EMPIRE telecom
A QualTek Company

February 10, 2017

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

RE: EM-AT&T- 142-170202
AT&T Wireless NOTICE OF EXEMPT MODIFICATION
130 Bald Hill Road, Tolland, CT 06084

Dear Ms. Bachman:

Enclosed please find three (3) sets of the first four (4) pages of the Revised Structural Analysis for the above referenced site. This revised analysis addresses the foundation issues that your office found lacking in the initial Analysis submitted with my application. The enclosed report has been updated to include a comparison of the foundation reactions from the proposed loading condition to the design reactions from the previous condition calculated in the 2007 Malouf Engineering Structural Analysis.

For your ease of reference, I have also included a copy of your letter dated February 6, 2017, enumerating the deficiency in the initial analysis.

I will submit electronic copies of the Revised Structural Analysis to you via e mail this day.

Please feel free to contact me with any questions or comments. Thank you for your kind cooperation in this matter.

Respectfully submitted,

Jack Andrews
Zoning Manager, Empire Telecom
o/b/o AT&T Wireless
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144
jandrews@empiretelecomm.com

Enclosures

MASER CONSULTING
— CONNECTICUT —

331 Newman Springs Road, Suite 203
Red Bank, NJ 07701
T: 732.383.1950
www.maserconsulting.com

EMPiRE telecom

16 Esquire Road
Billerica, MA 01862

LTE 2C

Lattice Tower Analysis

Site Name:	*Tolland Central*
FA #:	*10071279*
Site Number:	*CTL05331*
Site Address:	*130 Bald Hill Road* *Tolland, CT 06084* *Tolland County*
Maser Project Number:	*16963007A*

February 9, 2017

Analysis Type	*Tower Feasibility*
Pass/Fail	*Pass*
Mount Utilization	*90.9 %*

Frank E. Paden, P.E.
Connecticut Professional Engineer
PE License # 28188

Objective:

The objective of this report is to determine the capacity of the existing 180' lattice tower structure at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards.

Introduction:

Maser Consulting P.A. has performed limited field observations on July 26, 2016 to verify the existing condition of the structure and to locate and quantify the existing wireless appurtenances where possible. Maser Consulting P.A. has reviewed the following documents in completing this report:

- RFDS 1118671 provided by Empire Telecom, dated June 28, 2016 for LTE 2C scope of work.
- Rev Construction Drawings prepared by Maser Consulting Connecticut for LTE 2C Scope of Work
- Limited Visual Site Visit photos and notes prepared by Maser Consulting Connecticut on July 26, 2016.
- Tower Mapping Report prepared by Tower Engineering Professionals TEP#72497.94715 dated, August 30, 2016.
- Previous structural analysis report prepared by Malouf Engineering INTL., INC. dated November 29, 2007.
- Previous structural analysis report prepared by Maser Consulting P.A dated September 02, 2016

The existing **AT&T** equipment is supported on an existing 180' lattice tower structure. The main legs are constructed of pipes and the diagonals, horizontals are constructed of angle members. This report is based only upon this information, as well as the information obtained in the field.

Discrete and Linear Appurtenances:

Maser Consulting Connecticut understands the existing & proposed **AT&T** loading to be as follows:

- *(3) Kathrein 80010121 Antennas (Existing per Mount Mapping)*
- *(3) KMW AM-X-CD-16-65-OOD-RET Antennas (Existing per Mount Mapping)*
- *(3) Ericsson RRUS-11 B12 (Existing per Mount Mapping)*
- **(3) Ericsson RRUS-12 (***Proposed per RFDS***)**
- *(1) Raycap DC6 (Existing mounted to the tower leg)*
- *(6) Powerwave LGP21401 TMAs (Existing)*
- *(1) KRECU CO-41AN antenna (Existing per Mapping)*

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

Codes, Standards and Loading:

Maser Consulting Connecticut utilized the following codes and standards:

- 2016 CT State Building Code And All Subsequent Amendments
- Structural Standards for Antenna Supporting Structures and Antennas ANSI/TIA-222-G
    - Basic Wind Speed – 100 mph,
    - Exposure Category – B
    - Structure Class – II
    - Topographic Category – 1

Analysis Approach & Assumptions:

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

The following assumptions were utilized in this report:

- Structural Steel Pipes are constructed of A53 Grade B Steel.
- The existing tower is constructed to plumb and is properly maintained with no structural deficiencies and deteriorations.
- It is assumed that the telecommunication equipment supports, antenna supports, and existing structure have been designed by a registered licensed professional engineer for the existing loads acting on the structure, as required by all applicable codes, prior to the proposed modifications listed within this report.
- It is assumed that information provided by the client regarding the structure itself, the antenna models, feed lines, and other relevant information is current and correct.
- It is assumed all other existing appurtenances, antennas, cables, etc. belonging to others have been installed and supported per code and per specifications so as not to damage any existing structural support members, and that any contributing loads from adjacent equipment has been taken into consideration for their design.
- Proposed equipment and locations should not deviate from the proposed locations noted herein and shown on the associated Maser Consulting Connecticut final Construction Drawings.

Calculations:

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

The maximum factored foundation loads have been calculated for the proposed loading configuration described above. These reactions have been compared to the previous foundation reactions calculated in the above reference passing structural report completed by Malouf Engineering, Inc. Since the original reactions are based upon and Allowable Stress Design procedure, the reactions have been multiplied by a 1.35 factor for comparison to the reactions determined in accordance with ANSI/TIA-222-G Section 15.5.1, as follows:

Maximum Base Reactions	Previous Malouf Calculated Reactions EIA/TIA-222-F	Factored Malouf Reactions EIA/TIA-222-F (x1.35)	Current Analysis ANSI/TIA-222-G	Percentage Comparison
Moment	3,140 (k-ft)	4,239 (k-ft)	3,274 (k-ft)	**77.2%**
Shear	34 (kips)	45.9 (kips)	36 (kips)	**78.4%**
Compression	160 (kips per leg)	216 (kips per leg)	165 (kips per leg)	**76.3%**
Uplift	123 (kips per leg)	166 (kips)	133 (kips per leg)	**80.1%**

Conclusion:

The existing tower structure was analyzed for the loading in the applicable codes and standards. The tower structure has been determined to be structurally **ADEQUATE** to support the proposed and existing antennas, based upon the aforementioned assumptions.

The tower structure has been determined to be stressed to a maximum of **90.9%** of its structural capacity with the maximum usage occurring at the diagonal members within section height 120'-126.66'. The bolt connections are stressed to a maximum of **74.5%** of their capacity. Therefore, the proposed **AT&T** installation **CAN** be placed as intended pending a passing analysis of the existing foundation. Our structural analysis indicates that under the proposed conditions noted above, the existing 180' self-support tower foundation in its current condition will have a reduced load impact on the existing foundations as compared to the previous design values established by the Malouf Engineering report. Therefore, the conclusions of the Malouf Engineering report still govern and the existing foundations are adequate for the proposed loading condition.

Prior to the installation of the proposed equipment, the contractor shall verify that all bolted connections are properly fastened from the original installation. Additionally, the contractor shall inspect all existing hardware and verify that it is in its original condition and free of rust and deterioration. If any deficiencies are noted the contractor shall notify the engineer of the conditions prior to installation of any equipment for additional evaluation.

The conclusions reached by Maser Consulting Connecticut in this evaluation are only applicable for the existing structural members supporting the proposed **AT&T** telecommunications installation described herein. Further, no structural qualifications are made or implied by this document for the existing structure.

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

Sincerely,
Maser Consulting Connecticut

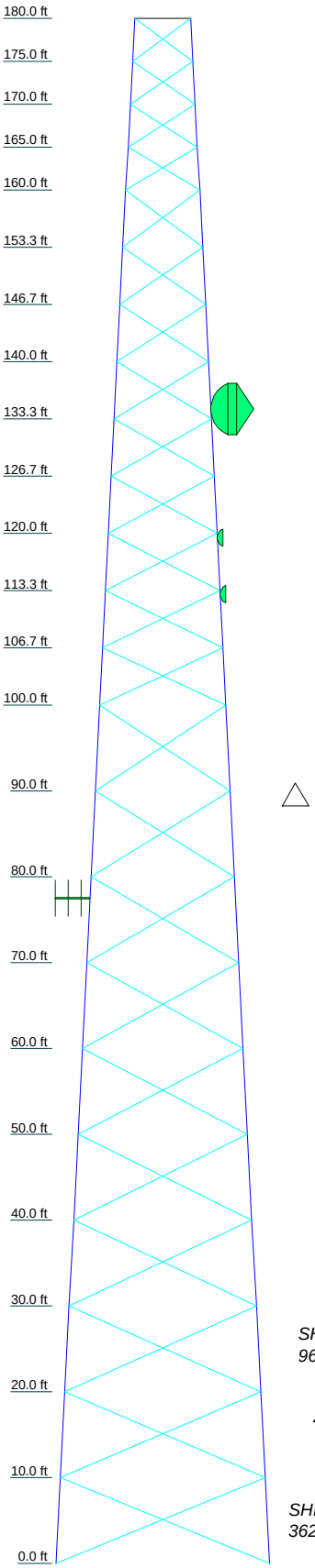
Frank Pazden, P.E.
Telecommunications Department Manager

Gowtham Penumatsa E.I.T
Structural Design Engineer

\\maserconsulting.com\UNM\AllOffices\MtLaurel\Projects\2016\16963000A\16963007A\Structural\Tower Structure Analysis\Rev 1\Word\

APPENDIX A

Section	T23	T22	T21	T20	T19	T18	T17	T16	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	ROHN 6 EH		P5x.375		P5.5x.375		ROHN 5 STD		ROHN 4 X-STR		ROHN 3 X-STR				ROHN 3 STD				ROHN 2.5 X-STR				
Leg Grade	A572-50																						
Diagonals	L4x4x5/16		L4x4x1/4		L3 1/2x3 1/2x1/4		L3x3x1/4		L3x3x3/16		L2 1/2x2 1/2x3/16				L2x2x3/16			L1 3/4x1 3/4x1/8			L1 1/2x1 1/2x1/8		
Diagonal Grade	A36																						
Top Girts	A																						
Face Width (ft)	23.7787	22.7659	21.753	20.7401	19.7273	18.7144	17.7015	16.6887	15.6758	14.6629	13.9877	13.3124	12.6372	11.962	11.2867	10.6115	9.93622	9.26098	8.58573	8.0793	7.57287	7.06643	6.56
# Panels @ (ft)	10 @ 10										9 @ 6.66667									4 @ 5			
Weight (lb)	2253.8	2205.8	1671.2	1632.9	1466.0	1433.3	1103.0	1075.8	917.8	897.8	521.4	509.7	498.0	374.0	364.9	356.0	272.1	267.0	262.1	195.9	192.5	189.3	220.2



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
PD1142-1	182	2' Dia parabolic dish antenna	112.917
PD458-1	181	12' Omni	104.5
3' Side Arm Mount	180	4' Side Arm Mount	104.5
DB224	180	4' Side Arm Mount	99
PD455-5	180	16' omni	99
3' Side Arm Mount	180	LGP 21401 TMA	90.7
DB224	179.917 - 179.917	RET	90.7
3' Side Arm Mount	179.917	RET	90.7
3' Side Arm Mount	179	RET	90.7
DB201-A	177.167	Raycap DC6	90.7
PD220	163.25	Pirod 10' PCS Frame (1)	90.7
3' Side Arm Mount	163.25	Pirod 10' PCS Frame (1)	90.7
16' Omni	158.5	Pirod 10' PCS Frame (1)	90.7
3' Side Arm Mount	158.5	80010121	90.7
20' Omni	154.167	80010121	90.7
3' Side Arm Mount	154.167	80010121	90.7
DB420	144.917	LGP 21401 TMA	90.7
3' Side Arm Mount	144.917	LGP 21401 TMA	90.7
PD1142-1	138.75	kreuc	90.7
3' Side Arm Mount	138.75	RRUS 12	90
AO8410M-54T0	136.167	RRUS 11 B12	90
4' Side Arm Mount	136.167	RRUS 11 B12	90
Andrew 6' w/Radome	134.5	RRUS 11 B12	90
PD220	126.667	RRUS 12	90
4' Side Arm Mount	126.667	RRUS 12	90
PD1142-1	125.25	DB22	85.8167
4' Side Arm Mount	125.25	Yagi s4307-sf3s1f	77.5
4' Side Arm Mount	123.167	(2) Whip Antenna 4'X1.5" Dia	76.667
DB806-XC	123.167	Pirod 6' Side Mount Standoff (1)	73.75
2' Dia parabolic dish antenna	119.5		

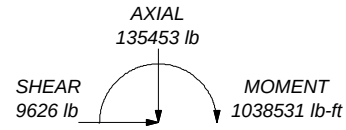
SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L2x2x1/8		

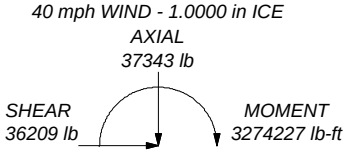
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 164949 lb
SHEAR: 21922 lb

UPLIFT: -133080 lb
SHEAR: 18471 lb



TORQUE 4007 lb-ft
40 mph WIND - 1.0000 in ICE



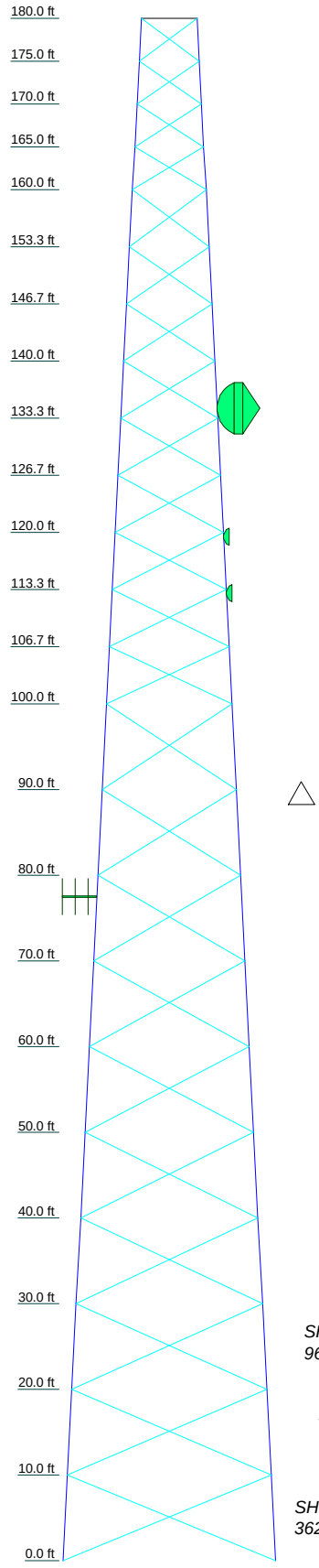
TORQUE 10994 lb-ft
REACTIONS - 100 mph WIND

Maser Consulting P.A
400 Valley Road
Mt Arlington, NJ
Phone: 973.398.3110
FAX: 973.398.3199

Job: **16963007**		
Project: **Tower Analysis**		
Client: SmartLink	Drawn by: gpenumatsa	App'd:
Code: TIA-222-G	Date: 12/29/16	Scale: NTS
Path: C:\Users\gpenumatsa\Desktop\Othe survor jobs\Tolland Central\Final Shawn report\TNX 222G\Lattice Tower Analysis - Copy.eri		Dwg No. E-1

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17	T18	T19	T20	T21	T22	T23
Legs	ROHN 2.5 X-STR							ROHN 3 STD			ROHN 3 X-STR			ROHN 4 X-STR		ROHN 5 STD		P5.5x.375		P5x.375		ROHN 6 EH
Leg Grade	A572-50																						
Diagonals	L1 1/2x1 1/2x1/8				L1 3/4x1 3/4x1/8			L2x2x3/16			L2 1/2x2 1/2x3/16			L3x3x3/16		L3x3x1/4		L3 1/2x3 1/2x1/4		L4x4x1/4		L4x4x5/16
Diagonal Grade	A36																						
Top Girts	A	N.A.																					
Face Width (ft)	6.56	7.06643	7.57287	8.0793	8.58573	9.26098	9.93622	10.6115	11.2867	11.962	12.6372	13.3124	13.9877	14.6629	15.6758	16.6887	17.7015	18.7144	19.7273	20.7401	21.753	22.7659	23.7787
# Panels @ (ft)	4 @ 5				9 @ 6.66667									10 @ 10									
Weight (lb)	220.2	189.3	192.5	195.9	262.1	267.0	272.1	356.0	364.9	374.0	498.0	509.7	521.4	897.8	917.8	1075.8	1103.0	1433.3	1466.0	1632.9	1671.2	2205.8	2253.8

24.7916 | 18880.5



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2' Dia parabolic dish antenna	119.5		

SYMBOL LIST

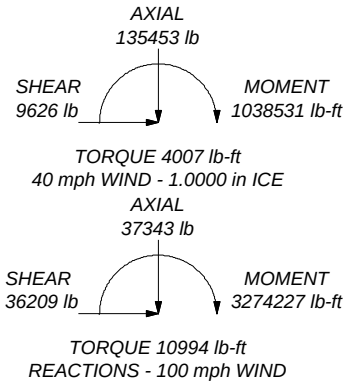
MARK	SIZE	MARK	SIZE
A	L2x2x1/8		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower designed for Exposure B to the TIA-222-G Standard.
2. Tower designed for a 100 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 40 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Structure Class II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. Weld together tower sections have flange connections.
8. Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications.
9. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
10. Welds are fabricated with ER-70S-6 electrodes.



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Job: **16963007**			
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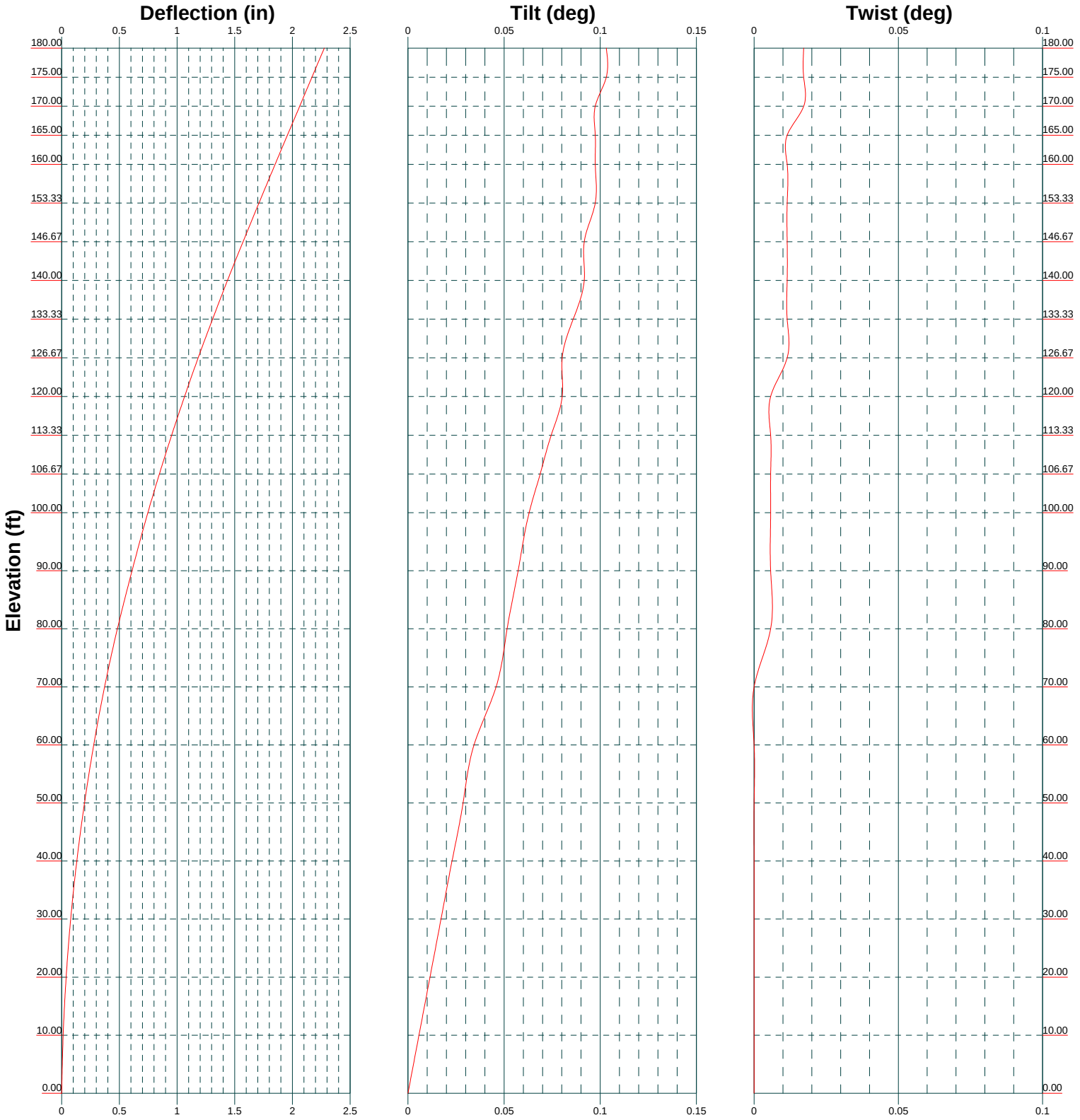
Client: SmartLink	Drawn by: gpenumatsa	App'd:	
Code: TIA-222-G	Date: 12/29/16	Scale: NTS	
Path: C:\Users\gpenumatsa\Desktop\Othe survor jobs\Tolland Central\Final Shawn report\TNX 222G\Lattice Tower Analysis - Copy.eri		Dwg No. E-1	

TIA-222-G - Service - 60 mph

Maximum Values



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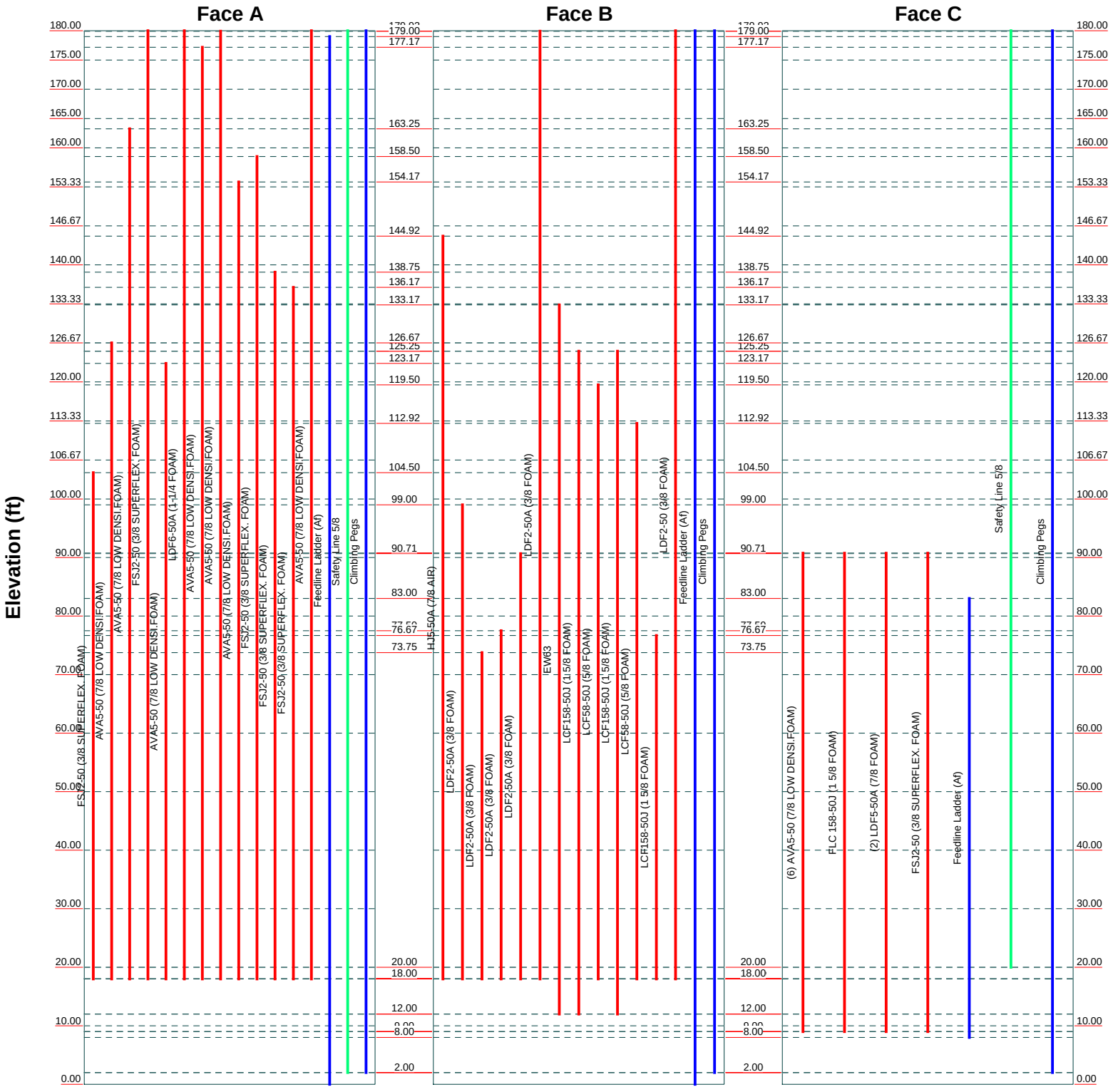
Path: C:\Users\gpenumatsa\Desktop\Othe survor jobs\Tolland Central\Final Shawn report\TNX 222G\Lattice Tower Analysis - Copy.eri		Dwg No. E-5	

