

**March 29, 2023**

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Subject: Structural Analysis Report

Client Designation: *Mississippi Public Broadcasting Reconfiguration*
FCC ASR Number: 1041037
Client Site Name: WMAW Rose Hill

Engineering Firm Designation: **TEP Project Number:** 327679.814195

Site Data: **2315 County Road 20, Louin, Jasper County, MS 39338**
Latitude 32° 08' 19.13", Longitude -89° 05' 37.15"
997.5± Foot - Guyed Tower

Dear Alicia Harris,

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

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

LC1: Existing + Proposed + Reserved Loading

Note: See Table 1 for the existing, proposed, and reserved loading

Sufficient Capacity

Structure Capacity	Foundation Capacity
89.7%	CANNOT DETERMINE

The analysis has been performed in accordance with the ANSI/TIA-222-H Structural Standard for Antenna Supporting Structures, Antennas, and Small Wind Turbine Support Structures and the 2018 International Building Code.

All modifications and equipment proposed in this report shall be installed in accordance with the appurtenances listed in Table 1 for the determined available structural capacity to be effective.

We at *Tower Engineering Professionals* appreciate the opportunity of providing our continuing professional services to you and *Mississippi Authority for Educational Television*. If you have any questions or need further assistance on this or any other projects please give us a call.

Structural analysis prepared by: Erik Latta, P.E. / LFC

Respectfully submitted by:

Aaron T. Rucker, P.E.



03/29/2023

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1) INTRODUCTION

The tower is a 997.5± Foot Guyed Tower mapped by Tower Engineering Professionals in February of 2023. The original design standard and wind speed were unavailable for review. The tower has been modified multiple times in the past to accommodate additional loading. All information provided to TEP was assumed to be accurate and complete.

2) ANALYSIS CRITERIA

TIA-222 Revision:	ANSI/TIA-222-H
Type of Analysis:	Feasibility Study
Risk Category:	II
Wind Speed:	116 mph (Ultimate)
Exposure Category:	C
Topographic Procedure:	Method 1 (Kzt = 1.0)
Ice Thickness:	1.0 in
Wind Speed with Ice:	30 mph
Service Wind Speed:	60 mph

Table 1 - Existing, Proposed, and Reserved Antenna and Cable Information

Existing/ Proposed/ Reserved	Mount Level (ft)	Ant CL (ft)	Qty	Antenna Model	Mount Type	Qty Coax	Coax Size	Coax Location	Owner/ Tenant
Proposed	0 - 1054		-	FAA F3 Lighting System	-	1	1" M.C.	CA-Face	MPB
<i>To Be Removed</i>	<i>0 – 1054</i>		-	<i>Existing Lighting System</i>	-	<i>1</i>	<i>2-1/4" M.C.</i>	<i>CA-Face</i>	<i>MPB</i>
Reserved	997.5	1025	1	Dielectric TFU-28ETT/VP-R O4	Tower Top	1	6-1/8"	Inside A-Leg	WMAW- TV
<i>To Be Removed</i>	<i>997.5</i>	<i>1025</i>	<i>1</i>	<i>Dielectric TUF-O4-14/56H-1-T</i>	<i>Tower Top</i>	<i>1</i>	<i>6-1/8"</i>	<i>Inside A-Leg</i>	<i>WMAW- TV</i>
Reserved	876	876	1	ERI SHPX-10AC	(10) Standoffs	1	3-1/8"	Inside C-Leg	WMAW- FM
<i>To Be Removed</i>	<i>876</i>	<i>876</i>	<i>1</i>	<i>Jampro JHPC-10</i>	<i>(10) Standoffs</i>	<i>1</i>	<i>3-1/8"</i>	<i>Inside C-Leg</i>	<i>WMAW- FM</i>
<i>To Be Removed</i>	<i>798</i>	<i>808</i>	<i>1</i>	<i>21', 4-Element Dipole</i>	<i>Side Platform</i>	<i>1</i>	<i>1-1/4" M.C.</i>	<i>AB-Face</i>	<i>Unknown</i>
		<i>804</i>	<i>1</i>	<i>1" Dia. x 7' Omni</i>					
		<i>800</i>	<i>1</i>	<i>Equipment Box 19"x26"x10"</i>					
			<i>1</i>	<i>Equipment Box 16"x24"x31"</i>					
		<i>798</i>	<i>1</i>	<i>Equipment Box 24"x24"x8"</i>					
			<i>1</i>	<i>Equipment Box 42"x26"x19"</i>					
<i>To Be Removed</i>	<i>765</i>	<i>767</i>	<i>1</i>	<i>5.5' x 3' Grid Dish</i>	<i>Standoff</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>Unknown</i>
		<i>763</i>	<i>1</i>	<i>5.5' x 3' Grid Dish</i>					
<i>To Be Removed</i>	<i>747</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>Standoff</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>Unknown</i>
Reserved	730	730	1	Kathrein Scala PR-TV	Pipe	1	1/2	CA-Face	MPB
Existing	697	697	1	44', 8-Element Dipole	(4) Standoffs	1	7/8	AB-Face	NWS
Reserved	654	654	1	Dielectric TFU-8WB-R C160	Standoff	1	4-1/16"	Inside CA-Face	WMAW- TV
Existing	616	626	1	21', 4-Element Dipole	Standoff	1	7/8	AB-Face	FBI

Existing/ Proposed/ Reserved	Mount Level (ft)	Ant CL (ft)	Qty	Antenna Model	Mount Type	Qty Coax	Coax Size	Coax Location	Owner/ Tenant
Reserved	525	525	1	Jampro JHPC-10	(10) Standoffs	1	3"	CA-Face	WMAW-FM
<i>To Be Removed</i>	520.5	520.5	1	20', 4-Element Dipole	(2) Standoffs	1	7/8	AB-Face	Unknown
<i>To Be Removed</i>	496	496	1	10', Single Element Dipole	Direct	1	1/2	AB-Face	Unknown
	482	482	1	10', Single Element Dipole	Direct				
<i>To Be Removed</i>	465	465	1	8' Dia. Dish	Direct	-	-	-	Unknown
Existing	392	402	1	21', 4-Element Dipole	Standoff	1	7/8	AB-Face	FBI
<i>To Be Removed</i>	392	392	1	20', 4-Element Dipole	(2) Standoffs	1	7/8	AB-Face	Unknown
Existing	370	370	1	8' Dia. Dish w/ Radome	Standoff	1	EW63	CA-Face	MPB
<i>To Be Removed</i>	348	-	-	-	(2) Face- Mounted Angles	-	-	-	Unknown
	342								
Existing	331	331	1	8' Dia. Dish w/ Radome	Pipe	1	EW63	CA-Face	MPB
<i>To Be Removed</i>	213	215	1	Damaged 10', 5-Element Yagi	Standoff	1	1/4"	CA-Face	Unknown
<i>To Be Removed</i>	190	196	1	40" x 32" Grid Panel Antenna	Standoff	1	1/8"	AB-Face	Unknown
						1	3/8"		
						1	1/2"		
<i>To Be Removed</i>	132	129	1	Damaged 6-Element Yagi	Standoff	-	-	-	Unknown
Existing	34	34	1	Compound Light	Standoff	1	5/8"	C-Leg	MPB
Existing	34	34	1	1.7' x 2' Ice Shield	Standoff	-	-	-	MPB
Existing	31	32	1	Anemometer	Standoff	1	5/16"	Inside A-Leg	MPB
<i>To Be Removed</i>	Multiple abandoned feed lines throughout tower. See note 1.								Unknown

Notes:

- 1) Refer to the Tower Mapping Report referenced in Table 2 for abandoned feed line details.

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Source
Maintenance and Condition Assessment Report	Tower Engineering Professionals, Inc., dated March 10, 2023 TEP No. 327679.814192	TEP
Tower Mapping Report	Tower Engineering Professionals, Inc., dated March 28, 2023 TEP No. 327679.814193	TEP
Correspondence	Correspondence in reference to the existing, proposed, and reserved loading.	KGA

3.1) Analysis Method

tnxTower (version 8.1.1.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Analysis Assumptions

- 1) The tower and foundation were built and maintained in accordance with the manufacturer's specification.
- 2) The configuration of existing antennas, transmission cables, mounts and other appurtenances are as specified in the tower mapping report by TEP.
- 3) Unless specified by the client or tower mapping, the location of the existing and proposed coax is assumed by TEP and listed in Table 1.
- 4) All tower components are in sufficient condition to carry their full design capacity.
- 5) Serviceability with respect to antenna twist, tilt, roll, or lateral translation, is not checked and is left to the carrier or tower owner to ensure conformance.
- 6) All antenna mounts and mounting hardware are structurally sufficient to carry the full design capacity requirements of appurtenance wind area and weight as provided by the original manufacturer specifications. It is the carrier's responsibility to ensure compliance to the structural limitations of the existing and/or proposed antenna mounts. TEP did not analyze antenna supporting mounts as part of this structural analysis report.
- 7) The following material grades were assumed:
 - a) Connection bolts: A325N
 - b) Leg grade: A572-50
 - c) SR diagonal grade: A572-50
 - d) Other bracing grade: A36
 - e) Guy wire grade: A586 Gr. 1
 - f) Guy anchor shaft grade: A572-50

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

4) ANALYSIS RESULTS

Table 3 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	ϕP_{allow} (K)	% Capacity	Pass / Fail
T1	997.5 - 996.667	Leg	3	4	-14.81	329.68	30.2	Pass
T2	996.667 - 990	Leg	3	10	-53.45	157.64	33.9	Pass
T3	990 - 982.417	Leg	3 1/4	25	-77.92	163.04	47.8	Pass
T4	982.417 - 960	Leg	3 1/4	37	-113.54	163.02	69.6	Pass
T5	960 - 930	Leg	3 1/2	70	-143.90	213.35	67.4	Pass
T6	930 - 900	Leg	3 1/2	112	-153.31	213.35	71.9	Pass
T7	900 - 870	Leg	3 1/2	154	-153.04	213.35	71.7	Pass
T8	870 - 840	Leg	3 1/4	196	-135.53	163.02	83.1	Pass
T9	840 - 810	Leg	3 1/4	238	-92.80	163.02	56.9	Pass
T10	810 - 802.417	Leg	3 3/4	279	-102.56	270.02	38.0	Pass
T11	802.417 - 787.583	Leg	3 3/4	291	-150.50	269.99	55.7	Pass
T12	787.583 - 780	Leg	3 3/4	312	-153.75	270.02	56.9	Pass
T13	780 - 750	Leg	3 3/4	327	-146.02	270.01	54.1	Pass
T14	750 - 720	Leg	3 1/2	368	-143.95	213.35	67.5	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	ϕP_{allow} (K)	% Capacity	Pass / Fail
T15	720 - 690	Leg	3 1/2	410	-160.07	213.35	75.0	Pass
T16	690 - 660	Leg	3 1/2	452	-160.78	213.35	75.4	Pass
T17	660 - 630	Leg	3 1/2	494	-151.36	213.35	70.9	Pass
T18	630 - 615	Leg	3 3/4	537	-166.75	270.01	61.8	Pass
T19	615 - 600	Leg	3 3/4	558	-189.63	442.60	42.8	Pass
T20	600 - 570	Leg	4	588	-217.64	513.72	42.4	Pass
T21	570 - 562.417	Leg	3 3/4	641	-174.11	442.60	39.3	Pass
T22	562.417 - 540	Leg	3 3/4	656	-161.62	270.00	59.9	Pass
T23	540 - 510	Leg	3 3/4	689	-186.51	270.01	69.1	Pass
T24	510 - 502.417	Leg	3 3/4	731	-189.66	270.02	70.2	Pass
T25	502.417 - 480	Leg	3 3/4	744	-192.38	442.59	43.5	Pass
T26	480 - 450	Leg	3 3/4	786	-188.46	442.60	42.6	Pass
T27	450 - 435	Leg	3 3/4	841	-166.68	442.60	37.7	Pass
T28	435 - 420	Leg	3 3/4	868	-164.95	270.01	61.1	Pass
T29	420 - 390	Leg	4 1/4	892	-251.38	401.30	62.6	Pass
T30	390 - 360	Leg	4 1/2	934	-277.38	475.53	58.3	Pass
T31	360 - 330	Leg	4 1/4	976	-227.24	401.30	56.6	Pass
T32	330 - 300	Leg	4	1018	-233.77	513.72	45.5	Pass
T33	300 - 292.417	Leg	4 1/4	1070	-234.68	589.62	39.8	Pass
T34	292.417 - 270	Leg	4 1/4	1087	-234.43	401.29	58.4	Pass
T35	270 - 240	Leg	4 1/4	1120	-223.88	401.30	55.8	Pass
T36	240 - 210	Leg	4 1/4	1161	-282.75	401.30	70.5	Pass
T37	210 - 202.417	Leg	4 1/2	1203	-302.66	475.55	63.6	Pass
T38	202.417 - 180	Leg	4 1/2	1215	-345.08	670.24	51.5	Pass
T39	180 - 150	Leg	4 1/2	1257	-336.39	670.24	50.2	Pass
T40	150 - 120	Leg	4 1/4	1311	-305.39	589.61	51.8	Pass
T41	120 - 90	Leg	4 1/4	1365	-304.93	589.61	51.7	Pass
T42	90 - 60	Leg	4 1/4	1419	-335.06	589.61	56.8	Pass
T43	60 - 30	Leg	4 1/2	1473	-378.77	670.24	56.5	Pass
T44	30 - 22.5	Leg	5	1527	-376.00	847.40	44.4	Pass
T45	22.5 - 15	Leg	5	1542	-387.08	843.87	45.9	Pass
T46	15 - 7.5	Leg	5	1566	-401.59	843.87	47.6	Pass
T47	7.5 - 0	Leg	5	1581	-416.39	843.87	49.3	Pass
T2	996.667 - 990	Diagonal	2L2x2x3/16x3/8	20	-9.28	39.43	23.5	Pass
T3	990 - 982.417	Diagonal	3/4	31	13.40	20.87	64.2	Pass
T4	982.417 - 960	Diagonal	3/4	64	12.35	20.87	59.2	Pass
T5	960 - 930	Diagonal	5/8	106	9.28	14.50	64.0	Pass
T6	930 - 900	Diagonal	5/8	149	5.60	14.50	38.7	Pass
T7	900 - 870	Diagonal	5/8	164	7.47	14.50	51.5	Pass
T8	870 - 840	Diagonal	3/4	206	14.24	20.87	68.2	Pass
T9	840 - 810	Diagonal	7/8	248	19.79	28.41	69.6	Pass
T10	810 - 802.417	Diagonal	7/8	287	20.90	28.41	73.6	Pass
T11	802.417 - 787.583	Diagonal	1	299	21.43	37.11	57.7	Pass
T12	787.583 - 780	Diagonal	7/8	324	16.09	28.41	56.6	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	ϕP_{allow} (K)	% Capacity	Pass / Fail
T13	780 - 750	Diagonal	7/8	366	15.48	28.41	54.5	Pass
T14	750 - 720	Diagonal	3/4	408	10.66	20.87	51.1	Pass
T15	720 - 690	Diagonal	5/8	449	5.25	14.50	36.2	Pass
T16	690 - 660	Diagonal	5/8	464	5.84	14.50	40.3	Pass
T17	660 - 630	Diagonal	5/8	506	13.00	14.50	89.7	Pass
T18	630 - 615	Diagonal	3/4	545	14.71	20.87	70.5	Pass
T19	615 - 600	Diagonal	3/4	569	17.66	20.87	84.6	Pass
T20	600 - 570	Diagonal	7/8	635	19.50	28.41	68.6	Pass
T21	570 - 562.417	Diagonal	7/8	652	17.02	28.41	59.9	Pass
T22	562.417 - 540	Diagonal	7/8	688	15.37	28.41	54.1	Pass
T23	540 - 510	Diagonal	3/4	730	12.41	20.87	59.5	Pass
T24	510 - 502.417	Diagonal	5/8	742	7.61	14.50	52.5	Pass
T25	502.417 - 480	Diagonal	5/8	781	6.04	14.50	41.7	Pass
T26	480 - 450	Diagonal	3/4	796	11.30	20.87	54.1	Pass
T27	450 - 435	Diagonal	7/8	847	13.34	28.41	46.9	Pass
T28	435 - 420	Diagonal	7/8	877	16.03	28.41	56.4	Pass
T29	420 - 390	Diagonal	1	901	20.61	37.11	55.5	Pass
T30	390 - 360	Diagonal	1	970	20.58	37.11	55.5	Pass
T31	360 - 330	Diagonal	3/4	1015	14.89	20.87	71.3	Pass
T32	330 - 300	Diagonal	5/8	1065	7.54	14.50	52.0	Pass
T33	300 - 292.417	Diagonal	5/8	1076	3.36	14.50	23.1	Pass
T34	292.417 - 270	Diagonal	5/8	1094	7.10	14.50	49.0	Pass
T35	270 - 240	Diagonal	5/8	1127	11.52	14.50	79.5	Pass
T36	240 - 210	Diagonal	3/4	1173	16.11	20.87	77.2	Pass
T37	210 - 202.417	Diagonal	7/8	1212	17.41	28.41	61.3	Pass
T38	202.417 - 180	Diagonal	7/8	1251	18.03	28.41	63.5	Pass
T39	180 - 150	Diagonal	3/4	1304	9.38	20.87	45.0	Pass
T40	150 - 120	Diagonal	5/8	1358	5.46	14.50	37.6	Pass
T41	120 - 90	Diagonal	5/8	1377	6.64	14.50	45.8	Pass
T42	90 - 60	Diagonal	5/8	1431	10.02	14.50	69.1	Pass
T43	60 - 30	Diagonal	3/4	1497	12.24	20.87	58.6	Pass
T44	30 - 22.5	Diagonal	2L2x2x3/16x3/8	1537	-14.39	38.22	37.7	Pass
T45	22.5 - 15	Diagonal	2L2 1/2x2x1/4x3/8	1562	-12.74	30.34	42.0	Pass
T46	15 - 7.5	Diagonal	2L2x2x3/16x3/8	1576	-14.67	37.88	38.7	Pass
T47	7.5 - 0	Diagonal	2L2 1/2x2x1/4x3/8	1601	-13.16	30.34	43.4	Pass
T4	982.417 - 960	Horizontal	2L2x2x3/16x1/4	60	-8.34	26.42	31.5	Pass
T5	960 - 930	Horizontal	2L2x2x3/16x1/4	102	-6.25	26.53	23.6	Pass
T6	930 - 900	Horizontal	2L2x2x3/16x1/4	144	-3.59	26.53	13.5	Pass
T7	900 - 870	Horizontal	2L2x2x3/16x1/4	168	-4.71	26.53	17.8	Pass
T8	870 - 840	Horizontal	2L2x2x3/16x1/4	210	-9.38	26.42	35.5	Pass
T9	840 - 810	Horizontal	2L2x2x3/16x1/4	252	-13.50	26.42	51.1	Pass
T11	802.417 - 787.583	Horizontal	2L2x2x3/16x1/4	303	-15.10	26.63	56.7	Pass
T13	780 - 750	Horizontal	2L2x2x3/16x1/4	361	-10.35	26.63	38.9	Pass
T14	750 - 720	Horizontal	2L2x2x3/16x1/4	403	-7.10	26.53	26.8	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	ϕP_{allow} (K)	% Capacity	Pass / Fail
T15	720 - 690	Horizontal	2L2x2x3/16x1/4	444	-3.46	26.53	13.0	Pass
T16	690 - 660	Horizontal	2L2x2x3/16x1/4	468	-3.65	26.53	13.8	Pass
T17	660 - 630	Horizontal	2L2x2x3/16x1/4	510	-8.73	26.53	32.9	Pass
T18	630 - 615	Horizontal	2L2x2x3/16x1/4	549	-10.38	26.63	39.0	Pass
T19	615 - 600	Horizontal	2L2x2x3/16x1/4	573	-11.40	26.63	42.8	Pass
T20	600 - 570	Horizontal	2L2x2x3/16x1/4	627	-12.61	26.74	47.2	Pass
T22	562.417 - 540	Horizontal	2L2x2x3/16x1/4	682	-10.57	26.63	39.7	Pass
T23	540 - 510	Horizontal	2L2x2x3/16x1/4	724	-8.25	26.63	31.0	Pass
T25	502.417 - 480	Horizontal	2L2x2x3/16x1/4	772	-3.59	26.63	13.5	Pass
T26	480 - 450	Horizontal	2L2x2x3/16x1/4	801	-7.24	26.63	27.2	Pass
T27	450 - 435	Horizontal	2L2x2x3/16x1/4	852	-8.74	26.63	32.8	Pass
T28	435 - 420	Horizontal	2L2x2x3/16x1/4	882	-10.90	26.63	40.9	Pass
T29	420 - 390	Horizontal	2L2x2x3/16x1/4	906	-13.93	26.84	51.9	Pass
T30	390 - 360	Horizontal	2L2x2x3/16x1/4	958	-13.32	26.95	49.4	Pass
T31	360 - 330	Horizontal	2L2x2x3/16x1/4	1009	-10.10	26.84	37.6	Pass
T32	330 - 300	Horizontal	2L2x2x3/16x1/4	1057	-4.43	26.74	16.6	Pass
T34	292.417 - 270	Horizontal	2L2x2x3/16x1/4	1100	-4.67	26.84	17.4	Pass
T35	270 - 240	Horizontal	2L2x2x3/16x1/4	1133	-7.84	26.84	29.2	Pass
T36	240 - 210	Horizontal	2L2x2x3/16x1/4	1177	-10.88	26.84	40.5	Pass
T38	202.417 - 180	Horizontal	2L2x2x3/16x1/4	1243	-11.51	26.95	42.7	Pass
T39	180 - 150	Horizontal	2L2x2x3/16x1/4	1295	-5.83	26.95	21.6	Pass
T40	150 - 120	Horizontal	2L2x2x3/16x1/4	1325	-5.29	26.84	19.7	Pass
T41	120 - 90	Horizontal	2L2x2x3/16x1/4	1379	-5.28	26.84	19.7	Pass
T42	90 - 60	Horizontal	2L2x2x3/16x1/4	1435	-6.18	26.84	23.0	Pass
T43	60 - 30	Horizontal	2L2x2x3/16x1/4	1489	-7.63	26.95	28.3	Pass
T45	22.5 - 15	Horizontal	2L2 1/2x2x3/16x3/8	1544	-6.70	27.91	24.0	Pass
T47	7.5 - 0	Horizontal	2L2 1/2x2x3/16x3/8	1583	-7.21	27.91	25.8	Pass
T19	615 - 600	Secondary Horizontal	L2x2x1/4	575	-3.29	15.18	21.7	Pass
T20	600 - 570	Secondary Horizontal	L2x2x1/4	605	-3.77	15.27	24.7	Pass
T21	570 - 562.417	Secondary Horizontal	L2x2x1/4	653	-3.02	15.18	19.9	Pass
T25	502.417 - 480	Secondary Horizontal	L2x2x1/4	761	-3.33	15.18	22.0	Pass
T26	480 - 450	Secondary Horizontal	L2x2x1/4	803	-3.26	15.18	21.5	Pass
T27	450 - 435	Secondary Horizontal	L2x2x1/4	855	-2.89	15.18	19.0	Pass
T32	330 - 300	Secondary Horizontal	L2x2x1/4	1035	-4.05	15.27	26.5	Pass
T33	300 - 292.417	Secondary Horizontal	L2x2x1/4	1084	-4.06	15.36	26.5	Pass
T38	202.417 - 180	Secondary Horizontal	L2x2x1/4	1232	-5.98	15.45	38.7	Pass
T39	180 - 150	Secondary Horizontal	L2x2x1/4	1274	-5.83	15.45	37.7	Pass
T40	150 - 120	Secondary Horizontal	L2x2x1/4	1328	-5.29	15.36	34.4	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	ϕP_{allow} (K)	% Capacity	Pass / Fail
T41	120 - 90	Secondary Horizontal	L2x2x1/4	1382	-5.28	15.36	34.4	Pass
T42	90 - 60	Secondary Horizontal	L2x2x1/4	1436	-5.81	15.36	37.8	Pass
T43	60 - 30	Secondary Horizontal	L2x2x1/4	1514	-6.56	15.45	42.5	Pass
T44	30 - 22.5	Secondary Horizontal	L2-1/2x2-1/2x3/16	1538	-6.56	23.10	28.4	Pass
T46	15 - 7.5	Secondary Horizontal	L2-1/2x2-1/2x3/16	1577	-6.96	23.10	30.1	Pass
T2	996.667 - 990	Top Girt	2L2x2x3/16x3/8	12	3.22	39.35	8.2	Pass
T3	990 - 982.417	Top Girt	2L2x2x3/16x1/4	27	-2.89	26.42	10.9	Pass
T4	982.417 - 960	Top Girt	2C8x11.5x1/4	39	-9.23	145.98	6.3	Pass
T5	960 - 930	Top Girt	2L2x2x3/16x1/4	72	-3.40	26.53	12.8	Pass
T6	930 - 900	Top Girt	2L2x2x3/16x1/4	114	-2.66	26.53	10.0	Pass
T7	900 - 870	Top Girt	2L2x2x3/16x1/4	156	-2.65	26.53	10.0	Pass
T8	870 - 840	Top Girt	2L2x2x3/16x1/4	198	-3.13	26.42	11.8	Pass
T9	840 - 810	Top Girt	2L2x2x3/16x1/4	240	-5.68	26.42	21.5	Pass
T10	810 - 802.417	Top Girt	2L2x2x3/16x1/4	282	-7.42	26.63	27.8	Pass
T11	802.417 - 787.583	Top Girt	2L2x2x3/16x1/4	294	-14.98	26.63	56.2	Pass
T13	780 - 750	Top Girt	2L2x2x3/16x1/4	331	-5.69	26.63	21.4	Pass
T14	750 - 720	Top Girt	2L2x2x3/16x1/4	373	-3.93	26.53	14.8	Pass
T15	720 - 690	Top Girt	2L2x2x3/16x1/4	415	-2.77	26.53	10.5	Pass
T16	690 - 660	Top Girt	2L2x2x3/16x1/4	457	-2.78	26.53	10.5	Pass
T17	660 - 630	Top Girt	2L2x2x3/16x1/4	498	-2.68	26.53	10.1	Pass
T18	630 - 615	Top Girt	2L2x2x3/16x1/4	540	-5.03	26.63	18.9	Pass
T19	615 - 600	Top Girt	2L2x2x3/16x1/4	561	-10.72	26.63	40.3	Pass
T20	600 - 570	Top Girt	2L2x2x3/16x1/4	591	-6.35	26.74	23.7	Pass
T21	570 - 562.417	Top Girt	2L2x2x3/16x1/4	646	-6.05	26.63	22.7	Pass
T22	562.417 - 540	Top Girt	2L2x2x3/16x1/4	661	-11.32	26.63	42.5	Pass
T23	540 - 510	Top Girt	2L2x2x3/16x1/4	694	-4.51	26.63	16.9	Pass
T24	510 - 502.417	Top Girt	2L2x2x3/16x1/4	736	-3.29	26.63	12.3	Pass
T25	502.417 - 480	Top Girt	2L2x2x3/16x1/4	748	-4.74	26.63	17.8	Pass
T26	480 - 450	Top Girt	2L2x2x3/16x1/4	788	-3.26	26.63	12.3	Pass
T27	450 - 435	Top Girt	2L2x2x3/16x1/4	843	-4.27	26.63	16.0	Pass
T28	435 - 420	Top Girt	2L2x2x3/16x1/4	870	-9.75	26.63	36.6	Pass
T29	420 - 390	Top Girt	2L2x2x3/16x1/4	894	-6.18	26.84	23.0	Pass
T30	390 - 360	Top Girt	2L2x2x3/16x1/4	936	-7.13	26.95	26.5	Pass
T31	360 - 330	Top Girt	2L2x2x3/16x1/4	979	-5.51	26.84	20.5	Pass
T32	330 - 300	Top Girt	2L2x2x3/16x1/4	1020	-4.05	26.74	15.2	Pass
T33	300 - 292.417	Top Girt	2L2x2x3/16x1/4	1075	-4.06	26.84	15.1	Pass
T34	292.417 - 270	Top Girt	2L2x2x3/16x1/4	1089	-4.06	26.84	15.1	Pass
T35	270 - 240	Top Girt	2L2x2x3/16x1/4	1122	-3.88	26.84	14.4	Pass
T36	240 - 210	Top Girt	2L2x2x3/16x1/4	1163	-4.90	26.84	18.3	Pass
T37	210 - 202.417	Top Girt	2L2x2x3/16x1/4	1207	-6.28	26.95	23.3	Pass
T38	202.417 - 180	Top Girt	2L2x2x3/16x1/4	1219	-12.05	26.95	44.7	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	ϕP_{allow} (K)	% Capacity	Pass / Fail
T39	180 - 150	Top Girt	2L2x2x3/16x1/4	1259	-5.83	26.95	21.6	Pass
T40	150 - 120	Top Girt	2L2x2x3/16x1/4	1313	-5.29	26.84	19.7	Pass
T41	120 - 90	Top Girt	2L2x2x3/16x1/4	1367	-5.28	26.84	19.7	Pass
T42	90 - 60	Top Girt	2L2x2x3/16x1/4	1421	-5.81	26.84	21.6	Pass
T43	60 - 30	Top Girt	2L2x2x3/16x1/4	1475	-6.56	26.95	24.4	Pass
T44	30 - 22.5	Top Girt	2L2x2x3/16x3/8	1529	-6.56	27.15	24.2	Pass
T46	15 - 7.5	Top Girt	2C8x11.5x3/8	1568	-6.96	154.66	4.5	Pass
T2	996.667 - 990	Bottom Girt	2L2x2x3/16x3/8	15	2.74	39.35	7.0	Pass
T4	982.417 - 960	Bottom Girt	2L2x2x3/16x1/4	42	-3.81	26.42	14.4	Pass
T5	960 - 930	Bottom Girt	2L2x2x3/16x1/4	75	-2.49	26.53	9.4	Pass
T6	930 - 900	Bottom Girt	2L2x2x3/16x1/4	117	-2.66	26.53	10.0	Pass
T7	900 - 870	Bottom Girt	2L2x2x3/16x1/4	159	-2.88	26.53	10.8	Pass
T8	870 - 840	Bottom Girt	2L2x2x3/16x1/4	201	-5.24	26.42	19.8	Pass
T9	840 - 810	Bottom Girt	2L2x2x3/16x1/4	243	-7.10	26.42	26.9	Pass
T12	787.583 - 780	Bottom Girt	2L2x2x3/16x1/4	319	-5.50	26.63	20.7	Pass
T13	780 - 750	Bottom Girt	2L2x2x3/16x1/4	334	-4.12	26.63	15.5	Pass
T14	750 - 720	Bottom Girt	2L2x2x3/16x1/4	376	-2.50	26.53	9.4	Pass
T15	720 - 690	Bottom Girt	2L2x2x3/16x1/4	418	-2.77	26.53	10.5	Pass
T16	690 - 660	Bottom Girt	2L2x2x3/16x1/4	460	-2.78	26.53	10.5	Pass
T17	660 - 630	Bottom Girt	2L2x2x3/16x1/4	501	-4.77	26.53	18.0	Pass
T19	615 - 600	Bottom Girt	2L2x2x3/16x1/4	564	-6.31	26.63	23.7	Pass
T20	600 - 570	Bottom Girt	2L2x2x3/16x1/4	595	-6.05	26.74	22.6	Pass
T22	562.417 - 540	Bottom Girt	2L2x2x3/16x1/4	664	-4.75	26.63	17.8	Pass
T23	540 - 510	Bottom Girt	2L2x2x3/16x1/4	697	-3.23	26.63	12.1	Pass
T25	502.417 - 480	Bottom Girt	2L2x2x3/16x1/4	749	-3.33	26.63	12.5	Pass
T26	480 - 450	Bottom Girt	2L2x2x3/16x1/4	792	-4.03	26.63	15.1	Pass
T28	435 - 420	Bottom Girt	2L2x2x3/16x1/4	873	-5.81	26.63	21.8	Pass
T29	420 - 390	Bottom Girt	2L2x2x3/16x1/4	897	-7.49	26.84	27.9	Pass
T30	390 - 360	Bottom Girt	2L2x2x3/16x1/4	940	-5.64	26.95	20.9	Pass
T31	360 - 330	Bottom Girt	2L2x2x3/16x1/4	981	-3.94	26.84	14.7	Pass
T32	330 - 300	Bottom Girt	2L2x2x3/16x1/4	1023	-4.05	26.74	15.2	Pass
T34	292.417 - 270	Bottom Girt	2L2x2x3/16x1/4	1092	-4.06	26.84	15.1	Pass
T35	270 - 240	Bottom Girt	2L2x2x3/16x1/4	1126	-4.23	26.84	15.7	Pass
T36	240 - 210	Bottom Girt	2L2x2x3/16x1/4	1168	-5.80	26.84	21.6	Pass
T38	202.417 - 180	Bottom Girt	2L2x2x3/16x1/4	1220	-5.98	26.95	22.2	Pass
T39	180 - 150	Bottom Girt	2L2x2x3/16x1/4	1262	-5.83	26.95	21.6	Pass
T40	150 - 120	Bottom Girt	2L2x2x3/16x1/4	1316	-5.29	26.84	19.7	Pass
T41	120 - 90	Bottom Girt	2L2x2x3/16x1/4	1370	-5.28	26.84	19.7	Pass
T42	90 - 60	Bottom Girt	2L2x2x3/16x1/4	1424	-5.81	26.84	21.6	Pass
T43	60 - 30	Bottom Girt	2L2x2x3/16x1/4	1478	-6.56	26.95	24.4	Pass
T45	22.5 - 15	Redund Horz 1 Bracing	L2 1/2x2x3/16	1549	6.70	22.90	29.3	Pass
T47	7.5 - 0	Redund Horz 1 Bracing	L2 1/2x2x3/16	1588	7.21	22.90	31.5	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	ϕP_{allow} (K)	% Capacity	Pass / Fail
T45	22.5 - 15	Redund Diag 1 Bracing	L2 1/2x2x3/16	1550	-7.50	19.25	38.9	Pass
T47	7.5 - 0	Redund Diag 1 Bracing	L2 1/2x2x3/16	1593	-8.06	19.25	41.9	Pass
T1	997.5 - 996.667	Guy A@997.5	1 1/8	1606	62.55	98.28	63.6	Pass
T12	787.583 - 780	Guy A@787.583	1 1/4	1609	82.70	120.96	68.4	Pass
T20	600 - 570	Guy A@585	1 3/16	1612	69.42	108.36	64.1	Pass
T30	390 - 360	Guy A@382.417	1 5/16	1615	85.13	133.56	63.7	Pass
T38	202.417 - 180	Guy A@187.583	1 1/16	1618	41.26	86.94	47.5	Pass
T1	997.5 - 996.667	Guy B@997.5	1 1/8	1605	62.20	98.28	63.3	Pass
T12	787.583 - 780	Guy B@787.583	1 1/4	1608	82.37	120.96	68.1	Pass
T20	600 - 570	Guy B@585	1 3/16	1611	69.45	108.36	64.1	Pass
T30	390 - 360	Guy B@382.417	1 5/16	1614	85.00	133.56	63.6	Pass
T38	202.417 - 180	Guy B@187.583	1 1/16	1617	41.19	86.94	47.4	Pass
T1	997.5 - 996.667	Guy C@997.5	1 1/8	1604	62.33	98.28	63.4	Pass
T12	787.583 - 780	Guy C@787.583	1 1/4	1607	82.71	120.96	68.4	Pass
T20	600 - 570	Guy C@585	1 3/16	1610	69.75	108.36	64.4	Pass
T30	390 - 360	Guy C@382.417	1 5/16	1613	85.37	133.56	63.9	Pass
T38	202.417 - 180	Guy C@187.583	1 1/16	1616	41.23	86.94	47.4	Pass
T1	997.5 - 996.667	Top Guy Pull-Off@997.5	W8x35	5	-0.00	318.11	3.7	Pass
T12	787.583 - 780	Top Guy Pull-Off@787.583	2C9x13.4x1/4	316	26.26	254.03	10.3	Pass
T20	600 - 570	Top Guy Pull-Off@585	2C9x13.4x1/4	615	26.91	254.03	10.6	Pass
T30	390 - 360	Top Guy Pull-Off@382.417	2C9x13.4x1/4	967	25.47	254.03	10.0	Pass
T38	202.417 - 180	Top Guy Pull-Off@187.583	2C9x13.4x1/4	1231	17.53	254.03	6.9	Pass
							Summary	
						Leg (T8)	83.1	Pass
						Diagonal (T17)	89.7	Pass
						Horizontal (T11)	56.7	Pass
						Secondary Horizontal (T43)	42.5	Pass
						Top Girt (T11)	56.2	Pass
						Bottom Girt (T29)	27.9	Pass
						Redund Horz 1 Bracing (T47)	31.5	Pass
						Redund Diag 1 Bracing (T47)	41.9	Pass
						Guy A (T12)	68.4	Pass
						Guy B (T12)	68.1	Pass
						Guy C (T12)	68.4	Pass
						Top Guy Pull-Off (T20)	10.6	Pass
						Bolt Checks	80.5	Pass
						RATING =	89.7	Pass

Table 4 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Inner Guy Anchor Shaft	-	59.2	Pass
1,2	Middle Guy Anchor Shaft	-	51.5	Pass
1,2	Outer Guy Anchor Shaft	-	66.9	Pass
Structure Rating (max from all components)¹ =				89.7%

Notes:

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

Table 5 - Dish Twist/Sway Results for 60 mph Service Wind Speed

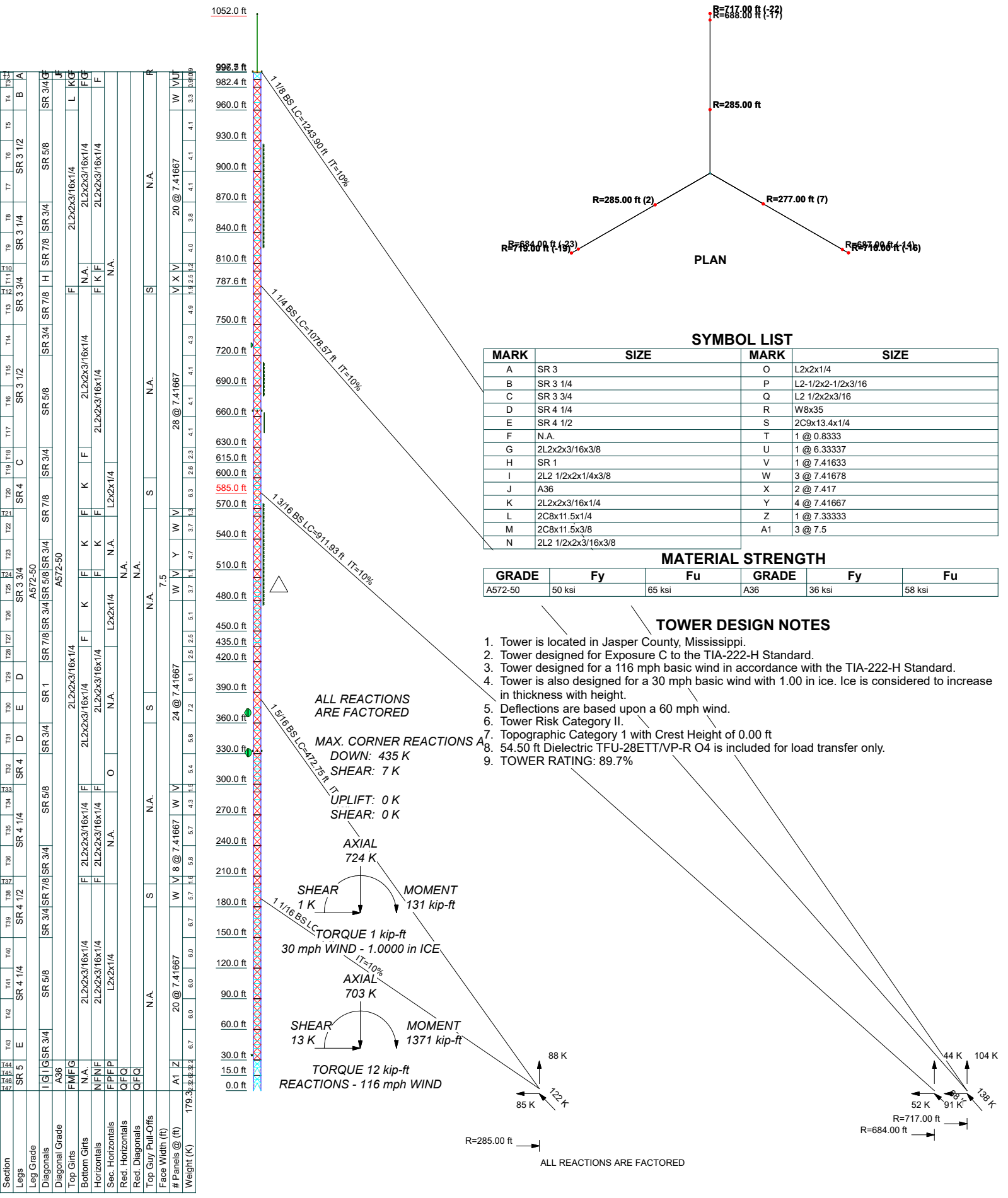
Elevation (ft)	Dish Model	Beam Deflection		
		Deflection (in)	Tilt (deg)	Twist (deg)
730	Kathrein Scala PR-TV	15.716	0.049	0.655
370	8' Dia. Dish w/ Radome	6.269	0.121	1.340
331	8' Dia. Dish w/ Radome	5.829	0.100	1.566

4.1) Recommendations

- 1) If the load differs from that described in Table 1 of this report or the provisions of this analysis are found to be invalid, another structural analysis should be performed.
- 2) This analysis assumes that the issues listed in the Maintenance and Condition Assessment Report referenced in Table 2 have been corrected.
- 3) The tower has sufficient capacity to carry the existing, proposed, and reserved loading. No modifications are required at this time.
- 4) TEP did not have sufficient information to perform a foundation analysis. Provide TEP with foundation drawings and a geotechnical report for this site in order to determine the substructure capacity. If this information is not available, TEP recommends a foundation mapping and geotechnical investigation.
- 5) Prior to acceptance of changed configuration a comprehensive structural analysis shall be performed in order to determine the overall stability and the adequacy of the structural members, foundations and connections.

