



# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: [siting.council@ct.gov](mailto:siting.council@ct.gov)

[www.ct.gov/csc](http://www.ct.gov/csc)

### VIA ELECTRONIC MAIL

May 6, 2019

Michelle Scharath  
Site Acquisition Specialist  
Empire Telecom USA, LLC  
16 Esquire Road  
Billerica, MA 01862

RE: **EM-AT&T-124-190328** – AT&T Mobility, LLC notice of intent to modify an existing telecommunications facility located at 6 Progress Avenue, Seymour, Connecticut.

Dear Ms. Scharath:

The Connecticut Siting Council (Council) is in receipt of your correspondence of May 2, 2019 submitted in response to the Council's April 1, 2019 and April 24, 2019 notifications of an incomplete request for exempt modification with regard to the above-referenced matter.

The submissions render the request for exempt modification complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman  
Executive Director

MAB/IN/emr



## Robidoux, Evan

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**From:** Michelle Scharath <mscharath@empiretelecomm.com>  
**Sent:** Thursday, May 02, 2019 4:52 PM  
**To:** Robidoux, Evan  
**Cc:** Kristen White; Lauren Groppi  
**Subject:** Response to Council 2nd Incomplete Letter for EM-AT&T-124-190328-ProgressAve-Seymour (CT5633)  
**Attachments:** RESPONSE TO 2nd INCOMPLETE LETTER .CT5633.pdf; 10099965.CT5633.Tower SA Pass.190501.pdf

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Hi Evan,

Attached please find a response letter to the most recent incomplete letter for the above referenced site. I will also send a copy to Melanie Bachman VIA UPS as well.

If you have any questions please don't hesitate to contact me.

Best,

**Michelle Scharath**  
**Site Acquisition Specialist**

**EMPIRE**  
**telecom**

16 Esquire Road | Billerica, MA 01862

Mobile: 978-935-6913

Email: [mscharath@empiretelecomm.com](mailto:mscharath@empiretelecomm.com)

Website: [www.EmpireTelecomm.com](http://www.EmpireTelecomm.com)

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Disclaimer: This email is intended only for the use of the individual or entity to which it is addressed, and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If you received this communication in error, please do not distribute it and notify us immediately by email ([administrator@qualtekservices.com](mailto:administrator@qualtekservices.com)) or via telephone (484.804.4500) and delete the original message. Unless expressly stated in this email, nothing in this message or any attachment should be construed as a digital or electronic signature.



May 2, 2019

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

Regarding: EM-AT&T-124-190328 - Progress Lane, Seymour; AT&T Notice  
of Exempt Modification – Equipment Modifications  
Property Address: 6 Progress Lane, Seymour, CT (the “Property”)  
Applicant: AT&T Mobility (“AT&T”, Site # CT5633)

Dear Ms. Bachman:

I am in receipt of the Council’s letter dated April 24, 2019, requesting a revision to the Monopole Structural Analysis Report provided with AT&T’s request for Exempt Modification at the above-referenced property. Attached please find a revised report by Maser Consulting Connecticut, which takes into account the approved equipment for Sprint at this facility pursuant to the Council’s filing number EM-MOBILE-124-180731.

Please accept this letter and the attached revised report to supplement AT&T’s notice received on April 24, 2019. If you require anything further for this filing to be deemed complete, please don’t hesitate to contact me.

Sincerely,

*Michelle Scharath*

Michelle Scharath  
Site Acquisition Specialist  
Empire Telecom USA, LLC  
[mscharath@empiretelecomm.com](mailto:mscharath@empiretelecomm.com)

Enclosure: Revised Monopole Structural Analysis



MASER CONSULTING  
— CONNECTICUT —

## Self-Support Tower Analysis

FOR  
CT5633 – Seymour East

FA #: 10099965  
6 Progress Avenue  
Seymour, CT 06483  
New Haven County

LTE 4C - MRCTB032000  
LTE 5C - MRCTB031387  
LTE 6C - MRCTB031657

**Tower Utilization: 63.2%**  
**Foundation Utilization: 63.5%**

May 1, 2019

*Prepared For*

**AT&T**  
550 Cochituate Road  
Framingham, MA 01701

*Prepared By*

**Maser Consulting Connecticut**  
331 Newman Springs Road, Suite 203  
Red Bank, NJ 07701  
Tel: 908.325.1950



### Objective:

The objective of this report is to determine the utilization of the existing 280' self-support tower structure at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards.

### Introduction:

Maser Consulting Connecticut has performed limited field observations on May 31, 2018 to verify the existing condition of the structure and to located and quantify the existing wireless appurtenances where possible, from ground level. Maser Consulting Connecticut has reviewed the following documents in completing this report:

- Structural Modification Report, prepared by Valmont, dated November 14, 2016
- Modification Drawings, prepared by Valmont, dated November 18, 2016
- Structural Analysis, prepared by Destek Engineering, dated August 7, 2015
- RFDS 2285405 Version 3.00, provided by Smartlink LLC, dated September 10, 2018
- Structural Analysis Report, prepared by CENTEK Engineering, dated July 3, 2018

The proposed **AT&T** equipment is to be supported on an existing 280' self-support tower structure. The main legs are constructed of pipes and the diagonals and horizontals are constructed of angle members. This report is based upon this information.

### Discrete and Linear Appurtenances:

Maser Consulting P.A. understands the existing and proposed **AT&T** loading to be as follows:

- (3) 80010121 Antennas (Existing)
- (3) QS66512-2 Antennas (Existing)
- (3) HPA65R-BU6A Antennas (Proposed)
- (3) RRUS 11 (Existing)
- (3) RRUS 32 (Existing)
- (3) RRUS 32 B2 (Existing)
- (3) RRUS 4478 B5
- (3) RRUS B14 4478 (Proposed)
- (3) RRUS 4426 B66 (Proposed)
- (3) DC6s (Existing/Proposed)
- (6) LGP 21401 TMAs (Existing)

Note: The overall antenna loading is found in Appendix A of this report.

### Codes, Standards and Loading:

Maser Consulting P.A. utilized the following codes and standards:

- 2018 Connecticut State Building Code, Incorporating the 2015 IBC
- Structural Standards for Antenna Supporting Structures and Antennas ANSI/TIA-222-G
  - Ultimate Wind Speed – 125 mph
  - Nominal Wind Speed – 97 mph
  - Exposure Category – B
  - Structure Class – II
  - Ice Thickness – 0.75"
  - Ice Wind Speed – 50 mph

### **Analysis Approach & Assumptions:**

The analysis approach used in this structural analysis is based on the premise that if the existing self-support tower is structurally adequate to support the existing and proposed equipment per the aforementioned codes and standards, or if the increase in the forces in the structure are deemed to be negligible or acceptable, then the proposed equipment can be installed as intended. TNX, a 3D finite element modeling and analysis program, was used to determine the capacity and usage of the existing self-support tower.

The following assumptions were utilized in this report:

- Structural steel tower legs are constructed of A572-50 grade steel
- Structural steel tower diagonals and horizontals are constructed of A36 Grade Steel
- The existing tower is constructed to plumb and is properly maintained with no structural deficiencies and deteriorations.
- It is assumed that the telecommunication equipment supports, antenna supports, and existing structure have been designed by a registered licensed professional engineer for the existing loads acting on the structure, as required by all applicable codes.
- It is assumed that information provided by the client regarding the structure itself, the antenna models, feed lines, and other relevant information is current and correct.
- It is assumed all other existing appurtenances, antennas, cables, etc. belonging to others have been installed and supported per code and per specifications so as not to damage any existing structural support members, and that any contributing loads from adjacent equipment has been taken into consideration for their design.
- The modifications of the tower was taken from the Modification Report by Valmont are assumed to be installed.
- A leg is assumed to be a 0° based on satellite imagery.

### **Calculations:**

The Tower Analysis calculations are found in **Appendix A** of this report.

### **Conclusion:**

The existing tower structure and foundation were analyzed for the loading in the applicable codes and standards. The tower structure has been determined to be structurally **ADEQUATE** to support the proposed and existing antennas, based upon the aforementioned assumptions. The tower structure has been determined to be stressed to a maximum of **59.8%** of its structural capacity with the maximum usage occurring at the diagonals within section height 0'-20'. The anchor rods are stressed to a maximum of **27.9%** of their capacity. The foundation is stressed at **63.5%** of its capacity. Therefore, the proposed installation **CAN** be installed as intended.


Maser Consulting Connecticut reserves the right to amend this report if additional information about the existing structure is provided. The conclusions reached by Maser Consulting Connecticut in this report are only valid for the equipment listed in this report. Any change to the installation will require a revision to this structural analysis.

We appreciate the opportunity to be of service on this project. If you should have any questions or require any additional information, please do not hesitate to call our office.

Sincerely,  
Maser Consulting Connecticut

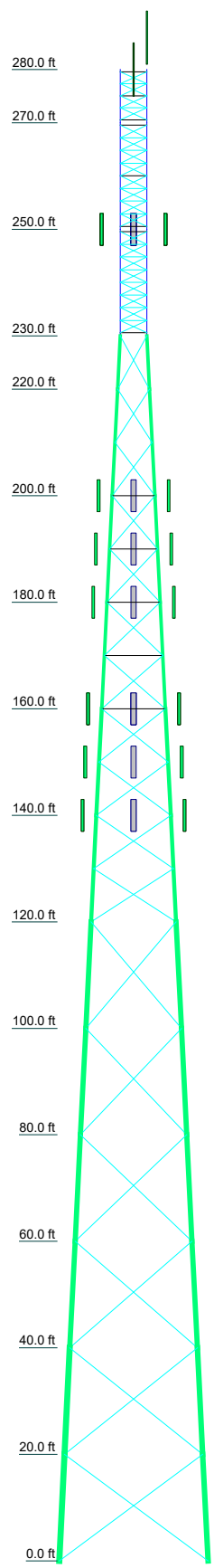


Petros E. Tsoukalas, P.E.  
Geographic Discipline Leader



Blake A. Wilson  
Senior Project Engineer

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15
Legs	SR 1 3/4	SR 2	SR 2 1/2	A	Pirolod 105218	Pirolod 105219	Pirolod 105220	Pirolod 105220	Pirolod 112743	Pirolod 112744	Pirolod 112745	Pirolod 112740	Pirolod 112740	Pirolod 112745	Pirolod 112740
Leg Grade															
Diagonals	SR 7/8		SR 1	B	L3x3x3/16	L3x3x5/16	L3 1/2x3 1/2x5/16	L3 1/2x3 1/2x5/16	A36	2L3 1/2x3 1/2x5/16x3/8					
Diagonal Grade	A572-50														
Top Girts	SR 1		SR 1 1/4	N.A.	L3x3x3/16	L4x4x1/4	L3x3x3/16	L3x3x3/16							
Mid Girts	SR 1		SR 1 1/4	N.A.	L3x3x3/16	L4x4x1/4	L3x3x3/16	L3x3x3/16							
Bottom Girts	SR 1		SR 1 1/4	N.A.	L3x3x3/16	L4x4x1/4	L3x3x3/16	L3x3x3/16							
Horizontals	SR 7/8		SR 1 1/4	N.A.	L3x3x3/16	L4x4x1/4	L3x3x3/16	L3x3x3/16							
Face Width (ft)	5			6	8	10	12	14	16	18	20	22	24	26	28
# Panels @ (ft)	4 @ 2.25		16 @ 2.375	1.5	2.8	3.5	4.4	5.1	5.0	7.0	7.1	8.3	8.5	9.5	9.6
Weight (K)	0.7	1.6	2.2	1.5	2.8	3.5	4.4	5.1	5.0	7.0	7.1	8.3	8.5	9.5	9.6



### DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Flash Beacon Lighting	280	TD-RRH-8x20-25	170
15' Lightning Rod	280	TD-RRH-8x20-25	170
DB420-A	280	Pirolod 15' T-Frame Sector Mount (1)	170
DB420-A	280	Pirolod 15' T-Frame Sector Mount (1)	170
Sector Mount [SM 412-1]	280	Pirolod 15' T-Frame Sector Mount (1)	170
APX18-206516L-CT0 w/ Mount Pipe	250	80010121 9' Mount Pipe	160
APX18-206516L-CT0 w/ Mount Pipe	250	80010121 9' Mount Pipe	160
APX18-206516L-CT0 w/ Mount Pipe	250	80010121 9' Mount Pipe	160
APXVAARR24_43-U-NA20 w/ Mount Pipe	250	QS66512-2	160
APXVAARR24_43-U-NA20 w/ Mount Pipe	250	QS66512-2	160
APXVAARR24_43-U-NA20 w/ Mount Pipe	250	HPA65R-BU6A	160
APXVAARR24_43-U-NA20 w/ Mount Pipe	250	HPA65R-BU6A	160
ATMAP-1A20	250	HPA65R-BU6A	160
ATMAP-1A20	250	RRUS-11	160
ATMAP-1A20	250	RRUS-11	160
ATMAP1412D-1A20	250	RRUS-11	160
ATMAP1412D-1A20	250	RRUS 32	160
ATMAP1412D-1A20	250	RRUS 32	160
KRF 102 267/1	250	RRUS 32	160
KRF 102 267/1	250	RRUS 32 B2	160
KRF 102 267/1	250	RRUS 32 B2	160
RADIO 4449 B12/B71	250	RRUS 32 B2	160
RADIO 4449 B12/B71	250	RRUS 4478 B5	160
RADIO 4449 B12/B71	250	RRUS 4478 B5	160
Pirolod 15' T-Frame Sector Mount (1)	250	RRUS 4478 B5	160
Pirolod 15' T-Frame Sector Mount (1)	250	RRU B14 4478	160
Pirolod 15' T-Frame Sector Mount (1)	250	RRU B14 4478	160
DB420-A	245	RRU B14 4478	160
DB225-2-F	235	RRUS 4426 B66	160
Sector Mount [SM 412-1]	235	RRUS 4426 B66	160
(3) DB980H120E-M	200	RRUS 4426 B66	160
(3) DB980H120E-M	200	LGP 21401	160
(3) DB980H120E-M	200	LGP 21401	160
Pirolod 12' T-Frame Sector Mount (1)	200	LGP 21401	160
Pirolod 12' T-Frame Sector Mount (1)	200	DC6-48-06-18-8F	160
Pirolod 12' T-Frame Sector Mount (1)	200	DC6-48-06-18-8F	160
(3) DB980H120E-M	190	DC6-48-06-18-8F	160
(3) DB980H120E-M	190	Pirolod 15' T-Frame Sector Mount (1)	160
(3) DB980H120E-M	190	Pirolod 15' T-Frame Sector Mount (1)	160
Pirolod 12' T-Frame Sector Mount (1)	190	Pirolod 15' T-Frame Sector Mount (1)	160
Pirolod 12' T-Frame Sector Mount (1)	190	APXV18-206517S-ACU	150
Pirolod 12' T-Frame Sector Mount (1)	190	APXV18-206517S-ACU	150
(3) DB980H120E-M	180	APXV18-206517S-ACU	150
(3) DB980H120E-M	180	(2) HBXX-6517DS-A2M	140
(3) DB980H120E-M	180	(2) HBXX-6517DS-A2M	140
Pirolod 12' T-Frame Sector Mount (1)	180	(2) HBXX-6517DS-A2M	140
Pirolod 12' T-Frame Sector Mount (1)	180	(2) LNX-6514DS-VTM	140
Pirolod 12' T-Frame Sector Mount (1)	180	(2) LNX-6514DS-VTM	140
APXVSP18-C-A20	170	(2) LNX-6514DS-VTM	140
APXVSP18-C-A20	170	(2) FD9R6004/2C-3L	140
APXVSP18-C-A20	170	(2) FD9R6004/2C-3L	140
APXVTM14-ALU-120	170	(2) FD9R6004/2C-3L	140
APXVTM14-ALU-120	170	RRH2X60-AWS	140
FD-RRH-2X50-800	170	RRH2X60-AWS	140
FD-RRH-2X50-800	170	RRH2X60-AWS	140
FD-RRH-4X40-1900	170	RRH2X60-PCS	140
FD-RRH-4X40-1900	170	RRH2X60-PCS	140
FD-RRH-4X40-1900	170	RRH2X60-PCS	140
FD-RRH-4X40-1900	170	DB-T1-6Z-8AB-0Z	140
TD-RRH-8x20-25	170	Pirolod 12' T-Frame Sector Mount (1)	140
		Pirolod 12' T-Frame Sector Mount (1)	140
		Pirolod 12' T-Frame Sector Mount (1)	140

### SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	Pirolod 105245	C	L3 1/2x3 1/2x5/16
B	L3x3x5/16		

### MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

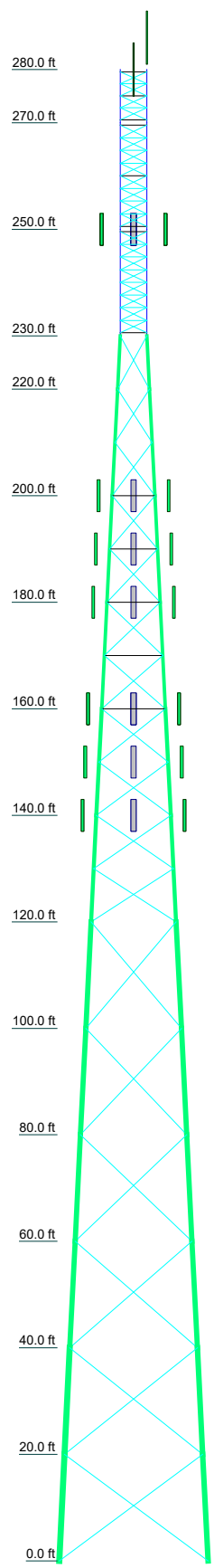
### TOWER DESIGN NOTES

1. Tower designed for Exposure B to the TIA-222-G Standard.
2. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.

<p>Maser Consulting, P.A. 5141 Virginia Way, Suite 420 Brentwood, TN 37027 Phone: (615) 686-2575 FAX:</p>	Job: <b>CT5633</b>
	Project: <b>18963021A</b>
	Client: <b>AT&amp;T</b> Drawn by: <b>BWilson</b> App'd:
	Code: <b>TIA-222-G</b> Date: <b>05/01/19</b> Scale: <b>NTS</b>
	Path:      Dwg No. <b>E-1</b>



Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15
Legs	SR 1 3/4	SR 2	SR 2 1/2	A	Pirod 105218	Pirod 105219	Pirod 105220	Pirod 105220	Pirod 105220	Pirod 112743	Pirod 112744	Pirod 112745	Pirod 112745	Pirod 112740	Pirod 112740
Leg Grade	SR 7/8	A572-50	SR 1	B	L3x3x3/16	L3x3x5/16	L3 1/2x3 1/2x5/16	L3 1/2x3 1/2x5/16	L3 1/2x3 1/2x5/16	A36	2L3 1/2x3 1/2x5/16x3/8	2L3 1/2x3 1/2x5/16x3/8	2L3 1/2x3 1/2x5/16x3/8	2L3 1/2x3 1/2x5/16x3/8	2L3 1/2x3 1/2x5/16x3/8
Diagonal Grade															
Top Girts															
Mid Girts	SR 1	SR 1	SR 1 1/4	N.A.	L3x3x3/16	L4x4x1/4	L3x3x3/16	L3x3x3/16	L4x4x1/4	C	L4x4x1/4	L3x3x3/16	L3x3x3/16	L4x4x1/4	L4x4x1/4
Bottom Girts	SR 1	SR 1	SR 1 1/4	N.A.	L3x3x3/16	L4x4x1/4	L3x3x3/16	L3x3x3/16	L4x4x1/4	N.A.	L4x4x1/4	L3x3x3/16	L3x3x3/16	L4x4x1/4	L4x4x1/4
Horizontals	SR 7/8	SR 7/8	SR 1 1/4	N.A.	L3x3x3/16	L4x4x1/4	L3x3x3/16	L3x3x3/16	L4x4x1/4	N.A.	L4x4x1/4	L3x3x3/16	L3x3x3/16	L4x4x1/4	L4x4x1/4
Face Width (ft)	5	16 @ 2.375	2.2	1.5	2.8	3.5	4.4	5.1	5.0	7.0	7.1	8.3	8.5	9.5	9.6
# Panels @ (ft)	4 @ 2.25	1.6	0.7												
Weight (K)															



**SYMBOL LIST**

MARK	SIZE	MARK	SIZE
A	Pirod 105245	C	L3 1/2x3 1/2x5/16
B	L3x3x5/16		

**MATERIAL STRENGTH**

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

**TOWER DESIGN NOTES**

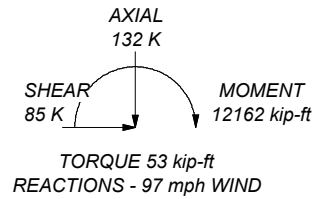
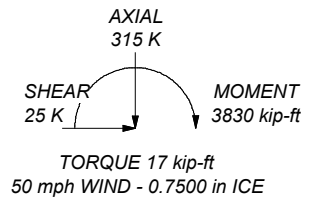
1. Tower designed for Exposure B to the TIA-222-G Standard.
2. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Structure Class II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 59.8%

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:

DOWN: 545 K  
SHEAR: 57 K

UPLIFT: -454 K  
SHEAR: 49 K



**Maser Consulting, P.A.**  
5141 Virginia Way, Suite 420  
Brentwood, TN 37027  
Phone: (615) 686-2575  
FAX:

Job: <b>CT5633</b>	Project: <b>18963021A</b>	
Client: <b>AT&amp;T</b>	Drawn by: <b>BWilson</b>	App'd:
Code: <b>TIA-222-G</b>	Date: <b>05/01/19</b>	Scale: <b>NTS</b>
Path:	Dwg No. <b>E-1</b>	

<b>tnxTower</b>  <b>Maser Consulting, P.A.</b> 5141 Virginia Way, Suite 420 Brentwood, TN 37027 Phone: (615) 686-2575 FAX:	<b>Job</b>	CT5633	<b>Page</b>	1 of 55
	<b>Project</b>	18963021A	<b>Date</b>	08:13:40 05/01/19
	<b>Client</b>	AT&T	<b>Designed by</b>	BWilson

## Tower Input Data

The main tower is a 3x free standing tower with an overall height of 280.00 ft above the ground line.

The base of the tower is set at an elevation of 0.00 ft above the ground line.

The face width of the tower is 5.00 ft at the top and 28.00 ft at the base.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).

Basic wind speed of 97 mph.

Structure Class II.

