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

October 28, 2021

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

RE: **Notice of Exempt Modification for T-Mobile**
Crown#828257: T-Mobile Site ID CT11307C
175 Stafford Street, Stafford, CT 06077
Latitude: 41° 59′ 13.38" / Longitude: -72° 15′ 40.78″

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 150-foot mount on the existing 150-foot monopole tower located at 175 Stafford Street, Stafford, CT. The property is owned by Harry & Nancy Pragl and the tower is owned by Crown Castle. T-Mobile now intends to replace six (6) antennas and ancillary equipment at the 150ft level. This modification/proposal includes hardware that is both 4G (LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

Panned Modification:

Tower:

Installed New:

(3) Ericsson – AIR6449 B41 Antennas
(3) RFS-APXVAALL24_43-U-NA20 Antennas
(3) Ericsson- RRU 4460 B25+B66
(3) Ericsson- Radio 4480 B71+B85
(4) Hybrid 1-5/8" Cables
(1) Site Pro 1 HRK14 Handrail Kit. I 8' Pipe Mount Sector

Remove:

(3) RFS -APXVTM14-C-120 Antennas
(3) Commscope – NNVV-65B-R4
(3) Alcatel Lucent – RRH2x50-800
(3) Alcatel Lucent – RRH8x20-25
(3) Alcatel Lucent – PCS MHZ 4x45W-65 MHZ
(4) 1-1/4" Coax Cables
(3) Hybrid 1-5/8" Cables

Ground:

Install New:

(1) 6160 Cabinet and enclosure
(1.) RBS 6601
(1) B160 Battery Cabinet
(1) CSR IXRE V2
(1) PSU 4813 Voltage Booster
(1.) BB 6648 In New 6160 Cabinet
(3) RB 6630 In New 6160 Cabinet
(1.) DG 20 IN SSC

The facility was approved by the Connecticut Siting Council in Docket No. on June 3, 2002. The approval was given with conditions which this exempt modification follows.

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 Ms. Mary Mitta, First Selectwoman, Town of Stafford, Mr. David Perkins, Zoning Enforcement Officer, Town of Stafford and Harry & Nancy Pragl, property owner. Crown Castle is the tower owner.

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

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

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

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

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

For the foregoing reasons, 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
Westborough, MA 01581
(781) 970-0053
Jeff.Barbadora@crowncastle.com

Attachments
cc:

Mary Mitta, First Selectwoman
Town of Stafford
1 Main street
Stafford, CT 06076
(860) 684-1777

David Perkins, Zoning Enforcement Officer
Town of Stafford
1 Main street
Stafford, CT 06076
(860) 684-1777

Harry & Nancy Pragl
PO Box 154B
Staffordville, CT 06077

Crown Castle, Tower Owner

DOCKET NO. 212 - Sprint Spectrum, L.P. d/b/a Sprint PCS application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telecommunications facility adjacent to 156 Stafford Street or 159 Stafford Street, Stafford, Connecticut.	}	Connecticut
	}	Siting
	}	Council
	}	June 3, 2002

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility at the proposed alternate D (deer stand) site located at 159 Stafford Street, in Stafford, 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 Sprint Spectrum d/b/a Sprint PCS for the construction, maintenance, and operation of a wireless telecommunications facility at the proposed alternate D (deer stand) site located at 159 Stafford Street Stafford, Connecticut. We deny certification of the proposed prime site and alternate A, B, and C sites located off Stafford Street, Stafford, Connecticut.

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

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas for Sprint PCS, and other telecommunications entities, both public and private, but such tower shall not exceed a height of 150 feet above ground level including all appurtenances.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include: a final site plan(s) for development of the proposed alternate site including a compound reduced in size, the location and specifications for the tower foundation, antennas, equipment and foundation for equipment, security fence, access road to be no closer than 25 feet to any inland wetlands, and utility line that shall be underground; 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; landscaping; and provisions for the prevention and containment of spills and/or other discharge into adjacent inland wetlands.

3. The Certificate Holder shall not construct during the months of May, June, and July for the protection of a State species of special concern, the whip-poor-wills (Caprimulgus vociferus).

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

5. The Certificate Holder shall provide electromagnetic radio frequency power density measurements within sixty days following commencement of commercial operation.

6. The Certificate Holder shall provide the Council with 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.

7. 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.

8. Following completion of construction, if the facility does not initially provide or permanently ceases to provide wireless services this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment within sixty days, or reapply for any continued or new use to the Council before any such use is made.

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

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

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

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

Sprint Spectrum, d/b/a Sprint PCS

Thomas J. Regan, Esq.
Brown, Rudnick, Freed & Gesmer, P.C.
CityPlace 1, 38th Floor
185 Asylum Street
Hartford, CT 06103-3402

Intervenor

Citizens for Neighborhood Preservation

Glen E. Coe, Esq.
Lewis B. Rome, Esq.
Rome McGuigan Sabanosh, P.C.
Attorneys At Law
One State Street
Hartford, CT 06103-3101

Party

Town of Stafford

Gordon J. Frassinelli, Jr.
First Selectman
Town of Stafford
Warren Memorial Town
1 Main Street, P.O. Box 11
Stafford Springs, CT 06076

CERTIFICATION

The undersigned members of the Connecticut Siting Council (Council) hereby certify that they have heard this case, or read the record thereof, in Docket No. 212 – Sprint Spectrum, L.P. d/b/a Sprint PCS application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a wireless telecommunications facility adjacent to 156 Stafford Street or 159 Stafford Street, Stafford, Connecticut, and voted as follows to approve the alternate D (deer stand) site at 159 Stafford Street, and deny the prime site (156 Stafford Street), and alternate sites A, B and C:

Council Members	Vote Cast
Mortimer A. Gelston, Chairman	Yes
Commissioner Donald W. Downes Designee: Gerald J. Heffernan	Yes
Commissioner Arthur J. Rocque, Jr. Designee: Brian J. Emerick	Yes
Brian O'Neill	Yes
Pamela B. Katz	Yes
Daniel P. Lynch, Jr.	Yes
Philip T. Ashton	Yes
Colin C. Tait	Yes
Edward S. Wilensky	Yes

Dated at New Britain, Connecticut, June 3, 2002.

STATE OF CONNECTICUT)

ss. New Britain, Connecticut :

COUNTY OF HARTFORD)

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

ATTEST:

S. Derek Phelps
Executive Director
Connecticut Siting Council

I certify that a copy of the Findings of Fact, Opinion, and Decision and Order in Docket No. 212 has been forwarded by Certified First Class Return Receipt Requested mail on June 5, 2002, to all parties and intervenors of record as listed on the attached service list, dated January 18, 2002.

ATTEST:

Gwenn R. Gregory
Secretary II
Connecticut Siting Council

175 STAFFORD ST

Location	175 STAFFORD ST	**Mblu**	30/ / 12/ /
Acct#	00142200	**Owner**	PRAGL HARRY J+NANCY C
Assessment	$181,790	**Appraisal**	$259,700
PID	1596	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$206,300	$53,400	$259,700
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$144,410	$37,380	$181,790

Owner of Record

Owner PRAGL HARRY J+NANCY C
Co-Owner
Address PO BOX 154 B
STAFFORDVILLE, CT 06077

Sale Price $0
Certificate 1
Book & Page 0340/0409
Sale Date 09/03/1998
Instrument

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
PRAGL HARRY J+NANCY C	$0	1	0340/0409		09/03/1998

Building Information

Building 1 : Section 1

Year Built:	1972
Living Area:	2,295
Replacement Cost:	$239,154
Building Percent Good:	80
Replacement Cost Less Depreciation:	$191,300

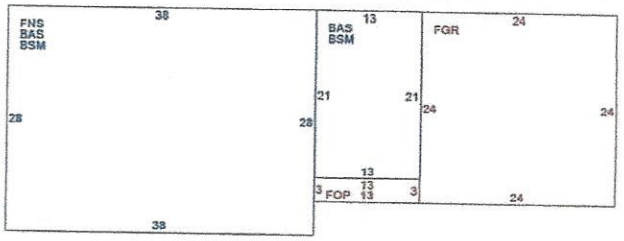
Building Attributes

Field	Description
Style	Colonial
Model	Residential
Grade:	C+
Stories	2
Occupancy	1
Exterior Wall 1	Aluminum Sidng
Exterior Wall 2	Brick
Roof Structure	Gambrel
Roof Cover	Asphalt
Interior Wall 1	Drywall
Interior Wall 2	
Interior Flr 1	Hardwood
Interior Flr 2	
Heat Fuel	Oil
Heat Type:	Hot Water
AC Type:	None
Total Bedrooms:	4
Full Bthrms:	1
Half Baths:	1
Extra Fixtures	0
Total Rooms:	8
Bath Style:	Average
Kitchen Style:	Average
Num Kitchens	1
Fireplaces	1
Extra Openings	
Prefab Fpl(s)	
Attic Type	None
Bsmt Type	Full
Bsmt Garage(s)	0
Fin Bsmnt	0
Fn. Bmt. Qual.	
Unfin Area	0.00

Building Photo

(http://images.vgsi.com/photos2/StaffordCTPhotos//\00\00\94\84.jpg)

Building Layout



(ParcelSketch.ashx?pid=1596&bid=1596)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	1,337	1,337
FNS	Finished 90% Story	1,064	958
BSM	Basement	1,337	0
FGR	Garage	576	0
FOP	Open Porch	39	0
		4,353	2,295

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	101
Description	Res Dwelling
Zone	AA
Neighborhood	240
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	3.98
Frontage	
Depth	
Assessed Value	$37,380
Appraised Value	$53,400

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
BRN6	2S Barn w/ Bsmt			748.00 S.F.	$15,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$198,700	$61,900	$260,600
2018	$198,700	$61,900	$260,600
2017	$198,700	$61,900	$260,600

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$139,090	$43,330	$182,420
2018	$139,090	$43,330	$182,420
2017	$139,090	$43,330	$182,420

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Stafford St
Stafford St
Bradway Rd
Rfd Rd
Rfd Rd
Fox Run Dr
Fox Run Dr

Barbadora, Jeff

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Sent: Monday, November 1, 2021 10:08 AM
To: Barbadora, Jeff
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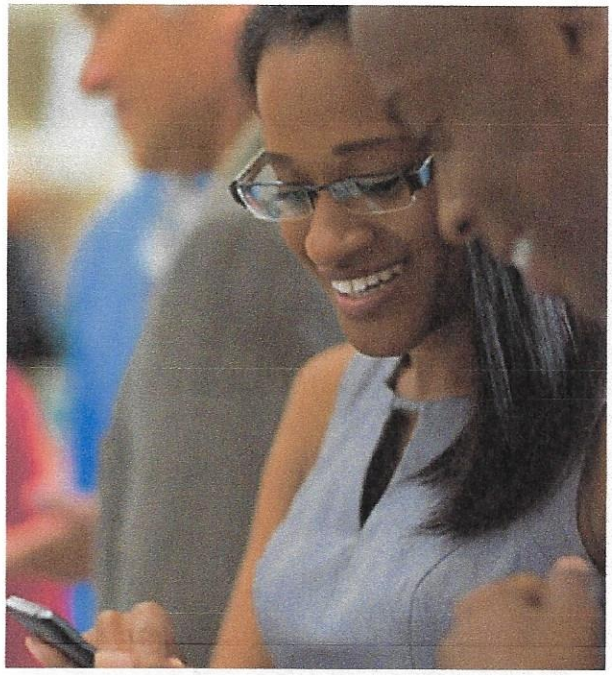
Delivered to 1 MAIN ST, STAFFORD SPRINGS, CT 06076
Received by D.MOULTON

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 775058437516

FROM	Jeff Barbadora 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	Town of Stafford Mary Mitta, First Selectwoman 1 Main Street STAFFORD SPRINGS, CT, US, 06076
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Thu 10/28/2021 06:04 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	STAFFORD SPRINGS, CT, US, 06076
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Priority Overnight



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Received by D.MOULTON

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 775058476800

FROM	Jeff Barbadora 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	Town of Stafford David Perkins, Zoning Enforcement 1 Main Street STAFFORD SPRINGS, CT, US, 06076
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
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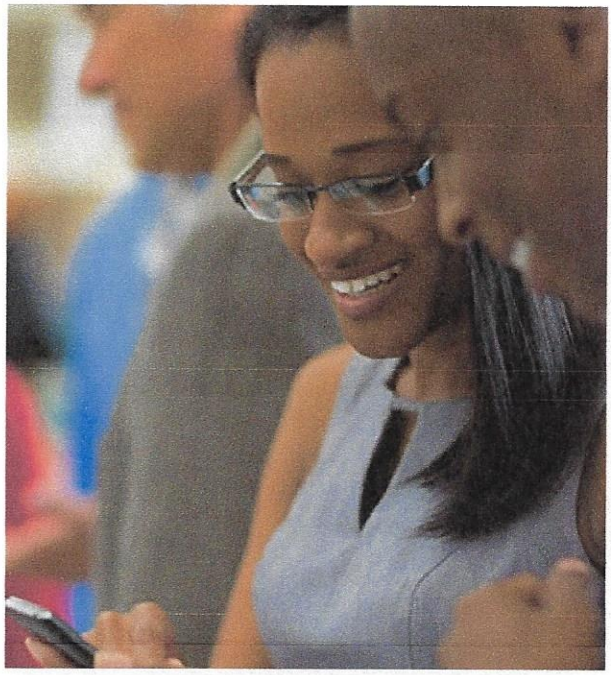

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Date: **September 9, 2021**

Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351

Subject: Structural Analysis Report

Carrier Designation:		
	Site Number:	CTHA628A
	Site Name:	CT54XC726
Crown Castle Designation:	**BU Number:**	876402
	Site Name:	STAFFORD/PRAGYL/SSUSA
	JDE Job Number:	684640
	Work Order Number:	2014543
	Order Number:	584573 Rev. 0
Engineering Firm Designation:	**TEP Project Number:**	22178.596518
Site Data:	**175 Stafford Street, Stafford, Tolland County, CT 06077** **Latitude *41° 59' 13.38"*, Longitude *-72° 15' 40.78"*** **150 Foot - Monopole Tower**	

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

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

LC5: Proposed Equipment Configuration **Sufficient Capacity – 73.5%**

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 – Analysis Criteria.

Structural analysis prepared by: Gautam Sopal, E.I. / DEN

Respectfully submitted by:

Shawn Hoffmeyer, P.E.

Electronic Copy

09/09/21

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1) INTRODUCTION

This is a 150-ft monopole tower mapped by Tower Engineering Professionals in December of 2007. The tower has been modified per reinforcement drawings prepared by Paul J. Ford and Company in June of 2013.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor:	1.0
Ice Thickness:	2.0 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
150.0	152.0	3	Ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe	3	1-5/8
		3	RFS Celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
		3	Ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	Ericsson	Radio 4480_TMOV2		
	150.0	1	Tower Mounts	Platform Mount [LP 1201-1]		
		1	Site Pro 1	HRK14 Handrail Kit		

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)
136.0	138.0	2	CCI Antennas	DMP65R-BU8D w/ Mount Pipe	2 5 6	3/8 3/4 1-5/8
		1	CCI Antennas	DMP65R-BU6D w/ Mount Pipe		
		2	CCI Antennas	OPA65R-BU8D w/ Mount Pipe		
		1	CCI Antennas	OPA65R-BU6D w/ Mount Pipe		
		3	Powerwave Technologies	7770.00 w/ Mount Pipe		
		3	Ericsson	RRUS 4449 B5/B12		
		3	Ericsson	RRUS 4478 B14		
		3	Ericsson	RRUS 8843 B2/B66A		
		6	Powerwave Technologies	LGP21401		
		1	Raycap	DC6-48-60-18-8F		
		1	Raycap	DC9-48-60-24-8C-EV		
	136.0	1	Tower Mounts	T-Arm Mount [TA 602-3]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
127.0	127.0	3	Commscope	SBNHH-1D65B w/ Mount Pipe	2	1-5/8
		3	Commscope	SBNHH-1D65B		
		3	Alcatel Lucent	B13 RRH 4X30		
		3	Alcatel Lucent	B66A RRH4X45		
		2	Raycap	RXXDC-3315-PF-48		
		1	Tower Mounts	Platform Mount [LP 303-1_HR-1]		
75.0	75.0	1	Lucent	KS24019-L112A	1	1/2
		1	Tower Mounts	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Geotechnical Report	2194187	CCISites
Tower Foundation Drawings	2208777	CCISites
Tower Manufacturer Drawings	2175539	CCISites
Tower Reinforcement Drawings	3888429	CCISites
Post-Modification Inspection	5639214	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.

3.2) Assumptions

1) The tower and structures were maintained in accordance with the TIA-222 Standard.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2, and the referenced drawings.
3) The foundation steel reinforcement was assumed to be the minimum required per ACI 318.
4) The following material grades were assumed:
   a) Pole shaft: ASTM A572-65
   b) Base plate: ASTM A572-50
   c) Anchor bolts: A615-75 N
   d) Concrete compressive strength: f'c = 3 ksi
   e) Foundation flexural reinforcement: fy = 60 ksi

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (k)	ϕP_{allow} (k)	% Capacity	Pass / Fail
L1	150 - 123	Pole	TP22.69x17x0.25	1	-10.97	1065.50	31.9	Pass
L2	123 - 85	Pole	TP28.36x21.6105x0.375	2	-16.62	2003.63	49.5	Pass
L3	85 - 44	Pole	TP36.86x27.0303x0.4063	3	-25.06	2808.54	51.9	Pass
L4	44 - 0	Pole	TP42.53x35.0535x0.4375	4	-38.20	3590.34	56.6	Pass
							Summary	
						Pole (L4)	56.6	Pass
						RATING =	**56.6**	**Pass**

Table 5 - Tower Component Stresses vs. Capacity - LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	-	65.4	Pass
1,2	Base Plate	-	73.5	Pass
1,2	Base Foundation Structural	-	41.9	Pass
1,2	Base Foundation Soil Interaction	-	43.5	Pass

Structure Rating (max from all components) =	**73.5%**

Notes:
1) See additional documentation in "Appendix C - Additional Calculations" for calculations supporting the % capacity listed.
2) Rating per TIA-222-H Section 15.5

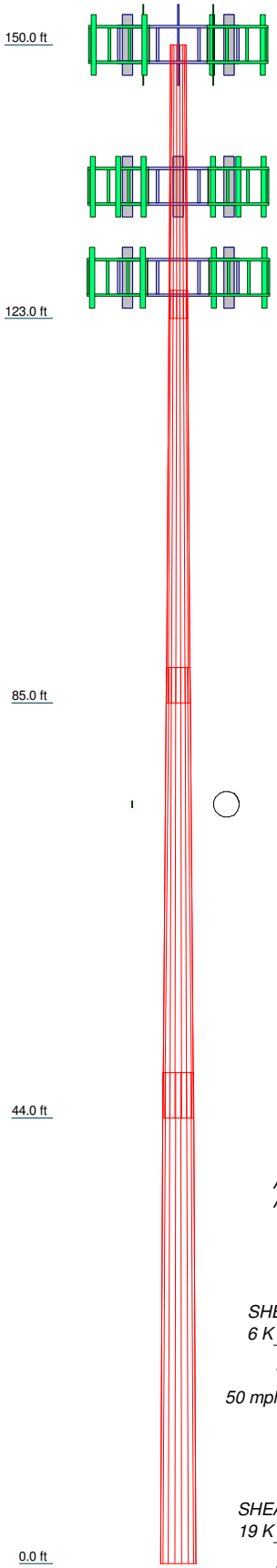
4.1) Recommendations

1) 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	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	27.00	18	0.2500	2.75	17.0000	22.6900	A572-65	1.4
2	40.75	18	0.3750	3.50	21.6105	28.3600		4.1
3	44.50	18	0.4063	4.50	27.0303	36.8600		6.2
4	48.50	18	0.4375		35.0535	42.5300		8.8
								20.4



MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower designed for Exposure B to the TIA-222-H Standard.
2. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50 mph basic wind with 2.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 56.6%

ALL REACTIONS ARE FACTORED

AXIAL 68 K

SHEAR 6 K *MOMENT 701 kip-ft*

TORQUE 1 kip-ft
50 mph WIND - 2.0000 in ICE

AXIAL 38 K

SHEAR 19 K *MOMENT 2179 kip-ft*

TORQUE 1 kip-ft
REACTIONS - 125 mph WIND

Tower Engineering Professionals, Inc.
326 Tryon Road
Raleigh, NC 27603-5263
Phone: (919) 661-6351
FAX: (919) 661-6350
Tower Engineering Professionals

Job: ***Stafford/Pragy/SSUSA (BU 876402)***			
Project: ***TEP No. 22178.596518***			
Client: Crown Castle	Drawn by: SMA	App'd:	
Code: TIA-222-H	Date: 09/08/21	Scale: NTS	
Path: C:\Users\smansenauff\Desktop\Stafford (876402) MP Review\Issued Docs\Pre-Seal\876402_2014543_LC5.eri		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 base elevation above sea level: 962.00 ft.
Basic wind speed of 125 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 2.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in 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	150.00-123.00	27.00	2.75	18	17.0000	22.6900	0.2500	1.0000	A572-65 (65 ksi)
L2	123.00-85.00	40.75	3.50	18	21.6105	28.3600	0.3750	1.5000	A572-65 (65 ksi)
L3	85.00-44.00	44.50	4.50	18	27.0303	36.8600	0.4063	1.6250	A572-65 (65 ksi)
L4	44.00-0.00	48.50		18	35.0535	42.5300	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	17.2237	13.2911	471.1170	5.9463	8.6360	54.5527	942.8540	6.6468	2.5520	10.208
	23.0015	17.8061	1132.7992	7.9662	11.5265	98.2776	2267.0890	8.9048	3.5534	14.214
L2	22.3485	25.2755	1439.9945	7.5386	10.9781	131.1696	2881.8838	12.6402	3.1434	8.383
	28.7396	33.3091	3295.7296	9.9347	14.4069	228.7608	6595.7958	16.6577	4.3314	11.55
L3	28.1697	34.3300	3074.3930	9.4515	13.7314	223.8953	6152.8313	17.1683	4.0423	9.95
	37.3660	47.0048	7891.5876	12.9411	18.7249	421.4493	15793.5591	23.5069	5.7724	14.209
L4	36.2311	48.0686	7277.0016	12.2887	17.8072	408.6557	14563.5785	24.0389	5.3994	12.342
	43.1186	58.4507	13083.8812	14.9428	21.6052	605.5883	26184.9785	29.2309	6.7153	15.349

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 150.00-123.00				1	1	1			
L2 123.00-85.00				1	1	1			
L3 85.00-44.00				1	1	1			
L4 44.00-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
***											

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

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
136									
FB-L98B-002-75000 (3/8)	C	No	No	Inside Pole	136.00 - 0.00	2	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-VG86ST-BRD(3/4)	C	No	No	Inside Pole	136.00 - 0.00	5	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
FXL 1873 PE(1-5/8)	C	No	No	Inside Pole	136.00 - 0.00	6	No Ice	0.00	0.67
							1/2" Ice	0.00	0.67
							1" Ice	0.00	0.67
							2" Ice	0.00	0.67
2" (Nominal) Conduit	C	No	No	Inside Pole	136.00 - 0.00	1	No Ice	0.00	0.72
							1/2" Ice	0.00	0.72
							1" Ice	0.00	0.72
							2" Ice	0.00	0.72
127									
HB158-1-08U8-S8J 18(1-5/8)	C	No	No	Inside Pole	127.00 - 0.00	2	No Ice	0.00	1.30
							1/2" Ice	0.00	1.30
							1" Ice	0.00	1.30
							2" Ice	0.00	1.30
75									
LDF4-50A(1/2)	C	No	No	Inside Pole	75.00 - 0.00	1	No Ice	0.00	0.15
							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15
							2" Ice	0.00	0.15
150									
HB158-21U6S24-xx M_TMO(1-5/8)	C	No	No	Inside Pole	150.00 - 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
Misc									
Step Pegs (5/8" SR) 7-in. w/30" step	C	No	No	CaAa (Out Of Face)	150.00 - 0.00	1	No Ice	0.03	0.49
							1/2" Ice	0.14	1.01
							1" Ice	0.23	2.07
							2" Ice	0.43	6.09
Safety Line 3/8	C	No	No	CaAa (Out Of Face)	150.00 - 0.00	1	No Ice	0.04	0.22
							1/2" Ice	0.14	0.75
							1" Ice	0.24	1.28
							2" Ice	0.44	2.34
***									

