3771.62	2.97
			Max. Vx	14	35.09	-3.55	-3775.12
			Max. Torque	12			-0.64
L40	14.5 - 9.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-100.88	1.24	-2.40
			Max. Mx	20	-59.83	3947.82	3.12
			Max. My	14	-59.83	-3.70	-3951.39
			Max. Vy	20	-35.44	3947.82	3.12
			Max. Vx	14	35.45	-3.70	-3951.39
			Max. Torque	12			-0.64
L41	9.5 - 4.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-103.33	1.24	-2.40
			Max. Mx	20	-61.94	4125.81	3.28
			Max. My	14	-61.94	-3.86	-4129.43
			Max. Vy	20	-35.80	4125.81	3.28
			Max. Vx	14	35.81	-3.86	-4129.43
			Max. Torque	12			-0.64
L42	4.5 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-105.43	1.24	-2.40
			Max. Mx	20	-63.80	4287.53	3.42
			Max. My	14	-63.80	-4.00	-4291.20
			Max. Vy	20	-36.12	4287.53	3.42
			Max. Vx	14	36.14	-4.00	-4291.20
			Max. Torque	12			-0.64

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	33	105.43	-0.01	-9.00
	Max. H_x	20	63.82	36.10	0.03
	Max. H_z	2	63.82	0.03	36.11
	Max. M_x	2	4289.17	0.03	36.11
	Max. M_z	8	4286.65	-36.10	-0.03
	Max. Torsion	24	0.64	18.08	31.29
	Min. Vert	19	47.86	31.25	-18.03
	Min. H_x	8	63.82	-36.10	-0.03
	Min. H_z	14	63.82	-0.03	-36.11
	Min. M_x	14	-4291.20	-0.03	-36.11
	Min. M_z	20	-4287.53	36.10	0.03
	Min. Torsion	12	-0.64	-18.08	-31.29

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	53.18	0.00	0.00	0.76	0.34	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	63.82	-0.03	-36.11	-4289.17	4.87	-0.51
0.9 Dead+1.0 Wind 0 deg - No Ice	47.86	-0.03	-36.11	-4226.96	4.69	-0.51
1.2 Dead+1.0 Wind 30 deg - No Ice	63.82	18.02	-31.26	-3712.20	-2139.27	-0.25
0.9 Dead+1.0 Wind 30 deg - No Ice	47.86	18.02	-31.26	-3658.39	-2108.23	-0.26
1.2 Dead+1.0 Wind 60 deg - No Ice	63.82	31.25	-18.03	-2140.25	-3710.09	0.09
0.9 Dead+1.0 Wind 60 deg -	47.86	31.25	-18.03	-2109.34	-3656.17	0.07

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
No Ice						
1.2 Dead+1.0 Wind 90 deg - No Ice	63.82	36.10	0.03	5.45	-4286.65	0.40
0.9 Dead+1.0 Wind 90 deg - No Ice	47.86	36.10	0.03	5.11	-4224.33	0.37
1.2 Dead+1.0 Wind 120 deg - No Ice	63.82	31.28	18.08	2149.95	-3714.49	0.61
0.9 Dead+1.0 Wind 120 deg - No Ice	47.86	31.28	18.08	2118.37	-3660.50	0.58
1.2 Dead+1.0 Wind 150 deg - No Ice	63.82	18.08	31.29	3718.63	-2146.93	0.64
0.9 Dead+1.0 Wind 150 deg - No Ice	47.86	18.08	31.29	3664.20	-2115.77	0.62
1.2 Dead+1.0 Wind 180 deg - No Ice	63.82	0.03	36.11	4291.20	-4.00	0.50
0.9 Dead+1.0 Wind 180 deg - No Ice	47.86	0.03	36.11	4228.44	-4.04	0.50
1.2 Dead+1.0 Wind 210 deg - No Ice	63.82	-18.02	31.26	3714.23	2140.15	0.23
0.9 Dead+1.0 Wind 210 deg - No Ice	47.86	-18.02	31.26	3659.87	2108.87	0.24
1.2 Dead+1.0 Wind 240 deg - No Ice	63.82	-31.25	18.03	2142.29	3710.96	-0.09
0.9 Dead+1.0 Wind 240 deg - No Ice	47.86	-31.25	18.03	2110.82	3656.81	-0.07
1.2 Dead+1.0 Wind 270 deg - No Ice	63.82	-36.10	-0.03	-3.42	4287.53	-0.39
0.9 Dead+1.0 Wind 270 deg - No Ice	47.86	-36.10	-0.03	-3.63	4224.99	-0.37
1.2 Dead+1.0 Wind 300 deg - No Ice	63.82	-31.28	-18.08	-2147.92	3715.37	-0.59
0.9 Dead+1.0 Wind 300 deg - No Ice	47.86	-31.28	-18.08	-2116.89	3661.16	-0.57
1.2 Dead+1.0 Wind 330 deg - No Ice	63.82	-18.08	-31.29	-3716.61	2147.81	-0.64
0.9 Dead+1.0 Wind 330 deg - No Ice	47.86	-18.08	-31.29	-3662.73	2116.42	-0.62
1.2 Dead+1.0 Ice+1.0 Temp	105.43	-0.00	0.00	2.40	1.24	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	105.43	-0.01	-9.00	-1155.21	2.28	-0.14
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	105.43	4.50	-7.79	-999.63	-576.61	-0.06
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	105.43	7.80	-4.50	-575.48	-1000.62	0.04
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	105.43	9.00	0.01	3.60	-1156.16	0.13
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	105.43	7.80	4.51	582.42	-1001.53	0.18
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	105.43	4.51	7.80	1005.91	-578.18	0.18
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	105.43	0.01	9.00	1160.58	0.46	0.14
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	105.43	-4.50	7.79	1005.00	579.34	0.06
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	105.43	-7.80	4.50	580.84	1003.36	-0.04
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	105.43	-9.00	-0.01	1.77	1158.89	-0.13
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	105.43	-7.80	-4.51	-577.05	1004.27	-0.18
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	105.43	-4.51	-7.80	-1000.54	580.92	-0.18
Dead+Wind 0 deg - Service	53.18	-0.01	-8.51	-1001.80	1.40	-0.12
Dead+Wind 30 deg - Service	53.18	4.25	-7.36	-866.96	-499.69	-0.06
Dead+Wind 60 deg - Service	53.18	7.36	-4.25	-499.59	-866.80	0.02
Dead+Wind 90 deg - Service	53.18	8.50	0.01	1.87	-1001.55	0.09
Dead+Wind 120 deg - Service	53.18	7.37	4.26	503.05	-867.83	0.14
Dead+Wind 150 deg -	53.18	4.26	7.37	869.66	-501.49	0.15

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
Service						
Dead+Wind 180 deg - Service	53.18	0.01	8.51	1003.48	-0.67	0.12
Dead+Wind 210 deg - Service	53.18	-4.25	7.36	868.63	500.43	0.06
Dead+Wind 240 deg - Service	53.18	-7.36	4.25	501.26	867.53	-0.02
Dead+Wind 270 deg - Service	53.18	-8.50	-0.01	-0.20	1002.28	-0.09
Dead+Wind 300 deg - Service	53.18	-7.37	-4.26	-501.38	868.57	-0.14
Dead+Wind 330 deg - Service	53.18	-4.26	-7.37	-867.99	502.22	-0.15

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-53.18	0.00	0.00	53.18	0.00	0.000%
2	-0.03	-63.82	-36.11	0.03	63.82	36.11	0.000%
3	-0.03	-47.86	-36.11	0.03	47.86	36.11	0.000%
4	18.02	-63.82	-31.26	-18.02	63.82	31.26	0.000%
5	18.02	-47.86	-31.26	-18.02	47.86	31.26	0.000%
6	31.25	-63.82	-18.03	-31.25	63.82	18.03	0.000%
7	31.25	-47.86	-18.03	-31.25	47.86	18.03	0.000%
8	36.10	-63.82	0.03	-36.10	63.82	-0.03	0.000%
9	36.10	-47.86	0.03	-36.10	47.86	-0.03	0.000%
10	31.28	-63.82	18.08	-31.28	63.82	-18.08	0.000%
11	31.28	-47.86	18.08	-31.28	47.86	-18.08	0.000%
12	18.08	-63.82	31.29	-18.08	63.82	-31.29	0.000%
13	18.08	-47.86	31.29	-18.08	47.86	-31.29	0.000%
14	0.03	-63.82	36.11	-0.03	63.82	-36.11	0.000%
15	0.03	-47.86	36.11	-0.03	47.86	-36.11	0.000%
16	-18.02	-63.82	31.26	18.02	63.82	-31.26	0.000%
17	-18.02	-47.86	31.26	18.02	47.86	-31.26	0.000%
18	-31.25	-63.82	18.03	31.25	63.82	-18.03	0.000%
19	-31.25	-47.86	18.03	31.25	47.86	-18.03	0.000%
20	-36.10	-63.82	-0.03	36.10	63.82	0.03	0.000%
21	-36.10	-47.86	-0.03	36.10	47.86	0.03	0.000%
22	-31.28	-63.82	-18.08	31.28	63.82	18.08	0.000%
23	-31.28	-47.86	-18.08	31.28	47.86	18.08	0.000%
24	-18.08	-63.82	-31.29	18.08	63.82	31.29	0.000%
25	-18.08	-47.86	-31.29	18.08	47.86	31.29	0.000%
26	0.00	-105.43	0.00	0.00	105.43	-0.00	0.000%
27	-0.01	-105.43	-9.00	0.01	105.43	9.00	0.000%
28	4.50	-105.43	-7.79	-4.50	105.43	7.79	0.000%
29	7.80	-105.43	-4.50	-7.80	105.43	4.50	0.000%
30	9.00	-105.43	0.01	-9.00	105.43	-0.01	0.000%
31	7.80	-105.43	4.51	-7.80	105.43	-4.51	0.000%
32	4.51	-105.43	7.80	-4.51	105.43	-7.80	0.000%
33	0.01	-105.43	9.00	-0.01	105.43	-9.00	0.000%
34	-4.50	-105.43	7.79	4.50	105.43	-7.79	0.000%
35	-7.80	-105.43	4.50	7.80	105.43	-4.50	0.000%
36	-9.00	-105.43	-0.01	9.00	105.43	0.01	0.000%
37	-7.80	-105.43	-4.51	7.80	105.43	4.51	0.000%
38	-4.51	-105.43	-7.80	4.51	105.43	7.80	0.000%
39	-0.01	-53.18	-8.51	0.01	53.18	8.51	0.000%
40	4.25	-53.18	-7.36	-4.25	53.18	7.36	0.000%
41	7.36	-53.18	-4.25	-7.36	53.18	4.25	0.000%
42	8.50	-53.18	0.01	-8.50	53.18	-0.01	0.000%
43	7.37	-53.18	4.26	-7.37	53.18	-4.26	0.000%
44	4.26	-53.18	7.37	-4.26	53.18	-7.37	0.000%
45	0.01	-53.18	8.51	-0.01	53.18	-8.51	0.000%
46	-4.25	-53.18	7.36	4.25	53.18	-7.36	0.000%
47	-7.36	-53.18	4.25	7.36	53.18	-4.25	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
48	-8.50	-53.18	-0.01	8.50	53.18	0.01	0.000%
49	-7.37	-53.18	-4.26	7.37	53.18	4.26	0.000%
50	-4.26	-53.18	-7.37	4.26	53.18	7.37	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00069371
3	Yes	5	0.00000001	0.00027905
4	Yes	7	0.00000001	0.00015872
5	Yes	6	0.00000001	0.00078464
6	Yes	7	0.00000001	0.00015878
7	Yes	6	0.00000001	0.00078521
8	Yes	5	0.00000001	0.00069728
9	Yes	5	0.00000001	0.00027414
10	Yes	7	0.00000001	0.00016100
11	Yes	6	0.00000001	0.00079561
12	Yes	7	0.00000001	0.00015883
13	Yes	6	0.00000001	0.00078475
14	Yes	5	0.00000001	0.00059506
15	Yes	5	0.00000001	0.00022362
16	Yes	7	0.00000001	0.00015970
17	Yes	6	0.00000001	0.00078941
18	Yes	7	0.00000001	0.00015959
19	Yes	6	0.00000001	0.00078862
20	Yes	5	0.00000001	0.00059663
21	Yes	5	0.00000001	0.00022024
22	Yes	7	0.00000001	0.00015865
23	Yes	6	0.00000001	0.00078420
24	Yes	7	0.00000001	0.00016088
25	Yes	6	0.00000001	0.00079527
26	Yes	4	0.00000001	0.00030286
27	Yes	7	0.00000001	0.00041707
28	Yes	7	0.00000001	0.00052698
29	Yes	7	0.00000001	0.00052677
30	Yes	7	0.00000001	0.00041782
31	Yes	7	0.00000001	0.00053385
32	Yes	7	0.00000001	0.00053240
33	Yes	7	0.00000001	0.00042083
34	Yes	7	0.00000001	0.00053424
35	Yes	7	0.00000001	0.00053420
36	Yes	7	0.00000001	0.00041954
37	Yes	7	0.00000001	0.00052970
38	Yes	7	0.00000001	0.00053138
39	Yes	5	0.00000001	0.00011388
40	Yes	5	0.00000001	0.00057695
41	Yes	5	0.00000001	0.00057742
42	Yes	5	0.00000001	0.00011386
43	Yes	5	0.00000001	0.00059730
44	Yes	5	0.00000001	0.00057788
45	Yes	5	0.00000001	0.00011393
46	Yes	5	0.00000001	0.00058804
47	Yes	5	0.00000001	0.00058702
48	Yes	5	0.00000001	0.00011357
49	Yes	5	0.00000001	0.00057495
50	Yes	5	0.00000001	0.00059486

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	160 - 155	28.489	44	1.6175	0.0009
L2	155 - 150	26.796	44	1.6162	0.0009
L3	150 - 145	25.108	44	1.6070	0.0009
L4	145 - 140	23.435	44	1.5878	0.0009
L5	140 - 135	21.788	44	1.5579	0.0009
L6	135 - 130	20.178	44	1.5156	0.0008
L7	130 - 125	18.619	44	1.4615	0.0007
L8	125 - 120	17.121	44	1.3984	0.0006
L9	120 - 111.333	15.693	44	1.3274	0.0006
L10	116 - 111	14.607	44	1.2664	0.0005
L11	111 - 106	13.299	44	1.2291	0.0005
L12	106 - 101	12.046	44	1.1629	0.0004
L13	101 - 96	10.864	44	1.0943	0.0004
L14	96 - 91	9.755	44	1.0243	0.0003
L15	91 - 86	8.720	44	0.9534	0.0003
L16	86 - 85.75	7.759	44	0.8821	0.0003
L17	85.75 - 81	7.712	44	0.8797	0.0003
L18	81 - 80.75	6.860	44	0.8332	0.0002
L19	80.75 - 80.5	6.817	44	0.8297	0.0002
L20	80.5 - 73.25	6.774	44	0.8261	0.0002
L21	79 - 72.25	6.517	44	0.8048	0.0002
L22	72.25 - 67.25	5.412	44	0.7539	0.0002
L23	67.25 - 62.25	4.655	44	0.6915	0.0002
L24	62.25 - 57.25	3.963	44	0.6299	0.0002
L25	57.25 - 52.25	3.336	44	0.5693	0.0001
L26	52.25 - 49.83	2.771	44	0.5097	0.0001
L27	49.83 - 49.58	2.520	44	0.4812	0.0001
L28	49.58 - 44.58	2.495	44	0.4783	0.0001
L29	44.58 - 36.3333	2.024	44	0.4204	0.0001
L30	43 - 35.3333	1.888	44	0.4023	0.0001
L31	35.3333 - 32.25	1.277	44	0.3543	0.0001
L32	32.25 - 32	1.058	44	0.3211	0.0001
L33	32 - 27	1.042	44	0.3184	0.0001
L34	27 - 22	0.736	44	0.2656	0.0001
L35	22 - 17	0.485	44	0.2139	0.0000
L36	17 - 15.5	0.288	44	0.1634	0.0000
L37	15.5 - 15.25	0.238	44	0.1486	0.0000
L38	15.25 - 14.75	0.231	44	0.1461	0.0000
L39	14.75 - 14.5	0.216	44	0.1412	0.0000
L40	14.5 - 9.5	0.208	44	0.1387	0.0000
L41	9.5 - 4.5	0.089	44	0.0899	0.0000
L42	4.5 - 0	0.020	44	0.0421	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
157.00	Platform Mount [13' LP 713-1]	44	27.473	1.6173	0.0009	56979
149.00	Platform Mount [13' LP 713-1]	44	24.772	1.6040	0.0009	18058
139.00	Platform Mount [LP 713-1]	44	21.462	1.5505	0.0009	7524
129.00	Commscope MC-PK8-DSH	44	18.314	1.4494	0.0007	4761
116.00	Platform Mount [LP 712-1]	44	14.607	1.2664	0.0005	5177
84.00	Side Arm Mount [4' SO 702-1]	44	7.393	0.8645	0.0003	5232
40.00	Pipe Mount [PM 601-1]	44	1.639	0.3811	0.0001	8406

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	160 - 155	121.784	14	6.9231	0.0039
L2	155 - 150	114.556	14	6.9174	0.0039
L3	150 - 145	107.350	14	6.8781	0.0039
L4	145 - 140	100.205	14	6.7960	0.0039
L5	140 - 135	93.171	14	6.6678	0.0039
L6	135 - 130	86.295	14	6.4881	0.0035
L7	130 - 125	79.634	14	6.2581	0.0031
L8	125 - 120	73.233	14	5.9891	0.0027
L9	120 - 111.333	67.131	14	5.6860	0.0024
L10	116 - 111	62.488	12	5.4251	0.0021
L11	111 - 106	56.899	12	5.2653	0.0020
L12	106 - 101	51.545	12	4.9818	0.0018
L13	101 - 96	46.492	12	4.6882	0.0016
L14	96 - 91	41.748	12	4.3881	0.0014
L15	91 - 86	37.318	12	4.0843	0.0013
L16	86 - 85.75	33.207	12	3.7791	0.0011
L17	85.75 - 81	33.009	12	3.7687	0.0011
L18	81 - 80.75	29.364	12	3.5693	0.0010
L19	80.75 - 80.5	29.177	12	3.5541	0.0010
L20	80.5 - 73.25	28.992	12	3.5389	0.0010
L21	79 - 72.25	27.896	12	3.4477	0.0010
L22	72.25 - 67.25	23.164	12	3.2293	0.0009
L23	67.25 - 62.25	19.925	12	2.9617	0.0008
L24	62.25 - 57.25	16.964	12	2.6979	0.0007
L25	57.25 - 52.25	14.277	12	2.4381	0.0006
L26	52.25 - 49.83	11.859	12	2.1827	0.0005
L27	49.83 - 49.58	10.784	12	2.0607	0.0005
L28	49.58 - 44.58	10.677	12	2.0482	0.0005
L29	44.58 - 36.3333	8.663	12	1.7999	0.0004
L30	43 - 35.3333	8.080	12	1.7224	0.0004
L31	35.3333 - 32.25	5.463	12	1.5168	0.0003
L32	32.25 - 32	4.530	12	1.3747	0.0003
L33	32 - 27	4.458	12	1.3632	0.0003
L34	27 - 22	3.150	12	1.1370	0.0002
L35	22 - 17	2.075	12	0.9157	0.0002
L36	17 - 15.5	1.230	12	0.6993	0.0001
L37	15.5 - 15.25	1.020	12	0.6360	0.0001
L38	15.25 - 14.75	0.987	12	0.6254	0.0001
L39	14.75 - 14.5	0.923	12	0.6042	0.0001
L40	14.5 - 9.5	0.892	12	0.5937	0.0001
L41	9.5 - 4.5	0.380	12	0.3845	0.0001
L42	4.5 - 0	0.085	12	0.1801	0.0000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
157.00	Platform Mount [13' LP 713-1]	14	117.446	6.9222	0.0040	13663
149.00	Platform Mount [13' LP 713-1]	14	105.915	6.8652	0.0040	4324
139.00	Platform Mount [LP 713-1]	14	91.781	6.6360	0.0039	1811
129.00	Commscope MC-PK8-DSH	14	78.332	6.2067	0.0031	1143
116.00	Platform Mount [LP 712-1]	12	62.488	5.4251	0.0021	1233
84.00	Side Arm Mount [4' SO 702-1]	12	31.643	3.7036	0.0011	1231
40.00	Pipe Mount [PM 601-1]	12	7.014	1.6318	0.0004	1966

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	160 - 155 (1)	TP20.801x19.6x0.25	5.00	0.00	0.0	16.5436	-3.80	967.80	0.004
L2	155 - 150 (2)	TP22.0021x20.801x0.25	5.00	0.00	0.0	17.5104	-4.16	1024.36	0.004
L3	150 - 145 (3)	TP23.2031x22.0021x0.25	5.00	0.00	0.0	18.4772	-7.97	1080.92	0.007
L4	145 - 140 (4)	TP24.4041x23.2031x0.25	5.00	0.00	0.0	19.4441	-8.42	1137.48	0.007
L5	140 - 135 (5)	TP25.6051x24.4041x0.25	5.00	0.00	0.0	20.4109	-12.87	1194.04	0.011
L6	135 - 130 (6)	TP26.8062x25.6051x0.25	5.00	0.00	0.0	21.3777	-13.48	1250.60	0.011
L7	130 - 125 (7)	TP28.0072x26.8062x0.25	5.00	0.00	0.0	22.3445	-17.08	1307.16	0.013
L8	125 - 120 (8)	TP29.2082x28.0072x0.25	5.00	0.00	0.0	23.3114	-17.78	1363.71	0.013
L9	120 - 111.333 (9)	TP31.29x29.2082x0.25	8.67	0.00	0.0	24.0848	-18.41	1408.96	0.013
L10	111.333 - 111 (10)	TP30.867x29.669x0.3438	5.00	0.00	0.0	33.7855	-23.57	1976.45	0.012
L11	111 - 106 (11)	TP32.065x30.867x0.3438	5.00	0.00	0.0	35.1115	-24.61	2054.02	0.012
L12	106 - 101 (12)	TP33.2631x32.065x0.3438	5.00	0.00	0.0	36.4376	-25.69	2131.60	0.012
L13	101 - 96 (13)	TP34.4611x33.2631x0.3438	5.00	0.00	0.0	37.7636	-26.80	2209.17	0.012
L14	96 - 91 (14)	TP35.6591x34.4611x0.3438	5.00	0.00	0.0	39.0896	-27.94	2286.74	0.012
L15	91 - 86 (15)	TP36.8571x35.6591x0.3438	5.00	0.00	0.0	40.4157	-29.12	2364.32	0.012
L16	86 - 85.75 (16)	TP36.917x36.8571x0.5125	0.25	0.00	0.0	60.0765	-29.21	3514.48	0.008
L17	85.75 - 81 (17)	TP38.0551x36.917x0.5063	4.75	0.00	0.0	61.2093	-30.71	3580.74	0.009
L18	81 - 80.75 (18)	TP38.115x38.0551x0.3438	0.25	0.00	0.0	41.8080	-30.79	2445.77	0.013
L19	80.75 - 80.5 (19)	TP38.1749x38.115x0.3438	0.25	0.00	0.0	41.8743	-30.86	2449.65	0.013
L20	80.5 - 73.25 (20)	TP39.912x38.1749x0.3438	7.25	0.00	0.0	42.2722	-31.23	2472.92	0.013
L21	73.25 - 72.25 (21)	TP39.467x37.8468x0.4063	6.75	0.00	0.0	51.0963	-34.14	2989.13	0.011
L22	72.25 - 67.25 (22)	TP40.6671x39.467x0.4063	5.00	0.00	0.0	52.6663	-35.57	3080.98	0.012
L23	67.25 - 62.25 (23)	TP41.8673x40.6671x0.4063	5.00	0.00	0.0	54.2362	-37.03	3172.82	0.012
L24	62.25 - 57.25 (24)	TP43.0674x41.8673x0.4063	5.00	0.00	0.0	55.8061	-38.52	3264.66	0.012
L25	57.25 - 52.25 (25)	TP44.2675x43.0674x0.4063	5.00	0.00	0.0	57.3761	-40.05	3356.50	0.012
L26	52.25 - 49.83 (26)	TP44.8484x44.2675x0.4063	2.42	0.00	0.0	58.1359	-40.98	3400.95	0.012
L27	49.83 - 49.58 (27)	TP44.9084x44.8484x0.4063	0.25	0.00	0.0	58.2144	-41.09	3405.54	0.012
L28	49.58 - 44.58 (28)	TP46.1086x44.9084x0.4063	5.00	0.00	0.0	59.7843	-43.02	3497.38	0.012
L29	44.58 - 36.3333 (29)	TP48.088x46.1086x0.4063	8.25	0.00	0.0	60.2804	-43.64	3526.41	0.012
L30	36.3333 - 35.3333 (30)	TP47.5161x45.6753x0.4375	7.67	0.00	0.0	66.3220	-48.47	3879.84	0.012
L31	35.3333 - 32.25 (31)	TP48.2565x47.5161x0.4375	3.08	0.00	0.0	67.3650	-49.77	3940.85	0.013
L32	32.25 - 32 (32)	TP48.3165x48.2565x0.4375	0.25	0.00	0.0	67.4495	-49.88	3945.80	0.013
L33	32 - 27 (33)	TP49.5171x48.3165x0.4375	5.00	0.00	0.0	69.1408	-52.01	4044.74	0.013
L34	27 - 22 (34)	TP50.7176x49.5171x0.4375	5.00	0.00	0.0	70.8321	-54.18	4143.68	0.013

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L35	22 - 17 (35)	TP51.9181x50.7176x0.4375	5.00	0.00	0.0	72.5234	-56.39	4242.62	0.013
L36	17 - 15.5 (36)	TP52.2783x51.9181x0.4375	1.50	0.00	0.0	73.0307	-57.10	4272.30	0.013
L37	15.5 - 15.25 (37)	TP52.3383x52.2783x0.4375	0.25	0.00	0.0	73.1153	-57.24	4277.25	0.013
L38	15.25 - 14.75 (38)	TP52.4584x52.3383x0.4375	0.50	0.00	0.0	73.2844	-57.47	4287.14	0.013
L39	14.75 - 14.5 (39)	TP52.5184x52.4584x0.4375	0.25	0.00	0.0	73.3690	-57.60	4292.09	0.013
L40	14.5 - 9.5 (40)	TP53.719x52.5184x0.4375	5.00	0.00	0.0	75.0603	-59.83	4391.03	0.014
L41	9.5 - 4.5 (41)	TP54.9195x53.719x0.4375	5.00	0.00	0.0	76.7515	-61.94	4489.96	0.014
L42	4.5 - 0 (42)	TP56x54.9195x0.4375	4.50	0.00	0.0	78.2737	-63.80	4579.01	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	160 - 155 (1)	TP20.801x19.6x0.25	13.66	508.14	0.027	0.00	508.14	0.000
L2	155 - 150 (2)	TP22.0021x20.801x0.25	41.04	559.87	0.073	0.00	559.87	0.000
L3	150 - 145 (3)	TP23.2031x22.0021x0.25	94.09	612.89	0.154	0.00	612.89	0.000
L4	145 - 140 (4)	TP24.4041x23.2031x0.25	149.37	667.00	0.224	0.00	667.00	0.000
L5	140 - 135 (5)	TP25.6051x24.4041x0.25	245.16	722.04	0.340	0.00	722.04	0.000
L6	135 - 130 (6)	TP26.8062x25.6051x0.25	338.04	777.82	0.435	0.00	777.82	0.000
L7	130 - 125 (7)	TP28.0072x26.8062x0.25	444.56	834.16	0.533	0.00	834.16	0.000
L8	125 - 120 (8)	TP29.2082x28.0072x0.25	556.13	890.88	0.624	0.00	890.88	0.000
L9	120 - 111.333 (9)	TP31.29x29.2082x0.25	646.93	936.40	0.691	0.00	936.40	0.000
L10	111.333 - 111 (10)	TP30.867x29.669x0.3438	782.43	1506.34	0.519	0.00	1506.34	0.000
L11	111 - 106 (11)	TP32.065x30.867x0.3438	916.93	1606.85	0.571	0.00	1606.85	0.000
L12	106 - 101 (12)	TP33.2631x32.065x0.3438	1053.62	1708.83	0.617	0.00	1708.83	0.000
L13	101 - 96 (13)	TP34.4611x33.2631x0.3438	1192.47	1812.13	0.658	0.00	1812.13	0.000
L14	96 - 91 (14)	TP35.6591x34.4611x0.3438	1333.49	1916.55	0.696	0.00	1916.55	0.000
L15	91 - 86 (15)	TP36.8571x35.6591x0.3438	1476.68	2021.91	0.730	0.00	2021.91	0.000
L16	86 - 85.75 (16)	TP36.917x36.8571x0.5125	1483.90	3264.29	0.455	0.00	3264.29	0.000
L17	85.75 - 81 (17)	TP38.0551x36.917x0.5063	1622.36	3432.41	0.473	0.00	3432.41	0.000
L18	81 - 80.75 (18)	TP38.115x38.0551x0.3438	1629.71	2133.36	0.764	0.00	2133.36	0.000
L19	80.75 - 80.5 (19)	TP38.1749x38.115x0.3438	1637.06	2138.68	0.765	0.00	2138.68	0.000
L20	80.5 - 73.25 (20)	TP39.912x38.1749x0.3438	1681.31	2170.66	0.775	0.00	2170.66	0.000
L21	73.25 - 72.25 (21)	TP39.467x37.8468x0.4063	1883.47	2839.37	0.663	0.00	2839.37	0.000
L22	72.25 - 67.25 (22)	TP40.6671x39.467x0.4063	2036.15	2983.96	0.682	0.00	2983.96	0.000
L23	67.25 - 62.25 (23)	TP41.8673x40.6671x0.4063	2190.99	3129.88	0.700	0.00	3129.88	0.000
L24	62.25 - 57.25 (24)	TP43.0674x41.8673x0.4063	2347.98	3276.97	0.717	0.00	3276.97	0.000
L25	57.25 - 52.25 (25)	TP44.2675x43.0674x0.4063	2507.08	3425.04	0.732	0.00	3425.04	0.000
L26	52.25 - 49.83 (26)	TP44.8484x44.2675x0.4063	2584.85	3497.01	0.739	0.00	3497.01	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 $\frac{M_{uy}}{\phi M_{ny}}$
L27	49.83 - 49.58 (27)	TP44.9084x44.8484x0.4063	2592.92	3504.46	0.740	0.00	3504.46	0.000
L28	49.58 - 44.58 (28)	TP46.1086x44.9084x0.4063	2755.25	3653.68	0.754	0.00	3653.68	0.000
L29	44.58 - 36.3333 (29)	TP48.088x46.1086x0.4063	2806.97	3700.96	0.758	0.00	3700.96	0.000
L30	36.3333 - 35.3333 (30)	TP47.5161x45.6753x0.4375	3061.55	4255.33	0.719	0.00	4255.33	0.000
L31	35.3333 - 32.25 (31)	TP48.2565x47.5161x0.4375	3165.57	4361.67	0.726	0.00	4361.67	0.000
L32	32.25 - 32 (32)	TP48.3165x48.2565x0.4375	3174.03	4370.30	0.726	0.00	4370.30	0.000
L33	32 - 27 (33)	TP49.5171x48.3165x0.4375	3344.24	4543.38	0.736	0.00	4543.38	0.000
L34	27 - 22 (34)	TP50.7176x49.5171x0.4375	3516.21	4717.04	0.745	0.00	4717.04	0.000
L35	22 - 17 (35)	TP51.9181x50.7176x0.4375	3689.94	4891.11	0.754	0.00	4891.11	0.000
L36	17 - 15.5 (36)	TP52.2783x51.9181x0.4375	3742.40	4943.38	0.757	0.00	4943.38	0.000
L37	15.5 - 15.25 (37)	TP52.3383x52.2783x0.4375	3751.17	4952.09	0.757	0.00	4952.09	0.000
L38	15.25 - 14.75 (38)	TP52.4584x52.3383x0.4375	3768.69	4969.52	0.758	0.00	4969.52	0.000
L39	14.75 - 14.5 (39)	TP52.5184x52.4584x0.4375	3777.47	4978.23	0.759	0.00	4978.23	0.000
L40	14.5 - 9.5 (40)	TP53.719x52.5184x0.4375	3953.86	5152.57	0.767	0.00	5152.57	0.000
L41	9.5 - 4.5 (41)	TP54.9195x53.719x0.4375	4132.02	5326.86	0.776	0.00	5326.86	0.000
L42	4.5 - 0 (42)	TP56x54.9195x0.4375	4293.90	5483.53	0.783	0.00	5483.53	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	160 - 155 (1)	TP20.801x19.6x0.25	5.28	286.95	0.018	0.00	524.86	0.000
L2	155 - 150 (2)	TP22.0021x20.801x0.25	5.67	303.91	0.019	0.00	588.00	0.000
L3	150 - 145 (3)	TP23.2031x22.0021x0.25	10.85	324.27	0.033	0.00	654.72	0.000
L4	145 - 140 (4)	TP24.4041x23.2031x0.25	11.27	341.24	0.033	0.00	725.03	0.000
L5	140 - 135 (5)	TP25.6051x24.4041x0.25	18.37	358.21	0.051	0.27	798.92	0.000
L6	135 - 130 (6)	TP26.8062x25.6051x0.25	18.79	375.18	0.050	0.27	876.40	0.000
L7	130 - 125 (7)	TP28.0072x26.8062x0.25	22.11	392.15	0.056	0.41	957.47	0.000
L8	125 - 120 (8)	TP29.2082x28.0072x0.25	22.54	409.11	0.055	0.52	1042.12	0.001
L9	120 - 111.333 (9)	TP31.29x29.2082x0.25	22.88	422.69	0.054	0.52	1112.42	0.000
L10	111.333 - 111 (10)	TP30.867x29.669x0.3438	26.69	592.93	0.045	0.52	1591.98	0.000
L11	111 - 106 (11)	TP32.065x30.867x0.3438	27.13	616.21	0.044	0.52	1719.40	0.000
L12	106 - 101 (12)	TP33.2631x32.065x0.3438	27.57	639.48	0.043	0.52	1851.72	0.000
L13	101 - 96 (13)	TP34.4611x33.2631x0.3438	28.00	662.75	0.042	0.52	1988.96	0.000
L14	96 - 91 (14)	TP35.6591x34.4611x0.3438	28.44	686.02	0.041	0.52	2131.09	0.000
L15	91 - 86 (15)	TP36.8571x35.6591x0.3438	28.87	709.29	0.041	0.52	2278.13	0.000
L16	86 - 85.75 (16)	TP36.917x36.8571x0.5125	28.88	1054.34	0.027	0.52	3376.27	0.000
L17	85.75 - 81 (17)	TP38.0551x36.917x0.5063	29.40	1074.22	0.027	0.59	3548.06	0.000
L18	81 - 80.75 (18)	TP38.115x38.0551x0.3438	29.42	733.73	0.040	0.59	2437.80	0.000
L19	80.75 - 80.5	TP38.1749x38.115x0.343	29.44	734.89	0.040	0.59	2445.54	0.000