Feed Line Distribution Chart
0' - 180'

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



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Job: **16963007**			
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Path: C:\Users\gpenumatsa\Desktop\Othe survor jobs\Tolland Central\Final Shawn report\TNX 222G\Lattice Tower Analysis - Copy.eri		Dwg No. E-7	

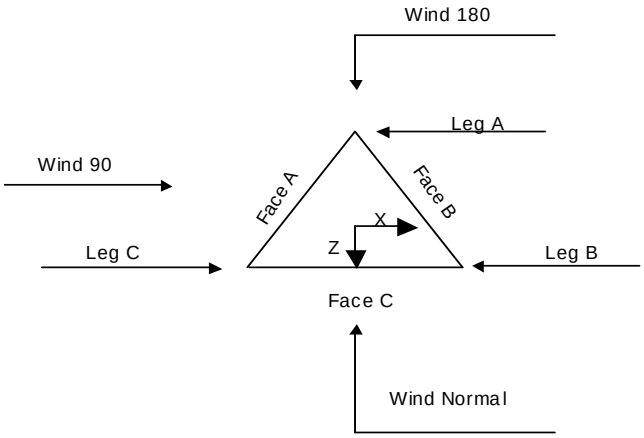
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 180.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 6.56 ft at the top and 24.79 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Basic wind speed of 100 mph.
Structure Class II.
Exposure Category B.
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 40 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Weld together tower sections have flange connections..
Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications..
Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards..
Welds are fabricated with ER-70S-6 electrodes..
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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-G Bracing Resist. Exemption
Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Use TIA-222-G 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		



Triangular Tower

Tower Section Geometry

Tower Section	*Tower Elevation*	*Assembly Database*	*Description*	*Section Width*	*Number of Sections*	*Section Length*
	ft			*ft*		*ft*
T1	180.00-175.00			6.56	1	5.00
T2	175.00-170.00			7.07	1	5.00
T3	170.00-165.00			7.57	1	5.00
T4	165.00-160.00			8.08	1	5.00
T5	160.00-153.33			8.59	1	6.67
T6	153.33-146.67			9.26	1	6.67
T7	146.67-140.00			9.94	1	6.67
T8	140.00-133.33			10.61	1	6.67
T9	133.33-126.67			11.29	1	6.67
T10	126.67-120.00			11.96	1	6.67
T11	120.00-113.33			12.64	1	6.67
T12	113.33-106.67			13.31	1	6.67
T13	106.67-100.00			13.99	1	6.67
T14	100.00-90.00			14.66	1	10.00
T15	90.00-80.00			15.68	1	10.00
T16	80.00-70.00			16.69	1	10.00
T17	70.00-60.00			17.70	1	10.00
T18	60.00-50.00			18.71	1	10.00
T19	50.00-40.00			19.73	1	10.00
T20	40.00-30.00			20.74	1	10.00
T21	30.00-20.00			21.75	1	10.00
T22	20.00-10.00			22.77	1	10.00
T23	10.00-0.00			23.78	1	10.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	180.00-175.00	5.00	X Brace	No	No	0.0000	0.0000
T2	175.00-170.00	5.00	X Brace	No	No	0.0000	0.0000
T3	170.00-165.00	5.00	X Brace	No	No	0.0000	0.0000
T4	165.00-160.00	5.00	X Brace	No	No	0.0000	0.0000
T5	160.00-153.33	6.67	X Brace	No	No	0.0000	0.0000
T6	153.33-146.67	6.67	X Brace	No	No	0.0000	0.0000
T7	146.67-140.00	6.67	X Brace	No	No	0.0000	0.0000
T8	140.00-133.33	6.67	X Brace	No	No	0.0000	0.0000
T9	133.33-126.67	6.67	X Brace	No	No	0.0000	0.0000
T10	126.67-120.00	6.67	X Brace	No	No	0.0000	0.0000
T11	120.00-113.33	6.67	X Brace	No	No	0.0000	0.0000
T12	113.33-106.67	6.67	X Brace	No	No	0.0000	0.0000
T13	106.67-100.00	6.67	X Brace	No	No	0.0000	0.0000
T14	100.00-90.00	10.00	X Brace	No	No	0.0000	0.0000
T15	90.00-80.00	10.00	X Brace	No	No	0.0000	0.0000
T16	80.00-70.00	10.00	X Brace	No	No	0.0000	0.0000
T17	70.00-60.00	10.00	X Brace	No	No	0.0000	0.0000
T18	60.00-50.00	10.00	X Brace	No	No	0.0000	0.0000
T19	50.00-40.00	10.00	X Brace	No	No	0.0000	0.0000
T20	40.00-30.00	10.00	X Brace	No	No	0.0000	0.0000
T21	30.00-20.00	10.00	X Brace	No	No	0.0000	0.0000
T22	20.00-10.00	10.00	X Brace	No	No	0.0000	0.0000
T23	10.00-0.00	10.00	X Brace	No	No	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 180.00-175.00	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Equal Angle	L1 1/2x1 1/2x1/8	A36 (36 ksi)
T2 175.00-170.00	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Equal Angle	L1 1/2x1 1/2x1/8	A36 (36 ksi)
T3 170.00-165.00	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Equal Angle	L1 1/2x1 1/2x1/8	A36 (36 ksi)
T4 165.00-160.00	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Equal Angle	L1 1/2x1 1/2x1/8	A36 (36 ksi)
T5 160.00-153.33	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x1/8	A36 (36 ksi)
T6 153.33-146.67	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x1/8	A36 (36 ksi)
T7 146.67-140.00	Pipe	ROHN 2.5 X-STR	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x1/8	A36 (36 ksi)
T8 140.00-133.33	Pipe	ROHN 3 STD	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T9 133.33-126.67	Pipe	ROHN 3 STD	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T10 126.67-120.00	Pipe	ROHN 3 STD	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T11 120.00-113.33	Pipe	ROHN 3 X-STR	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T12	Pipe	ROHN 3 X-STR	A572-50	Equal Angle	L2 1/2x2 1/2x3/16	A36

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
113.33-106.67			(50 ksi)			(36 ksi)
T13 106.67-100.00	Pipe	ROHN 3 X-STR	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T14 100.00-90.00	Pipe	ROHN 4 X-STR	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T15 90.00-80.00	Pipe	ROHN 4 X-STR	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T16 80.00-70.00	Pipe	ROHN 5 STD	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T17 70.00-60.00	Pipe	ROHN 5 STD	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A36 (36 ksi)
T18 60.00-50.00	Pipe	P5.5x.375	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T19 50.00-40.00	Pipe	P5.5x.375	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T20 40.00-30.00	Pipe	P5x.375	A572-50 (50 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)
T21 30.00-20.00	Pipe	P5x.375	A572-50 (50 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)
T22 20.00-10.00	Pipe	ROHN 6 EH	A572-50 (50 ksi)	Equal Angle	L4x4x5/16	A36 (36 ksi)
T23 10.00-0.00	Pipe	ROHN 6 EH	A572-50 (50 ksi)	Equal Angle	L4x4x5/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 180.00-175.00	Equal Angle	L2x2x1/8	A36 (36 ksi)	Solid Round		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 180.00-175.00	0.00	0.1875	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T2 175.00-170.00	0.00	0.1875	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T3 170.00-165.00	0.00	0.1875	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T4 165.00-160.00	0.00	0.1875	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T5 160.00-153.33	0.00	0.1875	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T6 153.33-146.67	0.00	0.1875	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T7 146.67-140.00	0.00	0.1875	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T8 140.00-133.33	0.00	0.1875	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T9 133.33-126.67	0.00	0.1875	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T10 126.67-120.00	0.00	0.1875	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T11 120.00-113.33	0.00	0.1875	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T12 113.33-106.67	0.00	0.1875	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T13 106.67-100.00	0.00	0.1875	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T14 100.00-90.00	0.00	0.2500	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T15 90.00-80.00	0.00	0.2500	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T16 80.00-70.00	0.00	0.2500	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T17 70.00-60.00	0.00	0.2500	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T18 60.00-50.00	0.00	0.2500	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T19 50.00-40.00	0.00	0.2500	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T20 40.00-30.00	0.00	0.2500	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T21 30.00-20.00	0.00	0.2500	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T22 20.00-10.00	0.00	0.3750	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T23 10.00-0.00	0.00	0.3750	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	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 180.00-175.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 175.00-170.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 170.00-165.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 165.00-160.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 160.00-153.33	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 153.33-146.67	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	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
T7	Yes	Yes	1	1	1	1	1	1	1	1
146.67-140.00				1	1	1	1	1	1	1
T8	Yes	Yes	1	1	1	1	1	1	1	1
140.00-133.33				1	1	1	1	1	1	1
T9	Yes	Yes	1	1	1	1	1	1	1	1
133.33-126.67				1	1	1	1	1	1	1
T10	Yes	Yes	1	1	1	1	1	1	1	1
126.67-120.00				1	1	1	1	1	1	1
T11	Yes	Yes	1	1	1	1	1	1	1	1
120.00-113.33				1	1	1	1	1	1	1
T12	Yes	Yes	1	1	1	1	1	1	1	1
113.33-106.67				1	1	1	1	1	1	1
T13	Yes	Yes	1	1	1	1	1	1	1	1
106.67-100.00				1	1	1	1	1	1	1
T14	Yes	Yes	1	1	1	1	1	1	1	1
100.00-90.00				1	1	1	1	1	1	1
T15	Yes	Yes	1	1	1	1	1	1	1	1
90.00-80.00				1	1	1	1	1	1	1
T16	Yes	Yes	1	1	1	1	1	1	1	1
80.00-70.00				1	1	1	1	1	1	1
T17	Yes	Yes	1	1	1	1	1	1	1	1
70.00-60.00				1	1	1	1	1	1	1
T18	Yes	Yes	1	1	1	1	1	1	1	1
60.00-50.00				1	1	1	1	1	1	1
T19	Yes	Yes	1	1	1	1	1	1	1	1
50.00-40.00				1	1	1	1	1	1	1
T20	Yes	Yes	1	1	1	1	1	1	1	1
40.00-30.00				1	1	1	1	1	1	1
T21	Yes	Yes	1	1	1	1	1	1	1	1
30.00-20.00				1	1	1	1	1	1	1
T22	Yes	Yes	1	1	1	1	1	1	1	1
20.00-10.00				1	1	1	1	1	1	1
T23	Yes	Yes	1	1	1	1	1	1	1	1
10.00-0.00				1	1	1	1	1	1	1

[1]*Note: 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.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
180.00-175.00														
T2	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
175.00-170.00														
T3	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
170.00-165.00														
T4	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
165.00-160.00														

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T5 160.00-153.33	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 153.33-146.67	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 146.67-140.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 140.00-133.33	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 133.33-126.67	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 126.67-120.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 120.00-113.33	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 113.33-106.67	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 106.67-100.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 100.00-90.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T15 90.00-80.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T16 80.00-70.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T17 70.00-60.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T18 60.00-50.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T19 50.00-40.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T20 40.00-30.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T21 30.00-20.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T22 20.00-10.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T23 10.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 180.00-175.00	Flange	0.6250 A325N	4	0.5000 A325N	1	0.5000 A325N	1	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 175.00-170.00	Flange	0.6250 A325N	0	0.5000 A325N	1	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 170.00-165.00	Flange	0.6250 A325N	0	0.5000 A325N	1	0.6250 A325N	0	0.0000 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

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.
T4	Flange	0.6250	0	0.5000	1	0.6250	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
165.00-160.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T5	Flange	0.7500	4	0.5000	1	0.0000	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
160.00-153.33		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T6	Flange	0.7500	0	0.5000	1	0.6250	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
153.33-146.67		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T7	Flange	0.7500	0	0.5000	1	0.6250	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
146.67-140.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T8	Flange	0.8750	4	0.5000	1	0.0000	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
140.00-133.33		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T9	Flange	0.8750	0	0.5000	1	0.6250	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
133.33-126.67		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T10	Flange	0.8750	0	0.5000	1	0.6250	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
126.67-120.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T11	Flange	0.8750	4	0.5000	1	0.0000	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
120.00-113.33		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T12	Flange	0.8750	0	0.5000	1	0.6250	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
113.33-106.67		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T13	Flange	0.8750	0	0.5000	1	0.6250	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
106.67-100.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T14	Flange	1.0000	4	0.6250	1	0.0000	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
100.00-90.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T15	Flange	1.0000	0	0.6250	1	0.6250	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
90.00-80.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T16	Flange	1.0000	4	0.6250	1	0.0000	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
80.00-70.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T17	Flange	1.0000	0	0.6250	1	0.6250	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
70.00-60.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T18	Flange	1.0000	4	0.6250	1	0.0000	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
60.00-50.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T19	Flange	1.0000	0	0.6250	1	0.6250	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
50.00-40.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T20	Flange	1.0000	6	0.6250	1	0.0000	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
40.00-30.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T21	Flange	1.0000	0	0.6250	1	0.6250	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
30.00-20.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T22	Flange	1.0000	6	0.7500	1	0.0000	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
20.00-10.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T23 10.00-0.00	Flange	1.0000	0	0.7500	1	0.6250	0	0.0000	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
HJ5-50A (7/8 AIR)	B	No	Ar (CaAa)	144.92 - 18.00	1.0000	0.44	1	1	2.1100	2.1100		1.54
LDF2-50A (3/8 FOAM)	B	No	Ar (CaAa)	99.00 - 18.00	1.0000	0.42	1	1	0.4400	0.4400		0.08
LDF2-50A (3/8 FOAM)	B	No	Ar (CaAa)	73.75 - 18.00	1.0000	0.4	1	1	0.4400	0.4400		0.08
LDF2-50A (3/8 FOAM)	B	No	Ar (CaAa)	77.50 - 18.00	1.0000	0.38	1	1	0.4400	0.4400		0.08

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
LDF2-50A (3/8 FOAM)	B	No	Ar (CaAa)	90.70 - 18.00	1.0000	0.36	1	1	0.4400	0.4400		0.08
LDF2-50A (3/8 FOAM)	B	No	Ar (CaAa)	179.92 - 18.00	1.0000	0.34	1	1	0.4400	0.4400		0.08
EW63	B	No	Ar (CaAa)	133.17 - 12.00	1.0000	0.32	1	1	1.5742	1.5742		0.51
LCF158-50J (1 5/8 FOAM)	B	No	Ar (CaAa)	125.25 - 12.00	1.0000	0.3	1	1	2.0100	2.0100		0.92
LCF58-50J (5/8 FOAM)	B	No	Ar (CaAa)	119.50 - 18.00	1.0000	0.28	1	1	0.8400	0.8400		0.25
LCF158-50J (1 5/8 FOAM)	B	No	Ar (CaAa)	125.25 - 12.00	1.0000	0.26	1	1	2.0100	2.0100		0.92
LCF58-50J (5/8 FOAM)	B	No	Ar (CaAa)	112.92 - 18.00	1.0000	0.24	1	1	0.8400	0.8400		0.25
LCF158-50J (1 5/8 FOAM)	B	No	Ar (CaAa)	76.67 - 18.00	1.0000	0.22	1	1	2.0100	2.0100		0.92
LDF2-50 (3/8 FOAM)	B	No	Ar (CaAa)	180.00 - 18.00	1.0000	0.49	1	1	0.4400	0.4400		0.08
AVA5-50 (7/8 LOW DENSI.FOAM)	C	No	Ar (CaAa)	90.71 - 9.00	1.0000	0.3	6	6	1.1000	1.1000		0.30
FLC 158-50J (1 5/8 FOAM)	C	No	Ar (CaAa)	90.71 - 9.00	1.0000	0.32	1	1	2.0200	2.0200		0.92
LDF5-50A (7/8 FOAM)	C	No	Ar (CaAa)	90.71 - 9.00	1.0000	0.34	2	2	1.0900	1.0900		0.33
FSJ2-50 (3/8 SUPERFLEX. FOAM)	C	No	Ar (CaAa)	90.71 - 9.00	1.0000	0.36	1	1	0.4300	0.4300		0.08
FSJ2-50 (3/8 SUPERFLEX. FOAM)	A	No	Ar (CaAa)	104.50 - 18.00	1.0000	0.5	1	1	0.4300	0.4300		0.08
AVA5-50 (7/8 LOW DENSI.FOAM)	A	No	Ar (CaAa)	126.67 - 18.00	1.0000	0.48	1	1	1.1000	1.1000		0.30
AVA5-50 (7/8 LOW DENSI.FOAM)	A	No	Ar (CaAa)	163.25 - 18.00	1.0000	0.46	1	1	1.1000	1.1000		0.30
FSJ2-50 (3/8 SUPERFLEX. FOAM)	A	No	Ar (CaAa)	180.00 - 18.00	1.0000	0.44	1	1	0.4300	0.4300		0.08
AVA5-50 (7/8 LOW DENSI.FOAM)	A	No	Ar (CaAa)	123.17 - 18.00	1.0000	0.42	1	1	1.1000	1.1000		0.30
LDF6-50A (1-1/4 FOAM)	A	No	Ar (CaAa)	180.00 - 18.00	1.0000	0.4	1	1	1.5500	1.5500		0.66
AVA5-50 (7/8 LOW DENSI.FOAM)	A	No	Ar (CaAa)	177.17 - 18.00	1.0000	0.38	1	1	1.1000	1.1000		0.30
AVA5-50 (7/8 LOW DENSI.FOAM)	A	No	Ar (CaAa)	179.92 - 18.00	1.0000	0.36	1	1	1.1000	1.1000		0.30
AVA5-50 (7/8 LOW DENSI.FOAM)	A	No	Ar (CaAa)	154.17 - 18.00	1.0000	0.34	1	1	1.1000	1.1000		0.30
FSJ2-50 (3/8	A	No	Ar (CaAa)	158.50 - 18.00	1.0000	0.32	1	1	0.4300	0.4300		0.08

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
SUPERFLEX. FOAM) FSJ2-50 (3/8	A	No	Ar (CaAa)	138.75 - 18.00	1.0000	0.3	1	1	0.4300	0.4300		0.08
SUPERFLEX. FOAM) FSJ2-50 (3/8	A	No	Ar (CaAa)	136.17 - 18.00	1.0000	0.28	1	1	0.4300	0.4300		0.08
SUPERFLEX. FOAM) AVA5-50 (7/8 LOW DENSI.FOAM)	A	No	Ar (CaAa)	180.00 - 18.00	1.0000	0.26	1	1	1.1000	1.1000		0.30

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#		C_AA_A ft^2/ft	Weight plf
Feedline Ladder (Af)	B	No	CaAa (In Face)	180.00 - 0.00	1.0000	0.2	1	No Ice	0.50	8.40
								1/2" Ice	0.61	13.50
								1" Ice	0.72	18.60
Feedline Ladder (Af)	C	No	CaAa (In Face)	83.00 - 8.00	1.0000	0.4	1	No Ice	0.50	8.40
								1/2" Ice	0.61	13.50
								1" Ice	0.72	18.60
Feedline Ladder (Af)	A	No	CaAa (In Face)	179.00 - 0.00	1.0000	0.4	1	No Ice	0.50	8.40
								1/2" Ice	0.61	13.50
								1" Ice	0.72	18.60
Safety Line 5/8	A	No	CaAa (Out Of Face)	180.00 - 2.00	0.0000	0	1	No Ice	0.09	0.40
								1/2" Ice	0.19	1.24
								1" Ice	0.29	2.70
Safety Line 5/8	C	No	CaAa (Out Of Face)	180.00 - 20.00	0.0000	0	1	No Ice	0.09	0.40
								1/2" Ice	0.19	1.24
								1" Ice	0.29	2.70
Climbing Pegs	A	No	CaAa (In Face)	180.00 - 2.00	0.0000	0	1	No Ice	0.02	5.50
								1/2" Ice	0.05	6.00
								1" Ice	0.08	6.50
Climbing Pegs	C	No	CaAa (In Face)	180.00 - 2.00	0.0000	0	1	No Ice	0.02	5.50
								1/2" Ice	0.05	6.00
								1" Ice	0.08	6.50
Climbing Pegs	B	No	CaAa (In Face)	180.00 - 2.00	0.0000	0	1	No Ice	0.02	5.50
								1/2" Ice	0.05	6.00
								1" Ice	0.08	6.50

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	180.00-175.00	A	0.000	0.000	4.419	0.440	70.43
		B	0.000	0.000	3.036	0.000	70.29
		C	0.000	0.000	0.100	0.440	29.50
T2	175.00-170.00	A	0.000	0.000	5.240	0.440	79.70
		B	0.000	0.000	3.040	0.000	70.30
		C	0.000	0.000	0.100	0.440	29.50

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T3	170.00-165.00	A	0.000	0.000	5.240	0.440	79.70
		B	0.000	0.000	3.040	0.000	70.30
		C	0.000	0.000	0.100	0.440	29.50
T4	165.00-160.00	A	0.000	0.000	5.598	0.440	80.67
		B	0.000	0.000	3.040	0.000	70.30
		C	0.000	0.000	0.100	0.440	29.50
T5	160.00-153.33	A	0.000	0.000	8.034	0.587	108.93
		B	0.000	0.000	4.053	0.000	93.73
		C	0.000	0.000	0.133	0.587	39.33
T6	153.33-146.67	A	0.000	0.000	8.740	0.587	110.80
		B	0.000	0.000	4.053	0.000	93.73
		C	0.000	0.000	0.133	0.587	39.33
T7	146.67-140.00	A	0.000	0.000	8.740	0.587	110.80
		B	0.000	0.000	5.091	0.000	101.31
		C	0.000	0.000	0.133	0.587	39.33
T8	140.00-133.33	A	0.000	0.000	9.095	0.587	111.46
		B	0.000	0.000	5.460	0.000	104.00
		C	0.000	0.000	0.133	0.587	39.33
T9	133.33-126.67	A	0.000	0.000	9.313	0.587	111.87
		B	0.000	0.000	6.483	0.000	107.32
		C	0.000	0.000	0.133	0.587	39.33
T10	126.67-120.00	A	0.000	0.000	10.395	0.587	114.82
		B	0.000	0.000	8.620	0.000	117.06
		C	0.000	0.000	0.133	0.587	39.33
T11	120.00-113.33	A	0.000	0.000	10.780	0.587	115.87
		B	0.000	0.000	9.708	0.000	121.21
		C	0.000	0.000	0.133	0.587	39.33
T12	113.33-106.67	A	0.000	0.000	10.780	0.587	115.87
		B	0.000	0.000	10.275	0.000	122.90
		C	0.000	0.000	0.133	0.587	39.33
T13	106.67-100.00	A	0.000	0.000	10.974	0.587	116.23
		B	0.000	0.000	10.310	0.000	123.00
		C	0.000	0.000	0.133	0.587	39.33
T14	100.00-90.00	A	0.000	0.000	16.600	0.880	174.60
		B	0.000	0.000	15.891	0.000	185.28
		C	0.000	0.000	0.997	0.880	61.46
T15	90.00-80.00	A	0.000	0.000	16.600	0.880	174.60
		B	0.000	0.000	16.344	0.000	186.10
		C	0.000	0.000	12.930	0.880	118.80
T16	80.00-70.00	A	0.000	0.000	16.600	0.880	174.60
		B	0.000	0.000	18.179	0.000	193.13
		C	0.000	0.000	16.430	0.880	177.60
T17	70.00-60.00	A	0.000	0.000	16.600	0.880	174.60
		B	0.000	0.000	19.234	0.000	196.90
		C	0.000	0.000	16.430	0.880	177.60
T18	60.00-50.00	A	0.000	0.000	16.600	0.880	174.60
		B	0.000	0.000	19.234	0.000	196.90
		C	0.000	0.000	16.430	0.880	177.60
T19	50.00-40.00	A	0.000	0.000	16.600	0.880	174.60
		B	0.000	0.000	19.234	0.000	196.90
		C	0.000	0.000	16.430	0.880	177.60
T20	40.00-30.00	A	0.000	0.000	16.600	0.880	174.60
		B	0.000	0.000	19.234	0.000	196.90
		C	0.000	0.000	16.430	0.880	177.60
T21	30.00-20.00	A	0.000	0.000	16.600	0.880	174.60
		B	0.000	0.000	19.234	0.000	196.90
		C	0.000	0.000	16.430	0.880	177.60
T22	20.00-10.00	A	0.000	0.000	7.480	0.880	149.32
		B	0.000	0.000	11.363	0.000	164.68
		C	0.000	0.000	16.430	0.000	173.60
T23	10.00-0.00	A	0.000	0.000	5.160	0.704	131.20