Exposure Category B.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 0.7500 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 50 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in tower member design is 1.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

## Options

<ul style="list-style-type: none"> <li>Consider Moments - Legs</li> <li>Consider Moments - Horizontals</li> <li>Consider Moments - Diagonals</li> <li>Use Moment Magnification</li> <li>√ Use Code Stress Ratios</li> <li>√ Use Code Safety Factors - Guys</li> <li>Escalate Ice</li> <li>Always Use Max Kz</li> <li>Use Special Wind Profile</li> <li>Include Bolts In Member Capacity</li> <li>Leg Bolts Are At Top Of Section</li> <li>√ Secondary Horizontal Braces Leg</li> <li>Use Diamond Inner Bracing (4 Sided)</li> <li>SR Members Have Cut Ends</li> <li>SR Members Are Concentric</li> </ul>	<ul style="list-style-type: none"> <li>Distribute Leg Loads As Uniform</li> <li>Assume Legs Pinned</li> <li>√ Assume Rigid Index Plate</li> <li>√ Use Clear Spans For Wind Area</li> <li>√ Use Clear Spans For KL/r</li> <li>Retension Guys To Initial Tension</li> <li>√ Bypass Mast Stability Checks</li> <li>Use Azimuth Dish Coefficients</li> <li>√ Project Wind Area of Appurt.</li> <li>Autocalc Torque Arm Areas</li> <li>Add IBC .6D+W Combination</li> <li>√ Sort Capacity Reports By Component</li> <li>Triangulate Diamond Inner Bracing</li> <li>Treat Feed Line Bundles As Cylinder</li> <li>Ignore KL/ry For 60 Deg. Angle Legs</li> </ul>	<ul style="list-style-type: none"> <li>Use ASCE 10 X-Brace Ly Rules</li> <li>Calculate Redundant Bracing Forces</li> <li>Ignore Redundant Members in FEA</li> <li>√ SR Leg Bolts Resist Compression</li> <li>√ All Leg Panels Have Same Allowable</li> <li>Offset Girt At Foundation</li> <li>√ Consider Feed Line Torque</li> <li>√ Include Angle Block Shear Check</li> <li>Use TIA-222-G Bracing Resist. Exemption</li> <li>Use TIA-222-G Tension Splice Exemption</li> <li style="text-align: center;">Poles</li> <li>Include Shear-Torsion Interaction</li> <li>Always Use Sub-Critical Flow</li> <li>Use Top Mounted Sockets</li> <li>Pole Without Linear Attachments</li> <li>Pole With Shroud Or No Appurtenances</li> <li>Outside and Inside Corner Radii Are Known</li> </ul>
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Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	280.00-270.00	2.25	X Brace	No	Yes	5.5000	6.5000
T2	270.00-250.00	2.38	X Brace	No	Yes	5.5000	6.5000
T3	250.00-230.00	2.38	X Brace	No	Yes	5.5000	6.5000
T4	230.00-220.00	10.00	X Brace	No	No	0.0000	0.0000
T5	220.00-200.00	10.00	X Brace	No	No	0.0000	0.0000
T6	200.00-180.00	10.00	X Brace	No	No	0.0000	0.0000
T7	180.00-160.00	10.00	X Brace	No	No	0.0000	0.0000
T8	160.00-140.00	10.00	X Brace	No	No	0.0000	0.0000
T9	140.00-120.00	10.00	X Brace	No	No	0.0000	0.0000
T10	120.00-100.00	20.00	X Brace	No	No	0.0000	0.0000
T11	100.00-80.00	20.00	X Brace	No	No	0.0000	0.0000
T12	80.00-60.00	20.00	X Brace	No	No	0.0000	0.0000
T13	60.00-40.00	20.00	X Brace	No	No	0.0000	0.0000
T14	40.00-20.00	20.00	X Brace	No	No	0.0000	0.0000
T15	20.00-0.00	20.00	X Brace	No	No	0.0000	0.0000

### Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 280.00-270.00	Solid Round	1 3/4	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T2 270.00-250.00	Solid Round	2	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T3 250.00-230.00	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T4 230.00-220.00	Truss Leg	Pirod 105245	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
T5 220.00-200.00	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T6 200.00-180.00	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
T7 180.00-160.00	Truss Leg	Pirod 105219	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
T8 160.00-140.00	Truss Leg	Pirod 105220	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x5/16	A36 (36 ksi)
T9 140.00-120.00	Truss Leg	Pirod 105220	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x5/16	A36 (36 ksi)
T10 120.00-100.00	Truss Leg	Pirod 112743	A572-50 (50 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A36 (36 ksi)
T11 100.00-80.00	Truss Leg	Pirod 112743	A572-50 (50 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A36 (36 ksi)
T12 80.00-60.00	Truss Leg	Pirod 112744	A572-50 (50 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A36 (36 ksi)
T13 60.00-40.00	Truss Leg	Pirod 112744	A572-50 (50 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A36 (36 ksi)
T14 40.00-20.00	Truss Leg	Pirod 112745	A572-50 (50 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A36 (36 ksi)
T15 20.00-0.00	Truss Leg	Pirod 112740	A572-50 (50 ksi)	Double Angle	2L3 1/2x3 1/2x5/16x3/8	A36 (36 ksi)

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### Tower Section Geometry (cont'd)

Tower Elevation <i>ft</i>	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 280.00-270.00	Solid Round	1	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T2 270.00-250.00	Solid Round	1	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T3 250.00-230.00	Solid Round	1 1/4	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T6 200.00-180.00	Equal Angle	L3x3x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T7 180.00-160.00	Equal Angle	L4x4x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T8 160.00-140.00	Equal Angle	L3 1/2x3 1/2x5/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)

### Tower Section Geometry (cont'd)

Tower Elevation <i>ft</i>	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 280.00-270.00	1	Solid Round	1	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T2 270.00-250.00	1	Solid Round	1	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T3 250.00-230.00	None	Flat Bar		A36 (36 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T6 200.00-180.00	1	Equal Angle	L3x3x3/16	A36 (36 ksi)	Pipe		A572-50 (50 ksi)
T7 180.00-160.00	1	Equal Angle	L4x4x1/4	A36 (36 ksi)	Pipe		A572-50 (50 ksi)

### Tower Section Geometry (cont'd)

Tower Elevation <i>ft</i>	Gusset Area (per face) <i>ft<sup>2</sup></i>	Gusset Thickness <i>in</i>	Gusset Grade	Adjust. Factor <i>A<sub>f</sub></i>	Adjust. Factor <i>A<sub>r</sub></i>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals <i>in</i>	Double Angle Stitch Bolt Spacing Horizontals <i>in</i>	Double Angle Stitch Bolt Spacing Redundants <i>in</i>
T1 280.00-270.00	0.00	0.0000	A36 (36 ksi)	1.05	1	1.05	36.0000	36.0000	36.0000
T2 270.00-250.00	0.00	0.0000	A36 (36 ksi)	1.05	1	1.05	36.0000	36.0000	36.0000
T3 250.00-230.00	0.00	0.0000	A36 (36 ksi)	1.05	1	1.05	36.0000	36.0000	36.0000
T4 230.00-220.00	0.00	0.0000	A36 (36 ksi)	1.05	1	1.05	36.0000	36.0000	36.0000
T5 220.00-200.00	0.00	0.0000	A36 (36 ksi)	1.05	1	1.05	36.0000	36.0000	36.0000
T6	0.00	0.0000	A36	1.05	1	1.05	36.0000	36.0000	36.0000





<p style="text-align: center;"><b>tnxTower</b></p> <p style="text-align: center;"><b>Maser Consulting, P.A.</b> 5141 Virginia Way, Suite 420 Brentwood, TN 37027 Phone: (615) 686-2575 FAX:</p>	<b>Job</b>		CT5633		<b>Page</b>		7 of 55	
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Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T2 270.00-250.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 250.00-230.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 230.00-220.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 220.00-200.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 200.00-180.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 180.00-160.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 160.00-140.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 140.00-120.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 120.00-100.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 100.00-80.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 80.00-60.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 60.00-40.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 40.00-20.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T15 20.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

**Tower Section Geometry (cont'd)**

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 280.00-270.00	Sleeve DS	0.6250	5	0.0000	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T2 270.00-250.00	Sleeve DS	0.7500	5	0.0000	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T3 250.00-230.00	Flange	1.0000	6	0.0000	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T4 230.00-220.00	Flange	1.0000	6	1.0000	1	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
T5 220.00-200.00	Flange	1.0000	6	1.0000	1	0.7500	0	0.6250	0	0.6250	0	0.7500	0	0.6250	0
T6 200.00-180.00	Flange	1.0000	6	1.0000	1	1.0000	1	0.6250	0	0.6250	0	0.7500	0	0.6250	0
T7 180.00-160.00	Flange	1.2500	6	1.2500	1	1.2500	1	0.6250	0	0.6250	0	1.0000	1	0.6250	0
T8 160.00-140.00	Flange	1.2500	6	1.2500	1	1.2500	1	0.6250	0	0.6250	0	1.2500	1	0.6250	0



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Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T9 140.00-120.00	Flange	1.2500 A325N	6	1.2500 A325N	1	0.7500 A325N	0	0.6250 A325N	0	0.6250 A325N	0	1.2500 A325N	1	0.6250 A325N	0
T10 120.00-100.00	Flange	1.2500 A325N	12	1.0000 A325N	2	0.7500 A325N	0	0.6250 A325N	0	0.6250 A325N	0	1.2500 A325N	1	0.6250 A325N	0
T11 100.00-80.00	Flange	1.2500 A325N	12	1.0000 A325N	2	0.7500 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	0	0.6250 A325N	0
T12 80.00-60.00	Flange	1.2500 A325N	12	1.0000 A325N	2	0.7500 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	0	0.6250 A325N	0
T13 60.00-40.00	Flange	1.2500 A325N	12	1.0000 A325N	2	0.7500 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	0	0.6250 A325N	0
T14 40.00-20.00	Flange	1.2500 A325N	12	1.0000 A325N	2	0.7500 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	0	0.6250 A325N	0
T15 20.00-0.00	Flange	1.2500 A325N	0	1.0000 A325N	2	0.7500 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	0	0.6250 A325N	0

### Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF7-50A (1-5/8 FOAM) ***	C	No	No	Ar (CaAa)	280.00 - 6.00	-6.0000	0.45	2	2	1.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM) ***	A	No	No	Ar (CaAa)	250.00 - 6.00	-6.0000	0.45	12	6	1.0000	1.9800		0.82
HCS 6X12 6AWG(1-3/8) ***	A	No	No	Ar (CaAa)	250.00 - 6.00	-6.0000	0.41	2	2	1.0000	1.3800		1.70
LDF7-50A (1-5/8 FOAM) ***	C	No	No	Ar (CaAa)	245.00 - 6.00	-6.0000	0.45	1	1	1.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM) ***	C	No	No	Ar (CaAa)	235.00 - 6.00	-6.0000	0.45	1	1	1.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM) ***	B	No	No	Ar (CaAa)	200.00 - 6.00	-6.0000	0.45	9	5	1.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM) ***	B	No	No	Ar (CaAa)	190.00 - 6.00	-6.0000	0.45	9	5	1.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM) ***	C	No	No	Ar (CaAa)	180.00 - 6.00	-6.0000	0.45	9	5	1.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM) ***	C	No	No	Ar (CaAa)	170.00 - 6.00	-6.0000	0.45	6	3	1.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM) ***	C	No	No	Ar (CaAa)	150.00 - 6.00	-6.0000	0.45	3	3	1.0000	1.9800		0.82
LDF7-50A (1-5/8 FOAM) ***	A	No	No	Ar (CaAa)	140.00 - 6.00	-6.0000	0.45	13	6	1.0000	1.9800		0.82
1" Coax	C	No	No	Ar (CaAa)	280.00 - 6.00	-6.0000	0.45	1	1	1.0000	1.0000		0.00

### Feed Line/Linear Appurtenances Section Areas

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Tower Section	Tower Elevation ft	Face	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
T1	280.00-270.00	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	4.960	0.000	0.02
T2	270.00-250.00	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	9.920	0.000	0.03
T3	250.00-230.00	A	0.000	0.000	53.040	0.000	0.26
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	13.880	0.000	0.05
T4	230.00-220.00	A	0.000	0.000	26.520	0.000	0.13
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	8.920	0.000	0.03
T5	220.00-200.00	A	0.000	0.000	53.040	0.000	0.26
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	17.840	0.000	0.07
T6	200.00-180.00	A	0.000	0.000	53.040	0.000	0.26
		B	0.000	0.000	53.460	0.000	0.22
		C	0.000	0.000	17.840	0.000	0.07
T7	180.00-160.00	A	0.000	0.000	53.040	0.000	0.26
		B	0.000	0.000	71.280	0.000	0.30
		C	0.000	0.000	65.360	0.000	0.26
T8	160.00-140.00	A	0.000	0.000	53.040	0.000	0.26
		B	0.000	0.000	71.280	0.000	0.30
		C	0.000	0.000	83.180	0.000	0.34
T9	140.00-120.00	A	0.000	0.000	104.520	0.000	0.48
		B	0.000	0.000	71.280	0.000	0.30
		C	0.000	0.000	89.120	0.000	0.36
T10	120.00-100.00	A	0.000	0.000	104.520	0.000	0.48
		B	0.000	0.000	71.280	0.000	0.30
		C	0.000	0.000	89.120	0.000	0.36
T11	100.00-80.00	A	0.000	0.000	104.520	0.000	0.48
		B	0.000	0.000	71.280	0.000	0.30
		C	0.000	0.000	89.120	0.000	0.36
T12	80.00-60.00	A	0.000	0.000	104.520	0.000	0.48
		B	0.000	0.000	71.280	0.000	0.30
		C	0.000	0.000	89.120	0.000	0.36
T13	60.00-40.00	A	0.000	0.000	104.520	0.000	0.48
		B	0.000	0.000	71.280	0.000	0.30
		C	0.000	0.000	89.120	0.000	0.36
T14	40.00-20.00	A	0.000	0.000	104.520	0.000	0.48
		B	0.000	0.000	71.280	0.000	0.30
		C	0.000	0.000	89.120	0.000	0.36
T15	20.00-0.00	A	0.000	0.000	73.164	0.000	0.33
		B	0.000	0.000	49.896	0.000	0.21
		C	0.000	0.000	62.384	0.000	0.25

### Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
T1	280.00-270.00	A	1.854	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	17.669	0.000	0.22
T2	270.00-250.00	A	1.844	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	35.225	0.000	0.44
T3	250.00-230.00	A	1.829	0.000	0.000	78.102	0.000	1.53

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Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight K
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	46.341	0.000	0.62
T4	230.00-220.00	A	1.817	0.000	0.000	38.972	0.000	0.76
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	28.698	0.000	0.40
T5	220.00-200.00	A	1.805	0.000	0.000	77.775	0.000	1.51
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	57.159	0.000	0.80
T6	200.00-180.00	A	1.787	0.000	0.000	77.533	0.000	1.50
		B		0.000	0.000	72.924	0.000	1.44
		C		0.000	0.000	56.819	0.000	0.79
T7	180.00-160.00	A	1.767	0.000	0.000	77.266	0.000	1.49
		B		0.000	0.000	96.968	0.000	1.90
		C		0.000	0.000	122.774	0.000	2.06
T8	160.00-140.00	A	1.745	0.000	0.000	76.970	0.000	1.48
		B		0.000	0.000	96.674	0.000	1.89
		C		0.000	0.000	155.743	0.000	2.57
T9	140.00-120.00	A	1.720	0.000	0.000	134.863	0.000	2.76
		B		0.000	0.000	96.343	0.000	1.87
		C		0.000	0.000	170.610	0.000	2.74
T10	120.00-100.00	A	1.692	0.000	0.000	134.285	0.000	2.73
		B		0.000	0.000	95.962	0.000	1.85
		C		0.000	0.000	169.492	0.000	2.70
T11	100.00-80.00	A	1.658	0.000	0.000	133.604	0.000	2.70
		B		0.000	0.000	95.514	0.000	1.83
		C		0.000	0.000	168.173	0.000	2.65
T12	80.00-60.00	A	1.617	0.000	0.000	132.771	0.000	2.65
		B		0.000	0.000	94.965	0.000	1.80
		C		0.000	0.000	166.559	0.000	2.60
T13	60.00-40.00	A	1.564	0.000	0.000	131.688	0.000	2.60
		B		0.000	0.000	94.251	0.000	1.76
		C		0.000	0.000	164.462	0.000	2.52
T14	40.00-20.00	A	1.486	0.000	0.000	130.114	0.000	2.52
		B		0.000	0.000	93.215	0.000	1.71
		C		0.000	0.000	161.413	0.000	2.42
T15	20.00-0.00	A	1.331	0.000	0.000	88.897	0.000	1.66
		B		0.000	0.000	63.813	0.000	1.12
		C		0.000	0.000	108.757	0.000	1.55

### Feed Line Center of Pressure

Section	Elevation ft	CP <sub>x</sub> in	CP <sub>z</sub> in	CP <sub>x</sub> Ice in	CP <sub>z</sub> Ice in
T1	280.00-270.00	-5.2149	1.5040	-2.8506	0.8669
T2	270.00-250.00	-5.1377	1.4803	-3.0230	0.9200
T3	250.00-230.00	-3.4097	-10.6237	-2.8685	-3.8368
T4	230.00-220.00	-3.1541	-7.4087	-2.4596	-2.3221
T5	220.00-200.00	-4.0233	-9.0007	-4.2421	-3.7876
T6	200.00-180.00	2.2473	-2.3571	-1.1995	-0.9189
T7	180.00-160.00	-5.7417	1.5454	-6.4364	2.1301
T8	160.00-140.00	-9.6635	2.7690	-11.2908	3.8692
T9	140.00-120.00	-11.5440	-7.0649	-14.0948	-2.9279
T10	120.00-100.00	-13.1010	-7.9489	-15.2778	-3.1672
T11	100.00-80.00	-14.4113	-8.7765	-16.7663	-3.5140
T12	80.00-60.00	-15.3816	-9.3990	-18.1017	-3.8619
T13	60.00-40.00	-16.5514	-10.1484	-19.3960	-4.2510

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Section	Elevation	CP <sub>x</sub>	CP <sub>z</sub>	CP <sub>x</sub> Ice	CP <sub>z</sub> Ice
	ft	in	in	in	in
T14	40.00-20.00	-17.4529	-10.7315	-20.5331	-4.6964
T15	20.00-0.00	-14.7880	-9.2144	-17.0151	-4.2677

### Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
T1	1	LDF7-50A (1-5/8 FOAM)	270.00 - 280.00	0.6000	0.3623
T1	14	1" Coax	270.00 - 280.00	0.6000	0.3623
T2	1	LDF7-50A (1-5/8 FOAM)	250.00 - 270.00	0.6000	0.3770
T2	14	1" Coax	250.00 - 270.00	0.6000	0.3770
T3	1	LDF7-50A (1-5/8 FOAM)	230.00 - 250.00	0.6000	0.3645
T3	3	LDF7-50A (1-5/8 FOAM)	230.00 - 250.00	0.6000	0.3645
T3	4	HCS 6X12 6AWG(1-3/8)	230.00 - 250.00	0.6000	0.3645
T3	6	LDF7-50A (1-5/8 FOAM)	230.00 - 245.00	0.6000	0.3645
T3	7	LDF7-50A (1-5/8 FOAM)	230.00 - 235.00	0.6000	0.3645
T3	14	1" Coax	230.00 - 250.00	0.6000	0.3645
T4	1	LDF7-50A (1-5/8 FOAM)	220.00 - 230.00	0.6000	0.2941
T4	3	LDF7-50A (1-5/8 FOAM)	220.00 - 230.00	0.6000	0.2941
T4	4	HCS 6X12 6AWG(1-3/8)	220.00 - 230.00	0.6000	0.2941
T4	6	LDF7-50A (1-5/8 FOAM)	220.00 - 230.00	0.6000	0.2941
T4	7	LDF7-50A (1-5/8 FOAM)	220.00 - 230.00	0.6000	0.2941
T4	14	1" Coax	220.00 - 230.00	0.6000	0.2941
T5	1	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.4007
T5	3	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.4007
T5	4	HCS 6X12 6AWG(1-3/8)	200.00 - 220.00	0.6000	0.4007
T5	6	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.4007
T5	7	LDF7-50A (1-5/8 FOAM)	200.00 - 220.00	0.6000	0.4007
T5	14	1" Coax	200.00 - 220.00	0.6000	0.4007
T6	1	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.4604
T6	3	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.4604

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	$K_a$ No Ice	$K_a$ Ice
T6	4	HCS 6X12 6AWG(1-3/8)	180.00 - 200.00	0.6000	0.4604
T6	6	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.4604
T6	7	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.4604
T6	8	LDF7-50A (1-5/8 FOAM)	180.00 - 200.00	0.6000	0.4604
T6	9	LDF7-50A (1-5/8 FOAM)	180.00 - 190.00	0.6000	0.4604
T6	14	1" Coax	180.00 - 200.00	0.6000	0.4604
T7	1	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.5166
T7	3	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.5166
T7	4	HCS 6X12 6AWG(1-3/8)	160.00 - 180.00	0.6000	0.5166
T7	6	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.5166
T7	7	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.5166
T7	8	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.5166
T7	9	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.5166
T7	10	LDF7-50A (1-5/8 FOAM)	160.00 - 180.00	0.6000	0.5166
T7	11	LDF7-50A (1-5/8 FOAM)	160.00 - 170.00	0.6000	0.5166
T7	14	1" Coax	160.00 - 180.00	0.6000	0.5166
T8	1	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.5805
T8	3	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.5805
T8	4	HCS 6X12 6AWG(1-3/8)	140.00 - 160.00	0.6000	0.5805
T8	6	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.5805
T8	7	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.5805
T8	8	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.5805
T8	9	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.5805
T8	10	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.5805
T8	11	LDF7-50A (1-5/8 FOAM)	140.00 - 160.00	0.6000	0.5805
T8	12	LDF7-50A (1-5/8 FOAM)	140.00 - 150.00	0.6000	0.5805
T8	14	1" Coax	140.00 - 160.00	0.6000	0.5805
T9	1	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	3	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	4	HCS 6X12 6AWG(1-3/8)	120.00 - 140.00	0.6000	0.6000
T9	6	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000

**tnxTower**

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K<sub>a</sub> No Ice</i>	<i>K<sub>a</sub> Ice</i>
T9	7	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	8	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	9	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	10	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	11	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	12	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	13	LDF7-50A (1-5/8 FOAM)	120.00 - 140.00	0.6000	0.6000
T9	14	1" Coax	120.00 - 140.00	0.6000	0.6000
T10	1	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	3	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	4	HCS 6X12 6AWG(1-3/8)	100.00 - 120.00	0.6000	0.6000
T10	6	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	7	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	8	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	9	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	10	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	11	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	12	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	13	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.6000
T10	14	1" Coax	100.00 - 120.00	0.6000	0.6000
T11	1	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	3	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	4	HCS 6X12 6AWG(1-3/8)	80.00 - 100.00	0.6000	0.6000
T11	6	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	7	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	8	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	9	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	10	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	11	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	12	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	13	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T11	14	1" Coax	80.00 - 100.00	0.6000	0.6000
T12	1	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	3	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	4	HCS 6X12 6AWG(1-3/8)	60.00 - 80.00	0.6000	0.6000
T12	6	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	7	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	8	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	9	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	10	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	11	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	12	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	$K_a$ No Ice	$K_a$ Ice
T12	13	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T12	14	1" Coax	60.00 - 80.00	0.6000	0.6000
T13	1	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	3	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	4	HCS 6X12 6AWG(1-3/8)	40.00 - 60.00	0.6000	0.6000
T13	6	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	7	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	8	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	9	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	10	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	11	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	12	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	13	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T13	14	1" Coax	40.00 - 60.00	0.6000	0.6000
T14	1	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	3	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	4	HCS 6X12 6AWG(1-3/8)	20.00 - 40.00	0.6000	0.6000
T14	6	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	7	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	8	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	9	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	10	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	11	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	12	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	13	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T14	14	1" Coax	20.00 - 40.00	0.6000	0.6000
T15	1	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T15	3	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T15	4	HCS 6X12 6AWG(1-3/8)	6.00 - 20.00	0.6000	0.6000
T15	6	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T15	7	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T15	8	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T15	9	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T15	10	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T15	11	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T15	12	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T15	13	LDF7-50A (1-5/8 FOAM)	6.00 - 20.00	0.6000	0.6000
T15	14	1" Coax	6.00 - 20.00	0.6000	0.6000

### Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral	Azimuth Adjustment	Placement	$C_{AA}$ Front	$C_{AA}$ Side	Weight
			ft ft ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K
Flash Beacon Lighting	B	None		0.0000	280.00	No Ice	2.70	0.05
						1/2" Ice	3.10	0.07
						1" Ice	3.50	0.09
15' Lightning Rod	B	From Leg	0.00	0.0000	280.00	No Ice	3.00	0.08
						1/2" Ice	4.53	0.10
						1" Ice	6.06	0.12
DB420-A	B	From	8.00	0.0000	280.00	No Ice	3.33	0.03

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	<b>Client</b>	AT&T	<b>Designed by</b>	BWilson