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 $\frac{T_u}{\phi T_n}$
	(19)	8						
L20	80.5 - 73.25	TP39.912x38.1749x0.343	29.58	741.88	0.040	0.59	2492.22	0.000
	(20)	8						
L21	73.25 - 72.25	TP39.467x37.8468x0.406	30.33	896.74	0.034	0.59	3081.11	0.000
	(21)	3						
L22	72.25 - 67.25	TP40.6671x39.467x0.406	30.77	924.29	0.033	0.59	3273.35	0.000
	(22)	3						
L23	67.25 - 62.25	TP41.8673x40.6671x0.40	31.20	951.85	0.033	0.59	3471.41	0.000
	(23)	63						
L24	62.25 - 57.25	TP43.0674x41.8673x0.40	31.63	979.40	0.032	0.59	3675.29	0.000
	(24)	63						
L25	57.25 - 52.25	TP44.2675x43.0674x0.40	32.05	1006.95	0.032	0.59	3884.98	0.000
	(25)	63						
L26	52.25 - 49.83	TP44.8484x44.2675x0.40	32.26	1020.29	0.032	0.59	3988.57	0.000
	(26)	63						
L27	49.83 - 49.58	TP44.9084x44.8484x0.40	32.26	1021.66	0.032	0.59	3999.34	0.000
	(27)	63						
L28	49.58 - 44.58	TP46.1086x44.9084x0.40	32.69	1049.22	0.031	0.59	4217.96	0.000
	(28)	63						
L29	44.58 -	TP48.088x46.1086x0.406	32.83	1057.92	0.031	0.59	4288.25	0.000
	36.3333 (29)	3						
L30	36.3333 -	TP47.5161x45.6753x0.43	33.64	1163.95	0.029	0.64	4820.13	0.000
	35.3333 (30)	75						
L31	35.3333 -	TP48.2565x47.5161x0.43	33.87	1182.26	0.029	0.64	4972.92	0.000
	32.25 (31)	75						
L32	32.25 - 32	TP48.3165x48.2565x0.43	33.87	1183.74	0.029	0.64	4985.42	0.000
	(32)	75						
L33	32 - 27 (33)	TP49.5171x48.3165x0.43	34.24	1213.42	0.028	0.64	5238.56	0.000
		75						
L34	27 - 22 (34)	TP50.7176x49.5171x0.43	34.59	1243.10	0.028	0.64	5497.98	0.000
		75						
L35	22 - 17 (35)	TP51.9181x50.7176x0.43	34.94	1272.78	0.027	0.64	5763.67	0.000
		75						
L36	17 - 15.5 (36)	TP52.2783x51.9181x0.43	35.06	1281.69	0.027	0.64	5844.59	0.000
		75						
L37	15.5 - 15.25	TP52.3383x52.2783x0.43	35.05	1283.17	0.027	0.64	5858.14	0.000
	(37)	75						
L38	15.25 - 14.75	TP52.4584x52.3383x0.43	35.09	1286.14	0.027	0.64	5885.27	0.000
	(38)	75						
L39	14.75 - 14.5	TP52.5184x52.4584x0.43	35.11	1287.63	0.027	0.64	5898.86	0.000
	(39)	75						
L40	14.5 - 9.5 (40)	TP53.719x52.5184x0.437	35.48	1317.31	0.027	0.64	6173.95	0.000
		5						
L41	9.5 - 4.5 (41)	TP54.9195x53.719x0.437	35.83	1346.99	0.027	0.64	6455.31	0.000
		5						
L42	4.5 - 0 (42)	TP56x54.9195x0.4375	36.16	1373.70	0.026	0.64	6713.89	0.000

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	160 - 155 (1)	0.004	0.027	0.000	0.018	0.000	0.031	1.050	4.8.2
L2	155 - 150 (2)	0.004	0.073	0.000	0.019	0.000	0.078	1.050	4.8.2
L3	150 - 145 (3)	0.007	0.154	0.000	0.033	0.000	0.162	1.050	4.8.2
L4	145 - 140 (4)	0.007	0.224	0.000	0.033	0.000	0.232	1.050	4.8.2
L5	140 - 135 (5)	0.011	0.340	0.000	0.051	0.000	0.353	1.050	4.8.2
L6	135 - 130 (6)	0.011	0.435	0.000	0.050	0.000	0.448	1.050	4.8.2
L7	130 - 125 (7)	0.013	0.533	0.000	0.056	0.000	0.549	1.050	4.8.2
L8	125 - 120 (8)	0.013	0.624	0.000	0.055	0.001	0.640	1.050	4.8.2
L9	120 - 111.333	0.013	0.691	0.000	0.054	0.000	0.707	1.050	4.8.2
	(9)								
L10	111.333 - 111	0.012	0.519	0.000	0.045	0.000	0.533	1.050	4.8.2

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	111 - 106 (11)	0.012	0.571	0.000	0.044	0.000	0.585	1.050	4.8.2
L12	106 - 101 (12)	0.012	0.617	0.000	0.043	0.000	0.631	1.050	4.8.2
L13	101 - 96 (13)	0.012	0.658	0.000	0.042	0.000	0.672	1.050	4.8.2
L14	96 - 91 (14)	0.012	0.696	0.000	0.041	0.000	0.710	1.050	4.8.2
L15	91 - 86 (15)	0.012	0.730	0.000	0.041	0.000	0.744	1.050	4.8.2
L16	86 - 85.75 (16)	0.008	0.455	0.000	0.027	0.000	0.464	1.050	4.8.2
L17	85.75 - 81 (17)	0.009	0.473	0.000	0.027	0.000	0.482	1.050	4.8.2
L18	81 - 80.75 (18)	0.013	0.764	0.000	0.040	0.000	0.778	1.050	4.8.2
L19	80.75 - 80.5 (19)	0.013	0.765	0.000	0.040	0.000	0.780	1.050	4.8.2
L20	80.5 - 73.25 (20)	0.013	0.775	0.000	0.040	0.000	0.789	1.050	4.8.2
L21	73.25 - 72.25 (21)	0.011	0.663	0.000	0.034	0.000	0.676	1.050	4.8.2
L22	72.25 - 67.25 (22)	0.012	0.682	0.000	0.033	0.000	0.695	1.050	4.8.2
L23	67.25 - 62.25 (23)	0.012	0.700	0.000	0.033	0.000	0.713	1.050	4.8.2
L24	62.25 - 57.25 (24)	0.012	0.717	0.000	0.032	0.000	0.729	1.050	4.8.2
L25	57.25 - 52.25 (25)	0.012	0.732	0.000	0.032	0.000	0.745	1.050	4.8.2
L26	52.25 - 49.83 (26)	0.012	0.739	0.000	0.032	0.000	0.752	1.050	4.8.2
L27	49.83 - 49.58 (27)	0.012	0.740	0.000	0.032	0.000	0.753	1.050	4.8.2
L28	49.58 - 44.58 (28)	0.012	0.754	0.000	0.031	0.000	0.767	1.050	4.8.2
L29	44.58 - 36.3333 (29)	0.012	0.758	0.000	0.031	0.000	0.772	1.050	4.8.2
L30	36.3333 - 35.3333 (30)	0.012	0.719	0.000	0.029	0.000	0.733	1.050	4.8.2
L31	35.3333 - 32.25 (31)	0.013	0.726	0.000	0.029	0.000	0.739	1.050	4.8.2
L32	32.25 - 32 (32)	0.013	0.726	0.000	0.029	0.000	0.740	1.050	4.8.2
L33	32 - 27 (33)	0.013	0.736	0.000	0.028	0.000	0.750	1.050	4.8.2
L34	27 - 22 (34)	0.013	0.745	0.000	0.028	0.000	0.759	1.050	4.8.2
L35	22 - 17 (35)	0.013	0.754	0.000	0.027	0.000	0.768	1.050	4.8.2
L36	17 - 15.5 (36)	0.013	0.757	0.000	0.027	0.000	0.771	1.050	4.8.2
L37	15.5 - 15.25 (37)	0.013	0.757	0.000	0.027	0.000	0.772	1.050	4.8.2
L38	15.25 - 14.75 (38)	0.013	0.758	0.000	0.027	0.000	0.773	1.050	4.8.2
L39	14.75 - 14.5 (39)	0.013	0.759	0.000	0.027	0.000	0.773	1.050	4.8.2
L40	14.5 - 9.5 (40)	0.014	0.767	0.000	0.027	0.000	0.782	1.050	4.8.2
L41	9.5 - 4.5 (41)	0.014	0.776	0.000	0.027	0.000	0.790	1.050	4.8.2
L42	4.5 - 0 (42)	0.014	0.783	0.000	0.026	0.000	0.798	1.050	4.8.2

Section Capacity Table

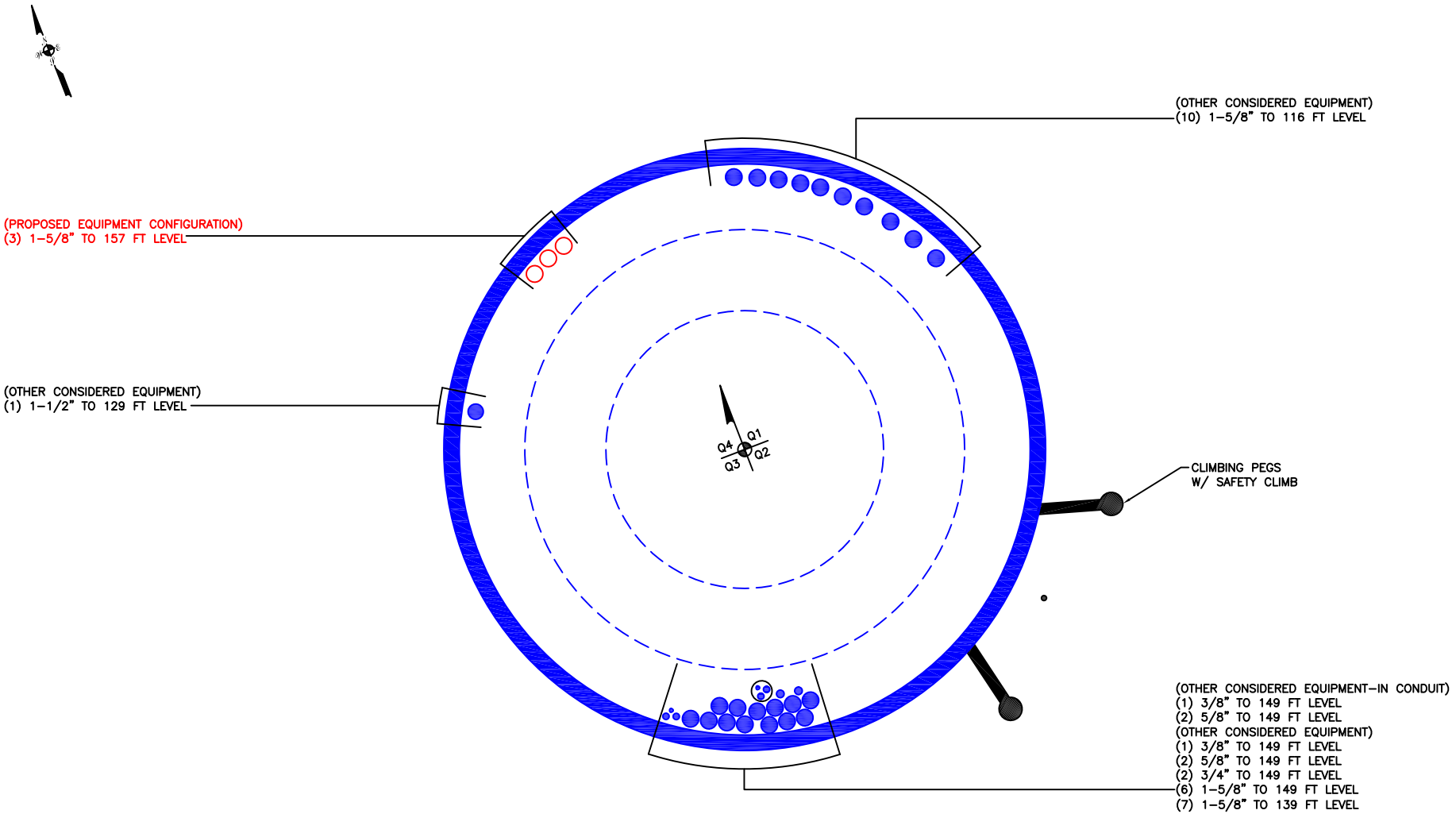
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	160 - 155	Pole	TP20.801x19.6x0.25	1	-3.80	1016.19	3.0	Pass
L2	155 - 150	Pole	TP22.0021x20.801x0.25	2	-4.16	1075.58	7.4	Pass
L3	150 - 145	Pole	TP23.2031x22.0021x0.25	3	-7.97	1134.97	15.4	Pass
L4	145 - 140	Pole	TP24.4041x23.2031x0.25	4	-8.42	1194.35	22.1	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L5	140 - 135	Pole	TP25.6051x24.4041x0.25	5	-12.87	1253.74	33.6	Pass
L6	135 - 130	Pole	TP26.8062x25.6051x0.25	6	-13.48	1313.13	42.7	Pass
L7	130 - 125	Pole	TP28.0072x26.8062x0.25	7	-17.08	1372.52	52.3	Pass
L8	125 - 120	Pole	TP29.2082x28.0072x0.25	8	-17.78	1431.90	61.0	Pass
L9	120 - 111.333	Pole	TP31.29x29.2082x0.25	9	-18.41	1479.41	67.3	Pass
L10	111.333 - 111	Pole	TP30.867x29.669x0.3438	10	-23.57	2075.27	50.8	Pass
L11	111 - 106	Pole	TP32.065x30.867x0.3438	11	-24.61	2156.72	55.7	Pass
L12	106 - 101	Pole	TP33.2631x32.065x0.3438	12	-25.69	2238.18	60.0	Pass
L13	101 - 96	Pole	TP34.4611x33.2631x0.3438	13	-26.80	2319.63	64.0	Pass
L14	96 - 91	Pole	TP35.6591x34.4611x0.3438	14	-27.94	2401.08	67.6	Pass
L15	91 - 86	Pole	TP36.8571x35.6591x0.3438	15	-29.12	2482.54	70.9	Pass
L16	86 - 85.75	Pole	TP36.917x36.8571x0.5125	16	-29.21	3690.20	44.2	Pass
L17	85.75 - 81	Pole	TP38.0551x36.917x0.5063	17	-30.71	3759.78	45.9	Pass
L18	81 - 80.75	Pole	TP38.115x38.0551x0.3438	18	-30.79	2568.06	74.1	Pass
L19	80.75 - 80.5	Pole	TP38.1749x38.115x0.3438	19	-30.86	2572.13	74.3	Pass
L20	80.5 - 73.25	Pole	TP39.912x38.1749x0.3438	20	-31.23	2596.57	75.1	Pass
L21	73.25 - 72.25	Pole	TP39.467x37.8468x0.4063	21	-34.14	3138.59	64.4	Pass
L22	72.25 - 67.25	Pole	TP40.6671x39.467x0.4063	22	-35.57	3235.03	66.2	Pass
L23	67.25 - 62.25	Pole	TP41.8673x40.6671x0.4063	23	-37.03	3331.46	67.9	Pass
L24	62.25 - 57.25	Pole	TP43.0674x41.8673x0.4063	24	-38.52	3427.89	69.5	Pass
L25	57.25 - 52.25	Pole	TP44.2675x43.0674x0.4063	25	-40.05	3524.32	70.9	Pass
L26	52.25 - 49.83	Pole	TP44.8484x44.2675x0.4063	26	-40.98	3571.00	71.6	Pass
L27	49.83 - 49.58	Pole	TP44.9084x44.8484x0.4063	27	-41.09	3575.82	71.7	Pass
L28	49.58 - 44.58	Pole	TP46.1086x44.9084x0.4063	28	-43.02	3672.25	73.1	Pass
L29	44.58 - 36.3333	Pole	TP48.088x46.1086x0.4063	29	-43.64	3702.73	73.5	Pass
L30	36.3333 - 35.3333	Pole	TP47.5161x45.6753x0.4375	30	-48.47	4073.83	69.8	Pass
L31	35.3333 - 32.25	Pole	TP48.2565x47.5161x0.4375	31	-49.77	4137.89	70.4	Pass
L32	32.25 - 32	Pole	TP48.3165x48.2565x0.4375	32	-49.88	4143.09	70.5	Pass
L33	32 - 27	Pole	TP49.5171x48.3165x0.4375	33	-52.01	4246.98	71.4	Pass
L34	27 - 22	Pole	TP50.7176x49.5171x0.4375	34	-54.18	4350.86	72.3	Pass
L35	22 - 17	Pole	TP51.9181x50.7176x0.4375	35	-56.39	4454.75	73.2	Pass
L36	17 - 15.5	Pole	TP52.2783x51.9181x0.4375	36	-57.10	4485.91	73.4	Pass
L37	15.5 - 15.25	Pole	TP52.3383x52.2783x0.4375	37	-57.24	4491.11	73.5	Pass
L38	15.25 - 14.75	Pole	TP52.4584x52.3383x0.4375	38	-57.47	4501.50	73.6	Pass
L39	14.75 - 14.5	Pole	TP52.5184x52.4584x0.4375	39	-57.60	4506.69	73.6	Pass
L40	14.5 - 9.5	Pole	TP53.719x52.5184x0.4375	40	-59.83	4610.58	74.4	Pass
L41	9.5 - 4.5	Pole	TP54.9195x53.719x0.4375	41	-61.94	4714.46	75.3	Pass
L42	4.5 - 0	Pole	TP56x54.9195x0.4375	42	-63.80	4807.96	76.0	Pass
							Summary	
						Pole (L42)	76.0	Pass
						RATING =	**76.0**	**Pass**

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

APPENDIX B

BASE LEVEL DRAWING


(OTHER CONSIDERED EQUIPMENT)
(10) 1-5/8" TO 116 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(3) 1-5/8" TO 157 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1-1/2" TO 129 FT LEVEL
Q4
Q1
Q3
Q2
CLIMBING PEGS
W/ SAFETY CLIMB
(OTHER CONSIDERED EQUIPMENT-IN CONDUIT)
(1) 3/8" TO 149 FT LEVEL
(2) 5/8" TO 149 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 3/8" TO 149 FT LEVEL
(2) 5/8" TO 149 FT LEVEL
(2) 3/4" TO 149 FT LEVEL
(6) 1-5/8" TO 149 FT LEVEL
(7) 1-5/8" TO 139 FT LEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 806953

Work Order: 2130743

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	160	48.6667	4.6667	12	19.6	31.29	0.25	Auto	A572-65
2	116	42.75	5.75	12	29.67	39.912	0.34375	Auto	A572-65
3	79	42.6667	6.6667	12	37.85	48.088	0.40625	Auto	A572-65
4	43	43	0	12	45.68	56	0.4375	Auto	A572-65

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
1	0	15.5	plate	MK SR 1													
2	78.25	80.75	plate	MK SR 2													
3	14.75	32.25	plate	CCI-AFP-060100													
4	32.25	49.83	plate	CCI-AFP-060100													
5	81	86	plate	CCI-AFP-060100	3		E				E				E		
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	4	0.75	3	0.375	PC 8.8 - M20 (100)	15	PC 8.8 - M20 (100)	15.000	15.000	2.063	1.1875	A572-65
2	4	0.75	3	0.375	PC 8.8 - M20 (100)	15	PC 8.8 - M20 (100)	15.000	15.000	2.069	1.1788	A572-65
3	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
4	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
5	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	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)
MK SR 1	Top	5	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	5	N	3	3	-	-	-	-	-	-	-	-	-
MK SR 2	Top	5	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	5	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	160 - 155	5		12	19.600	20.801	0.25	A572-65	1.000
2	155 - 150	5		12	20.801	22.002	0.25	A572-65	1.000
3	150 - 145	5		12	22.002	23.203	0.25	A572-65	1.000
4	145 - 140	5		12	23.203	24.404	0.25	A572-65	1.000
5	140 - 135	5		12	24.404	25.605	0.25	A572-65	1.000
6	135 - 130	5		12	25.605	26.806	0.25	A572-65	1.000
7	130 - 125	5		12	26.806	28.007	0.25	A572-65	1.000
8	125 - 120	5		12	28.007	29.208	0.25	A572-65	1.000
9	120 - 116	8.6667	4.6667	12	29.208	31.290	0.25	A572-65	1.000
10	116 - 111	5		12	29.669	30.867	0.34375	A572-65	1.000
11	111 - 106	5		12	30.867	32.065	0.34375	A572-65	1.000
12	106 - 101	5		12	32.065	33.263	0.34375	A572-65	1.000
13	101 - 96	5		12	33.263	34.461	0.34375	A572-65	1.000
14	96 - 91	5		12	34.461	35.659	0.34375	A572-65	1.000
15	91 - 86	5		12	35.659	36.857	0.34375	A572-65	1.000
16	86 - 85.75	0.25		12	36.857	36.917	0.5125	A572-65	0.974
17	85.75 - 81	4.75		12	36.917	38.055	0.50625	A572-65	0.976
18	81 - 80.75	0.25		12	38.055	38.115	0.34375	A572-65	1.000
19	80.75 - 80.5	0.25		12	38.115	38.175	0.34375	A572-65	1.000
20	80.5 - 79	7.25	5.75	12	38.175	39.912	0.34375	A572-65	1.000
21	79 - 72.25	6.75		12	37.847	39.467	0.40625	A572-65	1.000
22	72.25 - 67.25	5		12	39.467	40.667	0.40625	A572-65	1.000
23	67.25 - 62.25	5		12	40.667	41.867	0.40625	A572-65	1.000
24	62.25 - 57.25	5		12	41.867	43.067	0.40625	A572-65	1.000
25	57.25 - 52.25	5		12	43.067	44.268	0.40625	A572-65	1.000
26	52.25 - 49.83	2.42		12	44.268	44.848	0.40625	A572-65	1.000
27	49.83 - 49.58	0.25		12	44.848	44.908	0.40625	A572-65	1.000
28	49.58 - 44.58	5		12	44.908	46.109	0.40625	A572-65	1.000
29	44.58 - 43	8.2467	6.6667	12	46.109	48.088	0.40625	A572-65	1.000
30	43 - 35.3333	7.6667		12	45.675	47.516	0.4375	A572-65	1.000
31	35.3333 - 32.25	3.0833		12	47.516	48.256	0.4375	A572-65	1.000
32	32.25 - 32	0.25		12	48.256	48.317	0.4375	A572-65	1.000
33	32 - 27	5		12	48.317	49.517	0.4375	A572-65	1.000
34	27 - 22	5		12	49.517	50.718	0.4375	A572-65	1.000
35	22 - 17	5		12	50.718	51.918	0.4375	A572-65	1.000
36	17 - 15.5	1.5		12	51.918	52.278	0.4375	A572-65	1.000
37	15.5 - 15.25	0.25		12	52.278	52.338	0.4375	A572-65	1.000
38	15.25 - 14.75	0.5		12	52.338	52.458	0.4375	A572-65	1.000
39	14.75 - 14.5	0.25		12	52.458	52.518	0.4375	A572-65	1.000
40	14.5 - 9.5	5		12	52.518	53.719	0.4375	A572-65	1.000
41	9.5 - 4.5	5		12	53.719	54.920	0.4375	A572-65	1.000
42	4.5 - 0	4.5		12	54.920	56.000	0.4375	A572-65	1.000

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	160 - 155	3.80	13.66	5.28
2	155 - 150	4.16	41.04	5.67
3	150 - 145	7.97	94.09	10.85
4	145 - 140	8.42	149.37	11.27
5	140 - 135	12.87	245.16	18.37
6	135 - 130	13.48	338.04	18.79
7	130 - 125	17.08	444.56	22.11
8	125 - 120	17.78	556.13	22.54
9	120 - 116	18.41	646.93	22.88
10	116 - 111	23.57	782.43	26.69
11	111 - 106	24.61	916.94	27.13
12	106 - 101	25.69	1053.62	27.57
13	101 - 96	26.80	1192.47	28.00
14	96 - 91	27.94	1333.49	28.44
15	91 - 86	29.12	1476.68	28.87
16	86 - 85.75	29.21	1483.90	28.88
17	85.75 - 81	30.71	1622.36	29.40
18	81 - 80.75	30.79	1629.71	29.42
19	80.75 - 80.5	30.86	1637.06	29.44
20	80.5 - 79	31.23	1681.30	29.58
21	79 - 72.25	34.14	1883.47	30.33
22	72.25 - 67.25	35.57	2036.15	30.77
23	67.25 - 62.25	37.03	2190.99	31.20
24	62.25 - 57.25	38.52	2347.98	31.63
25	57.25 - 52.25	40.05	2507.09	32.05
26	52.25 - 49.83	40.98	2584.85	32.26
27	49.83 - 49.58	41.09	2592.92	32.26
28	49.58 - 44.58	43.02	2755.25	32.69
29	44.58 - 43	43.64	2806.97	32.83
30	43 - 35.3333	48.47	3061.55	33.64
31	35.3333 - 32.25	49.77	3165.57	33.87
32	32.25 - 32	49.88	3174.03	33.87
33	32 - 27	52.01	3344.25	34.24
34	27 - 22	54.18	3516.21	34.59
35	22 - 17	56.39	3689.94	34.94
36	17 - 15.5	57.10	3742.40	35.06
37	15.5 - 15.25	57.24	3751.16	35.05
38	15.25 - 14.75	57.47	3768.70	35.09
39	14.75 - 14.5	57.60	3777.47	35.11
40	14.5 - 9.5	59.83	3953.86	35.48
41	9.5 - 4.5	61.94	4132.02	35.83
42	4.5 - 0	63.80	4293.90	36.16

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
160 - 155	Pole	TP20.801x19.6x0.25	Pole	3.0%	Pass
155 - 150	Pole	TP22.002x20.801x0.25	Pole	7.4%	Pass
150 - 145	Pole	TP23.203x22.002x0.25	Pole	15.4%	Pass
145 - 140	Pole	TP24.404x23.203x0.25	Pole	22.1%	Pass
140 - 135	Pole	TP25.605x24.404x0.25	Pole	33.5%	Pass
135 - 130	Pole	TP26.806x25.605x0.25	Pole	42.5%	Pass
130 - 125	Pole	TP28.007x26.806x0.25	Pole	52.2%	Pass
125 - 120	Pole	TP29.208x28.007x0.25	Pole	60.8%	Pass
120 - 116	Pole	TP31.29x29.208x0.25	Pole	67.1%	Pass
116 - 111	Pole	TP30.867x29.669x0.3438	Pole	50.7%	Pass
111 - 106	Pole	TP32.065x30.867x0.3438	Pole	55.5%	Pass
106 - 101	Pole	TP33.263x32.065x0.3438	Pole	59.9%	Pass
101 - 96	Pole	TP34.461x33.263x0.3438	Pole	63.8%	Pass
96 - 91	Pole	TP35.659x34.461x0.3438	Pole	67.4%	Pass
91 - 86	Pole	TP36.857x35.659x0.3438	Pole	70.7%	Pass
86 - 85.75	Pole + Reinf.	TP36.917x36.857x0.5125	Reinf. 5 Tension Rupture	67.4%	Pass
85.75 - 81	Pole + Reinf.	TP38.055x36.917x0.5063	Reinf. 5 Tension Rupture	69.9%	Pass
81 - 80.75	Pole	TP38.115x38.055x0.3438	Pole	73.9%	Pass
80.75 - 80.5	Pole	TP38.175x38.115x0.3438	Pole	74.1%	Pass
80.5 - 79	Pole	TP39.912x38.175x0.3438	Pole	74.9%	Pass
79 - 72.25	Pole	TP39.467x37.847x0.4063	Pole	64.2%	Pass
72.25 - 67.25	Pole	TP40.667x39.467x0.4063	Pole	66.0%	Pass
67.25 - 62.25	Pole	TP41.867x40.667x0.4063	Pole	67.7%	Pass
62.25 - 57.25	Pole	TP43.067x41.867x0.4063	Pole	69.3%	Pass
57.25 - 52.25	Pole	TP44.268x43.067x0.4063	Pole	70.8%	Pass
52.25 - 49.83	Pole	TP44.848x44.268x0.4063	Pole	71.4%	Pass
49.83 - 49.58	Pole	TP44.908x44.848x0.4063	Pole	71.5%	Pass
49.58 - 44.58	Pole	TP46.109x44.908x0.4063	Pole	72.9%	Pass
44.58 - 43	Pole	TP48.088x46.109x0.4063	Pole	73.3%	Pass
43 - 35.33	Pole	TP47.516x45.675x0.4375	Pole	69.6%	Pass
35.33 - 32.25	Pole	TP48.256x47.516x0.4375	Pole	70.2%	Pass
32.25 - 32	Pole	TP48.317x48.256x0.4375	Pole	70.3%	Pass
32 - 27	Pole	TP49.517x48.317x0.4375	Pole	71.2%	Pass
27 - 22	Pole	TP50.718x49.517x0.4375	Pole	72.1%	Pass
22 - 17	Pole	TP51.918x50.718x0.4375	Pole	73.0%	Pass
17 - 15.5	Pole	TP52.278x51.918x0.4375	Pole	73.3%	Pass
15.5 - 15.25	Pole	TP52.338x52.278x0.4375	Pole	73.3%	Pass
15.25 - 14.75	Pole	TP52.458x52.338x0.4375	Pole	73.4%	Pass
14.75 - 14.5	Pole	TP52.518x52.458x0.4375	Pole	73.4%	Pass
14.5 - 9.5	Pole	TP53.719x52.518x0.4375	Pole	74.3%	Pass
9.5 - 4.5	Pole	TP54.92x53.719x0.4375	Pole	75.1%	Pass
4.5 - 0	Pole	TP56x54.92x0.4375	Pole	75.8%	Pass
				Summary	
			Pole	75.8%	Pass
			Reinforcement	69.9%	Pass
			Overall	75.8%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity* (100% Max. Allowable)					
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5
160 - 155	893	n/a	893	16.52	n/a	16.52	3.0%					
155 - 150	1059	n/a	1059	17.49	n/a	17.49	7.4%					
150 - 145	1244	n/a	1244	18.45	n/a	18.45	15.4%					
145 - 140	1450	n/a	1450	19.42	n/a	19.42	22.1%					
140 - 135	1677	n/a	1677	20.38	n/a	20.38	33.5%					
135 - 130	1927	n/a	1927	21.35	n/a	21.35	42.5%					
130 - 125	2200	n/a	2200	22.31	n/a	22.31	52.2%					
125 - 120	2499	n/a	2499	23.28	n/a	23.28	60.8%					
120 - 116	2756	n/a	2756	24.05	n/a	24.05	67.1%					
116 - 111	4023	n/a	4023	33.74	n/a	33.74	50.7%					
111 - 106	4516	n/a	4516	35.06	n/a	35.06	55.5%					
106 - 101	5047	n/a	5047	36.39	n/a	36.39	59.9%					
101 - 96	5618	n/a	5618	37.71	n/a	37.71	63.8%					
96 - 91	6231	n/a	6231	39.03	n/a	39.03	67.4%					
91 - 86	6887	n/a	6887	40.36	n/a	40.36	70.7%					
86 - 85.75	6921	3263	10183	40.42	18.00	58.42	46.6%					67.4%
85.75 - 81	7587	3460	11047	41.68	18.00	59.68	49.0%					69.9%
81 - 80.75	7623	n/a	7623	41.75	n/a	41.75	73.9%					
80.75 - 80.5	7660	n/a	7660	41.81	n/a	41.81	74.1%					
80.5 - 79	7880	n/a	7880	42.21	n/a	42.21	74.9%					
79 - 72.25	9964	n/a	9964	51.02	n/a	51.02	64.2%					
72.25 - 67.25	10911	n/a	10911	52.59	n/a	52.59	66.0%					
67.25 - 62.25	11916	n/a	11916	54.16	n/a	54.16	67.7%					
62.25 - 57.25	12981	n/a	12981	55.73	n/a	55.73	69.3%					
57.25 - 52.25	14108	n/a	14108	57.29	n/a	57.29	70.8%					
52.25 - 49.83	14676	n/a	14676	58.05	n/a	58.05	71.4%					
49.83 - 49.58	14735	n/a	14735	58.13	n/a	58.13	71.5%					
49.58 - 44.58	15960	n/a	15960	59.70	n/a	59.70	72.9%					
44.58 - 43	16361	n/a	16361	60.19	n/a	60.19	73.3%					
43 - 35.33	18788	n/a	18788	66.23	n/a	66.23	69.6%					
35.33 - 32.25	19688	n/a	19688	67.27	n/a	67.27	70.2%					
32.25 - 32	19762	n/a	19762	67.35	n/a	67.35	70.3%					
32 - 27	21287	n/a	21287	69.04	n/a	69.04	71.2%					
27 - 22	22887	n/a	22887	70.73	n/a	70.73	72.1%					
22 - 17	24566	n/a	24566	72.42	n/a	72.42	73.0%					
17 - 15.5	25085	n/a	25085	72.93	n/a	72.93	73.3%					
15.5 - 15.25	25172	n/a	25172	73.01	n/a	73.01	73.3%					
15.25 - 14.75	25348	n/a	25348	73.18	n/a	73.18	73.4%					
14.75 - 14.5	25435	n/a	25435	73.26	n/a	73.26	73.4%					
14.5 - 9.5	27235	n/a	27235	74.95	n/a	74.95	74.3%					
9.5 - 4.5	29118	n/a	29118	76.64	n/a	76.64	75.1%					
4.5 - 0	30885	n/a	30885	78.16	n/a	78.16	75.8%					

Note: Section capacity checked using 5 degree increments.