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
		B	0.000	0.000	5.160	0.000	128.00
		C	0.000	0.000	2.283	0.000	64.26

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	180.00-175.00	A	2.366	0.000	0.000	17.685	2.806	447.54
		B		0.000	0.000	11.069	0.000	283.28
		C		0.000	0.000	0.810	2.806	91.92
T2	175.00-170.00	A	2.360	0.000	0.000	20.368	2.800	508.33
		B		0.000	0.000	11.089	0.000	283.16
		C		0.000	0.000	0.808	2.800	91.60
T3	170.00-165.00	A	2.353	0.000	0.000	20.324	2.793	506.43
		B		0.000	0.000	11.066	0.000	282.33
		C		0.000	0.000	0.806	2.793	91.28
T4	165.00-160.00	A	2.346	0.000	0.000	22.160	2.786	537.54
		B		0.000	0.000	11.041	0.000	281.49
		C		0.000	0.000	0.804	2.786	90.94
T5	160.00-153.33	A	2.337	0.000	0.000	33.932	3.703	786.61
		B		0.000	0.000	14.683	0.000	373.96
		C		0.000	0.000	1.068	3.703	120.72
T6	153.33-146.67	A	2.327	0.000	0.000	37.939	3.689	852.52
		B		0.000	0.000	14.637	0.000	372.36
		C		0.000	0.000	1.064	3.689	120.08
T7	146.67-140.00	A	2.316	0.000	0.000	37.807	3.675	847.26
		B		0.000	0.000	17.904	0.000	439.86
		C		0.000	0.000	1.060	3.675	119.42
T8	140.00-133.33	A	2.305	0.000	0.000	41.827	3.661	906.02
		B		0.000	0.000	19.019	0.000	462.15
		C		0.000	0.000	1.056	3.661	118.73
T9	133.33-126.67	A	2.294	0.000	0.000	44.215	3.645	938.96
		B		0.000	0.000	22.957	0.000	533.49
		C		0.000	0.000	1.051	3.645	118.01
T10	126.67-120.00	A	2.282	0.000	0.000	49.601	3.629	1027.69
		B		0.000	0.000	29.875	0.000	667.53
		C		0.000	0.000	1.046	3.629	117.25
T11	120.00-113.33	A	2.269	0.000	0.000	51.357	3.612	1053.33
		B		0.000	0.000	34.929	0.000	754.10
		C		0.000	0.000	1.041	3.612	116.46
T12	113.33-106.67	A	2.256	0.000	0.000	51.119	3.595	1044.52
		B		0.000	0.000	38.394	0.000	807.97
		C		0.000	0.000	1.036	3.595	115.63
T13	106.67-100.00	A	2.242	0.000	0.000	53.078	3.576	1068.53
		B		0.000	0.000	38.440	0.000	805.28
		C		0.000	0.000	1.030	3.576	114.74
T14	100.00-90.00	A	2.223	0.000	0.000	80.674	5.326	1607.24
		B		0.000	0.000	62.047	0.000	1266.21
		C		0.000	0.000	4.731	5.326	217.51
T15	90.00-80.00	A	2.198	0.000	0.000	79.965	5.277	1581.72
		B		0.000	0.000	66.518	0.000	1322.15
		C		0.000	0.000	49.250	5.277	915.49
T16	80.00-70.00	A	2.171	0.000	0.000	79.177	5.222	1553.58
		B		0.000	0.000	75.509	0.000	1459.66
		C		0.000	0.000	55.801	5.222	1115.71
T17	70.00-60.00	A	2.140	0.000	0.000	78.288	5.161	1522.11
		B		0.000	0.000	80.922	0.000	1531.13

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
		C		0.000	0.000	55.386	5.161	1098.25
T18	60.00-50.00	A	2.105	0.000	0.000	77.266	5.090	1486.31
		B		0.000	0.000	79.900	0.000	1497.17
		C		0.000	0.000	54.908	5.090	1078.30
T19	50.00-40.00	A	2.063	0.000	0.000	76.060	5.006	1444.61
		B		0.000	0.000	78.695	0.000	1457.64
		C		0.000	0.000	54.346	5.006	1054.93
T20	40.00-30.00	A	2.012	0.000	0.000	74.585	4.904	1394.30
		B		0.000	0.000	77.219	0.000	1409.99
		C		0.000	0.000	53.657	4.904	1026.54
T21	30.00-20.00	A	1.945	0.000	0.000	72.666	4.771	1332.16
		B		0.000	0.000	75.300	0.000	1349.28
		C		0.000	0.000	52.763	4.771	992.03
T22	20.00-10.00	A	1.848	0.000	0.000	22.308	4.577	579.53
		B		0.000	0.000	32.846	0.000	694.53
		C		0.000	0.000	51.462	0.000	876.02
T23	10.00-0.00	A	1.656	0.000	0.000	9.635	3.354	356.62
		B		0.000	0.000	9.635	0.000	310.17
		C		0.000	0.000	6.592	0.000	154.48

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	180.00-175.00	0.5346	-2.7611	0.0527	-2.5565
T2	175.00-170.00	0.5175	-3.5851	0.1613	-3.4386
T3	170.00-165.00	0.5520	-3.7950	0.1751	-3.6378
T4	165.00-160.00	0.5544	-4.2200	0.1581	-4.1320
T5	160.00-153.33	0.5342	-4.7275	0.0597	-4.9188
T6	153.33-146.67	0.4755	-5.2678	-0.0526	-5.5709
T7	146.67-140.00	1.1309	-5.0404	0.4760	-5.4551
T8	140.00-133.33	1.2630	-4.9510	0.5027	-5.8352
T9	133.33-126.67	1.7758	-4.9217	0.9482	-5.9291
T10	126.67-120.00	2.6444	-5.0973	1.7016	-6.3105
T11	120.00-113.33	2.9927	-4.9836	2.2485	-6.3255
T12	113.33-106.67	3.3165	-5.0680	2.7034	-6.3581
T13	106.67-100.00	3.4416	-5.3650	2.7921	-6.9028
T14	100.00-90.00	3.4385	-5.2249	3.2186	-6.9614
T15	90.00-80.00	0.4312	-2.0233	1.4323	-4.2714
T16	80.00-70.00	-0.0295	-1.1530	1.6443	-3.5911
T17	70.00-60.00	0.2526	-1.1268	2.1869	-3.5081
T18	60.00-50.00	0.2570	-1.1508	2.2608	-3.6332
T19	50.00-40.00	0.2674	-1.2013	2.3427	-3.7739
T20	40.00-30.00	0.2694	-1.2141	2.3926	-3.8671
T21	30.00-20.00	0.2788	-1.2604	2.4470	-3.9741
T22	20.00-10.00	-1.6359	1.2022	-0.3355	-0.3961
T23	10.00-0.00	1.1318	-3.5535	0.9010	-4.8142

Shielding Factor Ka

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
T1	6	LDF2-50A (3/8 FOAM)	175.00 - 179.92	0.6000	0.5067
T1	13	LDF2-50 (3/8 FOAM)	175.00 - 180.00	0.6000	0.5067
T1	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	175.00 - 180.00	0.6000	0.5067
T1	23	LDF6-50A (1-1/4 FOAM)	175.00 - 180.00	0.6000	0.5067
T1	24	AVA5-50 (7/8 LOW DENSI.FOAM)	175.00 - 177.17	0.6000	0.5067
T1	25	AVA5-50 (7/8 LOW DENSI.FOAM)	175.00 - 179.92	0.6000	0.5067
T1	30	AVA5-50 (7/8 LOW DENSI.FOAM)	175.00 - 180.00	0.6000	0.5067
T1	31	Feedline Ladder (Af)	175.00 - 180.00	0.6000	0.5067
T1	33	Feedline Ladder (Af)	175.00 - 179.00	0.6000	0.5067
T1	36	Climbing Pegs	175.00 - 180.00	0.6000	0.5067
T1	37	Climbing Pegs	175.00 - 180.00	0.6000	0.5067
T1	38	Climbing Pegs	175.00 - 180.00	0.6000	0.5067
T2	6	LDF2-50A (3/8 FOAM)	170.00 - 175.00	0.6000	0.6000
T2	13	LDF2-50 (3/8 FOAM)	170.00 - 175.00	0.6000	0.6000
T2	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	170.00 - 175.00	0.6000	0.6000
T2	23	LDF6-50A (1-1/4 FOAM)	170.00 - 175.00	0.6000	0.6000
T2	24	AVA5-50 (7/8 LOW DENSI.FOAM)	170.00 - 175.00	0.6000	0.6000
T2	25	AVA5-50 (7/8 LOW DENSI.FOAM)	170.00 - 175.00	0.6000	0.6000
T2	30	AVA5-50 (7/8 LOW DENSI.FOAM)	170.00 - 175.00	0.6000	0.6000
T2	31	Feedline Ladder (Af)	170.00 - 175.00	0.6000	0.6000
T2	33	Feedline Ladder (Af)	170.00 - 175.00	0.6000	0.6000
T2	36	Climbing Pegs	170.00 - 175.00	0.6000	0.6000
T2	37	Climbing Pegs	170.00 - 175.00	0.6000	0.6000
T2	38	Climbing Pegs	170.00 - 175.00	0.6000	0.6000
T3	6	LDF2-50A (3/8 FOAM)	165.00 - 170.00	0.6000	0.6000
T3	13	LDF2-50 (3/8 FOAM)	165.00 - 170.00	0.6000	0.6000
T3	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	165.00 - 170.00	0.6000	0.6000
T3	23	LDF6-50A (1-1/4 FOAM)	165.00 - 170.00	0.6000	0.6000
T3	24	AVA5-50 (7/8 LOW DENSI.FOAM)	165.00 - 170.00	0.6000	0.6000
T3	25	AVA5-50 (7/8 LOW DENSI.FOAM)	165.00 - 170.00	0.6000	0.6000
T3	30	AVA5-50 (7/8 LOW DENSI.FOAM)	165.00 - 170.00	0.6000	0.6000

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
T3	31	Feedline Ladder (Af)	165.00 - 170.00	0.6000	0.6000
T3	33	Feedline Ladder (Af)	165.00 - 170.00	0.6000	0.6000
T3	36	Climbing Pegs	165.00 - 170.00	0.6000	0.6000
T3	37	Climbing Pegs	165.00 - 170.00	0.6000	0.6000
T3	38	Climbing Pegs	165.00 - 170.00	0.6000	0.6000
T4	6	LDF2-50A (3/8 FOAM)	160.00 - 165.00	0.6000	0.6000
T4	13	LDF2-50 (3/8 FOAM)	160.00 - 165.00	0.6000	0.6000
T4	20	AVA5-50 (7/8 LOW DENSI.FOAM)	160.00 - 163.25	0.6000	0.6000
T4	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	160.00 - 165.00	0.6000	0.6000
T4	23	LDF6-50A (1-1/4 FOAM)	160.00 - 165.00	0.6000	0.6000
T4	24	AVA5-50 (7/8 LOW DENSI.FOAM)	160.00 - 165.00	0.6000	0.6000
T4	25	AVA5-50 (7/8 LOW DENSI.FOAM)	160.00 - 165.00	0.6000	0.6000
T4	30	AVA5-50 (7/8 LOW DENSI.FOAM)	160.00 - 165.00	0.6000	0.6000
T4	31	Feedline Ladder (Af)	160.00 - 165.00	0.6000	0.6000
T4	33	Feedline Ladder (Af)	160.00 - 165.00	0.6000	0.6000
T4	36	Climbing Pegs	160.00 - 165.00	0.6000	0.6000
T4	37	Climbing Pegs	160.00 - 165.00	0.6000	0.6000
T4	38	Climbing Pegs	160.00 - 165.00	0.6000	0.6000
T5	6	LDF2-50A (3/8 FOAM)	153.33 - 160.00	0.6000	0.6000
T5	13	LDF2-50 (3/8 FOAM)	153.33 - 160.00	0.6000	0.6000
T5	20	AVA5-50 (7/8 LOW DENSI.FOAM)	153.33 - 160.00	0.6000	0.6000
T5	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	153.33 - 160.00	0.6000	0.6000
T5	23	LDF6-50A (1-1/4 FOAM)	153.33 - 160.00	0.6000	0.6000
T5	24	AVA5-50 (7/8 LOW DENSI.FOAM)	153.33 - 160.00	0.6000	0.6000
T5	25	AVA5-50 (7/8 LOW DENSI.FOAM)	153.33 - 160.00	0.6000	0.6000
T5	26	AVA5-50 (7/8 LOW DENSI.FOAM)	153.33 - 154.17	0.6000	0.6000
T5	27	FSJ2-50 (3/8 SUPERFLEX. FOAM)	153.33 - 158.50	0.6000	0.6000
T5	30	AVA5-50 (7/8 LOW DENSI.FOAM)	153.33 - 160.00	0.6000	0.6000
T5	31	Feedline Ladder (Af)	153.33 - 160.00	0.6000	0.6000
T5	33	Feedline Ladder (Af)	153.33 - 160.00	0.6000	0.6000
T5	36	Climbing Pegs	153.33 - 160.00	0.6000	0.6000

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
T5	37	Climbing Pegs	153.33 - 160.00	0.6000	0.6000
T5	38	Climbing Pegs	153.33 - 160.00	0.6000	0.6000
T6	6	LDF2-50A (3/8 FOAM)	146.67 - 153.33	0.6000	0.6000
T6	13	LDF2-50 (3/8 FOAM)	146.67 - 153.33	0.6000	0.6000
T6	20	AVA5-50 (7/8 LOW DENSI.FOAM)	146.67 - 153.33	0.6000	0.6000
T6	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	146.67 - 153.33	0.6000	0.6000
T6	23	LDF6-50A (1-1/4 FOAM)	146.67 - 153.33	0.6000	0.6000
T6	24	AVA5-50 (7/8 LOW DENSI.FOAM)	146.67 - 153.33	0.6000	0.6000
T6	25	AVA5-50 (7/8 LOW DENSI.FOAM)	146.67 - 153.33	0.6000	0.6000
T6	26	AVA5-50 (7/8 LOW DENSI.FOAM)	146.67 - 153.33	0.6000	0.6000
T6	27	FSJ2-50 (3/8 SUPERFLEX. FOAM)	146.67 - 153.33	0.6000	0.6000
T6	30	AVA5-50 (7/8 LOW DENSI.FOAM)	146.67 - 153.33	0.6000	0.6000
T6	31	Feedline Ladder (Af)	146.67 - 153.33	0.6000	0.6000
T6	33	Feedline Ladder (Af)	146.67 - 153.33	0.6000	0.6000
T6	36	Climbing Pegs	146.67 - 153.33	0.6000	0.6000
T6	37	Climbing Pegs	146.67 - 153.33	0.6000	0.6000
T6	38	Climbing Pegs	146.67 - 153.33	0.6000	0.6000
T7	1	HJ5-50A (7/8 AIR)	140.00 - 144.92	0.6000	0.6000
T7	6	LDF2-50A (3/8 FOAM)	140.00 - 146.67	0.6000	0.6000
T7	13	LDF2-50 (3/8 FOAM)	140.00 - 146.67	0.6000	0.6000
T7	20	AVA5-50 (7/8 LOW DENSI.FOAM)	140.00 - 146.67	0.6000	0.6000
T7	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	140.00 - 146.67	0.6000	0.6000
T7	23	LDF6-50A (1-1/4 FOAM)	140.00 - 146.67	0.6000	0.6000
T7	24	AVA5-50 (7/8 LOW DENSI.FOAM)	140.00 - 146.67	0.6000	0.6000
T7	25	AVA5-50 (7/8 LOW DENSI.FOAM)	140.00 - 146.67	0.6000	0.6000
T7	26	AVA5-50 (7/8 LOW DENSI.FOAM)	140.00 - 146.67	0.6000	0.6000
T7	27	FSJ2-50 (3/8 SUPERFLEX. FOAM)	140.00 - 146.67	0.6000	0.6000
T7	30	AVA5-50 (7/8 LOW DENSI.FOAM)	140.00 - 146.67	0.6000	0.6000
T7	31	Feedline Ladder (Af)	140.00 - 146.67	0.6000	0.6000
T7	33	Feedline Ladder (Af)	140.00 - 146.67	0.6000	0.6000
T7	36	Climbing Pegs	140.00 - 146.67	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T7	37	Climbing Pegs	140.00 - 146.67	0.6000	0.6000
T7	38	Climbing Pegs	140.00 - 146.67	0.6000	0.6000
T8	1	HJ5-50A (7/8 AIR)	133.33 - 140.00	0.6000	0.6000
T8	6	LDF2-50A (3/8 FOAM)	133.33 - 140.00	0.6000	0.6000
T8	13	LDF2-50 (3/8 FOAM)	133.33 - 140.00	0.6000	0.6000
T8	20	AVA5-50 (7/8 LOW DENSI.FOAM)	133.33 - 140.00	0.6000	0.6000
T8	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	133.33 - 140.00	0.6000	0.6000
T8	23	LDF6-50A (1-1/4 FOAM)	133.33 - 140.00	0.6000	0.6000
T8	24	AVA5-50 (7/8 LOW DENSI.FOAM)	133.33 - 140.00	0.6000	0.6000
T8	25	AVA5-50 (7/8 LOW DENSI.FOAM)	133.33 - 140.00	0.6000	0.6000
T8	26	AVA5-50 (7/8 LOW DENSI.FOAM)	133.33 - 140.00	0.6000	0.6000
T8	27	FSJ2-50 (3/8 SUPERFLEX. FOAM)	133.33 - 140.00	0.6000	0.6000
T8	28	FSJ2-50 (3/8 SUPERFLEX. FOAM)	133.33 - 138.75	0.6000	0.6000
T8	29	FSJ2-50 (3/8 SUPERFLEX. FOAM)	133.33 - 136.17	0.6000	0.6000
T8	30	AVA5-50 (7/8 LOW DENSI.FOAM)	133.33 - 140.00	0.6000	0.6000
T8	31	Feedline Ladder (Af)	133.33 - 140.00	0.6000	0.6000
T8	33	Feedline Ladder (Af)	133.33 - 140.00	0.6000	0.6000
T8	36	Climbing Pegs	133.33 - 140.00	0.6000	0.6000
T8	37	Climbing Pegs	133.33 - 140.00	0.6000	0.6000
T8	38	Climbing Pegs	133.33 - 140.00	0.6000	0.6000
T9	1	HJ5-50A (7/8 AIR)	126.67 - 133.33	0.6000	0.6000
T9	6	LDF2-50A (3/8 FOAM)	126.67 - 133.33	0.6000	0.6000
T9	7	EW63	126.67 - 133.17	0.6000	0.6000
T9	13	LDF2-50 (3/8 FOAM)	126.67 - 133.33	0.6000	0.6000
T9	19	AVA5-50 (7/8 LOW DENSI.FOAM)	126.67 - 126.67	0.6000	0.6000
T9	20	AVA5-50 (7/8 LOW DENSI.FOAM)	126.67 - 133.33	0.6000	0.6000
T9	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	126.67 - 133.33	0.6000	0.6000
T9	23	LDF6-50A (1-1/4 FOAM)	126.67 - 133.33	0.6000	0.6000
T9	24	AVA5-50 (7/8 LOW DENSI.FOAM)	126.67 - 133.33	0.6000	0.6000
T9	25	AVA5-50 (7/8 LOW DENSI.FOAM)	126.67 - 133.33	0.6000	0.6000
T9	26	AVA5-50 (7/8 LOW DENSI.FOAM)	126.67 - 133.33	0.6000	0.6000

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
T9	27	FSJ2-50 (3/8 SUPERFLEX. FOAM)	126.67 - 133.33	0.6000	0.6000
T9	28	FSJ2-50 (3/8 SUPERFLEX. FOAM)	126.67 - 133.33	0.6000	0.6000
T9	29	FSJ2-50 (3/8 SUPERFLEX. FOAM)	126.67 - 133.33	0.6000	0.6000
T9	30	AVA5-50 (7/8 LOW DENSI.FOAM)	126.67 - 133.33	0.6000	0.6000
T9	31	Feedline Ladder (Af)	126.67 - 133.33	0.6000	0.6000
T9	33	Feedline Ladder (Af)	126.67 - 133.33	0.6000	0.6000
T9	36	Climbing Pegs	126.67 - 133.33	0.6000	0.6000
T9	37	Climbing Pegs	126.67 - 133.33	0.6000	0.6000
T9	38	Climbing Pegs	126.67 - 133.33	0.6000	0.6000
T10	1	HJ5-50A (7/8 AIR)	120.00 - 126.67	0.6000	0.6000
T10	6	LDF2-50A (3/8 FOAM)	120.00 - 126.67	0.6000	0.6000
T10	7	EW63	120.00 - 126.67	0.6000	0.6000
T10	8	LCF158-50J (1 5/8 FOAM)	120.00 - 125.25	0.6000	0.6000
T10	10	LCF158-50J (1 5/8 FOAM)	120.00 - 125.25	0.6000	0.6000
T10	13	LDF2-50 (3/8 FOAM)	120.00 - 126.67	0.6000	0.6000
T10	19	AVA5-50 (7/8 LOW DENSI.FOAM)	120.00 - 126.67	0.6000	0.6000
T10	20	AVA5-50 (7/8 LOW DENSI.FOAM)	120.00 - 126.67	0.6000	0.6000
T10	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	120.00 - 126.67	0.6000	0.6000
T10	22	AVA5-50 (7/8 LOW DENSI.FOAM)	120.00 - 123.17	0.6000	0.6000
T10	23	LDF6-50A (1-1/4 FOAM)	120.00 - 126.67	0.6000	0.6000
T10	24	AVA5-50 (7/8 LOW DENSI.FOAM)	120.00 - 126.67	0.6000	0.6000
T10	25	AVA5-50 (7/8 LOW DENSI.FOAM)	120.00 - 126.67	0.6000	0.6000
T10	26	AVA5-50 (7/8 LOW DENSI.FOAM)	120.00 - 126.67	0.6000	0.6000
T10	27	FSJ2-50 (3/8 SUPERFLEX. FOAM)	120.00 - 126.67	0.6000	0.6000
T10	28	FSJ2-50 (3/8 SUPERFLEX. FOAM)	120.00 - 126.67	0.6000	0.6000
T10	29	FSJ2-50 (3/8 SUPERFLEX. FOAM)	120.00 - 126.67	0.6000	0.6000
T10	30	AVA5-50 (7/8 LOW DENSI.FOAM)	120.00 - 126.67	0.6000	0.6000
T10	31	Feedline Ladder (Af)	120.00 - 126.67	0.6000	0.6000
T10	33	Feedline Ladder (Af)	120.00 - 126.67	0.6000	0.6000
T10	36	Climbing Pegs	120.00 - 126.67	0.6000	0.6000
T10	37	Climbing Pegs	120.00 - 126.67	0.6000	0.6000

