STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@po.state.ct.us
Web Site: www.ct.gov/csc

July 16, 2004

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

RE: **EM-VER-078-040630** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 82 North Eagleville Road, Mansfield, Connecticut.

Dear Attorney Baldwin:

At a public meeting held on July 13, 2004, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies.

The proposed modifications are to be implemented as specified here and in your notice dated June 30, 2004, including the placement of all necessary equipment and shelters within the tower compound. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,

Pamela B. Katz, P.E.
Chairman

PBK/laf

c: Honorable Elizabeth Patterson, Mayor, Town of Mansfield
Martin Berliner, Town Manager, Town of Mansfield
Gregory Padick, Town Planner, Town of Mansfield
Thomas F. Flynn III, Nextel Communications, Inc.
Michele G. Briggs, Southwestern Bell Mobile Systems
John Murphy, General Manager, WHUS Radio
George L. Davis, Tower Manager

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CSC
CONNECTICUT SITING COUNCIL

General Power Density

Site Name: Storrs, CT (University of CT)
Tower Height: 80/84 ft rad center

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissable Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
Verizon	875	9	200	1800	80	0.1011	0.5833	17.34%
Verizon PCS	1900	3	200	600	84	0.0306	1.0	3.06%
Total Percentage of Maximum Permissible Exposure								20.40%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz
mW/cm^2 = milliwatts per square centimeter
ERP = Effective Radiated Power

Absolute worst case scenario, maximum values used.

CONNECTICUT
SITING COUNCIL

EM-VER-078-040630

ROBINSON & COLE LLP

I C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
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kbaldwin@rc.com
Direct (860) 275-8345

June 30, 2004

Via Hand Delivery

S. Derek Phelps
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Notice of Exempt Modification – Antenna Swap**
82 North Eagleville Road Telecommunications Facility
Mansfield (Storrs), Connecticut

Dear Mr. Phelps:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains a wireless telecommunications facility at 82 North Eagleville Road in Mansfield. This facility consists of three (3) Metawave® panel antennas at the 80-foot level of the 327-foot tower. Equipment associated with the antenna is located in an equipment shelter near the base of the tower.

The Connecticut Siting Council ("the Council") approved Cellco's most recent modification of the Mansfield facility on January 25, 2001. Cellco now intends to modify its facility by adding three (3) PCS antennas at the same 84-foot level on the tower. Attached behind Tab 1 are specifications for the proposed PCS antennas to be added to the Mansfield facility.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Mansfield Town Manager, Martin Berliner.

As the Council knows, on May 23, 2003, Cellco acquired, from Northcoast Communications, a license to provide PCS service throughout Connecticut. The proposed modifications to the Mansfield facility will allow Cellco to provide its customers in the Mansfield area with enhanced wireless voice and data services.

The planned modifications to the Mansfield facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in any increase in the overall height of the existing structure. Cellco's replacement antennas will be mounted at the 84-foot level on the 323-foot tower.

2. The proposed modifications will not affect associated equipment areas and will not require the extension of the site boundaries.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more.

4. The proposed modifications will not result in radio frequency (RF) power density levels at the facility that exceed the Federal Communications Commission (FCC) adopted safety standard. Attached behind Tab 2 is a Power Density Calculation Table.

Attached behind Tab 3 is a detailed Structural Report certifying that the existing tower can support the proposed PCS antennas.

For the foregoing reasons, Cellco respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Kenneth C. Baldwin

Enclosures
cc: Martin Berliner, Town Manager
Sandy M. Carter

DECIBEL
Base Station Antennas

932DG90T2E-M

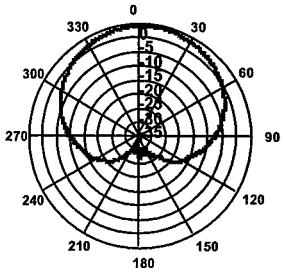
16.7 dBi, ± 45° Diversity Panel Antenna
1850-1990 MHz

1850-1990 MHz

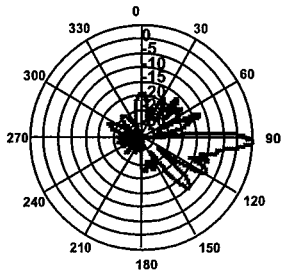
Diversity Master™
GEN3XPOL™

- Features air dielectric feed system for maximum array efficiency and lowest loss
- No fasteners, rivets, soldering or welding in critical element-to-transformer circuit
- Strong first upper side lobe suppression
- Excellent gain per unit length of antenna

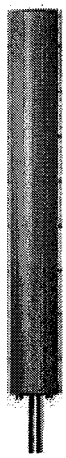
90°

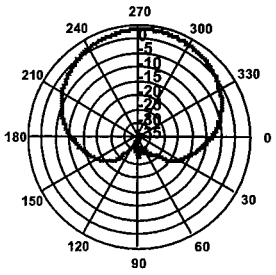


Azimuth 1850 MHz (Tilt=2)



Vertical 1850 MHz (Tilt=2)





Horizontal 1850 MHz (Tilt=2)

ELECTRICAL		MECHANICAL	
Frequency (MHz):	1850-1990	**Weight:**	9.5 lbs (4.3 kg)
Polarization:	+45°/-45°	**Dimensions (LxWxD):**	51.5 X 7 X 3.5 in (1308 X 178 X 89 mm)
Gain (dBd/dBi):	14.6/16.7	**Max. Wind Area:**	0.86 ft² (0.08 m²)
Azimuth BW:	90°	**Max. Wind Load (@ 100mph):**	50 lbf (222 N)
Elevation BW:	7°	**Max. Wind Speed:**	125 mph (201 km/h)
Beam Tilt:	2°	**Radiator Material:**	Aluminum
USLS* (dB):	>18	**Reflector Material:**	Aluminum
Front-to-Back Ratio* (dB):	30	**Radome Material:**	Polycarbonate, UV Resistant
Isolation (dB):	>30	**Mounting Hardware Material:**	Galvanized Steel
VSWR:	<1.33:1	**Connector Type:**	7-16 DIN - Female (Bottom)
IM Suppression - Two 20 Watt Carriers:	-150 dBc	**Color:**	Light Gray
Impedance:	50 Ohms	**Standard Mounting Hardware:**	DB390 Pipe Mount Kit, included
Max Input Power:	250 Watts	**Downtilt Mounting Hardware:**	DB5098, optional
Lightning Protection:	DC Ground	**Opt. Mounting Hardware:**	DB5094-AZ Azimuth Wall Mount
Opt Electrical Tilt:	0°,4°, Variable 1-8°		

ANDREW.

Andrew Corporation
8635 Stemmons Freeway
Dallas, Texas U.S.A 75247-3701
Tel: 214.631.0310

Fax: 214.631.4706
Toll Free Tel: 1.800.676.5342
Fax: 1.800.229.4706
www.andrew.com

dbtech@andrew.com

Date: 4/2/2004
* - Indicates Typical Values

General Power Density

Site Name: Storrs , CT
Tower Height: 80 ft rad center

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissable Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
Verizon	869	9	200	1800	80	0.1011	0.5793	17.46%
Verizon	1900	3	200	600	80	0.0337	1	3.37%
Total Percentage of Maximum Permissible Exposure								20.83%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz
mW/cm^2 = milliwatts per square centimeter
ERP = Effective Radiated Power

Absolute worst case scenario, maximum values used.

DETAILED STRUCTURAL ANALYSIS AND EVALUATION OF 323' EXISTING GUYED LATTICE TOWER FOR PROPOSED ANTENNA ADDITION

WHUS Tower
North Eagleville Road
Storrs, Connecticut

prepared for

verizonwireless

Verizon Wireless
99 East River Drive
East Hartford, Connecticut 06108

prepared by

URS

URS CORPORATION
795 BROOK STREET, BUILDING 5
ROCKY HILL, CT 06067
TEL. 860-529-8882

36921548.00000
VZ1-064

June 10, 2004

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

This report summarizes the structural analysis of the 288' guyed lattice tower with a 35' antenna support pole mounted on the top of tower located on North Eagleville Road in Storrs, Connecticut. The analysis was conducted in accordance with the TIA/EIA-222 and University of Connecticut (UCONN) requirements for wind velocity of 90 mph and 90 mph concurrent with ½" ice design wind load. The loading considered in the analysis consists of all proposed antennas and existing antennas, transmission lines, and ancillary items as outlined in the Section 6 of this report. The proposed Verizon Wireless modification is to add the antennas listed as follows:

ANTENNA & MOUNT DESCRIPTION	CARRIER	CENTERLINE ELEVATION
(3) Decibel DB932DG90T2E-M antennas on existing platform with (6) 1 1/4" coax cables	Verizon Wireless	@ 84' elevation

The results of the analysis indicate that the tower structure is in compliance with the proposed loading conditions. The tower is considered structurally feasible with the TIA/EIA-222 and UCONN wind load classification specified above and all the existing and proposed antenna loading.

This analysis is based on:

1) The tower structure's theoretical capacity not including any assessment of the condition of the tower.
2) Tower geometry, structural member sizes, and foundation details taken from Sabre Communications Corporation final erection drawings, report no. 98-0659 and Sabre analysis, number SA1370-G, signed and sealed on November 6, 1998.
3) Existing antennas, transmission lines, and ancillary item details were taken from a tower evaluation report prepared by Tectonic / Keyes Associates, job no. 2993.0931C signed and sealed January 20, 2003.
4) TIA\EIA-222 and UCONN wind load classification.
5) All existing and proposed coaxial cables installed in tower face, between support legs. All tower faces are completely covered with cables from 10'-0" A.G.L. to 288'-0" A.G.L.

This report is only valid per the assumptions and data utilized in this report for the structural member sizing, antenna inventory, mounting, and coaxial cable sizes and locations. The user of this report shall field verify the assumption of the structural member sizes, antennas, mount configurations, and cable sizes and locations. Notify the engineer in writing immediately if any of the assumptions in this report are found to be other than specified.

If you should have any questions, please call.

Sincerely,
URS Corporation AES

Richard A. Sambor, P.E.
Manager Facilities Design

RAS/ddm

cc: Mark Gauger – Verizon Wireless
John Murphy – WHUS
Douglas Roberts, AIA – URS
CF/Book

2. INTRODUCTION

The subject tower is located at North Eagleville Road in Storrs, Connecticut. The structure is a 288' guyed lattice tower with a 35' antenna support pole mounted on the top of tower designed by Sabre Communications Corporation, final erection drawing report no. 98-0659.

The tower is constructed of solid pipe legs, diagonals, and horizontal members. The tower sections are bolted together. The width of the face is 3'-8". Tower geometry, structural member sizes, and foundation details taken from Sabre Communications Corporation final erection drawings, report no. 98-0659 and Sabre analysis, number SA1370-G, signed and sealed on November 6, 1998.

Existing antennas, transmission lines, and ancillary item details were taken from a tower evaluation report on file at the offices of the Connecticut Siting Council and prepared by Tectonic / Keyes Associates, job no. 2993.0931C signed and sealed January 20, 2003. The inventory is summarized in tabular form in Section 6 of this report.

The proposed Verizon Wireless modification is to add the antennas as follows:

ANTENNA & MOUNT DESCRIPTION	CARRIER	CENTERLINE ELEVATION
(3) Decibel DB932DG90T2E-M antennas on existing platform with (6) 1 1/4" coax cables	Verizon Wireless	@ 84' elevation

This structural analysis of the communications tower was performed by URS Corporation (URS) for Verizon Wireless. The purpose of this analysis was to investigate the structural integrity of the existing tower with its existing and proposed antenna loads. This analysis was conducted to evaluate twist (rotation), sway (deflection) and stress on the tower, and the effect of forces to the foundation of the tower resulting from existing antenna arrangements.

3. ANALYSIS METHODOLOGY AND LOADING CONDITIONS

Methodology:

The structural analysis was done in accordance with the TIA/EIA-222, UCONN requirements, Structural Standard for Steel Antenna Towers and Antenna Supporting Structures, the American Institute of Steel Construction (AISC) and the Manual of Steel Construction; Allowable Stress Design (ASD).

The analysis was conducted using ERI Tower 3.0. The load conditions were evaluated as shown below which were compared to allowable stresses according to AISC, TIA/EIA, and UCONN requirements. The load combinations were investigated in ERI Tower 3.0 to determine the stress, sway and rotation.

Load Condition 1 = 90 mph Wind Load + Tower Dead Load
Load Condition 2 = 90 mph Wind Load (with ice) + Ice Load + Tower Dead Load

The TIA/EIA standard permits one-third increase in allowable stresses for towers and monopoles less than 700 feet tall. For purposes of this analysis, the allowable stresses of the tower members were increased by one-third in computing the load capacity; in addition, the appropriate "k" factors were assigned to each member.

4. FINDINGS AND EVALUATION

The combined axial and bending stresses on the tower structure were evaluated to compare with the allowable stress in accordance with AISC. The tower legs, diagonal and horizontal members, guys, and foundations have sufficient capacity to carry the loads applied.

The tower base reaction:

Compression (kips)	400

Guy anchor reactions:

Uplift (kips)	150
Shear (kips)	178

For detailed reactions, see drawing no. E-6 in section 6 of this report

Guy forces with factor of safety and torque arm usage:

Elevation (A.G.L.)	Guy Force (kips)	Factor of Safety	Torque Arm Usage (%)
284'	18.74	3.11	68.3
257'	24.80	2.35	97.1
217'	26.85	2.17	99.1
167'	24.18	2.41	76.4
107'	19.48	2.18	50.9
57'	9.25	2.25	18.9

For detailed reactions, see drawing no. E-6 in section 6 of this report

Tower deflection and twist at dish level (in degrees):

Deflection	0.333
Twist	0.742

For detailed deflection and twist data, see ERI tower output data in section 6 of this report

Member Usage Summary:

Elevation Range (from base)	Member Description	Member Force (kips)	Member Usage (%)	Member Description	Member Force (kips)	Member Usage (%)
280' – 288'	Leg	25.73	39.3	Diagonal	5.01	27.2
260' – 280'	Leg	34.28	43.1	Diagonal	5.42	25.1
240' – 260'	Leg	81.88	74.5	Diagonal	15.28	70.2
220' – 260'	Leg	75.97	69.1	Diagonal	15.66	71.9
200' – 220'	Leg	85.95	59.6	Diagonal	13.37	45.9
180' – 200'	Leg	90.67	62.9	Diagonal	8.49	54.8
160' – 180'	Leg	142.97	78.4	Diagonal	14.62	49.8
140' – 160'	Leg	122.19	84.8	Diagonal	9.62	43.8
120' – 140'	Leg	121.67	66.7	Diagonal	3.58	22.9
100' – 120'	Leg	133.61	73.3	Diagonal	14.47	49.3
80' – 100'	Leg	217.17	96.8	Diagonal	12.54	56.1
60' – 80'	Leg	216.08	96.3	Diagonal	8.10	51.2
40' – 60'	Leg	204.17	91.0	Diagonal	5.27	33.2
20' – 40'	Leg	202.19	90.1	Diagonal	4.24	26.8
0' – 20'	Leg	178.32	79.5	Diagonal	8.39	52.9

For detailed member analysis, see ERI tower output data in section 6 of this report

5. CONCLUSIONS AND RECOMMENDATIONS

The results of the analysis indicate that the structure is in compliance with the loading conditions and the materials and member sizes for the tower. The tower is considered structurally feasible with the TIA/EIA-222-E and UCONN wind load classification specified above for the entire existing and proposed antenna loading conditions

Limitations/Assumptions:

This report is based on the following:

A. Tower is properly installed and maintained.

B. Tower geometry, structural member sizes, and foundation details taken from Sabre Communications Corporation final erection drawings, report no. 98-0659 and Sabre analysis, number SA1370-G, signed and sealed on November 6, 1998.

C. Existing antennas, transmission lines, and ancillary item details were taken from a tower evaluation report prepared by Tectonic / Keyes Associates, job no. 2993.0931C signed and sealed January 20, 2003.

D. All existing and proposed coaxial cables installed in tower face, between support legs. All tower faces are completely covered with cables from 10'-0" A.G.L. to 288'-0" A.G.L.

E. All required members are in place.

F. All bolts are in place and are properly tightened.

G. Tower is in plumb condition.

H. All member coatings are in good condition.

I. All tower members were properly designed, detailed, fabricated, installed, and have been properly maintained since erection.

URS is not responsible for any modifications completed prior to or hereafter in which URS is not or was not directly involved. Modifications include but are not limited to:

A. Adding antennas
B. Adding coaxial cables

URS hereby states that this document represents the entire report and that it assumes no liability for any factual changes that may occur after the date of this report. All representations, recommendations, and conclusions are based upon information contained and set forth herein. If you are aware of any information which conflicts with that which is contained herein, or you are aware of any defects arising from original design, material, fabrication, or erection deficiencies, you should disregard this report and immediately contact URS. URS disclaims all liability for any representation, recommendation, or conclusion not expressly stated herein.

6.) DRAWINGS AND DATA

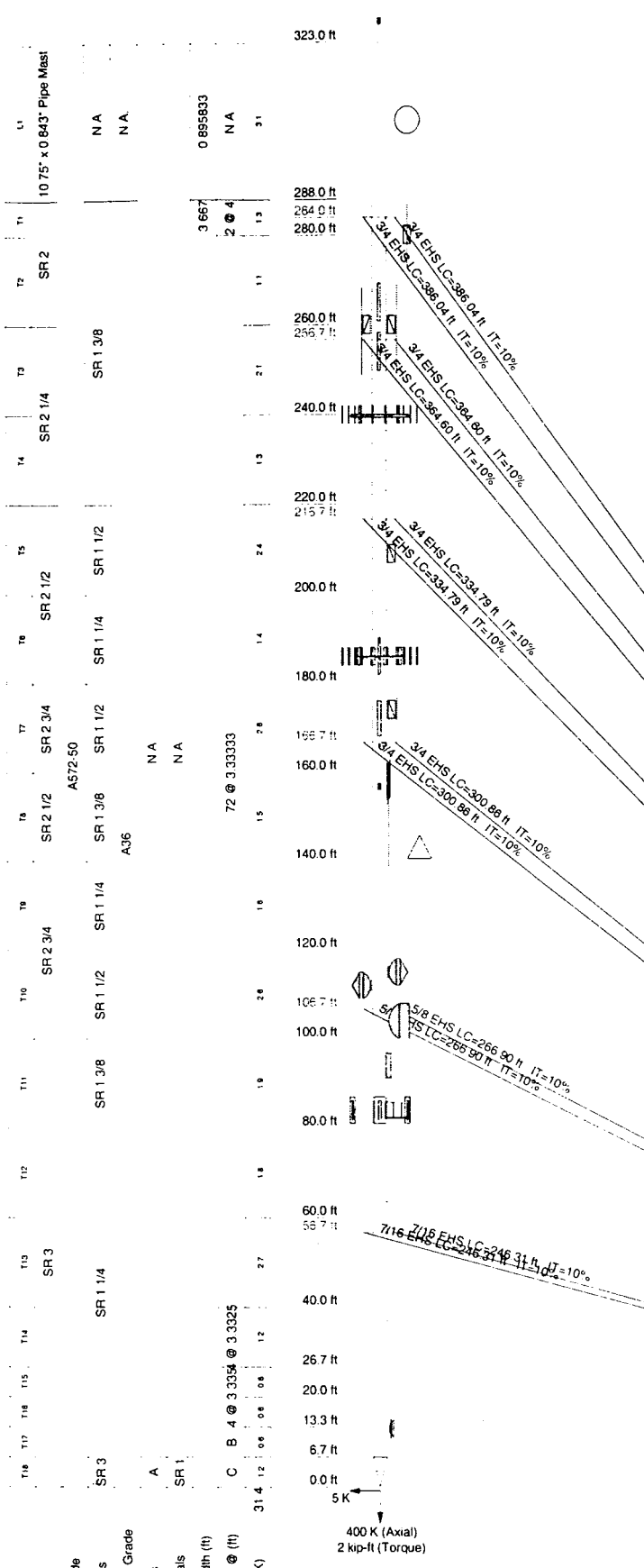
ANTENNA INVENTORY

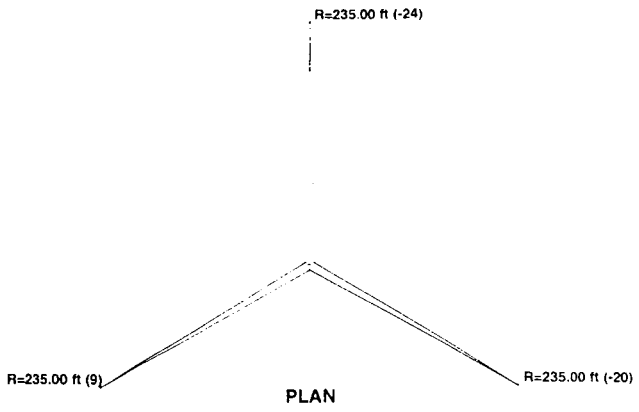
ANTENNA INVENTORY

QTY	Manufacturer and Model (or similar)	Mount	Level (ft)	Leg/Face	Coax
1	4' Lightning Rod	35' Mast	323 (Base)	-	-
1	Beacon	35' Mast	323 (Base)	-	1" conduit
1	Shively 2-Bay 6813 w/ Radome	35' Mast	305 (CL)	-	(1) 7/8"
-	**Guy Attachment**	**Torque Arm**	**284 (CL)**	**A, B, C**	-
1	Celwave PD1150	6' Sidearm	276 (Base)	B	(1) 1-5/8"
1	8' Long	Same 6' Sidearm	276 (Base)	B	(1) 1-5/8"
1	Scala AP16-850/065	3' Sidearm	262 (CL)	A, B, C	(1) 7/8"
1	Scala OGC9-825	3' Sidearm	260 (Base)	C	(1) 1-5/8"
1	Decibel DB810K	3' Sidearm	260 (Base)	B	(1) 1-5/8"
1	TMA	Same 3' Sidearm	259 (CL)	B	-
1	TMA	Same 3' Sidearm	259 (CL)	A-B	-
1	Decibel DB810K (Inverted)	Same 3' Sidearm	258 (Base)	B	(1) 1-5/8"
1	Scala OGC9-825 (Inverted)	Same 3' Sidearm	257 (Base)	C	(1) 1-5/8"
-	**Guy Attachment**	**Torque Arm**	**257 (CL)**	**A, B, C**	-
1	Scala AP16-850/065	Same 3' Sidearm	254 (CL)	A	(1) 1-7/8"
12	DB844H90 (Nextel)	12' T-Frame	240 (CL)	A,B,C	(12) 1-5/8"
-	**Guy Attachment**	**Torque Arm**	**217 (CL)**	**A, B, C**	-
1	Shively 1-Bay (unknown) w/o radome	2' Sidearm	209 (CL)	B	(1) 1-7/8"
1	Shively 1-Bay 6813 w/ radome	3' Sidearm	198 (CL)	A	(1) 1-7/8"
12	CSS DUO1417-8670 (Cingular)	12' Frame	186 (CL)	A, B, C	(9) 1-5/8"
9	TMA	Same 12' Extension	186 (CL)	A, B, C	-
1	EMS MB100RR650200PAL	12' Frame Extension	186 (CL)	Near A	(2) 1-5/8"
1	Decibel DB872	Direct	172 (CL)	A	(1) 7/8"
1	Decibel DB806	3' Sidearm	170 (CL)	B	(1) 1-1/4"
-	**Guy Attachment**	**Torque Arm**	**167 (CL)**	**A, B, C**	-
1	TMA	Direct	166 (CL)	A	-
1	Decibel DB872	Direct	158 (CL)	B	(1) 7/8"
2	Obstruction Lights	Conduit	156 (Base)	A-C	same conduit
1	Decibel DB589	1' Sidearm	154 (Base)	B	(1) 7/8"
1	7' Long	Direct	142 (Base)	B	(1) 1/2"
1	Celwave PD1108	2' Sidearm	124 (Base)	A	(1) 1/2"
2	Ice Shields	Pipe	121 (CL)	A,B	-
1	RFS 6' dia std w/ radome	Pipe	115 (CL)	B	(1) EW63 WG
1	RFS 6' dia std w/ radome	Pipe	112 (CL)	C	(1) EW63 WG
1	Celwave PD1110	2' Sidearm	110 (Base)	A	(1) 1/2"
-	**Guy Attachment**	**Torque Arm**	**107 (CL)**	**A, B, C**	-
1	RFS 8' dia HP w/ shroud	Pipe	104 (CL)	B	(1) EW63 WG
1	Scala PR-850	Direct	94 (CL)	B	(1) 1/2"
1	Decibel ASP-962	Direct	94 (CL)	A	(1) 1/2"
3	Metawave Panels (VZ WS)	14-6' Standard Platform	84 (CL)	A, B, C	(3) 1-5/8"
3	Decible DB932DG90T2E-M (VZ WS)	Same Platform	84 (CL)	A, B, C	(3) 1-1/4"
1	Decibel DB212-C	Direct	74 (CL)	C	(1) 1/2"
-	**Guy Attachment**	**Torque Arm**	**57 (CL)**	**A, B, C**	-
1	Scala CL-24	Direct	18 (CL)	B	(1) 1/4"
1	ChannelMaster 1.2M	2' Sidearm	13 (CL)	B	(1) 1/4"

URS Corporation
795 Brook Street, Building 5
Rocky Hill, CT 06067
Tel: 860.529.8882
Fax: 860.529.5566

ERI TOWER INPUT / OUTPUT DATA FOR TOWER WITH PROPOSED ANTENNA LOADING





APPURTENANCES

TYPE	ELEVATION	TYPE	ELEVATION
Flash Beacon Lighting	327	Pirod 12' T-Frame Sector Mount (1) (Cingular)	186
4' x 5/8" Lightning Rod	325	Pirod 12' T-Frame Sector Mount (1) (Cingular)	186
Shively 2-Bay 6813 w/ Radome (WHUS)	305	Pirod 12' T-Frame Sector Mount (1) (Cingular)	186
PD1150	280	MB100RR650200DPAL w/Mount Pipe	186
DB809M-XC	280	DB806M 6' Omni	174
Rohn 6' Side-Arm(1)	280	Rohn 6' Side-Arm(1)	174
AP16-850/065 w/Mount Pipe	265	DB872H	172
OGC9-825	263	ClearGain TMA	166
DB810K	261	DB589	158.5
Rohn 6' Side-Arm(1)	260	DB872H	158
Rohn 6' Side-Arm(1)	260	Flash Beacon Lighting	156
Rohn 6' Side-Arm(1)	260	Flash Beacon Lighting	156
ClearGain TMA	259	2'6"x4" Pipe Mount	154
ClearGain TMA	259	DB809M-XC	145.5
DB810K	257	PD1108	128
OGC9-825	254	Pirod 4' Side Mount Standoff (1)	124
AP16-850/065 w/Mount Pipe	254	Generic T-Arm Mount	121
(4) DB844H90 w/Mount Pipe (NEXTEL)	240	Generic T-Arm Mount	121
(4) DB844H90 w/Mount Pipe (NEXTEL)	240	2'6"x4" Pipe Mount (Dish Mount)	115
(4) DB844H90 w/Mount Pipe (NEXTEL)	240	Andrew 6' w/Radome	115
Pirod 15' T-Frame Sector Mount (1) (NEXTEL)	240	2'6"x4" Pipe Mount (Dish Mount)	112
Pirod 15' T-Frame Sector Mount (1) (NEXTEL)	240	Andrew 6' w/Radome	112
Pirod 15' T-Frame Sector Mount (1) (NEXTEL)	240	Pirod 4' Side Mount Standoff (1)	110
Shively 1-Bay 6813 w/o Radome (Radio)	209	PD1110	110
Pirod 4' Side Mount Standoff (1) (Radio)	209	8' Dia W/ Shroud	104
Shively 1-Bay 6813 w/ Radome (Radio)	198	ASP-962	94
Rohn 6' Side-Arm(1) (Radio)	198	Scala PR-850	94
(4) DUO1417-8670 w/Mount Pipe (Cingular)	186	DB932DG90E-M w/Mount Pipe (Verizon)	84
(4) DUO1417-8670 w/Mount Pipe (Cingular)	186	DB932DG90E-M w/Mount Pipe (Verizon)	84
(4) DUO1417-8670 w/Mount Pipe (Cingular)	186	PiROD 15' Platform with handrail (Verizon)	84
ClearGain TMA (Cingular)	186	155-0007-01 w/Mount Pipe (Verizon)	84
ClearGain TMA (Cingular)	186	155-0007-01 w/Mount Pipe (Verizon)	84
ClearGain TMA (Cingular)	186	DB932DG90E-M w/Mount Pipe (Verizon)	84
		155-0007-01 w/Mount Pipe (Verizon)	84
		DB212-2-C	74
		ASP-962 (Equivalent)	18
		4'6"x3" Pipe Mount (Dish Mount)	13
		1 2M	13

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	SR 1 1/4	C	2 @ 3.335
B	2 @ 3.33		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

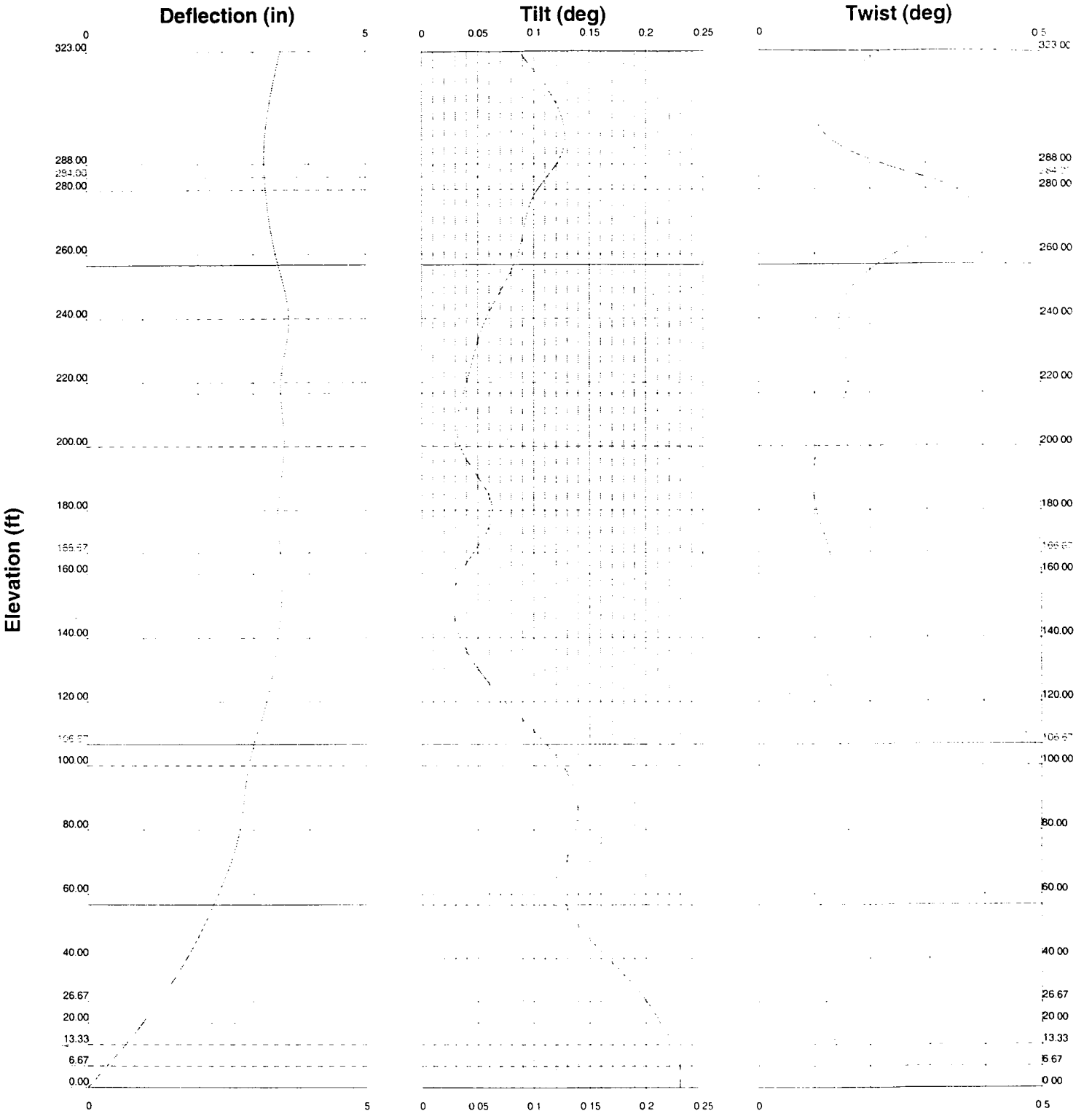
1. Tower designed for a 90 mph basic wind in accordance with the TIA/EIA-222-F Standard.
2. Tower is also designed for a 90 mph basic wind with 0.50 in ice.