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K
DB420-A	A	Centroid-Fa	0.00			1/2" Ice	5.99	5.99	0.04
		ce	9.50			1" Ice	8.65	8.65	0.05
		From	8.00	0.0000	280.00	No Ice	3.33	3.33	0.03
Sector Mount [SM 412-1]	C	Centroid-Fa	0.00			1/2" Ice	5.99	5.99	0.04
		ce	3.00			1" Ice	8.65	8.65	0.05
		None		0.0000	280.00	No Ice	70.47	70.47	3.08
						1/2" Ice	100.14	100.14	4.50
						1" Ice	129.81	129.81	5.92
***									
APX18-206516L-CT0 w/ Mount Pipe	A	From Leg	4.00	0.0000	250.00	No Ice	4.12	3.67	0.04
			0.00			1/2" Ice	4.73	4.72	0.08
			0.00			1" Ice	5.23	5.48	0.13
APX18-206516L-CT0 w/ Mount Pipe	B	From Leg	4.00	0.0000	250.00	No Ice	4.12	3.67	0.04
			0.00			1/2" Ice	4.73	4.72	0.08
			0.00			1" Ice	5.23	5.48	0.13
APX18-206516L-CT0 w/ Mount Pipe	C	From Leg	4.00	0.0000	250.00	No Ice	4.12	3.67	0.04
			0.00			1/2" Ice	4.73	4.72	0.08
			0.00			1" Ice	5.23	5.48	0.13
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.00	0.0000	250.00	No Ice	20.48	11.02	0.16
			0.00			1/2" Ice	21.23	12.55	0.30
			0.00			1" Ice	21.99	14.10	0.44
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.00	0.0000	250.00	No Ice	20.48	11.02	0.16
			0.00			1/2" Ice	21.23	12.55	0.30
			0.00			1" Ice	21.99	14.10	0.44
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.00	0.0000	250.00	No Ice	20.48	11.02	0.16
			0.00			1/2" Ice	21.23	12.55	0.30
			0.00			1" Ice	21.99	14.10	0.44
ATMAP-1A20	A	From Leg	4.00	0.0000	250.00	No Ice	0.73	0.25	0.01
			0.00			1/2" Ice	0.84	0.32	0.01
			0.00			1" Ice	0.96	0.40	0.02
ATMAP-1A20	B	From Leg	4.00	0.0000	250.00	No Ice	0.73	0.25	0.01
			0.00			1/2" Ice	0.84	0.32	0.01
			0.00			1" Ice	0.96	0.40	0.02
ATMAP-1A20	C	From Leg	4.00	0.0000	250.00	No Ice	0.73	0.25	0.01
			0.00			1/2" Ice	0.84	0.32	0.01
			0.00			1" Ice	0.96	0.40	0.02
ATMAP1412D-1A20	A	From Leg	4.00	0.0000	250.00	No Ice	0.41	1.00	0.01
			0.00			1/2" Ice	0.50	1.13	0.02
			0.00			1" Ice	0.59	1.26	0.03
ATMAP1412D-1A20	B	From Leg	4.00	0.0000	250.00	No Ice	0.41	1.00	0.01
			0.00			1/2" Ice	0.50	1.13	0.02
			0.00			1" Ice	0.59	1.26	0.03
ATMAP1412D-1A20	C	From Leg	4.00	0.0000	250.00	No Ice	0.41	1.00	0.01
			0.00			1/2" Ice	0.50	1.13	0.02
			0.00			1" Ice	0.59	1.26	0.03
KRF 102 267/1	A	From Leg	4.00	0.0000	250.00	No Ice	0.55	0.33	0.01
			0.00			1/2" Ice	0.65	0.42	0.01
			0.00			1" Ice	0.76	0.51	0.02
KRF 102 267/1	B	From Leg	4.00	0.0000	250.00	No Ice	0.55	0.33	0.01
			0.00			1/2" Ice	0.65	0.42	0.01
			0.00			1" Ice	0.76	0.51	0.02
KRF 102 267/1	C	From Leg	4.00	0.0000	250.00	No Ice	0.55	0.33	0.01
			0.00			1/2" Ice	0.65	0.42	0.01
			0.00			1" Ice	0.76	0.51	0.02
RADIO 4449 B12/B71	A	From Leg	4.00	0.0000	250.00	No Ice	1.65	1.30	0.08
			0.00			1/2" Ice	1.81	1.44	0.09
			0.00			1" Ice	1.98	1.60	0.11



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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K
RADIO 4449 B12/B71	B	From Leg	4.00	0.00	0.0000	250.00	No Ice 1.65	1.30	0.08
			0.00				1/2" Ice 1.81	1.44	0.09
			0.00				1" Ice 1.98	1.60	0.11
RADIO 4449 B12/B71	C	From Leg	4.00	0.00	0.0000	250.00	No Ice 1.65	1.30	0.08
			0.00				1/2" Ice 1.81	1.44	0.09
			0.00				1" Ice 1.98	1.60	0.11
Pirod 15' T-Frame Sector Mount (1)	A	None			0.0000	250.00	No Ice 15.00	15.00	0.50
							1/2" Ice 20.60	20.60	0.65
							1" Ice 26.20	26.20	0.80
Pirod 15' T-Frame Sector Mount (1)	B	None			0.0000	250.00	No Ice 15.00	15.00	0.50
							1/2" Ice 20.60	20.60	0.65
							1" Ice 26.20	26.20	0.80
Pirod 15' T-Frame Sector Mount (1)	C	None			0.0000	250.00	No Ice 15.00	15.00	0.50
							1/2" Ice 20.60	20.60	0.65
							1" Ice 26.20	26.20	0.80
***									
DB420-A	B	From Centroid-Fa	8.00	0.00	0.0000	245.00	No Ice 3.33	3.33	0.03
		ce	9.00				1/2" Ice 5.99	5.99	0.04
			9.00				1" Ice 8.65	8.65	0.05
DB225-2-F	A	From Centroid-Fa	8.00	0.00	0.0000	235.00	No Ice 1.36	1.36	0.05
		ce	0.00				1/2" Ice 2.45	2.45	0.07
			0.00				1" Ice 3.54	3.54	0.09
Sector Mount [SM 412-1]	C	None			0.0000	235.00	No Ice 70.47	70.47	3.08
							1/2" Ice 100.14	100.14	4.50
							1" Ice 129.81	129.81	5.92
(3) DB980H120E-M	A	From Leg	3.00	0.00	0.0000	200.00	No Ice 4.22	3.83	0.03
			0.00				1/2" Ice 4.81	4.92	0.07
			0.00				1" Ice 5.40	6.01	0.11
(3) DB980H120E-M	B	From Leg	3.00	0.00	0.0000	200.00	No Ice 4.22	3.83	0.03
			0.00				1/2" Ice 4.81	4.92	0.07
			0.00				1" Ice 5.40	6.01	0.11
(3) DB980H120E-M	C	From Leg	3.00	0.00	0.0000	200.00	No Ice 4.22	3.83	0.03
			0.00				1/2" Ice 4.81	4.92	0.07
			0.00				1" Ice 5.40	6.01	0.11
Pirod 12' T-Frame Sector Mount (1)	A	None			0.0000	200.00	No Ice 13.60	13.60	0.47
							1/2" Ice 18.40	18.40	0.60
							1" Ice 23.20	23.20	0.73
Pirod 12' T-Frame Sector Mount (1)	B	None			0.0000	200.00	No Ice 13.60	13.60	0.47
							1/2" Ice 18.40	18.40	0.60
							1" Ice 23.20	23.20	0.73
Pirod 12' T-Frame Sector Mount (1)	C	None			0.0000	200.00	No Ice 13.60	13.60	0.47
							1/2" Ice 18.40	18.40	0.60
							1" Ice 23.20	23.20	0.73
(3) DB980H120E-M	A	From Leg	3.00	0.00	0.0000	190.00	No Ice 4.22	3.83	0.03
			0.00				1/2" Ice 4.81	4.92	0.07
			0.00				1" Ice 5.40	6.01	0.11
(3) DB980H120E-M	B	From Leg	3.00	0.00	0.0000	190.00	No Ice 4.22	3.83	0.03
			0.00				1/2" Ice 4.81	4.92	0.07
			0.00				1" Ice 5.40	6.01	0.11
(3) DB980H120E-M	C	From Leg	3.00	0.00	0.0000	190.00	No Ice 4.22	3.83	0.03
			0.00				1/2" Ice 4.81	4.92	0.07
			0.00				1" Ice 5.40	6.01	0.11
Pirod 12' T-Frame Sector Mount (1)	A	None			0.0000	190.00	No Ice 13.60	13.60	0.47
							1/2" Ice 18.40	18.40	0.60
							1" Ice 23.20	23.20	0.73
Pirod 12' T-Frame Sector Mount (1)	B	None			0.0000	190.00	No Ice 13.60	13.60	0.47
							1/2" Ice 18.40	18.40	0.60

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C <sub>AA</sub>		Weight K	
			Horz Lateral ft	Vert ft			Front ft <sup>2</sup>	Side ft <sup>2</sup>		
Pirod 12' T-Frame Sector Mount (1)	C	None			0.0000	190.00	1" Ice	23.20	23.20	0.73
							No Ice	13.60	13.60	0.47
							1/2" Ice	18.40	18.40	0.60
(3) DB980H120E-M	A	From Leg	3.00	0.0000	180.00	180.00	1" Ice	23.20	23.20	0.73
							No Ice	4.22	3.83	0.03
							1/2" Ice	4.81	4.92	0.07
(3) DB980H120E-M	B	From Leg	0.00	0.0000	180.00	180.00	1" Ice	5.40	6.01	0.11
							No Ice	4.22	3.83	0.03
							1/2" Ice	4.81	4.92	0.07
(3) DB980H120E-M	C	From Leg	0.00	0.0000	180.00	180.00	1" Ice	5.40	6.01	0.11
							No Ice	4.22	3.83	0.03
							1/2" Ice	4.81	4.92	0.07
Pirod 12' T-Frame Sector Mount (1)	A	None			0.0000	180.00	No Ice	13.60	13.60	0.47
							1/2" Ice	18.40	18.40	0.60
							1" Ice	23.20	23.20	0.73
Pirod 12' T-Frame Sector Mount (1)	B	None			0.0000	180.00	No Ice	13.60	13.60	0.47
							1/2" Ice	18.40	18.40	0.60
							1" Ice	23.20	23.20	0.73
Pirod 12' T-Frame Sector Mount (1)	C	None			0.0000	180.00	No Ice	13.60	13.60	0.47
							1/2" Ice	18.40	18.40	0.60
							1" Ice	23.20	23.20	0.73
APXVSP18-C-A20	A	From Leg	3.00	0.0000	170.00	170.00	No Ice	0.00	0.00	0.00
							1/2" Ice	0.00	0.00	0.00
							1" Ice	0.00	0.00	0.00
APXVSP18-C-A20	B	From Leg	0.00	0.0000	170.00	170.00	No Ice	0.00	0.00	0.00
							1/2" Ice	0.00	0.00	0.00
							1" Ice	0.00	0.00	0.00
APXVSP18-C-A20	C	From Leg	0.00	0.0000	170.00	170.00	No Ice	0.00	0.00	0.00
							1/2" Ice	0.00	0.00	0.00
							1" Ice	0.00	0.00	0.00
APXVTM14-ALU-I20	A	From Leg	3.00	0.0000	170.00	170.00	No Ice	7.13	4.96	0.08
							1/2" Ice	7.66	5.75	0.13
							1" Ice	8.19	6.54	0.18
APXVTM14-ALU-I20	B	From Leg	0.00	0.0000	170.00	170.00	No Ice	7.13	4.96	0.08
							1/2" Ice	7.66	5.75	0.13
							1" Ice	8.19	6.54	0.18
APXVTM14-ALU-I20	C	From Leg	0.00	0.0000	170.00	170.00	No Ice	7.13	4.96	0.08
							1/2" Ice	7.66	5.75	0.13
							1" Ice	8.19	6.54	0.18
FD-RRH-2X50-800	A	From Leg	3.00	0.0000	170.00	170.00	No Ice	2.13	2.46	0.06
							1/2" Ice	2.32	2.66	0.09
							1" Ice	2.51	2.86	0.12
FD-RRH-2X50-800	B	From Leg	0.00	0.0000	170.00	170.00	No Ice	2.13	2.46	0.06
							1/2" Ice	2.32	2.66	0.09
							1" Ice	2.51	2.86	0.12
FD-RRH-2X50-800	C	From Leg	0.00	0.0000	170.00	170.00	No Ice	2.13	2.46	0.06
							1/2" Ice	2.32	2.66	0.09
							1" Ice	2.51	2.86	0.12
FD-RRH-4X40-1900	A	From Leg	3.00	0.0000	170.00	170.00	No Ice	2.49	3.26	0.09
							1/2" Ice	2.70	3.48	0.12
							1" Ice	2.91	3.72	0.15
FD-RRH-4X40-1900	B	From Leg	0.00	0.0000	170.00	170.00	No Ice	2.49	3.26	0.09
							1/2" Ice	2.70	3.48	0.12
							1" Ice	2.91	3.72	0.15
FD-RRH-4X40-1900	C	From Leg	0.00	0.0000	170.00	170.00	No Ice	2.49	3.26	0.09
							1/2" Ice	2.70	3.48	0.12
							1" Ice	2.91	3.72	0.15

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz	Vert						ft
							ft <sup>2</sup>	ft <sup>2</sup>	K	
TD-RRH-8x20-25	A	From Leg	0.00		0.0000	170.00	1" Ice	2.91	3.72	0.15
			3.00				No Ice	3.70	1.29	0.07
			0.00				1/2" Ice	3.95	1.46	0.09
TD-RRH-8x20-25	B	From Leg	0.00		0.0000	170.00	1" Ice	4.20	1.64	0.12
			3.00				No Ice	3.70	1.29	0.07
			0.00				1/2" Ice	3.95	1.46	0.09
TD-RRH-8x20-25	C	From Leg	0.00		0.0000	170.00	1" Ice	4.20	1.64	0.12
			3.00				No Ice	3.70	1.29	0.07
			0.00				1/2" Ice	3.95	1.46	0.09
Pirod 15' T-Frame Sector Mount (1)	A	From Leg	0.00		0.0000	170.00	1" Ice	4.20	1.64	0.12
			3.00				No Ice	15.00	15.00	0.50
			0.00				1/2" Ice	20.60	20.60	0.65
Pirod 15' T-Frame Sector Mount (1)	B	From Leg	0.00		0.0000	170.00	1" Ice	26.20	26.20	0.80
			3.00				No Ice	15.00	15.00	0.50
			0.00				1/2" Ice	20.60	20.60	0.65
Pirod 15' T-Frame Sector Mount (1)	C	From Leg	0.00		0.0000	170.00	1" Ice	26.20	26.20	0.80
			3.00				No Ice	15.00	15.00	0.50
			0.00				1/2" Ice	20.60	20.60	0.65
80010121 9' Mount Pipe	A	From Leg	0.00		0.0000	160.00	1" Ice	26.20	26.20	0.80
			3.00				No Ice	6.22	5.43	0.09
			0.00				1/2" Ice	7.03	6.71	0.15
80010121 9' Mount Pipe	B	From Leg	0.00		0.0000	160.00	1" Ice	7.86	8.00	0.21
			3.00				No Ice	6.22	5.43	0.09
			0.00				1/2" Ice	7.03	6.71	0.15
80010121 9' Mount Pipe	C	From Leg	0.00		0.0000	160.00	1" Ice	7.86	8.00	0.21
			3.00				No Ice	6.22	5.43	0.09
			0.00				1/2" Ice	7.03	6.71	0.15
QS66512-2	A	From Leg	0.00		0.0000	160.00	1" Ice	7.86	8.00	0.21
			3.00				No Ice	8.13	6.80	0.11
			0.00				1/2" Ice	8.59	7.27	0.17
QS66512-2	B	From Leg	0.00		0.0000	160.00	1" Ice	9.05	7.72	0.23
			3.00				No Ice	8.13	6.80	0.11
			0.00				1/2" Ice	8.59	7.27	0.17
QS66512-2	C	From Leg	0.00		0.0000	160.00	1" Ice	9.05	7.72	0.23
			3.00				No Ice	8.13	6.80	0.11
			0.00				1/2" Ice	8.59	7.27	0.17
HPA65R-BU6A	A	From Leg	0.00		0.0000	160.00	1" Ice	9.05	7.72	0.23
			3.00				No Ice	7.87	6.97	0.08
			0.00				1/2" Ice	8.32	7.92	0.15
HPA65R-BU6A	B	From Leg	0.00		0.0000	160.00	1" Ice	8.79	8.75	0.22
			3.00				No Ice	7.87	6.97	0.08
			0.00				1/2" Ice	8.32	7.92	0.15
HPA65R-BU6A	C	From Leg	0.00		0.0000	160.00	1" Ice	8.79	8.75	0.22
			3.00				No Ice	7.87	6.97	0.08
			0.00				1/2" Ice	8.32	7.92	0.15
RRUS-11	A	From Leg	0.00		0.0000	160.00	1" Ice	8.79	8.75	0.22
			3.00				No Ice	2.78	1.19	0.05
			0.00				1/2" Ice	2.99	1.33	0.07
RRUS-11	B	From Leg	0.00		0.0000	160.00	1" Ice	3.21	1.49	0.09
			3.00				No Ice	2.78	1.19	0.05
			0.00				1/2" Ice	2.99	1.33	0.07
RRUS-11	C	From Leg	0.00		0.0000	160.00	1" Ice	3.21	1.49	0.09
			3.00				No Ice	2.78	1.19	0.05
			0.00				1/2" Ice	2.99	1.33	0.07
RRUS 32	A	From Leg	0.00		0.0000	160.00	1" Ice	3.21	1.49	0.09
			3.00				No Ice	2.86	1.78	0.06
			0.00				1/2" Ice	3.08	1.97	0.08

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	<b>Project</b>	18963021A	<b>Date</b>	08:13:40 05/01/19
	<b>Client</b>	AT&T	<b>Designed by</b>	BWilson

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
RRUS 32	B	From Leg	0.00		0.0000	160.00	1" Ice	3.32	2.17	0.10
			3.00				No Ice	2.86	1.78	0.06
			0.00				1/2" Ice	3.08	1.97	0.08
RRUS 32	C	From Leg	0.00		0.0000	160.00	1" Ice	3.32	2.17	0.10
			3.00				No Ice	2.86	1.78	0.06
			0.00				1/2" Ice	3.08	1.97	0.08
RRUS 32 B2	A	From Leg	0.00		0.0000	160.00	1" Ice	3.32	2.17	0.10
			3.00				No Ice	2.73	1.67	0.05
			0.00				1/2" Ice	2.95	1.86	0.07
RRUS 32 B2	B	From Leg	0.00		0.0000	160.00	1" Ice	3.18	2.05	0.10
			3.00				No Ice	2.73	1.67	0.05
			0.00				1/2" Ice	2.95	1.86	0.07
RRUS 32 B2	C	From Leg	0.00		0.0000	160.00	1" Ice	3.18	2.05	0.10
			3.00				No Ice	2.73	1.67	0.05
			0.00				1/2" Ice	2.95	1.86	0.07
RRUS 4478 B5	A	From Leg	0.00		0.0000	160.00	1" Ice	3.18	2.05	0.10
			3.00				No Ice	1.84	1.06	0.06
			0.00				1/2" Ice	2.01	1.20	0.08
RRUS 4478 B5	B	From Leg	0.00		0.0000	160.00	1" Ice	2.19	1.34	0.09
			3.00				No Ice	1.84	1.06	0.06
			0.00				1/2" Ice	2.01	1.20	0.08
RRUS 4478 B5	C	From Leg	0.00		0.0000	160.00	1" Ice	2.19	1.34	0.09
			3.00				No Ice	1.84	1.06	0.06
			0.00				1/2" Ice	2.01	1.20	0.08
RRU B14 4478	A	From Leg	0.00		0.0000	160.00	1" Ice	2.19	1.34	0.09
			3.00				No Ice	1.86	0.82	0.05
			0.00				1/2" Ice	2.03	0.94	0.06
RRU B14 4478	B	From Leg	0.00		0.0000	160.00	1" Ice	2.20	1.07	0.08
			3.00				No Ice	1.86	0.82	0.05
			0.00				1/2" Ice	2.03	0.94	0.06
RRU B14 4478	C	From Leg	0.00		0.0000	160.00	1" Ice	2.20	1.07	0.08
			3.00				No Ice	1.86	0.82	0.05
			0.00				1/2" Ice	2.03	0.94	0.06
RRUS 4426 B66	A	From Leg	0.00		0.0000	160.00	1" Ice	2.20	1.07	0.08
			3.00				No Ice	1.64	0.73	0.05
			0.00				1/2" Ice	1.80	0.84	0.06
RRUS 4426 B66	B	From Leg	0.00		0.0000	160.00	1" Ice	1.97	0.97	0.08
			3.00				No Ice	1.64	0.73	0.05
			0.00				1/2" Ice	1.80	0.84	0.06
RRUS 4426 B66	C	From Leg	0.00		0.0000	160.00	1" Ice	1.97	0.97	0.08
			3.00				No Ice	1.64	0.73	0.05
			0.00				1/2" Ice	1.80	0.84	0.06
LGP 21401	A	From Leg	0.00		0.0000	160.00	1" Ice	1.97	0.97	0.08
			3.00				No Ice	1.66	0.44	0.03
			0.00				1/2" Ice	1.82	0.54	0.04
LGP 21401	B	From Leg	0.00		0.0000	160.00	1" Ice	1.98	0.65	0.05
			3.00				No Ice	1.66	0.44	0.03
			0.00				1/2" Ice	1.82	0.54	0.04
LGP 21401	C	From Leg	0.00		0.0000	160.00	1" Ice	1.98	0.65	0.05
			3.00				No Ice	1.66	0.44	0.03
			0.00				1/2" Ice	1.82	0.54	0.04
DC6-48-06-18-8F	A	From Leg	0.00		0.0000	160.00	1" Ice	1.98	0.65	0.05
			3.00				No Ice	1.20	1.20	0.03
			0.00				1/2" Ice	1.88	1.88	0.05
DC6-48-06-18-8F	B	From Leg	0.00		0.0000	160.00	1" Ice	2.09	2.09	0.08
			3.00				No Ice	1.20	1.20	0.03
			0.00				1/2" Ice	1.88	1.88	0.05

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
DC6-48-06-18-8F	C	From Leg	0.00		0.0000	160.00	1" Ice	2.09	2.09	0.08
			3.00				No Ice	1.20	1.20	0.03
			0.00				1/2" Ice	1.88	1.88	0.05
			0.00				1" Ice	2.09	2.09	0.08
Pirod 15' T-Frame Sector Mount (1)	A	None			0.0000	160.00	No Ice	15.00	15.00	0.50
							1/2" Ice	20.60	20.60	0.65
							1" Ice	26.20	26.20	0.80
Pirod 15' T-Frame Sector Mount (1)	B	None			0.0000	160.00	No Ice	15.00	15.00	0.50
							1/2" Ice	20.60	20.60	0.65
							1" Ice	26.20	26.20	0.80
Pirod 15' T-Frame Sector Mount (1)	C	None			0.0000	160.00	No Ice	15.00	15.00	0.50
							1/2" Ice	20.60	20.60	0.65
							1" Ice	26.20	26.20	0.80
APXV18-206517S-ACU	A	From Leg	3.00		0.0000	150.00	No Ice	5.40	4.70	0.05
			0.00				1/2" Ice	5.96	5.86	0.10
			0.00				1" Ice	6.52	7.02	0.15
APXV18-206517S-ACU	B	From Leg	3.00		0.0000	150.00	No Ice	5.40	4.70	0.05
			0.00				1/2" Ice	5.96	5.86	0.10
			0.00				1" Ice	6.52	7.02	0.15
APXV18-206517S-ACU	C	From Leg	3.00		0.0000	150.00	No Ice	5.40	4.70	0.05
			0.00				1/2" Ice	5.96	5.86	0.10
			0.00				1" Ice	6.52	7.02	0.15
(2) HBXX-6517DS-A2M	A	From Leg	3.00		0.0000	140.00	No Ice	8.53	5.24	0.04
			0.00				1/2" Ice	9.00	5.71	0.09
			0.00				1" Ice	9.48	6.18	0.15
(2) HBXX-6517DS-A2M	B	From Leg	3.00		0.0000	140.00	No Ice	8.53	5.24	0.04
			0.00				1/2" Ice	9.00	5.71	0.09
			0.00				1" Ice	9.48	6.18	0.15
(2) HBXX-6517DS-A2M	C	From Leg	3.00		0.0000	140.00	No Ice	8.53	5.24	0.04
			0.00				1/2" Ice	9.00	5.71	0.09
			0.00				1" Ice	9.48	6.18	0.15
(2) LNX-6514DS-VTM	A	From Leg	3.00		0.0000	140.00	No Ice	8.65	7.08	0.06
			0.00				1/2" Ice	9.31	8.27	0.13
			0.00				1" Ice	9.97	9.46	0.20
(2) LNX-6514DS-VTM	B	From Leg	3.00		0.0000	140.00	No Ice	8.65	7.08	0.06
			0.00				1/2" Ice	9.31	8.27	0.13
			0.00				1" Ice	9.97	9.46	0.20
(2) LNX-6514DS-VTM	C	From Leg	3.00		0.0000	140.00	No Ice	8.65	7.08	0.06
			0.00				1/2" Ice	9.31	8.27	0.13
			0.00				1" Ice	9.97	9.46	0.20
(2) FD9R6004/2C-3L	A	From Leg	3.00		0.0000	140.00	No Ice	0.37	0.08	0.00
			0.00				1/2" Ice	0.45	0.14	0.01
			0.00				1" Ice	0.53	0.20	0.00
(2) FD9R6004/2C-3L	B	From Leg	3.00		0.0000	140.00	No Ice	0.37	0.08	0.00
			0.00				1/2" Ice	0.45	0.14	0.01
			0.00				1" Ice	0.53	0.20	0.00
(2) FD9R6004/2C-3L	C	From Leg	3.00		0.0000	140.00	No Ice	0.37	0.08	0.00
			0.00				1/2" Ice	0.45	0.14	0.01
			0.00				1" Ice	0.53	0.20	0.00
RRH2X60-AWS	A	From Leg	3.00		0.0000	140.00	No Ice	3.50	1.82	0.06
			0.00				1/2" Ice	3.76	2.05	0.08
			0.00				1" Ice	4.03	2.29	0.11
RRH2X60-AWS	B	From Leg	3.00		0.0000	140.00	No Ice	3.50	1.82	0.06
			0.00				1/2" Ice	3.76	2.05	0.08
			0.00				1" Ice	4.03	2.29	0.11
RRH2X60-AWS	C	From Leg	3.00		0.0000	140.00	No Ice	3.50	1.82	0.06
			0.00				1/2" Ice	3.76	2.05	0.08