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

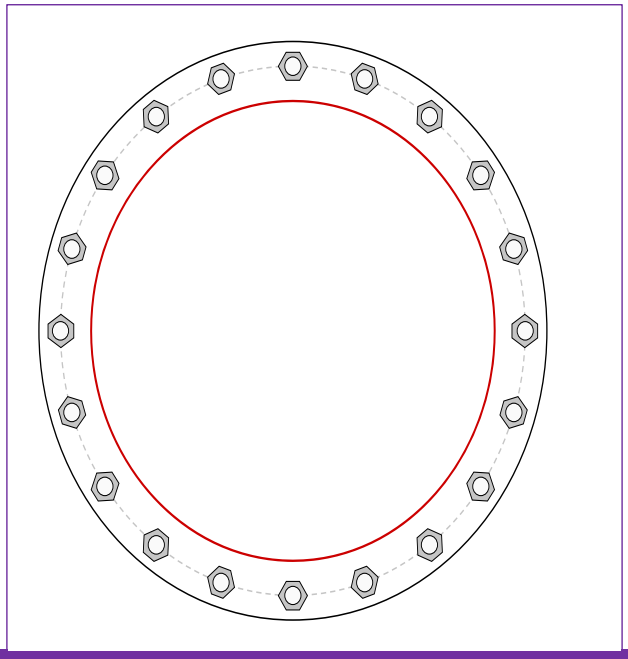
Monopole Base Plate Connection

Site Info	
BU #	806953
Site Name	BRG 2044 (A) 943097
Order #	618054 Rev. 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	1.0625

Applied Loads	
Moment (kip-ft)	4293.90
Axial Force (kips)	63.80
Shear Force (kips)	36.16

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

(20) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 64.48" BC

Base Plate Data

70.48" OD x 2.75" Plate (A633-60; Fy=60 ksi, Fu=80 ksi)

Stiffener Data

N/A

Pole Data

56" x 0.4375" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary		*(units of kips, kip-in)*
Pu_t = 156.55	ϕPn_t = 243.75	**Stress Rating**
Vu = 1.81	ϕVn = 149.1	**61.2%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary		
Max Stress (ksi):	25.1	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**44.3%**	**Pass**

Pier and Pad Foundation

BU # :	806953
Site Name:	BRG 2044 (A) 943(
App. Number:	618054 Rev. 0

TIA-222 Revision:	H
Tower Type:	Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp}:	63.8	kips
Base Shear, Vu_comp:	36.16	kips
Moment, M_u:	4293.9	ft-kips
Tower Height, **H**:	160	ft
BP Dist. Above Fdn, bp_{dist}:	6	in
Bolt Circle / Bearing Plate Width, **BC**:	64.48	in

Foundation Analysis Checks	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	195.69	36.16	**17.6%**	**Pass**
Bearing Pressure (ksf)	30.00	2.81	**9.4%**	**Pass**
*Overturning (kip*ft)*	6391.57	4492.78	**70.3%**	**Pass**
*Pad Flexure (kip*ft)*	8047.81	2213.25	**26.2%**	**Pass**
Pad Shear - 1-way (kips)	1630.75	260.25	**15.2%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.190	0.002	**1.2%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	6537.76	0.00	**0.0%**	**Pass**

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

Structural Rating*:	**26.2%**
Soil Rating*:	**70.3%**

Pad Properties		
Depth, **D**:	3.5	ft
Pad Width, W_1:	26	ft
Pad Thickness, **T**:	5	ft
Pad Rebar Size (Top dir.2), Sp_{top2}:	8	
Pad Rebar Quantity (Top dir. 2), mp_{top2}:	18	
Pad Rebar Size (Bottom dir. 2), Sp_2:	10	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	26	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties		
Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	4	ksi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties		
Total Soil Unit Weight, γ:	130	pcf
Ultimate Gross Bearing, Qult:	40.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	40	degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:	0.5	
Neglected Depth, **N**:	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	N/A	ft

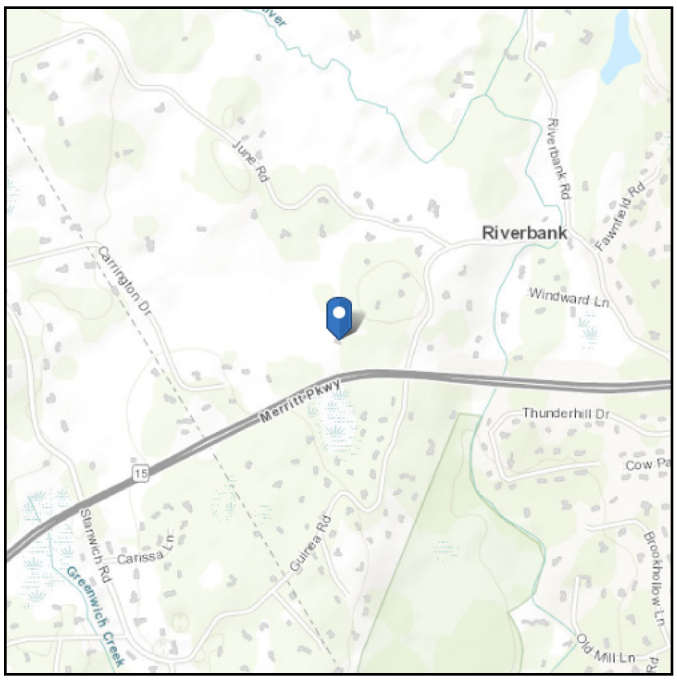
<--Toggle between Gross and Net

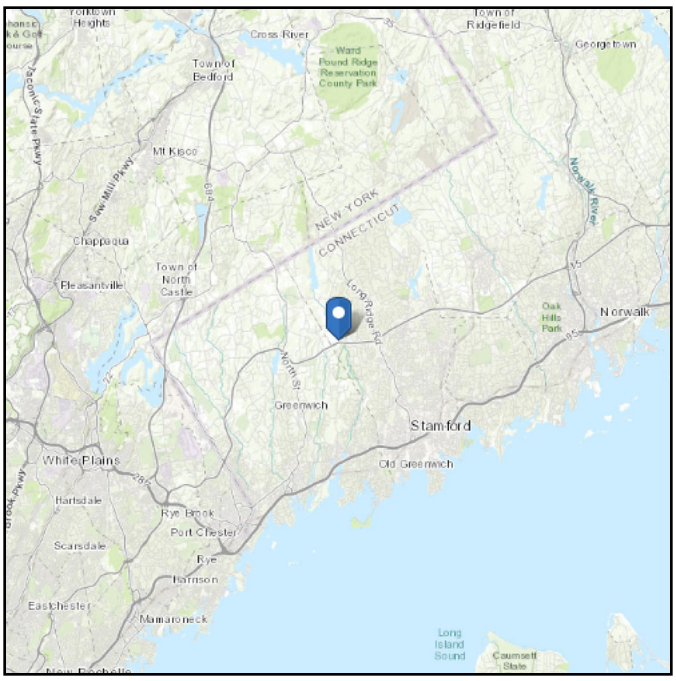
ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 246.84 ft (NAVD 88)
Latitude: 41.10175
Longitude: -73.594444





Wind

Results:

Wind Speed	~~117 Vmph~~ Vu = 120mph Per jurisdictional requirement
10-year MRI	76 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	97 Vmph

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

Date Accessed: Tue Jun 28 2022

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 7-10 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 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

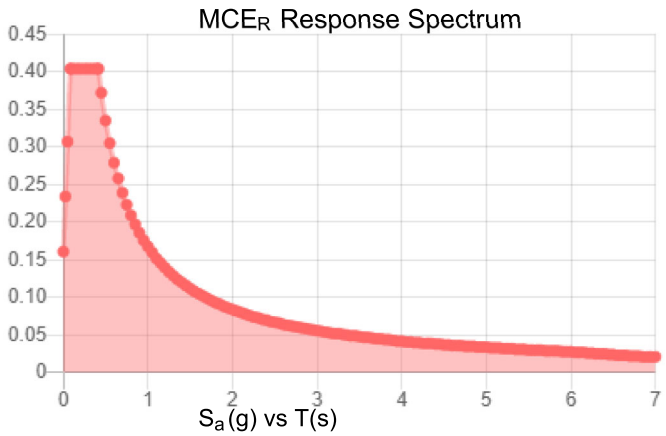
Seismic

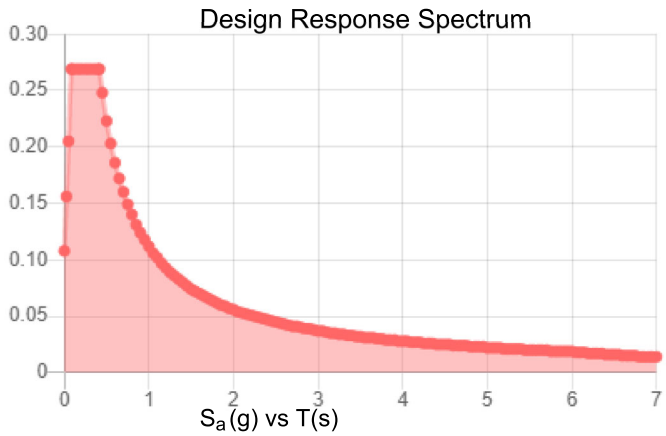
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.253	S_{DS} :	0.269
S_1 :	0.07	S_{D1} :	0.112
F_a :	1.598	T_L :	6
F_v :	2.4	PGA :	0.148
S_{MS} :	0.404	PGA_M :	0.222
S_{M1} :	0.168	F_{PGA} :	1.505
		I_e :	1

Seismic Design Category B





Data Accessed: Tue Jun 28 2022

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Tue Jun 28 2022

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 50-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.

Date: **August 23, 2022**

Infinigy
500 West Office Center Drive, Suite 150
Fort Washington, PA 19034
(518) 690-0790
structural@infinigy.com

Subject:	**Mount Analysis Report**	
Carrier Designation:	**T-Mobile Equipment Change Out**	
	Carrier Site Number:	CT11071E
	Carrier Site Name:	CT03XC344
Crown Castle Designation:	**Crown Castle BU Number:**	806953
	Crown Castle Site Name:	BRG 2044 (A) 943097
	Crown Castle JDE Job Number:	721030
	Crown Castle Order Number:	621042 Rev. 0
Engineering Firm Designation:	**Infinigy Report Designation:**	1039-Z0001-B
Site Data:	**69 Guinea Rd (Camp Rocky Craig), Stamford, Fairfield County, CT, 06903 Latitude 41°06'6.30" Longitude -73°35'40.00"**	
Structure Information:	**Tower Height & Type:**	**160.0 ft Monopole**
	Mount Elevation:	**157.0 ft**
	Mount Type:	**13.0 ft Platform**

Infinigy is pleased to submit this **"Mount Analysis Report"** to determine the structural integrity of T-Mobile's antenna mounting system with the proposed appurtenance and equipment addition on the abovementioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

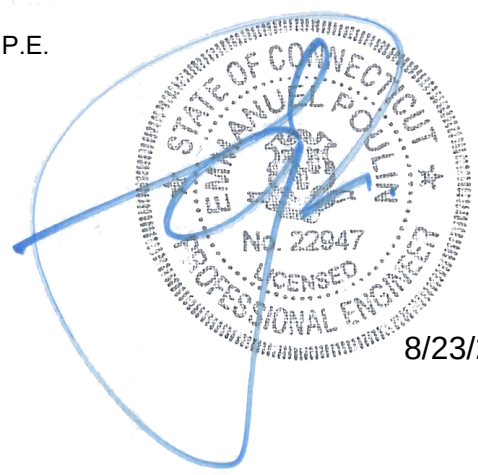
Platform **Sufficient**

This analysis utilizes an ultimate 3-second gust wind speed of 116 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Ian Geery

Respectfully Submitted by: Emmanuel Poulin, P.E.

structural@infinigy.com



8/23/22

TABLE OF CONTENTS

1) INTRODUCTION

This is an existing 3 sector 13.0 ft Platform.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC / 2018 Connecticut State Buildling Code
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	116 mph
Exposure Category:	B
Topographic Factor at Base:	1.00
Topographic Factor at Mount:	1.00
Ice Thickness:	0.75 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.253
Seismic S_1:	0.070
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
157.0	158.0	3	COMMSCOPE	VV-65B-R1_TMO	13.0 ft Platform
		3	ERICSSON	AIR 6419 B41_TMO	
		3	RFS/CELWAVE	APXVAALL24_43-U-NA20	
		3	ERICSSON	RADIO 4460 B2/B25 B66_TMO	
		3	ERICSSON	Radio 4480_TMOV2	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	T-Mobile Application	621042 Rev. 0	CCI Sites
Loading Document	T-Mobile	RFDS Version: 8	TSA
Previous Mount Analysis Report	Infinigy	10433109	CCI Sites

3.1) Analysis Method

RISA-3D (Version 20.0.2), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

Infinigy Mount Analysis Tool V2.3.2, a tool internally developed by Infinigy, was used to calculate wind loading on all appurtenances, dishes and mount members for various loading cases. Selected output from the analysis is included in Appendix B “Software Input Calculations”.

This analysis was performed in accordance with Crown Castle’s ENG-SOW-10208 *Mount Analysis* (Revision E).

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
3) 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.
4) The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
5) Prior structural modifications to the tower mounting system are assumed to be installed as shown per available data.
6) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM A500 (GR B-46)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

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

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity (Platform, All Sectors)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1,2	Horizontal(s)	HOR2	157.0	41.3	Pass
	Standoff(s)	S1		69.2	Pass
	Handrail(s)	HR2		40.9	Pass
	Mount Pipe(s)	MP8		54.8	Pass
	Platform Brace(s)	M29		5.9	Pass
	Handrail Brace(s)	M56		3.5	Pass
	Corner Plate(s)	M62		58.8	Pass
	Handrail Corner Plate(s)	M65		13.3	Pass
	Mount Connection(s)	--		57.8	Pass

Structure Rating (max from all components) =	69.2%

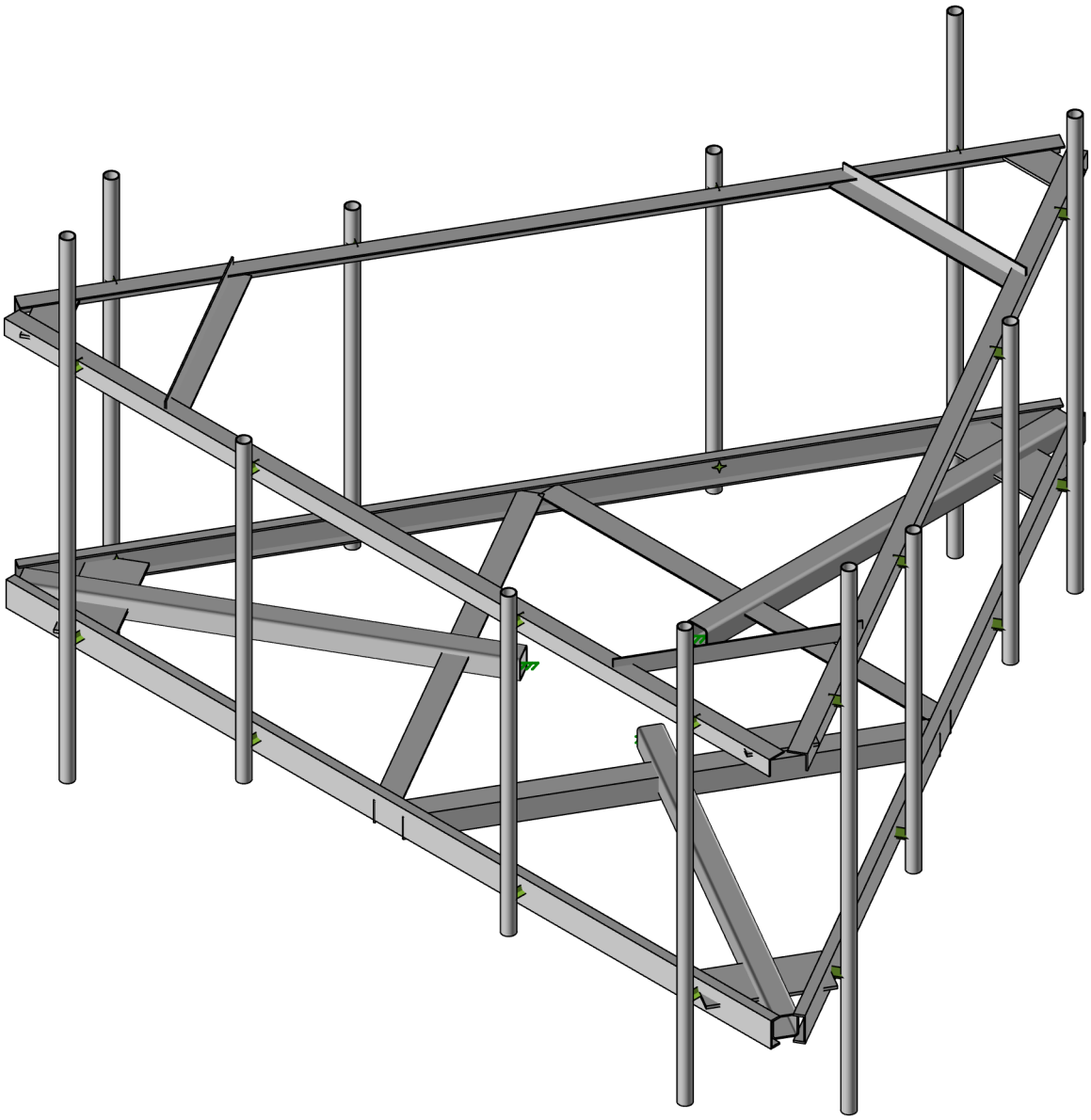
Notes:
1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
2) See additional documentation in “Appendix D – Additional Calculations” for detailed mount connection calculations.

4.1) Recommendations

The mount has sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

APPENDIX A

WIRE FRAME AND RENDERED MODELS



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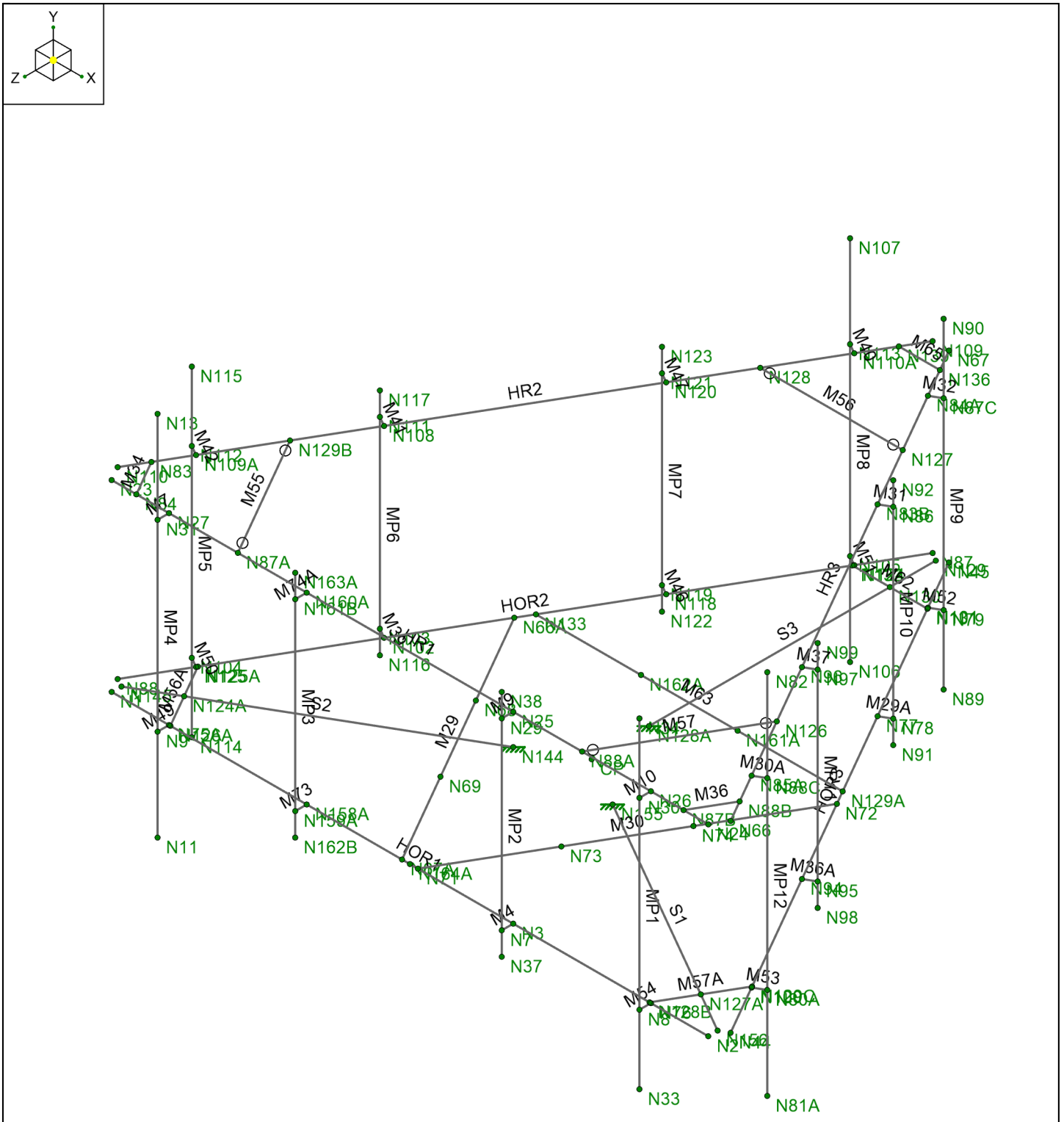

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APPENDIX B

SOFTWARE INPUT CALCULATIONS

Program Inputs

INFINIGY

Infinigy Load Calculator V2.3.2

PROJECT INFORMATION	
Site Name:	BRG 2044 (A) 943097
Carrier:	T-Mobile
Engineer:	Ian Geery

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	B	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil (Assumed)	
Ground Elevation:	246.84	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	157.00	ft
Tower Height AGL:	160.00	ft

TOPOGRAPHIC DATA		
Topo Feature:	N/A	
Slope Distance:	N/A	ft
Crest Distance:	N/A	ft
Crest Height:	N/A	ft

FACTORS		
Directionality Fact. (K_d):	0.950	
Ground Ele. Factor (K_e):	0.991	*Rev H Only
Rooftop Speed-Up (K_s):	1.000	*Rev H Only
Topographic Factor (K_{zt}):	1.000	
Height Esc. Fact. (K_{iz}):	1.169	
Gust Effect Factor (G_h):	1.000	
Shielding Factor (K_a):	0.900	
Velocity Pressure Co.(K_z):	1.124	(Mount Elev)

CODE STANDARDS		
Building Code:	2015 IBC	
TIA Standard:	TIA-222-H	
ASCE Standard:	ASCE 7-10	

WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	116	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	0.75	in
Radial Ice Thickness (t_{iz}):	0.877	in
Flat Pressure:	72.922	psf
Round Pressure:	43.753	psf
Ice Wind Pressure:	8.129	psf

SEISMIC DATA		
Short-Period Accel. (S_s):	0.253	g
1-Second Accel. (S_1):	0.070	g
Short-Period Design (S_{DS}):	0.269	
1-Second Design (S_{D1}):	0.112	
Short-Period Coeff. (F_a):	1.598	
1-Second Coeff. (F_v):	2.400	
Amplification Factor (A_s):	3.000	
Response Mod. Coeff. (R):	2.000	
Seismic Importance (I_e):	1.000	
Seismic Response Co. (C_s):	0.135	
Total App. Weight:	478.068	lb
Total Shear Force (V_s):	64.411	lb
Hor. Seismic Load (E_h):	64.411	lb
Vert. Seismic Load (E_v):	25.764	lb *

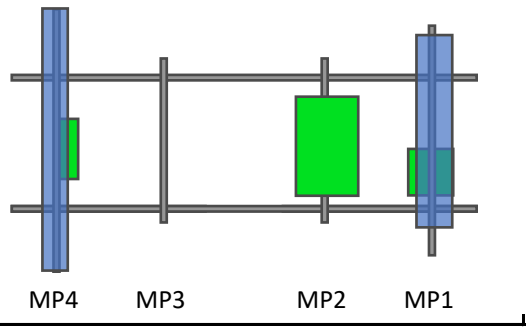
*For reference only. Per TIA rev H section 16.7, Ev is not applicable to mounts

Program Inputs

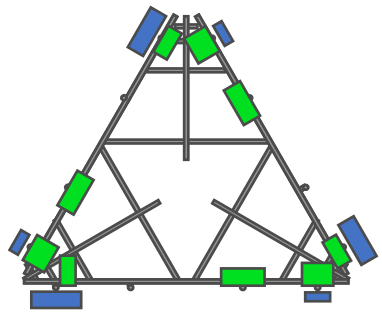
INFINIGY

Infinigy Load Calculator V2.3.2

ELEVATION VIEW



PLAN VIEW



APPURTENANCE INFORMATION

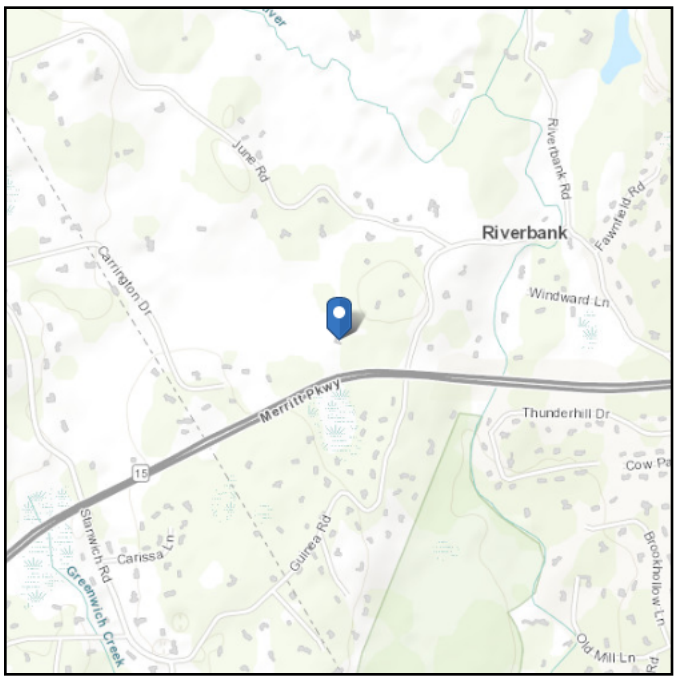
Appurtenance Name	Elevation	Qty.	Height (in)	Width (in)	Depth (in)	Weight (lbs)	EPA_N (ft^2)	EPA_T (ft^2)	Member (α sector)
COMMSCOPE VV-65B-R1_TMO	158.0	3	70.35	12.01	4.65	41.67	7.91	3.79	MP1
ERICSSON AIR 6419 B41_TMO	158.0	3	36.25	20.91	9.02	96.50	7.00	2.83	MP2
/CELWAVE APXVAALL24_43-U-NA20_TI	158.0	3	95.90	24.00	8.50	149.90	14.67	5.32	MP4
RICSSON RADIO 4460 B2/B25 B66_TMC	158.0	3	17.00	15.10	11.90	109.00	2.14	1.69	MP1
ERICSSON RADIO 4480_TMOV2	158.0	3	22.00	15.70	7.50	81.00	2.88	1.40	MP4

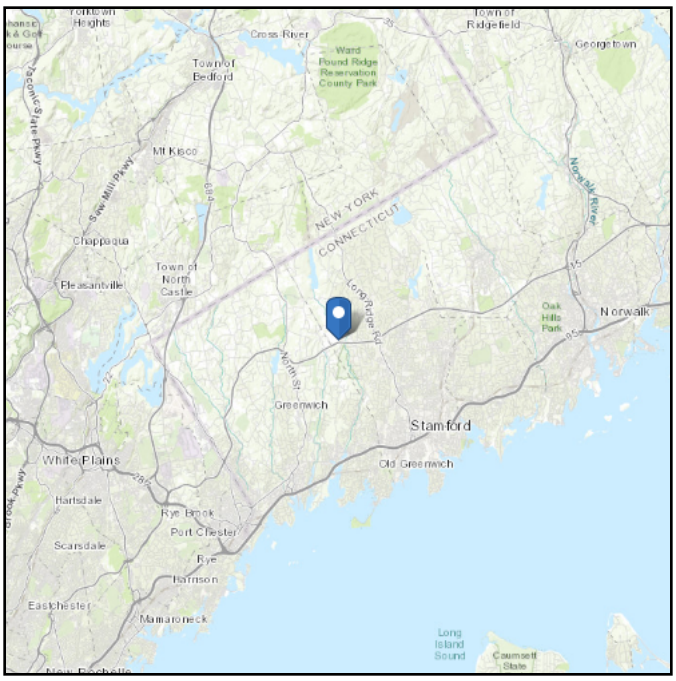
ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 246.84 ft (NAVD 88)
Latitude: 41.10175
Longitude: -73.594444





Wind

Results:

Wind Speed	116 Vmph per 2018 Connecticut State Building Code
10-year MRI	76 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	97 Vmph

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

Date Accessed: Thu Jun 23 2022

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 7-10 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 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

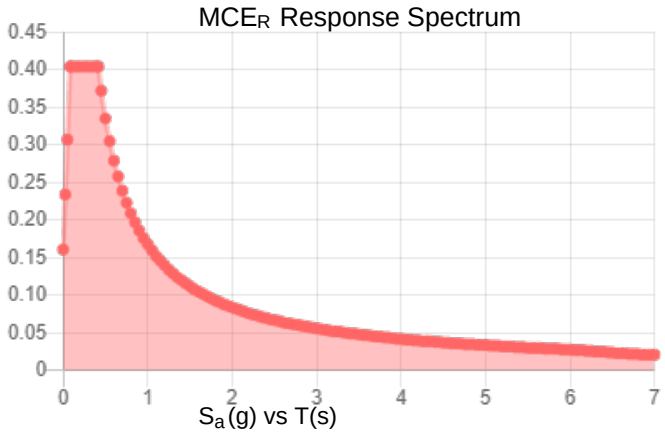
Seismic

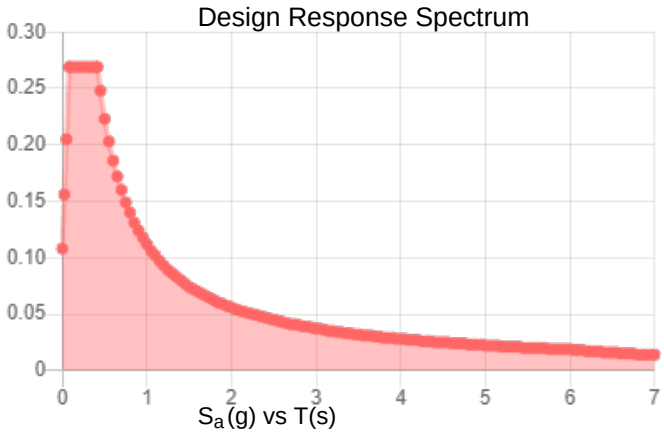
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.253	S_{DS} :	0.269
S_1 :	0.07	S_{D1} :	0.112
F_a :	1.598	T_L :	6
F_v :	2.4	PGA :	0.148
S_{MS} :	0.404	PGA_M :	0.222
S_{M1} :	0.168	F_{PGA} :	1.505
		I_e :	1

Seismic Design Category B





Data Accessed: **Thu Jun 23 2022**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Thu Jun 23 2022

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 50-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.

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Material Take-Off

	Material	Size	Pieces	Length[in]	Weight[K]
1	General Members				
2	RIGID		24	72	0
3	Total General		24	72	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	C5X6.7	3	468	0.261
7	A36 Gr.36	L3X3X4	6	579.8	0.237
8	A36 Gr.36	L4X4X4	3	240.6	0.132
9	A36 Gr.36	PL0.5X9_HRA	3	58.9	0.058
10	A36 Gr.36	PL6X.5	3	32.2	0.027
11	A500 Gr.B RECT	HSS4X4X4	3	225	0.231
12	A53 Gr.B	PIPE_2.0	12	900	0.26
13	Total HR Steel		33	2504.5	1.207

Node Coordinates

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
1	N1	0	0	0	
2	N2	156	0	0	
3	N3	105	0	0	
4	N7	105	0	3	
5	N8	141	0	3	
6	N9	15	0	3	
7	N11	15	-24	3	
8	N13	15	72	3	
9	N23	0	48	0	
10	N24	156	48	0	
11	N25	105	48	0	
12	N26	141	48	0	
13	N27	15	48	0	
14	N29	105	48	3	
15	N30	141	48	3	
16	N31	15	48	3	
17	N33	141	-18	3	
18	N34	141	66	3	
19	N37	105	-6	3	
20	N38	105	54	3	
21	CP	78	0	-47.5	
22	N44	158.136207	0	-3.700019	
23	N45	80.136207	0	-138.799981	
24	N66	158.136207	48	-3.700019	
25	N67	80.136207	48	-138.799981	
26	N87	75.863793	0	-138.799981	
27	N88	-2.136207	0	-3.700019	
28	N109	75.863793	48	-138.799981	
29	N110	-2.136207	48	-3.700019	
30	N128A	78	0	-62.5	
31	N129	78	0	-137.5	
32	N130	78	0	-125.5	
33	N131	87.814955	0	-125.5	
34	N132	68.185045	0	-125.5	
35	N129A	118.100308	0	-73.044229	
36	N133	37.899692	0	-73.044229	
37	N136	83.368257	48	-133.201905	
38	N139	72.631743	48	-133.201905	

Node Coordinates (Continued)

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
39	N144	65.009619	0	-40	
40	N145	0.057714	0	-2.5	
41	N155	90.990381	0	-40	
42	N156	155.942286	0	-2.5	
43	N161A	90.636207	0	-73.044229	
44	N162A	65.363793	0	-73.044229	
45	N158A	51	0	0	
46	N159A	51	0	3	
47	N160A	51	48	0	
48	N161B	51	48	3	
49	N162B	51	-6	3	
50	N163A	51	54	3	
51	N164A	78	0	0	
52	N87A	33	48	0	
53	N88A	123	48	0	
54	N83	1.095844	48	-9.298095	
55	N84	6.464102	48	0	
56	N87B	149.535898	48	0	
57	N88B	154.904156	48	-9.298095	
58	N66A	35.827895	0	-69.455771	
59	N67A	75.928203	0	0	
60	N68	49.559946	0	-45.671162	
61	N69	62.196152	0	-23.78461	
62	N71	80.071797	0	0	
63	N72	120.172105	0	-69.455771	
64	N73	93.803848	0	-23.78461	
65	N74	106.440054	0	-45.671162	
66	N75A	15	0	0	
67	N76	141	0	0	
68	N77	105.636207	0	-94.632686	
69	N78	108.234283	0	-96.132686	
70	N79	90.234283	0	-127.3096	
71	N80A	153.234283	0	-18.1904	
72	N81A	153.234283	-24	-18.1904	
73	N82	153.234283	72	-18.1904	
74	N83B	105.636207	48	-94.632686	
75	N84A	87.636207	48	-125.8096	
76	N85A	150.636207	48	-16.6904	
77	N86	108.234283	48	-96.132686	
78	N87C	90.234283	48	-127.3096	
79	N88C	153.234283	48	-18.1904	
80	N89	90.234283	-18	-127.3096	
81	N90	90.234283	66	-127.3096	
82	N91	108.234283	-6	-96.132686	
83	N92	108.234283	54	-96.132686	
84	N94	132.636207	0	-47.867314	
85	N95	135.234283	0	-49.367314	
86	N96	132.636207	48	-47.867314	
87	N97	135.234283	48	-49.367314	
88	N98	135.234283	-6	-49.367314	
89	N99	135.234283	54	-49.367314	
90	N100	150.636207	0	-16.6904	
91	N101	87.636207	0	-125.8096	
92	N102	23.363793	0	-47.867314	
93	N103	20.765717	0	-49.367314	

Node Coordinates (Continued)

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
94	N104	2.765717	0	-18.1904	
95	N105	65.765717	0	-127.3096	
96	N106	65.765717	-24	-127.3096	
97	N107	65.765717	72	-127.3096	
98	N108	23.363793	48	-47.867314	
99	N109A	5.363793	48	-16.6904	
100	N110A	68.363793	48	-125.8096	
101	N111	20.765717	48	-49.367314	
102	N112	2.765717	48	-18.1904	
103	N113	65.765717	48	-127.3096	
104	N114	2.765717	-18	-18.1904	
105	N115	2.765717	66	-18.1904	
106	N116	20.765717	-6	-49.367314	
107	N117	20.765717	54	-49.367314	
108	N118	50.363793	0	-94.632686	
109	N119	47.765717	0	-96.132686	
110	N120	50.363793	48	-94.632686	
111	N121	47.765717	48	-96.132686	
112	N122	47.765717	-6	-96.132686	
113	N123	47.765717	54	-96.132686	
114	N124	68.363793	0	-125.8096	
115	N125	5.363793	0	-16.6904	
116	N126	141.636207	48	-32.278857	
117	N127	96.636207	48	-110.221143	
118	N128	59.363793	48	-110.221143	
119	N129B	14.363793	48	-32.278857	
120	N124A	10.450019	0	-8.5	
121	N125A	5.542541	0	-17.	
122	N126A	15.357496	0	0	
123	N127A	145.549981	0	-8.5	
124	N128B	140.642504	0	0	
125	N129C	150.457459	0	-17.	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	N128A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N144	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N155	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Hot Rolled Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	2.9e+7	1.115e+7	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	2.9e+7	1.115e+7	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	2.9e+7	1.115e+7	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	2.9e+7	1.115e+7	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B RECT	2.9e+7	1.115e+7	0.3	0.65	0.527	46	1.4	58	1.3
6	A500 Gr.C RND	2.9e+7	1.115e+7	0.3	0.65	0.527	46	1.4	62	1.3
7	A500 Gr.C RECT	2.9e+7	1.115e+7	0.3	0.65	0.527	50	1.4	62	1.3
8	A53 Gr.B	2.9e+7	1.115e+7	0.3	0.65	0.49	35	1.6	60	1.2
9	A1085	2.9e+7	1.115e+7	0.3	0.65	0.49	50	1.4	65	1.3
10	A913 Gr.65	2.9e+7	1.115e+7	0.3	0.65	0.49	65	1.1	80	1.1

Cold Formed Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Yield [ksi]	Fu [ksi]
1	A653 SS Gr33	2.95e+7	1.135e+7	0.3	0.65	0.49	33	45
2	A653 SS Gr50/1	2.95e+7	1.135e+7	0.3	0.65	0.49	50	65

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	Horizontal	C5X6.7	Beam	Channel	A36 Gr.36	Typical	1.97	0.47	7.48	0.055
2	Standoff	HSS4X4X4	Beam	SquareTube	A500 Gr.B RECT	Typical	3.37	7.8	7.8	12.8
3	Handrail	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	0.031
4	Mount Pipe	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
5	Platform Brace	L4X4X4	Beam	Single Angle	A36 Gr.36	Typical	1.93	3	3	0.044
6	Handrail Brace	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	0.031
7	Corner Plate	PL0.5X9_HRA	Beam	RECT	A36 Gr.36	Typical	3.5	0.073	14.292	0.279
8	Handrail Corner Plate	PL6X.5	Beam	RECT	A36 Gr.36	Typical	3	0.062	9	0.237

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	CF1A	8CU1.25X057	Beam	None	A653 SS Gr33	Typical	0.581	0.057	4.41	0.00063