URS Corp. AES
795 Brook Street
Rocky Hill, CT 06067
Phone: (860) 529-8882
FAX: (860) 529-5566

Job	288' + 35' Guyed Lattice Tower
Project	WHUS Tower, UCONN, Storrs, CT
Client	Verizon WS
Drawn by	Daniel D. McClure
App'd	
Code	TIA/EIA-222-F
Date	06/10/04
Scale	N
Path	C:\Temp Project Files\UCONN Guyed Tower\288 + 35 Guyed Tower.en
Dwg No	E

TIA/EIA-222-F - Service - 50 mph

Maximum Values



URS Corp. AES 795 Brook Street Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-5566	Job *288' + 35' Guyed Lattice Tower* Project *WHUS Tower, UCONN, Storrs, CT* Client Verizon WS Drawn by Daniel D. McClure App'd Code TIA/EIA-222-F Date 06/10/04 Scale NTS Path C:\Temp Project Files\UCONN Guyed Tower\288 + 35 Guyed Tower.en Dwg No E-

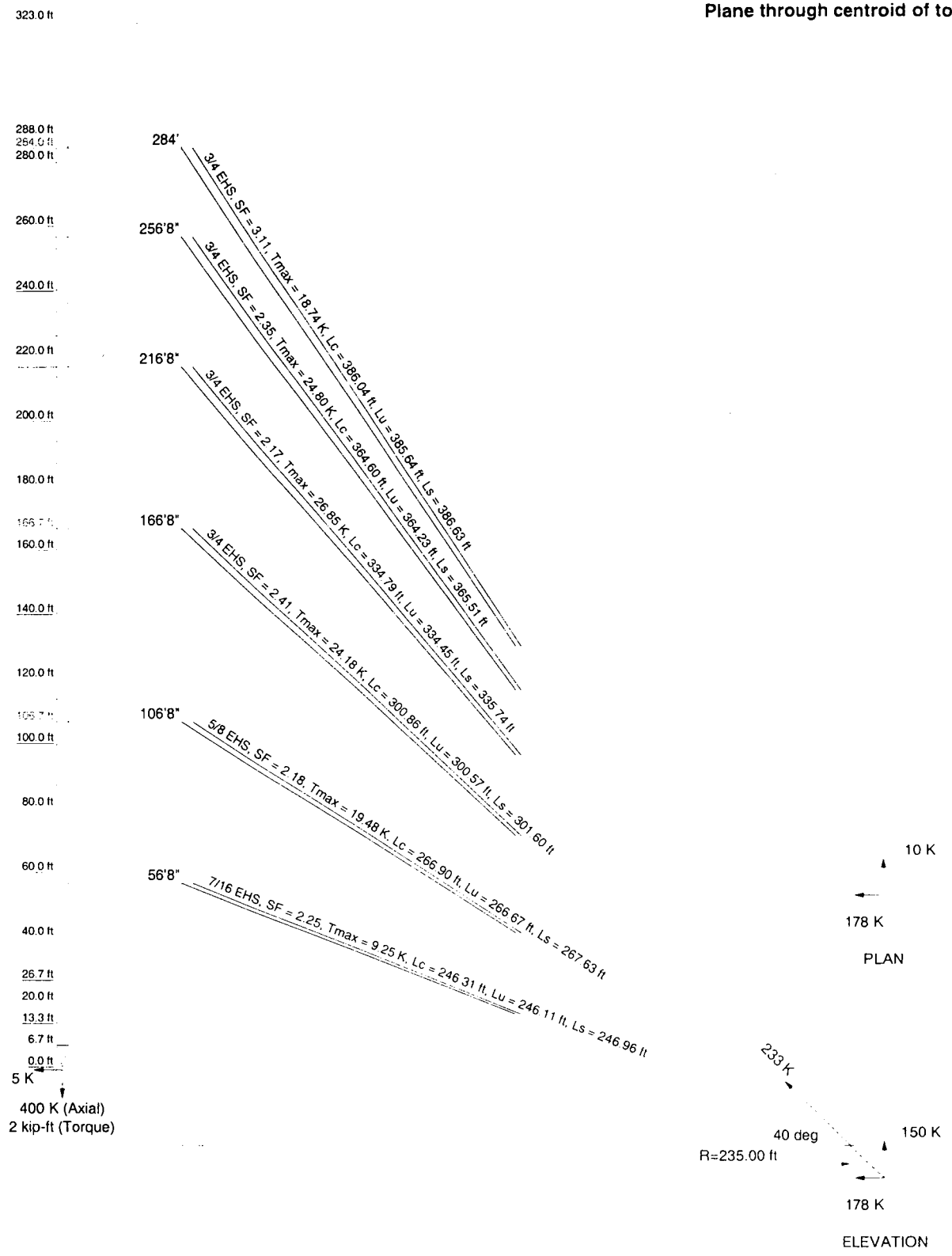
Guy Tensions and Tower Reactions

TIA/EIA-222-F - 90 mph/90 mph 0.5000 in Ice

Maximum Values

Anchor 'A'@235 ft Azimuth 0 deg Elev -24 ft

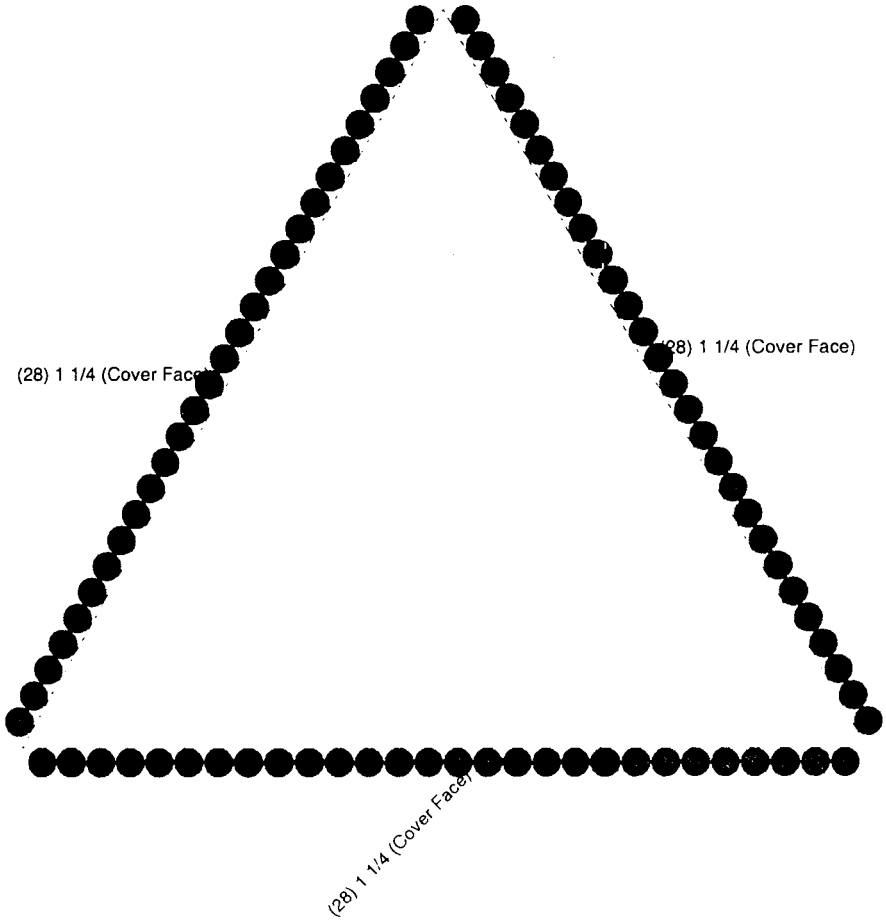
Plane through centroid of tower



URS Corp. AES 795 Brook Street Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-5566	Job: ***288' + 35' Guyed Lattice Tower*** Project: ***WHUS Tower, UCONN, Storrs, CT*** Client: Verizon WS — Drawn by: Daniel D. McClure — App'd: Code: TIA/EIA-222-F — Date: 06/10/04 — Scale: NT Path: D:\Temp\Project Files\UCONN\Guyed Tower\288 + 35 Guyed Tower.er — Dwg No: E

Feedline Plan

Round _____ Flat App In Face App Out Face



URS Corp. AES 795 Brook Street Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-5566	Job ***288' + 35' Guyed Lattice Tower*** Project ***WHUS Tower, UCONN, Storrs, CT*** Client Verizon WS Drawn by Daniel D. McClure App'd. Code TIA/EIA-222-F Date 06/10/04 Scale. NT Path D:\Temp Project Files\UCONN Guyed Tower\288 + 35 Guyed Tower.sr Dwg No. E

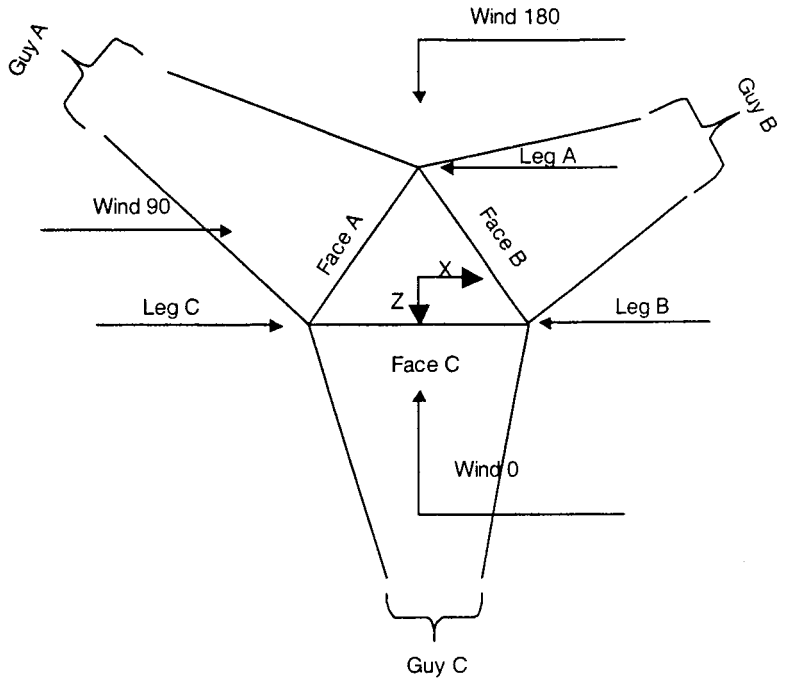
Tower Input Data

The main tower is a 3x guyed tower with an overall height of 323.00 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 3.67 ft at the top and tapered at the base.
An index plate is provided at the 3x guyed -tower connection.
There is a pole section.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Basic wind speed of 90 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56 pcf.
A wind speed of 90 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.0664.
Safety factor used in guy design is 2.
Stress ratio used in tower member design is 1.333.
Local bending stresses due to climbing loads and feedline supports are not considered

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Treat Feedline Bundles As Cylinder
Consider Moments - Horizontals	Assume Legs Pinned	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Diagonals	Assume Rigid Index Plate	\ Calculate Redundant Bracing Forces
Use Moment Magnification	\ Use Clear Spans For Wind Area	Ignore Redundant Members in FEA
\ Use Code Stress Ratios	\ Use Clear Spans For KL/r	\ SR Leg Bolts Resist Compression
\ Use Code Safety Factors - Guys	\ Retension Guys To Initial Tension	\ All Leg Panels Have Same Allowable
Escalate Ice	Bypass Mast Stability Checks	Offset Girt At Foundation
Always Use Max Kz	Use Azimuth Dish Coefficients	\ Consider Feedline Torque
Use Special Wind Profile	\ Project Wind Area of Appurt.	Include Angle Block Shear Check
Include Bolts In Member Capacity	\ Autocalc Torque Arm Areas	Poles
\ Leg Bolts Are At Top Of Section	\ SR Members Have Cut Ends	Include Shear-Torsion Interaction
Secondary Horizontal Braces Leg	\ Sort Capacity Reports By Component	Always Use Sub-Critical Flow
Use Diamond Inner Bracing (4 Sided)	Add IBC .6D+W Combination	Use Top Mounted Sockets



Face Guyed

Pole Section Geometry

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L1	323.00-288.00	35.00	10.75" x 0.843" Pipe Mast	A572-50 (50 ksi)	

Tower Elevation ft	Gusset Area (per face) ft²	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
L1 323.00-288.00				1	1	1		

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	288.00-280.00			3.67	1	8.00
T2	280.00-260.00			3.67	1	20.00
T3	260.00-240.00			3.67	1	20.00
T4	240.00-220.00			3.67	1	20.00
T5	220.00-200.00			3.67	1	20.00
T6	200.00-180.00			3.67	1	20.00
T7	180.00-160.00			3.67	1	20.00
T8	160.00-140.00			3.67	1	20.00
T9	140.00-120.00			3.67	1	20.00
T10	120.00-100.00			3.67	1	20.00
T11	100.00-80.00			3.67	1	20.00
T12	80.00-60.00			3.67	1	20.00
T13	60.00-40.00			3.67	1	20.00
T14	40.00-26.67			3.67	1	13.33
T15	26.67-20.00			3.67	1	6.67
T16	20.00-13.33			3.67	1	6.67
T17	13.33-6.67			3.67	1	6.66
T18	6.67-0.00			3.67	1	6.67

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	288.00-280.00	4.00	K Brace Left	No	No	0.0000	0.0000
T2	280.00-260.00	3.33	K Brace Left	No	No	0.0000	0.0000
T3	260.00-240.00	3.33	K Brace Left	No	No	0.0000	0.0000
T4	240.00-220.00	3.33	K Brace Left	No	No	0.0000	0.0000
T5	220.00-200.00	3.33	K Brace Left	No	No	0.0000	0.0000
T6	200.00-180.00	3.33	K Brace Left	No	No	0.0000	0.0000
T7	180.00-160.00	3.33	K Brace Left	No	No	0.0000	0.0000
T8	160.00-140.00	3.33	K Brace Left	No	No	0.0000	0.0000
T9	140.00-120.00	3.33	K Brace Left	No	No	0.0000	0.0000
T10	120.00-100.00	3.33	K Brace Left	No	No	0.0000	0.0000
T11	100.00-80.00	3.33	K Brace Left	No	No	0.0000	0.0000
T12	80.00-60.00	3.33	K Brace Left	No	No	0.0000	0.0000
T13	60.00-40.00	3.33	K Brace Left	No	No	0.0000	0.0000
T14	40.00-26.67	3.33	K Brace Left	No	No	0.0000	0.0000
T15	26.67-20.00	3.34	K Brace Left	No	No	0.0000	0.0000
T16	20.00-13.33	3.34	K Brace Left	No	No	0.0000	0.0000
T17	13.33-6.67	3.33	K Brace Left	No	No	0.0000	0.0000
T18	6.67-0.00	3.34	X Brace	No	Yes	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 288.00-280.00	Solid Round	2	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T2 280.00-260.00	Solid Round	2	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T3 260.00-240.00	Solid Round	2 1/4	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T4 240.00-220.00	Solid Round	2 1/4	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T5 220.00-200.00	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	1 1/2	A36 (36 ksi)
T6 200.00-180.00	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T7 180.00-160.00	Solid Round	2 3/4	A572-50 (50 ksi)	Solid Round	1 1/2	A36 (36 ksi)
T8 160.00-140.00	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T9 140.00-120.00	Solid Round	2 3/4	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T10 120.00-100.00	Solid Round	2 3/4	A572-50 (50 ksi)	Solid Round	1 1/2	A36 (36 ksi)
T11 100.00-80.00	Solid Round	3	A572-50 (50 ksi)	Solid Round	1 3/8	A36 (36 ksi)
T12 80.00-60.00	Solid Round	3	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T13 60.00-40.00	Solid Round	3	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T14 40.00-26.67	Solid Round	3	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T15 26.67-20.00	Solid Round	3	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T16 20.00-13.33	Solid Round	3	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T17 13.33-6.67	Solid Round	3	A572-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T18 6.67-0.00	Solid Round	3	A572-50 (50 ksi)	Solid Round	3	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
T18 6.67-0.00	Solid Round	1 1/4	A36 (36 ksi)	Solid Round	1 1/4	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T18 6.67-0.00	None	Solid Round		A36 (36 ksi)	Solid Round	1	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft²	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
T1 288.00-280.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T2 280.00-260.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T3 260.00-240.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T4 240.00-220.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T5 220.00-200.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T6 200.00-180.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T7 180.00-160.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T8 160.00-140.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T9 140.00-120.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T10 120.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T11 100.00-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T12 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T13 60.00-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T14 40.00-26.67	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T15 26.67-20.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T16 20.00-13.33	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T17 13.33-6.67	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T18 6.67-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000

Tower Section Geometry *(cont'd)*

K Factors[1]

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Legs	X Brace Diags X	X Brace Diags Y	K Brace Diags X	K Brace Diags Y	Single Diags X	Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
T1 288.00-280.00	Yes	Yes	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T2 280.00-260.00	Yes	Yes	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T3 260.00-240.00	Yes	Yes	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T4 240.00-220.00	Yes	Yes	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T5 220.00-200.00	Yes	Yes	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T6 200.00-180.00	Yes	Yes	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T7 180.00-160.00	Yes	Yes	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T8 160.00-140.00	Yes	Yes	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T9 140.00-120.00	Yes	Yes	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T10 120.00-100.00	Yes	Yes	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T11 100.00-80.00	Yes	Yes	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T12 80.00-60.00	Yes	Yes	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T13 60.00-40.00	Yes	Yes	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T14 40.00-26.67	Yes	Yes	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T15 26.67-20.00	Yes	Yes	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T16 20.00-13.33	Yes	Yes	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T17 13.33-6.67	Yes	Yes	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
T18 6.67-0.00	Yes	Yes	0.25	1	1	1	1	1	1	1	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		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
T1 288.00-280.00	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
T2 280.00-260.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 260.00-240.00	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 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
T4 240.00-220.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 220.00-200.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 200.00-180.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 180.00-160.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 160.00-140.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 140.00-120.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 120.00-100.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 100.00-80.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 80.00-60.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 60.00-40.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 40.00-26.67	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
T15 26.67-20.00	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
T16 20.00-13.33	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
T17 13.33-6.67	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
T18 6.67-0.00	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

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
284	EHS	A	3/4	5.83	10%	19000	1.155	385.71	235.00	0.0000	-24.00	100%
		B	3/4	5.83	10%	19000	1.155	382.53	235.00	0.0000	-20.00	100%
		C	3/4	5.83	10%	19000	1.155	359.95	235.00	0.0000	9.00	100%
256.667	EHS	A	3/4	5.83	10%	19000	1.155	364.29	235.00	0.0000	-24.00	100%
		B	3/4	5.83	10%	19000	1.155	361.22	235.00	0.0000	-20.00	100%
		C	3/4	5.83	10%	19000	1.155	339.56	235.00	0.0000	9.00	100%
216.667	EHS	A	3/4	5.83	10%	19000	1.155	334.50	235.00	0.0000	-24.00	100%
		B	3/4	5.83	10%	19000	1.155	331.64	235.00	0.0000	-20.00	100%
		C	3/4	5.83	10%	19000	1.155	311.64	235.00	0.0000	9.00	100%
166.667	EHS	A	3/4	5.83	10%	19000	1.155	300.60	235.00	0.0000	-24.00	100%
		B	3/4	5.83	10%	19000	1.155	298.09	235.00	0.0000	-20.00	100%
		C	3/4	5.83	10%	19000	1.155	280.87	235.00	0.0000	9.00	100%
106.667	EHS	A	5/8	4.24	10%	21000	0.813	266.69	235.00	0.0000	-24.00	100%
		B	5/8	4.24	10%	21000	0.813	264.75	235.00	0.0000	-20.00	100%
		C	5/8	4.24	10%	21000	0.813	252.19	235.00	0.0000	9.00	100%

56.6667	EHS	A	7/16	2.08	10%	21000	0.399	246.12	235.00	0.0000	-24.00	100%
		B	7/16	2.08	10%	21000	0.399	244.84	235.00	0.0000	-20.00	100%
		C	7/16	2.08	10%	21000	0.399	237.37	235.00	0.0000	9.00	100%

Guy Data *(cont'd)*

Guy Elevation *ft*	*Mount Type*	*Torque-Arm Spread* *ft*	*Torque-Arm Leg Angle* °	*Torque-Arm Style*	*Torque-Arm Grade*	*Torque-Arm Type*	*Torque-Arm Size*
284	Torque Arm	8.00	0.0000	Channel	A36 (36 ksi)	Channel	MC12x35
256.667	Torque Arm	8.00	0.0000	Channel	A36 (36 ksi)	Channel	MC12x35
216.667	Torque Arm	8.00	0.0000	Channel	A36 (36 ksi)	Channel	MC12x35
166.667	Torque Arm	8.00	0.0000	Channel	A36 (36 ksi)	Channel	MC12x35
106.667	Torque Arm	8.00	0.0000	Channel	A36 (36 ksi)	Channel	MC12x35
56.6667	Torque Arm	8.00	0.0000	Channel	A36 (36 ksi)	Channel	MC12x35

Guy Data *(cont'd)*

Guy Elevation *ft*	*Diagonal Grade*	*Diagonal Type*	*Upper Diagonal Size*	*Lower Diagonal Size*	*Is Strap*	*Pull-Off Grade*	*Pull-Off Type*	*Pull-Off Size*
284.00	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Solid Round	
256.67	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Solid Round	
216.67	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Solid Round	
166.67	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Solid Round	
106.67	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Solid Round	
56.67	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Solid Round	

Guy Data *(cont'd)*

Guy Elevation *ft*	*Cable Weight A* *K*	*Cable Weight B* *K*	*Cable Weight C* *K*	*Cable Weight D* *K*	*Tower Intercept A* *ft*	*Tower Intercept B* *ft*	*Tower Intercept C* *ft*	*Tower Intercept D* *ft*
284	0.45	0.44	0.42		14.32 6.5 sec/pulse	14.09 6.5 sec/pulse	12.51 6.1 sec/pulse	
256.667	0.42	0.42	0.39		12.80	12.59	11.16	

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
					6.2 sec/pulse	6.1 sec/pulse	5.8 sec/pulse	
216.667	0.39	0.38	0.36		10.84	10.66	9.44	
					5.7 sec/pulse	5.6 sec/pulse	5.3 sec/pulse	
166.667	0.35	0.34	0.32		8.79	8.65	7.70	
					5.1 sec/pulse	5.1 sec/pulse	4.8 sec/pulse	
106.667	0.22	0.22	0.21		6.74	6.65	6.05	
					4.5 sec/pulse	4.5 sec/pulse	4.2 sec/pulse	
56.6667	0.10	0.10	0.09		5.77	5.71	5.39	
					4.1 sec/pulse	4.1 sec/pulse	4.0 sec/pulse	

Guy Data *(cont'd)*

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
284	No	No	1	1	1	1	1	1
256.667	No	No	1	1	1	1	1	1
216.667	No	No	1	1	1	1	1	1
166.667	No	No	1	1	1	1	1	1
106.667	No	No	1	1	1	1	1	1
56.6667	No	No	1	1	1	1	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
284	0.0000	0	0.0000	1	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75
	A325N				A325N				A325N			
256.667	0.0000	0	0.0000	1	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75
	A325N				A325N				A325N			
216.667	0.0000	0	0.0000	1	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75
	A325N				A325N				A325N			
166.667	0.0000	0	0.0000	1	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75
	A325N				A325N				A325N			
106.667	0.0000	0	0.0000	1	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75
	A325N				A325N				A325N			
56.6667	0.0000	0	0.0000	1	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75
	A325N				A325N				A325N			

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
284	A	130.00	31	31	0.5000

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
	B	132.00	31	31	0.5000
	C	146.50	32	32	0.5000
256.667	A	116.33	30	30	0.5000
	B	118.33	30	30	0.5000
	C	132.83	31	31	0.5000
216.667	A	96.33	28	28	0.5000
	B	98.33	28	28	0.5000
	C	112.83	29	29	0.5000
166.667	A	71.33	26	26	0.5000
	B	73.33	26	26	0.5000
	C	87.83	27	27	0.5000
106.667	A	41.33	22	22	0.5000
	B	43.33	22	22	0.5000
	C	57.83	24	24	0.5000
56.6667	A	16.33	21	21	0.5000
	B	18.33	21	21	0.5000
	C	32.83	21	21	0.5000

Guy-Mast Forces (Excluding Wind) - No Ice

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top Bottom K	F_x K	F_y K	F_z K	M_x kip-ft	M_y kip-ft	M_z kip-ft
284	A	52.9253	6.19 5.83	-0.06	5.02	-3.62	-11.58	14.62	-20.06
	A	52.9253	6.19 5.83	0.06	5.02	-3.62	-11.58	-14.62	20.06
	B	52.5644	6.18 5.83	3.19	4.99	1.77	23.04	14.74	0.00
	B	52.5644	6.18 5.83	3.13	4.99	1.88	-11.52	-14.74	-19.96
	C	49.7597	6.15 5.83	-3.32	4.78	1.99	-11.04	15.62	19.12
	C	49.7597	6.15 5.83	-3.38	4.78	1.88	22.07	-15.62	0.00
			Sum:	-0.38	29.57	0.28	-0.61	0.00	-0.84
256.667	A	50.3349	6.15 5.83	-0.07	4.82	-3.82	-11.14	15.44	-19.29
	A	50.3349	6.15 5.83	0.07	4.82	-3.82	-11.14	-15.44	19.29
	B	49.9303	6.15 5.83	3.37	4.79	1.87	22.13	15.57	0.00
	B	49.9303	6.15 5.83	3.30	4.79	1.98	-11.07	-15.57	-19.17
	C	46.7815	6.12 5.83	-3.50	4.55	2.10	-10.50	16.51	18.19
	C	46.7815	6.12 5.83	-3.58	4.55	1.98	21.01	-16.51	0.00
			Sum:	-0.41	28.33	0.30	-0.70	0.00	-0.97
216.667	A	45.9611	6.11 5.83	-0.07	4.48	-4.15	-10.35	16.75	-17.93
	A	45.9611	6.11 5.83	0.07	4.48	-4.15	-10.35	-16.75	17.93
	B	45.4811	6.10 5.83	3.66	4.45	2.03	20.53	16.89	0.00
	B	45.4811	6.10	3.58	4.45	2.15	-10.27	-16.89	-17.78

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
			5.83						
	C	41.7434	6.07	-3.80	4.14	2.28	-9.56	17.92	16.56
			5.83						
	C	41.7434	6.07	-3.88	4.14	2.15	19.13	-17.92	0.00
			5.83						
			Sum:	-0.44	26.14	0.32	-0.88	0.00	-1.22
166.667	A	39.3270	6.05	-0.08	3.94	-4.59	-9.09	18.55	-15.75
			5.83						
	A	39.3270	6.05	0.08	3.94	-4.59	-9.09	-18.55	15.75
			5.83						
	B	38.7328	6.05	4.05	3.89	2.25	17.95	18.70	0.00
			5.83						
	B	38.7328	6.05	3.97	3.89	2.38	-8.98	-18.70	-15.55
			5.83						
	C	34.1169	6.01	-4.20	3.48	2.52	-8.04	19.79	13.93
			5.83						
	C	34.1169	6.01	-4.29	3.48	2.38	16.09	-19.79	0.00
			5.83						
			Sum:	-0.47	22.62	0.34	-1.17	0.00	-1.62
106.667	A	29.3126	4.35	-0.06	2.21	-3.74	-5.10	15.12	-8.84
			4.24						
	A	29.3126	4.35	0.06	2.21	-3.74	-5.10	-15.12	8.84
			4.24						
	B	28.5584	4.34	3.30	2.16	1.83	9.97	15.22	0.00
			4.24						
	B	28.5584	4.34	3.23	2.16	1.94	-4.99	-15.22	-8.64
			4.24						
	C	22.7661	4.32	-3.38	1.76	2.03	-4.06	15.93	7.03
			4.24						
	C	22.7661	4.32	-3.45	1.76	1.91	8.12	-15.93	0.00
			4.24						
			Sum:	-0.31	12.26	0.23	-1.16	0.00	-1.60
56.6667	A	19.1172	2.11	-0.03	0.74	-1.98	-1.70	8.00	-2.94
			2.08						
	A	19.1172	2.11	0.03	0.74	-1.98	-1.70	-8.00	2.94
			2.08						
	B	18.2335	2.11	1.74	0.70	0.97	3.25	8.04	0.00
			2.08						
	B	18.2335	2.11	1.71	0.70	1.02	-1.63	-8.04	-2.82
			2.08						
	C	11.5752	2.10	-1.75	0.47	1.05	-1.08	8.27	1.87
			2.08						
	C	11.5752	2.10	-1.79	0.47	0.99	2.16	-8.27	0.00
			2.08						
			Sum:	-0.10	3.81	0.08	-0.69	0.00	-0.95

Guy-Mast Forces (Excluding Wind) - Ice

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
284	A	52.9253	8.61	-0.09	7.01	-5.01	-16.18	20.24	-28.03

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom	F_x	F_y	F_z	M_x	M_y	M_z
ft		°	K	K	K	K	kip-ft	kip-ft	kip-ft
			8.02						
	A	52.9253	8.61	0.09	7.01	-5.01	-16.18	-20.24	28.03
			8.02						
	B	52.5644	8.61	4.42	6.97	2.45	32.19	20.40	0.00
			8.03						
	B	52.5644	8.61	4.33	6.97	2.60	-16.10	-20.40	-27.88
			8.03						
	C	49.7597	8.56	-4.59	6.68	2.76	-15.43	21.64	26.72
			8.04						
	C	49.7597	8.56	-4.69	6.68	2.60	30.86	-21.64	0.00
			8.04						
			Sum:	-0.53	41.31	0.39	-0.84	0.00	-1.16
256.667	A	50.3349	8.57	-0.09	6.74	-5.30	-15.57	21.39	-26.96
			8.03						
	A	50.3349	8.57	0.09	6.74	-5.30	-15.57	-21.39	26.96
			8.03						
	B	49.9303	8.57	4.67	6.70	2.59	30.94	21.57	0.00
			8.04						
	B	49.9303	8.57	4.58	6.70	2.75	-15.47	-21.57	-26.79
			8.04						
	C	46.7815	8.52	-4.86	6.36	2.92	-14.69	22.90	25.45
			8.05						
	C	46.7815	8.52	-4.96	6.36	2.75	29.39	-22.90	0.00
			8.05						
			Sum:	-0.57	39.60	0.42	-0.97	0.00	-1.34
216.667	A	45.9611	8.51	-0.10	6.27	-5.75	-14.49	23.24	-25.09
			8.05						
	A	45.9611	8.51	0.10	6.27	-5.75	-14.49	-23.24	25.09
			8.05						
	B	45.4811	8.51	5.07	6.22	2.81	28.73	23.43	0.00
			8.05						
	B	45.4811	8.51	4.97	6.22	2.99	-14.37	-23.43	-24.88
			8.05						
	C	41.7434	8.46	-5.28	5.80	3.17	-13.40	24.89	23.20
			8.07						
	C	41.7434	8.46	-5.39	5.80	2.99	26.79	-24.89	0.00
			8.07						
			Sum:	-0.63	36.59	0.46	-1.21	0.00	-1.68
166.667	A	39.3270	8.44	-0.11	5.52	-6.38	-12.75	25.78	-22.08
			8.07						
	A	39.3270	8.44	0.11	5.52	-6.38	-12.75	-25.78	22.08
			8.07						
	B	38.7328	8.43	5.62	5.45	3.12	25.15	25.98	0.00
			8.07						
	B	38.7328	8.43	5.51	5.45	3.31	-12.58	-25.98	-21.78
			8.07						
	C	34.1169	8.38	-5.84	4.89	3.51	-11.28	27.51	19.54
			8.08						
	C	34.1169	8.38	-5.96	4.89	3.30	22.56	-27.51	0.00
			8.08						
			Sum:	-0.66	31.70	0.47	-1.64	0.00	-2.24
106.667	A	29.3126	6.26	-0.09	3.22	-5.37	-7.43	21.69	-12.86
			6.06						
	A	29.3126	6.26	0.09	3.22	-5.37	-7.43	-21.69	12.86
			6.06						
	B	28.5584	6.25	4.73	3.14	2.62	14.52	21.84	0.00
			6.06						
	B	28.5584	6.25	4.64	3.14	2.78	-7.26	-21.84	-12.57
			6.06						

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
	C	22.7661	6.22 6.07	-4.86	2.57	2.92	-5.93	22.87	10.27
	C	22.7661	6.22 6.07	-4.95	2.57	2.75	11.85	-22.87	0.00
			Sum:	-0.44	17.85	0.33	-1.67	0.00	-2.30
56.6667	A	19.1172	3.23 3.15	-0.05	1.17	-3.01	-2.69	12.18	-4.66
	A	19.1172	3.23 3.15	0.05	1.17	-3.01	-2.69	-12.18	4.66
	B	18.2335	3.23 3.16	2.65	1.12	1.47	5.16	12.24	0.00
	B	18.2335	3.23 3.16	2.60	1.12	1.56	-2.58	-12.24	-4.47
	C	11.5752	3.21 3.16	-2.67	0.75	1.61	-1.74	12.60	3.02
	C	11.5752	3.21 3.16	-2.73	0.75	1.51	3.49	-12.60	0.00
			Sum:	-0.15	6.07	0.12	-1.06	0.00	-1.45

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
284	A	52.9253	6.19 5.83	-0.06	5.02	-3.62	-11.58	14.62	-20.06
	A	52.9253	6.19 5.83	0.06	5.02	-3.62	-11.58	-14.62	20.06
	B	52.5644	6.18 5.83	3.19	4.99	1.77	23.04	14.74	0.00
	B	52.5644	6.18 5.83	3.13	4.99	1.88	-11.52	-14.74	-19.96
	C	49.7597	6.15 5.83	-3.32	4.78	1.99	-11.04	15.62	19.12
	C	49.7597	6.15 5.83	-3.38	4.78	1.88	22.07	-15.62	0.00
			Sum:	-0.38	29.57	0.28	-0.61	0.00	-0.84
256.667	A	50.3349	6.15 5.83	-0.07	4.82	-3.82	-11.14	15.44	-19.29
	A	50.3349	6.15 5.83	0.07	4.82	-3.82	-11.14	-15.44	19.29
	B	49.9303	6.15 5.83	3.37	4.79	1.87	22.13	15.57	0.00
	B	49.9303	6.15 5.83	3.30	4.79	1.98	-11.07	-15.57	-19.17
	C	46.7815	6.12 5.83	-3.50	4.55	2.10	-10.50	16.51	18.19
	C	46.7815	6.12 5.83	-3.58	4.55	1.98	21.01	-16.51	0.00
			Sum:	-0.41	28.33	0.30	-0.70	0.00	-0.97
216.667	A	45.9611	6.11 5.83	-0.07	4.48	-4.15	-10.35	16.75	-17.93

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom	F_x	F_y	F_z	M_x	M_y	M_z
ft		°	K	K	K	K	kip-ft	kip-ft	kip-ft
	A	45.9611	6.11	0.07	4.48	-4.15	-10.35	-16.75	17.93
			5.83						
	B	45.4811	6.10	3.66	4.45	2.03	20.53	16.89	0.00
			5.83						
	B	45.4811	6.10	3.58	4.45	2.15	-10.27	-16.89	-17.78
			5.83						
	C	41.7434	6.07	-3.80	4.14	2.28	-9.56	17.92	16.56
			5.83						
	C	41.7434	6.07	-3.88	4.14	2.15	19.13	-17.92	0.00
			5.83						
			Sum:	-0.44	26.14	0.32	-0.88	0.00	-1.22
166.667	A	39.3270	6.05	-0.08	3.94	-4.59	-9.09	18.55	-15.75
			5.83						
	A	39.3270	6.05	0.08	3.94	-4.59	-9.09	-18.55	15.75
			5.83						
	B	38.7328	6.05	4.05	3.89	2.25	17.95	18.70	0.00
			5.83						
	B	38.7328	6.05	3.97	3.89	2.38	-8.98	-18.70	-15.55
			5.83						
	C	34.1169	6.01	-4.20	3.48	2.52	-8.04	19.79	13.93
			5.83						
	C	34.1169	6.01	-4.29	3.48	2.38	16.09	-19.79	0.00
			5.83						
			Sum:	-0.47	22.62	0.34	-1.17	0.00	-1.62
106.667	A	29.3126	4.35	-0.06	2.21	-3.74	-5.10	15.12	-8.84
			4.24						
	A	29.3126	4.35	0.06	2.21	-3.74	-5.10	-15.12	8.84
			4.24						
	B	28.5584	4.34	3.30	2.16	1.83	9.97	15.22	0.00
			4.24						
	B	28.5584	4.34	3.23	2.16	1.94	-4.99	-15.22	-8.64
			4.24						
	C	22.7661	4.32	-3.38	1.76	2.03	-4.06	15.93	7.03
			4.24						
	C	22.7661	4.32	-3.45	1.76	1.91	8.12	-15.93	0.00
			4.24						
			Sum:	-0.31	12.26	0.23	-1.16	0.00	-1.60
56.6667	A	19.1172	2.11	-0.03	0.74	-1.98	-1.70	8.00	-2.94
			2.08						
	A	19.1172	2.11	0.03	0.74	-1.98	-1.70	-8.00	2.94
			2.08						
	B	18.2335	2.11	1.74	0.70	0.97	3.25	8.04	0.00
			2.08						
	B	18.2335	2.11	1.71	0.70	1.02	-1.63	-8.04	-2.82
			2.08						
	C	11.5752	2.10	-1.75	0.47	1.05	-1.08	8.27	1.87
			2.08						
	C	11.5752	2.10	-1.79	0.47	0.99	2.16	-8.27	0.00
			2.08						
			Sum:	-0.10	3.81	0.08	-0.69	0.00	-0.95

Guy-Tensioning Information

Temperature At Time Of Tensioning

Guy Elevation ft		H ft	V ft	0 F Initial Tension K	0 F Intercept ft	20 F Initial Tension K	20 F Intercept ft	40 F Initial Tension K	40 F Intercept ft	60 F Initial Tension K	60 F Intercept ft	80 F Initial Tension K	80 F Intercept ft	100 F Initial Tension K	100 F Intercept ft	120 F Initial Tension K	120 F Intercept ft
284	A	232.72	308.00	8.071	10.42	7.302	11.50	6.552	12.78	5.830	14.32	5.146	16.16	4.512	18.35	3.942	20.89
	B	232.72	304.00	8.071	10.25	7.302	11.31	6.552	12.57	5.830	14.09	5.146	15.90	4.512	18.05	3.942	20.56
	C	232.72	275.00	8.070	9.10	7.300	10.04	6.551	11.16	5.830	12.51	5.147	14.12	4.514	16.04	3.946	18.26
256.667	A	232.72	280.67	8.070	9.32	7.301	10.28	6.551	11.43	5.830	12.80	5.147	14.46	4.514	16.42	3.945	18.69
	B	232.72	276.67	8.070	9.16	7.301	10.11	6.551	11.24	5.830	12.59	5.147	14.22	4.514	16.15	3.946	18.39
	C	232.72	247.67	8.069	8.11	7.300	8.95	6.551	9.96	5.830	11.16	5.148	12.60	4.516	14.31	3.950	16.30
216.667	A	232.72	240.67	8.068	7.88	7.300	8.69	6.551	9.67	5.830	10.84	5.148	12.24	4.517	13.90	3.950	15.85
	B	232.72	236.67	8.068	7.75	7.299	8.55	6.551	9.51	5.830	10.66	5.148	12.04	4.517	13.67	3.951	15.57
	C	232.72	207.67	8.068	6.85	7.299	7.57	6.551	8.42	5.830	9.44	5.148	10.66	4.519	12.11	3.955	13.79
166.667	A	232.72	190.67	8.069	6.38	7.300	7.05	6.551	7.84	5.830	8.79	5.149	9.94	4.520	11.29	3.957	12.85
	B	232.72	186.67	8.062	6.29	7.296	6.94	6.549	7.72	5.830	8.65	5.142	9.79	4.514	11.12	3.952	12.66
	C	232.72	157.67	8.062	5.59	7.295	6.17	6.548	6.87	5.830	7.70	5.151	8.70	4.524	9.89	3.950	11.29
106.667	A	232.72	130.67	5.974	4.80	5.378	5.33	4.797	5.97	4.240	6.74	3.716	7.68	3.235	8.81	2.810	10.12
	B	232.72	126.67	5.974	4.73	5.377	5.25	4.797	5.88	4.240	6.65	3.716	7.57	3.235	8.68	2.810	9.97
	C	232.72	97.67	5.973	4.30	5.376	4.78	4.796	5.35	4.240	6.05	3.716	6.89	3.237	7.90	2.813	9.08
56.6667	A	232.72	80.67	2.930	4.10	2.637	4.56	2.353	5.11	2.080	5.77	1.823	6.58	1.589	7.54	1.381	8.66
	B	232.72	76.67	2.930	4.06	2.637	4.51	2.353	5.05	2.080	5.71	1.823	6.51	1.589	7.47	1.381	8.58
	C	232.72	47.67	2.929	3.83	2.637	4.25	2.353	4.76	2.080	5.39	1.824	6.14	1.590	7.04	1.383	8.09