APPENDIX A

TNX TOWER OUTPUT



tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job WMAW Rose Hill (ASR# 1041037)	Page 1 of 78
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	Client MPB	Designed by elatta

Tower Input Data

The main tower is a 3x guyed tower with an overall height of 997.50 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 7.50 ft at the top and 7.50 ft at the base.

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

The following design criteria apply:

Tower is located in Jasper County, Mississippi.

Tower base elevation above sea level: 625.00 ft.

Basic wind speed of 116 mph.

Risk Category II.

Exposure Category C.

Simplified Topographic Factor Procedure for wind speed-up calculations is used.

Topographic Category: 1.

Crest Height: 0.00 ft.

Nominal ice thickness of 1.0000 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 30 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

Pressures are calculated at each section.

Stress ratio used in tower member design is 1.

Safety factor used in guy design is 1.

Tower analysis based on target reliabilities in accordance with Annex S.

Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.

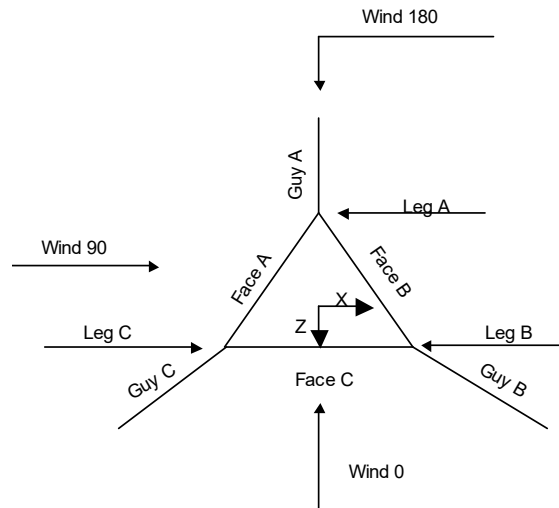
Maximum demand-capacity ratio is: 1.05.

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

Options

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

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job WMAW Rose Hill (ASR# 1041037)	Page 2 of 78
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Corner & Starmount Guyed Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	997.50-996.67			7.50	1	0.83
T2	996.67-990.00			7.50	1	6.67
T3	990.00-982.42			7.50	1	7.58
T4	982.42-960.00			7.50	1	22.42
T5	960.00-930.00			7.50	1	30.00
T6	930.00-900.00			7.50	1	30.00
T7	900.00-870.00			7.50	1	30.00
T8	870.00-840.00			7.50	1	30.00
T9	840.00-810.00			7.50	1	30.00
T10	810.00-802.42			7.50	1	7.58
T11	802.42-787.58			7.50	1	14.83
T12	787.58-780.00			7.50	1	7.58
T13	780.00-750.00			7.50	1	30.00
T14	750.00-720.00			7.50	1	30.00
T15	720.00-690.00			7.50	1	30.00
T16	690.00-660.00			7.50	1	30.00
T17	660.00-630.00			7.50	1	30.00
T18	630.00-615.00			7.50	1	15.00
T19	615.00-600.00			7.50	1	15.00
T20	600.00-570.00			7.50	1	30.00
T21	570.00-562.42			7.50	1	7.58
T22	562.42-540.00			7.50	1	22.42
T23	540.00-510.00			7.50	1	30.00
T24	510.00-502.42			7.50	1	7.58
T25	502.42-480.00			7.50	1	22.42
T26	480.00-450.00			7.50	1	30.00
T27	450.00-435.00			7.50	1	15.00
T28	435.00-420.00			7.50	1	15.00
T29	420.00-390.00			7.50	1	30.00

<i>tnxTower</i> <i>Tower Engineering Professionals</i> 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	WMAW Rose Hill (ASR# 1041037)	Page	3 of 78
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	Client	MPB	Designed by	elatta

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Assembly Database</i>	<i>Description</i>	<i>Section Width</i>	<i>Number of Sections</i>	<i>Section Length</i>
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T30	390.00-360.00			7.50	1	30.00
T31	360.00-330.00			7.50	1	30.00
T32	330.00-300.00			7.50	1	30.00
T33	300.00-292.42			7.50	1	7.58
T34	292.42-270.00			7.50	1	22.42
T35	270.00-240.00			7.50	1	30.00
T36	240.00-210.00			7.50	1	30.00
T37	210.00-202.42			7.50	1	7.58
T38	202.42-180.00			7.50	1	22.42
T39	180.00-150.00			7.50	1	30.00
T40	150.00-120.00			7.50	1	30.00
T41	120.00-90.00			7.50	1	30.00
T42	90.00-60.00			7.50	1	30.00
T43	60.00-30.00			7.50	1	30.00
T44	30.00-22.50			7.50	1	7.50
T45	22.50-15.00			7.50	1	7.50
T46	15.00-7.50			7.50	1	7.50
T47	7.50-0.00			7.50	1	7.50

Tower Section Geometry (cont'd)

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Diagonal Spacing</i>	<i>Bracing Type</i>	<i>Has K Brace End Panels</i>	<i>Has Horizontals</i>	<i>Top Girt Offset</i>	<i>Bottom Girt Offset</i>
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T1	997.50-996.67	0.83	X Brace	No	Yes	6.0000	4.0000
T2	996.67-990.00	6.33	X Brace	No	Yes	2.0000	2.0000
T3	990.00-982.42	7.42	TX Brace	No	Yes	2.0000	0.0000
T4	982.42-960.00	7.42	TX Brace	No	Yes	0.0000	2.0000
T5	960.00-930.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T6	930.00-900.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T7	900.00-870.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T8	870.00-840.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T9	840.00-810.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T10	810.00-802.42	7.42	TX Brace	No	Yes	2.0000	0.0000
T11	802.42-787.58	7.42	TX Brace	No	Yes	0.0000	0.0000
T12	787.58-780.00	7.42	TX Brace	No	Yes	0.0000	2.0000
T13	780.00-750.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T14	750.00-720.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T15	720.00-690.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T16	690.00-660.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T17	660.00-630.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T18	630.00-615.00	7.42	TX Brace	No	Yes	2.0000	0.0000
T19	615.00-600.00	7.42	TX Brace	No	Yes	0.0000	2.0000
T20	600.00-570.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T21	570.00-562.42	7.42	TX Brace	No	Yes	2.0000	0.0000
T22	562.42-540.00	7.42	TX Brace	No	Yes	0.0000	2.0000
T23	540.00-510.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T24	510.00-502.42	7.42	TX Brace	No	Yes	2.0000	0.0000
T25	502.42-480.00	7.42	TX Brace	No	Yes	0.0000	2.0000
T26	480.00-450.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T27	450.00-435.00	7.42	TX Brace	No	Yes	2.0000	0.0000
T28	435.00-420.00	7.42	TX Brace	No	Yes	0.0000	2.0000
T29	420.00-390.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T30	390.00-360.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T31	360.00-330.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T32	330.00-300.00	7.42	TX Brace	No	Yes	2.0000	2.0000

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<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Diagonal Spacing</i>	<i>Bracing Type</i>	<i>Has K Brace End Panels</i>	<i>Has Horizontals</i>	<i>Top Girt Offset</i>	<i>Bottom Girt Offset</i>
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T33	300.00-292.42	7.42	TX Brace	No	Yes	2.0000	0.0000
T34	292.42-270.00	7.42	TX Brace	No	Yes	0.0000	2.0000
T35	270.00-240.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T36	240.00-210.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T37	210.00-202.42	7.42	TX Brace	No	Yes	2.0000	0.0000
T38	202.42-180.00	7.42	TX Brace	No	Yes	0.0000	2.0000
T39	180.00-150.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T40	150.00-120.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T41	120.00-90.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T42	90.00-60.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T43	60.00-30.00	7.42	TX Brace	No	Yes	2.0000	2.0000
T44	30.00-22.50	7.33	X Brace	No	Yes	2.0000	0.0000
T45	22.50-15.00	7.50	K1 Down	No	Yes	0.0000	0.0000
T46	15.00-7.50	7.50	X Brace	No	Yes	0.0000	0.0000
T47	7.50-0.00	7.50	K1 Down	No	Yes	0.0000	0.0000

Tower Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>Leg Type</i>	<i>Leg Size</i>	<i>Leg Grade</i>	<i>Diagonal Type</i>	<i>Diagonal Size</i>	<i>Diagonal Grade</i>
<i>ft</i>						
T1 997.50-996.67	Solid Round	3	A572-50 (50 ksi)	Double Equal Angle		A36 (36 ksi)
T2 996.67-990.00	Solid Round	3	A572-50 (50 ksi)	Double Equal Angle	2L2x2x3/16x3/8	A36 (36 ksi)
T3 990.00-982.42	Solid Round	3 1/4	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T4 982.42-960.00	Solid Round	3 1/4	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T5 960.00-930.00	Solid Round	3 1/2	A572-50 (50 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T6 930.00-900.00	Solid Round	3 1/2	A572-50 (50 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T7 900.00-870.00	Solid Round	3 1/2	A572-50 (50 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T8 870.00-840.00	Solid Round	3 1/4	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T9 840.00-810.00	Solid Round	3 1/4	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T10 810.00-802.42	Solid Round	3 3/4	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T11 802.42-787.58	Solid Round	3 3/4	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T12 787.58-780.00	Solid Round	3 3/4	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T13 780.00-750.00	Solid Round	3 3/4	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T14 750.00-720.00	Solid Round	3 1/2	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T15 720.00-690.00	Solid Round	3 1/2	A572-50 (50 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T16 690.00-660.00	Solid Round	3 1/2	A572-50 (50 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T17 660.00-630.00	Solid Round	3 1/2	A572-50 (50 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T18 630.00-615.00	Solid Round	3 3/4	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)

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<i>Tower Elevation ft</i>	<i>Leg Type</i>	<i>Leg Size</i>	<i>Leg Grade</i>	<i>Diagonal Type</i>	<i>Diagonal Size</i>	<i>Diagonal Grade</i>
T19 615.00-600.00	Solid Round	3 3/4	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T20 600.00-570.00	Solid Round	4	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T21 570.00-562.42	Solid Round	3 3/4	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T22 562.42-540.00	Solid Round	3 3/4	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T23 540.00-510.00	Solid Round	3 3/4	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T24 510.00-502.42	Solid Round	3 3/4	A572-50 (50 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T25 502.42-480.00	Solid Round	3 3/4	A572-50 (50 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T26 480.00-450.00	Solid Round	3 3/4	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T27 450.00-435.00	Solid Round	3 3/4	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T28 435.00-420.00	Solid Round	3 3/4	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T29 420.00-390.00	Solid Round	4 1/4	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T30 390.00-360.00	Solid Round	4 1/2	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T31 360.00-330.00	Solid Round	4 1/4	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T32 330.00-300.00	Solid Round	4	A572-50 (50 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T33 300.00-292.42	Solid Round	4 1/4	A572-50 (50 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T34 292.42-270.00	Solid Round	4 1/4	A572-50 (50 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T35 270.00-240.00	Solid Round	4 1/4	A572-50 (50 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T36 240.00-210.00	Solid Round	4 1/4	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T37 210.00-202.42	Solid Round	4 1/2	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T38 202.42-180.00	Solid Round	4 1/2	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T39 180.00-150.00	Solid Round	4 1/2	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T40 150.00-120.00	Solid Round	4 1/4	A572-50 (50 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T41 120.00-90.00	Solid Round	4 1/4	A572-50 (50 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T42 90.00-60.00	Solid Round	4 1/4	A572-50 (50 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T43 60.00-30.00	Solid Round	4 1/2	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T44 30.00-22.50	Solid Round	5	A572-50 (50 ksi)	Double Equal Angle	2L2x2x3/16x3/8	A36 (36 ksi)
T45 22.50-15.00	Solid Round	5	A572-50 (50 ksi)	Double Angle	2L2 1/2x2x1/4x3/8	A36 (36 ksi)
T46 15.00-7.50	Solid Round	5	A572-50 (50 ksi)	Double Equal Angle	2L2x2x3/16x3/8	A36 (36 ksi)
T47 7.50-0.00	Solid Round	5	A572-50 (50 ksi)	Double Angle	2L2 1/2x2x1/4x3/8	A36 (36 ksi)

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Tower Section Geometry (cont'd)

<i>Tower Elevation ft</i>	<i>Top Girt Type</i>	<i>Top Girt Size</i>	<i>Top Girt Grade</i>	<i>Bottom Girt Type</i>	<i>Bottom Girt Size</i>	<i>Bottom Girt Grade</i>
T2 996.67-990.00	Double Equal Angle	2L2x2x3/16x3/8	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x3/8	A36 (36 ksi)
T3 990.00-982.42	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle		A36 (36 ksi)
T4 982.42-960.00	Double Channel	2C8x11.5x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T5 960.00-930.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T6 930.00-900.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T7 900.00-870.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T8 870.00-840.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T9 840.00-810.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T10 810.00-802.42	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle		A36 (36 ksi)
T11 802.42-787.58	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle		A36 (36 ksi)
T12 787.58-780.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T13 780.00-750.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T14 750.00-720.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T15 720.00-690.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T16 690.00-660.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T17 660.00-630.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T18 630.00-615.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle		A36 (36 ksi)
T19 615.00-600.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T20 600.00-570.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T21 570.00-562.42	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle		A36 (36 ksi)
T22 562.42-540.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T23 540.00-510.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T24 510.00-502.42	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle		A36 (36 ksi)
T25 502.42-480.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T26 480.00-450.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T27 450.00-435.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle		A36 (36 ksi)
T28 435.00-420.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T29 420.00-390.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)

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<i>Tower Elevation ft</i>	<i>Top Girt Type</i>	<i>Top Girt Size</i>	<i>Top Girt Grade</i>	<i>Bottom Girt Type</i>	<i>Bottom Girt Size</i>	<i>Bottom Girt Grade</i>
T30 390.00-360.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T31 360.00-330.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T32 330.00-300.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T33 300.00-292.42	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T34 292.42-270.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T35 270.00-240.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T36 240.00-210.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T37 210.00-202.42	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T38 202.42-180.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T39 180.00-150.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T40 150.00-120.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T41 120.00-90.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T42 90.00-60.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T43 60.00-30.00	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T44 30.00-22.50	Double Equal Angle	2L2x2x3/16x3/8	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T46 15.00-7.50	Double Channel	2C8x11.5x3/8	A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)

Tower Section Geometry (cont'd)

<i>Tower Elevation ft</i>	<i>No. of Mid Girts</i>	<i>Mid Girt Type</i>	<i>Mid Girt Size</i>	<i>Mid Girt Grade</i>	<i>Horizontal Type</i>	<i>Horizontal Size</i>	<i>Horizontal Grade</i>
T1 997.50-996.67	None	Flat Bar		A36 (36 ksi)	Wide Flange	W8x35	A36 (36 ksi)
T2 996.67-990.00	None	Flat Bar		A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T3 990.00-982.42	None	Flat Bar		A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T4 982.42-960.00	None	Flat Bar		A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T5 960.00-930.00	None	Flat Bar		A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T6 930.00-900.00	None	Flat Bar		A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T7 900.00-870.00	None	Flat Bar		A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T8 870.00-840.00	None	Flat Bar		A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T9 840.00-810.00	None	Flat Bar		A36 (36 ksi)	Double Equal Angle	2L2x2x3/16x1/4	A36 (36 ksi)
T10 810.00-802.42	None	Flat Bar		A36	Double Equal Angle	2L2x2x3/16x1/4	A36

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<i>Tower Elevation</i> <i>ft</i>	<i>No. of Mid Girts</i>	<i>Mid Girt Type</i>	<i>Mid Girt Size</i>	<i>Mid Girt Grade</i>	<i>Horizontal Type</i>	<i>Horizontal Size</i>	<i>Horizontal Grade</i>
T11 802.42-787.58	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T12 787.58-780.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T13 780.00-750.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T14 750.00-720.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T15 720.00-690.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T16 690.00-660.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T17 660.00-630.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T18 630.00-615.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T19 615.00-600.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T20 600.00-570.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T21 570.00-562.42	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T22 562.42-540.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T23 540.00-510.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T24 510.00-502.42	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T25 502.42-480.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T26 480.00-450.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T27 450.00-435.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T28 435.00-420.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T29 420.00-390.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T30 390.00-360.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T31 360.00-330.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T32 330.00-300.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T33 300.00-292.42	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T34 292.42-270.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T35 270.00-240.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T36 240.00-210.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T37 210.00-202.42	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T38 202.42-180.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T39 180.00-150.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T40 150.00-120.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36

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<i>Tower Elevation</i>	<i>No. of Mid Girts</i>	<i>Mid Girt Type</i>	<i>Mid Girt Size</i>	<i>Mid Girt Grade</i>	<i>Horizontal Type</i>	<i>Horizontal Size</i>	<i>Horizontal Grade</i>
<i>ft</i>							
T41 120.00-90.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T42 90.00-60.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T43 60.00-30.00	None	Flat Bar		(36 ksi) A36	Angle Double Equal	2L2x2x3/16x1/4	(36 ksi) A36
T45 22.50-15.00	None	Flat Bar		(36 ksi) A36	Angle Double Angle	2L2 1/2x2x3/16x3/8	(36 ksi) A36
T47 7.50-0.00	None	Flat Bar		(36 ksi) A36	Angle Double Angle	2L2 1/2x2x3/16x3/8	(36 ksi) A36

Tower Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>Secondary Horizontal Type</i>	<i>Secondary Horizontal Size</i>	<i>Secondary Horizontal Grade</i>	<i>Inner Bracing Type</i>	<i>Inner Bracing Size</i>	<i>Inner Bracing Grade</i>
<i>ft</i>						
T19 615.00-600.00	Equal Angle	L2x2x1/4	(36 ksi) A36	Solid Round		A572-50 (50 ksi)
T20 600.00-570.00	Equal Angle	L2x2x1/4	(36 ksi) A36	Solid Round		A572-50 (50 ksi)
T21 570.00-562.42	Equal Angle	L2x2x1/4	(36 ksi) A36	Solid Round		A572-50 (50 ksi)
T25 502.42-480.00	Equal Angle	L2x2x1/4	(36 ksi) A36	Solid Round		A572-50 (50 ksi)
T26 480.00-450.00	Equal Angle	L2x2x1/4	(36 ksi) A36	Solid Round		A572-50 (50 ksi)
T27 450.00-435.00	Equal Angle	L2x2x1/4	(36 ksi) A36	Solid Round		A572-50 (50 ksi)
T32 330.00-300.00	Equal Angle	L2x2x1/4	(36 ksi) A36	Solid Round		A572-50 (50 ksi)
T33 300.00-292.42	Equal Angle	L2x2x1/4	(36 ksi) A36	Solid Round		A572-50 (50 ksi)
T38 202.42-180.00	Equal Angle	L2x2x1/4	(36 ksi) A36	Solid Round		A572-50 (50 ksi)
T39 180.00-150.00	Equal Angle	L2x2x1/4	(36 ksi) A36	Solid Round		A572-50 (50 ksi)
T40 150.00-120.00	Equal Angle	L2x2x1/4	(36 ksi) A36	Solid Round		A572-50 (50 ksi)
T41 120.00-90.00	Equal Angle	L2x2x1/4	(36 ksi) A36	Solid Round		A572-50 (50 ksi)
T42 90.00-60.00	Equal Angle	L2x2x1/4	(36 ksi) A36	Solid Round		A572-50 (50 ksi)
T43 60.00-30.00	Equal Angle	L2x2x1/4	(36 ksi) A36	Solid Round		A572-50 (50 ksi)
T44 30.00-22.50	Equal Angle	L2-1/2x2-1/2x3/16	(36 ksi) A36	Solid Round		A572-50 (50 ksi)
T46 15.00-7.50	Equal Angle	L2-1/2x2-1/2x3/16	(36 ksi) A36	Solid Round		A572-50 (50 ksi)

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Tower Section Geometry (cont'd)

Tower Elevation	Redundant Bracing Grade	Redundant Type	Redundant Size	K Factor
ft				
T45 22.50-15.00	A36 (36 ksi)	Horizontal (1) Diagonal (1)	Single Angle Single Angle	L2 1/2x2x3/16 L2 1/2x2x3/16
T47 7.50-0.00	A36 (36 ksi)	Horizontal (1) Diagonal (1)	Single Angle Single Angle	L2 1/2x2x3/16 L2 1/2x2x3/16

Tower Section Geometry (cont'd)

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in					in	in	in
T1 997.50-996.67	0.00	0.0000	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T2 996.67-990.00	0.00	0.3750	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T3 990.00-982.42	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T4 982.42-960.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T5 960.00-930.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T6 930.00-900.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T7 900.00-870.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T8 870.00-840.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T9 840.00-810.00	0.00	0.3125	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T10 810.00-802.42	0.00	0.3125	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T11 802.42-787.58	0.00	0.3125	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T12 787.58-780.00	0.00	0.3125	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T13 780.00-750.00	0.00	0.3125	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T14 750.00-720.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T15 720.00-690.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T16 690.00-660.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T17 660.00-630.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T18 630.00-615.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T19 615.00-600.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T20 600.00-570.00	0.00	0.3125	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T21 570.00-562.42	0.00	0.3125	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt

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<i>Tower Elevation</i>	<i>Gusset Area (per face)</i>	<i>Gusset Thickness</i>	<i>Gusset Grade</i>	<i>Adjust. Factor A_f</i>	<i>Adjust. Factor A_r</i>	<i>Weight Mult.</i>	<i>Double Angle Stitch Bolt Spacing Diagonals in</i>	<i>Double Angle Stitch Bolt Spacing Horizontals in</i>	<i>Double Angle Stitch Bolt Spacing Redundants in</i>
<i>ft</i>	<i>ft²</i>	<i>in</i>							
T22 562.42-540.00	0.00	0.3125	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T23 540.00-510.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T24 510.00-502.42	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T25 502.42-480.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T26 480.00-450.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T27 450.00-435.00	0.00	0.3125	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T28 435.00-420.00	0.00	0.3125	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T29 420.00-390.00	0.00	0.3750	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T30 390.00-360.00	0.00	0.3750	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T31 360.00-330.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T32 330.00-300.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T33 300.00-292.42	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T34 292.42-270.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T35 270.00-240.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T36 240.00-210.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T37 210.00-202.42	0.00	0.3125	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T38 202.42-180.00	0.00	0.3125	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T39 180.00-150.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T40 150.00-120.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T41 120.00-90.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T42 90.00-60.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T43 60.00-30.00	0.00	0.2500	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T44 30.00-22.50	0.00	0.3750	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T45 22.50-15.00	0.00	0.3750	A36 (36 ksi)	1.4	1	1.1	45.0000	42.0000	Mid-Pt
T46 15.00-7.50	0.00	0.3750	A36 (36 ksi)	1.4	1	1.1	Mid-Pt	Third-Pt	Mid-Pt
T47 7.50-0.00	0.00	0.3750	A36 (36 ksi)	1.4	1	1.1	45.0000	42.0000	Mid-Pt

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Tower Section Geometry (cont'd)

Tower Elevation <i>ft</i>	Calc K Single Angles	Calc K Solid Rounds	Legs	K Factors ¹						
				X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 997.50-996.67	Yes	Yes	1	1	1	1	1	1	1	1
T2 996.67-990.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T3 990.00-982.42	Yes	Yes	1	1	1	1	1	1	1	1
T4 982.42-960.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T5 960.00-930.00	Yes	Yes	1	1	1	1	1	1	1	1
T6 930.00-900.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T7 900.00-870.00	Yes	Yes	1	1	1	1	1	1	1	1
T8 870.00-840.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T9 840.00-810.00	Yes	Yes	1	1	1	1	1	1	1	1
T10 810.00-802.42	Yes	Yes	1	1	1	1	1	1	0.5	1
T11 802.42-787.58	Yes	Yes	1	1	1	1	1	1	1	1
T12 787.58-780.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T13 780.00-750.00	Yes	Yes	1	1	1	1	1	1	1	1
T14 750.00-720.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T15 720.00-690.00	Yes	Yes	1	1	1	1	1	1	1	1
T16 690.00-660.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T17 660.00-630.00	Yes	Yes	1	1	1	1	1	1	1	1
T18 630.00-615.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T19 615.00-600.00	Yes	Yes	1	1	1	1	1	1	1	1
T20 600.00-570.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T21 570.00-562.42	Yes	Yes	1	1	1	1	1	1	1	1
T22 562.42-540.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T23 540.00-510.00	Yes	Yes	1	1	1	1	1	1	1	1
T24 510.00-502.42	Yes	Yes	1	1	1	1	1	1	0.5	1
T25 502.42-480.00	Yes	Yes	1	1	1	1	1	1	1	1
T26 480.00-450.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T27 450.00-435.00	Yes	Yes	1	1	1	1	1	1	1	1
T28 435.00-420.00	Yes	Yes	1	1	1	1	1	1	0.5	1

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Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors ¹							
			Legs	X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace
				X Y	X Y	X Y	X Y	X Y	X Y	X Y
T29 420.00-390.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T30 390.00-360.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T31 360.00-330.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T32 330.00-300.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T33 300.00-292.42	Yes	Yes	1	1	1	1	1	1	0.5	1
T34 292.42-270.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T35 270.00-240.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T36 240.00-210.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T37 210.00-202.42	Yes	Yes	1	1	1	1	1	1	0.5	1
T38 202.42-180.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T39 180.00-150.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T40 150.00-120.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T41 120.00-90.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T42 90.00-60.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T43 60.00-30.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T44 30.00-22.50	Yes	Yes	1	1	1	1	1	1	0.5	1
T45 22.50-15.00	Yes	Yes	1	1	1	1	1	1	0.5	1
T46 15.00-7.50	Yes	Yes	1	1	1	1	1	1	0.5	1
T47 7.50-0.00	Yes	Yes	1	1	1	1	1	1	0.5	1

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

<i>tnxTower</i> <i>Tower Engineering Professionals</i> 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	WMAW Rose Hill (ASR# 1041037)	Page 15 of 78
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Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical	Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	Net Width Deduct in	U	Net Width Deduct in	U
T1 997.50-996.67	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T2 996.67-990.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T3 990.00-982.42	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T4 982.42-960.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T5 960.00-930.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T6 930.00-900.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T7 900.00-870.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T8 870.00-840.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T9 840.00-810.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T10 810.00-802.42	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T11 802.42-787.58	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T12 787.58-780.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T13 780.00-750.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T14 750.00-720.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T15 720.00-690.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T16 690.00-660.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T17 660.00-630.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T18 630.00-615.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T19 615.00-600.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T20 600.00-570.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T21 570.00-562.42	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T22 562.42-540.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T23 540.00-510.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T24 510.00-502.42	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T25 502.42-480.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T26 480.00-450.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T27 450.00-435.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T28 435.00-420.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T29 420.00-390.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T30 390.00-360.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T31 360.00-330.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T32 330.00-300.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T33 300.00-292.42	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T34 292.42-270.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T35 270.00-240.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T36 240.00-210.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T37 210.00-202.42	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T38 202.42-180.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T39 180.00-150.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T40 150.00-120.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T41 120.00-90.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T42 90.00-60.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T43 60.00-30.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T44 30.00-22.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T45 22.50-15.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T46 15.00-7.50	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75
T47 7.50-0.00	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.0000	0.75	0.0000	0.75

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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 997.50-996.67	Flange	0.8750 A325N	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 996.67-990.00	Flange	0.8750 A325N	4	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T3 990.00-982.42	Flange	0.8750 A325N	0	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T4 982.42-960.00	Flange	0.8750 A325N	4	0.6250 A325N	2	0.6250 A325N	4	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T5 960.00-930.00	Flange	0.8750 A325N	4	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T6 930.00-900.00	Flange	0.8750 A325N	4	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T7 900.00-870.00	Flange	0.8750 A325N	4	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T8 870.00-840.00	Flange	0.8750 A325N	4	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T9 840.00-810.00	Flange	0.8750 A325N	4	0.7500 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T10 810.00-802.42	Flange	0.8750 A325N	0	0.7500 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T11 802.42-787.58	Flange	0.8750 A325N	0	0.8750 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T12 787.58-780.00	Flange	0.8750 A325N	4	0.7500 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T13 780.00-750.00	Flange	0.8750 A325N	4	0.7500 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T14 750.00-720.00	Flange	0.8750 A325N	4	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T15 720.00-690.00	Flange	0.8750 A325N	4	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T16 690.00-660.00	Flange	0.8750 A325N	4	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T17 660.00-630.00	Flange	0.8750 A325N	4	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T18 630.00-615.00	Flange	0.8750 A325N	0	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T19 615.00-600.00	Flange	0.8750 A325N	4	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	1
T20 600.00-570.00	Flange	0.8750 A325N	4	0.7500 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	1
T21 570.00-562.42	Flange	0.8750 A325N	0	0.7500 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	1
T22 562.42-540.00	Flange	0.8750 A325N	4	0.7500 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T23 540.00-510.00	Flange	0.8750 A325N	4	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T24 510.00-502.42	Flange	0.8750 A325N	0	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0
T25 502.42-480.00	Flange	0.8750 A325N	4	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	1
T26 480.00-450.00	Flange	0.8750 A325N	4	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	1
T27 450.00-435.00	Flange	0.8750 A325N	0	0.7500 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	1
T28 435.00-420.00	Flange	0.8750 A325N	4	0.7500 A325N	2	0.6250 A325N	2	0.6250 A325N	2	0.6250 A325N	0	0.6250 A325N	2	0.6250 A325N	0

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Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	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.
T34 292.42-270.00	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T35 270.00-240.00	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T36 240.00-210.00	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T37 210.00-202.42	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T38 202.42-180.00	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T39 180.00-150.00	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T40 150.00-120.00	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T41 120.00-90.00	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T42 90.00-60.00	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T43 60.00-30.00	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T44 30.00-22.50	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T45 22.50-15.00	0.6250	1	0.6250	1	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T46 15.00-7.50	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
	A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T47 7.50-0.00	0.6250	1	0.6250	1	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
	A325N		A325N		A325N		A325N		A325N		A325N		A325N	

Guy Data

Guy Elevation	Guy Grade	Guy Size	Initial Tension	%	Guy Modulus	Guy Weight	L_u	Anchor Radius	Anchor Azimuth Adj.	Anchor Elevation	End Fitting Efficiency
ft			K		ksi	plf	ft	ft	°	ft	%
997.5	BS	A 1 1/8	15.60	10%	24000	2.66	1243.39	717.00	0.000	-22.00	100%
		B 1 1/8	15.60	10%	24000	2.66	1239.06	718.00	0.000	-16.00	100%
		C 1 1/8	15.60	10%	24000	2.66	1242.09	719.00	0.000	-19.00	100%
787.583	BS	A 1 1/4	19.20	10%	24000	3.28	1078.18	717.00	0.000	-22.00	100%
		B 1 1/4	19.20	10%	24000	3.28	1074.35	718.00	0.000	-16.00	100%
		C 1 1/4	19.20	10%	24000	3.28	1077.26	719.00	0.000	-19.00	100%
585	BS	A 1 3/16	17.20	10%	24000	2.96	910.60	688.00	0.000	-17.00	100%
		B 1 3/16	17.20	10%	24000	2.96	907.87	687.00	0.000	-14.00	100%
		C 1 3/16	17.20	10%	24000	2.96	911.59	684.00	0.000	-23.00	100%
382.417	BS	A 1 5/16	21.20	10%	24000	3.62	473.98	285.00	0.000	0.00	100%
		B 1 5/16	21.20	10%	24000	3.62	463.62	277.00	0.000	7.00	100%
		C 1 5/16	21.20	10%	24000	3.62	472.37	285.00	0.000	2.00	100%
187.583	BS	A 1 1/16	13.80	10%	24000	2.37	337.32	285.00	0.000	0.00	100%
		B 1 1/16	13.80	10%	24000	2.37	326.79	277.00	0.000	7.00	100%
		C 1 1/16	13.80	10%	24000	2.37	336.22	285.00	0.000	2.00	100%

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Guy Data(cont'd)

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
997.5	Corner						
787.583	Corner						
585	Corner						
382.417	Corner						
187.583	Corner						

Guy Data (cont'd)

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
997.50	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Wide Flange	W8x35
787.58	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Double Channel	2C9x13.4x1/4
585.00	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Double Channel	2C9x13.4x1/4
382.42	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Double Channel	2C9x13.4x1/4
187.58	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Double Channel	2C9x13.4x1/4

Guy Data (cont'd)

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
997.5	3.31	3.30	3.30		121.53	120.74	121.30	
					19.0 sec/pulse 93.07	19.0 sec/pulse 92.45	19.0 sec/pulse 92.93	
787.583	3.54	3.52	3.53		16.7 sec/pulse 67.97	16.6 sec/pulse 67.58	16.6 sec/pulse 68.09	
585	2.70	2.69	2.70		14.2 sec/pulse 18.59	14.2 sec/pulse 17.80	14.2 sec/pulse 18.47	
382.417	1.72	1.68	1.71		7.4 sec/pulse 9.63	7.3 sec/pulse 9.04	7.4 sec/pulse 9.56	
187.583	0.80	0.77	0.80		5.4 sec/pulse	5.2 sec/pulse	5.3 sec/pulse	

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Guy Data (cont'd)

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm		Pull Off		Diagonal	
			K _x	K _y	K _x	K _y	K _x	K _y
997.5	No	No			1	1	1	1
787.583	No	No			1	1	1	1
585	No	No			1	1	1	1
382.417	No	No			1	1	1	1
187.583	No	No			1	1	1	1

Guy Data (cont'd)

Guy Elevation ft	Torque-Arm				Pull Off				Diagonal			
	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U
997.5	0.6250 A325N	0	0.0000	0.75	0.7500 A325N	0	0.0000	1	0.0000 A325N	0	0.0000	1
787.583	0.6250 A325N	0	0.0000	0.75	0.7500 A325N	4	0.0000	0.75	0.0000 A325N	0	0.0000	1
585	0.6250 A325N	0	0.0000	0.75	0.7500 A325N	4	0.0000	0.75	0.0000 A325N	0	0.0000	1
382.417	0.6250 A325N	0	0.0000	0.75	0.7500 A325N	4	0.0000	0.75	0.0000 A325N	0	0.0000	1
187.583	0.6250 A325N	0	0.0000	0.75	0.7500 A325N	4	0.0000	0.75	0.0000 A325N	0	0.0000	1

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q _z psf	q _z Ice psf	Ice Thickness in
997.5	A	487.75	48	3	1.1127
	B	490.75	48	3	1.1134
	C	489.25	48	3	1.1131
787.583	A	382.79	46	3	1.0861
	B	385.79	46	3	1.0869
	C	384.29	46	3	1.0865
585	A	284.00	43	3	1.0541
	B	285.50	43	3	1.0547
	C	281.00	43	3	1.0530
382.417	A	191.21	39	3	1.0133
	B	194.71	40	3	1.0151
	C	192.21	39	3	1.0138
187.583	A	93.79	34	2	0.9436
	B	97.29	34	2	0.9471
	C	94.79	34	2	0.9446

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Guy-Tensioning Information

Temperature At Time Of Tensioning																	
		0 F		20 F		40 F		60 F		80 F		100 F		120 F			
Guy Elevation	H	V	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	
ft	ft	ft	K	ft	K	ft	K	ft	K	ft	K	ft	K	ft	K	ft	
997.5	A	712.67	1019.50	16.753	113.73	16.355	116.30	15.971	118.90	15.600	121.53	15.242	124.18	14.895	126.85	14.561	129.54
	B	713.67	1013.50	16.762	112.93	16.361	115.50	15.974	118.11	15.600	120.74	15.239	123.39	14.890	126.07	14.554	128.76
	C	714.67	1016.50	16.758	113.48	16.359	116.06	15.973	118.67	15.600	121.30	15.240	123.96	14.893	126.64	14.557	129.33
787.583	A	712.67	809.58	21.068	85.25	20.417	87.82	19.795	90.43	19.200	93.07	18.632	95.74	18.091	98.43	17.575	101.14
	B	713.67	803.58	21.083	84.63	20.427	87.20	19.799	89.81	19.200	92.45	18.628	95.13	18.083	97.82	17.564	100.54
	C	714.67	806.58	21.076	85.09	20.422	87.67	19.797	90.29	19.200	92.93	18.630	95.61	18.087	98.31	17.570	101.02
585	A	683.67	602.00	19.487	60.30	18.693	62.76	17.943	65.28	17.200	67.97	16.543	70.55	15.926	73.16	15.347	75.79
	B	682.67	599.00	19.498	59.92	18.700	62.37	17.947	64.89	17.200	67.58	16.541	70.16	15.921	72.76	15.340	75.39
	C	679.67	608.00	19.468	60.46	18.680	62.91	17.937	65.41	17.200	68.09	16.547	70.65	15.934	73.25	15.357	75.86
382.417	A	280.67	382.42	24.092	16.42	23.111	17.10	22.146	17.82	21.200	18.59	20.274	19.42	19.372	20.30	18.494	21.23
	B	272.67	375.42	24.075	15.73	23.101	16.37	22.142	17.06	21.200	17.80	20.278	18.59	19.377	19.42	18.501	20.32
	C	280.67	380.42	24.112	16.30	23.124	16.97	22.153	17.70	21.200	18.47	20.268	19.30	19.360	20.17	18.476	21.11
187.583	A	280.67	187.58	17.605	7.57	16.297	8.17	15.026	8.85	13.800	9.63	12.629	10.51	11.526	11.49	10.501	12.60
	B	272.67	180.58	17.656	7.09	16.333	7.65	15.044	8.30	13.800	9.04	12.610	9.88	11.487	10.83	10.444	11.89
	C	280.67	185.58	17.630	7.51	16.314	8.11	15.034	8.79	13.800	9.56	12.622	10.44	11.512	11.43	10.482	12.54

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
Pipe 1 1/2" STD	B	No	No	Ar (CaAa)	983.00 - 0.00	-7.0000	-0.05	1	1	1.9000	1.9000		2.72
Pipe 1 1/2" STD	C	No	No	Ar (CaAa)	983.00 - 0.00	-7.0000	0.05	1	1	1.9000	1.9000		2.72
L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	B	No	No	Af (CaAa)	983.00 - 0.00	-9.0000	-0.2	1	1	1.0000	1.0000		1.60
L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	C	No	No	Af (CaAa)	983.00 - 0.00	-9.0000	0.2	1	1	1.0000	1.0000		1.60
L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	B	No	No	Af (CaAa)	983.00 - 0.00	-12.0000	0.3	1	1	0.3500	0.3500		0.60
***						0							
L1-1/2x2x1/4"	C	No	No	Af (CaAa)	23.00 - 1.00	6.0000	-0.1	2	2	12.0000	1.5000		2.75
1" O.D. Rolled Plate Rungs (12" W x 15" Step)	C	No	No	Ar (CaAa)	23.00 - 1.00	6.0000	-0.1	1	1	1.0000	0.8500		1.40

3/4" Solid Round	A	No	No	Ar (CaAa)	990.00 - 15.00	-2.0000	0	2	2	12.0000	0.7500		1.50
5/8" SR Rungs (12" W x 15" Step)	A	No	No	Ar (CaAa)	990.00 - 15.00	-2.0000	0	1	1	0.5000	0.5000		0.84

L1-1/2x2x1/4"	C	No	No	Af (CaAa)	997.50 - 983.00	6.0000	-0.1	2	2	12.0000	1.5000		2.75
1" O.D. Rolled Plate Rungs (12" W x 15" Step)	C	No	No	Ar (CaAa)	997.50 - 983.00	6.0000	-0.1	1	1	1.0000	0.8500		1.40

LDF5-50A(7/8")	B	No	No	Ar (CaAa)	392.00 - 0.00	2.0000	-0.05	1	1	1.0900	1.0900		0.33
LDF5-50A(7/8")	B	No	No	Ar (CaAa)	697.00 - 0.00	2.0000	0.05	1	1	1.0900	1.0900		0.33
LDF7-50A(1-5/8")	B	No	No	Ar (CaAa)	616.00 - 0.00	2.0000	0.3	1	1	1.9800	1.9800		0.82
5/8" Cable (Lights)	C	No	No	Ar (CaAa)	34.00 - 0.00	2.0000	0.5	1	1	0.6250	0.6250		0.30
EW63(ELLIPTICAL)	A	No	No	Ar (CaAa)	331.00 - 0.00	2.0000	-0.05	1	1	2.0100	2.0100		0.51
EW63(ELLIPTICAL)	A	No	No	Ar (CaAa)	370.00 - 0.00	2.0000	0.05	1	1	2.0100	2.0100		0.51
*** Inside ***													
5/16" Coax	A	No	No	Ar (CaAa)	32.00 - 0.00	-2.0000	0.45	1	1	0.3125	0.3125		0.09

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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

1" Metal Conduit	A	No	No	Ar (CaAa)	997.50 - 0.00	2.0000	0.1	1	1	1.0000	1.0000		1.13
6 1/8" Rigid	A	No	No	Ar (CaAa)	997.50 - 0.00	-4.0000	0.35	1	1	6.1250	6.1250		7.25
3-1/8" Rigid	A	No	No	Ar (CaAa)	876.00 - 0.00	-4.0000	-0.35	1	1	3.1250	3.1250		3.00
4 1/16" Rigid	A	No	No	Ar (CaAa)	654.00 - 0.00	-4.0000	-0.25	1	1	4.0625	4.0625		5.50
HJ8-50B(3")	A	No	No	Ar (CaAa)	525.00 - 0.00	2.0000	0.3	1	1	3.0100	3.0100		1.78
LDF4P-50A(1/2")	A	No	No	Ar (CaAa)	730.00 - 0.00	2.0000	-0.25	1	1	0.6300	0.6300		0.15