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	150.00-123.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.958	0.33
L2	123.00-85.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	2.755	0.71

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
L3	85.00-44.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	2.973	0.77
L4	44.00-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	3.190	0.82

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	150.00-123.00	A	1.958	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	23.108	0.54
L2	123.00-85.00	A	1.906	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	32.523	0.99
L3	85.00-44.00	A	1.816	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	34.227	1.06
L4	44.00-0.00	A	1.629	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	35.159	1.12

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	150.00-123.00	-0.5521	0.3188	-2.4046	1.3883
L2	123.00-85.00	-0.5599	0.3233	-2.6345	1.5210
L3	85.00-44.00	-0.5662	0.3269	-2.8017	1.6176
L4	44.00-0.00	-0.5700	0.3291	-2.8603	1.6514

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

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
150 AIR6449 B41_T-MOBILE	A	From	4.00	0.0000	150.00	No Ice	5.19	2.71	0.13

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
w/ Mount Pipe		Centroid-Leg	0.00 2.00			1/2" Ice 1" Ice 2" Ice	5.59 6.02 6.90	3.04 3.38 4.12	0.17 0.23 0.35
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Centroid-Leg	4.00 0.00 2.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.19 5.59 6.02 6.90	2.71 3.04 3.38 4.12	0.13 0.17 0.23 0.35
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Centroid-Leg	4.00 0.00 2.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.19 5.59 6.02 6.90	2.71 3.04 3.38 4.12	0.13 0.17 0.23 0.35
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	A	From Centroid-Leg	4.00 0.00 2.00	0.0000	150.00	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 Centroid-Leg	4.00 0.00 2.00	0.0000	150.00	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 Centroid-Leg	4.00 0.00 2.00	0.0000	150.00	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 Centroid-Leg	4.00 0.00 2.00	0.0000	150.00	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	B	From Centroid-Leg	4.00 0.00 2.00	0.0000	150.00	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 Centroid-Leg	4.00 0.00 2.00	0.0000	150.00	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 Centroid-Leg	4.00 0.00 2.00	0.0000	150.00	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 Centroid-Leg	4.00 0.00 2.00	0.0000	150.00	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 Centroid-Leg	4.00 0.00 2.00	0.0000	150.00	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
Platform Mount [LP 1201-1_HR-1]	C	None		0.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	26.39 31.40 36.20 45.40	26.39 31.40 36.20 45.40	2.36 3.06 3.86 5.76
(2) 2 3/8" Dia. x 8'	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.90 2.73 3.40 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
(2) 2 3/8" Dia. x 8'	B	From Centroid-Leg	4.00 0.00	0.0000	150.00	No Ice 1/2" Ice	1.90 2.73	1.90 2.73	0.03 0.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
		g	0.00			1" Ice	3.40	3.40	0.06
						2" Ice	4.40	4.40	0.12
(2) 2 3/8" Dia. x 8'	C	From Centroid-Le g	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
						2" Ice	4.40	4.40	0.12
136									
DMP65R-BU8D w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	15.89 16.81 17.76	7.89 8.74 9.60	0.14 0.25 0.38
						2" Ice	19.70	11.37	0.68
DMP65R-BU6D w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	11.96 12.70 13.46	5.97 6.63 7.30	0.11 0.20 0.30
						2" Ice	15.02	8.69	0.53
DMP65R-BU8D w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	15.89 16.81 17.76	7.89 8.74 9.60	0.14 0.25 0.38
						2" Ice	19.70	11.37	0.68
OPA65R-BU8D w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	17.46 18.46 19.48	8.58 9.49 10.42	0.11 0.22 0.35
						2" Ice	21.58	12.33	0.66
OPA65R-BU6D w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	12.25 13.00 13.76	6.05 6.71 7.39	0.09 0.18 0.27
						2" Ice	15.34	8.79	0.51
OPA65R-BU8D w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	17.46 18.46 19.48	8.58 9.49 10.42	0.11 0.22 0.35
						2" Ice	21.58	12.33	0.66
7770.00 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	5.75 6.18 6.61	4.25 5.01 5.71	0.06 0.10 0.16
						2" Ice	7.49	7.16	0.29
7770.00 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	5.75 6.18 6.61	4.25 5.01 5.71	0.06 0.10 0.16
						2" Ice	7.49	7.16	0.29
7770.00 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	5.75 6.18 6.61	4.25 5.01 5.71	0.06 0.10 0.16
						2" Ice	7.49	7.16	0.29
RRUS 4449 B5/B12	A	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
						2" Ice	2.72	2.07	0.16
RRUS 4449 B5/B12	B	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
						2" Ice	2.72	2.07	0.16
RRUS 4449 B5/B12	C	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
						2" Ice	2.72	2.07	0.16
RRUS 4478 B14	A	From Leg	4.00 0.00	0.0000	136.00	No Ice 1/2" Ice	1.84 2.01	1.06 1.20	0.06 0.08

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral ft / Vert ft / ft*	*Azimuth Adjustment* °	*Placement* ft		*C_AA_A Front* ft^2	*C_AA_A Side* ft^2	*Weight* K
			2.00			1" Ice	2.19	1.34	0.09
						2" Ice	2.57	1.66	0.14
RRUS 4478 B14	B	From Leg	4.00	0.0000	136.00	No Ice	1.84	1.06	0.06
			0.00			1/2" Ice	2.01	1.20	0.08
			2.00			1" Ice	2.19	1.34	0.09
						2" Ice	2.57	1.66	0.14
RRUS 4478 B14	C	From Leg	4.00	0.0000	136.00	No Ice	1.84	1.06	0.06
			0.00			1/2" Ice	2.01	1.20	0.08
			2.00			1" Ice	2.19	1.34	0.09
						2" Ice	2.57	1.66	0.14
RRUS 8843 B2/B66A	A	From Leg	4.00	0.0000	136.00	No Ice	1.64	1.35	0.07
			0.00			1/2" Ice	1.80	1.50	0.09
			2.00			1" Ice	1.97	1.65	0.11
						2" Ice	2.32	1.99	0.16
RRUS 8843 B2/B66A	B	From Leg	4.00	0.0000	136.00	No Ice	1.64	1.35	0.07
			0.00			1/2" Ice	1.80	1.50	0.09
			2.00			1" Ice	1.97	1.65	0.11
						2" Ice	2.32	1.99	0.16
RRUS 8843 B2/B66A	C	From Leg	4.00	0.0000	136.00	No Ice	1.64	1.35	0.07
			0.00			1/2" Ice	1.80	1.50	0.09
			2.00			1" Ice	1.97	1.65	0.11
						2" Ice	2.32	1.99	0.16
(2) LGP21401	A	From Leg	4.00	0.0000	136.00	No Ice	1.10	0.21	0.01
			0.00			1/2" Ice	1.24	0.27	0.02
			2.00			1" Ice	1.38	0.35	0.03
						2" Ice	1.69	0.52	0.05
(2) LGP21401	B	From Leg	4.00	0.0000	136.00	No Ice	1.10	0.21	0.01
			0.00			1/2" Ice	1.24	0.27	0.02
			2.00			1" Ice	1.38	0.35	0.03
						2" Ice	1.69	0.52	0.05
(2) LGP21401	C	From Leg	4.00	0.0000	136.00	No Ice	1.10	0.21	0.01
			0.00			1/2" Ice	1.24	0.27	0.02
			2.00			1" Ice	1.38	0.35	0.03
						2" Ice	1.69	0.52	0.05
DC6-48-60-18-8F	A	From Leg	4.00	0.0000	136.00	No Ice	1.21	1.21	0.03
			0.00			1/2" Ice	1.89	1.89	0.05
			2.00			1" Ice	2.11	2.11	0.08
						2" Ice	2.57	2.57	0.14
DC9-48-60-24-8C-EV	C	From Leg	4.00	0.0000	136.00	No Ice	1.14	1.14	0.03
			0.00			1/2" Ice	1.79	1.79	0.05
			2.00			1" Ice	2.00	2.00	0.07
						2" Ice	2.45	2.45	0.13
T-Arm Mount [TA 602-3]	C	None		0.0000	136.00	No Ice	13.40	13.40	0.77
						1/2" Ice	16.44	16.44	1.00
						1" Ice	19.70	19.70	1.29
						2" Ice	25.86	25.86	2.05
127									
SBNHH-1D65B w/ Mount Pipe	A	From Centroid-Leg	4.00	0.0000	127.00	No Ice	4.09	3.30	0.07
			0.00			1/2" Ice	4.49	3.68	0.13
			0.00			1" Ice	4.89	4.07	0.20
						2" Ice	5.72	4.87	0.39
SBNHH-1D65B	A	From Centroid-Leg	4.00	0.0000	127.00	No Ice	4.16	2.49	0.04
			0.00			1/2" Ice	4.57	2.88	0.09
			0.00			1" Ice	4.99	3.27	0.15
						2" Ice	5.85	4.09	0.28
SBNHH-1D65B w/ Mount Pipe	B	From Centroid-Leg	4.00	0.0000	127.00	No Ice	4.09	3.30	0.07
			0.00			1/2" Ice	4.49	3.68	0.13

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
		g	0.00			1" Ice	4.89	4.07	0.20
						2" Ice	5.72	4.87	0.39
SBNHH-1D65B	B	From Centroid-Le g	4.00 0.00 0.00	0.0000	127.00	No Ice 1/2" Ice 1" Ice	4.16 4.57 4.99	2.49 2.88 3.27	0.04 0.09 0.15
						2" Ice	5.85	4.09	0.28
SBNHH-1D65B w/ Mount Pipe	C	From Centroid-Le g	4.00 0.00 0.00	0.0000	127.00	No Ice 1/2" Ice 1" Ice	4.09 4.49 4.89	3.30 3.68 4.07	0.07 0.13 0.20
						2" Ice	5.72	4.87	0.39
SBNHH-1D65B	C	From Centroid-Le g	4.00 0.00 0.00	0.0000	127.00	No Ice 1/2" Ice 1" Ice	4.16 4.57 4.99	2.49 2.88 3.27	0.04 0.09 0.15
						2" Ice	5.85	4.09	0.28
B13 RRH 4X30	A	From Centroid-Le g	4.00 0.00 0.00	0.0000	127.00	No Ice 1/2" Ice 1" Ice	2.06 2.24 2.43	1.32 1.48 1.64	0.06 0.07 0.09
						2" Ice	2.84	2.00	0.14
B13 RRH 4X30	B	From Centroid-Le g	4.00 0.00 0.00	0.0000	127.00	No Ice 1/2" Ice 1" Ice	2.06 2.24 2.43	1.32 1.48 1.64	0.06 0.07 0.09
						2" Ice	2.84	2.00	0.14
B13 RRH 4X30	C	From Centroid-Le g	4.00 0.00 0.00	0.0000	127.00	No Ice 1/2" Ice 1" Ice	2.06 2.24 2.43	1.32 1.48 1.64	0.06 0.07 0.09
						2" Ice	2.84	2.00	0.14
B66A RRH4X45	A	From Centroid-Le g	4.00 0.00 0.00	0.0000	127.00	No Ice 1/2" Ice 1" Ice	2.54 2.75 2.97	1.61 1.79 1.98	0.06 0.08 0.10
						2" Ice	3.43	2.37	0.16
B66A RRH4X45	B	From Centroid-Le g	4.00 0.00 0.00	0.0000	127.00	No Ice 1/2" Ice 1" Ice	2.54 2.75 2.97	1.61 1.79 1.98	0.06 0.08 0.10
						2" Ice	3.43	2.37	0.16
B66A RRH4X45	C	From Centroid-Le g	4.00 0.00 0.00	0.0000	127.00	No Ice 1/2" Ice 1" Ice	2.54 2.75 2.97	1.61 1.79 1.98	0.06 0.08 0.10
						2" Ice	3.43	2.37	0.16
RXXDC-3315-PF-48	B	From Centroid-Le g	4.00 0.00 0.00	0.0000	127.00	No Ice 1/2" Ice 1" Ice	3.92 4.18 4.45	2.61 2.83 3.05	0.03 0.06 0.10
						2" Ice	5.00	3.53	0.19
RXXDC-3315-PF-48	C	From Centroid-Le g	4.00 0.00 0.00	0.0000	127.00	No Ice 1/2" Ice 1" Ice	3.92 4.18 4.45	2.61 2.83 3.05	0.03 0.06 0.10
						2" Ice	5.00	3.53	0.19
Platform Mount [LP 303-1_HR-1]	C	None		0.0000	127.00	No Ice 1/2" Ice 1" Ice	17.09 21.47 25.72	17.09 21.47 25.72	1.50 1.88 2.35
						2" Ice	33.96	33.96	3.52
2.375" OD x 5' Mount Pipe	A	From Centroid-Le g	4.00 0.00 0.00	0.0000	127.00	No Ice 1/2" Ice 1" Ice	1.19 1.50 1.81	1.19 1.50 1.81	0.02 0.03 0.04
						2" Ice	2.46	2.46	0.08
2.375" OD x 5' Mount Pipe	B	From Centroid-Le g	4.00 0.00 0.00	0.0000	127.00	No Ice 1/2" Ice 1" Ice	1.19 1.50 1.81	1.19 1.50 1.81	0.02 0.03 0.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	2.46	2.46	0.08
2.375" OD x 5' Mount Pipe	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	127.00	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
***									
KS24019-L112A	C	From Leg	4.00 0.00 0.00	0.0000	75.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.08 0.13 0.19 0.35	0.08 0.13 0.19 0.35	0.01 0.01 0.01 0.02
Side Arm Mount [SO 701-1]	C	None		0.0000	75.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.85 1.14 1.43 2.01	1.67 2.34 3.01 4.35	0.07 0.08 0.09 0.12
***									

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

Comb. No.	Description
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	150 - 123	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.42	2.16	0.30
			Max. Mx	20	-10.99	184.67	-0.87
			Max. My	2	-10.98	-0.59	185.29
			Max. Vy	20	-12.49	184.67	-0.87
			Max. Vx	2	-12.53	-0.59	185.29
			Max. Torque	4			0.97
L2	123 - 85	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.63	2.85	0.14
			Max. Mx	20	-16.64	688.50	-3.66
			Max. My	2	-16.63	-3.28	690.52
			Max. Vy	20	-14.52	688.50	-3.66
			Max. Vx	2	-14.56	-3.28	690.52
			Max. Torque	14			-0.95
L3	85 - 44	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.25	3.52	-0.13
			Max. Mx	20	-25.07	1312.47	-6.64
			Max. My	2	-25.07	-6.12	1315.92
			Max. Vy	20	-16.62	1312.47	-6.64
			Max. Vx	2	-16.66	-6.12	1315.92
			Max. Torque	14			-1.07
L4	44 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-68.39	4.04	-0.43
			Max. Mx	20	-38.20	2166.73	-10.09
			Max. My	14	-38.20	10.65	-2171.92
			Max. Vy	20	-18.48	2166.73	-10.09
			Max. Vx	14	18.52	10.65	-2171.92
			Max. Torque	14			-1.21

Maximum Reactions

Location	*Condition*	*Gov. Load Comb.*	*Vertical K*	*Horizontal, X K*	*Horizontal, Z K*
Pole	Max. Vert	35	68.39	4.91	-2.84
	Max. H_x	20	38.22	18.44	-0.07
	Max. H_z	2	38.22	-0.07	18.48
	Max. M_x	2	2171.87	-0.07	18.48
	Max. M_z	8	2165.52	-18.44	0.07
	Max. Torsion	2	1.19	-0.07	18.48
	Min. Vert	11	28.66	-15.94	-9.18
	Min. H_x	8	38.22	-18.44	0.07
	Min. H_z	14	38.22	0.07	-18.48
	Min. M_x	14	-2171.92	0.07	-18.48
	Min. M_z	20	-2166.73	18.44	-0.07
	Min. Torsion	14	-1.21	0.07	-18.48

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	31.85	0.00	0.00	0.02	0.45	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	38.22	0.07	-18.48	-2171.87	-9.48	-1.19
0.9 Dead+1.0 Wind 0 deg - No Ice	28.66	0.07	-18.48	-2130.45	-9.43	-1.18
1.2 Dead+1.0 Wind 30 deg - No Ice	38.22	9.28	-16.04	-1885.90	-1091.16	-0.99
0.9 Dead+1.0 Wind 30 deg - No Ice	28.66	9.28	-16.04	-1849.91	-1070.49	-0.98
1.2 Dead+1.0 Wind 60 deg - No Ice	38.22	16.01	-9.30	-1094.63	-1880.31	-0.52
0.9 Dead+1.0 Wind 60 deg - No Ice	28.66	16.01	-9.30	-1073.74	-1844.60	-0.51
1.2 Dead+1.0 Wind 90 deg - No Ice	38.22	18.44	-0.07	-10.05	-2165.52	0.10
0.9 Dead+1.0 Wind 90 deg - No Ice	28.66	18.44	-0.07	-9.84	-2124.38	0.10
1.2 Dead+1.0 Wind 120 deg - No Ice	38.22	15.94	9.18	1077.28	-1870.32	0.69
0.9 Dead+1.0 Wind 120 deg - No Ice	28.66	15.94	9.18	1056.74	-1834.81	0.69
1.2 Dead+1.0 Wind 150 deg - No Ice	38.22	9.16	15.97	1875.95	-1073.77	1.10
0.9 Dead+1.0 Wind 150 deg - No Ice	28.66	9.16	15.97	1840.16	-1053.45	1.09
1.2 Dead+1.0 Wind 180 deg - No Ice	38.22	-0.07	18.48	2171.92	10.65	1.21
0.9 Dead+1.0 Wind 180 deg - No Ice	28.66	-0.07	18.48	2130.48	10.29	1.20
1.2 Dead+1.0 Wind 210 deg - No Ice	38.22	-9.28	16.04	1885.95	1092.34	0.98
0.9 Dead+1.0 Wind 210 deg - No Ice	28.66	-9.28	16.04	1849.96	1071.35	0.98
1.2 Dead+1.0 Wind 240 deg - No Ice	38.22	-16.01	9.30	1094.69	1881.51	0.50
0.9 Dead+1.0 Wind 240 deg - No Ice	28.66	-16.01	9.30	1073.78	1845.47	0.49
1.2 Dead+1.0 Wind 270 deg -	38.22	-18.44	0.07	10.09	2166.73	-0.11

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
No Ice 0.9 Dead+1.0 Wind 270 deg -	28.66	-18.44	0.07	9.88	2125.26	-0.11
No Ice 1.2 Dead+1.0 Wind 300 deg -	38.22	-15.94	-9.18	-1077.26	1871.53	-0.69
No Ice 0.9 Dead+1.0 Wind 300 deg -	28.66	-15.94	-9.18	-1056.71	1835.68	-0.69
No Ice 1.2 Dead+1.0 Wind 330 deg -	38.22	-9.16	-15.97	-1875.92	1074.95	-1.08
No Ice 0.9 Dead+1.0 Wind 330 deg -	28.66	-9.16	-15.97	-1840.14	1054.31	-1.08
No Ice 1.2 Dead+1.0 Ice+1.0 Temp	68.39	-0.00	0.00	0.43	4.04	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	68.39	0.01	-5.67	-695.89	2.39	-0.97
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	68.39	2.84	-4.92	-603.50	-345.06	-0.66
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	68.39	4.91	-2.84	-349.29	-598.93	-0.17
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	68.39	5.67	-0.01	-1.37	-691.19	0.37
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	68.39	4.90	2.83	347.03	-597.12	0.80
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	68.39	2.82	4.91	602.57	-341.93	1.03
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	68.39	-0.01	5.67	696.77	6.01	0.97
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	68.39	-2.84	4.92	604.42	353.49	0.66
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	68.39	-4.91	2.84	350.18	607.34	0.17
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	68.39	-5.67	0.01	2.25	699.61	-0.37
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	68.39	-4.90	-2.83	-346.16	605.53	-0.80
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	68.39	-2.82	-4.91	-601.74	350.35	-1.03
Dead+Wind 0 deg - Service	31.85	0.01	-4.01	-466.72	-1.66	-0.27
Dead+Wind 30 deg - Service	31.85	2.02	-3.48	-405.28	-234.13	-0.22
Dead+Wind 60 deg - Service	31.85	3.48	-2.02	-235.23	-403.72	-0.12
Dead+Wind 90 deg - Service	31.85	4.01	-0.01	-2.14	-465.00	0.02
Dead+Wind 120 deg - Service	31.85	3.46	1.99	231.52	-401.57	0.15
Dead+Wind 150 deg - Service	31.85	1.99	3.47	403.16	-230.39	0.24
Dead+Wind 180 deg - Service	31.85	-0.01	4.01	466.76	2.66	0.27
Dead+Wind 210 deg - Service	31.85	-2.02	3.48	405.32	235.12	0.22
Dead+Wind 240 deg - Service	31.85	-3.48	2.02	235.26	404.72	0.12
Dead+Wind 270 deg - Service	31.85	-4.01	0.01	2.18	466.00	-0.02
Dead+Wind 300 deg - Service	31.85	-3.46	-1.99	-231.49	402.56	-0.15
Dead+Wind 330 deg - Service	31.85	-1.99	-3.47	-403.12	231.38	-0.24