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1 1/4 (Cover Face)	A	Yes	Ar (CfAe)	288.00 - 0.00	28	28	0.0000	1.5500		0.66
1 1/4 (Cover Face)	B	Yes	Ar (CfAe)	288.00 - 0.00	28	28	0.0000	1.5500		0.66
1 1/4 (Cover Face)	C	Yes	Ar (CfAe)	288.00 - 0.00	28	28	0.0000	1.5500		0.66

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
L1	323.00-288.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
T1	288.00-280.00	A	28.933	0.000	0.000	0.000	0.15
		B	28.933	0.000	0.000	0.000	0.15
		C	28.933	0.000	0.000	0.000	0.15
T2	280.00-260.00	A	72.333	0.000	0.000	0.000	0.37
		B	72.333	0.000	0.000	0.000	0.37
		C	72.333	0.000	0.000	0.000	0.37
T3	260.00-240.00	A	72.333	0.000	0.000	0.000	0.37
		B	72.333	0.000	0.000	0.000	0.37
		C	72.333	0.000	0.000	0.000	0.37
T4	240.00-220.00	A	72.333	0.000	0.000	0.000	0.37
		B	72.333	0.000	0.000	0.000	0.37
		C	72.333	0.000	0.000	0.000	0.37
T5	220.00-200.00	A	72.333	0.000	0.000	0.000	0.37
		B	72.333	0.000	0.000	0.000	0.37
		C	72.333	0.000	0.000	0.000	0.37
T6	200.00-180.00	A	72.333	0.000	0.000	0.000	0.37
		B	72.333	0.000	0.000	0.000	0.37
		C	72.333	0.000	0.000	0.000	0.37

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T7	180.00-160.00	A	72.333	0.000	0.000	0.000	0.37
		B	72.333	0.000	0.000	0.000	0.37
		C	72.333	0.000	0.000	0.000	0.37
T8	160.00-140.00	A	72.333	0.000	0.000	0.000	0.37
		B	72.333	0.000	0.000	0.000	0.37
		C	72.333	0.000	0.000	0.000	0.37
T9	140.00-120.00	A	72.333	0.000	0.000	0.000	0.37
		B	72.333	0.000	0.000	0.000	0.37
		C	72.333	0.000	0.000	0.000	0.37
T10	120.00-100.00	A	72.333	0.000	0.000	0.000	0.37
		B	72.333	0.000	0.000	0.000	0.37
		C	72.333	0.000	0.000	0.000	0.37
T11	100.00-80.00	A	72.333	0.000	0.000	0.000	0.37
		B	72.333	0.000	0.000	0.000	0.37
		C	72.333	0.000	0.000	0.000	0.37
T12	80.00-60.00	A	72.333	0.000	0.000	0.000	0.37
		B	72.333	0.000	0.000	0.000	0.37
		C	72.333	0.000	0.000	0.000	0.37
T13	60.00-40.00	A	72.333	0.000	0.000	0.000	0.37
		B	72.333	0.000	0.000	0.000	0.37
		C	72.333	0.000	0.000	0.000	0.37
T14	40.00-26.67	A	48.210	0.000	0.000	0.000	0.25
		B	48.210	0.000	0.000	0.000	0.25
		C	48.210	0.000	0.000	0.000	0.25
T15	26.67-20.00	A	24.123	0.000	0.000	0.000	0.12
		B	24.123	0.000	0.000	0.000	0.12
		C	24.123	0.000	0.000	0.000	0.12
T16	20.00-13.33	A	24.123	0.000	0.000	0.000	0.12
		B	24.123	0.000	0.000	0.000	0.12
		C	24.123	0.000	0.000	0.000	0.12
T17	13.33-6.67	A	24.087	0.000	0.000	0.000	0.12
		B	24.087	0.000	0.000	0.000	0.12
		C	24.087	0.000	0.000	0.000	0.12
T18	6.67-0.00	A	24.123	0.000	0.000	0.000	0.12
		B	24.123	0.000	0.000	0.000	0.12
		C	24.123	0.000	0.000	0.000	0.12

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	323.00-288.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
T1	288.00-280.00	A	0.500	1.700	27.900	0.000	0.000	0.33
		B		1.700	27.900	0.000	0.000	0.33
		C		1.700	27.900	0.000	0.000	0.33
T2	280.00-260.00	A	0.500	4.250	69.750	0.000	0.000	0.83
		B		4.250	69.750	0.000	0.000	0.83
		C		4.250	69.750	0.000	0.000	0.83
T3	260.00-240.00	A	0.500	4.250	69.750	0.000	0.000	0.83
		B		4.250	69.750	0.000	0.000	0.83
		C		4.250	69.750	0.000	0.000	0.83
T4	240.00-220.00	A	0.500	4.250	69.750	0.000	0.000	0.83
		B		4.250	69.750	0.000	0.000	0.83
		C		4.250	69.750	0.000	0.000	0.83
T5	220.00-200.00	A	0.500	4.250	69.750	0.000	0.000	0.83

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		4.250	69.750	0.000	0.000	0.83
		C		4.250	69.750	0.000	0.000	0.83
T6	200.00-180.00	A	0.500	4.250	69.750	0.000	0.000	0.83
		B		4.250	69.750	0.000	0.000	0.83
		C		4.250	69.750	0.000	0.000	0.83
T7	180.00-160.00	A	0.500	4.250	69.750	0.000	0.000	0.83
		B		4.250	69.750	0.000	0.000	0.83
		C		4.250	69.750	0.000	0.000	0.83
T8	160.00-140.00	A	0.500	4.250	69.750	0.000	0.000	0.83
		B		4.250	69.750	0.000	0.000	0.83
		C		4.250	69.750	0.000	0.000	0.83
T9	140.00-120.00	A	0.500	4.250	69.750	0.000	0.000	0.83
		B		4.250	69.750	0.000	0.000	0.83
		C		4.250	69.750	0.000	0.000	0.83
T10	120.00-100.00	A	0.500	4.250	69.750	0.000	0.000	0.83
		B		4.250	69.750	0.000	0.000	0.83
		C		4.250	69.750	0.000	0.000	0.83
T11	100.00-80.00	A	0.500	4.250	69.750	0.000	0.000	0.83
		B		4.250	69.750	0.000	0.000	0.83
		C		4.250	69.750	0.000	0.000	0.83
T12	80.00-60.00	A	0.500	4.250	69.750	0.000	0.000	0.83
		B		4.250	69.750	0.000	0.000	0.83
		C		4.250	69.750	0.000	0.000	0.83
T13	60.00-40.00	A	0.500	4.250	69.750	0.000	0.000	0.83
		B		4.250	69.750	0.000	0.000	0.83
		C		4.250	69.750	0.000	0.000	0.83
T14	40.00-26.67	A	0.500	2.833	46.488	0.000	0.000	0.55
		B		2.833	46.488	0.000	0.000	0.55
		C		2.833	46.488	0.000	0.000	0.55
T15	26.67-20.00	A	0.500	1.417	23.262	0.000	0.000	0.28
		B		1.417	23.262	0.000	0.000	0.28
		C		1.417	23.262	0.000	0.000	0.28
T16	20.00-13.33	A	0.500	1.417	23.262	0.000	0.000	0.28
		B		1.417	23.262	0.000	0.000	0.28
		C		1.417	23.262	0.000	0.000	0.28
T17	13.33-6.67	A	0.500	1.415	23.227	0.000	0.000	0.28
		B		1.415	23.227	0.000	0.000	0.28
		C		1.415	23.227	0.000	0.000	0.28
T18	6.67-0.00	A	0.500	1.417	23.262	0.000	0.000	0.28
		B		1.417	23.262	0.000	0.000	0.28
		C		1.417	23.262	0.000	0.000	0.28

Feed Line Shielding

Section	Elevation ft	Face	A_R ft^2	A_R Ice ft^2	A_F ft^2	A_F Ice ft^2
L1	323.00-288.00		0.000	0.000	0.000	0.000
			0.000	0.000	0.000	0.000
			0.000	0.000	0.000	0.000
T1	288.00-280.00	A	1.227	2.167	0.000	0.000
		B	1.227	2.167	0.000	0.000
		C	1.227	2.167	0.000	0.000
T2	280.00-260.00	A	3.360	5.938	0.000	0.000
		B	3.360	5.938	0.000	0.000
		C	3.360	5.938	0.000	0.000
T3	260.00-240.00	A	3.360	5.938	0.000	0.000

Section	Elevation	Face	A_R	A_R Ice	A_F	A_F Ice
	ft		ft^2	ft^2	ft^2	ft^2
		B	3.360	5.938	0.000	0.000
		C	3.360	5.938	0.000	0.000
T4	240.00-220.00	A	3.360	5.938	0.000	0.000
		B	3.360	5.938	0.000	0.000
		C	3.360	5.938	0.000	0.000
T5	220.00-200.00	A	3.666	6.250	0.000	0.000
		B	3.666	6.250	0.000	0.000
		C	3.666	6.250	0.000	0.000
T6	200.00-180.00	A	3.055	5.625	0.000	0.000
		B	3.055	5.625	0.000	0.000
		C	3.055	5.625	0.000	0.000
T7	180.00-160.00	A	3.666	6.250	0.000	0.000
		B	3.666	6.250	0.000	0.000
		C	3.666	6.250	0.000	0.000
T8	160.00-140.00	A	3.360	5.938	0.000	0.000
		B	3.360	5.938	0.000	0.000
		C	3.360	5.938	0.000	0.000
T9	140.00-120.00	A	3.055	5.625	0.000	0.000
		B	3.055	5.625	0.000	0.000
		C	3.055	5.625	0.000	0.000
T10	120.00-100.00	A	3.666	6.250	0.000	0.000
		B	3.666	6.250	0.000	0.000
		C	3.666	6.250	0.000	0.000
T11	100.00-80.00	A	3.360	5.938	0.000	0.000
		B	3.360	5.938	0.000	0.000
		C	3.360	5.938	0.000	0.000
T12	80.00-60.00	A	3.055	5.625	0.000	0.000
		B	3.055	5.625	0.000	0.000
		C	3.055	5.625	0.000	0.000
T13	60.00-40.00	A	3.055	5.625	0.000	0.000
		B	3.055	5.625	0.000	0.000
		C	3.055	5.625	0.000	0.000
T14	40.00-26.67	A	2.036	3.750	0.000	0.000
		B	2.036	3.750	0.000	0.000
		C	2.036	3.750	0.000	0.000
T15	26.67-20.00	A	1.018	1.875	0.000	0.000
		B	1.018	1.875	0.000	0.000
		C	1.018	1.875	0.000	0.000
T16	20.00-13.33	A	1.018	1.875	0.000	0.000
		B	1.018	1.875	0.000	0.000
		C	1.018	1.875	0.000	0.000
T17	13.33-6.67	A	1.018	1.874	0.000	0.000
		B	1.018	1.874	0.000	0.000
		C	1.018	1.874	0.000	0.000
T18	6.67-0.00	A	3.490	5.146	0.000	0.000
		B	3.490	5.146	0.000	0.000
		C	3.490	5.146	0.000	0.000

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L1	323.00-288.00	0.0000	0.0000	0.0000	0.0000
T1	288.00-280.00	0.0000	0.0000	0.0000	0.0000
T2	280.00-260.00	0.0000	0.0000	0.0000	0.0000
T3	260.00-240.00	0.0000	0.0000	0.0000	0.0000

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
T4	240.00-220.00	0.0000	0.0000	0.0000	0.0000
T5	220.00-200.00	0.0000	0.0000	0.0000	0.0000
T6	200.00-180.00	0.0000	0.0000	0.0000	0.0000
T7	180.00-160.00	0.0000	0.0000	0.0000	0.0000
T8	160.00-140.00	0.0000	0.0000	0.0000	0.0000
T9	140.00-120.00	0.0000	0.0000	0.0000	0.0000
T10	120.00-100.00	0.0000	0.0000	0.0000	0.0000
T11	100.00-80.00	0.0000	0.0000	0.0000	0.0000
T12	80.00-60.00	0.0000	0.0000	0.0000	0.0000
T13	60.00-40.00	0.0000	0.0000	0.0000	0.0000
T14	40.00-26.67	0.0000	0.0000	0.0000	0.0000
T15	26.67-20.00	0.0000	0.0000	0.0000	0.0000
T16	20.00-13.33	0.0000	0.0000	0.0000	0.0000
T17	13.33-6.67	0.0000	0.0000	0.0000	0.0000
T18	6.67-0.00	0.0000	0.0000	0.0000	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
4' x 5/8" Lightning Rod	C	None			0.0000	325.00	No Ice	0.25	0.25	0.01
							1/2" Ice	0.66	0.66	0.01
Flash Beacon Lighting	C	None			0.0000	327.00	No Ice	2.70	2.70	0.05
							1/2" Ice	3.10	3.10	0.07
Shively 2-Bay 6813 w/ Radome (WHUS)	C	None			0.0000	305.00	No Ice	10.10	10.10	0.17
							1/2" Ice	12.50	12.50	0.38
PD1150	B	From Leg	6.00	0.00	0.0000	280.00	No Ice	1.22	1.22	0.01
							1/2" Ice	2.43	2.43	0.02
DB809M-XC	B	From Leg	6.00	0.00	0.0000	280.00	No Ice	2.84	2.84	0.03
							1/2" Ice	4.29	4.29	0.05
Rohn 6' Side-Arm(1)	B	From Leg	6.00	0.00	0.0000	280.00	No Ice	10.60	10.60	0.14
							1/2" Ice	15.40	15.40	0.21
AP16-850/065 w/Mount Pipe	A	From Leg	3.00	0.00	0.0000	265.00	No Ice	10.76	8.23	0.08
							1/2" Ice	11.46	9.80	0.16
OGC9-825	C	From Leg	3.00	0.00	0.0000	263.00	No Ice	2.10	2.10	0.02
							1/2" Ice	3.18	3.18	0.03
DB810K	B	From Leg	3.00	0.00	0.0000	261.00	No Ice	4.08	4.08	0.04
							1/2" Ice	5.73	5.73	0.07
Rohn 6' Side-Arm(1)	A	From Leg	1.50	0.00	0.0000	260.00	No Ice	10.60	10.60	0.14
							1/2" Ice	15.40	15.40	0.21
Rohn 6' Side-Arm(1)	C	From Leg	1.50	0.00	0.0000	260.00	No Ice	10.60	10.60	0.14
							1/2" Ice	15.40	15.40	0.21

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight K
Rohn 6' Side-Arm(1)	B	From Leg	1.50 0.00 0.00	0.0000	260.00	No Ice 1/2" Ice	10.60 15.40	10.60 15.40	0.14 0.21
ClearGain TMA	B	From Leg	3.00 0.00 0.00	0.0000	259.00	No Ice 1/2" Ice	0.47 0.56	0.47 0.56	0.03 0.03
ClearGain TMA	B	From Leg	3.00 0.00 0.00	0.0000	259.00	No Ice 1/2" Ice	0.47 0.56	0.47 0.56	0.03 0.03
DB810K	B	From Leg	3.00 0.00 0.00	0.0000	257.00	No Ice 1/2" Ice	4.08 5.73	4.08 5.73	0.04 0.07
OGC9-825	C	From Leg	3.00 0.00 0.00	0.0000	254.00	No Ice 1/2" Ice	2.10 3.18	2.10 3.18	0.02 0.03
AP16-850/065 w/Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	254.00	No Ice 1/2" Ice	10.76 11.46	8.23 9.80	0.08 0.16
(4) DB844H90 w/Mount Pipe (NEXTEL)	A	From Leg	6.00 0.00 0.00	0.0000	240.00	No Ice 1/2" Ice	3.58 4.20	5.63 6.73	0.04 0.08
(4) DB844H90 w/Mount Pipe (NEXTEL)	B	From Leg	6.00 0.00 0.00	0.0000	240.00	No Ice 1/2" Ice	3.58 4.20	5.63 6.73	0.04 0.08
(4) DB844H90 w/Mount Pipe (NEXTEL)	C	From Leg	6.00 0.00 0.00	0.0000	240.00	No Ice 1/2" Ice	3.58 4.20	5.63 6.73	0.04 0.08
Pirod 15' T-Frame Sector Mount (1) (NEXTEL)	A	From Leg	3.00 0.00 0.00	0.0000	240.00	No Ice 1/2" Ice	15.00 20.60	15.00 20.60	0.50 0.65
Pirod 15' T-Frame Sector Mount (1) (NEXTEL)	B	From Leg	3.00 0.00 0.00	0.0000	240.00	No Ice 1/2" Ice	15.00 20.60	15.00 20.60	0.50 0.65
Pirod 15' T-Frame Sector Mount (1) (NEXTEL)	C	From Leg	3.00 0.00 0.00	0.0000	240.00	No Ice 1/2" Ice	15.00 20.60	15.00 20.60	0.50 0.65
Shively 1-Bay 6813 w/o Radome (Radio)	B	From Leg	3.00 0.00 0.00	0.0000	209.00	No Ice 1/2" Ice	2.40 3.50	2.40 3.50	0.08 0.15
Pirod 4' Side Mount Standoff (1) (Radio)	B	From Leg	1.50 0.00 0.00	0.0000	209.00	No Ice 1/2" Ice	2.72 4.91	2.72 4.91	0.05 0.09
Shively 1-Bay 6813 w/ Radome (Radio)	A	From Leg	3.00 0.00 0.00	0.0000	198.00	No Ice 1/2" Ice	4.90 6.00	4.90 6.00	0.18 0.22
Rohn 6' Side-Arm(1) (Radio)	A	From Leg	1.50 0.00 0.00	0.0000	198.00	No Ice 1/2" Ice	10.60 15.40	10.60 15.40	0.14 0.21
(4) DUO1417-8670 w/Mount Pipe (Cingular)	A	From Leg	6.00 0.00 0.00	0.0000	186.00	No Ice 1/2" Ice	7.25 7.96	5.86 6.96	0.05 0.10
(4) DUO1417-8670 w/Mount Pipe (Cingular)	B	From Leg	6.00 0.00 0.00	0.0000	186.00	No Ice 1/2" Ice	7.25 7.96	5.86 6.96	0.05 0.10
(4) DUO1417-8670 w/Mount Pipe (Cingular)	C	From Leg	6.00 0.00 0.00	0.0000	186.00	No Ice 1/2" Ice	7.25 7.96	5.86 6.96	0.05 0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
ClearGain TMA (Cingular)	A	From Leg	3.00			0.0000	186.00	No Ice	0.47	0.47	0.03
			0.00					1/2" Ice	0.56	0.56	0.03
			0.00								
ClearGain TMA (Cingular)	B	From Leg	3.00			0.0000	186.00	No Ice	0.47	0.47	0.03
			0.00					1/2" Ice	0.56	0.56	0.03
			0.00								
ClearGain TMA (Cingular)	C	From Leg	3.00			0.0000	186.00	No Ice	0.47	0.47	0.03
			0.00					1/2" Ice	0.56	0.56	0.03
			0.00								
Pirod 12' T-Frame Sector Mount (1) (Cingular)	A	From Leg	1.50			0.0000	186.00	No Ice	13.60	13.60	0.47
			0.00					1/2" Ice	18.40	18.40	0.60
			0.00								
Pirod 12' T-Frame Sector Mount (1) (Cingular)	B	From Leg	1.50			0.0000	186.00	No Ice	13.60	13.60	0.47
			0.00					1/2" Ice	18.40	18.40	0.60
			0.00								
Pirod 12' T-Frame Sector Mount (1) (Cingular)	C	From Leg	1.50			0.0000	186.00	No Ice	13.60	13.60	0.47
			0.00					1/2" Ice	18.40	18.40	0.60
			0.00								
MB100RR650200DPAL w/Mount Pipe	A	From Leg	3.00			0.0000	186.00	No Ice	8.99	6.41	0.08
			0.00					1/2" Ice	9.67	8.30	0.15
			0.00								
DB872H	A	From Leg	1.00			0.0000	172.00	No Ice	11.47	6.02	0.02
			0.00					1/2" Ice	12.08	6.60	0.08
			0.00								
DB806M 6' Omni	B	From Leg	3.00			0.0000	174.00	No Ice	1.14	1.14	0.01
			0.00					1/2" Ice	1.68	1.68	0.02
			0.00								
Rohn 6' Side-Arm(1)	B	From Leg	1.50			0.0000	174.00	No Ice	10.60	10.60	0.14
			0.00					1/2" Ice	15.40	15.40	0.21
			0.00								
ClearGain TMA	A	From Leg	0.50			0.0000	166.00	No Ice	0.47	0.47	0.03
			0.00					1/2" Ice	0.56	0.56	0.03
			0.00								
DB872H	B	From Leg	0.50			0.0000	158.00	No Ice	11.47	6.02	0.02
			0.00					1/2" Ice	12.08	6.60	0.08
			0.00								
Flash Beacon Lighting	A	None				0.0000	156.00	No Ice	2.70	2.70	0.05
								1/2" Ice	3.10	3.10	0.07
DB589	B	From Leg	1.00			0.0000	158.50	No Ice	2.13	2.13	0.01
			0.00					1/2" Ice	3.00	3.00	0.03
			0.00								
2'6"x4" Pipe Mount	B	From Leg	0.50			0.0000	154.00	No Ice	0.75	0.75	0.03
			0.00					1/2" Ice	0.95	0.95	0.04
			0.00								
DB809M-XC	B	From Leg	0.50			0.0000	145.50	No Ice	2.84	2.84	0.03
			0.00					1/2" Ice	4.29	4.29	0.05
			0.00								
PD1108	A	From Leg	2.00			0.0000	128.00	No Ice	1.53	1.53	0.01
			0.00					1/2" Ice	2.81	2.81	0.02
			0.00								
Pirod 4' Side Mount Standoff (1)	A	From Leg	1.00			0.0000	124.00	No Ice	2.72	2.72	0.05
			0.00					1/2" Ice	4.91	4.91	0.09
			0.00								
Generic T-Arm Mount	A	From Leg	5.00			0.0000	121.00	No Ice	5.50	5.50	0.13
			0.00					1/2" Ice	6.90	6.90	0.17
			0.00								
Generic T-Arm Mount	B	From Leg	5.00			0.0000	121.00	No Ice	5.50	5.50	0.13

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00				1/2" Ice	6.90	6.90	0.17
			0.00							
2'6"x4" Pipe Mount (Dish Mount)	B	From Leg	0.50		0.0000	115.00	No Ice	0.75	0.75	0.03
			0.00				1/2" Ice	0.95	0.95	0.04
			0.00							
2'6"x4" Pipe Mount (Dish Mount)	C	From Leg	0.50		0.0000	112.00	No Ice	0.75	0.75	0.03
			0.00				1/2" Ice	0.95	0.95	0.04
			0.00							
PD1110	A	From Leg	2.00		0.0000	110.00	No Ice	3.06	3.06	0.03
			0.00				1/2" Ice	5.10	5.10	0.06
			0.00							
Pirod 4' Side Mount Standoff (1)	A	From Leg	1.00		0.0000	110.00	No Ice	2.72	2.72	0.05
			0.00				1/2" Ice	4.91	4.91	0.09
			0.00							
Scala PR-850	B	From Leg	0.50		0.0000	94.00	No Ice	23.80	11.90	47.00
			0.00				1/2" Ice	24.48	12.46	47.14
			0.00							
ASP-962	A	From Leg	0.50		0.0000	94.00	No Ice	0.16	0.16	0.00
			0.00				1/2" Ice	0.29	0.29	0.00
			0.00							
155-0007-01 w/Mount Pipe (Verizon)	A	From Leg	6.00		0.0000	84.00	No Ice	26.10	6.99	0.13
			0.00				1/2" Ice	26.91	8.17	0.26
			0.00							
155-0007-01 w/Mount Pipe (Verizon)	B	From Leg	6.00		0.0000	84.00	No Ice	26.10	6.99	0.13
			0.00				1/2" Ice	26.91	8.17	0.26
			0.00							
155-0007-01 w/Mount Pipe (Verizon)	C	From Leg	6.00		0.0000	84.00	No Ice	26.10	6.99	0.13
			0.00				1/2" Ice	26.91	8.17	0.26
			0.00							
DB932DG90E-M w/Mount Pipe (Verizon)	A	From Leg	6.00		0.0000	84.00	No Ice	4.18	3.74	0.04
			0.00				1/2" Ice	4.81	4.78	0.08
			0.00							
DB932DG90E-M w/Mount Pipe (Verizon)	B	From Leg	6.00		0.0000	84.00	No Ice	4.18	3.74	0.04
			0.00				1/2" Ice	4.81	4.78	0.08
			0.00							
DB932DG90E-M w/Mount Pipe (Verizon)	C	From Leg	6.00		0.0000	84.00	No Ice	4.18	3.74	0.04
			0.00				1/2" Ice	4.81	4.78	0.08
			0.00							
PiROD 15' Platform with handrail (Verizon)	B	From Leg	3.00		0.0000	84.00	No Ice	33.80	33.80	2.04
			0.00				1/2" Ice	43.60	43.60	2.75
			0.00							
DB212-2-C	C	From Leg	0.50		0.0000	74.00	No Ice	3.10	3.10	0.03
			0.00				1/2" Ice	6.22	6.22	0.06
			0.00							
ASP-962 (Equivalent)	B	From Leg	0.50		0.0000	18.00	No Ice	0.16	0.16	0.00
			0.00				1/2" Ice	0.29	0.29	0.00
			0.00							
4'6"x3" Pipe Mount (Dish Mount)	B	From Leg	1.00		0.0000	13.00	No Ice	1.30	1.30	0.03
			0.00				1/2" Ice	1.57	1.57	0.05
			0.00							
Flash Beacon Lighting	C	None			0.0000	156.00	No Ice	2.70	2.70	0.05
							1/2" Ice	3.10	3.10	0.07

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 (ft²)	Weight (K)
Andrew 6' w/Radome	B	Paraboloid w/Radome	From Leg	0.50 0.00 0.00	Worst		115.00	6.00	No Ice 1/2" Ice	28.27 29.07	0.38 0.45
Andrew 6' w/Radome	C	Paraboloid w/Radome	From Leg	0.50 0.00 0.00	Worst		112.00	6.00	No Ice 1/2" Ice	28.27 29.07	0.38 0.45
8' Dia W/ Shroud	B	Paraboloid w/Shroud (HP)	From Leg	0.50 0.00 0.00	Worst		104.00	8.00	No Ice 1/2" Ice	50.27 51.32	0.38 0.45
1.2M	B	Paraboloid w/o Radome	From Leg	0.50 0.00 0.00	Worst		13.00	4.00	No Ice 1/2" Ice	12.17 13.09	0.17 0.23

Tower Pressures - No Ice

$G_H = 1.090$

Section Elevation (ft)	z (ft)	K_Z	q_z (psf)	A_G (ft²)	Face	A_F (ft²)	A_R (ft²)	A_{LG} (ft²)	Leg %	C_AA_A In Face (ft²)	C_AA_A Out Face (ft²)
L1 323.00-288.00	305.57	1.889	39	31.354	A	0.000	31.354	31.354	100.00	0.000	0.000
					B	0.000	31.354		100.00		
					C	0.000	31.354		100.00		
T1 288.00-280.00	284.00	1.85	38	30.669	A	0.000	31.561	2.667	8.45	0.000	0.000
					B	0.000	31.561		8.45		
					C	0.000	31.561		8.45		
T2 280.00-260.00	270.00	1.823	38	76.673	A	0.000	78.892	6.667	8.45	0.000	0.000
					B	0.000	78.892		8.45		
					C	0.000	78.892		8.45		
T3 260.00-240.00	250.00	1.783	37	77.090	A	0.000	79.708	7.500	9.41	0.000	0.000
					B	0.000	79.708		9.41		
					C	0.000	79.708		9.41		
T4 240.00-220.00	230.00	1.741	36	77.090	A	0.000	79.706	7.500	9.41	0.000	0.000
					B	0.000	79.706		9.41		
					C	0.000	79.706		9.41		
T5 220.00-200.00	210.00	1.697	35	77.507	A	0.000	80.508	8.333	10.35	0.000	0.000
					B	0.000	80.508		10.35		
					C	0.000	80.508		10.35		
T6 200.00-180.00	190.00	1.649	34	77.507	A	0.000	80.533	8.333	10.35	0.000	0.000
					B	0.000	80.533		10.35		
					C	0.000	80.533		10.35		
T7 180.00-160.00	170.00	1.597	33	77.923	A	0.000	81.321	9.167	11.27	0.000	0.000
					B	0.000	81.321		11.27		
					C	0.000	81.321		11.27		
T8 160.00-140.00	150.00	1.541	32	77.507	A	0.000	80.518	8.333	10.35	0.000	0.000
					B	0.000	80.518		10.35		
					C	0.000	80.518		10.35		
T9 140.00-120.00	130.00	1.48	31	77.923	A	0.000	81.350	9.167	11.27	0.000	0.000
					B	0.000	81.350		11.27		
					C	0.000	81.350		11.27		

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{Ice} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T10 120.00-100.00	110.00	1.411	29	77.923	A	0.000	81.319	9.167	11.27	0.000	0.000
					B	0.000	81.319		11.27		
					C	0.000	81.319		11.27		
T11 100.00-80.00	90.00	1.332	28	78.340	A	0.000	82.149	10.000	12.17	0.000	0.000
					B	0.000	82.149		12.17		
					C	0.000	82.149		12.17		
T12 80.00-60.00	70.00	1.24	26	78.340	A	0.000	82.165	10.000	12.17	0.000	0.000
					B	0.000	82.165		12.17		
					C	0.000	82.165		12.17		
T13 60.00-40.00	50.00	1.126	23	78.340	A	0.000	82.165	10.000	12.17	0.000	0.000
					B	0.000	82.165		12.17		
					C	0.000	82.165		12.17		
T14 40.00-26.67	33.34	1.003	21	52.214	A	0.000	54.763	6.665	12.17	0.000	0.000
					B	0.000	54.763		12.17		
					C	0.000	54.763		12.17		
T15 26.67-20.00	23.34	1	21	26.126	A	0.000	27.402	3.335	12.17	0.000	0.000
					B	0.000	27.402		12.17		
					C	0.000	27.402		12.17		
T16 20.00-13.33	16.67	1	21	26.126	A	0.000	27.402	3.335	12.17	0.000	0.000
					B	0.000	27.402		12.17		
					C	0.000	27.402		12.17		
T17 13.33-6.67	10.00	1	21	26.087	A	0.000	27.361	3.330	12.17	0.000	0.000
					B	0.000	27.361		12.17		
					C	0.000	27.361		12.17		
T18 6.67-0.00	3.34	1	21	13.959	A	0.000	26.603	3.499	13.15	0.000	0.000
					B	0.000	26.603		13.15		
					C	0.000	26.603		13.15		

Tower Pressure - With Ice

$G_H = 1.090$

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{Ice} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 323.00-288.00	305.57	1.889	39	0.5000	34.271	A	0.000	34.271	34.271	100.00	0.000	0.000
						B	0.000	34.271		100.00		
						C	0.000	34.271		100.00		
T1 288.00-280.00	284.00	1.85	38	0.5000	31.336	A	27.900	5.583	4.000	11.95	0.000	0.000
						B	27.900	5.583		11.95		
						C	27.900	5.583		11.95		
T2 280.00-260.00	270.00	1.823	38	0.5000	78.340	A	69.750	13.930	10.000	11.95	0.000	0.000
						B	69.750	13.930		11.95		
						C	69.750	13.930		11.95		
T3 260.00-240.00	250.00	1.783	37	0.5000	78.757	A	69.750	14.732	10.833	12.82	0.000	0.000
						B	69.750	14.732		12.82		
						C	69.750	14.732		12.82		
T4 240.00-220.00	230.00	1.741	36	0.5000	78.757	A	69.750	14.729	10.833	12.82	0.000	0.000
						B	69.750	14.729		12.82		
						C	69.750	14.729		12.82		
T5 220.00-200.00	210.00	1.697	35	0.5000	79.173	A	69.750	15.512	11.667	13.68	0.000	0.000
						B	69.750	15.512		13.68		
						C	69.750	15.512		13.68		
T6 200.00-180.00	190.00	1.649	34	0.5000	79.173	A	69.750	15.550	11.667	13.68	0.000	0.000
						B	69.750	15.550		13.68		

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face e	A_F ft²	A_R ft²	A_{Leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
						C	69.750	15.550		13.68		
T7 180.00-160.00	170.00	1.597	33	0.5000	79.590	A	69.750	16.310	12.500	14.52	0.000	0.000
						B	69.750	16.310		14.52		
						C	69.750	16.310		14.52		
T8 160.00-140.00	150.00	1.541	32	0.5000	79.173	A	69.750	15.527	11.667	13.68	0.000	0.000
						B	69.750	15.527		13.68		
						C	69.750	15.527		13.68		
T9 140.00-120.00	130.00	1.48	31	0.5000	79.590	A	69.750	16.354	12.500	14.52	0.000	0.000
						B	69.750	16.354		14.52		
						C	69.750	16.354		14.52		
T10 120.00-100.00	110.00	1.411	29	0.5000	79.590	A	69.750	16.307	12.500	14.53	0.000	0.000
						B	69.750	16.307		14.53		
						C	69.750	16.307		14.53		
T11 100.00-80.00	90.00	1.332	28	0.5000	80.007	A	69.750	17.132	13.333	15.35	0.000	0.000
						B	69.750	17.132		15.35		
						C	69.750	17.132		15.35		
T12 80.00-60.00	70.00	1.24	26	0.5000	80.007	A	69.750	17.153	13.333	15.34	0.000	0.000
						B	69.750	17.153		15.34		
						C	69.750	17.153		15.34		
T13 60.00-40.00	50.00	1.126	23	0.5000	80.007	A	69.750	17.153	13.333	15.34	0.000	0.000
						B	69.750	17.153		15.34		
						C	69.750	17.153		15.34		
T14 40.00-26.67	33.34	1.003	21	0.5000	53.324	A	46.488	11.432	8.887	15.34	0.000	0.000
						B	46.488	11.432		15.34		
						C	46.488	11.432		15.34		
T15 26.67-20.00	23.34	1	21	0.5000	26.682	A	23.262	5.721	4.447	15.34	0.000	0.000
						B	23.262	5.721		15.34		
						C	23.262	5.721		15.34		
T16 20.00-13.33	16.67	1	21	0.5000	26.682	A	23.262	5.721	4.447	15.34	0.000	0.000
						B	23.262	5.721		15.34		
						C	23.262	5.721		15.34		
T17 13.33-6.67	10.00	1	21	0.5000	26.642	A	23.227	5.712	4.440	15.34	0.000	0.000
						B	23.227	5.712		15.34		
						C	23.227	5.712		15.34		
T18 6.67-0.00	3.34	1	21	0.5000	14.535	A	23.262	4.485	4.665	16.81	0.000	0.000
						B	23.262	4.485		16.81		
						C	23.262	4.485		16.81		

Tower Pressure - Service

$G_H = 1.090$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face e	A_F ft²	A_R ft²	A_{Leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 323.00-288.00	305.57	1.889	12	31.354	A	0.000	31.354	31.354	100.00	0.000	0.000
					B	0.000	31.354		100.00		
					C	0.000	31.354		100.00		
T1 288.00-280.00	284.00	1.85	12	30.669	A	0.000	31.561	2.667	8.45	0.000	0.000
					B	0.000	31.561		8.45		
					C	0.000	31.561		8.45		
T2 280.00-260.00	270.00	1.823	12	76.673	A	0.000	78.892	6.667	8.45	0.000	0.000
					B	0.000	78.892		8.45		
					C	0.000	78.892		8.45		