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
T1	997.50-996.67	A	0.000	0.000	0.339	0.000	0.01
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.487	0.000	0.01
T2	996.67-990.00	A	0.000	0.000	2.708	0.000	0.06
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	3.900	0.000	0.05
T3	990.00-982.42	A	0.000	0.000	4.597	0.000	0.09
		B	0.000	0.000	0.242	0.000	0.00
		C	0.000	0.000	4.303	0.000	0.05
T4	982.42-960.00	A	0.000	0.000	13.590	0.000	0.27
		B	0.000	0.000	9.303	0.000	0.11
		C	0.000	0.000	7.995	0.000	0.10
T5	960.00-930.00	A	0.000	0.000	18.188	0.000	0.37
		B	0.000	0.000	12.450	0.000	0.15
		C	0.000	0.000	10.700	0.000	0.13
T6	930.00-900.00	A	0.000	0.000	18.188	0.000	0.37
		B	0.000	0.000	12.450	0.000	0.15
		C	0.000	0.000	10.700	0.000	0.13
T7	900.00-870.00	A	0.000	0.000	19.920	0.000	0.38
		B	0.000	0.000	12.450	0.000	0.15
		C	0.000	0.000	10.700	0.000	0.13
T8	870.00-840.00	A	0.000	0.000	26.868	0.000	0.46
		B	0.000	0.000	12.450	0.000	0.15
		C	0.000	0.000	10.700	0.000	0.13
T9	840.00-810.00	A	0.000	0.000	26.901	0.000	0.46
		B	0.000	0.000	12.450	0.000	0.15
		C	0.000	0.000	10.700	0.000	0.13
T10	810.00-802.42	A	0.000	0.000	6.805	0.000	0.12
		B	0.000	0.000	3.147	0.000	0.04
		C	0.000	0.000	2.705	0.000	0.03
T11	802.42-787.58	A	0.000	0.000	13.319	0.000	0.23
		B	0.000	0.000	6.156	0.000	0.07
		C	0.000	0.000	5.291	0.000	0.06
T12	787.58-780.00	A	0.000	0.000	6.812	0.000	0.12
		B	0.000	0.000	3.147	0.000	0.04
		C	0.000	0.000	2.705	0.000	0.03
T13	780.00-750.00	A	0.000	0.000	26.971	0.000	0.46
		B	0.000	0.000	12.450	0.000	0.15
		C	0.000	0.000	10.700	0.000	0.13
T14	750.00-720.00	A	0.000	0.000	27.638	0.000	0.46
		B	0.000	0.000	12.450	0.000	0.15
		C	0.000	0.000	10.700	0.000	0.13
T15	720.00-690.00	A	0.000	0.000	28.937	0.000	0.46
		B	0.000	0.000	13.213	0.000	0.15

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<i>Tower Section</i>	<i>Tower Elevation ft</i>	<i>Face</i>	<i>A_R</i> <i>ft²</i>	<i>A_F</i> <i>ft²</i>	<i>C_AA_A</i> <i>In Face ft²</i>	<i>C_AA_A</i> <i>Out Face ft²</i>	<i>Weight K</i>
T16	690.00-660.00	C	0.000	0.000	10.700	0.000	0.13
		A	0.000	0.000	28.977	0.000	0.46
		B	0.000	0.000	15.720	0.000	0.16
		C	0.000	0.000	10.700	0.000	0.13
T17	660.00-630.00	A	0.000	0.000	36.177	0.000	0.59
		B	0.000	0.000	15.720	0.000	0.16
		C	0.000	0.000	10.700	0.000	0.13
T18	630.00-615.00	A	0.000	0.000	19.015	0.000	0.31
		B	0.000	0.000	8.058	0.000	0.08
		C	0.000	0.000	5.350	0.000	0.06
T19	615.00-600.00	A	0.000	0.000	19.038	0.000	0.31
		B	0.000	0.000	10.830	0.000	0.09
		C	0.000	0.000	5.350	0.000	0.06
T20	600.00-570.00	A	0.000	0.000	38.147	0.000	0.63
		B	0.000	0.000	21.660	0.000	0.18
		C	0.000	0.000	10.700	0.000	0.13
T21	570.00-562.42	A	0.000	0.000	9.658	0.000	0.16
		B	0.000	0.000	5.475	0.000	0.05
		C	0.000	0.000	2.705	0.000	0.03
T22	562.42-540.00	A	0.000	0.000	28.590	0.000	0.47
		B	0.000	0.000	16.185	0.000	0.14
		C	0.000	0.000	7.995	0.000	0.10
T23	540.00-510.00	A	0.000	0.000	42.869	0.000	0.65
		B	0.000	0.000	21.660	0.000	0.18
		C	0.000	0.000	10.700	0.000	0.13
T24	510.00-502.42	A	0.000	0.000	11.995	0.000	0.17
		B	0.000	0.000	5.475	0.000	0.05
		C	0.000	0.000	2.705	0.000	0.03
T25	502.42-480.00	A	0.000	0.000	35.514	0.000	0.51
		B	0.000	0.000	16.185	0.000	0.14
		C	0.000	0.000	7.995	0.000	0.10
T26	480.00-450.00	A	0.000	0.000	47.687	0.000	0.68
		B	0.000	0.000	21.660	0.000	0.18
		C	0.000	0.000	10.700	0.000	0.13
T27	450.00-435.00	A	0.000	0.000	23.916	0.000	0.34
		B	0.000	0.000	10.830	0.000	0.09
		C	0.000	0.000	5.350	0.000	0.06
T28	435.00-420.00	A	0.000	0.000	23.967	0.000	0.34
		B	0.000	0.000	10.830	0.000	0.09
		C	0.000	0.000	5.350	0.000	0.06
T29	420.00-390.00	A	0.000	0.000	48.078	0.000	0.68
		B	0.000	0.000	21.878	0.000	0.18
		C	0.000	0.000	10.700	0.000	0.13
T30	390.00-360.00	A	0.000	0.000	50.240	0.000	0.68
		B	0.000	0.000	24.930	0.000	0.19
		C	0.000	0.000	10.700	0.000	0.13
T31	360.00-330.00	A	0.000	0.000	54.628	0.000	0.70
		B	0.000	0.000	24.930	0.000	0.19
		C	0.000	0.000	10.700	0.000	0.13
T32	330.00-300.00	A	0.000	0.000	60.641	0.000	0.71
		B	0.000	0.000	24.930	0.000	0.19
		C	0.000	0.000	10.700	0.000	0.13
T33	300.00-292.42	A	0.000	0.000	15.360	0.000	0.18
		B	0.000	0.000	6.301	0.000	0.05
		C	0.000	0.000	2.705	0.000	0.03
T34	292.42-270.00	A	0.000	0.000	45.486	0.000	0.53
		B	0.000	0.000	18.629	0.000	0.14
		C	0.000	0.000	7.995	0.000	0.10
T35	270.00-240.00	A	0.000	0.000	61.075	0.000	0.71
		B	0.000	0.000	24.930	0.000	0.19
		C	0.000	0.000	10.700	0.000	0.13

<i>tnxTower</i> <i>Tower Engineering Professionals</i> 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	WMAW Rose Hill (ASR# 1041037)	Page 25 of 78
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	Client	MPB	Designed by elatta

Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight K
T36	240.00-210.00	A	0.000	0.000	61.337	0.000	0.71
		B	0.000	0.000	24.930	0.000	0.19
		C	0.000	0.000	10.700	0.000	0.13
T37	210.00-202.42	A	0.000	0.000	15.550	0.000	0.18
		B	0.000	0.000	6.301	0.000	0.05
		C	0.000	0.000	2.705	0.000	0.03
T38	202.42-180.00	A	0.000	0.000	46.091	0.000	0.53
		B	0.000	0.000	18.629	0.000	0.14
		C	0.000	0.000	7.995	0.000	0.10
T39	180.00-150.00	A	0.000	0.000	62.000	0.000	0.71
		B	0.000	0.000	24.930	0.000	0.19
		C	0.000	0.000	10.700	0.000	0.13
T40	150.00-120.00	A	0.000	0.000	62.440	0.000	0.71
		B	0.000	0.000	24.930	0.000	0.19
		C	0.000	0.000	10.700	0.000	0.13
T41	120.00-90.00	A	0.000	0.000	63.006	0.000	0.71
		B	0.000	0.000	24.930	0.000	0.19
		C	0.000	0.000	10.700	0.000	0.13
T42	90.00-60.00	A	0.000	0.000	63.786	0.000	0.71
		B	0.000	0.000	24.930	0.000	0.19
		C	0.000	0.000	10.700	0.000	0.13
T43	60.00-30.00	A	0.000	0.000	65.088	0.000	0.71
		B	0.000	0.000	24.930	0.000	0.19
		C	0.000	0.000	10.950	0.000	0.13
T44	30.00-22.50	A	0.000	0.000	16.752	0.000	0.18
		B	0.000	0.000	6.232	0.000	0.05
		C	0.000	0.000	3.436	0.000	0.04
T45	22.50-15.00	A	0.000	0.000	16.864	0.000	0.18
		B	0.000	0.000	6.232	0.000	0.05
		C	0.000	0.000	7.531	0.000	0.09
T46	15.00-7.50	A	0.000	0.000	15.439	0.000	0.15
		B	0.000	0.000	6.232	0.000	0.05
		C	0.000	0.000	7.531	0.000	0.09
T47	7.50-0.00	A	0.000	0.000	15.439	0.000	0.15
		B	0.000	0.000	6.232	0.000	0.05
		C	0.000	0.000	6.946	0.000	0.08

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight K
T1	997.50-996.67	A	1.190	0.000	0.000	0.990	0.000	0.02
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	1.082	0.000	0.02
T2	996.67-990.00	A	1.190	0.000	0.000	7.923	0.000	0.15
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	8.660	0.000	0.14
T3	990.00-982.42	A	1.190	0.000	0.000	15.943	0.000	0.26
		B		0.000	0.000	0.658	0.000	0.01
		C		0.000	0.000	9.578	0.000	0.15
T4	982.42-960.00	A	1.190	0.000	0.000	47.132	0.000	0.77
		B		0.000	0.000	25.309	0.000	0.36
		C		0.000	0.000	18.666	0.000	0.29
T5	960.00-930.00	A	1.189	0.000	0.000	63.039	0.000	1.02
		B		0.000	0.000	33.848	0.000	0.48
		C		0.000	0.000	24.966	0.000	0.38
T6	930.00-900.00	A	1.185	0.000	0.000	62.924	0.000	1.02

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	Client	MPB	Designed by elatta

<i>Tower Section</i>	<i>Tower Elevation ft</i>	<i>Face or Leg</i>	<i>Ice Thickness in</i>	<i>A_R ft²</i>	<i>A_F ft²</i>	<i>C_AA_A In Face ft²</i>	<i>C_AA_A Out Face ft²</i>	<i>Weight K</i>
		B		0.000	0.000	33.780	0.000	0.48
		C		0.000	0.000	24.920	0.000	0.38
T7	900.00-870.00	A	1.181	0.000	0.000	66.098	0.000	1.07
		B		0.000	0.000	33.709	0.000	0.48
		C		0.000	0.000	24.872	0.000	0.38
T8	870.00-840.00	A	1.177	0.000	0.000	79.121	0.000	1.29
		B		0.000	0.000	33.635	0.000	0.48
		C		0.000	0.000	24.824	0.000	0.38
T9	840.00-810.00	A	1.173	0.000	0.000	78.970	0.000	1.29
		B		0.000	0.000	33.560	0.000	0.48
		C		0.000	0.000	24.773	0.000	0.38
T10	810.00-802.42	A	1.170	0.000	0.000	19.936	0.000	0.32
		B		0.000	0.000	8.471	0.000	0.12
		C		0.000	0.000	6.254	0.000	0.10
T11	802.42-787.58	A	1.168	0.000	0.000	38.971	0.000	0.63
		B		0.000	0.000	16.556	0.000	0.23
		C		0.000	0.000	12.224	0.000	0.19
T12	787.58-780.00	A	1.167	0.000	0.000	19.906	0.000	0.32
		B		0.000	0.000	8.456	0.000	0.12
		C		0.000	0.000	6.244	0.000	0.09
T13	780.00-750.00	A	1.164	0.000	0.000	78.652	0.000	1.28
		B		0.000	0.000	33.401	0.000	0.47
		C		0.000	0.000	24.667	0.000	0.37
T14	750.00-720.00	A	1.159	0.000	0.000	81.433	0.000	1.30
		B		0.000	0.000	33.317	0.000	0.47
		C		0.000	0.000	24.612	0.000	0.37
T15	720.00-690.00	A	1.154	0.000	0.000	87.128	0.000	1.35
		B		0.000	0.000	35.610	0.000	0.49
		C		0.000	0.000	24.554	0.000	0.37
T16	690.00-660.00	A	1.149	0.000	0.000	86.918	0.000	1.34
		B		0.000	0.000	43.307	0.000	0.57
		C		0.000	0.000	24.494	0.000	0.37
T17	660.00-630.00	A	1.144	0.000	0.000	101.941	0.000	1.64
		B		0.000	0.000	43.182	0.000	0.57
		C		0.000	0.000	24.431	0.000	0.37
T18	630.00-615.00	A	1.140	0.000	0.000	52.779	0.000	0.86
		B		0.000	0.000	21.968	0.000	0.29
		C		0.000	0.000	12.191	0.000	0.18
T19	615.00-600.00	A	1.137	0.000	0.000	52.712	0.000	0.86
		B		0.000	0.000	27.891	0.000	0.36
		C		0.000	0.000	12.175	0.000	0.18
T20	600.00-570.00	A	1.133	0.000	0.000	105.218	0.000	1.71
		B		0.000	0.000	55.654	0.000	0.72
		C		0.000	0.000	24.298	0.000	0.37
T21	570.00-562.42	A	1.129	0.000	0.000	26.551	0.000	0.43
		B		0.000	0.000	14.040	0.000	0.18
		C		0.000	0.000	6.130	0.000	0.09
T22	562.42-540.00	A	1.126	0.000	0.000	78.381	0.000	1.27
		B		0.000	0.000	41.436	0.000	0.53
		C		0.000	0.000	18.096	0.000	0.27
T23	540.00-510.00	A	1.121	0.000	0.000	112.511	0.000	1.80
		B		0.000	0.000	55.288	0.000	0.71
		C		0.000	0.000	24.151	0.000	0.36
T24	510.00-502.42	A	1.117	0.000	0.000	30.375	0.000	0.48
		B		0.000	0.000	13.944	0.000	0.18
		C		0.000	0.000	6.092	0.000	0.09
T25	502.42-480.00	A	1.114	0.000	0.000	89.658	0.000	1.42
		B		0.000	0.000	41.147	0.000	0.52
		C		0.000	0.000	17.980	0.000	0.27
T26	480.00-450.00	A	1.107	0.000	0.000	119.658	0.000	1.89
		B		0.000	0.000	54.883	0.000	0.70

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	Project	TEP# 327679.814195	Date 17:50:03 03/29/23
	Client	MPB	Designed by elatta

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight K
T27	450.00-435.00	C	1.102	0.000	0.000	23.989	0.000	0.36
		A		0.000	0.000	59.681	0.000	0.94
		B		0.000	0.000	27.359	0.000	0.35
T28	435.00-420.00	C	1.098	0.000	0.000	11.962	0.000	0.18
		A		0.000	0.000	59.579	0.000	0.94
		B		0.000	0.000	27.302	0.000	0.35
T29	420.00-390.00	C	1.092	0.000	0.000	11.939	0.000	0.18
		A		0.000	0.000	118.838	0.000	1.87
		B		0.000	0.000	55.082	0.000	0.69
T30	390.00-360.00	C	1.084	0.000	0.000	23.807	0.000	0.35
		A		0.000	0.000	122.563	0.000	1.91
		B		0.000	0.000	63.949	0.000	0.78
T31	360.00-330.00	C	1.075	0.000	0.000	23.706	0.000	0.35
		A		0.000	0.000	130.795	0.000	1.99
		B		0.000	0.000	63.625	0.000	0.77
T32	330.00-300.00	C	1.065	0.000	0.000	23.598	0.000	0.35
		A		0.000	0.000	142.215	0.000	2.10
		B		0.000	0.000	63.274	0.000	0.76
T33	300.00-292.42	C	1.059	0.000	0.000	23.481	0.000	0.35
		A		0.000	0.000	35.838	0.000	0.53
		B		0.000	0.000	15.934	0.000	0.19
T34	292.42-270.00	C	1.053	0.000	0.000	5.916	0.000	0.09
		A		0.000	0.000	105.675	0.000	1.56
		B		0.000	0.000	46.957	0.000	0.56
T35	270.00-240.00	C	1.043	0.000	0.000	17.438	0.000	0.26
		A		0.000	0.000	140.746	0.000	2.07
		B		0.000	0.000	62.473	0.000	0.75
T36	240.00-210.00	C	1.030	0.000	0.000	23.214	0.000	0.34
		A		0.000	0.000	139.889	0.000	2.04
		B		0.000	0.000	62.006	0.000	0.74
T37	210.00-202.42	C	1.021	0.000	0.000	23.059	0.000	0.34
		A		0.000	0.000	35.210	0.000	0.51
		B		0.000	0.000	15.592	0.000	0.18
T38	202.42-180.00	C	1.013	0.000	0.000	5.801	0.000	0.08
		A		0.000	0.000	103.710	0.000	1.51
		B		0.000	0.000	45.885	0.000	0.54
T39	180.00-150.00	C	0.998	0.000	0.000	17.081	0.000	0.25
		A		0.000	0.000	137.814	0.000	1.99
		B		0.000	0.000	60.873	0.000	0.71
T40	150.00-120.00	C	0.979	0.000	0.000	22.681	0.000	0.33
		A		0.000	0.000	136.504	0.000	1.96
		B		0.000	0.000	60.159	0.000	0.70
T41	120.00-90.00	C	0.954	0.000	0.000	22.443	0.000	0.32
		A		0.000	0.000	134.902	0.000	1.92
		B		0.000	0.000	59.285	0.000	0.68
T42	90.00-60.00	C	0.923	0.000	0.000	22.152	0.000	0.31
		A		0.000	0.000	132.818	0.000	1.86
		B		0.000	0.000	58.148	0.000	0.66
T43	60.00-30.00	C	0.877	0.000	0.000	21.773	0.000	0.31
		A		0.000	0.000	130.198	0.000	1.79
		B		0.000	0.000	56.494	0.000	0.62
T44	30.00-22.50	C	0.831	0.000	0.000	22.173	0.000	0.30
		A		0.000	0.000	33.168	0.000	0.44
		B		0.000	0.000	13.709	0.000	0.15
T45	22.50-15.00	C	0.803	0.000	0.000	7.424	0.000	0.09
		A		0.000	0.000	32.673	0.000	0.43
		B		0.000	0.000	13.462	0.000	0.14
T46	15.00-7.50	C	0.763	0.000	0.000	14.761	0.000	0.19
		A		0.000	0.000	27.018	0.000	0.35
		B		0.000	0.000	13.102	0.000	0.14
		C		0.000	0.000	14.401	0.000	0.19

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<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Face or Leg</i>	<i>Ice Thickness</i>	<i>A_R</i>	<i>A_F</i>	<i>C_AA_A In Face</i>	<i>C_AA_A Out Face</i>	<i>Weight</i>
	<i>ft</i>		<i>in</i>	<i>ft²</i>	<i>ft²</i>	<i>ft²</i>	<i>ft²</i>	<i>K</i>
T47	7.50-0.00	A	0.684	0.000	0.000	25.946	0.000	0.33
		B		0.000	0.000	12.387	0.000	0.12
		C		0.000	0.000	12.691	0.000	0.16

Feed Line Center of Pressure

<i>Section</i>	<i>Elevation</i>	<i>CP_X</i>	<i>CP_Z</i>	<i>CP_X</i>	<i>CP_Z</i>
	<i>ft</i>	<i>in</i>	<i>in</i>	<i>Ice in</i>	<i>Ice in</i>
T1	997.50-996.67	-0.0104	-0.7002	0.0000	0.0000
T2	996.67-990.00	0.3965	-0.2579	0.4039	0.3914
T3	990.00-982.42	-0.3431	-1.3118	-1.7084	-1.1497
T4	982.42-960.00	-0.9312	-4.1680	-1.9092	-4.4869
T5	960.00-930.00	-1.1303	-4.9515	-2.0714	-4.8125
T6	930.00-900.00	-1.1303	-4.9515	-2.0697	-4.8134
T7	900.00-870.00	-1.7694	-4.4960	-2.4236	-4.5618
T8	870.00-840.00	-4.0847	-2.8381	-3.7751	-3.6153
T9	840.00-810.00	-4.0463	-2.7956	-3.7549	-3.5977
T10	810.00-802.42	-4.1795	-2.8571	-3.8143	-3.6443
T11	802.42-787.58	-4.1086	-2.8029	-3.7743	-3.6071
T12	787.58-780.00	-2.4604	-1.7718	-2.8111	-2.7824
T13	780.00-750.00	-3.9978	-2.7292	-3.7008	-3.5490
T14	750.00-720.00	-4.2097	-2.7437	-4.0516	-3.5051
T15	720.00-690.00	-4.3673	-2.7393	-4.4301	-3.4070
T16	690.00-660.00	-3.8970	-2.8509	-3.6596	-3.5811
T17	660.00-630.00	-5.5813	-1.9715	-4.7950	-2.9741
T18	630.00-615.00	-6.0118	-1.7667	-5.0200	-2.8317
T19	615.00-600.00	-3.7958	-1.1914	-3.0906	-2.1579
T20	600.00-570.00	-3.5210	-1.0999	-2.9844	-2.0939
T21	570.00-562.42	-4.0421	-1.2334	-3.2095	-2.2346
T22	562.42-540.00	-4.4144	-1.3220	-3.3840	-2.3444
T23	540.00-510.00	-4.7110	-2.2248	-3.6153	-3.1711
T24	510.00-502.42	-5.1368	-3.1967	-3.9069	-4.0406
T25	502.42-480.00	-4.2965	-2.7254	-3.4852	-3.6453
T26	480.00-450.00	-4.3295	-2.7297	-3.4968	-3.6566
T27	450.00-435.00	-4.4426	-2.7787	-3.5506	-3.7077
T28	435.00-420.00	-4.7431	-2.9353	-3.6968	-3.8466
T29	420.00-390.00	-4.7911	-2.9750	-3.6720	-3.8866
T30	390.00-360.00	-4.1057	-3.0558	-3.0856	-4.1952
T31	360.00-330.00	-4.1699	-4.3830	-3.7283	-4.7419
T32	330.00-300.00	-4.3276	-4.1709	-4.1592	-4.6430
T33	300.00-292.42	-4.4501	-4.2704	-4.2229	-4.7058
T34	292.42-270.00	-4.8152	-4.5741	-4.4258	-4.9089
T35	270.00-240.00	-4.8828	-4.6311	-4.4570	-4.9419
T36	240.00-210.00	-4.8557	-4.6036	-4.4383	-4.9233
T37	210.00-202.42	-4.9664	-4.6831	-4.4945	-4.9748
T38	202.42-180.00	-3.8092	-3.7138	-3.8421	-4.3316
T39	180.00-150.00	-4.3347	-4.1697	-4.0940	-4.5809
T40	150.00-120.00	-4.4085	-4.2450	-4.1227	-4.6191
T41	120.00-90.00	-4.4402	-4.2752	-4.1175	-4.6185
T42	90.00-60.00	-4.4841	-4.3169	-4.1105	-4.6178
T43	60.00-30.00	-4.5405	-4.3052	-4.1597	-4.5405
T44	30.00-22.50	-3.2132	-3.9239	-4.1133	-4.0806
T45	22.50-15.00	-2.4481	-2.6995	-3.1660	-2.3969
T46	15.00-7.50	-1.9001	-2.3207	-2.1663	-1.7826
T47	7.50-0.00	-2.2016	-2.7295	-2.4900	-2.1946

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	WMAW Rose Hill (ASR# 1041037)	Page	29 of 78
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Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T1	13	L1-1/2x2x1/4"	996.67 - 997.50	0.0000	0.0000
T1	14	1" O.D. Rolled Plate Rungs (12" W x 15" Step)	996.67 - 997.50	0.0000	0.0000
T1	27	1" Metal Conduit	996.67 - 997.50	0.0000	0.0000
T1	28	6 1/8" Rigid	996.67 - 997.50	1.0000	0.0000
T2	13	L1-1/2x2x1/4"	990.00 - 996.67	0.6000	0.6000
T2	14	1" O.D. Rolled Plate Rungs (12" W x 15" Step)	990.00 - 996.67	0.6000	0.6000
T2	27	1" Metal Conduit	990.00 - 996.67	0.6000	0.6000
T2	28	6 1/8" Rigid	990.00 - 996.67	1.0000	0.6000
T3	1	Pipe 1 1/2" STD	982.42 - 983.00	0.6000	0.6000
T3	2	Pipe 1 1/2" STD	982.42 - 983.00	0.6000	0.6000
T3	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	982.42 - 983.00	0.6000	0.6000
T3	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	982.42 - 983.00	0.6000	0.6000
T3	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	982.42 - 983.00	0.6000	0.6000
T3	10	3/4" Solid Round	982.42 - 990.00	0.6000	0.6000
T3	11	5/8" SR Rungs (12" W x 15" Step)	982.42 - 990.00	0.6000	0.6000
T3	13	L1-1/2x2x1/4"	983.00 - 990.00	0.6000	0.6000
T3	14	1" O.D. Rolled Plate Rungs (12" W x 15" Step)	983.00 - 990.00	0.6000	0.6000
T3	27	1" Metal Conduit	982.42 - 990.00	0.6000	0.6000
T3	28	6 1/8" Rigid	982.42 - 990.00	1.0000	0.6000
T4	1	Pipe 1 1/2" STD	960.00 - 982.42	0.6000	0.6000
T4	2	Pipe 1 1/2" STD	960.00 - 982.42	0.6000	0.6000
T4	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	960.00 - 982.42	0.6000	0.6000
T4	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	960.00 - 982.42	0.6000	0.6000
T4	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	960.00 - 982.42	0.6000	0.6000
T4	10	3/4" Solid Round	960.00 - 982.42	0.6000	0.6000
T4	11	5/8" SR Rungs (12" W x 15" Step)	960.00 - 982.42	0.6000	0.6000
T4	27	1" Metal Conduit	960.00 - 982.42	0.6000	0.6000
T4	28	6 1/8" Rigid	960.00 - 982.42	1.0000	0.6000
T5	1	Pipe 1 1/2" STD	930.00 - 960.00	0.6000	0.6000
T5	2	Pipe 1 1/2" STD	930.00 - 960.00	0.6000	0.6000
T5	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	930.00 - 960.00	0.6000	0.6000
T5	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	930.00 - 960.00	0.6000	0.6000
T5	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	930.00 - 960.00	0.6000	0.6000
T5	10	3/4" Solid Round	930.00 - 960.00	0.6000	0.6000
T5	11	5/8" SR Rungs (12" W x 15" Step)	930.00 - 960.00	0.6000	0.6000
T5	27	1" Metal Conduit	930.00 - 960.00	0.6000	0.6000
T5	28	6 1/8" Rigid	930.00 - 960.00	1.0000	0.6000
T6	1	Pipe 1 1/2" STD	900.00 - 930.00	0.6000	0.6000
T6	2	Pipe 1 1/2" STD	900.00 - 930.00	0.6000	0.6000
T6	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	900.00 - 930.00	0.6000	0.6000
T6	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	900.00 - 930.00	0.6000	0.6000
T6	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	900.00 - 930.00	0.6000	0.6000
T6	10	3/4" Solid Round	900.00 - 930.00	0.6000	0.6000
T6	11	5/8" SR Rungs (12" W x 15" Step)	900.00 - 930.00	0.6000	0.6000
T6	27	1" Metal Conduit	900.00 - 930.00	0.6000	0.6000
T6	28	6 1/8" Rigid	900.00 - 930.00	1.0000	0.6000
T7	1	Pipe 1 1/2" STD	870.00 - 900.00	0.6000	0.6000
T7	2	Pipe 1 1/2" STD	870.00 - 900.00	0.6000	0.6000
T7	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	870.00 - 900.00	0.6000	0.6000
T7	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	870.00 - 900.00	0.6000	0.6000
T7	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	870.00 - 900.00	0.6000	0.6000
T7	10	3/4" Solid Round	870.00 - 900.00	0.6000	0.6000
T7	11	5/8" SR Rungs (12" W x 15" Step)	870.00 - 900.00	0.6000	0.6000
T7	27	1" Metal Conduit	870.00 - 900.00	0.6000	0.6000
T7	28	6 1/8" Rigid	870.00 - 900.00	1.0000	0.6000
T7	29	3-1/8" Rigid	870.00 - 876.00	1.0000	0.6000
T8	1	Pipe 1 1/2" STD	840.00 - 870.00	0.6000	0.6000

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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_a No Ice</i>	<i>K_a Ice</i>
T8	2	Pipe 1 1/2" STD	840.00 - 870.00	0.6000	0.6000
T8	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	840.00 - 870.00	0.6000	0.6000
T8	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	840.00 - 870.00	0.6000	0.6000
T8	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	840.00 - 870.00	0.6000	0.6000
T8	10	3/4" Solid Round	840.00 - 870.00	0.6000	0.6000
T8	11	5/8" SR Rungs (12" W x 15" Step)	840.00 - 870.00	0.6000	0.6000
T8	27	1" Metal Conduit	840.00 - 870.00	0.6000	0.6000
T8	28	6 1/8" Rigid	840.00 - 870.00	1.0000	0.6000
T8	29	3-1/8" Rigid	840.00 - 870.00	1.0000	0.6000
T9	1	Pipe 1 1/2" STD	810.00 - 840.00	0.6000	0.6000
T9	2	Pipe 1 1/2" STD	810.00 - 840.00	0.6000	0.6000
T9	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	810.00 - 840.00	0.6000	0.6000
T9	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	810.00 - 840.00	0.6000	0.6000
T9	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	810.00 - 840.00	0.6000	0.6000
T9	10	3/4" Solid Round	810.00 - 840.00	0.6000	0.6000
T9	11	5/8" SR Rungs (12" W x 15" Step)	810.00 - 840.00	0.6000	0.6000
T9	27	1" Metal Conduit	810.00 - 840.00	0.6000	0.6000
T9	28	6 1/8" Rigid	810.00 - 840.00	1.0000	0.6000
T9	29	3-1/8" Rigid	810.00 - 840.00	1.0000	0.6000
T10	1	Pipe 1 1/2" STD	802.42 - 810.00	0.6000	0.6000
T10	2	Pipe 1 1/2" STD	802.42 - 810.00	0.6000	0.6000
T10	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	802.42 - 810.00	0.6000	0.6000
T10	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	802.42 - 810.00	0.6000	0.6000
T10	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	802.42 - 810.00	0.6000	0.6000
T10	10	3/4" Solid Round	802.42 - 810.00	0.6000	0.6000
T10	11	5/8" SR Rungs (12" W x 15" Step)	802.42 - 810.00	0.6000	0.6000
T10	27	1" Metal Conduit	802.42 - 810.00	0.6000	0.6000
T10	28	6 1/8" Rigid	802.42 - 810.00	1.0000	0.6000
T10	29	3-1/8" Rigid	802.42 - 810.00	1.0000	0.6000
T11	1	Pipe 1 1/2" STD	787.58 - 802.42	0.6000	0.6000
T11	2	Pipe 1 1/2" STD	787.58 - 802.42	0.6000	0.6000
T11	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	787.58 - 802.42	0.6000	0.6000
T11	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	787.58 - 802.42	0.6000	0.6000
T11	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	787.58 - 802.42	0.6000	0.6000
T11	10	3/4" Solid Round	787.58 - 802.42	0.6000	0.6000
T11	11	5/8" SR Rungs (12" W x 15" Step)	787.58 - 802.42	0.6000	0.6000
T11	27	1" Metal Conduit	787.58 - 802.42	0.6000	0.6000
T11	28	6 1/8" Rigid	787.58 - 802.42	1.0000	0.6000
T11	29	3-1/8" Rigid	787.58 - 802.42	1.0000	0.6000
T12	1	Pipe 1 1/2" STD	780.00 - 787.58	0.6000	0.5864
T12	2	Pipe 1 1/2" STD	780.00 - 787.58	0.6000	0.5864
T12	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	780.00 - 787.58	0.6000	0.5864
T12	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	780.00 - 787.58	0.6000	0.5864
T12	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	780.00 - 787.58	0.6000	0.5864
T12	10	3/4" Solid Round	780.00 - 787.58	0.6000	0.5864
T12	11	5/8" SR Rungs (12" W x 15" Step)	780.00 - 787.58	0.6000	0.5864
T12	27	1" Metal Conduit	780.00 - 787.58	0.6000	0.5864
T12	28	6 1/8" Rigid	780.00 - 787.58	1.0000	0.5864
T12	29	3-1/8" Rigid	780.00 - 787.58	1.0000	0.5864
T13	1	Pipe 1 1/2" STD	750.00 - 780.00	0.6000	0.6000
T13	2	Pipe 1 1/2" STD	750.00 - 780.00	0.6000	0.6000
T13	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	750.00 - 780.00	0.6000	0.6000
T13	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	750.00 - 780.00	0.6000	0.6000
T13	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	750.00 - 780.00	0.6000	0.6000
T13	10	3/4" Solid Round	750.00 - 780.00	0.6000	0.6000
T13	11	5/8" SR Rungs (12" W x 15" Step)	750.00 - 780.00	0.6000	0.6000
T13	27	1" Metal Conduit	750.00 - 780.00	0.6000	0.6000
T13	28	6 1/8" Rigid	750.00 - 780.00	1.0000	0.6000
T13	29	3-1/8" Rigid	750.00 - 780.00	1.0000	0.6000
T14	1	Pipe 1 1/2" STD	720.00 - 750.00	0.6000	0.6000
T14	2	Pipe 1 1/2" STD	720.00 - 750.00	0.6000	0.6000
T14	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	720.00 - 750.00	0.6000	0.6000

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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_a No Ice</i>	<i>K_a Ice</i>
T14	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	720.00 - 750.00	0.6000	0.6000
T14	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	720.00 - 750.00	0.6000	0.6000
T14	10	3/4" Solid Round	720.00 - 750.00	0.6000	0.6000
T14	11	5/8" SR Rungs (12" W x 15" Step)	720.00 - 750.00	0.6000	0.6000
T14	27	1" Metal Conduit	720.00 - 750.00	0.6000	0.6000
T14	28	6 1/8" Rigid	720.00 - 750.00	1.0000	0.6000
T14	29	3-1/8" Rigid	720.00 - 750.00	1.0000	0.6000
T14	32	LDF4P-50A(1/2")	720.00 - 730.00	0.6000	0.6000
T15	1	Pipe 1 1/2" STD	690.00 - 720.00	0.6000	0.6000
T15	2	Pipe 1 1/2" STD	690.00 - 720.00	0.6000	0.6000
T15	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	690.00 - 720.00	0.6000	0.6000
T15	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	690.00 - 720.00	0.6000	0.6000
T15	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	690.00 - 720.00	0.6000	0.6000
T15	10	3/4" Solid Round	690.00 - 720.00	0.6000	0.6000
T15	11	5/8" SR Rungs (12" W x 15" Step)	690.00 - 720.00	0.6000	0.6000
T15	17	LDF5-50A(7/8")	690.00 - 697.00	0.6000	0.6000
T15	27	1" Metal Conduit	690.00 - 720.00	0.6000	0.6000
T15	28	6 1/8" Rigid	690.00 - 720.00	1.0000	0.6000
T15	29	3-1/8" Rigid	690.00 - 720.00	1.0000	0.6000
T15	32	LDF4P-50A(1/2")	690.00 - 720.00	0.6000	0.6000
T16	1	Pipe 1 1/2" STD	660.00 - 690.00	0.6000	0.6000
T16	2	Pipe 1 1/2" STD	660.00 - 690.00	0.6000	0.6000
T16	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	660.00 - 690.00	0.6000	0.6000
T16	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	660.00 - 690.00	0.6000	0.6000
T16	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	660.00 - 690.00	0.6000	0.6000
T16	10	3/4" Solid Round	660.00 - 690.00	0.6000	0.6000
T16	11	5/8" SR Rungs (12" W x 15" Step)	660.00 - 690.00	0.6000	0.6000
T16	17	LDF5-50A(7/8")	660.00 - 690.00	0.6000	0.6000
T16	27	1" Metal Conduit	660.00 - 690.00	0.6000	0.6000
T16	28	6 1/8" Rigid	660.00 - 690.00	1.0000	0.6000
T16	29	3-1/8" Rigid	660.00 - 690.00	1.0000	0.6000
T16	32	LDF4P-50A(1/2")	660.00 - 690.00	0.6000	0.6000
T17	1	Pipe 1 1/2" STD	630.00 - 660.00	0.6000	0.6000
T17	2	Pipe 1 1/2" STD	630.00 - 660.00	0.6000	0.6000
T17	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	630.00 - 660.00	0.6000	0.6000
T17	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	630.00 - 660.00	0.6000	0.6000
T17	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	630.00 - 660.00	0.6000	0.6000
T17	10	3/4" Solid Round	630.00 - 660.00	0.6000	0.6000
T17	11	5/8" SR Rungs (12" W x 15" Step)	630.00 - 660.00	0.6000	0.6000
T17	17	LDF5-50A(7/8")	630.00 - 660.00	0.6000	0.6000
T17	27	1" Metal Conduit	630.00 - 660.00	0.6000	0.6000
T17	28	6 1/8" Rigid	630.00 - 660.00	1.0000	0.6000
T17	29	3-1/8" Rigid	630.00 - 660.00	1.0000	0.6000
T17	30	4 1/16" Rigid	630.00 - 654.00	1.0000	0.6000
T17	32	LDF4P-50A(1/2")	630.00 - 660.00	0.6000	0.6000
T18	1	Pipe 1 1/2" STD	615.00 - 630.00	0.6000	0.6000
T18	2	Pipe 1 1/2" STD	615.00 - 630.00	0.6000	0.6000
T18	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	615.00 - 630.00	0.6000	0.6000
T18	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	615.00 - 630.00	0.6000	0.6000
T18	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	615.00 - 630.00	0.6000	0.6000
T18	10	3/4" Solid Round	615.00 - 630.00	0.6000	0.6000
T18	11	5/8" SR Rungs (12" W x 15" Step)	615.00 - 630.00	0.6000	0.6000
T18	17	LDF5-50A(7/8")	615.00 - 630.00	0.6000	0.6000
T18	18	LDF7-50A(1-5/8")	615.00 - 616.00	0.6000	0.6000
T18	27	1" Metal Conduit	615.00 - 630.00	0.6000	0.6000
T18	28	6 1/8" Rigid	615.00 - 630.00	1.0000	0.6000
T18	29	3-1/8" Rigid	615.00 - 630.00	1.0000	0.6000
T18	30	4 1/16" Rigid	615.00 - 630.00	1.0000	0.6000
T18	32	LDF4P-50A(1/2")	615.00 - 630.00	0.6000	0.6000
T19	1	Pipe 1 1/2" STD	600.00 - 615.00	0.6000	0.6000
T19	2	Pipe 1 1/2" STD	600.00 - 615.00	0.6000	0.6000
T19	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	600.00 - 615.00	0.6000	0.6000

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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_a No Ice</i>	<i>K_a Ice</i>
T19	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	600.00 - 615.00	0.6000	0.6000
T19	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	600.00 - 615.00	0.6000	0.6000
T19	10	3/4" Solid Round	600.00 - 615.00	0.6000	0.6000
T19	11	5/8" SR Rungs (12" W x 15" Step)	600.00 - 615.00	0.6000	0.6000
T19	17	LDF5-50A(7/8")	600.00 - 615.00	0.6000	0.6000
T19	18	LDF7-50A(1-5/8")	600.00 - 615.00	0.6000	0.6000
T19	27	1" Metal Conduit	600.00 - 615.00	0.6000	0.6000
T19	28	6 1/8" Rigid	600.00 - 615.00	1.0000	0.6000
T19	29	3-1/8" Rigid	600.00 - 615.00	1.0000	0.6000
T19	30	4 1/16" Rigid	600.00 - 615.00	1.0000	0.6000
T19	32	LDF4P-50A(1/2")	600.00 - 615.00	0.6000	0.6000
T20	1	Pipe 1 1/2" STD	570.00 - 600.00	0.6000	0.6000
T20	2	Pipe 1 1/2" STD	570.00 - 600.00	0.6000	0.6000
T20	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	570.00 - 600.00	0.6000	0.6000
T20	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	570.00 - 600.00	0.6000	0.6000
T20	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	570.00 - 600.00	0.6000	0.6000
T20	10	3/4" Solid Round	570.00 - 600.00	0.6000	0.6000
T20	11	5/8" SR Rungs (12" W x 15" Step)	570.00 - 600.00	0.6000	0.6000
T20	17	LDF5-50A(7/8")	570.00 - 600.00	0.6000	0.6000
T20	18	LDF7-50A(1-5/8")	570.00 - 600.00	0.6000	0.6000
T20	27	1" Metal Conduit	570.00 - 600.00	0.6000	0.6000
T20	28	6 1/8" Rigid	570.00 - 600.00	1.0000	0.6000
T20	29	3-1/8" Rigid	570.00 - 600.00	1.0000	0.6000
T20	30	4 1/16" Rigid	570.00 - 600.00	1.0000	0.6000
T20	32	LDF4P-50A(1/2")	570.00 - 600.00	0.6000	0.6000
T21	1	Pipe 1 1/2" STD	562.42 - 570.00	0.6000	0.6000
T21	2	Pipe 1 1/2" STD	562.42 - 570.00	0.6000	0.6000
T21	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	562.42 - 570.00	0.6000	0.6000
T21	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	562.42 - 570.00	0.6000	0.6000
T21	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	562.42 - 570.00	0.6000	0.6000
T21	10	3/4" Solid Round	562.42 - 570.00	0.6000	0.6000
T21	11	5/8" SR Rungs (12" W x 15" Step)	562.42 - 570.00	0.6000	0.6000
T21	17	LDF5-50A(7/8")	562.42 - 570.00	0.6000	0.6000
T21	18	LDF7-50A(1-5/8")	562.42 - 570.00	0.6000	0.6000
T21	27	1" Metal Conduit	562.42 - 570.00	0.6000	0.6000
T21	28	6 1/8" Rigid	562.42 - 570.00	1.0000	0.6000
T21	29	3-1/8" Rigid	562.42 - 570.00	1.0000	0.6000
T21	30	4 1/16" Rigid	562.42 - 570.00	1.0000	0.6000
T21	32	LDF4P-50A(1/2")	562.42 - 570.00	0.6000	0.6000
T22	1	Pipe 1 1/2" STD	540.00 - 562.42	0.6000	0.6000
T22	2	Pipe 1 1/2" STD	540.00 - 562.42	0.6000	0.6000
T22	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	540.00 - 562.42	0.6000	0.6000
T22	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	540.00 - 562.42	0.6000	0.6000
T22	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	540.00 - 562.42	0.6000	0.6000
T22	10	3/4" Solid Round	540.00 - 562.42	0.6000	0.6000
T22	11	5/8" SR Rungs (12" W x 15" Step)	540.00 - 562.42	0.6000	0.6000
T22	17	LDF5-50A(7/8")	540.00 - 562.42	0.6000	0.6000
T22	18	LDF7-50A(1-5/8")	540.00 - 562.42	0.6000	0.6000
T22	27	1" Metal Conduit	540.00 - 562.42	0.6000	0.6000
T22	28	6 1/8" Rigid	540.00 - 562.42	1.0000	0.6000
T22	29	3-1/8" Rigid	540.00 - 562.42	1.0000	0.6000
T22	30	4 1/16" Rigid	540.00 - 562.42	1.0000	0.6000
T22	32	LDF4P-50A(1/2")	540.00 - 562.42	0.6000	0.6000
T23	1	Pipe 1 1/2" STD	510.00 - 540.00	0.6000	0.6000
T23	2	Pipe 1 1/2" STD	510.00 - 540.00	0.6000	0.6000
T23	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	510.00 - 540.00	0.6000	0.6000
T23	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	510.00 - 540.00	0.6000	0.6000
T23	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	510.00 - 540.00	0.6000	0.6000
T23	10	3/4" Solid Round	510.00 - 540.00	0.6000	0.6000
T23	11	5/8" SR Rungs (12" W x 15" Step)	510.00 - 540.00	0.6000	0.6000
T23	17	LDF5-50A(7/8")	510.00 - 540.00	0.6000	0.6000
T23	18	LDF7-50A(1-5/8")	510.00 - 540.00	0.6000	0.6000