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
T10	38	Climbing Pegs	120.00 - 126.67	0.6000	0.6000
T11	1	HJ5-50A (7/8 AIR)	113.33 - 120.00	0.6000	0.6000
T11	6	LDF2-50A (3/8 FOAM)	113.33 - 120.00	0.6000	0.6000
T11	7	EW63	113.33 - 120.00	0.6000	0.6000
T11	8	LCF158-50J (1 5/8 FOAM)	113.33 - 120.00	0.6000	0.6000
T11	9	LCF58-50J (5/8 FOAM)	113.33 - 119.50	0.6000	0.6000
T11	10	LCF158-50J (1 5/8 FOAM)	113.33 - 120.00	0.6000	0.6000
T11	13	LDF2-50 (3/8 FOAM)	113.33 - 120.00	0.6000	0.6000
T11	19	AVA5-50 (7/8 LOW DENSI.FOAM)	113.33 - 120.00	0.6000	0.6000
T11	20	AVA5-50 (7/8 LOW DENSI.FOAM)	113.33 - 120.00	0.6000	0.6000
T11	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	113.33 - 120.00	0.6000	0.6000
T11	22	AVA5-50 (7/8 LOW DENSI.FOAM)	113.33 - 120.00	0.6000	0.6000
T11	23	LDF6-50A (1-1/4 FOAM)	113.33 - 120.00	0.6000	0.6000
T11	24	AVA5-50 (7/8 LOW DENSI.FOAM)	113.33 - 120.00	0.6000	0.6000
T11	25	AVA5-50 (7/8 LOW DENSI.FOAM)	113.33 - 120.00	0.6000	0.6000
T11	26	AVA5-50 (7/8 LOW DENSI.FOAM)	113.33 - 120.00	0.6000	0.6000
T11	27	FSJ2-50 (3/8 SUPERFLEX. FOAM)	113.33 - 120.00	0.6000	0.6000
T11	28	FSJ2-50 (3/8 SUPERFLEX. FOAM)	113.33 - 120.00	0.6000	0.6000
T11	29	FSJ2-50 (3/8 SUPERFLEX. FOAM)	113.33 - 120.00	0.6000	0.6000
T11	30	AVA5-50 (7/8 LOW DENSI.FOAM)	113.33 - 120.00	0.6000	0.6000
T11	31	Feedline Ladder (Af)	113.33 - 120.00	0.6000	0.6000
T11	33	Feedline Ladder (Af)	113.33 - 120.00	0.6000	0.6000
T11	36	Climbing Pegs	113.33 - 120.00	0.6000	0.6000
T11	37	Climbing Pegs	113.33 - 120.00	0.6000	0.6000
T11	38	Climbing Pegs	113.33 - 120.00	0.6000	0.6000
T12	1	HJ5-50A (7/8 AIR)	106.67 - 113.33	0.6000	0.6000
T12	6	LDF2-50A (3/8 FOAM)	106.67 - 113.33	0.6000	0.6000
T12	7	EW63	106.67 - 113.33	0.6000	0.6000
T12	8	LCF158-50J (1 5/8 FOAM)	106.67 - 113.33	0.6000	0.6000
T12	9	LCF58-50J (5/8 FOAM)	106.67 - 113.33	0.6000	0.6000
T12	10	LCF158-50J (1 5/8 FOAM)	106.67 - 113.33	0.6000	0.6000

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
T12	11	LCF58-50J (5/8 FOAM)	106.67 - 112.92	0.6000	0.6000
T12	13	LDF2-50 (3/8 FOAM)	106.67 - 113.33	0.6000	0.6000
T12	19	AVA5-50 (7/8 LOW DENSI.FOAM)	106.67 - 113.33	0.6000	0.6000
T12	20	AVA5-50 (7/8 LOW DENSI.FOAM)	106.67 - 113.33	0.6000	0.6000
T12	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	106.67 - 113.33	0.6000	0.6000
T12	22	AVA5-50 (7/8 LOW DENSI.FOAM)	106.67 - 113.33	0.6000	0.6000
T12	23	LDF6-50A (1-1/4 FOAM)	106.67 - 113.33	0.6000	0.6000
T12	24	AVA5-50 (7/8 LOW DENSI.FOAM)	106.67 - 113.33	0.6000	0.6000
T12	25	AVA5-50 (7/8 LOW DENSI.FOAM)	106.67 - 113.33	0.6000	0.6000
T12	26	AVA5-50 (7/8 LOW DENSI.FOAM)	106.67 - 113.33	0.6000	0.6000
T12	27	FSJ2-50 (3/8 SUPERFLEX. FOAM)	106.67 - 113.33	0.6000	0.6000
T12	28	FSJ2-50 (3/8 SUPERFLEX. FOAM)	106.67 - 113.33	0.6000	0.6000
T12	29	FSJ2-50 (3/8 SUPERFLEX. FOAM)	106.67 - 113.33	0.6000	0.6000
T12	30	AVA5-50 (7/8 LOW DENSI.FOAM)	106.67 - 113.33	0.6000	0.6000
T12	31	Feedline Ladder (Af)	106.67 - 113.33	0.6000	0.6000
T12	33	Feedline Ladder (Af)	106.67 - 113.33	0.6000	0.6000
T12	36	Climbing Pegs	106.67 - 113.33	0.6000	0.6000
T12	37	Climbing Pegs	106.67 - 113.33	0.6000	0.6000
T12	38	Climbing Pegs	106.67 - 113.33	0.6000	0.6000
T13	1	HJ5-50A (7/8 AIR)	100.00 - 106.67	0.6000	0.6000
T13	6	LDF2-50A (3/8 FOAM)	100.00 - 106.67	0.6000	0.6000
T13	7	EW63	100.00 - 106.67	0.6000	0.6000
T13	8	LCF158-50J (1 5/8 FOAM)	100.00 - 106.67	0.6000	0.6000
T13	9	LCF58-50J (5/8 FOAM)	100.00 - 106.67	0.6000	0.6000
T13	10	LCF158-50J (1 5/8 FOAM)	100.00 - 106.67	0.6000	0.6000
T13	11	LCF58-50J (5/8 FOAM)	100.00 - 106.67	0.6000	0.6000
T13	13	LDF2-50 (3/8 FOAM)	100.00 - 106.67	0.6000	0.6000
T13	18	FSJ2-50 (3/8 SUPERFLEX. FOAM)	100.00 - 104.50	0.6000	0.6000
T13	19	AVA5-50 (7/8 LOW DENSI.FOAM)	100.00 - 106.67	0.6000	0.6000
T13	20	AVA5-50 (7/8 LOW DENSI.FOAM)	100.00 - 106.67	0.6000	0.6000
T13	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	100.00 - 106.67	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T13	22	AVA5-50 (7/8 LOW DENSI.FOAM)	100.00 - 106.67	0.6000	0.6000
T13	23	LDF6-50A (1-1/4 FOAM)	100.00 - 106.67	0.6000	0.6000
T13	24	AVA5-50 (7/8 LOW DENSI.FOAM)	100.00 - 106.67	0.6000	0.6000
T13	25	AVA5-50 (7/8 LOW DENSI.FOAM)	100.00 - 106.67	0.6000	0.6000
T13	26	AVA5-50 (7/8 LOW DENSI.FOAM)	100.00 - 106.67	0.6000	0.6000
T13	27	FSJ2-50 (3/8 SUPERFLEX. FOAM)	100.00 - 106.67	0.6000	0.6000
T13	28	FSJ2-50 (3/8 SUPERFLEX. FOAM)	100.00 - 106.67	0.6000	0.6000
T13	29	FSJ2-50 (3/8 SUPERFLEX. FOAM)	100.00 - 106.67	0.6000	0.6000
T13	30	AVA5-50 (7/8 LOW DENSI.FOAM)	100.00 - 106.67	0.6000	0.6000
T13	31	Feedline Ladder (Af)	100.00 - 106.67	0.6000	0.6000
T13	33	Feedline Ladder (Af)	100.00 - 106.67	0.6000	0.6000
T13	36	Climbing Pegs	100.00 - 106.67	0.6000	0.6000
T13	37	Climbing Pegs	100.00 - 106.67	0.6000	0.6000
T13	38	Climbing Pegs	100.00 - 106.67	0.6000	0.6000
T14	1	HJ5-50A (7/8 AIR)	90.00 - 100.00	0.6000	0.6000
T14	2	LDF2-50A (3/8 FOAM)	90.00 - 99.00	0.6000	0.6000
T14	5	LDF2-50A (3/8 FOAM)	90.00 - 90.70	0.6000	0.6000
T14	6	LDF2-50A (3/8 FOAM)	90.00 - 100.00	0.6000	0.6000
T14	7	EW63	90.00 - 100.00	0.6000	0.6000
T14	8	LCF158-50J (1 5/8 FOAM)	90.00 - 100.00	0.6000	0.6000
T14	9	LCF58-50J (5/8 FOAM)	90.00 - 100.00	0.6000	0.6000
T14	10	LCF158-50J (1 5/8 FOAM)	90.00 - 100.00	0.6000	0.6000
T14	11	LCF58-50J (5/8 FOAM)	90.00 - 100.00	0.6000	0.6000
T14	13	LDF2-50 (3/8 FOAM)	90.00 - 100.00	0.6000	0.6000
T14	14	AVA5-50 (7/8 LOW DENSI.FOAM)	90.00 - 90.71	0.6000	0.6000
T14	15	FLC 158-50J (1 5/8 FOAM)	90.00 - 90.71	0.6000	0.6000
T14	16	LDF5-50A (7/8 FOAM)	90.00 - 90.71	0.6000	0.6000
T14	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	90.00 - 90.71	0.6000	0.6000
T14	18	FSJ2-50 (3/8 SUPERFLEX. FOAM)	90.00 - 100.00	0.6000	0.6000
T14	19	AVA5-50 (7/8 LOW DENSI.FOAM)	90.00 - 100.00	0.6000	0.6000
T14	20	AVA5-50 (7/8 LOW DENSI.FOAM)	90.00 - 100.00	0.6000	0.6000
T14	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	90.00 - 100.00	0.6000	0.6000
T14	22	AVA5-50 (7/8 LOW DENSI.FOAM)	90.00 - 100.00	0.6000	0.6000
T14	23	LDF6-50A (1-1/4 FOAM)	90.00 - 100.00	0.6000	0.6000
T14	24	AVA5-50 (7/8 LOW DENSI.FOAM)	90.00 - 100.00	0.6000	0.6000
T14	25	AVA5-50 (7/8 LOW DENSI.FOAM)	90.00 - 100.00	0.6000	0.6000
T14	26	AVA5-50 (7/8 LOW DENSI.FOAM)	90.00 - 100.00	0.6000	0.6000
T14	27	FSJ2-50 (3/8 SUPERFLEX.	90.00 - 100.00	0.6000	0.6000

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
		FOAM)			
T14	28	FSJ2-50 (3/8 SUPERFLEX. FOAM)	90.00 - 100.00	0.6000	0.6000
T14	29	FSJ2-50 (3/8 SUPERFLEX. FOAM)	90.00 - 100.00	0.6000	0.6000
T14	30	AVA5-50 (7/8 LOW DENSI.FOAM)	90.00 - 100.00	0.6000	0.6000
T14	31	Feedline Ladder (Af)	90.00 - 100.00	0.6000	0.6000
T14	33	Feedline Ladder (Af)	90.00 - 100.00	0.6000	0.6000
T14	36	Climbing Pegs	90.00 - 100.00	0.6000	0.6000
T14	37	Climbing Pegs	90.00 - 100.00	0.6000	0.6000
T14	38	Climbing Pegs	90.00 - 100.00	0.6000	0.6000
T15	1	HJ5-50A (7/8 AIR)	80.00 - 90.00	0.6000	0.6000
T15	2	LDF2-50A (3/8 FOAM)	80.00 - 90.00	0.6000	0.6000
T15	5	LDF2-50A (3/8 FOAM)	80.00 - 90.00	0.6000	0.6000
T15	6	LDF2-50A (3/8 FOAM)	80.00 - 90.00	0.6000	0.6000
T15	7	EW63	80.00 - 90.00	0.6000	0.6000
T15	8	LCF158-50J (1 5/8 FOAM)	80.00 - 90.00	0.6000	0.6000
T15	9	LCF58-50J (5/8 FOAM)	80.00 - 90.00	0.6000	0.6000
T15	10	LCF158-50J (1 5/8 FOAM)	80.00 - 90.00	0.6000	0.6000
T15	11	LCF58-50J (5/8 FOAM)	80.00 - 90.00	0.6000	0.6000
T15	13	LDF2-50 (3/8 FOAM)	80.00 - 90.00	0.6000	0.6000
T15	14	AVA5-50 (7/8 LOW DENSI.FOAM)	80.00 - 90.00	0.6000	0.6000
T15	15	FLC 158-50J (1 5/8 FOAM)	80.00 - 90.00	0.6000	0.6000
T15	16	LDF5-50A (7/8 FOAM)	80.00 - 90.00	0.6000	0.6000
T15	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	80.00 - 90.00	0.6000	0.6000
T15	18	FSJ2-50 (3/8 SUPERFLEX. FOAM)	80.00 - 90.00	0.6000	0.6000
T15	19	AVA5-50 (7/8 LOW DENSI.FOAM)	80.00 - 90.00	0.6000	0.6000
T15	20	AVA5-50 (7/8 LOW DENSI.FOAM)	80.00 - 90.00	0.6000	0.6000
T15	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	80.00 - 90.00	0.6000	0.6000
T15	22	AVA5-50 (7/8 LOW DENSI.FOAM)	80.00 - 90.00	0.6000	0.6000
T15	23	LDF6-50A (1-1/4 FOAM)	80.00 - 90.00	0.6000	0.6000
T15	24	AVA5-50 (7/8 LOW DENSI.FOAM)	80.00 - 90.00	0.6000	0.6000
T15	25	AVA5-50 (7/8 LOW DENSI.FOAM)	80.00 - 90.00	0.6000	0.6000
T15	26	AVA5-50 (7/8 LOW DENSI.FOAM)	80.00 - 90.00	0.6000	0.6000
T15	27	FSJ2-50 (3/8 SUPERFLEX. FOAM)	80.00 - 90.00	0.6000	0.6000
T15	28	FSJ2-50 (3/8 SUPERFLEX. FOAM)	80.00 - 90.00	0.6000	0.6000
T15	29	FSJ2-50 (3/8 SUPERFLEX. FOAM)	80.00 - 90.00	0.6000	0.6000
T15	30	AVA5-50 (7/8 LOW DENSI.FOAM)	80.00 - 90.00	0.6000	0.6000
T15	31	Feedline Ladder (Af)	80.00 - 90.00	0.6000	0.6000
T15	32	Feedline Ladder (Af)	80.00 - 83.00	0.6000	0.6000
T15	33	Feedline Ladder (Af)	80.00 - 90.00	0.6000	0.6000
T15	36	Climbing Pegs	80.00 - 90.00	0.6000	0.6000
T15	37	Climbing Pegs	80.00 - 90.00	0.6000	0.6000
T15	38	Climbing Pegs	80.00 - 90.00	0.6000	0.6000
T16	1	HJ5-50A (7/8 AIR)	70.00 - 80.00	0.6000	0.6000
T16	2	LDF2-50A (3/8 FOAM)	70.00 - 80.00	0.6000	0.6000
T16	3	LDF2-50A (3/8 FOAM)	70.00 - 73.75	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T16	4	LDF2-50A (3/8 FOAM)	70.00 - 77.50	0.6000	0.6000
T16	5	LDF2-50A (3/8 FOAM)	70.00 - 80.00	0.6000	0.6000
T16	6	LDF2-50A (3/8 FOAM)	70.00 - 80.00	0.6000	0.6000
T16	7	EW63	70.00 - 80.00	0.6000	0.6000
T16	8	LCF158-50J (1 5/8 FOAM)	70.00 - 80.00	0.6000	0.6000
T16	9	LCF58-50J (5/8 FOAM)	70.00 - 80.00	0.6000	0.6000
T16	10	LCF158-50J (1 5/8 FOAM)	70.00 - 80.00	0.6000	0.6000
T16	11	LCF58-50J (5/8 FOAM)	70.00 - 80.00	0.6000	0.6000
T16	12	LCF158-50J (1 5/8 FOAM)	70.00 - 76.67	0.6000	0.6000
T16	13	LDF2-50 (3/8 FOAM)	70.00 - 80.00	0.6000	0.6000
T16	14	AVA5-50 (7/8 LOW DENSI.FOAM)	70.00 - 80.00	0.6000	0.6000
T16	15	FLC 158-50J (1 5/8 FOAM)	70.00 - 80.00	0.6000	0.6000
T16	16	LDF5-50A (7/8 FOAM)	70.00 - 80.00	0.6000	0.6000
T16	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	70.00 - 80.00	0.6000	0.6000
T16	18	FSJ2-50 (3/8 SUPERFLEX. FOAM)	70.00 - 80.00	0.6000	0.6000
T16	19	AVA5-50 (7/8 LOW DENSI.FOAM)	70.00 - 80.00	0.6000	0.6000
T16	20	AVA5-50 (7/8 LOW DENSI.FOAM)	70.00 - 80.00	0.6000	0.6000
T16	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	70.00 - 80.00	0.6000	0.6000
T16	22	AVA5-50 (7/8 LOW DENSI.FOAM)	70.00 - 80.00	0.6000	0.6000
T16	23	LDF6-50A (1-1/4 FOAM)	70.00 - 80.00	0.6000	0.6000
T16	24	AVA5-50 (7/8 LOW DENSI.FOAM)	70.00 - 80.00	0.6000	0.6000
T16	25	AVA5-50 (7/8 LOW DENSI.FOAM)	70.00 - 80.00	0.6000	0.6000
T16	26	AVA5-50 (7/8 LOW DENSI.FOAM)	70.00 - 80.00	0.6000	0.6000
T16	27	FSJ2-50 (3/8 SUPERFLEX. FOAM)	70.00 - 80.00	0.6000	0.6000
T16	28	FSJ2-50 (3/8 SUPERFLEX. FOAM)	70.00 - 80.00	0.6000	0.6000
T16	29	FSJ2-50 (3/8 SUPERFLEX. FOAM)	70.00 - 80.00	0.6000	0.6000
T16	30	AVA5-50 (7/8 LOW DENSI.FOAM)	70.00 - 80.00	0.6000	0.6000
T16	31	Feedline Ladder (Af)	70.00 - 80.00	0.6000	0.6000
T16	32	Feedline Ladder (Af)	70.00 - 80.00	0.6000	0.6000
T16	33	Feedline Ladder (Af)	70.00 - 80.00	0.6000	0.6000
T16	36	Climbing Pegs	70.00 - 80.00	0.6000	0.6000
T16	37	Climbing Pegs	70.00 - 80.00	0.6000	0.6000
T16	38	Climbing Pegs	70.00 - 80.00	0.6000	0.6000
T17	1	HJ5-50A (7/8 AIR)	60.00 - 70.00	0.6000	0.6000
T17	2	LDF2-50A (3/8 FOAM)	60.00 - 70.00	0.6000	0.6000
T17	3	LDF2-50A (3/8 FOAM)	60.00 - 70.00	0.6000	0.6000
T17	4	LDF2-50A (3/8 FOAM)	60.00 - 70.00	0.6000	0.6000
T17	5	LDF2-50A (3/8 FOAM)	60.00 - 70.00	0.6000	0.6000
T17	6	LDF2-50A (3/8 FOAM)	60.00 - 70.00	0.6000	0.6000
T17	7	EW63	60.00 - 70.00	0.6000	0.6000
T17	8	LCF158-50J (1 5/8 FOAM)	60.00 - 70.00	0.6000	0.6000
T17	9	LCF58-50J (5/8 FOAM)	60.00 - 70.00	0.6000	0.6000
T17	10	LCF158-50J (1 5/8 FOAM)	60.00 - 70.00	0.6000	0.6000
T17	11	LCF58-50J (5/8 FOAM)	60.00 - 70.00	0.6000	0.6000
T17	12	LCF158-50J (1 5/8 FOAM)	60.00 - 70.00	0.6000	0.6000
T17	13	LDF2-50 (3/8 FOAM)	60.00 - 70.00	0.6000	0.6000
T17	14	AVA5-50 (7/8 LOW DENSI.FOAM)	60.00 - 70.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T17	15	FLC 158-50J (1 5/8 FOAM)	60.00 - 70.00	0.6000	0.6000
T17	16	LDF5-50A (7/8 FOAM)	60.00 - 70.00	0.6000	0.6000
T17	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	60.00 - 70.00	0.6000	0.6000
T17	18	FSJ2-50 (3/8 SUPERFLEX. FOAM)	60.00 - 70.00	0.6000	0.6000
T17	19	AVA5-50 (7/8 LOW DENSI.FOAM)	60.00 - 70.00	0.6000	0.6000
T17	20	AVA5-50 (7/8 LOW DENSI.FOAM)	60.00 - 70.00	0.6000	0.6000
T17	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	60.00 - 70.00	0.6000	0.6000
T17	22	AVA5-50 (7/8 LOW DENSI.FOAM)	60.00 - 70.00	0.6000	0.6000
T17	23	LDF6-50A (1-1/4 FOAM)	60.00 - 70.00	0.6000	0.6000
T17	24	AVA5-50 (7/8 LOW DENSI.FOAM)	60.00 - 70.00	0.6000	0.6000
T17	25	AVA5-50 (7/8 LOW DENSI.FOAM)	60.00 - 70.00	0.6000	0.6000
T17	26	AVA5-50 (7/8 LOW DENSI.FOAM)	60.00 - 70.00	0.6000	0.6000
T17	27	FSJ2-50 (3/8 SUPERFLEX. FOAM)	60.00 - 70.00	0.6000	0.6000
T17	28	FSJ2-50 (3/8 SUPERFLEX. FOAM)	60.00 - 70.00	0.6000	0.6000
T17	29	FSJ2-50 (3/8 SUPERFLEX. FOAM)	60.00 - 70.00	0.6000	0.6000
T17	30	AVA5-50 (7/8 LOW DENSI.FOAM)	60.00 - 70.00	0.6000	0.6000
T17	31	Feedline Ladder (Af)	60.00 - 70.00	0.6000	0.6000
T17	32	Feedline Ladder (Af)	60.00 - 70.00	0.6000	0.6000
T17	33	Feedline Ladder (Af)	60.00 - 70.00	0.6000	0.6000
T17	36	Climbing Pegs	60.00 - 70.00	0.6000	0.6000
T17	37	Climbing Pegs	60.00 - 70.00	0.6000	0.6000
T17	38	Climbing Pegs	60.00 - 70.00	0.6000	0.6000
T18	1	HJ5-50A (7/8 AIR)	50.00 - 60.00	0.6000	0.6000
T18	2	LDF2-50A (3/8 FOAM)	50.00 - 60.00	0.6000	0.6000
T18	3	LDF2-50A (3/8 FOAM)	50.00 - 60.00	0.6000	0.6000
T18	4	LDF2-50A (3/8 FOAM)	50.00 - 60.00	0.6000	0.6000
T18	5	LDF2-50A (3/8 FOAM)	50.00 - 60.00	0.6000	0.6000
T18	6	LDF2-50A (3/8 FOAM)	50.00 - 60.00	0.6000	0.6000
T18	7	EW63	50.00 - 60.00	0.6000	0.6000
T18	8	LCF158-50J (1 5/8 FOAM)	50.00 - 60.00	0.6000	0.6000
T18	9	LCF58-50J (5/8 FOAM)	50.00 - 60.00	0.6000	0.6000
T18	10	LCF158-50J (1 5/8 FOAM)	50.00 - 60.00	0.6000	0.6000
T18	11	LCF58-50J (5/8 FOAM)	50.00 - 60.00	0.6000	0.6000
T18	12	LCF158-50J (1 5/8 FOAM)	50.00 - 60.00	0.6000	0.6000
T18	13	LDF2-50 (3/8 FOAM)	50.00 - 60.00	0.6000	0.6000
T18	14	AVA5-50 (7/8 LOW DENSI.FOAM)	50.00 - 60.00	0.6000	0.6000
T18	15	FLC 158-50J (1 5/8 FOAM)	50.00 - 60.00	0.6000	0.6000
T18	16	LDF5-50A (7/8 FOAM)	50.00 - 60.00	0.6000	0.6000
T18	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	50.00 - 60.00	0.6000	0.6000
T18	18	FSJ2-50 (3/8 SUPERFLEX. FOAM)	50.00 - 60.00	0.6000	0.6000
T18	19	AVA5-50 (7/8 LOW DENSI.FOAM)	50.00 - 60.00	0.6000	0.6000
T18	20	AVA5-50 (7/8 LOW DENSI.FOAM)	50.00 - 60.00	0.6000	0.6000
T18	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	50.00 - 60.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T18	22	AVA5-50 (7/8 LOW DENSI.FOAM)	50.00 - 60.00	0.6000	0.6000
T18	23	LDF6-50A (1-1/4 FOAM)	50.00 - 60.00	0.6000	0.6000
T18	24	AVA5-50 (7/8 LOW DENSI.FOAM)	50.00 - 60.00	0.6000	0.6000
T18	25	AVA5-50 (7/8 LOW DENSI.FOAM)	50.00 - 60.00	0.6000	0.6000
T18	26	AVA5-50 (7/8 LOW DENSI.FOAM)	50.00 - 60.00	0.6000	0.6000
T18	27	FSJ2-50 (3/8 SUPERFLEX. FOAM)	50.00 - 60.00	0.6000	0.6000
T18	28	FSJ2-50 (3/8 SUPERFLEX. FOAM)	50.00 - 60.00	0.6000	0.6000
T18	29	FSJ2-50 (3/8 SUPERFLEX. FOAM)	50.00 - 60.00	0.6000	0.6000
T18	30	AVA5-50 (7/8 LOW DENSI.FOAM)	50.00 - 60.00	0.6000	0.6000
T18	31	Feedline Ladder (Af)	50.00 - 60.00	0.6000	0.6000
T18	32	Feedline Ladder (Af)	50.00 - 60.00	0.6000	0.6000
T18	33	Feedline Ladder (Af)	50.00 - 60.00	0.6000	0.6000
T18	36	Climbing Pegs	50.00 - 60.00	0.6000	0.6000
T18	37	Climbing Pegs	50.00 - 60.00	0.6000	0.6000
T18	38	Climbing Pegs	50.00 - 60.00	0.6000	0.6000
T19	1	HJ5-50A (7/8 AIR)	40.00 - 50.00	0.6000	0.6000
T19	2	LDF2-50A (3/8 FOAM)	40.00 - 50.00	0.6000	0.6000
T19	3	LDF2-50A (3/8 FOAM)	40.00 - 50.00	0.6000	0.6000
T19	4	LDF2-50A (3/8 FOAM)	40.00 - 50.00	0.6000	0.6000
T19	5	LDF2-50A (3/8 FOAM)	40.00 - 50.00	0.6000	0.6000
T19	6	LDF2-50A (3/8 FOAM)	40.00 - 50.00	0.6000	0.6000
T19	7	EW63	40.00 - 50.00	0.6000	0.6000
T19	8	LCF158-50J (1 5/8 FOAM)	40.00 - 50.00	0.6000	0.6000
T19	9	LCF58-50J (5/8 FOAM)	40.00 - 50.00	0.6000	0.6000
T19	10	LCF158-50J (1 5/8 FOAM)	40.00 - 50.00	0.6000	0.6000
T19	11	LCF58-50J (5/8 FOAM)	40.00 - 50.00	0.6000	0.6000
T19	12	LCF158-50J (1 5/8 FOAM)	40.00 - 50.00	0.6000	0.6000
T19	13	LDF2-50 (3/8 FOAM)	40.00 - 50.00	0.6000	0.6000
T19	14	AVA5-50 (7/8 LOW DENSI.FOAM)	40.00 - 50.00	0.6000	0.6000
T19	15	FLC 158-50J (1 5/8 FOAM)	40.00 - 50.00	0.6000	0.6000
T19	16	LDF5-50A (7/8 FOAM)	40.00 - 50.00	0.6000	0.6000
T19	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	40.00 - 50.00	0.6000	0.6000
T19	18	FSJ2-50 (3/8 SUPERFLEX. FOAM)	40.00 - 50.00	0.6000	0.6000
T19	19	AVA5-50 (7/8 LOW DENSI.FOAM)	40.00 - 50.00	0.6000	0.6000
T19	20	AVA5-50 (7/8 LOW DENSI.FOAM)	40.00 - 50.00	0.6000	0.6000
T19	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	40.00 - 50.00	0.6000	0.6000
T19	22	AVA5-50 (7/8 LOW DENSI.FOAM)	40.00 - 50.00	0.6000	0.6000
T19	23	LDF6-50A (1-1/4 FOAM)	40.00 - 50.00	0.6000	0.6000
T19	24	AVA5-50 (7/8 LOW DENSI.FOAM)	40.00 - 50.00	0.6000	0.6000
T19	25	AVA5-50 (7/8 LOW DENSI.FOAM)	40.00 - 50.00	0.6000	0.6000
T19	26	AVA5-50 (7/8 LOW DENSI.FOAM)	40.00 - 50.00	0.6000	0.6000
T19	27	FSJ2-50 (3/8 SUPERFLEX. FOAM)	40.00 - 50.00	0.6000	0.6000
T19	28	FSJ2-50 (3/8 SUPERFLEX.	40.00 - 50.00	0.6000	0.6000