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-31.85	0.00	0.00	31.85	0.00	0.000%
2	0.07	-38.22	-18.48	-0.07	38.22	18.48	0.000%
3	0.07	-28.66	-18.48	-0.07	28.66	18.48	0.000%
4	9.28	-38.22	-16.04	-9.28	38.22	16.04	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
5	9.28	-28.66	-16.04	-9.28	28.66	16.04	0.000%
6	16.01	-38.22	-9.30	-16.01	38.22	9.30	0.000%
7	16.01	-28.66	-9.30	-16.01	28.66	9.30	0.000%
8	18.44	-38.22	-0.07	-18.44	38.22	0.07	0.000%
9	18.44	-28.66	-0.07	-18.44	28.66	0.07	0.000%
10	15.94	-38.22	9.18	-15.94	38.22	-9.18	0.000%
11	15.94	-28.66	9.18	-15.94	28.66	-9.18	0.000%
12	9.16	-38.22	15.97	-9.16	38.22	-15.97	0.000%
13	9.16	-28.66	15.97	-9.16	28.66	-15.97	0.000%
14	-0.07	-38.22	18.48	0.07	38.22	-18.48	0.000%
15	-0.07	-28.66	18.48	0.07	28.66	-18.48	0.000%
16	-9.28	-38.22	16.04	9.28	38.22	-16.04	0.000%
17	-9.28	-28.66	16.04	9.28	28.66	-16.04	0.000%
18	-16.01	-38.22	9.30	16.01	38.22	-9.30	0.000%
19	-16.01	-28.66	9.30	16.01	28.66	-9.30	0.000%
20	-18.44	-38.22	0.07	18.44	38.22	-0.07	0.000%
21	-18.44	-28.66	0.07	18.44	28.66	-0.07	0.000%
22	-15.94	-38.22	-9.18	15.94	38.22	9.18	0.000%
23	-15.94	-28.66	-9.18	15.94	28.66	9.18	0.000%
24	-9.16	-38.22	-15.97	9.16	38.22	15.97	0.000%
25	-9.16	-28.66	-15.97	9.16	28.66	15.97	0.000%
26	0.00	-68.39	0.00	0.00	68.39	0.00	0.000%
27	0.01	-68.39	-5.67	-0.01	68.39	5.67	0.000%
28	2.84	-68.39	-4.92	-2.84	68.39	4.92	0.000%
29	4.91	-68.39	-2.84	-4.91	68.39	2.84	0.000%
30	5.67	-68.39	-0.01	-5.67	68.39	0.01	0.000%
31	4.90	-68.39	2.83	-4.90	68.39	-2.83	0.000%
32	2.82	-68.39	4.91	-2.82	68.39	-4.91	0.000%
33	-0.01	-68.39	5.67	0.01	68.39	-5.67	0.000%
34	-2.84	-68.39	4.92	2.84	68.39	-4.92	0.000%
35	-4.91	-68.39	2.84	4.91	68.39	-2.84	0.000%
36	-5.67	-68.39	0.01	5.67	68.39	-0.01	0.000%
37	-4.90	-68.39	-2.83	4.90	68.39	2.83	0.000%
38	-2.82	-68.39	-4.91	2.82	68.39	4.91	0.000%
39	0.01	-31.85	-4.01	-0.01	31.85	4.01	0.000%
40	2.02	-31.85	-3.48	-2.02	31.85	3.48	0.000%
41	3.48	-31.85	-2.02	-3.48	31.85	2.02	0.000%
42	4.01	-31.85	-0.01	-4.01	31.85	0.01	0.000%
43	3.46	-31.85	1.99	-3.46	31.85	-1.99	0.000%
44	1.99	-31.85	3.47	-1.99	31.85	-3.47	0.000%
45	-0.01	-31.85	4.01	0.01	31.85	-4.01	0.000%
46	-2.02	-31.85	3.48	2.02	31.85	-3.48	0.000%
47	-3.48	-31.85	2.02	3.48	31.85	-2.02	0.000%
48	-4.01	-31.85	0.01	4.01	31.85	-0.01	0.000%
49	-3.46	-31.85	-1.99	3.46	31.85	1.99	0.000%
50	-1.99	-31.85	-3.47	1.99	31.85	3.47	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	0.00030357
3	Yes	5	0.00000001	0.00014969
4	Yes	6	0.00000001	0.00093576
5	Yes	6	0.00000001	0.00030871

6	Yes	6	0.00000001	0.00096601
7	Yes	6	0.00000001	0.00032024
8	Yes	5	0.00000001	0.00018714
9	Yes	5	0.00000001	0.00008746
10	Yes	6	0.00000001	0.00094261
11	Yes	6	0.00000001	0.00031358
12	Yes	6	0.00000001	0.00091672
13	Yes	6	0.00000001	0.00030366
14	Yes	5	0.00000001	0.00059026
15	Yes	5	0.00000001	0.00028514
16	Yes	6	0.00000001	0.00097623
17	Yes	6	0.00000001	0.00032373
18	Yes	6	0.00000001	0.00094361
19	Yes	6	0.00000001	0.00031153
20	Yes	5	0.00000001	0.00011778
21	Yes	5	0.00000001	0.00005347
22	Yes	6	0.00000001	0.00092639
23	Yes	6	0.00000001	0.00030709
24	Yes	6	0.00000001	0.00095460
25	Yes	6	0.00000001	0.00031768
26	Yes	4	0.00000001	0.00009639
27	Yes	6	0.00008233	0.00047687
28	Yes	6	0.00008181	0.00094226
29	Yes	6	0.00008176	0.00097887
30	Yes	6	0.00008223	0.00045645
31	Yes	6	0.00008175	0.00097732
32	Yes	6	0.00008178	0.00092354
33	Yes	6	0.00008228	0.00047897
34	Yes	7	0.00000001	0.00022554
35	Yes	6	0.00008185	0.00098684
36	Yes	6	0.00008237	0.00046616
37	Yes	6	0.00008188	0.00096596
38	Yes	7	0.00000001	0.00022487
39	Yes	4	0.00000001	0.00034505
40	Yes	5	0.00000001	0.00011383
41	Yes	5	0.00000001	0.00012776
42	Yes	4	0.00000001	0.00024020
43	Yes	5	0.00000001	0.00012214
44	Yes	5	0.00000001	0.00011058
45	Yes	4	0.00000001	0.00037103
46	Yes	5	0.00000001	0.00013296
47	Yes	5	0.00000001	0.00011738
48	Yes	4	0.00000001	0.00023842
49	Yes	5	0.00000001	0.00011510
50	Yes	5	0.00000001	0.00012830

Maximum Tower Deflections - Service Wind

Section No.	*Elevation*	*Horz. Deflection*	*Gov. Load Comb.*	*Tilt*	*Twist*
	ft	*in*		°	°
L1	150 - 123	25.6461	46	1.5348	0.0032
L2	125.75 - 85	18.1074	46	1.3939	0.0023
L3	88.5 - 44	8.7267	46	0.9682	0.0011
L4	48.5 - 0	2.5867	46	0.4938	0.0004

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	AIR6449 B41_T-MOBILE w/ Mount Pipe	46	25.6461	1.5348	0.0032	27734
136.00	DMP65R-BU8D w/ Mount Pipe	46	21.2147	1.4642	0.0027	9904
127.00	SBNHH-1D65B w/ Mount Pipe	46	18.4764	1.4038	0.0024	6108
75.00	KS24019-L112A	46	6.1740	0.8003	0.0008	4510

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 123	119.2671	16	7.1579	0.0141
L2	125.75 - 85	84.2534	16	6.4997	0.0103
L3	88.5 - 44	40.6302	16	4.5142	0.0049
L4	48.5 - 0	12.0425	16	2.3006	0.0020

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	AIR6449 B41_T-MOBILE w/ Mount Pipe	16	119.2671	7.1579	0.0141	6138
136.00	DMP65R-BU8D w/ Mount Pipe	16	98.6882	6.8282	0.0119	2190
127.00	SBNHH-1D65B w/ Mount Pipe	16	85.9680	6.5461	0.0106	1348
75.00	KS24019-L112A	16	28.7477	3.7308	0.0036	976

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	150 - 123 (1)	TP22.69x17x0.25	27.00	0.00	0.0	17.3463	-10.97	1014.76	0.011
L2	123 - 85 (2)	TP28.36x21.6105x0.375	40.75	0.00	0.0	32.6191	-16.62	1908.22	0.009
L3	85 - 44 (3)	TP36.86x27.0303x0.4063	44.50	0.00	0.0	45.7231	-25.06	2674.80	0.009
L4	44 - 0 (4)	TP42.53x35.0535x0.4375	48.50	0.00	0.0	58.4507	-38.20	3419.37	0.011

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	150 - 123 (1)	TP22.69x17x0.25	185.93	577.27	0.322	0.00	577.27	0.000
L2	123 - 85 (2)	TP28.36x21.6105x0.375	693.23	1357.87	0.511	0.00	1357.87	0.000
L3	85 - 44 (3)	TP36.86x27.0303x0.4063	1320.90	2468.18	0.535	0.00	2468.18	0.000
L4	44 - 0 (4)	TP42.53x35.0535x0.4375	2179.45	3738.54	0.583	0.00	3738.54	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	150 - 123 (1)	TP22.69x17x0.25	12.58	304.43	0.041	0.96	582.80	0.002
L2	123 - 85 (2)	TP28.36x21.6105x0.375	14.62	572.47	0.026	0.84	1373.93	0.001
L3	85 - 44 (3)	TP36.86x27.0303x0.4063	16.71	802.44	0.021	0.91	2491.88	0.000
L4	44 - 0 (4)	TP42.53x35.0535x0.4375	18.57	1025.81	0.018	0.98	3781.39	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	150 - 123 (1)	0.011	0.322	0.000	0.041	0.002	0.335	1.050	4.8.2
L2	123 - 85 (2)	0.009	0.511	0.000	0.026	0.001	0.520	1.050	4.8.2
L3	85 - 44 (3)	0.009	0.535	0.000	0.021	0.000	0.545	1.050	4.8.2
L4	44 - 0 (4)	0.011	0.583	0.000	0.018	0.000	0.594	1.050	4.8.2

Section Capacity Table

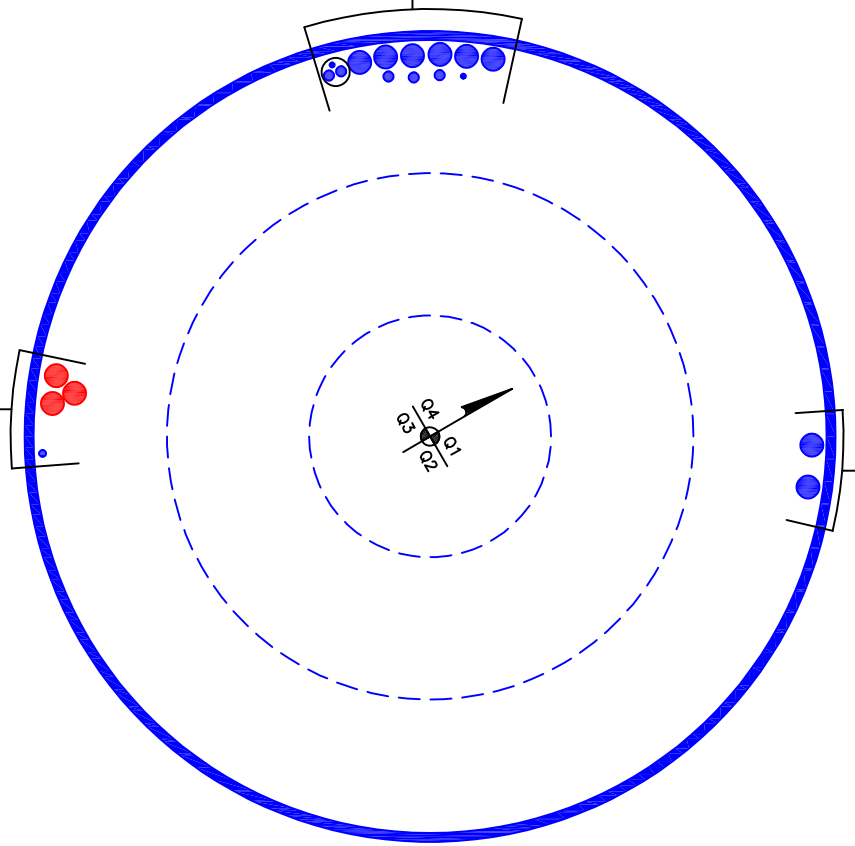
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	150 - 123	Pole	TP22.69x17x0.25	1	-10.97	1065.50	31.9	Pass
L2	123 - 85	Pole	TP28.36x21.6105x0.375	2	-16.62	2003.63	49.5	Pass
L3	85 - 44	Pole	TP36.86x27.0303x0.4063	3	-25.06	2808.54	51.9	Pass
L4	44 - 0	Pole	TP42.53x35.0535x0.4375	4	-38.20	3590.34	56.6	Pass
							Summary	
						Pole (L4)	56.6	Pass
						RATING =	**56.6**	**Pass**

APPENDIX B

BASE LEVEL DRAWING

(OTHER CONSIDERED EQUIPMENT–IN CONDUIT)
(1) 3/8" TO 136 FT LEVEL
(2) 3/4" TO 136 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 3/8" TO 136 FT LEVEL
(3) 3/4" TO 136 FT LEVEL
(6) 1–5/8" TO 136 FT LEVEL

(PROPOSED EQUIPMENT CONFIGURATION)
(3) 1–5/8" TO 150 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 75 FT LEVEL



(OTHER CONSIDERED EQUIPMENT)
(2) 1–5/8" TO 127 FT LEVEL

APPENDIX C

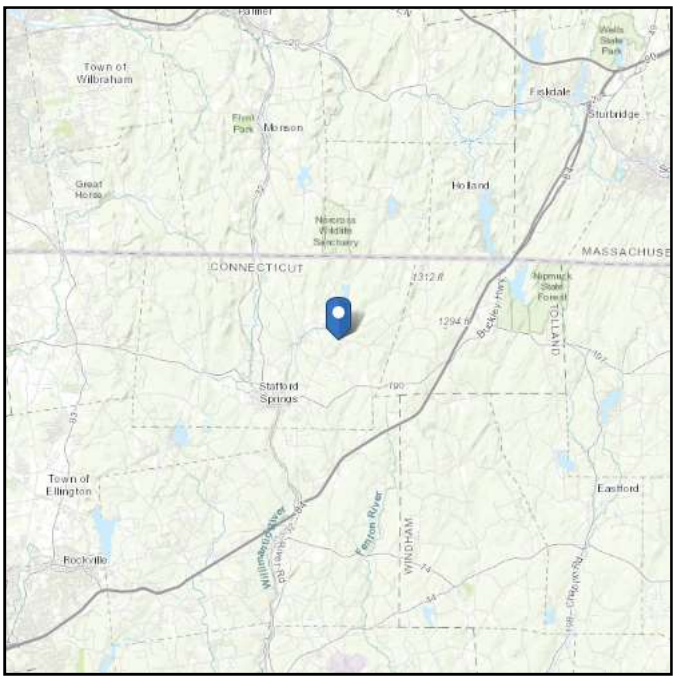
ADDITIONAL CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 962.45 ft (NAVD 88)
Latitude: 41.98705
Longitude: -72.261328



Wind

Results:

Wind Speed:	124 Vmph	125 Mph As Required By Jurisdiction
10-year MRI	77 Vmph	
25-year MRI	87 Vmph	
50-year MRI	94 Vmph	
100-year MRI	101 Vmph	

Data Accessed: Sat Sep 03 2021

Date 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

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.

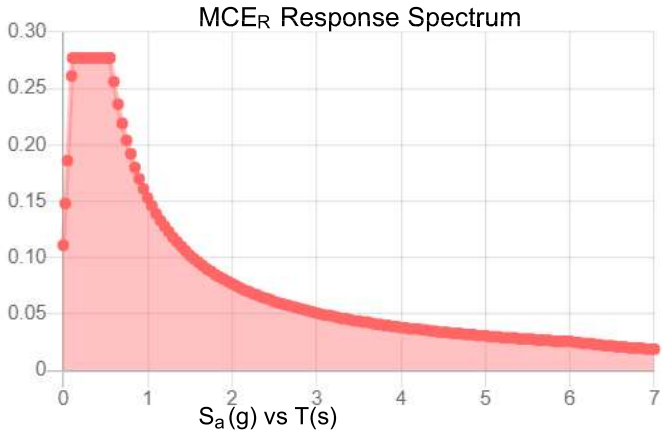
Seismic

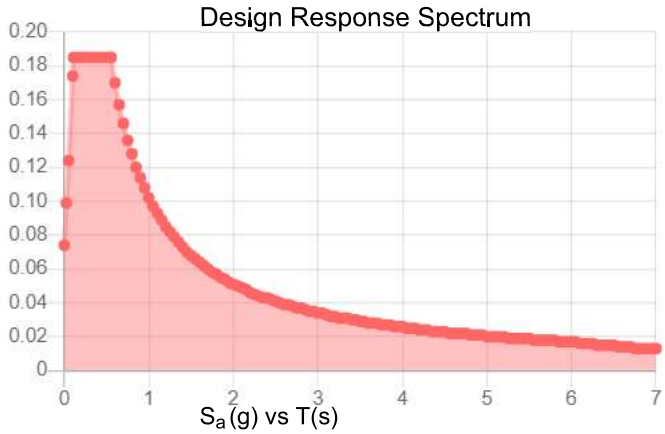
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.173	S_{DS} :	0.185
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.085
S_{MS} :	0.277	PGA_M :	0.136
S_{M1} :	0.153	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Fri Sep 03 2021

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:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Fri Sep 03 2021

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.

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

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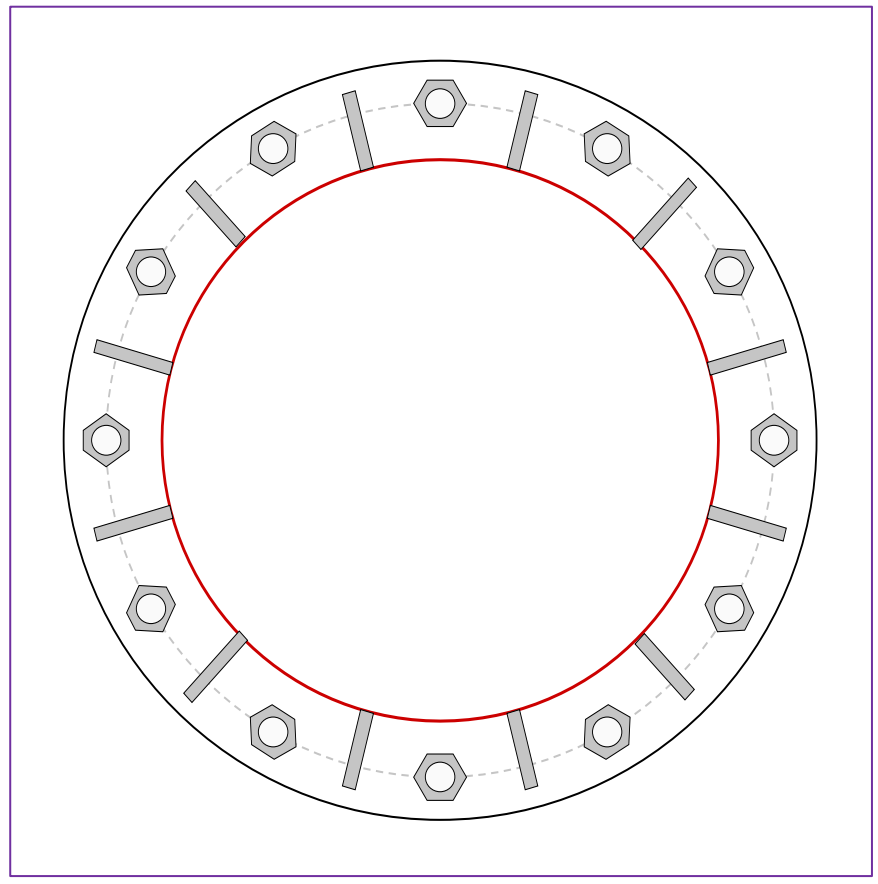
Monopole Base Plate Connection

Site Info	
BU #	876402
Site Name	Stafford/Pragy/SSUSA
Order #	584573 Rev. 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	1.75

Applied Loads	
Moment (kip-ft)	2179.00
Axial Force (kips)	38.00
Shear Force (kips)	19.00

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

(12) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 51.03" BC

Base Plate Data

57.53" OD x 1.75" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Stiffener Data

(12) 18"H x 6"W x 1"T, Notch: 0.75"
plate: Fy= 50 ksi ; weld: Fy= 80 ksi
horiz. weld: 0.5" groove, 45° dbl bevel, 0.625" fillet
vert. weld: 0.375" fillet

Pole Data

42.53" x 0.4375" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

Pu_t = 167.5	ϕPn_t = 243.75	**Stress Rating**
Vu = 1.58	ϕVn = 149.1	**65.4%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	34.75	(Roark's Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	**73.5%**	**Pass**

Stiffener Summary

Horizontal Weld:	**45.3%**	**Pass**
Vertical Weld:	**35.0%**	**Pass**
Plate Flexure+Shear:	**11.1%**	**Pass**
Plate Tension+Shear:	**46.3%**	**Pass**
Plate Compression:	**47.6%**	**Pass**

Pole Summary

Punching Shear:	**9.3%**	**Pass**

Pier and Pad Foundation

BU # :	876402
Site Name:	Stafford/Pragyl/SSU
App. Number:	584573 Rev. 0

TIA-222 Revision:	H
Tower Type:	Monopole

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

Superstructure Analysis Reactions

Compression, P_{comp}:	38	kips
Base Shear, Vu_comp:	19	kips
Moment, M_u:	2179	ft-kips
Tower Height, **H**:	150	ft
BP Dist. Above Fdn, bp_{dist}:	4	in

Pier Properties

Pier Shape:	Square	
Pier Diameter, **dpier**:	6	ft
Ext. Above Grade, **E**:	0.5	ft
Pier Rebar Size, **Sc**:	11	
Pier Rebar Quantity, **mc**:	26	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	7	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties

Depth, **D**:	7	ft
Pad Width, W_1:	22	ft
Pad Thickness, **T**:	3	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	9	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	17	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties

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

Soil Properties

Total Soil Unit Weight, γ:	113	pcf
Ultimate Net Bearing, Qnet:	59.400	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	45	degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:	0.5	
Neglected Depth, **N**:	3.30	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	N/A	ft

<--Toggle between Gross and Net

Foundation Analysis Checks

	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	347.62	19.00	**5.2%**	**Pass**
Bearing Pressure (ksf)	45.14	2.12	**4.7%**	**Pass**
*Overturning (kip*ft)*	5347.19	2327.83	**43.5%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	5167.27	2264.50	**41.7%**	**Pass**
Pier Compression (kip)	17184.96	67.16	**0.4%**	**Pass**
*Pad Flexure (kip*ft)*	2337.11	808.36	**32.9%**	**Pass**
Pad Shear - 1-way (kips)	679.06	135.71	**19.0%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.028	**16.4%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	3085.23	1358.70	**41.9%**	**Pass**

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

Structural Rating*:	**41.9%**
Soil Rating*:	**43.5%**

Date: **August 31, 2021**

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

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(704) 405-6589

Infinigy Engineering, PLLC
1033 Watervliet Shaker Road
Albany, NY 12205
518-690-0790
structural@infinigy.com

Subject:	**Mount Analysis Report**	
Carrier Designation:	**Sprint PCS Retain**	
	Carrier Site Number:	CTHA628A
	Carrier Site Name:	CT54XC726
Crown Castle Designation:	**Crown Castle BU Number:**	876402
	Crown Castle Site Name:	STAFFORD/PRAGYL/SSUSA
	Crown Castle JDE Job Number:	684640
	Crown Castle Order Number:	584573 Rev. 0
Engineering Firm Designation:	**Infinigy Engineering, PLLC Report Designation:** 1039-Z0001-B	
Site Data:	**175 Stafford Street, Stafford, Tolland County, CT, 06077** **Latitude 41°59'13.38", Longitude -72°15'40.78"**	
Structure Information:	**Tower Height & Type:**	**150.0 ft Monopole**
	Mount Elevation:	**150.0 ft**
	Mount Type:	**14.0 ft Platform**

Dear Darcy Tarr,

Infinigy Engineering, PLLC is pleased to submit this **"Mount Analysis Report"** to determine the structural integrity of Sprint PCS'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.

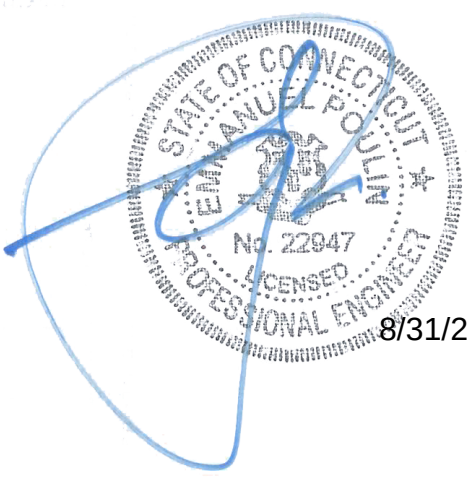
The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

Platform **Sufficient**
***Sufficient upon completion of the changes listed in the 'Recommendations' section of this report.**

This analysis has been performed in accordance with the 2018 Connecticut State Building Code and Appendix N based upon an ultimate 3-second gust wind speed of 125 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Leehou Proc

Respectfully Submitted by:
Emmanuel Poulin, P.E.
518-690-0790
structural@infinigy.com
CT PE License No. 22947



8/31/21

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1) INTRODUCTION

This is an existing 3-sector 14.0 ft Platform, designed by Engineered Endeavors Incorporated.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC / 2018 Connecticut State Building Code and Appendix N
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	2.0 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.173
Seismic S_1:	0.064
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
150.0	152.0	3	ERICSSON	AIR6449 B41_T-MOBILE	14.0 ft Platform
		3	RFS/Celwave	APXVAALL24_43-U-NA20_TMO	
		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	584573 Rev. 0	CCI Sites
Loading Document	T-Mobile	RFDS Version: 1	TSA
Tower Mapping Documents	Tower Engineering Professionals	2175539	CCI Sites

3.1) Analysis Method

RISA-3D (Version 19.0.4), 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 V2.1.7, 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 *Tower Mount Analysis* (Revision B).