<i>tnxTower</i> <i>Tower Engineering Professionals</i> 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	WMAW Rose Hill (ASR# 1041037)	Page 33 of 78
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	Client	MPB	Designed by elatta

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T23	27	1" Metal Conduit	510.00 - 540.00	0.6000	0.6000
T23	28	6 1/8" Rigid	510.00 - 540.00	1.0000	0.6000
T23	29	3-1/8" Rigid	510.00 - 540.00	1.0000	0.6000
T23	30	4 1/16" Rigid	510.00 - 540.00	1.0000	0.6000
T23	31	HJ8-50B(3")	510.00 - 525.00	0.6000	0.6000
T23	32	LDF4P-50A(1/2")	510.00 - 540.00	0.6000	0.6000
T24	1	Pipe 1 1/2" STD	502.42 - 510.00	0.6000	0.6000
T24	2	Pipe 1 1/2" STD	502.42 - 510.00	0.6000	0.6000
T24	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	502.42 - 510.00	0.6000	0.6000
T24	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	502.42 - 510.00	0.6000	0.6000
T24	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	502.42 - 510.00	0.6000	0.6000
T24	10	3/4" Solid Round	502.42 - 510.00	0.6000	0.6000
T24	11	5/8" SR Rungs (12" W x 15" Step)	502.42 - 510.00	0.6000	0.6000
T24	17	LDF5-50A(7/8")	502.42 - 510.00	0.6000	0.6000
T24	18	LDF7-50A(1-5/8")	502.42 - 510.00	0.6000	0.6000
T24	27	1" Metal Conduit	502.42 - 510.00	0.6000	0.6000
T24	28	6 1/8" Rigid	502.42 - 510.00	1.0000	0.6000
T24	29	3-1/8" Rigid	502.42 - 510.00	1.0000	0.6000
T24	30	4 1/16" Rigid	502.42 - 510.00	1.0000	0.6000
T24	31	HJ8-50B(3")	502.42 - 510.00	0.6000	0.6000
T24	32	LDF4P-50A(1/2")	502.42 - 510.00	0.6000	0.6000
T25	1	Pipe 1 1/2" STD	480.00 - 502.42	0.6000	0.6000
T25	2	Pipe 1 1/2" STD	480.00 - 502.42	0.6000	0.6000
T25	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	480.00 - 502.42	0.6000	0.6000
T25	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	480.00 - 502.42	0.6000	0.6000
T25	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	480.00 - 502.42	0.6000	0.6000
T25	10	3/4" Solid Round	480.00 - 502.42	0.6000	0.6000
T25	11	5/8" SR Rungs (12" W x 15" Step)	480.00 - 502.42	0.6000	0.6000
T25	17	LDF5-50A(7/8")	480.00 - 502.42	0.6000	0.6000
T25	18	LDF7-50A(1-5/8")	480.00 - 502.42	0.6000	0.6000
T25	27	1" Metal Conduit	480.00 - 502.42	0.6000	0.6000
T25	28	6 1/8" Rigid	480.00 - 502.42	1.0000	0.6000
T25	29	3-1/8" Rigid	480.00 - 502.42	1.0000	0.6000
T25	30	4 1/16" Rigid	480.00 - 502.42	1.0000	0.6000
T25	31	HJ8-50B(3")	480.00 - 502.42	0.6000	0.6000
T25	32	LDF4P-50A(1/2")	480.00 - 502.42	0.6000	0.6000
T26	1	Pipe 1 1/2" STD	450.00 - 480.00	0.6000	0.6000
T26	2	Pipe 1 1/2" STD	450.00 - 480.00	0.6000	0.6000
T26	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	450.00 - 480.00	0.6000	0.6000
T26	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	450.00 - 480.00	0.6000	0.6000
T26	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	450.00 - 480.00	0.6000	0.6000
T26	10	3/4" Solid Round	450.00 - 480.00	0.6000	0.6000
T26	11	5/8" SR Rungs (12" W x 15" Step)	450.00 - 480.00	0.6000	0.6000
T26	17	LDF5-50A(7/8")	450.00 - 480.00	0.6000	0.6000
T26	18	LDF7-50A(1-5/8")	450.00 - 480.00	0.6000	0.6000
T26	27	1" Metal Conduit	450.00 - 480.00	0.6000	0.6000
T26	28	6 1/8" Rigid	450.00 - 480.00	1.0000	0.6000
T26	29	3-1/8" Rigid	450.00 - 480.00	1.0000	0.6000
T26	30	4 1/16" Rigid	450.00 - 480.00	1.0000	0.6000
T26	31	HJ8-50B(3")	450.00 - 480.00	0.6000	0.6000
T26	32	LDF4P-50A(1/2")	450.00 - 480.00	0.6000	0.6000
T27	1	Pipe 1 1/2" STD	435.00 - 450.00	0.6000	0.6000
T27	2	Pipe 1 1/2" STD	435.00 - 450.00	0.6000	0.6000
T27	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	435.00 - 450.00	0.6000	0.6000
T27	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	435.00 - 450.00	0.6000	0.6000
T27	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	435.00 - 450.00	0.6000	0.6000
T27	10	3/4" Solid Round	435.00 - 450.00	0.6000	0.6000
T27	11	5/8" SR Rungs (12" W x 15" Step)	435.00 - 450.00	0.6000	0.6000
T27	17	LDF5-50A(7/8")	435.00 - 450.00	0.6000	0.6000
T27	18	LDF7-50A(1-5/8")	435.00 - 450.00	0.6000	0.6000
T27	27	1" Metal Conduit	435.00 - 450.00	0.6000	0.6000
T27	28	6 1/8" Rigid	435.00 - 450.00	1.0000	0.6000

<i>tnxTower</i> <i>Tower Engineering Professionals</i> 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job WMAW Rose Hill (ASR# 1041037)	Page 34 of 78
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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_a No Ice</i>	<i>K_a Ice</i>
T27	29	3-1/8" Rigid	435.00 - 450.00	1.0000	0.6000
T27	30	4 1/16" Rigid	435.00 - 450.00	1.0000	0.6000
T27	31	HJ8-50B(3")	435.00 - 450.00	0.6000	0.6000
T27	32	LDF4P-50A(1/2")	435.00 - 450.00	0.6000	0.6000
T28	1	Pipe 1 1/2" STD	420.00 - 435.00	0.6000	0.6000
T28	2	Pipe 1 1/2" STD	420.00 - 435.00	0.6000	0.6000
T28	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	420.00 - 435.00	0.6000	0.6000
T28	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	420.00 - 435.00	0.6000	0.6000
T28	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	420.00 - 435.00	0.6000	0.6000
T28	10	3/4" Solid Round	420.00 - 435.00	0.6000	0.6000
T28	11	5/8" SR Rungs (12" W x 15" Step)	420.00 - 435.00	0.6000	0.6000
T28	17	LDF5-50A(7/8")	420.00 - 435.00	0.6000	0.6000
T28	18	LDF7-50A(1-5/8")	420.00 - 435.00	0.6000	0.6000
T28	27	1" Metal Conduit	420.00 - 435.00	0.6000	0.6000
T28	28	6 1/8" Rigid	420.00 - 435.00	1.0000	0.6000
T28	29	3-1/8" Rigid	420.00 - 435.00	1.0000	0.6000
T28	30	4 1/16" Rigid	420.00 - 435.00	1.0000	0.6000
T28	31	HJ8-50B(3")	420.00 - 435.00	0.6000	0.6000
T28	32	LDF4P-50A(1/2")	420.00 - 435.00	0.6000	0.6000
T29	1	Pipe 1 1/2" STD	390.00 - 420.00	0.6000	0.6000
T29	2	Pipe 1 1/2" STD	390.00 - 420.00	0.6000	0.6000
T29	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	390.00 - 420.00	0.6000	0.6000
T29	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	390.00 - 420.00	0.6000	0.6000
T29	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	390.00 - 420.00	0.6000	0.6000
T29	10	3/4" Solid Round	390.00 - 420.00	0.6000	0.6000
T29	11	5/8" SR Rungs (12" W x 15" Step)	390.00 - 420.00	0.6000	0.6000
T29	16	LDF5-50A(7/8")	390.00 - 392.00	0.6000	0.6000
T29	17	LDF5-50A(7/8")	390.00 - 420.00	0.6000	0.6000
T29	18	LDF7-50A(1-5/8")	390.00 - 420.00	0.6000	0.6000
T29	27	1" Metal Conduit	390.00 - 420.00	0.6000	0.6000
T29	28	6 1/8" Rigid	390.00 - 420.00	1.0000	0.6000
T29	29	3-1/8" Rigid	390.00 - 420.00	1.0000	0.6000
T29	30	4 1/16" Rigid	390.00 - 420.00	1.0000	0.6000
T29	31	HJ8-50B(3")	390.00 - 420.00	0.6000	0.6000
T29	32	LDF4P-50A(1/2")	390.00 - 420.00	0.6000	0.6000
T30	1	Pipe 1 1/2" STD	360.00 - 390.00	0.6000	0.6000
T30	2	Pipe 1 1/2" STD	360.00 - 390.00	0.6000	0.6000
T30	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	360.00 - 390.00	0.6000	0.6000
T30	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	360.00 - 390.00	0.6000	0.6000
T30	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	360.00 - 390.00	0.6000	0.6000
T30	10	3/4" Solid Round	360.00 - 390.00	0.6000	0.6000
T30	11	5/8" SR Rungs (12" W x 15" Step)	360.00 - 390.00	0.6000	0.6000
T30	16	LDF5-50A(7/8")	360.00 - 390.00	0.6000	0.6000
T30	17	LDF5-50A(7/8")	360.00 - 390.00	0.6000	0.6000
T30	18	LDF7-50A(1-5/8")	360.00 - 390.00	0.6000	0.6000
T30	21	EW63(ELLIPTICAL)	360.00 - 370.00	0.6000	0.6000
T30	27	1" Metal Conduit	360.00 - 390.00	0.6000	0.6000
T30	28	6 1/8" Rigid	360.00 - 390.00	1.0000	0.6000
T30	29	3-1/8" Rigid	360.00 - 390.00	1.0000	0.6000
T30	30	4 1/16" Rigid	360.00 - 390.00	1.0000	0.6000
T30	31	HJ8-50B(3")	360.00 - 390.00	0.6000	0.6000
T30	32	LDF4P-50A(1/2")	360.00 - 390.00	0.6000	0.6000
T31	1	Pipe 1 1/2" STD	330.00 - 360.00	0.6000	0.6000
T31	2	Pipe 1 1/2" STD	330.00 - 360.00	0.6000	0.6000
T31	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	330.00 - 360.00	0.6000	0.6000
T31	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	330.00 - 360.00	0.6000	0.6000
T31	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	330.00 - 360.00	0.6000	0.6000
T31	10	3/4" Solid Round	330.00 - 360.00	0.6000	0.6000
T31	11	5/8" SR Rungs (12" W x 15" Step)	330.00 - 360.00	0.6000	0.6000
T31	16	LDF5-50A(7/8")	330.00 - 360.00	0.6000	0.6000
T31	17	LDF5-50A(7/8")	330.00 - 360.00	0.6000	0.6000
T31	18	LDF7-50A(1-5/8")	330.00 - 360.00	0.6000	0.6000

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	Client	MPB	Designed by elatta

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T31	20	EW63(ELLIPTICAL)	330.00 - 331.00	0.6000	0.6000
T31	21	EW63(ELLIPTICAL)	330.00 - 360.00	0.6000	0.6000
T31	27	1" Metal Conduit	330.00 - 360.00	0.6000	0.6000
T31	28	6 1/8" Rigid	330.00 - 360.00	1.0000	0.6000
T31	29	3-1/8" Rigid	330.00 - 360.00	0.6000	0.6000
T31	30	4 1/16" Rigid	330.00 - 360.00	1.0000	0.6000
T31	31	HJ8-50B(3")	330.00 - 360.00	0.6000	0.6000
T31	32	LDF4P-50A(1/2")	330.00 - 360.00	0.6000	0.6000
T32	1	Pipe 1 1/2" STD	300.00 - 330.00	0.6000	0.6000
T32	2	Pipe 1 1/2" STD	300.00 - 330.00	0.6000	0.6000
T32	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	300.00 - 330.00	0.6000	0.6000
T32	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	300.00 - 330.00	0.6000	0.6000
T32	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	300.00 - 330.00	0.6000	0.6000
T32	10	3/4" Solid Round	300.00 - 330.00	0.6000	0.6000
T32	11	5/8" SR Rungs (12" W x 15" Step)	300.00 - 330.00	0.6000	0.6000
T32	16	LDF5-50A(7/8")	300.00 - 330.00	0.6000	0.6000
T32	17	LDF5-50A(7/8")	300.00 - 330.00	0.6000	0.6000
T32	18	LDF7-50A(1-5/8")	300.00 - 330.00	0.6000	0.6000
T32	20	EW63(ELLIPTICAL)	300.00 - 330.00	0.6000	0.6000
T32	21	EW63(ELLIPTICAL)	300.00 - 330.00	0.6000	0.6000
T32	27	1" Metal Conduit	300.00 - 330.00	0.6000	0.6000
T32	28	6 1/8" Rigid	300.00 - 330.00	1.0000	0.6000
T32	29	3-1/8" Rigid	300.00 - 330.00	0.6000	0.6000
T32	30	4 1/16" Rigid	300.00 - 330.00	1.0000	0.6000
T32	31	HJ8-50B(3")	300.00 - 330.00	0.6000	0.6000
T32	32	LDF4P-50A(1/2")	300.00 - 330.00	0.6000	0.6000
T33	1	Pipe 1 1/2" STD	292.42 - 300.00	0.6000	0.6000
T33	2	Pipe 1 1/2" STD	292.42 - 300.00	0.6000	0.6000
T33	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	292.42 - 300.00	0.6000	0.6000
T33	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	292.42 - 300.00	0.6000	0.6000
T33	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	292.42 - 300.00	0.6000	0.6000
T33	10	3/4" Solid Round	292.42 - 300.00	0.6000	0.6000
T33	11	5/8" SR Rungs (12" W x 15" Step)	292.42 - 300.00	0.6000	0.6000
T33	16	LDF5-50A(7/8")	292.42 - 300.00	0.6000	0.6000
T33	17	LDF5-50A(7/8")	292.42 - 300.00	0.6000	0.6000
T33	18	LDF7-50A(1-5/8")	292.42 - 300.00	0.6000	0.6000
T33	20	EW63(ELLIPTICAL)	292.42 - 300.00	0.6000	0.6000
T33	21	EW63(ELLIPTICAL)	292.42 - 300.00	0.6000	0.6000
T33	27	1" Metal Conduit	292.42 - 300.00	0.6000	0.6000
T33	28	6 1/8" Rigid	292.42 - 300.00	1.0000	0.6000
T33	29	3-1/8" Rigid	292.42 - 300.00	0.6000	0.6000
T33	30	4 1/16" Rigid	292.42 - 300.00	1.0000	0.6000
T33	31	HJ8-50B(3")	292.42 - 300.00	0.6000	0.6000
T33	32	LDF4P-50A(1/2")	292.42 - 300.00	0.6000	0.6000
T34	1	Pipe 1 1/2" STD	270.00 - 292.42	0.6000	0.6000
T34	2	Pipe 1 1/2" STD	270.00 - 292.42	0.6000	0.6000
T34	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	270.00 - 292.42	0.6000	0.6000
T34	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	270.00 - 292.42	0.6000	0.6000
T34	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	270.00 - 292.42	0.6000	0.6000
T34	10	3/4" Solid Round	270.00 - 292.42	0.6000	0.6000
T34	11	5/8" SR Rungs (12" W x 15" Step)	270.00 - 292.42	0.6000	0.6000
T34	16	LDF5-50A(7/8")	270.00 - 292.42	0.6000	0.6000
T34	17	LDF5-50A(7/8")	270.00 - 292.42	0.6000	0.6000
T34	18	LDF7-50A(1-5/8")	270.00 - 292.42	0.6000	0.6000
T34	20	EW63(ELLIPTICAL)	270.00 - 292.42	0.6000	0.6000
T34	21	EW63(ELLIPTICAL)	270.00 - 292.42	0.6000	0.6000
T34	27	1" Metal Conduit	270.00 - 292.42	0.6000	0.6000
T34	28	6 1/8" Rigid	270.00 - 292.42	1.0000	0.6000
T34	29	3-1/8" Rigid	270.00 - 292.42	0.6000	0.6000
T34	30	4 1/16" Rigid	270.00 - 292.42	1.0000	0.6000
T34	31	HJ8-50B(3")	270.00 - 292.42	0.6000	0.6000
T34	32	LDF4P-50A(1/2")	270.00 - 292.42	0.6000	0.6000

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	WMAW Rose Hill (ASR# 1041037)	Page 36 of 78
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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_a No Ice</i>	<i>K_a Ice</i>
T35	1	Pipe 1 1/2" STD	240.00 - 270.00	0.6000	0.6000
T35	2	Pipe 1 1/2" STD	240.00 - 270.00	0.6000	0.6000
T35	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	240.00 - 270.00	0.6000	0.6000
T35	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	240.00 - 270.00	0.6000	0.6000
T35	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	240.00 - 270.00	0.6000	0.6000
T35	10	3/4" Solid Round	240.00 - 270.00	0.6000	0.6000
T35	11	5/8" SR Rungs (12" W x 15" Step)	240.00 - 270.00	0.6000	0.6000
T35	16	LDF5-50A(7/8")	240.00 - 270.00	0.6000	0.6000
T35	17	LDF5-50A(7/8")	240.00 - 270.00	0.6000	0.6000
T35	18	LDF7-50A(1-5/8")	240.00 - 270.00	0.6000	0.6000
T35	20	EW63(ELLIPTICAL)	240.00 - 270.00	0.6000	0.6000
T35	21	EW63(ELLIPTICAL)	240.00 - 270.00	0.6000	0.6000
T35	27	1" Metal Conduit	240.00 - 270.00	0.6000	0.6000
T35	28	6 1/8" Rigid	240.00 - 270.00	1.0000	0.6000
T35	29	3-1/8" Rigid	240.00 - 270.00	0.6000	0.6000
T35	30	4 1/16" Rigid	240.00 - 270.00	1.0000	0.6000
T35	31	HJ8-50B(3")	240.00 - 270.00	0.6000	0.6000
T35	32	LDF4P-50A(1/2")	240.00 - 270.00	0.6000	0.6000
T36	1	Pipe 1 1/2" STD	210.00 - 240.00	0.6000	0.6000
T36	2	Pipe 1 1/2" STD	210.00 - 240.00	0.6000	0.6000
T36	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	210.00 - 240.00	0.6000	0.6000
T36	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	210.00 - 240.00	0.6000	0.6000
T36	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	210.00 - 240.00	0.6000	0.6000
T36	10	3/4" Solid Round	210.00 - 240.00	0.6000	0.6000
T36	11	5/8" SR Rungs (12" W x 15" Step)	210.00 - 240.00	0.6000	0.6000
T36	16	LDF5-50A(7/8")	210.00 - 240.00	0.6000	0.6000
T36	17	LDF5-50A(7/8")	210.00 - 240.00	0.6000	0.6000
T36	18	LDF7-50A(1-5/8")	210.00 - 240.00	0.6000	0.6000
T36	20	EW63(ELLIPTICAL)	210.00 - 240.00	0.6000	0.6000
T36	21	EW63(ELLIPTICAL)	210.00 - 240.00	0.6000	0.6000
T36	27	1" Metal Conduit	210.00 - 240.00	0.6000	0.6000
T36	28	6 1/8" Rigid	210.00 - 240.00	1.0000	0.6000
T36	29	3-1/8" Rigid	210.00 - 240.00	0.6000	0.6000
T36	30	4 1/16" Rigid	210.00 - 240.00	1.0000	0.6000
T36	31	HJ8-50B(3")	210.00 - 240.00	0.6000	0.6000
T36	32	LDF4P-50A(1/2")	210.00 - 240.00	0.6000	0.6000
T37	1	Pipe 1 1/2" STD	202.42 - 210.00	0.6000	0.6000
T37	2	Pipe 1 1/2" STD	202.42 - 210.00	0.6000	0.6000
T37	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	202.42 - 210.00	0.6000	0.6000
T37	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	202.42 - 210.00	0.6000	0.6000
T37	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	202.42 - 210.00	0.6000	0.6000
T37	10	3/4" Solid Round	202.42 - 210.00	0.6000	0.6000
T37	11	5/8" SR Rungs (12" W x 15" Step)	202.42 - 210.00	0.6000	0.6000
T37	16	LDF5-50A(7/8")	202.42 - 210.00	0.6000	0.6000
T37	17	LDF5-50A(7/8")	202.42 - 210.00	0.6000	0.6000
T37	18	LDF7-50A(1-5/8")	202.42 - 210.00	0.6000	0.6000
T37	20	EW63(ELLIPTICAL)	202.42 - 210.00	0.6000	0.6000
T37	21	EW63(ELLIPTICAL)	202.42 - 210.00	0.6000	0.6000
T37	27	1" Metal Conduit	202.42 - 210.00	0.6000	0.6000
T37	28	6 1/8" Rigid	202.42 - 210.00	1.0000	0.6000
T37	29	3-1/8" Rigid	202.42 - 210.00	0.6000	0.6000
T37	30	4 1/16" Rigid	202.42 - 210.00	1.0000	0.6000
T37	31	HJ8-50B(3")	202.42 - 210.00	0.6000	0.6000
T37	32	LDF4P-50A(1/2")	202.42 - 210.00	0.6000	0.6000
T38	1	Pipe 1 1/2" STD	180.00 - 202.42	0.6000	0.6000
T38	2	Pipe 1 1/2" STD	180.00 - 202.42	0.6000	0.6000
T38	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	180.00 - 202.42	0.6000	0.6000
T38	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	180.00 - 202.42	0.6000	0.6000
T38	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	180.00 - 202.42	0.6000	0.6000
T38	10	3/4" Solid Round	180.00 - 202.42	0.6000	0.6000
T38	11	5/8" SR Rungs (12" W x 15" Step)	180.00 - 202.42	0.6000	0.6000
T38	16	LDF5-50A(7/8")	180.00 - 202.42	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
T38	17	LDF5-50A(7/8")	180.00 - 202.42	0.6000	0.6000
T38	18	LDF7-50A(1-5/8")	180.00 - 202.42	0.6000	0.6000
T38	20	EW63(ELLIPTICAL)	180.00 - 202.42	0.6000	0.6000
T38	21	EW63(ELLIPTICAL)	180.00 - 202.42	0.6000	0.6000
T38	27	1" Metal Conduit	180.00 - 202.42	0.6000	0.6000
T38	28	6 1/8" Rigid	180.00 - 202.42	1.0000	0.6000
T38	29	3-1/8" Rigid	180.00 - 202.42	0.6000	0.6000
T38	30	4 1/16" Rigid	180.00 - 202.42	1.0000	0.6000
T38	31	HJ8-50B(3")	180.00 - 202.42	0.6000	0.6000
T38	32	LDF4P-50A(1/2")	180.00 - 202.42	0.6000	0.6000
T39	1	Pipe 1 1/2" STD	150.00 - 180.00	0.6000	0.6000
T39	2	Pipe 1 1/2" STD	150.00 - 180.00	0.6000	0.6000
T39	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	150.00 - 180.00	0.6000	0.6000
T39	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	150.00 - 180.00	0.6000	0.6000
T39	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	150.00 - 180.00	0.6000	0.6000
T39	10	3/4" Solid Round	150.00 - 180.00	0.6000	0.6000
T39	11	5/8" SR Rungs (12" W x 15" Step)	150.00 - 180.00	0.6000	0.6000
T39	16	LDF5-50A(7/8")	150.00 - 180.00	0.6000	0.6000
T39	17	LDF5-50A(7/8")	150.00 - 180.00	0.6000	0.6000
T39	18	LDF7-50A(1-5/8")	150.00 - 180.00	0.6000	0.6000
T39	20	EW63(ELLIPTICAL)	150.00 - 180.00	0.6000	0.6000
T39	21	EW63(ELLIPTICAL)	150.00 - 180.00	0.6000	0.6000
T39	27	1" Metal Conduit	150.00 - 180.00	0.6000	0.6000
T39	28	6 1/8" Rigid	150.00 - 180.00	1.0000	0.6000
T39	29	3-1/8" Rigid	150.00 - 180.00	0.6000	0.6000
T39	30	4 1/16" Rigid	150.00 - 180.00	1.0000	0.6000
T39	31	HJ8-50B(3")	150.00 - 180.00	0.6000	0.6000
T39	32	LDF4P-50A(1/2")	150.00 - 180.00	0.6000	0.6000
T40	1	Pipe 1 1/2" STD	120.00 - 150.00	0.6000	0.6000
T40	2	Pipe 1 1/2" STD	120.00 - 150.00	0.6000	0.6000
T40	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	120.00 - 150.00	0.6000	0.6000
T40	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	120.00 - 150.00	0.6000	0.6000
T40	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	120.00 - 150.00	0.6000	0.6000
T40	10	3/4" Solid Round	120.00 - 150.00	0.6000	0.6000
T40	11	5/8" SR Rungs (12" W x 15" Step)	120.00 - 150.00	0.6000	0.6000
T40	16	LDF5-50A(7/8")	120.00 - 150.00	0.6000	0.6000
T40	17	LDF5-50A(7/8")	120.00 - 150.00	0.6000	0.6000
T40	18	LDF7-50A(1-5/8")	120.00 - 150.00	0.6000	0.6000
T40	20	EW63(ELLIPTICAL)	120.00 - 150.00	0.6000	0.6000
T40	21	EW63(ELLIPTICAL)	120.00 - 150.00	0.6000	0.6000
T40	27	1" Metal Conduit	120.00 - 150.00	0.6000	0.6000
T40	28	6 1/8" Rigid	120.00 - 150.00	1.0000	0.6000
T40	29	3-1/8" Rigid	120.00 - 150.00	0.6000	0.6000
T40	30	4 1/16" Rigid	120.00 - 150.00	1.0000	0.6000
T40	31	HJ8-50B(3")	120.00 - 150.00	0.6000	0.6000
T40	32	LDF4P-50A(1/2")	120.00 - 150.00	0.6000	0.6000
T41	1	Pipe 1 1/2" STD	90.00 - 120.00	0.6000	0.6000
T41	2	Pipe 1 1/2" STD	90.00 - 120.00	0.6000	0.6000
T41	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	90.00 - 120.00	0.6000	0.6000
T41	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	90.00 - 120.00	0.6000	0.6000
T41	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	90.00 - 120.00	0.6000	0.6000
T41	10	3/4" Solid Round	90.00 - 120.00	0.6000	0.6000
T41	11	5/8" SR Rungs (12" W x 15" Step)	90.00 - 120.00	0.6000	0.6000
T41	16	LDF5-50A(7/8")	90.00 - 120.00	0.6000	0.6000
T41	17	LDF5-50A(7/8")	90.00 - 120.00	0.6000	0.6000
T41	18	LDF7-50A(1-5/8")	90.00 - 120.00	0.6000	0.6000
T41	20	EW63(ELLIPTICAL)	90.00 - 120.00	0.6000	0.6000
T41	21	EW63(ELLIPTICAL)	90.00 - 120.00	0.6000	0.6000
T41	27	1" Metal Conduit	90.00 - 120.00	0.6000	0.6000
T41	28	6 1/8" Rigid	90.00 - 120.00	1.0000	0.6000
T41	29	3-1/8" Rigid	90.00 - 120.00	0.6000	0.6000
T41	30	4 1/16" Rigid	90.00 - 120.00	1.0000	0.6000

<i>tnxTower</i> <i>Tower Engineering Professionals</i> 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job WMAW Rose Hill (ASR# 1041037)	Page 38 of 78
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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_a No Ice</i>	<i>K_a Ice</i>
T41	31	HJ8-50B(3")	90.00 - 120.00	0.6000	0.6000
T41	32	LDF4P-50A(1/2")	90.00 - 120.00	0.6000	0.6000
T42	1	Pipe 1 1/2" STD	60.00 - 90.00	0.6000	0.6000
T42	2	Pipe 1 1/2" STD	60.00 - 90.00	0.6000	0.6000
T42	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	60.00 - 90.00	0.6000	0.6000
T42	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	60.00 - 90.00	0.6000	0.6000
T42	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	60.00 - 90.00	0.6000	0.6000
T42	10	3/4" Solid Round	60.00 - 90.00	0.6000	0.6000
T42	11	5/8" SR Rungs (12" W x 15" Step)	60.00 - 90.00	0.6000	0.6000
T42	16	LDF5-50A(7/8")	60.00 - 90.00	0.6000	0.6000
T42	17	LDF5-50A(7/8")	60.00 - 90.00	0.6000	0.6000
T42	18	LDF7-50A(1-5/8")	60.00 - 90.00	0.6000	0.6000
T42	20	EW63(ELLIPTICAL)	60.00 - 90.00	0.6000	0.6000
T42	21	EW63(ELLIPTICAL)	60.00 - 90.00	0.6000	0.6000
T42	27	1" Metal Conduit	60.00 - 90.00	0.6000	0.6000
T42	28	6 1/8" Rigid	60.00 - 90.00	1.0000	0.6000
T42	29	3-1/8" Rigid	60.00 - 90.00	0.6000	0.6000
T42	30	4 1/16" Rigid	60.00 - 90.00	1.0000	0.6000
T42	31	HJ8-50B(3")	60.00 - 90.00	0.6000	0.6000
T42	32	LDF4P-50A(1/2")	60.00 - 90.00	0.6000	0.6000
T43	1	Pipe 1 1/2" STD	30.00 - 60.00	0.6000	0.6000
T43	2	Pipe 1 1/2" STD	30.00 - 60.00	0.6000	0.6000
T43	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	30.00 - 60.00	0.6000	0.6000
T43	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	30.00 - 60.00	0.6000	0.6000
T43	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	30.00 - 60.00	0.6000	0.6000
T43	10	3/4" Solid Round	30.00 - 60.00	0.6000	0.6000
T43	11	5/8" SR Rungs (12" W x 15" Step)	30.00 - 60.00	0.6000	0.6000
T43	16	LDF5-50A(7/8")	30.00 - 60.00	0.6000	0.6000
T43	17	LDF5-50A(7/8")	30.00 - 60.00	0.6000	0.6000
T43	18	LDF7-50A(1-5/8")	30.00 - 60.00	0.6000	0.6000
T43	19	5/8" Cable (Lights)	30.00 - 34.00	0.6000	0.6000
T43	20	EW63(ELLIPTICAL)	30.00 - 60.00	0.6000	0.6000
T43	21	EW63(ELLIPTICAL)	30.00 - 60.00	0.6000	0.6000
T43	25	5/16" Coax	30.00 - 32.00	0.6000	0.6000
T43	27	1" Metal Conduit	30.00 - 60.00	0.6000	0.6000
T43	28	6 1/8" Rigid	30.00 - 60.00	1.0000	0.6000
T43	29	3-1/8" Rigid	30.00 - 60.00	0.6000	0.6000
T43	30	4 1/16" Rigid	30.00 - 60.00	1.0000	0.6000
T43	31	HJ8-50B(3")	30.00 - 60.00	0.6000	0.6000
T43	32	LDF4P-50A(1/2")	30.00 - 60.00	0.6000	0.6000
T44	1	Pipe 1 1/2" STD	22.50 - 30.00	0.6000	0.6000
T44	2	Pipe 1 1/2" STD	22.50 - 30.00	0.6000	0.6000
T44	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	22.50 - 30.00	0.6000	0.6000
T44	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	22.50 - 30.00	0.6000	0.6000
T44	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	22.50 - 30.00	0.6000	0.6000
T44	7	L1-1/2x2x1/4"	22.50 - 23.00	0.6000	0.6000
T44	8	1" O.D. Rolled Plate Rungs (12" W x 15" Step)	22.50 - 23.00	0.6000	0.6000
T44	10	3/4" Solid Round	22.50 - 30.00	0.6000	0.6000
T44	11	5/8" SR Rungs (12" W x 15" Step)	22.50 - 30.00	0.6000	0.6000
T44	16	LDF5-50A(7/8")	22.50 - 30.00	0.6000	0.6000
T44	17	LDF5-50A(7/8")	22.50 - 30.00	0.6000	0.6000
T44	18	LDF7-50A(1-5/8")	22.50 - 30.00	0.6000	0.6000
T44	19	5/8" Cable (Lights)	22.50 - 30.00	0.6000	0.6000
T44	20	EW63(ELLIPTICAL)	22.50 - 30.00	0.6000	0.6000
T44	21	EW63(ELLIPTICAL)	22.50 - 30.00	0.6000	0.6000
T44	25	5/16" Coax	22.50 - 30.00	0.6000	0.6000
T44	27	1" Metal Conduit	22.50 - 30.00	0.6000	0.6000
T44	28	6 1/8" Rigid	22.50 - 30.00	1.0000	0.6000
T44	29	3-1/8" Rigid	22.50 - 30.00	0.6000	0.6000
T44	30	4 1/16" Rigid	22.50 - 30.00	0.6000	0.6000
T44	31	HJ8-50B(3")	22.50 - 30.00	0.6000	0.6000
T44	32	LDF4P-50A(1/2")	22.50 - 30.00	0.6000	0.6000

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	Client	MPB	Designed by	elatta

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T45	1	Pipe 1 1/2" STD	15.00 - 22.50	0.6000	0.6000
T45	2	Pipe 1 1/2" STD	15.00 - 22.50	0.6000	0.6000
T45	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	15.00 - 22.50	0.6000	0.6000
T45	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	15.00 - 22.50	0.6000	0.6000
T45	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	15.00 - 22.50	0.6000	0.6000
T45	7	L1-1/2x2x1/4"	15.00 - 22.50	0.6000	0.6000
T45	8	1" O.D. Rolled Plate Rungs (12" W x 15" Step)	15.00 - 22.50	0.6000	0.6000
T45	10	3/4" Solid Round	15.00 - 22.50	0.6000	0.6000
T45	11	5/8" SR Rungs (12" W x 15" Step)	15.00 - 22.50	0.6000	0.6000
T45	16	LDF5-50A(7/8")	15.00 - 22.50	0.6000	0.6000
T45	17	LDF5-50A(7/8")	15.00 - 22.50	0.6000	0.6000
T45	18	LDF7-50A(1-5/8")	15.00 - 22.50	0.6000	0.6000
T45	19	5/8" Cable (Lights)	15.00 - 22.50	0.6000	0.6000
T45	20	EW63(ELLIPTICAL)	15.00 - 22.50	0.6000	0.6000
T45	21	EW63(ELLIPTICAL)	15.00 - 22.50	0.6000	0.6000
T45	25	5/16" Coax	15.00 - 22.50	0.6000	0.6000
T45	27	1" Metal Conduit	15.00 - 22.50	0.6000	0.6000
T45	28	6 1/8" Rigid	15.00 - 22.50	1.0000	0.6000
T45	29	3-1/8" Rigid	15.00 - 22.50	0.6000	0.6000
T45	30	4 1/16" Rigid	15.00 - 22.50	0.6000	0.6000
T45	31	HJ8-50B(3")	15.00 - 22.50	0.6000	0.6000
T45	32	LDF4P-50A(1/2")	15.00 - 22.50	0.6000	0.6000
T46	1	Pipe 1 1/2" STD	7.50 - 15.00	0.6000	0.5713
T46	2	Pipe 1 1/2" STD	7.50 - 15.00	0.6000	0.5713
T46	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	7.50 - 15.00	0.6000	0.5713
T46	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	7.50 - 15.00	0.6000	0.5713
T46	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	7.50 - 15.00	0.6000	0.5713
T46	7	L1-1/2x2x1/4"	7.50 - 15.00	0.6000	0.5713
T46	8	1" O.D. Rolled Plate Rungs (12" W x 15" Step)	7.50 - 15.00	0.6000	0.5713
T46	16	LDF5-50A(7/8")	7.50 - 15.00	0.6000	0.5713
T46	17	LDF5-50A(7/8")	7.50 - 15.00	0.6000	0.5713
T46	18	LDF7-50A(1-5/8")	7.50 - 15.00	0.6000	0.5713
T46	19	5/8" Cable (Lights)	7.50 - 15.00	0.6000	0.5713
T46	20	EW63(ELLIPTICAL)	7.50 - 15.00	0.6000	0.5713
T46	21	EW63(ELLIPTICAL)	7.50 - 15.00	0.6000	0.5713
T46	25	5/16" Coax	7.50 - 15.00	0.6000	0.5713
T46	27	1" Metal Conduit	7.50 - 15.00	0.6000	0.5713
T46	28	6 1/8" Rigid	7.50 - 15.00	1.0000	0.5713
T46	29	3-1/8" Rigid	7.50 - 15.00	0.6000	0.5713
T46	30	4 1/16" Rigid	7.50 - 15.00	0.6000	0.5713
T46	31	HJ8-50B(3")	7.50 - 15.00	0.6000	0.5713
T46	32	LDF4P-50A(1/2")	7.50 - 15.00	0.6000	0.5713
T47	1	Pipe 1 1/2" STD	0.00 - 7.50	0.6000	0.6000
T47	2	Pipe 1 1/2" STD	0.00 - 7.50	0.6000	0.6000
T47	3	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	0.00 - 7.50	0.6000	0.6000
T47	4	L2-1/2x2-1/2x1/4 (3' Long @ 7.5' Spacing)	0.00 - 7.50	0.6000	0.6000
T47	5	L2-1/2x3x1/4 (2' Long @ 7.5' Spacing)	0.00 - 7.50	0.6000	0.6000
T47	7	L1-1/2x2x1/4"	1.00 - 7.50	0.6000	0.6000
T47	8	1" O.D. Rolled Plate Rungs (12" W x 15" Step)	1.00 - 7.50	0.6000	0.6000
T47	16	LDF5-50A(7/8")	0.00 - 7.50	0.6000	0.6000
T47	17	LDF5-50A(7/8")	0.00 - 7.50	0.6000	0.6000
T47	18	LDF7-50A(1-5/8")	0.00 - 7.50	0.6000	0.6000
T47	19	5/8" Cable (Lights)	0.00 - 7.50	0.6000	0.6000
T47	20	EW63(ELLIPTICAL)	0.00 - 7.50	0.6000	0.6000
T47	21	EW63(ELLIPTICAL)	0.00 - 7.50	0.6000	0.6000
T47	25	5/16" Coax	0.00 - 7.50	0.6000	0.6000
T47	27	1" Metal Conduit	0.00 - 7.50	0.6000	0.6000
T47	28	6 1/8" Rigid	0.00 - 7.50	1.0000	0.6000
T47	29	3-1/8" Rigid	0.00 - 7.50	0.6000	0.6000
T47	30	4 1/16" Rigid	0.00 - 7.50	0.6000	0.6000
T47	31	HJ8-50B(3")	0.00 - 7.50	0.6000	0.6000
T47	32	LDF4P-50A(1/2")	0.00 - 7.50	0.6000	0.6000

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Antenna Pole Forces Dielectric TFU-28ETT/VP-R O4

Length of Pole	Ix	Iy	Modulus E	Antenna Pole C _{AA}	Antenna Pole Weight	Length of Beacon	Beacon C _{AA}	Beacon Weight
ft	in ⁴	in ⁴	ksi	ft ² /ft	plf	ft	ft ²	K
54.50	1000.0000	1000.0000	29000	No Ice With Ice	0.00 0.00	0.00	0.00 0.00	0.00 0.00

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			ft ft ft	°	ft	ft ²	ft ²	K
Drake Beacon LED-B-Hybrid-G5	C	None		0.000	1053.00	No Ice 1/2" Ice 1" Ice	0.56 0.91 1.05	0.03 0.05 0.06