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
		FOAM)			
T19	29	FSJ2-50 (3/8 SUPERFLEX. FOAM)	40.00 - 50.00	0.6000	0.6000
T19	30	AVA5-50 (7/8 LOW DENSI.FOAM)	40.00 - 50.00	0.6000	0.6000
T19	31	Feedline Ladder (Af)	40.00 - 50.00	0.6000	0.6000
T19	32	Feedline Ladder (Af)	40.00 - 50.00	0.6000	0.6000
T19	33	Feedline Ladder (Af)	40.00 - 50.00	0.6000	0.6000
T19	36	Climbing Pegs	40.00 - 50.00	0.6000	0.6000
T19	37	Climbing Pegs	40.00 - 50.00	0.6000	0.6000
T19	38	Climbing Pegs	40.00 - 50.00	0.6000	0.6000
T20	1	HJ5-50A (7/8 AIR)	30.00 - 40.00	0.6000	0.6000
T20	2	LDF2-50A (3/8 FOAM)	30.00 - 40.00	0.6000	0.6000
T20	3	LDF2-50A (3/8 FOAM)	30.00 - 40.00	0.6000	0.6000
T20	4	LDF2-50A (3/8 FOAM)	30.00 - 40.00	0.6000	0.6000
T20	5	LDF2-50A (3/8 FOAM)	30.00 - 40.00	0.6000	0.6000
T20	6	LDF2-50A (3/8 FOAM)	30.00 - 40.00	0.6000	0.6000
T20	7	EW63	30.00 - 40.00	0.6000	0.6000
T20	8	LCF158-50J (1 5/8 FOAM)	30.00 - 40.00	0.6000	0.6000
T20	9	LCF58-50J (5/8 FOAM)	30.00 - 40.00	0.6000	0.6000
T20	10	LCF158-50J (1 5/8 FOAM)	30.00 - 40.00	0.6000	0.6000
T20	11	LCF58-50J (5/8 FOAM)	30.00 - 40.00	0.6000	0.6000
T20	12	LCF158-50J (1 5/8 FOAM)	30.00 - 40.00	0.6000	0.6000
T20	13	LDF2-50 (3/8 FOAM)	30.00 - 40.00	0.6000	0.6000
T20	14	AVA5-50 (7/8 LOW DENSI.FOAM)	30.00 - 40.00	0.6000	0.6000
T20	15	FLC 158-50J (1 5/8 FOAM)	30.00 - 40.00	0.6000	0.6000
T20	16	LDF5-50A (7/8 FOAM)	30.00 - 40.00	0.6000	0.6000
T20	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	30.00 - 40.00	0.6000	0.6000
T20	18	FSJ2-50 (3/8 SUPERFLEX. FOAM)	30.00 - 40.00	0.6000	0.6000
T20	19	AVA5-50 (7/8 LOW DENSI.FOAM)	30.00 - 40.00	0.6000	0.6000
T20	20	AVA5-50 (7/8 LOW DENSI.FOAM)	30.00 - 40.00	0.6000	0.6000
T20	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	30.00 - 40.00	0.6000	0.6000
T20	22	AVA5-50 (7/8 LOW DENSI.FOAM)	30.00 - 40.00	0.6000	0.6000
T20	23	LDF6-50A (1-1/4 FOAM)	30.00 - 40.00	0.6000	0.6000
T20	24	AVA5-50 (7/8 LOW DENSI.FOAM)	30.00 - 40.00	0.6000	0.6000
T20	25	AVA5-50 (7/8 LOW DENSI.FOAM)	30.00 - 40.00	0.6000	0.6000
T20	26	AVA5-50 (7/8 LOW DENSI.FOAM)	30.00 - 40.00	0.6000	0.6000
T20	27	FSJ2-50 (3/8 SUPERFLEX. FOAM)	30.00 - 40.00	0.6000	0.6000
T20	28	FSJ2-50 (3/8 SUPERFLEX. FOAM)	30.00 - 40.00	0.6000	0.6000
T20	29	FSJ2-50 (3/8 SUPERFLEX. FOAM)	30.00 - 40.00	0.6000	0.6000
T20	30	AVA5-50 (7/8 LOW DENSI.FOAM)	30.00 - 40.00	0.6000	0.6000
T20	31	Feedline Ladder (Af)	30.00 - 40.00	0.6000	0.6000
T20	32	Feedline Ladder (Af)	30.00 - 40.00	0.6000	0.6000
T20	33	Feedline Ladder (Af)	30.00 - 40.00	0.6000	0.6000
T20	36	Climbing Pegs	30.00 - 40.00	0.6000	0.6000
T20	37	Climbing Pegs	30.00 - 40.00	0.6000	0.6000
T20	38	Climbing Pegs	30.00 - 40.00	0.6000	0.6000
T21	1	HJ5-50A (7/8 AIR)	20.00 - 30.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T21	2	LDF2-50A (3/8 FOAM)	20.00 - 30.00	0.6000	0.6000
T21	3	LDF2-50A (3/8 FOAM)	20.00 - 30.00	0.6000	0.6000
T21	4	LDF2-50A (3/8 FOAM)	20.00 - 30.00	0.6000	0.6000
T21	5	LDF2-50A (3/8 FOAM)	20.00 - 30.00	0.6000	0.6000
T21	6	LDF2-50A (3/8 FOAM)	20.00 - 30.00	0.6000	0.6000
T21	7	EW63	20.00 - 30.00	0.6000	0.6000
T21	8	LCF158-50J (1 5/8 FOAM)	20.00 - 30.00	0.6000	0.6000
T21	9	LCF58-50J (5/8 FOAM)	20.00 - 30.00	0.6000	0.6000
T21	10	LCF158-50J (1 5/8 FOAM)	20.00 - 30.00	0.6000	0.6000
T21	11	LCF58-50J (5/8 FOAM)	20.00 - 30.00	0.6000	0.6000
T21	12	LCF158-50J (1 5/8 FOAM)	20.00 - 30.00	0.6000	0.6000
T21	13	LDF2-50 (3/8 FOAM)	20.00 - 30.00	0.6000	0.6000
T21	14	AVA5-50 (7/8 LOW DENSI.FOAM)	20.00 - 30.00	0.6000	0.6000
T21	15	FLC 158-50J (1 5/8 FOAM)	20.00 - 30.00	0.6000	0.6000
T21	16	LDF5-50A (7/8 FOAM)	20.00 - 30.00	0.6000	0.6000
T21	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	20.00 - 30.00	0.6000	0.6000
T21	18	FSJ2-50 (3/8 SUPERFLEX. FOAM)	20.00 - 30.00	0.6000	0.6000
T21	19	AVA5-50 (7/8 LOW DENSI.FOAM)	20.00 - 30.00	0.6000	0.6000
T21	20	AVA5-50 (7/8 LOW DENSI.FOAM)	20.00 - 30.00	0.6000	0.6000
T21	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	20.00 - 30.00	0.6000	0.6000
T21	22	AVA5-50 (7/8 LOW DENSI.FOAM)	20.00 - 30.00	0.6000	0.6000
T21	23	LDF6-50A (1-1/4 FOAM)	20.00 - 30.00	0.6000	0.6000
T21	24	AVA5-50 (7/8 LOW DENSI.FOAM)	20.00 - 30.00	0.6000	0.6000
T21	25	AVA5-50 (7/8 LOW DENSI.FOAM)	20.00 - 30.00	0.6000	0.6000
T21	26	AVA5-50 (7/8 LOW DENSI.FOAM)	20.00 - 30.00	0.6000	0.6000
T21	27	FSJ2-50 (3/8 SUPERFLEX. FOAM)	20.00 - 30.00	0.6000	0.6000
T21	28	FSJ2-50 (3/8 SUPERFLEX. FOAM)	20.00 - 30.00	0.6000	0.6000
T21	29	FSJ2-50 (3/8 SUPERFLEX. FOAM)	20.00 - 30.00	0.6000	0.6000
T21	30	AVA5-50 (7/8 LOW DENSI.FOAM)	20.00 - 30.00	0.6000	0.6000
T21	31	Feedline Ladder (Af)	20.00 - 30.00	0.6000	0.6000
T21	32	Feedline Ladder (Af)	20.00 - 30.00	0.6000	0.6000
T21	33	Feedline Ladder (Af)	20.00 - 30.00	0.6000	0.6000
T21	36	Climbing Pegs	20.00 - 30.00	0.6000	0.6000
T21	37	Climbing Pegs	20.00 - 30.00	0.6000	0.6000
T21	38	Climbing Pegs	20.00 - 30.00	0.6000	0.6000
T22	1	HJ5-50A (7/8 AIR)	18.00 - 20.00	0.6000	0.6000
T22	2	LDF2-50A (3/8 FOAM)	18.00 - 20.00	0.6000	0.6000
T22	3	LDF2-50A (3/8 FOAM)	18.00 - 20.00	0.6000	0.6000
T22	4	LDF2-50A (3/8 FOAM)	18.00 - 20.00	0.6000	0.6000
T22	5	LDF2-50A (3/8 FOAM)	18.00 - 20.00	0.6000	0.6000
T22	6	LDF2-50A (3/8 FOAM)	18.00 - 20.00	0.6000	0.6000
T22	7	EW63	12.00 - 20.00	0.6000	0.6000
T22	8	LCF158-50J (1 5/8 FOAM)	12.00 - 20.00	0.6000	0.6000
T22	9	LCF58-50J (5/8 FOAM)	18.00 - 20.00	0.6000	0.6000
T22	10	LCF158-50J (1 5/8 FOAM)	12.00 - 20.00	0.6000	0.6000
T22	11	LCF58-50J (5/8 FOAM)	18.00 - 20.00	0.6000	0.6000
T22	12	LCF158-50J (1 5/8 FOAM)	18.00 - 20.00	0.6000	0.6000
T22	13	LDF2-50 (3/8 FOAM)	18.00 - 20.00	0.6000	0.6000

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
T22	14	AVA5-50 (7/8 LOW DENSI.FOAM)	10.00 - 20.00	0.6000	0.6000
T22	15	FLC 158-50J (1 5/8 FOAM)	10.00 - 20.00	0.6000	0.6000
T22	16	LDF5-50A (7/8 FOAM)	10.00 - 20.00	0.6000	0.6000
T22	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	10.00 - 20.00	0.6000	0.6000
T22	18	FSJ2-50 (3/8 SUPERFLEX. FOAM)	18.00 - 20.00	0.6000	0.6000
T22	19	AVA5-50 (7/8 LOW DENSI.FOAM)	18.00 - 20.00	0.6000	0.6000
T22	20	AVA5-50 (7/8 LOW DENSI.FOAM)	18.00 - 20.00	0.6000	0.6000
T22	21	FSJ2-50 (3/8 SUPERFLEX. FOAM)	18.00 - 20.00	0.6000	0.6000
T22	22	AVA5-50 (7/8 LOW DENSI.FOAM)	18.00 - 20.00	0.6000	0.6000
T22	23	LDF6-50A (1-1/4 FOAM)	18.00 - 20.00	0.6000	0.6000
T22	24	AVA5-50 (7/8 LOW DENSI.FOAM)	18.00 - 20.00	0.6000	0.6000
T22	25	AVA5-50 (7/8 LOW DENSI.FOAM)	18.00 - 20.00	0.6000	0.6000
T22	26	AVA5-50 (7/8 LOW DENSI.FOAM)	18.00 - 20.00	0.6000	0.6000
T22	27	FSJ2-50 (3/8 SUPERFLEX. FOAM)	18.00 - 20.00	0.6000	0.6000
T22	28	FSJ2-50 (3/8 SUPERFLEX. FOAM)	18.00 - 20.00	0.6000	0.6000
T22	29	FSJ2-50 (3/8 SUPERFLEX. FOAM)	18.00 - 20.00	0.6000	0.6000
T22	30	AVA5-50 (7/8 LOW DENSI.FOAM)	18.00 - 20.00	0.6000	0.6000
T22	31	Feedline Ladder (Af)	10.00 - 20.00	0.6000	0.6000
T22	32	Feedline Ladder (Af)	10.00 - 20.00	0.6000	0.6000
T22	33	Feedline Ladder (Af)	10.00 - 20.00	0.6000	0.6000
T22	36	Climbing Pegs	10.00 - 20.00	0.6000	0.6000
T22	37	Climbing Pegs	10.00 - 20.00	0.6000	0.6000
T22	38	Climbing Pegs	10.00 - 20.00	0.6000	0.6000
T23	14	AVA5-50 (7/8 LOW DENSI.FOAM)	9.00 - 10.00	0.6000	0.6000
T23	15	FLC 158-50J (1 5/8 FOAM)	9.00 - 10.00	0.6000	0.6000
T23	16	LDF5-50A (7/8 FOAM)	9.00 - 10.00	0.6000	0.6000
T23	17	FSJ2-50 (3/8 SUPERFLEX. FOAM)	9.00 - 10.00	0.6000	0.6000
T23	31	Feedline Ladder (Af)	0.00 - 10.00	0.6000	0.6000
T23	32	Feedline Ladder (Af)	8.00 - 10.00	0.6000	0.6000
T23	33	Feedline Ladder (Af)	0.00 - 10.00	0.6000	0.6000
T23	36	Climbing Pegs	2.00 - 10.00	0.6000	0.6000
T23	37	Climbing Pegs	2.00 - 10.00	0.6000	0.6000
T23	38	Climbing Pegs	2.00 - 10.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
PD1142-1	C	From Leg	0.00	0.0000	182.00	No Ice	1.32	1.32	10.00
			0.00			1/2" Ice	3.21	3.21	20.00
			8.50			1" Ice	5.10	5.10	30.00
DB201-A	C	From Leg	3.00	0.0000	177.17	No Ice	1.05	1.05	30.00
			0.00			1/2" Ice	1.91	1.91	30.00
			10.00			1" Ice	2.77	2.77	30.00
3' Side Arm Mount	C	From Leg	1.50	0.0000	180.00	No Ice	3.15	3.15	100.00
			0.00			1/2" Ice	5.67	5.67	130.00
			0.00			1" Ice	8.19	8.19	160.00
DB224	B	From Leg	0.00	0.0000	180.00	No Ice	3.15	3.15	30.00
			0.00			1/2" Ice	5.67	5.67	40.00
			10.00			1" Ice	8.19	8.19	50.00
PD458-1	B	From Leg	3.00	0.0000	181.00	No Ice	2.88	2.88	20.00
			0.00			1/2" Ice	4.34	4.34	50.00
			7.50			1" Ice	5.80	5.80	80.00
3' Side Arm Mount	B	From Leg	1.50	0.0000	179.92	No Ice	3.15	3.15	100.00
			0.00			1/2" Ice	5.67	5.67	130.00
			0.00			1" Ice	8.19	8.19	160.00
DB224	B	From Leg	0.00	0.0000	179.92 - 179.92	No Ice	3.15	3.15	30.00
			0.00			1/2" Ice	5.67	5.67	40.00
			0.00			1" Ice	8.19	8.19	50.00
3' Side Arm Mount	B	From Leg	1.50	0.0000	179.00	No Ice	3.15	3.15	100.00
			0.00			1/2" Ice	5.67	5.67	130.00
			0.00			1" Ice	8.19	8.19	160.00
PD455-5	A	From Leg	3.00	0.0000	180.00	No Ice	2.83	2.83	20.00
			0.00			1/2" Ice	4.87	4.87	50.00
			6.00			1" Ice	6.91	6.91	80.00
3' Side Arm Mount	A	From Leg	1.50	0.0000	180.00	No Ice	3.15	3.15	100.00
			0.00			1/2" Ice	5.67	5.67	130.00
			0.00			1" Ice	8.19	8.19	160.00
PD220	B	From Leg	3.00	0.0000	163.25	No Ice	3.08	3.08	20.00
			0.00			1/2" Ice	5.30	5.30	50.00
			10.00			1" Ice	7.52	7.52	80.00
3' Side Arm Mount	B	From Leg	1.50	0.0000	163.25	No Ice	3.15	3.15	100.00
			0.00			1/2" Ice	5.67	5.67	130.00
			0.00			1" Ice	8.19	8.19	160.00
16' Omni	C	From Leg	3.00	0.0000	158.50	No Ice	2.63	2.63	30.00
			0.00			1/2" Ice	4.21	4.21	50.00
			8.00			1" Ice	5.79	5.79	70.00
3' Side Arm Mount	C	From Leg	1.50	0.0000	158.50	No Ice	3.15	3.15	100.00
			0.00			1/2" Ice	5.67	5.67	130.00
			0.00			1" Ice	8.19	8.19	160.00
20' Omni	A	From Leg	3.00	0.0000	154.17	No Ice	1.32	1.32	10.00
			0.00			1/2" Ice	3.21	3.21	20.00
			9.50			1" Ice	5.10	5.10	30.00
3' Side Arm Mount	A	From Leg	1.50	0.0000	154.17	No Ice	3.15	3.15	100.00
			0.00			1/2" Ice	5.67	5.67	130.00
			0.00			1" Ice	8.19	8.19	160.00
DB420	B	From Leg	3.50	0.0000	144.92	No Ice	3.33	3.33	30.00
			0.00			1/2" Ice	5.99	5.99	40.00
			10.00			1" Ice	8.65	8.65	50.00
3' Side Arm Mount	B	From Leg	2.50	0.0000	144.92	No Ice	3.15	3.15	100.00
			0.00			1/2" Ice	5.67	5.67	130.00
			0.00			1" Ice	8.19	8.19	160.00
PD1142-1	C	From Leg	3.50	0.0000	138.75	No Ice	1.32	1.32	10.00
			0.00			1/2" Ice	3.21	3.21	20.00
			6.00			1" Ice	5.10	5.10	30.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
3' Side Arm Mount	C	From Leg	1.50	0.0000	138.75	No Ice	3.15	3.15	100.00
			0.00			1/2" Ice	5.67	5.67	130.00
			0.00			1" Ice	8.19	8.19	160.00
AO8410M-54T0	A	From Leg	4.00	0.0000	136.17	No Ice	2.63	2.63	30.00
			0.00			1/2" Ice	4.21	4.21	50.00
			7.00			1" Ice	5.79	5.79	70.00
4' Side Arm Mount	A	From Leg	2.00	0.0000	136.17	No Ice	4.25	4.25	120.00
			0.00			1/2" Ice	5.85	5.85	160.00
			0.00			1" Ice	7.45	7.45	200.00
DB806-XC	C	From Leg	4.00	0.0000	123.17	No Ice	1.14	1.14	20.00
			0.00			1/2" Ice	1.68	1.68	30.00
			5.00			1" Ice	2.22	2.22	40.00
4' Side Arm Mount	C	From Leg	2.00	0.0000	123.17	No Ice	4.25	4.25	120.00
			0.00			1/2" Ice	5.85	5.85	160.00
			0.00			1" Ice	7.45	7.45	200.00
PD220	B	From Leg	4.00	0.0000	126.67	No Ice	3.08	3.08	20.00
			0.00			1/2" Ice	5.30	5.30	50.00
			10.00			1" Ice	7.52	7.52	80.00
4' Side Arm Mount	B	From Leg	2.00	0.0000	126.67	No Ice	4.25	4.25	120.00
			0.00			1/2" Ice	5.85	5.85	160.00
			0.00			1" Ice	7.45	7.45	200.00
PD1142-1	A	From Leg	4.00	0.0000	125.25	No Ice	1.32	1.32	10.00
			0.00			1/2" Ice	3.21	3.21	20.00
			3.00			1" Ice	5.10	5.10	30.00
4' Side Arm Mount	A	From Leg	2.00	0.0000	125.25	No Ice	4.25	4.25	120.00
			0.00			1/2" Ice	5.85	5.85	160.00
			0.00			1" Ice	7.45	7.45	200.00
12' Omni	C	From Leg	4.00	0.0000	104.50	No Ice	2.63	2.63	30.00
			0.00			1/2" Ice	4.21	4.21	50.00
			4.00			1" Ice	5.79	5.79	70.00
4' Side Arm Mount	C	From Leg	2.00	0.0000	104.50	No Ice	4.25	4.25	120.00
			0.00			1/2" Ice	5.85	5.85	160.00
			0.00			1" Ice	7.45	7.45	200.00
16' omni	A	From Leg	4.00	0.0000	99.00	No Ice	2.63	2.63	30.00
			0.00			1/2" Ice	4.21	4.21	50.00
			4.00			1" Ice	5.79	5.79	70.00
4' Side Arm Mount	A	From Leg	2.00	0.0000	99.00	No Ice	4.25	4.25	120.00
			0.00			1/2" Ice	5.85	5.85	160.00
			0.00			1" Ice	7.45	7.45	200.00
kreuc	B	From Leg	2.00	0.0000	90.70	No Ice	2.63	2.63	30.00
			0.00			1/2" Ice	4.21	4.21	50.00
			0.00			1" Ice	5.79	5.79	70.00
LGP 21401 TMA	A	From Leg	2.00	0.0000	90.70	No Ice	1.20	0.90	20.00
			0.00			1/2" Ice	1.56	1.17	23.00
			0.00			1" Ice	1.92	1.44	26.00
LGP 21401 TMA	B	From Leg	2.00	0.0000	90.70	No Ice	1.20	0.90	20.00
			0.00			1/2" Ice	1.56	1.17	23.00
			0.00			1" Ice	1.92	1.44	26.00
LGP 21401 TMA	C	From Leg	2.00	0.0000	90.70	No Ice	1.20	0.90	20.00
			0.00			1/2" Ice	1.56	1.17	23.00
			0.00			1" Ice	1.92	1.44	26.00
RET	A	From Leg	2.00	0.0000	90.70	No Ice	0.40	0.20	63.50
			0.00			1/2" Ice	0.54	0.31	80.00
			0.00			1" Ice	0.68	0.42	96.50
RET	B	From Leg	2.00	0.0000	90.70	No Ice	0.40	0.20	63.50
			0.00			1/2" Ice	0.54	0.31	80.00
			0.00			1" Ice	0.68	0.42	96.50