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 Engineering, PLLC 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	Mount Pipe(s)	MP9	150.0	48.7	Pass
	Horizontal(s)	M13		48.2	Pass
	Handrail(s)	M53		23.3	Pass
	Handrail Bracing(s)	M42		41.2	Pass
	Standoff(s)	M1		92.0	Pass
	Mount Connection(s)	-		2.9	Pass

Structure Rating (max from all components) =	92.0%

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

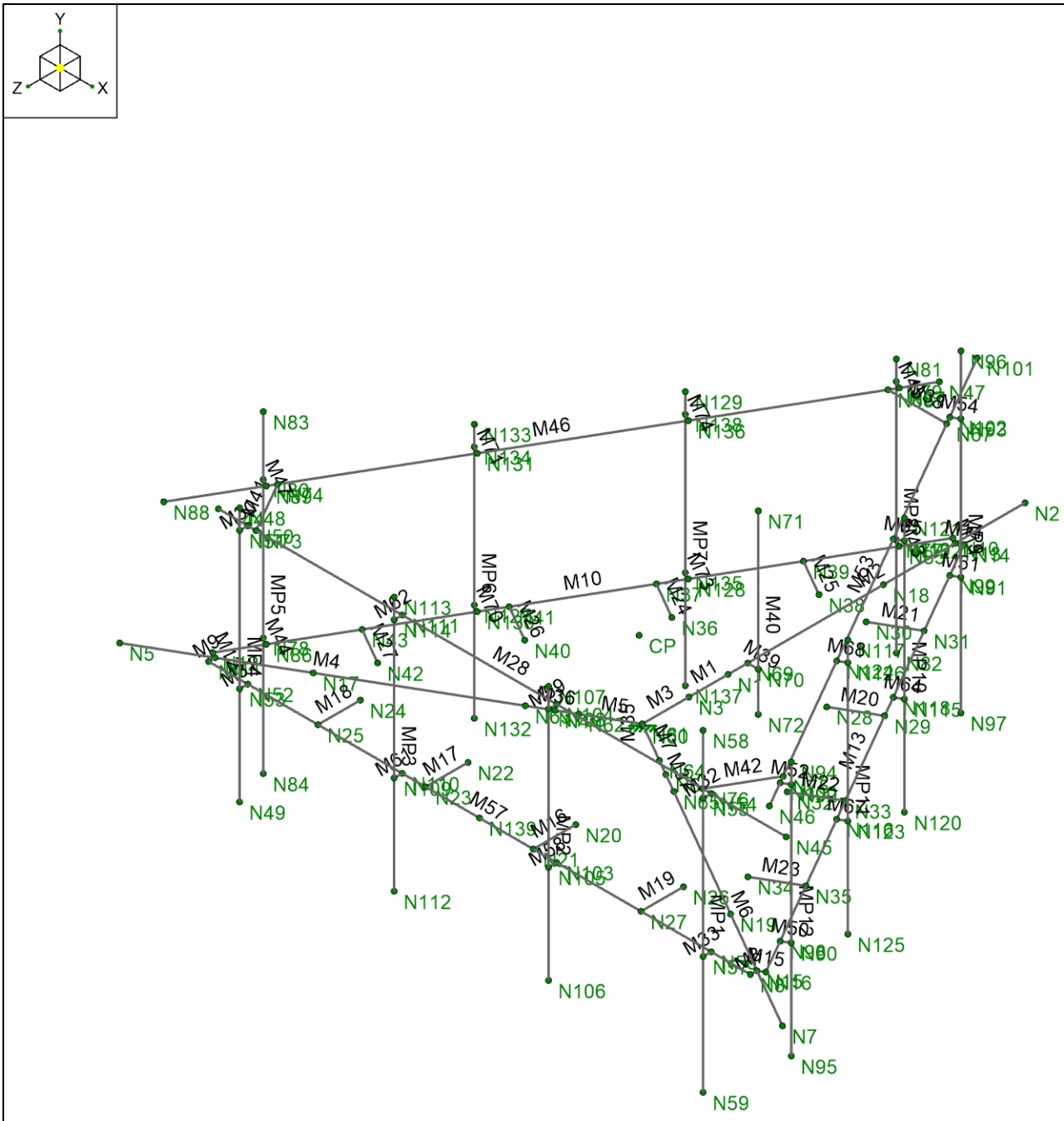
The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the structural modifications listed below must be completed.

1. Installation of proposed Site Pro 1 HRK14 handrail kit.
2. Addition of (1) 2.0 STD 8' long mount pipes per sector.

No structural modifications are required at this time, provided that the above-listed changes are implemented.

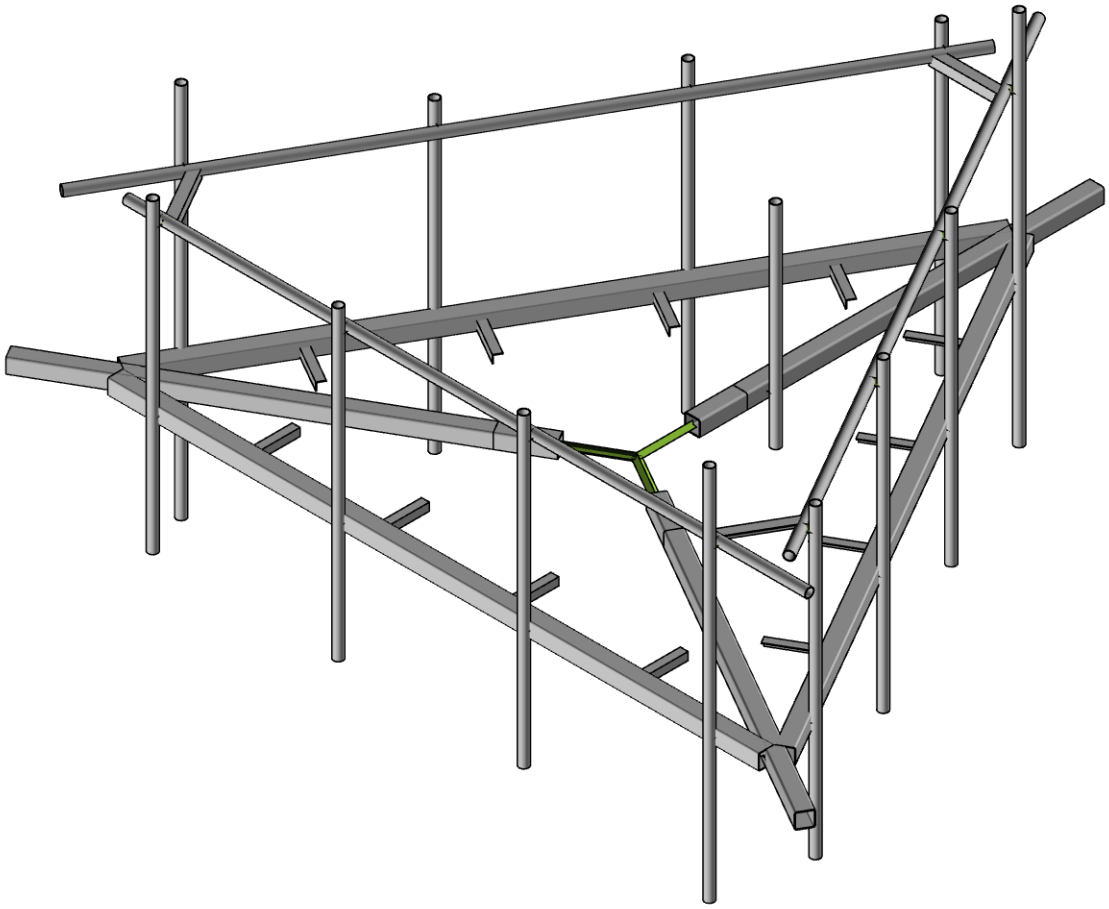
APPENDIX A

WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

Infinigy Engineering, PLLC	876402	Wireframe - 1
LP		Aug 30, 2021
1039-Z0001-B		876402_loaded.r3d



Envelope Only Solution

Infinigy Engineering, PLLC	876402	Rendered - 2
LP		Aug 30, 2021
1039-Z0001-B		876402_loaded.r3d

APPENDIX B

SOFTWARE INPUT CALCULATIONS

Program Inputs

PROJECT INFORMATION	
Client:	Crown Castle
Carrier:	T-Mobile
Engineer:	Leehou Proc

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	B	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil (Assumed)	
Ground Elevation:	962.45	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	150.00	ft
Tower Height AGL:	150.00	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):	0.966	*Rev H Only
Rooftop Speed-Up (K_s):	1.000	*Rev H Only
Topographic Factor (K_{zt}):	1.000	
Gust Effect Factor (G_h):	1.000	

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

WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	125	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	2	in
Flat Pressure:	81.443	psf
Round Pressure:	48.866	psf
Ice Wind Pressure:	7.819	psf

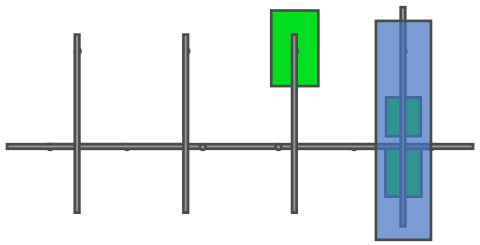
SEISMIC DATA		
Short-Period Accel. (S_s):	0.173	g
1-Second Accel. (S_1):	0.064	g
Short-Period Design (S_{DS}):	0.185	
1-Second Design (S_{D1}):	0.102	
Short-Period Coeff. (F_a):	1.600	
1-Second Coeff. (F_v):	2.400	
Amplification Factor (A_s):	3.000	
Response Mod. Coeff. (R):	2.000	

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

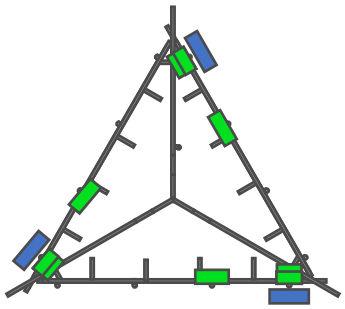
Infinigy Load Calculator V2.1.7

Program Inputs

ELEVATION VIEW



PLAN VIEW



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Infinigy Load Calculator V2.1.7

APPURTENANCE INFORMATION

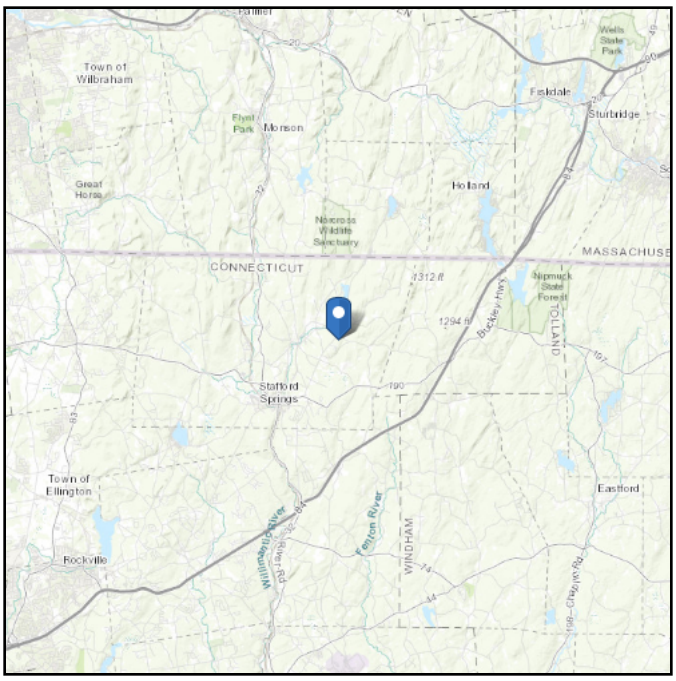
Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft^2)	EPA_T (ft^2)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
ERICSSON AIR6449 B41_T-MOBILE	152.0	3	0.90	40.88	5.27	2.36	193.87	86.82	114.63	31.73	MP2
/CELWAVE APXVAALL24_43-U-NA20_TI	152.0	3	0.90	40.88	14.67	5.99	539.68	220.36	149.90	41.49	MP1
RICSSON RADIO 4460 B2/B25 B66_TMC	152.0	3	0.90	40.88	2.14	1.69	78.70	62.02	109.00	30.17	MP1
ERICSSON RADIO 4480_TMOV2	152.0	3	0.90	40.88	2.88	1.40	105.89	51.40	81.00	22.42	MP1

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 962.45 ft (NAVD 88)
Latitude: 41.98705
Longitude: -72.261328



Wind

Results:

Wind Speed:	125 Vmph per Tolland County Requirements
10-year MRI	77 Vmph
25-year MRI	87 Vmph
50-year MRI	94 Vmph
100-year MRI	101 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: Mon Aug 30 2021

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.

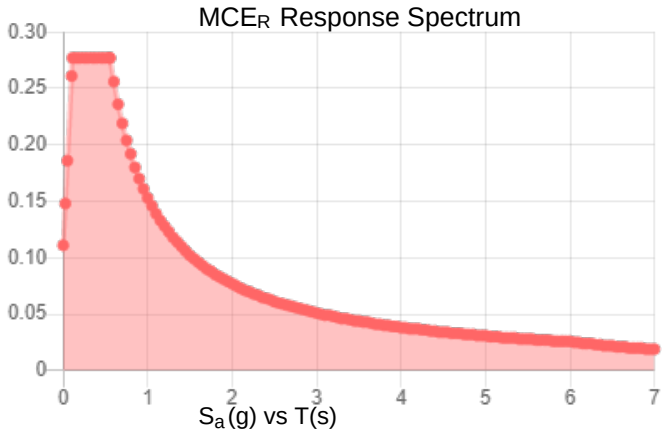
Seismic

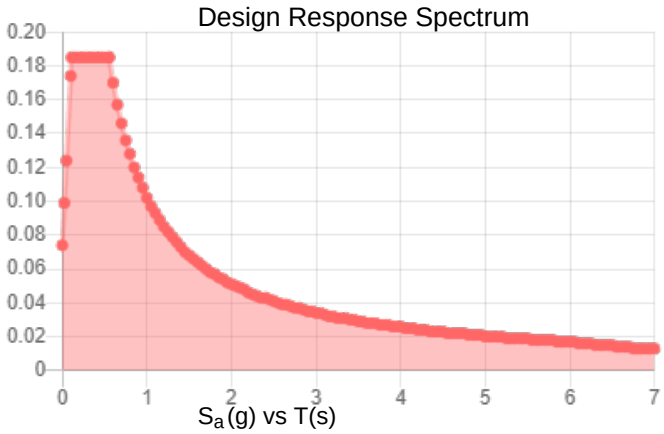
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.173	S_{DS} :	0.185
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.085
S_{MS} :	0.277	PGA_M :	0.136
S_{M1} :	0.153	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Mon Aug 30 2021

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:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Mon Aug 30 2021

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.

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

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APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N3	N1		Standoff	Beam	Tube	A500 Gr.B Rect	Typical
2	M2	N1	N2		Standoff	Beam	Tube	A500 Gr.B Rect	Typical
3	M3	N61	N3		RIGID	None	None	RIGID	Typical
4	M4	N63	N5		Standoff	Beam	Tube	A500 Gr.B Rect	Typical
5	M5	N61	N62		RIGID	None	None	RIGID	Typical
6	M6	N65	N7		Standoff	Beam	Tube	A500 Gr.B Rect	Typical
7	M7	N61	N64		RIGID	None	None	RIGID	Typical
8	M8	N15	N8		RIGID	None	None	RIGID	Typical
9	M9	N11	N9		RIGID	None	None	RIGID	Typical
10	M10	N10	N12		Horizontal	Beam	Tube	A500 Gr.B Rect	Typical
11	M11	N13	N10		RIGID	None	None	RIGID	Typical
12	M12	N11	N12		RIGID	None	None	RIGID	Typical
13	M13	N14	N16		Horizontal	Beam	Tube	A500 Gr.B Rect	Typical
14	M14	N13	N14		RIGID	None	None	RIGID	Typical
15	M15	N15	N16		RIGID	None	None	RIGID	Typical
16	M16	N20	N21	90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
17	M17	N22	N23	90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
18	M18	N24	N25	90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
19	M19	N26	N27	90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
20	M20	N28	N29	90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
21	M21	N30	N31	90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
22	M22	N32	N33	90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
23	M23	N34	N35	90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
24	M24	N36	N37	90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
25	M25	N38	N39	90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
26	M26	N40	N41	90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
27	M27	N42	N43	90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
28	M28	N45	N44		Handrail	Beam	Pipe	A53 Gr.B	Typical
29	MP4	N48	N49		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
30	M30	N50	N51		RIGID	None	None	RIGID	Typical
31	M31	N52	N53		RIGID	None	None	RIGID	Typical
32	M32	N54	N55		RIGID	None	None	RIGID	Typical
33	M33	N56	N57		RIGID	None	None	RIGID	Typical
34	MP1	N58	N59		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
35	M35	N60	N61		RIGID	None	None	RIGID	Typical
36	M36	N62	N63		Standoff	Beam	Tube	A500 Gr.B Rect	Typical
37	M37	N64	N65		Standoff	Beam	Tube	A500 Gr.B Rect	Typical
38	M38	N68	N67	180	Corner Angle	HBrace	Single Angle	A36 Gr.36	Typical
39	M39	N69	N70		RIGID	None	None	RIGID	Typical
40	M40	N71	N72		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
41	M41	N73	N74	180	Corner Angle	HBrace	Single Angle	A36 Gr.36	Typical
42	M42	N75	N76	180	Corner Angle	HBrace	Single Angle	A36 Gr.36	Typical
43	M43	N85	N77		RIGID	None	None	RIGID	Typical
44	M44	N86	N78		RIGID	None	None	RIGID	Typical
45	M45	N87	N79		RIGID	None	None	RIGID	Typical
46	M46	N88	N47		Handrail	Beam	Pipe	A53 Gr.B	Typical
47	M47	N89	N80		RIGID	None	None	RIGID	Typical
48	MP8	N81	N82		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
49	MP5	N83	N84		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
50	M50	N98	N90		RIGID	None	None	RIGID	Typical
51	M51	N99	N91		RIGID	None	None	RIGID	Typical
52	M52	N100	N92		RIGID	None	None	RIGID	Typical
53	M53	N101	N46		Handrail	Beam	Pipe	A53 Gr.B	Typical
54	M54	N102	N93		RIGID	None	None	RIGID	Typical
55	MP12	N94	N95		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
56	MP9	N96	N97		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
57	M57	N8	N9		Horizontal	Beam	Tube	A500 Gr.B Rect	Typical
58	M58	N103	N105		RIGID	None	None	RIGID	Typical
59	M59	N104	N108		RIGID	None	None	RIGID	Typical
60	MP2	N107	N106		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
61	M61	N110	N109		RIGID	None	None	RIGID	Typical
62	M62	N111	N114		RIGID	None	None	RIGID	Typical
63	MP3	N113	N112		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
64	M64	N118	N115		RIGID	None	None	RIGID	Typical
65	M65	N119	N122		RIGID	None	None	RIGID	Typical
66	MP10	N121	N120		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
67	M67	N116	N123		RIGID	None	None	RIGID	Typical
68	M68	N124	N126		RIGID	None	None	RIGID	Typical
69	MP11	N117	N125		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
70	M70	N130	N127		RIGID	None	None	RIGID	Typical
71	M71	N131	N134		RIGID	None	None	RIGID	Typical
72	MP6	N133	N132		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
73	M73	N128	N135		RIGID	None	None	RIGID	Typical
74	M74	N136	N138		RIGID	None	None	RIGID	Typical
75	MP7	N129	N137		Mount Pipe	Column	Pipe	A53 Gr.B	Typical

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e^{5}°F^{-1}]	Density [lb/ft^{3}]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	490	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	490	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	490	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	490	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	490	50	1.25	65	1.15
8	A913 Gr.65	29000	11154	0.3	0.65	490	65	1.1	80	1.1

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in^{2}]	Iyy [in^{4}]	Izz [in^{4}]	J [in^{4}]
1	Mount Pipe	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
2	Horizontal	HSS4X4X3	Beam	Tube	A500 Gr.B Rect	Typical	2.58	6.21	6.21	10
3	Standoff	HSS4X4X4	Beam	Tube	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
4	Handrail	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
5	Handrail Bracing	HSS2X2X3	VBrace	Tube	A500 Gr.B Rect	Typical	1.19	0.641	0.641	1.09
6	Corner Angle	L2.5x2.5x3	HBrace	Single Angle	A36 Gr.36	Typical	0.901	0.535	0.535	0.011
7	Grating Angle	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	0.722	0.271	0.271	0.009

Node Coordinates

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
1	N1	11.87702	0	50.30618	
2	N2	11.87702	0	-40.69382	
3	N3	11.87702	0	62.30618	
4	N4	-5.12298	0	86.371135	
5	N5	-89.664458	0	135.18118	
6	N6	28.87702	0	86.371135	
7	N7	113.418499	0	135.18118	
8	N8	94.87702	0	126.476252	

Node Coordinates (Continued)

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
9	N9	-71.12298	0	126.476252	
10	N10	10.14497	0	-20.283965	
11	N11	-71.12298	0	124.476252	
12	N12	-72.85503	0	123.476252	
13	N13	11.87702	0	-19.283965	
14	N14	13.609071	0	-20.283965	
15	N15	94.87702	0	124.476252	
16	N16	96.609071	0	123.476252	
17	N17	-52.070421	0	113.476252	
18	N18	11.87702	0	2.716035	
19	N19	75.824462	0	113.476252	
20	N20	28.37702	0	113.476252	
21	N21	28.37702	0	126.476252	
22	N22	-4.62298	0	113.476252	
23	N23	-4.62298	0	126.476252	
24	N24	-37.62298	0	113.476252	
25	N25	-37.62298	0	126.476252	
26	N26	61.37702	0	113.476252	
27	N27	61.37702	0	126.476252	
28	N28	35.600741	0	43.806725	
29	N29	46.859071	0	37.306725	
30	N30	19.100741	0	15.227886	
31	N31	30.359071	0	8.727886	
32	N32	52.100741	0	72.385563	
33	N33	63.359071	0	65.885563	
34	N34	68.600741	0	100.964401	
35	N35	79.859071	0	94.464401	
36	N36	-11.8467	0	43.806725	
37	N37	-23.10503	0	37.306725	
38	N38	4.6533	0	15.227886	
39	N39	-6.60503	0	8.727886	
40	N40	-28.3467	0	72.385563	
41	N41	-39.60503	0	65.885563	
42	N42	-44.8467	0	100.964401	
43	N43	-56.10503	0	94.464401	
44	N44	-68.12298	42	126.476252	
45	N45	105.87702	42	126.476252	
46	N46	95.109071	42	120.878176	
47	N47	8.64497	42	-17.685888	
48	N48	-59.12298	48	128.976252	
49	N49	-59.12298	-30	128.976252	
50	N50	-59.12298	42	126.476252	
51	N51	-59.12298	42	128.976252	
52	N52	-59.12298	0	126.476252	
53	N53	-59.12298	0	128.976252	
54	N54	82.87702	42	126.476252	
55	N55	82.87702	42	128.976252	
56	N56	82.87702	0	126.476252	
57	N57	82.87702	0	128.976252	
58	N58	82.87702	60	128.976252	
59	N59	82.87702	-36	128.976252	
60	N60	11.87702	-0.5	76.55618	
61	N61	11.87702	0	76.55618	
62	N62	-0.463842	0	83.68118	
63	N63	-10.856146	0	89.68118	