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	HOR1	N1	N2	180	Horizontal	Beam	Channel	A36 Gr.36	Typical
2	M4	N3	N7		RIGID	None	None	RIGID	Typical
3	HR1	N23	N24	180	Handrail	Beam	Single Angle	A36 Gr.36	Typical
4	M7	N27	N31		RIGID	None	None	RIGID	Typical
5	M9	N25	N29		RIGID	None	None	RIGID	Typical
6	M10	N26	N30		RIGID	None	None	RIGID	Typical
7	MP4	N13	N11		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
8	MP1	N34	N33		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
9	MP2	N38	N37		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
10	HOR3	N44	N45	180	Horizontal	Beam	Channel	A36 Gr.36	Typical
11	HR3	N66	N67	180	Handrail	Beam	Single Angle	A36 Gr.36	Typical
12	HOR2	N87	N88	180	Horizontal	Beam	Channel	A36 Gr.36	Typical
13	HR2	N109	N110	180	Handrail	Beam	Single Angle	A36 Gr.36	Typical
14	S3	N129	N128A		Standoff	Beam	SquareTube	A500 Gr.B RECT	Typical
15	M62	N132	N131	90	Corner Plate	Beam	RECT	A36 Gr.36	Typical
16	M63	N133	N129A	90	Platform Brace	Beam	Single Angle	A36 Gr.36	Typical
17	M65	N139	N136	90	Handrail Corner Plate	Beam	RECT	A36 Gr.36	Typical
18	S2	N145	N144		Standoff	Beam	SquareTube	A500 Gr.B RECT	Typical
19	S1	N156	N155		Standoff	Beam	SquareTube	A500 Gr.B RECT	Typical
20	M73	N158A	N159A		RIGID	None	None	RIGID	Typical
21	M74A	N160A	N161B		RIGID	None	None	RIGID	Typical
22	MP3	N163A	N162B		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
23	M34	N84	N83	90	Handrail Corner Plate	Beam	RECT	A36 Gr.36	Typical
24	M36	N88B	N87B	90	Handrail Corner Plate	Beam	RECT	A36 Gr.36	Typical
25	M29	N67A	N66A	90	Platform Brace	Beam	Single Angle	A36 Gr.36	Typical
26	M30	N72	N71	90	Platform Brace	Beam	Single Angle	A36 Gr.36	Typical
27	M29A	N77	N78		RIGID	None	None	RIGID	Typical
28	M30A	N85A	N88C		RIGID	None	None	RIGID	Typical
29	M31	N83B	N86		RIGID	None	None	RIGID	Typical
30	M32	N84A	N87C		RIGID	None	None	RIGID	Typical
31	MP12	N82	N81A		Mount Pipe	Column	Pipe	A53 Gr.B	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
32	MP9	N90	N89		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
33	MP10	N92	N91		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
34	M36A	N94	N95		RIGID	None	None	RIGID	Typical
35	M37	N96	N97		RIGID	None	None	RIGID	Typical
36	MP11	N99	N98		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
37	M39	N102	N103		RIGID	None	None	RIGID	Typical
38	M40	N110A	N113		RIGID	None	None	RIGID	Typical
39	M41	N108	N111		RIGID	None	None	RIGID	Typical
40	M42	N109A	N112		RIGID	None	None	RIGID	Typical
41	MP8	N107	N106		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
42	MP5	N115	N114		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
43	MP6	N117	N116		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
44	M46	N118	N119		RIGID	None	None	RIGID	Typical
45	M47	N120	N121		RIGID	None	None	RIGID	Typical
46	MP7	N123	N122		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
47	M49	N75A	N9		RIGID	None	None	RIGID	Typical
48	M50	N104	N125		RIGID	None	None	RIGID	Typical
49	M51	N105	N124		RIGID	None	None	RIGID	Typical
50	M52	N101	N79		RIGID	None	None	RIGID	Typical
51	M53	N100	N80A		RIGID	None	None	RIGID	Typical
52	M54	N76	N8		RIGID	None	None	RIGID	Typical
53	M55	N129B	N87A	270	Handrail Brace	Beam	Single Angle	A36 Gr.36	Typical
54	M56	N128	N127		Handrail Brace	Beam	Single Angle	A36 Gr.36	Typical
55	M57	N126	N88A		Handrail Brace	Beam	Single Angle	A36 Gr.36	Typical
56	M56A	N126A	N125A	90	Corner Plate	Beam	RECT	A36 Gr.36	Typical
57	M57A	N129C	N128B	90	Corner Plate	Beam	RECT	A36 Gr.36	Typical

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
1	HOR1			Yes	N/A	None
2	M4			Yes	** NA **	None
3	HR1			Yes	Default	None
4	M7			Yes	** NA **	None
5	M9			Yes	** NA **	None
6	M10			Yes	** NA **	None
7	MP4			Yes	** NA **	None
8	MP1			Yes	** NA **	None
9	MP2			Yes	** NA **	None
10	HOR3			Yes	N/A	None
11	HR3			Yes	Default	None
12	HOR2			Yes	N/A	None
13	HR2			Yes	Default	None
14	S3			Yes	N/A	None
15	M62			Yes	N/A	None
16	M63			Yes	N/A	None
17	M65			Yes	N/A	None
18	S2			Yes	N/A	None
19	S1			Yes	N/A	None
20	M73			Yes	** NA **	None
21	M74A			Yes	** NA **	None
22	MP3			Yes	** NA **	None
23	M34			Yes	N/A	None
24	M36			Yes	N/A	None
25	M29			Yes	N/A	None
26	M30			Yes	N/A	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
27	M29A			Yes	** NA **	None
28	M30A			Yes	** NA **	None
29	M31			Yes	** NA **	None
30	M32			Yes	** NA **	None
31	MP12			Yes	** NA **	None
32	MP9			Yes	** NA **	None
33	MP10			Yes	** NA **	None
34	M36A			Yes	** NA **	None
35	M37			Yes	** NA **	None
36	MP11			Yes	** NA **	None
37	M39			Yes	** NA **	None
38	M40			Yes	** NA **	None
39	M41			Yes	** NA **	None
40	M42			Yes	** NA **	None
41	MP8			Yes	** NA **	None
42	MP5			Yes	** NA **	None
43	MP6			Yes	** NA **	None
44	M46			Yes	** NA **	None
45	M47			Yes	** NA **	None
46	MP7			Yes	** NA **	None
47	M49			Yes	** NA **	None
48	M50			Yes	** NA **	None
49	M51			Yes	** NA **	None
50	M52			Yes	** NA **	None
51	M53			Yes	** NA **	None
52	M54			Yes	** NA **	None
53	M55	BenPIN	BenPIN	Yes	N/A	None
54	M56	BenPIN	BenPIN	Yes	N/A	None
55	M57	BenPIN	BenPIN	Yes	N/A	None
56	M56A			Yes	N/A	None
57	M57A			Yes	N/A	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	Lcomp bot [in]	L-Torque [in]	Channel Conn.	a [in]	Function
1	HOR1	Horizontal	156			Lbyy			N/A	N/A	Lateral
2	HR1	Handrail	156	Segment	Segment	Segment	Segment	Segment	N/A	N/A	Lateral
3	MP4	Mount Pipe	96						N/A	N/A	Lateral
4	MP1	Mount Pipe	84						N/A	N/A	Lateral
5	MP2	Mount Pipe	60						N/A	N/A	Lateral
6	HOR3	Horizontal	156			Lbyy			N/A	N/A	Lateral
7	HR3	Handrail	156	Segment	Segment	Segment	Segment	Segment	N/A	N/A	Lateral
8	HOR2	Horizontal	156			Lbyy			N/A	N/A	Lateral
9	HR2	Handrail	156	Segment	Segment	Segment	Segment	Segment	N/A	N/A	Lateral
10	S3	Standoff	75			Lbyy			N/A	N/A	Lateral
11	M62	Corner Plate	19.63			Lbyy			N/A	N/A	Lateral
12	M63	Platform Brace	80.201			Lbyy			N/A	N/A	Lateral
13	M65	Handrail Corner Plate	10.737			Lbyy			N/A	N/A	Lateral
14	S2	Standoff	75			Lbyy			N/A	N/A	Lateral
15	S1	Standoff	75			Lbyy			N/A	N/A	Lateral
16	MP3	Mount Pipe	60						N/A	N/A	Lateral
17	M34	Handrail Corner Plate	10.737			Lbyy			N/A	N/A	Lateral
18	M36	Handrail Corner Plate	10.737			Lbyy			N/A	N/A	Lateral
19	M29	Platform Brace	80.201			Lbyy			N/A	N/A	Lateral
20	M30	Platform Brace	80.201			Lbyy			N/A	N/A	Lateral
21	MP12	Mount Pipe	96						N/A	N/A	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	Lcomp bot [in]	L-Torque [in]	Channel Conn.	a [in]	Function
22	MP9	Mount Pipe	84						N/A	N/A	Lateral
23	MP10	Mount Pipe	60						N/A	N/A	Lateral
24	MP11	Mount Pipe	60						N/A	N/A	Lateral
25	MP8	Mount Pipe	96						N/A	N/A	Lateral
26	MP5	Mount Pipe	84						N/A	N/A	Lateral
27	MP6	Mount Pipe	60						N/A	N/A	Lateral
28	MP7	Mount Pipe	60						N/A	N/A	Lateral
29	M55	Handrail Brace	37.272			Lbyy			N/A	N/A	Lateral
30	M56	Handrail Brace	37.272			Lbyy			N/A	N/A	Lateral
31	M57	Handrail Brace	37.272			Lbyy			N/A	N/A	Lateral
32	M56A	Corner Plate	19.63			Lbyy			N/A	N/A	Lateral
33	M57A	Corner Plate	19.63			Lbyy			N/A	N/A	Lateral

Cold Formed Steel Design Parameters

No Data to Print...

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	Y	-20.834	6
2	MP1	Y	-20.834	64
3	MP2	Y	-48.25	6
4	MP2	Y	-48.25	30
5	MP4	Y	-74.95	0
6	MP4	Y	-74.95	%100
7	MP1	Y	-109	42
8	MP4	Y	-81	30
9	MP5	Y	-20.834	6
10	MP5	Y	-20.834	64
11	MP6	Y	-48.25	6
12	MP6	Y	-48.25	30
13	MP8	Y	-74.95	0
14	MP8	Y	-74.95	%100
15	MP5	Y	-109	42
16	MP8	Y	-81	30
17	MP9	Y	-20.834	6
18	MP9	Y	-20.834	64
19	MP10	Y	-48.25	6
20	MP10	Y	-48.25	30
21	MP12	Y	-74.95	0
22	MP12	Y	-74.95	%100
23	MP9	Y	-109	42
24	MP12	Y	-81	30

Member Point Loads (BLC 2 : Wind Load AZI 0)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	0	6
2	MP1	Z	-130.09	6
3	MP1	X	0	64
4	MP1	Z	-130.09	64
5	MP2	X	0	6
6	MP2	Z	-115.06	6
7	MP2	X	0	30
8	MP2	Z	-115.06	30

Member Point Loads (BLC 2 : Wind Load AZI 0) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
9	MP4	X	0	0
10	MP4	Z	-241.13	0
11	MP4	X	0	%100
12	MP4	Z	-241.13	%100
13	MP1	X	0	42
14	MP1	Z	-70.32	42
15	MP4	X	0	30
16	MP4	Z	-94.62	30
17	MP5	X	0	6
18	MP5	Z	-79.29	6
19	MP5	X	0	64
20	MP5	Z	-79.29	64
21	MP6	X	0	6
22	MP6	Z	-63.65	6
23	MP6	X	0	30
24	MP6	Z	-63.65	30
25	MP8	X	0	0
26	MP8	Z	-125.87	0
27	MP8	X	0	%100
28	MP8	Z	-125.87	%100
29	MP5	X	0	42
30	MP5	Z	-59.15	42
31	MP8	X	0	30
32	MP8	Z	-58.1	30
33	MP9	X	0	6
34	MP9	Z	-79.29	6
35	MP9	X	0	64
36	MP9	Z	-79.29	64
37	MP10	X	0	6
38	MP10	Z	-63.65	6
39	MP10	X	0	30
40	MP10	Z	-63.65	30
41	MP12	X	0	0
42	MP12	Z	-125.87	0
43	MP12	X	0	%100
44	MP12	Z	-125.87	%100
45	MP9	X	0	42
46	MP9	Z	-59.15	42
47	MP12	X	0	30
48	MP12	Z	-58.1	30

Member Point Loads (BLC 3 : Wind Load AZI 30)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	-56.58	6
2	MP1	Z	-98	6
3	MP1	X	-56.58	64
4	MP1	Z	-98	64
5	MP2	X	-48.96	6
6	MP2	Z	-84.81	6
7	MP2	X	-48.96	30
8	MP2	Z	-84.81	30
9	MP4	X	-101.36	0
10	MP4	Z	-175.55	0
11	MP4	X	-101.36	%100
12	MP4	Z	-175.55	%100

Member Point Loads (BLC 3 : Wind Load AZI 30) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
13	MP1	X	-33.3	42
14	MP1	Z	-57.68	42
15	MP4	X	-41.22	30
16	MP4	Z	-71.4	30
17	MP5	X	-56.58	6
18	MP5	Z	-98	6
19	MP5	X	-56.58	64
20	MP5	Z	-98	64
21	MP6	X	-48.96	6
22	MP6	Z	-84.81	6
23	MP6	X	-48.96	30
24	MP6	Z	-84.81	30
25	MP8	X	-101.36	0
26	MP8	Z	-175.55	0
27	MP8	X	-101.36	%100
28	MP8	Z	-175.55	%100
29	MP5	X	-33.3	42
30	MP5	Z	-57.68	42
31	MP8	X	-41.22	30
32	MP8	Z	-71.4	30
33	MP9	X	-31.18	6
34	MP9	Z	-54.01	6
35	MP9	X	-31.18	64
36	MP9	Z	-54.01	64
37	MP10	X	-23.26	6
38	MP10	Z	-40.29	6
39	MP10	X	-23.26	30
40	MP10	Z	-40.29	30
41	MP12	X	-43.72	0
42	MP12	Z	-75.73	0
43	MP12	X	-43.72	%100
44	MP12	Z	-75.73	%100
45	MP9	X	-27.71	42
46	MP9	Z	-48	42
47	MP12	X	-22.96	30
48	MP12	Z	-39.77	30

Member Point Loads (BLC 4 : Wind Load AZI 60)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	-68.67	6
2	MP1	Z	-39.65	6
3	MP1	X	-68.67	64
4	MP1	Z	-39.65	64
5	MP2	X	-55.13	6
6	MP2	Z	-31.83	6
7	MP2	X	-55.13	30
8	MP2	Z	-31.83	30
9	MP4	X	-109.01	0
10	MP4	Z	-62.93	0
11	MP4	X	-109.01	%100
12	MP4	Z	-62.93	%100
13	MP1	X	-51.22	42
14	MP1	Z	-29.57	42
15	MP4	X	-50.32	30
16	MP4	Z	-29.05	30

Member Point Loads (BLC 4 : Wind Load AZI 60) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
17	MP5	X	-112.66	6
18	MP5	Z	-65.04	6
19	MP5	X	-112.66	64
20	MP5	Z	-65.04	64
21	MP6	X	-99.65	6
22	MP6	Z	-57.53	6
23	MP6	X	-99.65	30
24	MP6	Z	-57.53	30
25	MP8	X	-208.83	0
26	MP8	Z	-120.57	0
27	MP8	X	-208.83	%100
28	MP8	Z	-120.57	%100
29	MP5	X	-60.9	42
30	MP5	Z	-35.16	42
31	MP8	X	-81.95	30
32	MP8	Z	-47.31	30
33	MP9	X	-68.67	6
34	MP9	Z	-39.65	6
35	MP9	X	-68.67	64
36	MP9	Z	-39.65	64
37	MP10	X	-55.13	6
38	MP10	Z	-31.83	6
39	MP10	X	-55.13	30
40	MP10	Z	-31.83	30
41	MP12	X	-109.01	0
42	MP12	Z	-62.93	0
43	MP12	X	-109.01	%100
44	MP12	Z	-62.93	%100
45	MP9	X	-51.22	42
46	MP9	Z	-29.57	42
47	MP12	X	-50.32	30
48	MP12	Z	-29.05	30

Member Point Loads (BLC 5 : Wind Load AZI 90)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	-62.36	6
2	MP1	Z	0	6
3	MP1	X	-62.36	64
4	MP1	Z	0	64
5	MP2	X	-46.52	6
6	MP2	Z	0	6
7	MP2	X	-46.52	30
8	MP2	Z	0	30
9	MP4	X	-87.45	0
10	MP4	Z	0	0
11	MP4	X	-87.45	%100
12	MP4	Z	0	%100
13	MP1	X	-55.42	42
14	MP1	Z	0	42
15	MP4	X	-45.93	30
16	MP4	Z	0	30
17	MP5	X	-113.16	6
18	MP5	Z	0	6
19	MP5	X	-113.16	64
20	MP5	Z	0	64

Member Point Loads (BLC 5 : Wind Load AZI 90) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
21	MP6	X	-97.92	6
22	MP6	Z	0	6
23	MP6	X	-97.92	30
24	MP6	Z	0	30
25	MP8	X	-202.71	0
26	MP8	Z	0	0
27	MP8	X	-202.71	%100
28	MP8	Z	0	%100
29	MP5	X	-66.6	42
30	MP5	Z	0	42
31	MP8	X	-82.45	30
32	MP8	Z	0	30
33	MP9	X	-113.16	6
34	MP9	Z	0	6
35	MP9	X	-113.16	64
36	MP9	Z	0	64
37	MP10	X	-97.92	6
38	MP10	Z	0	6
39	MP10	X	-97.92	30
40	MP10	Z	0	30
41	MP12	X	-202.71	0
42	MP12	Z	0	0
43	MP12	X	-202.71	%100
44	MP12	Z	0	%100
45	MP9	X	-66.6	42
46	MP9	Z	0	42
47	MP12	X	-82.45	30
48	MP12	Z	0	30

Member Point Loads (BLC 6 : Wind Load AZI 120)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	-68.67	6
2	MP1	Z	39.65	6
3	MP1	X	-68.67	64
4	MP1	Z	39.65	64
5	MP2	X	-55.13	6
6	MP2	Z	31.83	6
7	MP2	X	-55.13	30
8	MP2	Z	31.83	30
9	MP4	X	-109.01	0
10	MP4	Z	62.93	0
11	MP4	X	-109.01	%100
12	MP4	Z	62.93	%100
13	MP1	X	-51.22	42
14	MP1	Z	29.57	42
15	MP4	X	-50.32	30
16	MP4	Z	29.05	30
17	MP5	X	-68.67	6
18	MP5	Z	39.65	6
19	MP5	X	-68.67	64
20	MP5	Z	39.65	64
21	MP6	X	-55.13	6
22	MP6	Z	31.83	6
23	MP6	X	-55.13	30
24	MP6	Z	31.83	30

Member Point Loads (BLC 6 : Wind Load AZI 120) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
25	MP8	X	-109.01	0
26	MP8	Z	62.93	0
27	MP8	X	-109.01	%100
28	MP8	Z	62.93	%100
29	MP5	X	-51.22	42
30	MP5	Z	29.57	42
31	MP8	X	-50.32	30
32	MP8	Z	29.05	30
33	MP9	X	-112.66	6
34	MP9	Z	65.04	6
35	MP9	X	-112.66	64
36	MP9	Z	65.04	64
37	MP10	X	-99.65	6
38	MP10	Z	57.53	6
39	MP10	X	-99.65	30
40	MP10	Z	57.53	30
41	MP12	X	-208.83	0
42	MP12	Z	120.57	0
43	MP12	X	-208.83	%100
44	MP12	Z	120.57	%100
45	MP9	X	-60.9	42
46	MP9	Z	35.16	42
47	MP12	X	-81.95	30
48	MP12	Z	47.31	30

Member Point Loads (BLC 7 : Wind Load AZI 150)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	-56.58	6
2	MP1	Z	98	6
3	MP1	X	-56.58	64
4	MP1	Z	98	64
5	MP2	X	-48.96	6
6	MP2	Z	84.81	6
7	MP2	X	-48.96	30
8	MP2	Z	84.81	30
9	MP4	X	-101.36	0
10	MP4	Z	175.55	0
11	MP4	X	-101.36	%100
12	MP4	Z	175.55	%100
13	MP1	X	-33.3	42
14	MP1	Z	57.68	42
15	MP4	X	-41.22	30
16	MP4	Z	71.4	30
17	MP5	X	-31.18	6
18	MP5	Z	54.01	6
19	MP5	X	-31.18	64
20	MP5	Z	54.01	64
21	MP6	X	-23.26	6
22	MP6	Z	40.29	6
23	MP6	X	-23.26	30
24	MP6	Z	40.29	30
25	MP8	X	-43.72	0
26	MP8	Z	75.73	0
27	MP8	X	-43.72	%100
28	MP8	Z	75.73	%100

Member Point Loads (BLC 7 : Wind Load AZI 150) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
29	MP5	X	-27.71	42
30	MP5	Z	48	42
31	MP8	X	-22.96	30
32	MP8	Z	39.77	30
33	MP9	X	-56.58	6
34	MP9	Z	98	6
35	MP9	X	-56.58	64
36	MP9	Z	98	64
37	MP10	X	-48.96	6
38	MP10	Z	84.81	6
39	MP10	X	-48.96	30
40	MP10	Z	84.81	30
41	MP12	X	-101.36	0
42	MP12	Z	175.55	0
43	MP12	X	-101.36	%100
44	MP12	Z	175.55	%100
45	MP9	X	-33.3	42
46	MP9	Z	57.68	42
47	MP12	X	-41.22	30
48	MP12	Z	71.4	30

Member Point Loads (BLC 8 : Wind Load AZI 180)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	0	6
2	MP1	Z	130.09	6
3	MP1	X	0	64
4	MP1	Z	130.09	64
5	MP2	X	0	6
6	MP2	Z	115.06	6
7	MP2	X	0	30
8	MP2	Z	115.06	30
9	MP4	X	0	0
10	MP4	Z	241.13	0
11	MP4	X	0	%100
12	MP4	Z	241.13	%100
13	MP1	X	0	42
14	MP1	Z	70.32	42
15	MP4	X	0	30
16	MP4	Z	94.62	30
17	MP5	X	0	6
18	MP5	Z	79.29	6
19	MP5	X	0	64
20	MP5	Z	79.29	64
21	MP6	X	0	6
22	MP6	Z	63.65	6
23	MP6	X	0	30
24	MP6	Z	63.65	30
25	MP8	X	0	0
26	MP8	Z	125.87	0
27	MP8	X	0	%100
28	MP8	Z	125.87	%100
29	MP5	X	0	42
30	MP5	Z	59.15	42
31	MP8	X	0	30
32	MP8	Z	58.1	30

Member Point Loads (BLC 8 : Wind Load AZI 180) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
33	MP9	X	0	6
34	MP9	Z	79.29	6
35	MP9	X	0	64
36	MP9	Z	79.29	64
37	MP10	X	0	6
38	MP10	Z	63.65	6
39	MP10	X	0	30
40	MP10	Z	63.65	30
41	MP12	X	0	0
42	MP12	Z	125.87	0
43	MP12	X	0	%100
44	MP12	Z	125.87	%100
45	MP9	X	0	42
46	MP9	Z	59.15	42
47	MP12	X	0	30
48	MP12	Z	58.1	30

Member Point Loads (BLC 9 : Wind Load AZI 210)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	56.58	6
2	MP1	Z	98	6
3	MP1	X	56.58	64
4	MP1	Z	98	64
5	MP2	X	48.96	6
6	MP2	Z	84.81	6
7	MP2	X	48.96	30
8	MP2	Z	84.81	30
9	MP4	X	101.36	0
10	MP4	Z	175.55	0
11	MP4	X	101.36	%100
12	MP4	Z	175.55	%100
13	MP1	X	33.3	42
14	MP1	Z	57.68	42
15	MP4	X	41.22	30
16	MP4	Z	71.4	30
17	MP5	X	56.58	6
18	MP5	Z	98	6
19	MP5	X	56.58	64
20	MP5	Z	98	64
21	MP6	X	48.96	6
22	MP6	Z	84.81	6
23	MP6	X	48.96	30
24	MP6	Z	84.81	30
25	MP8	X	101.36	0
26	MP8	Z	175.55	0
27	MP8	X	101.36	%100
28	MP8	Z	175.55	%100
29	MP5	X	33.3	42
30	MP5	Z	57.68	42
31	MP8	X	41.22	30
32	MP8	Z	71.4	30
33	MP9	X	31.18	6
34	MP9	Z	54.01	6
35	MP9	X	31.18	64
36	MP9	Z	54.01	64

Member Point Loads (BLC 9 : Wind Load AZI 210) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
37	MP10	X	23.26	6
38	MP10	Z	40.29	6
39	MP10	X	23.26	30
40	MP10	Z	40.29	30
41	MP12	X	43.72	0
42	MP12	Z	75.73	0
43	MP12	X	43.72	%100
44	MP12	Z	75.73	%100
45	MP9	X	27.71	42
46	MP9	Z	48	42
47	MP12	X	22.96	30
48	MP12	Z	39.77	30

Member Point Loads (BLC 10 : Wind Load AZI 240)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	68.67	6
2	MP1	Z	39.65	6
3	MP1	X	68.67	64
4	MP1	Z	39.65	64
5	MP2	X	55.13	6
6	MP2	Z	31.83	6
7	MP2	X	55.13	30
8	MP2	Z	31.83	30
9	MP4	X	109.01	0
10	MP4	Z	62.93	0
11	MP4	X	109.01	%100
12	MP4	Z	62.93	%100
13	MP1	X	51.22	42
14	MP1	Z	29.57	42
15	MP4	X	50.32	30
16	MP4	Z	29.05	30
17	MP5	X	112.66	6
18	MP5	Z	65.04	6
19	MP5	X	112.66	64
20	MP5	Z	65.04	64
21	MP6	X	99.65	6
22	MP6	Z	57.53	6
23	MP6	X	99.65	30
24	MP6	Z	57.53	30
25	MP8	X	208.83	0
26	MP8	Z	120.57	0
27	MP8	X	208.83	%100
28	MP8	Z	120.57	%100
29	MP5	X	60.9	42
30	MP5	Z	35.16	42
31	MP8	X	81.95	30
32	MP8	Z	47.31	30
33	MP9	X	68.67	6
34	MP9	Z	39.65	6
35	MP9	X	68.67	64
36	MP9	Z	39.65	64
37	MP10	X	55.13	6
38	MP10	Z	31.83	6
39	MP10	X	55.13	30
40	MP10	Z	31.83	30

Member Point Loads (BLC 10 : Wind Load AZI 240) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
41	MP12	X	109.01	0
42	MP12	Z	62.93	0
43	MP12	X	109.01	%100
44	MP12	Z	62.93	%100
45	MP9	X	51.22	42
46	MP9	Z	29.57	42
47	MP12	X	50.32	30
48	MP12	Z	29.05	30

Member Point Loads (BLC 11 : Wind Load AZI 270)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	62.36	6
2	MP1	Z	0	6
3	MP1	X	62.36	64
4	MP1	Z	0	64
5	MP2	X	46.52	6
6	MP2	Z	0	6
7	MP2	X	46.52	30
8	MP2	Z	0	30
9	MP4	X	87.45	0
10	MP4	Z	0	0
11	MP4	X	87.45	%100
12	MP4	Z	0	%100
13	MP1	X	55.42	42
14	MP1	Z	0	42
15	MP4	X	45.93	30
16	MP4	Z	0	30
17	MP5	X	113.16	6
18	MP5	Z	0	6
19	MP5	X	113.16	64
20	MP5	Z	0	64
21	MP6	X	97.92	6
22	MP6	Z	0	6
23	MP6	X	97.92	30
24	MP6	Z	0	30
25	MP8	X	202.71	0
26	MP8	Z	0	0
27	MP8	X	202.71	%100
28	MP8	Z	0	%100
29	MP5	X	66.6	42
30	MP5	Z	0	42
31	MP8	X	82.45	30
32	MP8	Z	0	30
33	MP9	X	113.16	6
34	MP9	Z	0	6
35	MP9	X	113.16	64
36	MP9	Z	0	64
37	MP10	X	97.92	6
38	MP10	Z	0	6
39	MP10	X	97.92	30
40	MP10	Z	0	30
41	MP12	X	202.71	0
42	MP12	Z	0	0
43	MP12	X	202.71	%100
44	MP12	Z	0	%100

Member Point Loads (BLC 11 : Wind Load AZI 270) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
45	MP9	X	66.6	42
46	MP9	Z	0	42
47	MP12	X	82.45	30
48	MP12	Z	0	30

Member Point Loads (BLC 12 : Wind Load AZI 300)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	68.67	6
2	MP1	Z	-39.65	6
3	MP1	X	68.67	64
4	MP1	Z	-39.65	64
5	MP2	X	55.13	6
6	MP2	Z	-31.83	6
7	MP2	X	55.13	30
8	MP2	Z	-31.83	30
9	MP4	X	109.01	0
10	MP4	Z	-62.93	0
11	MP4	X	109.01	%100
12	MP4	Z	-62.93	%100
13	MP1	X	51.22	42
14	MP1	Z	-29.57	42
15	MP4	X	50.32	30
16	MP4	Z	-29.05	30
17	MP5	X	68.67	6
18	MP5	Z	-39.65	6
19	MP5	X	68.67	64
20	MP5	Z	-39.65	64
21	MP6	X	55.13	6
22	MP6	Z	-31.83	6
23	MP6	X	55.13	30
24	MP6	Z	-31.83	30
25	MP8	X	109.01	0
26	MP8	Z	-62.93	0
27	MP8	X	109.01	%100
28	MP8	Z	-62.93	%100
29	MP5	X	51.22	42
30	MP5	Z	-29.57	42
31	MP8	X	50.32	30
32	MP8	Z	-29.05	30
33	MP9	X	112.66	6
34	MP9	Z	-65.04	6
35	MP9	X	112.66	64
36	MP9	Z	-65.04	64
37	MP10	X	99.65	6
38	MP10	Z	-57.53	6
39	MP10	X	99.65	30
40	MP10	Z	-57.53	30
41	MP12	X	208.83	0
42	MP12	Z	-120.57	0
43	MP12	X	208.83	%100
44	MP12	Z	-120.57	%100
45	MP9	X	60.9	42
46	MP9	Z	-35.16	42
47	MP12	X	81.95	30
48	MP12	Z	-47.31	30

Member Point Loads (BLC 13 : Wind Load AZI 330)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	56.58	6
2	MP1	Z	-98	6
3	MP1	X	56.58	64
4	MP1	Z	-98	64
5	MP2	X	48.96	6
6	MP2	Z	-84.81	6
7	MP2	X	48.96	30
8	MP2	Z	-84.81	30
9	MP4	X	101.36	0
10	MP4	Z	-175.55	0
11	MP4	X	101.36	%100
12	MP4	Z	-175.55	%100
13	MP1	X	33.3	42
14	MP1	Z	-57.68	42
15	MP4	X	41.22	30
16	MP4	Z	-71.4	30
17	MP5	X	31.18	6
18	MP5	Z	-54.01	6
19	MP5	X	31.18	64
20	MP5	Z	-54.01	64
21	MP6	X	23.26	6
22	MP6	Z	-40.29	6
23	MP6	X	23.26	30
24	MP6	Z	-40.29	30
25	MP8	X	43.72	0
26	MP8	Z	-75.73	0
27	MP8	X	43.72	%100
28	MP8	Z	-75.73	%100
29	MP5	X	27.71	42
30	MP5	Z	-48	42
31	MP8	X	22.96	30
32	MP8	Z	-39.77	30
33	MP9	X	56.58	6
34	MP9	Z	-98	6
35	MP9	X	56.58	64
36	MP9	Z	-98	64
37	MP10	X	48.96	6
38	MP10	Z	-84.81	6
39	MP10	X	48.96	30
40	MP10	Z	-84.81	30
41	MP12	X	101.36	0
42	MP12	Z	-175.55	0
43	MP12	X	101.36	%100
44	MP12	Z	-175.55	%100
45	MP9	X	33.3	42
46	MP9	Z	-57.68	42
47	MP12	X	41.22	30
48	MP12	Z	-71.4	30

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	Y	-39.312	6
2	MP1	Y	-39.312	64
3	MP2	Y	-39.591	6

Member Point Loads (BLC 16 : Ice Weight) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
4	MP2	Y	-39.591	30
5	MP4	Y	-100.887	0
6	MP4	Y	-100.887	%100
7	MP1	Y	-40.875	42
8	MP4	Y	-40.395	30
9	MP5	Y	-39.312	6
10	MP5	Y	-39.312	64
11	MP6	Y	-39.591	6
12	MP6	Y	-39.591	30
13	MP8	Y	-100.887	0
14	MP8	Y	-100.887	%100
15	MP5	Y	-40.875	42
16	MP8	Y	-40.395	30
17	MP9	Y	-39.312	6
18	MP9	Y	-39.312	64
19	MP10	Y	-39.591	6
20	MP10	Y	-39.591	30
21	MP12	Y	-100.887	0
22	MP12	Y	-100.887	%100
23	MP9	Y	-40.875	42
24	MP12	Y	-40.395	30

Member Point Loads (BLC 17 : Ice Wind Load AZI 0)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	0	6
2	MP1	Z	-13.2	6
3	MP1	X	0	64
4	MP1	Z	-13.2	64
5	MP2	X	0	6
6	MP2	Z	-9.13	6
7	MP2	X	0	30
8	MP2	Z	-9.13	30
9	MP4	X	0	0
10	MP4	Z	-28.2	0
11	MP4	X	0	%100
12	MP4	Z	-28.2	%100
13	MP1	X	0	42
14	MP1	Z	-6.87	42
15	MP4	X	0	30
16	MP4	Z	-8.86	30
17	MP5	X	0	6
18	MP5	Z	-9.87	6
19	MP5	X	0	64
20	MP5	Z	-9.87	64
21	MP6	X	0	6
22	MP6	Z	-6.58	6
23	MP6	X	0	30
24	MP6	Z	-6.58	30
25	MP8	X	0	0
26	MP8	Z	-19.68	0
27	MP8	X	0	%100
28	MP8	Z	-19.68	%100
29	MP5	X	0	42
30	MP5	Z	-6.34	42
31	MP8	X	0	30

Member Point Loads (BLC 17 : Ice Wind Load AZI 0) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
32	MP8	Z	-7.02	30
33	MP9	X	0	6
34	MP9	Z	-9.87	6
35	MP9	X	0	64
36	MP9	Z	-9.87	64
37	MP10	X	0	6
38	MP10	Z	-6.58	6
39	MP10	X	0	30
40	MP10	Z	-6.58	30
41	MP12	X	0	0
42	MP12	Z	-19.68	0
43	MP12	X	0	%100
44	MP12	Z	-19.68	%100
45	MP9	X	0	42
46	MP9	Z	-6.34	42
47	MP12	X	0	30
48	MP12	Z	-7.02	30

Member Point Loads (BLC 18 : Ice Wind Load AZI 30)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	-6.04	6
2	MP1	Z	-10.47	6
3	MP1	X	-6.04	64
4	MP1	Z	-10.47	64
5	MP2	X	-4.14	6
6	MP2	Z	-7.17	6
7	MP2	X	-4.14	30
8	MP2	Z	-7.17	30
9	MP4	X	-12.68	0
10	MP4	Z	-21.96	0
11	MP4	X	-12.68	%100
12	MP4	Z	-21.96	%100
13	MP1	X	-3.35	42
14	MP1	Z	-5.8	42
15	MP4	X	-4.13	30
16	MP4	Z	-7.15	30
17	MP5	X	-6.04	6
18	MP5	Z	-10.47	6
19	MP5	X	-6.04	64
20	MP5	Z	-10.47	64
21	MP6	X	-4.14	6
22	MP6	Z	-7.17	6
23	MP6	X	-4.14	30
24	MP6	Z	-7.17	30
25	MP8	X	-12.68	0
26	MP8	Z	-21.96	0
27	MP8	X	-12.68	%100
28	MP8	Z	-21.96	%100
29	MP5	X	-3.35	42
30	MP5	Z	-5.8	42
31	MP8	X	-4.13	30
32	MP8	Z	-7.15	30
33	MP9	X	-4.38	6
34	MP9	Z	-7.58	6
35	MP9	X	-4.38	64

Member Point Loads (BLC 18 : Ice Wind Load AZI 30) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
36	MP9	Z	-7.58	64
37	MP10	X	-2.87	6
38	MP10	Z	-4.96	6
39	MP10	X	-2.87	30
40	MP10	Z	-4.96	30
41	MP12	X	-8.42	0
42	MP12	Z	-14.58	0
43	MP12	X	-8.42	%100
44	MP12	Z	-14.58	%100
45	MP9	X	-3.08	42
46	MP9	Z	-5.34	42
47	MP12	X	-3.2	30
48	MP12	Z	-5.55	30