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
RET	C	From Leg	2.00	0.0000	90.70	No Ice	0.40	0.20	63.50
			0.00			1/2" Ice	0.54	0.31	80.00
			0.00			1" Ice	0.68	0.42	96.50
DB22	A	From Leg	7.00	0.0000	85.82	No Ice	3.21	3.21	70.00
			0.00			1/2" Ice	5.78	5.78	100.00
			0.00			1" Ice	8.35	8.35	130.00
Pirod 6' Side Mount Standoff (1)	A	From Leg	0.00	0.0000	73.75	No Ice	4.97	4.97	70.00
			0.00			1/2" Ice	6.12	6.12	130.00
			0.00			1" Ice	7.27	7.27	190.00
(2) Whip Antenna 4'X1.5" Dia	B	From Leg	0.00	0.0000	76.67	No Ice	0.60	0.60	6.40
			0.00			1/2" Ice	0.92	0.92	11.45
			0.00			1" Ice	1.17	1.17	19.24
Yagi s4307-sf3s1f	C	From Leg	0.00	0.0000	77.50	No Ice	0.40	0.40	3.20
			0.00			1/2" Ice	1.00	1.00	5.00
			0.00			1" Ice	1.60	1.60	6.80
Raycap DC6	C	From Leg	2.00	0.0000	90.70	No Ice	2.39	2.78	34.85
			0.00			1/2" Ice	2.65	3.17	65.48
			0.00			1" Ice	2.93	3.57	100.35
RRUS 11 B12	A	From Leg	2.00	0.0000	90.00	No Ice	2.52	1.07	55.00
			1.00			1/2" Ice	2.72	1.21	74.32
			0.00			1" Ice	2.92	1.36	96.56
RRUS 11 B12	B	From Leg	2.00	0.0000	90.00	No Ice	2.52	1.07	55.00
			1.00			1/2" Ice	2.72	1.21	74.32
			0.00			1" Ice	2.92	1.36	96.56
RRUS 11 B12	C	From Leg	2.00	0.0000	90.00	No Ice	2.52	1.07	55.00
			1.00			1/2" Ice	2.72	1.21	74.32
			0.00			1" Ice	2.92	1.36	96.56
RRUS 12	A	From Leg	2.00	0.0000	90.00	No Ice	3.15	1.29	58.00
			1.00			1/2" Ice	3.36	1.44	81.22
			0.00			1" Ice	3.59	1.60	107.64
RRUS 12	B	From Leg	2.00	0.0000	90.00	No Ice	3.15	1.29	58.00
			1.00			1/2" Ice	3.36	1.44	81.22
			0.00			1" Ice	3.59	1.60	107.64
RRUS 12	C	From Leg	2.00	0.0000	90.00	No Ice	3.15	1.29	58.00
			1.00			1/2" Ice	3.36	1.44	81.22
			0.00			1" Ice	3.59	1.60	107.64
Pirod 10' PCS Frame (1)	A	From Leg	0.00	0.0000	90.70	No Ice	9.00	9.00	250.00
			0.00			1/2" Ice	13.20	13.20	350.00
			0.00			1" Ice	17.40	17.40	450.00
Pirod 10' PCS Frame (1)	B	From Leg	0.00	0.0000	90.70	No Ice	9.00	9.00	250.00
			0.00			1/2" Ice	13.20	13.20	350.00
			0.00			1" Ice	17.40	17.40	450.00
Pirod 10' PCS Frame (1)	C	From Leg	0.00	0.0000	90.70	No Ice	9.00	9.00	250.00
			0.00			1/2" Ice	13.20	13.20	350.00
			0.00			1" Ice	17.40	17.40	450.00
80010121	A	From Leg	2.00	0.0000	90.70	No Ice	5.27	4.48	62.35
			0.00			1/2" Ice	5.65	5.14	108.54
			0.00			1" Ice	6.04	5.80	160.98
80010121	B	From Leg	2.00	0.0000	90.70	No Ice	5.27	4.48	62.35
			0.00			1/2" Ice	5.65	5.14	108.54
			0.00			1" Ice	6.04	5.80	160.98
80010121	C	From Leg	2.00	0.0000	90.70	No Ice	5.27	4.48	62.35
			0.00			1/2" Ice	5.65	5.14	108.54
			0.00			1" Ice	6.04	5.80	160.98

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 lb
Andrew 6' w/Radome	B	Paraboloid w/Radome	From Leg	0.00 0.00 0.00	Worst		134.50	6.00	No Ice 1/2" Ice 1" Ice	28.27 29.07 29.86	380.00 450.00 520.00
2' Dia parabolic dish antenna	B	Paraboloid w/o Radome	From Leg	0.00 0.00 0.00	Worst		112.92	2.00	No Ice 1/2" Ice 1" Ice	4.00 4.34 4.68	22.00 44.28 66.56
2' Dia parabolic dish antenna	B	Paraboloid w/o Radome	From Leg	0.00 0.00 0.00	Worst		119.50	2.00	No Ice 1/2" Ice 1" Ice	4.00 4.34 4.68	22.00 44.28 66.56

Force Totals

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x lb-ft	Sum of Overturning Moments, M_z lb-ft	Sum of Torques lb-ft
Leg Weight	8377.83					
Bracing Weight	10502.64					
Total Member Self-Weight	18880.46			-8456.68	-5648.91	
Total Weight	31119.17			-8456.68	-5648.91	
Wind 0 deg - No Ice		-2.99	-22630.83	-2043381.14	-5377.74	6367.55
Wind 30 deg - No Ice		10675.36	-18496.25	-1684796.01	-973170.75	4018.42
Wind 60 deg - No Ice		18126.22	-10465.18	-959618.76	-1653109.95	757.12
Wind 90 deg - No Ice		21355.91	2.99	-8185.51	-1941162.27	-2823.07
Wind 120 deg - No Ice		19597.38	11318.00	1009240.39	-1767809.60	-5878.36
Wind 150 deg - No Ice		10680.54	18499.24	1668153.82	-973640.43	-6841.49
Wind 180 deg - No Ice		2.99	20935.54	1894337.15	-5920.08	-6237.45
Wind 210 deg - No Ice		-10675.36	18496.25	1667882.65	961872.94	-4018.42
Wind 240 deg - No Ice		-19594.39	11312.82	1008770.71	1756240.62	-489.19
Wind 270 deg - No Ice		-21355.91	-2.99	-8727.85	1929864.46	2823.07
Wind 300 deg - No Ice		-18129.21	-10470.36	-960088.43	1642083.30	5480.32
Wind 330 deg - No Ice		-10680.54	-18499.24	-1685067.18	962342.62	6841.49
Member Ice	46133.39					
Total Weight Ice	129228.68			-88730.21	-42000.11	
Wind 0 deg - Ice		-1.22	-9626.21	-1024911.30	-41889.19	2538.46
Wind 30 deg - Ice		4725.87	-8187.89	-888328.34	-503520.22	708.78
Wind 60 deg - Ice		8137.32	-4698.08	-548177.59	-837786.31	-1273.66
Wind 90 deg - Ice		9453.86	1.22	-88619.29	-965232.46	-2939.37
Wind 120 deg - Ice		8335.93	4814.16	379456.39	-852701.25	-3868.83
Wind 150 deg - Ice		4727.99	8189.11	710978.84	-503712.35	-3648.15
Wind 180 deg - Ice		1.22	9398.29	830356.67	-42111.03	-2507.81
Wind 210 deg - Ice		-4725.87	8187.89	710867.92	419520.00	-708.78
Wind 240 deg - Ice		-8334.71	4812.05	379264.26	768590.11	1330.37
Wind 270 deg - Ice		-9453.86	-1.22	-88841.14	881232.24	2939.37
Wind 300 deg - Ice		-8138.54	-4700.20	-548369.72	753897.02	3781.47
Wind 330 deg - Ice		-4727.99	-8189.11	-888439.27	419712.13	3648.15
Total Weight	31119.17			-8456.68	-5648.91	
Wind 0 deg - Service		-1.08	-8147.10	-733127.60	-1624.27	2292.32
Wind 30 deg - Service		3843.13	-6658.65	-604036.95	-350029.75	1446.63
Wind 60 deg - Service		6525.44	-3767.46	-342973.14	-594807.86	272.56

Load Case	*Vertical Forces* *lb*	*Sum of Forces X* *lb*	*Sum of Forces Z* *lb*	*Sum of Overturning Moments, M_x* *lb-ft*	*Sum of Overturning Moments, M_z* *lb-ft*	*Sum of Torques* *lb-ft*
Wind 90 deg - Service		7688.13	1.08	-457.17	-698506.70	-1016.30
Wind 120 deg - Service		7055.06	4074.48	365816.15	-636099.74	-2116.21
Wind 150 deg - Service		3845.00	6659.73	603024.99	-350198.84	-2462.94
Wind 180 deg - Service		1.08	7536.79	684450.99	-1819.51	-2245.48
Wind 210 deg - Service		-3843.13	6658.65	602927.37	346585.98	-1446.63
Wind 240 deg - Service		-7053.98	4072.62	365647.07	632558.34	-176.11
Wind 270 deg - Service		-7688.13	-1.08	-652.41	695062.92	1016.30
Wind 300 deg - Service		-6526.52	-3769.33	-343142.22	591461.71	1972.92
Wind 330 deg - Service		-3845.00	-6659.73	-604134.57	346755.06	2462.94

Load Combinations

Comb. No.	*Description*
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service

Comb. No.	*Description*
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	*Elevation ft*	*Component Type*	*Condition*	*Gov. Load Comb.*	*Axial lb*	*Major Axis Moment lb-ft*	*Minor Axis Moment lb-ft*
T1	180 - 175	Leg	Max Tension	7	825.84	-43.62	-10.09
			Max. Compression	31	-1827.59	3.39	-2.98
			Max. Mx	22	542.64	59.19	3.26
			Max. My	4	-455.99	-3.97	92.09
			Max. Vy	22	-300.71	-0.00	0.00
			Max. Vx	4	-445.79	-0.00	0.00
		Diagonal	Max Tension	15	572.82	0.00	0.00
			Max. Compression	2	-609.26	0.00	0.00
			Max. Mx	30	32.60	27.92	-4.12
			Max. My	27	3.08	24.06	-4.37
			Max. Vy	28	32.05	27.90	-3.93
			Max. Vx	27	-1.96	0.00	0.00
		Top Girt	Max Tension	11	150.35	0.00	0.00
			Max. Compression	6	-167.04	0.00	0.00
			Max. Mx	29	-135.59	-91.92	0.00
			Max. My	27	-94.55	0.00	2.69
			Max. Vy	29	56.05	0.00	0.00
			Max. Vx	27	-1.64	0.00	0.00
T2	175 - 170	Leg	Max Tension	7	1830.88	-43.62	-10.09
			Max. Compression	27	-2927.64	-6.08	6.62
			Max. Mx	22	1533.93	-45.83	3.26
			Max. My	16	-553.41	-3.95	52.09
			Max. Vy	19	35.64	44.38	9.26
			Max. Vx	16	35.71	-3.95	52.09
		Diagonal	Max Tension	24	764.38	0.00	0.00
			Max. Compression	2	-771.68	0.00	0.00
			Max. Mx	28	126.61	31.29	4.44
			Max. My	27	14.57	27.33	-4.75
			Max. Vy	28	34.24	31.26	-4.27
			Max. Vx	27	-2.04	0.00	0.00
T3	170 - 165	Leg	Max Tension	7	3088.65	-14.68	15.24
			Max. Compression	27	-4336.34	5.09	-20.12
			Max. Mx	22	2712.04	-41.25	-10.93
			Max. My	16	-729.67	-5.03	87.06
			Max. Vy	18	-35.02	40.93	32.77
			Max. Vx	16	-42.77	-5.03	87.06
		Diagonal	Max Tension	24	881.13	0.00	0.00
			Max. Compression	24	-895.01	0.00	0.00
			Max. Mx	29	205.26	34.67	4.82
			Max. My	27	25.61	30.53	-5.15
			Max. Vy	28	36.36	34.65	-4.67
			Max. Vx	27	-2.12	0.00	0.00
T4	165 - 160	Leg	Max Tension	7	4683.66	-102.18	-11.54
			Max. Compression	10	-6391.04	98.69	-24.61
			Max. Mx	6	4540.93	-103.73	-11.53

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. My	4	-1047.01	-3.35	139.87
			Max. Vy	22	65.44	-101.10	24.22
			Max. Vx	16	138.30	-5.04	87.06
		Diagonal	Max Tension	24	1131.19	0.00	0.00
			Max. Compression	2	-1142.87	0.00	0.00
			Max. Mx	29	147.76	38.39	-5.26
			Max. My	27	14.37	34.10	-5.68
			Max. Vy	28	38.49	38.37	-5.10
			Max. Vx	27	-2.22	0.00	0.00
T5	160 - 153.333	Leg	Max Tension	7	6772.37	-70.12	42.61
			Max. Compression	10	-8979.95	73.57	9.71
			Max. Mx	6	6596.14	-103.73	-11.53
			Max. My	19	3044.24	-42.26	-119.73
			Max. Vy	6	-101.92	-103.73	-11.53
			Max. Vx	8	-160.34	-7.61	114.10
		Diagonal	Max Tension	24	1430.11	0.00	0.00
			Max. Compression	24	-1445.93	0.00	0.00
			Max. Mx	29	251.39	51.56	-7.50
			Max. My	28	-213.46	44.45	-7.90
			Max. Vy	29	44.97	51.56	-7.50
			Max. Vx	27	-2.74	0.00	0.00
T6	153.333 - 146.667	Leg	Max Tension	7	9525.43	-70.12	42.61
			Max. Compression	2	-12272.48	55.96	-47.54
			Max. Mx	14	9047.33	-73.94	-34.23
			Max. My	19	4464.50	-42.26	-119.73
			Max. Vy	11	42.99	73.55	9.60
			Max. Vx	18	-63.15	-44.06	-119.66
		Diagonal	Max Tension	12	1672.62	0.00	0.00
			Max. Compression	12	-1682.72	0.00	0.00
			Max. Mx	29	395.82	58.24	8.24
			Max. My	27	43.97	50.94	-8.64
			Max. Vy	29	48.07	58.24	8.24
			Max. Vx	27	-2.85	0.00	0.00
T7	146.667 - 140	Leg	Max Tension	7	12691.39	-175.29	-26.56
			Max. Compression	10	-16124.15	170.93	27.15
			Max. Mx	22	11874.23	-183.04	-26.04
			Max. My	16	-1769.87	-10.95	255.56
			Max. Vy	22	76.22	-183.04	-26.04
			Max. Vx	4	-141.66	-6.05	-86.53
		Diagonal	Max Tension	24	1913.42	0.00	0.00
			Max. Compression	24	-1932.23	0.00	0.00
			Max. Mx	29	367.66	63.94	-8.79
			Max. My	27	43.21	56.20	-9.41
			Max. Vy	29	50.93	63.94	-8.79
			Max. Vx	27	-2.97	0.00	0.00
T8	140 - 133.333	Leg	Max Tension	7	15961.41	-221.24	-29.71
			Max. Compression	10	-20484.24	219.40	48.93
			Max. Mx	22	14761.00	-230.38	-49.06
			Max. My	16	-1911.61	-10.95	-318.43
			Max. Vy	22	336.10	-230.38	-49.06
			Max. Vx	4	483.01	-8.46	-238.47
		Diagonal	Max Tension	24	2268.51	0.00	0.00
			Max. Compression	24	-2310.81	0.00	0.00
			Max. Mx	29	509.63	82.52	11.17
			Max. My	27	47.22	73.64	-11.78
			Max. Vy	29	61.98	82.52	11.17
			Max. Vx	27	-3.53	0.00	0.00
T9	133.333 - 126.667	Leg	Max Tension	7	19971.31	-71.09	48.16
			Max. Compression	10	-25373.26	73.47	-0.79

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Mx	22	18655.69	-230.38	-49.06
			Max. My	5	-1932.44	-6.16	-238.52
			Max. Vy	22	103.11	-65.81	0.69
			Max. Vx	16	-203.91	-1.68	68.69
		Diagonal	Max Tension	24	2946.13	0.00	0.00
			Max. Compression	24	-2960.60	0.00	0.00
			Max. Mx	29	518.42	88.38	-11.73
			Max. My	27	114.61	79.04	-12.63
			Max. Vy	29	64.96	88.38	-11.73
			Max. Vx	27	-3.64	0.00	0.00
T10	126.667 - 120	Leg	Max Tension	7	24345.16	-71.09	48.16
			Max. Compression	10	-30408.58	182.42	-6.46
			Max. Mx	10	-30408.58	182.42	-6.46
			Max. My	3	12189.38	-43.55	161.86
			Max. Vy	14	-108.69	-72.58	-48.55
			Max. Vx	8	175.08	-8.85	155.50
		Diagonal	Max Tension	24	3271.29	0.00	0.00
			Max. Compression	24	-3307.73	0.00	0.00
			Max. Mx	29	471.61	99.72	-13.28
			Max. My	27	44.36	89.87	-13.87
			Max. Vy	29	68.60	99.72	-13.28
			Max. Vx	27	-3.80	0.00	0.00
T11	120 - 113.333	Leg	Max Tension	7	28914.69	-179.09	11.86
			Max. Compression	10	-35899.48	66.42	29.01
			Max. Mx	10	-35769.09	182.42	-6.46
			Max. My	16	-3359.96	-5.62	155.20
			Max. Vy	19	126.18	177.40	-11.68
			Max. Vx	4	-161.52	0.87	-100.62
		Diagonal	Max Tension	24	3594.52	0.00	0.00
			Max. Compression	24	-3625.19	0.00	0.00
			Max. Mx	29	600.39	121.10	-16.00
			Max. My	27	142.68	109.52	-17.11
			Max. Vy	29	82.65	121.10	-16.00
			Max. Vx	27	-4.52	0.00	0.00
T12	113.333 - 106.667	Leg	Max Tension	7	33765.63	-58.79	-10.85
			Max. Compression	10	-41630.38	117.95	-34.88
			Max. Mx	6	33107.87	-121.25	0.76
			Max. My	16	-3571.28	-5.62	155.20
			Max. Vy	18	103.62	71.67	9.16
			Max. Vx	16	190.26	-5.62	155.20
		Diagonal	Max Tension	24	3927.58	0.00	0.00
			Max. Compression	24	-3949.42	0.00	0.00
			Max. Mx	29	517.62	137.99	-17.70
			Max. My	27	84.88	125.73	-18.62
			Max. Vy	29	87.10	137.99	-17.70
			Max. Vx	27	-4.69	0.00	0.00
T13	106.667 - 100	Leg	Max Tension	7	38871.15	-119.20	0.68
			Max. Compression	10	-47620.61	232.82	0.74
			Max. Mx	11	-46568.71	233.63	0.56
			Max. My	12	-3220.85	-8.55	-315.69
			Max. Vy	11	-84.32	233.63	0.56
			Max. Vx	12	119.69	-8.55	-315.69
		Diagonal	Max Tension	24	4057.82	0.00	0.00
			Max. Compression	24	-4092.64	0.00	0.00
			Max. Mx	29	814.25	141.53	18.19
			Max. My	28	-319.75	128.22	-19.36
			Max. Vy	29	89.71	141.53	-18.15
			Max. Vx	27	-4.76	0.00	0.00
T14	100 - 90	Leg	Max Tension	7	45106.20	-221.89	17.75
			Max. Compression	2	-55854.76	347.22	-13.74

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Mx	14	42838.48	-406.87	16.38
			Max. My	8	-5057.70	-39.71	378.43
			Max. Vy	14	582.51	-406.87	16.38
			Max. Vx	4	543.50	-29.26	-291.88
		Diagonal	Max Tension	12	4877.58	0.00	0.00
			Max. Compression	12	-4923.95	0.00	0.00
			Max. Mx	29	858.13	208.21	28.10
			Max. My	27	120.65	183.77	-29.12
			Max. Vy	29	109.35	208.21	28.10
			Max. Vx	27	-6.23	0.00	0.00
T15	90 - 80	Leg	Max Tension	7	53374.96	-384.37	50.45
			Max. Compression	2	-66292.22	308.83	-6.36
			Max. Mx	14	51566.29	-406.87	16.38
			Max. My	8	-5348.09	-39.71	378.43
			Max. Vy	14	-235.70	-406.87	16.38
			Max. Vx	8	243.01	-39.71	378.43
		Diagonal	Max Tension	12	5837.13	0.00	0.00
			Max. Compression	12	-5950.15	0.00	0.00
			Max. Mx	29	1085.85	219.82	-29.46
			Max. My	27	-108.53	216.15	-30.68
			Max. Vy	29	114.13	219.82	-29.46
			Max. Vx	27	-6.36	0.00	0.00
T16	80 - 70	Leg	Max Tension	7	62910.47	-263.60	51.11
			Max. Compression	2	-77665.79	320.23	-0.44
			Max. Mx	14	60385.86	-375.75	5.00
			Max. My	8	-6575.60	-40.61	403.01
			Max. Vy	14	132.27	-375.75	5.00
			Max. Vx	8	-147.74	-40.61	403.01
		Diagonal	Max Tension	12	6217.86	0.00	0.00
			Max. Compression	12	-6270.06	0.00	0.00
			Max. Mx	29	995.56	269.27	35.09
			Max. My	27	71.30	243.03	-36.36
			Max. Vy	29	128.92	269.27	35.09
			Max. Vx	27	-7.09	0.00	0.00
T17	70 - 60	Leg	Max Tension	7	72216.25	-364.36	22.73
			Max. Compression	2	-88741.55	373.50	-4.17
			Max. Mx	37	-2235.50	-458.84	-11.48
			Max. My	8	-6974.02	-40.61	403.01
			Max. Vy	14	-92.41	-375.75	5.00
			Max. Vx	8	95.97	-40.61	403.01
		Diagonal	Max Tension	12	6537.35	0.00	0.00
			Max. Compression	12	-6653.79	0.00	0.00
			Max. Mx	29	1300.47	276.98	-35.97
			Max. My	27	-54.49	271.57	-36.79
			Max. Vy	29	132.93	276.98	-35.97
			Max. Vx	27	-7.08	0.00	0.00
T18	60 - 50	Leg	Max Tension	7	81875.91	-296.67	-2.60
			Max. Compression	2	-100464.00	239.64	2.49
			Max. Mx	35	-53782.85	605.20	4.99
			Max. My	8	-7974.01	-52.40	334.80
			Max. Vy	33	-124.04	-457.76	5.55
			Max. Vx	8	-86.37	-52.40	334.80
		Diagonal	Max Tension	12	6861.84	0.00	0.00
			Max. Compression	12	-6918.61	0.00	0.00
			Max. Mx	29	837.06	366.59	-45.73
			Max. My	27	-46.77	334.85	-47.23
			Max. Vy	29	158.16	366.59	-45.73
			Max. Vx	27	-8.43	0.00	0.00
T19	50 - 40	Leg	Max Tension	7	91214.52	-301.98	5.28
			Max. Compression	2	-111880.40	444.94	-4.29
			Max. Mx	33	-7424.43	-877.85	5.60