Node Coordinates (Continued)

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
64	N64	24.217882	0	83.68118	
65	N65	34.610187	0	89.68118	
66	CP	11.87702	24	77.55618	
67	N67	20.882574	42	-7.685888	
68	N68	2.871467	42	-7.685888	
69	N69	11.87702	0	44.30618	
70	N70	15.12702	0	44.30618	
71	N71	15.12702	42	44.30618	
72	N72	15.12702	-12	44.30618	
73	N73	-56.575974	42	126.476252	
74	N74	-65.581528	42	110.878176	
75	N75	89.335569	42	110.878176	
76	N76	80.330015	42	126.476252	
77	N77	1.979906	0	-11.14166	
78	N78	-69.020094	0	111.833948	
79	N79	1.979906	42	-11.14166	
80	N80	-69.020094	42	111.833948	
81	N81	1.979906	48	-11.14166	
82	N82	1.979906	-30	-11.14166	
83	N83	-69.020094	60	111.833948	
84	N84	-69.020094	-36	111.833948	
85	N85	4.14497	0	-9.89166	
86	N86	-66.85503	0	113.083948	
87	N87	4.14497	42	-9.89166	
88	N88	-78.35503	42	133.002532	
89	N89	-66.85503	42	113.083948	
90	N90	92.774135	0	111.833948	
91	N91	21.774135	0	-11.14166	
92	N92	92.774135	42	111.833948	
93	N93	21.774135	42	-11.14166	
94	N94	92.774135	48	111.833948	
95	N95	92.774135	-30	111.833948	
96	N96	21.774135	60	-11.14166	
97	N97	21.774135	-36	-11.14166	
98	N98	90.609071	0	113.083948	
99	N99	19.609071	0	-9.89166	
100	N100	90.609071	42	113.083948	
101	N101	8.109071	42	-29.810244	
102	N102	19.609071	42	-9.89166	
103	N103	35.54402	0	126.476252	
104	N104	35.54402	42	126.476252	
105	N105	35.54402	0	128.976252	
106	N106	35.54402	-30	128.976252	
107	N107	35.54402	48	128.976252	
108	N108	35.54402	42	128.976252	
109	N109	-11.78898	0	128.976252	
110	N110	-11.78898	0	126.476252	
111	N111	-11.78898	42	126.476252	
112	N112	-11.78898	-30	128.976252	
113	N113	-11.78898	48	128.976252	
114	N114	-11.78898	42	128.976252	
115	N115	45.440635	0	29.849921	
116	N116	66.942071	0	72.091501	
117	N117	69.107135	48	70.841501	
118	N118	43.275571	0	31.099921	

Node Coordinates (Continued)

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
119	N119	43.275571	42	31.099921	
120	N120	45.440635	-30	29.849921	
121	N121	45.440635	48	29.849921	
122	N122	45.440635	42	29.849921	
123	N123	69.107135	0	70.841501	
124	N124	66.942071	42	72.091501	
125	N125	69.107135	-30	70.841501	
126	N126	69.107135	42	70.841501	
127	N127	-45.353594	0	70.842367	
128	N128	-19.52203	0	31.100787	
129	N129	-21.687094	48	29.850787	
130	N130	-43.18853	0	72.092367	
131	N131	-43.18853	42	72.092367	
132	N132	-45.353594	-30	70.842367	
133	N133	-45.353594	48	70.842367	
134	N134	-45.353594	42	70.842367	
135	N135	-21.687094	0	29.850787	
136	N136	-19.52203	42	31.100787	
137	N137	-21.687094	-30	29.850787	
138	N138	-21.687094	42	29.850787	
139	N139	11.87702	0	126.476252	

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lcomp top [in]	Function
1	M1	Standoff	12	Lbyy	Lateral
2	M2	Standoff	91	Lbyy	Lateral
3	M4	Standoff	91	Lbyy	Lateral
4	M6	Standoff	91	Lbyy	Lateral
5	M10	Horizontal	166	Lbyy	Lateral
6	M13	Horizontal	166	Lbyy	Lateral
7	M16	Grating Angle	13	Lbyy	Lateral
8	M17	Grating Angle	13	Lbyy	Lateral
9	M18	Grating Angle	13	Lbyy	Lateral
10	M19	Grating Angle	13	Lbyy	Lateral
11	M20	Grating Angle	13	Lbyy	Lateral
12	M21	Grating Angle	13	Lbyy	Lateral
13	M22	Grating Angle	13	Lbyy	Lateral
14	M23	Grating Angle	13	Lbyy	Lateral
15	M24	Grating Angle	13	Lbyy	Lateral
16	M25	Grating Angle	13	Lbyy	Lateral
17	M26	Grating Angle	13	Lbyy	Lateral
18	M27	Grating Angle	13	Lbyy	Lateral
19	M28	Handrail	174	Lbyy	Lateral
20	MP4	Mount Pipe	78	Lbyy	Lateral
21	MP1	Mount Pipe	96	Lbyy	Lateral
22	M36	Standoff	12	Lbyy	Lateral
23	M37	Standoff	12	Lbyy	Lateral
24	M38	Corner Angle	18.011	Lbyy	Lateral
25	M40	Mount Pipe	54	Lbyy	Lateral
26	M41	Corner Angle	18.011	Lbyy	Lateral
27	M42	Corner Angle	18.011	Lbyy	Lateral
28	M46	Handrail	174	Lbyy	Lateral
29	MP8	Mount Pipe	78	Lbyy	Lateral
30	MP5	Mount Pipe	96	Lbyy	Lateral
31	M53	Handrail	174	Lbyy	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lcomp top [in]	Function
32	MP12	Mount Pipe	78	Lbyy	Lateral
33	MP9	Mount Pipe	96	Lbyy	Lateral
34	M57	Horizontal	166	Lbyy	Lateral
35	MP2	Mount Pipe	78	Lbyy	Lateral
36	MP3	Mount Pipe	78	Lbyy	Lateral
37	MP10	Mount Pipe	78	Lbyy	Lateral
38	MP11	Mount Pipe	78	Lbyy	Lateral
39	MP6	Mount Pipe	78	Lbyy	Lateral
40	MP7	Mount Pipe	78	Lbyy	Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Member)
1	Self Weight	DL		-1			18		3
2	Wind Load AZI 0	WLZ					36		
3	Wind Load AZI 30	None					36		
4	Wind Load AZI 60	None					36		
5	Wind Load AZI 90	WLX					36		
6	Wind Load AZI 120	None					36		
7	Wind Load AZI 150	None					36		
8	Wind Load AZI 180	None					36		
9	Wind Load AZI 210	None					36		
10	Wind Load AZI 240	None					36		
11	Wind Load AZI 270	None					36		
12	Wind Load AZI 300	None					36		
13	Wind Load AZI 330	None					36		
14	Distr. Wind Load Z	WLZ						75	
15	Distr. Wind Load X	WLX						75	
16	Ice Weight	OL1					18	75	3
17	Ice Wind Load AZI 0	OL2					36		
18	Ice Wind Load AZI 30	None					36		
19	Ice Wind Load AZI 60	None					36		
20	Ice Wind Load AZI 90	OL3					36		
21	Ice Wind Load AZI 120	None					36		
22	Ice Wind Load AZI 150	None					36		
23	Ice Wind Load AZI 180	None					36		
24	Ice Wind Load AZI 210	None					36		
25	Ice Wind Load AZI 240	None					36		
26	Ice Wind Load AZI 270	None					36		
27	Ice Wind Load AZI 300	None					36		
28	Ice Wind Load AZI 330	None					36		
29	Distr. Ice Wind Load Z	OL2						75	
30	Distr. Ice Wind Load X	OL3						75	
31	Seismic Load Z	ELZ			-0.277		18		
32	Seismic Load X	ELX	-0.277				18		
33	Service Live Loads	LL				1			
34	Maintenance Load 1	LL				1			
35	Maintenance Load 2	LL				1			
36	Maintenance Load 3	LL				1			
37	Maintenance Load 4	LL				1			
38	Maintenance Load 5	LL				1			
39	Maintenance Load 6	LL				1			
40	Maintenance Load 7	LL				1			
41	Maintenance Load 8	LL				1			
42	Maintenance Load 9	LL				1			
43	Maintenance Load 10	LL				1			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed	Area(Member)
44	Maintenance Load 11	LL				1			
45	Maintenance Load 12	LL				1			
46	BLC 1 Transient Area Loads	None						51	
47	BLC 16 Transient Area Loads	None						51	

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	Y	-57.315	6
2	MP2	Y	-57.315	30
3	MP1	Y	-74.95	6
4	MP1	Y	-74.95	90
5	MP1	Y	-109	%50
6	MP1	Y	-81	%75
7	MP6	Y	-57.315	6
8	MP6	Y	-57.315	30
9	MP5	Y	-74.95	6
10	MP5	Y	-74.95	90
11	MP5	Y	-109	%50
12	MP5	Y	-81	%75
13	MP10	Y	-57.315	6
14	MP10	Y	-57.315	30
15	MP9	Y	-74.95	6
16	MP9	Y	-74.95	90
17	MP9	Y	-109	%50
18	MP9	Y	-81	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	0	6
2	MP2	Z	-96.57	6
3	MP2	X	0	30
4	MP2	Z	-96.57	30
5	MP1	X	0	6
6	MP1	Z	-268.82	6
7	MP1	X	0	90
8	MP1	Z	-268.82	90
9	MP1	X	0	%50
10	MP1	Z	-78.4	%50
11	MP1	X	0	%75
12	MP1	Z	-105.49	%75
13	MP6	X	0	6
14	MP6	Z	-65.28	6
15	MP6	X	0	30
16	MP6	Z	-65.28	30
17	MP5	X	0	6
18	MP5	Z	-175.48	6
19	MP5	X	0	90
20	MP5	Z	-175.48	90
21	MP5	X	0	%50
22	MP5	Z	-68.65	%50
23	MP5	X	0	%75
24	MP5	Z	-73.63	%75
25	MP10	X	0	6

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
26	MP10	Z	-56.58	6
27	MP10	X	0	30
28	MP10	Z	-56.58	30
29	MP9	X	0	6
30	MP9	Z	-149.53	6
31	MP9	X	0	90
32	MP9	Z	-149.53	90
33	MP9	X	0	%50
34	MP9	Z	-65.94	%50
35	MP9	X	0	%75
36	MP9	Z	-64.77	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	-41.62	6
2	MP2	Z	-72.09	6
3	MP2	X	-41.62	30
4	MP2	Z	-72.09	30
5	MP1	X	-114.53	6
6	MP1	Z	-198.37	6
7	MP1	X	-114.53	90
8	MP1	Z	-198.37	90
9	MP1	X	-37.12	%50
10	MP1	Z	-64.3	%50
11	MP1	X	-45.96	%75
12	MP1	Z	-79.6	%75
13	MP6	X	-45.17	6
14	MP6	Z	-78.23	6
15	MP6	X	-45.17	30
16	MP6	Z	-78.23	30
17	MP5	X	-125.11	6
18	MP5	Z	-216.69	6
19	MP5	X	-125.11	90
20	MP5	Z	-216.69	90
21	MP5	X	-38.23	%50
22	MP5	Z	-66.21	%50
23	MP5	X	-49.57	%75
24	MP5	Z	-85.86	%75
25	MP10	X	-21.62	6
26	MP10	Z	-37.45	6
27	MP10	X	-21.62	30
28	MP10	Z	-37.45	30
29	MP9	X	-54.88	6
30	MP9	Z	-95.06	6
31	MP9	X	-54.88	90
32	MP9	Z	-95.06	90
33	MP9	X	-30.89	%50
34	MP9	Z	-53.51	%50
35	MP9	X	-25.6	%75
36	MP9	Z	-44.34	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	-49	6
2	MP2	Z	-28.29	6
3	MP2	X	-49	30
4	MP2	Z	-28.29	30
5	MP1	X	-129.5	6
6	MP1	Z	-74.76	6
7	MP1	X	-129.5	90
8	MP1	Z	-74.76	90
9	MP1	X	-57.1	%50
10	MP1	Z	-32.97	%50
11	MP1	X	-56.1	%75
12	MP1	Z	-32.39	%75
13	MP6	X	-82.24	6
14	MP6	Z	-47.48	6
15	MP6	X	-82.24	30
16	MP6	Z	-47.48	30
17	MP5	X	-228.65	6
18	MP5	Z	-132.01	6
19	MP5	X	-228.65	90
20	MP5	Z	-132.01	90
21	MP5	X	-67.46	%50
22	MP5	Z	-38.95	%50
23	MP5	X	-89.94	%75
24	MP5	Z	-51.93	%75
25	MP10	X	-49	6
26	MP10	Z	-28.29	6
27	MP10	X	-49	30
28	MP10	Z	-28.29	30
29	MP9	X	-129.5	6
30	MP9	Z	-74.76	6
31	MP9	X	-129.5	90
32	MP9	Z	-74.76	90
33	MP9	X	-57.1	%50
34	MP9	Z	-32.97	%50
35	MP9	X	-56.1	%75
36	MP9	Z	-32.39	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	-43.25	6
2	MP2	Z	0	6
3	MP2	X	-43.25	30
4	MP2	Z	0	30
5	MP1	X	-109.76	6
6	MP1	Z	0	6
7	MP1	X	-109.76	90
8	MP1	Z	0	90
9	MP1	X	-61.78	%50
10	MP1	Z	0	%50
11	MP1	X	-51.2	%75
12	MP1	Z	0	%75
13	MP6	X	-74.54	6
14	MP6	Z	0	6
15	MP6	X	-74.54	30

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
16	MP6	Z	0	30
17	MP5	X	-203.1	6
18	MP5	Z	0	6
19	MP5	X	-203.1	90
20	MP5	Z	0	90
21	MP5	X	-71.53	%50
22	MP5	Z	0	%50
23	MP5	X	-83.06	%75
24	MP5	Z	0	%75
25	MP10	X	-83.24	6
26	MP10	Z	0	6
27	MP10	X	-83.24	30
28	MP10	Z	0	30
29	MP9	X	-229.06	6
30	MP9	Z	0	6
31	MP9	X	-229.06	90
32	MP9	Z	0	90
33	MP9	X	-74.25	%50
34	MP9	Z	0	%50
35	MP9	X	-91.92	%75
36	MP9	Z	0	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	-49	6
2	MP2	Z	28.29	6
3	MP2	X	-49	30
4	MP2	Z	28.29	30
5	MP1	X	-129.5	6
6	MP1	Z	74.76	6
7	MP1	X	-129.5	90
8	MP1	Z	74.76	90
9	MP1	X	-57.1	%50
10	MP1	Z	32.97	%50
11	MP1	X	-56.1	%75
12	MP1	Z	32.39	%75
13	MP6	X	-42.85	6
14	MP6	Z	24.74	6
15	MP6	X	-42.85	30
16	MP6	Z	24.74	30
17	MP5	X	-111.17	6
18	MP5	Z	64.19	6
19	MP5	X	-111.17	90
20	MP5	Z	64.19	90
21	MP5	X	-55.19	%50
22	MP5	Z	31.86	%50
23	MP5	X	-49.84	%75
24	MP5	Z	28.78	%75
25	MP10	X	-83.63	6
26	MP10	Z	48.29	6
27	MP10	X	-83.63	30
28	MP10	Z	48.29	30
29	MP9	X	-232.81	6
30	MP9	Z	134.41	6
31	MP9	X	-232.81	90

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
32	MP9	Z	134.41	90
33	MP9	X	-67.9	%50
34	MP9	Z	39.2	%50
35	MP9	X	-91.36	%75
36	MP9	Z	52.74	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	-41.62	6
2	MP2	Z	72.09	6
3	MP2	X	-41.62	30
4	MP2	Z	72.09	30
5	MP1	X	-114.53	6
6	MP1	Z	198.37	6
7	MP1	X	-114.53	90
8	MP1	Z	198.37	90
9	MP1	X	-37.12	%50
10	MP1	Z	64.3	%50
11	MP1	X	-45.96	%75
12	MP1	Z	79.6	%75
13	MP6	X	-22.43	6
14	MP6	Z	38.84	6
15	MP6	X	-22.43	30
16	MP6	Z	38.84	30
17	MP5	X	-57.28	6
18	MP5	Z	99.21	6
19	MP5	X	-57.28	90
20	MP5	Z	99.21	90
21	MP5	X	-31.14	%50
22	MP5	Z	53.94	%50
23	MP5	X	-26.42	%75
24	MP5	Z	45.76	%75
25	MP10	X	-41.62	6
26	MP10	Z	72.09	6
27	MP10	X	-41.62	30
28	MP10	Z	72.09	30
29	MP9	X	-114.53	6
30	MP9	Z	198.37	6
31	MP9	X	-114.53	90
32	MP9	Z	198.37	90
33	MP9	X	-37.12	%50
34	MP9	Z	64.3	%50
35	MP9	X	-45.96	%75
36	MP9	Z	79.6	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	0	6
2	MP2	Z	96.57	6
3	MP2	X	0	30
4	MP2	Z	96.57	30
5	MP1	X	0	6
6	MP1	Z	268.82	6

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
7	MP1	X	0	90
8	MP1	Z	268.82	90
9	MP1	X	0	%50
10	MP1	Z	78.4	%50
11	MP1	X	0	%75
12	MP1	Z	105.49	%75
13	MP6	X	0	6
14	MP6	Z	65.28	6
15	MP6	X	0	30
16	MP6	Z	65.28	30
17	MP5	X	0	6
18	MP5	Z	175.48	6
19	MP5	X	0	90
20	MP5	Z	175.48	90
21	MP5	X	0	%50
22	MP5	Z	68.65	%50
23	MP5	X	0	%75
24	MP5	Z	73.63	%75
25	MP10	X	0	6
26	MP10	Z	56.58	6
27	MP10	X	0	30
28	MP10	Z	56.58	30
29	MP9	X	0	6
30	MP9	Z	149.53	6
31	MP9	X	0	90
32	MP9	Z	149.53	90
33	MP9	X	0	%50
34	MP9	Z	65.94	%50
35	MP9	X	0	%75
36	MP9	Z	64.77	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	41.62	6
2	MP2	Z	72.09	6
3	MP2	X	41.62	30
4	MP2	Z	72.09	30
5	MP1	X	114.53	6
6	MP1	Z	198.37	6
7	MP1	X	114.53	90
8	MP1	Z	198.37	90
9	MP1	X	37.12	%50
10	MP1	Z	64.3	%50
11	MP1	X	45.96	%75
12	MP1	Z	79.6	%75
13	MP6	X	45.17	6
14	MP6	Z	78.23	6
15	MP6	X	45.17	30
16	MP6	Z	78.23	30
17	MP5	X	125.11	6
18	MP5	Z	216.69	6
19	MP5	X	125.11	90
20	MP5	Z	216.69	90
21	MP5	X	38.23	%50
22	MP5	Z	66.21	%50

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
23	MP5	X	49.57	%75
24	MP5	Z	85.86	%75
25	MP10	X	21.62	6
26	MP10	Z	37.45	6
27	MP10	X	21.62	30
28	MP10	Z	37.45	30
29	MP9	X	54.88	6
30	MP9	Z	95.06	6
31	MP9	X	54.88	90
32	MP9	Z	95.06	90
33	MP9	X	30.89	%50
34	MP9	Z	53.51	%50
35	MP9	X	25.6	%75
36	MP9	Z	44.34	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	49	6
2	MP2	Z	28.29	6
3	MP2	X	49	30
4	MP2	Z	28.29	30
5	MP1	X	129.5	6
6	MP1	Z	74.76	6
7	MP1	X	129.5	90
8	MP1	Z	74.76	90
9	MP1	X	57.1	%50
10	MP1	Z	32.97	%50
11	MP1	X	56.1	%75
12	MP1	Z	32.39	%75
13	MP6	X	82.24	6
14	MP6	Z	47.48	6
15	MP6	X	82.24	30
16	MP6	Z	47.48	30
17	MP5	X	228.65	6
18	MP5	Z	132.01	6
19	MP5	X	228.65	90
20	MP5	Z	132.01	90
21	MP5	X	67.46	%50
22	MP5	Z	38.95	%50
23	MP5	X	89.94	%75
24	MP5	Z	51.93	%75
25	MP10	X	49	6
26	MP10	Z	28.29	6
27	MP10	X	49	30
28	MP10	Z	28.29	30
29	MP9	X	129.5	6
30	MP9	Z	74.76	6
31	MP9	X	129.5	90
32	MP9	Z	74.76	90
33	MP9	X	57.1	%50
34	MP9	Z	32.97	%50
35	MP9	X	56.1	%75
36	MP9	Z	32.39	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	43.25	6
2	MP2	Z	0	6
3	MP2	X	43.25	30
4	MP2	Z	0	30
5	MP1	X	109.76	6
6	MP1	Z	0	6
7	MP1	X	109.76	90
8	MP1	Z	0	90
9	MP1	X	61.78	%50
10	MP1	Z	0	%50
11	MP1	X	51.2	%75
12	MP1	Z	0	%75
13	MP6	X	74.54	6
14	MP6	Z	0	6
15	MP6	X	74.54	30
16	MP6	Z	0	30
17	MP5	X	203.1	6
18	MP5	Z	0	6
19	MP5	X	203.1	90
20	MP5	Z	0	90
21	MP5	X	71.53	%50
22	MP5	Z	0	%50
23	MP5	X	83.06	%75
24	MP5	Z	0	%75
25	MP10	X	83.24	6
26	MP10	Z	0	6
27	MP10	X	83.24	30
28	MP10	Z	0	30
29	MP9	X	229.06	6
30	MP9	Z	0	6
31	MP9	X	229.06	90
32	MP9	Z	0	90
33	MP9	X	74.25	%50
34	MP9	Z	0	%50
35	MP9	X	91.92	%75
36	MP9	Z	0	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	49	6
2	MP2	Z	-28.29	6
3	MP2	X	49	30
4	MP2	Z	-28.29	30
5	MP1	X	129.5	6
6	MP1	Z	-74.76	6
7	MP1	X	129.5	90
8	MP1	Z	-74.76	90
9	MP1	X	57.1	%50
10	MP1	Z	-32.97	%50
11	MP1	X	56.1	%75
12	MP1	Z	-32.39	%75
13	MP6	X	42.85	6
14	MP6	Z	-24.74	6
15	MP6	X	42.85	30

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
16	MP6	Z	-24.74	30
17	MP5	X	111.17	6
18	MP5	Z	-64.19	6
19	MP5	X	111.17	90
20	MP5	Z	-64.19	90
21	MP5	X	55.19	%50
22	MP5	Z	-31.86	%50
23	MP5	X	49.84	%75
24	MP5	Z	-28.78	%75
25	MP10	X	83.63	6
26	MP10	Z	-48.29	6
27	MP10	X	83.63	30
28	MP10	Z	-48.29	30
29	MP9	X	232.81	6
30	MP9	Z	-134.41	6
31	MP9	X	232.81	90
32	MP9	Z	-134.41	90
33	MP9	X	67.9	%50
34	MP9	Z	-39.2	%50
35	MP9	X	91.36	%75
36	MP9	Z	-52.74	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	41.62	6
2	MP2	Z	-72.09	6
3	MP2	X	41.62	30
4	MP2	Z	-72.09	30
5	MP1	X	114.53	6
6	MP1	Z	-198.37	6
7	MP1	X	114.53	90
8	MP1	Z	-198.37	90
9	MP1	X	37.12	%50
10	MP1	Z	-64.3	%50
11	MP1	X	45.96	%75
12	MP1	Z	-79.6	%75
13	MP6	X	22.43	6
14	MP6	Z	-38.84	6
15	MP6	X	22.43	30
16	MP6	Z	-38.84	30
17	MP5	X	57.28	6
18	MP5	Z	-99.21	6
19	MP5	X	57.28	90
20	MP5	Z	-99.21	90
21	MP5	X	31.14	%50
22	MP5	Z	-53.94	%50
23	MP5	X	26.42	%75
24	MP5	Z	-45.76	%75
25	MP10	X	41.62	6
26	MP10	Z	-72.09	6
27	MP10	X	41.62	30
28	MP10	Z	-72.09	30
29	MP9	X	114.53	6
30	MP9	Z	-198.37	6
31	MP9	X	114.53	90