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{Leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T3 260.00-240.00	250.00	1.783	11	77.090	A	0.000	79.708	7.500	9.41	0.000	0.000
					B	0.000	79.708		9.41		
					C	0.000	79.708		9.41		
T4 240.00-220.00	230.00	1.741	11	77.090	A	0.000	79.706	7.500	9.41	0.000	0.000
					B	0.000	79.706		9.41		
					C	0.000	79.706		9.41		
T5 220.00-200.00	210.00	1.697	11	77.507	A	0.000	80.508	8.333	10.35	0.000	0.000
					B	0.000	80.508		10.35		
					C	0.000	80.508		10.35		
T6 200.00-180.00	190.00	1.649	11	77.507	A	0.000	80.533	8.333	10.35	0.000	0.000
					B	0.000	80.533		10.35		
					C	0.000	80.533		10.35		
T7 180.00-160.00	170.00	1.597	10	77.923	A	0.000	81.321	9.167	11.27	0.000	0.000
					B	0.000	81.321		11.27		
					C	0.000	81.321		11.27		
T8 160.00-140.00	150.00	1.541	10	77.507	A	0.000	80.518	8.333	10.35	0.000	0.000
					B	0.000	80.518		10.35		
					C	0.000	80.518		10.35		
T9 140.00-120.00	130.00	1.48	9	77.923	A	0.000	81.350	9.167	11.27	0.000	0.000
					B	0.000	81.350		11.27		
					C	0.000	81.350		11.27		
T10 120.00-100.00	110.00	1.411	9	77.923	A	0.000	81.319	9.167	11.27	0.000	0.000
					B	0.000	81.319		11.27		
					C	0.000	81.319		11.27		
T11 100.00-80.00	90.00	1.332	9	78.340	A	0.000	82.149	10.000	12.17	0.000	0.000
					B	0.000	82.149		12.17		
					C	0.000	82.149		12.17		
T12 80.00-60.00	70.00	1.24	8	78.340	A	0.000	82.165	10.000	12.17	0.000	0.000
					B	0.000	82.165		12.17		
					C	0.000	82.165		12.17		
T13 60.00-40.00	50.00	1.126	7	78.340	A	0.000	82.165	10.000	12.17	0.000	0.000
					B	0.000	82.165		12.17		
					C	0.000	82.165		12.17		
T14 40.00-26.67	33.34	1.003	6	52.214	A	0.000	54.763	6.665	12.17	0.000	0.000
					B	0.000	54.763		12.17		
					C	0.000	54.763		12.17		
T15 26.67-20.00	23.34	1	6	26.126	A	0.000	27.402	3.335	12.17	0.000	0.000
					B	0.000	27.402		12.17		
					C	0.000	27.402		12.17		
T16 20.00-13.33	16.67	1	6	26.126	A	0.000	27.402	3.335	12.17	0.000	0.000
					B	0.000	27.402		12.17		
					C	0.000	27.402		12.17		
T17 13.33-6.67	10.00	1	6	26.087	A	0.000	27.361	3.330	12.17	0.000	0.000
					B	0.000	27.361		12.17		
					C	0.000	27.361		12.17		
T18 6.67-0.00	3.34	1	6	13.959	A	0.000	26.603	3.499	13.15	0.000	0.000
					B	0.000	26.603		13.15		
					C	0.000	26.603		13.15		

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_I	D_R	A_I ft²	F K	w plf	Ctrl. Face
L1 323.00-288.00	0.00	3.12	A	1	0.59	1	1	1	31.354	0.79	22.57	C
			B	1	0.59	1	1	1	31.354			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_L	D_R	A_L ft^2	F K	w plf	Ctrl. Face
			C	1	0.59	1	1	1	31.354			
T1 288.00-280.00	0.44	0.42 TA 0.84	A	1	2.1	1	1	1	31.561	2.57*	320.63	C
			B	1	2.1	1	1	1	31.561			
			C	1	2.1	1	1	1	31.561			
T2 280.00-260.00	1.11	1.09	A	1	2.1	1	1	1	78.892	6.32*	316.03	C
			B	1	2.1	1	1	1	78.892			
			C	1	2.1	1	1	1	78.892			
T3 260.00-240.00	1.11	1.26 TA 0.84	A	1	2.1	1	1	1	79.708	6.22*	310.84	C
			B	1	2.1	1	1	1	79.708			
			C	1	2.1	1	1	1	79.708			
T4 240.00-220.00	1.11	1.26	A	1	2.1	1	1	1	79.706	6.07*	303.52	C
			B	1	2.1	1	1	1	79.706			
			C	1	2.1	1	1	1	79.706			
T5 220.00-200.00	1.11	1.54 TA 0.84	A	1	2.1	1	1	1	80.508	5.95*	297.33	C
			B	1	2.1	1	1	1	80.508			
			C	1	2.1	1	1	1	80.508			
T6 200.00-180.00	1.11	1.37	A	1	2.1	1	1	1	80.533	5.78*	288.95	C
			B	1	2.1	1	1	1	80.533			
			C	1	2.1	1	1	1	80.533			
T7 180.00-160.00	1.11	1.75 TA 0.84	A	1	2.1	1	1	1	81.321	5.63*	281.41	C
			B	1	2.1	1	1	1	81.321			
			C	1	2.1	1	1	1	81.321			
T8 160.00-140.00	1.11	1.45	A	1	2.1	1	1	1	80.518	5.40*	270.08	C
			B	1	2.1	1	1	1	80.518			
			C	1	2.1	1	1	1	80.518			
T9 140.00-120.00	1.11	1.59	A	1	2.1	1	1	1	81.350	5.21*	260.65	C
			B	1	2.1	1	1	1	81.350			
			C	1	2.1	1	1	1	81.350			
T10 120.00-100.00	1.11	1.75 TA 0.84	A	1	2.1	1	1	1	81.319	4.97*	248.50	C
			B	1	2.1	1	1	1	81.319			
			C	1	2.1	1	1	1	81.319			
T11 100.00-80.00	1.11	1.89	A	1	2.1	1	1	1	82.149	4.72*	235.91	C
			B	1	2.1	1	1	1	82.149			
			C	1	2.1	1	1	1	82.149			
T12 80.00-60.00	1.11	1.82	A	1	2.1	1	1	1	82.165	4.39*	219.56	C
			B	1	2.1	1	1	1	82.165			
			C	1	2.1	1	1	1	82.165			
T13 60.00-40.00	1.11	1.82 TA 0.84	A	1	2.1	1	1	1	82.165	3.99*	199.44	C
			B	1	2.1	1	1	1	82.165			
			C	1	2.1	1	1	1	82.165			
T14 40.00-26.67	0.74	1.21	A	1	2.1	1	1	1	54.763	2.37*	177.63	C
			B	1	2.1	1	1	1	54.763			
			C	1	2.1	1	1	1	54.763			
T15 26.67-20.00	0.37	0.61	A	1	2.1	1	1	1	27.402	1.18*	177.11	C
			B	1	2.1	1	1	1	27.402			
			C	1	2.1	1	1	1	27.402			
T16 20.00-13.33	0.37	0.61	A	1	2.1	1	1	1	27.402	1.18*	177.11	C
			B	1	2.1	1	1	1	27.402			
			C	1	2.1	1	1	1	27.402			
T17 13.33-6.67	0.37	0.60	A	1	2.1	1	1	1	27.361	1.18*	177.11	C
			B	1	2.1	1	1	1	27.361			
			C	1	2.1	1	1	1	27.361			
T18 6.67-0.00	0.37	1.19	A	1	2.1	1	1	1	26.603	0.63*	94.63	C
			B	1	2.1	1	1	1	26.603			
			C	1	2.1	1	1	1	26.603			
Sum Weight:	15.97	31.41			*2A_g limit					74.54		

Tower Forces - No Ice - Wind 45 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1 323.00-288.00	0.00	3.12	A	1	0.59	1	1	1	31.354	0.79	22.57	C
			B	1	0.59	1	1	1	31.354			
			C	1	0.59	1	1	1	31.354			
T1 288.00-280.00	0.44	0.42 TA 0.84	A	1	2.1	1	0.825	1	31.561	2.57*	320.63	C
			B	1	2.1	1	0.825	1	31.561			
			C	1	2.1	1	0.825	1	31.561			
T2 280.00-260.00	1.11	1.09	A	1	2.1	1	0.825	1	78.892	6.32*	316.03	C
			B	1	2.1	1	0.825	1	78.892			
			C	1	2.1	1	0.825	1	78.892			
T3 260.00-240.00	1.11	1.26 TA 0.84	A	1	2.1	1	0.825	1	79.708	6.22*	310.84	C
			B	1	2.1	1	0.825	1	79.708			
			C	1	2.1	1	0.825	1	79.708			
T4 240.00-220.00	1.11	1.26	A	1	2.1	1	0.825	1	79.706	6.07*	303.52	C
			B	1	2.1	1	0.825	1	79.706			
			C	1	2.1	1	0.825	1	79.706			
T5 220.00-200.00	1.11	1.54 TA 0.84	A	1	2.1	1	0.825	1	80.508	5.95*	297.33	C
			B	1	2.1	1	0.825	1	80.508			
			C	1	2.1	1	0.825	1	80.508			
T6 200.00-180.00	1.11	1.37	A	1	2.1	1	0.825	1	80.533	5.78*	288.95	C
			B	1	2.1	1	0.825	1	80.533			
			C	1	2.1	1	0.825	1	80.533			
T7 180.00-160.00	1.11	1.75 TA 0.84	A	1	2.1	1	0.825	1	81.321	5.63*	281.41	C
			B	1	2.1	1	0.825	1	81.321			
			C	1	2.1	1	0.825	1	81.321			
T8 160.00-140.00	1.11	1.45	A	1	2.1	1	0.825	1	80.518	5.40*	270.08	C
			B	1	2.1	1	0.825	1	80.518			
			C	1	2.1	1	0.825	1	80.518			
T9 140.00-120.00	1.11	1.59	A	1	2.1	1	0.825	1	81.350	5.21*	260.65	C
			B	1	2.1	1	0.825	1	81.350			
			C	1	2.1	1	0.825	1	81.350			
T10 120.00-100.00	1.11	1.75 TA 0.84	A	1	2.1	1	0.825	1	81.319	4.97*	248.50	C
			B	1	2.1	1	0.825	1	81.319			
			C	1	2.1	1	0.825	1	81.319			
T11 100.00-80.00	1.11	1.89	A	1	2.1	1	0.825	1	82.149	4.72*	235.91	C
			B	1	2.1	1	0.825	1	82.149			
			C	1	2.1	1	0.825	1	82.149			
T12 80.00-60.00	1.11	1.82	A	1	2.1	1	0.825	1	82.165	4.39*	219.56	C
			B	1	2.1	1	0.825	1	82.165			
			C	1	2.1	1	0.825	1	82.165			
T13 60.00-40.00	1.11	1.82 TA 0.84	A	1	2.1	1	0.825	1	82.165	3.99*	199.44	C
			B	1	2.1	1	0.825	1	82.165			
			C	1	2.1	1	0.825	1	82.165			
T14 40.00-26.67	0.74	1.21	A	1	2.1	1	0.825	1	54.763	2.37*	177.63	C
			B	1	2.1	1	0.825	1	54.763			
			C	1	2.1	1	0.825	1	54.763			
T15 26.67-20.00	0.37	0.61	A	1	2.1	1	0.825	1	27.402	1.18*	177.11	C
			B	1	2.1	1	0.825	1	27.402			
			C	1	2.1	1	0.825	1	27.402			
T16 20.00-13.33	0.37	0.61	A	1	2.1	1	0.825	1	27.402	1.18*	177.11	C
			B	1	2.1	1	0.825	1	27.402			
			C	1	2.1	1	0.825	1	27.402			
T17 13.33-6.67	0.37	0.60	A	1	2.1	1	0.825	1	27.361	1.18*	177.11	C
			B	1	2.1	1	0.825	1	27.361			
			C	1	2.1	1	0.825	1	27.361			
T18 6.67-0.00	0.37	1.19	A	1	2.1	1	0.825	1	26.603	0.63*	94.63	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
			B	1	2.1	1	0.825	1	26.603			
			C	1	2.1	1	0.825	1	26.603			
Sum Weight:	15.97	31.41			*2Ag limit					74.54		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1 323.00-288.00	0.00	3.12	A	1	0.59	1	1	1	31.354	0.79	22.57	C
			B	1	0.59	1	1	1	31.354			
			C	1	0.59	1	1	1	31.354			
T1 288.00-280.00	0.44	0.42	A	1	2.1	1	0.8	1	31.561	2.57*	320.63	C
		TA 0.84	B	1	2.1	1	0.8	1	31.561			
			C	1	2.1	1	0.8	1	31.561			
T2 280.00-260.00	1.11	1.09	A	1	2.1	1	0.8	1	78.892	6.32*	316.03	C
			B	1	2.1	1	0.8	1	78.892			
			C	1	2.1	1	0.8	1	78.892			
T3 260.00-240.00	1.11	1.26	A	1	2.1	1	0.8	1	79.708	6.22*	310.84	C
		TA 0.84	B	1	2.1	1	0.8	1	79.708			
			C	1	2.1	1	0.8	1	79.708			
T4 240.00-220.00	1.11	1.26	A	1	2.1	1	0.8	1	79.706	6.07*	303.52	C
			B	1	2.1	1	0.8	1	79.706			
			C	1	2.1	1	0.8	1	79.706			
T5 220.00-200.00	1.11	1.54	A	1	2.1	1	0.8	1	80.508	5.95*	297.33	C
		TA 0.84	B	1	2.1	1	0.8	1	80.508			
			C	1	2.1	1	0.8	1	80.508			
T6 200.00-180.00	1.11	1.37	A	1	2.1	1	0.8	1	80.533	5.78*	288.95	C
			B	1	2.1	1	0.8	1	80.533			
			C	1	2.1	1	0.8	1	80.533			
T7 180.00-160.00	1.11	1.75	A	1	2.1	1	0.8	1	81.321	5.63*	281.41	C
		TA 0.84	B	1	2.1	1	0.8	1	81.321			
			C	1	2.1	1	0.8	1	81.321			
T8 160.00-140.00	1.11	1.45	A	1	2.1	1	0.8	1	80.518	5.40*	270.08	C
			B	1	2.1	1	0.8	1	80.518			
			C	1	2.1	1	0.8	1	80.518			
T9 140.00-120.00	1.11	1.59	A	1	2.1	1	0.8	1	81.350	5.21*	260.65	C
			B	1	2.1	1	0.8	1	81.350			
			C	1	2.1	1	0.8	1	81.350			
T10 120.00-100.00	1.11	1.75	A	1	2.1	1	0.8	1	81.319	4.97*	248.50	C
		TA 0.84	B	1	2.1	1	0.8	1	81.319			
			C	1	2.1	1	0.8	1	81.319			
T11 100.00-80.00	1.11	1.89	A	1	2.1	1	0.8	1	82.149	4.72*	235.91	C
			B	1	2.1	1	0.8	1	82.149			
			C	1	2.1	1	0.8	1	82.149			
T12 80.00-60.00	1.11	1.82	A	1	2.1	1	0.8	1	82.165	4.39*	219.56	C
			B	1	2.1	1	0.8	1	82.165			
			C	1	2.1	1	0.8	1	82.165			
T13 60.00-40.00	1.11	1.82	A	1	2.1	1	0.8	1	82.165	3.99*	199.44	C
		TA 0.84	B	1	2.1	1	0.8	1	82.165			
			C	1	2.1	1	0.8	1	82.165			
T14 40.00-26.67	0.74	1.21	A	1	2.1	1	0.8	1	54.763	2.37*	177.63	C
			B	1	2.1	1	0.8	1	54.763			
			C	1	2.1	1	0.8	1	54.763			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T15 26.67-20.00	0.37	0.61	A	1	2.1	1	0.8	1	27.402	1.18*	177.11	C
			B	1	2.1	1	0.8	1	27.402			
			C	1	2.1	1	0.8	1	27.402			
T16 20.00-13.33	0.37	0.61	A	1	2.1	1	0.8	1	27.402	1.18*	177.11	C
			B	1	2.1	1	0.8	1	27.402			
			C	1	2.1	1	0.8	1	27.402			
T17 13.33-6.67	0.37	0.60	A	1	2.1	1	0.8	1	27.361	1.18*	177.11	C
			B	1	2.1	1	0.8	1	27.361			
			C	1	2.1	1	0.8	1	27.361			
T18 6.67-0.00	0.37	1.19	A	1	2.1	1	0.8	1	26.603	0.63*	94.63	C
			B	1	2.1	1	0.8	1	26.603			
			C	1	2.1	1	0.8	1	26.603			
Sum Weight:	15.97	31.41			*2A$_g$ limit					74.54		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1 323.00-288.00	0.00	3.12	A	1	0.59	1	1	1	31.354	0.79	22.57	C
			B	1	0.59	1	1	1	31.354			
			C	1	0.59	1	1	1	31.354			
T1 288.00-280.00	0.44	0.42	A	1	2.1	1	0.85	1	31.561	2.57*	320.63	C
		TA 0.84	B	1	2.1	1	0.85	1	31.561			
			C	1	2.1	1	0.85	1	31.561			
T2 280.00-260.00	1.11	1.09	A	1	2.1	1	0.85	1	78.892	6.32*	316.03	C
			B	1	2.1	1	0.85	1	78.892			
			C	1	2.1	1	0.85	1	78.892			
T3 260.00-240.00	1.11	1.26	A	1	2.1	1	0.85	1	79.708	6.22*	310.84	C
		TA 0.84	B	1	2.1	1	0.85	1	79.708			
			C	1	2.1	1	0.85	1	79.708			
T4 240.00-220.00	1.11	1.26	A	1	2.1	1	0.85	1	79.706	6.07*	303.52	C
			B	1	2.1	1	0.85	1	79.706			
			C	1	2.1	1	0.85	1	79.706			
T5 220.00-200.00	1.11	1.54	A	1	2.1	1	0.85	1	80.508	5.95*	297.33	C
		TA 0.84	B	1	2.1	1	0.85	1	80.508			
			C	1	2.1	1	0.85	1	80.508			
T6 200.00-180.00	1.11	1.37	A	1	2.1	1	0.85	1	80.533	5.78*	288.95	C
			B	1	2.1	1	0.85	1	80.533			
			C	1	2.1	1	0.85	1	80.533			
T7 180.00-160.00	1.11	1.75	A	1	2.1	1	0.85	1	81.321	5.63*	281.41	C
		TA 0.84	B	1	2.1	1	0.85	1	81.321			
			C	1	2.1	1	0.85	1	81.321			
T8 160.00-140.00	1.11	1.45	A	1	2.1	1	0.85	1	80.518	5.40*	270.08	C
			B	1	2.1	1	0.85	1	80.518			
			C	1	2.1	1	0.85	1	80.518			
T9 140.00-120.00	1.11	1.59	A	1	2.1	1	0.85	1	81.350	5.21*	260.65	C
			B	1	2.1	1	0.85	1	81.350			
			C	1	2.1	1	0.85	1	81.350			
T10 120.00-100.00	1.11	1.75	A	1	2.1	1	0.85	1	81.319	4.97*	248.50	C
		TA 0.84	B	1	2.1	1	0.85	1	81.319			
			C	1	2.1	1	0.85	1	81.319			
T11 100.00-80.00	1.11	1.89	A	1	2.1	1	0.85	1	82.149	4.72*	235.91	C
			B	1	2.1	1	0.85	1	82.149			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_I	D_R	A_E ft²	F K	w plf	Ctrl. Face
			C	1	2.1	1	0.85	1	82.149			
T12 80.00-60.00	1.11	1.82	A	1	2.1	1	0.85	1	82.165	4.39*	219.56	C
			B	1	2.1	1	0.85	1	82.165			
			C	1	2.1	1	0.85	1	82.165			
T13 60.00-40.00	1.11	1.82 TA 0.84	A	1	2.1	1	0.85	1	82.165	3.99*	199.44	C
			B	1	2.1	1	0.85	1	82.165			
			C	1	2.1	1	0.85	1	82.165			
T14 40.00-26.67	0.74	1.21	A	1	2.1	1	0.85	1	54.763	2.37*	177.63	C
			B	1	2.1	1	0.85	1	54.763			
			C	1	2.1	1	0.85	1	54.763			
T15 26.67-20.00	0.37	0.61	A	1	2.1	1	0.85	1	27.402	1.18*	177.11	C
			B	1	2.1	1	0.85	1	27.402			
			C	1	2.1	1	0.85	1	27.402			
T16 20.00-13.33	0.37	0.61	A	1	2.1	1	0.85	1	27.402	1.18*	177.11	C
			B	1	2.1	1	0.85	1	27.402			
			C	1	2.1	1	0.85	1	27.402			
T17 13.33-6.67	0.37	0.60	A	1	2.1	1	0.85	1	27.361	1.18*	177.11	C
			B	1	2.1	1	0.85	1	27.361			
			C	1	2.1	1	0.85	1	27.361			
T18 6.67-0.00	0.37	1.19	A	1	2.1	1	0.85	1	26.603	0.63*	94.63	C
			B	1	2.1	1	0.85	1	26.603			
			C	1	2.1	1	0.85	1	26.603			
Sum Weight:	15.97	31.41			*$2A_E$ limit					74.54		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_I	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1 323.00-288.00	0.00	3.37	A	1	0.59	1	1	1	34.271	0.86	24.67	C
			B	1	0.59	1	1	1	34.271			
			C	1	0.59	1	1	1	34.271			
T1 288.00-280.00	0.99	0.50 TA 1.04	A	1	2.1	1	1	1	33.483	2.62*	327.60	C
			B	1	2.1	1	1	1	33.483			
			C	1	2.1	1	1	1	33.483			
T2 280.00-260.00	2.49	1.29	A	1	2.1	1	1	1	83.680	6.46*	322.90	C
			B	1	2.1	1	1	1	83.680			
			C	1	2.1	1	1	1	83.680			
T3 260.00-240.00	2.49	1.47 TA 1.04	A	1	2.1	1	1	1	84.482	6.35*	317.56	C
			B	1	2.1	1	1	1	84.482			
			C	1	2.1	1	1	1	84.482			
T4 240.00-220.00	2.49	1.47	A	1	2.1	1	1	1	84.479	6.20*	310.08	C
			B	1	2.1	1	1	1	84.479			
			C	1	2.1	1	1	1	84.479			
T5 220.00-200.00	2.49	1.76 TA 1.04	A	1	2.1	1	1	1	85.262	6.07*	303.72	C
			B	1	2.1	1	1	1	85.262			
			C	1	2.1	1	1	1	85.262			
T6 200.00-180.00	2.49	1.58	A	1	2.1	1	1	1	85.300	5.90*	295.16	C
			B	1	2.1	1	1	1	85.300			
			C	1	2.1	1	1	1	85.300			
T7 180.00-160.00	2.49	1.98 TA 1.04	A	1	2.1	1	1	1	86.060	5.75*	287.43	C
			B	1	2.1	1	1	1	86.060			
			C	1	2.1	1	1	1	86.060			
T8 160.00-	2.49	1.67	A	1	2.1	1	1	1	85.277	5.52*	275.88	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
140.00			B	1	2.1	1	1	1	85.277			
			C	1	2.1	1	1	1	85.277			
T9 140.00-120.00	2.49	1.80	A	1	2.1	1	1	1	86.104	5.32*	266.22	C
			B	1	2.1	1	1	1	86.104			
			C	1	2.1	1	1	1	86.104			
T10 120.00-100.00	2.49	1.98	A	1	2.1	1	1	1	86.057	5.08*	253.82	C
		TA 1.04	B	1	2.1	1	1	1	86.057			
			C	1	2.1	1	1	1	86.057			
T11 100.00-80.00	2.49	2.12	A	1	2.1	1	1	1	86.882	4.82*	240.93	C
			B	1	2.1	1	1	1	86.882			
			C	1	2.1	1	1	1	86.882			
T12 80.00-60.00	2.49	2.04	A	1	2.1	1	1	1	86.903	4.48*	224.24	C
			B	1	2.1	1	1	1	86.903			
			C	1	2.1	1	1	1	86.903			
T13 60.00-40.00	2.49	2.04	A	1	2.1	1	1	1	86.903	4.07*	203.68	C
		TA 1.04	B	1	2.1	1	1	1	86.903			
			C	1	2.1	1	1	1	86.903			
T14 40.00-26.67	1.66	1.36	A	1	2.1	1	1	1	57.921	2.42*	181.40	C
			B	1	2.1	1	1	1	57.921			
			C	1	2.1	1	1	1	57.921			
T15 26.67-20.00	0.83	0.68	A	1	2.1	1	1	1	28.982	1.21*	180.88	C
			B	1	2.1	1	1	1	28.982			
			C	1	2.1	1	1	1	28.982			
T16 20.00-13.33	0.83	0.68	A	1	2.1	1	1	1	28.982	1.21*	180.88	C
			B	1	2.1	1	1	1	28.982			
			C	1	2.1	1	1	1	28.982			
T17 13.33-6.67	0.83	0.68	A	1	2.1	1	1	1	28.939	1.20*	180.88	C
			B	1	2.1	1	1	1	28.939			
			C	1	2.1	1	1	1	28.939			
T18 6.67-0.00	0.83	1.31	A	1	2.1	1	1	1	27.747	0.66*	98.54	C
			B	1	2.1	1	1	1	27.747			
			C	1	2.1	1	1	1	27.747			
Sum Weight:	35.79	35.96			*2A$_E$ limit					76.21		

Tower Forces - With Ice - Wind 45 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1 323.00-288.00	0.00	3.37	A	1	0.59	1	1	1	34.271	0.86	24.67	C
			B	1	0.59	1	1	1	34.271			
			C	1	0.59	1	1	1	34.271			
T1 288.00-280.00	0.99	0.50	A	1	2.1	1	0.825	1	28.601	2.51	313.95	C
		TA 1.04	B	1	2.1	1	0.825	1	28.601			
			C	1	2.1	1	0.825	1	28.601			
T2 280.00-260.00	2.49	1.29	A	1	2.1	1	0.825	1	71.473	6.19	309.33	C
			B	1	2.1	1	0.825	1	71.473			
			C	1	2.1	1	0.825	1	71.473			
T3 260.00-240.00	2.49	1.47	A	1	2.1	1	0.825	1	72.276	6.12	306.00	C
		TA 1.04	B	1	2.1	1	0.825	1	72.276			
			C	1	2.1	1	0.825	1	72.276			
T4 240.00-220.00	2.49	1.47	A	1	2.1	1	0.825	1	72.273	5.98	298.78	C
			B	1	2.1	1	0.825	1	72.273			
			C	1	2.1	1	0.825	1	72.273			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_f	R_R	D_F	D_R	A_L ft²	F K	w plf	Ctrl. Face
T5 220.00-200.00	2.49	1.76 TA 1.04	A B C	1 1 1	2.1 2.1 2.1	1 1 1	0.825 0.825 0.825	1 1 1	73.056 73.056 73.056	5.89	294.27	C
T6 200.00-180.00	2.49	1.58	A B C	1 1 1	2.1 2.1 2.1	1 1 1	0.825 0.825 0.825	1 1 1	73.094 73.094 73.094	5.72	286.12	C
T7 180.00-160.00	2.49	1.98 TA 1.04	A B C	1 1 1	2.1 2.1 2.1	1 1 1	0.825 0.825 0.825	1 1 1	73.854 73.854 73.854	5.60	280.05	C
T8 160.00-140.00	2.49	1.67	A B C	1 1 1	2.1 2.1 2.1	1 1 1	0.825 0.825 0.825	1 1 1	73.070 73.070 73.070	5.35	267.35	C
T9 140.00-120.00	2.49	1.80	A B C	1 1 1	2.1 2.1 2.1	1 1 1	0.825 0.825 0.825	1 1 1	73.898 73.898 73.898	5.19	259.54	C
T10 120.00-100.00	2.49	1.98 TA 1.04	A B C	1 1 1	2.1 2.1 2.1	1 1 1	0.825 0.825 0.825	1 1 1	73.851 73.851 73.851	4.95	247.29	C
T11 100.00-80.00	2.49	2.12	A B C	1 1 1	2.1 2.1 2.1	1 1 1	0.825 0.825 0.825	1 1 1	74.676 74.676 74.676	4.72	236.12	C
T12 80.00-60.00	2.49	2.04	A B C	1 1 1	2.1 2.1 2.1	1 1 1	0.825 0.825 0.825	1 1 1	74.697 74.697 74.697	4.40	219.82	C
T13 60.00-40.00	2.49	2.04 TA 1.04	A B C	1 1 1	2.1 2.1 2.1	1 1 1	0.825 0.825 0.825	1 1 1	74.697 74.697 74.697	3.99	199.67	C
T14 40.00-26.67	1.66	1.36	A B C	1 1 1	2.1 2.1 2.1	1 1 1	0.825 0.825 0.825	1 1 1	49.785 49.785 49.785	2.37	177.83	C
T15 26.67-20.00	0.83	0.68	A B C	1 1 1	2.1 2.1 2.1	1 1 1	0.825 0.825 0.825	1 1 1	24.911 24.911 24.911	1.18	177.32	C
T16 20.00-13.33	0.83	0.68	A B C	1 1 1	2.1 2.1 2.1	1 1 1	0.825 0.825 0.825	1 1 1	24.911 24.911 24.911	1.18	177.32	C
T17 13.33-6.67	0.83	0.68	A B C	1 1 1	2.1 2.1 2.1	1 1 1	0.825 0.825 0.825	1 1 1	24.874 24.874 24.874	1.18	177.32	C
T18 6.67-0.00	0.83	1.31	A B C	1 1 1	2.1 2.1 2.1	1 1 1	0.825 0.825 0.825	1 1 1	23.676 23.676 23.676	0.66	98.54	C
Sum Weight:	35.79	35.96			$2A_E$ limit					74.04		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_f	R_R	D_F	D_R	A_L ft²	F K	w plf	Ctrl. Face
L1 323.00-288.00	0.00	3.37	A B C	1 1 1	0.59 0.59 0.59	1 1 1	1 1 1	1 1 1	34.271 34.271 34.271	0.86	24.67	C
T1 288.00-280.00	0.99	0.50 TA 1.04	A B	1 1	2.1 2.1	1 1	0.8 0.8	1 1	27.903 27.903	2.45	306.29	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_L ft²	F K	w plf	Ctrl. Face
			C	1	2.1	1	0.8	1	27.903			
T2 280.00-260.00	2.49	1.29	A	1	2.1	1	0.8	1	69.730	6.04	301.78	C
			B	1	2.1	1	0.8	1	69.730			
			C	1	2.1	1	0.8	1	69.730			
T3 260.00-240.00	2.49	1.47 TA 1.04	A	1	2.1	1	0.8	1	70.532	5.97	298.61	C
			B	1	2.1	1	0.8	1	70.532			
			C	1	2.1	1	0.8	1	70.532			
T4 240.00-220.00	2.49	1.47	A	1	2.1	1	0.8	1	70.529	5.83	291.57	C
			B	1	2.1	1	0.8	1	70.529			
			C	1	2.1	1	0.8	1	70.529			
T5 220.00-200.00	2.49	1.76 TA 1.04	A	1	2.1	1	0.8	1	71.312	5.74	287.24	C
			B	1	2.1	1	0.8	1	71.312			
			C	1	2.1	1	0.8	1	71.312			
T6 200.00-180.00	2.49	1.58	A	1	2.1	1	0.8	1	71.350	5.59	279.29	C
			B	1	2.1	1	0.8	1	71.350			
			C	1	2.1	1	0.8	1	71.350			
T7 180.00-160.00	2.49	1.98 TA 1.04	A	1	2.1	1	0.8	1	72.110	5.47	273.44	C
			B	1	2.1	1	0.8	1	72.110			
			C	1	2.1	1	0.8	1	72.110			
T8 160.00-140.00	2.49	1.67	A	1	2.1	1	0.8	1	71.327	5.22	260.97	C
			B	1	2.1	1	0.8	1	71.327			
			C	1	2.1	1	0.8	1	71.327			
T9 140.00-120.00	2.49	1.80	A	1	2.1	1	0.8	1	72.154	5.07	253.42	C
			B	1	2.1	1	0.8	1	72.154			
			C	1	2.1	1	0.8	1	72.154			
T10 120.00-100.00	2.49	1.98 TA 1.04	A	1	2.1	1	0.8	1	72.107	4.83	241.45	C
			B	1	2.1	1	0.8	1	72.107			
			C	1	2.1	1	0.8	1	72.107			
T11 100.00-80.00	2.49	2.12	A	1	2.1	1	0.8	1	72.932	4.61	230.60	C
			B	1	2.1	1	0.8	1	72.932			
			C	1	2.1	1	0.8	1	72.932			
T12 80.00-60.00	2.49	2.04	A	1	2.1	1	0.8	1	72.953	4.29	214.69	C
			B	1	2.1	1	0.8	1	72.953			
			C	1	2.1	1	0.8	1	72.953			
T13 60.00-40.00	2.49	2.04 TA 1.04	A	1	2.1	1	0.8	1	72.953	3.90	195.01	C
			B	1	2.1	1	0.8	1	72.953			
			C	1	2.1	1	0.8	1	72.953			
T14 40.00-26.67	1.66	1.36	A	1	2.1	1	0.8	1	48.623	2.32	173.68	C
			B	1	2.1	1	0.8	1	48.623			
			C	1	2.1	1	0.8	1	48.623			
T15 26.67-20.00	0.83	0.68	A	1	2.1	1	0.8	1	24.330	1.16	173.18	C
			B	1	2.1	1	0.8	1	24.330			
			C	1	2.1	1	0.8	1	24.330			
T16 20.00-13.33	0.83	0.68	A	1	2.1	1	0.8	1	24.330	1.16	173.18	C
			B	1	2.1	1	0.8	1	24.330			
			C	1	2.1	1	0.8	1	24.330			
T17 13.33-6.67	0.83	0.68	A	1	2.1	1	0.8	1	24.293	1.15	173.18	C
			B	1	2.1	1	0.8	1	24.293			
			C	1	2.1	1	0.8	1	24.293			
T18 6.67-0.00	0.83	1.31	A	1	2.1	1	0.8	1	23.095	0.66*	98.54	C
			B	1	2.1	1	0.8	1	23.095			
			C	1	2.1	1	0.8	1	23.095			
Sum Weight:	35.79	35.96			*2A_g limit					72.31		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_L ft²	F K	w plf	Ctrl. Face
L1 323.00-288.00	0.00	3.37	A	1	0.59	1	1	1	34.271	0.86	24.67	C
			B	1	0.59	1	1	1	34.271			
			C	1	0.59	1	1	1	34.271			
T1 288.00-280.00	0.99	0.50	A	1	2.1	1	0.85	1	29.298	2.57	321.60	C
		TA 1.04	B	1	2.1	1	0.85	1	29.298			
			C	1	2.1	1	0.85	1	29.298			
T2 280.00-260.00	2.49	1.29	A	1	2.1	1	0.85	1	73.217	6.34	316.87	C
			B	1	2.1	1	0.85	1	73.217			
			C	1	2.1	1	0.85	1	73.217			
T3 260.00-240.00	2.49	1.47	A	1	2.1	1	0.85	1	74.020	6.27	313.38	C
		TA 1.04	B	1	2.1	1	0.85	1	74.020			
			C	1	2.1	1	0.85	1	74.020			
T4 240.00-220.00	2.49	1.47	A	1	2.1	1	0.85	1	74.017	6.12	305.99	C
			B	1	2.1	1	0.85	1	74.017			
			C	1	2.1	1	0.85	1	74.017			
T5 220.00-200.00	2.49	1.76	A	1	2.1	1	0.85	1	74.799	6.03	301.29	C
		TA 1.04	B	1	2.1	1	0.85	1	74.799			
			C	1	2.1	1	0.85	1	74.799			
T6 200.00-180.00	2.49	1.58	A	1	2.1	1	0.85	1	74.837	5.86	292.94	C
			B	1	2.1	1	0.85	1	74.837			
			C	1	2.1	1	0.85	1	74.837			
T7 180.00-160.00	2.49	1.98	A	1	2.1	1	0.85	1	75.598	5.73	286.66	C
		TA 1.04	B	1	2.1	1	0.85	1	75.598			
			C	1	2.1	1	0.85	1	75.598			
T8 160.00-140.00	2.49	1.67	A	1	2.1	1	0.85	1	74.814	5.47	273.73	C
			B	1	2.1	1	0.85	1	74.814			
			C	1	2.1	1	0.85	1	74.814			
T9 140.00-120.00	2.49	1.80	A	1	2.1	1	0.85	1	75.642	5.31	265.67	C
			B	1	2.1	1	0.85	1	75.642			
			C	1	2.1	1	0.85	1	75.642			
T10 120.00-100.00	2.49	1.98	A	1	2.1	1	0.85	1	75.595	5.06	253.13	C
		TA 1.04	B	1	2.1	1	0.85	1	75.595			
			C	1	2.1	1	0.85	1	75.595			
T11 100.00-80.00	2.49	2.12	A	1	2.1	1	0.85	1	76.419	4.82*	240.93	C
			B	1	2.1	1	0.85	1	76.419			
			C	1	2.1	1	0.85	1	76.419			
T12 80.00-60.00	2.49	2.04	A	1	2.1	1	0.85	1	76.441	4.48*	224.24	C
			B	1	2.1	1	0.85	1	76.441			
			C	1	2.1	1	0.85	1	76.441			
T13 60.00-40.00	2.49	2.04	A	1	2.1	1	0.85	1	76.441	4.07*	203.68	C
		TA 1.04	B	1	2.1	1	0.85	1	76.441			
			C	1	2.1	1	0.85	1	76.441			
T14 40.00-26.67	1.66	1.36	A	1	2.1	1	0.85	1	50.948	2.42*	181.40	C
			B	1	2.1	1	0.85	1	50.948			
			C	1	2.1	1	0.85	1	50.948			
T15 26.67-20.00	0.83	0.68	A	1	2.1	1	0.85	1	25.493	1.21*	180.88	C
			B	1	2.1	1	0.85	1	25.493			
			C	1	2.1	1	0.85	1	25.493			
T16 20.00-13.33	0.83	0.68	A	1	2.1	1	0.85	1	25.493	1.21*	180.88	C
			B	1	2.1	1	0.85	1	25.493			
			C	1	2.1	1	0.85	1	25.493			
T17 13.33-6.67	0.83	0.68	A	1	2.1	1	0.85	1	25.455	1.20*	180.88	C
			B	1	2.1	1	0.85	1	25.455			
			C	1	2.1	1	0.85	1	25.455			
T18 6.67-0.00	0.83	1.31	A	1	2.1	1	0.85	1	24.258	0.66*	98.54	C
			B	1	2.1	1	0.85	1	24.258			
			C	1	2.1	1	0.85	1	24.258			
Sum Weight:	35.79	35.96			*2A_g limit					75.70		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_I	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1 323.00-288.00	0.00	3.12	A	1	0.614	1	1	1	31.354	0.25	7.24	C
			B	1	0.614	1	1	1	31.354			
			C	1	0.614	1	1	1	31.354			
T1 288.00-280.00	0.44	0.42	A	1	2.1	1	1	1	31.561	0.79*	98.96	C
		TA 0.84	B	1	2.1	1	1	1	31.561			
			C	1	2.1	1	1	1	31.561			
T2 280.00-260.00	1.11	1.09	A	1	2.1	1	1	1	78.892	1.95*	97.54	C
			B	1	2.1	1	1	1	78.892			
			C	1	2.1	1	1	1	78.892			
T3 260.00-240.00	1.11	1.26	A	1	2.1	1	1	1	79.708	1.92*	95.94	C
		TA 0.84	B	1	2.1	1	1	1	79.708			
			C	1	2.1	1	1	1	79.708			
T4 240.00-220.00	1.11	1.26	A	1	2.1	1	1	1	79.706	1.87*	93.68	C
			B	1	2.1	1	1	1	79.706			
			C	1	2.1	1	1	1	79.706			
T5 220.00-200.00	1.11	1.54	A	1	2.1	1	1	1	80.508	1.84*	91.77	C
		TA 0.84	B	1	2.1	1	1	1	80.508			
			C	1	2.1	1	1	1	80.508			
T6 200.00-180.00	1.11	1.37	A	1	2.1	1	1	1	80.533	1.78*	89.18	C
			B	1	2.1	1	1	1	80.533			
			C	1	2.1	1	1	1	80.533			
T7 180.00-160.00	1.11	1.75	A	1	2.1	1	1	1	81.321	1.74*	86.86	C
		TA 0.84	B	1	2.1	1	1	1	81.321			
			C	1	2.1	1	1	1	81.321			
T8 160.00-140.00	1.11	1.45	A	1	2.1	1	1	1	80.518	1.67*	83.36	C
			B	1	2.1	1	1	1	80.518			
			C	1	2.1	1	1	1	80.518			
T9 140.00-120.00	1.11	1.59	A	1	2.1	1	1	1	81.350	1.61*	80.45	C
			B	1	2.1	1	1	1	81.350			
			C	1	2.1	1	1	1	81.350			
T10 120.00-100.00	1.11	1.75	A	1	2.1	1	1	1	81.319	1.53*	76.70	C
		TA 0.84	B	1	2.1	1	1	1	81.319			
			C	1	2.1	1	1	1	81.319			
T11 100.00-80.00	1.11	1.89	A	1	2.1	1	1	1	82.149	1.46*	72.81	C
			B	1	2.1	1	1	1	82.149			
			C	1	2.1	1	1	1	82.149			
T12 80.00-60.00	1.11	1.82	A	1	2.1	1	1	1	82.165	1.36*	67.77	C
			B	1	2.1	1	1	1	82.165			
			C	1	2.1	1	1	1	82.165			
T13 60.00-40.00	1.11	1.82	A	1	2.1	1	1	1	82.165	1.23*	61.56	C
		TA 0.84	B	1	2.1	1	1	1	82.165			
			C	1	2.1	1	1	1	82.165			
T14 40.00-26.67	0.74	1.21	A	1	2.1	1	1	1	54.763	0.73*	54.82	C
			B	1	2.1	1	1	1	54.763			
			C	1	2.1	1	1	1	54.763			
T15 26.67-20.00	0.37	0.61	A	1	2.1	1	1	1	27.402	0.36*	54.66	C
			B	1	2.1	1	1	1	27.402			
			C	1	2.1	1	1	1	27.402			
T16 20.00-13.33	0.37	0.61	A	1	2.1	1	1	1	27.402	0.36*	54.66	C
			B	1	2.1	1	1	1	27.402			
			C	1	2.1	1	1	1	27.402			
T17 13.33-6.67	0.37	0.60	A	1	2.1	1	1	1	27.361	0.36*	54.66	C
			B	1	2.1	1	1	1	27.361			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
			C	1	2.1	1	1	1	27.361			
T18 6.67-0.00	0.37	1.19	A	1	2.1	1	1	1	26.603	0.19*	29.21	C
			B	1	2.1	1	1	1	26.603			
			C	1	2.1	1	1	1	26.603			
Sum Weight:	15.97	31.41			*2A_g limit					23.02		