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	<b>Project</b>	18963021A	<b>Date</b>	08:13:40 05/01/19
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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight	
			Horz	Lateral						
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
RRH2X60-PCS	A	From Leg	0.00		0.0000	140.00	1" Ice	4.03	2.29	0.11
			3.00				No Ice	2.20	1.72	0.06
			0.00				1/2" Ice	2.39	1.90	0.08
RRH2X60-PCS	B	From Leg	0.00		0.0000	140.00	1" Ice	2.59	2.09	0.10
			3.00				No Ice	2.20	1.72	0.06
			0.00				1/2" Ice	2.39	1.90	0.08
RRH2X60-PCS	C	From Leg	0.00		0.0000	140.00	1" Ice	2.59	2.09	0.10
			3.00				No Ice	2.20	1.72	0.06
			0.00				1/2" Ice	2.39	1.90	0.08
DB-T1-6Z-8AB-0Z	C	From Leg	0.00		0.0000	140.00	1" Ice	2.59	2.09	0.10
			3.00				No Ice	5.60	2.33	0.04
			0.00				1/2" Ice	5.60	2.33	0.08
Pirod 12' T-Frame Sector Mount (1)	A	None	0.00		0.0000	140.00	1" Ice	5.60	2.33	0.12
			3.00				No Ice	13.60	13.60	0.47
			0.00				1/2" Ice	18.40	18.40	0.60
Pirod 12' T-Frame Sector Mount (1)	B	None	0.00		0.0000	140.00	1" Ice	23.20	23.20	0.73
			3.00				No Ice	13.60	13.60	0.47
			0.00				1/2" Ice	18.40	18.40	0.60
Pirod 12' T-Frame Sector Mount (1)	C	None	0.00		0.0000	140.00	1" Ice	23.20	23.20	0.73
			3.00				No Ice	13.60	13.60	0.47
			0.00				1/2" Ice	18.40	18.40	0.60
			0.00				1" Ice	23.20	23.20	0.73

### Truss-Leg Properties

Section Designation	Area	Area Ice	Self Weight	Ice Weight	Equiv. Diameter	Equiv. Diameter Ice	Leg Area
	in <sup>2</sup>	in <sup>2</sup>	K	K	in	in	in <sup>2</sup>
Pirod 105245	1090.3344	3227.9386	0.68	0.66	7.5718	22.4162	5.3014
Pirod 105218	2263.4687	6700.6084	0.75	1.28	7.8593	23.2660	7.2158
Pirod 105218	2263.4687	6684.7191	0.75	1.26	7.8593	23.2108	7.2158
Pirod 105219	2441.8688	6739.2465	0.94	1.28	8.4787	23.4002	9.4248
Pirod 105220	2578.8005	6791.8153	1.12	1.28	8.9542	23.5827	11.9282
Pirod 105220	2578.8005	6769.8954	1.12	1.25	8.9542	23.5066	11.9282
Pirod 112743	3361.4495	8923.4288	1.54	1.77	11.6717	30.9841	14.7262
Pirod 112743	3361.4495	8898.2322	1.54	1.72	11.6717	30.8966	14.7262
Pirod 112744	3599.5585	8939.3815	1.90	1.60	12.4985	31.0395	17.8187
Pirod 112744	3599.5585	8899.2724	1.90	1.52	12.4985	30.9003	17.8187
Pirod 112745	3789.3331	8912.9018	2.19	1.45	13.1574	30.9476	21.2058
Pirod 112740	3789.3331	8797.0272	2.19	1.23	13.1574	30.5452	21.2058

### Tower Pressures - No Ice

$$G_H = 0.850$$

<b>tnxTower</b>  <b>Maser Consulting, P.A.</b> 5141 Virginia Way, Suite 420 Brentwood, TN 37027 Phone: (615) 686-2575 FAX:	<b>Job</b>	CT5633	<b>Page</b>	22 of 55
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	<b>Client</b>	AT&T	<b>Designed by</b>	BWilson

Section Elevation ft	z ft	K <sub>Z</sub>	q <sub>z</sub> psf	A <sub>G</sub> ft <sup>2</sup>	F a c e	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>
T1 280.00-270.00	275.00	1.319	27	51.458	A	0.000	7.943	2.917	36.72	0.000	0.000
					B	0.000	7.943		36.72	0.000	0.000
					C	0.000	7.943		36.72	4.960	0.000
T2 270.00-250.00	260.00	1.298	27	103.333	A	0.000	16.232	6.667	41.07	0.000	0.000
					B	0.000	16.232		41.07	0.000	0.000
					C	0.000	16.232		41.07	9.920	0.000
T3 250.00-230.00	240.00	1.269	26	104.167	A	0.000	18.850	8.333	44.21	53.040	0.000
					B	0.000	18.850		44.21	0.000	0.000
					C	0.000	18.850		44.21	13.880	0.000
T4 230.00-220.00	225.00	1.246	26	66.264	A	5.336	12.641	12.641	70.32	26.520	0.000
					B	5.336	12.641		70.32	0.000	0.000
					C	5.336	12.641		70.32	8.920	0.000
T5 220.00-200.00	210.00	1.222	25	162.945	A	10.990	26.241	26.241	70.48	53.040	0.000
					B	10.990	26.241		70.48	0.000	0.000
					C	10.990	26.241		70.48	17.840	0.000
T6 200.00-180.00	190.00	1.187	24	202.945	A	16.500	26.241	26.241	61.40	53.040	0.000
					B	16.500	26.241		61.40	53.460	0.000
					C	16.500	26.241		61.40	17.840	0.000
T7 180.00-160.00	170.00	1.15	24	243.362	A	20.846	28.309	28.309	57.59	53.040	0.000
					B	20.846	28.309		57.59	71.280	0.000
					C	20.846	28.309		57.59	65.360	0.000
T8 160.00-140.00	150.00	1.11	23	283.780	A	21.920	29.897	29.897	57.70	53.040	0.000
					B	21.920	29.897		57.70	71.280	0.000
					C	21.920	29.897		57.70	83.180	0.000
T9 140.00-120.00	130.00	1.065	22	323.780	A	20.617	29.897	29.897	59.19	104.520	0.000
					B	20.617	29.897		59.19	71.280	0.000
					C	20.617	29.897		59.19	89.120	0.000
T10 120.00-100.00	110.00	1.016	21	374.209	A	14.900	38.970	38.970	72.34	104.520	0.000
					B	14.900	38.970		72.34	71.280	0.000
					C	14.900	38.970		72.34	89.120	0.000
T11 100.00-80.00	90.00	0.959	20	414.209	A	15.567	38.970	38.970	71.46	104.520	0.000
					B	15.567	38.970		71.46	71.280	0.000
					C	15.567	38.970		71.46	89.120	0.000
T12 80.00-60.00	70.00	0.892	18	454.627	A	16.497	41.731	41.731	71.67	104.520	0.000
					B	16.497	41.731		71.67	71.280	0.000
					C	16.497	41.731		71.67	89.120	0.000
T13 60.00-40.00	50.00	0.811	17	494.627	A	17.455	41.731	41.731	70.51	104.520	0.000
					B	17.455	41.731		70.51	71.280	0.000
					C	17.455	41.731		70.51	89.120	0.000
T14 40.00-20.00	30.00	0.701	14	535.044	A	18.436	43.931	43.931	70.44	104.520	0.000
					B	18.436	43.931		70.44	71.280	0.000
					C	18.436	43.931		70.44	89.120	0.000
T15 20.00-0.00	10.00	0.7	14	575.044	A	19.440	43.931	43.931	69.32	73.164	0.000
					B	19.440	43.931		69.32	49.896	0.000
					C	19.440	43.931		69.32	62.384	0.000

### Tower Pressure - With Ice

$G_H = 0.850$

Section Elevation ft	z ft	K <sub>Z</sub>	q <sub>z</sub> psf	t <sub>z</sub> in	A <sub>G</sub> ft <sup>2</sup>	F a c e	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>
T1 280.00-270.00	275.00	1.319	7	1.8543	54.549	A	0.000	34.785	9.098	26.15	0.000	0.000
						B	0.000	34.785		26.15	0.000	0.000

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	<b>Project</b> 18963021A	<b>Date</b> 08:13:40 05/01/19
	<b>Client</b> AT&T	<b>Designed by</b> BWilson

Section Elevation ft	z ft	K <sub>Z</sub>	q <sub>z</sub> psf	t <sub>z</sub> in	A <sub>G</sub> ft <sup>2</sup>	F a c e	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
T2 270.00-250.00	260.00	1.298	7	1.8439	109.480	C	0.000	34.785	18.959	26.15	17.669	0.000
						A	0.000	68.204		27.80	0.000	0.000
						B	0.000	68.204		27.80	0.000	0.000
T3 250.00-230.00	240.00	1.269	7	1.8292	110.264	C	0.000	68.204	20.528	27.80	35.225	0.000
						A	0.000	70.068		29.30	78.102	0.000
						B	0.000	70.068		29.30	0.000	0.000
T4 230.00-220.00	225.00	1.246	7	1.8174	69.297	C	0.000	70.068	37.423	29.30	46.341	0.000
						A	5.336	43.580		76.50	38.972	0.000
						B	5.336	43.580		76.50	0.000	0.000
T5 220.00-200.00	210.00	1.222	7	1.8049	168.969	C	5.336	43.580	77.682	76.50	28.698	0.000
						A	10.990	90.277		76.71	77.775	0.000
						B	10.990	90.277		76.71	0.000	0.000
T6 200.00-180.00	190.00	1.187	6	1.7870	208.909	C	10.990	90.277	77.498	76.71	57.159	0.000
						A	16.500	96.219		68.75	77.533	0.000
						B	16.500	96.219		68.75	72.924	0.000
T7 180.00-160.00	170.00	1.15	6	1.7672	249.260	C	16.500	96.219	78.130	68.75	56.819	0.000
						A	20.846	99.655		64.84	77.266	0.000
						B	20.846	99.655		64.84	96.968	0.000
T8 160.00-140.00	150.00	1.11	6	1.7452	289.604	C	20.846	99.655	78.740	64.84	122.774	0.000
						A	21.920	99.559		64.82	76.970	0.000
						B	21.920	99.559		64.82	96.674	0.000
T9 140.00-120.00	130.00	1.065	6	1.7204	329.522	C	21.920	99.559	78.486	64.82	155.743	0.000
						A	20.617	97.789		66.29	134.863	0.000
						B	20.617	97.789		66.29	96.343	0.000
T10 120.00-100.00	110.00	1.016	6	1.6919	379.856	C	20.617	97.789	103.452	66.29	170.610	0.000
						A	14.900	117.171		78.33	134.285	0.000
						B	14.900	117.171		78.33	95.962	0.000
T11 100.00-80.00	90.00	0.959	5	1.6583	419.744	C	14.900	117.171	103.160	78.33	169.492	0.000
						A	15.567	117.209		77.70	133.604	0.000
						B	15.567	117.209		77.70	95.514	0.000
T12 80.00-60.00	70.00	0.892	5	1.6171	460.024	C	15.567	117.209	103.637	77.70	168.173	0.000
						A	16.497	118.156		76.97	132.771	0.000
						B	16.497	118.156		76.97	94.965	0.000
T13 60.00-40.00	50.00	0.811	4	1.5636	499.845	C	16.497	118.156	103.172	76.97	166.559	0.000
						A	17.455	118.026		76.15	131.688	0.000
						B	17.455	118.026		76.15	94.251	0.000
T14 40.00-20.00	30.00	0.701	4	1.4858	540.002	C	17.455	118.026	103.330	76.15	164.462	0.000
						A	18.436	118.238		75.60	130.114	0.000
						B	18.436	118.238		75.60	93.215	0.000
T15 20.00-0.00	10.00	0.7	4	1.3312	579.487	C	18.436	118.238	101.987	75.60	161.413	0.000
						A	19.440	116.071		75.26	88.897	0.000
						B	19.440	116.071		75.26	63.813	0.000
						C	19.440	116.071		75.26	108.757	0.000

### Tower Pressure - Service

$G_H = 0.850$

Section Elevation ft	z ft	K <sub>Z</sub>	q <sub>z</sub> psf	A <sub>G</sub> ft <sup>2</sup>	F a c e	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
T1 280.00-270.00	275.00	1.319	10	51.458	A	0.000	7.943	2.917	36.72	0.000	0.000
					B	0.000	7.943	36.72	0.000	0.000	
					C	0.000	7.943	36.72	4.960	0.000	



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Section Elevation ft	z ft	K <sub>Z</sub>	q <sub>z</sub> psf	A <sub>G</sub> ft <sup>2</sup>	F a c e	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>
T2 270.00-250.00	260.00	1.298	10	103.333	A	0.000	16.232	6.667	41.07	0.000	0.000
					B	0.000	16.232		41.07	0.000	0.000
					C	0.000	16.232		41.07	9.920	0.000
T3 250.00-230.00	240.00	1.269	10	104.167	A	0.000	18.850	8.333	44.21	53.040	0.000
					B	0.000	18.850		44.21	0.000	0.000
					C	0.000	18.850		44.21	13.880	0.000
T4 230.00-220.00	225.00	1.246	10	66.264	A	5.336	12.641	12.641	70.32	26.520	0.000
					B	5.336	12.641		70.32	0.000	0.000
					C	5.336	12.641		70.32	8.920	0.000
T5 220.00-200.00	210.00	1.222	10	162.945	A	10.990	26.241	26.241	70.48	53.040	0.000
					B	10.990	26.241		70.48	0.000	0.000
					C	10.990	26.241		70.48	17.840	0.000
T6 200.00-180.00	190.00	1.187	9	202.945	A	16.500	26.241	26.241	61.40	53.040	0.000
					B	16.500	26.241		61.40	53.460	0.000
					C	16.500	26.241		61.40	17.840	0.000
T7 180.00-160.00	170.00	1.15	9	243.362	A	20.846	28.309	28.309	57.59	53.040	0.000
					B	20.846	28.309		57.59	71.280	0.000
					C	20.846	28.309		57.59	65.360	0.000
T8 160.00-140.00	150.00	1.11	9	283.780	A	21.920	29.897	29.897	57.70	53.040	0.000
					B	21.920	29.897		57.70	71.280	0.000
					C	21.920	29.897		57.70	83.180	0.000
T9 140.00-120.00	130.00	1.065	8	323.780	A	20.617	29.897	29.897	59.19	104.520	0.000
					B	20.617	29.897		59.19	71.280	0.000
					C	20.617	29.897		59.19	89.120	0.000
T10 120.00-100.00	110.00	1.016	8	374.209	A	14.900	38.970	38.970	72.34	104.520	0.000
					B	14.900	38.970		72.34	71.280	0.000
					C	14.900	38.970		72.34	89.120	0.000
T11 100.00-80.00	90.00	0.959	8	414.209	A	15.567	38.970	38.970	71.46	104.520	0.000
					B	15.567	38.970		71.46	71.280	0.000
					C	15.567	38.970		71.46	89.120	0.000
T12 80.00-60.00	70.00	0.892	7	454.627	A	16.497	41.731	41.731	71.67	104.520	0.000
					B	16.497	41.731		71.67	71.280	0.000
					C	16.497	41.731		71.67	89.120	0.000
T13 60.00-40.00	50.00	0.811	6	494.627	A	17.455	41.731	41.731	70.51	104.520	0.000
					B	17.455	41.731		70.51	71.280	0.000
					C	17.455	41.731		70.51	89.120	0.000
T14 40.00-20.00	30.00	0.701	5	535.044	A	18.436	43.931	43.931	70.44	104.520	0.000
					B	18.436	43.931		70.44	71.280	0.000
					C	18.436	43.931		70.44	89.120	0.000
T15 20.00-0.00	10.00	0.7	5	575.044	A	19.440	43.931	43.931	69.32	73.164	0.000
					B	19.440	43.931		69.32	49.896	0.000
					C	19.440	43.931		69.32	62.384	0.000

### Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T1 280.00-270.00	0.02	0.73	A	0.154	2.756	27	1	1	4.512	0.35	35.38	C
			B	0.154	2.756		1	1	4.512			
			C	0.154	2.756		1	1	4.512			
T2 270.00-250.00	0.03	1.56	A	0.157	2.746	27	1	1	9.225	0.71	35.34	C
			B	0.157	2.746		1	1	9.225			
			C	0.157	2.746		1	1	9.225			
T3 250.00-230.00	0.31	2.16	A	0.181	2.661	26	1	1	10.771	1.43	71.73	A
			B	0.181	2.661		1	1	10.771			

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Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	K	K				psf			ft <sup>2</sup>	K	plf	
T4	0.17	1.45	C	0.181	2.661		1	1	10.771			
230.00-220.00			A	0.271	2.375	26	1	1	12.801	1.08	107.85	A
			B	0.271	2.375		1	1	12.801			
			C	0.271	2.375		1	1	12.801			
T5	0.33	2.84	A	0.228	2.504	25	1	1	26.212	2.22	110.86	A
220.00-200.00			B	0.228	2.504		1	1	26.212			
			C	0.228	2.504		1	1	26.212			
T6	0.55	3.49	A	0.211	2.561	24	1	1	31.626	2.83	141.70	B
200.00-180.00			B	0.211	2.561		1	1	31.626			
			C	0.211	2.561		1	1	31.626			
T7	0.82	4.41	A	0.202	2.589	24	1	1	37.119	3.56	177.92	B
180.00-160.00			B	0.202	2.589		1	1	37.119			
			C	0.202	2.589		1	1	37.119			
T8	0.90	5.11	A	0.183	2.655	23	1	1	39.011	3.71	185.52	B
160.00-140.00			B	0.183	2.655		1	1	39.011			
			C	0.183	2.655		1	1	39.011			
T9	1.13	4.98	A	0.156	2.749	22	1	1	37.603	3.96	197.90	A
140.00-120.00			B	0.156	2.749		1	1	37.603			
			C	0.156	2.749		1	1	37.603			
T10	1.13	6.98	A	0.144	2.794	21	1	1	36.994	3.77	188.65	A
120.00-100.00			B	0.144	2.794		1	1	36.994			
			C	0.144	2.794		1	1	36.994			
T11	1.13	7.10	A	0.132	2.84	20	1	1	37.621	3.62	181.05	A
100.00-80.00			B	0.132	2.84		1	1	37.621			
			C	0.132	2.84		1	1	37.621			
T12	1.13	8.32	A	0.128	2.854	18	1	1	40.104	3.49	174.41	A
80.00-60.00			B	0.128	2.854		1	1	40.104			
			C	0.128	2.854		1	1	40.104			
T13	1.13	8.45	A	0.12	2.886	17	1	1	41.039	3.22	161.24	A
60.00-40.00			B	0.12	2.886		1	1	41.039			
			C	0.12	2.886		1	1	41.039			
T14	1.13	9.46	A	0.117	2.898	14	1	1	43.257	2.87	143.57	A
40.00-20.00			B	0.117	2.898		1	1	43.257			
			C	0.117	2.898		1	1	43.257			
T15	0.79	9.60	A	0.11	2.923	14	1	1	44.248	2.51	125.74	A
20.00-0.00			B	0.11	2.923		1	1	44.248			
			C	0.11	2.923		1	1	44.248			
Sum Weight:	10.73	76.65						OTM	4805.75	39.34		

### Tower Forces - No Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	K	K				psf			ft <sup>2</sup>	K	plf	
T1	0.02	0.73	A	0.154	2.756	27	0.8	1	4.512	0.35	35.38	A
280.00-270.00			B	0.154	2.756		0.8	1	4.512			
			C	0.154	2.756		0.8	1	4.512			
T2	0.03	1.56	A	0.157	2.746	27	0.8	1	9.225	0.71	35.34	A
270.00-250.00			B	0.157	2.746		0.8	1	9.225			
			C	0.157	2.746		0.8	1	9.225			
T3	0.31	2.16	A	0.181	2.661	26	0.8	1	10.771	1.43	71.73	B
250.00-230.00			B	0.181	2.661		0.8	1	10.771			

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	<b>Client</b> AT&T	<b>Designed by</b> BWilson

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T4 230.00-220.00	0.17	1.45	C	0.181	2.661	26	0.8	1	10.771	1.02	102.35	B
			A	0.271	2.375		0.8	1	11.733			
			B	0.271	2.375		0.8	1	11.733			
T5 220.00-200.00	0.33	2.84	C	0.271	2.375	25	0.8	1	11.733	2.10	105.01	B
			A	0.228	2.504		0.8	1	24.013			
			B	0.228	2.504		0.8	1	24.013			
T6 200.00-180.00	0.55	3.49	C	0.228	2.504	24	0.8	1	24.013	2.66	132.97	C
			A	0.211	2.561		0.8	1	28.326			
			B	0.211	2.561		0.8	1	28.326			
T7 180.00-160.00	0.82	4.41	C	0.211	2.561	24	0.8	1	28.326	3.34	167.12	C
			A	0.202	2.589		0.8	1	32.950			
			B	0.202	2.589		0.8	1	32.950			
T8 160.00-140.00	0.90	5.11	C	0.202	2.589	23	0.8	1	32.950	3.49	174.28	C
			A	0.183	2.655		0.8	1	34.627			
			B	0.183	2.655		0.8	1	34.627			
T9 140.00-120.00	1.13	4.98	C	0.183	2.655	22	0.8	1	34.627	3.75	187.39	B
			A	0.156	2.749		0.8	1	33.480			
			B	0.156	2.749		0.8	1	33.480			
T10 120.00-100.00	1.13	6.98	C	0.156	2.749	21	0.8	1	33.480	3.63	181.29	B
			A	0.144	2.794		0.8	1	34.014			
			B	0.144	2.794		0.8	1	34.014			
T11 100.00-80.00	1.13	7.10	C	0.144	2.794	20	0.8	1	34.014	3.47	173.67	B
			A	0.132	2.84		0.8	1	34.508			
			B	0.132	2.84		0.8	1	34.508			
T12 80.00-60.00	1.13	8.32	C	0.132	2.84	18	0.8	1	34.508	3.34	167.09	B
			A	0.128	2.854		0.8	1	36.804			
			B	0.128	2.854		0.8	1	36.804			
T13 60.00-40.00	1.13	8.45	C	0.128	2.854	17	0.8	1	36.804	3.08	154.14	B
			A	0.12	2.886		0.8	1	37.548			
			B	0.12	2.886		0.8	1	37.548			
T14 40.00-20.00	1.13	9.46	C	0.12	2.886	14	0.8	1	37.548	2.74	137.05	B
			A	0.117	2.898		0.8	1	39.569			
			B	0.117	2.898		0.8	1	39.569			
T15 20.00-0.00	0.79	9.60	C	0.117	2.898	14	0.8	1	39.569	2.38	118.82	B
			A	0.11	2.923		0.8	1	40.360			
			B	0.11	2.923		0.8	1	40.360			
Sum Weight:	10.73	76.65						OTM	4585.77 kip-ft	37.50		

### Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T1 280.00-270.00	0.02	0.73	A	0.154	2.756	27	0.85	1	4.512	0.35	35.38	B
			B	0.154	2.756		0.85	1	4.512			
			C	0.154	2.756		0.85	1	4.512			
T2 270.00-250.00	0.03	1.56	A	0.154	2.756	27	0.85	1	4.512	0.71	35.34	B
			B	0.157	2.746		0.85	1	9.225			
			C	0.157	2.746		0.85	1	9.225			
T3 250.00-230.00	0.31	2.16	A	0.157	2.746	26	0.85	1	9.225	1.35	67.53	B
			B	0.181	2.661		0.85	1	10.771			
			C	0.181	2.661		0.85	1	10.771			

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Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	K	K				psf			ft <sup>2</sup>	K	plf	
T4 230.00-220.00	0.17	1.45	C	0.181	2.661		0.85	1	10.771			
			A	0.271	2.375	26	0.85	1	12.000	1.00	99.60	B
			B	0.271	2.375		0.85	1	12.000			
			C	0.271	2.375		0.85	1	12.000			
T5 220.00-200.00	0.33	2.84	A	0.228	2.504	25	0.85	1	24.563	2.05	102.43	B
			B	0.228	2.504		0.85	1	24.563			
			C	0.228	2.504		0.85	1	24.563			
T6 200.00-180.00	0.55	3.49	A	0.211	2.561	24	0.85	1	29.151	2.77	138.40	C
			B	0.211	2.561		0.85	1	29.151			
			C	0.211	2.561		0.85	1	29.151			
T7 180.00-160.00	0.82	4.41	A	0.202	2.589	24	0.85	1	33.992	3.35	167.37	C
			B	0.202	2.589		0.85	1	33.992			
			C	0.202	2.589		0.85	1	33.992			
T8 160.00-140.00	0.90	5.11	A	0.183	2.655	23	0.85	1	35.723	3.51	175.64	A
			B	0.183	2.655		0.85	1	35.723			
			C	0.183	2.655		0.85	1	35.723			
T9 140.00-120.00	1.13	4.98	A	0.156	2.749	22	0.85	1	34.511	3.76	187.95	C
			B	0.156	2.749		0.85	1	34.511			
			C	0.156	2.749		0.85	1	34.511			
T10 120.00-100.00	1.13	6.98	A	0.144	2.794	21	0.85	1	34.759	3.62	181.15	C
			B	0.144	2.794		0.85	1	34.759			
			C	0.144	2.794		0.85	1	34.759			
T11 100.00-80.00	1.13	7.10	A	0.132	2.84	20	0.85	1	35.286	3.47	173.65	C
			B	0.132	2.84		0.85	1	35.286			
			C	0.132	2.84		0.85	1	35.286			
T12 80.00-60.00	1.13	8.32	A	0.128	2.854	18	0.85	1	37.629	3.34	167.19	C
			B	0.128	2.854		0.85	1	37.629			
			C	0.128	2.854		0.85	1	37.629			
T13 60.00-40.00	1.13	8.45	A	0.12	2.886	17	0.85	1	38.421	3.09	154.34	C
			B	0.12	2.886		0.85	1	38.421			
			C	0.12	2.886		0.85	1	38.421			
T14 40.00-20.00	1.13	9.46	A	0.117	2.898	14	0.85	1	40.491	2.75	137.32	C
			B	0.117	2.898		0.85	1	40.491			
			C	0.117	2.898		0.85	1	40.491			
T15 20.00-0.00	0.79	9.60	A	0.11	2.923	14	0.85	1	41.332	2.39	119.60	C
			B	0.11	2.923		0.85	1	41.332			
			C	0.11	2.923		0.85	1	41.332			
Sum Weight:	10.73	76.65						OTM	4575.89 kip-ft	37.51		

### Tower Forces - With Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	K	K				psf			ft <sup>2</sup>	K	plf	
T1 280.00-270.00	0.22	2.27	A	0.638	1.785	7	1	1	26.722	0.33	32.54	C
			B	0.638	1.785		1	1	26.722			
			C	0.638	1.785		1	1	26.722			
T2 270.00-250.00	0.44	4.55	A	0.623	1.792	7	1	1	51.734	0.63	31.33	C
			B	0.623	1.792		1	1	51.734			
			C	0.623	1.792		1	1	51.734			
T3 250.00-230.00	2.15	5.26	A	0.635	1.786	7	1	1	53.723	0.79	39.54	A
			B	0.635	1.786		1	1	53.723			

<b>tnxTower</b>  <b>Maser Consulting, P.A.</b> 5141 Virginia Way, Suite 420 Brentwood, TN 37027 Phone: (615) 686-2575 FAX:	<b>Job</b> CT5633	<b>Page</b> 28 of 55
	<b>Project</b> 18963021A	<b>Date</b> 08:13:40 05/01/19
	<b>Client</b> AT&T	<b>Designed by</b> BWilson

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T4 230.00-220.00	1.16	3.37	C	0.635	1.786	7	1	1	53.723	0.52	51.77	A
			A	0.706	1.776				40.866			
			B	0.706	1.776				40.866			
T5 220.00-200.00	2.31	8.64	C	0.706	1.776	7	1	1	40.866	1.06	53.05	A
			A	0.599	1.804				78.097			
			B	0.599	1.804				78.097			
T6 200.00-180.00	3.73	10.08	C	0.599	1.804	6	1	1	78.097	1.26	62.85	A
			A	0.54	1.854				84.539			
			B	0.54	1.854				84.539			
T7 180.00-160.00	5.45	11.59	C	0.54	1.854	6	1	1	84.539	1.49	74.60	B
			A	0.483	1.922				88.231			
			B	0.483	1.922				88.231			
T8 160.00-140.00	5.93	12.28	C	0.483	1.922	6	1	1	88.231	1.59	79.63	C
			A	0.419	2.027				86.124			
			B	0.419	2.027				86.124			
T9 140.00-120.00	7.37	11.79	C	0.419	2.027	6	1	1	86.124	1.70	85.18	A
			A	0.359	2.15				81.206			
			B	0.359	2.15				81.206			
T10 120.00-100.00	7.28	15.25	C	0.359	2.15	6	1	1	81.206	1.69	84.45	A
			A	0.348	2.177				86.983			
			B	0.348	2.177				86.983			
T11 100.00-80.00	7.17	15.28	C	0.348	2.177	5	1	1	86.983	1.61	80.66	A
			A	0.316	2.253				86.381			
			B	0.316	2.253				86.381			
T12 80.00-60.00	7.05	16.21	C	0.316	2.253	5	1	1	86.381	1.52	76.19	A
			A	0.293	2.316				87.000			
			B	0.293	2.316				87.000			
T13 60.00-40.00	6.88	16.14	C	0.293	2.316	4	1	1	87.000	1.40	69.91	A
			A	0.271	2.376				87.143			
			B	0.271	2.376				87.143			
T14 40.00-20.00	6.65	16.90	C	0.271	2.376	4	1	1	87.143	1.22	60.94	A
			A	0.253	2.428				87.696			
			B	0.253	2.428				87.696			
T15 20.00-0.00	4.34	16.16	C	0.253	2.428	4	1	1	87.696	1.06	52.87	A
			A	0.234	2.487				86.903			
			B	0.234	2.487				86.903			
Sum Weight:	68.13	165.76						OTM	2289.03 kip-ft	17.87		

### Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T1 280.00-270.00	0.22	2.27	A	0.638	1.785	7	0.8	1	26.722	0.33	32.54	A
			B	0.638	1.785				26.722			
			C	0.638	1.785				26.722			
T2 270.00-250.00	0.44	4.55	A	0.623	1.792	7	0.8	1	51.734	0.63	31.33	A
			B	0.623	1.792				51.734			
			C	0.623	1.792				51.734			
T3 250.00-230.00	2.15	5.26	A	0.635	1.786	7	0.8	1	53.723	0.79	39.54	B
			B	0.635	1.786				53.723			

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	<b>Client</b>	AT&T	<b>Designed by</b>	BWilson

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	K	K				psf			ft <sup>2</sup>	K	plf	
T4 230.00-220.00	1.16	3.37	C	0.635	1.786		0.8	1	53.723			
			A	0.706	1.776	7	0.8	1	39.799	0.51	50.68	B
			B	0.706	1.776		0.8	1	39.799			
			C	0.706	1.776		0.8	1	39.799			
T5 220.00-200.00	2.31	8.64	A	0.599	1.804	7	0.8	1	75.899	1.04	51.93	B
			B	0.599	1.804		0.8	1	75.899			
			C	0.599	1.804		0.8	1	75.899			
T6 200.00-180.00	3.73	10.08	A	0.54	1.854	6	0.8	1	81.239	1.22	61.17	B
			B	0.54	1.854		0.8	1	81.239			
			C	0.54	1.854		0.8	1	81.239			
T7 180.00-160.00	5.45	11.59	A	0.483	1.922	6	0.8	1	84.062	1.45	72.47	C
			B	0.483	1.922		0.8	1	84.062			
			C	0.483	1.922		0.8	1	84.062			
T8 160.00-140.00	5.93	12.28	A	0.419	2.027	6	0.8	1	81.740	1.55	77.35	C
			B	0.419	2.027		0.8	1	81.740			
			C	0.419	2.027		0.8	1	81.740			
T9 140.00-120.00	7.37	11.79	A	0.359	2.15	6	0.8	1	77.083	1.66	83.00	B
			B	0.359	2.15		0.8	1	77.083			
			C	0.359	2.15		0.8	1	77.083			
T10 120.00-100.00	7.28	15.25	A	0.348	2.177	6	0.8	1	84.003	1.66	82.92	B
			B	0.348	2.177		0.8	1	84.003			
			C	0.348	2.177		0.8	1	84.003			
T11 100.00-80.00	7.17	15.28	A	0.316	2.253	5	0.8	1	83.268	1.58	79.11	B
			B	0.316	2.253		0.8	1	83.268			
			C	0.316	2.253		0.8	1	83.268			
T12 80.00-60.00	7.05	16.21	A	0.293	2.316	5	0.8	1	83.700	1.49	74.61	B
			B	0.293	2.316		0.8	1	83.700			
			C	0.293	2.316		0.8	1	83.700			
T13 60.00-40.00	6.88	16.14	A	0.271	2.376	4	0.8	1	83.653	1.37	68.35	B
			B	0.271	2.376		0.8	1	83.653			
			C	0.271	2.376		0.8	1	83.653			
T14 40.00-20.00	6.65	16.90	A	0.253	2.428	4	0.8	1	84.009	1.19	59.49	B
			B	0.253	2.428		0.8	1	84.009			
			C	0.253	2.428		0.8	1	84.009			
T15 20.00-0.00	4.34	16.16	A	0.234	2.487	4	0.8	1	83.015	1.03	51.31	B
			B	0.234	2.487		0.8	1	83.015			
			C	0.234	2.487		0.8	1	83.015			
Sum Weight:	68.13	165.76						OTM	2244.63 kip-ft	17.48		

### Tower Forces - With Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	K	K				psf			ft <sup>2</sup>	K	plf	
T1 280.00-270.00	0.22	2.27	A	0.638	1.785	7	0.85	1	26.722	0.32	32.34	B
			B	0.638	1.785		0.85	1	26.722			
			C	0.638	1.785		0.85	1	26.722			
T2 270.00-250.00	0.44	4.55	A	0.623	1.792	7	0.85	1	51.734	0.62	31.12	B
			B	0.623	1.792		0.85	1	51.734			
			C	0.623	1.792		0.85	1	51.734			
T3 250.00-230.00	2.15	5.26	A	0.635	1.786	7	0.85	1	53.723	0.78	38.99	B
			B	0.635	1.786		0.85	1	53.723			

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	<b>Project</b>	18963021A	<b>Date</b>	08:13:40 05/01/19
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Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	K	K				psf			ft <sup>2</sup>	K	plf	
T4 230.00-220.00	1.16	3.37	C	0.635	1.786		0.85	1	53.723			
			A	0.706	1.776	7	0.85	1	40.066	0.51	50.51	B
			B	0.706	1.776		0.85	1	40.066			
			C	0.706	1.776		0.85	1	40.066			
T5 220.00-200.00	2.31	8.64	A	0.599	1.804	7	0.85	1	76.448	1.03	51.62	B
			B	0.599	1.804		0.85	1	76.448			
			C	0.599	1.804		0.85	1	76.448			
T6 200.00-180.00	3.73	10.08	A	0.54	1.854	6	0.85	1	82.064	1.25	62.35	C
			B	0.54	1.854		0.85	1	82.064			
			C	0.54	1.854		0.85	1	82.064			
T7 180.00-160.00	5.45	11.59	A	0.483	1.922	6	0.85	1	85.105	1.46	72.77	C
			B	0.483	1.922		0.85	1	85.105			
			C	0.483	1.922		0.85	1	85.105			
T8 160.00-140.00	5.93	12.28	A	0.419	2.027	6	0.85	1	82.836	1.57	78.25	A
			B	0.419	2.027		0.85	1	82.836			
			C	0.419	2.027		0.85	1	82.836			
T9 140.00-120.00	7.37	11.79	A	0.359	2.15	6	0.85	1	78.114	1.67	83.60	B
			B	0.359	2.15		0.85	1	78.114			
			C	0.359	2.15		0.85	1	78.114			
T10 120.00-100.00	7.28	15.25	A	0.348	2.177	6	0.85	1	84.748	1.67	83.36	B
			B	0.348	2.177		0.85	1	84.748			
			C	0.348	2.177		0.85	1	84.748			
T11 100.00-80.00	7.17	15.28	A	0.316	2.253	5	0.85	1	84.046	1.59	79.55	B
			B	0.316	2.253		0.85	1	84.046			
			C	0.316	2.253		0.85	1	84.046			
T12 80.00-60.00	7.05	16.21	A	0.293	2.316	5	0.85	1	84.525	1.50	75.05	B
			B	0.293	2.316		0.85	1	84.525			
			C	0.293	2.316		0.85	1	84.525			
T13 60.00-40.00	6.88	16.14	A	0.271	2.376	4	0.85	1	84.525	1.38	68.78	B
			B	0.271	2.376		0.85	1	84.525			
			C	0.271	2.376		0.85	1	84.525			
T14 40.00-20.00	6.65	16.90	A	0.253	2.428	4	0.85	1	84.930	1.20	59.89	B
			B	0.253	2.428		0.85	1	84.930			
			C	0.253	2.428		0.85	1	84.930			
T15 20.00-0.00	4.34	16.16	A	0.234	2.487	4	0.85	1	83.987	1.03	51.73	B
			B	0.234	2.487		0.85	1	83.987			
			C	0.234	2.487		0.85	1	83.987			
Sum Weight:	68.13	165.76						OTM	2251.48 kip-ft	17.57		

### Tower Forces - Service - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	K	K				psf			ft <sup>2</sup>	K	plf	
T1 280.00-270.00	0.02	0.73	A	0.154	2.756	10	1	1	4.512	0.14	13.54	C
			B	0.154	2.756		1	1	4.512			
			C	0.154	2.756		1	1	4.512			
T2 270.00-250.00	0.03	1.56	A	0.157	2.746	10	1	1	9.225	0.27	13.52	C
			B	0.157	2.746		1	1	9.225			
			C	0.157	2.746		1	1	9.225			
T3 250.00-230.00	0.31	2.16	A	0.181	2.661	10	1	1	10.771	0.55	27.44	A
			B	0.181	2.661		1	1	10.771			

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	<b>Project</b>	18963021A	<b>Date</b>	08:13:40 05/01/19
	<b>Client</b>	AT&T	<b>Designed by</b>	BWilson

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	K	K				psf			ft <sup>2</sup>	K	plf	
T4	0.17	1.45	C	0.181	2.661		1	1	10.771			
230.00-220.00			A	0.271	2.375	10	1	1	12.801	0.41	41.26	A
			B	0.271	2.375		1	1	12.801			
			C	0.271	2.375		1	1	12.801			
T5	0.33	2.84	A	0.228	2.504	10	1	1	26.212	0.85	42.42	A
220.00-200.00			B	0.228	2.504		1	1	26.212			
			C	0.228	2.504		1	1	26.212			
T6	0.55	3.49	A	0.211	2.561	9	1	1	31.626	1.08	54.22	B
200.00-180.00			B	0.211	2.561		1	1	31.626			
			C	0.211	2.561		1	1	31.626			
T7	0.82	4.41	A	0.202	2.589	9	1	1	37.119	1.36	68.07	B
180.00-160.00			B	0.202	2.589		1	1	37.119			
			C	0.202	2.589		1	1	37.119			
T8	0.90	5.11	A	0.183	2.655	9	1	1	39.011	1.42	70.98	B
160.00-140.00			B	0.183	2.655		1	1	39.011			
			C	0.183	2.655		1	1	39.011			
T9	1.13	4.98	A	0.156	2.749	8	1	1	37.603	1.51	75.72	A
140.00-120.00			B	0.156	2.749		1	1	37.603			
			C	0.156	2.749		1	1	37.603			
T10	1.13	6.98	A	0.144	2.794	8	1	1	36.994	1.44	72.18	A
120.00-100.00			B	0.144	2.794		1	1	36.994			
			C	0.144	2.794		1	1	36.994			
T11	1.13	7.10	A	0.132	2.84	8	1	1	37.621	1.39	69.27	A
100.00-80.00			B	0.132	2.84		1	1	37.621			
			C	0.132	2.84		1	1	37.621			
T12	1.13	8.32	A	0.128	2.854	7	1	1	40.104	1.33	66.73	A
80.00-60.00			B	0.128	2.854		1	1	40.104			
			C	0.128	2.854		1	1	40.104			
T13	1.13	8.45	A	0.12	2.886	6	1	1	41.039	1.23	61.69	A
60.00-40.00			B	0.12	2.886		1	1	41.039			
			C	0.12	2.886		1	1	41.039			
T14	1.13	9.46	A	0.117	2.898	5	1	1	43.257	1.10	54.93	A
40.00-20.00			B	0.117	2.898		1	1	43.257			
			C	0.117	2.898		1	1	43.257			
T15	0.79	9.60	A	0.11	2.923	5	1	1	44.248	0.96	48.11	A
20.00-0.00			B	0.11	2.923		1	1	44.248			
			C	0.11	2.923		1	1	44.248			
Sum Weight:	10.73	76.65						OTM	1838.74 kip-ft	15.05		

### Tower Forces - Service - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	K	K				psf			ft <sup>2</sup>	K	plf	
T1	0.02	0.73	A	0.154	2.756	10	0.8	1	4.512	0.14	13.54	A
280.00-270.00			B	0.154	2.756		0.8	1	4.512			
			C	0.154	2.756		0.8	1	4.512			
T2	0.03	1.56	A	0.157	2.746	10	0.8	1	9.225	0.27	13.52	A
270.00-250.00			B	0.157	2.746		0.8	1	9.225			
			C	0.157	2.746		0.8	1	9.225			
T3	0.31	2.16	A	0.181	2.661	10	0.8	1	10.771	0.55	27.44	B
250.00-230.00			B	0.181	2.661		0.8	1	10.771			



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Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T4 230.00-220.00	0.17	1.45	C	0.181	2.661	10	0.8	1	10.771	0.39	39.16	B
			A	0.271	2.375		0.8	1	11.733			
			B	0.271	2.375		0.8	1	11.733			
T5 220.00-200.00	0.33	2.84	C	0.271	2.375	10	0.8	1	11.733	0.80	40.18	B
			A	0.228	2.504		0.8	1	24.013			
			B	0.228	2.504		0.8	1	24.013			
T6 200.00-180.00	0.55	3.49	C	0.228	2.504	9	0.8	1	24.013	1.02	50.88	C
			A	0.211	2.561		0.8	1	28.326			
			B	0.211	2.561		0.8	1	28.326			
T7 180.00-160.00	0.82	4.41	C	0.211	2.561	9	0.8	1	28.326	1.28	63.94	C
			A	0.202	2.589		0.8	1	32.950			
			B	0.202	2.589		0.8	1	32.950			
T8 160.00-140.00	0.90	5.11	C	0.202	2.589	9	0.8	1	32.950	1.33	66.68	C
			A	0.183	2.655		0.8	1	34.627			
			B	0.183	2.655		0.8	1	34.627			
T9 140.00-120.00	1.13	4.98	C	0.183	2.655	8	0.8	1	34.627	1.43	71.70	B
			A	0.156	2.749		0.8	1	33.480			
			B	0.156	2.749		0.8	1	33.480			
T10 120.00-100.00	1.13	6.98	C	0.156	2.749	8	0.8	1	33.480	1.39	69.36	B
			A	0.144	2.794		0.8	1	34.014			
			B	0.144	2.794		0.8	1	34.014			
T11 100.00-80.00	1.13	7.10	C	0.144	2.794	8	0.8	1	34.014	1.33	66.45	B
			A	0.132	2.84		0.8	1	34.508			
			B	0.132	2.84		0.8	1	34.508			
T12 80.00-60.00	1.13	8.32	C	0.132	2.84	7	0.8	1	34.508	1.28	63.93	B
			A	0.128	2.854		0.8	1	36.804			
			B	0.128	2.854		0.8	1	36.804			
T13 60.00-40.00	1.13	8.45	C	0.128	2.854	6	0.8	1	36.804	1.18	58.97	B
			A	0.12	2.886		0.8	1	37.548			
			B	0.12	2.886		0.8	1	37.548			
T14 40.00-20.00	1.13	9.46	C	0.12	2.886	5	0.8	1	37.548	1.05	52.44	B
			A	0.117	2.898		0.8	1	39.569			
			B	0.117	2.898		0.8	1	39.569			
T15 20.00-0.00	0.79	9.60	C	0.117	2.898	5	0.8	1	39.569	0.91	45.46	B
			A	0.11	2.923		0.8	1	40.360			
			B	0.11	2.923		0.8	1	40.360			
Sum Weight:	10.73	76.65						OTM	1754.57 kip-ft	14.35		

### Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T1 280.00-270.00	0.02	0.73	A	0.154	2.756	10	0.85	1	4.512	0.14	13.54	B
			B	0.154	2.756		0.85	1	4.512			
			C	0.154	2.756		0.85	1	4.512			
T2 270.00-250.00	0.03	1.56	A	0.154	2.756	10	0.85	1	4.512	0.27	13.52	B
			B	0.157	2.746		0.85	1	9.225			
			C	0.157	2.746		0.85	1	9.225			
T3 250.00-230.00	0.31	2.16	A	0.157	2.746	10	0.85	1	9.225	0.52	25.84	B
			B	0.181	2.661		0.85	1	10.771			
			C	0.181	2.661		0.85	1	10.771			