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
32	MP9	Z	-198.37	90
33	MP9	X	37.12	%50
34	MP9	Z	-64.3	%50
35	MP9	X	45.96	%75
36	MP9	Z	-79.6	%75

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	Y	-109.19	6
2	MP2	Y	-109.19	30
3	MP1	Y	-297.115	6
4	MP1	Y	-297.115	90
5	MP1	Y	-130.478	%50
6	MP1	Y	-129.731	%75
7	MP6	Y	-109.19	6
8	MP6	Y	-109.19	30
9	MP5	Y	-297.115	6
10	MP5	Y	-297.115	90
11	MP5	Y	-130.478	%50
12	MP5	Y	-129.731	%75
13	MP10	Y	-109.19	6
14	MP10	Y	-109.19	30
15	MP9	Y	-297.115	6
16	MP9	Y	-297.115	90
17	MP9	Y	-130.478	%50
18	MP9	Y	-129.731	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	0	6
2	MP2	Z	-9.67	6
3	MP2	X	0	30
4	MP2	Z	-9.67	30
5	MP1	X	0	6
6	MP1	Z	-30.65	6
7	MP1	X	0	90
8	MP1	Z	-30.65	90
9	MP1	X	0	%50
10	MP1	Z	-8.71	%50
11	MP1	X	0	%75
12	MP1	Z	-11.05	%75
13	MP6	X	0	6
14	MP6	Z	-7.52	6
15	MP6	X	0	30
16	MP6	Z	-7.52	30
17	MP5	X	0	6
18	MP5	Z	-23.57	6
19	MP5	X	0	90
20	MP5	Z	-23.57	90
21	MP5	X	0	%50
22	MP5	Z	-8.07	%50
23	MP5	X	0	%75
24	MP5	Z	-9.26	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
25	MP10	X	0	6
26	MP10	Z	-6.92	6
27	MP10	X	0	30
28	MP10	Z	-6.92	30
29	MP9	X	0	6
30	MP9	Z	-21.6	6
31	MP9	X	0	90
32	MP9	Z	-21.6	90
33	MP9	X	0	%50
34	MP9	Z	-7.9	%50
35	MP9	X	0	%75
36	MP9	Z	-8.76	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	-4.38	6
2	MP2	Z	-7.58	6
3	MP2	X	-4.38	30
4	MP2	Z	-7.58	30
5	MP1	X	-13.82	6
6	MP1	Z	-23.93	6
7	MP1	X	-13.82	90
8	MP1	Z	-23.93	90
9	MP1	X	-4.22	%50
10	MP1	Z	-7.31	%50
11	MP1	X	-5.14	%75
12	MP1	Z	-8.91	%75
13	MP6	X	-4.62	6
14	MP6	Z	-8.01	6
15	MP6	X	-4.62	30
16	MP6	Z	-8.01	30
17	MP5	X	-14.62	6
18	MP5	Z	-25.32	6
19	MP5	X	-14.62	90
20	MP5	Z	-25.32	90
21	MP5	X	-4.29	%50
22	MP5	Z	-7.43	%50
23	MP5	X	-5.35	%75
24	MP5	Z	-9.26	%75
25	MP10	X	-3	6
26	MP10	Z	-5.19	6
27	MP10	X	-3	30
28	MP10	Z	-5.19	30
29	MP9	X	-9.29	6
30	MP9	Z	-16.09	6
31	MP9	X	-9.29	90
32	MP9	Z	-16.09	90
33	MP9	X	-3.81	%50
34	MP9	Z	-6.6	%50
35	MP9	X	-4	%75
36	MP9	Z	-6.93	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	-5.99	6
2	MP2	Z	-3.46	6
3	MP2	X	-5.99	30
4	MP2	Z	-3.46	30
5	MP1	X	-18.7	6
6	MP1	Z	-10.8	6
7	MP1	X	-18.7	90
8	MP1	Z	-10.8	90
9	MP1	X	-6.84	%50
10	MP1	Z	-3.95	%50
11	MP1	X	-7.59	%75
12	MP1	Z	-4.38	%75
13	MP6	X	-8.28	6
14	MP6	Z	-4.78	6
15	MP6	X	-8.28	30
16	MP6	Z	-4.78	30
17	MP5	X	-26.23	6
18	MP5	Z	-15.14	6
19	MP5	X	-26.23	90
20	MP5	Z	-15.14	90
21	MP5	X	-7.51	%50
22	MP5	Z	-4.34	%50
23	MP5	X	-9.49	%75
24	MP5	Z	-5.48	%75
25	MP10	X	-5.99	6
26	MP10	Z	-3.46	6
27	MP10	X	-5.99	30
28	MP10	Z	-3.46	30
29	MP9	X	-18.7	6
30	MP9	Z	-10.8	6
31	MP9	X	-18.7	90
32	MP9	Z	-10.8	90
33	MP9	X	-6.84	%50
34	MP9	Z	-3.95	%50
35	MP9	X	-7.59	%75
36	MP9	Z	-4.38	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	-6	6
2	MP2	Z	0	6
3	MP2	X	-6	30
4	MP2	Z	0	30
5	MP1	X	-18.58	6
6	MP1	Z	0	6
7	MP1	X	-18.58	90
8	MP1	Z	0	90
9	MP1	X	-7.62	%50
10	MP1	Z	0	%50
11	MP1	X	-8	%75
12	MP1	Z	0	%75
13	MP6	X	-8.16	6
14	MP6	Z	0	6
15	MP6	X	-8.16	30

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
16	MP6	Z	0	30
17	MP5	X	-25.66	6
18	MP5	Z	0	6
19	MP5	X	-25.66	90
20	MP5	Z	0	90
21	MP5	X	-8.26	%50
22	MP5	Z	0	%50
23	MP5	X	-9.79	%75
24	MP5	Z	0	%75
25	MP10	X	-8.76	6
26	MP10	Z	0	6
27	MP10	X	-8.76	30
28	MP10	Z	0	30
29	MP9	X	-27.63	6
30	MP9	Z	0	6
31	MP9	X	-27.63	90
32	MP9	Z	0	90
33	MP9	X	-8.44	%50
34	MP9	Z	0	%50
35	MP9	X	-10.29	%75
36	MP9	Z	0	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	-5.99	6
2	MP2	Z	3.46	6
3	MP2	X	-5.99	30
4	MP2	Z	3.46	30
5	MP1	X	-18.7	6
6	MP1	Z	10.8	6
7	MP1	X	-18.7	90
8	MP1	Z	10.8	90
9	MP1	X	-6.84	%50
10	MP1	Z	3.95	%50
11	MP1	X	-7.59	%75
12	MP1	Z	4.38	%75
13	MP6	X	-5.57	6
14	MP6	Z	3.21	6
15	MP6	X	-5.57	30
16	MP6	Z	3.21	30
17	MP5	X	-17.31	6
18	MP5	Z	10	6
19	MP5	X	-17.31	90
20	MP5	Z	10	90
21	MP5	X	-6.71	%50
22	MP5	Z	3.88	%50
23	MP5	X	-7.24	%75
24	MP5	Z	4.18	%75
25	MP10	X	-8.38	6
26	MP10	Z	4.84	6
27	MP10	X	-8.38	30
28	MP10	Z	4.84	30
29	MP9	X	-26.54	6
30	MP9	Z	15.32	6
31	MP9	X	-26.54	90

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
32	MP9	Z	15.32	90
33	MP9	X	-7.54	%50
34	MP9	Z	4.35	%50
35	MP9	X	-9.57	%75
36	MP9	Z	5.52	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	-4.38	6
2	MP2	Z	7.58	6
3	MP2	X	-4.38	30
4	MP2	Z	7.58	30
5	MP1	X	-13.82	6
6	MP1	Z	23.93	6
7	MP1	X	-13.82	90
8	MP1	Z	23.93	90
9	MP1	X	-4.22	%50
10	MP1	Z	7.31	%50
11	MP1	X	-5.14	%75
12	MP1	Z	8.91	%75
13	MP6	X	-3.05	6
14	MP6	Z	5.29	6
15	MP6	X	-3.05	30
16	MP6	Z	5.29	30
17	MP5	X	-9.47	6
18	MP5	Z	16.41	6
19	MP5	X	-9.47	90
20	MP5	Z	16.41	90
21	MP5	X	-3.83	%50
22	MP5	Z	6.63	%50
23	MP5	X	-4.05	%75
24	MP5	Z	7.01	%75
25	MP10	X	-4.38	6
26	MP10	Z	7.58	6
27	MP10	X	-4.38	30
28	MP10	Z	7.58	30
29	MP9	X	-13.82	6
30	MP9	Z	23.93	6
31	MP9	X	-13.82	90
32	MP9	Z	23.93	90
33	MP9	X	-4.22	%50
34	MP9	Z	7.31	%50
35	MP9	X	-5.14	%75
36	MP9	Z	8.91	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	0	6
2	MP2	Z	9.67	6
3	MP2	X	0	30
4	MP2	Z	9.67	30
5	MP1	X	0	6
6	MP1	Z	30.65	6

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
7	MP1	X	0	90
8	MP1	Z	30.65	90
9	MP1	X	0	%50
10	MP1	Z	8.71	%50
11	MP1	X	0	%75
12	MP1	Z	11.05	%75
13	MP6	X	0	6
14	MP6	Z	7.52	6
15	MP6	X	0	30
16	MP6	Z	7.52	30
17	MP5	X	0	6
18	MP5	Z	23.57	6
19	MP5	X	0	90
20	MP5	Z	23.57	90
21	MP5	X	0	%50
22	MP5	Z	8.07	%50
23	MP5	X	0	%75
24	MP5	Z	9.26	%75
25	MP10	X	0	6
26	MP10	Z	6.92	6
27	MP10	X	0	30
28	MP10	Z	6.92	30
29	MP9	X	0	6
30	MP9	Z	21.6	6
31	MP9	X	0	90
32	MP9	Z	21.6	90
33	MP9	X	0	%50
34	MP9	Z	7.9	%50
35	MP9	X	0	%75
36	MP9	Z	8.76	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	4.38	6
2	MP2	Z	7.58	6
3	MP2	X	4.38	30
4	MP2	Z	7.58	30
5	MP1	X	13.82	6
6	MP1	Z	23.93	6
7	MP1	X	13.82	90
8	MP1	Z	23.93	90
9	MP1	X	4.22	%50
10	MP1	Z	7.31	%50
11	MP1	X	5.14	%75
12	MP1	Z	8.91	%75
13	MP6	X	4.62	6
14	MP6	Z	8.01	6
15	MP6	X	4.62	30
16	MP6	Z	8.01	30
17	MP5	X	14.62	6
18	MP5	Z	25.32	6
19	MP5	X	14.62	90
20	MP5	Z	25.32	90
21	MP5	X	4.29	%50
22	MP5	Z	7.43	%50

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
23	MP5	X	5.35	%75
24	MP5	Z	9.26	%75
25	MP10	X	3	6
26	MP10	Z	5.19	6
27	MP10	X	3	30
28	MP10	Z	5.19	30
29	MP9	X	9.29	6
30	MP9	Z	16.09	6
31	MP9	X	9.29	90
32	MP9	Z	16.09	90
33	MP9	X	3.81	%50
34	MP9	Z	6.6	%50
35	MP9	X	4	%75
36	MP9	Z	6.93	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	5.99	6
2	MP2	Z	3.46	6
3	MP2	X	5.99	30
4	MP2	Z	3.46	30
5	MP1	X	18.7	6
6	MP1	Z	10.8	6
7	MP1	X	18.7	90
8	MP1	Z	10.8	90
9	MP1	X	6.84	%50
10	MP1	Z	3.95	%50
11	MP1	X	7.59	%75
12	MP1	Z	4.38	%75
13	MP6	X	8.28	6
14	MP6	Z	4.78	6
15	MP6	X	8.28	30
16	MP6	Z	4.78	30
17	MP5	X	26.23	6
18	MP5	Z	15.14	6
19	MP5	X	26.23	90
20	MP5	Z	15.14	90
21	MP5	X	7.51	%50
22	MP5	Z	4.34	%50
23	MP5	X	9.49	%75
24	MP5	Z	5.48	%75
25	MP10	X	5.99	6
26	MP10	Z	3.46	6
27	MP10	X	5.99	30
28	MP10	Z	3.46	30
29	MP9	X	18.7	6
30	MP9	Z	10.8	6
31	MP9	X	18.7	90
32	MP9	Z	10.8	90
33	MP9	X	6.84	%50
34	MP9	Z	3.95	%50
35	MP9	X	7.59	%75
36	MP9	Z	4.38	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	6	6
2	MP2	Z	0	6
3	MP2	X	6	30
4	MP2	Z	0	30
5	MP1	X	18.58	6
6	MP1	Z	0	6
7	MP1	X	18.58	90
8	MP1	Z	0	90
9	MP1	X	7.62	%50
10	MP1	Z	0	%50
11	MP1	X	8	%75
12	MP1	Z	0	%75
13	MP6	X	8.16	6
14	MP6	Z	0	6
15	MP6	X	8.16	30
16	MP6	Z	0	30
17	MP5	X	25.66	6
18	MP5	Z	0	6
19	MP5	X	25.66	90
20	MP5	Z	0	90
21	MP5	X	8.26	%50
22	MP5	Z	0	%50
23	MP5	X	9.79	%75
24	MP5	Z	0	%75
25	MP10	X	8.76	6
26	MP10	Z	0	6
27	MP10	X	8.76	30
28	MP10	Z	0	30
29	MP9	X	27.63	6
30	MP9	Z	0	6
31	MP9	X	27.63	90
32	MP9	Z	0	90
33	MP9	X	8.44	%50
34	MP9	Z	0	%50
35	MP9	X	10.29	%75
36	MP9	Z	0	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	5.99	6
2	MP2	Z	-3.46	6
3	MP2	X	5.99	30
4	MP2	Z	-3.46	30
5	MP1	X	18.7	6
6	MP1	Z	-10.8	6
7	MP1	X	18.7	90
8	MP1	Z	-10.8	90
9	MP1	X	6.84	%50
10	MP1	Z	-3.95	%50
11	MP1	X	7.59	%75
12	MP1	Z	-4.38	%75
13	MP6	X	5.57	6
14	MP6	Z	-3.21	6
15	MP6	X	5.57	30

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
16	MP6	Z	-3.21	30
17	MP5	X	17.31	6
18	MP5	Z	-10	6
19	MP5	X	17.31	90
20	MP5	Z	-10	90
21	MP5	X	6.71	%50
22	MP5	Z	-3.88	%50
23	MP5	X	7.24	%75
24	MP5	Z	-4.18	%75
25	MP10	X	8.38	6
26	MP10	Z	-4.84	6
27	MP10	X	8.38	30
28	MP10	Z	-4.84	30
29	MP9	X	26.54	6
30	MP9	Z	-15.32	6
31	MP9	X	26.54	90
32	MP9	Z	-15.32	90
33	MP9	X	7.54	%50
34	MP9	Z	-4.35	%50
35	MP9	X	9.57	%75
36	MP9	Z	-5.52	%75

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	4.38	6
2	MP2	Z	-7.58	6
3	MP2	X	4.38	30
4	MP2	Z	-7.58	30
5	MP1	X	13.82	6
6	MP1	Z	-23.93	6
7	MP1	X	13.82	90
8	MP1	Z	-23.93	90
9	MP1	X	4.22	%50
10	MP1	Z	-7.31	%50
11	MP1	X	5.14	%75
12	MP1	Z	-8.91	%75
13	MP6	X	3.05	6
14	MP6	Z	-5.29	6
15	MP6	X	3.05	30
16	MP6	Z	-5.29	30
17	MP5	X	9.47	6
18	MP5	Z	-16.41	6
19	MP5	X	9.47	90
20	MP5	Z	-16.41	90
21	MP5	X	3.83	%50
22	MP5	Z	-6.63	%50
23	MP5	X	4.05	%75
24	MP5	Z	-7.01	%75
25	MP10	X	4.38	6
26	MP10	Z	-7.58	6
27	MP10	X	4.38	30
28	MP10	Z	-7.58	30
29	MP9	X	13.82	6
30	MP9	Z	-23.93	6
31	MP9	X	13.82	90

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

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
32	MP9	Z	-23.93	90
33	MP9	X	4.22	%50
34	MP9	Z	-7.31	%50
35	MP9	X	5.14	%75
36	MP9	Z	-8.91	%75

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	Z	-15.865	6
2	MP2	Z	-15.865	30
3	MP1	Z	-20.746	6
4	MP1	Z	-20.746	90
5	MP1	Z	-30.171	%50
6	MP1	Z	-22.421	%75
7	MP6	Z	-15.865	6
8	MP6	Z	-15.865	30
9	MP5	Z	-20.746	6
10	MP5	Z	-20.746	90
11	MP5	Z	-30.171	%50
12	MP5	Z	-22.421	%75
13	MP10	Z	-15.865	6
14	MP10	Z	-15.865	30
15	MP9	Z	-20.746	6
16	MP9	Z	-20.746	90
17	MP9	Z	-30.171	%50
18	MP9	Z	-22.421	%75

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	MP2	X	-15.865	6
2	MP2	X	-15.865	30
3	MP1	X	-20.746	6
4	MP1	X	-20.746	90
5	MP1	X	-30.171	%50
6	MP1	X	-22.421	%75
7	MP6	X	-15.865	6
8	MP6	X	-15.865	30
9	MP5	X	-20.746	6
10	MP5	X	-20.746	90
11	MP5	X	-30.171	%50
12	MP5	X	-22.421	%75
13	MP10	X	-15.865	6
14	MP10	X	-15.865	30
15	MP9	X	-20.746	6
16	MP9	X	-20.746	90
17	MP9	X	-30.171	%50
18	MP9	X	-22.421	%75

Node Loads and Enforced Displacements (BLC 33 : Service Live Loads)

	Node Label	L, D, M	Direction	Magnitude [(lb, lb-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N8	L	Y	-250

Node Loads and Enforced Displacements (BLC 34 : Maintenance Load 1)

	Node Label	L, D, M	Direction	Magnitude [(lb, lb-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N53	L	Y	-500

Node Loads and Enforced Displacements (BLC 35 : Maintenance Load 2)

	Node Label	L, D, M	Direction	Magnitude [(lb, lb-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N57	L	Y	-500

Node Loads and Enforced Displacements (BLC 36 : Maintenance Load 3)

	Node Label	L, D, M	Direction	Magnitude [(lb, lb-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N77	L	Y	-500

Node Loads and Enforced Displacements (BLC 37 : Maintenance Load 4)

	Node Label	L, D, M	Direction	Magnitude [(lb, lb-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N78	L	Y	-500

Node Loads and Enforced Displacements (BLC 38 : Maintenance Load 5)

	Node Label	L, D, M	Direction	Magnitude [(lb, lb-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N90	L	Y	-500

Node Loads and Enforced Displacements (BLC 39 : Maintenance Load 6)

	Node Label	L, D, M	Direction	Magnitude [(lb, lb-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N91	L	Y	-500

Node Loads and Enforced Displacements (BLC 40 : Maintenance Load 7)

	Node Label	L, D, M	Direction	Magnitude [(lb, lb-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N105	L	Y	-500

Node Loads and Enforced Displacements (BLC 41 : Maintenance Load 8)

	Node Label	L, D, M	Direction	Magnitude [(lb, lb-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N109	L	Y	-500

Node Loads and Enforced Displacements (BLC 42 : Maintenance Load 9)

	Node Label	L, D, M	Direction	Magnitude [(lb, lb-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N115	L	Y	-500

Node Loads and Enforced Displacements (BLC 43 : Maintenance Load 10)

	Node Label	L, D, M	Direction	Magnitude [(lb, lb-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N123	L	Y	-500

Node Loads and Enforced Displacements (BLC 44 : Maintenance Load 11)

	Node Label	L, D, M	Direction	Magnitude [(lb, lb-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N127	L	Y	-500

Node Loads and Enforced Displacements (BLC 45 : Maintenance Load 12)

	Node Label	L, D, M	Direction	Magnitude [(lb, lb-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N135	L	Y	-500