Drake Side Strobe High-LED-WR-120	A	From Leg	1.00 0.00 0.00	0.000	997.00	No Ice 1/2" Ice 1" Ice	2.50 3.00 3.50	0.04 0.06 0.08
Drake Side Strobe High-LED-WR-120	B	From Leg	1.00 0.00 0.00	0.000	997.00	No Ice 1/2" Ice 1" Ice	2.50 3.00 3.50	0.04 0.06 0.08
Drake Side Strobe High-LED-WR-120	C	From Leg	1.00 0.00 0.00	0.000	997.00	No Ice 1/2" Ice 1" Ice	2.50 3.00 3.50	0.04 0.06 0.08

Drake Side Strobe High-LED-WR-120	A	From Leg	1.00 0.00 0.00	0.000	665.00	No Ice 1/2" Ice 1" Ice	2.50 3.00 3.50	0.04 0.06 0.08
Drake Side Strobe High-LED-WR-120	B	From Leg	1.00 0.00 0.00	0.000	665.00	No Ice 1/2" Ice 1" Ice	2.50 3.00 3.50	0.04 0.06 0.08
Drake Side Strobe High-LED-WR-120	C	From Leg	1.00 0.00 0.00	0.000	665.00	No Ice 1/2" Ice 1" Ice	2.50 3.00 3.50	0.04 0.06 0.08

Drake Side Strobe High-LED-WR-120	A	From Leg	1.00 0.00 0.00	0.000	332.00	No Ice 1/2" Ice 1" Ice	2.50 3.00 3.50	0.04 0.06 0.08
Drake Side Strobe High-LED-WR-120	B	From Leg	1.00 0.00 0.00	0.000	332.00	No Ice 1/2" Ice 1" Ice	2.50 3.00 3.50	0.04 0.06 0.08
Drake Side Strobe High-LED-WR-120	C	From Leg	1.00 0.00 0.00	0.000	332.00	No Ice 1/2" Ice 1" Ice	2.50 3.00 3.50	0.04 0.06 0.08

40-FT 8 Element Dipole	B	From Leg	1.50 -2.50 0.00	-60.000	713.00 - 680.00	No Ice 1/2" Ice 1" Ice	10.00 14.03 18.07	0.09 0.16 0.26
(4) HSS 2" x 1" x 3' Long Standoff Bracket	B	From Leg	0.75 -1.25 0.00	-60.000	713.00 - 680.00	No Ice 1/2" Ice 1" Ice	0.10 0.20 0.30	0.01 0.01 0.02
Unistrut 2" x 1" x 8.5' Long	B	From Face	1.50 0.00	0.000	713.00	No Ice 1/2" Ice	2.80 3.70	0.02 0.04

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
Unistrut 2" x 1" x 8.5' Long	B	From Face	0.00 1.50 0.00 0.00	0.000	680.00	1" Ice No Ice 1/2" Ice 1" Ice	4.60 2.80 3.70 4.60	1.60 1.00 1.30 1.60	0.05 0.02 0.04 0.05

Bolt-on Leg Mod	A	From Leg	0.00 0.00 0.00	0.000	633.50	No Ice 1/2" Ice 1" Ice	4.00 4.50 5.00	0.50 1.00 1.50	0.25 0.28 0.31
Bolt-on Leg Mod	B	From Leg	0.00 0.00 0.00	0.000	633.50	No Ice 1/2" Ice 1" Ice	4.00 4.50 5.00	0.50 1.00 1.50	0.25 0.28 0.31
Bolt-on Leg Mod	C	From Leg	0.00 0.00 0.00	0.000	633.50	No Ice 1/2" Ice 1" Ice	4.00 4.50 5.00	0.50 1.00 1.50	0.25 0.28 0.31

L1x1x1/8" x 2' Long	A	From Leg	0.50 -0.50 0.00	0.000	636.00	No Ice 1/2" Ice 1" Ice	0.30 0.50 0.70	0.30 0.50 0.70	0.00 0.01 0.01
21-ft 4 Element Dipole	A	From Leg	1.00 -1.00 10.00	0.000	616.00	No Ice 1/2" Ice 1" Ice	5.25 7.38 9.53	5.25 7.38 9.53	0.06 0.10 0.15
Side Arm Mount [SO 304-1]	A	From Leg	0.50 -0.50 0.00	-60.000	616.00	No Ice 1/2" Ice 1" Ice	0.31 0.50 0.73	0.88 1.26 1.67	0.02 0.03 0.05

L1x1x1/8" x 2' Long	A	From Leg	0.50 0.50 0.00	0.000	411.00	No Ice 1/2" Ice 1" Ice	0.30 0.50 0.70	0.30 0.50 0.70	0.00 0.01 0.01
21-ft 4 Element Dipole	A	From Leg	1.00 1.00 10.00	0.000	392.00	No Ice 1/2" Ice 1" Ice	5.25 7.38 9.53	5.25 7.38 9.53	0.06 0.10 0.15
Side Arm Mount [SO 304-1]	A	From Leg	0.50 0.50 0.00	45.000	392.00	No Ice 1/2" Ice 1" Ice	0.31 0.50 0.73	0.88 1.26 1.67	0.02 0.03 0.05

2.4" dia. x 10' stabilizer	C	From Face	0.00 0.00 0.00	0.000	371.00	No Ice 1/2" Ice 1" Ice	2.37 3.41 4.46	2.38 3.41 4.46	0.04 0.06 0.09
4.5" dia. x 10'	C	From Leg	1.50 -1.00 0.00	0.000	370.00	No Ice 1/2" Ice 1" Ice	3.16 5.24 5.85	3.16 5.24 5.85	0.11 0.14 0.18
L6x4x3/8" x 10' Long	A	From Face	0.50 -1.00 0.00	0.000	372.00	No Ice 1/2" Ice 1" Ice	9.17 9.89 10.62	0.10 0.30 0.50	0.13 0.17 0.21
L6x4x3/8" x 10' Long	A	From Face	0.50 -1.00 0.00	0.000	365.00	No Ice 1/2" Ice 1" Ice	9.17 9.89 10.62	0.10 0.30 0.50	0.13 0.17 0.21

2.4" dia. x 10' stabilizer	C	From Leg	0.00 2.00 0.00	0.000	331.00	No Ice 1/2" Ice 1" Ice	2.37 3.41 4.46	2.38 3.41 4.46	0.04 0.06 0.09
L2-1/2 x 2-1/2 x 1/4" x 8' Long	C	From Face	0.50 0.00 0.00	0.000	331.00	No Ice 1/2" Ice 1" Ice	3.30 4.10 4.90	0.01 0.05 0.09	0.04 0.05 0.07
4.5" dia. x 7'	C	From Leg	1.00 0.00 0.00	0.000	331.00	No Ice 1/2" Ice 1" Ice	2.09 3.21 3.64	2.09 3.21 3.64	0.08 0.10 0.12

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K

Compound Light	C	From Leg	2.50 -1.00 0.00	0.000	34.00	No Ice 1/2" Ice 1" Ice	0.50 0.65 0.80	0.50 0.65 0.80	0.02 0.03 0.04
1.66" Dia x 2.5' Pipe	C	From Leg	1.25 -0.50 0.00	0.000	34.00	No Ice 1/2" Ice 1" Ice	0.36 0.52 0.68	0.36 0.52 0.68	0.01 0.01 0.01

20" x 24" Ice Shield	A	From Leg	5.00 0.00 0.00	0.000	34.00	No Ice 1/2" Ice 1" Ice	0.40 0.50 0.60	0.40 0.50 0.60	0.01 0.03 0.04
6' Single HSS Side Arm	A	From Leg	2.00 0.00 0.00	0.000	34.00	No Ice 1/2" Ice 1" Ice	0.10 0.15 0.20	1.50 2.10 2.70	0.02 0.03 0.04
Anemometer	A	From Leg	5.00 0.00 1.00	0.000	31.00	No Ice 1/2" Ice 1" Ice	0.30 0.50 0.70	0.30 0.50 0.70	0.01 0.01 0.02
6' Single HSS Side Arm	A	From Leg	2.00 0.00 0.00	0.000	31.00	No Ice 1/2" Ice 1" Ice	0.10 0.15 0.20	1.50 2.10 2.70	0.02 0.03 0.04

TFU-28ETT/VP-R O4 w/ 1' Base Adapter	C	None		0.000	1025.00	No Ice 1/2" Ice 1" Ice	54.30 118.60 124.40	54.30 118.60 124.40	8.10 8.90 9.70

SHPX-10AC w/ Radomes	B	From Leg	2.00 -1.00 0.00	0.000	927.00 - 825.00	No Ice 1/2" Ice 1" Ice	98.10 112.60 127.10	98.10 112.60 127.10	1.86 3.31 4.76

TFU-8WB-R C160	B	From Leg	3.00 -1.50 0.00	0.000	661.00 - 647.00	No Ice 1/2" Ice 1" Ice	26.40 41.20 42.60	26.40 41.20 42.60	0.79 1.12 1.45

JHPC-10	B	From Leg	2.00 -1.00 0.00	0.000	575.00 - 475.00	No Ice 1/2" Ice 1" Ice	54.90 71.37 87.84	54.90 71.37 87.84	0.89 1.16 1.42

Pipe Mount [PM 601-1]	C	From Leg	0.50 0.00 0.00	0.000	730.00	No Ice 1/2" Ice 1" Ice	1.32 1.58 1.84	1.32 1.58 1.84	0.07 0.08 0.09

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft ²	Weight K
PAL8-59AC	C	Paraboloid w/Radome	From Leg	2.00 1.50 0.00	45.000		370.00	8.00	No Ice 1/2" Ice 1" Ice	50.27 51.32 52.37
PAL8-59AC	C	Paraboloid w/Radome	From Leg	1.50 1.50 0.00	45.000		331.00	8.00	No Ice 1/2" Ice 1" Ice	50.27 51.32 52.37

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Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft²	Weight K	

Paraflector PR-TV	C	Grid	From Leg	1.00 0.00 0.00	0.000		730.00	4.70	No Ice 1/2" Ice 1" Ice	17.35 17.97 18.59	0.04 0.13 0.22

Load Combinations

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

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<i>Comb. No.</i>	<i>Description</i>
48	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy
49	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy
50	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy
51	Dead+Wind 0 deg - Service+Guy
52	Dead+Wind 30 deg - Service+Guy
53	Dead+Wind 60 deg - Service+Guy
54	Dead+Wind 90 deg - Service+Guy
55	Dead+Wind 120 deg - Service+Guy
56	Dead+Wind 150 deg - Service+Guy
57	Dead+Wind 180 deg - Service+Guy
58	Dead+Wind 210 deg - Service+Guy
59	Dead+Wind 240 deg - Service+Guy
60	Dead+Wind 270 deg - Service+Guy
61	Dead+Wind 300 deg - Service+Guy
62	Dead+Wind 330 deg - Service+Guy

Maximum Reactions

<i>Location</i>	<i>Condition</i>	<i>Gov. Load Comb.</i>	<i>Vertical K</i>	<i>Horizontal, X K</i>	<i>Horizontal, Z K</i>
Leg C	Max. Vert	26	430.46	5.52	-4.22
	Max. H _x	26	430.46	5.52	-4.22
	Max. H _z	5	68.72	-3.37	4.13
	Min. Vert	8	52.48	-4.53	3.63
	Min. H _x	8	52.48	-4.53	3.63
	Min. H _z	23	381.77	3.99	-4.55
Leg B	Max. Vert	14	435.45	-5.79	-3.52
	Max. H _x	32	53.92	4.85	2.91
	Max. H _z	32	53.92	4.85	2.91
	Min. Vert	32	53.92	4.85	2.91
	Min. H _x	14	435.45	-5.79	-3.52
	Min. H _z	14	435.45	-5.79	-3.52
Leg A	Max. Vert	2	428.31	-0.72	6.85
	Max. H _x	26	115.28	2.68	-2.86
	Max. H _z	2	428.31	-0.72	6.85
	Min. Vert	20	51.56	0.77	-5.79
	Min. H _x	8	288.83	-2.49	3.65
	Min. H _z	20	51.56	0.77	-5.79
Guy C @ 719 ft Elev -19 ft Azimuth 240 deg	Max. Vert	28	-6.00	-2.52	1.46
	Max. H _x	28	-6.00	-2.52	1.46
	Max. H _z	7	-98.87	-74.01	45.90
	Min. Vert	10	-103.20	-78.65	45.40
	Min. H _x	10	-103.20	-78.65	45.40
	Min. H _z	28	-6.00	-2.52	1.46
Guy B @ 718 ft Elev -16 ft Azimuth 120 deg	Max. Vert	16	-5.95	2.50	1.45
	Max. H _x	34	-102.79	78.48	45.32
	Max. H _z	37	-98.35	73.75	45.77
	Min. Vert	34	-102.79	78.48	45.32
	Min. H _x	16	-5.95	2.50	1.45
	Min. H _z	16	-5.95	2.50	1.45
Guy A @ 717 ft Elev -22 ft Azimuth 0 deg	Max. Vert	4	-6.14	0.00	-2.97
	Max. H _x	31	-55.73	5.82	-47.06

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<i>Location</i>	<i>Condition</i>	<i>Gov. Load Comb.</i>	<i>Vertical K</i>	<i>Horizontal, X K</i>	<i>Horizontal, Z K</i>
Guy C @ 684 ft Elev -23 ft Azimuth 240 deg	Max. H _z	4	-6.14	0.00	-2.97
	Min. Vert	22	-103.63	-0.01	-90.62
	Min. H _x	13	-55.60	-5.82	-46.95
	Min. H _z	22	-103.63	-0.01	-90.62
	Max. Vert	28	-0.09	-0.20	0.11
	Max. H _x	28	-0.09	-0.20	0.11
	Max. H _z	7	-43.59	-44.37	26.78
	Min. Vert	13	-43.75	-45.54	25.13
	Min. H _x	13	-43.75	-45.54	25.13
	Min. H _z	28	-0.09	-0.20	0.11
Guy B @ 687 ft Elev -14 ft Azimuth 120 deg	Max. Vert	16	-0.14	0.27	0.16
	Max. H _x	31	-43.08	45.71	25.24
	Max. H _z	37	-42.87	44.49	26.84
	Min. Vert	31	-43.08	45.71	25.24
	Min. H _x	16	-0.14	0.27	0.16
	Min. H _z	16	-0.14	0.27	0.16
	Max. Vert	4	-0.13	-0.00	-0.31
	Max. H _x	31	-23.63	2.15	-28.42
	Max. H _z	4	-0.13	-0.00	-0.31
	Min. Vert	19	-43.15	-1.00	-52.10
Guy A @ 688 ft Elev -17 ft Azimuth 0 deg	Min. H _x	13	-23.61	-2.16	-28.40
	Min. H _z	19	-43.15	-1.00	-52.10
	Max. Vert	27	-1.18	-1.27	0.73
	Max. H _x	27	-1.18	-1.27	0.73
	Max. H _z	6	-86.02	-70.94	42.21
	Min. Vert	12	-88.23	-73.76	41.36
	Min. H _x	12	-88.23	-73.76	41.36
	Min. H _z	27	-1.18	-1.27	0.73
	Max. Vert	15	-1.15	1.18	0.68
	Max. H _x	30	-88.35	73.07	40.99
Guy C @ 285 ft Elev 2 ft Azimuth 240 deg	Max. H _z	36	-87.65	71.50	42.45
	Min. Vert	30	-88.35	73.07	40.99
	Min. H _x	15	-1.15	1.18	0.68
	Min. H _z	15	-1.15	1.18	0.68
	Max. Vert	3	-1.21	-0.00	-1.47
	Max. H _x	30	-45.68	1.88	-43.65
	Max. H _z	3	-1.21	-0.00	-1.47
	Min. Vert	18	-88.35	-1.04	-84.19
	Min. H _x	12	-46.70	-1.89	-44.51
	Min. H _z	18	-88.35	-1.04	-84.19

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Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	441.44	0.02	0.02	-2.53	3.13	-0.03
1.2D+1.0W (pattern 1) 0 deg - No Ice+1.0 Guy	667.86	0.22	-12.67	-1335.99	-28.60	-9.07
1.2D+1.0W (pattern 2) 0 deg - No Ice+1.0 Guy	673.55	0.19	-11.57	-1257.25	-23.30	-8.91
1.2D+1.0W (pattern 3) 0 deg - No Ice+1.0 Guy	697.92	0.19	-11.63	-1232.97	-22.59	-8.72
1.2D+1.0W (pattern 1) 30 deg - No Ice+1.0 Guy	650.93	6.43	-10.36	-1072.14	-492.89	-11.96
1.2D+1.0W (pattern 2) 30 deg - No Ice+1.0 Guy	656.04	6.37	-9.52	-1009.09	-479.62	-11.08
1.2D+1.0W (pattern 3) 30 deg - No Ice+1.0 Guy	672.74	6.39	-9.56	-988.16	-485.16	-11.34
1.2D+1.0W (pattern 1) 60 deg - No Ice+1.0 Guy	624.88	10.47	-6.35	-523.09	-866.63	-10.56
1.2D+1.0W (pattern 2) 60 deg - No Ice+1.0 Guy	624.90	10.30	-6.25	-509.56	-842.49	-10.74
1.2D+1.0W (pattern 3) 60 deg - No Ice+1.0 Guy	634.61	10.36	-6.29	-510.82	-844.92	-10.54
1.2D+1.0W (pattern 1) 90 deg - No Ice+1.0 Guy	654.59	11.86	-0.35	134.66	-1180.82	-7.38
1.2D+1.0W (pattern 2) 90 deg - No Ice+1.0 Guy	659.75	11.13	-0.83	102.33	-1125.53	-7.58
1.2D+1.0W (pattern 3) 90 deg - No Ice+1.0 Guy	676.46	11.19	-0.79	90.30	-1109.92	-7.56
1.2D+1.0W (pattern 1) 120 deg - No Ice+1.0 Guy	672.89	10.82	6.26	682.83	-1189.40	-2.06
1.2D+1.0W (pattern 2) 120 deg - No Ice+1.0 Guy	678.46	9.86	5.70	643.10	-1118.41	-2.16
1.2D+1.0W (pattern 3) 120 deg - No Ice+1.0 Guy	703.03	9.88	5.71	629.20	-1095.65	-2.08
1.2D+1.0W (pattern 1) 150 deg - No Ice+1.0 Guy	654.41	5.62	10.55	962.44	-703.73	4.47
1.2D+1.0W (pattern 2) 150 deg - No Ice+1.0 Guy	659.27	4.89	10.12	926.76	-654.48	4.47
1.2D+1.0W (pattern 3) 150 deg - No Ice+1.0 Guy	676.02	4.95	10.15	919.41	-636.41	4.36
1.2D+1.0W (pattern 1) 180 deg - No Ice+1.0 Guy	624.17	-0.33	12.35	1016.45	14.63	8.98
1.2D+1.0W (pattern 2) 180 deg - No Ice+1.0 Guy	623.98	-0.33	12.15	989.04	14.87	9.00
1.2D+1.0W (pattern 3) 180 deg - No Ice+1.0 Guy	633.72	-0.34	12.22	991.97	14.88	8.80
1.2D+1.0W (pattern 1) 210 deg - No Ice+1.0 Guy	650.28	-5.84	10.78	962.95	681.59	12.25
1.2D+1.0W (pattern 2) 210 deg - No Ice+1.0 Guy	655.20	-5.14	10.33	924.01	633.01	11.64
1.2D+1.0W (pattern 3) 210 deg - No Ice+1.0 Guy	671.96	-5.20	10.37	917.59	615.00	11.58
1.2D+1.0W (pattern 1) 240 deg - No Ice+1.0 Guy	668.35	-10.91	6.58	698.27	1154.41	11.45
1.2D+1.0W (pattern 2) 240 deg - No Ice+1.0 Guy	674.13	-9.94	6.00	655.21	1083.48	11.39
1.2D+1.0W (pattern 3) 240 deg - No Ice+1.0 Guy	698.55	-9.99	6.04	643.85	1062.30	11.27
1.2D+1.0W (pattern 1) 270 deg - No Ice+1.0 Guy	653.31	-11.82	-0.25	134.60	1160.79	8.08
1.2D+1.0W (pattern 2) 270 deg - No Ice+1.0 Guy	658.35	-11.11	-0.73	101.93	1108.23	8.20
1.2D+1.0W (pattern 3) 270 deg - No Ice+1.0 Guy	674.99	-11.15	-0.69	90.97	1091.90	8.10
1.2D+1.0W (pattern 1) 300 deg - No Ice+1.0 Guy	625.70	-10.54	-5.93	-492.89	875.29	1.58
1.2D+1.0W (pattern 2) 300 deg - No Ice+1.0 Guy	625.63	-10.38	-5.84	-479.99	851.95	1.65
1.2D+1.0W (pattern 3) 300 deg - No Ice+1.0 Guy	635.26	-10.45	-5.87	-480.95	854.45	1.64
1.2D+1.0W (pattern 1) 330 deg - No Ice+1.0 Guy	651.90	-6.22	-10.18	-1064.57	466.90	-4.46
1.2D+1.0W (pattern 2) 330 deg - No Ice+1.0 Guy	656.76	-6.25	-9.32	-1002.39	466.03	-4.40
1.2D+1.0W (pattern 3) 330 deg - No Ice+1.0 Guy	673.40	-6.24	-9.39	-983.60	466.95	-4.24
1.2 Dead+1.0 Ice+1.0 Temp+Guy	720.09	0.07	0.06	-4.25	5.40	0.22
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy	723.53	0.07	-1.16	-119.93	12.96	-0.09
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy	722.12	0.71	-1.01	-108.93	-56.69	-0.85
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy	720.82	1.09	-0.60	-65.33	-94.32	-1.03
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy	722.01	1.25	0.08	-0.55	-110.72	-0.14
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy	723.32	1.16	0.64	49.65	-100.24	0.06
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy	721.99	0.67	1.11	98.62	-53.54	0.17
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy	720.79	0.08	1.26	111.78	-0.93	0.19
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy	722.10	-0.58	1.17	104.56	69.50	0.93
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy	723.53	-1.00	0.71	52.24	110.49	0.56
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy	722.22	-1.19	0.07	-1.08	131.48	0.29
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy	720.99	-0.97	-0.60	-67.86	106.49	0.54
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy	722.21	-0.53	-0.97	-105.23	62.12	-0.11
Dead+Wind 0 deg - Service+Guy	454.16	0.13	-3.91	-289.64	-11.08	-2.68
Dead+Wind 30 deg - Service+Guy	452.82	1.94	-3.26	-244.59	-140.44	-3.35
Dead+Wind 60 deg - Service+Guy	452.59	3.17	-1.91	-145.15	-229.34	-3.03
Dead+Wind 90 deg - Service+Guy	452.68	3.72	0.00	0.03	-273.68	-2.21
Dead+Wind 120 deg - Service+Guy	454.00	3.41	1.98	142.25	-251.60	-0.56
Dead+Wind 150 deg - Service+Guy	452.63	1.86	3.24	236.80	-136.05	1.39
Dead+Wind 180 deg - Service+Guy	452.49	-0.09	3.73	272.48	12.42	2.43
Dead+Wind 210 deg - Service+Guy	452.73	-1.88	3.34	245.64	142.09	3.47

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Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead+Wind 240 deg - Service+Guy	454.21	-3.35	2.10	155.72	247.36	3.42
Dead+Wind 270 deg - Service+Guy	453.05	-3.68	0.02	1.63	275.25	2.39
Dead+Wind 300 deg - Service+Guy	452.90	-3.15	-1.79	-131.26	236.96	0.45
Dead+Wind 330 deg - Service+Guy	452.99	-1.84	-3.19	-237.61	136.04	-1.34

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	-259.68	0.00	0.00	259.68	-0.00	0.001%
2	0.04	-306.10	-193.84	-0.04	306.10	193.79	0.013%
3	0.06	-306.10	-194.84	-0.06	306.10	194.79	0.013%
4	0.06	-306.10	-207.95	-0.06	306.10	207.89	0.015%
5	94.68	-304.41	-162.92	-94.69	304.41	162.88	0.013%
6	95.19	-304.41	-163.78	-95.20	304.41	163.75	0.008%
7	101.48	-304.41	-174.67	-101.49	304.41	174.62	0.013%
8	162.88	-302.72	-93.42	-162.92	302.72	93.44	0.013%
9	163.73	-302.72	-93.92	-163.76	302.72	93.93	0.008%
10	174.46	-302.72	-100.11	-174.51	302.72	100.13	0.015%
11	190.25	-304.45	0.30	-190.22	304.45	-0.27	0.013%
12	191.24	-304.45	0.29	-191.20	304.45	-0.26	0.012%
13	203.81	-304.45	0.29	-203.77	304.45	-0.25	0.014%
14	169.94	-306.16	98.11	-169.90	306.16	-98.08	0.014%
15	170.81	-306.16	98.58	-170.77	306.16	-98.56	0.013%
16	182.17	-306.16	105.14	-182.12	306.16	-105.11	0.016%
17	95.42	-304.44	164.23	-95.37	304.44	-164.22	0.013%
18	95.85	-304.44	165.02	-95.80	304.44	-165.01	0.012%
19	102.13	-304.44	175.91	-102.08	304.44	-175.89	0.014%
20	0.82	-302.72	186.66	-0.82	302.72	-186.70	0.013%
21	0.78	-302.72	187.59	-0.78	302.72	-187.63	0.012%
22	0.78	-302.72	199.97	-0.79	302.72	-200.01	0.010%
23	-93.70	-304.41	162.91	93.65	304.41	-162.90	0.012%
24	-94.21	-304.41	163.76	94.16	304.41	-163.75	0.015%
25	-100.50	-304.41	174.65	100.45	304.41	-174.64	0.014%
26	-168.43	-306.10	96.80	168.39	306.10	-96.78	0.013%
27	-169.36	-306.10	97.34	169.32	306.10	-97.32	0.013%
28	-180.72	-306.10	103.90	180.67	306.09	-103.87	0.016%
29	-189.44	-304.37	-0.21	189.40	304.37	0.24	0.013%
30	-190.42	-304.37	-0.18	190.39	304.37	0.21	0.012%
31	-203.00	-304.37	-0.18	202.96	304.37	0.22	0.014%
32	-162.55	-302.65	-93.91	162.57	302.65	93.93	0.009%
33	-163.36	-302.65	-94.35	163.39	302.66	94.38	0.013%
34	-174.09	-302.65	-100.54	174.11	302.66	100.57	0.011%
35	-94.71	-304.37	-163.23	94.72	304.37	163.18	0.013%
36	-95.17	-304.37	-164.00	95.18	304.37	163.95	0.015%
37	-101.46	-304.37	-174.89	101.47	304.37	174.84	0.014%
38	0.00	-482.46	0.00	0.00	482.46	0.00	0.001%
39	0.07	-482.77	-27.51	-0.08	482.77	27.51	0.002%
40	13.66	-482.46	-23.50	-13.65	482.46	23.48	0.006%
41	23.55	-482.14	-13.55	-23.54	482.14	13.55	0.002%
42	27.31	-482.46	-0.02	-27.31	482.46	0.02	0.000%
43	24.01	-482.78	13.78	-24.00	482.78	-13.78	0.001%
44	13.65	-482.46	23.58	-13.64	482.46	-23.56	0.004%
45	0.05	-482.14	27.05	-0.05	482.14	-27.04	0.002%
46	-13.54	-482.45	23.50	13.53	482.45	-23.48	0.005%
47	-23.86	-482.77	13.74	23.86	482.77	-13.74	0.001%
48	-27.23	-482.45	-0.01	27.22	482.45	0.02	0.003%

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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	
49	-23.49	-482.13	-13.56	23.49	482.13	13.56	0.001%
50	-13.60	-482.45	-23.51	13.60	482.45	23.49	0.003%
51	0.02	-260.16	-59.54	-0.02	260.16	59.53	0.004%
52	29.07	-259.68	-50.04	-29.07	259.68	50.02	0.005%
53	49.98	-259.21	-28.68	-49.97	259.21	28.67	0.004%
54	58.38	-259.69	0.08	-58.37	259.69	-0.07	0.005%
55	52.15	-260.18	30.10	-52.14	260.18	-30.09	0.004%
56	29.25	-259.69	50.39	-29.24	259.69	-50.38	0.005%
57	0.22	-259.21	57.29	-0.22	259.21	-57.28	0.005%
58	-28.79	-259.68	50.03	28.78	259.68	-50.03	0.005%
59	-51.74	-260.16	29.75	51.73	260.16	-29.74	0.004%
60	-58.15	-259.67	-0.05	58.14	259.67	0.06	0.005%
61	-49.87	-259.19	-28.80	49.87	259.19	28.80	0.001%
62	-29.06	-259.67	-50.10	29.06	259.67	50.09	0.005%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	40	0.00020000	0.00009562
2	Yes	41	0.00017268	0.00007198
3	Yes	40	0.00016742	0.00006642
4	Yes	40	0.00017271	0.00008567
5	Yes	40	0.00018708	0.00006589
6	Yes	40	0.00014050	0.00017294
7	Yes	40	0.00017397	0.00006958
8	Yes	21	0.00018195	0.00011511
9	Yes	22	0.00012531	0.00019762
10	Yes	21	0.00019755	0.00012974
11	Yes	40	0.00019394	0.00006608
12	Yes	39	0.00016902	0.00006330
13	Yes	40	0.00017872	0.00007196
14	Yes	41	0.00017923	0.00007315
15	Yes	40	0.00017706	0.00007124
16	Yes	40	0.00017887	0.00008665
17	Yes	40	0.00019481	0.00006504
18	Yes	39	0.00016853	0.00006250
19	Yes	40	0.00017843	0.00007209
20	Yes	21	0.00019904	0.00013601
21	Yes	21	0.00019303	0.00011206
22	Yes	22	0.00015022	0.00010722
23	Yes	40	0.00019783	0.00007925
24	Yes	38	0.00019944	0.00007494
25	Yes	40	0.00017521	0.00007321
26	Yes	41	0.00018105	0.00013811
27	Yes	40	0.00017049	0.00006689
28	Yes	40	0.00017756	0.00008690
29	Yes	40	0.00019057	0.00006313
30	Yes	39	0.00016841	0.00006722
31	Yes	40	0.00017475	0.00007049
32	Yes	22	0.00013835	0.00019478
33	Yes	21	0.00019830	0.00015575
34	Yes	22	0.00015337	0.00017772
35	Yes	40	0.00018772	0.00006430
36	Yes	38	0.00019900	0.00007587
37	Yes	40	0.00017249	0.00006975
38	Yes	32	0.00020000	0.00006878
39	Yes	28	0.00020000	0.00019758

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40	Yes	21	0.00020000	0.00005227
41	Yes	23	0.00020000	0.00007966
42	Yes	30	0.00020000	0.00012682
43	Yes	34	0.00020000	0.00016924
44	Yes	23	0.00020000	0.00009316
45	Yes	23	0.00020000	0.00019264
46	Yes	22	0.00020000	0.00014920
47	Yes	30	0.00020000	0.00010549
48	Yes	23	0.00020000	0.00015884
49	Yes	27	0.00020000	0.00014885
50	Yes	23	0.00020000	0.00006101
51	Yes	29	0.00016934	0.00003067
52	Yes	27	0.00019158	0.00003146
53	Yes	18	0.00016070	0.00003507
54	Yes	27	0.00019753	0.00003211
55	Yes	29	0.00017338	0.00003119
56	Yes	27	0.00019433	0.00003150
57	Yes	18	0.00016792	0.00003605
58	Yes	27	0.00019498	0.00003173
59	Yes	29	0.00017013	0.00003011
60	Yes	27	0.00019524	0.00003107
61	Yes	23	0.00018070	0.00015115
62	Yes	27	0.00019042	0.00003038

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
Pole	1052 - 997.5	11.360	57	0.362	0.815
Antenna					
T1	997.5 - 996.667	13.223	57	0.362	0.815
T2	996.667 - 990	13.255	57	0.361	0.816
T3	990 - 982.417	13.491	57	0.358	0.818
T4	982.417 - 960	13.801	57	0.354	0.839
T5	960 - 930	14.647	57	0.330	0.910
T6	930 - 900	15.573	57	0.286	1.037
T7	900 - 870	16.113	57	0.230	1.134
T8	870 - 840	16.146	57	0.173	1.062
T9	840 - 810	15.831	57	0.117	0.926
T10	810 - 802.417	15.317	57	0.086	0.780
T11	802.417 - 787.583	15.176	57	0.084	0.747
T12	787.583 - 780	14.940	57	0.086	0.699
T13	780 - 750	14.939	57	0.085	0.680
T14	750 - 720	15.361	55	0.067	0.642
T15	720 - 690	15.850	55	0.057	0.654
T16	690 - 660	15.969	55	0.086	0.583
T17	660 - 630	15.518	55	0.114	0.443
T18	630 - 615	14.645	55	0.131	0.358
T19	615 - 600	14.145	55	0.131	0.335
T20	600 - 570	13.604	55	0.127	0.305
T21	570 - 562.417	12.885	55	0.109	0.312
T22	562.417 - 540	12.779	55	0.109	0.332
T23	540 - 510	12.415	55	0.119	0.394
T24	510 - 502.417	11.782	55	0.141	0.490
T25	502.417 - 480	11.557	55	0.147	0.575
T26	480 - 450	10.699	55	0.164	0.848
T27	450 - 435	9.378	55	0.177	0.987
T28	435 - 420	8.692	55	0.177	1.064
T29	420 - 390	7.999	55	0.170	1.138
T30	390 - 360	6.740	55	0.141	1.253

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T31	360 - 330	6.125	55	0.112	1.399
T32	330 - 300	5.819	55	0.100	1.567
T33	300 - 292.417	5.453	55	0.102	1.472
T34	292.417 - 270	5.318	55	0.104	1.439
T35	270 - 240	4.766	55	0.109	1.284
T36	240 - 210	3.806	55	0.111	1.145
T37	210 - 202.417	2.817	55	0.103	1.003
T38	202.417 - 180	2.584	55	0.099	0.971
T39	180 - 150	2.072	55	0.083	0.928
T40	150 - 120	1.874	55	0.068	0.997
T41	120 - 90	1.714	55	0.061	0.805
T42	90 - 60	1.241	55	0.055	0.419
T43	60 - 30	0.628	58	0.044	0.197
T44	30 - 22.5	0.109	59	0.025	0.018
T45	22.5 - 15	0.067	59	0.019	0.014
T46	15 - 7.5	0.035	59	0.014	0.009
T47	7.5 - 0	0.011	59	0.007	0.005

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
1053.00	Drake Beacon LED-B-Hybrid-G5	57	11.360	0.362	0.815	255653
1025.00	TFU-28ETT/VP-R O4 w/ 1' Base Adapter	57	12.239	0.364	0.810	47343
997.50	Guy	57	13.223	0.362	0.815	24126
997.00	Drake Side Strobe High-LED-WR-120	57	13.243	0.361	0.816	19524
927.00	SHPX-10AC w/ Radomes	57	15.648	0.281	1.051	22504
921.90	SHPX-10AC w/ Radomes	57	15.766	0.272	1.073	21728
916.80	SHPX-10AC w/ Radomes	57	15.870	0.262	1.094	21019
911.70	SHPX-10AC w/ Radomes	57	15.961	0.253	1.112	20355
906.60	SHPX-10AC w/ Radomes	57	16.037	0.243	1.125	19727
901.50	SHPX-10AC w/ Radomes	57	16.098	0.233	1.133	19100
896.40	SHPX-10AC w/ Radomes	57	16.142	0.223	1.134	19365
891.30	SHPX-10AC w/ Radomes	57	16.171	0.213	1.129	20026
886.20	SHPX-10AC w/ Radomes	57	16.184	0.204	1.118	20738
881.10	SHPX-10AC w/ Radomes	57	16.185	0.194	1.104	21502
876.00	SHPX-10AC w/ Radomes	57	16.173	0.184	1.086	22325
870.90	SHPX-10AC w/ Radomes	57	16.151	0.174	1.066	23210
865.80	SHPX-10AC w/ Radomes	57	16.119	0.164	1.044	24138
860.70	SHPX-10AC w/ Radomes	57	16.078	0.154	1.022	25131
855.60	SHPX-10AC w/ Radomes	57	16.029	0.144	1.000	26209
850.50	SHPX-10AC w/ Radomes	57	15.972	0.135	0.976	27383
845.40	SHPX-10AC w/ Radomes	57	15.907	0.126	0.952	28667
840.30	SHPX-10AC w/ Radomes	57	15.835	0.117	0.928	30374
835.20	SHPX-10AC w/ Radomes	57	15.757	0.110	0.903	34058
830.10	SHPX-10AC w/ Radomes	57	15.674	0.103	0.877	39468
825.00	SHPX-10AC w/ Radomes	57	15.586	0.097	0.852	46923
787.58	Guy	57	14.940	0.086	0.699	6243
730.00	Paraflector PR-TV	55	15.716	0.049	0.655	36030
713.00	40-FT 8 Element Dipole	55	15.920	0.063	0.646	24769
707.50	40-FT 8 Element Dipole	55	15.960	0.068	0.636	22343
702.00	40-FT 8 Element Dipole	55	15.983	0.074	0.622	20274
696.50	40-FT 8 Element Dipole	55	15.988	0.079	0.606	18426
691.00	40-FT 8 Element Dipole	55	15.974	0.085	0.587	16465

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<i>Elevation</i>	<i>Appurtenance</i>	<i>Gov. Load Comb.</i>	<i>Deflection in</i>	<i>Tilt °</i>	<i>Twist °</i>	<i>Radius of Curvature ft</i>
<i>ft</i>			<i>in</i>			
685.50	40-FT 8 Element Dipole	55	15.938	0.090	0.566	17065
680.00	40-FT 8 Element Dipole	55	15.881	0.095	0.543	18415
665.00	Drake Side Strobe	55	15.630	0.109	0.471	21875
	High-LED-WR-120					
661.00	TFU-8WB-R C160	55	15.542	0.113	0.449	23097
654.00	TFU-8WB-R C160	55	15.367	0.118	0.407	28269
647.00	TFU-8WB-R C160	55	15.172	0.123	0.380	37800
636.00	L1x1x1/8" x 2' Long	55	14.837	0.129	0.365	80391
633.50	Bolt-on Leg Mod	55	14.757	0.129	0.362	107184
616.00	21-ft 4 Element Dipole	55	14.180	0.132	0.337	32599
585.00	Guy	55	13.175	0.117	0.294	17626
575.00	JHPC-10	55	12.967	0.112	0.303	18995
570.00	JHPC-10	55	12.885	0.109	0.312	22818
565.00	JHPC-10	55	12.814	0.109	0.325	89674
560.00	JHPC-10	55	12.744	0.110	0.339	51828
555.00	JHPC-10	55	12.668	0.112	0.353	57531
550.00	JHPC-10	55	12.587	0.114	0.367	62157
545.00	JHPC-10	55	12.502	0.116	0.380	54388
540.00	JHPC-10	55	12.415	0.119	0.394	48630
535.00	JHPC-10	55	12.326	0.122	0.409	46226
530.00	JHPC-10	55	12.233	0.125	0.423	44125
525.00	JHPC-10	55	12.134	0.129	0.439	36544
520.00	JHPC-10	55	12.028	0.133	0.455	29575
515.00	JHPC-10	55	11.911	0.137	0.472	23837
510.00	JHPC-10	55	11.782	0.141	0.490	20622
505.00	JHPC-10	55	11.638	0.145	0.543	14732
500.00	JHPC-10	55	11.477	0.149	0.607	11663
495.00	JHPC-10	55	11.300	0.153	0.674	14916
490.00	JHPC-10	55	11.109	0.157	0.740	21371
485.00	JHPC-10	55	10.907	0.161	0.800	28169
480.00	JHPC-10	55	10.699	0.164	0.848	26025
475.00	JHPC-10	55	10.486	0.168	0.881	29810
411.00	L1x1x1/8" x 2' Long	55	7.583	0.163	1.176	45021
392.00	21-ft 4 Element Dipole	55	6.806	0.144	1.246	12848
382.42	Guy	55	6.525	0.133	1.283	14447
372.00	L6x4x3/8" x 10' Long	55	6.304	0.122	1.330	20569
371.00	2.4" dia. x 10' stabilizer	55	6.286	0.122	1.335	21421
370.00	PAL8-59AC	55	6.269	0.121	1.340	22347
365.00	L6x4x3/8" x 10' Long	55	6.192	0.116	1.368	28512
332.00	Drake Side Strobe	55	5.838	0.101	1.564	146276
	High-LED-WR-120					
331.00	PAL8-59AC	55	5.829	0.100	1.566	129955
187.58	Guy	55	2.207	0.088	0.929	16264
34.00	Compound Light	59	0.148	0.027	0.029	14187
31.00	Anemometer	59	0.117	0.025	0.020	13559

Maximum Tower Deflections - Design Wind

<i>Section No.</i>	<i>Elevation ft</i>	<i>Horz. Deflection in</i>	<i>Gov. Load Comb.</i>	<i>Tilt °</i>	<i>Twist °</i>
Pole	1052 - 997.5	85.695	14	0.776	1.770
Antenna					
T1	997.5 - 996.667	85.712	14	0.776	1.769
T2	996.667 - 990	85.725	14	0.776	1.771
T3	990 - 982.417	85.754	14	0.771	1.777
T4	982.417 - 960	85.917	14	0.763	1.832
T5	960 - 930	86.703	28	0.719	2.016