Member Point Loads (BLC 19 : Ice Wind Load AZI 60)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	-8.55	6
2	MP1	Z	-4.93	6
3	MP1	X	-8.55	64
4	MP1	Z	-4.93	64
5	MP2	X	-5.7	6
6	MP2	Z	-3.29	6
7	MP2	X	-5.7	30
8	MP2	Z	-3.29	30
9	MP4	X	-17.04	0
10	MP4	Z	-9.84	0
11	MP4	X	-17.04	%100
12	MP4	Z	-9.84	%100
13	MP1	X	-5.49	42
14	MP1	Z	-3.17	42
15	MP4	X	-6.08	30
16	MP4	Z	-3.51	30
17	MP5	X	-11.43	6
18	MP5	Z	-6.6	6
19	MP5	X	-11.43	64
20	MP5	Z	-6.6	64
21	MP6	X	-7.91	6
22	MP6	Z	-4.57	6
23	MP6	X	-7.91	30
24	MP6	Z	-4.57	30
25	MP8	X	-24.42	0
26	MP8	Z	-14.1	0
27	MP8	X	-24.42	%100
28	MP8	Z	-14.1	%100
29	MP5	X	-5.95	42
30	MP5	Z	-3.44	42
31	MP8	X	-7.68	30
32	MP8	Z	-4.43	30
33	MP9	X	-8.55	6
34	MP9	Z	-4.93	6
35	MP9	X	-8.55	64
36	MP9	Z	-4.93	64
37	MP10	X	-5.7	6
38	MP10	Z	-3.29	6
39	MP10	X	-5.7	30

Member Point Loads (BLC 19 : Ice Wind Load AZI 60) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
40	MP10	Z	-3.29	30
41	MP12	X	-17.04	0
42	MP12	Z	-9.84	0
43	MP12	X	-17.04	%100
44	MP12	Z	-9.84	%100
45	MP9	X	-5.49	42
46	MP9	Z	-3.17	42
47	MP12	X	-6.08	30
48	MP12	Z	-3.51	30

Member Point Loads (BLC 20 : Ice Wind Load AZI 90)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	-8.76	6
2	MP1	Z	0	6
3	MP1	X	-8.76	64
4	MP1	Z	0	64
5	MP2	X	-5.73	6
6	MP2	Z	0	6
7	MP2	X	-5.73	30
8	MP2	Z	0	30
9	MP4	X	-16.84	0
10	MP4	Z	0	0
11	MP4	X	-16.84	%100
12	MP4	Z	0	%100
13	MP1	X	-6.17	42
14	MP1	Z	0	42
15	MP4	X	-6.41	30
16	MP4	Z	0	30
17	MP5	X	-12.09	6
18	MP5	Z	0	6
19	MP5	X	-12.09	64
20	MP5	Z	0	64
21	MP6	X	-8.28	6
22	MP6	Z	0	6
23	MP6	X	-8.28	30
24	MP6	Z	0	30
25	MP8	X	-25.36	0
26	MP8	Z	0	0
27	MP8	X	-25.36	%100
28	MP8	Z	0	%100
29	MP5	X	-6.7	42
30	MP5	Z	0	42
31	MP8	X	-8.25	30
32	MP8	Z	0	30
33	MP9	X	-12.09	6
34	MP9	Z	0	6
35	MP9	X	-12.09	64
36	MP9	Z	0	64
37	MP10	X	-8.28	6
38	MP10	Z	0	6
39	MP10	X	-8.28	30
40	MP10	Z	0	30
41	MP12	X	-25.36	0
42	MP12	Z	0	0
43	MP12	X	-25.36	%100

Member Point Loads (BLC 20 : Ice Wind Load AZI 90) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
44	MP12	Z	0	%100
45	MP9	X	-6.7	42
46	MP9	Z	0	42
47	MP12	X	-8.25	30
48	MP12	Z	0	30

Member Point Loads (BLC 21 : Ice Wind Load AZI 120)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	-8.55	6
2	MP1	Z	4.93	6
3	MP1	X	-8.55	64
4	MP1	Z	4.93	64
5	MP2	X	-5.7	6
6	MP2	Z	3.29	6
7	MP2	X	-5.7	30
8	MP2	Z	3.29	30
9	MP4	X	-17.04	0
10	MP4	Z	9.84	0
11	MP4	X	-17.04	%100
12	MP4	Z	9.84	%100
13	MP1	X	-5.49	42
14	MP1	Z	3.17	42
15	MP4	X	-6.08	30
16	MP4	Z	3.51	30
17	MP5	X	-8.55	6
18	MP5	Z	4.93	6
19	MP5	X	-8.55	64
20	MP5	Z	4.93	64
21	MP6	X	-5.7	6
22	MP6	Z	3.29	6
23	MP6	X	-5.7	30
24	MP6	Z	3.29	30
25	MP8	X	-17.04	0
26	MP8	Z	9.84	0
27	MP8	X	-17.04	%100
28	MP8	Z	9.84	%100
29	MP5	X	-5.49	42
30	MP5	Z	3.17	42
31	MP8	X	-6.08	30
32	MP8	Z	3.51	30
33	MP9	X	-11.43	6
34	MP9	Z	6.6	6
35	MP9	X	-11.43	64
36	MP9	Z	6.6	64
37	MP10	X	-7.91	6
38	MP10	Z	4.57	6
39	MP10	X	-7.91	30
40	MP10	Z	4.57	30
41	MP12	X	-24.42	0
42	MP12	Z	14.1	0
43	MP12	X	-24.42	%100
44	MP12	Z	14.1	%100
45	MP9	X	-5.95	42
46	MP9	Z	3.44	42
47	MP12	X	-7.68	30

Member Point Loads (BLC 21 : Ice Wind Load AZI 120) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
48	MP12	Z	4.43	30

Member Point Loads (BLC 22 : Ice Wind Load AZI 150)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	-6.04	6
2	MP1	Z	10.47	6
3	MP1	X	-6.04	64
4	MP1	Z	10.47	64
5	MP2	X	-4.14	6
6	MP2	Z	7.17	6
7	MP2	X	-4.14	30
8	MP2	Z	7.17	30
9	MP4	X	-12.68	0
10	MP4	Z	21.96	0
11	MP4	X	-12.68	%100
12	MP4	Z	21.96	%100
13	MP1	X	-3.35	42
14	MP1	Z	5.8	42
15	MP4	X	-4.13	30
16	MP4	Z	7.15	30
17	MP5	X	-4.38	6
18	MP5	Z	7.58	6
19	MP5	X	-4.38	64
20	MP5	Z	7.58	64
21	MP6	X	-2.87	6
22	MP6	Z	4.96	6
23	MP6	X	-2.87	30
24	MP6	Z	4.96	30
25	MP8	X	-8.42	0
26	MP8	Z	14.58	0
27	MP8	X	-8.42	%100
28	MP8	Z	14.58	%100
29	MP5	X	-3.08	42
30	MP5	Z	5.34	42
31	MP8	X	-3.2	30
32	MP8	Z	5.55	30
33	MP9	X	-6.04	6
34	MP9	Z	10.47	6
35	MP9	X	-6.04	64
36	MP9	Z	10.47	64
37	MP10	X	-4.14	6
38	MP10	Z	7.17	6
39	MP10	X	-4.14	30
40	MP10	Z	7.17	30
41	MP12	X	-12.68	0
42	MP12	Z	21.96	0
43	MP12	X	-12.68	%100
44	MP12	Z	21.96	%100
45	MP9	X	-3.35	42
46	MP9	Z	5.8	42
47	MP12	X	-4.13	30
48	MP12	Z	7.15	30

Member Point Loads (BLC 23 : Ice Wind Load AZI 180)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	0	6
2	MP1	Z	13.2	6
3	MP1	X	0	64
4	MP1	Z	13.2	64
5	MP2	X	0	6
6	MP2	Z	9.13	6
7	MP2	X	0	30
8	MP2	Z	9.13	30
9	MP4	X	0	0
10	MP4	Z	28.2	0
11	MP4	X	0	%100
12	MP4	Z	28.2	%100
13	MP1	X	0	42
14	MP1	Z	6.87	42
15	MP4	X	0	30
16	MP4	Z	8.86	30
17	MP5	X	0	6
18	MP5	Z	9.87	6
19	MP5	X	0	64
20	MP5	Z	9.87	64
21	MP6	X	0	6
22	MP6	Z	6.58	6
23	MP6	X	0	30
24	MP6	Z	6.58	30
25	MP8	X	0	0
26	MP8	Z	19.68	0
27	MP8	X	0	%100
28	MP8	Z	19.68	%100
29	MP5	X	0	42
30	MP5	Z	6.34	42
31	MP8	X	0	30
32	MP8	Z	7.02	30
33	MP9	X	0	6
34	MP9	Z	9.87	6
35	MP9	X	0	64
36	MP9	Z	9.87	64
37	MP10	X	0	6
38	MP10	Z	6.58	6
39	MP10	X	0	30
40	MP10	Z	6.58	30
41	MP12	X	0	0
42	MP12	Z	19.68	0
43	MP12	X	0	%100
44	MP12	Z	19.68	%100
45	MP9	X	0	42
46	MP9	Z	6.34	42
47	MP12	X	0	30
48	MP12	Z	7.02	30

Member Point Loads (BLC 24 : Ice Wind Load AZI 210)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	6.04	6
2	MP1	Z	10.47	6
3	MP1	X	6.04	64

Member Point Loads (BLC 24 : Ice Wind Load AZI 210) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
4	MP1	Z	10.47	64
5	MP2	X	4.14	6
6	MP2	Z	7.17	6
7	MP2	X	4.14	30
8	MP2	Z	7.17	30
9	MP4	X	12.68	0
10	MP4	Z	21.96	0
11	MP4	X	12.68	%100
12	MP4	Z	21.96	%100
13	MP1	X	3.35	42
14	MP1	Z	5.8	42
15	MP4	X	4.13	30
16	MP4	Z	7.15	30
17	MP5	X	6.04	6
18	MP5	Z	10.47	6
19	MP5	X	6.04	64
20	MP5	Z	10.47	64
21	MP6	X	4.14	6
22	MP6	Z	7.17	6
23	MP6	X	4.14	30
24	MP6	Z	7.17	30
25	MP8	X	12.68	0
26	MP8	Z	21.96	0
27	MP8	X	12.68	%100
28	MP8	Z	21.96	%100
29	MP5	X	3.35	42
30	MP5	Z	5.8	42
31	MP8	X	4.13	30
32	MP8	Z	7.15	30
33	MP9	X	4.38	6
34	MP9	Z	7.58	6
35	MP9	X	4.38	64
36	MP9	Z	7.58	64
37	MP10	X	2.87	6
38	MP10	Z	4.96	6
39	MP10	X	2.87	30
40	MP10	Z	4.96	30
41	MP12	X	8.42	0
42	MP12	Z	14.58	0
43	MP12	X	8.42	%100
44	MP12	Z	14.58	%100
45	MP9	X	3.08	42
46	MP9	Z	5.34	42
47	MP12	X	3.2	30
48	MP12	Z	5.55	30

Member Point Loads (BLC 25 : Ice Wind Load AZI 240)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	8.55	6
2	MP1	Z	4.93	6
3	MP1	X	8.55	64
4	MP1	Z	4.93	64
5	MP2	X	5.7	6
6	MP2	Z	3.29	6
7	MP2	X	5.7	30

Member Point Loads (BLC 25 : Ice Wind Load AZI 240) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
8	MP2	Z	3.29	30
9	MP4	X	17.04	0
10	MP4	Z	9.84	0
11	MP4	X	17.04	%100
12	MP4	Z	9.84	%100
13	MP1	X	5.49	42
14	MP1	Z	3.17	42
15	MP4	X	6.08	30
16	MP4	Z	3.51	30
17	MP5	X	11.43	6
18	MP5	Z	6.6	6
19	MP5	X	11.43	64
20	MP5	Z	6.6	64
21	MP6	X	7.91	6
22	MP6	Z	4.57	6
23	MP6	X	7.91	30
24	MP6	Z	4.57	30
25	MP8	X	24.42	0
26	MP8	Z	14.1	0
27	MP8	X	24.42	%100
28	MP8	Z	14.1	%100
29	MP5	X	5.95	42
30	MP5	Z	3.44	42
31	MP8	X	7.68	30
32	MP8	Z	4.43	30
33	MP9	X	8.55	6
34	MP9	Z	4.93	6
35	MP9	X	8.55	64
36	MP9	Z	4.93	64
37	MP10	X	5.7	6
38	MP10	Z	3.29	6
39	MP10	X	5.7	30
40	MP10	Z	3.29	30
41	MP12	X	17.04	0
42	MP12	Z	9.84	0
43	MP12	X	17.04	%100
44	MP12	Z	9.84	%100
45	MP9	X	5.49	42
46	MP9	Z	3.17	42
47	MP12	X	6.08	30
48	MP12	Z	3.51	30

Member Point Loads (BLC 26 : Ice Wind Load AZI 270)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	8.76	6
2	MP1	Z	0	6
3	MP1	X	8.76	64
4	MP1	Z	0	64
5	MP2	X	5.73	6
6	MP2	Z	0	6
7	MP2	X	5.73	30
8	MP2	Z	0	30
9	MP4	X	16.84	0
10	MP4	Z	0	0
11	MP4	X	16.84	%100

Member Point Loads (BLC 26 : Ice Wind Load AZI 270) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
12	MP4	Z	0	%100
13	MP1	X	6.17	42
14	MP1	Z	0	42
15	MP4	X	6.41	30
16	MP4	Z	0	30
17	MP5	X	12.09	6
18	MP5	Z	0	6
19	MP5	X	12.09	64
20	MP5	Z	0	64
21	MP6	X	8.28	6
22	MP6	Z	0	6
23	MP6	X	8.28	30
24	MP6	Z	0	30
25	MP8	X	25.36	0
26	MP8	Z	0	0
27	MP8	X	25.36	%100
28	MP8	Z	0	%100
29	MP5	X	6.7	42
30	MP5	Z	0	42
31	MP8	X	8.25	30
32	MP8	Z	0	30
33	MP9	X	12.09	6
34	MP9	Z	0	6
35	MP9	X	12.09	64
36	MP9	Z	0	64
37	MP10	X	8.28	6
38	MP10	Z	0	6
39	MP10	X	8.28	30
40	MP10	Z	0	30
41	MP12	X	25.36	0
42	MP12	Z	0	0
43	MP12	X	25.36	%100
44	MP12	Z	0	%100
45	MP9	X	6.7	42
46	MP9	Z	0	42
47	MP12	X	8.25	30
48	MP12	Z	0	30

Member Point Loads (BLC 27 : Ice Wind Load AZI 300)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	8.55	6
2	MP1	Z	-4.93	6
3	MP1	X	8.55	64
4	MP1	Z	-4.93	64
5	MP2	X	5.7	6
6	MP2	Z	-3.29	6
7	MP2	X	5.7	30
8	MP2	Z	-3.29	30
9	MP4	X	17.04	0
10	MP4	Z	-9.84	0
11	MP4	X	17.04	%100
12	MP4	Z	-9.84	%100
13	MP1	X	5.49	42
14	MP1	Z	-3.17	42
15	MP4	X	6.08	30

Member Point Loads (BLC 27 : Ice Wind Load AZI 300) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
16	MP4	Z	-3.51	30
17	MP5	X	8.55	6
18	MP5	Z	-4.93	6
19	MP5	X	8.55	64
20	MP5	Z	-4.93	64
21	MP6	X	5.7	6
22	MP6	Z	-3.29	6
23	MP6	X	5.7	30
24	MP6	Z	-3.29	30
25	MP8	X	17.04	0
26	MP8	Z	-9.84	0
27	MP8	X	17.04	%100
28	MP8	Z	-9.84	%100
29	MP5	X	5.49	42
30	MP5	Z	-3.17	42
31	MP8	X	6.08	30
32	MP8	Z	-3.51	30
33	MP9	X	11.43	6
34	MP9	Z	-6.6	6
35	MP9	X	11.43	64
36	MP9	Z	-6.6	64
37	MP10	X	7.91	6
38	MP10	Z	-4.57	6
39	MP10	X	7.91	30
40	MP10	Z	-4.57	30
41	MP12	X	24.42	0
42	MP12	Z	-14.1	0
43	MP12	X	24.42	%100
44	MP12	Z	-14.1	%100
45	MP9	X	5.95	42
46	MP9	Z	-3.44	42
47	MP12	X	7.68	30
48	MP12	Z	-4.43	30

Member Point Loads (BLC 28 : Ice Wind Load AZI 330)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	6.04	6
2	MP1	Z	-10.47	6
3	MP1	X	6.04	64
4	MP1	Z	-10.47	64
5	MP2	X	4.14	6
6	MP2	Z	-7.17	6
7	MP2	X	4.14	30
8	MP2	Z	-7.17	30
9	MP4	X	12.68	0
10	MP4	Z	-21.96	0
11	MP4	X	12.68	%100
12	MP4	Z	-21.96	%100
13	MP1	X	3.35	42
14	MP1	Z	-5.8	42
15	MP4	X	4.13	30
16	MP4	Z	-7.15	30
17	MP5	X	4.38	6
18	MP5	Z	-7.58	6
19	MP5	X	4.38	64

Member Point Loads (BLC 28 : Ice Wind Load AZI 330) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
20	MP5	Z	-7.58	64
21	MP6	X	2.87	6
22	MP6	Z	-4.96	6
23	MP6	X	2.87	30
24	MP6	Z	-4.96	30
25	MP8	X	8.42	0
26	MP8	Z	-14.58	0
27	MP8	X	8.42	%100
28	MP8	Z	-14.58	%100
29	MP5	X	3.08	42
30	MP5	Z	-5.34	42
31	MP8	X	3.2	30
32	MP8	Z	-5.55	30
33	MP9	X	6.04	6
34	MP9	Z	-10.47	6
35	MP9	X	6.04	64
36	MP9	Z	-10.47	64
37	MP10	X	4.14	6
38	MP10	Z	-7.17	6
39	MP10	X	4.14	30
40	MP10	Z	-7.17	30
41	MP12	X	12.68	0
42	MP12	Z	-21.96	0
43	MP12	X	12.68	%100
44	MP12	Z	-21.96	%100
45	MP9	X	3.35	42
46	MP9	Z	-5.8	42
47	MP12	X	4.13	30
48	MP12	Z	-7.15	30

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	Z	-8.421	6
2	MP1	Z	-8.421	64
3	MP2	Z	-19.502	6
4	MP2	Z	-19.502	30
5	MP4	Z	-30.294	0
6	MP4	Z	-30.294	%100
7	MP1	Z	-44.057	42
8	MP4	Z	-32.74	30
9	MP5	Z	-8.421	6
10	MP5	Z	-8.421	64
11	MP6	Z	-19.502	6
12	MP6	Z	-19.502	30
13	MP8	Z	-30.294	0
14	MP8	Z	-30.294	%100
15	MP5	Z	-44.057	42
16	MP8	Z	-32.74	30
17	MP9	Z	-8.421	6
18	MP9	Z	-8.421	64
19	MP10	Z	-19.502	6
20	MP10	Z	-19.502	30
21	MP12	Z	-30.294	0
22	MP12	Z	-30.294	%100
23	MP9	Z	-44.057	42

Member Point Loads (BLC 31 : Seismic Load Z) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
24	MP12	Z	-32.74	30

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP1	X	-8.421	6
2	MP1	X	-8.421	64
3	MP2	X	-19.502	6
4	MP2	X	-19.502	30
5	MP4	X	-30.294	0
6	MP4	X	-30.294	%100
7	MP1	X	-44.057	42
8	MP4	X	-32.74	30
9	MP5	X	-8.421	6
10	MP5	X	-8.421	64
11	MP6	X	-19.502	6
12	MP6	X	-19.502	30
13	MP8	X	-30.294	0
14	MP8	X	-30.294	%100
15	MP5	X	-44.057	42
16	MP8	X	-32.74	30
17	MP9	X	-8.421	6
18	MP9	X	-8.421	64
19	MP10	X	-19.502	6
20	MP10	X	-19.502	30
21	MP12	X	-30.294	0
22	MP12	X	-30.294	%100
23	MP9	X	-44.057	42
24	MP12	X	-32.74	30

Member Distributed Loads (BLC 14 : Distr. Wind Load Z)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	HOR1	SZ	-72.922	-72.922	0	%100
2	M4	SZ	0	0	0	%100
3	HR1	SZ	-72.922	-72.922	0	%100
4	M7	SZ	0	0	0	%100
5	M9	SZ	0	0	0	%100
6	M10	SZ	0	0	0	%100
7	MP4	SZ	-43.753	-43.753	0	%100
8	MP1	SZ	-43.753	-43.753	0	%100
9	MP2	SZ	-43.753	-43.753	0	%100
10	HOR3	SZ	-72.922	-72.922	0	%100
11	HR3	SZ	-72.922	-72.922	0	%100
12	HOR2	SZ	-72.922	-72.922	0	%100
13	HR2	SZ	-72.922	-72.922	0	%100
14	S3	SZ	-72.922	-72.922	0	%100
15	M62	SZ	-72.922	-72.922	0	%100
16	M63	SZ	-72.922	-72.922	0	%100
17	M65	SZ	-72.922	-72.922	0	%100
18	S2	SZ	-72.922	-72.922	0	%100
19	S1	SZ	-72.922	-72.922	0	%100
20	M73	SZ	0	0	0	%100
21	M74A	SZ	0	0	0	%100
22	MP3	SZ	-43.753	-43.753	0	%100

Member Distributed Loads (BLC 14 : Distr. Wind Load Z) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
23	M34	SZ	-72.922	-72.922	0	%100
24	M36	SZ	-72.922	-72.922	0	%100
25	M29	SZ	-72.922	-72.922	0	%100
26	M30	SZ	-72.922	-72.922	0	%100
27	M29A	SZ	0	0	0	%100
28	M30A	SZ	0	0	0	%100
29	M31	SZ	0	0	0	%100
30	M32	SZ	0	0	0	%100
31	MP12	SZ	-43.753	-43.753	0	%100
32	MP9	SZ	-43.753	-43.753	0	%100
33	MP10	SZ	-43.753	-43.753	0	%100
34	M36A	SZ	0	0	0	%100
35	M37	SZ	0	0	0	%100
36	MP11	SZ	-43.753	-43.753	0	%100
37	M39	SZ	0	0	0	%100
38	M40	SZ	0	0	0	%100
39	M41	SZ	0	0	0	%100
40	M42	SZ	0	0	0	%100
41	MP8	SZ	-43.753	-43.753	0	%100
42	MP5	SZ	-43.753	-43.753	0	%100
43	MP6	SZ	-43.753	-43.753	0	%100
44	M46	SZ	0	0	0	%100
45	M47	SZ	0	0	0	%100
46	MP7	SZ	-43.753	-43.753	0	%100
47	M49	SZ	0	0	0	%100
48	M50	SZ	0	0	0	%100
49	M51	SZ	0	0	0	%100
50	M52	SZ	0	0	0	%100
51	M53	SZ	0	0	0	%100
52	M54	SZ	0	0	0	%100
53	M55	SZ	-72.922	-72.922	0	%100
54	M56	SZ	-72.922	-72.922	0	%100
55	M57	SZ	-72.922	-72.922	0	%100
56	M56A	SZ	-72.922	-72.922	0	%100
57	M57A	SZ	-72.922	-72.922	0	%100

Member Distributed Loads (BLC 15 : Distr. Wind Load X)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	HOR1	SX	-72.922	-72.922	0	%100
2	M4	SX	0	0	0	%100
3	HR1	SX	-72.922	-72.922	0	%100
4	M7	SX	0	0	0	%100
5	M9	SX	0	0	0	%100
6	M10	SX	0	0	0	%100
7	MP4	SX	-43.753	-43.753	0	%100
8	MP1	SX	-43.753	-43.753	0	%100
9	MP2	SX	-43.753	-43.753	0	%100
10	HOR3	SX	-72.922	-72.922	0	%100
11	HR3	SX	-72.922	-72.922	0	%100
12	HOR2	SX	-72.922	-72.922	0	%100
13	HR2	SX	-72.922	-72.922	0	%100
14	S3	SX	-72.922	-72.922	0	%100
15	M62	SX	-72.922	-72.922	0	%100
16	M63	SX	-72.922	-72.922	0	%100
17	M65	SX	-72.922	-72.922	0	%100

Member Distributed Loads (BLC 15 : Distr. Wind Load X) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
18	S2	SX	-72.922	-72.922	0	%100
19	S1	SX	-72.922	-72.922	0	%100
20	M73	SX	0	0	0	%100
21	M74A	SX	0	0	0	%100
22	MP3	SX	-43.753	-43.753	0	%100
23	M34	SX	-72.922	-72.922	0	%100
24	M36	SX	-72.922	-72.922	0	%100
25	M29	SX	-72.922	-72.922	0	%100
26	M30	SX	-72.922	-72.922	0	%100
27	M29A	SX	0	0	0	%100
28	M30A	SX	0	0	0	%100
29	M31	SX	0	0	0	%100
30	M32	SX	0	0	0	%100
31	MP12	SX	-43.753	-43.753	0	%100
32	MP9	SX	-43.753	-43.753	0	%100
33	MP10	SX	-43.753	-43.753	0	%100
34	M36A	SX	0	0	0	%100
35	M37	SX	0	0	0	%100
36	MP11	SX	-43.753	-43.753	0	%100
37	M39	SX	0	0	0	%100
38	M40	SX	0	0	0	%100
39	M41	SX	0	0	0	%100
40	M42	SX	0	0	0	%100
41	MP8	SX	-43.753	-43.753	0	%100
42	MP5	SX	-43.753	-43.753	0	%100
43	MP6	SX	-43.753	-43.753	0	%100
44	M46	SX	0	0	0	%100
45	M47	SX	0	0	0	%100
46	MP7	SX	-43.753	-43.753	0	%100
47	M49	SX	0	0	0	%100
48	M50	SX	0	0	0	%100
49	M51	SX	0	0	0	%100
50	M52	SX	0	0	0	%100
51	M53	SX	0	0	0	%100
52	M54	SX	0	0	0	%100
53	M55	SX	-72.922	-72.922	0	%100
54	M56	SX	-72.922	-72.922	0	%100
55	M57	SX	-72.922	-72.922	0	%100
56	M56A	SX	-72.922	-72.922	0	%100
57	M57A	SX	-72.922	-72.922	0	%100

Member Distributed Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	HOR1	Y	-6.612	-6.612	0	%100
2	M4	Y	-0.939	-0.939	0	%100
3	HR1	Y	-5.483	-5.483	0	%100
4	M7	Y	-0.939	-0.939	0	%100
5	M9	Y	-0.939	-0.939	0	%100
6	M10	Y	-0.939	-0.939	0	%100
7	MP4	Y	-3.482	-3.482	0	%100
8	MP1	Y	-3.482	-3.482	0	%100
9	MP2	Y	-3.482	-3.482	0	%100
10	HOR3	Y	-6.612	-6.612	0	%100
11	HR3	Y	-5.483	-5.483	0	%100
12	HOR2	Y	-6.612	-6.612	0	%100

Member Distributed Loads (BLC 16 : Ice Weight) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
13	HR2	Y	-5.483	-5.483	0	%100
14	S3	Y	-6.997	-6.997	0	%100
15	M62	Y	-10.592	-10.592	0	%100
16	M63	Y	-6.997	-6.997	0	%100
17	M65	Y	-7.387	-7.387	0	%100
18	S2	Y	-6.997	-6.997	0	%100
19	S1	Y	-6.997	-6.997	0	%100
20	M73	Y	-0.939	-0.939	0	%100
21	M74A	Y	-0.939	-0.939	0	%100
22	MP3	Y	-3.482	-3.482	0	%100
23	M34	Y	-7.387	-7.387	0	%100
24	M36	Y	-7.387	-7.387	0	%100
25	M29	Y	-6.997	-6.997	0	%100
26	M30	Y	-6.997	-6.997	0	%100
27	M29A	Y	-0.939	-0.939	0	%100
28	M30A	Y	-0.939	-0.939	0	%100
29	M31	Y	-0.939	-0.939	0	%100
30	M32	Y	-0.939	-0.939	0	%100
31	MP12	Y	-3.482	-3.482	0	%100
32	MP9	Y	-3.482	-3.482	0	%100
33	MP10	Y	-3.482	-3.482	0	%100
34	M36A	Y	-0.939	-0.939	0	%100
35	M37	Y	-0.939	-0.939	0	%100
36	MP11	Y	-3.482	-3.482	0	%100
37	M39	Y	-0.939	-0.939	0	%100
38	M40	Y	-0.939	-0.939	0	%100
39	M41	Y	-0.939	-0.939	0	%100
40	M42	Y	-0.939	-0.939	0	%100
41	MP8	Y	-3.482	-3.482	0	%100
42	MP5	Y	-3.482	-3.482	0	%100
43	MP6	Y	-3.482	-3.482	0	%100
44	M46	Y	-0.939	-0.939	0	%100
45	M47	Y	-0.939	-0.939	0	%100
46	MP7	Y	-3.482	-3.482	0	%100
47	M49	Y	-0.939	-0.939	0	%100
48	M50	Y	-0.939	-0.939	0	%100
49	M51	Y	-0.939	-0.939	0	%100
50	M52	Y	-0.939	-0.939	0	%100
51	M53	Y	-0.939	-0.939	0	%100
52	M54	Y	-0.939	-0.939	0	%100
53	M55	Y	-5.483	-5.483	0	%100
54	M56	Y	-5.483	-5.483	0	%100
55	M57	Y	-5.483	-5.483	0	%100
56	M56A	Y	-10.592	-10.592	0	%100
57	M57A	Y	-10.592	-10.592	0	%100

Member Distributed Loads (BLC 29 : Distr. Ice Wind Load Z)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	HOR1	SZ	-10.819	-10.819	0	%100
2	M4	SZ	0	0	0	%100
3	HR1	SZ	-11.488	-11.488	0	%100
4	M7	SZ	0	0	0	%100
5	M9	SZ	0	0	0	%100
6	M10	SZ	0	0	0	%100
7	MP4	SZ	-14.13	-14.13	0	%100

Member Distributed Loads (BLC 29 : Distr. Ice Wind Load Z) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
8	MP1	SZ	-14.13	-14.13	0	%100
9	MP2	SZ	-14.13	-14.13	0	%100
10	HOR3	SZ	-10.819	-10.819	0	%100
11	HR3	SZ	-11.488	-11.488	0	%100
12	HOR2	SZ	-10.819	-10.819	0	%100
13	HR2	SZ	-11.488	-11.488	0	%100
14	S3	SZ	-10.648	-10.648	0	%100
15	M62	SZ	-9.71	-9.71	0	%100
16	M63	SZ	-10.648	-10.648	0	%100
17	M65	SZ	-10.496	-10.496	0	%100
18	S2	SZ	-10.648	-10.648	0	%100
19	S1	SZ	-10.648	-10.648	0	%100
20	M73	SZ	0	0	0	%100
21	M74A	SZ	0	0	0	%100
22	MP3	SZ	-14.13	-14.13	0	%100
23	M34	SZ	-10.496	-10.496	0	%100
24	M36	SZ	-10.496	-10.496	0	%100
25	M29	SZ	-10.648	-10.648	0	%100
26	M30	SZ	-10.648	-10.648	0	%100
27	M29A	SZ	0	0	0	%100
28	M30A	SZ	0	0	0	%100
29	M31	SZ	0	0	0	%100
30	M32	SZ	0	0	0	%100
31	MP12	SZ	-14.13	-14.13	0	%100
32	MP9	SZ	-14.13	-14.13	0	%100
33	MP10	SZ	-14.13	-14.13	0	%100
34	M36A	SZ	0	0	0	%100
35	M37	SZ	0	0	0	%100
36	MP11	SZ	-14.13	-14.13	0	%100
37	M39	SZ	0	0	0	%100
38	M40	SZ	0	0	0	%100
39	M41	SZ	0	0	0	%100
40	M42	SZ	0	0	0	%100
41	MP8	SZ	-14.13	-14.13	0	%100
42	MP5	SZ	-14.13	-14.13	0	%100
43	MP6	SZ	-14.13	-14.13	0	%100
44	M46	SZ	0	0	0	%100
45	M47	SZ	0	0	0	%100
46	MP7	SZ	-14.13	-14.13	0	%100
47	M49	SZ	0	0	0	%100
48	M50	SZ	0	0	0	%100
49	M51	SZ	0	0	0	%100
50	M52	SZ	0	0	0	%100
51	M53	SZ	0	0	0	%100
52	M54	SZ	0	0	0	%100
53	M55	SZ	-11.488	-11.488	0	%100
54	M56	SZ	-11.488	-11.488	0	%100
55	M57	SZ	-11.488	-11.488	0	%100
56	M56A	SZ	-9.71	-9.71	0	%100
57	M57A	SZ	-9.71	-9.71	0	%100

Member Distributed Loads (BLC 30 : Distr. Ice Wind Load X)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	HOR1	SX	-10.819	-10.819	0	%100
2	M4	SX	0	0	0	%100

Member Distributed Loads (BLC 30 : Distr. Ice Wind Load X) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
3	HR1	SX	-11.488	-11.488	0	%100
4	M7	SX	0	0	0	%100
5	M9	SX	0	0	0	%100
6	M10	SX	0	0	0	%100
7	MP4	SX	-14.13	-14.13	0	%100
8	MP1	SX	-14.13	-14.13	0	%100
9	MP2	SX	-14.13	-14.13	0	%100
10	HOR3	SX	-10.819	-10.819	0	%100
11	HR3	SX	-11.488	-11.488	0	%100
12	HOR2	SX	-10.819	-10.819	0	%100
13	HR2	SX	-11.488	-11.488	0	%100
14	S3	SX	-10.648	-10.648	0	%100
15	M62	SX	-9.71	-9.71	0	%100
16	M63	SX	-10.648	-10.648	0	%100
17	M65	SX	-10.496	-10.496	0	%100
18	S2	SX	-10.648	-10.648	0	%100
19	S1	SX	-10.648	-10.648	0	%100
20	M73	SX	0	0	0	%100
21	M74A	SX	0	0	0	%100
22	MP3	SX	-14.13	-14.13	0	%100
23	M34	SX	-10.496	-10.496	0	%100
24	M36	SX	-10.496	-10.496	0	%100
25	M29	SX	-10.648	-10.648	0	%100
26	M30	SX	-10.648	-10.648	0	%100
27	M29A	SX	0	0	0	%100
28	M30A	SX	0	0	0	%100
29	M31	SX	0	0	0	%100
30	M32	SX	0	0	0	%100
31	MP12	SX	-14.13	-14.13	0	%100
32	MP9	SX	-14.13	-14.13	0	%100
33	MP10	SX	-14.13	-14.13	0	%100
34	M36A	SX	0	0	0	%100
35	M37	SX	0	0	0	%100
36	MP11	SX	-14.13	-14.13	0	%100
37	M39	SX	0	0	0	%100
38	M40	SX	0	0	0	%100
39	M41	SX	0	0	0	%100
40	M42	SX	0	0	0	%100
41	MP8	SX	-14.13	-14.13	0	%100
42	MP5	SX	-14.13	-14.13	0	%100
43	MP6	SX	-14.13	-14.13	0	%100
44	M46	SX	0	0	0	%100
45	M47	SX	0	0	0	%100
46	MP7	SX	-14.13	-14.13	0	%100
47	M49	SX	0	0	0	%100
48	M50	SX	0	0	0	%100
49	M51	SX	0	0	0	%100
50	M52	SX	0	0	0	%100
51	M53	SX	0	0	0	%100
52	M54	SX	0	0	0	%100
53	M55	SX	-11.488	-11.488	0	%100
54	M56	SX	-11.488	-11.488	0	%100
55	M57	SX	-11.488	-11.488	0	%100
56	M56A	SX	-9.71	-9.71	0	%100
57	M57A	SX	-9.71	-9.71	0	%100

Member Distributed Loads (BLC 30 : Distr. Ice Wind Load X) (Continued)

Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]