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	M1	SZ	-81.443	-81.443	0	%100
2	M2	SZ	-81.443	-81.443	0	%100
3	M3	SZ	0	0	0	%100
4	M4	SZ	-81.443	-81.443	0	%100
5	M5	SZ	0	0	0	%100
6	M6	SZ	-81.443	-81.443	0	%100
7	M7	SZ	0	0	0	%100
8	M8	SZ	0	0	0	%100
9	M9	SZ	0	0	0	%100
10	M10	SZ	-81.443	-81.443	0	%100
11	M11	SZ	0	0	0	%100
12	M12	SZ	0	0	0	%100
13	M13	SZ	-81.443	-81.443	0	%100
14	M14	SZ	0	0	0	%100
15	M15	SZ	0	0	0	%100
16	M16	SZ	0	0	0	%100
17	M17	SZ	0	0	0	%100
18	M18	SZ	0	0	0	%100
19	M19	SZ	0	0	0	%100
20	M20	SZ	0	0	0	%100
21	M21	SZ	0	0	0	%100
22	M22	SZ	0	0	0	%100
23	M23	SZ	0	0	0	%100
24	M24	SZ	0	0	0	%100
25	M25	SZ	0	0	0	%100
26	M26	SZ	0	0	0	%100
27	M27	SZ	0	0	0	%100
28	M28	SZ	-48.866	-48.866	0	%100
29	MP4	SZ	-48.866	-48.866	0	%100
30	M30	SZ	0	0	0	%100
31	M31	SZ	0	0	0	%100
32	M32	SZ	0	0	0	%100
33	M33	SZ	0	0	0	%100
34	MP1	SZ	-48.866	-48.866	0	%100
35	M35	SZ	0	0	0	%100
36	M36	SZ	-81.443	-81.443	0	%100
37	M37	SZ	-81.443	-81.443	0	%100
38	M38	SZ	0	0	0	%100
39	M39	SZ	0	0	0	%100
40	M40	SZ	-48.866	-48.866	0	%100
41	M41	SZ	0	0	0	%100
42	M42	SZ	0	0	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	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, %)]
45	M45	SZ	0	0	0	%100
46	M46	SZ	-48.866	-48.866	0	%100
47	M47	SZ	0	0	0	%100
48	MP8	SZ	-48.866	-48.866	0	%100
49	MP5	SZ	-48.866	-48.866	0	%100
50	M50	SZ	0	0	0	%100
51	M51	SZ	0	0	0	%100
52	M52	SZ	0	0	0	%100
53	M53	SZ	-48.866	-48.866	0	%100
54	M54	SZ	0	0	0	%100
55	MP12	SZ	-48.866	-48.866	0	%100
56	MP9	SZ	-48.866	-48.866	0	%100
57	M57	SZ	-81.443	-81.443	0	%100
58	M58	SZ	0	0	0	%100
59	M59	SZ	0	0	0	%100
60	MP2	SZ	-48.866	-48.866	0	%100
61	M61	SZ	0	0	0	%100
62	M62	SZ	0	0	0	%100
63	MP3	SZ	-48.866	-48.866	0	%100
64	M64	SZ	0	0	0	%100
65	M65	SZ	0	0	0	%100
66	MP10	SZ	-48.866	-48.866	0	%100
67	M67	SZ	0	0	0	%100
68	M68	SZ	0	0	0	%100
69	MP11	SZ	-48.866	-48.866	0	%100
70	M70	SZ	0	0	0	%100
71	M71	SZ	0	0	0	%100
72	MP6	SZ	-48.866	-48.866	0	%100
73	M73	SZ	0	0	0	%100
74	M74	SZ	0	0	0	%100
75	MP7	SZ	-48.866	-48.866	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	M1	SX	-81.443	-81.443	0	%100
2	M2	SX	-81.443	-81.443	0	%100
3	M3	SX	0	0	0	%100
4	M4	SX	-81.443	-81.443	0	%100
5	M5	SX	0	0	0	%100
6	M6	SX	-81.443	-81.443	0	%100
7	M7	SX	0	0	0	%100
8	M8	SX	0	0	0	%100
9	M9	SX	0	0	0	%100
10	M10	SX	-81.443	-81.443	0	%100
11	M11	SX	0	0	0	%100
12	M12	SX	0	0	0	%100
13	M13	SX	-81.443	-81.443	0	%100
14	M14	SX	0	0	0	%100
15	M15	SX	0	0	0	%100
16	M16	SX	0	0	0	%100
17	M17	SX	0	0	0	%100
18	M18	SX	0	0	0	%100
19	M19	SX	0	0	0	%100
20	M20	SX	0	0	0	%100
21	M21	SX	0	0	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, %)]
22	M22	SX	0	0	0	%100
23	M23	SX	0	0	0	%100
24	M24	SX	0	0	0	%100
25	M25	SX	0	0	0	%100
26	M26	SX	0	0	0	%100
27	M27	SX	0	0	0	%100
28	M28	SX	-48.866	-48.866	0	%100
29	MP4	SX	-48.866	-48.866	0	%100
30	M30	SX	0	0	0	%100
31	M31	SX	0	0	0	%100
32	M32	SX	0	0	0	%100
33	M33	SX	0	0	0	%100
34	MP1	SX	-48.866	-48.866	0	%100
35	M35	SX	0	0	0	%100
36	M36	SX	-81.443	-81.443	0	%100
37	M37	SX	-81.443	-81.443	0	%100
38	M38	SX	0	0	0	%100
39	M39	SX	0	0	0	%100
40	M40	SX	-48.866	-48.866	0	%100
41	M41	SX	0	0	0	%100
42	M42	SX	0	0	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	M45	SX	0	0	0	%100
46	M46	SX	-48.866	-48.866	0	%100
47	M47	SX	0	0	0	%100
48	MP8	SX	-48.866	-48.866	0	%100
49	MP5	SX	-48.866	-48.866	0	%100
50	M50	SX	0	0	0	%100
51	M51	SX	0	0	0	%100
52	M52	SX	0	0	0	%100
53	M53	SX	-48.866	-48.866	0	%100
54	M54	SX	0	0	0	%100
55	MP12	SX	-48.866	-48.866	0	%100
56	MP9	SX	-48.866	-48.866	0	%100
57	M57	SX	-81.443	-81.443	0	%100
58	M58	SX	0	0	0	%100
59	M59	SX	0	0	0	%100
60	MP2	SX	-48.866	-48.866	0	%100
61	M61	SX	0	0	0	%100
62	M62	SX	0	0	0	%100
63	MP3	SX	-48.866	-48.866	0	%100
64	M64	SX	0	0	0	%100
65	M65	SX	0	0	0	%100
66	MP10	SX	-48.866	-48.866	0	%100
67	M67	SX	0	0	0	%100
68	M68	SX	0	0	0	%100
69	MP11	SX	-48.866	-48.866	0	%100
70	M70	SX	0	0	0	%100
71	M71	SX	0	0	0	%100
72	MP6	SX	-48.866	-48.866	0	%100
73	M73	SX	0	0	0	%100
74	M74	SX	0	0	0	%100
75	MP7	SX	-48.866	-48.866	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	M1	Y	-22.697	-22.697	0	%100
2	M2	Y	-22.697	-22.697	0	%100
3	M3	Y	-6.615	-6.615	0	%100
4	M4	Y	-22.697	-22.697	0	%100
5	M5	Y	-6.615	-6.615	0	%100
6	M6	Y	-22.697	-22.697	0	%100
7	M7	Y	-6.615	-6.615	0	%100
8	M8	Y	-6.615	-6.615	0	%100
9	M9	Y	-6.615	-6.615	0	%100
10	M10	Y	-22.697	-22.697	0	%100
11	M11	Y	-6.615	-6.615	0	%100
12	M12	Y	-6.615	-6.615	0	%100
13	M13	Y	-22.697	-22.697	0	%100
14	M14	Y	-6.615	-6.615	0	%100
15	M15	Y	-6.615	-6.615	0	%100
16	M16	Y	-6.615	-6.615	0	%100
17	M17	Y	-6.615	-6.615	0	%100
18	M18	Y	-6.615	-6.615	0	%100
19	M19	Y	-6.615	-6.615	0	%100
20	M20	Y	-6.615	-6.615	0	%100
21	M21	Y	-6.615	-6.615	0	%100
22	M22	Y	-6.615	-6.615	0	%100
23	M23	Y	-6.615	-6.615	0	%100
24	M24	Y	-6.615	-6.615	0	%100
25	M25	Y	-6.615	-6.615	0	%100
26	M26	Y	-6.615	-6.615	0	%100
27	M27	Y	-6.615	-6.615	0	%100
28	M28	Y	-13.367	-13.367	0	%100
29	MP4	Y	-13.367	-13.367	0	%100
30	M30	Y	-6.615	-6.615	0	%100
31	M31	Y	-6.615	-6.615	0	%100
32	M32	Y	-6.615	-6.615	0	%100
33	M33	Y	-6.615	-6.615	0	%100
34	MP1	Y	-13.367	-13.367	0	%100
35	M35	Y	-6.615	-6.615	0	%100
36	M36	Y	-22.697	-22.697	0	%100
37	M37	Y	-22.697	-22.697	0	%100
38	M38	Y	-6.615	-6.615	0	%100
39	M39	Y	-6.615	-6.615	0	%100
40	M40	Y	-13.367	-13.367	0	%100
41	M41	Y	-6.615	-6.615	0	%100
42	M42	Y	-6.615	-6.615	0	%100
43	M43	Y	-6.615	-6.615	0	%100
44	M44	Y	-6.615	-6.615	0	%100
45	M45	Y	-6.615	-6.615	0	%100
46	M46	Y	-13.367	-13.367	0	%100
47	M47	Y	-6.615	-6.615	0	%100
48	MP8	Y	-13.367	-13.367	0	%100
49	MP5	Y	-13.367	-13.367	0	%100
50	M50	Y	-6.615	-6.615	0	%100
51	M51	Y	-6.615	-6.615	0	%100
52	M52	Y	-6.615	-6.615	0	%100
53	M53	Y	-13.367	-13.367	0	%100
54	M54	Y	-6.615	-6.615	0	%100
55	MP12	Y	-13.367	-13.367	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, %)]
56	MP9	Y	-13.367	-13.367	0	%100
57	M57	Y	-22.697	-22.697	0	%100
58	M58	Y	-6.615	-6.615	0	%100
59	M59	Y	-6.615	-6.615	0	%100
60	MP2	Y	-13.367	-13.367	0	%100
61	M61	Y	-6.615	-6.615	0	%100
62	M62	Y	-6.615	-6.615	0	%100
63	MP3	Y	-13.367	-13.367	0	%100
64	M64	Y	-6.615	-6.615	0	%100
65	M65	Y	-6.615	-6.615	0	%100
66	MP10	Y	-13.367	-13.367	0	%100
67	M67	Y	-6.615	-6.615	0	%100
68	M68	Y	-6.615	-6.615	0	%100
69	MP11	Y	-13.367	-13.367	0	%100
70	M70	Y	-6.615	-6.615	0	%100
71	M71	Y	-6.615	-6.615	0	%100
72	MP6	Y	-13.367	-13.367	0	%100
73	M73	Y	-6.615	-6.615	0	%100
74	M74	Y	-6.615	-6.615	0	%100
75	MP7	Y	-13.367	-13.367	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	M1	SZ	-14.251	-14.251	0	%100
2	M2	SZ	-14.251	-14.251	0	%100
3	M3	SZ	0	0	0	%100
4	M4	SZ	-14.251	-14.251	0	%100
5	M5	SZ	0	0	0	%100
6	M6	SZ	-14.251	-14.251	0	%100
7	M7	SZ	0	0	0	%100
8	M8	SZ	0	0	0	%100
9	M9	SZ	0	0	0	%100
10	M10	SZ	-14.251	-14.251	0	%100
11	M11	SZ	0	0	0	%100
12	M12	SZ	0	0	0	%100
13	M13	SZ	-14.251	-14.251	0	%100
14	M14	SZ	0	0	0	%100
15	M15	SZ	0	0	0	%100
16	M16	SZ	0	0	0	%100
17	M17	SZ	0	0	0	%100
18	M18	SZ	0	0	0	%100
19	M19	SZ	0	0	0	%100
20	M20	SZ	0	0	0	%100
21	M21	SZ	0	0	0	%100
22	M22	SZ	0	0	0	%100
23	M23	SZ	0	0	0	%100
24	M24	SZ	0	0	0	%100
25	M25	SZ	0	0	0	%100
26	M26	SZ	0	0	0	%100
27	M27	SZ	0	0	0	%100
28	M28	SZ	-23.139	-23.139	0	%100
29	MP4	SZ	-23.139	-23.139	0	%100
30	M30	SZ	0	0	0	%100
31	M31	SZ	0	0	0	%100
32	M32	SZ	0	0	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, %)]
33	M33	SZ	0	0	0	%100
34	MP1	SZ	-23.139	-23.139	0	%100
35	M35	SZ	0	0	0	%100
36	M36	SZ	-14.251	-14.251	0	%100
37	M37	SZ	-14.251	-14.251	0	%100
38	M38	SZ	0	0	0	%100
39	M39	SZ	0	0	0	%100
40	M40	SZ	-23.139	-23.139	0	%100
41	M41	SZ	0	0	0	%100
42	M42	SZ	0	0	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	M45	SZ	0	0	0	%100
46	M46	SZ	-23.139	-23.139	0	%100
47	M47	SZ	0	0	0	%100
48	MP8	SZ	-23.139	-23.139	0	%100
49	MP5	SZ	-23.139	-23.139	0	%100
50	M50	SZ	0	0	0	%100
51	M51	SZ	0	0	0	%100
52	M52	SZ	0	0	0	%100
53	M53	SZ	-23.139	-23.139	0	%100
54	M54	SZ	0	0	0	%100
55	MP12	SZ	-23.139	-23.139	0	%100
56	MP9	SZ	-23.139	-23.139	0	%100
57	M57	SZ	-14.251	-14.251	0	%100
58	M58	SZ	0	0	0	%100
59	M59	SZ	0	0	0	%100
60	MP2	SZ	-23.139	-23.139	0	%100
61	M61	SZ	0	0	0	%100
62	M62	SZ	0	0	0	%100
63	MP3	SZ	-23.139	-23.139	0	%100
64	M64	SZ	0	0	0	%100
65	M65	SZ	0	0	0	%100
66	MP10	SZ	-23.139	-23.139	0	%100
67	M67	SZ	0	0	0	%100
68	M68	SZ	0	0	0	%100
69	MP11	SZ	-23.139	-23.139	0	%100
70	M70	SZ	0	0	0	%100
71	M71	SZ	0	0	0	%100
72	MP6	SZ	-23.139	-23.139	0	%100
73	M73	SZ	0	0	0	%100
74	M74	SZ	0	0	0	%100
75	MP7	SZ	-23.139	-23.139	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	M1	SX	-14.251	-14.251	0	%100
2	M2	SX	-14.251	-14.251	0	%100
3	M3	SX	0	0	0	%100
4	M4	SX	-14.251	-14.251	0	%100
5	M5	SX	0	0	0	%100
6	M6	SX	-14.251	-14.251	0	%100
7	M7	SX	0	0	0	%100
8	M8	SX	0	0	0	%100
9	M9	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, %)]
10	M10	SX	-14.251	-14.251	0	%100
11	M11	SX	0	0	0	%100
12	M12	SX	0	0	0	%100
13	M13	SX	-14.251	-14.251	0	%100
14	M14	SX	0	0	0	%100
15	M15	SX	0	0	0	%100
16	M16	SX	0	0	0	%100
17	M17	SX	0	0	0	%100
18	M18	SX	0	0	0	%100
19	M19	SX	0	0	0	%100
20	M20	SX	0	0	0	%100
21	M21	SX	0	0	0	%100
22	M22	SX	0	0	0	%100
23	M23	SX	0	0	0	%100
24	M24	SX	0	0	0	%100
25	M25	SX	0	0	0	%100
26	M26	SX	0	0	0	%100
27	M27	SX	0	0	0	%100
28	M28	SX	-23.139	-23.139	0	%100
29	MP4	SX	-23.139	-23.139	0	%100
30	M30	SX	0	0	0	%100
31	M31	SX	0	0	0	%100
32	M32	SX	0	0	0	%100
33	M33	SX	0	0	0	%100
34	MP1	SX	-23.139	-23.139	0	%100
35	M35	SX	0	0	0	%100
36	M36	SX	-14.251	-14.251	0	%100
37	M37	SX	-14.251	-14.251	0	%100
38	M38	SX	0	0	0	%100
39	M39	SX	0	0	0	%100
40	M40	SX	-23.139	-23.139	0	%100
41	M41	SX	0	0	0	%100
42	M42	SX	0	0	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	M45	SX	0	0	0	%100
46	M46	SX	-23.139	-23.139	0	%100
47	M47	SX	0	0	0	%100
48	MP8	SX	-23.139	-23.139	0	%100
49	MP5	SX	-23.139	-23.139	0	%100
50	M50	SX	0	0	0	%100
51	M51	SX	0	0	0	%100
52	M52	SX	0	0	0	%100
53	M53	SX	-23.139	-23.139	0	%100
54	M54	SX	0	0	0	%100
55	MP12	SX	-23.139	-23.139	0	%100
56	MP9	SX	-23.139	-23.139	0	%100
57	M57	SX	-14.251	-14.251	0	%100
58	M58	SX	0	0	0	%100
59	M59	SX	0	0	0	%100
60	MP2	SX	-23.139	-23.139	0	%100
61	M61	SX	0	0	0	%100
62	M62	SX	0	0	0	%100
63	MP3	SX	-23.139	-23.139	0	%100
64	M64	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, %)]
65	M65	SX	0	0	0	%100
66	MP10	SX	-23.139	-23.139	0	%100
67	M67	SX	0	0	0	%100
68	M68	SX	0	0	0	%100
69	MP11	SX	-23.139	-23.139	0	%100
70	M70	SX	0	0	0	%100
71	M71	SX	0	0	0	%100
72	MP6	SX	-23.139	-23.139	0	%100
73	M73	SX	0	0	0	%100
74	M74	SX	0	0	0	%100
75	MP7	SX	-23.139	-23.139	0	%100

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	M10	Y	-1.258	-1.901	0	15.091
2	M10	Y	-1.901	-1.718	15.091	30.182
3	M10	Y	-1.718	-3.583	30.182	45.273
4	M10	Y	-3.583	-3.583	45.273	60.364
5	M10	Y	-3.583	-2.99	60.364	75.455
6	M10	Y	-2.99	-2.99	75.455	90.545
7	M10	Y	-2.99	-3.583	90.545	105.636
8	M10	Y	-3.583	-3.583	105.636	120.727
9	M10	Y	-3.583	-1.718	120.727	135.818
10	M10	Y	-1.718	-1.901	135.818	150.909
11	M10	Y	-1.901	-1.258	150.909	166
12	M24	Y	-8.25	-8.25	2.933e-12	13
13	M25	Y	-7.315	-7.315	0	13
14	M26	Y	-8.25	-8.25	5.33e-12	13
15	M27	Y	-7.325	-7.325	0.019	13
16	M4	Y	-5.67	-3.18	36.4	54.6
17	M4	Y	-3.18	-0.69	54.6	72.8
18	M6	Y	-5.67	-3.18	36.4	54.6
19	M6	Y	-3.18	-0.69	54.6	72.8
20	M16	Y	-8.25	-8.25	2.265e-14	13
21	M17	Y	-8.25	-8.25	0	13
22	M18	Y	-7.315	-7.315	9.326e-15	13
23	M19	Y	-7.325	-7.325	0.019	13
24	M57	Y	-1.258	-1.901	0	15.091
25	M57	Y	-1.901	-1.718	15.091	30.182
26	M57	Y	-1.718	-3.583	30.182	45.273
27	M57	Y	-3.583	-3.583	45.273	60.364
28	M57	Y	-3.583	-2.99	60.364	75.455
29	M57	Y	-2.99	-2.99	75.455	90.545
30	M57	Y	-2.99	-3.583	90.545	105.636
31	M57	Y	-3.583	-3.583	105.636	120.727
32	M57	Y	-3.583	-1.718	120.727	135.818
33	M57	Y	-1.718	-1.901	135.818	150.909
34	M57	Y	-1.901	-1.258	150.909	166
35	M2	Y	-5.67	-3.18	36.4	54.6
36	M2	Y	-3.18	-0.69	54.6	72.8
37	M13	Y	-1.258	-1.901	0	15.091
38	M13	Y	-1.901	-1.718	15.091	30.182
39	M13	Y	-1.718	-3.583	30.182	45.273
40	M13	Y	-3.583	-3.583	45.273	60.364
41	M13	Y	-3.583	-2.99	60.364	75.455

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, %)]
42	M13	Y	-2.99	-2.99	75.455	90.545
43	M13	Y	-2.99	-3.583	90.545	105.636
44	M13	Y	-3.583	-3.583	105.636	120.727
45	M13	Y	-3.583	-1.718	120.727	135.818
46	M13	Y	-1.718	-1.901	135.818	150.909
47	M13	Y	-1.901	-1.258	150.909	166
48	M20	Y	-8.25	-8.25	0	13
49	M21	Y	-7.325	-7.325	0.019	13
50	M22	Y	-8.25	-8.25	0	13
51	M23	Y	-7.315	-7.315	0	13

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	M4	Y	-20.507	-11.501	36.4	54.6
2	M4	Y	-11.501	-2.496	54.6	72.8
3	M6	Y	-20.507	-11.501	36.4	54.6
4	M6	Y	-11.501	-2.496	54.6	72.8
5	M16	Y	-29.838	-29.838	2.265e-14	13
6	M17	Y	-29.837	-29.837	0	13
7	M18	Y	-26.455	-26.455	9.326e-15	13
8	M19	Y	-26.494	-26.494	0.019	13
9	M57	Y	-4.549	-6.874	0	15.091
10	M57	Y	-6.874	-6.213	15.091	30.182
11	M57	Y	-6.213	-12.957	30.182	45.273
12	M57	Y	-12.957	-12.957	45.273	60.364
13	M57	Y	-12.957	-10.815	60.364	75.455
14	M57	Y	-10.815	-10.815	75.455	90.545
15	M57	Y	-10.815	-12.957	90.545	105.636
16	M57	Y	-12.957	-12.957	105.636	120.727
17	M57	Y	-12.957	-6.213	120.727	135.818
18	M57	Y	-6.213	-6.874	135.818	150.909
19	M57	Y	-6.874	-4.549	150.909	166
20	M2	Y	-20.507	-11.501	36.4	54.6
21	M2	Y	-11.501	-2.496	54.6	72.8
22	M13	Y	-4.549	-6.874	0	15.091
23	M13	Y	-6.874	-6.213	15.091	30.182
24	M13	Y	-6.213	-12.957	30.182	45.273
25	M13	Y	-12.957	-12.957	45.273	60.364
26	M13	Y	-12.957	-10.815	60.364	75.455
27	M13	Y	-10.815	-10.815	75.455	90.545
28	M13	Y	-10.815	-12.957	90.545	105.636
29	M13	Y	-12.957	-12.957	105.636	120.727
30	M13	Y	-12.957	-6.213	120.727	135.818
31	M13	Y	-6.213	-6.874	135.818	150.909
32	M13	Y	-6.874	-4.549	150.909	166
33	M20	Y	-29.838	-29.838	0	13
34	M21	Y	-26.494	-26.494	0.019	13
35	M22	Y	-29.837	-29.837	0	13
36	M23	Y	-26.455	-26.455	0	13
37	M10	Y	-4.549	-6.874	0	15.091
38	M10	Y	-6.874	-6.213	15.091	30.182
39	M10	Y	-6.213	-12.957	30.182	45.273
40	M10	Y	-12.957	-12.957	45.273	60.364
41	M10	Y	-12.957	-10.815	60.364	75.455
42	M10	Y	-10.815	-10.815	75.455	90.545

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, %)]
43	M10	Y	-10.815	-12.957	90.545	105.636
44	M10	Y	-12.957	-12.957	105.636	120.727
45	M10	Y	-12.957	-6.213	120.727	135.818
46	M10	Y	-6.213	-6.874	135.818	150.909
47	M10	Y	-6.874	-4.549	150.909	166
48	M24	Y	-29.838	-29.838	2.933e-12	13
49	M25	Y	-26.455	-26.455	0	13
50	M26	Y	-29.837	-29.837	5.33e-12	13
51	M27	Y	-26.494	-26.494	0.019	13

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		
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	1.237	31	1	32					
40	(1.2 + 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	1.237	31	0.866	32	0.5				
41	(1.2 + 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	1.237	31	0.5	32	0.866				
42	(1.2 + 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	1.237	31		32	1				
43	(1.2 + 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	1.237	31	-0.5	32	0.866				