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T6	930 - 900	90.310	28	0.639	2.389
T7	900 - 870	92.414	28	0.540	2.665
T8	870 - 840	92.811	28	0.542	2.493
T9	840 - 810	91.769	28	0.655	2.099
T10	810 - 802.417	89.788	28	0.666	1.661
T11	802.417 - 787.583	89.211	28	0.652	1.553
T12	787.583 - 780	88.185	28	0.603	1.396
T13	780 - 750	88.062	28	0.582	1.379
T14	750 - 720	87.469	28	0.521	1.346
T15	720 - 690	86.379	16	0.484	1.355
T16	690 - 660	84.345	16	0.461	1.283
T17	660 - 630	80.886	16	0.567	1.057
T18	630 - 615	76.254	16	0.641	0.843
T19	615 - 600	73.833	16	0.645	0.784
T20	600 - 570	71.351	16	0.626	0.698
T21	570 - 562.417	67.827	16	0.559	0.686
T22	562.417 - 540	67.225	16	0.552	0.722
T23	540 - 510	65.342	16	0.563	0.897
T24	510 - 502.417	62.634	15	0.626	1.257
T25	502.417 - 480	62.009	15	0.647	1.399
T26	480 - 450	59.435	15	0.711	2.051
T27	450 - 435	54.901	15	0.775	2.577
T28	435 - 420	52.355	15	0.787	2.748
T29	420 - 390	49.661	15	0.780	2.910
T30	390 - 360	44.343	15	0.713	3.152
T31	360 - 330	40.550	15	0.641	3.523
T32	330 - 300	37.320	15	0.650	3.952
T33	300 - 292.417	33.375	15	0.698	3.783
T34	292.417 - 270	32.170	15	0.709	3.693
T35	270 - 240	28.319	15	0.735	3.448
T36	240 - 210	22.686	14	0.739	3.069
T37	210 - 202.417	17.474	14	0.686	2.695
T38	202.417 - 180	16.225	14	0.665	2.608
T39	180 - 150	13.106	14	0.580	2.458
T40	150 - 120	10.486	14	0.487	2.298
T41	120 - 90	7.981	14	0.407	1.855
T42	90 - 60	5.126	14	0.338	1.107
T43	60 - 30	2.448	14	0.244	0.533
T44	30 - 22.5	0.478	14	0.125	0.064
T45	22.5 - 15	0.278	14	0.097	0.050
T46	15 - 7.5	0.140	14	0.067	0.033
T47	7.5 - 0	0.037	26	0.034	0.019

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
1053.00	Drake Beacon LED-B-Hybrid-G5	14	85.695	0.776	1.770	138597
1025.00	TFU-28ETT/VP-R O4 w/ 1' Base Adapter	14	85.540	0.781	1.753	25667
997.50	Guy	14	85.712	0.776	1.769	7113
997.00	Drake Side Strobe High-LED-WR-120	14	85.720	0.776	1.770	5739
927.00	SHPX-10AC w/ Radomes	28	90.597	0.630	2.426	6426
921.90	SHPX-10AC w/ Radomes	28	91.047	0.613	2.484	6352
916.80	SHPX-10AC w/ Radomes	28	91.448	0.597	2.535	6287

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<i>Elevation</i>	<i>Appurtenance</i>	<i>Gov. Load Comb.</i>	<i>Deflection in</i>	<i>Tilt °</i>	<i>Twist °</i>	<i>Radius of Curvature ft</i>
<i>ft</i>			<i>in</i>	<i>°</i>	<i>°</i>	<i>ft</i>
911.70	SHPX-10AC w/ Radomes	28	91.799	0.579	2.585	6224
906.60	SHPX-10AC w/ Radomes	28	92.100	0.562	2.630	6161
901.50	SHPX-10AC w/ Radomes	28	92.350	0.545	2.660	6113
896.40	SHPX-10AC w/ Radomes	28	92.549	0.528	2.670	6213
891.30	SHPX-10AC w/ Radomes	28	92.698	0.512	2.663	6407
886.20	SHPX-10AC w/ Radomes	28	92.798	0.496	2.641	6615
881.10	SHPX-10AC w/ Radomes	28	92.851	0.489	2.605	6836
876.00	SHPX-10AC w/ Radomes	28	92.858	0.513	2.559	7073
870.90	SHPX-10AC w/ Radomes	28	92.821	0.537	2.504	7339
865.80	SHPX-10AC w/ Radomes	28	92.742	0.561	2.443	7718
860.70	SHPX-10AC w/ Radomes	28	92.622	0.583	2.377	8183
855.60	SHPX-10AC w/ Radomes	28	92.464	0.605	2.307	8708
850.50	SHPX-10AC w/ Radomes	28	92.271	0.624	2.241	9304
845.40	SHPX-10AC w/ Radomes	28	92.043	0.641	2.174	9988
840.30	SHPX-10AC w/ Radomes	28	91.785	0.655	2.104	10868
835.20	SHPX-10AC w/ Radomes	28	91.498	0.665	2.031	12467
830.10	SHPX-10AC w/ Radomes	28	91.185	0.671	1.957	14850
825.00	SHPX-10AC w/ Radomes	28	90.852	0.674	1.882	18361
787.58	Guy	28	88.185	0.603	1.396	1903
730.00	Paraflector PR-TV	28	86.815	0.494	1.354	11471
713.00	40-FT 8 Element Dipole	16	86.018	0.478	1.348	8078
707.50	40-FT 8 Element Dipole	16	85.689	0.473	1.338	7512
702.00	40-FT 8 Element Dipole	16	85.317	0.469	1.324	7020
696.50	40-FT 8 Element Dipole	16	84.900	0.466	1.307	6588
691.00	40-FT 8 Element Dipole	16	84.435	0.462	1.287	6231
685.50	40-FT 8 Element Dipole	16	83.920	0.465	1.263	6109
680.00	40-FT 8 Element Dipole	16	83.356	0.489	1.235	6068
665.00	Drake Side Strobe	16	81.564	0.549	1.116	5855
	High-LED-WR-120					
661.00	TFU-8WB-R C160	16	81.025	0.564	1.070	5872
654.00	TFU-8WB-R C160	16	80.022	0.587	0.971	6982
647.00	TFU-8WB-R C160	16	78.958	0.608	0.904	9224
636.00	L1x1x1/8" x 2' Long	16	77.216	0.632	0.863	18220
633.50	Bolt-on Leg Mod	16	76.815	0.636	0.854	16264
616.00	21-ft 4 Element Dipole	16	73.999	0.646	0.789	9093
585.00	Guy	16	69.323	0.590	0.659	5077
575.00	JHPC-10	16	68.272	0.567	0.670	5593
570.00	JHPC-10	16	67.827	0.559	0.686	6626
565.00	JHPC-10	16	67.426	0.554	0.709	24202
560.00	JHPC-10	16	67.033	0.552	0.734	12030
555.00	JHPC-10	16	66.628	0.551	0.766	12692
550.00	JHPC-10	16	66.210	0.553	0.808	13487
545.00	JHPC-10	16	65.781	0.557	0.851	14387
540.00	JHPC-10	16	65.342	0.563	0.897	14955
535.00	JHPC-10	16	64.894	0.570	0.945	13848
530.00	JHPC-10	16	64.436	0.579	0.996	11733
525.00	JHPC-10	16	63.965	0.589	1.052	9903
520.00	JHPC-10	16	63.479	0.600	1.113	8567
515.00	JHPC-10	15	62.997	0.613	1.181	7549
510.00	JHPC-10	15	62.634	0.626	1.257	6838
505.00	JHPC-10	15	62.235	0.640	1.345	5631
500.00	JHPC-10	15	61.783	0.654	1.457	4945
495.00	JHPC-10	15	61.270	0.669	1.596	5527
490.00	JHPC-10	15	60.703	0.683	1.749	6351
485.00	JHPC-10	15	60.089	0.697	1.905	6499
480.00	JHPC-10	15	59.435	0.711	2.051	6107
475.00	JHPC-10	15	58.747	0.725	2.176	6733
411.00	L1x1x1/8" x 2' Long	15	47.993	0.765	2.988	18195
392.00	21-ft 4 Element Dipole	15	44.658	0.718	3.134	4948
382.42	Guy	15	43.240	0.691	3.225	5550
372.00	L6x4x3/8" x 10' Long	15	41.909	0.665	3.348	8066

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Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
ft						
371.00	2.4" dia. x 10' stabilizer	15	41.790	0.662	3.361	8399
370.00	PAL8-59AC	15	41.672	0.660	3.374	8748
365.00	L6x4x3/8" x 10' Long	15	41.101	0.649	3.445	10993
332.00	Drake Side Strobe	15	37.546	0.648	3.938	10706
	High-LED-WR-120					
331.00	PAL8-59AC	15	37.434	0.649	3.946	10302
187.58	Guy	14	14.039	0.610	2.487	5003
34.00	Compound Light	14	0.640	0.141	0.085	4706
31.00	Anemometer	14	0.514	0.129	0.067	4524

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	997.5	Leg	A325N	0.8750	3	5.50	41.56	0.132	1.05	Bolt Tension
T2	996.667	Leg	A325N	0.8750	4	5.31	41.56	0.128	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	2.60	13.19	0.197	1.05	Member Block Shear
		Top Girt	A325N	0.6250	2	1.61	13.19	0.122	1.05	Member Block Shear
		Bottom Girt	A325N	0.6250	2	1.37	13.19	0.104	1.05	Member Block Shear
T3	990	Diagonal	A325N	0.6250	2	6.70	13.81	0.485	1.05	Bolt Shear
		Top Girt	A325N	0.6250	2	1.44	17.40	0.083	1.05	Gusset Bearing
T4	982.417	Leg	A325N	0.8750	4	13.52	41.56	0.325	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	6.18	13.81	0.447	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	4.17	17.40	0.240	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	4	2.31	17.40	0.133	1.05	Gusset Bearing
		Bottom Girt	A325N	0.6250	2	1.91	17.40	0.110	1.05	Gusset Bearing
T5	960	Leg	A325N	0.8750	4	21.72	41.56	0.523	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	4.64	13.81	0.336	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	3.12	17.40	0.180	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	2	1.70	17.40	0.098	1.05	Gusset Bearing
		Bottom Girt	A325N	0.6250	2	1.25	13.19	0.095	1.05	Member Block Shear
T6	930	Leg	A325N	0.8750	4	24.27	41.56	0.584	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	2.80	13.81	0.203	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	1.80	17.40	0.103	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	2	1.33	13.19	0.101	1.05	Member Block Shear
		Bottom Girt	A325N	0.6250	2	1.33	13.19	0.101	1.05	Member Block Shear
T7	900	Leg	A325N	0.8750	4	20.07	41.56	0.483	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	3.73	13.81	0.270	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	2.36	17.40	0.135	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	2	1.33	13.19	0.100	1.05	Member Block Shear
		Bottom Girt	A325N	0.6250	2	1.33	13.19	0.100	1.05	Member Block Shear
T8	870	Leg	A325N	0.8750	4	8.92	41.56	0.215	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	7.12	13.81	0.516	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	4.69	17.40	0.270	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	2	1.57	17.40	0.090	1.05	Gusset Bearing
		Bottom Girt	A325N	0.6250	2	2.62	17.40	0.151	1.05	Gusset Bearing
T9	840	Leg	A325N	0.8750	4	6.61	41.56	0.159	1.05	Bolt Tension
		Diagonal	A325N	0.7500	2	9.89	19.88	0.498	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	6.75	21.75	0.310	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	2	2.84	21.75	0.131	1.05	Gusset Bearing
		Bottom Girt	A325N	0.6250	2	3.55	21.75	0.163	1.05	Gusset Bearing
T10	810	Diagonal	A325N	0.7500	2	10.45	19.88	0.526	1.05	Bolt Shear
		Top Girt	A325N	0.6250	2	3.71	21.75	0.170	1.05	Gusset Bearing
T11	802.417	Diagonal	A325N	0.8750	2	10.71	22.84	0.469	1.05	Gusset Bearing
		Horizontal	A325N	0.6250	2	7.55	21.75	0.347	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	2	7.49	21.75	0.344	1.05	Gusset Bearing

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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
T12	787.583	Leg	A325N	0.8750	4	12.13	41.56	0.292	1.05	Bolt Tension
		Diagonal	A325N	0.7500	2	8.05	19.88	0.405	1.05	Bolt Shear
		Bottom Girt	A325N	0.6250	2	2.75	21.75	0.126	1.05	Gusset Bearing
		Top Guy	A325N	0.7500	4	6.56	23.52	0.279	1.05	Gusset Bearing
		Pull-Off@787.583								
T13	780	Leg	A325N	0.8750	4	9.95	41.56	0.239	1.05	Bolt Tension
		Diagonal	A325N	0.7500	2	7.74	19.88	0.389	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	5.18	21.75	0.238	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	2	2.84	21.75	0.131	1.05	Gusset Bearing
		Bottom Girt	A325N	0.6250	2	1.26	13.19	0.096	1.05	Member Block Shear
T14	750	Leg	A325N	0.8750	4	12.00	41.56	0.289	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	5.33	13.81	0.386	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	3.55	17.40	0.204	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	2	1.97	17.40	0.113	1.05	Gusset Bearing
		Bottom Girt	A325N	0.6250	2	1.25	13.19	0.095	1.05	Member Block Shear
T15	720	Leg	A325N	0.8750	4	13.35	41.56	0.321	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	2.62	13.81	0.190	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	1.39	13.19	0.105	1.05	Member Block Shear
		Top Girt	A325N	0.6250	2	1.39	13.19	0.105	1.05	Member Block Shear
		Bottom Girt	A325N	0.6250	2	1.39	13.19	0.105	1.05	Member Block Shear
T16	690	Leg	A325N	0.8750	4	12.59	41.56	0.303	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	2.92	13.81	0.211	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	1.39	13.19	0.106	1.05	Member Block Shear
		Top Girt	A325N	0.6250	2	1.39	13.19	0.106	1.05	Member Block Shear
		Bottom Girt	A325N	0.6250	2	1.39	13.19	0.106	1.05	Member Block Shear
T17	660	Leg	A325N	0.8750	4	12.25	41.56	0.295	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	6.50	13.81	0.471	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	4.36	17.40	0.251	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	2	1.31	13.19	0.099	1.05	Member Block Shear
		Bottom Girt	A325N	0.6250	2	2.38	17.40	0.137	1.05	Gusset Bearing
T18	630	Diagonal	A325N	0.6250	2	7.35	13.81	0.533	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	5.19	17.40	0.298	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	2	2.52	17.40	0.145	1.05	Gusset Bearing
T19	615	Leg	A325N	0.8750	4	15.81	41.56	0.380	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	8.83	13.81	0.639	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	5.70	17.40	0.327	1.05	Gusset Bearing
		Secondary Horizontal	A325N	0.6250	1	3.29	9.99	0.329	1.05	Member Block Shear
		Top Girt	A325N	0.6250	2	5.36	17.40	0.308	1.05	Gusset Bearing
		Bottom Girt	A325N	0.6250	2	3.16	17.40	0.181	1.05	Gusset Bearing
T20	600	Leg	A325N	0.8750	4	14.46	41.56	0.348	1.05	Bolt Tension
		Diagonal	A325N	0.7500	2	9.75	19.88	0.491	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	6.30	21.75	0.290	1.05	Gusset Bearing
		Secondary Horizontal	A325N	0.6250	1	3.77	9.99	0.377	1.05	Member Block Shear
		Top Girt	A325N	0.6250	2	3.17	21.75	0.146	1.05	Gusset Bearing
		Bottom Girt	A325N	0.6250	2	1.88	13.19	0.143	1.05	Member Block Shear
		Top Guy	A325N	0.7500	4	6.73	23.52	0.286	1.05	Gusset Bearing
		Pull-Off@585								
T21	570	Diagonal	A325N	0.7500	2	8.51	19.88	0.428	1.05	Bolt Shear
		Secondary Horizontal	A325N	0.6250	1	3.02	9.99	0.302	1.05	Member Block Shear
		Top Girt	A325N	0.6250	2	3.03	21.75	0.139	1.05	Gusset Bearing
T22	562.417	Leg	A325N	0.8750	4	13.46	41.56	0.324	1.05	Bolt Tension
		Diagonal	A325N	0.7500	2	7.69	19.88	0.387	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	5.28	21.75	0.243	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	2	5.66	21.75	0.260	1.05	Gusset Bearing
		Bottom Girt	A325N	0.6250	2	2.37	21.75	0.109	1.05	Gusset Bearing
T23	540	Leg	A325N	0.8750	4	15.55	41.56	0.374	1.05	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
T24	510	Diagonal	A325N	0.6250	2	6.21	13.81	0.449	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	4.13	17.40	0.237	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	2	2.26	17.40	0.130	1.05	Gusset Bearing
		Bottom Girt	A325N	0.6250	2	1.62	13.19	0.123	1.05	Member Block Shear
T25	502.417	Diagonal	A325N	0.6250	2	3.81	13.81	0.276	1.05	Bolt Shear
		Top Girt	A325N	0.6250	2	1.64	13.19	0.125	1.05	Member Block Shear
		Leg	A325N	0.8750	4	15.66	41.56	0.377	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	3.02	13.81	0.219	1.05	Bolt Shear
T26	480	Horizontal	A325N	0.6250	2	1.67	13.19	0.126	1.05	Member Block Shear
		Secondary	A325N	0.6250	1	3.33	9.99	0.333	1.05	Member Block Shear
		Horizontal	A325N	0.6250	2	2.37	17.40	0.136	1.05	Gusset Bearing
		Bottom Girt	A325N	0.6250	2	1.67	13.19	0.126	1.05	Member Block Shear
T27	450	Leg	A325N	0.8750	4	13.84	41.56	0.333	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	5.65	13.81	0.409	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	3.62	17.40	0.208	1.05	Gusset Bearing
		Secondary	A325N	0.6250	1	3.26	9.99	0.327	1.05	Member Block Shear
T28	435	Horizontal	A325N	0.6250	2	1.63	13.19	0.124	1.05	Member Block Shear
		Top Girt	A325N	0.6250	2	1.63	13.19	0.124	1.05	Member Block Shear
		Bottom Girt	A325N	0.6250	2	6.67	19.88	0.335	1.05	Bolt Shear
		Diagonal	A325N	0.7500	2	4.37	21.75	0.201	1.05	Gusset Bearing
T29	420	Horizontal	A325N	0.6250	1	2.89	9.99	0.289	1.05	Member Block Shear
		Top Girt	A325N	0.6250	2	1.44	13.19	0.109	1.05	Member Block Shear
		Leg	A325N	0.8750	4	13.76	41.56	0.331	1.05	Bolt Tension
		Diagonal	A325N	0.7500	2	8.02	19.88	0.403	1.05	Bolt Shear
T30	390	Horizontal	A325N	0.6250	2	5.45	21.75	0.251	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	2	4.88	21.75	0.224	1.05	Gusset Bearing
		Bottom Girt	A325N	0.6250	2	2.90	21.75	0.134	1.05	Gusset Bearing
		Leg	A325N	0.8750	4	20.96	41.56	0.504	1.05	Bolt Tension
T31	360	Diagonal	A325N	0.8750	2	10.30	27.06	0.381	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	6.97	26.10	0.267	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	2	2.18	13.19	0.165	1.05	Member Block Shear
		Bottom Girt	A325N	0.6250	2	2.18	13.19	0.165	1.05	Member Block Shear
T32	330	Leg	A325N	0.8750	4	18.88	41.56	0.454	1.05	Bolt Tension
		Diagonal	A325N	0.8750	2	10.29	27.06	0.380	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	6.66	26.10	0.255	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	2	2.40	13.19	0.182	1.05	Member Block Shear
T33	300	Bottom Girt	A325N	0.6250	2	2.40	13.19	0.182	1.05	Member Block Shear
		Top Guy	A325N	0.7500	4	6.37	28.22	0.226	1.05	Gusset Bearing
		Pull-Off@382.41								
		7								
T34	292.417	Leg	A325N	0.8750	4	18.21	41.56	0.438	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	7.45	13.81	0.539	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	5.05	17.40	0.290	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	2	2.75	17.40	0.158	1.05	Gusset Bearing
T35	330	Bottom Girt	A325N	0.6250	2	1.97	13.19	0.149	1.05	Member Block Shear
		Leg	A325N	0.8750	4	19.49	41.56	0.469	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	3.77	13.81	0.273	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	2.03	13.19	0.154	1.05	Member Block Shear
T36	300	Secondary	A325N	0.6250	1	4.05	9.99	0.405	1.05	Member Block Shear
		Horizontal	A325N	0.6250	2	2.03	13.19	0.154	1.05	Member Block Shear
		Bottom Girt	A325N	0.6250	2	2.03	13.19	0.154	1.05	Member Block Shear
		Diagonal	A325N	0.6250	2	1.68	13.81	0.122	1.05	Bolt Shear
T37	292.417	Secondary	A325N	0.6250	1	4.06	9.99	0.407	1.05	Member Block Shear
		Horizontal	A325N	0.6250	2	2.03	13.19	0.154	1.05	Member Block Shear
		Top Girt	A325N	0.6250	2	2.03	13.19	0.154	1.05	Member Block Shear
		Leg	A325N	0.8750	4	18.60	41.56	0.448	1.05	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
T35	270	Diagonal	A325N	0.6250	2	3.55	13.81	0.257	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	2.03	13.19	0.154	1.05	Member Block Shear
		Top Girt	A325N	0.6250	2	2.03	13.19	0.154	1.05	Member Block Shear
		Bottom Girt	A325N	0.6250	2	2.03	13.19	0.154	1.05	Member Block Shear
		Leg	A325N	0.8750	4	18.08	41.56	0.435	1.05	Bolt Tension
T36	240	Diagonal	A325N	0.6250	2	5.76	13.81	0.417	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	3.92	17.40	0.225	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	2	1.94	13.19	0.147	1.05	Member Block Shear
		Bottom Girt	A325N	0.6250	2	1.94	13.19	0.147	1.05	Member Block Shear
		Leg	A325N	0.8750	4	23.57	41.56	0.567	1.05	Bolt Tension
T37	210	Diagonal	A325N	0.6250	2	8.06	13.81	0.583	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	5.44	17.40	0.313	1.05	Gusset Bearing
		Top Girt	A325N	0.6250	2	2.45	13.19	0.186	1.05	Member Block Shear
		Bottom Girt	A325N	0.6250	2	2.45	13.19	0.186	1.05	Member Block Shear
		Diagonal	A325N	0.7500	2	8.71	19.88	0.438	1.05	Bolt Shear
T38	202.417	Top Girt	A325N	0.6250	2	2.62	13.19	0.199	1.05	Member Block Shear
		Leg	A325N	0.8750	4	27.98	41.56	0.673	1.05	Bolt Tension
		Diagonal	A325N	0.7500	2	9.01	19.88	0.453	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	5.76	21.75	0.265	1.05	Gusset Bearing
		Secondary Horizontal	A325N	0.6250	1	5.98	9.99	0.598	1.05	Member Block Shear
T39	180	Top Girt	A325N	0.6250	2	6.03	21.75	0.277	1.05	Gusset Bearing
		Bottom Girt	A325N	0.6250	2	2.99	13.19	0.227	1.05	Member Block Shear
		Top Guy	A325N	0.7500	4	4.38	23.52	0.186	1.05	Gusset Bearing
		Pull-Off@187.583								
		Leg	A325N	0.8750	4	25.40	41.56	0.611	1.05	Bolt Tension
T40	150	Diagonal	A325N	0.6250	2	4.69	13.81	0.340	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	2.91	13.19	0.221	1.05	Member Block Shear
		Secondary Horizontal	A325N	0.6250	1	5.83	9.99	0.583	1.05	Member Block Shear
		Top Girt	A325N	0.6250	2	2.91	13.19	0.221	1.05	Member Block Shear
		Bottom Girt	A325N	0.6250	2	2.91	13.19	0.221	1.05	Member Block Shear
T41	120	Leg	A325N	0.8750	4	24.43	41.56	0.588	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	2.73	13.81	0.198	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	2.64	13.19	0.201	1.05	Member Block Shear
		Secondary Horizontal	A325N	0.6250	1	5.29	9.99	0.529	1.05	Member Block Shear
		Top Girt	A325N	0.6250	2	2.64	13.19	0.201	1.05	Member Block Shear
T42	90	Bottom Girt	A325N	0.6250	2	2.64	13.19	0.201	1.05	Member Block Shear
		Leg	A325N	0.8750	4	25.42	41.56	0.612	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	3.32	13.81	0.240	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	2.64	13.19	0.200	1.05	Member Block Shear
		Secondary Horizontal	A325N	0.6250	1	5.28	9.99	0.529	1.05	Member Block Shear
T43	60	Top Girt	A325N	0.6250	2	2.64	13.19	0.200	1.05	Member Block Shear
		Bottom Girt	A325N	0.6250	2	2.64	13.19	0.200	1.05	Member Block Shear
		Leg	A325N	0.8750	4	27.93	41.56	0.672	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	5.01	13.81	0.363	1.05	Bolt Shear
		Horizontal	A325N	0.6250	2	2.90	13.19	0.220	1.05	Member Block Shear
T43	60	Secondary Horizontal	A325N	0.6250	1	5.81	9.99	0.581	1.05	Member Block Shear
		Top Girt	A325N	0.6250	2	2.90	13.19	0.220	1.05	Member Block Shear
		Bottom Girt	A325N	0.6250	2	2.90	13.19	0.220	1.05	Member Block Shear
		Leg	A325N	0.8750	4	31.58	41.56	0.760	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	6.12	13.81	0.443	1.05	Bolt Shear
T43	60	Horizontal	A325N	0.6250	2	3.28	13.19	0.249	1.05	Member Block Shear
		Secondary Horizontal	A325N	0.6250	1	6.56	9.99	0.657	1.05	Member Block Shear
		Top Girt	A325N	0.6250	2	3.28	13.19	0.249	1.05	Member Block Shear

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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
T44	30	Bottom Girt	A325N	0.6250	2	3.28	13.19	0.249	1.05	Member Block Shear
		Diagonal	A325N	0.6250	2	7.19	26.10	0.276	1.05	Member Bearing
		Secondary Horizontal	A325N	0.6250	1	6.56	9.53	0.688	1.05	Member Block Shear
T45	22.5	Top Girt	A325N	0.6250	2	3.28	13.19	0.249	1.05	Member Block Shear
		Diagonal	A325N	0.6250	2	6.37	26.10	0.244	1.05	Gusset Bearing
		Horizontal	A325N	0.6250	2	4.33	15.23	0.285	1.05	Member Block Shear
		Redund Horiz 1 Bracing	A325N	0.6250	1	6.70	9.53	0.703	1.05	Member Block Shear
		Redund Diag 1 Bracing	A325N	0.6250	1	7.50	9.53	0.786	1.05	Member Block Shear
T46	15	Diagonal	A325N	0.6250	2	7.33	26.10	0.281	1.05	Member Bearing
		Secondary Horizontal	A325N	0.6250	1	6.96	9.53	0.730	1.05	Member Block Shear
		Top Girt	A325N	0.6250	4	1.74	24.47	0.071	1.05	Gusset Bearing
T47	7.5	Diagonal	A325N	0.6250	2	6.58	26.10	0.252	1.05	Gusset Bearing
		Horizontal	A325N	0.6250	2	4.46	15.23	0.293	1.05	Member Block Shear
		Redund Horiz 1 Bracing	A325N	0.6250	1	7.21	9.53	0.756	1.05	Member Block Shear
		Redund Diag 1 Bracing	A325N	0.6250	1	8.06	9.53	0.846	1.05	Member Block Shear

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
T1	997.50 (A) (1606)	1 1/8 BS	15.60	156.00	62.55	98.28	0.952	1.496
	997.50 (B) (1605)	1 1/8 BS	15.60	156.00	62.20	98.28	0.952	1.505
	997.50 (C) (1604)	1 1/8 BS	15.60	156.00	62.33	98.28	0.952	1.502
T12	787.58 (A) (1609)	1 1/4 BS	19.20	192.00	82.70	120.96	0.952	1.393
	787.58 (B) (1608)	1 1/4 BS	19.20	192.00	82.37	120.96	0.952	1.399
	787.58 (C) (1607)	1 1/4 BS	19.20	192.00	82.71	120.96	0.952	1.393
T20	585.00 (A) (1612)	1 3/16 BS	17.20	172.00	69.42	108.36	0.952	1.487
	585.00 (B) (1611)	1 3/16 BS	17.20	172.00	69.45	108.36	0.952	1.486
	585.00 (C) (1610)	1 3/16 BS	17.20	172.00	69.75	108.36	0.952	1.480
T30	382.42 (A) (1615)	1 5/16 BS	21.20	212.00	85.13	133.56	0.952	1.494
	382.42 (B) (1614)	1 5/16 BS	21.20	212.00	85.00	133.56	0.952	1.496
	382.42 (C) (1613)	1 5/16 BS	21.20	212.00	85.37	133.56	0.952	1.490
T38	187.58 (A) (1618)	1 1/16 BS	13.80	138.00	41.26	86.94	0.952	2.007
	187.58 (B) (1617)	1 1/16 BS	13.80	138.00	41.19	86.94	0.952	2.010
	187.58 (C) (1616)	1 1/16 BS	13.80	138.00	41.23	86.94	0.952	2.008

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Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	997.5 - 996.667	3	0.83	0.83	13.3 K=1.00	7.0686	-14.81	313.98	0.047
T2	996.667 - 990	3	6.67	6.33	101.3 K=1.00	7.0686	-53.45	150.13	0.356 ¹
T3	990 - 982.417	3 1/4	7.58	7.42	109.5 K=1.00	8.2958	-77.92	155.27	0.502 ¹
T4	982.417 - 960	3 1/4	22.42	7.42	109.5 K=1.00	8.2958	-113.54	155.26	0.731 ¹
T5	960 - 930	3 1/2	30.00	7.42	101.7 K=1.00	9.6211	-143.90	203.19	0.708 ¹
T6	930 - 900	3 1/2	30.00	7.42	101.7 K=1.00	9.6211	-153.31	203.19	0.755 ¹
T7	900 - 870	3 1/2	30.00	7.42	101.7 K=1.00	9.6211	-153.04	203.19	0.753 ¹
T8	870 - 840	3 1/4	30.00	7.42	109.5 K=1.00	8.2958	-135.53	155.26	0.873 ¹
T9	840 - 810	3 1/4	30.00	7.42	109.5 K=1.00	8.2958	-92.80	155.26	0.598 ¹
T10	810 - 802.417	3 3/4	7.58	7.42	94.9 K=1.00	11.0447	-102.56	257.16	0.399 ¹
T11	802.417 - 787.583	3 3/4	14.83	7.42	94.9 K=1.00	11.0447	-150.50	257.13	0.585 ¹
T12	787.583 - 780	3 3/4	7.58	7.42	94.9 K=1.00	11.0447	-153.75	257.16	0.598 ¹
T13	780 - 750	3 3/4	30.00	7.42	94.9 K=1.00	11.0447	-146.02	257.15	0.568 ¹
T14	750 - 720	3 1/2	30.00	7.42	101.7 K=1.00	9.6211	-143.95	203.19	0.708 ¹
T15	720 - 690	3 1/2	30.00	7.42	101.7 K=1.00	9.6211	-160.07	203.19	0.788 ¹
T16	690 - 660	3 1/2	30.00	7.42	101.7 K=1.00	9.6211	-160.78	203.19	0.791 ¹
T17	660 - 630	3 1/2	30.00	7.42	101.7 K=1.00	9.6211	-151.36	203.19	0.745 ¹
T18	630 - 615	3 3/4	15.00	7.42	94.9 K=1.00	11.0447	-166.75	257.15	0.648 ¹
T19	615 - 600	3 3/4	15.00	3.71	47.5 K=1.00	11.0447	-189.63	421.52	0.450 ¹
T20	600 - 570	4	30.00	3.71	44.5 K=1.00	12.5664	-217.64	489.26	0.445 ¹
T21	570 - 562.417	3 3/4	7.58	3.71	47.5 K=1.00	11.0447	-174.11	421.53	0.413 ¹
T22	562.417 - 540	3 3/4	22.42	7.42	94.9 K=1.00	11.0447	-161.62	257.14	0.629 ¹
T23	540 - 510	3 3/4	30.00	7.42	94.9 K=1.00	11.0447	-186.51	257.15	0.725 ¹
T24	510 - 502.417	3 3/4	7.58	7.42	94.9 K=1.00	11.0447	-189.66	257.16	0.738 ¹
T25	502.417 - 480	3 3/4	22.42	3.71	47.5 K=1.00	11.0447	-192.38	421.52	0.456 ¹
T26	480 - 450	3 3/4	30.00	3.71	47.5 K=1.00	11.0447	-188.46	421.52	0.447 ¹
T27	450 - 435	3 3/4	15.00	3.71	47.5	11.0447	-166.68	421.52	0.395 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T28	435 - 420	3 3/4	15.00	7.42	K=1.00 94.9	11.0447	-164.95	257.15	0.641 ¹
T29	420 - 390	4 1/4	30.00	7.42	K=1.00 83.8	14.1863	-251.38	382.19	0.658 ¹
T30	390 - 360	4 1/2	30.00	7.42	K=1.00 79.1	15.9043	-277.38	452.89	0.612 ¹
T31	360 - 330	4 1/4	30.00	7.42	K=1.00 83.8	14.1863	-227.24	382.19	0.595 ¹
T32	330 - 300	4	30.00	3.71	K=1.00 44.5	12.5664	-233.77	489.26	0.478 ¹
T33	300 - 292.417	4 1/4	7.58	3.71	K=1.00 41.9	14.1863	-234.68	561.54	0.418 ¹
T34	292.417 - 270	4 1/4	22.42	7.42	K=1.00 83.8	14.1863	-234.43	382.18	0.613 ¹
T35	270 - 240	4 1/4	30.00	7.42	K=1.00 83.8	14.1863	-223.88	382.19	0.586 ¹
T36	240 - 210	4 1/4	30.00	7.42	K=1.00 83.8	14.1863	-282.75	382.19	0.740 ¹
T37	210 - 202.417	4 1/2	7.58	7.42	K=1.00 79.1	15.9043	-302.66	452.91	0.668 ¹
T38	202.417 - 180	4 1/2	22.42	3.71	K=1.00 39.6	15.9043	-345.08	638.33	0.541 ¹
T39	180 - 150	4 1/2	30.00	3.71	K=1.00 39.6	15.9043	-336.39	638.33	0.527 ¹
T40	150 - 120	4 1/4	30.00	3.71	K=1.00 41.9	14.1863	-305.39	561.54	0.544 ¹
T41	120 - 90	4 1/4	30.00	3.71	K=1.00 41.9	14.1863	-304.93	561.54	0.543 ¹
T42	90 - 60	4 1/4	30.00	3.71	K=1.00 41.9	14.1863	-335.06	561.54	0.597 ¹
T43	60 - 30	4 1/2	30.00	3.71	K=1.00 39.6	15.9043	-378.77	638.33	0.593 ¹
T44	30 - 22.5	5	7.50	3.67	K=1.00 35.2	19.6350	-376.00	807.04	0.466 ¹
T45	22.5 - 15	5	7.50	3.75	K=1.00 36.0	19.6350	-387.08	803.69	0.482 ¹
T46	15 - 7.5	5	7.50	3.75	K=1.00 36.0	19.6350	-401.59	803.69	0.500 ¹
T47	7.5 - 0	5	7.50	3.75	K=1.00 36.0	19.6350	-416.39	803.69	0.518 ¹

¹ P_u / φP_n controls

Leg Bending Design Data (Compression)

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M _{uy} kip-ft	φM _{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	997.5 - 996.667	3	4.96	16.88	0.294	0.00	16.88	0.000
T2	996.667 - 990	3	0.00	16.88	0.000	0.00	16.88	0.000
T3	990 - 982.417	3 1/4	0.00	21.46	0.000	0.00	21.46	0.000
T4	982.417 - 960	3 1/4	0.00	21.46	0.000	0.00	21.46	0.000
T5	960 - 930	3 1/2	0.00	26.80	0.000	0.00	26.80	0.000
T6	930 - 900	3 1/2	0.00	26.80	0.000	0.00	26.80	0.000
T7	900 - 870	3 1/2	0.00	26.80	0.000	0.00	26.80	0.000
T8	870 - 840	3 1/4	0.00	21.46	0.000	0.00	21.46	0.000
T9	840 - 810	3 1/4	0.00	21.46	0.000	0.00	21.46	0.000

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Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{ux} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M_{uy} kip-ft	ϕM_{uy} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
T10	810 - 802.417	3 3/4	0.00	32.96	0.000	0.00	32.96	0.000
T11	802.417 - 787.583	3 3/4	0.00	32.96	0.000	0.00	32.96	0.000
T12	787.583 - 780	3 3/4	0.00	32.96	0.000	0.00	32.96	0.000
T13	780 - 750	3 3/4	0.00	32.96	0.000	0.00	32.96	0.000
T14	750 - 720	3 1/2	0.00	26.80	0.000	0.00	26.80	0.000
T15	720 - 690	3 1/2	0.00	26.80	0.000	0.00	26.80	0.000
T16	690 - 660	3 1/2	0.00	26.80	0.000	0.00	26.80	0.000
T17	660 - 630	3 1/2	0.00	26.80	0.000	0.00	26.80	0.000
T18	630 - 615	3 3/4	0.00	32.96	0.000	0.00	32.96	0.000
T19	615 - 600	3 3/4	0.00	32.96	0.000	0.00	32.96	0.000
T20	600 - 570	4	0.00	40.00	0.000	0.00	40.00	0.000
T21	570 - 562.417	3 3/4	0.00	32.96	0.000	0.00	32.96	0.000
T22	562.417 - 540	3 3/4	0.00	32.96	0.000	0.00	32.96	0.000
T23	540 - 510	3 3/4	0.00	32.96	0.000	0.00	32.96	0.000
T24	510 - 502.417	3 3/4	0.00	32.96	0.000	0.00	32.96	0.000
T25	502.417 - 480	3 3/4	0.00	32.96	0.000	0.00	32.96	0.000
T26	480 - 450	3 3/4	0.00	32.96	0.000	0.00	32.96	0.000
T27	450 - 435	3 3/4	0.00	32.96	0.000	0.00	32.96	0.000
T28	435 - 420	3 3/4	0.00	32.96	0.000	0.00	32.96	0.000
T29	420 - 390	4 1/4	0.00	47.98	0.000	0.00	47.98	0.000
T30	390 - 360	4 1/2	0.00	56.95	0.000	0.00	56.95	0.000
T31	360 - 330	4 1/4	0.00	47.98	0.000	0.00	47.98	0.000
T32	330 - 300	4	0.00	40.00	0.000	0.00	40.00	0.000
T33	300 - 292.417	4 1/4	0.00	47.98	0.000	0.00	47.98	0.000
T34	292.417 - 270	4 1/4	0.00	47.98	0.000	0.00	47.98	0.000
T35	270 - 240	4 1/4	0.00	47.98	0.000	0.00	47.98	0.000
T36	240 - 210	4 1/4	0.00	47.98	0.000	0.00	47.98	0.000
T37	210 - 202.417	4 1/2	0.00	56.95	0.000	0.00	56.95	0.000
T38	202.417 - 180	4 1/2	0.00	56.95	0.000	0.00	56.95	0.000
T39	180 - 150	4 1/2	0.00	56.95	0.000	0.00	56.95	0.000
T40	150 - 120	4 1/4	0.00	47.98	0.000	0.00	47.98	0.000
T41	120 - 90	4 1/4	0.00	47.98	0.000	0.00	47.98	0.000
T42	90 - 60	4 1/4	0.00	47.98	0.000	0.00	47.98	0.000
T43	60 - 30	4 1/2	0.00	56.95	0.000	0.00	56.95	0.000
T44	30 - 22.5	5	0.00	78.13	0.000	0.00	78.13	0.000
T45	22.5 - 15	5	0.00	78.13	0.000	0.00	78.13	0.000
T46	15 - 7.5	5	0.00	78.13	0.000	0.00	78.13	0.000
T47	7.5 - 0	5	0.00	78.13	0.000	0.00	78.13	0.000

Leg Interaction Design Data (Compression)

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	Ratio $\frac{M_{uy}}{\phi M_{uy}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	997.5 - 996.667	3	0.047	0.294	0.000	0.318	1.050	4.8.1
T2	996.667 - 990	3	0.356	0.000	0.000	0.356 ¹	1.050	4.8.1
T3	990 - 982.417	3 1/4	0.502	0.000	0.000	0.502 ¹	1.050	4.8.1
T4	982.417 - 960	3 1/4	0.731	0.000	0.000	0.731 ¹	1.050	4.8.1
T5	960 - 930	3 1/2	0.708	0.000	0.000	0.708 ¹	1.050	4.8.1
T6	930 - 900	3 1/2	0.755	0.000	0.000	0.755 ¹	1.050	4.8.1
T7	900 - 870	3 1/2	0.753	0.000	0.000	0.753 ¹	1.050	4.8.1
T8	870 - 840	3 1/4	0.873	0.000	0.000	0.873 ¹	1.050	4.8.1
T9	840 - 810	3 1/4	0.598	0.000	0.000	0.598 ¹	1.050	4.8.1
T10	810 - 802.417	3 3/4	0.399	0.000	0.000	0.399 ¹	1.050	4.8.1
T11	802.417 - 787.583	3 3/4	0.585	0.000	0.000	0.585 ¹	1.050	4.8.1
T12	787.583 - 780	3 3/4	0.598	0.000	0.000	0.598 ¹	1.050	4.8.1
T13	780 - 750	3 3/4	0.568	0.000	0.000	0.568 ¹	1.050	4.8.1