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. My	8	-8449.06	-52.40	334.80
			Max. Vy	33	165.08	-877.85	5.60
			Max. Vx	8	87.21	-52.40	334.80
		Diagonal	Max Tension	12	7115.34	0.00	0.00
			Max. Compression	12	-7241.20	0.00	0.00
			Max. Mx	29	1588.77	348.67	-44.77
			Max. My	31	170.04	341.45	45.85
			Max. Vy	29	159.36	348.67	-44.77
			Max. Vx	31	8.23	0.00	0.00
T20	40 - 30	Leg	Max Tension	7	100837.86	-349.89	2.21
			Max. Compression	2	-123801.09	172.28	2.35
			Max. Mx	35	-65328.46	1091.27	7.37
			Max. My	8	-9607.36	-70.13	492.78
			Max. Vy	33	-214.52	-877.85	5.60
			Max. Vx	8	-99.30	-70.13	492.78
		Diagonal	Max Tension	12	7434.45	0.00	0.00
			Max. Compression	12	-7508.33	0.00	0.00
			Max. Mx	29	509.93	487.55	58.35
			Max. My	30	-1225.93	447.84	60.28
			Max. Vy	29	188.24	487.52	-57.83
			Max. Vx	30	9.83	0.00	0.00
T21	30 - 20	Leg	Max Tension	7	110109.52	-263.00	4.34
			Max. Compression	2	-135343.68	572.38	-3.72
			Max. Mx	29	917.52	-1693.62	2.09
			Max. My	8	-10166.48	-70.13	492.78
			Max. Vy	33	294.30	-1685.75	2.75
			Max. Vx	8	109.13	-70.13	492.78
		Diagonal	Max Tension	12	7678.62	0.00	0.00
			Max. Compression	12	-7839.52	0.00	0.00
			Max. Mx	29	2074.53	409.00	-54.00
			Max. My	37	2178.42	407.22	-54.69
			Max. Vy	29	182.93	409.00	-54.00
			Max. Vx	37	-9.22	0.00	0.00
T22	20 - 10	Leg	Max Tension	7	119719.98	-442.98	0.25
			Max. Compression	2	-147567.85	374.25	4.83
			Max. Mx	27	-85387.49	2121.47	12.28
			Max. My	8	-11492.84	-90.26	927.77
			Max. Vy	29	-385.71	-1693.62	2.09
			Max. Vx	24	-163.67	-89.08	926.17
		Diagonal	Max Tension	12	7940.93	0.00	0.00
			Max. Compression	12	-8033.75	0.00	0.00
			Max. Mx	29	-168.96	613.18	71.08
			Max. My	37	-3595.65	592.31	-73.53
			Max. Vy	29	209.21	613.18	71.08
			Max. Vx	30	10.87	0.00	0.00
T23	10 - 0	Leg	Max Tension	7	128587.70	-480.14	4.31
			Max. Compression	2	-159132.23	-0.00	-0.04
			Max. Mx	27	-91910.48	2121.47	12.28
			Max. My	8	-12162.37	-90.26	927.77
			Max. Vy	38	221.13	-0.00	-0.00
			Max. Vx	8	176.40	-90.26	927.77
		Diagonal	Max Tension	12	8191.44	0.00	0.00
			Max. Compression	12	-8353.45	0.00	0.00
			Max. Mx	28	2933.00	406.04	-57.39
			Max. My	27	2545.15	404.20	-58.11
			Max. Vy	28	185.75	406.04	-57.39
			Max. Vx	27	-9.26	0.00	0.00

Maximum Reactions

Location	*Condition*	*Gov. Load Comb.*	*Vertical lb*	*Horizontal, X lb*	*Horizontal, Z lb*
Leg C	Max. Vert	18	163927.38	18970.81	-10937.57
	Max. H_x	18	163927.38	18970.81	-10937.57
	Max. H_z	5	-116187.30	-13340.21	9328.10
	Min. Vert	7	-133079.85	-16011.87	9207.81
	Min. H_x	7	-133079.85	-16011.87	9207.81
	Min. H_z	18	163927.38	18970.81	-10937.57
Leg B	Max. Vert	10	164512.25	-18862.95	-11154.18
	Max. H_x	23	-132703.38	15893.86	9406.96
	Max. H_z	25	-115815.37	13137.83	9679.10
	Min. Vert	23	-132703.38	15893.86	9406.96
	Min. H_x	10	164512.25	-18862.95	-11154.18
	Min. H_z	10	164512.25	-18862.95	-11154.18
Leg A	Max. Vert	2	164948.82	241.51	21920.77
	Max. H_x	20	12942.35	3226.44	1122.71
	Max. H_z	2	164948.82	241.51	21920.77
	Min. Vert	15	-132376.31	-231.47	-18462.05
	Min. H_x	9	9671.27	-3216.71	829.31
	Min. H_z	15	-132376.31	-231.47	-18462.05

Tower Mast Reaction Summary

Load Combination	*Vertical lb*	*Shear$_x$ lb*	*Shear$_z$ lb*	*Overturning Moment, M_x lb-ft*	*Overturning Moment, M_z lb-ft*	*Torque lb-ft*
Dead Only	31119.17	-0.00	0.00	-8456.95	-5649.36	0.01
1.2 Dead+1.6 Wind 0 deg - No Ice	37343.33	-4.26	-36209.17	-3274221.06	-6399.43	10230.21
0.9 Dead+1.6 Wind 0 deg - No Ice	28007.25	-4.78	-36209.32	-3269624.22	-4690.20	10220.86
1.2 Dead+1.6 Wind 30 deg - No Ice	37343.00	17080.58	-29594.00	-2699060.56	-1558748.42	6451.89
0.9 Dead+1.6 Wind 30 deg - No Ice	28007.25	17080.58	-29594.00	-2694813.69	-1556065.92	6441.38
1.2 Dead+1.6 Wind 60 deg - No Ice	37343.00	29001.95	-16744.29	-1535865.71	-2649382.40	1198.49
0.9 Dead+1.6 Wind 60 deg - No Ice	28007.25	29001.95	-16744.29	-1532351.75	-2646006.86	1201.64
1.2 Dead+1.6 Wind 90 deg - No Ice	37343.00	34169.45	4.78	-9750.75	-3111416.41	-4562.00
0.9 Dead+1.6 Wind 90 deg - No Ice	28007.25	34169.45	4.78	-7203.65	-3107752.51	-4545.80
1.2 Dead+1.6 Wind 120 deg - No Ice	37343.33	31355.94	18108.27	1622200.39	-2833343.79	-9461.22
0.9 Dead+1.6 Wind 120 deg - No Ice	28007.25	31355.80	18108.80	1623729.04	-2829863.26	-9448.42
1.2 Dead+1.6 Wind 150 deg - No Ice	37343.00	17088.87	29598.79	2679132.18	-1559513.62	-10993.60
0.9 Dead+1.6 Wind 150 deg - No Ice	28007.25	17088.87	29598.79	2679989.82	-1556823.12	-10987.08
1.2 Dead+1.6 Wind 180 deg - No Ice	37343.00	4.78	33496.86	3041955.47	-7271.60	-10019.25
0.9 Dead+1.6 Wind 180 deg - No Ice	28007.25	4.78	33496.86	3042579.97	-5561.47	-10009.02
1.2 Dead+1.6 Wind 210 deg -	37343.00	-17080.58	29594.00	2678716.93	1545097.93	-6451.92

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
No Ice 0.9 Dead+1.6 Wind 210 deg - No Ice	28007.25	-17080.58	29594.00	2679575.59	1545827.49	-6441.40
1.2 Dead+1.6 Wind 240 deg - No Ice	37342.99	-31351.00	18100.51	1621468.47	2819269.25	-769.02
0.9 Dead+1.6 Wind 240 deg - No Ice	28007.25	-31351.02	18100.52	1622997.12	2819209.18	-772.47
1.2 Dead+1.6 Wind 270 deg - No Ice	37343.00	-34169.45	-4.78	-10621.00	3097793.18	4561.98
0.9 Dead+1.6 Wind 270 deg - No Ice	28007.25	-34169.45	-4.78	-8073.27	3097547.61	4545.79
1.2 Dead+1.6 Wind 300 deg - No Ice	37343.00	-29006.74	-16752.57	-1536638.42	2636185.93	8820.74
0.9 Dead+1.6 Wind 300 deg - No Ice	28007.25	-29006.74	-16752.57	-1533123.96	2636227.70	8807.37
1.2 Dead+1.6 Wind 330 deg - No Ice	37343.00	-17088.87	-29598.79	-2699515.23	1545849.38	10993.59
0.9 Dead+1.6 Wind 330 deg - No Ice	28007.25	-17088.87	-29598.79	-2695267.69	1546582.85	10987.08
1.2 Dead+1.0 Ice+1.0 Temp	135452.51	-0.00	0.00	-91746.52	-43768.76	-1.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	135452.51	-1.22	-9626.21	-1037613.07	-43661.60	2600.10
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	135452.51	4725.87	-8187.89	-899623.92	-510082.40	700.37
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	135452.51	8137.32	-4698.08	-555949.67	-847819.55	-1349.21
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	135452.51	9453.85	1.22	-91626.91	-976585.89	-3062.67
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	135452.51	8335.93	4814.16	381320.22	-862897.29	-4007.03
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	135452.51	4727.99	8189.11	716259.83	-510291.78	-3762.88
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	135452.51	1.22	9398.29	836880.30	-43908.38	-2569.39
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	135452.51	-4725.87	8187.89	716146.17	422507.92	-700.37
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	135452.51	-8334.71	4812.05	381125.89	775219.74	1406.77
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	135452.51	-9453.85	-1.22	-91856.25	889012.82	3062.67
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	135452.51	-8138.54	-4700.20	-556149.23	760366.51	3918.48
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	135452.51	-4727.99	-8189.11	-899739.60	422716.61	3762.84
Dead+Wind 0 deg - Service	31119.17	-1.08	-8147.10	-742597.15	-5575.13	2300.16
Dead+Wind 30 deg - Service	31119.17	3843.13	-6658.65	-613233.13	-354716.75	1450.98
Dead+Wind 60 deg - Service	31119.17	6525.44	-3767.46	-351592.05	-599961.50	270.15
Dead+Wind 90 deg - Service	31119.17	7688.13	1.08	-8383.28	-703926.42	-1024.97
Dead+Wind 120 deg - Service	31119.17	7055.06	4074.48	358663.86	-641387.97	-2126.61
Dead+Wind 150 deg - Service	31119.17	3845.00	6659.73	596375.90	-354885.07	-2471.14
Dead+Wind 180 deg - Service	31119.17	1.08	7536.79	677943.64	-5779.18	-2252.08
Dead+Wind 210 deg - Service	31119.17	-3843.13	6658.65	596277.85	343367.12	-1451.06
Dead+Wind 240 deg - Service	31119.17	-7053.98	4072.62	358495.45	629944.52	-173.53
Dead+Wind 270 deg - Service	31119.17	-7688.13	-1.08	-8578.87	692582.01	1025.01
Dead+Wind 300 deg - Service	31119.17	-6526.52	-3769.33	-351782.13	588733.47	1981.94
Dead+Wind 330 deg - Service	31119.17	-3845.00	-6659.73	-613333.91	343541.18	2471.17

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
1	-0.00	-31119.17	0.00	0.00	31119.17	-0.00	0.000%
2	-4.78	-37343.00	-36209.32	4.26	37343.33	36209.17	0.001%
3	-4.78	-28007.25	-36209.32	4.78	28007.25	36209.32	0.000%
4	17080.58	-37343.00	-29594.00	-17080.58	37343.00	29594.00	0.000%
5	17080.58	-28007.25	-29594.00	-17080.58	28007.25	29594.00	0.000%
6	29001.95	-37343.00	-16744.29	-29001.95	37343.00	16744.29	0.000%
7	29001.95	-28007.25	-16744.29	-29001.95	28007.25	16744.29	0.000%
8	34169.45	-37343.00	4.78	-34169.45	37343.00	-4.78	0.000%
9	34169.45	-28007.25	4.78	-34169.45	28007.25	-4.78	0.000%
10	31355.80	-37343.00	18108.80	-31355.94	37343.33	-18108.27	0.001%
11	31355.80	-28007.25	18108.80	-31355.80	28007.25	-18108.80	0.000%
12	17088.87	-37343.00	29598.79	-17088.87	37343.00	-29598.79	0.000%
13	17088.87	-28007.25	29598.79	-17088.87	28007.25	-29598.79	0.000%
14	4.78	-37343.00	33496.86	-4.78	37343.00	-33496.86	0.000%
15	4.78	-28007.25	33496.86	-4.78	28007.25	-33496.86	0.000%
16	-17080.58	-37343.00	29594.00	17080.58	37343.00	-29594.00	0.000%
17	-17080.58	-28007.25	29594.00	17080.58	28007.25	-29594.00	0.000%
18	-31351.02	-37343.00	18100.52	31351.00	37342.99	-18100.51	0.000%
19	-31351.02	-28007.25	18100.52	31351.02	28007.25	-18100.52	0.000%
20	-34169.45	-37343.00	-4.78	34169.45	37343.00	4.78	0.000%
21	-34169.45	-28007.25	-4.78	34169.45	28007.25	4.78	0.000%
22	-29006.74	-37343.00	-16752.57	29006.74	37343.00	16752.57	0.000%
23	-29006.74	-28007.25	-16752.57	29006.74	28007.25	16752.57	0.000%
24	-17088.87	-37343.00	-29598.79	17088.87	37343.00	29598.79	0.000%
25	-17088.87	-28007.25	-29598.79	17088.87	28007.25	29598.79	0.000%
26	-0.00	-135452.51	0.00	0.00	135452.51	-0.00	0.000%
27	-1.22	-135452.51	-9626.21	1.22	135452.51	9626.21	0.000%
28	4725.87	-135452.51	-8187.89	-4725.87	135452.51	8187.89	0.000%
29	8137.32	-135452.51	-4698.08	-8137.32	135452.51	4698.08	0.000%
30	9453.86	-135452.51	1.22	-9453.85	135452.51	-1.22	0.000%
31	8335.93	-135452.51	4814.16	-8335.93	135452.51	-4814.16	0.000%
32	4727.99	-135452.51	8189.11	-4727.99	135452.51	-8189.11	0.000%
33	1.22	-135452.51	9398.29	-1.22	135452.51	-9398.29	0.000%
34	-4725.87	-135452.51	8187.89	4725.87	135452.51	-8187.89	0.000%
35	-8334.71	-135452.51	4812.05	8334.71	135452.51	-4812.05	0.000%
36	-9453.86	-135452.51	-1.22	9453.85	135452.51	1.22	0.000%
37	-8138.54	-135452.51	-4700.20	8138.54	135452.51	4700.20	0.000%
38	-4727.99	-135452.51	-8189.11	4727.99	135452.51	8189.11	0.000%
39	-1.08	-31119.17	-8147.10	1.08	31119.17	8147.10	0.000%
40	3843.13	-31119.17	-6658.65	-3843.13	31119.17	6658.65	0.000%
41	6525.44	-31119.17	-3767.46	-6525.44	31119.17	3767.46	0.000%
42	7688.13	-31119.17	1.08	-7688.13	31119.17	-1.08	0.000%
43	7055.06	-31119.17	4074.48	-7055.06	31119.17	-4074.48	0.000%
44	3845.00	-31119.17	6659.73	-3845.00	31119.17	-6659.73	0.000%
45	1.08	-31119.17	7536.79	-1.08	31119.17	-7536.79	0.000%
46	-3843.13	-31119.17	6658.65	3843.13	31119.17	-6658.65	0.000%
47	-7053.98	-31119.17	4072.62	7053.98	31119.17	-4072.62	0.000%
48	-7688.13	-31119.17	-1.08	7688.13	31119.17	1.08	0.000%
49	-6526.52	-31119.17	-3769.33	6526.52	31119.17	3769.33	0.000%
50	-3845.00	-31119.17	-6659.73	3845.00	31119.17	6659.73	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance

1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00000001
3	Yes	4	0.00000001	0.00000001
4	Yes	4	0.00000001	0.00000001
5	Yes	4	0.00000001	0.00000001
6	Yes	4	0.00000001	0.00000001
7	Yes	4	0.00000001	0.00000001
8	Yes	4	0.00000001	0.00000001
9	Yes	4	0.00000001	0.00000001
10	Yes	4	0.00000001	0.00000001
11	Yes	4	0.00000001	0.00000001
12	Yes	4	0.00000001	0.00000001
13	Yes	4	0.00000001	0.00000001
14	Yes	4	0.00000001	0.00000001
15	Yes	4	0.00000001	0.00000001
16	Yes	4	0.00000001	0.00000001
17	Yes	4	0.00000001	0.00000001
18	Yes	4	0.00000001	0.00000001
19	Yes	4	0.00000001	0.00000001
20	Yes	4	0.00000001	0.00000001
21	Yes	4	0.00000001	0.00000001
22	Yes	4	0.00000001	0.00000001
23	Yes	4	0.00000001	0.00000001
24	Yes	4	0.00000001	0.00000001
25	Yes	4	0.00000001	0.00000001
26	Yes	4	0.00000001	0.00000001
27	Yes	4	0.00000001	0.00000001
28	Yes	4	0.00000001	0.00000001
29	Yes	4	0.00000001	0.00000309
30	Yes	4	0.00000001	0.00000001
31	Yes	4	0.00000001	0.00000001
32	Yes	4	0.00000001	0.00000001
33	Yes	4	0.00000001	0.00000001
34	Yes	4	0.00000001	0.00000001
35	Yes	4	0.00000001	0.00000001
36	Yes	4	0.00000001	0.00000001
37	Yes	4	0.00000001	0.00000001
38	Yes	4	0.00000001	0.00000001
39	Yes	4	0.00000001	0.00000001
40	Yes	4	0.00000001	0.00000001
41	Yes	4	0.00000001	0.00000001
42	Yes	4	0.00000001	0.00000001
43	Yes	4	0.00000001	0.00000001
44	Yes	4	0.00000001	0.00000001
45	Yes	4	0.00000001	0.00000001
46	Yes	4	0.00000001	0.00000001
47	Yes	4	0.00000001	0.00000001
48	Yes	4	0.00000001	0.00000001
49	Yes	4	0.00000001	0.00000001
50	Yes	4	0.00000001	0.00000001

Maximum Tower Deflections - Service Wind

Section No.	*Elevation*	*Horz. Deflection*	*Gov. Load Comb.*	*Tilt*	*Twist*
	ft	*in*		°	°
T1	180 - 175	2.276	39	0.1009	0.0169
T2	175 - 170	2.169	39	0.1006	0.0159
T3	170 - 165	2.063	39	0.1001	0.0149
T4	165 - 160	1.956	39	0.0994	0.0142

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T5	160 - 153.333	1.850	39	0.0983	0.0130
T6	153.333 - 146.667	1.710	39	0.0965	0.0121
T7	146.667 - 140	1.572	39	0.0940	0.0115
T8	140 - 133.333	1.437	39	0.0911	0.0105
T9	133.333 - 126.667	1.308	39	0.0874	0.0099
T10	126.667 - 120	1.183	39	0.0830	0.0087
T11	120 - 113.333	1.065	39	0.0781	0.0075
T12	113.333 - 106.667	0.953	39	0.0739	0.0065
T13	106.667 - 100	0.847	39	0.0693	0.0054
T14	100 - 90	0.747	39	0.0642	0.0045
T15	90 - 80	0.610	39	0.0585	0.0037
T16	80 - 70	0.483	39	0.0521	0.0029
T17	70 - 60	0.372	39	0.0447	0.0024
T18	60 - 50	0.278	39	0.0368	0.0018
T19	50 - 40	0.198	39	0.0307	0.0014
T20	40 - 30	0.131	39	0.0243	0.0010
T21	30 - 20	0.078	39	0.0176	0.0007
T22	20 - 10	0.039	39	0.0107	0.0004
T23	10 - 0	0.013	47	0.0054	0.0002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
182.00	PD1142-1	39	2.276	0.1009	0.0169	587692
181.00	PD458-1	39	2.276	0.1009	0.0169	587692
180.00	3' Side Arm Mount	39	2.276	0.1009	0.0169	587692
179.92	DB224	39	2.274	0.1009	0.0169	587692
179.92	DB224	39	2.274	0.1009	0.0169	587692
179.92	3' Side Arm Mount	39	2.274	0.1009	0.0169	587692
179.00	3' Side Arm Mount	39	2.254	0.1009	0.0167	587692
177.17	DB201-A	39	2.215	0.1008	0.0163	587692
163.25	PD220	39	1.919	0.0991	0.0138	650966
158.50	16' Omni	39	1.819	0.0979	0.0127	270973
154.17	20' Omni	39	1.727	0.0967	0.0122	193315
144.92	DB420	39	1.536	0.0933	0.0113	150475
138.75	PD1142-1	39	1.412	0.0904	0.0104	70712
136.17	AO8410M-54T0	39	1.362	0.0890	0.0102	107691
134.50	Andrew 6' w/Radome	39	1.330	0.0881	0.0100	157488
126.67	PD220	39	1.183	0.0830	0.0087	69804
125.25	PD1142-1	39	1.158	0.0820	0.0084	68603
123.17	DB806-XC	39	1.120	0.0804	0.0080	75336
119.50	2' Dia parabolic dish antenna	39	1.057	0.0777	0.0074	90438
112.92	2' Dia parabolic dish antenna	39	0.946	0.0736	0.0065	81357
104.50	12' Omni	39	0.814	0.0676	0.0051	91413
99.00	16' omni	39	0.732	0.0636	0.0044	61925
90.70	kreuc	39	0.619	0.0589	0.0037	165372
90.00	RRUS 11 B12	39	0.610	0.0585	0.0037	171620
85.82	DB22	39	0.555	0.0560	0.0033	111231
77.50	Yagi s4307-sf3s1f	39	0.454	0.0504	0.0028	64860
76.67	(2) Whip Antenna 4'X1.5" Dia	39	0.444	0.0498	0.0027	65908
73.75	Pirod 6' Side Mount Standoff (1)	39	0.412	0.0476	0.0026	71843

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	180 - 175	9.997	2	0.4407	0.0751
T2	175 - 170	9.531	2	0.4398	0.0706
T3	170 - 165	9.064	2	0.4380	0.0665
T4	165 - 160	8.597	2	0.4350	0.0633
T5	160 - 153.333	8.131	2	0.4308	0.0580
T6	153.333 - 146.667	7.515	2	0.4228	0.0539
T7	146.667 - 140	6.910	2	0.4124	0.0513
T8	140 - 133.333	6.316	2	0.3993	0.0468
T9	133.333 - 126.667	5.752	2	0.3831	0.0441
T10	126.667 - 120	5.204	2	0.3641	0.0388
T11	120 - 113.333	4.686	2	0.3423	0.0333
T12	113.333 - 106.667	4.194	2	0.3240	0.0290
T13	106.667 - 100	3.729	2	0.3039	0.0242
T14	100 - 90	3.287	2	0.2816	0.0201
T15	90 - 80	2.686	2	0.2566	0.0163
T16	80 - 70	2.129	2	0.2287	0.0130
T17	70 - 60	1.643	2	0.1965	0.0105
T18	60 - 50	1.226	2	0.1617	0.0082
T19	50 - 40	0.876	2	0.1352	0.0063
T20	40 - 30	0.580	2	0.1071	0.0046
T21	30 - 20	0.343	2	0.0777	0.0032
T22	20 - 10	0.174	2	0.0471	0.0019
T23	10 - 0	0.058	10	0.0238	0.0009

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
182.00	PD1142-1	2	9.997	0.4407	0.0751	150696
181.00	PD458-1	2	9.997	0.4407	0.0751	150696
180.00	3' Side Arm Mount	2	9.997	0.4407	0.0751	150696
179.92	DB224	2	9.989	0.4407	0.0750	150696
179.92	DB224	2	9.989	0.4407	0.0750	150696
179.92	3' Side Arm Mount	2	9.989	0.4407	0.0750	150696
179.00	3' Side Arm Mount	2	9.904	0.4405	0.0742	150696
177.17	DB201-A	2	9.733	0.4403	0.0725	150696
163.25	PD220	2	8.434	0.4337	0.0615	190007
158.50	16' Omni	2	7.991	0.4292	0.0567	65876
154.17	20' Omni	2	7.592	0.4239	0.0542	46548
144.92	DB420	2	6.752	0.4092	0.0502	35147
138.75	PD1142-1	2	6.208	0.3965	0.0462	16511
136.17	AO8410M-54T0	2	5.989	0.3903	0.0453	24958
134.50	Andrew 6' w/Radome	2	5.850	0.3861	0.0447	36256
126.67	PD220	2	5.205	0.3641	0.0388	16727
125.25	PD1142-1	2	5.092	0.3595	0.0376	16347
123.17	DB806-XC	2	4.928	0.3525	0.0358	17672
119.50	2' Dia parabolic dish antenna	2	4.648	0.3408	0.0330	20669
112.92	2' Dia parabolic dish antenna	2	4.164	0.3229	0.0288	19053
104.50	12' Omni	2	3.583	0.2965	0.0227	20847
99.00	16' omni	2	3.224	0.2787	0.0196	14142
90.70	kreuc	2	2.727	0.2583	0.0165	38584
90.00	RRUS 11 B12	2	2.686	0.2566	0.0163	40101
85.82	DB22	2	2.447	0.2456	0.0149	25601