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
44	(1.2 + 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	1.237	31	-0.866	32	0.5				
45	(1.2 + 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	1.237	31	-1	32					
46	(1.2 + 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	1.237	31	-0.866	32	-0.5				
47	(1.2 + 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	1.237	31	-0.5	32	-0.866				
48	(1.2 + 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	1.237	31		32	-1				
49	(1.2 + 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	1.237	31	0.5	32	-0.866				
50	(1.2 + 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	1.237	31	0.866	32	-0.5				
51	(0.9 - 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	0.863	31	1	32					
52	(0.9 - 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	0.863	31	0.866	32	0.5				
53	(0.9 - 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	0.863	31	0.5	32	0.866				
54	(0.9 - 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	0.863	31		32	1				
55	(0.9 - 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	0.863	31	-0.5	32	0.866				
56	(0.9 - 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	0.863	31	-0.866	32	0.5				
57	(0.9 - 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	0.863	31	-1	32					
58	(0.9 - 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	0.863	31	-0.866	32	-0.5				
59	(0.9 - 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	0.863	31	-0.5	32	-0.866				
60	(0.9 - 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	0.863	31		32	-1				
61	(0.9 - 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	0.863	31	0.5	32	-0.866				
62	(0.9 - 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	0.863	31	0.866	32	-0.5				
63	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 0	Yes	Y	1	1	2	0.23	14	0.23	15		33	1.5
64	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 30	Yes	Y	1	1	3	0.23	14	0.2	15	0.115	33	1.5
65	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 60	Yes	Y	1	1	4	0.23	14	0.115	15	0.2	33	1.5
66	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 90	Yes	Y	1	1	5	0.23	14		15	0.23	33	1.5
67	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 120	Yes	Y	1	1	6	0.23	14	-0.115	15	0.2	33	1.5
68	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 150	Yes	Y	1	1	7	0.23	14	-0.2	15	0.115	33	1.5
69	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 180	Yes	Y	1	1	8	0.23	14	-0.23	15		33	1.5
70	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 210	Yes	Y	1	1	9	0.23	14	-0.2	15	-0.115	33	1.5
71	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 240	Yes	Y	1	1	10	0.23	14	-0.115	15	-0.2	33	1.5
72	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 270	Yes	Y	1	1	11	0.23	14		15	-0.23	33	1.5
73	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 300	Yes	Y	1	1	12	0.23	14	0.115	15	-0.2	33	1.5
74	1.0DL + 1.5LL + 1.0SWL (60 mph) AZI 330	Yes	Y	1	1	13	0.23	14	0.2	15	-0.115	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	0.058	14	0.058	15	
77	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	34	1.5	3	0.058	14	0.05	15	0.029
78	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	34	1.5	4	0.058	14	0.029	15	0.05
79	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	34	1.5	5	0.058	14		15	0.058
80	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	34	1.5	6	0.058	14	-0.029	15	0.05
81	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	34	1.5	7	0.058	14	-0.05	15	0.029
82	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	34	1.5	8	0.058	14	-0.058	15	
83	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	34	1.5	9	0.058	14	-0.05	15	-0.029
84	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	34	1.5	10	0.058	14	-0.029	15	-0.05
85	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	34	1.5	11	0.058	14		15	-0.058
86	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	34	1.5	12	0.058	14	0.029	15	-0.05
87	1.2DL + 1.5LM-MP1 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	34	1.5	13	0.058	14	0.05	15	-0.029
88	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	35	1.5	2	0.058	14	0.058	15	
89	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	35	1.5	3	0.058	14	0.05	15	0.029
90	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	35	1.5	4	0.058	14	0.029	15	0.05
91	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	35	1.5	5	0.058	14		15	0.058
92	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	35	1.5	6	0.058	14	-0.029	15	0.05
93	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	35	1.5	7	0.058	14	-0.05	15	0.029
94	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	35	1.5	8	0.058	14	-0.058	15	
95	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	35	1.5	9	0.058	14	-0.05	15	-0.029
96	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	35	1.5	10	0.058	14	-0.029	15	-0.05
97	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	35	1.5	11	0.058	14		15	-0.058
98	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	35	1.5	12	0.058	14	0.029	15	-0.05

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
99	1.2DL + 1.5LM-MP2 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	35	1.5	13	0.058	14	0.05	15	-0.029
100	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	36	1.5	2	0.058	14	0.058	15	
101	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	36	1.5	3	0.058	14	0.05	15	0.029
102	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	36	1.5	4	0.058	14	0.029	15	0.05
103	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	36	1.5	5	0.058	14		15	0.058
104	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	36	1.5	6	0.058	14	-0.029	15	0.05
105	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	36	1.5	7	0.058	14	-0.05	15	0.029
106	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	36	1.5	8	0.058	14	-0.058	15	
107	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	36	1.5	9	0.058	14	-0.05	15	-0.029
108	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	36	1.5	10	0.058	14	-0.029	15	-0.05
109	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	36	1.5	11	0.058	14		15	-0.058
110	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	36	1.5	12	0.058	14	0.029	15	-0.05
111	1.2DL + 1.5LM-MP3 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	36	1.5	13	0.058	14	0.05	15	-0.029
112	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	37	1.5	2	0.058	14	0.058	15	
113	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	37	1.5	3	0.058	14	0.05	15	0.029
114	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	37	1.5	4	0.058	14	0.029	15	0.05
115	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	37	1.5	5	0.058	14		15	0.058
116	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	37	1.5	6	0.058	14	-0.029	15	0.05
117	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	37	1.5	7	0.058	14	-0.05	15	0.029
118	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	37	1.5	8	0.058	14	-0.058	15	
119	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	37	1.5	9	0.058	14	-0.05	15	-0.029
120	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	37	1.5	10	0.058	14	-0.029	15	-0.05
121	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	37	1.5	11	0.058	14		15	-0.058
122	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	37	1.5	12	0.058	14	0.029	15	-0.05
123	1.2DL + 1.5LM-MP4 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	37	1.5	13	0.058	14	0.05	15	-0.029
124	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	38	1.5	2	0.058	14	0.058	15	
125	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	38	1.5	3	0.058	14	0.05	15	0.029
126	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	38	1.5	4	0.058	14	0.029	15	0.05
127	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	38	1.5	5	0.058	14		15	0.058
128	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	38	1.5	6	0.058	14	-0.029	15	0.05
129	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	38	1.5	7	0.058	14	-0.05	15	0.029
130	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	38	1.5	8	0.058	14	-0.058	15	
131	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	38	1.5	9	0.058	14	-0.05	15	-0.029
132	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	38	1.5	10	0.058	14	-0.029	15	-0.05
133	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	38	1.5	11	0.058	14		15	-0.058
134	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	38	1.5	12	0.058	14	0.029	15	-0.05
135	1.2DL + 1.5LM-MP5 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	38	1.5	13	0.058	14	0.05	15	-0.029
136	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	39	1.5	2	0.058	14	0.058	15	
137	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	39	1.5	3	0.058	14	0.05	15	0.029
138	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	39	1.5	4	0.058	14	0.029	15	0.05
139	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	39	1.5	5	0.058	14		15	0.058
140	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	39	1.5	6	0.058	14	-0.029	15	0.05
141	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	39	1.5	7	0.058	14	-0.05	15	0.029
142	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	39	1.5	8	0.058	14	-0.058	15	
143	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	39	1.5	9	0.058	14	-0.05	15	-0.029
144	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	39	1.5	10	0.058	14	-0.029	15	-0.05
145	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	39	1.5	11	0.058	14		15	-0.058
146	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	39	1.5	12	0.058	14	0.029	15	-0.05
147	1.2DL + 1.5LM-MP6 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	39	1.5	13	0.058	14	0.05	15	-0.029
148	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	40	1.5	2	0.058	14	0.058	15	
149	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	40	1.5	3	0.058	14	0.05	15	0.029
150	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	40	1.5	4	0.058	14	0.029	15	0.05
151	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	40	1.5	5	0.058	14		15	0.058
152	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	40	1.5	6	0.058	14	-0.029	15	0.05
153	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	40	1.5	7	0.058	14	-0.05	15	0.029

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
154	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	40	1.5	8	0.058	14	-0.058	15	
155	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	40	1.5	9	0.058	14	-0.05	15	-0.029
156	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	40	1.5	10	0.058	14	-0.029	15	-0.05
157	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	40	1.5	11	0.058	14		15	-0.058
158	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	40	1.5	12	0.058	14	0.029	15	-0.05
159	1.2DL + 1.5LM-MP7 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	40	1.5	13	0.058	14	0.05	15	-0.029
160	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	41	1.5	2	0.058	14	0.058	15	
161	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	41	1.5	3	0.058	14	0.05	15	0.029
162	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	41	1.5	4	0.058	14	0.029	15	0.05
163	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	41	1.5	5	0.058	14		15	0.058
164	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	41	1.5	6	0.058	14	-0.029	15	0.05
165	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	41	1.5	7	0.058	14	-0.05	15	0.029
166	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	41	1.5	8	0.058	14	-0.058	15	
167	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	41	1.5	9	0.058	14	-0.05	15	-0.029
168	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	41	1.5	10	0.058	14	-0.029	15	-0.05
169	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	41	1.5	11	0.058	14		15	-0.058
170	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	41	1.5	12	0.058	14	0.029	15	-0.05
171	1.2DL + 1.5LM-MP8 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	41	1.5	13	0.058	14	0.05	15	-0.029
172	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	42	1.5	2	0.058	14	0.058	15	
173	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	42	1.5	3	0.058	14	0.05	15	0.029
174	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	42	1.5	4	0.058	14	0.029	15	0.05
175	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	42	1.5	5	0.058	14		15	0.058
176	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	42	1.5	6	0.058	14	-0.029	15	0.05
177	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	42	1.5	7	0.058	14	-0.05	15	0.029
178	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	42	1.5	8	0.058	14	-0.058	15	
179	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	42	1.5	9	0.058	14	-0.05	15	-0.029
180	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	42	1.5	10	0.058	14	-0.029	15	-0.05
181	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	42	1.5	11	0.058	14		15	-0.058
182	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	42	1.5	12	0.058	14	0.029	15	-0.05
183	1.2DL + 1.5LM-MP9 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	42	1.5	13	0.058	14	0.05	15	-0.029
184	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	43	1.5	2	0.058	14	0.058	15	
185	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	43	1.5	3	0.058	14	0.05	15	0.029
186	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	43	1.5	4	0.058	14	0.029	15	0.05
187	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	43	1.5	5	0.058	14		15	0.058
188	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	43	1.5	6	0.058	14	-0.029	15	0.05
189	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	43	1.5	7	0.058	14	-0.05	15	0.029
190	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	43	1.5	8	0.058	14	-0.058	15	
191	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	43	1.5	9	0.058	14	-0.05	15	-0.029
192	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	43	1.5	10	0.058	14	-0.029	15	-0.05
193	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	43	1.5	11	0.058	14		15	-0.058
194	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	43	1.5	12	0.058	14	0.029	15	-0.05
195	1.2DL + 1.5LM-MP10 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	43	1.5	13	0.058	14	0.05	15	-0.029
196	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	44	1.5	2	0.058	14	0.058	15	
197	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	44	1.5	3	0.058	14	0.05	15	0.029
198	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	44	1.5	4	0.058	14	0.029	15	0.05
199	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	44	1.5	5	0.058	14		15	0.058
200	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	44	1.5	6	0.058	14	-0.029	15	0.05
201	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	44	1.5	7	0.058	14	-0.05	15	0.029
202	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	44	1.5	8	0.058	14	-0.058	15	
203	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	44	1.5	9	0.058	14	-0.05	15	-0.029
204	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	44	1.5	10	0.058	14	-0.029	15	-0.05
205	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	44	1.5	11	0.058	14		15	-0.058
206	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	44	1.5	12	0.058	14	0.029	15	-0.05
207	1.2DL + 1.5LM-MP11 + 1SWL (30 mph) AZI 330	Yes	Y	1	1.2	44	1.5	13	0.058	14	0.05	15	-0.029
208	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 0	Yes	Y	1	1.2	45	1.5	2	0.058	14	0.058	15	

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
209	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 30	Yes	Y	1	1.2	45	1.5	3	0.058	14	0.05	15	0.029
210	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 60	Yes	Y	1	1.2	45	1.5	4	0.058	14	0.029	15	0.05
211	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 90	Yes	Y	1	1.2	45	1.5	5	0.058	14		15	0.058
212	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 120	Yes	Y	1	1.2	45	1.5	6	0.058	14	-0.029	15	0.05
213	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 150	Yes	Y	1	1.2	45	1.5	7	0.058	14	-0.05	15	0.029
214	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 180	Yes	Y	1	1.2	45	1.5	8	0.058	14	-0.058	15	
215	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 210	Yes	Y	1	1.2	45	1.5	9	0.058	14	-0.05	15	-0.029
216	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 240	Yes	Y	1	1.2	45	1.5	10	0.058	14	-0.029	15	-0.05
217	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 270	Yes	Y	1	1.2	45	1.5	11	0.058	14		15	-0.058
218	1.2DL + 1.5LM-MP12 + 1SWL (30 mph) AZI 300	Yes	Y	1	1.2	45	1.5	12	0.058	14	0.029	15	-0.05

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	N60	max	4120.502	5	10906.616	35	4357.964	2	5771.633	136	4419.876	23	5282.814	133
2		min	-4120.5	23	2425.72	53	-4357.963	20	-4008.928	20	-4412.171	5	-5272.421	115
3	Totals:	max	4120.502	5	10906.616	35	4357.964	2						
4		min	-4120.5	23	2425.72	53	-4357.963	20						

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	M1	HSS4X4X4	0.92	0	37	0.123	0	y	37	138935.324	139518	16180.5	16180.5	1.114	H1-1b
2	M36	HSS4X4X4	0.91	0	31	0.118	0	y	29	138935.324	139518	16180.5	16180.5	1.112	H1-1b
3	M37	HSS4X4X4	0.909	0	35	0.118	0	y	33	138935.324	139518	16180.5	16180.5	1.112	H1-1b
4	M2	HSS4X4X4	0.682	0	37	0.122	0	y	37	109675.001	139518	16180.5	16180.5	1.754	H1-1b
5	M4	HSS4X4X4	0.681	0	31	0.117	0	y	28	109675.001	139518	16180.5	16180.5	1.756	H1-1b
6	M6	HSS4X4X4	0.68	0	35	0.117	0	y	33	109675.001	139518	16180.5	16180.5	1.756	H1-1b
7	MP9	PIPE_2.0	0.487	60	32	0.08	60		12	14916.096	32130	1871.625	1871.625	2.306	H1-1b
8	MP1	PIPE_2.0	0.485	60	28	0.078	60		8	14916.096	32130	1871.625	1871.625	2.236	H1-1b
9	MP5	PIPE_2.0	0.484	60	36	0.078	60		4	14916.096	32130	1871.625	1871.625	2.259	H1-1b
10	M13	HSS4X4X3	0.482	0	31	0.134	0	y	29	49449.972	106812	12661.5	12661.5	3	H1-1b
11	M57	HSS4X4X3	0.481	0	27	0.134	0	y	37	49449.972	106812	12661.5	12661.5	3	H1-1b
12	M10	HSS4X4X3	0.478	166	35	0.134	166	y	33	49449.972	106812	12661.5	12661.5	3	H1-1b
13	MP8	PIPE_2.0	0.453	47.938	33	0.056	47.938		6	19360.206	32130	1871.625	1871.625	1.495	H1-1b
14	MP12	PIPE_2.0	0.452	47.938	29	0.055	47.938		2	19360.206	32130	1871.625	1871.625	2.149	H1-1b
15	MP4	PIPE_2.0	0.45	47.938	37	0.054	47.938		10	19360.206	32130	1871.625	1871.625	2.29	H1-1b
16	M42	L2.5x2.5x3	0.412	18.011	2	0.052	0	y	2	27044.913	29192.4	872.574	1971.83	1.5	H2-1
17	M38	L2.5x2.5x3	0.41	18.011	6	0.052	0	y	6	27044.913	29192.4	872.574	1971.83	1.5	H2-1
18	M41	L2.5x2.5x3	0.408	18.011	9	0.05	0	y	10	27044.913	29192.4	872.574	1971.83	1.5	H2-1
19	MP10	PIPE_2.0	0.261	47.938	8	0.032	47.938		8	19360.206	32130	1871.625	1871.625	2.884	H1-1b
20	MP6	PIPE_2.0	0.254	47.938	12	0.034	47.938		12	19360.206	32130	1871.625	1871.625	2.36	H1-1b
21	MP2	PIPE_2.0	0.251	47.938	3	0.032	47.938		4	19360.206	32130	1871.625	1871.625	2.176	H1-1b
22	MP11	PIPE_2.0	0.222	47.938	8	0.038	47.938		11	19360.206	32130	1871.625	1871.625	2.588	H1-1b
23	MP7	PIPE_2.0	0.22	47.938	12	0.036	47.938		3	19360.206	32130	1871.625	1871.625	2.347	H1-1b
24	MP3	PIPE_2.0	0.21	47.938	4	0.036	47.938		7	19360.206	32130	1871.625	1871.625	2.22	H1-1b
25	M46	PIPE_2.0	0.192	25.375	2	0.228	25.375		9	4678.524	32130	1871.625	1871.625	3	H1-1b
26	M53	PIPE_2.0	0.178	25.375	10	0.233	25.375		6	4678.524	32130	1871.625	1871.625	3	H1-1b
27	M28	PIPE_2.0	0.168	25.375	7	0.23	25.375		2	4678.524	32130	1871.625	1871.625	3	H1-1b
28	M20	L2x2x3	0.053	13	33	0.007	13	z	33	22057.073	23392.8	557.717	1239.29	1.5	H2-1
29	M26	L2x2x3	0.053	13	31	0.007	13	z	31	22057.073	23392.8	557.717	1239.29	1.5	H2-1
30	M24	L2x2x3	0.053	13	30	0.007	13	z	30	22057.073	23392.8	557.717	1239.29	1.5	H2-1
31	M22	L2x2x3	0.053	13	31	0.007	13	z	35	22057.073	23392.8	557.717	1239.29	1.5	H2-1
32	M16	L2x2x3	0.053	13	34	0.007	13	z	34	22057.073	23392.8	557.717	1239.29	1.5	H2-1
33	M17	L2x2x3	0.053	13	32	0.007	13	z	32	22057.073	23392.8	557.717	1239.29	1.5	H2-1

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

	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
34	M23	L2x2x3	0.048	13	35	0.007	13	z	35	22057.073	23392.8	557.717	1239.29	1.5	H2-1
35	M18	L2x2x3	0.048	13	30	0.007	13	z	30	22057.073	23392.8	557.717	1239.29	1.5	H2-1
36	M25	L2x2x3	0.048	13	38	0.007	13	z	38	22057.073	23392.8	557.717	1239.29	1.5	H2-1
37	M21	L2x2x3	0.048	13	30	0.007	13	z	30	22057.073	23392.8	557.717	1239.29	1.5	H2-1
38	M19	L2x2x3	0.048	13	26	0.007	13	z	31	22057.073	23392.8	557.717	1239.29	1.5	H2-1
39	M27	L2x2x3	0.048	13	37	0.007	13	z	37	22057.073	23392.8	557.717	1239.29	1.5	H2-1
40	M40	PIPE_2.0	0.031	41.625	2	0.003	41.625		2	25203.832	32130	1871.625	1871.625	1	H1-1b

Material Take-Off

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General Members				
2	RIGID		35	118.5	0
3	Total General		35	118.5	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	L2x2x3	12	156	31.938
7	A36 Gr.36	L2.5x2.5x3	3	54	13.805
8	A500 Gr.B Rect	HSS4X4X3	3	498	391.846
9	A500 Gr.B Rect	HSS4X4X4	6	309	317.582
10	A53 Gr.B	PIPE_2.0	16	1566	452.944
11	Total HR Steel		40	2583	1208.115

APPENDIX D

ADDITIONAL CALCUATIONS

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

Bolt Calculation Tool, V1.5.1

PROJECT DATA	
Site Name:	STAFFORD/PRAGYL/SSUSA
Site Number:	876402
Connection Description:	Mount to Tower

MAXIMUM BOLT LOADS		
Bolt Tension:	736.99	lbs
Bolt Shear:	915.41	lbs

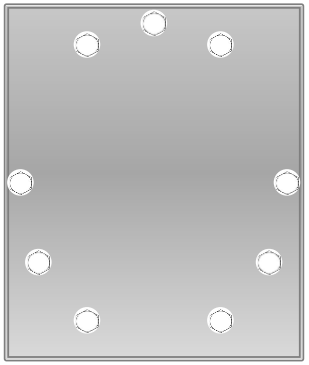
WORST CASE BOLT LOADS[1]		
Bolt Tension:	0.00	lbs
Bolt Shear:	915.41	lbs

BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	1	in
Bolt Grade:	A325	-
# of Bolts:	9	-
Threads Excluded?	No	-

[1] *Worst case bolt loads correspond to Load combination #23 on member M35 in RISA-3D, which causes the maximum demand on the bolts.*

Member Information
I nodes of M35

BOLT CHECK		
Tensile Strength	54516.96	
Shear Strength	31808.63	
Max Tensile Usage	1.4%	
Max Shear Usage	2.9%	
Interaction Check (Worst Case)	0.00	***≤1.05***
Result	Pass	



EBI Consulting

environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

T-Mobile Existing Facility

Site ID: CTHA628A

876402
175 Stafford Street
Stafford Springs, Connecticut 06077

October 27, 2021

EBI Project Number: 6221006343

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**18.65%**

October 27, 2021

T-Mobile
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, Connecticut 06002

Emissions Analysis for Site: CTHA628A - 876402

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **175 Stafford Street** in **Stafford Springs, Connecticut** 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 ($\mu W/cm^2$). 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.

Public 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 and 700 MHz frequency 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 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report 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 done for the proposed T-Mobile Wireless antenna facility located at 175 Stafford Street in Stafford Springs, Connecticut 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 manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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. For power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.

3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

7) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.

8) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.

9) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

10) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.

11) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. 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. This is rarely the case, and if so, is never continuous.

12) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

13) The antennas used in this modeling are the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector A, the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector B, the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied

specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, 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.

14) The antenna mounting height centerline of the proposed antennas is 152 feet above ground level (AGL).

15) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd
Height (AGL):	152 feet	Height (AGL):	152 feet	Height (AGL):	152 feet
Channel Count:	13	Channel Count:	13	Channel Count:	13
Total TX Power (W):	560 Watts	Total TX Power (W):	560 Watts	Total TX Power (W):	560 Watts
ERP (W):	17,868.72	ERP (W):	17,868.72	ERP (W):	17,868.72
Antenna A1 MPE %:	**3.98%**	Antenna B1 MPE %:	**3.98%**	Antenna C1 MPE %:	**3.98%**
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd
Height (AGL):	152 feet	Height (AGL):	152 feet	Height (AGL):	152 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	36,356.09	ERP (W):	36,356.09	ERP (W):	36,356.09
Antenna A2 MPE %:	**6.13%**	Antenna B2 MPE %:	**6.13%**	Antenna C2 MPE %:	**6.13%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	10.11%
AT&T	6%
Verizon	2.54%
Site Total MPE % :	18.65%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	10.11%
T-Mobile Sector B Total:	10.11%
T-Mobile Sector C Total:	10.11%
Site Total MPE % :	18.65%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 600 MHz LTE	2	591.73	152.0	2.00	600 MHz LTE	400	0.50%
T-Mobile 600 MHz NR	1	1577.94	152.0	2.66	600 MHz NR	400	0.67%
T-Mobile 700 MHz LTE	2	695.22	152.0	2.35	700 MHz LTE	467	0.50%
T-Mobile 1900 MHz GSM	4	1052.26	152.0	7.10	1900 MHz GSM	1000	0.71%
T-Mobile 1900 MHz LTE	2	2104.51	152.0	7.10	1900 MHz LTE	1000	0.71%
T-Mobile 2100 MHz LTE	2	2649.42	152.0	8.94	2100 MHz LTE	1000	0.89%
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	11044.63	152.0	18.63	2500 MHz LTE 1C & 2C Traffic	1000	1.86%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	1074.06	152.0	1.81	2500 MHz LTE 1C & 2C Broadcast	1000	0.18%
T-Mobile 2500 MHz NR Traffic	1	22089.26	152.0	37.26	2500 MHz NR Traffic	1000	3.73%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	152.0	3.62	2500 MHz NR Broadcast	1000	0.36%
						Total:	**10.11%**

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

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:	10.11%
Sector B:	10.11%
Sector C:	10.11%
T-Mobile Maximum MPE % (Sector A):	10.11%
Site Total:	18.65%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **18.65%** 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.

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29 OCTOBER 2021 ⓘ
by
6:00pm ⓘ

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November 1, 2021 at 9:56 am
STAFFORDVILLE, CT 06077

Get Updates ⌄

Text & Email Updates ⌄

Proof of Delivery ⌄

Tracking History ⌃

November 1, 2021, 9:56 am
Delivered, Individual Picked Up at Post Office
STAFFORDVILLE, CT 06077
Your item was picked up at the post office at 9:56 am on November 1, 2021 in STAFFORDVILLE, CT 06077. Waiver of signature was exercised at time of delivery.

Feedback

October 29, 2021, 9:31 am
Available for Pickup
STAFFORDVILLE, CT 06077

October 29, 2021, 9:14 am
Arrived at Post Office
STAFFORDVILLE, CT 06077

October 29, 2021, 5:06 am
Arrived at USPS Regional Destination Facility
HARTFORD CT DISTRIBUTION CENTER

October 28, 2021, 8:07 pm
Arrived at USPS Regional Origin Facility
BOSTON MA DISTRIBUTION CENTER

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