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Section No.	Elevation ft	Size	Ratio P_u ϕP_n	Ratio M_{ux} ϕM_{nx}	Ratio M_{uy} ϕM_{ny}	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T14	750 - 720	3 1/2	0.708	0.000	0.000	0.708 ¹	1.050	4.8.1
T15	720 - 690	3 1/2	0.788	0.000	0.000	0.788 ¹	1.050	4.8.1
T16	690 - 660	3 1/2	0.791	0.000	0.000	0.791 ¹	1.050	4.8.1
T17	660 - 630	3 1/2	0.745	0.000	0.000	0.745 ¹	1.050	4.8.1
T18	630 - 615	3 3/4	0.648	0.000	0.000	0.648 ¹	1.050	4.8.1
T19	615 - 600	3 3/4	0.450	0.000	0.000	0.450 ¹	1.050	4.8.1
T20	600 - 570	4	0.445	0.000	0.000	0.445 ¹	1.050	4.8.1
T21	570 - 562.417	3 3/4	0.413	0.000	0.000	0.413 ¹	1.050	4.8.1
T22	562.417 - 540	3 3/4	0.629	0.000	0.000	0.629 ¹	1.050	4.8.1
T23	540 - 510	3 3/4	0.725	0.000	0.000	0.725 ¹	1.050	4.8.1
T24	510 - 502.417	3 3/4	0.738	0.000	0.000	0.738 ¹	1.050	4.8.1
T25	502.417 - 480	3 3/4	0.456	0.000	0.000	0.456 ¹	1.050	4.8.1
T26	480 - 450	3 3/4	0.447	0.000	0.000	0.447 ¹	1.050	4.8.1
T27	450 - 435	3 3/4	0.395	0.000	0.000	0.395 ¹	1.050	4.8.1
T28	435 - 420	3 3/4	0.641	0.000	0.000	0.641 ¹	1.050	4.8.1
T29	420 - 390	4 1/4	0.658	0.000	0.000	0.658 ¹	1.050	4.8.1
T30	390 - 360	4 1/2	0.612	0.000	0.000	0.612 ¹	1.050	4.8.1
T31	360 - 330	4 1/4	0.595	0.000	0.000	0.595 ¹	1.050	4.8.1
T32	330 - 300	4	0.478	0.000	0.000	0.478 ¹	1.050	4.8.1
T33	300 - 292.417	4 1/4	0.418	0.000	0.000	0.418 ¹	1.050	4.8.1
T34	292.417 - 270	4 1/4	0.613	0.000	0.000	0.613 ¹	1.050	4.8.1
T35	270 - 240	4 1/4	0.586	0.000	0.000	0.586 ¹	1.050	4.8.1
T36	240 - 210	4 1/4	0.740	0.000	0.000	0.740 ¹	1.050	4.8.1
T37	210 - 202.417	4 1/2	0.668	0.000	0.000	0.668 ¹	1.050	4.8.1
T38	202.417 - 180	4 1/2	0.541	0.000	0.000	0.541 ¹	1.050	4.8.1
T39	180 - 150	4 1/2	0.527	0.000	0.000	0.527 ¹	1.050	4.8.1
T40	150 - 120	4 1/4	0.544	0.000	0.000	0.544 ¹	1.050	4.8.1
T41	120 - 90	4 1/4	0.543	0.000	0.000	0.543 ¹	1.050	4.8.1
T42	90 - 60	4 1/4	0.597	0.000	0.000	0.597 ¹	1.050	4.8.1
T43	60 - 30	4 1/2	0.593	0.000	0.000	0.593 ¹	1.050	4.8.1
T44	30 - 22.5	5	0.466	0.000	0.000	0.466 ¹	1.050	4.8.1
T45	22.5 - 15	5	0.482	0.000	0.000	0.482 ¹	1.050	4.8.1
T46	15 - 7.5	5	0.500	0.000	0.000	0.500 ¹	1.050	4.8.1
T47	7.5 - 0	5	0.518	0.000	0.000	0.518 ¹	1.050	4.8.1

¹ $P_u / \phi P_n$ controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in ²	P_u K	ϕP_n K	Ratio P_u ϕP_n
T2	996.667 - 990	2L2x2x3/16x3/8	9.82	4.53	88.6 K=1.00	1.4300	-9.28	37.55	0.247 ¹
T44	30 - 22.5	2L 'a' > 26.0407 in - 20 2L2x2x3/16x3/8	10.49	4.74	92.7 K=1.00	1.4300	-14.39	36.40	0.395 ¹
T45	22.5 - 15	2L 'a' > 27.2404 in - 1537 2L2 1/2x2x1/4x3/8	8.39	7.49	143.2 K=1.00	2.1300	-12.74	28.89	0.441 ¹
T46	15 - 7.5	2L 'a' > 30.5783 in - 1562 2L2x2x3/16x3/8	10.61	4.80	93.8 K=1.00	1.4300	-14.67	36.08	0.406 ¹
T47	7.5 - 0	2L 'a' > 27.5584 in - 1576 2L2 1/2x2x1/4x3/8	8.39	7.49	143.2 K=1.00	2.1300	-13.16	28.89	0.456 ¹
		2L 'a' > 30.5783 in - 1601							

¹ $P_u / \phi P_n$ controls

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Horizontal Design Data (Compression)

Section No.	Elevation <i>ft</i>	Size	<i>L</i> <i>ft</i>	<i>L_u</i> <i>ft</i>	<i>Kl/r</i>	<i>A</i> <i>in²</i>	<i>P_u</i> <i>K</i>	ϕP_n <i>K</i>	Ratio $\frac{P_u}{\phi P_n}$
T4	982.417 - 960	2L2x2x3/16x1/4	7.50	6.80	127.5 K=0.96	1.4297	-8.34	25.16	0.331 ¹
T5	960 - 930	2L2x2x3/16x1/4	7.50	6.78	127.3 K=0.97	1.4297	-6.25	25.26	0.247 ¹
T6	930 - 900	2L2x2x3/16x1/4	7.50	6.78	127.3 K=0.97	1.4297	-3.59	25.26	0.142 ¹
T7	900 - 870	2L2x2x3/16x1/4	7.50	6.78	127.3 K=0.97	1.4297	-4.71	25.26	0.187 ¹
T8	870 - 840	2L2x2x3/16x1/4	7.50	6.80	127.5 K=0.96	1.4297	-9.38	25.16	0.373 ¹
T9	840 - 810	2L2x2x3/16x1/4	7.50	6.80	127.5 K=0.96	1.4297	-13.50	25.16	0.536 ¹
T11	802.417 - 787.583	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-15.10	25.36	0.596 ¹
T13	780 - 750	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-10.35	25.36	0.408 ¹
T14	750 - 720	2L2x2x3/16x1/4	7.50	6.78	127.3 K=0.97	1.4297	-7.10	25.26	0.281 ¹
T15	720 - 690	2L2x2x3/16x1/4	7.50	6.78	127.3 K=0.97	1.4297	-3.46	25.26	0.137 ¹
T16	690 - 660	2L2x2x3/16x1/4	7.50	6.78	127.3 K=0.97	1.4297	-3.65	25.26	0.144 ¹
T17	660 - 630	2L2x2x3/16x1/4	7.50	6.78	127.3 K=0.97	1.4297	-8.73	25.26	0.345 ¹
T18	630 - 615	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-10.38	25.36	0.409 ¹
T19	615 - 600	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-11.40	25.36	0.449 ¹
T20	600 - 570	2L2x2x3/16x1/4	7.50	6.74	126.8 K=0.97	1.4297	-12.61	25.46	0.495 ¹
T22	562.417 - 540	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-10.57	25.36	0.417 ¹
T23	540 - 510	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-8.25	25.36	0.325 ¹
T25	502.417 - 480	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-3.59	25.36	0.142 ¹
T26	480 - 450	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-7.24	25.36	0.285 ¹
T27	450 - 435	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-8.74	25.36	0.345 ¹
T28	435 - 420	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-10.90	25.36	0.430 ¹
T29	420 - 390	2L2x2x3/16x1/4	7.50	6.72	126.5 K=0.97	1.4297	-13.93	25.56	0.545 ¹
T30	390 - 360	2L2x2x3/16x1/4	7.50	6.70	126.3 K=0.97	1.4297	-13.32	25.66	0.519 ¹
T31	360 - 330	2L2x2x3/16x1/4	7.50	6.72	126.5 K=0.97	1.4297	-10.10	25.56	0.395 ¹
T32	330 - 300	2L2x2x3/16x1/4	7.50	6.74	126.8 K=0.97	1.4297	-4.43	25.46	0.174 ¹
T34	292.417 - 270	2L2x2x3/16x1/4	7.50	6.72	126.5 K=0.97	1.4297	-4.67	25.56	0.183 ¹
T35	270 - 240	2L2x2x3/16x1/4	7.50	6.72	126.5 K=0.97	1.4297	-7.84	25.56	0.307 ¹
T36	240 - 210	2L2x2x3/16x1/4	7.50	6.72	126.5 K=0.97	1.4297	-10.88	25.56	0.426 ¹
T38	202.417 - 180	2L2x2x3/16x1/4	7.50	6.70	126.3	1.4297	-11.51	25.66	0.449 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T39	180 - 150	2L2x2x3/16x1/4	7.50	6.70	K=0.97 126.3	1.4297	-5.83	25.66	0.227 ¹
T40	150 - 120	2L2x2x3/16x1/4	7.50	6.72	K=0.97 126.5	1.4297	-5.29	25.56	0.207 ¹
T41	120 - 90	2L2x2x3/16x1/4	7.50	6.72	K=0.97 126.5	1.4297	-5.28	25.56	0.207 ¹
T42	90 - 60	2L2x2x3/16x1/4	7.50	6.72	K=0.97 126.5	1.4297	-6.18	25.56	0.242 ¹
T43	60 - 30	2L2x2x3/16x1/4	7.50	6.70	K=0.97 126.3	1.4297	-7.63	25.66	0.297 ¹
T45	22.5 - 15	2L2 1/2x2x3/16x3/8	7.50	6.66	K=0.97 127.4	1.6200	-6.70	26.58	0.252 ¹
T47	7.5 - 0	2L 'a' > 21.2300 in - 1544 2L2 1/2x2x3/16x3/8	7.50	5.10	K=1.00 127.4	1.6200	-7.21	26.58	0.271 ¹
		2L 'a' > 21.2300 in - 1583			K=1.00				

¹ P_u / φP_n controls

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T19	615 - 600	L2x2x1/4	7.50	6.92	136.3 K=1.00	0.9380	-3.29	14.45	0.227 ¹
T20	600 - 570	L2x2x1/4	7.50	6.90	135.9 K=1.00	0.9380	-3.77	14.54	0.259 ¹
T21	570 - 562.417	L2x2x1/4	7.50	6.92	136.3 K=1.00	0.9380	-3.02	14.45	0.209 ¹
T25	502.417 - 480	L2x2x1/4	7.50	6.92	136.3 K=1.00	0.9380	-3.33	14.45	0.231 ¹
T26	480 - 450	L2x2x1/4	7.50	6.92	136.3 K=1.00	0.9380	-3.26	14.45	0.226 ¹
T27	450 - 435	L2x2x1/4	7.50	6.92	136.3 K=1.00	0.9380	-2.89	14.45	0.200 ¹
T32	330 - 300	L2x2x1/4	7.50	6.90	135.9 K=1.00	0.9380	-4.05	14.54	0.279 ¹
T33	300 - 292.417	L2x2x1/4	7.50	6.88	135.5 K=1.00	0.9380	-4.06	14.63	0.278 ¹
T38	202.417 - 180	L2x2x1/4	7.50	6.85	135.1 K=1.00	0.9380	-5.98	14.72	0.406 ¹
T39	180 - 150	L2x2x1/4	7.50	6.85	135.1 K=1.00	0.9380	-5.83	14.72	0.396 ¹
T40	150 - 120	L2x2x1/4	7.50	6.88	135.5 K=1.00	0.9380	-5.29	14.63	0.362 ¹
T41	120 - 90	L2x2x1/4	7.50	6.88	135.5 K=1.00	0.9380	-5.28	14.63	0.361 ¹
T42	90 - 60	L2x2x1/4	7.50	6.88	135.5 K=1.00	0.9380	-5.81	14.63	0.397 ¹
T43	60 - 30	L2x2x1/4	7.50	6.85	135.1 K=1.00	0.9380	-6.56	14.72	0.446 ¹
T44	30 - 22.5	L2-1/2x2-1/2x3/16	7.50	3.41	101.3 K=1.23	0.9023	-6.56	22.00	0.298 ¹
T46	15 - 7.5	L2-1/2x2-1/2x3/16	7.50	3.41	101.3 K=1.23	0.9023	-6.96	22.00	0.316 ¹

¹ P_u / φP_n controls

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Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T2	996.667 - 990	2L2x2x3/16x3/8	7.50	6.82	127.8 K=0.96	1.4300	-1.10	25.06	0.044 ¹
T3	990 - 982.417	2L2x2x3/16x1/4	7.50	6.80	127.5 K=0.96	1.4297	-2.89	25.16	0.115 ¹
T4	982.417 - 960	2C8x11.5x1/4	7.50	7.23	92.0 K=1.00	6.7024	-9.23	139.03	0.066 ¹
T5	960 - 930	2L2x2x3/16x1/4	7.50	6.78	127.3 K=0.97	1.4297	-3.40	25.26	0.135 ¹
T6	930 - 900	2L2x2x3/16x1/4	7.50	6.78	127.3 K=0.97	1.4297	-2.66	25.26	0.105 ¹
T7	900 - 870	2L2x2x3/16x1/4	7.50	6.78	127.3 K=0.97	1.4297	-2.65	25.26	0.105 ¹
T8	870 - 840	2L2x2x3/16x1/4	7.50	6.80	127.5 K=0.96	1.4297	-3.13	25.16	0.124 ¹
T9	840 - 810	2L2x2x3/16x1/4	7.50	6.80	127.5 K=0.96	1.4297	-5.68	25.16	0.226 ¹
T10	810 - 802.417	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-7.42	25.36	0.292 ¹
T11	802.417 - 787.583	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-14.98	25.36	0.590 ¹
T13	780 - 750	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-5.69	25.36	0.224 ¹
T14	750 - 720	2L2x2x3/16x1/4	7.50	6.78	127.3 K=0.97	1.4297	-3.93	25.26	0.156 ¹
T15	720 - 690	2L2x2x3/16x1/4	7.50	6.78	127.3 K=0.97	1.4297	-2.77	25.26	0.110 ¹
T16	690 - 660	2L2x2x3/16x1/4	7.50	6.78	127.3 K=0.97	1.4297	-2.78	25.26	0.110 ¹
T17	660 - 630	2L2x2x3/16x1/4	7.50	6.78	127.3 K=0.97	1.4297	-2.68	25.26	0.106 ¹
T18	630 - 615	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-5.03	25.36	0.198 ¹
T19	615 - 600	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-10.72	25.36	0.423 ¹
T20	600 - 570	2L2x2x3/16x1/4	7.50	6.74	126.8 K=0.97	1.4297	-6.35	25.46	0.249 ¹
T21	570 - 562.417	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-6.05	25.36	0.239 ¹
T22	562.417 - 540	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-11.32	25.36	0.446 ¹
T23	540 - 510	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-4.51	25.36	0.178 ¹
T24	510 - 502.417	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-3.29	25.36	0.130 ¹
T25	502.417 - 480	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-4.74	25.36	0.187 ¹
T26	480 - 450	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-3.26	25.36	0.129 ¹
T27	450 - 435	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-4.27	25.36	0.168 ¹
T28	435 - 420	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-9.75	25.36	0.384 ¹
T29	420 - 390	2L2x2x3/16x1/4	7.50	6.72	126.5 K=0.97	1.4297	-6.18	25.56	0.242 ¹
T30	390 - 360	2L2x2x3/16x1/4	7.50	6.70	126.3 K=0.97	1.4297	-7.13	25.66	0.278 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T31	360 - 330	2L2x2x3/16x1/4	7.50	6.72	126.5 K=0.97	1.4297	-5.51	25.56	0.216 ¹
T32	330 - 300	2L2x2x3/16x1/4	7.50	6.74	126.8 K=0.97	1.4297	-4.05	25.46	0.159 ¹
T33	300 - 292.417	2L2x2x3/16x1/4	7.50	6.72	126.5 K=0.97	1.4297	-4.06	25.56	0.159 ¹
T34	292.417 - 270	2L2x2x3/16x1/4	7.50	6.72	126.5 K=0.97	1.4297	-4.06	25.56	0.159 ¹
T35	270 - 240	2L2x2x3/16x1/4	7.50	6.72	126.5 K=0.97	1.4297	-3.88	25.56	0.152 ¹
T36	240 - 210	2L2x2x3/16x1/4	7.50	6.72	126.5 K=0.97	1.4297	-4.90	25.56	0.192 ¹
T37	210 - 202.417	2L2x2x3/16x1/4	7.50	6.70	126.3 K=0.97	1.4297	-6.28	25.66	0.245 ¹
T38	202.417 - 180	2L2x2x3/16x1/4	7.50	6.70	126.3 K=0.97	1.4297	-12.05	25.66	0.470 ¹
T39	180 - 150	2L2x2x3/16x1/4	7.50	6.70	126.3 K=0.97	1.4297	-5.83	25.66	0.227 ¹
T40	150 - 120	2L2x2x3/16x1/4	7.50	6.72	126.5 K=0.97	1.4297	-5.29	25.56	0.207 ¹
T41	120 - 90	2L2x2x3/16x1/4	7.50	6.72	126.5 K=0.97	1.4297	-5.28	25.56	0.207 ¹
T42	90 - 60	2L2x2x3/16x1/4	7.50	6.72	126.5 K=0.97	1.4297	-5.81	25.56	0.227 ¹
T43	60 - 30	2L2x2x3/16x1/4	7.50	6.70	126.3 K=0.97	1.4297	-6.56	25.66	0.256 ¹
T44	30 - 22.5	2L2x2x3/16x3/8	7.50	6.66	125.8 K=0.97	1.4300	-6.56	25.86	0.254 ¹
T46	15 - 7.5	2C8x11.5x3/8	7.50	7.08	85.9 K=1.00	6.7024	-6.96	147.30	0.047 ¹

¹ P_u / φP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T2	996.667 - 990	2L2x2x3/16x3/8	7.50	6.82	127.8 K=0.96	1.4300	-1.10	25.06	0.044 ¹
T4	982.417 - 960	2L2x2x3/16x1/4	7.50	6.80	127.5 K=0.96	1.4297	-3.81	25.16	0.152 ¹
T5	960 - 930	2L2x2x3/16x1/4	7.50	6.78	127.3 K=0.97	1.4297	-2.49	25.26	0.099 ¹
T6	930 - 900	2L2x2x3/16x1/4	7.50	6.78	127.3 K=0.97	1.4297	-2.66	25.26	0.105 ¹
T7	900 - 870	2L2x2x3/16x1/4	7.50	6.78	127.3 K=0.97	1.4297	-2.88	25.26	0.114 ¹
T8	870 - 840	2L2x2x3/16x1/4	7.50	6.80	127.5 K=0.96	1.4297	-5.24	25.16	0.208 ¹
T9	840 - 810	2L2x2x3/16x1/4	7.50	6.80	127.5 K=0.96	1.4297	-7.10	25.16	0.282 ¹
T12	787.583 - 780	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-5.50	25.36	0.217 ¹
T13	780 - 750	2L2x2x3/16x1/4	7.50	6.76	127.0 K=0.97	1.4297	-4.12	25.36	0.163 ¹
T14	750 - 720	2L2x2x3/16x1/4	7.50	6.78	127.3 K=0.97	1.4297	-2.50	25.26	0.099 ¹
T15	720 - 690	2L2x2x3/16x1/4	7.50	6.78	127.3 K=0.97	1.4297	-2.77	25.26	0.110 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T16	690 - 660	2L2x2x3/16x1/4	7.50	6.78	K=0.97 127.3	1.4297	-2.78	25.26	0.110 ¹
T17	660 - 630	2L2x2x3/16x1/4	7.50	6.78	K=0.97 127.3	1.4297	-4.77	25.26	0.189 ¹
T19	615 - 600	2L2x2x3/16x1/4	7.50	6.76	K=0.97 127.0	1.4297	-6.31	25.36	0.249 ¹
T20	600 - 570	2L2x2x3/16x1/4	7.50	6.74	K=0.97 126.8	1.4297	-6.05	25.46	0.238 ¹
T22	562.417 - 540	2L2x2x3/16x1/4	7.50	6.76	K=0.97 127.0	1.4297	-4.75	25.36	0.187 ¹
T23	540 - 510	2L2x2x3/16x1/4	7.50	6.76	K=0.97 127.0	1.4297	-3.23	25.36	0.127 ¹
T25	502.417 - 480	2L2x2x3/16x1/4	7.50	6.76	K=0.97 127.0	1.4297	-3.33	25.36	0.131 ¹
T26	480 - 450	2L2x2x3/16x1/4	7.50	6.76	K=0.97 127.0	1.4297	-4.03	25.36	0.159 ¹
T28	435 - 420	2L2x2x3/16x1/4	7.50	6.76	K=0.97 127.0	1.4297	-5.81	25.36	0.229 ¹
T29	420 - 390	2L2x2x3/16x1/4	7.50	6.72	K=0.97 126.5	1.4297	-7.49	25.56	0.293 ¹
T30	390 - 360	2L2x2x3/16x1/4	7.50	6.70	K=0.97 126.3	1.4297	-5.64	25.66	0.220 ¹
T31	360 - 330	2L2x2x3/16x1/4	7.50	6.72	K=0.97 126.5	1.4297	-3.94	25.56	0.154 ¹
T32	330 - 300	2L2x2x3/16x1/4	7.50	6.74	K=0.97 126.8	1.4297	-4.05	25.46	0.159 ¹
T34	292.417 - 270	2L2x2x3/16x1/4	7.50	6.72	K=0.97 126.5	1.4297	-4.06	25.56	0.159 ¹
T35	270 - 240	2L2x2x3/16x1/4	7.50	6.72	K=0.97 126.5	1.4297	-4.23	25.56	0.165 ¹
T36	240 - 210	2L2x2x3/16x1/4	7.50	6.72	K=0.97 126.5	1.4297	-5.80	25.56	0.227 ¹
T38	202.417 - 180	2L2x2x3/16x1/4	7.50	6.70	K=0.97 126.3	1.4297	-5.98	25.66	0.233 ¹
T39	180 - 150	2L2x2x3/16x1/4	7.50	6.70	K=0.97 126.3	1.4297	-5.83	25.66	0.227 ¹
T40	150 - 120	2L2x2x3/16x1/4	7.50	6.72	K=0.97 126.5	1.4297	-5.29	25.56	0.207 ¹
T41	120 - 90	2L2x2x3/16x1/4	7.50	6.72	K=0.97 126.5	1.4297	-5.28	25.56	0.207 ¹
T42	90 - 60	2L2x2x3/16x1/4	7.50	6.72	K=0.97 126.5	1.4297	-5.81	25.56	0.227 ¹
T43	60 - 30	2L2x2x3/16x1/4	7.50	6.70	K=0.97 126.3	1.4297	-6.56	25.66	0.256 ¹

¹ P_u / φP_n controls

Redundant Horizontal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T45	22.5 - 15	L2 1/2x2x3/16	1.88	1.40	79.6 K=2.03	0.8090	-6.70	23.32	0.288 ¹
T47	7.5 - 0	L2 1/2x2x3/16	1.88	1.40	79.6 K=2.03	0.8090	-7.21	23.32	0.309 ¹

¹ P_u / φP_n controls

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Redundant Diagonal (1) Design Data (Compression)

Section No.	Elevation <i>ft</i>	Size	<i>L</i> <i>ft</i>	<i>L_u</i> <i>ft</i>	<i>Kl/r</i>	<i>A</i> <i>in²</i>	<i>P_u</i> <i>K</i>	ϕP_n <i>K</i>	Ratio $\frac{P_u}{\phi P_n}$
T45	22.5 - 15	L2 1/2x2x3/16	4.19	3.46	108.6 K=1.12	0.8090	-7.50	18.33	0.409 ¹
T47	7.5 - 0	L2 1/2x2x3/16	4.19	3.46	108.6 K=1.12	0.8090	-8.06	18.33	0.440 ¹

¹ $P_u / \phi P_n$ controls

Top Guy Pull-Off Design Data (Compression)

Section No.	Elevation <i>ft</i>	Size	<i>L</i> <i>ft</i>	<i>L_u</i> <i>ft</i>	<i>Kl/r</i>	<i>A</i> <i>in²</i>	<i>P_u</i> <i>K</i>	ϕP_n <i>K</i>	Ratio $\frac{P_u}{\phi P_n}$
T1	997.5 - 996.667	W8x35	7.50	7.25	42.9 K=1.00	10.3000	-0.00	302.96	0.000 ¹

¹ $P_u / \phi P_n$ controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation <i>ft</i>	Size	<i>L</i> <i>ft</i>	<i>L_u</i> <i>ft</i>	<i>Kl/r</i>	<i>A</i> <i>in²</i>	<i>P_u</i> <i>K</i>	ϕP_n <i>K</i>	Ratio $\frac{P_u}{\phi P_n}$
T2	996.667 - 990	3	6.67	0.17	2.7	7.0686	0.44	318.09	0.001 ¹
T3	990 - 982.417	3 1/4	7.58	0.17	2.5	8.2958	0.43	373.31	0.001 ¹
T4	982.417 - 960	3 1/4	22.42	0.17	2.5	8.2958	54.09	373.31	0.145 ¹
T5	960 - 930	3 1/2	30.00	0.17	2.3	9.6211	86.87	432.95	0.201 ¹
T6	930 - 900	3 1/2	30.00	0.17	2.3	9.6211	97.09	432.95	0.224 ¹
T7	900 - 870	3 1/2	30.00	0.17	2.3	9.6211	97.08	432.95	0.224 ¹
T8	870 - 840	3 1/4	30.00	0.17	2.5	8.2958	80.27	373.31	0.215 ¹
T9	840 - 810	3 1/4	30.00	0.17	2.5	8.2958	35.67	373.31	0.096 ¹
T11	802.417 - 787.583	3 3/4	14.83	7.42	94.9	11.0447	31.24	497.01	0.063 ¹
T14	750 - 720	3 1/2	30.00	0.17	2.3	9.6211	27.11	432.95	0.063 ¹
T15	720 - 690	3 1/2	30.00	0.17	2.3	9.6211	41.47	432.95	0.096 ¹
T16	690 - 660	3 1/2	30.00	0.17	2.3	9.6211	41.46	432.95	0.096 ¹
T17	660 - 630	3 1/2	30.00	0.17	2.3	9.6211	29.37	432.95	0.068 ¹
T20	600 - 570	4	30.00	3.71	44.5	12.5664	2.11	565.49	0.004 ¹

¹ $P_u / \phi P_n$ controls

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Leg Bending Design Data (Tension)

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T2	996.667 - 990	3	0.00	16.88	0.000	0.00	16.88	0.000
T3	990 - 982.417	3 1/4	0.00	21.46	0.000	0.00	21.46	0.000
T4	982.417 - 960	3 1/4	0.00	21.46	0.000	0.00	21.46	0.000
T5	960 - 930	3 1/2	0.00	26.80	0.000	0.00	26.80	0.000
T6	930 - 900	3 1/2	0.00	26.80	0.000	0.00	26.80	0.000
T7	900 - 870	3 1/2	0.00	26.80	0.000	0.00	26.80	0.000
T8	870 - 840	3 1/4	0.00	21.46	0.000	0.00	21.46	0.000
T9	840 - 810	3 1/4	0.00	21.46	0.000	0.00	21.46	0.000
T11	802.417 - 787.583	3 3/4	0.00	32.96	0.000	0.00	32.96	0.000
T14	750 - 720	3 1/2	0.00	26.80	0.000	0.00	26.80	0.000
T15	720 - 690	3 1/2	0.00	26.80	0.000	0.00	26.80	0.000
T16	690 - 660	3 1/2	0.00	26.80	0.000	0.00	26.80	0.000
T17	660 - 630	3 1/2	0.00	26.80	0.000	0.00	26.80	0.000
T20	600 - 570	4	0.00	40.00	0.000	0.00	40.00	0.000

Leg Interaction Design Data (Tension)

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T2	996.667 - 990	3	0.001	0.000	0.000	0.001 ¹	1.050	4.8.1
T3	990 - 982.417	3 1/4	0.001	0.000	0.000	0.001 ¹	1.050	4.8.1
T4	982.417 - 960	3 1/4	0.145	0.000	0.000	0.145 ¹	1.050	4.8.1
T5	960 - 930	3 1/2	0.201	0.000	0.000	0.201 ¹	1.050	4.8.1
T6	930 - 900	3 1/2	0.224	0.000	0.000	0.224 ¹	1.050	4.8.1
T7	900 - 870	3 1/2	0.224	0.000	0.000	0.224 ¹	1.050	4.8.1
T8	870 - 840	3 1/4	0.215	0.000	0.000	0.215 ¹	1.050	4.8.1
T9	840 - 810	3 1/4	0.096	0.000	0.000	0.096 ¹	1.050	4.8.1
T11	802.417 - 787.583	3 3/4	0.063	0.000	0.000	0.063 ¹	1.050	4.8.1
T14	750 - 720	3 1/2	0.063	0.000	0.000	0.063 ¹	1.050	4.8.1
T15	720 - 690	3 1/2	0.096	0.000	0.000	0.096 ¹	1.050	4.8.1
T16	690 - 660	3 1/2	0.096	0.000	0.000	0.096 ¹	1.050	4.8.1
T17	660 - 630	3 1/2	0.068	0.000	0.000	0.068 ¹	1.050	4.8.1
T20	600 - 570	4	0.004	0.000	0.000	0.004 ¹	1.050	4.8.1

¹ $P_u / \phi P_n$ controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in ²	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	996.667 - 990	2L2x2x3/16x3/8 2L 'a' > 26.0407 in - 20	9.82	4.53	92.3	0.8616	5.20	37.48	0.139 ¹
T3	990 - 982.417	3/4	10.55	10.17	650.7	0.4418	13.40	19.88	0.674 ¹
T4	982.417 - 960	3/4	10.55	10.17	650.7	0.4418	12.35	19.88	0.621 ¹
T5	960 - 930	5/8	10.55	10.14	778.6	0.3068	9.28	13.81	0.672 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T6	930 - 900	5/8	10.55	10.14	778.6	0.3068	5.60	13.81	0.406 ¹
T7	900 - 870	5/8	10.55	10.14	778.6	0.3068	7.47	13.81	0.541 ¹
T8	870 - 840	3/4	10.55	10.17	650.7	0.4418	14.24	19.88	0.716 ¹
T9	840 - 810	7/8	10.55	10.17	557.7	0.6013	19.79	27.06	0.731 ¹
T10	810 - 802.417	7/8	10.55	10.11	554.5	0.6013	20.90	27.06	0.772 ¹
T11	802.417 - 787.583	1	10.55	10.11	485.2	0.7854	21.43	35.34	0.606 ¹
T12	787.583 - 780	7/8	10.55	10.11	554.5	0.6013	16.09	27.06	0.595 ¹
T13	780 - 750	7/8	10.55	10.11	554.5	0.6013	15.48	27.06	0.572 ¹
T14	750 - 720	3/4	10.55	10.14	648.8	0.4418	10.66	19.88	0.536 ¹
T15	720 - 690	5/8	10.55	10.14	778.6	0.3068	5.25	13.81	0.380 ¹
T16	690 - 660	5/8	10.55	10.14	778.6	0.3068	5.84	13.81	0.423 ¹
T17	660 - 630	5/8	10.55	10.14	778.6	0.3068	13.00	13.81	0.942 ¹
T18	630 - 615	3/4	10.55	10.11	646.9	0.4418	14.71	19.88	0.740 ¹
T19	615 - 600	3/4	10.55	10.11	646.9	0.4418	17.66	19.88	0.888 ¹
T20	600 - 570	7/8	10.55	10.08	552.9	0.6013	19.50	27.06	0.721 ¹
T21	570 - 562.417	7/8	10.55	10.11	554.5	0.6013	17.02	27.06	0.629 ¹
T22	562.417 - 540	7/8	10.55	10.11	554.5	0.6013	15.37	27.06	0.568 ¹
T23	540 - 510	3/4	10.55	10.11	646.9	0.4418	12.41	19.88	0.624 ¹
T24	510 - 502.417	5/8	10.55	10.11	776.3	0.3068	7.61	13.81	0.551 ¹
T25	502.417 - 480	5/8	10.55	10.11	776.3	0.3068	6.04	13.81	0.438 ¹
T26	480 - 450	3/4	10.55	10.11	646.9	0.4418	11.30	19.88	0.568 ¹
T27	450 - 435	7/8	10.55	10.11	554.5	0.6013	13.34	27.06	0.493 ¹
T28	435 - 420	7/8	10.55	10.11	554.5	0.6013	16.03	27.06	0.592 ¹
T29	420 - 390	1	10.55	10.05	482.4	0.7854	20.61	35.34	0.583 ¹
T30	390 - 360	1	10.55	10.02	481.0	0.7854	20.58	35.34	0.582 ¹
T31	360 - 330	3/4	10.55	10.05	643.2	0.4418	14.89	19.88	0.749 ¹
T32	330 - 300	5/8	10.55	10.08	774.1	0.3068	7.54	13.81	0.546 ¹
T33	300 - 292.417	5/8	10.55	10.05	771.8	0.3068	3.36	13.81	0.243 ¹
T34	292.417 - 270	5/8	10.55	10.05	771.8	0.3068	7.10	13.81	0.515 ¹
T35	270 - 240	5/8	10.55	10.05	771.8	0.3068	11.52	13.81	0.835 ¹
T36	240 - 210	3/4	10.55	10.05	643.2	0.4418	16.11	19.88	0.810 ¹
T37	210 - 202.417	7/8	10.55	10.02	549.7	0.6013	17.41	27.06	0.643 ¹
T38	202.417 - 180	7/8	10.55	10.02	549.7	0.6013	18.03	27.06	0.666 ¹
T39	180 - 150	3/4	10.55	10.02	641.3	0.4418	9.38	19.88	0.472 ¹
T40	150 - 120	5/8	10.55	10.05	771.8	0.3068	5.46	13.81	0.395 ¹
T41	120 - 90	5/8	10.55	10.05	771.8	0.3068	6.64	13.81	0.481 ¹
T42	90 - 60	5/8	10.55	10.05	771.8	0.3068	10.02	13.81	0.726 ¹
T43	60 - 30	3/4	10.55	10.02	641.3	0.4418	12.24	19.88	0.615 ¹
T44	30 - 22.5	2L2x2x3/16x3/8	10.49	4.74	96.3	0.8616	1.22	37.48	0.032 ¹
T45	22.5 - 15	2L 'a' > 27.2404 in - 1537	8.39	7.49	101.6	1.3162	9.81	57.26	0.171 ¹
		2L2 1/2x2x1/4x3/8							
		2L 'a' > 30.5783 in - 1559							
T46	15 - 7.5	2L2x2x3/16x3/8	10.61	4.80	97.4	0.8616	0.86	37.48	0.023 ¹
T47	7.5 - 0	2L 'a' > 27.5584 in - 1576	8.39	7.49	101.6	1.3162	10.92	57.26	0.191 ¹
		2L2 1/2x2x1/4x3/8							
		2L 'a' > 30.5783 in - 1598							

¹ P_u / φP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T4	982.417 - 960	2L2x2x3/16x1/4	7.50	6.80	140.5	0.8613	1.97	37.47	0.053 ¹
T5	960 - 930	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.49	37.47	0.067 ¹
T6	930 - 900	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.66	37.47	0.071 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T7	900 - 870	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.65	37.47	0.071 ¹
T8	870 - 840	2L2x2x3/16x1/4	7.50	6.80	140.5	0.8613	2.35	37.47	0.063 ¹
T9	840 - 810	2L2x2x3/16x1/4	7.50	6.80	140.5	0.8613	1.61	37.47	0.043 ¹
T11	802.417 - 787.583	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	2.61	37.47	0.070 ¹
T13	780 - 750	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	2.53	37.47	0.068 ¹
T14	750 - 720	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.50	37.47	0.067 ¹
T15	720 - 690	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.77	37.47	0.074 ¹
T16	690 - 660	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.78	37.47	0.074 ¹
T17	660 - 630	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.62	37.47	0.070 ¹
T18	630 - 615	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	2.89	37.47	0.077 ¹
T19	615 - 600	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	3.29	37.47	0.088 ¹
T20	600 - 570	2L2x2x3/16x1/4	7.50	6.74	139.3	0.8613	3.77	37.47	0.101 ¹
T22	562.417 - 540	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	2.80	37.47	0.075 ¹
T23	540 - 510	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	3.23	37.47	0.086 ¹
T25	502.417 - 480	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	3.33	37.47	0.089 ¹
T26	480 - 450	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	3.26	37.47	0.087 ¹
T27	450 - 435	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	2.89	37.47	0.077 ¹
T28	435 - 420	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	2.86	37.47	0.076 ¹
T29	420 - 390	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	4.36	37.47	0.116 ¹
T30	390 - 360	2L2x2x3/16x1/4	7.50	6.70	138.5	0.8613	4.80	37.47	0.128 ¹
T31	360 - 330	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	3.94	37.47	0.105 ¹
T32	330 - 300	2L2x2x3/16x1/4	7.50	6.74	139.3	0.8613	4.05	37.47	0.108 ¹
T34	292.417 - 270	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	4.06	37.47	0.108 ¹
T35	270 - 240	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	3.88	37.47	0.103 ¹
T36	240 - 210	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	4.90	37.47	0.131 ¹
T38	202.417 - 180	2L2x2x3/16x1/4	7.50	6.70	138.5	0.8613	5.98	37.47	0.160 ¹
T39	180 - 150	2L2x2x3/16x1/4	7.50	6.70	138.5	0.8613	5.83	37.47	0.156 ¹
T40	150 - 120	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	5.29	37.47	0.141 ¹
T41	120 - 90	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	5.28	37.47	0.141 ¹
T42	90 - 60	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	5.81	37.47	0.155 ¹
T43	60 - 30	2L2x2x3/16x1/4	7.50	6.70	138.5	0.8613	6.56	37.47	0.175 ¹
T45	22.5 - 15	2L2 1/2x2x3/16x3/8	7.50	6.66	69.1	1.0041	8.67	43.68	0.198 ¹
2L 'a' > 21.2300 in - 1558									
T47	7.5 - 0	2L2 1/2x2x3/16x3/8	7.50	6.66	69.1	1.0041	8.92	43.68	0.204 ¹
2L 'a' > 21.2300 in - 1597									

¹ P_u / φP_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T19	615 - 600	L2x2x1/4	7.50	6.92	141.6	0.5629	3.29	24.49	0.134 ¹
T20	600 - 570	L2x2x1/4	7.50	6.90	141.2	0.5629	3.77	24.49	0.154 ¹
T21	570 - 562.417	L2x2x1/4	7.50	6.92	141.6	0.5629	3.02	24.49	0.123 ¹
T25	502.417 - 480	L2x2x1/4	7.50	6.92	141.6	0.5629	3.33	24.49	0.136 ¹
T26	480 - 450	L2x2x1/4	7.50	6.92	141.6	0.5629	3.26	24.49	0.133 ¹
T27	450 - 435	L2x2x1/4	7.50	6.92	141.6	0.5629	2.89	24.49	0.118 ¹
T32	330 - 300	L2x2x1/4	7.50	6.90	141.2	0.5629	4.05	24.49	0.165 ¹
T33	300 - 292.417	L2x2x1/4	7.50	6.88	140.8	0.5629	4.06	24.49	0.166 ¹
T38	202.417 - 180	L2x2x1/4	7.50	6.85	140.4	0.5629	5.98	24.49	0.244 ¹
T39	180 - 150	L2x2x1/4	7.50	6.85	140.4	0.5629	5.83	24.49	0.238 ¹
T40	150 - 120	L2x2x1/4	7.50	6.88	140.8	0.5629	5.29	24.49	0.216 ¹
T41	120 - 90	L2x2x1/4	7.50	6.88	140.8	0.5629	5.28	24.49	0.216 ¹
T42	90 - 60	L2x2x1/4	7.50	6.88	140.8	0.5629	5.81	24.49	0.237 ¹
T43	60 - 30	L2x2x1/4	7.50	6.85	140.4	0.5629	6.56	24.49	0.268 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T44	30 - 22.5	L2-1/2x2-1/2x3/16	7.50	3.41	109.2	0.5713	6.56	24.85	0.264 ¹
T46	15 - 7.5	L2-1/2x2-1/2x3/16	7.50	3.41	109.2	0.5713	6.96	24.85	0.280 ¹

¹ P_u / φP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T2	996.667 - 990	2L2x2x3/16x3/8	7.50	6.82	141.0	0.8616	3.22	37.48	0.086 ¹
T3	990 - 982.417	2L2x2x3/16x1/4	7.50	6.80	140.5	0.8613	1.35	37.47	0.036 ¹
T4	982.417 - 960	2C8x11.5x1/4	7.50	7.23	92.0	4.7793	1.97	207.90	0.009 ¹
T5	960 - 930	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.49	37.47	0.067 ¹
T6	930 - 900	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.66	37.47	0.071 ¹
T7	900 - 870	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.65	37.47	0.071 ¹
T8	870 - 840	2L2x2x3/16x1/4	7.50	6.80	140.5	0.8613	2.35	37.47	0.063 ¹
T9	840 - 810	2L2x2x3/16x1/4	7.50	6.80	140.5	0.8613	1.61	37.47	0.043 ¹
T10	810 - 802.417	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	1.78	37.47	0.047 ¹
T11	802.417 - 787.583	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	2.61	37.47	0.070 ¹
T13	780 - 750	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	2.53	37.47	0.068 ¹
T14	750 - 720	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.50	37.47	0.067 ¹
T15	720 - 690	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.77	37.47	0.074 ¹
T16	690 - 660	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.78	37.47	0.074 ¹
T17	660 - 630	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.62	37.47	0.070 ¹
T18	630 - 615	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	2.89	37.47	0.077 ¹
T19	615 - 600	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	3.29	37.47	0.088 ¹
T20	600 - 570	2L2x2x3/16x1/4	7.50	6.74	139.3	0.8613	3.77	37.47	0.101 ¹
T21	570 - 562.417	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	3.02	37.47	0.080 ¹
T22	562.417 - 540	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	2.80	37.47	0.075 ¹
T23	540 - 510	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	3.23	37.47	0.086 ¹
T24	510 - 502.417	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	3.29	37.47	0.088 ¹
T25	502.417 - 480	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	3.33	37.47	0.089 ¹
T26	480 - 450	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	3.26	37.47	0.087 ¹
T27	450 - 435	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	2.89	37.47	0.077 ¹
T28	435 - 420	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	2.86	37.47	0.076 ¹
T29	420 - 390	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	4.36	37.47	0.116 ¹
T30	390 - 360	2L2x2x3/16x1/4	7.50	6.70	138.5	0.8613	4.80	37.47	0.128 ¹
T31	360 - 330	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	3.94	37.47	0.105 ¹
T32	330 - 300	2L2x2x3/16x1/4	7.50	6.74	139.3	0.8613	4.05	37.47	0.108 ¹
T33	300 - 292.417	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	4.06	37.47	0.108 ¹
T34	292.417 - 270	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	4.06	37.47	0.108 ¹
T35	270 - 240	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	3.88	37.47	0.103 ¹
T36	240 - 210	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	4.90	37.47	0.131 ¹
T37	210 - 202.417	2L2x2x3/16x1/4	7.50	6.70	138.5	0.8613	5.24	37.47	0.140 ¹
T38	202.417 - 180	2L2x2x3/16x1/4	7.50	6.70	138.5	0.8613	5.98	37.47	0.160 ¹
T39	180 - 150	2L2x2x3/16x1/4	7.50	6.70	138.5	0.8613	5.83	37.47	0.156 ¹
T40	150 - 120	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	5.29	37.47	0.141 ¹
T41	120 - 90	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	5.28	37.47	0.141 ¹
T42	90 - 60	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	5.81	37.47	0.155 ¹
T43	60 - 30	2L2x2x3/16x1/4	7.50	6.70	138.5	0.8613	6.56	37.47	0.175 ¹
T44	30 - 22.5	2L2x2x3/16x3/8	7.50	6.66	137.8	0.8616	6.56	37.48	0.175 ¹
T46	15 - 7.5	2C8x11.5x3/8	7.50	7.08	85.9	4.7793	6.96	207.90	0.033 ¹