Tower Forces - Service - Wind 45 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1 323.00-	0.00	3.12	A	1	0.614	1	1	1	31.354	0.25	7.24	C
288.00			B	1	0.614	1	1	1	31.354			
			C	1	0.614	1	1	1	31.354			
T1 288.00-	0.44	0.42	A	1	2.1	1	0.825	1	31.561	0.79*	98.96	C
280.00		TA 0.84	B	1	2.1	1	0.825	1	31.561			
			C	1	2.1	1	0.825	1	31.561			
T2 280.00-	1.11	1.09	A	1	2.1	1	0.825	1	78.892	1.95*	97.54	C
260.00			B	1	2.1	1	0.825	1	78.892			
			C	1	2.1	1	0.825	1	78.892			
T3 260.00-	1.11	1.26	A	1	2.1	1	0.825	1	79.708	1.92*	95.94	C
240.00		TA 0.84	B	1	2.1	1	0.825	1	79.708			
			C	1	2.1	1	0.825	1	79.708			
T4 240.00-	1.11	1.26	A	1	2.1	1	0.825	1	79.706	1.87*	93.68	C
220.00			B	1	2.1	1	0.825	1	79.706			
			C	1	2.1	1	0.825	1	79.706			
T5 220.00-	1.11	1.54	A	1	2.1	1	0.825	1	80.508	1.84*	91.77	C
200.00		TA 0.84	B	1	2.1	1	0.825	1	80.508			
			C	1	2.1	1	0.825	1	80.508			
T6 200.00-	1.11	1.37	A	1	2.1	1	0.825	1	80.533	1.78*	89.18	C
180.00			B	1	2.1	1	0.825	1	80.533			
			C	1	2.1	1	0.825	1	80.533			
T7 180.00-	1.11	1.75	A	1	2.1	1	0.825	1	81.321	1.74*	86.86	C
160.00		TA 0.84	B	1	2.1	1	0.825	1	81.321			
			C	1	2.1	1	0.825	1	81.321			
T8 160.00-	1.11	1.45	A	1	2.1	1	0.825	1	80.518	1.67*	83.36	C
140.00			B	1	2.1	1	0.825	1	80.518			
			C	1	2.1	1	0.825	1	80.518			
T9 140.00-	1.11	1.59	A	1	2.1	1	0.825	1	81.350	1.61*	80.45	C
120.00			B	1	2.1	1	0.825	1	81.350			
			C	1	2.1	1	0.825	1	81.350			
T10 120.00-	1.11	1.75	A	1	2.1	1	0.825	1	81.319	1.53*	76.70	C
100.00		TA 0.84	B	1	2.1	1	0.825	1	81.319			
			C	1	2.1	1	0.825	1	81.319			
T11 100.00-	1.11	1.89	A	1	2.1	1	0.825	1	82.149	1.46*	72.81	C
80.00			B	1	2.1	1	0.825	1	82.149			
			C	1	2.1	1	0.825	1	82.149			
T12 80.00-	1.11	1.82	A	1	2.1	1	0.825	1	82.165	1.36*	67.77	C
60.00			B	1	2.1	1	0.825	1	82.165			
			C	1	2.1	1	0.825	1	82.165			
T13 60.00-	1.11	1.82	A	1	2.1	1	0.825	1	82.165	1.23*	61.56	C
40.00		TA 0.84	B	1	2.1	1	0.825	1	82.165			
			C	1	2.1	1	0.825	1	82.165			
T14 40.00-	0.74	1.21	A	1	2.1	1	0.825	1	54.763	0.73*	54.82	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_f	R_R	D_f	D_R	A_L ft²	F K	w plf	Ctrl. Face
26.67			B	1	2.1	1	0.825	1	54.763			
			C	1	2.1	1	0.825	1	54.763			
T15 26.67-20.00	0.37	0.61	A	1	2.1	1	0.825	1	27.402	0.36*	54.66	C
			B	1	2.1	1	0.825	1	27.402			
			C	1	2.1	1	0.825	1	27.402			
T16 20.00-13.33	0.37	0.61	A	1	2.1	1	0.825	1	27.402	0.36*	54.66	C
			B	1	2.1	1	0.825	1	27.402			
			C	1	2.1	1	0.825	1	27.402			
T17 13.33-6.67	0.37	0.60	A	1	2.1	1	0.825	1	27.361	0.36*	54.66	C
			B	1	2.1	1	0.825	1	27.361			
			C	1	2.1	1	0.825	1	27.361			
T18 6.67-0.00	0.37	1.19	A	1	2.1	1	0.825	1	26.603	0.19*	29.21	C
			B	1	2.1	1	0.825	1	26.603			
			C	1	2.1	1	0.825	1	26.603			
Sum Weight:	15.97	31.41			*2Ag limit					23.02		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_f	R_R	D_f	D_R	A_L ft²	F K	w plf	Ctrl. Face
L1 323.00-288.00	0.00	3.12	A	1	0.614	1	1	1	31.354	0.25	7.24	C
			B	1	0.614	1	1	1	31.354			
			C	1	0.614	1	1	1	31.354			
T1 288.00-280.00	0.44	0.42	A	1	2.1	1	0.8	1	31.561	0.79*	98.96	C
		TA 0.84	B	1	2.1	1	0.8	1	31.561			
			C	1	2.1	1	0.8	1	31.561			
T2 280.00-260.00	1.11	1.09	A	1	2.1	1	0.8	1	78.892	1.95*	97.54	C
			B	1	2.1	1	0.8	1	78.892			
			C	1	2.1	1	0.8	1	78.892			
T3 260.00-240.00	1.11	1.26	A	1	2.1	1	0.8	1	79.708	1.92*	95.94	C
		TA 0.84	B	1	2.1	1	0.8	1	79.708			
			C	1	2.1	1	0.8	1	79.708			
T4 240.00-220.00	1.11	1.26	A	1	2.1	1	0.8	1	79.706	1.87*	93.68	C
			B	1	2.1	1	0.8	1	79.706			
			C	1	2.1	1	0.8	1	79.706			
T5 220.00-200.00	1.11	1.54	A	1	2.1	1	0.8	1	80.508	1.84*	91.77	C
		TA 0.84	B	1	2.1	1	0.8	1	80.508			
			C	1	2.1	1	0.8	1	80.508			
T6 200.00-180.00	1.11	1.37	A	1	2.1	1	0.8	1	80.533	1.78*	89.18	C
			B	1	2.1	1	0.8	1	80.533			
			C	1	2.1	1	0.8	1	80.533			
T7 180.00-160.00	1.11	1.75	A	1	2.1	1	0.8	1	81.321	1.74*	86.86	C
		TA 0.84	B	1	2.1	1	0.8	1	81.321			
			C	1	2.1	1	0.8	1	81.321			
T8 160.00-140.00	1.11	1.45	A	1	2.1	1	0.8	1	80.518	1.67*	83.36	C
			B	1	2.1	1	0.8	1	80.518			
			C	1	2.1	1	0.8	1	80.518			
T9 140.00-120.00	1.11	1.59	A	1	2.1	1	0.8	1	81.350	1.61*	80.45	C
			B	1	2.1	1	0.8	1	81.350			
			C	1	2.1	1	0.8	1	81.350			
T10 120.00-100.00	1.11	1.75	A	1	2.1	1	0.8	1	81.319	1.53*	76.70	C
		TA 0.84	B	1	2.1	1	0.8	1	81.319			
			C	1	2.1	1	0.8	1	81.319			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_f	R_R	D_f	D_R	A_f ft²	F K	w plf	Ctrl. Face
T11 100.00-80.00	1.11	1.89	A	1	2.1	1	0.8	1	82.149	1.46*	72.81	C
			B	1	2.1	1	0.8	1	82.149			
			C	1	2.1	1	0.8	1	82.149			
T12 80.00-60.00	1.11	1.82	A	1	2.1	1	0.8	1	82.165	1.36*	67.77	C
			B	1	2.1	1	0.8	1	82.165			
			C	1	2.1	1	0.8	1	82.165			
T13 60.00-40.00	1.11	1.82 TA 0.84	A	1	2.1	1	0.8	1	82.165	1.23*	61.56	C
			B	1	2.1	1	0.8	1	82.165			
			C	1	2.1	1	0.8	1	82.165			
T14 40.00-26.67	0.74	1.21	A	1	2.1	1	0.8	1	54.763	0.73*	54.82	C
			B	1	2.1	1	0.8	1	54.763			
			C	1	2.1	1	0.8	1	54.763			
T15 26.67-20.00	0.37	0.61	A	1	2.1	1	0.8	1	27.402	0.36*	54.66	C
			B	1	2.1	1	0.8	1	27.402			
			C	1	2.1	1	0.8	1	27.402			
T16 20.00-13.33	0.37	0.61	A	1	2.1	1	0.8	1	27.402	0.36*	54.66	C
			B	1	2.1	1	0.8	1	27.402			
			C	1	2.1	1	0.8	1	27.402			
T17 13.33-6.67	0.37	0.60	A	1	2.1	1	0.8	1	27.361	0.36*	54.66	C
			B	1	2.1	1	0.8	1	27.361			
			C	1	2.1	1	0.8	1	27.361			
T18 6.67-0.00	0.37	1.19	A	1	2.1	1	0.8	1	26.603	0.19*	29.21	C
			B	1	2.1	1	0.8	1	26.603			
			C	1	2.1	1	0.8	1	26.603			
Sum Weight:	15.97	31.41			*2A_g limit					23.02		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_f	R_R	D_f	D_R	A_f ft²	F K	w plf	Ctrl Face
L1 323.00-288.00	0.00	3.12	A	1	0.614	1	1	1	31.354	0.25	7.24	C
			B	1	0.614	1	1	1	31.354			
			C	1	0.614	1	1	1	31.354			
T1 288.00-280.00	0.44	0.42 TA 0.84	A	1	2.1	1	0.85	1	31.561	0.79*	98.96	C
			B	1	2.1	1	0.85	1	31.561			
			C	1	2.1	1	0.85	1	31.561			
T2 280.00-260.00	1.11	1.09	A	1	2.1	1	0.85	1	78.892	1.95*	97.54	C
			B	1	2.1	1	0.85	1	78.892			
			C	1	2.1	1	0.85	1	78.892			
T3 260.00-240.00	1.11	1.26 TA 0.84	A	1	2.1	1	0.85	1	79.708	1.92*	95.94	C
			B	1	2.1	1	0.85	1	79.708			
			C	1	2.1	1	0.85	1	79.708			
T4 240.00-220.00	1.11	1.26	A	1	2.1	1	0.85	1	79.706	1.87*	93.68	C
			B	1	2.1	1	0.85	1	79.706			
			C	1	2.1	1	0.85	1	79.706			
T5 220.00-200.00	1.11	1.54 TA 0.84	A	1	2.1	1	0.85	1	80.508	1.84*	91.77	C
			B	1	2.1	1	0.85	1	80.508			
			C	1	2.1	1	0.85	1	80.508			
T6 200.00-180.00	1.11	1.37	A	1	2.1	1	0.85	1	80.533	1.78*	89.18	C
			B	1	2.1	1	0.85	1	80.533			
			C	1	2.1	1	0.85	1	80.533			
T7 180.00-160.00	1.11	1.75 TA 0.84	A	1	2.1	1	0.85	1	81.321	1.74*	86.86	C
			B	1	2.1	1	0.85	1	81.321			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
			C	1	2.1	1	0.85	1	81.321			
T8 160.00-140.00	1.11	1.45	A	1	2.1	1	0.85	1	80.518	1.67*	83.36	C
			B	1	2.1	1	0.85	1	80.518			
			C	1	2.1	1	0.85	1	80.518			
T9 140.00-120.00	1.11	1.59	A	1	2.1	1	0.85	1	81.350	1.61*	80.45	C
			B	1	2.1	1	0.85	1	81.350			
			C	1	2.1	1	0.85	1	81.350			
T10 120.00-100.00	1.11	1.75 TA 0.84	A	1	2.1	1	0.85	1	81.319	1.53*	76.70	C
			B	1	2.1	1	0.85	1	81.319			
			C	1	2.1	1	0.85	1	81.319			
T11 100.00-80.00	1.11	1.89	A	1	2.1	1	0.85	1	82.149	1.46*	72.81	C
			B	1	2.1	1	0.85	1	82.149			
			C	1	2.1	1	0.85	1	82.149			
T12 80.00-60.00	1.11	1.82	A	1	2.1	1	0.85	1	82.165	1.36*	67.77	C
			B	1	2.1	1	0.85	1	82.165			
			C	1	2.1	1	0.85	1	82.165			
T13 60.00-40.00	1.11	1.82 TA 0.84	A	1	2.1	1	0.85	1	82.165	1.23*	61.56	C
			B	1	2.1	1	0.85	1	82.165			
			C	1	2.1	1	0.85	1	82.165			
T14 40.00-26.67	0.74	1.21	A	1	2.1	1	0.85	1	54.763	0.73*	54.82	C
			B	1	2.1	1	0.85	1	54.763			
			C	1	2.1	1	0.85	1	54.763			
T15 26.67-20.00	0.37	0.61	A	1	2.1	1	0.85	1	27.402	0.36*	54.66	C
			B	1	2.1	1	0.85	1	27.402			
			C	1	2.1	1	0.85	1	27.402			
T16 20.00-13.33	0.37	0.61	A	1	2.1	1	0.85	1	27.402	0.36*	54.66	C
			B	1	2.1	1	0.85	1	27.402			
			C	1	2.1	1	0.85	1	27.402			
T17 13.33-6.67	0.37	0.60	A	1	2.1	1	0.85	1	27.361	0.36*	54.66	C
			B	1	2.1	1	0.85	1	27.361			
			C	1	2.1	1	0.85	1	27.361			
T18 6.67-0.00	0.37	1.19	A	1	2.1	1	0.85	1	26.603	0.19*	29.21	C
			B	1	2.1	1	0.85	1	26.603			
			C	1	2.1	1	0.85	1	26.603			
Sum Weight:	15.97	31.41			*2A$_g$ limit					23.02		

Force Totals (Does not include forces on guys)

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Torques kip-ft
Leg Weight	19.53			
Bracing Weight	11.88			
Total Member Self-Weight	31.41			
Guy Weight	11.21			
Total Weight	116.12			
Wind 0 deg - No Ice		-0.24	-102.54	20.07
Wind 30 deg - No Ice		50.95	-88.68	19.68
Wind 45 deg - No Ice		72.18	-72.34	17.44
Wind 60 deg - No Ice		88.49	-51.06	14.01
Wind 90 deg - No Ice		102.32	0.24	4.59
Wind 120 deg - No Ice		88.73	51.48	-6.06
Wind 135 deg - No Ice		72.52	72.68	-10.95
Wind 150 deg - No Ice		51.37	88.92	-15.09

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Torques kip-ft
Wind 180 deg - No Ice		0.24	102.54	-20.07
Wind 210 deg - No Ice		-50.95	88.68	-19.68
Wind 225 deg - No Ice		-72.18	72.34	-17.44
Wind 240 deg - No Ice		-88.49	51.06	-14.01
Wind 270 deg - No Ice		-102.32	-0.24	-4.59
Wind 300 deg - No Ice		-88.73	-51.48	6.06
Wind 315 deg - No Ice		-72.52	-72.68	10.95
Wind 330 deg - No Ice		-51.37	-88.92	15.09
Member Ice	4.55			
Guy Ice	8.10			
Total Weight Ice	153.77			
Wind 0 deg - Ice		-0.24	-109.61	25.44
Wind 30 deg - Ice		54.29	-94.36	24.66
Wind 45 deg - Ice		75.72	-75.80	21.71
Wind 60 deg - Ice		91.34	-52.65	17.28
Wind 90 deg - Ice		109.00	0.24	5.26
Wind 120 deg - Ice		94.96	55.02	-8.16
Wind 135 deg - Ice		76.07	76.14	-14.27
Wind 150 deg - Ice		54.71	94.61	-19.40
Wind 180 deg - Ice		0.24	105.71	-25.44
Wind 210 deg - Ice		-54.29	94.36	-24.66
Wind 225 deg - Ice		-75.72	75.80	-21.71
Wind 240 deg - Ice		-94.71	54.60	-17.28
Wind 270 deg - Ice		-109.00	-0.24	-5.26
Wind 300 deg - Ice		-91.58	-53.07	8.16
Wind 315 deg - Ice		-76.07	-76.14	14.27
Wind 330 deg - Ice		-54.71	-94.61	19.40
Total Weight	116.12			
Wind 0 deg - Service		-0.07	-31.66	6.19
Wind 30 deg - Service		15.73	-27.38	6.07
Wind 45 deg - Service		22.28	-22.33	5.38
Wind 60 deg - Service		27.32	-15.76	4.32
Wind 90 deg - Service		31.59	0.07	1.42
Wind 120 deg - Service		27.39	15.89	-1.87
Wind 135 deg - Service		22.39	22.44	-3.38
Wind 150 deg - Service		15.86	27.45	-4.66
Wind 180 deg - Service		0.07	31.66	-6.19
Wind 210 deg - Service		-15.73	27.38	-6.07
Wind 225 deg - Service		-22.28	22.33	-5.38
Wind 240 deg - Service		-27.32	15.76	-4.32
Wind 270 deg - Service		-31.59	-0.07	-1.42
Wind 300 deg - Service		-27.39	-15.89	1.87
Wind 315 deg - Service		-22.39	-22.44	3.38
Wind 330 deg - Service		-15.86	-27.45	4.66

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice+Guy
3	Dead+Wind 30 deg - No Ice+Guy
4	Dead+Wind 45 deg - No Ice+Guy
5	Dead+Wind 60 deg - No Ice+Guy

Comb. No.	Description
6	Dead+Wind 90 deg - No Ice+Guy
7	Dead+Wind 120 deg - No Ice+Guy
8	Dead+Wind 135 deg - No Ice+Guy
9	Dead+Wind 150 deg - No Ice+Guy
10	Dead+Wind 180 deg - No Ice+Guy
11	Dead+Wind 210 deg - No Ice+Guy
12	Dead+Wind 225 deg - No Ice+Guy
13	Dead+Wind 240 deg - No Ice+Guy
14	Dead+Wind 270 deg - No Ice+Guy
15	Dead+Wind 300 deg - No Ice+Guy
16	Dead+Wind 315 deg - No Ice+Guy
17	Dead+Wind 330 deg - No Ice+Guy
18	Dead+Ice+Temp+Guy
19	Dead+Wind 0 deg+Ice+Temp+Guy
20	Dead+Wind 30 deg+Ice+Temp+Guy
21	Dead+Wind 45 deg+Ice+Temp+Guy
22	Dead+Wind 60 deg+Ice+Temp+Guy
23	Dead+Wind 90 deg+Ice+Temp+Guy
24	Dead+Wind 120 deg+Ice+Temp+Guy
25	Dead+Wind 135 deg+Ice+Temp+Guy
26	Dead+Wind 150 deg+Ice+Temp+Guy
27	Dead+Wind 180 deg+Ice+Temp+Guy
28	Dead+Wind 210 deg+Ice+Temp+Guy
29	Dead+Wind 225 deg+Ice+Temp+Guy
30	Dead+Wind 240 deg+Ice+Temp+Guy
31	Dead+Wind 270 deg+Ice+Temp+Guy
32	Dead+Wind 300 deg+Ice+Temp+Guy
33	Dead+Wind 315 deg+Ice+Temp+Guy
34	Dead+Wind 330 deg+Ice+Temp+Guy
35	Dead+Wind 0 deg - Service+Guy
36	Dead+Wind 30 deg - Service+Guy
37	Dead+Wind 45 deg - Service+Guy
38	Dead+Wind 60 deg - Service+Guy
39	Dead+Wind 90 deg - Service+Guy
40	Dead+Wind 120 deg - Service+Guy
41	Dead+Wind 135 deg - Service+Guy
42	Dead+Wind 150 deg - Service+Guy
43	Dead+Wind 180 deg - Service+Guy
44	Dead+Wind 210 deg - Service+Guy
45	Dead+Wind 225 deg - Service+Guy
46	Dead+Wind 240 deg - Service+Guy
47	Dead+Wind 270 deg - Service+Guy
48	Dead+Wind 300 deg - Service+Guy
49	Dead+Wind 315 deg - Service+Guy
50	Dead+Wind 330 deg - Service+Guy

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	323 - 288	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	31	-3.87	28.98	1.03
			Max. Mx	23	-3.84	-30.13	0.77
			Max. My	19	-3.86	-0.84	29.33
			Max. Vy	23	1.52	-30.13	0.77
			Max. Vx	19	-1.48	-0.84	29.33
			Max. Torque	20			0.01
T1	288 - 280	Leg	Max Tension	27	7.45	0.00	-0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	25	-25.73	4.35	-0.27
			Max. Mx	19	-23.74	11.35	1.91
			Max. My	30	-23.62	-1.19	-13.31
			Max. Vy	25	-3.83	-10.05	8.13
			Max. Vx	30	-4.55	-1.19	-13.31
		Diagonal	Max Tension	23	5.08	0.00	0.00
			Max. Compression	15	-5.01	0.00	0.00
			Max. Mx	31	2.86	0.02	0.00
			Max. Vy	31	-0.01	0.00	0.00
		Guy A	Bottom Tension	26	18.16		
			Top Tension	26	18.74		
			Top Cable Vert	26	15.44		
			Top Cable Norm	26	10.61		
			Top Cable Tan	26	0.45		
			Bot Cable Vert	26	-13.90		
			Bot Cable Norm	26	11.68		
			Bot Cable Tan	26	0.48		
		Guy B	Bottom Tension	33	18.27		
			Top Tension	33	18.85		
			Top Cable Vert	33	15.48		
			Top Cable Norm	33	10.76		
			Top Cable Tan	33	0.21		
			Bot Cable Vert	33	-13.90		
			Bot Cable Norm	33	11.87		
			Bot Cable Tan	33	0.23		
		Guy C	Bottom Tension	23	17.82		
			Top Tension	23	18.34		
			Top Cable Vert	23	14.49		
			Top Cable Norm	23	11.24		
			Top Cable Tan	23	0.41		
			Bot Cable Vert	23	-13.03		
			Bot Cable Norm	23	12.16		
			Bot Cable Tan	23	0.46		
		Torque Arm Top	Max Tension	23	9.86	-24.20	-0.00
			Max. Compression	14	-2.45	-41.66	-0.00
			Max. Mx	33	0.82	-58.93	0.00
			Max. Vy	33	14.80	-58.93	0.00
		Index Plate	Max Tension	26	1.51	19.45	0.07
			Max. Compression	21	-0.07	0.00	0.00
			Max. Mx	24	1.09	22.31	0.66
			Max. My	30	0.93	-6.94	-2.79
			Max. Vy	24	10.54	22.31	0.66
			Max. Vx	30	-1.32	-6.94	-2.79
T2	280 - 260	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	29	-34.28	3.19	0.53
			Max. Mx	31	-28.74	-5.92	3.84
			Max. My	20	-29.72	-0.24	-6.89
			Max. Vy	26	-2.53	-2.92	1.54
			Max. Vx	20	2.48	2.86	1.32
		Diagonal	Max Tension	20	6.52	0.00	0.00
			Max. Compression	27	-5.42	0.00	0.00
			Max. Mx	32	-3.88	0.01	0.00
			Max. Vy	32	-0.01	0.00	0.00
T3	260 - 240	Leg	Max Tension	12	4.52	0.31	-0.90
			Max. Compression	33	-81.88	-27.79	7.71
			Max. Mx	32	-72.98	29.62	-4.47
			Max. My	32	-81.05	-3.80	-27.73
			Max. Vy	27	-12.68	20.42	16.71
			Max. Vx	27	-11.82	-17.38	-22.69
		Diagonal	Max Tension	27	11.87	0.00	0.00
			Max. Compression	27	-15.28	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	32	-7.04	0.01	0.00
			Max. Vy	32	-0.01	0.00	0.00
		Guy A	Bottom Tension	27	24.27		
			Top Tension	27	24.80		
			Top Cable Vert	27	19.54		
			Top Cable Norm	27	15.27		
			Top Cable Tan	27	0.01		
			Bot Cable Vert	27	-18.06		
			Bot Cable Norm	27	16.21		
			Bot Cable Tan	27	0.01		
		Guy B	Bottom Tension	32	23.91		
			Top Tension	32	24.43		
			Top Cable Vert	32	19.15		
			Top Cable Norm	32	15.18		
			Top Cable Tan	32	0.01		
			Bot Cable Vert	32	-17.68		
			Bot Cable Norm	32	16.10		
			Bot Cable Tan	32	0.02		
		Guy C	Bottom Tension	22	22.55		
			Top Tension	22	23.02		
			Top Cable Vert	22	17.23		
			Top Cable Norm	22	15.27		
			Top Cable Tan	22	0.01		
			Bot Cable Vert	22	-15.85		
			Bot Cable Norm	22	16.05		
			Bot Cable Tan	22	0.02		
		Torque Arm Top	Max Tension	26	15.19	-13.41	0.00
			Max. Compression	31	-4.95	0.00	0.00
			Max. Mx	27	-4.45	-81.12	0.00
			Max. Vy	27	20.34	-81.12	0.00
T4	240 - 220	Leg	Max Tension	12	2.13	-0.35	1.29
			Max. Compression	33	-75.97	5.85	-3.86
			Max. Mx	33	-75.03	-27.74	7.92
			Max. My	32	-63.85	9.99	23.96
			Max. Vy	32	-10.99	10.33	23.82
			Max. Vx	27	11.10	15.43	-19.76
		Diagonal	Max Tension	33	15.82	0.00	0.00
			Max. Compression	33	-15.66	0.00	0.00
			Max. Mx	32	5.61	0.01	0.00
			Max. Vy	32	-0.01	0.00	0.00
T5	220 - 200	Leg	Max Tension	32	3.20	-0.88	-1.10
			Max. Compression	23	-85.95	0.80	-3.23
			Max. Mx	27	-77.88	-37.57	-9.51
			Max. My	21	-74.49	10.43	35.33
			Max. Vy	27	-15.61	14.44	-2.88
			Max. Vx	21	13.93	10.43	35.33
		Diagonal	Max Tension	27	11.76	0.00	0.00
			Max. Compression	32	-13.37	0.00	0.00
			Max. Mx	32	-0.29	0.02	0.00
			Max. Vy	32	-0.01	0.00	0.00
		Guy A	Bottom Tension	27	26.39		
			Top Tension	27	26.85		
			Top Cable Vert	27	19.71		
			Top Cable Norm	27	18.24		
			Top Cable Tan	27	0.02		
			Bot Cable Vert	27	-18.42		
			Bot Cable Norm	27	18.90		
			Bot Cable Tan	27	0.01		
		Guy B	Bottom Tension	32	25.86		
			Top Tension	32	26.31		
			Top Cable Vert	32	19.17		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Top Cable Norm	32	18.02		
			Top Cable Tan	32	0.00		
			Bot Cable Vert	32	-17.89		
			Bot Cable Norm	32	18.67		
			Bot Cable Tan	32	0.03		
		Guy C	Bottom Tension	21	24.30		
			Top Tension	21	24.69		
			Top Cable Vert	21	16.84		
			Top Cable Norm	21	18.06		
			Top Cable Tan	21	0.12		
			Bot Cable Vert	21	-15.66		
			Bot Cable Norm	21	18.58		
			Bot Cable Tan	21	0.22		
		Torque Arm Top	Max Tension	26	19.43	0.00	0.00
			Max. Compression	26	-7.95	0.00	0.00
			Max. Mx	27	-6.49	-81.60	0.00
			Max. Vy	27	20.46	-81.60	0.00
T6	200 - 180	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	23	-90.67	1.37	-0.26
			Max. Mx	21	-73.34	-4.62	-0.06
			Max. My	32	-76.26	1.97	4.31
			Max. Vy	21	-1.93	-4.35	-0.64
			Max. Vx	20	-2.13	-0.22	1.72
		Diagonal	Max Tension	30	10.15	0.00	0.00
			Max. Compression	24	-8.49	0.00	0.00
			Max. Mx	31	2.26	0.01	0.00
			Max. Vy	31	-0.01	0.00	0.00
T7	180 - 160	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	19	-142.97	-0.49	0.43
			Max. Mx	27	-97.34	34.79	-9.46
			Max. My	32	-103.02	-8.69	33.87
			Max. Vy	27	-14.52	34.79	-9.46
			Max. Vx	32	-13.12	-8.69	33.87
		Diagonal	Max Tension	31	16.32	0.00	0.00
			Max. Compression	34	-14.62	0.00	0.00
			Max. Mx	31	7.40	0.02	0.00
			Max. Vy	31	-0.01	0.00	0.00
		Guy A	Bottom Tension	26	23.82		
			Top Tension	26	24.18		
			Top Cable Vert	26	15.68		
			Top Cable Norm	26	18.41		
			Top Cable Tan	26	0.22		
			Bot Cable Vert	26	-14.64		
			Bot Cable Norm	26	18.79		
			Bot Cable Tan	26	0.35		
		Guy B	Bottom Tension	33	23.14		
			Top Tension	33	23.50		
			Top Cable Vert	33	15.06		
			Top Cable Norm	33	18.04		
			Top Cable Tan	33	0.09		
			Bot Cable Vert	33	-14.03		
			Bot Cable Norm	33	18.41		
			Bot Cable Tan	33	0.14		
		Guy C	Bottom Tension	21	22.98		
			Top Tension	21	23.28		
			Top Cable Vert	21	13.40		
			Top Cable Norm	21	19.04		
			Top Cable Tan	21	0.10		
			Bot Cable Vert	21	-12.46		
			Bot Cable Norm	21	19.31		
			Bot Cable Tan	21	0.15		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Torque Arm Top	Max Tension	23	21.15	-7.37	0.00
			Max. Compression	23	-9.52	0.00	0.00
			Max. Mx	26	-0.07	-63.34	0.00
			Max. Vy	26	15.90	-63.34	0.00
T8	160 - 140	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	19	-122.19	0.72	-0.13
			Max. Mx	26	-102.68	-15.82	4.03
			Max. My	31	-108.46	5.80	-18.21
			Max. Vy	26	-6.31	-15.82	4.03
			Max. Vx	21	6.63	12.82	12.95
		Diagonal	Max Tension	22	11.29	0.00	0.00
			Max. Compression	30	-9.62	0.00	0.00
			Max. Mx	31	-7.52	0.01	0.00
			Max. Vy	31	-0.01	0.00	0.00
T9	140 - 120	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	22	-121.66	1.17	0.56
			Max. Mx	23	-86.92	-4.24	0.34
			Max. My	25	-95.10	-1.73	-4.05
			Max. Vy	31	1.29	3.29	1.46
			Max. Vx	34	-1.21	3.11	0.01
		Diagonal	Max Tension	22	3.81	0.00	0.00
			Max. Compression	5	-3.58	0.00	0.00
			Max. Mx	26	1.39	0.01	0.00
			Max. Vy	26	-0.01	0.00	0.00
T10	120 - 100	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	27	-133.61	0.08	-0.58
			Max. Mx	28	-73.27	28.15	-6.87
			Max. My	34	-93.95	-7.53	29.40
			Max. Vy	28	12.06	27.63	-8.24
			Max. Vx	34	11.75	-7.25	28.38
		Diagonal	Max Tension	30	13.51	0.00	0.00
			Max. Compression	28	-14.47	0.00	0.00
			Max. Mx	24	-2.13	0.02	0.00
			Max. Vy	24	-0.01	0.00	0.00
		Guy A	Bottom Tension	27	19.28		
			Top Tension	27	19.48		
			Top Cable Vert	27	9.76		
			Top Cable Norm	27	16.85		
			Top Cable Tan	27	0.00		
			Bot Cable Vert	27	-9.14		
			Bot Cable Norm	27	16.98		
			Bot Cable Tan	27	0.00		
		Guy B	Bottom Tension	33	18.68		
			Top Tension	33	18.87		
			Top Cable Vert	33	9.25		
			Top Cable Norm	33	16.45		
			Top Cable Tan	33	0.05		
			Bot Cable Vert	33	-8.63		
			Bot Cable Norm	33	16.57		
			Bot Cable Tan	33	0.09		
		Guy C	Bottom Tension	22	18.46		
			Top Tension	22	18.60		
			Top Cable Vert	22	7.41		
			Top Cable Norm	22	17.06		
			Top Cable Tan	22	0.01		
			Bot Cable Vert	22	-6.88		
			Bot Cable Norm	22	17.13		
			Bot Cable Tan	22	0.00		
		Torque Arm Top	Max Tension	23	19.51	-1.44	-0.00
			Max. Compression	23	-9.16	0.00	0.00
			Max. Mx	26	-0.35	-40.08	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	26	10.10	-40.08	0.00
T11	100 - 80	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	32	-217.17	-2.35	1.02
			Max. Mx	23	-101.11	10.23	4.83
			Max. My	24	-121.48	-0.66	11.10
			Max. Vy	28	-4.02	5.72	3.60
			Max. Vx	25	4.49	6.37	-3.88
		Diagonal	Max Tension	22	12.29	0.00	0.00
			Max. Compression	30	-12.54	0.00	0.00
			Max. Mx	24	-3.89	0.01	0.00
			Max. Vy	24	-0.01	0.00	0.00
T12	80 - 60	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	32	-216.68	1.14	6.00
			Max. Mx	33	-211.07	-10.41	0.73
			Max. My	31	-185.33	2.90	11.21
			Max. Vy	31	-3.69	2.91	11.21
			Max. Vx	31	-3.41	2.91	11.21
		Diagonal	Max Tension	34	8.16	0.00	0.00
			Max. Compression	31	-8.10	0.00	0.00
			Max. Mx	29	3.94	0.01	0.00
			Max. Vy	29	-0.01	0.00	0.00
T13	60 - 40	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	32	-204.17	-0.19	-1.99
			Max. Mx	19	-137.95	12.81	3.03
			Max. My	31	-185.50	-5.61	-19.56
			Max. Vy	34	5.38	12.60	2.89
			Max. Vx	31	-6.66	3.12	2.65
		Diagonal	Max Tension	28	7.06	0.00	0.00
			Max. Compression	31	-5.27	0.00	0.00
			Max. Mx	34	1.65	0.01	0.00
			Max. Vy	34	-0.01	0.00	0.00
		Guy A	Bottom Tension	27	9.17		
			Top Tension	27	9.25		
			Top Cable Vert	27	3.17		
			Top Cable Norm	27	8.69		
			Top Cable Tan	27	0.00		
			Bot Cable Vert	27	-2.85		
			Bot Cable Norm	27	8.72		
			Bot Cable Tan	27	0.00		
		Guy B	Bottom Tension	33	9.66		
			Top Tension	33	9.73		
			Top Cable Vert	33	3.19		
			Top Cable Norm	33	9.20		
			Top Cable Tan	33	0.04		
			Bot Cable Vert	33	-2.86		
			Bot Cable Norm	33	9.23		
			Bot Cable Tan	33	0.05		
		Guy C	Bottom Tension	22	8.79		
			Top Tension	22	8.84		
			Top Cable Vert	22	1.89		
			Top Cable Norm	22	8.63		
			Top Cable Tan	22	0.00		
			Bot Cable Vert	22	-1.63		
			Bot Cable Norm	22	8.64		
			Bot Cable Tan	22	0.00		
		Torque Arm Top	Max Tension	31	9.95	0.00	0.00
			Max. Compression	31	-4.41	0.00	0.00
			Max. Mx	33	-3.60	-13.98	-0.00
			Max. Vy	33	3.58	-13.98	-0.00
T14	40 - 26.67	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	32	-202.20	-0.22	0.53