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
77.50	Yagi s4307-sf3s1f	2	2.000	0.2211	0.0123	14787
76.67	(2) Whip Antenna 4'X1.5" Dia	2	1.958	0.2185	0.0121	15038
73.75	Pirod 6' Side Mount Standoff (1)	2	1.816	0.2092	0.0114	16454

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	180	Leg	A325N	0.6250	4	206.46	20708.70	0.010 ✔	1	Bolt Tension
		Diagonal	A325N	0.5000	1	572.82	4132.50	0.139 ✔	1	Member Bearing
		Top Girt	A325N	0.5000	1	150.35	4132.50	0.036 ✔	1	Member Bearing
T2	175	Diagonal	A325N	0.5000	1	764.38	4132.50	0.185 ✔	1	Member Bearing
T3	170	Diagonal	A325N	0.5000	1	881.13	4132.50	0.213 ✔	1	Member Bearing
T4	165	Diagonal	A325N	0.5000	1	1131.19	4132.50	0.274 ✔	1	Member Bearing
T5	160	Leg	A325N	0.7500	4	1693.09	29820.60	0.057 ✔	1	Bolt Tension
		Diagonal	A325N	0.5000	1	1430.11	4132.50	0.346 ✔	1	Member Bearing
T6	153.333	Diagonal	A325N	0.5000	1	1672.62	4132.50	0.405 ✔	1	Member Bearing
T7	146.667	Diagonal	A325N	0.5000	1	1913.42	4132.50	0.463 ✔	1	Member Bearing
T8	140	Leg	A325N	0.8750	4	3990.35	40589.10	0.098 ✔	1	Bolt Tension
		Diagonal	A325N	0.5000	1	2268.51	6198.75	0.366 ✔	1	Gusset Bearing
T9	133.333	Diagonal	A325N	0.5000	1	2946.13	6198.75	0.475 ✔	1	Member Bearing
T10	126.667	Diagonal	A325N	0.5000	1	3271.29	6198.75	0.528 ✔	1	Gusset Bearing
T11	120	Leg	A325N	0.8750	4	7228.67	40589.10	0.178 ✔	1	Bolt Tension
		Diagonal	A325N	0.5000	1	3594.52	6198.75	0.580 ✔	1	Gusset Bearing
T12	113.333	Diagonal	A325N	0.5000	1	3927.58	6198.75	0.634 ✔	1	Gusset Bearing
T13	106.667	Diagonal	A325N	0.5000	1	4057.82	6198.75	0.655 ✔	1	Gusset Bearing
T14	100	Leg	A325N	1.0000	4	11276.60	53014.40	0.213 ✔	1	Bolt Tension
		Diagonal	A325N	0.6250	1	4877.58	7830.00	0.623 ✔	1	Member Bearing
T15	90	Diagonal	A325N	0.6250	1	5837.13	7830.00	0.745 ✔	1	Member Bearing
T16	80	Leg	A325N	1.0000	4	15727.60	53014.40	0.297 ✔	1	Bolt Tension
		Diagonal	A325N	0.6250	1	6217.86	10440.00	0.596 ✔	1	Gusset Bearing
T17	70	Diagonal	A325N	0.6250	1	6537.35	10440.00	0.626 ✔	1	Gusset Bearing
T18	60	Leg	A325N	1.0000	4	20469.00	53014.40	0.386 ✔	1	Bolt Tension
		Diagonal	A325N	0.6250	1	6861.84	10440.00	0.657 ✔	1	Gusset Bearing
T19	50	Diagonal	A325N	0.6250	1	7115.34	10440.00	0.682 ✔	1	Member Bearing
T20	40	Leg	A325N	1.0000	6	16806.30	53014.40	0.317 ✔	1	Bolt Tension
		Diagonal	A325N	0.6250	1	7434.45	10440.00	0.712 ✔	1	Member Bearing
T21	30	Diagonal	A325N	0.6250	1	7678.62	10440.00	0.735 ✔	1	Gusset Bearing
T22	20	Leg	A325N	1.0000	6	19953.30	53014.40	0.376 ✔	1	Bolt Tension

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load lb	Ratio Load / Allowable	Allowable Ratio	Criteria
		Diagonal	A325N	0.7500	1	7940.93	15768.80	0.504 ✔	1	Member Bearing
T23	10	Diagonal	A325N	0.7500	1	8191.44	15768.80	0.519 ✔	1	Member Bearing

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 175	ROHN 2.5 X-STR	5.01	5.01	65.0 K=1.00	2.2535	-1827.59	74428.70	0.025 [1] ✔
T2	175 - 170	ROHN 2.5 X-STR	5.01	5.01	65.0 K=1.00	2.2535	-2927.64	74428.70	0.039 [1] ✔
T3	170 - 165	ROHN 2.5 X-STR	5.01	5.01	65.0 K=1.00	2.2535	-4336.34	74428.70	0.058 [1] ✔
T4	165 - 160	ROHN 2.5 X-STR	5.01	5.01	65.0 K=1.00	2.2535	-6391.04	74428.70	0.086 [1] ✔
T5	160 - 153.333	ROHN 2.5 X-STR	6.68	6.68	86.7 K=1.00	2.2535	-8979.95	58513.50	0.153 [1] ✔
T6	153.333 - 146.667	ROHN 2.5 X-STR	6.68	6.68	86.7 K=1.00	2.2535	-12272.50	58513.50	0.210 [1] ✔
T7	146.667 - 140	ROHN 2.5 X-STR	6.68	6.68	86.7 K=1.00	2.2535	-16124.10	58513.50	0.276 [1] ✔
T8	140 - 133.333	ROHN 3 STD	6.68	6.68	68.9 K=1.00	2.2285	-20484.20	70892.70	0.289 [1] ✔
T9	133.333 - 126.667	ROHN 3 STD	6.68	6.68	68.9 K=1.00	2.2285	-25373.30	70892.70	0.358 [1] ✔
T10	126.667 - 120	ROHN 3 STD	6.68	6.68	68.9 K=1.00	2.2285	-30408.60	70892.70	0.429 [1] ✔
T11	120 - 113.333	ROHN 3 X-STR	6.68	6.68	70.5 K=1.00	3.0159	-35899.50	94342.30	0.381 [1] ✔
T12	113.333 - 106.667	ROHN 3 X-STR	6.68	6.68	70.5 K=1.00	3.0159	-41630.40	94342.30	0.441 [1] ✔
T13	106.667 - 100	ROHN 3 X-STR	6.68	6.68	70.5 K=1.00	3.0159	-47620.60	94342.30	0.505 [1] ✔
T14	100 - 90	ROHN 4 X-STR	10.02	10.02	81.4 K=1.00	4.4074	-55854.80	122174.00	0.457 [1] ✔
T15	90 - 80	ROHN 4 X-STR	10.02	10.02	81.4 K=1.00	4.4074	-66292.20	122174.00	0.543 [1] ✔
T16	80 - 70	ROHN 5 STD	10.02	10.02	64.0 K=1.00	4.2999	-77665.80	143400.00	0.542 [1] ✔
T17	70 - 60	ROHN 5 STD	10.02	10.02	64.0 K=1.00	4.2999	-88741.50	143400.00	0.619 [1] ✔
T18	60 - 50	P5.5x.375	10.02	10.02	66.2 K=1.00	6.0377	-100464.00	197279.00	0.509 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T19	50 - 40	P5.5x.375	10.02	10.02	66.2 K=1.00	6.0377	-111880.00	197279.00	0.567 [1]
T20	40 - 30	P5x.375	10.02	10.02	65.4 K=1.00	6.1120	-123801.00	201245.00	0.615 [1]
T21	30 - 20	P5x.375	10.02	10.02	65.4 K=1.00	6.1120	-135344.00	201245.00	0.673 [1]
T22	20 - 10	ROHN 6 EH	10.02	10.02	54.8 K=1.00	8.4049	-147568.00	303742.00	0.486 [1]
T23	10 - 0	ROHN 6 EH	10.02	10.02	54.8 K=1.00	8.4049	-159132.00	303742.00	0.524 [1]

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 175	L1 1/2x1 1/2x1/8	8.45	4.13	167.3 K=1.00	0.3594	-609.26	2899.07	0.210 [1]
T2	175 - 170	L1 1/2x1 1/2x1/8	8.87	4.34	175.7 K=1.00	0.3594	-771.68	2629.64	0.293 [1]
T3	170 - 165	L1 1/2x1 1/2x1/8	9.29	4.55	184.3 K=1.00	0.3594	-895.02	2391.21	0.374 [1]
T4	165 - 160	L1 1/2x1 1/2x1/8	9.72	4.76	193.0 K=1.00	0.3594	-1142.87	2180.08	0.524 [1]
T5	160 - 153.333	L1 3/4x1 3/4x1/8	11.14	5.53	191.2 K=1.00	0.4219	-1445.93	2605.74	0.555 [1]
T6	153.333 - 146.667	L1 3/4x1 3/4x1/8	11.69	5.80	200.7 K=1.00	0.4219	-1682.72	2366.70	0.711 [1]
T7	146.667 - 140	KL/R > 200 (C) - 54 L1 3/4x1 3/4x1/8	12.25	6.08	210.3 K=1.00	0.4219	-1932.23	2154.40	0.897 [1]
T8	140 - 133.333	KL/R > 200 (C) - 64 L2x2x3/16	12.82	6.33	192.9 K=1.00	0.7150	-2310.81	4341.66	0.532 [1]
T9	133.333 - 126.667	L2x2x3/16	13.40	6.62	201.7 K=1.00	0.7150	-2960.60	3969.50	0.746 [1]
T10	126.667 - 120	KL/R > 200 (C) - 82 L2x2x3/16	13.99	6.92	210.7 K=1.00	0.7150	-3307.73	3638.71	0.909 [1]
T11	120 - 113.333	KL/R > 200 (C) - 91 L2 1/2x2 1/2x3/16	14.59	7.22	174.9 K=1.00	0.9020	-3625.19	6658.86	0.544 [1]
T12	113.333 - 106.667	L2 1/2x2 1/2x3/16	15.19	7.52	182.2 K=1.00	0.9020	-3949.42	6135.32	0.644 [1]
T13	106.667 - 100	L2 1/2x2 1/2x3/16	15.80	7.82	189.6 K=1.00	0.9020	-4092.64	5666.93	0.722 [1]
T14	100 - 90	L3x3x3/16	18.17	9.04	182.1	1.0900	-4923.95	7425.35	0.663 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T15	90 - 80	L3x3x3/16	19.03	9.47	190.7 K=1.00	1.0900	-5950.15	6773.24	0.878 [1]
T16	80 - 70	L3x3x1/4	19.89	9.85	199.7 K=1.00	1.4400	-6270.06	8157.31	0.769 [1]
T17	70 - 60	L3x3x1/4	20.78	10.29	208.6 K=1.00	1.4400	-6653.79	7473.99	0.890 [1]
T18	60 - 50	KL/R > 200 (C) - 153 L3 1/2x3 1/2x1/4	21.67	10.74	185.7 K=1.00	1.6900	-6918.61	11067.30	0.625 [1]
T19	50 - 40	L3 1/2x3 1/2x1/4	22.57	11.19	193.5 K=1.00	1.6900	-7241.20	10192.70	0.710 [1]
T20	40 - 30	L4x4x1/4	23.48	11.65	175.8 K=1.00	1.9400	-7508.33	14182.80	0.529 [1]
T21	30 - 20	L4x4x1/4	24.40	12.11	182.7 K=1.00	1.9400	-7839.52	13125.70	0.597 [1]
T22	20 - 10	L4x4x5/16	25.33	12.51	189.7 K=1.00	2.4000	-8033.75	15063.90	0.533 [1]
T23	10 - 0	L4x4x5/16	26.27	12.97	196.8 K=1.00	2.4000	-8353.45	13999.00	0.597 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 175	L2x2x1/8	6.56	6.11	184.5 K=1.00	0.4844	-167.04	3214.75	0.052 [1]

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 175	ROHN 2.5 X-STR	5.01	5.01	65.0	2.2535	825.84	101409.00	0.008 [1]
T2	175 - 170	ROHN 2.5 X-STR	5.01	5.01	65.0	2.2535	1830.88	101409.00	0.018 [1]
T3	170 - 165	ROHN 2.5 X-STR	5.01	5.01	65.0	2.2535	3088.65	101409.00	0.030 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T4	165 - 160	ROHN 2.5 X-STR	5.01	5.01	65.0	2.2535	4683.66	101409.00	0.046 [1]
T5	160 - 153.333	ROHN 2.5 X-STR	6.68	6.68	86.7	2.2535	6772.37	101409.00	0.067 [1]
T6	153.333 - 146.667	ROHN 2.5 X-STR	6.68	6.68	86.7	2.2535	9525.43	101409.00	0.094 [1]
T7	146.667 - 140	ROHN 2.5 X-STR	6.68	6.68	86.7	2.2535	12691.40	101409.00	0.125 [1]
T8	140 - 133.333	ROHN 3 STD	6.68	6.68	68.9	2.2285	15961.40	100281.00	0.159 [1]
T9	133.333 - 126.667	ROHN 3 STD	6.68	6.68	68.9	2.2285	19971.30	100281.00	0.199 [1]
T10	126.667 - 120	ROHN 3 STD	6.68	6.68	68.9	2.2285	24345.20	100281.00	0.243 [1]
T11	120 - 113.333	ROHN 3 X-STR	6.68	6.68	70.5	3.0159	28914.70	135717.00	0.213 [1]
T12	113.333 - 106.667	ROHN 3 X-STR	6.68	6.68	70.5	3.0159	33765.60	135717.00	0.249 [1]
T13	106.667 - 100	ROHN 3 X-STR	6.68	6.68	70.5	3.0159	38871.10	135717.00	0.286 [1]
T14	100 - 90	ROHN 4 X-STR	10.02	10.02	81.4	4.4074	45106.20	198335.00	0.227 [1]
T15	90 - 80	ROHN 4 X-STR	10.02	10.02	81.4	4.4074	53375.50	198335.00	0.269 [1]
T16	80 - 70	ROHN 5 STD	10.02	10.02	64.0	4.2999	62910.50	193494.00	0.325 [1]
T17	70 - 60	ROHN 5 STD	10.02	10.02	64.0	4.2999	72216.30	193494.00	0.373 [1]
T18	60 - 50	P5.5x.375	10.02	10.02	66.2	6.0377	81875.90	271699.00	0.301 [1]
T19	50 - 40	P5.5x.375	10.02	10.02	66.2	6.0377	91214.50	271699.00	0.336 [1]
T20	40 - 30	P5x.375	10.02	10.02	65.4	6.1120	100838.00	275039.00	0.367 [1]
T21	30 - 20	P5x.375	10.02	10.02	65.4	6.1120	110110.00	275039.00	0.400 [1]
T22	20 - 10	ROHN 6 EH	10.02	10.02	54.8	8.4049	119720.00	378222.00	0.317 [1]
T23	10 - 0	ROHN 6 EH	10.02	10.02	54.8	8.4049	128588.00	378222.00	0.340 [1]

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$

Section No.	Elevation *ft*	Size	L *ft*	L_u *ft*	Kl/r	A in^2	P_u *lb*	ϕP_n *lb*	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 175	L1 1/2x1 1/2x1/8	8.45	4.13	109.2	0.2109	572.82	9175.78	0.062 [1] ✔
T2	175 - 170	L1 1/2x1 1/2x1/8	8.87	4.34	114.6	0.2109	764.38	9175.78	0.083 [1] ✔
T3	170 - 165	L1 1/2x1 1/2x1/8	9.29	4.55	120.0	0.2109	881.13	9175.78	0.096 [1] ✔
T4	165 - 160	L1 1/2x1 1/2x1/8	9.72	4.76	125.6	0.2109	1131.19	9175.78	0.123 [1] ✔
T5	160 - 153.333	L1 3/4x1 3/4x1/8	11.14	5.53	123.8	0.2578	1430.11	11214.80	0.128 [1] ✔
T6	153.333 - 146.667	L1 3/4x1 3/4x1/8	11.69	5.80	129.8	0.2578	1672.62	11214.80	0.149 [1] ✔
T7	146.667 - 140	L1 3/4x1 3/4x1/8	12.25	6.08	136.0	0.2578	1913.42	11214.80	0.171 [1] ✔
T8	140 - 133.333	L2x2x3/16	12.82	6.33	125.2	0.4484	2268.51	19503.60	0.116 [1] ✔
T9	133.333 - 126.667	L2x2x3/16	13.40	6.62	130.8	0.4484	2946.13	19503.60	0.151 [1] ✔
T10	126.667 - 120	L2x2x3/16	13.99	6.92	136.6	0.4484	3271.29	19503.60	0.168 [1] ✔
T11	120 - 113.333	L2 1/2x2 1/2x3/16	14.59	7.22	112.9	0.5886	3594.52	25604.50	0.140 [1] ✔
T12	113.333 - 106.667	L2 1/2x2 1/2x3/16	15.19	7.52	117.6	0.5886	3927.58	25604.50	0.153 [1] ✔
T13	106.667 - 100	L2 1/2x2 1/2x3/16	15.80	7.82	122.3	0.5886	4057.82	25604.50	0.158 [1] ✔
T14	100 - 90	L3x3x3/16	18.17	9.04	117.1	0.7120	4877.58	30973.40	0.157 [1] ✔
T15	90 - 80	L3x3x3/16	19.03	9.47	122.6	0.7120	5837.13	30973.40	0.188 [1] ✔
T16	80 - 70	L3x3x1/4	19.89	9.85	128.7	0.9394	6217.86	40862.80	0.152 [1] ✔
T17	70 - 60	L3x3x1/4	20.78	10.29	134.4	0.9394	6537.35	40862.80	0.160 [1] ✔
T18	60 - 50	L3 1/2x3 1/2x1/4	21.67	10.74	119.6	1.1269	6861.84	49019.10	0.140 [1] ✔
T19	50 - 40	L3 1/2x3 1/2x1/4	22.57	11.19	124.5	1.1269	7115.34	49019.10	0.145 [1] ✔
T20	40 - 30	L4x4x1/4	23.48	11.65	113.0	1.3144	7434.45	57175.30	0.130 [1] ✔
T21	30 - 20	L4x4x1/4	24.40	12.11	117.4	1.3144	7678.62	57175.30	0.134 [1] ✔
T22	20 - 10	L4x4x5/16	25.33	12.51	122.3	1.5949	7940.93	69379.10	0.114 [1] ✔
T23	10 - 0	L4x4x5/16	26.27	12.97	126.8	1.5949	8191.44	69379.10	0.118 [1] ✔

[1] $P_u / \phi P_n$ controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	180 - 175	L2x2x1/8	6.56	6.11	121.1	0.3047	150.35	13253.90	0.011 [1] ✔

[1] $P_u / \phi P_n$ controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	180 - 175	Leg	ROHN 2.5 X-STR	2	-1827.59	74428.70	2.5	Pass
T2	175 - 170	Leg	ROHN 2.5 X-STR	15	-2927.64	74428.70	3.9	Pass
T3	170 - 165	Leg	ROHN 2.5 X-STR	24	-4336.34	74428.70	5.8	Pass
T4	165 - 160	Leg	ROHN 2.5 X-STR	32	-6391.04	74428.70	8.6	Pass
T5	160 - 153.333	Leg	ROHN 2.5 X-STR	41	-8979.95	58513.50	15.3	Pass
T6	153.333 - 146.667	Leg	ROHN 2.5 X-STR	51	-12272.50	58513.50	21.0	Pass
T7	146.667 - 140	Leg	ROHN 2.5 X-STR	59	-16124.10	58513.50	27.6	Pass
T8	140 - 133.333	Leg	ROHN 3 STD	68	-20484.20	70892.70	28.9	Pass
T9	133.333 - 126.667	Leg	ROHN 3 STD	77	-25373.30	70892.70	35.8	Pass
T10	126.667 - 120	Leg	ROHN 3 STD	86	-30408.60	70892.70	42.9	Pass
T11	120 - 113.333	Leg	ROHN 3 X-STR	95	-35899.50	94342.30	38.1	Pass
T12	113.333 - 106.667	Leg	ROHN 3 X-STR	104	-41630.40	94342.30	44.1	Pass
T13	106.667 - 100	Leg	ROHN 3 X-STR	113	-47620.60	94342.30	50.5	Pass
T14	100 - 90	Leg	ROHN 4 X-STR	123	-55854.80	122174.00	45.7	Pass
T15	90 - 80	Leg	ROHN 4 X-STR	132	-66292.20	122174.00	54.3	Pass
T16	80 - 70	Leg	ROHN 5 STD	141	-77665.80	143400.00	54.2	Pass
T17	70 - 60	Leg	ROHN 5 STD	150	-88741.50	143400.00	61.9	Pass
T18	60 - 50	Leg	P5.5x.375	159	-100464.00	197279.00	50.9	Pass
T19	50 - 40	Leg	P5.5x.375	168	-111880.00	197279.00	56.7	Pass
T20	40 - 30	Leg	P5x.375	177	-123801.00	201245.00	61.5	Pass
T21	30 - 20	Leg	P5x.375	186	-135344.00	201245.00	67.3	Pass
T22	20 - 10	Leg	ROHN 6 EH	195	-147568.00	303742.00	48.6	Pass
T23	10 - 0	Leg	ROHN 6 EH	204	-159132.00	303742.00	52.4	Pass
T1	180 - 175	Diagonal	L1 1/2x1 1/2x1/8	10	-609.26	2899.07	21.0	Pass
T2	175 - 170	Diagonal	L1 1/2x1 1/2x1/8	19	-771.68	2629.64	29.3	Pass
T3	170 - 165	Diagonal	L1 1/2x1 1/2x1/8	28	-895.02	2391.21	37.4	Pass
T4	165 - 160	Diagonal	L1 1/2x1 1/2x1/8	37	-1142.87	2180.08	52.4	Pass
T5	160 - 153.333	Diagonal	L1 3/4x1 3/4x1/8	46	-1445.93	2605.74	55.5	Pass
T6	153.333 - 146.667	Diagonal	L1 3/4x1 3/4x1/8	54	-1682.72	2366.70	71.1	Pass
T7	146.667 - 140	Diagonal	L1 3/4x1 3/4x1/8	64	-1932.23	2154.40	89.7	Pass
T8	140 - 133.333	Diagonal	L2x2x3/16	73	-2310.81	4341.66	53.2	Pass
T9	133.333 - 126.667	Diagonal	L2x2x3/16	82	-2960.60	3969.50	74.6	Pass
T10	126.667 - 120	Diagonal	L2x2x3/16	91	-3307.73	3638.71	90.9	Pass
T11	120 - 113.333	Diagonal	L2 1/2x2 1/2x3/16	100	-3625.19	6658.86	54.4	Pass
T12	113.333 - 106.667	Diagonal	L2 1/2x2 1/2x3/16	109	-3949.42	6135.32	64.4	Pass
T13	106.667 - 100	Diagonal	L2 1/2x2 1/2x3/16	118	-4092.64	5666.93	72.2	Pass
T14	100 - 90	Diagonal	L3x3x3/16	126	-4923.95	7425.35	66.3	Pass
T15	90 - 80	Diagonal	L3x3x3/16	135	-5950.15	6773.24	87.8	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T16	80 - 70	Diagonal	L3x3x1/4	144	-6270.06	8157.31	76.9	Pass
T17	70 - 60	Diagonal	L3x3x1/4	153	-6653.79	7473.99	89.0	Pass
T18	60 - 50	Diagonal	L3 1/2x3 1/2x1/4	162	-6918.61	11067.30	62.5	Pass
T19	50 - 40	Diagonal	L3 1/2x3 1/2x1/4	171	-7241.20	10192.70	71.0	Pass
T20	40 - 30	Diagonal	L4x4x1/4	180	-7508.33	14182.80	52.9	Pass
T21	30 - 20	Diagonal	L4x4x1/4	189	-7839.52	13125.70	59.7	Pass
T22	20 - 10	Diagonal	L4x4x5/16	198	-8033.75	15063.90	53.3	Pass
T23	10 - 0	Diagonal	L4x4x5/16	207	-8353.45	13999.00	59.7	Pass
T1	180 - 175	Top Girt	L2x2x1/8	5	-167.04	3214.75	5.2	Pass
							Summary	
						Leg (T21)	67.3	Pass
						Diagonal (T10)	90.9	Pass
						Top Girt (T1)	5.2	Pass
						Bolt Checks	74.5	Pass
						RATING =	**90.9**	**Pass**