Member Distributed Loads (BLC 46 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	HOR3	Y	-1.737	-5.013	78	93.6
2	HOR3	Y	-5.013	-5.957	93.6	109.2
3	HOR3	Y	-5.957	-4.424	109.2	124.8
4	HOR3	Y	-4.424	-2.507	124.8	140.4
5	HOR3	Y	-2.507	-0.352	140.4	156
6	HOR2	Y	-0.375	-2.511	0	15.6
7	HOR2	Y	-2.511	-4.427	15.6	31.2
8	HOR2	Y	-4.427	-5.959	31.2	46.8
9	HOR2	Y	-5.959	-5.008	46.8	62.4
10	HOR2	Y	-5.008	-1.738	62.4	78
11	S3	Y	-1.407	-4.451	0	13.5
12	S3	Y	-4.451	-9.997	13.5	27
13	S3	Y	-9.997	-14.59	27	40.5
14	S3	Y	-14.59	-11.497	40.5	54
15	S3	Y	-11.497	-4.173	54	67.5
16	M62	Y	-1.679	-1.631	0	4.907
17	M62	Y	-1.631	-1.608	4.907	9.815
18	M62	Y	-1.608	-1.631	9.815	14.722
19	M62	Y	-1.631	-1.676	14.722	19.63
20	M63	Y	-3.229	-3.229	12.182	68.018
21	HOR1	Y	-1.739	-5.008	78	93.6
22	HOR1	Y	-5.008	-5.959	93.6	109.2
23	HOR1	Y	-5.959	-4.427	109.2	124.8
24	HOR1	Y	-4.427	-2.506	124.8	140.4
25	HOR1	Y	-2.506	-0.361	140.4	156
26	HOR3	Y	-0.338	-2.503	0	15.6
27	HOR3	Y	-2.503	-4.425	15.6	31.2
28	HOR3	Y	-4.425	-5.958	31.2	46.8
29	HOR3	Y	-5.958	-5.013	46.8	62.4
30	HOR3	Y	-5.013	-1.737	62.4	78
31	S1	Y	-1.441	-4.462	0	13.5
32	S1	Y	-4.462	-9.996	13.5	27
33	S1	Y	-9.996	-14.589	27	40.5
34	S1	Y	-14.589	-11.495	40.5	54
35	S1	Y	-11.495	-4.172	54	67.5
36	M30	Y	-3.229	-3.229	12.182	68.019
37	M57A	Y	-1.676	-1.631	0	4.907
38	M57A	Y	-1.631	-1.608	4.907	9.815
39	M57A	Y	-1.608	-1.631	9.815	14.722
40	M57A	Y	-1.631	-1.679	14.722	19.63
41	HOR1	Y	-0.359	-2.506	0	15.6
42	HOR1	Y	-2.506	-4.427	15.6	31.2
43	HOR1	Y	-4.427	-5.959	31.2	46.8
44	HOR1	Y	-5.959	-5.008	46.8	62.4
45	HOR1	Y	-5.008	-1.739	62.4	78
46	HOR2	Y	-1.737	-5.013	78	93.6
47	HOR2	Y	-5.013	-5.957	93.6	109.2
48	HOR2	Y	-5.957	-4.424	109.2	124.8
49	HOR2	Y	-4.424	-2.509	124.8	140.4
50	HOR2	Y	-2.509	-0.358	140.4	156
51	S2	Y	-1.42	-4.455	0	13.5
52	S2	Y	-4.455	-9.997	13.5	27
53	S2	Y	-9.997	-14.589	27	40.5
54	S2	Y	-14.589	-11.496	40.5	54
55	S2	Y	-11.496	-4.173	54	67.5

Member Distributed Loads (BLC 46 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
56	M29	Y	-3.229	-3.229	12.182	68.018
57	M56A	Y	-1.679	-1.631	0	4.907
58	M56A	Y	-1.631	-1.608	4.907	9.815
59	M56A	Y	-1.608	-1.631	9.815	14.722
60	M56A	Y	-1.631	-1.676	14.722	19.63
61	HOR1	Y	-0.29	-0.29	71.52	83.52
62	M29	Y	-0.118	-2.894	0	6.416
63	M29	Y	-2.894	-5.828	6.416	12.832
64	M29	Y	-5.828	-5.247	12.832	19.248
65	M29	Y	-5.247	-1.722	19.248	25.664
66	M29	Y	-1.722	-0.118	25.664	32.08
67	M30	Y	-0.149	-1.76	48.12	54.536
68	M30	Y	-1.76	-5.324	54.536	60.952
69	M30	Y	-5.324	-6.065	60.952	67.369
70	M30	Y	-6.065	-3.364	67.369	73.785
71	M30	Y	-3.364	-0.387	73.785	80.201
72	HOR2	Y	-0.29	-0.29	71.52	83.52
73	M63	Y	-0.118	-2.894	0	6.416
74	M63	Y	-2.894	-5.828	6.416	12.832
75	M63	Y	-5.828	-5.247	12.832	19.248
76	M63	Y	-5.247	-1.722	19.248	25.664
77	M63	Y	-1.722	-0.118	25.664	32.08
78	M29	Y	-0.149	-1.76	48.12	54.536
79	M29	Y	-1.76	-5.324	54.536	60.952
80	M29	Y	-5.324	-6.065	60.952	67.369
81	M29	Y	-6.065	-3.364	67.369	73.785
82	M29	Y	-3.364	-0.387	73.785	80.201
83	HOR3	Y	-0.29	-0.29	71.52	83.52
84	M63	Y	-0.149	-1.76	48.12	54.536
85	M63	Y	-1.76	-5.324	54.536	60.952
86	M63	Y	-5.324	-6.065	60.952	67.369
87	M63	Y	-6.065	-3.364	67.369	73.785
88	M63	Y	-3.364	-0.387	73.785	80.201
89	M30	Y	-0.118	-2.894	0	6.416
90	M30	Y	-2.894	-5.828	6.416	12.832
91	M30	Y	-5.828	-5.247	12.832	19.248
92	M30	Y	-5.247	-1.722	19.248	25.664
93	M30	Y	-1.722	-0.118	25.664	32.08

Member Distributed Loads (BLC 47 : BLC 16 Transient Area Loads)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	HOR3	Y	-0.904	-2.609	78	93.6
2	HOR3	Y	-2.609	-3.101	93.6	109.2
3	HOR3	Y	-3.101	-2.303	109.2	124.8
4	HOR3	Y	-2.303	-1.305	124.8	140.4
5	HOR3	Y	-1.305	-0.183	140.4	156
6	HOR2	Y	-0.195	-1.307	0	15.6
7	HOR2	Y	-1.307	-2.304	15.6	31.2
8	HOR2	Y	-2.304	-3.101	31.2	46.8
9	HOR2	Y	-3.101	-2.606	46.8	62.4
10	HOR2	Y	-2.606	-0.905	62.4	78
11	S3	Y	-0.733	-2.317	0	13.5
12	S3	Y	-2.317	-5.203	13.5	27
13	S3	Y	-5.203	-7.594	27	40.5
14	S3	Y	-7.594	-5.984	40.5	54

Member Distributed Loads (BLC 47 : BLC 16 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
15	S3	Y	-5.984	-2.172	54	67.5
16	M62	Y	-0.874	-0.849	0	4.907
17	M62	Y	-0.849	-0.837	4.907	9.815
18	M62	Y	-0.837	-0.849	9.815	14.722
19	M62	Y	-0.849	-0.872	14.722	19.63
20	M63	Y	-1.68	-1.68	12.182	68.018
21	HOR1	Y	-0.905	-2.607	78	93.6
22	HOR1	Y	-2.607	-3.102	93.6	109.2
23	HOR1	Y	-3.102	-2.304	109.2	124.8
24	HOR1	Y	-2.304	-1.305	124.8	140.4
25	HOR1	Y	-1.305	-0.188	140.4	156
26	HOR3	Y	-0.176	-1.303	0	15.6
27	HOR3	Y	-1.303	-2.303	15.6	31.2
28	HOR3	Y	-2.303	-3.101	31.2	46.8
29	HOR3	Y	-3.101	-2.609	46.8	62.4
30	HOR3	Y	-2.609	-0.904	62.4	78
31	S1	Y	-0.75	-2.322	0	13.5
32	S1	Y	-2.322	-5.203	13.5	27
33	S1	Y	-5.203	-7.593	27	40.5
34	S1	Y	-7.593	-5.983	40.5	54
35	S1	Y	-5.983	-2.172	54	67.5
36	M30	Y	-1.68	-1.68	12.182	68.019
37	M57A	Y	-0.872	-0.849	0	4.907
38	M57A	Y	-0.849	-0.837	4.907	9.815
39	M57A	Y	-0.837	-0.849	9.815	14.722
40	M57A	Y	-0.849	-0.874	14.722	19.63
41	HOR1	Y	-0.187	-1.304	0	15.6
42	HOR1	Y	-1.304	-2.304	15.6	31.2
43	HOR1	Y	-2.304	-3.102	31.2	46.8
44	HOR1	Y	-3.102	-2.607	46.8	62.4
45	HOR1	Y	-2.607	-0.905	62.4	78
46	HOR2	Y	-0.904	-2.609	78	93.6
47	HOR2	Y	-2.609	-3.101	93.6	109.2
48	HOR2	Y	-3.101	-2.303	109.2	124.8
49	HOR2	Y	-2.303	-1.306	124.8	140.4
50	HOR2	Y	-1.306	-0.186	140.4	156
51	S2	Y	-0.739	-2.319	0	13.5
52	S2	Y	-2.319	-5.203	13.5	27
53	S2	Y	-5.203	-7.593	27	40.5
54	S2	Y	-7.593	-5.984	40.5	54
55	S2	Y	-5.984	-2.172	54	67.5
56	M29	Y	-1.68	-1.68	12.182	68.018
57	M56A	Y	-0.874	-0.849	0	4.907
58	M56A	Y	-0.849	-0.837	4.907	9.815
59	M56A	Y	-0.837	-0.849	9.815	14.722
60	M56A	Y	-0.849	-0.872	14.722	19.63
61	HOR1	Y	-0.151	-0.151	71.52	83.52
62	M29	Y	-0.062	-1.506	0	6.416
63	M29	Y	-1.506	-3.034	6.416	12.832
64	M29	Y	-3.034	-2.731	12.832	19.248
65	M29	Y	-2.731	-0.896	19.248	25.664
66	M29	Y	-0.896	-0.062	25.664	32.08
67	M30	Y	-0.077	-0.916	48.12	54.536
68	M30	Y	-0.916	-2.771	54.536	60.952
69	M30	Y	-2.771	-3.156	60.952	67.369

Member Distributed Loads (BLC 47 : BLC 16 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
70	M30	Y	-3.156	-1.751	67.369	73.785
71	M30	Y	-1.751	-0.201	73.785	80.201
72	HOR2	Y	-0.151	-0.151	71.52	83.52
73	M63	Y	-0.062	-1.506	0	6.416
74	M63	Y	-1.506	-3.034	6.416	12.832
75	M63	Y	-3.034	-2.731	12.832	19.248
76	M63	Y	-2.731	-0.896	19.248	25.664
77	M63	Y	-0.896	-0.062	25.664	32.08
78	M29	Y	-0.077	-0.916	48.12	54.536
79	M29	Y	-0.916	-2.771	54.536	60.952
80	M29	Y	-2.771	-3.156	60.952	67.369
81	M29	Y	-3.156	-1.751	67.369	73.785
82	M29	Y	-1.751	-0.201	73.785	80.201
83	HOR3	Y	-0.151	-0.151	71.52	83.52
84	M63	Y	-0.077	-0.916	48.12	54.536
85	M63	Y	-0.916	-2.771	54.536	60.952
86	M63	Y	-2.771	-3.156	60.952	67.369
87	M63	Y	-3.156	-1.751	67.369	73.785
88	M63	Y	-1.751	-0.201	73.785	80.201
89	M30	Y	-0.062	-1.506	0	6.416
90	M30	Y	-1.506	-3.034	6.416	12.832
91	M30	Y	-3.034	-2.731	12.832	19.248
92	M30	Y	-2.731	-0.896	19.248	25.664
93	M30	Y	-0.896	-0.062	25.664	32.08

Member Area Loads (BLC 1 : Self Weight)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [psf]
1	N133	N87	N45	N129A	Y	Two Way	-6
2	N72	N71	N2	N44	Y	Two Way	-6
3	N66A	N67A	N1	N88	Y	Two Way	-6
4	N69	N73	N71	N67A	Y	Two Way	-6
5	N68	N66A	N133	N162A	Y	Two Way	-6
6	N74	N161A	N129A	N72	Y	Two Way	-6

Member Area Loads (BLC 16 : Ice Weight)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [psf]
1	N133	N87	N45	N129A	Y	Two Way	-3.123
2	N72	N71	N2	N44	Y	Two Way	-3.123
3	N66A	N67A	N1	N88	Y	Two Way	-3.123
4	N69	N73	N71	N67A	Y	Two Way	-3.123
5	N68	N66A	N133	N162A	Y	Two Way	-3.123
6	N74	N161A	N129A	N72	Y	Two Way	-3.123

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Member)
1	Self Weight	DL		-1			24		6
2	Wind Load AZI 0	WLZ					48		
3	Wind Load AZI 30	None					48		
4	Wind Load AZI 60	None					48		
5	Wind Load AZI 90	WLX					48		
6	Wind Load AZI 120	None					48		
7	Wind Load AZI 150	None					48		

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Member)
8	Wind Load AZI 180	None					48		
9	Wind Load AZI 210	None					48		
10	Wind Load AZI 240	None					48		
11	Wind Load AZI 270	None					48		
12	Wind Load AZI 300	None					48		
13	Wind Load AZI 330	None					48		
14	Distr. Wind Load Z	WLZ						57	
15	Distr. Wind Load X	WLX						57	
16	Ice Weight	OL1					24	57	6
17	Ice Wind Load AZI 0	OL2					48		
18	Ice Wind Load AZI 30	None					48		
19	Ice Wind Load AZI 60	None					48		
20	Ice Wind Load AZI 90	OL3					48		
21	Ice Wind Load AZI 120	None					48		
22	Ice Wind Load AZI 150	None					48		
23	Ice Wind Load AZI 180	None					48		
24	Ice Wind Load AZI 210	None					48		
25	Ice Wind Load AZI 240	None					48		
26	Ice Wind Load AZI 270	None					48		
27	Ice Wind Load AZI 300	None					48		
28	Ice Wind Load AZI 330	None					48		
29	Distr. Ice Wind Load Z	OL2						57	
30	Distr. Ice Wind Load X	OL3						57	
31	Seismic Load Z	ELZ			-0.404		24		
32	Seismic Load X	ELX	-0.404				24		
33	Service Live Loads	LL							
34	Maintenance Load Lm1	LL				1			
35	Maintenance Load Lm2	LL				1			
36	Maintenance Load Lm3	LL				1			
37	Maintenance Load Lm4	LL				1			
38	Maintenance Load Lm5	LL				1			
39	Maintenance Load Lm6	LL				1			
40	Maintenance Load Lm7	LL				1			
41	Maintenance Load Lm8	LL				1			
42	Maintenance Load Lm9	LL				1			
43	Maintenance Load Lm10	LL				1			
44	Maintenance Load Lm11	LL				1			
45	Maintenance Load Lm12	LL				1			
46	BLC 1 Transient Area Loads	None						93	
47	BLC 16 Transient Area Loads	None						93	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4DL	Yes	Y	1	1.4								
2	1.2DL + 1WL AZI 0	Yes	Y	1	1.2	2	1	14	1	15			
3	1.2DL + 1WL AZI 30	Yes	Y	1	1.2	3	1	14	0.866	15	0.5		
4	1.2DL + 1WL AZI 60	Yes	Y	1	1.2	4	1	14	0.5	15	0.866		
5	1.2DL + 1WL AZI 90	Yes	Y	1	1.2	5	1	14		15	1		
6	1.2DL + 1WL AZI 120	Yes	Y	1	1.2	6	1	14	-0.5	15	0.866		
7	1.2DL + 1WL AZI 150	Yes	Y	1	1.2	7	1	14	-0.866	15	0.5		
8	1.2DL + 1WL AZI 180	Yes	Y	1	1.2	8	1	14	-1	15			
9	1.2DL + 1WL AZI 210	Yes	Y	1	1.2	9	1	14	-0.866	15	-0.5		
10	1.2DL + 1WL AZI 240	Yes	Y	1	1.2	10	1	14	-0.5	15	-0.866		
11	1.2DL + 1WL AZI 270	Yes	Y	1	1.2	11	1	14		15	-1		
12	1.2DL + 1WL AZI 300	Yes	Y	1	1.2	12	1	14	0.5	15	-0.866		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
13	1.2DL + 1WL AZI 330	Yes	Y	1	1.2	13	1	14	0.866	15	-0.5		
14	0.9DL + 1WL AZI 0	Yes	Y	1	0.9	2	1	14	1	15			
15	0.9DL + 1WL AZI 30	Yes	Y	1	0.9	3	1	14	0.866	15	0.5		
16	0.9DL + 1WL AZI 60	Yes	Y	1	0.9	4	1	14	0.5	15	0.866		
17	0.9DL + 1WL AZI 90	Yes	Y	1	0.9	5	1	14		15	1		
18	0.9DL + 1WL AZI 120	Yes	Y	1	0.9	6	1	14	-0.5	15	0.866		
19	0.9DL + 1WL AZI 150	Yes	Y	1	0.9	7	1	14	-0.866	15	0.5		
20	0.9DL + 1WL AZI 180	Yes	Y	1	0.9	8	1	14	-1	15			
21	0.9DL + 1WL AZI 210	Yes	Y	1	0.9	9	1	14	-0.866	15	-0.5		
22	0.9DL + 1WL AZI 240	Yes	Y	1	0.9	10	1	14	-0.5	15	-0.866		
23	0.9DL + 1WL AZI 270	Yes	Y	1	0.9	11	1	14		15	-1		
24	0.9DL + 1WL AZI 300	Yes	Y	1	0.9	12	1	14	0.5	15	-0.866		
25	0.9DL + 1WL AZI 330	Yes	Y	1	0.9	13	1	14	0.866	15	-0.5		
26	1.2D + 1.0Di	Yes	Y	1	1.2	16	1						
27	1.2D + 1.0Di +1.0Wi AZI 0	Yes	Y	1	1.2	16	1	17	1	29	1	30	
28	1.2D + 1.0Di +1.0Wi AZI 30	Yes	Y	1	1.2	16	1	18	1	29	0.866	30	0.5
29	1.2D + 1.0Di +1.0Wi AZI 60	Yes	Y	1	1.2	16	1	19	1	29	0.5	30	0.866
30	1.2D + 1.0Di +1.0Wi AZI 90	Yes	Y	1	1.2	16	1	20	1	29		30	1
31	1.2D + 1.0Di +1.0Wi AZI 120	Yes	Y	1	1.2	16	1	21	1	29	-0.5	30	0.866
32	1.2D + 1.0Di +1.0Wi AZI 150	Yes	Y	1	1.2	16	1	22	1	29	-0.866	30	0.5
33	1.2D + 1.0Di +1.0Wi AZI 180	Yes	Y	1	1.2	16	1	23	1	29	-1	30	
34	1.2D + 1.0Di +1.0Wi AZI 210	Yes	Y	1	1.2	16	1	24	1	29	-0.866	30	-0.5
35	1.2D + 1.0Di +1.0Wi AZI 240	Yes	Y	1	1.2	16	1	25	1	29	-0.5	30	-0.866
36	1.2D + 1.0Di +1.0Wi AZI 270	Yes	Y	1	1.2	16	1	26	1	29		30	-1
37	1.2D + 1.0Di +1.0Wi AZI 300	Yes	Y	1	1.2	16	1	27	1	29	0.5	30	-0.866
38	1.2D + 1.0Di +1.0Wi AZI 330	Yes	Y	1	1.2	16	1	28	1	29	0.866	30	-0.5
39	(1.2 + 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	1.254	31	1	32					
40	(1.2 + 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	1.254	31	0.866	32	0.5				
41	(1.2 + 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	1.254	31	0.5	32	0.866				
42	(1.2 + 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	1.254	31		32	1				
43	(1.2 + 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	1.254	31	-0.5	32	0.866				
44	(1.2 + 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	1.254	31	-0.866	32	0.5				
45	(1.2 + 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	1.254	31	-1	32					
46	(1.2 + 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	1.254	31	-0.866	32	-0.5				
47	(1.2 + 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	1.254	31	-0.5	32	-0.866				
48	(1.2 + 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	1.254	31		32	-1				
49	(1.2 + 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	1.254	31	0.5	32	-0.866				
50	(1.2 + 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	1.254	31	0.866	32	-0.5				
51	(0.9 - 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	0.846	31	1	32					
52	(0.9 - 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	0.846	31	0.866	32	0.5				
53	(0.9 - 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	0.846	31	0.5	32	0.866				
54	(0.9 - 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	0.846	31		32	1				
55	(0.9 - 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	0.846	31	-0.5	32	0.866				
56	(0.9 - 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	0.846	31	-0.866	32	0.5				
57	(0.9 - 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	0.846	31	-1	32					
58	(0.9 - 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	0.846	31	-0.866	32	-0.5				
59	(0.9 - 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	0.846	31	-0.5	32	-0.866				
60	(0.9 - 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	0.846	31		32	-1				
61	(0.9 - 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	0.846	31	0.5	32	-0.866				
62	(0.9 - 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	0.846	31	0.866	32	-0.5				
63	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 0	Yes	Y	1	1	2	0.268	14	0.268	15		33	1.5
64	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 30	Yes	Y	1	1	3	0.268	14	0.232	15	0.134	33	1.5
65	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 60	Yes	Y	1	1	4	0.268	14	0.134	15	0.232	33	1.5
66	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 90	Yes	Y	1	1	5	0.268	14		15	0.268	33	1.5
67	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 120	Yes	Y	1	1	6	0.268	14	-0.134	15	0.232	33	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
68	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 150	Yes	Y	1	1	7	0.268	14	-0.232	15	0.134	33	1.5
69	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 180	Yes	Y	1	1	8	0.268	14	-0.268	15		33	1.5
70	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 210	Yes	Y	1	1	9	0.268	14	-0.232	15	-0.134	33	1.5
71	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 240	Yes	Y	1	1	10	0.268	14	-0.134	15	-0.232	33	1.5
72	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 270	Yes	Y	1	1	11	0.268	14		15	-0.268	33	1.5
73	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 300	Yes	Y	1	1	12	0.268	14	0.134	15	-0.232	33	1.5
74	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 330	Yes	Y	1	1	13	0.268	14	0.232	15	-0.134	33	1.5
75	1.2DL + 1.5LL	Yes	Y	1	1.2	33	1.5						
76	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	34	1.5	2	0.067	14	0.067	15	
77	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	34	1.5	3	0.067	14	0.058	15	0.033
78	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	34	1.5	4	0.067	14	0.033	15	0.058
79	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	34	1.5	5	0.067	14		15	0.067
80	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	34	1.5	6	0.067	14	-0.033	15	0.058
81	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	34	1.5	7	0.067	14	-0.058	15	0.033
82	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	34	1.5	8	0.067	14	-0.067	15	
83	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	34	1.5	9	0.067	14	-0.058	15	-0.033
84	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	34	1.5	10	0.067	14	-0.033	15	-0.058
85	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	34	1.5	11	0.067	14		15	-0.067
86	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	34	1.5	12	0.067	14	0.033	15	-0.058
87	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	34	1.5	13	0.067	14	0.058	15	-0.033
88	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	35	1.5	2	0.067	14	0.067	15	
89	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	35	1.5	3	0.067	14	0.058	15	0.033
90	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	35	1.5	4	0.067	14	0.033	15	0.058
91	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	35	1.5	5	0.067	14		15	0.067
92	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	35	1.5	6	0.067	14	-0.033	15	0.058
93	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	35	1.5	7	0.067	14	-0.058	15	0.033
94	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	35	1.5	8	0.067	14	-0.067	15	
95	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	35	1.5	9	0.067	14	-0.058	15	-0.033
96	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	35	1.5	10	0.067	14	-0.033	15	-0.058
97	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	35	1.5	11	0.067	14		15	-0.067
98	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	35	1.5	12	0.067	14	0.033	15	-0.058
99	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	35	1.5	13	0.067	14	0.058	15	-0.033
100	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	36	1.5	2	0.067	14	0.067	15	
101	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	36	1.5	3	0.067	14	0.058	15	0.033
102	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	36	1.5	4	0.067	14	0.033	15	0.058
103	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	36	1.5	5	0.067	14		15	0.067
104	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	36	1.5	6	0.067	14	-0.033	15	0.058
105	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	36	1.5	7	0.067	14	-0.058	15	0.033
106	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	36	1.5	8	0.067	14	-0.067	15	
107	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	36	1.5	9	0.067	14	-0.058	15	-0.033
108	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	36	1.5	10	0.067	14	-0.033	15	-0.058
109	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	36	1.5	11	0.067	14		15	-0.067
110	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	36	1.5	12	0.067	14	0.033	15	-0.058
111	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	36	1.5	13	0.067	14	0.058	15	-0.033
112	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	37	1.5	2	0.067	14	0.067	15	
113	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	37	1.5	3	0.067	14	0.058	15	0.033
114	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	37	1.5	4	0.067	14	0.033	15	0.058
115	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	37	1.5	5	0.067	14		15	0.067
116	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	37	1.5	6	0.067	14	-0.033	15	0.058
117	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	37	1.5	7	0.067	14	-0.058	15	0.033
118	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	37	1.5	8	0.067	14	-0.067	15	
119	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	37	1.5	9	0.067	14	-0.058	15	-0.033
120	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	37	1.5	10	0.067	14	-0.033	15	-0.058
121	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	37	1.5	11	0.067	14		15	-0.067
122	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	37	1.5	12	0.067	14	0.033	15	-0.058

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
123	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	37	1.5	13	0.067	14	0.058	15	-0.033
124	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	38	1.5	2	0.067	14	0.067	15	
125	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	38	1.5	3	0.067	14	0.058	15	0.033
126	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	38	1.5	4	0.067	14	0.033	15	0.058
127	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	38	1.5	5	0.067	14		15	0.067
128	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	38	1.5	6	0.067	14	-0.033	15	0.058
129	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	38	1.5	7	0.067	14	-0.058	15	0.033
130	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	38	1.5	8	0.067	14	-0.067	15	
131	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	38	1.5	9	0.067	14	-0.058	15	-0.033
132	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	38	1.5	10	0.067	14	-0.033	15	-0.058
133	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	38	1.5	11	0.067	14		15	-0.067
134	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	38	1.5	12	0.067	14	0.033	15	-0.058
135	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	38	1.5	13	0.067	14	0.058	15	-0.033
136	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	39	1.5	2	0.067	14	0.067	15	
137	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	39	1.5	3	0.067	14	0.058	15	0.033
138	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	39	1.5	4	0.067	14	0.033	15	0.058
139	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	39	1.5	5	0.067	14		15	0.067
140	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	39	1.5	6	0.067	14	-0.033	15	0.058
141	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	39	1.5	7	0.067	14	-0.058	15	0.033
142	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	39	1.5	8	0.067	14	-0.067	15	
143	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	39	1.5	9	0.067	14	-0.058	15	-0.033
144	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	39	1.5	10	0.067	14	-0.033	15	-0.058
145	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	39	1.5	11	0.067	14		15	-0.067
146	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	39	1.5	12	0.067	14	0.033	15	-0.058
147	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	39	1.5	13	0.067	14	0.058	15	-0.033
148	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	40	1.5	2	0.067	14	0.067	15	
149	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	40	1.5	3	0.067	14	0.058	15	0.033
150	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	40	1.5	4	0.067	14	0.033	15	0.058
151	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	40	1.5	5	0.067	14		15	0.067
152	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	40	1.5	6	0.067	14	-0.033	15	0.058
153	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	40	1.5	7	0.067	14	-0.058	15	0.033
154	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	40	1.5	8	0.067	14	-0.067	15	
155	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	40	1.5	9	0.067	14	-0.058	15	-0.033
156	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	40	1.5	10	0.067	14	-0.033	15	-0.058
157	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	40	1.5	11	0.067	14		15	-0.067
158	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	40	1.5	12	0.067	14	0.033	15	-0.058
159	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	40	1.5	13	0.067	14	0.058	15	-0.033
160	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	41	1.5	2	0.067	14	0.067	15	
161	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	41	1.5	3	0.067	14	0.058	15	0.033
162	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	41	1.5	4	0.067	14	0.033	15	0.058
163	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	41	1.5	5	0.067	14		15	0.067
164	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	41	1.5	6	0.067	14	-0.033	15	0.058
165	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	41	1.5	7	0.067	14	-0.058	15	0.033
166	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	41	1.5	8	0.067	14	-0.067	15	
167	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	41	1.5	9	0.067	14	-0.058	15	-0.033
168	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	41	1.5	10	0.067	14	-0.033	15	-0.058
169	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	41	1.5	11	0.067	14		15	-0.067
170	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	41	1.5	12	0.067	14	0.033	15	-0.058
171	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	41	1.5	13	0.067	14	0.058	15	-0.033
172	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	42	1.5	2	0.067	14	0.067	15	
173	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	42	1.5	3	0.067	14	0.058	15	0.033
174	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	42	1.5	4	0.067	14	0.033	15	0.058
175	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	42	1.5	5	0.067	14		15	0.067
176	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	42	1.5	6	0.067	14	-0.033	15	0.058
177	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	42	1.5	7	0.067	14	-0.058	15	0.033

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
178	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	42	1.5	8	0.067	14	-0.067	15	
179	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	42	1.5	9	0.067	14	-0.058	15	-0.033
180	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	42	1.5	10	0.067	14	-0.033	15	-0.058
181	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	42	1.5	11	0.067	14		15	-0.067
182	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	42	1.5	12	0.067	14	0.033	15	-0.058
183	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	42	1.5	13	0.067	14	0.058	15	-0.033
184	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	43	1.5	2	0.067	14	0.067	15	
185	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	43	1.5	3	0.067	14	0.058	15	0.033
186	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	43	1.5	4	0.067	14	0.033	15	0.058
187	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	43	1.5	5	0.067	14		15	0.067
188	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	43	1.5	6	0.067	14	-0.033	15	0.058
189	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	43	1.5	7	0.067	14	-0.058	15	0.033
190	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	43	1.5	8	0.067	14	-0.067	15	
191	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	43	1.5	9	0.067	14	-0.058	15	-0.033
192	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	43	1.5	10	0.067	14	-0.033	15	-0.058
193	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	43	1.5	11	0.067	14		15	-0.067
194	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	43	1.5	12	0.067	14	0.033	15	-0.058
195	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	43	1.5	13	0.067	14	0.058	15	-0.033
196	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	44	1.5	2	0.067	14	0.067	15	
197	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	44	1.5	3	0.067	14	0.058	15	0.033
198	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	44	1.5	4	0.067	14	0.033	15	0.058
199	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	44	1.5	5	0.067	14		15	0.067
200	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	44	1.5	6	0.067	14	-0.033	15	0.058
201	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	44	1.5	7	0.067	14	-0.058	15	0.033
202	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	44	1.5	8	0.067	14	-0.067	15	
203	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	44	1.5	9	0.067	14	-0.058	15	-0.033
204	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	44	1.5	10	0.067	14	-0.033	15	-0.058
205	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	44	1.5	11	0.067	14		15	-0.067
206	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	44	1.5	12	0.067	14	0.033	15	-0.058
207	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	44	1.5	13	0.067	14	0.058	15	-0.033
208	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	45	1.5	2	0.067	14	0.067	15	
209	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	45	1.5	3	0.067	14	0.058	15	0.033
210	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	45	1.5	4	0.067	14	0.033	15	0.058
211	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	45	1.5	5	0.067	14		15	0.067
212	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	45	1.5	6	0.067	14	-0.033	15	0.058
213	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	45	1.5	7	0.067	14	-0.058	15	0.033
214	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	45	1.5	8	0.067	14	-0.067	15	
215	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	45	1.5	9	0.067	14	-0.058	15	-0.033
216	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	45	1.5	10	0.067	14	-0.033	15	-0.058
217	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	45	1.5	11	0.067	14		15	-0.067
218	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	45	1.5	12	0.067	14	0.033	15	-0.058
219	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	45	1.5	13	0.067	14	0.058	15	-0.033

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N128A	max	549.301	17	2256.283	27	2979.797	14	10579.367	2	1732.182	23	223.017	145
2		min	-549.811	23	-58.251	20	-3001.965	8	-872.88	20	-1733.419	17	-243.471	175
3	N144	max	2515.878	18	2252.463	31	1542.749	12	374.039	24	985.426	15	648.436	24
4		min	-2535.211	12	-35.076	24	-1532.388	18	-5295.931	31	-985.764	21	-9108.098	31
5	N155	max	2512.709	4	2252.489	35	1581.947	4	379.18	16	984.794	19	9140.212	35
6		min	-2491.336	22	-35.157	16	-1575.151	22	-5240.621	35	-986.245	25	-645.968	16
7	Totals:	max	4887.683	17	6313.85	34	5077.311	2						
8		min	-4887.684	23	2573.646	52	-5077.311	20						

Connection Design Results

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
1	S1	HSS4X4X4	0.692	75	10	0.07	75	y	133	118476.337	139518	16180.5	16180.5	2.01	H1-1b
2	S2	HSS4X4X4	0.675	75	6	0.07	75	y	81	118476.337	139518	16180.5	16180.5	2.01	H1-1b
3	S3	HSS4X4X4	0.673	75	2	0.07	75	y	173	118476.337	139518	16180.5	16180.5	2.009	H1-1b
4	M62	PL0.5X9_HRA	0.588	9.815	2	0.349	10.019	y	31	42798.261	113400	1182.6	13720.32	1.295	H1-1b
5	M57A	PL0.5X9_HRA	0.582	9.815	9	0.35	10.019	y	27	42798.261	113400	1182.6	13720.32	1.359	H1-1b
6	M56A	PL0.5X9_HRA	0.579	9.815	6	0.349	9.815	y	33	42798.261	113400	1182.6	13720.32	1.291	H1-1b
7	MP8	PIPE_2.0	0.548	72	12	0.109	72		12	14916.096	32130	1871.625	1871.625	1	H1-1b
8	MP12	PIPE_2.0	0.547	72	8	0.109	72		8	14916.096	32130	1871.625	1871.625	1	H1-1b
9	MP5	PIPE_2.0	0.531	65.625	7	0.122	65.625		9	17855.085	32130	1871.625	1871.625	1	H1-1b
10	MP9	PIPE_2.0	0.53	65.625	3	0.123	65.625		5	17855.085	32130	1871.625	1871.625	1	H1-1b
11	MP4	PIPE_2.0	0.529	72	4	0.106	72		3	14916.096	32130	1871.625	1871.625	1	H1-1b
12	MP1	PIPE_2.0	0.508	65.625	11	0.121	65.625		13	17855.085	32130	1871.625	1871.625	1	H1-1b
13	MP10	PIPE_2.0	0.49	53.75	3	0.093	53.75		2	23808.54	32130	1871.625	1871.625	1	H1-1b
14	MP6	PIPE_2.0	0.49	53.75	7	0.099	53.75		6	23808.54	32130	1871.625	1871.625	1	H1-1b
15	MP7	PIPE_2.0	0.482	53.75	13	0.09	53.75		2	23808.54	32130	1871.625	1871.625	1	H1-1b
16	MP11	PIPE_2.0	0.481	53.75	9	0.096	53.75		10	23808.54	32130	1871.625	1871.625	1	H1-1b
17	MP2	PIPE_2.0	0.46	53.75	11	0.091	53.75		9	23808.54	32130	1871.625	1871.625	1	H1-1b
18	MP3	PIPE_2.0	0.452	53.75	5	0.086	53.75		6	23808.54	32130	1871.625	1871.625	1	H1-1b
19	HOR2	C5X6.7	0.413	139.75	5	0.119	81.25	z	4	4363.033	63828	1603.791	9585	3	H1-1a
20	HR2	L3X3X4	0.409	16.25	2	0.314	6.5	y	10	44387.622	46656	1688.138	3755.745	1.069	H2-1
21	HR3	L3X3X4	0.409	16.25	10	0.31	6.5	z	7	44387.622	46656	1688.138	3755.745	1.067	H2-1
22	HOR3	C5X6.7	0.404	16.25	11	0.121	81.25	z	12	4363.033	63828	1603.791	9585	2.326	H1-1a
23	HR1	L3X3X4	0.398	16.25	6	0.314	6.5	y	2	44387.622	46656	1688.138	3755.745	1.051	H2-1
24	HOR1	C5X6.7	0.374	139.75	9	0.123	81.25	z	8	4363.033	63828	1603.791	9585	3	H1-1a
25	M65	PL6X.5	0.133	0	11	0.082	10.737	y	11	72637.71	97200	1012.5	12150	2.227	H1-1b
26	M34	PL6X.5	0.131	0	3	0.079	0	y	3	72637.71	97200	1012.5	12150	2.227	H1-1b
27	M36	PL6X.5	0.131	0	7	0.079	10.737	y	7	72637.71	97200	1012.5	12150	2.23	H1-1b
28	M29	L4X4X4	0.059	0	11	0.006	0	z	203	35994.516	62532	3137.597	6053.927	1.5	H2-1
29	M30	L4X4X4	0.053	80.201	5	0.006	0	z	111	35994.516	62532	3137.597	6053.927	1.5	H2-1
30	M63	L4X4X4	0.051	0	7	0.006	0	z	151	35994.516	62532	3137.597	6053.927	1.5	H2-1
31	M56	L3X3X4	0.032	18.636	2	0.035	37.272	y	5	37678.74	46656	1688.138	3637.872	1.136	H2-1
32	M55	L3X3X4	0.028	18.636	6	0.034	37.272	z	9	37678.74	46656	1688.138	3637.872	1.136	H2-1
33	M57	L3X3X4	0.028	18.636	10	0.034	37.272	y	13	37678.74	46656	1688.138	3637.872	1.136	H2-1