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	31	-193.24	6.68	-0.42
			Max. My	31	-191.83	-0.83	3.27
			Max. Vy	31	-2.38	1.79	-0.51
			Max. Vx	31	-1.11	-0.83	3.27
		Diagonal	Max Tension	33	3.96	0.00	0.00
			Max. Compression	31	-4.17	0.00	0.00
			Max. Mx	34	3.70	0.01	0.00
			Max. Vy	34	-0.01	0.00	0.00
T15	26.67 - 20	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	32	-189.70	-0.47	-0.50
			Max. Mx	31	-184.02	2.95	-0.98
			Max. My	34	-180.02	-2.28	1.02
			Max. Vy	31	1.30	2.95	-0.98
			Max. Vx	31	-0.48	-1.60	0.78
		Diagonal	Max Tension	31	4.86	0.00	0.00
			Max. Compression	32	-4.24	0.00	0.00
			Max. Mx	31	4.86	0.01	0.00
			Max. Vy	31	-0.01	0.00	0.00
T16	20 - 13.33	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	32	-178.32	0.39	0.09
			Max. Mx	31	-174.44	-1.60	0.78
			Max. My	26	-160.23	0.41	0.93
			Max. Vy	31	-0.90	1.34	0.83
			Max. Vx	26	-0.49	-0.19	-0.67
		Diagonal	Max Tension	33	6.24	0.00	0.00
			Max. Compression	31	-6.68	0.00	0.00
			Max. Mx	31	4.84	0.01	0.00
			Max. Vy	31	-0.01	0.00	0.00
T17	13.33 - 6.67	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	32	-163.97	-0.06	-0.16
			Max. Mx	30	-151.54	-1.33	-0.21
			Max. My	26	-156.50	0.41	0.93
			Max. Vy	29	-0.61	0.60	0.53
			Max. Vx	27	-0.58	-0.89	-0.21
		Diagonal	Max Tension	34	8.63	0.00	0.00
			Max. Compression	31	-8.39	0.00	0.00
			Max. Mx	31	7.82	0.01	0.00
			Max. Vy	31	-0.01	0.00	0.00
T18	6.67 - 0	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	33	-158.69	-0.30	1.08
			Max. Mx	19	-117.68	0.68	-0.35
			Max. My	27	-129.57	-0.22	-1.92
			Max. Vy	21	0.27	-0.30	-0.21
			Max. Vx	27	0.72	-0.22	-1.92
		Diagonal	Max Tension	1	0.00	0.00	0.00
			Max. Compression	31	-19.45	-0.54	0.17
			Max. Mx	33	-18.20	1.11	-0.23
			Max. My	28	-18.69	1.10	-0.26
			Max. Vy	33	0.78	0.00	0.00
			Max. Vx	28	-0.18	1.10	-0.26
		Horizontal	Max Tension	31	15.50	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
		Top Girt	Max Tension	28	34.94	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	32	27.80	0.01	0.00
			Max. Vy	32	-0.01	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Mast	Max. Vert	30	400.20	1.41	-0.33
	Max. H_x	15	284.82	4.07	2.27
	Max. H_z	2	297.90	0.24	3.48
	Max. M_x	1	0.00	0.48	0.30
	Max. M_z	1	0.00	0.48	0.30
	Max. Torsion	27	1.80	0.53	-2.85
	Min. Vert	1	227.58	0.48	0.30
	Min. H_x	5	278.14	-3.16	2.67
	Min. H_z	10	286.56	0.68	-3.73
	Min. M_x	1	0.00	0.48	0.30
	Min. M_z	1	0.00	0.48	0.30
	Min. Torsion	19	-2.04	0.09	1.90
Guy C @ 235 ft Elev 9 ft Azimuth 240 deg	Max. Vert	13	-4.68	-4.17	2.41
	Max. H_x	13	-4.68	-4.17	2.41
	Max. H_z	21	-127.47	-153.86	90.87
	Min. Vert	22	-128.64	-156.13	90.09
	Min. H_x	22	-128.64	-156.13	90.09
	Min. H_z	13	-4.68	-4.17	2.41
Guy B @ 235 ft Elev -20 ft Azimuth 120 deg	Max. Vert	7	-6.80	4.77	2.75
	Max. H_x	32	-146.43	153.90	88.87
	Max. H_z	33	-147.04	153.64	91.02
	Min. Vert	33	-147.04	153.64	91.02
	Min. H_x	7	-6.80	4.77	2.75
	Min. H_z	7	-6.80	4.77	2.75
Guy A @ 235 ft Elev -24 ft Azimuth 0 deg	Max. Vert	2	-7.10	0.00	-5.60
	Max. H_x	31	-83.25	9.97	-95.52
	Max. H_z	2	-7.10	0.00	-5.60
	Min. Vert	27	-150.11	-0.09	-178.31
	Min. H_x	23	-87.82	-9.91	-100.70
	Min. H_z	27	-150.11	-0.09	-178.31

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear$_x$ K	Shear$_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	227.58	-0.48	-0.30	0.00	0.00	0.10
Dead+Wind 0 deg - No Ice+Guy	297.90	-0.24	-3.48	0.00	0.00	1.56
Dead+Wind 30 deg - No Ice+Guy	290.09	1.88	-3.34	0.00	0.00	1.78
Dead+Wind 45 deg - No Ice+Guy	282.33	2.71	-3.09	0.00	0.00	1.80
Dead+Wind 60 deg - No Ice+Guy	278.14	3.16	-2.67	0.00	0.00	1.57
Dead+Wind 90 deg - No Ice+Guy	292.10	2.93	-1.02	0.00	0.00	0.64
Dead+Wind 120 deg - No	300.79	2.01	0.99	0.00	0.00	-0.09

Load Combination	Vertical K	Shear$_x$ K	Shear$_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Ice+Guy						
Dead+Wind 135 deg - No Ice+Guy	302.07	1.31	1.88	0.00	0.00	-0.44
Dead+Wind 150 deg - No Ice+Guy	299.05	0.58	2.70	0.00	0.00	-0.74
Dead+Wind 180 deg - No Ice+Guy	286.56	-0.68	3.73	0.00	0.00	-1.42
Dead+Wind 210 deg - No Ice+Guy	301.33	-1.62	2.84	0.00	0.00	-1.54
Dead+Wind 225 deg - No Ice+Guy	306.79	-2.24	2.02	0.00	0.00	-1.40
Dead+Wind 240 deg - No Ice+Guy	307.68	-2.87	1.12	0.00	0.00	-1.19
Dead+Wind 270 deg - No Ice+Guy	300.31	-3.82	-0.79	0.00	0.00	-0.54
Dead+Wind 300 deg - No Ice+Guy	284.82	-4.07	-2.27	0.00	0.00	0.38
Dead+Wind 315 deg - No Ice+Guy	289.57	-3.48	-2.65	0.00	0.00	0.67
Dead+Wind 330 deg - No Ice+Guy	296.11	-2.49	-2.97	0.00	0.00	1.02
Dead+Ice+Temp+Guy	288.84	-0.51	-0.31	0.00	0.00	0.13
Dead+Wind 0 deg+Ice+Temp+Guy	392.06	-0.09	-1.90	0.00	0.00	2.04
Dead+Wind 30 deg+Ice+Temp+Guy	388.44	1.60	-2.49	0.00	0.00	1.80
Dead+Wind 45 deg+Ice+Temp+Guy	385.55	2.16	-2.71	0.00	0.00	1.77
Dead+Wind 60 deg+Ice+Temp+Guy	384.89	2.29	-2.55	0.00	0.00	1.64
Dead+Wind 90 deg+Ice+Temp+Guy	391.34	1.50	-1.60	0.00	0.00	1.03
Dead+Wind 120 deg+Ice+Temp+Guy	394.91	0.52	0.04	0.00	0.00	-0.14
Dead+Wind 135 deg+Ice+Temp+Guy	395.07	0.04	0.88	0.00	0.00	-0.78
Dead+Wind 150 deg+Ice+Temp+Guy	397.71	-0.32	1.73	0.00	0.00	-1.30
Dead+Wind 180 deg+Ice+Temp+Guy	392.60	-0.53	2.85	0.00	0.00	-1.80
Dead+Wind 210 deg+Ice+Temp+Guy	399.59	-0.78	1.91	0.00	0.00	-1.62
Dead+Wind 225 deg+Ice+Temp+Guy	398.76	-1.01	1.04	0.00	0.00	-1.51
Dead+Wind 240 deg+Ice+Temp+Guy	400.20	-1.41	0.33	0.00	0.00	-1.47
Dead+Wind 270 deg+Ice+Temp+Guy	397.46	-2.51	-0.76	0.00	0.00	-1.20
Dead+Wind 300 deg+Ice+Temp+Guy	390.31	-3.39	-1.62	0.00	0.00	0.18
Dead+Wind 315 deg+Ice+Temp+Guy	393.71	-2.66	-1.69	0.00	0.00	1.40
Dead+Wind 330 deg+Ice+Temp+Guy	395.17	-1.89	-1.67	0.00	0.00	1.81
Dead+Wind 0 deg - Service+Guy	230.74	-0.45	-1.74	0.00	0.00	0.50
Dead+Wind 30 deg - Service+Guy	230.56	0.26	-1.55	0.00	0.00	0.55
Dead+Wind 45 deg - Service+Guy	230.66	0.54	-1.34	0.00	0.00	0.52
Dead+Wind 60 deg -	230.77	0.76	-1.05	0.00	0.00	0.46

Load Combination	Vertical K	Shear$_x$ K	Shear$_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Service+Guy						
Dead+Wind 90 deg - Service+Guy	230.79	0.91	-0.36	0.00	0.00	0.27
Dead+Wind 120 deg - Service+Guy	231.17	0.70	0.36	0.00	0.00	0.07
Dead+Wind 135 deg - Service+Guy	231.25	0.47	0.66	0.00	0.00	-0.03
Dead+Wind 150 deg - Service+Guy	231.33	0.17	0.90	0.00	0.00	-0.12
Dead+Wind 180 deg - Service+Guy	231.76	-0.53	1.11	0.00	0.00	-0.28
Dead+Wind 210 deg - Service+Guy	231.94	-1.22	0.95	0.00	0.00	-0.35
Dead+Wind 225 deg - Service+Guy	232.18	-1.52	0.73	0.00	0.00	-0.33
Dead+Wind 240 deg - Service+Guy	232.33	-1.74	0.44	0.00	0.00	-0.27
Dead+Wind 270 deg - Service+Guy	231.82	-1.92	-0.27	0.00	0.00	-0.07
Dead+Wind 300 deg - Service+Guy	231.52	-1.71	-0.98	0.00	0.00	0.14
Dead+Wind 315 deg - Service+Guy	231.26	-1.48	-1.28	0.00	0.00	0.24
Dead+Wind 330 deg - Service+Guy	230.97	-1.18	-1.51	0.00	0.00	0.33

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-116.12	0.00	-0.00	116.12	0.00	0.001%
2	-0.39	-116.88	-117.72	0.39	116.88	117.72	0.001%
3	58.35	-115.90	-101.67	-58.35	115.90	101.66	0.000%
4	82.73	-115.24	-82.88	-82.73	115.24	82.88	0.000%
5	101.40	-114.97	-58.54	-101.40	114.97	58.54	0.000%
6	117.21	-115.93	0.31	-117.21	115.93	-0.31	0.002%
7	101.76	-116.92	59.20	-101.76	116.92	-59.20	0.003%
8	83.24	-116.71	83.52	-83.24	116.71	-83.52	0.001%
9	59.00	-116.14	102.16	-59.00	116.14	-102.16	0.000%
10	0.39	-115.36	117.72	-0.39	115.36	-117.72	0.000%
11	-58.35	-116.34	101.67	58.35	116.34	-101.67	0.000%
12	-82.73	-117.00	82.88	82.73	117.00	-82.88	0.001%
13	-101.40	-117.27	58.54	101.39	117.27	-58.54	0.002%
14	-117.21	-116.31	-0.31	117.21	116.31	0.31	0.000%
15	-101.76	-115.32	-59.20	101.76	115.32	59.20	0.000%
16	-83.24	-115.53	-83.52	83.24	115.53	83.52	0.000%
17	-59.00	-116.10	-102.16	59.00	116.10	102.16	0.001%
18	0.00	-153.77	0.00	-0.00	153.77	0.00	0.001%
19	-0.60	-155.63	-146.00	0.60	155.63	146.00	0.000%
20	72.03	-153.23	-125.47	-72.03	153.23	125.47	0.000%
21	101.02	-151.61	-101.07	-101.02	151.60	101.07	0.000%
22	122.28	-150.92	-70.57	-122.28	150.92	70.57	0.000%
23	144.69	-153.28	0.41	-144.69	153.28	-0.41	0.000%
24	126.19	-155.73	73.52	-126.19	155.73	-73.52	0.000%
25	101.77	-155.22	102.11	-101.77	155.22	-102.11	0.000%
26	73.00	-153.83	126.33	-73.00	153.83	-126.33	0.000%
27	0.60	-151.92	142.10	-0.60	151.92	-142.10	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
28	-72.03	-154.32	125.47	72.03	154.32	-125.47	0.000%
29	-101.02	-155.94	101.07	101.02	155.94	-101.07	0.000%
30	-125.66	-156.62	72.52	125.66	156.62	-72.52	0.000%
31	-144.69	-154.26	-0.41	144.69	154.26	0.41	0.000%
32	-122.82	-151.81	-71.57	122.82	151.81	71.57	0.000%
33	-101.77	-152.32	-102.11	101.77	152.32	102.11	0.001%
34	-73.00	-153.71	-126.33	72.99	153.71	126.33	0.000%
35	-0.12	-116.35	-36.34	0.12	116.35	36.34	0.001%
36	18.01	-116.05	-31.39	-18.01	116.05	31.39	0.001%
37	25.54	-115.85	-25.59	-25.54	115.85	25.59	0.001%
38	31.30	-115.76	-18.07	-31.30	115.76	18.07	0.001%
39	36.19	-116.06	0.10	-36.19	116.06	-0.10	0.001%
40	31.42	-116.37	18.28	-31.42	116.37	-18.28	0.001%
41	25.70	-116.30	25.78	-25.70	116.30	-25.78	0.001%
42	18.21	-116.13	31.54	-18.21	116.13	-31.54	0.001%
43	0.12	-115.89	36.34	-0.12	115.89	-36.34	0.001%
44	-18.01	-116.19	31.39	18.01	116.19	-31.39	0.001%
45	-25.54	-116.39	25.59	25.54	116.39	-25.59	0.001%
46	-31.30	-116.48	18.07	31.30	116.48	-18.07	0.001%
47	-36.19	-116.18	-0.10	36.19	116.18	0.10	0.001%
48	-31.42	-115.87	-18.28	31.42	115.87	18.28	0.001%
49	-25.70	-115.94	-25.78	25.70	115.94	25.78	0.001%
50	-18.21	-116.11	-31.54	18.21	116.11	31.54	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	9	0.00000001	0.00005899
2	Yes	16	0.00004489	0.00008302
3	Yes	17	0.00005744	0.00009314
4	Yes	28	0.00000001	0.00000000
5	Yes	16	0.00006865	0.00009578
6	Yes	15	0.00008468	0.00009251
7	Yes	15	0.00009149	0.00009522
8	Yes	16	0.00006110	0.00008848
9	Yes	22	0.00000001	0.00009992
10	Yes	22	0.00006165	0.00008990
11	Yes	18	0.00006395	0.00009935
12	Yes	17	0.00004859	0.00008299
13	Yes	16	0.00006870	0.00008169
14	Yes	19	0.00007296	0.00009202
15	Yes	18	0.00009627	0.00009644
16	Yes	17	0.00009682	0.00007940
17	Yes	17	0.00007720	0.00007985
18	Yes	9	0.00000001	0.00006664
19	Yes	28	0.00009967	0.00006335
20	Yes	59	0.00009378	0.00003738
21	Yes	74	0.00009499	0.00003841
22	Yes	62	0.00009682	0.00003704
23	Yes	63	0.00009516	0.00004555
24	Yes	27	0.00009010	0.00004452
25	Yes	42	0.00009926	0.00003867
26	Yes	59	0.00009353	0.00003548
27	Yes	95	0.00009612	0.00003827
28	Yes	71	0.00009298	0.00003942

29	Yes	47	0.00009732	0.00004009
30	Yes	31	0.00008902	0.00005494
31	Yes	72	0.00009397	0.00003756
32	Yes	92	0.00009682	0.00004402
33	Yes	53	0.00008896	0.00008158
34	Yes	67	0.00009595	0.00004405
35	Yes	11	0.00000001	0.00006098
36	Yes	11	0.00000001	0.00007708
37	Yes	11	0.00000001	0.00007123
38	Yes	11	0.00000001	0.00005819
39	Yes	11	0.00000001	0.00003983
40	Yes	11	0.00000001	0.00004792
41	Yes	11	0.00000001	0.00004829
42	Yes	11	0.00000001	0.00004869
43	Yes	11	0.00000001	0.00004845
44	Yes	11	0.00000001	0.00004057
45	Yes	11	0.00000001	0.00005006
46	Yes	11	0.00000001	0.00005995
47	Yes	11	0.00000001	0.00006142
48	Yes	11	0.00000001	0.00006332
49	Yes	11	0.00000001	0.00005273
50	Yes	11	0.00000001	0.00004094

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	323 - 288	3.489	48	0.0848	0.2153
T1	288 - 280	3.194	43	0.1200	0.2153
T2	280 - 260	3.224	43	0.1035	0.3540
T3	260 - 240	3.402	43	0.0869	0.2446
T4	240 - 220	3.640	43	0.0555	0.1428
T5	220 - 200	3.495	43	0.0420	0.1597
T6	200 - 180	3.557	43	0.0352	0.1096
T7	180 - 160	3.439	43	0.0615	0.1060
T8	160 - 140	3.509	42	0.0357	0.1294
T9	140 - 120	3.436	41	0.0360	0.1085
T10	120 - 100	3.230	41	0.0765	0.1371
T11	100 - 80	2.908	41	0.1250	0.1464
T12	80 - 60	2.743	46	0.1354	0.1601
T13	60 - 40	2.350	46	0.1283	0.1144
T14	40 - 26.67	1.777	46	0.1662	0.1183
T15	26.67 - 20	1.270	47	0.1992	0.1228
T16	20 - 13.33	0.976	47	0.2130	0.1162
T17	13.33 - 6.67	0.666	47	0.2244	0.1376
T18	6.67 - 0	0.333	47	0.2320	0.1106

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
327.00	Flash Beacon Lighting	48	3.489	0.0848	0.2153	100960
325.00	4' x 5/8" Lightning Rod	48	3.489	0.0848	0.2153	100960
305.00	Shively 2-Bay 6813 w/ Radome	43	3.269	0.1031	0.3201	28044

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
284.00	Guy	43	3.205	0.1124	0.2043	18727
280.00	PD1150	43	3.224	0.1035	0.3540	20329
265.00	AP16-850/065 w/Mount Pipe	43	3.339	0.0905	0.2120	20015
263.00	OGC9-825	43	3.362	0.0893	0.2279	20059
261.00	DB810K	43	3.388	0.0878	0.2398	20420
260.00	Rohn 6' Side-Arm(1)	43	3.402	0.0869	0.2446	21919
259.00	ClearGain TMA	43	3.416	0.0858	0.2475	25121
257.00	DB810K	43	3.446	0.0834	0.2484	44720
256.67	Guy	43	3.451	0.0829	0.2480	52831
254.00	OGC9-825	43	3.493	0.0789	0.2393	56609
240.00	(4) DB844H90 w/Mount Pipe	43	3.640	0.0555	0.1428	6839
216.67	Guy	43	3.492	0.0411	0.1577	10819
209.00	Shively 1-Bay 6813 w/o Radome	43	3.524	0.0387	0.1369	158172
198.00	Shively 1-Bay 6813 w/ Radome	43	3.554	0.0376	0.1047	11580
186.00	(4) DUO1417-8670 w/Mount Pipe	43	3.477	0.0570	0.0984	38191
174.00	DB806M 6' Omni	42	3.450	0.0576	0.1163	27239
172.00	DB872H	42	3.459	0.0548	0.1197	40928
166.67	Guy	42	3.487	0.0459	0.1271	35686
166.00	ClearGain TMA	42	3.490	0.0447	0.1278	30102
158.50	DB589	42	3.510	0.0342	0.1284	13774
158.00	DB872H	42	3.510	0.0338	0.1279	13834
156.00	Flash Beacon Lighting	41	3.511	0.0323	0.1255	14631
154.00	2'6"x4" Pipe Mount	41	3.510	0.0314	0.1225	15968
145.50	DB809M-XC	41	3.476	0.0299	0.1078	26311
128.00	PD1108	41	3.320	0.0593	0.1282	23139
124.00	Pirod 4' Side Mount Standoff (1)	41	3.276	0.0679	0.1333	18939
121.00	Generic T-Arm Mount	41	3.241	0.0744	0.1363	17387
115.00	Andrew 6' w/Radome	41	3.169	0.0896	0.1397	22382
112.00	Andrew 6' w/Radome	41	3.129	0.0974	0.1407	21566
110.00	PD1110	41	3.100	0.1023	0.1412	17873
106.67	Guy	41	3.046	0.1110	0.1423	13905
104.00	8' Dia W/ Shroud	41	2.996	0.1173	0.1435	11819
94.00	Scala PR-850	46	2.860	0.1325	0.1534	16458
84.00	155-0007-01 w/Mount Pipe	46	2.790	0.1361	0.1619	12607
74.00	DB212-2-C	46	2.650	0.1336	0.1493	13126
56.67	Guy	46	2.267	0.1276	0.1103	29957
18.00	ASP-962	47	0.885	0.2166	0.1241	28989
13.00	1.2M	47	0.650	0.2249	0.1369	20524

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	323 - 288	17.797	15	1.4297	1.0682
T1	288 - 280	16.946	33	1.7016	1.0652
T2	280 - 260	19.228	26	1.5666	2.4252
T3	260 - 240	24.059	27	1.6884	1.4002
T4	240 - 220	31.086	32	0.8571	2.7939
T5	220 - 200	24.478	31	1.5653	0.7975
T6	200 - 180	21.876	26	0.7723	0.6739
T7	180 - 160	19.898	30	0.7774	0.5815
T8	160 - 140	19.264	30	0.4233	1.3845
T9	140 - 120	17.924	30	0.2757	0.7426
T10	120 - 100	16.791	30	0.3333	0.7420
T11	100 - 80	16.052	30	0.5115	0.6982

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T12	80 - 60	14.099	13	0.5925	0.7650
T13	60 - 40	11.494	13	0.6802	0.5313
T14	40 - 26.67	8.327	13	0.8506	0.5153
T15	26.67 - 20	5.825	13	0.9557	0.5394
T16	20 - 13.33	4.448	30	1.0001	0.5063
T17	13.33 - 6.67	3.013	13	1.0354	0.5771
T18	6.67 - 0	1.505	13	1.0586	0.4682

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
327.00	Flash Beacon Lighting	15	17.797	1.4297	1.0694	6979
325.00	4' x 5/8" Lightning Rod	15	17.797	1.4297	1.0694	6979
305.00	Shively 2-Bay 6813 w/ Radome	10	15.737	1.7254	1.3691	1939
284.00	Guy	26	18.050	1.6290	1.8406	2929
280.00	PD1150	26	19.228	1.5666	2.4252	1234
265.00	AP16-850/065 w/Mount Pipe	26	22.625	1.7761	1.4707	689
263.00	OGC9-825	26	23.048	1.7570	1.4500	571
261.00	DB810K	27	23.668	1.7171	1.4193	538
260.00	Rohn 6' Side-Arm(1)	27	24.059	1.6884	1.4002	561
259.00	ClearGain TMA	27	24.475	1.6536	1.4308	627
257.00	DB810K	27	25.366	1.5681	1.5965	1042
256.67	Guy	27	25.519	1.5521	1.6233	1204
254.00	OGC9-825	27	26.774	1.4124	1.8243	2101
240.00	(4) DB844H90 w/Mount Pipe	32	31.086	0.8571	2.7939	180
216.67	Guy	31	23.841	1.5293	0.6882	389
209.00	Shively 1-Bay 6813 w/o Radome	26	22.785	1.2003	0.6418	963
198.00	Shively 1-Bay 6813 w/ Radome	26	21.640	0.7301	0.6724	1717
186.00	(4) DUO1417-8670 w/Mount Pipe	30	20.231	0.7740	0.5377	3083
174.00	DB806M 6' Omni	30	19.683	0.7120	0.8119	2194
172.00	DB872H	30	19.628	0.6774	0.9220	2864
166.67	Guy	30	19.492	0.5677	1.2046	3890
166.00	ClearGain TMA	30	19.474	0.5530	1.2345	3956
158.50	DB589	30	19.193	0.3939	1.3770	1932
158.00	DB872H	30	19.167	0.3845	1.3703	1966
156.00	Flash Beacon Lighting	30	19.057	0.3489	1.3247	2231
154.00	2'6"x4" Pipe Mount	30	18.935	0.3164	1.2539	2696
145.50	DB809M-XC	30	18.333	0.2854	0.8129	8709
128.00	PD1108	30	17.156	0.2954	0.7406	3727
124.00	Pirod 4' Side Mount Standoff (1)	30	16.956	0.3146	0.7444	3823
121.00	Generic T-Arm Mount	30	16.829	0.3288	0.7435	4038
115.00	Andrew 6' w/Radome	30	16.629	0.3649	0.7260	7266
112.00	Andrew 6' w/Radome	30	16.543	0.3945	0.7127	8017
110.00	PD1110	30	16.483	0.4153	0.7038	5566
106.67	Guy	30	16.371	0.4500	0.6911	3199
104.00	8' Dia W/ Shroud	30	16.262	0.4765	0.6849	2389
94.00	Scala PR-850	30	15.603	0.5484	0.7390	2726
84.00	155-0007-01 w/Mount Pipe	30	14.573	0.5824	0.7728	3809
74.00	DB212-2-C	13	13.379	0.6092	0.7149	4454
56.67	Guy	13	11.007	0.7106	0.5055	6405
18.00	ASP-962	30	4.027	1.0010	0.5247	2991
13.00	1.2M	13	2.939	1.0424	0.5781	4740

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T K	Allowable T_a K	Required S.F.	Actual S.F.
T1	284.00 (A) (328)	3/4 EHS	5.83	58.30	18.74	29.15	2.000	3.110 ✓
	284.00 (A) (329)	3/4 EHS	5.83	58.30	18.07	29.15	2.000	3.226 ✓
	284.00 (B) (324)	3/4 EHS	5.83	58.30	18.40	29.15	2.000	3.168 ✓
	284.00 (B) (325)	3/4 EHS	5.83	58.30	18.85	29.15	2.000	3.093 ✓
	284.00 (C) (320)	3/4 EHS	5.83	58.30	18.16	29.15	2.000	3.211 ✓
	284.00 (C) (321)	3/4 EHS	5.83	58.30	18.34	29.15	2.000	3.178 ✓
T3	256.67 (A) (340)	3/4 EHS	5.83	58.30	24.80	29.15	2.000	2.351 ✓
	256.67 (A) (341)	3/4 EHS	5.83	58.30	24.10	29.15	2.000	2.419 ✓
	256.67 (B) (336)	3/4 EHS	5.83	58.30	24.36	29.15	2.000	2.393 ✓
	256.67 (B) (337)	3/4 EHS	5.83	58.30	24.43	29.15	2.000	2.386 ✓
	256.67 (C) (332)	3/4 EHS	5.83	58.30	22.84	29.15	2.000	2.552 ✓
	256.67 (C) (333)	3/4 EHS	5.83	58.30	23.02	29.15	2.000	2.532 ✓
T5	216.67 (A) (352)	3/4 EHS	5.83	58.30	26.85	29.15	2.000	2.171 ✓
	216.67 (A) (353)	3/4 EHS	5.83	58.30	26.03	29.15	2.000	2.240 ✓
	216.67 (B) (348)	3/4 EHS	5.83	58.30	26.22	29.15	2.000	2.223 ✓
	216.67 (B) (349)	3/4 EHS	5.83	58.30	26.31	29.15	2.000	2.216 ✓
	216.67 (C) (344)	3/4 EHS	5.83	58.30	24.41	29.15	2.000	2.388 ✓
	216.67 (C) (345)	3/4 EHS	5.83	58.30	24.69	29.15	2.000	2.361 ✓
T7	166.67 (A) (364)	3/4 EHS	5.83	58.30	24.00	29.15	2.000	2.429 ✓
	166.67 (A) (365)	3/4 EHS	5.83	58.30	24.18	29.15	2.000	2.411 ✓
	166.67 (B) (360)	3/4 EHS	5.83	58.30	23.12	29.15	2.000	2.522 ✓
	166.67 (B) (361)	3/4 EHS	5.83	58.30	23.50	29.15	2.000	2.481 ✓
	166.67 (C) (356)	3/4 EHS	5.83	58.30	22.58	29.15	2.000	2.582 ✓
	166.67 (C) (357)	3/4 EHS	5.83	58.30	23.28	29.15	2.000	2.504 ✓
T10	106.67 (A) (376)	5/8 EHS	4.24	42.40	19.48	21.20	2.000	2.177 ✓
	106.67 (A) (377)	5/8 EHS	4.24	42.40	18.48	21.20	2.000	2.294 ✓
	106.67 (B) (372)	5/8 EHS	4.24	42.40	18.34	21.20	2.000	2.311 ✓
	106.67 (B) (373)	5/8 EHS	4.24	42.40	18.87	21.20	2.000	2.247 ✓

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T K	Allowable T_a K	Required S.F.	Actual S.F.
	106.67 (C) (368)	5/8 EHS	4.24	42.40	17.83	21.20	2.000	2.378 ✓
	106.67 (C) (369)	5/8 EHS	4.24	42.40	18.60	21.20	2.000	2.279 ✓
T13	56.67 (A) (388)	7/16 EHS	2.08	20.80	9.25	10.40	2.000	2.248 ✓
	56.67 (A) (389)	7/16 EHS	2.08	20.80	8.72	10.40	2.000	2.386 ✓
	56.67 (B) (384)	7/16 EHS	2.08	20.80	9.73	10.40	2.000	2.137 ✓
	56.67 (B) (385)	7/16 EHS	2.08	20.80	9.65	10.40	2.000	2.155 ✓
	56.67 (C) (380)	7/16 EHS	2.08	20.80	8.56	10.40	2.000	2.429 ✓
	56.67 (C) (381)	7/16 EHS	2.08	20.80	8.84	10.40	2.000	2.353 ✓

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L1	323 - 288 (1)	10.75" x 0.843" Pipe Mast	35.00	35.00	119.5	10.461	26.2373	-3.84	274.47	0.014

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$
L1	323 - 288 (1)	10.75" x 0.843" Pipe Mast	30.24	-6.016	33.000	0.182	0.00	0.000	33.000	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	323 - 288 (1)	10.75" x 0.843" Pipe Mast	0.014	0.182	0.000	0.196 ✓	1.066	H1-3 ✓

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	Mast Stability Index	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	288 - 280	2	8.00	4.00	96.0 K=1.00	1.00	15.618	3.1416	-25.73	49.07	0.524
T2	280 - 260	2	20.00	3.33	80.0 K=1.00	1.00	19.012	3.1416	-34.28	59.73	0.574
T3	260 - 240	2 1/4	20.00	3.33	71.1 K=1.00	1.00	20.731	3.9761	-81.88	82.43	0.993
T4	240 - 220	2 1/4	20.00	3.33	71.1 K=1.00	1.00	20.731	3.9761	-75.97	82.43	0.922
T5	220 - 200	2 1/2	20.00	3.33	64.0 K=1.00	1.00	22.023	4.9087	-85.95	108.11	0.795
T6	200 - 180	2 1/2	20.00	3.33	64.0 K=1.00	1.00	22.023	4.9087	-90.67	108.11	0.839
T7	180 - 160	2 3/4	20.00	3.33	58.2 K=1.00	1.00	23.025	5.9396	-142.97	136.76	1.045
T8	160 - 140	2 1/2	20.00	3.33	64.0 K=1.00	1.00	22.023	4.9087	-122.19	108.11	1.130
T9	140 - 120	2 3/4	20.00	3.33	58.2 K=1.00	1.00	23.025	5.9396	-121.67	136.76	0.890
T10	120 - 100	2 3/4	20.00	3.33	58.2 K=1.00	1.00	23.025	5.9396	-133.61	136.76	0.977
T11	100 - 80	3	20.00	3.33	53.3 K=1.00	1.00	23.823	7.0686	-217.17	168.39	1.290
T12	80 - 60	3	20.00	3.33	53.3 K=1.00	1.00	23.823	7.0686	-216.08	168.39	1.283
T13	60 - 40	3	20.00	3.33	53.3 K=1.00	1.00	23.823	7.0686	-204.17	168.39	1.212
T14	40 - 26.67	3	13.33	3.33	53.3 K=1.00	1.00	23.825	7.0686	-202.19	168.41	1.201
T15	26.67 - 20	3	6.67	3.34	53.4 K=1.00	1.00	23.819	7.0686	-189.70	168.36	1.127
T16	20 - 13.33	3	6.67	3.34	53.4 K=1.00	1.00	23.819	7.0686	-178.32	168.36	1.059
T17	13.33 - 6.67	3	6.66	3.33	53.3 K=1.00	1.00	23.831	7.0686	-163.97	168.45	0.973
T18	6.67 - 0	3	7.00	3.50	14.0 K=0.25	0.93	26.950	7.0686	-158.69	190.50	0.833

Leg Bending Design Data (Compression)

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_z kip-ft	Actual f_{bz} ksi	Allow. F_{bz} ksi	Ratio $\frac{f_{bz}}{F_{bz}}$
T1	288 - 280	2	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T2	280 - 260	2	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T3	260 - 240	2 1/4	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T4	240 - 220	2 1/4	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T5	220 - 200	2 1/2	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T6	200 - 180	2 1/2	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T7	180 - 160	2 3/4	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T8	160 - 140	2 1/2	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T9	140 - 120	2 3/4	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T10	120 - 100	2 3/4	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T11	100 - 80	3	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T12	80 - 60	3	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
T13	60 - 40	3	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T14	40 - 26.67	3	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T15	26.67 - 20	3	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T16	20 - 13.33	3	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T17	13.33 - 6.67	3	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T18	6.67 - 0	3	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000