¹ P_u / φP_n controls

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Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T2	996.667 - 990	2L2x2x3/16x3/8	7.50	6.82	141.0	0.8616	2.74	37.48	0.073 ¹
T4	982.417 - 960	2L2x2x3/16x1/4	7.50	6.80	140.5	0.8613	1.97	37.47	0.053 ¹
T5	960 - 930	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.49	37.47	0.067 ¹
T6	930 - 900	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.66	37.47	0.071 ¹
T7	900 - 870	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.65	37.47	0.071 ¹
T8	870 - 840	2L2x2x3/16x1/4	7.50	6.80	140.5	0.8613	2.35	37.47	0.063 ¹
T9	840 - 810	2L2x2x3/16x1/4	7.50	6.80	140.5	0.8613	1.61	37.47	0.043 ¹
T12	787.583 - 780	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	2.66	37.47	0.071 ¹
T13	780 - 750	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	2.53	37.47	0.068 ¹
T14	750 - 720	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.50	37.47	0.067 ¹
T15	720 - 690	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.77	37.47	0.074 ¹
T16	690 - 660	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.78	37.47	0.074 ¹
T17	660 - 630	2L2x2x3/16x1/4	7.50	6.78	140.1	0.8613	2.62	37.47	0.070 ¹
T19	615 - 600	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	3.29	37.47	0.088 ¹
T20	600 - 570	2L2x2x3/16x1/4	7.50	6.74	139.3	0.8613	3.77	37.47	0.101 ¹
T22	562.417 - 540	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	2.80	37.47	0.075 ¹
T23	540 - 510	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	3.23	37.47	0.086 ¹
T25	502.417 - 480	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	3.33	37.47	0.089 ¹
T26	480 - 450	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	3.26	37.47	0.087 ¹
T28	435 - 420	2L2x2x3/16x1/4	7.50	6.76	139.7	0.8613	2.86	37.47	0.076 ¹
T29	420 - 390	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	4.36	37.47	0.116 ¹
T30	390 - 360	2L2x2x3/16x1/4	7.50	6.70	138.5	0.8613	4.80	37.47	0.128 ¹
T31	360 - 330	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	3.94	37.47	0.105 ¹
T32	330 - 300	2L2x2x3/16x1/4	7.50	6.74	139.3	0.8613	4.05	37.47	0.108 ¹
T34	292.417 - 270	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	4.06	37.47	0.108 ¹
T35	270 - 240	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	3.88	37.47	0.103 ¹
T36	240 - 210	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	4.90	37.47	0.131 ¹
T38	202.417 - 180	2L2x2x3/16x1/4	7.50	6.70	138.5	0.8613	5.98	37.47	0.160 ¹
T39	180 - 150	2L2x2x3/16x1/4	7.50	6.70	138.5	0.8613	5.83	37.47	0.156 ¹
T40	150 - 120	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	5.29	37.47	0.141 ¹
T41	120 - 90	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	5.28	37.47	0.141 ¹
T42	90 - 60	2L2x2x3/16x1/4	7.50	6.72	138.9	0.8613	5.81	37.47	0.155 ¹
T43	60 - 30	2L2x2x3/16x1/4	7.50	6.70	138.5	0.8613	6.56	37.47	0.175 ¹

¹ P_u / φP_n controls

Redundant Horizontal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T45	22.5 - 15	L2 1/2x2x3/16	1.88	1.40	33.3	0.5013	6.70	21.81	0.307 ¹
T47	7.5 - 0	L2 1/2x2x3/16	1.88	1.40	33.3	0.5013	7.21	21.81	0.331 ¹

¹ P_u / φP_n controls

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Redundant Diagonal (1) Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T45	22.5 - 15	L2 1/2x2x3/16	4.19	3.46	74.6	0.5013	7.50	21.81	0.344 ¹
T47	7.5 - 0	L2 1/2x2x3/16	4.19	3.46	74.6	0.5013	8.06	21.81	0.370 ¹

¹ P_u / φP_n controls

Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	997.5 - 996.667	W8x35	7.50	7.25	42.9	10.3000	0.00	333.72	0.000 ¹
T12	787.583 - 780	2C9x13.4x1/4	7.50	7.19	86.9	5.5618	26.26	241.94	0.109 ¹
T20	600 - 570	2C9x13.4x1/4	7.50	7.17	86.6	5.5618	26.91	241.94	0.111 ¹
T30	390 - 360	2C9x13.4x1/4	7.50	7.13	86.1	5.5618	25.47	241.94	0.105 ¹
T38	202.417 - 180	2C9x13.4x1/4	7.50	7.13	86.1	5.5618	17.53	241.94	0.072 ¹

¹ P_u / φP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	φP _{allow} K	% Capacity	Pass Fail
T1	997.5 - 996.667	Leg	3	4	-14.81	329.68	30.2	Pass
T2	996.667 - 990	Leg	3	10	-53.45	157.64	33.9	Pass
T3	990 - 982.417	Leg	3 1/4	25	-77.92	163.04	47.8	Pass
T4	982.417 - 960	Leg	3 1/4	37	-113.54	163.02	69.6	Pass
T5	960 - 930	Leg	3 1/2	70	-143.90	213.35	67.4	Pass
T6	930 - 900	Leg	3 1/2	112	-153.31	213.35	71.9	Pass
T7	900 - 870	Leg	3 1/2	154	-153.04	213.35	71.7	Pass
T8	870 - 840	Leg	3 1/4	196	-135.53	163.02	83.1	Pass
T9	840 - 810	Leg	3 1/4	238	-92.80	163.02	56.9	Pass
T10	810 - 802.417	Leg	3 3/4	279	-102.56	270.02	38.0	Pass
T11	802.417 - 787.583	Leg	3 3/4	291	-150.50	269.99	55.7	Pass
T12	787.583 - 780	Leg	3 3/4	312	-153.75	270.02	56.9	Pass
T13	780 - 750	Leg	3 3/4	327	-146.02	270.01	54.1	Pass
T14	750 - 720	Leg	3 1/2	368	-143.95	213.35	67.5	Pass
T15	720 - 690	Leg	3 1/2	410	-160.07	213.35	75.0	Pass
T16	690 - 660	Leg	3 1/2	452	-160.78	213.35	75.4	Pass
T17	660 - 630	Leg	3 1/2	494	-151.36	213.35	70.9	Pass
T18	630 - 615	Leg	3 3/4	537	-166.75	270.01	61.8	Pass
T19	615 - 600	Leg	3 3/4	558	-189.63	442.60	42.8	Pass
T20	600 - 570	Leg	4	588	-217.64	513.72	42.4	Pass
T21	570 - 562.417	Leg	3 3/4	641	-174.11	442.60	39.3	Pass
T22	562.417 - 540	Leg	3 3/4	656	-161.62	270.00	59.9	Pass
T23	540 - 510	Leg	3 3/4	689	-186.51	270.01	69.1	Pass
T24	510 - 502.417	Leg	3 3/4	731	-189.66	270.02	70.2	Pass
T25	502.417 - 480	Leg	3 3/4	744	-192.38	442.59	43.5	Pass
T26	480 - 450	Leg	3 3/4	786	-188.46	442.60	42.6	Pass
T27	450 - 435	Leg	3 3/4	841	-166.68	442.60	37.7	Pass
T28	435 - 420	Leg	3 3/4	868	-164.95	270.01	61.1	Pass
T29	420 - 390	Leg	4 1/4	892	-251.38	401.30	62.6	Pass
T30	390 - 360	Leg	4 1/2	934	-277.38	475.53	58.3	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T31	360 - 330	Leg	4 1/4	976	-227.24	401.30	56.6	Pass
T32	330 - 300	Leg	4	1018	-233.77	513.72	45.5	Pass
T33	300 - 292.417	Leg	4 1/4	1070	-234.68	589.62	39.8	Pass
T34	292.417 - 270	Leg	4 1/4	1087	-234.43	401.29	58.4	Pass
T35	270 - 240	Leg	4 1/4	1120	-223.88	401.30	55.8	Pass
T36	240 - 210	Leg	4 1/4	1161	-282.75	401.30	70.5	Pass
T37	210 - 202.417	Leg	4 1/2	1203	-302.66	475.55	63.6	Pass
T38	202.417 - 180	Leg	4 1/2	1215	-345.08	670.24	51.5	Pass
T39	180 - 150	Leg	4 1/2	1257	-336.39	670.24	50.2	Pass
T40	150 - 120	Leg	4 1/4	1311	-305.39	589.61	51.8	Pass
T41	120 - 90	Leg	4 1/4	1365	-304.93	589.61	51.7	Pass
T42	90 - 60	Leg	4 1/4	1419	-335.06	589.61	56.8	Pass
T43	60 - 30	Leg	4 1/2	1473	-378.77	670.24	56.5	Pass
T44	30 - 22.5	Leg	5	1527	-376.00	847.40	44.4	Pass
T45	22.5 - 15	Leg	5	1542	-387.08	843.87	45.9	Pass
T46	15 - 7.5	Leg	5	1566	-401.59	843.87	47.6	Pass
T47	7.5 - 0	Leg	5	1581	-416.39	843.87	49.3	Pass
T2	996.667 - 990	Diagonal	2L2x2x3/16x3/8	20	-9.28	39.43	23.5	Pass
T3	990 - 982.417	Diagonal	3/4	31	13.40	20.87	64.2	Pass
T4	982.417 - 960	Diagonal	3/4	64	12.35	20.87	59.2	Pass
T5	960 - 930	Diagonal	5/8	106	9.28	14.50	64.0	Pass
T6	930 - 900	Diagonal	5/8	149	5.60	14.50	38.7	Pass
T7	900 - 870	Diagonal	5/8	164	7.47	14.50	51.5	Pass
T8	870 - 840	Diagonal	3/4	206	14.24	20.87	68.2	Pass
T9	840 - 810	Diagonal	7/8	248	19.79	28.41	69.6	Pass
T10	810 - 802.417	Diagonal	7/8	287	20.90	28.41	73.6	Pass
T11	802.417 - 787.583	Diagonal	1	299	21.43	37.11	57.7	Pass
T12	787.583 - 780	Diagonal	7/8	324	16.09	28.41	56.6	Pass
T13	780 - 750	Diagonal	7/8	366	15.48	28.41	54.5	Pass
T14	750 - 720	Diagonal	3/4	408	10.66	20.87	51.1	Pass
T15	720 - 690	Diagonal	5/8	449	5.25	14.50	36.2	Pass
T16	690 - 660	Diagonal	5/8	464	5.84	14.50	40.3	Pass
T17	660 - 630	Diagonal	5/8	506	13.00	14.50	89.7	Pass
T18	630 - 615	Diagonal	3/4	545	14.71	20.87	70.5	Pass
T19	615 - 600	Diagonal	3/4	569	17.66	20.87	84.6	Pass
T20	600 - 570	Diagonal	7/8	635	19.50	28.41	68.6	Pass
T21	570 - 562.417	Diagonal	7/8	652	17.02	28.41	59.9	Pass
T22	562.417 - 540	Diagonal	7/8	688	15.37	28.41	54.1	Pass
T23	540 - 510	Diagonal	3/4	730	12.41	20.87	59.5	Pass
T24	510 - 502.417	Diagonal	5/8	742	7.61	14.50	52.5	Pass
T25	502.417 - 480	Diagonal	5/8	781	6.04	14.50	41.7	Pass
T26	480 - 450	Diagonal	3/4	796	11.30	20.87	54.1	Pass
T27	450 - 435	Diagonal	7/8	847	13.34	28.41	46.9	Pass
T28	435 - 420	Diagonal	7/8	877	16.03	28.41	56.4	Pass
T29	420 - 390	Diagonal	1	901	20.61	37.11	55.5	Pass
T30	390 - 360	Diagonal	1	970	20.58	37.11	55.5	Pass
T31	360 - 330	Diagonal	3/4	1015	14.89	20.87	71.3	Pass
T32	330 - 300	Diagonal	5/8	1065	7.54	14.50	52.0	Pass
T33	300 - 292.417	Diagonal	5/8	1076	3.36	14.50	23.1	Pass
T34	292.417 - 270	Diagonal	5/8	1094	7.10	14.50	49.0	Pass
T35	270 - 240	Diagonal	5/8	1127	11.52	14.50	79.5	Pass
T36	240 - 210	Diagonal	3/4	1173	16.11	20.87	77.2	Pass
T37	210 - 202.417	Diagonal	7/8	1212	17.41	28.41	61.3	Pass
T38	202.417 - 180	Diagonal	7/8	1251	18.03	28.41	63.5	Pass
T39	180 - 150	Diagonal	3/4	1304	9.38	20.87	45.0	Pass
T40	150 - 120	Diagonal	5/8	1358	5.46	14.50	37.6	Pass
T41	120 - 90	Diagonal	5/8	1377	6.64	14.50	45.8	Pass
T42	90 - 60	Diagonal	5/8	1431	10.02	14.50	69.1	Pass
T43	60 - 30	Diagonal	3/4	1497	12.24	20.87	58.6	Pass
T44	30 - 22.5	Diagonal	2L2x2x3/16x3/8	1537	-14.39	38.22	37.7	Pass
T45	22.5 - 15	Diagonal	2L2 1/2x2x1/4x3/8	1562	-12.74	30.34	42.0	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T46	15 - 7.5	Diagonal	2L2x2x3/16x3/8	1576	-14.67	37.88	38.7	Pass
T47	7.5 - 0	Diagonal	2L2 1/2x2x1/4x3/8	1601	-13.16	30.34	43.4	Pass
T4	982.417 - 960	Horizontal	2L2x2x3/16x1/4	60	-8.34	26.42	31.5	Pass
T5	960 - 930	Horizontal	2L2x2x3/16x1/4	102	-6.25	26.53	23.6	Pass
T6	930 - 900	Horizontal	2L2x2x3/16x1/4	144	-3.59	26.53	13.5	Pass
T7	900 - 870	Horizontal	2L2x2x3/16x1/4	168	-4.71	26.53	17.8	Pass
T8	870 - 840	Horizontal	2L2x2x3/16x1/4	210	-9.38	26.42	35.5	Pass
T9	840 - 810	Horizontal	2L2x2x3/16x1/4	252	-13.50	26.42	51.1	Pass
T11	802.417 - 787.583	Horizontal	2L2x2x3/16x1/4	303	-15.10	26.63	56.7	Pass
T13	780 - 750	Horizontal	2L2x2x3/16x1/4	361	-10.35	26.63	38.9	Pass
T14	750 - 720	Horizontal	2L2x2x3/16x1/4	403	-7.10	26.53	26.8	Pass
T15	720 - 690	Horizontal	2L2x2x3/16x1/4	444	-3.46	26.53	13.0	Pass
T16	690 - 660	Horizontal	2L2x2x3/16x1/4	468	-3.65	26.53	13.8	Pass
T17	660 - 630	Horizontal	2L2x2x3/16x1/4	510	-8.73	26.53	32.9	Pass
T18	630 - 615	Horizontal	2L2x2x3/16x1/4	549	-10.38	26.63	39.0	Pass
T19	615 - 600	Horizontal	2L2x2x3/16x1/4	573	-11.40	26.63	42.8	Pass
T20	600 - 570	Horizontal	2L2x2x3/16x1/4	627	-12.61	26.74	47.2	Pass
T22	562.417 - 540	Horizontal	2L2x2x3/16x1/4	682	-10.57	26.63	39.7	Pass
T23	540 - 510	Horizontal	2L2x2x3/16x1/4	724	-8.25	26.63	31.0	Pass
T25	502.417 - 480	Horizontal	2L2x2x3/16x1/4	772	-3.59	26.63	13.5	Pass
T26	480 - 450	Horizontal	2L2x2x3/16x1/4	801	-7.24	26.63	27.2	Pass
T27	450 - 435	Horizontal	2L2x2x3/16x1/4	852	-8.74	26.63	32.8	Pass
T28	435 - 420	Horizontal	2L2x2x3/16x1/4	882	-10.90	26.63	40.9	Pass
T29	420 - 390	Horizontal	2L2x2x3/16x1/4	906	-13.93	26.84	51.9	Pass
T30	390 - 360	Horizontal	2L2x2x3/16x1/4	958	-13.32	26.95	49.4	Pass
T31	360 - 330	Horizontal	2L2x2x3/16x1/4	1009	-10.10	26.84	37.6	Pass
T32	330 - 300	Horizontal	2L2x2x3/16x1/4	1057	-4.43	26.74	16.6	Pass
T34	292.417 - 270	Horizontal	2L2x2x3/16x1/4	1100	-4.67	26.84	17.4	Pass
T35	270 - 240	Horizontal	2L2x2x3/16x1/4	1133	-7.84	26.84	29.2	Pass
T36	240 - 210	Horizontal	2L2x2x3/16x1/4	1177	-10.88	26.84	40.5	Pass
T38	202.417 - 180	Horizontal	2L2x2x3/16x1/4	1243	-11.51	26.95	42.7	Pass
T39	180 - 150	Horizontal	2L2x2x3/16x1/4	1295	-5.83	26.95	21.6	Pass
T40	150 - 120	Horizontal	2L2x2x3/16x1/4	1325	-5.29	26.84	19.7	Pass
T41	120 - 90	Horizontal	2L2x2x3/16x1/4	1379	-5.28	26.84	19.7	Pass
T42	90 - 60	Horizontal	2L2x2x3/16x1/4	1435	-6.18	26.84	23.0	Pass
T43	60 - 30	Horizontal	2L2x2x3/16x1/4	1489	-7.63	26.95	28.3	Pass
T45	22.5 - 15	Horizontal	2L2 1/2x2x3/16x3/8	1544	-6.70	27.91	24.0	Pass
T47	7.5 - 0	Horizontal	2L2 1/2x2x3/16x3/8	1583	-7.21	27.91	25.8	Pass
T19	615 - 600	Secondary Horizontal	L2x2x1/4	575	-3.29	15.18	21.7	Pass
T20	600 - 570	Secondary Horizontal	L2x2x1/4	605	-3.77	15.27	24.7	Pass
T21	570 - 562.417	Secondary Horizontal	L2x2x1/4	653	-3.02	15.18	19.9	Pass
T25	502.417 - 480	Secondary Horizontal	L2x2x1/4	761	-3.33	15.18	22.0	Pass
T26	480 - 450	Secondary Horizontal	L2x2x1/4	803	-3.26	15.18	21.5	Pass
T27	450 - 435	Secondary Horizontal	L2x2x1/4	855	-2.89	15.18	19.0	Pass
T32	330 - 300	Secondary Horizontal	L2x2x1/4	1035	-4.05	15.27	26.5	Pass
T33	300 - 292.417	Secondary Horizontal	L2x2x1/4	1084	-4.06	15.36	26.5	Pass
T38	202.417 - 180	Secondary Horizontal	L2x2x1/4	1232	-5.98	15.45	38.7	Pass
T39	180 - 150	Secondary Horizontal	L2x2x1/4	1274	-5.83	15.45	37.7	Pass
T40	150 - 120	Secondary Horizontal	L2x2x1/4	1328	-5.29	15.36	34.4	Pass
T41	120 - 90	Secondary Horizontal	L2x2x1/4	1382	-5.28	15.36	34.4	Pass
T42	90 - 60	Secondary Horizontal	L2x2x1/4	1436	-5.81	15.36	37.8	Pass
T43	60 - 30	Secondary Horizontal	L2x2x1/4	1514	-6.56	15.45	42.5	Pass
T44	30 - 22.5	Secondary Horizontal	L2-1/2x2-1/2x3/16	1538	-6.56	23.10	28.4	Pass
T46	15 - 7.5	Secondary Horizontal	L2-1/2x2-1/2x3/16	1577	-6.96	23.10	30.1	Pass
T2	996.667 - 990	Top Girt	2L2x2x3/16x3/8	12	3.22	39.35	8.2	Pass
T3	990 - 982.417	Top Girt	2L2x2x3/16x1/4	27	-2.89	26.42	10.9	Pass
T4	982.417 - 960	Top Girt	2C8x11.5x1/4	39	-9.23	145.98	6.3	Pass
T5	960 - 930	Top Girt	2L2x2x3/16x1/4	72	-3.40	26.53	12.8	Pass
T6	930 - 900	Top Girt	2L2x2x3/16x1/4	114	-2.66	26.53	10.0	Pass
T7	900 - 870	Top Girt	2L2x2x3/16x1/4	156	-2.65	26.53	10.0	Pass
T8	870 - 840	Top Girt	2L2x2x3/16x1/4	198	-3.13	26.42	11.8	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T9	840 - 810	Top Girt	2L2x2x3/16x1/4	240	-5.68	26.42	21.5	Pass
T10	810 - 802.417	Top Girt	2L2x2x3/16x1/4	282	-7.42	26.63	27.8	Pass
T11	802.417 - 787.583	Top Girt	2L2x2x3/16x1/4	294	-14.98	26.63	56.2	Pass
T13	780 - 750	Top Girt	2L2x2x3/16x1/4	331	-5.69	26.63	21.4	Pass
T14	750 - 720	Top Girt	2L2x2x3/16x1/4	373	-3.93	26.53	14.8	Pass
T15	720 - 690	Top Girt	2L2x2x3/16x1/4	415	-2.77	26.53	10.5	Pass
T16	690 - 660	Top Girt	2L2x2x3/16x1/4	457	-2.78	26.53	10.5	Pass
T17	660 - 630	Top Girt	2L2x2x3/16x1/4	498	-2.68	26.53	10.1	Pass
T18	630 - 615	Top Girt	2L2x2x3/16x1/4	540	-5.03	26.63	18.9	Pass
T19	615 - 600	Top Girt	2L2x2x3/16x1/4	561	-10.72	26.63	40.3	Pass
T20	600 - 570	Top Girt	2L2x2x3/16x1/4	591	-6.35	26.74	23.7	Pass
T21	570 - 562.417	Top Girt	2L2x2x3/16x1/4	646	-6.05	26.63	22.7	Pass
T22	562.417 - 540	Top Girt	2L2x2x3/16x1/4	661	-11.32	26.63	42.5	Pass
T23	540 - 510	Top Girt	2L2x2x3/16x1/4	694	-4.51	26.63	16.9	Pass
T24	510 - 502.417	Top Girt	2L2x2x3/16x1/4	736	-3.29	26.63	12.3	Pass
T25	502.417 - 480	Top Girt	2L2x2x3/16x1/4	748	-4.74	26.63	17.8	Pass
T26	480 - 450	Top Girt	2L2x2x3/16x1/4	788	-3.26	26.63	12.3	Pass
T27	450 - 435	Top Girt	2L2x2x3/16x1/4	843	-4.27	26.63	16.0	Pass
T28	435 - 420	Top Girt	2L2x2x3/16x1/4	870	-9.75	26.63	36.6	Pass
T29	420 - 390	Top Girt	2L2x2x3/16x1/4	894	-6.18	26.84	23.0	Pass
T30	390 - 360	Top Girt	2L2x2x3/16x1/4	936	-7.13	26.95	26.5	Pass
T31	360 - 330	Top Girt	2L2x2x3/16x1/4	979	-5.51	26.84	20.5	Pass
T32	330 - 300	Top Girt	2L2x2x3/16x1/4	1020	-4.05	26.74	15.2	Pass
T33	300 - 292.417	Top Girt	2L2x2x3/16x1/4	1075	-4.06	26.84	15.1	Pass
T34	292.417 - 270	Top Girt	2L2x2x3/16x1/4	1089	-4.06	26.84	15.1	Pass
T35	270 - 240	Top Girt	2L2x2x3/16x1/4	1122	-3.88	26.84	14.4	Pass
T36	240 - 210	Top Girt	2L2x2x3/16x1/4	1163	-4.90	26.84	18.3	Pass
T37	210 - 202.417	Top Girt	2L2x2x3/16x1/4	1207	-6.28	26.95	23.3	Pass
T38	202.417 - 180	Top Girt	2L2x2x3/16x1/4	1219	-12.05	26.95	44.7	Pass
T39	180 - 150	Top Girt	2L2x2x3/16x1/4	1259	-5.83	26.95	21.6	Pass
T40	150 - 120	Top Girt	2L2x2x3/16x1/4	1313	-5.29	26.84	19.7	Pass
T41	120 - 90	Top Girt	2L2x2x3/16x1/4	1367	-5.28	26.84	19.7	Pass
T42	90 - 60	Top Girt	2L2x2x3/16x1/4	1421	-5.81	26.84	21.6	Pass
T43	60 - 30	Top Girt	2L2x2x3/16x1/4	1475	-6.56	26.95	24.4	Pass
T44	30 - 22.5	Top Girt	2L2x2x3/16x3/8	1529	-6.56	27.15	24.2	Pass
T46	15 - 7.5	Top Girt	2C8x11.5x3/8	1568	-6.96	154.66	4.5	Pass
T2	996.667 - 990	Bottom Girt	2L2x2x3/16x3/8	15	2.74	39.35	7.0	Pass
T4	982.417 - 960	Bottom Girt	2L2x2x3/16x1/4	42	-3.81	26.42	14.4	Pass
T5	960 - 930	Bottom Girt	2L2x2x3/16x1/4	75	-2.49	26.53	9.4	Pass
T6	930 - 900	Bottom Girt	2L2x2x3/16x1/4	117	-2.66	26.53	10.0	Pass
T7	900 - 870	Bottom Girt	2L2x2x3/16x1/4	159	-2.88	26.53	10.8	Pass
T8	870 - 840	Bottom Girt	2L2x2x3/16x1/4	201	-5.24	26.42	19.8	Pass
T9	840 - 810	Bottom Girt	2L2x2x3/16x1/4	243	-7.10	26.42	26.9	Pass
T12	787.583 - 780	Bottom Girt	2L2x2x3/16x1/4	319	-5.50	26.63	20.7	Pass
T13	780 - 750	Bottom Girt	2L2x2x3/16x1/4	334	-4.12	26.63	15.5	Pass
T14	750 - 720	Bottom Girt	2L2x2x3/16x1/4	376	-2.50	26.53	9.4	Pass
T15	720 - 690	Bottom Girt	2L2x2x3/16x1/4	418	-2.77	26.53	10.5	Pass
T16	690 - 660	Bottom Girt	2L2x2x3/16x1/4	460	-2.78	26.53	10.5	Pass
T17	660 - 630	Bottom Girt	2L2x2x3/16x1/4	501	-4.77	26.53	18.0	Pass
T19	615 - 600	Bottom Girt	2L2x2x3/16x1/4	564	-6.31	26.63	23.7	Pass
T20	600 - 570	Bottom Girt	2L2x2x3/16x1/4	595	-6.05	26.74	22.6	Pass
T22	562.417 - 540	Bottom Girt	2L2x2x3/16x1/4	664	-4.75	26.63	17.8	Pass
T23	540 - 510	Bottom Girt	2L2x2x3/16x1/4	697	-3.23	26.63	12.1	Pass
T25	502.417 - 480	Bottom Girt	2L2x2x3/16x1/4	749	-3.33	26.63	12.5	Pass
T26	480 - 450	Bottom Girt	2L2x2x3/16x1/4	792	-4.03	26.63	15.1	Pass
T28	435 - 420	Bottom Girt	2L2x2x3/16x1/4	873	-5.81	26.63	21.8	Pass
T29	420 - 390	Bottom Girt	2L2x2x3/16x1/4	897	-7.49	26.84	27.9	Pass
T30	390 - 360	Bottom Girt	2L2x2x3/16x1/4	940	-5.64	26.95	20.9	Pass
T31	360 - 330	Bottom Girt	2L2x2x3/16x1/4	981	-3.94	26.84	14.7	Pass
T32	330 - 300	Bottom Girt	2L2x2x3/16x1/4	1023	-4.05	26.74	15.2	Pass
T34	292.417 - 270	Bottom Girt	2L2x2x3/16x1/4	1092	-4.06	26.84	15.1	Pass

tnxTower Tower Engineering Professionals 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	WMAW Rose Hill (ASR# 1041037)	Page	78 of 78
	Project	TEP# 327679.814195	Date	17:50:03 03/29/23
	Client	MPB	Designed by	elatta

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T35	270 - 240	Bottom Girt	2L2x2x3/16x1/4	1126	-4.23	26.84	15.7	Pass
T36	240 - 210	Bottom Girt	2L2x2x3/16x1/4	1168	-5.80	26.84	21.6	Pass
T38	202.417 - 180	Bottom Girt	2L2x2x3/16x1/4	1220	-5.98	26.95	22.2	Pass
T39	180 - 150	Bottom Girt	2L2x2x3/16x1/4	1262	-5.83	26.95	21.6	Pass
T40	150 - 120	Bottom Girt	2L2x2x3/16x1/4	1316	-5.29	26.84	19.7	Pass
T41	120 - 90	Bottom Girt	2L2x2x3/16x1/4	1370	-5.28	26.84	19.7	Pass
T42	90 - 60	Bottom Girt	2L2x2x3/16x1/4	1424	-5.81	26.84	21.6	Pass
T43	60 - 30	Bottom Girt	2L2x2x3/16x1/4	1478	-6.56	26.95	24.4	Pass
T45	22.5 - 15	Redund Horz 1 Bracing	L2 1/2x2x3/16	1549	6.70	22.90	29.3	Pass
T47	7.5 - 0	Redund Horz 1 Bracing	L2 1/2x2x3/16	1588	7.21	22.90	31.5	Pass
T45	22.5 - 15	Redund Diag 1 Bracing	L2 1/2x2x3/16	1550	-7.50	19.25	38.9	Pass
T47	7.5 - 0	Redund Diag 1 Bracing	L2 1/2x2x3/16	1593	-8.06	19.25	41.9	Pass
T1	997.5 - 996.667	Guy A@997.5	1 1/8	1606	62.55	98.28	63.6	Pass
T12	787.583 - 780	Guy A@787.583	1 1/4	1609	82.70	120.96	68.4	Pass
T20	600 - 570	Guy A@585	1 3/16	1612	69.42	108.36	64.1	Pass
T30	390 - 360	Guy A@382.417	1 5/16	1615	85.13	133.56	63.7	Pass
T38	202.417 - 180	Guy A@187.583	1 1/16	1618	41.26	86.94	47.5	Pass
T1	997.5 - 996.667	Guy B@997.5	1 1/8	1605	62.20	98.28	63.3	Pass
T12	787.583 - 780	Guy B@787.583	1 1/4	1608	82.37	120.96	68.1	Pass
T20	600 - 570	Guy B@585	1 3/16	1611	69.45	108.36	64.1	Pass
T30	390 - 360	Guy B@382.417	1 5/16	1614	85.00	133.56	63.6	Pass
T38	202.417 - 180	Guy B@187.583	1 1/16	1617	41.19	86.94	47.4	Pass
T1	997.5 - 996.667	Guy C@997.5	1 1/8	1604	62.33	98.28	63.4	Pass
T12	787.583 - 780	Guy C@787.583	1 1/4	1607	82.71	120.96	68.4	Pass
T20	600 - 570	Guy C@585	1 3/16	1610	69.75	108.36	64.4	Pass
T30	390 - 360	Guy C@382.417	1 5/16	1613	85.37	133.56	63.9	Pass
T38	202.417 - 180	Guy C@187.583	1 1/16	1616	41.23	86.94	47.4	Pass
T1	997.5 - 996.667	Top Guy Pull-Off@997.5	W8x35	5	-0.00	318.11	3.7	Pass
T12	787.583 - 780	Top Guy Pull-Off@787.583	2C9x13.4x1/4	316	26.26	254.03	10.3	Pass
T20	600 - 570	Top Guy Pull-Off@585	2C9x13.4x1/4	615	26.91	254.03	10.6	Pass
T30	390 - 360	Top Guy Pull-Off@382.417	2C9x13.4x1/4	967	25.47	254.03	10.0	Pass
T38	202.417 - 180	Top Guy Pull-Off@187.583	2C9x13.4x1/4	1231	17.53	254.03	6.9	Pass
Summary								
Leg (T8)							83.1	Pass
Diagonal (T17)							89.7	Pass
Horizontal (T11)							56.7	Pass
Secondary Horizontal (T43)							42.5	Pass
Top Girt (T11)							56.2	Pass
Bottom Girt (T29)							27.9	Pass
Redund Horz 1 Bracing (T47)							31.5	Pass
Redund Diag 1 Bracing (T47)							41.9	Pass
Guy A (T12)							68.4	Pass
Guy B (T12)							68.1	Pass
Guy C (T12)							68.4	Pass
Top Guy Pull-Off (T20)							10.6	Pass
Bolt Checks							80.5	Pass
RATING =							89.7	Pass

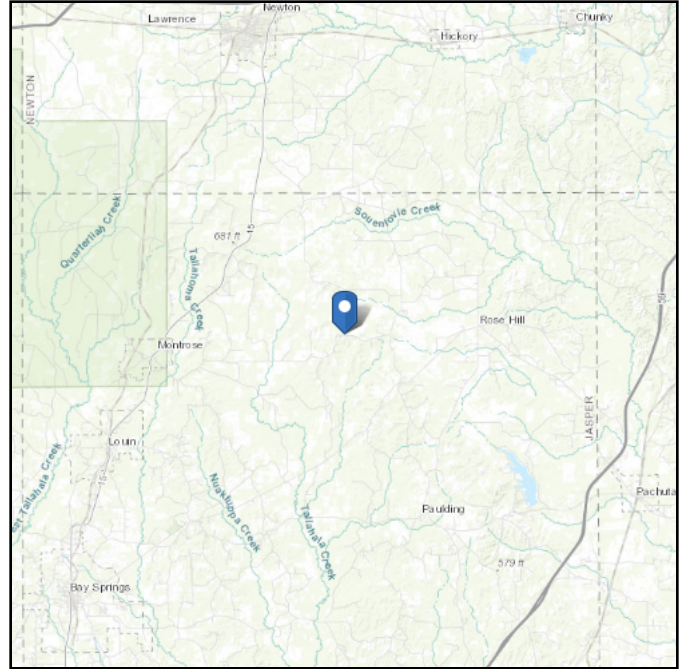
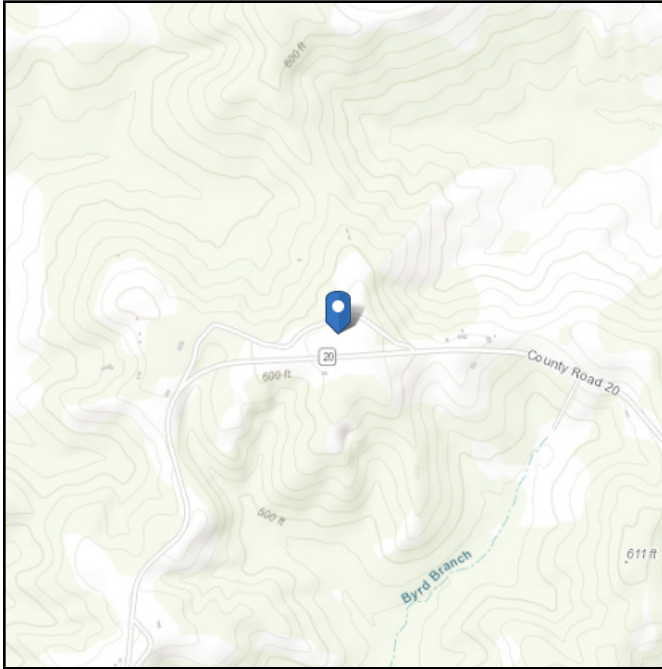
APPENDIX B
ADDITIONAL CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see
Section 11.4.3)

Latitude: 32.138647
Longitude: -89.09365
Elevation: 625' (Google Earth)



Wind

Results:

Wind Speed	116 Vmph
10-year MRI	74 Vmph
25-year MRI	83 Vmph
50-year MRI	90 Vmph
100-year MRI	96 Vmph

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

Date Accessed: Tue Mar 14 2023

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

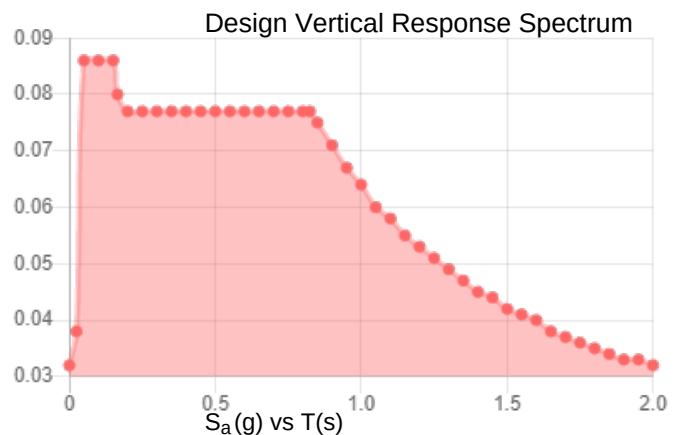
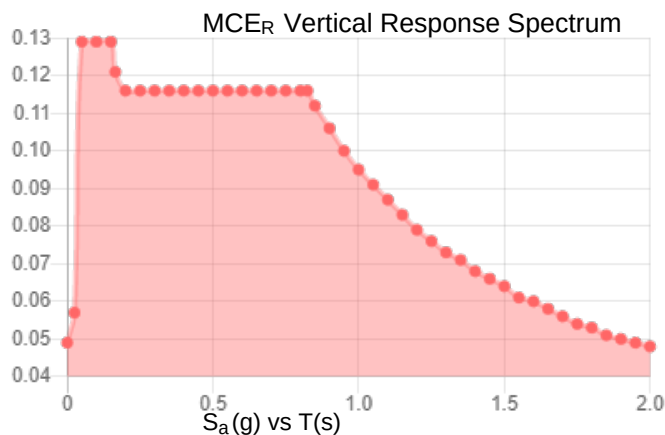
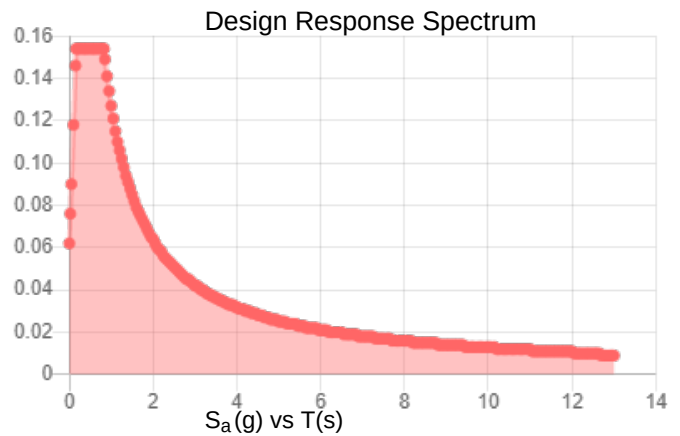
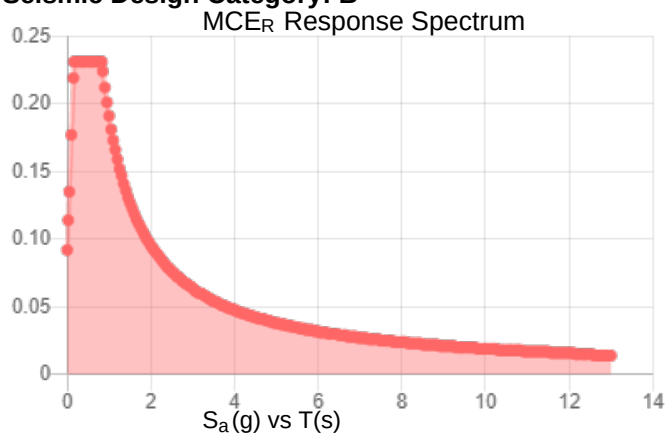
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class:

Results:

S_S :	0.145	S_{D1} :	0.127
S_1 :	0.079	T_L :	12
F_a :	1.6	PGA :	0.07
F_v :	2.4	PGA _M :	0.113
S_{MS} :	0.231	F_{PGA} :	1.6
S_{M1} :	0.191	I_e :	1
S_{DS} :	0.154	C_v :	0.7

Seismic Design Category: B



Data Accessed:

Tue Mar 14 2023

Date Source:

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

Results:

Ice Thickness: 1.00 in.
Concurrent Temperature: 15 F
Gust Speed 30 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Tue Mar 14 2023

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

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

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ASR # 1041037_WMAW Rose Hill

TEP #: 327679.814195

Analysis: ECL 3/27/2023

Check: LFC 3/27/2023

Anchor Shaft Analysis

Code Revisions: ANSI/TIA-222-H

Number of Anchor Rings: 3

Radius (ft)	Reaction (k)	Shaft Area (in ²)	F _y (ksi)	φTn (k)	Capacity (%)	Pass/Fail
285.0	122	4.91	50.00	196.35	59.2%	Pass
684.0	68	3.14	50.00	125.66	51.5%	Pass
717.0	138	4.91	50.00	196.35	66.9%	Pass