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Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T4 230.00-220.00	0.17	1.45	C	0.181	2.661	10	0.85	1	10.771	0.38	38.11	B
			A	0.271	2.375		0.85	1	12.000			
			B	0.271	2.375		0.85	1	12.000			
			C	0.271	2.375		0.85	1	12.000			
T5 220.00-200.00	0.33	2.84	A	0.228	2.504	10	0.85	1	24.563	0.78	39.19	B
			B	0.228	2.504		0.85	1	24.563			
			C	0.228	2.504		0.85	1	24.563			
T6 200.00-180.00	0.55	3.49	A	0.211	2.561	9	0.85	1	29.151	1.06	52.96	C
			B	0.211	2.561		0.85	1	29.151			
			C	0.211	2.561		0.85	1	29.151			
T7 180.00-160.00	0.82	4.41	A	0.202	2.589	9	0.85	1	33.992	1.28	64.04	C
			B	0.202	2.589		0.85	1	33.992			
			C	0.202	2.589		0.85	1	33.992			
T8 160.00-140.00	0.90	5.11	A	0.183	2.655	9	0.85	1	35.723	1.34	67.20	A
			B	0.183	2.655		0.85	1	35.723			
			C	0.183	2.655		0.85	1	35.723			
T9 140.00-120.00	1.13	4.98	A	0.156	2.749	8	0.85	1	34.511	1.44	71.91	C
			B	0.156	2.749		0.85	1	34.511			
			C	0.156	2.749		0.85	1	34.511			
T10 120.00-100.00	1.13	6.98	A	0.144	2.794	8	0.85	1	34.759	1.39	69.31	C
			B	0.144	2.794		0.85	1	34.759			
			C	0.144	2.794		0.85	1	34.759			
T11 100.00-80.00	1.13	7.10	A	0.132	2.84	8	0.85	1	35.286	1.33	66.44	C
			B	0.132	2.84		0.85	1	35.286			
			C	0.132	2.84		0.85	1	35.286			
T12 80.00-60.00	1.13	8.32	A	0.128	2.854	7	0.85	1	37.629	1.28	63.97	C
			B	0.128	2.854		0.85	1	37.629			
			C	0.128	2.854		0.85	1	37.629			
T13 60.00-40.00	1.13	8.45	A	0.12	2.886	6	0.85	1	38.421	1.18	59.05	C
			B	0.12	2.886		0.85	1	38.421			
			C	0.12	2.886		0.85	1	38.421			
T14 40.00-20.00	1.13	9.46	A	0.117	2.898	5	0.85	1	40.491	1.05	52.54	C
			B	0.117	2.898		0.85	1	40.491			
			C	0.117	2.898		0.85	1	40.491			
T15 20.00-0.00	0.79	9.60	A	0.11	2.923	5	0.85	1	41.332	0.92	45.76	C
			B	0.11	2.923		0.85	1	41.332			
			C	0.11	2.923		0.85	1	41.332			
Sum Weight:	10.73	76.65						OTM	1750.79 kip-ft	14.35		

### Force Totals

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M <sub>x</sub> kip-ft	Sum of Overturning Moments, M <sub>z</sub> kip-ft	Sum of Torques kip-ft
Leg Weight	50.99					
Bracing Weight	25.66					
Total Member Self-Weight	76.65					
Total Weight	109.64			-12.60	4.69	
Wind 0 deg - No Ice		0.03	-51.74	-7345.06	0.94	-33.17
Wind 30 deg - No Ice		25.20	-43.60	-6203.72	-3574.09	3.28
Wind 60 deg - No Ice		44.04	-25.42	-3630.50	-6261.70	15.04
Wind 90 deg - No Ice		51.79	-0.03	-16.35	-7377.54	-19.83

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Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, $M_x$ kip-ft	Sum of Overturning Moments, $M_z$ kip-ft	Sum of Torques kip-ft
Wind 120 deg - No Ice		46.35	26.73	3785.12	-6580.66	-22.54
Wind 150 deg - No Ice		25.68	44.48	6330.57	-3657.54	20.87
Wind 180 deg - No Ice		-0.03	49.89	7099.88	8.44	33.17
Wind 210 deg - No Ice		-25.20	43.60	6178.52	3583.46	-3.28
Wind 240 deg - No Ice		-45.64	26.35	3715.29	6461.58	-15.04
Wind 270 deg - No Ice		-51.79	0.03	-8.85	7386.92	19.83
Wind 300 deg - No Ice		-44.75	-25.80	-3700.33	6399.53	22.54
Wind 330 deg - No Ice		-25.68	-44.48	-6355.77	3666.92	-20.87
Member Ice	89.11					
Total Weight Ice	293.54			-34.86	59.82	
Wind 0 deg - Ice		0.01	-25.11	-3808.04	58.82	-17.37
Wind 30 deg - Ice		12.37	-21.41	-3261.27	-1804.11	-4.77
Wind 60 deg - Ice		21.37	-12.34	-1897.37	-3166.15	2.00
Wind 90 deg - Ice		24.93	-0.01	-35.86	-3700.08	-3.97
Wind 120 deg - Ice		21.93	12.65	1867.76	-3237.61	-1.77
Wind 150 deg - Ice		12.49	21.64	3224.56	-1822.01	13.12
Wind 180 deg - Ice		-0.01	24.73	3693.92	60.81	17.37
Wind 210 deg - Ice		-12.37	21.41	3191.55	1923.74	4.77
Wind 240 deg - Ice		-21.70	12.53	1849.85	3324.23	-2.00
Wind 270 deg - Ice		-24.93	0.01	-33.86	3819.71	3.97
Wind 300 deg - Ice		-21.60	-12.46	-1915.28	3318.79	1.77
Wind 330 deg - Ice		-12.49	-21.64	-3294.28	1941.64	-13.12
Total Weight	109.64			-12.60	4.69	
Wind 0 deg - Service		0.01	-19.79	-2805.71	-1.11	-12.69
Wind 30 deg - Service		9.64	-16.68	-2369.02	-1368.96	1.25
Wind 60 deg - Service		16.85	-9.73	-1384.48	-2397.27	5.76
Wind 90 deg - Service		19.82	-0.01	-1.66	-2824.21	-7.59
Wind 120 deg - Service		17.73	10.23	1452.83	-2519.31	-8.62
Wind 150 deg - Service		9.83	17.02	2426.75	-1400.89	7.99
Wind 180 deg - Service		-0.01	19.09	2721.10	1.76	12.69
Wind 210 deg - Service		-9.64	16.68	2368.57	1369.61	-1.25
Wind 240 deg - Service		-17.46	10.08	1426.11	2470.81	-5.76
Wind 270 deg - Service		-19.82	0.01	1.21	2824.86	7.59
Wind 300 deg - Service		-17.12	-9.87	-1411.19	2447.07	8.62
Wind 330 deg - Service		-9.83	-17.02	-2427.20	1401.54	-7.99

## Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice

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<i>Comb. No.</i>	<i>Description</i>
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

### Maximum Member Forces

<i>Section No.</i>	<i>Elevation ft</i>	<i>Component Type</i>	<i>Condition</i>	<i>Gov. Load Comb.</i>	<i>Axial K</i>	<i>Major Axis Moment kip-ft</i>	<i>Minor Axis Moment kip-ft</i>	
T1	280 - 270	Leg	Max Tension	7	5.57	0.35	-0.24	
			Max. Compression	2	-8.36	0.00	0.15	
			Max. Mx	8	-1.34	-0.43	-0.00	
			Max. My	2	-8.36	-0.00	-0.43	
			Max. Vy	8	1.02	-0.14	-0.00	
		Diagonal	Max. Vx	2	-1.07	0.00	0.15	
			Max Tension	25	1.37	0.00	0.00	
			Max. Compression	24	-1.42	0.00	0.00	
			Max. Mx	38	0.63	-0.01	0.00	
			Max. My	22	-0.26	-0.00	0.00	
		Horizontal	Max. Vy	38	0.01	-0.01	0.00	
			Max. Vx	22	-0.00	-0.00	0.00	
			Max Tension	6	0.24	0.00	0.00	
			Max. Compression	11	-0.15	0.00	0.00	
			Max. Mx	26	0.13	0.03	0.00	
			Max. My	8	0.04	0.00	-0.00	
			Max. Vy	26	0.02	0.00	0.00	
			Max. Vx	8	0.00	0.00	0.00	
			Top Girt	Max Tension	18	0.52	0.00	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft	
T2	270 - 250	Bottom Girt	Max. Compression	23	-0.49	0.00	0.00	
			Max. Mx	26	0.03	0.03	0.00	
			Max. My	8	0.03	0.00	-0.00	
			Max. Vy	26	-0.02	0.00	0.00	
			Max. Vx	8	0.00	0.00	0.00	
			Max Tension	14	0.61	0.00	0.00	
			Max. Compression	3	-0.56	0.00	0.00	
			Max. Mx	26	0.10	0.03	0.00	
			Max. My	8	0.05	0.00	-0.00	
			Max. Vy	26	-0.02	0.00	0.00	
			Max. Vx	8	0.00	0.00	0.00	
			Max Tension	29	0.13	0.00	0.00	
		Mid Girt	Max. Compression	3	-0.01	0.00	0.00	
			Max. Mx	26	0.11	0.03	0.00	
			Max. My	8	0.05	0.00	-0.00	
			Max. Vy	26	-0.02	0.00	0.00	
			Max. Vx	8	0.00	0.00	0.00	
			Max Tension	15	21.31	-0.02	0.61	
			Leg	Max. Compression	2	-25.27	-0.01	0.22
				Max. Mx	8	-1.64	-0.61	-0.00
				Max. My	2	-8.37	0.00	0.64
				Max. Vy	9	1.39	-0.18	-0.05
				Max. Vx	3	-1.56	-0.01	0.22
				Max Tension	5	1.90	0.00	0.00
		Diagonal		Max. Compression	16	-1.94	0.00	0.00
				Max. Mx	34	0.85	-0.01	0.00
				Max. My	22	-0.30	-0.00	0.00
				Max. Vy	36	0.01	-0.01	-0.00
				Max. Vx	22	-0.00	-0.00	0.00
				Max Tension	6	0.37	0.00	0.00
			Horizontal	Max. Compression	3	-0.29	0.00	0.00
				Max. Mx	26	0.16	0.03	0.00
				Max. My	8	0.05	0.00	-0.00
				Max. Vy	26	-0.02	0.00	0.00
				Max. Vx	8	0.00	0.00	0.00
				Max Tension	2	0.55	0.00	0.00
		Top Girt		Max. Compression	15	-0.50	0.00	0.00
				Max. Mx	26	0.04	0.03	0.00
				Max. My	8	0.01	0.00	-0.00
				Max. Vy	26	-0.02	0.00	0.00
				Max. Vx	8	0.00	0.00	0.00
				Max Tension	14	0.82	0.00	0.00
Bottom Girt	Max. Compression		3	-0.77	0.00	0.00		
	Max. Mx		26	0.12	0.03	0.00		
	Max. My		20	0.08	0.00	-0.00		
	Max. Vy		26	-0.02	0.00	0.00		
	Max. Vx		20	0.00	0.00	0.00		
	Max Tension		6	0.24	0.00	0.00		
	Mid Girt	Max. Compression	3	-0.15	0.00	0.00		
		Max. Mx	26	0.14	0.03	0.00		
		Max. My	20	0.05	0.00	-0.00		
		Max. Vy	26	-0.02	0.00	0.00		
		Max. Vx	20	0.00	0.00	0.00		
		Max Tension	23	59.26	-0.25	-0.16		
Leg		Max. Compression	10	-68.53	-1.94	-1.32		
		Max. Mx	20	-59.23	1.95	-0.57		
		Max. My	3	-66.81	-0.04	2.25		
		Max. Vy	9	4.05	-1.95	-0.57		
		Max. Vx	14	4.61	0.04	-2.21		
		Max Tension	13	4.47	0.00	0.00		
	Diagonal	Max. Compression	12	-4.62	0.00	0.00		

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T4	230 - 220	Horizontal	Max. Mx	27	1.31	-0.01	-0.00
			Max. My	20	-2.87	-0.00	0.00
			Max. Vy	27	0.02	-0.01	-0.00
			Max. Vx	20	0.00	-0.00	0.00
			Max Tension	14	0.69	0.00	0.00
			Max. Compression	3	-0.57	0.00	0.00
			Max. Mx	26	0.26	0.03	0.00
			Max. My	20	0.07	0.00	-0.00
			Max. Vy	26	-0.02	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
			Max Tension	2	1.22	0.00	0.00
			Max. Compression	15	-1.14	0.00	0.00
		Top Girt	Max. Mx	26	0.09	0.04	0.00
			Max. My	20	-0.01	0.00	-0.00
			Max. Vy	26	-0.03	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
			Max Tension	22	1.55	0.00	0.00
			Max. Compression	11	-1.34	0.00	0.00
		Bottom Girt	Max. Mx	26	0.32	0.04	0.00
			Max. My	20	0.08	0.00	-0.00
			Max. Vy	26	-0.03	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
			Max Tension	23	62.47	-2.30	-0.17
			Max. Compression	10	-70.98	2.36	-0.13
		Leg	Max. Mx	22	60.95	-3.00	0.07
			Max. My	24	-5.02	-0.32	5.93
			Max. Vy	14	0.21	-2.97	0.01
Max. Vx	20		0.59	-0.30	-5.69		
Max Tension	23		5.67	0.13	-0.03		
Max. Compression	10		-6.59	0.00	0.00		
Max. Mx	22		4.06	0.14	0.01		
Max. My	10		-6.55	-0.12	0.04		
Max. Vy	37		0.04	0.08	-0.00		
Max. Vx	22		0.01	0.00	0.00		
Diagonal	Max Tension		23	87.93	-3.72	-0.05	
	Max. Compression		10	-99.79	4.77	0.20	
	Max. Mx	10	-99.79	4.77	0.20		
	Max. My	24	-6.35	-0.32	5.93		
	Max. Vy	10	-0.26	3.78	0.03		
	Max. Vx	20	-0.36	-0.30	-5.69		
	Max Tension	10	5.29	0.00	0.00		
	Max. Compression	10	-5.42	0.00	0.00		
	Max. Mx	27	2.16	0.09	-0.01		
	Max. My	21	-3.39	-0.04	-0.02		
	Max. Vy	38	0.05	0.08	0.01		
	Max. Vx	36	0.00	0.00	0.00		
Leg	Max Tension	23	112.46	-3.18	-0.03		
	Max. Compression	10	-128.68	4.01	0.03		
	Max. Mx	10	-110.34	4.77	0.20		
	Max. My	24	-7.39	-0.14	4.38		
	Max. Vy	22	-0.98	-4.49	-0.20		
	Max. Vx	4	-0.97	-0.14	-4.23		
	Max Tension	23	8.04	0.00	0.00		
	Max. Compression	10	-9.52	0.00	0.00		
	Max. Mx	27	-0.91	0.12	0.02		
	Max. My	37	-3.83	0.08	-0.02		
	Max. Vy	37	0.07	0.11	0.02		
	Max. Vx	36	0.00	0.00	0.00		
Top Girt	Max Tension	22	3.97	0.00	0.00		
	Max. Compression	11	-3.10	0.00	0.00		
	Max. Mx	26	1.33	-0.14	0.00		

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft		
T7	180 - 160	Mid Girt	Max. My	33	0.62	0.00	0.00		
			Max. Vy	26	0.07	0.00	0.00		
			Max. Vx	33	-0.00	0.00	0.00		
			Max Tension	22	5.79	0.00	0.00		
			Max. Compression	11	-4.40	0.00	0.00		
			Max. Mx	26	2.10	-0.18	0.00		
		Leg	Max. My	33	1.10	0.00	0.01		
			Max. Vy	26	-0.08	0.00	0.00		
			Max. Vx	33	-0.00	0.00	0.00		
			Max Tension	23	145.77	-3.50	-0.01		
			Max. Compression	10	-169.52	5.06	0.05		
			Max. Mx	10	-169.52	5.06	0.05		
		Diagonal	Max. My	24	-10.66	-0.13	4.31		
			Max. Vy	22	-0.87	-3.85	-0.05		
			Max. Vx	24	1.10	-0.13	4.31		
			Max Tension	23	9.56	0.00	0.00		
			Max. Compression	10	-11.09	0.00	0.00		
			Max. Mx	37	1.34	0.13	0.02		
		Top Girt	Max. My	37	-3.51	0.11	-0.02		
			Max. Vy	37	0.08	0.13	0.02		
			Max. Vx	30	-0.01	0.00	0.00		
			Max Tension	22	6.15	0.00	0.00		
			Max. Compression	11	-4.70	0.00	0.00		
			Max. Mx	26	2.22	-0.30	0.00		
Mid Girt	Max. My	33	1.19	0.00	0.01				
	Max. Vy	26	-0.12	0.00	0.00				
	Max. Vx	33	0.00	0.00	0.00				
	Max Tension	22	5.46	0.00	0.00				
	Max. Compression	11	-4.06	0.00	0.00				
	Max. Mx	26	2.17	-0.37	0.00				
T8	160 - 140	Leg	Max. My	33	1.28	0.00	0.01		
			Max. Vy	26	0.13	0.00	0.00		
			Max. Vx	33	0.00	0.00	0.00		
			Max Tension	23	186.29	-3.70	0.01		
			Max. Compression	10	-220.39	4.28	0.04		
			Max. Mx	10	-193.41	5.06	0.05		
		Diagonal	Max. My	24	-15.80	-0.30	6.28		
			Max. Vy	22	-1.52	-4.55	-0.06		
			Max. Vx	12	-1.01	0.21	-2.28		
			Max Tension	8	10.35	0.00	0.00		
			Max. Compression	10	-10.58	0.00	0.00		
			Max. Mx	27	3.06	0.20	0.02		
		Top Girt	Max. My	33	-2.99	0.12	-0.03		
			Max. Vy	37	0.10	0.19	0.02		
			Max. Vx	37	0.01	0.00	0.00		
			Max Tension	22	4.32	0.00	0.00		
			Max. Compression	11	-3.27	0.00	0.00		
			Max. Mx	26	1.67	-0.42	0.00		
		T9	140 - 120	Leg	Max. My	33	0.96	0.00	0.01
					Max. Vy	26	-0.14	0.00	0.00
					Max. Vx	33	-0.00	0.00	0.00
					Max Tension	23	229.58	-4.23	0.01
					Max. Compression	10	-271.07	9.81	0.22
					Max. Mx	10	-271.07	9.81	0.22
Diagonal	Max. My			20	-21.24	0.08	-9.04		
	Max. Vy			6	-1.43	-4.12	-0.02		
	Max. Vx			24	1.62	-0.06	3.95		
	Max Tension			9	11.71	0.00	0.00		
	Max. Compression			10	-12.23	0.00	0.00		
	Max. Mx			35	3.82	0.22	-0.02		
Max. My	33	-2.58	0.18	-0.03					

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T10	120 - 100	Leg	Max. Vy	37	0.12	0.22	-0.03
			Max. Vx	33	0.01	0.00	0.00
			Max Tension	23	257.77	-9.40	-0.22
			Max. Compression	10	-302.76	9.62	0.16
			Max. Mx	22	250.88	-11.42	-0.20
			Max. My	20	-23.53	-1.09	-17.40
			Max. Vy	14	0.49	-11.05	-0.30
		Diagonal	Max. Vx	24	-0.82	-1.09	17.32
			Max Tension	23	15.97	0.00	0.00
			Max. Compression	10	-17.51	0.00	0.00
			Max. Mx	37	3.26	-0.59	0.08
			Max. My	14	-13.62	-0.19	0.12
			Max. Vy	37	-0.21	-0.59	0.08
			Max. Vx	33	-0.02	0.00	0.00
T11	100 - 80	Leg	Max Tension	23	299.64	-11.15	-0.19
			Max. Compression	10	-352.65	14.16	0.17
			Max. Mx	10	-352.65	14.16	0.17
			Max. My	20	-25.38	-1.09	-17.40
			Max. Vy	10	-0.52	14.16	0.17
			Max. Vx	24	0.86	-1.09	17.32
			Max Tension	16	16.25	0.00	0.00
		Diagonal	Max. Compression	16	-16.83	0.00	0.00
			Max. Mx	37	4.27	-0.68	0.11
			Max. My	33	4.45	-0.60	0.11
			Max. Vy	37	-0.23	-0.68	0.11
			Max. Vx	33	0.02	0.00	0.00
			Max Tension	23	337.40	-12.55	-0.17
			Max. Compression	10	-398.20	10.12	0.13
T12	80 - 60	Leg	Max. Mx	10	-395.97	14.16	0.17
			Max. My	20	-31.07	-1.27	-15.64
			Max. Vy	10	0.48	14.16	0.17
			Max. Vx	24	-0.77	-1.27	15.56
			Max Tension	16	15.92	0.00	0.00
			Max. Compression	16	-16.46	0.00	0.00
			Max. Mx	37	2.81	-0.77	0.11
		Diagonal	Max. My	27	-0.90	-0.63	-0.12
			Max. Vy	37	-0.25	-0.77	0.11
			Max. Vx	27	-0.02	0.00	0.00
			Max Tension	23	372.42	-11.84	-0.16
			Max. Compression	10	-440.71	14.72	0.12
			Max. Mx	10	-440.71	14.72	0.12
			Max. My	20	-32.16	-1.27	-15.64
T13	60 - 40	Leg	Max. Vy	33	0.82	-12.36	-0.10
			Max. Vx	20	-0.83	-1.27	-15.64
			Max Tension	23	16.31	0.00	0.00
			Max. Compression	10	-17.92	0.00	0.00
			Max. Mx	37	5.04	-0.83	0.12
			Max. My	33	4.78	-0.83	0.12
			Max. Vy	37	-0.26	-0.83	0.12
		Diagonal	Max. Vx	33	0.02	0.00	0.00
			Max Tension	23	408.37	-12.56	-0.13
			Max. Compression	10	-486.45	10.34	0.08
			Max. Mx	10	-483.88	14.72	0.12
			Max. My	20	-39.58	-1.84	-23.68
			Max. Vy	33	-1.15	-12.36	-0.10
			Max. Vx	20	1.20	-1.84	-23.68
T14	40 - 20	Leg	Max Tension	10	17.01	0.00	0.00
			Max. Compression	22	-16.24	0.00	0.00
			Max. Mx	37	0.79	-0.97	0.14
			Max. My	33	-6.72	-0.80	0.15
			Max. Vy	37	-0.28	-0.97	0.14
			Max Tension	23	408.37	-12.56	-0.13
			Max. Compression	10	-486.45	10.34	0.08
		Diagonal	Max. Mx	10	-483.88	14.72	0.12
			Max. My	20	-39.58	-1.84	-23.68
			Max. Vy	33	-1.15	-12.36	-0.10
			Max. Vx	20	1.20	-1.84	-23.68
			Max Tension	10	17.01	0.00	0.00
			Max. Compression	22	-16.24	0.00	0.00
			Max. Mx	37	0.79	-0.97	0.14



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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T15	20 - 0	Leg	Max. Vx	38	-0.02	0.00	0.00
			Max Tension	23	437.34	-13.00	-0.12
			Max. Compression	10	-522.48	0.00	-0.00
			Max. Mx	35	-253.63	14.07	0.13
			Max. My	20	-40.05	-1.84	-23.68
			Max. Vy	22	-1.01	-13.45	-0.12
		Diagonal	Max. Vx	20	-1.49	-1.84	-23.68
			Max Tension	23	18.30	0.00	0.00
			Max. Compression	10	-20.55	0.00	0.00
			Max. Mx	38	6.88	-0.93	-0.13
			Max. My	27	5.39	-0.93	-0.13
			Max. Vy	38	-0.28	-0.93	-0.13
			Max. Vx	27	-0.02	0.00	0.00

### Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	536.07	49.09	-27.80
	Max. H <sub>x</sub>	18	536.07	49.09	-27.80
	Max. H <sub>z</sub>	7	-444.56	-42.15	23.74
	Min. Vert	7	-444.56	-42.15	23.74
	Min. H <sub>x</sub>	7	-444.56	-42.15	23.74
	Min. H <sub>z</sub>	18	536.07	49.09	-27.80
Leg B	Max. Vert	10	545.32	-49.21	-29.27
	Max. H <sub>x</sub>	23	-454.49	42.27	25.26
	Max. H <sub>z</sub>	23	-454.49	42.27	25.26
	Min. Vert	23	-454.49	42.27	25.26
	Min. H <sub>x</sub>	10	545.32	-49.21	-29.27
	Min. H <sub>z</sub>	10	545.32	-49.21	-29.27
Leg A	Max. Vert	2	528.65	-1.09	55.49
	Max. H <sub>x</sub>	21	32.91	3.72	2.66
	Max. H <sub>z</sub>	2	528.65	-1.09	55.49
	Min. Vert	15	-435.87	1.11	-47.41
	Min. H <sub>x</sub>	9	33.41	-3.73	2.71
	Min. H <sub>z</sub>	15	-435.87	1.11	-47.41