Envelope AISI S100-16: ASD Member Cold Formed Steel Code Checks

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APPENDIX D

ADDITIONAL CALCUATIONS

INFINIGY

Bolt Calculation Tool, V1.6.1

PROJECT DATA	
Site Name:	BRG 2044 (A) 943097
Site Number:	806953
Connection Description:	Mount to Tower

MAXIMUM BOLT LOADS		
Bolt Tension:	11764.72	lbs
Bolt Shear:	635.40	lbs

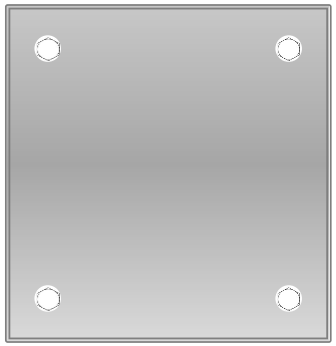
WORST CASE BOLT LOADS[1]		
Bolt Tension:	11764.72	lbs
Bolt Shear:	530.82	lbs

BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	0.625	in
Bolt Grade:	A325	-
# of Bolts:	4	-
Threads Excluded?	No	-

[1] *Worst case bolt loads correspond to Load combination #10 on member S1 in RISA-3D, which causes the maximum demand on the bolts.*

Member Information
J nodes of S3, S2, S1,

BOLT CHECK		
Tensile Strength	20340.15	
Shear Strength	13805.83	
Max Tensile Usage	57.8%	
Max Shear Usage	4.6%	
Interaction Check (Worst Case)	0.34	***≤1.05***
Result	Pass	



FOX HILL TELECOM

Radio Frequency Emissions Analysis Report

T-Mobile

Site ID: CT11071E

Stamford/ MP X32/ Den Rd
70 Guinea Road
Stamford, CT 06903

August 30, 2022

Fox Hill Telecom Project Number: 221557

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	14.46 %

FOX HILL TELECOM

August 30, 2022

T-MOBILE
Attn: RF Manager
35 Griffin Road South
Bloomfield, CT 06009

Emissions Analysis for Site: **CT11071E – Stamford/ MP X32/ Den Rd**

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed upgrades to the T-MOBILE facility located at **70 Guinea Road, Stamford, CT**, for the purpose of determining whether the emissions from the Proposed T-MOBILE Antenna Installation 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 600 MHz & 700 MHz bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2500 MHz (BRS) 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 percent 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 T-MOBILE antenna facility located at **70 Guinea Road, Stamford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-MOBILE is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each 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 / 5G NR	600 MHz	2	40
LTE	700 MHz	2	20
LTE	1900 MHz (PCS)	4	40
GSM	1900 MHz (PCS)	1	15
LTE	2100 MHz (AWS)	4	40
LTE / 5G NR	2500 MHz (BRS)	8	20

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz, 700 MHz, 1900 MHz (PCS), 2100 MHz (AWS) and 2500 MHz (BRS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	RFS APXVAALL24_43-U-NA20	158
A	2	Commscope VV-65B-R1	158
A	3	Ericsson AIR6419 B41	158
B	1	RFS APXVAALL24_43-U-NA20	158
B	2	Commscope VV-65B-R1	158
B	3	Ericsson AIR6419 B41	158
C	1	RFS APXVAALL24_43-U-NA20	158
C	2	Commscope VV-65B-R1	158
C	3	Ericsson AIR6419 B41	158

Table 2: Antenna Data

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

RESULTS

Per the calculations completed for the proposed T-MOBILE 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	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	1.04
Antenna A2	Commscope VV-65B-R1	1900 MHz (PCS) / 2100 MHz (AWS)	16.55 / 16.85	9	335	15,654.24	2.44
Antenna A3	Ericsson AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	3.52
						Sector A Composite MPE%	**7.00**
Antenna B1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	1.04
Antenna B2	Commscope VV-65B-R1	1900 MHz (PCS) / 2100 MHz (AWS)	16.55 / 16.85	9	335	15,654.24	2.44
Antenna B3	Ericsson AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	3.52
						Sector B Composite MPE%	**7.00**
Antenna C1	RFS APXVAALL24_43-U-NA20	600 MHz / 700 MHz	13.65 / 13.85	4	120	2,824.56	1.04
Antenna C2	Commscope VV-65B-R1	1900 MHz (PCS) / 2100 MHz (AWS)	16.55 / 16.85	9	335	15,654.24	2.44
Antenna C3	Ericsson AIR6419 B41	2500 MHz (BRS)	21.5	8	160	22,600.60	3.52
						Sector C Composite MPE%	**7.00**

Table 3: T-MOBILE Emissions Levels

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum T-MOBILE MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each T-MOBILE Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
T-MOBILE – Max Per Sector Value	**7.00 %**
AT&T	4.46 %
Verizon Wireless	2.81 %
Metricom	0.00 %
Nextel	0.19 %
Site Total MPE %:	**14.46 %**

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	7.00 %
T-MOBILE Sector B Total:	7.00 %
T-MOBILE Sector C Total:	7.00 %
Site Total:	14.46 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated T-MOBILE sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

T-MOBILE _ 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
T-Mobile 600 MHz LTE / 5G NR	2	926.96	158	2.88	600 MHz	400	0.72%
T-Mobile 700 MHz LTE	2	485.32	158	1.51	700 MHz	467	0.32%
T-Mobile 1900 MHz (PCS) LTE	4	1,807.42	158	11.25	1900 MHz (PCS)	1000	1.12%
T-Mobile 1900 MHz (PCS) GSM	1	677.78	158	1.05	1900 MHz (PCS)	1000	0.11%
T-Mobile 2100 MHz (AWS) LTE	4	1,936.69	158	12.05	2100 MHz (AWS)	1000	1.21%
T-Mobile 2500 MHz (BRS) LTE / 5G NR	8	2,825.08	158	35.17	2500 MHz (BRS)	1000	3.52%
						Total:	**7.00 %**

Table 6: T-MOBILE 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 T-MOBILE facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

T-MOBILE Sector	Power Density Value (%)
Sector A:	7.00 %
Sector B:	7.00 %
Sector C:	7.00 %
T-MOBILE Maximum Total (per sector):	7.00 %
Site Total:	14.46 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **14.46 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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 values calculated were well within the allowable 100% threshold standard per the federal government.

Scott Heffernan
Principal RF Engineer
Fox Hill Telecom, Inc
Holden, MA 01520
(978)660-3998

T-Mobile

T-MOBILE SITE NUMBER: CT11071E
T-MOBILE SITE NAME: STAMFORD/ MP X32/ DEN RD.
SITE TYPE: MONOPOLE
TOWER HEIGHT: 160'-0"

BUSINESS UNIT #: 806953
SITE ADDRESS: 69 GUINEA RD (CAMP ROCKY CRAIG) STAMFORD, CT 06903
COUNTY: FAIRFIELD
JURISDICTION: CONNECTICUT SITING COUNCIL

T-MOBILE ANCHOR SITE CONFIGURATION: 67E5D998E 6160

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	BRG 2044 (A) 943097
SITE ADDRESS:	69 GUINEA RD (CAMP ROCKY CRAIG) STAMFORD, CT 06903
COUNTY:	FAIRFIELD
MAP/PARCEL #:	N 005 3576
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.101750°
LONGITUDE:	-73.594444°
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	250'
CURRENT ZONING:	RA-3 ONE FAMILY RESIDENCE
JURISDICTION:	CONNECTICUT SITING COUNCIL
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	N/A
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 4 SYLVAN WAY PARSIPPANY, NJ 07054
ELECTRIC PROVIDER:	CONNECTICUT LIGHT & POWER CO 800-922-4455
TELCO PROVIDER:	AT&T 866-620-6900

PROJECT TEAM

A&E FIRM:	B+T GROUP 1717 S. BOULDER AVE. TULSA, OK 74119 MARVIN PHILLIPS MARVIN.PHILLIPS@BTGRP.COM
CROWN CASTLE USA INC. DISTRICT CONTACTS:	3530 TORINGDON WAY, SUITE 300 CHARLOTTE, NC 28277 TRICIA PELON - PROJECT MANAGER TRICIA.PELON@CROWNCASTLE.COM JASON D'AMICO - CONSTRUCTION MANAGER JASON.DAMICO@CROWNCASTLE.COM

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.1	OVERALL SITE PLAN
C-1.2	SITE PLAN & ENLARGED SITE PLAN
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	ANTENNA & CABLE SCHEDULE
C-4	PLUMBING DIAGRAM
C-5	EQUIPMENT SPECS
E-1	AC PANEL SCHEDULES & ONE LINE DIAGRAM
G-1	ANTENNA GROUNDING DIAGRAM
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR FULL SIZE. 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.

PROJECT DESCRIPTION

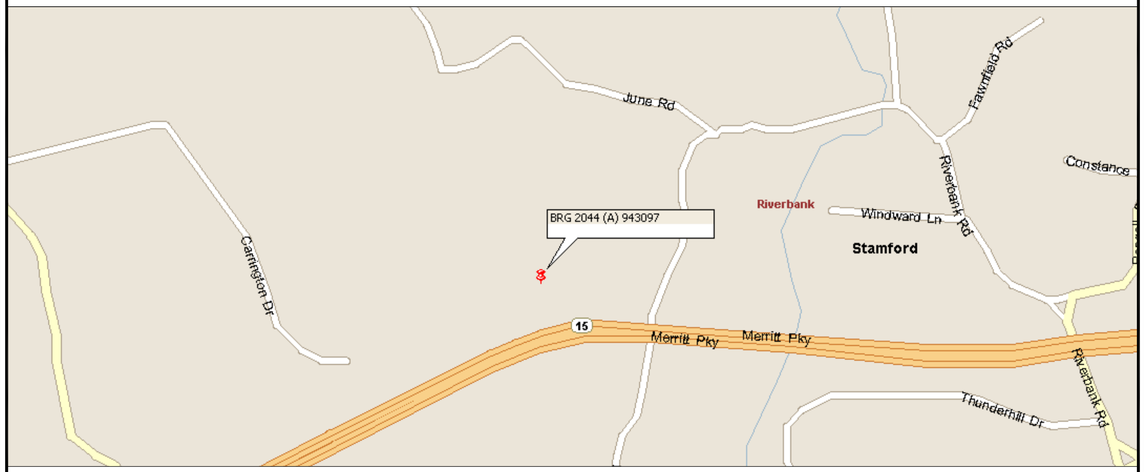
THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK:
- REMOVE PLATFORM MOUNT & ASSOCIATED EQUIPMENT FROM 118'-0" LEVEL
- REMOVE (9) ANTENNAS
- REMOVE (6) RRHs
- REMOVE (9) ACUs
- REMOVE (6) COAX CABLES (1-5/8")
- REMOVE (4) COAX CABLES (17/64")
- REMOVE (1) COAX CABLE (1/2")
- REMOVE (3) HCS 6X12 CABLES (1-5/8")
- REMOVE (1) COAX CABLE (1/8")
- REMOVE (3) HYBRID CABLES (1-1/4")
- REMOVE (1) HCS 9X18 CABLE (1-5/8")
- REMOVE (1) COAX CABLE (7/8")
- REMOVE (1) COAX CABLE (5/8")
- INSTALL (9) ANTENNAS
- INSTALL (6) RRHs
- INSTALL (3) HYBRID CABLES (1-5/8")

GROUND SCOPE OF WORK:
- REMOVE (2) DUW30 & (6) RU22 RADIOS FROM RBS 6131 CABINET
- REMOVE 6131 CABINET
- REMOVE S8000 OUTDOOR CABINET
- RELOCATE (1) DUG20 & (2) BB6630
- INSTALL (1) 6160 AC V1 CABINET
- INSTALL (1) B160 BATTERY CABINET
- INSTALL (1) RP 6651, (1) PSU 4813 & (1) CSR IXRE V2 (GEN2) IN 6160 CABINET
- INSTALL (1) PSU 4813 VR4A IN RBS 6131 CABINET
- INSTALL (1) 125 AMP BREAKER FOR 6160

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

LOCATION MAP



NO SCALE

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	2018 CONNECTICUT SBC/2015 IBC
MECHANICAL	2018 CONNECTICUT SBC/2015 IMC
ELECTRICAL	2018 CONNECTICUT SBC/2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	BLACK & VEATCH
DATED:	6/28/22
MOUNT ANALYSIS:	INFINIGY
DATED:	8/23/22
RFDS REVISION:	8
DATED:	8/8/22
ORDER ID:	621042
REVISION:	0

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

APPROVALS

APPROVAL	SIGNATURE	DATE
PROPERTY OWNER OR REP.		
LAND USE PLANNER		
T-MOBILE		
OPERATIONS		
RF		
NETWORK		
BACKHAUL		
CONSTRUCTION MANAGER		

THE PARTIES ABOVE HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL CONSTRUCTION DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES AND MODIFICATIONS THEY MAY IMPOSE.

T-Mobile
4 SYLVAN WAY
PARSIPPANY, NJ 07054

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

T-MOBILE SITE NUMBER:
CT11071E

BU #: **806953**
BRG 2044 (A) 943097

69 GUINEA RD (CAMP ROCKY CRAIG)
STAMFORD, CT 06903

EXISTING
160'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	7/18/22	TDG	PRELIMINARY REVIEW	CV
0	8/30/22	TDG	CONSTRUCTION	LR
1	9/6/22	TDG	CONSTRUCTION	CV

STATE OF CONNECTICUT
No. 23924
LICENSED PROFESSIONAL ENGINEER
9/6/22

MTS ENGINEERING P.L.L.C.
BER:2386985
Expires 3/31/23

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: T–MOBILE
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. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
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 "T–MOBILE".
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

T-Mobile
4 SYLVAN WAY
PARSIPPANY, NJ 07054

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

T-MOBILE SITE NUMBER:
CT11071E

BU #: **806953**
BRG 2044 (A) 943097

69 GUINEA RD (CAMP ROCKY CRAIG)
STAMFORD, CT 06903

EXISTING
160'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	7/18/22	TDG	PRELIMINARY REVIEW	CV
0	8/30/22	TDG	CONSTRUCTION	LR
1	9/6/22	TDG	CONSTRUCTION	CV

MTS ENGINEERING P.L.L.C.
BER:2386985
Expires 3/31/23

SHEET NUMBER: T-2
REVISION: 1

SITE PLAN DISCLAIMER:

PROPERTY LINES AND STRUCTURES HAVE BEEN DIGITIZED FROM GOOGLE MAPS. CROWN CASTLE USA INC. HAS NOT COMPLETED A SITE SURVEY AND THEREFORE MAKES NO CLAIMS AS TO THE ACCURACY OF INFORMATION DEPICTED ON THIS SHEET.

1 OVERALL SITE PLAN

SCALE: 80' 40' 0 80' 1" = 80'–0" (FULL SIZE) 1" = 160'–0" (11x17)

N

T-Mobile
4 SYLVAN WAY
PARSIPPANY, NJ 07054

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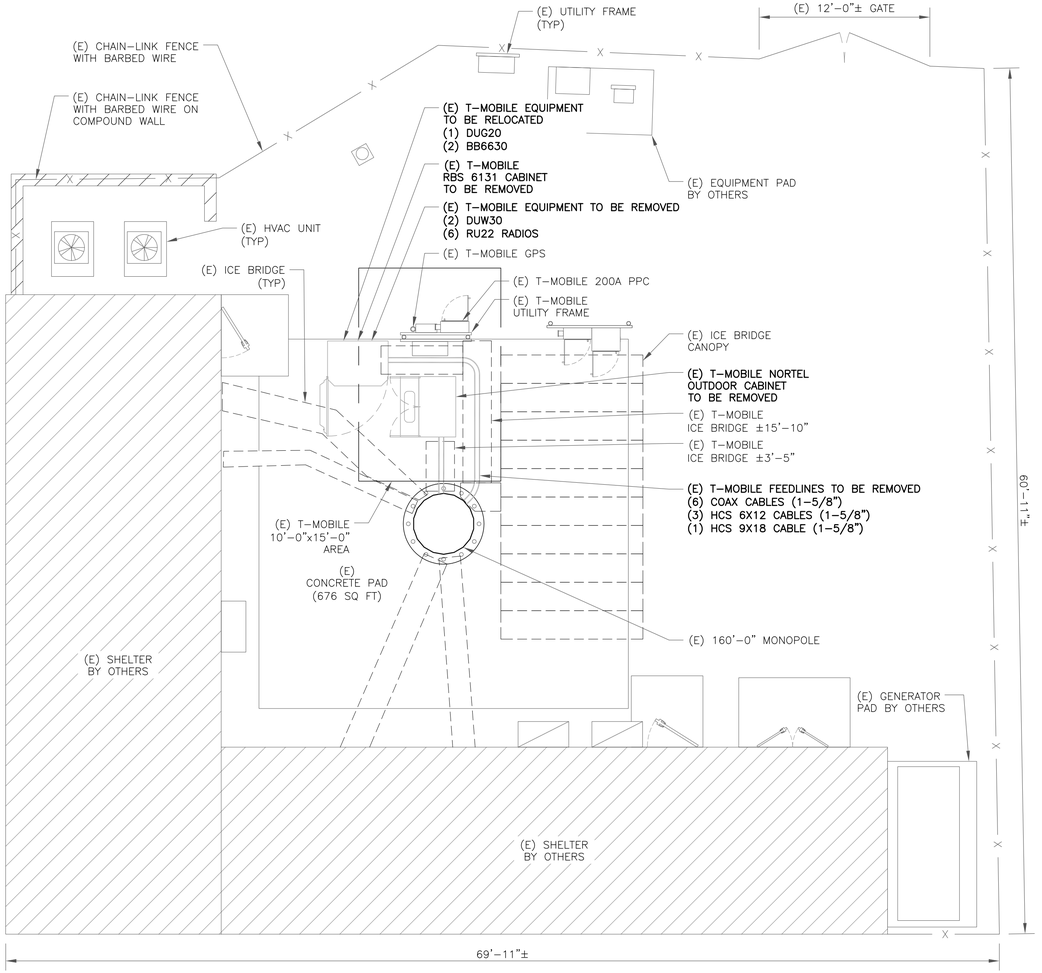
STATE OF CONNECTICUT
CHAD VANDERGRAFT
No. 23924
LICENSED
PROFESSIONAL ENGINEER
9/6/22

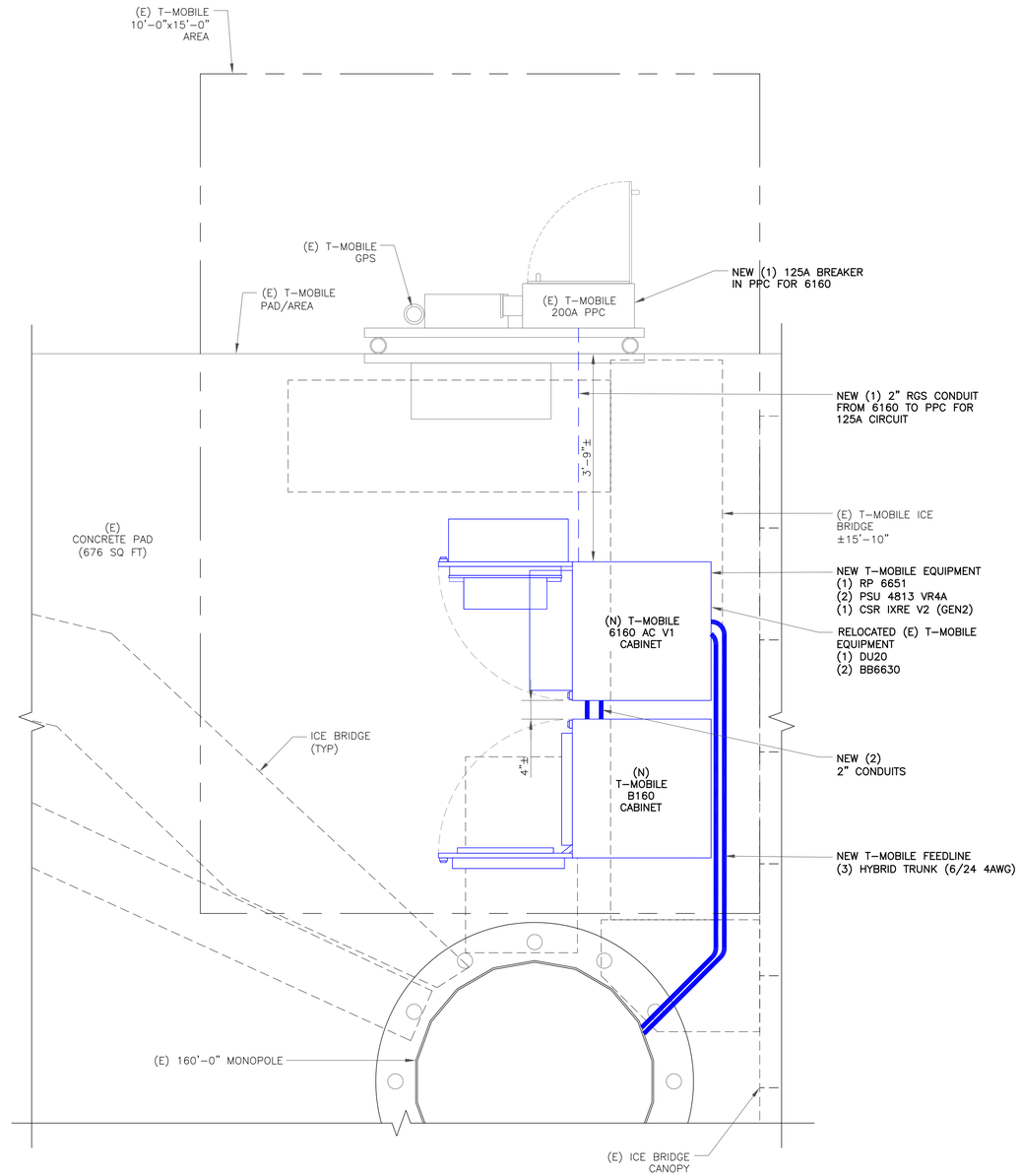
MTS ENGINEERING P.L.L.C.
BER:2386985
Expires 3/31/23

SHEET NUMBER: C-1.1

REVISION: 1



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



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

T-Mobile
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PARSIPPANY, NJ 07054

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T-MOBILE SITE NUMBER:
CT11071E

BU #: **806953**
BRG 2044 (A) 943097

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STAMFORD, CT 06903

EXISTING
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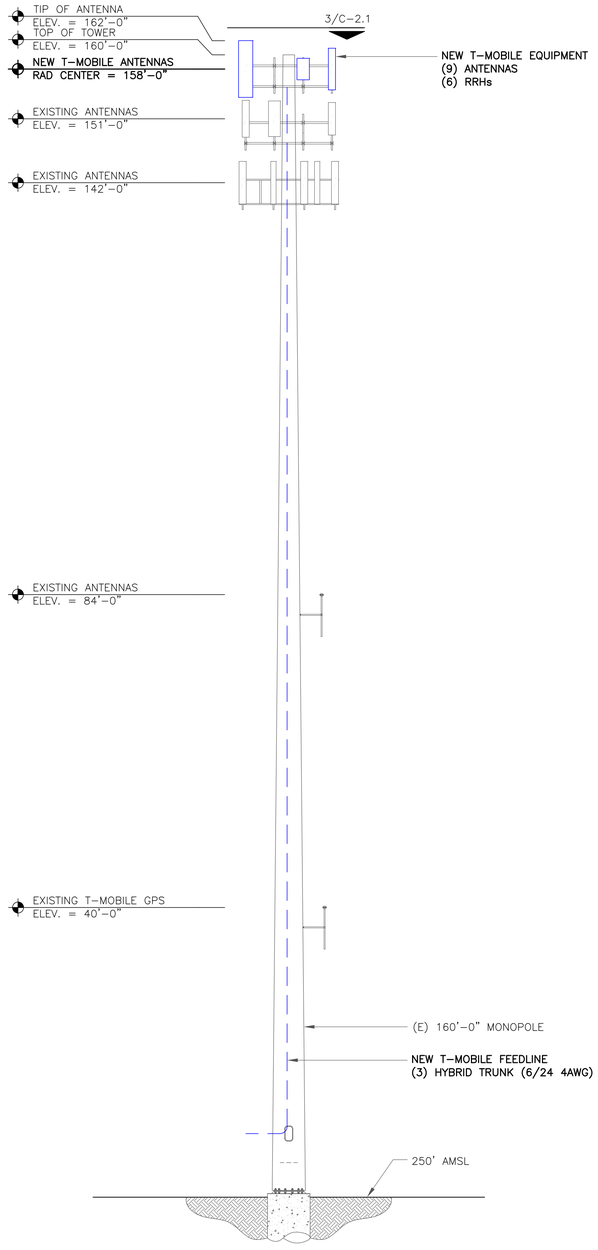
STATE OF CONNECTICUT
No. 23924
LICENSED PROFESSIONAL ENGINEER
9/6/22

MTS ENGINEERING P.L.L.C.
BER:2386985
Expires 3/31/23

SHEET NUMBER: C-1.2
REVISION: 1

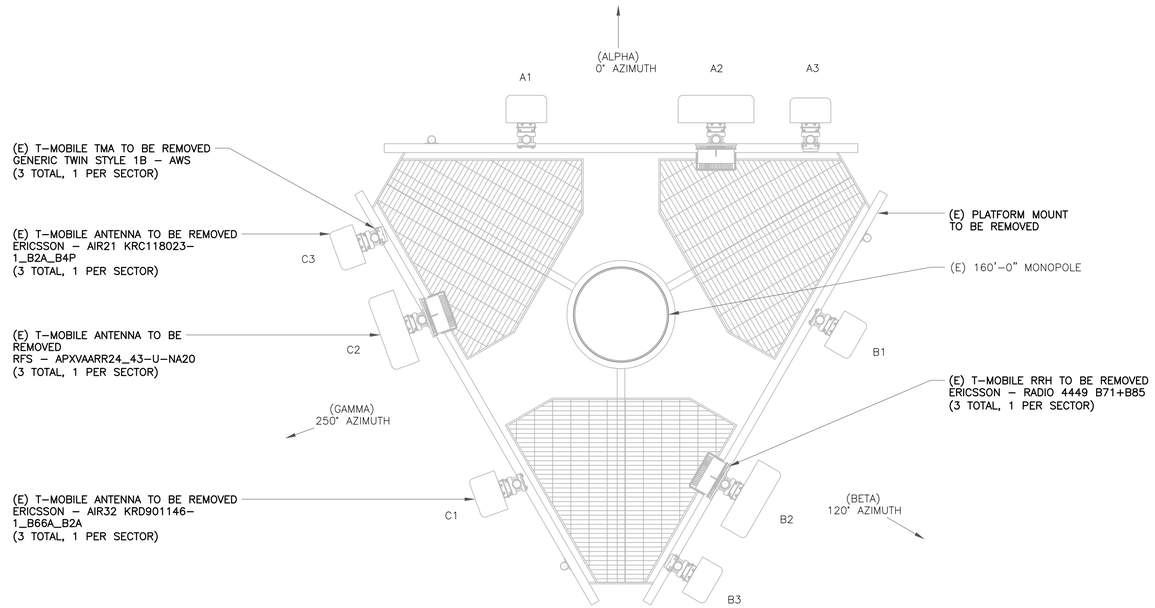


T-MOBILE EQUIPMENT

ANTENNA CL: 158'-0"
MOUNT CL: 157'-0"

ANY AND ALL TOWER MOUNTED EQUIPMENT MUST NOT TRAP OR INTERFERE W/ EXISTING SAFETY CLIMB

1 FINAL ELEVATION
SCALE: NOT TO SCALE



2 EXISTING ANTENNA LAYOUT @ 118'-0"
SCALE: NOT TO SCALE

3 FINAL ANTENNA LAYOUT @ 118'-0"
SCALE: NOT TO SCALE

T-Mobile
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EXISTING
160'-0" MONOPOLE

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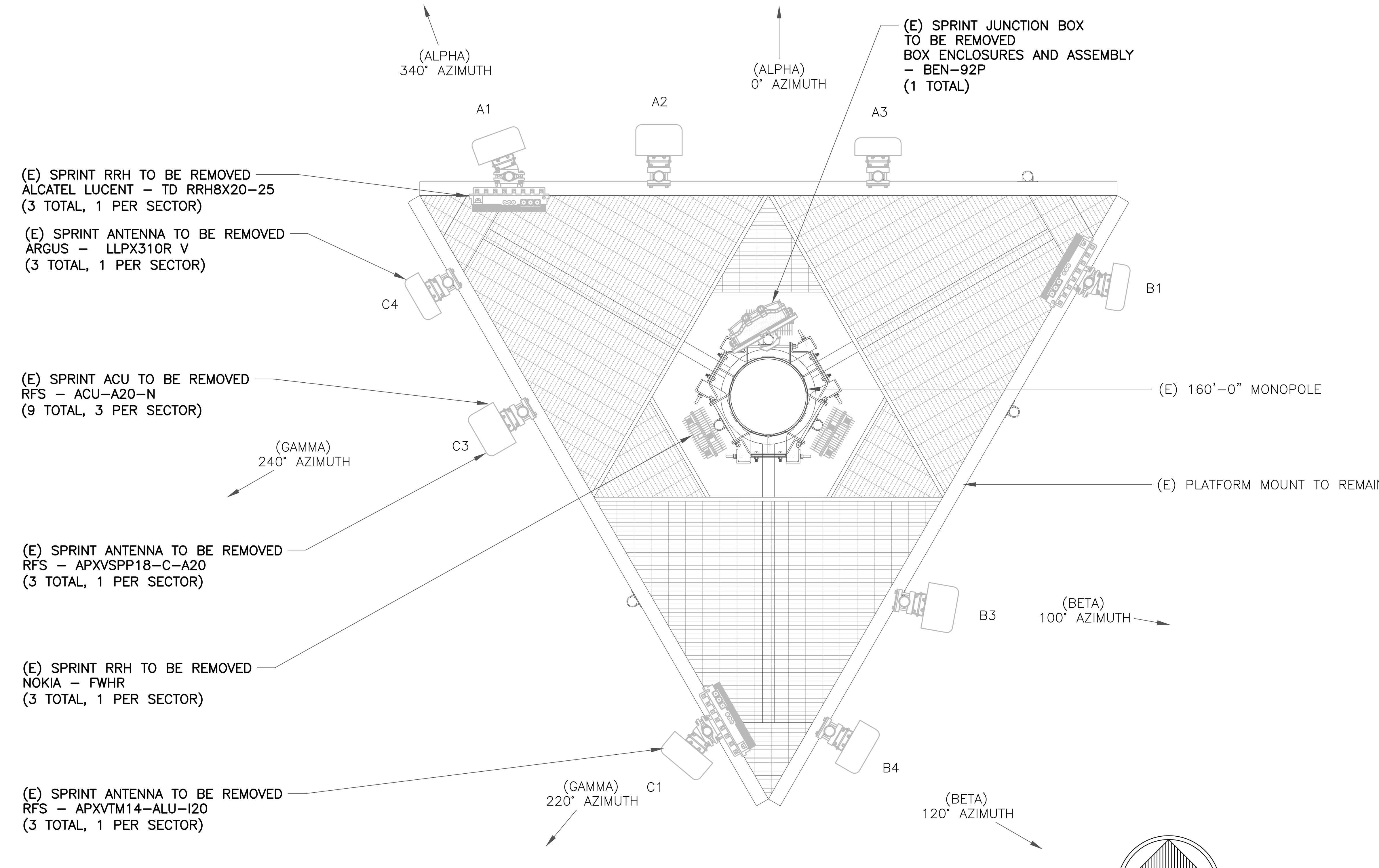
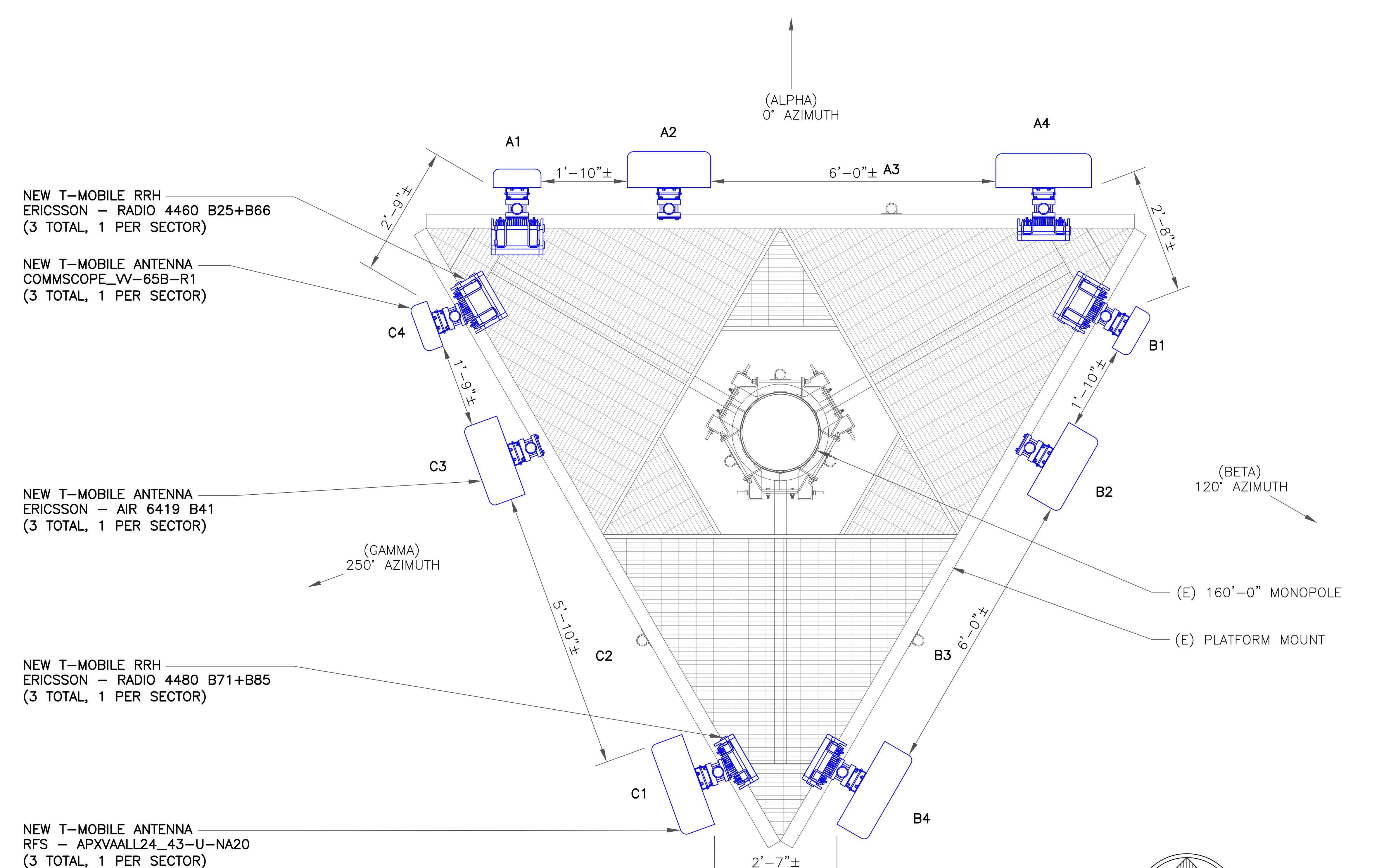