Leg Interaction Design Data (Compression)

Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	288 - 280	2	0.524	0.000	0.000	0.524 ✓	1.333	H1-3 ✓
T2	280 - 260	2	0.574	0.000	0.000	0.574 ✓	1.333	H1-3 ✓
T3	260 - 240	2 1/4	0.993	0.000	0.000	0.993 ✓	1.333	H1-3 ✓
T4	240 - 220	2 1/4	0.922	0.000	0.000	0.922 ✓	1.333	H1-3 ✓
T5	220 - 200	2 1/2	0.795	0.000	0.000	0.795 ✓	1.333	H1-3 ✓
T6	200 - 180	2 1/2	0.839	0.000	0.000	0.839 ✓	1.333	H1-3 ✓
T7	180 - 160	2 3/4	1.045	0.000	0.000	1.045 ✓	1.333	H1-3 ✓
T8	160 - 140	2 1/2	1.130	0.000	0.000	1.130 ✓	1.333	H1-3 ✓
T9	140 - 120	2 3/4	0.890	0.000	0.000	0.890 ✓	1.333	H1-3 ✓
T10	120 - 100	2 3/4	0.977	0.000	0.000	0.977 ✓	1.333	H1-3 ✓
T11	100 - 80	3	1.290	0.000	0.000	1.290 ✓	1.333	H1-3 ✓
T12	80 - 60	3	1.283	0.000	0.000	1.283 ✓	1.333	H1-3 ✓
T13	60 - 40	3	1.212	0.000	0.000	1.212 ✓	1.333	H1-3 ✓
T14	40 - 26.67	3	1.201	0.000	0.000	1.201 ✓	1.333	H1-3 ✓
T15	26.67 - 20	3	1.127	0.000	0.000	1.127 ✓	1.333	H1-3 ✓
T16	20 - 13.33	3	1.059	0.000	0.000	1.059 ✓	1.333	H1-3 ✓
T17	13.33 - 6.67	3	0.973	0.000	0.000	0.973 ✓	1.333	H1-3 ✓
T18	6.67 - 0	3	0.833	0.000	0.000	0.833 ✓	1.333	H1-3 ✓

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	288 - 280	1 3/8	5.43	5.18	126.6 K=0.70	9.321	1.4849	-5.01	13.84	0.362 ✓
T2	280 - 260	1 3/8	4.96	4.73	115.6 K=0.70	10.905	1.4849	-5.42	16.19	0.335 ✓
T3	260 - 240	1 3/8	4.96	4.70	114.9 K=0.70	11.001	1.4849	-15.28	16.34	0.935 ✓
T4	240 - 220	1 3/8	4.96	4.70	114.9	11.001	1.4849	-15.66	16.34	0.959

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio P / P_a
					K=0.70					✓
T5	220 - 200	1 1/2	4.96	4.67	104.7	12.374	1.7672	-13.37	21.87	0.611
					K=0.70					✓
T6	200 - 180	1 1/4	4.96	4.67	125.6	9.460	1.2272	-8.49	11.61	0.731
					K=0.70					✓
T7	180 - 160	1 1/2	4.96	4.65	104.1	12.456	1.7672	-14.62	22.01	0.664
					K=0.70					✓
T8	160 - 140	1 3/8	4.96	4.67	114.2	11.097	1.4849	-9.62	16.48	0.584
					K=0.70					✓
T9	140 - 120	1 1/4	4.96	4.65	124.9	9.572	1.2272	-3.58	11.75	0.305
					K=0.70					✓
T10	120 - 100	1 1/2	4.96	4.65	104.1	12.456	1.7672	-14.47	22.01	0.657
					K=0.70					✓
T11	100 - 80	1 3/8	4.96	4.62	112.8	11.286	1.4849	-12.54	16.76	0.748
					K=0.70					✓
T12	80 - 60	1 1/4	4.96	4.62	124.1	9.684	1.2272	-8.10	11.88	0.682
					K=0.70					✓
T13	60 - 40	1 1/4	4.96	4.62	124.1	9.684	1.2272	-5.27	11.88	0.443
					K=0.70					✓
T14	40 - 26.67	1 1/4	4.96	4.62	124.1	9.686	1.2272	-4.17	11.89	0.351
					K=0.70					✓
T15	26.67 - 20	1 1/4	4.96	4.62	124.2	9.679	1.2272	-4.24	11.88	0.357
					K=0.70					✓
T16	20 - 13.33	1 1/4	4.96	4.62	124.2	9.679	1.2272	-6.68	11.88	0.562
					K=0.70					✓
T17	13.33 - 6.67	1 1/4	4.95	4.62	124.1	9.692	1.2272	-8.39	11.89	0.706
					K=0.70					✓
T18	6.67 - 0	3	4.36	2.71	43.3	18.919	7.0686	-19.45	133.73	0.145
					K=1.00					✓

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio P / P_a
T1	288 - 280 (322)	MC12x35	4.00	3.92	125.5	9.483	10.3000	-0.81	97.67	0.008
					K=1.00					
T1	288 - 280 (323)	MC12x35	4.00	3.92	42.4	21.600	10.3000	0.00	97.67	0.000
					K=1.00					
T1	288 - 280 (326)	MC12x35	4.00	3.92	42.4	21.600	10.3000	0.00	97.67	0.000
					K=1.00					
T1	288 - 280 (327)	MC12x35	4.00	3.92	125.5	9.483	10.3000	-1.05	97.67	0.011
					K=1.00					
T1	288 - 280 (330)	MC12x35	4.00	3.92	125.5	9.483	10.3000	-0.46	97.67	0.005
					K=1.00					
T1	288 - 280 (331)	MC12x35	4.00	3.92	42.4	21.600	10.3000	0.00	97.67	0.000
					K=1.00					
T3	260 - 240 (334)	MC12x35	4.00	3.91	125.2	9.519	10.3000	-4.03	98.05	0.041
					K=1.00					
T3	260 - 240 (335)	MC12x35	4.00	3.91	125.2	9.519	10.3000	-3.50	98.05	0.036
					K=1.00					
T3	260 - 240 (338)	MC12x35	4.00	3.91	125.2	9.519	10.3000	-4.20	98.05	0.043

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio P / P_a
T3	260 - 240 (339)	MC12x35	4.00	3.91	K=1.00 125.2	9.519	10.3000	-3.88	98.05	0.040
T3	260 - 240 (342)	MC12x35	4.00	3.91	K=1.00 125.2	9.519	10.3000	-4.22	98.05	0.043
T3	260 - 240 (343)	MC12x35	4.00	3.91	K=1.00 125.2	9.519	10.3000	-4.45	98.05	0.045
T5	220 - 200 (346)	MC12x35	4.00	3.90	K=1.00 125.0	9.555	10.3000	-3.70	98.42	0.038
T5	220 - 200 (347)	MC12x35	4.00	3.90	K=1.00 125.0	9.555	10.3000	-6.95	98.42	0.071
T5	220 - 200 (350)	MC12x35	4.00	3.90	K=1.00 125.0	9.555	10.3000	-6.09	98.42	0.062
T5	220 - 200 (351)	MC12x35	4.00	3.90	K=1.00 125.0	9.555	10.3000	-3.69	98.42	0.038
T5	220 - 200 (354)	MC12x35	4.00	3.90	K=1.00 125.0	9.555	10.3000	-3.97	98.42	0.040
T5	220 - 200 (355)	MC12x35	4.00	3.90	K=1.00 125.0	9.555	10.3000	-6.49	98.42	0.066
T7	180 - 160 (358)	MC12x35	4.00	3.89	K=1.00 124.7	9.592	10.3000	-5.91	98.80	0.060
T7	180 - 160 (359)	MC12x35	4.00	3.89	K=1.00 124.7	9.592	10.3000	-5.66	98.80	0.057
T7	180 - 160 (362)	MC12x35	4.00	3.89	K=1.00 124.7	9.592	10.3000	-9.52	98.80	0.096
T7	180 - 160 (363)	MC12x35	4.00	3.89	K=1.00 124.7	9.592	10.3000	-4.19	98.80	0.042
T7	180 - 160 (366)	MC12x35	4.00	3.89	K=1.00 124.7	9.592	10.3000	-8.08	98.80	0.082
T7	180 - 160 (367)	MC12x35	4.00	3.89	K=1.00 124.7	9.592	10.3000	-8.34	98.80	0.084
T10	120 - 100 (370)	MC12x35	4.00	3.89	K=1.00 124.7	9.592	10.3000	-7.50	98.80	0.076
T10	120 - 100 (371)	MC12x35	4.00	3.89	K=1.00 124.7	9.592	10.3000	-8.28	98.80	0.084
T10	120 - 100 (374)	MC12x35	4.00	3.89	K=1.00 124.7	9.592	10.3000	-9.16	98.80	0.093
T10	120 - 100 (375)	MC12x35	4.00	3.89	K=1.00 124.7	9.592	10.3000	-8.11	98.80	0.082
T10	120 - 100 (378)	MC12x35	4.00	3.89	K=1.00 124.7	9.592	10.3000	-9.01	98.80	0.091
T10	120 - 100 (379)	MC12x35	4.00	3.89	K=1.00 124.7	9.592	10.3000	-8.61	98.80	0.087
T13	60 - 40 (382)	MC12x35	4.00	3.88	K=1.00 124.5	9.628	10.3000	-3.64	99.17	0.037
T13	60 - 40 (383)	MC12x35	4.00	3.88	K=1.00 124.5	9.628	10.3000	-3.56	99.17	0.036
T13	60 - 40 (386)	MC12x35	4.00	3.88	K=1.00 124.5	9.628	10.3000	-4.41	99.17	0.044
T13	60 - 40 (387)	MC12x35	4.00	3.88	K=1.00 124.5	9.628	10.3000	-3.90	99.17	0.039
T13	60 - 40 (390)	MC12x35	4.00	3.88	K=1.00 124.5	9.628	10.3000	-3.61	99.17	0.036
T13	60 - 40 (391)	MC12x35	4.00	3.88	K=1.00 124.5	9.628	10.3000	-4.07	99.17	0.041
					K=1.00					

Torque-Arm Top Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$
T1	288 - 280 (322)	MC12x35	-54.50	-18.116	21.600	0.839	0.00	-0.000	21.600	0.000
T1	288 - 280 (323)	MC12x35	-55.82	-18.554	21.600	0.859	0.00	-0.000	21.600	0.000
T1	288 - 280 (326)	MC12x35	-58.93	-19.589	21.600	0.907	0.00	-0.000	21.600	0.000
T1	288 - 280 (327)	MC12x35	-54.48	-18.111	21.600	0.838	0.00	-0.000	21.600	0.000
T1	288 - 280 (330)	MC12x35	-57.44	-19.095	21.600	0.884	0.00	-0.000	21.600	0.000
T1	288 - 280 (331)	MC12x35	-58.04	-19.294	21.600	0.893	0.00	-0.000	21.600	0.000
T3	260 - 240 (334)	MC12x35	-66.30	-22.039	21.600	1.020	0.00	-0.000	21.600	0.000
T3	260 - 240 (335)	MC12x35	-72.40	-24.066	21.600	1.114	0.00	-0.000	21.600	0.000
T3	260 - 240 (338)	MC12x35	-80.31	-26.695	21.600	1.236	0.00	-0.000	21.600	0.000
T3	260 - 240 (339)	MC12x35	-59.72	-19.852	21.600	0.919	0.00	-0.000	21.600	0.000
T3	260 - 240 (342)	MC12x35	-67.43	-22.415	21.600	1.038	0.00	-0.000	21.600	0.000
T3	260 - 240 (343)	MC12x35	-81.12	-26.965	21.600	1.248	0.00	-0.000	21.600	0.000
T5	220 - 200 (346)	MC12x35	-76.38	-25.388	21.600	1.175	-0.00	-0.000	21.600	0.000
T5	220 - 200 (347)	MC12x35	-69.97	-23.259	21.600	1.077	0.00	-0.000	21.600	0.000
T5	220 - 200 (350)	MC12x35	-80.55	-26.775	21.600	1.240	0.00	-0.000	21.600	0.000
T5	220 - 200 (351)	MC12x35	-65.65	-21.823	21.600	1.010	-0.00	-0.000	21.600	0.000
T5	220 - 200 (354)	MC12x35	-75.62	-25.136	21.600	1.164	-0.00	-0.000	21.600	0.000
T5	220 - 200 (355)	MC12x35	-81.60	-27.123	21.600	1.256	0.00	-0.000	21.600	0.000
T7	180 - 160 (358)	MC12x35	-47.83	-15.898	21.600	0.736	0.00	-0.000	21.600	0.000
T7	180 - 160 (359)	MC12x35	-62.49	-20.773	21.600	0.962	-0.00	-0.000	21.600	0.000
T7	180 - 160 (362)	MC12x35	-51.18	-17.012	21.600	0.788	-0.00	-0.000	21.600	0.000
T7	180 - 160 (363)	MC12x35	-55.51	-18.453	21.600	0.854	0.00	-0.000	21.600	0.000
T7	180 - 160 (366)	MC12x35	-60.00	-19.945	21.600	0.923	-0.00	-0.000	21.600	0.000
T7	180 - 160 (367)	MC12x35	-57.89	-19.244	21.600	0.891	0.00	-0.000	21.600	0.000
T10	120 - 100 (370)	MC12x35	-26.55	-8.825	21.600	0.409	0.00	-0.000	21.600	0.000
T10	120 - 100 (371)	MC12x35	-37.62	-12.507	21.600	0.579	-0.00	-0.000	21.600	0.000
T10	120 - 100 (374)	MC12x35	-31.54	-10.483	21.600	0.485	-0.00	-0.000	21.600	0.000
T10	120 - 100 (375)	MC12x35	-35.24	-11.715	21.600	0.542	0.00	-0.000	21.600	0.000
T10	120 - 100 (378)	MC12x35	-38.14	-12.680	21.600	0.587	-0.00	-0.000	21.600	0.000
T10	120 - 100 (379)	MC12x35	-38.27	-12.722	21.600	0.589	0.00	-0.000	21.600	0.000
T13	60 - 40 (382)	MC12x35	-12.28	-4.082	21.600	0.189	-0.00	-0.000	21.600	0.000
T13	60 - 40 (383)	MC12x35	-7.57	-2.516	21.600	0.116	0.00	-0.000	21.600	0.000
T13	60 - 40 (386)	MC12x35	-13.31	-4.426	21.600	0.205	0.00	-0.000	21.600	0.000
T13	60 - 40 (387)	MC12x35	-7.90	-2.627	21.600	0.122	-0.00	-0.000	21.600	0.000
T13	60 - 40 (390)	MC12x35	-13.98	-4.647	21.600	0.215	-0.00	-0.000	21.600	0.000
T13	60 - 40 (391)	MC12x35	-12.80	-4.255	21.600	0.197	0.00	-0.000	21.600	0.000

Torque-Arm Top Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	288 - 280 (322)	MC12x35	0.008	0.839	0.000	0.847 ✓	1.333	H1-3 ✓
T1	288 - 280 (323)	MC12x35	0.000	0.859	0.000	0.859 ✓	1.333	H1-3 ✓
T1	288 - 280 (326)	MC12x35	0.000	0.907	0.000	0.907 ✓	1.333	H1-3 ✓
T1	288 - 280 (327)	MC12x35	0.011	0.838	0.000	0.849 ✓	1.333	H1-3 ✓
T1	288 - 280 (330)	MC12x35	0.005	0.884	0.000	0.889 ✓	1.333	H1-3 ✓
T1	288 - 280 (331)	MC12x35	0.000	0.893	0.000	0.893 ✓	1.333	H1-3 ✓
T3	260 - 240 (334)	MC12x35	0.041	1.020	0.000	1.061 ✓	1.333	H1-3 ✓
T3	260 - 240 (335)	MC12x35	0.036	1.114	0.000	1.150 ✓	1.333	H1-3 ✓
T3	260 - 240 (338)	MC12x35	0.043	1.236	0.000	1.279 ✓	1.333	H1-3 ✓

Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T3	260 - 240 (339)	MC12x35	0.040	0.919	0.000	0.959 ✓	1.333	H1-3 ✓
T3	260 - 240 (342)	MC12x35	0.043	1.038	0.000	1.081 ✓	1.333	H1-3 ✓
T3	260 - 240 (343)	MC12x35	0.045	1.248	0.000	1.294 ✓	1.333	H1-3 ✓
T5	220 - 200 (346)	MC12x35	0.038	1.175	0.000	1.213 ✓	1.333	H1-3 ✓
T5	220 - 200 (347)	MC12x35	0.071	1.077	0.000	1.147 ✓	1.333	H1-3 ✓
T5	220 - 200 (350)	MC12x35	0.062	1.240	0.000	1.301 ✓	1.333	H1-3 ✓
T5	220 - 200 (351)	MC12x35	0.038	1.010	0.000	1.048 ✓	1.333	H1-3 ✓
T5	220 - 200 (354)	MC12x35	0.040	1.164	0.000	1.204 ✓	1.333	H1-3 ✓
T5	220 - 200 (355)	MC12x35	0.066	1.256	0.000	1.322 ✓	1.333	H1-3 ✓
T7	180 - 160 (358)	MC12x35	0.060	0.736	0.000	0.796 ✓	1.333	H1-3 ✓
T7	180 - 160 (359)	MC12x35	0.057	0.962	0.000	1.019 ✓	1.333	H1-3 ✓
T7	180 - 160 (362)	MC12x35	0.096	0.788	0.000	0.884 ✓	1.333	H1-3 ✓
T7	180 - 160 (363)	MC12x35	0.042	0.854	0.000	0.897 ✓	1.333	H1-3 ✓
T7	180 - 160 (366)	MC12x35	0.082	0.923	0.000	1.005 ✓	1.333	H1-3 ✓
T7	180 - 160 (367)	MC12x35	0.084	0.891	0.000	0.975 ✓	1.333	H1-3 ✓
T10	120 - 100 (370)	MC12x35	0.076	0.409	0.000	0.485 ✓	1.333	H1-3 ✓
T10	120 - 100 (371)	MC12x35	0.084	0.579	0.000	0.663 ✓	1.333	H1-3 ✓
T10	120 - 100 (374)	MC12x35	0.093	0.485	0.000	0.578 ✓	1.333	H1-3 ✓
T10	120 - 100 (375)	MC12x35	0.082	0.542	0.000	0.624 ✓	1.333	H1-3 ✓
T10	120 - 100 (378)	MC12x35	0.091	0.587	0.000	0.678 ✓	1.333	H1-3 ✓
T10	120 - 100 (379)	MC12x35	0.087	0.589	0.000	0.676 ✓	1.333	H1-3 ✓
T13	60 - 40 (382)	MC12x35	0.037	0.189	0.000	0.226 ✓	1.333	H1-3 ✓
T13	60 - 40 (383)	MC12x35	0.036	0.116	0.000	0.152 ✓	1.333	H1-3 ✓
T13	60 - 40 (386)	MC12x35	0.044	0.205	0.000	0.249 ✓	1.333	H1-3 ✓
T13	60 - 40 (387)	MC12x35	0.039	0.122	0.000	0.161 ✓	1.333	H1-3 ✓
T13	60 - 40 (390)	MC12x35	0.036	0.215	0.000	0.252 ✓	1.333	H1-3 ✓
T13	60 - 40 (391)	MC12x35	0.041	0.197	0.000	0.238 ✓	1.333	H1-3 ✓

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	288 - 280	2	8.00	4.00	96.0	30.000	3.1416	7.45	94.25	0.079
T3	260 - 240	2 1/4	20.00	3.33	71.1	30.000	3.9761	4.52	119.28	0.038
T4	240 - 220	2 1/4	20.00	3.33	71.1	30.000	3.9761	2.13	119.28	0.018
T5	220 - 200	2 1/2	20.00	3.33	64.0	30.000	4.9087	3.20	147.26	0.022

Leg Bending Design Data (Tension)

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
T1	288 - 280	2	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T3	260 - 240	2 1/4	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T4	240 - 220	2 1/4	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000
T5	220 - 200	2 1/2	0.00	0.000	37.500	0.000	0.00	0.000	37.500	0.000

Leg Interaction Design Data (Tension)

Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	288 - 280	2	0.079	0.000	0.000	0.079 ✓	1.333	H2-1 ✓
T3	260 - 240	2 1/4	0.038	0.000	0.000	0.038 ✓	1.333	H2-1 ✓
T4	240 - 220	2 1/4	0.018	0.000	0.000	0.018 ✓	1.333	H2-1 ✓
T5	220 - 200	2 1/2	0.022	0.000	0.000	0.022 ✓	1.333	H2-1 ✓

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	288 - 280	1 3/8	5.43	5.18	180.8	21.600	1.4849	5.08	32.07	0.158 ✓
T2	280 - 260	1 3/8	4.96	4.73	165.1	21.600	1.4849	6.52	32.07	0.203 ✓
T3	260 - 240	1 3/8	4.96	4.70	164.1	21.600	1.4849	11.87	32.07	0.370 ✓
T4	240 - 220	1 3/8	4.96	4.70	164.1	21.600	1.4849	15.82	32.07	0.493 ✓
T5	220 - 200	1 1/2	4.96	4.67	149.6	21.600	1.7672	11.76	38.17	0.308 ✓
T6	200 - 180	1 1/4	4.96	4.67	179.5	21.600	1.2272	10.15	26.51	0.383 ✓
T7	180 - 160	1 1/2	4.96	4.65	148.7	21.600	1.7672	16.32	38.17	0.428 ✓
T8	160 - 140	1 3/8	4.96	4.67	163.2	21.600	1.4849	11.29	32.07	0.352 ✓
T9	140 - 120	1 1/4	4.96	4.65	178.4	21.600	1.2272	3.81	26.51	0.144 ✓
T10	120 - 100	1 1/2	4.96	4.65	148.7	21.600	1.7672	13.51	38.17	0.354 ✓
T11	100 - 80	1 3/8	4.96	4.62	161.2	21.600	1.4849	12.29	32.07	0.383 ✓

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio P / P_a
T12	80 - 60	1 1/4	4.96	4.62	177.3	21.600	1.2272	8.16	26.51	0.308 ✓
T13	60 - 40	1 1/4	4.96	4.62	177.3	21.600	1.2272	7.06	26.51	0.266 ✓
T14	40 - 26.67	1 1/4	4.96	4.62	177.3	21.600	1.2272	3.96	26.51	0.149 ✓
T15	26.67 - 20	1 1/4	4.96	4.62	177.4	21.600	1.2272	4.86	26.51	0.183 ✓
T16	20 - 13.33	1 1/4	4.96	4.62	177.4	21.600	1.2272	6.24	26.51	0.236 ✓
T17	13.33 - 6.67	1 1/4	4.95	4.62	177.2	21.600	1.2272	8.63	26.51	0.325 ✓

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio P / P_a
T18	6.67 - 0	1	1.83	1.58	76.0	21.600	0.7854	15.50	16.96	0.914 ✓

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio P / P_a
T18	6.67 - 0	1 1/4	3.67	3.42	131.2	21.600	1.2272	34.94	26.51	1.318 ✓

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio P / P_a
T1	288 - 280 (322)	MC12x35	4.00	3.92	42.4	21.600	10.3000	0.69	222.48	0.003
T1	288 - 280 (323)	MC12x35	4.00	3.92	42.4	21.600	10.3000	1.28	222.48	0.006
T1	288 - 280 (326)	MC12x35	4.00	3.92	42.4	21.600	10.3000	0.82	222.48	0.004
T1	288 - 280 (327)	MC12x35	4.00	3.92	42.4	21.600	10.3000	0.26	222.48	0.001
T1	288 - 280 (330)	MC12x35	4.00	3.92	42.4	21.600	10.3000	0.35	222.48	0.002
T1	288 - 280 (331)	MC12x35	4.00	3.92	42.4	21.600	10.3000	1.07	222.48	0.005
T3	260 - 240 (334)	MC12x35	4.00	3.91	42.3	21.600	10.3000	0.46	222.48	0.002
T3	260 - 240 (335)	MC12x35	4.00	3.91	42.3	21.600	10.3000	4.83	222.48	0.022
T3	260 - 240 (338)	MC12x35	4.00	3.91	42.3	21.600	10.3000	5.16	222.48	0.023
T3	260 - 240 (339)	MC12x35	4.00	3.91	42.3	21.600	10.3000	0.43	222.48	0.002
T3	260 - 240 (342)	MC12x35	4.00	3.91	42.3	21.600	10.3000	0.22	222.48	0.001
T3	260 - 240 (343)	MC12x35	4.00	3.91	42.3	21.600	10.3000	1.57	222.48	0.007

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T5	220 - 200 (346)	MC12x35	4.00	3.90	42.2	21.600	10.3000	1.30	222.48	0.006
T5	220 - 200 (347)	MC12x35	4.00	3.90	42.2	21.600	10.3000	0.03	222.48	0.000
T5	220 - 200 (350)	MC12x35	4.00	3.90	42.2	21.600	10.3000	0.24	222.48	0.001
T5	220 - 200 (351)	MC12x35	4.00	3.90	42.2	21.600	10.3000	0.92	222.48	0.004
T5	220 - 200 (354)	MC12x35	4.00	3.90	42.2	21.600	10.3000	0.87	222.48	0.004
T5	220 - 200 (355)	MC12x35	4.00	3.90	42.2	21.600	10.3000	2.53	222.48	0.011
T7	180 - 160 (358)	MC12x35	4.00	3.89	42.1	21.600	10.3000	0.96	222.48	0.004
T7	180 - 160 (359)	MC12x35	4.00	3.89	42.1	21.600	10.3000	3.64	222.48	0.016
T7	180 - 160 (362)	MC12x35	4.00	3.89	42.1	21.600	10.3000	6.57	222.48	0.030
T7	180 - 160 (363)	MC12x35	4.00	3.89	42.1	21.600	10.3000	1.21	222.48	0.005
T7	180 - 160 (366)	MC12x35	4.00	3.89	42.1	21.600	10.3000	7.78	222.48	0.035
T7	180 - 160 (367)	MC12x35	4.00	3.89	42.1	21.600	10.3000	3.28	222.48	0.015
T10	120 - 100 (370)	MC12x35	4.00	3.89	42.1	21.600	10.3000	0.34	222.48	0.002
T10	120 - 100 (371)	MC12x35	4.00	3.89	42.1	21.600	10.3000	3.11	222.48	0.014
T10	120 - 100 (374)	MC12x35	4.00	3.89	42.1	21.600	10.3000	5.18	222.48	0.023
T10	120 - 100 (375)	MC12x35	4.00	3.89	42.1	21.600	10.3000	0.78	222.48	0.004
T10	120 - 100 (378)	MC12x35	4.00	3.89	42.1	21.600	10.3000	7.70	222.48	0.035
T10	120 - 100 (379)	MC12x35	4.00	3.89	42.1	21.600	10.3000	2.19	222.48	0.010
T13	60 - 40 (382)	MC12x35	4.00	3.88	41.9	21.600	10.3000	0.54	222.48	0.002
T13	60 - 40 (383)	MC12x35	4.00	3.88	41.9	21.600	10.3000	0.50	222.48	0.002
T13	60 - 40 (386)	MC12x35	4.00	3.88	41.9	21.600	10.3000	3.05	222.48	0.014
T13	60 - 40 (387)	MC12x35	4.00	3.88	41.9	21.600	10.3000	7.23	222.48	0.033
T13	60 - 40 (390)	MC12x35	4.00	3.88	41.9	21.600	10.3000	3.43	222.48	0.015
T13	60 - 40 (391)	MC12x35	4.00	3.88	41.9	21.600	10.3000	0.24	222.48	0.001

Torque-Arm Top Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_z ktp-ft	Actual f_{bz} ksi	Allow. F_{bz} ksi	Ratio $\frac{f_{bz}}{F_{bz}}$
T1	288 - 280 (322)	MC12x35	-53.36	17.737	21.600	0.821	-0.00	0.000	27.000	0.000
T1	288 - 280 (323)	MC12x35	-55.82	18.554	21.600	0.859	0.00	0.000	27.000	0.000
T1	288 - 280 (326)	MC12x35	-58.93	19.589	21.600	0.907	0.00	0.000	27.000	0.000
T1	288 - 280 (327)	MC12x35	-53.63	17.826	21.600	0.825	-0.00	0.000	27.000	0.000
T1	288 - 280 (330)	MC12x35	-52.95	17.602	21.600	0.815	-0.00	0.000	27.000	0.000
T1	288 - 280 (331)	MC12x35	-58.04	19.294	21.600	0.893	0.00	0.000	27.000	0.000
T3	260 - 240 (334)	MC12x35	-59.44	19.758	21.600	0.915	-0.00	0.000	27.000	0.000
T3	260 - 240 (335)	MC12x35	-53.06	17.636	21.600	0.816	-0.00	0.000	27.000	0.000
T3	260 - 240 (338)	MC12x35	-59.68	19.837	21.600	0.918	-0.00	0.000	27.000	0.000
T3	260 - 240 (339)	MC12x35	-52.34	17.399	21.600	0.806	-0.00	0.000	27.000	0.000
T3	260 - 240 (342)	MC12x35	-56.54	18.794	21.600	0.870	-0.00	0.000	27.000	0.000
T3	260 - 240 (343)	MC12x35	-62.77	20.865	21.600	0.966	-0.00	0.000	27.000	0.000
T5	220 - 200 (346)	MC12x35	-72.50	24.101	21.600	1.116	-0.00	0.000	27.000	0.000
T5	220 - 200 (347)	MC12x35	-65.26	21.693	21.600	1.004	0.00	0.000	27.000	0.000
T5	220 - 200 (350)	MC12x35	-77.65	25.813	21.600	1.195	0.00	0.000	27.000	0.000
T5	220 - 200 (351)	MC12x35	-62.94	20.924	21.600	0.969	-0.00	0.000	27.000	0.000
T5	220 - 200 (354)	MC12x35	-71.22	23.675	21.600	1.096	-0.00	0.000	27.000	0.000
T5	220 - 200 (355)	MC12x35	-65.78	21.867	21.600	1.012	0.00	0.000	27.000	0.000
T7	180 - 160 (358)	MC12x35	-48.48	16.115	21.600	0.746	0.00	0.000	27.000	0.000
T7	180 - 160 (359)	MC12x35	-59.93	19.922	21.600	0.922	0.00	0.000	27.000	0.000
T7	180 - 160 (362)	MC12x35	-45.52	15.133	21.600	0.701	0.00	0.000	27.000	0.000
T7	180 - 160 (363)	MC12x35	-55.41	18.419	21.600	0.853	-0.00	0.000	27.000	0.000
T7	180 - 160 (366)	MC12x35	-52.52	17.457	21.600	0.808	0.00	0.000	27.000	0.000
T7	180 - 160 (367)	MC12x35	-52.72	17.525	21.600	0.811	0.00	0.000	27.000	0.000
T10	120 - 100 (370)	MC12x35	-27.52	9.147	21.600	0.423	-0.00	0.000	27.000	0.000
T10	120 - 100 (371)	MC12x35	-37.53	12.476	21.600	0.578	0.00	0.000	27.000	0.000

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
T10	120 - 100 (374)	MC12x35	-25.06	8.332	21.600	0.386	-0.00	0.000	27.000	0.000
T10	120 - 100 (375)	MC12x35	-34.49	11.464	21.600	0.531	-0.00	0.000	27.000	0.000
T10	120 - 100 (378)	MC12x35	-33.25	11.054	21.600	0.512	0.00	0.000	27.000	0.000
T10	120 - 100 (379)	MC12x35	-32.90	10.936	21.600	0.506	-0.00	0.000	27.000	0.000
T13	60 - 40 (382)	MC12x35	-11.85	3.940	21.600	0.182	0.00	0.000	27.000	0.000
T13	60 - 40 (383)	MC12x35	-7.93	2.636	21.600	0.122	-0.00	0.000	27.000	0.000
T13	60 - 40 (386)	MC12x35	-10.68	3.549	21.600	0.164	-0.00	0.000	27.000	0.000
T13	60 - 40 (387)	MC12x35	-5.52	1.835	21.600	0.085	0.00	0.000	27.000	0.000
T13	60 - 40 (390)	MC12x35	-10.20	3.392	21.600	0.157	0.00	0.000	27.000	0.000
T13	60 - 40 (391)	MC12x35	-12.79	4.252	21.600	0.197	0.00	0.000	27.000	0.000

Torque-Arm Top Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	288 - 280 (322)	MC12x35	0.003	0.821	0.000	0.824 ✓	1.333	H2-1 ✓
T1	288 - 280 (323)	MC12x35	0.006	0.859	0.000	0.865 ✓	1.333	H2-1 ✓
T1	288 - 280 (326)	MC12x35	0.004	0.907	0.000	0.911 ✓	1.333	H2-1 ✓
T1	288 - 280 (327)	MC12x35	0.001	0.825	0.000	0.826 ✓	1.333	H2-1 ✓
T1	288 - 280 (330)	MC12x35	0.002	0.815	0.000	0.816 ✓	1.333	H2-1 ✓
T1	288 - 280 (331)	MC12x35	0.005	0.893	0.000	0.898 ✓	1.333	H2-1 ✓
T3	260 - 240 (334)	MC12x35	0.002	0.915	0.000	0.917 ✓	1.333	H2-1 ✓
T3	260 - 240 (335)	MC12x35	0.022	0.816	0.000	0.838 ✓	1.333	H2-1 ✓
T3	260 - 240 (338)	MC12x35	0.023	0.918	0.000	0.942 ✓	1.333	H2-1 ✓
T3	260 - 240 (339)	MC12x35	0.002	0.806	0.000	0.807 ✓	1.333	H2-1 ✓
T3	260 - 240 (342)	MC12x35	0.001	0.870	0.000	0.871 ✓	1.333	H2-1 ✓
T3	260 - 240 (343)	MC12x35	0.007	0.966	0.000	0.973 ✓	1.333	H2-1 ✓
T5	220 - 200 (346)	MC12x35	0.006	1.116	0.000	1.122 ✓	1.333	H2-1 ✓
T5	220 - 200 (347)	MC12x35	0.000	1.004	0.000	1.004 ✓	1.333	H2-1 ✓
T5	220 - 200 (350)	MC12x35	0.001	1.195	0.000	1.196 ✓	1.333	H2-1 ✓
T5	220 - 200 (351)	MC12x35	0.004	0.969	0.000	0.973 ✓	1.333	H2-1 ✓
T5	220 - 200 (354)	MC12x35	0.004	1.096	0.000	1.100 ✓	1.333	H2-1 ✓
T5	220 - 200 (355)	MC12x35	0.011	1.012	0.000	1.024 ✓	1.333	H2-1 ✓
T7	180 - 160 (358)	MC12x35	0.004	0.746	0.000	0.750 ✓	1.333	H2-1 ✓
T7	180 - 160 (359)	MC12x35	0.016	0.922	0.000	0.939 ✓	1.333	H2-1 ✓
T7	180 - 160 (362)	MC12x35	0.030	0.701	0.000	0.730 ✓	1.333	H2-1 ✓
T7	180 - 160 (363)	MC12x35	0.005	0.853	0.000	0.858 ✓	1.333	H2-1 ✓
T7	180 - 160 (366)	MC12x35	0.035	0.808	0.000	0.843 ✓	1.333	H2-1 ✓
T7	180 - 160 (367)	MC12x35	0.015	0.811	0.000	0.826 ✓	1.333	H2-1 ✓
T10	120 - 100 (370)	MC12x35	0.002	0.423	0.000	0.425 ✓	1.333	H2-1 ✓
T10	120 - 100 (371)	MC12x35	0.014	0.578	0.000	0.592 ✓	1.333	H2-1 ✓
T10	120 - 100 (374)	MC12x35	0.023	0.386	0.000	0.409 ✓	1.333	H2-1 ✓