### Tower Mast Reaction Summary

Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
Dead Only	109.64	-0.00	-0.00	-12.60	4.69	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	131.56	0.04	-82.48	-11755.69	-0.25	-53.10
0.9 Dead+1.6 Wind 0 deg - No Ice	98.67	0.04	-82.56	-11751.05	-1.66	-53.09
1.2 Dead+1.6 Wind 30 deg - No Ice	131.56	40.15	-69.50	-9926.39	-5718.23	5.23
0.9 Dead+1.6 Wind 30 deg - No Ice	98.67	40.19	-69.57	-9921.90	-5719.23	5.23
1.2 Dead+1.6 Wind 60 deg - No Ice	131.56	70.17	-40.51	-5803.25	-10019.69	23.99

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Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
Ice						
0.9 Dead+1.6 Wind 60 deg - No Ice	98.67	70.24	-40.55	-5799.06	-10020.39	24.01
1.2 Dead+1.6 Wind 90 deg - No Ice	131.56	82.54	-0.02	-16.35	-11809.72	-31.85
0.9 Dead+1.6 Wind 90 deg - No Ice	98.67	82.62	-0.02	-12.57	-11810.28	-31.82
1.2 Dead+1.6 Wind 120 deg - No Ice	131.56	73.89	42.61	6065.66	-10538.94	-36.13
0.9 Dead+1.6 Wind 120 deg - No Ice	98.67	73.96	42.65	6069.00	-10539.58	-36.11
1.2 Dead+1.6 Wind 150 deg - No Ice	131.56	40.94	70.88	10134.64	-5859.94	33.41
0.9 Dead+1.6 Wind 150 deg - No Ice	98.67	40.99	70.95	10137.73	-5860.96	33.40
1.2 Dead+1.6 Wind 180 deg - No Ice	131.56	-0.04	79.48	11363.73	11.77	53.09
0.9 Dead+1.6 Wind 180 deg - No Ice	98.67	-0.04	79.56	11366.74	10.36	53.09
1.2 Dead+1.6 Wind 210 deg - No Ice	131.56	-40.19	69.48	9891.55	5737.52	-5.23
0.9 Dead+1.6 Wind 210 deg - No Ice	98.67	-40.23	69.55	9894.61	5735.70	-5.23
1.2 Dead+1.6 Wind 240 deg - No Ice	131.56	-72.76	42.01	5954.02	10344.45	-23.99
0.9 Dead+1.6 Wind 240 deg - No Ice	98.67	-72.83	42.05	5957.33	10342.24	-24.01
1.2 Dead+1.6 Wind 270 deg - No Ice	131.56	-82.54	0.06	-4.31	11820.99	31.85
0.9 Dead+1.6 Wind 270 deg - No Ice	98.67	-82.62	0.06	-0.54	11818.74	31.82
1.2 Dead+1.6 Wind 300 deg - No Ice	131.56	-71.29	-41.11	-5914.94	10236.10	36.12
0.9 Dead+1.6 Wind 300 deg - No Ice	98.67	-71.37	-41.15	-5910.78	10234.02	36.11
1.2 Dead+1.6 Wind 330 deg - No Ice	131.56	-40.91	-70.90	-10169.73	5862.77	-33.41
0.9 Dead+1.6 Wind 330 deg - No Ice	98.67	-40.95	-70.97	-10165.27	5860.97	-33.41
1.2 Dead+1.0 Ice+1.0 Temp	315.47	0.00	0.00	-37.24	60.75	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	315.46	0.01	-24.81	-3808.50	59.80	-17.47
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	315.46	12.22	-21.14	-3261.46	-1801.25	-4.88
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	315.46	21.11	-12.18	-1898.01	-3162.23	1.89
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	315.46	24.62	-0.00	-37.63	-3696.29	-4.04
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	315.46	21.67	12.50	1864.43	-3235.06	-1.78
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	315.46	12.34	21.37	3219.38	-1820.16	13.17
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	315.46	-0.00	24.43	3688.06	61.75	17.47
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	315.46	-12.21	21.15	3186.42	1923.75	4.88
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	315.46	-21.43	12.38	1846.59	3323.53	-1.89
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	315.46	-24.62	0.01	-35.60	3817.73	4.04
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	315.46	-21.33	-12.30	-1915.86	3316.60	1.79

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Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 330	315.46	-12.33	-21.37	-3294.42	1940.53	-13.17
deg+1.0 Ice+1.0 Temp						
Dead+Wind 0 deg - Service	109.64	0.01	-19.73	-2818.58	3.26	-12.70
Dead+Wind 30 deg - Service	109.64	9.61	-16.63	-2381.69	-1364.44	1.24
Dead+Wind 60 deg - Service	109.64	16.79	-9.69	-1396.79	-2392.81	5.74
Dead+Wind 90 deg - Service	109.64	19.75	-0.01	-13.73	-2820.02	-7.60
Dead+Wind 120 deg - Service	109.64	17.67	10.19	1440.72	-2515.40	-8.64
Dead+Wind 150 deg - Service	109.64	9.79	16.96	2414.37	-1396.85	7.98
Dead+Wind 180 deg - Service	109.64	-0.01	19.02	2708.60	6.14	12.70
Dead+Wind 210 deg - Service	109.64	-9.61	16.63	2356.23	1374.31	-1.24
Dead+Wind 240 deg - Service	109.64	-17.40	10.05	1414.02	2475.65	-5.74
Dead+Wind 270 deg - Service	109.64	-19.75	0.01	-10.86	2829.41	7.60
Dead+Wind 300 deg - Service	109.64	-17.06	-9.84	-1423.49	2451.29	8.64
Dead+Wind 330 deg - Service	109.64	-9.79	-16.96	-2439.85	1405.72	-7.98

## Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-109.64	0.00	0.00	109.64	0.00	0.000%
2	0.04	-131.57	-82.78	-0.04	131.56	82.48	0.194%
3	0.04	-98.68	-82.78	-0.04	98.67	82.56	0.170%
4	40.33	-131.57	-69.76	-40.15	131.56	69.50	0.204%
5	40.33	-98.68	-69.76	-40.19	98.67	69.57	0.185%
6	70.46	-131.57	-40.68	-70.17	131.56	40.51	0.219%
7	70.46	-98.68	-40.68	-70.24	98.67	40.55	0.202%
8	82.86	-131.57	-0.04	-82.54	131.56	0.02	0.209%
9	82.86	-98.68	-0.04	-82.62	98.67	0.02	0.189%
10	74.16	-131.57	42.77	-73.89	131.56	-42.61	0.198%
11	74.16	-98.68	42.77	-73.96	98.67	-42.65	0.173%
12	41.09	-131.57	71.17	-40.94	131.56	-70.88	0.209%
13	41.09	-98.68	71.17	-40.99	98.67	-70.95	0.189%
14	-0.04	-131.57	79.82	0.04	131.56	-79.48	0.217%
15	-0.04	-98.68	79.82	0.04	98.67	-79.56	0.200%
16	-40.33	-131.57	69.76	40.19	131.56	-69.48	0.204%
17	-40.33	-98.68	69.76	40.23	98.67	-69.55	0.184%
18	-73.02	-131.57	42.16	72.76	131.56	-42.01	0.194%
19	-73.02	-98.68	42.16	72.83	98.67	-42.05	0.170%
20	-82.86	-131.57	0.04	82.54	131.56	-0.06	0.209%
21	-82.86	-98.68	0.04	82.62	98.67	-0.06	0.189%
22	-71.60	-131.57	-41.29	71.29	131.56	41.11	0.224%
23	-71.60	-98.68	-41.29	71.37	98.67	41.15	0.206%
24	-41.09	-131.57	-71.17	40.91	131.56	70.90	0.210%
25	-41.09	-98.68	-71.17	40.95	98.67	70.97	0.189%
26	0.00	-315.47	0.00	-0.00	315.47	-0.00	0.001%
27	0.01	-315.47	-25.11	-0.01	315.46	24.81	0.097%
28	12.37	-315.47	-21.41	-12.22	315.46	21.14	0.096%
29	21.37	-315.47	-12.34	-21.11	315.46	12.18	0.096%
30	24.93	-315.47	-0.01	-24.62	315.46	0.00	0.096%
31	21.93	-315.47	12.65	-21.67	315.46	-12.50	0.095%
32	12.49	-315.47	21.64	-12.34	315.46	-21.37	0.096%
33	-0.01	-315.47	24.73	0.00	315.46	-24.43	0.096%
34	-12.37	-315.47	21.41	12.21	315.46	-21.15	0.096%
35	-21.70	-315.47	12.53	21.43	315.46	-12.38	0.097%
36	-24.93	-315.47	0.01	24.62	315.46	-0.01	0.098%
37	-21.60	-315.47	-12.46	21.33	315.46	12.30	0.100%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
38	-12.49	-315.47	-21.64	12.33	315.46	21.37	0.099%
39	0.01	-109.64	-19.79	-0.01	109.64	19.73	0.060%
40	9.64	-109.64	-16.68	-9.61	109.64	16.63	0.059%
41	16.85	-109.64	-9.73	-16.79	109.64	9.69	0.061%
42	19.82	-109.64	-0.01	-19.75	109.64	0.01	0.061%
43	17.73	-109.64	10.23	-17.67	109.64	-10.19	0.061%
44	9.83	-109.64	17.02	-9.79	109.64	-16.96	0.061%
45	-0.01	-109.64	19.09	0.01	109.64	-19.02	0.060%
46	-9.64	-109.64	16.68	9.61	109.64	-16.63	0.059%
47	-17.46	-109.64	10.08	17.40	109.64	-10.05	0.060%
48	-19.82	-109.64	0.01	19.75	109.64	-0.01	0.061%
49	-17.12	-109.64	-9.87	17.06	109.64	9.84	0.063%
50	-9.83	-109.64	-17.02	9.79	109.64	16.96	0.061%

## Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.0000001	0.0000001
2	Yes	5	0.00027766	0.00028861
3	Yes	5	0.00020415	0.00023053
4	Yes	5	0.00029457	0.00030552
5	Yes	5	0.00022115	0.00024491
6	Yes	5	0.00031033	0.00032309
7	Yes	5	0.00023673	0.00026047
8	Yes	5	0.00029465	0.00030719
9	Yes	5	0.00022123	0.00024686
10	Yes	5	0.00027700	0.00029026
11	Yes	5	0.00020351	0.00023294
12	Yes	5	0.00029474	0.00030785
13	Yes	5	0.00022130	0.00024764
14	Yes	5	0.00031032	0.00032251
15	Yes	5	0.00023668	0.00025985
16	Yes	5	0.00029449	0.00030523
17	Yes	5	0.00022109	0.00024464
18	Yes	5	0.00027717	0.00028774
19	Yes	5	0.00020374	0.00022988
20	Yes	5	0.00029460	0.00030713
21	Yes	5	0.00022119	0.00024681
22	Yes	5	0.00031095	0.00032555
23	Yes	5	0.00023730	0.00026317
24	Yes	5	0.00029478	0.00030809
25	Yes	5	0.00022132	0.00024786
26	Yes	4	0.00000001	0.00002695
27	Yes	4	0.00077342	0.00066509
28	Yes	4	0.00077863	0.00066202
29	Yes	4	0.00078420	0.00066347
30	Yes	4	0.00077827	0.00065837
31	Yes	4	0.00077203	0.00065546
32	Yes	4	0.00077788	0.00065770
33	Yes	4	0.00078364	0.00066164
34	Yes	4	0.00077777	0.00065875
35	Yes	4	0.00077254	0.00066130
36	Yes	4	0.00077904	0.00067073
37	Yes	4	0.00078516	0.00067919
38	Yes	4	0.00077950	0.00067331

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39	Yes	4	0.00024749	0.00033878
40	Yes	4	0.00025166	0.00033790
41	Yes	4	0.00025568	0.00034520
42	Yes	4	0.00025170	0.00034509
43	Yes	4	0.00024727	0.00034584
44	Yes	4	0.00025171	0.00034390
45	Yes	4	0.00025568	0.00034109
46	Yes	4	0.00025151	0.00033556
47	Yes	4	0.00024714	0.00033846
48	Yes	4	0.00025166	0.00034538
49	Yes	4	0.00025595	0.00035318
50	Yes	4	0.00025181	0.00034659

### Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	280 - 270	7.705	43	0.2765	0.0320
T2	270 - 250	7.113	43	0.2740	0.0287
T3	250 - 230	5.970	43	0.2589	0.0251
T4	230 - 220	4.908	43	0.2311	0.0199
T5	220 - 200	4.436	43	0.2127	0.0168
T6	200 - 180	3.589	43	0.1856	0.0108
T7	180 - 160	2.856	43	0.1582	0.0079
T8	160 - 140	2.223	43	0.1357	0.0073
T9	140 - 120	1.674	43	0.1162	0.0065
T10	120 - 100	1.205	43	0.0952	0.0052
T11	100 - 80	0.825	43	0.0771	0.0044
T12	80 - 60	0.529	43	0.0585	0.0035
T13	60 - 40	0.301	43	0.0428	0.0026
T14	40 - 20	0.141	43	0.0269	0.0017
T15	20 - 0	0.039	43	0.0133	0.0008

### Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
280.00	Flash Beacon Lighting	43	7.705	0.2765	0.0320	149016
250.00	APX18-206516L-CT0 w/ Mount Pipe	43	5.970	0.2589	0.0251	74299
245.00	DB420-A	43	5.694	0.2533	0.0241	51400
235.00	DB225-2-F	43	5.160	0.2395	0.0214	29165
200.00	(3) DB980H120E-M	43	3.589	0.1856	0.0108	41497
190.00	(3) DB980H120E-M	43	3.209	0.1719	0.0090	44482
180.00	(3) DB980H120E-M	43	2.856	0.1582	0.0079	48076
170.00	APXVSP18-C-A20	43	2.528	0.1461	0.0076	52666
160.00	80010121 9' Mount Pipe	43	2.223	0.1357	0.0073	57969
150.00	APXV18-206517S-ACU	43	1.939	0.1260	0.0069	60985
140.00	(2) HBXX-6517DS-A2M	43	1.674	0.1162	0.0065	63021

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### Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	280 - 270	32.313	10	1.1599	0.1340
T2	270 - 250	29.829	10	1.1497	0.1202
T3	250 - 230	25.033	10	1.0866	0.1051
T4	230 - 220	20.576	10	0.9699	0.0832
T5	220 - 200	18.595	10	0.8924	0.0703
T6	200 - 180	15.044	10	0.7785	0.0450
T7	180 - 160	11.972	10	0.6631	0.0332
T8	160 - 140	9.319	10	0.5688	0.0305
T9	140 - 120	7.018	10	0.4871	0.0270
T10	120 - 100	5.051	10	0.3990	0.0220
T11	100 - 80	3.459	10	0.3235	0.0182
T12	80 - 60	2.215	11	0.2454	0.0145
T13	60 - 40	1.262	11	0.1793	0.0107
T14	40 - 20	0.589	11	0.1127	0.0071
T15	20 - 0	0.163	11	0.0558	0.0035

### Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
280.00	Flash Beacon Lighting	10	32.313	1.1599	0.1340	35844
250.00	APX18-206516L-CT0 w/ Mount	10	25.033	1.0866	0.1051	17882
	Pipe					
245.00	DB420-A	10	23.874	1.0629	0.1008	12388
235.00	DB225-2-F	10	21.636	1.0051	0.0896	7034
200.00	(3) DB980H120E-M	10	15.044	0.7785	0.0450	9906
190.00	(3) DB980H120E-M	10	13.451	0.7208	0.0378	10606
180.00	(3) DB980H120E-M	10	11.972	0.6631	0.0332	11459
170.00	APXVSP18-C-A20	10	10.598	0.6126	0.0318	12559
160.00	80010121 9' Mount Pipe	10	9.319	0.5688	0.0305	13830
150.00	APXV18-206517S-ACU	10	8.127	0.5283	0.0290	14548
140.00	(2) HBXX-6517DS-A2M	10	7.018	0.4871	0.0270	15032

### Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria
T1	280	Leg	A325N	0.6250	5	1.67	24.85	0.067 ✓	1	Bolt DS
T2	270	Leg	A325N	0.7500	5	5.05	35.78	0.141 ✓	1	Bolt DS
T3	250	Leg	A325N	1.0000	6	9.88	53.01	0.186 ✓	1	Bolt Tension
T4	230	Leg	A325N	1.0000	6	10.41	53.01	0.196 ✓	1	Bolt Tension
		Diagonal	A325N	1.0000	1	5.67	16.94	0.335 ✓	1	Member Block Shear
T5	220	Leg	A325N	1.0000	6	14.66	53.01	0.276 ✓	1	Bolt Tension

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Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria	
T6	200	Diagonal	A325N	1.0000	1	5.29	10.16	0.520	✓	1	Member Block Shear
		Leg	A325N	1.0000	6	18.67	53.01	0.352	✓	1	Bolt Tension
		Diagonal	A325N	1.0000	1	8.04	16.94	0.475	✓	1	Member Block Shear
T7	180	Top Girt	A325N	1.0000	1	3.97	10.16	0.391	✓	1	Member Block Shear
		Leg	A325N	1.2500	6	24.18	82.83	0.292	✓	1	Bolt Tension
		Diagonal	A325N	1.2500	1	9.56	17.14	0.558	✓	1	Member Block Shear
T8	160	Top Girt	A325N	1.2500	1	6.15	16.43	0.374	✓	1	Member Block Shear
		Leg	A325N	1.2500	6	31.04	82.83	0.375	✓	1	Bolt Tension
		Diagonal	A325N	1.2500	1	10.35	20.54	0.504	✓	1	Member Block Shear
T9	140	Top Girt	A325N	1.2500	1	4.32	20.54	0.211	✓	1	Member Block Shear
		Leg	A325N	1.2500	6	38.26	82.83	0.462	✓	1	Bolt Tension
		Diagonal	A325N	1.2500	1	11.71	20.54	0.570	✓	1	Member Block Shear
T10	120	Leg	A325N	1.2500	12	21.48	82.83	0.259	✓	1	Bolt Tension
		Diagonal	A325N	1.0000	2	7.99	35.53	0.225	✓	1	Member Block Shear
T11	100	Leg	A325N	1.2500	12	24.97	82.83	0.301	✓	1	Bolt Tension
		Diagonal	A325N	1.0000	2	8.12	35.53	0.229	✓	1	Member Block Shear
T12	80	Leg	A325N	1.2500	12	28.12	82.83	0.339	✓	1	Bolt Tension
		Diagonal	A325N	1.0000	2	7.96	35.53	0.224	✓	1	Member Block Shear
T13	60	Leg	A325N	1.2500	12	31.03	82.83	0.375	✓	1	Bolt Tension
		Diagonal	A325N	1.0000	2	8.16	35.53	0.230	✓	1	Member Block Shear
T14	40	Leg	A325N	1.2500	12	34.03	82.83	0.411	✓	1	Bolt Tension
		Diagonal	A325N	1.0000	2	8.50	35.53	0.239	✓	1	Member Block Shear
T15	20	Diagonal	A325N	1.0000	2	9.15	35.53	0.258	✓	1	Member Block Shear

### Compression Checks

### Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio P <sub>u</sub> / φP <sub>n</sub>
T1	280 - 270	1 3/4	10.00	2.25	61.7 K=1.00	2.4053	-8.36	81.93	0.102 <sup>1</sup> ✓

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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T2	270 - 250	2	20.00	2.38	57.0 K=1.00	3.1416	-25.27	111.48	0.227 <sup>1</sup>
T3	250 - 230	2 1/2	20.00	2.38	45.6 K=1.00	4.9087	-68.53	189.74	0.361 <sup>1</sup>
T4	230 - 220	Pirod 105245	10.02	10.02	37.8 K=1.00	5.3014	-70.98	214.86	0.330 <sup>1</sup>
T5	220 - 200	Pirod 105218	20.03	10.02	32.4 K=1.00	7.2158	-99.79	300.68	0.332 <sup>1</sup>
T6	200 - 180	Pirod 105218	20.03	10.02	32.4 K=1.00	7.2158	-128.68	300.68	0.428 <sup>1</sup>
T7	180 - 160	Pirod 105219	20.03	10.02	28.4 K=1.00	9.4248	-169.52	399.87	0.424 <sup>1</sup>
T8	160 - 140	Pirod 105220	20.03	10.02	25.2 K=1.00	11.9282	-220.39	512.38	0.430 <sup>1</sup>
T9	140 - 120	Pirod 105220	20.03	10.02	25.2 K=1.00	11.9282	-271.07	512.38	0.529 <sup>1</sup>
T10	120 - 100	Pirod 112743	20.03	20.03	32.6 K=1.00	14.7262	-302.76	613.14	0.494 <sup>1</sup>
T11	100 - 80	Pirod 112743	20.03	20.03	32.6 K=1.00	14.7262	-352.65	613.14	0.575 <sup>1</sup>
T12	80 - 60	Pirod 112744	20.03	20.03	32.6 K=1.00	17.8187	-398.20	741.99	0.537 <sup>1</sup>
T13	60 - 40	Pirod 112744	20.03	20.03	32.6 K=1.00	17.8187	-440.71	741.99	0.594 <sup>1</sup>
T14	40 - 20	Pirod 112745	20.03	20.03	32.5 K=1.00	21.2057	-486.45	883.14	0.551 <sup>1</sup>
T15	20 - 0	Pirod 112740	20.03	20.03	32.5 K=1.00	21.2057	-522.48	883.14	0.592 <sup>1</sup>

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L <sub>d</sub> ft	Kl/r	φP <sub>n</sub> K	A in <sup>2</sup>	V <sub>u</sub> K	φV <sub>n</sub> K	Stress Ratio
T4	230 - 220	0.5	1.47	120.0	238.57	0.1963	0.59	3.45	0.172
T5	220 - 200	0.5	1.46	119.0	324.71	0.1963	0.36	3.38	0.108
T6	200 - 180	0.5	1.46	119.0	324.71	0.1963	0.98	3.38	0.290
T7	180 - 160	0.625	1.45	94.4	424.12	0.3068	0.87	6.96	0.126
T8	160 - 140	0.625	1.43	93.6	536.77	0.3068	1.52	7.01	0.217
T9	140 - 120	0.625	1.43	93.6	536.77	0.3068	1.63	7.01	0.233
T10	120 - 100	0.75	1.73	93.9	662.68	0.4418	0.83	14.36	0.059
T11	100 - 80	0.75	1.73	93.9	662.68	0.4418	0.87	14.36	0.062



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Section No.	Elevation ft	Diagonal Size	$L_d$ ft	$Kl/r$	$\phi P_n$ K	$A$ in <sup>2</sup>	$V_u$ K	$\phi V_n$ K	Stress Ratio
T12	80 - 60	0.75	1.71	93.1	801.84	0.4418	0.78	14.53	0.055
T13	60 - 40	0.75	1.71	93.1	801.84	0.4418	0.85	14.53	0.059
T14	40 - 20	0.875	1.70	79.1	954.26	0.6013	1.22	23.59	0.053
T15	20 - 0	0.875	1.70	79.1	954.26	0.6013	1.50	23.59	0.064

### Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	$L$ ft	$L_u$ ft	$Kl/r$	$A$ in <sup>2</sup>	$P_u$ K	$\phi P_n$ K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	7/8	5.48	2.66	131.4 K=0.90	0.6013	-1.42	7.87	0.181 <sup>1</sup>
T2	270 - 250	7/8	5.54	2.68	132.1 K=0.90	0.6013	-1.94	7.79	0.249 <sup>1</sup>
T3	250 - 230	1	5.54	2.65	114.6 K=0.90	0.7854	-4.62	13.51	0.342 <sup>1</sup>
T4	230 - 220	L3x3x5/16	11.42	5.02	106.8 K=1.04	1.7800	-6.59	31.65	0.208 <sup>1</sup>
T5	220 - 200	L3x3x3/16	12.50	5.67	115.6 K=1.01	1.0900	-5.42	17.29	0.313 <sup>1</sup>
T6	200 - 180	L3x3x5/16	13.80	6.37	129.8 K=1.00	1.7800	-9.52	23.77	0.401 <sup>1</sup>
T7	180 - 160	L3x3x5/16	15.24	7.09	144.5 K=1.00	1.7800	-11.09	19.26	0.576 <sup>1</sup>
T8	160 - 140	L3 1/2x3 1/2x5/16	16.80	7.89	137.3 K=1.00	2.0900	-10.30	25.06	0.411 <sup>1</sup>
T9	140 - 120	L3 1/2x3 1/2x5/16	18.45	8.73	151.8 K=1.00	2.0900	-11.20	20.49	0.547 <sup>1</sup>
T10	120 - 100	2L3 1/2x3 1/2x5/16x3/8	26.26	12.45	134.0 K=0.97	4.1800	-17.51	52.58	0.333 <sup>1</sup>
T11	100 - 80	2L3 1/2x3 1/2x5/16x3/8	27.59	13.14	139.9 K=0.96	4.1800	-16.83	48.27	0.349 <sup>1</sup>
T12	80 - 60	2L3 1/2x3 1/2x5/16x3/8	29.01	13.87	146.0 K=0.95	4.1800	-16.46	44.30	0.372 <sup>1</sup>
T13	60 - 40	2L3 1/2x3 1/2x5/16x3/8	30.49	14.62	152.4 K=0.94	4.1800	-17.92	40.67	0.441 <sup>1</sup>
T14	40 - 20	2L3 1/2x3 1/2x5/16x3/8	32.02	15.40	159.0 K=0.93	4.1800	-16.24	37.36	0.435 <sup>1</sup>
T15	20 - 0	2L3 1/2x3 1/2x5/16x3/8	33.61	16.20	165.8 K=0.92	4.1800	-20.55	34.37	0.598 <sup>1</sup>

<sup>1</sup>  $P_u / \phi P_n$  controls

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### Horizontal Design Data (Compression)

Section No.	Elevation <i>ft</i>	Size	<i>L</i> <i>ft</i>	<i>L<sub>u</sub></i> <i>ft</i>	<i>Kl/r</i>	<i>A</i> <i>in<sup>2</sup></i>	<i>P<sub>u</sub></i> <i>K</i>	$\phi P_n$ <i>K</i>	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	7/8	5.00	4.85	186.4 K=0.70	0.6013	-0.15	3.91	0.038 <sup>1</sup> ✓
T2	270 - 250	7/8	5.00	4.83	185.6 K=0.70	0.6013	-0.29	3.94	0.074 <sup>1</sup> ✓
T3	250 - 230	7/8	5.00	4.79	184.0 K=0.70	0.6013	-0.57	4.01	0.142 <sup>1</sup> ✓

<sup>1</sup>  $P_u / \phi P_n$  controls

### Top Girt Design Data (Compression)

Section No.	Elevation <i>ft</i>	Size	<i>L</i> <i>ft</i>	<i>L<sub>u</sub></i> <i>ft</i>	<i>Kl/r</i>	<i>A</i> <i>in<sup>2</sup></i>	<i>P<sub>u</sub></i> <i>K</i>	$\phi P_n$ <i>K</i>	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	1	5.00	4.85	163.1 K=0.70	0.7854	-0.49	6.67	0.074 <sup>1</sup> ✓
T2	270 - 250	1	5.00	4.83	162.4 K=0.70	0.7854	-0.50	6.73	0.075 <sup>1</sup> ✓
T3	250 - 230	1 1/4	5.00	4.79	128.8 K=0.70	1.2272	-1.14	16.71	0.068 <sup>1</sup> ✓
T6	200 - 180	L3x3x3/16	8.00	6.67	134.2 K=1.00	1.0900	-3.10	13.65	0.227 <sup>1</sup> ✓
T7	180 - 160	L4x4x1/4	10.00	8.60	129.9 K=1.00	1.9400	-4.70	25.75	0.183 <sup>1</sup> ✓
T8	160 - 140	L3 1/2x3 1/2x5/16	12.00	10.60	184.4 K=1.00	2.0900	-3.27	13.88	0.235 <sup>1</sup> ✓

<sup>1</sup>  $P_u / \phi P_n$  controls

### Bottom Girt Design Data (Compression)

Section No.	Elevation <i>ft</i>	Size	<i>L</i> <i>ft</i>	<i>L<sub>u</sub></i> <i>ft</i>	<i>Kl/r</i>	<i>A</i> <i>in<sup>2</sup></i>	<i>P<sub>u</sub></i> <i>K</i>	$\phi P_n$ <i>K</i>	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	1	5.00	4.85	163.1 K=0.70	0.7854	-0.56	6.67	0.084 <sup>1</sup> ✓
T2	270 - 250	1	5.00	4.83	162.4 K=0.70	0.7854	-0.77	6.73	0.115 <sup>1</sup> ✓
T3	250 - 230	1 1/4	5.00	4.79	128.8 K=0.70	1.2272	-1.34	16.60	0.081 <sup>1</sup> ✓

<sup>1</sup>  $P_u / \phi P_n$  controls

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**Mid Girt Design Data (Compression)**

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	1	5.00	4.85	163.1 K=0.70	0.7854	-0.01	6.67	0.002 <sup>1</sup> ✓
T2	270 - 250	1	5.00	4.83	162.4 K=0.70	0.7854	-0.15	6.73	0.022 <sup>1</sup> ✓
T6	200 - 180	L3x3x3/16	9.00	8.00	145.3 K=0.90	1.0900	-4.40	11.67	0.377 <sup>1</sup> ✓
T7	180 - 160	L4x4x1/4	11.00	10.00	139.0 K=0.92	1.9400	-4.06	22.67	0.179 <sup>1</sup> ✓

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

**Tension Checks**

**Leg Design Data (Tension)**

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	1 3/4	10.00	2.25	61.7	1.7942	5.57	87.47	0.064 <sup>1</sup> # ✓
T2	270 - 250	2	20.00	2.38	57.0	3.1416	21.31	141.37	0.151 <sup>1</sup> # ✓
T3	250 - 230	2 1/2	20.00	2.38	45.6	4.9087	59.26	220.89	0.268 <sup>1</sup> ✓
T4	230 - 220	Pirod 105245	10.02	10.02	37.8	5.3014	62.47	238.57	0.262 <sup>1</sup> ✓
T5	220 - 200	Pirod 105218	20.03	10.02	32.4	7.2158	87.93	324.71	0.271 <sup>1</sup> ✓
T6	200 - 180	Pirod 105218	20.03	10.02	32.4	7.2158	112.01	324.71	0.345 <sup>1</sup> ✓
T7	180 - 160	Pirod 105219	20.03	10.02	28.4	9.4248	145.10	424.12	0.342 <sup>1</sup> ✓
T8	160 - 140	Pirod 105220	20.03	10.02	25.2	11.9282	186.26	536.77	0.347 <sup>1</sup> ✓
T9	140 - 120	Pirod 105220	20.03	10.02	25.2	11.9282	229.58	536.77	0.428 <sup>1</sup> ✓
T10	120 - 100	Pirod 112743	20.03	20.03	32.6	14.7262	257.77	662.68	0.389 <sup>1</sup> ✓
T11	100 - 80	Pirod 112743	20.03	20.03	32.6	14.7262	299.64	662.68	0.452 <sup>1</sup> ✓
T12	80 - 60	Pirod 112744	20.03	20.03	32.6	17.8187	337.40	801.84	0.421 <sup>1</sup> ✓
T13	60 - 40	Pirod 112744	20.03	20.03	32.6	17.8187	372.42	801.84	0.464 <sup>1</sup> ✓

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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T14	40 - 20	Pirod 112745	20.03	20.03	32.5	21.2057	408.37	954.26	0.428 <sup>1</sup>
T15	20 - 0	Pirod 112740	20.03	20.03	32.5	21.2057	437.34	954.26	0.458 <sup>1</sup>

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

# Based on net area of leg in section below

### Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L <sub>d</sub> ft	Kl/r	φP <sub>n</sub> K	A in <sup>2</sup>	V <sub>u</sub> K	φV <sub>n</sub> K	Stress Ratio
T4	230 - 220	0.5	1.47	120.0	238.57	0.1963	0.59	3.45	0.172
T5	220 - 200	0.5	1.46	119.0	324.71	0.1963	0.36	3.38	0.108
T6	200 - 180	0.5	1.46	119.0	324.71	0.1963	0.98	3.38	0.290
T7	180 - 160	0.625	1.45	94.4	424.12	0.3068	0.87	6.96	0.126
T8	160 - 140	0.625	1.43	93.6	536.77	0.3068	1.52	7.01	0.217
T9	140 - 120	0.625	1.43	93.6	536.77	0.3068	1.63	7.01	0.233
T10	120 - 100	0.75	1.73	93.9	662.68	0.4418	0.83	14.36	0.059
T11	100 - 80	0.75	1.73	93.9	662.68	0.4418	0.87	14.36	0.062
T12	80 - 60	0.75	1.71	93.1	801.84	0.4418	0.78	14.53	0.055
T13	60 - 40	0.75	1.71	93.1	801.84	0.4418	0.85	14.53	0.059
T14	40 - 20	0.875	1.70	79.1	954.26	0.6013	1.22	23.59	0.053
T15	20 - 0	0.875	1.70	79.1	954.26	0.6013	1.50	23.59	0.064

### Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	7/8	5.48	2.66	146.0	0.6013	1.37	27.06	0.051 <sup>1</sup>
T2	270 - 250	7/8	5.54	2.68	146.8	0.6013	1.90	27.06	0.070 <sup>1</sup>
T3	250 - 230	1	5.54	2.65	127.3	0.7854	4.47	35.34	0.127 <sup>1</sup>

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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T4	230 - 220	L3x3x5/16	11.42	5.02	67.6	1.0713	5.67	46.60	0.122 <sup>1</sup> ✓
T5	220 - 200	L3x3x3/16	11.93	5.42	71.5	0.6593	5.29	28.68	0.184 <sup>1</sup> ✓
T6	200 - 180	L3x3x5/16	13.80	6.37	85.1	1.0713	8.04	46.60	0.173 <sup>1</sup> ✓
T7	180 - 160	L3x3x5/16	15.24	7.09	94.9	1.0127	9.56	44.05	0.217 <sup>1</sup> ✓
T8	160 - 140	L3 1/2x3 1/2x5/16	16.80	7.89	89.9	1.2452	10.35	54.17	0.191 <sup>1</sup> ✓
T9	140 - 120	L3 1/2x3 1/2x5/16	17.62	8.32	94.6	1.2452	11.71	54.17	0.216 <sup>1</sup> ✓
T10	120 - 100	2L3 1/2x3 1/2x5/16x3/8	26.26	12.45	141.6	2.6077	15.97	113.43	0.141 <sup>1</sup> ✓
T11	100 - 80	2L3 1/2x3 1/2x5/16x3/8	27.59	13.14	149.3	2.6077	16.25	113.43	0.143 <sup>1</sup> ✓
T12	80 - 60	2L3 1/2x3 1/2x5/16x3/8	29.01	13.87	157.3	2.6077	15.92	113.43	0.140 <sup>1</sup> ✓
T13	60 - 40	2L3 1/2x3 1/2x5/16x3/8	30.49	14.62	165.7	2.6077	16.31	113.43	0.144 <sup>1</sup> ✓
T14	40 - 20	2L3 1/2x3 1/2x5/16x3/8	32.02	15.40	174.3	2.6077	17.01	113.43	0.150 <sup>1</sup> ✓
T15	20 - 0	2L3 1/2x3 1/2x5/16x3/8	33.61	16.20	183.2	2.6077	18.30	113.43	0.161 <sup>1</sup> ✓

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	7/8	5.00	4.85	266.3	0.6013	0.24	27.06	0.009 <sup>1</sup> ✓
T2	270 - 250	7/8	5.00	4.83	265.1	0.6013	0.37	27.06	0.014 <sup>1</sup> ✓
T3	250 - 230	7/8	5.00	4.79	262.9	0.6013	0.69	27.06	0.026 <sup>1</sup> ✓

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Top Girt Design Data (Tension)

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Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	1	5.00	4.85	233.0	0.7854	0.52	35.34	0.015 <sup>1</sup>
T2	270 - 250	1	5.00	4.83	232.0	0.7854	0.55	35.34	0.015 <sup>1</sup>
T3	250 - 230	1 1/4	5.00	4.79	184.0	1.2272	1.22	55.22	0.022 <sup>1</sup>
T6	200 - 180	L3x3x3/16	8.00	6.67	89.5	0.6593	3.97	28.68	0.139 <sup>1</sup>
T7	180 - 160	L4x4x1/4	10.00	8.60	86.4	1.1972	6.15	52.08	0.118 <sup>1</sup>
T8	160 - 140	L3 1/2x3 1/2x5/16	12.00	10.60	122.2	1.2452	4.32	54.17	0.080 <sup>1</sup>

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	1	5.00	4.85	233.0	0.7854	0.61	35.34	0.017 <sup>1</sup>
T2	270 - 250	1	5.00	4.83	232.0	0.7854	0.82	35.34	0.023 <sup>1</sup>
T3	250 - 230	1 1/4	5.00	4.79	184.0	1.2272	1.55	39.76	0.039 <sup>1</sup>

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Mid Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	280 - 270	1	5.00	4.85	233.0	0.7854	0.13	35.34	0.004 <sup>1</sup>
T2	270 - 250	1	5.00	4.83	232.0	0.7854	0.24	35.34	0.007 <sup>1</sup>
T6	200 - 180	L3x3x3/16	9.00	8.00	102.2	1.0900	5.79	35.32	0.164 <sup>1</sup>
T7	180 - 160	L4x4x1/4	11.00	10.00	96.0	1.9400	5.46	62.86	0.087 <sup>1</sup>

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

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## Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$\phi P_{allow}$ K	% Capacity	Pass Fail	
T1	280 - 270	Leg	1 3/4	3	-8.36	81.93	10.2	Pass	
T2	270 - 250	Leg	2	45	-25.27	111.48	22.7	Pass	
T3	250 - 230	Leg	2 1/2	122	-68.53	189.74	36.1	Pass	
T4	230 - 220	Leg	Pirod 105245	200	-70.98	214.86	33.0	Pass	
T5	220 - 200	Leg	Pirod 105218	209	-99.79	300.68	33.2	Pass	
T6	200 - 180	Leg	Pirod 105218	224	-128.68	300.68	42.8	Pass	
T7	180 - 160	Leg	Pirod 105219	245	-169.52	399.87	42.4	Pass	
T8	160 - 140	Leg	Pirod 105220	266	-220.39	512.38	43.0	Pass	
T9	140 - 120	Leg	Pirod 105220	284	-271.07	512.38	52.9	Pass	
T10	120 - 100	Leg	Pirod 112743	299	-302.76	613.14	49.4	Pass	
T11	100 - 80	Leg	Pirod 112743	308	-352.65	613.14	57.5	Pass	
T12	80 - 60	Leg	Pirod 112744	317	-398.20	741.99	53.7	Pass	
T13	60 - 40	Leg	Pirod 112744	326	-440.71	741.99	59.4	Pass	
T14	40 - 20	Leg	Pirod 112745	335	-486.45	883.14	55.1	Pass	
T15	20 - 0	Leg	Pirod 112740	344	-522.48	883.14	59.2	Pass	
T1	280 - 270	Diagonal	7/8	16	-1.42	7.87	18.1	Pass	
T2	270 - 250	Diagonal	7/8	60	-1.94	7.79	24.9	Pass	
T3	250 - 230	Diagonal	1	132	-4.62	13.51	34.2	Pass	
T4	230 - 220	Diagonal	L3x3x5/16	204	-6.59	31.65	20.8	Pass	
T5	220 - 200	Diagonal	L3x3x3/16	213	-5.42	17.29	31.3	Pass	
T6	200 - 180	Diagonal	L3x3x5/16	234	-9.52	23.77	40.1	Pass	
T7	180 - 160	Diagonal	L3x3x5/16	255	-11.09	19.26	57.6	Pass	
T8	160 - 140	Diagonal	L3 1/2x3 1/2x5/16	271	-10.30	25.06	41.1	Pass	
T9	140 - 120	Diagonal	L3 1/2x3 1/2x5/16	287	-11.20	20.49	54.7	Pass	
T10	120 - 100	Diagonal	2L3 1/2x3 1/2x5/16x3/8	303	-17.51	52.58	33.3	Pass	
T11	100 - 80	Diagonal	2L3 1/2x3 1/2x5/16x3/8	315	-16.83	48.27	34.9	Pass	
T12	80 - 60	Diagonal	2L3 1/2x3 1/2x5/16x3/8	324	-16.46	44.30	37.2	Pass	
T13	60 - 40	Diagonal	2L3 1/2x3 1/2x5/16x3/8	330	-17.92	40.67	44.1	Pass	
T14	40 - 20	Diagonal	2L3 1/2x3 1/2x5/16x3/8	340	-16.24	37.36	43.5	Pass	
T15	20 - 0	Diagonal	2L3 1/2x3 1/2x5/16x3/8	348	-20.55	34.37	59.8	Pass	
T1	280 - 270	Horizontal	7/8	36	-0.15	3.91	3.8	Pass	
T2	270 - 250	Horizontal	7/8	112	-0.29	3.94	7.4	Pass	
T3	250 - 230	Horizontal	7/8	190	-0.57	4.01	14.2	Pass	
T1	280 - 270	Top Girt	1	6	-0.49	6.67	7.4	Pass	
T2	270 - 250	Top Girt	1	46	-0.50	6.73	7.5	Pass	
T3	250 - 230	Top Girt	1 1/4	124	-1.14	16.71	6.8	Pass	
T6	200 - 180	Top Girt	L3x3x3/16	228	-3.10	13.65	22.7	Pass	
T7	180 - 160	Top Girt	L4x4x1/4	249	-4.70	25.75	18.3	Pass	
T8	160 - 140	Top Girt	L3 1/2x3 1/2x5/16	270	-3.27	13.88	23.5	Pass	
T1	280 - 270	Bottom Girt	1	7	-0.56	6.67	8.4	Pass	
T2	270 - 250	Bottom Girt	1	49	-0.77	6.73	11.5	Pass	
T3	250 - 230	Bottom Girt	1 1/4	129	-1.34	16.60	8.1	Pass	
T1	280 - 270	Mid Girt	1	11	0.13	35.34	0.4	Pass	
T2	270 - 250	Mid Girt	1	52	-0.15	6.73	2.2	Pass	
T6	200 - 180	Mid Girt	L3x3x3/16	231	-4.40	11.67	37.7	Pass	
T7	180 - 160	Mid Girt	L4x4x1/4	252	-4.06	22.67	17.9	Pass	
Summary									
							Leg (T13)	59.4	Pass
							Diagonal (T15)	59.8	Pass
							Horizontal (T3)	14.2	Pass
							Top Girt (T8)	23.5	Pass
							Bottom Girt (T2)	11.5	Pass
							Mid Girt	37.7	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$\phi P_{allow}$ K	% Capacity	Pass Fail
						(T6)		
						Bolt Checks	57.0	Pass
						<b>RATING =</b>	<b>59.8</b>	<b>Pass</b>

Program Version 8.0.5.0 - 11/28/2018 File://maserconsulting.com/BWE/AllOffices/MtLaurel/Projects/2018/18963000A/18963021A/Structural/Tower Analysis/Rev 1/TNX/Self Support Tower.eri



Tower Information	
Tower Type	Self Support
TIA-222 Rev	G

Load Z Normalization

Applied Loads		
	Comp.	Uplift
Axial (k)	545.00	454.00
Shear (k)	57.00	49.00

Anchor Rod Data	
Quantity:	6
Diameter (in):	2.25
<a href="#">Material Grade:</a>	A687
Grout Considered:	Yes
$l_{ar}$ (in):	
Eta Factor, $\eta$ :	0.55
Thread Type:	N-Included
Configuration:	Symmetrical

Fy=105 ksi Fu=150 ksi  
Grout Considered  
Bending Interaction Not Considered

Anchor Rod Results	
Axial, $P_u$ (kips)	75.67
Shear, $V_u$ (kips)	8.17
Moment, $M_u$ (kip-in)	#VALUE!
Axial Cap., $\phi P_n$ (kips)	325.00
Shear Cap., $\phi V_n$ (kips)	-
Moment Cap., $\phi M_n$ (kip-in)	#VALUE!
Stress Rating	27.9%

Pass

# SST Unit Base Foundation

TIA-222 Revision:

Top & Bot. Pad Rein. Different?:	<input type="checkbox"/>
Tower Centroid Offset?:	<input checked="" type="checkbox"/>
Block Foundation?:	<input type="checkbox"/>

Superstructure Analysis Reactions		
Global Moment, <b>M</b> :	12162	ft-kips
Global Axial, <b>P</b> :	132	kips
Global Shear, <b>V</b> :	85	kips
Leg Compression, <b>P<sub>comp</sub></b> :	545	kips
Leg Comp. Shear, <b>V<sub>u,comp</sub></b> :	57	kips
Leg Uplift, <b>P<sub>uplift</sub></b> :	454	kips
Leg Uplift. Shear, <b>V<sub>u,uplift</sub></b> :	49	kips
Tower Height, <b>H</b> :	280	ft
Base Face Width, <b>BW</b> :	28	ft
BP Dist. Above Fdn, <b>bp<sub>dist</sub></b> :	3	in

Foundation Analysis Checks				
	Capacity	Demand	Rating	Check
<i>Lateral (Sliding) (kips)</i>	534.54	85.00	15.9%	Pass
<i>Bearing Pressure (ksf)</i>	7.50	2.20	29.3%	Pass
<i>Overturning (kip*ft)</i>	20897.14	13268.84	63.5%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	3307.78	185.25	5.6%	Pass
<i>Pier Flexure (Tension) (kip*ft)</i>	1764.15	159.25	9.0%	Pass
<i>Pier Compression (kip)</i>	15912.00	559.63	3.5%	Pass
<i>Pad Flexure (kip*ft)</i>	13519.41	676.05	5.0%	Pass
<i>Pad Shear - 1-way (kips)</i>	1485.15	118.45	8.0%	Pass
<i>Pad Shear - Comp 2-way (ksi)</i>	0.190	0.057	29.8%	Pass

Pier Properties		
Pier Shape:	Square	
Pier Diameter, <b>dpier</b> :	5.0	ft
Ext. Above Grade, <b>E</b> :	0.50	ft
Pier Rebar Size, <b>Sc</b> :	9	
Pier Rebar Quantity, <b>mc</b> :	23	
Pier Tie/Spiral Size, <b>St</b> :	4	
Pier Tie/Spiral Quantity, <b>mt</b> :	6	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, <b>cc<sub>pier</sub></b> :	3	in

Soil Rating:	63.5%
Structural Rating:	29.8%

Pad Properties		
Depth, <b>D</b> :	6.00	ft
Pad Width, <b>W</b> :	38.50	ft
Pad Thickness, <b>T</b> :	3.25	ft
Pad Rebar Size (Bottom), <b>Sp</b> :	11	
Pad Rebar Quantity (Bottom), <b>mp</b> :	60	
Pad Clear Cover, <b>cc<sub>pad</sub></b> :	3	in

Material Properties		
Rebar Grade, <b>Fy</b> :	60	ksi
Concrete Compressive Strength, <b>F'c</b> :	4	ksi
Dry Concrete Density, <b>δc</b> :	150	pcf

Soil Properties		
Total Soil Unit Weight, <b>γ</b> :	120	pcf
Ultimate Gross Bearing, <b>Qult</b> :	10.000	ksf
Cohesion, <b>Cu</b> :	0.000	ksf
Friction Angle, <b>φ</b> :	30	degrees
SPT Blow Count, <b>N<sub>blows</sub></b> :		
Base Friction, <b>μ</b> :	0.45	
Neglected Depth, <b>N</b> :	3.3	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, <b>gw</b> :	N/A	ft

<-- Toggle between Gross and Net