2 EXISTING ANTENNA LAYOUT @ 158'–0" LEVEL
SCALE: NOT TO SCALE



3 FINAL ANTENNA LAYOUT @ 158'–0" LEVEL
SCALE: NOT TO SCALE

1 NOT USED
SCALE: NOT TO SCALE

T · · Mobile · · ·

4 SYLVAN WAY
PARSIPPANY, NJ 07054

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

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1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

T-MOBILE SITE NUMBER:
CT11071E

BU #: **806953**
BRG 2044 (A) 943097

69 GUINEA RD (CAMP ROCKY CRAIG)
STAMFORD, CT 06903

EXISTING
160'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	7/18/22	TDG	PRELIMINARY REVIEW	CV
0	8/30/22	TDG	CONSTRUCTION	LR
1	9/6/22	TDG	CONSTRUCTION	CV

MTS ENGINEERING P.L.L.C.
BER:2386985
Expires 3/31/23

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

SHEET NUMBER: C-2.1
REVISION: 1

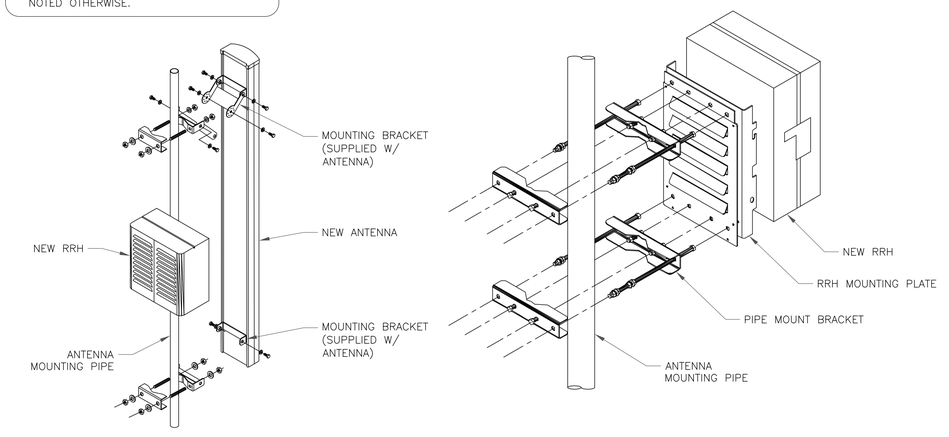
RF SYSTEM SCHEDULE

SECTOR	ANTENNA	TECH	MANUFACTURER	ANTENNA MODEL	AZIMUTH	M-TILT	E-TILT	RAD CENTER	TMA/RRU	FEEDLINE TYPE
ALPHA	A1	G1900/L2100/L1900	COMMSCOPE	VV-65B-R1	0°	0°	2°/2°	158'-0"	RADIO 4460 B25+B66	(1) HYBRID TRUNK (6/24 4AWG) (60M)
	A2	L2500/N2500	ERICSSON	AIR 6419 B41	0°	0°	2°/2°	158'-0"	–	
	A3	–	–	–	–	–	–	158'-0"	–	
	A4	L700/L600/N600	RFS	APXVAALL24_43-U-NA20	0°	0°	2°/2°	158'-0"	RADIO 4480 B71+B85	
BETA	B1	G1900/L2100/L1900	COMMSCOPE	VV-65B-R1	120°	0°	2°/2°	158'-0"	RADIO 4460 B25+B66	(1) HYBRID TRUNK (6/24 4AWG) (60M)
	B2	L2500/N2500	ERICSSON	AIR 6419 B41	120°	0°	2°/2°	158'-0"	–	
	B3	–	–	–	–	–	–	158'-0"	–	
	B4	L700/L600/N600	RFS	APXVAALL24_43-U-NA20	120°	0°	2°/2°	158'-0"	RADIO 4480 B71+B85	
GAMMA	C1	L700/L600/N600	RFS	APXVAALL24_43-U-NA20	250°	0°	2°/2°	158'-0"	RADIO 4480 B71+B85	(1) HYBRID TRUNK (6/24 4AWG) (60M)
	C2	–	–	–	–	–	–	158'-0"	–	
	C3	L2500/N2500	ERICSSON	AIR 6419 B41	250°	0°	2°/2°	158'-0"	–	
	C4	G1900/L2100/L1900	COMMSCOPE	VV-65B-R1	250°	0°	2°/2°	158'-0"	RADIO 4460 B25+B66	

1 ANTENNA AND CABLE SCHEDULE
SCALE: NOT TO SCALE

INSTALLER NOTES:

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



2 ANTENNA WITH RRH MOUNTING DETAIL
SCALE: NOT TO SCALE

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4 SYLVAN WAY
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3 CORPORATE PARK DRIVE, SUITE 101
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SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

T-MOBILE SITE NUMBER:
CT11071E

BU #: **806953**
BRG 2044 (A) 943097

69 GUINEA RD (CAMP ROCKY CRAIG)
STAMFORD, CT 06903

EXISTING
160'-0" MONOPOLE

ISSUED FOR:

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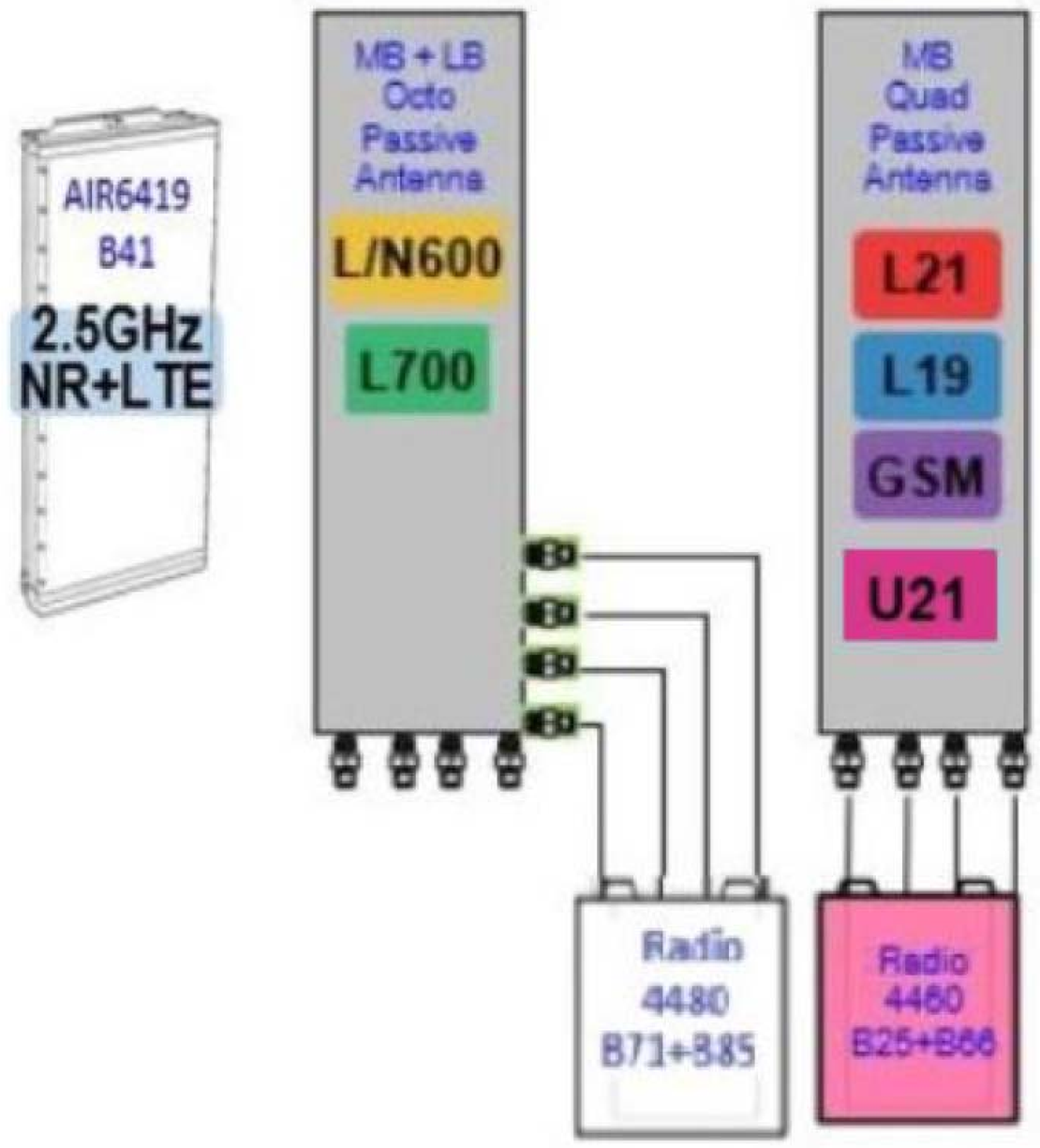
STATE OF CONNECTICUT
CHRISTOPHER VANDERGRAFT
No. 23924
LICENSED PROFESSIONAL ENGINEER
9/6/22

MTS ENGINEERING P.L.L.C.
BER:2386985
Expires 3/31/23

SHEET NUMBER: C-3
REVISION: 1



1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE

T-Mobile
4 SYLVAN WAY
PARSIPPANY, NJ 07054

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CT11071E

BU #: **806953**
BRG 2044 (A) 943097

69 GUINEA RD (CAMP ROCKY CRAIG)
STAMFORD, CT 06903

EXISTING
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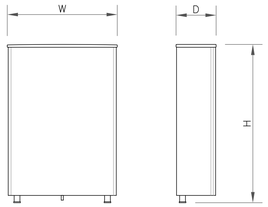
CLAY V. SCHOUT
No. 23924
LICENSED
PROFESSIONAL ENGINEER
9/6/22

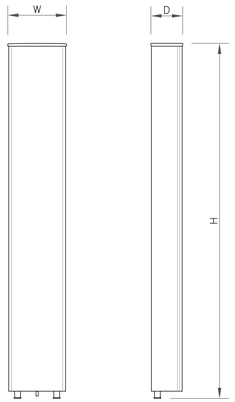
MTS ENGINEERING P.L.L.C.
BER:2386985
Expires 3/31/23

SHEET NUMBER: C-4
REVISION: 1



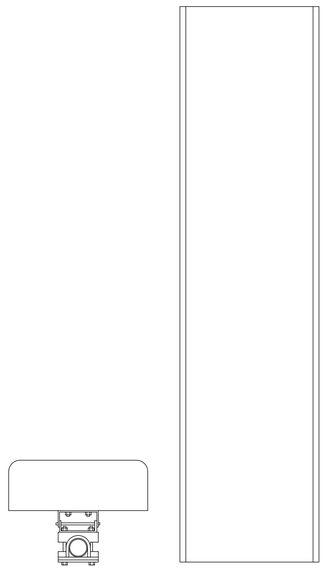
ANTENNA SPECS	
MANUFACTURER	ERICSSON
MODEL #	AIR 6419 B41
WIDTH	20.91"
DEPTH	9.02"
HEIGHT	36.25"
WEIGHT	96.50 LBS

1 ANTENNA SPECS
SCALE: NOT TO SCALE



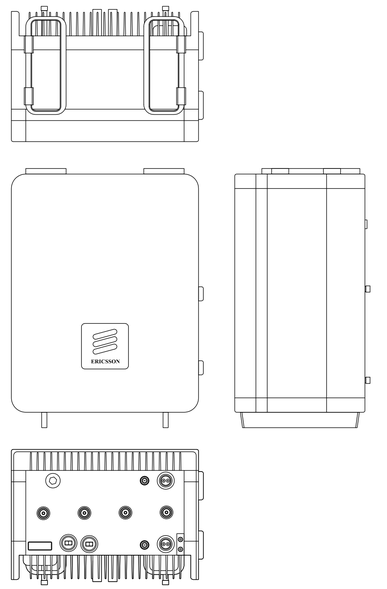
ANTENNA SPECS	
MANUFACTURER	COMMSCOPE
MODEL #	VV-65B-R1
WIDTH	12.01"
DEPTH	4.65"
HEIGHT	70.35"
WEIGHT	41.67 LBS

2 ANTENNA SPECS
SCALE: NOT TO SCALE



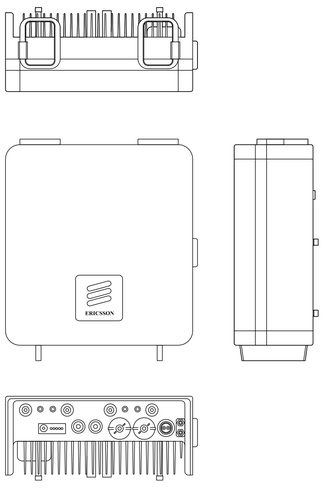
RFS/CELWAVE – APXVAALL24_43-U-NA20
WEIGHT (WITHOUT MOUNTING HARDWARE): 149.9 LBS
SIZE (HxWxD): 95.9x24.0x8.5 IN.

RFS/CELWAVE – APXVAALL24_43-U-NA20
SCALE: NOT TO SCALE



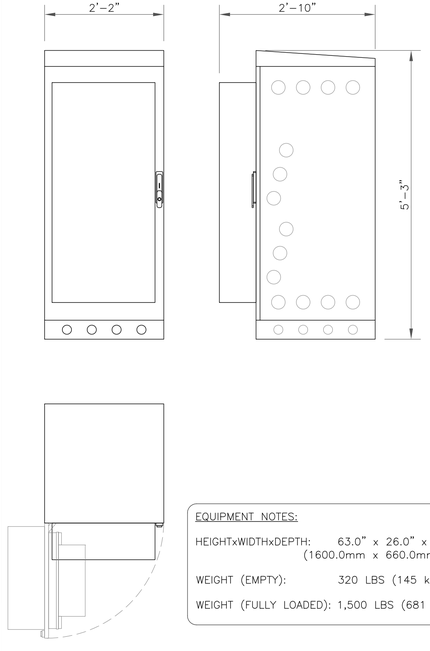
ERICSSON – RADIO 4460
WEIGHT: 109 LBS
SIZE (HxWxD): 17.0x15.1x11.9 IN.

ERICSSON – RADIO 4460
SCALE: NOT TO SCALE



ERICSSON – RADIO 4480
WEIGHT: 92.6 LBS
SIZE (HxWxD): 21.8x15.7x7.5 IN.

ERICSSON – RADIO 4480
SCALE: NOT TO SCALE



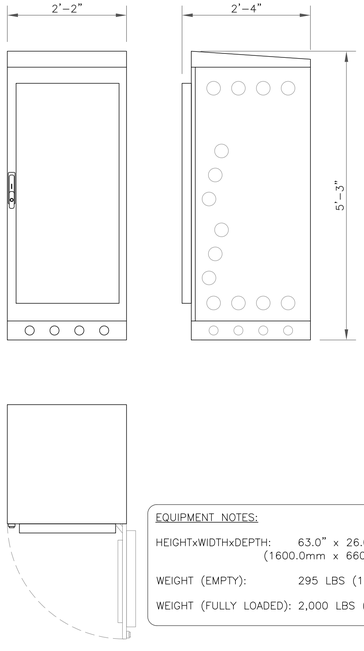
EQUIPMENT NOTES:

HEIGHTxWIDTHxDEPTH: 63.0" x 26.0" x 34.0"
(1600.0mm x 660.0mm x 864.0mm)

WEIGHT (EMPTY): 320 LBS (145 kg)

WEIGHT (FULLY LOADED): 1,500 LBS (681 kg)

6 ERICSSON – 6160
SCALE: NOT TO SCALE



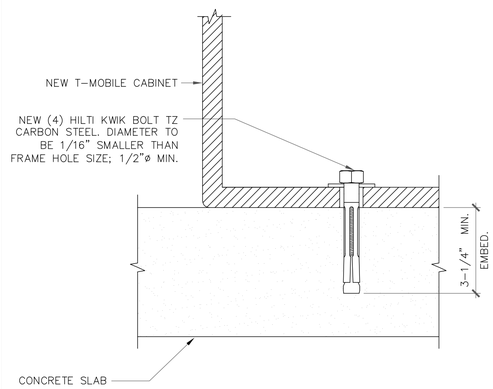
EQUIPMENT NOTES:

HEIGHTxWIDTHxDEPTH: 63.0" x 26.0" x 28.0"
(1600.0mm x 660.0mm x 711.0mm)

WEIGHT (EMPTY): 295 LBS (134 kg)

WEIGHT (FULLY LOADED): 2,000 LBS (908 kg)

7 ERICSSON – B160
SCALE: NOT TO SCALE



8 CABINET ANCHOR DETAIL
SCALE: NOT TO SCALE

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B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

T-MOBILE SITE NUMBER:
CT11071E

BU #: **806953**
BRG 2044 (A) 943097

69 GUINEA RD (CAMP ROCKY CRAIG)
STAMFORD, CT 06903

EXISTING
160'-0" MONOPOLE

ISSUED FOR:

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1	9/6/22	TDG	CONSTRUCTION	CV

STATE OF CONNECTICUT
CHAD VANDERGRAFT
No. 23924
LICENSED
PROFESSIONAL ENGINEER
9/6/22

MTS ENGINEERING P.L.L.C.
BER:2386985
Expires 3/31/23

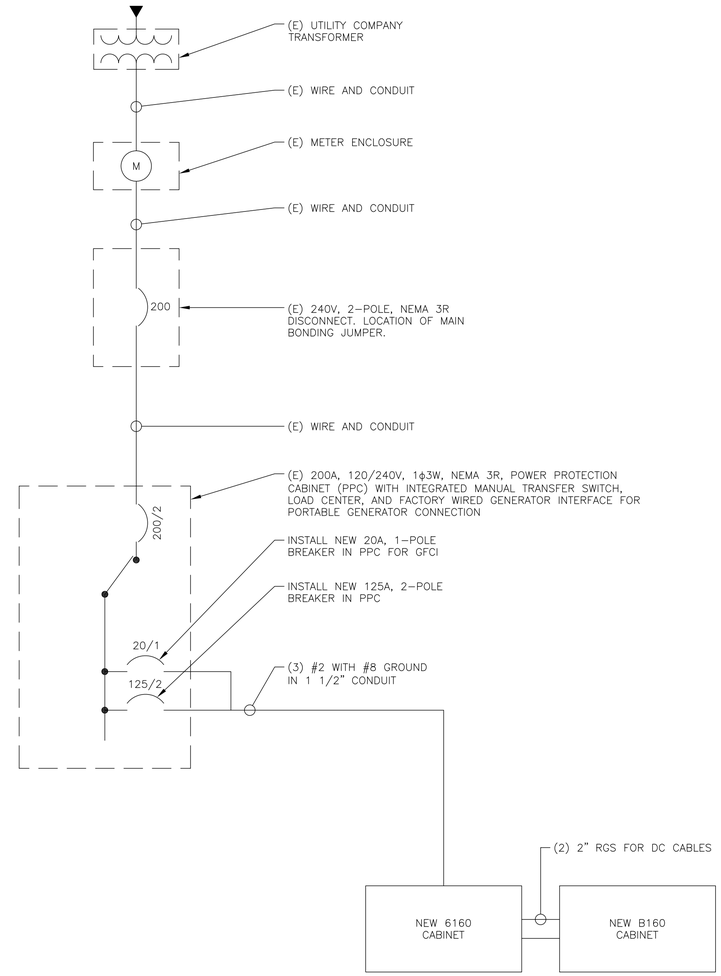
SHEET NUMBER: C-5
REVISION: 1

FINAL PANEL SCHEDULE							
LOAD	POLES	AMPS	BUS L1	BUS L2	AMPS	POLES	LOAD
SURGE	2	60	1	2	20	1	PANEL PLUG
			3	4	20	1	TELCO PLUG
LED LIGHT	1	15	5	6	125	2	6160
			7	8			
			9	10	20	1	GFI
			11	12			
			13	14			
			15	16			
			17	18			
			19	20			
			21	22			
			23	24			

RATED VOLTAGE: ■120/240 □_____, 1 PHASE, 3 WIRE	BRANCH POLES: □12 ■24 □30 □42	APPROVED MF'RS
RATED AMPS: □100 ■200 □400 □_____,	CABINET: ■SURFACE □FLUSH	NEMA □1 ■3R □4X
□MAIN LUGS ONLY | MAIN 200 AMPS ■BREAKER □FUSED SWITCH	■HINGED DOOR	■KEYED DOOR LATCH
□FUSED ■CIRCUIT BREAKER BRANCH DEVICES	□_____ TO BE GFCI BREAKERS	FULL NEUTRAL BUS | GROUND BAR
ALL BREAKERS MUST BE RATED TO INTERRUPT A SHORT CIRCUIT ISC OF 10,000 AMPS SYMMETRICAL		

INSTALL NEW BREAKER IN POSITION 6 AND 8 WITH A NEW 2P 125A BREAKER
INSTALL NEW BREAKER IN POSITION 10 WITH A NEW 1P 20A BREAKER
INSTALL NEW WIRES FOR NEW 6160 CABINET WITH (3) 1/0 AWG THWN (COPPER) AND (1) #2G AWG. MINIMUM CONDUIT SIZE TO BE 2".
IF 125A BREAKER WILL NOT PROPERLY FIT IN EXISTING PANEL, REPLACE (E) PANEL WITH SQUARE D PANEL QO12040M200RB (OR APPROVED EQUAL).
UPGRADE FEEDER WIRES TO MEET AMPACITY IF NEW PANEL IS REQUIRED.
FINAL PANEL DESIGN AND CALCULATIONS FOR WIRE SIZE WERE BASED OFF OF EXISTING DOCUMENTS AND PHOTOS

1 AC PANEL SCHEDULE
SCALE: NOT TO SCALE



NOTES:

1. ALL NEW CONDUCTORS TO BE INSTALLED SHALL BE COPPER. ALL CONDUCTORS SHALL BE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 UNLESS NOTED OTHERWISE.
2. CONTRACTOR IS TO FIELD VERIFY ALL EXISTING ITEMS SHOWN ON THE ELECTRICAL ONE–LINE DIAGRAM AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
3. ALL GROUNDING AND BONDING PER THE NEC.

2 ONE LINE DIAGRAM
SCALE: NOT TO SCALE

T-Mobile
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69 GUINEA RD (CAMP ROCKY CRAIG)
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EXISTING
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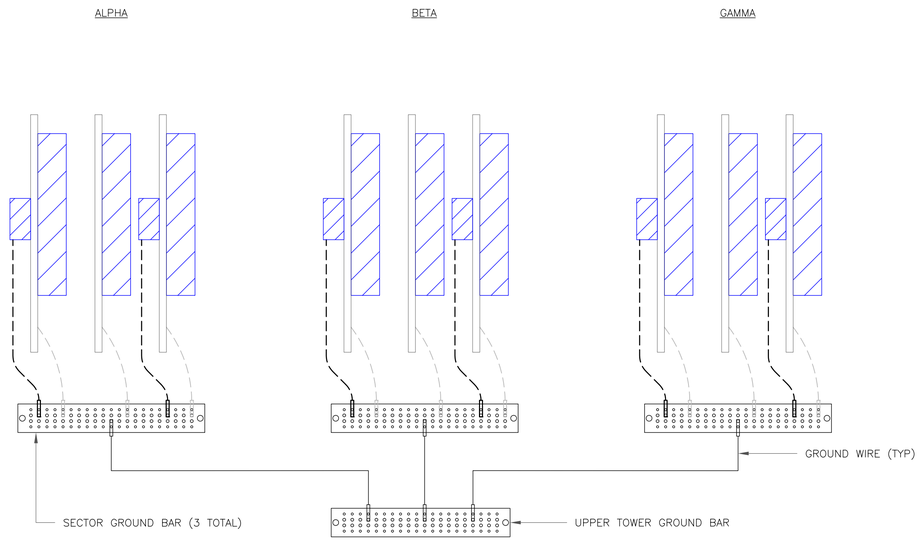
MTS ENGINEERING P.L.L.C.
BER:2386985
Expires 3/31/23

SHEET NUMBER: E-1
REVISION: 1



NOTE:

ALL NEW GROUNDS TO BE #6 STRANDED COPPER WITH GREEN INSULATION UNLESS NOTED OTHERWISE.

1 ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE

T-Mobile

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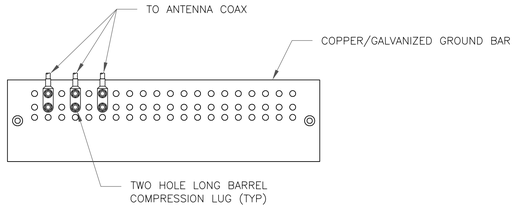
STATE OF CONNECTICUT
No. 23924
LICENSED
PROFESSIONAL ENGINEER
9/6/22

MTS ENGINEERING P.L.L.C.
BER:2386985
Expires 3/31/23

SHEET NUMBER: G-1

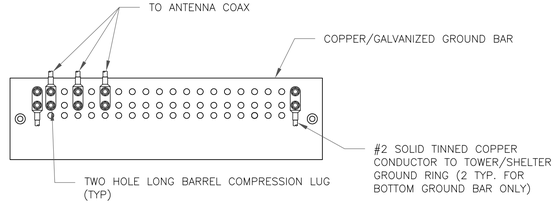
REVISION: 1



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.

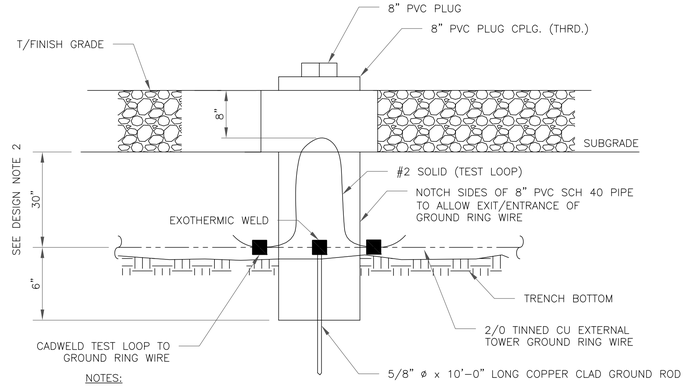
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



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.

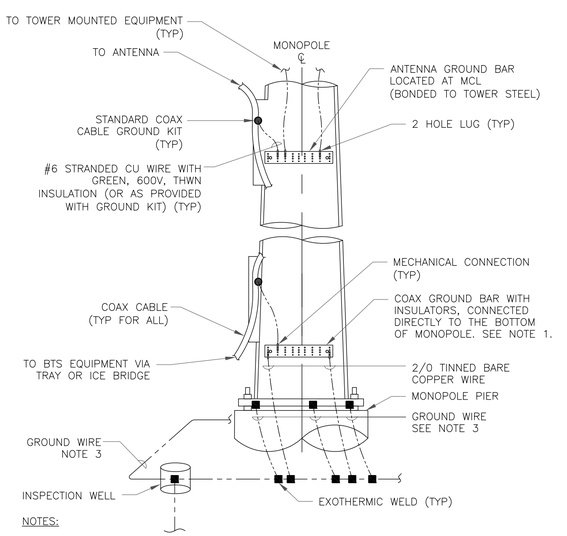
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL
2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)

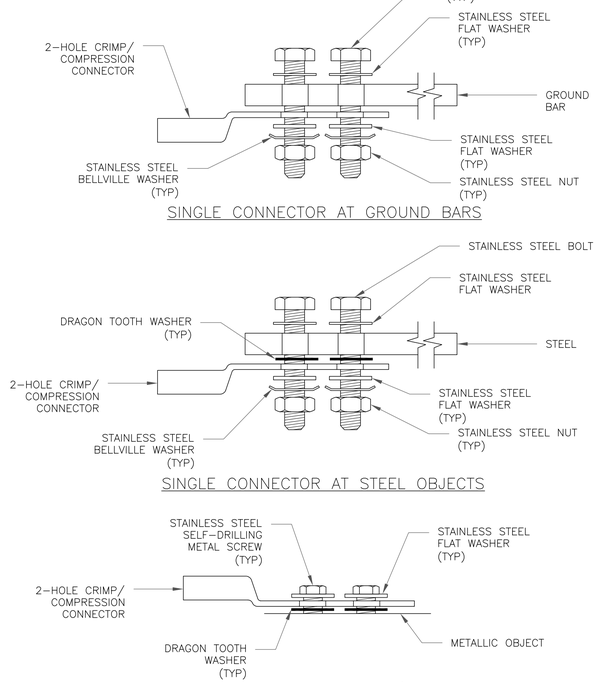
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



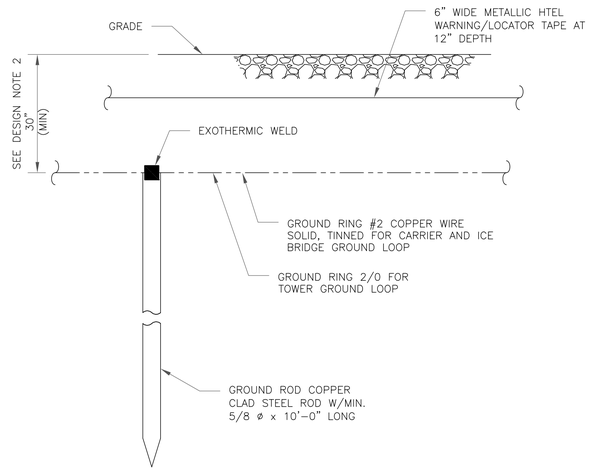
NOTES:

1. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATIONS AND CONNECTION ORIENTATION. COAXIAL CABLES EXCEEDING 200 FEET ON THE TOWER SHALL HAVE GROUND KITS AT THE MIDPOINT. PROVIDE AS REQUIRED.
2. ONLY MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO CROWN CASTLE USA INC. TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.
3. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE RECOGNIZED EDITION OF ANSI/TIA 222 AND NFPA 780.

4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

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2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)

6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

T-Mobile
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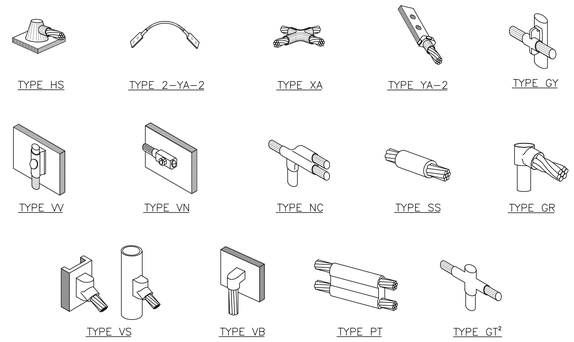
STATE OF CONNECTICUT
No. 23924
LICENSED
PROFESSIONAL ENGINEER
9/6/22

MTS ENGINEERING P.L.L.C.
BER:2386985
Expires 3/31/23

SHEET NUMBER: G-2
REVISION: 1

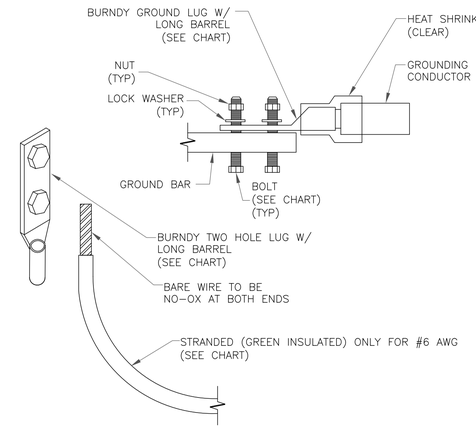


NOTE:

1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.
2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE

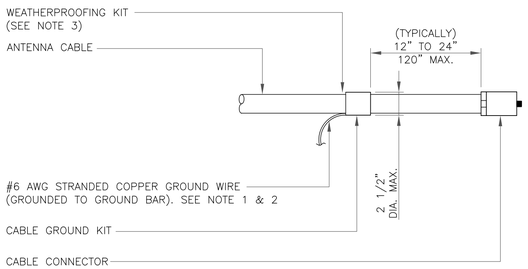
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



NOTES:

1. 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.

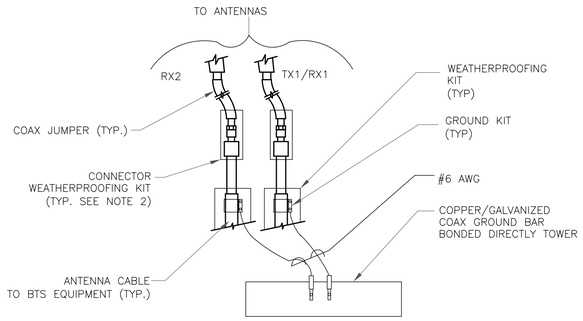
2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



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.

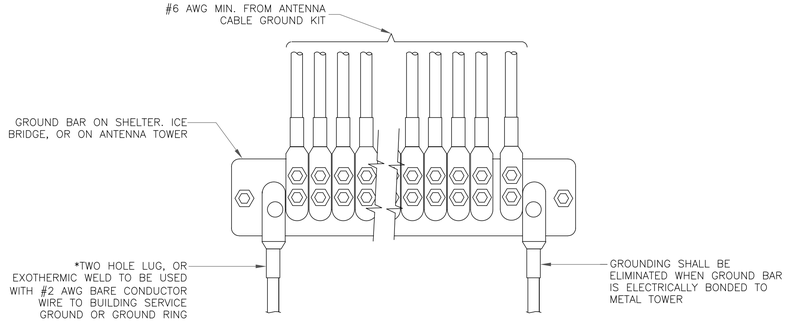
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



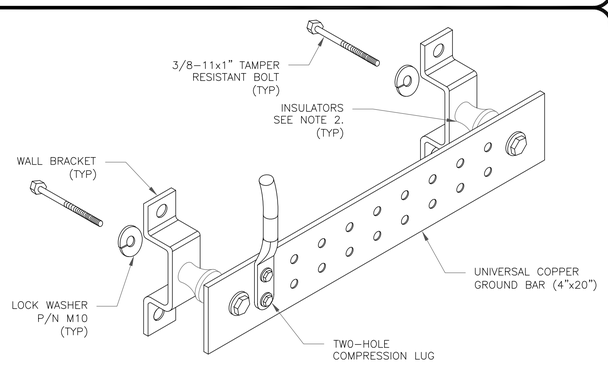
NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE



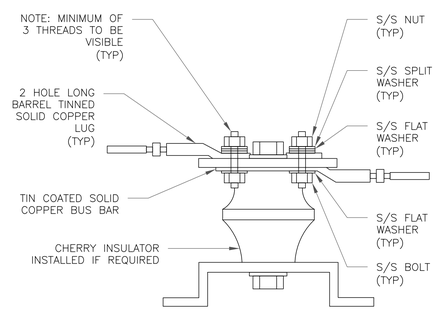
5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



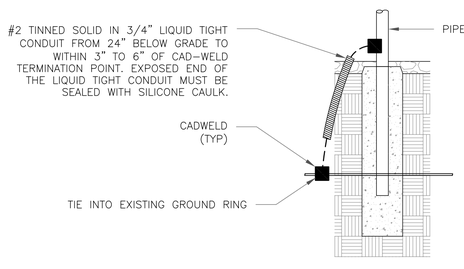
NOTES:

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.

6 GROUND BAR DETAIL
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE

T-Mobile
4 SYLVAN WAY
PARSIPPANY, NJ 07054

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

T-MOBILE SITE NUMBER:
CT11071E

BU #: **806953**
BRG 2044 (A) 943097

69 GUINEA RD (CAMP ROCKY CRAIG)
STAMFORD, CT 06903

EXISTING
160'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	7/18/22	TDG	PRELIMINARY REVIEW	CV
0	8/30/22	TDG	CONSTRUCTION	LR
1	9/6/22	TDG	CONSTRUCTION	CV

MTS ENGINEERING P.L.L.C.
BER:2386985
Expires 3/31/23

SHEET NUMBER: G-3
REVISION: 1