Section No.	Elevation ft	Size	Ratio $\frac{P}{P_n}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T10	120 - 100 (375)	MC12x35	0.004	0.531	0.000	0.534 ✓	1.333	H2-1 ✓
T10	120 - 100 (378)	MC12x35	0.035	0.512	0.000	0.546 ✓	1.333	H2-1 ✓
T10	120 - 100 (379)	MC12x35	0.010	0.506	0.000	0.516 ✓	1.333	H2-1 ✓
T13	60 - 40 (382)	MC12x35	0.002	0.182	0.000	0.185 ✓	1.333	H2-1 ✓
T13	60 - 40 (383)	MC12x35	0.002	0.122	0.000	0.124 ✓	1.333	H2-1 ✓
T13	60 - 40 (386)	MC12x35	0.014	0.164	0.000	0.178 ✓	1.333	H2-1 ✓
T13	60 - 40 (387)	MC12x35	0.033	0.085	0.000	0.117 ✓	1.333	H2-1 ✓
T13	60 - 40 (390)	MC12x35	0.015	0.157	0.000	0.172 ✓	1.333	H2-1 ✓
T13	60 - 40 (391)	MC12x35	0.001	0.197	0.000	0.198 ✓	1.333	H2-1 ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
L1	323 - 288	Pole	10.75" x 0.843" Pipe Mast	1	-3.84	292.70	18.4	Pass
T1	288 - 280	Leg	2	4	-25.73	65.41	39.3	Pass
T2	280 - 260	Leg	2	13	-34.28	79.62	43.1	Pass
T3	260 - 240	Leg	2 1/4	33	-81.88	109.88	74.5	Pass
T4	240 - 220	Leg	2 1/4	54	-75.97	109.88	69.1	Pass
T5	220 - 200	Leg	2 1/2	74	-85.95	144.10	59.6	Pass
T6	200 - 180	Leg	2 1/2	95	-90.67	144.10	62.9	Pass
T7	180 - 160	Leg	2 3/4	118	-142.97	182.30	78.4	Pass
T8	160 - 140	Leg	2 1/2	139	-122.19	144.10	84.8	Pass
T9	140 - 120	Leg	2 3/4	158	-121.67	182.30	66.7	Pass
T10	120 - 100	Leg	2 3/4	181	-133.61	182.30	73.3	Pass
T11	100 - 80	Leg	3	201	-217.17	224.47	96.8	Pass
T12	80 - 60	Leg	3	222	-216.08	224.47	96.3	Pass
T13	60 - 40	Leg	3	243	-204.17	224.47	91.0	Pass
T14	40 - 26.67	Leg	3	264	-202.19	224.49	90.1	Pass
T15	26.67 - 20	Leg	3	279	-189.70	224.43	84.5	Pass
T16	20 - 13.33	Leg	3	288	-178.32	224.43	79.5	Pass
T17	13.33 - 6.67	Leg	3	297	-163.97	224.55	73.0	Pass
T18	6.67 - 0	Leg	3	306	-158.69	253.93	62.5	Pass
T1	288 - 280	Diagonal	1 3/8	6	-5.01	18.45	27.2	Pass
T2	280 - 260	Diagonal	1 3/8	15	-5.42	21.59	25.1	Pass
T3	260 - 240	Diagonal	1 3/8	49	-15.28	21.78	70.2	Pass
T4	240 - 220	Diagonal	1 3/8	60	-15.66	21.78	71.9	Pass
T5	220 - 200	Diagonal	1 1/2	90	-13.37	29.15	45.9	Pass
T6	200 - 180	Diagonal	1 1/4	99	-8.49	15.47	54.8	Pass
T7	180 - 160	Diagonal	1 1/2	129	-14.62	29.34	49.8	Pass
T8	160 - 140	Diagonal	1 3/8	155	-9.62	21.96	43.8	Pass
T9	140 - 120	Diagonal	1 1/4	163	-3.58	15.66	22.9	Pass
T10	120 - 100	Diagonal	1 1/2	186	-14.47	29.34	49.3	Pass
T11	100 - 80	Diagonal	1 3/8	218	-12.54	22.34	56.1	Pass
T12	80 - 60	Diagonal	1 1/4	224	-8.10	15.84	51.2	Pass
T13	60 - 40	Diagonal	1 1/4	261	-5.27	15.84	33.2	Pass
T14	40 - 26.67	Diagonal	1 1/4	266	-4.17	15.84	26.3	Pass
T15	26.67 - 20	Diagonal	1 1/4	281	-4.24	15.83	26.8	Pass
T16	20 - 13.33	Diagonal	1 1/4	290	-6.68	15.83	42.2	Pass
T17	13.33 - 6.67	Diagonal	1 1/4	299	-8.39	15.85	52.9	Pass
T18	6.67 - 0	Diagonal	3	316	-19.45	178.26	10.9	Pass
T18	6.67 - 0	Horizontal	1	312	15.50	22.61	68.6	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P allow K	% Capacity	Pass Fail
T18	6.67 - 0	Top Girt	1 1/4	309	34.94	35.33	98.9	Pass
T1	288 - 280	Guy A@284	3/4	328	18.74	29.15	64.3	Pass
T3	260 - 240	Guy A@256.667	3/4	340	24.80	29.15	85.1	Pass
T5	220 - 200	Guy A@216.667	3/4	352	26.85	29.15	92.1	Pass
T7	180 - 160	Guy A@166.667	3/4	365	24.18	29.15	83.0	Pass
T10	120 - 100	Guy A@106.667	5/8	376	19.48	21.20	91.9	Pass
T13	60 - 40	Guy A@56.6667	7/16	388	9.25	10.40	89.0	Pass
T1	288 - 280	Guy B@284	3/4	325	18.85	29.15	64.7	Pass
T3	260 - 240	Guy B@256.667	3/4	337	24.43	29.15	83.8	Pass
T5	220 - 200	Guy B@216.667	3/4	349	26.31	29.15	90.3	Pass
T7	180 - 160	Guy B@166.667	3/4	361	23.50	29.15	80.6	Pass
T10	120 - 100	Guy B@106.667	5/8	373	18.87	21.20	89.0	Pass
T13	60 - 40	Guy B@56.6667	7/16	384	9.73	10.40	93.6	Pass
T1	288 - 280	Guy C@284	3/4	321	18.34	29.15	62.9	Pass
T3	260 - 240	Guy C@256.667	3/4	333	23.02	29.15	79.0	Pass
T5	220 - 200	Guy C@216.667	3/4	345	24.69	29.15	84.7	Pass
T7	180 - 160	Guy C@166.667	3/4	357	23.28	29.15	79.9	Pass
T10	120 - 100	Guy C@106.667	5/8	369	18.60	21.20	87.8	Pass
T13	60 - 40	Guy C@56.6667	7/16	381	8.84	10.40	85.0	Pass
T1	288 - 280	Torque Arm Top@284	MC12x35	326	0.82	296.57	68.3	Pass
T3	260 - 240	Torque Arm Top@256.667	MC12x35	343	-4.45	130.69	97.1	Pass
T5	220 - 200	Torque Arm Top@216.667	MC12x35	355	-6.49	131.20	99.1	Pass
T7	180 - 160	Torque Arm Top@166.667	MC12x35	359	-5.66	131.70	76.4	Pass
T10	120 - 100	Torque Arm Top@106.667	MC12x35	378	-9.01	131.70	50.9	Pass
T13	60 - 40	Torque Arm Top@56.6667	MC12x35	390	-3.61	132.20	18.9	Pass

Summary		
Pole (L1)	18.4	Pass
Leg (T11)	96.8	Pass
Diagonal (T4)	71.9	Pass
Horizontal (T18)	68.6	Pass
Top Girt (T18)	98.9	Pass
Guy A (T5)	92.1	Pass
Guy B (T13)	93.6	Pass
Guy C (T10)	87.8	Pass
Torque Arm Top (T5)	99.1	Pass
RATING =	**99.1**	**Pass**

REDUNTANT MEMBER EVALUATION

Redundant Member Analysis

Input Data

Applied Forces:

Maximum Leg Force: $P_{leg} := 218kips$ (SEE ERI OUTPUT)

Design Axial Force: $P := 0.015 \cdot P_{leg}$ $P = 3.27\,kips$ (Per TIA / EIA code)

Column Data:

Steel Yield Strength: $Fy := 36ksi$

Modulus of Elasticity: $E := 29000ksi$

Steel Section Area: $A_{steel} := 0.785in^2$

Pipe X - Axis (Strong)

Maximum Unbraced Length: $L_x := 3.67ft$

Radius of Gyration: $r_x := 0.25in$

Design "K" Value: $K_x := 1.0$

Compression Analysis

Applied Compressive Stress:

$$f_{comp} := \frac{P}{A_{steel}} \qquad f_{comp} = 4.17\ ksi$$

Check Compressive Stress:

Allowable Compressive Stress:

$$C_c := \sqrt{\frac{2\cdot\pi^2\cdot E}{Fy}} \qquad C_c = 126.1$$

$$F_x := \begin{cases} \dfrac{\left[1 - \dfrac{\left(\dfrac{K_x\cdot L_x}{r_x}\right)^2}{2\cdot C_c^{\,2}}\right]\cdot Fy}{\dfrac{5}{3} + \dfrac{3\cdot\left(\dfrac{K_x\cdot L_x}{r_x}\right)}{8\cdot C_c} - \dfrac{\left(\dfrac{K_x\cdot L_x}{r_x}\right)^3}{8\cdot C_c^{\,3}}} & \text{if } \dfrac{K_x\cdot L_x}{r_x} \le C_c \\ \dfrac{12\cdot\pi^2\cdot E}{23\cdot\left(\dfrac{K_x\cdot L_x}{r_x}\right)^2} & \text{if } \dfrac{K_x\cdot L_x}{r_x} > C_c \end{cases} \qquad F_x = 4.81\ ksi$$

$$P_x := F_x\cdot A_{steel} \qquad P_x = 3.78\ kips$$

Stress Ratio:

$$Ratio_x := \frac{f_{comp}}{F_x} \qquad Ratio_x = 0.87$$

BASE FOUNDATION EVALUATION

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FOUNDATION ANALYSIS

TOWER FORCES:

Moment Caused by Tower	$M_t := 0.010 \cdot ft \cdot kips$
Shear at Base of Tower	$S_t := 0.001 kip$
Max Compressive Force	$C_t := 400 \cdot kip$
Height of Tower	$H_t := 323 \cdot ft$
Base Plate Bolt Circle	$MP := 1.0 ft$

FOOTING DIMENSIONS:

Overall Depth of Footing	$D_f := 8.0 ft$
Length of Pier	$L_p := 2.5 \cdot ft$
Extension of Pier Above Grade	$L_{pag} := 0.5 \cdot ft$
Diameter of Pier	$d_p := 3.0 \cdot ft$
Thickness of Footing	$T_f := 2.0 \cdot ft$
Width of Footing:	$W_f := 10.0 ft$
Length of Anchor Bolts:	$L_{st} := 72 in$
Projection of anchor bolts above pier	$A_{BP} := 12 \cdot in$
Anchor bolts area	$A_{anchor} := 3.97 \cdot in^2$

PROPERTIES:

Compressive Strength of Concrete	$f'c := 3000 psi$
Yield Strength of Steel Reinforcement	$fy := 60000 \cdot psi$
Internal Friction Angle of Soil	$\phi_s := 30 \cdot deg$
Allowable Bearing Capacity	$q_s := 5000 \cdot psf$
Unit Weight of Soil	$\gamma_s := 110 \cdot pcf$
Unit Weight of Concrete	$\gamma_c := 150 \cdot pcf$
Depth to Neglect	$n := 1 ft$
Cohesion of Clay Type Soil Note: Use 0 for Sandy Soil	$c := 0 \cdot ksf$
Seismic Zone Factor: UBC Fig 23-2	$Z := 2$
Coefficient of Friction between soil and Concrete:	$\mu := 0.5$
Clear Cover of Reinforcement Pier:	$Cvr_{pier} := 3 \cdot in$
Clear Cover of Reinforcement Pier:	$Cvr_{pad} := 3 \cdot in$

PIER REINFORCEMENT:

Bar Size	$BSpier := 7$	Bar Diameter	$d_{bpier} := 0.875 \cdot in$
Number of Bars	$NBpier := 10$	Bar Area	$A_{bpier} := 0.60 \cdot in^2$

PAD REINFORCEMENT:

TOP:	Bar Size	$BS_{top} := 7$	Bar Diameter	$d_{btop} := 0.875 \cdot in$	IGNORE NO TOP REINF.
	Number of Bars	$NB_{top} := 18$	Bar Area	$A_{btop} := 0.60 \cdot in^2$	
BOTTOM:	Bar Size	$BS_{bot} := 7$	Bar Diameter	$d_{bbot} := 0.875 \cdot in$	
	Number of Bars	$NB_{bot} := 18$	Bar Area	$A_{bot} := 0.60 \cdot in^2$	

Coefficient of Lateral Soil Pressure: $K_p := \dfrac{1 + \sin(\phi_s)}{1 - \sin(\phi_s)}$ $K_p = 3$

Load Factor (EIA 3.1.1): $LF := \text{if}\left[H_t \le 700 \cdot ft, 1.3, \text{if}\left[H_t \ge 1200, 1.7, 1.3 + \left(\dfrac{H_t - 700}{1200 - 700} \right) \cdot 0.4 \right] \right]$ $LF = 1.3$

CHECK ANCHOR STEEL EMBEDMENT

Depth:

$D_{ab} := L_{st} - A_{BP}$ $\quad D_{ab} = 5\ ft$

$DepthCheck := if\left(D_{ab} \geq L_{anchor}, "Okay", "No\ Good"\right)$

$DepthCheck = "No\ Good"$ anchor plate is provided

$L_{anchor} := \frac{(0.11 \cdot fy) \cdot in}{\sqrt{f'c\,psi}}$

$L_{anchor} = 10.0416\ ft$

STABILITY OF FOOTING

Passive Pressure:

$P_{pn} := K_p \cdot \gamma_s \cdot n + c \cdot 2 \cdot \sqrt{K_p}$ $\quad P_{pn} = 0.33\ ksf$

$P_{pt} := K_p \cdot \gamma_s \cdot (D_f - T_f) + c \cdot 2 \cdot \sqrt{K_p}$ $\quad P_{pt} = 1.98\ ksf$

$P_{top} := if\left[n < (D_f - T_f), P_{pt}, P_{pn}\right]$ $\quad P_{top} = 1.98\ ksf$

$P_{bot} := K_p \cdot \gamma_s \cdot D_f + c \cdot 2 \cdot \sqrt{K_p}$ $\quad P_{bot} = 2.64\ ksf$

$P_{ave} := \frac{P_{top} + P_{bot}}{2}$ $\quad P_{ave} = 2.31\ ksf$

$T_p := if\left[n < (D_f - T_f), T_f, (D_f - n)\right]$ $\quad T_p = 2\ ft$

$A_p := W_f T_p$ $\quad A_p = 20\ ft^2$

Ultimate Shear:

$S_u := P_{ave} \cdot A_p$ $\quad S_u = 46.2\ kip$

Weight of Concrete Pad:

$WT_c := \left[\left(W_f^2 \cdot T_f\right) + \frac{d_p^2 \cdot \pi}{4} L_p\right] \cdot \gamma_c$ $\quad WT_c = 32.6507\ kip$

Weight of Soil: above Footing:

$WT_{s1} := \left[W_f^2 \cdot \left(\left|L_p - L_{pag}\right|\right) - \frac{d_p^2 \cdot \pi}{4} \cdot \left(\left|L_p - L_{pag}\right|\right)\right] \cdot \gamma_s$ $\quad WT_{s1} = 20.4449\ kip$

Weight of Soil Wedge at back face:

$WT_{s2} := \left[\frac{(D_f)^2 \cdot \tan(\phi_s)}{2} \cdot W_f\right] \cdot \gamma_s$ $\quad WT_{s2} = 20.3227\ kip$

Total Weight:

$WT_{tot} := WT_c + WT_{s1} + C_t$ $\quad WT_{tot} = 453.0956\ kip$

Resisting Moment:

$M_r := \left(WT_{tot}\right) \cdot \frac{W_f}{2} + S_u \cdot \frac{T_f}{3} + WT_{s2} \cdot \left(W_f + \frac{D_f \tan(\phi_s)}{3}\right)$ $\quad M_r = 2530.7943\ kip \cdot ft$

Overturning Moment:

$M_{ot} := M_t + S_t \cdot (L_p + T_f)$ $\quad M_{ot} = 0.0145\ kip \cdot ft$

Factor of Safety:

$FS := \frac{M_r}{M_{ot}}$ $\quad FS_{req} := 1.5$ $\quad FS = 174537.54$

$SafetyCheck := if\left(FS > FS_{req}, "Okay", "No\ Good"\right)$ $\quad SafetyCheck = "Okay"$

SHEAR CAPACITY IN PIER

$FS := 2$

$$S_p := \frac{P_{ave} \cdot A_p + \mu \cdot WT_{tot}}{FS}$$

$S_p = 136.3739\ \text{kips}$

$ShearCheck := \text{if}(S_p > S_t, \text{"Okay"}, \text{"No Good"})$

$ShearCheck = \text{"Okay"}$

BEARING PRESSURE CAUSED BY FOOTING

$A_{mat} := W_f^2$ $\quad A_{mat} = 100\ \text{ft}^2$

$S := \frac{W_f^3}{6}$ $\quad S = 166.6667\ \text{ft}^3$

$P_{max} := \frac{WT_{tot}}{A_{mat}} + \frac{M_{ot}}{S}$ $\quad P_{max} = 4.531\ \text{ksf}$

$P_{min} := \frac{WT_{tot}}{A_{mat}} - \frac{M_{ot}}{S}$ $\quad P_{min} = 4.5309\ \text{ksf}$

$MaxPressure := \text{if}(P_{max} < q_s, \text{"Okay"}, \text{"No Good"})$ $\quad MaxPressure = \text{"Okay"}$

$MinPressure := \text{if}[(P_{min} \geq 0) \cdot (P_{min} < q_s), \text{"Okay"}, \text{"No Good"}]$ $\quad MinPressure = \text{"Okay"}$

Distance to Resultant of Pressure Distribution:

$$X_p := \frac{P_{max}}{\left(\frac{P_{max} - P_{min}}{W_f}\right)} \cdot \frac{1}{3}$$

$X_p = 86801.5959\ \text{ft}$

Distance to Kern: $X_k := \frac{W_f}{3}$ $\quad X_k = 3.3333\ \text{ft}$

Since Resultant Force is Not in Kern, Area to which Pressure is Applied Must be Reduced.

Eccentricity: $e := \frac{M_{ot}}{WT_{tot}}$ $\quad e = 0$

Adjusted Soil Pressure:

$$P_a := \frac{2 \cdot WT_{tot}}{3 \cdot W_f \left(\frac{W_f}{2} - e\right)}$$

$P_a = 6.0413\ \text{ksf}$

$$q_{adj} := \text{if}\left(P_{min} < 0, P_a, \frac{P_{max}}{ft^2}\right)$$

$q_{adj} = 4.531\ \text{ksf}$

$PressureCheck := \text{if}(q_{adj} < q_s, \text{"Okay"}, \text{"No Good"})$ $\quad PressureCheck = \text{"Okay"}$

CONCRETE BEARING CAPACITY (ACI 10.17)

$\phi_c := 0.75$ (ACI 9.3.2.2)

$P_b := \phi_c \cdot 0.85 \cdot f'c \frac{d_p^2 \cdot \pi}{4}$ $P_b = 1946.6879$ kip

$BearingCheck := \text{if}(P_b > LF \cdot C_t, \text{"Okay"}, \text{"No Good"})$ BearingCheck = "Okay"

SHEAR STRENGTH OF CONCRETE

Beam Shear: (Critical section located at a distance d from the face of Pier) (ACI 11.3.1.1)

$\phi_c := .85$ (ACI 9.3.2.3)

$d := T_f - Cvr_{pier} - .5 \cdot in$ $d = 20.5$ in

$d_1 := \frac{W_f}{2} - \frac{d_p}{2}$ $d_1 = 3.5$ ft

$d_2 := d_1 - d$ $d_2 = 1.7917$ ft

$L := \left(\frac{W_f}{2} - e\right) \cdot 3$ $L = 14.9999$ ft

$Slope := \text{if}\left(L > W_f, \frac{P_{max} - P_{min}}{W_f}, \frac{q_{adj}}{L}\right)$ $Slope = 0$ kcf

$V_{req} := LF \cdot \left[\left(q_{adj} - Slope \cdot d_1\right) + \left(\frac{Slope \cdot d_1}{2}\right)\right] \cdot W_f \cdot d_1$ $V_{req} = 206.1611$ kip

ACI 11.3.1.1 $V_{Avail} := \phi_c \cdot 2 \cdot \sqrt{f'c \cdot psi} \cdot W_f \cdot d$ $V_{Avail} = 229.0576$ kip

$BeamShearCheck := \text{if}(V_{req} < V_{Avail}, \text{"Okay"}, \text{"No Good"})$ BeamShearCheck = "Okay"

Punching Shear: (Critical Section Located at a distance of d/2 from the face of pier) (ACI 11.12.2.1)

$b_o := (d_p + d) \cdot \pi$ $b_o = 14.7917$ ft

Area included inside bo: $A_{bo} := \frac{\pi \cdot (d_p + d)^2}{4}$ $A_{bo} = 17.411\ ft^2$

Area outside of bo: $A_{out} := A_{mat} - A_{bo}$ $A_{out} = 82.589\ ft^2$

Guess Value: $v_u := 1\,ksf$ (From "Foundation Analysis and design", By Joseph Bowles, Eq. 8-9)

Given $d^2 + d_p \cdot d = \frac{WT_{tot}}{\pi \cdot v_u}$

$v_u := Find(v_u)$ $v_u = 17.9311\,ksf$

$V_u := v_u \cdot d \cdot W_f$ $V_u = 306.3223\,kips$

$V_{req} := LF \cdot V_u$ $V_{req} = 398.2191\,kips$

$V_{Avail} := \phi_c \cdot 4 \cdot \sqrt{f'c\,psi} \cdot b_o \cdot d$ $V_{Avail} = 677.6286\,kips$

$PunchingShearCheck := if(V_{req} < V_{Avail}, "Okay", "No Good")$

STEEL REINFORCEMENT IN THE PAD $\phi_m := .90$ ACI 9.3.2.2

Take Maximum Bending at face of Pier:

$q_b := q_{adj} - d_1 \cdot Slope$ $q_b = 4.531\,ksf$

$M_n := \frac{LF}{\phi_m} \cdot \left[(q_{adj} - q_b) \cdot \frac{d_1^2}{3} + q_b \cdot \frac{d_1^2}{2} \right] \cdot W_f$ $M_n = 400.8697\,kip \cdot ft$

ACI 10.2.7.3 $\beta := if\left[f'c \le 4000 \cdot psi, .85, if\left[f'c \ge 8000 \cdot psi, .65, .85 - \left(\frac{\frac{f'c}{psi} - 4000}{1000} \right) \cdot .05 \right] \right]$ $\beta = 0.85$

$A_s := \frac{M_n}{\phi_m \cdot fy \cdot d}$ $A_s = 4.3455\,in^2$

$a := \frac{A_s \cdot fy}{\beta \cdot f'c \cdot W_f}$ $a = 0.8521\,in$

$A_s := \frac{M_n}{fy \cdot \left(d - \frac{a}{2} \right)}$ $A_s = 3.9939\,in^2$

$\rho := \frac{A_s}{W_f \cdot d}$ $\rho = 0.0016$

$\rho_{min} := \frac{3 \cdot \sqrt{f'c\,psi}}{fy}$ $\rho_{min} = 0.0027$

Temperature and Shrinkage: $\rho_{sh} := if(fy \geq 60000 \cdot psi, 0.0018, 0.0020)$ $\rho_{sh} = 0.0018$

(ACI 7.12.2.1b)

FOR BOTTOM BARS: $As := \max(\rho, \rho_{min}, \rho_{sh}) \cdot W_f \cdot d$ $As = 6.737\ in^2$

$As_{prov} := A_{bot} \cdot NB_{bot}$ $As_{prov} = 10.8\ in^2$

$PadReinforcement := if(As_{prov} > As, "Okay", "No Good")$ $PadReinforcement = "Okay"$

FOR TOP BARS: $As := \rho_{sh} \cdot (W_f \cdot d)$ $As = 4.428\ in^2$

$As_{prov} := A_{btop} \cdot NB_{top}$ $As_{prov} = 10.8\ in^2$

$PadReinforcement := if(As_{prov} > As, "Okay", "No Good")$ $PadReinforcement = "Okay"$

TENSION (ACI 12.2.3) **DEVELOPMENT LENGTH OF PAD REINFORCEMENT**

Bar Spacing: $B_{sPad} := \frac{W_f - 2 \cdot Cvr_{pad} - NB_{bot} \cdot d_{bbot}}{NB_{bot} - 1}$ $B_{sPad} = 5.7794\ in$

Development Length Factors:

Reinforcement Location Factor	$\alpha := 1.0$
Coating Factor	$\beta := 1.0$
Concrete strength Factor	$\lambda := 1.0$
Reinforcement Size Factor	$\gamma := 1.0$

Spacing or Cover Dimension: $c := if\left(Cvr_{pad} < \frac{B_{sPad}}{2}, Cvr_{pad}, \frac{B_{sPad}}{2}\right)$ $c = 2.8897\ in$

Transverse Reinforcement Index: As allowed by ACI 12.2.4 $k_{tr} := 0$

$$L_{dbt} := \frac{3}{40} \cdot \frac{fy}{\sqrt{f'c \cdot psi}} \cdot \frac{\alpha \cdot \beta \cdot \gamma \cdot \lambda}{\left(\frac{c + k_{tr}}{d_{bbot}}\right)} \cdot d_{bbot}$$

$L_{dbt} = 21.7678\ in$

$L_{dbmin} := 12 \cdot in$

Minimum Development Length: (ACI 12.2.1) $L_{dbtCheck} := if(L_{dbt} \geq L_{dbmin}, "Use\ L.dbt", "Use\ L.dbmin")$ $L_{dbtCheck} = "Use\ L.dbt"$

Available Length in Pad: $L_{Pad} := \frac{W_f}{2} - \frac{d_p}{2} - Cvr_{pad}$ $L_{Pad} = 39\ in$

LpadTension := if($L_{Pad} > L_{dbt}$, "Okay", "No Good") LpadTension = "Okay"

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REINFORCEMENT IN PIER

Pier Area:

$$A_p := \frac{\pi \cdot d_p^{\,2}}{4} \qquad A_p = 1017.876\ in^2$$

(ACI 10.8.4 and 10.9.1)

$$A_{smin} := 0.01 \cdot 0.05 \cdot A_p \qquad A_{smin} = 0.5089\ in^2$$

$$A_{sprov} := NBpier \cdot A_{bpier} \qquad A_{sprov} = 6\ in^2$$

SteelAreaCheck := if($A_{sprov} > A_{smin}$, "Okay", "No Good") SteelAreaCheck = "Okay"

NOTE: Anchor Bolts are not accounted for in reinforcement calculation and will provide additional reinforcement to satisfy minimum requirement of steel.

Bar Spacing In Pier:

$$B_{sPier} := \frac{d_p \cdot \pi}{NBpier} - d_{bpier} \qquad B_{sPier} = 10.4347\ in$$

Diamter of Reinforcement Cage:

$$Diam_{cage} := d_p - 2 \cdot Cvr_{pier} \qquad Diam_{cage} = 30\ in$$

Maximum Moment in Pier:

$$M_p := \left[M_t + S_t \cdot \left(L_p + \frac{A_{BP}}{2} \right) \right] \cdot LF \qquad M_p = 0.2028\ in \cdot kips$$

Pier Check evaluated from outside program and results are listed below;

(defined variables) $(f'_c\ \ f_y\ \ cl\ \ Spiral) = (4\ \ 60\ \ 3\ \ 0)$

The required input is column diameter in inches, number of reinforcing bars, bar size number, factored axial load in kips and moment in kip inches:

$(D\ \ N\ \ n\ \ P_u\ \ M_{xu}) := (36\ \ 10\ \ 7\ \ 405\ \ 100)$

Clears any previous output:

$(\phi P_n\ \ \phi M_{xn}\ \ f_{sp}\ \ \rho) := (0\ \ 0\ \ 0\ \ 0)$

$(\phi P_n\ \ \phi M_{xn}\ \ f_{sp}\ \ \rho) := \phi P'_n(D, N, n, P_u, M_{xu})^T$

The Output is given as useable axial load in kips, moment capacity in kip inches, splicing stress in ksi, and reinforcement ratio:

$(\phi P_n\ \ \phi M_{xn}\ \ f_{sp}\ \ \rho) = (2596.9127\ \ 641.213\ \ 21.7997\ \ 0.0059)$

Column size and reinforcement may be changed to match capacity to the applied load.

AxialLoadCheck := if($\phi P_n \geq P_u$, "Okay", "No Good") AxialLoadCheck = "Okay"

BendingCheck := if($\phi M_{xn} \geq M_{xu}$, "Okay", "No Good") BendingCheck = "Okay"

DEVELOPMENT LENGTH OF PIER REINFORCEMENT

TENSION (ACI 12.2.3)

Factors for development:

Reinforcement Location Factor $\alpha := 1.0$

Coating Factor $\beta := 1.0$

Concrete strength Factor $\lambda := 1.0$

Reinforcement Size Factor $\gamma := 1.0$

Spacing or Cover Dimension: $c := \text{if}\left(Cvr_{pier} < \frac{B_{sPier}}{2}, Cvr_{pier}, \frac{B_{sPier}}{2}\right)$ $c = 3\ in$

Transverse Reinforcement: As allowed by ACI 12.2.4 $k_{tr} := 0$

$$L_{dbt} := \frac{3}{40}\cdot\frac{fy}{\sqrt{f'c\,psi}}\cdot\frac{\alpha\cdot\beta\cdot\gamma\cdot\lambda}{\left(\frac{c + k_{tr}}{d_{bpier}}\right)}\cdot d_{bpier} \qquad L_{dbt} = 20.9675\ in$$

Minimum Development Length: (ACI 12.2.1) $L_{dbmin} := 12\cdot in$

Pier reinforcement bars are standard 90 degree hooks and therefore developement in the pad is computed as follows:

$$L_{dh} := \frac{1200\cdot d_{bpier}}{\sqrt{\frac{f'c}{psi}}}\cdot .7 \qquad L_{dh} = 13.4192\ in$$

$$L_{db} := \max\left(L_{dbt}, L_{dbmin}\right) \qquad L_{db} = 20.9675\ in$$

COMPRESSION: (ACI 12.3.2)

$$L_{dbc1} := \frac{.02\cdot d_{bpier}\cdot fy}{\sqrt{f'c\,psi}} \qquad L_{dbc1} = 19.1703\ in$$

$$L_{dbmin} := 0.0003\cdot\frac{in^2}{lb}\cdot\left(d_{bpier}\cdot fy\right) \qquad L_{dbmin} = 15.75\ in$$

$$L_{dbc} := \text{if}\left(L_{dbc1} \geq L_{dbmin}, L_{dbc1}, L_{dbmin}\right) \qquad L_{dbc} = 19.1703\ in$$

Available Length in Pier:

$$L_{pier} := L_p - 3\cdot in \qquad L_{pier} = 27\ in$$

$$L_{piertension} := \text{if}\left(L_{pier} > L_{dbt}, \text{"Okay"}, \text{"No Good"}\right) \qquad L_{piertension} = \text{"Okay"}$$

$$L_{piercompression} := \text{if}\left(L_{pier} > L_{dbc}, \text{"Okay"}, \text{"No Good"}\right)$$

Available Length in Pad:

$$L_{pad} := T_f - 3\cdot in \qquad L_{pad} = 21\ in$$

$$L_{padtension} := \text{if}\left(L_{pad} > L_{dh}, \text{"Okay"}, \text{"No Good"}\right) \qquad L_{padtension} = \text{"Okay"}$$

$$L_{padcompression} := \text{if}\left(L_{pad} > L_{dbc}, \text{"Okay"}, \text{"No Good"}\right)$$

TIE SIZE AND SPACING IN COLUMN

Minimum Tie Size:

$Tie_{min} := if(BSpier \le 10, 3, 4)$ $\quad Tie_{min} = 3$

Used #4 Ties

$d_{Tie} := 4$

Seismic factor:
(ACI 21.10.5)

$z := if(Z \le 2, 1, 0.5)$ $\quad z = 1$

$s_{lim1} := 16 \cdot d_{bpier} \cdot z$ $\quad s_{lim1} = 14\ in$

$s_{lim2} := \frac{48 \cdot d_{Tie} \cdot in}{8} \cdot z$ $\quad s_{lim2} = 24\ in$

$s_{lim3} := D_f z$ $\quad s_{lim3} = 96\ in$

$s_{lim4} := 18in$ $\quad s_{lim4} = 18\ in$

Maximum Spacing:

$$s_{tie} := \min\left(\begin{pmatrix} s_{lim1} \\ s_{lim2} \\ s_{lim3} \\ s_{lim4} \end{pmatrix}\right) \quad s_{tie} = 14\ in$$

Number of Ties Required:

$$n_{tie} := \frac{L_{pier} - 3 \cdot in}{s_{tie}} + 1 \quad n_{tie} = 2.7143$$

GUY ANCHOR EVALUATION

URS

Job :	WHUS Guyed Tower - Storrs, CT	**Project No.**	VZ1 064	**Page**	of
Description:	Anchor Block Evaluation - UCONN Req's	**Computed by**	DDM	**Sheet**	of
	Typical Anchor Block	**Checked by**		**Date**	6/10/04
				Date	

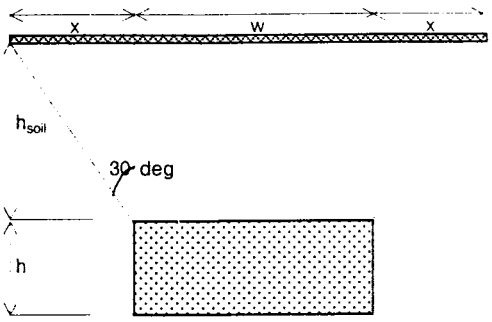
CHECK UPLIFT RESISTANCE

RESULTS FROM COMPUTER ANALYSIS:

Uplift =	150	kips
Sliding =	178	kips

CONCRETE PARAMETERS:

γ conc =	150	pcf
w =	4.5	ft
h =	4	ft
d =	24	ft
Vol. =	*432*	ft^3
Wc =	*64.80*	kips



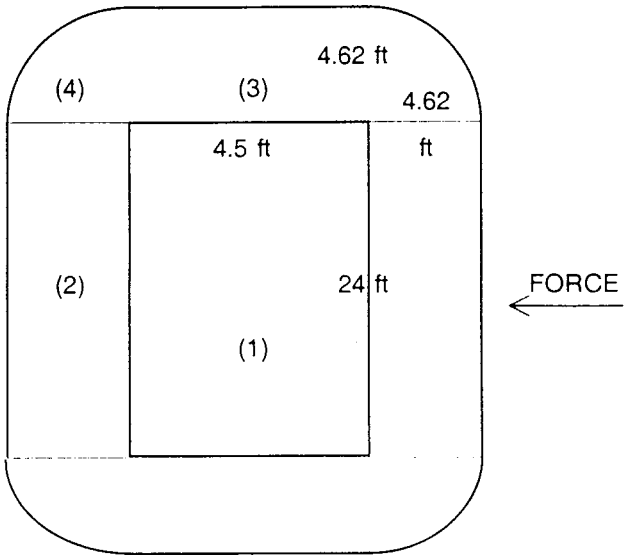
Foundation Section

SOIL PARAMETERS:

γ_{soil} =	110	pcf
h_{soil} =	8	ft
x =	*4.62*	ft

Soil Weight (Wr):

(1) =	95.04	kips
(2) =	97.55	kips
(3) =	18.29	kips
(4) =	19.66	kips
*(5) Anchor Reinf. =	0	kips
Total =	230.54	kips



Foundation Plan View

CHECK UPLIFT (PER EIA/TIA-222-F STANDARD):

Wr / 2.0 + Wc / 1.25 > UPLIFT				(Wr + Wc) / 1.5 > UPLIFT			
167.11	>	*150*	***OK***	*196.89*	>	*150*	***OK***

→ ***GUY ANCHORS AGAINST UPLIFT ARE ADEQUATE***

URS

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Job :	WHUS Guyed Tower - Storrs, CT	Project No.	VZ1 064	Sheet	of
Description:	Anchor Block Evaluation - UCONN Req's	Computed by	DDM	Date	6/10/04
	Typical Anchor Block	Checked by		Date	

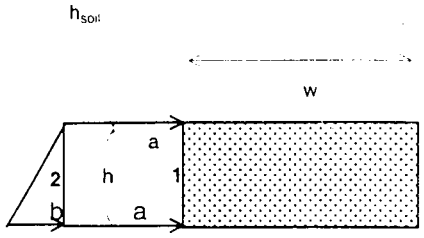
CHECK SLIDING RESISTANCE

SOIL PARAMETERS

$\gamma soil$ =	110	pcf
h_{soil} =	8	ft
h =	4	ft
ϕ =	30	degrees

ANCHOR PARAMETERS

w = 4.5 ft
h = 4.0 ft
d = 24.0 ft



Foundation Elevation View

K_a = 0.33

K_p = 3.00

Δ = 2.67

HORIZONTAL FORCES

1 =	225.28	k
2 =	14.08	k
RESIST TO SLIDING =	239.36	k

SOIL & CONCRETE WEIGHT =	Wr + Wc =	295.34	k
UPLIFT REACTIONS =		-150	k
SUM =		145.34	k

COEF. OF FRICTION, (0.5) =	72.67	k
RESIST TO SLIDING =	239.36	k
SUM =	312.03	k

SF AGAINST SLIDING

SF = 1.75 > 1.5 OK

→ *GUY ANCHORS AGAINST SLIDING ARE ADEQUATE*